



NORTH BRANCH —Minnesota—

**CITY COUNCIL
REGULAR AGENDA
TUESDAY, JULY 8, 2025 @ 7:00 PM
CITY HALL, 6408 ELM STREET, NORTH
BRANCH, MN 55056**

Kevin Schieber
Mayor

Robert Canada
Councilmember

Jeff Goulet
Councilmember

Jim Ibinger
Councilmember

Patrick Meacham
Councilmember

1. CALL TO ORDER
2. PLEDGE OF ALLEGIANCE
3. ROLL CALL

4. AGENDA APPROVAL
 - a. Approve Agenda

ACTION

5. PRESENTATION & PROCLAMATION

6. PUBLIC COMMENT

Provides an opportunity for the public to address the Council on items that are not on the Agenda. Please raise your hand to be recognized. Please state your name and address for the record. This section is for the express purpose of addressing concerns of City services and operations. It shall not be used to clarify individual's views for political purposes.

7. CONSENT AGENDA

All matters listed under Consent Agenda are considered routine and/or non-controversial and will be approved by one motion. There will be no separate discussion of these items unless a Councilmember or citizen so requests, in which case the item will be removed from the Consent Agenda and considered in its normal sequence on the Agenda.

- | | |
|---|--------|
| a. Claims | ACTION |
| b. Minutes - City Council Meeting - June 24, 2025 | ACTION |
| c. Receive Legal Staff Report from City Attorney | INFO |
| d. Approval of LG220 gambling permits for St. Gregory the Great Catholic Church | ACTION |
| e. Approval of Resolution R-205-2025 Accepting the offer of dedication for public improvements Luchts Crossing 4th Addition | ACTION |

8. PUBLIC HEARINGS

9. STAFF REPORTS

- a. Receive and Review Draft of New Assessment Policy INFO
- b. Finance Update INFO
- c. Consider Approval of Resolution R-203-2025 SRTS CSAH 30 Improvent Project - ACTION
Cost Share Agreement

10. MAYOR/CITY COUNCIL

- a. League of Minnesota Cities Conference update - Mayor Schieber and Council Member Jim Ibinger INFO
- b. Advisory Committee member updates - Public Safety, Personnel, Public Works, Finance, Liquor Store INFO
- c. Consider approval of Resolution # R-204-2025 adopting amendment to the City of North Branch Policies & Procedures Manual (Code of Conduct and Bylaws). ACTION

11. ADJOURNMENT

Since we do not have time to discuss every point presented, it may seem that decisions are preconceived. However, background information is provided to the City Council on each Agenda item in advance from Staff and appointed Commissions; and decisions are based on this information and past experiences. In addition some items may also have been discussed preliminarily at Council Work Sessions. If you are aware of information that has not been discussed, please raise your hand to be recognized. Comments that are pertinent are appreciated. Items requiring excessive time may be continued to another meeting.



Prepared By: Sharon Wright, Finance Director

Presenter:

Date: 06/13/2025

Board & Commission: City Council

Subject: Claims

Claims

Voting Requirements:

Voting Options Simple Majority

City of North Branch

ACH Checks

5846 TO 5859 - \$195,000.00

Checks

91711 TO 91997 - \$415,590.64

Payroll

07/03/2025 - \$145,038.72

Accounts Payable

Computer Check Proof List by Vendor

User: TiffaniFolstad
Printed: 06/23/2025 - 2:44PM
Batch: 00005.06.2025 - 06232025



Invoice No	Description	Amount	Pmt Date	Acct Number	Reference
Vendor: 2121	BAXTER, JAMES			Check Sequence: 1	ACH Enabled: False
1309	FINAL AMT DUE/FIREWORKS DISPLAY	7,500.00	06/23/2025	851-49990-50430	
	Check Total:	7,500.00			
Vendor: 2266	Joseph Bigbear			Check Sequence: 2	ACH Enabled: False
25-7E-109	6/24 SUMMER CONCERT	2,000.00	06/23/2025	403-46500-50300	
	Check Total:	2,000.00			
Vendor: UB*00043	JULIE BRUNET			Check Sequence: 3	ACH Enabled: False
	Refund Check 011369-000, 5165 383RD ST	0.07	06/23/2025	602-00000-20200	
	Refund Check 011369-000, 5165 383RD ST	2.92	06/23/2025	615-00000-20200	
	Refund Check 011369-000, 5165 383RD ST	22.50	06/23/2025	612-00000-20200	
	Refund Check 011369-000, 5165 383RD ST	52.32	06/23/2025	602-00000-20200	
	Refund Check 011369-000, 5165 383RD ST	72.16	06/23/2025	615-00000-20200	
	Refund Check 011369-000, 5165 383RD ST	0.03	06/23/2025	615-00000-20200	
	Check Total:	150.00			
Vendor: 1109	Cintas			Check Sequence: 4	ACH Enabled: False
4231912526	MAT/TOWEL/MOP	52.00	06/23/2025	101-41940-50300	
4232661852	WASTEWATER UNIFORMS	37.79	06/23/2025	602-49450-50237	
4233398712	WASTEWATER UNIFORMS	35.80	06/23/2025	602-49450-50237	
4233398789	PARKS UNIFORMS	7.71	06/23/2025	101-45000-50300	
4233398789	GEN UNIFORMS	8.04	06/23/2025	620-49600-50300	
4233398789	WATER UNIFORMS	16.59	06/23/2025	615-49550-50237	
4233398789	PW UNIFORMS	188.40	06/23/2025	101-43000-50237	
4233398789	SHOP TOWELS	10.55	06/23/2025	101-43000-50300	

Invoice No	Description	Amount	Pmt Date	Acct Number	Reference
4233412349	STORE 2 RUGS/MATS	47.19	06/23/2025	609-48000-50300	
4233412384	STORE 1 RUGS/MATS	47.92	06/23/2025	609-49750-50300	
9321299233	UNIFORM CREDIT	-100.20	06/23/2025	101-43000-50237	
	Check Total:	351.79			
Vendor: UB*00045	JENNIFER OLSON PARENT & WILLIAM PARENT			Check Sequence: 5	ACH Enabled: False
	Refund Check 006582-000, 8145 HUMMINGB	29.22	06/23/2025	615-00000-20200	
	Refund Check 006582-000, 8145 HUMMINGB	9.10	06/23/2025	612-00000-20200	
	Refund Check 006582-000, 8145 HUMMINGB	21.19	06/23/2025	602-00000-20200	
	Refund Check 006582-000, 8145 HUMMINGB	35.28	06/23/2025	602-00000-20200	
	Refund Check 006582-000, 8145 HUMMINGB	1.19	06/23/2025	615-00000-20200	
	Refund Check 006582-000, 8145 HUMMINGB	0.34	06/23/2025	615-00000-20200	
	Refund Check 006582-000, 8145 HUMMINGB	22.85	06/23/2025	615-00000-20200	
	Check Total:	119.17			
Vendor: 1399	First National Bank Building MN Secretary Of State- Notary			Check Sequence: 6	ACH Enabled: False
06052025	NOTARY APP T KOSTUCH	120.00	06/23/2025	101-41400-50300	
	Check Total:	120.00			
Vendor: UB*00042	KEVIN RICHARDSON			Check Sequence: 7	ACH Enabled: False
	Refund Check 006015-000, 38960 5TH AVE	40.09	06/23/2025	615-00000-20200	
	Refund Check 006015-000, 38960 5TH AVE	3.31	06/23/2025	615-00000-20200	
	Refund Check 006015-000, 38960 5TH AVE	29.06	06/23/2025	602-00000-20200	
	Refund Check 006015-000, 38960 5TH AVE	1.62	06/23/2025	615-00000-20200	
	Refund Check 006015-000, 38960 5TH AVE	12.49	06/23/2025	612-00000-20200	
	Refund Check 006015-000, 38960 5TH AVE	5.09	06/23/2025	602-00000-20200	
	Check Total:	91.66			
Vendor: UB*00044	SCALES PROPERTIES			Check Sequence: 8	ACH Enabled: False
	Refund Check 013121-000, 38052 GREENWAY	0.04	06/23/2025	615-00000-20200	
	Refund Check 013121-000, 38052 GREENWAY	0.43	06/23/2025	615-00000-20200	
	Refund Check 013121-000, 38052 GREENWAY	7.77	06/23/2025	602-00000-20200	
	Refund Check 013121-000, 38052 GREENWAY	10.71	06/23/2025	615-00000-20200	
	Refund Check 013121-000, 38052 GREENWAY	3.50	06/23/2025	612-00000-20200	

Invoice No	Description	Amount	Pmt Date	Acct Number	Reference
	Refund Check 013121-000, 38052 GREENWAY	0.06	06/23/2025	602-00000-20200	
	Check Total:	22.51			
Vendor: UB*00048	SCALES PROPERTIES			Check Sequence: 9	ACH Enabled: False
	Refund Check 013089-000, 38062 GREENWAY	0.20	06/23/2025	602-00000-20200	
	Refund Check 013089-000, 38062 GREENWAY	9.40	06/23/2025	612-00000-20200	
	Refund Check 013089-000, 38062 GREENWAY	21.89	06/23/2025	602-00000-20200	
	Refund Check 013089-000, 38062 GREENWAY	30.18	06/23/2025	615-00000-20200	
	Refund Check 013089-000, 38062 GREENWAY	1.23	06/23/2025	615-00000-20200	
	Refund Check 013089-000, 38062 GREENWAY	0.14	06/23/2025	615-00000-20200	
	Check Total:	63.04			
Vendor: UB*00047	DAVID SCHERER			Check Sequence: 10	ACH Enabled: False
	Refund Check 012937-000, 5155 383RD ST	1.02	06/23/2025	615-00000-20200	
	Refund Check 012937-000, 5155 383RD ST	7.86	06/23/2025	612-00000-20200	
	Refund Check 012937-000, 5155 383RD ST	0.03	06/23/2025	602-00000-20200	
	Refund Check 012937-000, 5155 383RD ST	0.01	06/23/2025	615-00000-20200	
	Refund Check 012937-000, 5155 383RD ST	18.28	06/23/2025	602-00000-20200	
	Refund Check 012937-000, 5155 383RD ST	25.22	06/23/2025	615-00000-20200	
	Check Total:	52.42			
Vendor: 2267	Keith Secola			Check Sequence: 11	ACH Enabled: False
25-7E-109	6/2024 SUMMER CONCERT	3,000.00	06/23/2025	403-46500-50300	
	Check Total:	3,000.00			
Vendor: 1550	STREICHERS			Check Sequence: 12	ACH Enabled: False
1740824R	TRAINING SUPPLIES-REISSUE	151.00	06/23/2025	101-42110-50332	
	Check Total:	151.00			
Vendor: UB*00046	MEGAN & SPENCER WERNESS			Check Sequence: 13	ACH Enabled: False
	Refund Check 006590-000, 6488 377TH ST	0.82	06/23/2025	602-00000-20200	
	Refund Check 006590-000, 6488 377TH ST	0.04	06/23/2025	615-00000-20200	
	Refund Check 006590-000, 6488 377TH ST	3.76	06/23/2025	602-00000-20200	
	Refund Check 006590-000, 6488 377TH ST	2.44	06/23/2025	615-00000-20200	

Invoice No	Description	Amount	Pmt Date	Acct Number	Reference
	Refund Check 006590-000, 6488 377TH ST	0.01	06/23/2025	615-00000-20200	
	Refund Check 006590-000, 6488 377TH ST	0.35	06/23/2025	612-00000-20200	
	Refund Check 006590-000, 6488 377TH ST	1.12	06/23/2025	615-00000-20200	
	Check Total:	8.54			
	Total for Check Run:	13,630.13			
	Total of Number of Checks:	13			

Accounts Payable

Computer Check Proof List by Vendor

User: SharonWright
Printed: 07/01/2025 - 10:19AM
Batch: 00001.07.2025 - 07012025SMW



Invoice No	Description	Amount	Pmt Date	Acct Number	Reference
Vendor: 1269	IUOE Local 49 Fringe Benefit			Check Sequence: 1	ACH Enabled: False
JULY 2025	49ERS HEALTH INSURANCE PREMIUM FOI	20,345.00	07/01/2025	101-00000-21706	
	Check Total:	20,345.00			
	Total for Check Run:	20,345.00			
	Total of Number of Checks:	1			

Accounts Payable

Computer Check Proof List by Vendor

User: TiffaniFolstad
 Printed: 07/03/2025 - 9:31AM
 Batch: 00002.07.2025 - 07032025



Invoice No	Description	Amount	Pmt Date	Acct Number	Reference
Vendor: 1662 1R6M-QLFD-1MK	AMAZON CAPITAL SERVICES OFFICE SUPPLIES	138.05	07/03/2025	Check Sequence: 1 101-41420-50210	ACH Enabled: False
	Check Total:	138.05			
Vendor: 1646 0703 AMER	Ameritas DEFERRED COMP	90.00	07/03/2025	Check Sequence: 2 101-00000-21705	ACH Enabled: False
	Check Total:	90.00			
Vendor: 1025 514728	ANDERSON AND KOCH FORD PD EXHAUST REPAIR	177.51	07/03/2025	Check Sequence: 3 101-42110-50404	ACH Enabled: False
	Check Total:	177.51			
Vendor: 1428 40013448	API HVAC Services, Inc REPAIRS	1,836.00	07/03/2025	Check Sequence: 4 609-48000-50404	ACH Enabled: False
	Check Total:	1,836.00			
Vendor: 1029 3775900 3775901	Artisan Beer Company BEER BEER	40.00 95.40	07/03/2025 07/03/2025	Check Sequence: 5 609-49750-50252 609-48000-50252	ACH Enabled: False
	Check Total:	135.40			
Vendor: 1036 287294933X07	AT & T MOBILITY MOBILE SERVICES	2,433.64	07/03/2025	Check Sequence: 6 101-41420-50321	ACH Enabled: False
	Check Total:	2,433.64			
Vendor: 1038 43491	Automatic Systems Co. WP #2 PROGRAMMING	1,312.50	07/03/2025	Check Sequence: 7 615-49550-50300	ACH Enabled: False

Invoice No	Description	Amount	Pmt Date	Acct Number	Reference
	Check Total:	1,312.50			
Vendor: 1046	Baribeau Implement Co. Inc.			Check Sequence: 8	ACH Enabled: False
T307403	DITCH MOWER PARTS	3,573.00	07/03/2025	612-49700-50404	
	Check Total:	3,573.00			
Vendor: 1049	BELLBOY CORPORATION			Check Sequence: 9	ACH Enabled: False
0109943200	N/A SALES	26.67	07/03/2025	609-49750-50250	
0208081500	LIQUOR	977.03	07/03/2025	609-49750-50251	
0208157100	LIQUOR	388.54	07/03/2025	609-49750-50251	
0300052100	THC	201.65	07/03/2025	609-49750-50254	
0300073000	THC	91.65	07/03/2025	609-49750-50254	
	Check Total:	1,685.54			
Vendor: 1052	BERNICKS			Check Sequence: 10	ACH Enabled: False
10370084	BEER	2,449.55	07/03/2025	609-48000-50252	
10370084	LIQUOR	84.00	07/03/2025	609-48000-50251	
10370085	BEER CREDIT	-9.96	07/03/2025	609-48000-50252	
10370086	THC	90.00	07/03/2025	609-49750-50254	
10370087	N/A SALES	284.40	07/03/2025	609-49750-50250	
10370087	BEER	6,029.00	07/03/2025	609-49750-50252	
10370088	N/A SALES	144.91	07/03/2025	609-49750-50250	
10370089	BEER CREDIT	-15.20	07/03/2025	609-49750-50252	
10372938	THC	90.00	07/03/2025	609-48000-50254	
10372939	BEER	1,660.40	07/03/2025	609-48000-50252	
10372939	N/A SALES	29.00	07/03/2025	609-48000-50250	
10372940	BEER	5,383.10	07/03/2025	609-49750-50252	
10372940	LIQUOR	60.00	07/03/2025	609-49750-50251	
10372940	N/A SALES	250.00	07/03/2025	609-49750-50250	
10372941	N/A SALES	56.96	07/03/2025	609-49750-50250	
10372942	BEER CREDIT	-103.26	07/03/2025	609-49750-50252	
	Check Total:	16,482.90			
Vendor: 1064	Branch Manufacturing Company			Check Sequence: 11	ACH Enabled: False

Invoice No	Description	Amount	Pmt Date	Acct Number	Reference
121976	DIGGER REPAIRS	217.00	07/03/2025	101-43000-50404	
	Check Total:	217.00			
Vendor: 1066	Breakthru Beverage MN			Check Sequence: 12	ACH Enabled: False
121989613	WINE	113.65	07/03/2025	609-48000-50253	
121992494	LIQUOR	975.12	07/03/2025	609-48000-50251	
121992621	WINE	81.65	07/03/2025	609-49750-50253	
121992622	LIQUOR	768.96	07/03/2025	609-49750-50251	
122103336	BEER	261.00	07/03/2025	609-49750-50252	
122106531	LIQUOR	578.38	07/03/2025	609-48000-50251	
122108562	LIQUOR	3,770.58	07/03/2025	609-49750-50251	
	Check Total:	6,549.34			
Vendor: 1076	Business Essentials			Check Sequence: 13	ACH Enabled: False
655258-1	PAPER SUPPLIES	176.03	07/03/2025	101-41940-50210	
655258-1	PAPER SUPPLIES	176.04	07/03/2025	101-45000-50210	
655258-1	PAPER SUPPLIES	176.03	07/03/2025	101-43000-50210	
655258-1	PAPER SUPPLIES	176.03	07/03/2025	101-42280-50210	
655258-1	PAPER SUPPLIES	176.03	07/03/2025	101-45500-50210	
	Check Total:	880.16			
Vendor: 1082	Capitol Beverage Sales LP			Check Sequence: 14	ACH Enabled: False
3153974	LIQUOR	450.00	07/03/2025	609-49750-50251	
3153974	N/A	107.00	07/03/2025	609-49750-50250	
3153974	BEER	1,231.15	07/03/2025	609-49750-50252	
3153976	BEER	110.00	07/03/2025	609-48000-50252	
3153976	N/A	42.00	07/03/2025	609-48000-50250	
	Check Total:	1,940.15			
Vendor: 1905	Cemstone Products Co., Inc.			Check Sequence: 15	ACH Enabled: False
7784973	POTHOLE PATCHING	285.12	07/03/2025	101-43000-50224	
	Check Total:	285.12			
Vendor: 1109	Cintas			Check Sequence: 16	ACH Enabled: False

Invoice No	Description	Amount	Pmt Date	Acct Number	Reference
4232661984	SHOP SUPPLIES	10.55	07/03/2025	101-43000-50300	
4232661984	UNIFORMS	16.59	07/03/2025	615-49550-50237	
4232661984	UNIFORMS	87.68	07/03/2025	101-43000-50237	
4232661984	UNIFORMS	8.04	07/03/2025	620-49600-50237	
4232661984	UNIFORMS	7.71	07/03/2025	101-45000-50237	
4234151457	WASTEWATER UNIFORMS	35.80	07/03/2025	602-49450-50237	
4234151485	GENERATION UNIFORMS	7.71	07/03/2025	620-49600-50237	
4234151485	PW UNIFORMS	103.39	07/03/2025	101-43000-50237	
4234151485	SHOP SUPPLIES	17.67	07/03/2025	101-43000-50300	
4234151485	WATER UNIFORMS	14.55	07/03/2025	615-49550-50237	
4234912684	UNIFORMS	35.80	07/03/2025	602-49450-50237	
4234912684	MATS FOR WW	22.04	07/03/2025	602-49450-50300	
4234912843	WATER UNIFORMS	16.59	07/03/2025	615-49550-50237	
4234912843	PARKS UNIFORMS	7.71	07/03/2025	101-45000-50237	
4234912843	PW UNIFORMS	87.68	07/03/2025	101-43000-50237	
4234912843	GENERATION MATS	22.63	07/03/2025	620-49600-50300	
4234912843	SHOP SUPPLIES/MATS	28.28	07/03/2025	101-43000-50300	
4234912843	GENERATION UNIFORMS	8.04	07/03/2025	620-49600-50237	
4234926920	LIBRARY MATS & MOPS	26.60	07/03/2025	101-45500-50300	
4234926925	MATS/PD	14.03	07/03/2025	101-42280-50300	
4234926928	MATS AND SUPPLIES	52.00	07/03/2025	101-41940-50300	
4234927091	WATER FLOOR MATS	4.80	07/03/2025	615-49550-50300	
4234927143	LIQUOR STORE 2 FLOOR MATS	47.19	07/03/2025	609-48000-50300	
	Check Total:	683.08			
Vendor: 1114	Coffee Mill Inc			Check Sequence: 17	ACH Enabled: False
0273343	COFFEE & SERVICE CHARGE	94.00	07/03/2025	101-41940-50210	
	Check Total:	94.00			
Vendor: 1122	Crystal Springs Ice			Check Sequence: 18	ACH Enabled: False
01-500618	N/A SALES	81.44	07/03/2025	609-48000-50250	
01-500620	N/A SALES	177.36	07/03/2025	609-49750-50250	
01-500694	N/A SALES	45.28	07/03/2025	609-48000-50250	
01-500697	N/A SALES	263.36	07/03/2025	609-49750-50250	

Invoice No	Description	Amount	Pmt Date	Acct Number	Reference
04-500303	N/A SALES	241.84	07/03/2025	609-49750-50250	
	Check Total:	809.28			
Vendor: 1125	Custom Pole Buildings, LLC			Check Sequence: 19	ACH Enabled: False
2508609	NEW PW BLDG	4,500.00	07/03/2025	615-49550-50525	
2508609	NEW PW BLDG	6,750.00	07/03/2025	612-49700-50525	
2508609	NEW PW BLDG	27,000.00	07/03/2025	101-49990-50525	
2508609	NEW PW BLDG	6,750.00	07/03/2025	602-49450-50525	
2508620	NEW PW BLDG	5,155.50	07/03/2025	602-49450-50525	
2508620	NEW PW BLDG	3,437.00	07/03/2025	615-49550-50525	
2508620	NEW PW BLDG	20,622.00	07/03/2025	101-49990-50525	
2508620	NEW PW BLDG	5,155.50	07/03/2025	612-49700-50525	
	Check Total:	79,370.00			
Vendor: 1129	DAHLHEIMER DISTRIBUTING			Check Sequence: 20	ACH Enabled: False
1836-00026	KEG CREDIT	-30.00	07/03/2025	609-00000-11560	
2500236	N/A SALES	596.25	07/03/2025	609-49750-50250	
2500236	KEG	60.00	07/03/2025	609-00000-11560	
2500288	N/A SALES	34.00	07/03/2025	609-48000-50250	
2500291	THC	214.50	07/03/2025	609-48000-50254	
2500292	BEER	1,613.80	07/03/2025	609-48000-50252	
2500299	THC	850.50	07/03/2025	609-49750-50254	
2500300	BEER	13,009.85	07/03/2025	609-49750-50252	
2506145	THC	481.50	07/03/2025	609-49750-50254	
2506179	N/A SALES	28.25	07/03/2025	609-48000-50250	
2506183	LIQUOR	94.00	07/03/2025	609-48000-50251	
2506193	BEER	5,369.70	07/03/2025	609-48000-50252	
2506194	N/A SALES	303.00	07/03/2025	609-49750-50250	
2506195	LIQUOR	2,770.20	07/03/2025	609-49750-50251	
2506196	BEER	14,000.45	07/03/2025	609-49750-50252	
	Check Total:	39,396.00			
Vendor: 1143	Dr Pepper Snapple Group			Check Sequence: 21	ACH Enabled: False
4849204760	N/A SALES	181.50	07/03/2025	609-49750-50250	

Invoice No	Description	Amount	Pmt Date	Acct Number	Reference
	Check Total:	181.50			
Vendor: 2205 21544	FES, Inc. HELMET SHIELD	88.28	07/03/2025	Check Sequence: 22 101-42280-50237	ACH Enabled: False
	Check Total:	88.28			
Vendor: 1204 290137	Gateway Sign Co. CUSTOM DECALS	780.00	07/03/2025	Check Sequence: 23 101-42280-50401	ACH Enabled: False
	Check Total:	780.00			
Vendor: 2243 Unit 325	Guardian Fleet Safety, LLC NEW SQUAD 325 BUILD	23,987.85	07/03/2025	Check Sequence: 24 701-70100-50550	ACH Enabled: False
	Check Total:	23,987.85			
Vendor: 1239 7113135	Hawkins, Inc. WATER PLANT CHEMICALS	2,064.75	07/03/2025	Check Sequence: 25 615-49550-50210	ACH Enabled: False
	Check Total:	2,064.75			
Vendor: 1246 831526	HOHENSTEINS, INC. BEER	351.00	07/03/2025	Check Sequence: 26 609-48000-50252	ACH Enabled: False
	Check Total:	351.00			
Vendor: 1249 1106	Mitchell Holmes LOCKER TAGS	111.96	07/03/2025	Check Sequence: 27 101-42280-50210	ACH Enabled: False
	Check Total:	111.96			
Vendor: 2142 24783	INSIGHT BREWING COMPANY, LLC THC	240.00	07/03/2025	Check Sequence: 28 609-49750-50254	ACH Enabled: False
24783	BEER	101.50	07/03/2025	609-49750-50252	
	Check Total:	341.50			
Vendor: 1265 1897405	Isanti-Chisago County Star SUMMER CONCERT AD	384.60	07/03/2025	Check Sequence: 29 403-46500-50300	ACH Enabled: False

Invoice No	Description	Amount	Pmt Date	Acct Number	Reference
	Check Total:	384.60			
Vendor: 1269	IUOE Local 49 Fringe Benefit			Check Sequence: 30	ACH Enabled: False
FOR AUG 2025	49ERS HEALTH FOR AUG	20,345.00	07/03/2025	101-00000-21706	
	Check Total:	20,345.00			
Vendor: 1650	John Hirsch's Cambridge Motors			Check Sequence: 31	ACH Enabled: False
419681	SQUAD REPAIRS #119	817.89	07/03/2025	101-42110-50404	
	Check Total:	817.89			
Vendor: 1279	JOHNSON BROTHERS LIQUOR CO			Check Sequence: 32	ACH Enabled: False
2815206	LIQUOR	5,275.16	07/03/2025	609-49750-50251	
2815207	WINE	93.78	07/03/2025	609-49750-50253	
2815208	LIQUOR	1,166.67	07/03/2025	609-48000-50251	
2815209	WINE	46.89	07/03/2025	609-48000-50253	
2821162	LIQUOR	571.75	07/03/2025	609-49750-50251	
2821163	LIQUOR	6,670.62	07/03/2025	609-49750-50251	
2821165	LIQUOR	2,236.30	07/03/2025	609-49750-50251	
2821166	WINE	192.73	07/03/2025	609-49750-50253	
2821167	LIQUOR	2,600.71	07/03/2025	609-49750-50251	
2821168	WINE	998.72	07/03/2025	609-49750-50253	
2821169	N/A SALES	85.68	07/03/2025	609-49750-50250	
2821170	WINE	0.92	07/03/2025	609-48000-50253	
2821171	LIQUOR	3,345.86	07/03/2025	609-48000-50251	
2821172	LIQUOR	611.54	07/03/2025	609-48000-50251	
2821173	LIQUOR	570.88	07/03/2025	609-48000-50251	
2821174	WINE	757.80	07/03/2025	609-48000-50253	
2821175	N/A SALES	73.68	07/03/2025	609-48000-50250	
	Check Total:	25,299.69			
Vendor: 1891	Kirvida Fire, Inc.			Check Sequence: 33	ACH Enabled: False
13330	ENGINE 4303 REPAIRS	447.48	07/03/2025	101-42280-50404	
	Check Total:	447.48			

Invoice No	Description	Amount	Pmt Date	Acct Number	Reference
Vendor: 2249 6182518920	KMG TOOLS INC Scan Tool Update 2 of 3	2,399.00	07/03/2025	Check Sequence: 34 101-43000-50240	ACH Enabled: False
	Check Total:	2,399.00			
Vendor: 1685 002291	Lakes Brewing Company BEER	254.00	07/03/2025	Check Sequence: 35 609-49750-50252	ACH Enabled: False
	Check Total:	254.00			
Vendor: 2041 0128	Dalana Larson CUSTOM SHIRTS/NOMEX HOODS	1,550.00	07/03/2025	Check Sequence: 36 101-42280-50237	ACH Enabled: False
	Check Total:	1,550.00			
Vendor: 1176 15008359834	M Health Fairview VISIT 5008359834 ON 5/20/2025	507.04	07/03/2025	Check Sequence: 37 101-42280-50314	ACH Enabled: False
	Check Total:	507.04			
Vendor: 1643 812209	McDonald Distributing LIQUOR	1,107.70	07/03/2025	Check Sequence: 38 609-49750-50251	ACH Enabled: False
812329	THC	71.76	07/03/2025	609-48000-50254	
812329	LIQUOR	291.50	07/03/2025	609-48000-50251	
812329	BEER	6,166.20	07/03/2025	609-48000-50252	
812341	LIQUOR CREDIT	-117.55	07/03/2025	609-49750-50251	
812342	BEER	10,415.15	07/03/2025	609-49750-50252	
812342	N/A SALES	42.80	07/03/2025	609-49750-50250	
812342	THC	71.76	07/03/2025	609-49750-50254	
812561	BEER CREDIT	-61.00	07/03/2025	609-49750-50252	
813431	N/A SALES	21.40	07/03/2025	609-48000-50250	
813431	BEER	3,281.00	07/03/2025	609-48000-50252	
813431	LIQUOR	79.90	07/03/2025	609-48000-50251	
813460	BEER CREDIT	-203.70	07/03/2025	609-49750-50252	
813476	LIQUOR	335.50	07/03/2025	609-49750-50251	
813477	N/A SALES	42.80	07/03/2025	609-49750-50250	
813477	BEER	8,376.15	07/03/2025	609-49750-50252	
8860664	BEER	-18.60	07/03/2025	609-48000-50252	

Invoice No	Description	Amount	Pmt Date	Acct Number	Reference
8860667	BEER CREDIT	-11.13	07/03/2025	609-48000-50252	
	Check Total:	29,891.64			
Vendor: 1348	Metro Sales Inc.			Check Sequence: 39	ACH Enabled: False
2817318	COPY MACHINE USE/LEASE	1,722.61	07/03/2025	101-41420-50219	
2827601	COPY MACHINE USE/LEASE	259.00	07/03/2025	101-41420-50219	
	Check Total:	1,981.61			
Vendor: 1368	Minnesota Municipal Beverage Association			Check Sequence: 40	ACH Enabled: False
	DUES AND SUBSCRIPTIONS	1,890.00	07/03/2025	609-49750-50433	
	DUES AND SUBSCRIPTIONS	810.00	07/03/2025	609-48000-50433	
	Check Total:	2,700.00			
Vendor: 2058	MINNESOTA RURAL WATER ASSOCIATION			Check Sequence: 41	ACH Enabled: False
06172025	ASSOCIATE MEMBERSHIP 8/2025-6/2026	425.00	07/03/2025	615-49550-50433	
	Check Total:	425.00			
Vendor: 2106	Minnesota State Colleges and Universities			Check Sequence: 42	ACH Enabled: False
1207036	FIRE SCHOOL 3/23-3/24-2025	640.00	07/03/2025	101-42280-50199	
	Check Total:	640.00			
Vendor: 1404	MN TEAMSTERS #320			Check Sequence: 43	ACH Enabled: False
FOR JULY 2025	UNION DUES	1,688.00	07/03/2025	101-00000-21708	
	Check Total:	1,688.00			
Vendor: 1341	Mobile Health Services			Check Sequence: 44	ACH Enabled: False
47618	ANNUAL HEARING TEST	58.92	07/03/2025	615-49550-50300	
47618	ANNUAL HEARING TEST	383.03	07/03/2025	101-43000-50300	
47618	ANNUAL HEARING TEST	294.67	07/03/2025	101-42110-50300	
47618	ANNUAL HEARING TEST	29.46	07/03/2025	101-45000-50300	
47618	ANNUAL HEARING TEST	58.92	07/03/2025	602-49450-50300	
	Check Total:	825.00			
Vendor: 1411	Moose Lake Brewing Co. LLC			Check Sequence: 45	ACH Enabled: False

Invoice No	Description	Amount	Pmt Date	Acct Number	Reference
SB27-010	BEER	39.00	07/03/2025	609-49750-50252	
SB28-010	BEER	111.00	07/03/2025	609-48000-50252	
SB28-011	BEER	36.00	07/03/2025	609-49750-50252	
	Check Total:	186.00			
Vendor: 2203	Morris Electronics, Inc.			Check Sequence: 46	ACH Enabled: False
14023	PD/LIQ/COUNCIL/FIN IT SUPPORT	218.75	07/03/2025	101-41420-50300	
14029	PD IT SUPPORT	125.00	07/03/2025	101-41420-50300	
14032	PD IT SUPPORT	125.00	07/03/2025	101-41420-50300	
14041	PD IT SUPPORT	125.00	07/03/2025	101-41420-50300	
14066	ULTRADNS GROUP IT SUPPORT	62.50	07/03/2025	101-41420-50300	
14124	CITY/PLANNING IT SUPPORT	125.00	07/03/2025	101-41420-50300	
14158	PD IT SUPPORT	125.00	07/03/2025	101-41420-50300	
14182	PD & CLERK IT SUPPORT	62.50	07/03/2025	101-41420-50300	
14260	PW IT SUPPORT	62.50	07/03/2025	101-41420-50300	
14289	CITY/CLERK IT SUPPORT	62.50	07/03/2025	101-41420-50300	
14313	PD IT SUPPORT	125.00	07/03/2025	101-41420-50300	
14318	PD IT SUPPORT	62.50	07/03/2025	101-41420-50300	
14336	PD IT SUPPORT	312.50	07/03/2025	101-41420-50300	
14339	CITY ON SITE SERVICE	2,467.00	07/03/2025	101-41420-50300	
14369	PD & CLERK IT SUPPORT	125.00	07/03/2025	101-41420-50300	
14389	ADJUSTABLE STAND MONITOR	200.69	07/03/2025	101-41430-50210	
	Check Total:	4,386.44			
Vendor: 1440	North Central Bus & Equip Inc.			Check Sequence: 47	ACH Enabled: False
323806	TRANSIT 517 SEAT COVERS	290.00	07/03/2025	101-43000-50404	
323806X1	NEW SQUAD SEAT COVERS	290.00	07/03/2025	101-42110-50404	
	Check Total:	580.00			
Vendor: 1453	Olson Power & Equipment			Check Sequence: 48	ACH Enabled: False
R01167	ZERO TURN MOWER RENTAL-MAY	1,050.00	07/03/2025	101-45000-50410	
R01178	ZERO TURN MOWER RENTAL-JUNE	1,050.00	07/03/2025	101-45000-50410	
	Check Total:	2,100.00			

Invoice No	Description	Amount	Pmt Date	Acct Number	Reference
Vendor: 1893	Parman Energy Group, LLC			Check Sequence: 49	ACH Enabled: False
318658	DEF	220.29	07/03/2025	101-43000-50210	
318658A	GEAR OIL	100.93	07/03/2025	101-43000-50210	
	Check Total:	321.22			
Vendor: 1465	Paustis Wine Company			Check Sequence: 50	ACH Enabled: False
268633	WINE	263.00	07/03/2025	609-49750-50253	
268634	WINE	170.00	07/03/2025	609-48000-50253	
	Check Total:	433.00			
Vendor: 1474	PHILLIPS WINE & SPIRITS, INC			Check Sequence: 51	ACH Enabled: False
5001049	LIQUOR	3,142.94	07/03/2025	609-49750-50251	
5001050	WINE	506.49	07/03/2025	609-49750-50253	
5001050	LIQUOR	373.42	07/03/2025	609-49750-50251	
5001051	N/A SALES	31.73	07/03/2025	609-49750-50250	
5001052	LIQUOR	0.31	07/03/2025	609-48000-50251	
5001053	LIQUOR	1,048.31	07/03/2025	609-48000-50251	
5001054	LIQUOR	95.02	07/03/2025	609-48000-50251	
5001054	WINE	137.52	07/03/2025	609-48000-50253	
6997001	LIQUOR	459.39	07/03/2025	609-49750-50251	
6997002	WINE	366.72	07/03/2025	609-49750-50253	
6997003	LIQUOR	193.48	07/03/2025	609-48000-50251	
	Check Total:	6,355.33			
Vendor: 1884	SUSO 4 North Branch, LP Pine Tree Commercial Realty			Check Sequence: 52	ACH Enabled: False
	STORE 2 RENT	2,322.84	07/03/2025	609-48000-50412	
	Check Total:	2,322.84			
Vendor: 1987	POMP'S TIRE SERVICE INC			Check Sequence: 53	ACH Enabled: False
2390025875	Skid Loader Trailer Tires	541.88	07/03/2025	101-43000-50404	
2390026104	PARKS Trailer Tires	249.94	07/03/2025	101-45000-50404	
CREDIT	CREDIT ON ACCOUNT	-50.00	07/03/2025	101-45000-50404	
	Check Total:	741.82			

Invoice No	Description	Amount	Pmt Date	Acct Number	Reference
Vendor: 1484 855536-05-25	Premium Waters Inc. OPERATING SUPPLIES	49.36	07/03/2025	Check Sequence: 54 609-49750-50210	ACH Enabled: False
	Check Total:	49.36			
Vendor: 2232 W-100224	Pryes Brewing Company LLC BEER	116.00	07/03/2025	Check Sequence: 55 609-48000-50252	ACH Enabled: False
	Check Total:	116.00			
Vendor: 1494 2026983458	Red Bull Distribution Company N/A SALES	84.00	07/03/2025	Check Sequence: 56 609-49750-50250	ACH Enabled: False
	Check Total:	84.00			
Vendor: 2066 B017836 B017978	RMB Environmental Laboratories, Inc. WASTEWATER LAB TEST WATER PLANT SAMPLES	158.20 105.00	07/03/2025 07/03/2025	Check Sequence: 57 602-49450-50315 615-49550-50315	ACH Enabled: False
	Check Total:	263.20			
Vendor: 2257 17	Row Sewer Service PARK RESTROOMS	355.00	07/03/2025	Check Sequence: 58 101-45000-50415	ACH Enabled: False
	Check Total:	355.00			
Vendor: 1509 39890	Jason Russell BULBS	47.85	07/03/2025	Check Sequence: 59 101-42280-50404	ACH Enabled: False
	Check Total:	47.85			
Vendor: 2040 498855 498856	Rustic Roots Winery, Inc. WINE WINE	4,032.20 201.60	07/03/2025 07/03/2025	Check Sequence: 60 609-49750-50253 609-48000-50253	ACH Enabled: False
	Check Total:	4,233.80			
Vendor: 1510 MAY 2025	Rydberg & Sons Inc. 4,372.79 tons of Class 5	58,114.38	07/03/2025	Check Sequence: 61 101-43000-50231	ACH Enabled: False
	Check Total:	58,114.38			
Vendor: 1527	SMALL LOT MN			Check Sequence: 62	ACH Enabled: False

Invoice No	Description	Amount	Pmt Date	Acct Number	Reference
MN97213	WINE	165.00	07/03/2025	609-48000-50253	
MN97433	WINE	334.00	07/03/2025	609-49750-50253	
	Check Total:	499.00			
Vendor: 1534	SOUTHERN GLAZERS WINE & SPIRITS OF MINNESOTA			Check Sequence: 63	ACH Enabled: False
2637292	LIQUOR	2,861.60	07/03/2025	609-48000-50251	
2637292	WINE	324.90	07/03/2025	609-48000-50253	
2637824	LIQUOR	10,105.90	07/03/2025	609-49750-50251	
2637825	WINE	51.99	07/03/2025	609-49750-50253	
2640013	WINE	61.39	07/03/2025	609-48000-50253	
2640013	LIQUOR	907.14	07/03/2025	609-48000-50251	
2640507	LIQUOR	1,598.58	07/03/2025	609-49750-50251	
2640508	WINE	340.14	07/03/2025	609-49750-50253	
	Check Total:	16,251.64			
Vendor: 1542	Staples			Check Sequence: 64	ACH Enabled: False
6034635873	OFFICE SUPPLIES	159.44	07/03/2025	101-41940-50210	
	Check Total:	159.44			
Vendor: 1548	Stop Stick, Ltd			Check Sequence: 65	ACH Enabled: False
38556-IN	STOP STICK SHIPPING	47.00	07/03/2025	701-70100-50550	
	Check Total:	47.00			
Vendor: 1550	STREICHERS			Check Sequence: 66	ACH Enabled: False
1767437	NEW HIRE UNIFORM	327.97	07/03/2025	101-42110-50237	
	Check Total:	327.97			
Vendor: 1584	U.S. Bank Equipment Finance			Check Sequence: 67	ACH Enabled: False
557477957	COPY MACHINE LEASE	185.00	07/03/2025	101-41420-50219	
557791712	COPY MACHINE LEASE	958.08	07/03/2025	101-41420-50219	
	Check Total:	1,143.08			
Vendor: 2268	Vehicle Response Training			Check Sequence: 68	ACH Enabled: False
2044	HANDS ON TRAINING	2,961.94	07/03/2025	101-42280-50199	

Invoice No	Description	Amount	Pmt Date	Acct Number	Reference
	Check Total:	2,961.94			
Vendor: 1598	Viking Coca-Cola Bottling Co.			Check Sequence: 69	ACH Enabled: False
3690526	N/A SALES	142.40	07/03/2025	609-49750-50250	
3690597	N/A SALES	65.10	07/03/2025	609-48000-50250	
3690598	N/A SALES	365.00	07/03/2025	609-49750-50250	
	Check Total:	572.50			
Vendor: 1601	VINOCOPIA, Inc.			Check Sequence: 70	ACH Enabled: False
0375743-IN	WINE	386.00	07/03/2025	609-49750-50253	
0375745-IN	WINE	122.50	07/03/2025	609-48000-50253	
	Check Total:	508.50			
Vendor: 1611	WATSON COMPANY			Check Sequence: 71	ACH Enabled: False
150468	N/A SALES	1,297.99	07/03/2025	609-49750-50250	
	Check Total:	1,297.99			
Vendor: 2182	WESTERN STATES ENVELOPE COMPANY			Check Sequence: 72	ACH Enabled: False
298348	ENVELOPES	130.71	07/03/2025	612-49700-50210	
298348	ENVELOPES	130.71	07/03/2025	615-49550-50210	
298348	ENVELOPES	130.72	07/03/2025	602-49450-50210	
	Check Total:	392.14			
Vendor: 1622	WINE MERCHANTS			Check Sequence: 73	ACH Enabled: False
7524521	WINE	612.61	07/03/2025	609-49750-50253	
	Check Total:	612.61			
	Total for Check Run:	381,615.51			
	Total of Number of Checks:	73			

Accounts Payable

Check Detail

User: TiffaniFolstad
Printed: 07/03/2025 - 9:10AM



Check Number	Check Date	Amount
1118 - Commissioner Of Revenue (W/H)		
5855	06/20/2025	
Inv 0620 STATE		8,957.24
5855 Total:		8,957.24
1118 - Commissioner Of Revenue (W/H) Total:		8,957.24
1362 - Minnesota Dept of Revenue		
5856	06/18/2025	
Inv WATER SALES TAX		1,626.00
5856 Total:		1,626.00
5857	06/18/2025	
Inv LS 1 SALES TAX		27,517.00
Inv LS 2 SALES TAX		10,896.00
5857 Total:		38,413.00
1362 - Minnesota Dept of Revenue Total:		40,039.00
1424 - N.B. Fire Relief Association		
5850	06/20/2025	
Inv FRA 6/20/2025		711.00
5850 Total:		711.00
1424 - N.B. Fire Relief Association Total:		711.00
1431 - Nationwide Retirement Solution		
5854	06/20/2025	
Inv 0620 NAT		5.00
5854 Total:		5.00
1431 - Nationwide Retirement Solution Total:		5.00
1585 - United States Treasury		
5852	06/20/2025	
Inv 0620 FED		38,605.67

Check Number	Check Date	Amount
5852 Total:		38,605.67
1585 - United States Treasury Total:		38,605.67
1630 - XCEL Energy		
5859	06/25/2025	
Inv 931170558		498.89
Inv 931271377		27.48
Inv 931940570		100.22
5859 Total:		626.59
1630 - XCEL Energy Total:		626.59
1899 - BlueCross/Blue Shield Minnesota		
5858	06/18/2025	
Inv 250604713872L		44,925.82
5858 Total:		44,925.82
1899 - BlueCross/Blue Shield Minnesota Total:		44,925.82
1941 - WEX, Inc.		
5849	06/11/2025	
Inv EE HSA 6/6/2025		5,975.63
5849 Total:		5,975.63
1941 - WEX, Inc. Total:		5,975.63
2096 - Xpress Solutions Inc		
5847	06/06/2025	
Inv XBP June 2025		2,242.90
5847 Total:		2,242.90
5848	06/06/2025	
Inv		636.75
5848 Total:		636.75
2096 - Xpress Solutions Inc Total:		2,879.65
2107 - US BANK - CREDIT CARDS		
5851	06/07/2025	
Inv		50,316.04
5851 Total:		50,316.04

Check Number	Check Date	Amount
2107 - US BANK - CREDIT CARDS Total:		50,316.04
2170 - Pathpoint Merchant Services LLC		
5846	06/02/2025	
Inv XBP CC June 25		1,958.36
5846 Total:		1,958.36
2170 - Pathpoint Merchant Services LLC Total:		1,958.36
Total:		195,000.00



NORTH BRANCH —Minnesota—

Kevin Schieber
Mayor

Robert Canada
Councilmember

Jim Ibinger
Councilmember

Jeff Goulet
Councilmember

Patrick Meacham
Councilmember

**CITY COUNCIL
REGULAR AGENDA
TUESDAY, JUNE 24, 2025 @ 7:00 PM
CITY HALL, 6408 ELM STREET, NORTH
BRANCH, MN 55056**

MINUTES OF THE PROCEEDINGS OF THE CITY COUNCIL OF THE CITY OF NORTH BRANCH IN THE COUNTY OF CHISAGO AND IN THE STATE OF MINNESOTA

REGULAR MEETING

Tuesday, June 24, 2025

1. CALL TO ORDER

The North Branch City Council met in REGULAR and Mayor Kevin Schieber called the meeting to order at 7PM.

2. PLEDGE OF ALLEGIANCE

Mayor Schieber led the pledge of allegiance.

3. ROLL CALL

Present: Mayor Kevin Schieber, Councilmember Jeff Goulet, Councilmember Jim Ibinger, Councilmember Patrick Meacham, Councilmember Robert Canada

Absent:

Remote:

Others Present:

Notes:

4. AGENDA APPROVAL

a. Approve Agenda

ACTION

Mayor Kevin Schieber asked to move 7g in the agenda to 9d.

RESULT: Passed
MOVER: Patrick Meacham
SECONDER: Robert Canada
AYES: Kevin Schieber, Jeff Goulet, Jim Ibinger, Patrick Meacham, Robert Canada
ABSENT:
NOTES:

5. PRESENTATION & PROCLAMATION

a. Oath of office and Swearing in of Officer Bryce Lind INFO

6. PUBLIC COMMENT

Provides an opportunity for the public to address the Council on items that are not on the Agenda. Please raise your hand to be recognized. Please state your name and address for the record. This section is for the express purpose of addressing concerns of City services and operations. It shall not be used to clarify individual's views for political purposes.

There was no public comment.

7. CONSENT AGENDA

All matters listed under Consent Agenda are considered routine and/or non-controversial and will be approved by one motion. There will be no separate discussion of these items unless a Councilmember or citizen so requests, in which case the item will be removed from the Consent Agenda and considered in its normal sequence on the Agenda.

RESULT: Passed
MOVER: Jim Ibinger
SECONDER: Robert Canada
AYES: Kevin Schieber, Jeff Goulet, Jim Ibinger, Patrick Meacham, Robert Canada
ABSENT:
NOTES:

a. Claims	ACTION
b. City Council - Regular Meeting - June 10th, 2025 - 7:00 PM	ACTION
c. Approval of Social Media policy	ACTION
d. Approval of Resolution R-199-2025 to approve the Fox Run 2nd Addition Final Plat	ACTION
e. Approval of Resolution R-202-2025 Approving the Fox Run 2nd Addition Planned Unit Development and Subdivision Agreement	ACTION
f. Approval of a Special Event Permit Application for Fashion Show in Central Park	ACTION
g. Approval of Job Descriptions for Liquor Operations Department including Store Clerk, Lead Store Clerk, Assistant Store Manager, Store Manager, and Liquor Operations Director.	ACTION

Moved to 9D.

Liquor store manager will need to be changed to Exempt, not non exempt.

h. Approval of Job Description for Accountant	ACTION
i. Approval of City Clerk Job Description.	ACTION

8. PUBLIC HEARINGS

9. STAFF REPORTS

- a. Consider approval of Resolution R-201-2025 in support of the future I-35/400th Street interchange and Hwy 95 truck bypass. ACTION

RESULT: Passed

MOVER: Jeff Goulet

SECONDER: Robert Canada

AYES: Kevin Schieber, Jeff Goulet, Jim Ibinger, Patrick Meacham, Robert Canada

ABSENT:

NOTES:

- b. Software Discussion INFO

Sharon Wright discussed BS & A software. This software will streamline our workflow. Further discussion will happen in July meetings.

- c. Administrator update VERBAL UPDATE

City Administrator, Matthew Hill, gave updates regarding transitioning to the new website and also let the Council know that the City is working on maintaining a consistent message using social media. The City is looking to renew/replace the industrial park signage along I-35. Matthew Hill asked the Council if they had any ideas they could reach out to him.

City staff have been in consultation with the City Attorney's office related to claims regarding the City's planning and zoning authority. The City has lawfully adopted planning and zoning controls pursuant to the Minnesota Municipal Planning Act, which will continue to govern all required procedures and protocols undertaken by the City as is required by state law.

- d. Approval of Job Descriptions for Liquor Operation Department including Store Clerk, Lead Store Clerk, Assistant Store Manager, Store Manager, and Liquor Operations Director. ACTION

Liquor Store Manager to be changed to Exempt, not non-exempt.

RESULT: Passed

MOVER: Jeff Goulet

SECONDER: Robert Canada

AYES: Kevin Schieber, Jeff Goulet, Jim Ibinger, Patrick Meacham, Robert Canada

ABSENT:

NOTES:

10. MAYOR/CITY COUNCIL

- a. Parameters of public comment INFO

In March 2023, changes were made regarding public comment, moving from 3 minutes to 5 minutes, which the City Council has been very lenient with. There were also changes to public comment rules. Consensus to bring a proposal of change to by-laws

11. CLOSED SESSION

Mayor Kevin Schieber called the Meeting to a Closed session at 8:17pm

RESULT: Passed
MOVER: Kevin Schieber
SECONDER: Robert Canada
AYES: Kevin Schieber, Jeff Goulet, Jim Ibinger, Patrick Meacham, Robert Canada
ABSENT:
NOTES:

- a. Closed meeting pursuant to Minn. Stat. 13D.05, sub. 3 (c) to consider the sale of INFO
real property at 37891 Forest Blvd

Mayor Kevin Schieber, Member Robert Canada, Member Jim Ibinger, Member Jeff Goulet, Member Patrick Meacham, City Administrator Matthew Hill, City Clerk Tonya Kostuch, and Community Development Director Nate Sondrol were in attendance.

Mayor Schieber announced that we are back in open session at 8:44pm

12. ADJOURNMENT

The meeting adjourned at 8:44pm.

RESULT: Passed
MOVER: Kevin Schieber
SECONDER: Robert Canada
AYES: Kevin Schieber, Jeff Goulet, Jim Ibinger, Patrick Meacham, Robert Canada
ABSENT:
NOTES:

APPROVED: Kevin Schieber ATTEST: Tonya Kostuch



MEMORANDUM

To: The Honorable Kevin Schieber
City of North Branch City Council

VIA EMAIL ONLY

cc: Matthew Hill, City Administrator

From: Robert J. Kringler

Date: July 2, 2025

Re: Legal Staff Report for July 8, 2025 City Council Meeting

- - - - -

We are submitting this memorandum to update the City of North Branch City Council on the work we performed as City Attorney during June of 2025. The matters listed below are discussed in a general manner only for sake of brevity and to maintain any attorney-client privileged and/or confidential information/data.

Summary of City Matters

1. **Personnel and Labor Matters**

Attorneys researched, reviewed, analyzed, and drafted documents and advisory communications to the City Council regarding the competition of the City Administrator's performance evaluation.

2. **Municipal Matters**

Attorneys researched, reviewed, analyzed, and advised on questions related to the licensing of liquor stores and businesses selling alcohol. Attorney's reviewed, analyzed, and commented on a draft social media policy presented by the City. Attorneys reviewed, analyzed and responded to a data request. Attorneys began reviewing the City's current franchise fee ordinances for possible future amendments.

3. **Land Use and Real Estate Matters**

Attorneys researched, reviewed, advised and drafted documents related to a potential real estate transaction. Attorneys researched, reviewed, and drafted a memo on questions related to planning and zoning authority within the City. Attorneys researched, reviewed, advised on questions related to the liquor store lease. Attorneys reviewed and advised staff on a cost-share agreement with a residential developer.

4. **Staff Communications**

Attorneys also make occasional day-to-day communications with the City Administrator, City Engineer and City staff regarding the above-referenced matters, among others.

RJK/sc

LG220 Application for Exempt Permit

An exempt permit may be issued to a nonprofit organization that:

- conducts lawful gambling on five or fewer days, and
- awards less than \$50,000 in prizes during a calendar year.

If total raffle prize value for the calendar year will be \$1,500 or less, contact the Licensing Specialist assigned to your county by calling 651-539-1900.

Application Fee (non-refundable)

Applications are processed in the order received. If the application is postmarked or received 30 days or more before the event, the application fee is **\$100**; otherwise the fee is **\$150**.

Due to the high volume of exempt applications, payment of additional fees prior to 30 days before your event will not expedite service, nor are telephone requests for expedited service accepted.

ORGANIZATION INFORMATION

Organization Name: St. Gregory the Great Catholic Church

Previous Gambling Permit Number: X-36504-24-029

Minnesota Tax ID Number, if any: 4603272

Federal Employer ID Number (FEIN), if any: 41-6104942

Mailing Address: P.O. Box 609

City: North Branch State: MN Zip: 55056 County: Chisago

Name of Chief Executive Officer (CEO): Fr. Matthew Shireman

CEO Daytime Phone: 651-674-4056 CEO Email: info@stgregorynb.org

(permit will be emailed to this email address unless otherwise indicated below)

Email permit to (if other than the CEO): _____

NONPROFIT STATUS

Type of Nonprofit Organization (check one):

☐ Fraternal ☒ Religious ☐ Veterans ☐ Other Nonprofit Organization

Attach a copy of one of the following showing proof of nonprofit status:

(DO NOT attach a sales tax exempt status or federal employer ID number, as they are not proof of nonprofit status.)

☐ **A current calendar year Certificate of Good Standing**

Don't have a copy? Obtain this certificate from:

MN Secretary of State, Business Services Division
60 Empire Drive, Suite 100
St. Paul, MN 55103

Secretary of State website, phone numbers:
www.sos.state.mn.us
651-296-2803, or toll free 1-877-551-6767

☐ **IRS income tax exemption (501(c)) letter in your organization's name**

Don't have a copy? To obtain a copy of your federal income tax exempt letter, have an organization officer contact the IRS toll free at 1-877-829-5500.

☐ **IRS - Affiliate of national, statewide, or international parent nonprofit organization (charter)**

If your organization falls under a parent organization, attach copies of both of the following:

1. IRS letter showing your parent organization is a nonprofit 501(c) organization with a group ruling; and
2. the charter or letter from your parent organization recognizing your organization as a subordinate.

GAMBLING PREMISES INFORMATION

Name of premises where the gambling event will be conducted (for raffles, list the site where the drawing will take place): Church of St. Gregory the Great

Physical Address (do not use P.O. box): 38725 Forest Blvd

Check one:

☒ City: North Branch Zip: 55056 County: Chisago

☐ Township: _____ Zip: _____ County: _____

Date(s) of activity (for raffles, indicate the date of the drawing): September 28, 2025

Check each type of gambling activity that your organization will conduct:

☐ Bingo ☐ Paddlewheels ☐ Pull-Tabs ☐ Tipboards ☒ Raffle

Gambling equipment for bingo paper, bingo boards, raffle boards, paddlewheels, pull-tabs, and tipboards must be obtained from a distributor licensed by the Minnesota Gambling Control Board. EXCEPTION: Bingo hard cards and bingo ball selection devices may be borrowed from another organization authorized to conduct bingo. To find a licensed distributor, go to www.mn.gov/gcb and click on **Distributors** under the **List of Licensees** tab, or call 651-539-1900.

LG220 Application for Exempt Permit

11/17
Page 2 of 2

LOCAL UNIT OF GOVERNMENT ACKNOWLEDGMENT (required before submitting application to the Minnesota Gambling Control Board)

CITY APPROVAL for a gambling premises located within city limits	COUNTY APPROVAL for a gambling premises located in a township
☐ The application is acknowledged with no waiting period. ☐ The application is acknowledged with a 30-day waiting period, and allows the Board to issue a permit after 30 days (60 days for a 1st class city). ☐ The application is denied.	☐ The application is acknowledged with no waiting period. ☐ The application is acknowledged with a 30-day waiting period, and allows the Board to issue a permit after 30 days. ☐ The application is denied.
Print City Name: _____	Print County Name: _____
Signature of City Personnel: _____	Signature of County Personnel: _____
Title: _____ Date: _____	Title: _____ Date: _____
The city or county must sign before submitting application to the Gambling Control Board.	TOWNSHIP (if required by the county) On behalf of the township, I acknowledge that the organization is applying for exempted gambling activity within the township limits. (A township has no statutory authority to approve or deny an application, per Minn. Statutes, section 349.213.) Print Township Name: _____ Signature of Township Officer: _____ Title: _____ Date: _____

CHIEF EXECUTIVE OFFICER'S SIGNATURE (required)

The information provided in this application is complete and accurate to the best of my knowledge. I acknowledge that the financial report will be completed and returned to the Board within 30 days of the event date.

Chief Executive Officer's Signature: *Fr. Matthew Shireman* Date: 06/26/2025
 (Signature must be CEO's signature; designee may not sign)

Print Name: Fr. Matthew Shireman

REQUIREMENTS

Complete a separate application for:

- all gambling conducted on two or more consecutive days; or
- all gambling conducted on one day.

Only one application is required if one or more raffle drawings are conducted on the same day.

Financial report to be completed within 30 days after the gambling activity is done:

A financial report form will be mailed with your permit. Complete and return the financial report form to the Gambling Control Board.

Your organization must keep all exempt records and reports for 3-1/2 years (Minn. Statutes, section 349.166, subd. 2(f)).

MAIL APPLICATION AND ATTACHMENTS

Mail application with:

- _____ a copy of your proof of nonprofit status; and
- _____ application fee (non-refundable). If the application is postmarked or received 30 days or more before the event, the application fee is **\$100**; otherwise the fee is **\$150**. Make check payable to **State of Minnesota**.

To: Minnesota Gambling Control Board
 1711 West County Road B, Suite 300 South
 Roseville, MN 55113

Questions?

Call the Licensing Section of the Gambling Control Board at 651-539-1900.

Data privacy notice: The information requested on this form (and any attachments) will be used by the Gambling Control Board (Board) to determine your organization's qualifications to be involved in lawful gambling activities in Minnesota. Your organization has the right to refuse to supply the information; however, if your organization refuses to supply this information, the Board may not be able to determine your organization's qualifications and, as a consequence, may refuse to issue a permit. If your organization supplies the information requested, the Board will be able to process the

application. Your organization's name and address will be public information when received by the Board. All other information provided will be private data about your organization until the Board issues the permit. When the Board issues the permit, all information provided will become public. If the Board does not issue a permit, all information provided remains private, with the exception of your organization's name and address which will remain public. Private data about your organization are available to Board members, Board staff whose work requires access to the information; Minnesota's Depart-

ment of Public Safety; Attorney General; Commissioners of Administration, Minnesota Management & Budget, and Revenue; Legislative Auditor, national and international gambling regulatory agencies; anyone pursuant to court order; other individuals and agencies specifically authorized by state or federal law to have access to the information; individuals and agencies for which law or legal order authorizes a new use or sharing of information after this notice was given; and anyone with your written consent.

This form will be made available in alternative format (i.e. large print, braille) upon request.

An equal opportunity employer

**Internal Revenue Service
P.O. Box 2508
Cincinnati, OH 45201**

Department of the Treasury

Date: October 24, 2018

Person to Contact:

R. Meyer ID# 0110429

Toll Free Telephone Number:

877-829-5500

United States Conference of Catholic
Bishops
3211 4th Street, NE
Washington, DC 20017-1194

Group Exemption Number:

0928

Dear Sir/Madam:

This responds to your October 12, 2018, request for information regarding the status of your group tax exemption.

Our records indicate that you were issued a determination letter in March 1946, that you are currently exempt from federal income tax under section 501(c)(3) of the Internal Revenue Code, and are not a private foundation within the meaning of section 509(a) of the Code because you are described in sections 509(a)(1) and 170(b)(1)(A)(i).

With your request, you provided a copy of the *Official Catholic Directory for 2018*, which includes the names and addresses of the agencies and instrumentalities and the educational, charitable, and religious institutions operated by the Roman Catholic Church in the United States, its territories, and possessions that are subordinate organizations under your group tax exemption. Your request indicated that each subordinate organization is a non-profit organization, that no part of the net earnings thereof inures to the benefit of any individual, and that no substantial part of their activities is for promotion of legislation. You have further represented that none of your subordinate organizations is a private foundation under section 509(a), although all subordinates do not all share the same sub-classification under section 509(a). Based on your representations, the subordinate organizations in the *Official Catholic Directory for 2018* are recognized as exempt under section 501(c)(3) of the Code under GEN 0928.

Donors may deduct contributions to you and your subordinate organizations as provided in section 170 of the Code. Bequests, legacies, devises, transfers, or gifts to them or for their use are deductible for federal estate and gifts tax purposes if they meet the applicable provisions of section 2055, 2106, and 2522 of the Code.

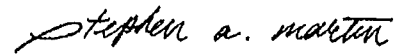
Subordinate organizations under a group exemption do not receive individual exemption letters. Subordinate organizations are not listed in Tax Exempt Organization Search (Pub 78 data), and many are not listed in the Exempt Organizations Business Master

File extract, or EO BMF. Donors may verify that a subordinate organization is included in your group exemption by consulting the *Official Catholic Directory*, the official subordinate listing approved by you, or by contacting you directly. IRS does not verify the inclusion of subordinate organizations under your group exemption. See IRS Publication 4573, *Group Exemption*, for additional information about group exemptions.

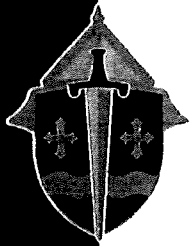
Each subordinate organization covered in a group exemption should have its own EIN. Each subordinate organization must use its own EIN, not the EIN of the central organization, in all filings with IRS.

If you have any questions, please call us at the telephone number shown in the heading of this letter.

Sincerely,

A handwritten signature in cursive script that reads "Stephen A. Martin".

Stephen A. Martin
Director, Exempt Organizations
Rulings and Agreements



ARCHDIOCESE
SAINT PAUL &
MINNEAPOLIS

OFFICE OF THE CHANCELLOR FOR CIVIL AFFAIRS

November 18, 2019

Reverend Shane Stoppel-Wasinger
Church of Saint Gregory
38725 Forest Blvd
North Branch, MN 55056

Dear Reverend Stoppel-Wasinger,

The Church of Saint Gregory, a Minnesota religious parish corporation, is a tax exempt organization under the provisions of Section 501(c)(3) of the Internal Revenue Code by reason of a Group Ruling issued to the United States Conference of Catholic Bishops by the Internal Revenue Service on October 24, 2018, which is the latest annual update in a series that began with the original determination of March 25, 1946. A copy of the 2018 Group Ruling is enclosed. The Group Exemption Number is 0928.

The Group Ruling provides that any organizations listed in the *Official Catholic Directory* for 2018 as being an agency, instrumentality and educational, charitable and religious institutions operated, supervised or controlled by or in connection with the Roman Catholic Church in the United States, are tax exempt.

The Church of Saint Gregory, is listed in the *Official Catholic Directory* for 2018 on page 1268. A copy of the Archdiocesan section from the directory showing that listing is enclosed.

If you have any questions about the tax exempt status, please contact me.

Sincerely,

Joseph F. Kueppers
Chancellor for Civil Affairs

ENCLOSURES



Prepared By: Nathan Sondrol, Community Development Director

Presenter: Nathan Sondrol, Community Development Director

Date: 07/02/2025

Board & Commission: City Council

Subject: Approval of Resolution R-205-2025 Accepting the offer of dedication for public improvements Luchts Crossing 4th Addition

Overview / Background

Graphic Homes, Inc (Developer) has submitted an Offer of Dedication for the Public Improvements as required for the Lucht's Crossing 4th Addition development. City staff have reviewed the required public improvements and have found them satisfactorily complete and are accepting the offer to dedication. By this action, the City shall approve the Developer to enter the one (1) year warranty period for the improvements. Upon completion of the warranty period, and if no issues are identified with the public improvement items, the City can take action to accept the improvements, making them an official public asset. At that time, the remaining security would be released. The developer also has additional security in place for a wetland management agreement associated with the development. The requirements of the wetland management agreement shall be complied with.

Staff Recommendation

City staff recommend approval of the resolution accepting the offer of dedication as stated.

Requested Action

Approve Resolution No. R-205-2025 accepting the offer of dedication for public improvements for the Luchts Crossing 4th Addition.

Voting Requirements:

Voting Options Simple Majority

STATE OF MINNESOTA

COUNTY OF CHISAGO

CITY OF NORTH BRANCH

CITY COUNCIL RESOLUTION NO. R-205-2025

A RESOLUTION ACCEPTING AN OFFER OF DEDICATION FOR PUBLIC IMPROVEMENTS FOR LUCHTS CROSSING 4TH ADDITION

WHEREAS, in accordance with Planned Unit Development and Subdivision Agreement (“Agreements”) Luchts Crossing 4th Addition (“Developments”), dated July 27, 2022, , Graphic Homes, Inc (“Developer”), agreed to install certain public improvements (“Improvements”) for said Developments, and provide Financial Guarantee (“Security”), in the form of Letter of Credit, covering the installation and construction of those “Improvements;” and,

WHEREAS, the Developer has completed the Improvements as of July 8, 2025, as required by the Agreements for the Developments, and hereby has made an Offer of Dedication for those Improvements; and,

WHEREAS, as allowed by those Agreements, the Developer has also requested a reduction in security to reflect the work completed; and,

WHEREAS, City Staff has inspected the final Improvements and fully accepts the public Improvements as required for the Development.

WHEREAS, all items associated with the wetland management agreement of the development shall be completed.

NOW THEREFORE, BE IT RESOLVED BY THE NORTH BRANCH CITY COUNCIL THAT: as state in attached Exhibit A, the offer of Dedication for Luchts Crossing 4th Addition have been accepted upon compliance with the wetland management agreement.

Passed by the City Council of North Branch, Minnesota this 8th day of July, 2025.

Kevin Schieber, Mayor
Attested:

Matthew Hill, City Administrator

LUCHTS CROSSING 4TH ADDITION
OFFER OF DEDICATION

THE UNDERSIGNED, Graphic Homes Inc. a Minnesota corporation ("Developer") has executed this Offer of Dedication ("Offer") effective as of the 9th day of April, 2025.

RECITALS

A. The Developer and the City of North Branch, a Minnesota municipal corporation ("City") are parties to a Planned Unit Development and Subdivision Agreement dated August 22, 2022 (the "Agreement") according to the terms of which the Developer agreed to construct certain Improvements to the Property owned by the Developer including certain Public Improvements to be dedicated to the City.

B. Pursuant to the Agreement, the Developer has furnished the City with a Letter of Credit in the original amount of \$1,673,531.00, issued by Security State Bank of Marine.

C. The Agreement further provides that the Improvements may be offered to the City in no more than three (3) dedications and that, if the City accepts the dedication of such Improvements, the Letter of Credit may be reduced by an amount equal to 100% of estimated costs of the Improvements to be dedicated as determined by the City Engineer (the "Reduction Amount")

D. The Developer has completed certain of the Public Improvements and now desires to offer to dedicate such improvements (the "Dedicated Improvements") to the City and, upon the City's acceptance of such offer to keep the Letter of Credit in the reduced amount as allowed by the Agreement for the duration of the warranty period.

OFFER OF DEDICATION

The following provisions are hereby submitted to the City by the Developer in connection with the Agreement regarding the development of the Lucht's Crossing 4th Addition Development within the City limits:

1. Offer of Dedication. The Developer hereby offers to dedicate to the City all of the Public Improvements completed by the Developer pursuant to the Agreement.

2. Developer's Acknowledgment. Developer hereby acknowledges that, the Improvements will not be formally dedicated to the City until the City's final acceptance of the Public Improvements required by the Development Agreement as evidenced by a Certificate of Completion issued by the City and therefore the City's acceptance of the Offer of the Dedicated Improvements hereunder is expressly made contingent upon and subject to such formal statutory dedication requirements, the City's final acceptance of the Public Improvements and in all other respects is contingent upon the Developer's continued compliance with the terms and conditions of the Agreement. The Developer further acknowledges that as to all Public Improvements, including the Dedicated Improvements, the Warranty Period defined in the Agreement, shall not

commence until the City's final acceptance of the Public Improvements.

3. Letter of Credit. The City approves a reduction in the Letter of Credit and the Developer may submit a replacement Letter of Credit in the amount of \$418,382.75 to remain on file for the duration of the Warranty Period and for so long thereafter as is necessary to complete the remaining Developer's obligations under the terms of the Agreement, which includes, but is not limited to preparation and approval of as-built drawings of the Development.

4. Definitions. Capitalized terms not otherwise defined herein shall have the meanings given them on the Agreement.

Respectfully Submitted,

DEVELOPER:

GRAPHIC HOMES, INC.

By:  4-9-25
Steven J. Rindahl
Its: President



Prepared By: Matthew Hill, City Administrator

Presenter: Matthew Hill, City Administrator

Date: 07/01/2025

Board & Commission: City Council

Subject: Receive and Review Draft of New Assessment Policy

Justin Messner of WSB Engineering will be presenting the draft Special Assessment Policy for the City of North Branch, and requesting feedback from Council and Staff prior to bringing back a final policy for approval.

Voting Requirements:

Voting Options Simple Majority



Northwest Old Town Street and Utility Improvements

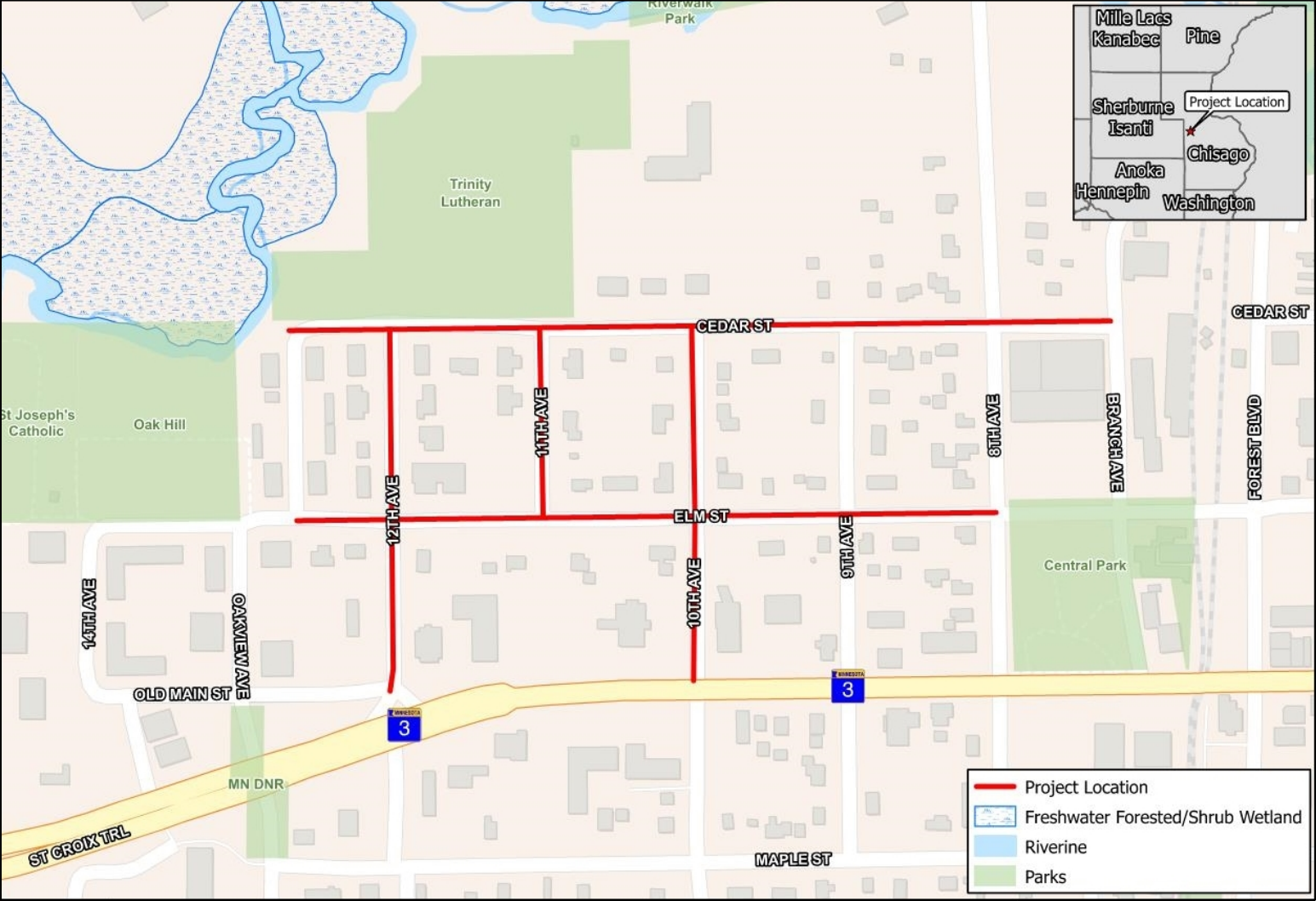
City Council
07/08/2025



CITY OF
NORTH BRANCH

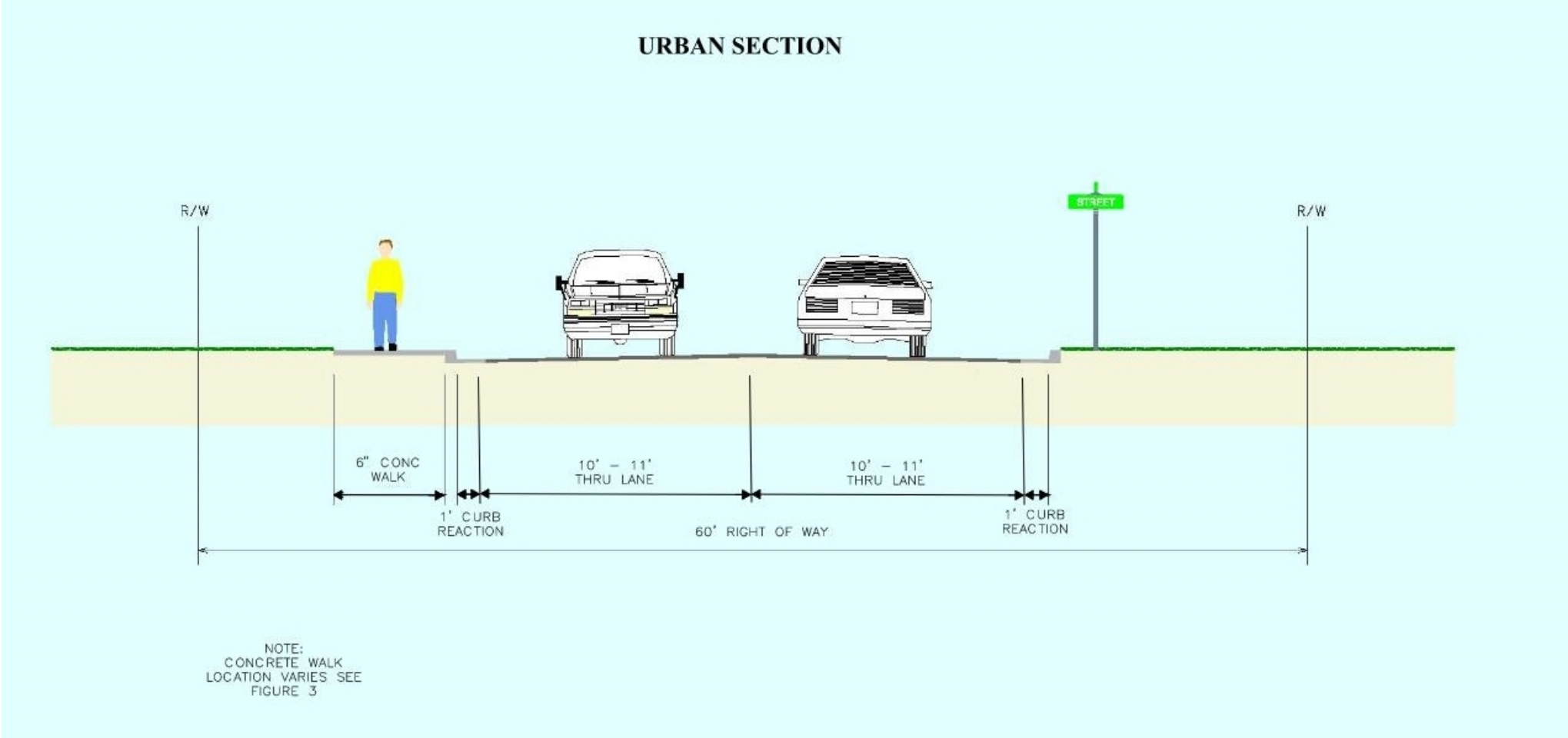


Proposed Improvements



- Project Location
 - Cedar Street
Elmwood Terrace Apartments to Branch Avenue
 - Elm Street
Elmwood Terrace Apartments to 8th Avenue
 - 12th Avenue
Cedar Street to Main Street
 - 11th Avenue
Cedar Street to Elm Street
 - 10th Avenue
Cedar Street to Main Street

Proposed Improvements



Proposed Improvements

- **Sidewalk Improvements**

- New sidewalk along all roadways to be reconstructed
- New sidewalk installation only (no roadway improvements) on 9th Avenue from Cedar Street to TH 95.

- **Storm Sewer Improvements**

- Installation of new storm sewer and catch basins along all roadways
- Installation of new stormwater retention within City owned property

- **Sanitary Sewer Improvements**

- Maintenance and repairs as needed (to be evaluated during final design)

- **Watermain Improvements**

- Replacement of existing 4-inch and 6-inch watermain with 8-inch
- Installation of new 12-inch trunk watermain along Cedar Street

Amendment to Special Assessment Policy

- Current Policy
 - Policy originally adopted in 1996 (last amended 2011)
 - Assessment rates not clearly defined
 - Properties assessed primarily on a front foot basis
 - High variability in assessment due to configuration of lots

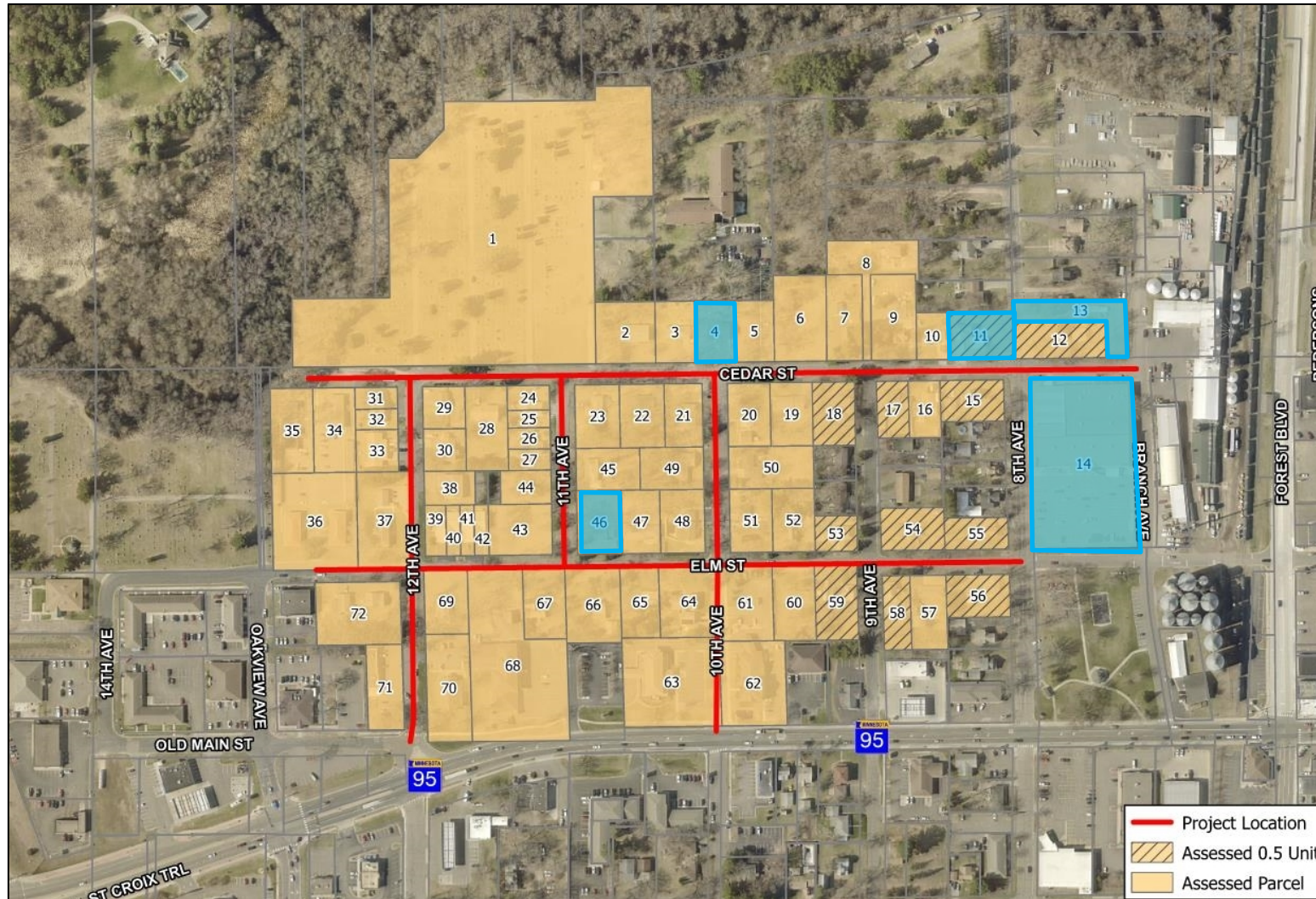
Amendment to Special Assessment Policy



NORTH BRANCH

• Current Policy – Option 1

- Lot 4 = \$38,780
- Lot 11 = \$30,940
- Lot 13 = \$20,630
- Lot 14 = \$96,930
- Lot 46 = \$61,880



Proposed Special Assessment

- Amended Policy
 - Assessed 20% of Surface and Drainage Improvements
 - Residential – consistent in assessments (same benefit)
 - Properties assessed on a unit basis
 - Interior Lots = 1 unit
 - Corner Lots = 0.5 unit on each roadway under construction
 - Commercial / Industrial / Multifamily
 - Properties assessed on a front foot basis

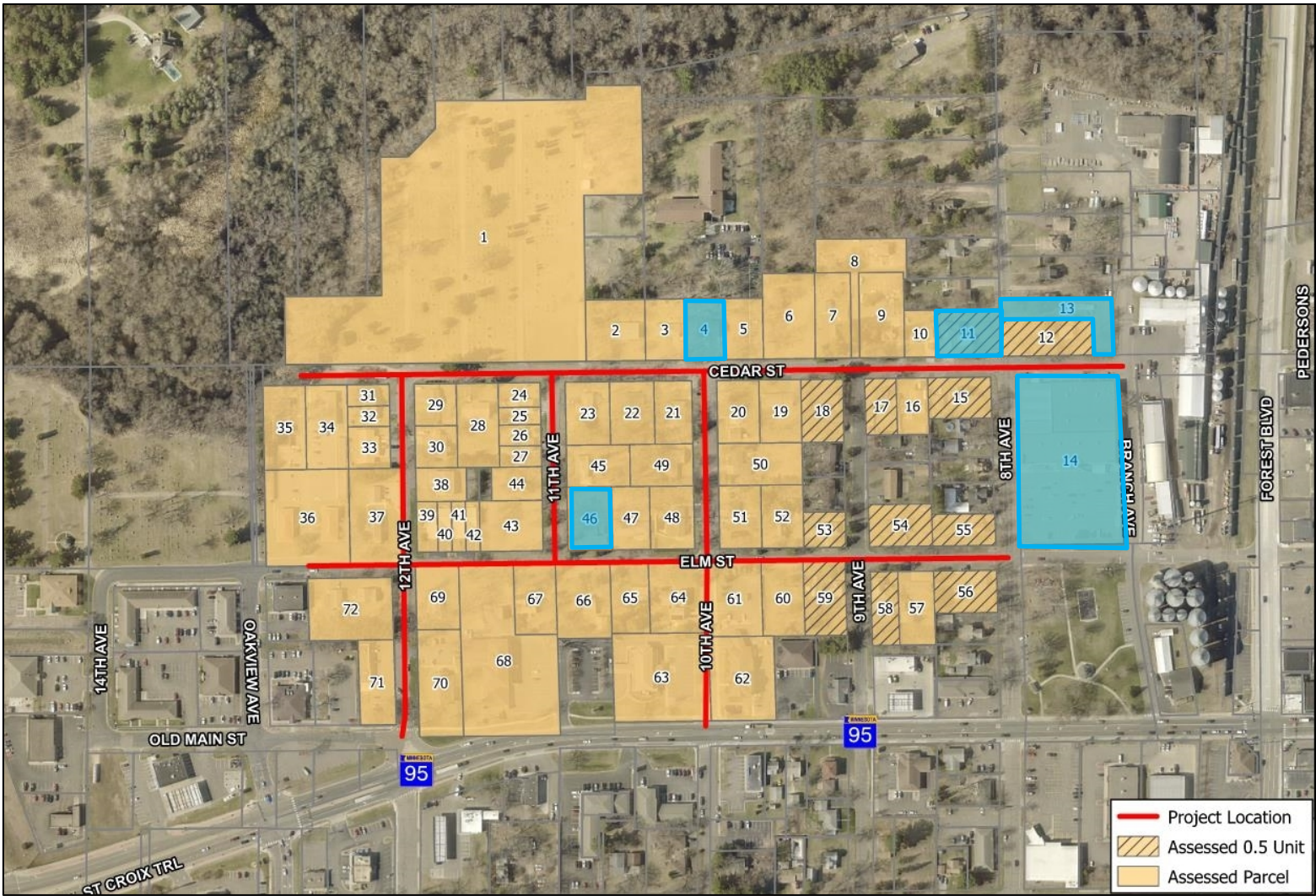
Proposed Special Assessment



NORTH BRANCH

- Proposed Policy – Option 2 (No MSA)

- Lot 4 = \$12,000
\$38,780
- Lot 11 = \$6,000
\$30,940
- Lot 13 = \$12,000
\$20,630
- Lot 14 = \$19,400
\$96,930
- Lot 46 = \$12,000
\$61,880



Proposed Special Assessment



NORTH BRANCH

- Proposed Policy – Option 3 (MSA)

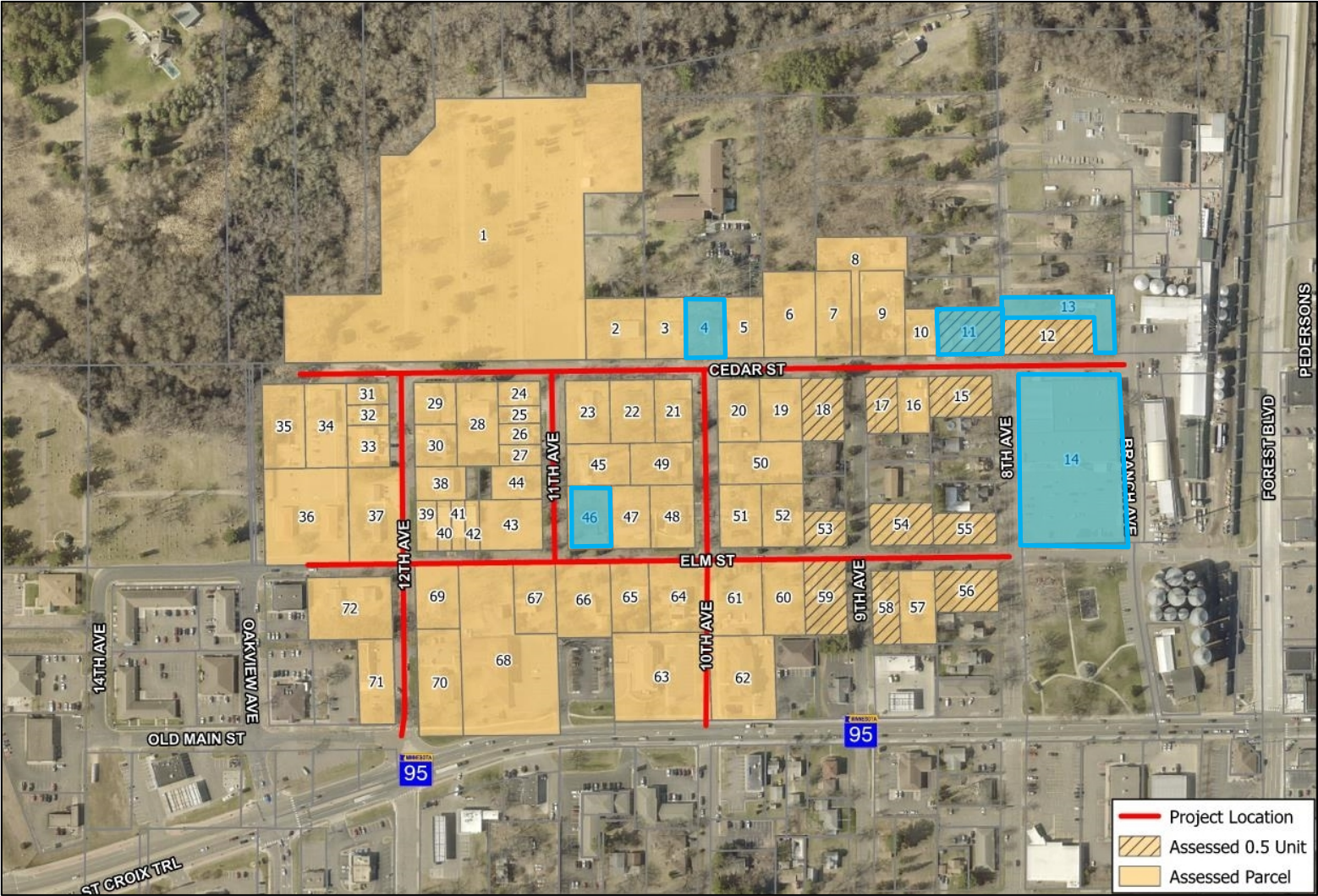
- Lot 4 = \$7,340
\$38,780

- Lot 11 = \$3,670
\$30,940

- Lot 13 = \$7,340
\$20,630

- Lot 14 = \$11,870
\$96,930

- Lot 46 = \$7,340
\$61,880



Proposed Project Cost and Funding – Option 1



<i>City of North Branch</i> <i>Northwest Old Town Street & Utility Improvements</i> <i>WSB Project No. 1654-02</i>				
Summary - Option 1 (Current Policy)				
	<i>State Aid Total</i>	<i>Assessment Total</i>	<i>City Total</i>	<i>Project Total</i>
Schedule A - Street Improvements	\$917,300.00	\$2,070,400.00	-\$269,900.00	\$2,717,800.00
Schedule B - Drainage Improvements	\$629,000.00	\$964,700.00	-\$327,300.00	\$1,266,400.00
Schedule C - Watermain Improvements	\$0.00	\$0.00	\$1,167,500.00	\$1,167,500.00
Schedule D - Sanitary Sewer	\$0.00	\$0.00	\$242,900.00	\$242,900.00
<i>Estimated Total</i>	<i>\$1,546,300.00</i>	<i>\$3,035,100.00</i>	<i>\$813,200.00</i>	<i>\$5,394,600.00</i>

Proposed Project Cost and Funding – Option 2



<i>City of North Branch</i> <i>Northwest Old Town Street & Utility Improvements</i> <i>WSB Project No. 1654-02</i>				
Summary - Option 2 (20% Assessed Surface and Drainage - No MSA Towards Assessments)				
	<i>State Aid Total</i>	<i>Assessment Total</i>	<i>City Total</i>	<i>Project Total</i>
Schedule A - Street Improvements	\$917,300.00	\$543,600.00	\$1,256,900.00	\$2,717,800.00
Schedule B - Drainage Improvements	\$629,000.00	\$253,300.00	\$384,100.00	\$1,266,400.00
Schedule C - Watermain Improvements	\$0.00	\$0.00	\$1,167,500.00	\$1,167,500.00
Schedule D - Sanitary Sewer	\$0.00	\$0.00	\$242,900.00	\$242,900.00
<i>Estimated Total</i>	<i>\$1,546,300.00</i>	<i>\$796,900.00</i>	<i>\$3,051,400.00</i>	<i>\$5,394,600.00</i>

Proposed Project Cost and Funding – Option 3



<i>City of North Branch</i> <i>Northwest Old Town Street & Utility Improvements</i> <i>WSB Project No. 1654-02</i>				
Summary - Option 3 (20% Assessed Surface and Drainage - MSA Towards Assessments)				
	<i>State Aid Total</i>	<i>Assessment Total</i>	<i>City Total</i>	<i>Project Total</i>
Schedule A - Street Improvements	\$917,300.00	\$360,100.00	\$1,440,400.00	\$2,717,800.00
Schedule B - Drainage Improvements	\$629,000.00	\$127,500.00	\$509,900.00	\$1,266,400.00
Schedule C - Watermain Improvements	\$0.00	\$0.00	\$1,167,500.00	\$1,167,500.00
Schedule D - Sanitary Sewer	\$0.00	\$0.00	\$242,900.00	\$242,900.00
<i>Estimated Total</i>	<i>\$1,546,300.00</i>	<i>\$487,600.00</i>	<i>\$3,360,700.00</i>	<i>\$5,394,600.00</i>

Northwest Oldtown Street and Utility Improvements



City Council Action

- Accept amended Special Assessment Policy

Council Action in August 2025: Accept revised Feasibility Report for the Northwest Oldtown Street and Utility Improvements

CITY OF NORTH BRANCH SPECIAL ASSESSMENT POLICY

Updated July 2025

Policy Goals:

The following sets forth the City's general assessment policies. Assessment amounts are based upon the cost of the particular improvements and are allocated by the Council as guided by this policy. The amount assessed against any particular parcel is required to be not greater than the increase in the market value of the property due to the improvement, unless greater assessments have been agreed to by the owners impacted by the proposed improvements.

The special assessment method described in the policy statement cannot be considered as all inclusive. Unique or unusual circumstances may, at times, justify special consideration. In such situations, the City Council may, from time to time, establish by resolution or as part of a Feasibility Study amendments to the assessment policy to cover situations that may have not been contemplated in this policy.

Assessment Period:

The assessment shall be 15 years. The assessment amount shall be amortized over the term of the assessment, at the applicable interest rate, with equal installment payments through the term.

The owner of any property so assessed may, at any time prior to certification, make payments (partial or full) towards the balance owed.

The owner may, at any time after certification, pay the whole of the assessment, with interest accrued to the date of payment, except that no interest may be charged if the entire assessment is paid by November 30th of the assessment year.

The owner may, at any time, thereafter, pay to the Finance Director the entire amount of the assessment remaining unpaid, with interest accrued to December of the year in which such payment is made. Such payment must be made before November 14th or interest will be charged through December 31st of the succeeding year.

Assessable Costs:

The grand total of the assessments related to a project cannot exceed the City's total project cost.

The amount of any individual assessment cannot exceed the special benefit to the property. In this case, a special benefit is defined as the increase in the market value of the property because of the improvement.

The amounts included in the costs assessable under this policy shall include the following:

1. Contract Costs: Amount paid to contractors for constructing the improvements.
2. Construction Interest: The costs of financing during the period between the date when the first payment is made to the contractor exceeding any amount placed in escrow pursuant to the development agreement and the date the assessment roll is approved by the City Council.
3. Expenses: Costs incurred by the City in addition to the contract costs, including engineering, legal, advertising, finance charges, administration, easements/right-of-way, permit fees, and the assessment process.
4. Project Cost (total cost of the improvement): Total of contract costs, interest, and expenses.

Interest:

The rate of interest on assessments for which bonds were issued to finance the project shall be two percent (2%) greater than the rate of interest on the bonds. In the event that no bonds were issued to finance the project, the rate of interest shall be two percent (2%) greater than the average rate of interest on all bonds issued in the prior calendar year, or if no bonds were issued in the prior calendar year, two percent (2%) greater than the current bond market rate for the City of North Branch.

Method of Measurement:

1. Single Family Residential Property (Non-Tax Exempt): When residential parcels are assessed on a unit basis, a unit shall be defined as one buildable lot consistent with the prevailing zoning district in which the project is located. For single-family residential properties, corner, and other multiple-frontage, lots will be assessed one-half for each roadway frontage. In the case of lots with more than two frontages, the units will be prorated so the property assessment will total one unit once all frontages have been improved.
2. Other property classifications shall be assessed on a front-footage basis, for each adjacent roadway improvement.
 - a. Multifamily Residential - The unit cost is calculated by applying the front footage method to the parcel and distributing the portion of the allocated project cost equally to all residential lots/units, regardless of density.

Improvement Assessments:

1. Streets (New Construction and New Developments)

The assessments for new street construction for new developments or the assessments for streets which have not previously been publicly improved shall be assessed based on 100% of the total project costs (including surface, storm sewer, sanitary sewer, and watermain improvements).

2. Streets (Reconstruction)

Complete reconstruction shall include complete pavement removal, subgrade corrections as necessary, complete replacement/installation of concrete curb and gutter, installation or reconstruction of storm sewer, and stormwater management.

Complete reconstruction of existing roadways shall be assessed at a rate of 20% of the costs of the improvements to the benefiting properties. The City of North Branch will participate in the remaining 80% of the improvement costs.

3. Streets (Mill and Bituminous Overlay)

Mill and bituminous overlay of existing streets within City right-of-way or City easement are not assessed.

4. Sidewalks

Installation of new sidewalks and existing sidewalk removal and replacement within City right-of-way or City easement are not assessed.

5. Alleys

Alley construction, reconstruction, or overlays shall be assessed at 60% of the total improvements on a per unit basis to the abutting properties. The City of North Branch will participate in the remaining 40% of the improvement costs.

6. Storm Sewer

- a. In areas of new development, the assessment is 100% of the project cost for storm sewer and stormwater management.
- b. For improvements to existing storm sewer systems, the assessment rates as outlined in the individual street assessments listed previously.

7. Sanitary Sewer Mains

- a. In areas of new development, the assessment is 100% of the project cost for sanitary sewer mains.
- b. Improvement costs for sanitary sewer main line improvements located within City right-of-way or City easement shall be paid for wholly out of their respective utility funds and not assessed to benefited properties.

8. Water Mains

- a. In areas of new development, the assessment is 100% of the project cost for watermains.

- b. Improvement costs for water main line improvements located within City right-of-way or City easement shall be paid for wholly out of their respective utility funds and not assessed to benefited properties.

9. Water and Sanitary Sewer Services

- a. Repair, replacement, or installation of new sanitary sewer service and water service lines for individual properties shall be assessed at 100% of actual costs.

- i. Water service line improvement costs shall include the installation of new service line pipe, corporation stops and/or fittings, curb box shut off, and/or new gate valves, depending on the size of the water service.
 - ii. Sanitary service line improvements shall include the installation of new service line pipe and wyes.

10. Diseased Tree Removal and Replacement

Diseased tree removal and replacement within City right-of-way or City easement are not assessed.

Methods for Determining Front Footage:

STANDARD LOT

Front footage equals the length of the lot abutting the street receiving the improvement. See Figure 1

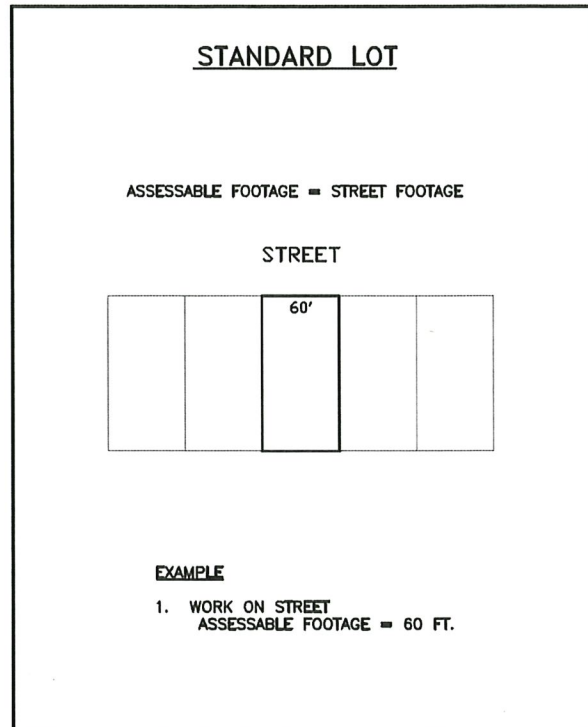


Figure 1

FOUR SIDED ODD SHAPED LOTS

Front footage equals the area of the lot divided by the average of the two depths. See Figure 2.

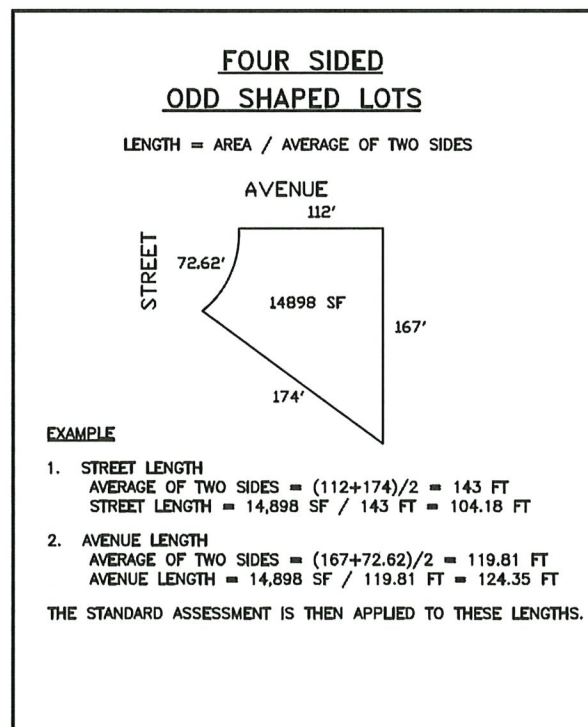


Figure 2

ODD-SHAPED LOTS WITH GREATER THAN 4 SIDES

Front footage equals the area of the lot divided by the average depth of lots in the immediate vicinity. See Figure 3.

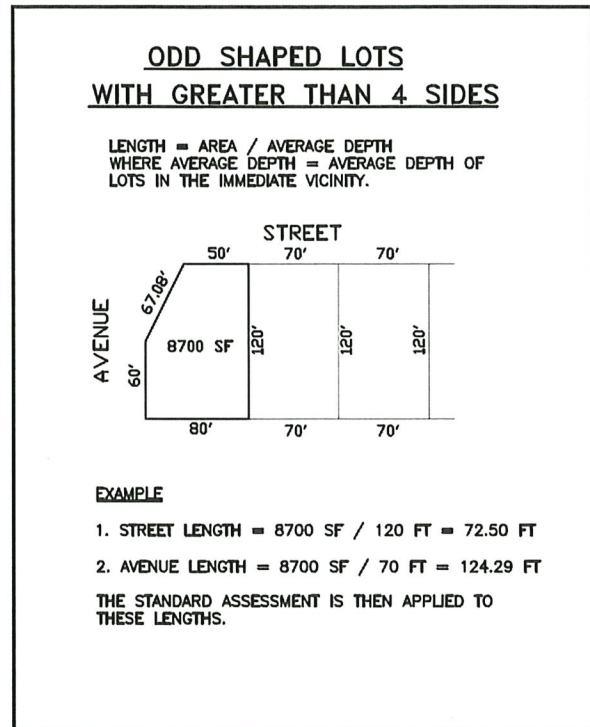


Figure 3

CORNER LOTS

Front footage equals the dimension of the shorter side plus one-third of the long side if work is done on both streets. If work is performed on the short side only, front footage equals the short side length. If work is performed on the long side only, front footage equals one third of the long side length. See Figure 4.

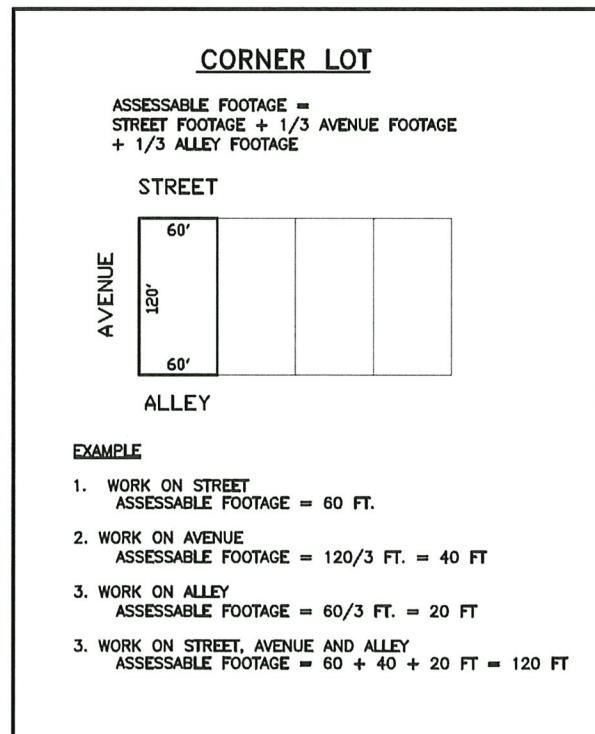


Figure 4

CORNER LOTS WITH CURVES

Front footage is determined for corner lots with curves as in standard corner lots, with $\frac{1}{2}$ of the curve length applied to the short side of the lot and $\frac{1}{2}$ of the curve length applied to the long side of the lot. See Figure 5.

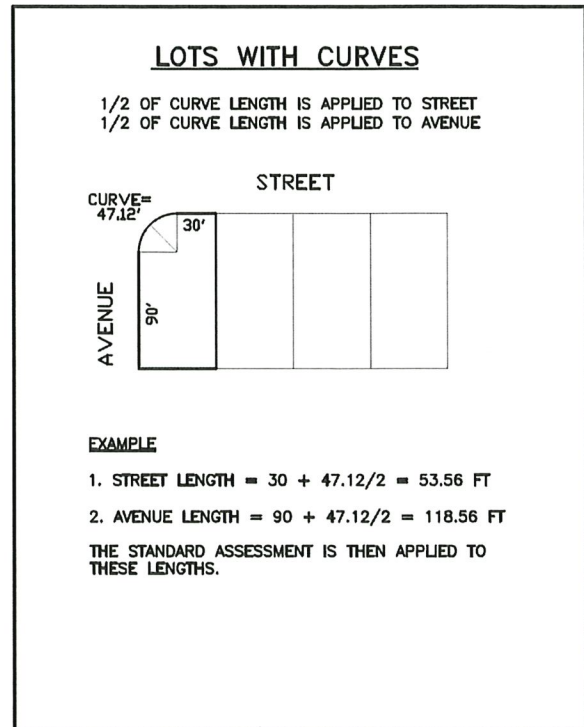


Figure 5

DOUBLE FRONTAGE LOTS

Front footage is determined similar to a corner lot. Work on one street is assessed full length while the other street is assessed $\frac{1}{3}$ of its length. In cases where the double frontage includes an alley, the street side shall be assessed the full length, and the alley side shall be assessed the $\frac{1}{3}$ length. See Figure 6.

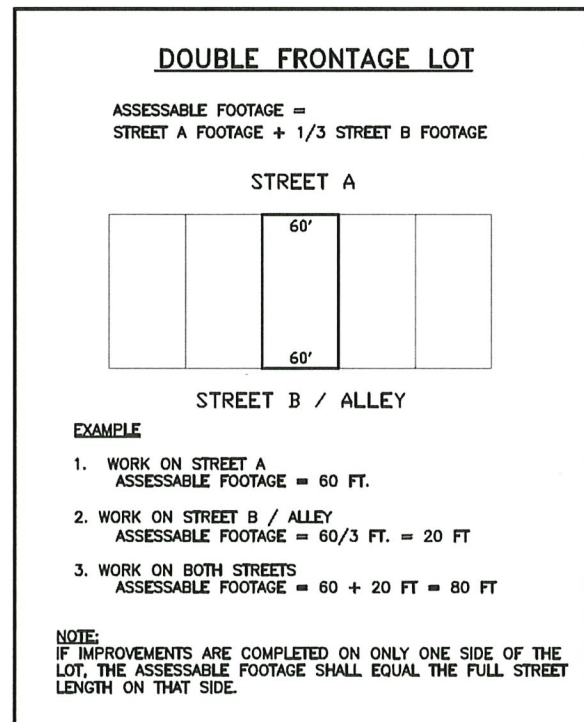


Figure 6

Senior Citizen Deferral of Special Assessments:

1. Establishment of Deferral:

Pursuant to Minn. Stat. 435.193 et seq., special assessment installment payments payable by senior citizens and persons retired by virtue of permanent and total disability are deferred if payment of such installments would create hardship.

2. Criteria:

In determining whether a person is eligible for deferral of special assessment installment payments, the following criteria are established:

a. Senior Citizens:

Senior citizens special assessment deferral applies to qualifying special assessments against all properties classified as "homestead" pursuant to Minn. Stat. Chapter 273, where one or more of the owners of such property is 65 years of age or older and it would create a hardship for the owner or owners of the property to pay the special assessment installments as they become due.

The senior citizen shall be required to prove eligibility for this special assessment deferral on the basis of age.

b. Persons Retired by Virtue of Permanent and Total Disability

The special assessment hardship deferral for persons retired by virtue of permanent and total disability applies to special assessments levied after the date of the adoption of this resolution.

This special assessment hardship deferral applies to qualifying special assessments against all properties classified as "homestead" pursuant to Minn. Stat. Chapter 273 where one or more of the owners of the property is retired by virtue of permanent or total disability and it would create a hardship for the owner or owners of the property to pay the special assessment installments as they become due.

It shall be presumed that a property owner is retired from employment by virtue of a permanent and total disability if:

- i. The individual has in fact retired from employment; and
- ii. The individual suffers from the total and permanent loss of the sight of both eyes, the loss of both arms at the shoulder, the loss of both legs so close to the hips that no effective artificial members can be used, completed and permanent paralysis, total and permanent loss of mental faculties, or any other injury which totally incapacitates the person from working at an occupation which brings an income.

The owner of the properties must provide proof and verify under oath that he or she qualifies under the criteria defining a permanent and total disability. In cases where exceptional and unusual circumstances exist, the City Council may determine that a permanent and total disability exists despite the fact that the definitional requirement of Section 2, B(3) are not met; such cases shall be decided by the Council on a case-by-case basis.

c. Hardship

It shall be presumed that a hardship exists if:

- i. The annual assessment installment exceeds one (1) percent of the previous year's total adjusted gross incomes, for Federal Income Tax purposes, for all owners of the property; in no event shall "total adjusted gross income" include social security benefits, railroad retirement benefits, retirement benefits attributable to employee contributions, disability benefits, personal injury awards, or worker's compensation payments.
- ii. All live owners of the property verify, under oath, that they meet the criteria for establishing a hardship by completing an application provided by the City or the County.

In cases where exceptional and unusual circumstances exist, the City Council may determine that a hardship exists despite the fact that the minimum income requirements of the Hardship Section are not met; such cases shall be decided by the Council on a case-by-case basis.

3. Interest:

Interest shall be charged on any assessment deferred pursuant to this document at a rate equal to the rate charged on other assessments for the particular public improvement project the assessment is financing.

4. Termination of Deferment:

The option to defer the payment of special assessments pursuant to this document shall terminate and all installment amounts previously deferred, and applicable interest, shall become due upon the occurrence of any of the following events:

- a. The request of the property owner.
- b. The death of the property owner who qualifies for the deferral, providing the surviving owner is otherwise not eligible for the deferral.
- c. The sale, transfer, or subdivision of the property or any part thereof.
- d. The loss of homestead status of the property.
- e. The City determines that a hardship no longer exists.



Prepared By: Sharon Wright, Finance Director

Presenter: Sharon Wright, Finance Director

Date: 07/01/2025

Board & Commission: City Council

Subject: Finance Update

Being presented is the year-to-date financial information through the end of May 2025. Also, the cash and investments balances at May 31, 2025.

Voting Requirements:

Bank Account Balances

5/31/2025

	EOM Balance	Interest Rate
Bremer - Checking (0753)	1,230,003.70	0.0%
Bremer - MM (2886)	2,398,321.39	4.0%
Associated - Checking (4089)	37,248.06	0.0%
Associated - MM (3859)	1,186,270.86	3.92%
Xpress Cash Balance	179,166.70	0.00%
Total Checking/Savings	\$ 5,031,010.71	

Investments

US Bank	15,170,837.76	Varies
Neighborhood National CD	1,000,000.00	1.8%
Wells Fargo	1,039,508.93	Varies
Total Investments	\$ 17,210,346.69	

Total Cash & Investments	\$ 22,241,357.40
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City of North Branch

May 2025 Update

Percent of Year

0.42%

General Fund

	5/31/2025 Actual	5/31/2024 Actual	Current vs Prior Inc/(Dec)	Projected 2025	2025 Budget
Revenues:					
Taxes	\$ -	\$ -	\$ -	\$ 6,152,620	\$ 6,246,315
Licenses & Permits	134,813	146,960	(12,147)	323,551	347,800
Intergovernmental	243,595	133,442	110,152	1,450,000	1,570,822
Charges for Services	101,545	30,548	70,996	243,708	104,300
Fines & Forfeits	11,647	10,519	1,128	27,953	17,000
Other Revenue	90,755	295,221	(204,466)	217,812	150,400
Other Financing Sources	9,601	-	9,601	315,300	315,300
Total Revenues	\$ 591,956	\$ 616,691	\$ (24,735)	\$ 8,730,945	\$ 8,751,937
Expenditures:					
City Council	\$ 6,964	\$ 12,945	\$ (5,982)	32,000	\$ 32,382
City Administrator	77,706	23,131	54,575	258,000	261,168
City Clerk	16,765	60,053	(43,288)	132,000	132,406
Elections	-	4,756	(4,756)	-	-
Technology	227,356	-	227,356	465,000	481,100
Finance	154,132	112,336	41,796	403,000	404,753
City Attorney	39,010	59,021	(20,011)	50,000	50,000
City Engineer	9,979	9,671	308	40,000	40,000
Legislative	12,612	7,500	5,112	31,500	31,500
Planning & Zoning	24,093	41,167	(17,074)	150,000	153,239
City Facilities	58,177	106,203	(48,026)	170,000	172,189
Police	1,112,393	1,090,674	21,720	2,750,000	2,777,895
Fire	311,079	198,706	112,373	620,000	621,584
Building Inspection	138,871	129,207	9,664	350,000	352,169
Civil Defense	4,907	32,065	(27,159)	7,700	4,200
Animal Control	1,400	1,750	(350)	4,500	4,500
Street Lights	23,200	22,236	964	92,000	109,000
Public Works	658,369	498,401	159,969	3,080,087	3,176,340
Parks	69,344	125,854	(56,510)	316,425	382,074
Library	43,682	37,311	6,371	104,837	116,202
Non-Dept Exps	54,431	37,653	16,778	280,635	301,100
Total Expenditures	\$ 3,044,469	\$ 2,610,639	\$ 433,830	9,337,684	\$ 9,603,801
Net Postion increase/(decrease)	\$ (2,452,514)	\$ (1,993,948)	\$ (458,565)	\$ (606,739)	\$ (851,864)

**

Sewer Fund (602)

	5/31/2025 Actual	5/31/2024 Actual	Current vs Prior Inc/(Dec)	Projected 2025	2025 Budget
Revenues:					
Charges for Services	\$ 104,087	\$ 221,366	\$ (117,279)	249,809	\$ 355,000
Utility Charges	727,985	542,286	185,699	1,747,163	1,803,000
Other Revenue	66,851	-	66,851	70,000	5,000
Other Financing Sources	-	-	-	-	-
Total Revenues	\$ 898,923	\$ 763,652	\$ 135,271	\$ 2,066,972	\$ 2,163,000
Expenditures:					
Sanitary Sewer	\$ 676,272	\$ 376,492	299,781	2,198,053	\$ 2,325,610
Total Expenditures	\$ 676,272	\$ 376,492	\$ 299,781	\$ 2,198,053	\$ 2,325,610
Net Postion increase/(decrease)	\$ 222,650	\$ 387,160	\$ (164,510)	\$ (131,081)	\$ (162,610)

Liquor Store Fund (609)

	5/31/2025 Actual	5/31/2024 Actual	Current vs Prior Inc/(Dec)	Projected 2025	2025 Budget
Revenues:					
Liquor Store - East	\$ 1,119,150	\$ 1,030,133	\$ 89,018	\$ 3,011,000	\$ 3,017,572
Liquor Store - West	463,571	423,290	40,281	1,204,411	1,247,411
Cost of Liquor Sold - East	(823,811)	(796,948)	(26,863)	(2,196,830)	(2,258,504)
Cost of Liquor Sold - West	(329,918)	(324,251)	(5,667)	(879,781)	(848,339)
Other Revenue	4,932	954	3,979	14,797	4,200
Total Revenues	\$ 433,925	\$ 333,177	\$ 100,747	\$ 1,153,597	\$ 1,162,340
Operating Expenses:					
Liquor Store - East	\$ 201,870	\$ 221,383	(19,514)	\$ 729,301	\$ 763,666
Liquor Store - West	144,558	166,736	(22,179)	354,598	393,998
Total Operating Expenses	\$ 346,428	\$ 388,120	\$ (41,692)	\$ 1,083,899	\$ 1,157,664
Net Postion increase/(decrease)	\$ 87,497	\$ (54,942)	\$ 142,439	\$ 69,698	\$ 4,676
Net Profit Percentage	5.51%	-3.78%		1.65%	

Stormwater Fund (612)

	5/31/2025 Actual	5/31/2024 Actual	Current vs Prior Inc/(Dec)	Projected 2025	2025 Budget
Revenues:					
Utility Charges	\$ 293,937	\$ 252,216	41,721	475,500	\$ 475,500
Other Revenue	12,656	-	12,656	12,656	300
Other Financing Sources	-	-	-	-	-
Total Revenues	\$ 306,593	\$ 252,216	\$ 54,377	\$ 488,156	\$ 475,800
Expenditures:					
Storm Sewer	\$ 88,153	\$ 126,012	(37,859)	475,000	\$ 563,413
Total Expenditures	\$ 88,153	\$ 126,012	\$ (37,859)	\$ 475,000	\$ 563,413
Net Postion increase/(decrease)	\$ 218,440	\$ 126,204	\$ 92,236	\$ 13,156	\$ (87,613)

Water Fund (615)

	5/31/2025 Actual	5/31/2024 Actual	Current vs Prior Inc/(Dec)	Projected 2025	2025 Budget
Revenues:					
Charges for Services	\$ 52,360	\$ 338,413	\$ (286,053)	628,320	\$ 135,000
Water Charges	746,372	678,700	67,673	1,850,000	1,969,468
Other Revenue	47,260	15,550	31,710	47,500	50,000
Other Financing Sources	-	-	-	-	-
Total Revenues	\$ 845,992	\$ 1,032,663	\$ (186,671)	\$ 2,525,820	\$ 2,154,468
Expenditures:					
Water	\$ 413,039	\$ 401,802	11,237	2,010,000	\$ 2,700,682
Total Expenditures	\$ 413,039	\$ 401,802	\$ 11,237	\$ 2,010,000	\$ 2,700,682
Net Postion increase/(decrease)	\$ 432,953	\$ 630,861	\$ (197,908)	\$ 515,820	\$ (546,214)

Generation Fund (620)

	5/31/2025 Actual	5/31/2024 Actual	Current vs Prior Inc/(Dec)	Projected 2025	2025 Budget
Revenues:					
Charges for Services	\$ -	\$ 7,930	\$ (7,930)	-	\$ -
Utility Charges	150,000	150,000	-	360,000	360,000
Other Revenue	137,963	20,828	117,134	137,963	-
Other Financing Sources	-	-	-	-	-
Total Revenues	\$ 287,963	\$ 178,759	\$ 109,204	\$ 497,963	\$ 360,000
Expenditures:					
Generation	\$ 118,018	\$ 73,364	44,654	360,000	\$ 361,151
Total Expenditures	\$ 118,018	\$ 73,364	\$ 44,654	\$ 360,000	\$ 361,151
Net Postion increase/(decrease)	\$ 169,945	\$ 105,395	\$ 64,550	\$ 137,963	\$ (1,151)

Monthly Report for Liquor Store - Council Report

May 2025

Percent of Year: 0.42%

Sales by Month and Year-to-Date

Month	2025 Sales	3 Year Avg Sales	2024 Sales	2023 Sales	2022 Sales	2021 Sales
January	\$ 291,927	\$ 258,152	\$ 249,337	\$ 260,869	\$ 264,251	\$ 294,006
February	271,922	259,711	260,707	258,033	260,393	266,208
March	312,449	284,347	295,583	287,435	270,023	304,564
April	320,504	291,390	288,819	294,541	290,810	327,239
May	390,851	353,492	359,929	360,263	340,284	366,090
June	-	369,694	356,157	396,703	356,222	370,136
July	-	386,768	387,761	384,874	387,670	406,355
August	-	377,153	416,855	374,215	340,390	337,323
September	-	358,098	367,288	364,930	342,075	329,748
October	-	320,305	348,507	320,341	292,066	332,607
November	-	324,683	360,918	315,225	297,905	310,290
December	-	404,453	425,741	392,734	394,885	375,740
Total	\$ 1,587,654	\$ 3,988,246	\$ 4,117,602	\$ 4,010,162	\$ 3,836,975	4,020,305

YTD Sales compared to 3 Year Avg	\$ 140,561
YTD Sales compared to 2024 Sales	\$ 133,278

YTD Sales compared to 3 Year Avg	109.71%
YTD Sales compared to 2024 Sales	109.16%

Expenses by Month and Year-to-Date

Month	2025 Expenses	3 Year Avg Expenses	2024 Expenses	2023 Expenses	2022 Expenses	2021 Expenses
January	267,093	246,181	175,638	255,794	307,113	293,718
February	262,001	279,673	331,652	272,608	234,760	282,744
March	281,533	334,265	324,884	326,195	351,716	382,787
April	306,612	303,311	287,748	309,284	312,900	317,321
May	382,917	358,198	389,397	327,960	357,236	325,980
June	-	327,872	275,479	306,429	401,707	361,741
July	-	353,050	378,477	364,310	316,364	365,403
August	-	354,394	365,253	364,211	333,718	338,110
September	-	327,614	346,710	330,720	305,413	329,361
October	-	271,933	234,669	306,036	275,092	279,299
November	-	366,419	378,443	378,576	342,238	279,323
December	-	440,927	534,146	487,602	301,033	392,250
Total	\$ 1,500,157	\$ 3,963,836	\$ 4,022,495	\$ 4,029,724	\$ 3,839,288	3,948,037

YTD Expenses compared to 3 Year Avg	\$ (21,471)
YTD Expenses compared to 2024 Exps	\$ (9,162)

YTD Expenses compared to 3 Year Avg	98.59%
YTD Expenses compared to 2024 Exps	99.39%

	2025	3 Year Avg	2024	2023	2022	2021
YTD Net Income (Before Transfers)	\$ 87,497	\$ 115,929	\$ 175,107	\$ 80,438	\$ 92,243	\$ 172,269
Net Income Percentage	5.51%	2.89%	4.25%	2.01%	2.40%	4.28%

Gross Margin **NOTE:** Gross Margin measures the revenue generated less the cost of the items sold

Monthly Report for Liquor Store - Council Report

May 2025

Percent of Year: 0.42%

	2025 Annual Budget	Actual 2025 YTD	Actual East	Actual West
Sales	\$ 4,259,583	\$ 1,582,722	\$ 1,119,150	\$ 463,571
Cost of Sales	3,106,843	1,153,729	823,811	329,918
Gross Margin	\$ 1,152,740 27.1%	\$ 428,992 27.1%	\$ 295,339 26.4%	\$ 133,653 28.8%

	2025 Annual Budget	Actual 2025 YTD	East Actual	West Actual
Gross Margin by Category - Budget vs Actual				
Liquor	\$ 418,468	\$ 123,019	\$ 84,142	\$ 38,876
Beer	556,299	220,783	158,118	62,665
Wine	123,638	52,935	28,457	24,479
Non-Alcoholic	37,335	16,851	13,985	2,865
THC	17,000	15,404	10,636	4,768
Other	-	-	-	-
	<u>\$ 1,152,740</u>	<u>\$ 428,992</u>	<u>\$ 295,339</u>	<u>\$ 133,653</u>

2025 Sales By Category

Month	Total	Liquor	Beer	Wine	THC	Non-Alcoholic
January	291,017	108,447	134,588	29,854	8,527	9,601
February	270,498	102,744	122,439	29,206	7,886	8,224
March	311,711	115,750	145,909	32,016	8,543	9,492
April	319,634	117,478	151,667	31,388	9,222	9,879
May	389,862	143,857	191,703	31,187	9,203	13,912
June	-					
July	-					
August	-					
September	-					
October	-					
November	-					
December	-					
Total	<u>1,582,722</u>	<u>588,276</u>	<u>746,307</u>	<u>153,650</u>	<u>43,381</u>	<u>51,107</u>

2025 Cost of Goods Sold By Category

Month	Total	Liquor	Beer	Wine	THC	Non-Alcoholic
January	189,931	98,706	65,812	14,628	6,730	4,055
February	197,271	70,807	92,673	22,267	5,747	5,776
March	215,775	88,594	91,132	23,825	4,551	7,672
April	248,250	94,221	127,565	14,754	5,188	6,523
May	302,502	112,929	148,341	25,240	5,761	10,231
June	-					
July	-					
August	-					
September	-					
October	-					
November	-					
December	-					
Total	<u>1,153,729</u>	<u>465,257</u>	<u>525,523</u>	<u>100,714</u>	<u>27,977</u>	<u>34,257</u>

Monthly Report for Liquor Store - Council Report

May 2025

Percent of Year: 0.42%

2024 Sales to Cost of Goods Sold Comparison

2024 Sales By Category

Month	Total	Liquor	Beer	Wine	THC	Non-Alcoholic
January	249,162	96,471	116,344	27,809	-	8,539
February	260,303	99,256	121,438	30,641	-	8,968
March	295,369	111,612	140,575	33,741	-	9,440
April	287,961	105,719	143,013	28,776	-	10,454
May	359,716	128,807	184,939	32,723	-	13,247
June	356,247	127,840	182,522	32,263	-	13,622
July	387,751	132,338	208,092	31,690	-	15,631
August	416,555	142,184	221,495	36,758	909	15,209
September	367,288	127,223	188,095	34,381	4,368	13,221
October	348,482	128,231	167,580	35,655	5,341	11,675
November	360,318	133,546	163,115	47,104	5,691	10,861
December	421,538	166,694	178,546	56,103	8,411	11,784
Total	4,110,689	1,499,920	2,015,754	427,645	24,720	142,651

2024 Cost of Goods Sold By Category

Month	Total	Liquor	Beer	Wine	THC	Non-Alcoholic
January	98,488	54,374	39,284	3,003	-	1,826
February	257,805	102,021	116,719	29,676	-	9,389
March	232,041	99,025	98,637	25,000	-	9,379
April	222,083	77,625	113,174	22,005	-	9,280
May	310,782	105,537	152,552	38,043	-	14,650
June	206,602	69,342	112,660	11,939	-	12,660
July	302,657	87,152	175,558	28,314	-	11,633
August	278,520	93,741	156,504	18,515	-	9,760
September	280,341	100,389	141,435	21,712	6,959	9,845
October	177,997	46,801	103,408	18,209	3,421	6,158
November	298,206	94,454	151,680	38,439	3,429	10,205
December	311,851	92,170	183,084	31,170	(340)	5,767
Total	2,977,372	1,022,631	1,544,694	286,026	13,470	110,552



Prepared By: Nathan Sondrol, Community Development Director, Shawn Williams, Public Works Director

Presenter: Nathan Sondrol, Community Development Director, Shawn Williams, Public Works Director

Date: 07/02/2025

Board & Commission: City Council

Subject: Consider Approval of Resolution R-203-2025 SRTS CSAH 30 Improvement Project - Cost Share Agreement

Background

The City is partnering with Chisago County for the construction of a trail and crosswalk improvements along the west side of CSAH 30 from Maple Street to 377th Street and a roundabout improvement at the intersection of CSAH 30 and 377th Street. These improvements are included as part of the overall CSAH 30 Improvement project from Maple Street to Co Rd 17.

The City Council approved a letter of understanding (LOU) between Chisago County and the City for the project that outlined the roles and responsibilities for each entity for the project at the September 24, 2024, meeting and approved the plans and specs and authorized obtaining bids at the same meeting.

Chisago County obtained bids and awarded Knife River Corporation the contract with the low quote for the project in the amount of \$6,586,316.60. The City Council approved the award of the low bid and the city's contribution to the project at the October 26, 2024, meeting with the City's contribution for the project would be \$1,718,103.56 with a breakdown of the costs below. The project is bid on unit quantities and final project cost will be based on actual quantities used. The city requires a 5% contingency for all projects. The funding for the project was identified in the 2025 budget discussions and through srts grant funding.

CSAH 30 SRTS CITY COSTS		
Total	\$1,718,103.56	Funding Source
City	\$1,145,628.06	Reserves
SRTS	\$322,475.50	Grant
Developer	\$250,000.00	Developer

The developer conducted an Environmental Assessment Worksheet (EAW) for the Townsedge development that required the installation of turn lanes on CSAH 30 to the development. The developer has agreed to contribute funds to the cost of the construction of the roundabout in lieu of the installation of the turn lanes. The cost share agreement with developer, Graphic Homes, inc (CR Real Estate LLC) would outline the roles and responsibilities for the proposed improvements.

The City Council approved the cost share agreement on February 11, 2025, per Resolution R-149-2025. The cost share agreement that was approved required a letter of credit to be provided for security for the project. The developer has not signed the cost agreement as they have not been willing to provide a letter of credit for the project. The developer has deeded land and temporary easements to allow for the construction of the roundabout and associated street and utility improvements. The developer has agreed to provide a cash payment prior to December 1, 2025, in the amount of \$250,000 with an acknowledgment of failure to pay will result in an assessment of \$250,000 to the property and waives the developers' rights to appeal the assessment. The developer has signed the revised agreement.

Requested Action

Consider Approval of Resolution R-203-2025 APPROVING THE COST SHARE AGREEMENT WITH CR REAL ESTATE LLC FOR THE CSAH 30 CORRIDOR IMPROVEMENT PROJECT

Voting Requirements:

Voting Options Simple Majority

STATE OF MINNESOTA

COUNTY OF CHISAGO

CITY OF NORTH BRANCH

CITY COUNCIL RESOLUTION NO. R-203-2025

A RESOLUTION APPROVING CSAH 30 IMPROVEMENT PROJECT APPROVING A COST SHARE AGREEMENT WITH CR REAL ESTATE LLC FOR THE CSAH 30 CORRIDOR IMPROVEMENT PROJECT

WHEREAS, the city received a safe routes to school grant for the construction of a multi-use trail along the east side of County Road 30 from 379th St - Maple St and along the south side of Maple Street from Co Rd 30 to 7th Ave; and,

WHEREAS, the City is partnering with Chisago County for the construction of the trail and crosswalk improvements to be part of the reconstruction project of CSAH 30 from Maple Street to Co Rd 17 including a roundabout improvement project at 377th Street.

WHEREAS, the city council approved a letter of understanding between the City and Chisago County to outline roles and responsibilities of the project on September 24, 2024, and

WHEREAS, the city engineer, WSB, estimated the City of North Branch funding amount for the project at \$1,596,608.22, which consists of \$1,179,469.36 in roadway and storm sewer improvements and \$417,138.86 in CSAH 30 Safe Routes to School Trail improvements and the funding for the project was identified in the preliminary 2025 budget discussions and through SRTS grant funding.

WHEREAS, the City Council approved the plans and specs and authorized obtaining bids for the project at the September 24, 2024, and

WHEREAS, the county advertised bids in their legal paper and on Quest CDN for the 2024 overlay project and on October 29, 2024, 23 bids were received and read aloud. The low bid was received from Knife River Corporation-North Central for the amount of \$6,586,316.60

WHEREAS, the city portion of the project is \$1,718,103.50, with funds coming from reserves (\$1,145,628.06), SRTS grant (\$322.475.50) and the adjacent developer (\$250,000)

WHEREAS, permanent right-of-way easements and temporary construction easements are required for portions of the project and the developer, CR Real Estate, LLC is agreeing to provide these; and

NOW, THEREFORE BE IT RESOLVED THAT: The City of North Branch Council approve the cost share agreement with CR Real Estate LLC.

Passed by the City Council of North Branch, Minnesota this 8th day of July, 2025.

Kevin Schieber, Mayor

Attested:

Matthew Hill, City Administrator

COST SHARE AGREEMENT

THIS COST SHARE AGREEMENT (the “Agreement,”) is made and entered into as of this ____ day of _____, 2025, by and between the **CITY OF NORTH BRANCH**, a municipal corporation under the laws of the State of Minnesota (the “City”), and **CR REAL ESTATE LLC**, a limited liability company under the laws of the State of Minnesota, 25635 Vassar Street NE, Stacy, Minnesota 55079 (“Developer”); (individually, the City and Developer may be referred to as a “Party”; collectively, as the “Parties”).

RECITALS

WHEREAS, Developer owns certain real property located in the City, Chisago County, Minnesota (PID Nos. 11.00592.11 and 11.00592.13), legally described on Exhibit A, which is attached hereto and incorporated herein by reference (the “Property”); and

WHEREAS, the City and Chisago County have entered into an agreement whereby the City will cost share and reimburse Chisago County to construct certain improvements to CSAH No. 30, including but not limited to construction of a roundabout (the “CSAH 30 Project”); and

WHEREAS, Developer desires to develop the Property and has requested to include certain additional improvements in the CSAH 30 Project in order to facilitate Developer’s future development of the Property; and

WHEREAS, as part of CSAH 30 Project, Developer has requested that a turn lane to serve such future development of the Property along with sewer and water utilities therein be constructed as part of the CASH 30 Project to be paid for by Developer (the “Developer’s Improvements”); and

WHEREAS, Developer has granted to the City Permanent Public Right-of-Way Easements and Temporary Construction Easements, dated February 11, 2025, for the purposes stated in such easement agreement for the CSAH 30 Project, including the Developer’s Improvements; and

WHEREAS, Developer has requested this Agreement be entered into whereby the Developer will cost/share and reimburse the City for all costs and expenses incurred by the City with respect to the construction of the Developer’s Improvements; and

WHEREAS, the Parties agree that the description of the Developer’s Improvements to be constructed as part of the CSAH 30 Project, and the costs thereof to be paid by Developer to reimburse the City for all costs incurred by the City regarding the same, are contained in and attached hereto as Exhibit B; and

WHEREAS, the City is willing to undertake in cooperation with Chisago County, as part of the CSAH 30 Project the construction of the Developer’s Improvements as soon as practicable pursuant to the terms and conditions set forth herein, and subject to the requirements of applicable law, final design and approval of plans and specifications by the City and Chisago

County, bidding of the CSAH No. 30 Project including Developer's Improvements by Chisago County, construction contract(s) award(s) by Chisago County, completion of financing for the CSAH 30 Project by Chisago County, and construction of the CSAH 30 Project including the Developer's Improvements by Chisago County; and

WHEREAS, the City and Developer now desire to enter into this Agreement defining the terms and conditions under which Developer will cost share and reimburse the City for all costs incurred by the City related to the Developer's Improvements as contained in this Agreement and described in **Exhibit B**.

NOW, THEREFORE, in consideration of the mutual covenants and promises contained herein, the Parties agree as follows:

ARTICLE ONE **Definitions and Terms**

- 1.1 **"City"** means the City of North Branch, a Minnesota municipal corporation, 6408 Elm Street, North Branch, MN 55056.
- 1.2 **"County"** means Chisago County, a Minnesota political subdivision, 313 N. Main Street, Center City, MN 55012.
- 1.3 **"CSAH 30 Project"** means the construction of the CSAH No. 30 improvements project pursuant to the Final Design, including the Developer's Improvements.
- 1.4 **"Effective Date"** means the date first above written.
- 1.5 **"Expiration Date"** means the date that Developer has fully performed their obligations hereunder to the satisfaction of the City to reimburse the City for the Total Developer's Improvements Cost as specified in this Agreement and described **Exhibit B** incurred by the City for construction by Chisago County of the Developer's Improvements as part of the CSAH 30 Project.
- 1.6 **"Developer"** means CR Real Estate LLC, a limited liability company under the laws of the State of Minnesota, whose address for notices purposes is 25635 Vassar Street NE, Stacy, MN 55079.
- 1.7 **"Developer Improvements"** means a roadway turn lane and sewer and water utility lines constructed by Chisago County to serve the Property as part of the CSAH 30 Project with all costs of the Developer's Improvements to be paid by Developer to the City to reimburse the City for all such costs incurred by the City regarding the same, all as specified in this Agreement and described in **Exhibit B**, which is attached hereto and incorporated herein by reference.

- 1.8 ***“Final Design”*** means the final architectural and engineering design plans and specifications for the CSAH 30 Project approved by the City and County. The Final Design shall consist of construction plans and bidding documents pursuant to Minn. Stat. § 471.345, as applicable and determined by the City and County in their sole judgment and discretion.
- 1.9 ***“Property”*** means that certain real property located in the City, Chisago County, Minnesota (PID Nos. 11.00592.11 and 11.00592.13), legally described on **Exhibit A**, which is attached hereto and incorporated herein by reference.
- 1.10 ***“Substantial Completion Date”*** means the date on which the County Engineer determines that the CSAH 30 Project is substantially complete.
- 1.11 ***“Total Developer’s Improvements Cost”*** means the actual cost to construct the Developer’s Improvements portion of the CSAH 30 Project, inclusive of all sums paid to contractors for the construction of the Developer’s Improvements, all sums paid to professionals to manage the construction of the Developer’s Improvements, and all interest that may accrue on any bonds issued to fund any portion of the Developer’s Improvements in the amount of \$250,000.00, as described in **Exhibit B**.

ARTICLE TWO

Term of Agreement

- 2.1 This Agreement shall be in effect and binding on the Parties beginning on the Effective Date and terminating on the Expiration Date, unless earlier terminated pursuant to this Agreement.

ARTICLE THREE

Representations and Warranties

- 3.1 **Representations and Warranties of the City:** The City represents and warrants that the City is a municipal corporation organized and existing under and by virtue of and pursuant to the laws of the State of Minnesota and has the power to enter into this Agreement and carry out its obligation hereunder.
- 3.2 **Representations and Warranties of Developer:** Developer makes the following representations and warranties:
- 3.2.1 Developer is a limited liability company organized and existing under and by virtue of and pursuant to the laws of the State of Minnesota, is in good standing in the State of Minnesota and has the power and authority to enter into this Agreement and to perform its obligations hereunder and is not in violation of the laws of the State or City Code.
- 3.2.2 Neither the execution and delivery of this Agreement, nor the fulfillment of or compliance with the terms and conditions of this Agreement is prevented, limited

by or conflicts with or results in a breach of, the terms, conditions or provision of any contractual restriction, evidence of indebtedness, agreement or instrument of whatever nature to which Developer is now a party or by which it is bound, or constitutes a default under any of the foregoing.

- 3.2.3 Developer will cooperate with the City with respect to any litigation commenced with respect to the Property, as applicable.
- 3.2.4 Developer shall promptly advise the City in writing of all litigation or claims affecting this Agreement and all written complaints and charges made by any governmental authority materially affecting this Agreement or materially affecting Developer, the Property, or its activities.
- 3.2.5 Developer has the resources and capability to satisfy the financial obligations contained in this Agreement.
- 3.2.6 Developer acknowledges the City's contributions to the CSAH 30 Project, including the Developer's Improvements, and further warrants that Developer will not seek subsidies or other financial assistance from the City to cover any costs, expenses or obligations made the responsibility of Developer hereunder.

ARTICLE FOUR

Final Design

- 4.1 Final Design: The City and County shall retain design professional(s) and complete and approve the architectural and engineering design for the CSAH 30 Project as determined by the City and County in their sole judgment and discretion.

ARTICLE FIVE

CSAH 30 Project Funding for Developer's Improvements

- 5.1 Developer Cost Share: Developer shall reimburse the City for all costs incurred by the City for the construction of the Developer's Improvements as part of the CSAH 30 Project in the amount of \$250,000.00 and as described in Exhibit B.
- 5.2 Timing of Developer Reimbursement Payment: As consideration for the Developer's Improvements constructed as part of the CSAH 30 Project, Developer shall pay to the City the Total Developer's Improvements Cost in Section 5.1 of this Agreement, to be paid prior to December 1, 2025.
- 5.3 Assessment Rights Reserved to the City and Developer's Waiver. Developer acknowledges that should the payment obligations of section 5.2 not be satisfied, that the City reserves the right to recover any unpaid amounts due to the City concerning the Developer's Improvements using its standard property tax assessment procedure under the North Branch City code. Developer waives its right to challenge or appeal any

assessment irregularities up to the Developers Cost Share of \$250,000, as defined in this agreement.

ARTICLE SIX

Construction

- 6.1 Project Construction: The County shall be responsible for all aspects of construction of the CSAH 30 Project in accordance with the Final Design approved by the City and County, in their sole judgment and discretion and pursuant to the following requirements:
- 6.1.1 Competitive Bids: The County shall solicit competitive bids and award the contract(s) for construction of the CSAH 30 Project in accordance with the Final Design and in compliance with the Uniform Municipal Contracting Law, Minn. Stat. § 471.345.
- 6.1.2 Lowest Responsible Bid: The County shall identify, in its sole judgment and discretion, the lowest responsible bid(s) for the contract(s) to construct the CSAH 30 Project.
- 6.1.3 Conditions Precedent: The County's obligations to award the contract(s) for construction of the CSAH 30 Project and to cause the CSAH 30 Project to be constructed under this Article is subject to the conditions precedent that the City timely receives full execution of this Agreement.
- 6.1.4 Substantial Completion: Upon satisfaction of the conditions herein, the County shall award the contract(s) for construction of the CSAH 30 Project and exercise all reasonable diligence to cause the construction of the CSAH 30 Project to be substantially completed as soon as practicable thereafter in accordance with the Final Design.
- 6.1.5 Ownership of Developer's Improvements: Notwithstanding this Agreement, the Developer's Improvements to be constructed, whether existing on the Effective Date or installed thereafter, shall at all times following the Substantial Completion Date be and remain under the sole ownership of the City and County, as applicable to the City's and County's right-of-way interests.

ARTICLE SEVEN

Indemnification

- 7.1 Mutual Indemnification: Each Party (the "Indemnifying Party") shall indemnify and hold harmless the other Party, and its respective officers, employees and members and agents (the "Indemnified Party"), from and against any and all claims and demands for, or litigation with respect to, all damages which may arise out of or be caused by the Indemnifying Party or its agents, employees, contractors or subcontractors with respect to the Indemnifying Party's performance of its obligations under this Agreement. The

Indemnifying Party shall defend the Indemnified Party against the foregoing, or litigation in connection with the foregoing, at the Indemnifying Party's expense, with counsel reasonably acceptable to the Indemnified Party. The Indemnified Party, at its expense, shall have the right to participate in the defense of any claims or litigation and shall have the right to approve any settlement, which approval shall not be unreasonably withheld. The indemnification provision of this Section shall not apply to damages or other losses proximately caused by or resulting from the negligence or willful misconduct of the Indemnified Party. All indemnification obligations shall survive termination, expiration or cancellation of this Agreement. Nothing this Agreement shall be construed to waive any immunities or limitations to which the City is entitled under Minn. Stat. Chapter 466 or otherwise.

- 7.2 Waiver and Release: The City and Developer agree that the City has no obligation to the Developer under this Agreement if for any reason the CSAH 30 Project and/or the Developer's Improvements are not constructed, or are not constructed completely, or are not constructed to Developer's satisfaction, and Developer hereby waives and releases the City from any and all claims or liability of any kind or nature whatsoever related thereto or arising therefrom or from this Agreement.

ARTICLE EIGHT

Termination

- 8.1 Termination: This Agreement shall remain in effect until such time as Developer shall have fully performed all of its duties and obligations under this Agreement. Notwithstanding the foregoing, this Agreement may be terminated; (i) by mutual written agreement of the Parties at any time; or (ii) by the City for default of Developer, upon 15 days' written notice to Developer, unless the Developer cures the default within the notice period. Developer's obligation to make full reimbursement payment to the City for all costs incurred by the City for the Developer's Improvements shall survive termination, expiration or cancellation of this Agreement.

ARTICLE NINE

Default and Remedies

- 9.1 Developer Default: If Developer shall default in the payment of any sum required to be paid by Developer under this Agreement, and such default shall continue for 15 days after written notice to Developer, or if Developer shall default in the observance or performance of any of the other covenants, obligations or conditions in this Agreement, which Developer is required to observe or perform, and such default shall continue for 15 days after written notice to Developer, or if the interest of Developer in this Agreement shall be levied upon under execution or other legal process, or if any voluntary petition in bankruptcy or for corporate reorganization or any similar relief shall be filed by Developer, or if any involuntary petition in bankruptcy shall be filed against Developer under any federal or state bankruptcy or insolvency act and shall not have been dismissed within 15 days following the filing thereof, or if a receiver shall be appointed for Developer or any of the property of Developer by any court and such receiver shall not be

dismissed within 15 days from the date of appointment, or if Developer shall make an assignment for the benefit of creditors, or if Developer shall abandon or vacate the Property, then the City may treat the occurrence of any one or more of the foregoing events as a breach of this Agreement and thereupon at its option may terminate this Agreement, in addition to exercising any and all other rights and remedies provided at law or in equity, including but not limited to drawing down the Security. In addition to the remedies and amounts payable set forth or permitted herein, upon the occurrence of an event of default by Developer, Developer shall pay to the City all fees and expenses, including reasonable attorney's fees, incurred by the City as a result of the event of default and related to enforcing this Agreement, whether or not a lawsuit or other action is formally taken.

ARTICLE TEN

Miscellaneous

- 10.1 Notices: Any notice, demand, or other communication required or permitted to be given hereunder shall be deemed delivered and effectively given when delivered personally to the representatives of the City and Developer identified below or three (3) business days after being mailed by registered or certified mail, addressed as provided herein above:

To City:
City of North Branch
Attn: City Administrator

To Developer:
CR Real Estate LLC
Attn: Candace Rindahl, Manager

Either Party may change its address or the identity of its designated representative named above by written notice to the other Party in the manner stated in this paragraph.

- 10.2 Voluntary and Knowing: The Parties, by executing this Agreement, state that they have carefully read this Agreement and understand fully the contents thereof; that in executing this Agreement they voluntarily accept all terms described in this Agreement without duress, coercion, undue influence, or otherwise, and that they intend to be legally bound thereby.
- 10.3 Authorized Signatories: The Parties each represent and warrant to the other that (i) the persons signing this Agreement are authorized signatories for the entities represented; and (ii) no further approvals, actions or ratifications are needed for the full enforceability of this Agreement against it; each Party indemnifies and holds the other harmless against any breach of the foregoing representation and warranty.
- 10.4 Governing Law: This Agreement shall be deemed to have been made and accepted in Chisago County, Minnesota, and the laws of the State of Minnesota shall govern any interpretations or constructions of this Agreement without regard to its choice of law or conflict of laws principles.
- 10.5 Data Practices: The Parties acknowledge that this Agreement is subject to the requirements of Minnesota's Government Data Practices Act, Minn. Stat. § 13.01 *et seq.*

- 10.6 Records – Availability and Retention: Pursuant to Minn. Stat. § 16C.05 subd. 5, Developer agrees that the City, the State Auditor, or any of their duly authorized representatives at any time during normal business hours and as often as they may reasonably deem necessary, shall have access to and the right to examine, audit, excerpt, and transcribe any books, documents, papers, records, etc., which are pertinent to the accounting practices and procedures of Developer and involve transactions relating to this Agreement. Developer agrees to maintain these records for a period of six years from the date of termination of this Agreement.
- 10.7 Compliance with laws: The Parties shall abide by all Federal, State and local laws, statutes, ordinances, rules and regulations now in effect or hereinafter adopted pertaining to this Agreement.
- 10.8 Dispute Resolution: The City and Developer agree to negotiate all disputes between them in good faith for a period of 15 days from the date of notice of dispute prior to proceeding to formal dispute resolution or exercising their rights under law.
- 10.9 No waiver: Any party's failure in any one or more instances to insist upon strict performance of any of the terms and conditions of this Agreement or to exercise any right herein conferred shall not be construed as a waiver or relinquishment of that right or of that party's right to assert or rely upon the terms and conditions of this Agreement. Any express waiver of a term of this Agreement shall not be binding and effective unless made in writing and properly executed by the waiving party.
- 10.10 Severability: The invalidity or unenforceability of any provision of this Agreement shall not affect the validity or enforceability of any other provision. Any invalid or unenforceable provision shall be deemed severed from this Agreement to the extent of its invalidity or unenforceability, and this Agreement shall be construed and enforced as if the Agreement did not contain that particular provision to the extent of its invalidity or unenforceability.
- 10.11 Headings, Captions and Recitals: Headings and captions contained in this Agreement are for convenience only and are not intended to alter any of the provisions of this Agreement and shall not be used for the interpretation of the validity of this Agreement or any provision hereof. The recitals set forth at the beginning of this Agreement are incorporated herein by reference and made a part of this Agreement.
- 10.12 Survivability: All covenants, indemnities, guarantees, releases, representations and warranties by any Party or Parties, and any undischarged obligations of the City and Developer arising prior to the expiration of this Agreement (whether by completion or earlier termination), shall survive such expiration.
- 10.13 Exhibits: The exhibits attached to this Agreement are considered an integral part of it as if fully set forth within it.

- 10.14 Entire Agreement: All prior understandings, discussions and agreements are merged in the governing terms of this Agreement, which is a complete and final written expression of the intent of the parties. Every warranty or representation binding upon the City is set forth in this Agreement. The City makes no further warranties or representations and Developer has not relied on any other warranties or representations, express or implied, relative to the terms of this Agreement. In the event of a conflict or inconsistency between the terms of this Agreement and those of any other agreement between the Parties, the terms of this Agreement shall govern.
- 10.15 Modification/Amendments: Any alterations, variations, modifications, amendments or waivers of the provisions of this Agreement shall only be valid when they have been reduced to writing, approved by Developer's Board of Directors and the North Branch City Council, and signed by an authorized representative of the City and Developer.
- 10.16 Execution: This Agreement may be executed simultaneously in two or more counterparts that, when taken together, shall be deemed an original and constitute one and the same document. The signature of any Party to the counterpart shall be deemed a signature to the Agreement, and may be appended to, any other counterpart. Facsimile and email transmissions of executed signature pages shall be deemed as originals and sufficient to bind the executing Party.

[Signature page to follow]

IN WITNESS WHEREOF, the Parties have executed and entered into this Agreement effective as of the date first above written.

CR REAL ESTATE LLC

By: Candace Rindahl
Candace Rindahl, Its Manager

STATE OF Minnesota)
) ss.
COUNTY OF Isanti)

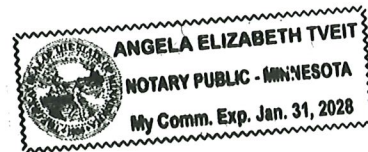
The foregoing instrument was acknowledged before me this 2 day of July, 2025, by Candace Rindahl, as Manager of CR Real Estate LLC, a limited liability company under the laws of the State of Minnesota, Developer.

Angela E. Tveit
Notary Public

CITY OF NORTH BRANCH

By: _____
Kevin Schieber, Its Mayor

By: _____
Tonya Kostuch, Its City Clerk



7/2/25

EXHIBIT A

Legal Description of Property

Parcel (11.00592.11)

Lot 11, Block 1, Townsedge, Chisago County, Minnesota.

Parcel (11.00592.13)

Outlot B, Townsedge, Chisago County , Minnesota.

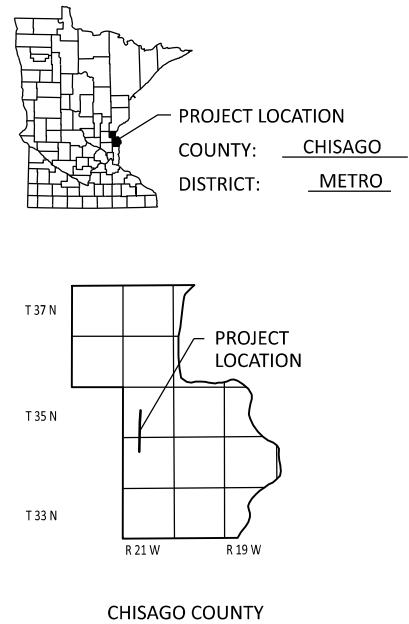
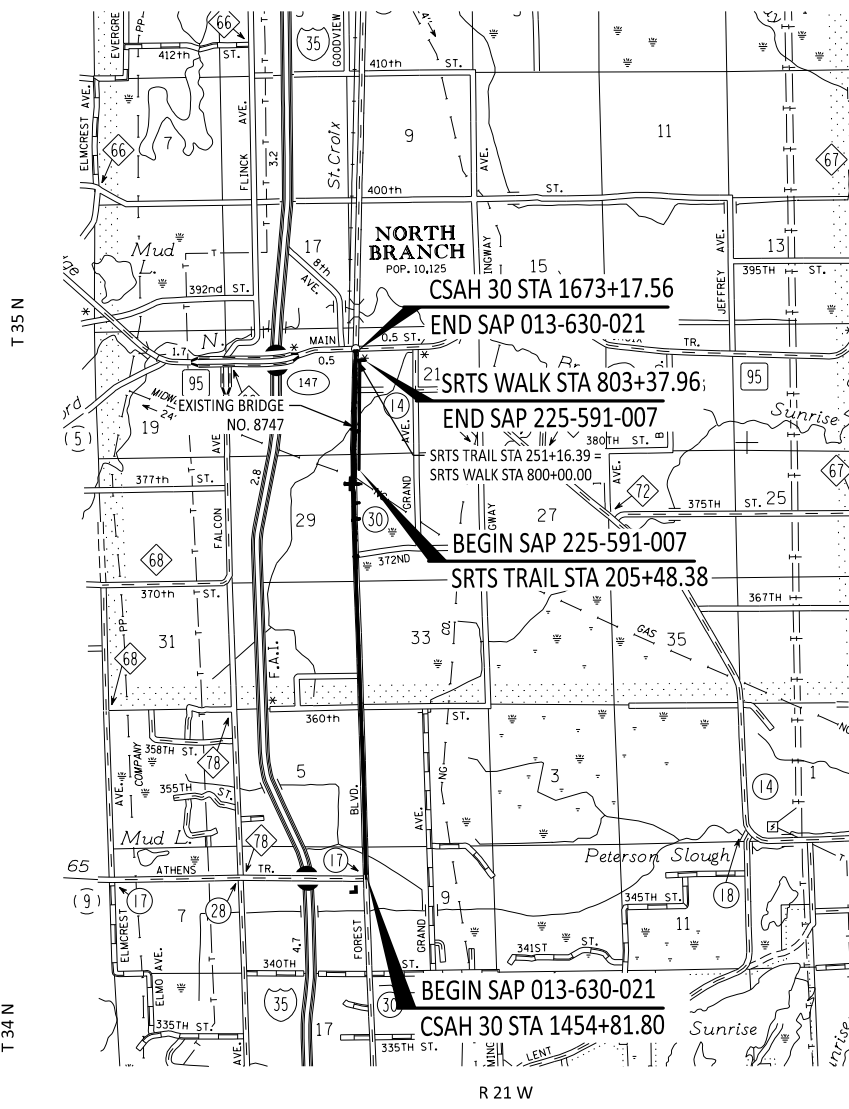
EXHIBIT B

Description of Developer's Improvements and Cost

MINNESOTA DEPARTMENT OF TRANSPORTATION
CHISAGO COUNTY, MINNESOTA

CONSTRUCTION PLAN FOR GRADING, BITUMINOUS SURFACING, ROUNDABOUT, DRAINAGE, LIGHTING AND APPURTENANT WORK

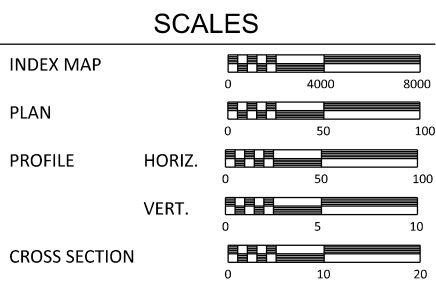
LOCATED IN CSAH 30 FROM 250' NORTH OF CSAH 17 (ATHENS TRAIL) TO TH 95 IN NORTH BRANCH (Geographic Description)



CSAH 30 SAP 013-630-021			
GROSS LENGTH	21,835.76 ft	4.136	miles
BRIDGES-LENGTH	N/A ft	N/A	miles
EXCEPTIONS-LENGTH	N/A ft	N/A	miles
NET LENGTH	21,835.76 ft	4.136	miles

DESIGN DESIGNATION		SAFE ROUTES TO SCHOOL TRAIL SAP 225-591-007	
GROSS LENGTH	4,905.97' = 0.929 MILES		
BRIDGES-LENGTH	NA		
EXCEPTIONS-LENGTH	NA		
NET LENGTH	4,905.97' = 0.929 MILES		
DESIGN SPEED	20 MPH		
BASED ON SIGHT DISTANCE	STOPPING		
HEIGHT OF EYE / HEIGHT OF OBJECT	4.5' / 0.0'		
DESIGN SPEED NOT ACHIEVED AT	ROAD CROSSINGS		

PLAN REVISIONS		
DATE	SHEET NO.	APPROVED BY



DESIGN DESIGNATION		RECONDITIONING	RECONSTRUCTION
STATION RANGE		1454+81.80 - 1582+20.00	1582+20.00 - 1673+17.56
GROSS LENGTH	12,738.20 FT	9,097.56 FT	
R VALUE	40	40	
ADT (Current Year) 2025	4,590	4,590	
ADT (Future Year) 2045	6,183	6,183	
D (DIRECTIONAL DISTR.)	50/50	50/50	
HEAVY COMMERCIAL	9.54%	9.54%	
ESALS	1,802,000	1,802,000	
DESIGN SPEED	55 MPH	30 - 40 MPH	
BASED ON SIGHT DISTANCE	STOPPING	STOPPING	
HEIGHT OF EYE / HEIGHT OF OBJECT	3.5' / 2.0'	3.5' / 2.0'	
FUNCTIONAL CLASS	MINOR ARTERIAL	MINOR ARTERIAL	
NO. OF TRAFFIC LANES	2	3	
NO. OF PARKING LANES	0	0	
SHOULDER WIDTH	8 FT	6 FT / 8 FT	
TON DESIGN	10	10	
DESIGN SPEED NOT ACHIEVED AT	NA	ROUNDABOUT	

THE SUBSURFACE UTILITY INFORMATION IN THIS PLAN IS UTILITY QUALITY LEVEL D THIS QUALITY LEVEL WAS DETERMINED ACCORDING TO THE GUIDELINES OF ASCE/UESI/CI 38-22, ENTITLED "STANDARD GUIDELINE FOR THE INVESTIGATING AND DOCUMENTING EXISTING UTILITIES".

SAP 013-630-021
SAP 225-591-007 / SAP 225-102-004

MINN. PROJECT NO. LOCAL FUNDS

GOVERNING SPECIFICATIONS

THE 2020 EDITION OF THE MINNESOTA DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR CONSTRUCTION" SHALL GOVERN.
ALL TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE LATEST EDITION OF THE MINNESOTA MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES, INCLUDING THE LATEST EDITION OF THE FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS.

INDEX

SHEET NO.	DESCRIPTION
1	TITLE SHEET
2 - 3	GENERAL LAYOUT
4 - 7	ESTIMATED QUANTITIES
8 - 13	QUANTITY TABULATIONS
14 - 15	EARTHWORK TABULATION
16 - 17	CONSTRUCTION NOTES
18 - 28	TYPICAL SECTIONS
29 - 30	MISCELLANEOUS DETAILS
31 - 47	STANDARD PLATES
48 - 82	STANDARD PLAN SHEETS
83 - 91	CONSTRUCTION STAGING & TRAFFIC CONTROL
92 - 96	ALIGNMENT PLANS & TABULATION
97 - 107	INPLACE TOPOGRAPHY & UTILITIES PLAN
108 - 118	REMOVAL PLAN
119 - 139	CONSTRUCTION PLAN & PROFILE
140 - 142	PROFILES
143	SANITARY AND WATERMAIN PLAN
144 - 155	INTERSECTION DETAILS
156 - 159	PEDESTRIAN RAMP DETAILS
160 - 163	DRIVEWAY DETAILS
164 - 167	DRAINAGE PLAN
168 - 170	DRAINAGE PROFILES
171 - 173	DRAINAGE TABULATIONS
174 - 177	STORM WATER POLLUTION PREVENTION PLAN
178 - 189	TURF ESTABLISHMENT & EROSION CONTROL PLAN
190 - 207	SIGNING & PAVEMENT MARKING PLAN
208 - 212	TRAFFIC CONTROL SIGNAL SYSTEM
213 - 216	LIGHTING & RRFB PLAN
BR1 - BR5	BOX CULVERT PLAN
X1 - X65	CROSS SECTIONS

THIS PLAN CONTAINS 286 SHEETS

ALL APPLICABLE FEDERAL, STATE, AND LOCAL LAWS AND ORDINANCES WILL BE COMPLIED WITHIN 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: 9/12/2024 LICENSE NUMBER 44620

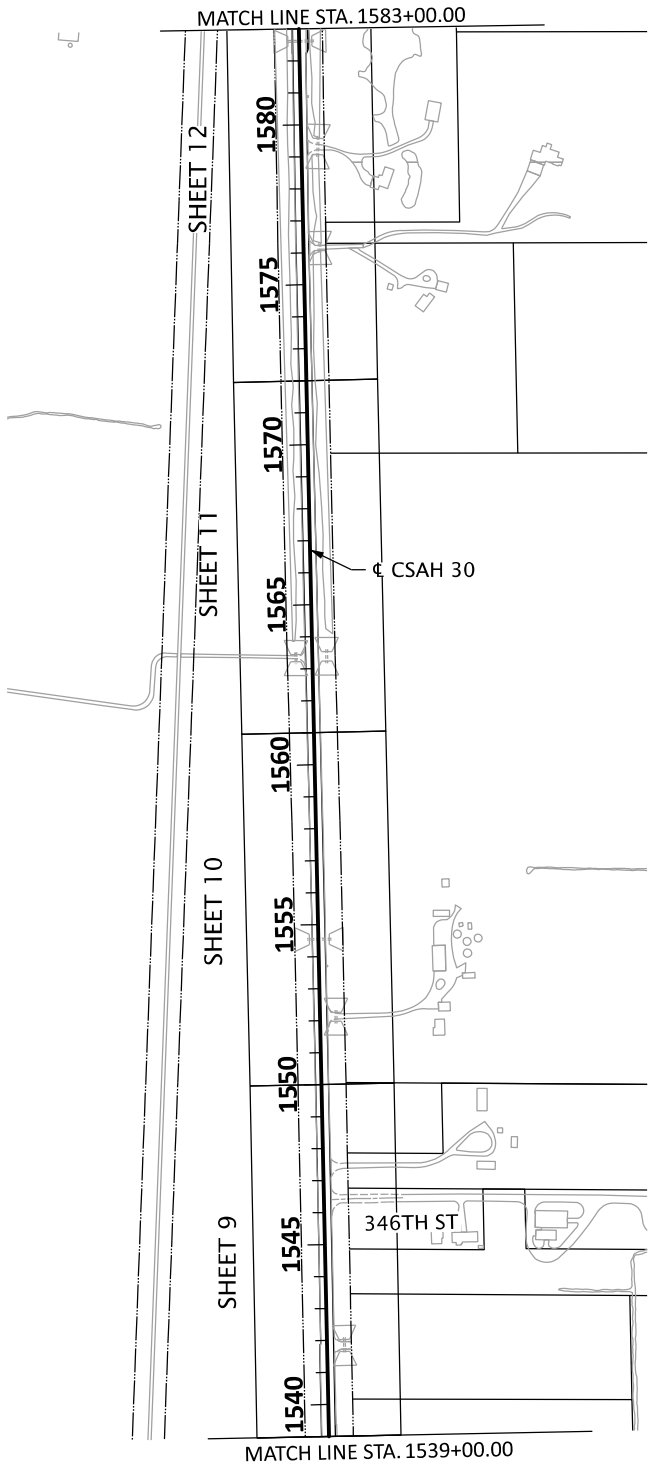
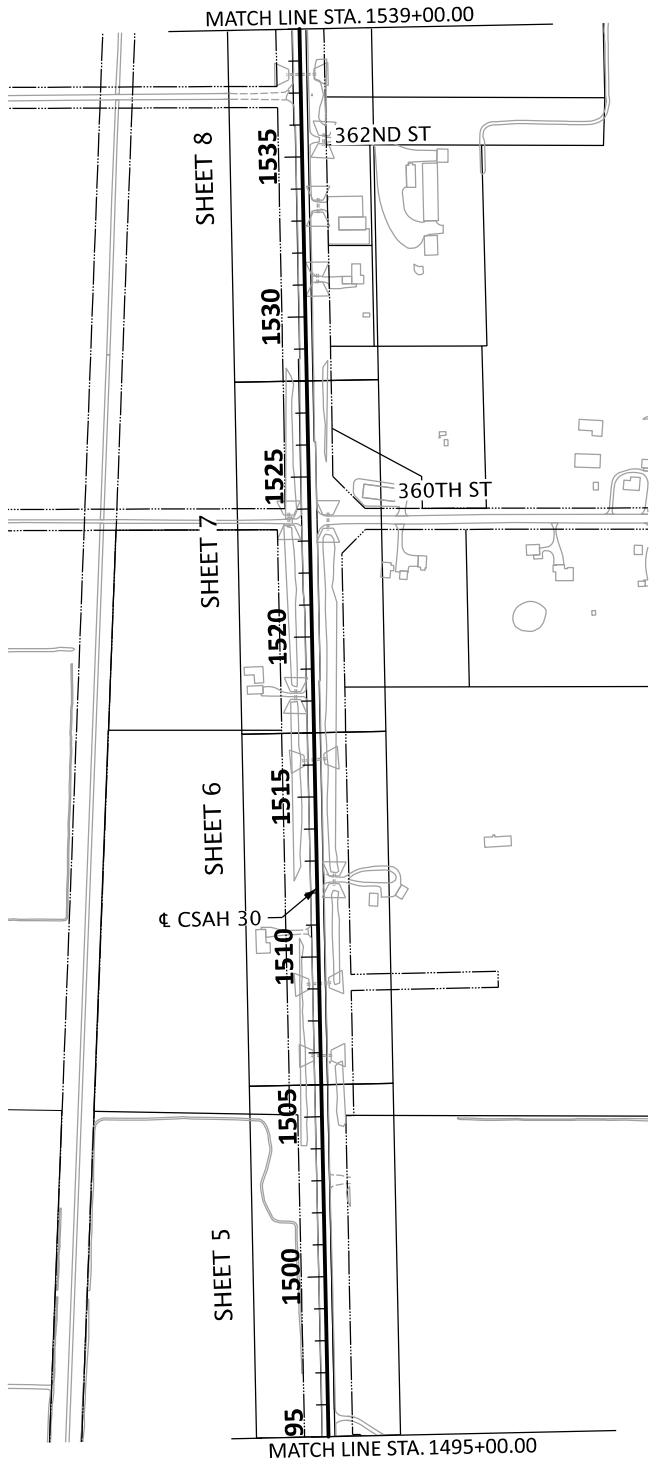
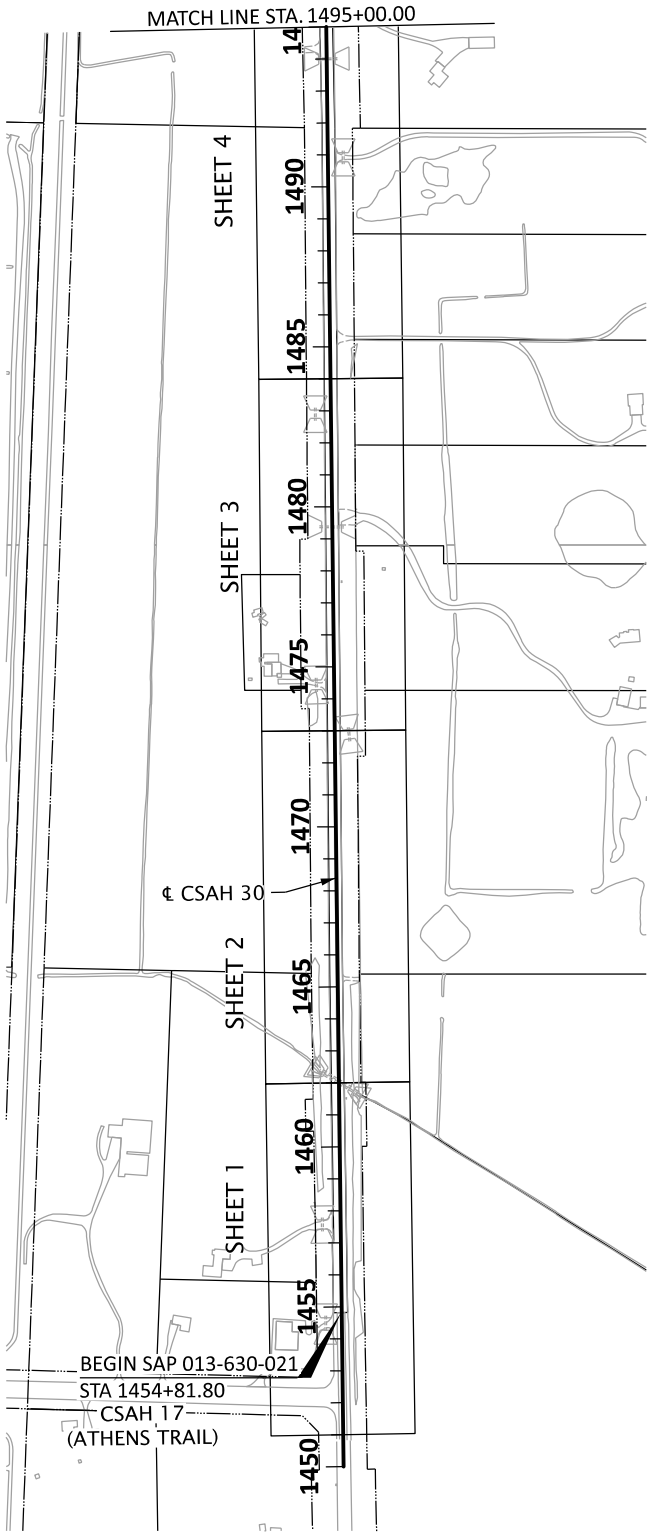
APPROVED: CITY ENGINEER - CITY OF NORTH BRANCH
APPROVED: CITY ENGINEER - CITY OF STACY
APPROVED: CHISAGO COUNTY ENGINEER
DISTRICT STATE AID ENGINEER
REVIEWED FOR COMPLIANCE WITH STATE AID RULES / POLICY
STATE AID ENGINEER: APPROVED FOR STATE AID FUNDING

SHEET NO. 1 OF 216 SHEETS

CSAH 30 (Forest Blvd)

CSAH 30 (Forest Blvd)

CSAH 30 (Forest Blvd)



SECTION		INPLACE TOPOGRAPHY & UTIL PLANS	REMOVAL PLANS	CONSTRUCTION PLAN & PROFILE	DRAINAGE PLAN	TURF & EROSION CONTROL PLAN	SIGNING & PAVEMENT MARKING PLAN
1	PLAN SHEET INDEX PER SECTION	97	108	119	-	179	193
2		97	108	120	-	179	193
3		98	109	121	-	180	194
4		98	109	122	-	180	194
5		99	110	123	-	181	195
6		99	110	124	-	181	195
7		100	111	125	-	182	196
8		100	111	126	-	182	196
9		101	112	127	-	183	197
10		101	112	128	-	183	197
11		102	113	129	-	184	198
12		102	113	130	-	184	198

LEGEND

	INPLACE PAVEMENT		CONSTRUCTION LIMITS
	PROPOSED CONSTRUCTION		WETLAND DELINEATION - AREA OF ENVIRONMENTAL SENSITIVITY
	PROPOSED R/W		
	TEMPORARY EASEMENT		
	PERMANENT EASEMENT		
	INPLACE RAILROAD RIGHT OF WAY		
	INPLACE RIGHT OF WAY		

DATE: 9/12/2024 1:58:16 PM
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NO.	DATE	BY	CHK	REVISIONS

Design By:	NEH
Plan By:	MKV
Checked By:	MAN
Approved By:	NEH

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.	
	NICHOLAS E. HENTGES, PE
DATE: 9/12/2024	LICENSE NO. 44620



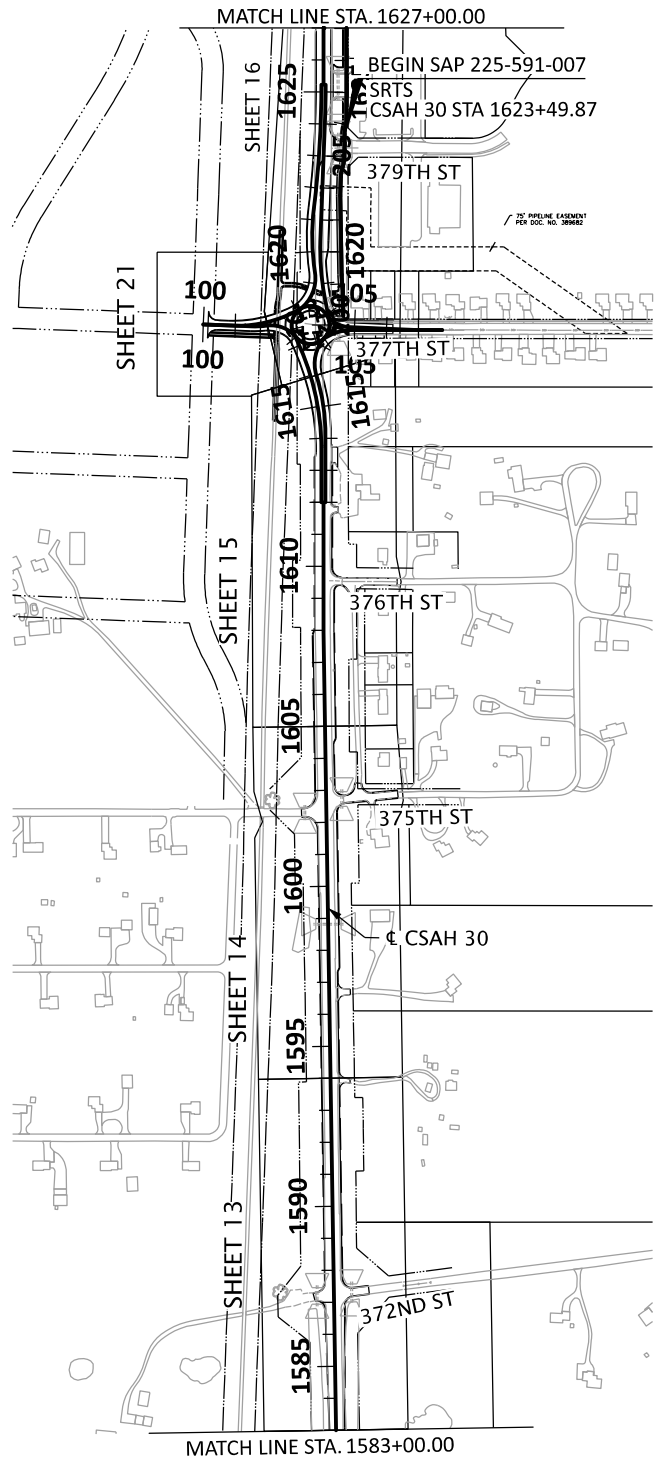
CSAH 30 (Forest Blvd) Improvements
Chisago County, Minnesota

CHISAGO COUNTY, MINNESOTA

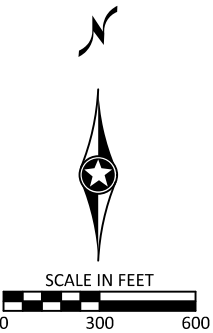
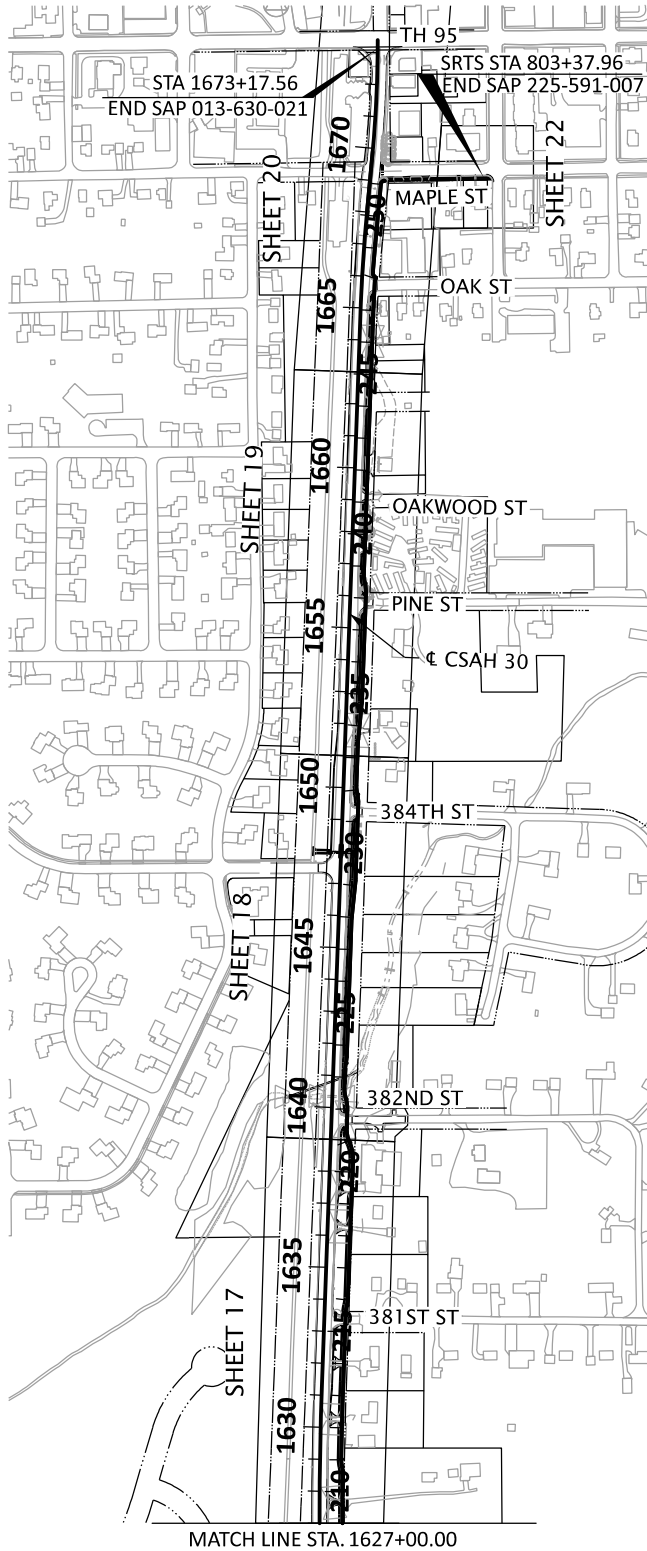
GENERAL LAYOUT
SAP 013-630-021 / SAP 225-591-007 / SAP 225-102-004

SHEET
2
OF
216
SHEETS

CSAH 30 (Forest Blvd)



CSAH 30 (Forest Blvd)



SECTION	INPLACE TOPOGRAPHY & UTIL PLANS	REMOVAL PLANS	CONSTRUCTION PLAN & PROFILE	DRAINAGE PLAN	TURF & EROSION CONTROL PLAN	SIGNING & PAVEMENT MARKING PLAN
13	103	114	131	164	185	199
14	103	114	132	164	185	199
15	104	115	133	165	186	200
16	104	115	134	165	186	200
17	105	116	135	166	187	201
18	105	116	136	166	187	201
19	106	117	137	167	188	202
20	106	117	138	167	188	202
21	107	118	139	-	189	203
22	107	118	139	-	189	203

LEGEND

	INPLACE PAVEMENT		CONSTRUCTION LIMITS
	PROPOSED CONSTRUCTION		WETLAND DELINEATION - AREA OF ENVIRONMENTAL SENSITIVITY
	PROPOSED R/W		
	TEMPORARY EASEMENT		
	PERMANENT EASEMENT		
	INPLACE RAILROAD RIGHT OF WAY		
	INPLACE RIGHT OF WAY		

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NO.	DATE	BY	CHK	REVISIONS

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CSAH 30 (Forest Blvd) Improvements
Chisago County, Minnesota

CHISAGO COUNTY, MINNESOTA

GENERAL LAYOUT
SAP 013-630-021 / SAP 225-591-007 / SAP 225-102-004

SHEET
3
OF
216
SHEETS

DATE: 9/12/2024 3:53:03 PM
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STATEMENT OF ESTIMATED QUANTITIES													
TAB	SHEET	ITEM NUMBER	DESCRIPTION	NOTES	UNITS	PROJECT TOTAL	SAP 013-630-021			50% SAP 013-630-021 50% SAP 225-102-004		SAP 225-591-007	CITY LOCAL FUNDS
							ROADWAY		STORM SEWER	ROADWAY	STORM SEWER	SAFE ROUTES TO SCHOOL	
							RECONDITIONING	RECONSTRUCTION					
		2021.501	MOBILIZATION		LUMP SUM	1	0.06	0.48	0.19	0.13	0.04	0.05	0.05
		2051.501	MAINT AND RESTORATION OF HAUL ROADS		LUMP SUM	1		1					
A	8 - 9	2101.502	CLEARING		EACH	51				1		50	
A	8 - 9	2101.502	GRUBBING		EACH	51				1		50	
A	8 - 9	2101.505	CLEARING		ACRE	0.7		0.1		0.5		0.1	
A	8 - 9	2101.505	GRUBBING		ACRE	0.7		0.1		0.5		0.1	
M	BR1	2104.502	REMOVE BOX CULVERT		EACH	2			2				
M	BR1	2104.502	REMOVE BOX CULVERT END		EACH	4			4				
A	8 - 9	2104.502	REMOVE GATE VALVE AND BOX		EACH	4				2		2	
A	8 - 9	2104.502	REMOVE HYDRANT		EACH	4				2		2	
I	190 - 191	2104.502	REMOVE DELINEATOR / MARKER		EACH	5		5					
I	190 - 191	2104.502	REMOVE SIGN		EACH	25		22		1			2
A	8 - 9	2104.502	REMOVE LIGHT FOUNDATION		EACH	6		5		1			
A	8 - 9	2104.502	SALVAGE LIGHTING UNIT		EACH	6		5		1			
I	190 - 191	2104.502	SALVAGE SIGN		EACH	5		5					
A	8 - 9	2104.502	SALVAGE MAIL BOX SUPPORT		EACH	14		8		2			4
A	8 - 9	2104.503	SAWING CONCRETE PAVEMENT (FULL DEPTH)		LIN FT	695		671		24			
A	8 - 9	2104.503	SAWING BITUMINOUS PAVEMENT (FULL DEPTH)		LIN FT	758		648				70	40
A	8 - 9	2104.503	REMOVE PIPE CULVERTS		LIN FT	914		806		108			
A	8 - 9	2104.503	REMOVE WATER MAIN		LIN FT	110							110
A	8 - 9	2104.503	REMOVE CURB AND GUTTER		LIN FT	1120		1002				78	40
A	8 - 9	2104.503	REMOVE GUARDRAIL-PLATE BEAM		LIN FT	465		465					
A	8 - 9	2104.503	REMOVE STEEL CASING		LIN FT	100							100
A	8 - 9	2104.503	REMOVE TENSION CABLE GUARDRAIL		LIN FT	505		505					
A	8 - 9	2104.504	REMOVE PAVEMENT	(3) (4)	SQ YD	10531		8185		2346			
A	8 - 9	2104.504	REMOVE CONCRETE DRIVEWAY PAVEMENT		SQ YD	431		431					
A	8 - 9	2104.504	REMOVE BITUMINOUS DRIVEWAY PAVEMENT		SQ YD	710		540				161	9
A	8 - 9	2104.504	REMOVE BITUMINOUS PAVEMENT	(4)	SQ YD	35469		32033		2861			575
A	8 - 9	2104.518	REMOVE BITUMINOUS WALK		SQ FT	10035				10035			
A	8 - 9	2104.518	REMOVE CONCRETE WALK		SQ FT	970		237					733
J	192	2104.602	REMOVE SIGN SPECIAL		EACH	1				1			
J	192	2104.602	SALVAGE SIGN SPECIAL		EACH	7		7					
J	192	2104.602	SALVAGE SIGN PANEL SPECIAL		EACH	3		3					
F	15	2106.507	EXCAVATION - COMMON	(P)	CU YD	21939		13054		4649		3080	1156
F	15	2106.507	EXCAVATION - SUBGRADE	(P)	CU YD	20851		16494		3510			847
F	15	2106.507	SELECT GRANULAR EMBANKMENT (CV)	(P)	CU YD	24404		18751		4794			859
M	BR1	2106.507	SELECT GRANULAR EMBANKMENT MOD 10% (CV)	(P)	CU YD	11			11				
F	15	2106.507	COMMON EMBANKMENT (CV)	(P)	CU YD	13075		4181		1278		7277	339
		2106.601	DEWATERING	(2)	LUMP SUM	1		1					
		2130.523	WATER	(6)	M GALLON	400		400					
B , E	10 , 13	2211.507	AGGREGATE BASE (CV) CLASS 5	(P)	CU YD	12188		9420		1630		801	337
B , E	10 , 13	2221.509	SHOULDER BASE AGGREGATE CLASS 5 MOD		TON	494		494					
A	8 - 9	2232.504	MILL BITUMINOUS SURFACE (2.0")		SQ YD	40837	36863	3974					

- NOTES
- (1) GEOTEXTILE FILTER TYPE 4 IS INCIDENTAL.

(2) TO BE USED FOR GROUNDWATER LOWERING AS NECESSARY FOR ANY GRADING, EXCAVATION AND UTILITY CONSTRUCTION.

(3) BITUMINOUS PAVEMENT OVER CONCRETE PAVEMENT. SEE CONSTRUCTION NOTES, CONSTRUCTION PLAN & PROFILE, AND CROSS SECTIONS FOR MORE DETAILS.

(4) SEE GEOTECHNICAL REPORT FOR INPLACE PAVEMENT THICKNESSES.

(5) CONTRACTOR IS RESPONSIBLE FOR COORDINATION OF TEMPORARY MAIL SERVICE AND FINAL MAIL BOX PLACEMENT (INCIDENTAL).

(6) TO BE USED FOR DUST CONTROL AND/OR AS DIRECTED BY THE ENGINEER.

(7) TO BE USED IN PEDESTRIAN RAMP LANDINGS PER MNDOT STANDARD PLAN 5-297.250 (SHEET 6 OF 6).

(8) SEE MISCELLANEOUS DETAILS FOR CONCRETE TRUCK APRON DETAILS.

(9) REFER TO THE BR1 THRU BR5 DETAILS IN THE PLAN SET.

(10) SANITARY STRUCTURE TO BE 48" IN DIAMETER.

(11) CYLINDER STYLE DELINEATORS TYPE X4 - 3 SHALL BE INSTALLED ON ALL GUIDE POSTS (INCIDENTAL).

(12) TRAFFIC CONTROL ITEM INCLUDES ANY AND ALL COSTS NECESSARY FOR CONTRACTOR TO STAGE AND CONSTRUCT PROJECT.

(13) 2 CASTING ASSEMBLIES TO BE USED FOR THE SANITARY SEWER STRUCTURES. 69 CASTINGS TO BE USED FOR STORM SEWER STRUCTURES.

(14) TO BE USED FOR TEMPORARY ADDRESS SIGNS.

(15) TO BE USED IF EXISTING TRAFFIC LOOPS ARE DAMAGED DURING CONSTRUCTION.

(P) DENOTES PLAN QUANTITY.

BASIS FOR QUANTITIES	
UNIT WEIGHT OF BITUMINOUS MIX: - 2360 MIX.....113 LBS/SY-IN	
TACK COAT - NEW PAVEMENT.....0.05 GAL/SY - MILLED PAVEMENT.....0.085 GAL/SY	
BITUMINOUS MATERIAL FOR FOG SEAL.....0.1 GAL/SY	
AGGREGATE BASE.....1.8 TON/CU YD SHOULDER BASE AGG CL 5 MOD.....1.8 TON/CU YD	
EROSION CONTROL & TURF ESTABLISHMENT - SEE TURF PLANS FOR RATES, VARIES BASED ON SEED MIX	

NO.	DATE	BY	CHK	REVISIONS

Design By:	NEH
Plan By:	MKV
Checked By:	MAN
Approved By:	NEH

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NICHOLAS E. HENTGES, PE

DATE: 9/12/2024

LICENSE NO. 44620



CSAH 30 (Forest Blvd) Improvements
Chisago County, Minnesota

CHISAGO COUNTY, MINNESOTA	SHEET 4 OF 216 SHEETS
ESTIMATED QUANTITIES	
SAP 013-630-021 / SAP 225-591-007 / SAP 225-102-004	

DATE: 9/12/2024 3:53:04 PM
PATH & FILENAME: Projects\Minnesota\023661-000\03_Discipline\Roadway\Sheets\023661-000_est

STATEMENT OF ESTIMATED QUANTITIES													
TAB	SHEET	ITEM NUMBER	DESCRIPTION	NOTES	UNITS	PROJECT TOTAL	SAP 013-630-021			50% SAP 013-630-021 50% SAP 225-102-004		SAP 225-591-007	CITY LOCAL FUNDS
							ROADWAY		STORM SEWER	ROADWAY	STORM SEWER	SAFE ROUTES TO SCHOOL	
							RECONDITIONING	RECONSTRUCTION					
						QUANTITY	QUANTITY	QUANTITY	QUANTITY	QUANTITY	QUANTITY	QUANTITY	QUANTITY
B	10	2355.506	BITUMINOUS MATERIAL FOR FOG SEAL		GALLON	2163	2163						
B	10	2357.506	BITUMINOUS MATERIAL FOR TACK COAT		GALLON	11170	3326	7319		403			122
B	10	2360.509	TYPE SP 12.5 NON WEARING COURSE MIXTURE (3,B)		TON	5102		4799		303			
B , E	10 , 13	2360.509	TYPE SP 12.5 WEARING COURSE MIXTURE (3,C)		TON	17081	4413	11693		641			334
B	10	2360.509	TYPE SP 12.5 WEARING COURSE MIXTURE (4;F)		TON	477				477			
B	10	2360.509	TYPE SP 12.5 NON WEARING COURSE MIXTURE (4;F)		TON	239				239			
M	BR1	2411.507	STRUCTURE EXCAVATION CLASS E		CU YD	2743			2743				
M	BR1	2412.502	9X4 PRECAST CONCRETE BOX CULVERT END SECTION	(9)	EACH	2			2				
M	BR1	2412.503	9X4 PRECAST CONCRETE BOX CULVERT	(9)	LIN FT	200			200				
M	BR1	2451.507	GRANULAR BEDDING (CV)		CU YD	183			183				
G	171	2501.502	18" GS PIPE APRON		EACH	14		14					
H	172 - 173	2501.502	15" RC PIPE APRON		EACH	2			2				
G	171	2501.502	18" RC PIPE APRON		EACH	8		8					
G	171	2501.502	24" RC PIPE APRON		EACH	6		6					
H	172 - 173	2501.502	30" RC PIPE APRON		EACH	3			1		2		
H	172 - 173	2501.502	36" RC PIPE APRON		EACH	1			1				
H	172 - 173	2501.502	15" RC SAFETY APRON		EACH	2					2		
G	171	2501.502	18" RC SAFETY APRON		EACH	2		2					
G	171	2501.503	18" CAS PIPE CULVERT		LIN FT	320		320					
G	171	2501.503	18" RC PIPE CULVERT DESIGN 3006 CLASS III		LIN FT	260		251					9
G	171	2501.503	24" RC PIPE CULVERT DESIGN 3006 CLASS III		LIN FT	300		300					
	165 - 167	2502.503	4" PERF TP PIPE DRAIN		LIN FT	450		450					
	143	2503.503	12" PVC PIPE SEWER		LIN FT	280							280
H	172 - 173	2503.503	15" RC PIPE SEWER DESIGN 3006 CLASS V		LIN FT	3307			1944		1363		
H	172 - 173	2503.503	18" RC PIPE SEWER DESIGN 3006 CLASS III		LIN FT	1012			1012				
H	172 - 173	2503.503	24" RC PIPE SEWER DESIGN 3006 CLASS III		LIN FT	2054			2054				
H	172 - 173	2503.503	30" RC PIPE SEWER DESIGN 3006 CLASS III		LIN FT	947			477		470		
H	172 - 173	2503.503	36" RC PIPE SEWER DESIGN 3006 CLASS III		LIN FT	267			267				
	143	2503.602	CONNECT TO EXISTING MANHOLES (SAN)		EACH	1							1
	143	2503.603	20" STEEL CASING PIPE		LIN FT	90							90
	143	2504.602	CONNECT TO EXISTING WATER MAIN		EACH	4							4
	143	2504.602	HYDRANT		EACH	4							4
A	8 - 9	2504.602	ADJUST HYDRANT AND GATE VALVE		EACH	1						1	
A	8 - 9	2504.602	ADJUST GATE VALVE AND BOX		EACH	2				2			
	143	2504.602	6" GATE VALVE AND BOX		EACH	4							4
	143	2504.603	6" WATERMAIN DUCTILE IRON CL 52		LIN FT	44							44
	143	2504.603	10" WATERMAIN DUCTILE IRON CL 52		LIN FT	170							170
	143	2504.603	16" STEEL CASING PIPE		LIN FT	150							150
H	172 - 173	2506.502	CASTING ASSEMBLY	(13)	EACH	70			50		18		2
A	8 - 9	2506.502	ADJUST FRAME AND RING CASTING		EACH	2		1					1
H	172 - 173	2506.503	CONSTRUCT DRAINAGE STRUCTURE DESIGN G		LIN FT	96			87		9		
H	172 - 173	2506.503	CONSTRUCT DRAINAGE STRUCTURE DESIGN 48-4020		LIN FT	324			223		101		
H	172 - 173	2506.503	CONSTRUCT DRAINAGE STRUCTURE DESIGN 60-4020		LIN FT	29			17		12		

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(P) DENOTES PLAN QUANTITY.

BASIS FOR QUANTITIES

UNIT WEIGHT OF BITUMINOUS MIX:
- 2360 MIX.....113 LBS/SY-IN

TACK COAT
- NEW PAVEMENT.....0.05 GAL/SY
- MILLED PAVEMENT.....0.085 GAL/SY

BITUMINOUS MATERIAL FOR FOG SEAL.....0.1 GAL/SY

AGGREGATE BASE.....1.8 TON/CU YD
SHOULDER BASE AGG CL 5 MOD.....1.8 TON/CU YD

EROSION CONTROL & TURF ESTABLISHMENT
- SEE TURF PLANS FOR RATES, VARIES BASED ON SEED MIX

NO.	DATE	BY	CHK	REVISIONS

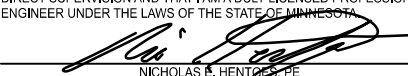
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NEH

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NICHOLAS E. HENTGES, PE

DATE: 9/12/2024

LICENSE NO. 44620



CSAH 30 (Forest Blvd) Improvements

Chisago County, Minnesota

CHISAGO COUNTY, MINNESOTA	
ESTIMATED QUANTITIES	
SAP 013-630-021 / SAP 225-591-007 / SAP 225-102-004	

SHEET

5

OF

216

SHEETS

DATE: 9/12/2024 3:53:05 PM
PATH & FILENAME: Projects\Minnesota\023661-000\03_Discipline\Roadway\Sheets\023661-000_est

STATEMENT OF ESTIMATED QUANTITIES													
TAB	SHEET	ITEM NUMBER	DESCRIPTION	NOTES	UNITS	PROJECT TOTAL	SAP 013-630-021			50% SAP 013-630-021 50% SAP 225-102-004		SAP 225-591-007	CITY LOCAL FUNDS
							ROADWAY		STORM SEWER	ROADWAY	STORM SEWER	SAFE ROUTES TO SCHOOL	
							RECONDITIONING	RECONSTRUCTION					
A	8 - 9	2506.602	ADJUST FRAME AND RING CASTING (SPECIAL)		EACH	2		1		1			
	143	2506.603	CONSTRUCT DRAINAGE STRUCTURE DESIGN SPECIAL	(10)	LIN FT	11							10.5
A	8 - 9	2506.603	RECONSTRUCT DRAINAGE STRUCTURE SPECIAL		LIN FT	6.2							6.2
M	BR1	2511.504	GEOTEXTILE FILTER TYPE 7		SQ YD	398			398				
M	BR1	2511.507	RANDOM RIPRAP CLASS I		CU YD	7			7				
G, H	171 - 173	2511.507	RANDOM RIPRAP CLASS II	(1)	CU YD	62.8		35.8	18.8		8		
M	BR1	2511.507	RANDOM RIPRAP CLASS III		CU YD	400			400				
C	11	2521.518	4" CONCRETE WALK		SQ FT	19101		485		14310		3546	760
C	11	2521.518	7" CONCRETE WALK	(8)	SQ FT	3525				3525			
B	10	2521.518	3" BITUMINOUS WALK		SQ FT	49336				11408		37928	
C	11	2521.602	DRILL AND GROUT REINF BAR (EPOXY COATED)	(7)	EACH	93				33		60	
C	11	2521.618	CONCRETE CURB RAMP WALK		SQ FT	4449		528		1619		2302	
C	11	2531.503	CONCRETE CURB AND GUTTER DESIGN B612		LIN FT	270		163					107
C	11	2531.503	CONCRETE CURB AND GUTTER DESIGN B624		LIN FT	9892		9004		286		32	570
C	11	2531.503	CONCRETE CURB AND GUTTER DESIGN R424		LIN FT	374				374			
C	11	2531.503	CONCRETE CURB AND GUTTER DESIGN S524		LIN FT	3687				3687			
E	13	2531.504	6" CONCRETE DRIVEWAY PAVEMENT		SQ YD	340		340					
E	13	2531.504	8" CONCRETE DRIVEWAY PAVEMENT		SQ YD	628		503					125
C	11	2531.618	TRUNCATED DOMES		SQ FT	580				160		420	
	133 - 137	2540.602	INSTALL MAIL BOX SUPPORT	(5)	EACH	14		8		2			4
L	213	2545.502	LIGHTING UNIT TYPE 9-30		EACH	11				11			
	134 - 138	2545.502	LIGHT FOUNDATION DESIGN E		EACH	6		5		1			
L	213	2545.502	LIGHT FOUNDATION DESIGN STEEL E		EACH	11				11			
L	213	2545.502	SERVICE CABINET -TYPE L1		EACH	1				1			
L	213	2545.502	SERVICE EQUIPMENT		EACH	1				1			
L	213	2545.502	EQUIPMENT PAD B		EACH	1				1			
L	213	2545.503	2" NON-METALLIC CONDUIT		LIN FT	1500				1500			
L	213	2545.503	UNDERGROUND WIRE 1/C 8 AWG		LIN FT	6500				6500			
	134 - 138	2545.602	INSTALL LIGHTING UNIT		EACH	6		5		1			
G, H	171 - 173	2554.502	GUIDE POST TYPE B	(11)	EACH	21		13	4		4		
	136	2557.503	WIRE FENCE DESIGN 48V-9322		LIN FT	50		50					
		2563.601	TRAFFIC CONTROL	(12)	LUMP SUM	1	0.06	0.48	0.19	0.13	0.04	0.05	0.05
		2563.613	PORTABLE CHANGEABLE MESSAGE SIGN		UNIT DAY	100		100					
		2563.618	CONSTRUCTION SIGN SPECIAL	(14)	SQ FT	7		7					
I	190 - 191	2564.602	INSTALL SIGN		EACH	5		5					
J	192	2564.602	INSTALL SIGN SPECIAL		EACH	7		7					
J	192	2564.602	INSTALL SIGN PANEL SPECIAL		EACH	3		3					
I	190 - 191	2564.602	DELINEATOR / MARKER		EACH	3		1		2			
I	190 - 191	2564.602	DELINEATOR / MARKER PANEL		EACH	13		6		4			3

- NOTES
- (1) GEOTEXTILE FILTER TYPE 4 IS INCIDENTAL.

(2) TO BE USED FOR GROUNDWATER LOWERING AS NECESSARY FOR ANY GRADING, EXCAVATION AND UTILITY CONSTRUCTION.

(3) BITUMINOUS PAVEMENT OVER CONCRETE PAVEMENT. SEE CONSTRUCTION NOTES CONSTRUCTION PLAN & PROFILE, AND CROSS SECTIONS FOR MORE DETAILS.

(4) SEE GEOTECHNICAL REPORT FOR INPLACE PAVEMENT THICKNESSES.

(5) CONTRACTOR IS RESPONSIBLE FOR COORDINATION OF TEMPORARY MAIL SERVICE AND FINAL MAIL BOX PLACEMENT (INCIDENTAL).

(6) TO BE USED FOR DUST CONTROL AND/OR AS DIRECTED BY THE ENGINEER.

(7) TO BE USED IN PEDESTRIAN RAMP LANDINGS PER MNDOT STANDARD PLAN 5-297.250 (SHEET 6 OF 6).

(8) SEE MISCELLANEOUS DETAILS FOR CONCRETE TRUCK APRON DETAILS.

(9) REFER TO THE BR1 THRU BR5 DETAILS IN THE PLAN SET.

(10) SANITARY STRUCTURE TO BE 48" IN DIAMETER.

(11) CYLINDER STYLE DELINEATORS TYPE X4 - 3 SHALL BE INSTALLED ON ALL GUIDE POSTS (INCIDENTAL).

(12) TRAFFIC CONTROL ITEM INCLUDES ANY AND ALL COSTS NECESSARY FOR CONTRACTOR TO STAGE AND CONSTRUCT PROJECT.

(13) 2 CASTING ASSEMBLIES TO BE USED FOR THE SANITARY SEWER STRUCTURES. 69 CASTINGS TO BE USED FOR STORM SEWER STRUCTURES.

(14) TO BE USED FOR TEMPORARY ADDRESS SIGNS.

(15) TO BE USED IF EXISTING TRAFFIC LOOPS ARE DAMAGED DURING CONSTRUCTION.

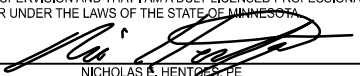
(P) DENOTES PLAN QUANTITY.

BASIS FOR QUANTITIES	
UNIT WEIGHT OF BITUMINOUS MIX: - 2360 MIX.....113 LBS/SY-IN	
TACK COAT - NEW PAVEMENT.....0.05 GAL/SY - MILLED PAVEMENT.....0.085 GAL/SY	
BITUMINOUS MATERIAL FOR FOG SEAL.....0.1 GAL/SY	
AGGREGATE BASE.....1.8 TON/CU YD SHOULDER BASE AGG CL 5 MOD.....1.8 TON/CU YD	
EROSION CONTROL & TURF ESTABLISHMENT - SEE TURF PLANS FOR RATES, VARIES BASED ON SEED MIX	

NO.	DATE	BY	CHK	REVISIONS

Design By:	NEH
Plan By:	MKV
Checked By:	MAN
Approved By:	NEH

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CSAH 30 (Forest Blvd) Improvements
Chisago County, Minnesota

CHISAGO COUNTY, MINNESOTA

ESTIMATED QUANTITIES
SAP 013-630-021 / SAP 225-591-007 / SAP 225-102-004

SHEET 6 OF 216 SHEETS

DATE: 9/12/2024 3:53:06 PM
PATH & FILENAME: Projects\Minnesota\023661-000\03_Discipline\Roadway\Sheets\023661-000_est

STATEMENT OF ESTIMATED QUANTITIES													
TAB	SHEET	ITEM NUMBER	DESCRIPTION	NOTES	UNITS	PROJECT TOTAL	SAP 013-630-021			50% SAP 013-630-021 50% SAP 225-102-004		SAP 225-591-007	CITY LOCAL FUNDS
							ROADWAY		STORM SEWER	ROADWAY	STORM SEWER	SAFE ROUTES TO SCHOOL	
							RECONDITIONING	RECONSTRUCTION					
							QUANTITY	QUANTITY	QUANTITY	QUANTITY	QUANTITY	QUANTITY	QUANTITY
I	190 - 191	2564.618	SIGN		SQ FT	682		441		173			68
	209	2565.602	RIGID PVC LOOP DETECTOR 6'X6'	(15)	EACH	9		9					
	215 - 216	2565.616	PEDESTRIAN CROSSWALK FLASHER SYSTEM		SYSTEM	3		1		1			1
		2573.501	STABILIZED CONSTRUCTION EXIT		LUMP SUM	1		1					
		2573.501	EROSION CONTROL SUPERVISOR		LUMP SUM	1		1					
D	12	2573.502	STORM DRAIN INLET PROTECTION		EACH	78		58		16			4
D	12	2573.502	CULVERT END CONTROLS		EACH	17		9			8		
D	12	2573.503	SILT FENCE, TYPE MS		LIN FT	8278		6915		474		889	
D	12	2573.503	SEDIMENT CONTROL LOG TYPE STRAW		LIN FT	3678		2078		729		597	274
M	BR1	2573.602	TEMPORARY STREAM DIVERSION SYSTEM		EACH	1			1				
D	12	2574.508	FERTILIZER TYPE 1		POUND	2270		1782		397			91
D	12	2574.508	FERTILIZER TYPE 3		POUND	1114		542		154		404	14
D	12	2575.504	RAPID STABILIZATION METHOD 4		SQ YD	31170		24484				5450	1236
D	12	2575.505	SEEDING		ACRE	12.3		8		1.9		1.8	0.6
D	12	2575.505	DISK ANCHORING		ACRE	8.4		6.4		1.5			0.5
D	12	2575.508	HYDRAULIC STABILIZED FIBER MATRIX		POUND	9445		4609		1306		3420	110
D	12	2575.509	MULCH MATERIAL TYPE 3		TON	12.4		9.7		2.2			0.5
D	12	2575.523	RAPID STABILIZATION METHOD 3		M GALLON	22		11		3		8	1
D	12	2575.608	SEED TURFGRASS		POUND	645		314		89		234	8
D	12	2575.608	SEED MESIC INSLOPE		POUND	648		441		105		80	22
K	192	2582.503	4" SOLID LINE PAINT		LIN FT	9597	3065	6532					
K	192	2582.503	6" SOLID LINE PAINT		LIN FT	44609	25698	18911					
K	192	2582.503	24" SOLID LINE PAINT		LIN FT	545		503					42
K	192	2582.503	4" BROKEN LINE PAINT		LIN FT	3950	2610	1340					
K	192	2582.503	6" DOTTED LINE PAINT		LIN FT	37		37					
K	192	2582.503	10" DOTTED LINE PAINT		LIN FT	88	88						
K	192	2582.503	4" DOUBLE SOLID LINE PAINT		LIN FT	6680		5904					776
K	192	2582.503	4" SOLID LINE PAINT GROUND IN (WR)		LIN FT	2869		1089		1543			237
K	192	2582.503	6" SOLID LINE PAINT GROUND IN (WR)		LIN FT	3856		1815		2041			
K	192	2582.503	6" DOTTED LINE PAINT GROUND IN (WR)		LIN FT	46		23		23			
K	192	2582.503	12" DOTTED LINE PREFORM THERMO GROUND IN		LIN FT	86				43			43
K	192	2582.518	PAVEMENT MESSAGE PAINT		SQ FT	1105	79	995		31			
K	192	2582.518	CROSSWALK PREFORM THERMOPLASTIC		SQ FT	474		474					
K	192	2582.518	CROSSWALK PREFORM THERMOPLASTIC GROUND IN		SQ FT	360				180			180

- NOTES
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- 2360 MIX.....	113 LBS/SY-IN
TACK COAT	
- NEW PAVEMENT.....	0.05 GAL/SY
- MILLED PAVEMENT.....	0.085 GAL/SY
BITUMINOUS MATERIAL FOR FOG SEAL.....	
	0.1 GAL/SY
AGGREGATE BASE.....	
	1.8 TON/CU YD
SHOULDER BASE AGG CL 5 MOD.....	
	1.8 TON/CU YD
EROSION CONTROL & TURF ESTABLISHMENT	
- SEE TURF PLANS FOR RATES, VARIES BASED ON SEED MIX	

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DATE: 9/12/2024
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CSAH 30 (Forest Blvd) Improvements
Chisago County, Minnesota

CHISAGO COUNTY, MINNESOTA	
ESTIMATED QUANTITIES	
SAP 013-630-021 / SAP 225-591-007 / SAP 225-102-004	

SHEET
7
OF
216
SHEETS

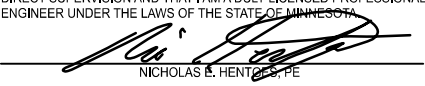
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REMOVALS TABULATION														A
LOCATION	CLEARING	GRUBBING	CLEARING	GRUBBING	REMOVE BITUMINOUS PAVEMENT	REMOVE BITUMINOUS DRIVEWAY PAVEMENT	REMOVE CONCRETE DRIVEWAY PAVEMENT	REMOVE PAVEMENT	MILL BITUMINOUS SURFACE (2.0")	REMOVE CONCRETE WALK	REMOVE BITUMINOUS WALK	REMOVE CURB AND GUTTER	SAWING BIT PAVEMENT (FULL DEPTH)	SAWING CONC PAVEMENT (FULL DEPTH)
	ACRE	ACRE	EACH	EACH	SQ YD	SQ YD	SQ YD	SQ YD	SQ YD	SQ FT	SQ FT	LIN FT	LIN FT	LIN FT
SAP 013-630-021														
CSAH 30														
STA 1454+81.68 TO STA 1462+00									2223					
STA 1462+00 TO STA 1473+00									2934					
STA 1473+00 TO STA 1484+00									2934					
STA 1484+00 TO STA 1495+00									2934					
STA 1495+00 TO STA 1506+00									2934					
STA 1506+00 TO STA 1517+00									2934					
STA 1517+00 TO STA 1528+00									4774					
STA 1528+00 TO STA 1539+00									3336					
STA 1539+00 TO STA 1550+00									3266					
STA 1550+00 TO STA 1561+00									2934					
STA 1561+00 TO STA 1572+00									2934					
STA 1572+00 TO STA 1582+20									2726					
TOTAL RECONDITIONING SAP 013-630-021									36863					
STA 1582+20 TO STA 1594+00					4603			1759					40	72
STA 1594+00 TO STA 1605+00					4650			1200					25	18
STA 1605+00 TO STA 1613+73					3929	53		728					15	24
STA 1622+85 TO STA 1627+00	0.1	0.1			2590		431	80				70	40	125
STA 1627+00 TO STA 1639+00					6070	312		282					77	168
STA 1639+00 TO STA 1651+00					5729			775					32	216
STA 1651+00 TO STA 1663+00					3541	175		2667				236	55	24
STA 1663+00 TO STA 1673+17.56					780			694	3974	237		696	292	24
SUBTOTAL RECONSTRUCTION	0.1	0.1			31892	540	431	8185	3974	237		1002	576	671
SIDE STREETS														
362ND ST														
STA 101+23.92 TO STA 102+94														
364TH ST														
STA 119+57 TO STA 201+26.54														
372ND ST														
STA 299+60 TO STA 300+23.68					141								25	
375TH ST													25	
STA 399+60.04 TO STA 401+25														
376TH ST														
STA 499+65 TO STA 501+30.52														
382ND ST														
STA 599+61 TO STA 601+30.70													22	
SUBTOTAL SIDE STREETS RECONSTRUCTION					141								72	
TOTALRECONSTRUCTION SAP 013-630-021	0.1	0.1			32033	540	431	8185	3974	237		1002	648	671
SAP 013-630-021 / SAP 225-102-004 (50/50)														
1613+73 TO 1616+00					594			616			994			
1616+00 TO 1618+75	0.5	0.5	1	1	1065			693			5546			
1618+75 TO 1622+85					1202			1037			3495			24
TOTAL SAP 013-630-021 / SAP 225-102-004 (50/50)	0.5	0.5	1	1	2861			2346			10035			24
SRTS: SAP 225-591-007														
TRAIL														
STA 800+00.00 TO STA 803+37.96			6	6		161						78	70	
CSAH 30														
STA 205+48.38 TO 209+01.30			1	1										
STA 209+01.30 TO STA 221+02.28			7	7										
STA 221+02.28 TO STA 233+05.61	0.1	0.1	7	7										
STA 233+05.61 TO STA 245+06.61			20	20										
STA 245+06.61 TO STA 251+16.39			9	9										
TOTAL SAP 225-591-007	0.1	0.1	50	50		161						78	70	
CITY LOCAL FUNDS														
377TH ST														
STA 101+53.82 TO STA 102+82						9				733				
STA 105+78 TO STA 107+64.69					575								40	
CSAH 30														
STA 101+53.82 TO STA 102+82												40		
TOTAL CITY LOCAL FUNDS					575	9				733		40	40	
TOTAL	0.7	0.7	51	51	35469	710	431	10531	40837	970	10035	1120	758	695

NOTES:
- SAWING OF EXISTING CURB AND GUTTER, CONCRETE WALK, AND BITUMINOUS TRAILS IS INCIDENTAL.
- SEE GEOTECHNICAL REPORT FOR INPLACE BITUMINOUS AND CONCRETE PAVEMENT THICKNESS

NO.	DATE	BY	CHK	REVISIONS

Design By:
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Plan By:
MKV
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QUANTITY TABULATIONS
SAP 013-630-021 / SAP 225-591-007 / SAP 225-102-004

SHEET
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216
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DATE: 9/12/2024 1:58:43 PM
PATH & FILENAME: Projects\Minnesota\023661-000\03_Discipline\Roadway\Sheets\023661-000_Tab

REMOVALS TABULATION															A
LOCATION	REMOVE PIPE CULVERTS	RECONSTRUCT DRAINAGE STRUCTURE SPECIAL	REMOVE WATERMAIN	REMOVE STEEL CASING	REMOVE GUARDRAIL - PLATE BEAM	REMOVE TENSION CABLE GUARDRAIL	ADJUST FRAME & RING CASTING	ADJUST FRAME & RING CASTING (SPECIAL)	SALVAGE MAILBOX SUPPORT	SALVAGE LIGHTING UNIT	REMOVE LIGHT FOUNDATION	ADJUST GATE VALVE AND BOX	ADJUST HYDRANT & GATE VALVE	REMOVE HYDRANT	REMOVE GATE VALVE AND BOX
	LIN FT	LIN FT	LIN FT	LIN FT	LIN FT	LIN FT	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH
SAP 013-630-021															
CSAH 30															
STA 1454+81.68 TO STA 1462+00															
STA 1462+00 TO STA 1473+00															
STA 1473+00 TO STA 1484+00															
STA 1484+00 TO STA 1495+00															
STA 1495+00 TO STA 1506+00															
STA 1506+00 TO STA 1517+00															
STA 1517+00 TO STA 1528+00															
STA 1528+00 TO STA 1539+00															
STA 1539+00 TO STA 1550+00															
STA 1550+00 TO STA 1561+00															
STA 1561+00 TO STA 1572+00															
STA 1572+00 TO STA 1582+20															
TOTAL RECONDITIONING SAP 013-630-021															
STA 1582+20 TO STA 1594+00	229								2						
STA 1594+00 TO STA 1605+00	208								1						
STA 1605+00 TO STA 1613+73									1						
STA 1622+85 TO STA 1627+00	194														
STA 1627+00 TO STA 1639+00	116								2						
STA 1639+00 TO STA 1651+00					465					1	1				
STA 1651+00 TO STA 1663+00	32					435			1	3	3				
STA 1663+00 TO STA 1673+17.56	27					70	1	1		1	1				
SUBTOTAL RECONSTRUCTION	806				465	505	1	1	7	5	5				
SIDE STREETS															
362ND ST															
STA 101+23.92 TO STA 102+94															
364TH ST															
STA 119+57 TO STA 201+26.54															
372ND ST															
STA 299+60 TO STA 300+23.68															
375TH ST									1						
STA 399+60.04 TO STA 401+25															
376TH ST															
STA 499+65 TO STA 501+30.52															
382ND ST															
STA 599+61 TO STA 601+30.70															
SUBTOTAL SIDE STREETS RECONSTRUCTION									1						
TOTALRECONSTRUCTION SAP 013-630-021	806				465	505	1	1	8	5	5				
SAP 013-630-021 / SAP 225-102-004 (50/50)															
1613+73 TO 1616+00									2						
1616+00 TO 1618+75	108							1		1	1	2		2	2
1618+75 TO 1622+85															
TOTAL SAP 013-630-021 / SAP 225-102-004 (50/50)	108							1	2	1	1	2		2	2
SRTS: SAP 225-591-007															
TRAIL															
STA 800+00.00 TO STA 803+37.96															
CSAH 30															
STA 205+48.38 TO 209+01.30														1	1
STA 209+01.30 TO STA 221+02.28															
STA 221+02.28 TO STA 233+05.61															
STA 233+05.61 TO STA 245+06.61													1		
STA 245+06.61 TO STA 251+16.39														1	1
TOTAL SAP 225-591-007													1	2	2
CITY LOCAL FUNDS															
377TH ST															
STA 101+53.82 TO STA 102+82															
STA 105+78 TO STA 107+64.69		6.2	110	100					4						
377TH ST															
STA 101+53.82 TO STA 102+82							1								
TOTAL CITY LOCAL FUNDS		6.2	110	100			1		4						
TOTAL	914	6.2	110	100	465	505	2	2	14	6	6	2	1	4	4

NO.	DATE	BY	CHK	REVISIONS

Design By:	NEH
Plan By:	MKV
Checked By:	MAN
Approved By:	NEH

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	NICHOLAS E. HENTGES, PE
DATE: 9/12/2024	LICENSE NO. 44620



CSAH 30 (Forest Blvd) Improvements
Chisago County, Minnesota

CHISAGO COUNTY, MINNESOTA

QUANTITY TABULATIONS
SAP 013-630-021 / SAP 225-591-007 / SAP 225-102-004

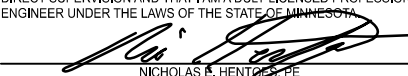
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BITUMINOUS & AGGREGATE TABULATION									B
LOCATION	3" BITUMINOUS WALK	TYPE SP 12.5 NON-WEARING COURSE MIX (SPNWB330B)	TYPE SP 12.5 WEARING COURSE MIX (SPWEB340C)	TYPE SP 12.5 NON-WEARING COURSE MIX (SPNWB430F)	TYPE SP 12.5 WEARING COURSE MIX (SPWEB440F)	AGGREGATE BASE (CV) CLASS 5	BITUMINOUS MATERIAL FOR FOG SEAL	BITUMINOUS MATERIAL FOR TACK COAT	SHOULDER BASE AGGREGATE CLASS 5 MOD
	SQ FT	TONS	TONS	TONS	TONS	CU YD	GAL	GAL	TONS
CHISAGO COUNTY SAP 013-630-021									
CSAH 30									
STA 1454+81.68 TO STA 1462+00			263				114	199	
STA 1462+00 TO STA 1473+00			349				206	263	
STA 1473+00 TO STA 1484+00			349				206	263	
STA 1484+00 TO STA 1495+00			349				206	263	
STA 1495+00 TO STA 1506+00			349				206	263	
STA 1506+00 TO STA 1517+00			349				206	263	
STA 1517+00 TO STA 1528+00			581				67	437	
STA 1528+00 TO STA 1539+00			406				171	306	
STA 1539+00 TO STA 1550+00			394				179	298	
STA 1550+00 TO STA 1561+00			349				206	263	
STA 1561+00 TO STA 1572+00			349				206	263	
STA 1572+00 TO STA 1582+20			326				190	245	
TOTAL RECONDITIONING SAP 013-630-021			4413				2163	3326	
STA 1582+20 TO STA 1594+00		652	1698			1349		1040	124
STA 1594+00 TO STA 1605+00		707	1733			1357		1080	129
STA 1605+00 TO STA 1613+73		558	1373			1128		855	102
STA 1622+85 TO STA 1627+00		284	568			559		377	
STA 1627+00 TO STA 1639+00		785	1570			1283		1043	
STA 1639+00 TO STA 1651+00		834	1668			1386		1107	
STA 1651+00 TO STA 1663+00		793	1585			1307		1053	
STA 1663+00 TO STA 1673+17.56		186	841			369		601	
SUBTOTAL RECONSTRUCTION		4799	11036			8738		7156	355
SIDE STREETS									
362ND ST									
STA 101+23.92 TO STA 102+94									
364TH ST									
STA 199+57 TO STA 201+26.54									
372ND ST									
STA 299+60 TO STA 300+23.68			36			31		15	5
375TH ST									
STA 399+60.04 TO STA 401+25			108			95		44	17
376TH ST									
STA 499+65 TO STA 501+30.52			124			108		50	2
382ND ST									
STA 599+61 TO STA 601+30.70			135			118		54	
SUBTOTAL SIDE STREETS RECONSTRUCTION			403			352		163	24
TOTAL RECONSTRUCTION SAP 013-630-021		4799	11439			9090		7319	379
SAP 013-630-021 / SAP 225-102-004 (50/50)									
1613+73 TO 1616+00	1081	99	197			270		132	
1616+00 TO 1618+75	4365			239	477	712			
1618+75 TO 1622+85	5962	204	408			648		271	
TOTAL SAP 013-630-021 / SAP 225-102-004 (50/50)	11408	303	605	239	477	1630		403	
SRTS: SAP 225-591-007									
WALK									
STA 800+00.00 TO STA 803+37.96						41			
TRAIL									
STA 205+48.38 TO 209+01.30	2827					54			
STA 209+01.30 TO STA 221+02.28	12114					227			
STA 221+02.28 TO STA 233+05.61	9547					185			
STA 233+05.61 TO STA 245+06.61	10931					214			
STA 245+06.61 TO STA 251+16.39	2509					53			
TOTAL SAP 225-591-007	37928					774			
CITY LOCAL FUNDS									
377TH ST									
STA 101+53.82 TO STA 102+82			184			182		73	
STA 105+78 TO STA 107+64.69			121			134		49	
TOTAL CITY LOCAL FUNDS			305			316		122	
TOTAL	49336	5102	16762	239	477	11810	2163	11170	379

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Chisago County, Minnesota

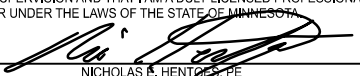
CHISAGO COUNTY, MINNESOTA
QUANTITY TABULATIONS SAP 013-630-021 / SAP 225-591-007 / SAP 225-102-004

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CONCRETE									C
LOCATION	CURB AND GUTTER DESIGN B624	CURB AND GUTTER DESIGN B612	CURB AND GUTTER DESIGN R424	CURB AND GUTTER DESIGN S524	4" CONCRETE WALK	CONCRETE CURB RAMP WALK	7" CONCRETE WALK	DRILL & GROUT REINFORCEMENT BARS (EPOXY COATED)	TRUNCATED DOMES
	LIN FT	LIN FT	LIN FT	LIN FT	SQ FT	SQ FT	SQ FT	EACH	SQ FT
SAP 013-630-021									
CSAH 30									
STA 1582+20 TO STA 1594+00									
STA 1594+00 TO STA 1605+00									
STA 1605+00 TO STA 1613+73									
STA 1622+85 TO STA 1627+00	856	116				194			
STA 1627+00 TO STA 1639+00	2411								
STA 1639+00 TO STA 1651+00	2465	47			485	334			
STA 1651+00 TO STA 1663+00	2456								
STA 1663+00 TO STA 1673+17.56	816								
TOTALRECONSTRUCTION SAP 013-630-021	9004	163			485	528			
SAP 013-630-021 / SAP 225-102-004 (50/50)									
1613+73 TO 1616+00				896	2672	53			
1616+00 TO 1618+75	286		374	1193	4327	1531	3525	33	160
1618+75 TO 1622+85				1598	7311	35			
TOTAL SAP 013-630-021 / SAP 225-102-004 (50/50)	286		374	3687	14310	1619	3525	33	160
SRTS: SAP 225-591-007									
WALK									
STA 800+00.00 TO STA 803+37.96	32				1954	63		3	12
TRAIL									
STA 205+48.38 TO 209+01.30						97			20
STA 209+01.30 TO STA 221+02.28						185			40
STA 221+02.28 TO STA 233+05.61						622		30	128
STA 233+05.61 TO STA 245+06.61						839		9	144
STA 245+06.61 TO STA 251+16.39					1592	496		18	76
TOTAL SAP 225-591-007	32				3546	2302		60	420
CITY LOCAL FUNDS									
377TH ST									
STA 101+53.82 TO STA 102+82	317	82							
STA 105+78 TO STA 107+64.69	253				760				
CSAH 30									
STA 1622+85 TO STA 1627+00		25							
TOTAL CITY LOCAL	570	107			760				
TOTAL	9892	270	374	3687	19101	4449	3525	93	580

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CSAH 30 (Forest Blvd) Improvements
Chisago County, Minnesota

CHISAGO COUNTY, MINNESOTA
QUANTITY TABULATIONS SAP 013-630-021 / SAP 225-591-007 / SAP 225-102-004

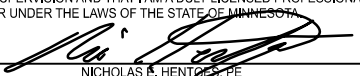
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TURF ESTABLISHMENT & EROSION CONTROL														D
LOCATION	SEEDING	DISK ANCHORING	SEED TURFGRASS	SEED MESIC INLSOPE RESIDENT/RURAL	FERTILIZER TYPE 3 22-5-10 RESIDENT/BLVD	FERTILIZER TYPE 1 20-10-20 RURAL INSLOPE	MULCH MATERIAL TYPE 3	HYDRAULIC STABILIZED FIBER MATRIX	RAPID STABILIZATION METHOD 3	RAPID STABILIZATION METHOD 4	STORM DRAIN INLET PROTECTION	CULVERT END CONTROLS	SILT FENCE, TYPE MS	SEDIMENT CONTROL LOG, TYPE STRAW
	ACRE	ACRE	POUND	POUND	POUND	POUND	TONS	POUND	MGAL	SQ YD	EACH	EACH	LIN FT	LIN FT
SAP 013-630-021														
CSAH 30														
STA 1582+20 TO STA 1594+00	0.9	0.9		58		306	1.6			4217		3	2596	952
STA 1594+00 TO STA 1605+00	1.3	1.3		73		389	2.1			5363		4	2031	215
STA 1605+00 TO STA 1613+73	1.0	1.0		59		312	1.7			4298		1	1414	320
STA 1622+85 TO STA 1627+00	0.6	0.4	50	35	86	97	0.5	734	1.5	1329	3			
STA 1627+00 TO STA 1639+00	1.5	0.7	160	90	279	203	1.1	2378	5.0	2789	12		159	159
STA 1639+00 TO STA 1651+00	1.0	0.7	53	59	92	222	1.2	778	2.0	3054	18	1	137	137
STA 1651+00 TO STA 1663+00	0.6	0.5	31	35	54	131	0.7	455	1.0	1797	12			
STA 1663+00 TO STA 1673+17.56	0.3	0.3	6	10	9	40	0.3	75	0.5	543	13			
SUBTOTAL RECONSTRUCTION	7.2	5.8	300	419	520	1700	9.2	4420	10	23390	58	9	6337	1783
SIDE STREETS														
372ND ST														
STA 299+60 TO STA 300+23.68	0.2	0.2		4		19	0.1			246			121	121
375TH ST														
STA 400+61.31 TO STA 403+23	0.2	0.2		6		27	0.2			365			316	
376TH ST														
STA 499+65 TO STA 501+30.52	0.2	0.2		7		36	0.2			483			141	174
382ND ST														
STA 403+00 TO STA 406+92	0.2		14.0	5	22			189	0.5					
SUBTOTAL SIDE STREETS RECONSTRUCTION	0.8	0.6	14.0	22	22	82	0.5	189	0.5	1094.0			578.0	295
TOTAL RECONSTRUCTION SAP 013-630-021	8	6.4	314	441	542	1782	9.7	4609	10.5	24484	58	9	6915	2078
SAP 013-630-021 / SAP 225-102-004 (50/50)														
1613+73 TO 1616+00	0.4	0.4		18.0		94	0.5			1279.0				
1616+00 TO 1618+75	0.7	0.7	13.0	41.0	22	196	1.1	182	0.5	2701.0	11			274
1618+75 TO 1622+85	0.8	0.4	76.0	46.0	132	107	0.6	1124	2.5	1470.0	5		474	455
TOTAL SAP 013-630-021 / SAP 225-102-004 (50/50)	1.9	1.5	89	105	154	397	2.2	1306	3.0	5450	16		474	729
SRTS: SAP 225-591-007														
WALK														
STA 800+00.00 TO STA 803+37.96	0.2		14	5	24			197	0.5					
TRAIL														
STA 205+48.38 TO 209+01.30	0.2		13	5	20			171	0.5			1		312
STA 209+01.30 TO STA 221+02.28	0.2		21	7	36			302	1.0			6		
STA 221+02.28 TO STA 233+05.61	0.6		110	37	192			1635	3.5				889	285
STA 233+05.61 TO STA 245+06.61	0.4		59	20	102			867	2.0			1		
STA 245+06.61 TO STA 251+16.39	0.2		17	6	30			248	0.5					
TOTAL SAP 225-591-007	1.8		234	80	404			3420	8.0			8	889	597
CITY LOCAL FUNDS														
377TH ST														
STA 101+53.82 TO STA 102+82	0.4	0.3	8	18	14	77	0.4	110	0.5	1061	2			
STA 105+78 TO STA 107+64.49	0.2	0.2		4		14	0.1			175	2			274
TOTAL CITY LOCAL	0.6	0.5	8	22	14	91	0.5	110	0.5	1236	4			274
TOTAL	12.3	8.4	645	648	1114	2270	12.4	9445	22	31170	78	17	8278	3678

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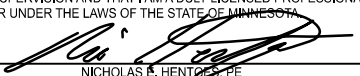
CHISAGO COUNTY, MINNESOTA
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DRIVEWAY TABULATION					E
LOCATION	TYPE SP 12.5 WEARING COURSE MIX (3,C) (SPWEB340C)	AGGREGATE BASE (CV) CLASS 5	SHOULDER BASE AGGREGATE CLASS 5 MOD	6" CONCRETE DRWY PAVEMENT	8" CONCRETE DRWY PAVEMENT
	TONS	CU YD	TONS	SY	SY
SAP 013-630-021					
CSAH 30					
STA 1582+20 TO STA 1594+00			22		
STA 1594+00 TO STA 1605+00			44		
STA 1605+00 TO STA 1613+73			49		
STA 1622+85 TO STA 1627+00		84			503
STA 1627+00 TO STA 1639+00	126	122		172	
STA 1639+00 TO STA 1651+00					
STA 1651+00 TO STA 1663+00	55	55		87	
STA 1663+00 TO STA 1673+17.56	13	23		81	
SUBTOTSUBTOTAL RECONSTRUCTIONAL	194	284	115	340	503
SIDE STREETS					
375TH ST					
STA 400+61.31 TO STA 403+23	34	26			
376TH ST					
STA 499+65 TO STA 501+30.52	26	20			
SUBTOTAL SIDE STREETS RECONSTRUCTION	60	46			
TOTALRECONSTRUCTION SAP 013-630-021	254	330	115	340	503
SRTS: SAP 225-591-007					
WALK					
STA 800+00.00 TO STA 803+37.96	36	27			
TOTAL SAP 225-591-007	36	27			
CITY LOCAL FUNDS					
377TH ST					
STA 101+53.82 TO STA 102+82					
STA 105+78 TO STA 107+64.49	29	21			
CSAH 30					
STA 1622+85 TO STA 1627+00					125
TOTAL CITY LOCAL	29	21			125
TOTAL	319	378	115	340	628

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EARTHWORK TABULATION				F
STATION	EXCAVATION		EMBANKMENT	
	COMMON	SUBGRADE	COMMON	SELECT GRANULAR (CV)
	(CU YD)	(CU YD)	(CU YD)	(CU YD)
SAP 013-630-021 - CSAH 30-1				
1582+00.00 TO 1583+00.00 R1	160	218	16	222
1583+00.00 R1 TO 1584+00.00 R1	135	277	31	286
1584+00.00 R1 TO 1585+00.00 R1	190	290	41	306
1585+00.00 R1 TO 1586+00.00 R1	198	295	45	326
1586+00.00 R1 TO 1587+00.00 R1	218	316	44	345
1587+00.00 R1 TO 1588+00.00 R1	190	329	28	333
1588+00.00 R1 TO 1589+00.00 R1	253	308	91	316
1589+00.00 R1 TO 1590+00.00 R1	320	309	51	316
1590+00.00 R1 TO 1591+00.00 R1	383	310	46	316
1591+00.00 R1 TO 1592+00.00 R1	430	314	48	316
1592+00.00 R1 TO 1593+00.00 R1	426	315	28	316
1593+00.00 R1 TO 1594+00.00 R1	374	315	27	316
1594+00.00 R1 TO 1595+00.00 R1	306	314	30	316
1595+00.00 R1 TO 1596+00.00 R1	258	310	51	316
1596+00.00 R1 TO 1597+00.00 R1	251	310	40	316
1597+00.00 R1 TO 1598+00.00 R1	190	296	80	338
1598+00.00 R1 TO 1599+00.00 R1	180	292	94	349
1599+00.00 R1 TO 1600+00.00 R1	158	292	91	349
1600+00.00 R1 TO 1601+00.00 R1	112	227	77	275
1601+00.00 R1 TO 1602+00.00 R1	109	164	62	207
1602+00.00 R1 TO 1603+00.00 R1	80	185	16	225
1603+00.00 R1 TO 1604+00.00 R1	113	162	81	207
1604+00.00 R1 TO 1605+00.00 R1	143	164	98	219
1605+00.00 R1 TO 1606+00.00 R1	154	162	102	241
1606+00.00 R1 TO 1607+00.00 R1	154	161	104	241
1607+00.00 R1 TO 1608+00.00 R1	139	161	98	228
1608+00.00 R1 TO 1609+00.00 R1	136	157	82	207
1609+00.00 R1 TO 1610+00.00 R1	131	179	47	198
1610+00.00 R1 TO 1611+00.00 R1	134	161	69	174
1611+00.00 R1 TO 1612+00.00 R1	161	312	40	316
SUBTOTAL CSAH 30-1	6186	7606	1758	8436
SAP 013-630-021 - CSAH 30-NB				
1612+00.00 TO 1613+00.00 R1	299	306	15	306
1613+00.00 R1 TO 1614+00.00 R1	418	294	32	297
1623+00.00 R1 TO 1624+00.00 R1	83	253	80	292
1624+00.00 R1 TO 1625+00.00 R1	95	229	103	293
1625+00.00 R1 TO 1626+00.00 R1	96	259	93	290
SUBTOTAL CSAH 30-NB	991	1341	323	1478

EARTHWORK TABULATION				F
STATION	EXCAVATION		EMBANKMENT	
	COMMON	SUBGRADE	COMMON	SELECT GRANULAR (CV)
	(CU YD)	(CU YD)	(CU YD)	(CU YD)
SAP 013-630-021 - CSAH 30-2				
1626+00.00 TO 1627+00.00 R1	72	134	86	152
1627+00.00 R1 TO 1628+00.00 R1	74	118	68	152
1628+00.00 R1 TO 1629+00.00 R1	83	122	80	152
1629+00.00 R1 TO 1630+00.00 R1	81	132	78	152
1630+00.00 R1 TO 1631+00.00 R1	80	120	64	170
1631+00.00 R1 TO 1632+00.00 R1	79	107	69	195
1632+00.00 R1 TO 1633+00.00 R1	74	106	62	196
1633+00.00 R1 TO 1634+00.00 R1	76	112	59	168
1634+00.00 R1 TO 1635+00.00 R1	85	120	89	152
1635+00.00 R1 TO 1636+00.00 R1	85	130	89	152
1636+00.00 R1 TO 1637+00.00 R1	83	150	71	160
1637+00.00 R1 TO 1638+00.00 R1	76	179	59	191
1638+00.00 R1 TO 1639+00.00 R1	80	147	63	196
1639+00.00 R1 TO 1640+00.00 R1	69	122	45	165
1640+00.00 R1 TO 1641+00.00 R1	193	202	120	292
1641+00.00 R1 TO 1642+00.00 R1	50	148	48	194
1642+00.00 R1 TO 1643+00.00 R1	44	126	45	152
1643+00.00 R1 TO 1644+00.00 R1	43	132	43	152
1644+00.00 R1 TO 1645+00.00 R1	43	124	45	152
1645+00.00 R1 TO 1646+00.00 R1	41	126	45	152
1646+00.00 R1 TO 1647+00.00 R1	47	122	45	172
1647+00.00 R1 TO 1648+00.00 R1	71	142	40	219
1648+00.00 R1 TO 1649+00.00 R1	84	140	49	240
1649+00.00 R1 TO 1650+00.00 R1	62	148	40	207
1650+00.00 R1 TO 1651+00.00 R1	47	141	38	193
1651+00.00 R1 TO 1652+00.00 R1	43	147	39	167
1652+00.00 R1 TO 1653+00.00 R1	54	145	45	185
1653+00.00 R1 TO 1654+00.00 R1	60	299	47	339
1654+00.00 R1 TO 1655+00.00 R1	91	311	48	339
1655+00.00 R1 TO 1656+00.00 R1	148	325	39	329
1656+00.00 R1 TO 1657+00.00 R1	234	296	45	296
1657+00.00 R1 TO 1658+00.00 R1	324	295	37	295
1658+00.00 R1 TO 1659+00.00 R1	385	295	25	295
1659+00.00 R1 TO 1660+00.00 R1	451	295	28	295
1660+00.00 R1 TO 1661+00.00 R1	497	295	29	295
1661+00.00 R1 TO 1662+00.00 R1	530	295	25	295
1662+00.00 R1 TO 1663+00.00 R1	531	288	27	295
1663+00.00 R1 TO 1664+00.00 R1	389	288	25	295
1664+00.00 R1 TO 1665+00.00 R1	183	288	33	295
1665+00.00 R1 TO 1666+00.00 R1	64	197	33	202
1666+00.00 R1 TO 1667+00.00 R1	44	81	21	81
1667+00.00 R1 TO 1668+00.00 R1	31	57	14	61
1668+00.00 R1 TO 1669+00.00 R1				
1669+00.00 R1 TO 1670+00.00 R1				
SUBTOTAL CSAH 30-2	5877	7547	2100	8837
SAP 013-630-021 - CSAH 30 TOTAL	13054	16494	4181	18751

NOTES:

1. THE EXCAVATION - COMMON QUANTITY INCLUDES TOPSOIL STRIPPING.
2. SEE THE GEOTECHNICAL REPORT FOR INPLACE BITUMINOUS AND CONCRETE PAVEMENT DEPTHS.
3. TOPSOIL PLACEMENT IS INCLUDED IN COMMON EMBANKMENT.
4. PLACING, HAULING AND DISPOSING OF EXCAVATED MATERIALS IS CONSIDERED INCIDENTAL.
5. ALL STOCKPILE AREAS SHALL BE APPROVED BY THE ENGINEER.
6. SOILS NOT USED ON THE PROJECT SHALL BECOME PROPERTY OF THE CONTRACTOR AND SHALL BE DISPOSED OF OUTSIDE OF THE RIGHT OF WAY. NO DIRECT COMPENSATION WILL BE PAID FOR THE PREPARATION OF AN ACCEPTABLE DISPOSAL PLAN OR FOR OFF-PROJECT DISPOSAL OF MATERIALS. DISPOSAL SITES SHALL BE LEFT IN A WELL GRADED CONDITION WITH ALL SOLID WASTES AND BOULDERS ADEQUATELY COVERED.
7. UNLESS DIRECTED OTHERWISE BY THE PROJECT ENGINEER, ANY MATERIAL THAT IS FOUND TO BE UNNECESSARY FOR THE CONSTRUCTION OF THE ROADWAY EMBANKMENT AND DISPOSAL OF SAME BECOMES NECESSARY, ON OR OFF THE PROJECT, THE DISPOSAL AND ALL RELATED ITEMS WILL BE CONSIDERED INCIDENTAL.

NO.	DATE	BY	CHK	REVISIONS

Design By:	NEH
Plan By:	MKV
Checked By:	MAN
Approved By:	NEH

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.	
	NICHOLAS E. HENTGES, PE
DATE: 9/12/2024	LICENSE NO. 44620



CSAH 30 (Forest Blvd) Improvements

Chisago County, Minnesota

CHISAGO COUNTY, MINNESOTA

EARTHWORK SUMMARY AND TABULATIONS

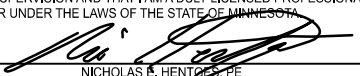
SAP 013-630-021 / SAP 225-591-007 / SAP 225-102-004

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EARTHWORK TABULATION				F
	EXCAVATION		EMBANKMENT	
STATION	COMMON	SUBGRADE	COMMON	SELECT GRANULAR (CV)
	(CU YD)	(CU YD)	(CU YD)	(CU YD)
SAP 013-630-021 / SAP 225-102-004 (50/50)				
1614+00.00 R1 TO 1615+00.00 R1	532	317	62	347
1615+00.00 R1 TO 1616+00.00 R1	682	290	114	327
1616+00.00 R1 TO 1617+00.00 R1	700	430	201	586
1617+00.00 R1 TO 1618+00.00 R1	631	670	206	1163
1618+00.00 R1 TO 1619+00.00 R1	479	516	166	743
1619+00.00 R1 TO 1620+00.00 R1	609	300	199	386
1620+00.00 R1 TO 1621+00.00 R1	502	331	119	448
1621+00.00 R1 TO 1622+00.00 R1	327	333	110	427
1622+00.00 R1 TO 1623+00.00 R1	188	323	101	367
TOTAL SAP 013-630-021 / SAP 225-102-004 (50/50)	4649	3510	1278	4794
CITY OF NORTH BRANCH - 377TH ST				
100+00.00 R1 TO 100+50.00 R1	122	126	18	129
100+50.00 R1 TO 101+00.00 R1	195	135	26	135
101+00.00 R1 TO 101+50.00 R1	254	139	24	139
101+50.00 R1 TO 102+00.00 R1	447	139	183	145
105+00.00 E1 TO 105+50.00 R1	50	127	17	128
105+50.00 R1 TO 106+00.00 R1	47	129	22	130
106+00.00 R1 TO 106+50.00 R1	20	51	9	53
377TH ST SUBTOTAL	1136	847	299	859
CITY OF NORTH BRANCH - 377TH ST				
1624+00.00 R1 TO 1625+00.00 R1	20		40	
CITY - TOTAL	1156	847	339	859
SAP 225-591-007 - SRTS TRAIL (CSAH 30 STATIONS)				
1623+50.00 R1 TO 1624+00.00 R1	28		66	
1624+00.00 R1 TO 1625+00.00 R1	93		210	
1625+00.00 R1 TO 1626+00.00 R1	134		57	
1626+00.00 R1 TO 1627+00.00 R1	102		66	
1627+00.00 R1 TO 1628+00.00 R1	135		38	
1628+00.00 R1 TO 1629+00.00 R1	106		36	
1629+00.00 R1 TO 1630+00.00 R1	64		30	
1630+00.00 R1 TO 1631+00.00 R1	90		26	
1631+00.00 R1 TO 1632+00.00 R1	73		28	
1632+00.00 R1 TO 1633+00.00 R1	51		65	
1633+00.00 R1 TO 1634+00.00 R1	66		83	
1634+00.00 R1 TO 1635+00.00 R1	60		86	
1635+00.00 R1 TO 1636+00.00 R1	64		82	
1636+00.00 R1 TO 1637+00.00 R1	82		64	
1637+00.00 R1 TO 1638+00.00 R1	106		45	
1638+00.00 R1 TO 1639+00.00 R1	58		96	
1639+00.00 R1 TO 1640+00.00 R1	70		52	

EARTHWORK TABULATION				F
	EXCAVATION		EMBANKMENT	
STATION	COMMON	SUBGRADE	COMMON	SELECT GRANULAR (CV)
	(CU YD)	(CU YD)	(CU YD)	(CU YD)
1640+00.00 R1 TO 1641+00.00 R1	73		741	
1641+00.00 R1 TO 1642+00.00 R1	67		453	
1642+00.00 R1 TO 1643+00.00 R1	50		303	
1643+00.00 R1 TO 1644+00.00 R1	52		324	
1644+00.00 R1 TO 1645+00.00 R1	73		529	
1645+00.00 R1 TO 1646+00.00 R1	72		501	
1646+00.00 R1 TO 1647+00.00 R1	65		426	
1647+00.00 R1 TO 1648+00.00 R1	61		410	
1648+00.00 R1 TO 1649+00.00 R1	51		264	
1649+00.00 R1 TO 1650+00.00 R1	45		106	
1650+00.00 R1 TO 1651+00.00 R1	48		286	
1651+00.00 R1 TO 1652+00.00 R1	57		187	
1652+00.00 R1 TO 1653+00.00 R1	51		307	
1653+00.00 R1 TO 1654+00.00 R1	55		348	
1654+00.00 R1 TO 1655+00.00 R1	48		252	
1655+00.00 R1 TO 1656+00.00 R1	35		64	
1656+00.00 R1 TO 1657+00.00 R1	56		60	
1657+00.00 R1 TO 1658+00.00 R1	38		50	
1658+00.00 R1 TO 1659+00.00 R1	36		48	
1659+00.00 R1 TO 1660+00.00 R1	62		34	
1660+00.00 R1 TO 1661+00.00 R1	67		85	
1661+00.00 R1 TO 1662+00.00 R1	62		103	
1662+00.00 R1 TO 1663+00.00 R1	97		14	
1663+00.00 R1 TO 1664+00.00 R1	77		16	
1664+00.00 R1 TO 1665+00.00 R1	46		107	
1665+00.00 R1 TO 1666+00.00 R1	28		80	
1666+00.00 R1 TO 1667+00.00 R1	34		6	
1667+00.00 R1 TO 1668+00.00 R1	31		8	
1668+00.00 R1 TO 1669+00.00 R1	30		7	
SRTS TRAIL - SUBTOTAL	2949		7249	
SAP 225-591-007 - SRTS WALK				
800+00.00 R1 TO 800+50.00 R1	29		4	
800+50.00 R1 TO 801+00.00 R1	28		6	
801+00.00 R1 TO 801+50.00 R1	28		5	
801+50.00 R1 TO 802+00.00 R1	13		4	
802+00.00 R1 TO 802+50.00 R1	10		4	
802+50.00 R1 TO 803+00.00 R1	15		3	
803+00.00 R1 TO 803+50.00 R1	8		2	
SRTS WALK - SUBTOTAL	131		28	
SAP 225-591-007 TOTAL	3080		7277	
PROJECT TOTAL	21939	20850	13075	24404

- NOTES:
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NO.	DATE	BY	CHK	REVISIONS	Design By: NEH	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.  NICHOLAS E. HENTGES, PE DATE: 9/12/2024 LICENSE NO. 44620			CSAH 30 (Forest Blvd) Improvements Chisago County, Minnesota	CHISAGO COUNTY, MINNESOTA		SHEET 15 OF 216 SHEETS
					Plan By: MKV					EARTHWORK SUMMARY AND TABULATIONS		
					Checked By: MAN					SAP 013-630-021 / SAP 225-591-007 / SAP 225-102-004		
					Approved By: NEH							

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CONSTRUCTION /SOILS NOTES	
GENERAL NOTES	
1	CONTRACTOR SHALL NOTIFY PROPERTY OWNERS 72 HOURS IN ADVANCE OF DISRUPTION OF ACCESS TO PROPERTY.
2	CONTRACTOR SHALL PROTECT ALL EXISTING UTILITIES AND PIPING NOT MARKED FOR REMOVAL AT ALL TIMES DURING CONSTRUCTION.
3	WHERE SURVEY CONTROL MONUMENTS OR IRONS ARE ENCOUNTERED, THE ENGINEER SHALL BE NOTIFIED BEFORE ANY SUCH ITEMS ARE REMOVED. THE CONTRACTOR SHALL CAREFULLY PRESERVE AND PROTECT ALL MONUMENTS AND IRONS UNTIL THE OWNER AND AUTHORIZED SURVEYOR OR AGENT HAS WITNESSED OR OTHERWISE REFERENCED THEIR LOCATION.
4	NO TREES OR SHRUBS ARE TO BE REMOVED WITHOUT BEING MARKED FOR REMOVAL BY THE ENGINEER.
5	THE CONTRACTOR SHALL VERIFY THE EXACT LOCATION AND ELEVATION OF ALL EXISTING UTILITIES PRIOR TO COMMENCING ANY EXCAVATION
GRADING, BASE AND SURFACE	
6	<u>GRADING GRADE</u> IS DEFINED AS THE BOTTOM OF THE AGGREGATE BASE LAYER.
7	<u>SELECT GRADING MATERIAL</u> ON THIS PROJECT, WHETHER OBTAINED LOCALLY OR FROM BORROW, SHALL CONSIST OF ALL SOILS EXCEPT TOPSOIL, DEBRIS, PEAT, MUCK, SILT, MARL AND ORGANIC OR OTHER UNSTABLE MATERIAL.
8	UNSUITABLE MATERIALS ARE MARL, SILT, SILTY LOAM, TOPSOILS, DEBRIS, PEAT, MUCK AND ORGANIC OR OTHER UNSTABLE SOILS. UNSUITABLE MATERIALS MAY NOT BE PLACED WITHIN A 1 (V):1.5(H) SLOPE DOWNWARD AND OUTWARD FROM THE GRADING EMBANKMENT PI OR ABOVE THE ELEVATION OF THE BOTTOM OF THE SELECT GRANULAR CORRECTION MATERIAL.
9	<u>SELECT GRANULAR MATERIAL</u> IS DEFINED AS MATERIAL MEETING THE REQUIREMENTS OF MNDOT SPEC. 3149.
10	STRIP SOD AND TOPSOIL FROM AREAS TO BE DISTURBED BY CONSTRUCTION AND REUSE AS SLOPE DRESSING. FOR ESTIMATING PURPOSES, 6" WAS USED.
11	ALL TOPSOIL STRIPPING WILL BE CONSIDERED TO BE EXCAVATION-COMMON.
12	IN FILL SECTIONS, TOPSOIL AND OTHER UNSUITABLE MATERIALS SHALL BE ELIMINATED FROM BENEATH THE ROAD CORE.
13	IN ANY PROPOSED WIDENING CONSTRUCTION, MATCH THE EXISING SOIL IN THE UPPER 5 FEET OF ROADWAYS TO BE WIDENED WITH SOIL OF A SIMILAR CLASS, COLOR, MOISTURE CONTENT AND, AND PERFORMANCE CHARACTERISTICS. GRANULAR MATERIALS SHALL NOT BE PLACED ADJACENT TO EXISTING NON-GRANULAR MATERIALS. CONSTRUCT WIDENING IN UNIFORM LIFTS.
14	EXCESS MATERIAL SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE REMOVED FROM THE PROJECT LIMITS.
15	THE CONTRACTOR'S PERSONNEL OR ANY OTHER PERSONNEL MAY NOT USE THE NEW ROAD SURFACE OR ROADBED FOR THE PURPOSE OF STOCKPILING AGGREGATE MATERIAL, OR ANY OTHER MATERIAL, WITHOUT APPROVAL OF THE ENGINEER.
16	THE BOTTOM OF ALL SUBCUTS SHALL BE SHAPED AND COMPACTED BY THE "QUALITY COMPACTION METHOD". THE CONTRACTOR SHALL USE A MINIMUM OF 4 PASSES OF AN APPROVED COMPACTION DEVICE.
17	COMPACTION OF ALL AGGREGATE BASE MATERIAL SHOULD BE IN ACCORDANCE WITH THE "PENETRATION INDEX METHOD" REQUIREMENTS.
18	COMPACTION OF ALL GRANULAR AND SELECT GRANULAR MATERIAL SHOULD BE IN ACCORDANCE WITH MNDOT "SPECIFIED DENSITY METHOD" REQUIREMENTS.
19	PROVIDE A 1V:20H ON LONGITUDINAL TAPERS AND A 1V:4H ON TRANSVERSE TAPERS BETWEEN CHANGES IN SUBGRADE AND SUBCUT DEPTHS.
20	AS A PRECAUTIONARY MEASURE FROM A SOILS STANDPOINT, TRAFFIC LANES TO BE USED DURING CONSTRUCTION MUST BE DELINEATED TO KEEP VEHICLES A SAFE DISTANCE AWAY FROM THE ADJACENT EXCAVATION. THE DELINEATION SHOULD COINCIDE WITH POINTS ESTABLISHED BY PROJECTING A 1(V):2(H) OR GREATER (FLATTER) SLOPE BETWEEN THE EDGE OF THE TRAFFIC SURFACE AND THE BOTTOM OF THE EXCAVATION.
21	TEST ROLLING WILL BE REQUIRED AS PER MNDOT SPEC. 2111.3 AND ON ALL SUBGRADE AND AGGREGATE BASE PORTIONS OF THE PERMANENT CONSTRUCTION. USE A TR10 AS SPECIFIED IN MNDOT SPEC. 2111.3.A.2. ALL TEST ROLLING CONSIDERED INCIDENTAL
22	COMPACTION OF ALL MAINLINE, SHOULDER, AND SIDE STREET BITUMINOUS PAVEMENTS SHALL BE THE "MAXIMUM DENSITY METHOD".
23	COMPACTION OF TRAIL, AND DRIVEWAY BITUMINOUS PAVEMENTS SHALL BE THE "ORDINARY COMPACTION METHOD".

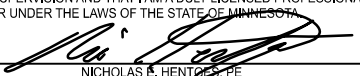
CONSTRUCTION /SOILS NOTES	
24	PAVEMENT SURFACE SMOOTHNESS WILL BE EVALUATED ON THIS PROJECT.
25	ALL PAVED DRIVEWAYS AND SIDE STREETS SHALL BE SAWCUT OR HAVE MILLED JOINT AT THE MATCH POINTS.
26	PROVIDE FOR A UNIFORM BITUMINOUS TACK COAT BETWEEN ALL BITUMINOUS COURSES. THE TACK COAT SHALL BE IN ACCORDANCE WITH MN/DOT SPECIFICATION 2357.
27	ALL GRADING SHALL BE SHAPED AND COMPACTED TO SEAL THE SURFACE AND PROVIDE DRAINAGE AT THE END OF EACH WORKING DAY. ALL EROSION AND SEDIMENT CONTROL BMPs ARE TO BE IN GOOD CONDITION AT THE END OF EACH WORKING DAY.
28	ALL TRENCHING, EXCAVATION, BACKFILLING, AND COMPACTION FOR CONSTRUCTING STORM CULVERTS WILL BE INCIDENTAL AND PERFORMED AS SPECIFIED.
REMOVALS	
29	EROSION CONTROL MEASURES ARE TO BE IN PLACE PRIOR TO REMOVAL AND/OR RECLAMATION OF EXISTING BITUMINOUS MATERIAL.
30	TEMPORARY EROSION CONTROL DEVICES AND THEIR SUGGESTED LOCATIONS ALONG WITH PAY ITEMS FOR THEIR USE DOES NOT RELIEVE THE CONTRACTOR OF THEIR RESPONSIBILITIES TO CONDUCT CONSTRUCTION IN A MANNER THAT WILL SUFFICIENTLY CONTROL EROSION. RESPONSIBILITIES FOR CONTROL OF EROSION ARE SET FORTH IN MNDOT SPEC. 1717, 1803, 2101, 2106, 2573, 2575 AND AS AMENDED BY THE SPECIAL PROVISIONS.
31	THE EXISTING PAVEMENT THICKNESSES ARE ASSUMED AS FOLLOWS: CSAH 30: 4" - 9" BITUMINOUS PAVEMENT OVER 6" - 8" OF AGGREGATE BASE. 7" CONCRETE PAVEMENT LOCATED ALONG CSAH 30 THAT RANGES IN DEPTHS OF OVER 2' TO DIRECTLY UNDER THE BITUMINOUS PAVEMENT. SEE TYPICAL SECTIONS, PROFILES AND CROSS SECTIONS FOR MORE DETAIL. THE ABOVE INFORMATION WAS TAKEN FROM THE PROJECT GROUND PENETRATING RADAR EVALUATION THAT IS PROVIDED IN THE PROJECT MANUAL. NO GUARANTEE IS MADE TO THE EXACT PAVEMENT THICKNESSES. THE CONTRACTOR SHALL INVESTIGATE AND MAKE THEIR OWN DETERMINATION OF THE EXISTING PAVMENT THICKNESS. (INFORMATION WAS TAKEN FROM THE PROJECT SOILS BORINGS AND/OR RECORD DRAWINGS)
TURF ESTABLISHMENT	
32	FAILURE TO PROPERLY INSTALL, REMOVE SEDIMENT, OR MAINTAIN EROSION CONTROL DEVICES MAY RESULT IN A DEDUCTION TO THE CONTRACTOR. SEE PROJECT SPECIFICATIONS 1717 FOR MORE DETAILS.
33	PLACE A MINIMUM OF 6 INCHES OF TOPSOIL ON ALL AREAS SCHEDULED FOR PERMANENT TURF ESTABLISHMENT.
34	PERMANENT TURF ESTABLISHMENT SHALL BE CONSTRUCTED USING TYPICAL CONSTRUCTION REQUIREMENTS. SEE TURF ESTABLISHMENT PLANS FOR TURF ESTABLISHMENT TYPES AND LOCATIONS.
35	THE CONTRACTOR SHALL BE REQUIRED TO SUPPLY WATER TO SEEDED AREA DURING THE 30 CALENDAR DAY MAINTENANCE PERIOD, A MINIMUM OF EVERY THREE DAYS TO MAINTAIN A 3 INCH MOIST SOIL SURFACE, OR AS DIRECTED BY THE ENGINEER.
36	THE CONTRACTOR SHALL BE REQUIRED TO FINE GRADE RESIDENT'S MOWED YARDS TO THE SATISFACTION OF THE ENGINEER.
CONSTRUCTION /SOILS NOTES	
MISCELLANEOUS	
37	ANYTHING DISTURBED OR DAMAGED OUTSIDE THE STAKED CONSTRUCTION AREA SHALL BE RESTORED AT THE CONTRACTOR'S EXPENSE TO THE SATISFACTION OF THE PROPERTY OWNER.
38	ALL CONSTRUCTION STAKING WILL REQUIRE A 48 HOUR ADVANCE NOTICE.
39	WHERE SEDIMENT DEPOSITS IN WATERS OF THE STATE THE MATERIAL MUST BE REMOVED IN 7 DAYS PER NPDES PERMIT. THE CONTRACTOR IS HEREBY REMINDED OF HIS RESPONSIBILITY UNDER STATE LAW TO CONTACT ALL UTILITIES THAT MAY HAVE
40	FACILITIES IN THE AREA. CONTACT MUST BE MADE THROUGH GOPHER STATE ONE-CALL.
41	THE CONTRACTOR MUST CONTACT EACH UTILITY COMPANY, PRIOR TO THE START OF CONSTRUCTION, TO DETERMINE ANY AND ALL SPECIAL REQUIREMENTS IN REGARDS TO WORKING AROUND THE PRIVATE UTILITIES WITHIN THE PROJECT LIMITS.

NO.	DATE	BY	CHK	REVISIONS	Design By: NEH Plan By: MKV Checked By: MAN Approved By: NEH	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  NICHOLAS E. HENTGES, PE DATE: <u>9/12/2024</u> LICENSE NO. <u>44620</u>			CSAH 30 (Forest Blvd) Improvements Chisago County, Minnesota	CHISAGO COUNTY, MINNESOTA		SHEET 16 OF 216 SHEETS
										SOILS AND CONSTRUCTION NOTES SAP 013-630-021 / SAP 225-591-007 / SAP 225-102-004		

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STAGING AND TRAFFIC CONTROL NOTES	
GENERAL NOTES	
1	ALL TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE LATEST EDITION OF THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MN MUTCD) INCLUDING THE FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS.
2	THE CONTRACTOR SHALL MAINTAIN ACCESS TO DRIVEWAYS AT ALL TIMES TO THE SATISFACTION OF THE ENGINEER. THE CONTRACTOR SHALL COORDINATE DRIVEWAY CLOSURES WITH THE RESIDENTS FOR CONCRETE CURB & GUTTER, CONCRETE APRON CONSTRUCTION OR DRAINAGE REMOVALS AND CONSTRUCTION.
3	THE CONTRACTOR IS RESPONSIBLE FOR PROTECTING ANY WORK AREAS NEAR TRAFFIC IN ACCORDANCE WITH THE MN MUTCD.
4	ALL TRAFFIC CONTROL DEVICES NEEDED TO ERECT THE ROAD CLOSURE AND TO MEET PROJECT STAGING AND MN MUTCD REQUIREMENTS SHALL BE INCLUDED IN THE LUMP SUM BID ITEM FOR TRAFFIC CONTROL.
5	THE DETOUR PLAN DOES NOT INCLUDE ANY TEMPORARY TRAFFIC CONTROL DEVICES REQUIRED TO CONSTRUCT THE PROJECT. CONSULT THE FIELD MANUAL FOR OTHER TEMPORARY SIGNAGE THAT MAY BE REQUIRED, SUCH AS, BUT NOT LIMITED TO, ROAD WORK AHEAD, FLAGGER SIGNAGE, BUMP AHEAD, BUMP WITH DOWN ARROW, ROUGH ROAD, LOW SHOULDER, NO CENTER STRIPE, ETC.
6	ALL DETOUR SIGNING SHOWN IN THE DETOUR PLANS SHALL BE INSTALLED THE DAY OF ROAD CLOSURE AND SHALL BE REMOVED IMMEDIATELY UPON ROAD CLOSURE COMPLETION UNLESS OTHERWISE NOTED. THE SURROUNDING GROUND SHALL BE RETURNED TO ITS ORIGINAL CONDITION.
7	THE CONTRACTOR SHALL BE REQUIRED TO COVER OR REMOVE ALL TRAFFIC CONTROL DEVICES WHICH MAY BE INCONSISTENT WITH TRAFFIC PATTERNS DURING THE TRAFFIC DETOUR.
8	ALL SIGNS INSTALLED ON TH 95 AND I-35 SHALL BE GROUND-MOUNTED AND MASH-16 COMPLIANT. USE SQUARE TUBE POSTS WITH APPROPRIATE BASES.
9	PORTABLE CHANGEABLE MESSAGE BOARDS SHALL BE USED AT THE DIRECTION OF THE ENGINEER.

STAGING AND TRAFFIC CONTROL NOTES	
10	THE CONTRACTOR WILL PROVIDE ACCESS FOR THE FIRE DEPARTMENT TO THE NORTH TO TRUNK HIGHWAY 95 OR TO THE SOUTH TO CSAH 17 ON CSAH 30 AT ALL TIMES. THE DEPARTMENT WILL PRIMARILY USE GRAND AVE AND 381ST STREET FOR ACCESS, BUT MAY GO NORTH DURING STORM SEWER CONSTRUCTION.
11	THE CONTRACTOR WILL PROVIDE ADDITIONAL DIRECTIONAL SIGNAGE FOR LOCAL ACCESS FROM ADJACENT ROADWAYS AT THE DISCRETION OF THE ENGINEER. THE PLAN INCLUDES BUSINESSES SIGNING THAT WILL BE NECESSARY DURING THE PROJECT.
12	THE CONTRACTOR WILL BE ALLOWED FULL ROAD CLOSURES AS DETAILED IN THE PLANS AND SPECIFICATIONS AND WILL BE RESONSIBLE FOR NOTIFYING ALL EMERGENCY RESPONSE PARTIES LISTED IN THE 1404 SPECIFICATION, AS WELL AS THE LOCAL SCHOOL DISTRICT(S). THE CONTRACTOR WILL SUBMIT FOR AND RECEIVE WRITTEN APPROVAL FOR ANY OTHER FULL CLOSURE AREA.
13	MAINTAIN LOCAL ACCESS AT ALL TIMES FROM TH 95 TO 384TH STREET AND FROM 381ST STREET TO 379TH STREET AND SOUTH OF 376TH STREET.

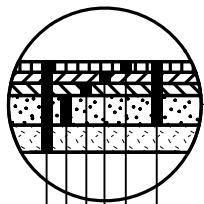
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CSAH 30 (Forest Blvd) Improvements
Chisago County, Minnesota

CHISAGO COUNTY, MINNESOTA		SHEET 17 OF 216 SHEETS
SOILS AND CONSTRUCTION NOTES SAP 013-630-021 / SAP 225-591-007 / SAP 225-102-004		

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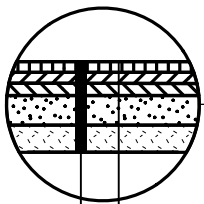


INSET A

RECONDITIONING - 1
CSAH 30 - MAINLINE

- REMOVE BITUMINOUS PAVEMENT*
- 2" TYPE SP 12.5 WEAR COURSE MIXTURE (SPWEB340C) MNDOT SPEC 2360
- 2" TYPE SP 12.5 WEAR COURSE MIXTURE (SPWEB340C) MNDOT SPEC 2360
- 2" TYPE SP 12.5" NON-WEAR COURSE MIXTURE (SPNWB330B) MNDOT SPEC 2360
- 6" AGGREGATE BASE (CV) CLASS 5
- INPLACE PAVEMENT AND BASE

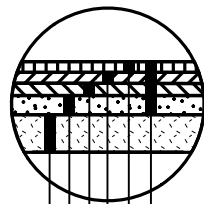
*REMOVE BITUMINOUS PAVEMENT DEPTH SHALL NOT IMPACT THE INPLACE CONCRETE PAVEMENT, ONLY ENOUGH TO PLACE PROPOSED NEW MATERIAL.



INSET B

FOG SEAL
CSAH 30 - SHOULDERS

- FOG SEAL
- INPLACE SHOULDER PAVEMENT

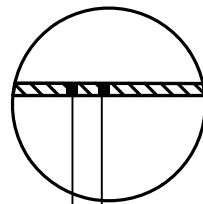


INSET C

RECONDITIONING - 2
CSAH 30 - MAINLINE

- REMOVE BITUMINOUS PAVEMENT*
- 2" TYPE SP 12.5 WEAR COURSE MIXTURE (SPWEB340C) MNDOT SPEC 2360
- 2" TYPE SP 12.5 WEAR COURSE MIXTURE (SPWEB340C) MNDOT SPEC 2360
- 2" TYPE SP 12.5" NON-WEAR COURSE MIXTURE (SPNWB330B) MNDOT SPEC 2360
- VARIABLE DEPTH AGGREGATE BASE (CV) CLASS 5 - 6" AVERAGE
- INPLACE CONCRETE PAVEMENT

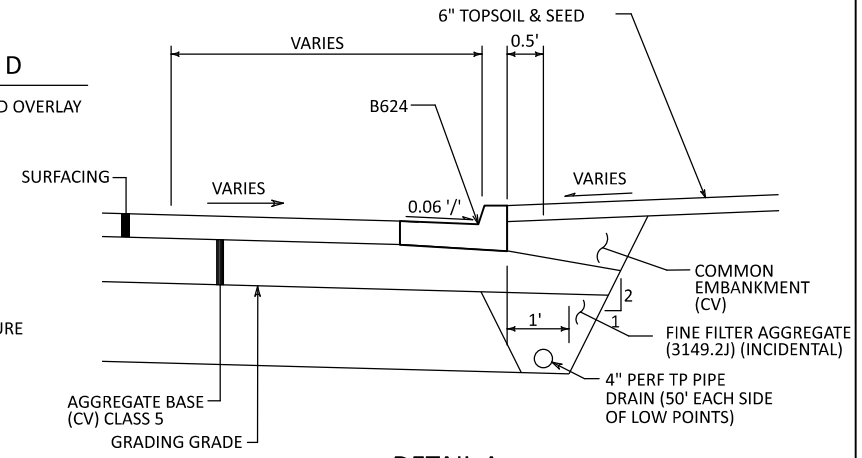
*REMOVE BITUMINOUS PAVEMENT DOWN TO INPLACE CONCRETE PAVEMENT



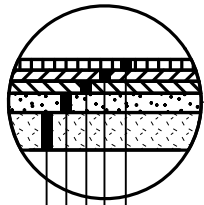
INSET D

CSAH 30 MILL AND OVERLAY

- MILL BITUMINOUS SURFACE (2.0")
- 2" TYPE SP 12.5 WEAR COURSE MIXTURE (SPWEB340C) MNDOT SPEC 2360



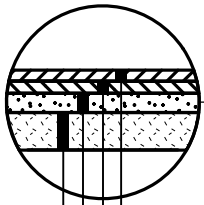
DETAIL A
CONCRETE CURB & GUTTER



INSET E

RECONSTRUCTION / WIDENING
CSAH 30
MAINLINE, BYPASS LANES, TURN LANES

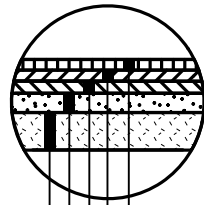
- 2" TYPE SP 12.5 WEAR COURSE MIXTURE (SPWEB340C) MNDOT SPEC 2360
- 2" TYPE SP 12.5 WEAR COURSE MIXTURE (SPWEB340C) MNDOT SPEC 2360
- 2" TYPE SP 12.5" NON-WEAR COURSE MIXTURE (SPNWB330B) MNDOT SPEC 2360
- 6" AGGREGATE BASE (CV) CLASS 5
- 18" SELECT GRANULAR EMBANKMENT



INSET F

RECONSTRUCTION / WIDENING
CSAH 30 - SHOULDERS

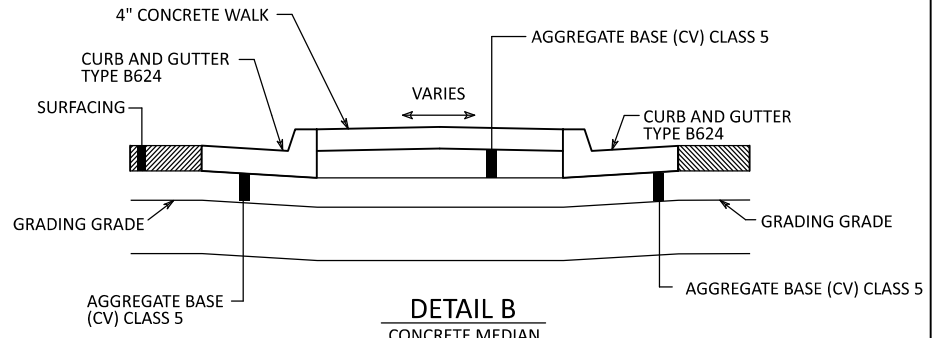
- 2" TYPE SP 12.5 WEAR COURSE MIXTURE (SPWEB340C) MNDOT SPEC 2360
- 2" TYPE SP 12.5 WEAR COURSE MIXTURE (SPWEB340C) MNDOT SPEC 2360
- 8" AGGREGATE BASE (CV) CLASS 5
- 18" SELECT GRANULAR EMBANKMENT



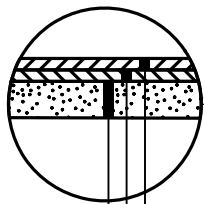
INSET G

CSAH 30 - ROUNDABOUT

- 2" TYPE SP 12.5 WEAR COURSE MIXTURE (SPWEB440F) MNDOT SPEC 2360
- 2" TYPE SP 12.5 WEAR COURSE MIXTURE (SPWEB440F) MNDOT SPEC 2360
- 2" TYPE SP 12.5" NON-WEAR COURSE MIXTURE (SPNWB430F) MNDOT SPEC 2360
- 6" AGGREGATE BASE (CV) CLASS 5
- 18" SELECT GRANULAR EMBANKMENT



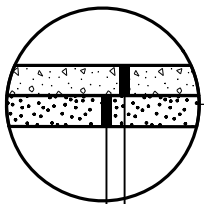
DETAIL B
CONCRETE MEDIAN



INSET H

BITUMINOUS RESIDENTIAL DRIVEWAY

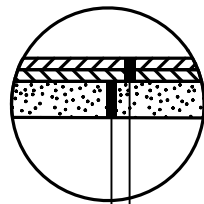
- 2" TYPE SP 12.5 WEAR COURSE MIXTURE (SPWEB340C) MNDOT SPEC 2360
- 2" TYPE SP 12.5 WEAR COURSE MIXTURE (SPWEB340C) MNDOT SPEC 2360
- 6" AGGREGATE BASE (CV) CLASS 5



INSET I

CONCRETE DRIVEWAY

- 6" CONCRETE DRIVEWAY PAVEMENT (RESIDENTIAL)
- 8" CONCRETE DRIVEWAY PAVEMENT (COMMERCIAL)
- 6" AGGREGATE BASE (CV) CLASS 5

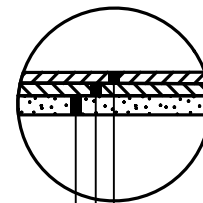


INSET J

BITUMINOUS TRAIL

- 3" TYPE SP 9.5 WEAR COURSE MIXTURE** (SPWEA230C) MNDOT SPEC 2360 - 1 LIFTS
- 6" AGGREGATE BASE (CV) CLASS 5

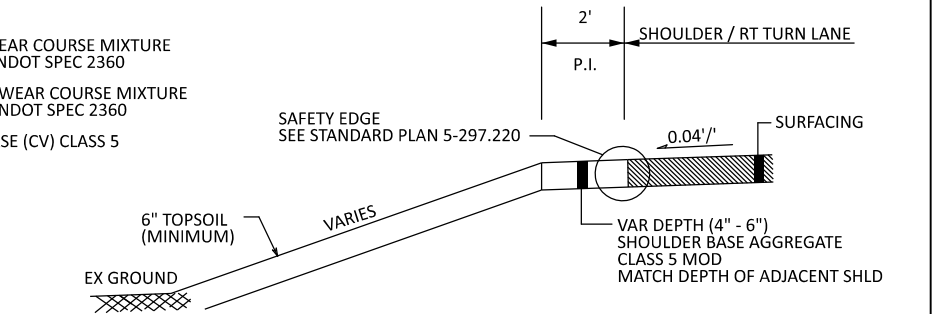
** TO BE PAID AS 3" BUTMINOUS WALK BY THE SQ FT



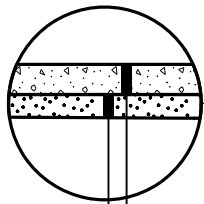
INSET G1

ALL SIDE STREETS

- 2" TYPE SP 12.5 WEAR COURSE MIXTURE (SPWEB340C) MNDOT SPEC 2360
- 2.5" TYPE SP 12.5 WEAR COURSE MIXTURE (SPWEB340C) MNDOT SPEC 2360
- 8" AGGREGATE BASE (CV) CLASS 5



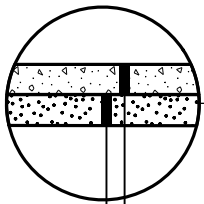
DETAIL C
RURAL SHOULDER PI



INSET K

6" CONCRETE WALK
(PED RAMPS & LANDINGS)

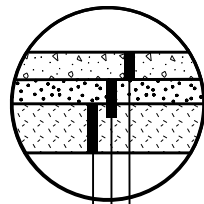
- 6" CONCRETE CURB RAMP WALK
- 4" AGGREGATE BASE (CV) CLASS 5



INSET L

4" CONCRETE WALK
(SIDEWALKS & MEDIANS)

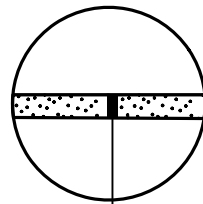
- 4" CONCRETE WALK
- 6" AGGREGATE BASE (CV) CLASS 5



INSET M

ROUNDABOUT TRUCK APRON

- 7" CONCRETE WALK
- 6" AGGREGATE BASE (CV) CLASS 5
- 12" SELECT GRANULAR EMBANKMENT (CV)



INSET N

AGGREGATE DRIVEWAYS

- 6" SHOULDER BASE AGGREGATE CLASS 5 MOD

NO.	DATE	BY	CHK	REVISIONS

Design By: NEH
Plan By: MKV
Checked By: MAN
Approved By: NEH

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NICHOLAS E. HENTGES, PE
DATE: 9/12/2024 LICENSE NO. 44620



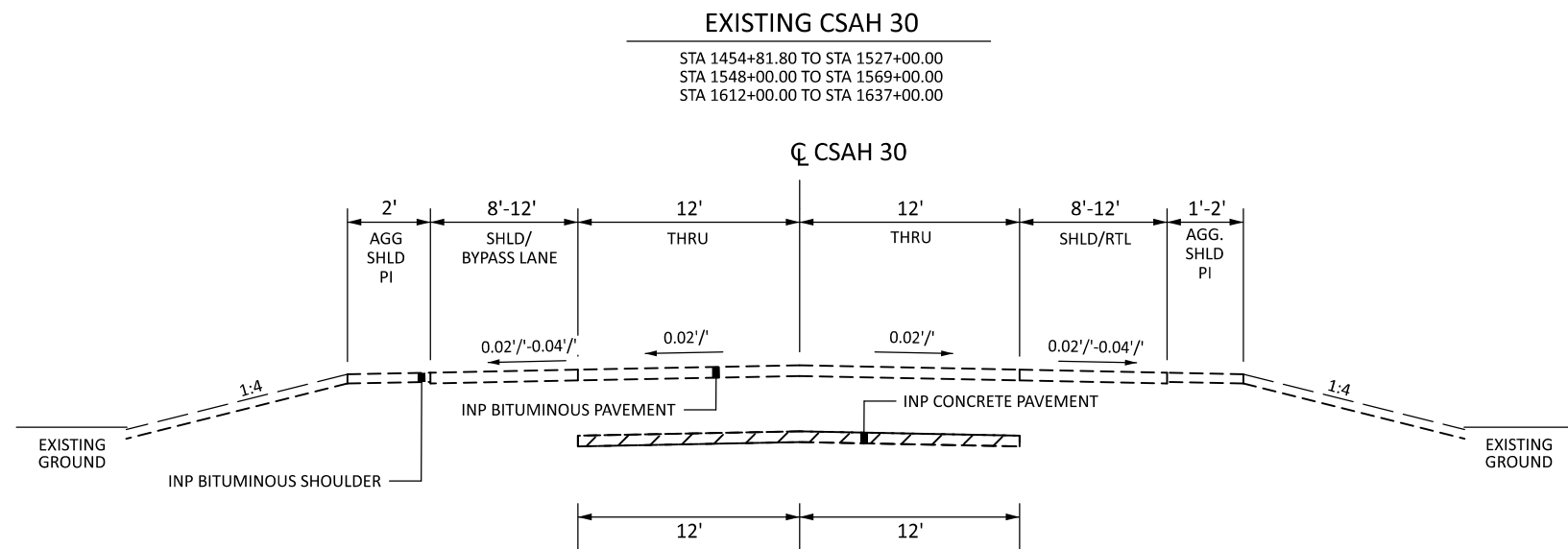
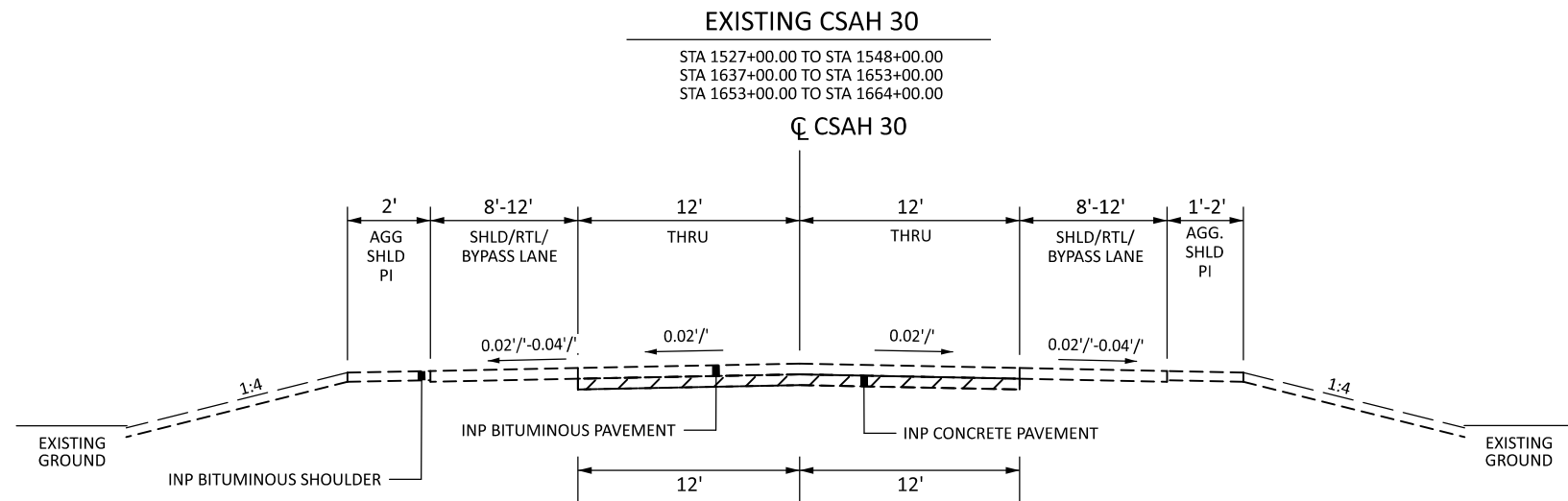
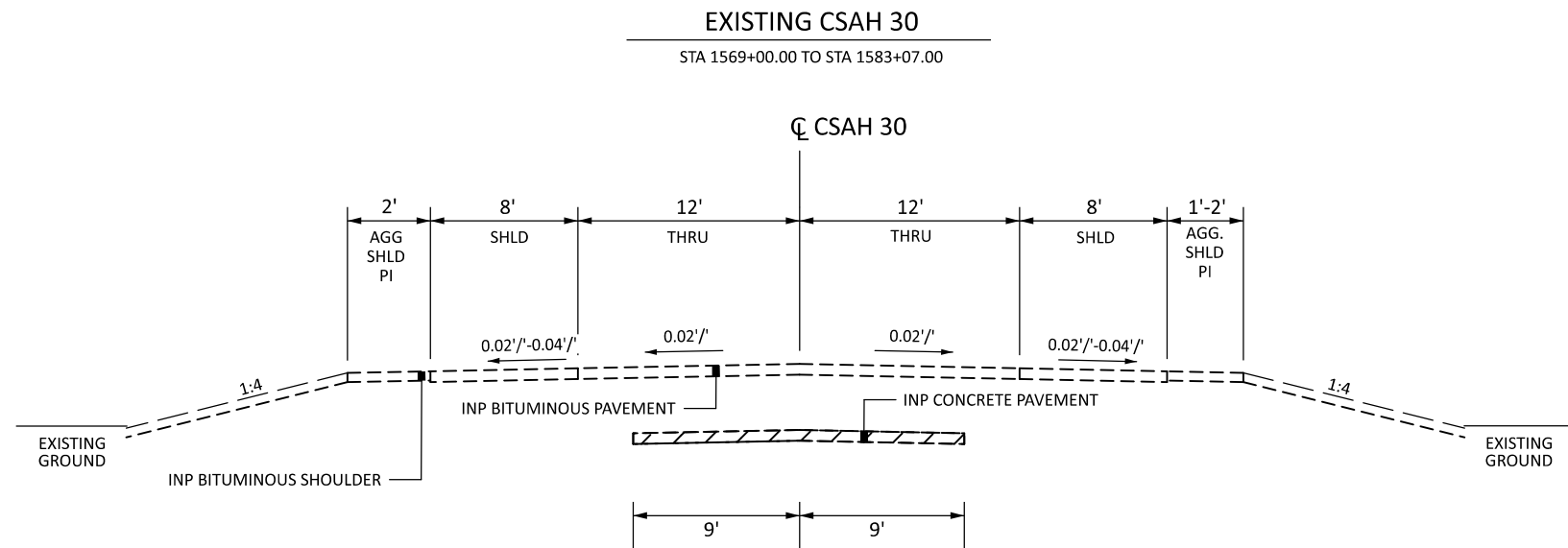
CSAH 30 (Forest Blvd) Improvements
Chisago County, Minnesota

CHISAGO COUNTY, MINNESOTA

TYPICAL SECTIONS
SAP 013-630-021 / SAP 225-591-007 / SAP 225-102-004

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GENERAL NOTES:

- SEE REMOVAL PLANS FOR THE LIMITS OF REMOVAL OF THE INPLACE CONCRETE PAVEMENT BENEATH THE INPLACE BITUMINOUS PAVEMENT.
- SEE CONSTRUCTION PLAN & PROFILE SHEETS FOR THE ELEVATION DEPICTION OF THE INPLACE CONCRETE PAVEMENT.

NO.	DATE	BY	CHK	REVISIONS

Design By:
NEH

Plan By:
MKV

Checked By:
MAN

Approved By:
NEH

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NICHOLAS E. HENTGES, PE

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LICENSE NO. 44620



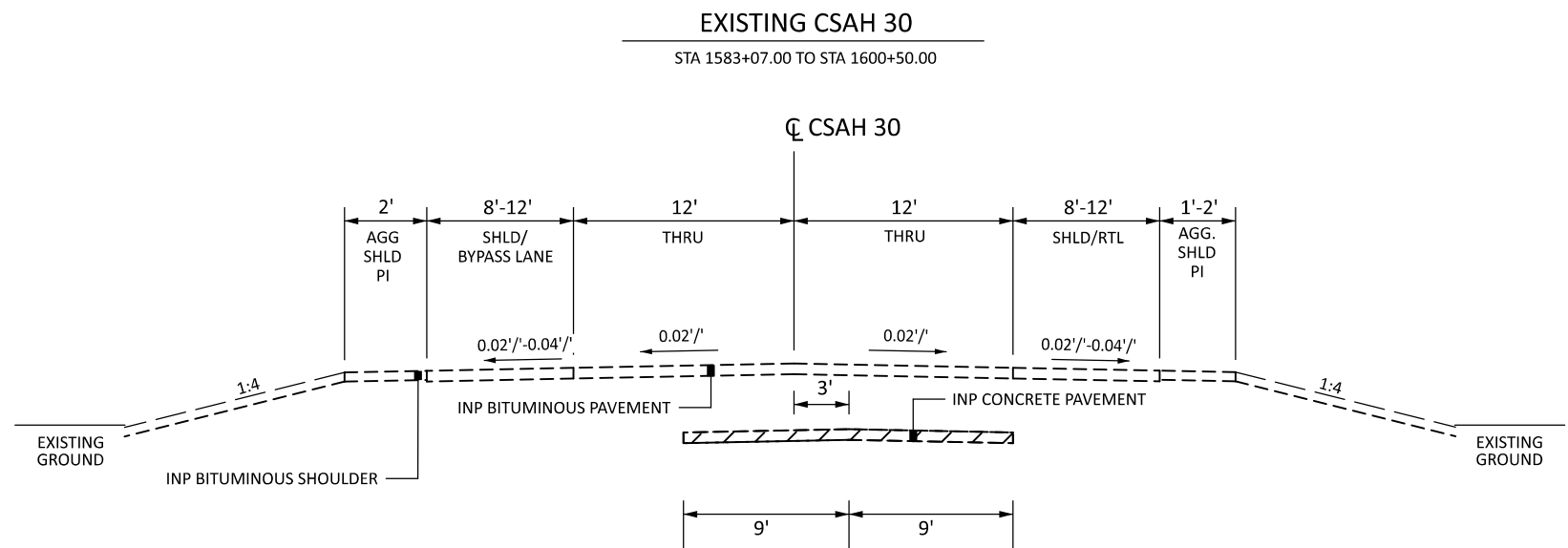
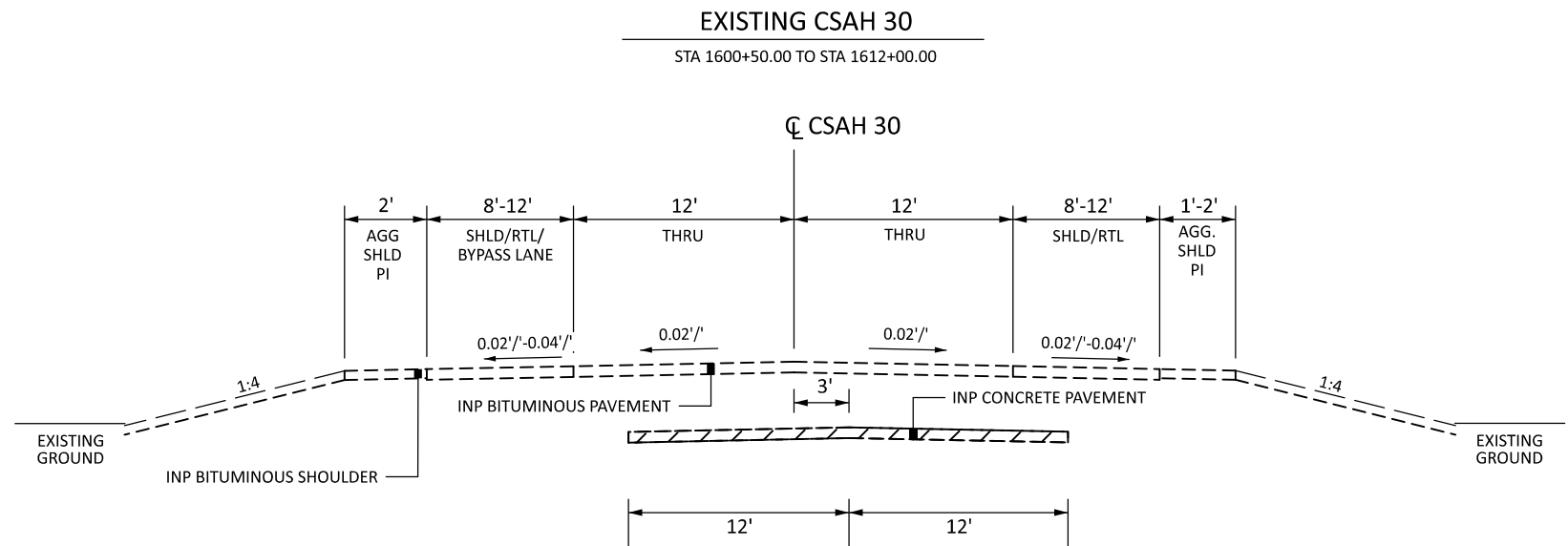
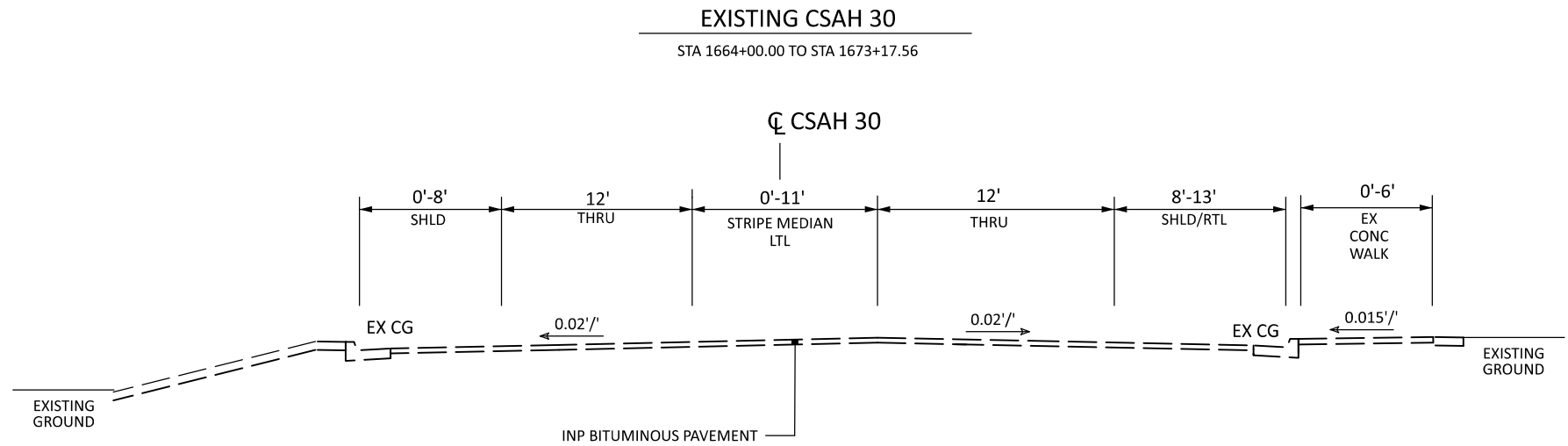
CSAH 30 (Forest Blvd) Improvements
Chisago County, Minnesota

CHISAGO COUNTY, MINNESOTA

EXISTING TYPICALS
TYPICAL SECTIONS
SAP 013-630-021 / SAP 225-591-007 / SAP 225-102-004

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CSAH 30 (Forest Blvd) Improvements
Chisago County, Minnesota

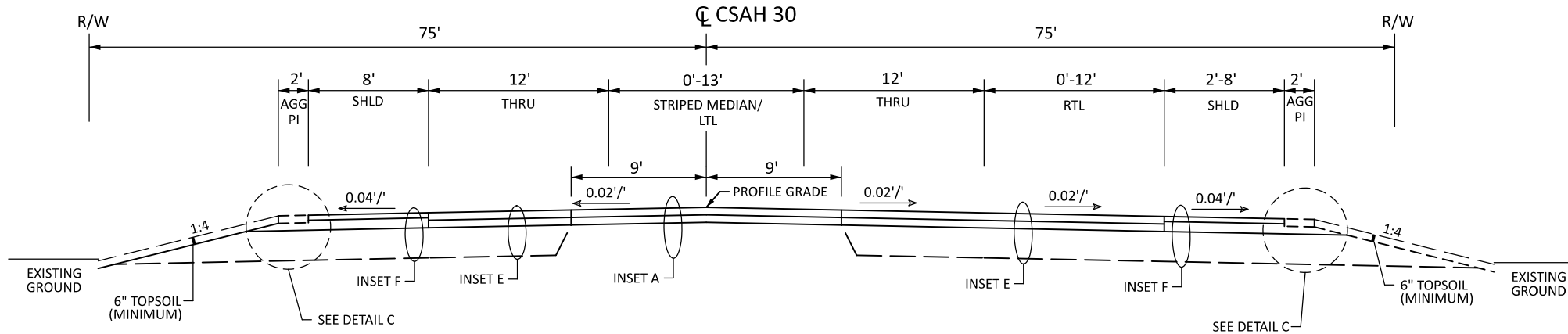
CHISAGO COUNTY, MINNESOTA
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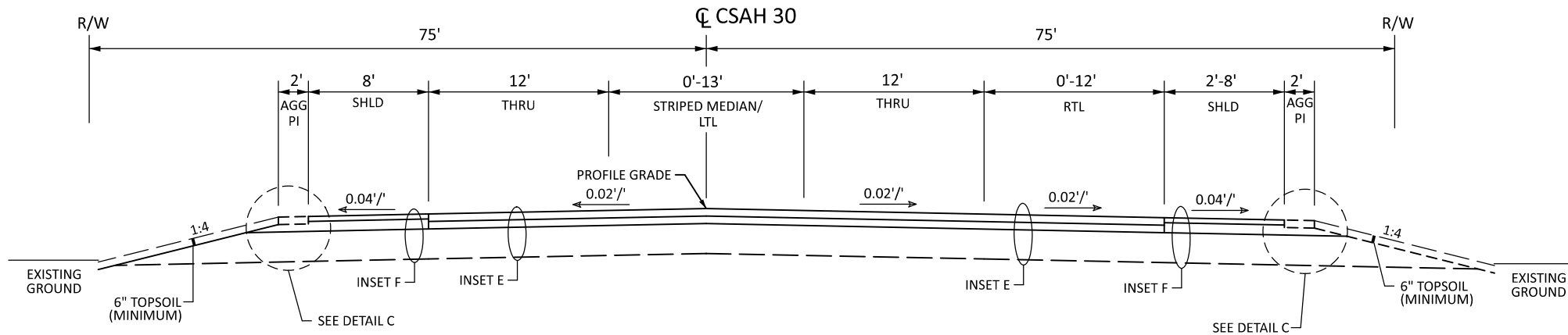
PROPOSED TYPICAL SECTION 3 - CSAH 30

STA 1582+81 TO STA 1586+00
STA 1597+00 TO STA 1598+61
STA 1599+01 TO STA 1600+50



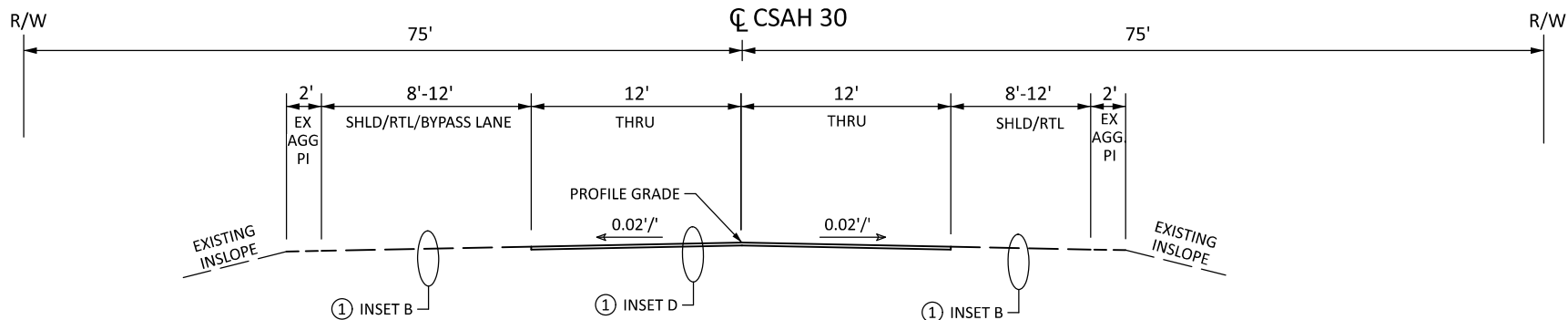
PROPOSED TYPICAL SECTION 2 - CSAH 30

STA 1582+20 TO STA 1582+81
STA 1586+00 TO STA 1597+00
STA 1598+61 TO STA 1599+01



PROPOSED TYPICAL SECTION 1 - CSAH 30

STA 1454+81.80 TO STA 1582+20



SPECIFIC NOTES:

- ① INSET D ALSO APPLIES TO RIGHT TURN LANES AND BYPASS LANES

GENERAL NOTES:

- IN AREAS WHERE NEW ROADWAY CONSTRUCTION IS OUTSIDE OF THE EXISTING ROADWAY, STRIP THE INPLACE TOPSOIL AND PLACE GRANULAR MATERIAL UP TO THE BOTTOM OF THE SELECT GRANULAR SUBGRADE OF THE NEW ROADWAY CONSTRUCTION.
- SHOULDER CROSS SLOPES TO BE 4% AND TURN LANE CROSS SLOPES TO BE 2%.
- SEE CONSTRUCTION PLAN & PROFILE SHEETS FOR EXACT LIMITS OF TURN LANES.
- SEE REMOVALS PLANS FOR AREAS OF EXPECTED BURIED CONCRETE PAVEMENT REMOVAL

NO.	DATE	BY	CHK	REVISIONS

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Plan By: MKV
Checked By: MAN
Approved By: NEH

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NICHOLAS E. HENTZ, P.E.
DATE: 9/12/2024 LICENSE NO. 44620



CSAH 30 (Forest Blvd) Improvements
Chisago County, Minnesota

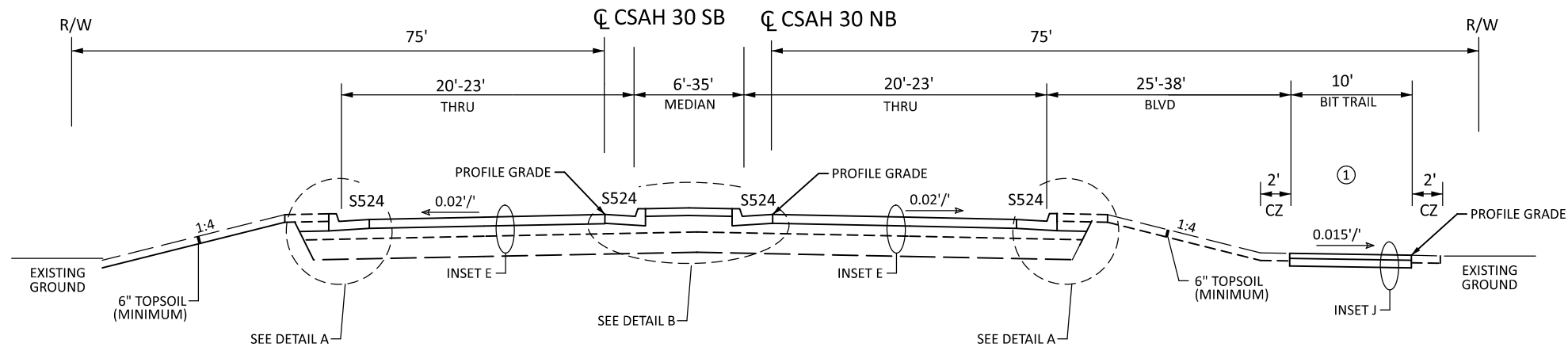
CHISAGO COUNTY, MINNESOTA

TYPICAL SECTIONS
SAP 013-630-021 / SAP 225-591-007 / SAP 225-102-004

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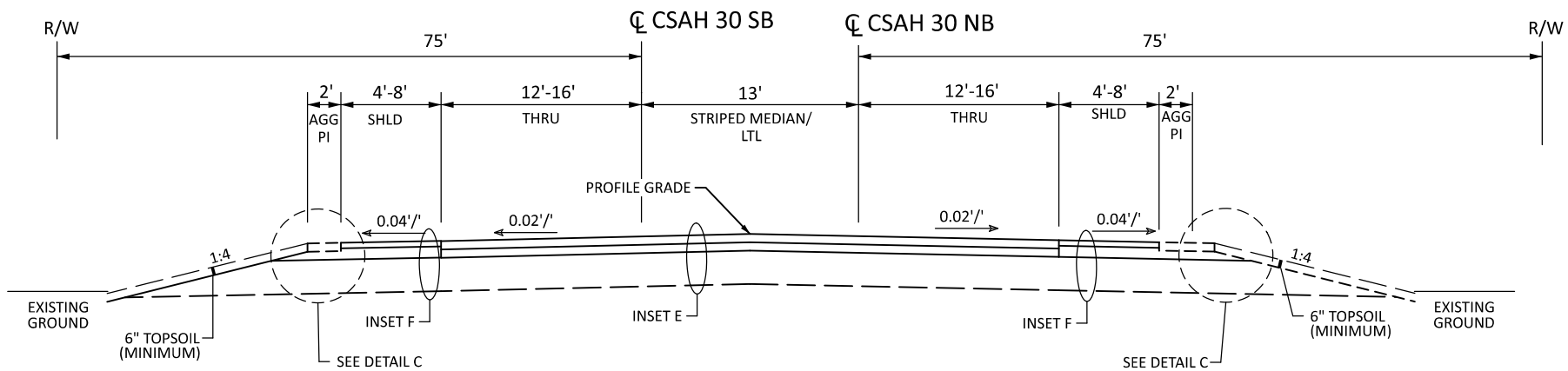
PROPOSED TYPICAL SECTION 6 - CSAH 30

STA 1613+73 TO STA 1616+80
STA 1618+43 TO STA 1619+71



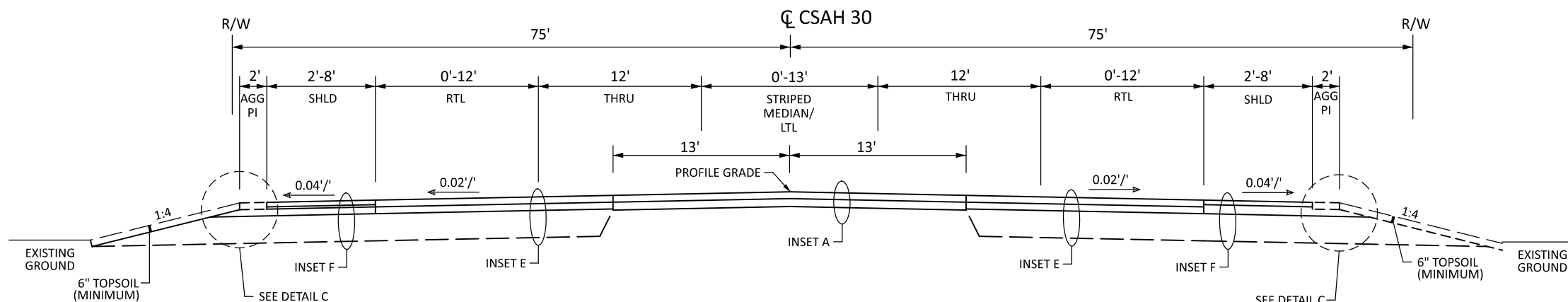
PROPOSED TYPICAL SECTION 5 - CSAH 30

STA 1611+00 TO STA 1613+73



PROPOSED TYPICAL SECTION 4 - CSAH 30

STA 1600+50 TO STA 1611+00



SPECIFIC NOTES:
① SEE CONSTRUCTION PLANS FOR BEGINNING AND END OF TRAIL CONSTRUCTION

GENERAL NOTES:
- IN AREAS WHERE NEW ROADWAY CONSTRUCTION IS OUTSIDE OF THE EXISTING ROADWAY, STRIP THE INPLACE TOPSOIL AND PLACE GRANULAR MATERIAL UP TO THE BOTTOM OF THE SELECT GRANULAR SUBGRADE OF THE NEW ROADWAY CONSTRUCTION.
- SHOULDER CROSS SLOPES TO BE 4% AND TURN LANE CROSS SLOPES TO BE 2%.
- SEE CONSTRUCTION PLAN & PROFILE SHEETS FOR EXACT LIMITS OF TURN LANES.
- SEE REMOVAL PLANS FOR AREAS OF EXPECTED BURIED CONCRETE PAVEMENT REMOVAL

NO.	DATE	BY	CHK	REVISIONS

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Checked By: MAN
Approved By: NEH

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NICHOLAS E. HENTGES, PE
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CSAH 30 (Forest Blvd) Improvements
Chisago County, Minnesota

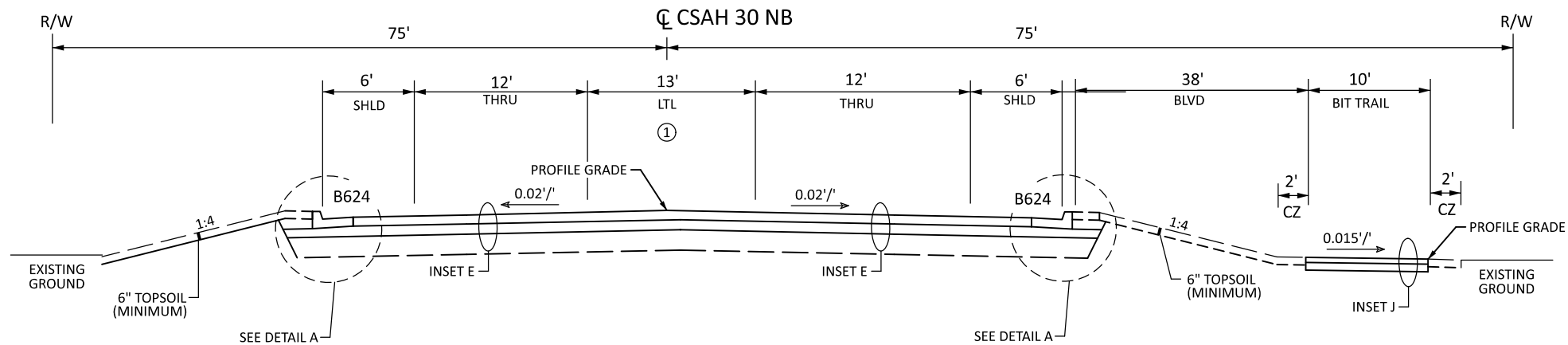
CHISAGO COUNTY, MINNESOTA
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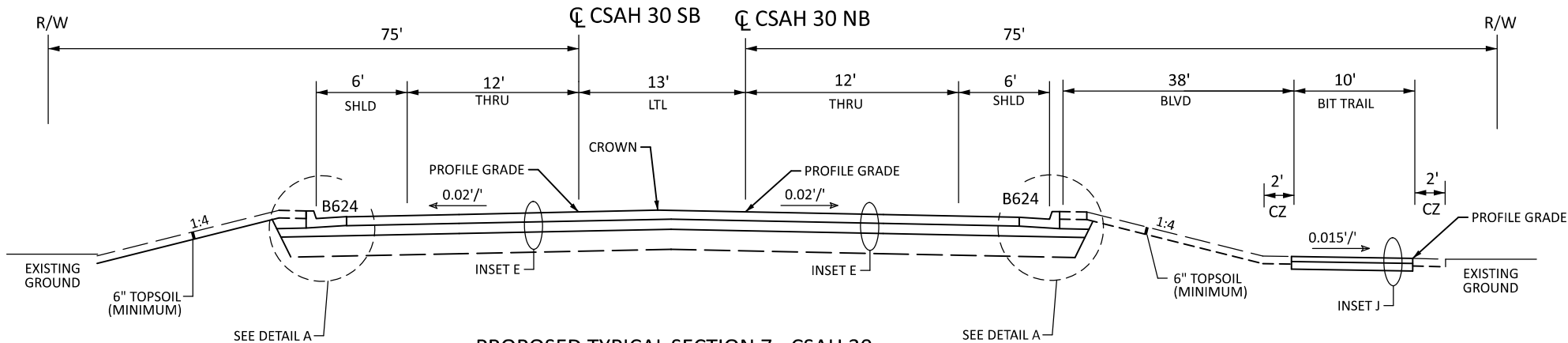
PROPOSED TYPICAL SECTION 9 - CSAH 30

STA 1625+22 TO STA 1626+00



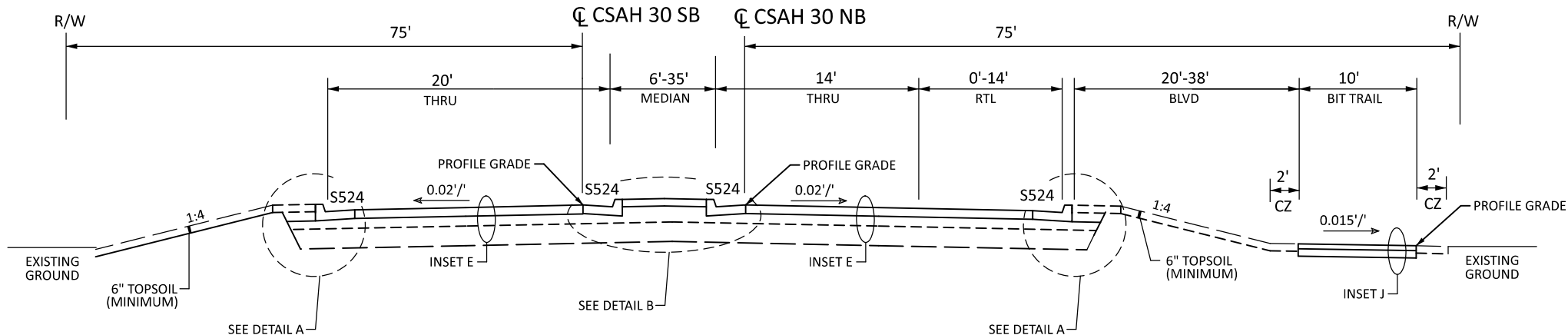
PROPOSED TYPICAL SECTION 8 - CSAH 30

STA 1622+84 TO STA 1625+22



PROPOSED TYPICAL SECTION 7 - CSAH 30

STA 1619+71 TO STA 1622+84



SPECIFIC NOTES:

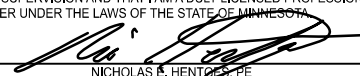
- ① SEE CONSTRUCTION PLANS FOR LOCATIONS OF DEDICATED LEFT TURN LANES

GENERAL NOTES:

- IN AREAS WHERE NEW ROADWAY CONSTRUCTION IS OUTSIDE OF THE EXISTING ROADWAY, STRIP THE INPLACE TOPSOIL AND PLACE GRANULAR MATERIAL UP TO THE BOTTOM OF THE SELECT GRANULAR SUBGRADE OF THE NEW ROADWAY CONSTRUCTION.
- SHOULDER CROSS SLOPES TO BE 4% AND TURN LANE CROSS SLOPES TO BE 2%.
- SEE CONSTRUCTION PLAN & PROFILE SHEETS FOR EXACT LIMITS OF TURN LANES.
- SEE REMOVAL PLANS FOR AREAS OF EXPECTED BURIED CONCRETE PAVEMENT REMOVAL

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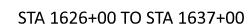
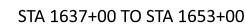
CSAH 30 (Forest Blvd) Improvements
Chisago County, Minnesota

CHISAGO COUNTY, MINNESOTA

TYPICAL SECTIONS
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STA 1653+00 TO STA 1665+59



- IN AREAS WHERE NEW ROADWAY CONSTRUCTION IS OUTSIDE OF THE EXISTING ROADWAY, STRIP THE INPLACE TOPSOIL AND PLACE GRANULAR MATERIAL UP TO THE BOTTOM OF THE SELECT GRANULAR SUBGRADE OF THE NEW ROADWAY CONSTRUCTION.
- SHOULDER CROSS SLOPES TO BE 4% AND TURN LANE CROSS SLOPES TO BE 2%.
- SEE CONSTRUCTION PLAN & PROFILE SHEETS FOR EXACT LIMITS OF TURN LANES.

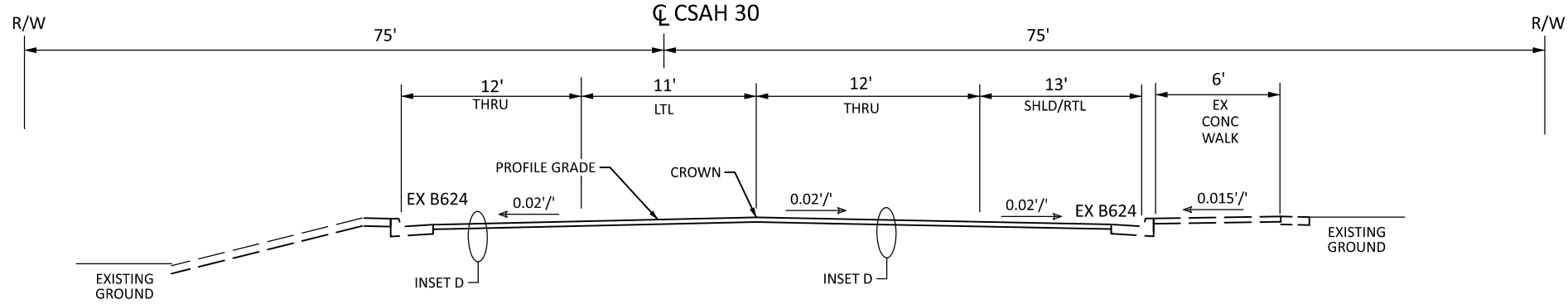
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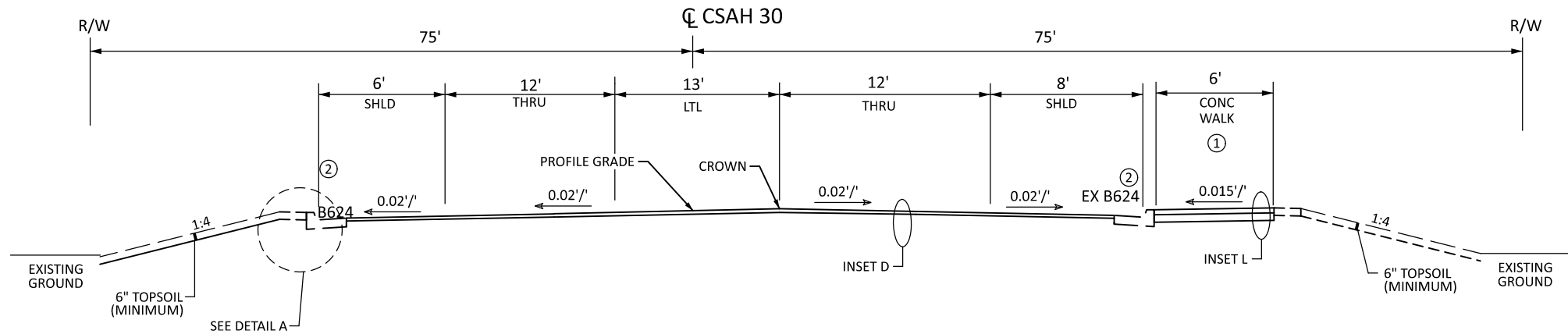
PROPOSED TYPICAL SECTION 15 - CSAH 30

STA 1669+43 TO STA 1673+17.56



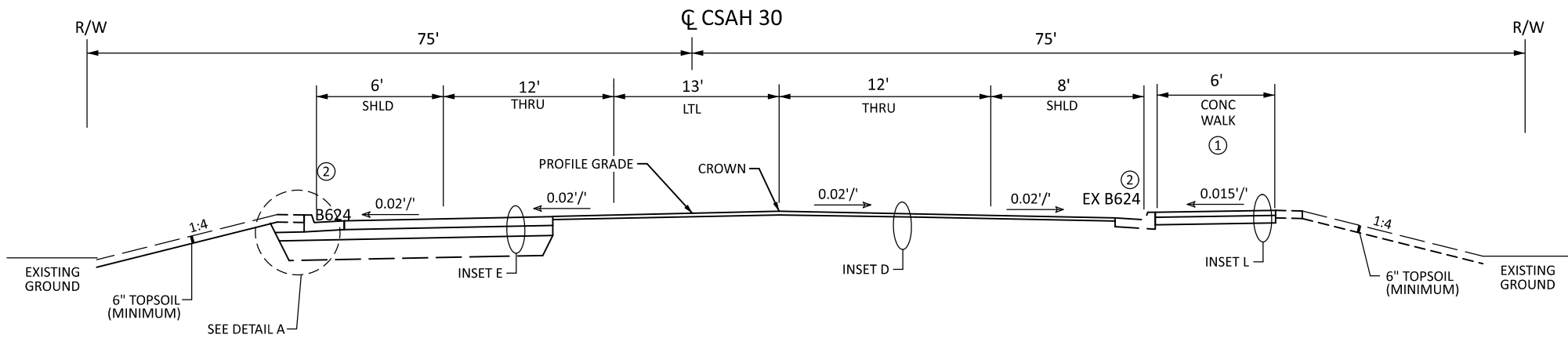
PROPOSED TYPICAL SECTION 14 - CSAH 30

STA 1666+76 TO STA 1669+43



PROPOSED TYPICAL SECTION 13 - CSAH 30

STA 1665+59 TO STA 1666+76



SPECIFIC NOTES:

- SEE CONSTRUCTION PLANS FOR BEGINNING AND END OF CONCRETE WALK AND CURB AND GUTTER CONSTRUCTION
- SEE CONSTRUCTION PLANS FOR BEGINNING AND END OF CURB TRANSITION

GENERAL NOTES:

- IN AREAS WHERE NEW ROADWAY CONSTRUCTION IS OUTSIDE OF THE EXISTING ROADWAY, STRIP THE INPLACE TOPSOIL AND PLACE GRANULAR MATERIAL UP TO THE BOTTOM OF THE SELECT GRANULAR SUBGRADE OF THE NEW ROADWAY CONSTRUCTION.
- SHOULDER CROSS SLOPES TO BE 4% AND TURN LANE CROSS SLOPES TO BE 2%.
- SEE CONSTRUCTION PLAN & PROFILE SHEETS FOR EXACT LIMITS OF TURN LANES.

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CSAH 30 (Forest Blvd) Improvements
Chisago County, Minnesota

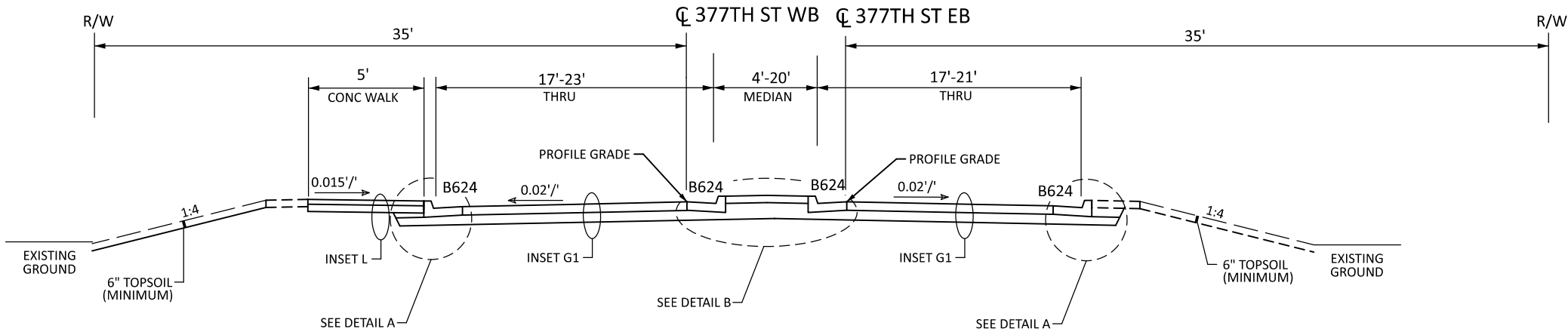
CHISAGO COUNTY, MINNESOTA

TYPICAL SECTIONS
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SHEETS

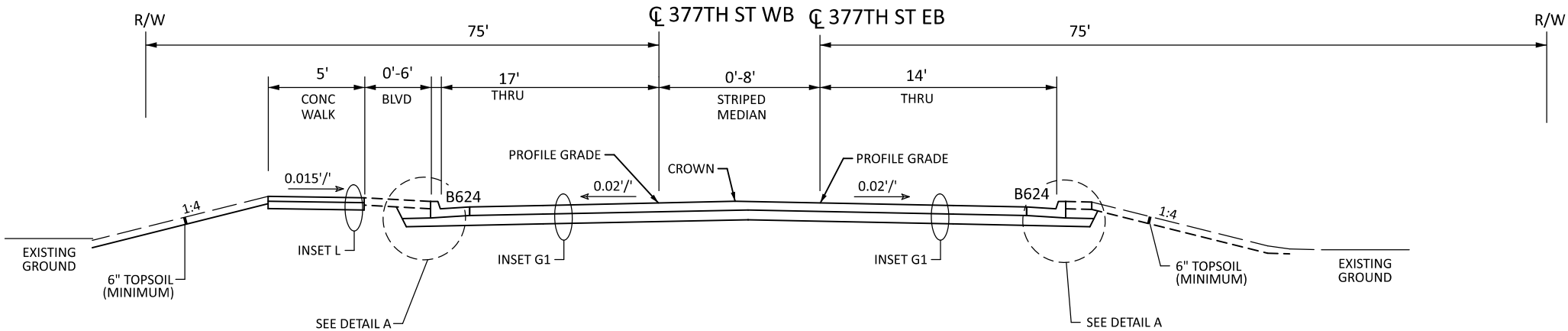
PROPOSED TYPICAL SECTION 18 - 377TH ST

STA 104+42.79 TO STA 104+91.47



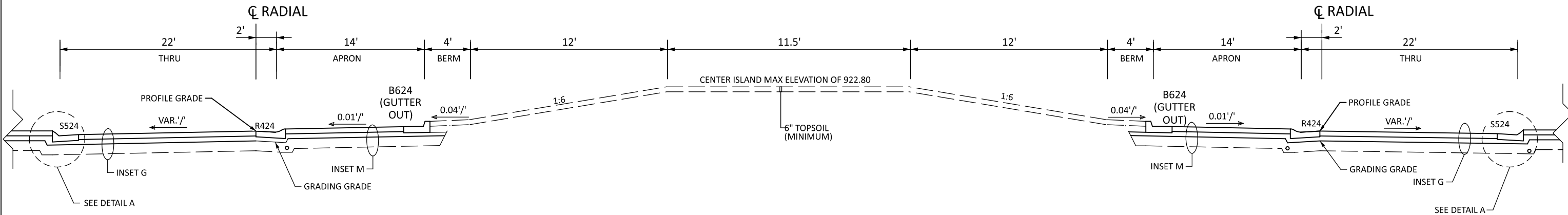
PROPOSED TYPICAL SECTION 17 - 377TH ST

STA 104+91.47 TO STA 106+20.00



PROPOSED TYPICAL SECTION 16 - CSAH 30

377TH ST ROUNDABOUT



- GENERAL NOTES:
- IN AREAS WHERE NEW ROADWAY CONSTRUCTION IS OUTSIDE OF THE EXISTING ROADWAY, STRIP THE INPLACE TOPSOIL AND PLACE GRANULAR MATERIAL UP TO THE BOTTOM OF THE SELECT GRANULAR SUBGRADE OF THE NEW ROADWAY CONSTRUCTION.
 - RURAL SHOULDER CROSS SLOPES TO BE 4% AND TURN LANE CROSS SLOPES TO BE 2%.
 - SEE CONSTRUCTION PLAN & PROFILE SHEETS FOR EXACT LIMITS OF TURN LANES.
 - SEE REMOVAL PLANS FOR AREAS OF EXPECTED BURIED CONCRETE PAVEMENT REMOVAL

NO.	DATE	BY	CHK	REVISIONS

Design By:
NEH
Plan By:
MKV
Checked By:
MAN
Approved By:
NEH

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.

Nicholas E. Hentges, PE
NICHOLAS E. HENTGES, PE
DATE: 9/12/2024 LICENSE NO. 44620



CSAH 30 (Forest Blvd) Improvements
Chisago County, Minnesota

CHISAGO COUNTY, MINNESOTA

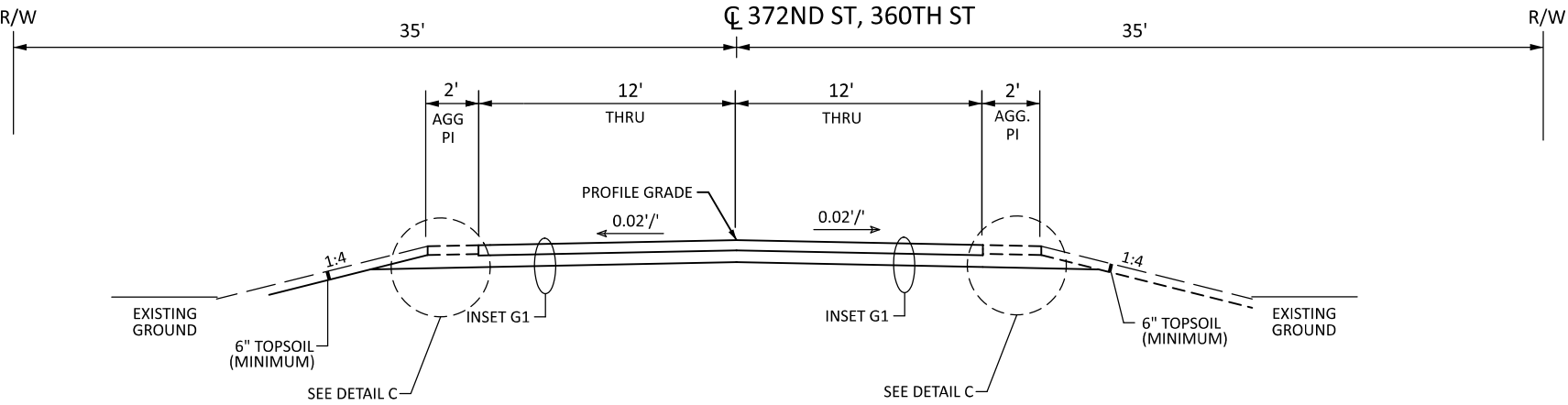
TYPICAL SECTIONS
SAP 013-630-021 / SAP 225-591-007 / SAP 225-102-004

SHEET
26
OF
216
SHEETS

DATE: 9/12/2024 1:59:34 PM
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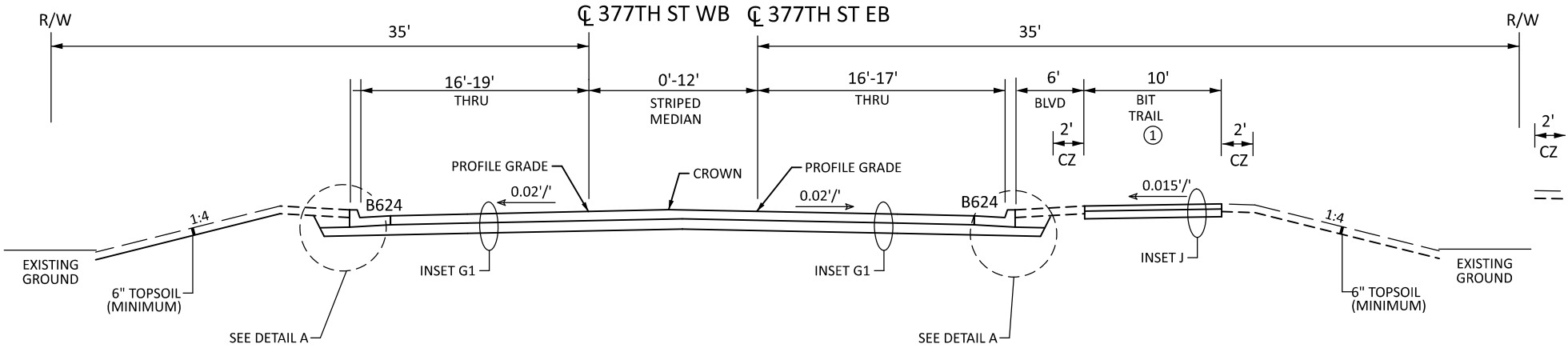
PROPOSED TYPICAL SECTION 21 - 372ND ST

STA 299+40 TO STA 300+23.68



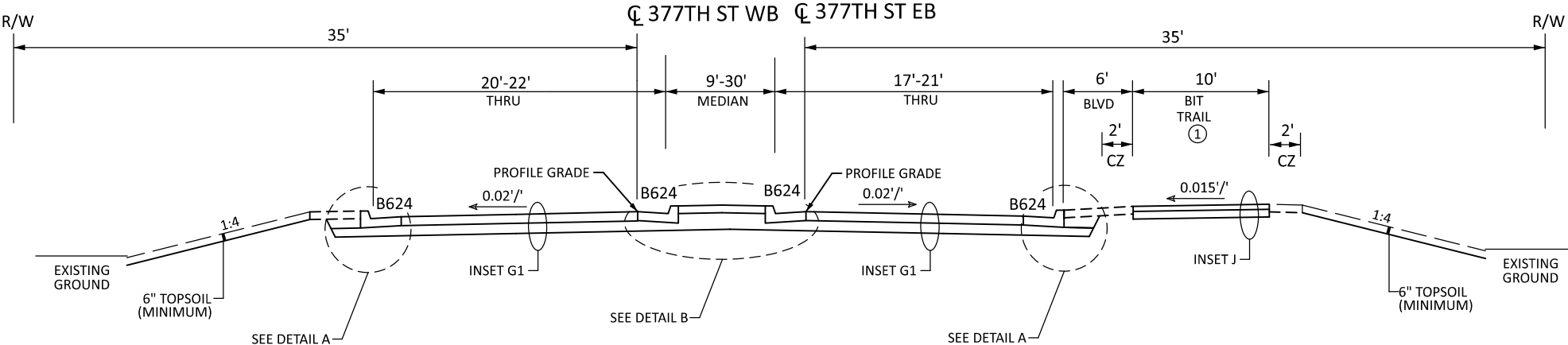
PROPOSED TYPICAL SECTION 20 - 377TH ST

STA 100+14.67 TO STA 102+05.78



PROPOSED TYPICAL SECTION 19 - 377TH ST

STA 102+05.78 TO STA 102+53.72

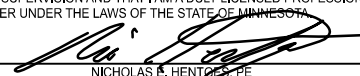


SPECIFIC NOTES:
① SEE CONSTRUCTION PLANS FOR BEGINNING AND END OF TRAIL CONSTRUCTION

GENERAL NOTES:
- IN AREAS WHERE NEW ROADWAY CONSTRUCTION IS OUTSIDE OF THE EXISTING ROADWAY, STRIP THE INPLACE TOPSOIL AND PLACE GRANULAR MATERIAL UP TO THE BOTTOM OF THE SELECT GRANULAR SUBGRADE OF THE NEW ROADWAY CONSTRUCTION.
- RURAL SHOULDER CROSS SLOPES TO BE 4% AND TURN LANE CROSS SLOPES TO BE 2%.
- SEE CONSTRUCTION PLAN & PROFILE SHEETS FOR EXACT LIMITS OF TURN LANES.
- SEE REMOVAL PLANS FOR AREAS OF EXPECTED BURIED CONCRETE PAVEMENT REMOVAL

NO.	DATE	BY	CHK	REVISIONS

Design By: NEH
Plan By: MKV
Checked By: MAN
Approved By: NEH

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NICHOLAS E. HENTGES, PE
DATE: 9/12/2024 LICENSE NO. 44620



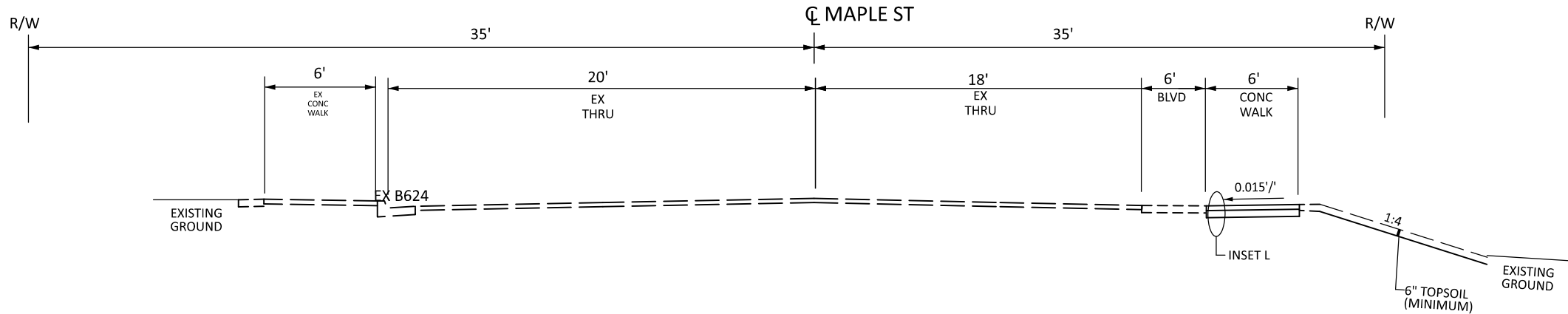
CSAH 30 (Forest Blvd) Improvements
Chisago County, Minnesota

CHISAGO COUNTY, MINNESOTA

TYPICAL SECTIONS
SAP 013-630-021 / SAP 225-591-007 / SAP 225-102-004

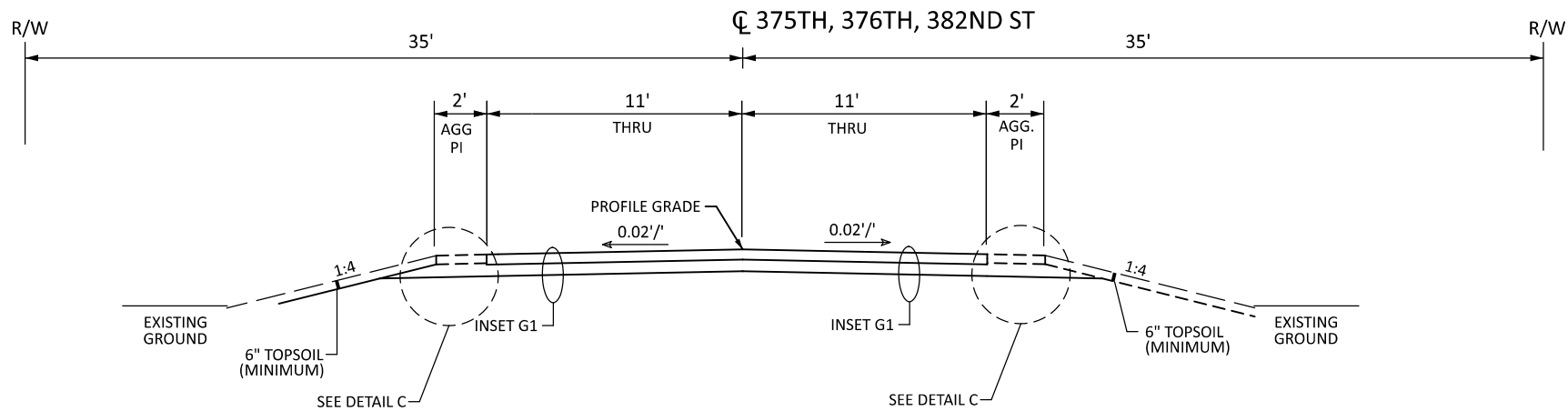
SHEET
27
OF
216
SHEETS

PROPOSED TYPICAL SECTION 23 - MAPLE ST



PROPOSED TYPICAL SECTION 22 - 375TH ST, 376TH ST, 382ND ST

STA 399+40 TO STA 401+25.04
STA 499+40 TO STA 501+30.52
STA 599+30 TO STA 601+30.70



GENERAL NOTES:

- IN AREAS WHERE NEW ROADWAY CONSTRUCTION IS OUTSIDE OF THE EXISTING ROADWAY, STRIP THE INPLACE TOPSOIL AND PLACE GRANULAR MATERIAL UP TO THE BOTTOM OF THE SELECT GRANULAR SUBGRADE OF THE NEW ROADWAY CONSTRUCTION.
- RURAL SHOULDER CROSS SLOPES TO BE 4% AND TURN LANE CROSS SLOPES TO BE 2%.
- SEE CONSTRUCTION PLAN & PROFILE SHEETS FOR EXACT LIMITS OF TURN LANES.
- SEE REMOVAL PLANS FOR AREAS OF EXPECTED BURIED CONCRETE PAVEMENT REMOVAL

NO.	DATE	BY	CHK	REVISIONS

Design By: NEH
Plan By: MKV
Checked By: MAN
Approved By: NEH

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Nicholas E. Hentges
NICHOLAS E. HENTGES, PE
DATE: 9/12/2024 LICENSE NO. 44620



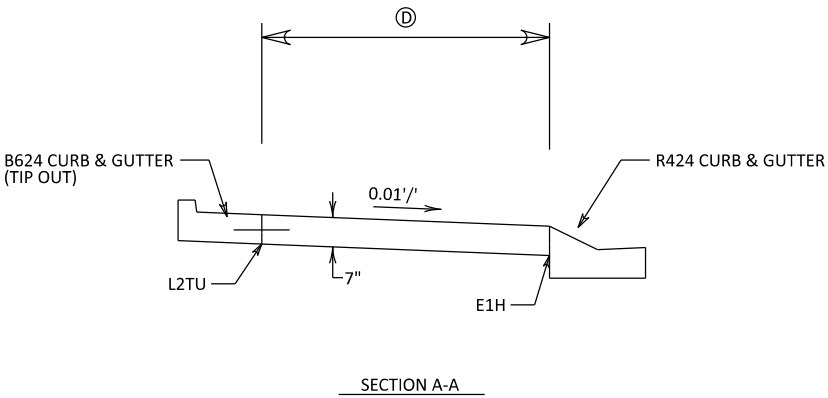
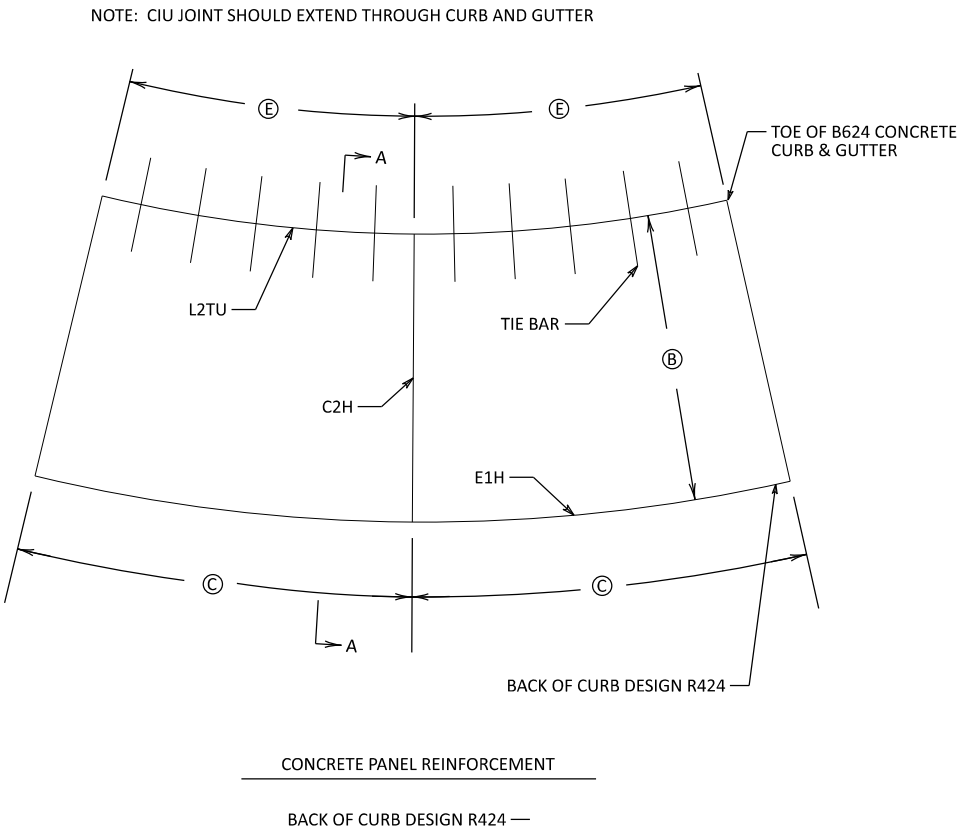
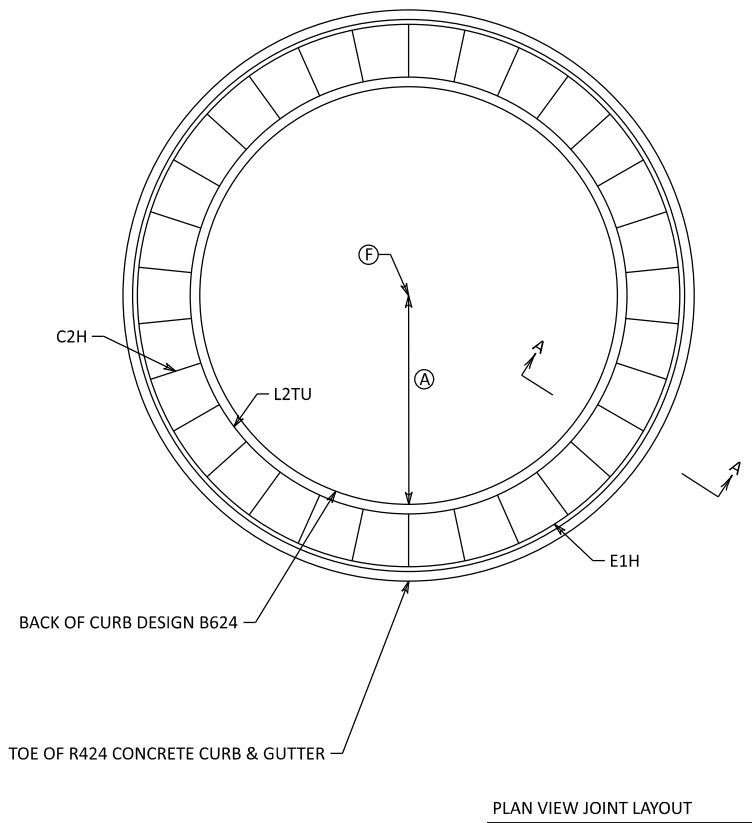
CSAH 30 (Forest Blvd) Improvements
Chisago County, Minnesota

CHISAGO COUNTY, MINNESOTA

TYPICAL SECTIONS
SAP 013-630-021 / SAP 225-591-007 / SAP 225-102-004

SHEET
28
OF
216
SHEETS

Truck Apron Details
NOT TO SCALE



ROUNDABOUT	Ⓐ	Ⓑ	Ⓒ	Ⓓ	Ⓔ	Ⓕ
CSAH 30 & 377TH ST	43.5'R	11'	11.83'	11'	9.53'	X: 526239.3770 , Y: 172870.6953

- GENERAL NOTES:
- SEE TYPICAL SECTIONS AND PLAN SHEETS FOR CURB AND GUTTER DETAILS
 - ALL TIE BARS SHALL BE EPOXY COATED IN ACCORDANCE WITH SPEC. 3301 AND STANDARD PLAN 5-297.221. (INCIDENTAL)

NO.	DATE	BY	CHK	REVISIONS

Design By: NEH
Plan By: MKV
Checked By: MAN
Approved By: NEH

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.

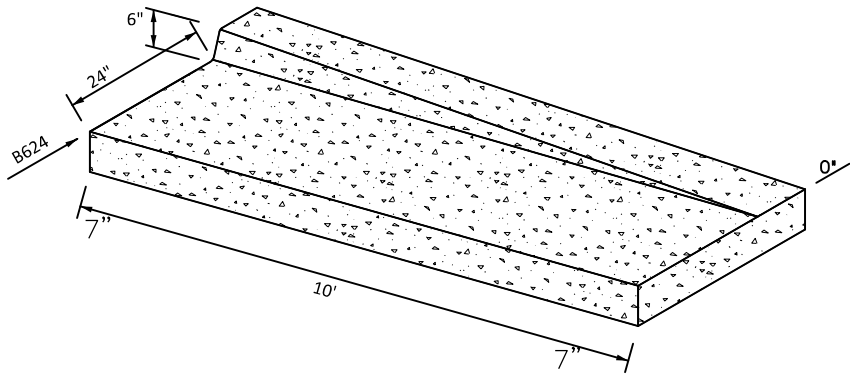
Nicholas E. Hentges
NICHOLAS E. HENTGES, PE
DATE: 9/12/2024 LICENSE NO. 44620



CSAH 30 (Forest Blvd) Improvements
Chisago County, Minnesota

CHISAGO COUNTY, MINNESOTA
TRUCK APRON DETAIL
MISCELLANEOUS DETAILS
SAP 013-630-021 / SAP 225-591-007 / SAP 225-102-004

SHEET
29
OF
216
SHEETS



FOR OTHER DIMENSIONS SEE STANDARD PLATE NO. 7100
TO BE USED AT CURB AND GUTTER TERMINI
PAYMENT SHALL BE MADE AS CONCRETE CURB & GUTTER DESIGN B624 BY THE LINEAR FOOT

B624 TO 0" HEIGHT CURB & GUTTER TRANSITION

NOT TO SCALE

DATE: 9/12/2024 1:59:44 PM
PATH & FILENAME: Projects\Minnesota\023661-000\03_Discipline\Roadway\Sheets\023661-000_det

NO.	DATE	BY	CHK	REVISIONS

Design By:	NEH
Plan By:	MKV
Checked By:	MAN
Approved By:	NEH

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.	
	
NICHOLAS E. HENTGES, PE	
DATE: 9/12/2024	LICENSE NO. 44620



CSAH 30 (Forest Blvd) Improvements
Chisago County, Minnesota

CHISAGO COUNTY, MINNESOTA
MISCELLANEOUS DETAILS SAP 013-630-021 / SAP 225-591-007 / SAP 225-102-004

SHEET
30
OF
216
SHEETS

DATE: 9/12/2024 1:59:57 PM
PATH & FILENAME: Projects\Minnesota\023661-000\03_Discipline\Roadway\Sheets\023661-000-sd1

INTERNAL DIAMETER OF PIPE (INCHES)	WEIGHT PER LINEAR FOOT OF PIPE	WALL THICKNESS	CLASS I		CLASS II		CLASS III		CLASS IV		CLASS V	
			D - LOAD TO PRODUCE A 0.01" CRACK (LBS./LIN.FT. OF DIA.)		1000		1350		2000		3000	
			D - LOAD TO PRODUCE ULTIMATE LOAD (LBS./LIN.FT. OF DIA.)		1200		1500		2000		3000	
			CONCRETE 4000 PSI (4)		CONCRETE 4000 PSI (4)		CONCRETE 4000 PSI (4)		CONCRETE 4000 PSI (4)		CONCRETE 6000 PSI	
			T		MINIMUM REINFORCEMENT SQUARE INCHES PER LINEAR FOOT OF BARREL							
D	POUNDS	INCHES	INNER CAGE	OUTER CAGE	INNER CAGE	OUTER CAGE	INNER CAGE	OUTER CAGE	INNER CAGE	OUTER CAGE	INNER CAGE	OUTER CAGE
12	92	2	---	(5)	---	0.07 (2)	---	0.07 (2)	---	0.07	---	0.10
15	127	2 1/4	---	(5)	---	0.07 (2)	---	0.07 (2)	---	0.10	---	0.14
18	168	2 1/2	---	(5)	---	0.07 (2)	---	0.07 (2)	---	0.14	---	0.19
21	214	2 3/4	---	(5)	---	0.07 (2)	---	0.07 (2)	---	0.20	---	0.24
24	265	3	---	(5)	---	0.07 (2)	---	0.07 (2)	---	0.27	---	0.30
27	322	3 1/4	---	(5)	---	0.13	---	0.16	---	0.31	---	0.38
30	384	3 1/2	---	(5)	---	0.14	---	0.18	---	0.35	---	0.41
33	452	3 3/4	---	(5)	---	0.15	---	0.20	---	0.27	---	0.16
36	524	4	---	(5)	---	0.12 (3)	0.07	0.17 (3)	0.10	0.30	0.18	0.50
42	685	4 1/2	---	(5)	---	0.15	0.09	0.21	0.13	0.35	0.21	0.60
48	867	5	---	(5)	---	0.18	0.11	0.24	0.14	0.42 (5)	0.25	0.73 (5)
54	1070	5 1/2	---	(5)	---	0.22	0.13	0.29	0.17	0.50 (5)	0.30	0.7 (5)
60	1296	6	0.21	0.13	0.25	0.15	0.34	0.20	0.59 (5)	0.35	(7)	(7)
66	1542	6 1/4	0.25	0.15	0.31	0.19	0.41 (5)	0.25	0.69 (5)	0.41 (5)	(7)	(7)
72	1810	7	0.29	0.17	0.35	0.21	0.49 (5)	0.29	0.79 (5)	0.47 (5)	0.96 (1.5)	0.58 (5)
78	2098	7 1/2	0.32	0.19	0.40 (5)	0.24	0.57 (5)	0.34	0.71 (1.5)	0.43 (5)	1.05 (1.5)	0.63 (5)
84	2410	8	0.37	0.22	0.46 (5)	0.28	0.64 (5)	0.38	0.76 (1.5)	0.46 (5)	1.14 (1.5)	0.68 (5)
90	2740	8 1/2	0.41 (5)	0.25	0.51 (5)	0.31	0.69 (5)	0.41 (5)	0.82 (1.5)	0.49 (5)	1.23 (1.5)	0.74 (5)
96	3090	9	0.46 (5)	0.28	0.57 (5)	0.34	0.76 (5)	0.46 (5)	0.87 (1.5)	0.52 (5)	1.32 (1.5)	0.79 (5)
108	3860	10	0.51 (5)	0.37	0.76 (5)	0.46 (5)	1.08 (5)	0.65 (5)	0.98 (1.5)	0.59 (5)	1.50 (1.5)	0.90 (5)

NOTES:

SEE SHEETS 3 THROUGH 6 FOR ADDITIONAL INFORMATION ON PIPE SECTIONS AND GENERAL NOTES.

STANDARD PLATE 3006, GASKET JOINT FOR R.C. PIPE, MAY BE FURNISHED IN LIEU OF 3000 PIPE. THE GASKET IS REQUIRED.

WHEN CONNECTING 3000 TO 3006 STANDARD PLATE PIPES, USE A TRANSITION SECTION OF NOMINAL LAYING LENGTH WITH A 3000 JOINT ON ONE END AND A 3006 GASKET JOINT ON THE OTHER END AND HAVING THE TONGUE AND GROOVE CONFIGURATION NECESSARY TO CONNECT THE PIPES. 3000 JOINTS ARE NOT ALLOWED ON CHISAGO COUNTY PROJECTS

- CLASS IV PIPE 78" OR MORE IN DIAMETER AND CLASS V PIPE 72" OR MORE IN DIAMETER ARE SPECIAL DESIGNS IN ACCORDANCE WITH 3236 AND REQUIRE SHEAR REINFORCEMENT. FOR SHEAR REINFORCEMENT, SEE SHEET 5 OF 6.
- FOR THESE CLASSES AND SIZES, THE MINIMUM PRACTICAL STEEL REINFORCEMENT IS SPECIFIED.
- AS AN ALTERNATIVE, SINGLE-CAGE REINFORCEMENT MAY BE USED. THE REINFORCEMENT AREA IN SQUARE INCHES PER LINEAR FOOT IS 0.20 IN²/LIN.FT. FOR CLASS 2, AND 0.30 IN²/LIN.FT. FOR CLASS 3.
- THE REQUIRED STRENGTH INCREASES TO 5000 PSI FOR LARGER SIZE PIPE. SEE BELOW.
- FOR PIPES 48" AND LARGER, AS AN ALTERNATIVE FOR DESIGNS REQUIRING BOTH INNER AND OUTER CAGES, IF THE REQUIRED REINFORCEMENT FOR EITHER CAGE MEETS OR EXCEEDS 0.40 IN²/LIN.FT., QUADRANT REINFORCEMENT MAY BE USED AS SHOWN ON SHEET 4 OF 6. THESE ARE SPECIAL DESIGNS IN ACCORDANCE WITH 3236.
- USE CLASS 2 AS THE MINIMUM CLASS OF PIPE.
- USE "C" WALL PIPE.

APPROVED MARCH 5, 2020

STATE DESIGN ENGINEER

STATE OF MINNESOTA
DEPARTMENT OF TRANSPORTATION
REINFORCED CONCRETE PIPE
B WALL

SPECIFICATION REFERENCE
2501
2503

STANDARD PLATE NO.
3000M
1 OF 6

INTERNAL DIA. OF PIPE (INCHES)	WEIGHT PER LINEAR FOOT OF PIPE	WALL THICKNESS	CLASS II		CLASS III		CLASS IV		CLASS V	
			D - LOAD TO PRODUCE A 0.01 INCH CRACK (LBS./LIN.FT. OF DIA.)		1000		1350		2000	
			D - LOAD TO PRODUCE ULTIMATE LOAD (LBS./LIN.FT. OF DIA.)		1500		2000		3000	
			CONCRETE 4000 PSI (4)		CONCRETE 4000 PSI (4)		CONCRETE 4000 PSI (4)		CONCRETE 6000 PSI	
			MINIMUM REINFORCEMENT SQUARE INCHES PER LINEAR FOOT OF BARREL							
		T	INNER CAGE	OUTER CAGE	INNER CAGE	OUTER CAGE	INNER CAGE	OUTER CAGE	INNER CAGE	OUTER CAGE
0	POUNDS	INCHES								
12	140	2 1/4	0.07 (2)	---	0.07 (2)	---	0.07 (2)	---	0.07 (2)	---
15	180	3	0.07 (2)	---	0.07 (2)	---	0.07 (2)	---	0.07 (2)	---
18	230	3 1/4	0.07 (2)	---	0.07 (2)	---	0.07 (2)	---	0.10	---
21	280	3 1/2	0.07 (2)	---	0.07 (2)	---	0.07 (2)	---	0.10	---
24	340	3 3/4	0.07 (2)	---	0.07	---	0.07	0.07	0.12	0.07
27	410	4	0.07 (2)	---	0.08	---	0.08	0.07	0.14	0.08
30	480	4 1/4	0.07 (2)	---	0.10	---	0.09	0.07	0.18	0.11
33	510	4 1/2	0.07 (2)	---	0.12	---	0.11	0.07	0.23	0.14
36	630	4 3/4	0.07 (3)	0.07	0.08 (5)	0.07	0.14	0.08	0.27	0.16
42	810	5 1/4	0.10	0.07	0.12	0.07	0.20	0.12	0.36	0.22
48	1010	5 3/4	0.14	0.08	0.16	0.10	0.26	0.16	0.47 (5)	0.28
54	1230	6 1/4	0.17	0.10	0.21	0.13	0.34	0.20	0.58 (5)	0.35
60	1470	6 3/4	0.22	0.13	0.25	0.15	0.41 (5)	0.25	0.70 (5)	0.42 (5)
66	1740	7 1/4	0.25	0.15	0.31	0.19	0.51 (5)	0.31	0.84 (5)	0.50 (5)
			CONCRETE 5000 PSI							
72	2010	7 3/4	0.30	0.18	0.36	0.22	0.61 (5)	0.37	0.99 (5)	0.59 (5)
78	2330	8 1/4	0.35	0.21	0.42 (5)	0.25	0.71 (5)	0.43 (5)	0.85 (1.5)	0.51 (5)
84	2640	8 3/4	0.41 (5)	0.25	0.50 (5)	0.30	0.85 (5)	0.51 (5)	0.94 (1.5)	0.56 (5)
			CONCRETE 5000 PSI							
90	3000	9 1/4	0.48 (5)	0.29	0.59 (5)	0.35	0.74 (1.5)	0.44 (5)	1.03 (1.5)	0.62 (5)
96	3370	9 3/4	0.55 (5)	0.33	0.70 (5)	0.42 (5)	0.79 (1.5)	0.47 (5)	1.12 (1.5)	0.67 (5)
			CONCRETE 5000 PSI							
108	4170	10 3/4	0.70 (5)	0.42 (5)	0.99 (5)	0.59 (5)	0.90 (1.5)	0.54 (5)	1.30 (1.5)	0.78 (5)

NOTES:

SEE SHEET 3 THROUGH 6 FOR ADDITIONAL INFORMATION ON C WALL PIPE SECTIONS AND GENERAL NOTES.

STANDARD PLATE 3006, GASKET JOINT FOR R.C. PIPE, MAY BE FURNISHED IN LIEU OF 3000 PIPE. THE GASKET IS REQUIRED.

WHEN CONNECTING 3000 TO 3006 STANDARD PLATE PIPES, USE A TRANSITION SECTION OF NOMINAL LAYING LENGTH WITH A 3000 JOINT ON ONE END AND A 3006 GASKET JOINT ON THE OTHER END AND HAVING THE TONGUE AND GROOVE CONFIGURATION NECESSARY TO CONNECT THE PIPES.

3000 JOINTS ARE NOT ALLOWED ON CHISAGO COUNTY PROJECTS

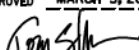
① CLASS IV PIPE 90" OR MORE IN DIAMETER AND CLASS V PIPE 78" OR MORE IN DIAMETER ARE SPECIAL DESIGNS IN ACCORDANCE WITH 3236 AND REQUIRE SHEAR REINFORCEMENT. FOR SHEAR REINFORCEMENT, SEE SHEET 5 OF 6.

② FOR THESE CLASSES AND SIZES, THE MINIMUM PRACTICAL STEEL REINFORCEMENT IS SPECIFIED.

③ AS AN ALTERNATIVE, FOR CLASS II AND III, A SINGLE CAGE REINFORCEMENT MAY BE USED. THE REQUIRED REINFORCEMENT IS 0.16 IN²/LIN.FT. FOR CLASS II AND 0.20 IN²/LIN.FT. FOR CLASS III.

④ THE REQUIRED STRENGTH INCREASES TO 5000 PSI FOR LARGER SIZE PIPE. SEE BELOW.

⑤ FOR PIPES 48" AND LARGER, AS AN ALTERNATIVE FOR DESIGNS REQUIRING BOTH INNER AND OUTER CAGES, IF THE REQUIRED REINFORCEMENT FOR EITHER CAGE EXCEEDS 0.40 IN²/LIN.FT., QUADRANT REINFORCEMENT MAY BE USED AS SHOWN ON SHEET 4 OF 6. THESE ARE SPECIAL DESIGNS IN ACCORDANCE WITH 3236.

APPROVED MARCH 5, 2020

STATE DESIGN ENGINEER

STATE OF MINNESOTA
DEPARTMENT OF TRANSPORTATION
REINFORCED CONCRETE PIPE
C WALL

SPECIFICATION REFERENCE
2501
2503

STANDARD PLATE NO.
3000M
2 OF 6

INTERNAL DIAMETER OF PIPE IN INCHES	CROSS SECTION WATER AREA	J LENGTH OF JOINT	A (INCHES)	D1	D2	D3	D4	TOLERANCES IN DIMENSIONS (PLUS OR MINUS)				
								INTERNAL DIAMETER	WALL THICKNESS		J	
									D1, D2, D3, & D4	B WALL		C WALL
D	SQ. FT.	INCHES										
12	0.79	1 1/4	3/8	13 1/4	13 3/8	13 3/8	14 1/4	1/4	3/8	3/8	3/8	1/4
15	1.23	2	3/8	16 1/2	16 3/8	16 3/8	17 1/4	17 3/8	3/8	3/8	3/8	1/4
18	1.77	2 1/4	3/8	19 3/8	20	20 3/8	20 3/4	3/8	3/8	3/8	3/8	1/4
21	2.40	2 1/2	3/8	22 3/8	23 1/4	23 3/4	24 3/8	3/8	3/8	3/8	3/8	1/4
24	3.14	2 3/4	3/8	26	26 3/8	27	27 3/8	3/8	3/8	3/8	3/8	1/4
27	3.98	3	3/8	29 3/4	29 3/8	30 1/4	30 3/8	3/8	3/8	3/8	3/8	1/4
30	4.91	3 1/4	3/8	32 3/4	32 3/8	33 1/2	33 3/8	3/8	3/8	3/8	3/8	1/4
33	5.94	3 1/2	1/4	35 1/2	36	36 3/4	37 1/4	3/8	1/4	3/8	1/4	1/4
36	7.07	3 3/4	1/4	38 3/4	39 1/4	40	40 1/2	3/8	1/4	3/8	1/4	1/4
42	9.62	4	1/4	45 1/8	45 3/8	46 1/2	47	3/8	1/4	3/8	1/4	1/4
48	12.57	4 1/4	1/4	51 1/2	52	53	53 1/2	1/2	1/4	1/4	3/8	1/4
54	15.90	4 1/2	1/4	57 3/8	58 3/8	59 3/8	59 3/8	3/8	1/4	1/4	3/8	1/4
60	19.63	5	1/4	64 1/4	64 3/4	66	66 1/2	3/8	1/4	3/8	3/8	1/4
66	23.76	5 1/2	1/4	70 3/8	71 1/8	72 1/2	73	3/8	1/4	3/8	3/8	1/4
72	28.27	6	1/4	77	77 1/2	79	79 1/2	3/4	1/4	3/8	3/8	1/4
78	33.18	6 1/2	1/4	83 3/8	83 3/8	85 3/8	86 3/8	3/8	1/4	3/8	3/8	1/4
84	38.48	7	1/4	89 3/4	90 1/4	92 3/8	92 3/8	3/8	1/4	3/8	3/8	1/4
90	44.18	7 1/4	1/4	95 3/4	96 1/4	98 3/8	98 3/8	3/8	1/4	3/8	3/8	1/4
96	50.27	7 1/2	1/4	102 3/8	102 3/8	104 1/2	105	1	1/4	3/8	1/2	1/4
108	63.62	7 3/4	1/4	115 3/8	116	118	118 1/2	1 1/8	1/4	1/2	3/8	1/4

NOTE:
LAYING LENGTH: DO NOT UNDERRUN THE LAYING LENGTH BY MORE THAN 1/2".

SECTION AT PIPE JOINT

TONGUE END

GROOVE END

J

A

D3/2

D1/2

D/2

D2/2

D4/2

E OF PIPE

ALTERNATE BELL TYPE END OR SEE STANDARD PLATE 3006

APPROVED MARCH 5, 2020 STATE DESIGN ENGINEER	STATE OF MINNESOTA DEPARTMENT OF TRANSPORTATION REINFORCED CONCRETE PIPE JOINT DIMENSIONS FOR B-WALL AND C-WALL	SPECIFICATION REFERENCE 2501 2503	STANDARD PLATE NO. 3000M 3 OF 6
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NO.	DATE	BY	CHK	REVISIONS

Design By: NEH
Plan By: MKV
Checked By: MAN
Approved By: NEH

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.
NICHOLAS E. HENTZ, P.E.
DATE: 9/12/2024 LICENSE NO. 44620

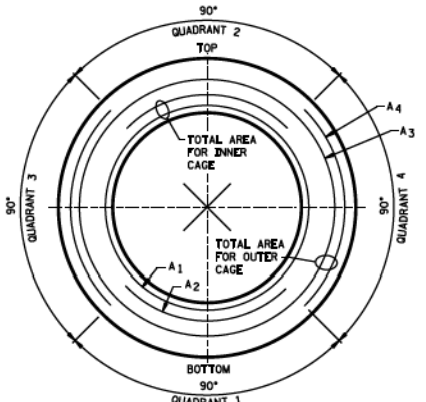


CSAH 30 (Forest Blvd) Improvements
Chisago County, Minnesota

CHISAGO COUNTY, MINNESOTA
STANDARD PLATES
SAP 013-630-021 / SAP 225-591-007 / SAP 225-102-004

SHEET 31 OF 216 SHEETS

DATE: 9/12/2024 1:59:58 PM
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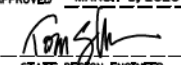


CROSS SECTION FOR QUADRANT REINFORCEMENT

INTERNAL DIAMETER OF PIPE	B WALL		C WALL	
	QUADRANT REINFORCEMENT LENGTH		QUADRANT REINFORCEMENT LENGTH	
	LENGTH OF 90° ARC	LENGTH OF 90° ARC	LENGTH OF 90° ARC	LENGTH OF 90° ARC
48"	40"	44"	40"	46"
54"	44"	50"	44"	51"
60"	49"	55"	49"	57"
66"	54"	61"	54"	62"
72"	59"	66"	59"	68"
78"	63"	72"	63"	73"
84"	68"	77"	68"	78"
90"	73"	83"	73"	84"
96"	77"	88"	77"	90"
108"	87"	99"	87"	101"

QUADRANT REINFORCEMENT NOTES:
SEE SHEET 1 OR 2 FOR INNER AND OUTER CAGE REINFORCEMENT.
FOR PIPE 48" AND LARGER, AS AN ALTERNATIVE FOR DESIGNS REQUIRING BOTH INNER AND OUTER CAGES, IF THE REQUIRED REINFORCEMENT FOR EITHER CAGE MEETS OR EXCEEDS Q40 IN $\frac{1}{2}$ L, QUADRANT REINFORCEMENT MAY BE USED.
A1 + A2 = TOTAL INNER CAGE REINFORCEMENT.
A3 + A4 = TOTAL OUTER CAGE REINFORCEMENT.
A1 = REINFORCING OF FULL CIRCULAR INNER CAGE.
A2 = REINFORCING OF INNER LAP SECTION, 90° MINIMUM ARC.
A3 = REINFORCING OF FULL CIRCULAR OUTER CAGE.
A4 = REINFORCING OF OUTER LAP SECTION, 90° MINIMUM ARC.
PROVIDE FULL CIRCULAR CAGES WITH AN AREA EQUAL TO AT LEAST 50% OF THE REQUIRED TOTAL AREA.

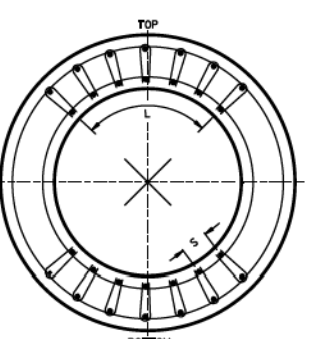
GENERAL NOTES:
USE OF QUADRANT REINFORCEMENT REQUIRES ADDITIONAL FABRICATION CONTROLS. SEE SPEC 3236 AND PROJECT SPECIAL PROVISIONS.
POINT OR INDENT LEGIBLE MARKS AT ONE END OF EACH SECTION ON THE INSIDE AND OUTSIDE OF OPPOSITE WALLS DESIGNATING THE CENTER OF THE QUADRANT REINFORCEMENT.
MARK OR STENCIL THE TOP OF THE PIPE ON BOTH THE INSIDE AND OUTSIDE SURFACES.

APPROVED
MARCH 5, 2020

STATE DESIGN ENGINEER

STATE OF MINNESOTA
DEPARTMENT OF TRANSPORTATION
REINFORCED CONCRETE PIPE
QUADRANT REINFORCEMENT
SPECIAL DESIGN

SPECIFICATION
REFERENCE
2501
2503

STANDARD
PLATE
NO.
3000M
4 OF 6



CROSS SECTION FOR SHEAR REINFORCEMENT

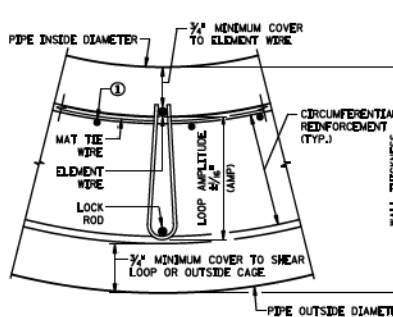
SHEAR REINFORCEMENT NOTES:
SHEAR LOCK MATS MUST BE INSTALLED FROM INSIDE OF PIPE AS SHOWN ON THIS SHEET.
AMP = STIRRUP AMPLITUDE MEASURED FROM FACE OF ELEMENT WIRE TO TIP OF LOOP WIRE (INCHES).
A_r = MINIMUM RADIAL REINFORCING REQUIRED IN SQUARE INCHES PER SQUARE FOOT OF PIPE OVER A MINIMUM ARC LENGTH L, AT TOP AND BOTTOM OF PIPE.
L = MINIMUM ARC LENGTH OF STIRRUPS MEASURED AT INNER CAGE CENTERED ON CENTERLINE OF PIPE (INCHES).
S = MAXIMUM SPACING OF ROWS OR RADIAL REINFORCING AT INNER CAGE (INCHES).
S IS BASED ON SECTION 12.10.4.2.6 OF THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 8TH EDITION, WHERE S IS NOT TO EXCEED $0.75 \sqrt{f_c}$ WHERE f_c IS 0.3 IN ACCORDANCE WITH AASHTO SECTION 12.5.3.2. THE MAXIMUM STIRRUP SPACING HAS BEEN ROUNDED UP FROM THE CALCULATED VALUE TO THE NEAREST $\frac{1}{2}$ ".
PIN ALL SHEAR REINFORCEMENT. PROVIDE ELEMENT BAR WITH A MINIMUM DIAMETER OF 0.15" AND A LOCK ROD OF THE SAME DIAMETER.
SECURE LOCK RODS PLACED ON THE INSIDE OF THE OUTER CAGE NO MORE THAN 6" FROM END OF EACH LOCK ROD AT 12" MAXIMUM SPACING.
SET INSIDE CIRCUMFERENTIAL REINFORCEMENT COVER BY USING A 1" CHAIR FOR THE CIRCUMFERENTIAL REINFORCEMENT.
POINT OR INDENT LEGIBLE MARKS AT ONE END OF EACH SECTION ON THE INSIDE AND OUTSIDE OF OPPOSITE WALLS DESIGNATING THE CENTER OF SHEAR REINFORCEMENT.
MARK OR STENCIL THE TOP OF THE PIPE ON BOTH THE INSIDE AND OUTSIDE SURFACES.
SEE STANDARD PLATE 3007 FOR ADDITIONAL DETAILS.
① WHEN SHEAR LOCK MAT ALTERNATE IS USED, LOCATE THE LONGITUDINALS ON THE INNER CAGE AS SHOWN.

INTERNAL DIAMETER OF PIPE	WALL THICKNESS	AMPLITUDE	SHEAR REINFORCEMENT					
			CLASS IV			CLASS V		
			A _r	L	S	A _r	L	S
48"	7"	5"	—	—	—	0.47	58	3.5
78"	7 1/2"	5 1/2"	0.40	49	4.0	0.48	63	4.0
84"	8"	6"	0.41	53	4.5	0.49	67	4.5
90"	8 1/2"	6 1/2"	0.42	58	4.5	0.50	74	4.5
96"	9"	7"	0.42	62	5.0	0.51	78	5.0
108"	10"	8"	0.43	71	5.5	0.52	89	5.5

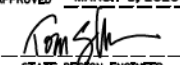
SHEAR REINFORCEMENT B WALL

INTERNAL DIAMETER OF PIPE	WALL THICKNESS	AMPLITUDE	SHEAR REINFORCEMENT					
			CLASS IV			CLASS V		
			A _r	L	S	A _r	L	S
78"	8 1/2"	6 1/2"	—	—	—	0.48	51	4.5
84"	8 1/2"	6 1/2"	—	—	—	0.47	57	4.5
90"	9 1/2"	7 1/2"	0.39	42	5.0	0.48	62	5.0
96"	9 1/2"	7 1/2"	0.40	46	5.5	0.49	68	5.5
108"	10 1/2"	8 1/2"	0.41	57	6.0	0.50	79	6.0

SHEAR REINFORCEMENT C WALL



SHEAR LOCK MAT DETAIL
(PINNED ON INSIDE)

APPROVED
MARCH 5, 2020

STATE DESIGN ENGINEER

STATE OF MINNESOTA
DEPARTMENT OF TRANSPORTATION
REINFORCED CONCRETE PIPE
SPECIAL DESIGN
SHEAR REINFORCEMENT - INSTALLED FROM INSIDE

SPECIFICATION
REFERENCE
2501
2503

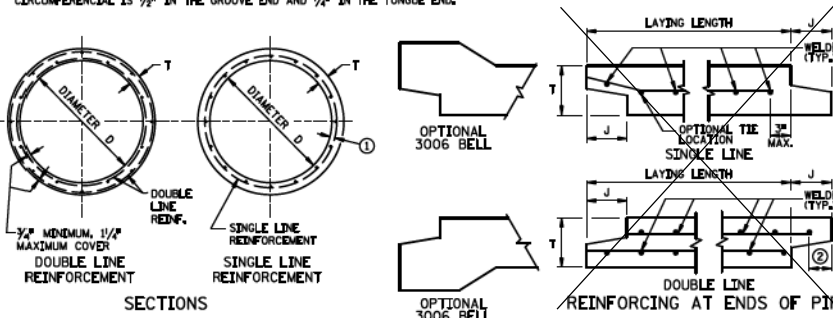
STANDARD
PLATE
NO.
3000M
5 OF 6

REINFORCEMENT:
USE REINFORCEMENT STEEL CONFORMING TO AASHTO M10, EXCEPT AS SHOWN.
LAP CIRCUMFERENTIAL REINFORCEMENT AT LEAST 20 DIAMETERS FOR DEFORMED COLD-WORKED WIRE, AND AT LEAST 40 DIAMETERS FOR PLAIN BARS AND COLD-DRAWN WIRE. ADDITIONALLY, USE A LAP WITH LONGITUDINAL WIRE INCLUDED ON EACH SIDE OF THE LAP. ASSEMBLE ALL CIRCULAR AND LONGITUDINAL REINFORCEMENT AND SECURELY FASTEN SO AS TO MAINTAIN REINFORCEMENT IN EXACT SHAPE AND CORRECT POSITION WITHIN THE FORM.
REINFORCEMENT WILL BE CONSIDERED AS MEETING THE DESIGN REQUIREMENTS IF THE AREA COMPUTED ON THE BASIS OF NOMINAL AREA OF THE WIRE OR BARS USED, EQUALS OR EXCEEDS THE ABOVE REQUIREMENT. ACTUAL AREA OF THE REINFORCING USED MAY VARY FROM THE NOMINAL AREA ACCORDING TO PERMISSIBLE VARIATIONS OF THE STANDARD SPECIFICATIONS FOR THE REINFORCING. IF REBAR IS USED INSTEAD OF WELDED WIRE REINFORCING, INCREASE THE STEEL AREAS SHOWN BY 8%.
PROVIDE COVER OVER THE CIRCUMFERENTIAL STEEL AS SHOWN ON THIS PLATE, BUT IN NO CASE LESS THAN $\frac{3}{4}$ " AS MEASURED TO THE INSIDE WALL SURFACE OR THE OUTSIDE WALL SURFACE, EXCEPT IN THE TONGUE AND GROOVE. REINFORCING STEEL MAY BE OMITTED FROM EITHER THE TONGUE OR GROOVE ENDS OF PIPE WITH A SINGLE CAGE. PROVIDE REINFORCEMENT IN BELL ENDS WHEN STANDARD PLATE 3006 JOINTS ARE USED.
DO NOT EXCEED 4" CENTER-TO-CENTER SPACING OF ADJACENT RINGS OF CIRCUMFERENTIAL REINFORCEMENT IN A CAGE UP TO AND INCLUDING PIPE HAVING A 4" WALL THICKNESS, NOR EXCEED THE WALL THICKNESS FOR LARGE PIPE, AND IN NO CASE EXCEED 6". MAINTAIN CONTINUITY OF THE CIRCUMFERENTIAL REINFORCING STEEL DURING THE MANUFACTURE OF THE PIPE. ANY CIRCUMFERENTIAL REINFORCING THAT IS CUT MUST BE REPLACED WITH AT LEAST ONE-HALF OF THE STEEL AREA ON EACH SIDE OF THE CUT WIRE.
CIRCUMFERENTIAL REINFORCEMENT: A LINE OF CIRCUMFERENTIAL REINFORCEMENT FOR ANY GIVEN TOTAL AREA MAY BE COMPOSED OF TWO LAYERS FOR PIPE WITH WALL THICKNESSES OF LESS THAN 7" OR THREE LAYERS FOR PIPE WITH WALL THICKNESSES OF 7" OR GREATER, DO NOT SEPARATE THE LAYERS BY MORE THAN THE THICKNESS OF ONE LONGITUDINAL BAR PLUS $\frac{1}{4}$ ". FASTEN MULTIPLE LAYERS TOGETHER TO FORM A SINGLE CAGE. ALL OTHER SPECIFICATION REQUIREMENTS SUCH AS LAPS, WELDS, AND TOLERANCES OF PLACEMENT IN THE WALL OF THE PIPE, ETC., APPLY TO THIS METHOD OF FABRICATION OF A LINE OF REINFORCEMENT.

GENERAL NOTES:
COMPUTE THE STRENGTH TEST REQUIREMENTS IN POUNDS-FORCE PER LINEAL FOOT OF PIPE UNDER THE THREE-EDGE-BEARING METHOD BY MULTIPLYING THE INTERNAL DIAMETER OF THE PIPE IN FEET BY THE D-LOADS EXPRESSED IN POUND-FORCE PER LINEAL FOOT OF DIAMETER TO PRODUCE THE 0.01" CRACK AND THE ULTIMATE LOAD SPECIFIED ON SHEETS 1 AND 2 OF THIS STANDARD PLATE.
SEE STANDARD PLATE 3145 FOR PIPE TIE REQUIREMENTS.
NO MORE THAN TWO LIFT HOLES ARE PERMITTED IN ANY SECTION OF PIPE. FURNISH AND INSTALL TAPERED CONCRETE PLUGS TO CLOSE LIFT HOLES.
PERFORM GASKET LUBRICATION PER MANUFACTURER'S RECOMMENDATIONS.
REFER TO MDDOT DRAINAGE MANUAL FOR ALLOWABLE FILL HEIGHTS.

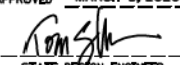
LAYING LENGTH:
LAYING LENGTH IS DEFINED AS THE TOTAL PIPE SECTION LENGTH MINUS THE TONGUE LENGTH & THE MINIMUM LAYING LENGTH IS 6' FOR DIAMETERS 100" OR LESS, EXCEPT THAT TWO 4'-LENGTHS ARE PERMITTED IN A LINE OF PIPE TO MAKE A REQUIRED LENGTH. THE MINIMUM LAYING LENGTH IS 4' FOR DIAMETERS GREATER THAN 100". FOR ALL DIAMETERS OF PIPE, ONE SECTION OF ANY ODD LENGTH GREATER THAN 4 FEET IS PERMITTED IN EACH LINE OR REACH OF PIPE TO MAKE THE REQUIRED LENGTH. PLACE PIPE SECTIONS SHORTER THAN THE NOMINAL LENGTH NEAR THE MIDDLE OF THE LINE OR AS REQUIRED BY THE ENGINEER.

BASIS OF DESIGN:
CONCRETE STRENGTHS AND REINFORCEMENT REQUIREMENTS ARE IN ACCORDANCE WITH AASHTO M10, FOR PIPE SIZES AND CLASSES THAT ARE NOT INCLUDED IN M10, A CUSTOM DESIGN FOR THE 3 EDGE BEARING TEST WAS PERFORMED IN ACCORDANCE WITH THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 8TH EDITION, SECTION 12.10.4.2, WITH HL-93 LIVE LOAD EXCLUDING LANE LOAD, ASSUMED SOIL UNIT WEIGHT OF 120 PCF.
① 35 TO 50 PERCENT OF T, EXCEPT WHEN WALL THICKNESS IS LESS THAN $2\frac{1}{2}$ ", THEN $\frac{3}{4}$ " OF COVER IS REQUIRED.
② MAXIMUM END COVER ON LAST CIRCUMFERENTIAL IS LESSER OF $\frac{1}{2}$ THE LENGTH OF THE JOINT OR 3". MINIMUM END COVER TO THE LAST CIRCUMFERENTIAL IS $\frac{1}{4}$ " IN THE GROOVE END AND $\frac{1}{4}$ " IN THE TONGUE END.



SECTIONS

REINFORCING AT ENDS OF PIPE

APPROVED
MARCH 5, 2020

STATE DESIGN ENGINEER

STATE OF MINNESOTA
DEPARTMENT OF TRANSPORTATION
REINFORCED CONCRETE PIPE
GENERAL NOTES

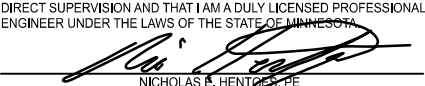
SPECIFICATION
REFERENCE
2501
2503

STANDARD
PLATE
NO.
3000M
6 OF 6

NO.	DATE	BY	CHK	REVISIONS

Design By:
NEH
Plan By:
MKV
Checked By:
MAN
Approved By:
NEH

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.


NICHOLAS E. HENTGES, PE
DATE: 9/12/2024
LICENSE NO. 44620



CSAH 30 (Forest Blvd) Improvements
Chisago County, Minnesota

CHISAGO COUNTY, MINNESOTA

STANDARD PLATES
SAP 013-630-021 / SAP 225-591-007 / SAP 225-102-004

SHEET
32
OF
216
SHEETS

DATE: 9/12/2024 2:00:00 PM
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DIAMETER D	LENGTH OF JOINT J	D ₁	D ₂	MINIMUM L ₂	B-WALL L ₁	C-WALL L ₁	X ₁	X ₂	Y ₁	Y ₂	Y ₃
12	3/4	15.223	15.331	5	2	1/4	1	1/4	0.062	0.090	0.313
15	3/4	18.723	18.831	4 1/4	2 1/4	1 1/4	1	1/4	0.062	0.090	0.313
18	3/4	22.098	22.206	5	2 1/4	1 1/4	1	1/4	0.062	0.090	0.313
21	3/4	25.600	25.724	5 1/4	2 1/4	1 1/4	1	1/4	0.062	0.090	0.313
24	3/4	28.975	29.099	5 1/4	2 1/4	2	1	1/4	0.062	0.090	0.313
27	4	32.476	32.608	5 1/4	2 1/4	2	1	1/4	0.062	0.090	0.313
30	4	35.976	36.108	5 1/4	2 1/4	2	1	1/4	0.062	0.090	0.313
33	4 1/4	39.476	39.616	5 1/4	2 1/4	2 1/4	1	1/4	0.062	0.090	0.313
36	4 1/4	42.976	43.116	6	3 1/4	2 1/4	1	1/4	0.062	0.090	0.313
42	4 1/4	50.021	50.183	6 1/4	3 1/4	3	1 1/4	1	0.067	0.129	0.376
48	4 1/4	57.023	57.193	7 1/4	4 1/4	3 1/4	1 1/4	1	0.067	0.129	0.376
54	5	63.007	63.192	7 1/4	3 1/4	2 1/4	1 1/4	1	0.067	0.129	0.376
60	5	69.007	69.192	7 1/4	3 1/4	2 1/4	1 1/4	1	0.067	0.129	0.376
66	5	75.007	75.192	7 1/4	2 1/4	2	1 1/4	1	0.067	0.129	0.376
72	5 1/4	79.250	79.400	---	---	---	1 1/4	1 1/4	0.093	0.190	0.376
78	5 1/4	86.250	86.400	---	---	---	1 1/4	1 1/4	0.093	0.190	0.376
84	5 1/4	91.500	91.650	---	---	---	1 1/4	1 1/4	0.093	0.190	0.376
90	5 1/4	97.750	97.900	---	---	---	1 1/4	1 1/4	0.093	0.190	0.376
96	5 1/4	104.250	104.400	---	---	---	1 1/4	1 1/4	0.093	0.190	0.376
108	6 1/4	117.250	117.400	---	---	---	1 1/4	1 1/4	0.130	0.190	0.376

66" PIPE AND SMALLER ①
REINFORCEMENT NOT SHOWN

72" PIPE AND LARGER
REINFORCEMENT NOT SHOWN

NOTES:
SEE STANDARD PLATE 3000 FOR PIPE DESIGN.
THE ENGINEER MAY APPROVE A CHANGE IN THE SIZE OF THE NOTCH AND GASKET. A WRITTEN REQUEST FOR APPROVAL OF SUCH CHANGE IS REQUIRED.

TOLERANCES IN DIMENSIONS:
JOINT DIMENSIONS ARE NOMINAL AND SUBJECT TO REASONABLE MANUFACTURING TOLERANCES. FABRICATE THE TONGUE AND GROOVE SUCH THAT WHEN THE PIPE IS JOINTED WITH THE GASKET IN PLACE A PROPER FIT IS OBTAINED. FINAL ACCEPTANCE OF THE PIPE WILL BE AT THE JOB SITE AFTER EFFECTIVE JOINTING HAS BEEN OBTAINED.
DIMENSIONS SHOWN ARE DESIGN DIMENSIONS. INSPECTION MEASUREMENTS WILL BE MADE TO THE NEAREST 1/8".
FURNISH GASKETS IN ACCORDANCE WITH ASTM C1619 CLASS C.
① SEE SHEET 2 OF 2 FOR OPTIONAL BELL REINFORCEMENT, CLEARANCES, AND NOTES.

APPROVED MARCH 5, 2020

STATE DESIGN ENGINEER

STATE OF MINNESOTA
DEPARTMENT OF TRANSPORTATION
GASKET JOINT FOR R.C. PIPE

SPECIFICATION
REFERENCE
2501
2503

STANDARD
PLATE
NO.
3006H
1 OF 2

CYLINDRICAL CAGE DETAIL

EXPANDED BELL DETAIL

BELL REINFORCEMENT OPTIONS
66" PIPE AND SMALLER

OPTIONAL TONGUE DETAIL
REINFORCEMENT NOT SHOWN

ENLARGED JOINT DETAIL

NOTES:
PROVIDE A BELL CAGE AT LEAST AS WIDE AS DIMENSION B.
FOR DOUBLE CAGE PIPE, PROVIDE REINFORCEMENT AT LEAST EQUAL IN AREA TO THAT OF THE OUTSIDE CAGE OR LINE FOR BELLS, AND THE INSIDE CAGE OR LINE FOR SPIGOTS. FOR SINGLE CAGE PIPE, PROVIDE REINFORCEMENT IN THE BELL AT LEAST EQUAL IN AREA TO THAT OF THE CAGE.
SEE SHEET 1 FOR ALL DIMENSIONS OTHER THAN BELL REINFORCEMENT.
① LOCATE REINFORCING IN BELL FROM 3/4" TO 1 1/4" FROM INNER FACE OF BELL.
② USE A MINIMUM OF THREE NO. 3 HOOK TIES EQUALLY SPACED WITH A MAXIMUM SPACING OF 24".

OPTIONAL TRANSITION PIPE
CONNECT TONGUE END TO TONGUE END

INTERNAL DIAMETER	12"	15"	18"	21"	24"	27"	30"
WALL	4"	4 3/8"	4 3/8"	5 1/2"	5 3/4"	6"	6 1/2"
INSIDE REINFORCEMENT (IN ² / LIN. FT.)	0.08	0.08	0.10	0.12	0.12	0.14	0.18
OUTSIDE REINFORCEMENT (IN ² / LIN. FT.)	---	---	---	0.08	0.08	0.08	0.11

APPROVED MARCH 5, 2020

STATE DESIGN ENGINEER

STATE OF MINNESOTA
DEPARTMENT OF TRANSPORTATION
**GASKET JOINT FOR R.C. PIPE
OPTIONS**

SPECIFICATION
REFERENCE
2501
2503

STANDARD
PLATE
NO.
3006H
2 OF 2

SHEAR LOCK ALTERNATE - PIPE ①

SHEAR LOCK ALTERNATE - BOX CULVERTS ①

J-BAR ALTERNATE ①

V-BAR ALTERNATE

V-BAR DETAIL

NOTES:
S = MAXIMUM SPACING OF ROWS OR RADIAL REINFORCING AT INNER CAGE. REFER TO STANDARD PLATES 3000, 3014, OR THE PRECAST BOX CULVERT STANDARDS FOR REINFORCEMENT CLEARANCES, SHEAR REINFORCEMENT AREAS, AMPLITUDE, AND SPACING.
USE SHEAR REINFORCEMENT IN CONFORMANCE WITH THE APPLICABLE REQUIREMENTS OF AASHTO M32. USE GRADE 60 REINFORCING BARS IN CONFORMANCE WITH SPEC 330L.
ANCHOR SHEAR REINFORCEMENT IN CONFORMANCE WITH SECTION 12 OF THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS.
PIN ALL SHEAR REINFORCEMENT. FOR SHEAR LOCK MAT AND J-BAR ALTERNATES, PROVIDE ELEMENT WIRE WITH A MINIMUM DIAMETER OF 0.419" AND A LOCK ROD OF THE SAME DIAMETER. FOR THE V-BAR ALTERNATE USE ROD WITH A MINIMUM DIAMETER OF 0.25".
OTHER FORMS OF SHEAR REINFORCEMENT WILL BE CONSIDERED FOR APPROVAL UPON WRITTEN REQUEST.

① STIRRUPS MAY BE SPICED A MINIMUM OF ONE OVERLAP AT OR NEAR E OF PIPE.
② THE J BAR ALTERNATE CAN BE FABRICATED FROM WELDED WIRE REINFORCEMENT OR AS APPROVED BY THE ENGINEER. BEND THE WIRE TO FORM A 140 DEGREE OR GREATER HOOK.
③ AS MEASURED ALONG THE INNER CAGE.
④ FOR BOX CULVERTS, SHEAR LOCK MATS MAY BE INSTALLED FROM THE INSIDE OR OUTSIDE AT FABRICATORS OPTION.

APPROVED MARCH 5, 2020

STATE DESIGN ENGINEER

STATE OF MINNESOTA
DEPARTMENT OF TRANSPORTATION
**SHEAR REINFORCEMENT FOR
PRECAST DRAINAGE STRUCTURES**

SPECIFICATION
REFERENCE
2501
2503

STANDARD
PLATE
NO.
3007F

NO.	DATE	BY	CHK	REVISIONS

Design By:
NEH
Plan By:
MKV
Checked By:
MAN
Approved By:
NEH

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.

NICHOLAS E. HENTGES, PE
DATE: 9/12/2024
LICENSE NO. 44620



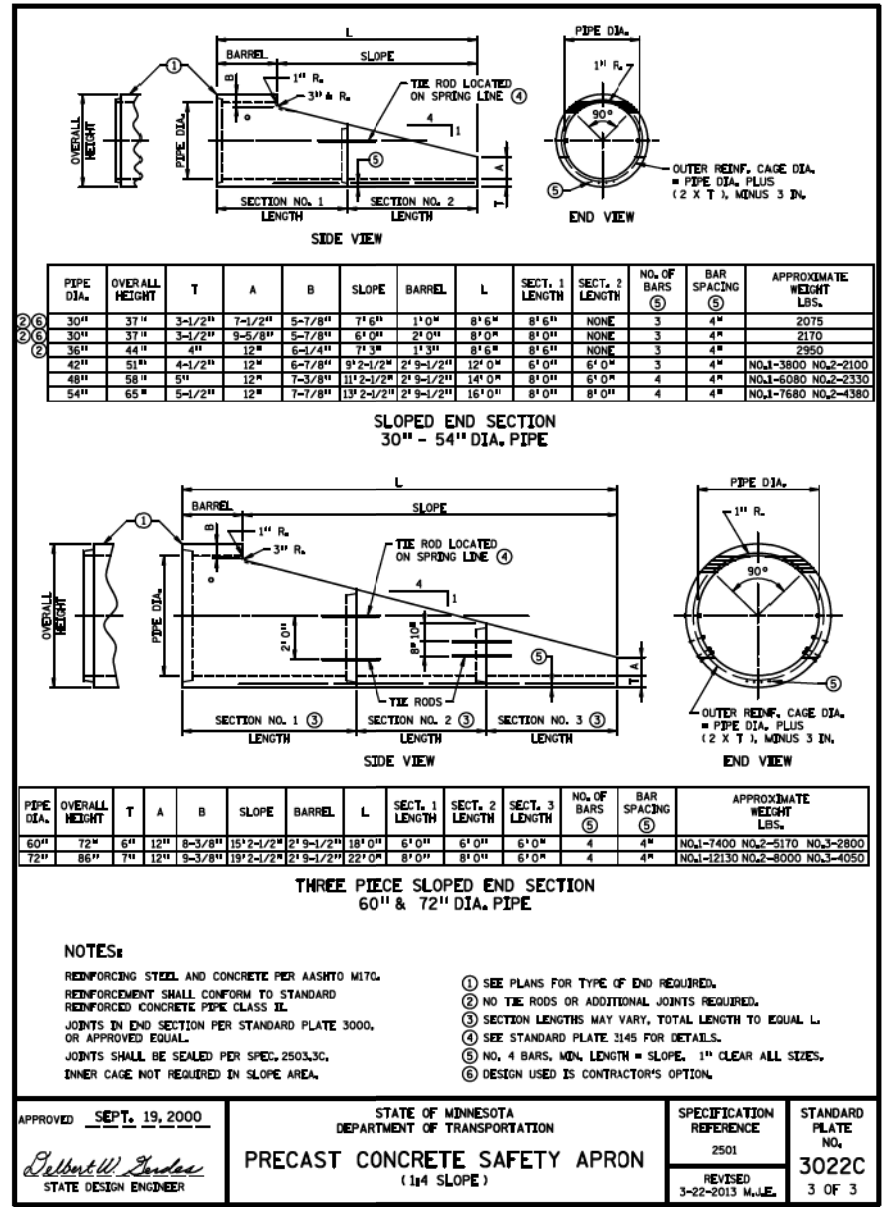
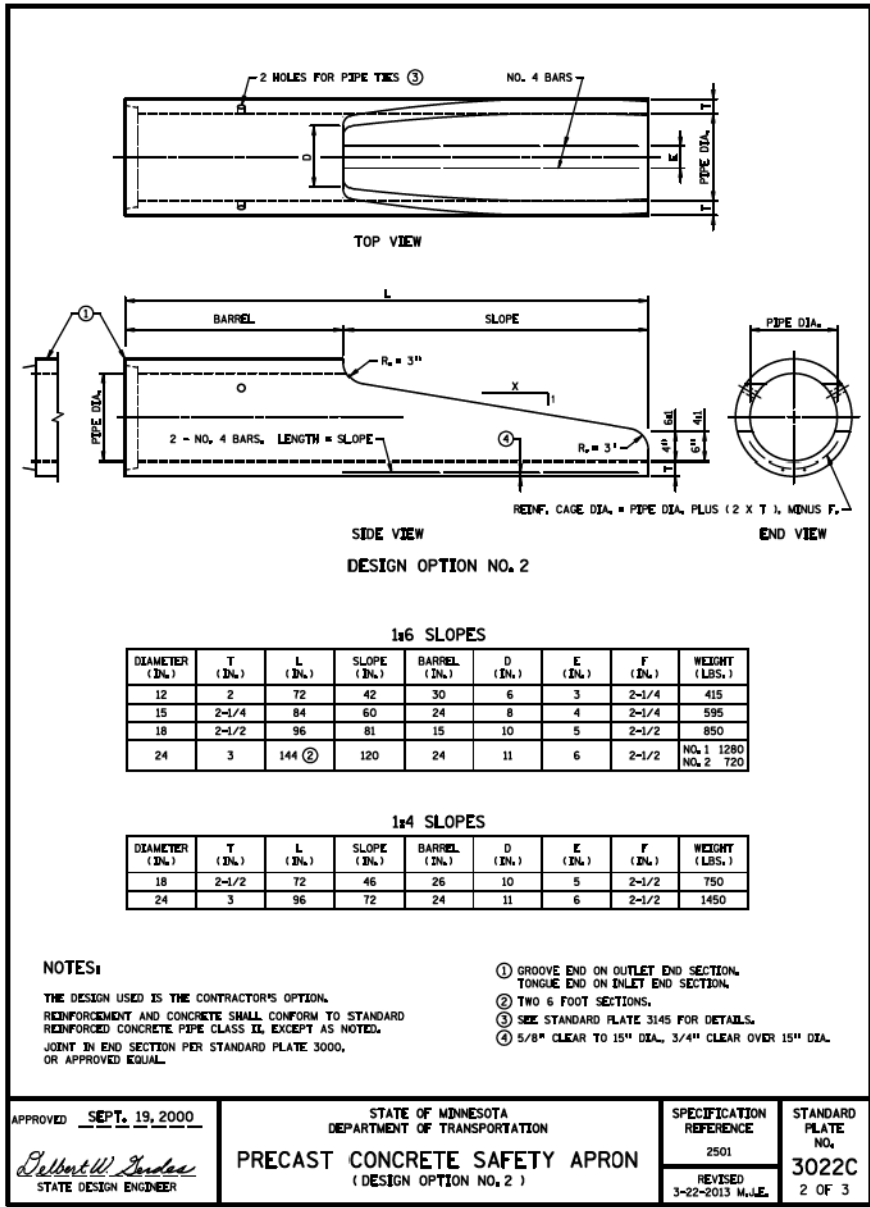
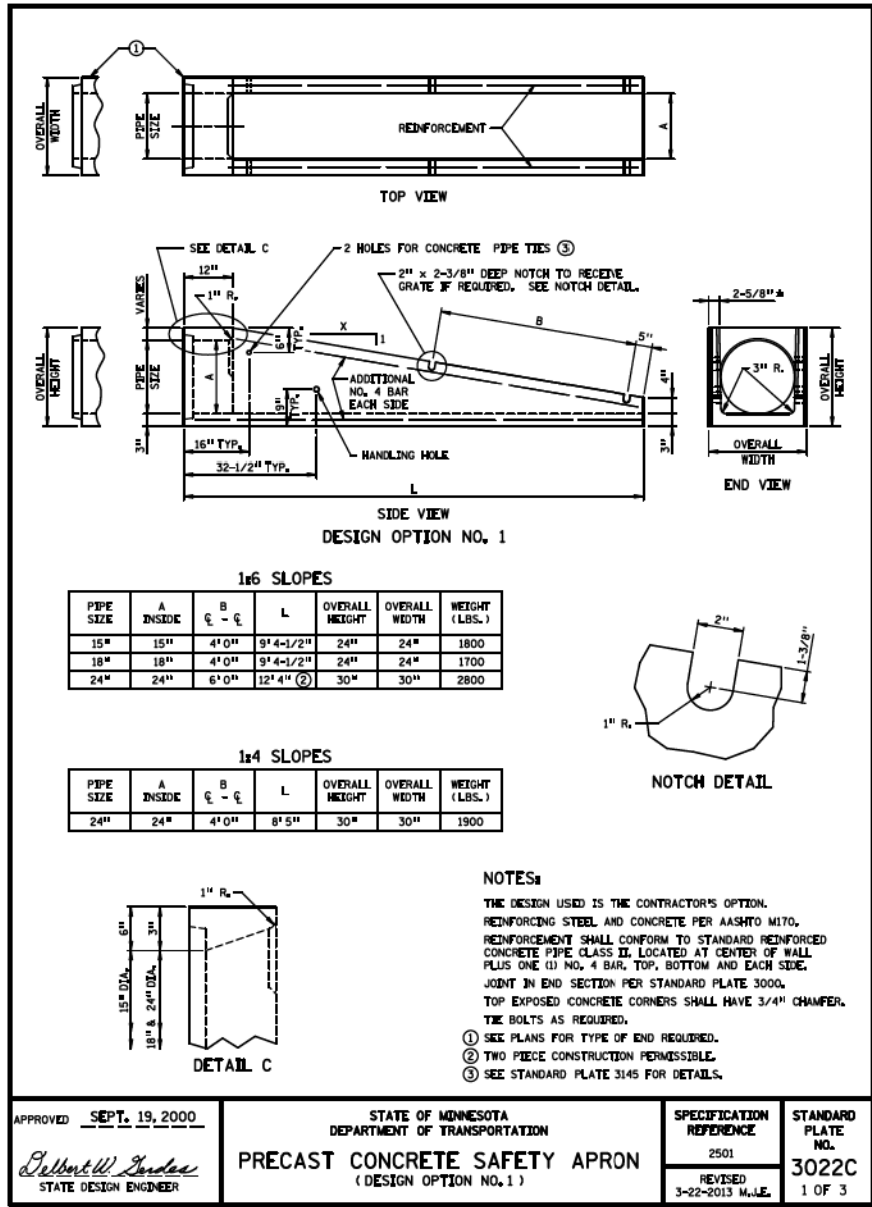
CSAH 30 (Forest Blvd) Improvements
Chisago County, Minnesota

CHISAGO COUNTY, MINNESOTA

STANDARD PLATES
SAP 013-630-021 / SAP 225-591-007 / SAP 225-102-004

SHEET
33
OF
216
SHEETS

DATE: 9/12/2024 2:00:01 PM
PATH & FILENAME: Projects\Minnesota\023661-000\03_Discipline\Roadway\Sheets\023661-000-SD1



NO.	DATE	BY	CHK	REVISIONS

Design By:
Plan By:
Checked By:
Approved By:

NEH
MKV
MAN
NEH

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NICHOLAS E. HENTZ, P.E.
DATE: 9/12/2024 LICENSE NO. 44620



CSAH 30 (Forest Blvd) Improvements
Chisago County, Minnesota

CHISAGO COUNTY, MINNESOTA
STANDARD PLATES
SAP 013-630-021 / SAP 225-591-007 / SAP 225-102-004

SHEET
34
OF
216
SHEETS

DATE: 9/12/2024 2:00:01 PM
PATH & FILENAME: Projects\Minnesota\023661-000\03_Discipline\Roadway\Sheets\023661-000-sd1

GAGE	THICKNESS - EQUIVALENT	
	GALV. STEEL (IN.)	ALUM. ALLOY (IN.)
18	.0516	.048
16	.0635	.060
14	.0785	.075
12	.1084	.105
10	.1382	.135
8	.1681	.164

ROUND PIPE			PIPE-ARCH			
PIPE DIA. (IN.)	END AREA SQ. FT.	GAGE (MIN.)	SPAN ① (IN.)	RISE ① (IN.)	END AREA SQ. FT.	GAGE (MIN.)
6	0.2	18				
8	0.4	16				
10	0.6	16				
12	0.8	16				
15	1.2	16	17	13	1.1	16
18	1.8	16	21	15	1.5	16
21	2.4	16	24	18	2.2	16
24	3.1	16	28	20	2.8	16
30	4.9	14	35	24	4.4	14
36	7.1	14	42	29	6.4	14
42	9.6	12	49	33	8.7	12
48	12.6	12	57	38	11.4	12
54	15.9	12	64	43	14.3	12
60	19.6	10	71	47	17.6	10
66	23.8	10	77	52	21.3	8
72	28.3	10	83	57	25.3	8
78	33.2	8				
84	38.5	8				

ROUND PIPE SHALL HAVE THE VERTICAL AXIS ELONGATED 5% MORE THAN THE NORMAL DIAMETER WHEN CALLED FOR IN THE PLANS.

THE AVERAGE INSIDE DIAMETER OF CIRCULAR PIPE AND PIPE TO BE REFORMED INTO PIPE ARCHES SHALL NOT VARY MORE THAN ONE PERCENT OR ONE-HALF INCH, WHICHEVER IS GREATER, FROM THE NOMINAL DIAMETER WHEN MEASURED ON THE INSIDE CREST OF THE CORRUGATIONS.

FOR PIPE-ARCH A TOLERANCE OF PLUS OR MINUS ONE INCH OR TWO PERCENT OF THE EQUIVALENT CIRCULAR DIAMETER, WHICHEVER IS GREATER, WILL BE PERMISSIBLE IN SPAN AND RISE. ALL DIMENSIONS ARE MEASURED FROM THE INSIDE CRESTS OF THE CORRUGATIONS.

① SEE AASHTO M196M FOR ALUMINUM PIPE-ARCH VALUES.

APPROVED Jan. 29, 1979

Construction and Engineering Development

STATE OF MINNESOTA
DEPARTMENT OF TRANSPORTATION
CORRUGATED METAL PIPE CULVERT
STANDARD 2-2/3" x 1/2" CORRUGATION

SPECIFICATION REFERENCE 2501, 2502 2503
REVISED 8-22-96

STANDARD PLATE NO. 3040F

NOTE: REINFORCEMENT AND DESIGN OF END SECTION "C" SHALL CONFORM TO STANDARD REINFORCED CONCRETE PIPE CLASS II, "B" WALL.

ROUNDED EDGE PERMITTED ON SLOPED END "B".

HANDLING HOLES SHALL BE PROVIDED AS NECESSARY FOR HANDLING OF APRONS.

SLOPE = Y TO X

SEE STD. PLATE 3000 FOR ADDITIONAL REQUIREMENTS

DIAM.	WEIGHT PER SECTION (LBS.)	APPROX. SLOPE Y TO X	T	A	B	C	D	E	G	R	⑤
12"	530	1 TO 2.4	2"	4"	24"	48-7/8"	72-7/8"	24"	2"	1-1/2"	0.07
15"	740	1 TO 2.4	2-1/4"	6"	27"	46"	73"	30"	2-1/4"	1-1/2"	0.07
18"	990	1 TO 2.3	2-1/2"	9"	27"	46"	73"	36"	2-1/2"	1-1/2"	0.07
21"	1280	1 TO 2.4	2-3/4"	9"	36"	37-1/2"	73-1/2"	42"	2-3/4"	1-1/2"	0.07
24"	1520	1 TO 2.5	3"	9-1/2"	43-1/2"	30"	73-1/2"	48"	3"	1-1/2"	0.07
27"	1930	1 TO 2.5	3-1/4"	10-1/2"	49-1/2"	24"	73-1/2"	54"	3-1/4"	1-1/2"	0.13
30"	2190	1 TO 2.5	3-1/2"	12"	54"	19-3/4"	73-3/4"	60"	3-1/2"	1-1/2"	0.14
36"	4100	1 TO 2.5	4"	15"	63"	34-3/4"	97-3/4"	72"	4"	1-1/2"	0.12
42"	5380	1 TO 2.5	4-1/2"	21"	63"	35"	98"	78"	4-1/2"	1-1/2"	0.15
48"	6550	1 TO 2.5	5"	24"	72"	26"	98"	84"	5"	1-1/2"	0.18
54"	8240	1 TO 2.0	5-1/2"	27"	65"	33-1/4"	98-1/4"	90"	5-1/2"	1-1/2"	0.22
60"	8730	1 TO 1.9	6"	35"	60"	39"	99"	96"	5"	1-1/2"	0.25
66"	10710	1 TO 1.7	6-1/2"	30"	72"	27"	99"	102"	5-1/2"	1-1/2"	0.31
72"	12520	1 TO 1.8	7"	36"	78"	21"	99"	108"	6"	1-1/2"	0.35
78"	14770	1 TO 1.8	7-1/2"	36"	90"	21"	111"	114"	6-1/2"	1-1/2"	0.40
84"	18160	1 TO 1.6	8"	36"	90-1/2"	21"	111-1/2"	120"	6-1/2"	1-1/2"	0.46
90"	20900	1 TO 1.5	8-1/2"	41"	87-1/2"	24"	111-1/2"	132"	6-1/2"	6"	0.51

⑤ CONTINUOUS BASIC REINFORCEMENT IN SQ. IN. PER LINEAL FT. FOR SLOPED END "B" (LARGER OF INNER OR OUTER GAGE ON STD. PLATE 3000). FOR WALL THICKNESSES LESS THAN 4", LOCATE REINFORCEMENT AT THE CENTER OF WALL. FOR WALL THICKNESSES 4" AND GREATER, LOCATE REINFORCEMENT WITH A MIN. OF 2" OF COVER MEASURED FROM THE OUTSIDE OF THE WALL.

NOTE: UNLESS SPECIFIED OTHERWISE IN THE PLANS, WHEN AN APRON IS REQUIRED FOR A RUN OF GASKET PIPE (STD. PLATE 3006), THE PRODUCER MAY FURNISH EITHER:

1. AN APRON WITH A STD. PLATE 3006 JOINT, OR
2. AN APRON WITH A STD. PLATE 3000 JOINT AND THE END OF THE STD. PLATE 3006 PIPE CONNECTING TO THE APRON PROVIDED WITH A STD. PLATE 3000 JOINT. THIS JOINT IS TO BE SEALED WITH A PREFORMED MASTIC SEALER.

APPROVED May 8, 1985

Assistant Division Director Technical Services

STATE OF MINNESOTA
DEPARTMENT OF TRANSPORTATION
CONCRETE APRON FOR REINFORCED CONCRETE PIPE

SPECIFICATION REFERENCE 2501, 2503
REVISED 10-16-2000 A.K.J.

STANDARD PLATE NO. 3100G

ALTERNATE ROD CONNECTIONS

STANDARD COUPLING BAND

EDGE REIN. SEE SECTION A-A

2" LAP

12" MAX. SPS.

5"

END CORNER PLATE

GALVANIZED TOE PLATE EXTENSIONS ARE NOT REQUIRED, UNLESS SPECIFIED IN THE PLANS.

SECTION A-A

NOTES:

FOR OTHER APPROVED CONNECTIONS, SEE STANDARD PLATE 3124.

MULTIPLE PANEL BODIES SHALL HAVE 2" MIN. LAP SEAMS WHICH ARE TO BE JOINED BY 3/8" DIA. RIVETS OR BOLTS (GALVANIZED) SPACED AT 6" MAX. C. TO C. NUTS SHALL BE TIGHTENED TO 25 LB. + TORQUE.

WHERE METAL APRONS ARE TO BE FASTENED TO HELICALLY CORRUGATED PIPE, AN APPROVED CONNECTION SHALL BE USED.

THE TOP EDGE OF ALL APRONS SHALL HAVE TUBING REINFORCING (SEE SECTION A-A). THE TUBING SHALL BE SUPPLEMENTED WITH 2" X 2" X 1/4" GALV. ANGLE FOR 60" THRU 72" DIA. AND 2-1/2" X 2-1/2" X 1/4" GALV. ANGLE FOR 78" AND 84" DIA. ALTERNATE ROLLED TOP EDGE DESIGNS APPROVED BY THE MN/DOT MATERIALS SECTION MAY BE USED.

PIPE DIA. (IN.)	GAGE	DIMENSIONS					REMARKS
		A 1" ± (IN.)	B MAX. (IN.)	H 1" ± (IN.)	L 1-1/2" ± (IN.)	W 2" ± (IN.)	
12	16	6	6	6	21	24	1 PIECE
15	16	7	8	6	26	30	"
18	16	8	10	6	31	36	"
21	16	9	12	6	36	42	"
24	16	10	13	6	41	48	"
30	14	12	16	8	51	60	"
36	14	14	19	9	60	72	2 PIECES, & SPLICE
42	12	16	22	11	69	84	"
48	12	18	27	12	78	90	"
54	12	18	30	12	84	102	"
60	12	18	33	12	87	114	3 PIECES, 2 SPLICES
66	12	18	36	12	87	120	"
72	12	18	39	12	87	126	"
78	12	18	42	12	87	132	"
84	12	18	45	12	87	138	"

① A 2 PIECE APRON WITH & SPLICE MAY BE USED IN LIEU OF A 1 PIECE APRON.

② A 3 PIECE APRON WITH 2 SPLICES MAY BE USED IN LIEU OF A 2 PIECE APRON. THE 3 PIECE BODIES SHALL BE MADE OF 3 EQUAL SECTIONS OF 12 GA. MATERIAL.

③ 3 PIECE BODIES SHALL HAVE 12 GA. SIDES AND 10 GA. CENTER PANELS. WIDTH OF CENTER PANEL SHALL EXCEED 20% OF PIPES PERIPHERY.

④ FOR 12" THRU 24" DIA. PIPE, A FLAT STRAP CONNECTOR MAY BE USED IN PLACE OF THE ROD CONNECTION. STRAP CONNECTOR SHALL BE 1" WIDE, 12 GA. STRAP WITH STANDARD 6" LONG X 1/2" DIA. BAND BOLT AND NUT.

⑤ THE PIPE DIAMETER IS EQUAL TO DIMENSION D OF APRON.

APPROVED Nov. 13, 1985

Director Materials, Research and Standards

STATE OF MINNESOTA
DEPARTMENT OF TRANSPORTATION
METAL APRON FOR C.S. PIPE

SPECIFICATION REFERENCE 2501
REVISED 5-3-99 A.K.J.

STANDARD PLATE NO. 3123J

NO.	DATE	BY	CHK	REVISIONS

Design By: NEH
Plan By: MKV
Checked By: MAN
Approved By: NEH

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NICHOLAS E. HENTGES, PE
DATE: 9/12/2024 LICENSE NO. 44620



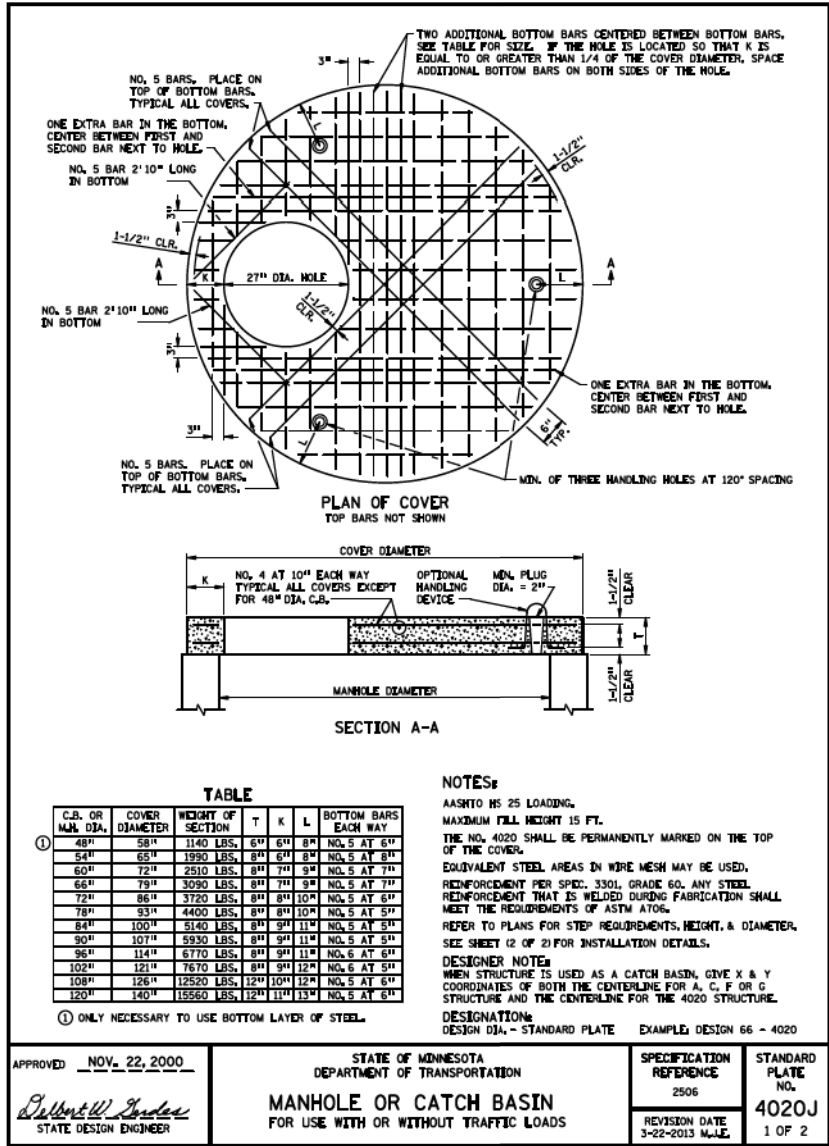
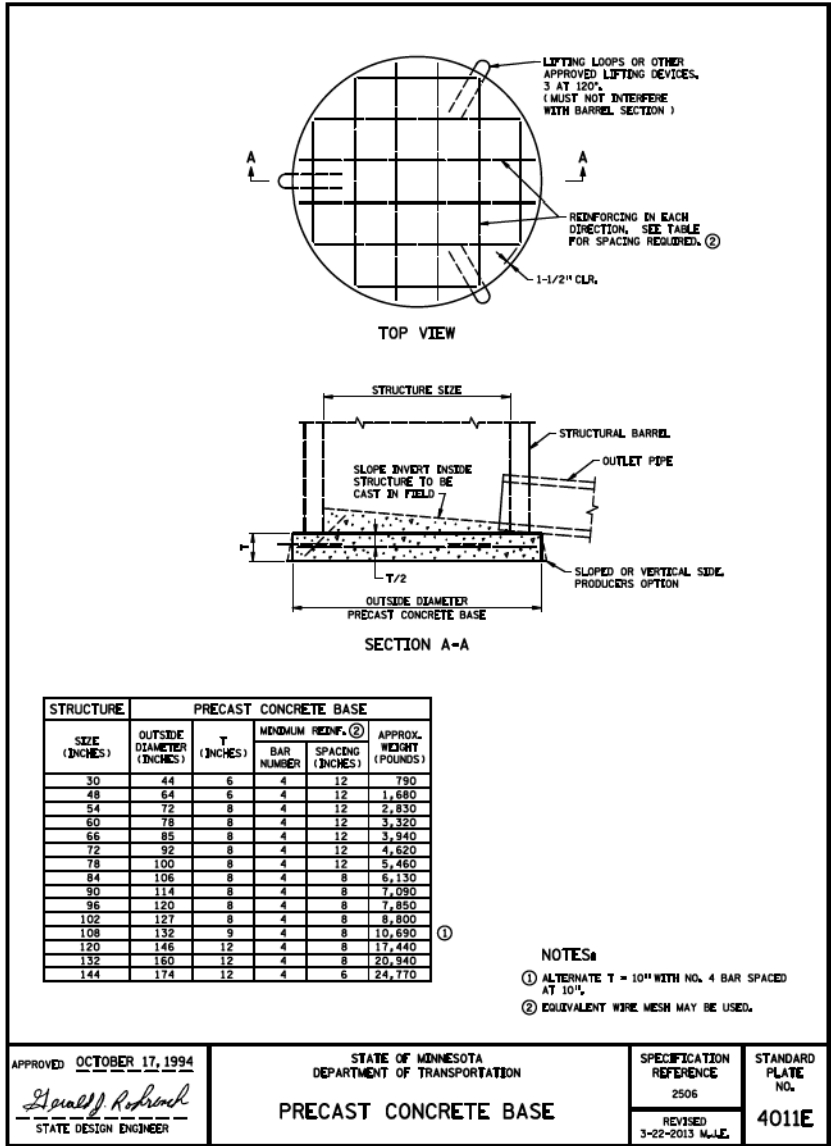
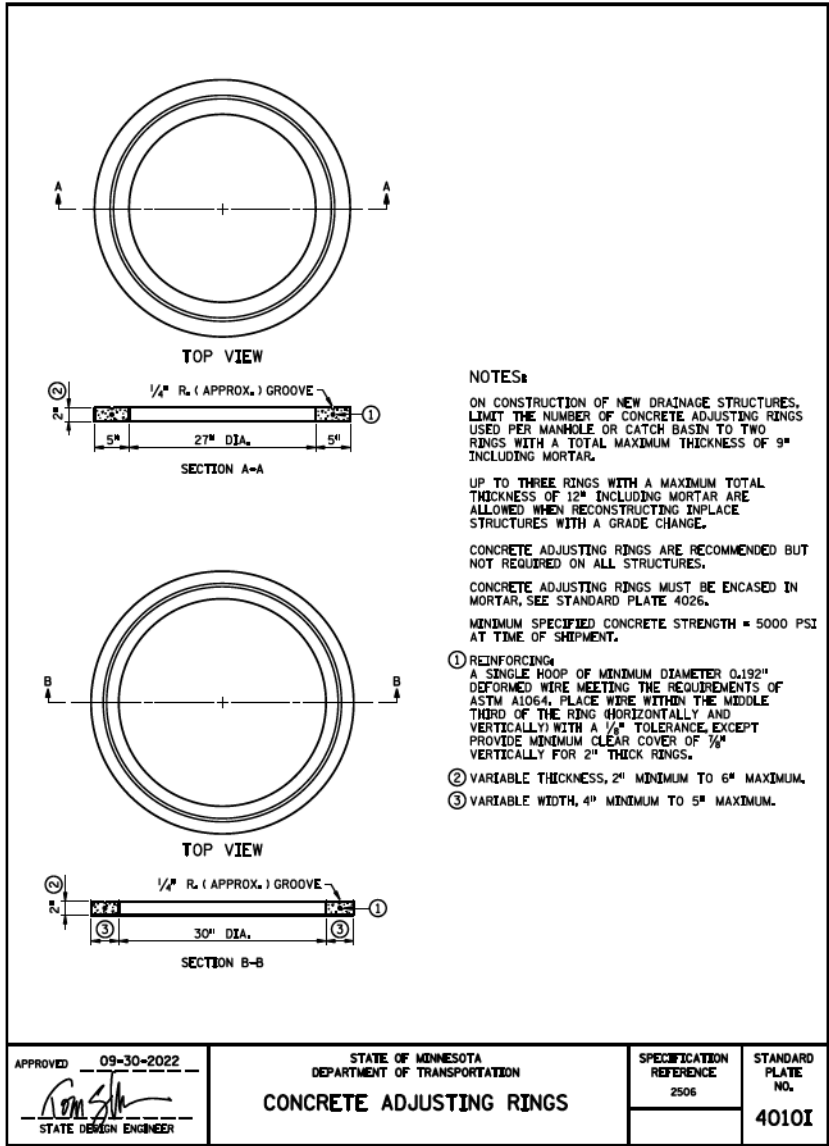
CSAH 30 (Forest Blvd) Improvements
Chisago County, Minnesota

CHISAGO COUNTY, MINNESOTA

STANDARD PLATES
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SHEET 35 OF 216 SHEETS

DATE: 9/12/2024 2:00:04 PM
PATH & FILENAME: Projects\Minnesota\023661-000\03_Discipline\Roadway\Sheets\023661-000-sd1



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Plan By: MKV

Checked By: MAN

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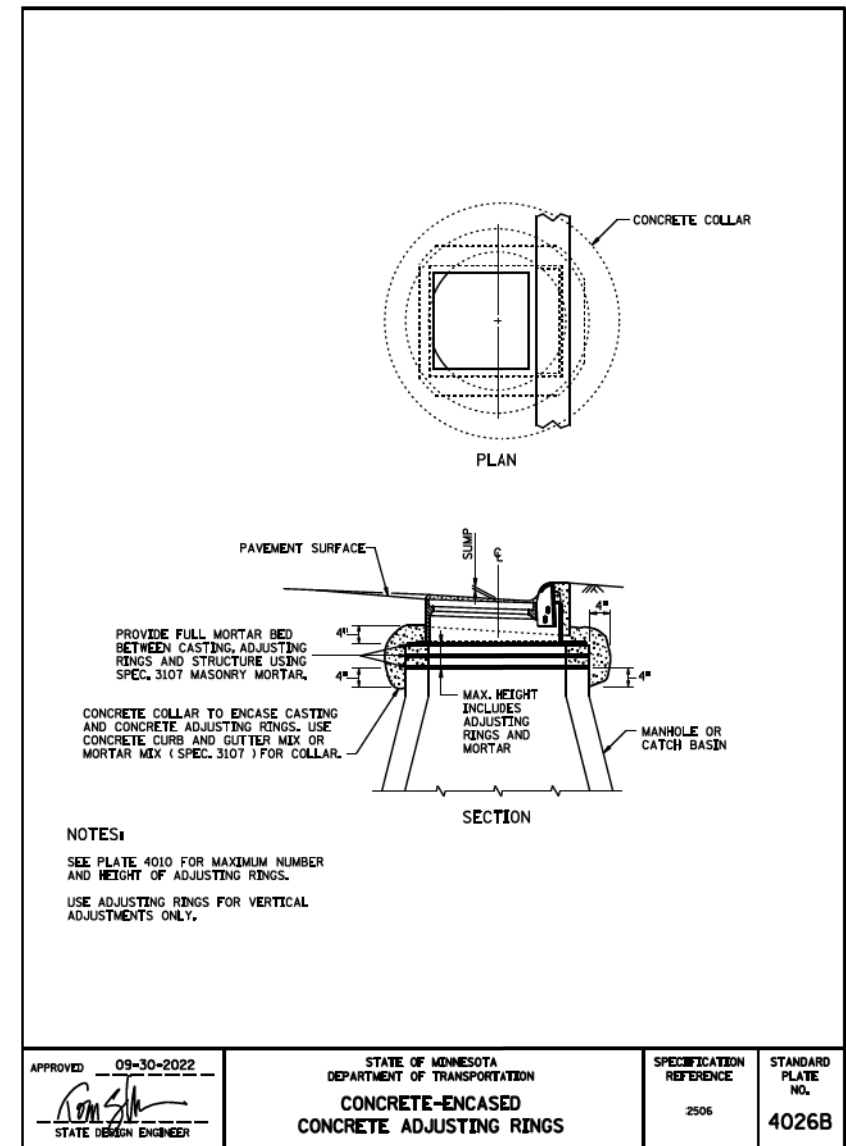
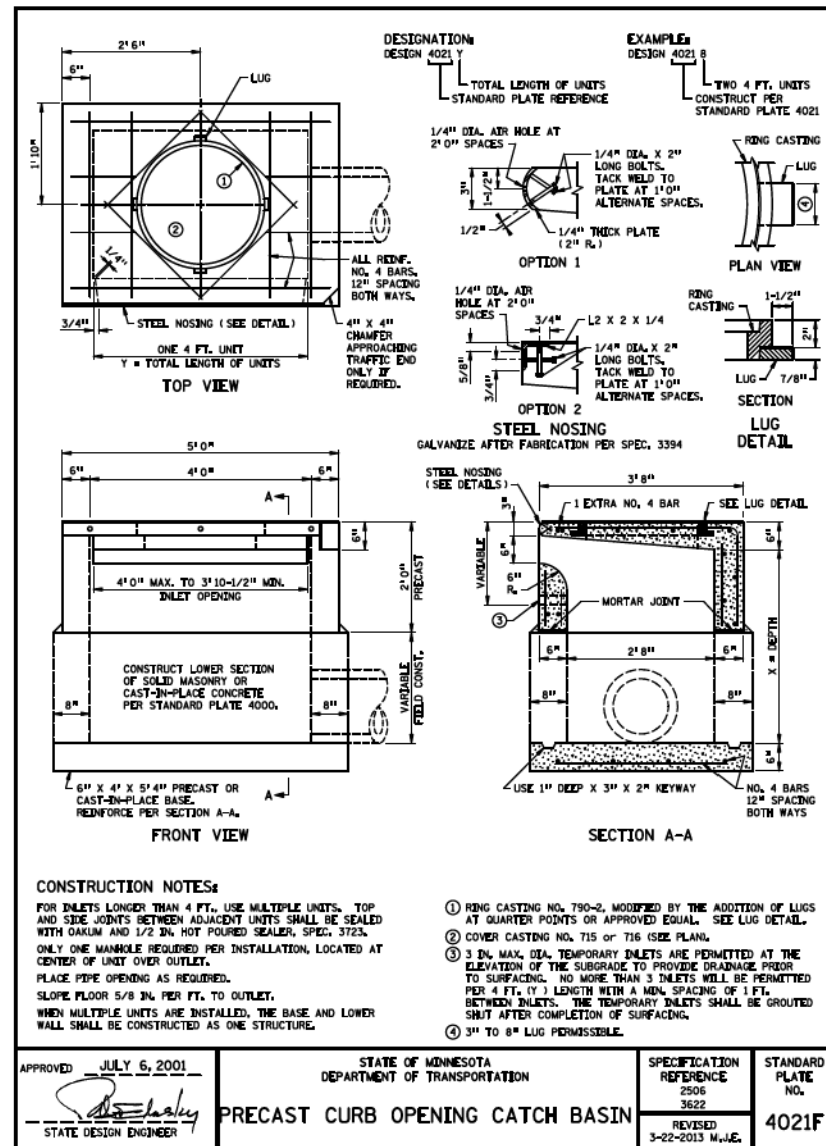
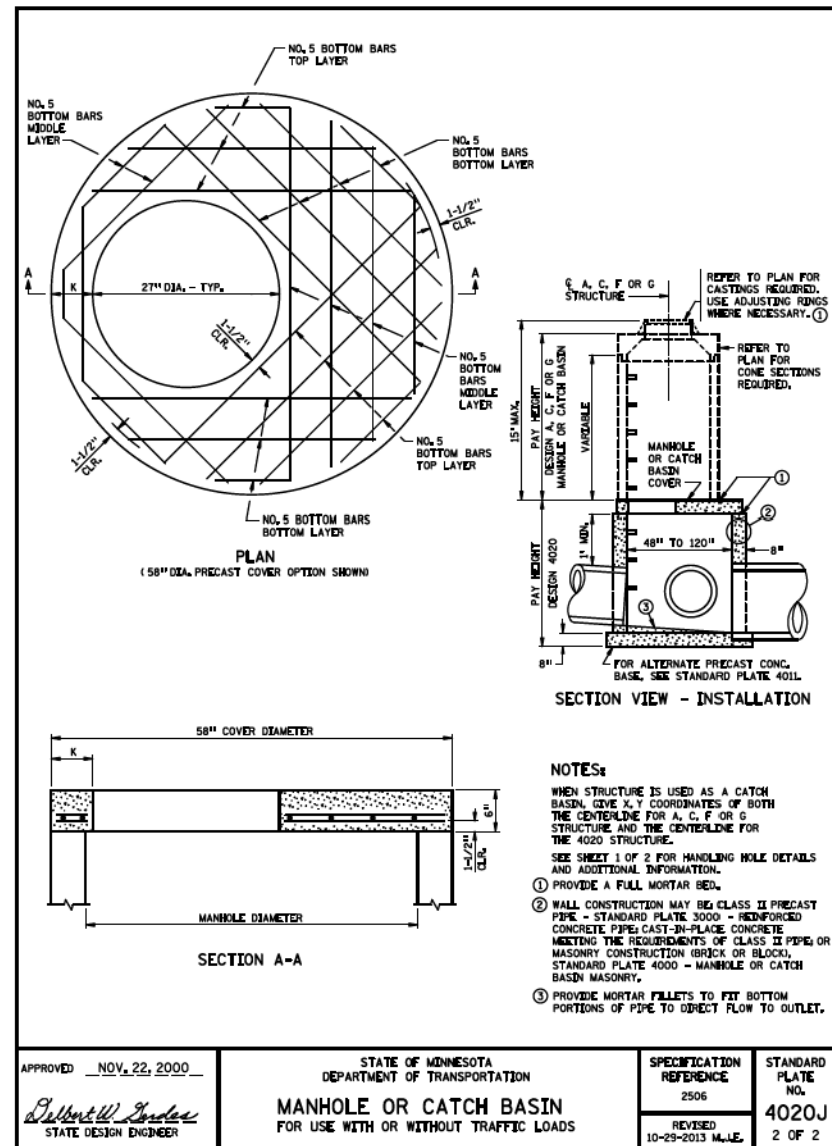


CSAH 30 (Forest Blvd) Improvements
Chisago County, Minnesota

CHISAGO COUNTY, MINNESOTA

STANDARD PLATES
SAP 013-630-021 / SAP 225-591-007 / SAP 225-102-004

SHEET
38
OF
216
SHEETS

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Design By:	
Plan By:	
Checked By:	
Approved By:	

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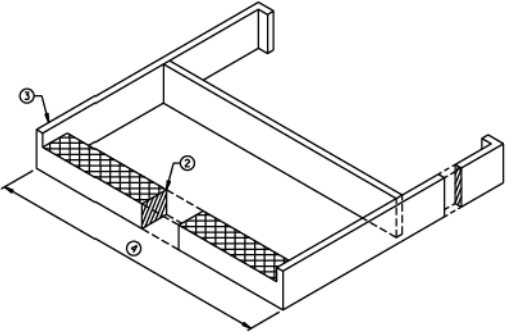
Chisago County, Minnesota

CHISAGO COUNTY, MINNESOTA

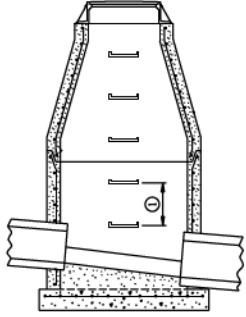
STANDARD PLATES

AP 013-630-021 / SAP 225-591-007 / SAP 225-102-004

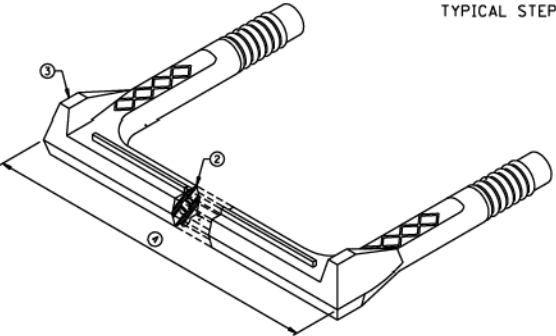
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TYPICAL METAL STEP



TYPICAL STEP ALIGNMENT

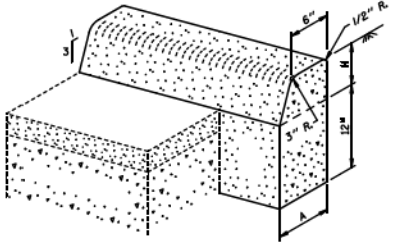


TYPICAL REINFORCED PLASTIC STEP

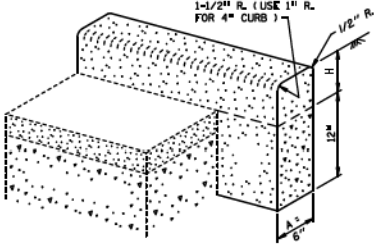
NOTES:
STEPS SHOWN ARE BASIC DESIGNS ONLY. FINAL CONFIGURATIONS MAY VARY FROM THESE DRAWINGS. VARIATIONS IN THE ABOVE DESIGNS WHICH WILL NOT DECREASE STRENGTH WILL BE PERMITTED.
THE OFFICE OF MATERIALS, RESEARCH AND ENGINEERING WILL MAINTAIN A LISTING OF APPROVED MANHOLE STEPS. CURRENTLY APPROVED STEPS ARE ALUMINUM, CAST IRON AND STEEL REINFORCED PLASTIC. SELECTION OF APPROVED STEP DESIGN IS THE OPTION OF THE CONTRACTOR OR SUPPLIER.
ALUMINUM STEPS SHALL CONFORM TO ASTM B26-64A, ALLOY AA 514.0. EMBEDDED LEG SECTIONS SHALL BE GIVEN A NEOPRENE PROTECTIVE COATING OR EQUIVALENT FOR CORROSION PROTECTION. COATINGS SHALL BE APPROVED BY MATERIALS ENGINEERING.
EXCEPT AS OTHERWISE NOTED ON THIS PLATE, STEPS SHALL CONFORM TO THE REQUIREMENTS OF ASTM C478.

STEPS SHALL BE EMBEDDED IN THE RISER OR CONICAL TOP SECTION WALL A MINIMUM DISTANCE OF 3 IN.
THE RUNG OR CLEAT SHALL PROJECT A MINIMUM CLEAR DISTANCE OF 4 IN. FROM THE WALL OF THE RISER OR CONE SECTION MEASURED FROM THE POINT OF EMBEDMENT.
THE MIN. CLEAR DISTANCE BETWEEN THE RUNG OR CLEAT AND THE OPPOSITE WALL OF THE MANHOLE RISER OR CONE SHALL BE 18 IN. MEASURED AT THE CENTER FACE OF THE STEP.
① STEPS SHALL BE SPACED AT A MAXIMUM DESIGN DISTANCE OF 16 IN. APART.
② STEPS SHALL HAVE A MINIMUM CROSS SECTION DIMENSION OF 1 IN.
③ MINIMUM VERTICAL SIDE DIMENSION TO PREVENT FOOT FROM SLIPPING OFF IS 1 1/2".
④ THE MINIMUM WIDTH OF RUNGS OR CLEATS SHALL BE 10 IN.

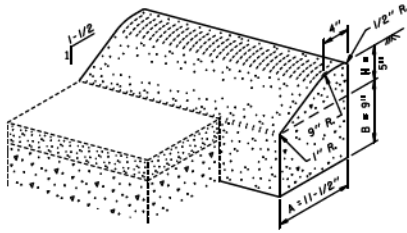
APPROVED	DEC. 30, 1996	STATE OF MINNESOTA DEPARTMENT OF TRANSPORTATION	SPECIFICATION REFERENCE	STANDARD PLATE NO.
		MANHOLE OR CATCH BASIN STEP	2506	4180J



DESIGN B



DESIGN V



DESIGN S

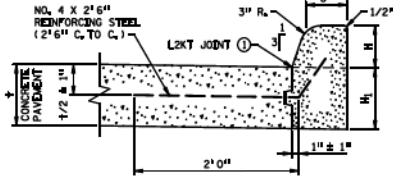
NOTE:
ALL CURB SLOPE MEASUREMENTS ARE IN RELATION TO ADJACENT PAVEMENT SLOPE.

DESIGN NO.	CURB WIDTH A	CURB HEIGHT H	CONCRETE CU. YDS. PER LIN. FT.	CONCRETE LIN. FT. PER CU. YD.
B4	7-3/8"	4"	0.0294	34.0
B6	8"	6"	0.0352	28.4
B8	8-5/8"	8"	0.0414	24.2
B9	9"	9"	0.0449	22.3
B10	9-3/8"	10"	0.0485	20.6

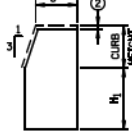
DESIGN NO.	CURB HEIGHT H	CONCRETE CU. YDS. PER LIN. FT.	CONCRETE LIN. FT. PER CU. YD.
V4	4"	0.0247	40.5
V6	6"	0.0277	36.1
V8	8"	0.0308	32.5
V9	9"	0.0323	31.0
V10	10"	0.0338	29.6

DESIGN NO.	CONCRETE CU. YDS. PER LIN. FT.	CONCRETE LIN. FT. PER CU. YD.
S5	0.0364	27.5

APPROVED	JULY 25, 2011	STATE OF MINNESOTA DEPARTMENT OF TRANSPORTATION	SPECIFICATION REFERENCE	STANDARD PLATE NO.
		CONCRETE CURB	2531	7020K
DESIGN B, DESIGN V, DESIGN S, DESIGN DR AND DESIGN BR				



CURB SECTION

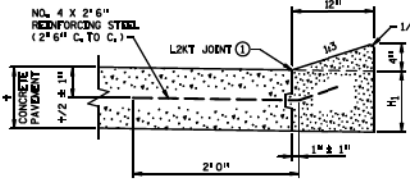


PREFORMED
EXPANSION JOINT
MATERIAL

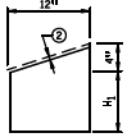
TABLE OF CU. YDS. PER LIN. FT. ③

DIMENSION H ₁	4"	6"	7"	8"	9"	10"
8"	0.0222	0.0275	0.0303	0.0332	0.0361	0.0392
9"	0.0240	0.0295	0.0324	0.0354	0.0384	0.0415
10"	0.0259	0.0315	0.0345	0.0375	0.0407	0.0439
11"	0.0277	0.0335	0.0366	0.0397	0.0429	0.0462
12"	0.0295	0.0355	0.0387	0.0419	0.0452	0.0485

DESIGN BRH-H₁
(EXAMPLE: DESIGN BR6-9)



CURB SECTION

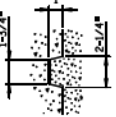


PREFORMED
EXPANSION JOINT
MATERIAL

TABLE OF CU. YDS. PER LIN. FT. ③

DIMENSION H ₁	CU. YDS. CONC.
8"	0.0313
9"	0.0344
10"	0.0374
11"	0.0404
12"	0.0435

DESIGN DR4-H₁
(EXAMPLE: DESIGN DR4-9)



ALTERNATE KEYWAY DETAIL

NOTES:
ALL CURB SLOPE MEASUREMENTS ARE IN RELATION TO ADJACENT PAVEMENT SLOPE.
SEE STANDARD PLAN 5-297.221 FOR STANDARD PAVEMENT KEYWAY DETAIL.
JOINT MATERIAL SHALL BE OF 1/2" THICKNESS.
1 THICKNESS REQUIRED AT 1/2" EXPANSION JOINTS AND 3 THICKNESSES REQUIRED AT 1" EXPANSION JOINTS.
① SEE PLANS FOR SEALING REQUIREMENTS.
② 1/2" LESS THAN CURB DIMENSIONS FOR APPLICATION OF SEALER.
③ BASED ON A 2% PAVEMENT CROSS SLOPE AND STANDARD KEYWAY DESIGN.

APPROVED	JULY 25, 2011	STATE OF MINNESOTA DEPARTMENT OF TRANSPORTATION	SPECIFICATION REFERENCE	STANDARD PLATE NO.
		CONCRETE CURB	2531	7020K
DESIGN B, DESIGN V, DESIGN S, DESIGN DR AND DESIGN BR				

NO.	DATE	BY	CHK	REVISIONS

Design By:	NEH
Plan By:	MKV
Checked By:	MAN
Approved By:	NEH

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NICHOLAS E. HENTGES, PE
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RECTANGULAR PLATES

RADIAL PLATES

SECTION A-A
TRUNCATED DOME

TYPICAL RADIAL TRUNCATED DOME PLATES			
RADIUS (FEET)	LONG CHORD WIDTH (INCHES)	SQUARE FEET PER PLATE	PLATES REQUIRED FOR 90 DEGREE TURN
10	23 1/2	3.53	8
15	18 1/4	2.93	15
15	23 1/2	3.67	12
20	18 1/4	3.00	20
20	18 1/4	2.98	20
25	20 1/2	3.28	23
25	23 1/4	3.77	20
30	22 1/2	3.65	25
35	22	3.56	30

NOTES:

DETECTABLE WARNING SURFACES SHALL FOLLOW THE PUBLIC RIGHTS-OF-WAY ACCESSIBILITY GUIDELINES (PROWAG).

DETECTABLE WARNINGS CONSIST OF TRUNCATED DOMES ALIGNED IN A SQUARE OR RADIAL GRID PATTERN.

DETECTABLE WARNINGS ARE REQUIRED:

- WHERE RAMPS, LANDINGS, OR BLENDED TRANSITIONS PROVIDE A FLUSH PEDESTRIAN CONNECTION TO THE ROADWAY.
- WHERE PEDESTRIAN ACCESS ROUTES CROSS COMMERCIAL DRIVEWAYS THAT ARE PROVIDED WITH TRAFFIC CONTROL DEVICES OR OTHERWISE PERMITTED TO OPERATE LIKE A PUBLIC ROADWAY.
- AT PEDESTRIAN RAILWAY CROSSINGS.
- ON RAIL PLATFORMS WHERE BOARDING EDGES ARE NOT PROTECTED.

DETECTABLE WARNINGS SHALL EXTEND:

- A MINIMUM OF 24" IN THE DIRECTION OF TRAVEL.
- THE FULL WIDTH OF THE RAMP, LANDING, OR BLENDED TRANSITION, WITHIN 3' OF FULL WIDTH ON EITHER END.
- THE FULL LENGTH OF THE PUBLIC USE AREA OF A RAIL PLATFORM.

DETECTABLE WARNING SURFACES SHALL CONTRAST VISUALLY WITH ADJACENT GUTTER, ROADWAY, OR WALKWAY, EITHER LIGHT-ON-DARK OR DARK-ON-LIGHT. CONTRAST MAY BE PROVIDED ON THE FULL RAMP SURFACE, EXCLUDING THE FLARED SIDES.

FOR MN/DOT PROJECTS, SEE MN/DOT'S APPROVED/QUALIFIED PRODUCT LISTS.

ALL TRUNCATED DOME SYSTEMS SHALL BE PLACED IN STRICT ACCORDANCE WITH THE RECOMMENDATIONS OF THE MANUFACTURER.

- CENTER-TO-CENTER DOME SPACING: 16" MINIMUM, 24" MAXIMUM.
- BASE-TO-BASE DOME SPACING: 0.65" MINIMUM.
- DOME BASE TO PLATE EDGE SPACING: 0.35" MINIMUM, 0.75" MAXIMUM.
- SPACING VARIES ON RADIAL PLATES.
- TYPICAL WIDTHS AVAILABLE: 12", 18", 24", 30", 36". CHECK WITH MANUFACTURERS FOR AVAILABLE WIDTHS.
- ON RADIAL PLATE, RADIUS DEFINED AT BACK OF CURB.
- TYPICAL RADIAL CHECK WITH MANUFACTURERS FOR AVAILABLE RADII.

APPROVED AUGUST 23, 2010

STATE DESIGN ENGINEER

STATE OF MINNESOTA
DEPARTMENT OF TRANSPORTATION
**DETECTABLE WARNING SURFACE
TRUNCATED DOMES**

SPECIFICATION
REFERENCE
2531
2563
REVISED
01-09-2020 M.A.E.

STANDARD
PLATE
NO.
7038A

DESIGN B

DESIGN V

NOTES:

- LONGITUDINAL JOINT WHEN ADJACENT TO RIGID PAVEMENT OR BASE. SEE STANDARD PLANS MANUAL FOR JOINT INFORMATION.
- SLOPE 0.06 FT/FT NORMAL, UNLESS OTHERWISE SPECIFIED. IF A DIFFERENT GUTTER SLOPE IS PERMITTED, THE FORM MAY BE TILTED.

DESIGN B		W = 12"		W = 18"		W = 24"		W = 30"		W = 36"						
DIMENSIONS		CONCRETE		CONCRETE		CONCRETE		CONCRETE		CONCRETE						
H	A	DESIGN NO.	CU. YDS. PER LIN. FT.	DESIGN NO.	CU. YDS. PER LIN. FT.	DESIGN NO.	CU. YDS. PER LIN. FT.	DESIGN NO.	CU. YDS. PER LIN. FT.	DESIGN NO.	CU. YDS. PER LIN. FT.					
4	7-3/8"	B412	0.0421	23.8	B418	0.0529	18.9	B424	0.0637	15.7	B430	0.0745	13.4	B436	0.0853	11.7
6	8"	B612	0.0474	21.1	B618	0.0582	17.2	B624	0.0690	14.5	B630	0.0798	12.5	B636	0.0906	11.0
8	8-5/8"	B812	0.0529	18.9	B818	0.0637	15.7	B824	0.0745	13.4	B830	0.0853	11.7	B836	0.0962	10.4
9	9"	B912	0.0559	17.9	B918	0.0667	15.0	B924	0.0775	12.9	B930	0.0883	11.3	B936	0.0991	10.1
10	9-3/8"	B1012	0.0589	17.0	B1018	0.0697	14.4	B1024	0.0805	12.4	B1030	0.0913	11.0	B1036	0.1021	9.8

DESIGN V		W = 12"		W = 18"		W = 24"		W = 30"		W = 36"						
DIMENSIONS		CONCRETE		CONCRETE		CONCRETE		CONCRETE		CONCRETE						
H	A	DESIGN NO.	CU. YDS. PER LIN. FT.	DESIGN NO.	CU. YDS. PER LIN. FT.	DESIGN NO.	CU. YDS. PER LIN. FT.	DESIGN NO.	CU. YDS. PER LIN. FT.	DESIGN NO.	CU. YDS. PER LIN. FT.					
4	6"	V412	0.0396	25.3	V418	0.0504	19.9	V424	0.0612	16.4	V430	0.0720	13.9	V436	0.0828	12.1
6	6"	V612	0.0426	23.5	V618	0.0534	18.7	V624	0.0642	15.6	V630	0.0750	13.4	V636	0.0858	11.7
8	6"	V812	0.0457	21.9	V818	0.0565	17.7	V824	0.0673	14.9	V830	0.0781	12.8	V836	0.0889	11.3
9	6"	V912	0.0472	21.2	V918	0.0580	17.2	V924	0.0688	14.5	V930	0.0796	12.6	V936	0.0904	11.1
10	6"	V1012	0.0487	20.5	V1018	0.0595	16.8	V1024	0.0703	14.2	V1030	0.0811	12.4	V1036	0.0919	10.9

APPROVED MARCH 11, 1994

ACTING STATE DESIGN ENGINEER

STATE OF MINNESOTA
DEPARTMENT OF TRANSPORTATION
**CONCRETE CURB AND GUTTER
DESIGN B AND DESIGN V**

SPECIFICATION
REFERENCE
2531
REVISION DATE
2-28-05

STANDARD
PLATE
NO.
7100H

DESIGN D

DESIGN S

DESIGN R

DESIGN D		CONCRETE	
DESIGN NO.	GUTTER WIDTH W	CU. YDS. PER LIN. FT.	LIN. FT. PER CU. YD.
D412	12"	0.0505	19.8
D418	18"	0.0613	16.3
D424	24"	0.0721	13.9
D436	36"	0.0937	10.7

DESIGN S		CONCRETE	
DESIGN NO.	GUTTER WIDTH W	CU. YDS. PER LIN. FT.	LIN. FT. PER CU. YD.
S512	12-1/2"	0.0541	18.5
S518	18-1/2"	0.0649	15.4
S524	24-1/2"	0.0757	13.2
S530	30-1/2"	0.0865	11.6
S536	36-1/2"	0.0973	10.3

DESIGN R		CONCRETE	
DESIGN NO.	GUTTER WIDTH W	CU. YDS. PER LIN. FT.	LIN. FT. PER CU. YD.
R412	12"	0.0492	20.3
R418	18"	0.0600	16.7
R424	24"	0.0708	14.1
R436	36"	0.0924	10.8

NOTES:

- SLOPE 3/4" PER FOOT NORMAL UNLESS OTHERWISE SPECIFIED. IF A DIFFERENT GUTTER SLOPE IS SPECIFIED, THE FORM MAY BE TILTED.
- LONGITUDINAL JOINT WHEN ADJACENT TO RIGID PAVEMENT OR BASE. SEE STANDARD PLANS MANUAL FOR JOINT INFORMATION.

APPROVED AUGUST 28, 2017

STATE DESIGN ENGINEER

STATE OF MINNESOTA
DEPARTMENT OF TRANSPORTATION
**CONCRETE CURB AND GUTTER
DESIGN D, DESIGN S AND DESIGN R**

SPECIFICATION
REFERENCE
2531

STANDARD
PLATE
NO.
7102K

NO.	DATE	BY	CHK	REVISIONS

Design By: NEH
Plan By: MKV
Checked By: MAN
Approved By: NEH

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.

NICHOLAS E. HENTGES, PE
DATE: 9/12/2024 LICENSE NO. 44620

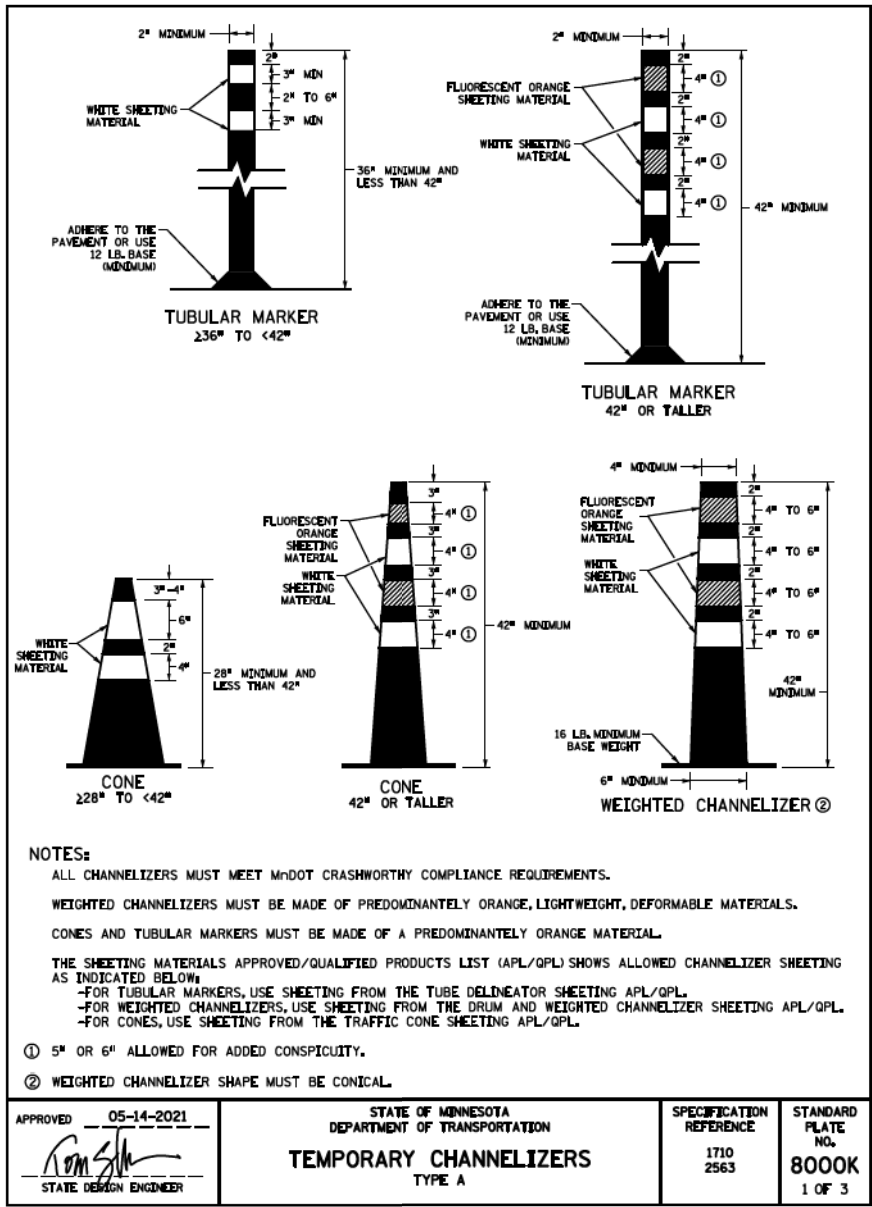
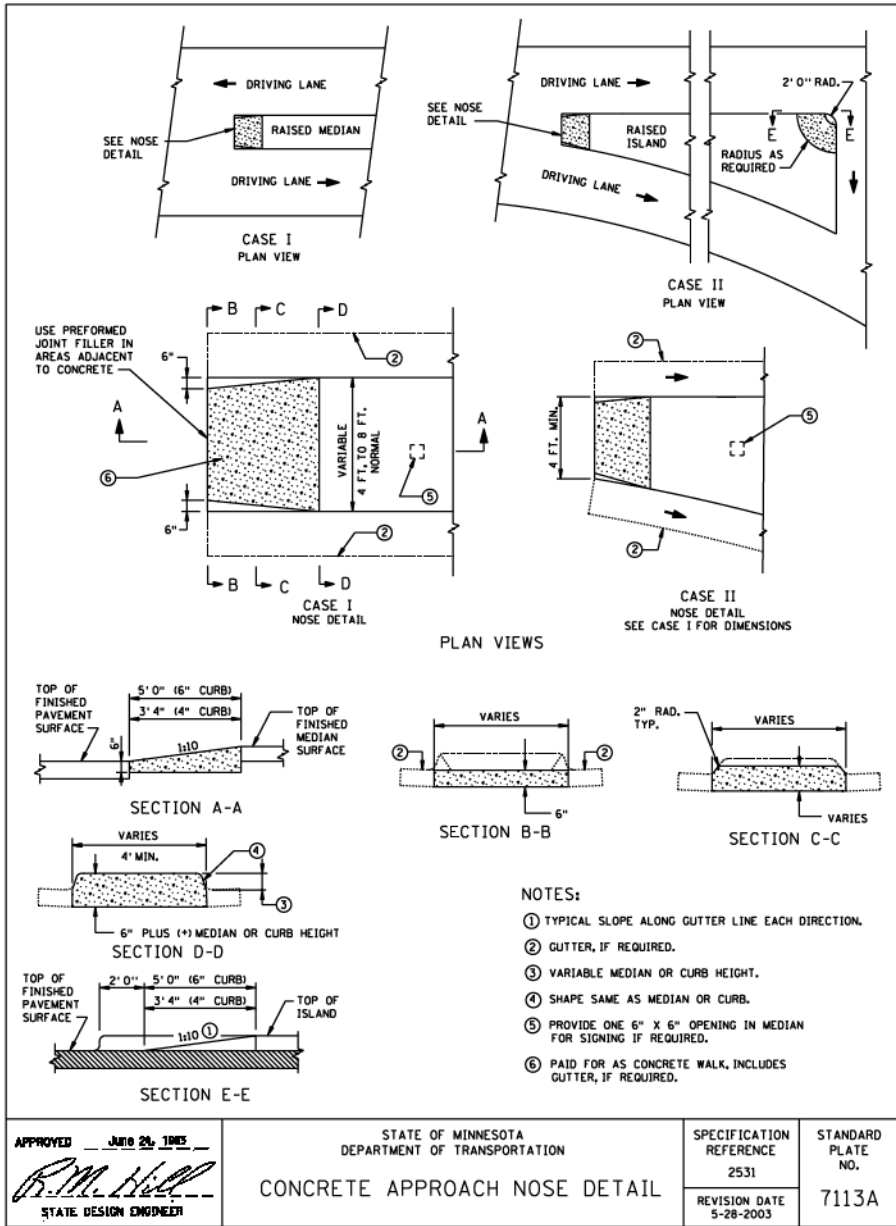
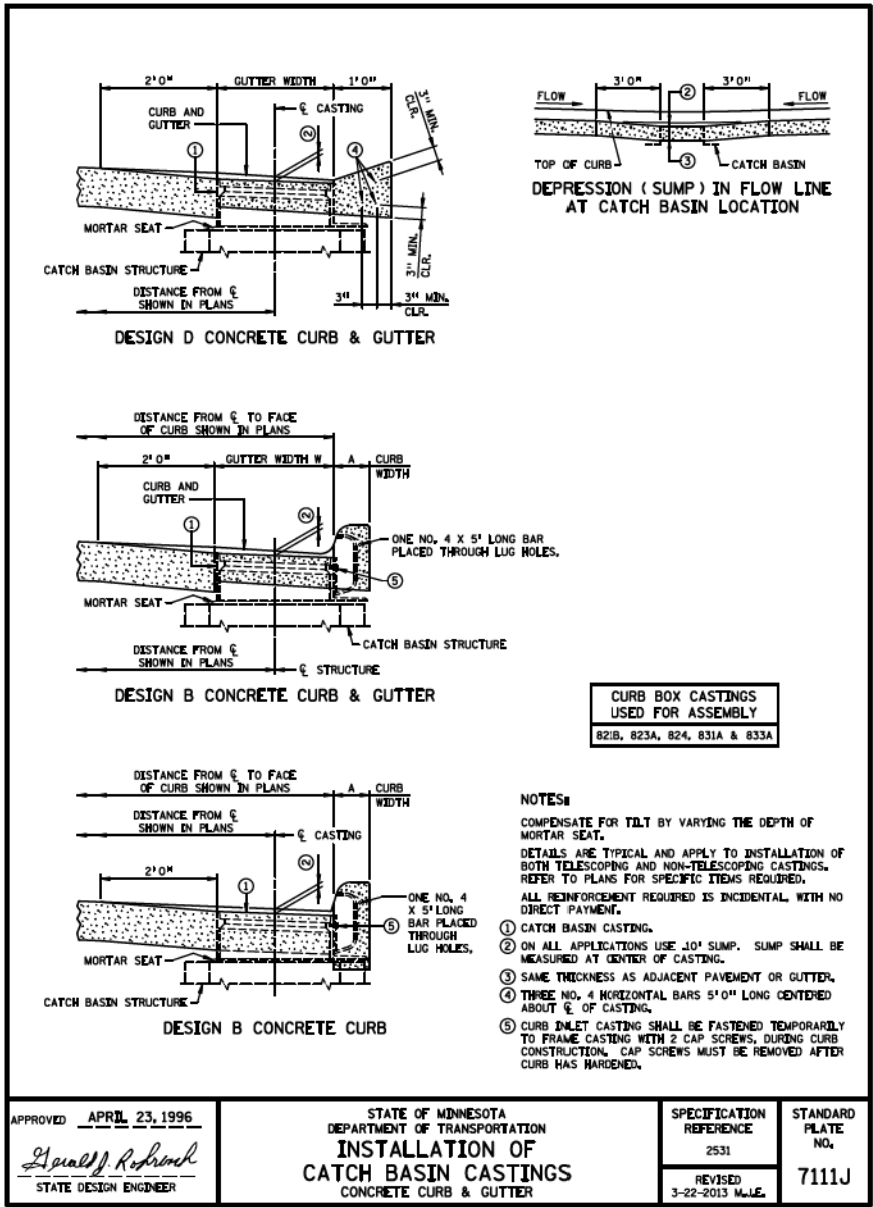


CSAH 30 (Forest Blvd) Improvements
Chisago County, Minnesota

CHISAGO COUNTY, MINNESOTA
STANDARD PLATES
SAP 013-630-021 / SAP 225-591-007 / SAP 225-102-004

SHEET
42
OF
216
SHEETS

DATE: 9/12/2024 2:00:08 PM
PATH & FILENAME: Projects\Minnesota\023661-000\03_Discipline\Roadway\Sheets\023661-000-sd1



NO.	DATE	BY	CHK	REVISIONS

Design By:
NEH
Plan By:
MKV
Checked By:
MAN
Approved By:
NEH

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Nicholas E. Hentrich, PE
NICHOLAS E. HENTRICH, PE
DATE: 9/12/2024 LICENSE NO. 44620



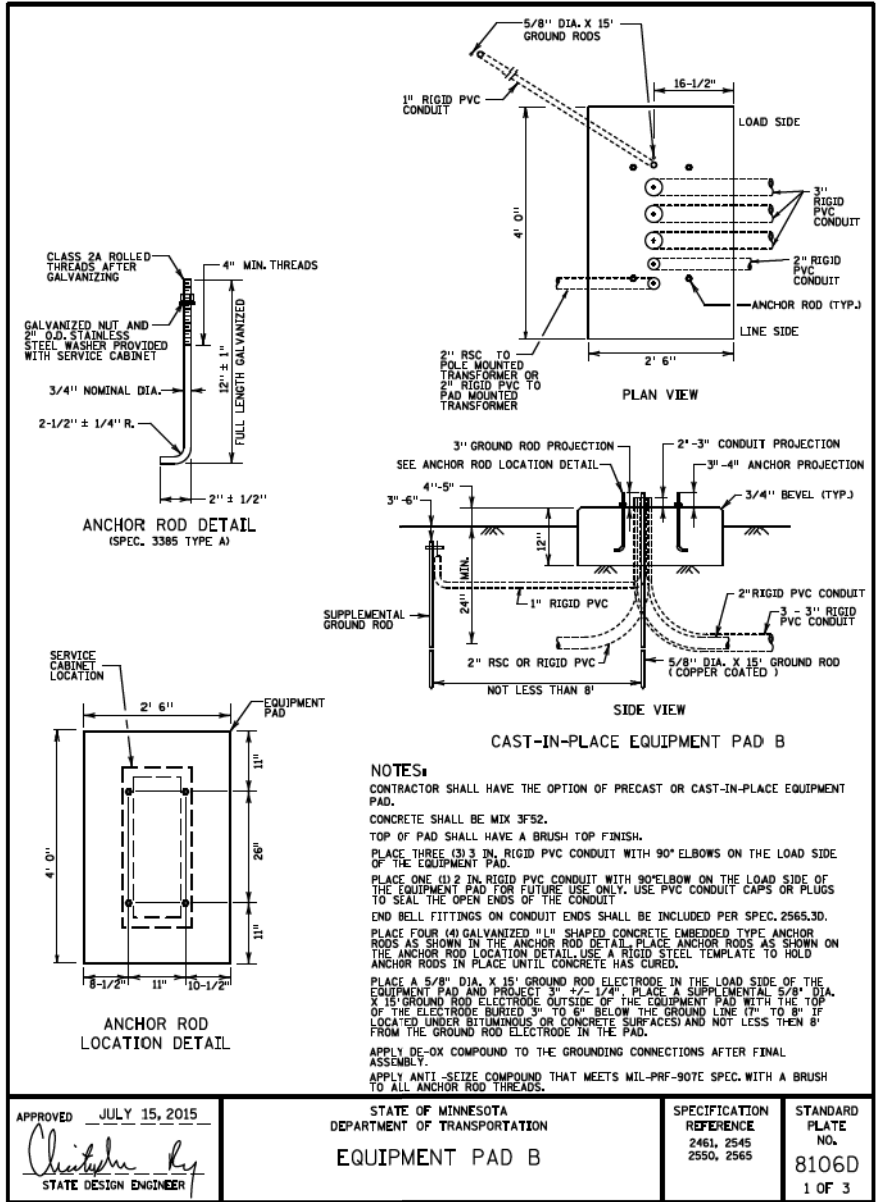
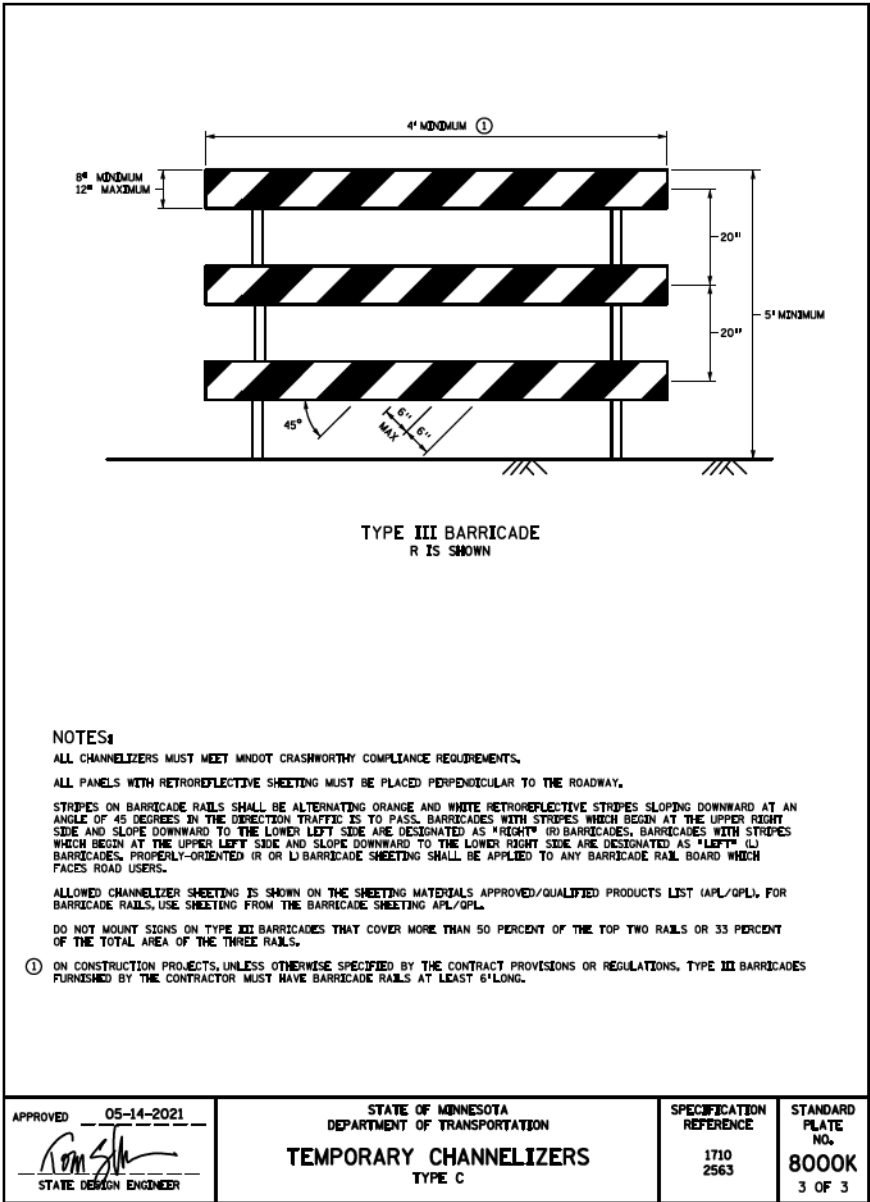
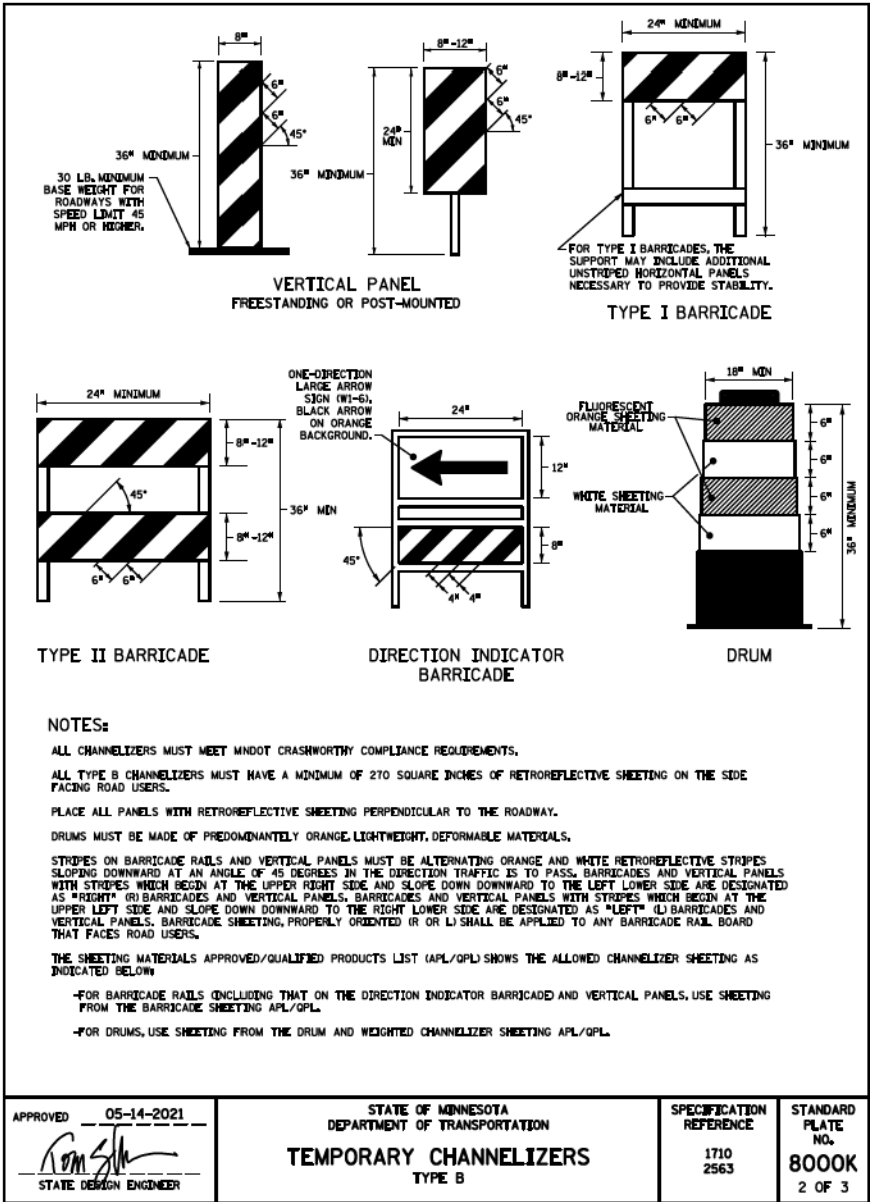
CSAH 30 (Forest Blvd) Improvements
Chisago County, Minnesota

CHISAGO COUNTY, MINNESOTA

STANDARD PLATES
SAP 013-630-021 / SAP 225-591-007 / SAP 225-102-004

SHEET
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OF
216
SHEETS

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NO.	DATE	BY	CHK	REVISIONS

Design By:
NEH
Plan By:
MKV
Checked By:
MAN
Approved By:
NEH

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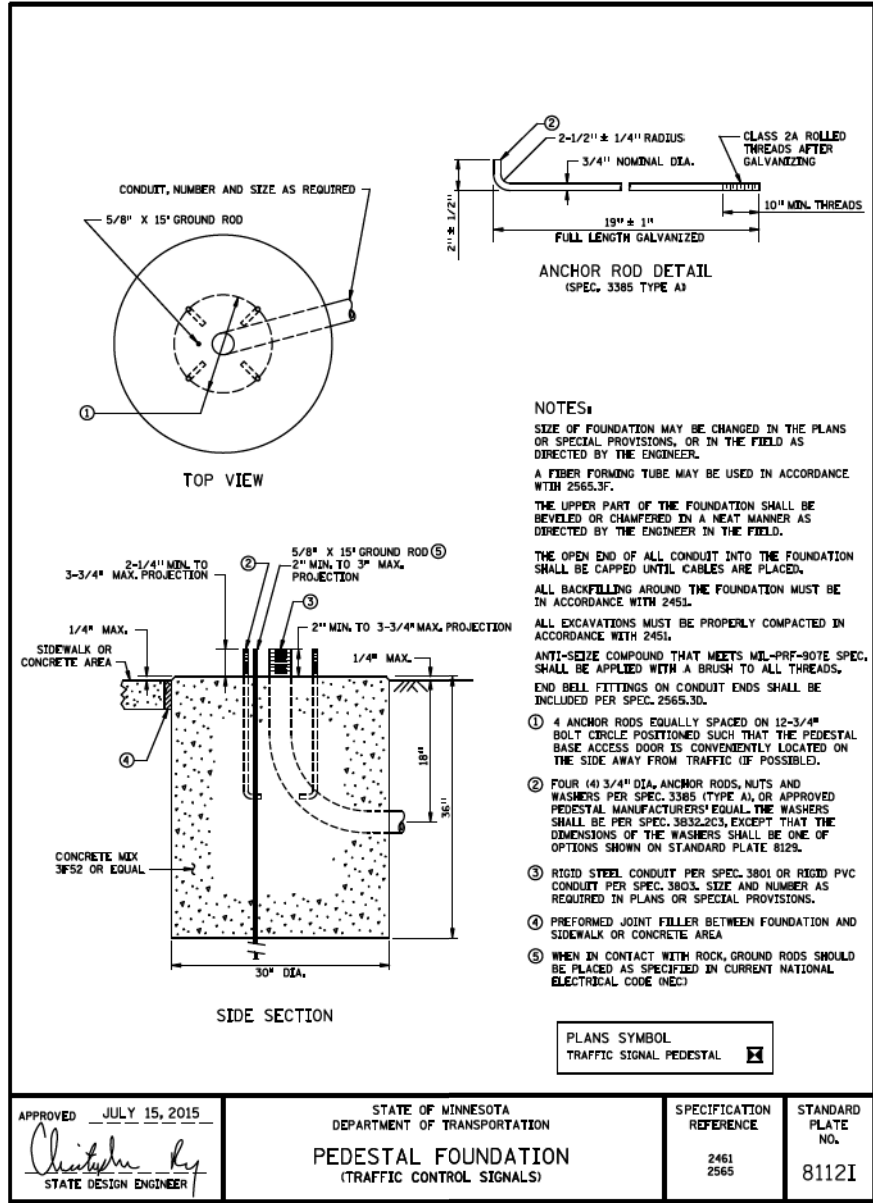
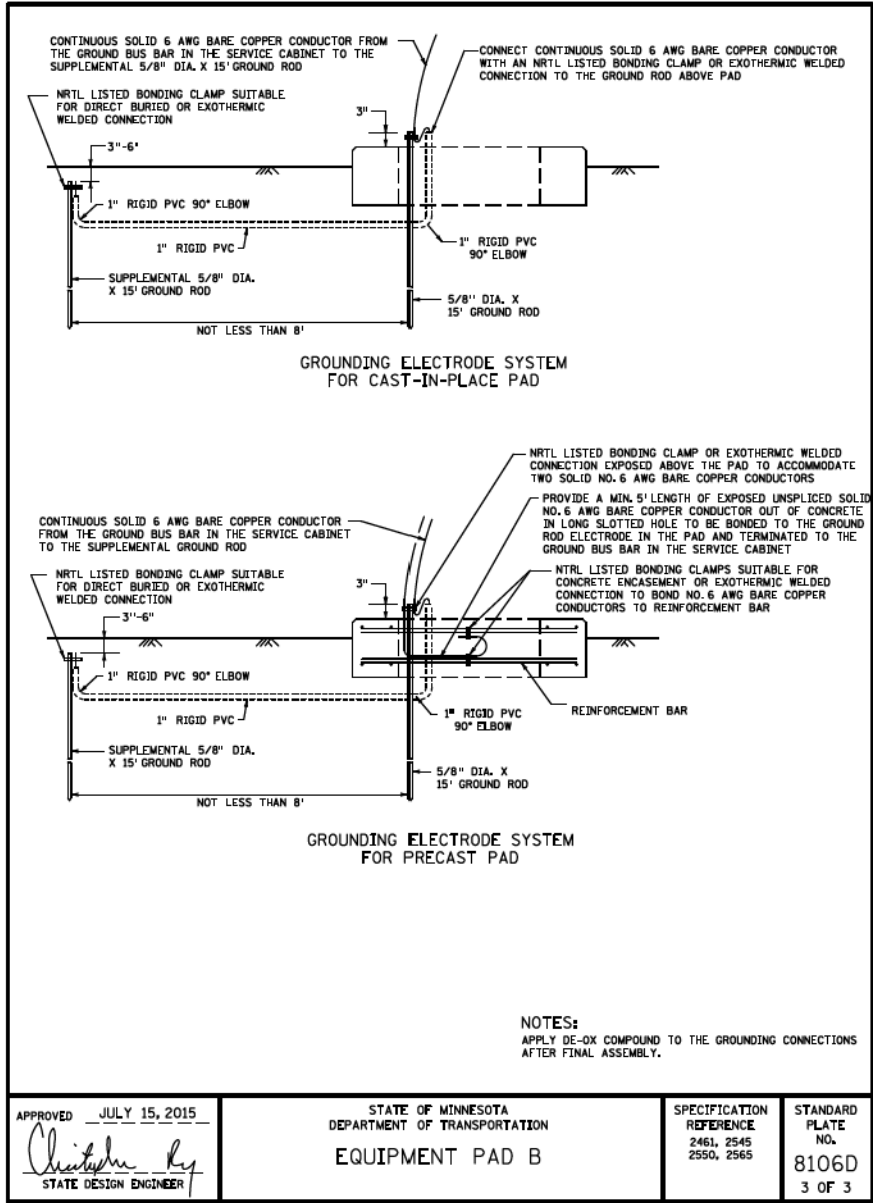
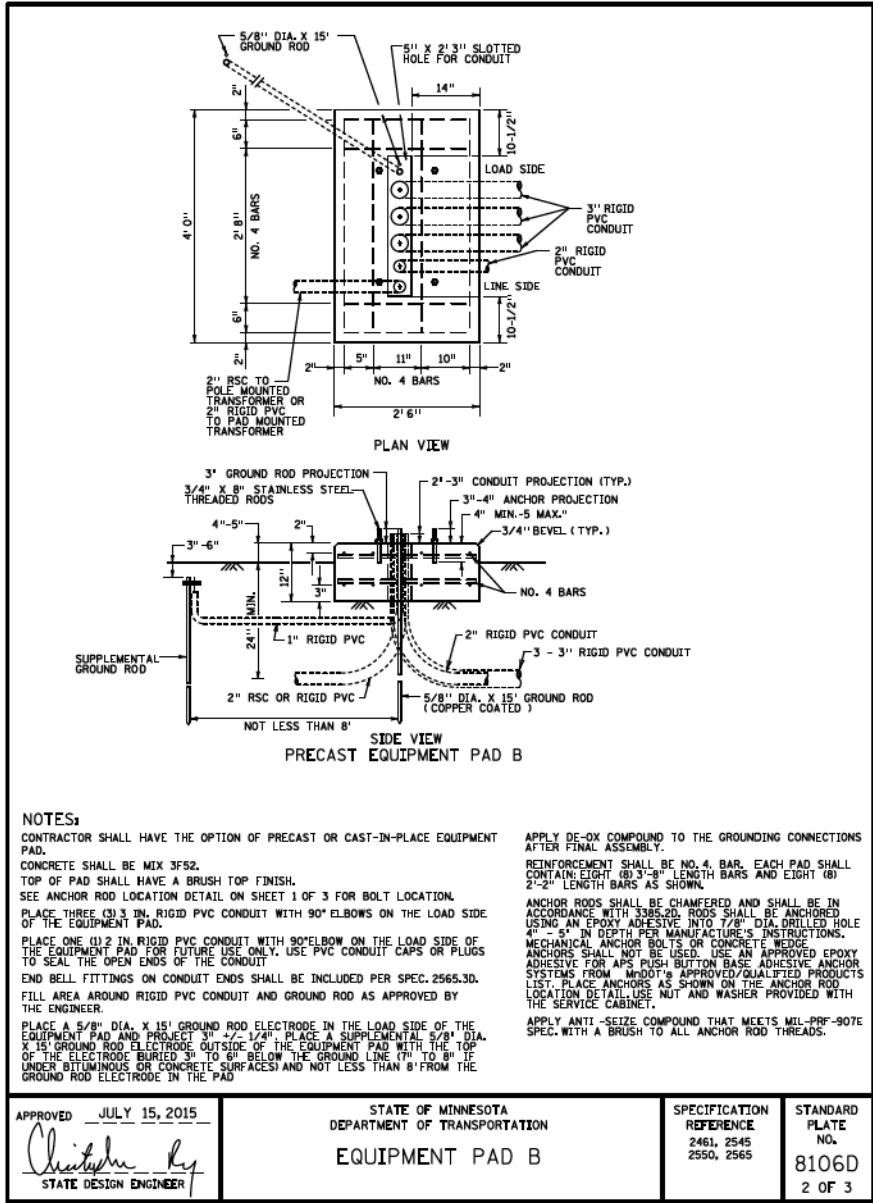
CSAH 30 (Forest Blvd) Improvements
Chisago County, Minnesota

CHISAGO COUNTY, MINNESOTA

STANDARD PLATES
SAP 013-630-021 / SAP 225-591-007 / SAP 225-102-004

SHEET
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OF
216
SHEETS

DATE: 9/12/2024 2:00:10 PM
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NO.	DATE	BY	CHK	REVISIONS

Design By:
NEH

Plan By:
MKV

Checked By:
MAN

Approved By:
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NICHOLAS E. HENTZ, P.E.

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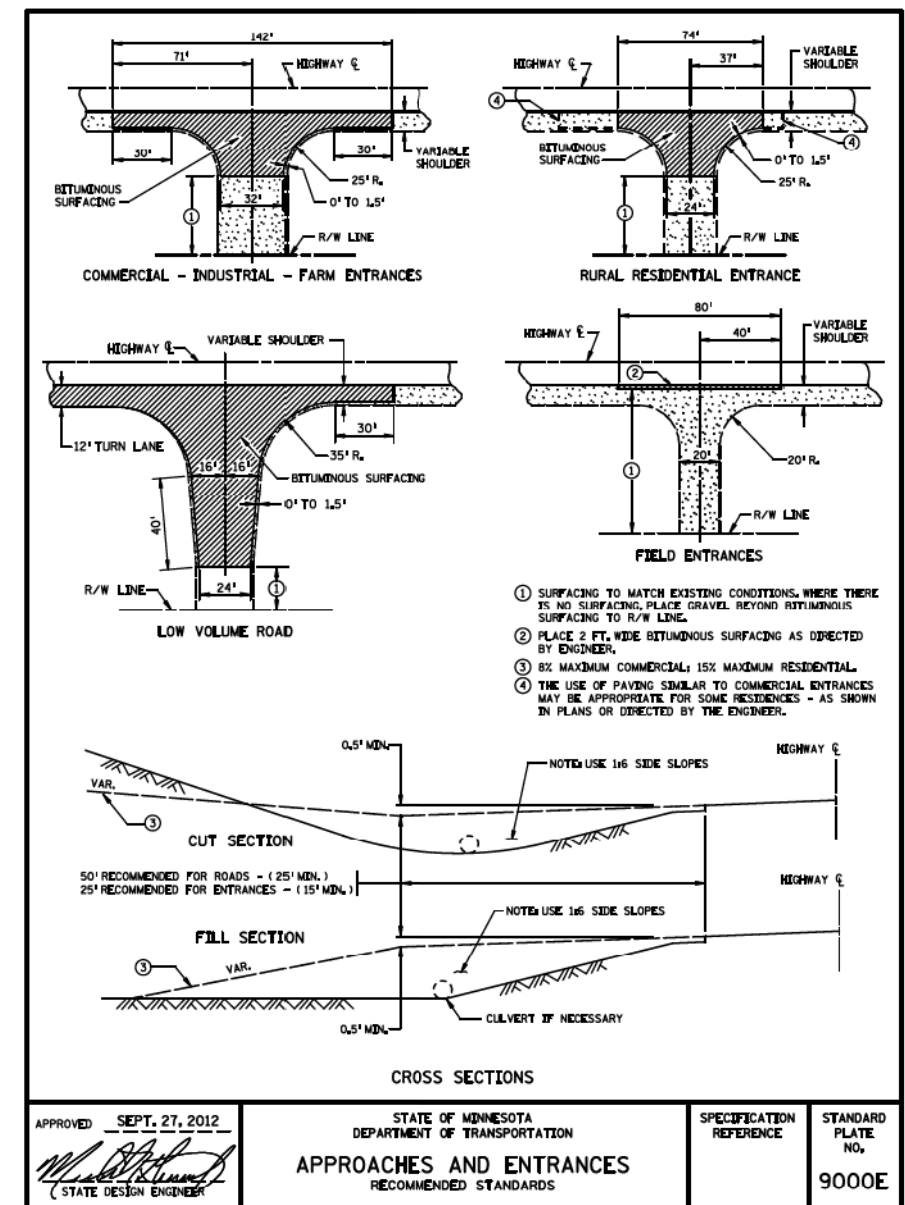
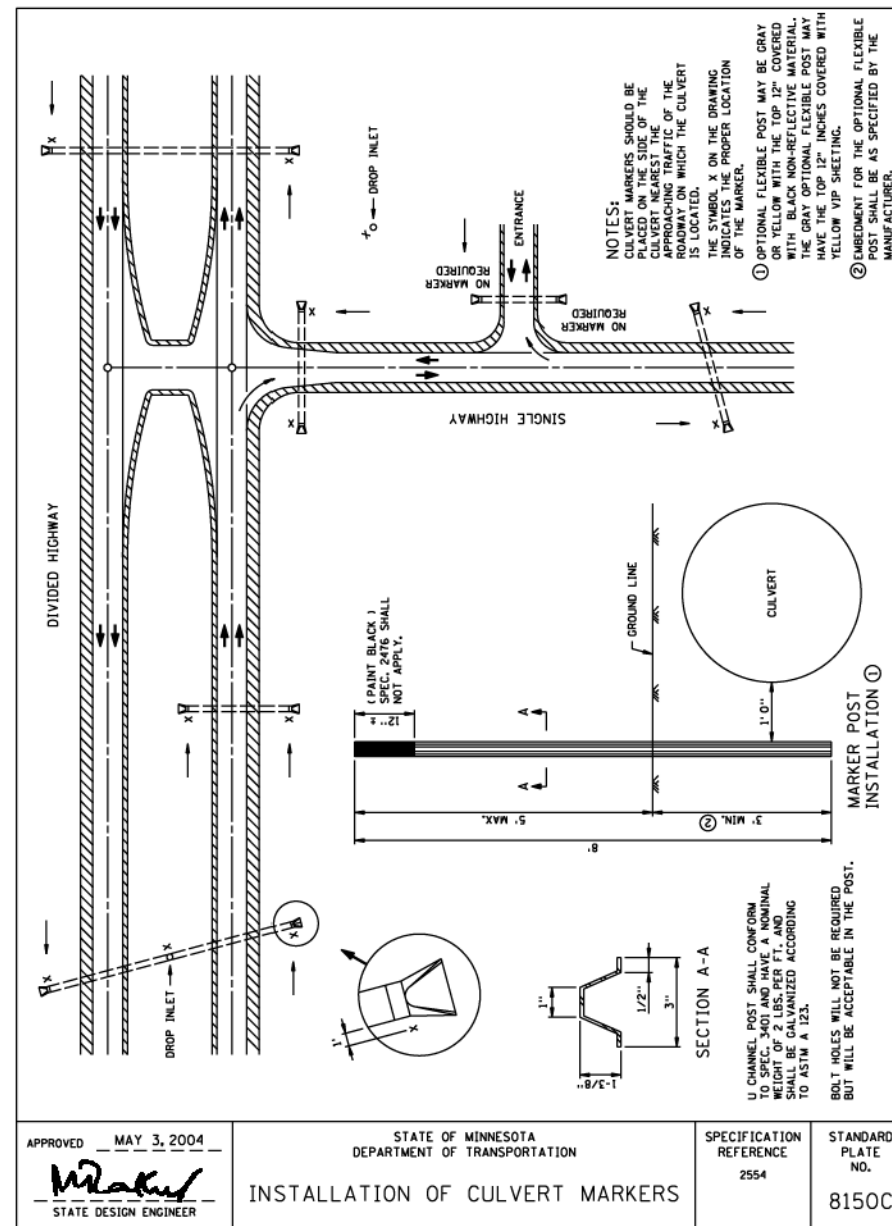
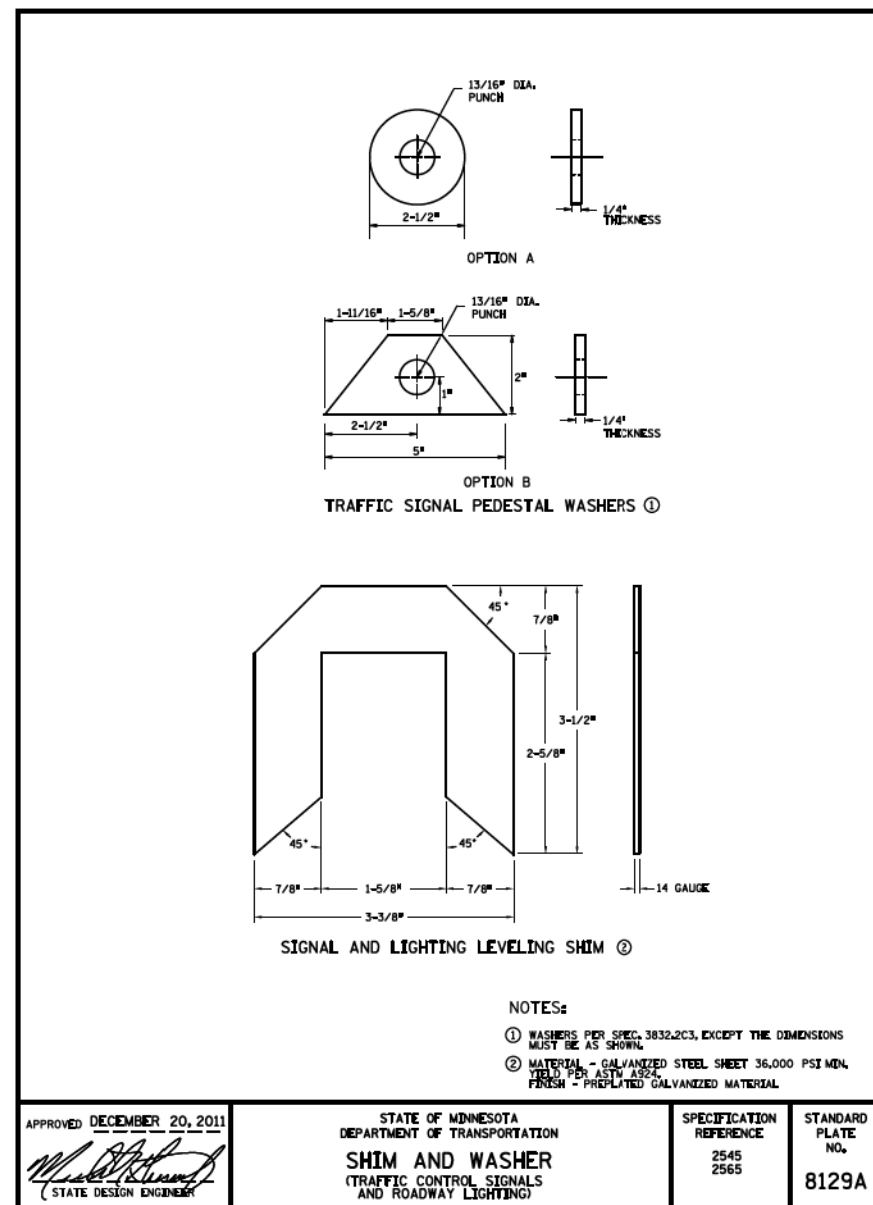


CSAH 30 (Forest Blvd) Improvements
Chisago County, Minnesota

CHISAGO COUNTY, MINNESOTA

STANDARD PLATES
SAP 013-630-021 / SAP 225-591-007 / SAP 225-102-004

SHEET
45
OF
216
SHEETS

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Design By:	NEH
Plan By:	MKV
Checked By:	MAN
Approved By:	NEH

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DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL
ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA



NICHOLAS E. HENTGES, PE

DATE: 9/12/2024 LICENSE NO. 44620



CSAH 30 (Forest Blvd) Improvements

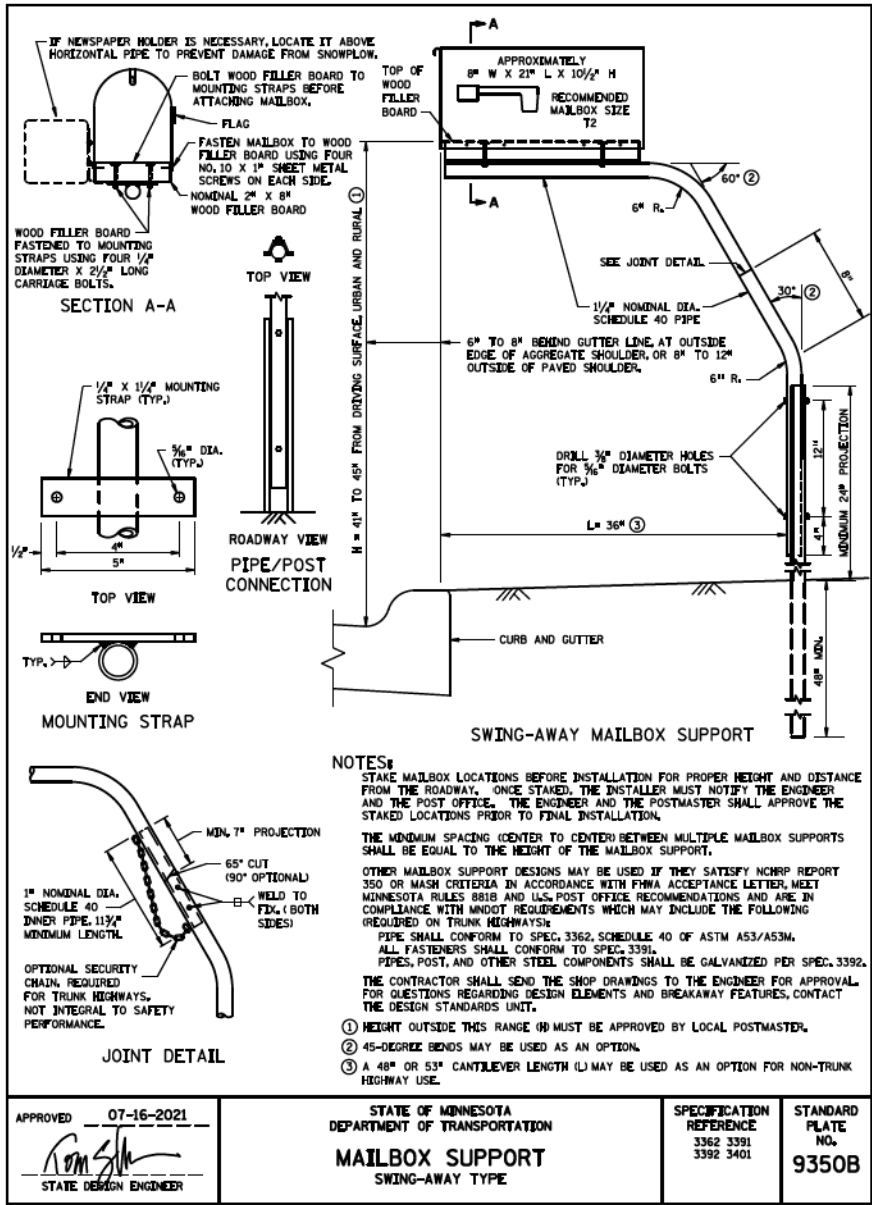
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CHISAGO COUNTY, MINNESOTA

STANDARD PLATES

AP 013-630-021 / SAP 225-591-007 / SAP 225-102-004

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NO.	DATE	BY	CHK	REVISIONS

Design By: NEH
Plan By: MKV
Checked By: MAN
Approved By: NEH

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NICHOLAS E. HENTZ, P.E.
DATE: 9/12/2024 LICENSE NO. 44620



CSAH 30 (Forest Blvd) Improvements
Chisago County, Minnesota

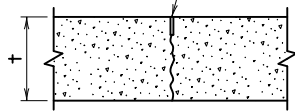
CHISAGO COUNTY, MINNESOTA

STANDARD PLATES
SAP 013-630-021 / SAP 225-591-007 / SAP 225-102-004

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OF
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SHEETS

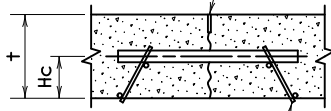
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SEE JOINT DETAIL A OR B



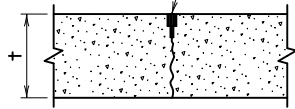
C1U & C2H

SEE JOINT DETAIL A OR B



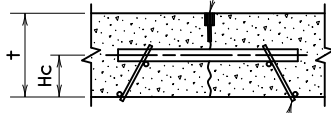
DOWEL BAR ASSEMBLY
C1U-D & C2H-D ⑧

SEE JOINT DETAIL C

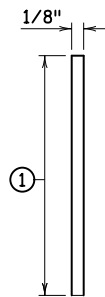


C3P

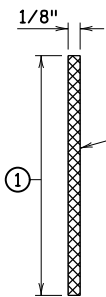
SEE JOINT DETAIL C



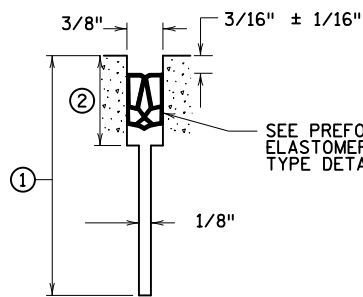
DOWEL BAR ASSEMBLY
C3P-D ⑧



JOINT DETAIL A ③⑤
SAWED & UNSEALED

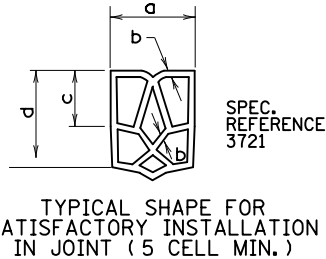


JOINT DETAIL B ④⑤
SAWED & SEALED



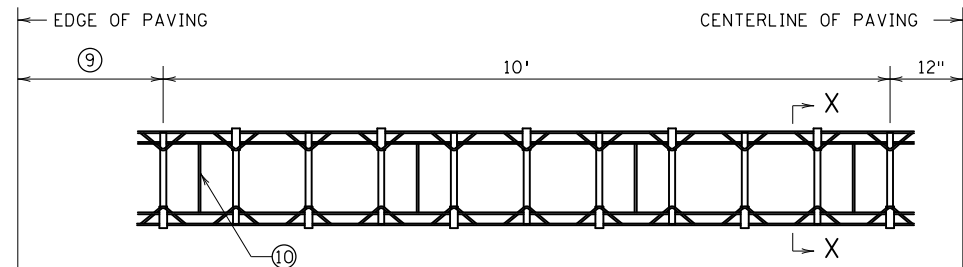
JOINT DETAIL C ④⑤
SAWED AND SEALED

REQUIRED DIMENSIONS ②	
JOINT TYPE	TRANSVERSE
NOMINAL SEALER SIZE	11/16" USE IN ALL 3/8" JOINTS
a	0.69" + 0.13" - 0.05"
b	0.08" ± 0.02"
c	0.25" MIN.
d	0.63" MIN.

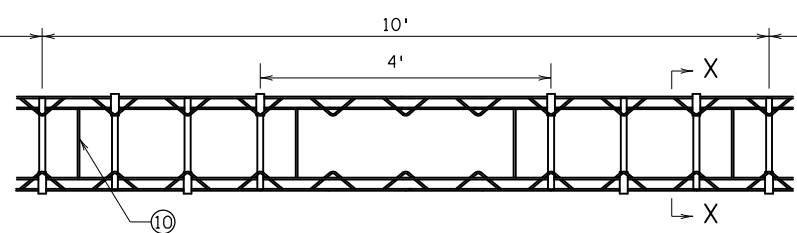


PREFORMED ELASTOMERIC TYPE DETAIL ②

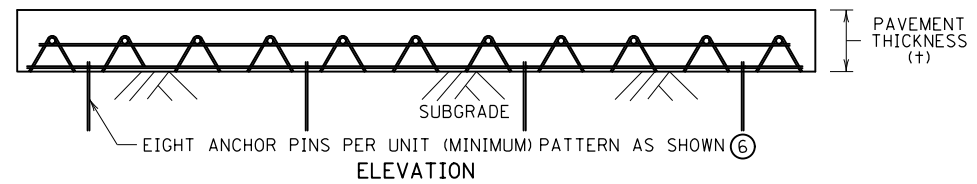
CONTRACTION JOINT REFERENCE, DETAIL & SEALER SPEC. TABLE				
JOINT REFERENCE		JOINT DETAIL	JOINT SEALER SPEC.	JOINT WIDTH
WITHOUT DOWELS	WITH DOWELS			
C1U	C1U-D	A	UNSEALED	1/8"
C2H	C2H-D	B	3725	1/8"
C3P	C3P-D	C	3721	3/8"
LEGEND C = CONTRACTION JOINT NO. = JOINT REFERENCE U = UNSEALED H = HOT POURED P = PREFORMED -D = DOWEL BARS				
EXAMPLE C2H-D				



PLAN VIEW
ELEVEN DOWEL BASKET (SPACED AT 12")

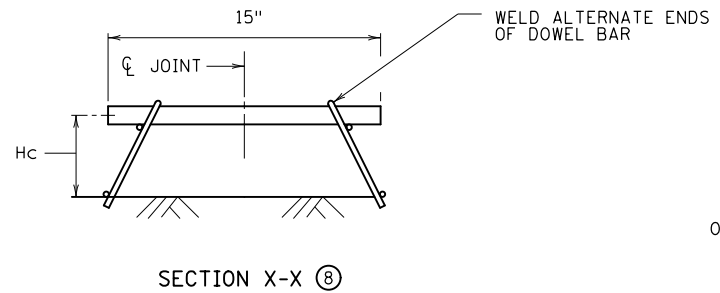


PLAN VIEW
EIGHT DOWEL BASKET (WHEEL PATH DOWELS SPACED AT 12")

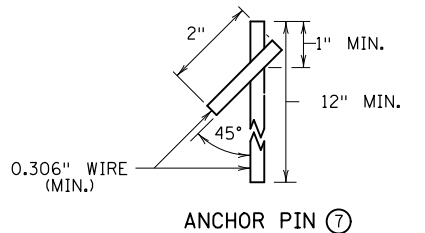


CONTRACTION JOINT DOWEL BAR ASSEMBLIES

DOWEL BAR TABLE		
† PAVEMENT THICKNESS (IN.)	DOWEL BAR DIAMETER (IN.)	HC HEIGHT TO CENTER OF DOWEL BAR (IN.)
7 - 7 1/2	1	3
8 - 10	1 1/4	4
≥ 10 1/2	1 1/2	5



SECTION X-X ⑧



ANCHOR PIN ⑦

NOTES:

SEE STANDARD PLATE 1103 FOR DOWEL BAR ASSEMBLY.

FURNISH AND INSTALL ALL JOINT SEALER IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.

SEE STANDARD PLANS 5-297.217 AND 5-297.219 FOR CONCRETE MAINLINE/RAMP PAVEMENT.

SEE PAVING LAYOUTS IN THE PLANS FOR JOINT CLASS DESIGNATION TO BE USED AND SPECIAL REINFORCEMENT REQUIRED.

① JOINT DEPTH AND TOLERANCE: $\pm 3 \pm 1/4$ ".

② JOINT DEPTH 1/4" MORE THAN THE PREFORMED SEALER WHEN COMPRESSED TO FIT THE JOINT DESIGN WIDTH. "a" DIMENSION APPLIES AT ANY POINT THROUGHOUT "c" DEPTH. SHARP CORNERS NOT PERMITTED. PROVIDE CORNERS WITH SUITABLE FILLET.

③ CLEAN JOINT FACES WITH WATER DURING THE SAW CUTTING OPERATION OR BY WATER BLASTING AFTER SAWING.

④ CLEAN AND DRY JOINT FACES BY SANDBLASTING AND AIR BLASTING, WHEN SEALING IS REQUIRED.

⑤ JOINT WIDTH TOLERANCE IS $\pm 1/16$ " TO $-1/32$ ".

⑥ EVENLY SPACE A MINIMUM OF (8) ANCHOR PINS (4 PER SIDE) PER DOWEL ASSEMBLY. PROVIDE QUALITY CONTROL PLAN FOR ANCHORING THE DOWEL BAR ASSEMBLIES TO THE ENGINEER FOR ACCEPTANCE PER SPEC. 2301.

⑦ ANCHOR PIN REQUIREMENTS FOR CONCRETE PAVEMENT ON GRADE CONSTRUCTION. FOR CONCRETE OVERLAYS, ANCHOR PIN REQUIREMENT AS APPROVED BY THE ENGINEER.

⑧ TOLERANCES:
- PLACE DOWEL BARS PARALLEL TO THE SUBSTRATE SURFACE $\pm 1/8$ " IN 15"
- PLACE DOWEL BARS PARALLEL TO THE CENTERLINE OF THE PAVEMENT $\pm 1/4$ " IN 15"
- SAW CONTRACTION JOINTS PERPENDICULAR TO THE CENTERLINE OF THE PAVEMENT AND CENTERED ON THE DOWEL BAR ± 3 ".
- HEIGHT (hc) TO CENTER OF DOWEL BAR $\pm 1/2$ ".

⑨ DISTANCE TO EDGE OF PAVEMENT FROM OUTSIDE DOWEL:
- 3' 0" FOR 14' 0" LANE.
- 2' 6" FOR 13' 6" LANE.
- 2' 0" FOR 13' 0" LANE.
- 1' 0" FOR 12' 0" LANE.

⑩ CONTRACTOR OPTION TO CUT AND BEND SPACER WIRES AFTER STAKING.

LEAD EXPERT OFFICE

GLENN ENGSTROM
DIRECTOR
OFFICE OF MATERIALS
AND ROAD RESEARCH



STANDARD PLAN 5-297.221

1 OF 4

THOMAS STYRBICKI
STATE DESIGN ENGINEER

APPROVED: 10-03-2022
REVISED:

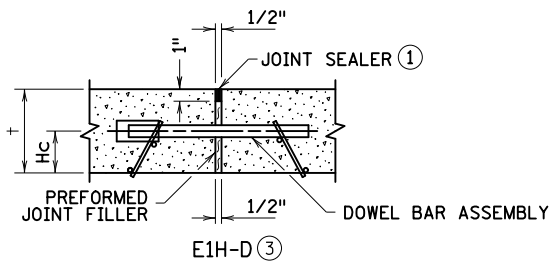
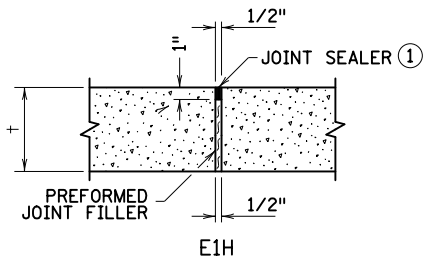
SAP 013-630-021 / SAP 225-591-007

PAVEMENT JOINTS
CONTRACTION (DESIGN C)

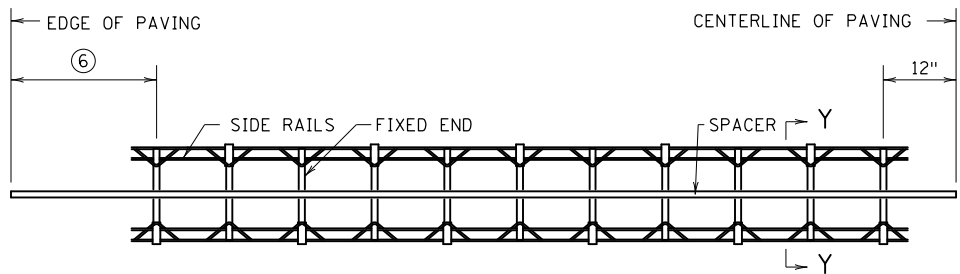
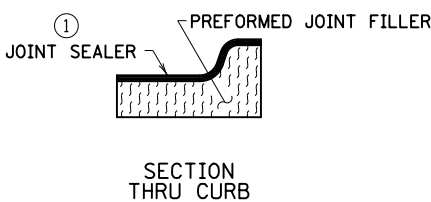
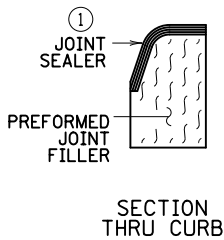
SHEET NO. 48 OF 216

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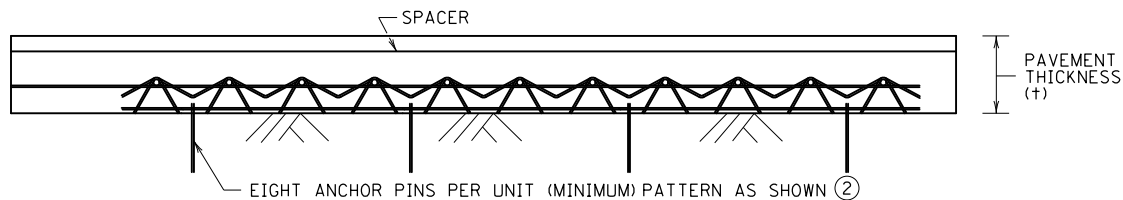
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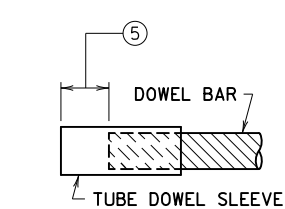
EXPANSION JOINT REFERENCE, DETAIL & SEALER SPEC. TABLE				
JOINT REFERENCE		PREFORMED JOINT FILLER SPEC.	JOINT SEALER SPEC.	JOINT WIDTH
WITHOUT DOWELS	WITH DOWELS			
E1H	E1H-D	3702	3725	1/2"
LEGEND E = EXPANSION JOINT NO. = JOINT REFERENCE H = HOT POURED -D = DOWEL BARS EXAMPLE E1H-D				



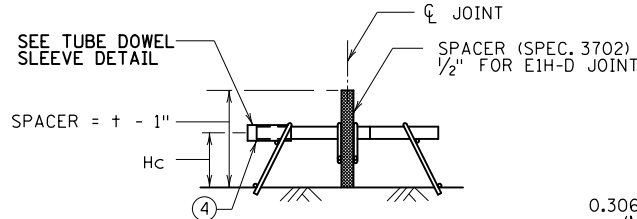
PLAN VIEW
EXPANSION JOINT DOWEL ASSEMBLY



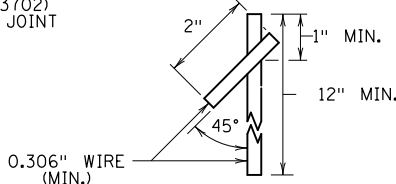
ELEVATION VIEW
EXPANSION JOINT DOWEL BAR ASSEMBLY



TUBE DOWEL SLEEVE DETAIL



SECTION Y-Y



ANCHOR PIN

DOWEL BAR TABLE		
† PAVEMENT THICKNESS (IN.)	DOWEL BAR DIAMETER (IN.)	Hc HEIGHT TO CENTER OF DOWEL BAR (IN.)
7 - 7 1/2	1	3
8 - 10	1 1/4	4
≥ 10 1/2	1 1/2	5

NOTES:

WHEN USING THE EXPANSION JOINT DOWEL ASSEMBLY, CONTACT THE CONCRETE OFFICE.

SEE STANDARD PLATE 1103 FOR DOWEL BAR ASSEMBLY.

PROVIDE PREFORMED JOINT FILLER MATERIAL IN ACCORDANCE WITH SPEC. 3702.

FURNISH AND INSTALL ALL JOINT SEALER IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.

- JOINT SEALER SPEC. 3725. CLEAN AND DRY JOINT FACES BY SANDBLASTING AND AIR BLASTING. TOP OF SEALER FLUSH TO 1/8" BELOW TOP OF PAVEMENT SURFACE.
- EVENLY SPACE A MINIMUM OF (8) ANCHOR PINS (4 PER SIDE) PER DOWEL ASSEMBLY. PROVIDE QUALITY CONTROL PLAN FOR ANCHORING THE DOWEL BAR ASSEMBLIES TO THE ENGINEER FOR ACCEPTANCE PER SPEC. 2301.

- TOLERANCES:
 - PLACE DOWEL BARS PARALLEL TO THE SUBSTRATE SURFACE ±1/8" IN 15".
 - PLACE DOWEL BARS PARALLEL TO THE CENTERLINE OF THE PAVEMENT ±1/4" IN 15".
 - HEIGHT (Hc) TO CENTER OF DOWEL BAR ± 1/2".

- PLACE METAL INSTALLATION SHIELDS FOR EXPANSION JOINTS PARALLEL TO THE PAVEMENT SURFACE AND THE PAVEMENT CENTERLINE WITHIN A TOLERANCE OF 1/4" WITHIN THE LENGTH OF BAR.

- SPACE FROM END OF DOWEL BAR TO END OF SLEEVE IS 1" MINIMUM.

- DISTANCE TO EDGE OF PAVEMENT FROM OUTSIDE DOWEL:
 - 3' 0" FOR 14' 0" LANE.
 - 2' 6" FOR 13' 6" LANE.
 - 2' 0" FOR 13' 0" LANE.
 - 1' 0" FOR 12' 0" LANE.

LEAD EXPERT OFFICE

GLENN ENGSTROM
DIRECTOR
OFFICE OF MATERIALS
AND ROAD RESEARCH



STANDARD PLAN 5-297.221

2 OF 4

THOMAS STYRBICKI
STATE DESIGN ENGINEER

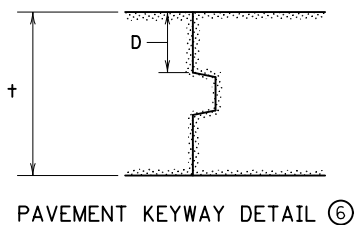
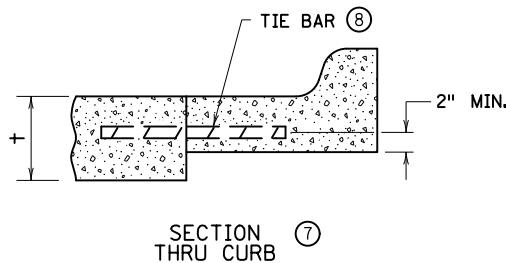
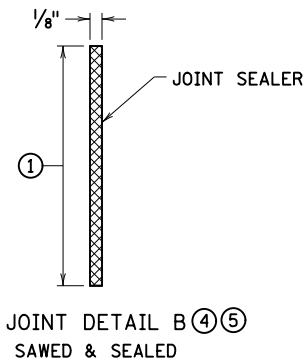
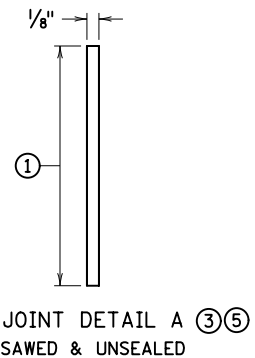
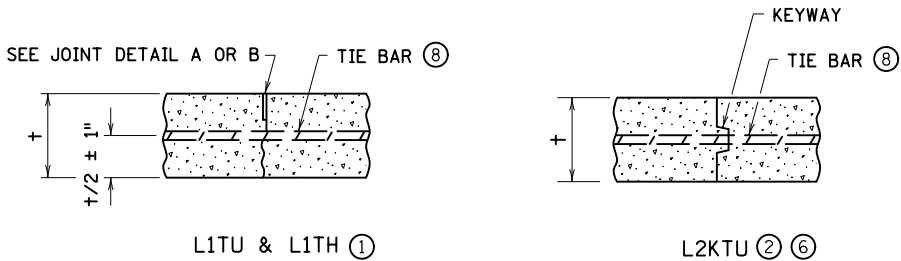
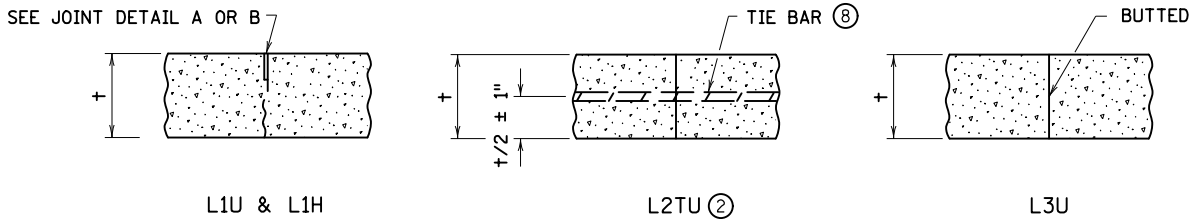
APPROVED: 10-03-2022
REVISED:

SAP 013-630-021 / SAP 225-591-007

PAVEMENT JOINTS
EXPANSION (DESIGN E)

SHEET NO. 49 OF 216

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FIXED FORM KEYWAY TABLE ⑥	
+	D
PAVEMENT THICKNESS	(MIN. DEPTH)
< 7"	2-1/2"
7" TO 7-1/2"	3"
8" TO 9-1/2"	4"
≥ 10"	5"

SLIPFORM KEYWAY TABLE ⑥	
+	D
PAVEMENT THICKNESS	(MIN. DEPTH)
< 10"	NO KEYWAY
≥ 10"	5"

LONGITUDINAL JOINT REFERENCE, DETAIL & SEALER SPECIFICATION TABLE					
JOINT REFERENCE			JOINT DETAIL	JOINT SEALER SPEC	JOINT WIDTH
WITHOUT TIE BARS	WITH TIE BARS	WITH KEYWAY & TIE BARS			
L1U	L1TU		A	UNSEALED	1/8"
L1H	L1TH		B	3725	1/8"
	L2TU	L2KTU	NONE	UNSEALED	
L3U			NONE	UNSEALED	

LEGEND

L = LONGITUDINAL JOINT

NO. = JOINT REFERENCE

1 = PAVED CONSTRUCTION JOINT

2 = TIED CONSTRUCTION JOINT

3 = BUTTED CONSTRUCTION JOINT

K = KEYWAY

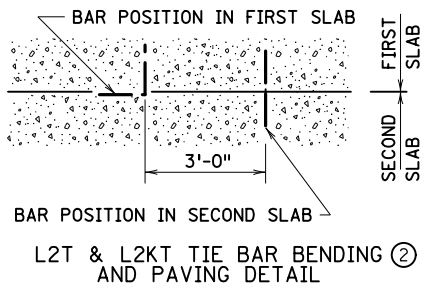
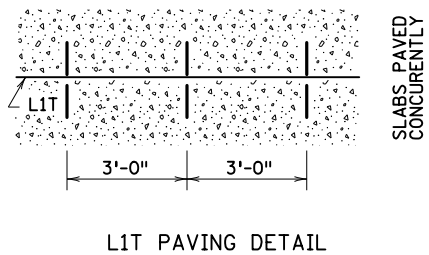
T = TIE BARS

U = UNSEALED

H = HOT POURED

EXAMPLE

L2KTU



NOTES:

PROVIDE EPOXY-COATED TIE BARS COMPLYING WITH SPEC. 3301.

FURNISH AND INSTALL ALL JOINT SEALER IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.

SEE STANDARD PLANS 5-297.217 AND 5-297.219 FOR CONCRETE MAINLINE AND RAMP PAVEMENT.

SEE PAVING LAYOUTS IN THE PLANS FOR JOINT CLASS DESIGNATION TO BE USED AND SPECIAL REINFORCEMENT REQUIRED.

LONGITUDINAL JOINTS SAWED WIDER THAN 1/8", CONTACT THE CONCRETE UNIT FOR SEALING RECOMMENDATIONS.

① JOINT DEPTH AND TOLERANCE: $\pm 3 \pm 1/4$ ".

② BEND TIE BARS 90 DEGREES WHEN INSERTED IN THE L2 JOINTS, EXCEPT WHEN NOTED OTHERWISE IN THE PLANS.

③ CLEAN JOINT FACES WITH WATER DURING THE SAW CUTTING OPERATION OR BY WATER BLASTING AFTER SAWING.

④ CLEAN AND DRY JOINT FACES BY SANDBLASTING AND AIR BLASTING, WHEN SEALING IS REQUIRED.

⑤ JOINT WIDTH TOLERANCE IS $\pm 1/16$ " TO $-1/32$ ".

⑥ CONTRACTOR'S OPTION TO USE KEYWAY WHEN:
- PLACING FIXED FORM CONSTRUCTION.
- PLACING SLIPFORM CONSTRUCTION WHEN $\pm \geq 10$ ".

USE OF KEYWAY FOR ANY OTHER APPLICATION REQUIRES APPROVAL BY THE ENGINEER. OTHER KEYWAY SHAPES MAY BE USED WITH THE APPROVAL OF THE CONCRETE ENGINEER.

⑦ WHEN CURB AND GUTTER IS NOT CONSTRUCTED AT THE SAME DEPTH AS ADJACENT CONCRETE, PLACE TIE BAR MINIMUM OF 2" ABOVE THE CURB AND GUTTER GRADE.

⑧ PROVIDE NO. 4 TIE BAR, 30" LONG, SPACED AT 3' ON CENTER.

LEAD EXPERT OFFICE

GLENN ENGSTROM
DIRECTOR
OFFICE OF MATERIALS
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STANDARD PLAN 5-297.221

3 OF 4

THOMAS STYRBICKI
STATE DESIGN ENGINEER

APPROVED: 10-03-2022
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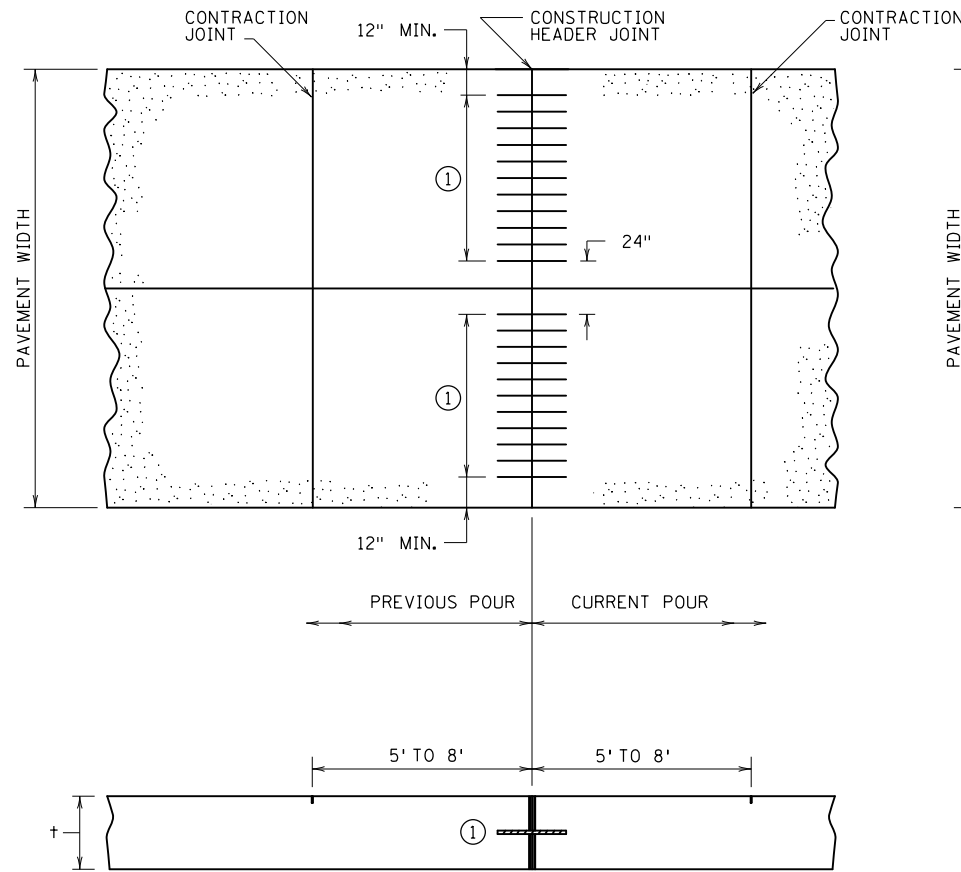
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PAVEMENT JOINTS

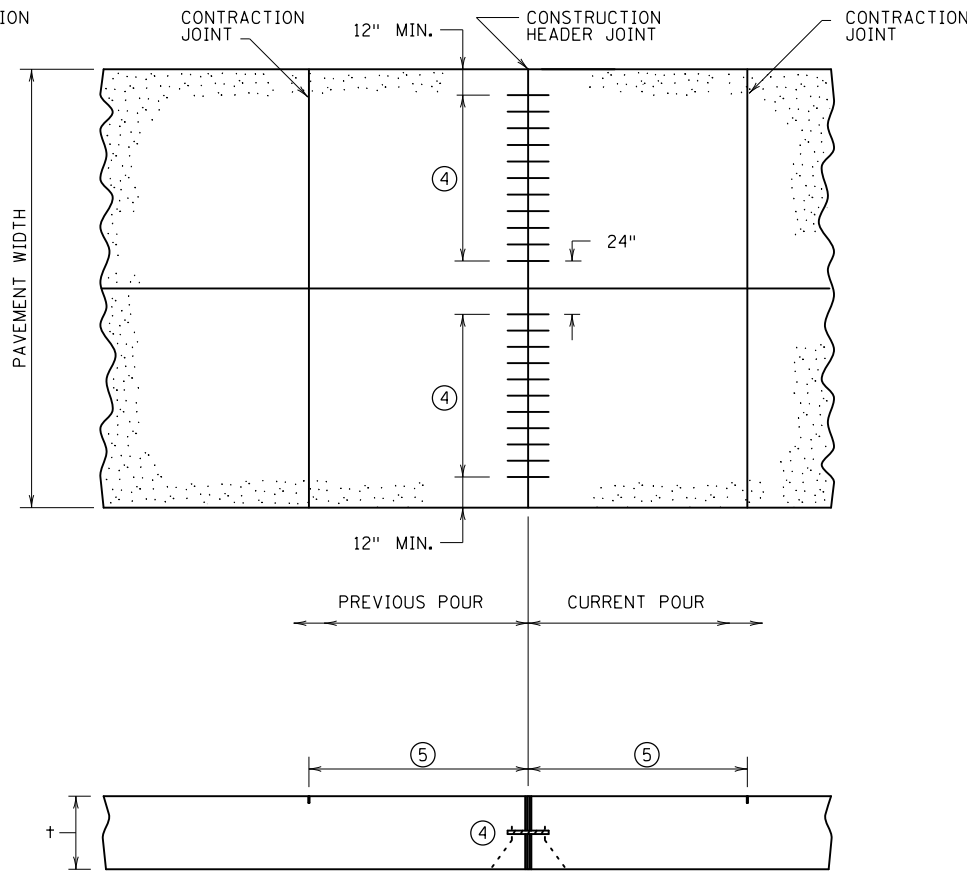
LONGITUDINAL (DESIGN L)

SHEET NO. 50 OF 216

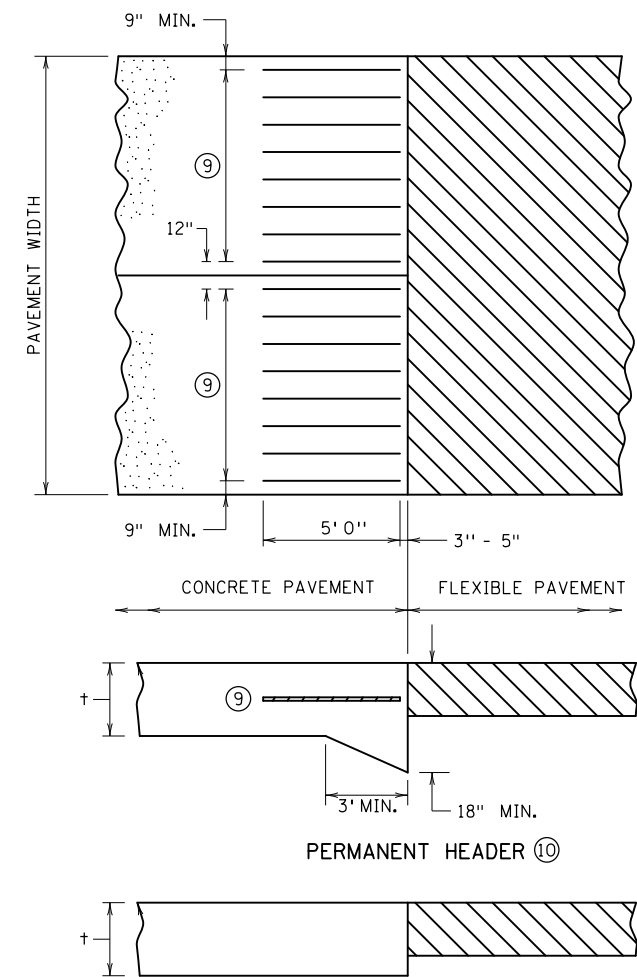
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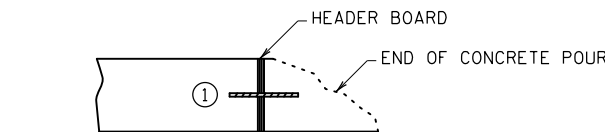
REINFORCEMENT BAR CONSTRUCTION HEADERS



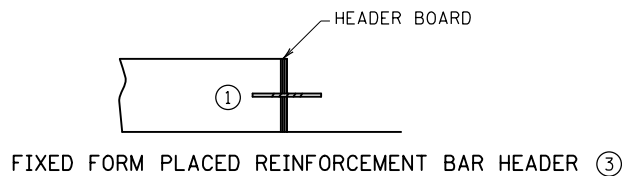
DOWEL BAR CONSTRUCTION HEADERS



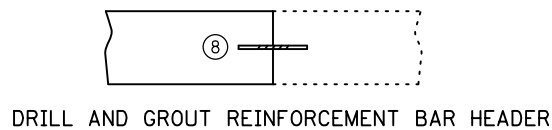
TERMINAL HEADER ⑪



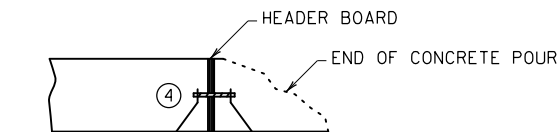
SLIPFORM PLACED REINFORCEMENT BAR HEADER ②



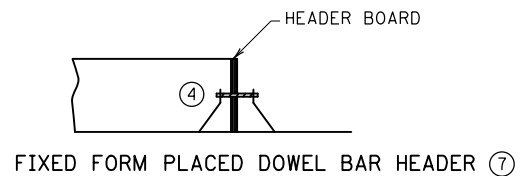
FIXED FORM PLACED REINFORCEMENT BAR HEADER ③



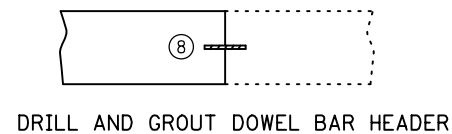
DRILL AND GROUT REINFORCEMENT BAR HEADER



SLIPFORM PLACED DOWEL BAR HEADER ⑥



FIXED FORM PLACED DOWEL BAR HEADER ⑦



DRILL AND GROUT DOWEL BAR HEADER

NOTES:

PROVIDE EPOXY-COATED REINFORCEMENT BARS IN ACCORDANCE WITH SPEC. 3301.

- ① PROVIDE NO. 4 REINFORCEMENT BARS, 30" LONG, SPREAD 12" ON CENTER AT DEPTH OF $T/2 \pm 1"$.
- ② PAVE PAST THE HEADER LOCATION. REMOVE END OF CONCRETE POUR. SET HEADER BOARD SHAPED TO PAVEMENT CROSS SECTION AND SLOTTED OR DRILLED FOR REINFORCEMENT BARS. PLACE THE CONCRETE BEHIND THE BOARD AND INSERT THE REINFORCEMENT BARS. CONSOLIDATE AND FINISH THE CONCRETE BEHIND THE BOARD.
- ③ SET HEADER BOARD SHAPED TO PAVEMENT CROSS SECTION AND SLOTTED OR DRILLED FOR REINFORCEMENT BARS. PLACE THE CONCRETE BEHIND THE BOARD AND INSERT THE REINFORCEMENT BARS. CONSOLIDATE AND FINISH THE CONCRETE BEHIND THE BOARD.
- ④ PROVIDE DOWEL BARS IN ACCORDANCE WITH SPEC. 3302 AND THE CONTRACT.
- ⑤ DISTANCE EQUAL TO OR LESS THAN THE DESIGNED CONTRACTION JOINT SPACING IN ACCORDANCE WITH THE CONTRACT.
- ⑥ PLACE DOWEL BAR BASKET AT DESIRED HEADER LOCATION. SET HEADER BOARD SHAPED TO PAVEMENT CROSS SECTION ABOVE AND BELOW THE DOWELS. PAVE PAST THE HEADER LOCATION AND FINISH CONCRETE BEHIND THE HEADER BOARD. THOROUGHLY REMOVE ALL CONCRETE FROM THE EXPOSED DOWELS.
- ⑦ PLACE DOWEL BAR BASKET AT DESIRED HEADER LOCATION. SET HEADER BOARD SHAPED TO PAVEMENT CROSS SECTION ABOVE AND BELOW THE DOWELS. PLACE, CONSOLIDATE AND FINISH THE CONCRETE BEHIND THE HEADER BOARD.
- ⑧ DRILL AND GROUT 18" LONG DOWEL OR REINFORCEMENT BARS SPACED AT 12" ON CENTER AT A DEPTH OF $T/2 \pm 1"$. DRILL THE HOLE $1/8"$ GREATER THAN THE NOMINAL OUTSIDE DIAMETER OF THE BAR BEING PLACED TO A DEPTH OF 9". INJECT A MnDOT-APPROVED EPOXY OR NON-SHRINK GROUT IN THE BACK OF THE DRILL HOLE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
 - FOR DOWEL BAR HEADERS, USE DOWEL BARS HAVING A DIAMETER IN ACCORDANCE WITH SPEC. 3302 AND THE CONTRACT.
 - FOR REINFORCEMENT BAR HEADERS, USE NO. 4 REINFORCEMENT BARS.
- ⑨ PROVIDE NO. 7 REINFORCEMENT BARS, 5' LONG, SPACED 18" ON CENTER AT DEPTH OF $T/2 \pm 1"$.
- ⑩ USE PERMANENT HEADER WHEN LONG SECTIONS OF CONCRETE (400' OR GREATER) ABUT BITUMINOUS. CONTACT THE CONCRETE UNIT WHEN FUTURE CONCRETE IS BEING CONSTRUCTED ADJACENT TO AN EXISTING PERMANENT HEADER.
- ⑪ USE TERMINAL HEADER WHEN SHORT SECTIONS OF CONCRETE (LESS THAN 400') ABUT BITUMINOUS (ON SIDE STREETS, FOR EXAMPLE).

LEAD EXPERT OFFICE

GLENN ENGSTROM
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STANDARD PLAN 5-297.221

4 OF 4

THOMAS STYRBICKI
STATE DESIGN ENGINEER

APPROVED: 10-03-2022
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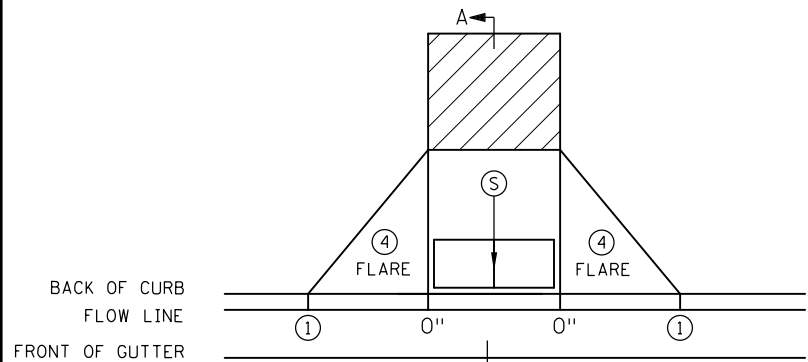
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PAVEMENT JOINTS

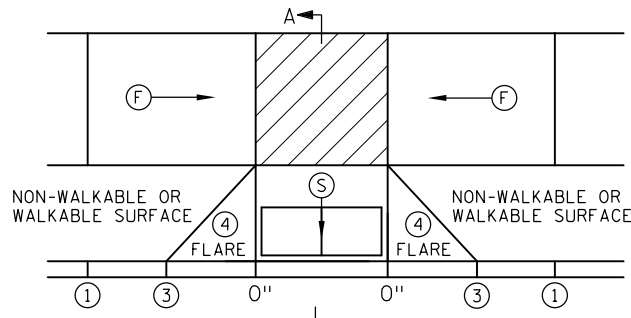
CONSTRUCTION AND TERMINAL HEADERS

SHEET NO. 51 OF 216

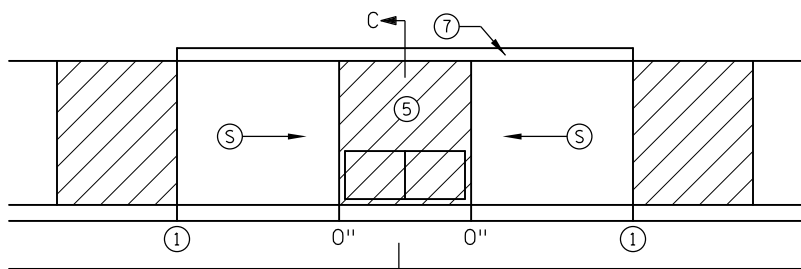
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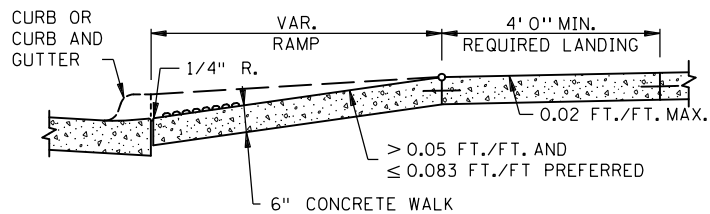
PERPENDICULAR



TIERED PERPENDICULAR

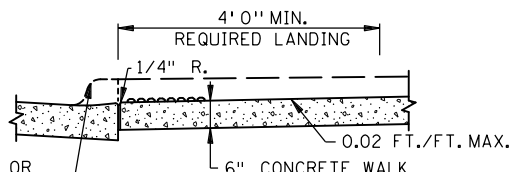


PARALLEL



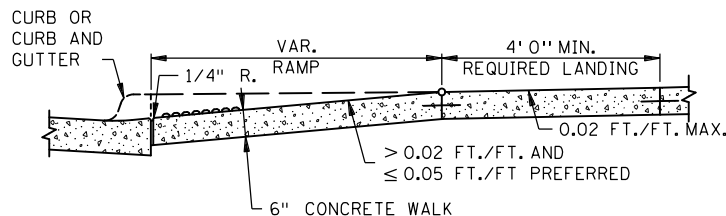
SECTION A-A

PERPENDICULAR/TIERED/DIAGONAL



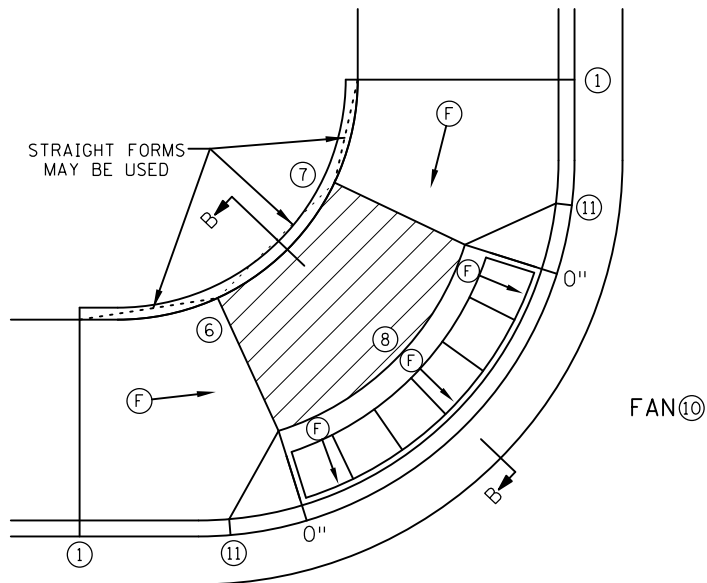
SECTION C-C

PARALLEL/DEPRESSED CORNER

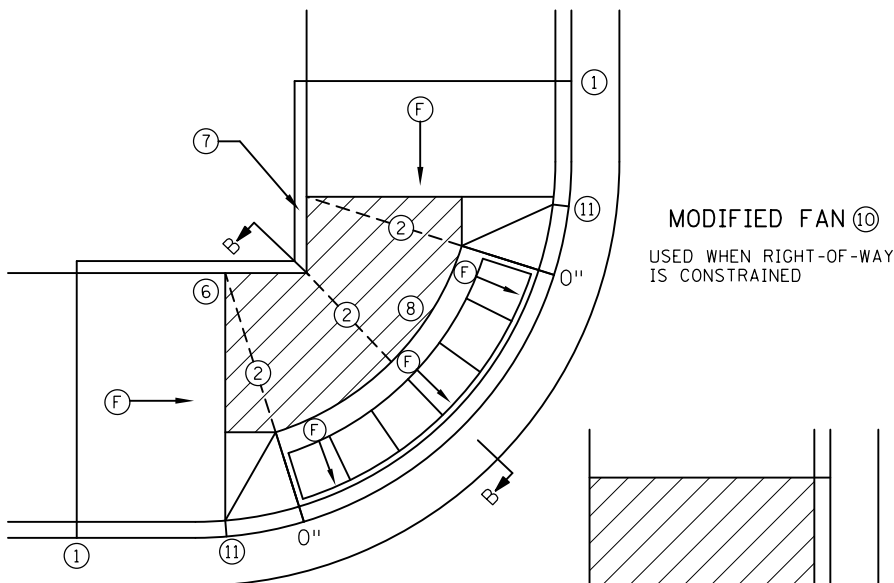


SECTION B-B

FAN

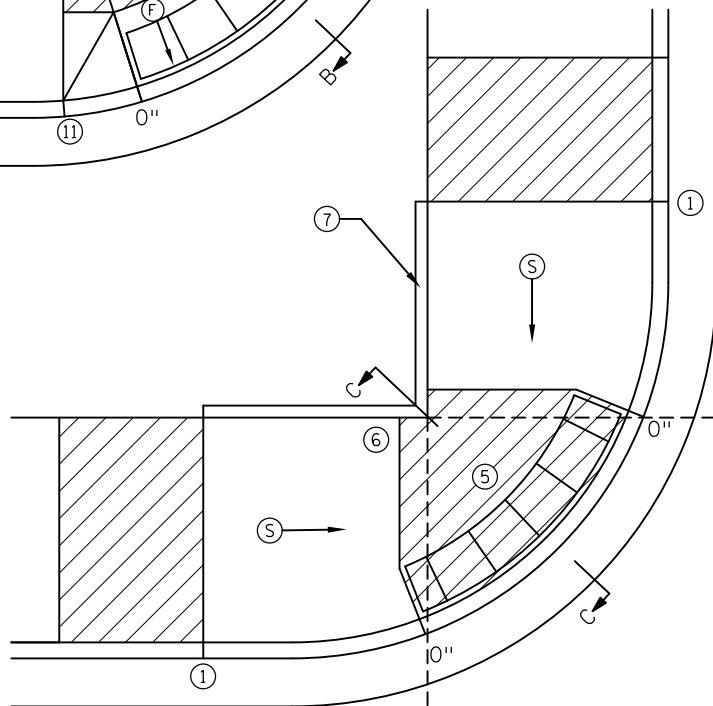


FAN ⑩

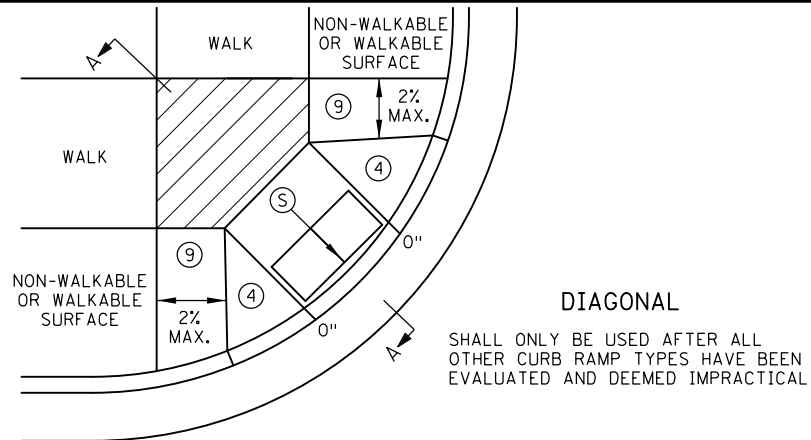


MODIFIED FAN ⑩

USED WHEN RIGHT-OF-WAY IS CONSTRAINED



DEPRESSED CORNER



DIAGONAL

SHALL ONLY BE USED AFTER ALL OTHER CURB RAMP TYPES HAVE BEEN EVALUATED AND DEEMED IMPRACTICAL

NOTES:

- LANDINGS SHALL BE LOCATED ANYWHERE THE PEDESTRIAN ACCESS ROUTE (PAR) CHANGES DIRECTION, AT THE TOP OF RAMPS THAT HAVE RUNNING SLOPES GREATER THAN 5.0%, AND IF THE APPROACHING WALK IS INVERSE GRADE GREATER THAN 2%. INITIAL CURB RAMP LANDINGS SHALL BE CONSTRUCTED WITHIN 15' FROM THE BACK OF CURB, WITH 6' FROM THE BACK OF CURB BEING THE PREFERRED DISTANCE, ONLY APPLICABLE WHEN THE INITIAL RAMP RUNNING SLOPE IS OVER 5.0%.
- SECONDARY CURB RAMP LANDINGS ARE REQUIRED FOR EVERY 30" OF VERTICAL RISE WHEN THE LONGITUDINAL RUNNING SLOPE IS GREATER THAN 5.0%.
- CONTRACTION JOINTS SHALL BE CONSTRUCTED ALONG ALL GRADE BREAKS WITHIN THE PAR. 1/4" DEEP VISUAL JOINTS SHALL BE USED AT THE TOPS OF CONCRETE FLARES ADJACENT TO WALKABLE SURFACES.
- ALL GRADE BREAKS WITHIN THE PAR SHALL BE PERPENDICULAR TO THE PATH OF TRAVEL, THUS BOTH SIDES OF A SLOPED WALKING SURFACE MUST BE EQUAL LENGTH. (EXCEPT AS STATED IN ⑥ BELOW.)
- TO ENSURE RAMPS AND LANDINGS ARE PROPERLY CONSTRUCTED, ALL INITIAL LANDINGS AT A TOP OF A RAMPED SURFACE (RUNNING SLOPE GREATER THAN 2%) SHALL BE FORMED AND PLACED SEPARATELY IN AN INDEPENDENT CONCRETE POUR. FOLLOW SIDEWALK REINFORCEMENT DETAILS ON SHEET 6 OF 6 FOR ALL SEPARATELY POURED INITIAL LANDINGS.
- WHEN SIDEWALK IS AT BACK OF CURB, TOP OF CURB SHALL MATCH PROPOSED ADJACENT WALK GRADE. MAINTAIN POSITIVE BOULEVARD DRAINAGE TO TOP OF CURB.
- ALL RAMP TYPES SHOULD HAVE A MINIMUM 3' LONG RAMP LENGTH.
- 4' MINIMUM WIDTH OF DETECTABLE WARNING IS REQUIRED FOR ALL RAMPS. DETECTABLE WARNINGS SHALL CONTINUOUSLY EXTEND FOR A MIN. OF 24" IN THE PATH OF TRAVEL. DETECTABLE WARNING TO COVER THE ENTIRE PAR WIDTH OF SHARED-USE PATHS AND THE ENTIRE PAR WIDTH OF THE WALK WITH THE EXCEPTION OF 3" MAXIMUM ON EACH OUTSIDE EDGE WHICH ENSURES THE DETECTABLE WARNINGS ARE ENCASED IN CONCRETE WHEN ADJACENT TO TURF. WHEN ADJACENT TO CONCRETE FLARES 0" - 3" OFFSET IS ALLOWED.
- WHEN DESIGNING OR ORDERING RECTANGULAR DETECTABLE WARNING SURFACES SHOULD BE 6" LESS THAN THE INCOMING PAR. ARC LENGTH OF THE RADIAL DETECTABLE WARNINGS SHOULD NOT BE GREATER THAN 20 FEET.
- RECTANGULAR DETECTABLE WARNINGS SHALL BE SETBACK 3" FROM THE BACK OF CURB. RADIAL DETECTABLE WARNINGS SHALL BE SETBACK 3" MINIMUM TO 6" MAXIMUM FROM THE BACK OF CURB.

- ① MATCH FULL HEIGHT CURB.
- ② 4' MINIMUM DEPTH LANDING REQUIRED ACROSS TOP OF RAMP.
- ③ 3" HIGH CURB WHEN USING A 3' LONG RAMP, 4" HIGH CURB WHEN USING A 4' LONG RAMP.
- ④ SEE SHEET 4 OF 6, TYPICAL SIDE TREATMENT OPTIONS, FOR DETAILS ON FLARES AND RETURNED CURBS.
- ⑤ DETECTABLE WARNINGS MAY BE PART OF THE 4' X 4' MIN. LANDING AREA IF IT IS NOT FEASIBLE TO CONSTRUCT THE LANDING OUTSIDE OF THE DETECTABLE WARNING AREA.
- ⑥ THE GRADE BREAK SHALL BE PERPENDICULAR TO THE BACK OF WALK. THIS WILL ENSURE THAT THE GRADE BREAK IS PERPENDICULAR TO THE DIRECTION OF TRAVEL. (TYPICAL FOR ALL)
- ⑦ WHEN ADJACENT TO GRASS, GRADING SHALL ALWAYS BE USED WHEN FEASIBLE. V CURB, IF USED, SHALL BE PLACED OUTSIDE THE SIDEWALK LIMITS WHEN RIGHT OF WAY ALLOWS. WHEN ADJACENT TO PARKING LOTS, CONCRETE OR BITUMINOUS TAPERS LESS THAN 5% RUNNING SLOPE SHOULD BE USED OVER V CURB TO REDUCE TRIPPING HAZARDS AND FACILITATE SNOW & ICE REMOVAL.
- ⑧ A 7' MIN TOP RADIUS GRADE BREAK IS REQUIRED TO BE CONSTRUCTIBLE.
- ⑨ PAVE FULL WALK WIDTH.
- ⑩ "S" SLOPES ON FANS SHALL ONLY BE USED WHEN ALL OTHER FEASIBLE OPTIONS HAVE BEEN EVALUATED AND DEEMED IMPRACTICAL.
- ⑪ INTERMEDIATE CURB HEIGHTS TAPER SHALL RISE AT 8-10% TO A MINIMUM 3" CURB HEIGHT. REDUCE INTERMEDIATE CURB HEIGHT TO 2+ INCHES IF NECESSARY TO MATCH ADJACENT BOULEVARD OR SIDEWALK GRADES.

LEGEND

- THESE LONGITUDINAL SLOPE RANGES SHALL BE THE STARTING POINT. IF SITE CONDITIONS WARRANT, LONGITUDINAL SLOPES UP TO 8.3% OR FLATTER ARE ALLOWED.
- ⑤ INDICATES PEDESTRIAN RAMP - SLOPE SHALL BE BETWEEN 5.0% MINIMUM AND 8.3% MAXIMUM IN THE DIRECTION SHOWN AND THE CROSS SLOPE SHALL NOT EXCEED 2.0%.
- ⑥ INDICATES PEDESTRIAN RAMP - SLOPE SHALL BE GREATER THAN 2.0% AND LESS THAN 5.0% IN THE DIRECTION SHOWN AND CROSS SLOPE SHALL NOT EXCEED 2.0%.
- ⑦ LANDING AREA - 4' X 4' MIN. (5' X 5' MIN. PREFERRED) DIMENSIONS AND MAX 2.0% SLOPE IN ALL DIRECTIONS. LANDING SHALL BE FULL WIDTH OF INCOMING PAR.
- X" CURB HEIGHT

REVISION:

APPROVED: 11-04-2021

Jeffrey J. Perkins
JEFFREY PERKINS
OPERATIONS DIVISION



STANDARD PLAN 5-297.250

1 OF 6

Tom Styrbicki
THOMAS STYRBICKI
STATE DESIGN ENGINEER

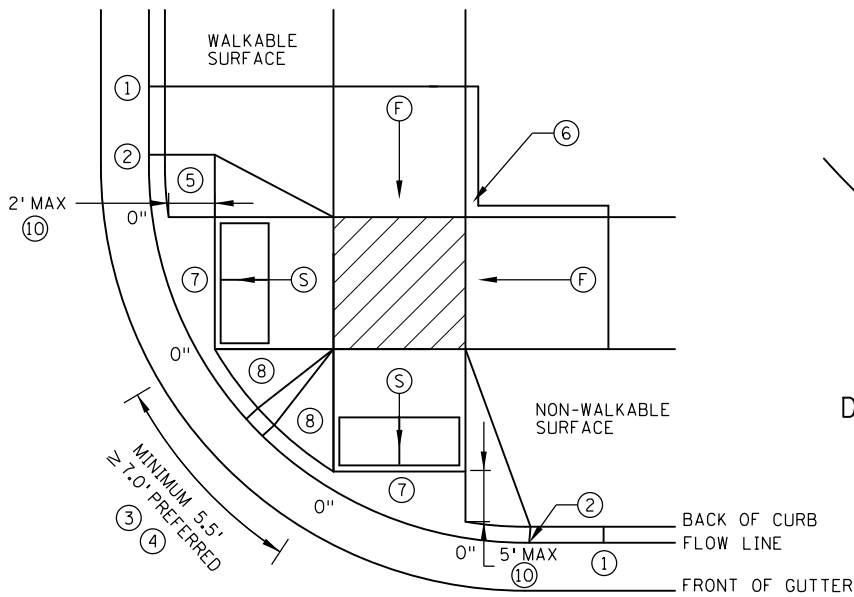
APPROVED: 11-04-2021
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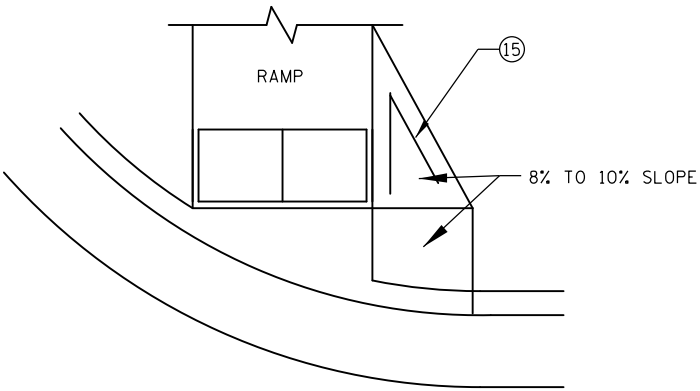
PEDESTRIAN CURB RAMP DETAILS

SHEET NO. 52 OF 216

DATE: 9/12/2024
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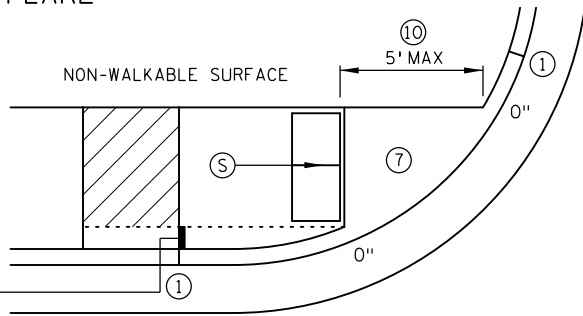


COMBINED DIRECTIONAL

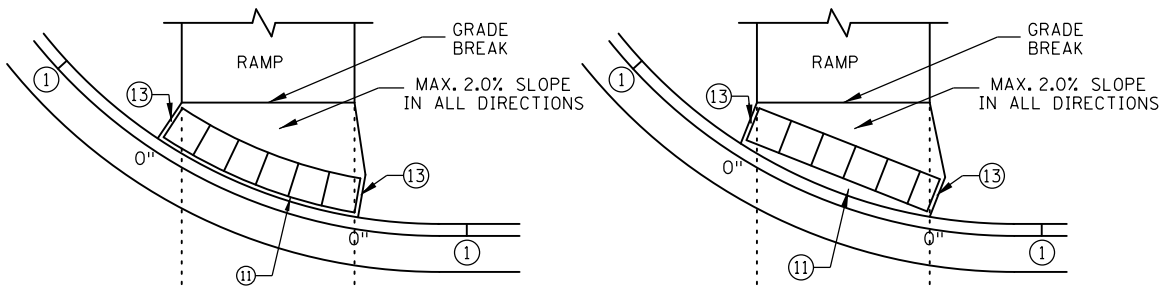


DIRECTIONAL RAMP WALKABLE FLARE

IF NON-CONCRETE BLVD. IS
CONSTRUCTED AND IS LESS THAN 2'
IN WIDTH AT TOP OF CURB
TRANSITION, PAVE CONCRETE RAMP
WIDTH TO ADJACENT BACK OF CURB.

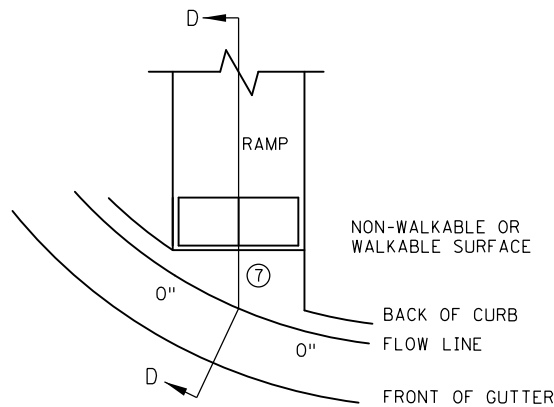


STANDARD ONE-WAY DIRECTIONAL ⑨

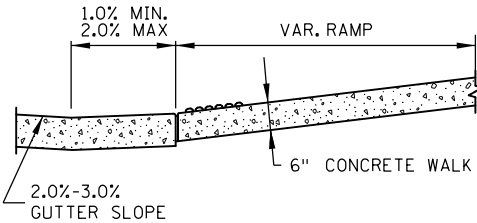


DETECTABLE WARNING PLACEMENT WHEN
SETBACK CRITERIA IS EXCEEDED ⑫

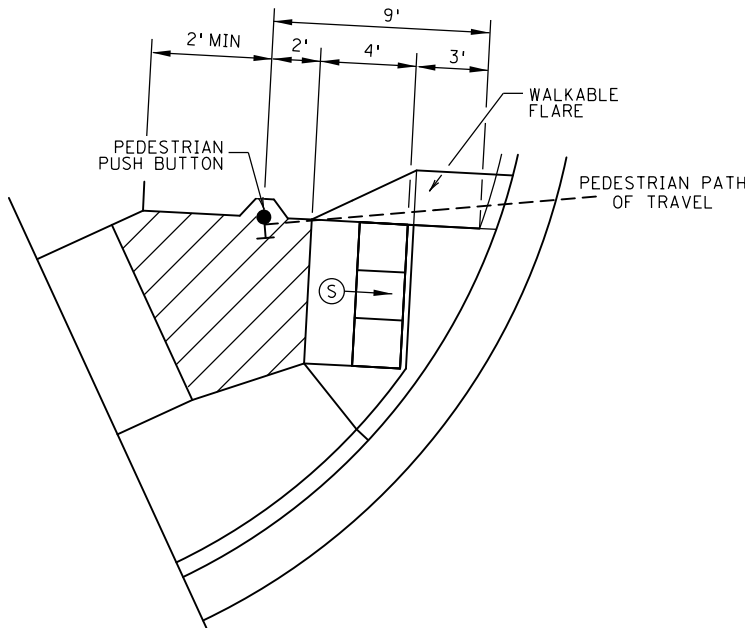
ONE-WAY DIRECTIONAL WITH DETECTABLE
WARNING AT BACK OF CURB



CURB FOR DIRECTIONAL RAMPS ⑭



SECTION D-D



SEMI-DIRECTIONAL RAMP ③④⑨

3' DOME SETBACK, 4' LONG RAMP AND
PUSH BUTTON 9' FROM THE BACK OF CURB
PRIMARYLY USED FOR APS APPLICATIONS
WHERE THE PAR DOES NOT CONTINUE PAST
THE PUSH BUTTON (DEAD-END SIDEWALK)

NOTES:

LANDINGS SHALL BE LOCATED ANYWHERE THE PEDESTRIAN ACCESS ROUTE (PAR) CHANGES
DIRECTION, AT THE TOP OF RAMPS THAT HAVE RUNNING SLOPES GREATER THAN 5.0%,
AND IF THE APPROACHING WALK IS INVERSE GRADE.

INITIAL CURB RAMP LANDINGS SHALL BE CONSTRUCTED WITHIN 15' FROM THE BACK
OF CURB, WITH 6' FROM THE BACK OF CURB BEING THE PREFERRED DISTANCE, ONLY
APPLICABLE WHEN THE INITIAL RAMP RUNNING SLOPE IS OVER 5.0%.

SECONDARY CURB RAMP LANDINGS ARE REQUIRED FOR EVERY 30" OF VERTICAL RISE
WHEN THE LONGITUDINAL SLOPE IS GREATER THAN 5.0%.

CONTRACTION JOINTS SHALL BE CONSTRUCTED ALONG ALL GRADE BREAKS WITHIN THE PAR. 1/4" DEEP VISUAL
JOINTS SHALL BE USED AT THE TOP GRADE BREAK OF CONCRETE FLARES ADJACENT TO WALKABLE SURFACES.

ALL GRADE BREAKS WITHIN THE PAR SHALL BE PERPENDICULAR TO THE PATH OF TRAVEL.
THUS BOTH SIDES OF A SLOPED WALKING SURFACE MUST BE EQUAL LENGTH.

TO ENSURE INITIAL RAMPS AND INITIAL LANDINGS ARE PROPERLY CONSTRUCTED, LANDINGS
SHALL BE CAST SEPARATELY, FOLLOW SIDEWALK REINFORCEMENT DETAILS ON SHEET 6 AND
THE ADA SPECIAL PROVISION (PROSECUTION OF WORK).

TOP OF CURB SHALL MATCH PROPOSED ADJACENT WALK GRADE.

WHEN THE BOULEVARD IS 4' WIDE OR LESS, THE TOP OF CURB TAPER SHALL MATCH THE RAMP
SLOPES TO REDUCE NEGATIVE BOULEVARD SLOPES FROM THE TOP BACK OF CURB TO THE PAR.

ALL RAMP TYPES SHOULD HAVE A MINIMUM 3' LONG RAMP LENGTH.

4' MINIMUM WIDTH OF DETECTABLE WARNING IS REQUIRED FOR ALL RAMPS. DETECTABLE WARNINGS SHALL
CONTINUOUSLY EXTEND FOR A MIN. OF 24" IN THE PATH OF TRAVEL. DETECTABLE WARNING TO COVER
THE ENTIRE PAR WIDTH OF SHARED-USE PATHS AND THE ENTIRE PAR WIDTH OF THE WALK WITH THE
EXCEPTION OF 3" MAXIMUM ON EACH OUTSIDE EDGE WHICH ENSURES THE DETECTABLE WARNINGS ARE
ENCASED IN CONCRETE WHEN ADJACENT TO TURF. WHEN ADJACENT TO CONCRETE FLARES 0" - 3" OFFSET
IS ALLOWED.

WHEN DESIGNING OR ORDERING RECTANGULAR DETECTABLE WARNING SURFACES SHOULD BE 6" LESS THAN
THE INCOMING PAR. ARC LENGTH OF THE RADIAL DETECTABLE WARNINGS SHOULD NOT BE GREATER THAN
20 FEET.

RADIAL DETECTABLE WARNINGS SHALL BE SETBACK 3" MINIMUM TO 6" MAXIMUM FROM THE BACK OF CURB.
SEE NOTES ⑩ & ⑪ FOR INFORMATION REGARDING RECTANGULAR DETECTABLE WARNING PLACEMENT.

① MATCH FULL CURB HEIGHT.

② 3" HIGH CURB WHEN USING A 3' LONG RAMP
4" HIGH CURB WHEN USING A 4' LONG RAMP.

③ 3" MINIMUM CURB HEIGHT (5.5' MIN. DISTANCE REQUIRED BETWEEN DOMES)
4" PREFERRED (7' MIN. DISTANCE REQUIRED BETWEEN DOMES).

④ THE "BUMP" IN BETWEEN THE RAMPS SHOULD NOT BE IN THE PATH OF TRAVEL FOR COMBINED DIRECTIONAL
RAMPS. IF THIS OCCURS MODIFY THE RAMP LOCATION OR SWITCH RAMP TO A FAN/DEPRESSED CORNER.

⑤ WHEN USING CONCRETE PAVED FLARES ON THE OUTSIDE OF DIRECTIONAL RAMPS, AND ADJACENT TO A
WALKABLE SURFACE, DIRECTIONAL RAMP FLARES SHALL BE USED. SEE THE DETAIL ON THIS SHEET.

⑥ GRADING SHALL ALWAYS BE USED WHEN FEASIBLE. V CURB, IF USED, SHALL BE PLACED OUTSIDE THE SIDEWALK
LIMITS WHEN RIGHT OF WAY ALLOWS. WHEN ADJACENT TO PARKING LOTS, CONCRETE OR BITUMINOUS TAPERS
SHOULD BE USED OVER V CURB TO REDUCE TRIPPING HAZARDS AND FACILITATE SNOW & ICE REMOVAL.

⑦ MAX. 2.0% SLOPE IN ALL DIRECTIONS IN FRONT OF GRADE BREAK AND DRAIN TO FLOW LINE. SHALL BE
CONSTRUCTED INTEGRAL WITH CURB AND GUTTER.

⑧ 8% TO 10% WALKABLE FLARE.

⑨ PLACE DOMES AT THE BACK OF CURB WHEN ALLOWABLE SETBACK CRITERIA IS EXCEEDED.

⑩ FRONT EDGE OF DETECTABLE WARNING SHALL BE SET BACK 2' MAXIMUM WHEN ADJACENT TO WALKABLE
SURFACE, AND 5' MAXIMUM WHEN ADJACENT TO NON-WALKABLE SURFACE WITH ONE CORNER SET 3" FROM
BACK OF CURB. A WALKABLE SURFACE IS DEFINED AS A PAVED SURFACE ADJACENT TO A CURB RAMP
WITHOUT RAISED OBSTACLES THAT COULD MISTAKENLY BE TRAVERSED BY A USER WHO IS VISUALLY
IMPAIRED.

⑪ RECTANGULAR DETECTABLE WARNINGS MAY BE SETBACK UP TO 9" FROM THE BACK OF CURB WITH CORNERS
SET 3" FROM BACK OF CURB. IF 9" SETBACK IS EXCEEDED USE RADIAL DETECTABLE WARNINGS.

⑫ FOR DIRECTIONAL RAMPS WITH THE DETECTABLE WARNINGS PLACED AT THE BACK OF CURB, THE DETECTABLE
WARNINGS SHALL COVER THE ENTIRE WIDTH OF THE WALK/PATH. THIS ENSURES A DETECTABLE EDGE
AND HELPS ELIMINATE THE CURB TAPER OBSTRUCTING THE PATH OF PEDESTRIAN TRAVEL.

⑬ THE CONCRETE WALK SHALL BE FORMED AND CONSTRUCTED PERPENDICULAR TO THE BACK OF CURB.
MAINTAIN 3" BETWEEN EDGE OF DOMES AND EDGE OF CONCRETE.

⑭ TO BE USED FOR ALL DIRECTIONAL RAMPS, EXCEPT WHERE DOMES ARE PLACED ALONG THE BACK OF CURB.

⑮ PLACE 2 NO. 4 BARS 4 INCHES FROM SIDE OF FORMS WITH A MINIMUM 2 INCHES
OF CONCRETE COVER ALONG EACH SIDE OF FLARE (INCIDENTAL).

LEGEND

THESE LONGITUDINAL SLOPE RANGES SHALL BE THE STARTING POINT. IF SITE
CONDITIONS WARRANT, LONGITUDINAL SLOPES UP TO 8.3% OR FLATTER ARE ALLOWED.



INDICATES PEDESTRIAN RAMP - SLOPE SHALL BE BETWEEN
5.0% MINIMUM AND 8.3% MAXIMUM IN THE DIRECTION SHOWN
AND THE CROSS SLOPE SHALL NOT EXCEED 2.0%.



INDICATES PEDESTRIAN RAMP - SLOPE SHALL BE GREATER
THAN 2.0% AND LESS THAN 5.0% IN THE DIRECTION SHOWN
AND CROSS SLOPE SHALL NOT EXCEED 2.0%.



LANDING AREA - 4' X 4' MIN. (5' X 5' MIN. PREFERRED) DIMENSIONS AND MAX
2.0% SLOPE IN ALL DIRECTIONS. LANDING SHALL BE FULL WIDTH OF INCOMING PARs.

X" CURB HEIGHT

REVISION:

APPROVED: 11-04-2021

Jeff J. Perkins
JEFFREY PERKINS
OPERATIONS DIVISION



STANDARD PLAN 5-297.250

2 OF 6

Tom Styrbicki
THOMAS STYRBICKI
STATE DESIGN ENGINEER

APPROVED: 11-04-2021
REVISED:

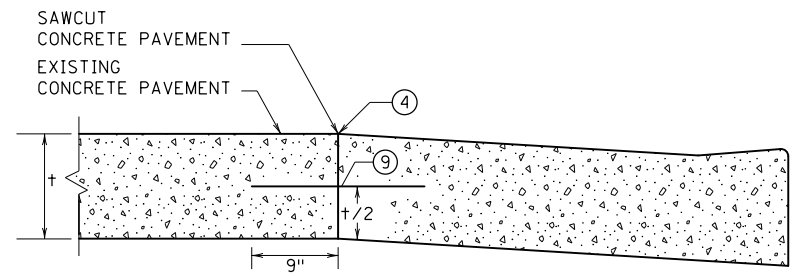
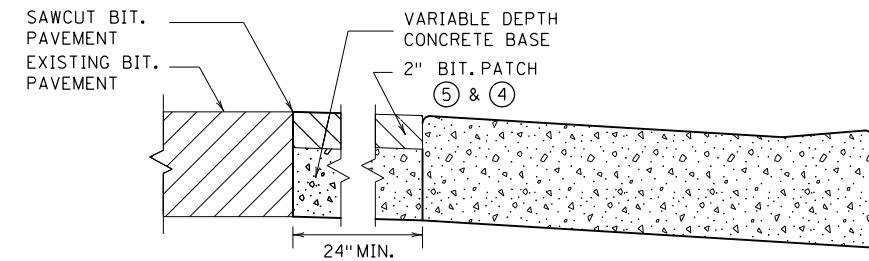
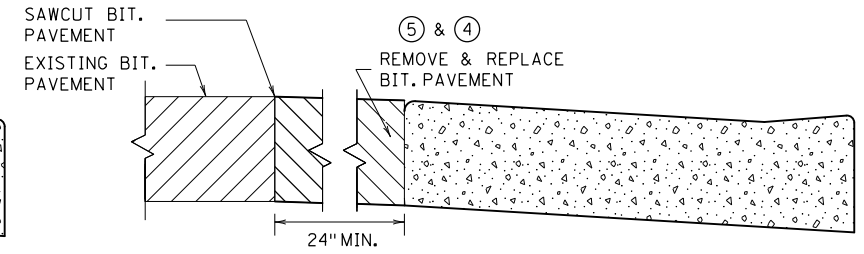
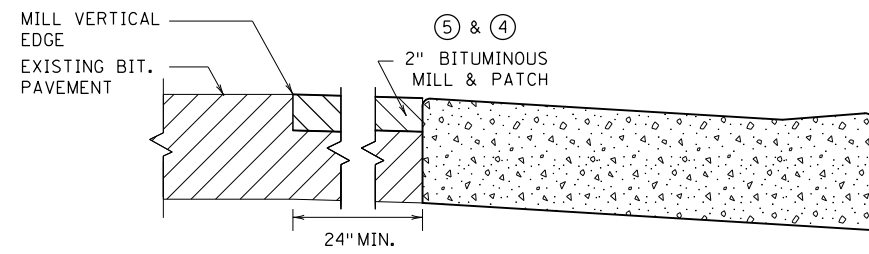
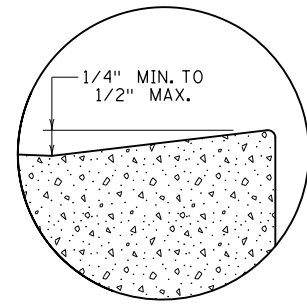
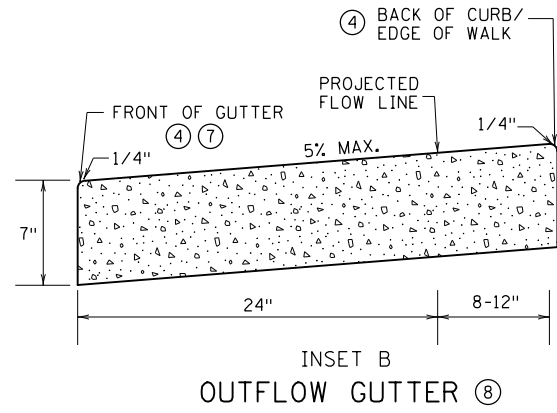
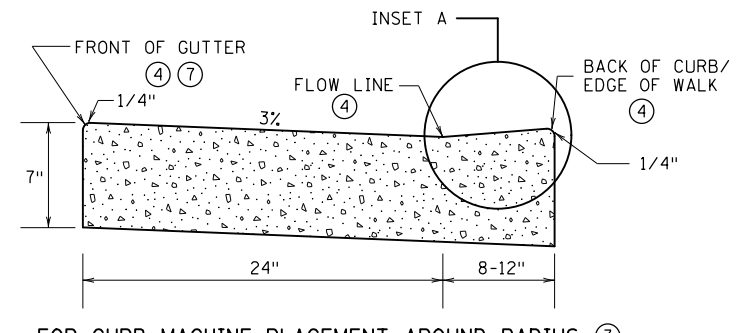
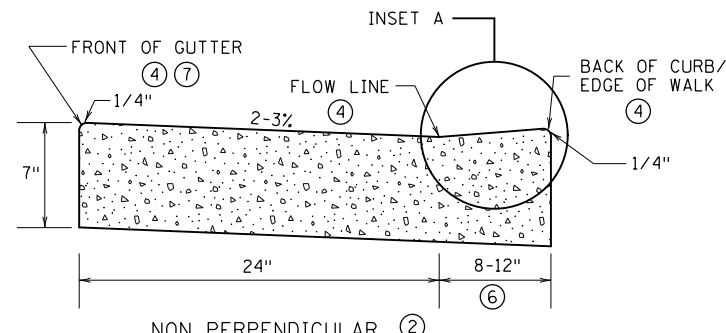
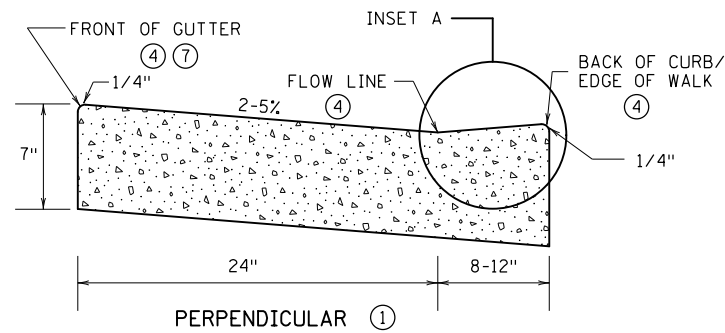
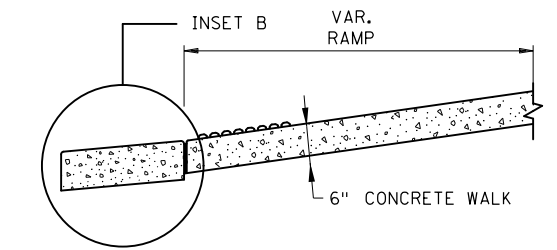
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PEDESTRIAN CURB RAMP DETAILS

SHEET NO. 53 OF 216

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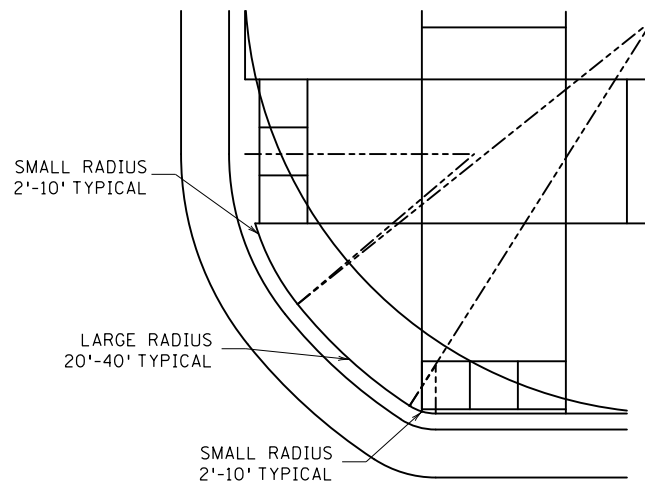
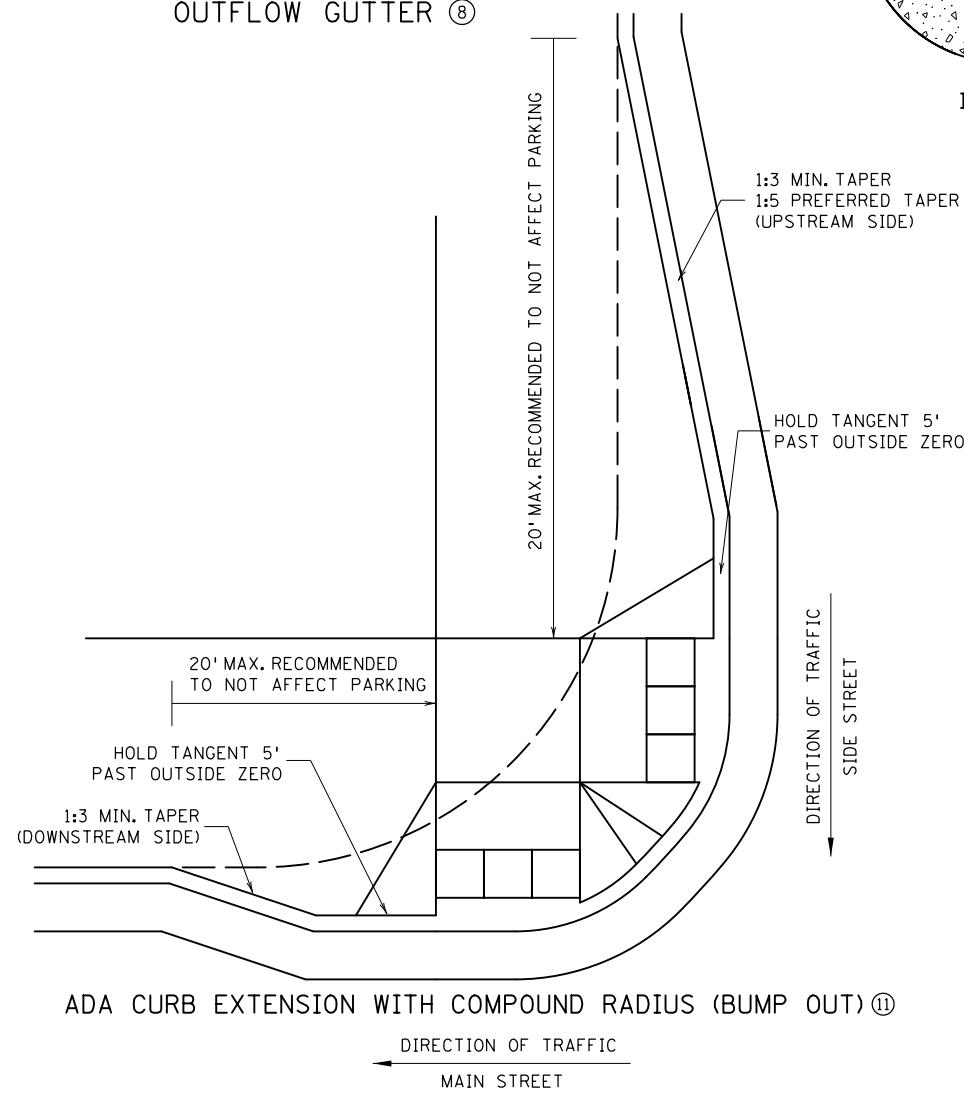


ONLY ALLOWED PER ENGINEER'S APPROVAL

PAVEMENT TREATMENT OPTIONS IN FRONT OF CURB & GUTTER FOR USE ON CURB RAMP RETROFITS

NOTES:

- POSITIVE FLOW LINE DRAINAGE SHALL BE MAINTAINED THROUGH THE PEDESTRIAN ACCESS ROUTE (PAR) AT A 2% MAXIMUM. NO PONDING SHALL BE PRESENT IN THE PAR. ANY VERTICAL LIP THAT OCCURS AT THE FLOW LINE SHALL NOT BE GREATER THAN 1/4 INCH.
- FOR USE AT CURB CUTS WHERE THE PEDESTRIAN'S PATH OF TRAVEL IS ASSUMED PERPENDICULAR TO THE GUTTER FLOW LINE. RAMP TYPES INCLUDE: PERPENDICULAR, TIERED PERPENDICULAR, PARALLEL, AND DIAGONAL RAMPS.
 - FOR USE AT CURB RAMPS WHERE THE PEDESTRIAN'S PATH OF TRAVEL IS ASSUMED NON PERPENDICULAR TO THE GUTTER FLOW LINE. RAMP TYPES INCLUDE: FANS & DEPRESSED CORNERS.
 - BEGIN GUTTER SLOPE TRANSITION 10' OUTSIDE OF ALL CURB RAMPS.
 - THERE SHALL BE NO VERTICAL DISCONTINUITIES GREATER THAN 1/4".
 - ELEVATION CHANGE TAKES PLACE FROM THE EXISTING TO NEW FRONT OF GUTTER. PATCH IS USED TO MATCH THE NEW GUTTER FACE INTO THE EXISTING ROADWAY.
 - VARIABLE WIDTH FOR DIRECTIONAL CURB APPLICATIONS. SEE SHEET 2 FOR DIRECTIONAL CURB SLOPE REQUIREMENTS.
 - TOP FRONT OF GUTTER SHALL BE CONSTRUCTED FLUSH WITH PROPOSED ADJACENT PAVEMENT ELEVATION. TOP 1.5" OF THE GUTTER FACE MUST BE A FORMED EDGE. PAR GUTTER SHALL NOT BE OVERLAID.
 - SHOULD BE USED AT VERTICALLY CONSTRAINED AREAS WHEN AT A DRAINAGE HIGH POINT OR SUPER ELEVATED ROADWAY SEGMENTS.
 - DRILL AND GROUT NO. 4 EPOXY-COATED 18" LONG TIE BARS AT 30" CENTER TO CENTER INTO EXISTING CONCRETE PAVEMENT 1' MINIMUM FROM ALL JOINTS.
 - HELPS PROVIDE TWO SEPARATE RAMPS, REDUCES THE DOME SETBACK LENGTH AND MINIMIZES DIRECTIONAL CURB. THIS RADIUS DESIGN CLOSELY FOLLOWS THE TURNING VEHICLE PATH WHILE OPTIMIZING CURB RAMP LENGTH.
 - CURB EXTENSIONS SHOULD BE USED IN VERTICALLY CONSTRAINED AREAS, USUALLY IN DOWNTOWN ROADWAY SEGMENTS WHERE ON-STREET PARKING IS AVAILABLE. CURB EXTENSIONS SHOULD BE CONSIDERED FOR APS INTERSECTIONS WHERE SPACE IS LIMITED. PUSH BUTTONS MUST MEET APS CRITERIA AS DESCRIBED IN THE PUSH BUTTON LOCATION DETAIL SHEET.

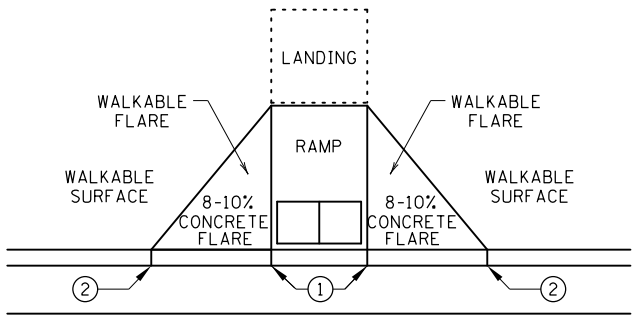


COMBINED DIRECTIONAL (COMPOUND RADIUS)

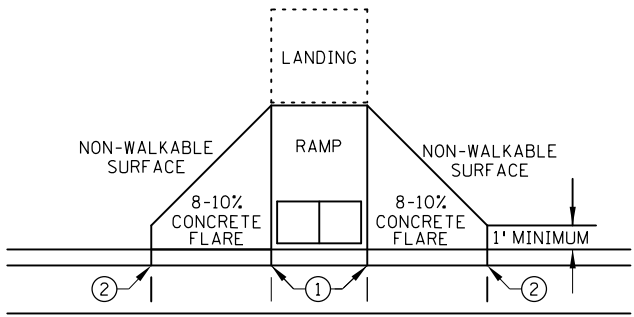
REVISION:
APPROVED: 11-04-2021
<i>Jeffrey J. Perkins</i> JEFFREY PERKINS OPERATIONS DIVISION

m MINNESOTA DEPARTMENT OF TRANSPORTATION	STANDARD PLAN 5-297.250 <i>Tom Styrbicki</i> THOMAS STYRBICKI STATE DESIGN ENGINEER	3 OF 6 APPROVED: 11-04-2021 REVISED:	PEDESTRIAN CURB RAMP DETAILS
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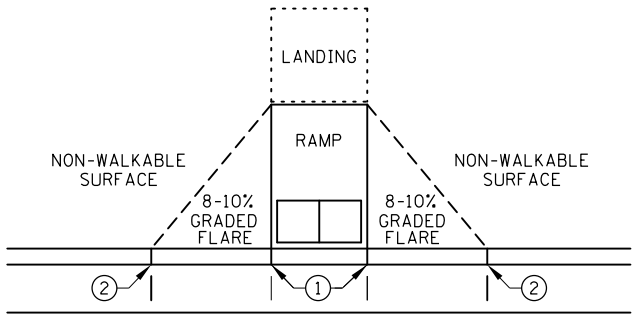
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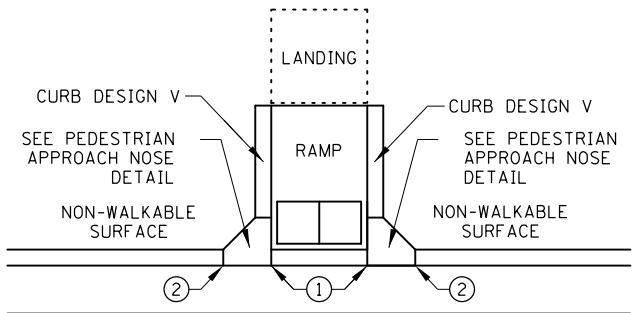
PAVED FLARES
ADJACENT TO WALKABLE SURFACE



PAVED FLARES
ADJACENT TO NON-WALKABLE SURFACE

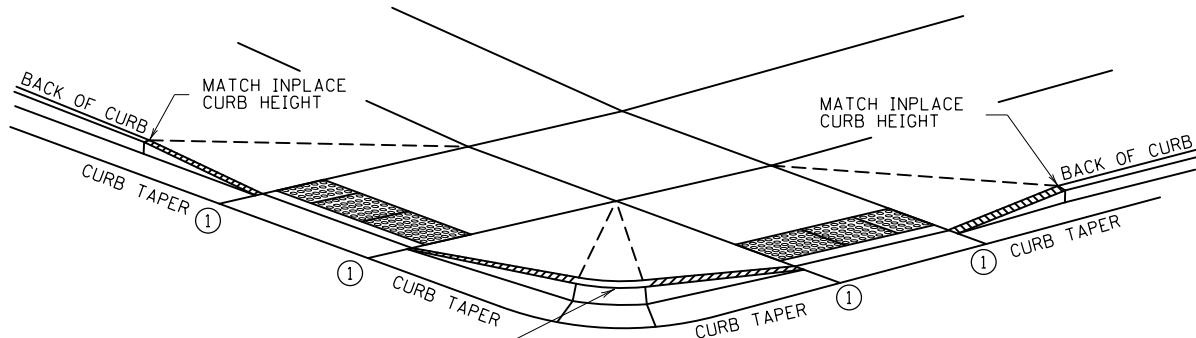


GRADED FLARES



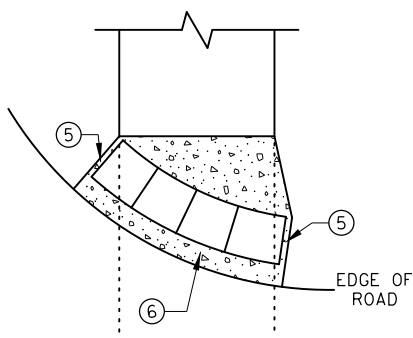
RETURNED CURB

TYPICAL SIDE TREATMENT OPTIONS

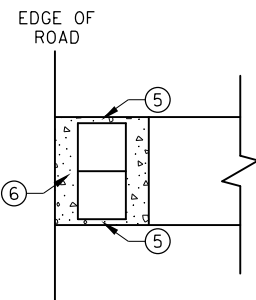


3" MINIMUM CURB HEIGHT, 4" PREFERRED
(MEASURED AT FRONT FACE OF CURB)
FOR A MIN. 6" LENGTH (MEASURED ALONG FLOW LINE)

DETECTABLE EDGE WITH
CURB AND GUTTER

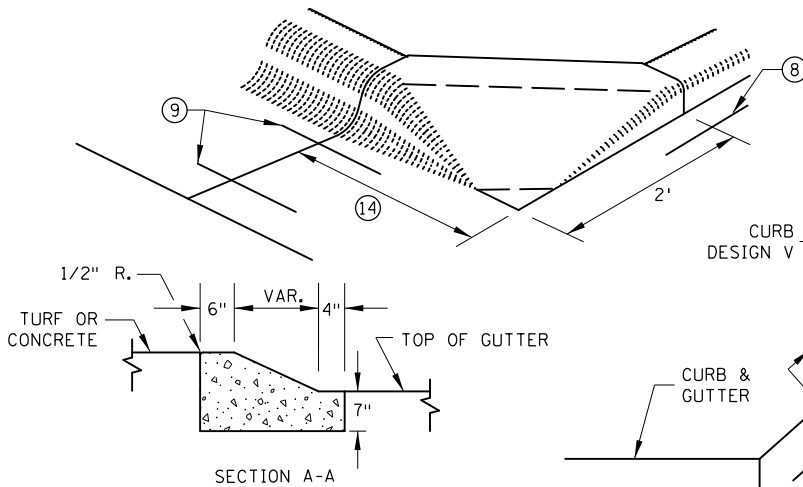


RADIAL DETECTABLE WARNING

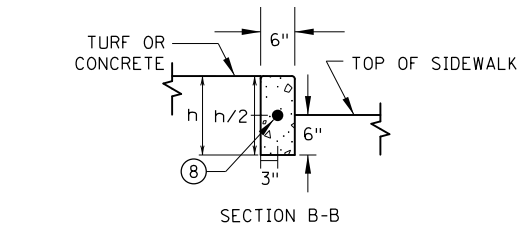


RECTANGULAR DETECTABLE WARNING

DETECTABLE EDGE WITHOUT CURB AND GUTTER

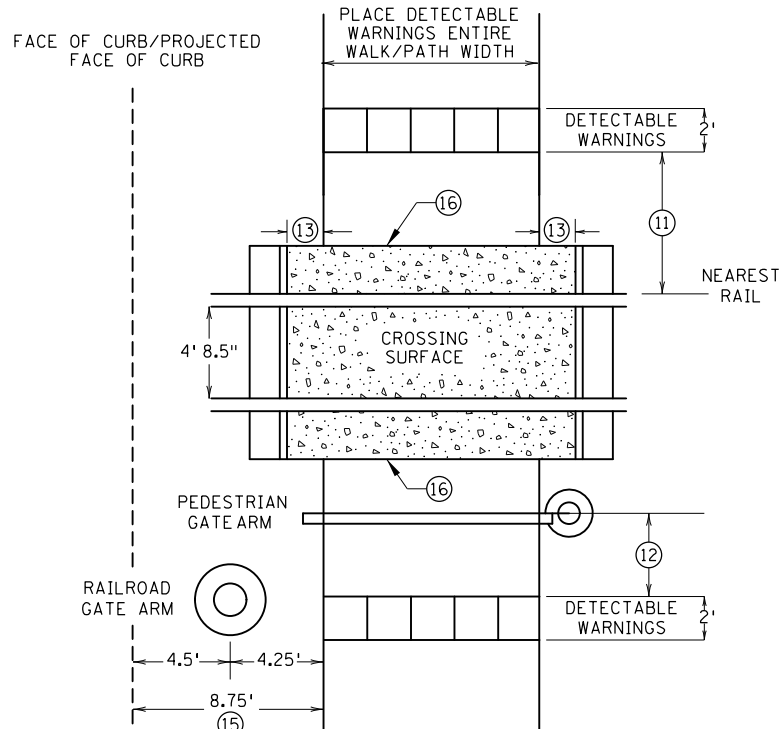


SECTION A-A



SECTION B-B

PEDESTRIAN APPROACH
NOSE DETAIL
(FOR RETURNED CURB
SIDE TREATMENT)



RAILROAD CROSSING
PLAN VIEW

NOTES:

INTERMEDIATE CURB HEIGHTS TAPER SHALL RISE AT 8-10% TO A MINIMUM 3 INCH CURB HEIGHT. INCREASE CURB TAPER LENGTH AT LESS THAN 8% OR REDUCE INTERMEDIATE CURB HEIGHT TO 2+ INCHES IF NECESSARY TO MATCH ADJACENT BOULEVARD OR SIDEWALK GRADES.

SEE STANDARD PATE 7038 AND THIS SHEET FOR ADDITIONAL DETAILS ON DETECTABLE WARNING.

A WALKABLE SURFACE IS DEFINED AS A PAVED SURFACE ADJACENT TO A CURB RAMP WITHOUT RAISED OBSTACLES THAT COULD MISTAKENLY BE TRAVERSED BY A USER WHO IS VISUALLY IMPAIRED.

CONCRETE FLARE LENGTHS ADJACENT TO NON-WALKABLE SURFACES SHOULD BE LESS THAN 8' LONG MEASURED ALONG THE RAMPS FROM THE BACK OF CURB.

1 0" CURB HEIGHT. SEE INSET A ON SHEET 3 OF 6.

2 FULL CURB HEIGHT.

3 SIDE TREATMENTS ARE APPLICABLE TO ALL RAMP TYPES AND SHOULD BE IMPLEMENTED AS NEEDED AS FIELD CONDITIONS DICTATE. THE ENGINEER SHALL DETERMINE THE RAMP SIDE TREATMENTS BASED ON MAINTENANCE OF BOTH ROADWAY AND SIDEWALK, ADJACENT PROPERTY CONSIDERATIONS, AND MITIGATING CONSTRUCTION IMPACTS.

4 TYPICALLY USED FOR MEDIANS AND ISLANDS.

5 WHEN NO CONCRETE FLARES ARE PROPOSED, THE CONCRETE WALK SHALL BE FORMED AND CONSTRUCTED PERPENDICULAR TO THE EDGE OF ROADWAY. MAINTAIN 3" MAX. BETWEEN EDGE OF DOMES AND EDGE OF CONCRETE.

6 IF NO CURB AND GUTTER IS PLACED IN RURAL SECTIONS, DETECTABLE WARNINGS SHALL BE PLACED 1' FROM THE EDGE OF BITUMINOUS ROADWAY AND/OR BITUMINOUS SHARED-USE PATH TO PROVIDE VISUAL CONTRAST.

7 ALL CONSTRUCTED CURBS MUST HAVE A CONTINUOUS DETECTABLE EDGE FOR THE VISUALLY IMPAIRED. THIS DETECTABLE EDGE REQUIRES DETECTABLE WARNINGS WHEREVER THERE IS ZERO-INCH HIGH CURB. CURB TAPERS ARE CONSIDERED A DETECTABLE EDGE WHEN THE TAPER STARTS WITHIN 3" OF THE EDGE OF THE DETECTABLE WARNINGS. AND UNIFORMLY RISES TO A 3-INCH MINIMUM CURB HEIGHT. ANY CURB NOT PART OF A CURB TAPER AND LESS THAN 3 INCHES IN HEIGHT IS NOT CONSIDERED A DETECTABLE EDGE AND THEREFORE IS NOT COMPLIANT WITH ACCESSIBILITY STANDARDS.

8 DRILL AND GROUT 1 - NO. 4 12" LONG REINFORCEMENT BAR (EPOXY COATED) WITH 3" MIN. COVER. REINFORCEMENT BARS ARE NOT NEEDED IF THE APPROACH NOSE IS POURED INTEGRAL WITH THE V CURB.

9 DRILL AND GROUT 2 - NO. 4 12" LONG REINFORCEMENT BARS (EPOXY COATED) WITH 3" MIN. COVER. REINFORCEMENT BARS ARE NOT NEEDED IF THE APPROACH NOSE IS POURED INTEGRAL WITH THE CURB AND GUTTER.

10 SIDE TREATMENT EXAMPLES SHOWN ARE WHEN THE INITIAL LANDING IS APPROXIMATELY LEVEL WITH THE FULL HEIGHT CURB (I.E. 6' LONG RAMP FOR 6" HIGH CURB). WHEN THE INITIAL LANDING IS MORE THAN 1" BELOW FULL HEIGHT CURB REFER TO SHEETS 1 & 2 TO MODIFY THE CURB HEIGHT TAPERS AND MAINTAIN POSITIVE BOULEVARD DRAINAGE. CONSTRUCT THESE TAPERS AT 0" - 3" AT 8-10%, THEN LESS THAN 5% FROM 3" CURB TO FULL CURB HEIGHT.

11 NEAREST EDGE OF DETECTABLE WARNING SURFACES SHALL BE PLACED 12' MINIMUM TO 15' MAXIMUM FROM THE NEAREST RAIL. FOR SKEWED RAILWAYS IN NO INSTANCE SHALL THE DETECTABLE WARNING BE CLOSER THAN 12' MEASURED PERPENDICULAR TO THE NEAREST RAIL.

12 WHEN PEDESTRIAN GATES ARE PROVIDED, DETECTABLE WARNING SURFACES SHALL BE PLACED ON THE SIDE OF THE GATES OPPOSITE THE RAIL, 2' FROM THE APPROACHING SIDE OF THE GATE ARM. THIS CRITERIA GOVERNS OVER NOTE 11.

13 CROSSING SURFACE SHALL EXTEND 2' MINIMUM PAST THE OUTSIDE EDGE OF WALK OR SHARED-USE PATH.

14 3' FOR MEDIANS AND SPLITTER ISLANDS. NOSE CAN BE REDUCED TO 2' ON FREE RIGHT ISLANDS.

15 SIDEWALK TO BE PLACED 8.75' MIN. FROM THE FACE OF CURB/PROJECTED FACE OF CURB. THIS ENSURES MIN. CLEARANCE BETWEEN THE SIDEWALK AND GATE ARM COUNTERWEIGHT SUPPORTS.

16 CONSTRUCT WITH EXPANSION MATERIAL PER MNDOT SPECIFICATION 3702 TYPES A-E. EXPANSION MATERIAL SHALL MATCH FULL HEIGHT OF ADJACENT CONCRETE.

REVISION:
APPROVED: 11-04-2021
Jeffrey J. Perkins
JEFFREY PERKINS
OPERATIONS DIVISION



STANDARD PLAN 5-297.250

4 OF 6

THOMAS STYRBICKI
STATE DESIGN ENGINEER

APPROVED: 11-04-2021
REVISED:

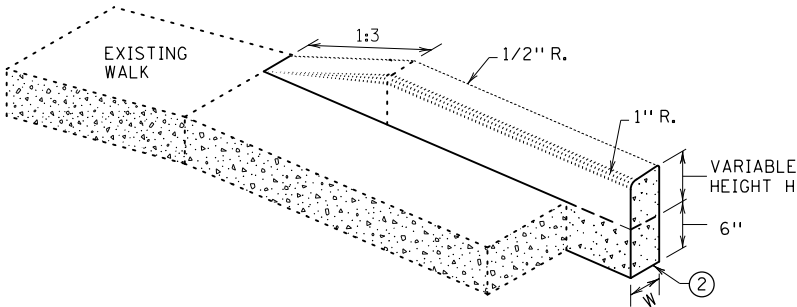
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PEDESTRIAN CURB RAMP DETAILS

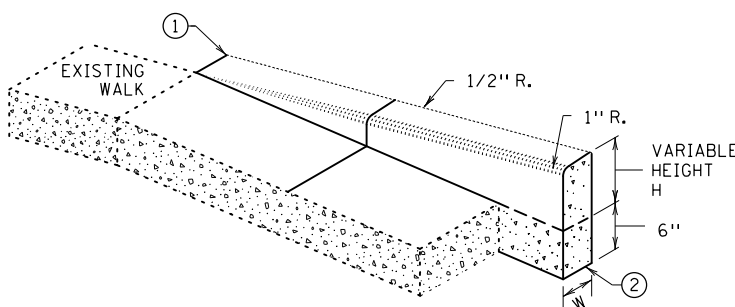
SHEET NO. 55 OF 216

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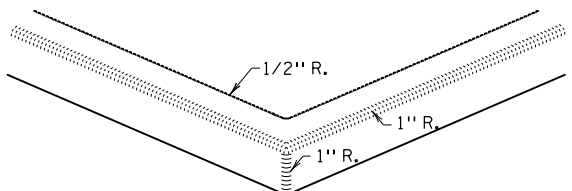
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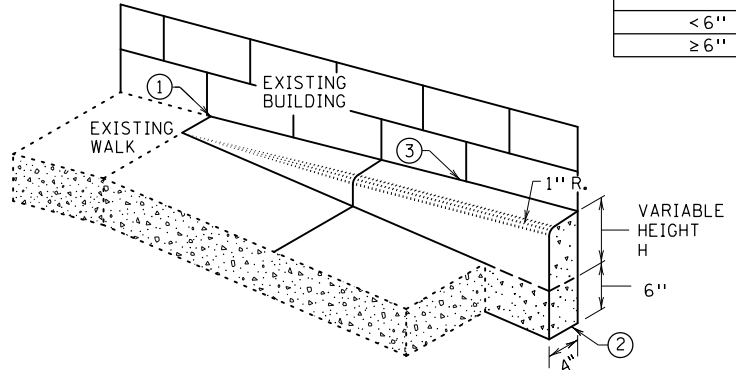
V CURB ADJACENT TO LANDSCAPE
CURB WITHIN SIDEWALK LIMITS



V CURB ADJACENT TO LANDSCAPE
CURB OUTSIDE SIDEWALK LIMITS

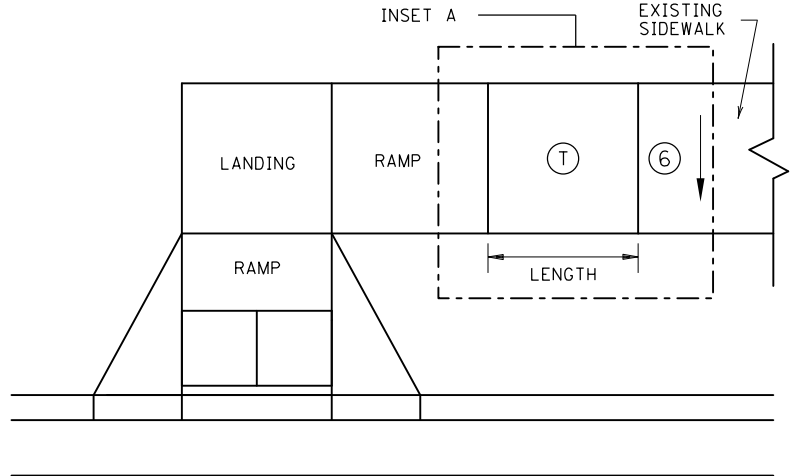


V CURB INTERSECTION

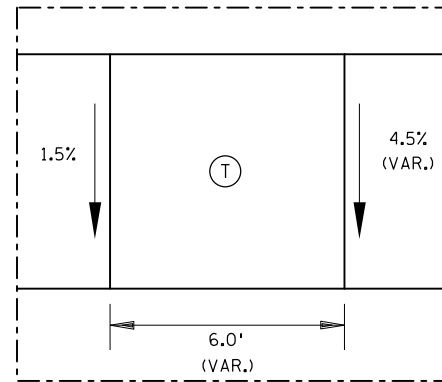


V CURB ADJACENT TO BUILDING
OR BARRIER

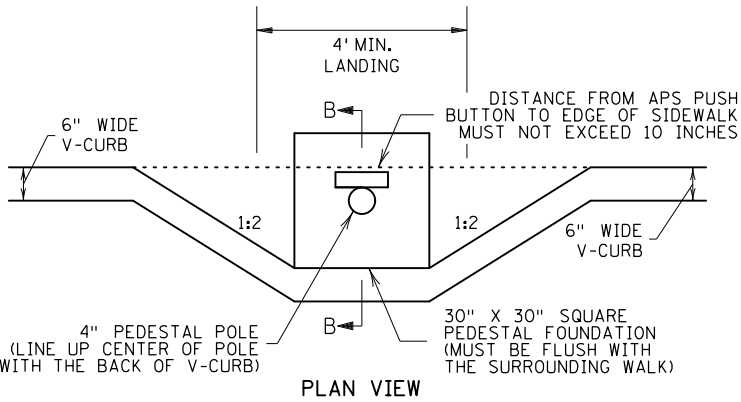
CONCRETE CURB DESIGN V	
CURB HEIGHT H	CURB WIDTH W
< 6"	4"
≥ 6"	6"



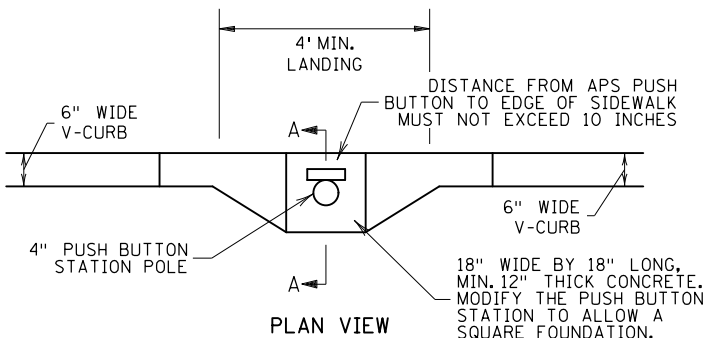
TRANSITION PANEL ④ ⑤



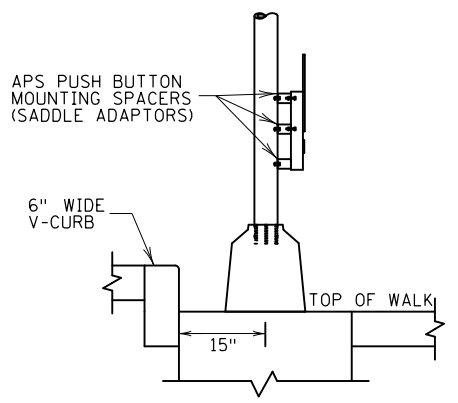
INSET A



PLAN VIEW

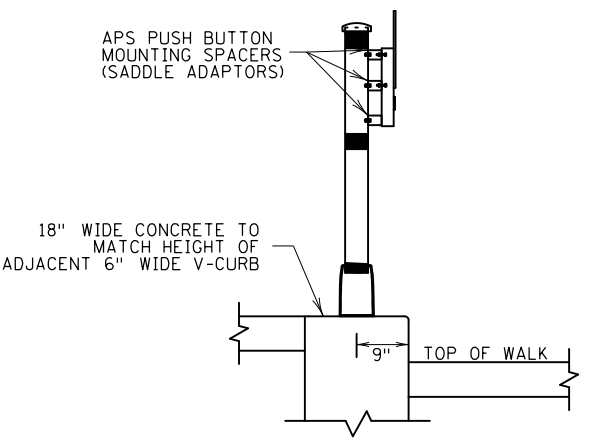


PLAN VIEW



SECTION B-B

SIGNAL PEDESTAL & PUSH BUTTON (V-CURB)



SECTION A-A

PUSH BUTTON STATION (V-CURB)

NOTES:

A WALKABLE FLARE IS AN 8-10% CONCRETE FLARE THAT IS REQUIRED WHEN THE FLARE IS ADJACENT TO A WALKABLE SURFACE, OR WHEN THE PEDESTRIAN PATH OF TRAVEL OF A PUSH BUTTON TRAVERSES THE FLARE.

ALL V CURB CONTRACTION JOINTS SHALL MATCH CONCRETE WALK JOINTS.

WHERE RIGHT-OF-WAY ALLOWS, USE OF V CURB SHOULD BE MINIMIZED. GRADING ADJACENT TURF OR SLOPING ADJACENT PAVEMENT IS PREFERRED.

V CURB SHALL BE PLACED OUTSIDE THE SIDEWALK LIMITS WHEN RIGHT OF WAY ALLOWS.

V CURB NEXT TO BUILDING SHALL BE A 4" WIDTH AND SHALL MATCH PREVIOUS TOP OF SIDEWALK ELEVATIONS.

- ① END TAPERS AT TRANSITION SECTION SHALL MATCH INPLACE SIDEWALK GRADES.
- ② ALL V CURB SHALL MATCH BOTTOM OF ADJACENT WALK.
- ③ CONSTRUCT USING APPROVED EXPANSION MATERIAL PER MNDOT TYPE A-E EXPANSION. LEAVE A MINIMUM 1/2" TOP GAP AND SEAL WITH MNDOT APPROVED SILICONE PER MNDOT SPEC 3722.
- ④ THE MAX. RATE OF CROSS SLOPE TRANSITIONING IS 1' LINEAR FOOT OF SIDEWALK PER HALF PERCENT CROSS SLOPE. WHEN PAR WIDTH IS GREATER THAN 6' OR THE RUNNING SLOPE IS GREATER THAN 5%, DOUBLE THE CALCULATED TRANSITION LENGTH.
- ⑤ TRANSITION PANELS ARE TO ONLY BE USED AFTER THE RAMP, OR IF NEEDED, LANDING ARE AT THE FULL CURB HEIGHT (TYPICAL SECTION).
- ⑥ EXISTING CROSS SLOPE GREATER THAN 2.0%.

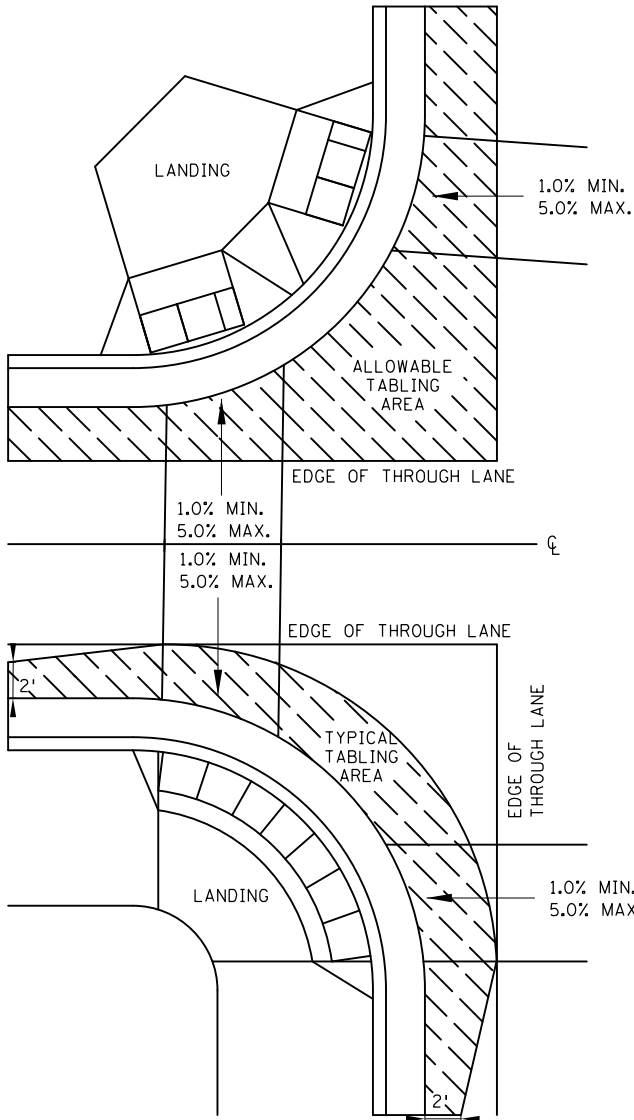
LEGEND

- THESE LONGITUDINAL SLOPE RANGES SHALL BE THE STARTING POINT. IF SITE CONDITIONS WARRANT, LONGITUDINAL SLOPES UP TO 8.3% OR FLATTER ARE ALLOWED.
- ⑤ INDICATES PEDESTRIAN RAMP - SLOPE SHALL BE BETWEEN 5.0% MINIMUM AND 8.3% MAXIMUM IN THE DIRECTION SHOWN AND THE CROSS SLOPE SHALL NOT EXCEED 2.0%.
 - LANDING AREA - 4' X 4' MIN. (5' X 5' MIN. PREFERRED) DIMENSIONS AND MAX 2.0% SLOPE IN ALL DIRECTIONS. LANDING SHALL BE FULL WIDTH OF INCOMING PAR.
 - ① TRANSITION PANEL(S) - TO BE USED FOR TRANSITIONING THE CROSS-SLOPE OF A RAMP TO THE EXISTING WALK CROSS-SLOPE. RATE OF TRANSITION SHOULD BE 0.5% PER 1 LINEAR FOOT OF WALK. SEE THIS SHEET FOR ADDITIONAL INFORMATION.

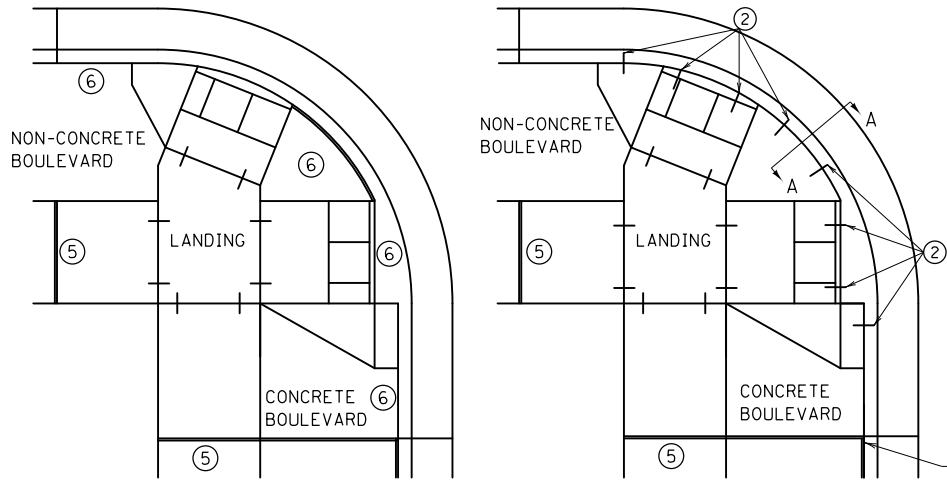
REVISION:
APPROVED: 11-04-2021
<i>Jeffrey J. Perkins</i>
JEFFREY PERKINS
OPERATIONS DIVISION

	STANDARD PLAN 5-297.250	5 OF 6	PEDESTRIAN CURB RAMP DETAILS
	<i>Tom Styrbicki</i>	APPROVED: 11-04-2021 REVISED:	
THOMAS STYRBICKI STATE DESIGN ENGINEER	SAP 013-630-021 / SAP 225-591-007		SHEET NO. 56 OF 216

DATE: 9/12/2024 TIME: 2:00:30 PM
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CURB LINE AND ROAD CROSSING ADJUSTMENTS

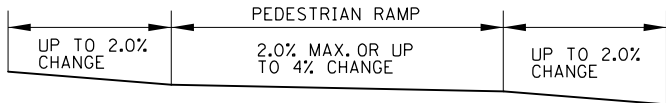


EXPANSION MATERIAL PLACEMENT
FOR CONCRETE ROADWAYS

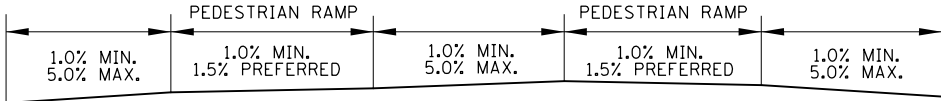
CURB LINE REINFORCEMENT ④
PLACEMENT ON BITUMINOUS ROADWAYS



FLOW LINE PROFILE "TABLE" - TWIN PERPENDICULARS



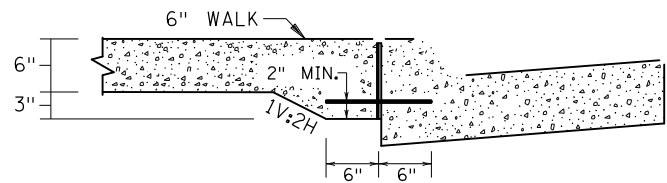
FLOW LINE PROFILE "TABLE" - FAN



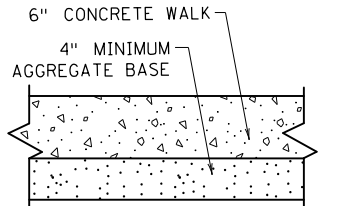
FLOW LINE PROFILE RAISE - TWIN PERPENDICULARS



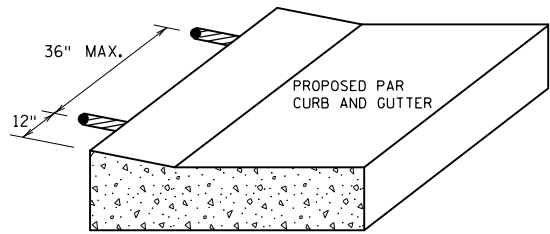
FLOW LINE PROFILE RAISE - FAN



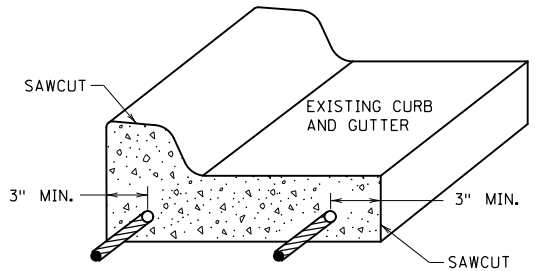
SECTION VIEW A-A
THICKENED SECTION
THROUGH CURB RAMP FLARES



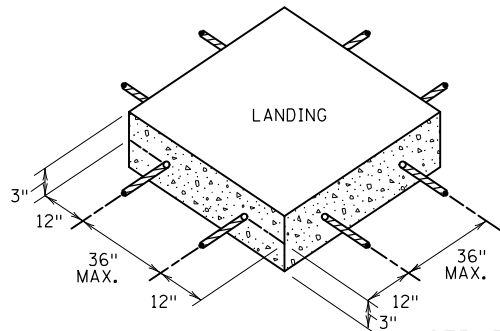
TYPICAL SIDEWALK SECTION
WITHIN INTERSECTION CORNER



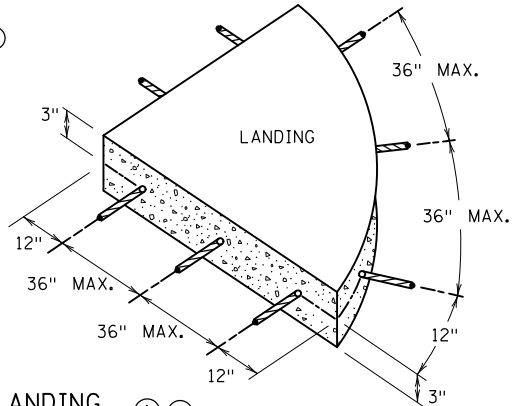
CURB RAMP REINFORCEMENT DETAILS ② ④



CURB AND GUTTER
REINFORCEMENT ③



SEPARATE LANDING
POUR REINFORCEMENT ① ②



GENERAL NOTES:

"TABLING" OF CROSSWALKS MEANS MAINTAINING LESS THAN 2% CROSS SLOPE WITHIN A CROSSWALK, IS REQUIRED WHEN A ROADWAY IS IN A STOP OR YIELD CONDITION AND THE PROJECT SCOPE ALLOWS.

RECONSTRUCTION PROJECTS: ON FULL PAVEMENT REPLACEMENT PROJECTS "TABLING" OF ENTIRE CROSSWALK SHALL OCCUR WHEN FEASIBLE.

MILL & OVERLAY PROJECTS: "TABLING" OF FLOW LINES, IN FRONT OF THE PEDESTRIAN RAMP, IS REQUIRED WHEN THE EXISTING FLOW LINE IS GREATER THAN 2%. WARPING OF THE BITUMINOUS PAVEMENT CAN NOT EXTEND INTO THE THROUGH LANE. TABLE THE FLOW LINE TO 2% OR AS MUCH AS POSSIBLE WHILE ADHERING TO THE FOLLOWING CRITERIA:

- 1) 1.0% MIN. CROSS-SLOPE OF THE ROAD
- 2) 5.0% MAX. CROSS-SLOPE OF THE ROAD
- 3) "TABLE" FLOW LINE UP TO 4% CHANGE FROM EXISTING SLOPE IN FRONT OF PEDESTRIAN RAMP
- 4) UP TO 2% CHANGE IN FLOW LINE FROM EXISTING SLOPE BEYOND THE PEDESTRIAN CURB RAMP

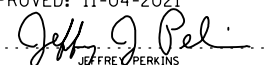
STAND-ALONE ADA RETROFITS: FOLLOW MILL & OVERLAY CRITERIA ABOVE HOWEVER ALL PAVEMENT WARPING IS DONE WITH BITUMINOUS PATCHING ON BITUMINOUS ROADWAYS AND FULL-DEPTH APRON REPLACEMENT ON CONCRETE ROADWAYS.

RAISING OF CURB LINES SHOULD OCCUR IN VERTICALLY CONSTRAINED AREAS. RAISE THE CURB LINES ENOUGH TO ALLOW COMPLIANT RAMPS OR AS MUCH AS POSSIBLE WHILE ADHERING TO THE FOLLOWING CRITERIA:

- 1) 1.0% MIN. AND 5.0% MAXIMUM CROSS-SLOPE OF THE ROAD
- 2) 1.0% MIN. FLOW LINE (ON EITHER SIDE OF PEDESTRIAN RAMP) TO MAINTAIN POSITIVE DRAINAGE
- 3) 5.0% RECOMMENDED MAX. FLOW LINE
- 4) LONGITUDINAL THROUGH LANE ROADWAY TAPERS SHOULD BE 1" VERTICAL PER 15' HORIZONTAL

NOTES:

- ① TO ENSURE RAMPS AND LANDINGS ARE PROPERLY CONSTRUCTED, ALL INITIAL LANDINGS AT A TOP OF A RAMPED SURFACE (RUNNING SLOPE GREATER THAN 2%) SHALL BE FORMED AND PLACED SEPARATELY IN AN INDEPENDENT CONCRETE POUR. FOLLOW SIDEWALK REINFORCEMENT DETAILS ON THIS SHEET FOR ALL SEPARATELY POURED INITIAL LANDINGS.
- ② DRILL AND GROUT NO. 4 12" LONG REINFORCEMENT BARS (EPOXY COATED) AT 36" MAXIMUM CENTER TO CENTER MINIMUM 12" SPACING FROM CONSTRUCTION JOINTS. BARS TO BE ADJUSTED TO MATCH RAMP GRADE. BARS TO BE PAID BY EACH.
- ③ DRILL AND GROUT 2 - NO. 4 X 12" LONG (6" EMBEDDED) REINFORCEMENT BARS (EPOXY COATED). REINFORCEMENT REQUIRED FOR ALL CONSTRUCTION JOINTS. BARS TO BE PAID BY EACH.
- ④ THIS CURB LINE REINFORCEMENT DETAIL SHALL BE USED ON BITUMINOUS ROADWAYS. FOR CONCRETE ROADWAYS, SEE NOTE 6.
- ⑤ CONSTRUCT WITH EXPANSION MATERIAL PER MNDOT SPECIFICATION 3702 TYPES A-E. EXPANSION MATERIAL SHALL MATCH FULL HEIGHT OF ADJACENT CONCRETE.
- ⑥ USE AN APPROVED TYPE F (1/4 INCH THICK) SEPARATION MATERIAL. SEPARATION MATERIAL SHALL MATCH FULL HEIGHT DIMENSION OF ADJACENT CONCRETE.

REVISION:
APPROVED: 11-04-2021
 JEFF PERKINS OPERATIONS DIVISION



STANDARD PLAN 5-297.250

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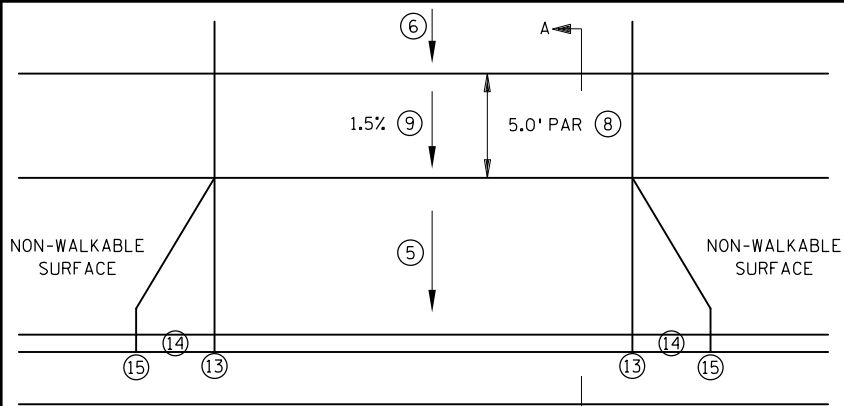
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SAP 013-630-021 / SAP 225-591-007

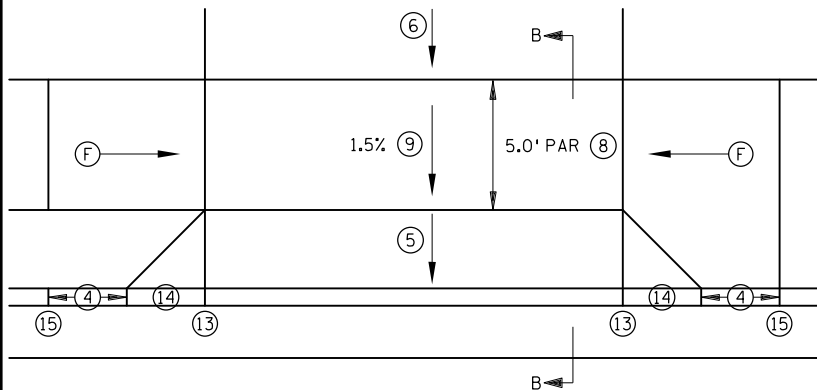
PEDESTRIAN CURB RAMP DETAILS

SHEET NO. 57 OF 216

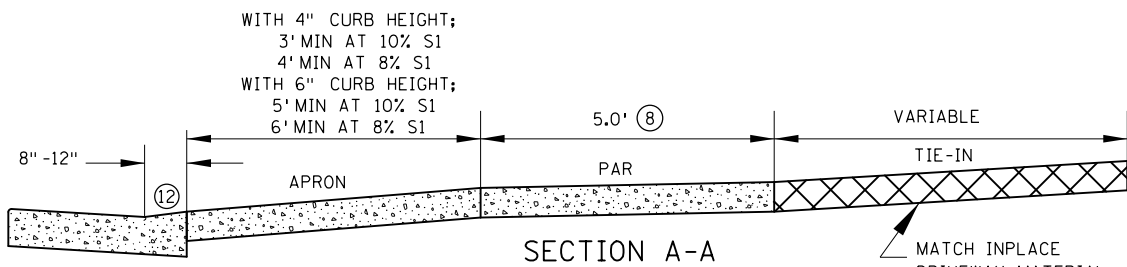
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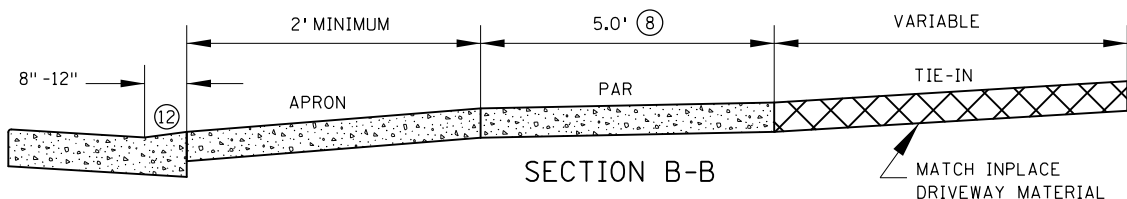
PERPENDICULAR DRIVEWAY ①



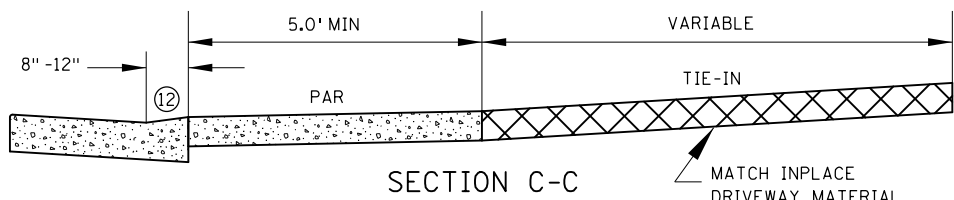
TIERED PERPENDICULAR DRIVEWAY ②



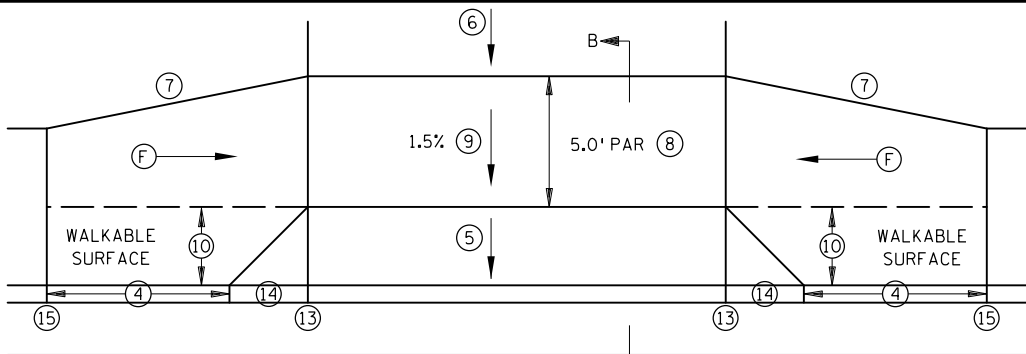
SECTION A-A



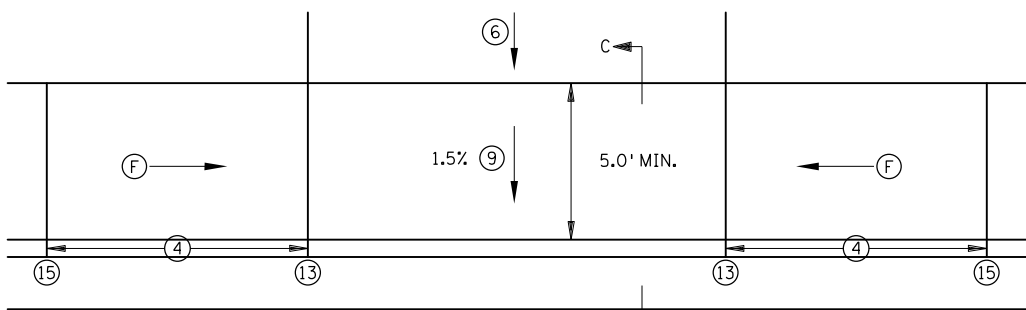
SECTION B-B



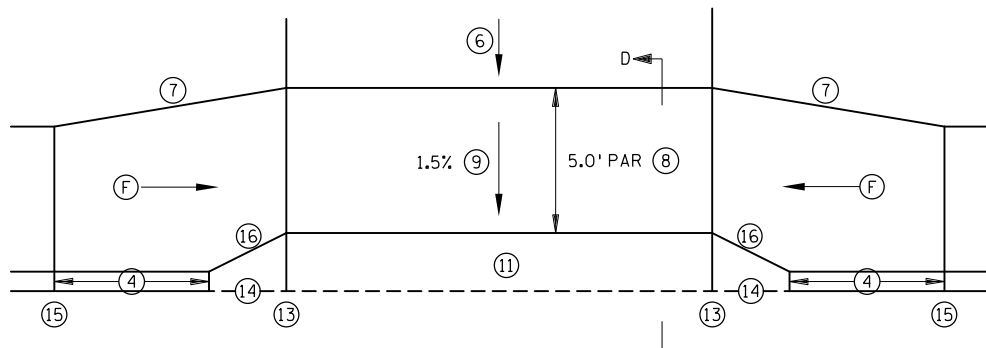
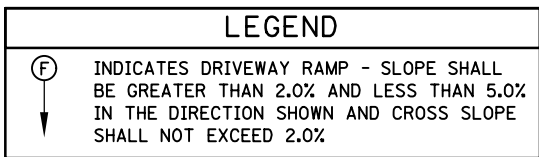
SECTION C-C



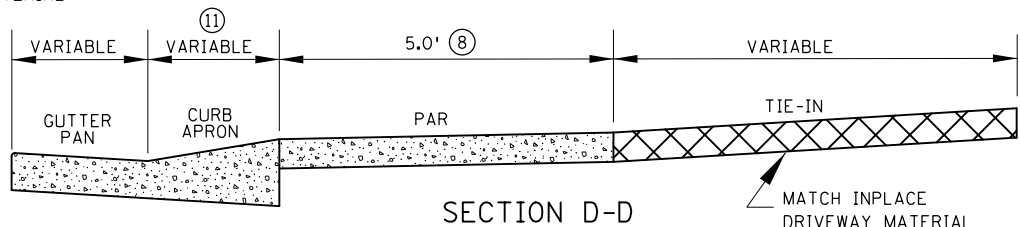
TIERED PERPENDICULAR OFFSET DRIVEWAY ②



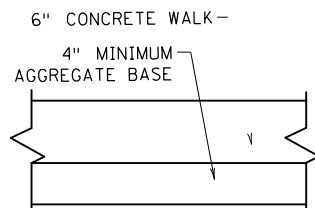
PARALLEL DRIVEWAY ③



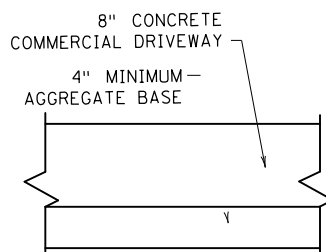
INTEGRAL DRIVEWAY APRON



SECTION D-D



TYPICAL SIDEWALK SECTION ①⑦



TYPICAL DRIVEWAY SECTIONS

NOTES:

ALL SIDEWALK AND BOULEVARD WIDTHS SHALL BE MEASURED FROM BACK OF CURB.

IN URBAN ROADWAY SECTIONS, 6" CURB HEIGHT SHOULD BE USED WHEN 6' OR GREATER BOULEVARD WIDTH IS PROPOSED. WHEN BOULEVARD IS LESS THAN 6' WIDE, 4" CURB HEIGHT SHOULD BE USED.

MAINTAIN EXISTING DRAINAGE PATTERNS FLOWING TO PUBLIC RIGHT OF WAY.

ACQUIRE ADEQUATE L3 TO ALLOW FOR A CONTINUOUS PAR PROFILE (UNIFORM TYPICAL SIDEWALK SECTION) THROUGH THE DRIVEWAY APRON.

IN NO CASE SHALL SIDEWALK PROFILES EXCEED 5.0%, EXCEPT SIDEWALK PROFILES CAN MATCH ROADWAY GRADE IF ROADWAY GRADE IS GREATER THAN 5.0%. RAMP FOR DRIVEWAYS ARE REQUIRED TO FOLLOW THE ABOVE SIDEWALK CRITERIA.

CONTRACTION JOINTS SHALL BE CONSTRUCTED ALONG ALL GRADE BREAKS WITHIN THE PEDESTRIAN ACCESS ROUTE (PAR). 1/4" DEEP VISUAL JOINTS SHALL BE USED AT THE TOPS OF CONCRETE FLARES ADJACENT TO WALKABLE SURFACES.

DRIVEWAY TYPES FROM MOST PREFERRED TO LEAST PREFERRED ARE AS FOLLOWS: PERPENDICULAR, TIERED PERPENDICULAR, TIERED PERPENDICULAR OFFSET & PARALLEL.

- ① PERPENDICULAR DRIVEWAYS ARE THE STANDARD AND STARTING POINT FOR ALL DRIVEWAY DESIGN AND CONSTRUCTION. SHOULD BE USED TO ACHIEVE CONTINUOUS PAR PROFILE THROUGH THE DRIVEWAY. OBTAINING A PERPENDICULAR DRIVEWAY DESIGN BECOMES MORE CRITICAL WITH STEEP ROADWAY PROFILES.
- ② TO BE USED WHEN PERPENDICULAR DRIVEWAY DESIGN CANNOT BE ACHIEVED, THE DRIVEWAY PAR IS BELOW ROADWAY CURB HEIGHT. THIS DRIVEWAY TYPE CAN BE USED FOR BOTH PAVED (AS SHOWN) AND GRASS BOULEVARDS.
- ③ TO BE USED WHEN PERPENDICULAR AND TIERED PERPENDICULAR DRIVEWAY DESIGN CANNOT BE ACHIEVED. CAN BE USED FOR STEEP NEGATIVE SLOPED DRIVEWAYS. DW CURB TYPE 2 SHOULD BE USED TO RAISE PAR ABOVE GUTTER AND REDUCE "ROLLER COASTER" EFFECT. 4" HIGH ROADWAY CURB SHOULD BE USED TO REDUCE "ROLLER COASTER" EFFECT ESPECIALLY WHEN MULTIPLE DRIVEWAYS ARE PRESENT.
- ④ TOP OF CURB SHALL MATCH PROPOSED ADJACENT WALK GRADE.
- ⑤ 8% STANDARD, 10% MAX. FOR COMMERCIAL AND 12% MAX. FOR RESIDENTIAL. SEE GENERAL NOTES ON SHEET 2 FOR MORE INFORMATION.
- ⑥ S3 8% MAXIMUM, IF THE SLOPE IS EXCEEDED OR CONTINUED FOR MORE THAN 5', ANALYZE VEHICLE TEMPLATES FOR VERTICAL CLEARANCE. IF EXISTING DRIVEWAY IS NEGATIVELY DRAINING, S3 CAN BECOME SLIGHTLY MORE NEGATIVE TO ACHIEVE PERPENDICULAR DRIVEWAY DESIGN IF THE VERTICAL CLEARANCE IS ACHIEVED IN VEHICLE TEMPLATES.
- ⑦ 1:3 MIN. 1:5 PREFERRED FOR DRIVEWAY RETROFIT PROJECTS. 1:10 PREFERRED FOR SIDEWALK REPLACEMENT PROJECTS.
- ⑧ 5.0' MIN. PAR WIDTH IS THE STANDARD THROUGH DRIVEWAYS. IF FEASIBLE WIDEN DRIVEWAY PAR WIDTH TO MATCH APPROACHING SIDEWALK PAR WIDTHS. IN VERTICALLY CONSTRAINED AREAS PAR WIDTHS CAN INCREMENTALLY BE REDUCED TO 4.5' OR 4' MIN AFTER ALL OTHER OPTIONS HAVE BEEN APPLIED.
- ⑨ THE PEDESTRIAN ACCESS ROUTE, MAY NOT EXCEED 0.02 FT./FT. AS CONSTRUCTED.
- ⑩ SIDEWALK OFFSET TO BE LESS THAN OR EQUAL TO HALF THE APPROACHING SIDEWALK WIDTH.
- ⑪ INTEGRAL DRIVEWAY APRON TO BE POURED MONOLITHICALLY/INTEGRAL WITH THE CURB AND GUTTER. SEE SHEET 2 FOR MORE INFORMATION.
- ⑫ SEE SHEET 2 FOR CURB TYPE INFORMATION.
- ⑬ 0" CURB IS AT FLOW LINE. SEE DRIVEWAY TABLE FOR BACK OF CURB HEIGHTS.
- ⑭ 3' LONG AT 8-10% PREFERRED FOR INITIAL CURB TAPER. REDUCE CURB TAPER SLOPE IF NECESSARY TO MATCH ADJACENT SIDEWALK GRADES.
- ⑮ MATCH FULL CURB HEIGHT.
- ⑯ 1:2 TAPER RATE ON INTEGRAL DRIVEWAY APRONS.
- ⑰ SEE SHEET 4 FOR WHEN 6" WALK IS REQUIRED.

REVISION:
APPROVED: 11-04-2021 Jeff J. Perkins JEFFREY PERKINS OPERATIONS DIVISION



STANDARD PLAN 5-297.254

1 OF 4

THOMAS STYRBICKI
STATE DESIGN ENGINEER

APPROVED: 11-04-2021
REVISED:

SAP 013-630-021 / SAP 225-591-007

DRIVEWAY AND SIDEWALK DETAILS

SHEET NO. 58 OF 216

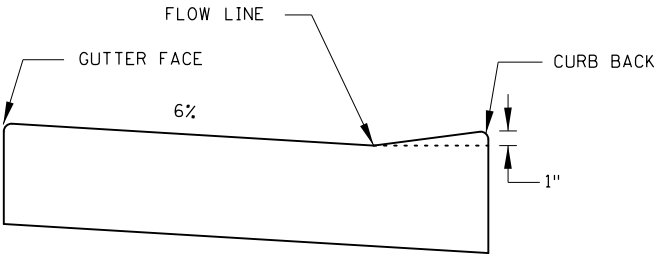
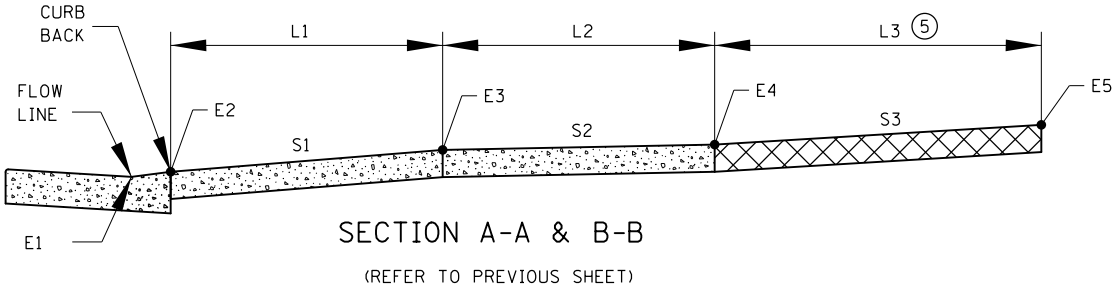
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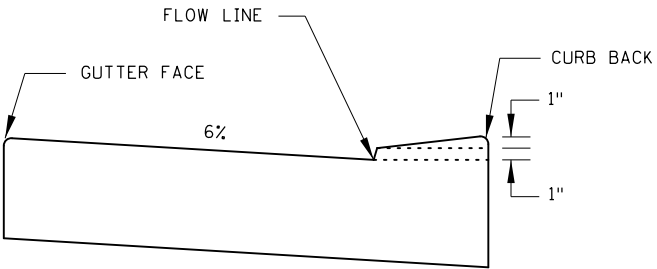
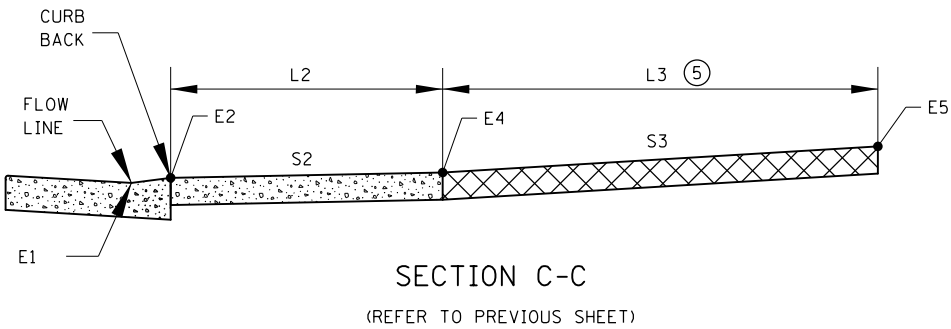
DRIVEWAY TABLE ①																
STATION	SIDE	DRIVEWAY TYPE ②	CURB TYPE ③	E1	E2	L1	S1	E3	L2	S2 ④	E4	L3 ⑤	S3	EXISTING ⑥	E5	COMMENTS
						FT	%		FT	%		FT	%	%		

NOTES:

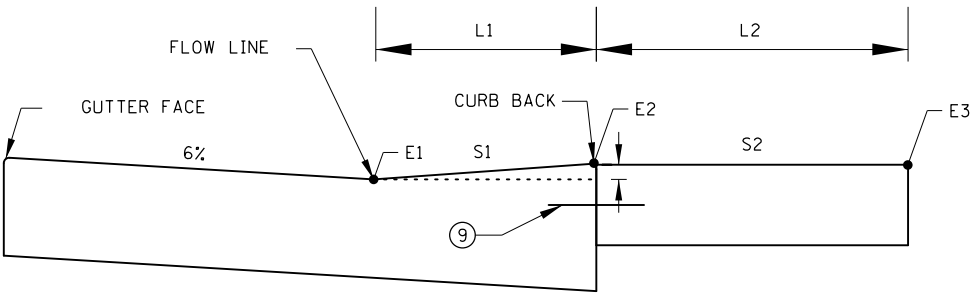
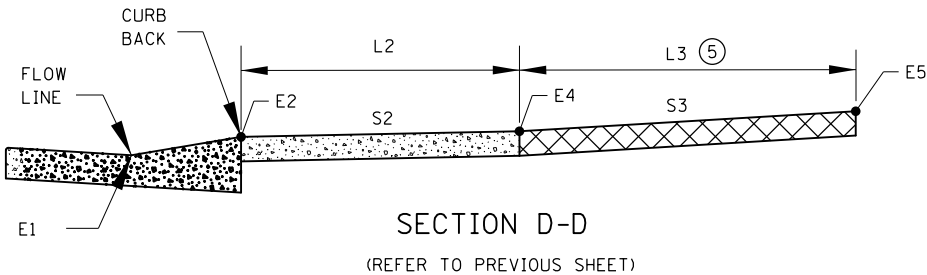
- ALL SIDEWALK AND BOULEVARD WIDTHS SHALL BE MEASURED FROM BACK OF CURB.
- DW CURB TYPE 1 SHALL BE USED WHEN THE DRIVEWAY ACTS AS A PEDESTRIAN RAMP. THE MAX. APRON SLOPE MUST ADHERE TO ADA CRITERIA AS WELL. DW CURB TYPE 1 SHOULD BE USED IF THERE IS ON STREET PARKING.
- WHERE ROADWAY DRAINAGE IS A CONCERN (NEGATIVE SLOPED APRON) DW CURB TYPE 2 CAN BE USED TO HELP KEEP THE WATER ON PUBLIC RIGHT OF WAY.
- S1 8% STANDARD, 10% MAX. COMMERCIAL AND 12% MAX. RESIDENTIAL. IF EXISTING GRADES ARE STEEPER DO NOT MAKE GRADES APPRECIABLY WORSE BY USING BEST PRACTICES SUCH AS DRIVEWAY CURB HEIGHTS, EXTENDING L3 AND/OR STEEPEN S3.
- S3 8% MAXIMUM, IF THIS SLOPE IS EXCEEDED OR CONTINUED FOR MORE THAN 5', ANALYZE VEHICLE TEMPLATES FOR VERTICAL CLEARANCE. SEE FACILITY DESIGN GUIDE, CHAPTER 6, FOR GEOMETRIC DESIGNS OF DRIVEWAYS.
- ① EXAMPLE SHOWN TO BE INCLUDED IN PLAN FOR EACH DRIVEWAY THAT HAS PAR THROUGH IT.
- ② REFERS TO THE FOLLOWING TYPES; PERPENDICULAR DRIVEWAY, TIERED PERPENDICULAR OFFSET DRIVEWAY, TIERED PERPENDICULAR DRIVEWAY, PARALLEL DRIVEWAY, AND INTEGRAL DRIVEWAY APRON.
- ③ DW CURB TYPE 1 IS THE STANDARD AND SHALL BE THE STARTING POINT FOR ALL PERPENDICULAR AND TIERED DRIVEWAYS. DW CURB TYPE 2 SHALL ONLY BE USED AFTER UTILIZING BEST PRACTICES SUCH AS MAXIMIZING S1, S3, AND L3.
- ④ SHOULD BE DESIGNED AT 1.5%.
- ⑤ ACQUIRE ADEQUATE L3 TO ALLOW FOR CONTINUOUS PAR PROFILE (UNIFORM SIDEWALK SECTION) THROUGH THE DRIVEWAY APRON.
- ⑥ PROVIDE INPLACE TIE-IN SLOPE INFORMATION AT BACK OF PROPOSED WALK (S3 AREA).
- ⑦ INFORMATION TO BE INCORPORATED INTO DRIVEWAY TABLE WHEN INTEGRAL DRIVEWAY APRON IS USED. OTHER CURB HEIGHTS & CURB APRON LENGTHS CAN BE USED.
- ⑧ L1 & S1 FOR INTEGRAL DRIVEWAY APRON IS TO FLOWLINE. 12.5% IS MAXIMUM PREFERRED SLOPE.
- ⑨ TIE ADJACENT SECTIONS. CONCRETE DRIVEWAY APRON AND CONCRETE DRIVEWAY SIDEWALK SHALL BE CONSTRUCTED SEPARATELY IN AN INDEPENDENT CONCRETE POUR. DRILL AND GROUT OR CAST IN-PLACE THROUGH HOLES IN THE FORMS NO. 4 X 12" LONG TIE BARS (EPOXY COATED). 36" MAXIMUM SPACING WITH 2" MINIMUM CONCRETE COVER PLACED 1' MINIMUM FROM ADJACENT CONSTRUCTION JOINT.



DW CURB TYPE 1
STANDARD CURB AT DRIVEWAY



DW CURB TYPE 2
VERTICALLY CONSTRAINED

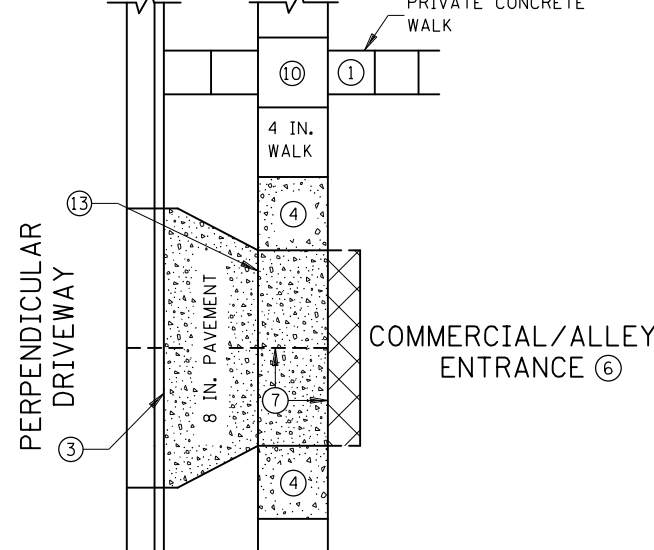
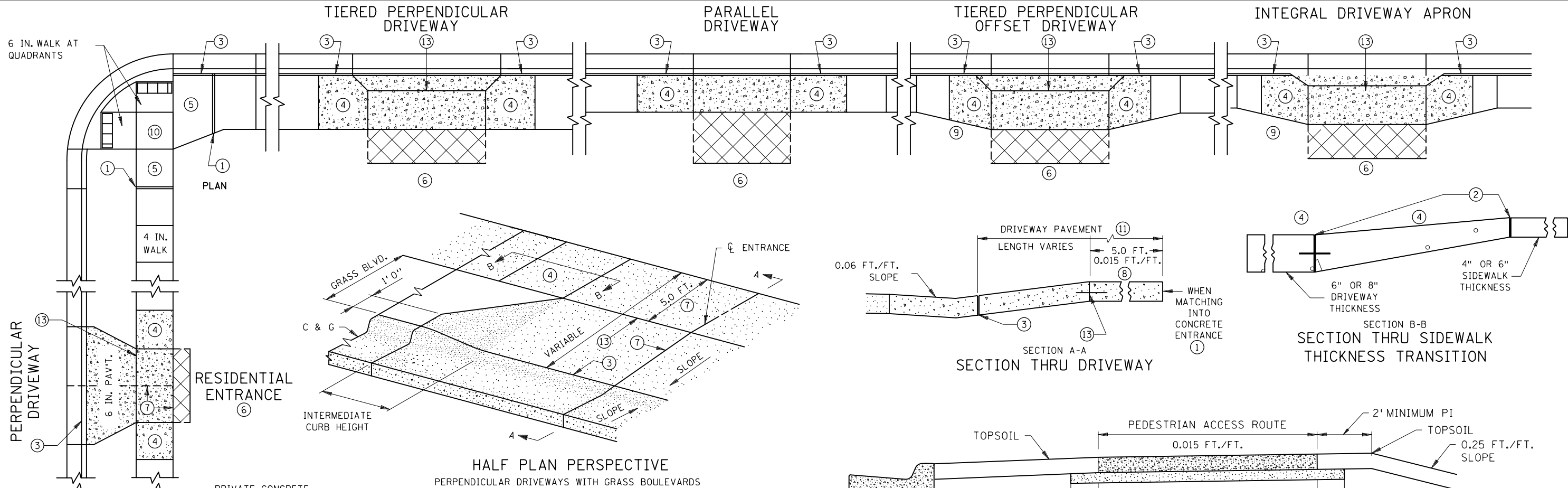


INTEGRAL DRIVEWAY APRON (IDA)

TYPICAL INTEGRAL DRIVEWAY APRON ⑦			
CURB TYPE	L1	E2	S1 ⑧
	FT		%
IDA 216	1.33	+0.16	12.5
IDA 220	1.67	+0.16	10
IDA 324	2	+0.24	12.5
IDA 432	2.67	+0.33	12.5

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APPROVED: 11-04-2021 <i>Jeffrey J. Perkins</i> JEFFREY PERKINS OPERATIONS DIVISION

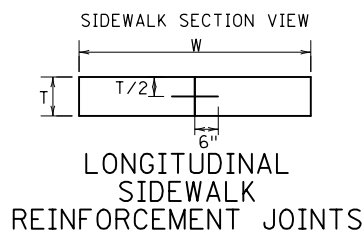
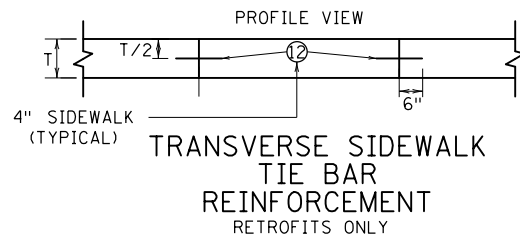
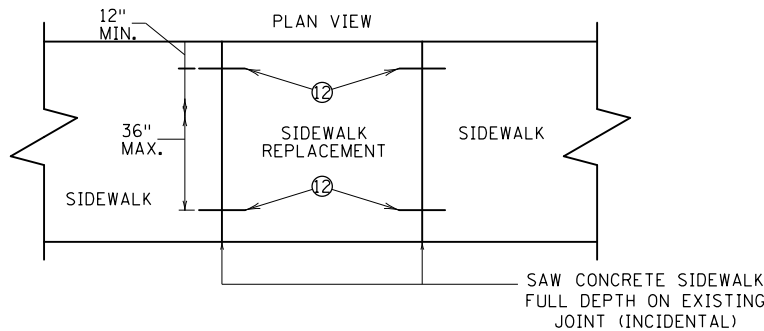
	STANDARD PLAN 5-297.254	2 OF 4	DRIVEWAY AND SIDEWALK DETAILS
	<i>Tom Styrbicki</i> THOMAS STYRBICKI STATE DESIGN ENGINEER	APPROVED: 11-04-2021 REVISED:	
SAP 013-630-021 / SAP 225-591-007			SHEET NO. 59 OF 216



SIDEWALK LONGITUDINAL JOINT TIE BAR TABLE				
SIDEWALK WIDTH, W	SIDEWALK THICKNESS, T	TIE BAR SIZE	LENGTH	SPACING
> 7'	4"	No. 4	12"	24"
>10'	6"	No. 4	12"	36"

FOR 4" CONCRETE ONLY: CAST IN PLACE BARS MUST BE SUPPORTED WITH P-STAKES OR REINFORCEMENT BASKETS FOR FULL WIDTH CONCRETE PLACEMENTS.

FOR 6" CONCRETE ONLY: DRILL AND GROUT OR CAST IN PLACE THROUGH HOLES IN THE FORMS REQUIRED FOR STAGED ADJACENT CONCRETE PLACEMENTS.



NOTES:

- ALL SIDEWALK AND BOULEVARD WIDTHS SHALL BE MEASURED FROM BACK OF CURB.
- TO MINIMIZE SIDEWALK "ROLLER COASTER" EFFECT IT IS DESIRABLE TO KEEP THE PAR ELEVATION CONTINUOUS OR AT LEAST IN THE UPPER HALF OF CURB HEIGHT. 4" HIGH CURB SHOULD BE USED INSTEAD OF 6" HIGH CURB TO HELP THIS PROBLEM WHEN APPLICABLE.
- 4" HIGH ADJACENT CURB IS PREFERRED WHEN BOULEVARDS 4' OR LESS ARE PRESENT MEASURED FROM THE BACK OF CURB. WHEN THE DRIVEWAY IS SLOPING DOWN FROM THE ROADWAY (NEGATIVE) 4" HIGH ADJACENT CURB SHOULD ALSO BE USED.
- SEE FACILITY DESIGN GUIDE, CHAPTER 6, FOR GEOMETRIC DESIGN OF DRIVEWAYS.
1. CONSTRUCT WITH EXPANSION MATERIAL PER MNDOT SPECIFICATION 3702 TYPES A-E. EXPANSION MATERIAL SHALL MATCH FULL HEIGHT OF ADJACENT CONCRETE. DRIVEWAY EXPANSION SHALL BE PLACED AT TOP OR BOTTOM OF TRANSITION PANEL.
 2. CONSTRUCT WITH EXPANSION MATERIAL MNDOT PER SPEC. 3702 TYPES A-E. EXPANSION MATERIAL SHALL MATCH FULL HEIGHT OF ADJACENT CONCRETE. MAXIMUM ONE EXPANSION PER DRIVEWAY PLACED AT EITHER TOP OR BOTTOM OF CONCRETE THICKNESS TRANSITION. IF MULTIPLE DRIVEWAYS EXIST PLACE ONE EXPANSION BETWEEN EACH DRIVEWAY. IF NO DRIVEWAY EXIST PLACE A MAXIMUM OF ONE EXPANSION PER 150' OF SIDEWALK RUN.
 3. USE AN APPROVED TYPE F (1/4 INCH THICK) SEPARATION MATERIAL. SEPARATION MATERIAL SHALL MATCH FULL HEIGHT DIMENSION OF ADJACENT CONCRETE.
 4. TRANSITION DRIVEWAY THICKNESS TO WALK THICKNESS. IF THERE IS A CONSTRUCTION JOINT AND NO EXPANSION IS USED, INSTALL TIE BARS.
 5. TRANSITION CURB RAMP THICKNESS TO WALK THICKNESS.
 6. MATCH INPLACE DRIVEWAY WIDTH, MATERIAL TYPE AND THICKNESS.
 7. FORM CONTRACTION JOINT AS NEEDED TO PRODUCE APPROXIMATELY SQUARE PANELS. CONCRETE PANEL SIZE SHOULD NOT EXCEED 1 1/2 : 1 LENGTH X WIDTH. 81 SF FOR 6" CONCRETE DRIVEWAY WITH 9'X9' MAXIMUM PANEL SIZE. 144 SF FOR 8" CONCRETE DRIVEWAY WITH 12'X12' MAXIMUM PANEL SIZE. MATCH DRIVEWAY APRON AND SIDEWALK JOINTS.
 8. THE PEDESTRIAN ACCESS ROUTE CROSS-SLOPE, SHALL NOT EXCEED 0.02 FT./FT. AS CONSTRUCTED.
 9. 1:10 MIN. SIDEWALK OFFSET TAPER REQUIRED FOR SIDEWALK REPLACEMENT PROJECTS. 1:3 MIN. AND 1:5 MIN. PREFERRED SIDEWALK OFFSET TAPER FOR DRIVEWAY REPLACEMENT.
 10. LANDING REQUIRED, SEE NEXT SHEET FOR MORE INFORMATION.
 11. CONCRETE DRIVEWAY APRON AND CONCRETE DRIVEWAY SIDEWALK SECTIONS SHALL BE CONSTRUCTED SEPARATELY IN AN INDEPENDENT CONCRETE POUR. ENGINEER'S APPROVAL REQUIRED FOR MONOLITHIC PLACEMENTS.
 12. DRILL AND GROUT NO. 4 X 12" LONG TIE BARS (EPOXY COATED), 36" MAXIMUM SPACING BETWEEN BARS COVER PLACED 1' MINIMUM FROM ADJACENT CONSTRUCTION JOINTS. 1' MINIMUM FROM ADJACENT CONCRETE JOINTS. BARS TO BE ADJUSTED TO MATCH SIDEWALK GRADES. TO BE PAID BY EACH.
 13. DRILL AND GROUT OR CAST IN-PLACE THROUGH HOLES IN THE FORMS NO. 4 X 12" LONG TIE BARS (EPOXY COATED), 36" MAXIMUM SPACING BETWEEN BARS WITH 2" MINIMUM CONCRETE COVER PLACED 1' MINIMUM FROM ADJACENT CONSTRUCTION JOINTS. 1' MINIMUM FROM ADJACENT CONCRETE JOINTS.

REVISION: 12-23-2021

APPROVED: 11-04-2021

Jeffrey Perkins
JEFFREY PERKINS
OPERATIONS DIVISION



STANDARD PLAN 5-297.254

3 OF 4

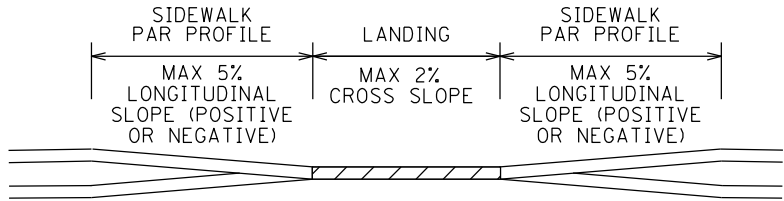
DRIVEWAY AND SIDEWALK DETAILS

APPROVED: 11-04-2021
REVISED: 12-23-2021

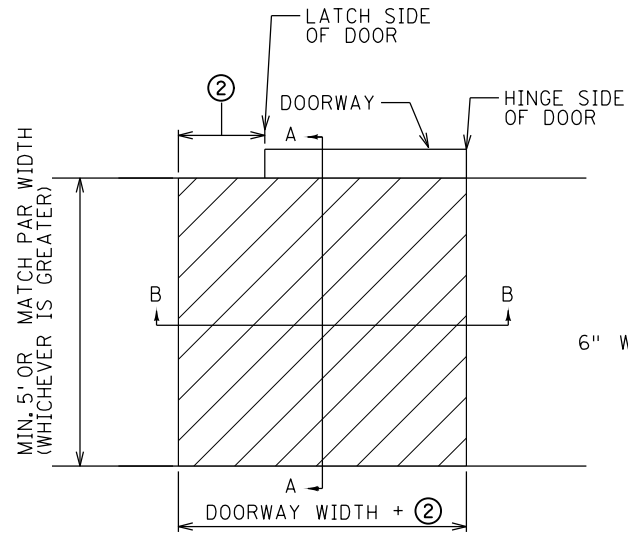
Tom Styrbicki
THOMAS STYRBICKI
STATE DESIGN ENGINEER

SAP 013-630-021 / SAP 225-591-007

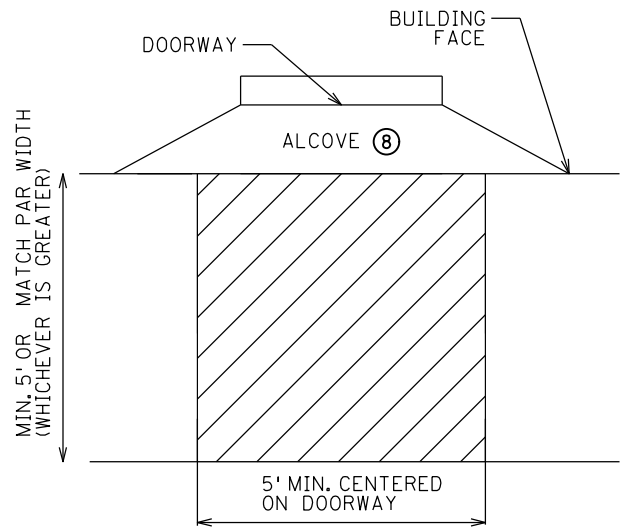
SHEET NO. 60 OF 216



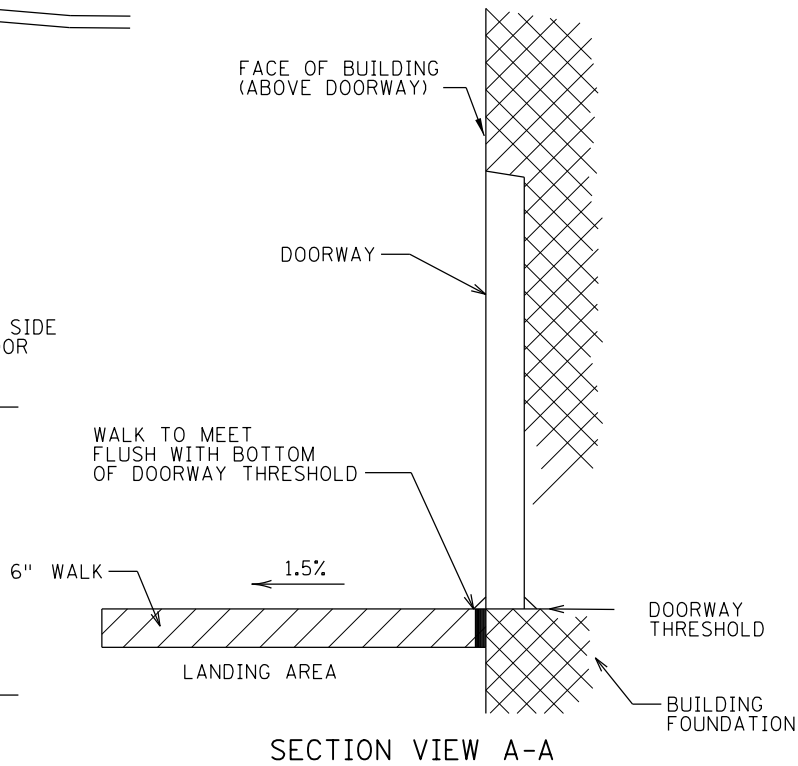
SECTION VIEW B-B



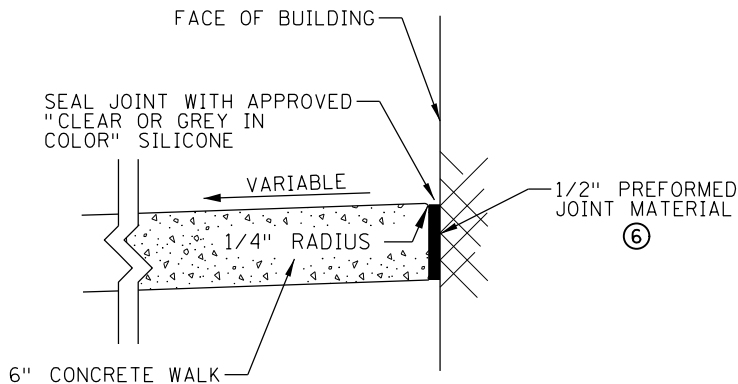
PLAN VIEW DOORWAY



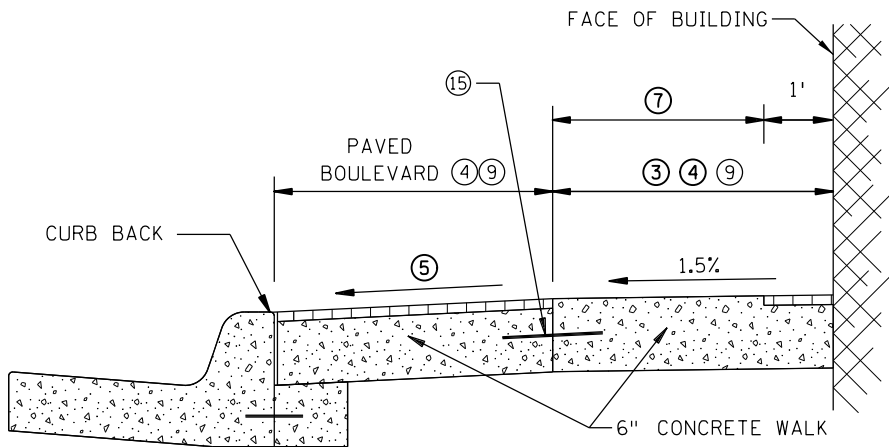
PLAN VIEW DOORWAY WITH ALCOVE
SIDEWALK LANDING REQUIREMENTS ①



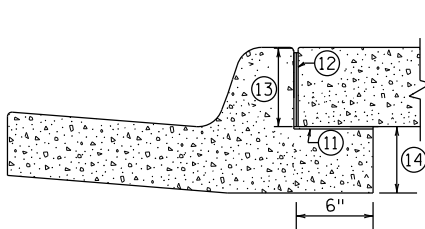
SECTION VIEW A-A



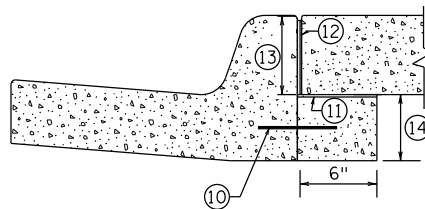
BUILDING JOINT SEAL (INCIDENTAL)



DOWNTOWN SIDEWALK TYPICAL SECTION



SLIP FORM SILL



FIXED FORM SILL

SILL CURB SHOULD BE USED AT ALL LOCATIONS WHEN CONCRETE WALK IS AT BACK OF CURB, INCLUDING PAVED BOULEVARD.
SILL CURB SHALL NOT BE USED IN CURB RAMP AND DRIVEWAY AREAS, INCLUDING CONCRETE FLARES.
SILL CURB WITH 4" WALK CAN USE FIXED OR SLIP FORM OPTIONS.

NOTES:

- 6" WALK IS REQUIRED:
1) IN ALL SIDEWALK LOCATIONS WHERE VARIABLE SLOPED CONCRETE BOULEVARDS ARE PAVED, SUCH AS COMMERCIAL (STORE FRONT, DOWNTOWN) AREAS.
2) ANYTIME DRILL AND REINFORCEMENT IS USED TO TIE LONGITUDINAL JOINTS TOGETHER.
3) TO ELIMINATE LONGITUDINAL JOINT WHEN INCREASING PANEL SIZE OVER 36SF.
4) AT LOCATIONS WHERE MAINTENANCE EQUIPMENT WILL SUBJECT CONCRETE TO HEAVY LOADS.

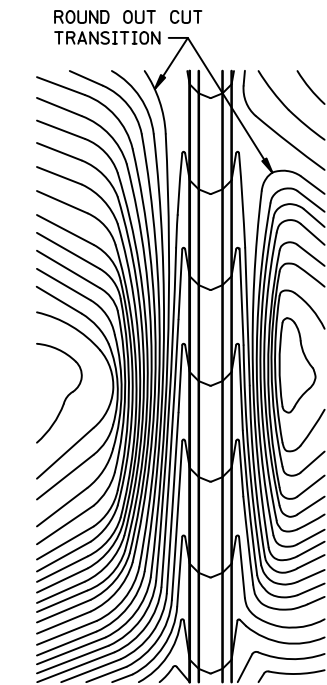
ALL SIDEWALK AND BOULEVARD WIDTHS SHALL BE MEASURED FROM BACK OF CURB.
FIELD ADJUST SIDEWALK PROFILES TO MEET ALL DOORWAY THRESHOLDS.
SIDEWALK MUST MAINTAIN POSITIVE DRAINAGE AWAY FROM THE BUILDING TO THE ROADWAY.

- SEE SPECIAL PROVISIONS FOR SILICONE SPECIFICATIONS.
- ① LANDING CRITERIA IS REQUIRED FOR ALL DOORS, STEPS, AND PRIVATE WALKS. FEASIBILITY DECREASES WITH NARROWER BOULEVARDS AND STEEPER SIDEWALK PROFILES.
- ② 18" MIN. WHEN DOOR SWINGS OUTWARD FROM BUILDING. 12" MIN WHEN DOOR SWINGS INWARD FROM BUILDING.
- ③ 6' MIN. PAR REQUIRED WHEN ADJACENT TO BUILDINGS.
- ④ 2/3 PAR TO 1/3 BOULEVARD SHOULD BE USED WHEN FEASIBLE. HOLD UNIFORM BOULEVARD WIDTH. 4' PREFERRED MINIMUM BOULEVARD.
- ⑤ 1%-5% FOR THE MAJORITY OF THE BLOCK, WITH EXCEPTIONS UP TO 8% IN CONSTRAINED AREAS.
- ⑥ CONSTRUCT USING APPROVED EXPANSION MATERIAL PER MNDOT TYPE A-E EXPANSION. LEAVE A MINIMUM 1/2" TOP GAP AND SEAL WITH MNDOT APPROVED SILICONE PER MNDOT SPEC 3722.
- ⑦ TO MINIMIZE VIBRATION AND ROLLING RESISTANCE, AREA SHALL BE FREE OF PAVERS, STAMPED CONCRETE, AND/OR EXCESSIVE JOINTING.
- ⑧ 2% MAX. PER BUILDING CODE. IF GREATER THAN 2%, FLATTEN AS FEASIBLE.
- ⑨ FORM CONTRACTION JOINTS AS NEEDED TO PRODUCE APPROXIMATELY SQUARE PANEL SIZE. CONCRETE PANEL SIZE SHOULD NOT EXCEED 1 1/2' : 1' LENGTH X WIDTH.
- ⑩ DRILL AND GROUT NO. 4 X 8" LONG TIE BARS (EPOXY COATED). 36" MAXIMUM SPACING BETWEEN BARS WITH 2" MINIMUM CONCRETE COVER PLACED 1' MINIMUM FROM ADJACENT CONSTRUCTION JOINTS. 1' MINIMUM FROM ADJACENT CONCRETE JOINTS. TIE BARS SHALL BE EMBEDDED 4" WITH 2" MINIMUM CONCRETE COVER AND ARE INCIDENTAL TO SILL PLACEMENT.
- ⑪ FURNISH AND INSTALL THE FULL WIDTH OF THE TOP OF SILL A MINIMUM 2ML THICK POLYTHENE SHEETING.
- ⑫ USE AN APPROVED TYPE F (1/4" INCH THICK) SEPARATION MATERIAL. SEPARATION MATERIAL SHALL MATCH FULL HEIGHT DIMENSION OF ADJACENT CONCRETE.
- ⑬ DIMENSION TO BE SAME AS SIDEWALK THICKNESS, 4" MIN.
- ⑭ 6" WALK: 5" MIN. FOR B424; 7" MIN. FOR B624
4" WALK: 7" MIN. FOR B424; 9" MIN. FOR B624
- ⑮ DRILL AND GROUT NO. 4 X 12" LONG TIE BARS (EPOXY COATED). 36" MAXIMUM SPACING BETWEEN BARS WITH 2" MINIMUM CONCRETE COVER PLACED 1' MINIMUM FROM ADJACENT CONCRETE JOINTS.

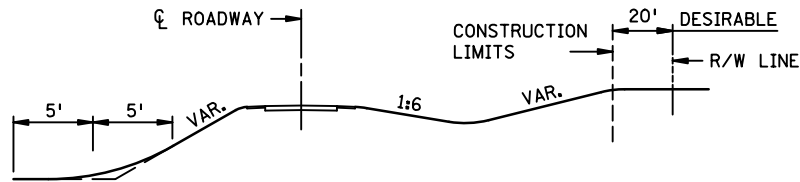
REVISION:
APPROVED: 11-04-2021
<i>Jeff J. Perkins</i>
JEFF PERKINS OPERATIONS DIVISION

	STANDARD PLAN 5-297.254	4 OF 4	DRIVEWAY AND SIDEWALK DETAILS
	<i>Tom Styrbicki</i>	APPROVED: 11-04-2021 REVISED:	
DEPARTMENT OF TRANSPORTATION	THOMAS STYRBICKI STATE DESIGN ENGINEER	SAP 013-630-021 / SAP 225-591-007	SHEET NO. 61 OF 216

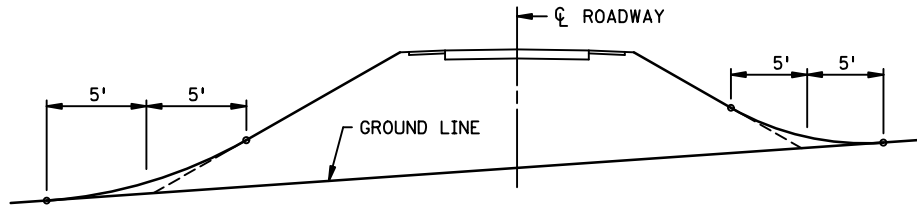
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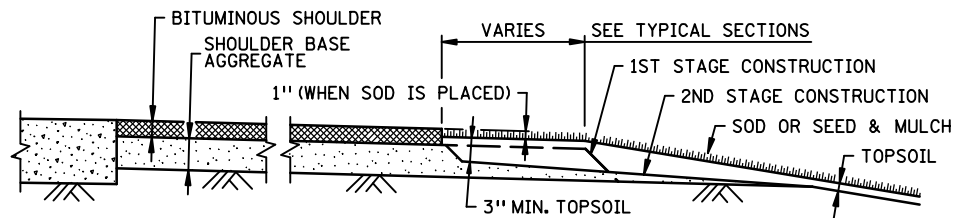
CONTOURING ROAD CUTS



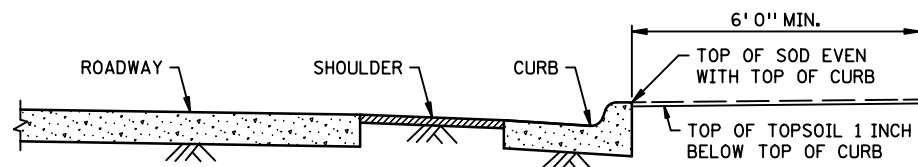
ROUNDING SHOULDERS AND BACKSLOPES



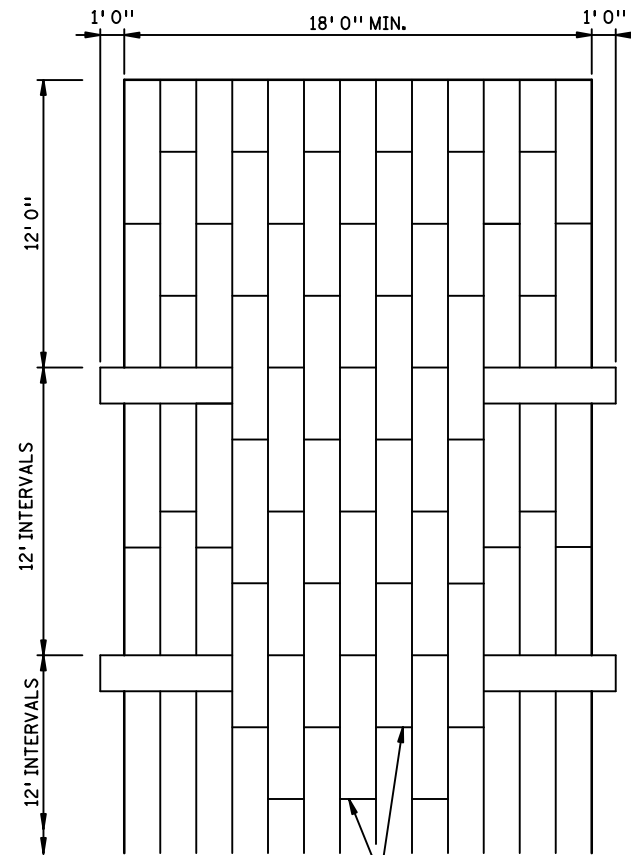
SHAPING FOR DRAINAGE ALONG THE TOE OF FILL SLOPES



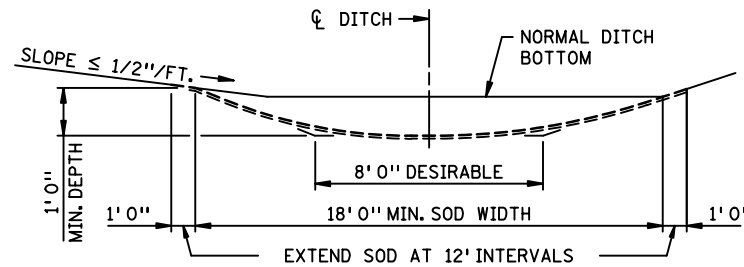
SHAPING AND TOPSOILING INSLOPES



SHAPING ADJACENT TO CURBS WHEN SOD IS PLACED

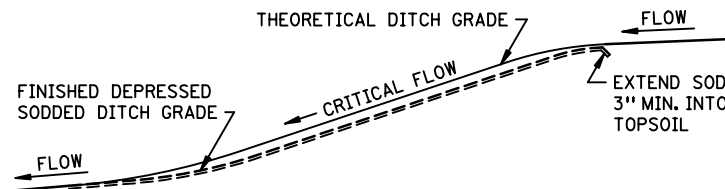


PLAN VIEW



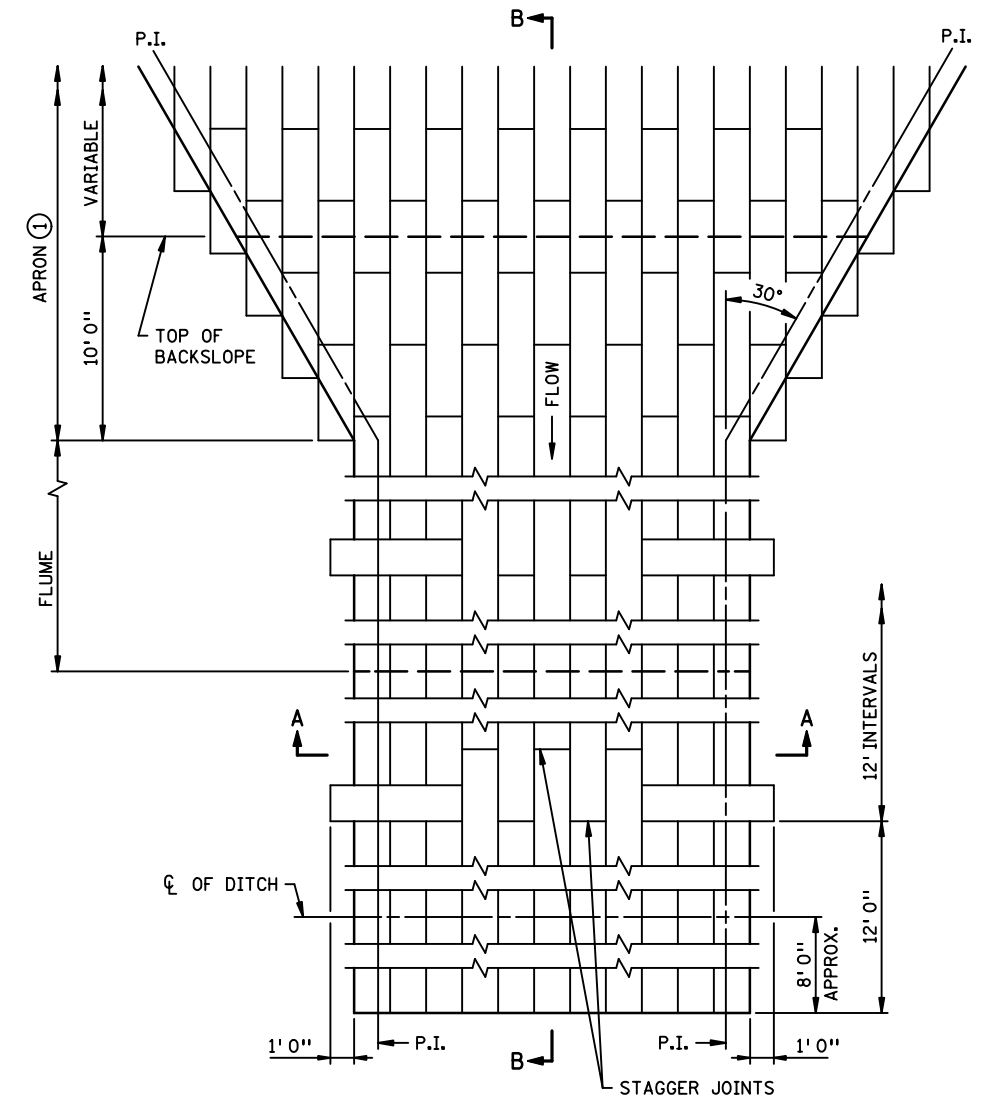
SODDED DITCH CROSS SECTION

WHERE FRONT OR BACK SLOPE IS FLAT (LESS THAN 1/2"/FT.), FIRST NOTCH DITCH AND THEN PROVIDE ROUNDING.

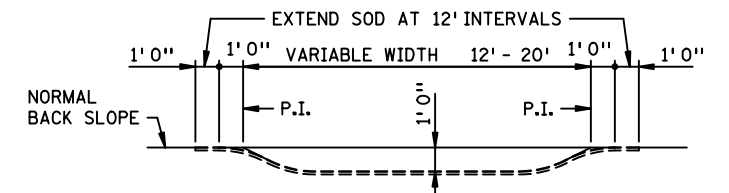


DITCH PROFILE

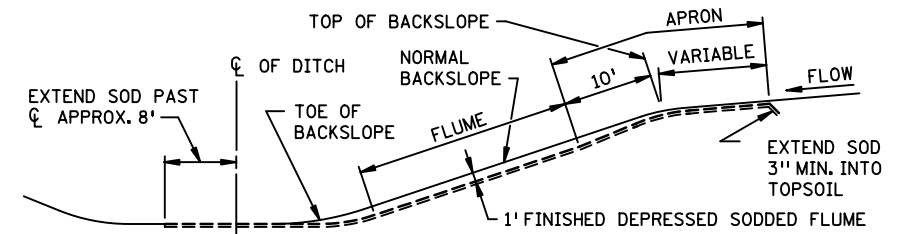
SODDED DITCH DETAILS



PLAN VIEW



SECTION A-A



SECTION B-B

SODDED FLUME DETAILS

- NOTES:
SEE SPEC. 2575.3 FOR ADDITIONAL INFORMATION.
① CONSTRUCT TAPER AS DIRECTED BY THE ENGINEER.

REVISION:
APPROVED: 2-28-2017

CHIEF ENVIRONMENTAL OFFICER

MINNESOTA
DEPARTMENT
OF
TRANSPORTATION

STANDARD PLAN 5-297.404

1 OF 3

STATE DESIGN ENGINEER

APPROVED: 2-28-2017
REVISED:

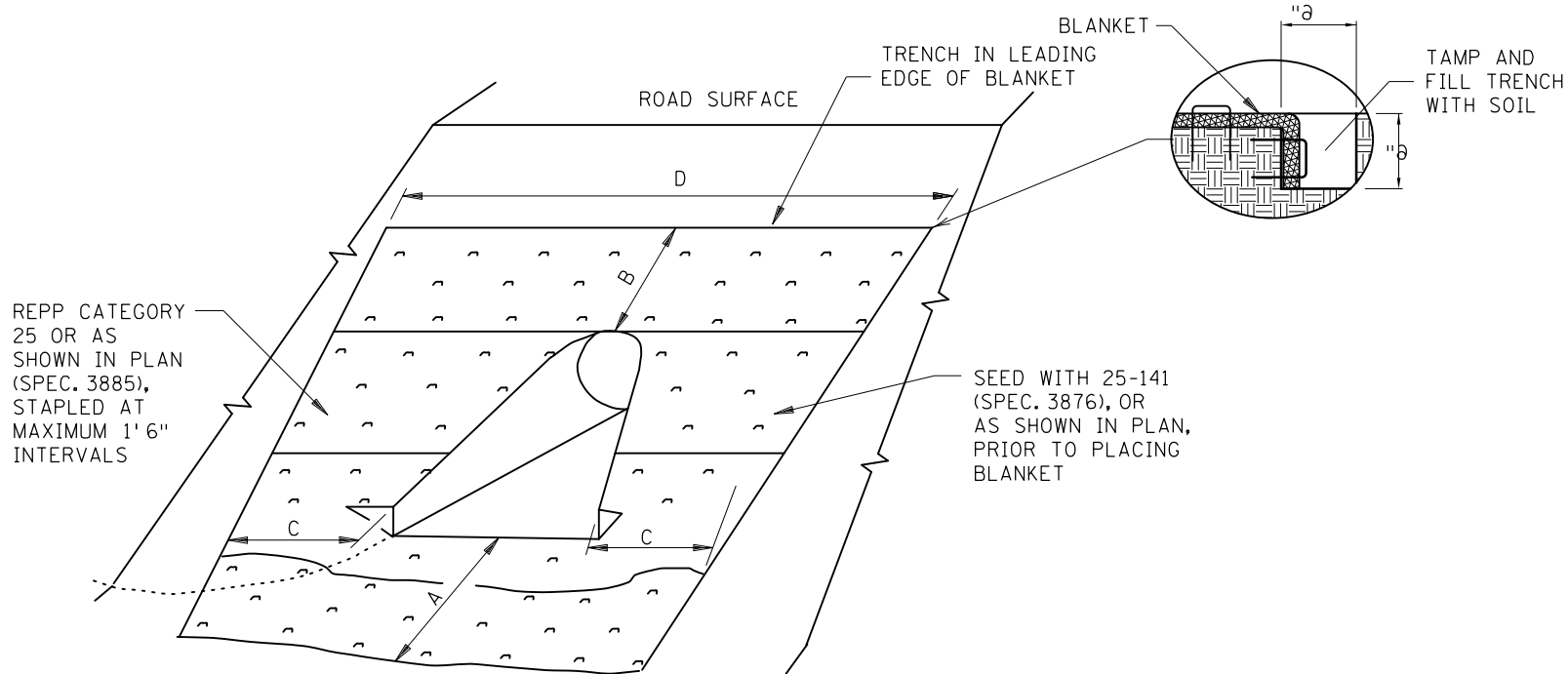
SAP 013-630-021 / SAP 225-591-007

PERMANENT EROSION CONTROL
ALONG ROADWAYS, DITCHES AND FLUMES

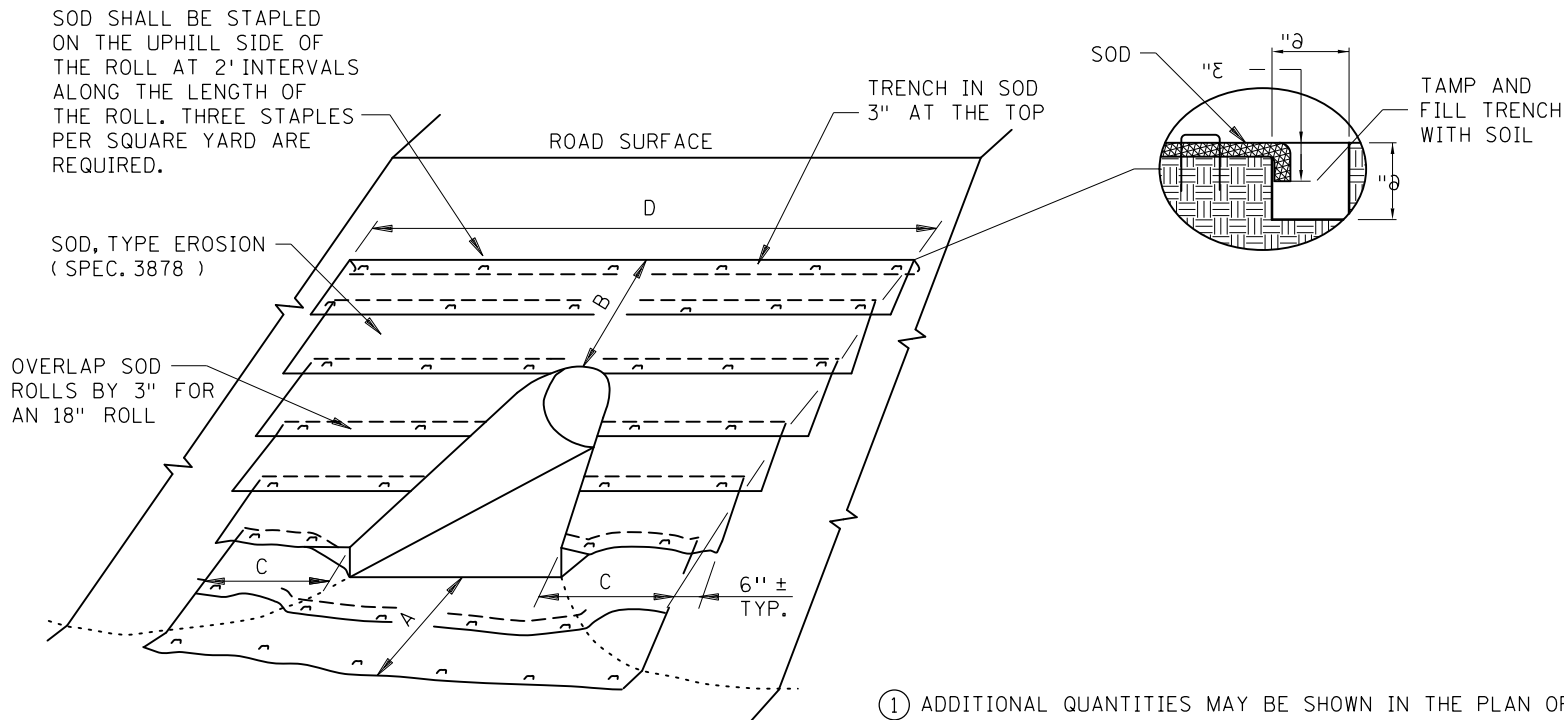
SHEET NO. 62 OF 216

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DATE: 9/12/2024
TIME: 2:00:45 PM
FILENAME: Projects\Minnesota\023661-000\03_Discipline\Roadway\Sheets\023661-000_spn400-700



ROLLED EROSION PREVENTION PRODUCT (BLANKET) & SEED DETAIL



SODDING DETAIL

- ① ADDITIONAL QUANTITIES MAY BE SHOWN IN THE PLAN OR REQUIRED BY THE ENGINEER.
② FOR ARCH PIPE USE CLOSEST CIRCULAR PIPE DIAMETER AND APRON SLOPE. DIAMETERS LARGER THAN 72" REQUIRE SPECIAL DESIGNS.

CULVERT INLET APRON ①								
CULVERT DIAMETER ②	SOD OR REPP (SQ. YDS.)						"A"	"B"
	CIRCULAR AND ARCH PIPE METAL APRON (PLATE 3123, PLATE 3122)	CIRCULAR AND ARCH PIPE CONCRETE APRON (PLATE 3100, PLATE 3110)	CIRCULAR AND ARCH PIPE METAL SAFETY APRON 1:4 SLOPE (PLATE 3148)	CIRCULAR AND ARCH PIPE METAL SAFETY APRON 1:6 SLOPE (PLATE 3148)	CIRCULAR CORRUGATED METAL PIPE SAFETY APRON 1:6 SLOPE (PLATE 3128)	CIRCULAR CORRUGATED METAL PIPE SAFETY APRON 1:4 SLOPE (PLATE 3128)		
15"	9	9	8	8	N/A	N/A	3'	1.5'
18"	13	12	12	14	16	N/A	3'	3'
21"	14	14	14	16	18	14	3'	3'
24"	16	15	16	19	21	17	3'	3'
27"	N/A	20	N/A	N/A	N/A	N/A	3'	4.5'
30"	23	22	25	30	32	N/A	3'	4.5'
36"	34	34	39	48	51	37	4.5'	4.5'
42"	43	40	51	64	N/A	N/A	4.5'	6'
48"	54	50	66	82	N/A	N/A	4.5'	7.5'
54"	65	58	81	102	N/A	N/A	4.5'	9'
60"	69	59	91	115	N/A	N/A	4.5'	9'
66"	69	63	N/A	N/A	N/A	N/A	4.5'	9'
72"	78	72	99	122	N/A	N/A	4.5'	10.5'

CULVERT OUTLET APRON ①								
CULVERT DIAMETER ②	SOD OR REPP (SQ. YDS.)						"A"	"B"
	CIRCULAR AND ARCH PIPE METAL APRON (PLATE 3123, PLATE 3122)	CIRCULAR AND ARCH PIPE CONCRETE APRON (PLATE 3100, PLATE 3110)	CIRCULAR AND ARCH PIPE METAL SAFETY APRON 1:4 SLOPE (PLATE 3148)	CIRCULAR AND ARCH PIPE METAL SAFETY APRON 1:6 SLOPE (PLATE 3148)	CIRCULAR CORRUGATED METAL PIPE SAFETY APRON 1:6 SLOPE (PLATE 3128)	CIRCULAR CORRUGATED METAL PIPE SAFETY APRON 1:4 SLOPE (PLATE 3128)		
15"	10	10	9	10	N/A	N/A	4.5'	1.5'
18"	13	13	12	14	15	N/A	6'	1.5'
21"	16	14	16	18	19	15	6'	1.5'
24"	18	18	18	21	22	18	7.5'	1.5'
27"	N/A	19	N/A	N/A	N/A	N/A	7.5'	1.5'
30"	23	23	24	28	29	N/A	9'	1.5'
36"	36	35	38	47	48	37	10.5'	1.5'
42"	43	40	47	58	N/A	N/A	12'	1.5'
48"	50	46	57	70	N/A	N/A	13.5'	1.5'
54"	57	50	67	84	N/A	N/A	15'	1.5'
60"	74	63	90	113	N/A	N/A	16.5'	1.5'
66"	75	67	N/A	N/A	N/A	N/A	16.5'	1.5'
72"	77	70	92	114	N/A	N/A	16.5'	1.5'

NOTES:

REPP = ROLLED EROSION PREVENTION PRODUCT.

AREA SHOWN IN SQUARE YARDS IS FOR ONE CULVERT END.

QUANTITIES ARE CALCULATED TO INCLUDE SOD REQUIRED TO PROVIDE A 3" OVERLAP ON ALL 18" WIDE ROLLS. THIS ALLOWS FOR SHRINKAGE OF THE SOD.

FOR PIPE ARCHES USE EQUIVALENT PIPE DIAMETER TO APPROXIMATE AREA.

FOR CORRUGATED POLYETHYLENE PIPE METAL APRON (PLATE 3129), USE THE METAL APRON COLUMN (PLATE 3123).

AREAS AND DIMENSIONS ARE APPROXIMATE AND ARE BASED ON APRON SIDE SLOPES OF NO STEEPER THAN 1:2, UNLESS INDICATED AS FOR SAFETY APRONS.

CARE SHOULD BE TAKEN IN SELECTING SOD TO STABILIZE THE APRON. RIP-RAP SHOULD BE USED FOR FLOW VELOCITIES GREATER THAN 6 FPS.

REVISION:
APPROVED: JANUARY 8, 2020 <i>Marni Karnowski</i> MARNI KARNOWSKI CHIEF ENVIRONMENTAL OFFICER



STANDARD PLAN 5-297.404

2 OF 3

Tom Styrbicki
THOMAS STYRBICKI
STATE DESIGN ENGINEER

APPROVED: 1-8-2020
REVISED:

SAP 013-630-021 / SAP 225-591-007

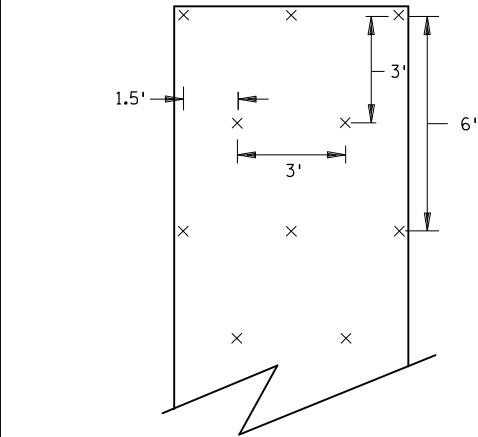
PERMANENT EROSION CONTROL

TURF ESTABLISHMENT DETAIL AT CULVERT ENDS

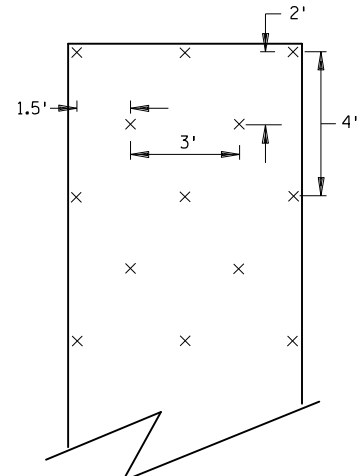
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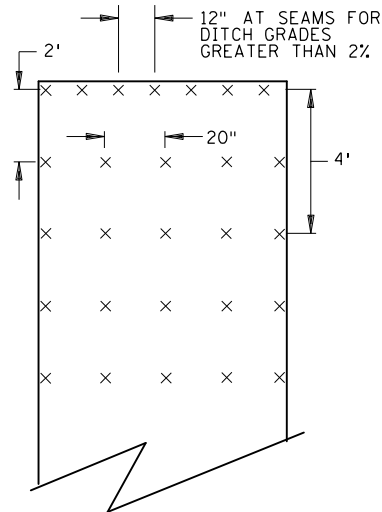
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SLOPES FLATTER THAN 1:2
120 STAPLES PER 100 SQ YD

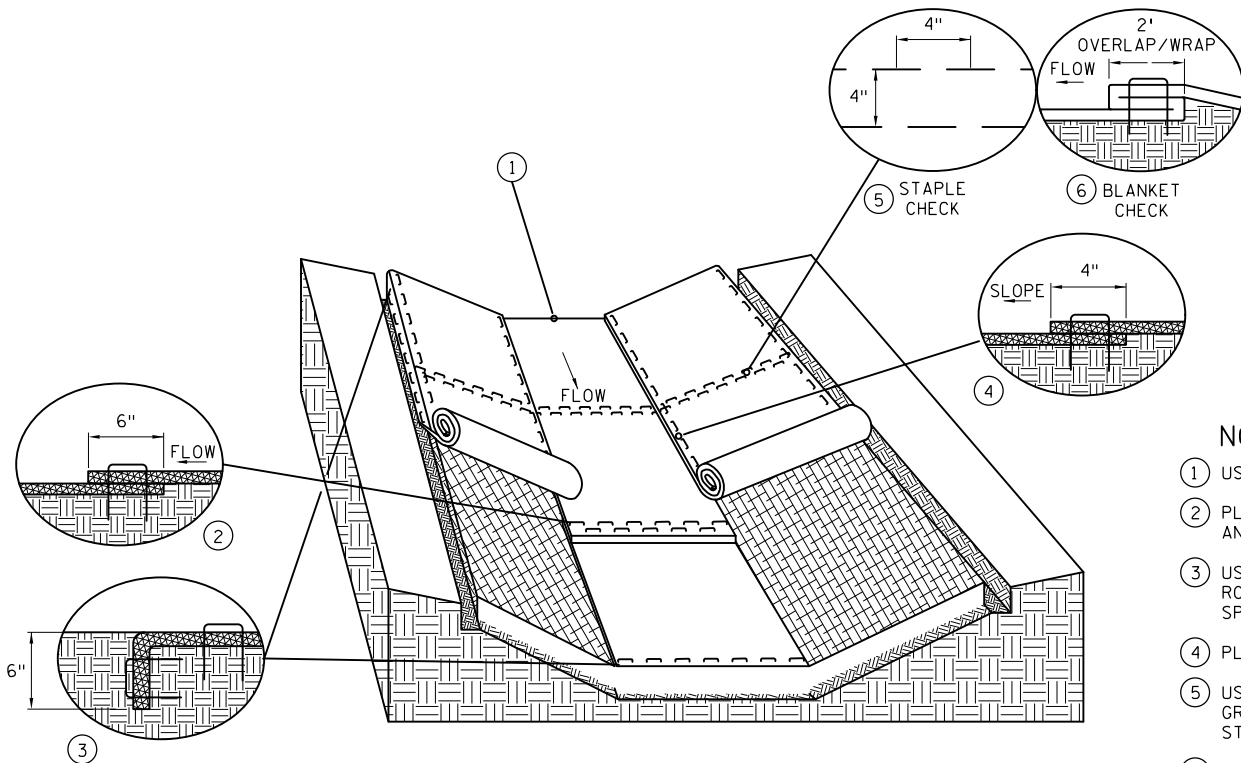


SLOPES 1:2 TO 1:1
170 STAPLES PER 100 SQ YD

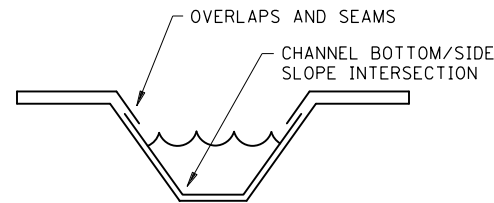


CHANNEL AND DITCH APPLICATIONS
350 STAPLES PER 100 SQ YD

BLANKET STAPLE PATTERN



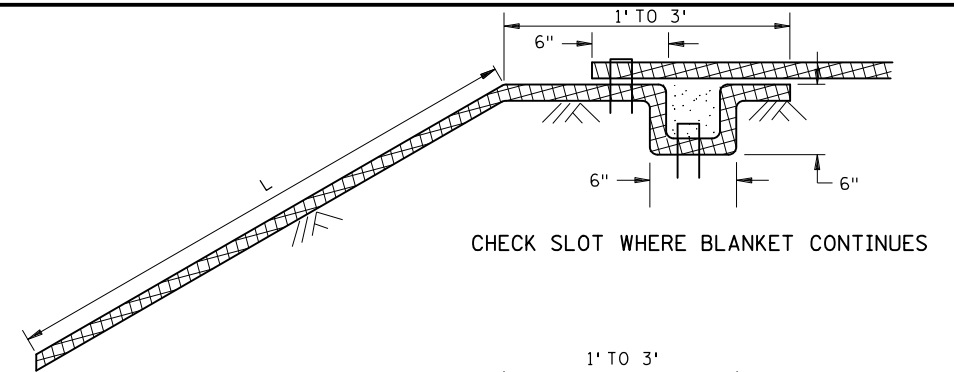
DITCH BLANKET STAPLE DETAIL



DITCH BLANKET CRITICAL POINTS ⑦

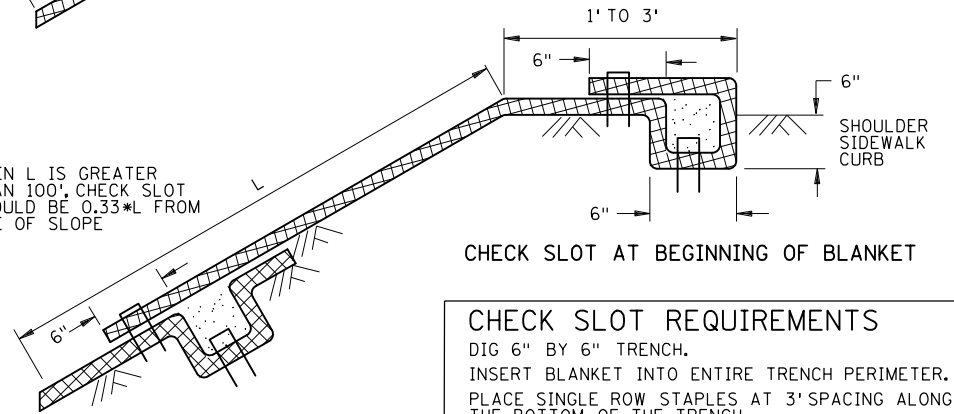
NOTES:

- ① USE CHECK SLOT DETAIL (NO ALTERNATES).
- ② PLACE DOUBLE ROW OF STAPLES STAGGERED 4" APART AND 4" ON CENTER.
- ③ USE 6" X 6" TRENCH TO PLACE BLANKET. PLACE SINGLE ROW OF STAPLES ON TOP AND TRENCH SIDES AT 12" SPACING. BACKFILL TRENCH WITH SOIL AND TAMP.
- ④ PLACE SINGLE ROW OF STAPLES AT 12" SPACING.
- ⑤ USE STAPLE CHECK FOR CHANNEL SLOPES LESS THAN 2.5%. GRADE AT 100' INTERVALS. PLACE DOUBLE ROW OF STAPLES STAGGERED 4" APART AND AT 4" SPACING.
- ⑥ USE BLANKET CHECKS FOR THE FOLLOWING SLOPES:
2.5%-3% 100' INTERVALS
3%-5% 50' INTERVALS
5%-7% 25' INTERVALS
- ⑦ CRITICAL POINTS SHALL BE SECURED WITH PROPER STAPLE PATTERNS.



CHECK SLOT WHERE BLANKET CONTINUES

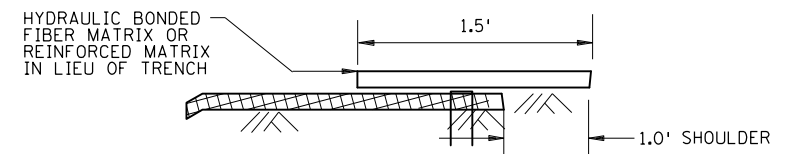
WHEN L IS GREATER THAN 100', CHECK SLOT SHOULD BE 0.33*L FROM TOE OF SLOPE



CHECK SLOT AT BEGINNING OF BLANKET

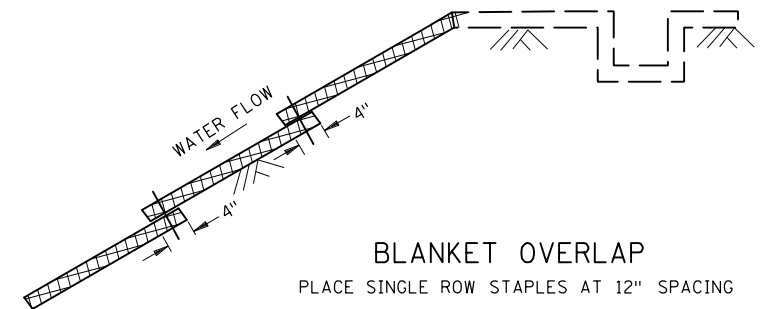
CHECK SLOT REQUIREMENTS

DIG 6" BY 6" TRENCH.
INSERT BLANKET INTO ENTIRE TRENCH PERIMETER.
PLACE SINGLE ROW STAPLES AT 3' SPACING ALONG THE BOTTOM OF THE TRENCH.
BACKFILL TRENCH WITH SOIL AND TAMP.
PLACE SINGLE ROW STAPLES AT 3' SPACING ON OVERLAP.



CHECK SLOT ALTERNATIVE
PLACE SINGLE ROW STAPLES AT 12" SPACING

CHECK SLOT DETAILS



BLANKET OVERLAP
PLACE SINGLE ROW STAPLES AT 12" SPACING

GENERAL BLANKET INSTALLATION REQUIREMENTS

REPP = ROLLED EROSION PREVENTION PRODUCT.
PREPARE SOIL AS PER SPECIFICATION 2574.
LAY PARALLEL OR PERPENDICULAR TO THE DIRECTION OF WATER FLOW.
OVERLAP ADJACENT STRIP EDGES A MINIMUM OF 4".
OVERLAP BLANKET 6" (MINIMUM) AT EACH END. OVERLAP BOTTOM END OF UPPER BLANKET OVER TOP END OF LOWER BLANKET. STAPLE ALONG OVERLAP EVERY 1.5'.
THE UPPERMOST BLANKET OF ALL SLOPE APPLICATIONS MUST START IN A CHECK SLOT. IF SLOPE LENGTH (L) IS 100' OR GREATER, INSERT BLANKET INTO A CHECK SLOT 1/3 FROM THE BOTTOM OF THE SLOPE.

REVISION:
APPROVED: JANUARY 8, 2020 <i>Marni Karnowski</i> MARNI KARNOWSKI CHIEF ENVIRONMENTAL OFFICER



STANDARD PLAN 5-297.404

3 OF 3

Tom Styrbicki
THOMAS STYRBICKI
STATE DESIGN ENGINEER

APPROVED: 1-8-2020
REVISED:

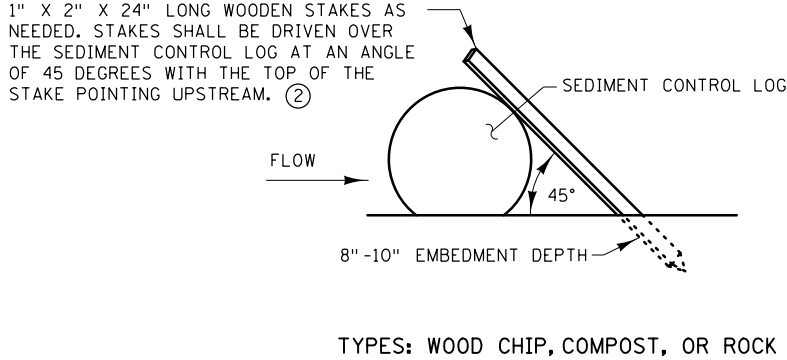
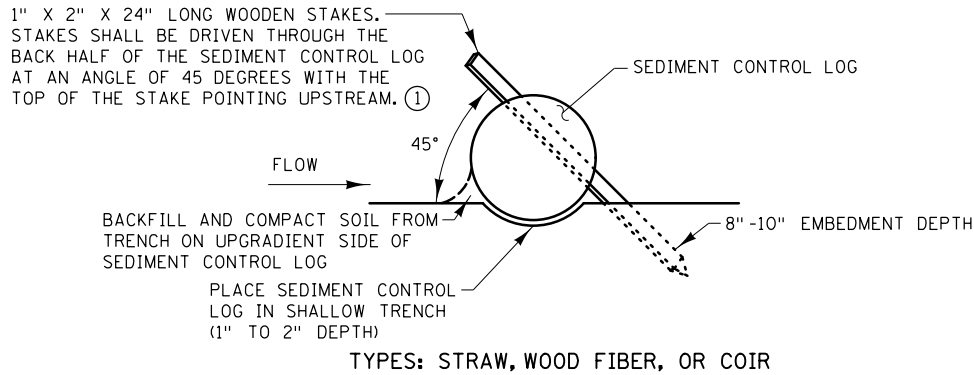
SAP 013-630-021 / SAP 225-591-007

PERMANENT EROSION CONTROL
REPP (BLANKET) STAPLE PATTERN FOR SLOPES

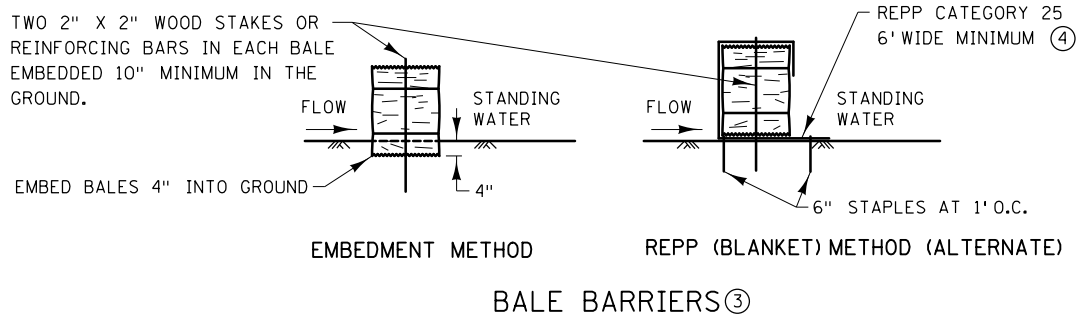
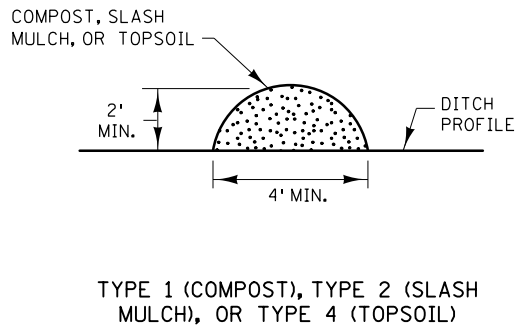
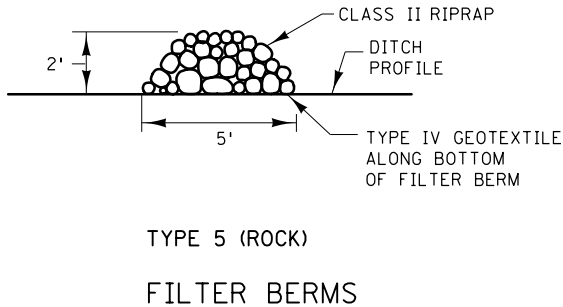
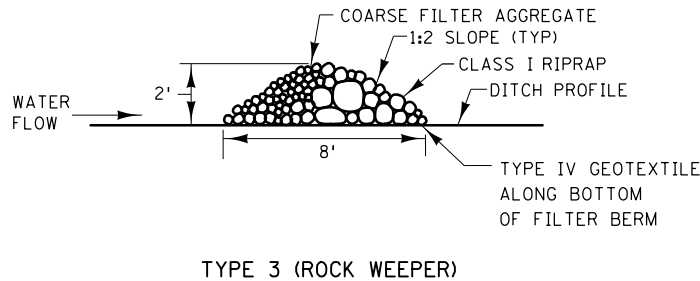
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DATE: 9/12/2024 TIME: 2:00:47 PM
FILENAME: Projects\Minnesota\023661-000\03_Discipline\Roadway\Sheets\023661-000_spn400-700



SEDIMENT CONTROL LOGS



NOTES:

REPP = ROLLED EROSION PREVENTION PRODUCT.

SEE SPECS. 2573, 3149, 3874, 3882, 3885, 3886, AND 3897.

- ① SPACE BETWEEN STAKES SHALL BE A MAXIMUM OF 1' FOR DITCH CHECKS OR 2' FOR OTHER APPLICATIONS.
- ② PLACE STAKES AS NEEDED TO PREVENT MOVEMENT OF SEDIMENT CONTROL LOGS PLACED ON SLOPES OR AS NEEDED DUE TO OTHER FACTORS. STAKES SHALL BE INCIDENTAL.
- ③ TO BE USED FOR CRITICAL PERIMETER CONTROL AREAS WHERE STANDING WATER OCCURS (6" MAXIMUM DEPTH). BALES SHALL CONSIST OF TYPE 1 MULCH OF APPROXIMATELY 14" X 18" X 36" LONG. BALES SHALL BE PLACED ON EDGE AND BUTTED TIGHT TO ADJACENT BALES.
- ④ INSTEAD OF TRENCHING, PLACE BALE ON THE REPP (BLANKET) AND WRAP BLANKET AROUND THE BALE. PLACE STAKE THROUGH BALE AND BLANKET.

REVISION:

APPROVED: JANUARY 8, 2020

Marni Karnowski

MARNI KARNOWSKI
CHIEF ENVIRONMENTAL OFFICER



STANDARD PLAN 5-297.405

2 OF 8

Thomas Styrbicki
THOMAS STYRBICKI
STATE DESIGN ENGINEER

APPROVED: 1-8-2020
REVISED:

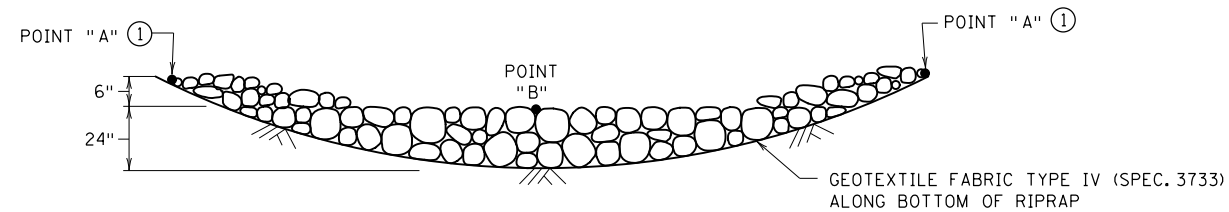
SAP 013-630-021 / SAP 225-591-007

TEMPORARY SEDIMENT CONTROL

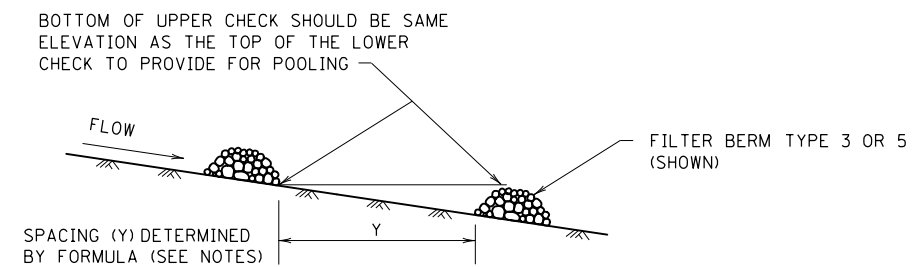
FILTER BERMS, SEDIMENT CONTROL LOGS, AND BALE BARRIERS

SHEET NO. 65 OF 216

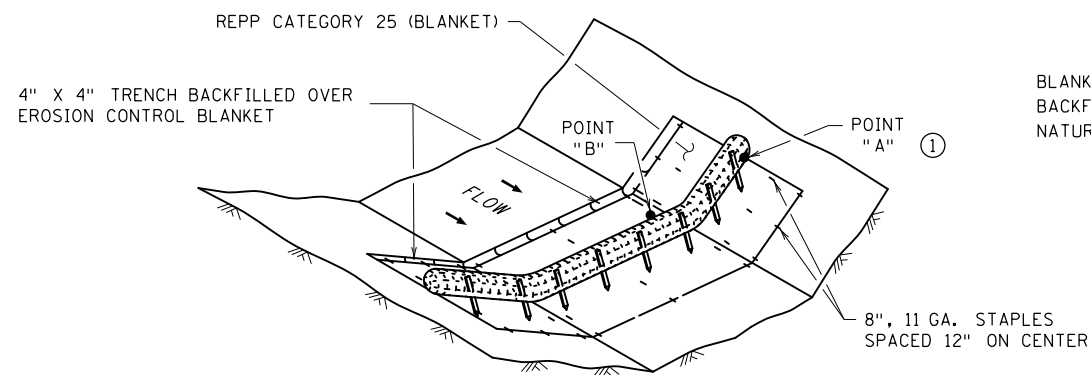
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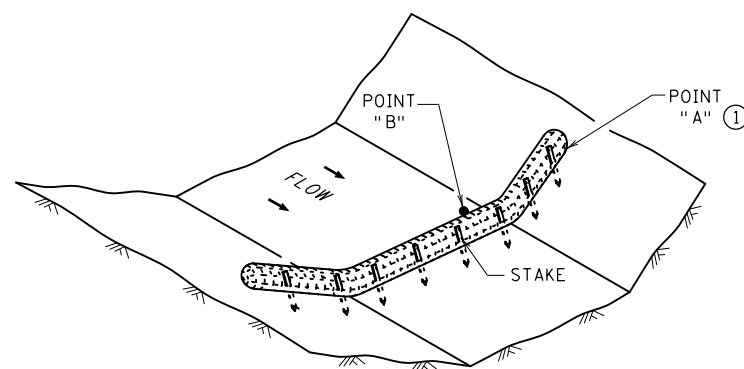
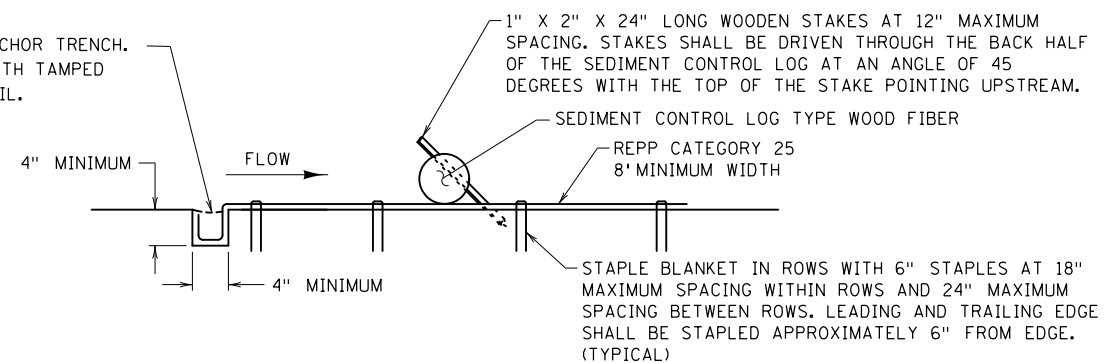
ROCK DITCH CHECKS
 FILTER BERMS TYPE 3 (ROCK WEEPER) OR FILTER TYPE 5 (ROCK) ③
 FOR USE ON ROUGH-GRADED AREAS
 ONLY FOR USE OUTSIDE CLEAR ZONE ②



DITCH CHECK SPACING
 FOR ALL FILTER BERM TYPES



SEDIMENT CONTROL LOG TYPE REPP (BLANKET) SYSTEM ④



SEDIMENT CONTROL LOG TYPE WOOD FIBER, OR TYPE COMPOST ⑤
 FOR USE ON ROUGH GRADED AREAS

NOTES:

REPP = ROLLED EROSION PREVENTION PRODUCT.

SEE SPECS. 2573, 3601, 3733, 3885, 3886 & 3889.

FOR DITCH CHECKS, PLACE SEDIMENT CONTROL LOG PERPENDICULAR TO FLOW AND IN A CRESCENT SHAPE WITH THE ENDS FACING UPSTREAM.

APPROXIMATE SPACING BETWEEN EACH DITCH CHECK SHOULD BE DETERMINED FROM THE FOLLOWING SPACING FORMULA:

$$\text{APPROXIMATE SPACING OF DITCH CHECKS (FT.)} = Y = \frac{\text{DITCH CHECK HEIGHT (FT.)}}{\% \text{ CHANNEL SLOPE}} \times 100$$

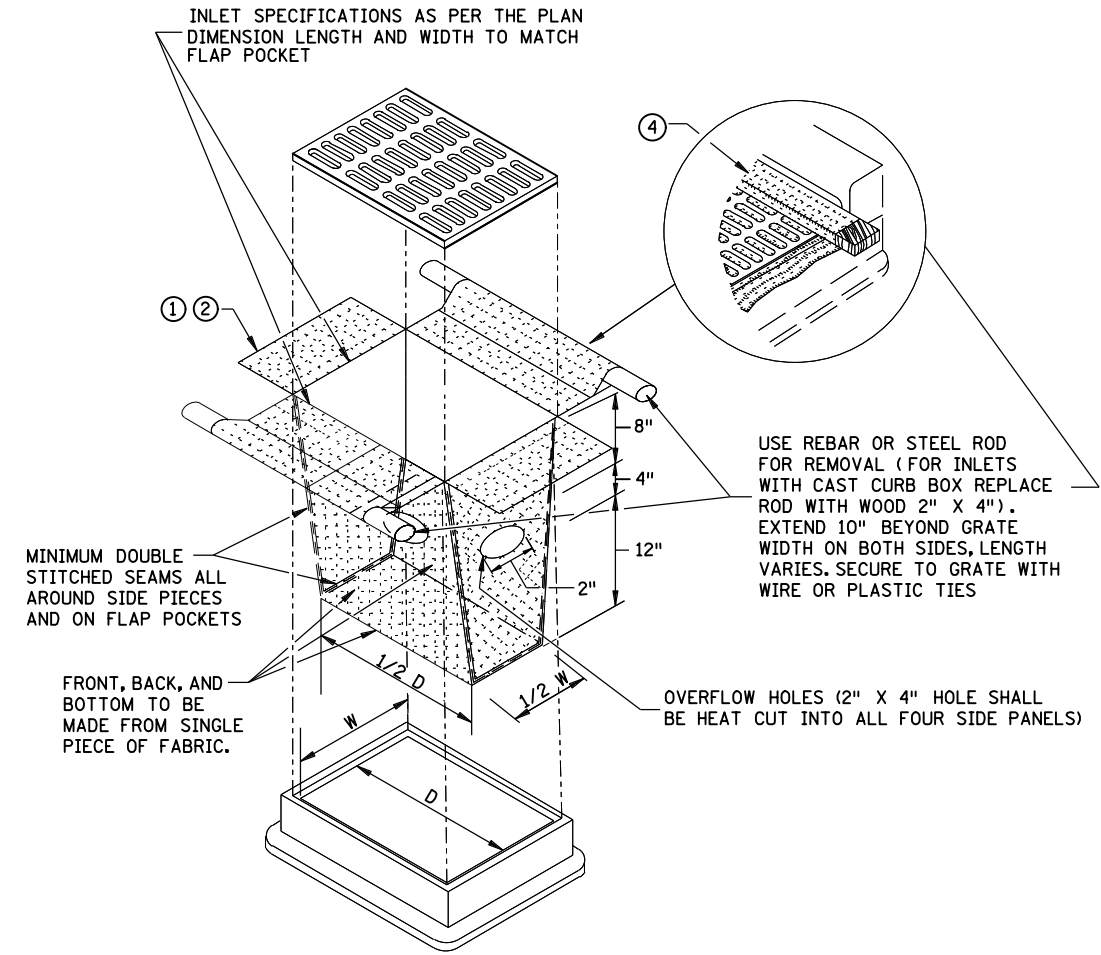
- POINT "A" MUST BE A MINIMUM OF 6" HIGHER THAN POINT "B" TO ENSURE THAT WATER FLOWS OVER THE DIKE AND NOT AROUND THE ENDS.
- ROCK DITCH CHECKS PLACED WITHIN THE CLEAR ZONE ARE TO BE 18" OR LESS IN HEIGHT. A 1:6 APPROACH AND DEPARTURE SLOPE SHALL BE PROVIDED.
- DITCH GRADE 3% - 5%, MAX. FLOW VELOCITY 12 FT./SEC.
- DITCH GRADE 1.5% - 3%, MAX. FLOW VELOCITY 4.5 FT./SEC.
- DITCH GRADE 1.5% - 3%, MAX. FLOW VELOCITY 1.5 FT./SEC.

DATE: 9/12/2024 TIME: 2:00:47 PM
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REVISION:
APPROVED: JANUARY 8, 2020 MARNI KARNOWSKI CHIEF ENVIRONMENTAL OFFICER

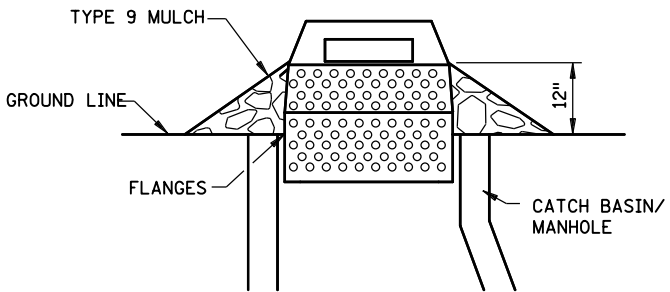
 MINNESOTA DEPARTMENT OF TRANSPORTATION	STANDARD PLAN 5-297.405	3 OF 8	TEMPORARY SEDIMENT CONTROL DITCH CHECK
	 THOMAS STYRBICKI STATE DESIGN ENGINEER	APPROVED: 1-8-2020 REVISED:	
SAP 013-630-021 / SAP 225-591-007			SHEET NO. 66 OF 216

DATE: 9/12/2024 TIME: 2:00:48 PM
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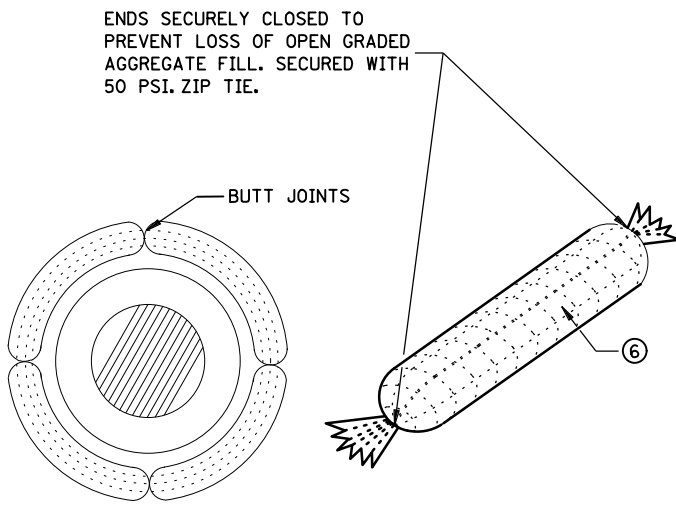
FILTER BAG INSERT ③

(CAN BE INSTALLED IN ANY INLET TYPE
WITH OR WITHOUT A CURB BOX)

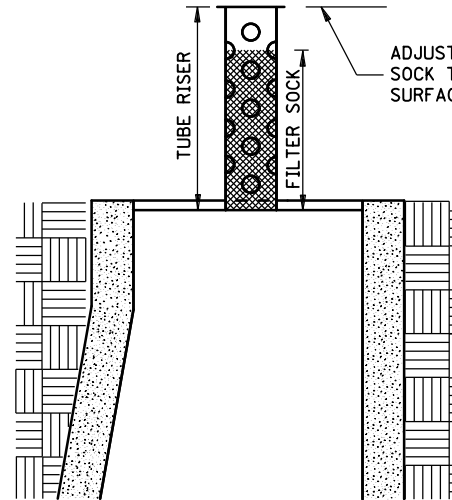
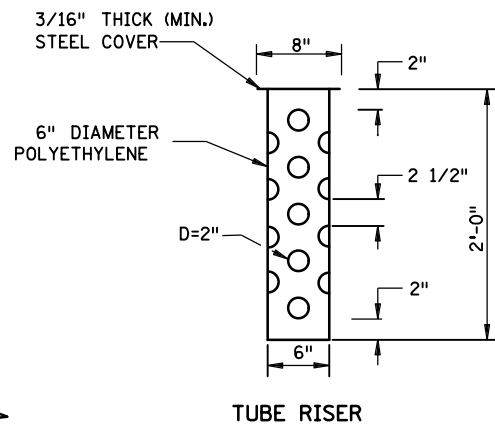


SEDIMENT CONTROL INLET HAT

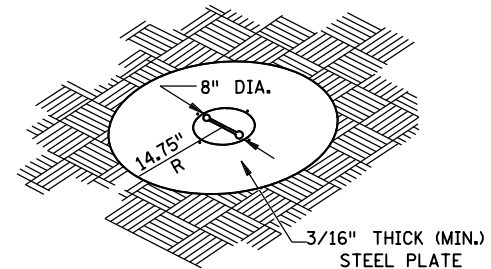
NOTE:
THE SEDIMENT CONTROL BARRIER SHALL BE A METAL
OR PLASTIC/POLYETHYLENE RISER SIZED TO FIT INSIDE
THE CATCH BASIN/MANHOLE; HAVE PERFORATIONS TO ALLOW
FOR WATER INFILTRATION; HAVE AN OVERFLOW OPENING,
FLANGES AND A LID/COVER.



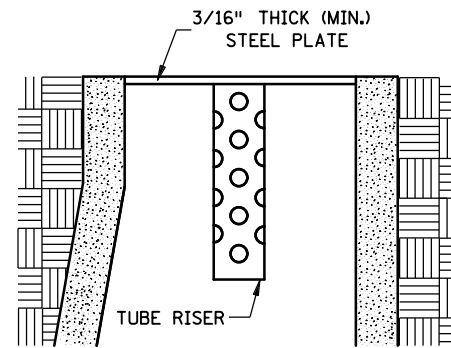
ROCK LOG/COMPOST LOG



SECTION
(UP POSITION)

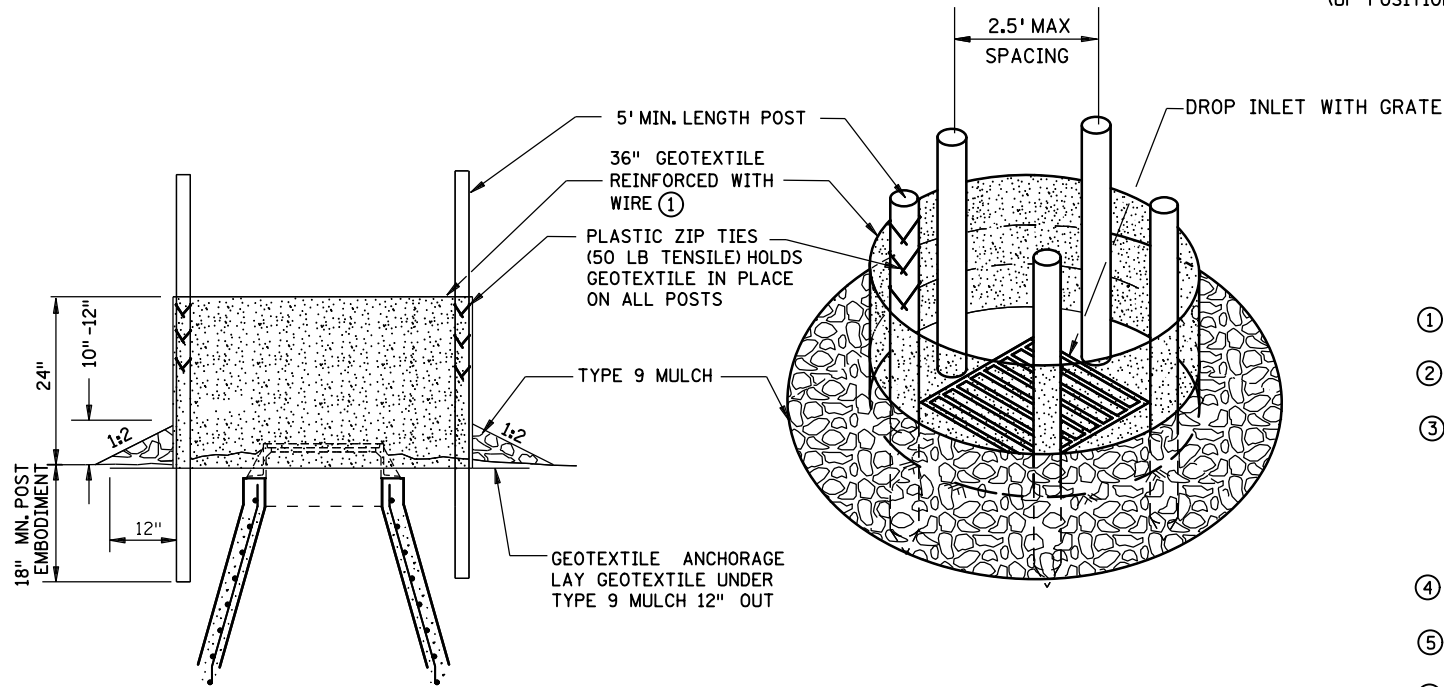


PERSPECTIVE VIEW



SECTION
(DOWN POSITION)

POP-UP HEAD



SILT FENCE RING AND ROCK FILTER BERM

USE WHERE INLET DRAINS IN AN AREA WITH SLOPES AT 1:3 OR LESS

NOTES:

SEE SPECS. 2573, 3137, & 3886.

DEVICES MUST BE ADJUSTED ACCORDINGLY AS TO NOT CAUSE FLOODING ON ROADWAY
THAT WOULD IMPEDE TRAFFIC FLOW.

- ① ALL GEOTEXTILE USED FOR INLET PROTECTION SHALL BE MONOFILAMENT IN BOTH DIRECTIONS, MEETING SPEC. 3886.
- ② FINISHED SIZE, INCLUDING POCKETS WHERE REQUIRED SHALL EXTEND A MINIMUM OF 10 INCHES AROUND THE PERIMETER TO FACILITATE MAINTENANCE OR REMOVAL.
- ③ INSTALLATION NOTES:
DO NOT PLACE FILTER BAG INSERT IN INLETS SHALLOWER THAN 30 INCHES,
MEASURED FROM THE BOTTOM OF THE INLET TO THE TOP OF THE GRATE. THE
PLACED BAG SHALL HAVE A MINIMUM SIDE CLEARANCE OF 3 INCHES BETWEEN
THE INLET WALLS AND THE BAG, MEASURED AT THE BOTTOM OF THE OVERFLOW HOLES.
WHERE NECESSARY THE CONTRACTOR SHALL CLINCH THE BAG, USING PLASTIC ZIP TIES,
TO ACHIEVE THE 3 INCH SIDE CLEARANCE.
- ④ FLAP POCKETS SHALL BE LARGE ENOUGH TO ACCEPT WOOD 2 INCH X 4 INCH OR USE A
ROCK SOCK OR SAND BAGS IN PLACE OF THE FLAP POCKETS.
- ⑤ SOCK HEIGHT MUST NOT BE SO HIGH AS TO SLOW DOWN WATER FILTRATION TO CAUSE
FLOODING OF THE ROADWAY.
- ⑥ GEOTEXTILE SOCK BETWEEN 4-10 FEET LONG AND 4-6 INCH DIAMETER. SEAM TO BE
JOINED BY TWO ROWS OF STITCHING WITH A PLASTIC MESH BACKING OR PROVIDE A
HEAT BONDED SEAM (OR APPROVED EQUIVALENT). FILL ROCK LOG WITH OPEN GRADED
AGGREGATE CONSISTING OF SOUND DURABLE PARTICLES OF COARSE AGGREGATE
CONFORMING TO SPEC. 3137 TABLE 3137-1; CA-3 GRADATION.

REVISION:

APPROVED: 2-28-2017

Chief Environmental Officer
CHIEF ENVIRONMENTAL OFFICER



STANDARD PLAN 5-297.405

4 OF 8

APPROVED: 2-28-2017
REVISED:

Tom Smith
STATE DESIGN ENGINEER

SAP 013-630-021 / SAP 225-591-007

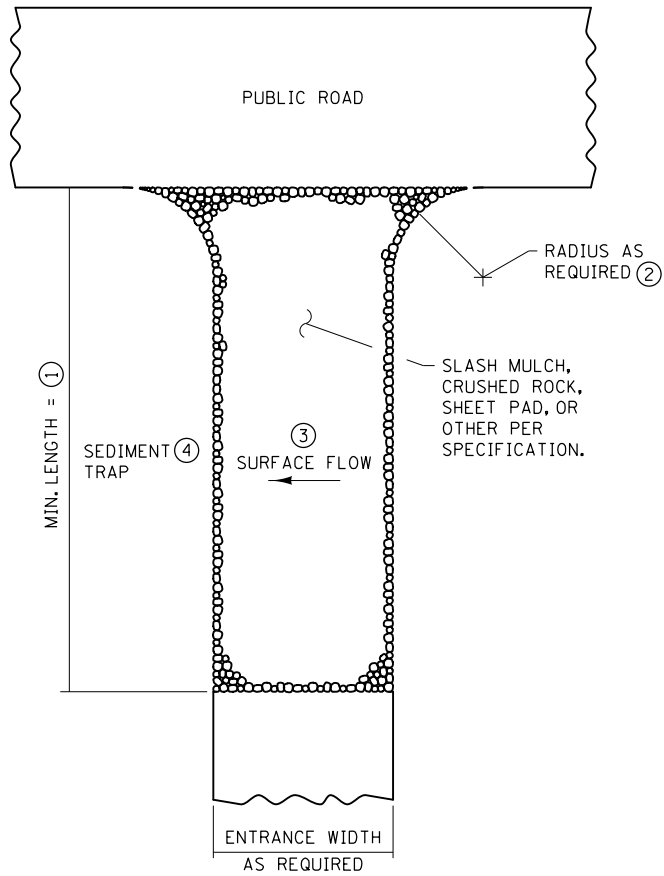
TEMPORARY SEDIMENT CONTROL

STORM DRAIN INLET PROTECTION

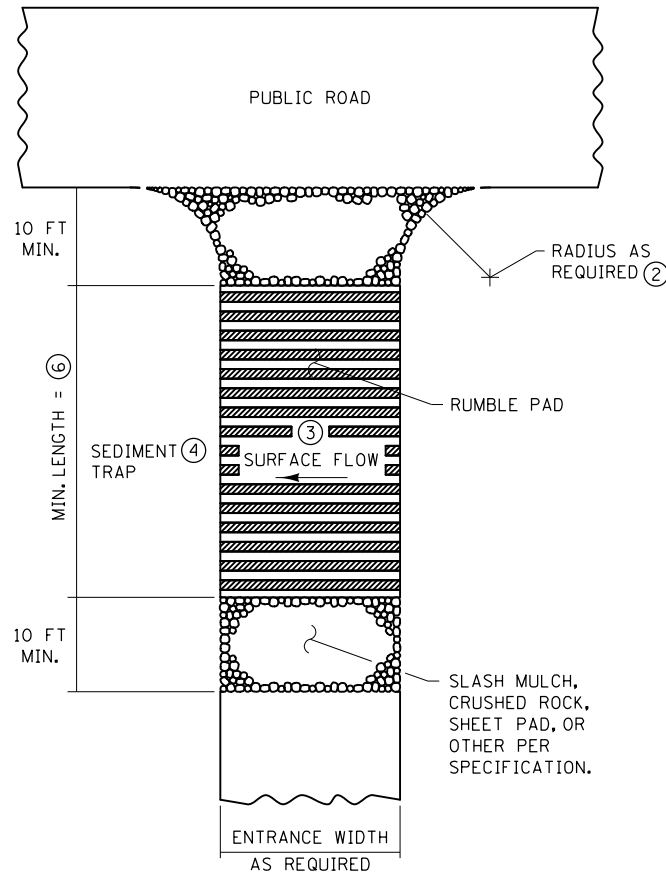
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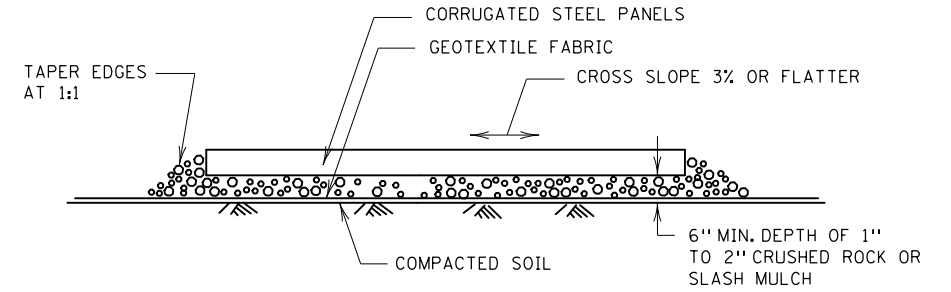
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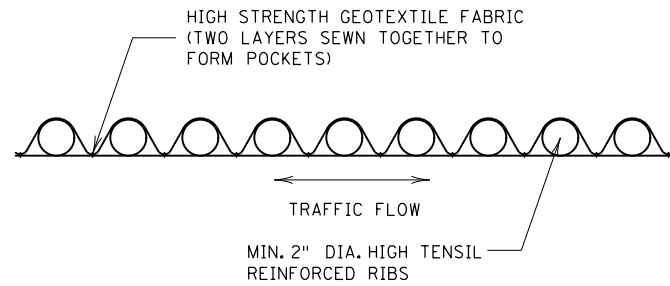
SLASH MULCH, CRUSHED ROCK, OR SHEET
PAD CONSTRUCTION EXIT ⑤⑦



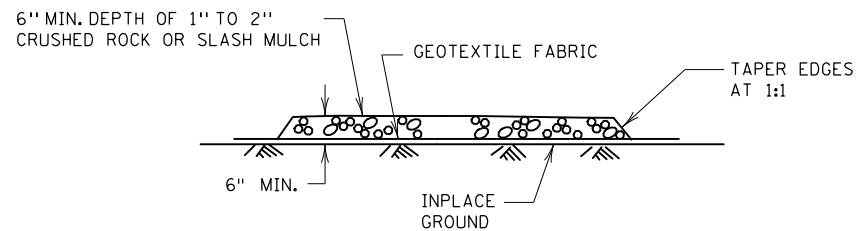
RUMBLE PAD
CONSTRUCTION EXIT ⑤⑦



RUMBLE PAD



SHEET PAD



SLASH MULCH OR CRUSHED ROCK

NOTES:

SEE SPECS. 2573 & 3882.

- ① MINIMUM LENGTH SHALL BE THE GREATER OF 50 FEET OR A LENGTH SUFFICIENT TO ALLOW A MINIMUM OF 5 TIRE ROTATIONS ON THE PROVIDED PAD. MINIMUM LENGTH SHALL BE CALCULATED USING THE LARGEST TIRE WHICH WILL BE USED IN TYPICAL OPERATIONS.
- ② PROVIDE RADIUS OR WIDEN PAD SUFFICIENTLY TO PREVENT VEHICLE TIRES FROM TRACKING OFF OF PAD WHEN LEAVING SITE.
- ③ IF RUNOFF FROM DISTURBED AREAS FLOWS TOWARD CONSTRUCTION EXITS, PREVENT RUNOFF FROM DRAINING DIRECTLY TO PUBLIC ROAD OVER CONSTRUCTION EXIT BY CROWNING THE EXIT OR SLOPING TO ONE SIDE. IF SURFACE GRADING IS INSUFFICIENT, PROVIDE OTHER MEANS OF INTERCEPTING RUNOFF.
- ④ IF RUNOFF FROM CONSTRUCTION EXITS WILL DRAIN OFF OF PROJECT SITE, PROVIDE SEDIMENT TRAP WITH STABILIZED OVERFLOW.
- ⑤ IF A TIRE WASH OFF IS REQUIRED THE CONSTRUCTION EXITS SHALL BE GRADED TO DRAIN THE WASH WATER TO A SEDIMENT TRAP.
- ⑥ MINIMUM LENGTH OF RUMBLE PAD SHALL BE 20 FEET, OR AS REQUIRED TO REMOVE SEDIMENT FROM TIRES. IF SIGNIFICANT SEDIMENT IS TRACKED FROM THE SITE, THE RUMBLE PAD SHALL BE LENGTHENED OR THE DESIGN MODIFIED TO PROVIDE ADDITIONAL VIBRATION. WASH-OFF LENGTH SHALL BE AS REQUIRED TO EFFECTIVELY REMOVE CONSTRUCTION SEDIMENT FROM VEHICLE TIRES.
- ⑦ MAINTENANCE OF CONSTRUCTION EXITS SHALL OCCUR WHEN THE EFFECTIVENESS OF SEDIMENT REMOVAL HAS BEEN REDUCED. MAINTENANCE SHALL CONSIST OF REMOVING SEDIMENT AND CLEANING THE MATERIALS OR PLACING ADDITIONAL MATERIAL (SLASH MULCH OR CRUSHED ROCK) OVER SEDIMENT FILLED MATERIAL TO RESTORE EFFECTIVENESS.



STANDARD PLAN 5-297.405

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APPROVED: 2-28-2017
REVISED:

TEMPORARY SEDIMENT CONTROL
STABILIZED CONSTRUCTION EXIT

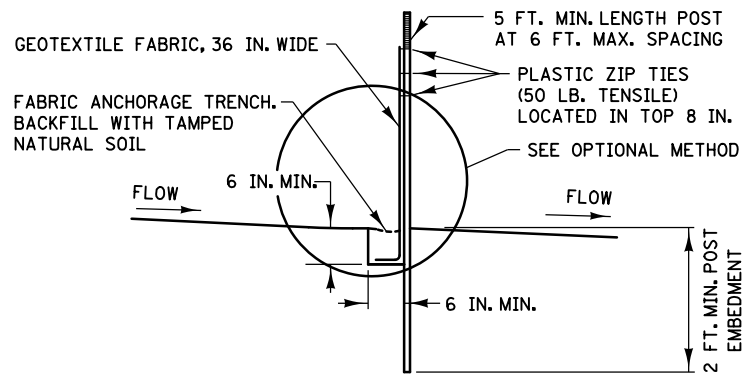
SAP 013-630-021 / SAP 225-591-007

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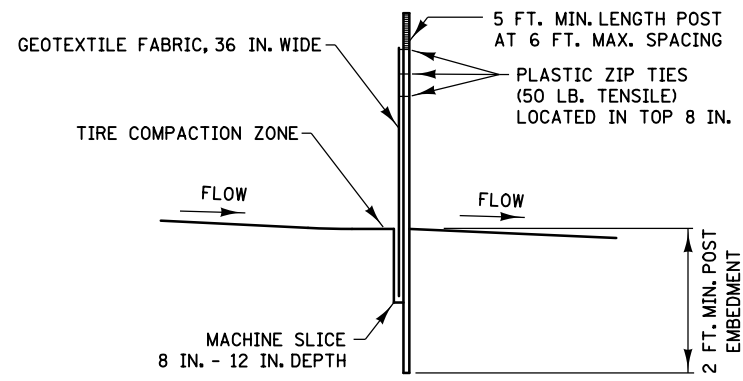
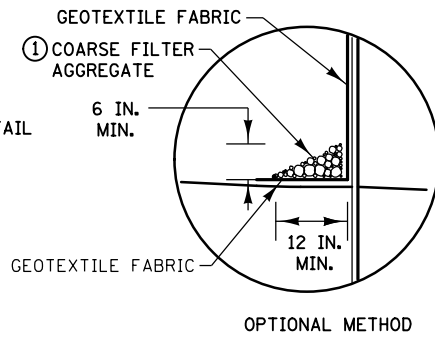
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REVISIONS:
APPROVED: 2-28-2017
[Signature]
CHIEF ENVIRONMENTAL OFFICER

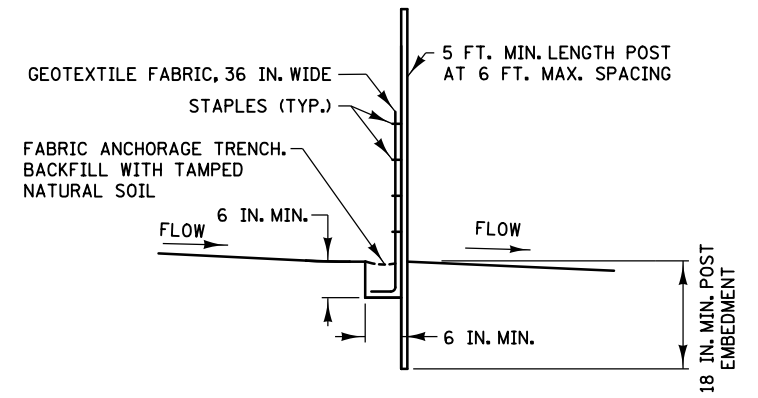
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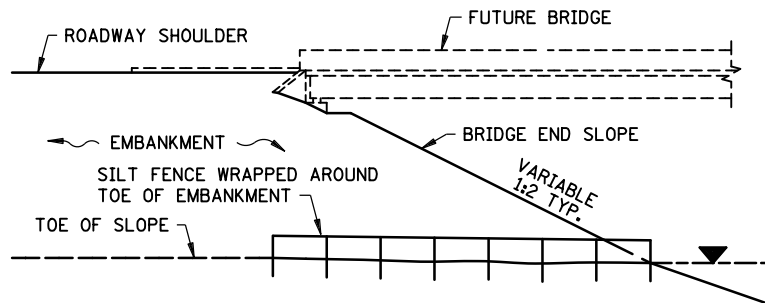
SILT FENCE TYPE HI ②
(HAND INSTALLED)



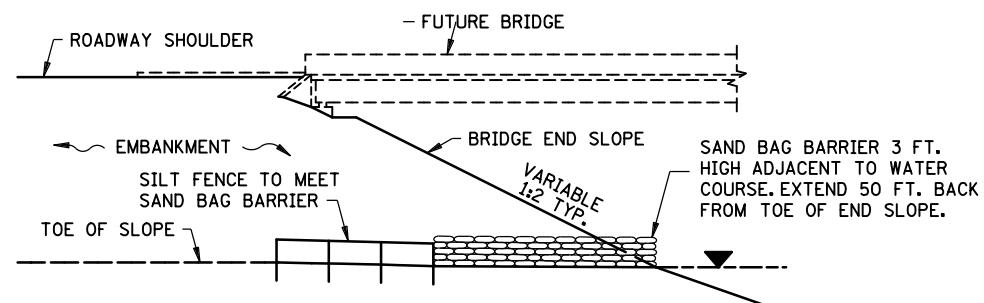
SILT FENCE TYPE MS ②
(MACHINE SLICED)



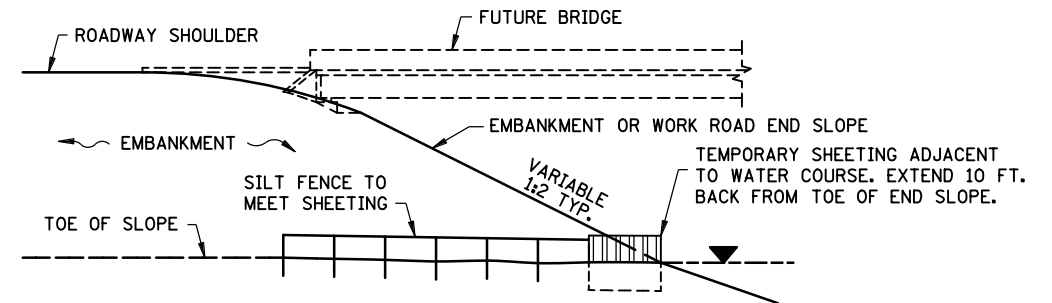
SILT FENCE TYPE PA ③
(PREASSEMBLED)



SILT FENCE ONLY ④

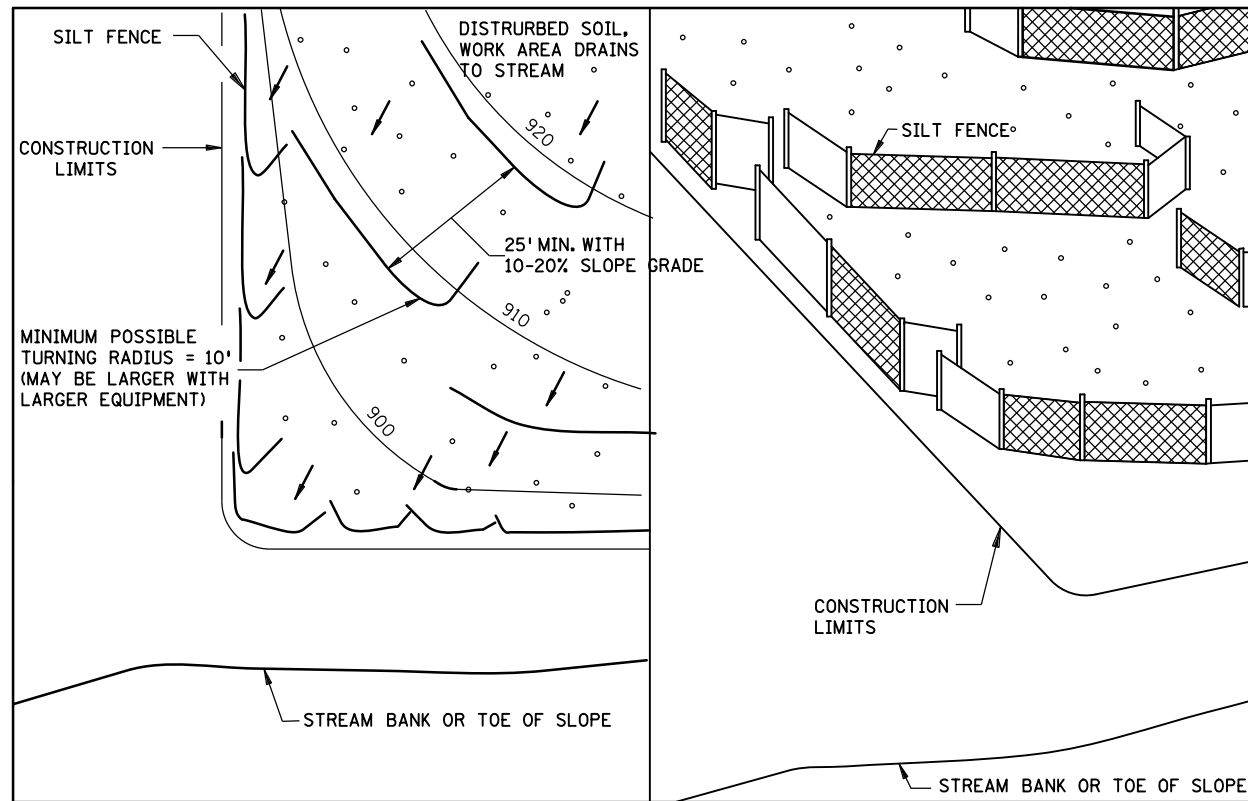


SILT FENCE WITH SAND BAGS ⑤



SILT FENCE WITH SHEETING ⑥

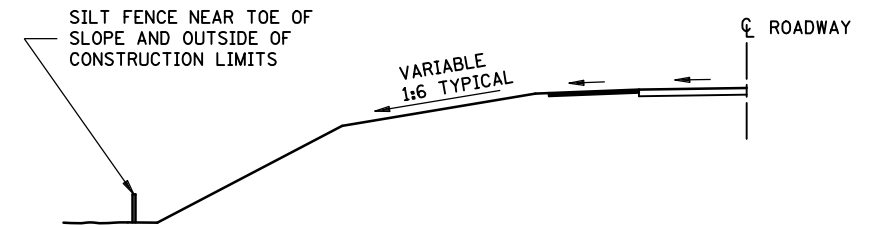
INSTALLATION AT BRIDGE EMBANKMENT ADJACENT TO WATER



PLAN VIEW

PERSPECTIVE VIEW

J-HOOK INSTALLATION

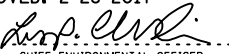


LOCATION AT TOE OF ROADWAY EMBANKMENT

NOTES:

SEE SPECS. 2573, 3149 & 3886.

- ① COARSE FILTER AGGREGATE (SPEC. 3149) SHALL BE INCIDENTAL.
- ② TO PROTECT AREAS FROM SHEET FLOW. MAXIMUM CONTRIBUTING AREA: 1 ACRE.
- ③ TO PROTECT AREAS FROM SHEET FLOW. MAXIMUM CONTRIBUTING AREA: 0.25 ACRE.
- ④ WATER COURSE FLOW VELOCITY: STANDING. CONTRIBUTING SLOPE AREA: 1/2 ACRE.
- ⑤ WATER COURSE FLOW VELOCITY: 1 TO 7 FT./SEC. CONTRIBUTING SLOPE AREA: 1 ACRE.
- ⑥ WATER COURSE FLOW VELOCITY: 8 TO 15 FT./SEC. CONTRIBUTING SLOPE AREA: 3 ACRES.

REVISION:
APPROVED: 2-28-2017
 CHIEF ENVIRONMENTAL OFFICER



STANDARD PLAN 5-297.405

6 OF 8

APPROVED: 2-28-2017
REVISOR:

STATE DESIGN ENGINEER

APPROVED: 2-28-2017
REVISOR:

SAP 013-630-021 / SAP 225-591-007

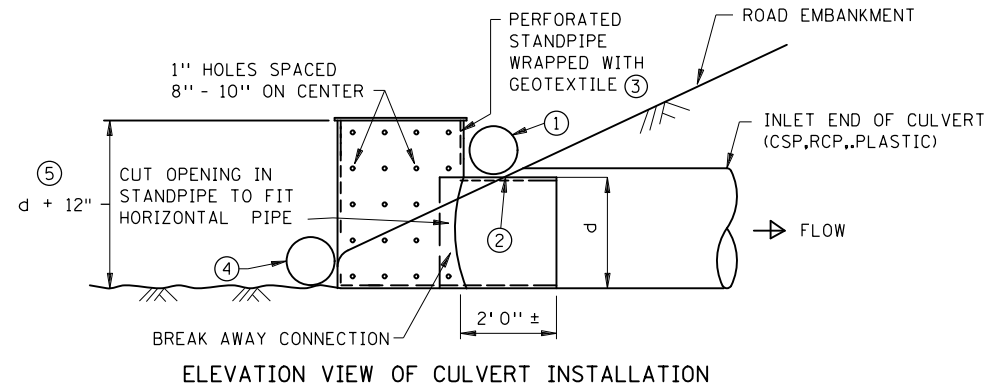
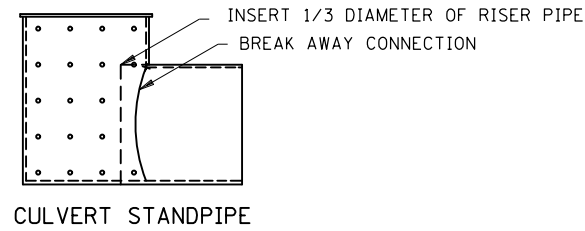
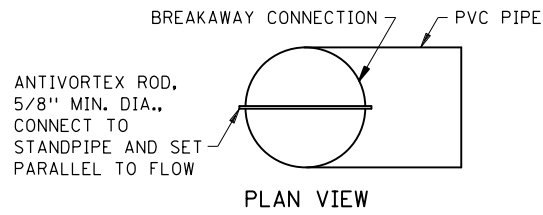
TEMPORARY SEDIMENT CONTROL

SILT FENCE

SHEET NO. 69 OF 216

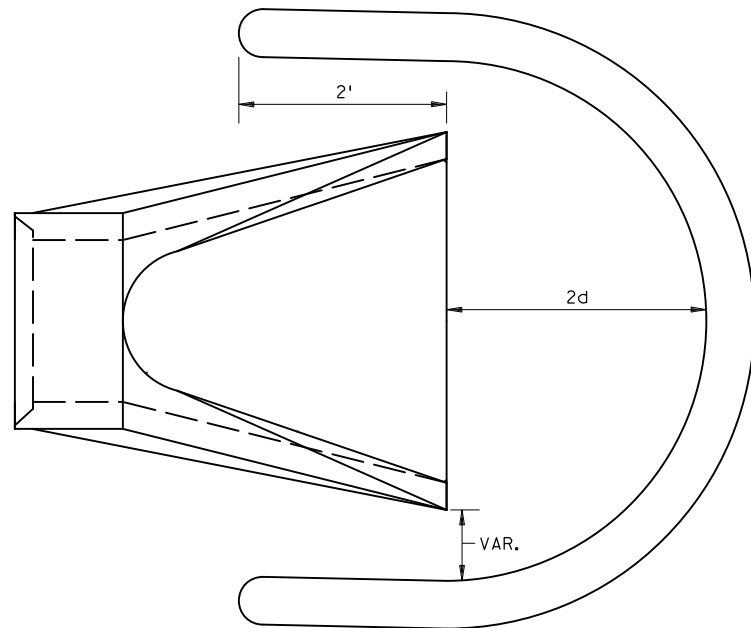
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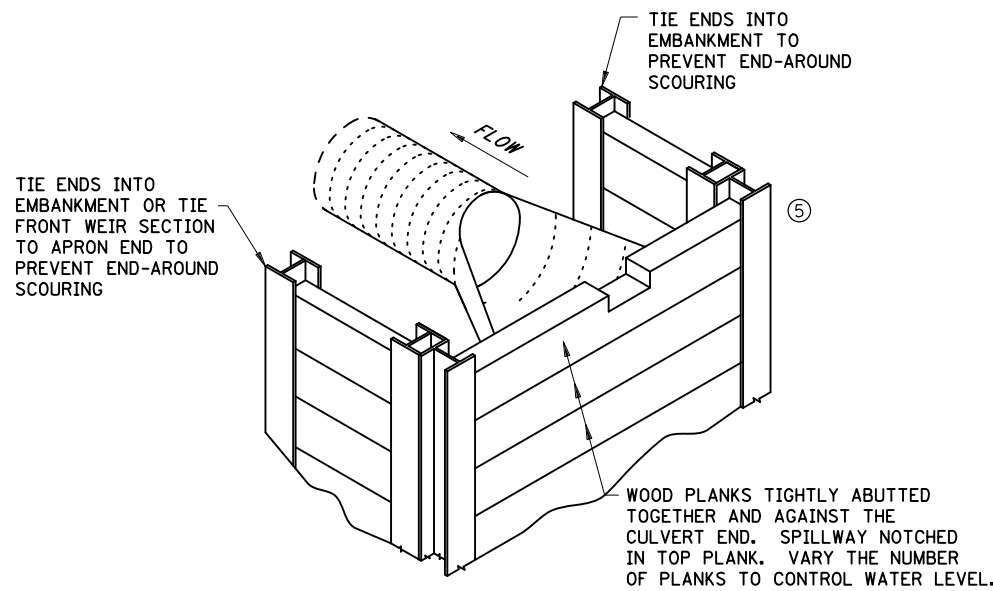
CULVERT STANDPIPE INSERT (D-RISER)

d = CULVERT SIZE: 12" - 36"

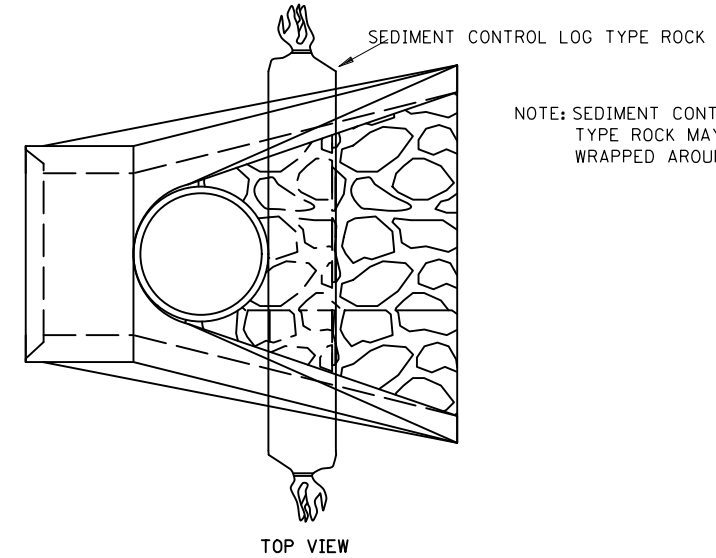
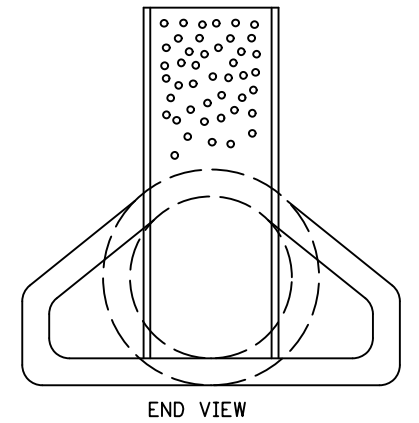
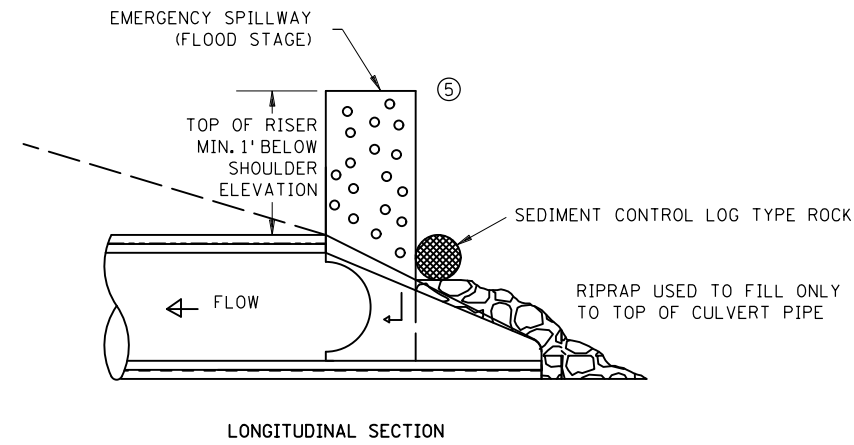


SEDIMENT CONTROL LOG WEIR (COMPOST, WOOD CHIP, OR ROCK)

d = CULVERT SIZE: 12" - 36"



WOOD PLANK WEIR



CULVERT STANDPIPE INSERT (D-RISER)

NOTE: SEDIMENT CONTROL LOG
TYPE ROCK MAY BE
WRAPPED AROUND RISER

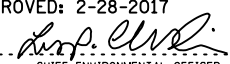
NOTES:

SEE SPECS. 2573, 3891 & 3893.

FOR USE WHEN TEMPORARY PONDING IS NEEDED IN DITCH
SECTIONS FOR SEDIMENT CONTROL.

MANUFACTURED ALTERNATIVES LISTED ON MnDOT'S
APPROVED PRODUCTS LIST MAY BE SUBSTITUTED AT
NO ADDITIONAL COST.

- ① ROCK LOG OR SANDBAG TO HOLD STANDPIPE AND ACT
AS A SEAL BETWEEN RISER PIPE AND CULVERT.
- ② PLACE CULVERT APRON AND SLIDE TEMPORARY STANDPIPE
INTO CSP OR RCP CULVERT.
- ③ ALL GEOTEXTILE USED FOR CULVERT PROTECTION SHALL BE
MONOFILAMENT IN BOTH DIRECTIONS, MEETING SPEC. 3886
FOR MACHINE SLICED.
- ④ ROCK LOG OR RIP RAP TO HOLD STANDPIPE AND ACT
AS A FILTER BETWEEN RISER PIPE AND CULVERT.
- ⑤ HEIGHT OVERFLOW NOT TO CAUSE FLOODING OF ROAD OR
ADJACENT PROPERTIES.

REVISION:
APPROVED: 2-28-2017
 CHIEF ENVIRONMENTAL OFFICER



STANDARD PLAN 5-297.405

8 OF 8


STATE DESIGN ENGINEER

APPROVED: 2-28-2017
REVISED:

SAP 013-630-021 / SAP 225-591-007

TEMPORARY SEDIMENT CONTROL CULVERT END CONTROLS

SHEET NO. 70 OF 216

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DATE: 9/12/2024 TIME: 2:00:51 PM
FILENAME: Projects\Minnesota\023661-000\03_Discipline\Roadway\Sheets\023661-000_spn400-700

CONSTRUCTION SEQUENCE

1. PLACE AND COMPACT 18" OF ~~FINE AGGREGATE BEDDING~~ ^{GRANULAR*} TO THE REQUIREMENTS OF SPEC. 2106.
2. LOOSELY PLACE 6" OF ~~FINE AGGREGATE BEDDING MATERIAL~~ ^{GRANULAR*} (SPEC. 3149.2.G.1) TO GRADE. DO NOT COMPACT PRIOR TO PIPE PLACEMENT.
3. FOR PIPES WITH BELL, REMOVE MATERIAL IN BELL AREA PRIOR TO PLACEMENT.
4. FURNISH AND INSTALL PIPE TO GRADE.
5. AFTER PLACEMENT OF THE PIPE, PLACE ADDITIONAL BEDDING AND COMPACT THE FULL LENGTH ON BOTH SIDES OF THE PIPE UNDERNEATH THE HAUNCH AREA BY FIRST SHOVEL SLICING (MANUALLY SHOVEL THE BLADE END OF A SHOVEL AT AN ANGLE DOWN THE ENTIRE LENGTH OF THE PIPE IN THE HAUNCH AREA) THEN COMPACT THE HAUNCH AT AN ANGLE USING A POWERED MECHANICAL OR PNEUMATIC DEVICE (I.E. POLE TAMPER, JUMPING JACK, OR SIMILAR).
6. COMPACT THE REMAINING MATERIAL OUTSIDE THE HAUNCH AREA TO THE REQUIREMENTS OF SPEC. 2106 ENSURING THAT THE ENTIRE LENGTH OF PIPE IS SUPPORTED UNIFORMLY BY BEDDING.
7. PLACE AND COMPACT BACKFILL EVENLY AND SIMULTANEOUSLY IN 6" LIFTS ON EACH SIDE OF THE PIPE UP TO THE SPRINGLINE WHEN COMPACTED.
8. COMPLETE REMAINING BACKFILL.

REVISION:
APPROVED: JANUARY 18, 2019
Kevin Weston
STATE BRIDGE 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.

SIGNED *Nicholas E. Hentges*
LICENSED PROFESSIONAL ENGINEER
NAME: NICHOLAS E. HENTGES, PE

DATE 9/12/2024
LIC NO. 44620



STANDARD PLAN 5-297.441

1 OF 1

Rom
STATE DESIGN ENGINEER

APPROVED: 01-18-2019
REVISED:

SAP 013-630-021 / SAP 225-591-007

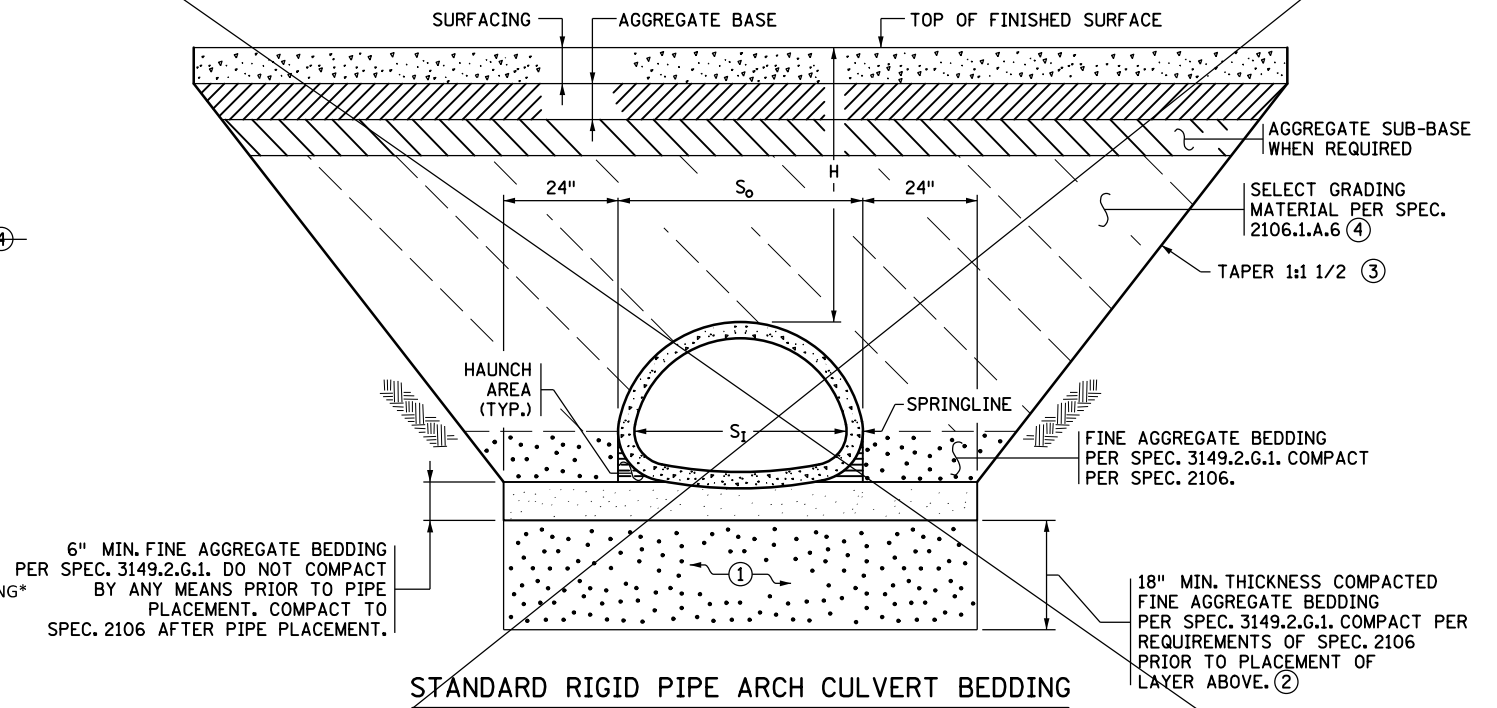
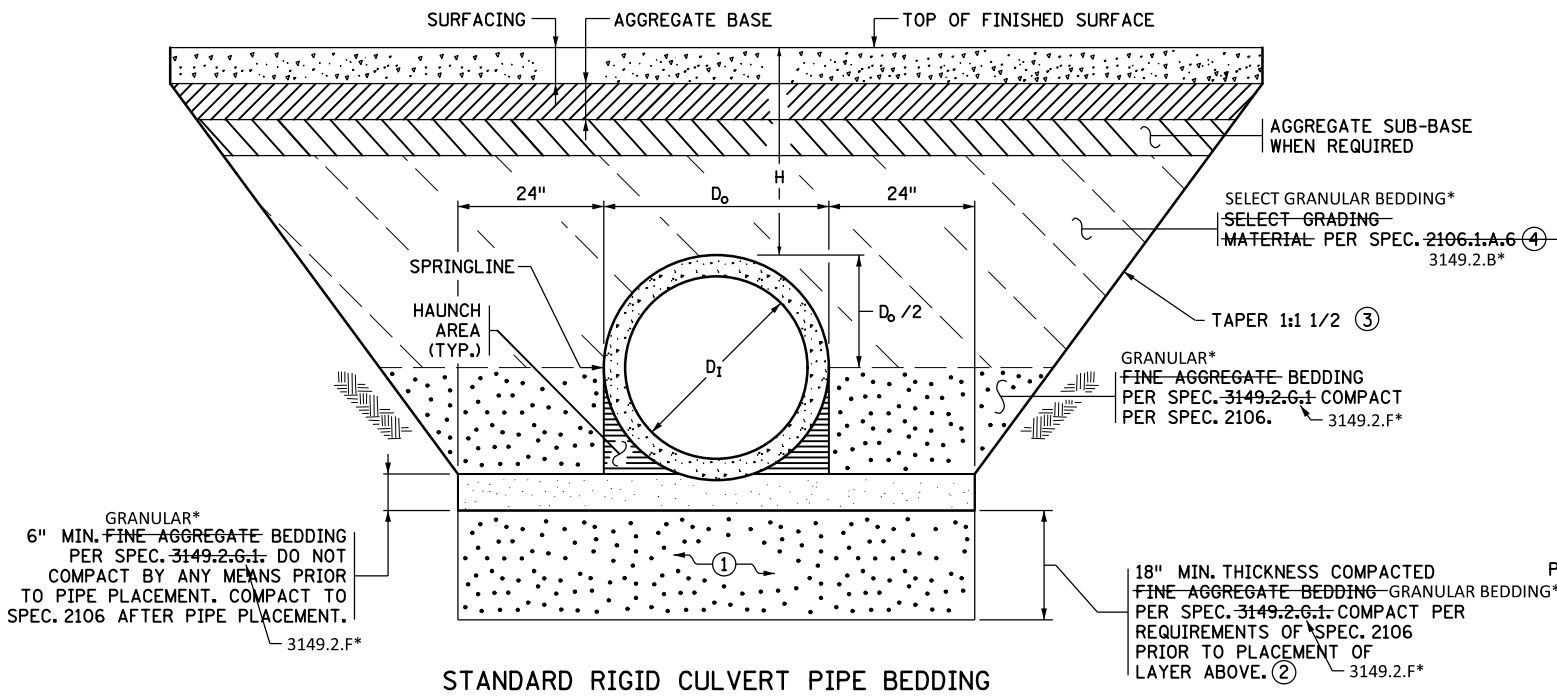
STANDARD CULVERT BEDDING FOR RIGID PIPE
(WITHOUT TREATMENTS)

SHEET NO. 71 OF 216

Page 158 of 405

-LEGEND-

- D_1 = INSIDE DIAMETER OF ROUND PIPE (INCHES).
 D_o = OUTSIDE DIAMETER OF ROUND PIPE (INCHES).
 S_1 = INSIDE SPAN OF PIPE-ARCH (INCHES).
 S_o = OUTSIDE SPAN OF PIPE-ARCH (INCHES).
 H = FILL COVER HEIGHT OVER PIPE (FEET).
- = UNDISTURBED SOIL
 = COMPACTED BEDDING
 = LOOSE BEDDING, COMPACTED AFTER PIPE PLACEMENT



NOTES

STANDARD BEDDING FOR RIGID PIPE CULVERTS WITHOUT TREATMENTS.

RIGID PIPE INCLUDES CONCRETE.

ENTRANCE CULVERTS (FIELD AND DRIVEWAY CULVERTS) DO NOT NEED BEDDING UNLESS SPECIFIED IN THE PLANS OR SPECIAL PROVISIONS.

UNLESS OTHERWISE NOTED IN THE PLAN, BEDDING QUANTITIES ARE COMPUTED FOR THE FULL LENGTH OF THE PIPE AND APRON, AND WILL NOT BE ADJUSTED FOR CHANGES TO MEET OSHA REQUIREMENTS.

WHEN RIPRAP IS REQUIRED AT THE APRON END, SEE STANDARD PLATE OR PLAN FOR RIPRAP INSTALLATION AND QUANTITIES. FOR APRONS WITHOUT RIPRAP PLACE 6" MIN. FINE AGGREGATE BEDDING UNDER APRONS. USE A TRENCH WIDTH EQUAL TO THE PIPE TRENCH WIDTH.

CONTRACT PAY ITEM FOR FINE AGGREGATE BEDDING INCLUDES THE COST OF EXCAVATION, PLACEMENT AND COMPACTION.

EXCAVATION AND BACKFILL WITH SELECT GRADING MATERIAL ARE NOT TABULATED SEPARATELY BUT ARE INCLUDED IN THE CONTRACT UNIT PRICE OF THE RELEVANT CULVERT PAY ITEM.

EXCAVATE & CONSTRUCT ALL TRENCHES AND SLOPES PER OSHA REQUIREMENTS.

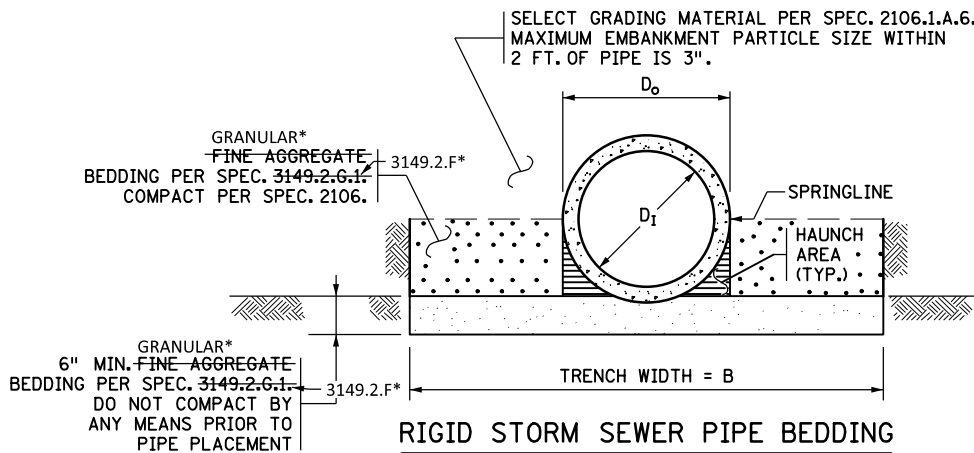
ALL SLOPES SHOWN AS (V):(H).

PIPE SIZE IS BASED ON THE NOMINAL INSIDE DIAMETER OR SPAN.

PROTECT ALL PIPE DURING CONSTRUCTION PER SPEC. 2501.

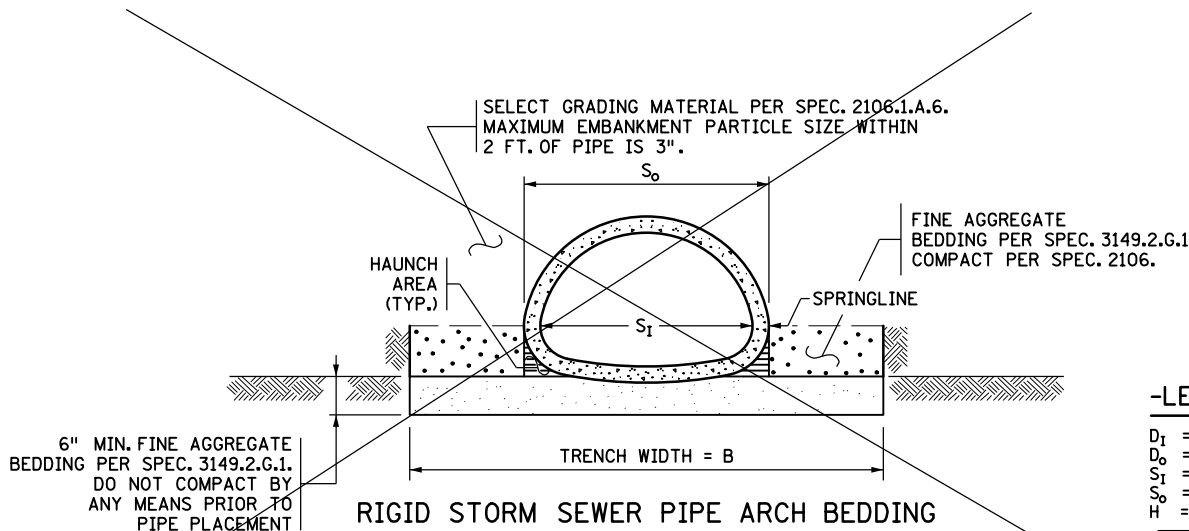
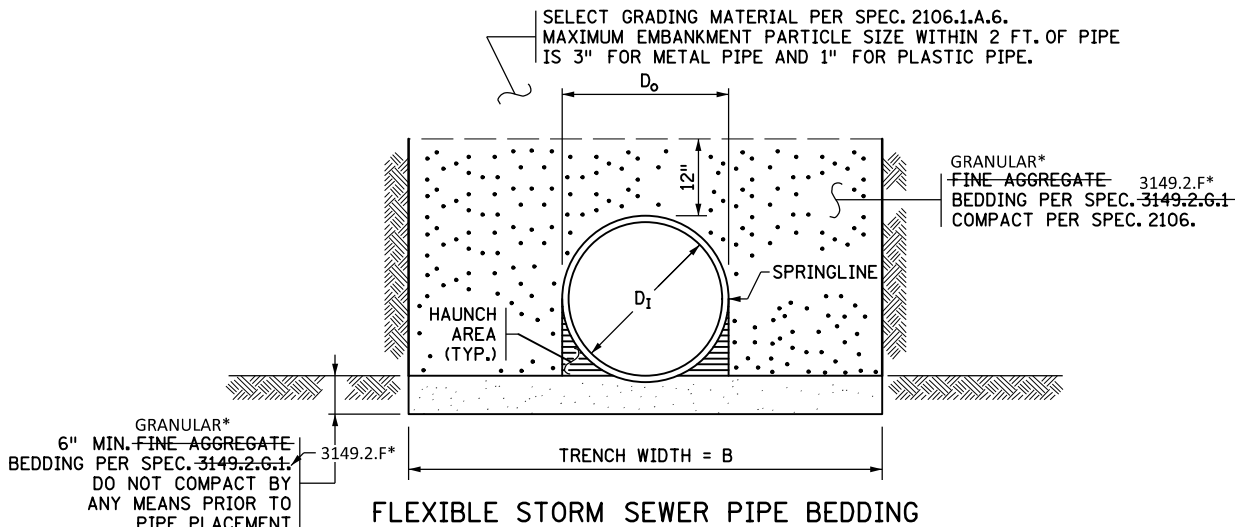
PLACE MULTIPLE PIPE CULVERTS WITH A CLEARANCE OF 24 INCHES OR GREATER BETWEEN STRINGS OF PIPE.

- ① IF APPROVED BY THE ENGINEER, IN WET CONDITIONS THE CONTRACTOR MAY SUBSTITUTE 18" OF COARSE FILTER AGGREGATE PER SPEC. 3149.2.H COMPACTED TO THE QUALITY COMPACTION REQUIREMENTS OF SPEC. 2106. WRAP WITH GEOTEXTILE FABRIC TYPE IV PER SPEC. 3733. SEAM ALL FABRIC SIDES AND ENDS PER SPEC. TABLE 3733-1 INCLUDING FOOTNOTE (e) OR OVERLAP A MINIMUM OF 3 FT., ALL AT NO ADDITIONAL COST. ALL WORK AND MATERIAL SHALL BE INCLUDED PER PAY ITEM "COARSE AGGREGATE BEDDING (CY)".*
- ② FOR INSTALLATIONS ON INTACT BEDROCK, OMIT THIS LAYER.
- ③ OVER-EXCAVATION BENEATH TAPERS IS NOT PERMITTED UNLESS REQUIRED BY OSHA. (TYP.)
- ④ MAXIMUM EMBANKMENT PARTICLE SIZE WITHIN 2 FT. OF RIGID PIPE IS 3".



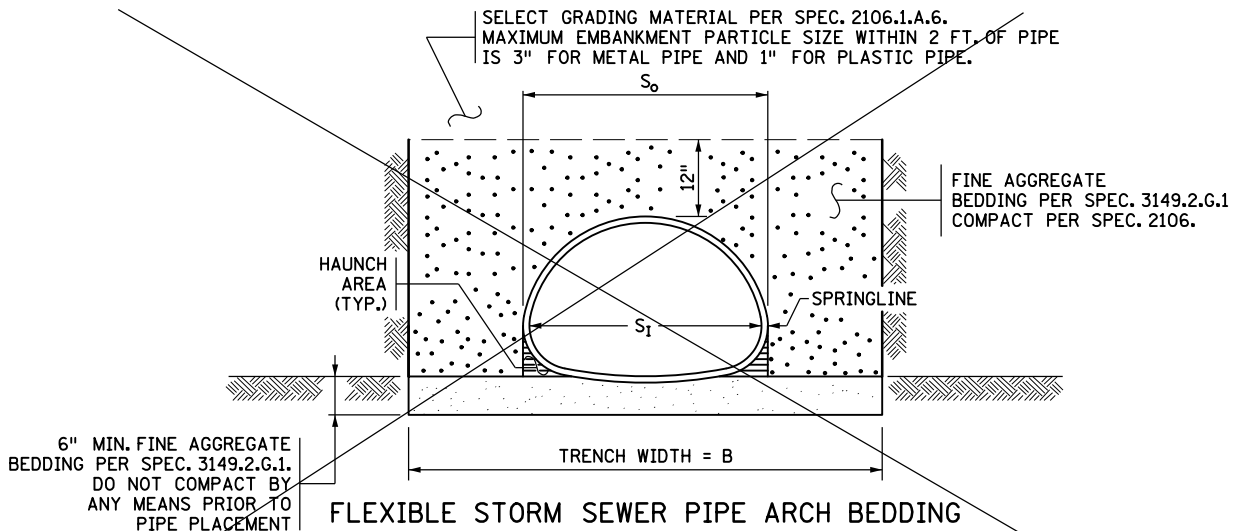
TRENCH BASE WIDTH ①②	
PIPE DIA. D_1 OR S_1	TRENCH WIDTH B
< 42"	$D_0 + 24"$
42" TO 54"	$1.5 \times D_0$
> 54"	$D_0 + 36"$

PLASTIC PIPE WITH H > 10 FT. ①②	
PIPE DIA.	TRENCH WIDTH (FEET)
12"	5'-2"
15"	5'-6"
18"	5'-9"
24"	6'-6"
30"	8'-0"
36"	9'-6"
42"	11'-0"
48"	12'-6"



-LEGEND-

- D_1 = INSIDE DIAMETER OF ROUND PIPE (INCHES).
 D_0 = OUTSIDE DIAMETER OF ROUND PIPE (INCHES).
 S_1 = INSIDE SPAN OF PIPE-ARCH (INCHES).
 S_0 = OUTSIDE SPAN OF PIPE-ARCH (INCHES).
 H = FILL COVER HEIGHT OVER PIPE (FEET).
 = UNDISTURBED SOIL
 = COMPACTED BEDDING
 = LOOSE BEDDING, COMPACTED AFTER PIPE PLACEMENT



CONSTRUCTION SEQUENCE

1. LOOSELY PLACE 6" OF ~~FINE AGGREGATE~~ ^{GRANULAR*} BEDDING MATERIAL TO GRADE. DO NOT COMPACT PRIOR TO PIPE PLACEMENT.
2. FOR PIPES WITH BELL, REMOVE MATERIAL IN BELL AREA PRIOR TO PLACEMENT.
3. FURNISH AND INSTALL PIPE TO GRADE.
4. AFTER PLACEMENT OF THE PIPE, PLACE ADDITIONAL ~~FINE AGGREGATE~~ ^{GRANULAR*} BEDDING AND COMPACT THE FULL LENGTH ON BOTH SIDES OF THE PIPE UNDERNEATH THE HAUNCH AREA BY FIRST SHOVEL SLICING (MANUALLY SHOVE THE BLADE END OF SHOVEL AT AN ANGLE DOWN THE ENTIRE LENGTH OF HAUNCH UNDER THE PIPE). THEN COMPACT THE HAUNCH AT AN ANGLE USING A POWERED MECHANICAL OR PNEUMATIC DEVICE (I.E. POLE TAMPER, JUMPING JACK, OR SIMILAR).
5. COMPACT THE REMAINING MATERIAL OUTSIDE THE HAUNCH AREA TO THE REQUIREMENTS OF SPEC. 2106 ENSURING THAT THE ENTIRE LENGTH OF PIPE IS SUPPORTED UNIFORMLY BY BEDDING.
6. PLACE AND COMPACT BACKFILL EVENLY AND SIMULTANEOUSLY IN 6" LIFTS ON EACH SIDE OF THE PIPE UP TO THE SPRINGLINE FOR RIGID PIPE AND 12" ABOVE THE TOP OF THE PIPE FOR FLEXIBLE PIPE WHEN COMPACTED.
7. COMPLETE REMAINING BACKFILL.

NOTES

- EXCAVATE & CONSTRUCT ALL TRENCHES AND SLOPES PER OSHA REQUIREMENTS.
- PIPE SIZE IS BASED ON THE NOMINAL INSIDE DIAMETER OR SPAN.
- PROTECT ALL PIPE DURING CONSTRUCTION PER SPEC. 2503.
- WHEN RIPRAP IS REQUIRED AT THE APRON END, SEE STANDARD PLATE OR PLAN FOR RIPRAP INSTALLATION AND QUANTITIES. FOR APRONS WITHOUT RIPRAP PLACE 6" MIN. FINE AGGREGATE BEDDING UNDER APRONS. USE A TRENCH WIDTH EQUAL TO THE PIPE TRENCH WIDTH.
- ~~GRANULAR*~~ ~~FINE AGGREGATE~~ BEDDING INCLUDING THE COST OF EXCAVATION, PLACEMENT AND COMPACTION IS INCLUDED IN THE CONTRACT UNIT PRICE OF THE RELEVANT STORM SEWER PAY ITEM.
- EXCAVATION AND BACKFILL WITH SELECT GRADING MATERIAL ARE NOT TABULATED SEPARATELY BUT ARE INCLUDED IN THE CONTRACT UNIT PRICE OF THE RELEVANT STORM SEWER PAY ITEM.
- RIGID PIPE INCLUDES CONCRETE. FLEXIBLE PIPE INCLUDES METAL, AND PLASTIC MATERIALS SUCH AS CORRUGATED POLYPROPYLENE (PP), CORRUGATED POLYETHYLENE (CP) AND POLYVINYL CHLORIDE (PVC).
- ① MODIFY TRENCH WIDTH & SLOPE AS NECESSARY TO COMPLY WITH OSHA REQUIREMENTS.
- ② USE PLASTIC PIPE TABLE FOR TRENCH WIDTHS WHEN FILL HEIGHT IS GREATER THAN 10 FT.

DATE: 9/12/2024

FILENAME: Projects\Minneapolis\Standard Plans\Standard Storm Sewer Bedding\Standard Storm Sewer Bedding.dwg

REVISION:
APPROVED: JANUARY 18, 2019
<i>Kevin Weston</i>
STATE BRIDGE 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.

SIGNED *Nicholas E. Hentges*
LICENSED PROFESSIONAL ENGINEER
NAME: NICHOLAS E. HENTGES, PE

DATE 9/12/2024
LIC NO. 44620



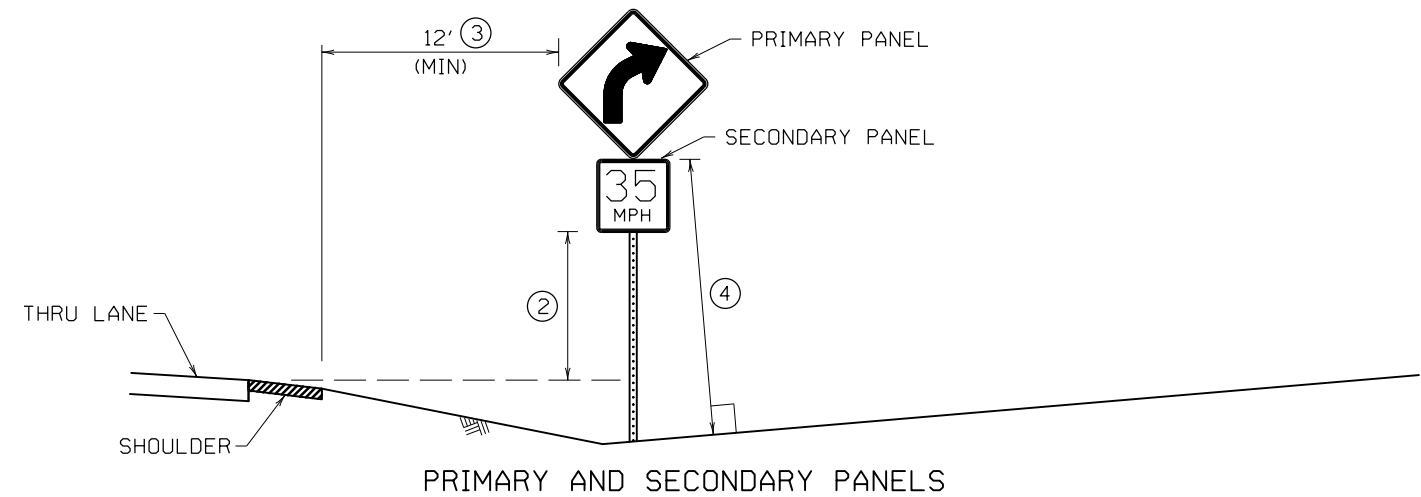
STANDARD PLAN 5-297.442	1 OF 1
APPROVED: 01-18-2019	REVISED:
<i>Rom Sgh</i>	
STATE DESIGN ENGINEER	

SAP 013-630-021 / SAP 225-591-007

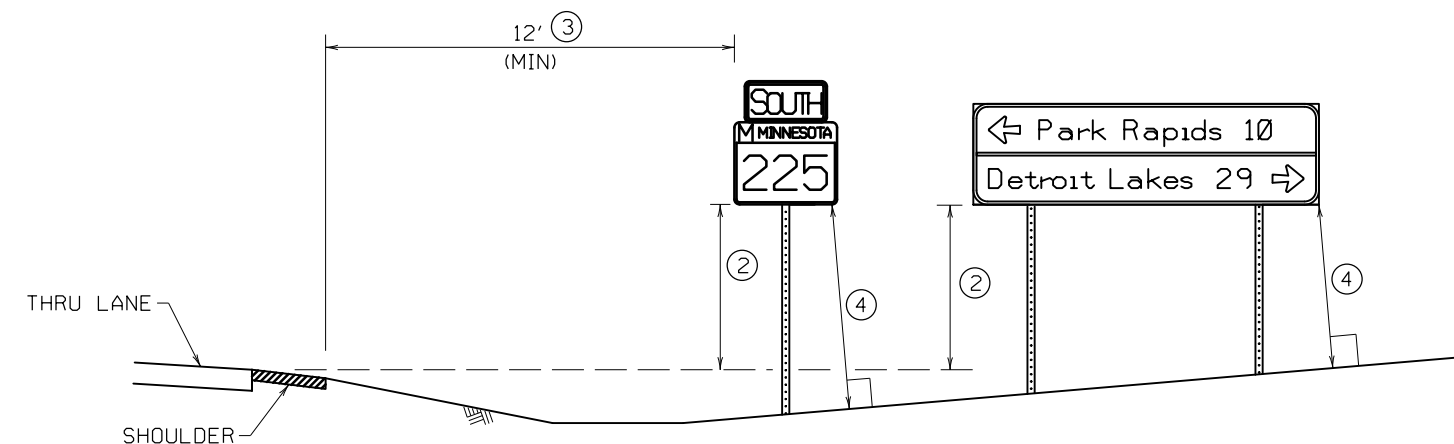
STANDARD STORM SEWER BEDDING
FOR RIGID AND FLEXIBLE PIPE

SHEET NO. 72 OF 216

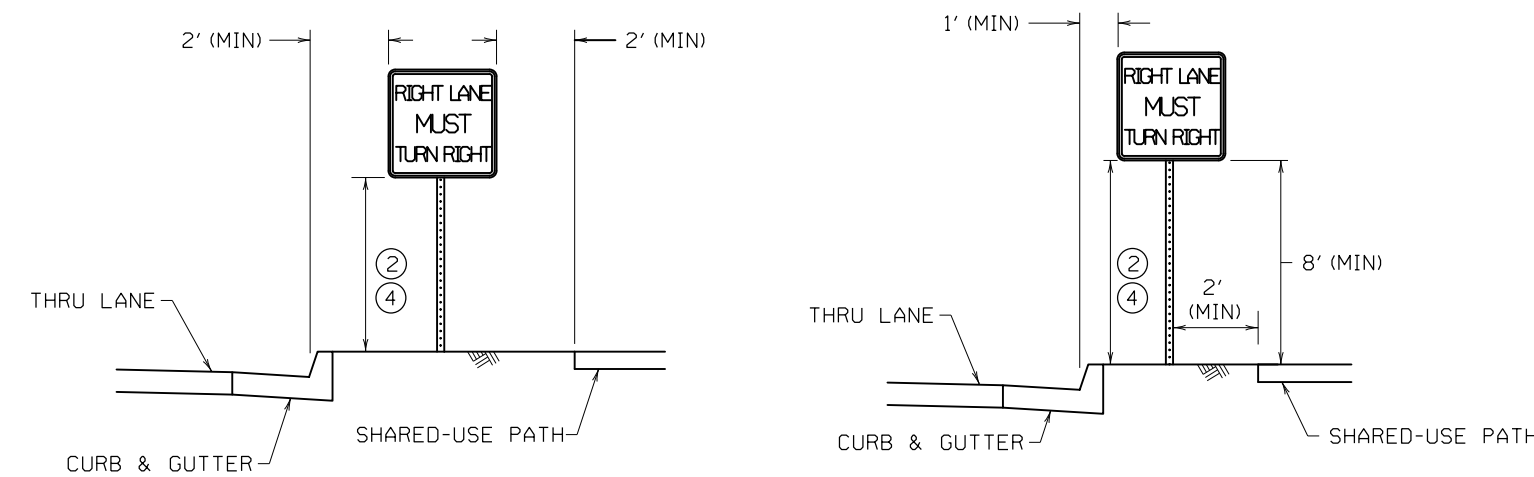
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PRIMARY AND SECONDARY PANELS

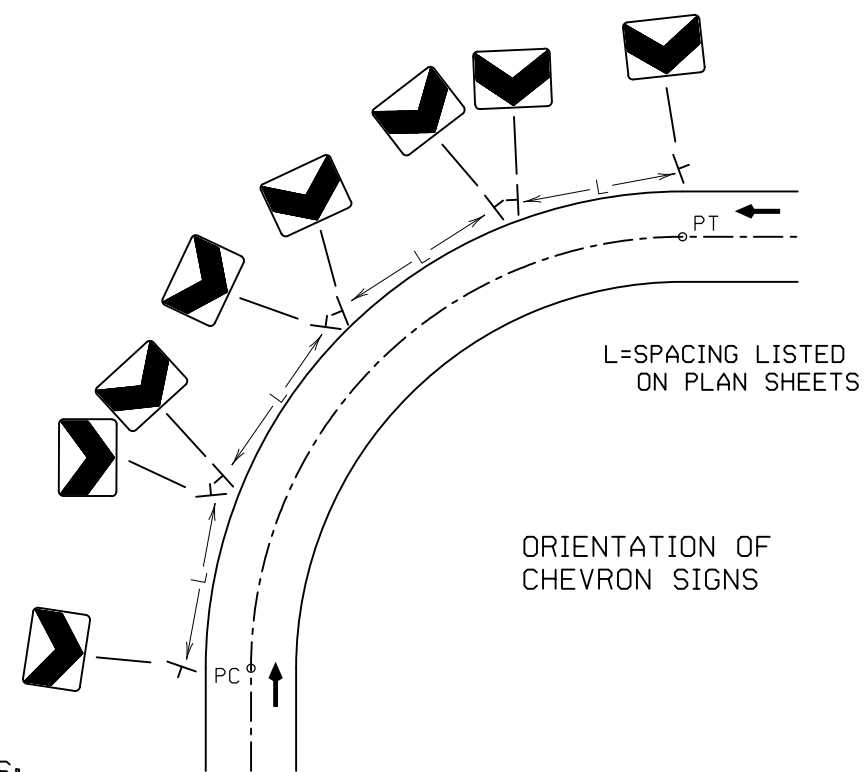


STANDARD LOCATIONS



BOULEVARD LOCATIONS
6' TO 12' WIDE

BOULEVARD LOCATIONS ①
LESS THAN 6' WIDE



ORIENTATION OF
CHEVRON SIGNS

NOTES:

PLACE SIGNS AND ORIENT THEM APPROXIMATELY AS SHOWN IN THE PLAN, AT RIGHT ANGLES TO THE DIRECTION OF, AND FACING THE TRAFFIC THEY ARE INTENDED TO SERVE, UNLESS OTHERWISE SPECIFIED. TO AVOID SPECULAR GLARE, TURN SIGNS APPROXIMATELY THREE DEGREES AWAY FROM APPROACHING TRAFFIC.

IF A SIGN NEEDS TO BE REPOSITIONED FROM THE PROPOSED PLAN LOCATION IN ORDER TO AVOID CONFLICTS WITH UTILITIES OR OBSTACLES, CONTACT THE PROJECT ENGINEER.

MOUNT SIGN FACES PLUMB.

LATERAL CLEARANCES GIVEN APPLY TO RIGHT AND/OR LEFT SIDE INSTALLATION.

ERECT OR CONSTRUCT SIGN SUPPORT SO THAT NO PORTION OF THE SIGN PANEL IS WITHIN 15' OF THE RAIL OF A RAILROAD TRACK.

PLACE SIGNS SUCH THAT OBSTACLES DO NOT BLOCK THEM FROM BEING VIEWED BY THE APPROACHING TRAFFIC.

PLACE SIGNS A MINIMUM OF 10' FROM THE NEAREST OBSTACLE. OBSTACLES MAY INCLUDE, BUT ARE NOT LIMITED TO, LIGHT POLES, TREES, SIGNS, AND BUILDINGS. SIGNS MAY BE PLACED CLOSER TO SIGNS IN TIGHT AREAS, BUT NO MORE THAN TWO POSTS IN A 7' DIAMETER CIRCLE.

AVOID PLACING SIGNS IN DITCH BOTTOMS.

- ① ONLY USE WHEN BOULEVARD IS TOO NARROW TO OBTAIN ADEQUATE CURBED LOCATION SIGN OFFSETS.
- ② ALL SIGN MOUNTING HEIGHTS ARE MEASURED VERTICALLY FROM THE BOTTOM OF THE LOWEST SIGN PANEL TO THE TOP OF THE CURB, OR IN ABSENCE OF CURB, TO THE NEAR EDGE OF THE THRU-LANE PAVEMENT. SEE SIGN TABULATIONS.
- ③ MINIMUM OFFSET MAY BE REDUCED TO AT LEAST 6' FROM SHOULDER AND AT LEAST 12' FROM THRU LANE IF SITE CONDITIONS PROHIBIT A 12' OFFSET FROM SHOULDER.
- ④ CRASHWORTHY HEIGHT IS AT LEAST 7' FOR BREAKAWAY STRUCTURES AND AT LEAST 4' FOR BENDABLE STRUCTURES. SEE SPECIFIC SQUARE TUBE BASE STRUCTURE PLAN FOR CRASH RESPONSE TYPE. THE CRASHWORTHY HEIGHT IS MEASURED TO THE BOTTOM OF THE PRIMARY SIGN PANEL EXCLUDING ANY SECONDARY SIGN PANELS, MARKERS, DELINEATORS, AND REFERENCE LOCATION SIGN PANELS. ANY SECONDARY SIGN PANELS MOUNTED TO MORE THAN ONE POST ARE CONSIDERED PRIMARY SIGN PANELS FOR CRASHWORTHY PURPOSES.

LEAD
EXPERT
OFFICE

BRIAN SORENSON
STATE TRAFFIC ENGINEER
OFFICE OF TRAFFIC ENGINEERING

STANDARD SIGN PLACEMENT

APPROVED: 08-09-2023
REVISED:

THOMAS STYRBICKI
STATE DESIGN ENGINEER

STANDARD
PLAN
5-297.701

1 OF 1

SAP 013-630-021 / SAP 225-591-007

SHEET NO. 73 OF 216

DATE: 9/12/2024 TIME: 2:01:23 PM
FILENAME: Invalid expression

LEAD
EXPERT
OFFICE

BRIAN SORENSON
STATE TRAFFIC ENGINEER
OFFICE OF TRAFFIC ENGINEERING

DELINEATOR AND MARKER PLACEMENT

APPROVED: 06-04-2024
REVISED:

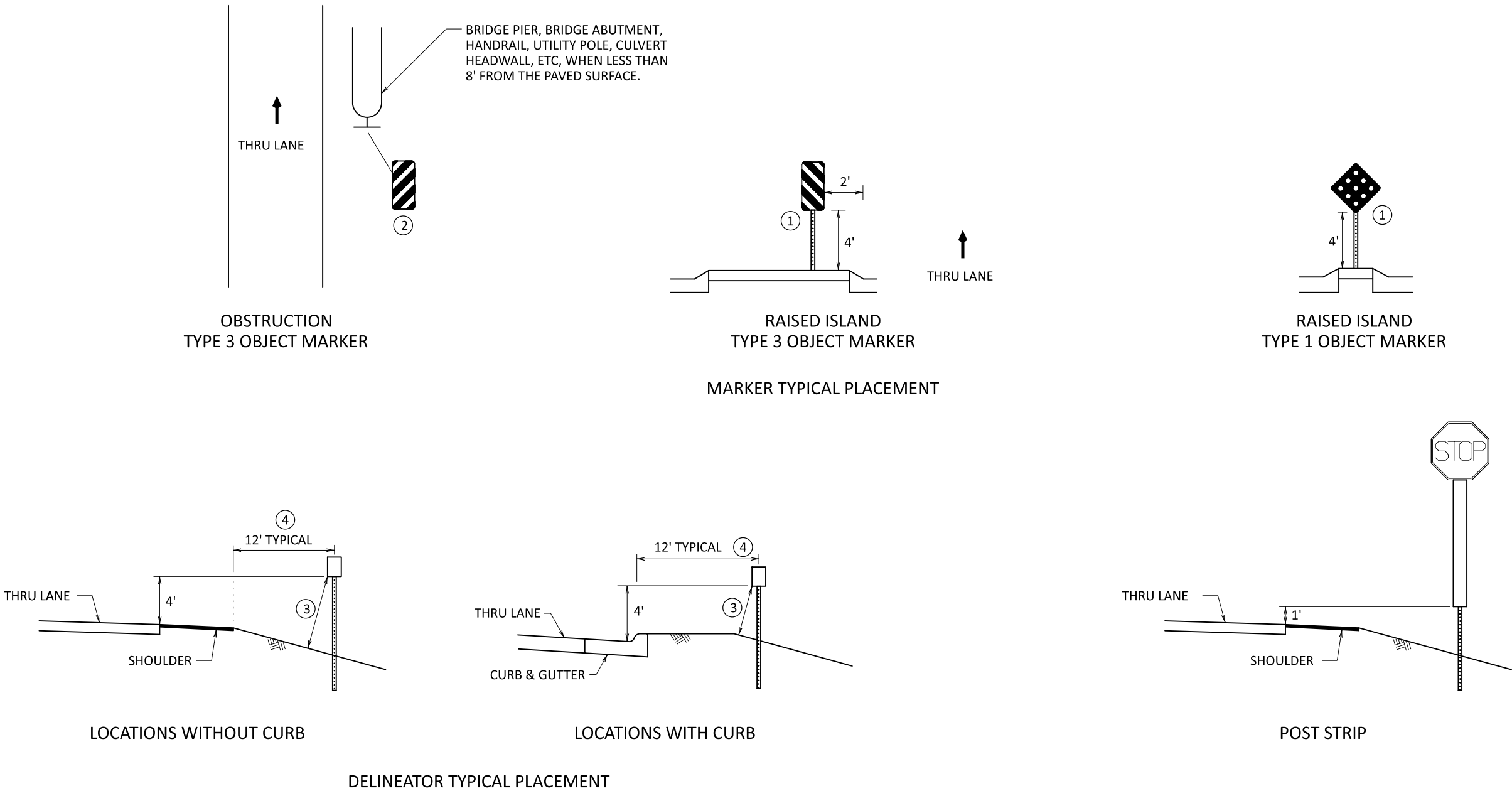

THOMAS STYRBICKI
STATE DESIGN ENGINEER

STANDARD
PLAN
5-297.702

1 OF 1

SAP 013-630-021 / SAP 225-591-007

SHEET NO. 74 OF 216



DATE: 9/12/2024
TIME: 2:01:24 PM
FILENAME: Invalid expression

LEAD EXPERT OFFICE
BRIAN SORENSON
STATE TRAFFIC ENGINEER
OFFICE OF TRAFFIC ENGINEERING

SQUARE-TUBE SIGN MOUNTING DETAILS

APPROVED: 08-09-2023
REVISED:

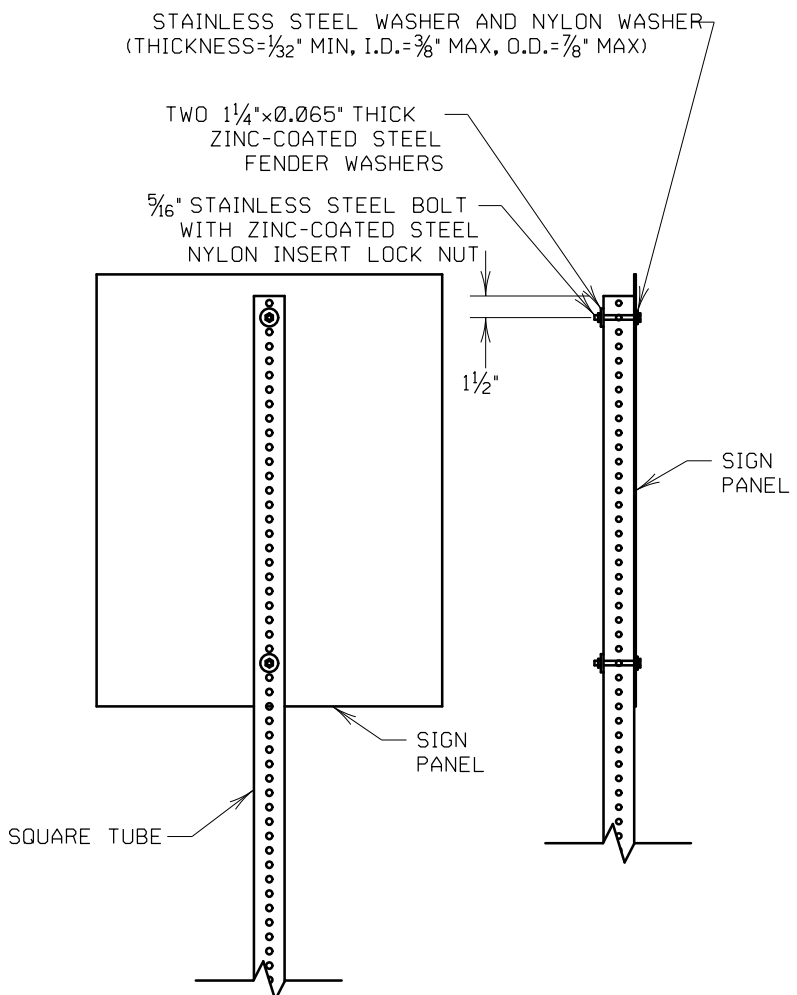
THOMAS STYRBICKI
STATE DESIGN ENGINEER

STANDARD PLAN
5-297.718

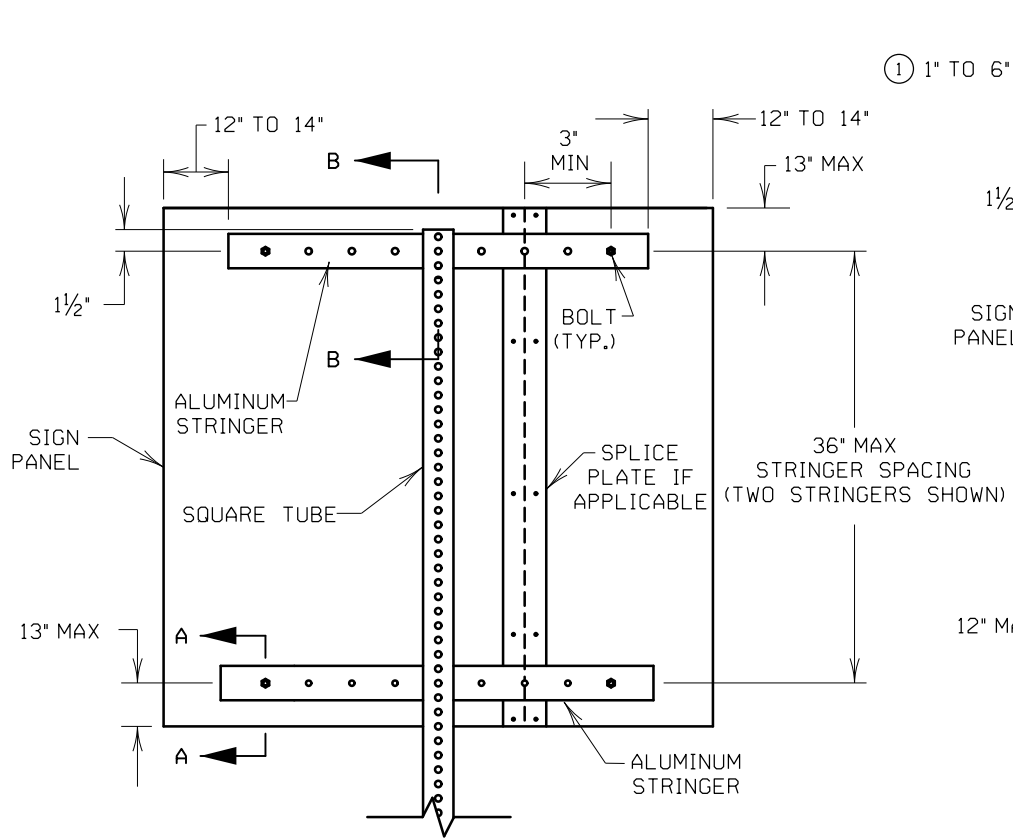
1 OF 3

SAP 013-630-021 / SAP 225-591-007

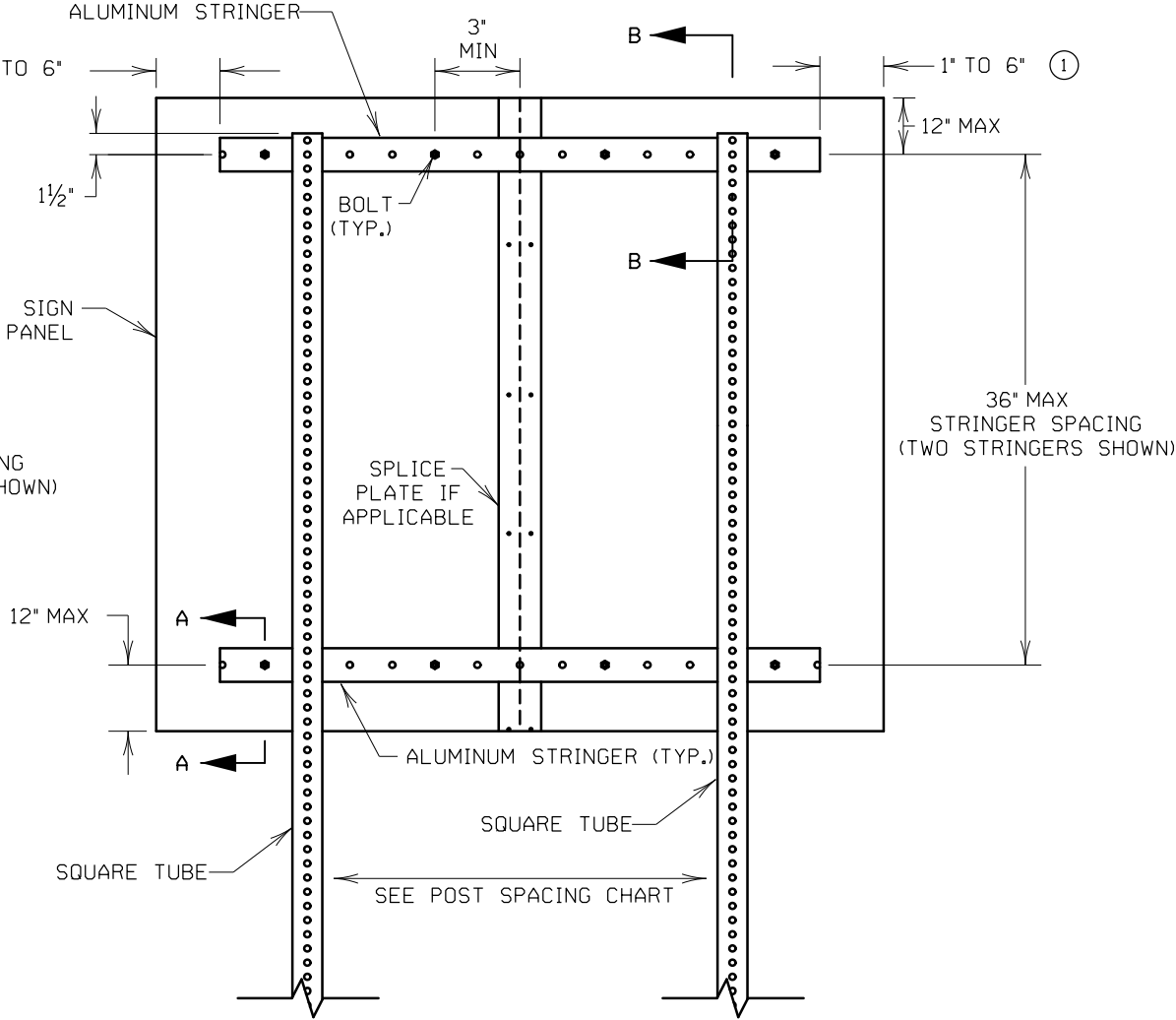
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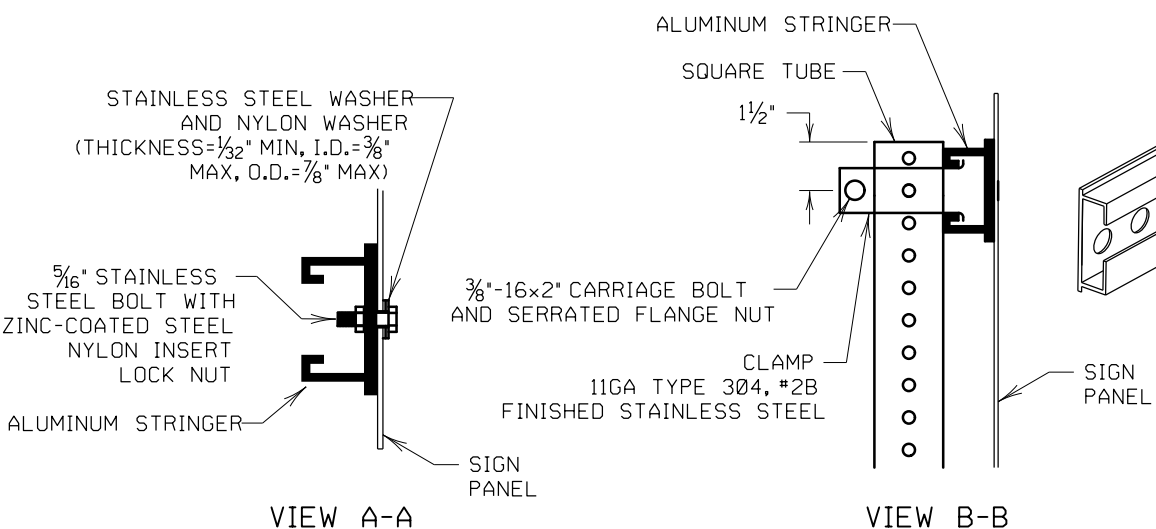
FOR SIGN PANELS UP TO 30" WIDE



FOR SIGN PANELS 36" WIDE
OR GREATER ON ONE POST

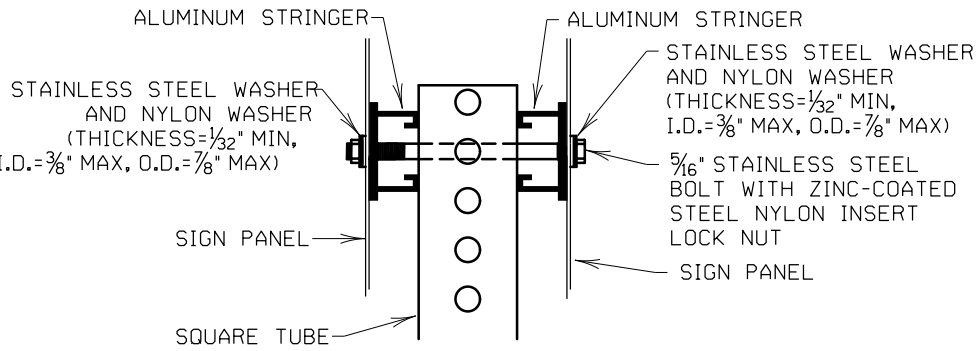


FOR SIGN PANELS ON TWO OR MORE POSTS



CLAMP DETAIL
4" SQUARE TUBE

CLAMP DETAIL
2" AND 2 $\frac{1}{2}$ " SQUARE TUBE



BACK-TO-BACK SIGN MOUNTING
WITH STRINGERS

NOTES:
BOLT SIGN PANELS TO STRINGERS OR RISER POSTS AT NO GREATER THAN 24"
SPACING OR ACCORDING TO THE MNDOT STANDARD SIGNS AND MARKINGS MANUAL
FOR MOUNTING HOLES (PUNCH CODES) INFORMATION.

CENTER STRINGERS ON SIGN PANEL.

① IF POST SPACING REQUIRES PLACEMENT OF A POST WITHIN THIS AREA, EXTEND
STRINGERS AS NEEDED TO ACCOMMODATE THE STRINGER TO POST CLAMP.

LEAD
EXPERT
OFFICE

BRIAN SORENSON
STATE TRAFFIC ENGINEER
OFFICE OF TRAFFIC ENGINEERING

SQUARE-TUBE SIGN MOUNTING DETAILS

APPROVED: 08-09-2023
REVISED:

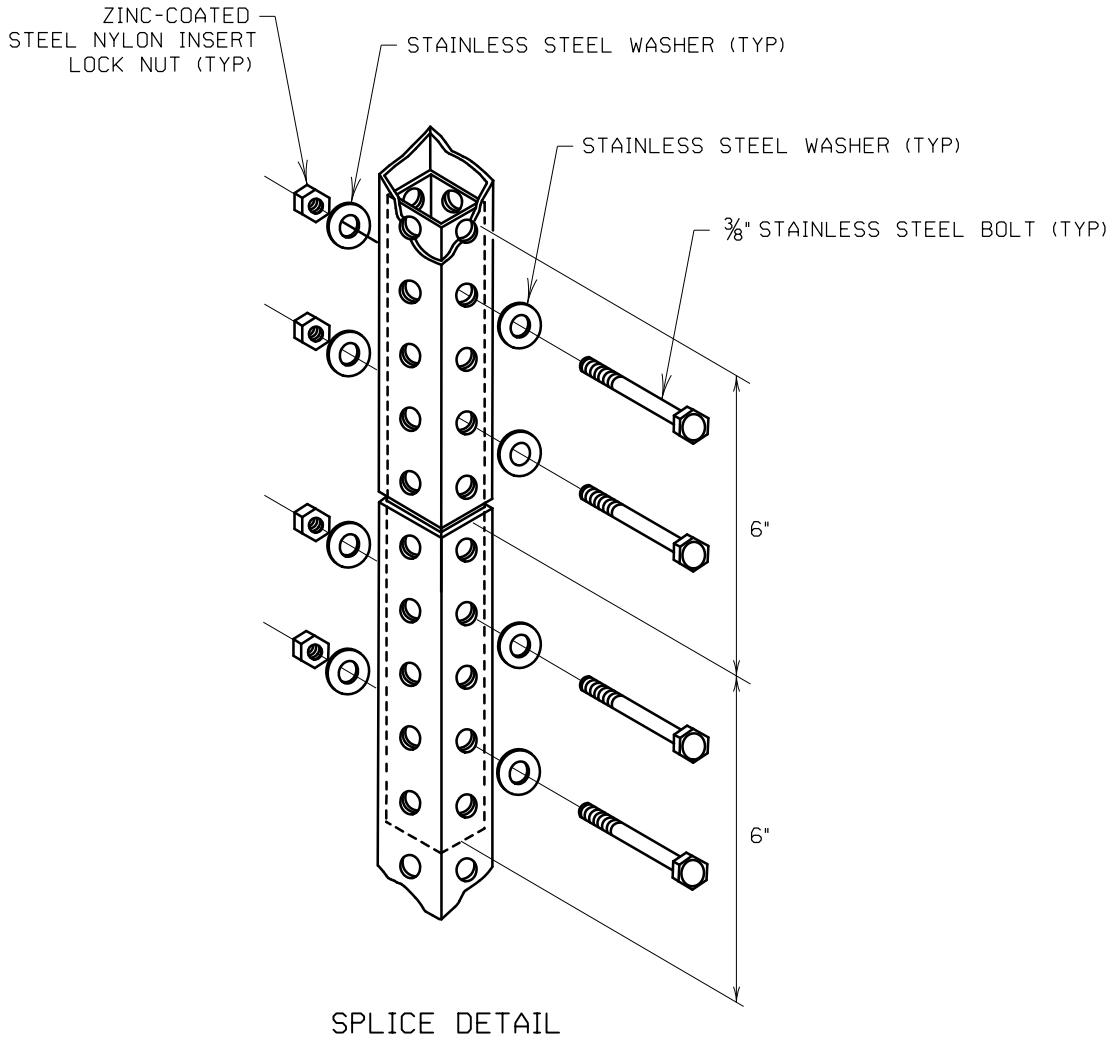

THOMAS STYRBICKI
STATE DESIGN ENGINEER

STANDARD
PLAN
5-297.718

2 OF 3

SAP 013-630-021 / SAP 225-591-007

SHEET NO. 76 OF 216



PANEL WIDTH	SQUARE TUBE POST SPACING						
	2 POSTS	3 POSTS	4 POSTS	5 POSTS	6 POSTS	7 POSTS	8 POSTS
(IN)	(IN)	(IN)	(IN)	(IN)	(IN)	(IN)	(IN)
42	15						
48	21						
54	30						
60	36						
66	36						
72	42						
78	42						
84	48						
90	48	42					
96	48	42					
102	54	42					
108	54	42					
114	60	42					
120	60	48					
126	66	48					
132	66	48	42				
138	72	48	42				
144	72	48	42				
150	78	54	42				
156	78	54	42				
162	84	54	42				
168	84	60	48				
174	90	60	48	42			
180	90	60	48	42			
186	96	66	48	42			
192	96	66	48	42			
198	102	66	54	42			
204	102	72	54	42			
210	108	72	54	42			
216	108	72	54	48	42		
222	114	78	60	48	42		
228	114	78	60	48	42		
234	120	78	60	48	42		
240	120	84	60	48	42		
246		84	66	54	42		
252		84	66	54	42		
258		90	66	54	42	42	
264		90	66	54	48	42	
270		90	72	54	48	42	
276		96	72	60	48	42	
282		96	72	60	48	42	
288		96	72	60	48	42	
294		102	78	60	54	42	
300		102	78	60	54	42	42
306		102	78	66	54	42	42
312		108	78	66	54	48	42
318		108	84	66	54	48	42
324		108	84	66	54	48	42
330		114	84	66	60	48	42
336		114	84	72	60	48	42

DISTANCES ARE CENTER-TO-CENTER OF POSTS

NOTES:

NO MORE THAN ONE SPLICE PER POST.

WHEN USED, THE SPLICE MUST BE PLACED AT LEAST 8' ABOVE GROUND. THE PREFERRED PLACEMENT LOCATION IS BEHIND THE SIGN PANEL.

INTERIOR POST STUD SHALL BE ONE SIZE SMALLER FOR TIGHT FIT. IF RISER POST IS 2½", INTERIOR POST IS 2¾". IF RISER POST IS 2", INTERIOR POST IS 1¾".

[illegible][illegible]

PANEL WIDTH (INCHES)

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DATE: 9/12/2024 TIME: 2:01:26 PM
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LEAD
EXPERT
OFFICE

BRIAN SORENSON
STATE TRAFFIC ENGINEER
OFFICE OF TRAFFIC ENGINEERING

SQUARE TUBE SIDE-BY-SIDE SIGN MOUNTING DETAILS

APPROVED: 08-09-2023
REVISED:

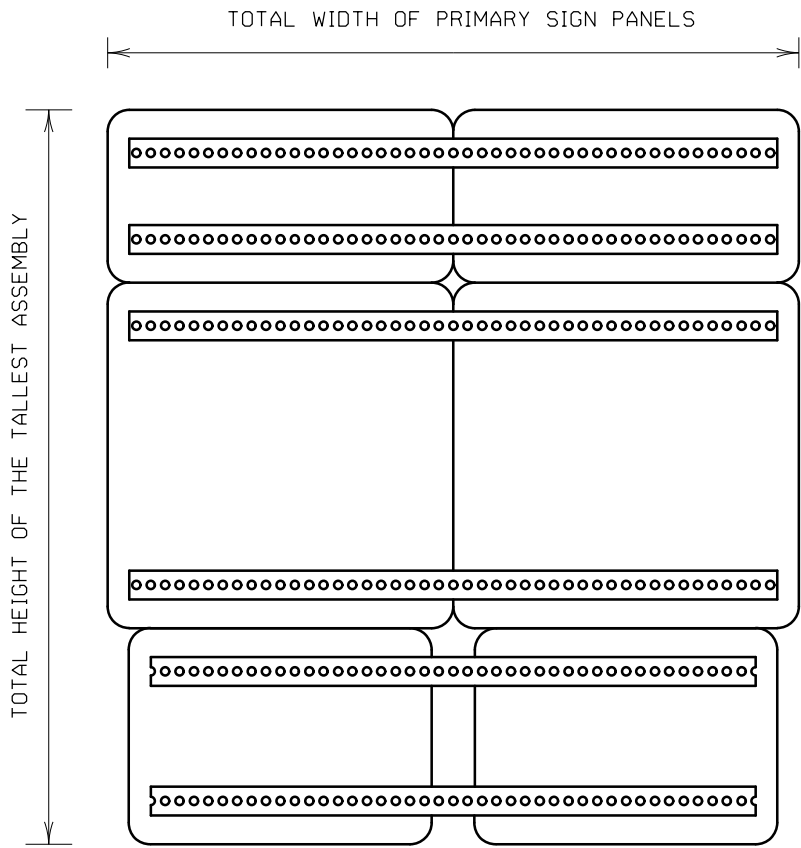

THOMAS STYRBICKI
STATE DESIGN ENGINEER

STANDARD
PLAN
5-297.719

1 OF 1

SAP 013-630-021 / SAP 225-591-007

SHEET NO. 78 OF 216

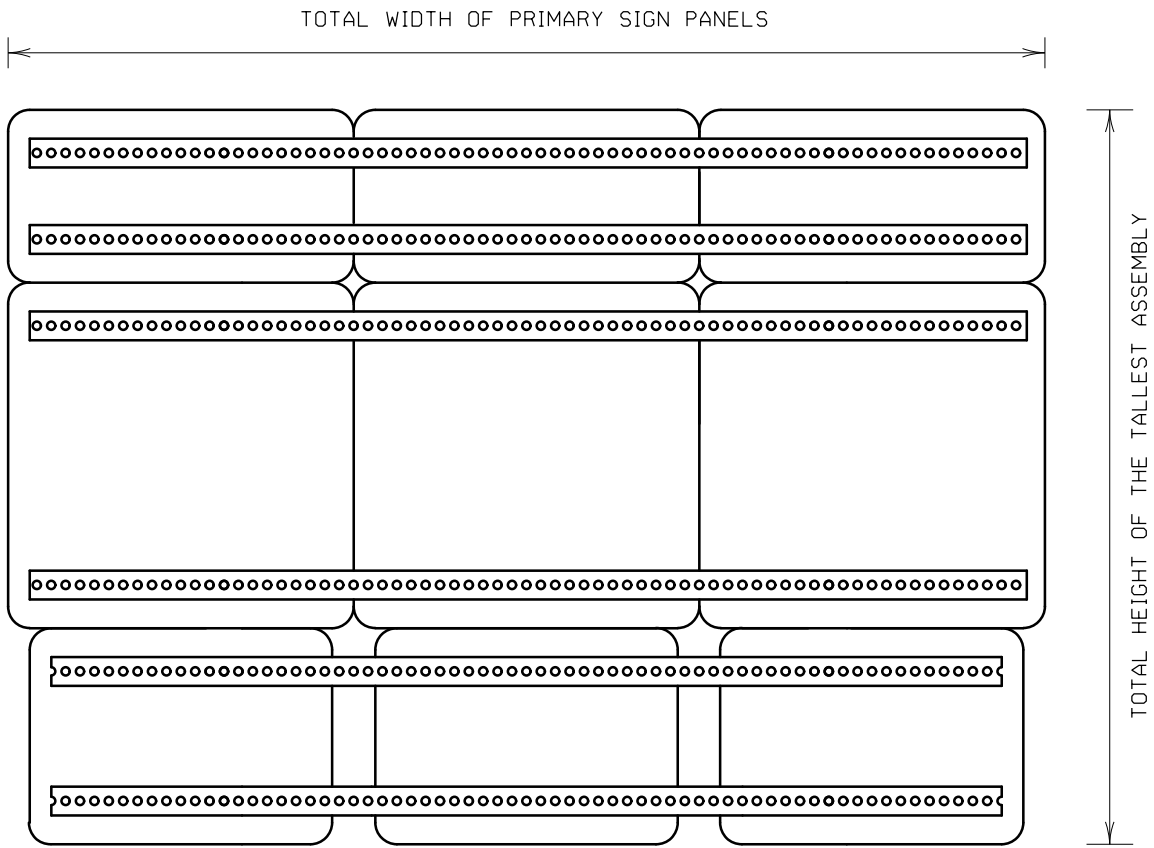


TWO SIDE-BY-SIDE ASSEMBLIES

← SECONDARY SIGN PANELS →

← PRIMARY SIGN PANELS →

← SECONDARY SIGN PANELS →



THREE SIDE-BY-SIDE ASSEMBLIES

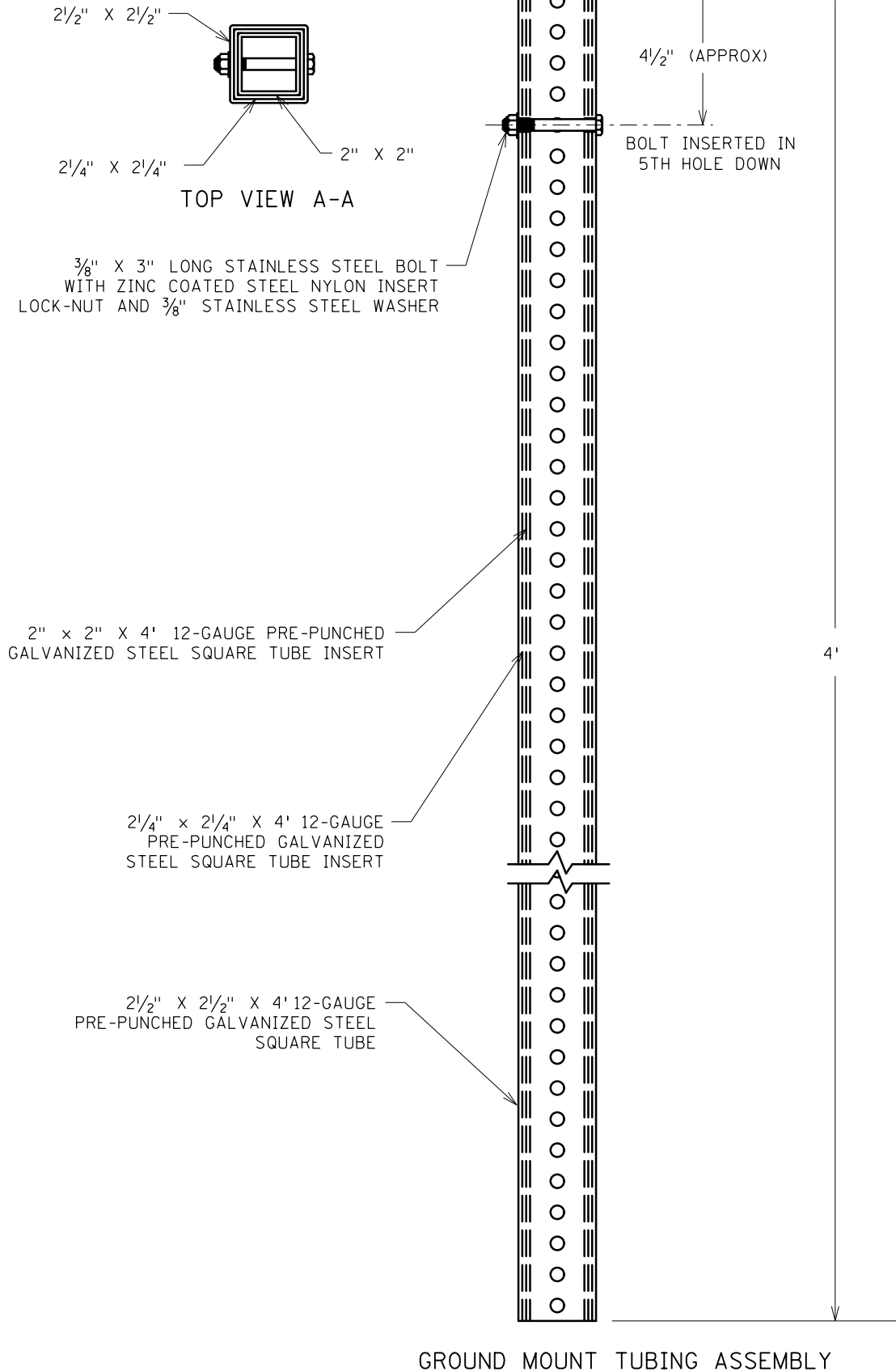
NOTES:

- CENTER SECONDARY SIGN PANELS BELOW OR ABOVE PRIMARY SIGN PANELS.
- STRINGER SPACING TO MATCH VERTICAL PUNCHING SPACING FOR SIGN PANELS.
- FOR SINGLE-POST INSTALLATIONS, THE STRINGERS MUST EXTEND 1" BEYOND THE BOLT HOLES.
- FOR MULTI-POST INSTALLATIONS, THE STRINGERS MUST EXTEND EITHER 1" BEYOND THE BOLT HOLES OR 3" BEYOND THE OUTER POST CENTERLINE, WHICHEVER IS GREATER.
- DETERMINE THE NUMBER OF POSTS AND THE POST SPACING BY THE TOTAL WIDTH AND HEIGHT OF THE ASSEMBLIES.
- SEE STANDARD PLAN 5-297.718 FOR ADDITIONAL MOUNTING DETAILS.

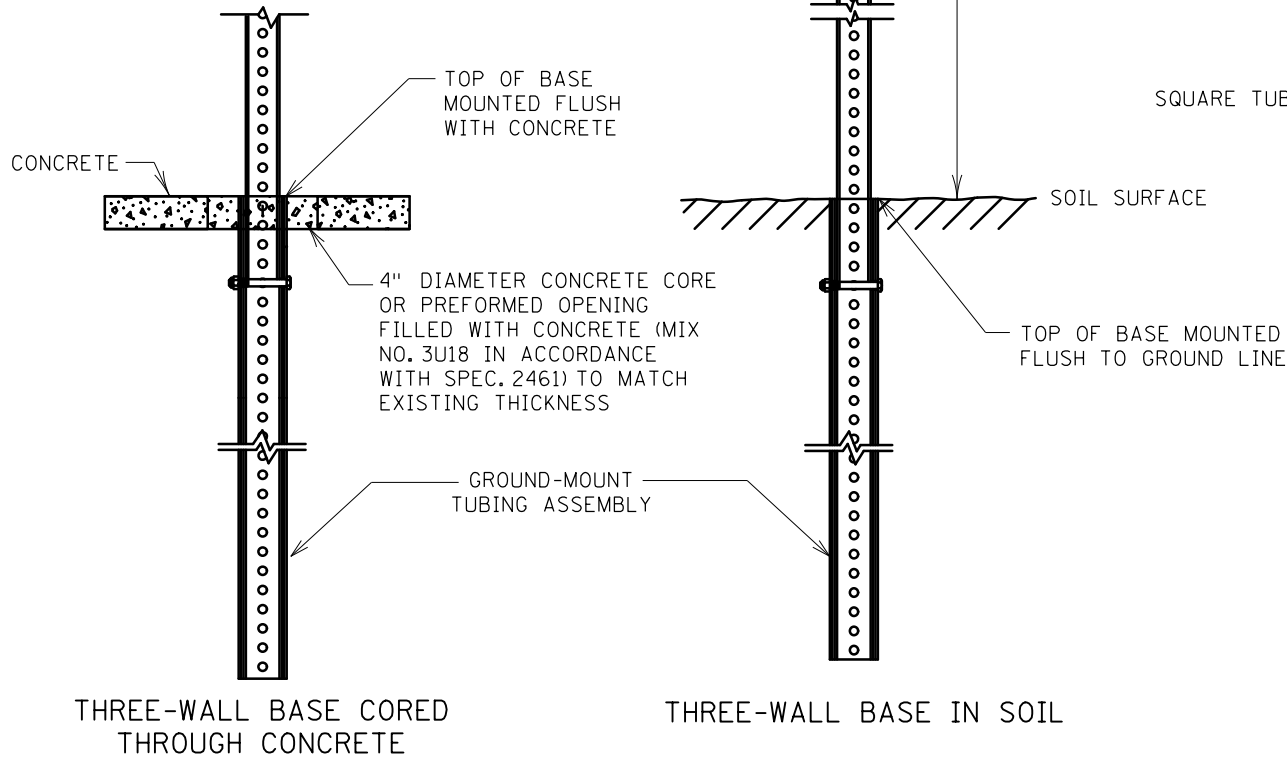
DATE: 9/12/2024 TIME: 2:02:06 PM
FILENAME: Projects\Minnesota\023661-000\03_Discipline\Roadway\Sheets\023661-000_spn7-800

LEAD EXPERT OFFICE

BRIAN SORENSON
STATE TRAFFIC ENGINEER
OFFICE OF TRAFFIC ENGINEERING



GROUND MOUNT TUBING ASSEMBLY

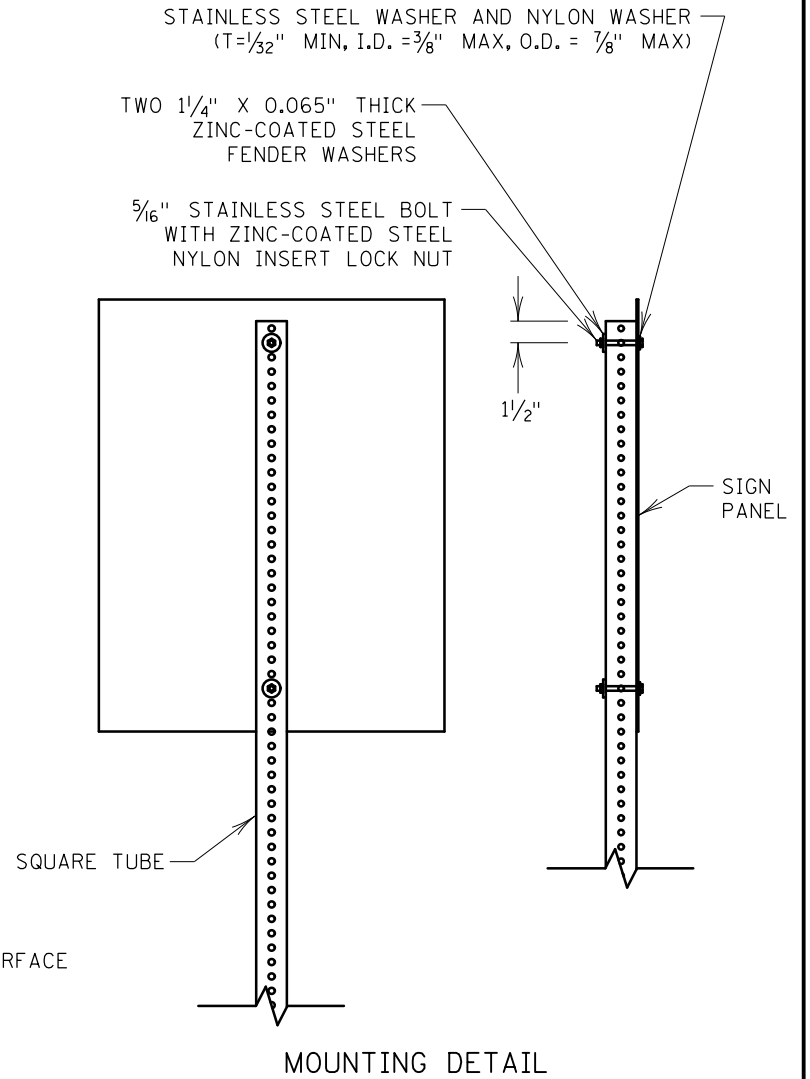


NOTES:

THE CRASH RESPONSE FOR THIS STRUCTURE IS BENDABLE.

TO MEET CRASHWORTHY REQUIREMENTS THE DISTANCE BETWEEN THE BOTTOM OF THE SIGN PANEL AND THE GROUND SURFACE BELOW ANY PORTION OF THE SIGN PANEL SHALL BE A MINIMUM OF 4'. SEE TABULATIONS FOR MOUNTING HEIGHT.

SQUARE TUBE SIGN POSTS PER MnDOT SPEC. 3402.



STANDARD PLAN 5-297.721

1 OF 1

THOMAS STYRBICKI
STATE DESIGN ENGINEER

APPROVED: 11-29-2022
REVISED:

SAP 013-630-021 / SAP 225-591-007

THREE-WALL BASE
FOR 1 3/4" SQUARE-TUBE RISER POST

SHEET NO. 79 OF 216

DATE: 9/12/2024 TIME: 2:02:38 PM
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LEAD
EXPERT
OFFICE

BRIAN SORENSON
STATE TRAFFIC ENGINEER
OFFICE OF TRAFFIC ENGINEERING

FIN BASE
FOR 2" SQUARE-TUBE RISER POST IN SOIL

APPROVED: 08-09-2023
REVISED:

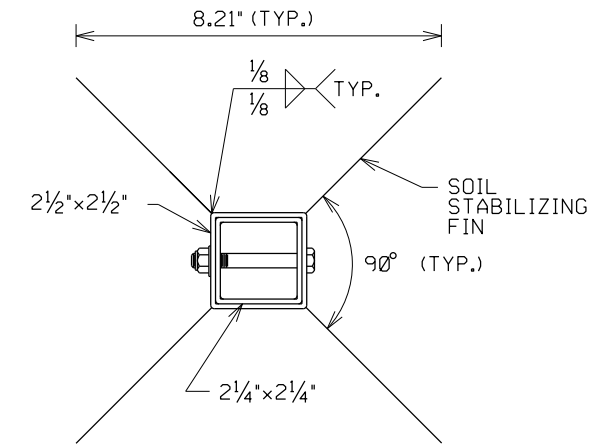

THOMAS STYRBICKI
STATE DESIGN ENGINEER

STANDARD
PLAN
5-297.722

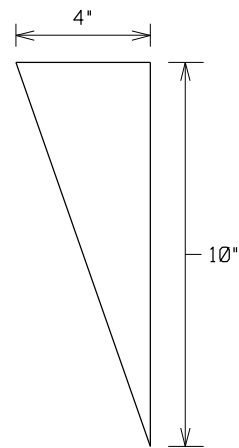
1 OF 1

SAP 013-630-021 / SAP 225-591-007

SHEET NO. 80 OF 216



VIEW A-A



SOIL STABILIZING FIN
FOUR REQUIRED

12-GAUGE PRE-GALVANIZED ASTM A569 STEEL.
WELD THE 10" EDGE OF EACH FIN TO EACH
CORNER OF THE 2 1/2" SQUARE TUBE. SEE VIEW
A-A FOR WELDING DETAILS. WELDS MUST BE
ZINC-COATED.

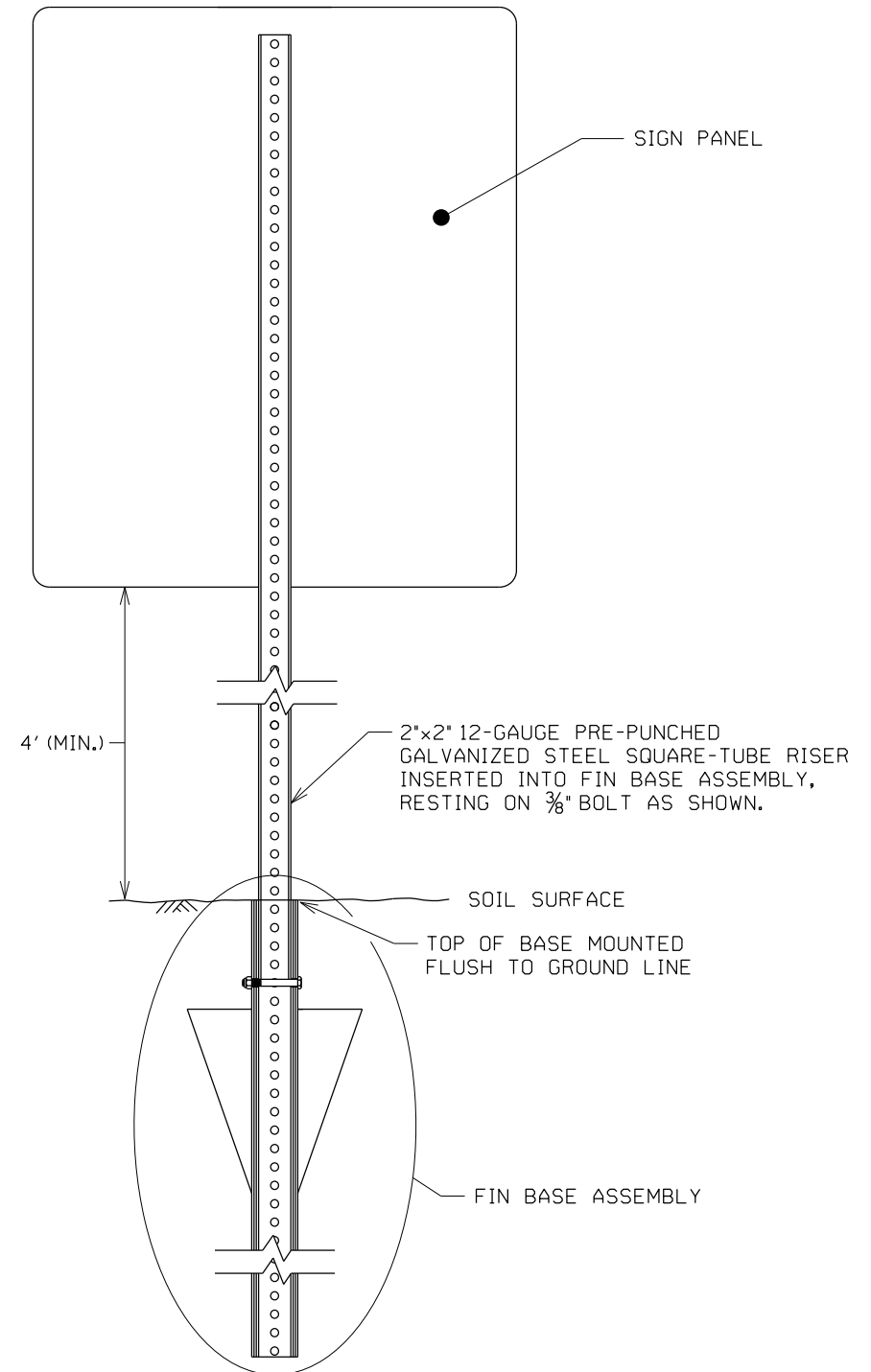
3/8"x3" LONG STAINLESS STEEL
BOLT WITH ZINC-COATED STEEL
NYLON INSERT LOCK-NUT AND
3/8" STAINLESS STEEL WASHER

SOIL
STABILIZING
FIN

2 1/4"x2 1/4"x4' 12-GAUGE
PRE-PUNCHED GALVANIZED
STEEL SQUARE-TUBE INSERT

2 1/2"x2 1/2"x4' 12-GAUGE
PRE-PUNCHED GALVANIZED
STEEL SQUARE TUBE

FIN BASE ASSEMBLY



FIN BASE IN SOIL

NOTES:

THE CRASH RESPONSE TYPE FOR THIS STRUCTURE IS BENDABLE.

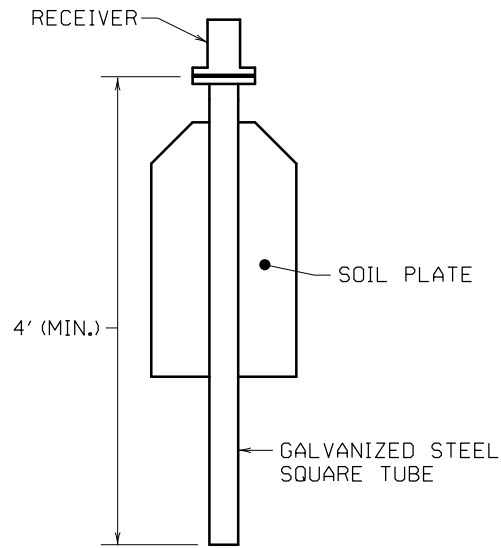
TO MEET CRASHWORTHY REQUIREMENTS, THE DISTANCE BETWEEN THE BOTTOM OF THE SIGN PANEL
AND THE GROUND SURFACE BELOW ANY PORTION OF THE SIGN PANEL MUST BE A MINIMUM OF 4'.
SEE TABULATIONS FOR MOUNTING HEIGHT.

SEE STANDARD PLAN 5-297.718 FOR ADDITIONAL MOUNTING DETAILS.

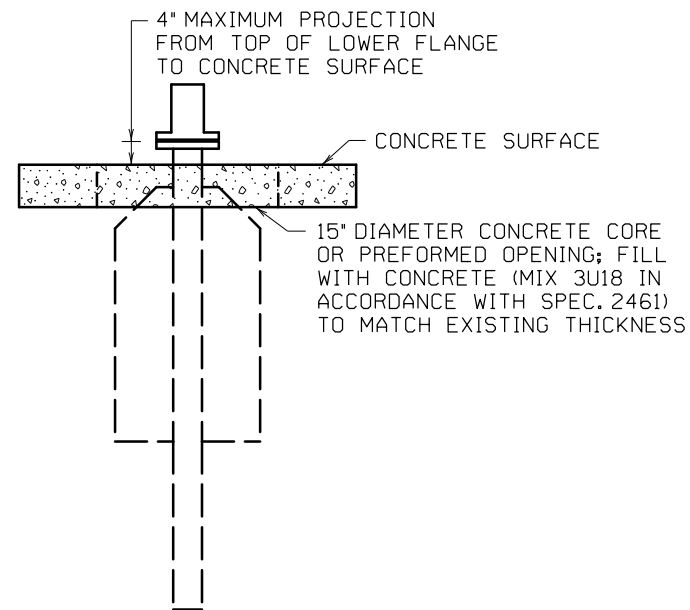
SQUARE-TUBE SIGN POSTS IN ACCORDANCE WITH SPEC. 3402.

① INSERT BOLT IN 5TH HOLE DOWN.

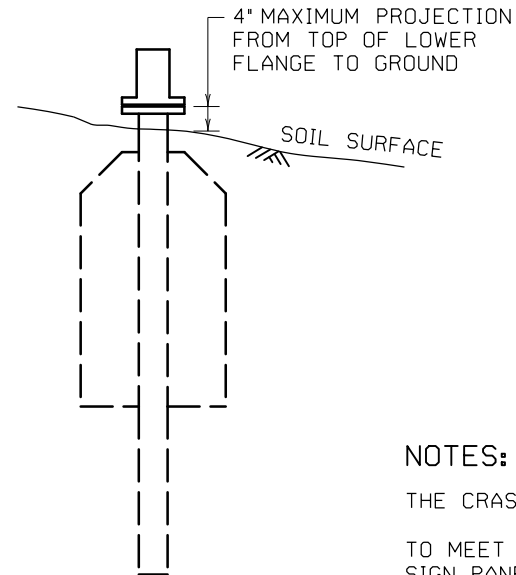
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PROPRIETARY SLIP BASE ASSEMBLY①



SLIP BASE ASSEMBLY IN CONCRETE



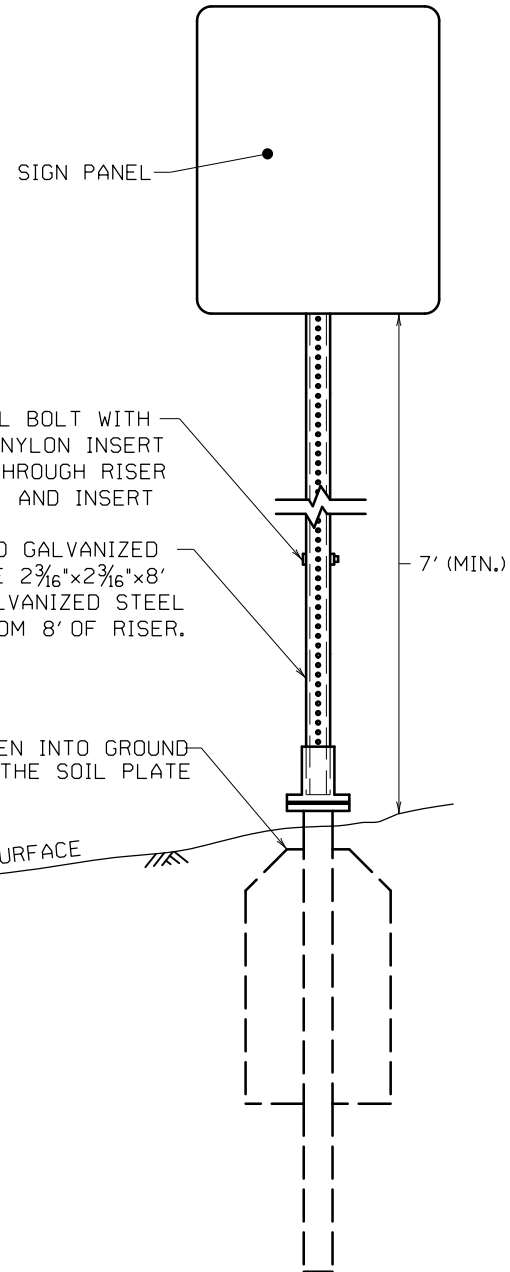
SLIP BASE ASSEMBLY IN SOIL

$\frac{5}{16}$ " STAINLESS STEEL BOLT WITH ZINC-COATED STEEL NYLON INSERT LOCK NUT; PLACE THROUGH RISER AND INSERT

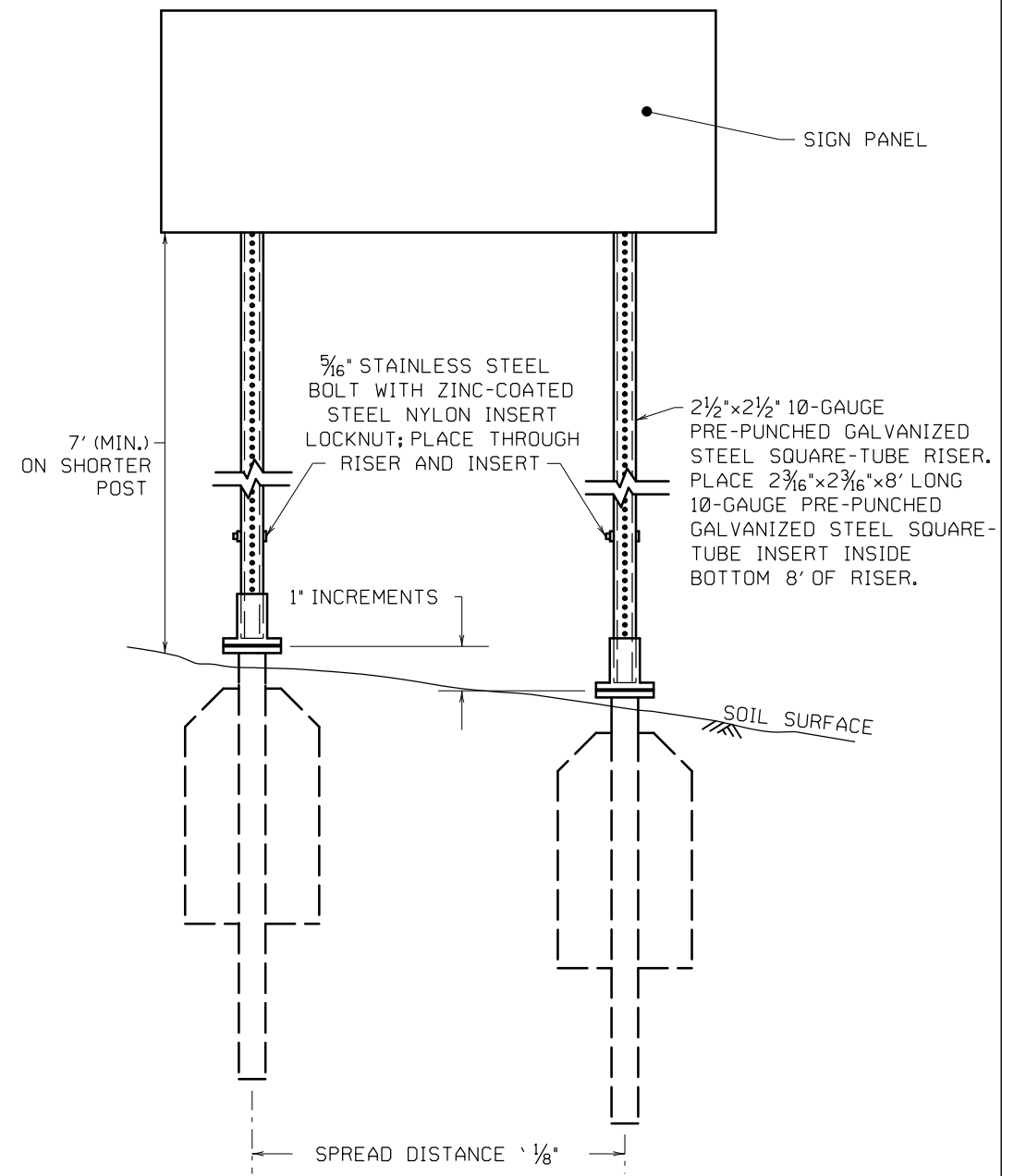
$2\frac{1}{2}$ "x $2\frac{1}{2}$ " 10-GAUGE PRE-PUNCHED GALVANIZED STEEL SQUARE-TUBE RISER. PLACE $2\frac{3}{16}$ "x $2\frac{3}{16}$ "x8' LONG 10-GAUGE PRE-PUNCHED GALVANIZED STEEL SQUARE-TUBE INSERT INSIDE BOTTOM 8' OF RISER.

SLIP BASE MUST BE DRIVEN INTO GROUND TO COMPLETELY BURY THE SOIL PLATE

SOIL SURFACE



SLIP BASE ASSEMBLY WITH SINGLE-POST SIGN
TYPICAL PLACEMENT IN SOIL



SLIP BASE ASSEMBLY WITH MULTIPLE-POST SIGN②
TYPICAL PLACEMENT IN SOIL

NOTES:

THE CRASH RESPONSE TYPE FOR THIS STRUCTURE IS BREAKAWAY.

TO MEET CRASHWORTHY REQUIREMENTS, THE DISTANCE BETWEEN THE BOTTOM OF THE PRIMARY SIGN PANEL AND THE GROUND SURFACE BELOW ANY PORTION OF THE PRIMARY SIGN PANEL MUST BE A MINIMUM OF 7'. SEE SIGNING PLAN TABULATIONS FOR MOUNTING HEIGHT.

$\frac{1}{16}$ "-THICK LEVELING SHIMS MAY BE USED TO PLUMB TOP HALF. PLACE SHIMS UNDER TEFLON-COATED SLIP WASHER. MAXIMUM OF TWO SHIMS PER NOTCH POINT.

FOR SIGN PANEL MOUNTING DETAILS, SEE STANDARD PLAN 5-297.718.

SQUARE TUBE SIGN POST IN ACCORDANCE WITH MDOT SPEC. 3402.

① USE APPROVED PRODUCT FROM THE SIGN STRUCTURES PAGE OF THE SIGNING SECTION OF THE APPROVED PRODUCTS LIST.

② FOR MULTIPLE-POST APPLICATIONS, ENSURE SOIL PLATES ARE COMPLETELY BURIED. IF SOIL SURFACE IS NOT LEVEL, DRIVE THE BASES UNTIL THEY ARE OFFSET IN 1" INCREMENTS. THE BASES MUST BE TRUE AND SQUARE WITH ONE ANOTHER TO ENSURE PROPER UNRESTRICTED INSERTION OF STEEL TUBE RISERS. MOUNT SIGN PANELS LEVEL.

LEAD
EXPERT
OFFICE

BRIAN SORENSON
STATE TRAFFIC ENGINEER
OFFICE OF TRAFFIC ENGINEERING

SLIP BASE ASSEMBLY
FOR $2\frac{1}{2}$ " SQUARE-TUBE RISER POST

APPROVED: 08-09-2023
REVISED:

THOMAS STYRBICKI
STATE DESIGN ENGINEER

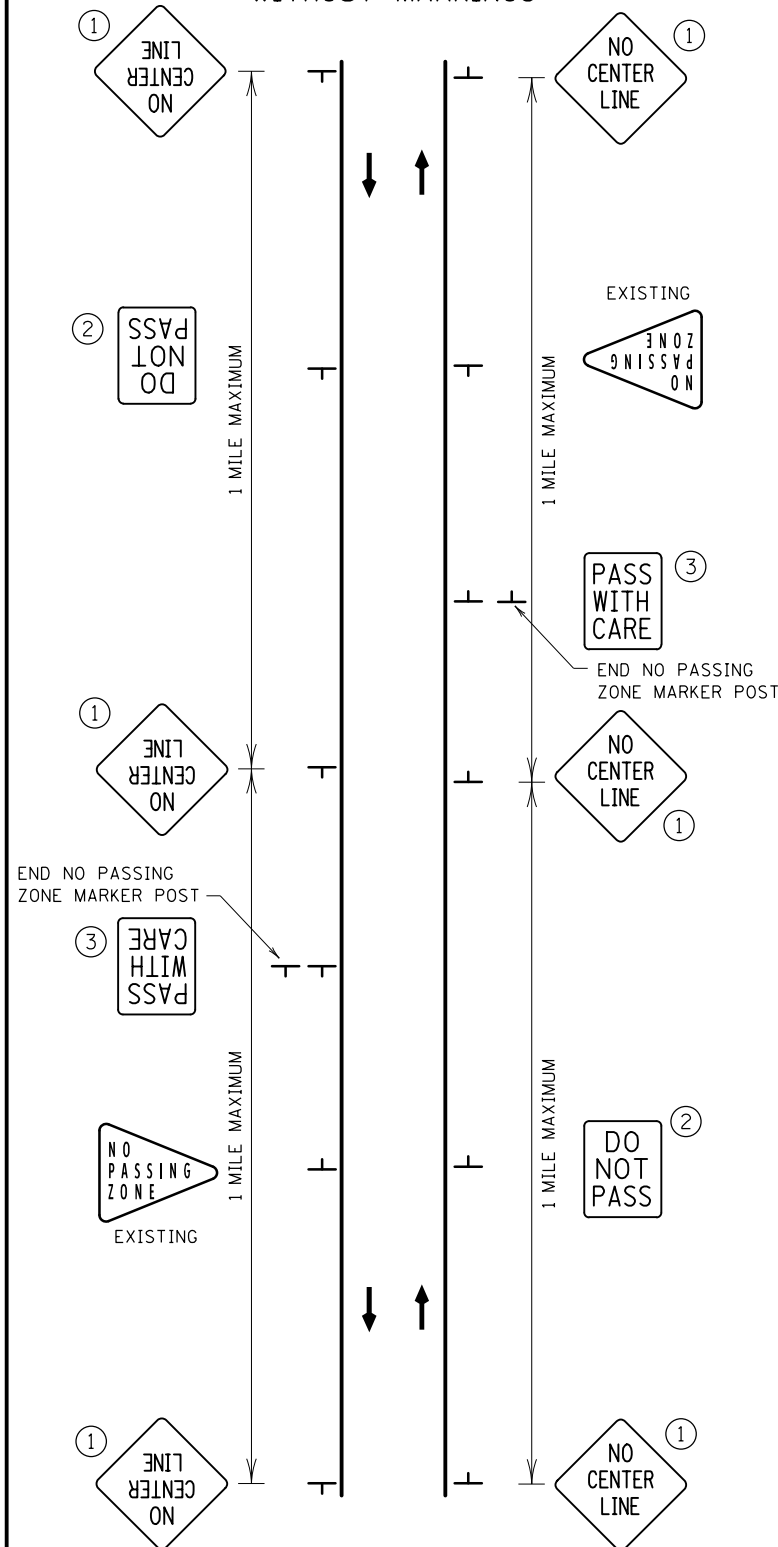
STANDARD
PLAN
5-297.724

1 OF 1

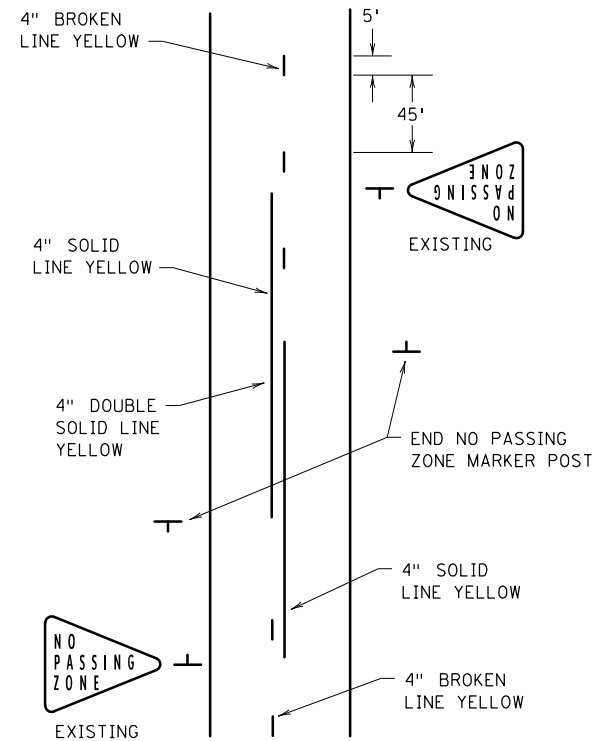
SAP 013-630-021 / SAP 225-591-007

SHEET NO. 81 OF 216

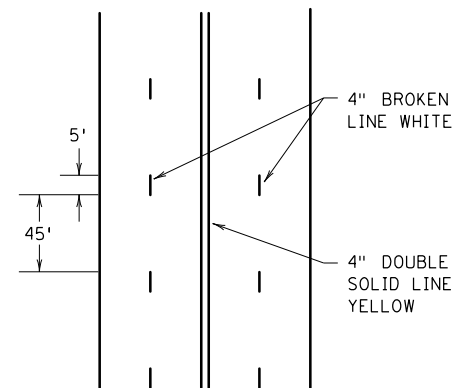
TWO-LANE, TWO-WAY
LESS THAN 400 ADT
WITHOUT MARKINGS



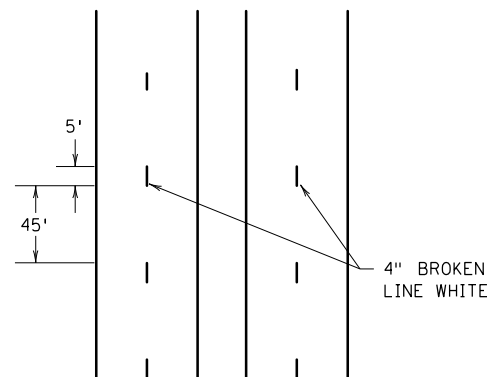
TWO-LANE, TWO-WAY



MULTI-LANE, UNDIVIDED



MULTI-LANE, DIVIDED



GENERAL NOTES:

SEE MnDOT SPEC. 2580 (INTERIM PAVEMENT MARKING).

DO NOT OPEN ANY ROADWAY SEGMENT TO TRAFFIC UNLESS THE FOLLOWING MARKINGS (INTERIM OR PERMANENT) ARE INPLACE: CENTERLINE MARKINGS (INCLUDING NO PASSING ZONES), FLUSH MEDIANS (EXCLUDING CROSSHATCHING), AND LANE LINE (INCLUDING TURN AND AUXILIARY LANE LINES). THIS REQUIREMENT IS WAIVED FOR TANGENT ROAD SEGMENTS LESS THAN 350' IN LENGTH AND CURVED ROAD SEGMENTS WITH DEGREES OF CURVE GREATER THAN 6 DEGREES FOR LESS THAN 50' IN LENGTH.

PLACE INTERIM BROKEN LINE PAVEMENT MARKINGS AT THE SAME CYCLE LENGTH AS FINAL PAVEMENT MARKINGS WITH A MINIMUM LENGTH OF 5 FEET; IF FINAL PAVEMENT MARKING PLAN IS NOT PROVIDED, THE CYCLE LENGTH SHALL BE 50'. PLACE INTERIM DOTTED LINE PAVEMENT MARKINGS AT THE SAME CYCLE LENGTH AND LINE LENGTH AS SHOWN IN THE PLAN; IF FINAL PAVEMENT MARKING PLAN IS NOT PROVIDED, THE CYCLE LENGTH SHALL BE 15' WITH A LINE LENGTH OF 3'.

FOR NO PASSING ZONE LOCATIONS, REFER TO THE SIGNING OR PAVEMENT MARKING PLAN; IF NEITHER IS PROVIDED, FOLLOW INPLACE NO PASSING ZONES.

WHEN PERMANENT PAVEMENT MARKINGS ARE TO BE MULTI-COMPONENT LIQUID AND PAINT IS USED FOR THE INTERIM MARKINGS, PLACE A 10 MIL THICK LAYER OF PAINT. REMOVAL OF THE 10 MIL LAYER OF PAINT IS NOT REQUIRED PRIOR TO PLACING THE MULTI-COMPONENT LIQUID. IF THE LAYER OF PAINT IS GREATER THAN 10 MIL, REMOVE THE PAINT PRIOR TO PLACING THE MULTI-COMPONENT LIQUID.

PLACE INTERIM MARKINGS ON THE FINAL PERMANENT PAVEMENT SURFACE SUCH THAT THEY WILL BE FULLY COVERED BY THE PERMANENT PAVEMENT MARKINGS.

INTERIM PAVEMENT MARKINGS SHOULD NOT BE LEFT INPLACE FOR MORE THAN 14 CALENDAR DAYS UNLESS THEY MEET THE REQUIREMENTS OF PERMANENT OR TEMPORARY MARKINGS.

USING SIGNING IN LIEU OF INTERIM PAVEMENT MARKINGS ON TWO-LANE, TWO-WAY ROADWAYS

ON ROADS WITH AN AVERAGE DAILY TRAFFIC (ADT) OF LESS THAN 400 VEHICLES, THE SIGNS AS SHOWN MAY BE USED IN LIEU OF PAVEMENT MARKINGS FOR UP TO 14 CALENDAR DAYS OR AS DIRECTED BY THE ENGINEER.

- 1 PLACE A "NO CENTER LINE" SIGN (W8-12, BLACK ON ORANGE) FOR EACH DIRECTION OF TRAVEL. PLACE ADDITIONAL SIGNS AT MAJOR INTERSECTIONS OR ONE MILE INCREMENTS, WHICHEVER IS LESS.
- 2 IF NOT ALREADY INPLACE, PLACE A "DO NOT PASS" SIGN (R4-1) OPPOSITE OF EACH INPLACE "NO PASSING ZONE" SIGN (W14-3).
- 3 PLACE A "PASS WITH CARE" SIGN (R4-2) AT THE END OF EACH NO PASSING ZONE, ADJACENT TO THE END OF NO PASSING ZONE MARKER POST.

USING TEMPORARY RAISED PAVEMENT MARKERS (TRPMS) AS INTERIM PAVEMENT MARKING

WHEN USING TRPMS AS INTERIM PAVEMENT MARKINGS, FOLLOW THE REQUIREMENTS BELOW UNLESS OTHERWISE DIRECTED BY THE ENGINEER.

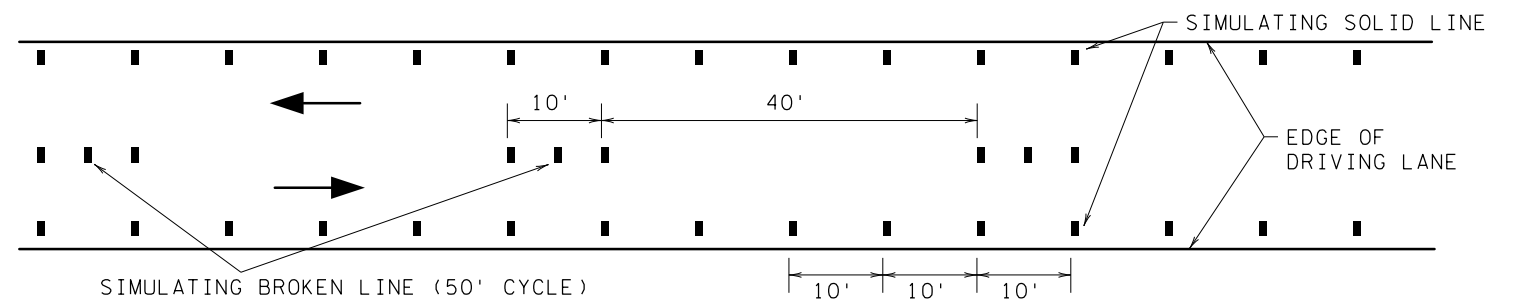
USE DOUBLE-SIDED TRPMS ON TWO-LANE, TWO-WAY ROADS.

BROKEN LINE: USE 3 TRPMS PER 10' BROKEN LINE, 5' SPACING WITH A 40' GAP.

SOLID LINE: USE CONTINUOUS TRPMS; 10' SPACING FOR TANGENTS AND CURVES UNDER 6 DEGREES; 5' SPACING FOR CURVES ≥ 6 DEGREES, GRADES > 5 PERCENT, OR CONCRETE PAVEMENTS.

DOUBLE SOLID LINE: USE TWO CONTINUOUS TRPMS 4" APART, 10' SPACING ON TANGENTS AND CURVES UNDER 6 DEGREES; 5' SPACING FOR CURVES ≥ 6 DEGREES, GRADES > 5 PERCENT, OR CONCRETE PAVEMENTS.

SIMULATING A SOLID LINE AND A BROKEN LINE (50' CYCLE) WITH TRPMS



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NOTES & GUIDELINES

GENERAL INFORMATION:

1. ALL DISTANCES ARE APPROXIMATE.

SIGNING:

1. ALL TEMPORARY SIGNS ARE REQUIRED TO BE CRASHWORTHY PER THE AASHTO MANUAL FOR ASSESSING SAFETY HARDWARE 2016 (MASH-2016). TEMPORARY SIGN STRUCTURES THAT ARE CRASHWORTHY UNDER THE NATIONAL COOPERATIVE HIGHWAY RESEARCH PROGRAM REPORT 350 (NCHRP-350) MAY BE USED PROVIDED THE DEVICES WERE ACQUIRED BY THE CONTRACTOR PRIOR TO DECEMBER 31ST, 2019. THE MINNESOTA TYPE "C" AND "D" BRACED LEG U-CHANNEL (KNEE BRACE) SIGN SUPPORT IS NOT ALLOWED.
2. THE CONTRACTOR SHALL COORDINATE THE INSTALLATION OF THE FINAL SIGNS TO ASSURE THAT THE FINAL SIGNS ARE PLACED AS NEEDED, OR PROVIDE TEMPORARY SIGNING UNTIL THE FINAL SIGNING IS PLACED.
- 3 WHEN MULTIPLE GROUND MOUNTED SIGN STRUCTURES ARE PLACED ADJACENT TO EACH OTHER THERE SHOULD BE NO MORE THAN 2 POSTS WITHIN 84" OF EACH OTHER. WHEN THIS SPACING CAN NOT BE MAINTAINED, THEN SIGN STRUCTURES SHALL BE OFFSET, AND STAGGERED WITH A MINIMUM OF 4' BETWEEN SIGN STRUCTURES BOTH Laterally AND LONGITUDINALLY. EXAMPLE SHOWS DETOUR SIGNAGE, BUT THIS REQUIREMENT APPLIES TO ALL SIGNAGE.
4. WHEN A SIGN OR BARRICADE IS ORIENTED SUCH THAT VISIBILITY TO ROAD USERS INCLUDING BIKES AND PEDESTRIANS IS REDUCED ENOUGH TO CAUSE A HAZARD, DELINEATE THE SIGN/BARRICADE WITH APPROPRIATE DEVICES.
5. TEMPORARY SIGNS SHALL BE PLACED SUCH THAT OBSTACLES DO NOT BLOCK THEM FROM BEING VIEWED BY APPROACHING ROAD USERS. OBSTACLES MAY INCLUDE, BUT ARE NOT LIMITED TO, LIGHT POLES, TREES, SIGNS, AND BUILDINGS.
6. TEMPORARY SIGNS SHALL BE PLACED AND ORIENTED APPROXIMATELY AS SHOWN IN THE PLAN, AT RIGHT ANGLES TO DIRECTION OF TRAVEL AND FACING THE TRAFFIC THEY ARE INTENDED TO SERVE, UNLESS OTHERWISE SPECIFIED.
7. LONGITUDINAL DROPOFFS SHALL BE SIGNED AS SHOWN IN THE "MINNESOTA TEMPORARY TRAFFIC CONTROL FIELD MANUAL" PAGES (6K-aJ) THRU (6K-al) UNLESS OTHERWISE SPECIFIED IN THESE PLANS.
8. AFTER REMOVAL OF SIGN AND/OR SIGN BASE, BACK FILL, COMPACT, AND LEVEL SOIL TO MATCH SURROUNDING SOIL.

CONSTRUCTION INFORMATION SIGNING:

1. THE CONTRACTOR SHALL USE CONSTRUCTION INFORMATION SIGNING AS SHOWN IN THE PLAN WHICH ARE TO BE USED AS FOLLOWS:
- PLACE G20-X2 ADVANCE NOTICE SIGNS 7 DAYS PRIOR TO THE WORK STARTING DATE. ONCE WORK BEGINS, COVER THE START DATE LEGEND WITH SUGGESTED PLAQUE CONTAINED IN THIS PLAN. IF NO ALTERNATE MESSAGE IS SHOWN IN THE PLAN OR APPROVED BY THE ENGINEER, DISPLAY THE CORRECT ESTIMATED FINISH DATE, MONTH, OR SEASON.
- IF CONSTRUCTION INFORMATION SIGNING IS NO LONGER VISIBLE TO THE MOTORING PUBLIC ONCE WORK BEGINS, MOVE SAID SIGNING TO A SITE IN ADVANCE OF THE WORK ZONE OR CLOSURE AS SHOWN IN THE PLAN OR APPROVED BY THE ENGINEER.

TRAFFIC CONTROL DEVICES & SYMBOLS LEGEND

SYMBOL DESCRIPTION

-  AREA CLOSED TO TRAFFIC / WORK AREA
-  TRAFFIC CONTROL SIGN
-  TYPE III BARRICADE = 
-  TYPE A FLASHING WARNING LIGHT

INDEX

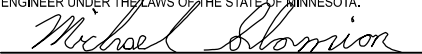
TRAFFIC CONTROL SHEET NO. DESCRIPTIONS

83		TEMPORARY TRAFFIC CONTROL TITLE SHEET
84	-	85 TEMPORARY SIGN TABULATION
86		TEMPORARY SQUARE TUBE GROUND MOUNTED SIGN PLACEMENT
87		TEMPORARY SIGN COVERING AND MODIFICATION DETAIL
88		SPECIAL SIGN DETAILS
89		DETOUR
90	-	91 TRAFFIC CONTROL

NO.	DATE	BY	CHK	REVISIONS

Design By:	MJS
Plan By:	GAD
Checked By:	MKV
Approved By:	MJS

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.


MIKE SHOMION, PE

DATE: 9/12/2024 LICENSE NO. 50488

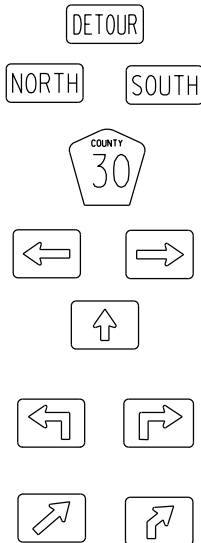


CSAH 30 (Forest Blvd) Improvements
Chisago County, Minnesota

CHISAGO COUNTY, MINNESOTA
TEMPORARY TRAFFIC CONTROL TITLE SHEET
CONSTRUCTION STAGING & TRAFFIC CONTROL
SAP 013-630-021 / SAP 225-591-007 / SAP 225-102-004

SHEET
83
OF
216
SHEETS

DATE: 9/12/2024 2:03:33 PM
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"M" SERIES					
SIGN	SIGN NO.	COLOR	SIZE (IN. X IN.) (WxH)	ASSEMBLY (IN. X IN.) (WxH)	NUMBER OF POST
	M4-8	BLACK ON ORANGE	24 x 12 36 x 18	24 x 63 36 x 93 [Ⓒ]	1
	M3-4 M3-4	WHITE ON BLUE	24 x 12 36 x 18		
	M1-6M	WHITE AND YELLOW BLUE	24 x 24 36 x 36		
	M6-1	WHITE ON BLUE	21 x 15 30 x 21 [Ⓒ]		
	M6-3				
	M5-1				
	M6-2				
	M5-2				
M4-8a	BLACK ON ORANGE	24 x 18 36 x 24	24 x 69 36 x 99 [Ⓒ]	1	
M3-4 M3-4	WHITE ON BLUE	24 x 12 36 x 18			
M1-6M	WHITE AND YELLOW BLUE	24 x 24 36 x 36			
M6-1 (R/L)	WHITE ON BLUE	21 x 15 30 x 21			

SPECIFIC NOTES:

- Ⓐ MAY USE 2" SQUARE TUBE POST WITH FIN BASE.
- Ⓑ SEE SPECIAL SIGN DETAILS SHEET FOR SIGN DETAILS.
- Ⓒ LOWER SIZES ARE FOR SIGNS ON MNDOT R/W.

GENERAL NOTES:

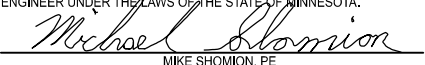
1. SIGN STRUCTURE TABULATIONS INDICATE SQUARE TUBE GROUND MOUNTED SIGN STRUCTURES THAT ARE MASH-16 COMPLIANT.
2. USE PRODUCTS FROM THE BASES FOR SQUARE TUBE SIGN STRUCTURES APPROVED/QUALIFIED PRODUCTS LIST FOR THE INDICATED SQUARE TUBE RISER POST SIZE. PLACE PER THE MANUFACTURER'S SPECIFICATIONS.
3. ALUMINUM STRINGERS SHALL BE USED FOR SIGNS 36 INCHES AND WIDER. SEE MANUFACTURER'S SPECIFICATIONS FOR SQUARE TUBE MOUNTING DETAILS. STRINGERS ON SINGLE POST ASSEMBLIES ARE REQUIRED TO BE AT LEAST 9 INCHES IN FROM THE EDGE OF THE SIGN.
4. UNLESS OTHERWISE INDICATED, USE 2-1/2 INCH RISER POSTS FOR GROUND MOUNTED SIGN STRUCTURES.

"W" SERIES					
SIGN	SIGN NO.	COLOR	SIZE (IN. X IN.) (WxH)	ASSEMBLY (IN. X IN.) (WxH)	NUMBER OF POST
	W20-1	WHITE ON BLUE	24 x 12	48 x 84	1
	W20-1	WHITE AND YELLOW ON BLUE	24 x 24		
	W20-1	BLACK ON ORANGE	48 x 48		
	W20-1	WHITE ON BLUE	24 x 12	48 x 84	1
	W20-1	WHITE AND YELLOW ON BLUE	24 x 24		
	W20-2	BLACK ON ORANGE	48 x 48		
	W20-1	BLACK ON ORANGE	48 x 48	48 x 72	1
	W16-2P	BLACK ON ORANGE	36 x 24		
	W20-2	BLACK ON ORANGE	48 x 48	48 x 48	1
	W20-3M	BLACK ON ORANGE	18 x 18	18 x 18	1

NO.	DATE	BY	CHK	REVISIONS

Design By:
MJS
Plan By:
GAD
Checked By:
MKV
Approved By:
MJS

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.

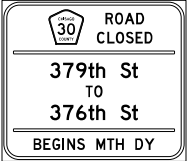

MIKE SHOMION, PE
DATE: 9/12/2024 LICENSE NO. 50488



CSAH 30 (Forest Blvd) Improvements
Chisago County, Minnesota

CHISAGO COUNTY, MINNESOTA
TEMPORARY SIGN TABULATION
CONSTRUCTION STAGING & TRAFFIC CONTROL
SAP 013-630-021 / SAP 225-591-007 / SAP 225-102-004

SHEET
84
OF
216
SHEETS

"G" SERIES						
SIGN	SIGN NO.	COLOR	SIZE (IN. X IN.) (W×H)	ASSEMBLY (IN. X IN.) (W×H)	NUMBER OF POST	POST SPACING INCHES
 379th St TO 376th St BEGINS MTH DY SAMPLE	G20-X2 ®	BLACK ON ORANGE	96 x 84	96 x 84	2	48
	G20-X6 (R/L/THRU)	BLACK ON ORANGE	36 x 24	36 x 24	1	
 	G20-X4 (R/L/THRU)	BLACK ON ORANGE	72 x 18	72 x 18	2	42

BARRICADE MOUNTED SIGNS			
SIGN	SIGN NO.	COLOR	SIZE (IN. X IN. (W×H)
	R9-9	BLACK ON WHITE	30 x 18
	R11-2M	BLACK ON WHITE	48 x 30
	R11-4	BLACK ON WHITE	60 x 30
	R11-3a	BLACK ON WHITE	60 x 30
	M4-10 (R/L)	BLACK ON ORANGE	48 x 18

SPECIFIC NOTES:

- ① MAY USE 2" SQUARE TUBE POST WITH FIN BASE.
- ② SEE SPECIAL SIGN DETAILS SHEET FOR SIGN DETAILS.

GENERAL NOTES;

1. SIGN STRUCTURE TABULATIONS INDICATE SQUARE TUBE GROUND MOUNTED SIGN STRUCTURES THAT ARE MASH-16 COMPLIANT.
2. USE PRODUCTS FROM THE BASES FOR SQUARE TUBE SIGN STRUCTURES APPROVED/QUALIFIED PRODUCTS LIST FOR THE INDICATED SQUARE TUBE RISER POST SIZE. PLACE PER THE MANUFACTURER'S SPECIFICATIONS.
3. ALUMINUM STRINGERS SHALL BE USED FOR SIGNS 36 INCHES AND WIDER. SEE MANUFACTURER'S SPECIFICATIONS FOR SQUARE TUBE MOUNTING DETAILS. STRINGERS ON SINGLE POST ASSEMBLIES ARE REQUIRED TO BE AT LEAST 9 INCHES IN FROM THE EDGE OF THE SIGN.
4. UNLESS OTHERWISE INDICATED, USE 2-1/2 INCH RISER POSTS FOR GROUND MOUNTED SIGN STRUCTURES.

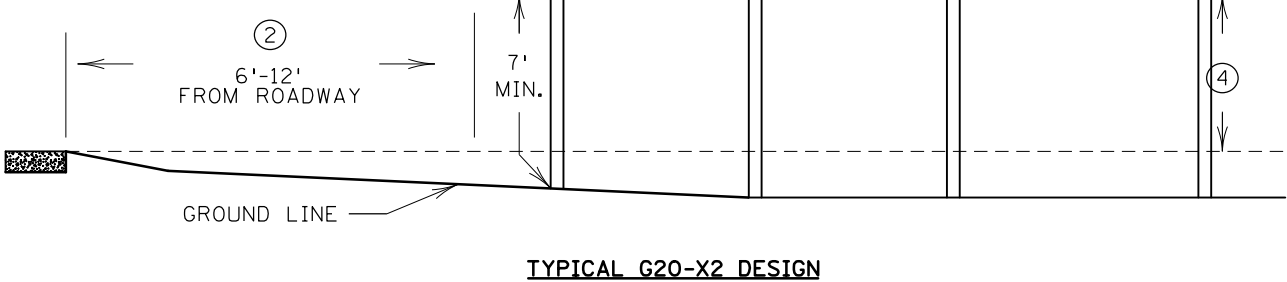
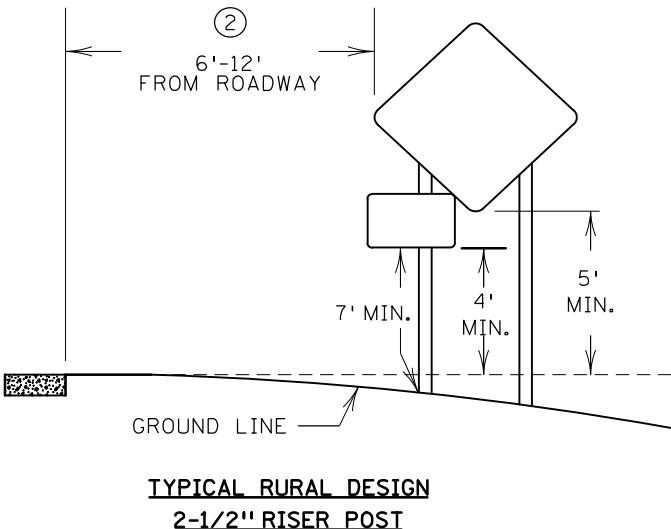
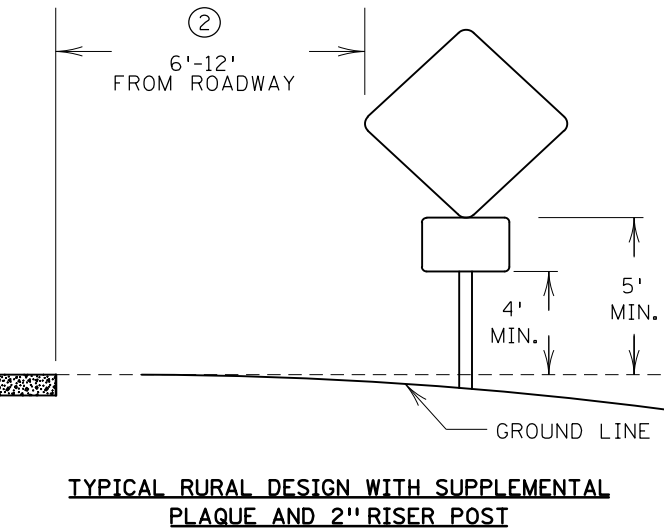
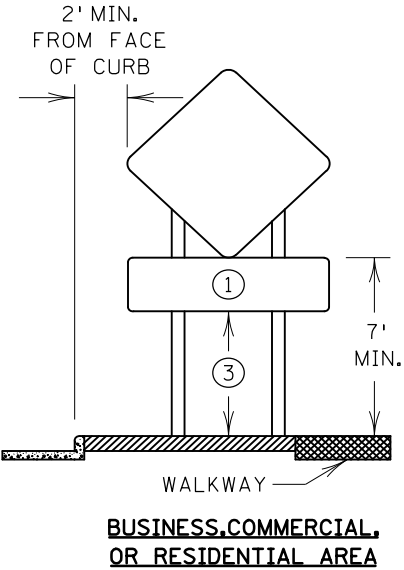
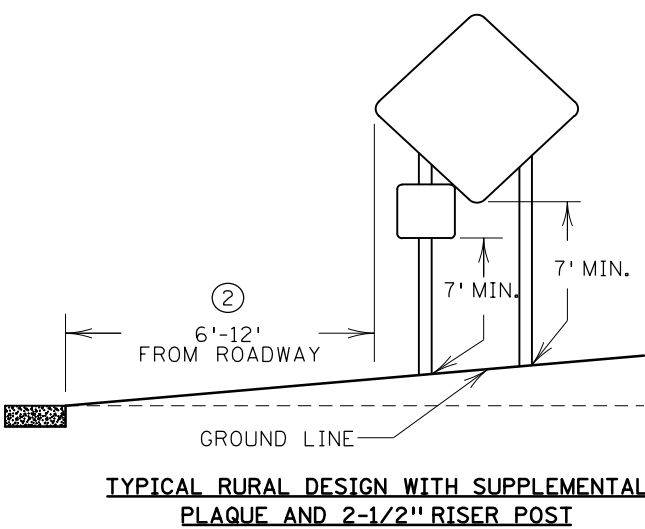
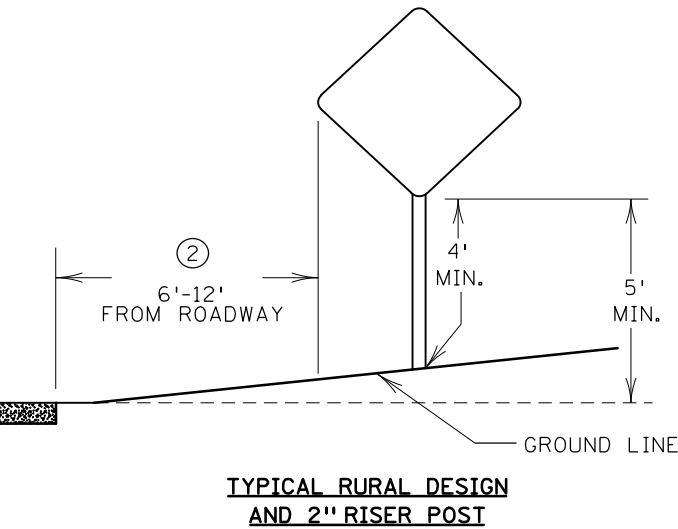
NO.	DATE	BY	CHK	REVISIONS	Design By: MJS	I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.  MIKE SHOMION, PE DATE: 9/12/2024 LICENSE NO. 50488	  CSAH 30 (Forest Blvd) Improvements Chisago County, Minnesota	 CHISAGO COUNTY, MINNESOTA TEMPORARY SIGN TABULATION CONSTRUCTION STAGING & TRAFFIC CONTROL SAP 013-630-021 / SAP 225-591-007 / SAP 225-102-004	SHEET 85 OF 216 SHEETS
				Plan By: GAD					
				Checked By: MKV					
				Approved By: MJS					

GENERAL NOTES:

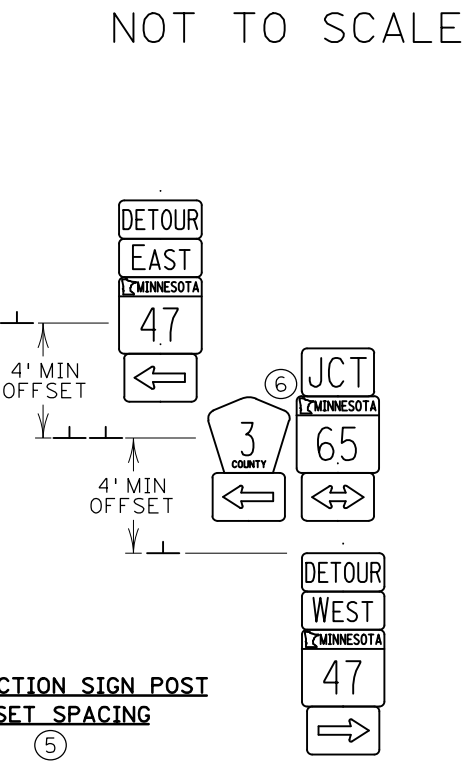
1. GROUND MOUNTED SQUARE TUBE SIGN STRUCTURES PLACED WITHIN 50' OF THE RADIUS END OF AN INTERSECTION SHALL BE PLACED ON ONE 2" OR 2-1/2" POST.
2. FOR 2" SQUARE TUBE RISER POST IN SOIL, USE FIN BASE PLACED PER MANUFACTURER'S SPECIFICATIONS. USE A 2" X 2" PRE-PUNCHED, GALVANIZED STEEL, SQUARE TUBE RISER POST. PLACE 3/8" STAINLESS STEEL BOLT THROUGH THE 5TH HOLE DOWN FROM THE TOP OF THE BASE. RISER POST SHALL REST ON THE BOLT.
3. FOR 2-1/2" SQUARE TUBE RISER POST IN SOIL, USE SLIP BASE PLACED PER MANUFACTURER'S SPECIFICATIONS USING A 10 GAUGE, 2-1/2" X 2-1/2" PRE-PUNCHED, GALVANIZED STEEL, SQUARE TUBE RISER POST WITH A 10 GAUGE 2-3/16" X 2-3/16" PRE-PUNCHED, GALVANIZED STEEL, SQUARE TUBE INTERNAL INSERT.

SPECIFIC NOTES:

- ① IF ANY PART OF A SIGN OR SIGN ASSEMBLY EXTENDS MORE THAN 4" INTO THE PEDESTRIAN FACILITY, THE MINIMUM HEIGHT TO BOTTOM OF THE SIGN OR SIGN ASSEMBLY SHALL BE 7'.
- ② 6' - 12' FROM EDGE OF ROADWAY, MUST BE A MINIMUM OF 6' FROM EDGE OF PAVED SHOULDER (WHEN PRESENT).
- ③ IF GROUND MOUNTED TEMPORARY SIGN OR SIGN ASSEMBLY IS PLACED ON 2-1/2" SQUARE TUBE RISER POST(S), THE MINIMUM CLEARANCE FROM THE GROUND LINE TO THE BOTTOM OF THE LOWEST SIGN ON THE ASSEMBLY SHALL BE 7', OR AS SHOWN IN DETAIL, WHICHEVER IS GREATER.
- ④ 5' MINIMUM IN RURAL, 7' MINIMUM IN BUSINESS, COMMERCIAL, OR RESIDENTIAL AREAS.
- ⑤ WHEN MULTIPLE GROUND MOUNTED SIGN STRUCTURES ARE PLACED ADJACENT TO EACH OTHER THERE SHOULD BE NO MORE THAN 2 POSTS WITHIN 84" OF EACH OTHER. WHEN THIS SPACING CAN NOT BE MAINTAINED, THEN SIGN STRUCTURES SHALL BE OFFSET, AND STAGGERED WITH A MINIMUM OF 4' BETWEEN SIGN STRUCTURES BOTH Laterally AND LONGITUDINALLY. EXAMPLE SHOWS DETOUR SIGNAGE, BUT THIS REQUIREMENT APPLIES TO ALL SIGNAGE.
- ⑥ INPLACE AND/OR OTHER CONSTRUCTION SIGNING.



CONSTRUCTION SIGN POST
OFFSET SPACING
⑤

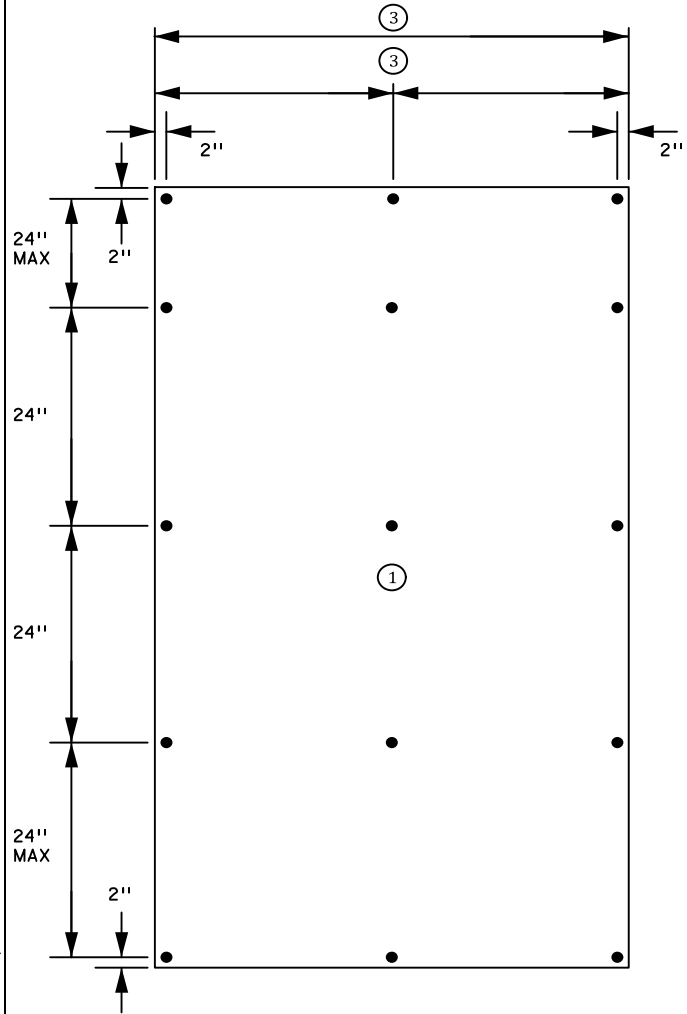


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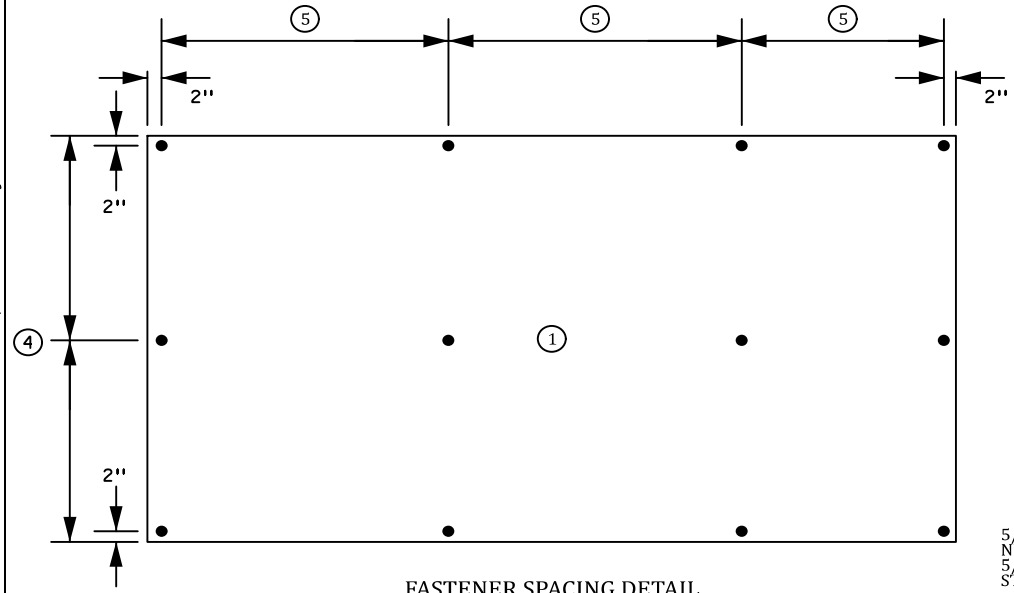
PUBLISHED BY OTE 03/15/2021					TEMPORARY SQUARE TUBE GROUND MOUNTED SIGN PLACEMENT									
NO.	DATE	BY	CHK	REVISIONS	Design By:	I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.  MIKE SHOMION, PE DATE: 9/12/2024 LICENSE NO. 50488					CSAH 30 (Forest Blvd) Improvements Chisago County, Minnesota	CHISAGO COUNTY, MINNESOTA		SHEET 86 OF 216 SHEETS
												TEMPORARY SQUARE TUBE GROUND MOUNTED SIGN PLACEMENT CONSTRUCTION STAGING & TRAFFIC CONTROL SAP 013-630-021 / SAP 225-591-007 / SAP 225-102-004		

DATE: 9/12/2024 2:03:35 PM
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FASTENER SPACING DETAIL
HORIZONTAL PLACEMENT

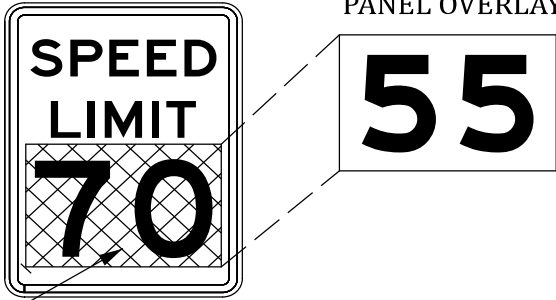


FASTENER SPACING DETAIL
VERTICAL PLACEMENT

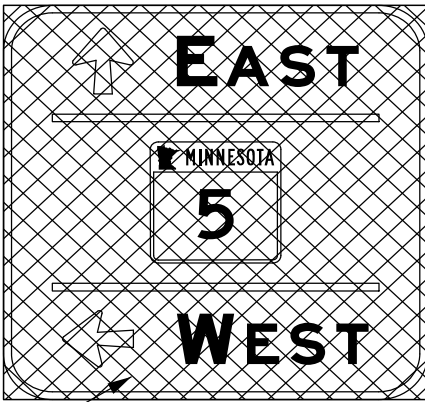


R2-1

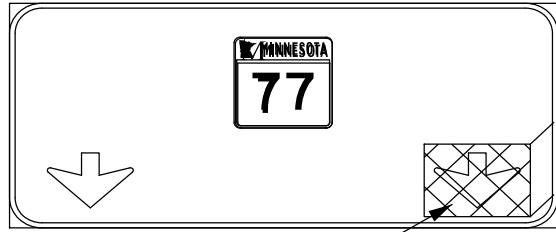
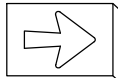
BLACK ON WHITE
PANEL OVERLAY



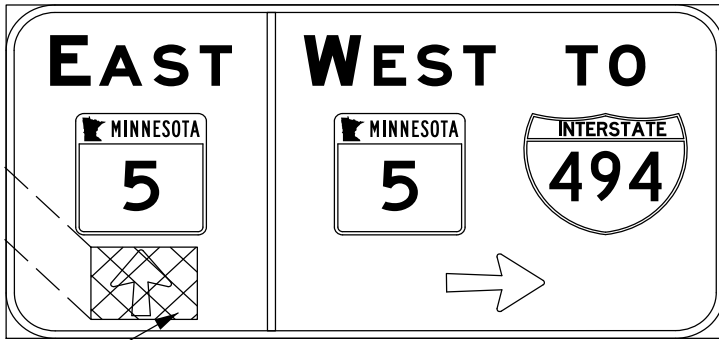
BLANK
NON-REFLECTIVE
GREEN
COVER



BLACK ON
ORANGE
PANEL
OVERLAY



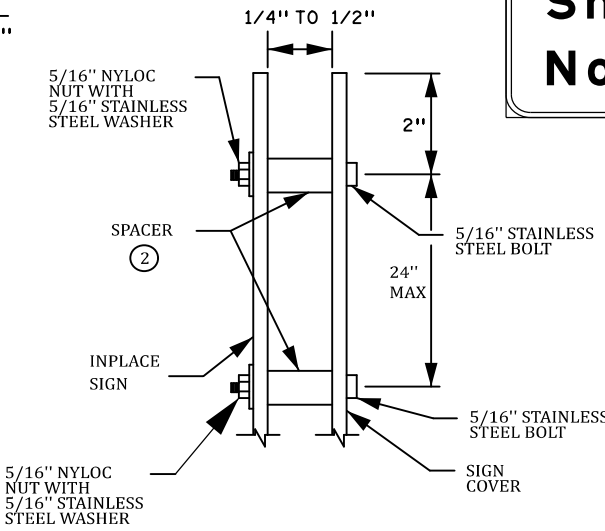
BLANK
ORANGE
PANEL
OVERLAY



BLACK ON
ORANGE
PANEL
OVERLAY



SPACER DETAIL



GENERAL NOTES:

- SIGN COVERS ARE USED TO COVER THE ENTIRE PANEL OF A INPLACE SIGN. THE COVER SHALL BE BLANK, GREEN IN COLOR, AND MADE OF A RIGID NON-REFLECTIVE MATERIAL (SHEET ALUMINUM, PLYWOOD, CORRUGATED PLASTIC). OTHER MATERIALS MAY BE USED AS APPROVED BY THE ENGINEER.
- SIGN PANEL OVERLAYS ARE USED TO MODIFY THE MESSAGE OF AN INPLACE SIGN PANEL. THE PANEL OVERLAY SHALL BE MADE OF SHEET ALUMINUM WITH THE APPROPRIATE SHEETING MATERIAL AS SPECIFIED ON THE MNDOT SHEETING FOR RIGID TEMPORARY WORK ZONE SIGNS APL. THE MESSAGE SHALL FOLLOW THE REQUIREMENTS OF THE "MNDOT STANDARD SIGNS AND MARKINGS MANUAL" OR THE "FHWA STANDARD HIGHWAY SIGNS MANUAL" (AND SUPPLEMENTS). THE SIGN PANEL OVERLAY SHALL BE RECTANGULAR IN SHAPE AND FULLY COVER THE MESSAGE ELEMENT(S) BEING MODIFIED.
- SIGN PANEL OVERLAY WITH A MESSAGE SHALL BE BLACK ON FLUORESCENT ORANGE ON ALL SIGNS EXCEPT FOR REGULATORY SIGNS WHICH SHALL BE THE PROPER COLOR ON A WHITE BACKGROUND.
- BLANK SIGN PANEL OVERLAYS SHALL BE FLUORESCENT ORANGE ON ALL SIGNS.
- DO NOT COVER OR MODIFY THE "STOP" (R1-1), "YIELD" (R1-2), OR THE (W14-3) NO PASSING ZONE SIGNS, THESE SIGNS SHALL BE REMOVED IF THEY NO LONGER APPLY OR CONFLICT WITH WORK ZONE SIGNING.
- MINIMIZE DAMAGE TO THE INPLACE SIGN PANEL. DO NOT APPLY TAPE TO THE INPLACE SIGN SHEETING.
- SPACERS (SUCH AS PLASTIC OR RUBBER) SHALL BE A MATERIAL THAT WILL NOT HARM THE INPLACE SIGN SHEETING FACE.
- ATTACH SIGN COVER PANEL OR PANEL OVERLAY USING HARDWARE SHOWN IN THE SPACER DETAIL.
- IF SHEET METAL SCREWS ARE USED TO PLACE CORRUGATED PLASTIC AS A SIGN COVER PANEL, PLACE FENDER WASHERS BETWEEN THE SCREW HEADS AND THE CORRUGATED PLASTIC.
- REMOVE ALL COVERING MATERIAL, MOUNTING HARDWARE, AND FASTENERS WHEN SIGN COVER PANEL OR PANEL OVERLAY IS REMOVED.
- NO HANDLE OR OTHER LIFTING DEVICE SHALL BE LEFT ATTACHED TO ANY SIGN COVER PANEL AFTER PLACEMENT.

SPECIFIC NOTES:

- THE SIGN COVER OR PANEL OVERLY SHALL FULLY COVER THE MESSAGE BEING COVERED OR MODIFIED.
- PLACE SIGN COVER AND PANEL OVERLAYS WITH SPACERS THAT PROVIDE A SPACING OF 1/4 IN TO 1/2 IN BETWEEN THE COVER MATERIAL AND THE INPLACE SIGN. THE SPACERS SHALL HAVE AN OUTSIDE DIAMETER BETWEEN 3/8 IN TO 7/8 IN. EACH FASTENER REQUIRES A SPACER.
- IF THE SIGN COVER OR PANEL OVERLAY IS GREATER THAN 48 IN WIDE, THE FASTENER SPACING SHALL BE NO GREATER THAN 24 IN. IF THE SIGN COVER OR PANEL OVERLAY IS LESS THAN 24 IN WIDE, DO NOT PLACE A CENTER FASTENER (UNLESS REQUIRED BY SPECIFIC NOTE ④).
- VERTICAL SPACING FOR FASTENERS IS 50% OF THE SIGN COVER OR PANEL OVERLAY. IF THE SIGN COVER OR PANEL OVERLAY IS LESS THAN 24 IN HIGH, DO NOT PLACE A CENTER FASTENER (UNLESS REQUIRED PER SPECIFIC NOTE ⑤).
- HORIZONTAL SPACING FOR FASTENERS SHALL NOT BE LESS THAN 15 IN OR MORE THAN 24 IN.

ASSEMBLY NOTES:

- DRILL 11/32 IN HOLES ON THE SIGN COVER OR PANEL OVERLAY IN ACCORDANCE WITHHELD FASTENER SPACING DETAILS.
- ATTACH PLASTIC SPACERS TO SIGN COVER OR PANEL OVERLAY WITH DOUBLE FACED TAPE. CENTERED BEHIND EACH DRILLED HOLE.
- POSITION THE COVER OR OVERLAY MATERIAL OVER THE SIGN OR MESSAGE TO BE MODIFIED.
- DRILL ALL THE OUTSIDE HOLES THROUGH THE INPLACE SIGN PANEL AND ATTACH THE COVER OR OVERLAY MATERIAL WITH APPROPRIATE FASTENERS.
- DRILL ALL THE INNER HOLES THROUGH THE INPLACE SIGN PANEL AND ATTACH WITH APPROPRIATE FASTENERS.

PUBLISHED BY OTE 08/17/2023

TEMPORARY SIGN COVERING AND MODIFICATION DETAIL

NO.	DATE	BY	CHK	REVISIONS

Design By: MJS
Plan By: GAD
Checked By: MKV
Approved By: MJS

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.
Michael Shomon
MIKE SHOMON, PE
DATE: 9/12/2024 LICENSE NO. 50488

wsb

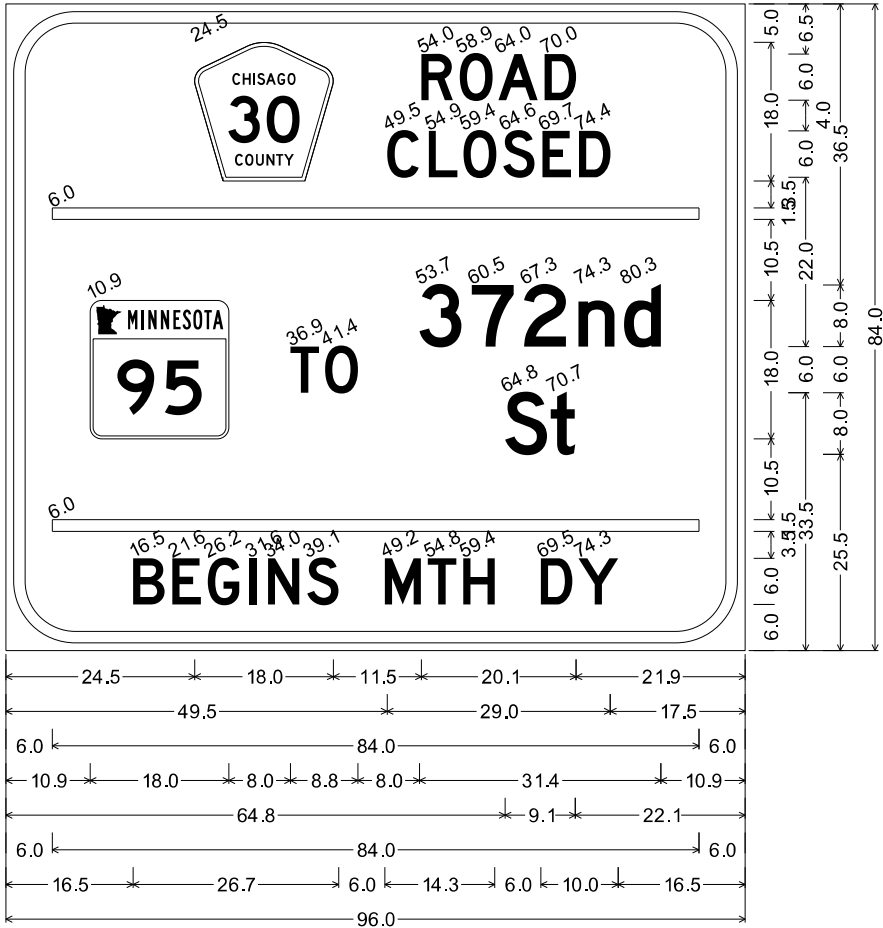
Chisago
COUNTY USA

CSAH 30 (Forest Blvd) Improvements
Chisago County, Minnesota

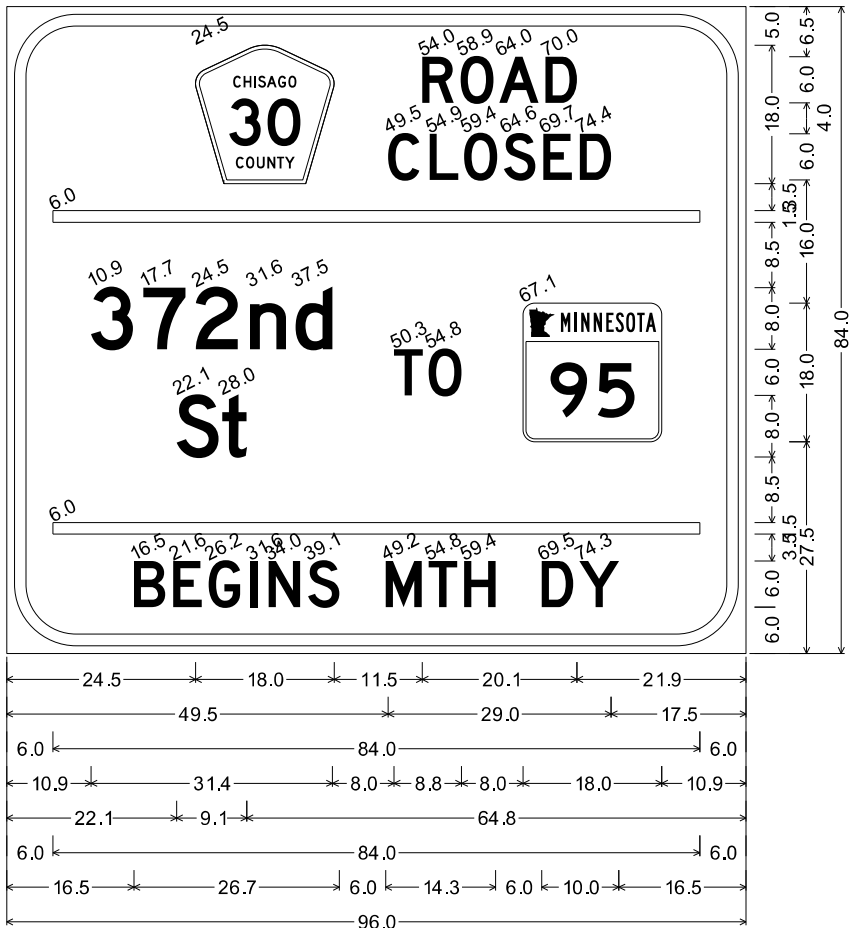
CHISAGO COUNTY, MINNESOTA
TEMPORARY SIGN COVERING AND MODIFICATION DETAIL
CONSTRUCTION STAGING & TRAFFIC CONTROL
SAP 013-630-021 / SAP 225-591-007 / SAP 225-102-004

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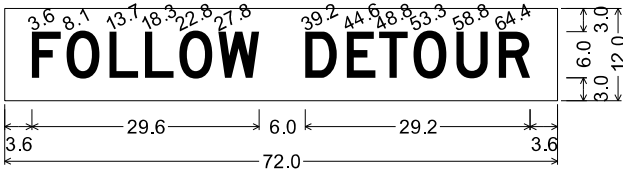
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9.0" Radius, 1.5" Border, 1.0" Indent, Black on Orange;
"ROAD", D 2K; "CLOSED", D 2K; State Highway 95 M1-5M; "TO", D 2K;
"372nd", D 2K; "St", D 2K; "BEGINS MTH DY", D 2K;



9.0" Radius, 1.5" Border, 1.0" Indent, Black on Orange;
"ROAD", D 2K; "CLOSED", D 2K; "372nd", D 2K; "St", D 2K;
"TO", D 2K; State Highway 95 M1-5M; "BEGINS MTH DY", D 2K;



No border, White on Orange;
"FOLLOW DETOUR" Black, D 2K;

NO.	DATE	BY	CHK	REVISIONS

Design By:	MJS
Plan By:	GAD
Checked By:	MKV
Approved By:	MJS

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.	
	MIKE SHOMON, PE
DATE: 9/12/2024	LICENSE NO. 50488

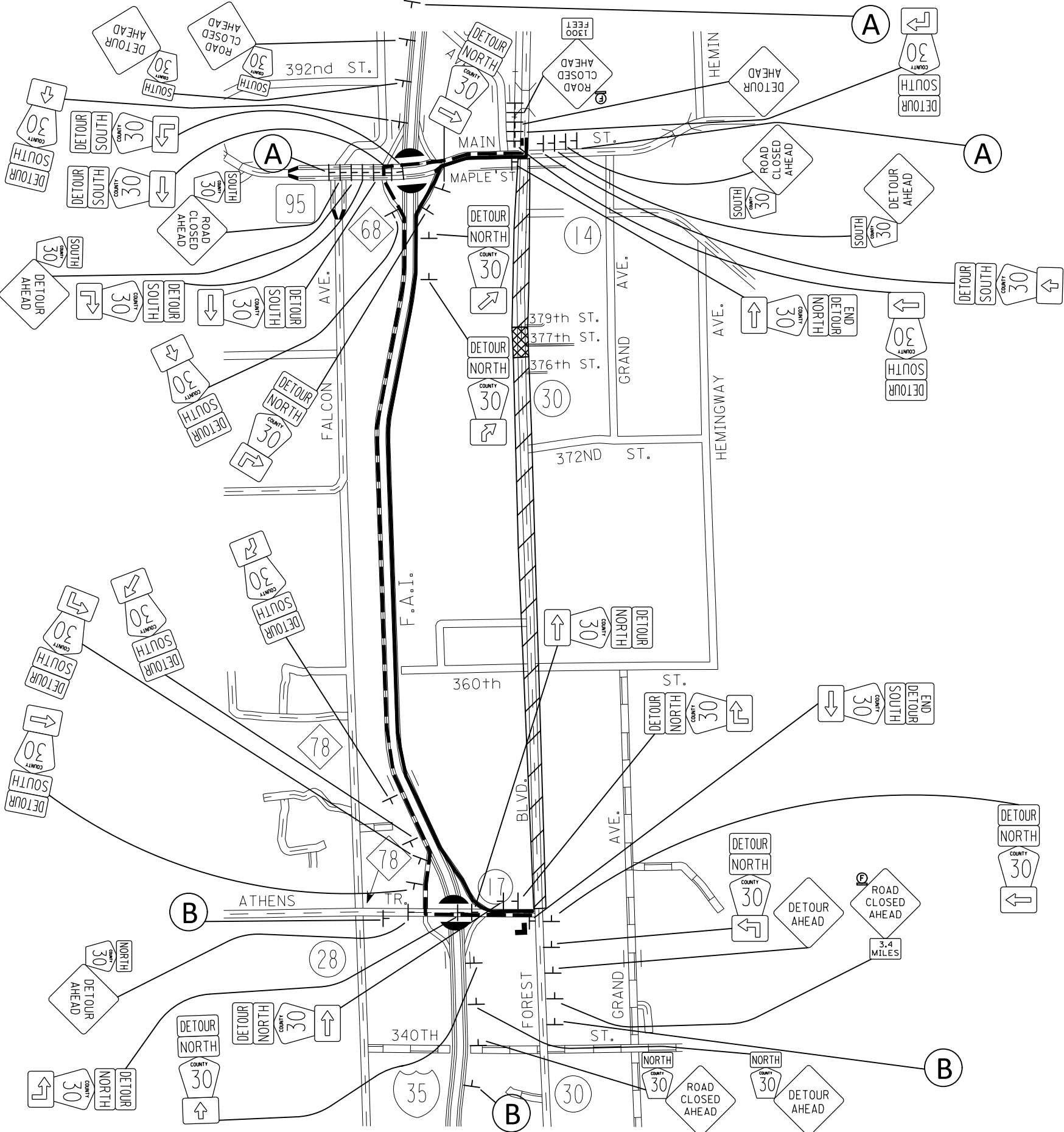


CSAH 30 (Forest Blvd) Improvements
Chisago County, Minnesota

CHISAGO COUNTY, MINNESOTA
SPECIAL SIGN DETAILS
CONSTRUCTION STAGING & TRAFFIC CONTROL
SAP 013-630-021 / SAP 225-591-007 / SAP 225-102-004

SHEET	88
OF	216
SHEETS	

DATE: 9/12/2024 2:03:45 PM
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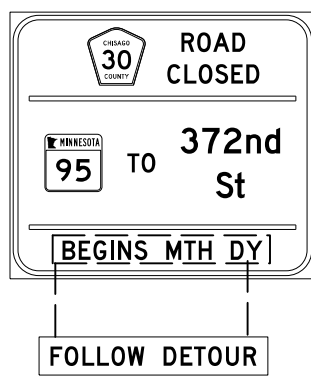
NOTES:

1. MAINTAIN ACCESS TO RESIDENTIAL AREAS AT ALL TIMES

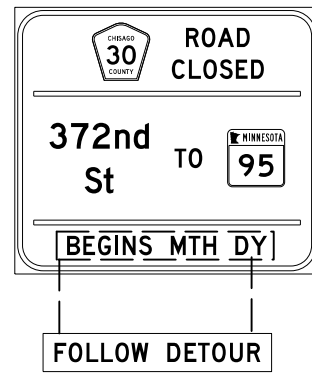
CSAH 30 NORTH DETOUR ROUTE —————

CSAH 30 SOUTH DETOUR ROUTE - - - - -

A



B



NO.	DATE	BY	CHK	REVISIONS

Design By: MJS
Plan By: GAD
Checked By: MKV
Approved By: MJS

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Michael Shomon
MIKE SHOMON, PE
DATE: 9/12/2024 LICENSE NO. 50488

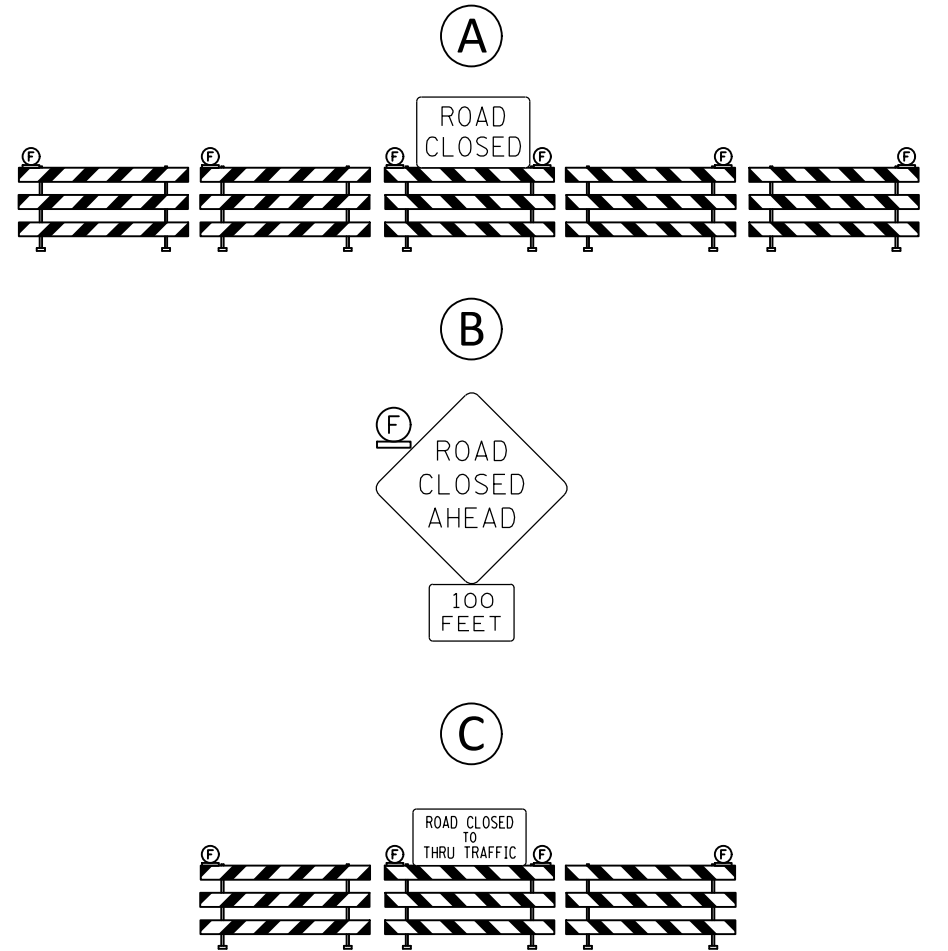
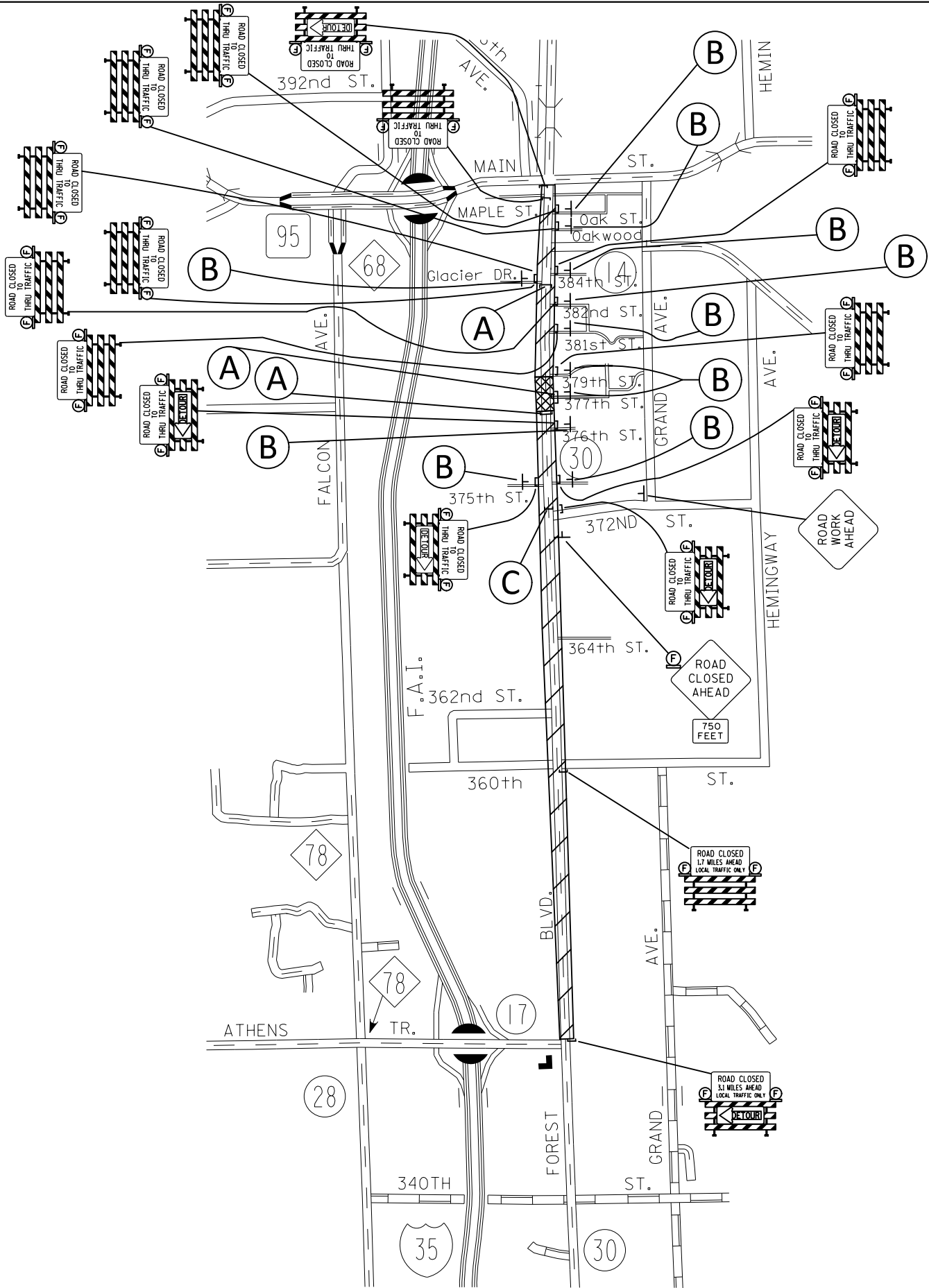


CSAH 30 (Forest Blvd) Improvements
Chisago County, Minnesota

CHISAGO COUNTY, MINNESOTA
DETOUR
CONSTRUCTION STAGING & TRAFFIC CONTROL
SAP 013-630-021 / SAP 225-591-007 / SAP 225-102-004

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NO.	DATE	BY	CHK	REVISIONS

Design By: MJS
Plan By: GAD
Checked By: MKV
Approved By: MJS

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Michael Shomon
MIKE SHOMON, PE
DATE: 9/12/2024 LICENSE NO. 50488

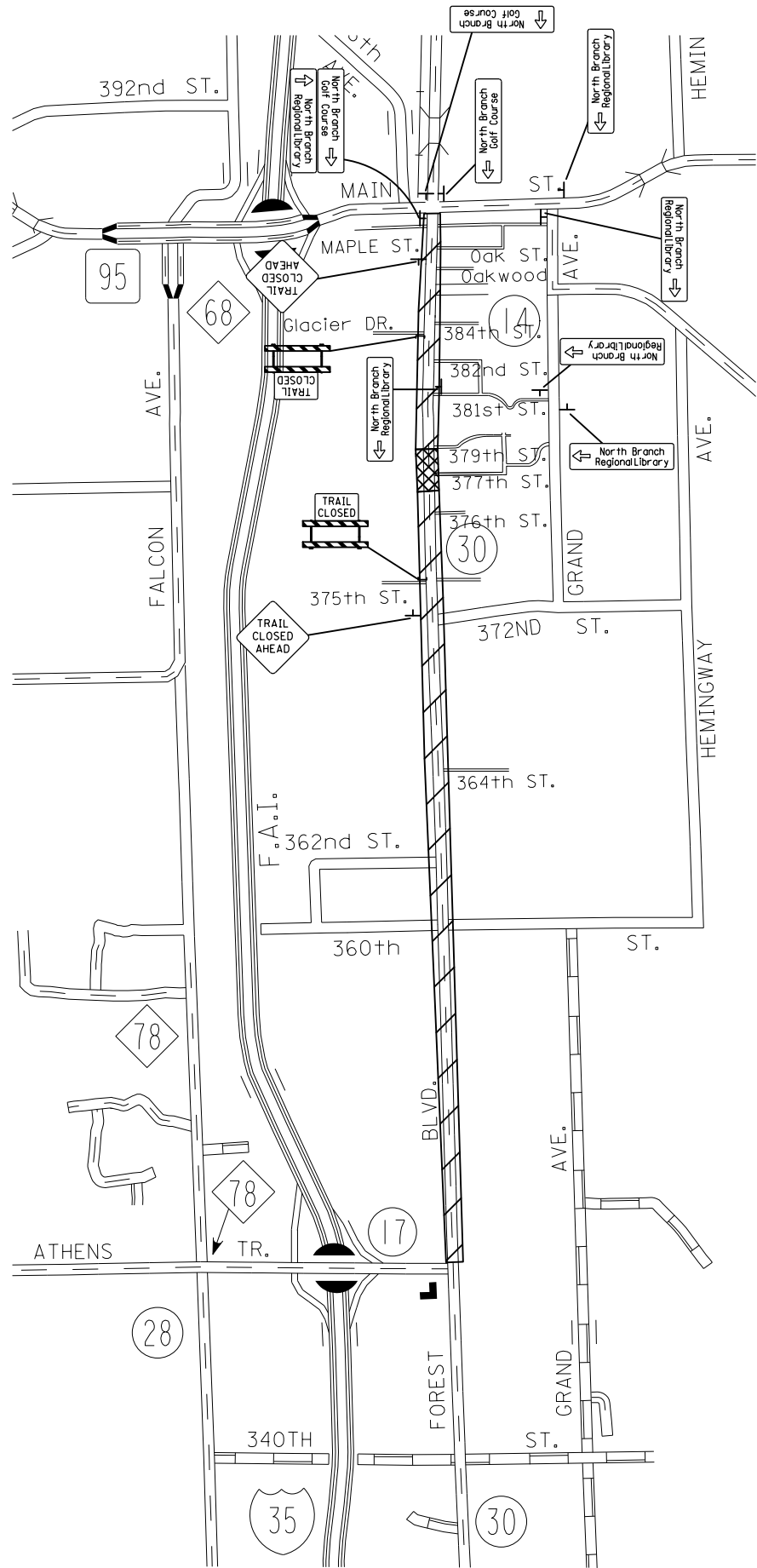


CSAH 30 (Forest Blvd) Improvements
Chisago County, Minnesota

CHISAGO COUNTY, MINNESOTA
TRAFFIC CONTROL
CONSTRUCTION STAGING & TRAFFIC CONTROL
SAP 013-630-021 / SAP 225-591-007 / SAP 225-102-004

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OF
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SHEETS

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NO.	DATE	BY	CHK	REVISIONS

Design By: MJS
Plan By: GAD
Checked By: MKV
Approved By: MJS

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MIKE SHOMON, PE
DATE: 9/12/2024 LICENSE NO. 50488

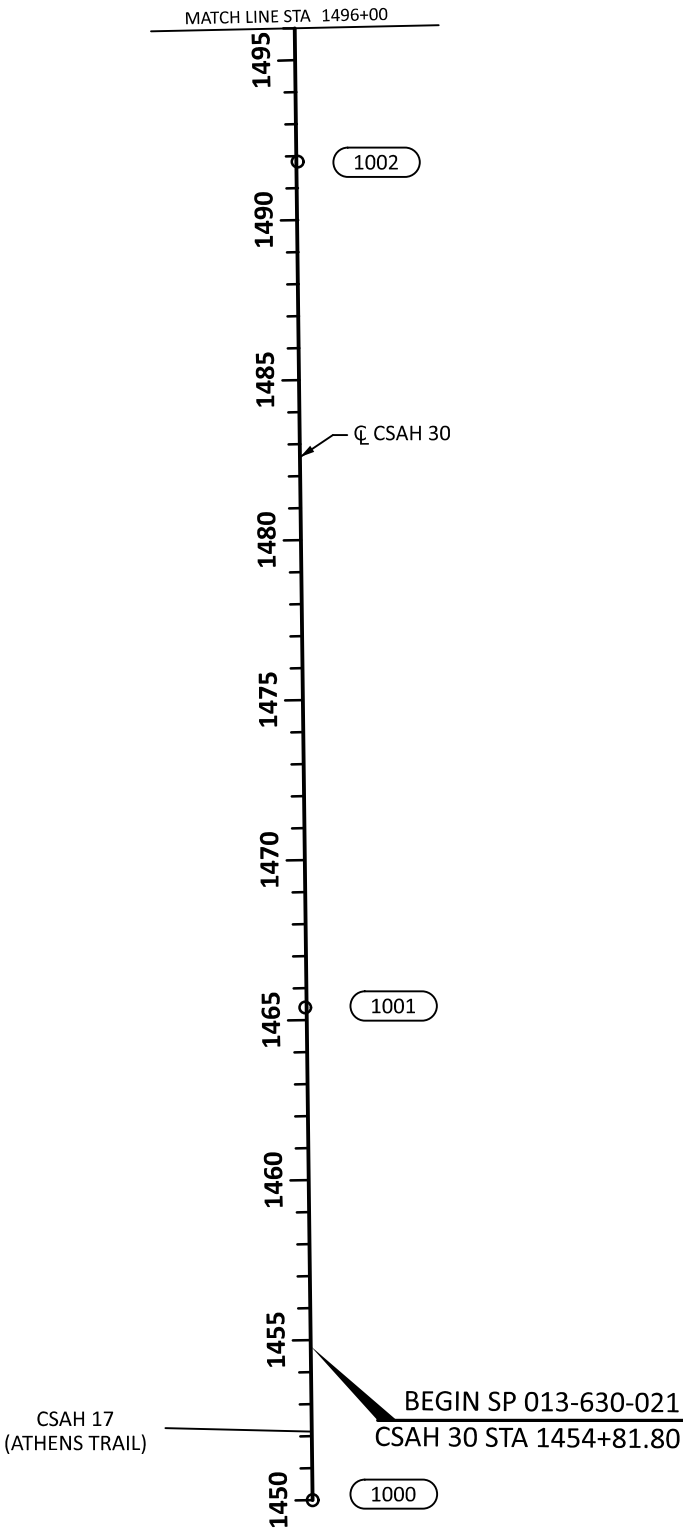


CSAH 30 (Forest Blvd) Improvements
Chisago County, Minnesota

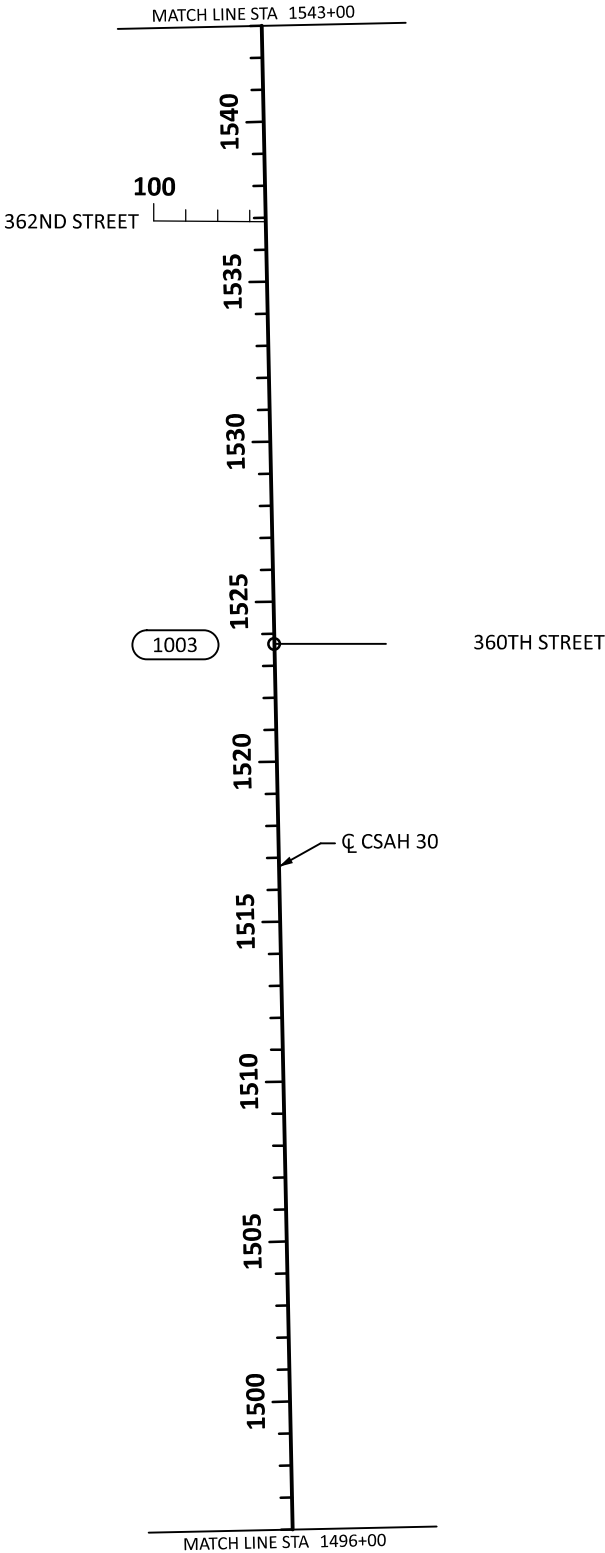
CHISAGO COUNTY, MINNESOTA
TRAFFIC CONTROL
CONSTRUCTION STAGING & TRAFFIC CONTROL
SAP 013-630-021 / SAP 225-591-007 / SAP 225-102-004

SHEET
91
OF
216
SHEETS

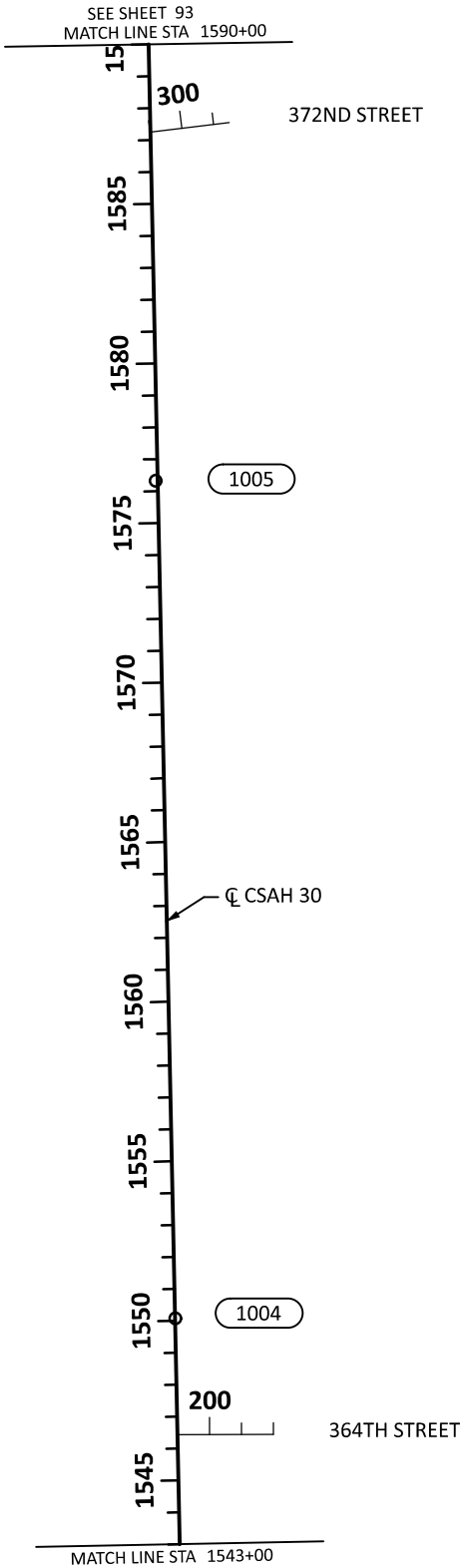
CSAH 30 (Forest Blvd)



CSAH 30 (Forest Blvd)



CSAH 30 (Forest Blvd)



THE HORIZONTAL CONTROL FOR THIS PLAN IS CHISAGO COUNTY COORDINATES NAD 83 (1996 ADJUSTMENT).
THE VERTICAL CONTROL FOR THIS PLAN IS NAVD 88.

LEGEND	
XXXX	POINT NUMBER (POINT DETAILS FOUND ON ALIGNMENT TABULATION SHEET)

NO.	DATE	BY	CHK	REVISIONS

Design By:	NEH
Plan By:	MKV
Checked By:	MAN
Approved By:	NEH

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.


NICHOLAS E. HENTGES, PE
DATE: 9/12/2024 LICENSE NO. 44620



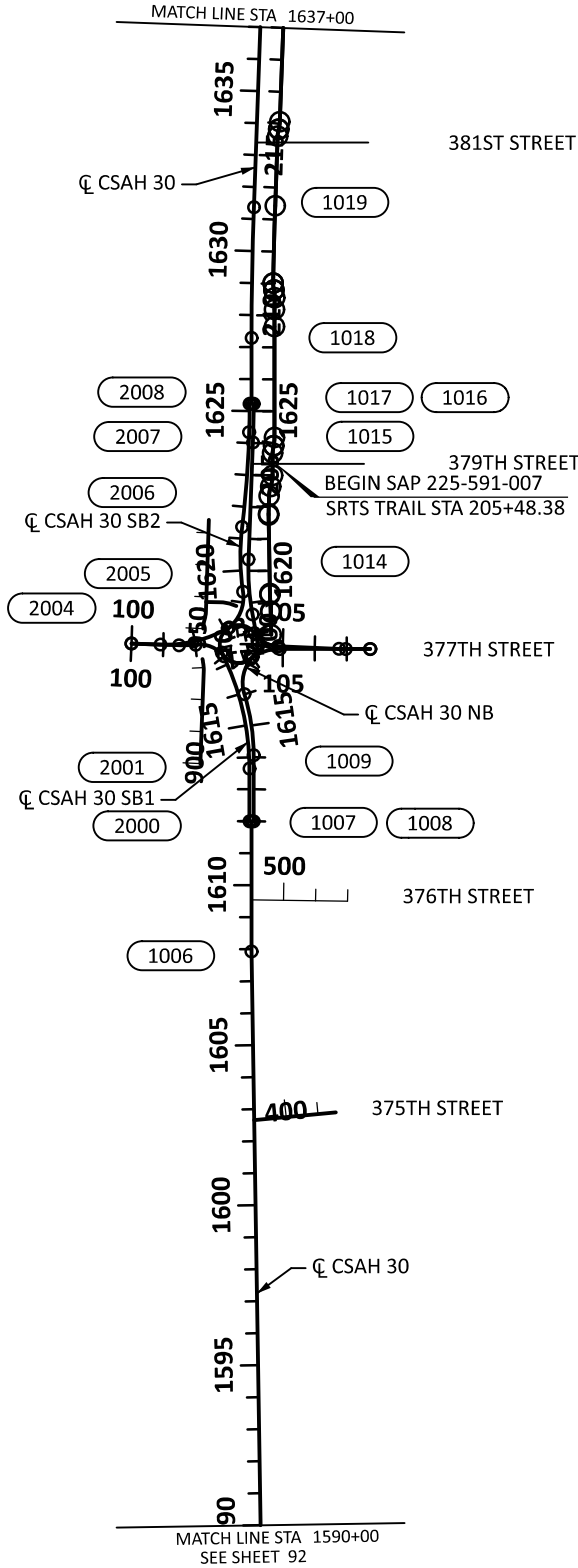
CSAH 30 (Forest Blvd) Improvements
Chisago County, Minnesota

CHISAGO COUNTY, MINNESOTA
ALIGNMENT PLAN AND TABULATIONS SAP 013-630-021 / SAP 225-591-007 / SAP 225-102-004

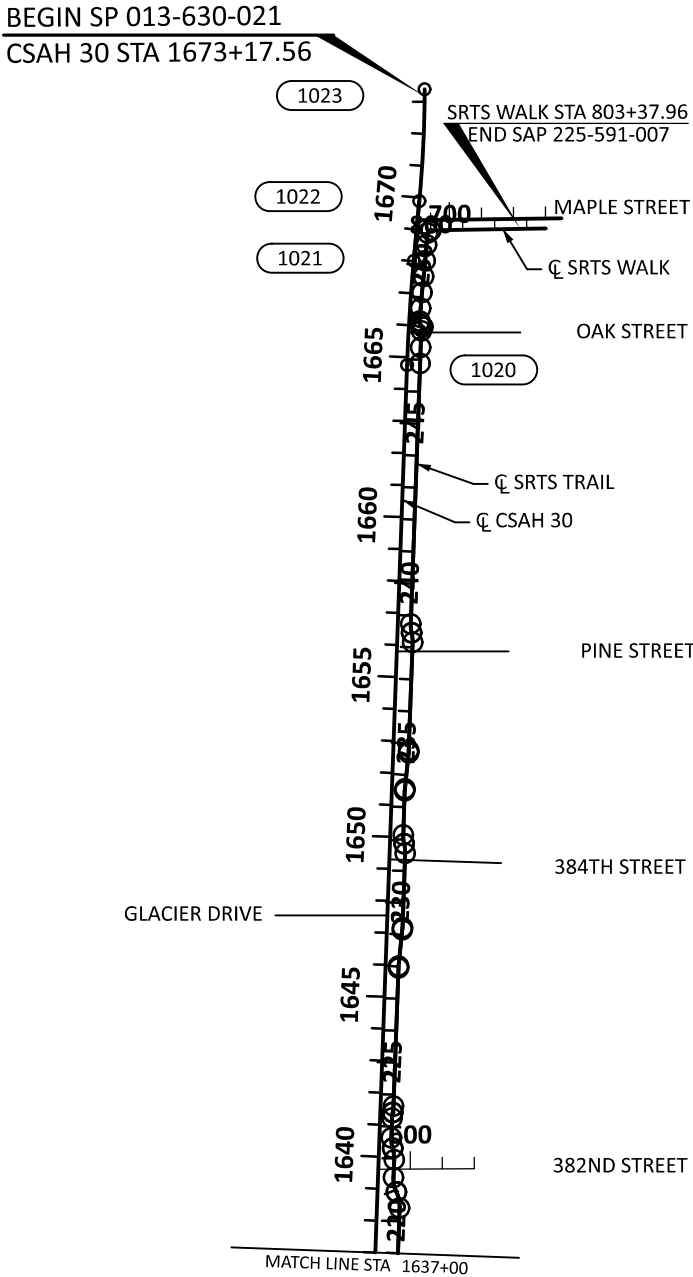
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DATE: 9/12/2024 2:03:56 PM
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CSAH 30 (Forest Blvd)



CSAH 30 (Forest Blvd)



THE HORIZONTAL CONTROL FOR THIS PLAN IS CHISAGO COUNTY COORDINATES NAD 83 (1996 ADJUSTMENT).
THE VERTICAL CONTROL FOR THIS PLAN IS NAVD 88.

LEGEND	
XXXX	POINT NUMBER (POINT DETAILS FOUND ON ALIGNMENT TABULATION SHEET)

NO.	DATE	BY	CHK	REVISIONS

Design By: NEH
Plan By: MKV
Checked By: MAN
Approved By: NEH

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NICHOLAS E. HENTZ, P.E.
DATE: 9/12/2024 LICENSE NO. 44620



CSAH 30 (Forest Blvd) Improvements
Chisago County, Minnesota

CHISAGO COUNTY, MINNESOTA
ALIGNMENT PLAN AND TABULATIONS
SAP 013-630-021 / SAP 225-591-007 / SAP 225-102-004

SHEET 93 OF 216 SHEETS

DATE: 9/12/2024 2:03:59 PM
PATH & FILENAME: Projects\Minnesota\023661-000\03_Discipline\Roadway\Sheets\023661-000_al

ALIGNMENT TABULATION										
POINT NUMBER	POINT TYPE	STATION	CIRCULAR CURVE DATA					COORDINATES		DIRECTION AZIMUTH
			DELTA	DEGREE	RADIUS	TANGENT	LENGTH			
			SPIRAL CURVE DATA					EASTING (X)	NORTHING (Y)	
			THETA	DEGREE	ST	LT	LS			
ALIGNMENT: CSAH 30-1										
1000	START	1450+00.000 R1						526557.630	156119.240	
1001	HPI	1465+39.786 R1						526534.352	157658.850	359.134°
1002	HPI	1491+83.063 R1						526510.705	160302.021	359.487°
1003	HPI	1523+68.041 R1						526443.513	163486.290	358.791°
1004	HPI	1550+07.649 R1						526391.254	166125.381	358.866°
1005	HPI	1576+32.498 R1						526329.603	168749.506	358.654°
1006	HPI	1607+93.311 R1						526279.464	171909.921	359.091°
1007	END	1612+00.000 R1						526279.523	172316.610	0.008°
ALIGNMENT: CSAH 30 NB										
1008	START	1612+00.000 R1						526286.023	172316.609	
1009	PC	1614+06.512 R1						526286.053	172523.122	0.008°
	HPI	1615+04.325 R1	17.115° LT	8.815°	650	97.813	194.169	526286.067	172620.934	PI
	CC							525636.053	172523.216	
1010	PRC	1616+00.681 R1						526257.294	172714.42	342.893°
	HPI	1616+69.240 R1	59.481° RT	47.746°	120	68.559	124.577	526237.127	172779.945	PI
	CC							526371.985	172749.719	
1011	PRC	1617+25.258 R1						526283.334	172830.594	42.374°
	HPI	1617+54.860 R1	52.902° LT	96.295°	59.5	29.602	54.937	526303.284	172852.463	PI
	CC							526239.377	172870.695	
1012	PT	1617+80.195 R1						526297.875	172881.567	349.472°
1013	PC	1618+63.228 R1						526282.704	172963.202	349.472°
	HPI	1619+49.972 R1	12.692° RT	7.346°	780	86.744	172.777	526266.854	173048.486	PI
	CC							527049.572	173105.724	
1014	PT	1620+36.005 R1						526270.128	173135.168	2.163°
1015	PC	1624+01.546 R1						526283.927	173500.448	2.163°
	HPI	1624+61.987 R1	2.155° LT	1.783°	3213.5	60.441	120.868	526286.208	173560.846	PI
	CC							523072.717	173621.752	
1016	PT	1625+22.414 R1						526286.217	173621.287	0.008°
ALIGNMENT: CSAH 30-2										
1017	START	1625+22.410 R1						526279.717	173621.288	
1018	PC	1627+28.230 R1						526279.747	173827.108	0.008°
	HPI	1629+32.574 R1	2.043° RT	0.500°	11459.16	204.345	408.646	526279.776	174031.452	PI
	CC							537738.903	173825.45	
1019	PT	1631+36.876 R1						526287.091	174235.666	2.052°
1020	PC	1664+75.217 R1						526406.597	177571.867	2.052°
	HPI	1666+38.482 R1	3.264° RT	1.000°	5729.58	163.266	326.443	526412.442	177735.028	PI
	CC							532132.505	177366.759	
1021	PT	1668+01.660 R1						526427.568	177897.592	5.316°
1022	PC	1669+89.355 R1						526444.958	178084.479	5.316°
	HPI	1671+64.415 R1	5.257° LT	1.503°	3813.22	175.06	349.875	526461.177	178258.787	PI
	CC							522648.139	178437.765	
1023	PT	1673+39.229 R1						526461.357	178433.847	0.059°
ALIGNMENT: CSAH 30 SB1										
2000	START	1612+00.000 R1						526273.023	172316.611	
2001	PC	1613+64.766 R1						526273.047	172481.377	0.008°
	HPI	1615+56.337 R1	26.933° LT	7.162°	800	191.571	376.06	526273.075	172672.948	PI
	CC							525473.047	172481.493	
2002	PT	1617+40.826 R1						526186.327	172843.752	333.075°

ALIGNMENT TABULATION										
POINT NUMBER	POINT TYPE	STATION	CIRCULAR CURVE DATA					COORDINATES		DIRECTION AZIMUTH
			DELTA	DEGREE	RADIUS	TANGENT	LENGTH			
			SPIRAL CURVE DATA					EASTING (X)	NORTHING (Y)	
			THETA	DEGREE	ST	LT	LS			
ALIGNMENT: CSAH 30 SB2										
2003	PC	1618+02.242 R1						526204.563	172918.947	54.190°
	HPI	1618+75.503 R1	62.809° LT	47.746°	120	73.261	131.546	526263.975	172961.813	PI
	CC							526134.351	173016.262	
2004	PRC	1619+33.789 R1						526252.995	173034.246	351.381°
	HPI	1620+35.981 R1	15.529° RT	7.645°	749.5	102.192	203.132	526237.68	173135.284	PI
	CC							526994.031	173146.571	
2005	PRC	1621+36.921 R1						526249.974	173236.735	6.909°
	HPI	1622+85.464 R1	5.315° LT	1.790°	3200.5	148.543	296.873	526267.844	173384.199	PI
	CC							523072.717	173621.752	
2006	PCC	1624+33.795 R1						526271.977	173532.685	1.595°
	HPI	1624+78.105 R1	1.586° LT	1.790°	3200.5	44.311	88.615	526273.21	173576.978	PI
	CC							523072.717	173621.752	
2007	PT	1625+22.410 R1						526273.217	173621.289	0.008°
ALIGNMENT: 362ND ST										
	START	100+00.000 R1						526067.401	164808.013	
	END	103+50.000 R1						526417.391	164805.452	90.419°
ALIGNMENT: 364TH ST										
	START	199+00.000 R1						526398.477	165760.647	
	END	202+00.000 R1						526698.473	165762.117	89.719°
ALIGNMENT: 372ND ST										
	START	299+00.000 R1						526312.275	169841.728	
	END	301+50.000 R1						526560.413	169872.184	83.003°
ALIGNMENT: 375TH ST										
	START	399+00.000 R1						526287.820	171383.209	
	END	401+56.101 R1						526542.781	171407.341	84.593°
ALIGNMENT: 376TH ST										
	START	499+00.000 R1						526279.488	172070.863	
	END	502+00.000 R1						526579.461	172066.848	90.767°
ALIGNMENT: 382ND ST										
	START	599+00.000 R1						526316.582	175058.95	
	END	602+00.000 R1						526616.577	175060.65	89.675°
ALIGNMENT: SOUTH SUNRISE PRAIRIE TRAIL										
	START	900+00.000 R1						526119.321	172497.169	
	PC	902+92.064 R1						526130.208	172789.03	2.136°
	HPI	903+04.484 R1	14.160° LT	57.296°	100	12.42	24.714	526130.671	172801.442	PI
	CC							526030.277	172792.758	
	PRC	903+16.778 R1						526128.084	172813.589	347.976°
	HPI	903+21.775 R1	5.202° RT	52.087°	110	4.997	9.988	526127.043	172818.477	PI
	CC							526235.67	172836.504	
	PT	903+26.765 R1						526126.449	172823.438	353.179°
ALIGNMENT: NORTH SUNRISE PRAIRIE TRAIL										
	START	950+00.000 R1						526128.542	172919.008	
	PC	950+01.689 R1						526128.602	172920.697	2.042°
	HPI	950+15.259 R1	14.065° RT	52.087°	110	13.57	27.003	526129.085	172934.258	PI
	CC							526238.532	172916.778	
	PRC	950+28.692 R1						526132.85	172947.295	16.107°
	HPI	950+41.240 R1	14.304° LT	57.296°	100	12.548	24.965	526136.331	172959.35	PI
	CC							526036.775	172975.037	
	PT	950+53.658 R1						526136.725	172971.892	1.802°
	END	953+40.838 R1						526145.758	173258.93	1.802°

NO.	DATE	BY	CHK	REVISIONS

Design By:	NEH
Plan By:	MKV
Checked By:	MAN
Approved By:	NEH

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.	
	NICHOLAS E. HENTGES, PE
DATE: 9/12/2024	LICENSE NO. 44620



CSAH 30 (Forest Blvd) Improvements
Chisago County, Minnesota

CHISAGO COUNTY, MINNESOTA

ALIGNMENT PLAN AND TABULATIONS
SAP 013-630-021 / SAP 225-591-007 / SAP 225-102-004

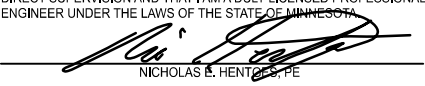
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ALIGNMENT TABULATION										
POINT NUMBER	POINT TYPE	STATION	CIRCULAR CURVE DATA					COORDINATES		DIRECTION AZIMUTH
			DELTA	DEGREE	RADIUS	TANGENT	LENGTH			
			SPIRAL CURVE DATA							
			THETA	DEGREE	ST	LT	LS	EASTING (X)	NORTHING (Y)	
ALIGNMENT: SRTS TRAIL										
	START	200+00.000 R1						526341.312	172899.403	
	PC	200+70.755 R1						526339.799	172970.142	358.775°
	HPI	200+72.696 R1	2.022° LT	52.087°	110	1.941	3.881	526339.757	172972.082	PI
	CC							526229.824	172967.789	
	PT	200+74.636 R1						526339.647	172974.02	356.753°
	PC	201+25.635 R1						526336.759	173024.936	356.753°
	HPI	201+27.658 R1	2.318° RT	57.296°	100	2.023	4.046	526336.644	173026.956	PI
	CC							526436.598	173030.6	
	PT	201+29.681 R1						526336.611	173028.979	359.071°
	PC	203+74.173 R1						526332.649	173273.439	359.071°
	HPI	203+76.248 R1	2.378° RT	57.296°	100	2.075	4.15	526332.615	173275.514	PI
	CC							526432.636	173275.06	
	PT	203+78.323 R1						526332.668	173277.589	1.449°
	PC	204+34.165 R1						526334.08	173333.413	1.449°
	HPI	204+49.383 R1	17.307° RT	57.299°	99.995	15.218	30.204	526334.465	173348.626	PI
	CC							526434.043	173330.884	
	PRC	204+64.369 R1						526339.358	173363.036	18.756°
	HPI	204+82.184 R1	18.399° LT	52.089°	109.995	17.814	35.321	526345.087	173379.906	PI
	CC							526235.205	173398.405	
	PT	204+99.691 R1						526345.198	173397.72	0.357°
	PC	205+69.724 R1						526345.634	173467.751	0.357°
	HPI	205+81.266 R1	13.169° RT	57.299°	99.995	11.542	22.983	526345.706	173479.293	PI
	CC							526445.627	173467.128	
	PC	205+92.708 R1						526348.406	173490.516	13.526°
	HPI	206+05.807 R1	13.582° LT	52.089°	109.995	13.099	26.075	526351.47	173503.252	PI
	CC							526241.462	173516.243	
	PT	206+18.783 R1						526351.457	173516.351	359.944°
	PC	209+65.397 R1						526351.115	173862.965	359.944°
	HPI	209+91.993 R1	0.647° RT	1.217°	4708.914	26.596	53.191	526351.089	173889.561	PI
	CC							531060.027	173867.607	
	PT	210+18.588 R1						526351.363	173916.155	0.591°
	PC	210+55.521 R1						526351.744	173953.087	0.591°
	HPI	210+67.483 R1	12.412° LT	52.089°	109.995	11.961	23.829	526351.867	173965.047	PI
	CC							526241.755	173954.221	
	PC	210+79.352 R1						526349.416	173976.756	348.178°
	HPI	210+90.431 R1	12.644° RT	57.299°	99.995	11.079	22.068	526347.147	173987.6	PI
	CC							526447.29	173997.242	
	PC	211+01.420 R1						526347.306	173998.678	0.823°
	HPI	212+22.276 R1	1.231° RT	0.509°	11253	120.856	241.703	526349.041	174119.522	PI
	CC							537599.146	173837.121	
	PT	213+43.123 R1						526353.371	174240.301	2.053°
	PC	215+60.813 R1						526361.17	174457.851	2.053°
	HPI	215+71.789 R1	12.528° RT	57.299°	99.995	10.976	21.864	526361.564	174468.82	PI
	CC							526461.101	174454.268	
	PC	215+82.678 R1						526364.327	174479.443	14.581°
	HPI	215+94.752 R1	12.528° LT	52.089°	109.995	12.074	24.051	526367.367	174491.128	PI
	CC							526257.875	174507.134	
	PT	216+06.729 R1						526367.799	174503.193	2.053°
	PC	220+41.629 R1						526383.381	174937.814	2.053°
	HPI	220+67.857 R1	26.823° LT	52.089°	109.995	26.228	51.495	526384.321	174964.025	PI
	CC							526273.457	174941.755	
	PC	220+93.126 R1						526373.331	174987.842	335.230°
	HPI	221+16.968 R1	26.822° RT	57.299°	99.995	23.842	46.81	526363.342	175009.491	PI
	CC							526464.126	175029.738	
	PT	221+39.936 R1						526364.195	175033.317	2.052°
	PC	221+95.230 R1						526366.175	175088.576	2.052°
	HPI	222+13.544 R1	18.907° LT	52.089°	109.995	18.315	36.297	526366.83	175106.879	PI
	CC							526256.25	175092.514	
	PC	222+31.528 R1						526361.519	175124.409	343.145°
	HPI	222+48.178 R1	18.907° RT	57.299°	99.995	16.65	32.997	526356.692	175140.343	PI
	CC							526457.219	175153.403	
	PT	222+64.525 R1						526357.288	175156.982	2.052°

NO.	DATE	BY	CHK	REVISIONS

Design By:	NEH
Plan By:	MKV
Checked By:	MAN
Approved By:	NEH

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.	
	NICHOLAS E. HENTGES, PE
DATE: 9/12/2024	LICENSE NO. 44620





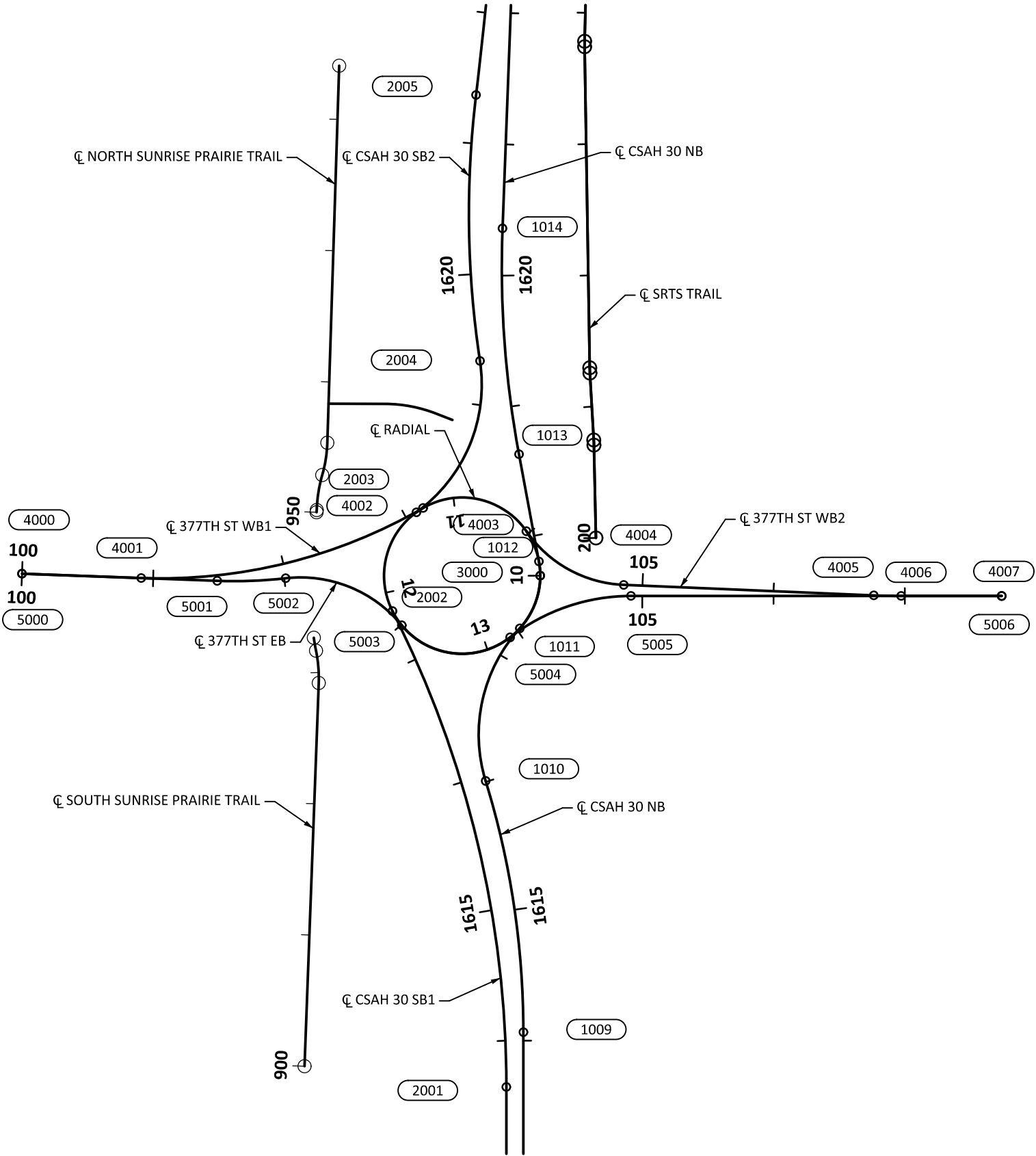
CSAH 30 (Forest Blvd) Improvements
Chisago County, Minnesota

CHISAGO COUNTY, MINNESOTA	
ALIGNMENT PLAN AND TABULATIONS SAP 013-630-021 / SAP 225-591-007 / SAP 225-102-004	

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ALIGNMENT TABULATION										
POINT NUMBER	POINT TYPE	STATION	CIRCULAR CURVE DATA					COORDINATES		DIRECTION AZIMUTH
			DELTA	DEGREE	RADIUS	TANGENT	LENGTH			
			SPIRAL CURVE DATA					EASTING (X)	NORTHING (Y)	
THETA	DEGREE	ST	LT	LS						
ALIGNMENT: SRTS TRAIL										
	PC	223+26.560 R1						526359.508	175218.977	2.052°
	HPI	223+35.499 R1	10.217° RT	57.299°	99.995	8.939	17.831	526359.828	175227.911	PI
	CC							526459.439	175215.398	
	PC	223+44.392 R1						526361.728	175236.647	12.269°
	HPI	223+54.225 R1	10.217° LT	52.089°	109.995	9.833	19.614	526363.818	175246.256	PI
	CC							526254.245	175260.02	
	PT	223+64.006 R1						526364.17	175256.083	2.052°
	PC	227+95.744 R1						526379.625	175687.543	2.052°
	HPI	227+99.073 R1	3.814° RT	57.296°	100	3.33	6.657	526379.744	175690.871	PI
	CC							526479.561	175683.964	
	PT	228+02.400 R1						526380.085	175694.183	5.866°
	PC	229+15.675 R1						526391.661	175806.864	5.866°
	HPI	229+19.337 R1	3.814° LT	52.087°	110	3.663	7.322	526392.035	175810.508	PI
	CC							526282.236	175818.106	
	PT	229+22.997 R1						526392.166	175814.168	2.052°
	PC	231+55.412 R1						526400.486	176046.434	2.052°
	HPI	231+70.739 R1	15.866° LT	52.089°	109.995	15.327	30.459	526401.035	176061.751	PI
	CC							526290.561	176050.371	
	PC	231+85.872 R1						526397.375	176076.637	346.186°
	HPI	231+99.806 R1	15.866° RT	57.298°	99.996	13.934	27.69	526394.047	176090.168	PI
	CC							526494.478	176100.513	
	PT	232+13.562 R1						526394.546	176104.093	2.052°
	PC	233+50.522 R1						526399.449	176240.965	2.052°
	HPI	233+53.852 R1	3.814° RT	57.296°	100	3.33	6.657	526399.568	176244.293	PI
	CC							526499.385	176237.386	
	PT	233+57.179 R1						526399.909	176247.605	5.866°
	PC	234+70.453 R1						526411.485	176360.286	5.866°
	HPI	234+74.116 R1	3.814° LT	52.087°	110	3.663	7.322	526411.859	176363.93	PI
	CC							526302.061	176371.528	
	PT	234+77.775 R1						526411.99	176367.59	2.052°
	PC	238+16.042 R1						526424.099	176705.64	2.052°
	HPI	238+31.370 R1	15.866° LT	52.089°	109.995	15.327	30.459	526424.648	176720.958	PI
	CC							526314.175	176709.578	
	PC	238+46.503 R1						526420.988	176735.843	346.186°
	HPI	238+60.436 R1	15.866° RT	57.299°	99.995	13.934	27.69	526417.661	176749.374	PI
	CC							526518.091	176759.719	
	PT	238+74.192 R1						526418.16	176763.299	2.052°
	PC	246+88.640 R1						526447.315	177577.225	2.052°
	HPI	247+13.626 R1	0.640° RT	1.282°	4470.339	24.986	49.971	526448.21	177602.195	PI
	CC							530914.789	177417.195	
	PT	247+38.611 R1						526449.383	177627.153	2.692°
	HPI	247+90.678 R1						526451.829	177679.162	
	HPI	248+03.540 R1						526455.818	177691.391	18.066°
	PC	248+03.873 R1						526455.501	177691.494	288.066°
	HPI	248+07.239 R1	37.201° RT	212.958°	10	3.365	6.493	526452.301	177692.537	PI
	CC							526458.602	177701.001	
	PT	248+10.366 R1						526450.384	177695.303	325.267°
	HPI	248+18.039 R1						526446.013	177701.609	
	HPI	248+26.080 R1						526446.236	177709.646	1.595°
	HPI	248+65.911 R1						526449.301	177749.36	
	HPI	249+15.516 R1						526453.61	177798.777	4.984°
	HPI	249+65.546 R1						526458.226	177848.593	5.294°
	HPI	250+15.430 R1						526462.906	177898.257	5.383°
	HPI	250+65.261 R1						526467.515	177947.875	5.306°
	PC	251+01.805 R1						526471.003	177984.252	5.477°
	HPI	251+10.742 R1	83.606° RT	213.244°	9.995	8.937	14.585	526471.856	177993.149	PI
	CC							526480.952	177983.298	
	PT	251+16.389 R1						526480.792	177993.292	89.083°
	END	251+16.394 R1						526480.797	177993.292	89.083°
ALIGNMENT: SRTS WALK										
SRTS TRAIL STA 251+16.39 = SRTS WALK STA 800+00.00										
	START	800+00.000 R1						526480.797	177993.292	
	END	803+59.085 R1						526839.836	177999.036	89.083°

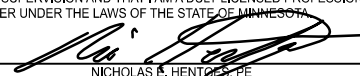
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ALIGNMENT TABULATION										
POINT NUMBER	POINT TYPE	STATION	CIRCULAR CURVE DATA					COORDINATES		DIRECTION AZIMUTH
			DELTA	DEGREE	RADIUS	TANGENT	LENGTH			
			SPIRAL CURVE DATA					EASTING (X)	NORTHING (Y)	
			THETA	DEGREE	ST	LT	LS			
ALIGNMENT: RADIAL										
3000	PC	10+00.000						526298.877	172870.695	
	PI									
	CC							526239.377	172870.695	
3000	PT	13+73.847						526298.877	172870.693	
ALIGNMENT: 377TH ST EB										
5000	START	100+00.000 R1						525904.168	172872.233	
5001	PC	101+48.795 R1						526052.864	172866.778	92.101°
	HPI	101+74.937 R1	8.543° LT	16.370°	350	26.142	52.187	526078.988	172865.82	PI
	CC							526065.695	173216.543	
5002	PRC	102+00.982 R1						526104.965	172868.753	83.558°
	HPI	102+55.288 R1	57.009° RT	57.296°	100	54.306	99.499	526158.928	172874.846	PI
	CC							526116.185	172769.384	
5003	PRC	103+00.481 R1						526193.421	172832.902	140.567°
	HPI	103+58.373 R1	88.430° LT	96.295°	59.5	57.892	91.832	526230.193	172788.188	PI
	CC							526239.377	172870.695	
5004	PRC	103+92.314 R1						526275.897	172823.722	52.136°
	HPI	104+43.781 R1	37.876° RT	38.197°	150	51.467	99.158	526316.529	172855.311	PI
	CC							526367.965	172705.3	
5005	PT	104+91.472 R1						526367.996	172855.3	90.012°
5006	END	107+73.796 R1						526650.32	172855.241	90.012°
ALIGNMENT: 377TH ST WB1										
4000	START	100+00.000 R1						525904.168	172872.233	
4001	PC	100+90.855 R1						525994.962	172868.903	92.101°
	HPI	102+05.935 R1	32.101° LT	14.324°	400	115.08	224.108	526109.965	172864.684	PI
	CC							526009.627	173268.634	
4002	PT	103+14.962 R1						526209.627	172922.224	60.000°
ALIGNMENT: 377TH ST WB2										
4003	PC	103+98.008 R1						526288.311	172904.543	145.329°
	HPI	104+45.302 R1	52.931° LT	60.311°	95	47.294	87.763	526315.216	172865.647	PI
	CC							526366.442	172958.586	
4004	PT	104+85.771 R1						526362.468	172863.669	92.397°
4005	PC	106+76.405 R1						526552.935	172855.694	92.397°
	HPI	106+86.814 R1	2.385° LT	11.459°	500	10.409	20.816	526563.336	172855.259	PI
	CC							526573.851	173355.257	
4006	PT	106+97.221 R1						526573.745	172855.257	90.012°
4007	END	107+73.796 R1						526650.32	172855.241	90.012°

NO.	DATE	BY	CHK	REVISIONS

Design By: NEH
Plan By: MKV
Checked By: MAN
Approved By: NEH

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NICHOLAS E. HENTGES, PE
DATE: 9/12/2024
LICENSE NO. 44620

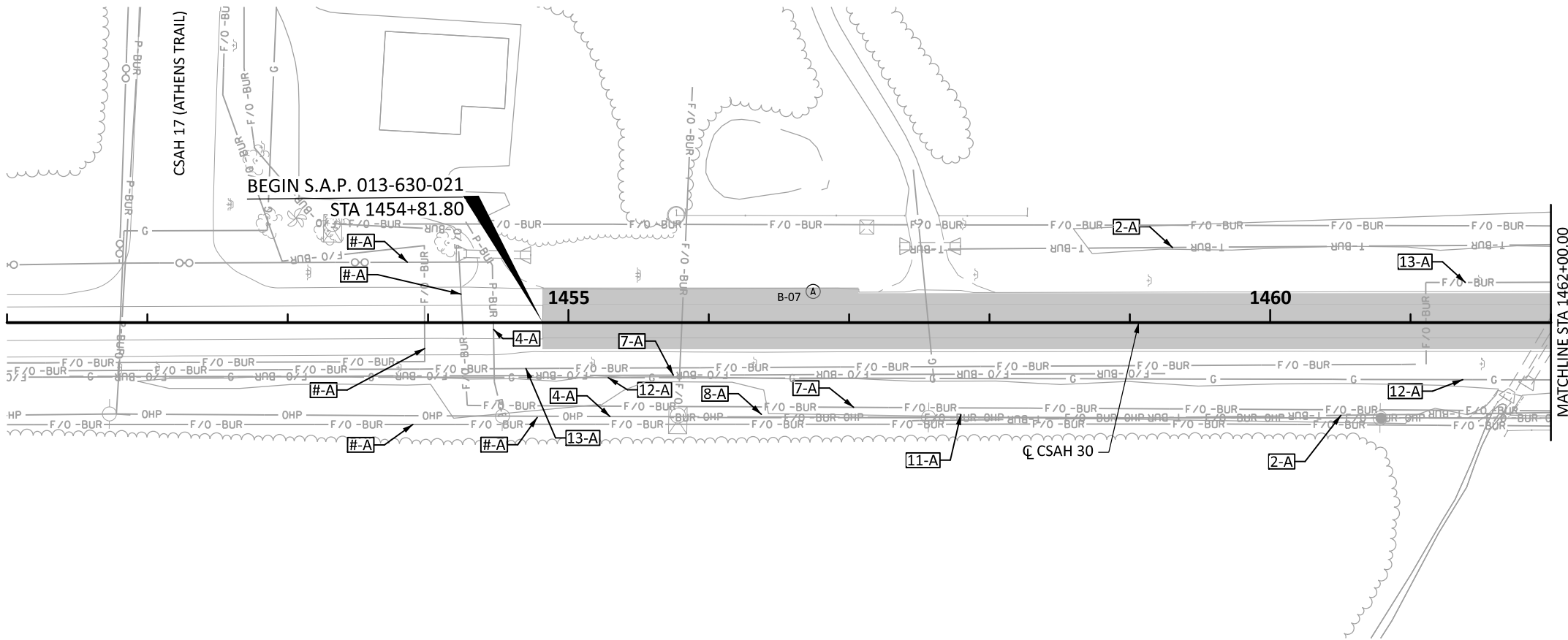


CSAH 30 (Forest Blvd) Improvements
Chisago County, Minnesota

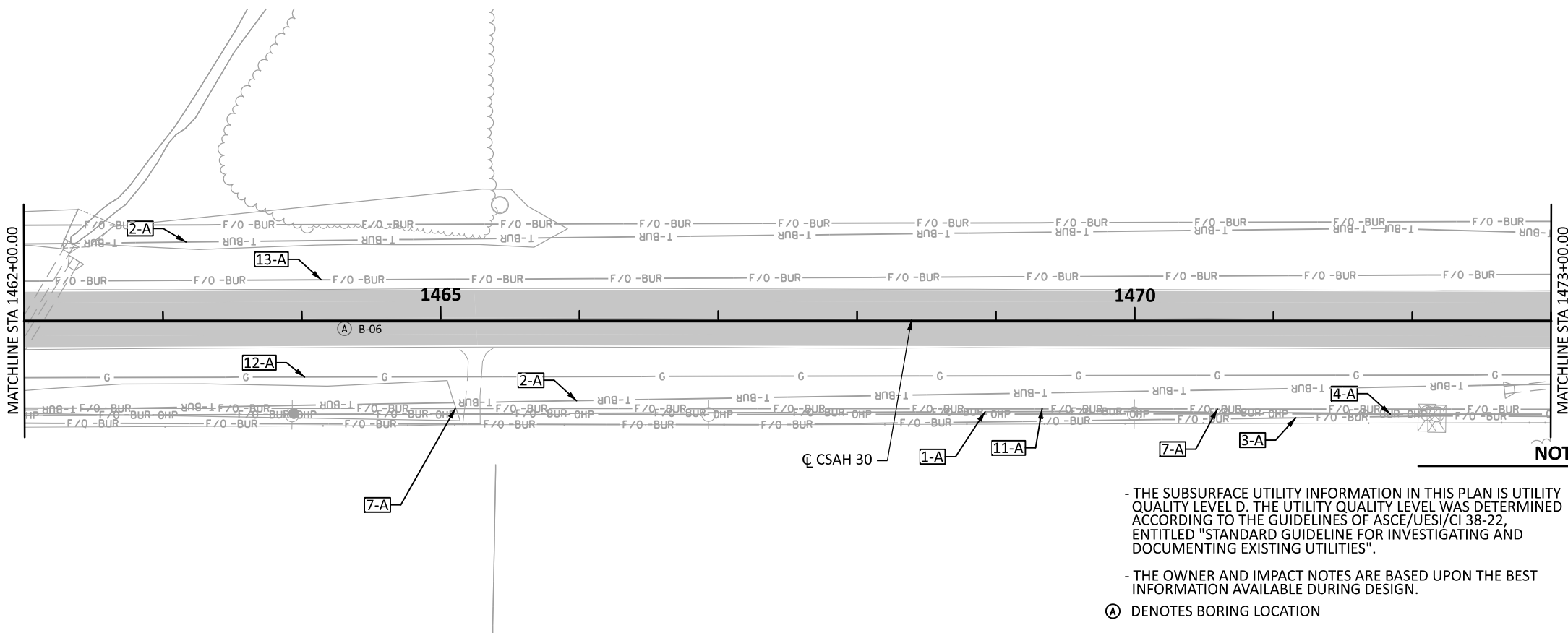
CHISAGO COUNTY, MINNESOTA

ALIGNMENT PLAN AND TABULATIONS
SAP 013-630-021 / SAP 225-591-007 / SAP 225-102-004

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96
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SHEETS



- LEGEND**
- CONSTRUCTION LIMITS
 - - - EXISTING R/W
 - - - EXISTING RR R/W
 - T-BUR - BURIED TELEPHONE
 - G - GAS
 - TV-BUR - BURIED CABLE TELEVISION
 - F/O - BUR - BURIED FIBER OPTIC
 - OHP - OVERHEAD POWER
 - P-BUR - BURIED ELECTRIC
 - OO - BURIED COMM.
 - PROPOSED ROADWAY
 - U - UTILITY PEDESTAL
 - M - MANHOLE
 - - POWER/UTILITY POLE
 - - LIGHT POLE
 - - UTILITY POLE ANCHOR
 - ✱ - VEGETATION
 - ✱ - VEGETATION
 - ⊕ - INPLACE STRUCTURE
 - ⊕ - CATCH BASIN
 - ⊕ - APRON
 - - - WETLAND DELINEATION



- LEGEND CONT.**
- 1-W - UTILITY CONFLICT (OWNER - IMPACT)
- OWNERSHIP:**
- (1) ARVIG, (2) CENTURY LINK/LUMEN, (3) CONSOLIDATED COMM., (4) EAST CENTRAL ENERGY, (5) FRONTIER COMM., (6) GREAT RIVER ENERGY, (7) MIDCO, (8) MINNESOTA ENERGY RESOURCES, (10) VIKING GAS, (11) WINDSTREAM COMM., (12) XCEL ENERGY, (13) ZAYO GROUP, LLC, (14) SMMPA
- IMPACT NOTES ON PLAN SHEETS:**
- (A) LEAVE AS IS,
(B) ADJUST,
(C) RELOCATE,
(D) REMOVE

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Ⓐ DENOTES BORING LOCATION

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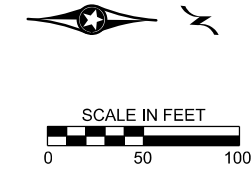
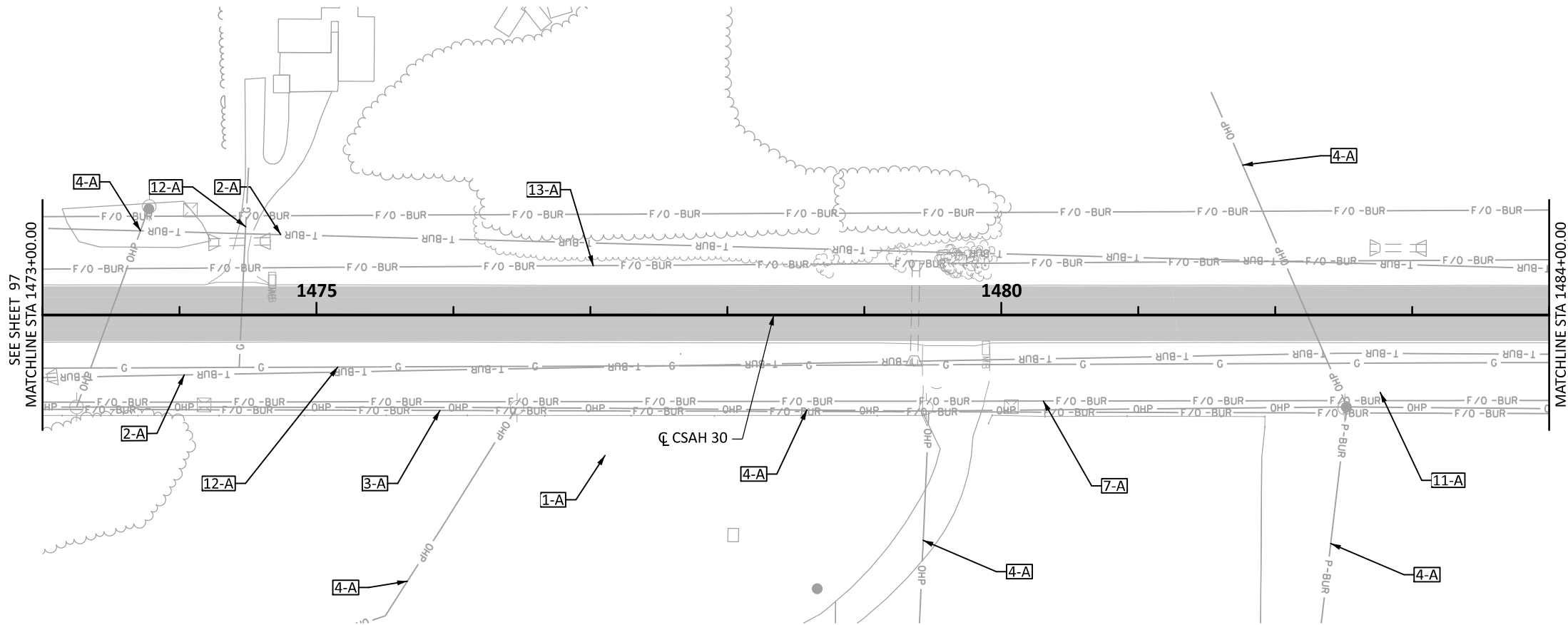
CSAH 30 (Forest Blvd) Improvements
Chisago County, Minnesota

CHISAGO COUNTY, MINNESOTA

INPLACE TOPOGRAPHY & UTILITIES PLAN
SAP 013-630-021 / SAP 225-591-007 / SAP 225-102-004

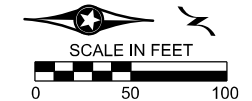
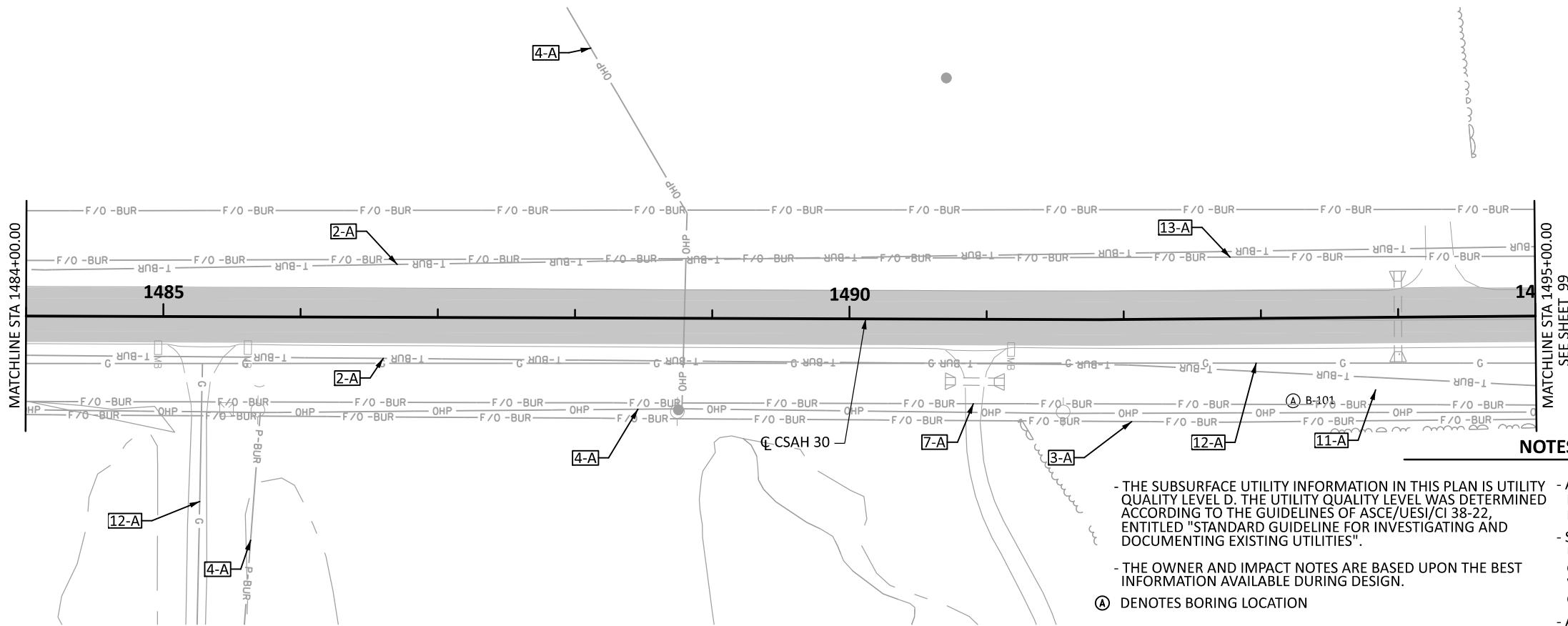
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LEGEND

- CONSTRUCTION LIMITS
- EXISTING R/W
- EXISTING RR R/W
- T-BUR- BURIED TELEPHONE
- G- GAS
- TV-BUR- BURIED CABLE TELEVISION
- F/O-BUR- BURIED FIBER OPTIC
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- VEGETATION
- VEGETATION
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- CATCH BASIN
- APRON
- WETLAND DELINEATION



LEGEND CONT.

- 1-W- UTILITY CONFLICT (OWNER - IMPACT)
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(8) MINNESOTA ENERGY RESOURCES,
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COMM., (12) XCEL ENERGY,
(13) ZAYO GROUP, LLC.
(14) SMMPA

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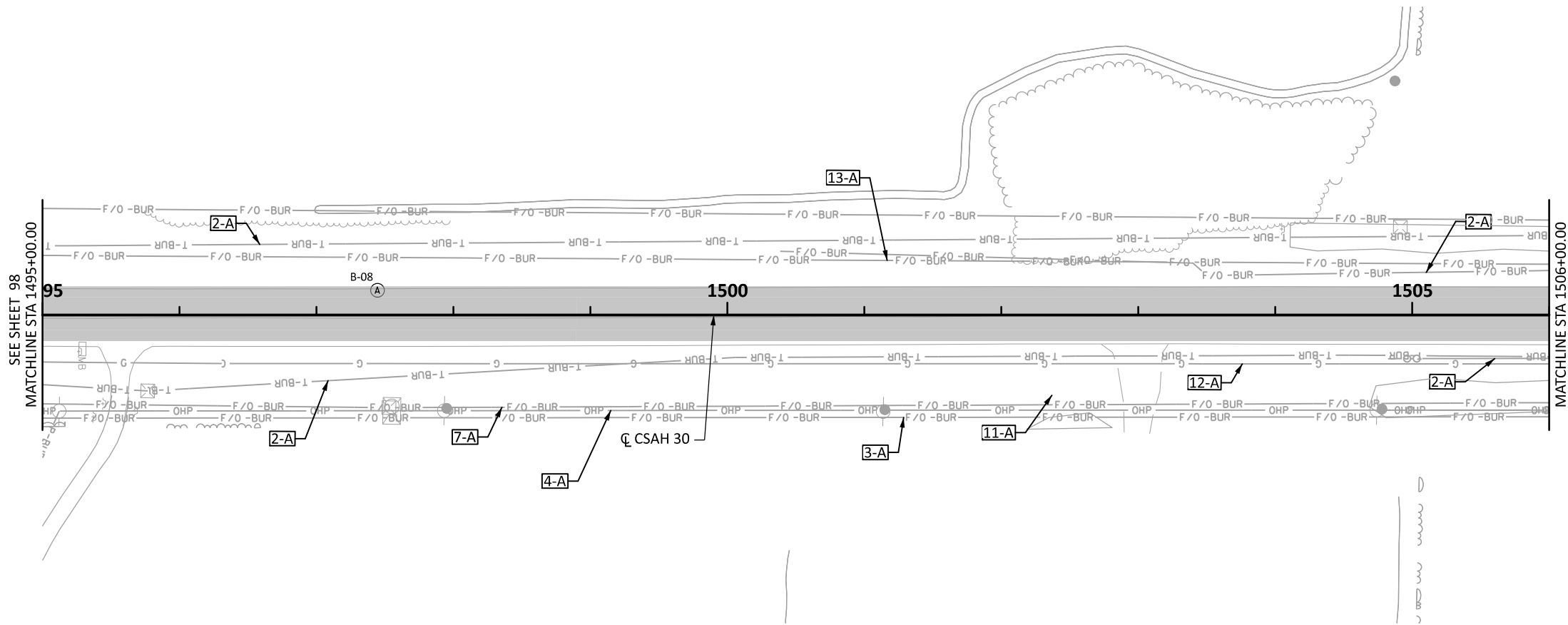
CSAH 30 (Forest Blvd) Improvements
Chisago County, Minnesota

CHISAGO COUNTY, MINNESOTA

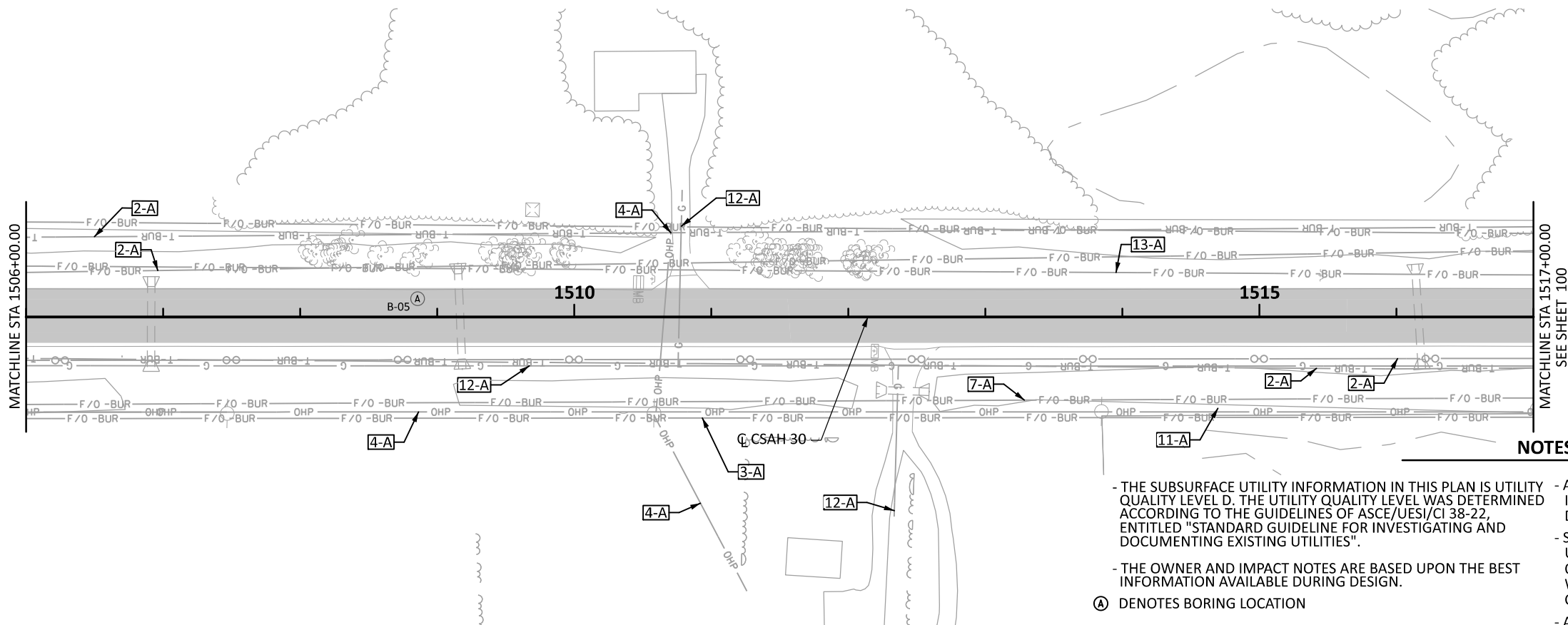
INPLACE TOPOGRAPHY & UTILITIES PLAN
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- LEGEND**
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 - - - EXISTING R/W
 - - - EXISTING RR R/W
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- LEGEND CONT.**
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Ⓐ DENOTES BORING LOCATION

NO.	DATE	BY	CHK	REVISIONS

Design By:
Plan By:
Checked By:
Approved By:

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MKV
MAN
NEH

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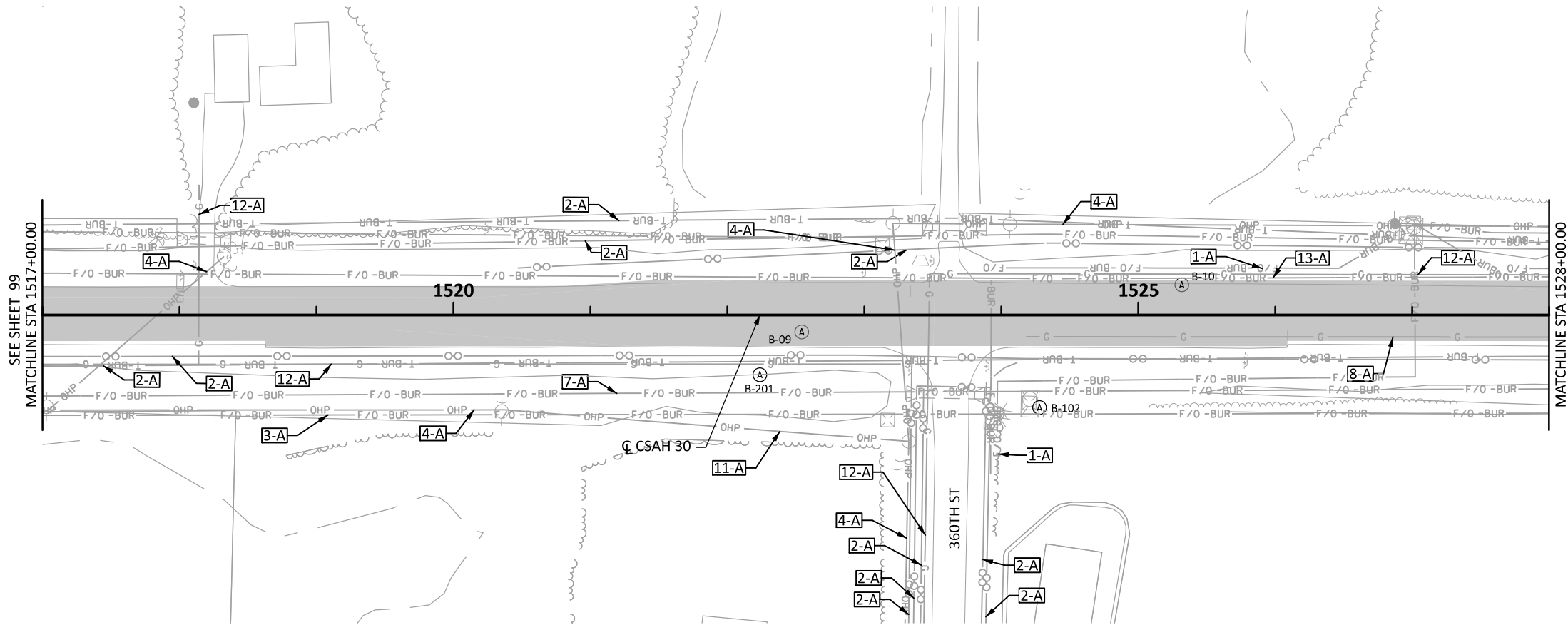


CSAH 30 (Forest Blvd) Improvements
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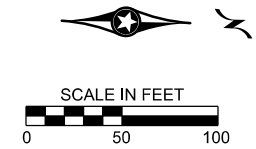
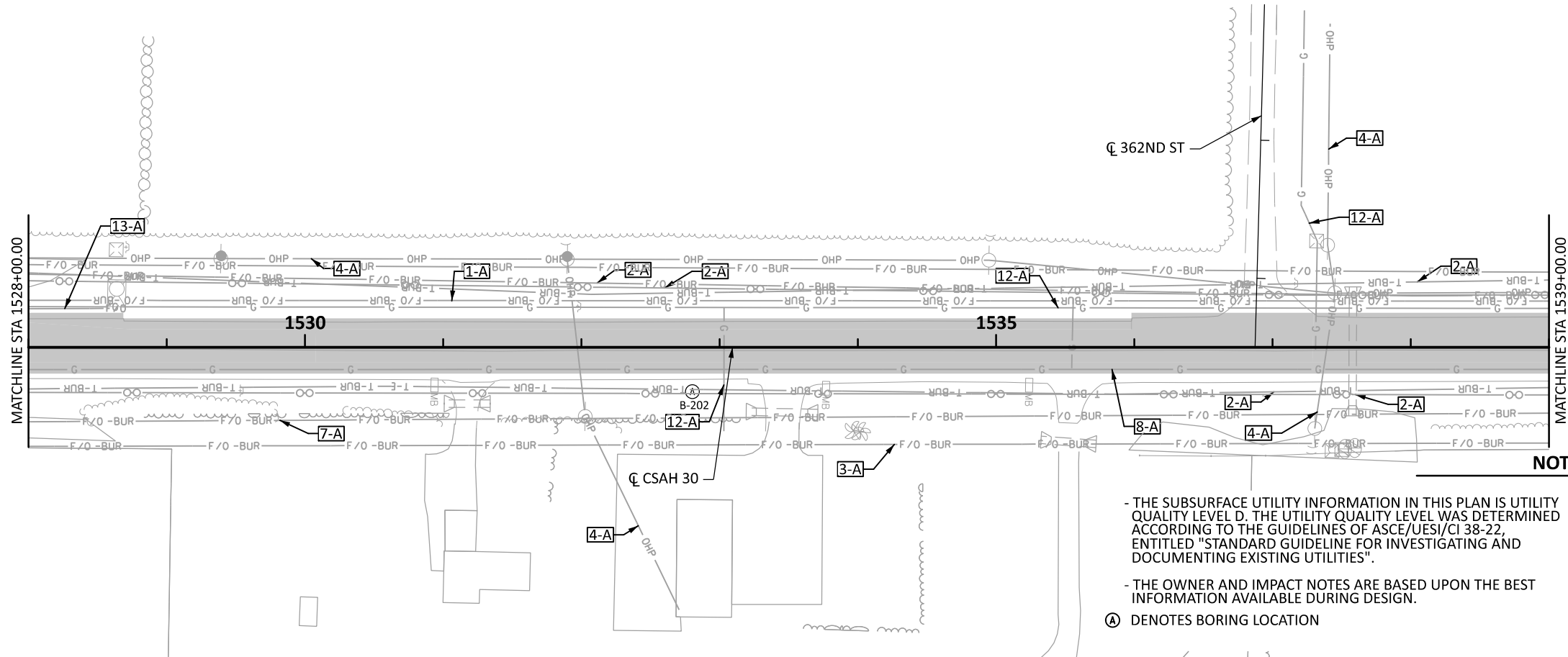
CHISAGO COUNTY, MINNESOTA
INPLACE TOPOGRAPHY & UTILITIES PLAN
SAP 013-630-021 / SAP 225-591-007 / SAP 225-102-004

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- LEGEND**
- CONSTRUCTION LIMITS
 - - - EXISTING R/W
 - - - EXISTING RR R/W
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 - G GAS
 - TV-BUR BURIED CABLE TELEVISION
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 - PROPOSED ROADWAY
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 - ✱ VEGETATION
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 - WETLAND DELINEATION



- LEGEND CONT.**
- 1-W UTILITY CONFLICT (OWNER - IMPACT)
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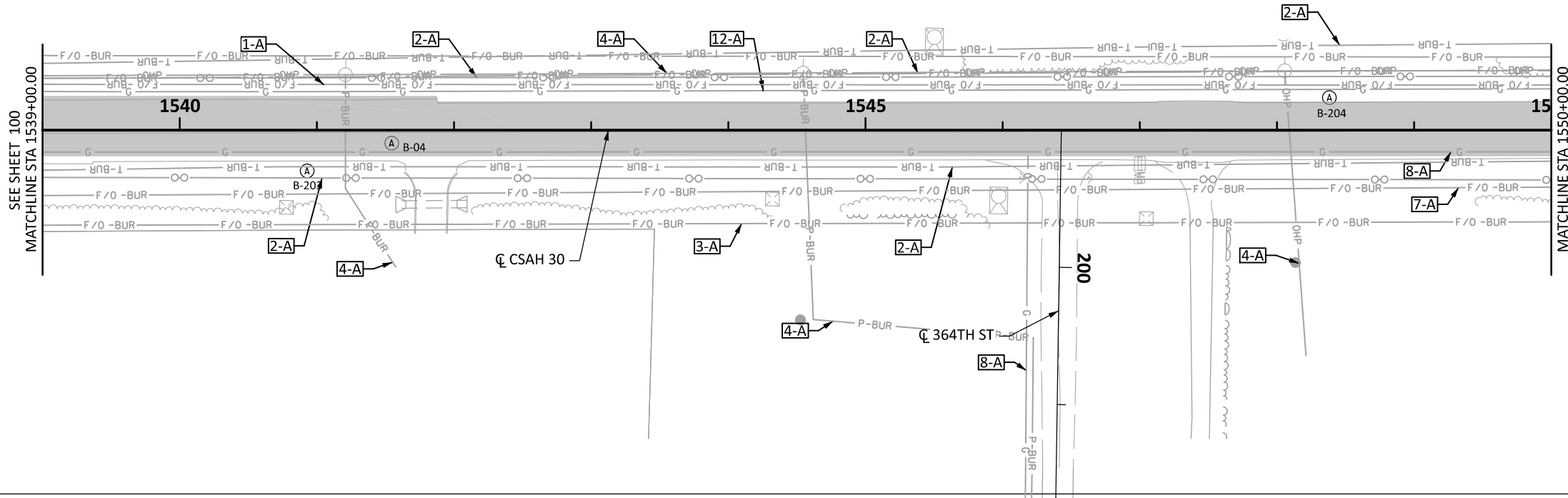
CSAH 30 (Forest Blvd) Improvements
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INPLACE TOPOGRAPHY & UTILITIES PLAN
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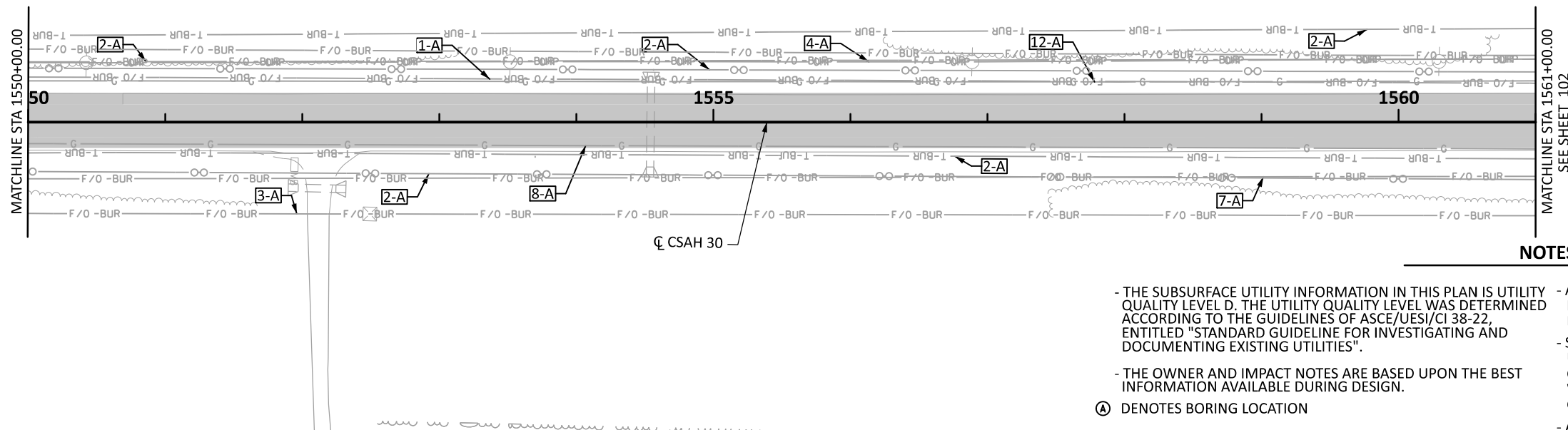
LEGEND	
---	CONSTRUCTION LIMITS
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---	EXISTING RR R/W
-T-BUR-	BURIED TELEPHONE
-G-	GAS
-TV-BUR-	BURIED CABLE TELEVISION
-F/O-BUR-	BURIED FIBER OPTIC
-OHP-	OVERHEAD POWER
-P-BUR-	BURIED ELECTRIC
-OO-	BURIED COMM.
[Shaded Area]	PROPOSED ROADWAY
[Box with U]	UTILITY PEDESTAL
[Box with OM]	HANDHOLE
[Circle with dot]	MANHOLE
[Circle with cross]	POWER/UTILITY POLE
[Circle with dot]	LIGHT POLE
[Circle with cross]	UTILITY POLE ANCHOR
[Star]	VEGETATION
[Wavy Line]	VEGETATION
[Box with +]	INPLACE STRUCTURE
[Box with X]	CATCH BASIN
[Box with /]	APRON
[Wavy Line]	WETLAND DELINEATION



LEGEND CONT.

1-W UTILITY CONFLICT (OWNER - IMPACT)
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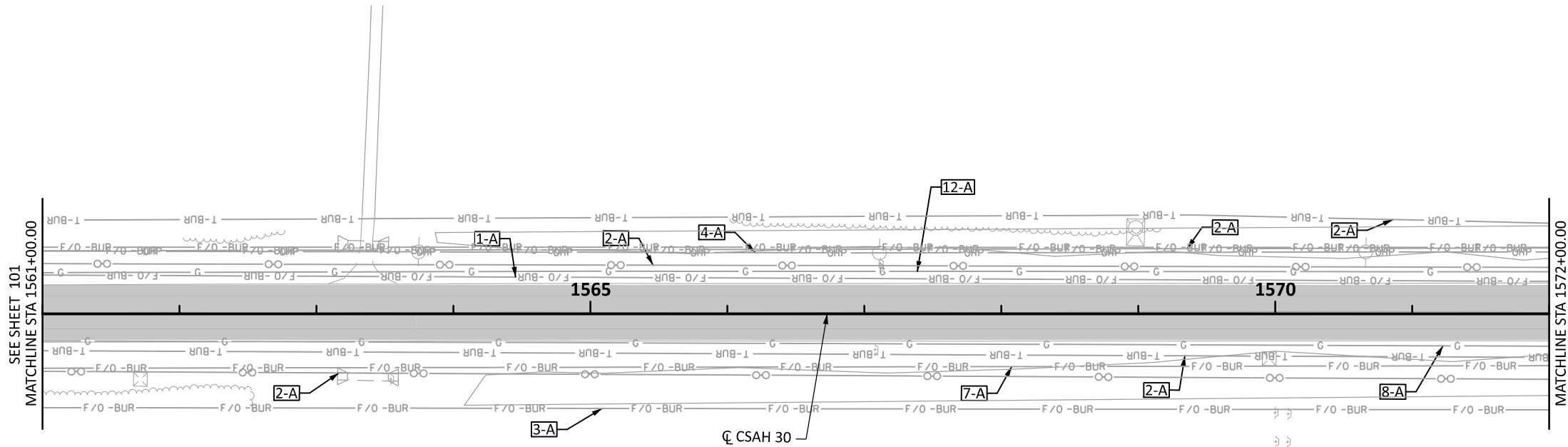
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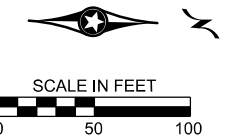
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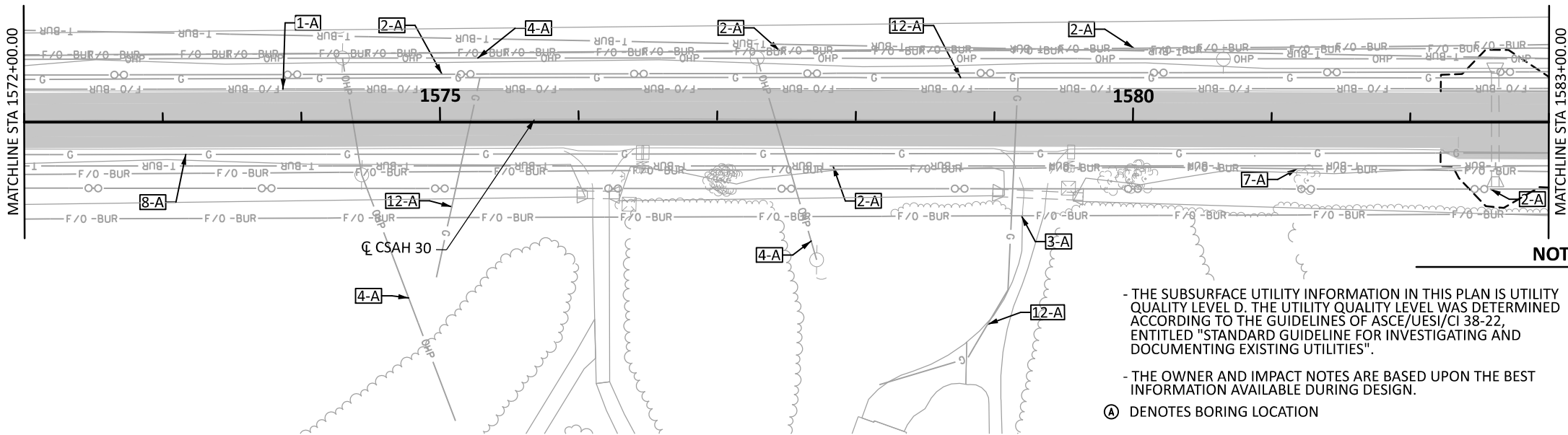


- LEGEND**
- CONSTRUCTION LIMITS
 - - - EXISTING R/W
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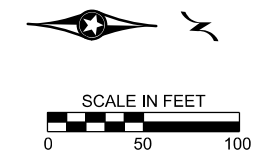
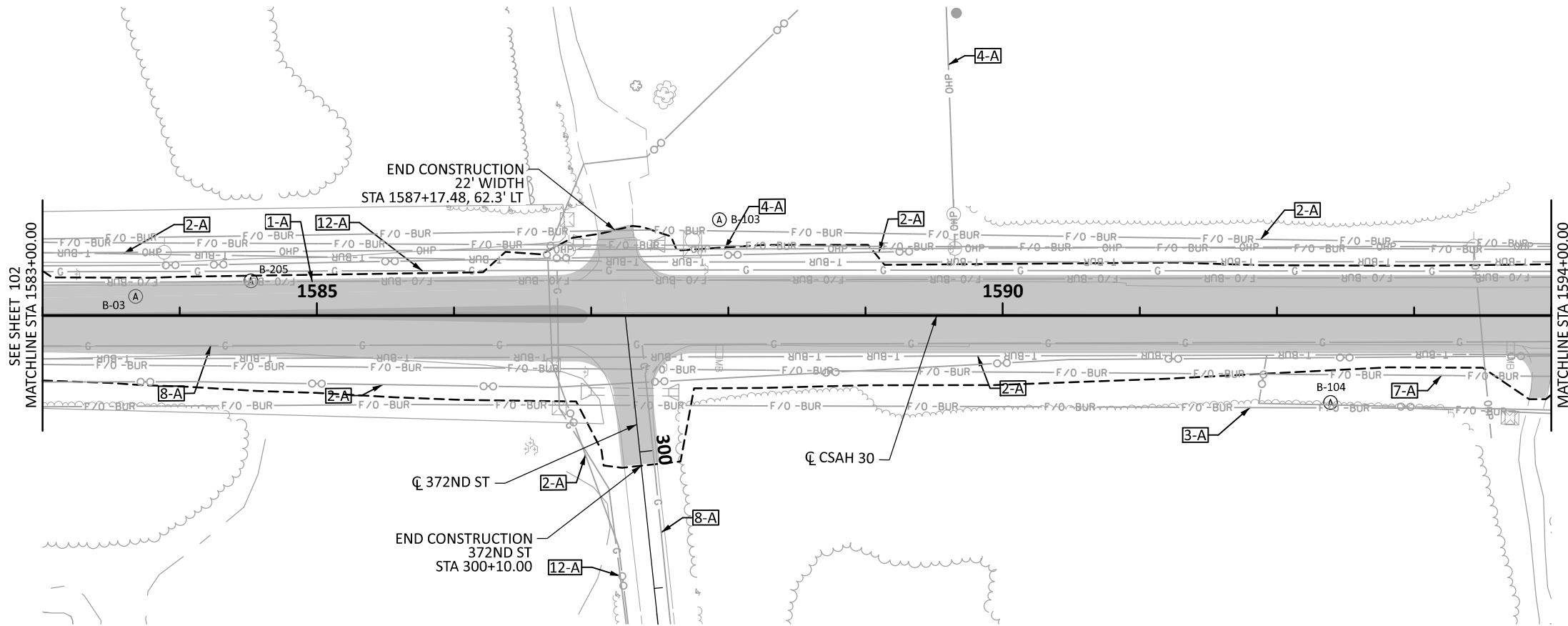
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Chisago County, Minnesota

CHISAGO COUNTY, MINNESOTA

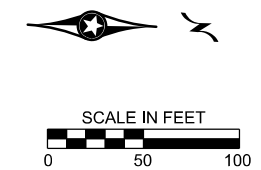
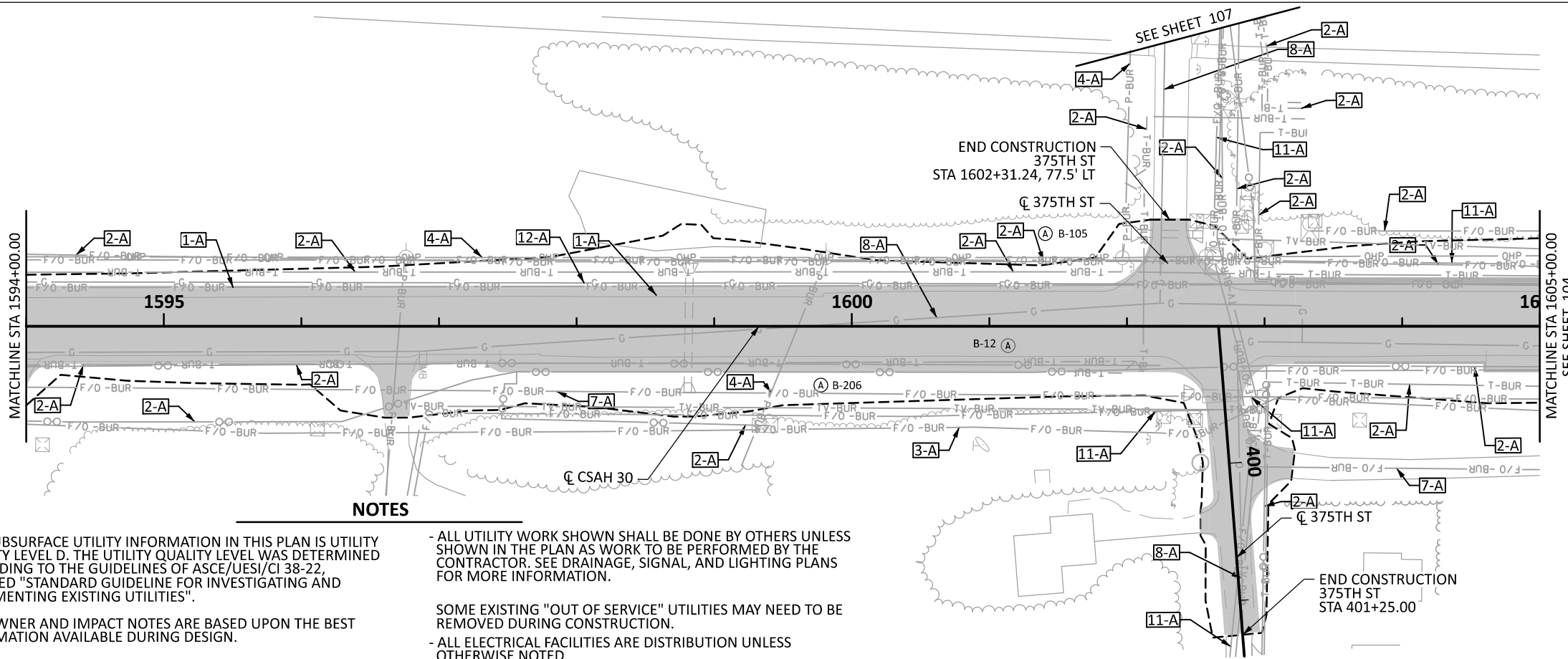
INPLACE TOPOGRAPHY & UTILITIES PLAN
SAP 013-630-021 / SAP 225-591-007 / SAP 225-102-004

SHEET
102
OF
216
SHEETS

DATE: 9/12/2024 2:04:29 PM
PATH & FILENAME: Projects\Minnesota\Roadway\Sheets\023661-000_top



- LEGEND**
- CONSTRUCTION LIMITS
 - EXISTING R/W
 - EXISTING RR R/W
 - T-BUR BURIED TELEPHONE
 - G GAS
 - TV-BUR BURIED CABLE TELEVISION
 - F/O -BUR BURIED FIBER OPTIC
 - OHP OVERHEAD POWER
 - P-BUR BURIED ELECTRIC
 - OO BURIED COMM.
 - PROPOSED ROADWAY
 - U UTILITY PEDESTAL
 - M HANDHOLE
 - OM MANHOLE
 - POWER/UTILITY POLE
 - LIGHT POLE
 - UTILITY POLE ANCHOR
 - ✱ VEGETATION
 - ✱ VEGETATION
 - ✱ INPLACE STRUCTURE
 - ✱ CATCH BASIN
 - ✱ APRON
 - WETLAND DELINEATION



- LEGEND CONT.**
- 1-W UTILITY CONFLICT (OWNER - IMPACT)
- OWNERSHIP:
(1) ARVIG, (2) CENTURY LINK/LUMEN,
(3) CONSOLIDATED COMM., (4) EAST
CENTRAL ENERGY, (5) FRONTIER COMM.,
(6) GREAT RIVER ENERGY, (7) MIDCO,
(8) MINNESOTA ENERGY RESOURCES,
(10) VIKING GAS, (11) WINDSTREAM
COMM., (12) XCEL ENERGY,
(13) ZAYO GROUP, LLC.
- IMPACT NOTES ON PLAN SHEETS:
(A) LEAVE AS IS,
(B) ADJUST,
(C) RELOCATE,
(D) REMOVE

NOTES

- THE SUBSURFACE UTILITY INFORMATION IN THIS PLAN IS UTILITY QUALITY LEVEL D. THE UTILITY QUALITY LEVEL WAS DETERMINED ACCORDING TO THE GUIDELINES OF ASCE/UESI/CI 38-22, ENTITLED "STANDARD GUIDELINE FOR INVESTIGATING AND DOCUMENTING EXISTING UTILITIES".
- THE OWNER AND IMPACT NOTES ARE BASED UPON THE BEST INFORMATION AVAILABLE DURING DESIGN.
- ALL UTILITY WORK SHOWN SHALL BE DONE BY OTHERS UNLESS SHOWN IN THE PLAN AS WORK TO BE PERFORMED BY THE CONTRACTOR. SEE DRAINAGE, SIGNAL, AND LIGHTING PLANS FOR MORE INFORMATION.
- SOME EXISTING "OUT OF SERVICE" UTILITIES MAY NEED TO BE REMOVED DURING CONSTRUCTION.
- ALL ELECTRICAL FACILITIES ARE DISTRIBUTION UNLESS OTHERWISE NOTED.

NO.	DATE	BY	CHK	REVISIONS

Design By:	NEH
Plan By:	MKV
Checked By:	MAN
Approved By:	NEH

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.

Nicholas E. Hentges, PE
NICHOLAS E. HENTGES, PE
DATE: 9/12/2024 LICENSE NO. 44620



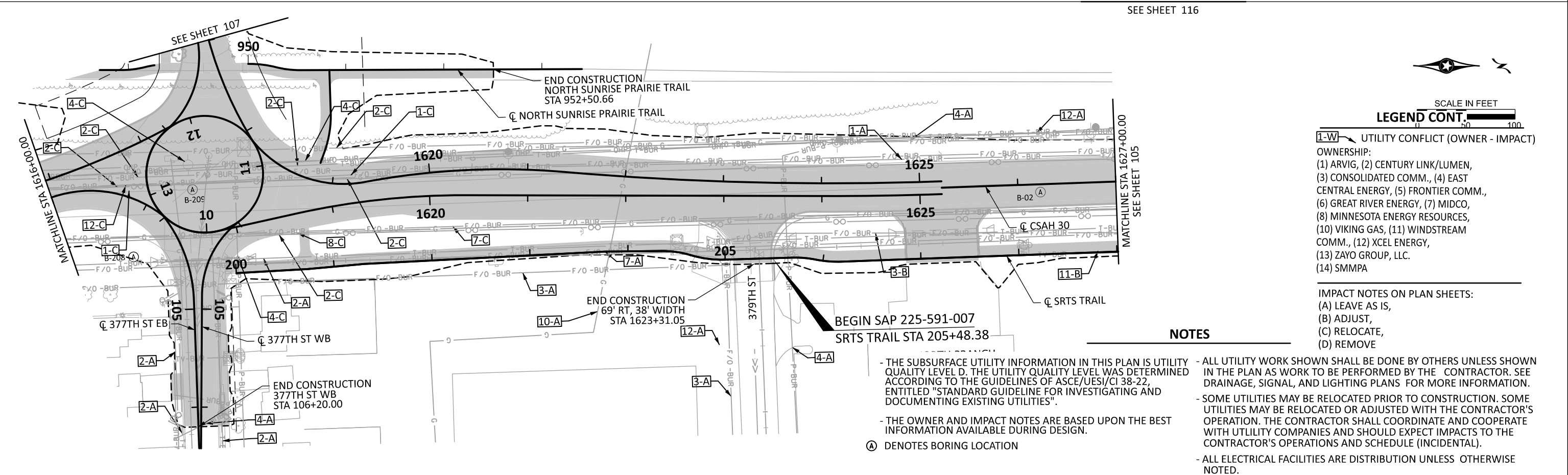
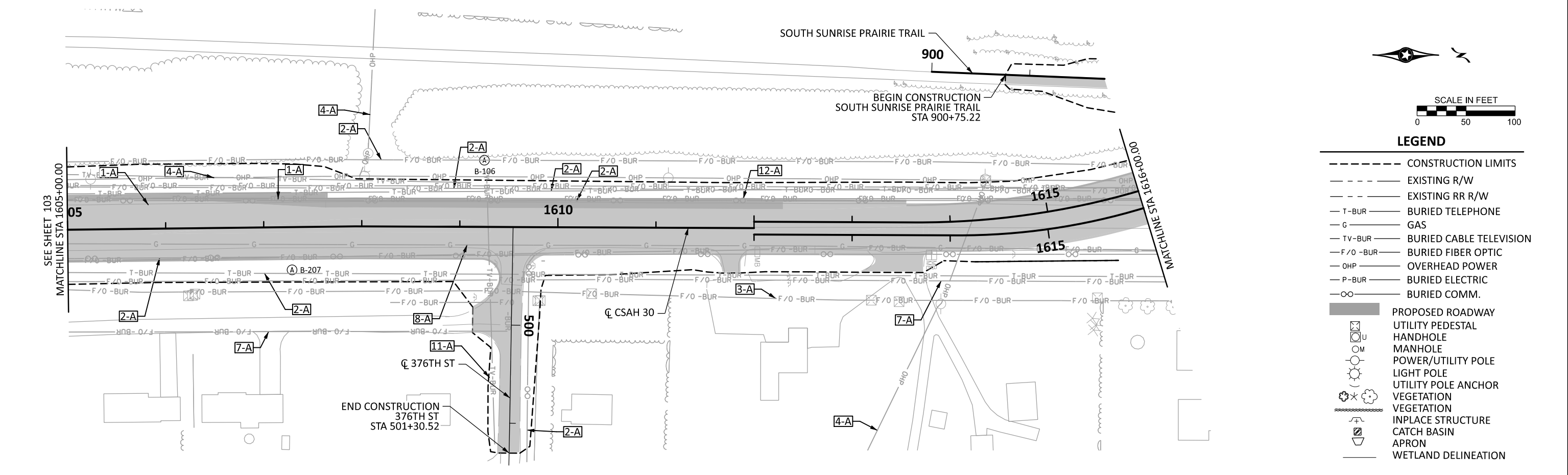
CSAH 30 (Forest Blvd) Improvements
Chisago County, Minnesota

CHISAGO COUNTY, MINNESOTA

INPLACE TOPOGRAPHY & UTILITIES PLAN
SAP 013-630-021 / SAP 225-591-007 / SAP 225-102-004

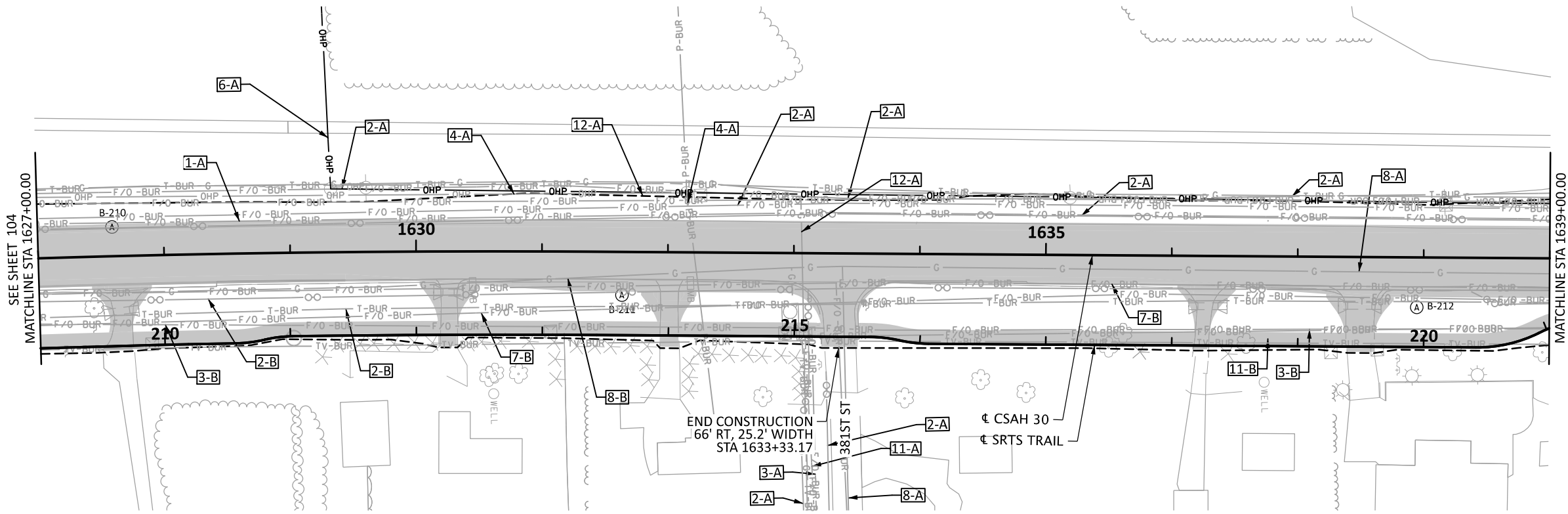
SHEET
103
OF
216
SHEETS

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NO.	DATE	BY	CHK	REVISIONS	Design By: NEH	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.  NICHOLAS E. HENTZ, P.E. DATE: 9/12/2024 LICENSE NO. 44620			CSAH 30 (Forest Blvd) Improvements Chisago County, Minnesota	CHISAGO COUNTY, MINNESOTA	SHEET 104 OF 216 SHEETS
				Plan By: MKV	INPLACE TOPOGRAPHY & UTILITIES PLAN						
				Checked By: MAN	SAP 013-630-021 / SAP 225-591-007 / SAP 225-102-004						
				Approved By: NEH							

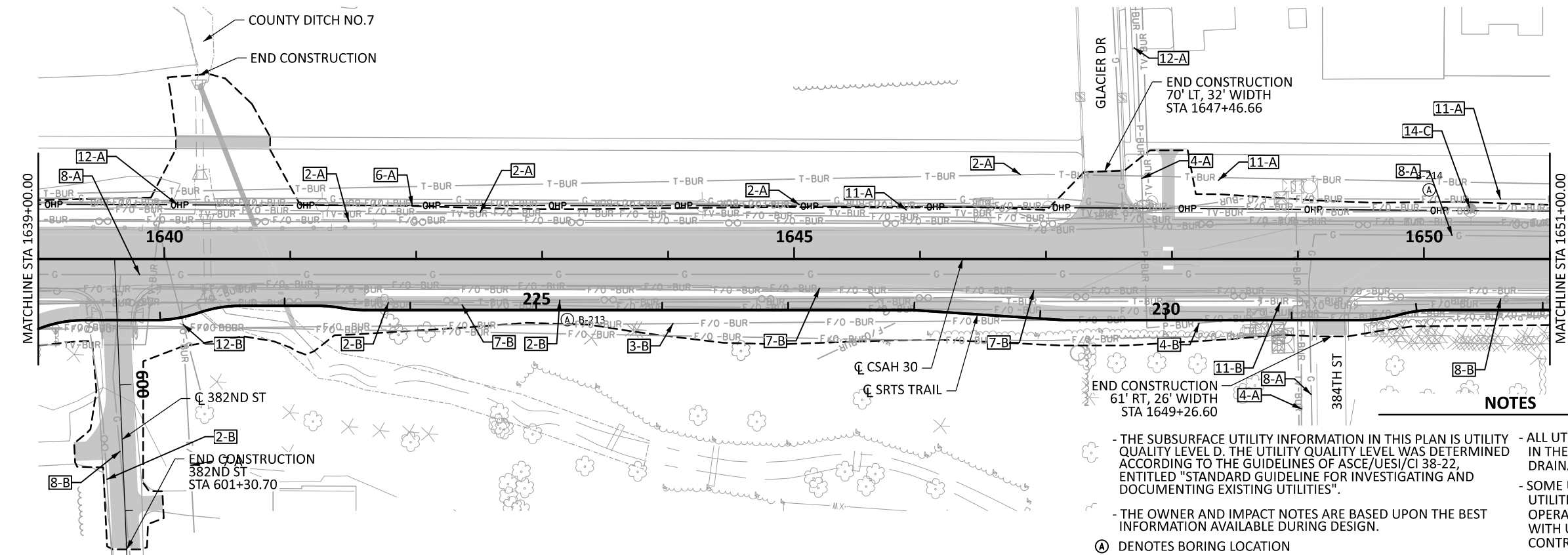
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SCALE IN FEET
0 50 100

LEGEND

- CONSTRUCTION LIMITS
- - - EXISTING R/W
- - - EXISTING RR R/W
- T-BUR BURIED TELEPHONE
- G GAS
- TV-BUR BURIED CABLE TELEVISION
- F/O-BUR BURIED FIBER OPTIC
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- UTILITY POLE ANCHOR
- ✱ VEGETATION
- ✱ VEGETATION
- ⊕ INPLACE STRUCTURE
- ⊕ CATCH BASIN
- ⊕ APRON
- WETLAND DELINEATION



SCALE IN FEET
0 50 100

LEGEND CONT.

- 1-W UTILITY CONFLICT (OWNER - IMPACT)

OWNERSHIP:
(1) ARVIG, (2) CENTURY LINK/LUMEN,
(3) CONSOLIDATED COMM., (4) EAST
CENTRAL ENERGY, (5) FRONTIER COMM.,
(6) GREAT RIVER ENERGY, (7) MIDCO,
(8) MINNESOTA ENERGY RESOURCES,
(10) VIKING GAS, (11) WINDSTREAM
COMM., (12) XCEL ENERGY,
(13) ZAYO GROUP, LLC.
(14) SMMPA

IMPACT NOTES ON PLAN SHEETS:
(A) LEAVE AS IS,
(B) ADJUST,
(C) RELOCATE,
(D) REMOVE

NOTES

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- Ⓐ DENOTES BORING LOCATION
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- SOME UTILITIES MAY BE RELOCATED PRIOR TO CONSTRUCTION. SOME UTILITIES MAY BE RELOCATED OR ADJUSTED WITH THE CONTRACTOR'S OPERATION. THE CONTRACTOR SHALL COORDINATE AND COOPERATE WITH UTILITY COMPANIES AND SHOULD EXPECT IMPACTS TO THE CONTRACTOR'S OPERATIONS AND SCHEDULE (INCIDENTAL).
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NO.	DATE	BY	CHK	REVISIONS

Design By: NEH
Plan By: MKV
Checked By: MAN
Approved By: NEH

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NICHOLAS E. HENTGES, PE
DATE: 9/12/2024 LICENSE NO. 44620



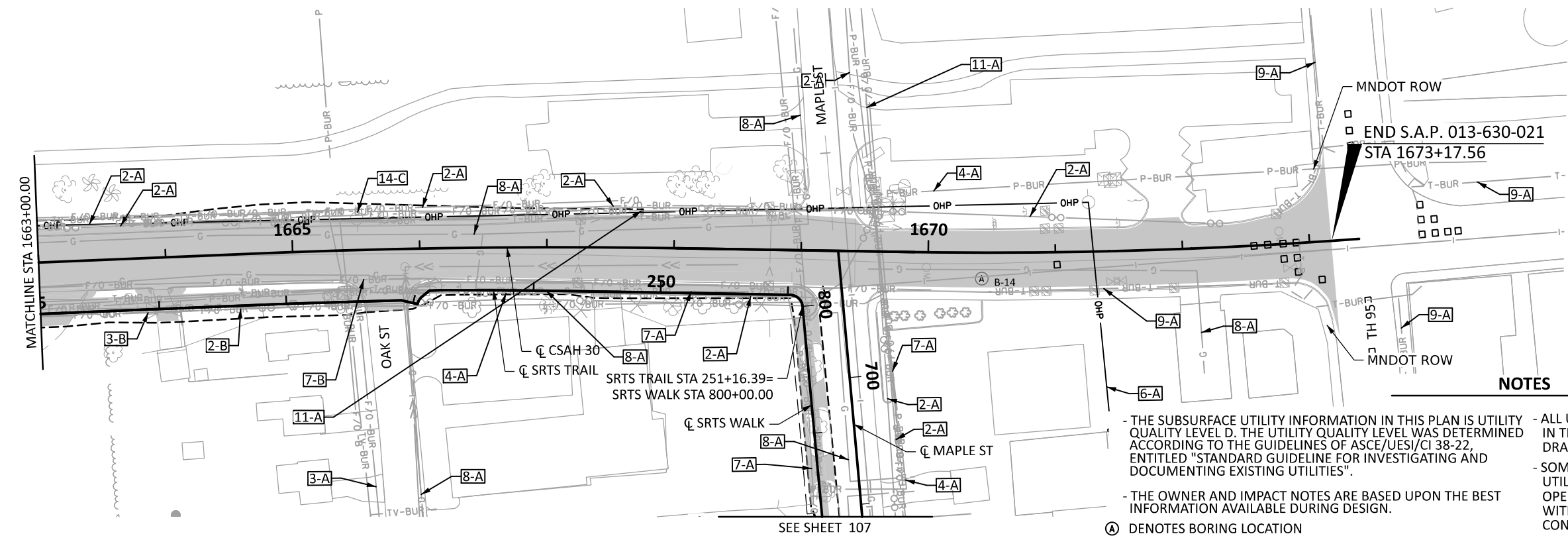
CSAH 30 (Forest Blvd) Improvements
Chisago County, Minnesota

CHISAGO COUNTY, MINNESOTA

INPLACE TOPOGRAPHY & UTILITIES PLAN
SAP 013-630-021 / SAP 225-591-007 / SAP 225-102-004

SHEET
105
OF
216
SHEETS

DATE: 9/12/2024 2:04:35 PM
PATH & FILENAME: Projects\Minnesota\Roadway\Sheets\023661-000_Top



SEE SHEET 107



LEGEND

- CONSTRUCTION LIMITS
- - - EXISTING R/W
- - - EXISTING RR R/W
- T-BUR BURIED TELEPHONE
- G GAS
- TV-BUR BURIED CABLE TELEVISION
- F/O-BUR BURIED FIBER OPTIC
- OHP OVERHEAD POWER
- P-BUR BURIED ELECTRIC
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- ✱ VEGETATION
- ✱ VEGETATION
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- ⊕ CATCH BASIN
- ⊕ APRON
- WETLAND DELINEATION



LEGEND CONT.

- 1-W UTILITY CONFLICT (OWNER - IMPACT)
- OWNERSHIP:
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Design By:
Plan By:
Checked By:
Approved By:

NEH
MKV
MAN
NEH

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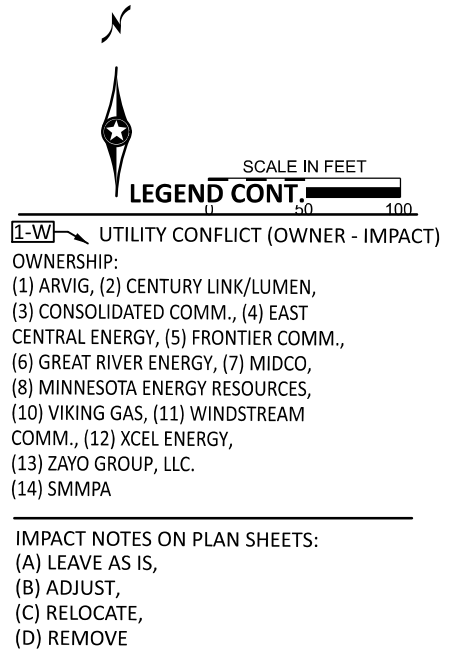
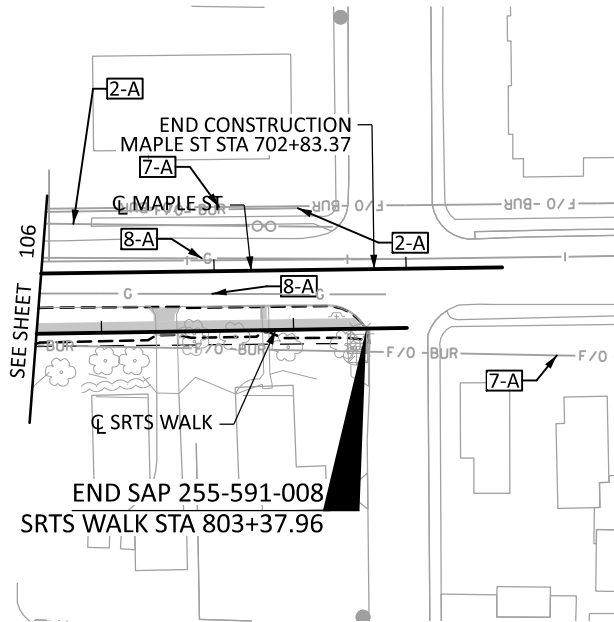
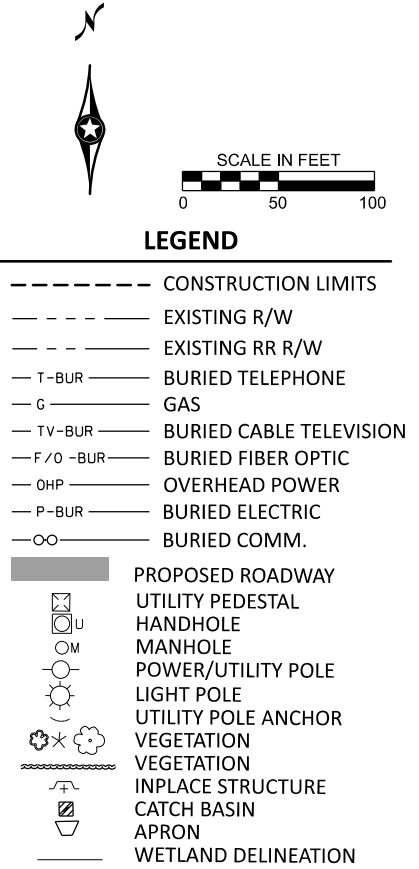
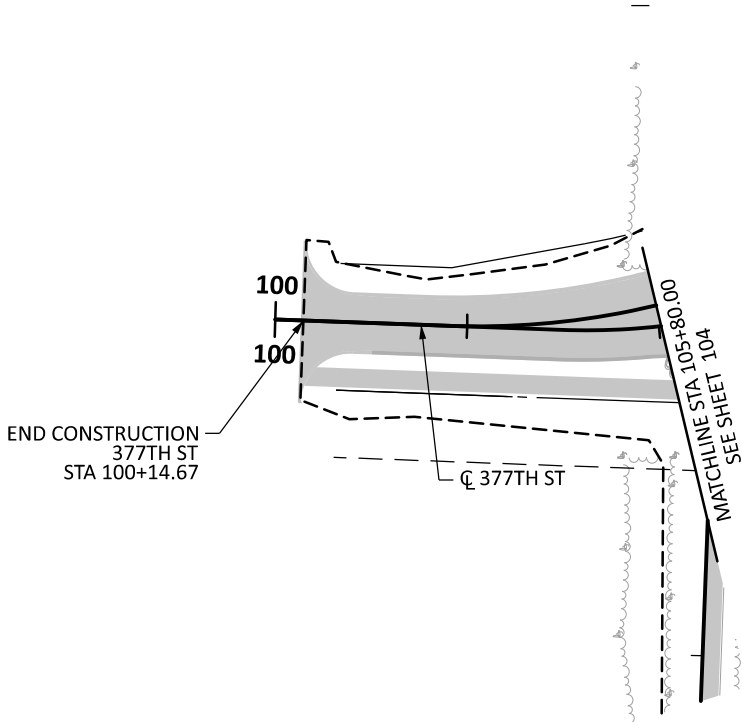
CSAH 30 (Forest Blvd) Improvements
Chisago County, Minnesota

CHISAGO COUNTY, MINNESOTA

INPLACE TOPOGRAPHY & UTILITIES PLAN
SAP 013-630-021 / SAP 225-591-007 / SAP 225-102-004

SHEET
106
OF
216
SHEETS

DATE: 9/12/2024 2:04:37 PM
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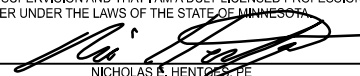


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Design By: NEH
Plan By: MKV
Checked By: MAN
Approved By: NEH

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NICHOLAS E. HENTGES, PE
DATE: 9/12/2024
LICENSE NO. 44620

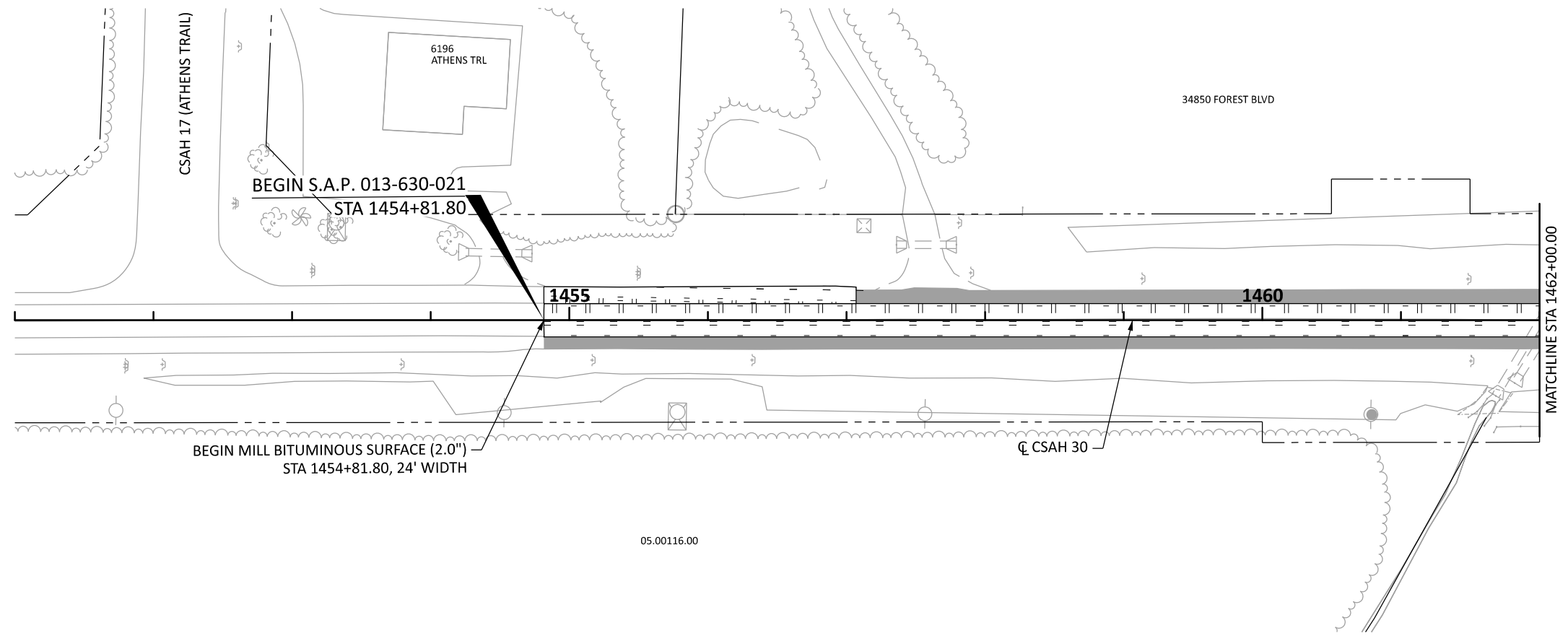


CSAH 30 (Forest Blvd) Improvements
Chisago County, Minnesota

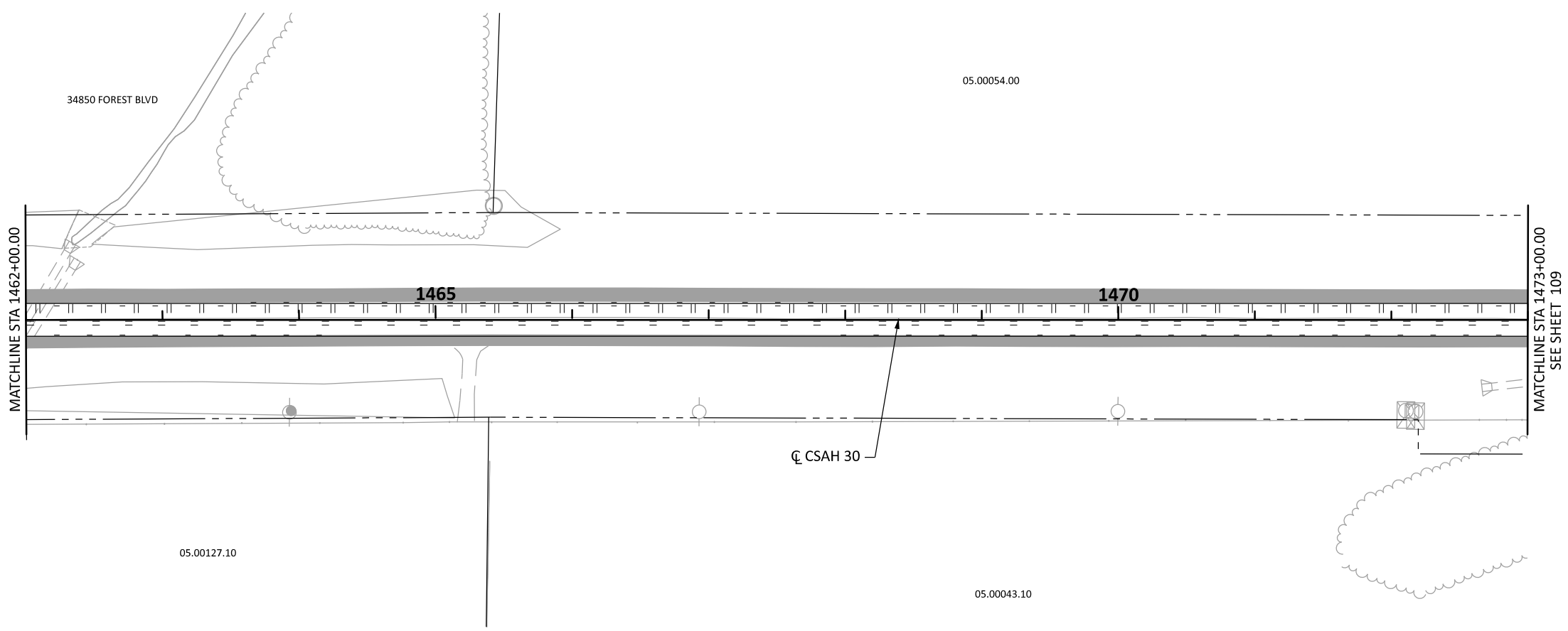
CHISAGO COUNTY, MINNESOTA

INPLACE TOPOGRAPHY & UTILITIES PLAN
SAP 013-630-021 / SAP 225-591-007 / SAP 225-102-004

SHEET
107
OF
216
SHEETS



- LEGEND**
- MILL BITUMINOUS SURFACE (2.0")
 - FOG SEAL (EXISTING RURAL SHOULDERS)
 - REMOVE BITUMINOUS PAVEMENT
 - REMOVE PAVEMENT
 - REMOVE CONCRETE DRIVEWAY PAVEMENT
 - REMOVE BITUMINOUS DRIVEWAY PAVEMENT
 - CLEAR & GRUB TREE (ACRES)
 - REMOVE BITUMINOUS WALK
 - REMOVE CONCRETE WALK
 - REMOVE CURB & GUTTER
 - REMOVE SEWER PIPE (STORM)
 - REMOVE PIPE CULVERTS
 - CLEAR & GRUB TREE (EACH)
 - RELOCATE MAILBOX SUPPORT
 - CONSTRUCTION LIMITS
 - EXISTING R/W
 - PROPOSED R/W
 - TEMPORARY EASEMENT
 - PERMANENT EASEMENT
 - REMOVE GUARDRAIL- PLATE BEAM
 - REMOVE GUARDRAIL- TENSION

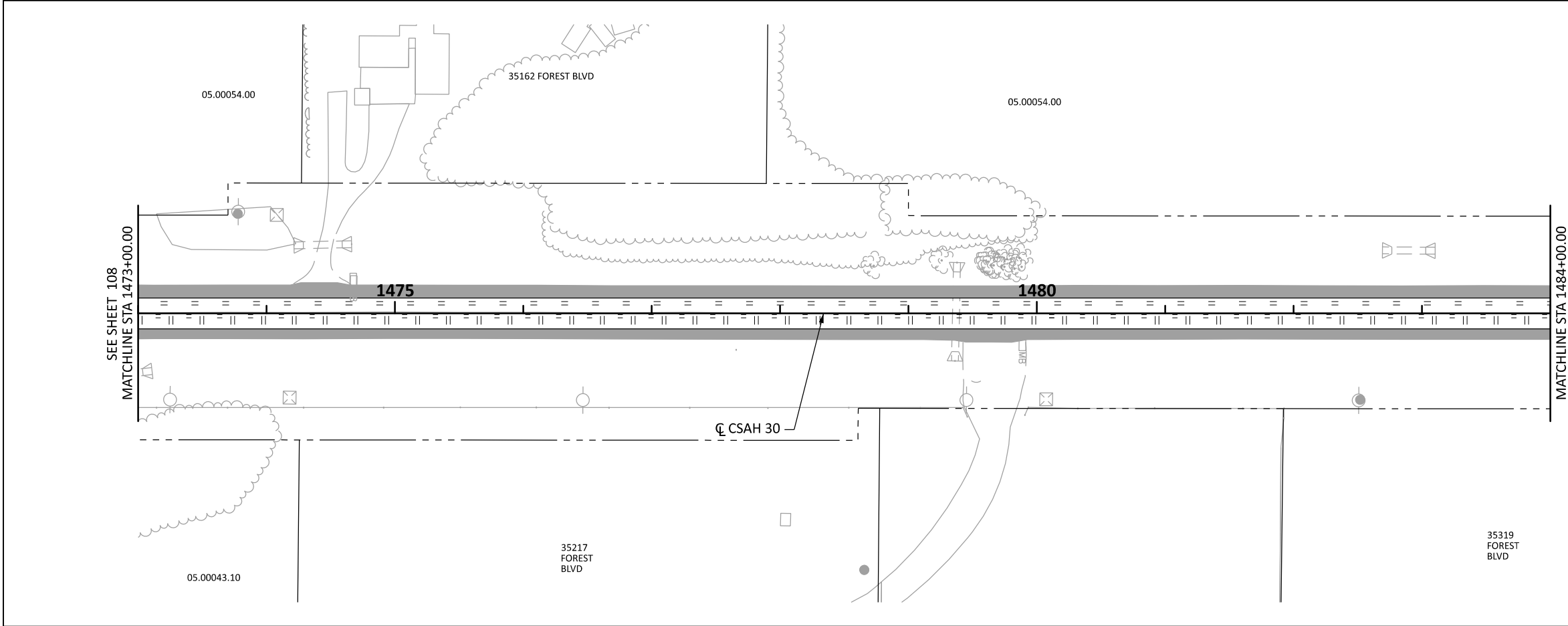


- LEGEND**
- ① SAWCUT BITUMINOUS PAVEMENT (FULL DEPTH)
 - ② SAWCUT CONCRETE PAVEMENT (FULL DEPTH)
 - ③ REMOVE LIGHT FOUNDATION
 - ④ ADJUST FRAME & RING CASTING
 - ⑤ ADJUST FRAME & RING CASTING (SPECIAL)
 - ⑥ SALVAGE LIGHTING UNIT
 - ⑦ ADJUST GATE VALVE & BOX
 - ⑧ REMOVE HYDRANT REMOVE GATE VALVE & BOX
- NOTES**
- EXACT LIMITS OF CLEARING AND GRUBBING WILL BE ESTABLISHED IN THE FIELD.
 - REMOVAL OF ALL AGGREGATE SURFACING REGARDLESS OF THICKNESS SHALL BE INCLUDED IN EXCAVATION - COMMON.
 - SAWCUTTING FOR CONCRETE CURB AND GUTTER SHALL BE INCIDENTAL.
 - SEE SIGNING PLANS FOR ADDITIONAL REMOVALS.
 - SEE SANITARY AND WATERMAIN PLANS FOR MORE DETAILS.

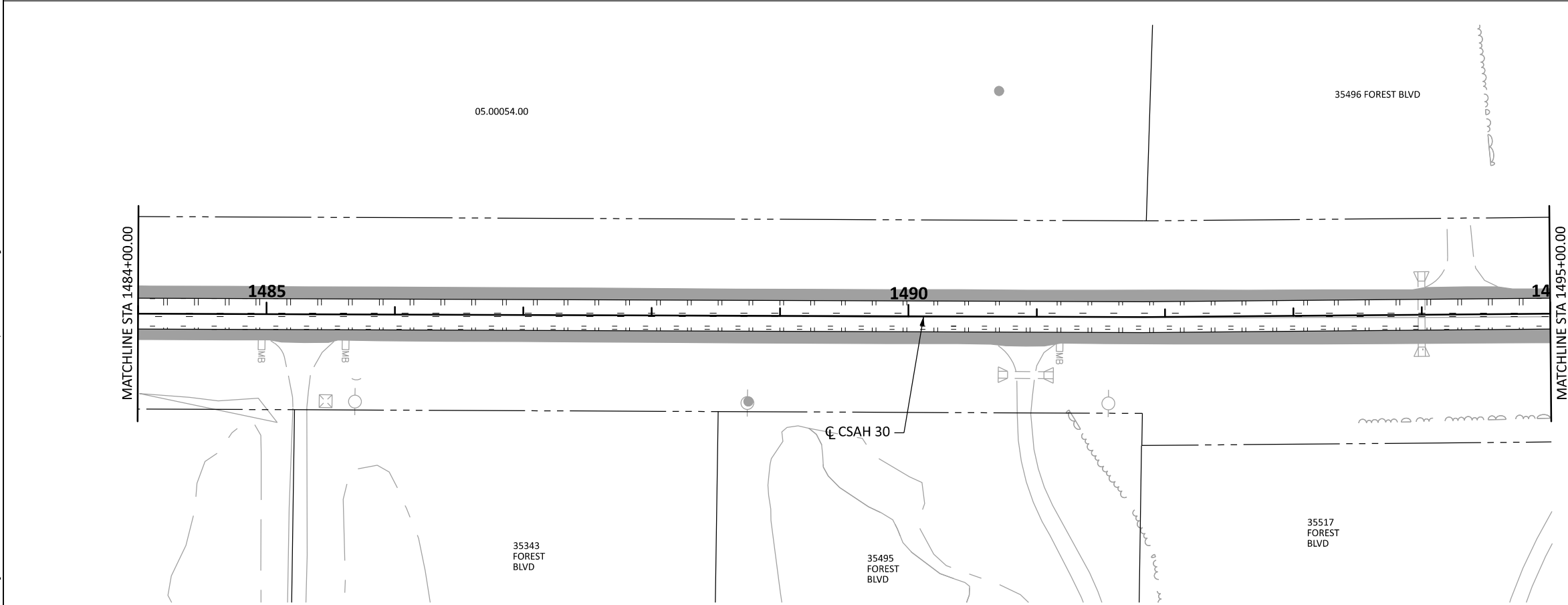
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LEGEND	
	MILL BITUMINOUS SURFACE (2.0")
	FOG SEAL (EXISTING RURAL SHOULDERS)
	REMOVE BITUMINOUS PAVEMENT
	REMOVE PAVEMENT
	REMOVE CONCRETE DRIVEWAY PAVEMENT
	REMOVE BITUMINOUS DRIVEWAY PAVEMENT
	CLEAR & GRUB TREE (ACRES)
	REMOVE BITUMINOUS WALK
	REMOVE CONCRETE WALK
	REMOVE CURB & GUTTER
	REMOVE SEWER PIPE (STORM)
	REMOVE PIPE CULVERTS
	CLEAR & GRUB TREE (EACH)
	RELOCATE MAILBOX SUPPORT
	CONSTRUCTION LIMITS
	EXISTING R/W
	PROPOSED R/W
	TEMPORARY EASEMENT
	PERMANENT EASEMENT
	REMOVE GUARDRAIL- PLATE BEAM
	REMOVE GUARDRAIL- TENSION



LEGEND	
①	SAWCUT BITUMINOUS PAVEMENT (FULL DEPTH)
②	SAWCUT CONCRETE PAVEMENT (FULL DEPTH)
③	REMOVE LIGHT FOUNDATION
④	ADJUST FRAME & RING CASTING
⑤	ADJUST FRAME & RING CASTING (SPECIAL)
⑥	SALVAGE LIGHTING UNIT
⑦	ADJUST GATE VALVE & BOX
⑧	REMOVE HYDRANT REMOVE GATE VALVE & BOX

NOTES

- EXACT LIMITS OF CLEARING AND GRUBBING WILL BE ESTABLISHED IN THE FIELD.
- REMOVAL OF ALL AGGREGATE SURFACING REGARDLESS OF THICKNESS SHALL BE INCLUDED IN EXCAVATION - COMMON.
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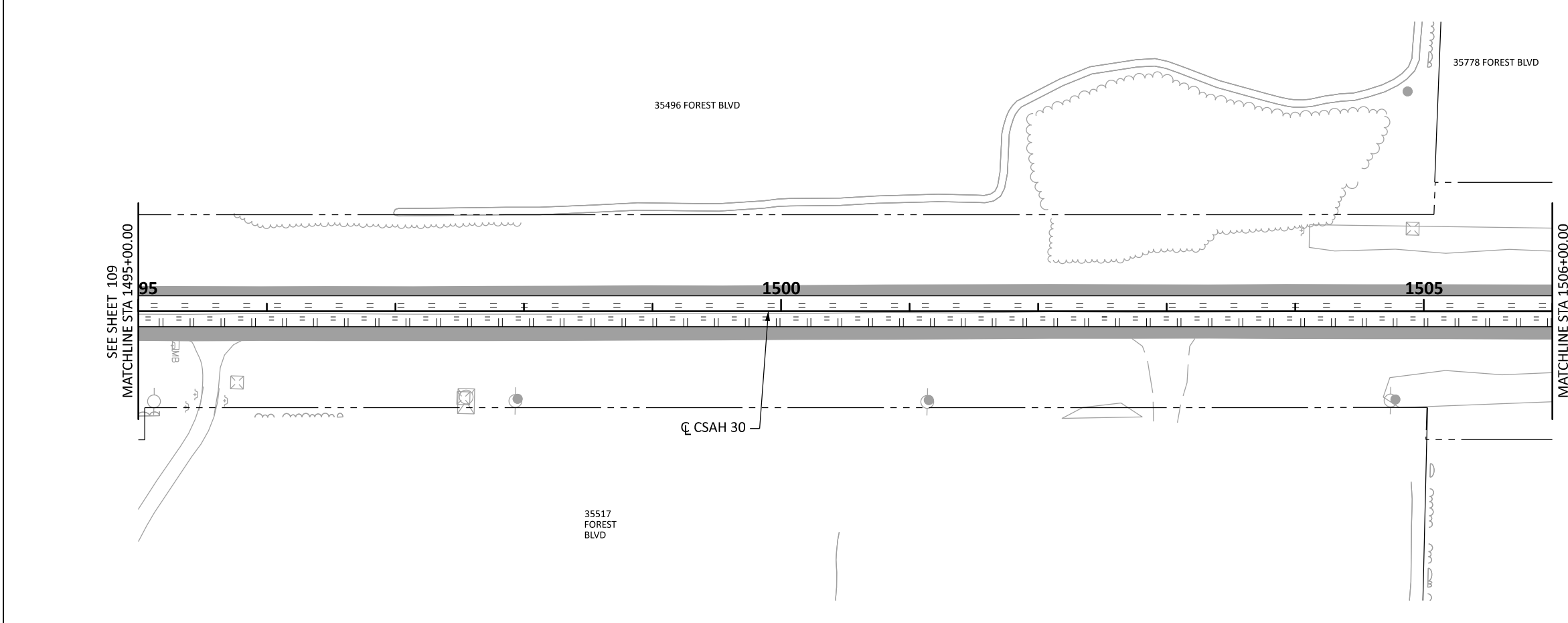


CSAH 30 (Forest Blvd) Improvements
Chisago County, Minnesota

CHISAGO COUNTY, MINNESOTA	
REMOVAL PLAN	
SAP 013-630-021 / SAP 225-591-007 / SAP 225-102-004	

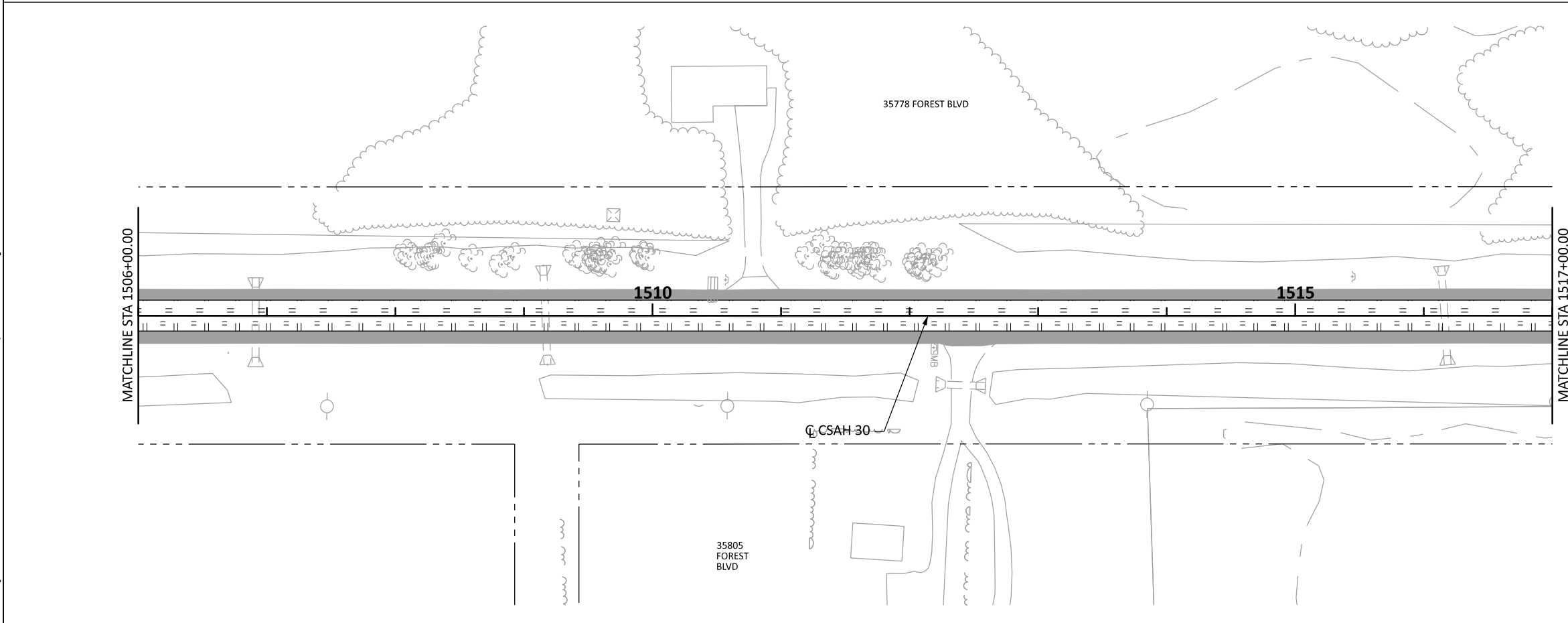
SHEET
109
OF
216
SHEETS

DATE: 9/12/2024 2:04:54 PM
PATH & FILENAME: Projects\Minnesota\023661-000\03_Discipline\Roadway\Sheets\023661-000_Rem



LEGEND

	MILL BITUMINOUS SURFACE (2.0")
	FOG SEAL (EXISTING RURAL SHOULDERS)
	REMOVE BITUMINOUS PAVEMENT
	REMOVE PAVEMENT
	REMOVE CONCRETE DRIVEWAY PAVEMENT
	REMOVE BITUMINOUS DRIVEWAY PAVEMENT
	CLEAR & GRUB TREE (ACRES)
	REMOVE BITUMINOUS WALK
	REMOVE CONCRETE WALK
	REMOVE CURB & GUTTER
	REMOVE SEWER PIPE (STORM)
	REMOVE PIPE CULVERTS
	CLEAR & GRUB TREE (EACH)
	RELOCATE MAILBOX SUPPORT
	CONSTRUCTION LIMITS
	EXISTING R/W
	PROPOSED R/W
	TEMPORARY EASEMENT
	PERMANENT EASEMENT
	REMOVE GUARDRAIL- PLATE BEAM
	REMOVE GUARDRAIL- TENSION



LEGEND

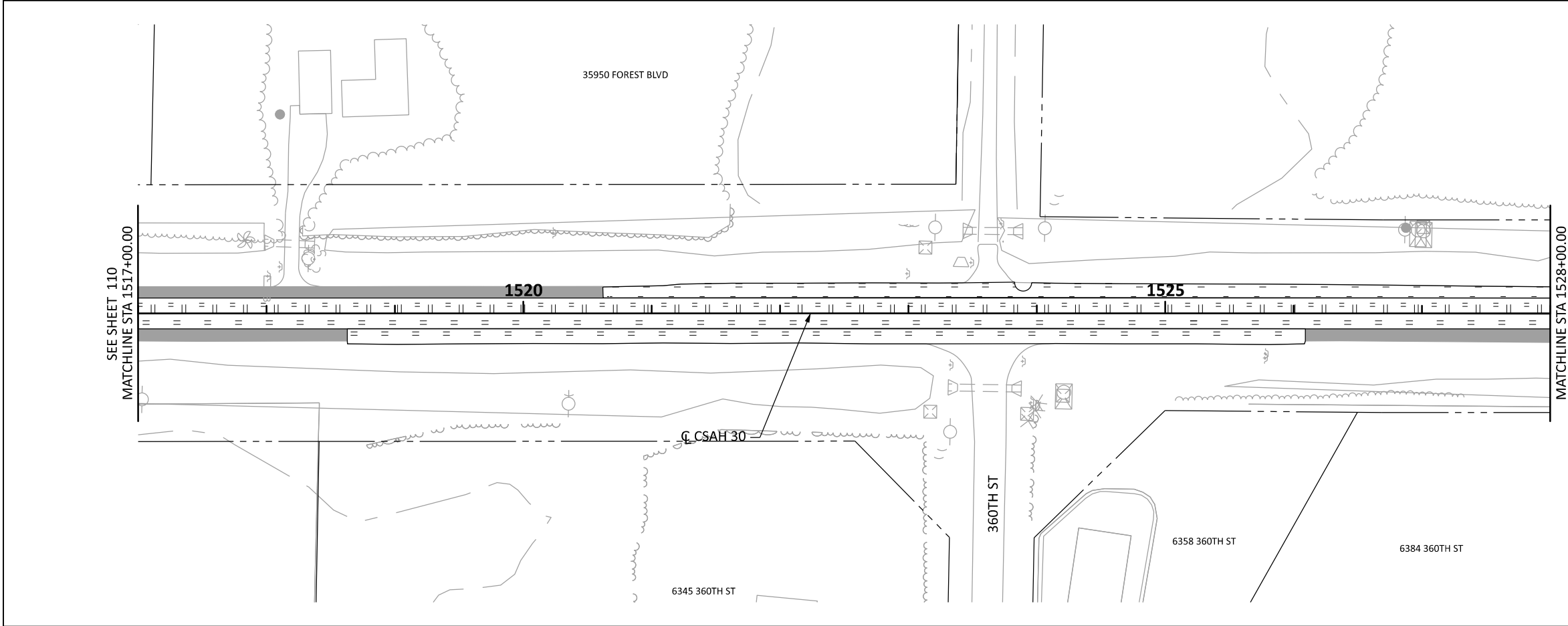
①	SAWCUT BITUMINOUS PAVEMENT (FULL DEPTH)
②	SAWCUT CONCRETE PAVEMENT (FULL DEPTH)
③	REMOVE LIGHT FOUNDATION
④	ADJUST FRAME & RING CASTING
⑤	ADJUST FRAME & RING CASTING (SPECIAL)
⑥	SALVAGE LIGHTING UNIT
⑦	ADJUST GATE VALVE & BOX
⑧	REMOVE HYDRANT REMOVE GATE VALVE & BOX

NOTES

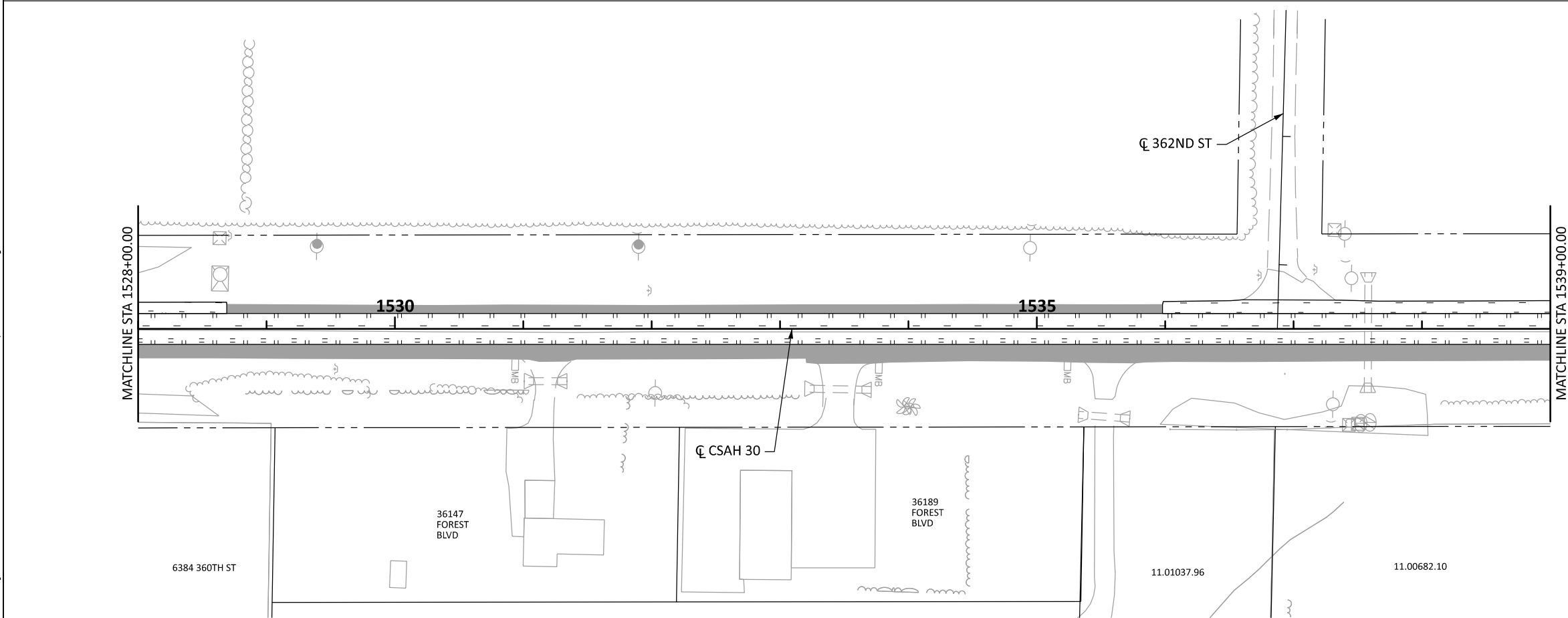
- EXACT LIMITS OF CLEARING AND GRUBBING WILL BE ESTABLISHED IN THE FIELD.
- REMOVAL OF ALL AGGREGATE SURFACING REGARDLESS OF THICKNESS SHALL BE INCLUDED IN EXCAVATION - COMMON.
- SAWCUTTING FOR CONCRETE CURB AND GUTTER SHALL BE INCIDENTAL.
- SEE SIGNING PLANS FOR ADDITIONAL REMOVALS.
- SEE SANITARY AND WATERMAIN PLANS FOR MORE DETAILS.

					Design By: NEH		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.  NICHOLAS E. HENTGES, PE DATE: 9/12/2024 LICENSE NO. 44620	  CSAH 30 (Forest Blvd) Improvements Chisago County, Minnesota	CHISAGO COUNTY, MINNESOTA		SHEET 11 OF 21 SHEETS
					Plan By: MKV						
					Checked By: MAN						
					Approved By: NEH						
NO.	DATE	BY	CHK	REVISIONS					REMOVAL PLAN		
									SAP 013-630-021 / SAP 225-591-007 / SAP 225-102-004		

DATE: 9/12/2024 2:04:55 PM
PATH & FILENAME: Projects\Minnesota\023661-000\03_Discipline\Roadway\Sheets\023661-000_Rem



- LEGEND**
- MILL BITUMINOUS SURFACE (2.0")
 - FOG SEAL (EXISTING RURAL SHOULDERS)
 - REMOVE BITUMINOUS PAVEMENT
 - REMOVE PAVEMENT
 - REMOVE CONCRETE DRIVEWAY PAVEMENT
 - REMOVE BITUMINOUS DRIVEWAY PAVEMENT
 - CLEAR & GRUB TREE (ACRES)
 - REMOVE BITUMINOUS WALK
 - REMOVE CONCRETE WALK
 - REMOVE CURB & GUTTER
 - REMOVE SEWER PIPE (STORM)
 - REMOVE PIPE CULVERTS
 - CLEAR & GRUB TREE (EACH)
 - RELOCATE MAILBOX SUPPORT
 - CONSTRUCTION LIMITS
 - EXISTING R/W
 - PROPOSED R/W
 - TEMPORARY EASEMENT
 - PERMANENT EASEMENT
 - REMOVE GUARDRAIL- PLATE BEAM
 - REMOVE GUARDRAIL- TENSION



- LEGEND**
- SAWCUT BITUMINOUS PAVEMENT (FULL DEPTH)
 - SAWCUT CONCRETE PAVEMENT (FULL DEPTH)
 - REMOVE LIGHT FOUNDATION
 - ADJUST FRAME & RING CASTING
 - ADJUST FRAME & RING CASTING (SPECIAL)
 - SALVAGE LIGHTING UNIT
 - ADJUST GATE VALVE & BOX
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DATE: 9/12/2024 LICENSE NO. 44620

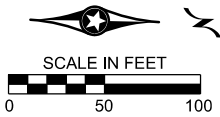


CSAH 30 (Forest Blvd) Improvements
Chisago County, Minnesota

CHISAGO COUNTY, MINNESOTA

REMOVAL PLAN
SAP 013-630-021 / SAP 225-591-007 / SAP 225-102-004

SHEET
111
OF
216
SHEETS



LEGEND

- MILL BITUMINOUS SURFACE (2.0")
- FOG SEAL (EXISTING RURAL SHOULDERS)
- REMOVE BITUMINOUS PAVEMENT
- REMOVE PAVEMENT
- REMOVE CONCRETE DRIVEWAY PAVEMENT
- REMOVE BITUMINOUS DRIVEWAY PAVEMENT
- CLEAR & GRUB TREE (ACRES)
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- REMOVE CURB & GUTTER
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- EXISTING R/W
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- TEMPORARY EASEMENT
- PERMANENT EASEMENT
- REMOVE GUARDRAIL- PLATE BEAM
- REMOVE GUARDRAIL- TENSION

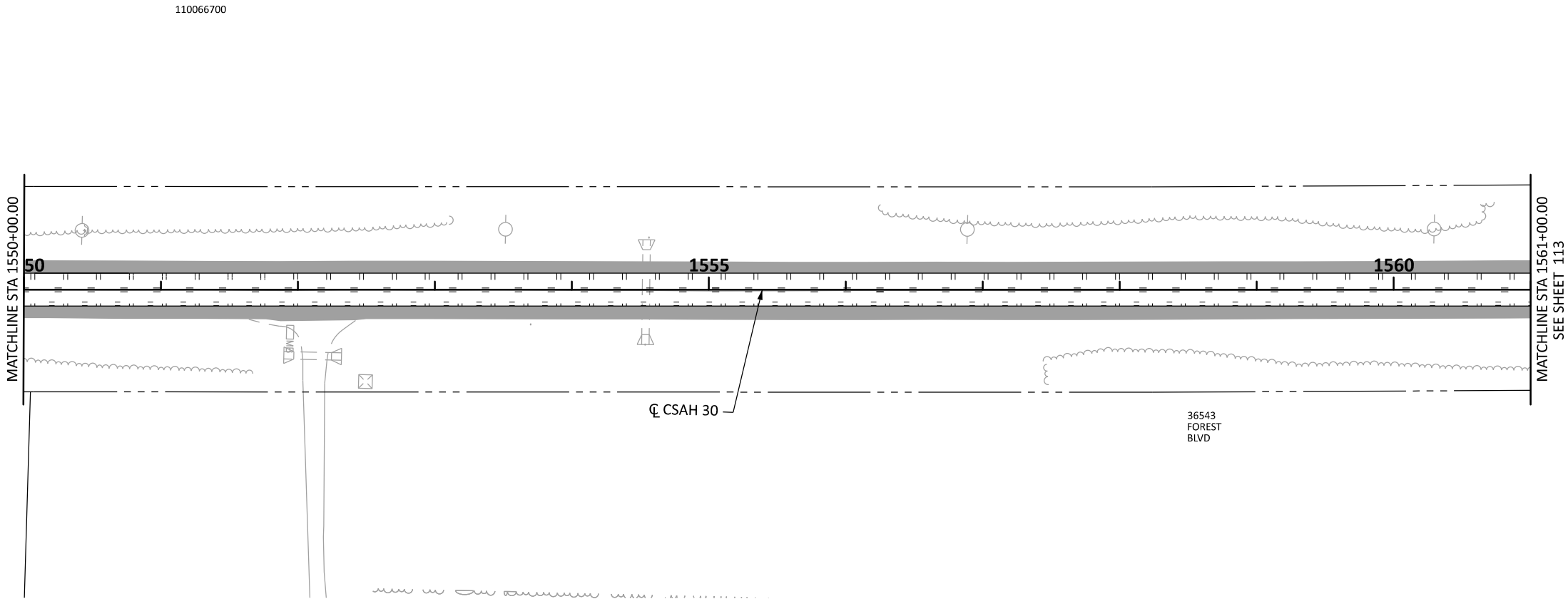
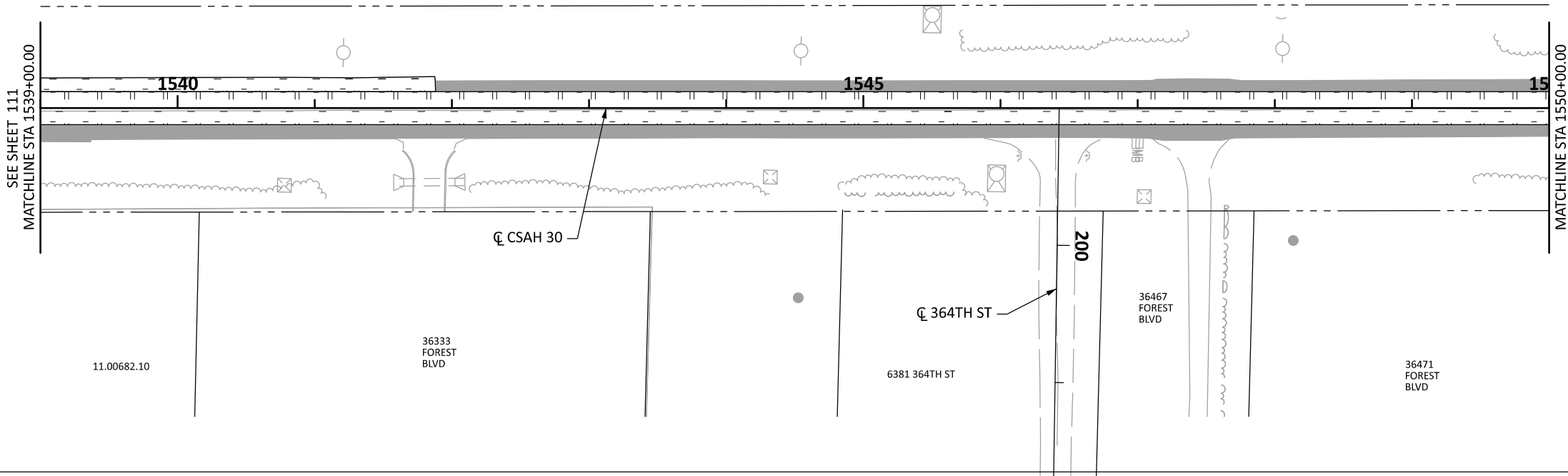


LEGEND

- ① SAWCUT BITUMINOUS PAVEMENT (FULL DEPTH)
- ② SAWCUT CONCRETE PAVEMENT (FULL DEPTH)
- ③ REMOVE LIGHT FOUNDATION
- ④ ADJUST FRAME & RING CASTING
- ⑤ ADJUST FRAME & RING CASTING (SPECIAL)
- ⑥ SALVAGE LIGHTING UNIT
- ⑦ ADJUST GATE VALVE & BOX
- ⑧ REMOVE HYDRANT REMOVE GATE VALVE & BOX

NOTES

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Design By: NEH
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NICHOLAS E. HENTGES, PE
DATE: 9/12/2024 LICENSE NO. 44620



CSAH 30 (Forest Blvd) Improvements
Chisago County, Minnesota

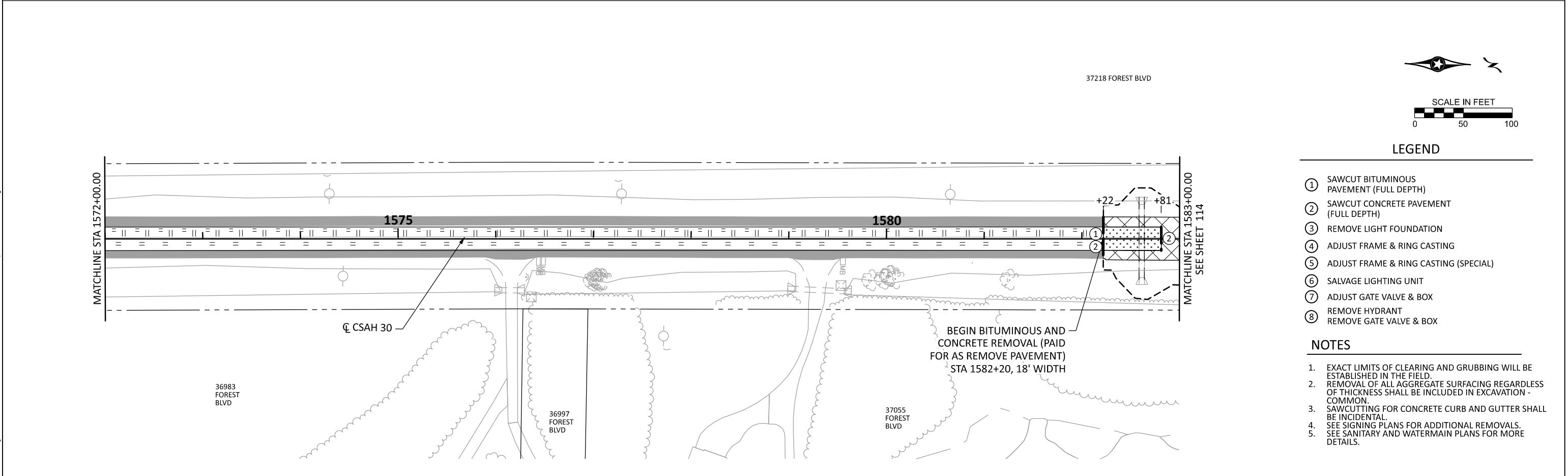
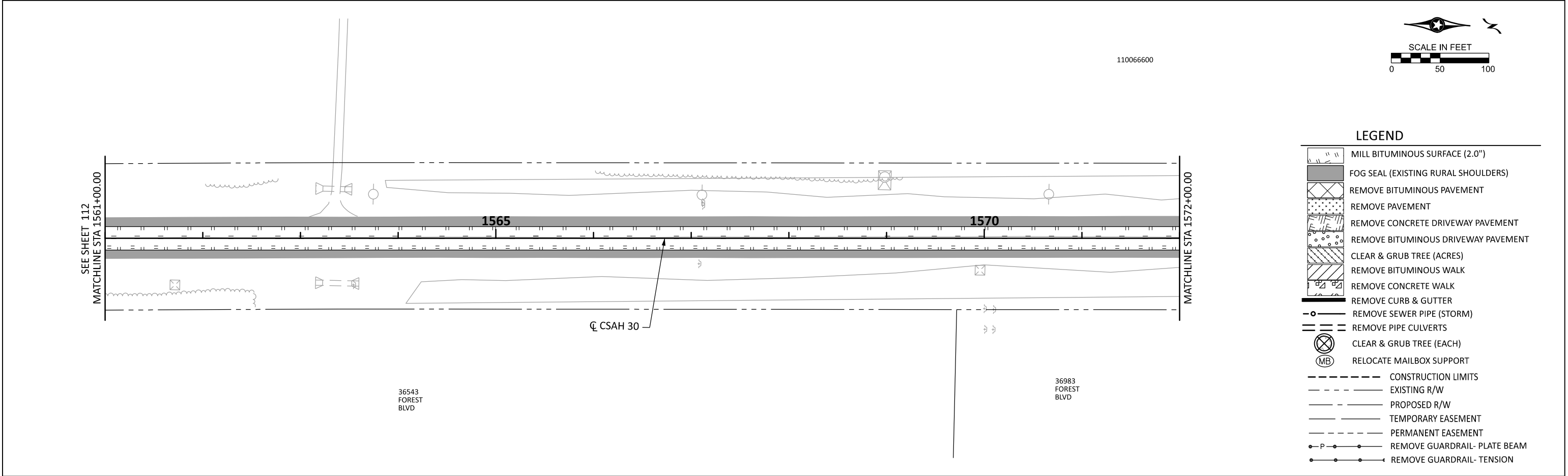
CHISAGO COUNTY, MINNESOTA

REMOVAL PLAN
SAP 013-630-021 / SAP 225-591-007 / SAP 225-102-004

SHEET
112
OF
216
SHEETS

DATE: 9/12/2024 2:04:56 PM
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DATE: 9/12/2024 2:04:57 PM
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NO.	DATE	BY	CHK	REVISIONS

Design By: NEH
Plan By: MKV
Checked By: MAN
Approved By: NEH

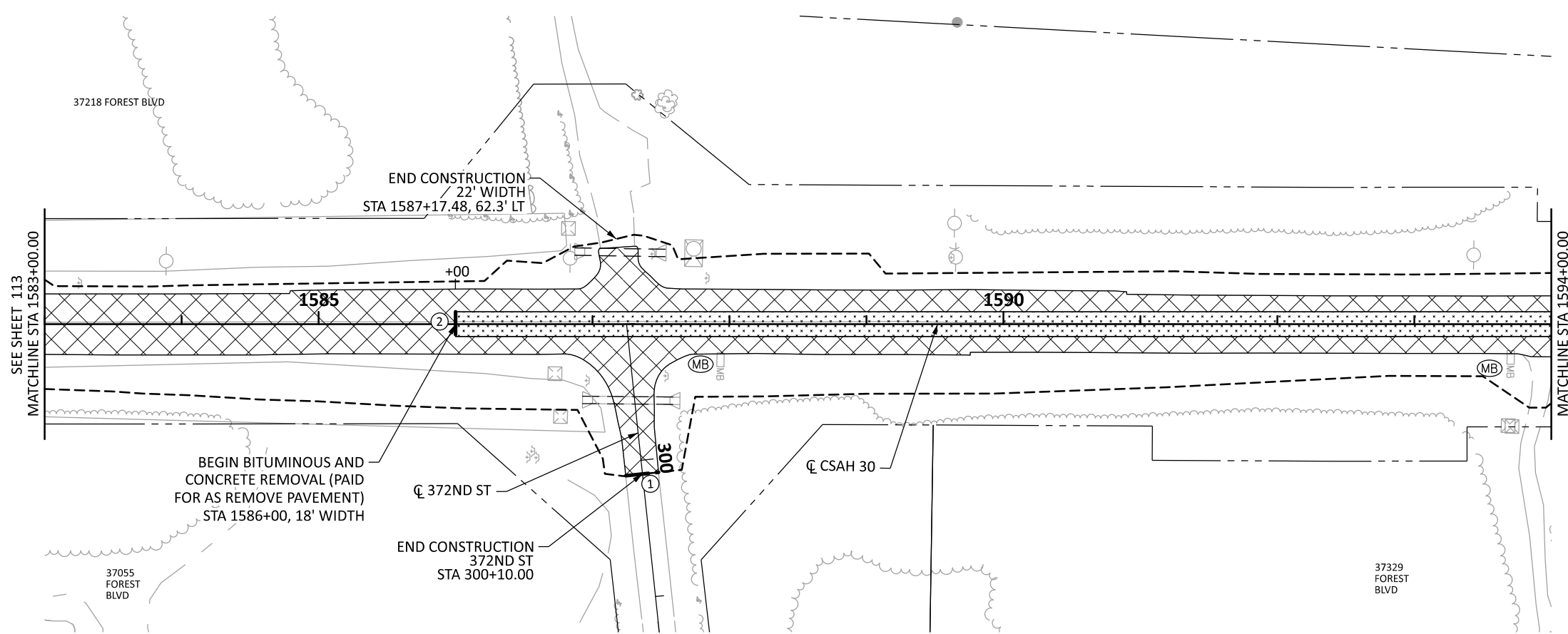
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NICHOLAS E. HENTZ, P.E.
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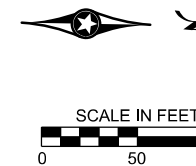
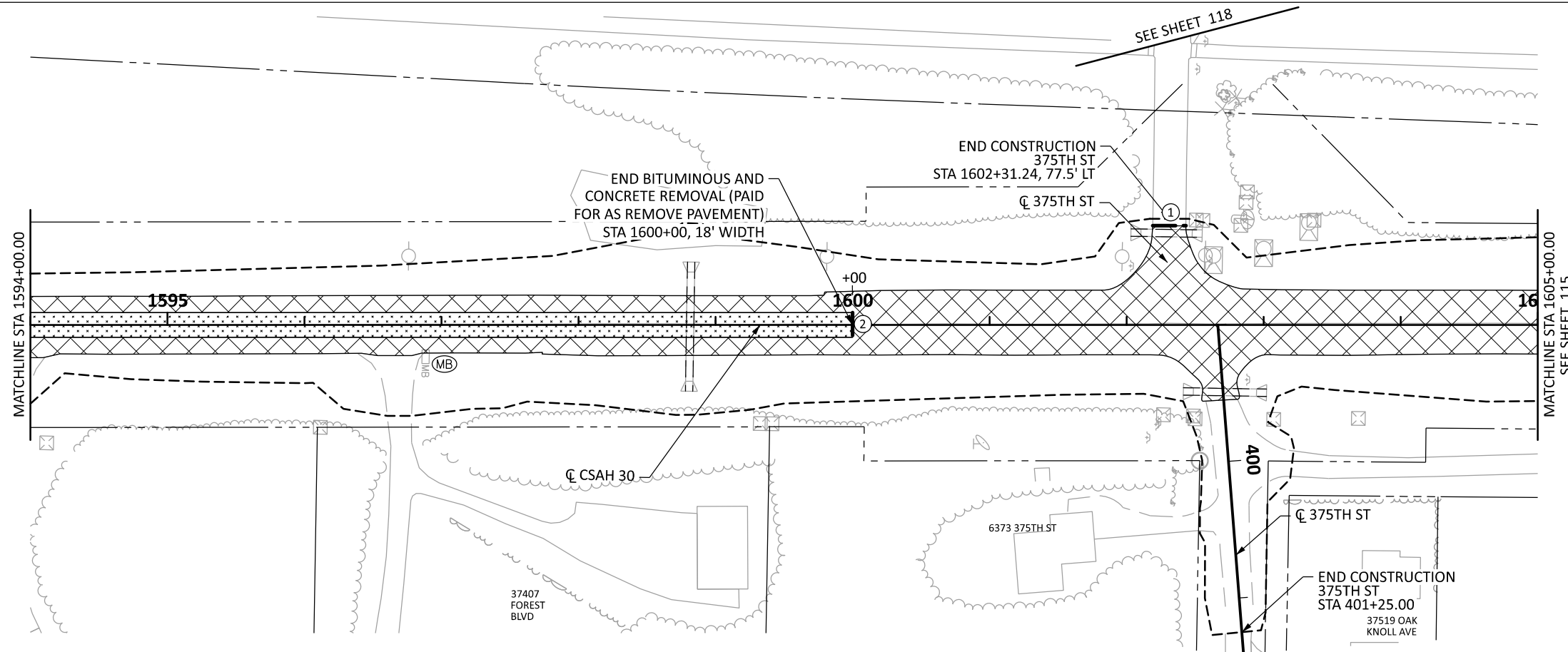
CSAH 30 (Forest Blvd) Improvements
Chisago County, Minnesota

CHISAGO COUNTY, MINNESOTA		SHEET 113 OF 216 SHEETS
REMOVAL PLAN SAP 013-630-021 / SAP 225-591-007 / SAP 225-102-004		



LEGEND

- MILL BITUMINOUS SURFACE (2.0")
- FOG SEAL (EXISTING RURAL SHOULDERS)
- REMOVE BITUMINOUS PAVEMENT
- REMOVE PAVEMENT
- REMOVE CONCRETE DRIVEWAY PAVEMENT
- REMOVE BITUMINOUS DRIVEWAY PAVEMENT
- CLEAR & GRUB TREE (ACRES)
- REMOVE BITUMINOUS WALK
- REMOVE CONCRETE WALK
- REMOVE CURB & GUTTER
- REMOVE SEWER PIPE (STORM)
- REMOVE PIPE CULVERTS
- CLEAR & GRUB TREE (EACH)
- RELOCATE MAILBOX SUPPORT
- CONSTRUCTION LIMITS
- EXISTING R/W
- PROPOSED R/W
- TEMPORARY EASEMENT
- PERMANENT EASEMENT
- REMOVE GUARDRAIL- PLATE BEAM
- REMOVE GUARDRAIL- TENSION



LEGEND

- ① SAWCUT BITUMINOUS PAVEMENT (FULL DEPTH)
- ② SAWCUT CONCRETE PAVEMENT (FULL DEPTH)
- ③ REMOVE LIGHT FOUNDATION
- ④ ADJUST FRAME & RING CASTING
- ⑤ ADJUST FRAME & RING CASTING (SPECIAL)
- ⑥ SALVAGE LIGHTING UNIT
- ⑦ ADJUST GATE VALVE & BOX
- ⑧ REMOVE HYDRANT REMOVE GATE VALVE & BOX

NOTES

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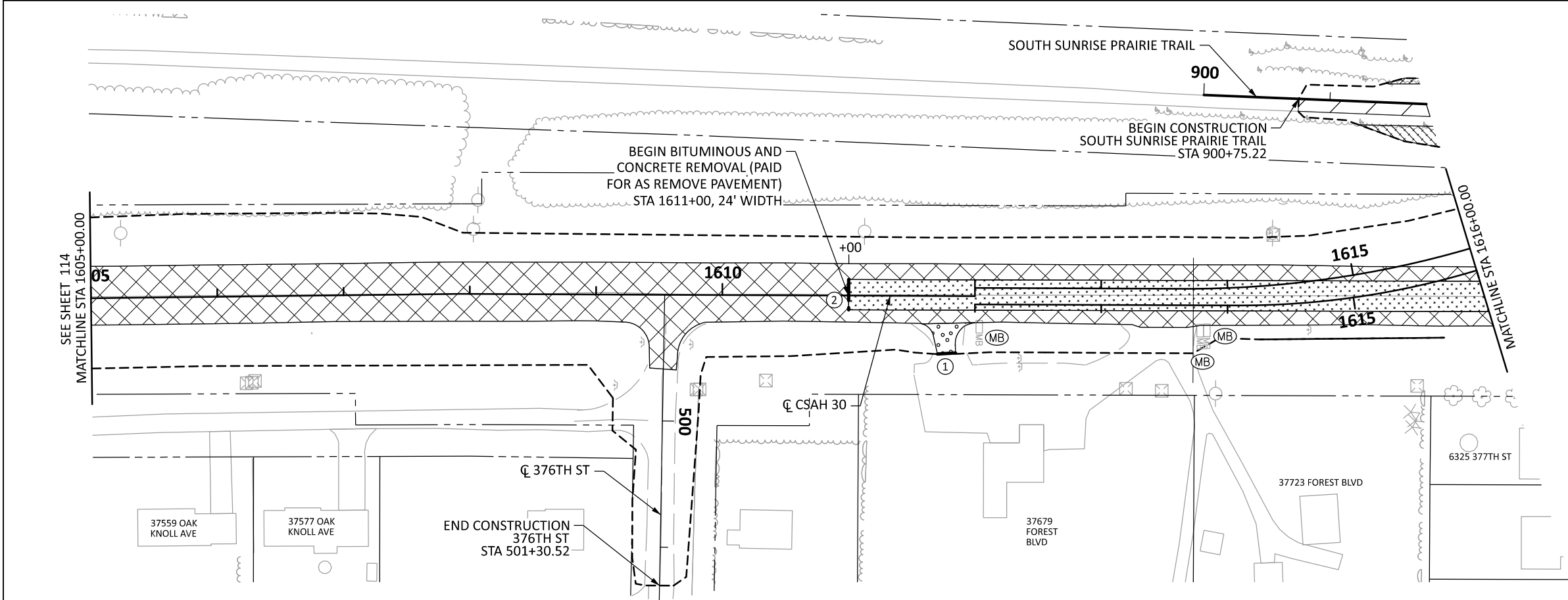
CSAH 30 (Forest Blvd) Improvements
Chisago County, Minnesota

CHISAGO COUNTY, MINNESOTA

REMOVAL PLAN
SAP 013-630-021 / SAP 225-591-007 / SAP 225-102-004

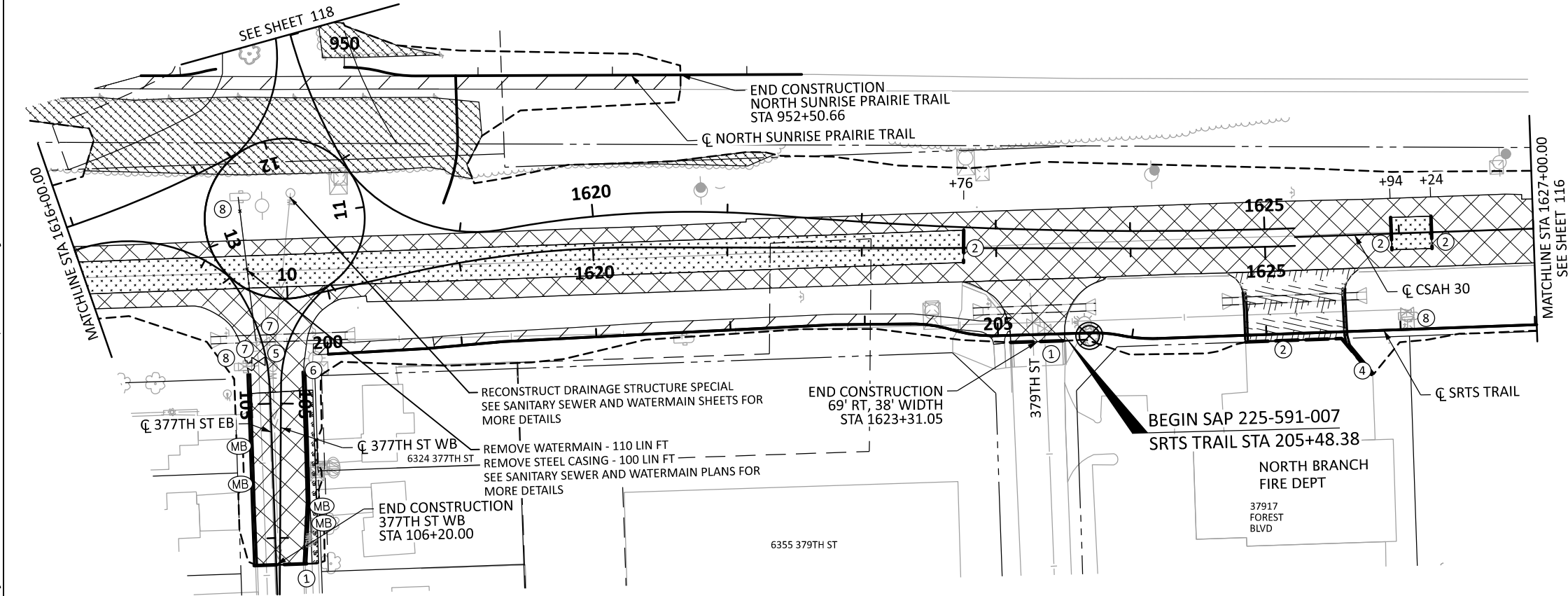
SHEET
114
OF
216
SHEETS

DATE: 9/12/2024 2:04:59 PM
PATH & FILENAME: Projects\Minnesota\023661-000\03_Discipline\Roadway\Sheets\023661-000_Rem



LEGEND	
	MILL BITUMINOUS SURFACE (2.0")
	FOG SEAL (EXISTING RURAL SHOULDERS)
	REMOVE BITUMINOUS PAVEMENT
	REMOVE PAVEMENT
	REMOVE CONCRETE DRIVEWAY PAVEMENT
	REMOVE BITUMINOUS DRIVEWAY PAVEMENT
	CLEAR & GRUB TREE (ACRES)
	REMOVE BITUMINOUS WALK
	REMOVE CONCRETE WALK
	REMOVE CURB & GUTTER
	REMOVE SEWER PIPE (STORM)
	REMOVE PIPE CULVERTS
	CLEAR & GRUB TREE (EACH)
	RELOCATE MAILBOX SUPPORT
	CONSTRUCTION LIMITS
	EXISTING R/W
	PROPOSED R/W
	TEMPORARY EASEMENT
	PERMANENT EASEMENT
	REMOVE GUARDRAIL- PLATE BEAM
	REMOVE GUARDRAIL- TENSION

SEE SHEET 116



LEGEND	
①	SAWCUT BITUMINOUS PAVEMENT (FULL DEPTH)
②	SAWCUT CONCRETE PAVEMENT (FULL DEPTH)
③	REMOVE LIGHT FOUNDATION
④	ADJUST FRAME & RING CASTING
⑤	ADJUST FRAME & RING CASTING (SPECIAL)
⑥	SALVAGE LIGHTING UNIT
⑦	ADJUST GATE VALVE & BOX
⑧	REMOVE HYDRANT REMOVE GATE VALVE & BOX

NOTES	
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3.	SAWCUTTING FOR CONCRETE CURB AND GUTTER SHALL BE INCIDENTAL.
4.	SEE SIGNING PLANS FOR ADDITIONAL REMOVALS.
5.	SEE SANITARY AND WATERMAIN PLANS FOR MORE DETAILS.

NO.	DATE	BY	CHK	REVISIONS

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Plan By:	MKV
Checked By:	MAN
Approved By:	NEH

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NICHOLAS E. HENTGES, P.E.
DATE: 9/12/2024 LICENSE NO. 44620



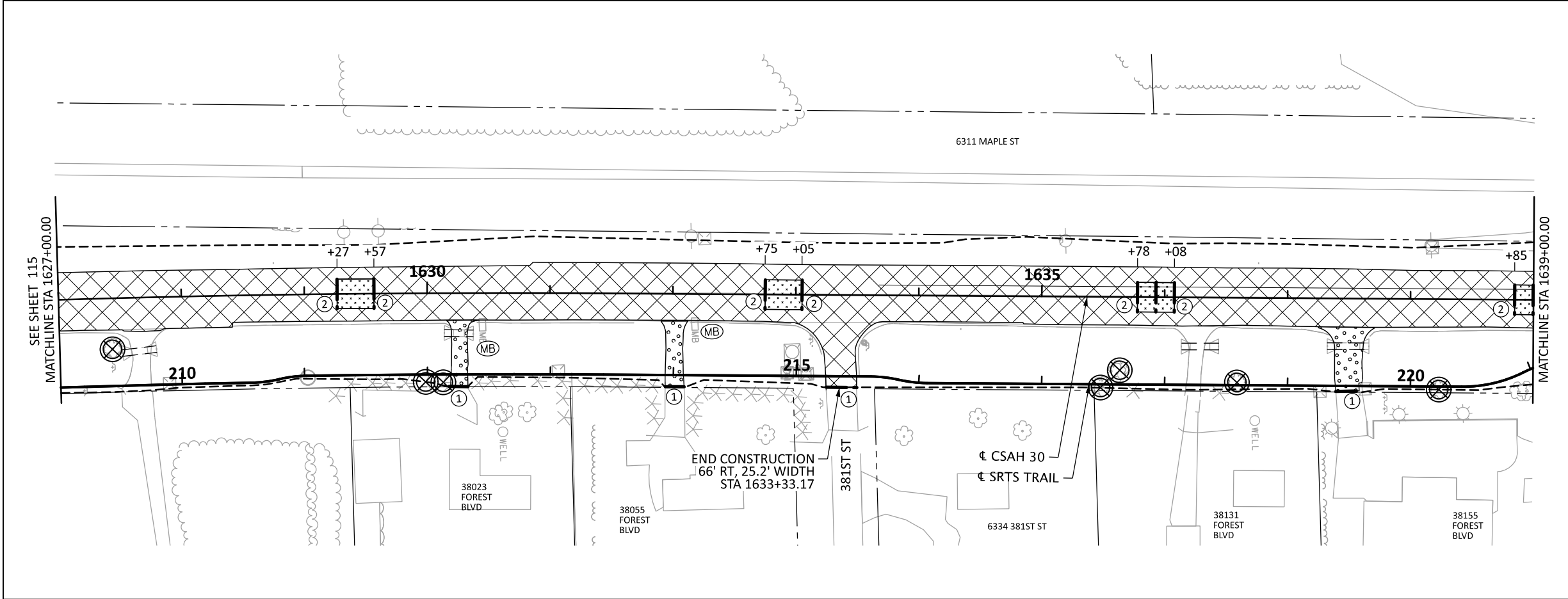
CSAH 30 (Forest Blvd) Improvements
Chisago County, Minnesota

CHISAGO COUNTY, MINNESOTA

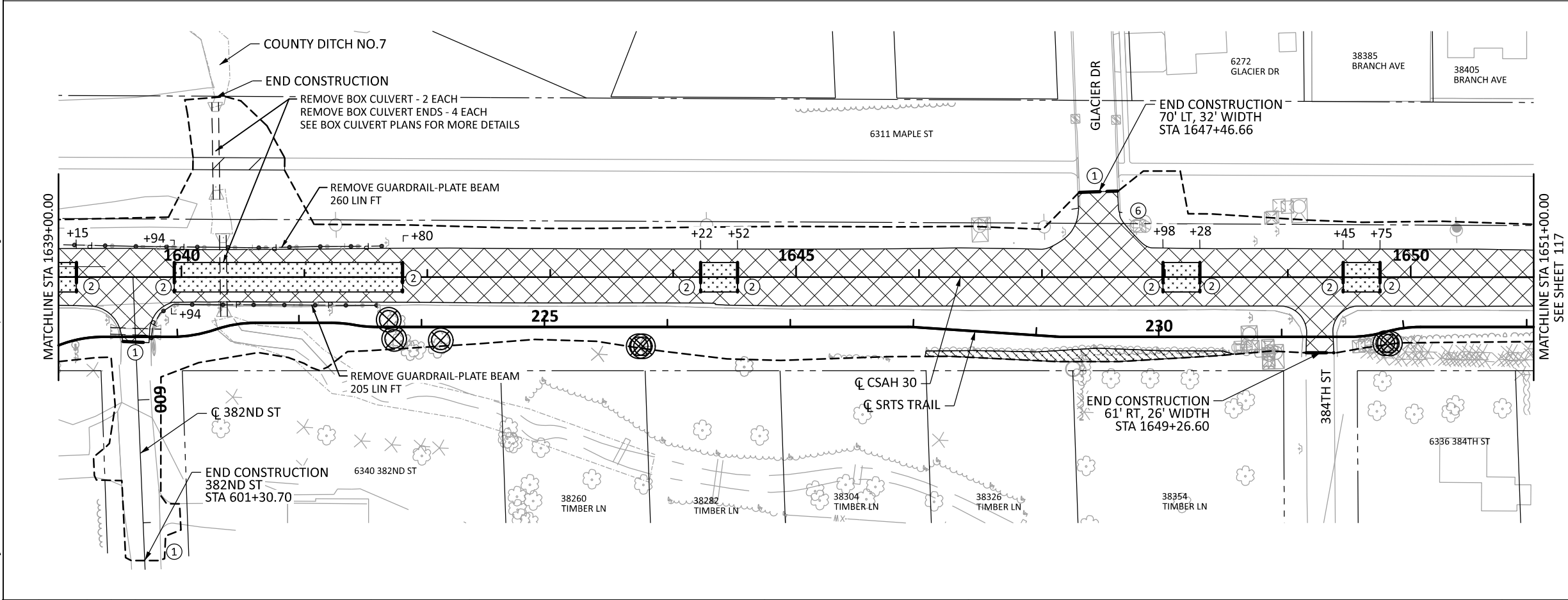
REMOVAL PLAN
SAP 013-630-021 / SAP 225-591-007 / SAP 225-102-004

SHEET
115
OF
216
SHEETS

DATE: 9/12/2024 2:05:00 PM
PATH & FILENAME: Projects\Minnesota\023661-000\03_Discipline\Roadway\Sheets\023661-000_Rem



- LEGEND**
- MILL BITUMINOUS SURFACE (2.0")
 - FOG SEAL (EXISTING RURAL SHOULDERS)
 - REMOVE BITUMINOUS PAVEMENT
 - REMOVE PAVEMENT
 - REMOVE CONCRETE DRIVEWAY PAVEMENT
 - REMOVE BITUMINOUS DRIVEWAY PAVEMENT
 - CLEAR & GRUB TREE (ACRES)
 - REMOVE BITUMINOUS WALK
 - REMOVE CONCRETE WALK
 - REMOVE CURB & GUTTER
 - REMOVE SEWER PIPE (STORM)
 - REMOVE PIPE CULVERTS
 - CLEAR & GRUB TREE (EACH)
 - RELOCATE MAILBOX SUPPORT
 - CONSTRUCTION LIMITS
 - EXISTING R/W
 - PROPOSED R/W
 - TEMPORARY EASEMENT
 - PERMANENT EASEMENT
 - REMOVE GUARDRAIL- PLATE BEAM
 - REMOVE GUARDRAIL- TENSION



- LEGEND**
- 1 SAWCUT BITUMINOUS PAVEMENT (FULL DEPTH)
 - 2 SAWCUT CONCRETE PAVEMENT (FULL DEPTH)
 - 3 REMOVE LIGHT FOUNDATION
 - 4 ADJUST FRAME & RING CASTING
 - 5 ADJUST FRAME & RING CASTING (SPECIAL)
 - 6 SALVAGE LIGHTING UNIT
 - 7 ADJUST GATE VALVE & BOX
 - 8 REMOVE HYDRANT REMOVE GATE VALVE & BOX
- NOTES**
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Nicholas E. Hentges, PE
NICHOLAS E. HENTGES, PE
DATE: 9/12/2024 LICENSE NO. 44620



CSAH 30 (Forest Blvd) Improvements
Chisago County, Minnesota

CHISAGO COUNTY, MINNESOTA	SHEET 116 OF 216 SHEETS
REMOVAL PLAN SAP 013-630-021 / SAP 225-591-007 / SAP 225-102-004	



-

- ## NOTES
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					NEH	
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wsb



Chisago
COUNTY USA

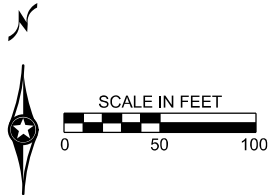
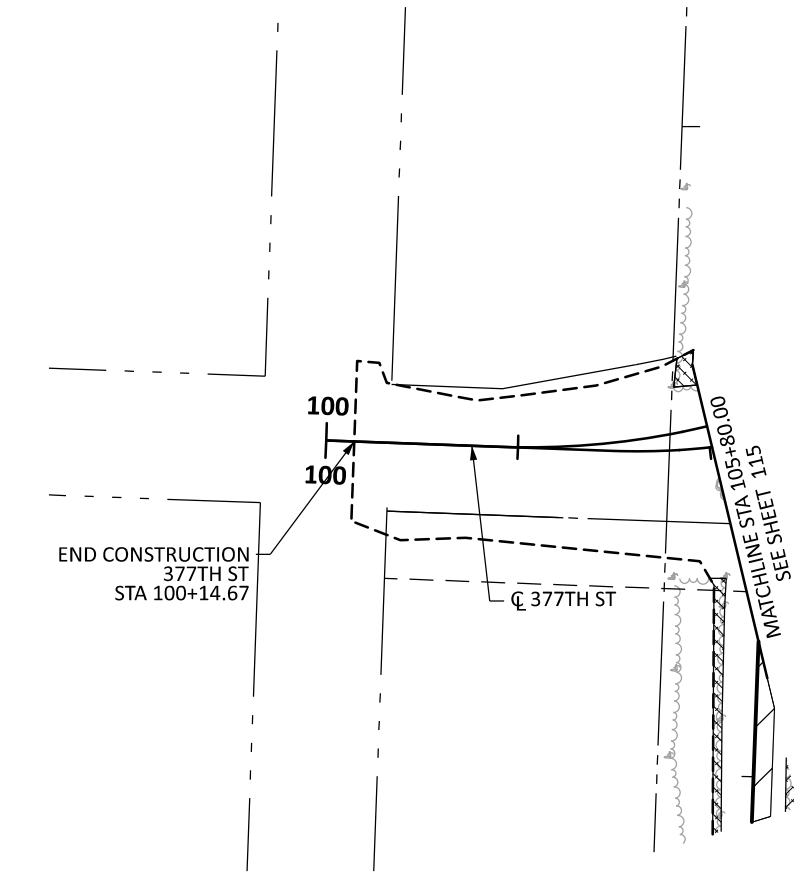
CSAH 30 (Forest Blvd) Improvements

Chisago County, Minnesota

CHISAGO COUNTY, MINNESOTA
REMOVAL PLAN SAP 013-630-021 / SAP 225-591-007 / SAP 225-102-004

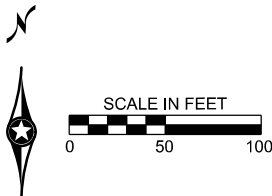
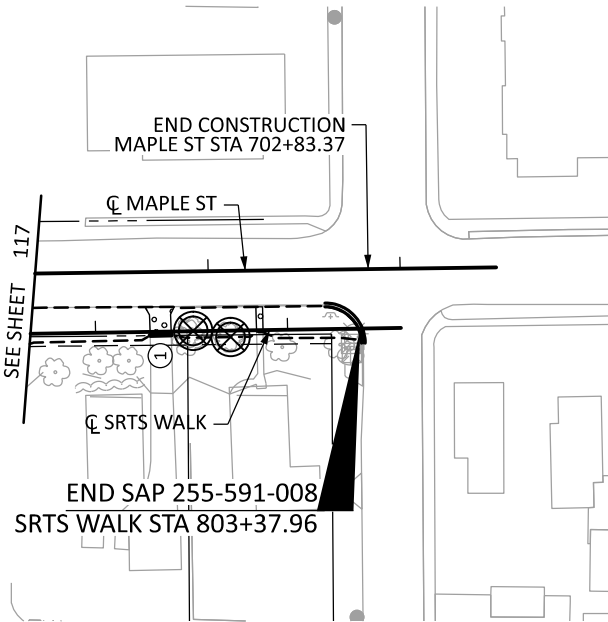
SHEET
117
OF
216
SHEETS

DATE: 9/12/2024 2:05:01 PM
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LEGEND

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- FOG SEAL (EXISTING RURAL SHOULDERS)
- REMOVE BITUMINOUS PAVEMENT
- REMOVE PAVEMENT
- REMOVE CONCRETE DRIVEWAY PAVEMENT
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- CLEAR & GRUB TREE (ACRES)
- REMOVE BITUMINOUS WALK
- REMOVE CONCRETE WALK
- REMOVE CURB & GUTTER
- REMOVE SEWER PIPE (STORM)
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- CONSTRUCTION LIMITS
- EXISTING R/W
- PROPOSED R/W
- TEMPORARY EASEMENT
- PERMANENT EASEMENT
- REMOVE GUARDRAIL- PLATE BEAM
- REMOVE GUARDRAIL- TENSION



LEGEND

- ① SAWCUT BITUMINOUS PAVEMENT (FULL DEPTH)
- ② SAWCUT CONCRETE PAVEMENT (FULL DEPTH)
- ③ REMOVE LIGHT FOUNDATION
- ④ ADJUST FRAME & RING CASTING
- ⑤ ADJUST FRAME & RING CASTING (SPECIAL)
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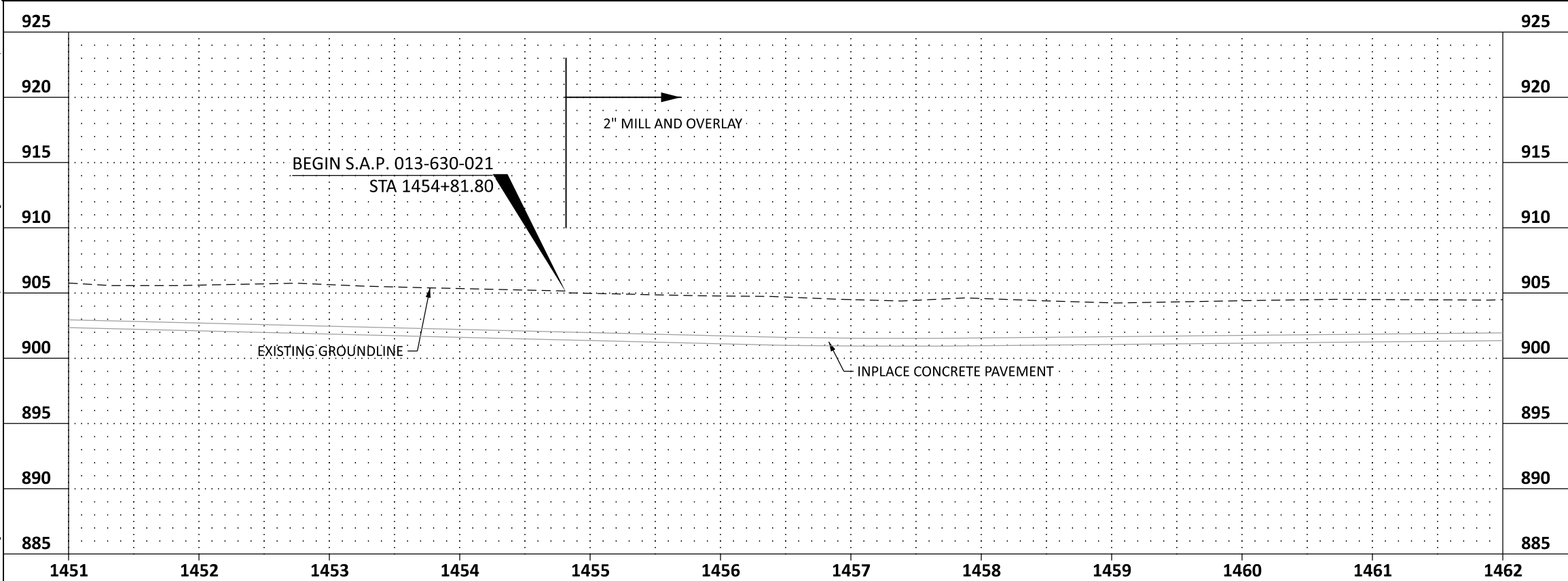
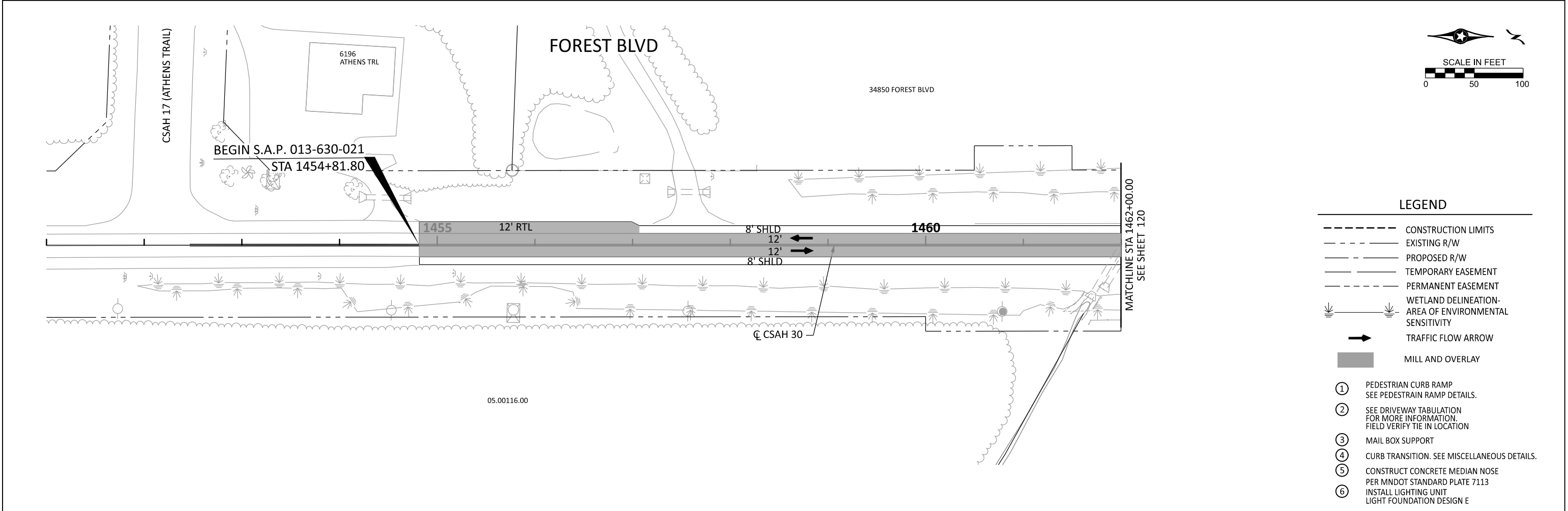
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Chisago County, Minnesota

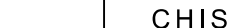
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REMOVAL PLAN
SAP 013-630-021 / SAP 225-591-007 / SAP 225-102-004

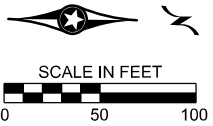
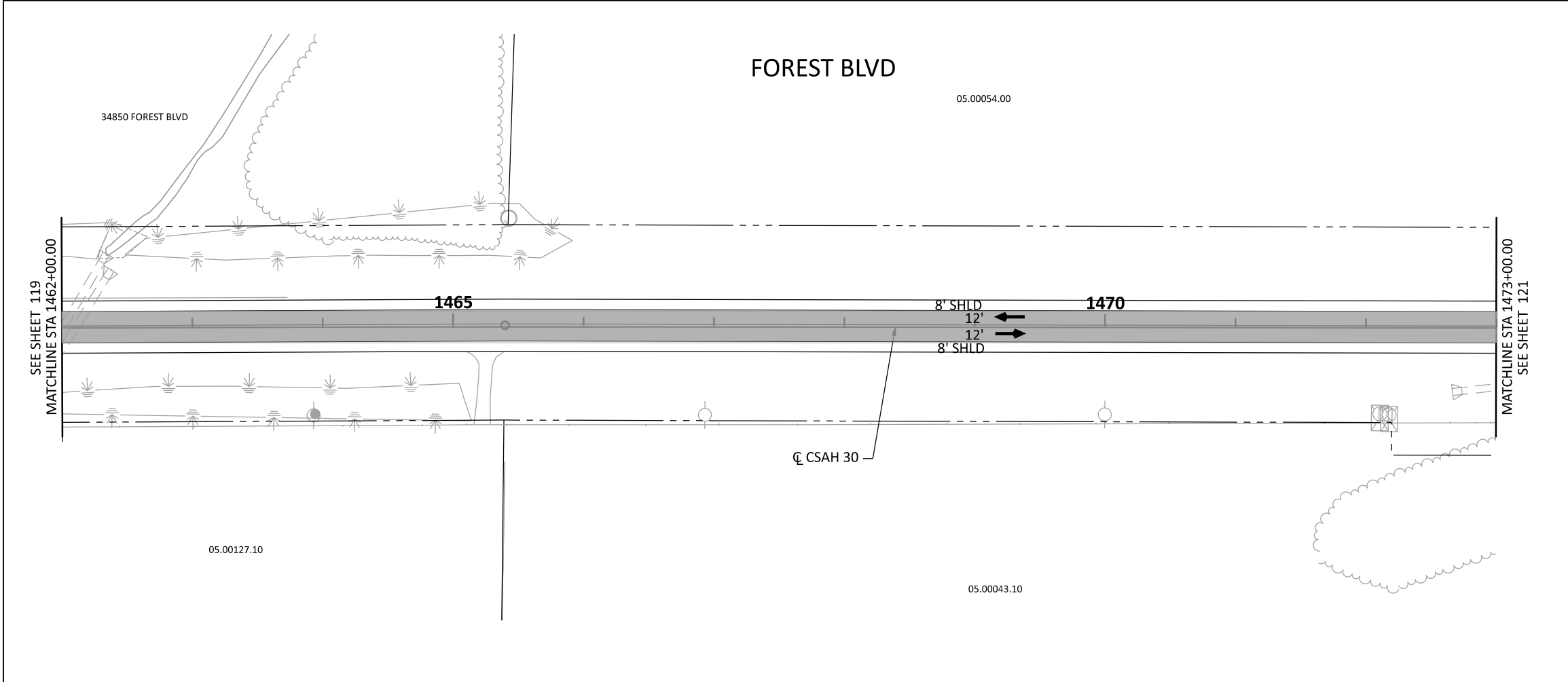
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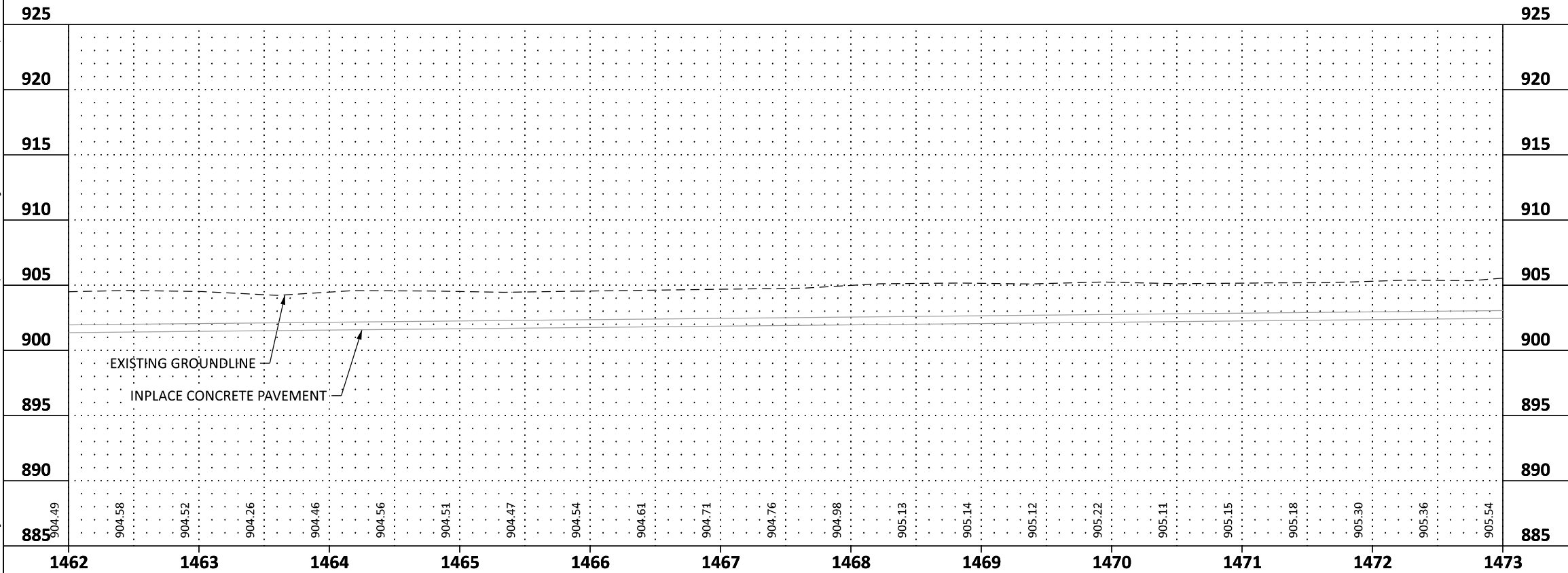
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												CONSTRUCTION PLAN & PROFILE SAP 013-630-021 / SAP 225-591-007 / SAP 225-102-004					

DATE: 9/12/2024 2:05:21 PM
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LEGEND

- CONSTRUCTION LIMITS
- - - EXISTING R/W
- - - PROPOSED R/W
- - - TEMPORARY EASEMENT
- - - PERMANENT EASEMENT
- WETLAND DELINEATION-
AREA OF ENVIRONMENTAL
SENSITIVITY
- TRAFFIC FLOW ARROW
- MILL AND OVERLAY
- ① PEDESTRIAN CURB RAMP
SEE PEDESTRAIN RAMP DETAILS.
- ② SEE DRIVEWAY TABULATION
FOR MORE INFORMATION.
FIELD VERIFY TIE IN LOCATION
- ③ MAIL BOX SUPPORT
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- ⑤ CONSTRUCT CONCRETE MEDIAN NOSE
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LIGHT FOUNDATION DESIGN E



GENERAL NOTES

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- SEE DRIVEWAY DETAIL SHEETS FOR DETAILED DRIVEWAY INFORMATION.

NO.	DATE	BY	CHK	REVISIONS

Design By: NEH
Plan By: MKV
Checked By: MAN
Approved By: NEH

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Nicholas E. Hentges, PE
NICHOLAS E. HENTGES, PE
DATE: 9/12/2024 LICENSE NO. 44620



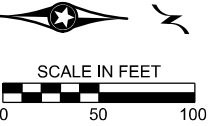
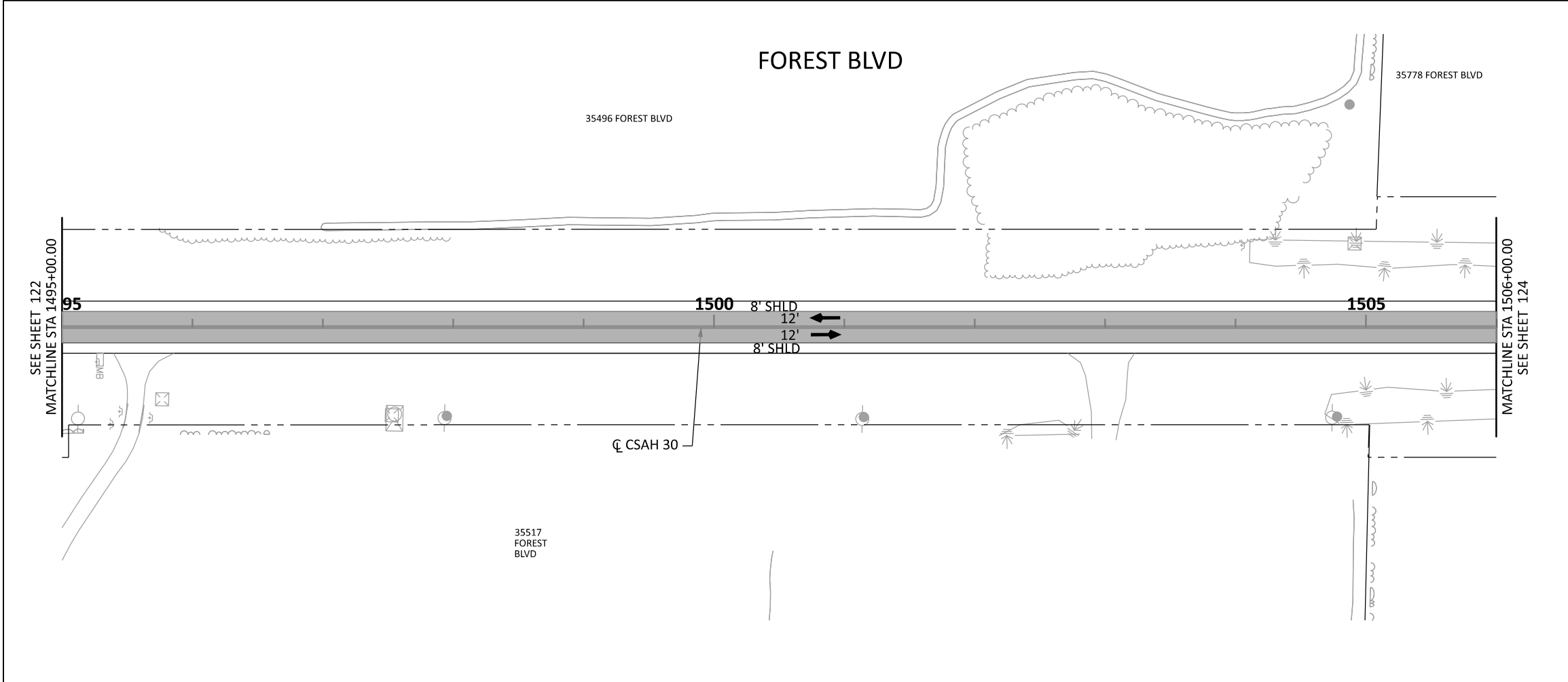
CSAH 30 (Forest Blvd) Improvements
Chisago County, Minnesota

CHISAGO COUNTY, MINNESOTA

CONSTRUCTION PLAN & PROFILE
SAP 013-630-021 / SAP 225-591-007 / SAP 225-102-004

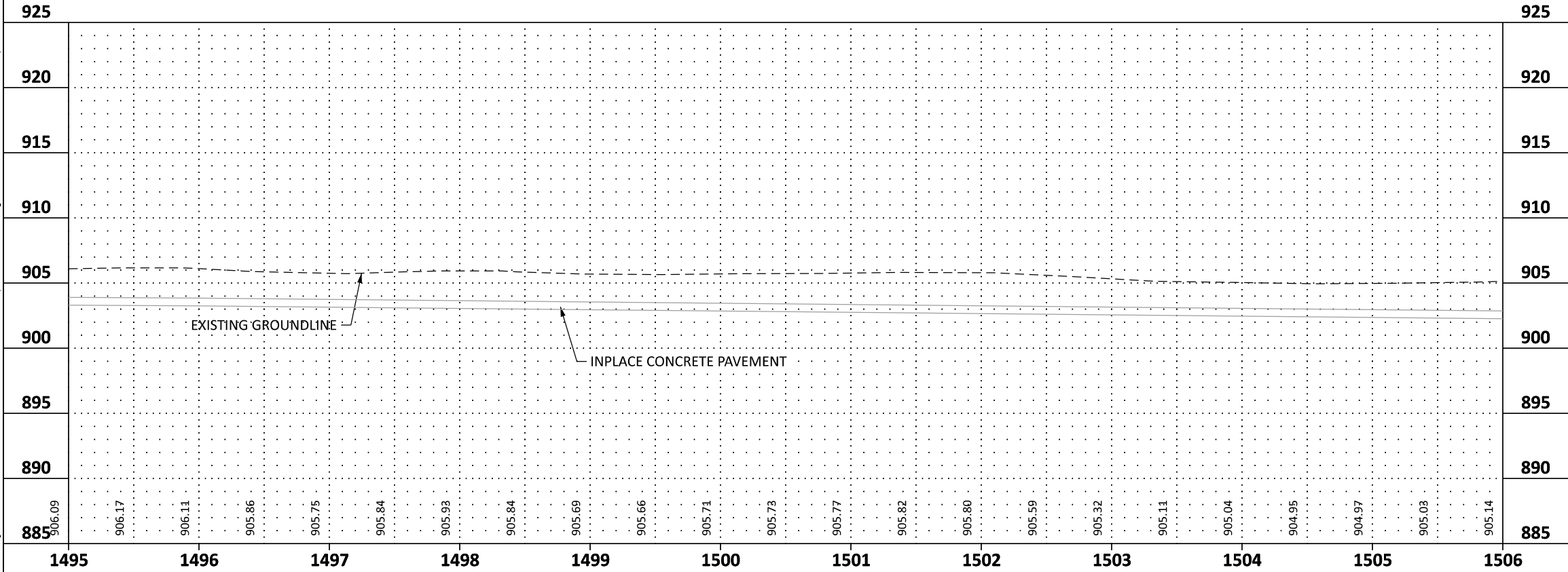
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LEGEND

- CONSTRUCTION LIMITS
- - - EXISTING R/W
- - - PROPOSED R/W
- - - TEMPORARY EASEMENT
- - - PERMANENT EASEMENT
- WETLAND DELINEATION-
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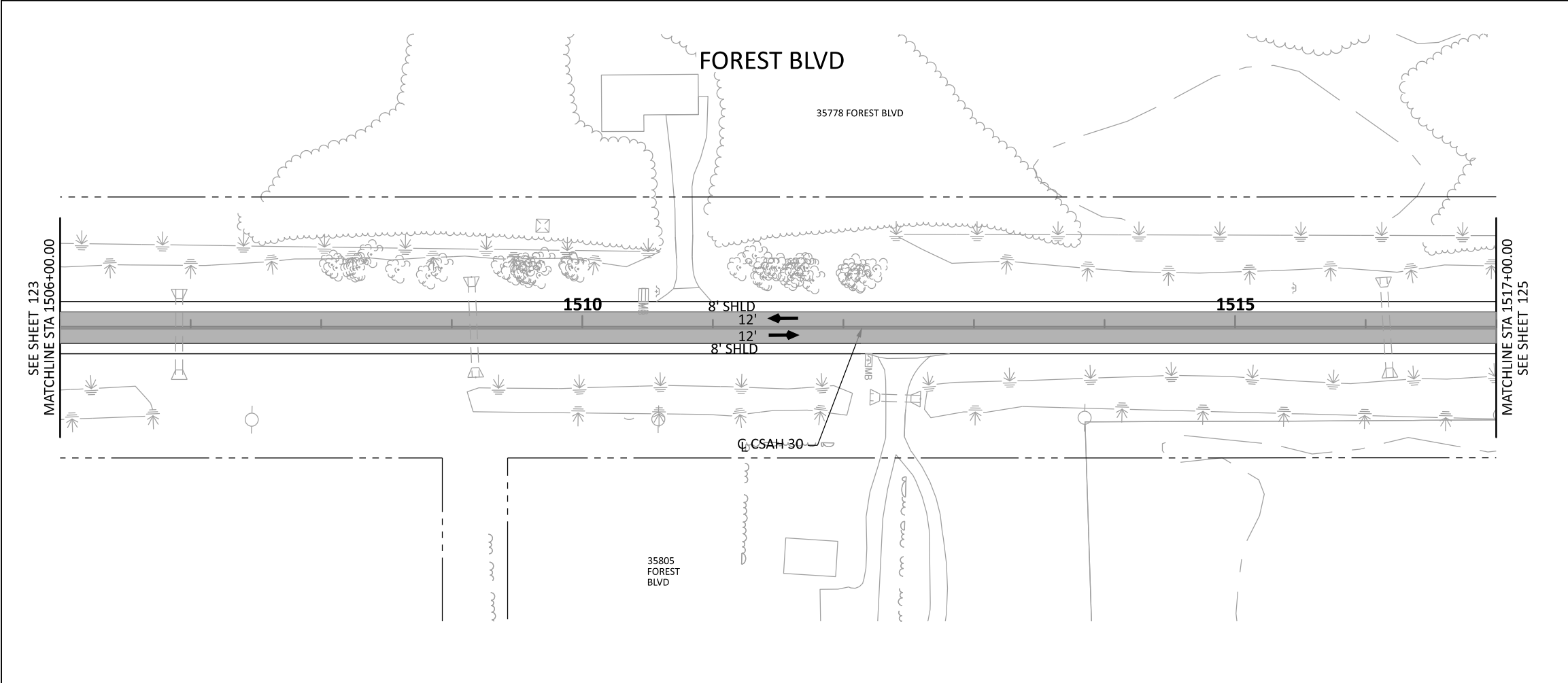
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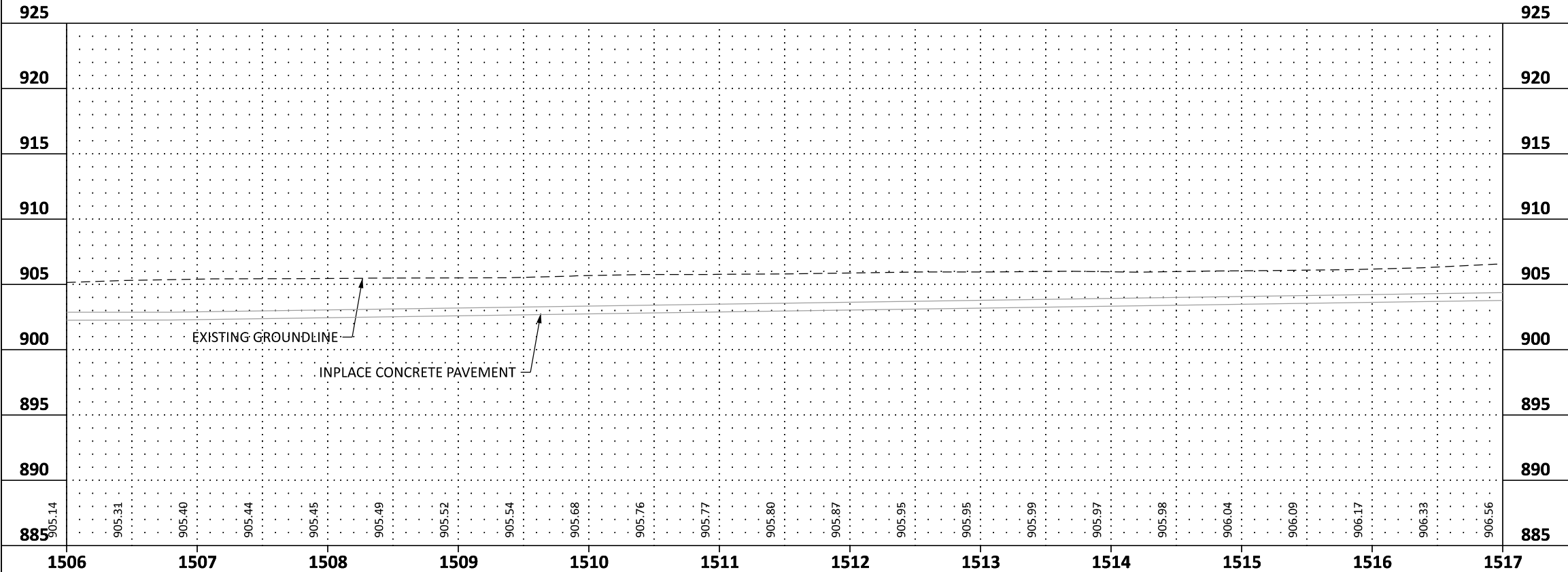
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- LEGEND**
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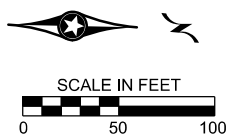
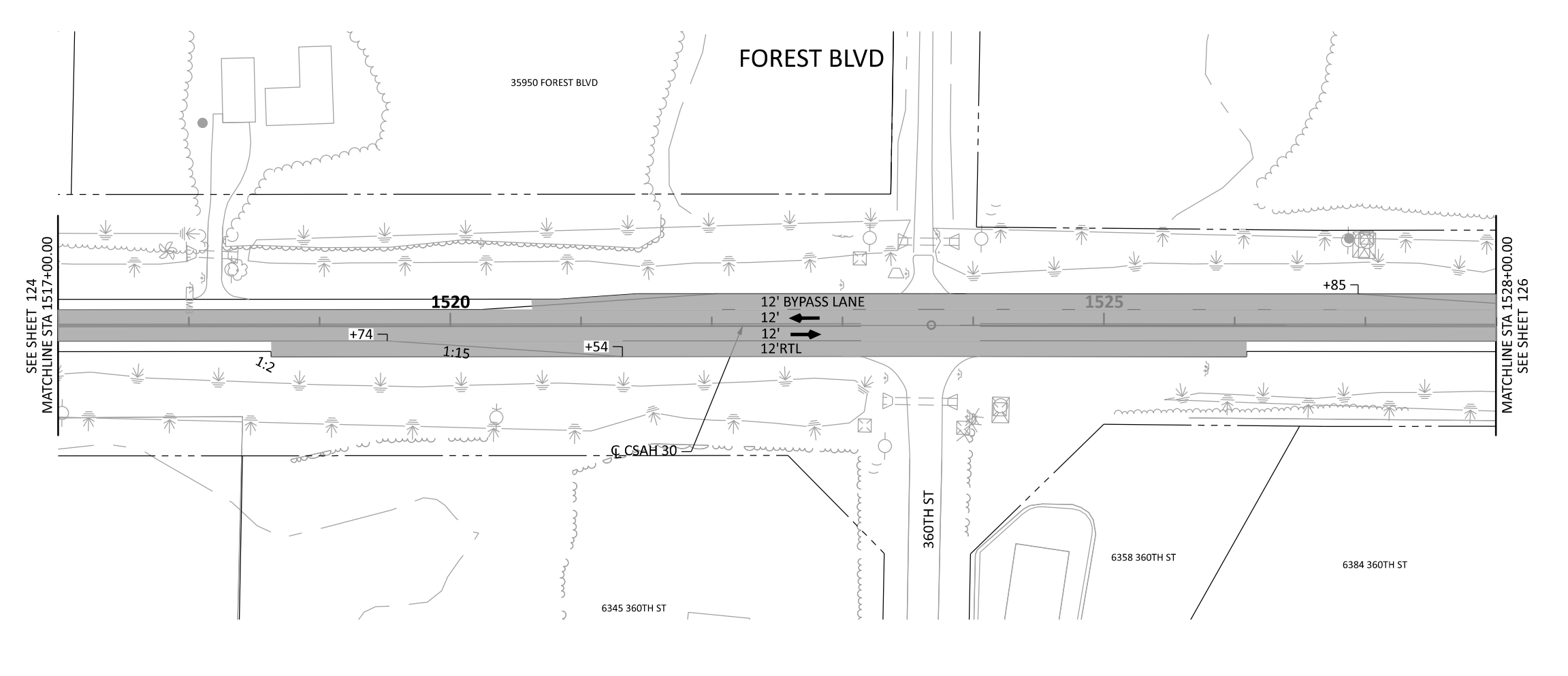
CSAH 30 (Forest Blvd) Improvements
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CHISAGO COUNTY, MINNESOTA

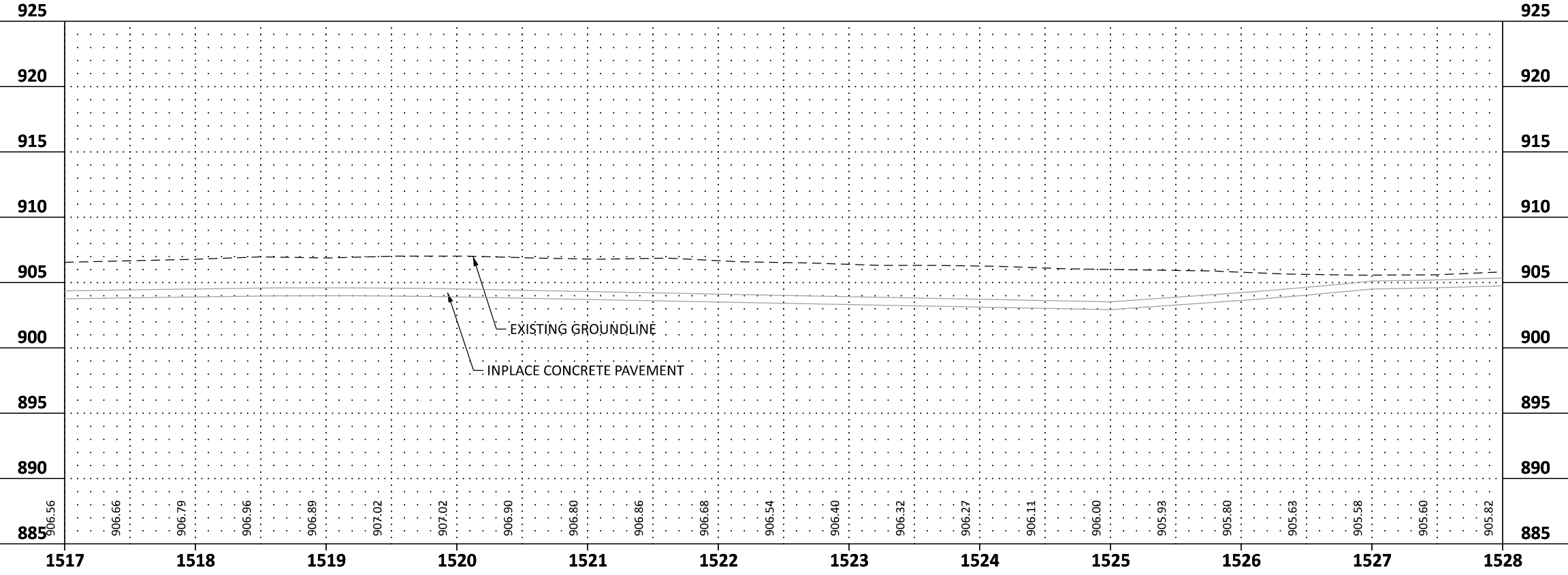
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- LEGEND**
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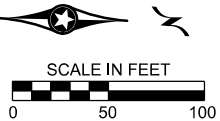
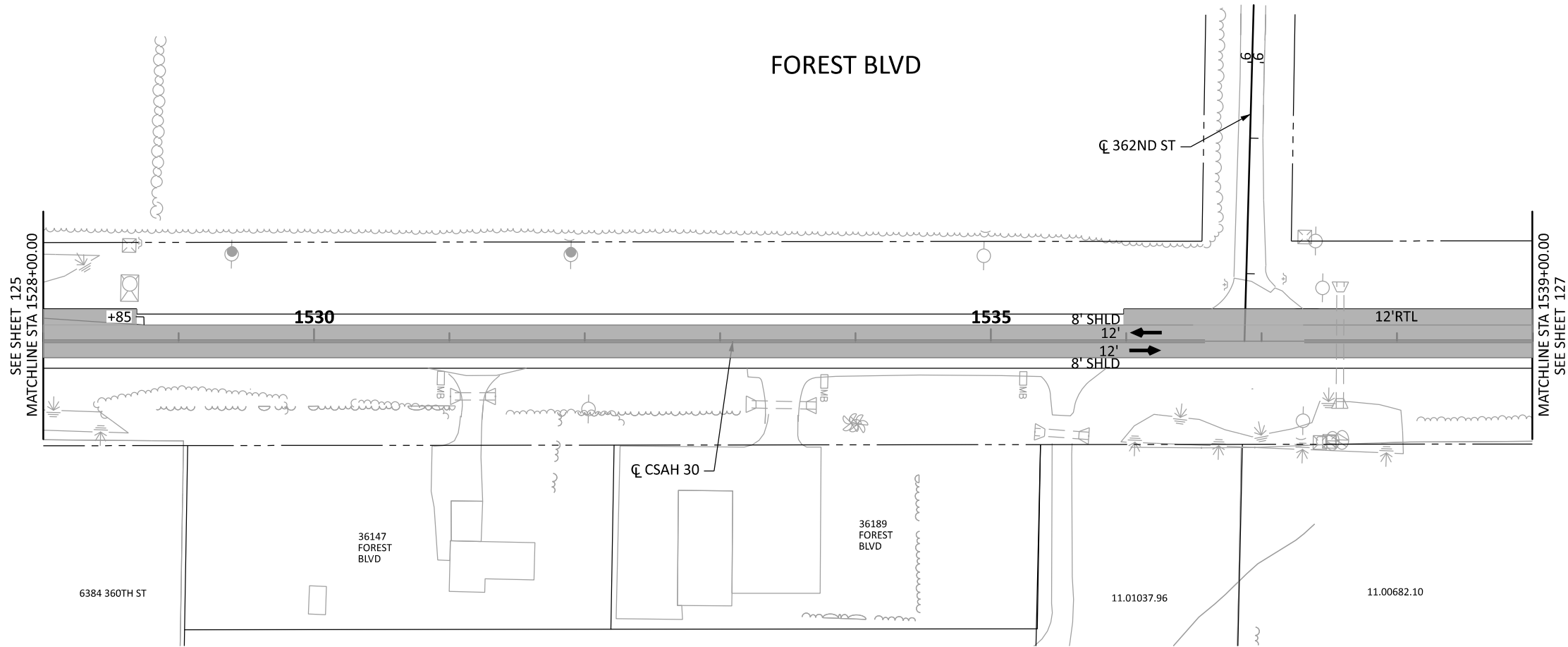
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NICHOLAS E. HENTGES, PE	
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CSAH 30 (Forest Blvd) Improvements	
Chisago County, Minnesota	

CHISAGO COUNTY, MINNESOTA		SHEET 125 OF 216 SHEETS
CONSTRUCTION PLAN & PROFILE SAP 013-630-021 / SAP 225-591-007 / SAP 225-102-004		

FOREST BLVD

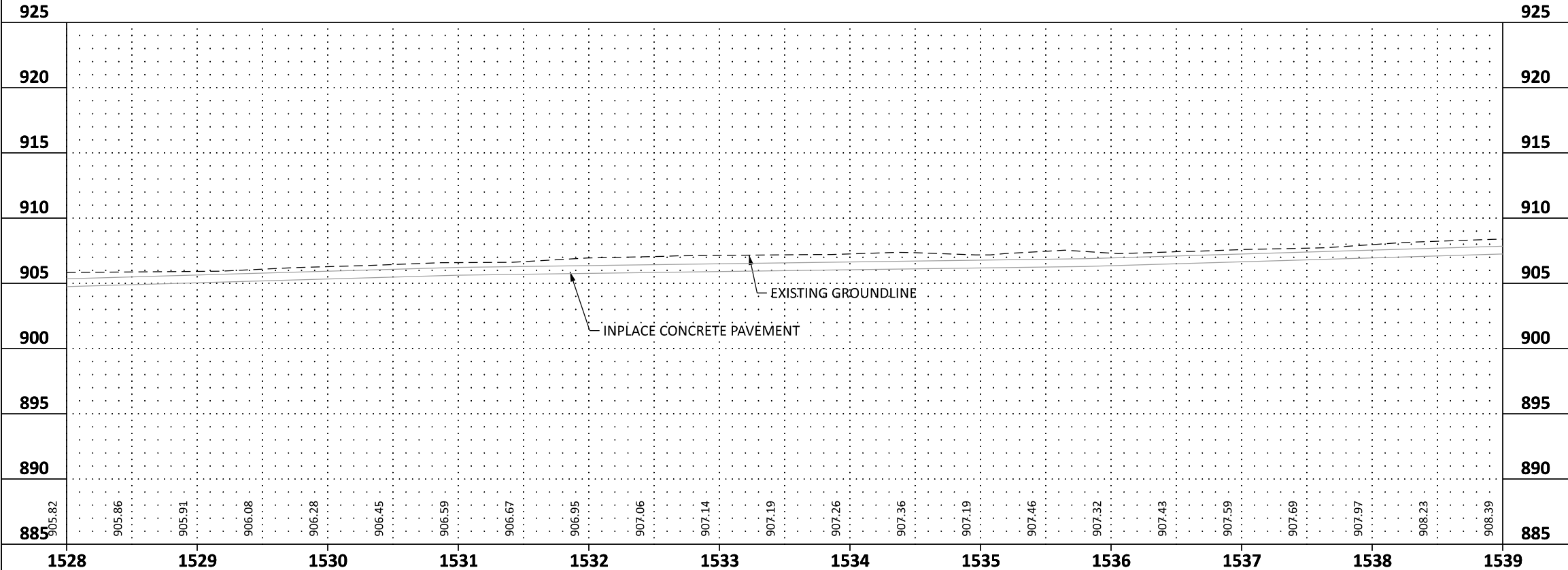


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CSAH 30 (Forest Blvd) Improvements
Chisago County, Minnesota

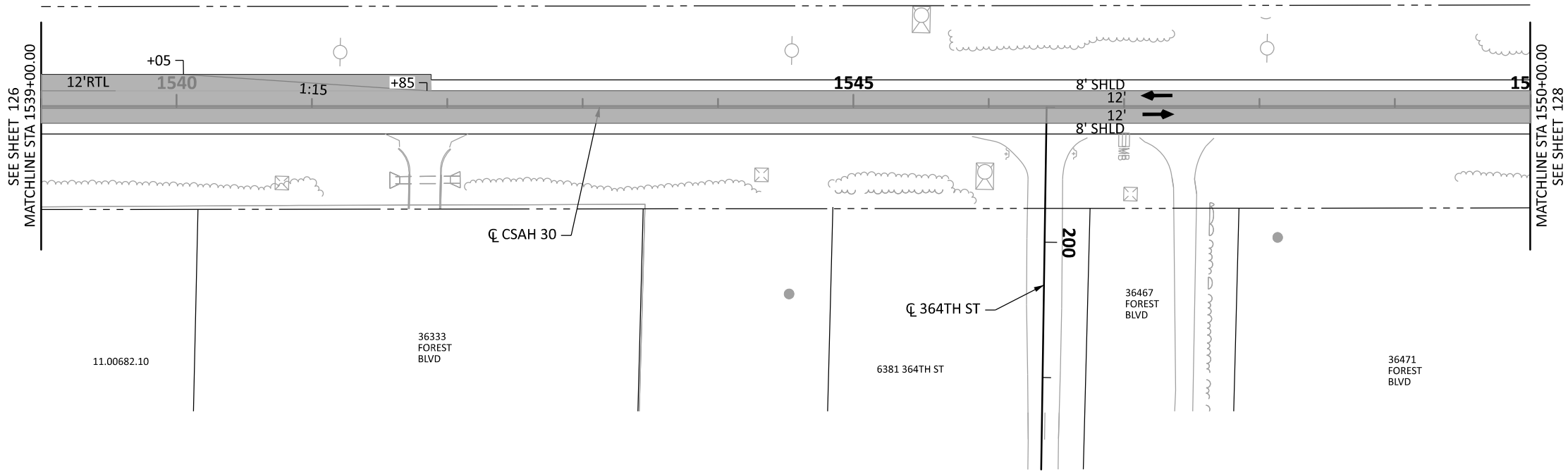
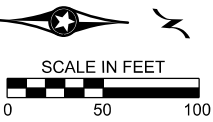
CHISAGO COUNTY, MINNESOTA

CONSTRUCTION PLAN & PROFILE
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SHEET
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216
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FOREST BLVD

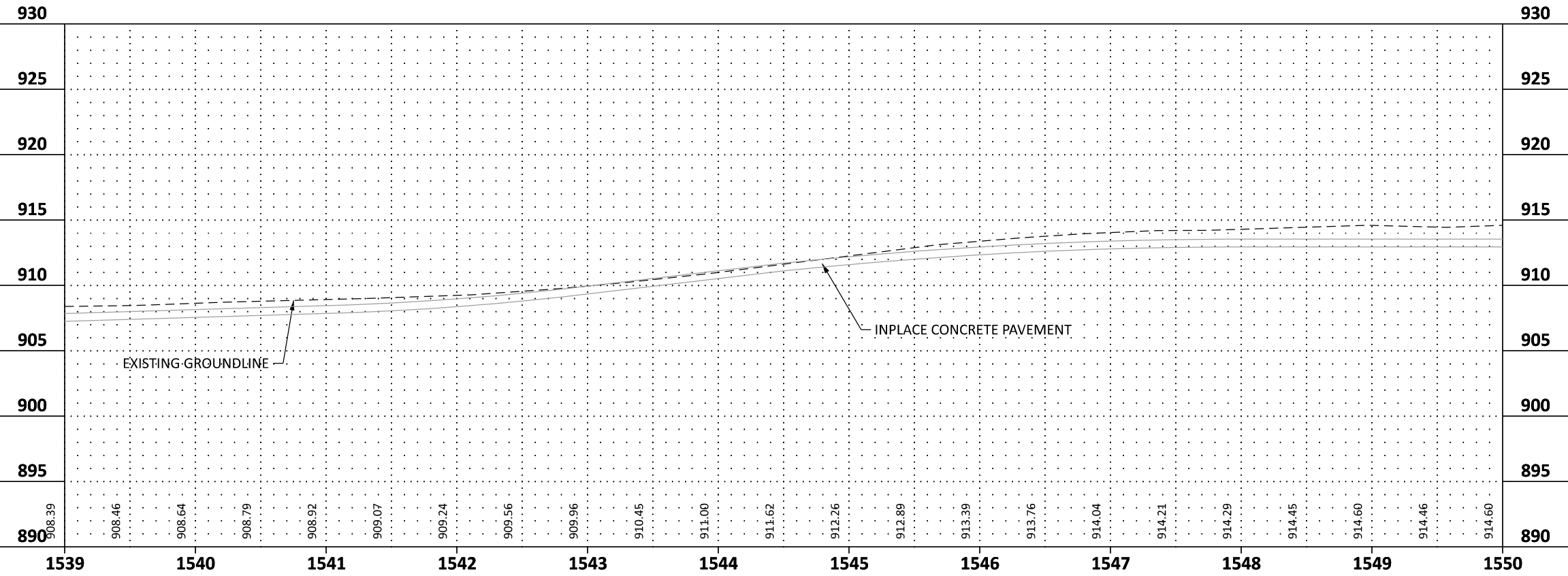


- LEGEND
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CSAH 30 (Forest Blvd) Improvements
Chisago County, Minnesota

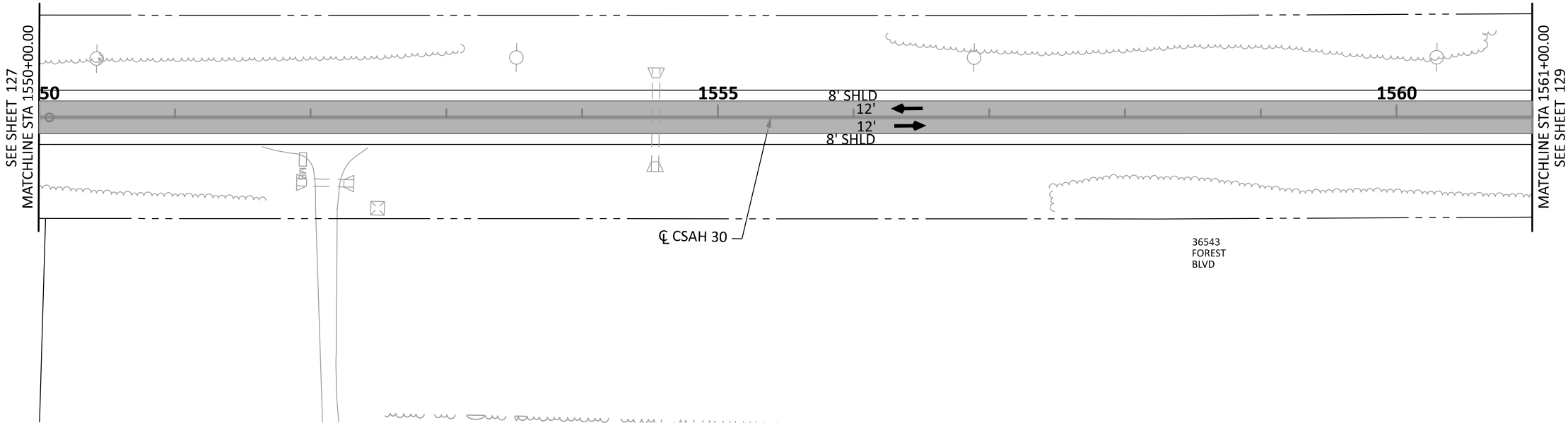
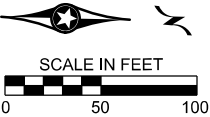
CHISAGO COUNTY, MINNESOTA

CONSTRUCTION PLAN & PROFILE
SAP 013-630-021 / SAP 225-591-007 / SAP 225-102-004

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OF
216
SHEETS

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FOREST BLVD



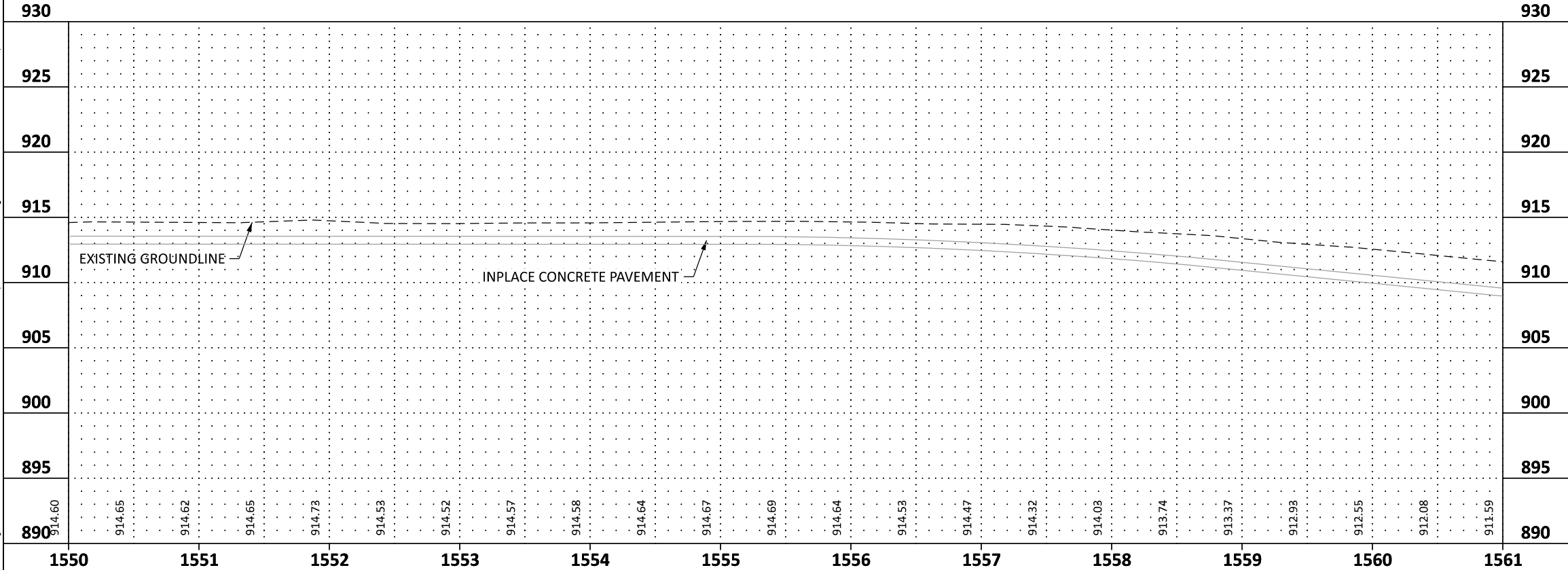
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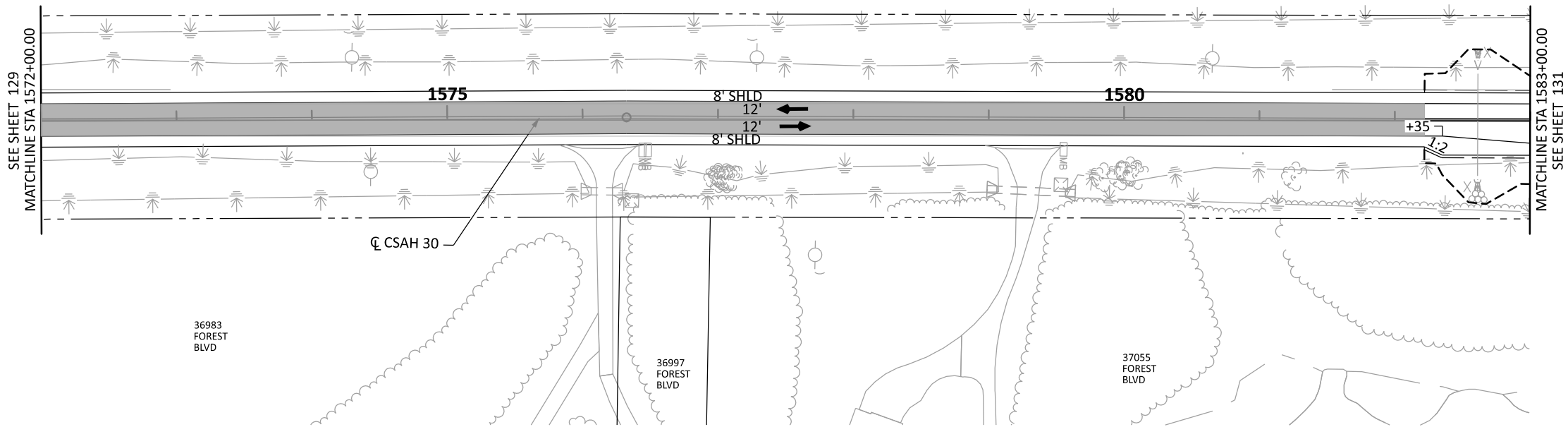
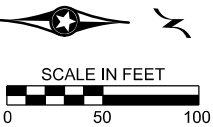
CSAH 30 (Forest Blvd) Improvements
Chisago County, Minnesota

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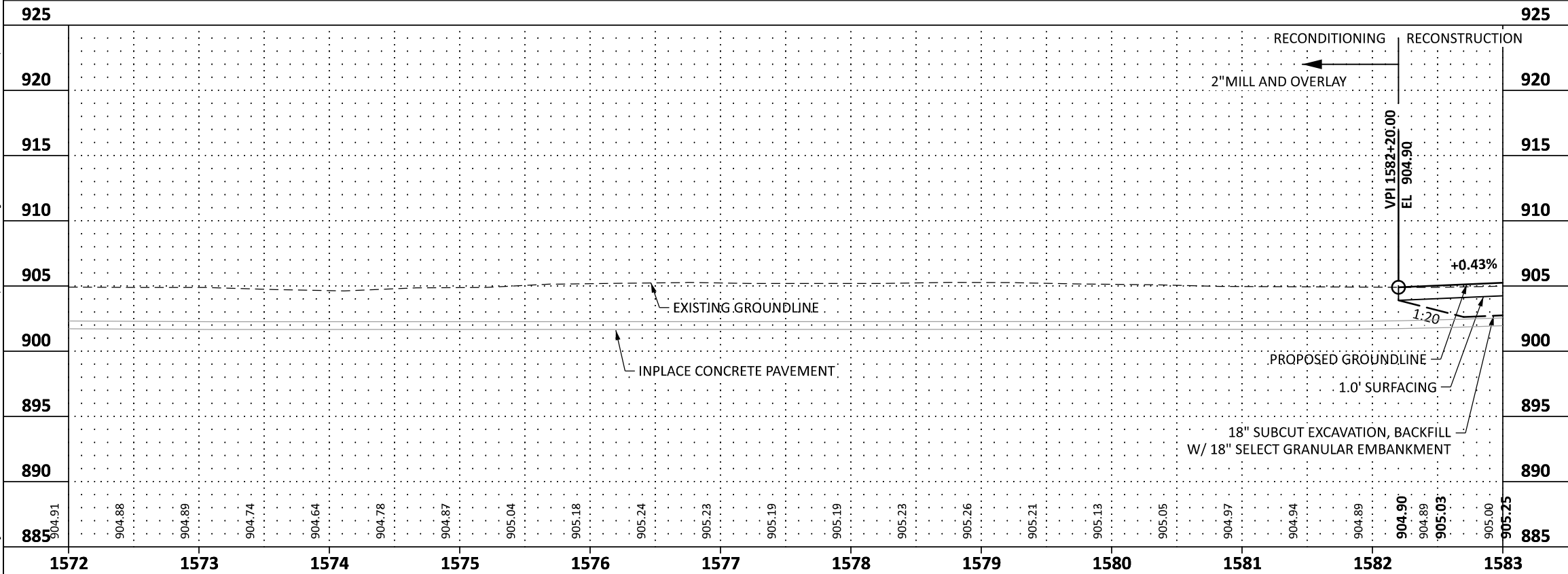
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SHEET
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SHEETS

FOREST BLVD



- LEGEND**
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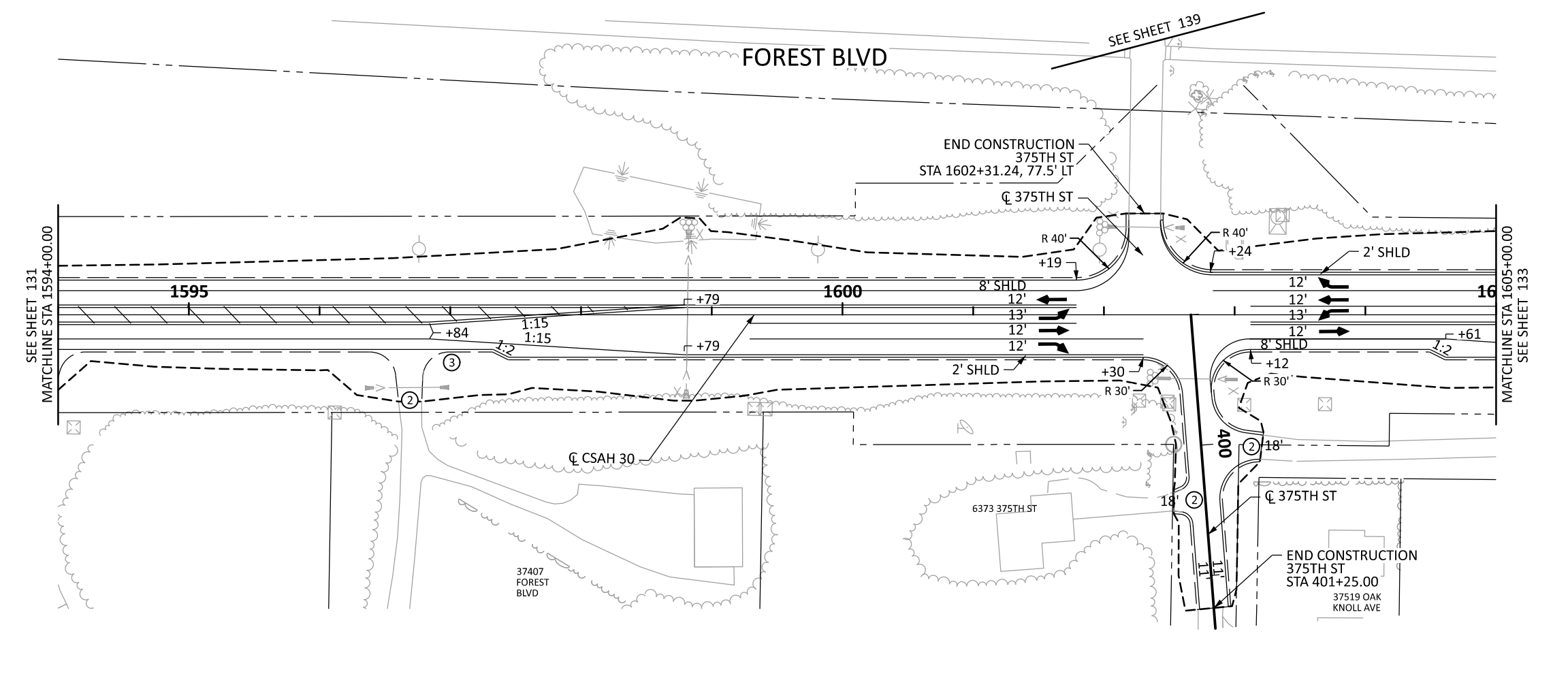
CSAH 30 (Forest Blvd) Improvements
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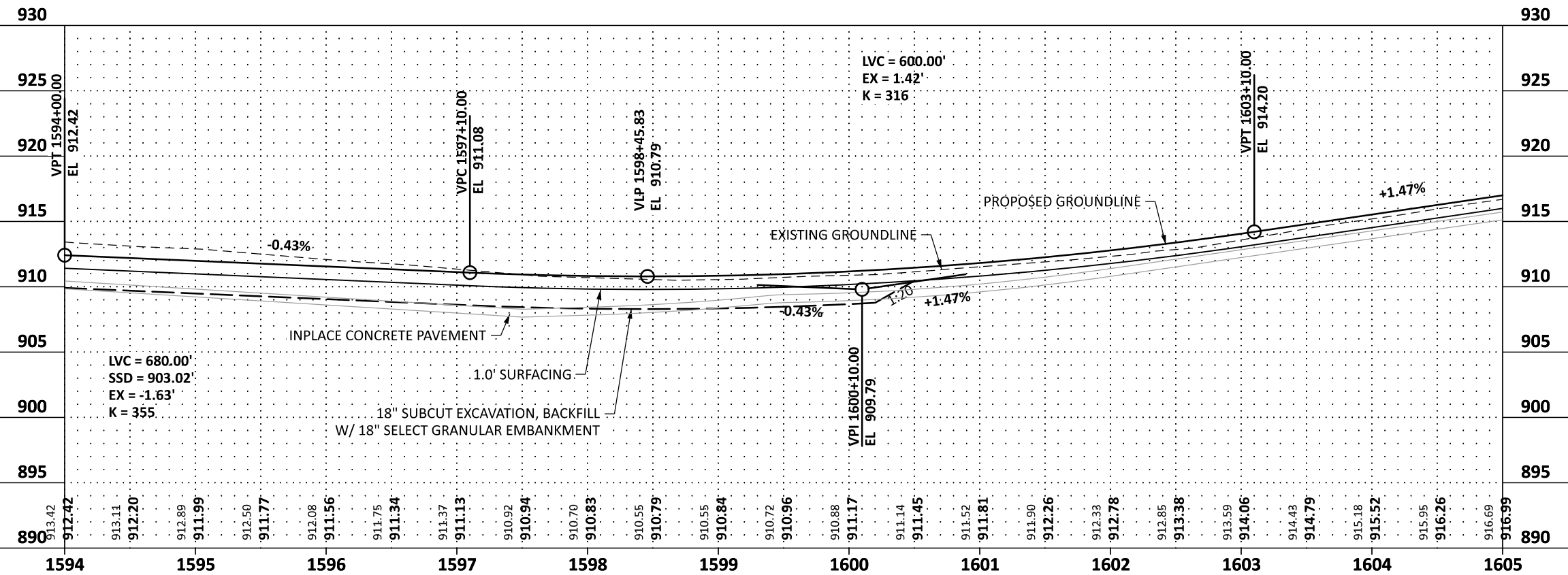
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Chisago COUNTY USA

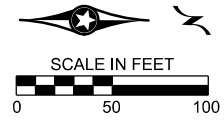
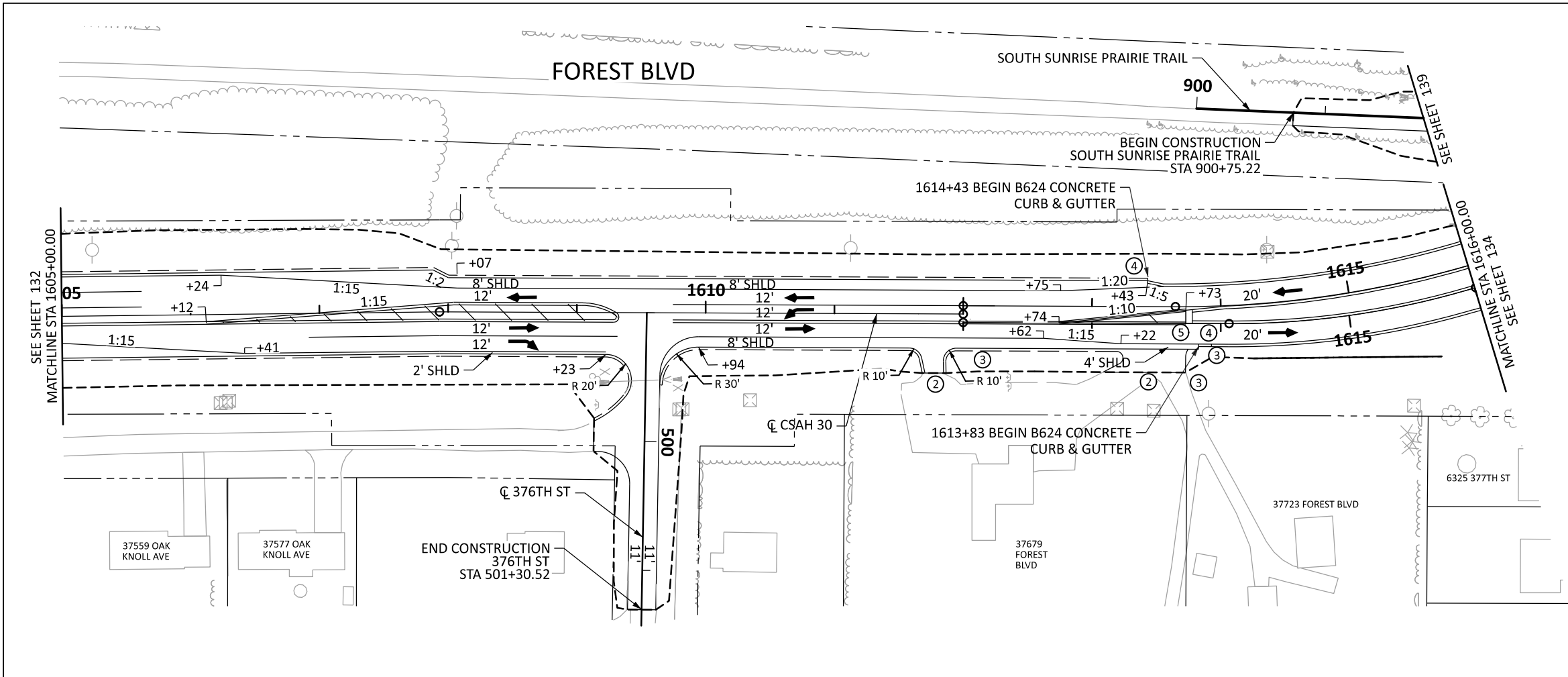
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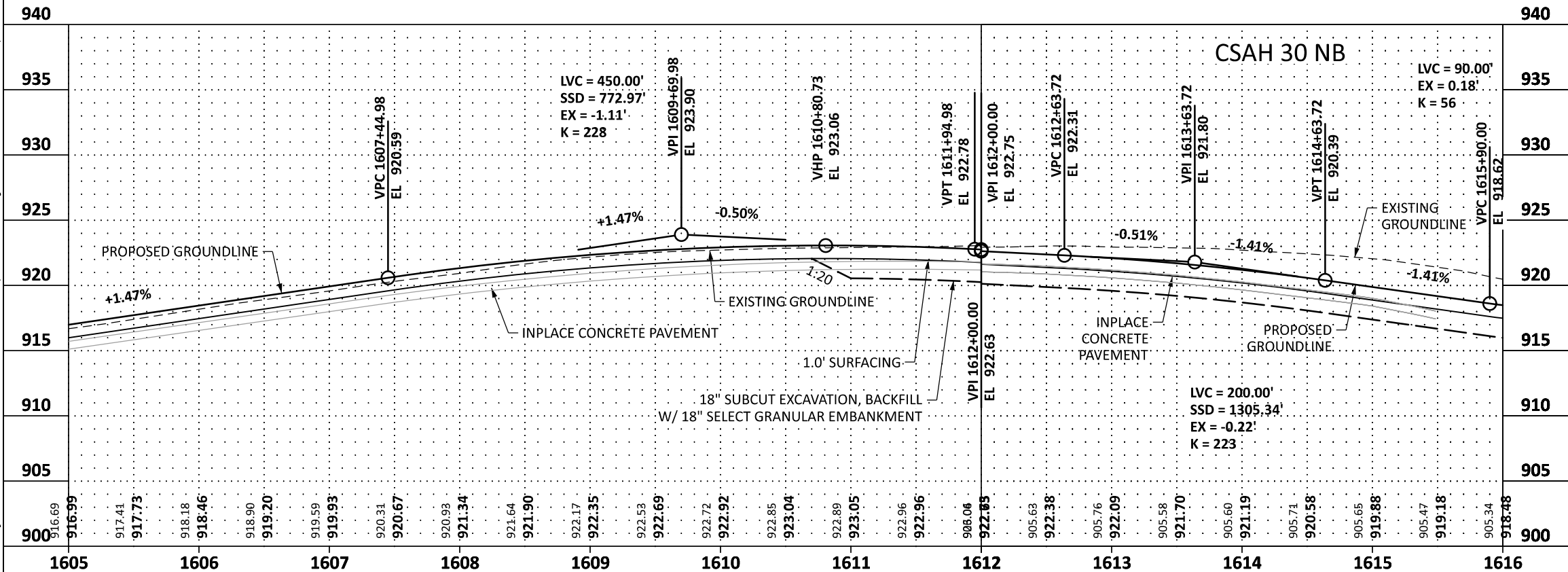
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LEGEND

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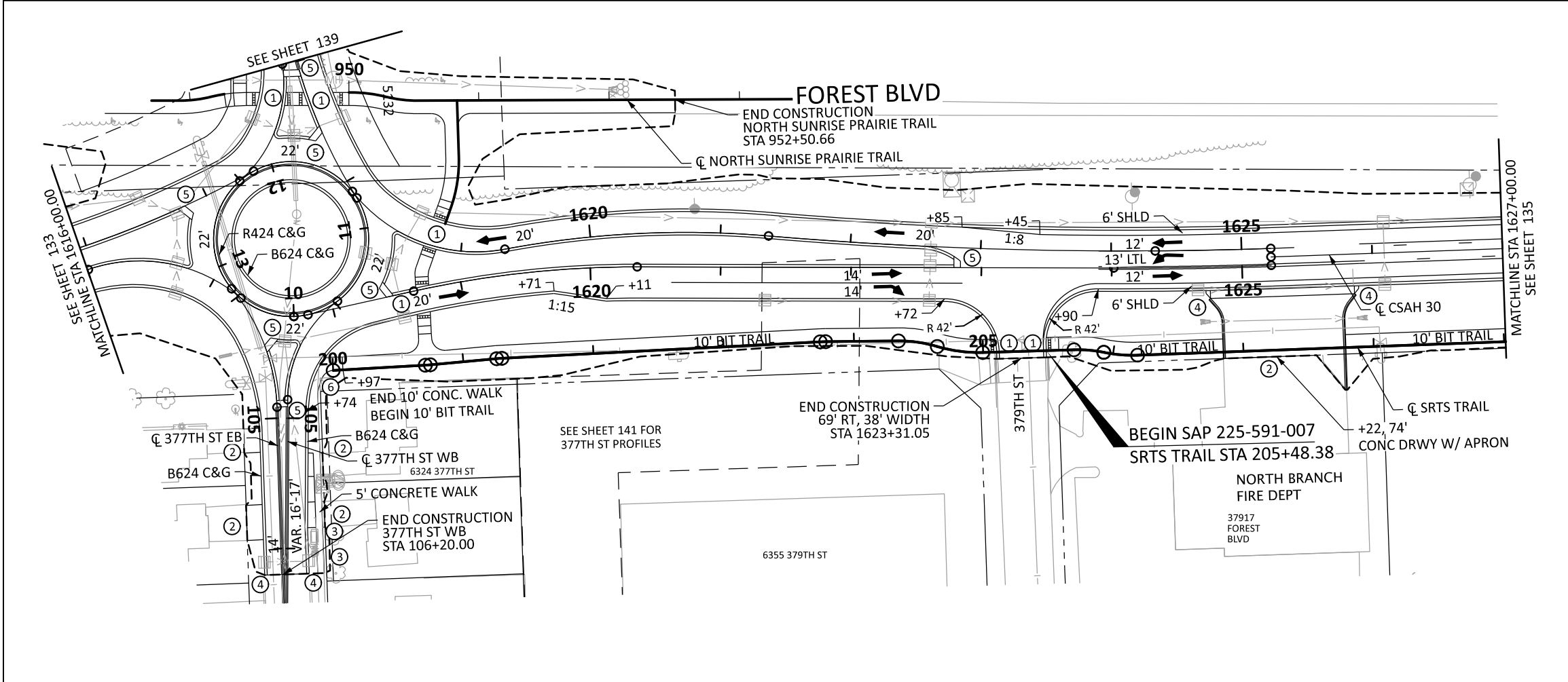
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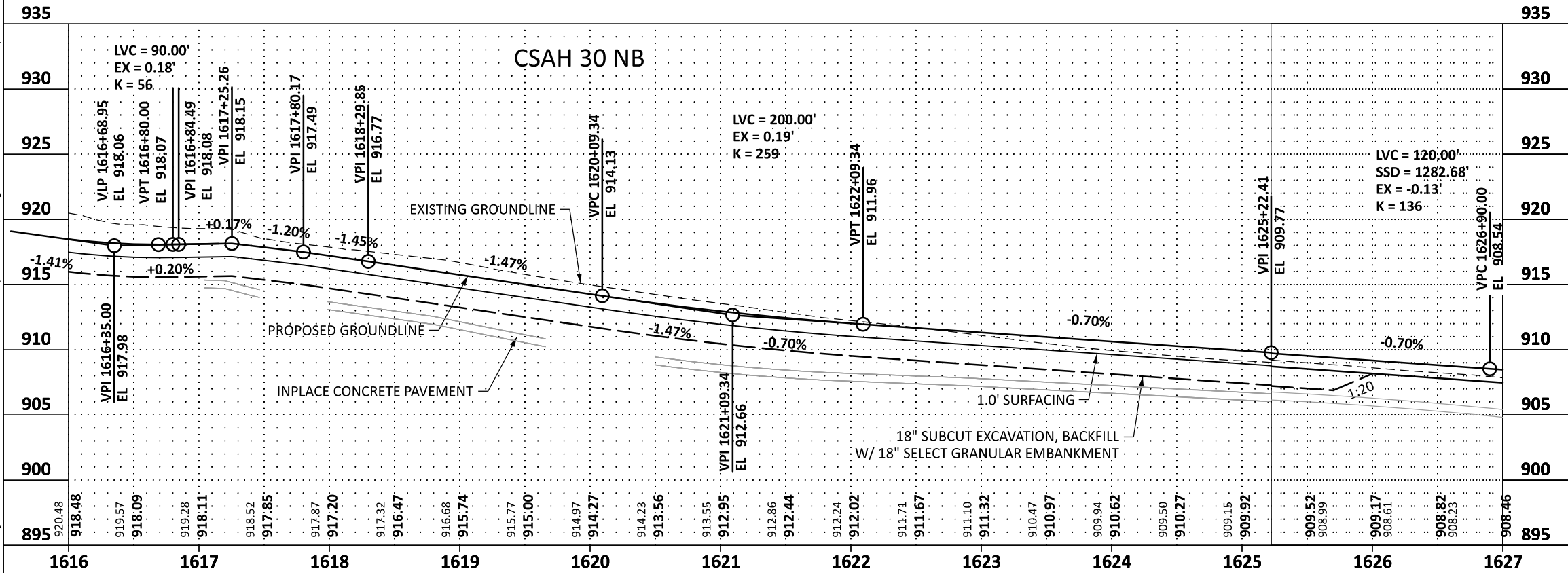
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- ① PEDESTRIAN CURB RAMP
SEE PEDESTRAIN RAMP DETAILS.
- ② SEE DRIVEWAY TABULATION
FOR MORE INFORMATION.
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LIGHT FOUNDATION DESIGN E



GENERAL NOTES

- ALL DIMENSIONS ARE TO FACE OF CURB OR EDGE OF BITUMINOUS UNLESS OTHERWISE NOTED.
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- SEE DRIVEWAY DETAIL SHEETS FOR DETAILED DRIVEWAY INFORMATION.
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NO.	DATE	BY	CHK	REVISIONS

Design By:	NEH
Plan By:	MKV
Checked By:	MAN
Approved By:	NEH

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Nicholas E. Hentrich, PE
NICHOLAS E. HENTRICH, PE
DATE: 9/12/2024 LICENSE NO. 44620

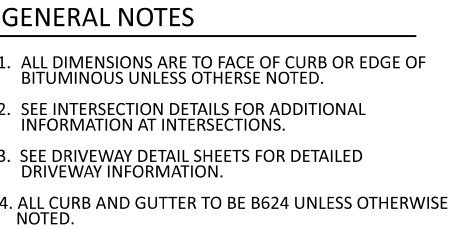
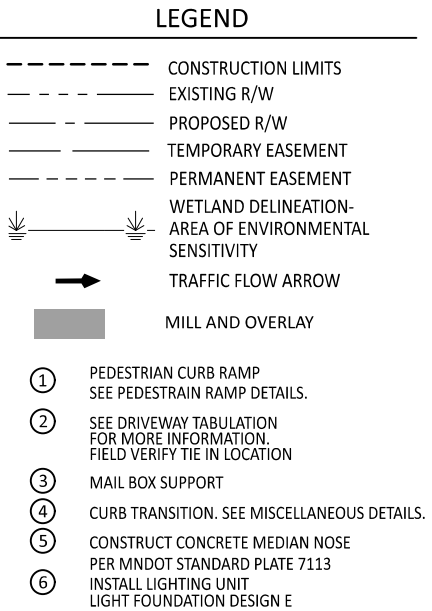


CSAH 30 (Forest Blvd) Improvements
Chisago County, Minnesota

CHISAGO COUNTY, MINNESOTA

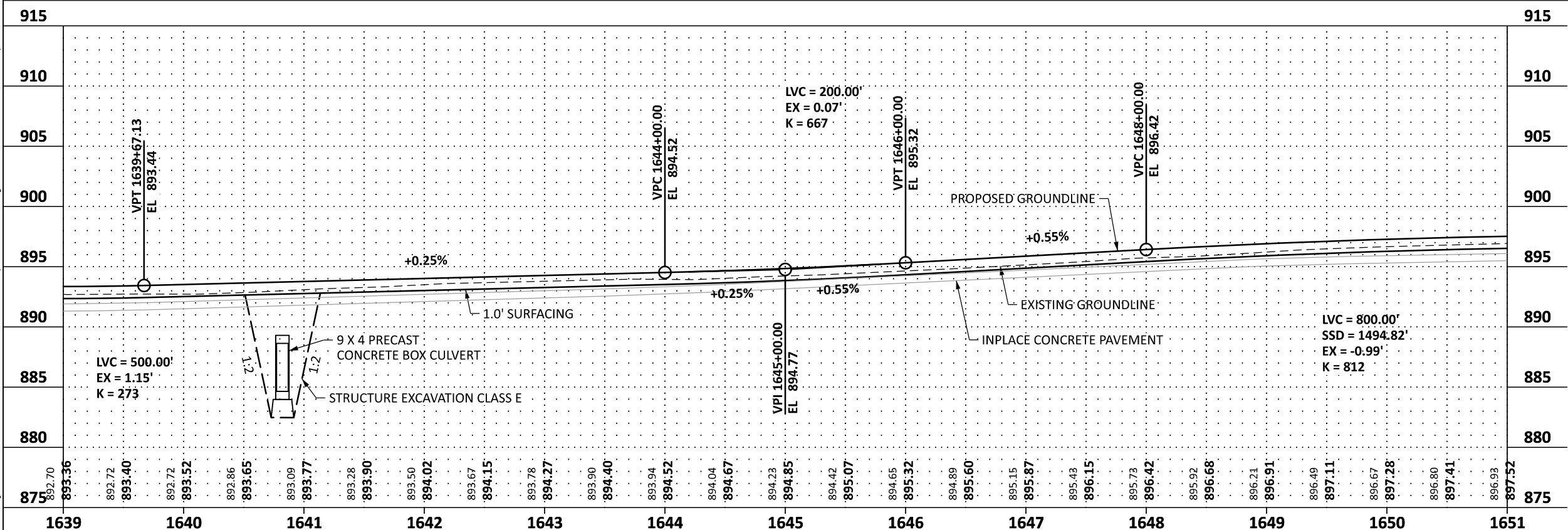
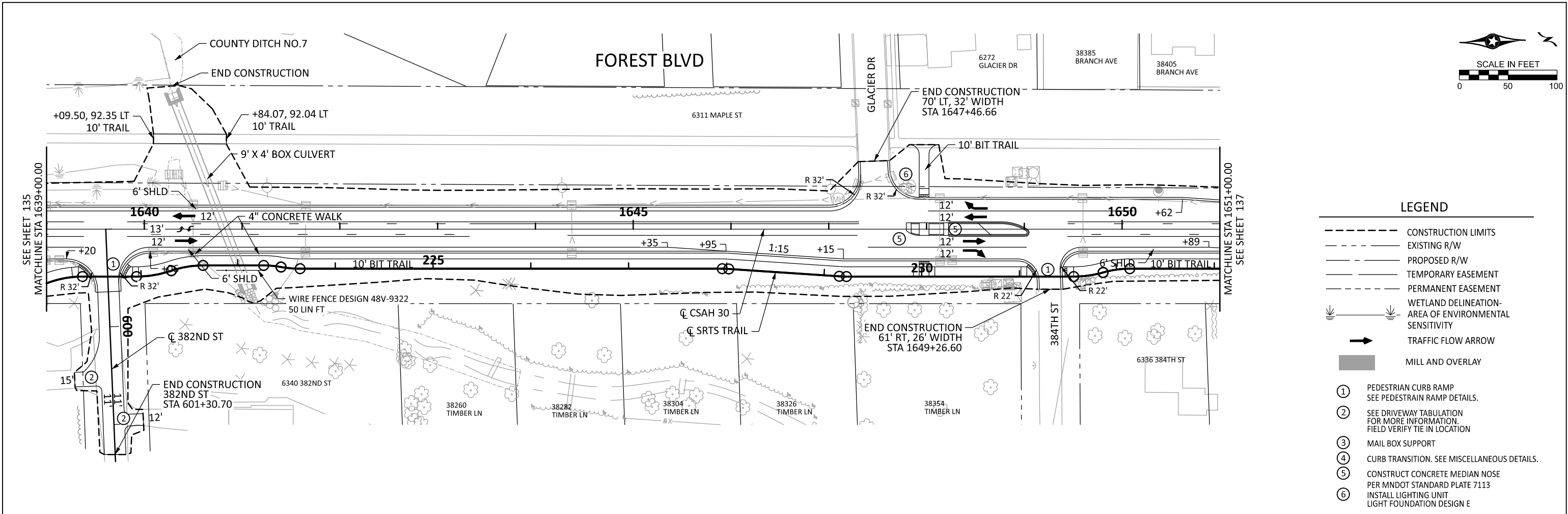
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Chisago County, Minnesota

CHISAGO COUNTY, MINNESOTA

CONSTRUCTION PLAN & PROFILE
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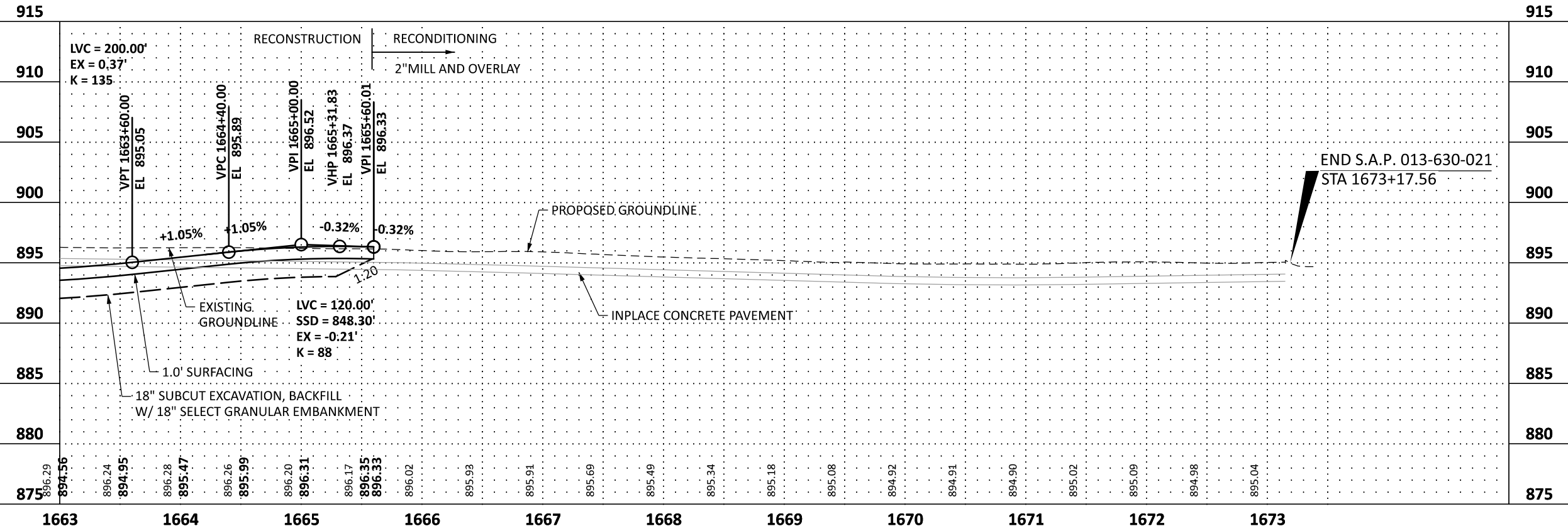
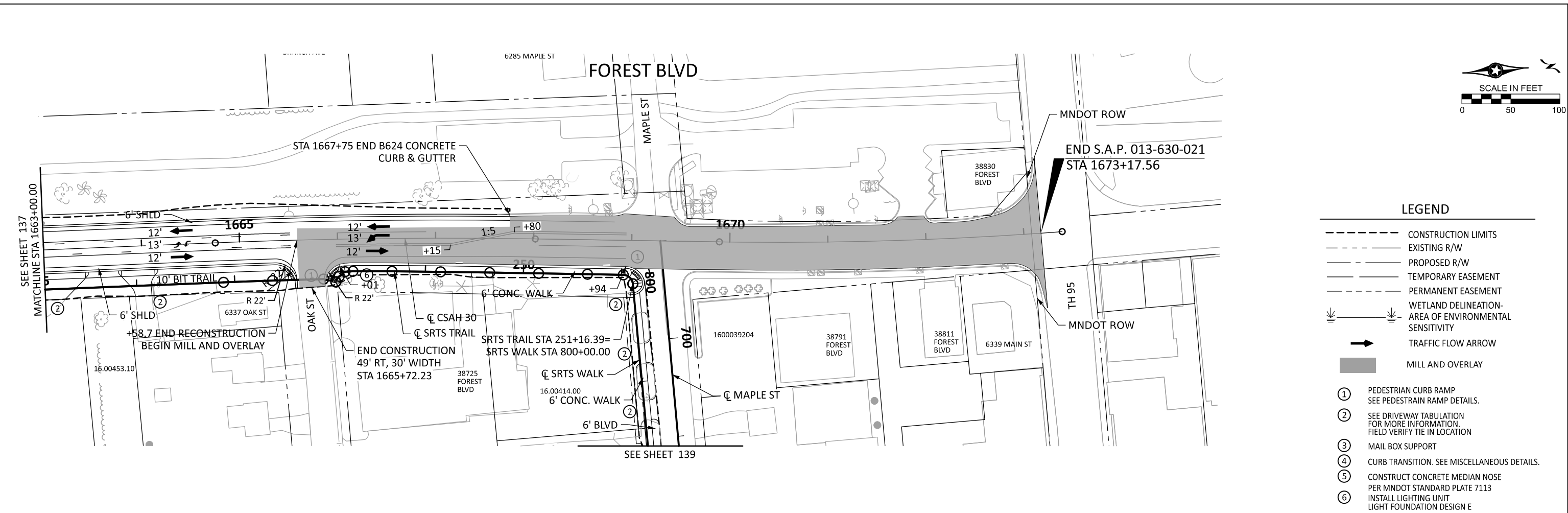
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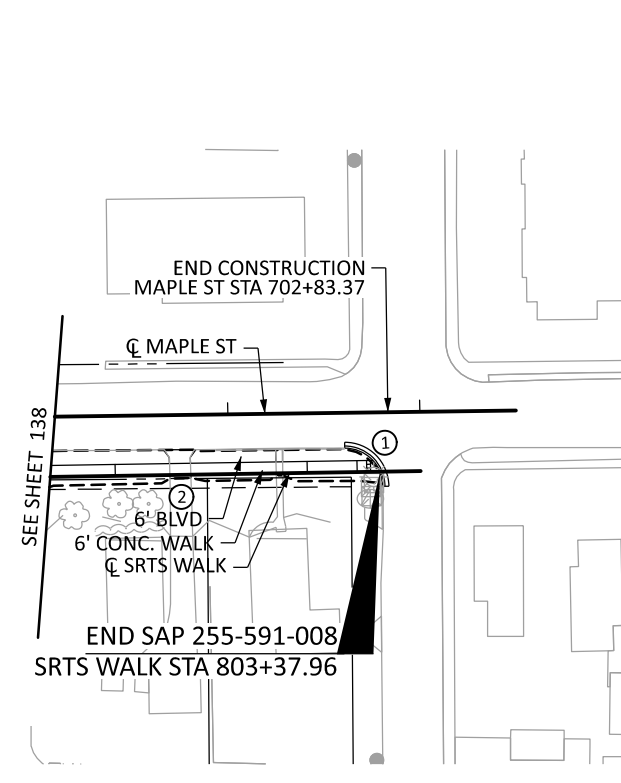
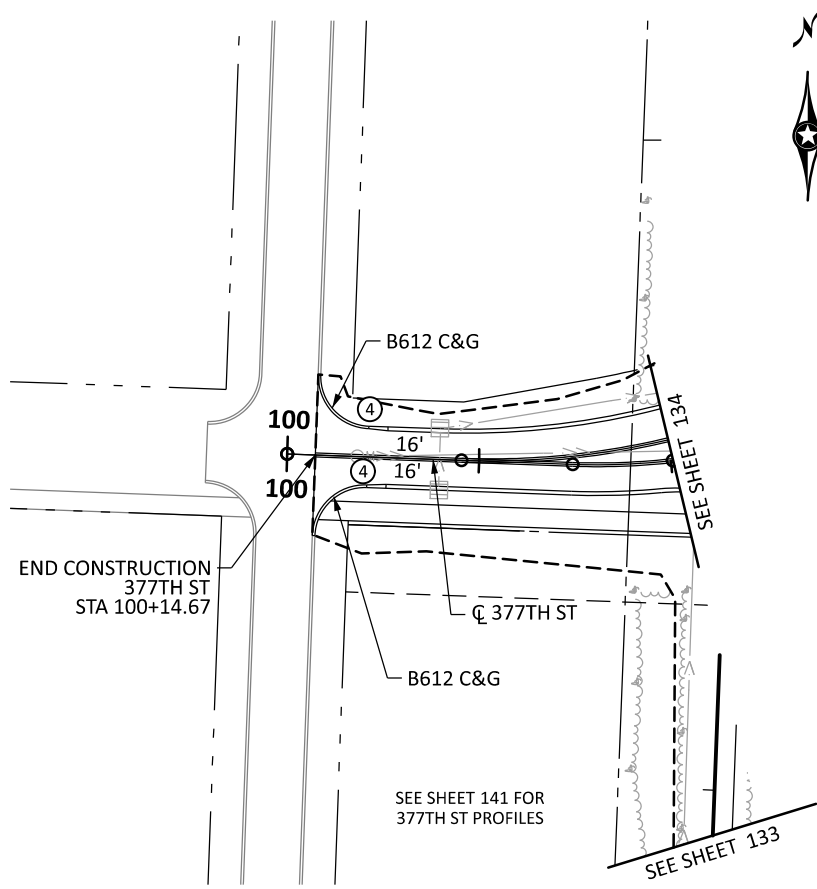
CSAH 30 (Forest Blvd) Improvements
Chisago County, Minnesota

CHISAGO COUNTY, MINNESOTA

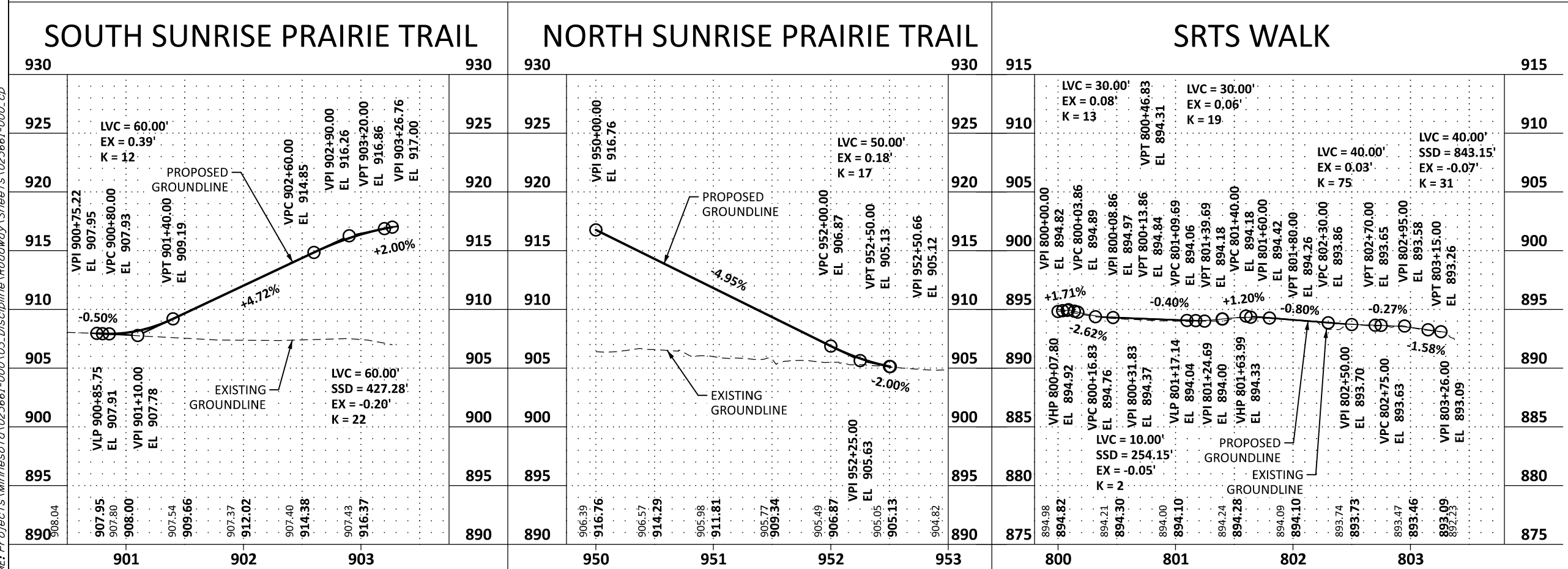
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- LEGEND**
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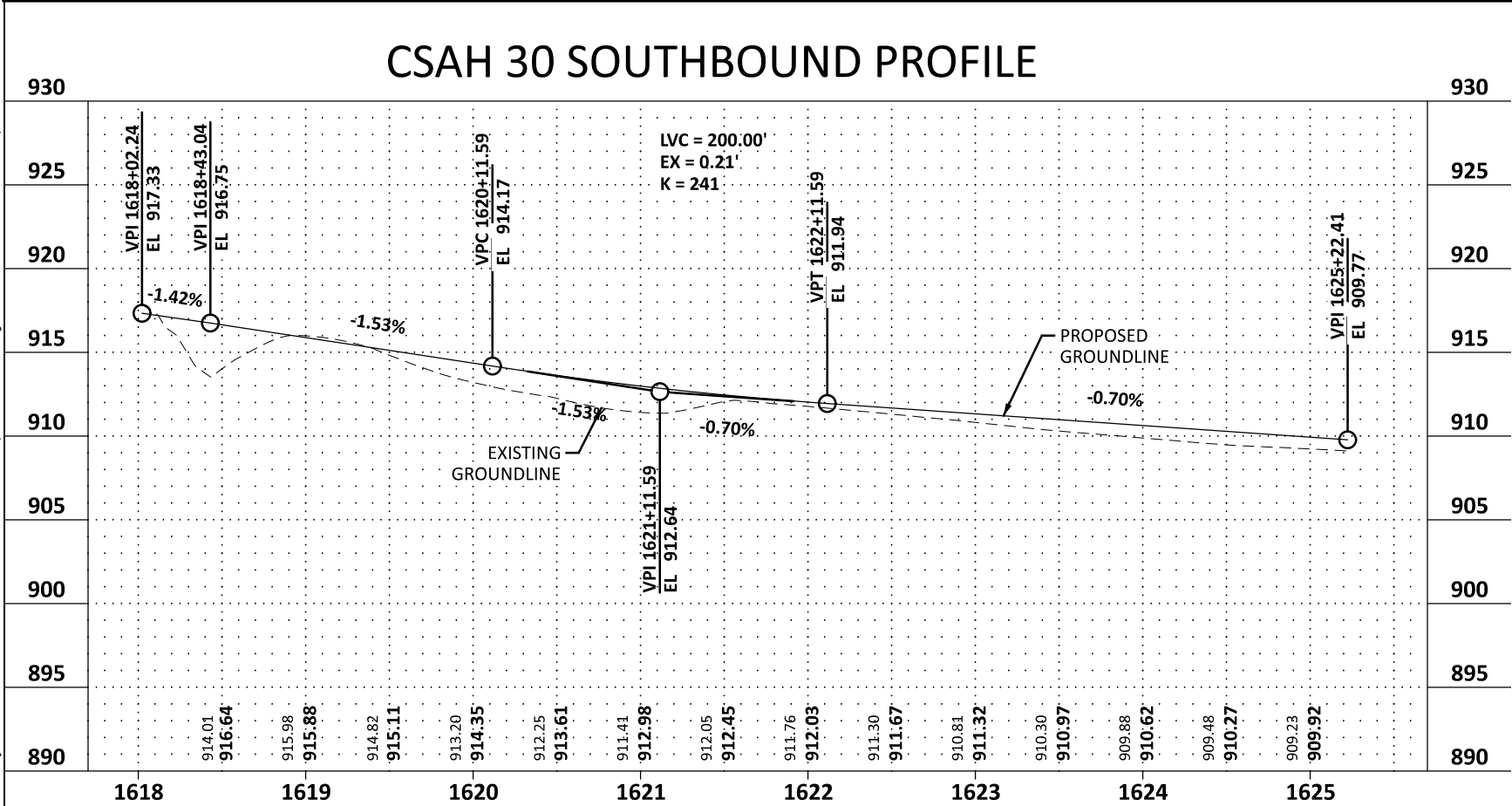
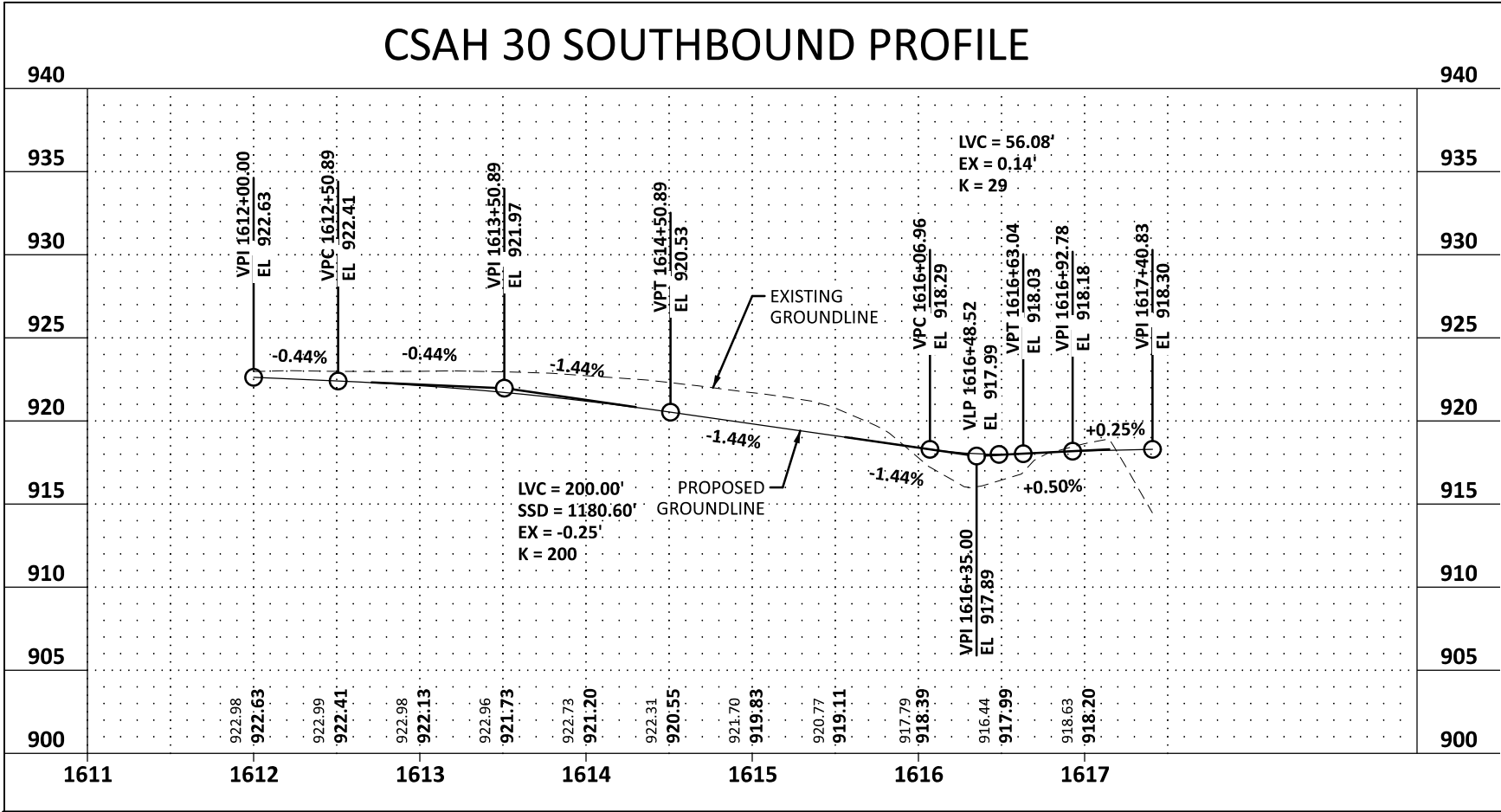


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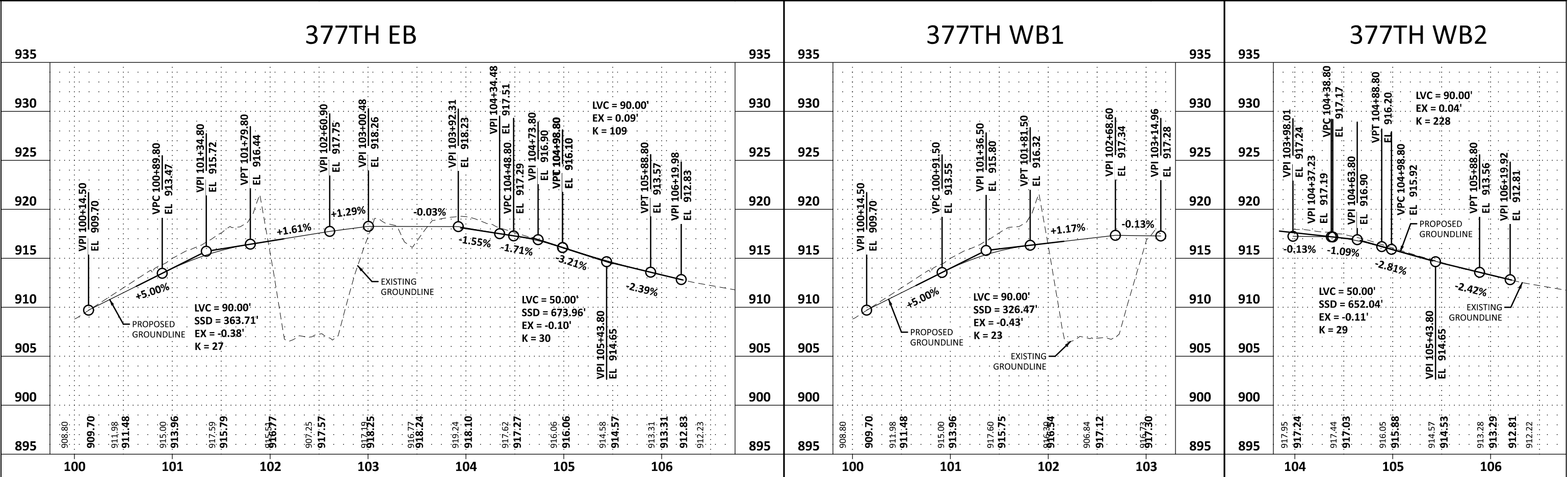
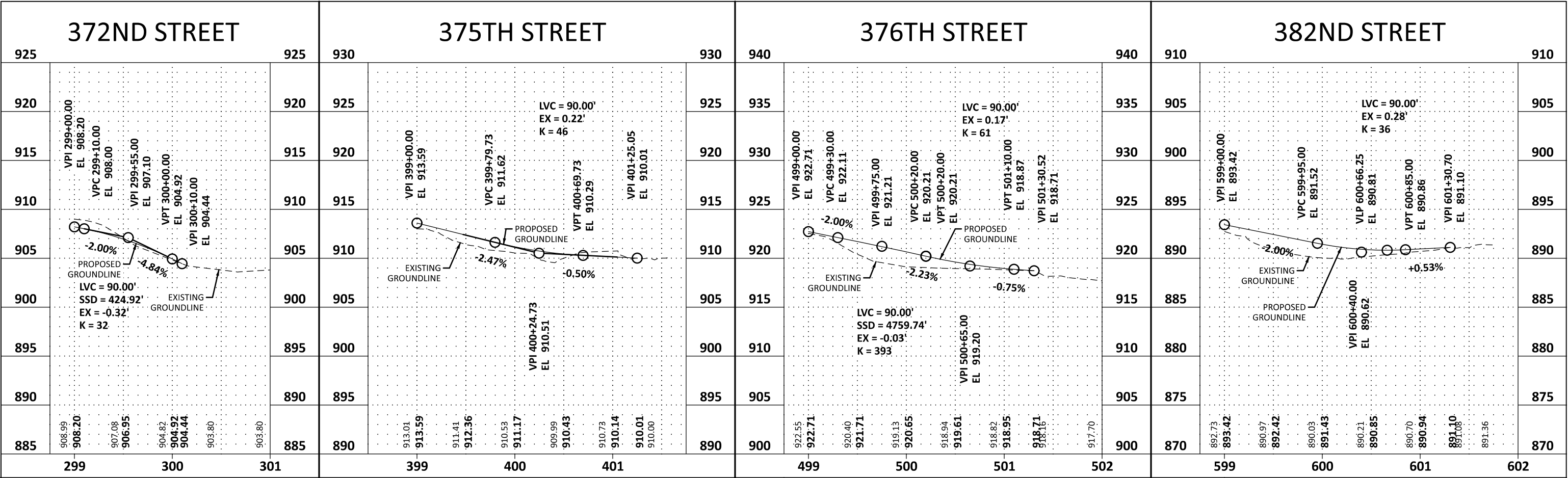
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CSAH 30 (Forest Blvd) Improvements
Chisago County, Minnesota

CHISAGO COUNTY, MINNESOTA	SHEET 140 OF 216 SHEETS
PROFILES SAP 013-630-021 / SAP 225-591-007 / SAP 225-102-004	

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Chisago County, Minnesota

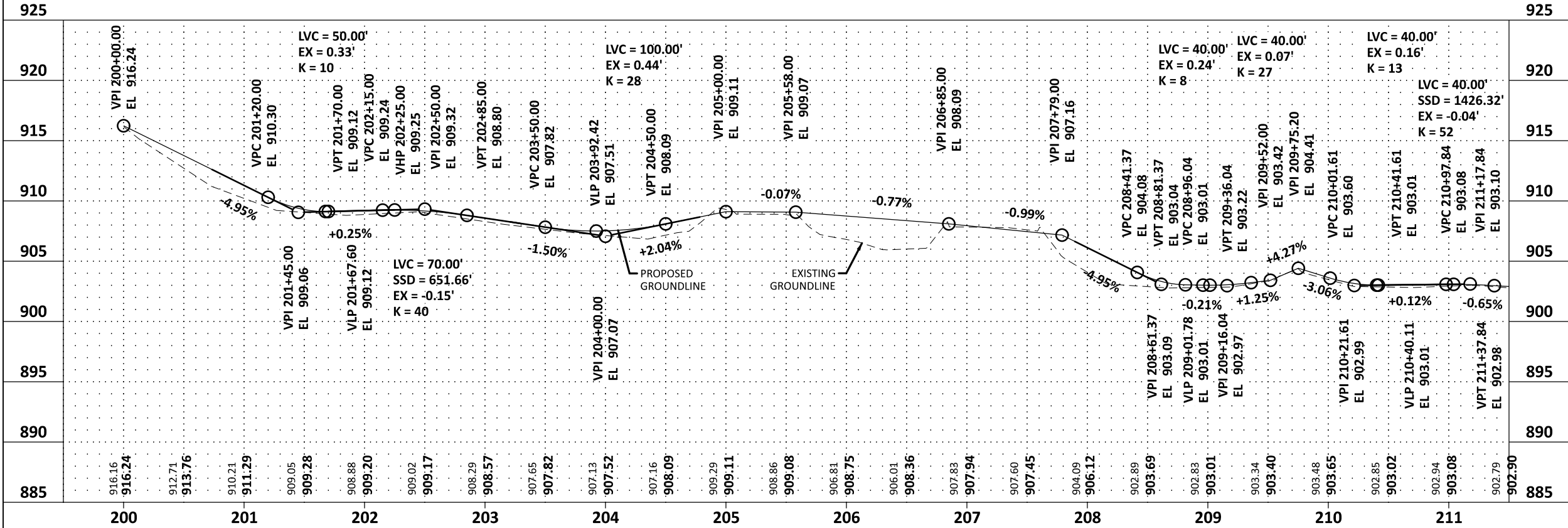
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SAP 013-630-021 / SAP 225-591-007 / SAP 225-102-004

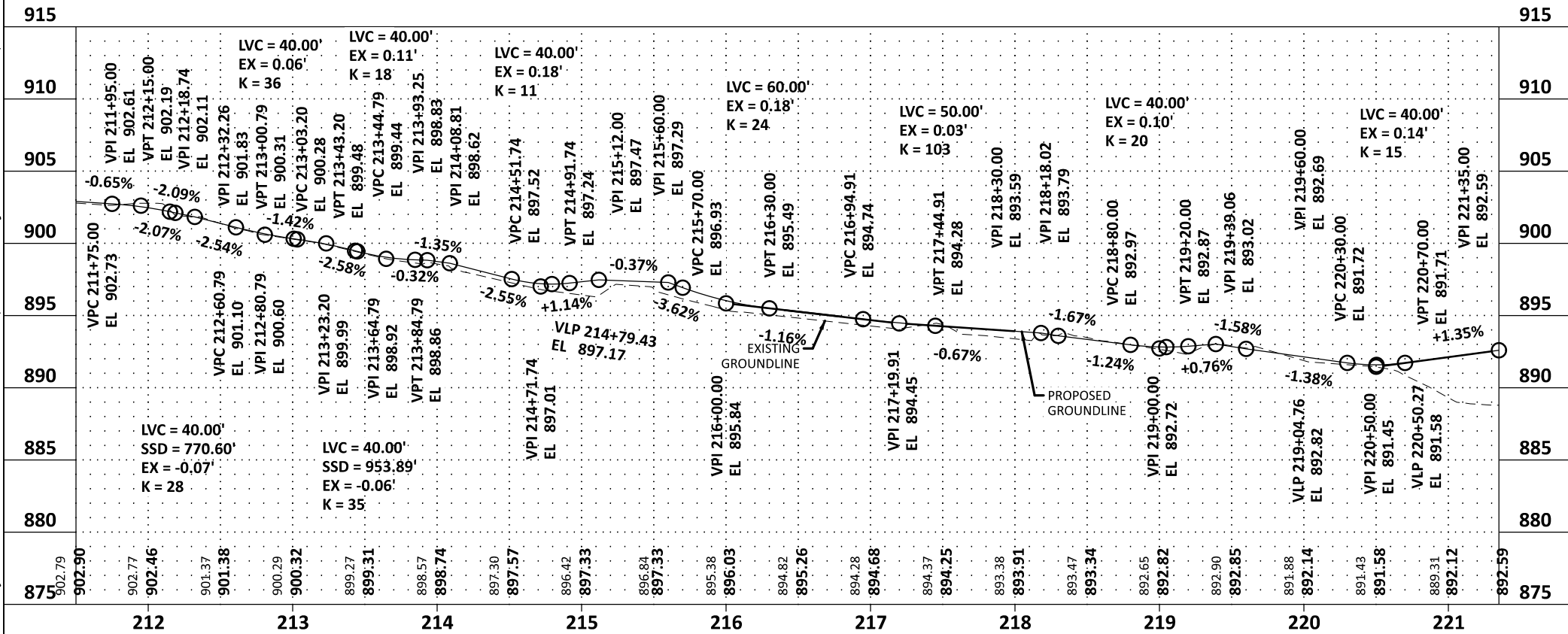
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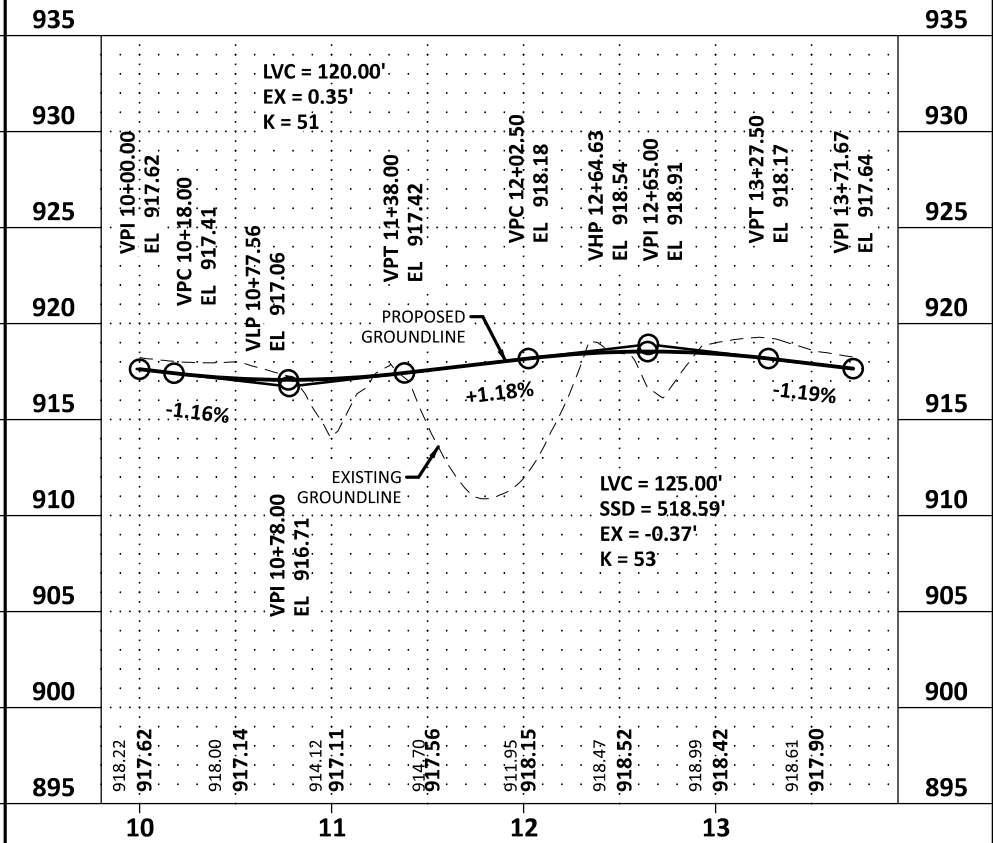
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SRTS TRAIL



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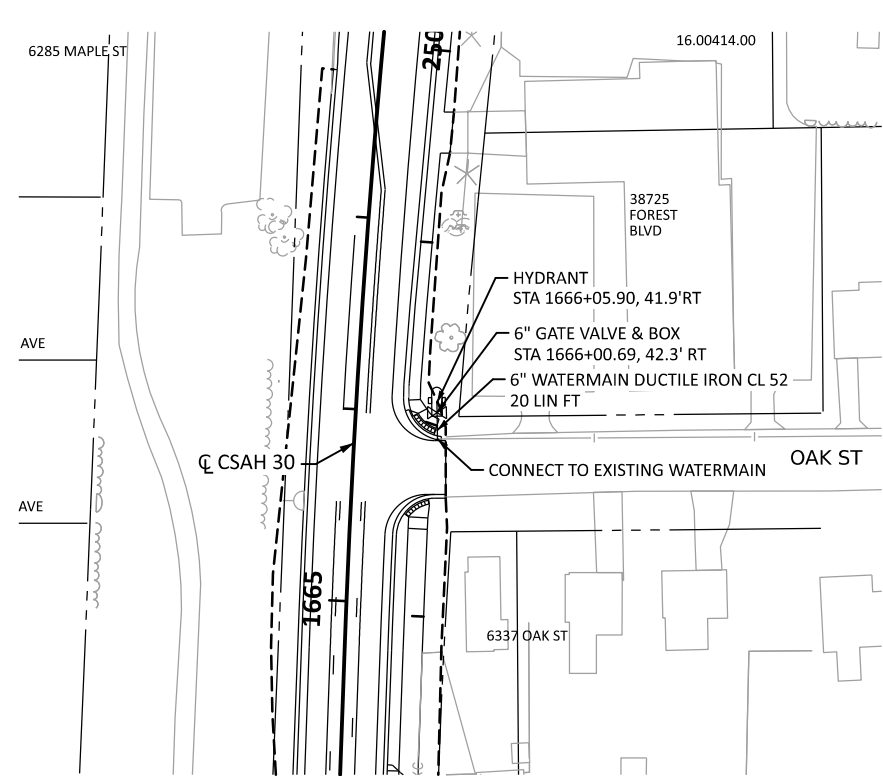
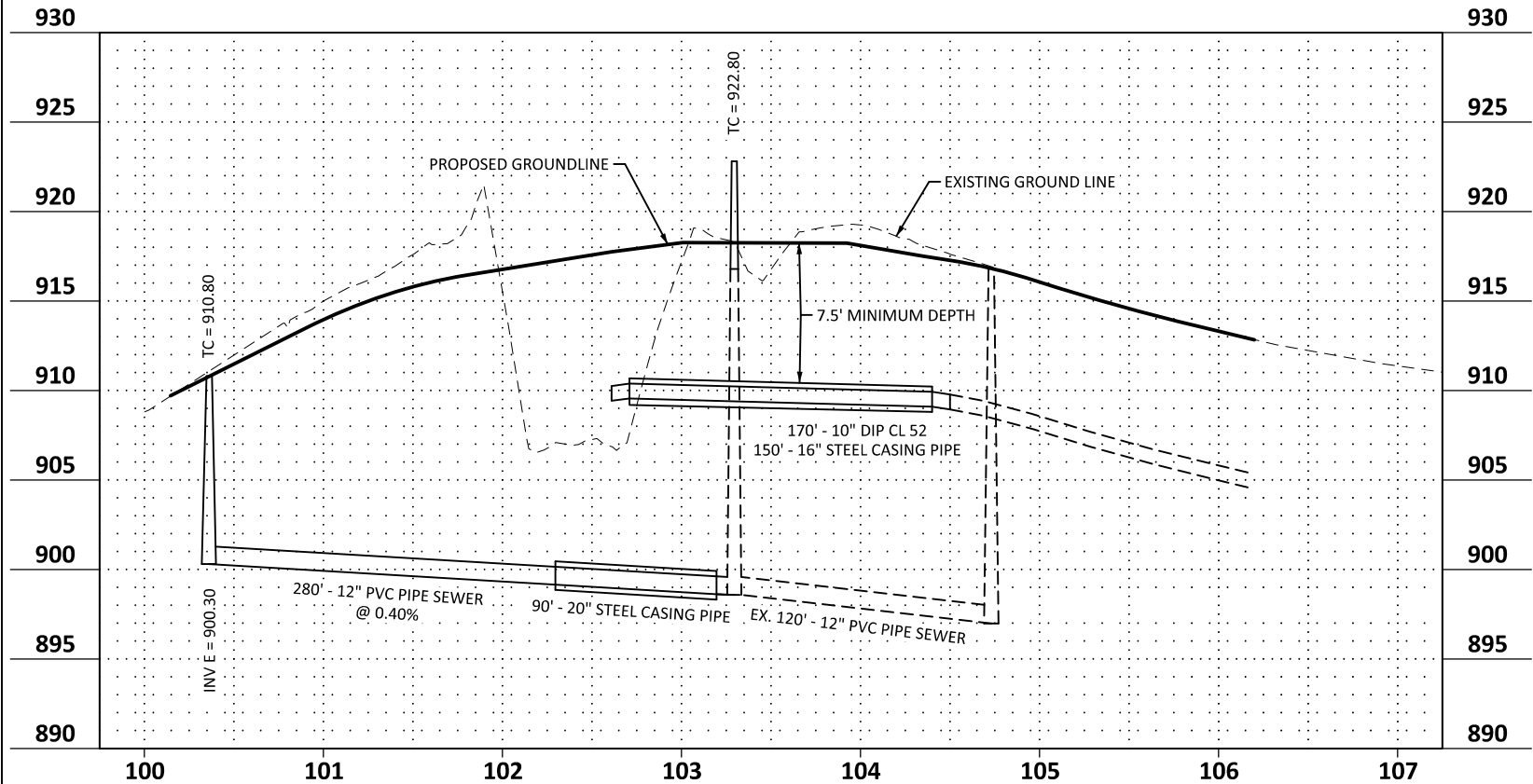
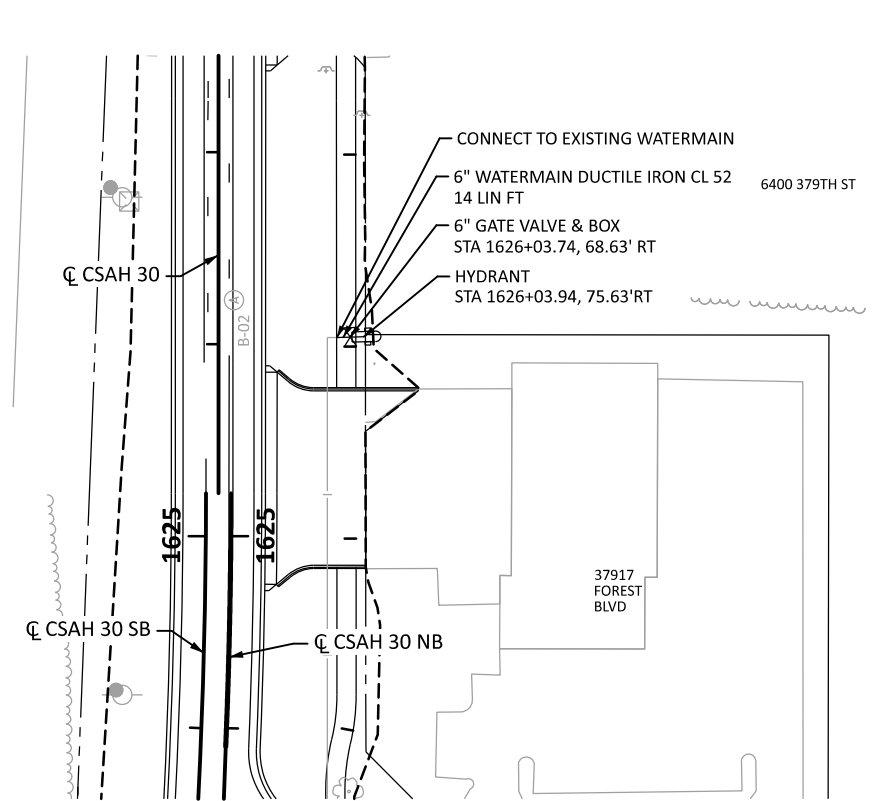
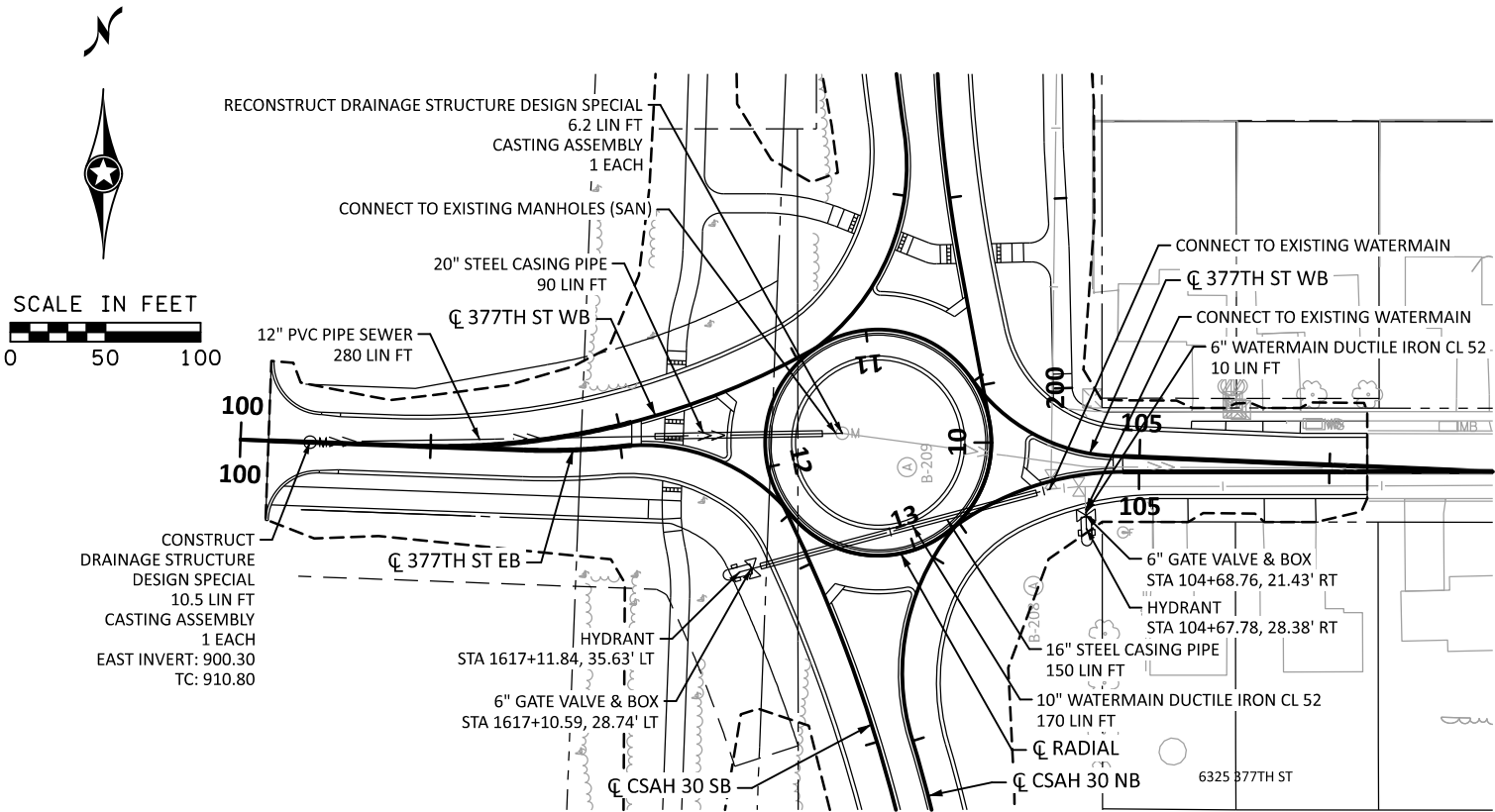
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CSAH 30 (Forest Blvd) Improvements
Chisago County, Minnesota

CHISAGO COUNTY, MINNESOTA		SHEET 142 OF 216 SHEETS
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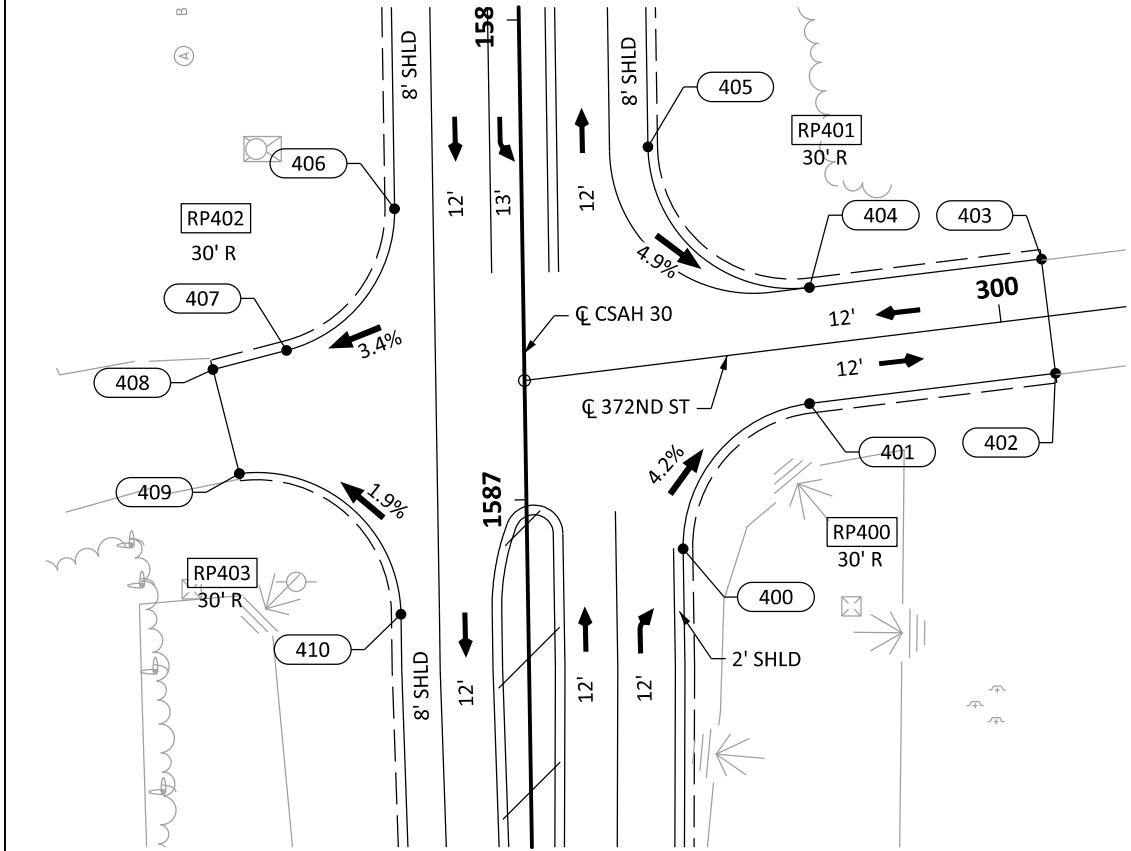
CSAH 30 (Forest Blvd) Improvements
Chisago County, Minnesota

CHISAGO COUNTY, MINNESOTA

SANITARY AND WATERMAIN PLAN
SAP 013-630-021 / SAP 225-591-007 / SAP 225-102-004

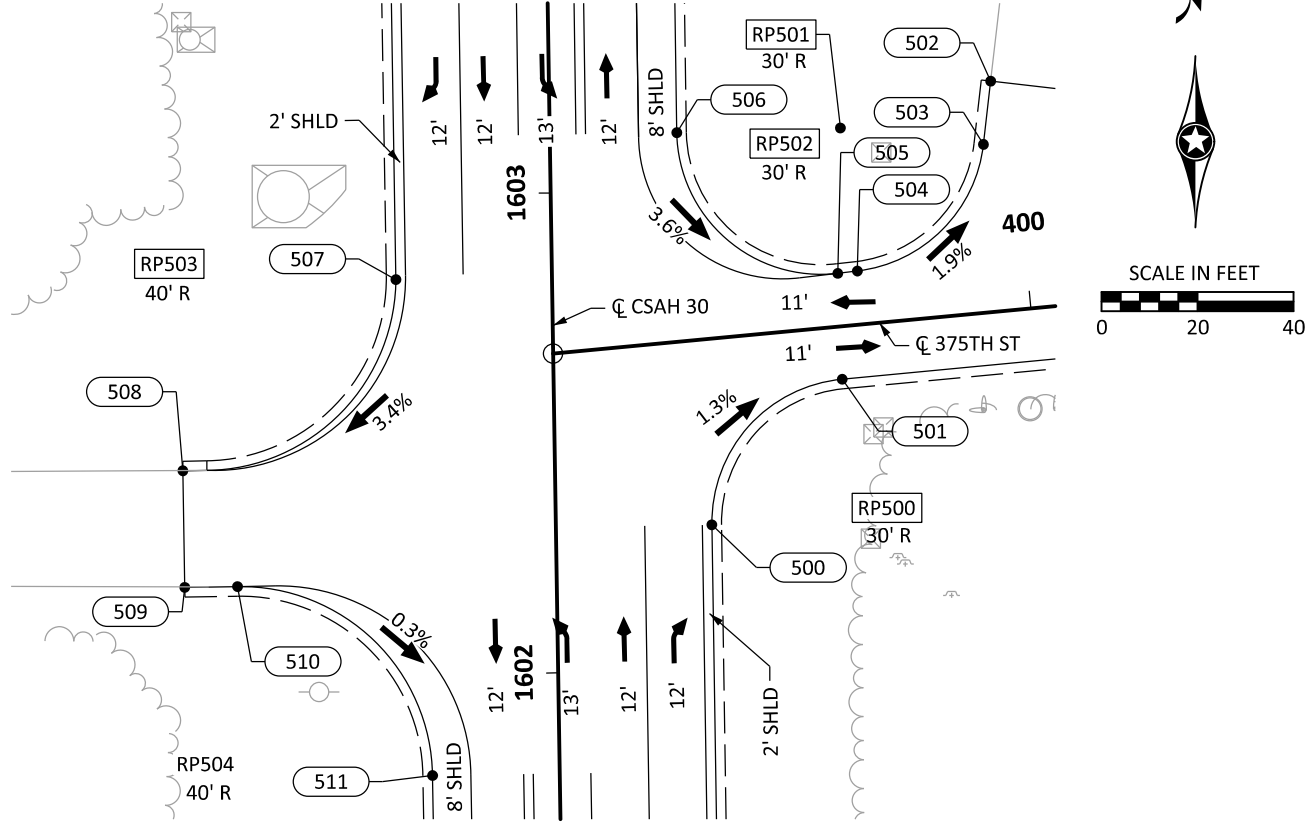
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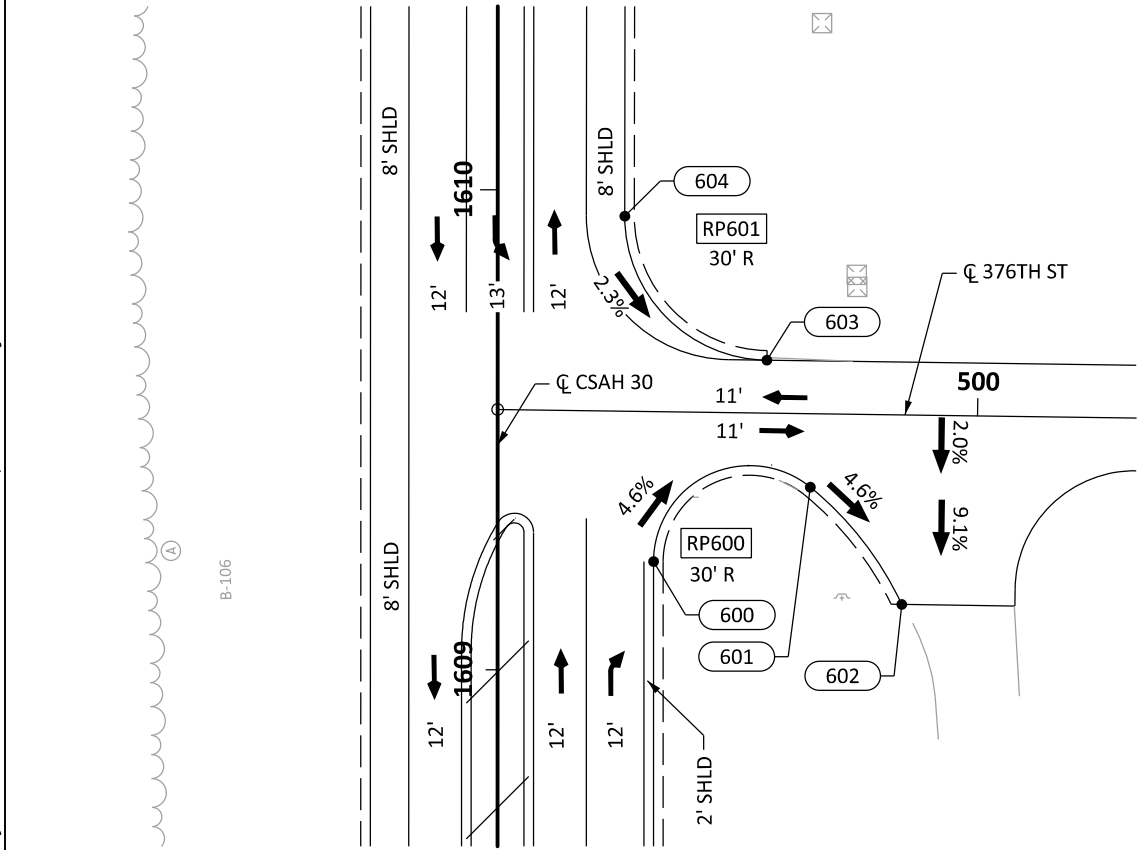
GUTTER CONTROL POINTS			
POINT NO.	X	Y	ELEV
400	526345.335	169806.676	907.722
401	526371.677	169836.929	905.885
402	526436.491	169844.884	903.727
403	526433.567	169868.705	904.104
404	526371.657	169861.106	906.533
405	526338.006	169890.407	909.044
406	526285.204	169877.514	908.881
407	526262.712	169847.992	907.511
408	526247.370	169844.028	906.968
409	526252.893	169822.349	906.752
410	526286.544	169793.048	907.664

RADIUS POINTS		
POINT NO.	X	Y
RP400	526375.331	169807.152
RP401	526368.002	169890.883
RP402	526255.208	169877.038
RP403	526256.548	169792.572



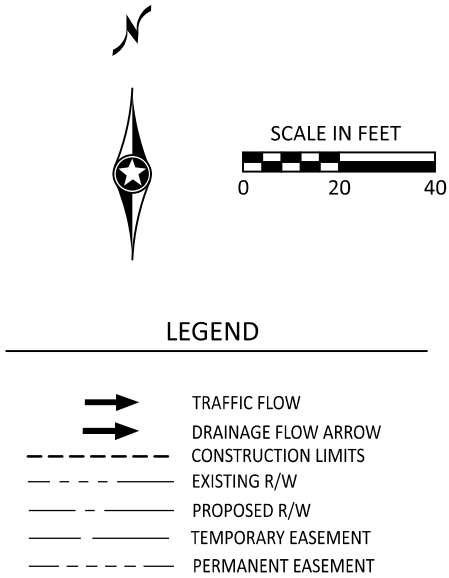
GUTTER CONTROL POINTS			
POINT NO.	X	Y	ELEV
500	526320.890	171347.518	912.482
501	526348.060	171377.861	911.904
502	526378.985	171439.965	910.778
503	526377.481	171426.786	911.025
504	526351.206	171400.396	911.771
505	526347.120	171399.912	911.875
506	526313.593	171429.227	913.703
507	526255.058	171399.489	913.159
508	526210.697	171358.833	912.180
509	526211.094	171334.580	912.280
510	526222.082	171334.660	912.211
511	526262.711	171295.300	912.019

RADIUS POINTS		
POINT NO.	X	Y
RP500	526350.886	171347.994
RP501	526347.675	171430.188
RP502	526343.589	171429.703
RP503	526215.063	171398.855
RP504	526222.716	171294.665



GUTTER CONTROL POINTS			
POINT NO.	X	Y	ELEV
600	526311.983	172039.160	921.863
601	526344.634	172054.648	919.780
602	526350.855	172048.905	918.336
603	526335.591	172081.113	921.319
604	526305.993	172111.114	922.368

RADIUS POINTS		
POINT NO.	X	Y
RP600	526331.983	172039.157
RP601	526335.993	172111.110



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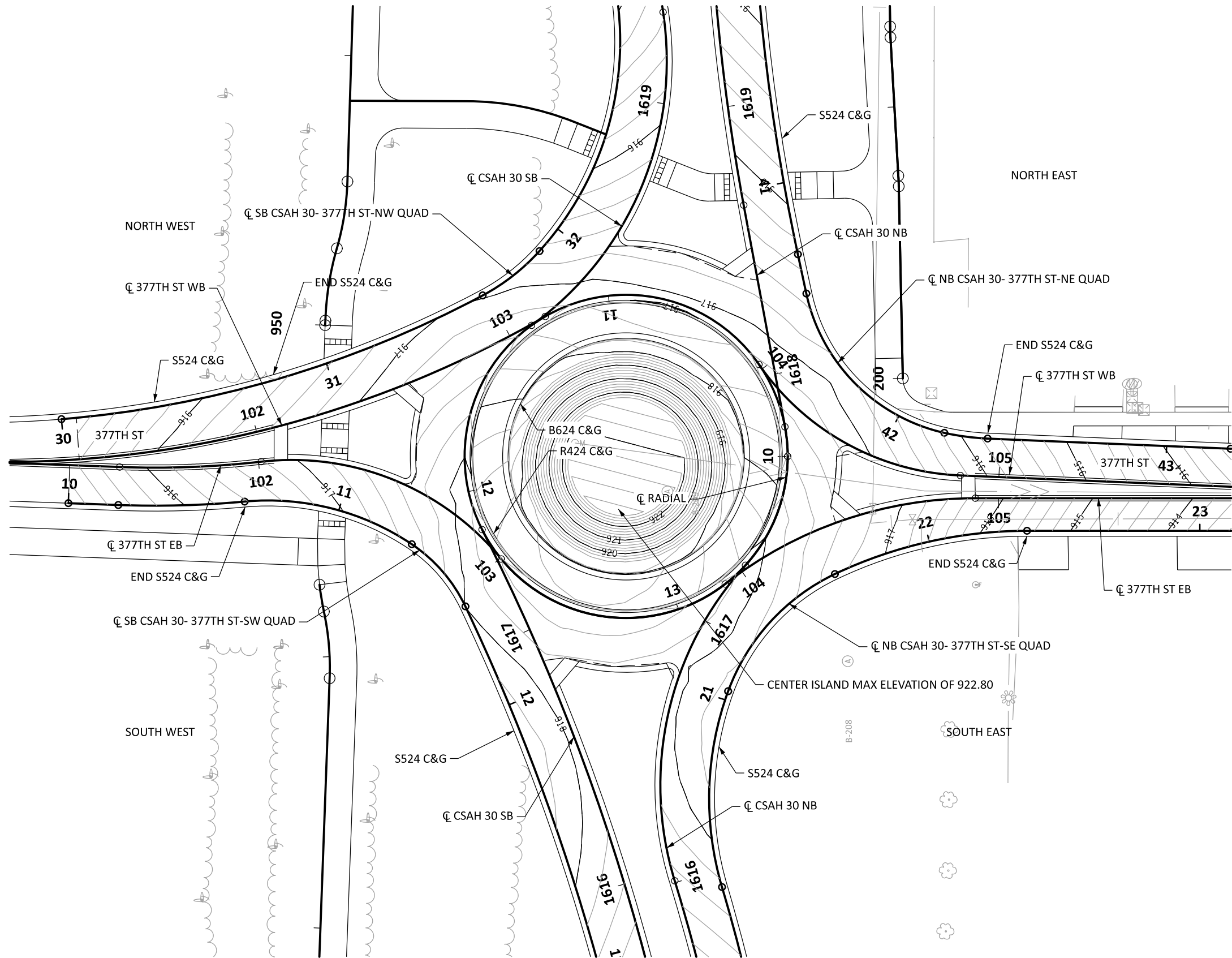


CSAH 30 (Forest Blvd) Improvements
Chisago County, Minnesota

CHISAGO COUNTY, MINNESOTA
INTERSECTIONS DETAILS
SAP 013-630-021 / SAP 225-591-007 / SAP 225-102-004

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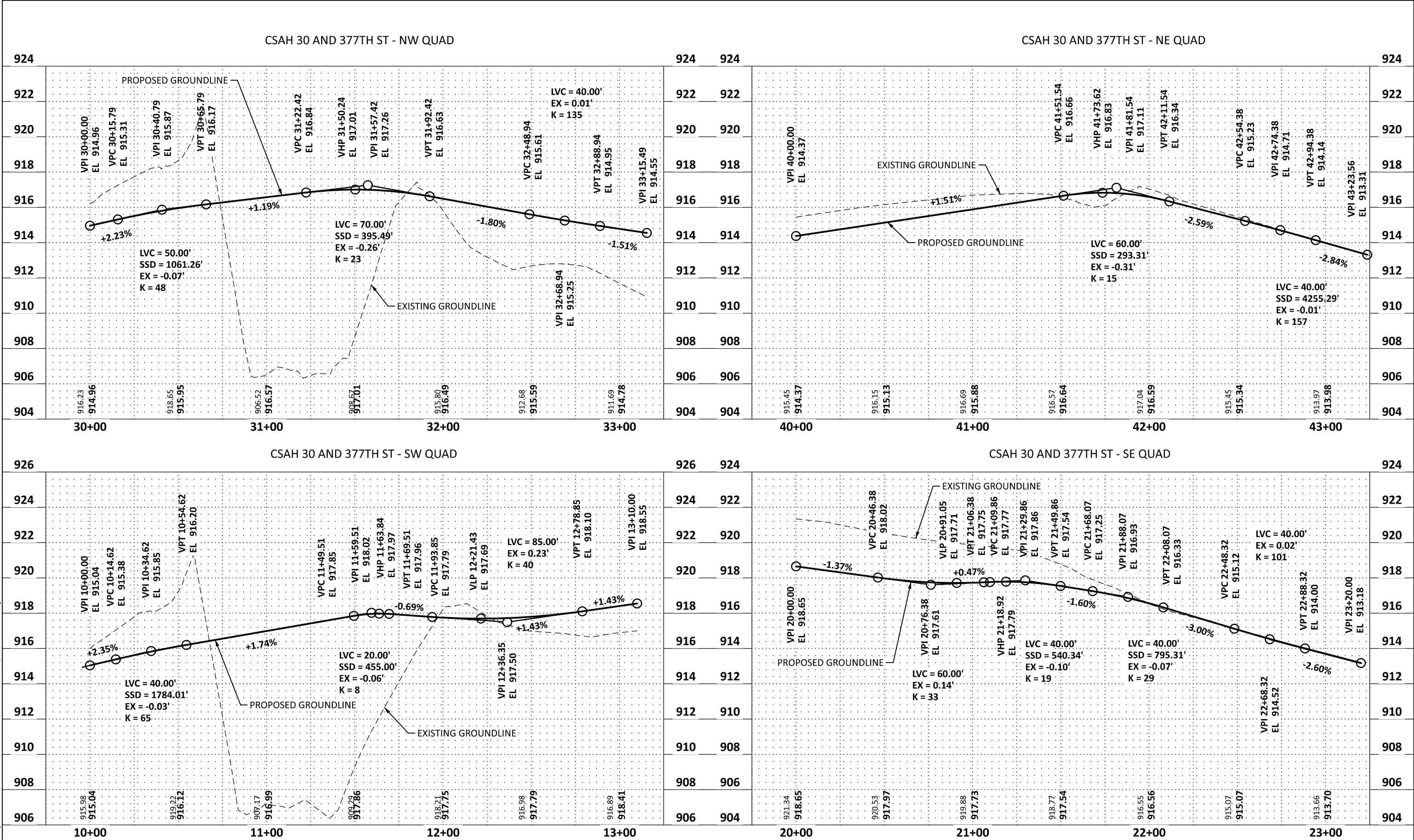


CSAH 30 (Forest Blvd) Improvements
Chisago County, Minnesota

CHISAGO COUNTY, MINNESOTA
ROUNDABOUT DETAIL
INTERSECTIONS DETAILS
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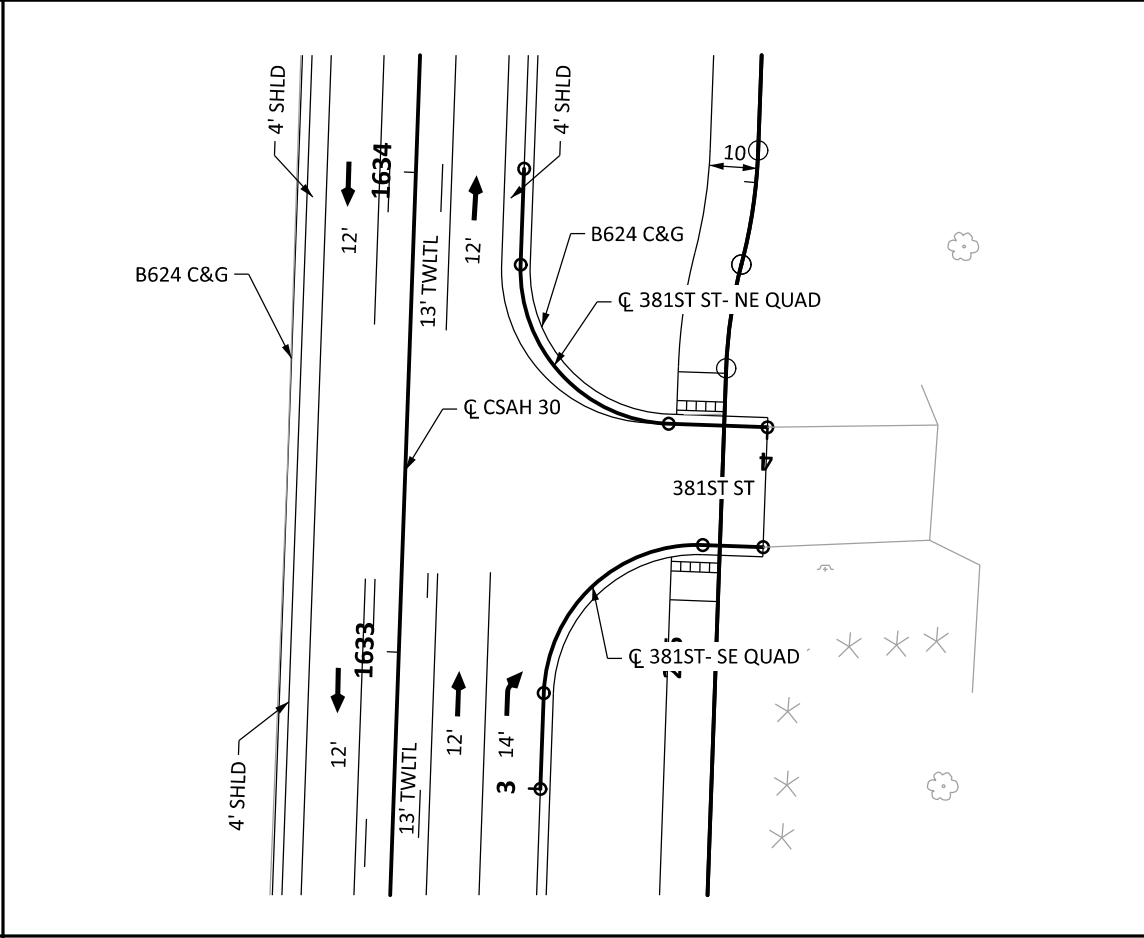
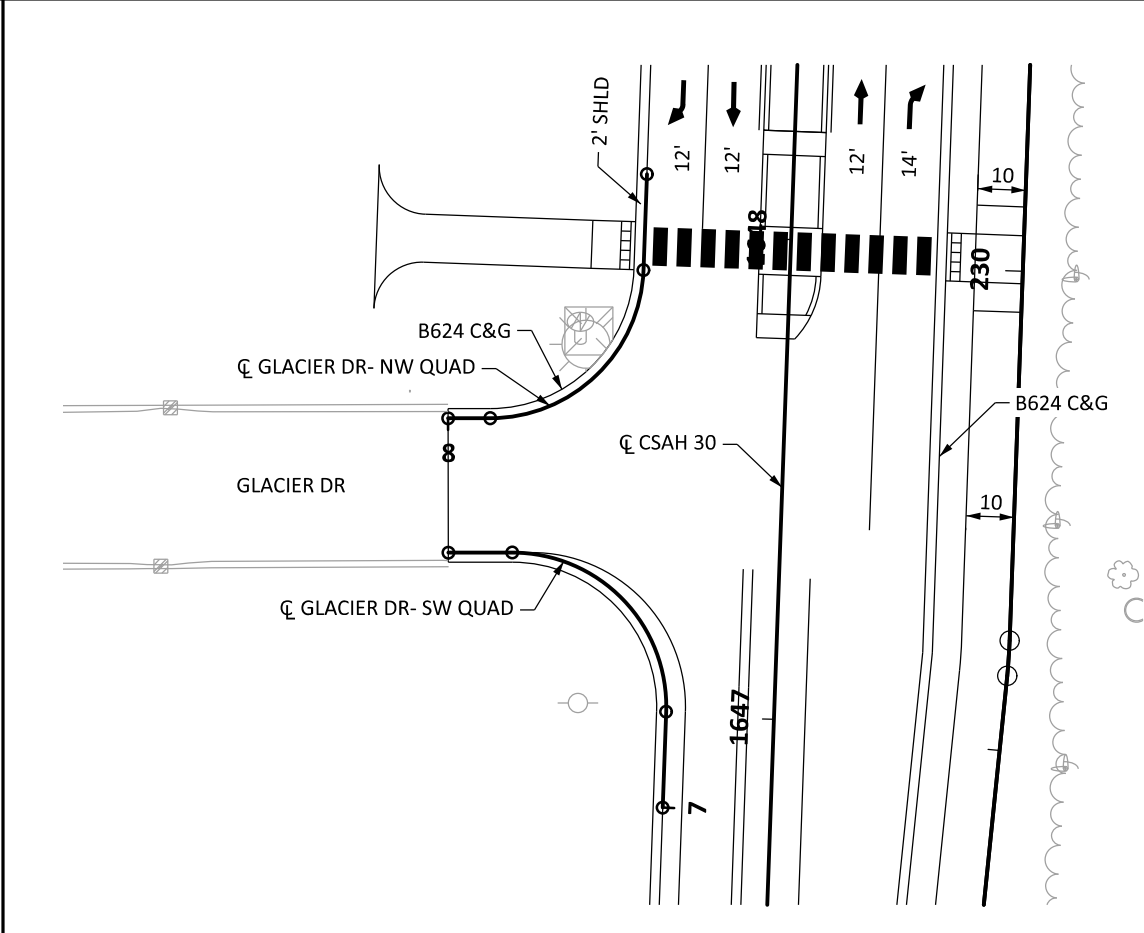
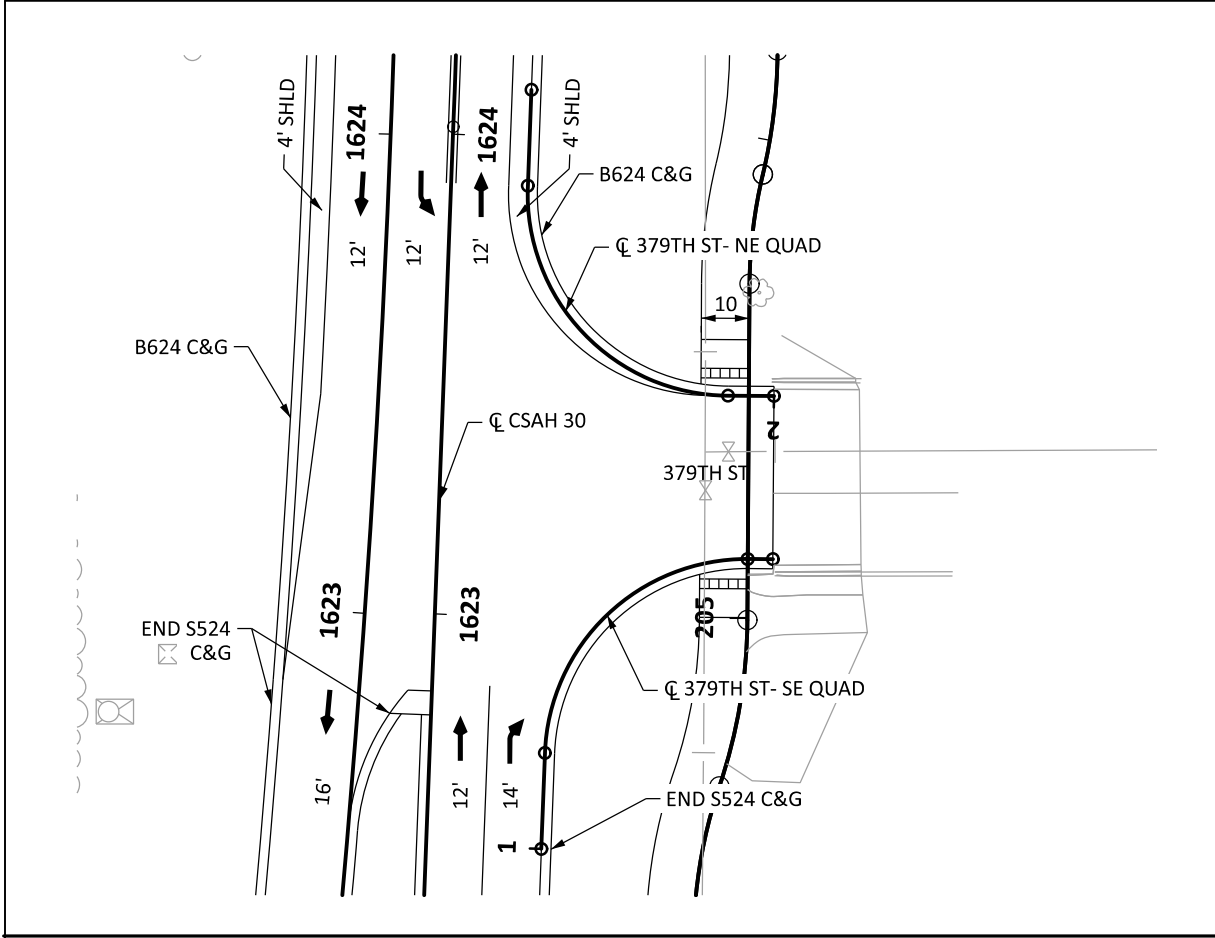
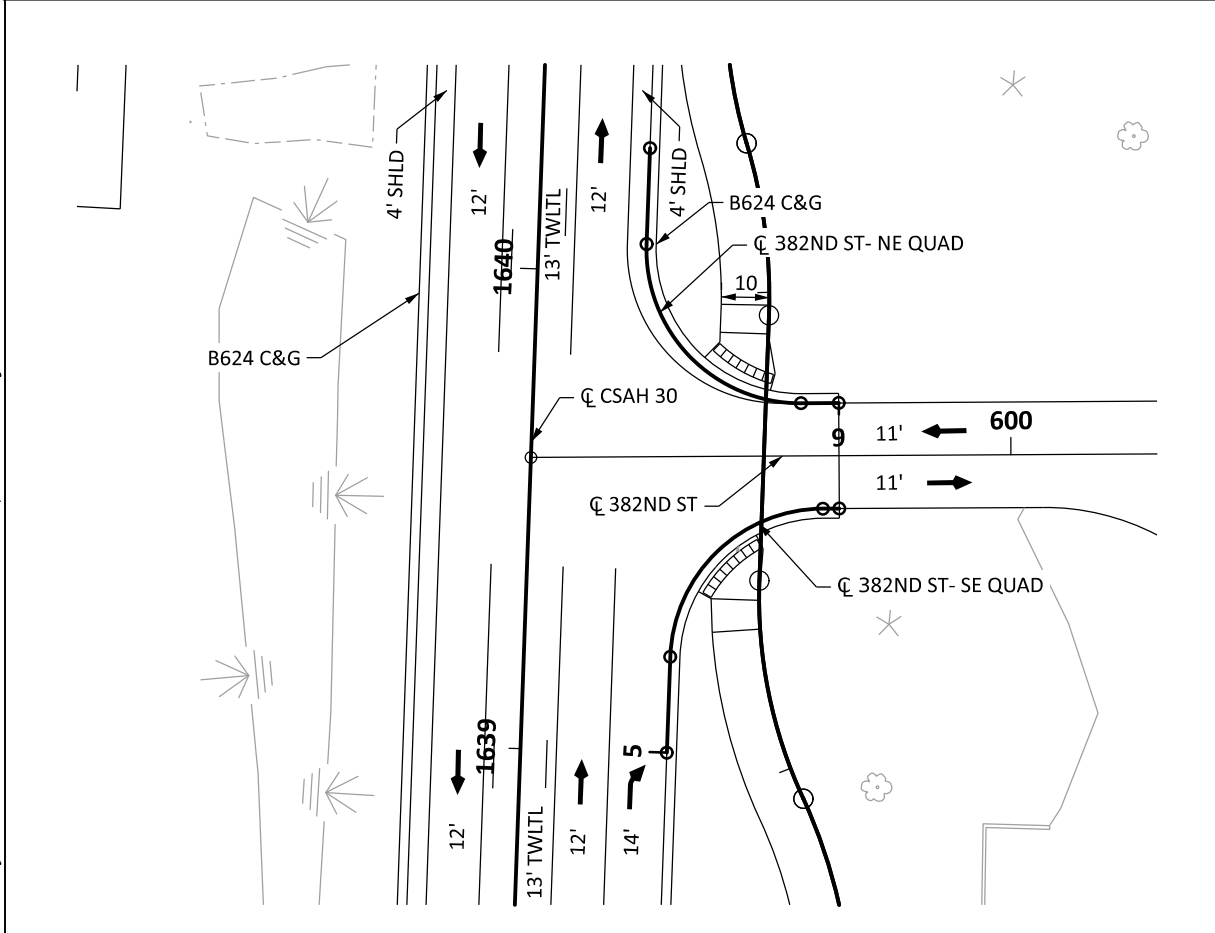
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ALIGNMENT TABULATION										
POINT NUMBER	POINT TYPE	STATION	CIRCULAR CURVE DATA					COORDINATES		DIRECTION AZIMUTH
			DELTA	DEGREE	RADIUS	TANGENT	LENGTH	EASTING (X)	NORTHING (Y)	
			SPIRAL CURVE DATA							
			THETA	DEGREE	ST	LT	LS			
ALIGNMENT: RA-QUAD NW										
	PC	30+00.00 R1						526031.419	172884.396	85°17'39.234"
	HPI	30+82.54 R1	23°19'10.511" LT	14°19'26.202"	400	82.543	162.801	526113.684	172891.168	PI
	CC							525998.603	173283.047	
	PCC	31+62.80 R1						526186.548	172929.952	61°58'28.724"
	HPI	31+76.27 R1	19°50'45.467" LT	74°24'36.372"	77	13.47	26.671	526198.439	172936.281	PI
	CC							526150.369	172997.923	
	PCC	31+89.47 R1						526207.475	172946.271	42°07'43.257"
	HPI	32+43.30 R1	50°10'08.973" LT	49°49'20.701"	115	53.832	100.696	526243.586	172986.195	PI
	CC							526122.187	173023.413	
	PRC	32+90.17 R1						526236.056	173039.498	351°57'34.284"
	HPI	33+02.83 R1	01°53'42.725" RT	07°29'05.109"	765.5	12.662	25.321	526234.285	173052.035	PI
	CC							526994.031	173146.571	
	PT	33+15.49 R1						526232.930	173064.624	353°51'17.009"
ALIGNMENT: RA-QUAD SW										
	START	10+00.00 R1						526033.965	172853.462	
	PC	10+18.40 R1						526052.351	172852.788	92°06'03.605"
	HPI	10+41.72 R1	07°19'52.734" LT	15°44'26.156"	364	23.32	46.576	526075.655	172851.933	PI
	CC							526065.695	173216.543	
	PRC	10+64.97 R1						526098.877	172854.059	84°46'10.871"
	HPI	10+98.68 R1	39°04'19.337" RT	60°18'40.849"	95	33.708	64.784	526132.445	172857.132	PI
	CC							526107.537	172759.454	
	PCC	11+29.76 R1						526160.443	172838.359	123°50'30.208"
	HPI	11+45.43 R1	30°45'10.920" RT	100°31'08.081"	57	15.675	30.594	526173.463	172829.630	PI
	CC							526128.700	172791.016	
	PCC	11+60.35 R1						526180.188	172815.470	154°35'41.129"
	HPI	12+35.39 R1	10°43'03.969" RT	07°09'43.101"	800	75.043	149.648	526212.382	172747.684	PI
	CC							525457.551	172472.256	
	PT	13+10.00 R1						526231.409	172675.093	165°18'45.098"

ALIGNMENT TABULATION										
POINT NUMBER	POINT TYPE	STATION	CIRCULAR CURVE DATA					COORDINATES		DIRECTION AZIMUTH
			DELTA	DEGREE	RADIUS	TANGENT	LENGTH			
			SPIRAL CURVE DATA					EASTING (X)	NORTHING (Y)	
			THETA	DEGREE	ST	LT	LS			
ALIGNMENT: RA-QUAD NE										
	PC	40+00.00 R1						526286.372	173070.772	177°22'40.327"
	HPI	40+63.58 R1	09°30'52.803" LT	07°29'58.011"	764	63.582	126.872	526289.281	173007.257	PI
	CC							527049.572	173105.724	
	PT	41+26.87 R1						526302.649	172945.096	167°51'47.524"
	PC	41+41.64 R1						526305.755	172930.653	167°51'47.524"
	HPI	41+84.50 R1	65°12'31.505" LT	85°30'57.920"	67	42.855	76.253	526314.765	172888.756	PI
	CC							526371.257	172944.740	
	PCC	42+17.90 R1						526356.579	172879.367	102°39'16.019"
	HPI	42+25.97 R1	10°15'25.224" LT	63°39'43.118"	90	8.077	16.112	526364.461	172877.598	PI
	CC							526376.296	172967.181	
	PT	42+34.01 R1						526372.531	172877.260	92°23'50.795"
	HPI	43+23.56 R1						526462.008	172873.514	92°23'50.795"
	END	43+33.56 R1						526472.007	172873.514	90°00'00.000"
ALIGNMENT: RA-QUAD SE										
	PC	20+00.00 R1						526282.554	172683.192	346°06'05.018"
	HPI	20+15.00 R1	02°34'51.212" LT	08°36'10.692"	666	15.003	30	526278.950	172697.755	PI
	CC							525636.053	172523.216	
	PRC	20+30.00 R1						526274.695	172712.141	343°31'13.806"
	HPI	20+67.98 R1	36°33'21.115" RT	49°49'20.701"	115	37.983	73.372	526263.920	172748.564	PI
	CC							526384.971	172744.764	
	PCC	21+03.37 R1						526276.958	172784.240	20°04'34.921"
	HPI	21+34.91 R1	44°33'04.288" RT	74°24'36.372"	77	31.542	59.873	526287.786	172813.865	PI
	CC							526349.280	172757.808	
	PCC	21+63.24 R1						526316.285	172827.381	64°37'39.208"
	HPI	22+00.41 R1	25°23'04.417" RT	34°43'28.973"	165	37.161	73.102	526349.861	172843.304	PI
	CC							526386.988	172678.296	
	PT	22+36.35 R1						526387.022	172843.296	90°00'43.625"
	END	23+20.73 R1						526471.401	172843.278	90°00'43.625"

NO.	DATE	BY	CHK	REVISIONS	Design By:	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  NICHOLAS E. HENTGES, PE DATE: <u>9/12/2024</u> LICENSE NO. <u>44620</u>			CSAH 30 (Forest Blvd) Improvements Chisago County, Minnesota	CHISAGO COUNTY, MINNESOTA		SHEET 147 OF 216 SHEETS
					Plan By: MKV							
					Checked By: MAN							
					Approved By: NEH							
									INTERSECTIONS DETAILS			
									SAP 013-630-021 / SAP 225-591-007 / SAP 225-102-004			

DATE: 9/12/2024 2:06:21 PM
PATH & FILENAME: Projects\Minnesota\023661-000\03_Discipline\Roadway\Sheets\023661-000_Int





LEGEND

	TRAFFIC FLOW
	DRAINAGE FLOW ARROW
	CONSTRUCTION LIMITS
	EXISTING R/W
	PROPOSED R/W
	TEMPORARY EASEMENT
	PERMANENT EASEMENT

NO.	DATE	BY	CHK	REVISIONS

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NICHOLAS E. HENTGES, PE
DATE: 9/12/2024 LICENSE NO. 44620



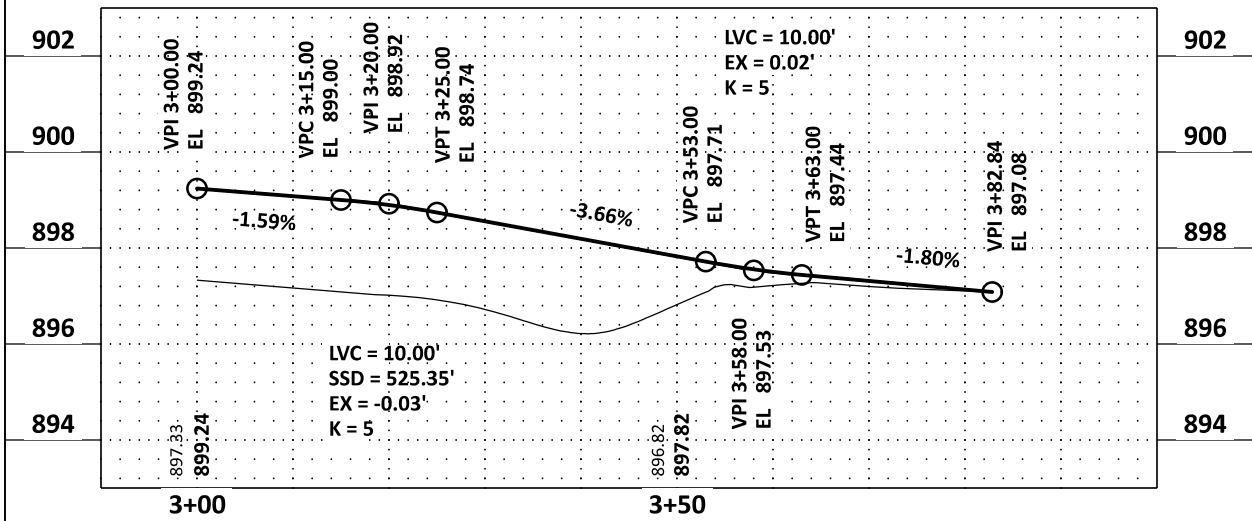
CSAH 30 (Forest Blvd) Improvements
Chisago County, Minnesota

CHISAGO COUNTY, MINNESOTA
INTERSECTIONS DETAILS
SAP 013-630-021 / SAP 225-591-007 / SAP 225-102-004

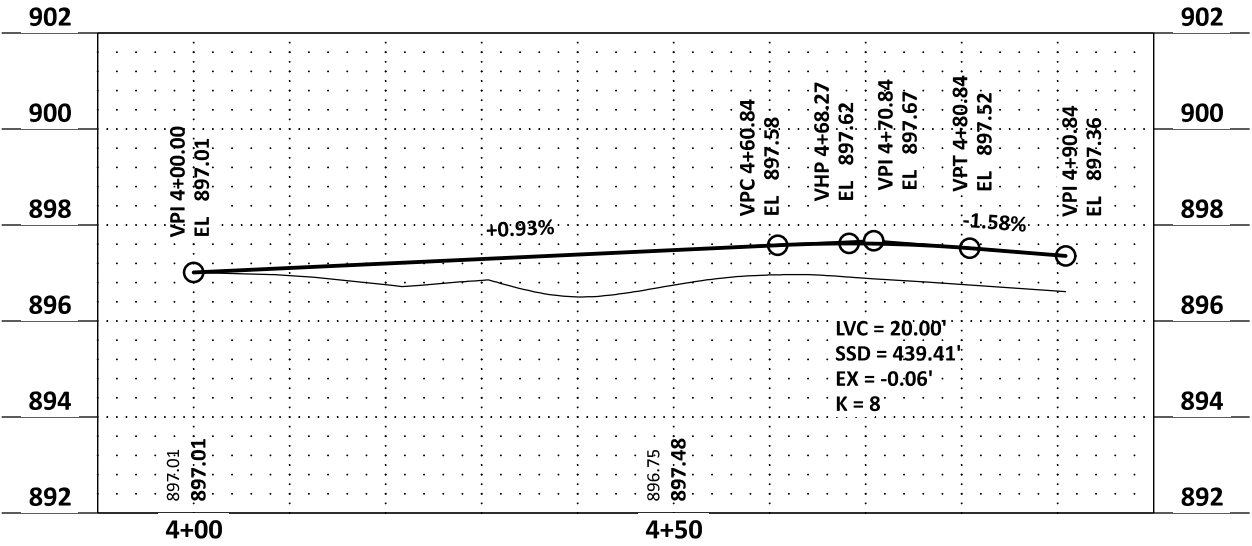
SHEET 148 OF 216 SHEETS

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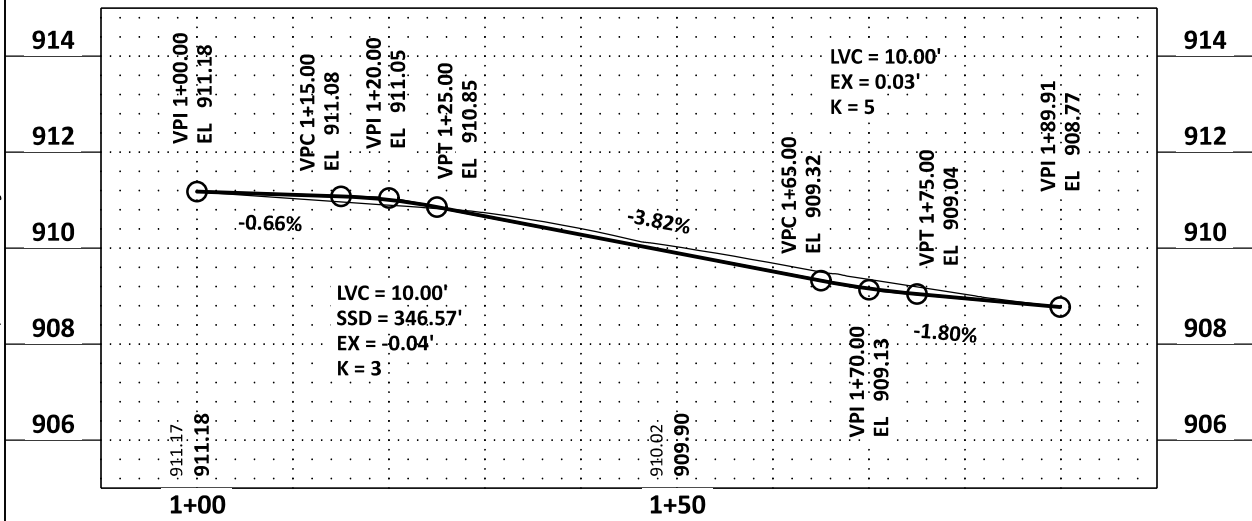
381ST ST - SOUTHEAST QUAD PROFILE



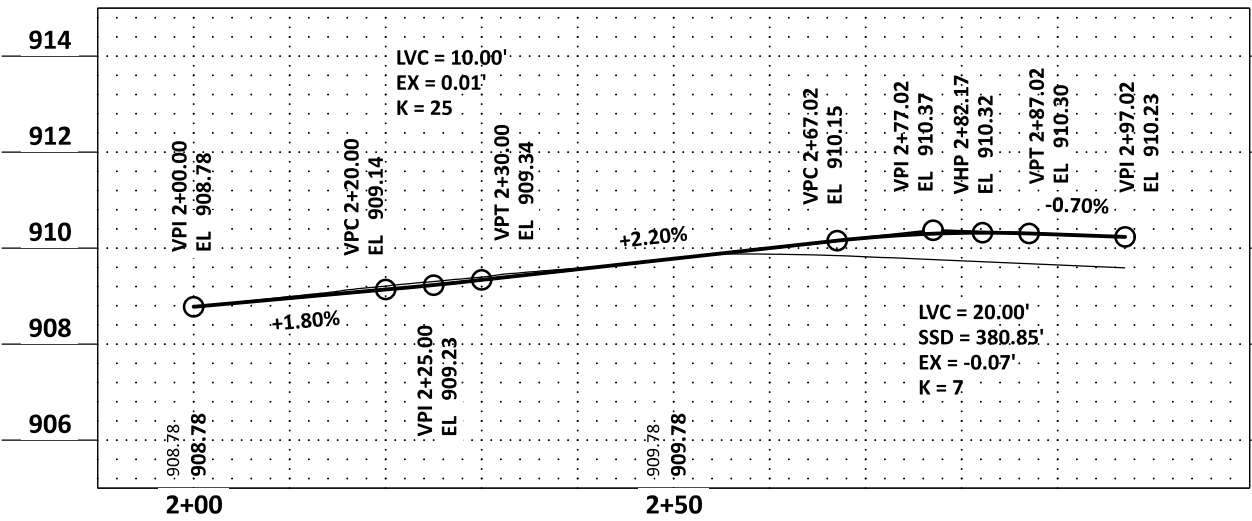
381ST ST - NORTHEAST QUAD PROFILE



379TH ST - SOUTHEAST QUAD PROFILE



379TH ST - NORTHEAST QUAD PROFILE



NO.	DATE	BY	CHK	REVISIONS

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Nicholas E. Hentges
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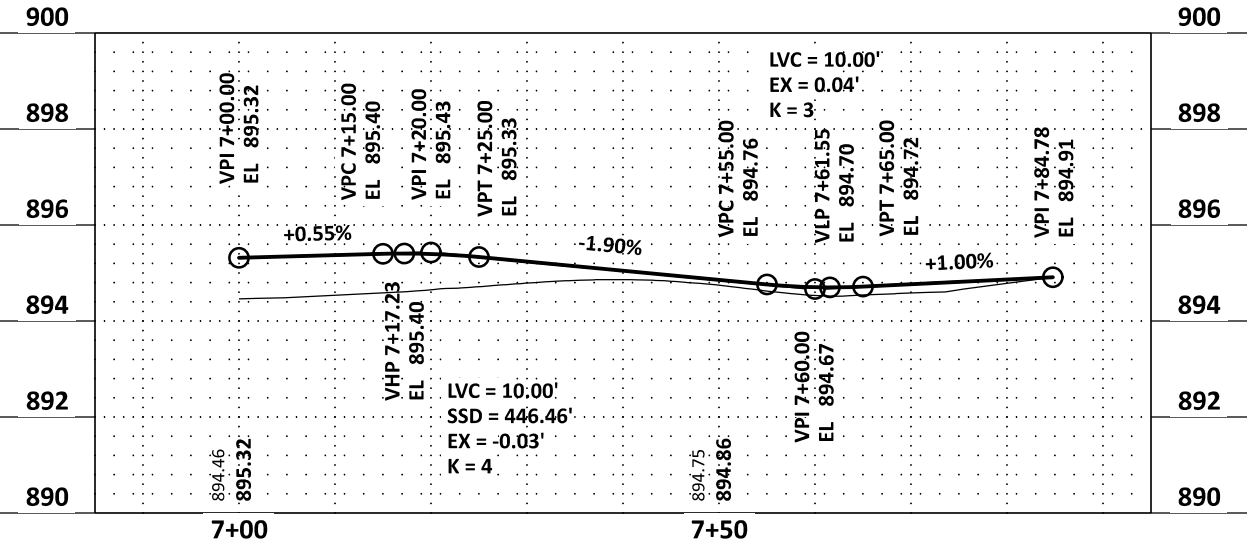


CSAH 30 (Forest Blvd) Improvements
Chisago County, Minnesota

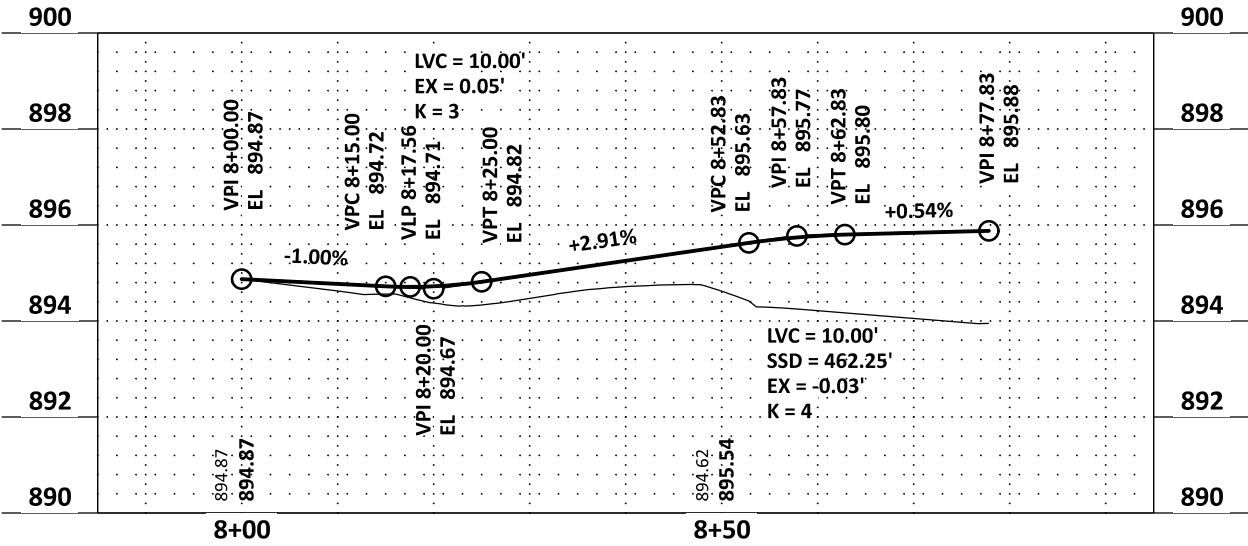
CHISAGO COUNTY, MINNESOTA
INTERSECTIONS DETAILS
SAP 013-630-021 / SAP 225-591-007 / SAP 225-102-004

SHEET
149
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216
SHEETS

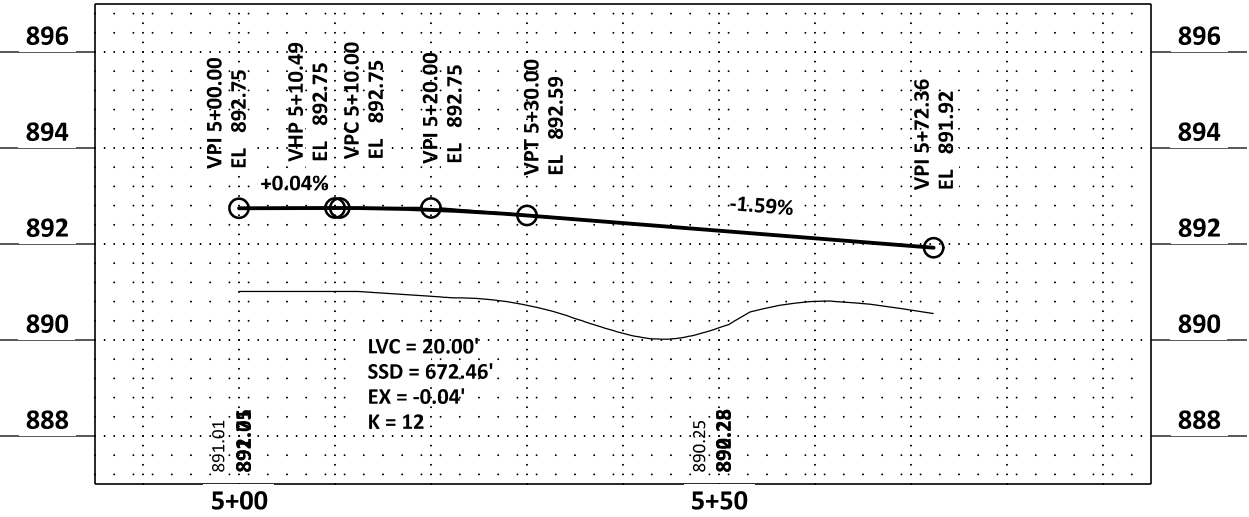
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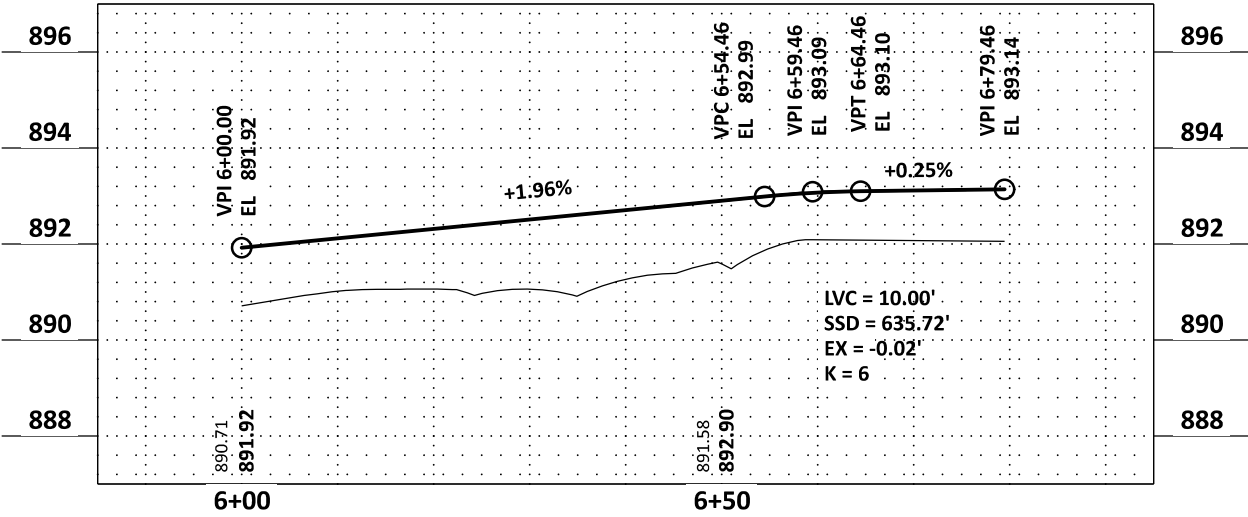
GLACIER DR - NORTHWEST QUAD PROFILE



382ND ST - SOUTHEAST QUAD PROFILE



382ND ST - NORTHEAST QUAD PROFILE



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NICHOLAS E. HENTGES, PE
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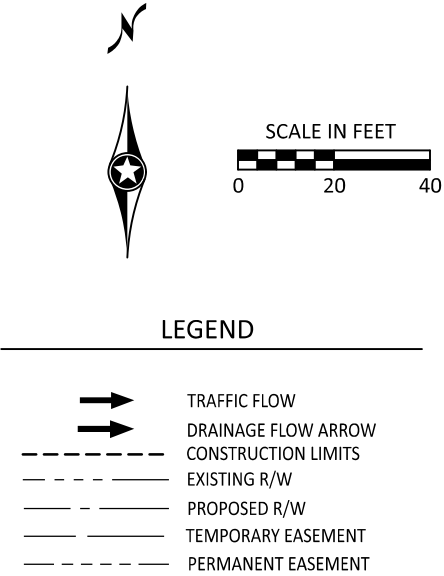
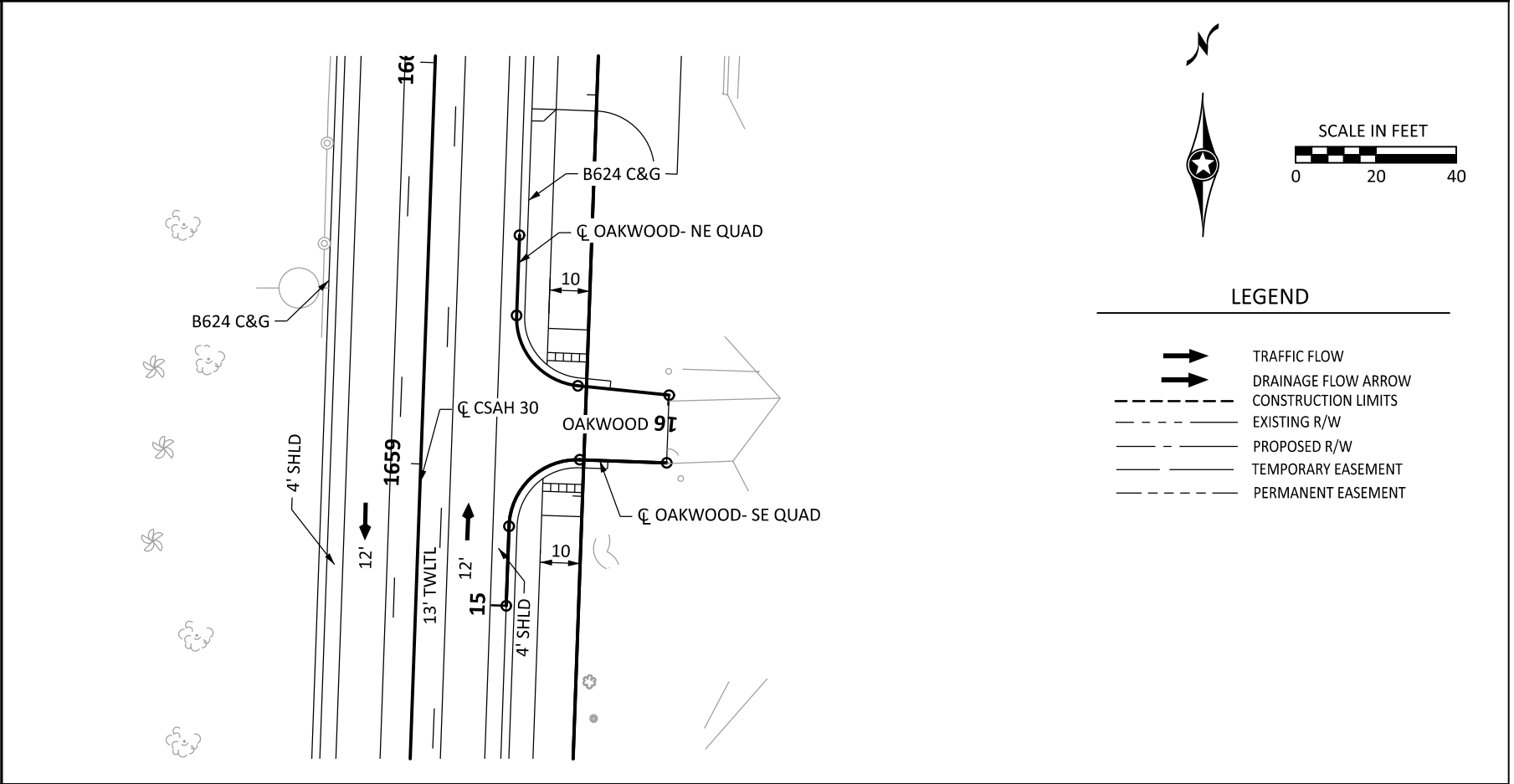
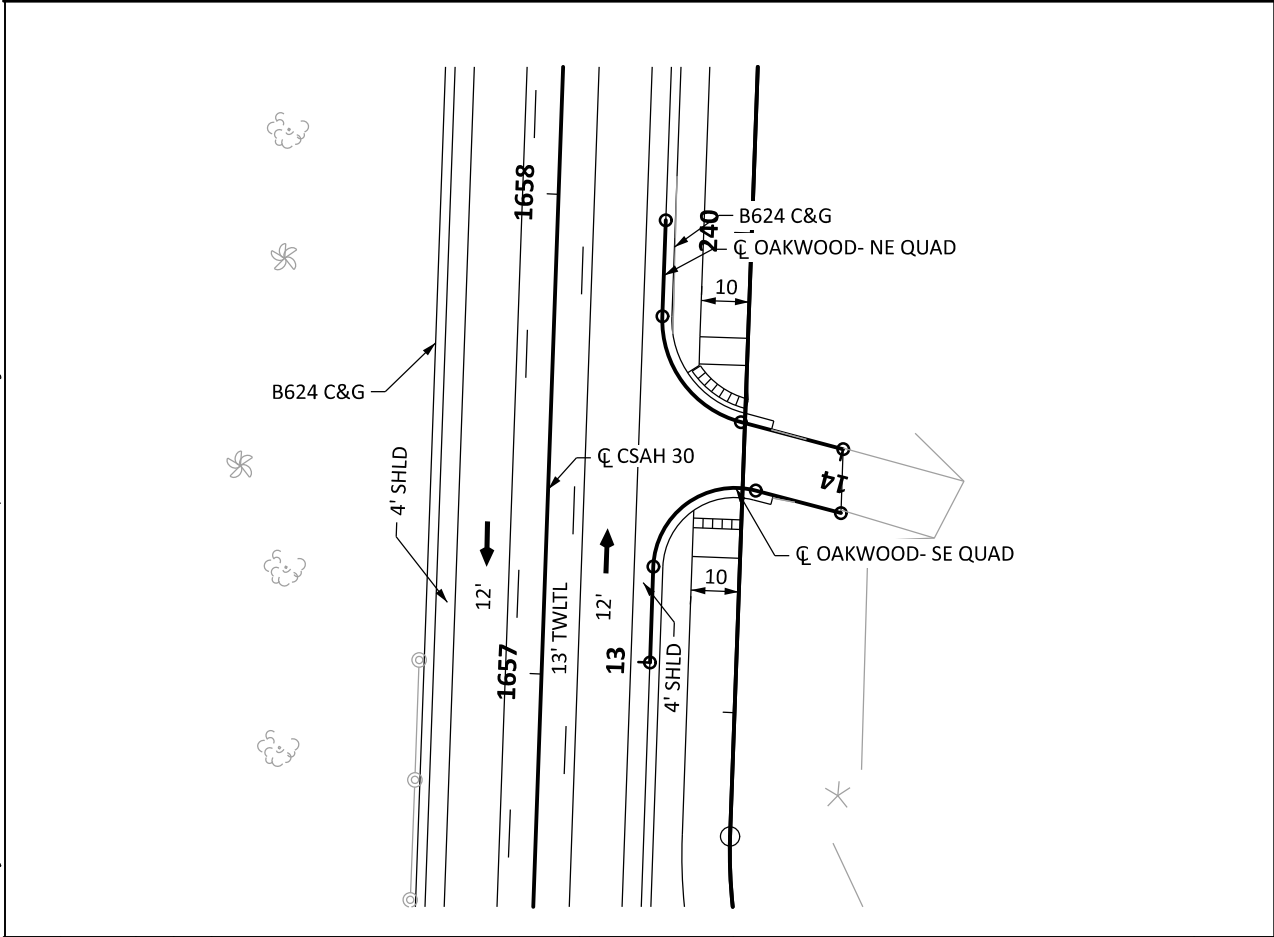
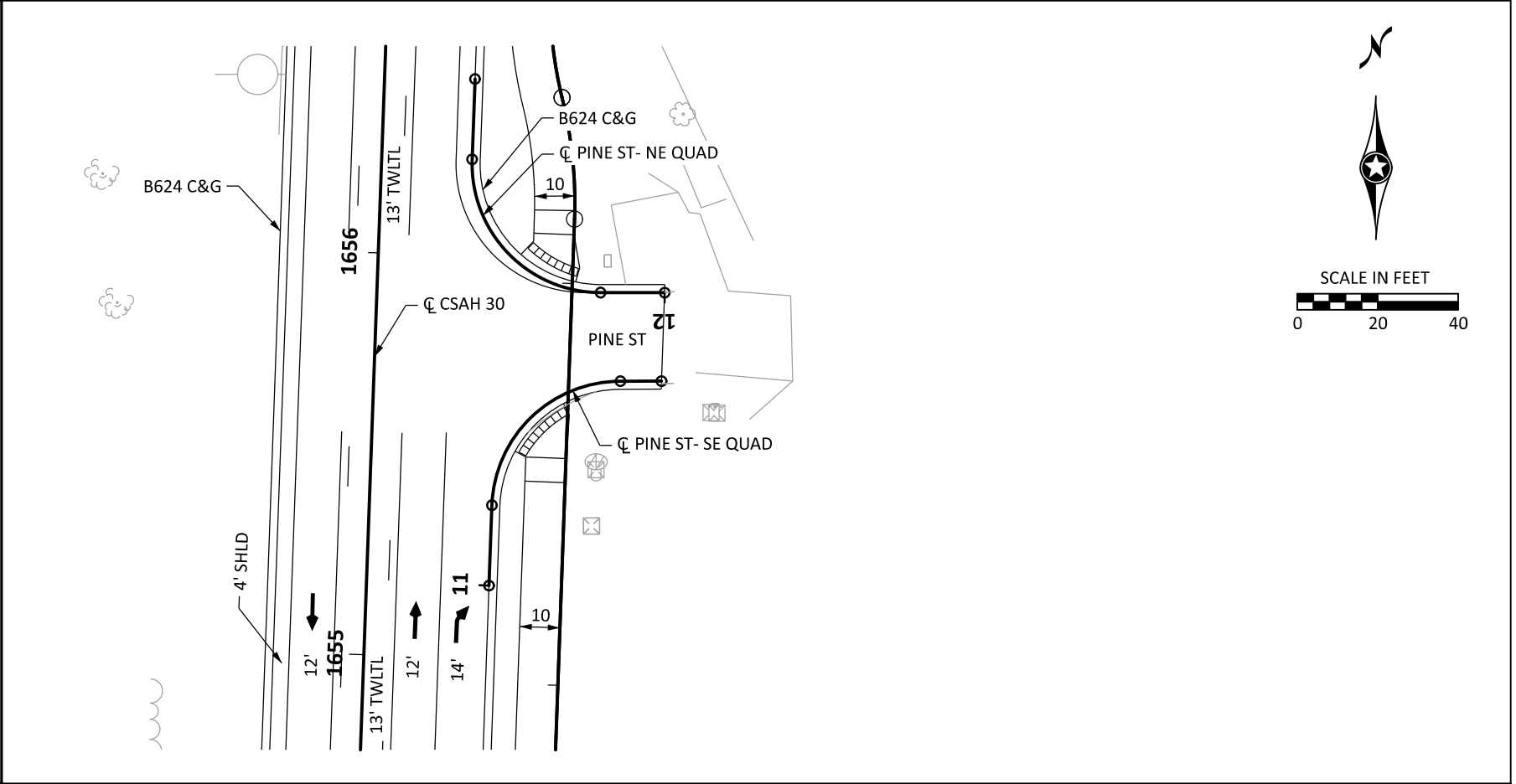
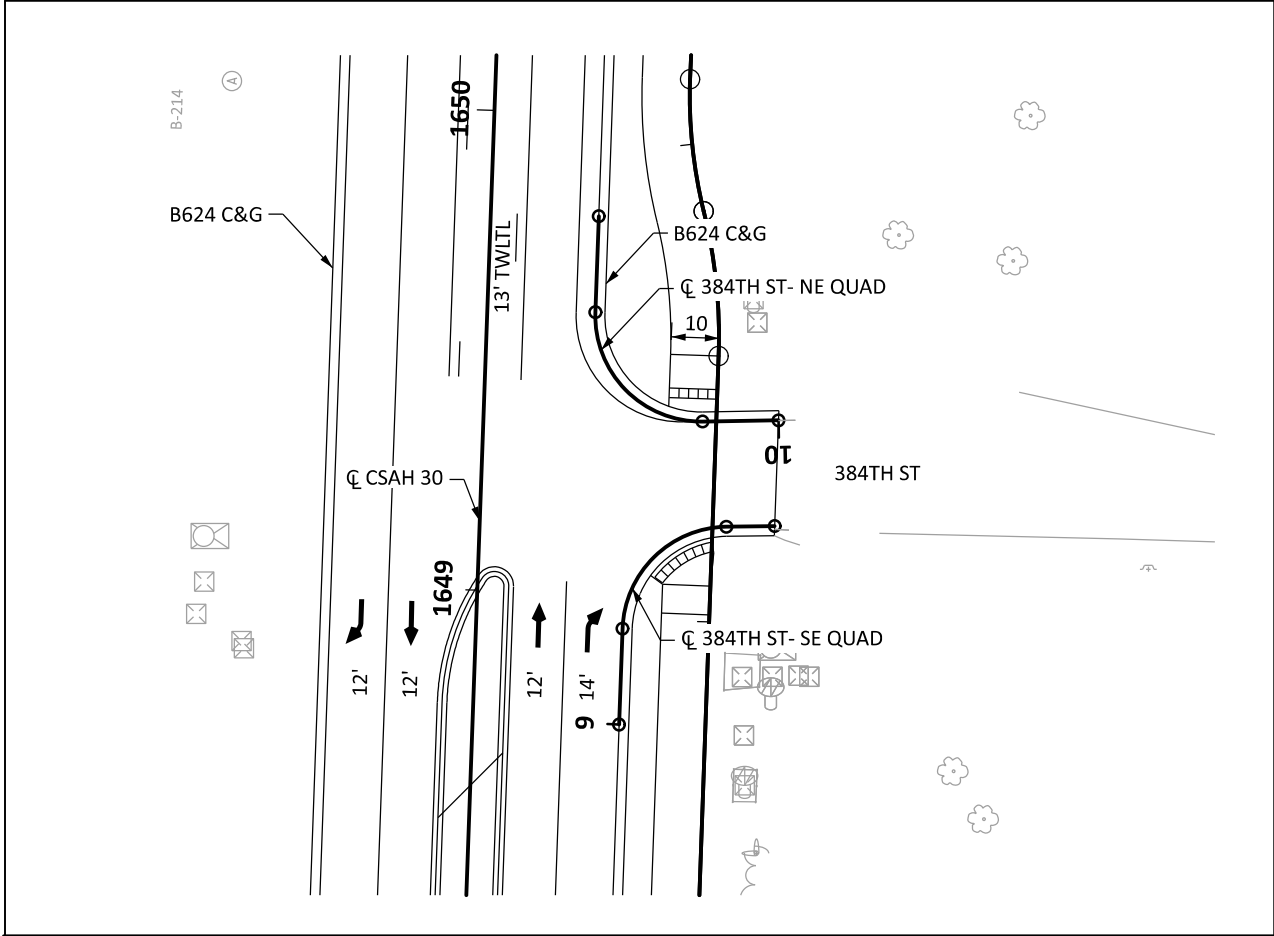
CSAH 30 (Forest Blvd) Improvements
Chisago County, Minnesota

CHISAGO COUNTY, MINNESOTA

INTERSECTIONS DETAILS
SAP 013-630-021 / SAP 225-591-007 / SAP 225-102-004

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OF
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SHEETS

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LICENSE NO. 44620



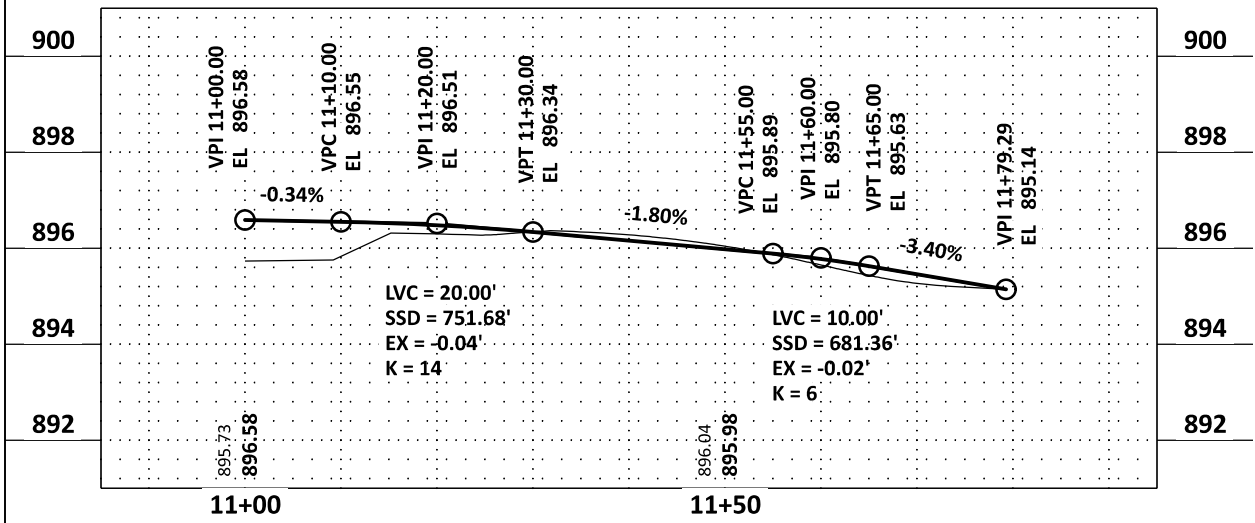
CSAH 30 (Forest Blvd) Improvements
Chisago County, Minnesota

CHISAGO COUNTY, MINNESOTA
INTERSECTIONS DETAILS
SAP 013-630-021 / SAP 225-591-007 / SAP 225-102-004

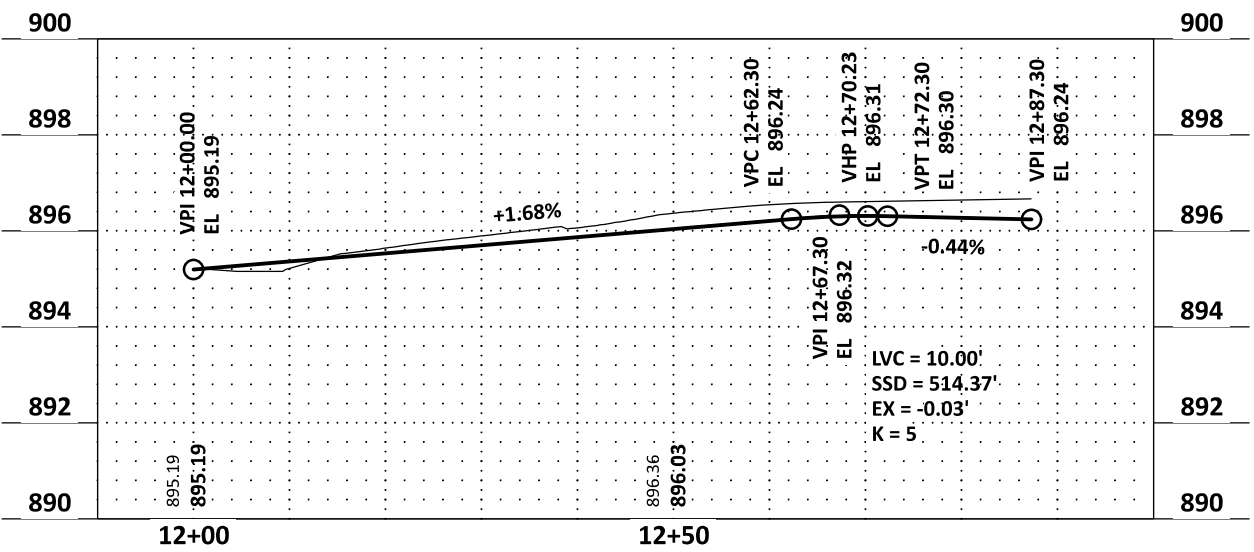
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151
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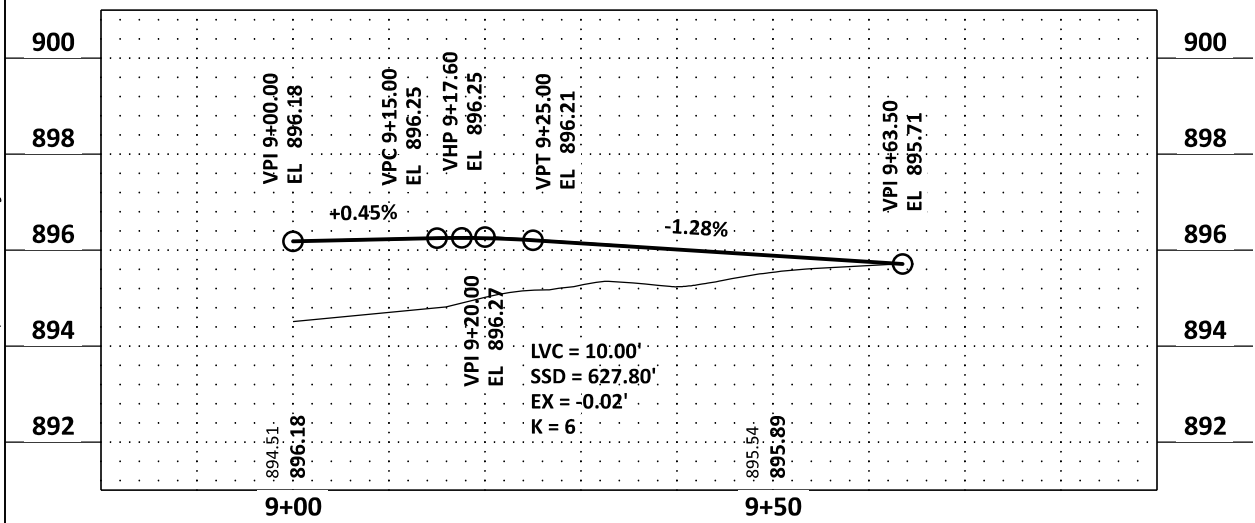
PINE ST - SOUTHEAST QUAD PROFILE



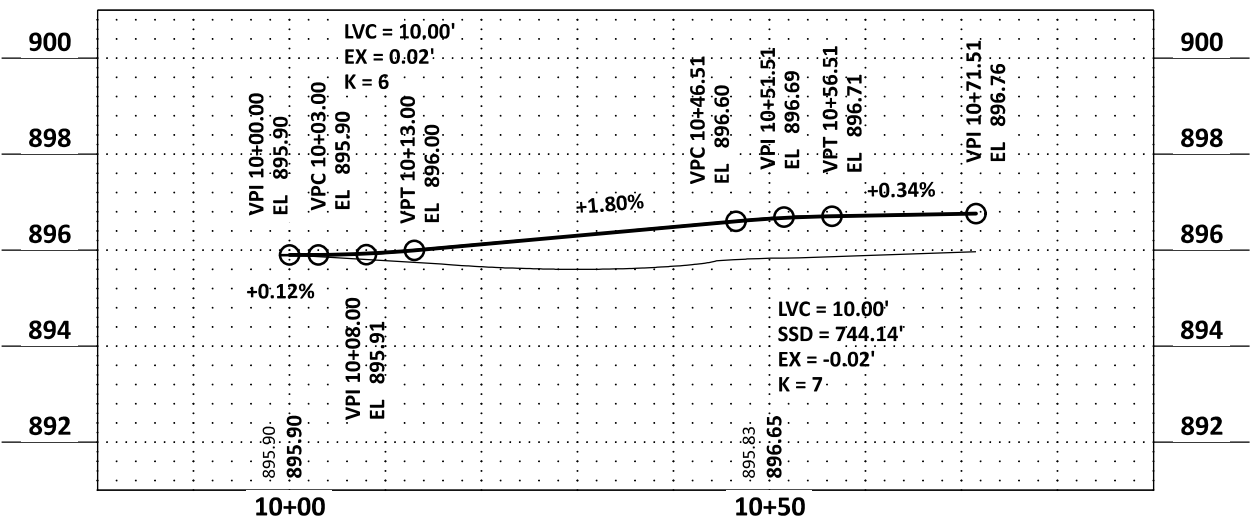
PINE ST - NORTHEAST QUAD PROFILE



384TH ST - SOUTHEAST QUAD PROFILE



384TH ST - NORTHEAST QUAD PROFILE



NO.	DATE	BY	CHK	REVISIONS

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CSAH 30 (Forest Blvd) Improvements
Chisago County, Minnesota

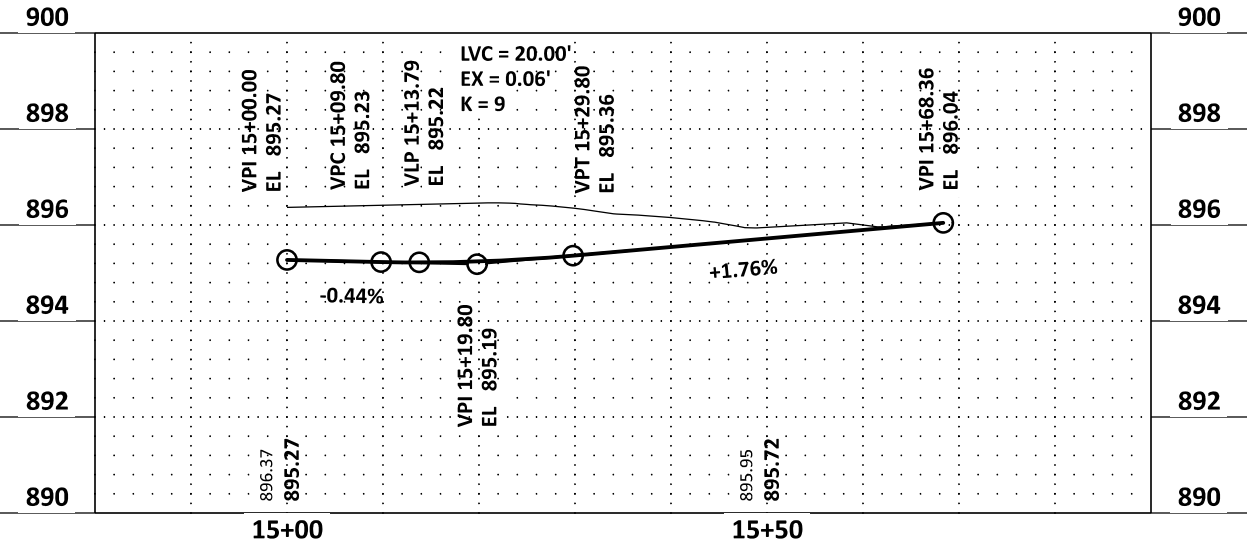
CHISAGO COUNTY, MINNESOTA

INTERSECTIONS DETAILS
SAP 013-630-021 / SAP 225-591-007 / SAP 225-102-004

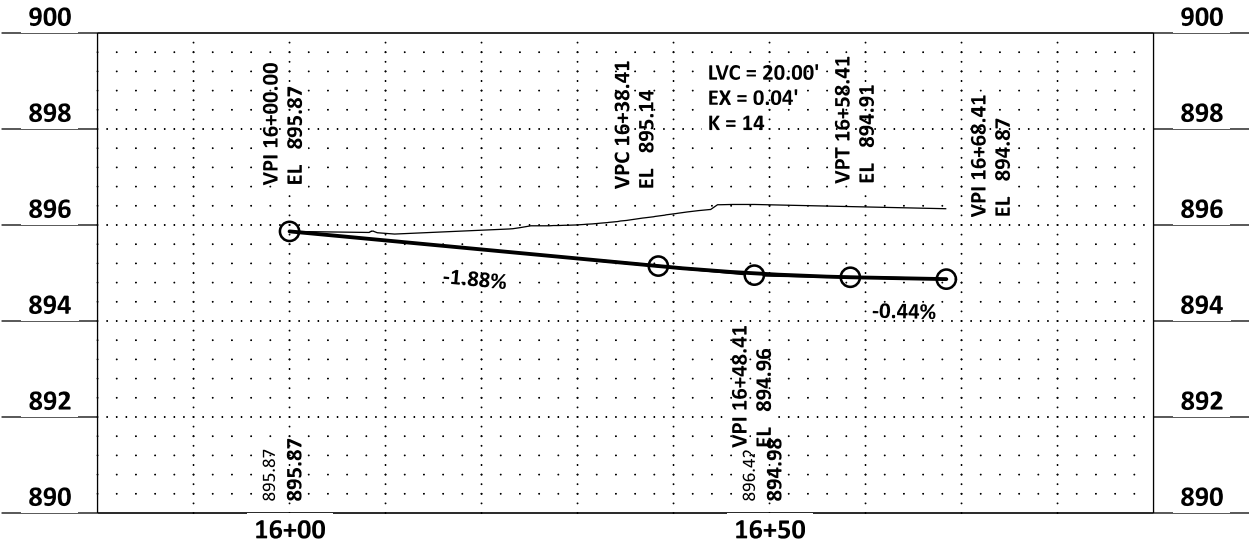
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152
OF
216
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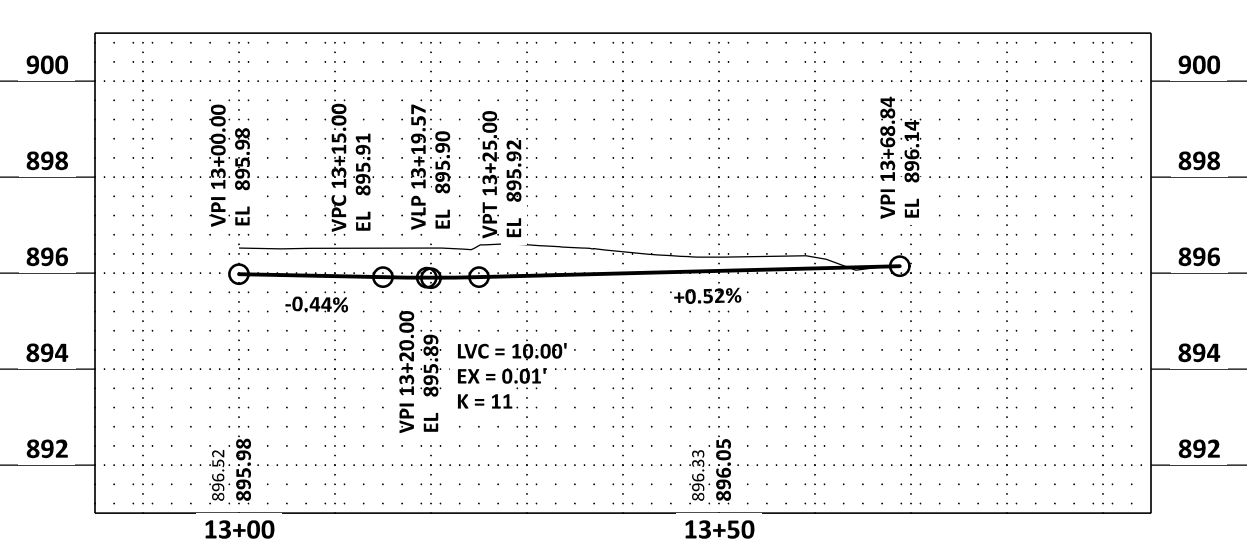
OAKWOOD ST N - SOUTHEAST QUAD PROFILE



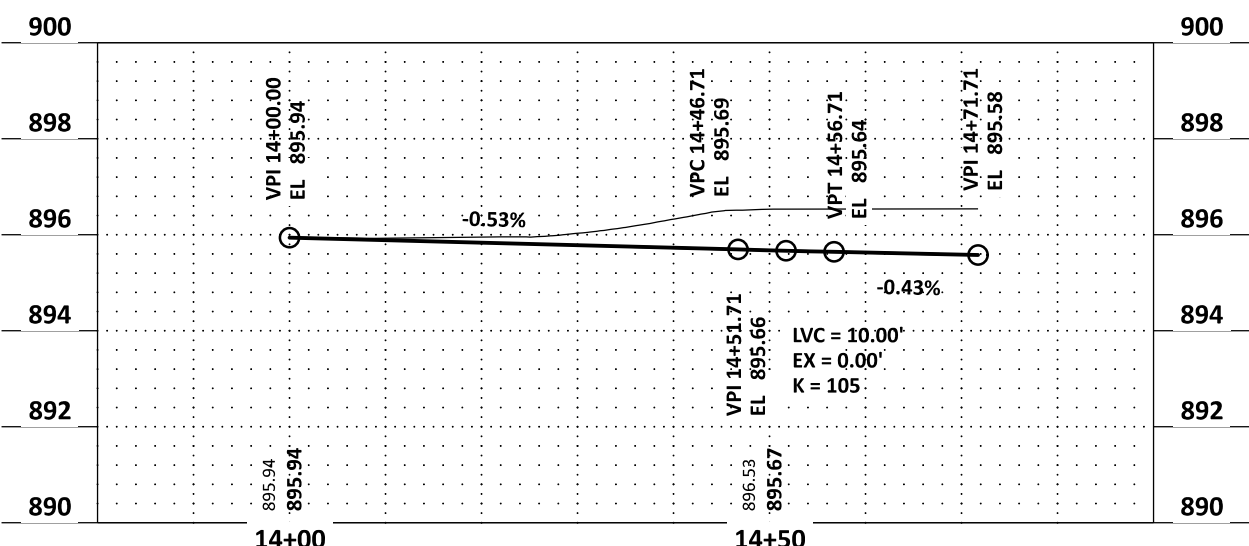
OAKWOOD ST N - NORTHEAST QUAD PROFILE



OAKWOOD ST S - SOUTHEAST QUAD PROFILE



OAKWOOD ST S - NORTHEAST QUAD PROFILE



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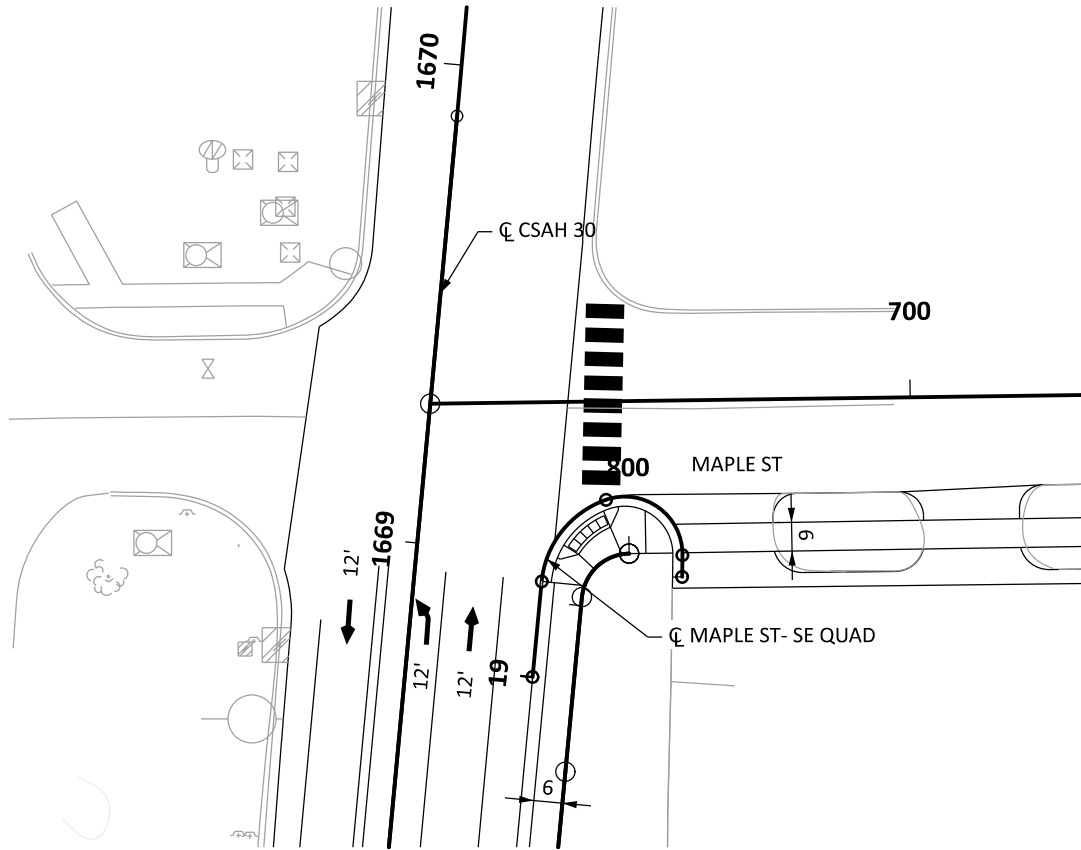
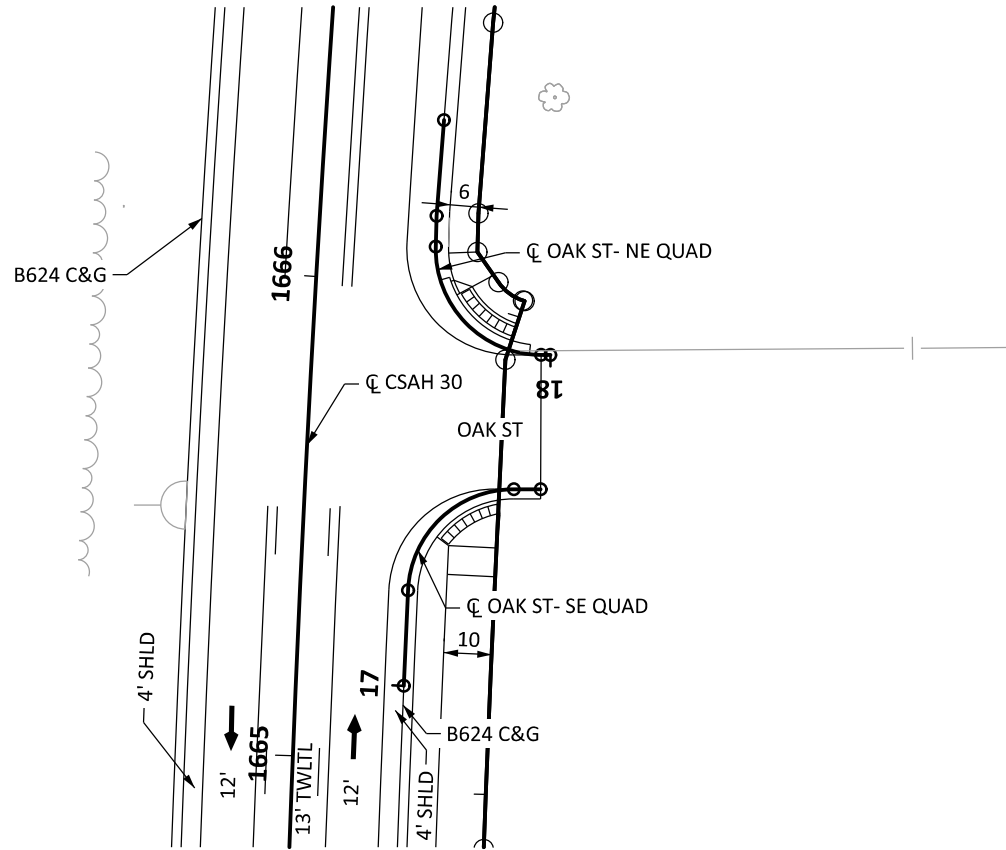
NICHOLAS E. HENTGES, PE
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CSAH 30 (Forest Blvd) Improvements
Chisago County, Minnesota

CHISAGO COUNTY, MINNESOTA
INTERSECTIONS DETAILS
SAP 013-630-021 / SAP 225-591-007 / SAP 225-102-004

SHEET 153 OF 216 SHEETS



LEGEND

- TRAFFIC FLOW
- DRAINAGE FLOW ARROW
- CONSTRUCTION LIMITS
- EXISTING R/W
- PROPOSED R/W
- TEMPORARY EASEMENT
- PERMANENT EASEMENT

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CSAH 30 (Forest Blvd) Improvements
Chisago County, Minnesota

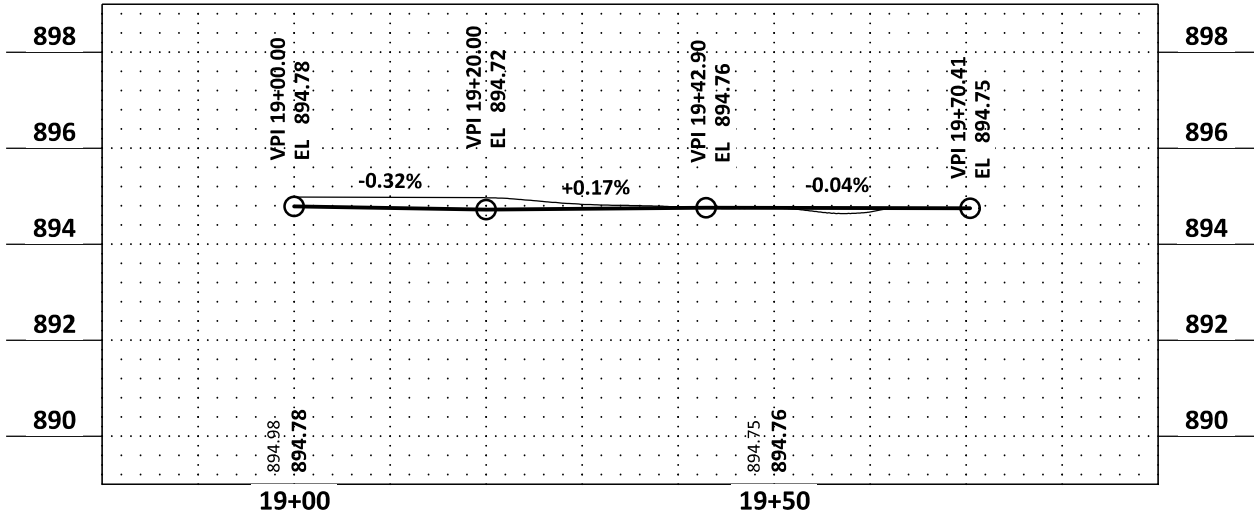
CHISAGO COUNTY, MINNESOTA

INTERSECTIONS DETAILS
SAP 013-630-021 / SAP 225-591-007 / SAP 225-102-004

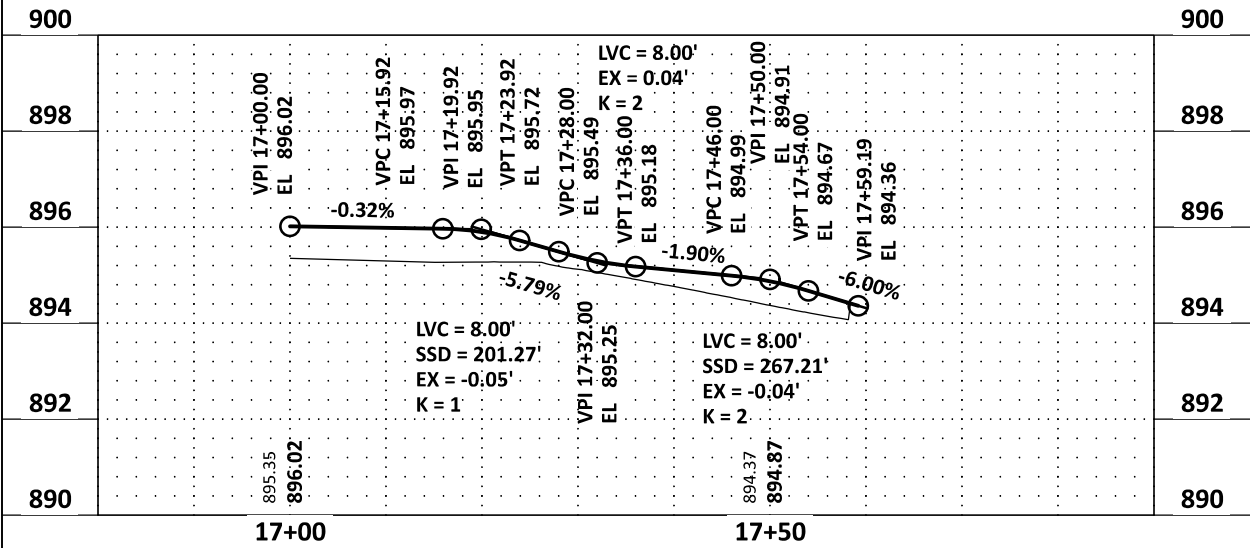
SHEET
154
OF
216
SHEETS

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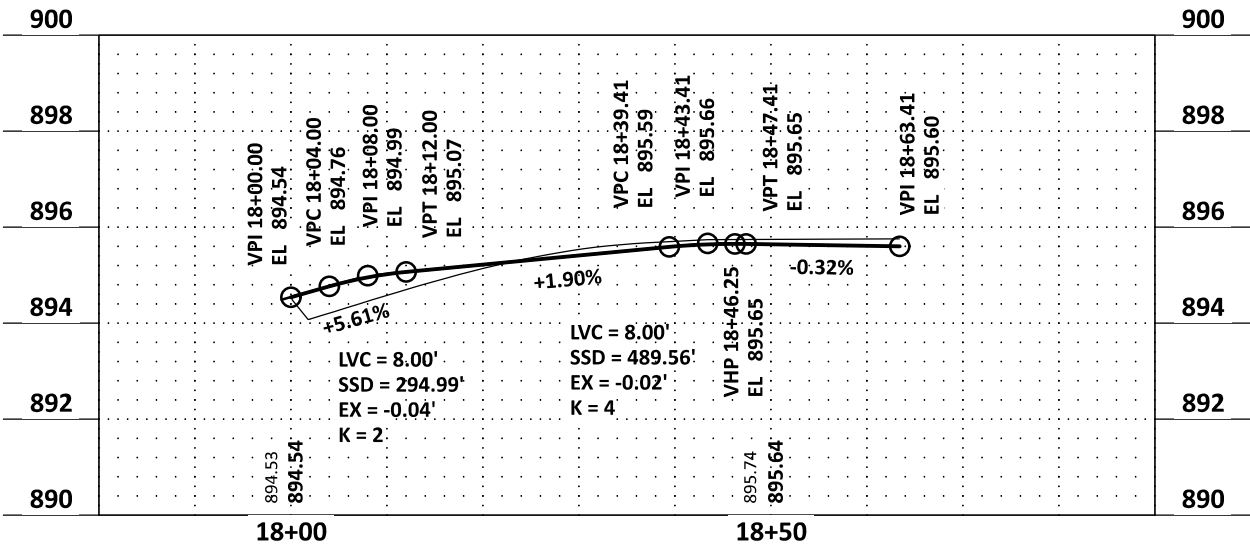
MAPLE ST - SOUTHEAST QUAD PROFILE



OAK ST - SOUTHEAST QUAD PROFILE



OAK ST - NORTHEAST QUAD PROFILE



NO.	DATE	BY	CHK	REVISIONS

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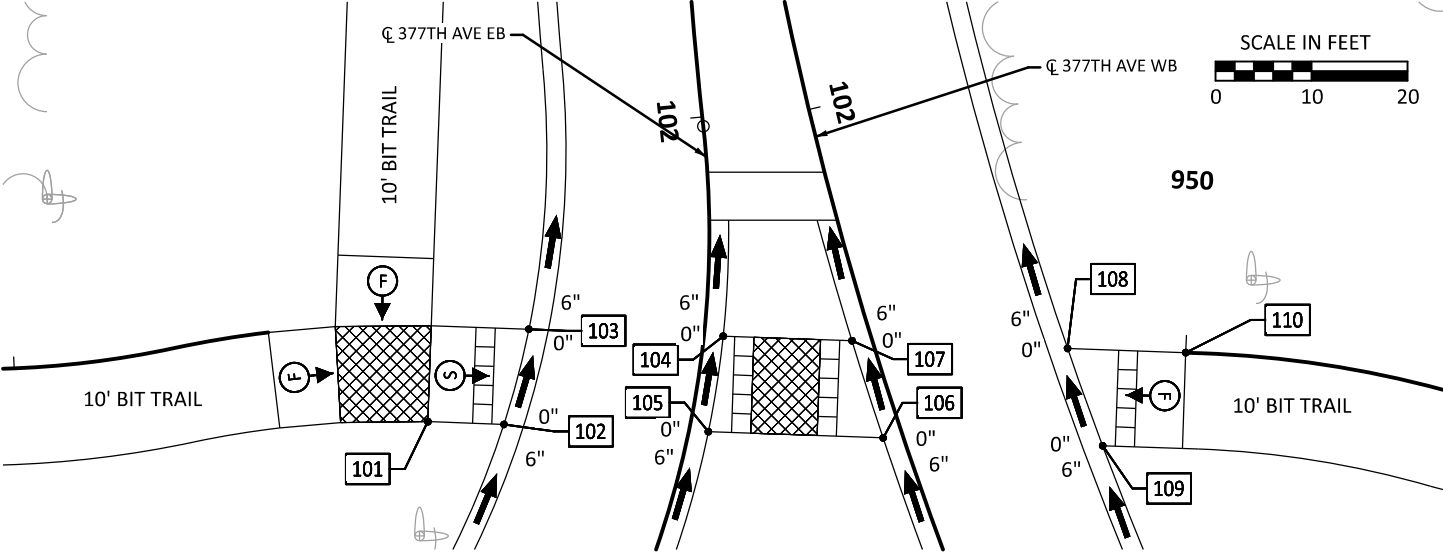
CSAH 30 (Forest Blvd) Improvements
Chisago County, Minnesota

CHISAGO COUNTY, MINNESOTA

INTERSECTIONS DETAILS
SAP 013-630-021 / SAP 225-591-007 / SAP 225-102-004

SHEET
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OF
216
SHEETS

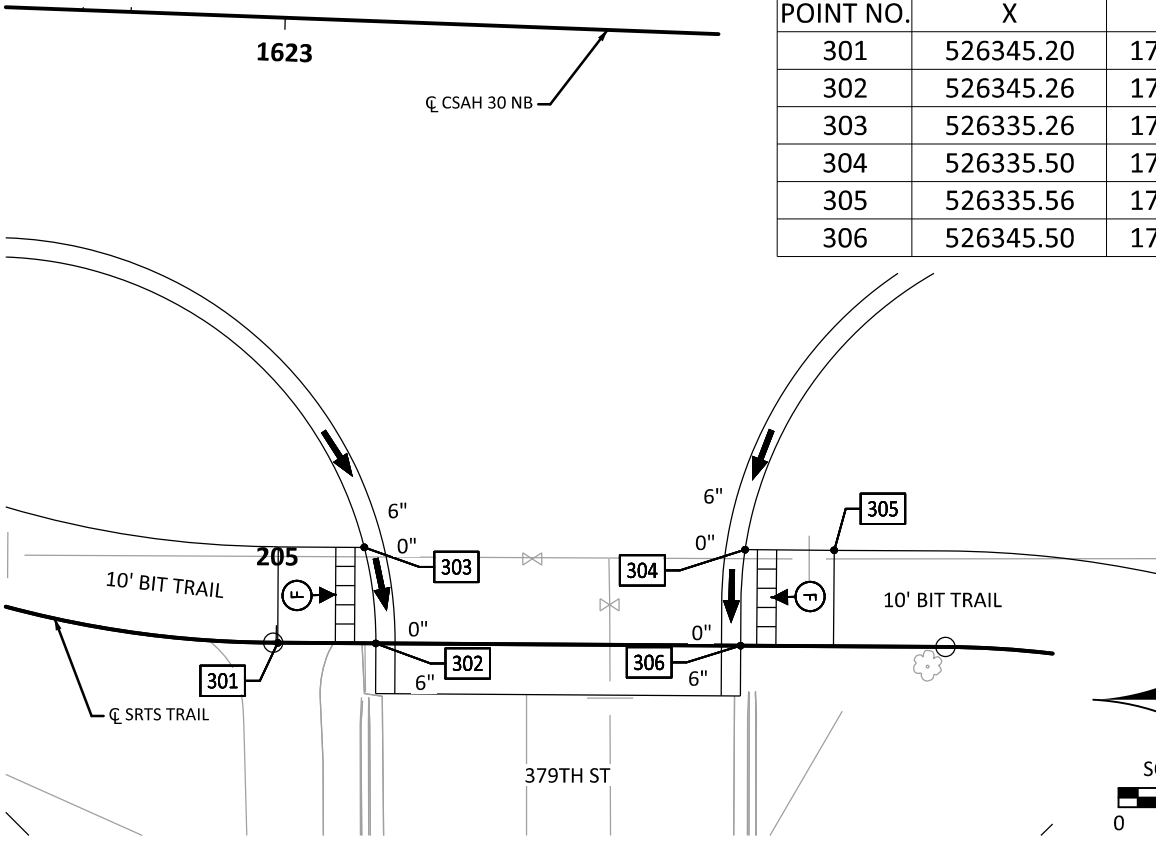
CSAH 30 AT 377TH ST WEST LEG



POINT NO.	X	Y	ELEV
101	526135.73	172840.07	917.12
102	526136.02	172847.99	916.64
103	526126.10	172850.58	916.49
104	526126.82	172870.83	916.78
105	526136.78	172869.28	917.03

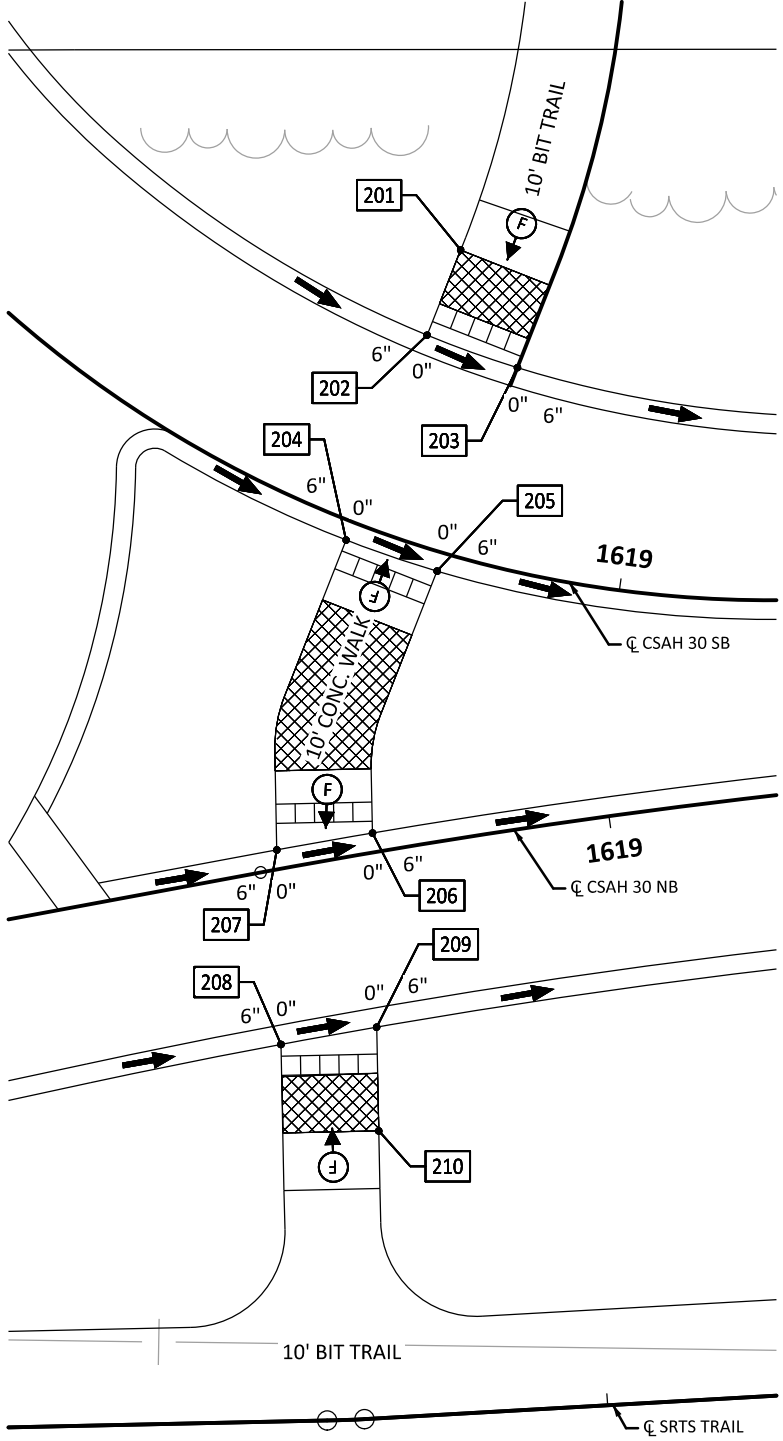
106	526137.42	172887.49	916.82
107	526127.30	172884.24	916.70
108	526128.13	172906.70	916.45
109	526138.24	172910.35	916.57
110	526128.54	172919.01	916.76

CSAH 30 AT 379TH ST



POINT NO.	X	Y	ELEV
301	526345.20	173398.20	909.11
302	526345.26	173408.41	908.75
303	526335.26	173407.21	908.94
304	526335.50	173446.88	908.94
305	526335.56	173456.16	909.26
306	526345.50	173446.41	908.75

CSAH 30 AT 377TH ST NORTH LEG



POINT NO.	X	Y	ELEV
201	526217.88	172984.03	916.14
202	526226.74	172980.54	915.81
203	526230.12	172989.95	915.63
204	526248.08	172972.11	916.20
205	526251.32	172981.59	916.05
206	526278.60	172974.86	915.98
207	526280.36	172964.89	916.13
208	526300.62	172965.32	915.86
209	526298.82	172975.28	915.70
210	526315.63	172975.64	916.08

LEGEND

XXX

CONTROL POINTS AT PED. RAMP AND GUTTER FLOW LINE

DRAINAGE FLOW ARROW

CATCH BASIN

TRUNCATED DOMES

X"

CURB HEIGHT

LANDING AREA - 4' X 4' MIN. DIMENSIONS AND MAX 2.0% SLOPE IN ALL DIRECTIONS

INDICATES PEDESTRIAN RAMP - SLOPE SHALL BE BETWEEN 5.0% MINIMUM AND 8.3% MAXIMUM IN THE DIRECTION SHOWN AND CROSS SLOPE SHALL NOT EXCEED 2.0%.

INDICATES PEDESTRIAN RAMP - SLOPE SHALL BE GREATER THAN 2.0% AND LESS THAN 5.0% IN THE DIRECTION SHOWN AND CROSS SLOPE SHALL NOT EXCEED 2.0%.

MAX. 2.0% SLOPE IN ALL DIRECTIONS

GENERAL NOTES

- MAINTAIN A MINIMUM 4' WIDE PEDESTRIAN ACCESS ROUTE OBSTRUCTION TO OBSTRUCTION AND/OR OBSTRUCTION TO FAR EDGE OF WALK.

- THE CROSS SLOPE OF THE PEDESTRIAN ACCESS ROUTE SHALL NOT EXCEED 0.020 FT/FT

- PROVIDE A SAWCUT (INCIDENTAL) AT ALL CONCRETE WALK AND BITUMINOUS TRAIL REMOVAL LIMITS.

- ALL CURB RAMPS AND LANDING AREAS SHALL BE 6" CONCRETE WALK ON 6" AGGREGATE BASE (CV) CLASS 5 AND 12" SELECT GRANULAR EMBANKMENT.

NO.	DATE	BY	CHK	REVISIONS

Design By: NEH

Plan By: MKV

Checked By: MAN

Approved By: NEH

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NICHOLAS E. HENTGES, PE

DATE: 9/12/2024

LICENSE NO. 44620

wsb

Chisago COUNTY USA

CSAH 30 (Forest Blvd) Improvements

Chisago County, Minnesota

CHISAGO COUNTY, MINNESOTA

PEDESTRIAN RAMP DETAILS

SAP 013-630-021 / SAP 225-591-007 / SAP 225-102-004

SHEET 156 OF 216 SHEETS

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POINT NO.	X	Y	ELEV
401	526359.43	174409.24	897.47
402	526359.77	174418.88	897.13
403	526349.75	174418.54	897.32
404	526350.89	174448.21	897.07
405	526351.14	174457.13	897.38
406	526360.81	174447.86	896.98

1634

CL CSAH 30 NB

215

10' BIT TRAIL

CL SRTS TRAIL

381ST ST

SCALE IN FEET

0 10 20

POINT NO.	X	Y	ELEV
501	526354.13	175029.55	892.44
502	526351.47	175031.05	892.39
503	526363.50	175042.78	892.10
504	526366.45	175072.92	892.09
505	526352.80	175079.79	892.41
506	526356.23	175090.86	892.53

Design By:	NEH
Plan By:	MKV
Checked By:	MAN
Approved By:	NEH

wsb



CSAH 30 (Forest Blvd) Improvements

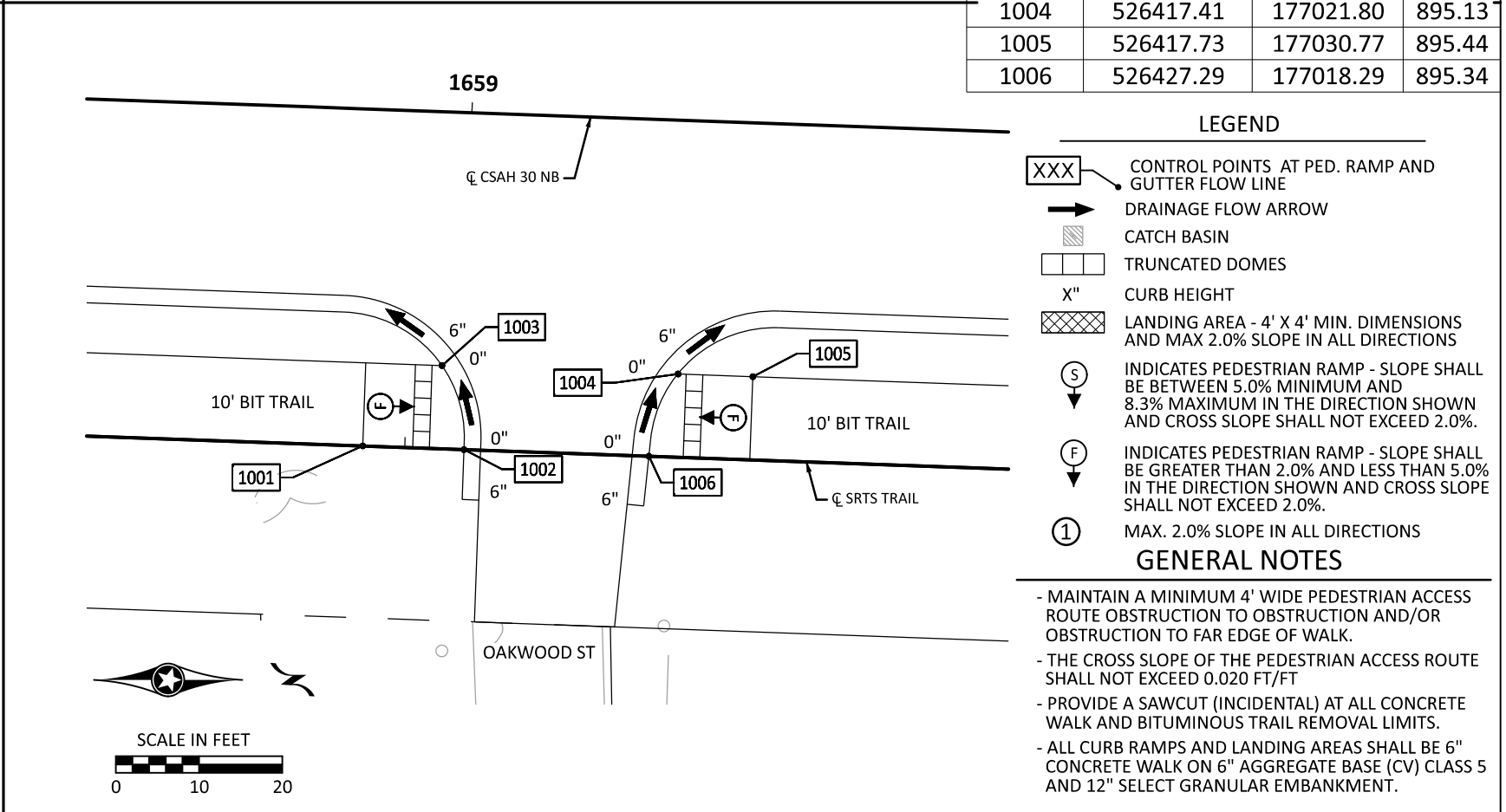
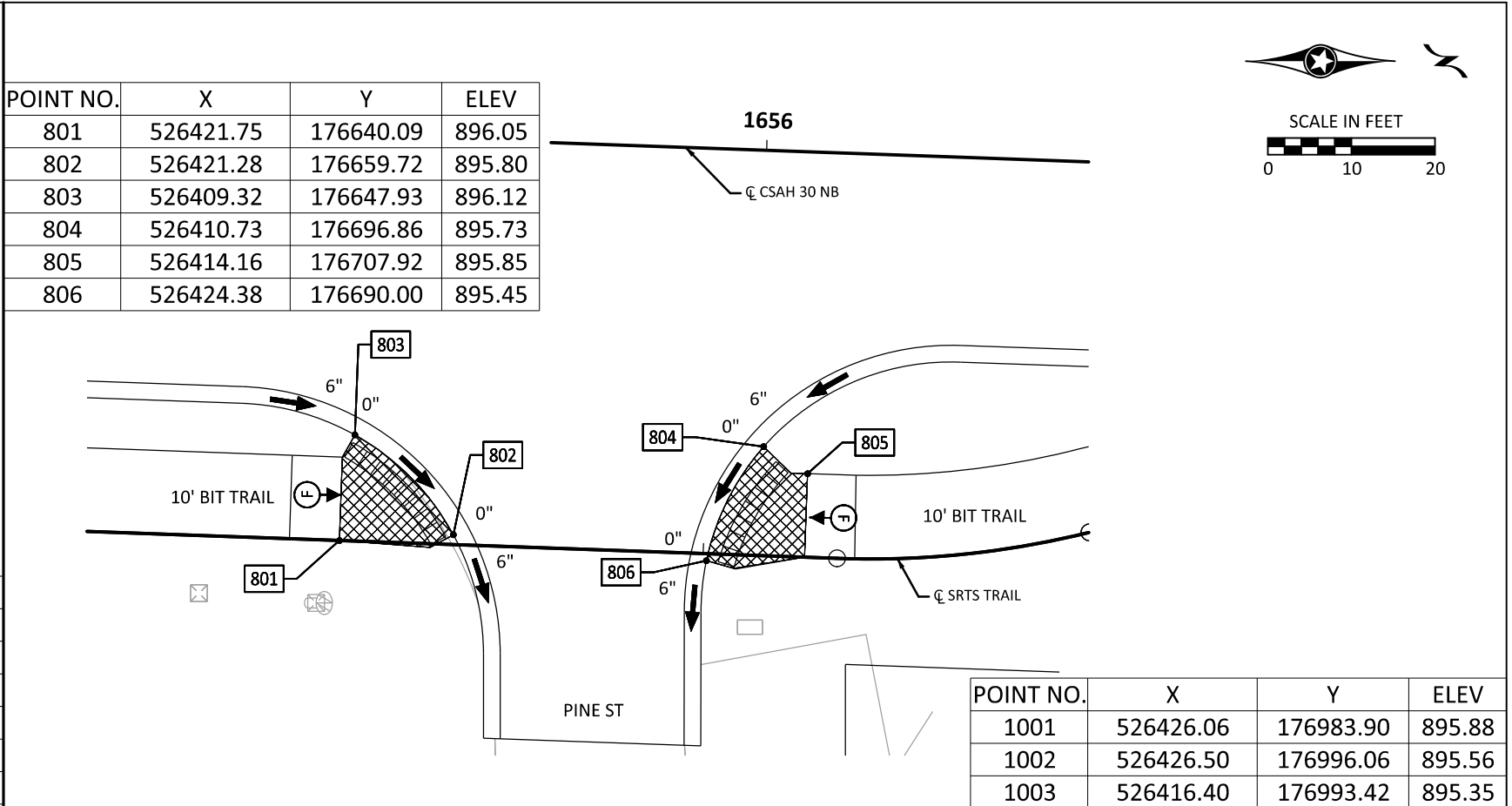
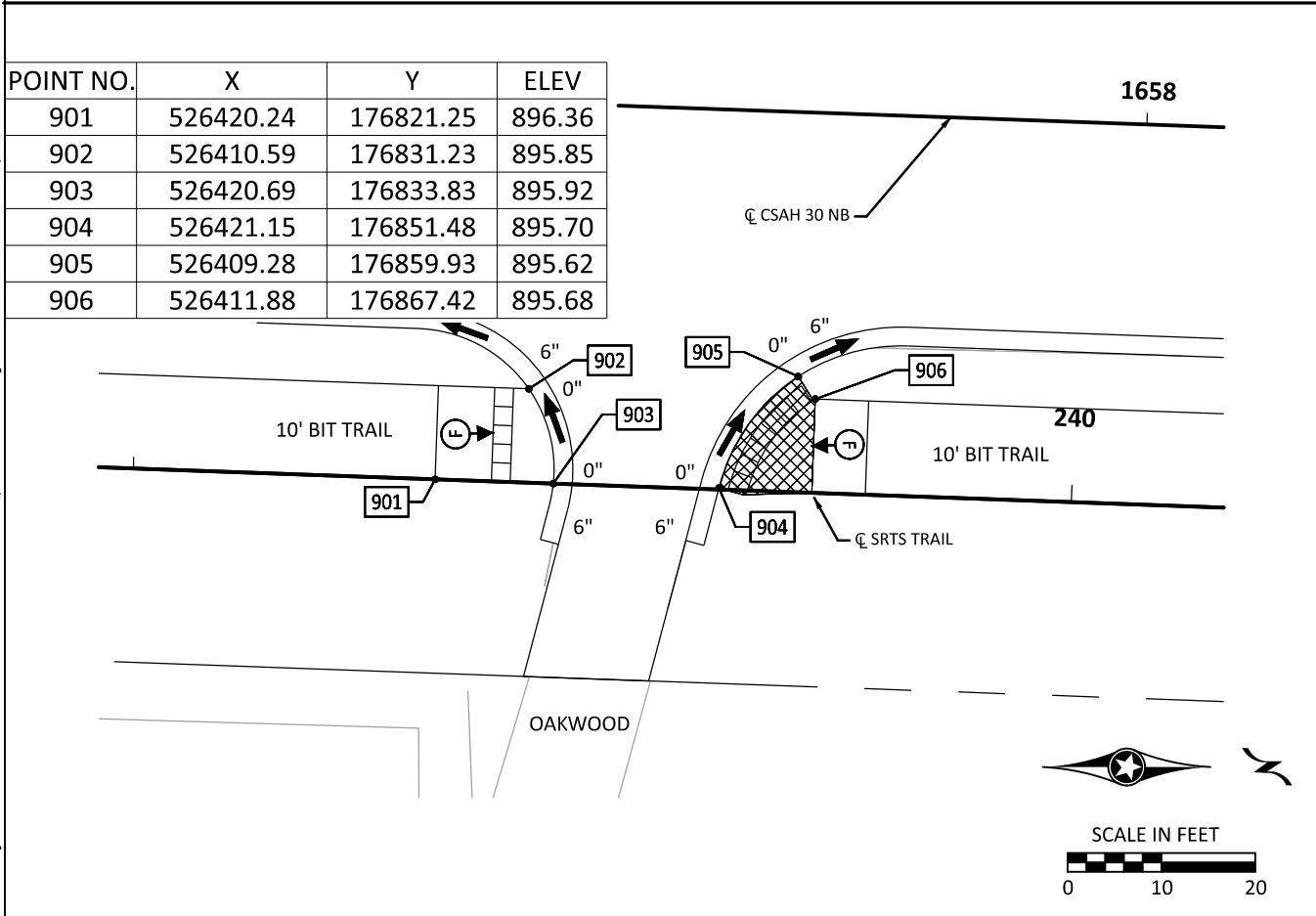
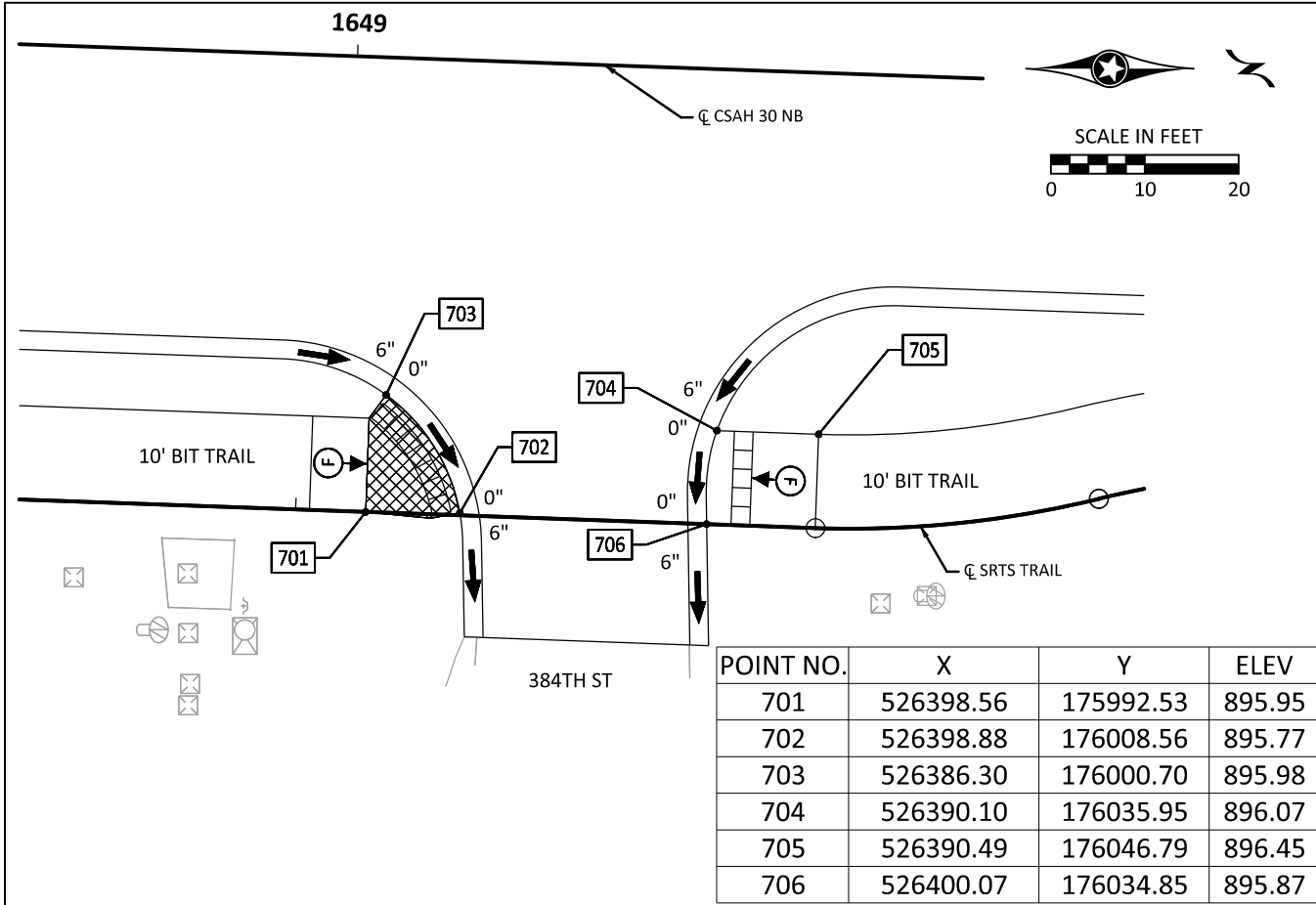
Chisago County, Minnesota

CHISAGO COUNTY, MINNESOTA

PEDESTRIAN RAMP DETAILS
SAP 013-630-021 / SAP 225-591-007 / SAP 225-102-004

HEET
157
OF
216
HEETS

DATE: 9/12/2024 2:06:42 PM
PATH & FILENAME: Projects\Minnesota\023661-000\03_Discipline\Roadway\Sheets\023661-000_ped



- LEGEND**
- XXX CONTROL POINTS AT PED. RAMP AND GUTTER FLOW LINE
 - DRAINAGE FLOW ARROW
 - ▨ CATCH BASIN
 - ▢ TRUNCATED DOMES
 - X" CURB HEIGHT
 - ▨ LANDING AREA - 4' X 4' MIN. DIMENSIONS AND MAX 2.0% SLOPE IN ALL DIRECTIONS
 - S INDICATES PEDESTRIAN RAMP - SLOPE SHALL BE BETWEEN 5.0% MINIMUM AND 8.3% MAXIMUM IN THE DIRECTION SHOWN AND CROSS SLOPE SHALL NOT EXCEED 2.0%.
 - F INDICATES PEDESTRIAN RAMP - SLOPE SHALL BE GREATER THAN 2.0% AND LESS THAN 5.0% IN THE DIRECTION SHOWN AND CROSS SLOPE SHALL NOT EXCEED 2.0%.
 - ① MAX. 2.0% SLOPE IN ALL DIRECTIONS
- GENERAL NOTES**
- MAINTAIN A MINIMUM 4' WIDE PEDESTRIAN ACCESS ROUTE OBSTRUCTION TO OBSTRUCTION AND/OR OBSTRUCTION TO FAR EDGE OF WALK.
 - THE CROSS SLOPE OF THE PEDESTRIAN ACCESS ROUTE SHALL NOT EXCEED 0.020 FT/FT
 - PROVIDE A SAWCUT (INCIDENTAL) AT ALL CONCRETE WALK AND BITUMINOUS TRAIL REMOVAL LIMITS.
 - ALL CURB RAMPS AND LANDING AREAS SHALL BE 6" CONCRETE WALK ON 6" AGGREGATE BASE (CV) CLASS 5 AND 12" SELECT GRANULAR EMBANKMENT.

NO.	DATE	BY	CHK	REVISIONS

Design By: NEH
Plan By: MKV
Checked By: MAN
Approved By: NEH

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.

NICHOLAS E. HENTZ, PE
DATE: 9/12/2024 LICENSE NO. 44620



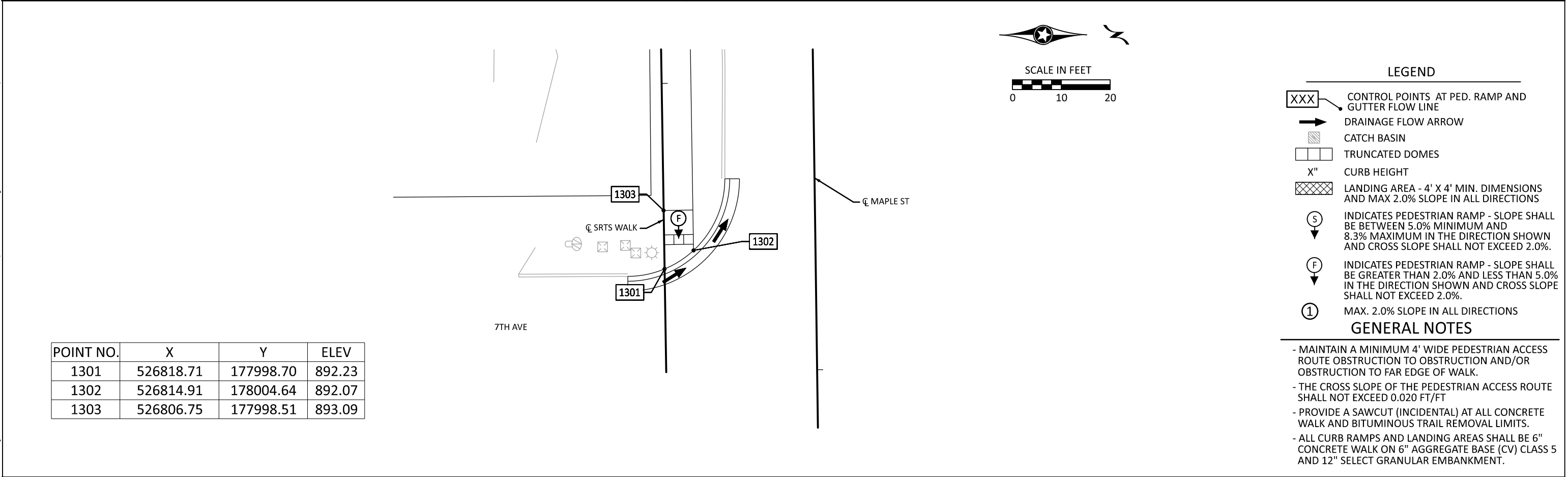
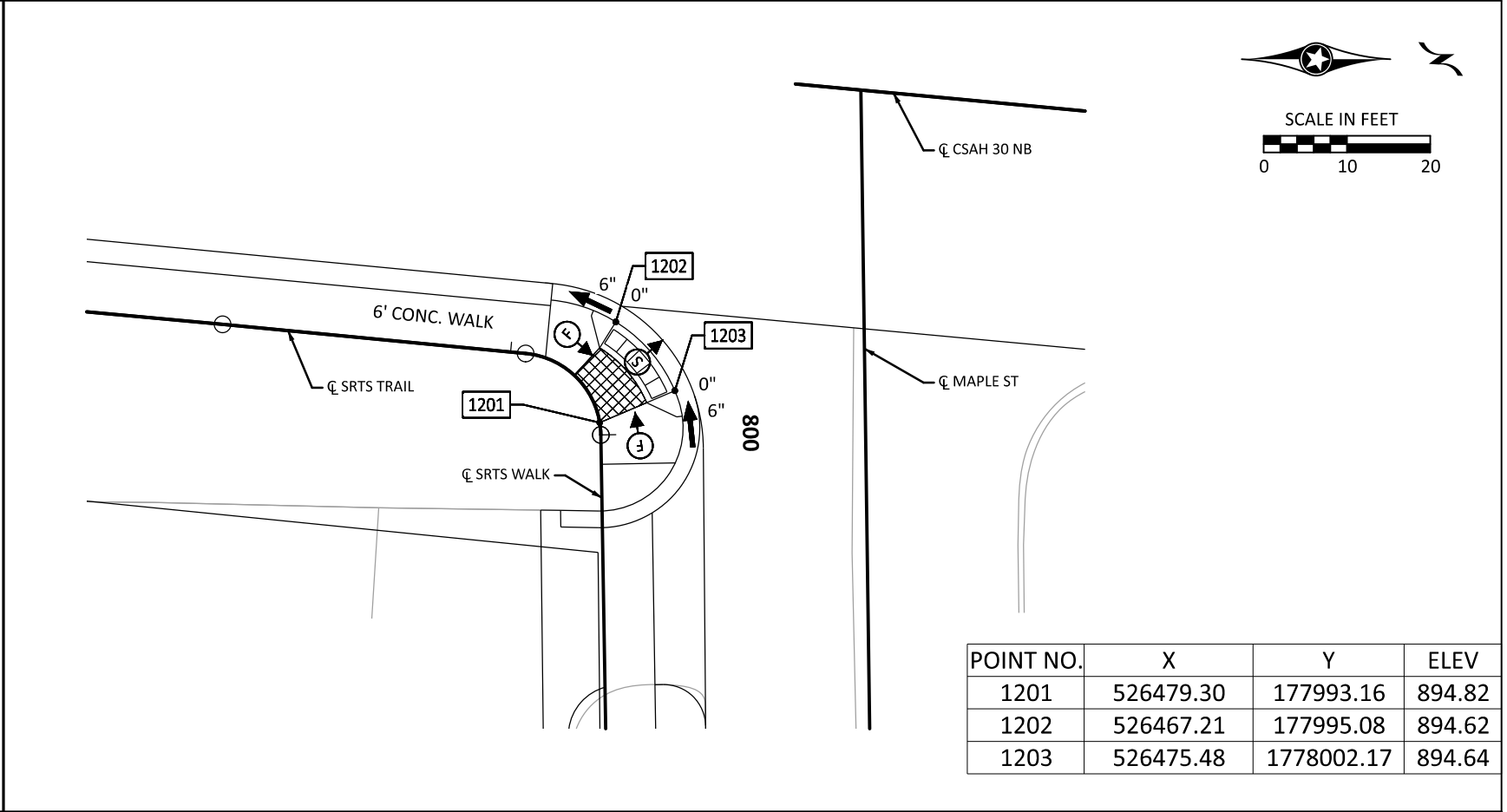
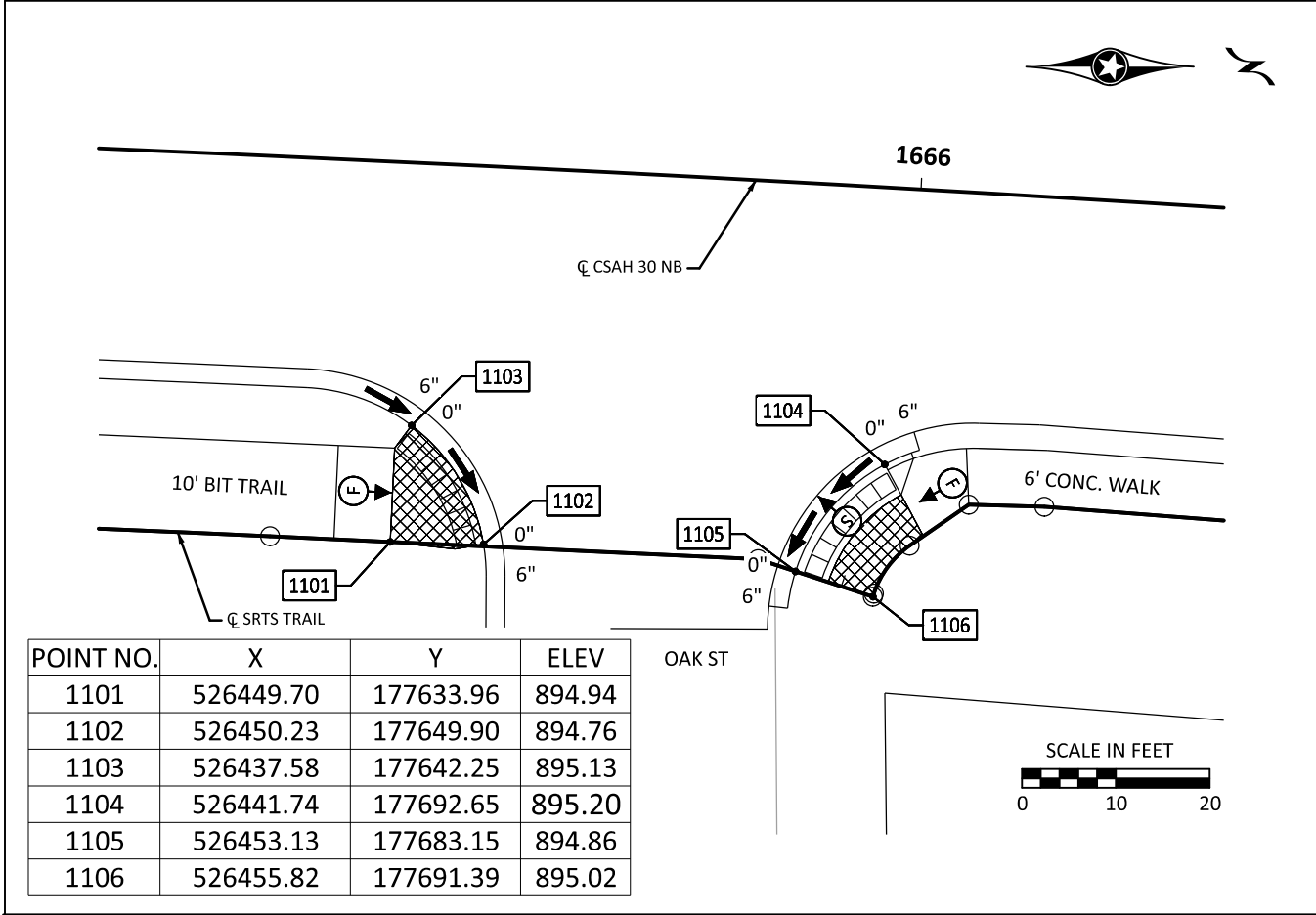
CSAH 30 (Forest Blvd) Improvements
Chisago County, Minnesota

CHISAGO COUNTY, MINNESOTA

PEDESTRIAN RAMP DETAILS
SAP 013-630-021 / SAP 225-591-007 / SAP 225-102-004

SHEET 158 OF 216 SHEETS

DATE: 9/12/2024 2:06:43 PM
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NO.	DATE	BY	CHK	REVISIONS

Design By: NEH
Plan By: MKV
Checked By: MAN
Approved By: NEH

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NICHOLAS E. HENTZ, PE
DATE: 9/12/2024
LICENSE NO. 44620

DATE: 9/12/2024 2:06:55 PM
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POINT NO.	X	Y	ELEV
2200	526328.21	170507.86	911.93
2201	526362.80	170501.71	909.78
2202	526362.60	170513.90	909.95
2203	526327.96	170523.49	911.86

POINT NO.	X	Y
RP2200	526350.60	170483.56
RP2201	526349.73	170538.21

POINT NO.	X	Y	ELEV
2300	526324.00	170773.25	910.79
2301	526353.85	170777.11	907.94
2302	526353.55	170796.48	907.86
2303	526323.63	170796.57	910.69

POINT NO.	X	Y
RP2300	526346.28	170755.96
RP2301	526345.32	170816.51

POINT NO.	X	Y	ELEV
2400	526351.21	171400.40	911.77
2401	526377.48	171426.79	910.99
2402	526378.99	171439.97	910.74
2403	526397.51	171437.85	910.68
2404	526430.34	171407.75	910.27
2405	526447.60	171387.28	910.12
2406	526438.23	171372.56	907.68
2407	526424.02	171372.41	908.34
2408	526411.52	171383.87	910.54

POINT NO.	X	Y
RP2400	526347.68	171430.19
RP2401	526427.51	171437.61
RP2402	526448.55	171377.33
RP2403	526412.47	171373.91

POINT NO.	X	Y	ELEV
2500	526344.63	172054.65	921.00
2501	526350.86	172048.91	918.31
2502	526392.48	172048.35	918.23
2503	526412.61	172058.08	919.35

POINT NO.	X	Y
RP2500	526300.36	172000.43
RP2501	526412.28	172033.08

NO.	DATE	BY	CHK	REVISIONS

Design By: NEH
Plan By: MKV
Checked By: MAN
Approved By: NEH

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NICHOLAS E. HENTGES, PE
DATE: 9/12/2024 LICENSE NO. 44620



CSAH 30 (Forest Blvd) Improvements
Chisago County, Minnesota

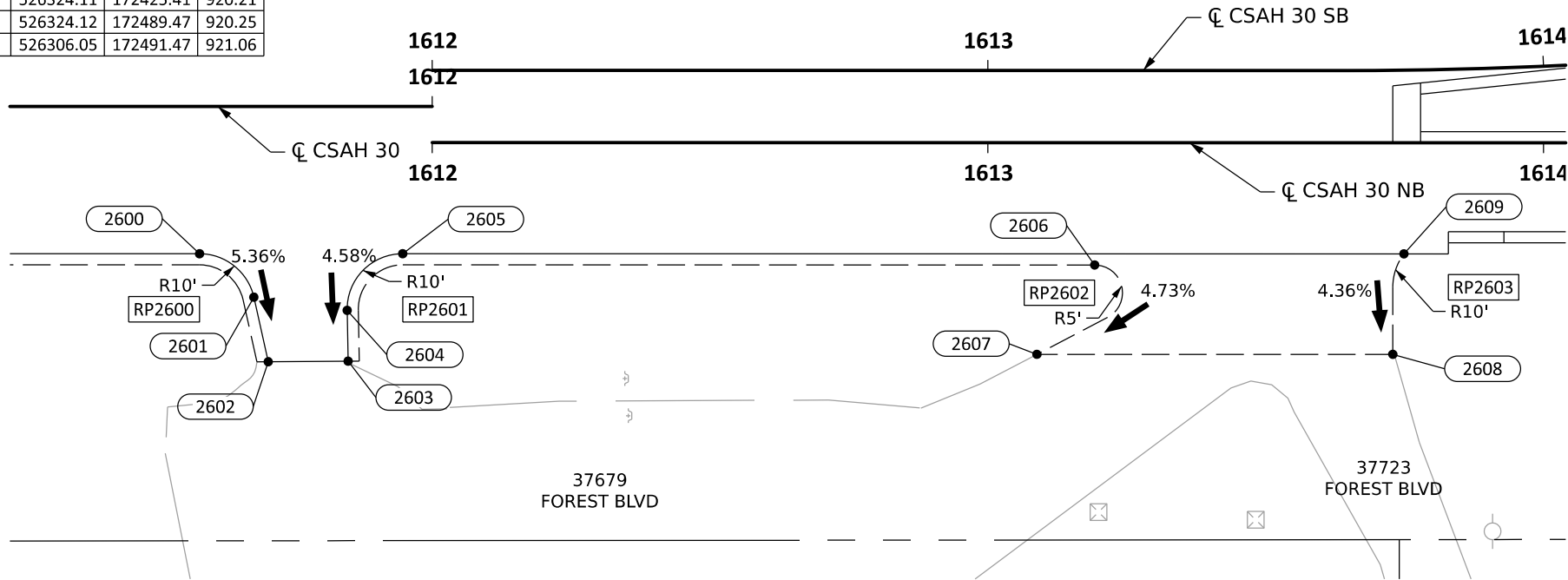
CHISAGO COUNTY, MINNESOTA

DRIVEWAY DETAILS
SAP 013-630-021 / SAP 225-591-007 / SAP 225-102-004

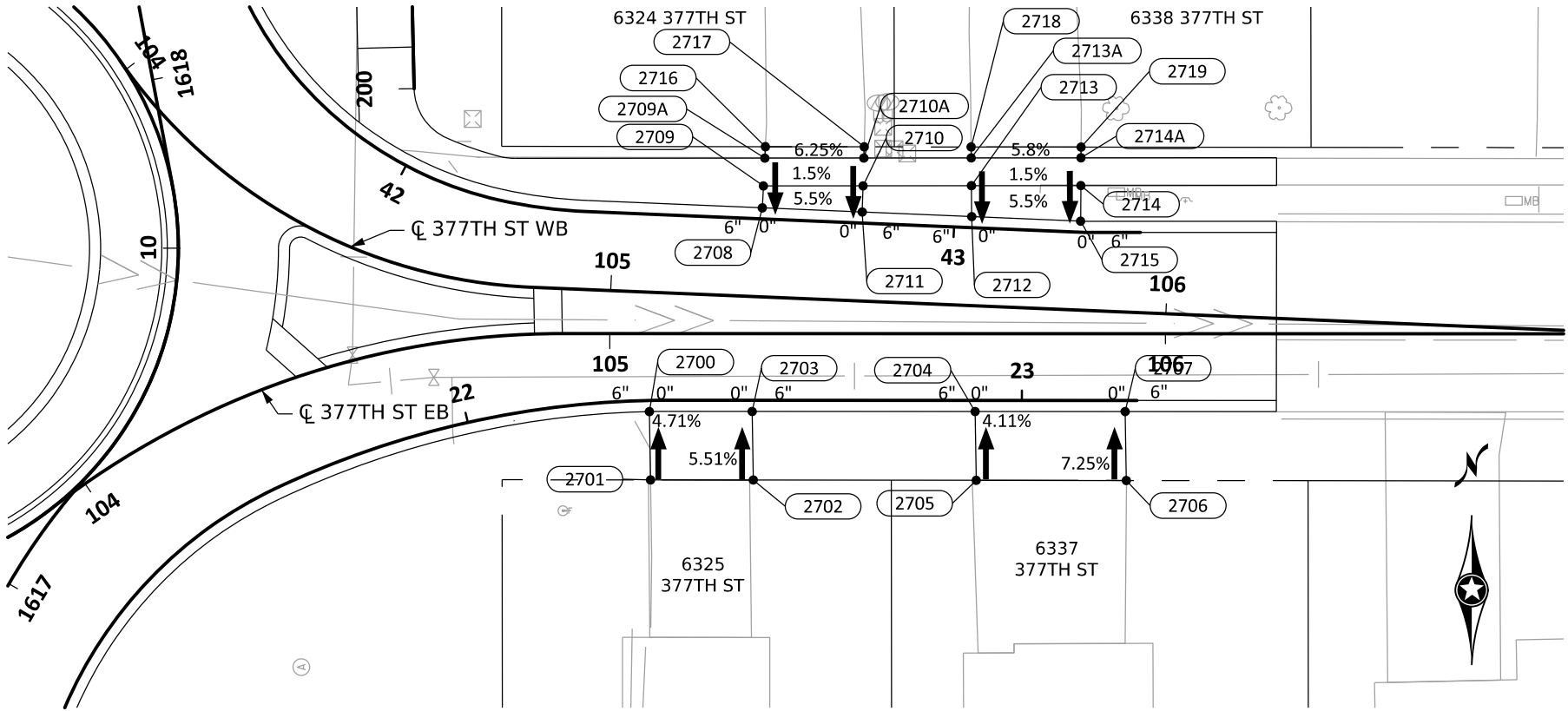
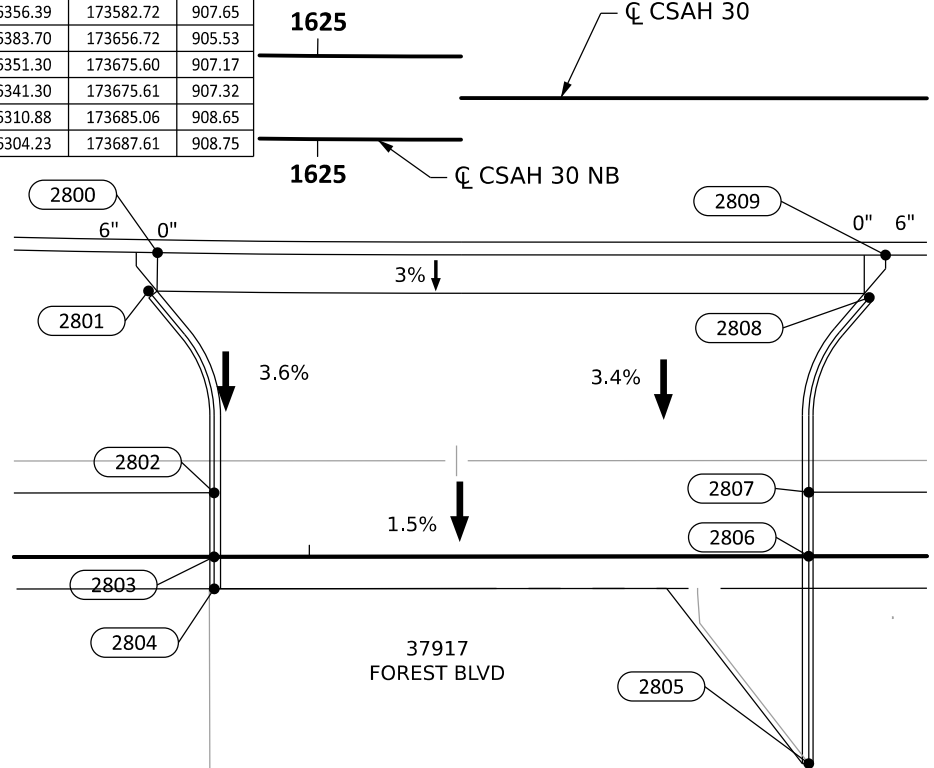
SHEET
160
OF
216
SHEETS

POINT NO.	X	Y	ELEV
2600	526306.02	172274.73	922.40
2601	526313.84	172284.49	921.68
2602	526325.46	172287.08	921.04
2603	526325.35	172301.46	921.10
2604	526316.21	172301.29	921.52
2605	526306.02	172311.29	922.25
2606	526308.04	172435.82	921.51
2607	526324.11	172425.41	920.21
2608	526324.12	172489.47	920.25
2609	526306.05	172491.47	921.06

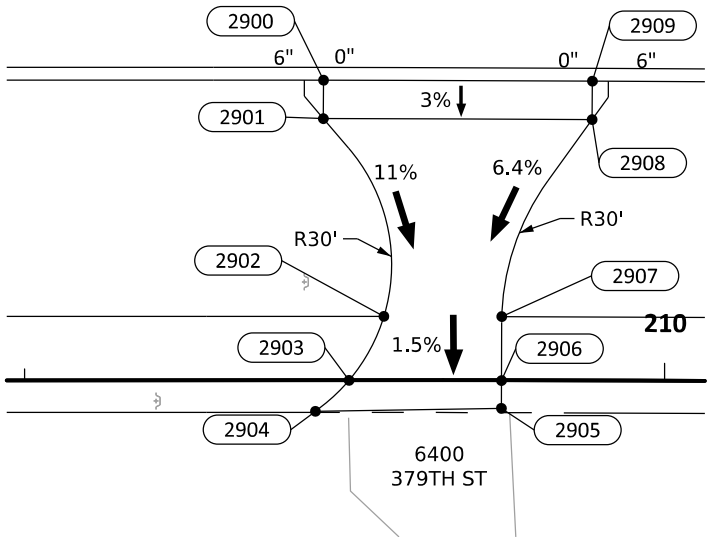
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RP2600	526316.02	172274.73
RP2601	526316.02	172311.29
RP2602	526313.04	172435.82
RP2603	526312.05	172499.47



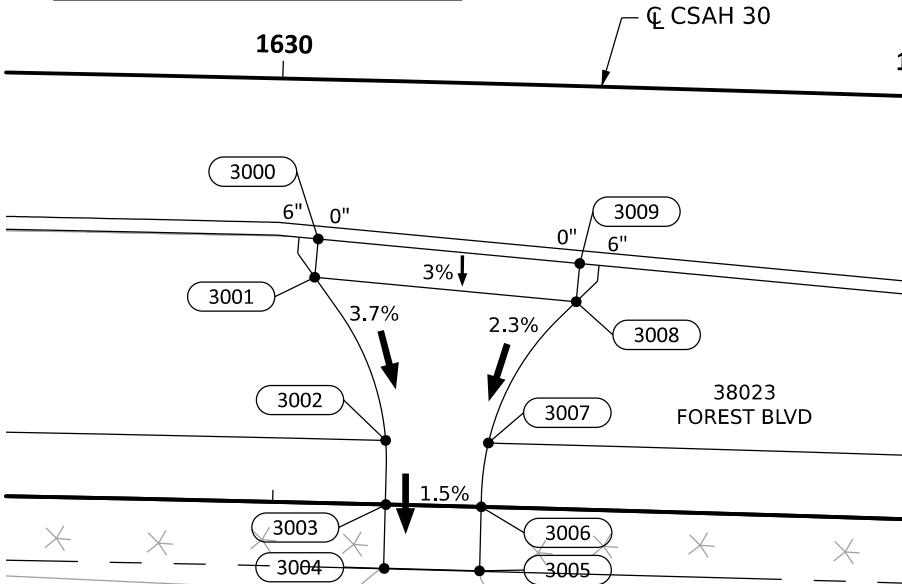
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2800	526303.84	173572.54	909.66
2801	526309.84	173572.45	909.48
2802	526341.39	173582.70	908.24
2803	526351.39	173582.71	908.09
2804	526356.39	173582.72	907.65
2805	526383.70	173656.72	905.53
2806	526351.30	173675.60	907.17
2807	526341.30	173675.61	907.32
2808	526310.88	173685.06	908.65
2809	526304.23	173687.61	908.75



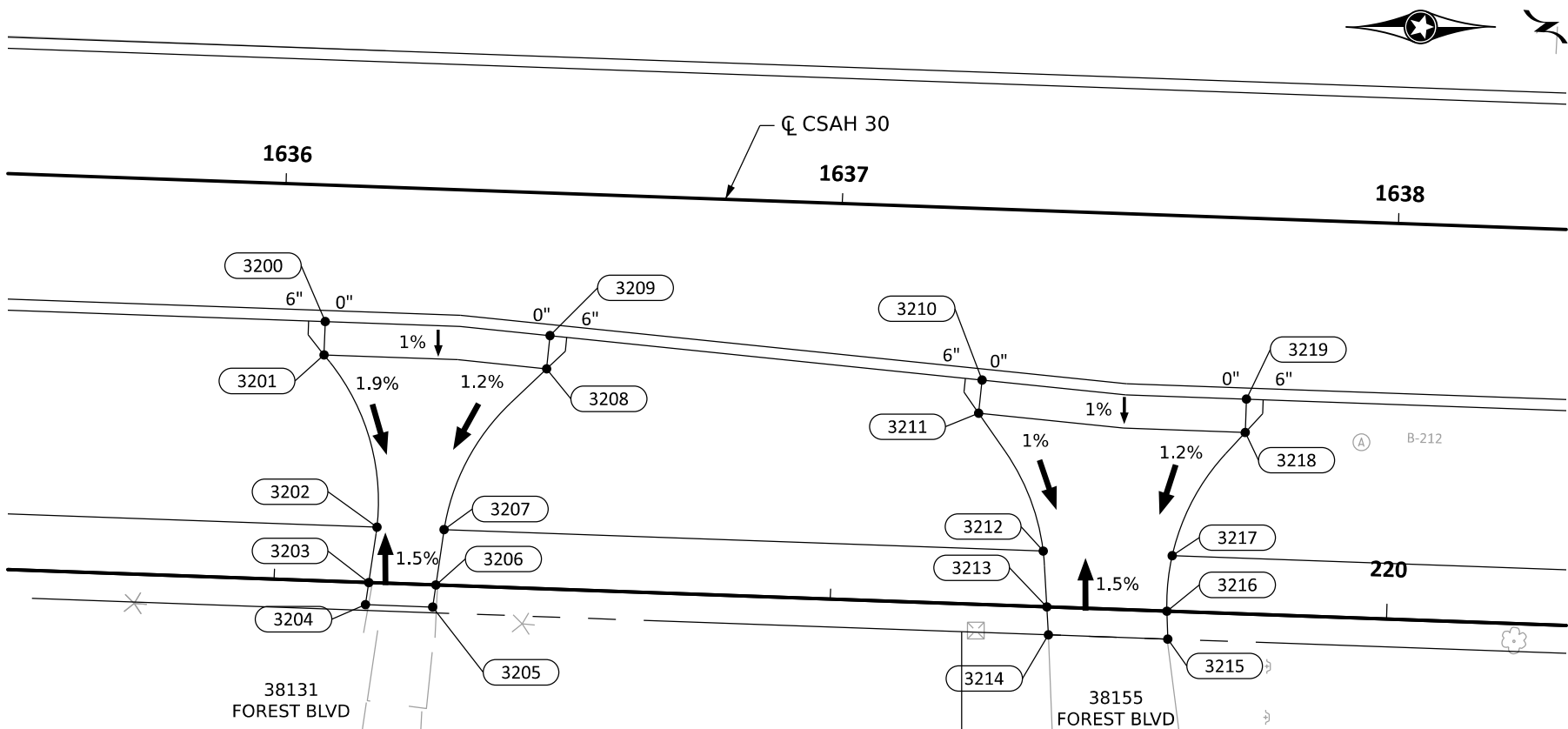
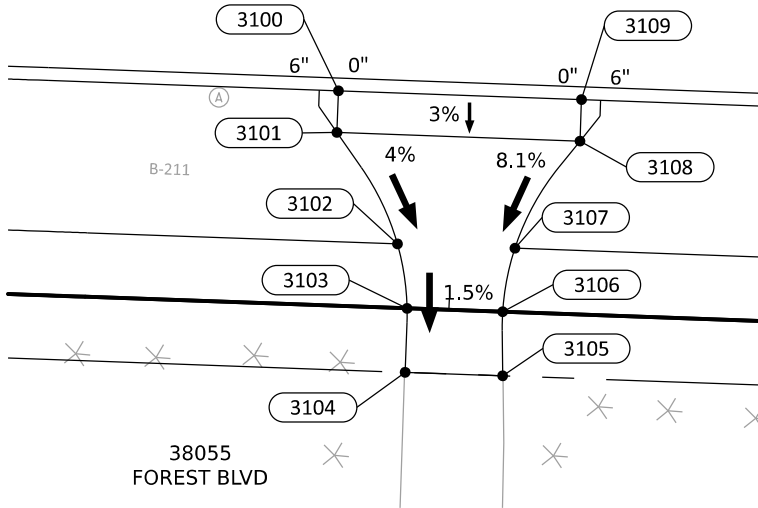
POINT NO.	X	Y	ELEV
2900	526304.26	173844.27	907.47
2901	526310.26	173844.26	907.29
2902	526341.16	173853.71	903.57
2903	526351.15	173848.28	903.42
2904	526356.00	173842.96	903.06
2905	526355.52	173872.07	904.34
2906	526351.20	173872.09	904.41
2907	526341.20	173872.14	904.55
2908	526310.41	173886.26	906.76
2909	526304.41	173886.29	906.94



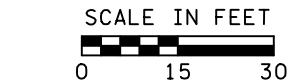
POINT NO.	X	Y	ELEV
3000	526308.10	174104.38	903.48
3001	526314.07	174103.82	903.30
3002	526339.57	174114.90	902.26
3003	526349.64	174114.85	902.11
3004	826359.55	174114.58	901.96
3005	526359.95	174129.58	901.68
3006	526349.95	174129.85	901.83
3007	526339.96	174130.96	901.98
3008	526317.90	174144.68	902.60
3009	526311.93	174145.24	902.78



POINT NO.	X	Y	ELEV
3100	526321.20	174279.87	899.95
3101	526327.69	174279.63	899.77
3102	526345.11	174289.09	898.98
3103	526355.17	174290.59	898.83
3104	526365.17	174290.30	898.68
3105	526365.72	174305.57	898.47
3106	526355.71	174305.53	898.62
3107	526345.77	174307.45	898.70
3108	526329.05	174317.61	900.37
3109	526322.56	174317.84	900.55



POINT NO.	X	Y	ELEV
3200	526328.44	174705.53	894.34
3201	526334.43	174705.32	894.28
3202	526365.38	174714.81	893.64
3203	526375.33	174713.35	893.79
3204	526379.29	174712.77	893.85
3205	526379.72	174724.83	893.65
3206	526375.77	174725.42	893.59
3207	526365.81	174726.89	893.44
3208	526336.94	174745.31	893.86
3209	526330.97	174745.92	893.92
3210	526338.94	174823.55	893.21
3211	826344.91	174822.94	893.15
3212	526369.67	174834.54	892.87
3213	526379.70	174835.18	893.02
3214	526384.71	174835.46	893.10
3215	526385.48	174856.91	892.76
3216	526380.57	174856.76	892.69
3217	526370.50	174857.71	892.54
3218	526348.37	174870.82	892.85
3219	526342.37	174871.04	892.91



- LEGEND**
- XXX • CONTROL POINTS
 - RXX' → RADIUS CALLOUT
 - PROPOSED CATCH BASIN
 - CONSTRUCT CONCRETE CURB AND GUTTER
 - DRAINAGE FLOW ARROW
 - CONSTRUCTION LIMITS
 - EX RIGHT OF WAY
 - RIGHT OF WAY
 - TEMPORARY EASEMENT
 - PERMANENT EASEMENT DRAINAGE/ UTIL
- INDICATES PEDESTRIAN RAMP - SLOPE SHALL BE GREATER THAN 2.0% AND LESS THAN 5.0% IN THE DIRECTION SHOWN AND CROSS SLOPE SHALL NOT EXCEED 2.0%.
- SEE CITY OF NORTH BRANCH STD PLATE RDW-005 (RESIDENTIAL CONCRETE DRIVEWAY ENTRANCES)
- SEE CITY OF NORTH BRANCH STD PLATE RDW-008 (RESIDENTIAL BITUMINOUS DRIVEWAY ENTRANCE)
- NOTES:**
- SEE MISCELLANEOUS DETAILS FOR DRIVEWAY DETAILS.
 - SEE DRIVEWAY TAB FOR QUANTITY INFORMATION.

NO.	DATE	BY	CHK	REVISIONS

Design By: NEH
Plan By: MKV
Checked By: MAN
Approved By: NEH

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NICHOLAS E. HENTGES, PE
DATE: 9/12/2024 LICENSE NO. 44620



CSAH 30 (Forest Blvd) Improvements
Chisago County, Minnesota

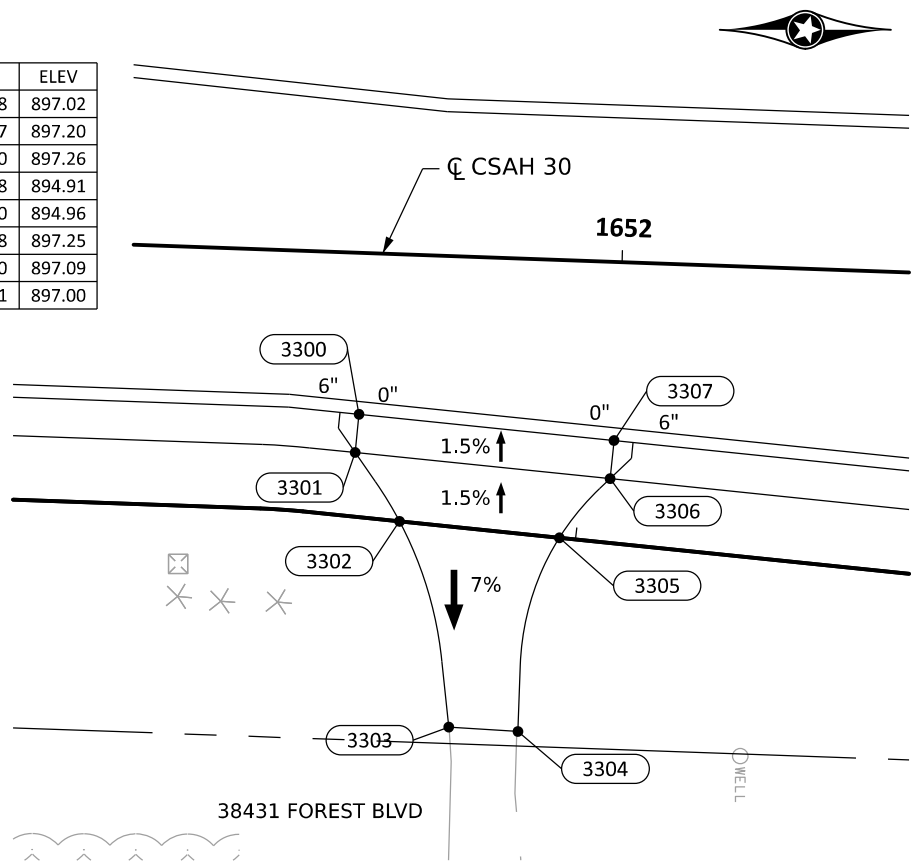
CHISAGO COUNTY, MINNESOTA

DRIVEWAY DETAILS
SAP 013-630-021 / SAP 225-591-007 / SAP 225-102-004

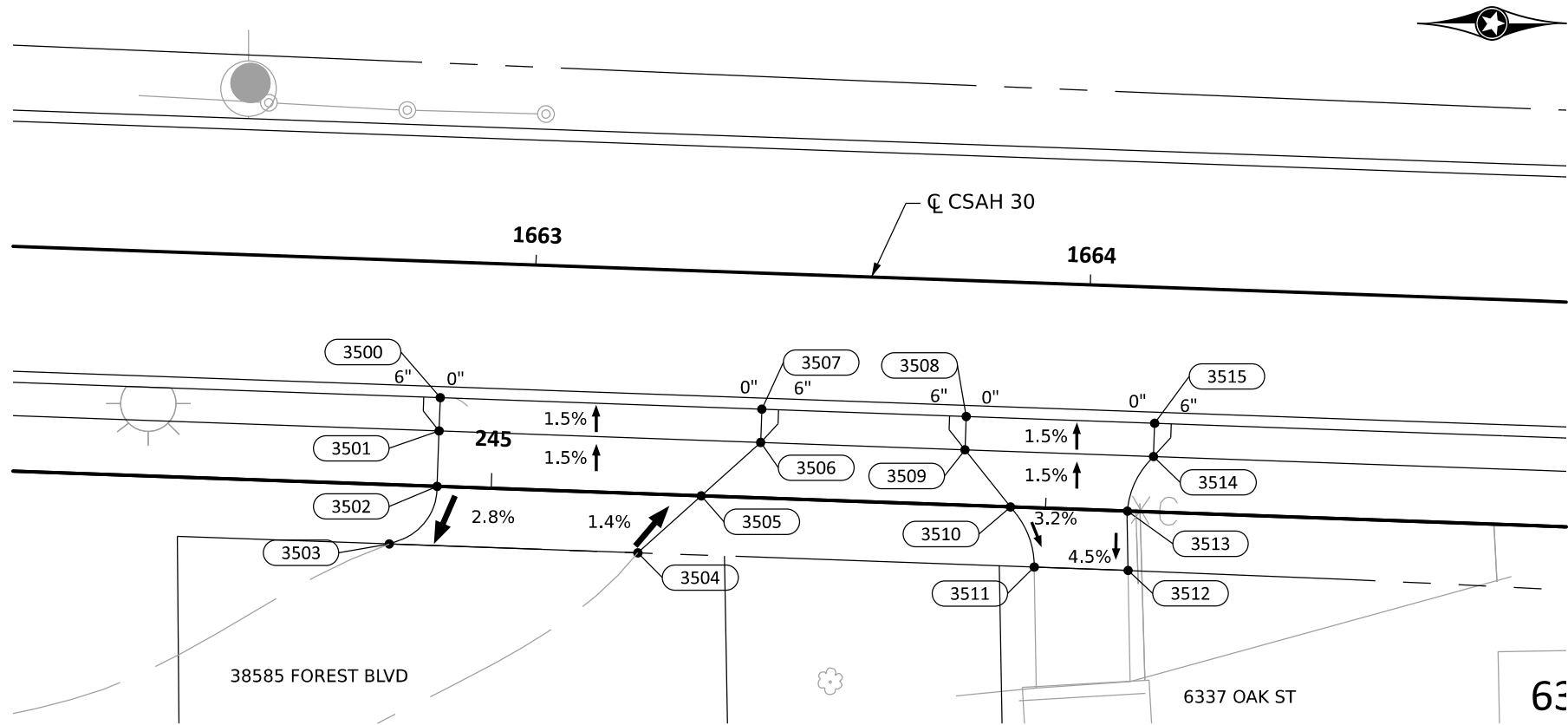
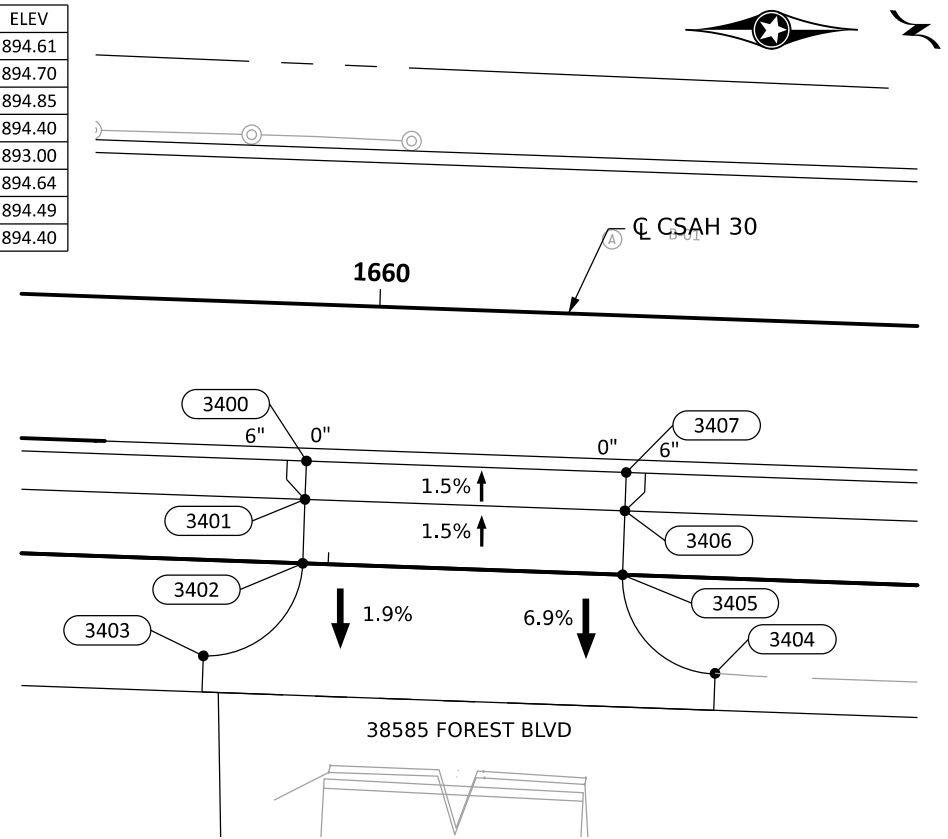
SHEET
162
OF
216
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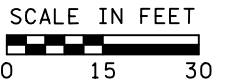
POINT NO.	X	Y	ELEV
3300	526384.73	174256.38	897.02
3301	526390.69	174255.77	897.20
3302	526401.46	174262.70	897.26
3303	526433.60	176270.38	894.91
3304	526434.28	176281.20	894.96
3305	526404.03	176287.68	897.25
3306	526394.79	176295.60	897.09
3307	526388.82	176296.21	897.00



POINT NO.	X	Y	ELEV
3400	526413.69	177085.49	894.61
3401	526419.69	177085.27	894.70
3402	526429.68	177084.92	894.85
3403	526444.13	177069.39	894.40
3404	526446.87	177149.34	893.00
3405	526431.47	177134.88	894.64
3406	526421.48	177135.24	894.49
3407	526415.48	177135.46	894.40



POINT NO.	X	Y	ELEV
3500	526424.22	177379.53	893.90
3501	526430.22	177379.32	893.99
3502	526440.21	177378.96	894.14
3503	526450.58	177370.34	893.75
3504	526452.18	177415.15	894.67
3505	526441.92	177426.57	894.45
3506	526432.30	177437.28	894.39
3507	526426.30	177437.50	894.30
3508	526427.62	177474.33	894.68
3509	526433.62	177474.12	894.76
3510	526443.92	177482.32	895.01
3511	526454.75	177486.61	894.64
3512	526455.36	177503.52	894.74
3513	526444.67	177503.40	895.23
3514	526434.83	177508.09	895.12
3515	526428.84	177508.31	895.03



LEGEND

- XXX • CONTROL POINTS
- RXX' → RADIUS CALLOUT
- PROPOSED CATCH BASIN
- CONSTRUCT CONCRETE CURB AND GUTTER
- DRAINAGE FLOW ARROW
- CONSTRUCTION LIMITS
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- SEE CITY OF NORTH BRANCH STD PLATE RDW-008 (RESIDENTIAL BITUMINOUS DRIVEWAY ENTRANCE)
- NOTES:
- SEE MISCELLANEOUS DETAILS FOR DRIVEWAY DETAILS.
 - SEE DRIVEWAY TAB FOR QUANTITY INFORMATION.

NO.	DATE	BY	CHK	REVISIONS

Design By: NEH
Plan By: MKV
Checked By: MAN
Approved By: NEH

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.

NICHOLAS E. HENTZ, P.E.
DATE: 9/12/2024 LICENSE NO. 44620



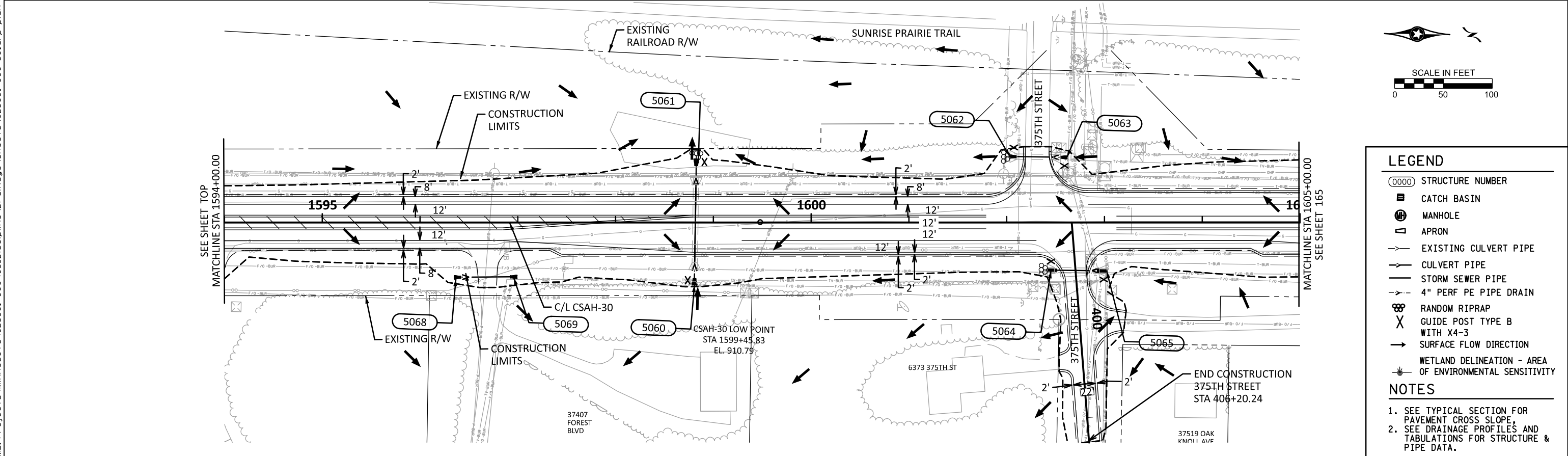
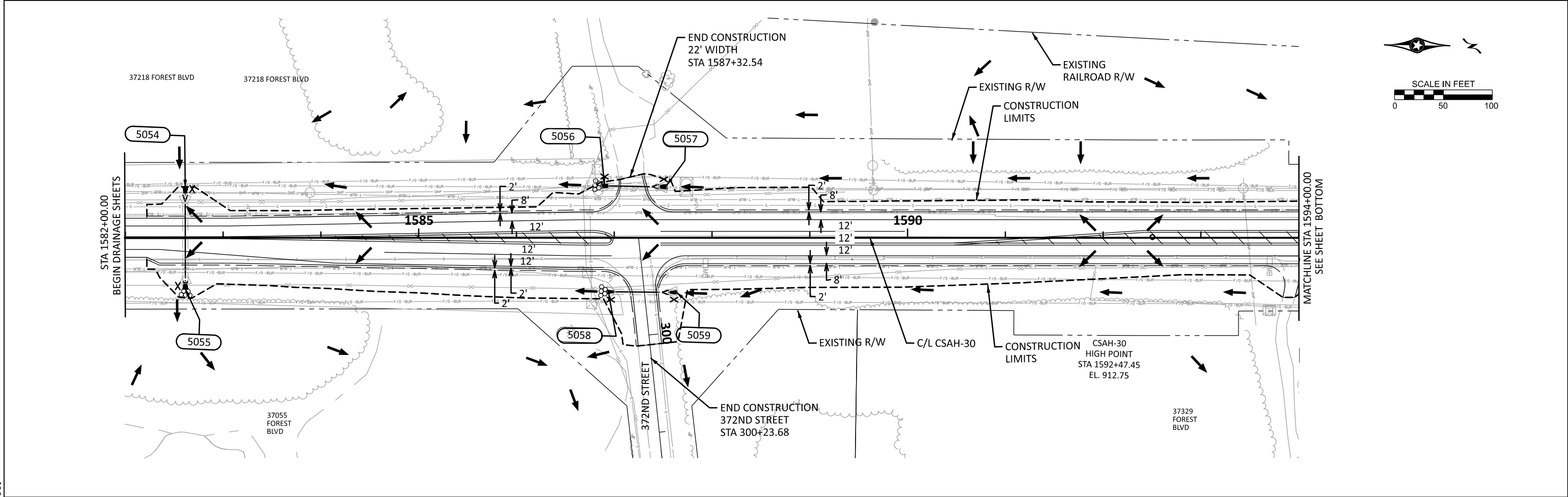
CSAH 30 (Forest Blvd) Improvements
Chisago County, Minnesota

CHISAGO COUNTY, MINNESOTA

DRIVEWAY DETAILS
SAP 013-630-021 / SAP 225-591-007 / SAP 225-102-004

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SHEETS

DATE: 9/12/2024 2:07:25 PM
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LEGEND

- 0000 STRUCTURE NUMBER
- CATCH BASIN
- MANHOLE
- APRON
- EXISTING CULVERT PIPE
- CULVERT PIPE
- STORM SEWER PIPE
- 4" PERF PE PIPE DRAIN
- RANDOM RIPRAP
- GUIDE POST TYPE B WITH X4-3
- SURFACE FLOW DIRECTION
- WETLAND DELINEATION - AREA OF ENVIRONMENTAL SENSITIVITY

NOTES

- SEE TYPICAL SECTION FOR PAVEMENT CROSS SLOPE.
- SEE DRAINAGE PROFILES AND TABULATIONS FOR STRUCTURE & PIPE DATA.

NO.	DATE	BY	CHK	REVISIONS

Design By: WAR
Plan By: WAR
Checked By: EAE
Approved By: EAE

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.

EARTH A. EVANS, PE
DATE: 9/12/2024 LICENSE NO. 44235

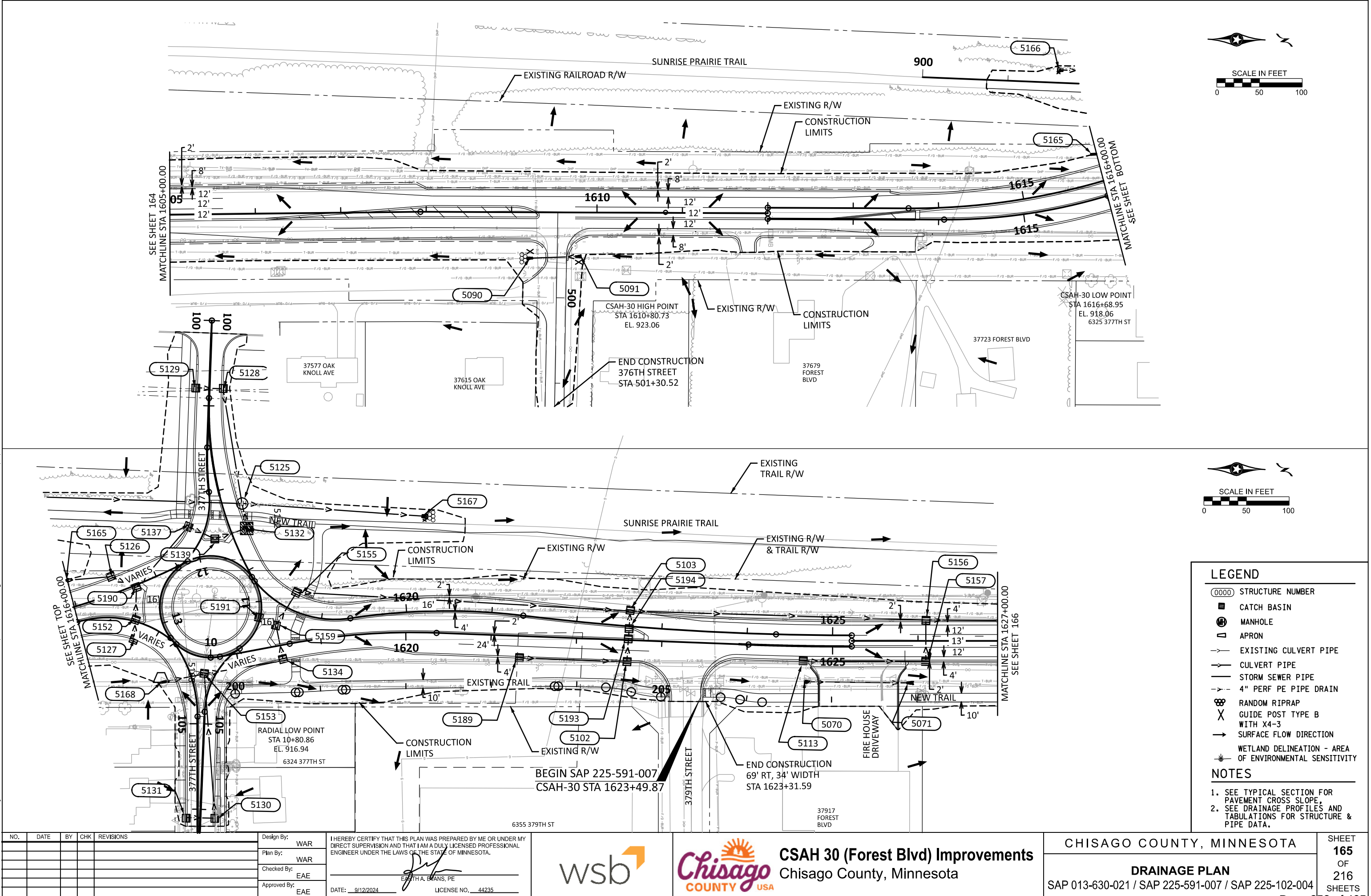


CSAH 30 (Forest Blvd) Improvements
Chisago County, Minnesota

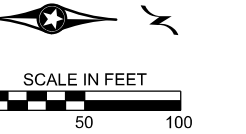
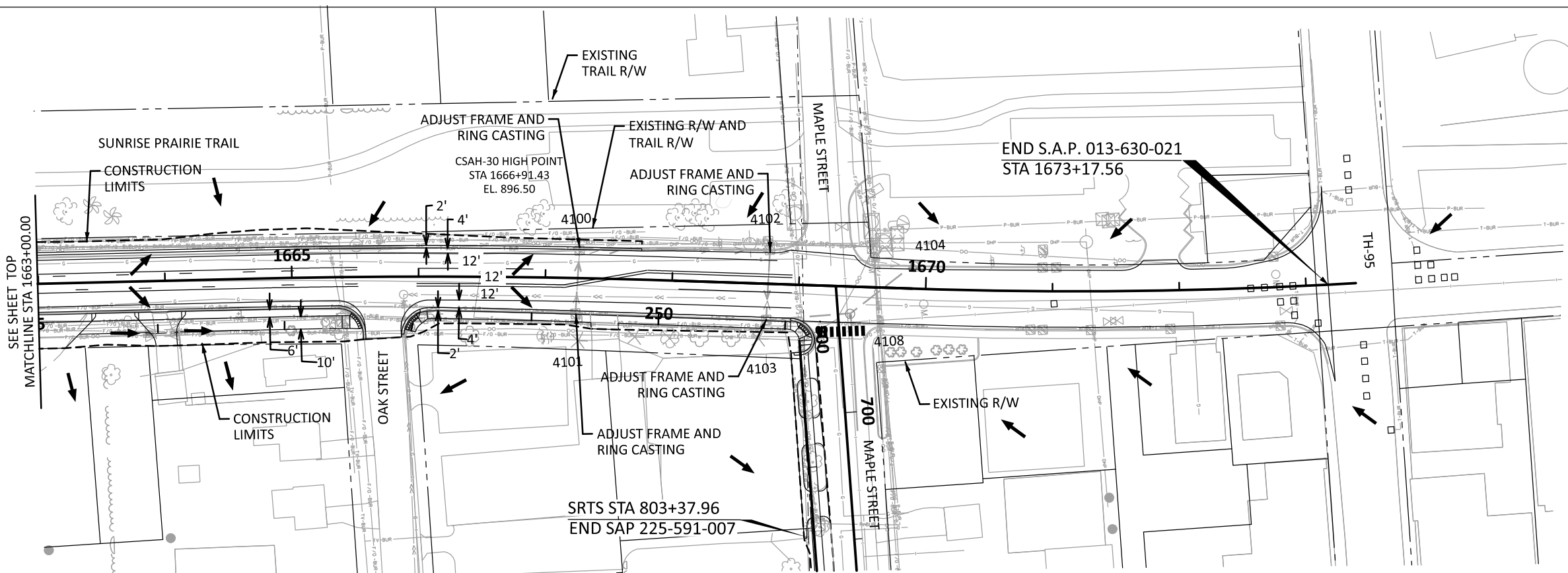
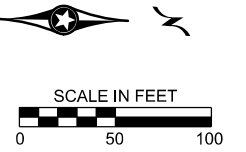
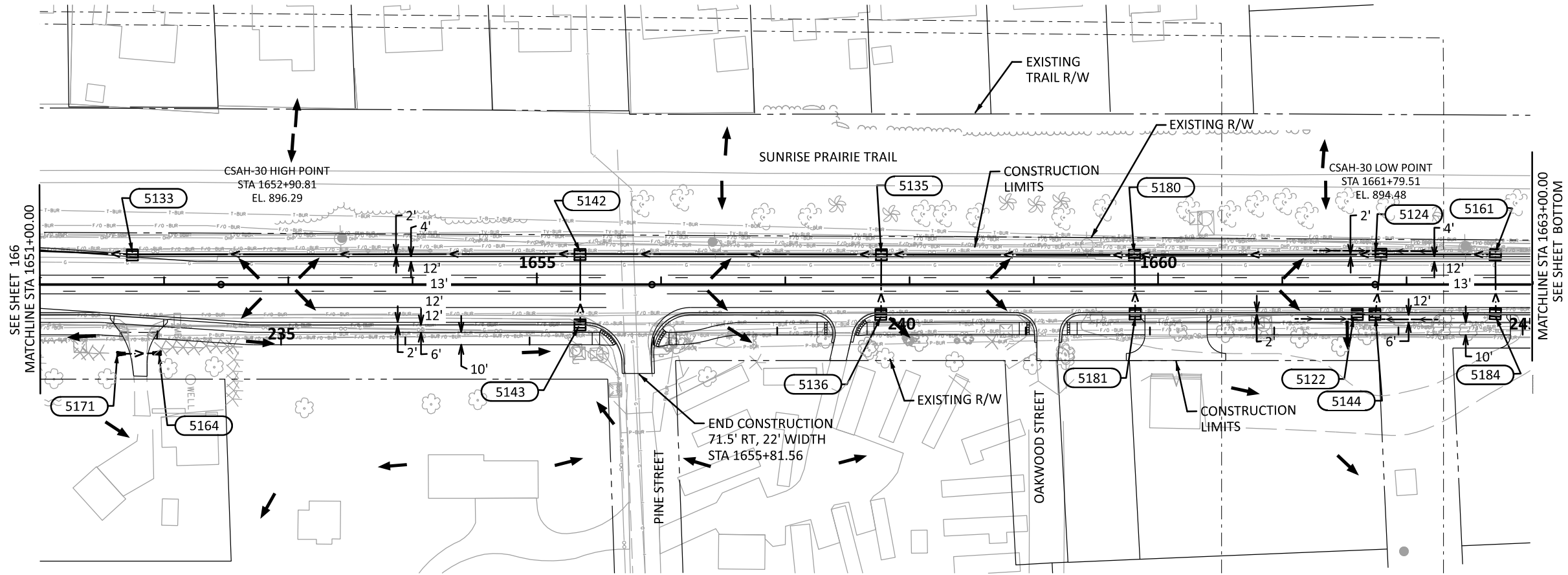
CHISAGO COUNTY, MINNESOTA
DRAINAGE PLAN
SAP 013-630-021 / SAP 225-591-007 / SAP 225-102-004

SHEET
164
OF
216
SHEETS

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- LEGEND**
- 0000 STRUCTURE NUMBER
 - CATCH BASIN
 - MANHOLE
 - APRON
 - EXISTING CULVERT PIPE
 - CULVERT PIPE
 - STORM SEWER PIPE
 - 4" PERF PE PIPE DRAIN
 - RANDOM RIPRAP
 - GUIDE POST TYPE B WITH X4-3
 - SURFACE FLOW DIRECTION
 - WETLAND DELINEATION - AREA OF ENVIRONMENTAL SENSITIVITY

- NOTES**
- SEE TYPICAL SECTION FOR PAVEMENT CROSS SLOPE.
 - SEE DRAINAGE PROFILES AND TABULATIONS FOR STRUCTURE & PIPE DATA.

NO.	DATE	BY	CHK	REVISIONS

Design By: WAR
Plan By: WAR
Checked By: EAE
Approved By: EAE

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.

EMILY A. EVANS, PE
DATE: 9/12/2024 LICENSE NO. 44235



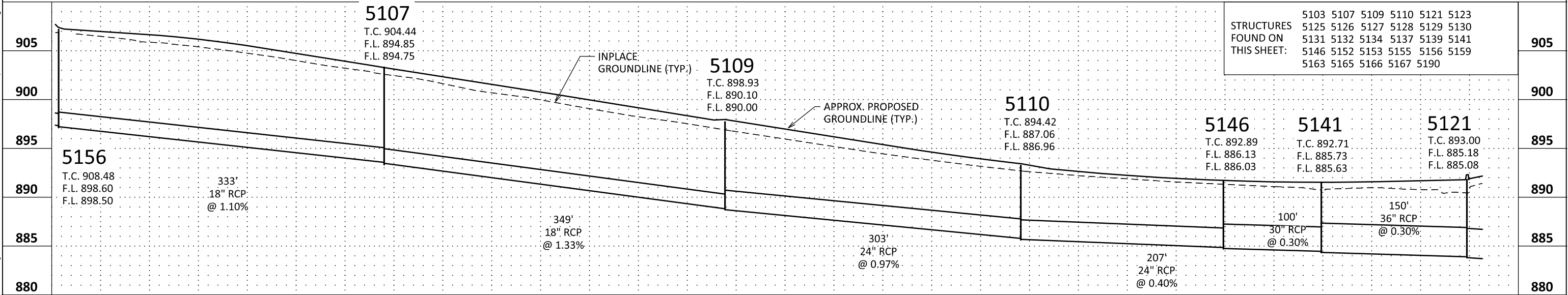
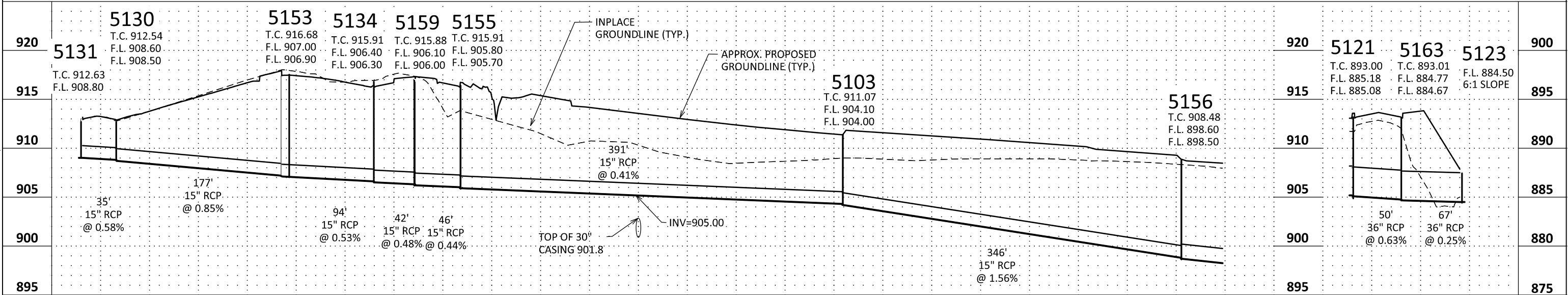
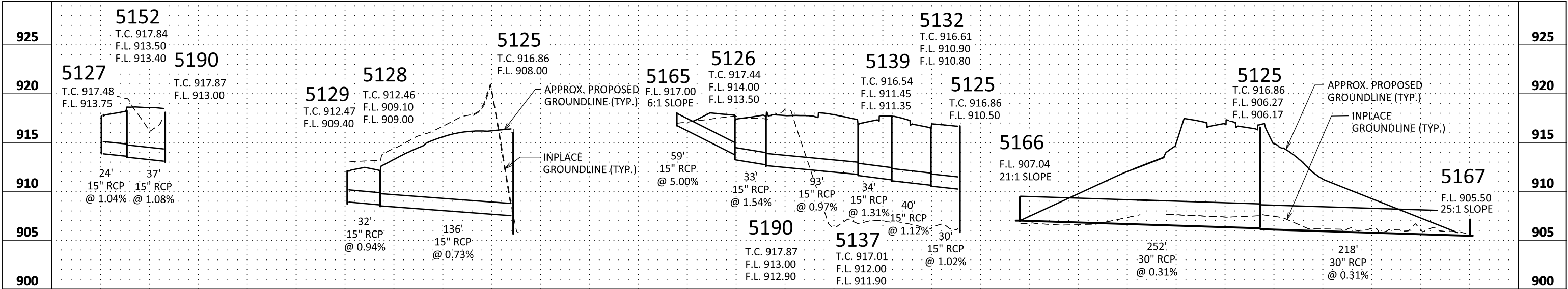
CSAH 30 (Forest Blvd) Improvements
Chisago County, Minnesota

CHISAGO COUNTY, MINNESOTA

DRAINAGE PLAN
SAP 013-630-021 / SAP 225-591-007 / SAP 225-102-004

SHEET
167
OF
216
SHEETS

DATE: 9/12/2024 5:19:25 PM
PATH & FILENAME: Projects\Minnesota\023661-000\03_Discipline\Drainage\Sheets\023661-000-302dr1-CSAH-30-prof-001



STRUCTURES	5103	5107	5109	5110	5121	5123
FOUND ON	5125	5126	5127	5128	5129	5130
THIS SHEET:	5131	5132	5134	5137	5139	5141
	5146	5152	5153	5155	5156	5159
	5163	5165	5166	5167	5190	

NO.	DATE	BY	CHK	REVISIONS

Design By:	WAR	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. _____ EMILY A. EVANS, PE DATE: 9/12/2024 LICENSE NO. 44235
Plan By:	WAR	
Checked By:	EAE	
Approved By:	EAE	



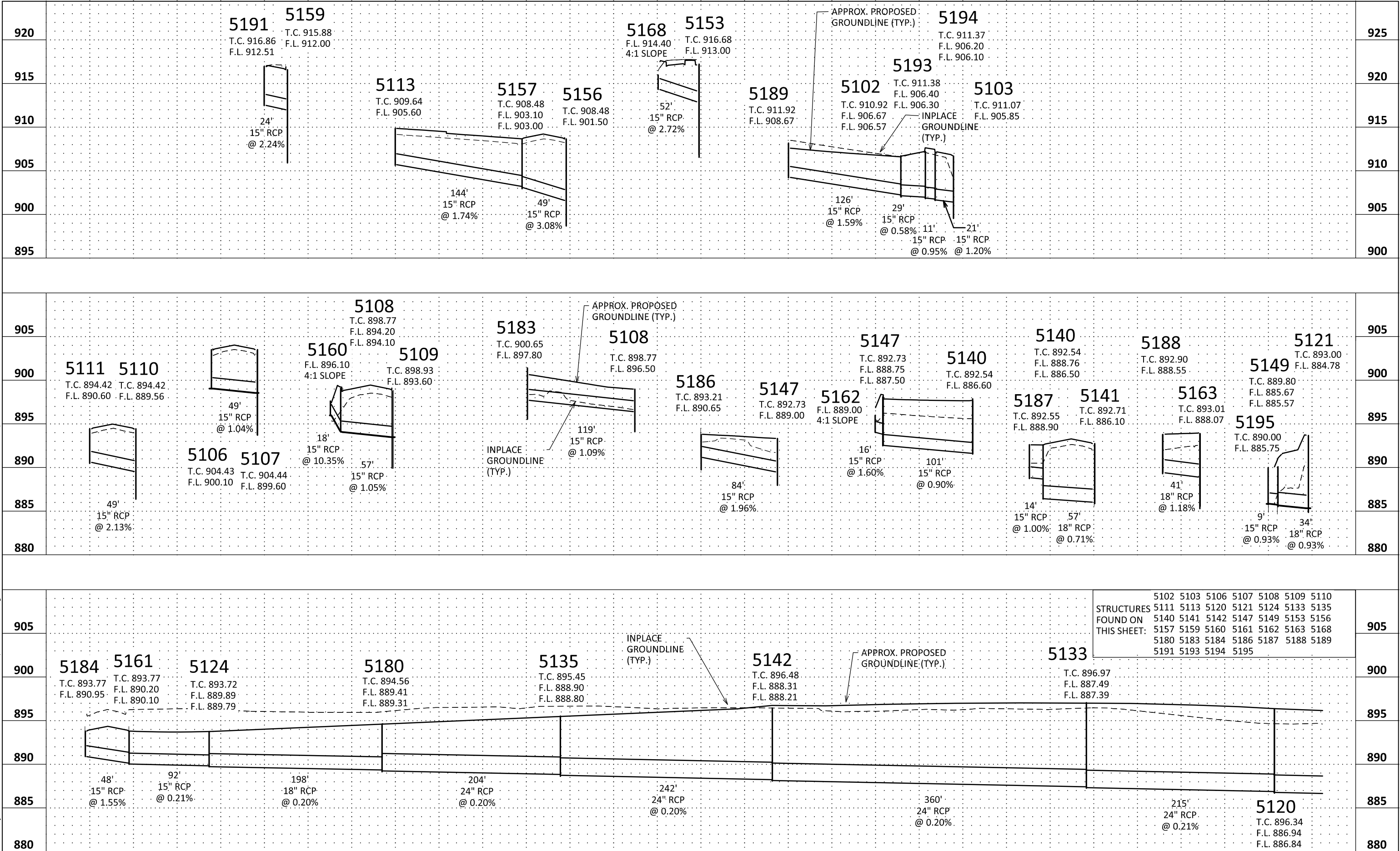
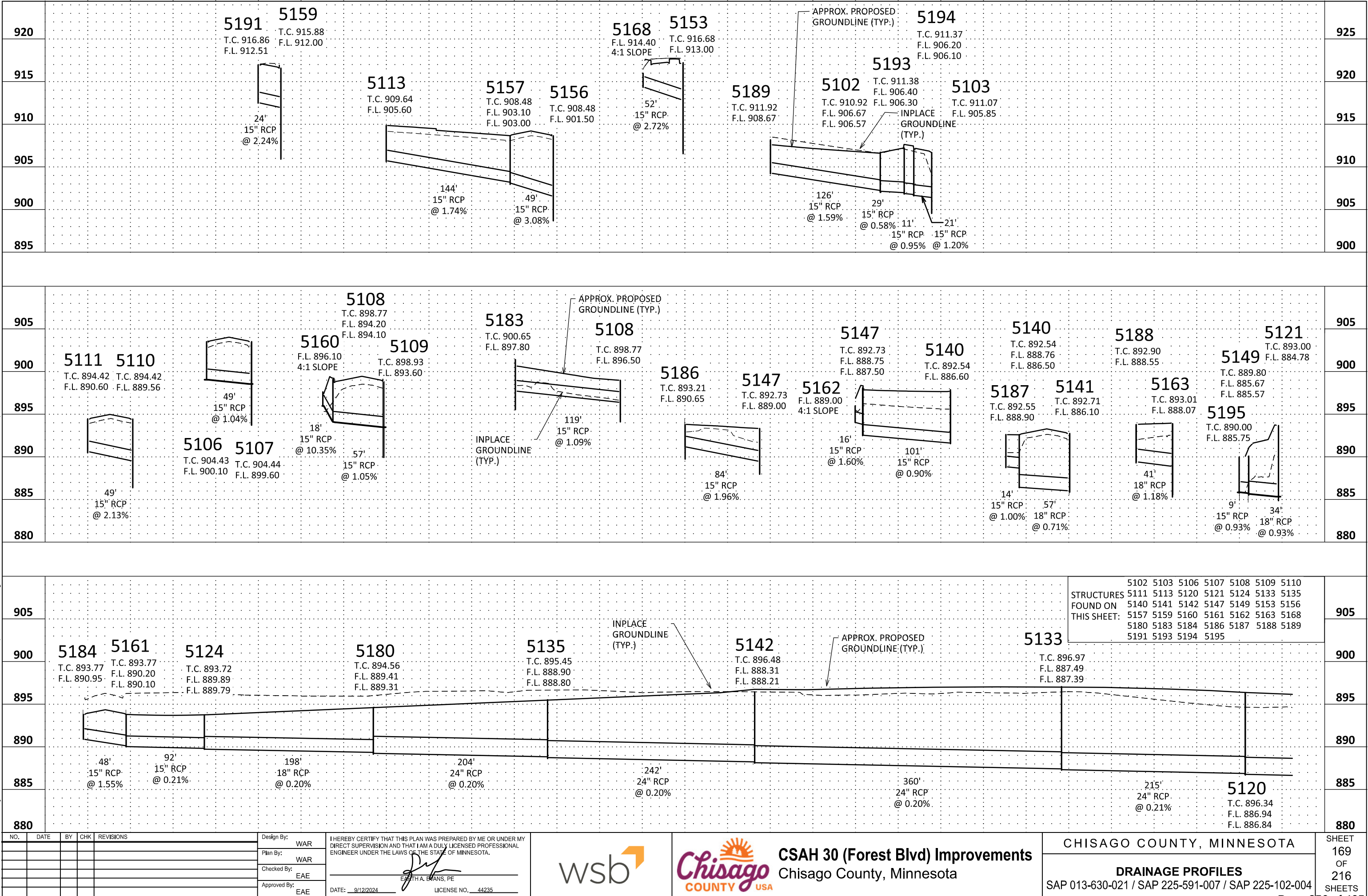
CSAH 30 (Forest Blvd) Improvements
Chisago County, Minnesota

CHISAGO COUNTY, MINNESOTA

DRAINAGE PROFILES
SAP 013-630-021 / SAP 225-591-007 / SAP 225-102-004

SHEET
168
OF
216
SHEETS

DATE: 9/12/2024 5:19:27 PM
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CULVERT TABULATION														G
STRUCTURE NO.		STRUCTURE LOCATION			APRON ELEV	FLOWS TO PIPE INLET ELEV. / CULVERT GRADE	18" RC PIPE CULVERT DES 3006 CL III	18" CAS PIPE CULVERT	24" RC PIPE CULVERT DES 3006 CL III	APRON	APRON TYPE	RIPRAP CLASS II	GUIDE POSTS TYPE B WITH X 4-3 (INCIDENTAL)	REMARKS
		ALIGN.	STATION	OFFSET			LIN FT	LIN FT	LIN FT			EACH	CU YD	
5054	5055	CSAH 30-1	1582+62	51.9' LT	900.77	900.27			104	1	24" RC PIPE APRON		1	
5055		CSAH 30-1	1582+62	52.2' RT	900.27	0.48%				1	24" RC PIPE APRON	6.2	1	
5057	5056	CSAH 30-1	1587+54	52.1' LT	903.89	903.41			68	1	24" RC PIPE APRON		1	
5056		CSAH 30-1	1586+87	53' LT	903.41	0.70%				1	24" RC PIPE APRON	6.2	1	
5059	5058	CSAH 30-1	1587+64	55.9' RT	902.88	901.91	72			1	18" RC PIPE APRON		1	
5058		CSAH 30-1	1586+93	55.4' RT	901.91	1.34%				1	18" RC PIPE APRON	4.3	1	
5060	5061	CSAH 30-1	1598+81	63.7' RT	905.02	904.52			128	1	24" RC PIPE APRON		1	
5061		CSAH 30-1	1598+83	64.6' LT	904.52	0.39%				1	24" RC PIPE APRON	6.2	1	
5063	5062	CSAH 30-1	1602+62	66.5' LT	911.03	909.47	60			1	18" RC PIPE APRON		1	
5062		CSAH 30-1	1602+04	67.4' LT	909.47	2.60%				1	18" RC PIPE APRON	4.3	1	
5065	5064	CSAH 30-1	1603+02	49.6' RT	909.40	908.95	64			1	18" RC PIPE SAFETY APRON②		1	
5064		CSAH 30-1	1602+42	48.6' RT	908.95	0.70%				1	18" RC PIPE SAFETY APRON②	4.3	1	
5068	5069	CSAH 30-1	1596+35	56.1' RT	906.00	905.65		65		1	18" GS PIPE APRON			
5069		CSAH 30-1	1596+99	55.6' RT	905.65	0.54%				1	18" GS PIPE APRON			
5070	5071	CSAH 30 NB	1624+67	42' RT	905.00	904.40	116 ①			1	18" RC PIPE APRON			
5071		CSAH 30-2	1625+94	49.2' RT	904.40	0.52%				1	18" RC PIPE APRON			
5072	5073	CSAH 30-2	1627+46	45.3' RT	903.08	902.86		45		1	18" GS PIPE APRON			
5073		CSAH 30-2	1627+88	44.7' RT	902.86	0.49%				1	18" GS PIPE APRON			
5091	5090	CSAH 30-1	1609+82	51.3' RT	917.50	917.00	64			1	18" RC PIPE APRON			
5090		CSAH 30-1	1609+19	54' RT	917.00	0.78%				1	18" RC PIPE APRON	4.3	1	
5171	5164	CSAH 30-2	1651+63	55.8' RT	895.36	895.07		35		1	18" GS PIPE APRON			
5164		CSAH 30-2	1651+98	55.2' RT	895.07	0.81%				1	18" GS PIPE APRON			
5169	5170	CSAH 30-2	1631+81	51.0' RT	898.05	896.94		45		1	18" GS PIPE APRON			
5170		CSAH 30-2	1632+22	51.2' RT	896.94	2.47%				1	18" GS PIPE APRON			
5172	5173	CSAH 30-2	1630+06	47.2' RT	904.07	903.43		40		1	18" GS PIPE APRON			
5173		CSAH 30-2	1630+47	47' RT	903.43	1.61%				1	18" GS PIPE APRON			
5174	5175	CSAH 30-2	1636+08	48' RT	894.91	894.54		40		1	18" GS PIPE APRON			
5175		CSAH 30-2	1636+45	47.9' RT	894.54	0.91%				1	18" GS PIPE APRON			
5176	5182	CSAH 30-2	1637+26	51.1' RT	893.91	893.64		50		1	18" GS PIPE APRON			
5182		CSAH 30-2	1637+75	50.9' RT	893.64	0.53%				1	18" GS PIPE APRON			
							260	320	300	30		35.8	13	

GENERAL NOTES:

THE OUTLET ELEVATION IS THE INVERT ELEVATION OF THE PIPE AT THE INSIDE EDGE OF THE FLOWS FROM STRUCTURE.
INLET ELEVATION IS THE INVERT ELEVATION OF THE PIPE AT THE INSIDE EDGE OF THE FLOWS TO STRUCTURE.
THE CASTING ELEVATION AND LOCATION ARE AT THE CENTER OF THE GRATE/COVER.
FOR CONCRETE PIPES WITH APRONS: THE LOCATION OF THE APRON IS THE OUTLET, INVERT END OF THE APRON.
STATIONS, OFFSETS, AND ELEVATIONS ARE GIVEN TO:
-END OF ALL CONCRETE APRONS.
-END OF BARREL FOR ALL METAL APRONS.
-CENTER OF CASTING FOR ALL STORM STRUCTURES.
-FOR 4020 STRUCTURES, THE SECOND LINE LISTS STA. AND OFFSET TO CENTER OF STRUCTURE.
ALL PIPE LENGTHS EXCLUDE APRONS.
PAY HEIGHTS ARE FROM BOTTOM OF CASTING TO INVERT, PLUS 0.7'
RC PIPE IS DES 3006 GACKET JOINT PIPE, PIPE CLASS BASED ON BEDDING DETAILS ON SHEET 62.
ALL RC PIPE IS CL III UNLESS OTHERWISE NOTED.
STEPS REQUIRED WHEN DEPTH FROM TOP OF CASTING TO STRUCTURE INVERT IS GREATER THAN 4.5'.
GEOTEXTILE FILTER TYPE 4 REQUIRED FOR DETAIL 3133D AND X 4-3 DELINEATOR IS INCIDENTAL

SPECIFIC NOTES:

- ① 9 LIN FT OF 18" RC PIPE CULVERT CL III FUNDED WITH LOCAL FUNDS
② FURNISH AND INSTALL SAFETY APRON AT CULVERT END. UTILIZE 1:X CROSS SLOPE OPTION PER STD PLATE 3022.

NO.	DATE	BY	CHK	REVISIONS

Design By: WAR
Plan By: WAR
Checked By: EAE
Approved By: EAE

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.

EMILY H. EVANS, PE
DATE: 9/12/2024 LICENSE NO. 44235



CSAH 30 (Forest Blvd) Improvements
Chisago County, Minnesota

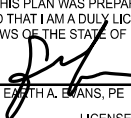
CHISAGO COUNTY, MINNESOTA

DRAINAGE TABULATIONS
SAP 013-630-021 / SAP 225-591-007 / SAP 225-102-004

SHEET 171 OF 216 SHEETS

DATE: 9/12/2024 3:08:14 PM
PATH & FILENAME: Projects\Minnesota\023661-000\03_Discipline\Drainage\Sheets\023661-000-130tab-CSAH-30-plan-001

STORM SEWER TABULATION																					H	
STRUCTURE NO. FLOWS FROM FLOWS TO		STRUCTURE LOCATION ALIGN. STATION OFFSET			DRAINAGE STRUCTURES					TOP OF CASTING ELEV	FLOWS FROM PIPE OUTLET ELEV	FLOWS TO PIPE INLET ELEV	15" RC PIPE SEWER DES 3006 CL V LIN FT	18" RC PIPE SEWER DES 3006 CL III LIN FT	24" RC PIPE SEWER DES 3006 CL III LIN FT	30" RC PIPE SEWER DES 3006 CL III LIN FT	36" RC PIPE SEWER DES 3006 CL III LIN FT	APRON EACH	APRON TYPE	RIPRAP CLASS II CU YD	GUIDE POSTS TYPE B WITH X 4-3 (INCIDENTAL) EACH	REMARKS
					PAY HEIGHT			CASTING ASSEMBLY TYPE	STEPS REQ'D													
					G	48-4020	60-4020															
		LIN FT	LIN FT	LIN FT																		
SAP 013-630-021																						
5129	5128	377TH ST WB1	100+79	14.94' RT	3.4			B - 5		912.47	909.40	909.10	32									
5128	5125	377TH ST WB1	100+79	14.98' LT		4.5		B - 5	YES	912.46	909.00	908.00	136									
5131	5130	377th ST EB1	106+10	13' LT	4			B - 5		912.63	908.80	908.60	35									
5121	5163	CSAH 30-2	1640+50	23.43' LT			8.1	B - 5	YES	893.00	885.08	884.77					50					
5163	5123	CSAH 30-2	1640+50	22.87' RT			8.4	B - 5	YES	893.01	884.67	884.50					67					
5123		CSAH 30-2	1641+00	68.32' RT							884.50							1	36" RC PIPE APRON	10.6	1	
5156	5107	CSAH 30-2	1626+10	23.47' LT		13.7		B - 5	YES	908.48	898.50	894.85		333								
5107	5109	CSAH 30-2	1629+42	22.73' LT		14.4		B - 5	YES	904.44	894.75	890.10		349								
5109	5110	CSAH 30-2	1632+90	23.5' LT		12		B - 5	YES	898.93	890.00	887.06			303							
5110	5146	CSAH 30-2	1635+93	23.49' LT		8.3		B - 5	YES	894.42	886.96	886.13			207							
5146	5141	CSAH 30-2	1638+00	23.01' LT		7.2		B - 5	YES	892.89	886.03	885.73				100						
5141	5121	CSAH 30-2	1639+00	23.09' LT		7.6		B - 5	YES	892.71	885.63	885.18					150					
5103	5156	CSAH 30 SB2	1622+19	16.52' LT		12.5		B - 9	YES	911.07	904.00	898.60	346									
5113	5157	CSAH 30 NB	1624+66	16.54' RT		6.6		B - 5	YES	909.64	905.60	903.10	144									
5157	5156	CSAH 30-2	1626+09	23.19' RT		7.0		B - 5	YES	908.48	903.00	901.50	49									
5111	5110	CSAH 30-2	1635+93	23.18' RT	5			B - 5	YES	894.42	890.60	889.56	49									
5106	5107	CSAH 30-2	1629+42	23.47' RT	5			B - 5	YES	904.43	900.10	899.60	49									
5160	5108	CSAH 30-2	1632+85	50.05' RT							896.10	894.20	18					1	15" RC PIPE APRON		1	
5108	5109	CSAH 30-2	1632+90	31.5' RT		5.2		B - 5	YES	898.77	894.10	893.60	57									
5183	5108	CSAH 30-2	1631+71	31.18' RT	4			B - 5	YES	900.65	897.80	896.50	119									
5186	5147	CSAH 30-2	1637+16	28.78' RT	4			B - 5	YES	893.21	890.65	889.00	84									
5162	5147	CSAH 30-2	1638+00	47.8' RT							889.00	888.75	16					1	15" RC PIPE APRON		1	
5147	5140	CSAH 30-2	1637+99	31.06' RT		6.2		B - 5	YES	892.73	887.50	886.60	101									
5187	5140	CSAH 30-2	1639+13	31.44' RT	4			B - 5	YES	892.55	888.90	888.76	14									
5140	5141	CSAH 30-2	1639+00	31.43' RT		6.5		B - 5	YES	892.54	886.50	886.10		57								
5188	5163	CSAH 30-2	1640+10	23.33' RT	5			B - 5	YES	892.90	888.55	888.07		41								
5195	5149	CSAH 30-2	1640+26	55.58' LT	4.4			B - 5		890.00	885.75	885.67	9									
5149	5121	CSAH 30-2	1640+35	55.79' LT		5.2		M - 11	YES	889.80	885.57	884.78		34								
5184	5161	CSAH 30-2	1662+72	23.03' RT	3.6			B - 5	YES	893.77	890.95	890.20	48									
5161	5124	CSAH 30-2	1662+72	23.06' LT		3.9		B - 5	YES	893.77	890.10	889.89	92									
5124	5180	CSAH 30-2	1661+79	23.04' LT		4.4		B - 5		893.72	889.79	889.41		198								
5180	5135	CSAH 30-2	1659+81	22.61' LT		5.7		B - 5	YES	894.56	889.31	888.90			204							
5135	5142	CSAH 30-2	1657+78	23.02' LT		7.2		B - 5	YES	895.45	888.80	888.31			242							
5142	5133	CSAH 30-2	1655+35	23.5' LT		9.0		B - 5	YES	896.48	888.21	887.49			360							
5133	5120	CSAH 30-2	1651+75	23.05' LT		10.1		B - 5	YES	896.97	887.39	886.94			215							
5120	5138	CSAH 30-2	1649+60	30.91' LT		9.9		B - 5	YES	896.34	886.84	886.53			146							
5138	5112	CSAH 30-2	1648+14	31.11' LT		9.5		B - 5	YES	895.69	886.43	886.21			104							
5112	5118	CSAH 30-2	1647+10	29.39' LT		10.4		A - 7D	YES	895.93	886.11	885.54			273							
5118	5116	CSAH 30-2	1644+37	23.45' LT		9.1		B - 5	YES	893.97	885.44	884.87				272						
5116	5115	CSAH 30-2	1641+65	23.06' LT		8.7		B - 5	YES	893.29	884.77	884.67				49						
5115	5114	CSAH 30-2	1641+65	23.43' RT		9		B - 5	YES	893.29	884.57	884.40				56						
5114		CSAH 30-2	1641+33	70.13' RT							884.40							1	30" RC PIPE APRON	8.2	1	
5122	5144	CSAH 30-2	1661+60	23.03' RT	3.4			B - 5		893.79	890.60	890.45	15									
5144	5124	CSAH 30-2	1661+75	23.03' RT	4			B - 5		893.74	890.35	889.89	48									
5119	5120	CSAH 30-2	1649+60	23.04' RT	4			B - 5	YES	896.50	893.65	892.65	56									
5104	5105	CSAH 30-2	1647+63	53.9' LT	4			B - 5		894.96	891.26	890.75	35									
5105	5112	CSAH 30-2	1647+31	45.28' LT		4.6		B - 5		894.95	890.65	890.25	26									
5136	5135	CSAH 30-2	1657+77	23.06' RT	5.1			B - 5	YES	895.45	891.40	890.40	48									
5143	5142	CSAH 30-2	1655+35	31.5' RT	5			B - 5	YES	896.32	892.40	891.50	57									
5148	5116	CSAH 30-2	1640+81	44.91' LT	5			M - 11	YES	889.88	886.40	884.97	87									
5181	5180	CSAH 30-2	1659+82	22.67' RT	5			B - 5	YES	894.56	890.35	889.71	47									
5192	5145	CSAH 30-2	1648+27	31.41' RT	4			B - 5	YES	895.75	893.00	891.60	13									
5145	5138	CSAH 30-2	1648+14	31.4' RT		5.0		B - 5	YES	895.68	891.50	890.75	65									
5117	5118	CSAH 30-2	1644+38	23.42' RT	4.9			B - 5	YES	893.98	889.60	889.10	49									
SAP 013-630-021 SUBTOTALS					87	223	17						1944	1012	2054	477	267	4		18.8	4	

NO.	DATE	BY	CHK	REVISIONS	Design By: WAR	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.  ELIZABETH A. EVANS, PE DATE: 9/12/2024 LICENSE NO. 44235			CSAH 30 (Forest Blvd) Improvements Chisago County, Minnesota	CHISAGO COUNTY, MINNESOTA		SHEET 172 OF 216 SHEETS	
					Plan By: WAR					DRAINAGE TABULATIONS			
					Checked By: EAE					SAP 013-630-021 / SAP 225-591-007 / SAP 225-102-004			
					Approved By: EAE								

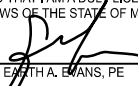
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STORM SEWER TABULATION																				H			
STRUCTURE NO. FLOWS FROM FLOWS TO		STRUCTURE LOCATION			DRAINAGE STRUCTURES					TOP OF CASTING ELEV	FLOWS FROM PIPE OUTLET ELEV	FLOWS TO PIPE INLET ELEV	15" RC PIPE SEWER DES 3006 CL V LIN FT	18" RC PIPE SEWER DES 3006 CL III LIN FT	24" RC PIPE SEWER DES 3006 CL III LIN FT	30" RC PIPE SEWER DES 3006 CL III LIN FT	36" RC PIPE SEWER DES 3006 CL III LIN FT	APRON EACH	APRON TYPE	RIPRAP CLASS II CU YD	GUIDE POSTS TYPE B WITH X 4-3 (INCIDENTAL) EACH	REMARKS	
		ALIGN.	STATION	OFFSET	PAY HEIGHT			CASTING ASSEMBLY TYPE	STEPS REQ'D														
					G	48-4020	60-4020																
					LIN FT	LIN FT	LIN FT																
SAP 013-630-021 & SAP 225-102-004																							
5127	5152	CSAH 30 NB	1616+75	19.86' RT	4.0			B - 9		917.48	913.75	913.50	24										
5152	5190	CSAH 30 SB1	1616+79	14.89' RT		4.9		B - 9	YES	917.84	913.40	913.00	37										
5165	5126	CSAH 30 SB1	1615+90	33.80' LT							917.00	914.00	59					1	15" RC PIPE SAFETY APRON		1		
5126	5190	CSAH 30 SB1	1616+50	18.74' LT		4.5		B - 9	YES	917.44	913.50	913.00	33										
5190	5137	CSAH 30 SB1	1616+74	1.56' RT		6		B - 9	YES	917.87	912.90	912.00	93										
5137	5139	377TH ST EB	102+50	18.39' RT		5.6		B - 9	YES	917.01	911.90	911.45	34										
5139	5132	377TH ST WB1	102+53	21.2' RT		5.7		B - 9	YES	916.54	911.35	910.90	40										
5132	5125	377TH ST WB1	102+54	18.46' LT		6.2		B - 9	YES	916.61	910.80	910.50	30										
5166	5125	CSAH 30 SB1	1615+78	139.73' LT							907.04	906.27				252	1	30" RC PIPE APRON		1			
5125	5167	377TH ST WB1	102+24	22.36' LT			11.6	A - 7D	YES	916.86	906.17	905.50				218							
5167		CSAH 30 SB1	1617+41	285.48' RT							905.50						1	30" RC PIPE APRON	8.2	1			
5130	5153	377th ST WB	106+10	16.5' RT		5.6		B - 5	YES	912.54	908.50	907.00	177										
5153	5134	377th ST EB1	104+44	12.43' RT		10.3		B - 9	YES	916.68	906.90	906.40	94										
5134	5159	CSAH 30 NB	1618+53	17.09' RT		9.9		B - 9	YES	915.91	906.30	906.10	42										
5159	5155	CSAH 30 SB2	1618+55	24.66' RT		10.1		B - 9	YES	915.88	906.00	905.80	46										
5155	5103	CSAH 30 SB2	1618+60	20.09' LT		12		B - 9	YES	915.91	905.70	904.10	391										
5191	5159	RADIAL	10+81	1.00' LT	5			B - 9	YES	916.86	912.51	912.00	24										
5168	5153	377TH ST EB	104+38	35.51' RT							914.40	913.00	52				1	15" RC PIPE SAFETY APRON		1			
5189	5102	CSAH 30 NB	1621+34	24.73' RT		5		B - 9	YES	911.92	908.67	906.67	126										
5102	5193	CSAH 30 NB	1622+21	24.54' RT		4.6		B - 9	YES	910.92	906.57	906.40	29										
5193	5194	CSAH 30 NB	1622+61	1.53' LT		5.2		B - 9	YES	911.38	906.30	906.20	11										
5194	5103	CSAH 30 NB	1622+62	1.53' RT		5.6		B - 9	YES	911.37	906.10	905.85	21										
SAP 013-630-021 & SAP 225-102-004 SUBTOTAL						9	101	12					1363			470	4		8.2	4			
PROJECT TOTAL						96	324	29					3307	1012	2054	947	267	8		27	8		

- General Notes:
- * INDICATES LENGTH OF PIPE WITHIN SAP #
 - STRUCTURE NUMBERS ARRANGED IN ORDER THEY APPEAR IN PROFILE SHEETS.
 - THE OUTLET ELEVATION IS THE INVERT ELEVATION OF THE PIPE AT THE INSIDE EDGE OF THE FLOWS FROM STRUCTURE.
 - INLET ELEVATION IS THE INVERT ELEVATION OF THE PIPE AT THE INSIDE EDGE OF THE FLOWS TO STRUCTURE.
 - THE CASTING ELEVATION AND LOCATION ARE AT THE CENTER OF THE GRATE/COVER.
 - FOR OFFSET STRUCTURES, THE STRUCTURE LOCATION IS AT THE CENTER OF THE STRUCTURE.
 - FOR CONCRETE PIPES WITH APRONS: THE LOCATION OF THE APRON IS THE OUTLET, INVERT END OF THE APRON.
 - STATIONS, OFFSETS, AND ELEVATIONS ARE GIVEN TO:
 - END OF ALL CONCRETE APRONS.
 - END OF BARREL FOR ALL METAL APRONS.
 - CENTER OF CASTING FOR ALL STORM STRUCTURES.
 - FOR 4020 STRUCTURES, THE SECOND LINE LISTS STA. AND OFFSET TO CENTER OF STRUCTURE.
 - ALL PIPE LENGTHS EXCLUDE APRONS.
 - PAY HEIGHTS ARE FROM BOTTOM OF CASTING TO INVERT, PLUS 0.7'
 - RC PIPE IS DES 3006 GACKET JOINT PIPE, PIPE CLASS BASED ON BEDDING DETAILS ON SHEET 62.
 - 15" RC PIPE IS CL V. ALL OTHER RC PIPE IS CL III UNLESS OTHERWISE NOTED.
 - STEPS REQUIRED WHEN DEPTH FROM TOP OF CASTING TO STRUCTURE INVERT IS GREATER THAN 4.5'.
 - TIE ALL JOINTS FROM STRUCTURES TO APRON, INCIDENTAL.
 - GEOTEXTILE FILTER TYPE 4 REQUIRED FOR DETAIL 3133D AND X 4-3 DELINEATOR IS INCIDENTAL.
 - ALL SAFETY APRON UTILIZING 1:X CROSS SLOPE OPTION PER STD PLATE 3022.

CASTING ASSEMBLY SUMMARY							
ASSEMBLY	RING OR FRAME	COVER OR GRATE	CURB BOX	STANDARD PLATE NUMBER	USE	SAP 013-630-021 & 225-102-004	SAP 013-630-021
B-5	SQUARE CONC.	816 (4154)	823A (4160)	4129	CATCH BASIN	1	46
M-11	ROUND CONC.	731 (4143)		4143	CATCH BASIN	0	2
A-7D	ROUND CONC.	700-7		4101	MAN HOLE	1	1
B-9	SQUARE CONC. (4132)	816 (4154)			CATCH BASIN	16	1
TOTAL						18	50

NO.	DATE	BY	CHK	REVISIONS

Design By:	WAR	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.  EARTH A. EVANS, PE
Plan By:	WAR	
Checked By:	EAE	
Approved By:	EAE	
DATE: 9/12/2024		LICENSE NO. 44235



CSAH 30 (Forest Blvd) Improvements
Chisago County, Minnesota

CHISAGO COUNTY, MINNESOTA	
DRAINAGE TABULATIONS SAP 013-630-021 / SAP 225-591-007 / SAP 225-102-004	

SHEET
173
OF
216
SHEETS

STORMWATER POLLUTION PREVENTION PLAN (SWPPP) NARRATIVE

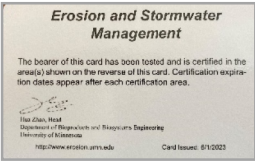
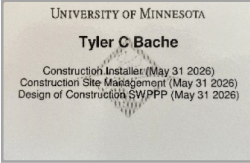
PROJECT NAME: CHISAGO COUNTY CSAH 30 CORRIDOR IMPROVEMENTS **PROJECT NUMBER:** SAP 013-630-021; WSB 023661-000
PROJECT LOCATION: STREET: 379th STREET CITY: NORTH BRANCH COUNTY: CHISAGO COUNTY
STATE: MINNESOTA ZIP: 55056 LATITUDE/LONGITUDE: 45.4977/-92.9807

THE PLANNED SCOPE OF THE PROJECT INCLUDES:
CHISAGO COUNTY IS PROPOSING THE RECONDITIONING AND RECONSTRUCTION OF FOREST BOULEVARD FROM ATHENS TRAIL TO SAINT CROIX TRAIL. CONSTRUCTION ACTIVITIES INCLUDE ROADWAY RECONDITIONS AND RECONSTRUCTION FROM CSAH 17 (ATHENS TRAIL) IN STACY TO TRUNK HIGHWAY 95 IN NORTH BRANCH, ADDITION OF A MULTI-USE TRAIL ALONG THE EAST SIDE OF CSAH 30 FROM 377TH ST TO MAPLE STREET, ADDITION OF A SIDEWALK ALONG THE SOUTH SIDE OF MAPLE STREET FROM CSAH 30 TO 7TH AVE, ROUNDABOUT ADDITION AT THE INTERSECTION OF CSAH 30 AND 377TH ST, NEW STORM SEWER SYSTEM FROM 377TH ST TO MAPLE ST, AND MILL AND OVERLAY FROM MAPLE ST TO TRUNK HIGHWAY 95.

TENTATIVE CONSTRUCTION SCHEDULE (OPERATOR SHOULD PROVIDE ESTIMATED CONSTRUCTION SCHEDULE TO THE ENGINEER)	
CONSTRUCTION ACTIVITIES:	ESTIMATED DATES OF SOIL DISTURBANCE ACTIVITIES:
TEMPORARY SEDIMENT CONTROL BMPS & REMOVALS	APRIL 2025
GRADING & UTILITY WORK	APRIL – JULY 2025
CURB & PAVEMENT	JUNE – OCTOBER 2025
FINAL STABILIZATION	NOVEMBER 2025

PROJECT PERSONNEL AND TRAINING

SWPPP DEVELOPER:
WSB TYLER C. BACHE
701 XENIA AVE S, SUITE 300
GOLDEN VALLEY, MN 55416
303-870-7436/TBACHE@WSBENG.COM



CONTRACTOR TO PROVIDE CERTIFICATION OF EROSION CONTROL OFFICER AND ANY OTHER CREW MEMBERS WHO WILL WORK ON THE IMPLEMENTATION OF THE SWPPP AND THE INSTALLATION, INSPECTION, AND MAINTENANCE OF THE EROSION PREVENTION AND SEDIMENT CONTROL BMPS BEFORE, DURING, AND AFTER CONSTRUCTION UNTIL THE NOTICE OF TERMINATION (NOT) HAS BEEN FILED WITH THE MPCA. PROVIDE PROOF OF CERTIFICATION AT THE PRECONSTRUCTION MEETING. WORK WILL NOT BE ALLOWED TO COMMENCE UNTIL PROOF OF CERTIFICATION HAS BEEN PROVIDED TO THE PROJECT ENGINEER.

CHAIN OF RESPONSIBILITY

CHISAGO COUNTY AND THE CONTRACTOR ARE CO-PERMITTEES FOR THE NPDES CONSTRUCTION GENERAL PERMIT. THE CONTRACTOR IS RESPONSIBLE TO COMPLY WITH ALL ASPECTS OF THE NPDES CONSTRUCTION PERMIT AT ALL TIMES UNTIL THE NOTICE OF TERMINATION (NOT) HAS BEEN FILED WITH THE MPCA.

NAME	COMPANY	TITLE	PHONE
BEN HOBERT	CHISAGO COUNTY	OWNER CONTACT	651-213-8723
NIC HENTGES	WSB	PROJECT MANAGER	612-360-1286

AGENCY CONTACTS

ORGANIZATION	CONTACT NAME	PHONE
MPCA (EMERGENCY) 24 HOUR	STATE DUTY OFFICER	1-800-422-0798
MPCA	JIM DEXTER	218-302-6632
COMFORT LAKE & FOREST LAKE WD	MIKE KINNEY	651-209-9753
ACOE	DULUTH FIELD OFFICE	218-788-6408
MNDNR	CRAIG WILLS	763-284-7221

LOCATION OF SWPPP REQUIREMENTS

THE REQUIRED SWPPP ELEMENTS MAY BE LOCATED IN MANY PLACES WITHIN THE PLAN SET AS WELL AS IN THE SPECIAL PROVISIONS, PROJECT MANUAL, MNDOT SPEC BOOK, OR ON FILE WITH THE PROJECT OWNER.

DESCRIPTION	LOCATION
TEMPORARY/PERMANENT EROSION CONTROL MEASURES	178 - 189
DIRECTION OF FLOW	164 - 167
CONSTRUCTION NOTES & STANDARD PLATES	16 , 31 - 47
DRAINAGE PLAN & CONSTRUCTION PLAN	164 - 167 , 119 - 142
BMP TABULATION	178 - 189
STORMWATER CALCULATIONS	DRAINAGE REPORT & HYDRAULIC REPORT. AVAILABLE UPON REQUEST

RECEIVING WATERS

A SPECIAL AND IMPAIRED WATERS SEARCH WAS COMPLETED USING THE MPCA SEARCH ENGINE ON 03/20/24. BASED ON THIS REVIEW, THE FOLLOWING SPECIAL/IMPAIRED WATERS (WITH CONSTRUCTION RELATED IMPAIRMENTS) ARE LOCATED WITHIN ONE MILE OF, AND DOWNSTREAM OF, ANY PROJECT DISCHARGE POINTS. PARTS 23.9 & 23.10 OF THE NPDES PERMIT APPLY.

WATERBODY	IMPAIRMENT (S)
SUNRISE RIVER, NORTH BRANCH	FECAL COLIFORM; FISH BIOASSESSMENTS; MERCURY IN FISH TISSUE
COUNTY DITCH 5 (WETLAND 1)	N/A
COUNTY DITCH 7	N/A
UNNAMED STREAM	N/A
WET DITCH 1	N/A

AREAS OF ENVIRONMENTAL SENSITIVITY (AES) AND INFESTED WATERS

IN ADDITION TO THE LIST OF SPECIAL AND IMPAIRED WATERS, THE CONTRACTOR SHALL BE AWARE THAT THERE ARE WETLANDS AND EXISTING STORMWATER FACILITIES WITHIN AND NEAR THE PROJECT BOUNDARY. THERE IS A MAP OF KNOWN NATURAL RESOURCES ON THE LAST PAGE OF THE SWPPP NARRATIVE. AREAS OF ENVIRONMENTAL SENSITIVITY ARE ALSO CALLED OUT ON THE PLAN SHEETS.

SOIL TYPES

A PROJECT WIDE GEOTECHNICAL REPORT WAS COMPLETED DURING THE DESIGN PHASE BY AMERICA TESTING AND ENGINEERING INC. THIS REPORT FOUND THE SUBSURFACE SOIL CONDITIONS CONSISTED OF A MIX OF SHALLOW TOPSOIL, ADDITIONAL FILL AND POSSIBLE FILL SOILS EXTENDING TO DEPTHS RANGING FROM ABOUT 2 INCHES TO 2 FEET. THE FILL WAS GENERALLY UNDERLAIN BY SOILS IDENTIFIED AS COARSE ALLUVIUM THAT EXTENDED TO THE BORING TERMINATION DEPTHS OF 14 1/2 FEET. THESE MOSTLY CONSISTED OF SAND AND SAND WITH SILT, PLUS SOME SILTY SAND. THE TILL CONSISTS OF A BLEND OF SAND AND CLAY WHILE THE OUTWASH IS GENERALLY SANDY. ADDITIONAL SOIL INFORMATION CAN BE FOUND IN THE GEOTECHNICAL REPORT, LOCATED WITHIN THE PROJECT SPECIFICATIONS. SOIL CLASSIFICATIONS FOR HIGHLY ERODIBLE LAND (HEL), POTENTIALLY HIGHLY ERODIBLE LAND (PHEL), AND NOT HIGHLY ERODIBLE LAND (NHEL) SOILS CAN BE FOUND ON FIGURE 1. SWPPP RESOURCE MAP.

NATIVE TOPSOIL WILL BE STRIPPED; IF MATERIAL NEEDS TO BE STOCKPILED, APPROPRIATE ACTION WILL TAKE PLACE TO ENSURE THE STOCKPILES HAVE ALL PROPER BMPS IN PLACE ACCORDING TO THIS SWPPP AND THE NPDES PERMIT.

ENVIRONMENTAL REVIEW

NO FORMAL ENVIRONMENTAL REVIEW WAS REQUIRED FOR THIS PROJECT.

WETLANDS: MITIGATION MEASURES ARE REQUIRED AS A RESULT OF WETLAND IMPACTS FROM THE PROJECT. A PROJECT WIDE WETLAND DELINEATION REPORT SHOWS 23 WETLANDS WITHIN THE PROJECT AREA USING THE LEVEL 2 METHOD. MITIGATION MEASURES HAVE BEEN ADDRESSED VIA WETLAND BANKING. ALL WETLAND AREAS WILL BE PROTECTED WITH PERIMETER CONTROL AND A 50’ NATURAL BUFFER (IF INFEEASIBLE, REDUNDANT PERIMETER CONTROL MEASURES), INCLUDED AREAS THAT ARE PERMITTED TO BE FILLED AND/OR EXCAVATED UNTIL WORK IN THE PERMITTED AREAS ARE NECESSARY. REDUNDANT BMP MEASURES MUST BE PLACED 5’ FROM THE INITIAL PERIMETER CONTROL MEASURE WITH A STABILIZED BUFFER STRIP BETWEEN THE BMPS. A LIST OF THESE DELINATED WETLANDS IS PROVIDED IN THE TABLE BELOW.

WETAND ID	CLASSIFICATION	DESCRIPTION	WETLAND SIZE (ACRES)
1	PEMB	WET MEADOW	0.02
2	PEMB	WET MEADOW	0.4
3	PEMB	WET MEADOW	0.17
4	PEMB	WET MEADOW	0.17
5	PEMB	WET MEADOW	0.21
6	PEMB	WET MEADOW	0.07
7	PSS1Ad	SHRUB SWAMP	0.02
8	PSS1Ad	SHRUB SWAMP	0.01
9	PEMB	WET MEADOW	0.11
10	PEMB	WET MEADOW	0.19
11	PEMB	WET MEADOW	0.13
12	PEMB	WET MEADOW	0.7
13	PEMB	WET MEADOW	0.31
14	PEMB	WET MEADOW	0.28
15	PEMB	WET MEADOW	0.25
16	PEMB	WET MEADOW	0.07
17	PEMB	WET MEADOW	0.1
18	PEMC	SHALLOW MARSH	0.71
19	PEMC	SHALLOW MARSH	1.33
20	PEMC	SHALLOW MARSH	0.12
21	PEMC	SHALLOW MARSH	0.13
22	PEMB	WET MEADOW	0.13
23	PEMB	WET MEADOW	1.43

THREATENED/ENDANGERED SPECIES: THE U.S. FISH & WILDLIFE SERVICE LISTS THE NORTHERN LONG-EARED BAT, TRI-COLORED BAT, WHOOPING CRANE, SALAMANDER MUSSEL, AND MONARCH BUTTERFLY AS THREATENED/ENDANGERED SPECIES WITHIN THE COUNTY. TREE REMOVAL SHOULD OCCUR OUTSIDE OF THE NORTHERN LONG-EARED BAT ACTIVE SEASON (APRIL 1 TO OCTOBER 31). BASED ON THE CONSTRUCTION ACTIVITIES, IT IS DETERMINED THAT THE PROJECT WILL HAVE NO EFFECT ON THESE SPECIES OR THEIR HABITATS. HOWEVER, IF THESE SPECIES ARE FOUND, CONTRACTOR TO STOP WORK IMMEDIATELY FOR FURTHER INVESTIGATION.

DRINKING WATER/WELLS: ACCORDING TO THE MDH, THE PROJECT IS LOCATED WITHIN THE NORTH BRANCH DRINKING WATER SUPPLY MANAGEMENT AREA (DWSMA) AND WELLHEAD PROTECTION AREA.

CONTAMINATED PROPERTIES: THE MPCA’S “WHAT’S IN MY NEIGHBORHOOD” DATABASE WAS REVIEWED ON 03/20/2024. THE RESULTS OF THIS REVIEW SHOW THE DEPTH OF THE FULL RECLAMATION IS NOT PROPOSED TO UNEARTH ANY CONTAMINATED SOIL, CONTAMINATED WATER, AND/OR REGULATED WASTE. REFER TO MNDOT SPEC 1717.1.A. FOR POTENTIAL INDICATORS OF CONTAMINATED MATERIALS AND REGULATED WASTE. IF CONTAMINATED MATERIAL, CONTAMINATED WATER, AND/OR REGULATED MATERIALS ARE FOUND, CREWS ARE TO STOP WORK IMMEDIATELY FOR FURTHER INVESTIGATION/TESTING.

SITE ID	NAME	ADDRESS	ACTIVITIES
26226	POLETECH INC	36375 FOREST BLVD	HAZARDOUS WASTE; PETROLEUM REMEDIATION, LEAK SITE
62502	RALPH D ELLEFSON FARM	6093 362ND ST	FEEDLOTS
88716	NORTH BRANCH COLLISION LLC	36401 FOREST BLVD STE 2	HAZARDOUS WASTE
10809	SNOWBALL EXPRESS INC	6360 375TH ST	HAZARDOUS WASTE

NO.	DATE	BY	CHK	REVISIONS	Design By:	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. NICHOLAS E. HENTGES, PE DATE: 9/12/2024 LICENSE NO. 44620
					NEH	
					MKV	
					MAN	
					NEH	



CSAH 30 (Forest Blvd) Improvements
Chisago County, Minnesota

CHISAGO COUNTY, MINNESOTA
STORM WATER POLLUTION PREVENTION PLAN
SAP 013-630-021 / SAP 225-591-007 / SAP 225-102-004

SHEET
174
OF
216
SHEETS

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55553	ROLAND CLEVELAND FARM	6160 375TH ST	FEEDLOTS
11566	O'BRIENS	38171 FOREST LAKE BLVD	HAZARDOUS WASTE
13697	BRANCH MANUFACTURING CO	6420 PINE ST	HAZARDOUS WASTE
1982	NORTH BRANCH MUNICIPAL WATER AND LIGHT	6388 MAPLE ST	ABOVEGROUND TANKS; AIR QUALITY; HAZARDOUS WASTE, MINIMAL QUANTITY GENERATOR; UNDERGROUND TANKS
187113	FORMER GAS STATION	911 FOREST BLVD	PETROLEUM REMEDIATION, LEAK SITE

FLOOD CONTINGENCY PLAN: PROJECT ACTIVITIES ARE NOT LOCATED WITHIN THE 100-YEAR FLOODPLAIN OR FLOODWAY; HOWEVER, THE PROJECT ENGINEER (AT THEIR DISCRETION) MAY REQUIRE A PREVENTATIVE FLOOD CONTINGENCY PLAN FOR SPECIFIC PROJECT ACTIVITIES AND AREAS IF SEASONAL PRECIPITATION POSSES A POTENTIAL RISK OF FLOODING WORK AREAS WITHIN THE PROJECT LIMITS. THIS PLAN SHALL BE SUBMITTED BY THE OPERATOR TO THE PROJECT ENGINEER FOR APPROVAL A MINIMUM OF 72 HOURS PRIOR TO THE SCHEDULED WORK AND/OR DURING ACTIVE WORK WITHIN THE AREA OF POTENTIAL RISK OF FLOODING. NO WORK CAN COMMENCE IN THE AREA UNTIL WRITTEN APPROVAL HAS BEEN GRANTED BY THE PROJECT ENGINEER.

LAND FEATURE CHANGES

TOTAL AREA TO BE DISTURBED = 22.79 ACRES
IMPERVIOUS AREA: PRE-CONSTRUCTION = 10.38 ACRES/POST-CONSTRUCTION = 15.33 ACRES
NET INCREASE OF IMPERVIOUS AREA = 4.95 ACRES

LONG TERM MAINTENANCE AND OPERATION:

THE NPDES PERMANENT STORMWATER TREATMENT SYSTEM (PART 15.1) FROM THE NET NEW IMPERVIOUS SURFACES OF THE PROJECT IS PROVIDED IN THE EXISTING DITCHES ALONG THE ROADWAY. EXISTING SOILS ARE GENERALLY CHARACTERIZED AS HSG A AND B SOILS AND CONDUCIVE TO INFILTRATION. CHISAGO COUNTY STAFF IS RESPONSIBLE FOR THE LONG-TERM MAINTENANCE AND OPERATION OF THE PERMANENT STORMWATER SYSTEM. THE STORMWATER REPORT CAN BE MADE AVAILIABLE BY REQUEST.

STABILIZATION TIME FRAMES

AREA	TIME FRAME	NOTES
EXPOSED AREAS	IMMEDIATELY AND NO LATER THAN 7 DAYS OF BEING UNWORKED	1, 4, 5
LAST 200 LINEAL FEET OF DRAINAGE DITCH/SWALE	WITHIN 24 HOURS OF CONNECTION TO SURFACE WATER/PROPERTY EDGE	1, 2, 3
REMAINING PORTIONS OF DRAINAGE DITCH OR SWALE	7 DAYS	1, 3
PIPE AND CULVERT OUTLETS	24 HOURS	
STOCKPILES	7 DAYS	1

- INITIATE STABILIZATION IMMEDIATELY WHEN CONSTRUCTION HAS TEMPORARILY OR PERMANENTLY CEASED ON ANY PORTION OF THE SITE. COMPLETE STABILIZATION WITHIN THE TIME FRAME LISTED. IN MANY INSTANCES THIS WILL REQUIRE STABILIZATION TO OCCUR MORE THAN ONCE DURING THE COURSE OF THE PROJECT. TEMPORARY SOIL STOCKPILES WITHOUT SIGNIFICANT CLAY OR SILT AND STOCKPILED AND CONSTRUCTED ROAD BASE ARE EXEMPT FROM THE STABILIZATION REQUIREMENT.
- STABILIZE WETTED PERIMETER OF DITCH (I.E. WHERE THE DITCH GETS WET).
- APPLICATION OF MULCH, HYDROMULCH, TACKIFIER AND POLYACRYLAMIDE ARE NOT ACCEPTABLE STABILIZATION METHODS IN THESE AREAS.
- STABILIZE ALL AREAS OF THE SITE PRIOR TO THE ONSET OF WINTER. ANY WORK STILL BEING PERFORMED WILL BE MULCHED OR BLANKETED WITHIN THE TIME FRAMES IN THE NPDES PERMIT.
- TOPSOIL BERMS MUST BE STABILIZED TO BE CONSIDERED PERIMETER CONTROL BMPS. USE RAPID STABILIZATION METHOD 3. THE SEED MIX USED IN THE RAPID STABILIZATION MAY BE SUBSTITUTED AS FOLLOWS:
 - SINGLE YEAR CONSTRUCTION BETWEEN MAY 1 - AUGUST 1, SEED WITH SEED MIX 21-111
 - SINGLE YEAR CONSTRUCTION BETWEEN AUGUST 1 - OCTOBER 31, SEED WITH SEED MIX 21-112
 - MULTI YEAR TEMPORARY STABILIZATION 22-111
- KEEP DITCHES AND EXPOSED SOILS IN AN EVEN ROUGH GRADED CONDITION IN ORDER TO BE ABLE TO APPLY EROSION CONTROL MULCHES, HYDROMULCHES, AND BLANKETS.

SITE INSPECTION AND MAINTENANCE

THE EROSION CONTROL OFFICER IS TO INSPECT THE ENTIRE CONSTRUCTION SITE AT LEAST ONCE EVERY SEVEN (7) DAYS DURING ACTIVE CONSTRUCTION AND WITHIN 24 HOURS AFTER A RAINFALL EVENT GREATER THAN 0.5 INCHES IN 24 HOURS. THE OPERATOR SHALL PROVIDE A RAINFALL GAUGE ON-SITE AT VARIOUS MILE INTERVALS ALONG THE ALIGNMENT. INSPECT ALL TEMPORARY AND PERMANENT PROJECT BMPS UNTIL THE SITE HAS UNDERGONE FINAL STABILIZATION AND THE NOT HAS BEEN SUBMITTED. INSPECT SURFACE WATER INCLUDING DRAINAGE DITCHES FOR SIGNS OF EROSION AND SEDIMENT DEPOSITION. INSPECT CONSTRUCTION SITE VEHICLE EXIT LOCATIONS FOR EVIDENCE OF TRACKING ONTO PAVED SURFACES. INSPECT SURROUNDING PROPERTIES FOR EVIDENCE OF OFF-SITE SEDIMENT ACCUMULATION. ALL INSPECTIONS AND MAINTENANCE CONDUCTED MUST BE RECORDED IN WRITING BY THE OPERATOR AND RETAINED WITH THE SWPPP. SUBMIT INSPECTION REPORTS IN A FORMAT THAT IS ACCEPTABLE TO THE PROJECT ENGINEER. RECORDS OF EACH INSPECTION AND MAINTENANCE ACTIVITY SHALL INCLUDE:

- DATE, TIME, AND NAME OF PERSON(S) CONDUCTING INSPECTIONS;
- FINDINGS OF INSPECTIONS, INCLUDING RECOMMENDATIONS FOR CORRECTIVE ACTIONS;
- CORRECTIVE ACTIONS TAKEN (INCLUDING DATES, TIMES, AND PARTY COMPLETING MAINTENANCE ACTIVITIES); INCLUDING DOCUMENTATION/PHOTOS OF IMPLEMENTED BMPS INTENDED TO CORRECT A PROBLEM BUT FAILED.
- DATE AND AMOUNT OF ALL RAINFALL EVENTS GREATER THAN 0.5 INCHES IN 24 HOURS;
- DOCUMENTATION OF CHANGES MADE TO THE SWPPP.

REPLACE, REPAIR OR SUPPLEMENT ALL NONFUNCTIONAL BMPS BY THE END OF THE NEXT BUSINESS DAY FOLLOWING DISCOVERY UNLESS LISTED DIFFERENTLY BELOW:

- REPAIR, REPLACE, OR SUPPLEMENT PERIMETER CONTROL DEVICES WHEN THEY BECOME NONFUNCTIONAL OR SEDIMENT REACHES 1/2 THE HEIGHT OF THE DEVICE. COMPLETE REPAIRS BY THE END OF THE NEXT BUSINESS DAY FOLLOWING DISCOVERY.
- REPAIR OR REPLACE INLET PROTECTION DEVICES WHEN THEY BECOME NONFUNCTIONAL OR SEDIMENT REACHES 1/2 THE HEIGHT AND/OR DEPTH OF THE DEVICE.
- REMOVE ALL DELTAS AND SEDIMENT DEPOSITED IN SURFACE WATERS INCLUDING DRAINAGE WAYS, CATCH BASINS, AND OTHER DRAINAGE SYSTEMS. STABILIZE ANY AREAS THAT ARE DISTURBED BY SEDIMENT REMOVAL OPERATIONS. SEDIMENT REMOVAL AND STABILIZATION MUST BE COMPLETED WITHIN 7 DAYS OF DISCOVERY.

- REMOVE TRACKED SEDIMENT FROM PAVED SURFACES BOTH ON AND OFF SITE WITHIN ONE (1) CALENDAR DAY OF DISCOVERY. STREET SWEEPING MAY HAVE TO OCCUR MORE OFTEN TO MINIMIZE OFF SITE IMPACTS. LIGHTLY WET THE PAVEMENT PRIOR TO SWEEPING.
- MAINTAIN ALL BMPS UNTIL WORK HAS BEEN COMPLETED, SITE HAS GONE UNDER FINAL STABILIZATION, AND THE NOT HAS BEEN SUBMITTED TO THE MPCA.

CONSTRUCTION ACTIVITY REQUIREMENTS: EROSION/SEDIMENT CONTROL, PROCEDURES, & MAINTENANCE STANDARDS

- AMEND THE SWPPP AND DOCUMENT ALL CHANGES TO THE SWPPP AND ASSOCIATED PLAN SHEETS IN A TIMELY MANNER. SWPPP AMENDMENTS AND SITE PLANS WILL BE PREPARED BY THE OPERATOR AND SUBMITTED TO THE OWNER FOR REVIEW AND WRITTEN APPROVAL BY THE PROJECT OWNER (OR DESIGNATED REPRESENTATIVE). STORE THE SWPPP AND ALL AMENDMENTS ON SITE AT ALL TIMES.
- PREPARE AND SUBMIT A SITE MANAGEMENT PLAN FOR THE ENGINEER’S ACCEPTANCE FOR STAGING/STOCKPILE MANAGEMENT AREAS, CONCRETE MANAGEMENT, CONCRETE SLURRY APPLICATION AREAS, FUGITIVE DUST CONTROL PLAN, SPILL CONTAINMENT PLAN, HAZARDOUS MATERIAL MANIFEST & MANAGEMENT PLAN, WETLAND MANAGEMENT PLAN, VEGETATION PRESERVATION & MAINTENANCE PLAN, WORK IN AND NEAR AREAS OF ENVIRONMENTAL SENSITIVITY, AREAS IDENTIFIED IN THE PLANS AS “SITE MANAGEMENT PLAN AREA”, ANY WORK THAT WILL REQUIRE DEWATERING, ANY ADDITIONAL PLANS LISTED IN THE PROJECT SPECIFICATIONS, AND AS REQUIRED BY THE ENGINEER. SUBMIT ALL SITE MANAGEMENT PLANS TO THE ENGINEER IN WRITING. ALLOW A MINIMUM OF 7 DAYS FOR PROJECT ENGINEER TO REVIEW AND ACCEPT SITE MANAGEMENT PLAN SUBMITTALS. WORK WILL NOT BE ALLOWED TO COMMENCE IF A SITE MANAGEMENT PLAN IS REQUIRED UNTIL ACCEPTANCE HAS BEEN GRANTED BY THE ENGINEER. THERE WILL BE NO EXTRA TIME ADDED TO THE CONTRACT DUE TO THE UNTIMELY SUBMITTAL.
- THE PROJECT’S CONSTRUCTION PHASING AND STAGING IS DEFINED BY THE “CONSTRUCTION STAGING & TRAFFIC CONTROL PLAN” AND PROJECT SPECIFICATIONS.
- BURNING OF ANY MATERIAL IS NOT ALLOWED WITHIN PROJECT BOUNDARY.
- DO NOT DISTURB AREAS OUTSIDE OF THE CONSTRUCTION LIMITS. DELINEATE AREAS NOT TO BE DISTURBED AND WETLANDS (EVEN AREAS THAT ARE PERMITTED FOR CONSTRUCTION) PRIOR TO STARTING GROUND DISTURBING ACTIVITIES. IF IT BECOMES NECESSARY TO DISTURB AREAS OUTSIDE OF THE CONSTRUCTION LIMITS, OBTAIN WRITTEN PERMISSION FROM THE PROJECT ENGINEER PRIOR TO PROCEEDING. PRESERVE ALL NATURAL BUFFERS SHOWN ON THE PLANS.
- ROUTE STORMWATER AROUND UNSTABILIZED AREAS OF THE SITE WHENEVER FEASIBLE. PROVIDE EROSION CONTROL AND VELOCITY DISSIPATION DEVICES AS NEEDED TO KEEP CHANNELS FROM ERODING AND TO PREVENT NUISANCE CONDITIONS AT THE OUTLET.
- DIRECT DISCHARGE FROM BMPS TO VEGETATED AREAS WHENEVER FEASIBLE. PROVIDE VELOCITY DISSIPATION DEVICES AS NEEDED TO PREVENT EROSION.
- LOCATE PERIMETER CONTROL ON THE CONTOUR TO CAPTURE OVERLAND, LOW-VELOCITY SHEET FLOWS DOWN GRADIENT OF ALL EXPOSED SOILS AND PRIOR TO DISCHARGING TO SURFACE WATERS. PLACE J-HOOKS AT A MAXIMUM OF 100-FOOT INTERVALS.
- ALL STOCKPILES MUST HAVE PERIMETER SEDIMENT CONTROLS IMPLEMENTED AND MAINTAINED AT ALL TIMES AND SHOULD BE INSTALLED PRIOR TO INITIATION OF STOCKPILING. PILES CANNOT BE PLACED IN BUFFER AREAS OR SURFACE WATERS, INCLUDING STORMWATER CONVEYANCES SUCH AS CURB AND GUTTER SYSTEMS, OR CONDUITS AND DITCHES UNLESS THERE IS A BYPASS IN PLACE TO PREVENT STORMWATER RUN-ON INTO THE STOCKPILE.
- STEEP SLOPES MAY BE TEMPORARILY CREATED DURING GRADING OPERATIONS. STABILIZATION OF STEEP SLOPES (3:1 OR GREATER) SHALL BE PROPERLY CAT-TRACKED AND STABILIZED PER THE EROSION CONTROL PLAN. LONG SLOPES CAN BE BROKEN UP WITH SEDIMENT CONTROL LOGS IF EROSION IS EVIDENT.
- DITCH CHECKS WILL BE PLACED AS INDICATED ON THE PLANS DURING ALL PHASES OF CONSTRUCTION.
- ALL STORM DRAIN INLETS, THAT RECEIVE PROJECT STORMWATER, MUST BE PROTECTED BY APPROPRIATE BMPS DURING CONSTRUCTION UNTIL ALL SOURCES WITH POTENTIAL FOR DISCHARGING TO THE INLET HAVE BEEN STABILIZED. INLET PROTECTION MAY BE REMOVED FOR A PARTICULAR INLET IF A SPECIFIC SAFETY CONCERN (STREET FLOODING/FREEZING) HAS BEEN IDENTIFIED AND THE PERMITTEE(S) HAS RECEIVED WRITTEN CORRESPONDENCE FROM THE JURISDICTIONAL AUTHORITY VERIFYING THE NEED FOR REMOVAL. WRITTEN CORRESPONDENCE MUST BE DOCUMENTED IN THE SWPPP.
- SILT FENCE IS NOT AN ACCEPTABLE CATCH BASIN INLET PROTECTION BMP. CONTACTOR SHALL CLEAN, REMOVE AND DISPOSE OF SEDIMENT, AND/OR REPLACE STORM DRAIN INLET PROTECTION ON A ROUTINE BASIS TO ENSURE THE DEVICE IS FULLY FUNCTIONAL PRIOR TO THE NEXT FORECASTED PRECIPITATION EVENT (30% OR GREATER).
- DISCHARGE TURBID OR SEDIMENT LADEN WATER TO TEMPORARY SEDIMENT BASINS WHENEVER FEASIBLE. IN THE EVENT THAT IT IS NOT FEASIBLE TO DISCHARGE THE SEDIMENT LADEN WATER TO A TEMPORARY SEDIMENT BASIN, THE WATER MUST BE TREATED SO THAT IT DOES NOT CAUSE A NUISANCE CONDITION IN THE RECEIVING WATERS OR TO DOWNSTREAM LANDOWNERS. CLEAN OUT ALL PERMANENT STORMWATER BASINS REGARDLESS OF WHETHER USED AS TEMPORARY SEDIMENT BASINS/TRAPS TO THE DESIGN CAPACITY AFTER COMPLETING ALL UP-GRADIENT LAND DISTURBING ACTIVITY. USE A SKIMMER DEVICE FOR BASIN DRAINING.
- PROVIDE STABILIZATION IN ANY TRENCHES CUT FOR DEWATERING OR SITE DRAINING PURPOSES.
- THE CONTRACTOR SHALL SUBMIT A DEWATERING PLAN AND NARRATIVE TO THE PROJECT ENGINEER FOR APPROVAL 7 DAYS PRIOR TO UNDERTAKING THESE ACTIVITIES. DEWATERING PLAN MUST INCLUDE BMP’S TO PREVENT SEDIMENT TRANSPORT, EROSION, AND ADVERSE IMPACTS TO DOWNSTREAM RECEIVING WATERS. THE DEWATERING PLAN MUST ALSO INCLUDE ANY SPECIFIC CHEMICAL TREATMENTS (FLOC, POLYMERS, ETC.) THAT WILL BE USED. THE CONTRACTOR IS RESPONSIBLE TO OBTAIN ANY PERMIT NECESSARY FOR THESE ACTIVITIES; THE DEWATERING PLAN AND DNR APPROPRIATIONS PERMIT WILL BECOME PART OF THE SWPPP. THE CONTRACTOR SHALL VISUALLY CHECK AND PHOTOGRAPH THE DISCHARGE AT THE BEGINNING AND AT LEAST ONCE EVERY 24 HOURS OF OPERATION TO ENSURE ADEQUATE TREATMENT HAS BEEN OBTAINED AND NUISANCE CONDITIONS WILL NOT RESULT FROM THE DISCHARGE.

TEMPORARY & PERMANENT EROSION CONTROL BMPS

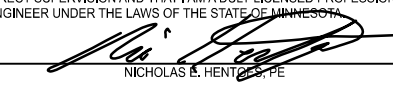
SEED MIX: SEED MIX SHALL BE USED IN CONSTRUCTION AND REVEGETATION PROJECTS IN ORDER TO ENHANCE SOIL NUTRIENT AVAILABILITY AND BIOLOGICAL SOIL STRUCTURE, ENCOURAGE NATIVE PLAN SUCCESSION, REDUCE EROSION, AND DISCOURAGE INVASIVE PLANT SPECIES. INOCULATION OF SOILS WITH MYCORRHIZAL FUNGI OR THE PRESENCE OF PRE-EXISTING SOIL MICROBES IS ESSENTIAL FOR THE STABILIZATION OF ADVERSE SOILS, ESTABLISHMENT OF NATIVE GRASSES, AND THE EXCLUSION OF NON-NATIVE “ANNUALS” AND NOXIOUS WEEDS.

EROSION CONTROL BLANKET: EROSION CONTROL BLANKETS (ECBS) ARE A SOIL STABILIZATION (EROSION CONTROL) BMP, INTENDED TO PROTECT DISTURBED SOIL SURFACES FROM RAINDROP IMPACT EROSION. ECBS ARE CARPET-LIKE MATS, INSTALLED OVER AND ANCHORED TO THE PROPERLY PREPARED SOIL SURFACES. PROPERLY SELECTED AND INSTALLED, ECBS CAN MIMIC THE BENEFICIAL EFFECTS OF VEGETATIVE COVER THEREBY REDUCING EROSION RATES BY OVER 90%. ECBS ALSO PROTECT SEEDS AND PROVIDE A BENEFICIAL ENVIRONMENT FOR VEGETATION TO BECOME ESTABLISHED. CONTRACTOR SHALL VERIFY DURING REGULAR INSPECTIONS THAT NO GULLIES, RILLS, OR SCOUR HOLES HAVE FORMED UNDER EROSION CONTROL BLANKETS AND MATS AND CORRECT ALL ERODED AREAS WITHIN 7 DAYS. ALL REPAIRS MUST BE COMPLETED WITHIN 24 HOURS OF DISCOVERY, OR AS SOON AS FIELD CONDITIONS ALLOW ACCESS.

NO.	DATE	BY	CHK	REVISIONS

Design By:	NEH
Plan By:	MKV
Checked By:	MAN
Approved By:	NEH

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


NICHOLAS E. HENTGES, PE
DATE: 9/12/2024 LICENSE NO. 44620



CSAH 30 (Forest Blvd) Improvements
Chisago County, Minnesota

CHISAGO COUNTY, MINNESOTA
STORM WATER POLLUTION PREVENTION PLAN SAP 013-630-021 / SAP 225-591-007 / SAP 225-102-004

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STRAW MULCHING: DISTURBED SOIL AREAS SHALL BE PROTECTED WITH STRAW MULCH. MULCHING IS THE APPLICATION OF A PROTECTIVE LAYER OF STRAW OR OTHER SUITABLE MATERIAL TO THE SOIL SURFACE. STRAW MULCH SHALL BE USED IN CONJUNCTION WITH SEEDING AND HYDRO-SEEDING FOR ESTABLISHMENT OF VEGETATION. STRAW MULCH MUST BE SECURED TO THE GROUND USING DISKING OR AN OVERSPRAY OF AN HECF. MULCHING IS COMMONLY USED AS A TEMPORARY MEASURE TO PROTECT BARE OR DISTURBED SOIL AREAS THAT HAVE NOT BEEN SEEDED, UNTIL NATIVE VEGETATION RE-GROWS. CERTIFIED WEED-FREE MULCH MUST BE USED WHEN USING NATIVE SEED MIXES OR WHEN WORKING NEAR ENVIRONMENTALLY SENSITIVE AREAS.

HYDRAULIC MATRICES: HYDRAULIC MATRICES ARE EROSION CONTROL PRODUCTS THAT ARE USED TO STABILIZE EXPOSED SOILS. THESE MATRICES ARE APPLIED IN A SLURRY, PRODUCED BY MIXING FIBER, WATER AND A BINDING AGENT TOGETHER IN A MECHANICAL HYDRO-SEEDER. WOOD FIBER IS WIDELY USED BUT OTHER FIBERS CAN INCLUDE PAPER, STRAW, COIR, CORN, ETC. THE EFFECTIVENESS OF THESE HYDRAULIC MATRICES ARE DEPENDENT ON:

- PROPER SOIL PREPARATION
- APPLICATION RATES (DEPENDENT ON THE MANUFACTURERS RECOMMENDATIONS)
- THE TYPE OF FIBERS USED
- THE TYPE OF BOND AGENT(S) ADDED

THESE HYDRAULIC MATRICES ARE CLASSIFIED IN THE MNDOT SPEC BOOK AND APPROVED PRODUCTS LIST, DEPENDING ON THE PRODUCT CHARACTERISTICS, STRENGTH, AND LONGGEVITY. HYDRAULIC MATRICES USED INCLUDE: ORGANIC FIBER MATRIX, HYDRAULIC MULCH MATRIX, STABILIZED FIBER MATRIX, BONDED FIBER MATRIX, AND FIBER REINFORCED MATRIX.

SOD TYPE LAWN: SOD IS A PERMANENT EROSION PREVENTION BMP THAT PROVIDES INSTANTANEOUS SOIL STABILIZATION. THE CONTRACTOR IS RESPONSIBLE FOR MAINTENANCE OF SOD AS OUTLINED IN THE PROJECT SPECIFICATIONS.

ENERGY DISSIPATER: AN ENERGY DISSIPATER IS A STRUCTURE DESIGNED TO CONTROL EROSION AT THE OUTLET OF A CHANNEL OR CONDUIT.

RAPID STABILIZATION METHOD #1: THIS METHOD SHALL CONSIST OF TYPE 1 MULCH (2 TON PER ACRE) WITH DISC ANCHORING BE SPREAD IN AREAS THAT HAVE BEEN UNWORKED FOR 7 DAYS. THIS METHOD SHALL BE USED ON SLOPES OF 3:1 AND LESS. OPERATOR MUST APPLY MULCH IN A UNIFORM PATTERN OVER THE DISTURBED SOILS TO ACHIEVE A MINIMUM OF 90% GROUND COVER.

RAPID STABILIZATION METHOD #2: THIS METHOD SHALL CONSIST OF TYPE 3 MULCH (1.5 TON PER ACRE) OR 3884 TYPE STABILIZED FIBER MATRIX (750 LBS PER ACRE) BE SPREAD IN AREAS THAT HAVE BEEN UNWORKED FOR 7 DAYS. THIS METHOD SHALL BE USED ON SLOPES LESS THAN 3:1.

RAPID STABILIZATION METHOD #3: THIS WORK SHALL CONSIST OF OPERATIONS NECESSARY TO RAPIDLY STABILIZE SMALL CRITICAL AREAS WITHIN 200 FEET OF SURFACE WATERS, TO PREVENT OFF SITE SEDIMENTATION AND OR TO COMPLY WITH PERMIT REQUIREMENTS. THIS FORM OF RAPID STABILIZATION EMPLOYS SFM, SEED MIX 22-111, AND FERTILIZER TYPE 3. THIS METHOD SHALL BE USED ON SLOPES LESS THAN 3:1. INSTALL PER MNDOT SPECIFICATION 2575.3.M.1.C.

RAPID STABILIZATION METHOD #4: THIS METHOD SHALL CONSIST OF CATEGORY 20/25 EROSION CONTROL BLANKET (NATURAL NET ONLY) IN COMBINATION WITH MNDOT SEED MIX 22-111 (2 LBS PER 100 SQ. YD.) AND TYPE 3 SLOW RELEASE FERTILIZER (8 LBS PER 100 SQ. YD.). THIS IS AN ACCEPTABLE BMP FOR DISTURBED AREAS ADJACENT TO ENVIRONMENTALLY SENSITIVE AREAS, SURFACE WATERS, AND WITHIN THE LAST 200 FEET OF DITCH BOTTOMS.

TEMPORARY & PERMANENT SEDIMENT CONTROL BMPS

SEDIMENT CONTROL LOGS: SEDIMENT CONTROL LOGS ARE MANUFACTURED FROM STRAW, WOOD EXCELSIOR, COCONUT FIBERS, AND/OR OTHER MATERIALS THAT ARE BOUND WITH POLYPROPYLENE OR BIODEGRADABLE NETTING INTO TIGHT TUBULAR ROLLS. FIBER ROLLS CONTROL THREE TYPES OF EROSIONAL PROCESSES; EROSION CONTROL, RUN OFF CONTROL, AND SEDIMENT CONTROL. SEDIMENT CONTROL LOGS CAN BE USED FOR THE FOLLOWING:

- SLOPE INTERRUPTERS TO REDUCE EROSION ON NEWLY CONSTRUCTED SLOPES
- TEMPORARY DITCH CHECKS TO REDUCE RUNOFF VELOCITIES IN DRAINAGE CHANNELS
- SEDIMENT CONTROL BARRIERS FOR SMALL DISTURBED SOIL AREAS SUCH AS STOCKPILES, DISCRETE SLOPES, OR INDIVIDUAL LOTS

MACHINE SLICED SILT FENCE: A SILT FENCE IS A TEMPORARY SEDIMENT BARRIER CONSISTING OF FILTER FABRIC ENTRENCHED INTO THE SOIL AND ATTACHED TO SUPPORTING POSTS. SILT FENCE IS INTENDED TO BE INSTALLED WHERE SEDIMENT-LADEN WATER CAN POND, THUS ALLOWING THE SEDIMENT TO FALL OUT OF SUSPENSION AND SEPARATE FROM THE RUNOFF. SILT FENCE INSTALLED WITH A TRENCHER OR BY SLICING IS THE MOST EFFECTIVE INSTALLATION METHOD TO ENSURE AGAINST COMMON SILT FENCE FAILURES. THE BMP WILL BE CLEANED OUT OR REPLACED WHEN THE SEDIMENT REACHES 1/2 THE HEIGHT OF THE FENCE.

STABILIZED CONSTRUCTION EXIT: TEMPORARY CONSTRUCTION EXITS ARE CONSTRUCTED AT THE EGRESS POINT FROM THE CONSTRUCTION AREA ONTO A PAVED ROAD. A STABILIZED CONSTRUCTION EXIT IS A TRACKING CONTROL BMP INTENDED TO PREVENT TRACKING OF SOIL FROM THE CONSTRUCTION SITE BY EQUIPMENT AND VEHICLES. THE EXITS ARE CONSTRUCTED OF LARGE ANGULAR ROCK, STEEL RIBS (RUMBLE STRIPS), OR TRACK PADS INTENDED TO KNOCK THE MUD OFF THE TIRES BEFORE TRAVELING ONTO THE ROADWAY.

CHEMICAL TREATMENTS: OPERATOR MUST AMEND THE SWPPP TO INCLUDE THE INTENDED USES AND LOCATIONS OF FLOCCULANTS, POLYMERS, AND OTHER SEDIMENTATION TREATMENT CHEMICALS. CHEMICAL TREATMENTS MUST BE IN COMPLIANCE WITH PART 9.18.

BIORETENTION & BIOSWALES: BIORETENTION BASINS AND BIOSWALES DIRECT SHEET FLOW ACROSS A GRASS BUFFER STRIP TO A PONDING AREA FOR INFILTRATION. THEY UTILIZE SOILS AND BOTH WOODY AND HERBACEOUS PLANTS TO REMOVE POLLUTANTS FROM STORMWATER RUNOFF. THE PONDING AREA GENERALLY CONSISTS OF A SURFACE LAYER CONTAINING ORGANICS SUCH AS MULCH, TREES, NATIVE GRASSES AND SHRUBS, A SUBSURFACE LAYER OF PLANTING SOIL, AND A SAND BED.

DUST CONTROL: OPERATOR WILL COMPLY WITH STATE RULE 7011.0150 ON DUST PREVENTION REQUIREMENTS. DUST FROM THE SITE WILL BE CONTROLLED BY INCREASED STREET SWEEPING AND/OR USING A MOBILE PRESSURE-TYPE DISTRIBUTOR TRUCK TO APPLY POTABLE WATER TO DISTURBED AREAS. THE MOBILE UNIT WILL APPLY WATER AT A RATE NECESSARY TO PREVENT RUNOFF AND PONDING.

POLLUTION PREVENTION MANAGEMENT

POTENTIAL SOURCES OF POLLUTANTS FROM CONSTRUCTION ACTIVITIES INCLUDE, BUT NOT LIMITED TO:

1. SEDIMENT AND FUGITIVE DUST GENERATED FROM CLEARING AND GRUBBING, IMPORT/EXPORT OPERATIONS, REMOVALS/COMPACTION, MASS/FINE GRADING, EXCAVATIONS, TRENCHING, TOPSOIL STRIPING STOCKPILING, WET/DRY PAVEMENT CUTTING, STREET CONSTRUCTION.
2. BASIC/ACIDIC PH LEVELS FROM CURB AND GUTTER, MANHOLE STRUCTURES, SIDEWALKS, DRIVEWAY APRONS, FOUNDATIONS, BRIDGE ABUTMENTS, WET/DRY PAVEMENT CUTTING, MASONRY WASHOUT/CLEANOUT.
3. EXCESS NUTRIENTS FROM LANDSCAPING INSTALLATIONS, SOIL ADDITIVES, FERTILIZATION, MULCHING.
4. HYDROCARBONS FROM STREET CONSTRUCTION, DEMOLITION/REMOVALS, WET/DRY PAVEMENT CUTTING.

OPERATOR WILL COMPLY WITH ALL OF THE POLLUTION PREVENTION AND MANAGEMENT MEASURES IDENTIFIED IN THE NPDES-CSW PERMIT, PART 12.1. STORAGE AND DISPOSAL OF CONSTRUCTION AND HAZARDOUS WASTES MUST BE IN COMPLIANCE WITH MPCA REGULATIONS.

- A. POSITION AND STAKE DOWN ALL PORTABLE TOILETS SO THEY CANNOT BE TIPPED OR KNOCKED OVER. SUPPLY ADEQUATE SECONDARY CONTAINMENT.
- B. SECONDARY CONTAINMENT IS NEEDED AROUND ALL STATIONARY EQUIPMENT (GENERATORS, PUMPS, LIGHT PLANTS, ETC.) PROVIDE CONTAINMENT FOR ALL HAZARDOUS MATERIALS AND TOXIC WASTE.
- C. NO ENGINE DEGREASING IS ALLOWED ON SITE.
- D. VEHICLE AND EQUIPMENT WASHING TO OCCUR IN DESIGNATED AREA AS DETERMINED BY THE CONTRACTOR SUBMITTAL OF A MANAGEMENT PLAN FOR THESE ACTIVITIES.
- E. PROPERLY CLEAN UP AND REPORT ALL SPILLS AS REQUIRED BY THE MPCA AND MNDOT SPECIFICATIONS.
- F. PROVIDE A SPILL KIT AT EACH WORK LOCATION ON THE SITE.
- G. PROVIDE A SECURE STORAGE AREA WITH RESTRICTED ACCESS FOR ALL HAZARDOUS MATERIALS AND TOXIC WASTE. RETURN ALL HAZARDOUS MATERIALS AND TOXIC WASTE TO THE DESIGNATED STORAGE AREA AT THE END OF THE BUSINESS DAY UNLESS INFEASIBLE. STORE ALL HAZARDOUS MATERIALS AND TOXIC WASTE (INCLUDING BUT NOT LIMITED TO OIL, DIESEL FUEL, GASOLINE, HYDRAULIC FLUIDS, PAINT, PETROLEUM BASED PRODUCTS, WOOD PRESERVATIVES, ADDITIVES, CURING COMPOUNDS, AND ACIDS) IN SEALED CONTAINERS WITH SECONDARY CONTAINMENT. CLEAN UP SPILLS IMMEDIATELY. STORE, COLLECT AND DISPOSE OF ALL SOLID WASTE.
- H. SLURRY FROM CONCRETE OPERATIONS MUST BE VACUUMED UP IMMEDIATELY. NO CONCRETE WASHOUT SHALL COME IN CONTACT WITH THE GROUND AND MUST BE PROPERLY DISPOSED OF.
- I. A SIGN MUST BE INSTALLED ADJACENT TO EACH CONCRETE WASHOUT FACILITY.
- J. CREATE AND FOLLOW A WRITTEN DISPOSAL PLAN FOR ALL WASTE MATERIALS. INCLUDE IN THE PLAN HOW THE MATERIAL WILL BE DISPOSED OF AND THE LOCATION OF THE DISPOSAL SITE. SUBMIT PLAN TO THE ENGINEER PRIOR TO CONSTRUCTION.
- K. USE METHODS AND OPERATIONAL PROCEDURES THAT PREVENT DISCHARGE OR PLACEMENT OF BITUMINOUS GRINDINGS, CUTTINGS, MILLINGS, AND OTHER BITUMINOUS WASTES FROM AREAS OF EXISTING OR FUTURE VEGETATED SOILS AND FROM ALL WATER CONVEYANCE SYSTEMS, INCLUDING INLETS, DITCHES AND CURB FLOW LINES.

FINAL STABILIZATION

FINAL STABILIZATION IS ACHIEVED WHEN NPDES CGP PARTS 13.1-13.7 (AS APPLICABLE) ARE COMPLETED PRIOR TO SUBMISSION OF THE NOTICE OF TERMINATION (NOT) TO MPCA.

1. ALL AREAS MUST BE STABILIZED WITH A UNIFORM PERENNIAL VEGETATIVE COVER WITH A DENSITY OF 70%.
2. ALL TEMPORARY SEDIMENT CONTROL BMP MEASURES MUST BE REMOVED PRIOR TO SUBMITTING PERMIT NOT.
3. THE NOT SUBMITTAL MUST INCLUDE EITHER GROUND OR AERIAL PHOTOGRAPHS SHOWING THE AFOREMENTIONED REQUIREMENTS OF HAVE BEEN MET.

NO.	DATE	BY	CHK	REVISIONS

Design By:	NEH	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  NICHOLAS E. HENTGES, PE
Plan By:	MKV	
Checked By:	MAN	
Approved By:	NEH	
DATE: 9/12/2024		LICENSE NO. 44620



CSAH 30 (Forest Blvd) Improvements
Chisago County, Minnesota

CHISAGO COUNTY, MINNESOTA
STORM WATER POLLUTION PREVENTION PLAN SAP 013-630-021 / SAP 225-591-007 / SAP 225-102-004

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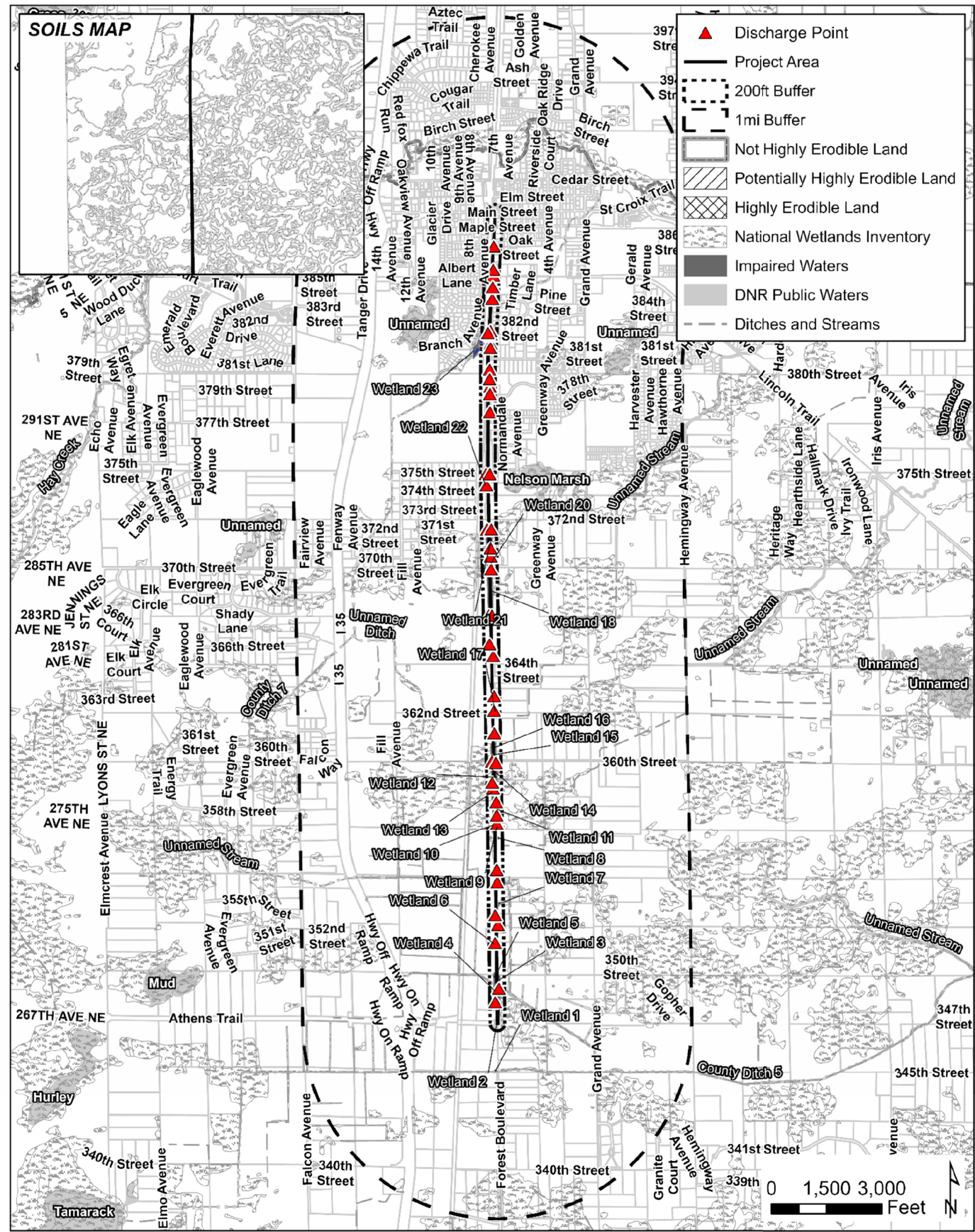


Figure 1. SWPPP Resource Map

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Plan By: MKV
Checked By: MAN
Approved By: NEH

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EROSION/SEDIMENT CONTROL NOTES:

SEDIMENT CONTROL PRACTICES:

1. SEDIMENT CONTROL MUST BE IN PLACE AND APPROVED BY THE ENGINEER BEFORE ANY PHASE OF CONSTRUCTION CAN BEGIN.
2. IF A 50' NATURAL BUFFER AROUND A SURFACE WATER IS INFEASIBLE, REDUNDANT PERIMETER CONTROLS MUST BE PROVIDED. REDUNDANT MEASURE TO BE INSTALLED 5' FROM THE PRIMARY MEASURE WITH STABILIZED AREAS IN BETWEEN THE TWO BMPS.
3. INLET PROTECTION WILL BE INSTALLED AT ALL CATCH INLETS WITHIN AND IMMEDIATELY DOWNSTREAM OF THE PROJECT AREA PER STANDARD DETAILS.
4. TEMPORARY STABILIZATION MEASURES SHALL BE EMPLOYED WITHIN 200 FEET OF THE NWP OF ALL DISCHARGE POINTS WITHIN 24 HOURS. MULCH IS NOT AN APPROVED MEASURE.
5. IN THE EVENT THAT PERMANENT STABILIZATION CANNOT BE IMPLEMENTED WITHIN 7 DAYS AFTER CONSTRUCTION ACTIVITY IN THE DISTURBED AREA HAS CEASED, TEMPORARY STABILIZATION BMPS MUST BE SCHEDULED TO OCCUR WITHIN THAT 7 DAY TIME FRAME (EXCEPT WHERE CALLED OUT BY NOTE BELOW)
6. RAPID STABILIZATION METHOD 4 SHALL BE EMPLOYED WITHIN 200 FEET OF THE NORMAL WETTED PERIMETER OF ALL DISCHARGE POINTS WITHIN 24 HOURS.
7. ALL STOCKPILES MUST HAVE DOWN GRADIENT PERIMETER SEDIMENT CONTROL IMPLEMENTED AND MAINTAINED AT ALL TIMES. STOCKPILES TO RECEIVE TEMPORARY STABILIZATION IF UNWORKED FOR 7 DAYS.
8. STOCKPILES MAY NOT BE PLACED WITHIN ANY DRAINAGE OR CURB LINE UNLESS PROPER BYPASS IS INSTALLED PRIOR TO STOCKPILE PLACEMENT.
9. CONTRACTOR TO INSTALL SEDIMENT CONTROL LOGS DOWN GRADIENT FROM ANY EXPOSED AREAS

EROSION PREVENTION PRACTICES:

1. STABILIZATION OF DISTURBED AREAS SHALL BE DONE BY PERMANENT TURF ESTABLISHMENT WHENEVER POSSIBLE.

POLLUTION PREVENTION MANAGEMENT MEASURES:

1. A ROCK CONSTRUCTION ENTRANCE WILL BE PLACED AT ALL ENTRANCES THAT LEAD TO THE PROJECT SITE IN ACCORDANCE WITH THE STORMWATER POLLUTION PREVENTION PLAN AND THE APPROVED STANDARD DETAILS. ENTRANCE MUST BE A MINIMUM OF 50 FEET PER THE CONSTRUCTION PERMIT REQUIREMENT.
2. ALL STREETS IN AND ADJACENT TO THE PROJECT SHALL REMAIN CLEAN AND PASSABLE AT ALL TIMES. ADJACENT STREET AND CURB LINE TO BE SWEEPED FREE OF DEBRIS AT THE END OF EACH WORK DAY, OR AS OFTEN AS NEEDED TO ENSURE PUBLIC SAFETY.
3. SLURRY FROM CONCRETE OPERATIONS MUST BE VACUUMED UP IMMEDIATELY. NO CONCRETE WASHOUT SHALL COME IN CONTACT WITH THE GROUND AND MUST BE PROPERLY DISPOSED OF. ALL HAZARDOUS MATERIALS MUST BE KEPT UNDER COVER AND WITHIN PROPER CONTAINMENT WHEN NOT IN USE.

MISCELLANEOUS:

1. ADDITIONAL EROSION AND SEDIMENT CONTROL MAY BE ADDED DURING ANY PHASE OF CONSTRUCTION AS DIRECTED BY THE ENGINEER.
2. IF PROJECT CONSISTS OF MILL & OVERLAY OF SECTIONS, ENSURE MILLINGS ARE NOT A THREAT FROM WASHING OFF THE PROJECT ROW.
3. CONTRACTOR TO PROTECT ALL WETLAND AREAS WITH PERIMETER CONTROL (AND REDUNDANT MEASURES) UNTIL WORK IN THE PERMITTED AREAS IS NEEDED. REDUNDANT MEASURES MUST BE A MINIMUM OF 5 FEET APART, WHERE FEASIBLE.
4. THE CONTRACTOR SHALL AMEND THE SWPPP AND THIS PLAN SHEET TO SHOW THE LOCATIONS OF STAGING AREAS, STOCKPILE LOCATIONS (AND APPROPRIATE ESC BMPS), AND LOCATIONS OF POTENTIAL POLLUTANT GENERATING ACTIVITIES (I.E. DESIGNATED CONCRETE WASHOUT AREAS, FUELING LOCATIONS, ETC.).

TURF ESTABLISHMENT AND EROSION CONTROL LEGEND



PERMANENT: RESDENTIAL AREAS
SEED TURFGRASS (200 LBS/ACRE)
SEED MESIC INSLOPE (65 LBS/ACRE)
FERTILIZER TYPE 3 (350 LBS/ACRE, 22-5-10)
HYDRAULIC STABILIZED FIBER MATRIX (3000 LBS/ACRE)

TEMPORARY:
RAPID STAB METHOD 3

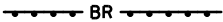


PERMANENT: RURAL INSLOPE
SEED MESIC INSLOPE (65 LBS/ACRE)
FERTILIZER TYPE 1 (350 LBS/ACRE, 20-10-20)
MULCH MATERIAL TYPE 3 (2 TONS/ACRE)
DISK ANCHORING

TEMPORARY:
RAPID STAB METHOD 4



SILT FENCE, TYPE MS



SEDIMENT CONTROL LOG, TYPE STRAW



CULVERT END CONTROLS



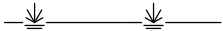
STORM DRAIN INLET PROTECTION



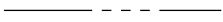
SURFACE DRAINAGE DIRECTION



PROPOSED DRAINAGE STRUCTURES



AREA OF ENVIRONMENTAL SENSITIVITY



RIGHT OF WAY



TEMPORARY EASEMENT



PERMANENT DRAINAGE EASEMENT

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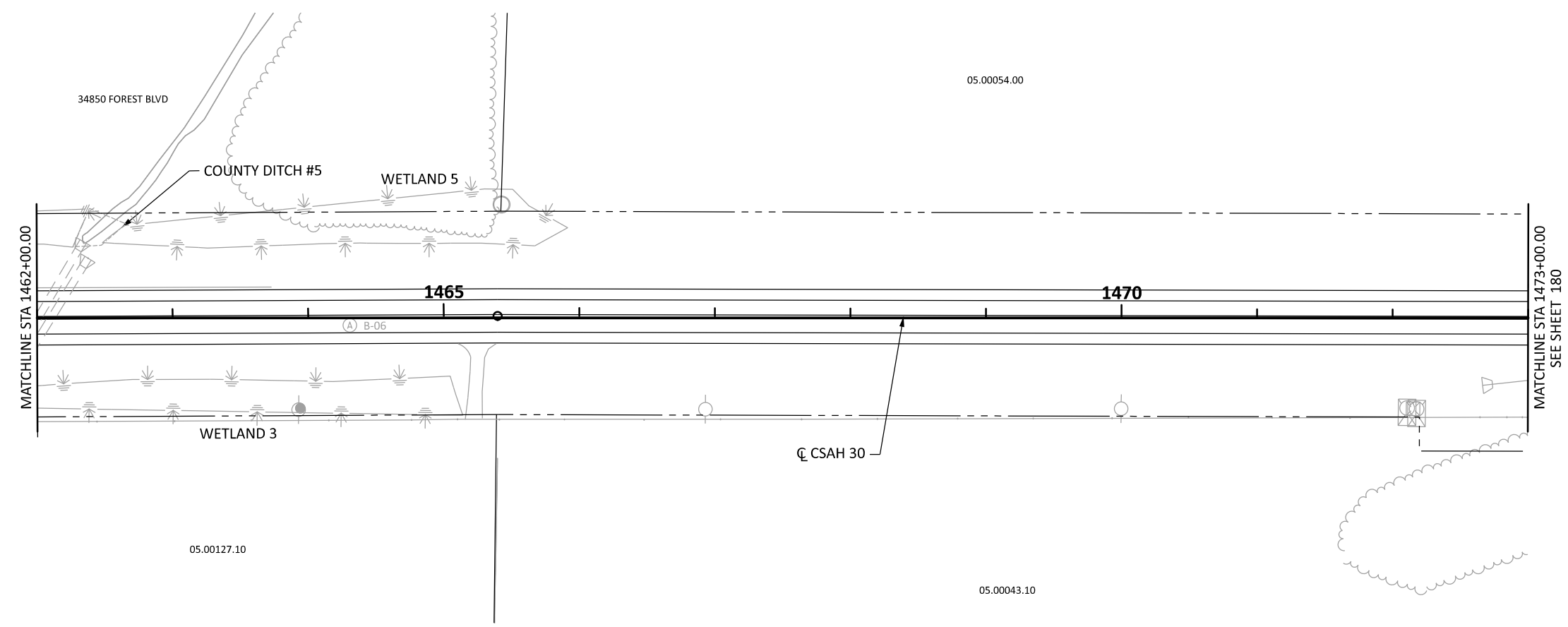
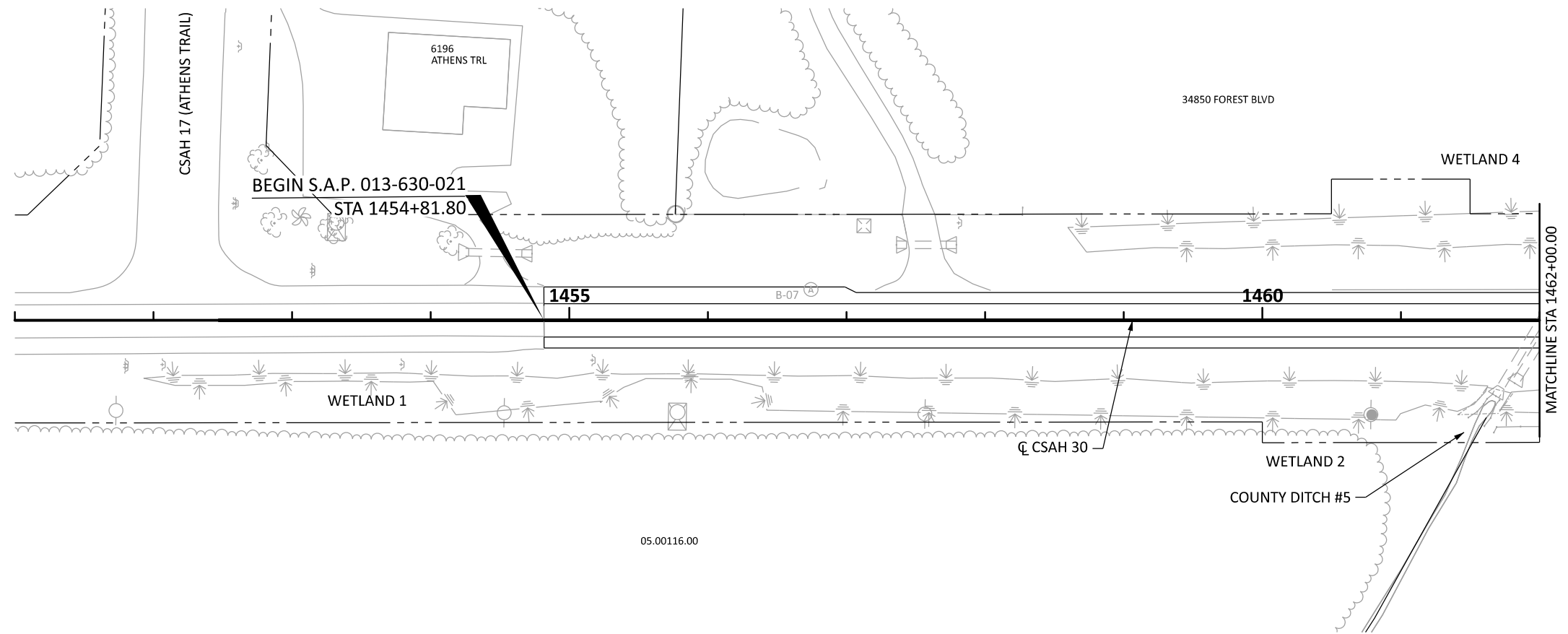


CSAH 30 (Forest Blvd) Improvements
Chisago County, Minnesota

CHISAGO COUNTY, MINNESOTA

EROSION CONTROL & TURF ESTABLISHMENT PLAN
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PATH & FILENAME: Projects\Minnesota\023661-000\03_Discipline\Roadway\Sheets\023661-000_1e

NO.	DATE	BY	CHK	REVISIONS

Design By: NEH
Plan By: MKV
Checked By: MAN
Approved By: NEH

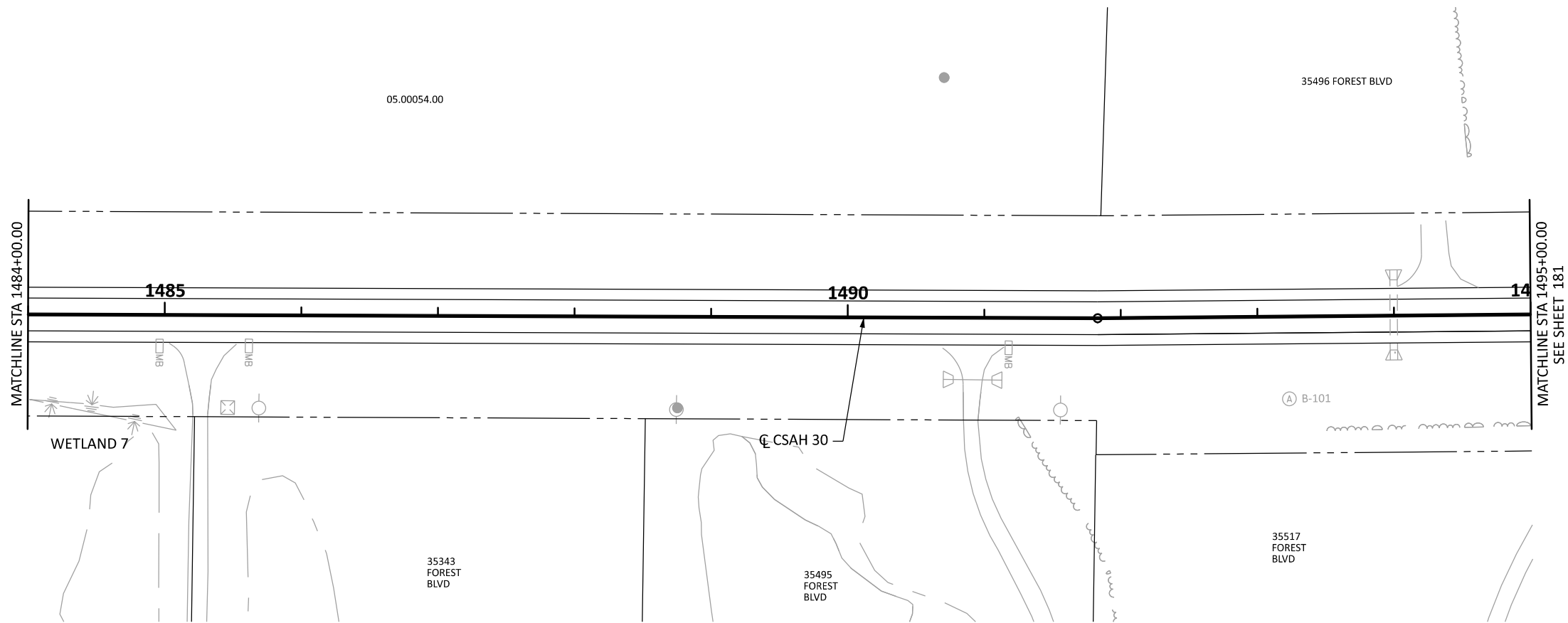
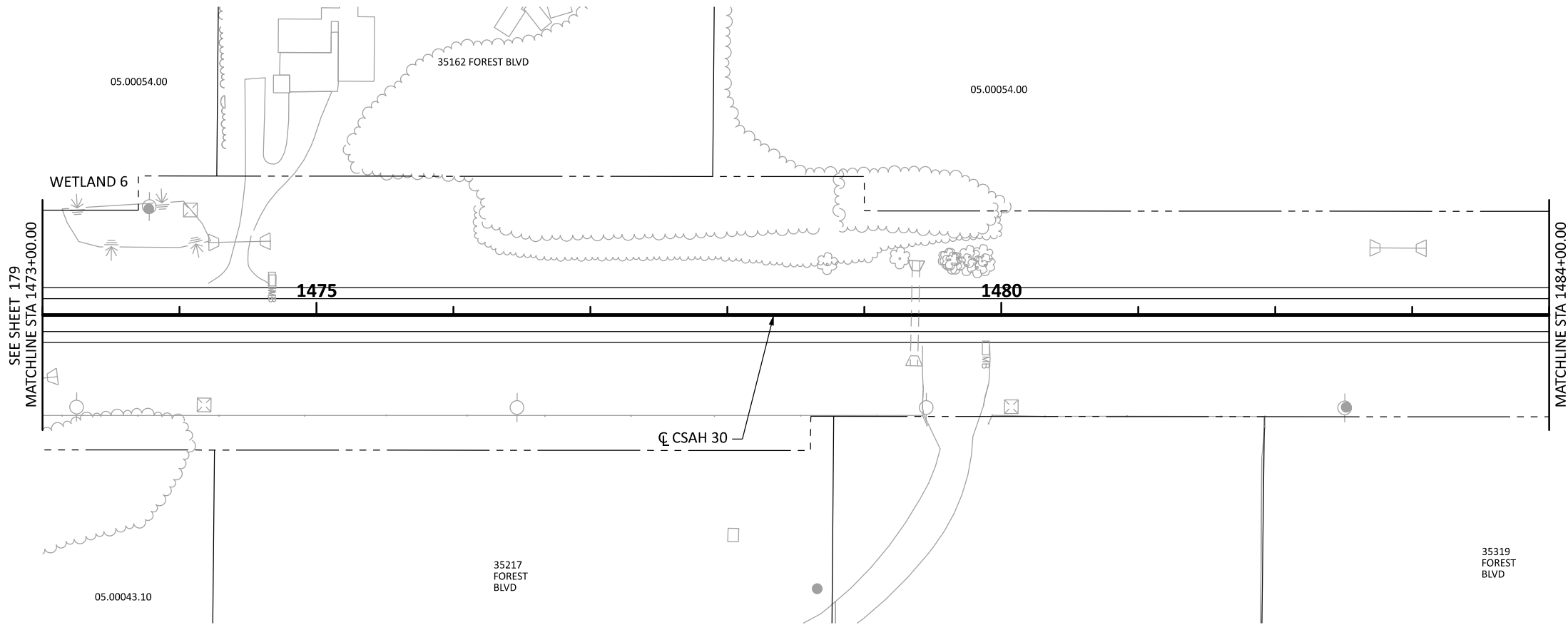
I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

NICHOLAS E. HENTGES, PE
DATE: 9/12/2024 LICENSE NO. 44620

CSAH 30 (Forest Blvd) Improvements
Chisago County, Minnesota

CHISAGO COUNTY, MINNESOTA
TURF ESTABLISHMENT & EROSION CONTROL PLAN
SAP 013-630-021 / SAP 225-591-007 / SAP 225-102-004

SHEET 179 OF 216 SHEETS

[illegible]

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



NICHOLAS A. HENTGES, PE

DATE: 9/12/2024 LICENSE NO. 44620



CSAH 30 (Forest Blvd) Improvements

Chisago County, Minnesota

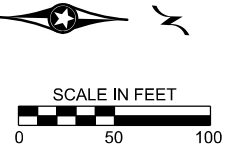
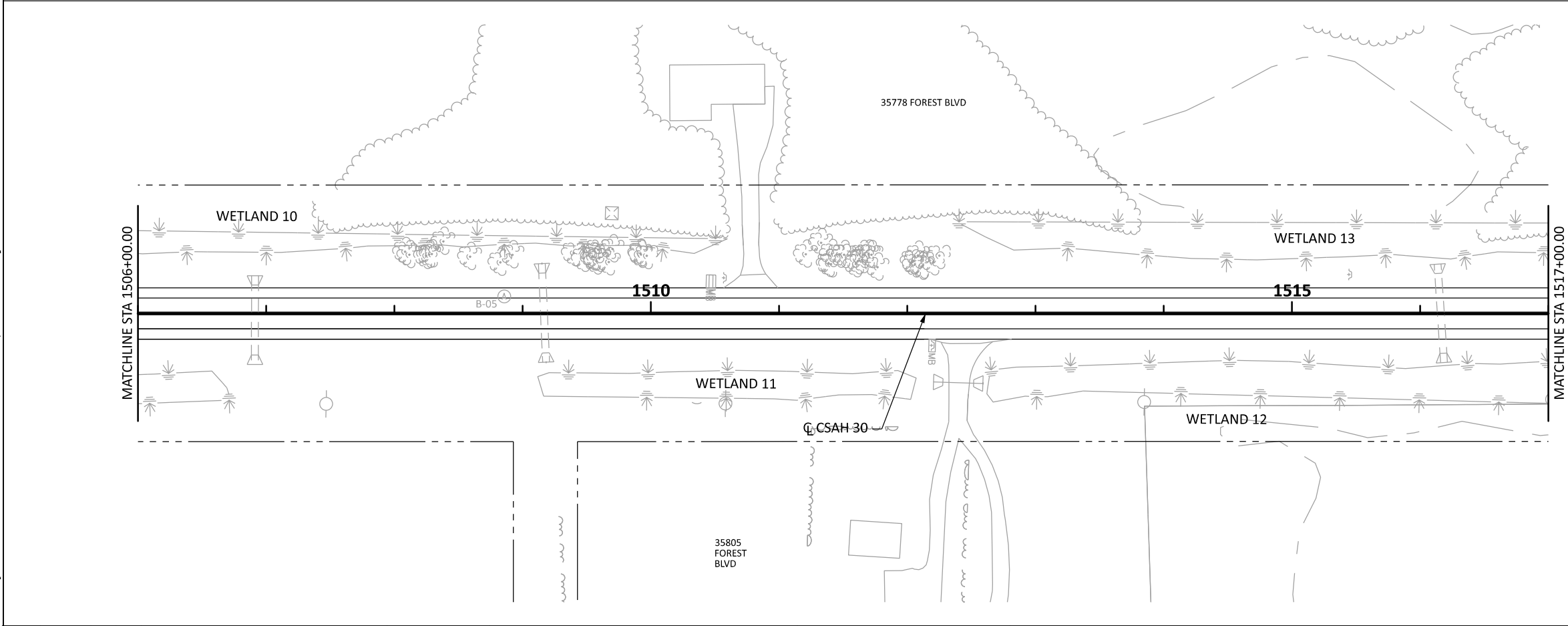
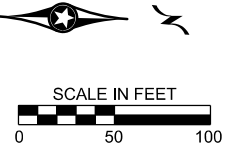
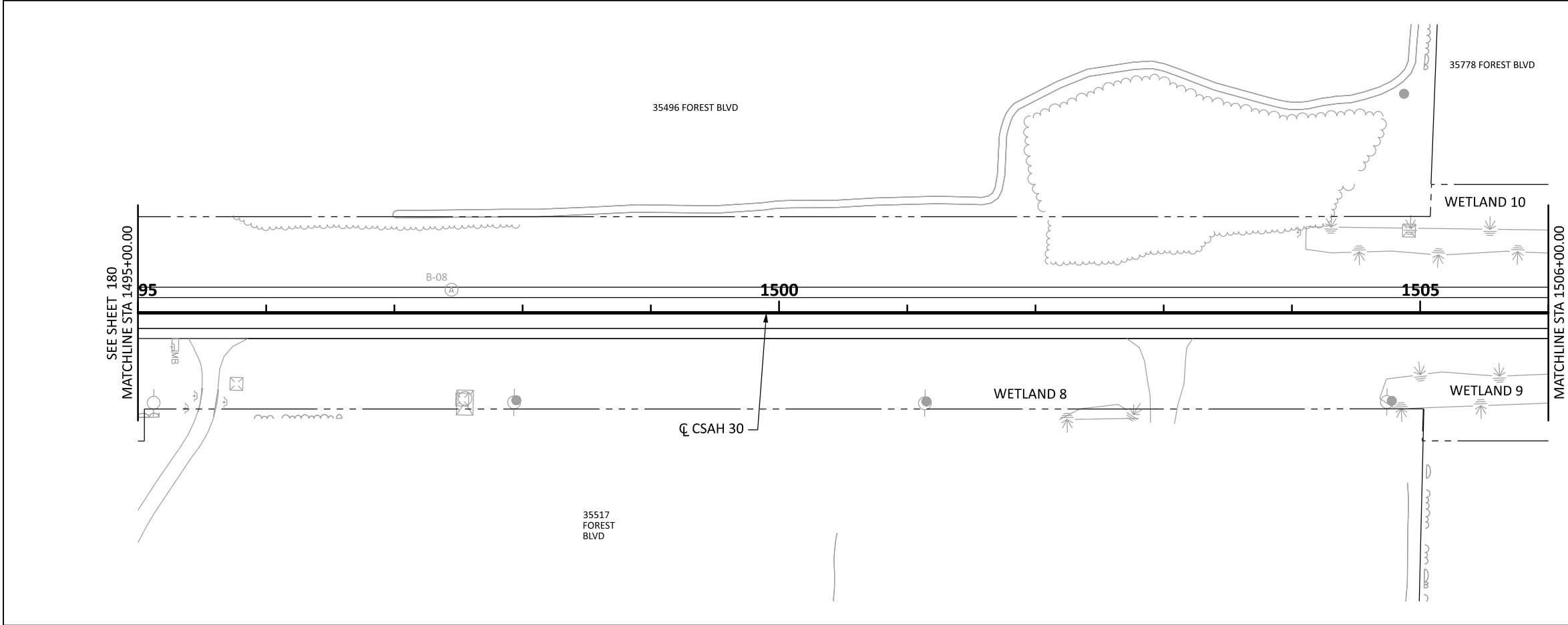
CHISAGO COUNTY, MINNESOTA

TURF ESTABLISHMENT & EROSION CONTROL PLAN
SAP 013-630-021 / SAP 225-591-007 / SAP 225-102-004

SHEET
 180
 OF
 216
 SHEETS

DATE: 9/12/2024 2:09:05 PM
PATH & FILENAME: Projects\Minnesota\023661-000\03_Discipline\Roadway\Sheets\023661-000_te

DATE: 9/12/2024 2:09:07 PM
PATH & FILENAME: Projects\Minnesota\023661-000\03_Discipline\Roadway\Sheets\023661-000_1e



NO.	DATE	BY	CHK	REVISIONS

Design By: NEH
Plan By: MKV
Checked By: MAN
Approved By: NEH

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.

NICHOLAS E. HENTGES, PE
DATE: 9/12/2024 LICENSE NO. 44620

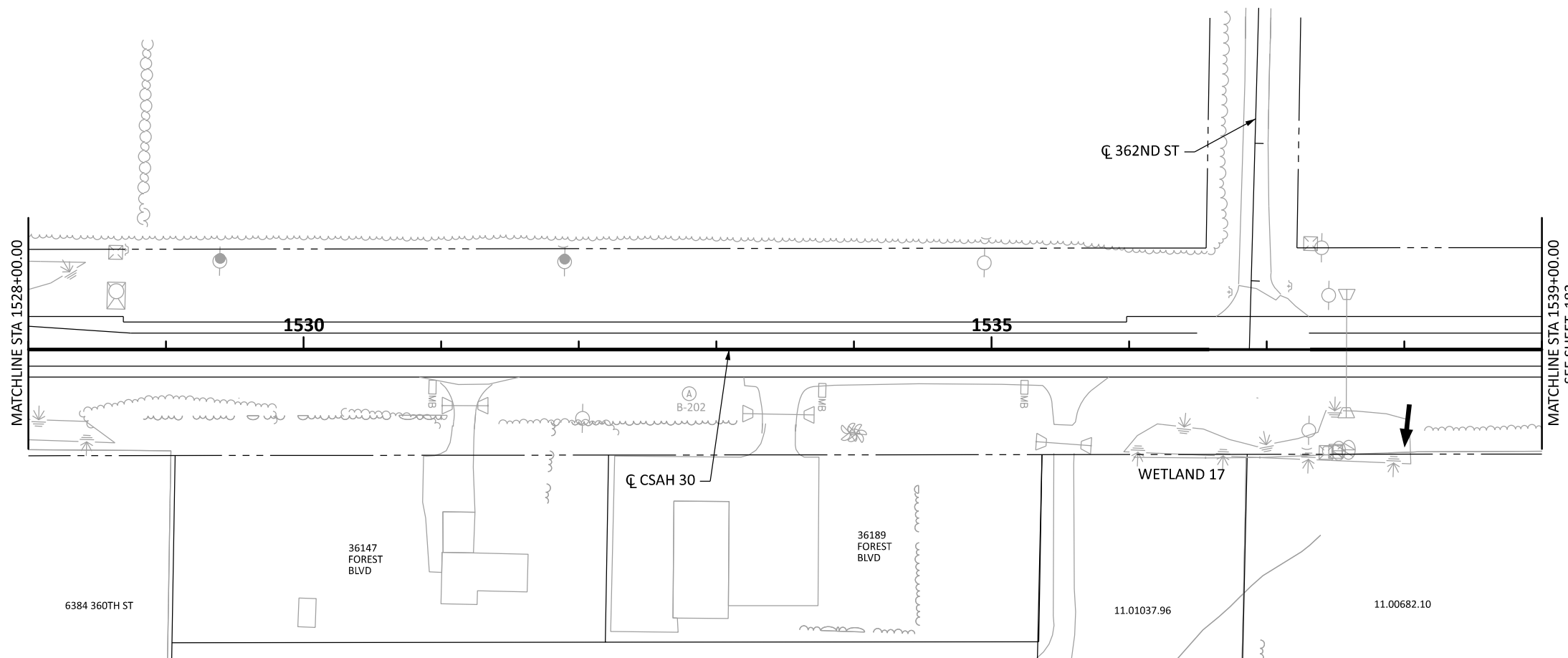
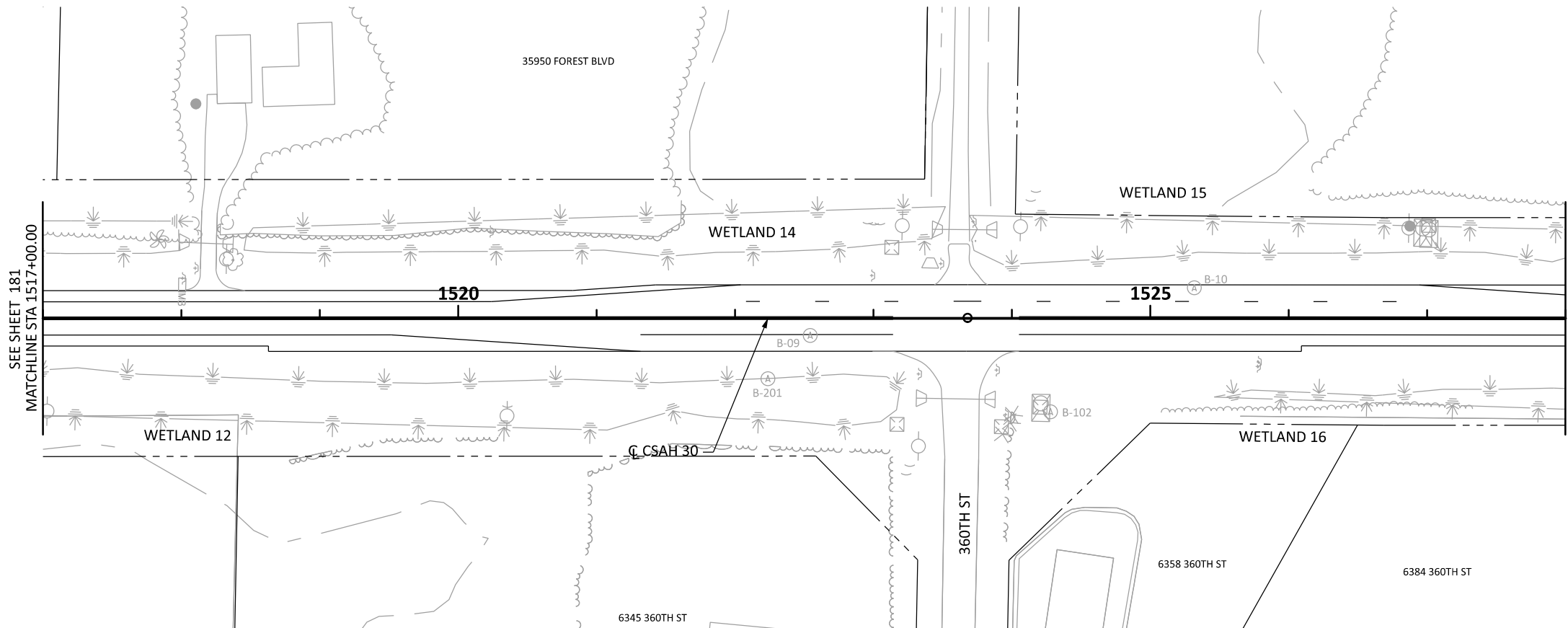




CSAH 30 (Forest Blvd) Improvements
Chisago County, Minnesota

CHISAGO COUNTY, MINNESOTA
TURF ESTABLISHMENT & EROSION CONTROL PLAN
SAP 013-630-021 / SAP 225-591-007 / SAP 225-102-004

SHEET
181
OF
216
SHEETS

[illegible]

Design By:	NEH
Plan By:	MKV
Checked By:	MAN
Approved By:	NEH

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


NICHOLAS E. HENTGES, P.E.

DATE: 9/12/2024 LICENSE NO. 44620



CSAH 30 (Forest Blvd) Improvements

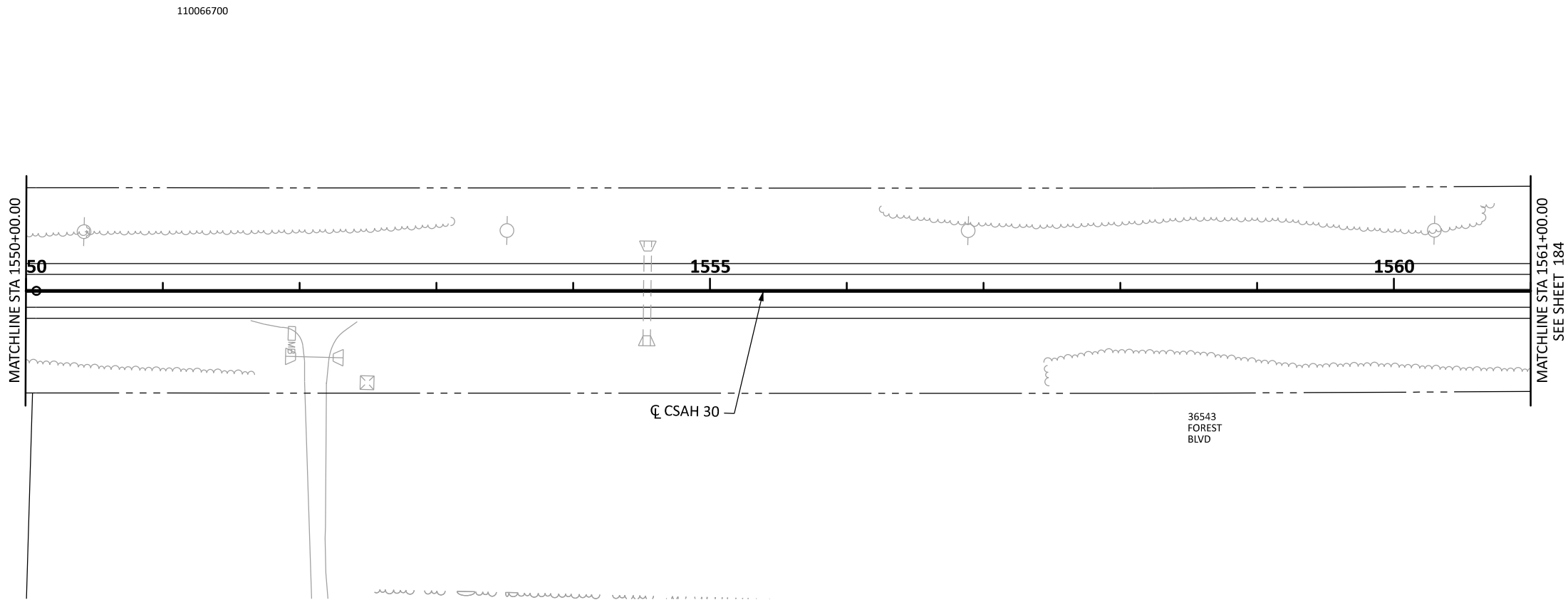
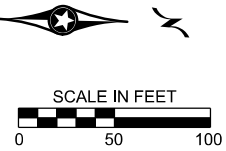
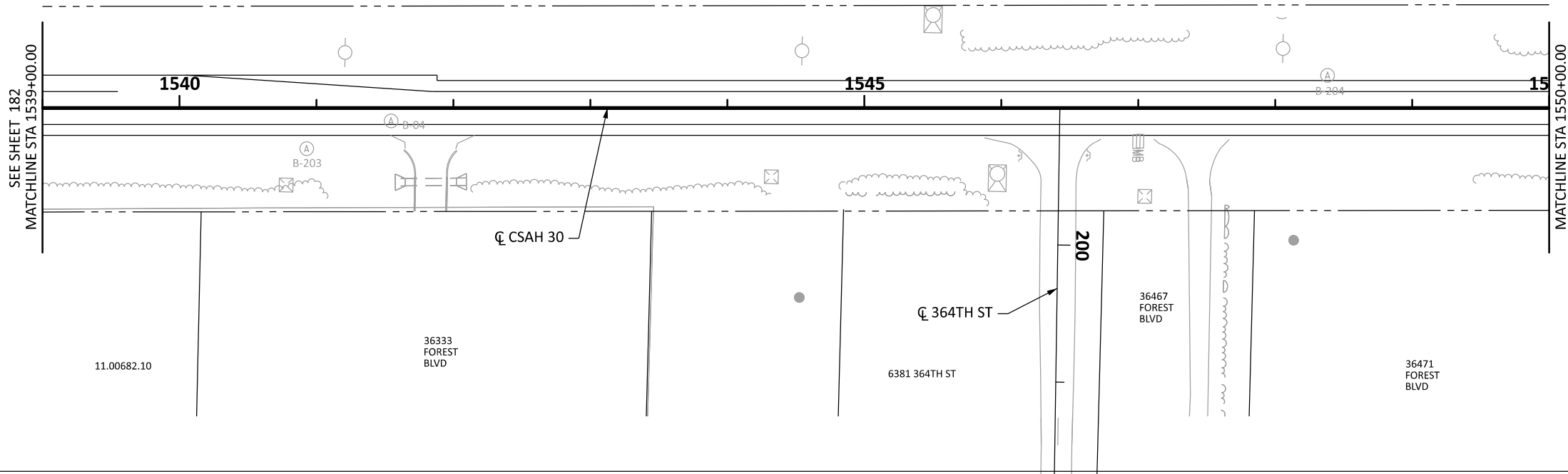
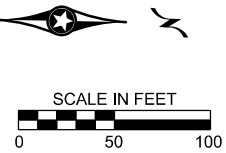
Chisago County, Minnesota

CHISAGO COUNTY, MINNESOTA

TURF ESTABLISHMENT & EROSION CONTROL PLAN
SAP 013-630-021 / SAP 225-591-007 / SAP 225-102-004

SHEET
182
OF
216
SHEETS

DATE: 9/12/2024 2:09:08 PM
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NO.	DATE	BY	CHK	REVISIONS

Design By: NEH
Plan By: MKV
Checked By: MAN
Approved By: NEH

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.

NICHOLAS E. HENTGES, PE
DATE: 9/12/2024 LICENSE NO. 44620



CSAH 30 (Forest Blvd) Improvements
Chisago County, Minnesota

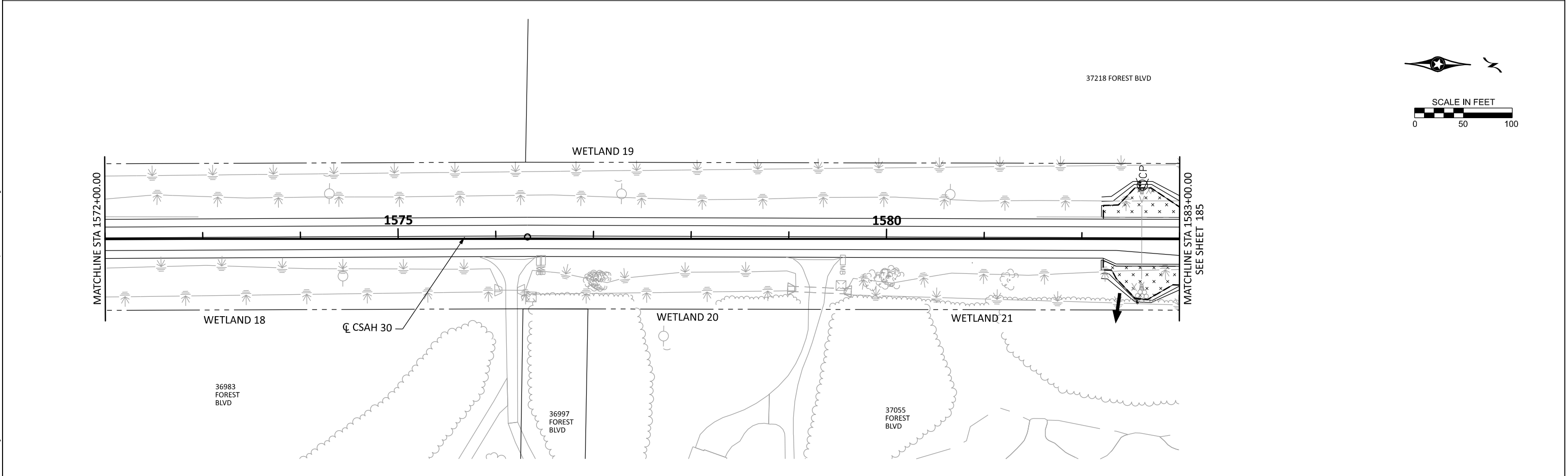
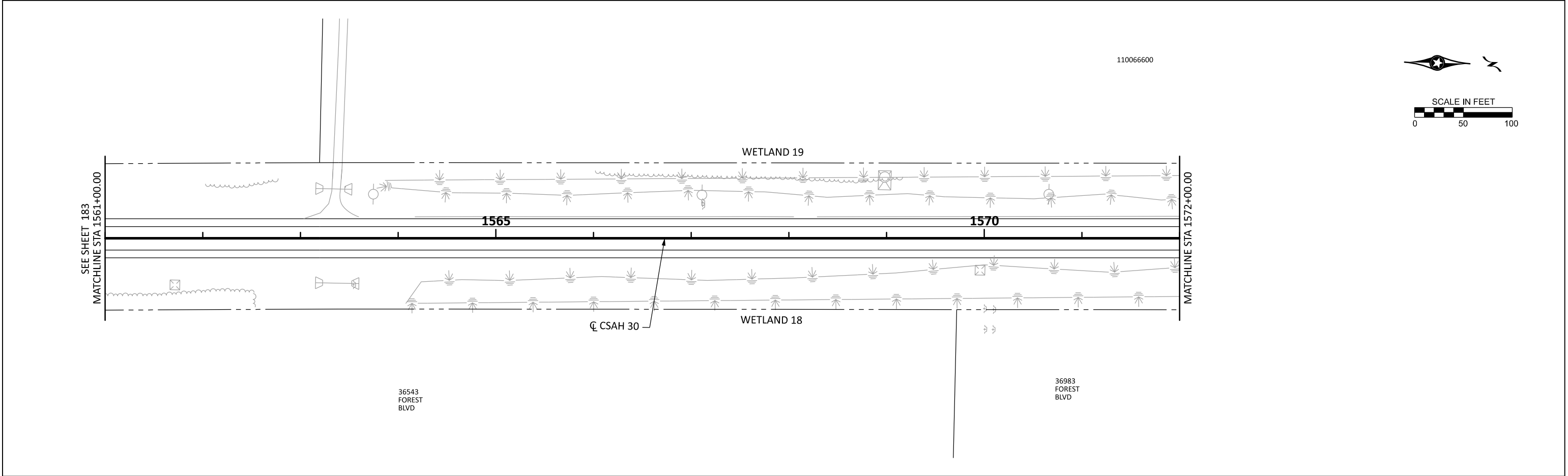
CHISAGO COUNTY, MINNESOTA

TURF ESTABLISHMENT & EROSION CONTROL PLAN
SAP 013-630-021 / SAP 225-591-007 / SAP 225-102-004

SHEET
183
OF
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SHEETS

DATE: 9/12/2024 2:09:09 PM
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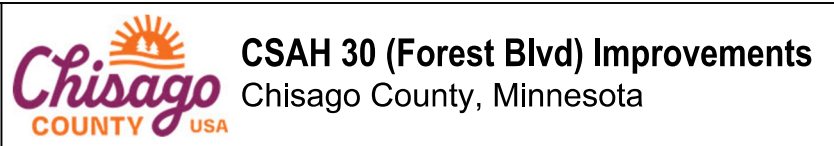


NO.	DATE	BY	CHK	REVISIONS

Design By: NEH
Plan By: MKV
Checked By: MAN
Approved By: NEH

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.

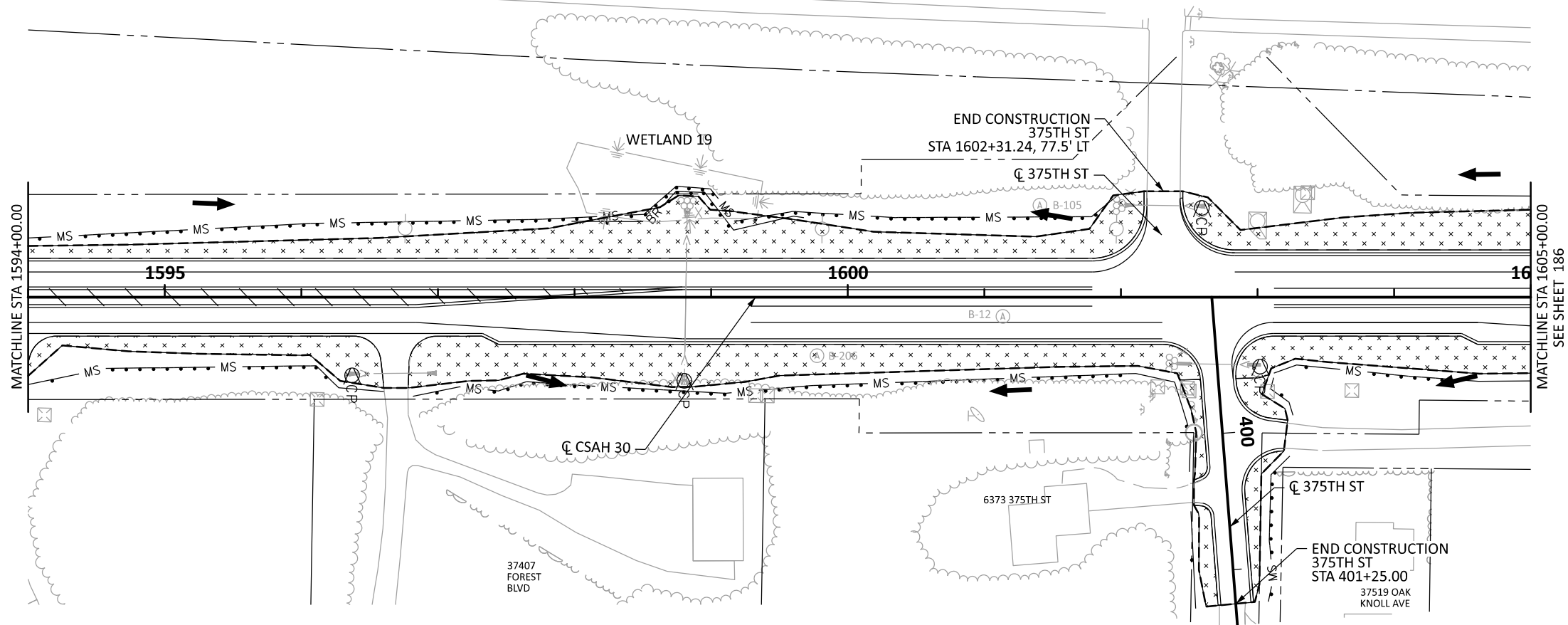
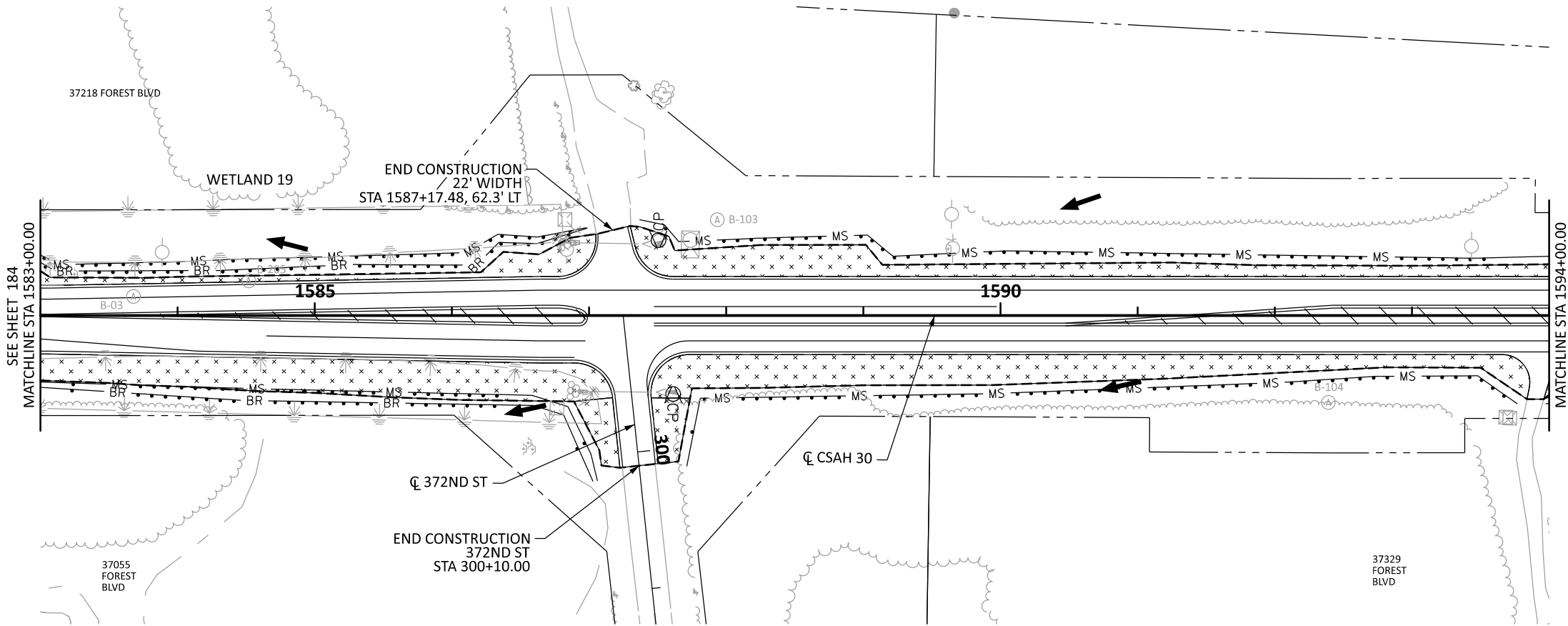
Nicholas E. Hentges
NICHOLAS E. HENTGES, PE
DATE: 9/12/2024 LICENSE NO. 44620



CHISAGO COUNTY, MINNESOTA

TURF ESTABLISHMENT & EROSION CONTROL PLAN
SAP 013-630-021 / SAP 225-591-007 / SAP 225-102-004

SHEET
184
OF
216
SHEETS

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Design By:	NEH
Plan By:	MKV
Checked By:	MAN
Approved By:	NEH

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.


NICHOLAS E. HENTGES, PE

DATE: 9/12/2024 LICENSE NO. 44620



CSAH 30 (Forest Blvd) Improvements

Chisago County, Minnesota

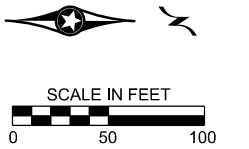
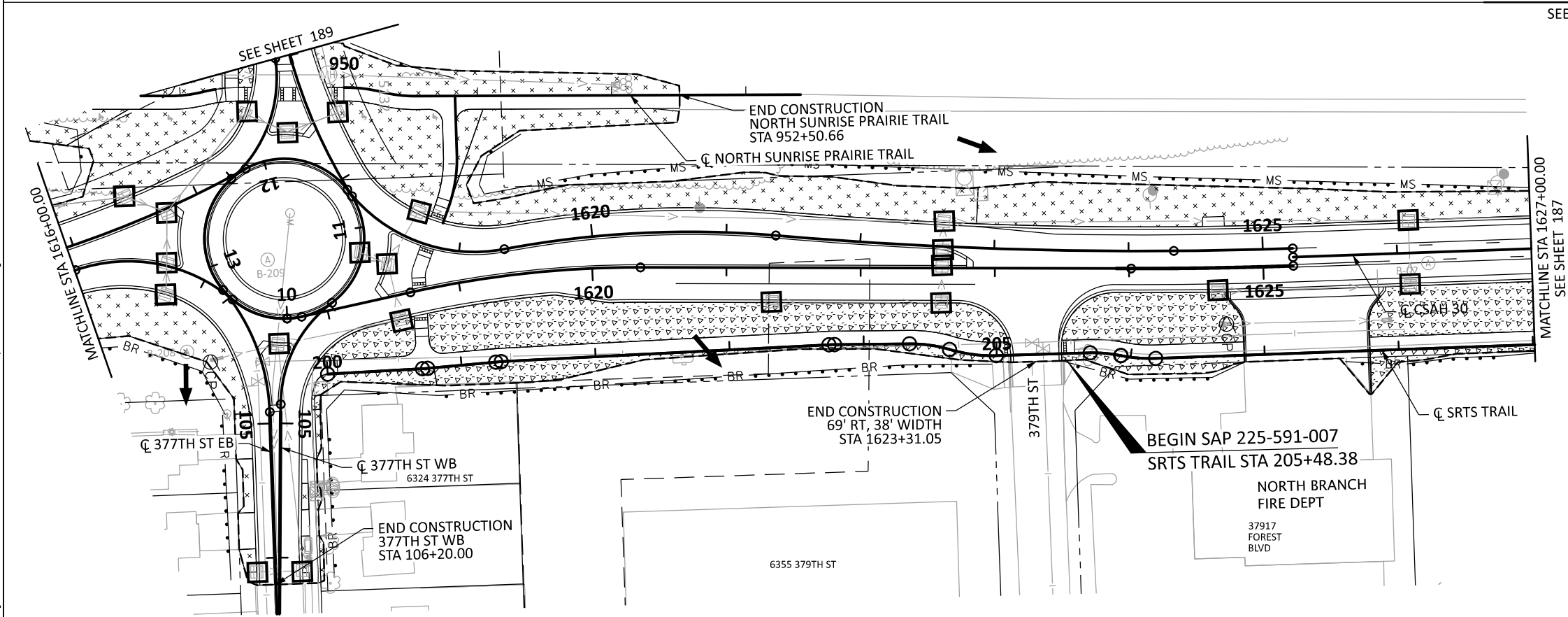
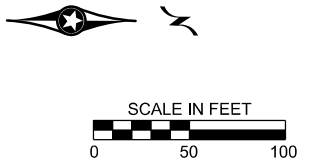
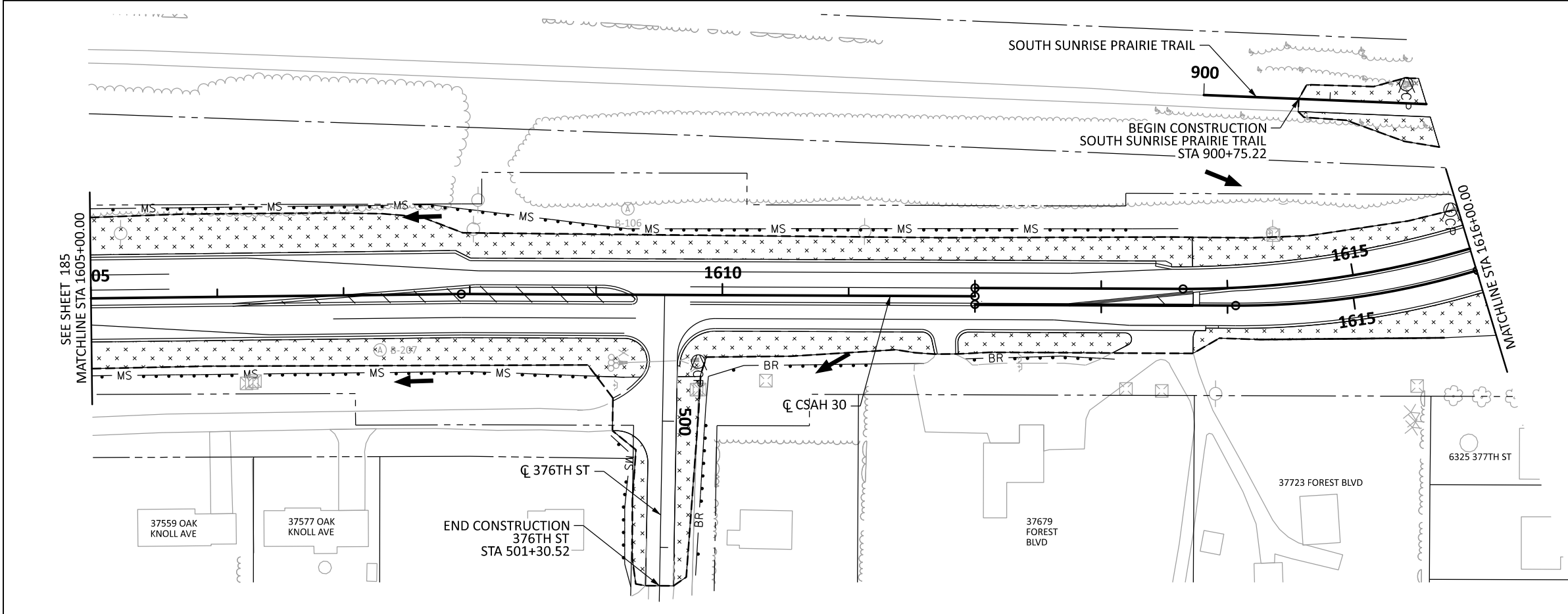
CHISAGO COUNTY, MINNESOTA

TURF ESTABLISHMENT & EROSION CONTROL PLAN
SAP 013-630-021 / SAP 225-591-007 / SAP 225-102-004

SHEET
 185
 OF
 216
 SHEETS

DATE: 9/12/2024 2:09:11 PM
PATH & FILENAME: Projects\Minnesota\023661-000\03_Discipline\Roadway\Sheets\023661-000_te

DATE: 9/12/2024 2:09:13 PM
PATH & FILENAME: Projects\Minnesota\023661-000\03_Discipline\Roadway\Sheets\023661-000_1e



NO.	DATE	BY	CHK	REVISIONS

Design By: NEH
Plan By: MKV
Checked By: MAN
Approved By: NEH

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.

Nicholas E. Hentges, P.E.
NICHOLAS E. HENTGES, P.E.
DATE: 9/12/2024 LICENSE NO. 44620



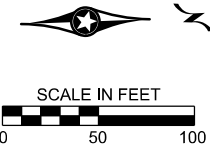
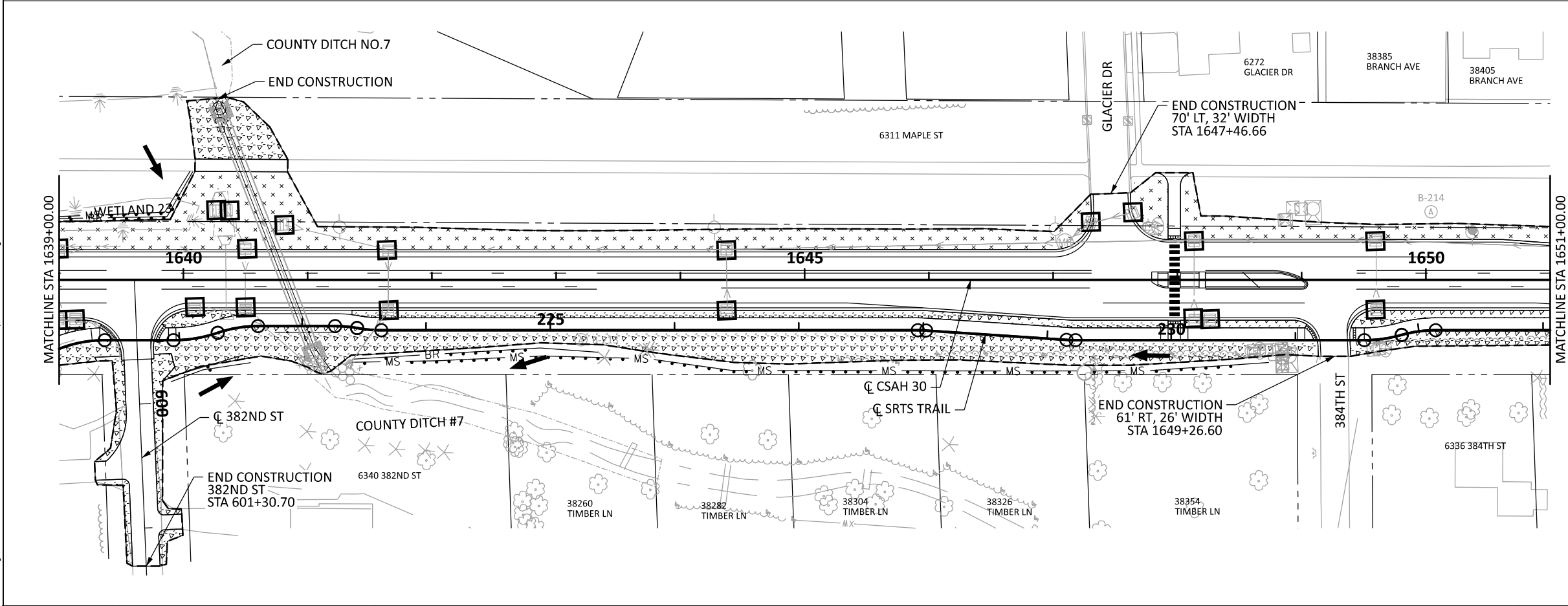
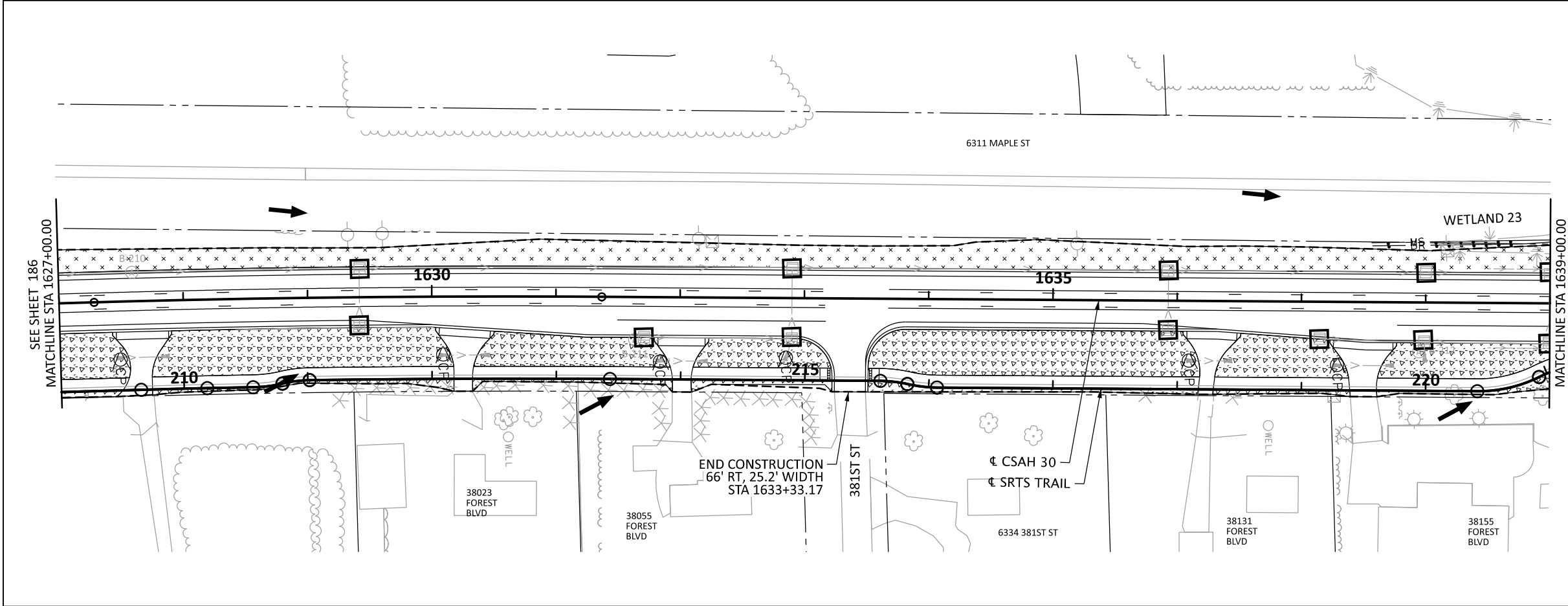
CSAH 30 (Forest Blvd) Improvements
Chisago County, Minnesota

CHISAGO COUNTY, MINNESOTA

TURF ESTABLISHMENT & EROSION CONTROL PLAN
SAP 013-630-021 / SAP 225-591-007 / SAP 225-102-004

SHEET
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OF
216
SHEETS

DATE: 9/12/2024 2:09:17 PM
PATH & FILENAME: Projects\Minnesota\023661-000\03_Discipline\Roadway\Sheets\023661-000_1e



NO.	DATE	BY	CHK	REVISIONS

Design By: NEH
Plan By: MKV
Checked By: MAN
Approved By: NEH

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.

Nicholas E. Hentges
NICHOLAS E. HENTGES, PE
DATE: 9/12/2024 LICENSE NO. 44620





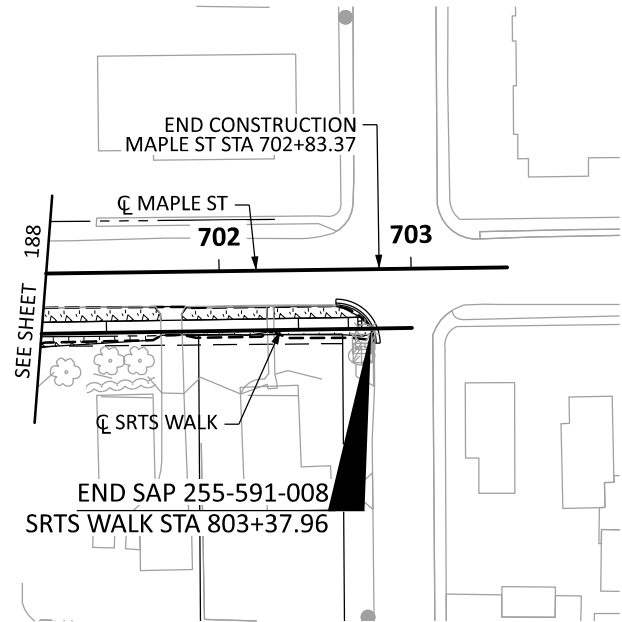
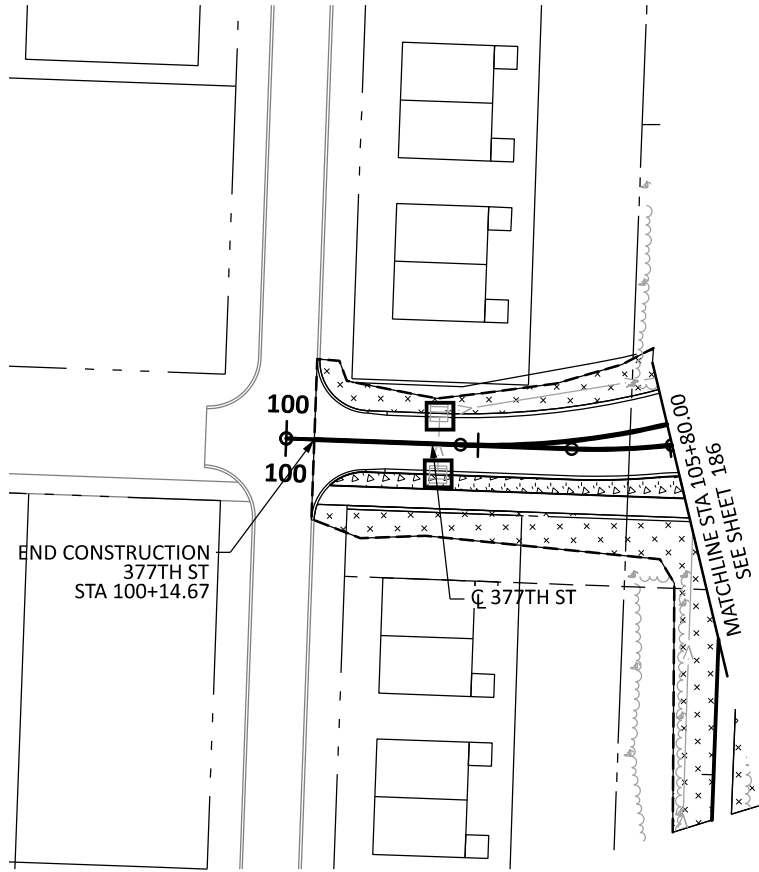
CSAH 30 (Forest Blvd) Improvements
Chisago County, Minnesota

CHISAGO COUNTY, MINNESOTA

TURF ESTABLISHMENT & EROSION CONTROL PLAN
SAP 013-630-021 / SAP 225-591-007 / SAP 225-102-004

SHEET
187
OF
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SHEETS

DATE: 9/12/2024 2:09:24 PM
PATH & FILENAME: Projects\Minnesota\Roadway\Sheets\023661-000_te



NO.	DATE	BY	CHK	REVISIONS

Design By: NEH
Plan By: MKV
Checked By: MAN
Approved By: NEH

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.

NICHOLAS E. HENTGES, PE
DATE: 9/12/2024 LICENSE NO. 44620



CSAH 30 (Forest Blvd) Improvements
Chisago County, Minnesota

CHISAGO COUNTY, MINNESOTA

EROSION CONTROL & TURF ESTABLISHMENT PLAN
SAP 013-630-021 / SAP 225-591-007 / SAP 225-102-004

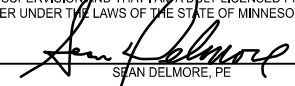
SHEET
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SHEETS

DATE: 9/12/2024 2:09:50 PM
PATH & FILENAME: Projects\Minnesota\023661-000\03_Discipline\Roadway\Sheets\023661-000_ss

SIGN AND DELINEATOR / MARKER																						I			
SIGN NUMBER	PANEL				SUPPORT			REMOVE SIGN			SIGN			SALVAGE SIGN	INSTALL SIGN	REMOVE DELINEATOR /MARKER	DELINEATOR /MARKER			DELINEATOR /MARKER PANEL					
	PANEL CODE	LEGEND	SIZE (W x H)	MOUNTING HEIGHT	TYPE	RISER POST SIZE	NUMBER OF POSTS	(A)	(B)	(C)	(A)	(B)	(C)				(A)	(A)	(A)	(A)	(B)	(C)	(A)	(B)	(C)
								INCHES	FEET	INCHES	EACH	EACH	SQ FT				SQ FT	SQ FT	SQ FT	EACH	EACH	EACH	EACH	EACH	EACH
S-1																									
S-2																									
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S-21																									
S-22																									
S-23																									
S-24																									
S-25	W14-3	NO PASSING ZONE	48 x 48 x 36	7	SQ-SOIL	2-1/2	1	1			5.60				1	1									
S-26	R9-X6L	BRANCH LANDSCAPE NURSERY	72 x 18	7	SQ-SOIL	2-1/2	1																		
S-27	R3-8AC	L-T	36 x 30	7	SQ-SOIL	2	1				7.50														
S-28	R1-1	STOP	36 x 36	7	SQ-SOIL	2-1/2	1	1			9.00														
	X63	CYLINDER STYLE DELINEATOR (WHITE)	6 x 9																	1					
S-29	R3-7R	RIGHT LANE MUST TURN RIGHT	30 x 30	7	SQ-SOIL	2	1				6.25														
S-30	R1-1	STOP	36 x 36	7	SQ-SOIL	2-1/2	1	1			9.00														
	X63	CYLINDER STYLE DELINEATOR (WHITE)	6 x 9																	1					
S-31																									
S-32																									
S-33																									
S-34	R1-1	STOP	36 x 36	7	SQ-SOIL	2-1/2	1	1			9.00														
	X63	CYLINDER STYLE DELINEATOR (WHITE)	6 x 9																	1					
S-35	R3-8ACA	L-T-R	54 x 30	7	SQ-SOIL	2-1/2	1				11.25														
S-36	R3-8ACA	L-T-R	54 x 30	7	SQ-SOIL	2-1/2	1				11.25														
S-37	R2-1	SPEED LIMIT 55	24 x 30	7	SQ-SOIL	2	1				5.00														
S-38	R3-8AC	L-T	36 x 30	7	SQ-SOIL	2	1				7.50														
S-39	X36	SNOWPLOW MARKER LOWER BLADE	6 x 12	4	SQ-SOIL	1-3/4	1												1						
S-40	R4-7	KEEP RIGHT	24 x 30	7							5.00														
S-41	OM1-2	TYPE 1 OBJECT MARKER	18 x 18	4	SQ-CONC	2-1/2	1														1				
S-41	R3-7R	RIGHT LANE MUST TURN RIGHT	30 x 30	7	SQ-SOIL	2	1				6.25														
S-42	X36	SNOWPLOW MARKER RAISE BLADE	6 x 12	4	SQ-SOIL	1-3/4	1												1						
S-43	W16-17P	ROUNDABOUT PLAQUE	36 x 12								3.00														
	W2-6	ROUNDABOUT	30 x 30	7	SQ-SOIL	2-1/2	1				6.25														
	W13-1P	20 MPH PLAQUE	18 x 18								2.25														
S-44	W3-2	YIELD AHEAD	30 x 30	7	SQ-SOIL	2	1				6.25														
S-45	R1-1	STOP	36 x 36	7	SQ-SOIL	2-1/2	1	1			9.00														
	X63	CYLINDER STYLE DELINEATOR (WHITE)	6 x 9																	1					
S-46	DESIGN	ROUNDABOUT DIAGRAMATIC	150 x 84	7	SQ-SOIL	2-1/2	4				87.50														
S-47	R3-7R	RIGHT LANE MUST TURN RIGHT	30 x 30	7	SQ-SOIL	2	1				6.25														
S-48	W16-17P	ROUNDABOUT PLAQUE	36 x 12								3.00														
	W2-6	ROUNDABOUT	30 x 30	7	SQ-SOIL	2-1/2	1				6.25														
	W13-1P	20 MPH PLAQUE	18 x 18								2.25														
	R4-7	KEEP RIGHT	24 x 30	7							5.00														
S-49	OM1-2	TYPE 1 OBJECT MARKER	18 x 18	4	SQ-CONC	2-1/2	1														1				
S-50	W3-2	YIELD AHEAD	30 x 30	7	SQ-SOIL	2	1				6.25														
S-51	I-8	LIBRARY	24 x 24	7	SQ-SOIL	2	1	1			4.00														
	M6-1L	ARROW LEFT (GREEN)	21 x 15								2.19														
S-52	R3-8AC	L-T	36 x 30	7	SQ-SOIL	2	1				7.50														
S-53	R3-9cP	BEGIN PLAQUE	30 x 12	7	SQ-SOIL	2-1/2	1				2.50														
S-54	R3-9B	TWO WAY LEFT TURN LANE	24 x 36								6.00														
S-54	R2-1	SPEED LIMIT 40	24 x 30	7	SQ-SOIL	2	1				5.00														
S-55	R1-1	STOP	36 x 36	7	SQ-SOIL	2-1/2	1	1			9.00														
	X63	CYLINDER STYLE DELINEATOR (WHITE)	6 x 9																	1					
S-56	W11-2	PEDESTRIAN CROSSING (FL YEL-GR)	30 x 30								6.25														
	W16-7PL	DOWN ARROW LEFT PLAQUE (FL YEL-GR)	24 x 12	7	SQ-SOIL	2-1/2	1				2.00														
S-57	I-8	LIBRARY	24 x 24																						

NO.	DATE	BY	CHK	REVISIONS

Design By: MF
Plan By: MF
Checked By: ES
Approved By: SD

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.

SEAN DELMORE, PE
DATE: 9/12/2024 LICENSE NO. 40945



CSAH 30 (Forest Blvd) Improvements
Chisago County, Minnesota

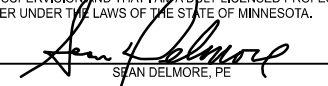
DATE: 9/12/2024 2:09:50 PM
PATH & FILENAME: Projects\Minnesota\Roadway\Sheets\023661-000_ss

SIGN AND DELINEATOR / MARKER																						I
SIGN NUMBER	PANEL CODE	PANEL			SUPPORT			REMOVE SIGN			SIGN			SALVAGE SIGN	INSTALL SIGN	REMOVE DELINEATOR /MARKER	DELINEATOR /MARKER			DELINEATOR /MARKER PANEL		
		LEGEND	SIZE (W x H)	MOUNTING HEIGHT	TYPE	RISER POST SIZE	NUMBER OF POSTS	(A)	(B)	(C)	(A)	(B)	(C)				(A)	(B)	(C)	(A)	(B)	(C)
								INCHES	FEET	INCHES	EACH	EACH	SQ FT				SQ FT	SQ FT	SQ FT	SQ FT	EACH	EACH
S-73	R3-7R	RIGHT LANE MUST TURN RIGHT	30 x 30	7	SQ-SOIL	2	1															
S-74	R3-9B	TWO WAY LEFT TURN LANE	24 x 36	7	SQ-SOIL	2	1					6.25										
S-75	R1-1	STOP	36 x 36	7	SQ-SOIL	2-1/2	1	1				9.00										
	X63	CYLINDER STYLE DELINEATOR (WHITE)	6 x 9																			
S-76	R2-1	SPEED LIMIT 40	x					1														
S-77	OM1-2	TYPE 1 OBJECT MARKER	18 x 18	4	SQ-CONC	1-3/4	1										1					
S-78	R3-7R	RIGHT LANE MUST TURN RIGHT	30 x 30	7	SQ-SOIL	2	1					6.25										
S-79	R3-8AC	L-T	36 x 30	7	SQ-SOIL	2	1					7.50										
S-80	W11-2	PEDESTRIAN CROSSING (FL YEL-GR)	30 x 30	7	SQ-SOIL	2	1					6.25										
S-81	X36	SNOWPLOW MARKER BLADE DOWN	x													1						
S-82								NOT USED														
S-83	X36	SNOWPLOW MARKER BLADE UP	x													1						
S-84	R1-1	STOP	36 x 36	7	SQ-SOIL	2-1/2	1	1				9.00										
S-85	W11-2	PEDESTRIAN CROSSING (FL YEL-GR)	30 x 30	7	SQ-SOIL	2	1					6.25										
S-86	DESIGN	NO PARKING ON ANY NORTH BRANCH CITY STREET..	x	7	SQ-SOIL	2	1							1	1							
S-87	R2-1	SPEED LIMIT 40	x					1														
S-88	DESIGN	NORTH BRANCH GOLF COURSE RIGHT	x	7	SQ-SOIL	2	1							1	1							
	DESIGN	NORTH BRANCH GOLF COURSE LEFT	x																			
S-89	M4-X1	OLD (WHITE)	24 x 12	7	SQ-SOIL	2	1							1	1							
	M1-4	US 61	24 x 24																			
S-90	M4-X1	OLD (WHITE)	24 x 12	7	SQ-SOIL	2	1							1	1							
	M1-4	US 61	24 x 24																			
S-91	R2-1	SPEED LIMIT 40	x					1														
S-92								NOT USED														
S-93	R1-1	STOP	36 x 36	7	SQ-SOIL	2-1/2	1	1				9.00										
S-94	R3-7R	RIGHT LANE MUST TURN RIGHT	30 x 30	7	SQ-SOIL	2	1					6.25										
S-95	R2-1	SPEED LIMIT 40	24 x 30	7	SQ-SOIL	2	1	1				5.00										
S-96	R3-9cP	BEGIN PLAQUE	30 x 12	7	SQ-SOIL	2-1/2	1					2.50										
	R3-9B	TWO WAY LEFT TURN LANE	24 x 36								6.00											
S-97	X36	SNOWPLOW MARKER RAISE BLADE	x													1						
S-98	R3-8AC	L-T	36 x 30	7	SQ-SOIL	2	1					7.50										
S-99	M2-1	JCT (BLUE)	21 x 15	7	SQ-SOIL	2	1	1				2.19										
	M1-5M	MINNESOTA HWY 95	24 x 24									4.00										
S-100	R3-8AD	L-TR	36 x 30	7	SQ-SOIL	2	1	1				7.50										
S-101	W3-3	SIGNAL AHEAD	30 x 30	7	SQ-SOIL	2	1	1				6.25										
S-102	R1-1	STOP	36 x 36	7	SQ-SOIL	2-1/2	1	1				9.00										
S-103	R2-1	SPEED LIMIT 30	24 x 30	7	SQ-SOIL	2	1	1				5.00										
S-104	R3-9dP	END PLAQUE	30 x 12	7	SQ-SOIL	2-1/2	1					2.50										
	R3-9B	TWO WAY LEFT TURN LANE	24 x 36								6.00											
S-105								NOT USED														
S-106								NOT USED														
S-107	DESIGN	377TH ST ARROW	42 x 24	7	SQ-CONC	2-1/2	1						7.00									
	OM1-2	TYPE 1 OBJECT MARKER	18 x 18					4														
S-108	R6-1R	ONE WAY RIGHT	36 x 12	4	SQ-CONC	2-1/2	1					3.00										
	R6-4B	ROUNDAABOUT DIRECTIONAL (4 ARROWS)	60 x 24								10.00											
S-109	R1-2	YIELD	30 x 30	7	SQ-SOIL	2-1/2	1					6.25										
S-110	R1-2	YIELD	30 x 30	7	SQ-CONC	2-1/2	1					6.25										
	R6-2R	ONE WAY RIGHT	24 x 30								5.00											
S-111	W14-3	NO PASSING ZONE	x																			
S-112	R1-2	YIELD	30 x 30	7	SQ-SOIL	2-1/2	1															
S-113	DESIGN	FOREST BLVD ARROW	48 x 24	7	SQ-CONC	2-1/2	1					8.00										
	OM1-2	TYPE 1 OBJECT MARKER	18 x 18					4														1
S-114	R1-1	STOP	x								1											
	R1-2	YIELD	30 x 30	7	SQ-CONC	2-1/2	1															
S-115	R6-2R	ONE WAY RIGHT	24 x 30								6.25					5.00						
	W16-17P	ROUNDAABOUT PLAQUE	36 x 12	7	SQ-SOIL	2-1/2	1															
S-116	W2-6	ROUNDAABOUT	30 x 30								3.00					6.25						
	R4-7	KEEP RIGHT	24 x 30	7			5.00															
S-117	OM1-2	TYPE 1 OBJECT MARKER	18 x 18	4	SQ-CONC	2-1/2	1															
	R2-1	SPEED LIMIT 30	24 x 30								5.00											1
S-118	R6-1R	ONE WAY RIGHT	36 x 12	4	SQ-CONC	2-1/2	1					3.00										
	R6-4A	ROUNDAABOUT DIRECTIONAL (3 ARROWS)	48 x 24								8.00											
S-120	DESIGN	377TH ST ARROW	42 x 24	7	SQ-CONC	2-1/2	1						7.00									
	OM1-2	TYPE 1 OBJECT MARKER	18 x 18					4														
S-121	R1-2	YIELD	30 x 30	7	SQ-SOIL	2-1/2	1					6.25										
	R1-2	YIELD	30 x 30								6.25											
S-122	R6-2R	ONE WAY RIGHT	24 x 30	7	SQ-CONC	2-1/2	1					5.00										
	R6-1R	ONE WAY RIGHT	36 x 12								3.00											
S-123	R6-4B	ROUNDAABOUT DIRECTIONAL (4 ARROWS)	60 x 24	4	SQ-CONC	2-1/2	1					10.00										
	DESIGN	FOREST BLVD ARROW	48 x 24					7			8.00											
S-124	OM1-2	TYPE 1 OBJECT MARKER	18 x 18	4	SQ-CONC	2-1/2	1															
	R6-1R	ONE WAY RIGHT	36 x 12								3.00											1
S-125	R6-4A	ROUNDAABOUT DIRECTIONAL (3 ARROWS)	48 x 24	4	SQ-CONC	2-1/2	1					8.00										
	R1-2	YIELD	30 x 30					7				6.25										
S-127	R1-2	YIELD	30 x 30	7	SQ-CONC	2-1/2	1					6.25										
	R6-2R	ONE WAY RIGHT	24 x 30								5.00											
S-128	R3-8AD	L-TR	36 x 36	7	SQ-SOIL	2-1/2	1	1				9.00										
	R8-3	NO PARKING	24 x 24									4.00										
S-129	M3-3	SOUTH (BLUE)	24 x 12	7	SQ-SOIL	2	1	1				2.00								</		

FUNDING NOTE(S):
(A) SAP 013-630-021
(B) SAP 013-630-021 / SAP 225-102-004 (50/50)
(C) CITY LOCAL FUNDS

NO.	DATE	BY	CHK	REVISIONS

Design By: MF
Plan By: MF
Checked By: ES
Approved By: SD

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SEAN DELMORE, PE
DATE: 9/12/2024 LICENSE NO. 40945



CSAH 30 (Forest Blvd) Improvements
Chisago County, Minnesota

CHISAGO COUNTY, MINNESOTA

SIGNING & PAVEMENT MARKING PLAN
SAP 013-630-021 / SAP 225-591-007 / SAP 225-102-004

SHEET
191
OF
216
SHEETS

DATE: 9/12/2024 2:09:51 PM
PATH & FILENAME: Projects\Minnesota\Roadway\Sheets\023661-000_ss

SIGN SPECIAL											J
SIGN NUMBER	PANEL			SUPPORT			REMOVE SIGN SPECIAL	SALVAGE SIGN SPECIAL	INSTALL SIGN SPECIAL	SALVAGE SIGN PANEL SPECIAL	INSTALL SIGN PANEL SPECIAL
	LEGEND	SIZE (W X H)	MOUNTING HEIGHT	TYPE	RISER POST SIZE	NUMBER OF POSTS	(B)	(A)	(A)	(A)	(A)
		INCH	FEET		INCHES		EACH	EACH	EACH	EACH	EACH
S-501	NOT USED										
S-502	NOT USED										
S-503	372ND ST	X	7	SQ-SOIL	2	1		1	1		
	FOREST BLVD	X									
S-504	375TH ST	X	7	SQ-SOIL	2	1		1	1		
	FOREST BLVD	X									
S-505	376TH ST	X	7	SQ-SOIL	2	1		1	1		
	FOREST BLVD	X									
S-506	379TH ST	X	7	SQ-SOIL	2	1		1	1		
	OAK KNOLL AVE	X									
S-507	381ST ST	X	7	SQ-SOIL	2	1		1	1		
	FOREST BLVD	X									
S-508	382ND ST	X	7	SQ-SOIL	2	1		1	1		
	FOREST BLVD	X									
S-509	GLACIER DR	X	7	SQ-SOIL	2	1				1	1
	FOREST BLVD	X									
S-510	384TH ST	X	7	SQ-SOIL	2	1		1	1		
	FOREST BLVD	X									
S-511	PINE ST	X	7	SQ-SOIL	2	1				1	1
	FOREST BLVD	X									
S-512	OAK ST	X	7	SQ-SOIL	2	1				1	1
	FOREST BLVD	X									
S-513	377TH ST	X	7	SQ-SOIL	2	1	1				
	FOREST BLVD	X									
GROUP SUBTOTAL							1	7	7	3	3
PROJECT TOTAL							1	7	7	3	3

FUNDING NOTE(S):
(A) SAP 013-630-021
(B) SAP 013-630-021 / SAP 225-102-004 (50/50)

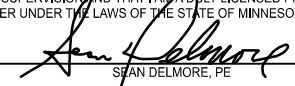
PAVEMENT MARKING TABULATION															K
LOCATION	PAINT GR IN (WR)			PAINT										PREFORM THERMOPLASTIC	PREFORM THERMOPLASTIC GR IN
	4" SOLID LINE	6" SOLID LINE	6" DOTTED LINE (2)	4" SOLID LINE	4" BROKEN LINE (1)	4" DOUBLE SOLID LINE	6" SOLID LINE	6" DOTTED LINE (2)	10" DOTTED LINE (3)	24" SOLID LINE	PAVEMENT MESSAGE		CROSSWALK (5)	12" DOTTED LINE (4)	CROSSWALK (5)
	YELLOW	WHITE	WHITE	YELLOW	YELLOW	YELLOW	WHITE	WHITE	WHITE	YELLOW	LEFT ARROW	RIGHT ARROW		WHITE	
	LIN FT	LIN FT	LIN FT	LIN FT	LIN FT	LIN FT	LIN FT	LIN FT	LIN FT	LIN FT	SQ FT	SQ FT	SQ FT	LIN FT	SQ FT
SAP 013-630-021															
CSAH 30															
STA 1454+81.73 TO STA 1462+00				857	190		1513					16			
STA 1462+00 TO STA 1473+00					220		2200								
STA 1473+00 TO STA 1484+00					220		2200								
STA 1484+00 TO STA 1495+00					220		2200								
STA 1495+00 TO STA 1506+00					220		2200								
STA 1506+00 TO STA 1517+00					220		2200								
STA 1517+00 TO STA 1528+00				158	220		2200								
STA 1528+00 TO STA 1539+00				1009	230		2270		88			31			
STA 1539+00 TO STA 1550+00				621	220		2288					16			
STA 1550+00 TO STA 1561+00					220		2187					16			
STA 1561+00 TO STA 1572+00					220		2200								
STA 1572+00 TO STA 1582+20					220		2200								
STA 1582+00 TO STA 1594+00				420	210		2040								
TOTAL RECONDITIONING SAP 013-630-021				3065	2610		25698		88			79			
STA 1582+20 TO STA 1594+00				80	20	1793	2768			192	31	31			
STA 1594+00 TO STA 1605+00						1447	3023			151	47	47			
STA 1605+00 TO STA 1613+73						1254	2271	37		121	47	47			
STA 1622+85 TO STA 1627+00				1089	1815	23	220	50	200	834	62		180		
STA 1627+00 TO STA 1639+00					2336	470	2335				155	31	150		
STA 1639+00 TO STA 1651+00					1090	220	566	2846		39	124	47			
STA 1651+00 TO STA 1663+00					2301	470	2481				155	31			
STA 1663+00 TO STA 1673+00					505	110	644	2353			109	31	144		
TOTAL RECONSTRUCTION SAP 013-630-021				1089	1815	23	6532	1340	5904	18911	37	503	730	265	474
SAP 013-630-021 / SAP 225-102-004 (50/50)															
STA 1613+73 TO STA 1616+00				454	454										
STA 1616+00 TO STA 1618+75				252	548									43	
STA 1618+75 TO STA 1622+85				837	1039	23						31			180
SAP 013-630-021 / SAP 225-102-004 (50/50)				1543	2041	23						31		43	180
CITY LOCAL FUNDS															
377TH STREET															
STA 101+53.82 TO STA 102+82				122		468				25				20	
STA 105+78 TO STA 107+64.69				115		308				17				23	180
TOTAL CITY LOCAL				237		776				42				43	180
PROJECT TOTAL				2869	3856	46	9597	3950	6680	44609	37	88	545	1105	474

NOTES:
(1) 10' LINE, 40' GAP.
(2) 2' LINE, 6' GAP.
(3) 3' LINE, 12' GAP.
(4) 3' LINE, 3' GAP.
(5) 10' X 3' BLOCK.

NO.	DATE	BY	CHK	REVISIONS

Design By:
MF
Plan By:
MF
Checked By:
ES
Approved By:
SD

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SEAN DELMORE, PE
DATE: 9/12/2024 LICENSE NO. 40845



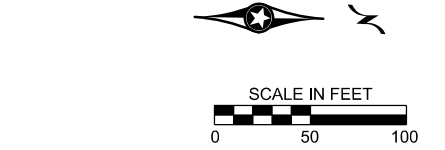
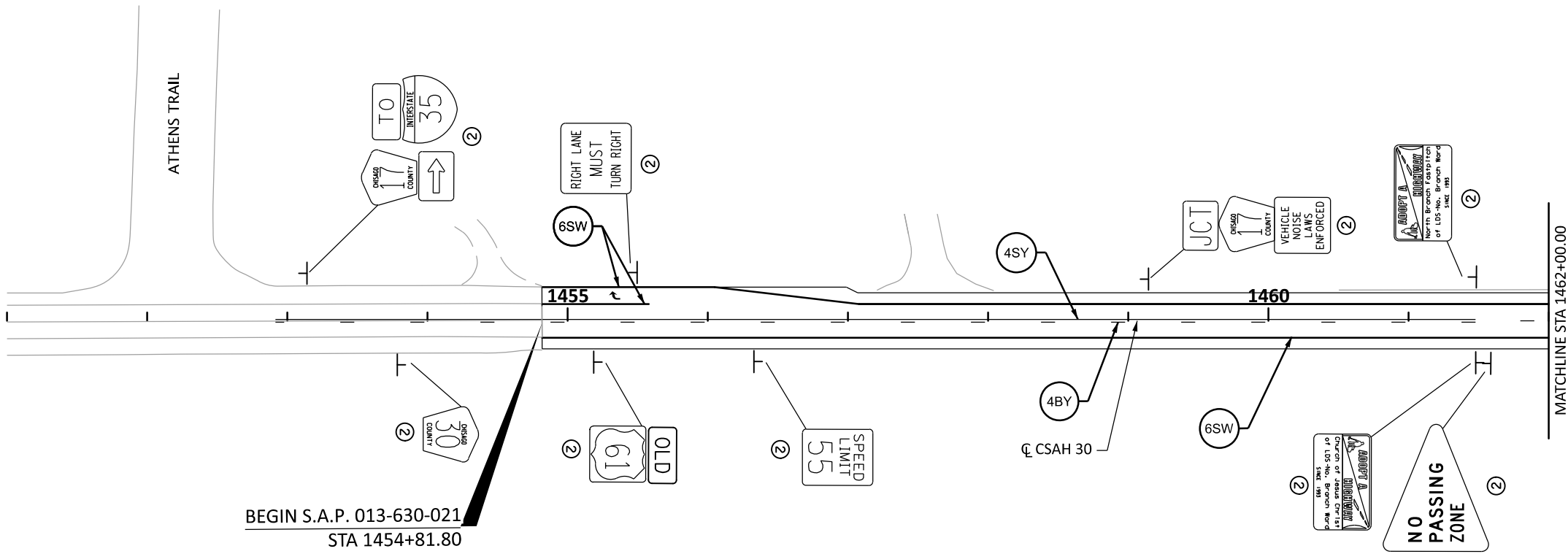
CSAH 30 (Forest Blvd) Improvements
Chisago County, Minnesota

CHISAGO COUNTY, MINNESOTA

SIGNING & PAVEMENT MARKING PLAN
SAP 013-630-021 / SAP 225-591-007 / SAP 225-102-004

SHEET
192
OF
216
SHEETS

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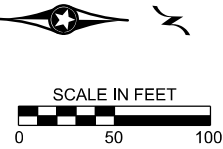
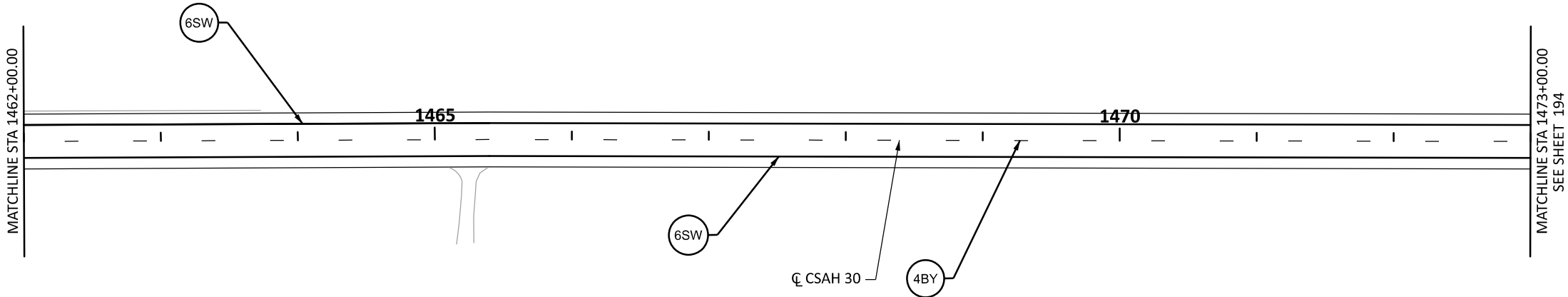


STRIPING LEGEND

- ARROWS - PAINT
- CROSSWALK - PREF THERMO
- 2ND DIGIT PATTERN
 - S = SOLID
 - B = BROKEN
 - D = DOUBLE
 - T = DOTTED
- 1ST DIGIT WIDTH
 - 4", 8", ETC.
- 3RD DIGIT COLOR
 - W = WHITE
 - Y = YELLOW
 - B = BLACK
- EXAMPLE: 4SW = 4" SOLID LINE WHITE PAINT
- CIRCLE - PAINT
- SQUARE - PREF THERMO
- G = GROUND IN
- W = WET REFLECTIVE

SIGNING LEGEND

- INPLACE



NO.	DATE	BY	CHK	REVISIONS

Design By: MF
Plan By: MF
Checked By: ES
Approved By: SD

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Sean Delmore
SEAN DELMORE, PE

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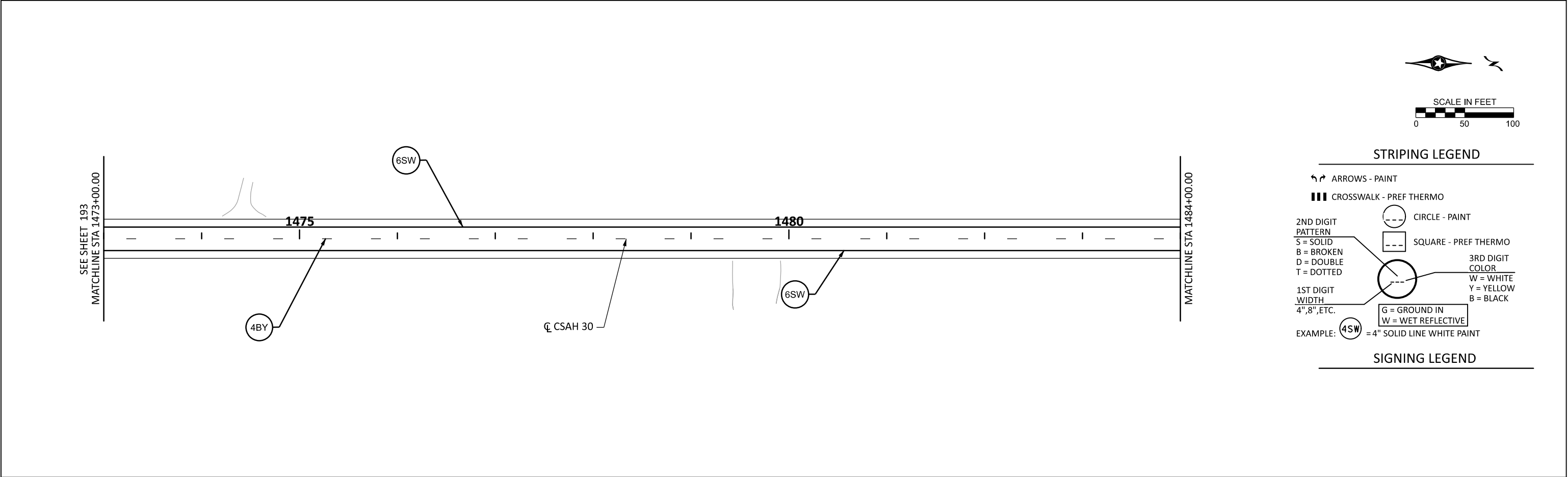
CSAH 30 (Forest Blvd) Improvements
Chisago County, Minnesota

CHISAGO COUNTY, MINNESOTA

SIGNING & PAVEMENT MARKING PLAN
SAP 013-630-021 / SAP 225-591-007 / SAP 225-102-004

SHEET
193
OF
216
SHEETS

DATE: 9/12/2024 2:09:56 PM
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STRIPING LEGEND

↔ ARROWS - PAINT

▬ CROSSWALK - PREF THERMO

2ND DIGIT PATTERN

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1ST DIGIT WIDTH

4", 8", ETC.

CIRCLE - PAINT

SQUARE - PREF THERMO

3RD DIGIT COLOR

W = WHITE

Y = YELLOW

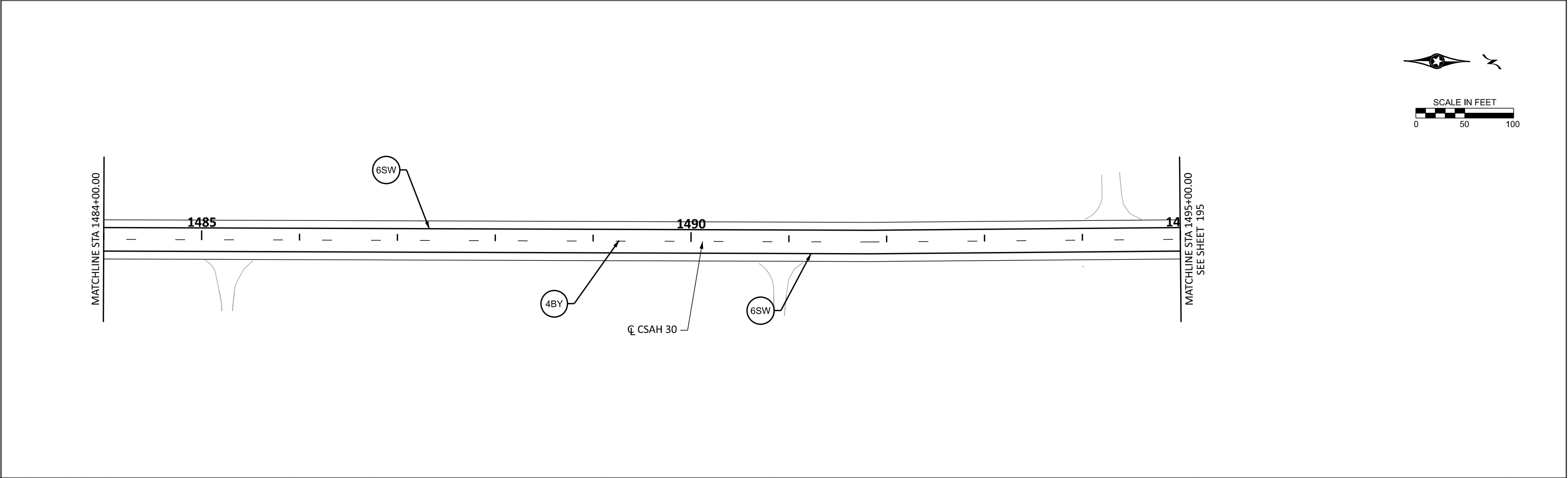
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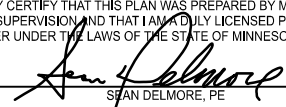
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W = WET REFLECTIVE

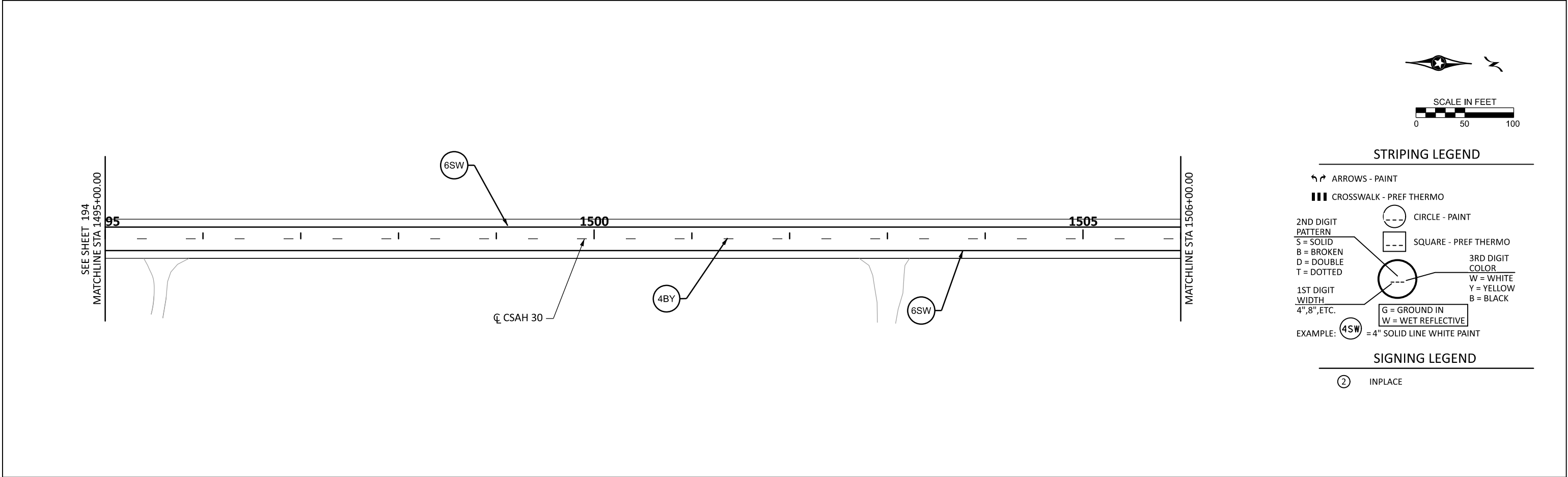
EXAMPLE: **4SW** = 4" SOLID LINE WHITE PAINT

SIGNING LEGEND



NO.	DATE	BY	CHK	REVISIONS	Design By: MF	I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A FULLY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.  SEAN DELMORE, PE DATE: <u>9/12/2024</u> LICENSE NO. <u>40945</u>			CSAH 30 (Forest Blvd) Improvements Chisago County, Minnesota	CHISAGO COUNTY, MINNESOTA		SHEET
										194		
										OF		
										216		
										SHEETS		
					Approved By: SD					SIGNING & PAVEMENT MARKING PLAN SAP 013-630-021 / SAP 225-591-007 / SAP 225-102-004		

DATE: 9/12/2024 2:09:56 PM
PATH & FILENAME: Projects\Minnesota\023661-000\03_Discipline\Roadway\Sheets\023661-000_ss



STRIPING LEGEND

↔ ARROWS - PAINT

▬ CROSSWALK - PREF THERMO

2ND DIGIT PATTERN

S = SOLID

B = BROKEN

D = DOUBLE

T = DOTTED

1ST DIGIT WIDTH

4", 8", ETC.

4SW

= 4" SOLID LINE WHITE PAINT

CIRCLE - PAINT

SQUARE - PREF THERMO

3RD DIGIT COLOR

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B = BLACK

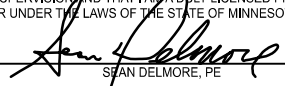
G = GROUND IN

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SIGNING LEGEND

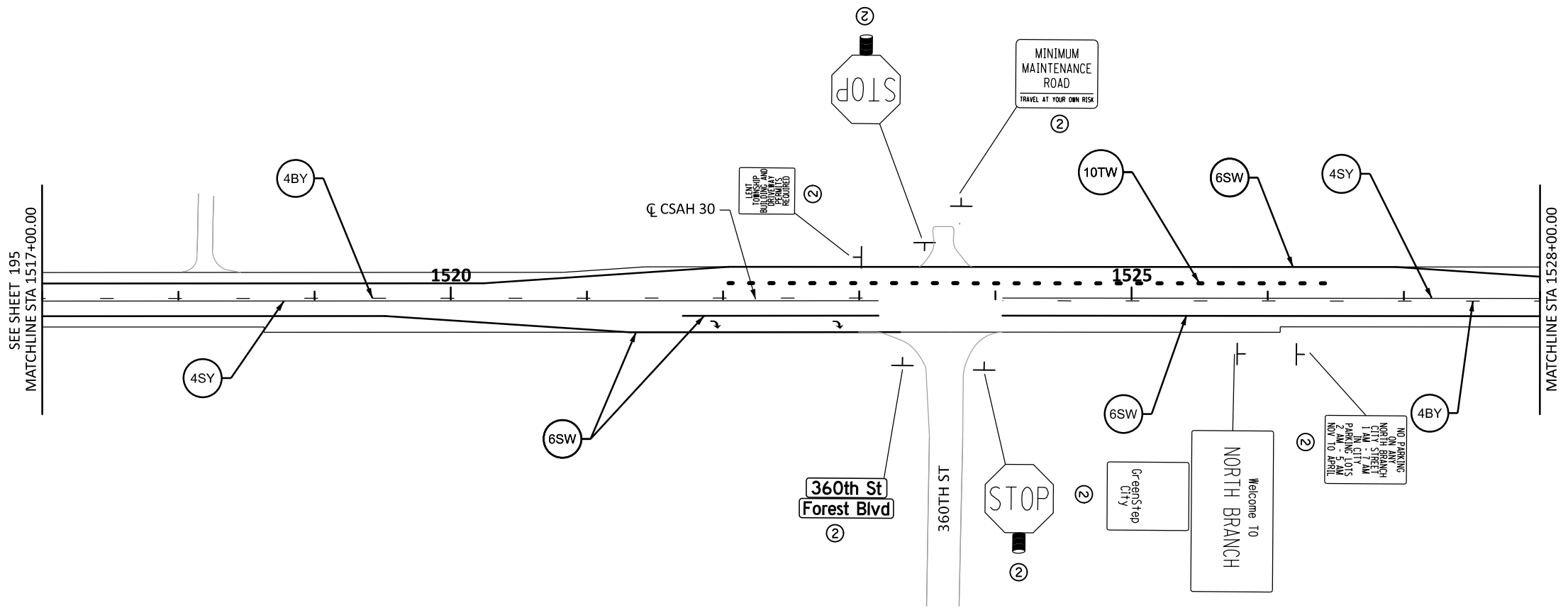
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INPLACE

NO.	DATE	BY	CHK	REVISIONS	Design By: MF	I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A FULLY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.  SEAN DELMORE, PE DATE: 9/12/2024 LICENSE NO. 40945			CSAH 30 (Forest Blvd) Improvements Chisago County, Minnesota	CHISAGO COUNTY, MINNESOTA	SHEET 195 OF 216 SHEETS			
														SIGNING & PAVEMENT MARKING PLAN SAP 013-630-021 / SAP 225-591-007 / SAP 225-102-004

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SCALE IN FEET
0 50 100

STRIPING LEGEND

ARROWS - PAINT

CROSSWALK - PREF THERMO

2ND DIGIT PATTERN
S = SOLID
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T = DOTTED

1ST DIGIT WIDTH
4", 8", ETC.

CIRCLE - PAINT

SQUARE - PREF THERMO

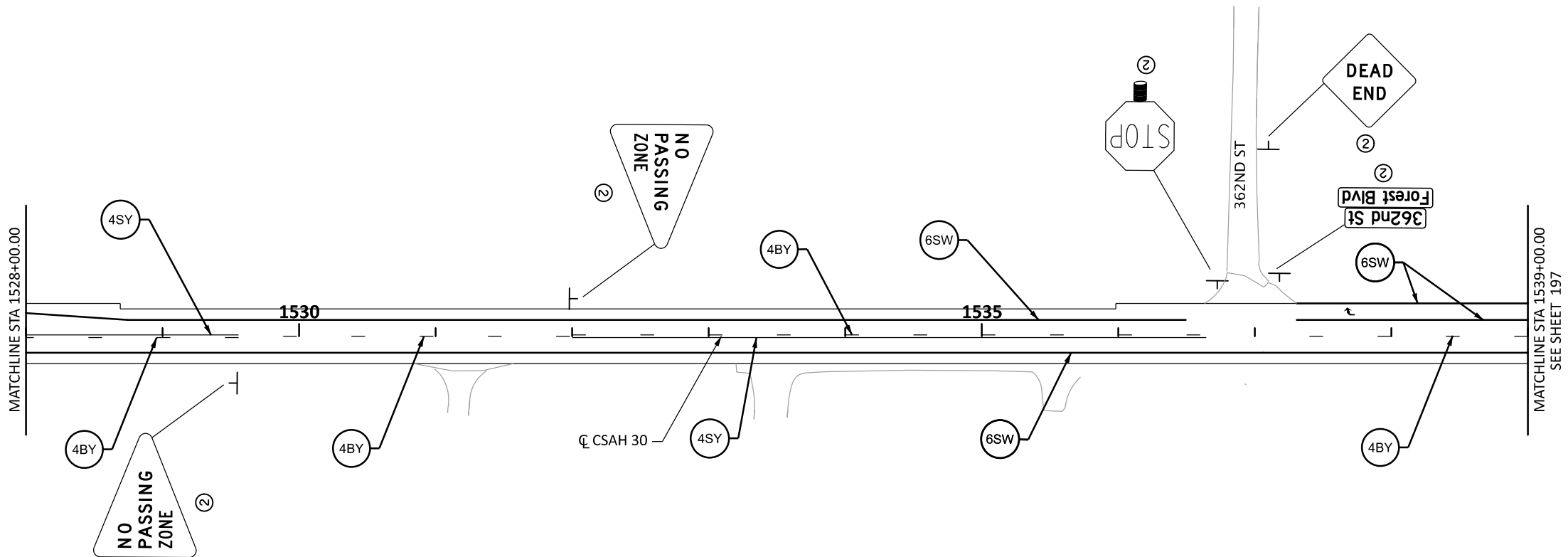
3RD DIGIT COLOR
W = WHITE
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G = GROUND IN
W = WET REFLECTIVE

EXAMPLE: 4SW = 4" SOLID LINE WHITE PAINT

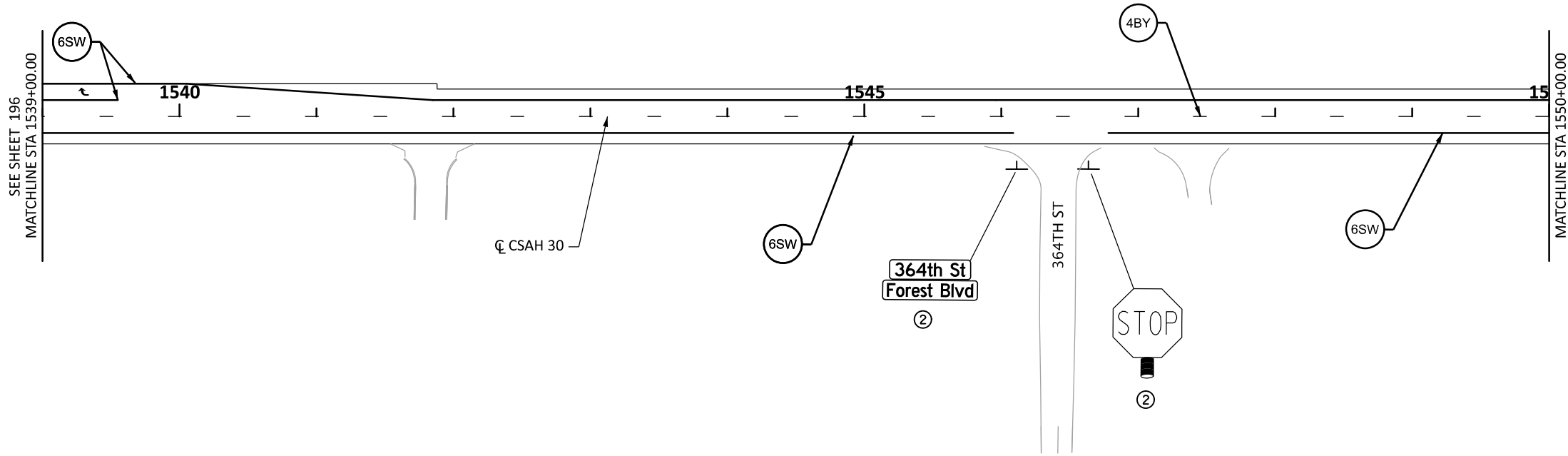
SIGNING LEGEND

INPLACE



SCALE IN FEET
0 50 100

NO.	DATE	BY	CHK	REVISIONS	Design By: MF	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.  SEAN DELMORE, PE DATE: 9/12/2024 LICENSE NO. 40945			CSAH 30 (Forest Blvd) Improvements Chisago County, Minnesota	CHISAGO COUNTY, MINNESOTA		SHEET 196 OF 216 SHEETS
					Plan By: MF							
					Checked By: ES							
					Approved By: SD							
										SIGNING & PAVEMENT MARKING PLAN SAP 013-630-021 / SAP 225-591-007 / SAP 225-102-004		



SCALE IN FEET

0 50 100

STRIPING LEGEND

↔ ARROWS - PAINT

▬ CROSSWALK - PREF THERMO

2ND DIGIT PATTERN

S = SOLID

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3RD DIGIT COLOR

W = WHITE

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1ST DIGIT WIDTH

4", 8", ETC.

EXAMPLE: 4SW = 4" SOLID LINE WHITE PAINT

CIRCLE - PAINT

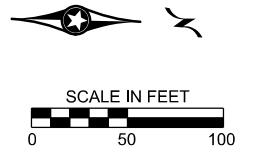
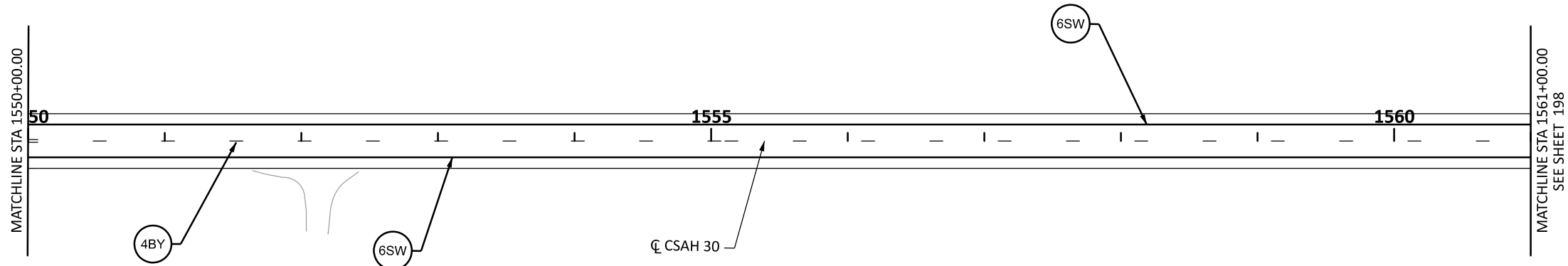
SQUARE - PREF THERMO

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W = WET REFLECTIVE

SIGNING LEGEND

② INPLACE



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Design By: MF

Plan By: MF

Checked By: ES

Approved By: SD

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Sean Delmore

SEAN DELMORE, PE

DATE: 9/12/2024 LICENSE NO. 40945



CSAH 30 (Forest Blvd) Improvements

Chisago County, Minnesota

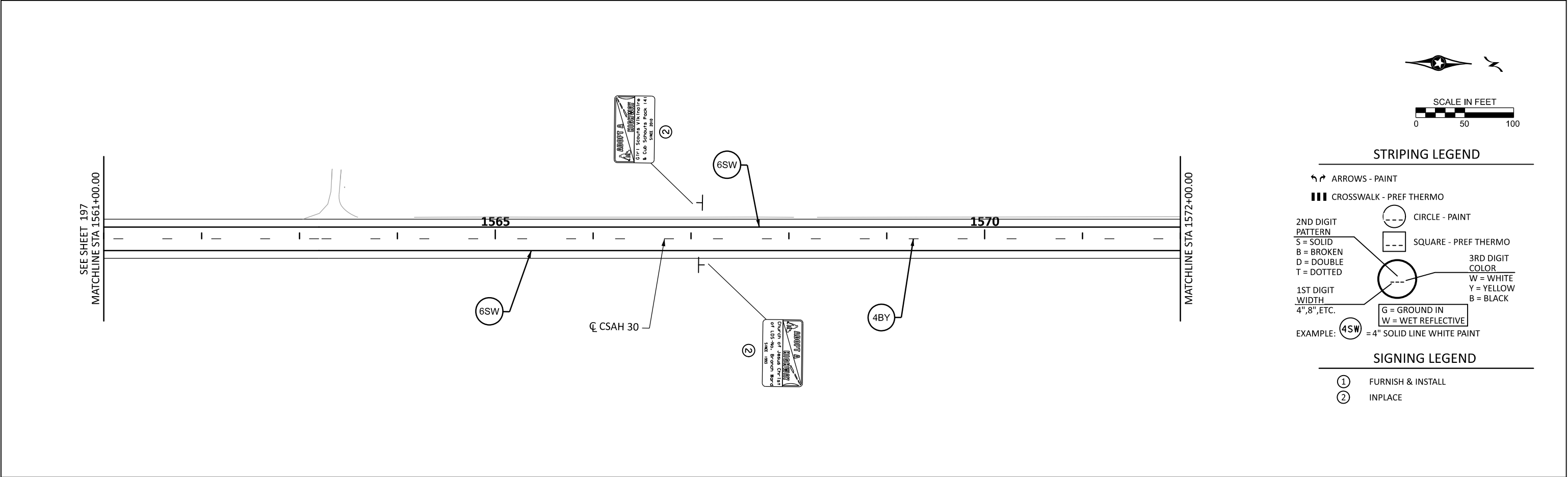
CHISAGO COUNTY, MINNESOTA

SIGNING & PAVEMENT MARKING PLAN

SAP 013-630-021 / SAP 225-591-007 / SAP 225-102-004

SHEET 197 OF 216 SHEETS

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STRIPING LEGEND

↔ ARROWS - PAINT

▬ CROSSWALK - PREF THERMO

2ND DIGIT PATTERN
S = SOLID
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D = DOUBLE
T = DOTTED

3RD DIGIT COLOR
W = WHITE
Y = YELLOW
B = BLACK

1ST DIGIT WIDTH
4", 8", ETC.

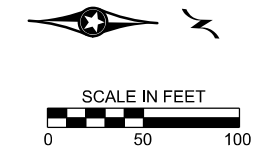
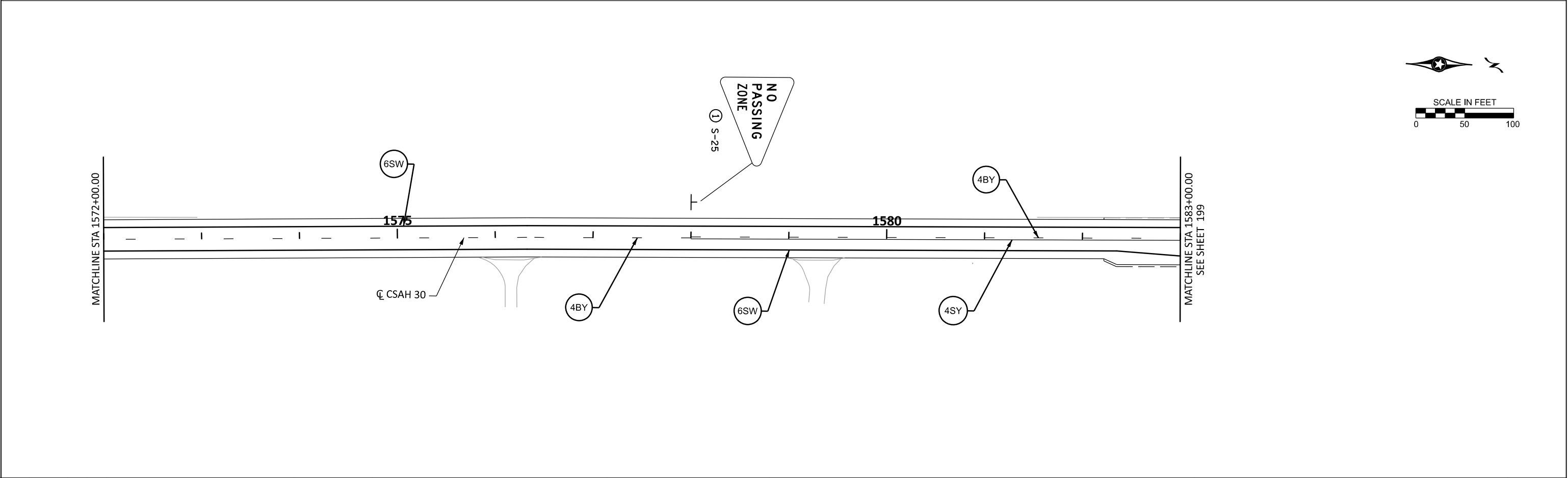
G = GROUND IN
W = WET REFLECTIVE

EXAMPLE: **4SW** = 4" SOLID LINE WHITE PAINT

SIGNING LEGEND

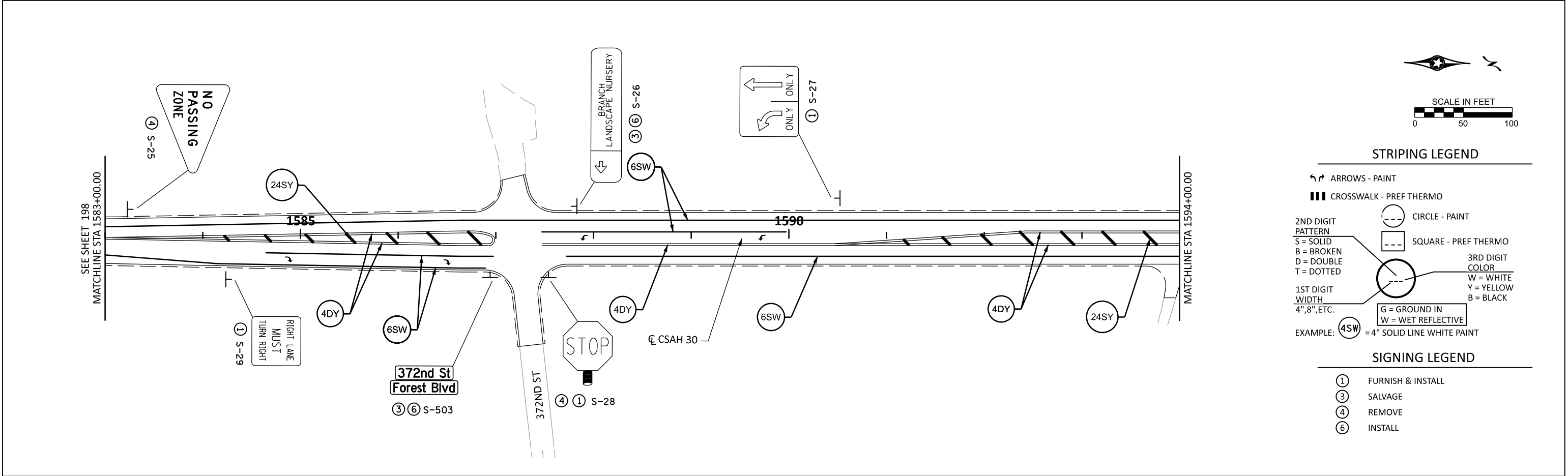
① FURNISH & INSTALL

② INPLACE



NO.	DATE	BY	CHK	REVISIONS	Design By: MF	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.  SEAN DELMORE, PE DATE: <u>9/12/2024</u> LICENSE NO. <u>40945</u>			CSAH 30 (Forest Blvd) Improvements Chisago County, Minnesota	CHISAGO COUNTY, MINNESOTA		SHEET 198 OF 216 SHEETS		
										SIGNING & PAVEMENT MARKING PLAN SAP 013-630-021 / SAP 225-591-007 / SAP 225-102-004				

DATE: 9/12/2024 2:09:58 PM
PATH & FILENAME: Projects\Minnesota\Roadway\Sheets\023661-000_ss



STRIPING LEGEND

ARROWS - PAINT

CROSSWALK - PREF THERMO

2ND DIGIT PATTERN
S = SOLID
B = BROKEN
D = DOUBLE
T = DOTTED

1ST DIGIT WIDTH
4", 8", ETC.

CIRCLE - PAINT

SQUARE - PREF THERMO

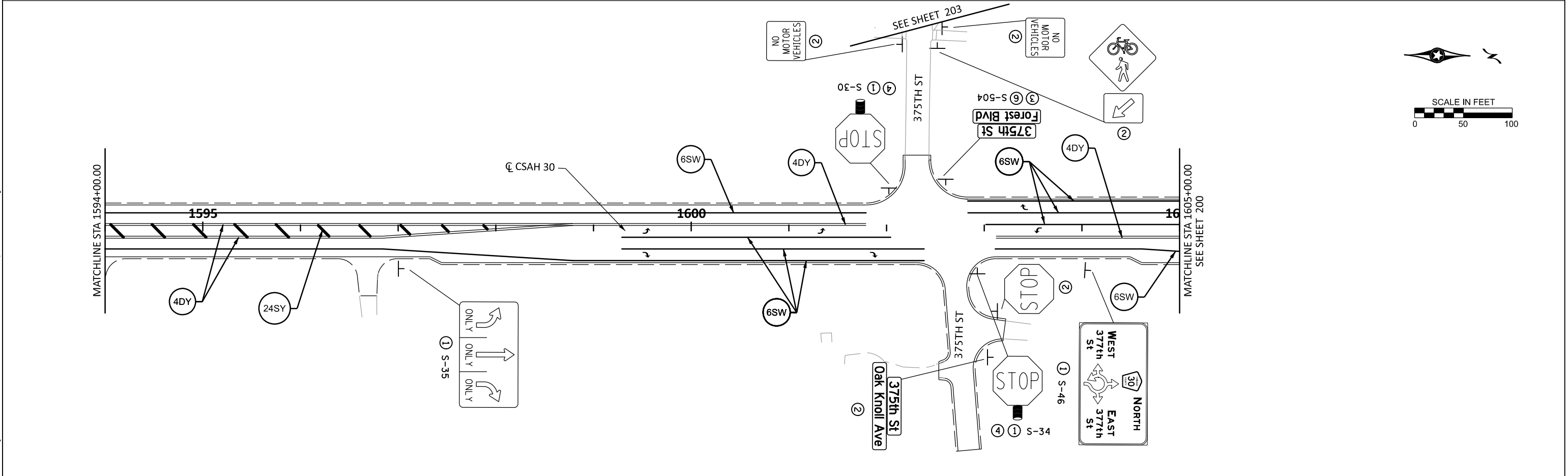
3RD DIGIT COLOR
W = WHITE
Y = YELLOW
B = BLACK

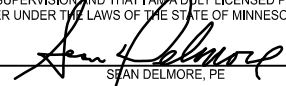
G = GROUND IN
W = WET REFLECTIVE

EXAMPLE: 4SW = 4" SOLID LINE WHITE PAINT

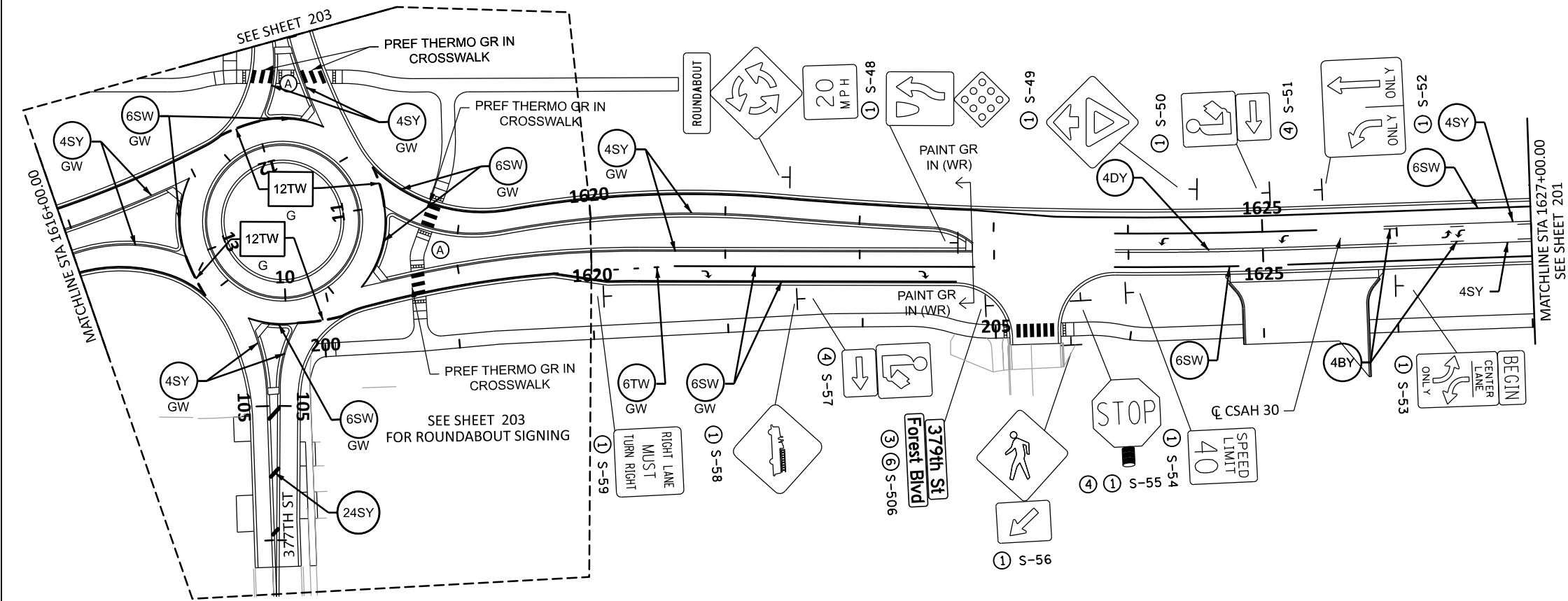
SIGNING LEGEND

1 FURNISH & INSTALL
3 SALVAGE
4 REMOVE
6 INSTALL



NO.	DATE	BY	CHK	REVISIONS	Design By: MF	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.  SEAN DELMORE, PE DATE: <u>9/12/2024</u> LICENSE NO. <u>40945</u>	  Chisago COUNTY USA CSAH 30 (Forest Blvd) Improvements Chisago County, Minnesota	CHISAGO COUNTY, MINNESOTA	SHEET 199 OF 216 SHEETS
				Plan By: MF	SIGNING & PAVEMENT MARKING PLAN				
				Checked By: ES	SAP 013-630-021 / SAP 225-591-007 / SAP 225-102-004				
				Approved By: SD					

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SCALE IN FEET
0 50 100

STRIPING LEGEND

ARROWS - PAINT

CROSSWALK - PREF THERMO

2ND DIGIT PATTERN
S = SOLID
B = BROKEN
D = DOUBLE
T = DOTTED

1ST DIGIT WIDTH
4", 8", ETC.

3RD DIGIT COLOR
W = WHITE
Y = YELLOW
B = BLACK

G = GROUND IN
W = WET REFLECTIVE

EXAMPLE: 4SW = 4" SOLID LINE WHITE PAINT

SIGNING LEGEND

1 FURNISH & INSTALL
3 SALVAGE
4 REMOVE
6 INSTALL

(A) SEE SHEETS 214 - 216 FOR RRFB PLAN.

NO.	DATE	BY	CHK	REVISIONS

Design By: MF
Plan By: MF
Checked By: ES
Approved By: SD

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SEAN DELMORE, PE
DATE: 9/12/2024 LICENSE NO. 40945



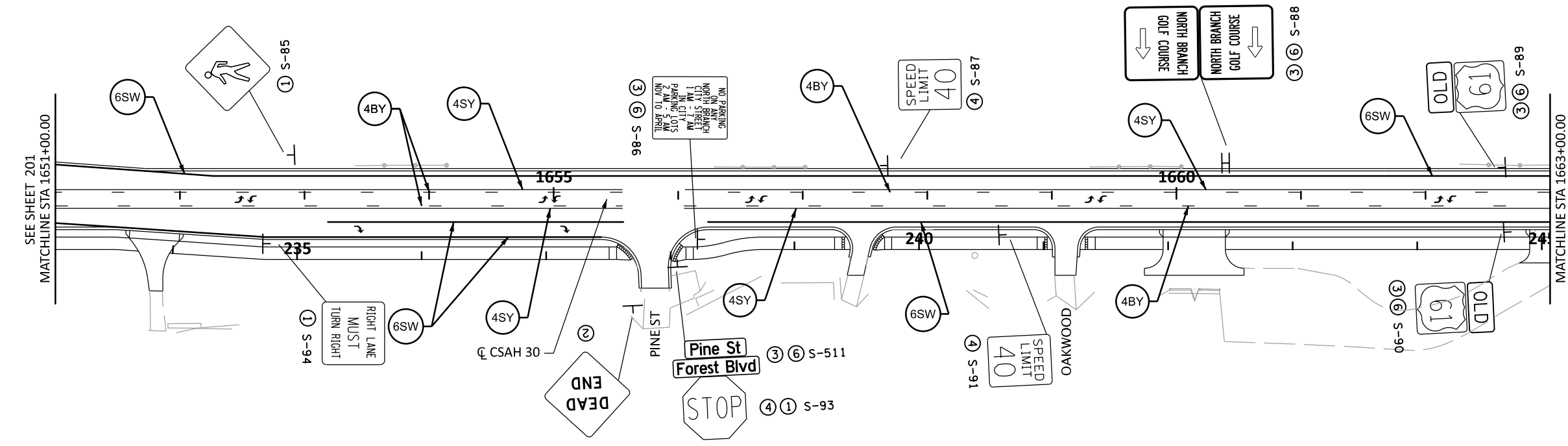
CSAH 30 (Forest Blvd) Improvements
Chisago County, Minnesota

CHISAGO COUNTY, MINNESOTA

SIGNING & PAVEMENT MARKING PLAN
SAP 013-630-021 / SAP 225-591-007 / SAP 225-102-004

SHEET
200
OF
216
SHEETS

DATE: 9/12/2024 2:10:00 PM
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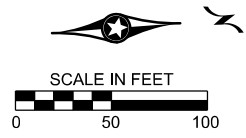
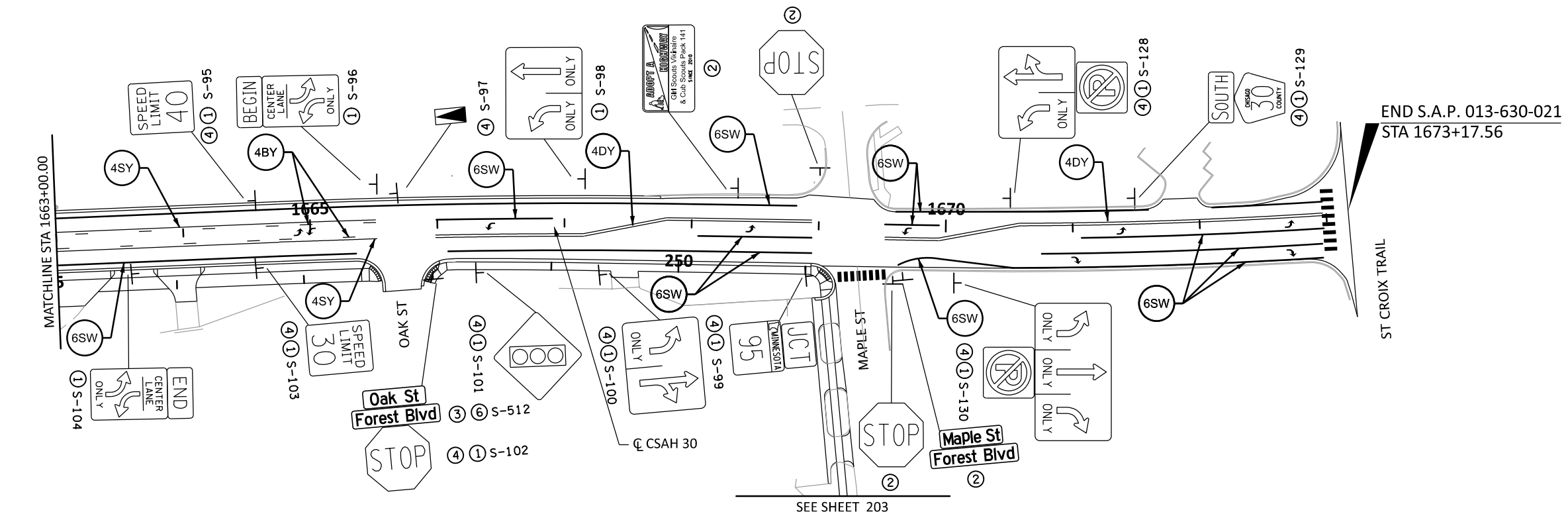


STRIPING LEGEND

- ARROWS - PAINT
- CROSSWALK - PREF THERMO
- 2ND DIGIT PATTERN:
 - S = SOLID
 - B = BROKEN
 - D = DOUBLE
 - T = DOTTED
- 1ST DIGIT WIDTH:
 - 4" = 4"
 - 8" = 8"
 - ETC. = ETC.
- CIRCLE - PAINT
- SQUARE - PREF THERMO
- 3RD DIGIT COLOR:
 - W = WHITE
 - Y = YELLOW
 - B = BLACK
- G = GROUND IN
- W = WET REFLECTIVE
- EXAMPLE: 4SW = 4" SOLID LINE WHITE PAINT

SIGNING LEGEND

- 1 FURNISH & INSTALL
- 2 INPLACE
- 3 SALVAGE
- 4 REMOVE
- 6 INSTALL



NO.	DATE	BY	CHK	REVISIONS

Design By: MF
Plan By: MF
Checked By: ES
Approved By: SD

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DATE: 9/12/2024 LICENSE NO. 40945



CSAH 30 (Forest Blvd) Improvements
Chisago County, Minnesota

CHISAGO COUNTY, MINNESOTA

SIGNING & PAVEMENT MARKING PLAN
SAP 013-630-021 / SAP 225-591-007 / SAP 225-102-004

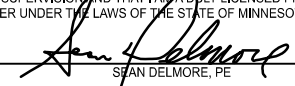
SHEET 202 OF 216 SHEETS

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DATE: 9/12/2024 2:10:01 PM
PATH & FILENAME: Projects\Minnesota\023661-000\03_Discipline\Roadway\Sheets\023661-000_ss

NO.	DATE	BY	CHK	REVISIONS

Design By: MF
Plan By: MF
Checked By: ES
Approved By: SD

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SEAN DELMORE, PE
DATE: 9/12/2024 LICENSE NO. 40945

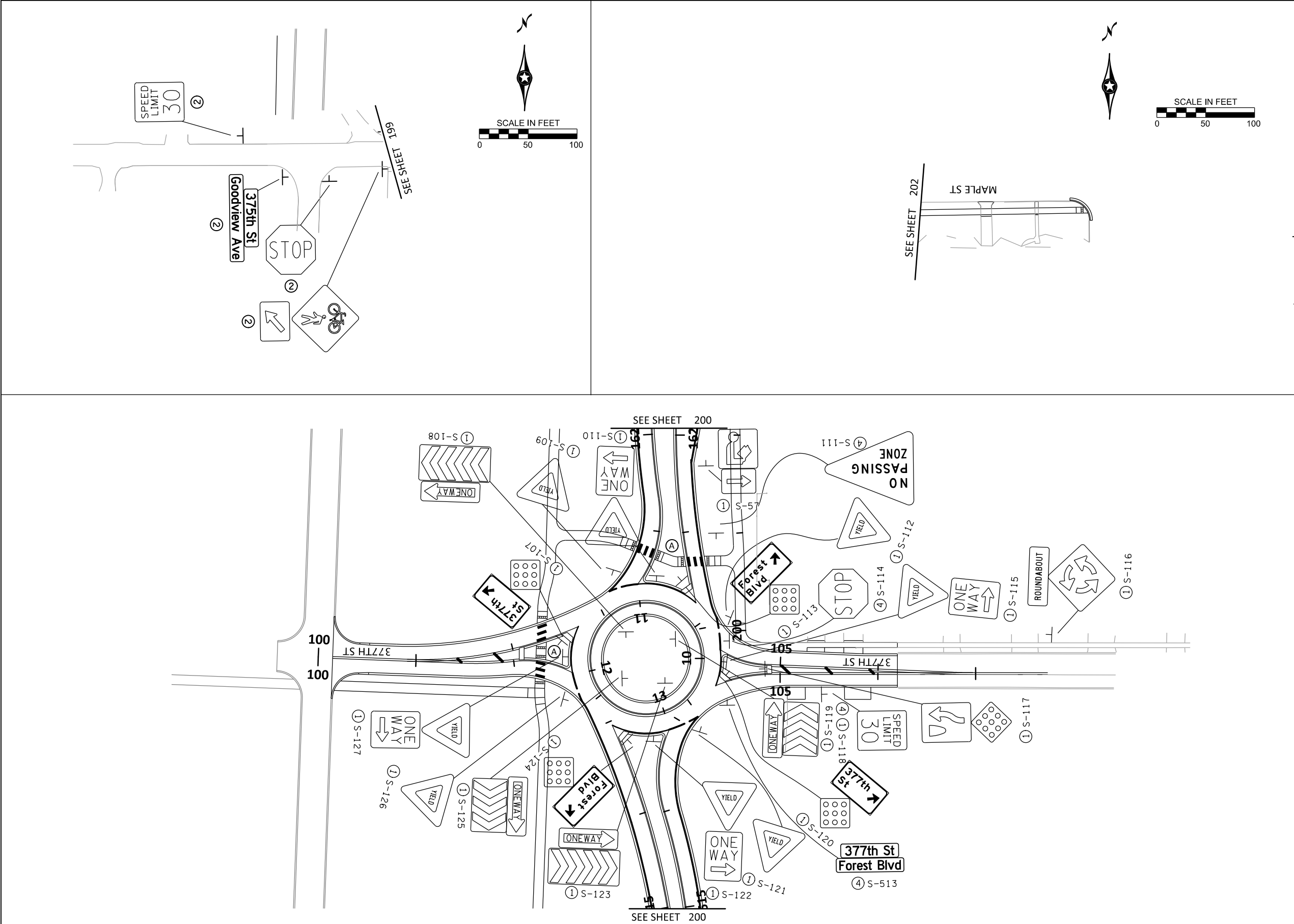


CSAH 30 (Forest Blvd) Improvements
Chisago County, Minnesota

CHISAGO COUNTY, MINNESOTA

SIGNING & PAVEMENT MARKING PLAN
SAP 013-630-021 / SAP 225-591-007 / SAP 225-102-004

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216
SHEETS



STRIPING LEGEND

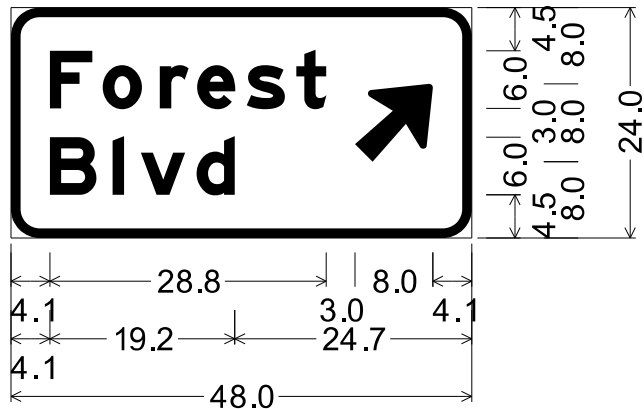
- ARROWS - PAINT
- CROSSWALK - PREF THERMO GR IN
- 2ND DIGIT PATTERN
S = SOLID
B = BROKEN
D = DOUBLE
T = DOTTED
- 1ST DIGIT WIDTH
4", 8", ETC.
- CIRCLE - PAINT
- SQUARE - PREF THERMO
- 3RD DIGIT COLOR
W = WHITE
Y = YELLOW
B = BLACK
- G = GROUND IN
W = WET REFLECTIVE
- EXAMPLE: 4SW = 4" SOLID LINE WHITE PAINT

SIGNING LEGEND

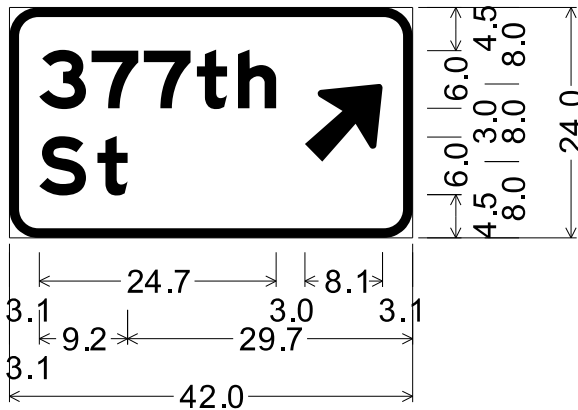
- 1 FURNISH & INSTALL
2 INPLACE
3 SALVAGE
4 REMOVE
6 INSTALL

NOTES

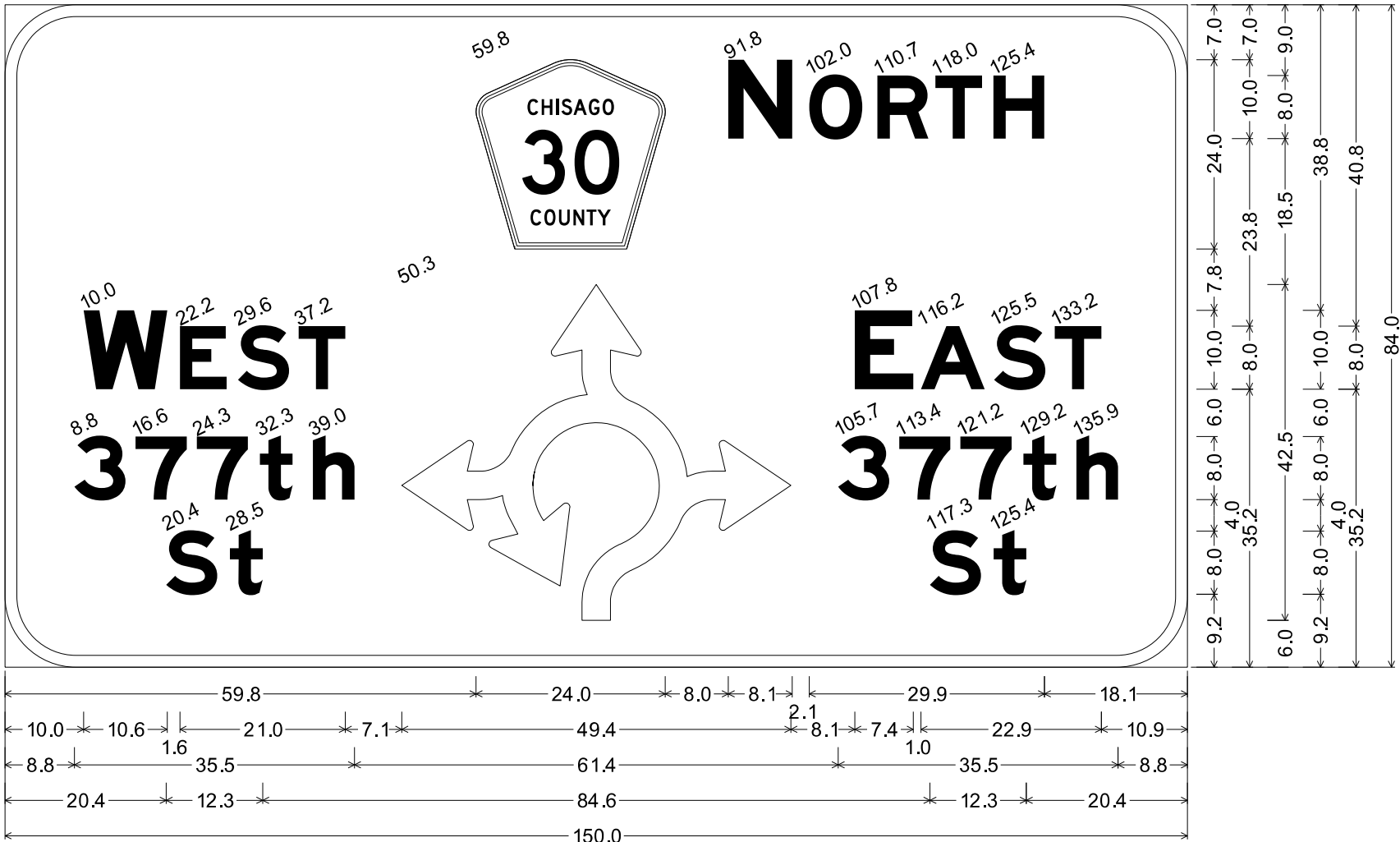
- A SEE SHEETS 214 - 216 FOR RRFB PLAN.



3.0" Radius, 1.0" Border, White on Green;
"Forest", E Mod 2K;
"Blvd", E Mod 2K;
Arrow 3 - 10.0" 45°;



3.0" Radius, 1.0" Border, White on Green;
"377th", E Mod 2K 60% spacing;
"St", E Mod 2K;
Arrow 3 - 10.0" 45°;

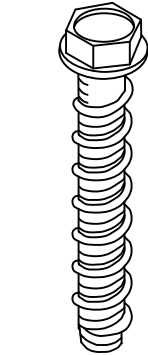
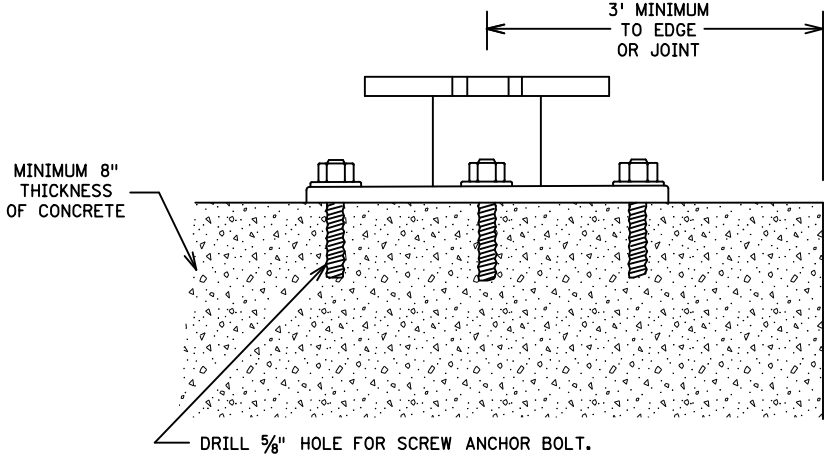


Roundabout Diagrammatic;
9.0" Radius, 1.5" Border, White on Green;
"NORTH", E Mod 2K; "WEST", E Mod 2K; "377th", E Mod 2K; "St", E Mod 2K; RA Arrow-4hd; "EAST", E Mod 2K;
"377th", E Mod 2K; "St", E Mod 2K;

DIMENSIONS ARE IN INCHES.

DATE: 9/12/2024 2:10:02 PM
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				Plan By: MF							
				Checked By: ES							
				Approved By: SD							
SIGNING & PAVEMENT MARKING PLAN SAP 013-630-021 / SAP 225-591-007 / SAP 225-102-004											



SCREW
ANCHOR BOLT
6" LONG CARBON STEEL
WITH 2700 POUNDS OF
PULL OUT STRENGTH.

THE MINIMUM CONCRETE SURFACE REQUIRED FOR MOUNTING THE SLIP BASE
IS 6 FEET BY 6 FEET.

SLIP BASE MOUNTED TO CONCRETE SURFACE DETAIL

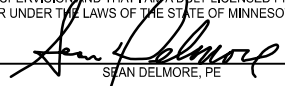
RISER POSTS TO BE MOUNTED CLOSE TO PLUMB. UP TO A MAXIMUM OF 1/2" OF SHIM
WASHERS MAY BE USED BETWEEN SHEAR BOLT BASE AND CONCRETE FOR LEVELING.
IF MORE THAN 1/2" OF SHIMS ARE REQUIRED, THEN CORE THROUGH THE CONCRETE.
IF CONCRETE IS LESS THAN 8" THICK, THEN CORE THROUGH THE CONCRETE.

REV 5/04/21

SLIP BASE
MOUNTED TO CONCRETE SURFACE

NO.	DATE	BY	CHK	REVISIONS

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Approved By: SD

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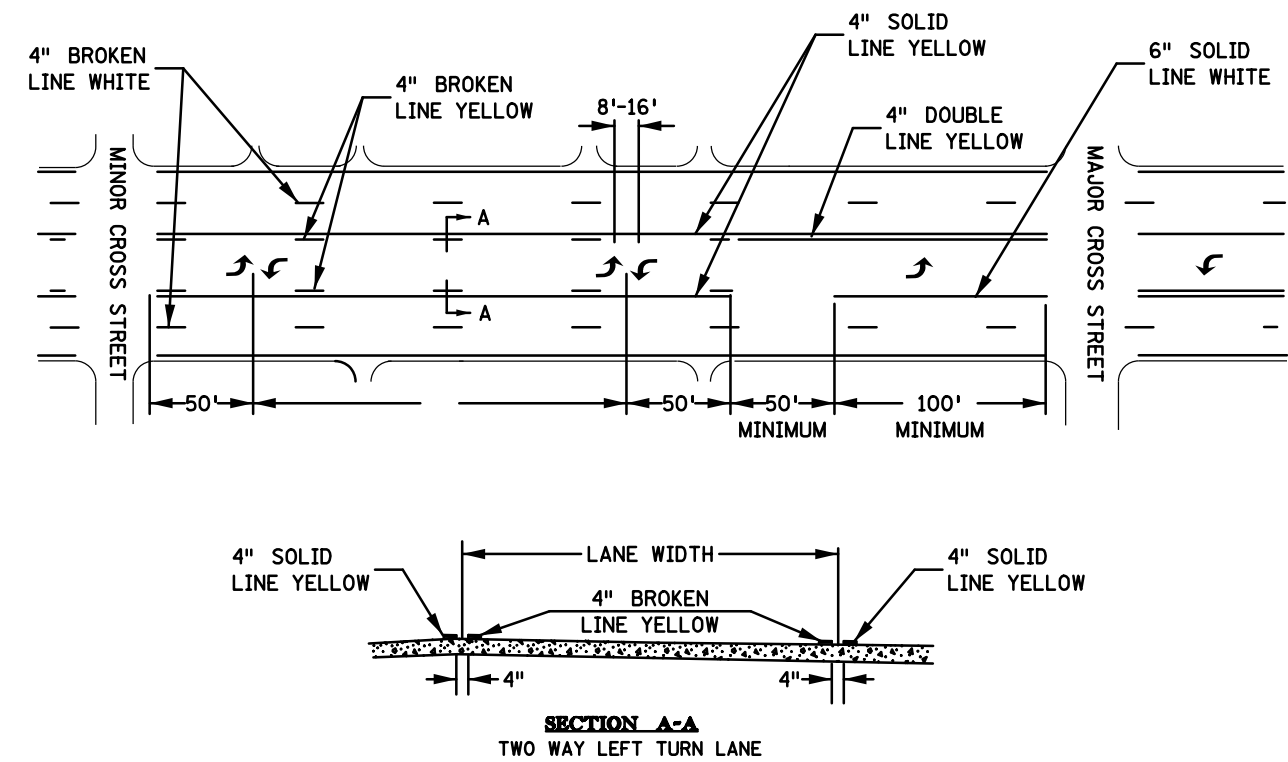
CSAH 30 (Forest Blvd) Improvements
Chisago County, Minnesota

CHISAGO COUNTY, MINNESOTA
SIGNING & PAVEMENT MARKING PLAN
SAP 013-630-021 / SAP 225-591-007 / SAP 225-102-004

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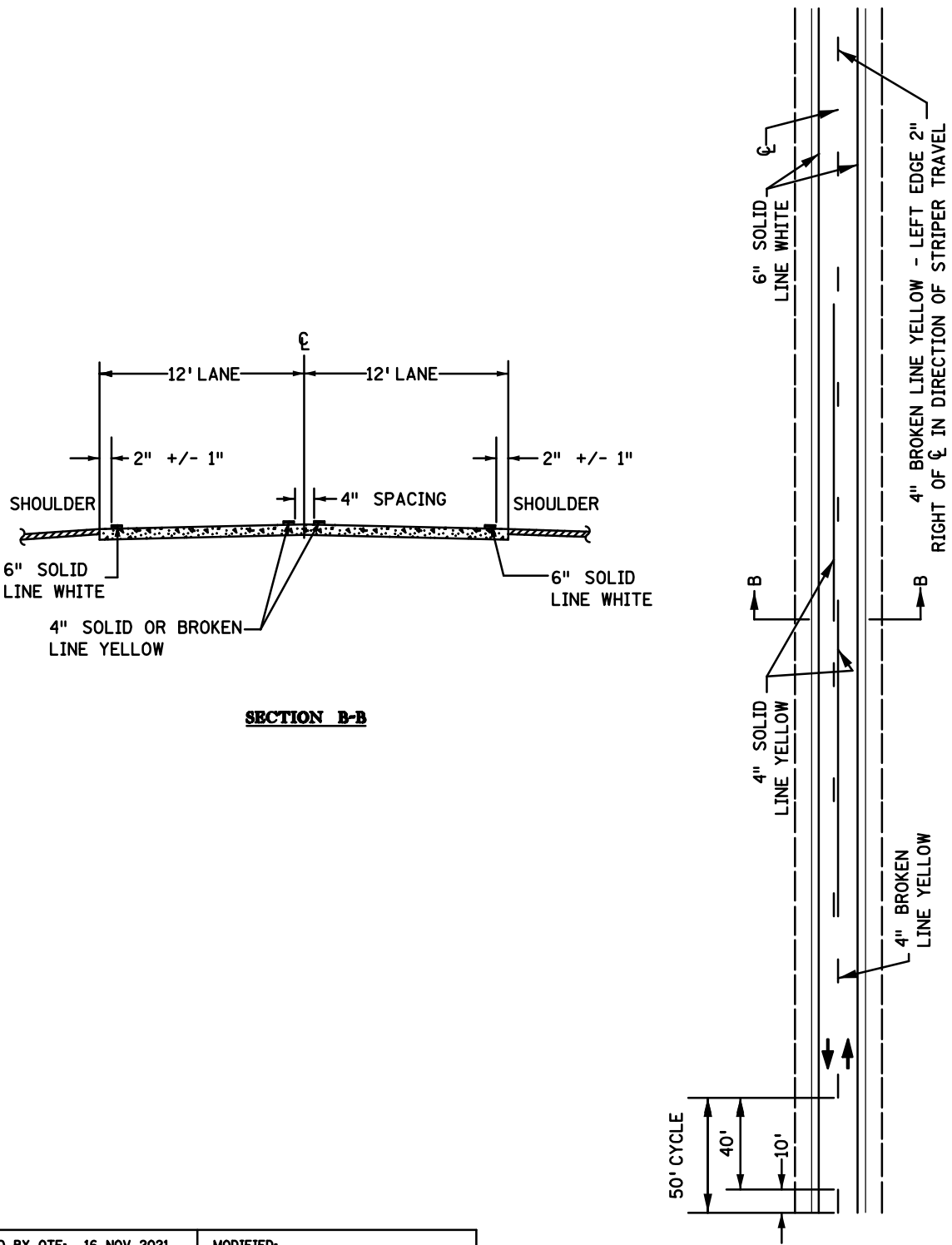
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PATH & FILENAME: Projects\Minnesota\023661-000\03_Discipline\Roadway\Sheets\023661-000_ss

TWO-WAY LEFT-TURN LANE



PUBLISHED BY OTE: 16 NOV 2021
MODIFIED:

TWO-LANE, TWO-WAY



PUBLISHED BY OTE: 16 NOV 2021
MODIFIED:

NO.	DATE	BY	CHK	REVISIONS

Design By: MF
Plan By: MF
Checked By: ES
Approved By: SD

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Sean Delmore
SEAN DELMORE, PE
DATE: 9/12/2024
LICENSE NO. 40945



CSAH 30 (Forest Blvd) Improvements
Chisago County, Minnesota

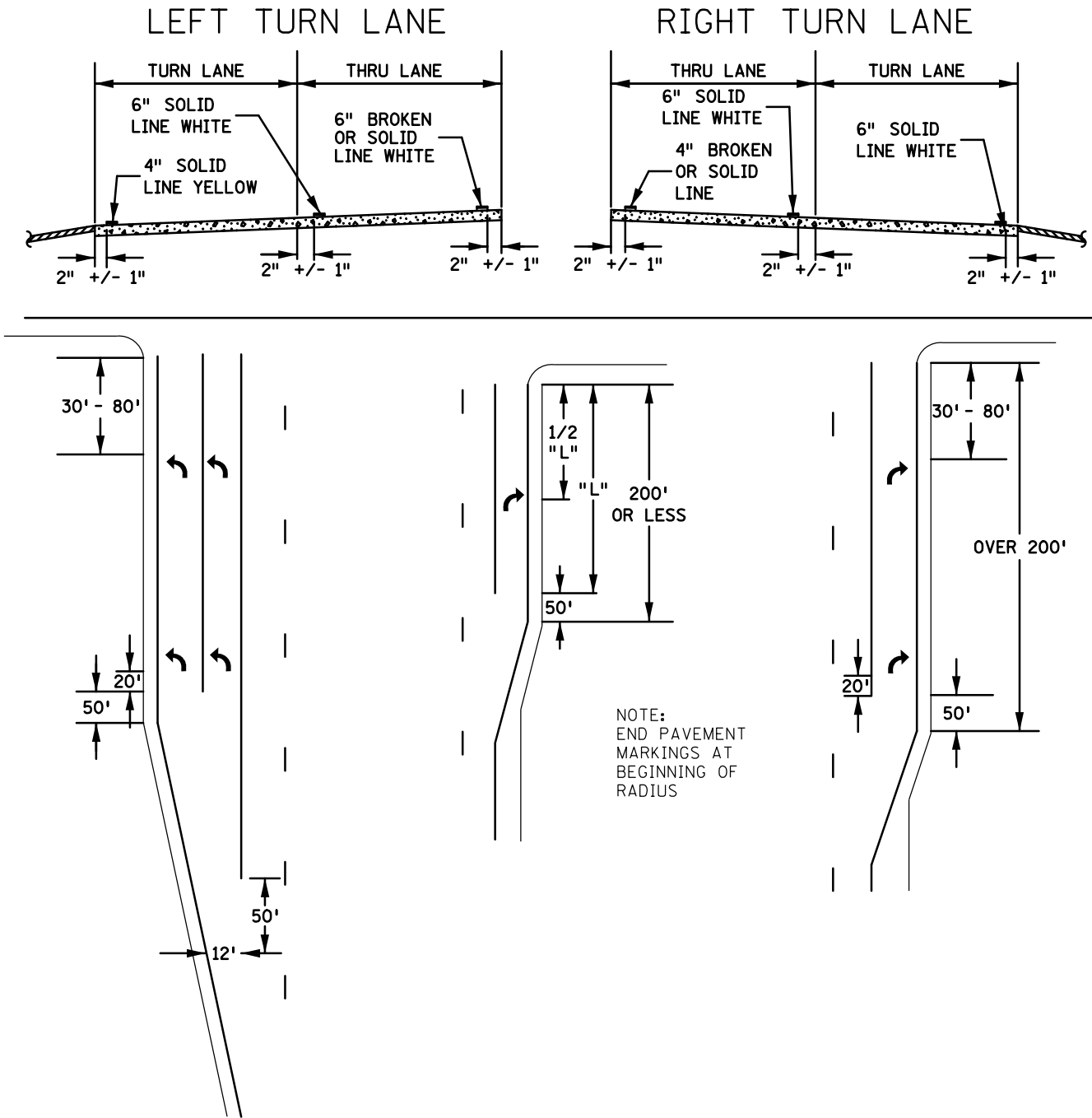
CHISAGO COUNTY, MINNESOTA

SIGNING & PAVEMENT MARKING PLAN
SAP 013-630-021 / SAP 225-591-007 / SAP 225-102-004

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OF
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SHEETS

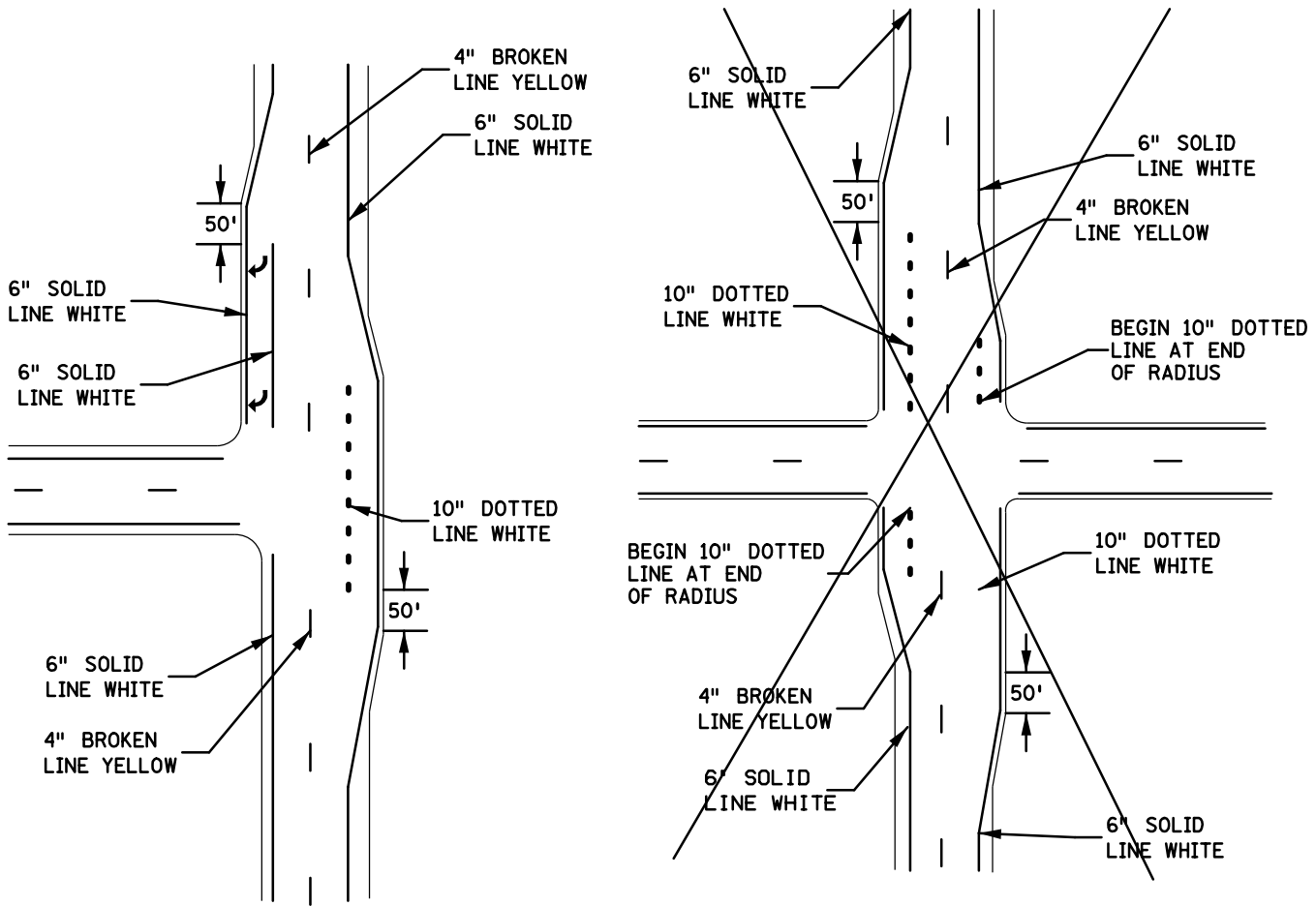
DATE: 9/12/2024 2:10:03 PM
PATH & FILENAME: Projects\Minnesota\023661-000\03_Discipline\Roadway\Sheets\023661-000_ss

TURN LANE WITH ARROW MESSAGE



PUBLISHED BY OTE: 16 NOV 2021 MODIFIED:

BYPASS LANE



PUBLISHED BY OTE: 16 NOV 2021 MODIFIED:

NO.	DATE	BY	CHK	REVISIONS

Design By: MF
Plan By: MF
Checked By: ES
Approved By: SD

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Sean Delmore
SEAN DELMORE, PE
DATE: 9/12/2024 LICENSE NO. 40945



CSAH 30 (Forest Blvd) Improvements
Chisago County, Minnesota

CHISAGO COUNTY, MINNESOTA

SIGNING & PAVEMENT MARKING PLAN
SAP 013-630-021 / SAP 225-591-007 / SAP 225-102-004

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OF
216
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PATH & FILENAME: Projects\Minnesota\023661-000\03_Discipline\Roadway\Sheets\023661-000-445sgp-001

STANDARD PLATES - SIGNAL SYSTEMS	
THE FOLLOWING STANDARD PLATES, APPROVED BY THE FEDERAL HIGHWAY ADMINISTRATION, SHALL APPLY ON THIS PROJECT	
PLATE NO.	DESCRIPTION
► 8132 B	PREFORMED RIGID PVC CONDUIT LOOP DETECTOR
► STANDARD PLATES APPLICABLE TO THIS PROJECT	

ABBREVIATIONS	
APS	ACCESSIBLE PEDESTRIAN SIGNAL
AWF	ADVANCE WARNING FLASHER
C.D.	COUNT DOWN
D2-1 (e.g.)	DETECTOR (PHASE 2, NO. 1)
DEG	DEGREES
DWK	DON'T WALK
EQ.G	EQUIPMENT GROUND
EVP	EMERGENCY VEHICLE PRE-EMPTION
F&I	FURNISH AND INSTALL
FL	FLASH/FLASHING
FYA	FLASHING YELLOW ARROW
GLA	GREEN LEFT ARROW
GRN	GREEN INDICATION
GR. RD.	GROUND ROD
GRA	GREEN RIGHT ARROW
GTHA	GREEN THRU ARROW
HH	HANDHOLE
HPS	HIGH PRESSURE SODIUM
IND	INDICATION
IMC	INTERMEDIATE METAL CONDUIT
INP	INPLACE
INS. GR.	INSULATED GROUND
JB	JUNCTION BOX
LED	LIGHT EMITTING DIODE
LHT	LIGHT
LUM	LUMINAIRE
NEU	NEUTRAL
NMC	NONMETALLIC CONDUIT
P1-1 (e.g.)	PEDESTRIAN INDICATION (PHASE 1, NO. 1)
PB	PUSH BUTTON
PB2-1 (e.g.)	PUSH BUTTON (PHASE 2, NO. 1)
PEC	PHOTOELECTRIC CELL
PED	PEDESTRIAN
PV	PULL VAULT
RED	RED INDICATION
R&S	REMOVE AND SALVAGE
RLA	RED LEFT ARROW
RSC	RIGID STEEL CONDUIT
S&I	SALVAGE AND INSTALL
SOP	SOURCE OF POWER
SPR	SPARE
ST LHT	STREET LIGHT
STA	STATION
TDW	TELEPHONE DROP WIRE
WLK	WALK
YEL	YELLOW INDICATION
YLA	YELLOW LEFT ARROW
YRA	YELLOW RIGHT ARROW

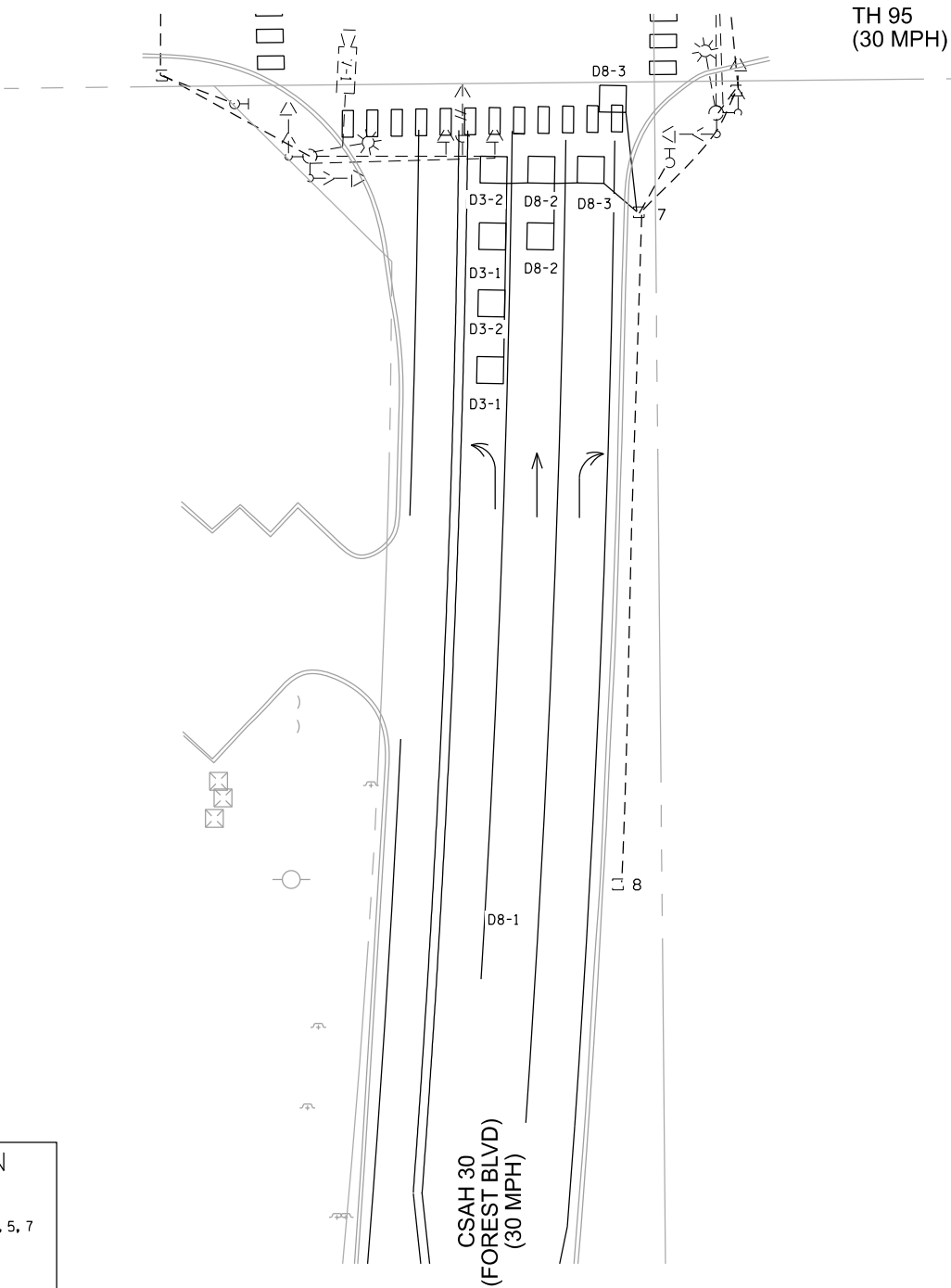
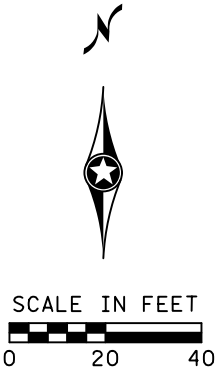
SYMBOLS	
■	HANDHOLE
—○—	EQ.G CONNECTION
—◄	EVP CONFIRMATORY LIGHT
—//→	EVP DETECTOR
◄—//→	EVP DETECTOR AND CONFIRMATORY LIGHT
—●—	SPLICE
⬢FO	FIBER OPTIC SPLICE VAULT
⬢PV	PULL VAULT
⬢2	LUMINAIRE NO.
⬢3	SIGNAL BASE NO.
⬢3-2	SIGNAL HEAD NO./FLASHER HEAD NO.
⬢BM4	BARREL MOUNT BASE NO.
⬢WP1	WOOD POLE NO.
⬢TV	TELEVISION CAMERA (CCTV)
—V◄	VIDEO DETECTION
FOR PLANS AND UTILITIES SYMBOLS SEE TECHNICAL MANUAL	

NO.	DATE	BY	CHK	REVISIONS

Design By:	MF
Plan By:	MF
Checked By:	ES
Approved By:	SD

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	SEAN DELMORE, PE
DATE: 9/12/2024	LICENSE NO. 40945

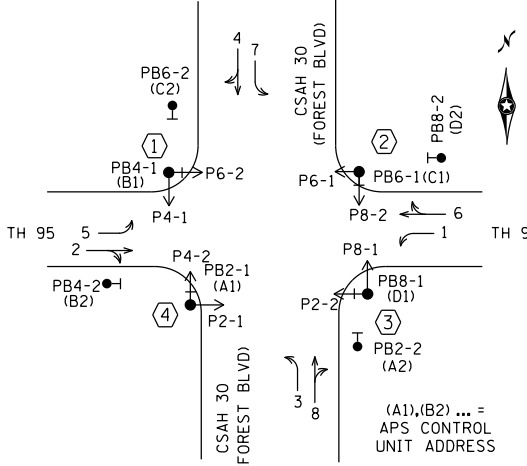
- NOTES:
- 1. CONTRACTOR SHALL TEST LOOP DETECTORS D3-1, D3-2, D8-1, D8-2 AND D8-3 PRIOR TO THE MILLING AND AFTER THE MILLING IS COMPLETED. IF ANY LOOP DETECTOR FAILS, THE CONTRACTOR SHALL FURNISH AND INSTALL NEW.
 - 2. CONTRACTOR SHALL CONTACT PETE ELLWANGER, METRO SIGNAL CONSTRUCTION COORDINATOR (651-775-1279) PRIOR TO ANY TRAFFIC CONTROL CHANGE OR REMOVAL OF EXISTING LOOP DETECTORS.



LOOP DETECTOR CHART		
NUMBER	SIZE	LOCATION
D1-1, D5-1, D7-1	6 X 6	INP
D1-2, D5-2, D7-2	6 X 6	INP
D2-1, D6-1	6 X 6	INP
* D3-1	6 X 6	20 & 50
* D3-2	6 X 6	5 & 35
D4-1	6 X 6	INP
D4-2	6 X 6	INP
D4-3	6 X 6	INP
* D8-1	6 X 6	165
* D8-2	6 X 6	5 & 20
* D8-3	6 X 6	5 & -5

➡ * CONTRACTOR SHALL TEST LOOPS DETECTORS D3-1, D3-2, D8-1, D8-2 AND D8-3 PRIOR TO MILL AND OVERLAY AND AFTER. ANY LOOP THAT IS DAMAGED SHALL BE REPLACED.

CONTROLLER PHASING, PEDESTRIAN INDICATIONS AND PUSH BUTTONS



SIGNAL SYSTEM OPERATION

- THE SIGNAL SYSTEM FLASH MODE IS ALL RED.
- NORMAL OPERATION IS 8 PHASE, WITH PHASE 1, 3, 5, 7 BEING FYA TURN PHASES, BY TIME OF DAY.
- PHASES 2 AND 6 SHALL BE ON VEHICLE RECALL.

(A1),(B2) ... =
APS CONTROL
UNIT ADDRESS

PEDESTRIAN PUSH BUTTONS SHALL BE LOCATED AS SHOWN ABOVE

NO.	DATE	BY	CHK	REVISIONS

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DATE: 9/12/2024 LICENSE NO. 40945



CSAH 30 (Forest Blvd) Improvements
Chisago County, Minnesota

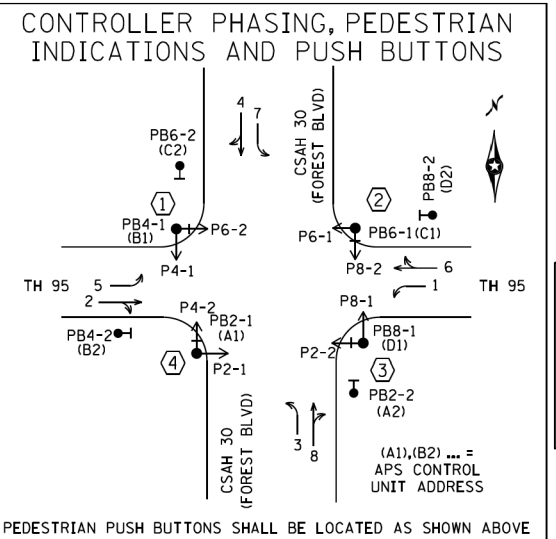
CHISAGO COUNTY, MINNESOTA
LOOP REPLACEMENT
TRAFFIC CONTROL SIGNAL SYSTEM
SAP 013-630-021 / SAP 225-591-007 / SAP 225-102-004

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OF
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DATE: 9/12/2024 2:10:37 PM
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- NOTES:
- SEE SPECIAL PROVISIONS FOR STATE FURNISHED MATERIALS.
 - THE EXACT LOCATION OF HANDHOLES, POLES, LOOP DETECTORS, EQUIPMENT PAD AND PUSH BUTTON STATIONS, SHALL BE VERIFIED IN THE FIELD BY MNDOT TRAFFIC OFFICE PERSONNEL.
 - THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING THE CONNECTION OF THE POWER FOR THE TRAFFIC SIGNAL.
 - FOR TYPE D SIGNS SEE DETAIL SHEET. ALL SIGNS REQUIRED ARE INCLUDED IN PAYMENT FOR THE TRAFFIC CONTROL SIGNAL SYSTEM PAY ITEM.
 - PAVEMENT MARKINGS ARE INCLUDED IN PAVEMENT MARKING PLAN.
 - CONSTRUCTION OF PEDESTRIAN CURB RAMPS ARE PART OF THE CONSTRUCTION PLAN AND ARE NOT INCLUDED IN PAYMENT FOR THE SIGNAL SYSTEM.
 - THIS PLAN SPECIFIES CONDUIT SIZES, TYPES, AND GENERAL LOCATIONS. THE EXACT LOCATIONS WILL BE DETERMINED IN THE FIELD. CONDUITS UNDER THE ROADWAYS MAY REQUIRE BORING.
 - ALL NEW CONDUIT SHALL BE PVC - SCHEDULE 80 OR HDPE SCHEDULE 80 AND SHALL CARRY 1/C#6 GREEN INSULATED GROUNDING CONDUCTOR AS SHOWN IN THE PLAN.
 - ITEMS DENOTED WITH AN * ARE INCLUDED IN PAYMENT FOR THE EVP SYSTEM PAY ITEM.
 - TEMPORARY SIGNAL SYSTEM WORK (SEE SPECIAL PROVISIONS)

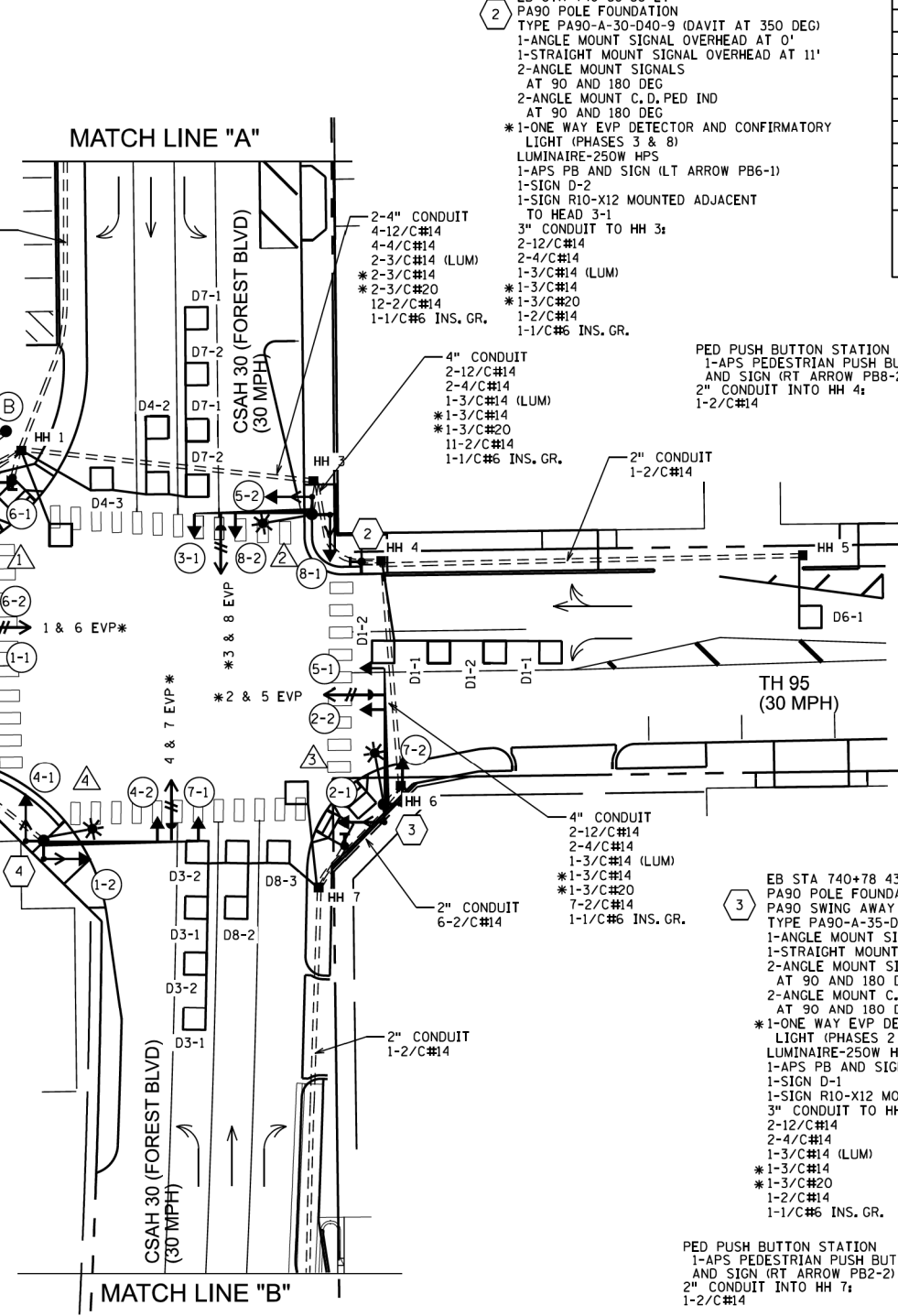
- (A) EQUIPMENT PAD - SEE DETAIL
SERVICE CABINET
CONTROLLER AND CABINET
4" CONDUIT TO HH 1:
2-12/C#14
2-4/C#14
*1-3/C#14
*1-3/C#20
18-2/C#14
1-1/C#6 INS. GR.
4" CONDUIT TO HH 11:
2-12/C#14
2-4/C#14
*1-3/C#14
*1-3/C#20
1-2/C#14
3" CONDUIT STUBBED OUT - CAPPED BOTH ENDS
3/4" CONDUIT STUBBED OUT CAPPED FOR TELEPHONE LINE
2" CONDUIT TO SERVICE CABINET
2-1/C#6
1-1/C#6 INS. GR.
2-2" CONDUIT STUBBED OUT AND CAPPED BOTH ENDS (ONE FROM CONTROLLER CABINET, ONE FROM SERVICE CABINET)
2" CONDUIT TO SERVICE CABINET (COMMS)
SERVICE CABINET TO HH 12:
2" CONDUIT
3-1/C #2
SERVICE CABINET TO HH 11:
2" CONDUIT
4-3/C #14 (LUM)
HH 11 TO HH 1:
2" CONDUIT
2-3/C#14 (LUM)
- (B) POLE MOUNTED TRANSFORMER
(TO BE RELOCATED BY POWER COMPANY)
APPROXIMATE LOCATION
EXTEND 2" CONDUIT INTO HH 12:
3-1/C#2



SIGNAL SYSTEM OPERATION

- THE SIGNAL SYSTEM FLASH MODE IS ALL RED.
- NORMAL OPERATION IS 8 PHASE, WITH PHASE 1, 3, 5, 7 BEING FYA TURN PHASES, BY TIME OF DAY.
- PHASES 2 AND 6 SHALL BE ON VEHICLE RECALL.

- EB STA 739+67 48' LT
PA100 POLE FOUNDATION
TYPE PA100-A-40-D40-9 (DAVIT AT 350 DEG)
1-ANGLE MOUNT SIGNAL OVERHEAD AT 0'
1-STRAIGHT MOUNT SIGNAL OVERHEAD AT 11'
2-ANGLE MOUNT SIGNALS
AT 90 AND 180 DEG
2-ANGLE MOUNT C.D. PED IND
AT 90 AND 180 DEG
*1-ONE WAY EVP DETECTOR AND CONFIRMATORY LIGHT (PHASES 1 & 6)
LUMINAIRE-250W HPS
1-APS PB AND SIGN (LT ARROW PB4-1)
1-SIGN D-1
1-SIGN R10-X12 MOUNTED ADJACENT TO HEAD 1-1
3" CONDUIT TO HH 11:
2-12/C#14
2-4/C#14
*1-3/C#14 (LUM)
*1-3/C#20
1-2/C#14
1-1/C#6 INS. GR.
- TH 95 (30 MPH)
- HH 10
- 2" CONDUIT 1-2/C#14
- HH 9
- EB STA 739+86 46' RT
PA100 POLE FOUNDATION
TYPE PA100-A-40-D40-9 (DAVIT AT 350 DEG)
1-ANGLE MOUNT SIGNAL OVERHEAD AT 0'
1-STRAIGHT MOUNT SIGNAL OVERHEAD AT 11'
2-ANGLE MOUNT SIGNALS
AT 90 AND 180 DEG
2-ANGLE MOUNT C.D. PED IND
AT 90 AND 180 DEG
*1-ONE WAY EVP DETECTOR AND CONFIRMATORY LIGHT (PHASES 4 & 7)
LUMINAIRE 250W HPS
1-APS PB AND SIGN (LT ARROW PB2-1)
1-SIGN D-2
1-SIGN R10-X12 MOUNTED ADJACENT TO HEAD 7-1
3" CONDUIT TO HH 9:
2-12/C#14
2-4/C#14
1-3/C#14 (LUM)
*1-3/C#14
*1-3/C#20
1-2/C#14
1-1/C#6 INS. GR.
- PEDESTRIAN PUSH BUTTON STATION
1-APS PEDESTRIAN PUSH BUTTON AND SIGN (RT ARROW PB4-2)
2" CONDUIT TO HH 9:
1-2/C#14



- EB STA 740+58 38' LT
PA90 POLE FOUNDATION
TYPE PA90-A-30-D40-9 (DAVIT AT 350 DEG)
1-ANGLE MOUNT SIGNAL OVERHEAD AT 0'
1-STRAIGHT MOUNT SIGNAL OVERHEAD AT 11'
2-ANGLE MOUNT SIGNALS
AT 90 AND 180 DEG
2-ANGLE MOUNT C.D. PED IND
AT 90 AND 180 DEG
*1-ONE WAY EVP DETECTOR AND CONFIRMATORY LIGHT (PHASES 3 & 8)
LUMINAIRE-250W HPS
1-APS PB AND SIGN (LT ARROW PB6-1)
1-SIGN D-2
1-SIGN R10-X12 MOUNTED ADJACENT TO HEAD 3-1
3" CONDUIT TO HH 3:
2-12/C#14
2-4/C#14
1-3/C#14 (LUM)
*1-3/C#14
*1-3/C#20
1-2/C#14
1-1/C#6 INS. GR.
- TH 95 (30 MPH)
- HH 5
- 2" CONDUIT 1-2/C#14
- HH 4
- EB STA 740+78 43' RT
PA90 POLE FOUNDATION
TYPE PA90-A-35-D40-9 (DAVIT AT 350 DEG)
1-ANGLE MOUNT SIGNAL OVERHEAD AT 0'
1-STRAIGHT MOUNT SIGNAL OVERHEAD AT 11'
2-ANGLE MOUNT SIGNALS
AT 90 AND 180 DEG
2-ANGLE MOUNT C.D. PED IND
AT 90 AND 180 DEG
*1-ONE WAY EVP DETECTOR AND CONFIRMATORY LIGHT (PHASES 2 & 5)
LUMINAIRE-250W HPS
1-APS PB AND SIGN (LT ARROW PB8-1)
1-SIGN D-1
1-SIGN R10-X12 MOUNTED ADJACENT TO HEAD 5-1
3" CONDUIT TO HH 6:
2-12/C#14
2-4/C#14
1-3/C#14 (LUM)
*1-3/C#14
*1-3/C#20
1-2/C#14
1-1/C#6 INS. GR.
- PEDESTRIAN PUSH BUTTON STATION
1-APS PEDESTRIAN PUSH BUTTON AND SIGN (RT ARROW PB2-2)
2" CONDUIT INTO HH 7:
1-2/C#14

SIGNAL FACE CHART						
FACE	R	Y	G	RLA	YLA	FYA
1-1, 1-2				←	←	←
2-1, 2-2	●	●	●	←	←	←
3-1, 3-2				←	←	←
4-1, 4-2	●	●	●	←	←	←
5-1, 5-2				←	←	←
6-1, 6-2	●	●	●	←	←	←
7-1, 7-2				←	←	←
8-1, 8-2	●	●	●	←	←	←

-ALL SIGNAL INDICATIONS SHALL BE 12" LED
-ALL SIGNAL HEADS SHALL BE BLACK POLYCARBONATE WITH BACKGROUND SHIELDS

LOOP DETECTOR CHART		
NUMBER	SIZE (FT)	LOCATION
D1-1, 5-1	6x6	20 & 50
D1-2, D5-2	6x6	5 & 35
D2-1, D6-1	6x6	120
D3-1, 7-1	6x6	20 & 50
D3-2, 7-2	6x6	5 & 35
D4-1	6x6	170
D4-2	6x6	5 & 20
D4-3	6x6	5 & -5
D8-1	6x6	165
D8-2	6x6	5 & 20
D8-3	6x6	5 & -5

-ALL LOOP DETECTORS SHALL BE PVC
-LOCATION: DISTANCE FROM CROSSWALK/STOP BAR IN FEET

FOR INFORMATION ONLY

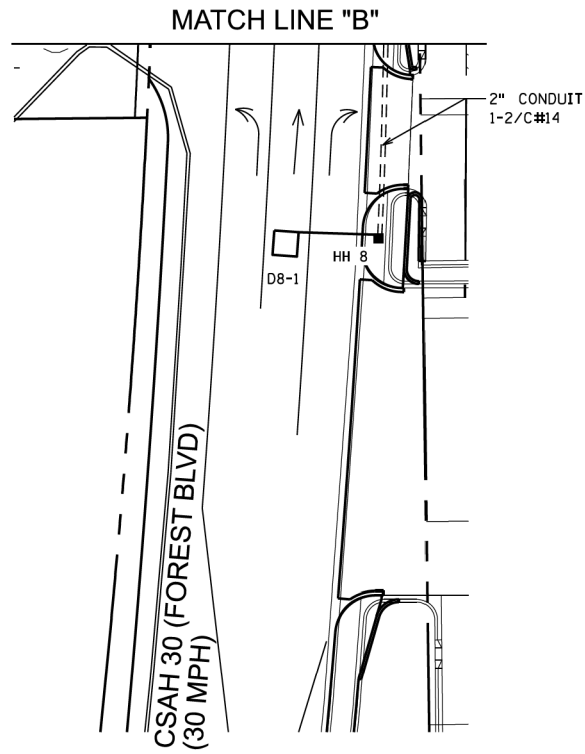
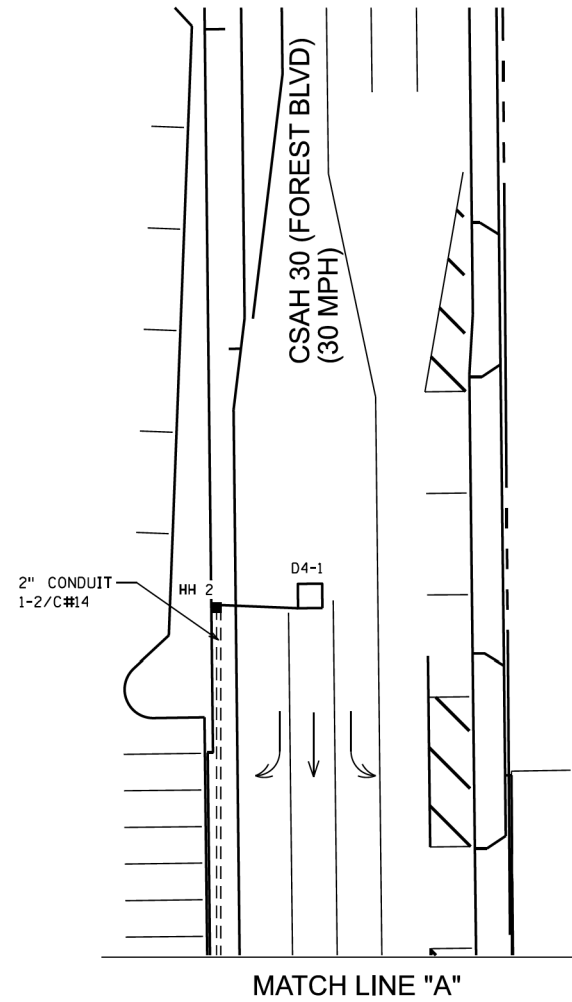
NO.	DATE	BY	CHK	REVISIONS



CSAH 30 (Forest Blvd) Improvements
Chisago County, Minnesota

CHISAGO COUNTY, MINNESOTA
FOR INFORMATION ONLY
TRAFFIC CONTROL SIGNAL SYSTEM
SAP 013-630-021 / SAP 225-591-007 / SAP 225-102-004

SHEET
210
OF
216
SHEETS



FOR INFORMATION ONLY

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NO.	DATE	BY	CHK	REVISIONS

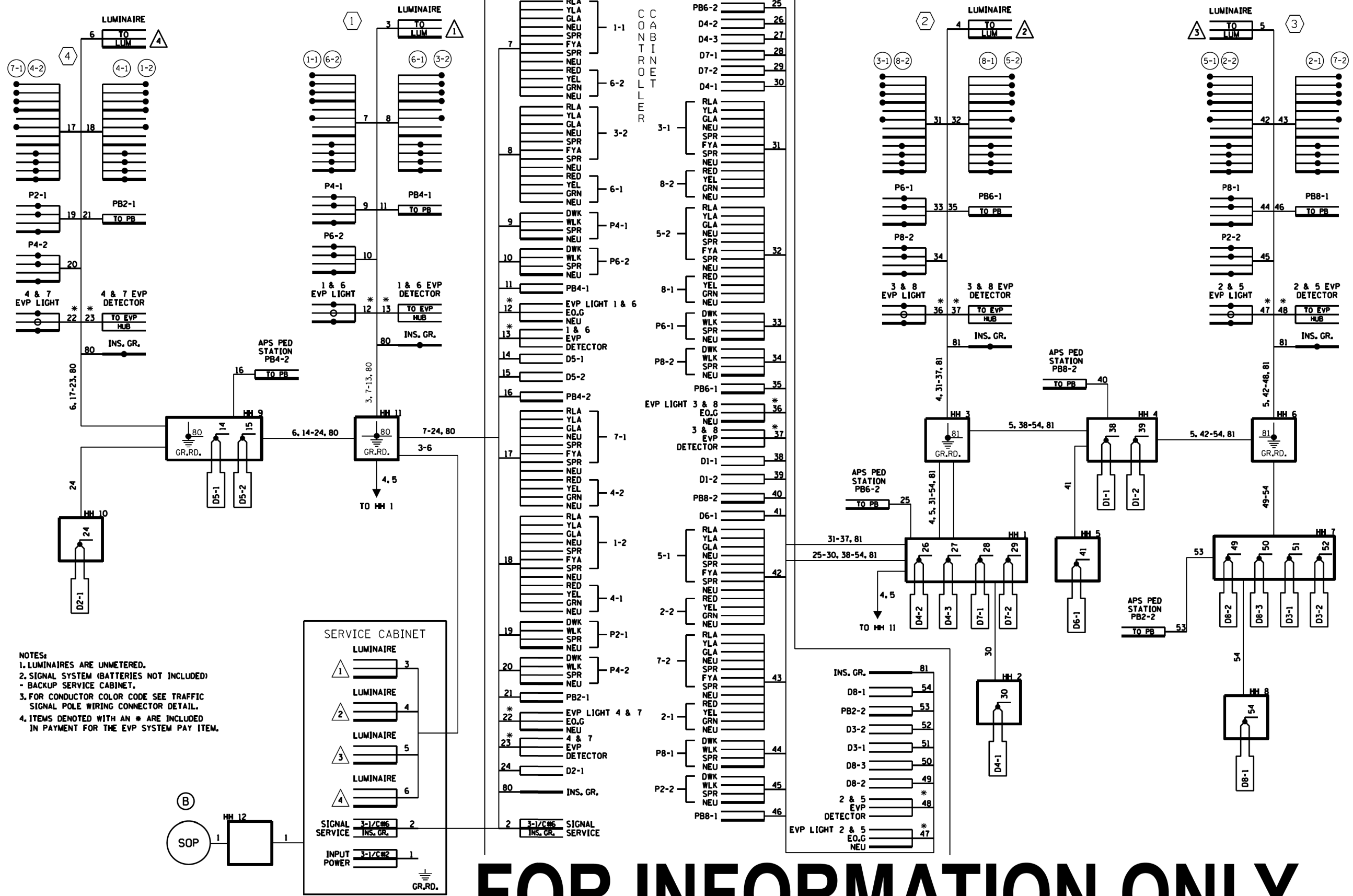


CSAH 30 (Forest Blvd) Improvements
Chisago County, Minnesota

CHISAGO COUNTY, MINNESOTA
FOR INFORMATION ONLY
TRAFFIC CONTROL SIGNAL SYSTEM
SAP 013-630-021 / SAP 225-591-007 / SAP 225-102-004

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211
OF
216
SHEETS

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FOR INFORMATION ONLY

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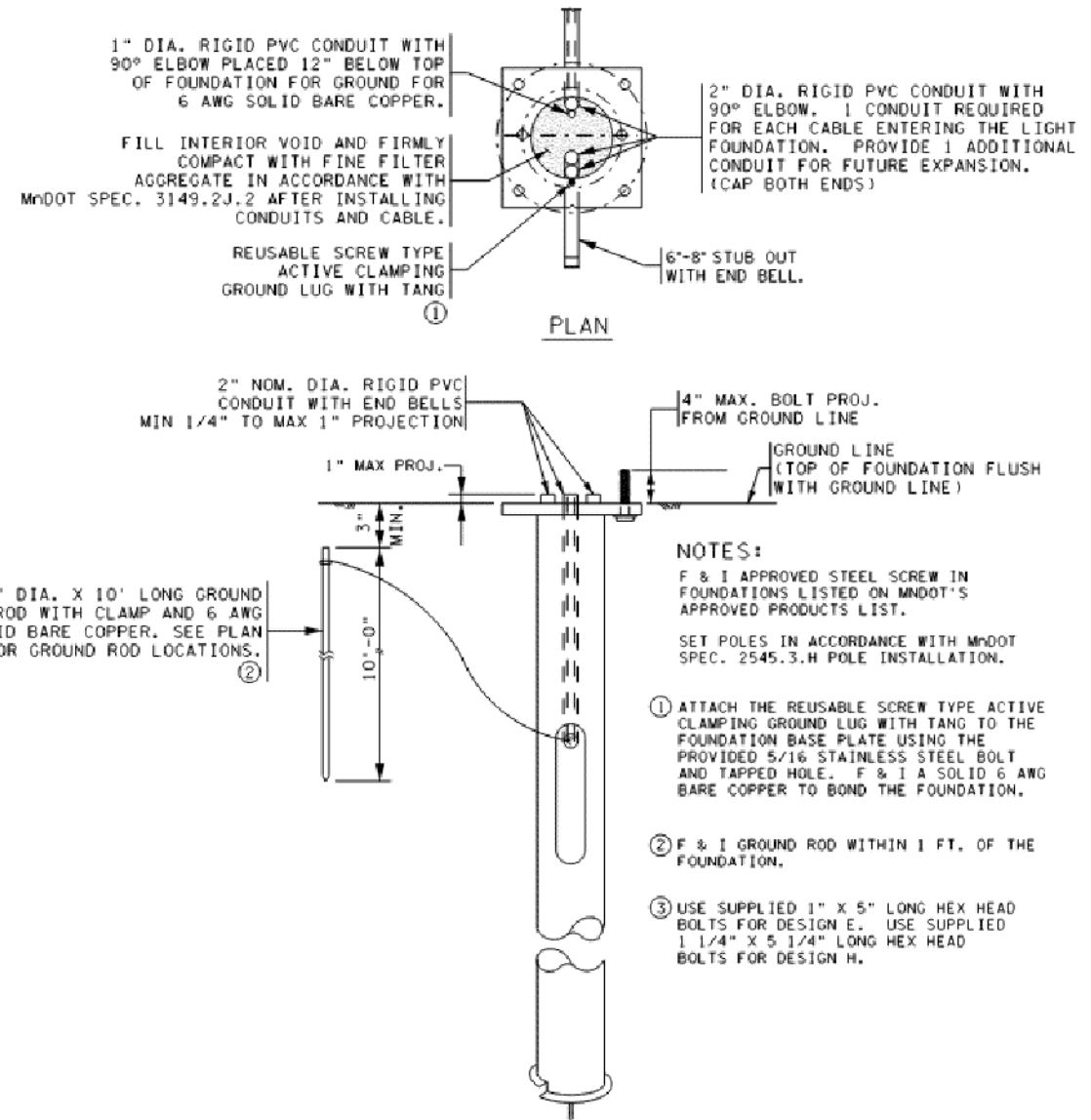


CSAH 30 (Forest Blvd) Improvements
Chisago County, Minnesota

CHISAGO COUNTY, MINNESOTA
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TRAFFIC CONTROL SIGNAL SYSTEM
SAP 013-630-021 / SAP 225-591-007 / SAP 225-102-004

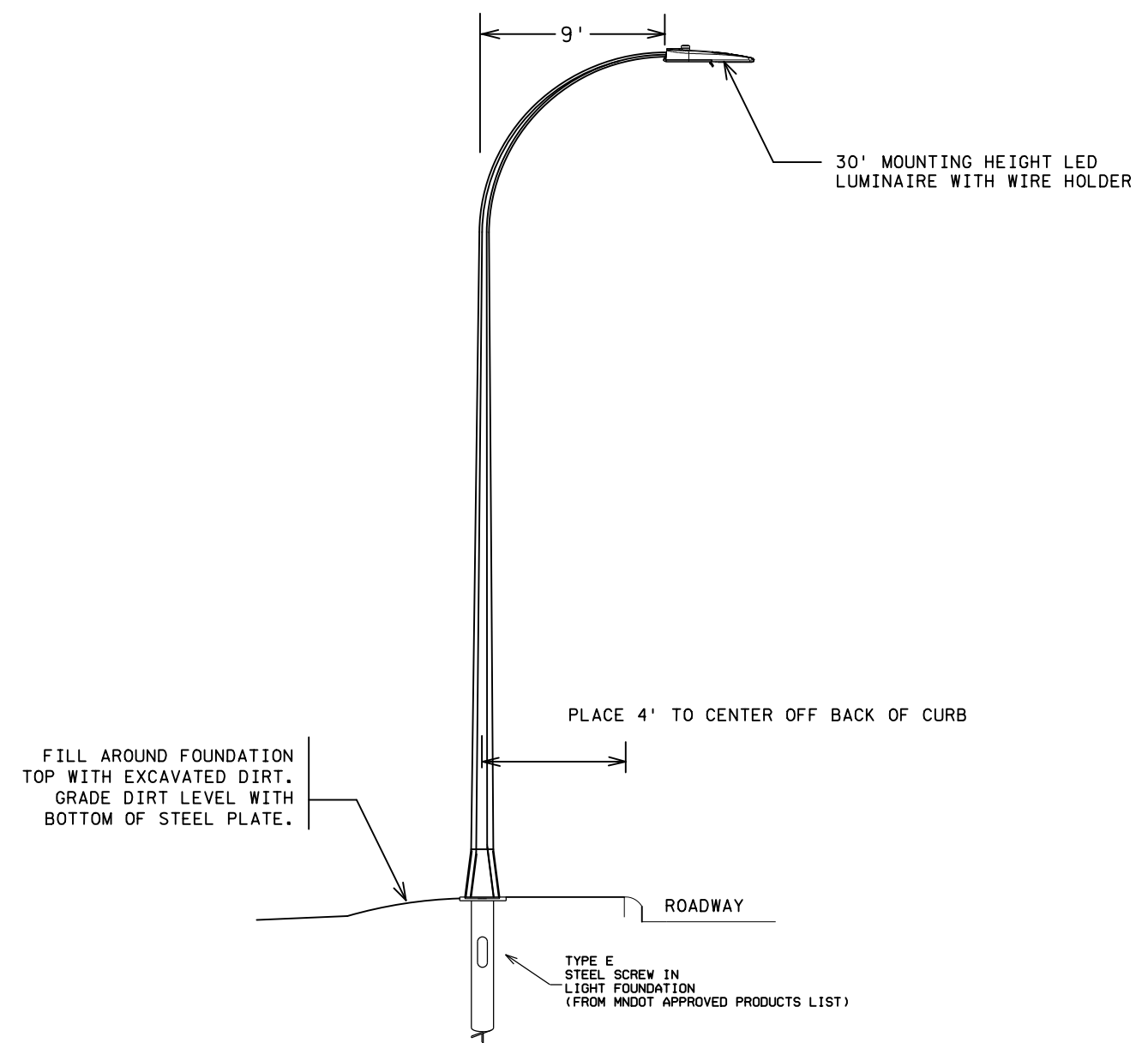
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OF
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STEEL SCREW IN LIGHT FOUNDATION DESIGN E

STREET LIGHTING TABULATION		L
ITEM DESCRIPTION	UNIT	TOTAL
LIGHTING UNIT TYPE 9-30	EACH	11
LIGHT FOUNDATION DESIGN STEEL E	EACH	11
SERVICE CABINET TYPE-L1	EACH	1
EQUIPMENT PAD B	EACH	1
SERVICE EQUIPMENT	EACH	1
2" NON-METALLIC CONDUIT	LIN FT	1500
UNDERGROUND WIRE 1/C 8 AWG	LIN FT	6500



TYPICAL PLACEMENT OF LIGHTING UNIT TYPE 9-30

NOTE:

WHEN SIDEWALK IS PRESENT PLACE 3' TO CENTER OFF BACK EDGE OF SIDEWALK.

NO.	DATE	BY	CHK	REVISIONS

Design By: DS
Plan By: DS
Checked By: ES
Approved By: SD

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

Sean Delmore
SEAN DELMORE, PE

DATE: 9/12/2024 LICENSE NO. 40945

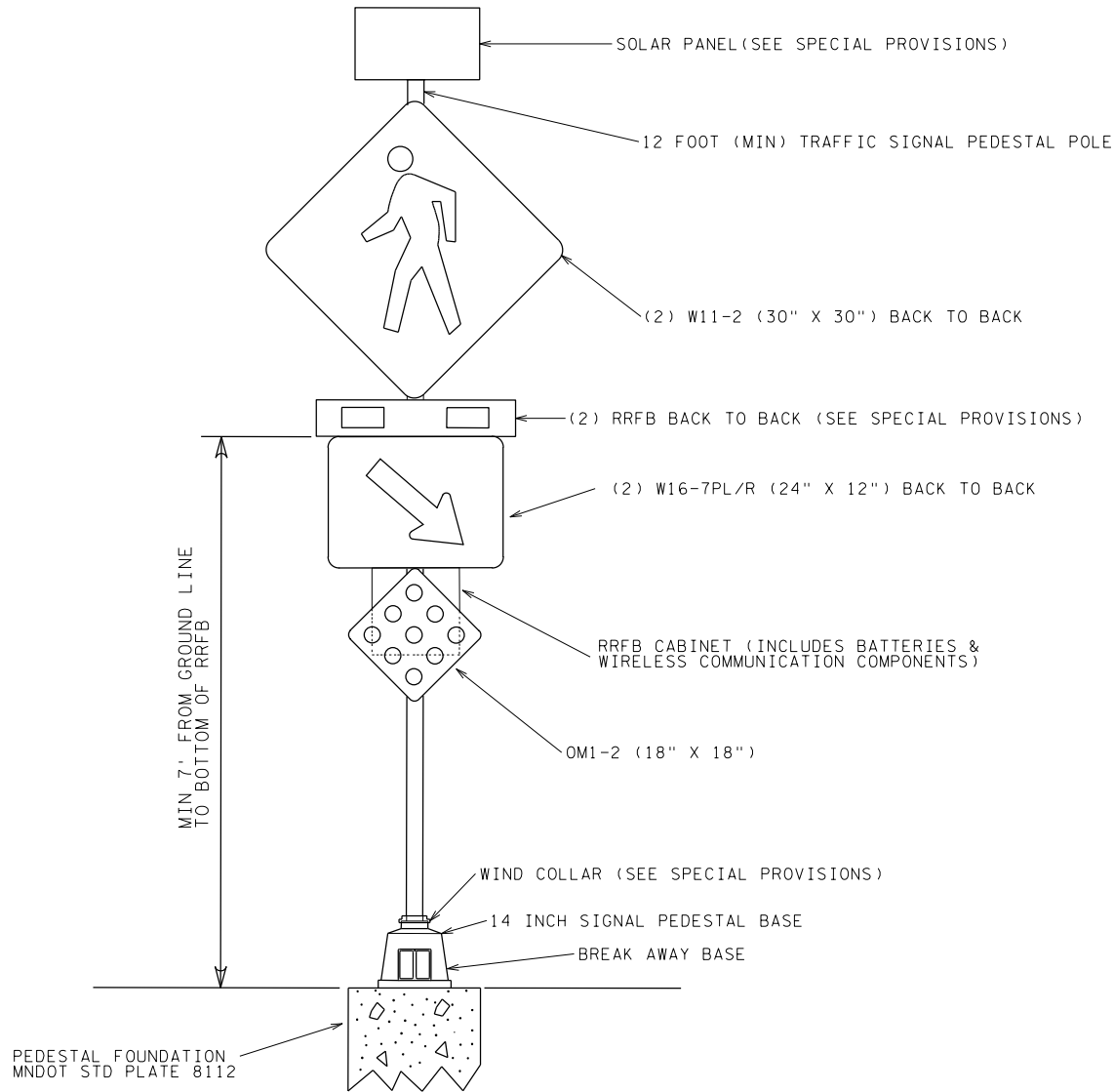


CSAH 30 (Forest Blvd) Improvements
Chisago County, Minnesota

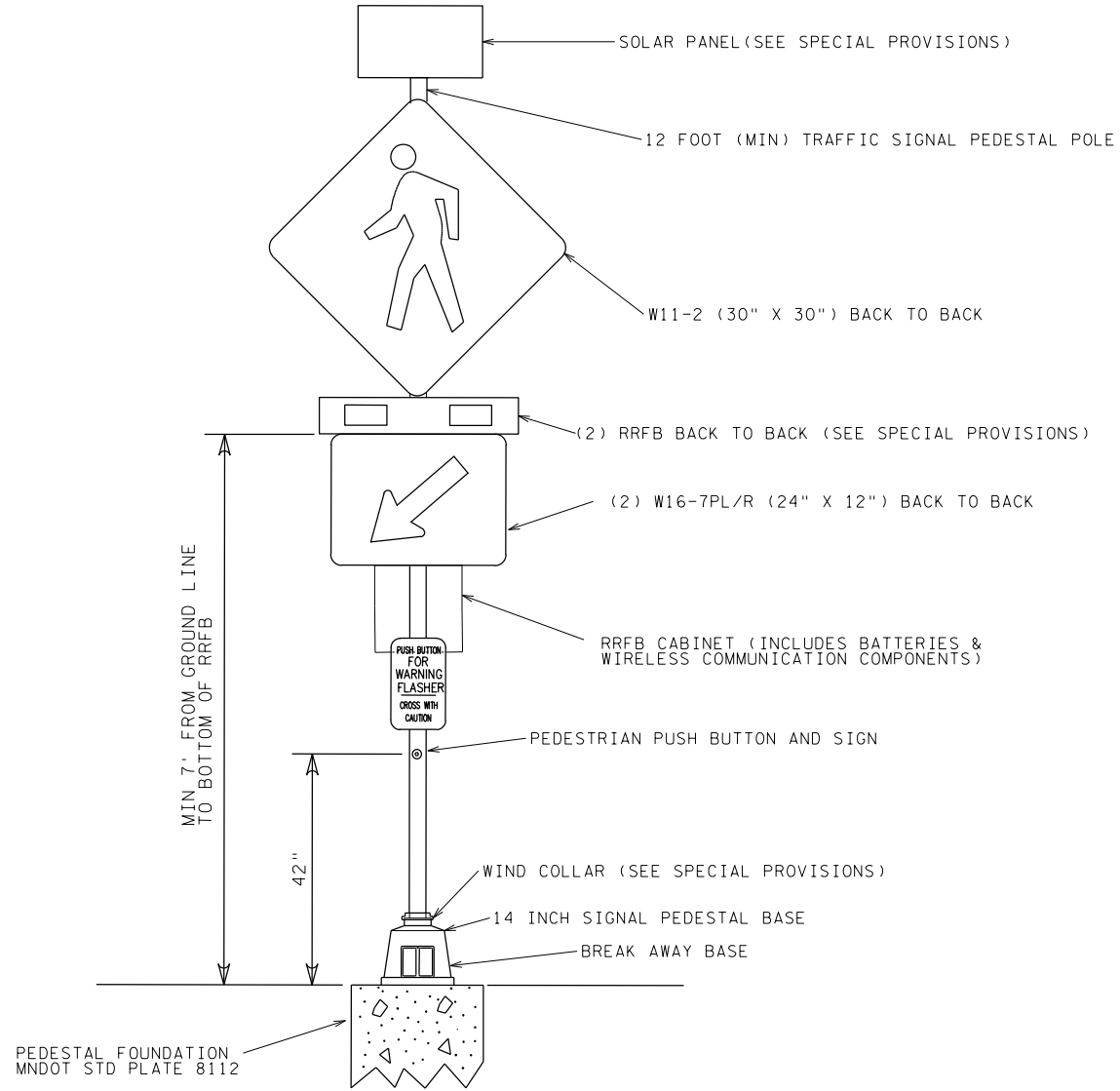
CHISAGO COUNTY, MINNESOTA

LIGHTING & RRFB PLAN
SAP 013-630-021 / SAP 225-591-007 / SAP 225-102-004

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OF
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SHEETS



WARNING FLASHER DETAIL
SYSTEM (2)
NOT TO SCALE



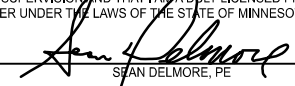
WARNING FLASHER / PUSH BUTTON DETAIL
SYSTEM (1) AND (3)
NOT TO SCALE

PEDESTRIAN CROSSWALK FLASHER SYSTEM (SIGNS) (A) (C)					
CODE NO.	POSTS	MOUNTING HEIGHT	PANEL	QTY	PANEL LEGEND
	NO. & TYPE		SIZE (W x H)		
			INCH	EACH	
R10-25	(B)	3.5	6 x 12	6	PUSH BUTTON TO ACTIVATE FLASHER
W11-2	(B)	9.5	30 x 30	18	PEDESTRIAN CROSSING
W16-7PL	(B)	7	24 x 12	6	DOWN ARROW (LEFT)
W16-7PR	(B)	7	24 x 12	12	DOWN ARROW (RIGHT)
OM1-2	(B)	4	18 x 18	2	HAZARD MARKER

(A) ALL SIGN PANELS MOUNTED TO PEDESTAL POLES
(B) ALL SIGN PANELS PAID UNDER ITEM - (2565) PEDESTRIAN CROSSWALK FLASHER SYSTEM
(C) PEDESTRIAN CROSSWALK FLASHER SYSTEM TO BE TRAFFICM brand.

NO.	DATE	BY	CHK	REVISIONS

Design By: DS
Plan By: DS
Checked By: ES
Approved By: SD

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SEAN DELMORE, PE
DATE: 9/12/2024 LICENSE NO. 40945



CSAH 30 (Forest Blvd) Improvements
Chisago County, Minnesota

CHISAGO COUNTY, MINNESOTA

LIGHTING & RRFB PLAN
SAP 013-630-021 / SAP 225-591-007 / SAP 225-102-004

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SHEETS

FEEDPOINT G

LIGHTING STANDARDS AND FOUNDATIONS

NO.	STATION	LT	RT	LOCATION	TYPE	MH
G1	105+00	X		377th St (WB)	Type 9-30	30'
G2	104+40		X	377th St (EB)	Type 9-30	30'
G3	1616+35		X	CSAH 30 (NB)	Type 9-30	30'
G4	1617+00	X		CSAH 30 (SB)	Type 9-30	30'
G5	101+90		X	377th St (EB)	Type 9-30	30'
G6	1614+00		X	CSAH 30 (NB)	Type 9-30	30'
G7	1618+40		X	CSAH 30 (NB)	Type 9-30	30'
G8	1619+20	X		CSAH 30 (SB)	Type 9-30	30'
G9	1621+00	X		CSAH 30 (SB)	Type 9-30	30'
G10	1622+95	X		CSAH 30 (SB)	Type 9-30	30'
G11	103+80	X		377th St (WB)	Type 9-30	30'

LEGEND

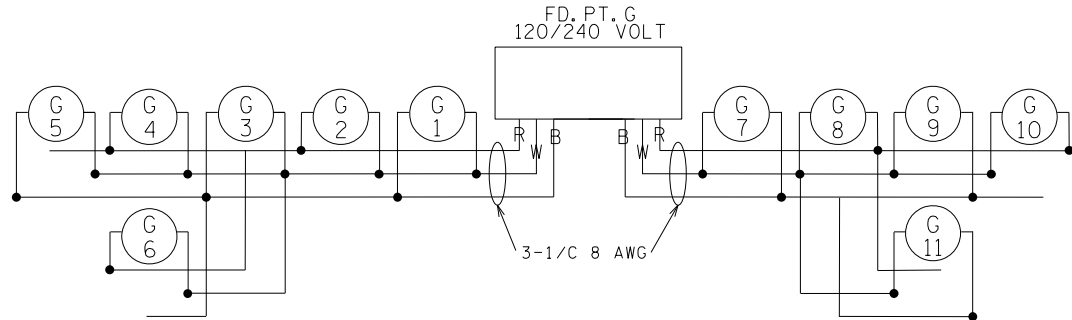
-  LIGHTING UNIT TYPE 9-30
-  2" NON-METALLIC CONDUIT
-  SERVICE CABINET TYPE L1
-  LIGHTING SYSTEM ID
LIGHTING UNIT #



SCALE IN FEET
0 50 100

LIGHTING SYSTEM G WIRING DIAGRAM

B AND R DENOTE CURRENT CARRYING CONDUCTORS
W DENOTES NEUTRAL CONDUCTOR
GROUND NOT SHOWN



- NOTE:
1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL UTILITIES PRIOR TO WORK.
 2. THE CONTRACTOR SHALL COORDINATE THE PLACEMENT OF CONDUIT AND FOUNDATIONS WITH OTHER CONSTRUCTION ACTIVITIES IN THE AREA.
 3. THE CONTRACTOR IS RESPONSIBLE FOR ALL PERMITS AND UTILITY COORDINATION.
 4. ALL MATERIALS AND WORK SHALL BE IN ACCORDANCE WITH THE N.E.C.
 5. EXACT LOCATIONS OF LIGHT, PEDESTALS AND SERVICE CABINET FOUNDATIONS SHALL BE STAKED IN THE FIELD FOR ENGINEER APPROVAL.

NO.	DATE	BY	CHK	REVISIONS

Design By:
DS
Plan By:
DS
Checked By:
ES
Approved By:
SD

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

Sean Delmore
SEAN DELMORE, PE
DATE: 9/12/2024 LICENSE NO. 40945



CSAH 30 (Forest Blvd) Improvements
Chisago County, Minnesota

CHISAGO COUNTY, MINNESOTA

LIGHTING & RRFB PLAN
SAP 013-630-021 / SAP 225-591-007 / SAP 225-102-004

SHEET
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OF
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SHEETS

- NOTE:
- 1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL UTILITIES PRIOR TO WORK.
 - 2. THE CONTRACTOR SHALL COORDINATE THE PLACEMENT OF CONDUIT AND FOUNDATIONS WITH OTHER CONSTRUCTION ACTIVITIES IN THE AREA.
 - 3. THE CONTRACTOR IS RESPONSIBLE FOR ALL PERMITS AND UTILITY COORDINATION.
 - 4. ALL MATERIALS AND WORK SHALL BE IN ACCORDANCE WITH THE N.E.C.
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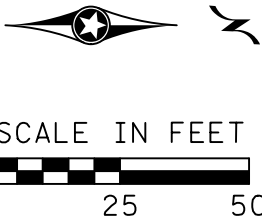
645

1650

230

CSAH 30

384TH ST



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NO.	DATE	BY	CHK	REVISIONS

Design By: DS
Plan By: DS
Checked By: ES
Approved By: SD

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Sean Delmore
SEAN DELMORE, PE
DATE: 9/12/2024 LICENSE NO. 40945



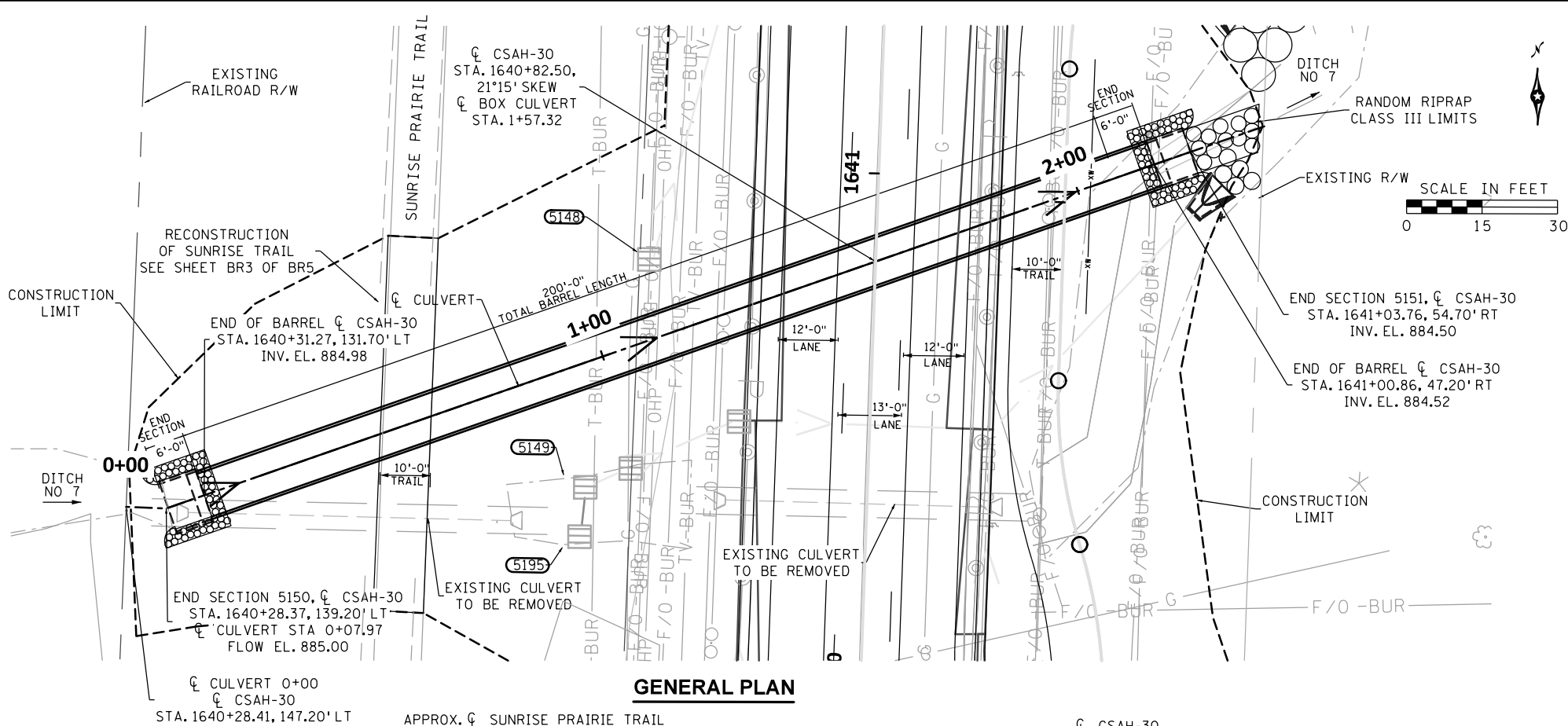
CSAH 30 (Forest Blvd) Improvements
Chisago County, Minnesota

CHISAGO COUNTY, MINNESOTA

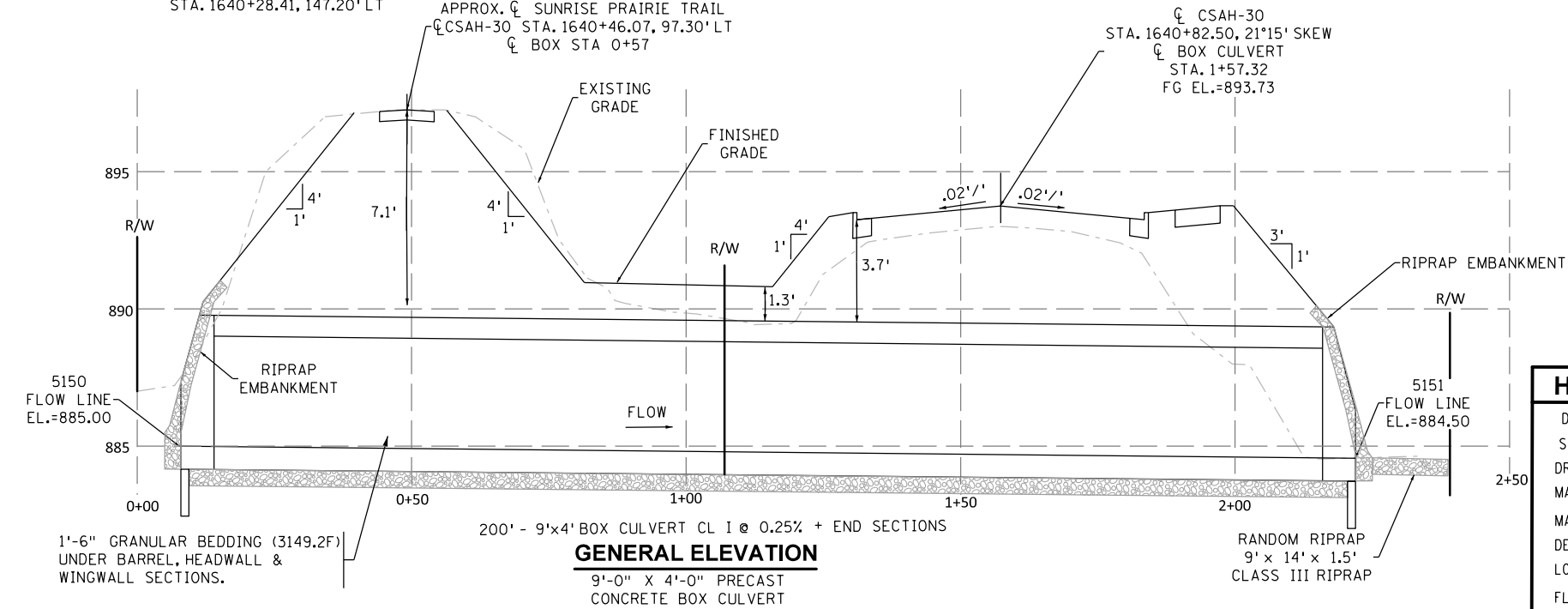
LIGHTING & RRFB PLAN
SAP 013-630-021 / SAP 225-591-007 / SAP 225-102-004

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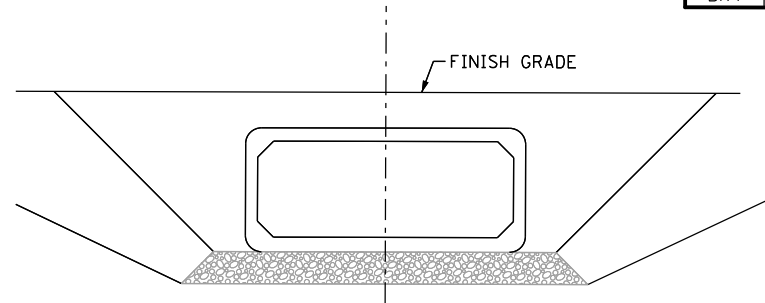
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GENERAL PLAN



GENERAL ELEVATION



TYPICAL CULVERT SECTION (N.T.S)

SEE CONCRETE BOX CULVERT BEDDING
DETAIL SHEET BR4 OF BR5

CONSTRUCTION NOTES

THE 2020 EDITION OF THE MINNESOTA
DEPARTMENT OF TRANSPORTATION "STANDARD
SPECIFICATIONS FOR CONSTRUCTION" SHALL
GOVERN.

THE BARS MARKED WITH THE SUFFIX "E" SHALL
BE EPOXY COATED IN ACCORDANCE WITH
SPEC. 3301

THE BARS SHOWN IN THE PLAN ARE IN U.S.
CUSTOMARY DESIGNATIONS.

THE SUBSURFACE UTILITY INFORMATION IN
THIS PLAN IS UTILITY QUALITY LEVEL D.
THIS UTILITY QUALITY LEVEL WAS
DETERMINED ACCORDING TO THE GUIDELINES
OF C1/ASCE 38-02, ENTITLED "STANDARD
GUIDELINES FOR THE COLLECTION AND
DEPICTION OF EXISTING SUBSURFACE
UTILITY DATA".

FINISH ALL EXPOSED EDGES OF CONCRETE
WITH 1/2" OR 3/4" CHAMFER OR RADIUS,
UNLESS OTHERWISE NOTED.

SEE SPECIAL PROVISIONS AND ROADWAY
PLANS FOR CONSTRUCTION DEWATERING
REQUIREMENTS.

DESIGN DATA

2020 AND CURRENT INTERIM AASHTO LRFD BRIDGE
DESIGN SPECIFICATIONS
LOAD AND RESISTANCE FACTOR DESIGN METHOD
DESIGN LOADING HL-93 LIVE LOAD

INSIDE HEIGHT4'-0"
INSIDE WIDTH9'-0"
LENGTH200'-0"
UNIT WEIGHT FILL120 LBS./CU. FT.
SKEW ANGLE21°15'00"
ANGLE INTERNAL FRICTION32°
MINIMUM FILL DEPTH4.37'
MAXIMUM FILL DEPTH8.47'

MAXIMUM ALLOWABLE DESIGN STRESSES:
MAX ALLOWABLE GROSS BEARING PRESURE: 2500 PSF
MAXIMUM BEARING LOAD (DESIGN): 1500 PSF

REINFORCED CONCRETE:
f'c = 5,000 PSI
fy = 60,000 PSI REINFORCEMENT BARS
fy = 65,000 PSI WWF REINFORCEMENT

STRUCTURAL STEEL:
fy = 36,000 PSI
STRUCTURAL STEEL MNDOT 3306

DESIGN SPEED: OVER = 55 MPH
ADT (2025) = 4,590
ADT (2045) = 5,049

HL-93 OPERATING RATING FACTOR = 1.3 (LRFD)

LIST OF SHEETS

NO.	DESCRIPTION
BR1	GENERAL PLAN AND ELEVATION
BR2	PRECAST CONCRETE BARREL DETAILS
BR3	BOX CULVERT BEDDING DETAIL
BR4	EMBANKMENT PROTECTION FOR BOX CULVERTS

HYDRAULIC ENGINEERS RECOMMENDATION

DATED: 06/30/2024 (NAVD88)
STREAM OR DITCH DESIGNATION DITCH NO. 7.
DRAINAGE AREA 4.4 SQ. MILES
MAX. DISCHARGE ON RECORD NA DESIGN DISCHARGE (100YR. FREQ.) 268 C.F.S.
MAX. HIGHWATER ELEVATION NA DESIGNED HIGHWATER ELEVATION NA
DESIGNED MEAN VELOCITY THROUGH STRUCTURE 7.44 F.P.S.
LOW SUPERSTRUCTURE AT OR ABOVE ELEVATION NA
FLOWLINE ELEVATION 885.0 SKEW ANGLE 21° 15'
WATERWAY AREA REQ'D. BELOW ELEVATION 889.0 = 36 SQ. FT.
@ RIGHT ANGLES TO CHANNEL
IN THE INTEREST OF FLOOD PLAIN ZONING THE REGIONAL FLOOD (100 YR. FREQ.) IS
268 C.F.S. AT STAGE 890.63 AND MEAN VELOCITY OF 0.96 F.P.S. WITH
2 FT. SWELLHEAD. THE ABOVE RECOMMENDATION WILL PROVIDE A STRUCTURE
OF ADEQUATE WATERWAY TO PASS THE REGIONAL FLOOD WITHIN CRITERIA ESTABLISHED
BY THE DEPARTMENT OF NATURAL RESOURCES.
PIER SCOUR EL. NA

NOTES:
PAY ITEM 2411.507 INCLUDES EXCAVATION
FOR BOX CULVERT AND HEADWALLS.

GENERAL PLAN AND ELEVATION

CSAH-30 OVER DITCH NO 7 IN
CHISAGO COUNTY

SCHEDULE OF QUANTITIES FOR 9' x 4' CONCRETE BOX CULVERT

M

ITEM	2106.507	2573.602	2411.507	2412.502	2412.503	2104.502	2104.502	2451.507	2511.504	2511.507	2511.507
	SELECT GRANULAR EMBANKMENT MOD 10% (CV)	TEMPORARY STREAM DIVERSION SYSTEM	STRUCTURE EXCAVATION CLASS E (CY)	9 X 4 PRECAST CONCRETE END SECTION	9 X 4 PRECAST CONCRETE BOX CULVERT	REMOVE BOX CULVERT	REMOVE CULVERT END	GRANULAR BEDDING (CV)	GEOTEXTILE FILTER TYPE 7	RANDOM RIPRAP, CLASS I	RANDOM RIPRAP, CLASS III
UNIT	CU. YD.	EACH	CU. YD.	EACH	LN. FT.	EACH	EACH	CU. YD.	SQ. YD.	CU. YD.	CU. YD.
QUANTITY	10.8	1	2743	2	200	2	4	183	398	7	400

NO.	DATE	BY	CHK	REVISIONS

Design By:
Plan By:
Checked By:
Approved By:

WAR
WAR
EAE
EAE

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.

EARTH A. EVANS, PE
DATE: 9/12/2024 LICENSE NO. 44235



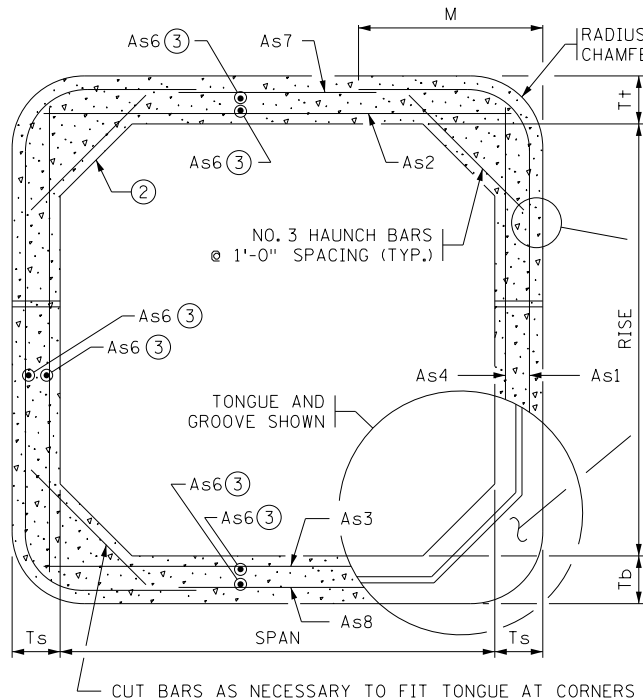
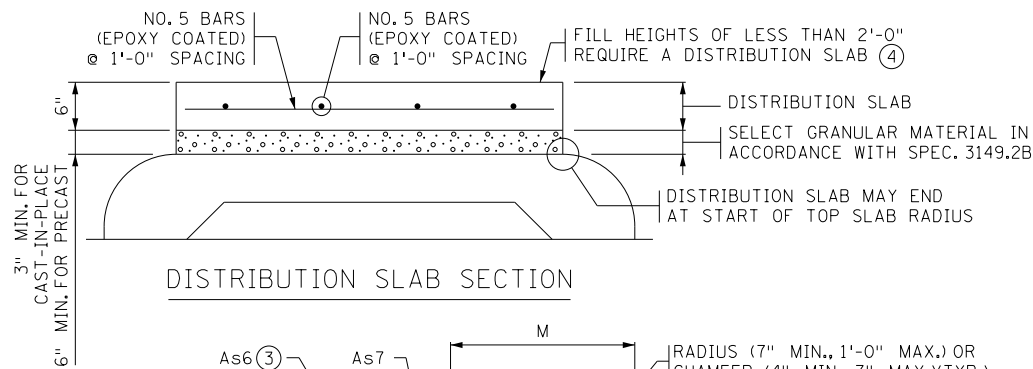
CSAH 30 (Forest Blvd) Improvements
Chisago County, Minnesota

CHISAGO COUNTY, MINNESOTA

GENERAL PLAN AND ELEVATION
SAP 013-630-021 / SAP 225-591-007 / SAP 225-102-004

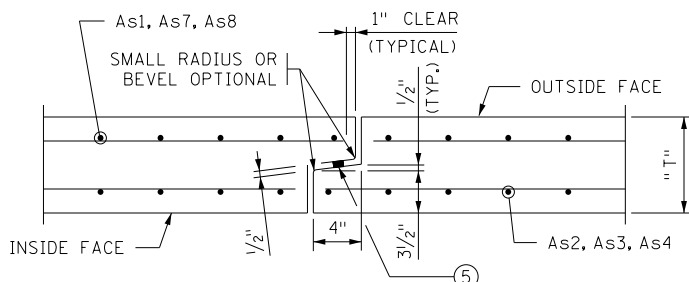
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TRANSVERSE BARREL SECTION

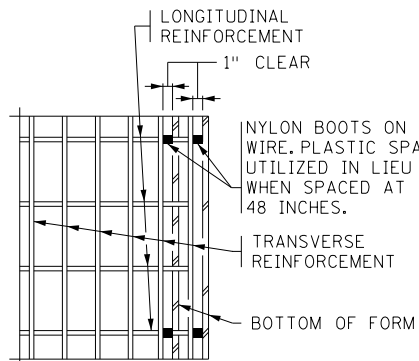
BAR REINFORCEMENT OPTION SHOWN



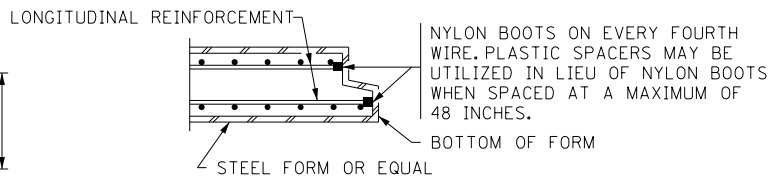
TONGUE AND GROOVE JOINT DETAIL

HAUNCH BAR LENGTH:
31" FOR 8" WALL THICKNESS
34" FOR 9" WALL THICKNESS
34" FOR 10" WALL AND 10" SLAB
36" FOR 10" WALL AND 11" SLAB
38" FOR 10" WALL AND 12" SLAB
38" FOR 11" WALL THICKNESS

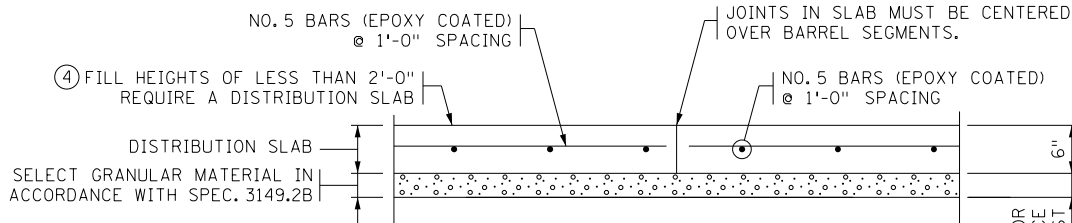
REINFORCEMENT NOT SHOWN FOR CLARITY



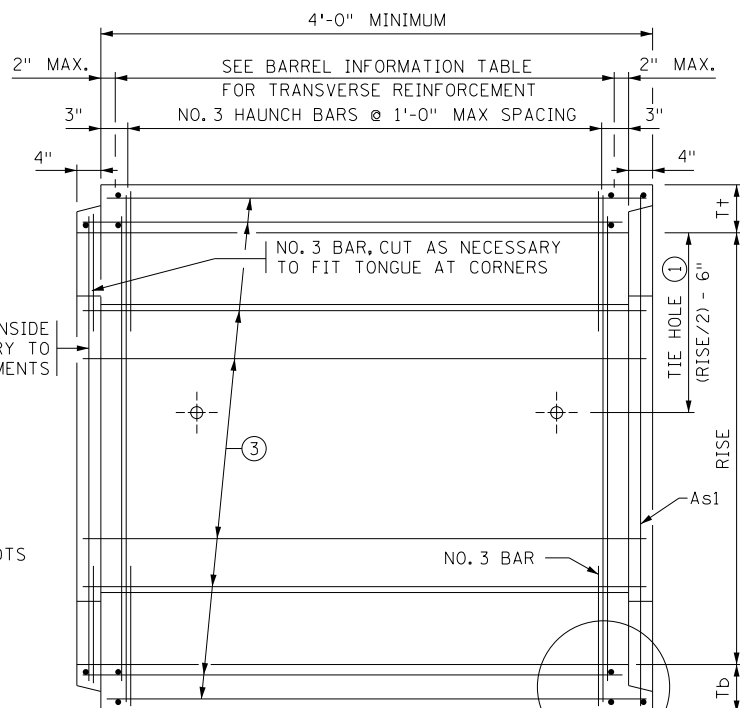
PLAN



SECTION FORMING DETAIL

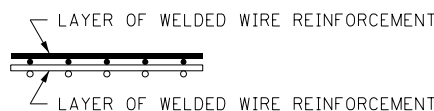


DISTRIBUTION SLAB - LONGITUDINAL SECTION



LONGITUDINAL BARREL SECTION

BAR REINFORCEMENT OPTION SHOWN



REINFORCEMENT LAYER DETAIL

WHEN MORE THAN ONE LAYER OF WELDED WIRE REINFORCEMENT IS USED TO OBTAIN THE REQUIRED REINFORCEMENT AREAS, PLACE THE WIRES OF THE WELDED WIRE REINFORCEMENT AS SHOWN

CONSTRUCTION NOTES

CONSTRUCT CULVERTS IN ACCORDANCE WITH SPEC. 2412 EXCEPT AS NOTED.

REFER TO THE GENERAL PLAN AND ELEVATION SHEET FOR THE DISTANCE BETWEEN BARRELS OF ADJACENT BOXES AND TO STANDARD FIGURE 5-395.115 FOR MATERIAL REQUIREMENTS FOR FILL BETWEEN ADJACENT BOXES.

PROVIDE WELDED WIRE REINFORCEMENT, SHEAR REINFORCEMENT AND REINFORCEMENT BARS IN ACCORDANCE WITH THE APPLICABLE REQUIREMENTS OF AASHTO M259.

1 1/2" MIN. AND 2" MAX. CONCRETE COVER ON ALL REINFORCEMENT, INCLUDING SHEAR REINFORCEMENT, EXCEPT FOR TONGUE AND GROOVE DETAIL.

ANY OF THE FOLLOWING COMBINATIONS OF STEEL REINFORCEMENT MAY BE USED:
(a) 1 OR 2 LAYERS OF WELDED WIRE REINFORCEMENT OR
(b) 1 LAYER OF WELDED WIRE REINFORCEMENT AND 1 LAYER OF REINFORCEMENT BARS OR
(c) 1 LAYER OF REINFORCEMENT BARS.

DEVELOP REINFORCEMENT IN ACCORDANCE WITH AASHTO "LRFD BRIDGE DESIGN SPECIFICATIONS". IF BAR REINFORCEMENT IS SUBSTITUTED FOR WELDED WIRE REINFORCEMENT, INCREASE THE AREA OF REINFORCEMENT BY 8%, AND SUBMIT DESIGN CALCULATIONS VERIFYING COMPLIANCE WITH AASHTO 5.7.3.4. "CONTROL OF CRACKING BY DISTRIBUTION OF REINFORCEMENT".

MAXIMUM SIZE OF REINFORCEMENT BARS IS NO. 6. THE MAXIMUM WELDED WIRE REINFORCEMENT SIZE IS W23 PER LAYER (MAXIMUM OF 2 LAYERS).

SPACE CENTER TO CENTER OF TRANSVERSE WIRES NOT LESS THAN 2" NOR MORE THAN 4". SPACE CENTER TO CENTER OF LONGITUDINAL WIRES NOT MORE THAN 8".

WHEN USING As1, As7, AND As8 REINFORCEMENT AS ONE CONTINUOUS CAGE WITH SPLICES OCCURRING IN THE CENTER OF THE TOP AND BOTTOM OF THE BOX SECTION, THE MIN. LAP LENGTH FOR THE As7 AND As8 IS 15".

WELDING IS NOT PERMITTED ON REINFORCEMENT BARS OR WELDED WIRE REINFORCEMENT, EXCEPT THAT THE ORIGINAL WELDING REQUIRED TO MANUFACTURE WIRE REINFORCEMENT IS ACCEPTABLE.

WHEN REINFORCEMENT IS CUT, PLACE ADDITIONAL REINFORCEMENT ON BOTH SIDES OF THE CUT MEMBER TO REPLACE OR EXCEED THE CUT STEEL.

USE CONCRETE MIX NO. 3W82 WITH NO CALCIUM CHLORIDE ALLOWED.

SHOP DRAWING APPROVAL IN ACCORDANCE WITH SPEC. 3238.2A IS NOT REQUIRED UNLESS OPENINGS OR ATTACHMENTS ARE PLACED ON A BARREL SEGMENT.

COMPACT THE FIRST 1.5' (LOOSE) OF FILL ABOVE THE BOX WITH LIGHT COMPACTION EQUIPMENT SUCH AS PLATE COMPACTORS OR WALK BEHIND ROLLERS.

TRANSVERSE REINFORCEMENT IS PARALLEL TO THE CULVERT SPAN. LONGITUDINAL REINFORCEMENT IS PERPENDICULAR TO THE CULVERT SPAN.

- USE 1" DIAMETER CULVERT TIES. SEE STANDARD PLATE NO. 3145 FOR DETAILS.
- USE 12" VERTICAL, 12" HORIZONTAL HAUNCHES ON ALL BOX SIZES.
- PLACE LONGITUDINAL REINFORCEMENT DENOTED AS As6 IN ALL SLABS AND WALLS WITH A MINIMUM OF 0.06 SQ. IN./FT.
- ROADWAY OR SHOULDER FILL HEIGHTS OF LESS THAN 2'-0" REQUIRE A 6" THICK DISTRIBUTION SLAB WITH CONCRETE MIX 3S52.

PLACE CAST-IN-PLACE DISTRIBUTION SLABS WITH 3" MIN. SELECT GRANULAR MATERIAL IN ACCORDANCE WITH SPEC. 3149.2B BETWEEN BARREL AND DISTRIBUTION SLAB.

PRECAST DISTRIBUTION SLABS MAY BE USED FOR FILL HEIGHTS OVER 1'-0". PROVIDE 6" MINIMUM SELECT GRANULAR MATERIAL IN ACCORDANCE WITH SPEC. 3149.2B BETWEEN BARREL AND SLAB.

EXTEND THE WIDTH OF THE DISTRIBUTION SLAB TO THE OUTSIDE EDGES OF THE ROADWAY SHOULDERS UNLESS DIRECTED BY THE ENGINEER.

REDESIGN THE DISTRIBUTION SLAB PER THE MnDOT PAVEMENT DESIGN MANUAL IF IT IS USED AS PAVEMENT SURFACE.

PAYMENT FOR THE DISTRIBUTION SLAB AND SELECT GRANULAR MATERIAL BENEATH THE SLAB IS INCLUDED IN THE PRECAST CONCRETE BOX CULVERT PAY ITEM.

- REFER TO SPEC. 2412 FOR SEALANT REQUIREMENTS.
- BOX CULVERT IS A NON-STANDARD SIZE. BARREL INFORMATION PROVIDED IN THE TABLE MATCHES THAT OF A STANDARD 10' X 4' BOX CULVERT.

BARREL INFORMATION TABLE ***

BARREL INFORMATION TABLE ***																									
LOCATION ⑥	SIZE	CLASS	f'c (P.S.I.)	FILL HEIGHT RANGE (FT.)	DISTRIBUTION SLAB REQUIRED *	RECESSED TIE RODS REQUIRED **	DIMENSIONS					WEIGHT (LBS./FT.)	WELDED WIRE REINFORCEMENT												
							SPAN (FT.)	RISE (FT.)	T+ (IN.)	Tb (IN.)	Ts (IN.)		As1			As2		As3		As4		As7		As8	
													AREA (IN. ² /FT.)	LENGTH (FT.)	M (FT.)	AREA (IN. ² /FT.)	LENGTH (FT.)	AREA (IN. ² /FT.)	LENGTH (FT.)	AREA (IN. ² /FT.)	LENGTH (FT.)	AREA (IN. ² /FT.)	LENGTH (FT.)		
1640+82.50	9x4	1	5000	3	NO	NO	9	4	9	10	8	3800	0.66	10'-8"	2'-10"	0.50	10'-6"	0.48	10'-6"	0.20	4'-6"	0.24	8'-3"	0.24	8'-3"

REVISION: DECEMBER 21, 2022

APPROVED: MARCH 24, 2011

Nancy Dubenberger
STATE BRIDGE ENGINEER

* ALL CLASS 1 CULVERTS WITH FILL HEIGHTS OF LESS THAN 2'-0" REQUIRE A DISTRIBUTION SLAB. IF A DISTRIBUTION SLAB IS NOT REQUIRED, INDICATE "NO" IN THIS BOX.

** FOR PEDESTRIAN CULVERT APPLICATIONS HIDE-AWAY OR RECESSED TIE CONNECTIONS ARE REQUIRED. SEE STANDARD PLATE 3145. IF REQUIRED, INDICATE "YES" IN THIS BOX.

*** BOX CULVERTS WITH SPANS FROM 6 TO 14 FT. ARE DESIGNED FOR HL-93 LIVE LOADS (AASHTO LRFD 3.6.2.1) NOT INCLUDING THE DESIGN LANE LOAD. BOXES WITH SPANS OF 16 FT. ARE DESIGNED FOR HL-93 LIVE LOADS INCLUDING THE DESIGN LANE LOAD.

NO.	DATE	BY	CHK	REVISIONS

Design By:

WAR

Plan By:

WAR

Checked By:

EAE

Approved By:

EAE

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.

Earth A. Evans, PE
EARTH A. EVANS, PE

DATE: 9/12/2024

LICENSE NO. 44235

wsb

Chisago
COUNTY USA

CSAH 30 (Forest Blvd) Improvements
Chisago County, Minnesota

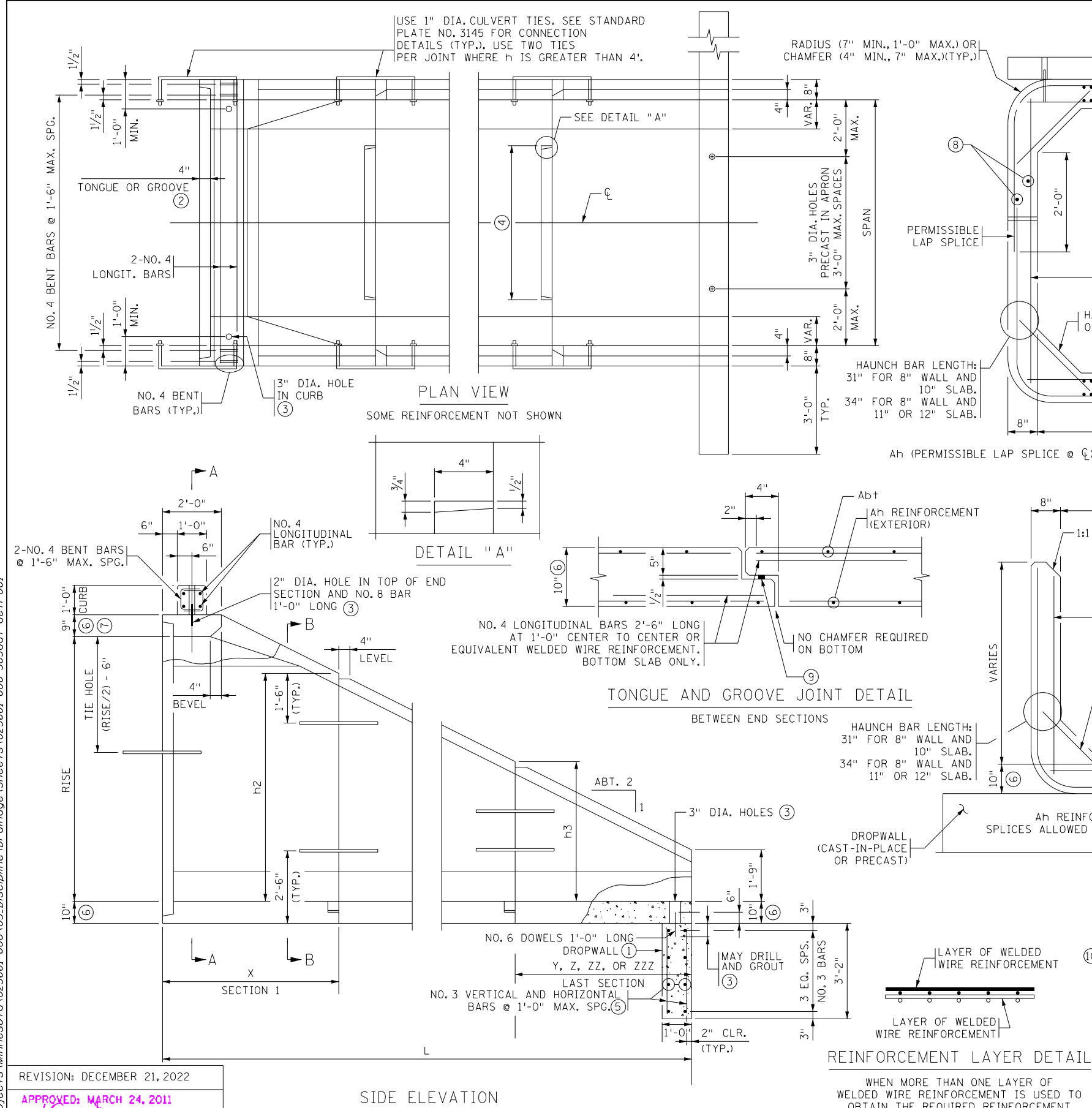
CHISAGO COUNTY, MINNESOTA

PRECAST CONCRETE BARREL DETAILS
SAP 013-630-021 / SAP 225-591-007 / SAP 225-102-004

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FIG. 5-395.101(A)

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CONSTRUCTION NOTES

SEE STANDARD FIG. 5-395.101(A) AND FIG. 5-395.101(B) FOR ADDITIONAL DIMENSIONS AND CONSTRUCTION NOTES.

USE CONCRETE MIX NO. 3W82 WITH NO CALCIUM CHLORIDE ALLOWED. ALL END SECTIONS REQUIRE CURB ON LINTEL BEAM.

ON ALL END SECTIONS FOR WATERWAYS, USE DROPWALLS ON INLET AND OUTLET ENDS.

SEE STANDARD FIG. 5-395.115 FOR EMBANKMENT PROTECTION.

FINISH ALL EXPOSED EDGES OF CONCRETE WITH 1/2" OR 3/4" CHAMFER OR RADIUS UNLESS OTHERWISE NOTED.

MAXIMUM SIZE OF REINFORCEMENT BARS IS NO. 6, EXCEPT NO. 7 OR 8 BARS MAY BE USED FOR A+b ON SPANS GREATER THAN 14'. THE MAXIMUM WELDED WIRE REINFORCEMENT SIZE IS W23 PER LAYER (MAXIMUM OF 2 LAYERS).

- WITH DOUBLE BOXES LOCATE DROPWALL JOINTS BETWEEN END SECTIONS. SEE STANDARD FIG. 5-395.111 FOR ALTERNATE DROPWALLS. LIMITS OF EXCAVATION FOR DROPWALL ARE APPROXIMATELY THE SAME AS DROPWALL DIMENSIONS. DROPWALL CONCRETE MIX IS 3S52, OR 3Y82 IF PRECAST. FURNISHING AND INSTALLATION OF DROPWALL TO BE INCLUDED IN PRICE BID FOR END SECTIONS. DROPWALL NOT REQUIRED FOR NON-WATERWAY USE.
- CHECK LOCATION TO DETERMINE WHETHER A TONGUE OR A GROOVE IS USED.
- FILL HOLE WITH GROUT. GROUT CONSISTS OF 1 PART CEMENT AND 2 PARTS SAND. USE TYPE 1A AIR ENTRAINED PORTLAND CEMENT. GROUT MIX MAXIMUM SLUMP IS 4".
- 3'-6" MIN. TONGUE AND 3'-7" MIN. GROOVE FOR CULVERTS WITH 6'-0" SPANS. 5'-0" MIN. TONGUE AND 5'-1" MIN. GROOVE FOR CULVERTS WITH SPANS GREATER THAN 6'-0". CENTER TONGUE AND GROOVE ON C OF EACH APRON JOINT. TONGUE AND GROOVE JOINT ON ALL THREE SIDES OF APRON IS PERMISSIBLE.
- WELDED WIRE REINFORCEMENT OF EQUAL AREA MAY BE SUBSTITUTED FOR REBAR.
- APRON TOP AND BOTTOM SLAB THICKNESS MAY BE 8" FOR CULVERTS WITH 6' SPANS ONLY. BOTTOM SLAB THICKNESS MAY BE INCREASED UP TO 2" MAX. PROVIDED CONCRETE COVER IS 1/2" MIN., 2" MAX.
- 10" MINIMUM TOP SLAB FOR 14' AND 16' SPANS.
- PLACE LONGITUDINAL REINFORCEMENT PERPENDICULAR TO THE CULVERT SPAN WITH A MINIMUM OF 0.06 SQUARE INCHES PER PERIPHERAL FOOT ON ALL FACES OF THE BARREL.
- REFER TO SPEC. 2412 FOR SEALANT REQUIREMENTS.
- BOX CULVERT IS A NON-STANDARD SIZE. VALUES THAT REFERENCE A 4' RISE AND 10' SPAN WILL BE USED FOR DESIGN.

A++ , A+b REINFORCEMENT		
SPAN (FT.)	A++ (IN ² /FT.)	A+b (IN ² /FT.)
6	0.27	0.44
8	0.47	0.60
10	0.62	0.74
12	0.88	1.06
14	1.20	1.58
16	1.52	2.09

A+b REINFORCEMENT	
SPAN (FT.)	A+b (IN ² /FT.)
6-10	0.20
12	0.30
14	0.39
16	0.39

APRON DIMENSIONS & A _h REINFORCEMENT													
RISE FT.	L FT.	SECTION 1		h2	SECTION 2		h3	SECTION 3		h4	SECTION 4		h5
		X	A _h		Y	A _h		Z	A _h		ZZ	A _h	
4	8	8' (4')	0.192	1'-9" (3'-9")	4' (0.192)	(1'-9")							
5	10	6'	0.192	3'-9"	4'	0.192	1'-9"						
6	12	6'	0.192	4'-9"	6'	0.192	1'-9"						
7	14	6'	0.192	5'-9"	8' (4')	0.192	1'-9" (3'-9")	4' (0.192)	(1'-9")				
8	16	6'	0.20	6'-9"	6'	0.192	3'-9"	4'	0.192	1'-9"			
9	18	6'	0.29	7'-9"	6'	0.20	4'-9"	6'	0.192	1'-9"			
10	20	6'	0.42	8'-9"	6'	0.29	5'-9"	8' (4')	0.192	1'-9" (3'-9")	4' (0.192)	(1'-9")	
11	22	6'	0.60	9'-9"	6'	0.42	6'-9"	6'	0.192	3'-9"	4'	0.192	1'-9"
12	24	6'	0.78	10'-9"	6'	0.60	7'-9"	6'	0.20	4'-9"	6'	0.192	1'-9"
13	26	6'	1.03	11'-9"	6'	0.78	8'-9"	6'	0.28	5'-9"	8' (4')	0.192	1'-9" (3'-9")
14	28	6'	1.38	12'-9"	6'	1.03	9'-9"	6'	0.40	6'-9"	6'	0.192	3'-9"

NOTE: A_h IS AREA OF REINFORCEMENT PER FOOT OF LENGTH (IN²/FT.)
VALUES IN () MAY BE USED FOR END SECTIONS WITH SPANS OF 14' AND 16' ONLY.

FIG. 5-395.102

REVISION: DECEMBER 21, 2022

APPROVED: MARCH 24, 2011

Nancy Dubenberger
STATE BRIDGE ENGINEER

NO.	DATE	BY	CHK	REVISIONS

Design By:
Plan By:
Checked By:
Approved By:

WAR

WAR

EAE

EAE

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Earth A. Evans, PE
EARTH A. EVANS, PE

DATE: 9/12/2024 LICENSE NO. 44235



CSAH 30 (Forest Blvd) Improvements
Chisago County, Minnesota

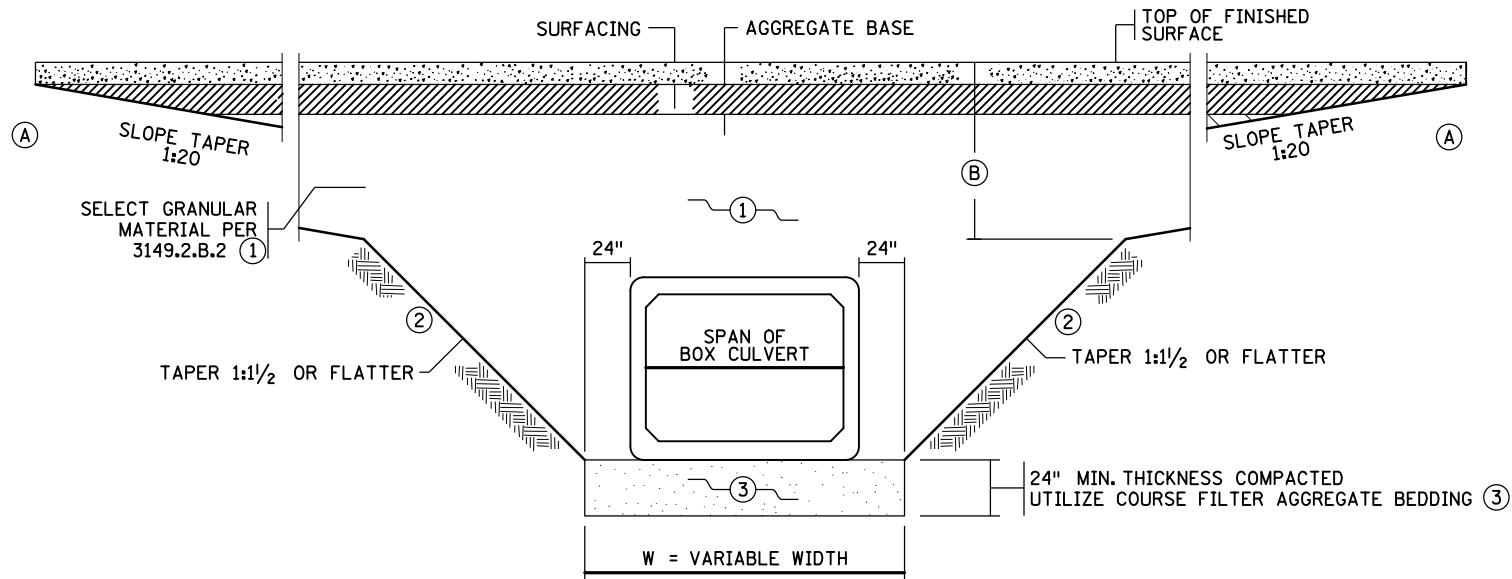
CHISAGO COUNTY, MINNESOTA

SINGLE OR MULTIPLE BARREL FOR SKEWS UP TO 7.5"

PRECAST CONCRETE END SECTION TYPE 1
SAP 013-630-021 / SAP 225-591-007 / SAP 225-102-004

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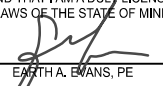
CONCRETE BOX CULVERT BEDDING

NOTES

- EXCAVATE & CONSTRUCT ALL TRENCHES AND SLOPES PER OSHA REQUIREMENTS.
ALL SLOPES SHOWN AS (V) : (H)
- ① MAXIMUM EMBANKMENT PARTICLE SIZE WITHIN 2 FT. OF CULVERT IS 3" PER SPEC. TABLE 2106-4.
 - ② OVER EXCAVATION BENEATH TAPERS IS NOT PERMITTED UNLESS REQUIRED BY OSHA. (TYP.)
 - ③ IF APPROVED BY THE ENGINEER IN WET CONDITIONS THE CONTRACTOR MAY SUBSTITUTE 24" OF COARSE FILTER AGGREGATE PER 3149.2.H COMPACTED TO THE QUALITY COMPACTION REQUIREMENTS OF SPEC. 2211.3.D.2.b. WRAP WITH GEOTEXTILE FABRIC TYPE IV PER SPEC 3733. SEAM ALL FABRIC SIDES AND ENDS PER SPEC TABLE 3733-1 INCLUDING FOOTNOTE (e) OR OVERLAP A MINIMUM OF 3 FT. ALL AT NO ADDITIONAL COST.
- DESIGNER NOTE:
SLOPING AND BENCHING FOR EXCAVATIONS GREATER THAN 20 FT. DEEP SHALL BE DESIGNED BY A REGISTERED ENGINEER.

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Plan By:	WAR
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Approved By:	EAE

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EARTHA A. EVANS, PE	
DATE: 9/12/2024	LICENSE NO. 44235

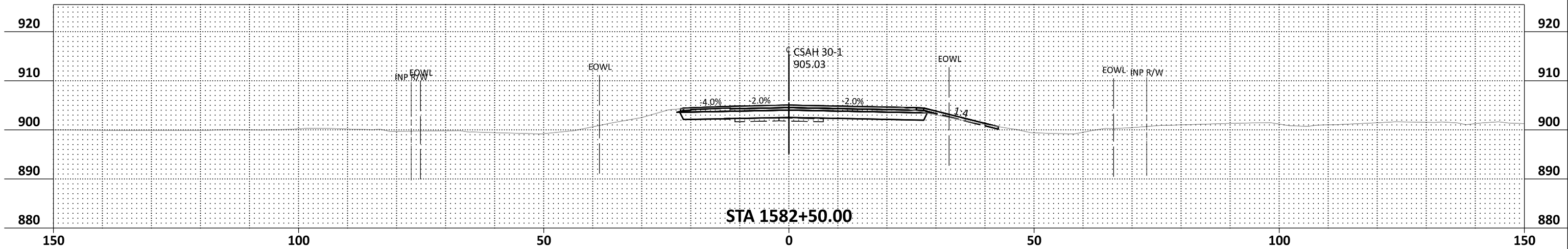
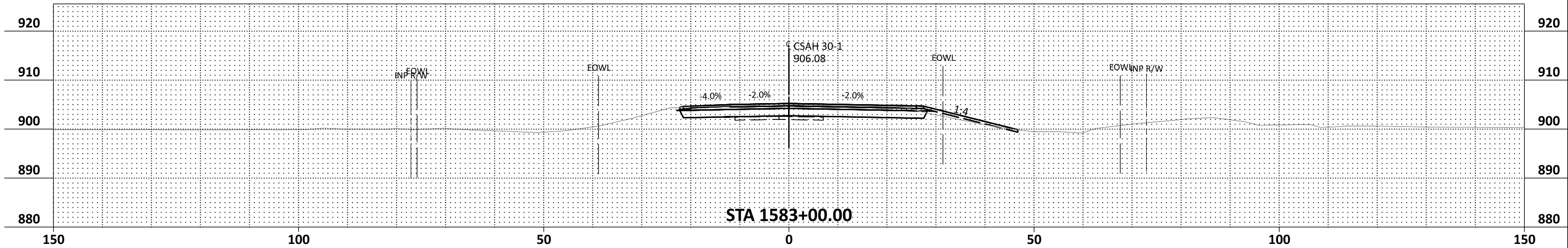
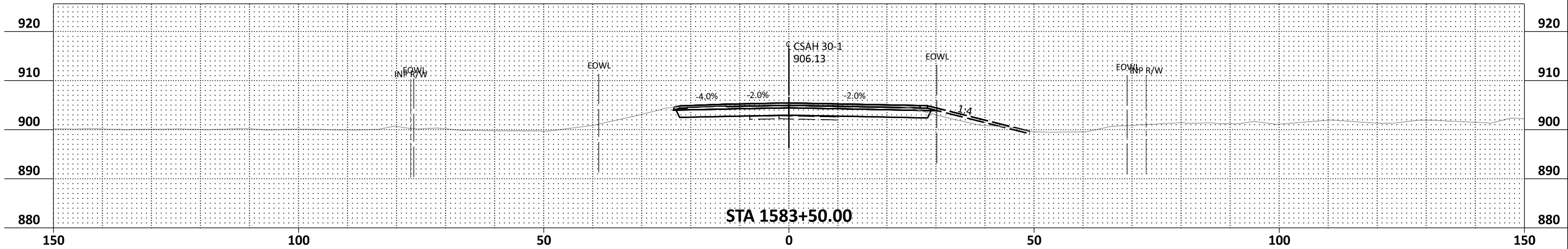


CSAH 30 (Forest Blvd) Improvements
Chisago County, Minnesota

CHISAGO COUNTY, MINNESOTA
BOX CULVERT BEDDING
SAP 013-630-021 / SAP 225-591-007 / SAP 225-102-004

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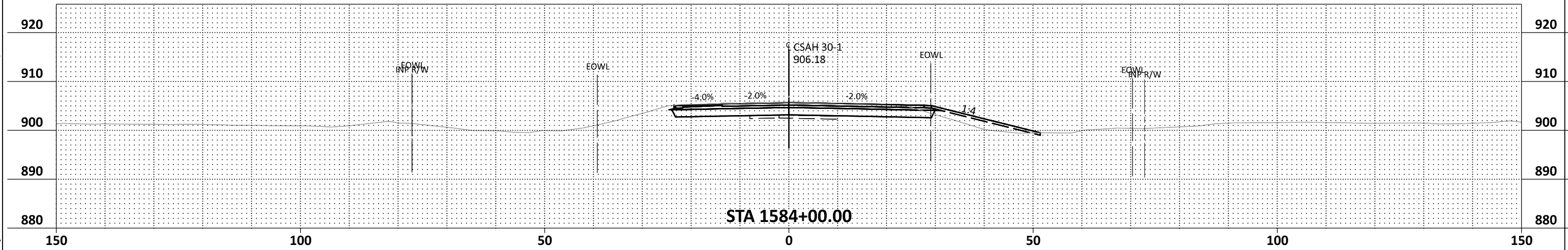
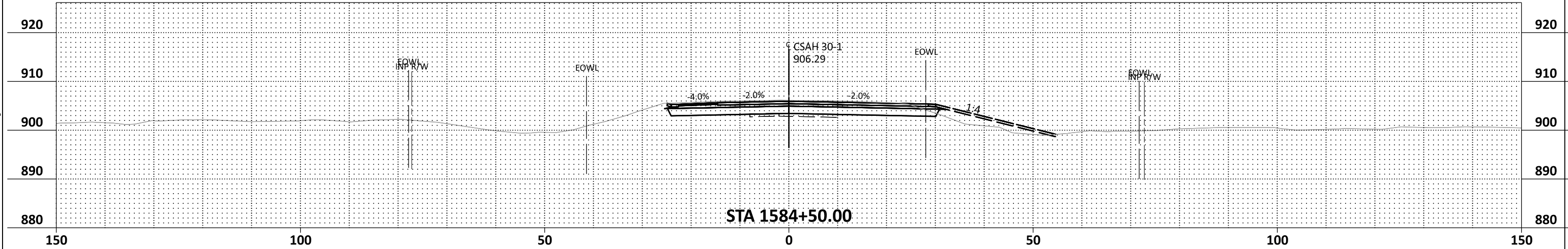
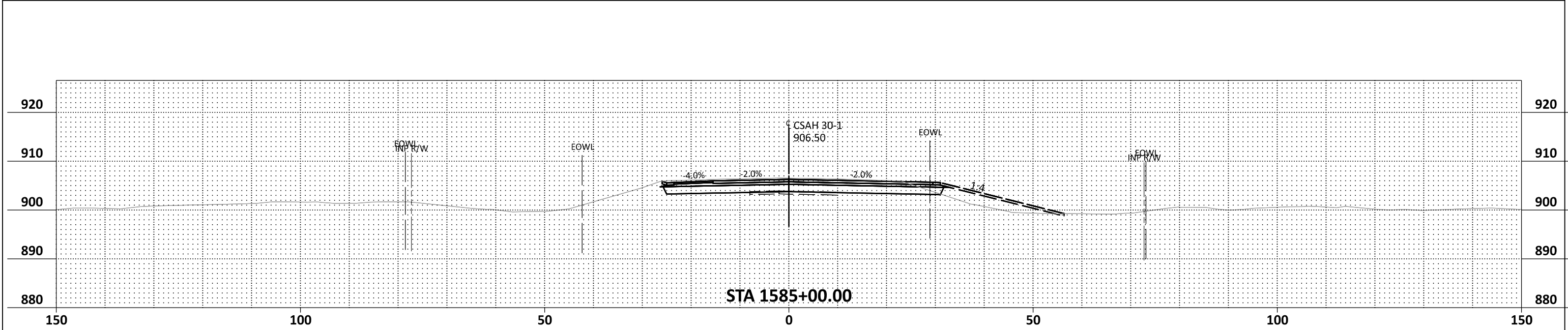
CSAH 30 (Forest Blvd) Improvements
Chisago County, Minnesota

CHISAGO COUNTY, MINNESOTA

CROSS SECTIONS
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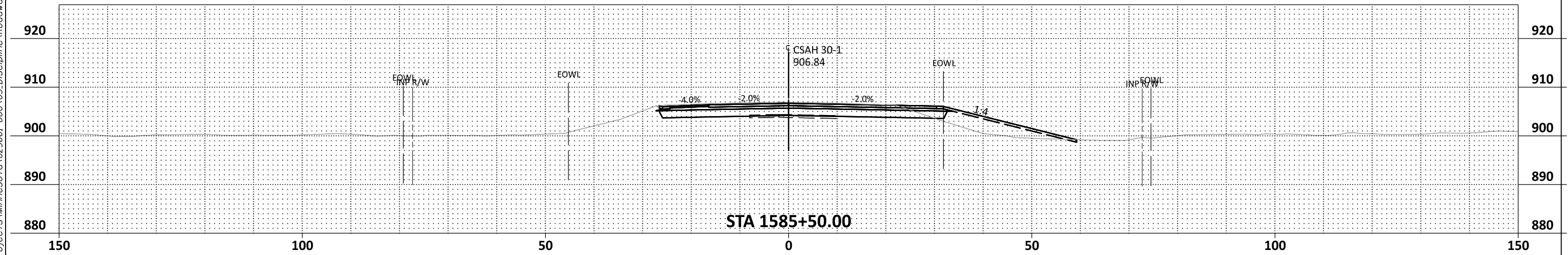
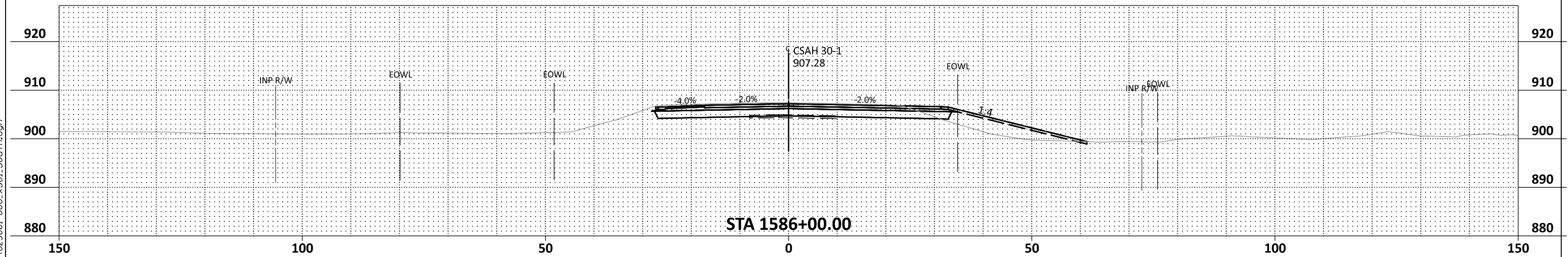
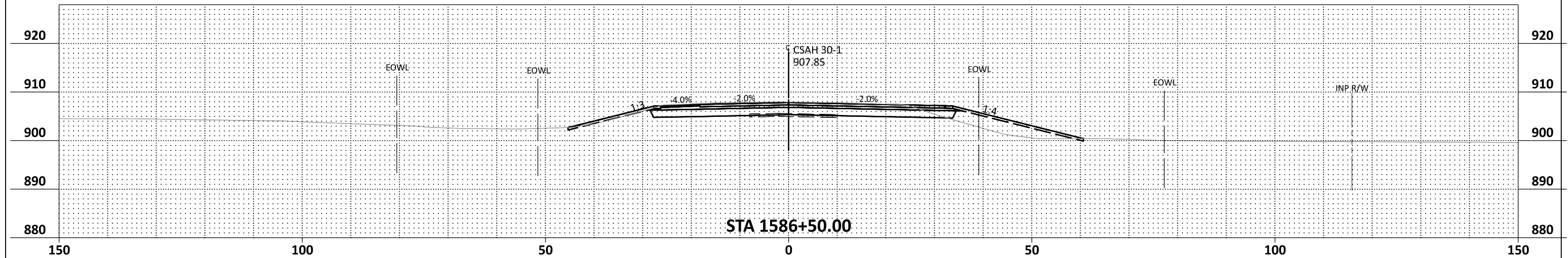


CSAH 30 (Forest Blvd) Improvements
Chisago County, Minnesota

CHISAGO COUNTY, MINNESOTA

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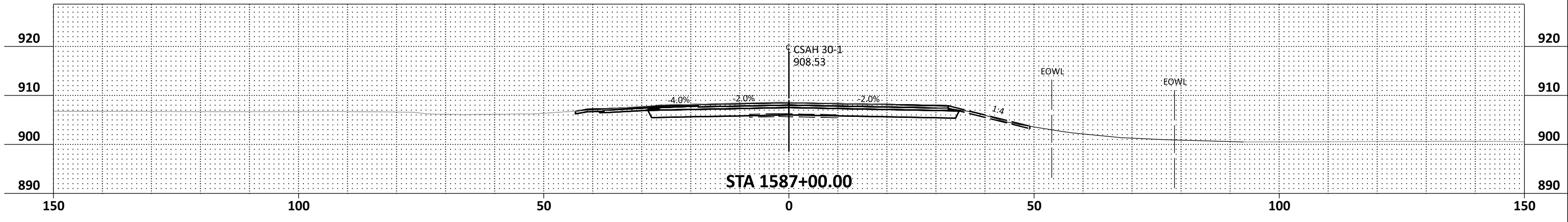
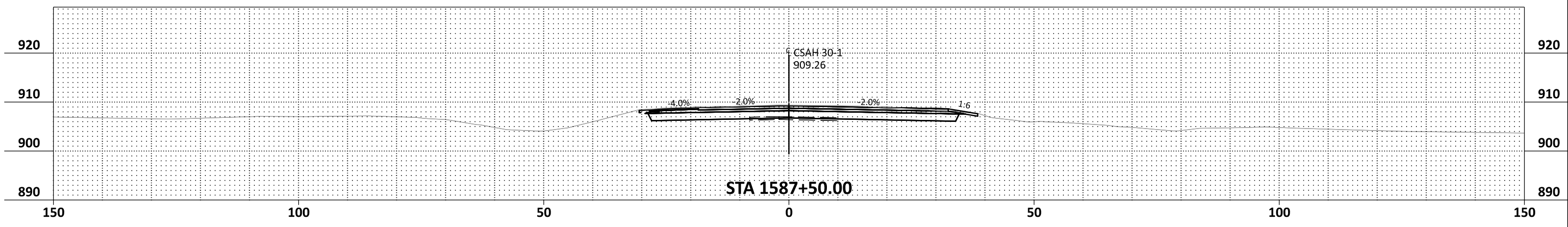
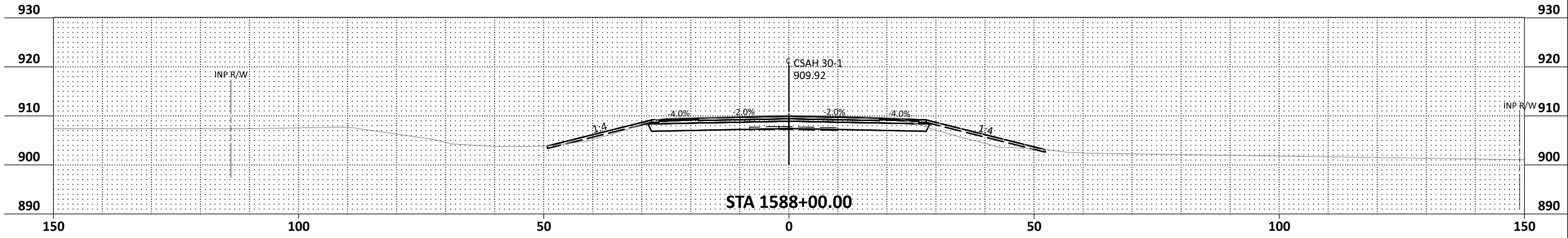
CSAH 30 (Forest Blvd) Improvements

Chisago County, Minnesota

CHISAGO COUNTY, MINNESOTA
CROSS SECTIONS SAP 013-630-021 / SAP 225-591-007 / SAP 225-102-004

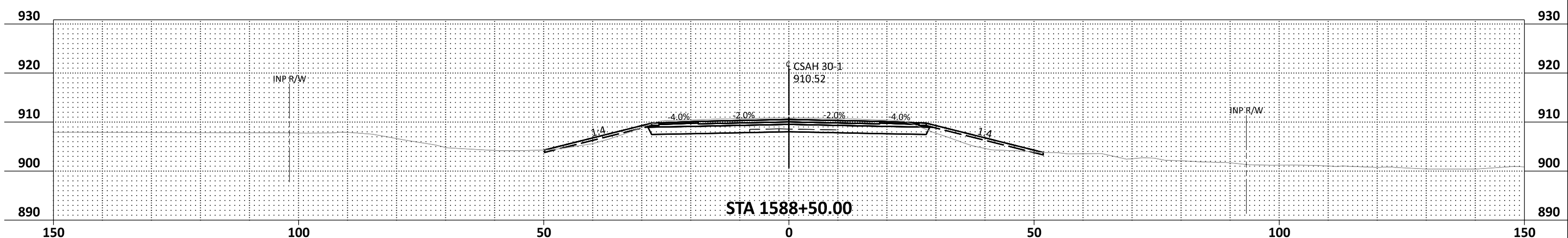
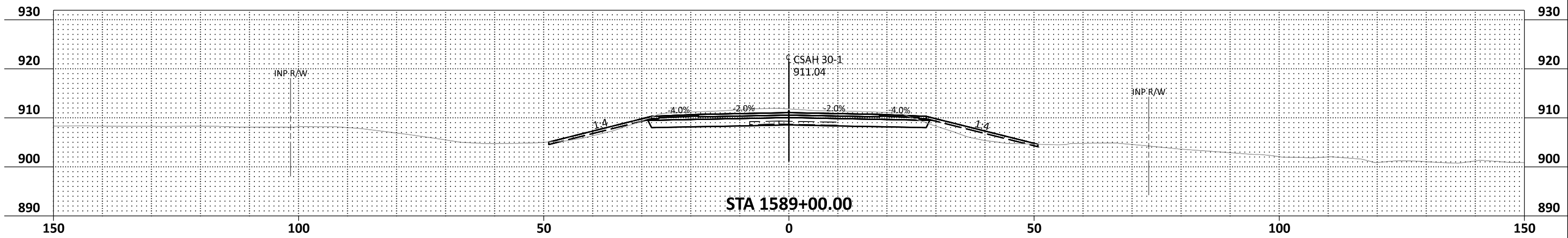
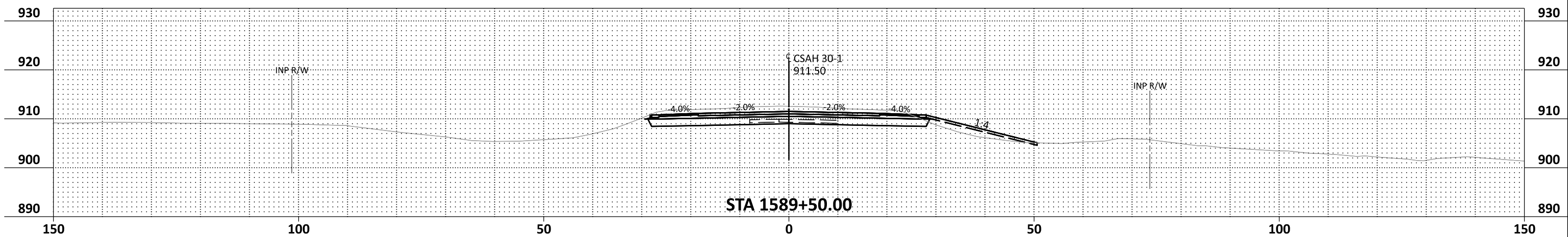
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					Plan By: GAD						
					Checked By: AJP				CROSS SECTIONS SAP 013-630-021 / SAP 225-591-007 / SAP 225-102-004		
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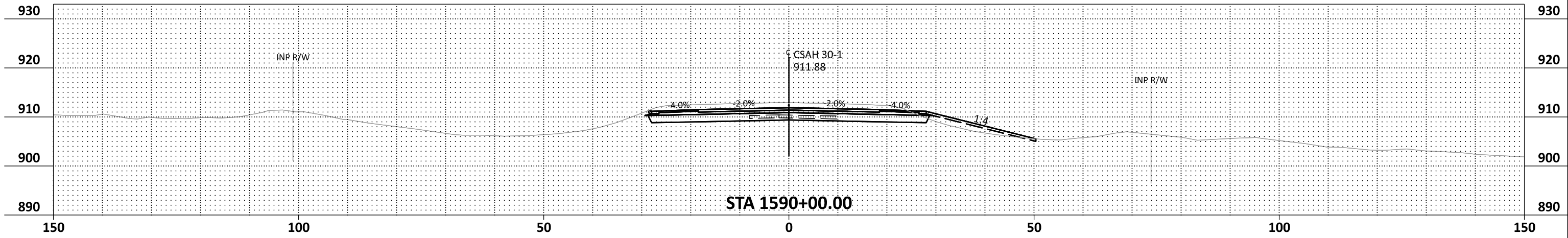
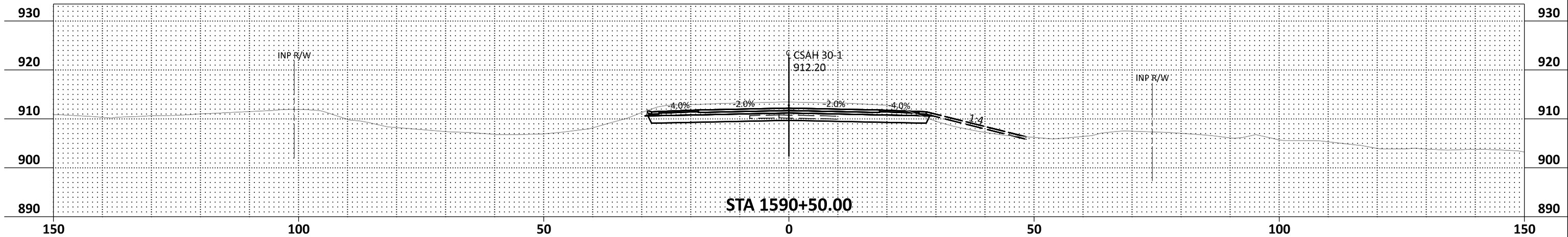
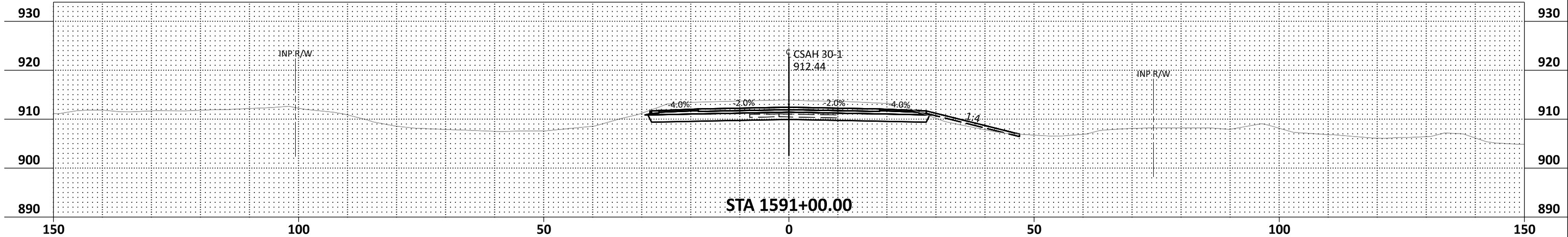


CSAH 30 (Forest Blvd) Improvements
Chisago County, Minnesota

CHISAGO COUNTY, MINNESOTA
CROSS SECTIONS
SAP 013-630-021 / SAP 225-591-007 / SAP 225-102-004

SHEET
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NO.	DATE	BY	CHK	REVISIONS

Design By:	MKV
Plan By:	GAD
Checked By:	AJP
Approved By:	MKV



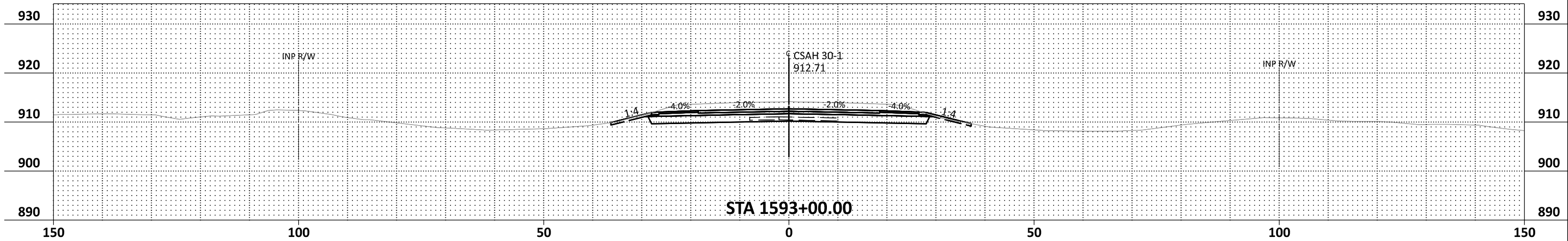
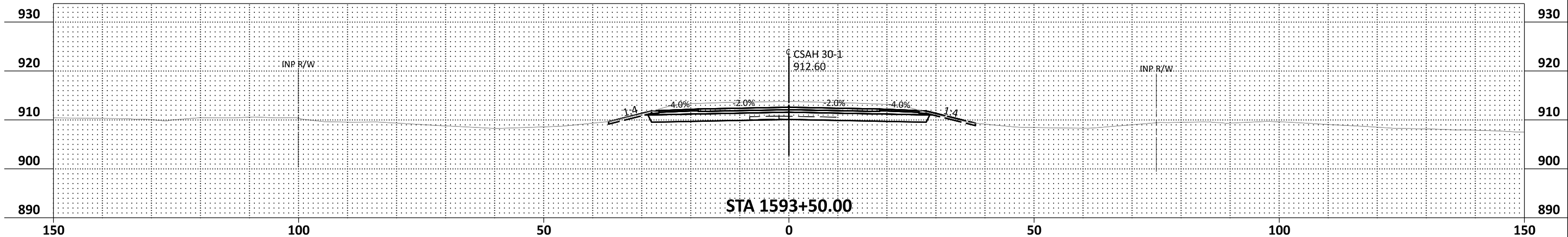
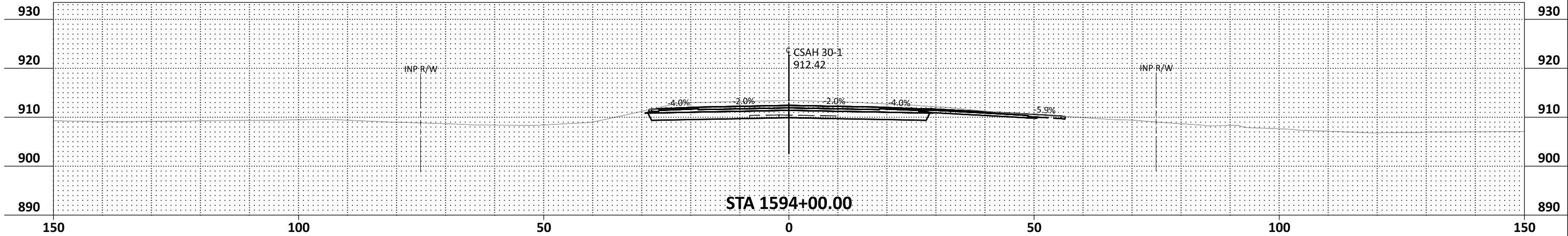
CSAH 30 (Forest Blvd) Improvements
Chisago County, Minnesota

CHISAGO COUNTY, MINNESOTA

CROSS SECTIONS
SAP 013-630-021 / SAP 225-591-007 / SAP 225-102-004

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Design By:	MKV
Plan By:	GAD
Checked By:	AJP
Approved By:	MKV



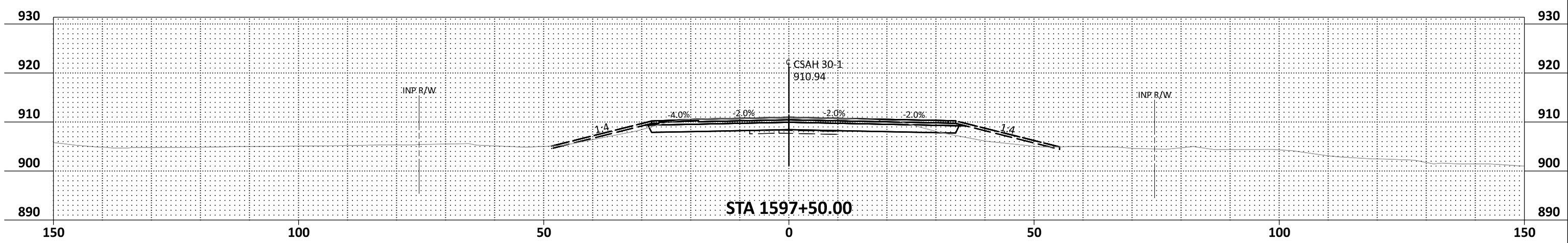
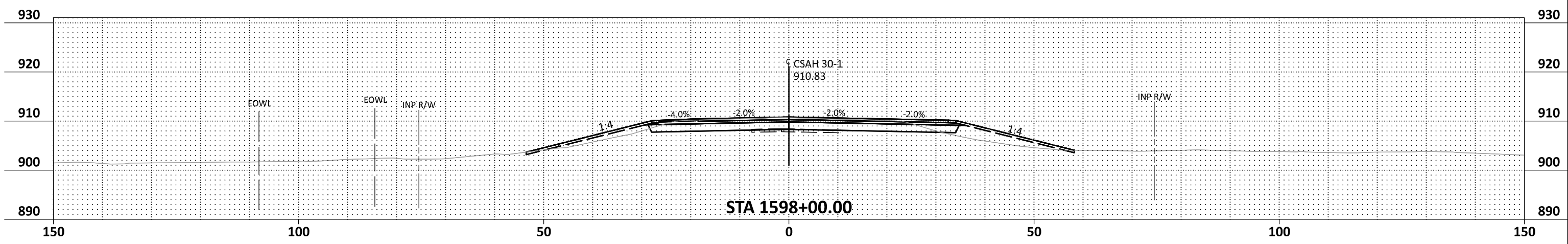
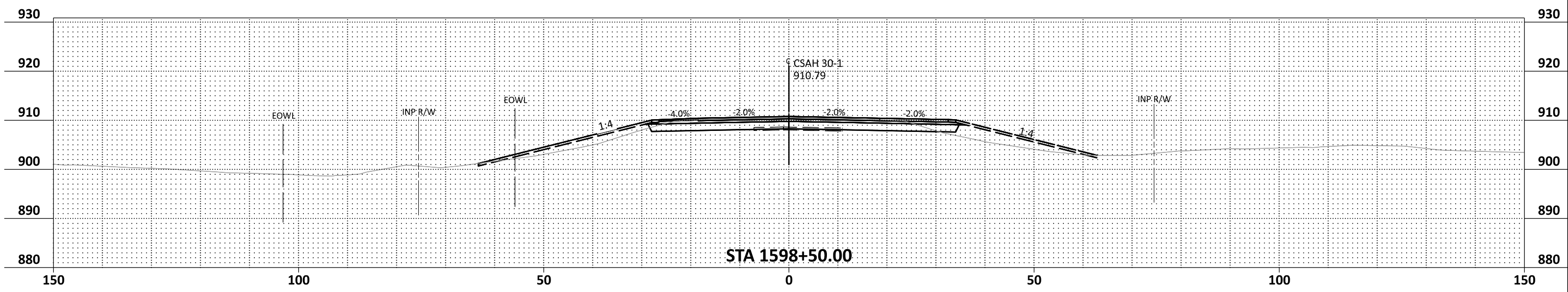
CSAH 30 (Forest Blvd) Improvements
Chisago County, Minnesota

CHISAGO COUNTY, MINNESOTA

CROSS SECTIONS
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Design By:	MKV
Plan By:	GAD
Checked By:	AJP
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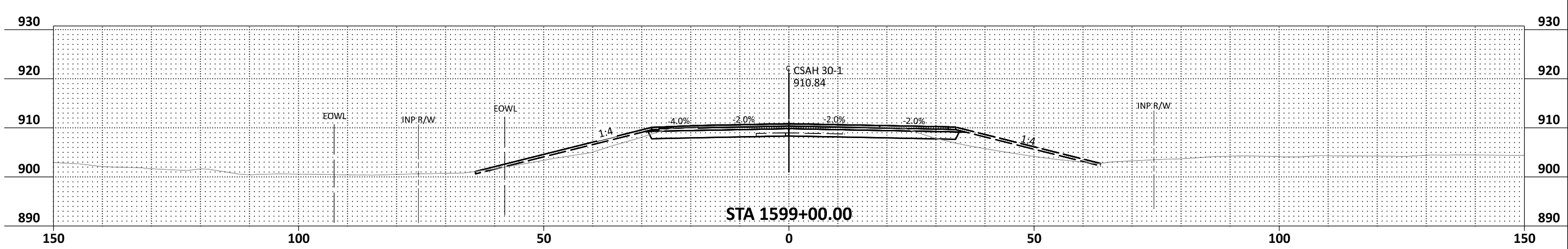
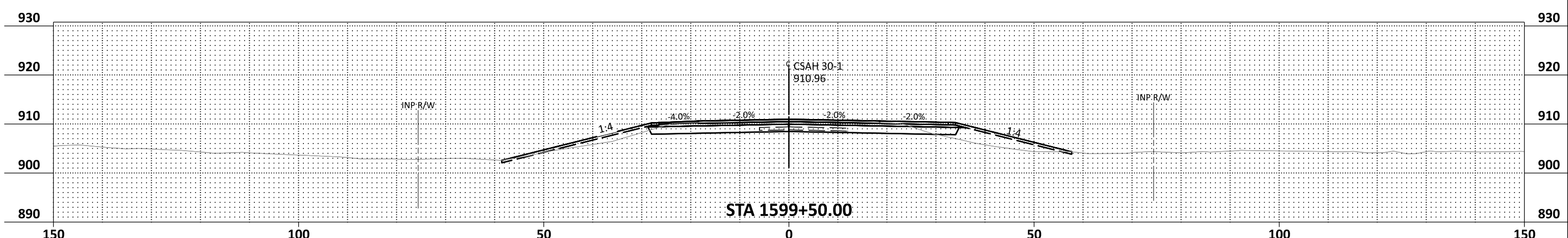
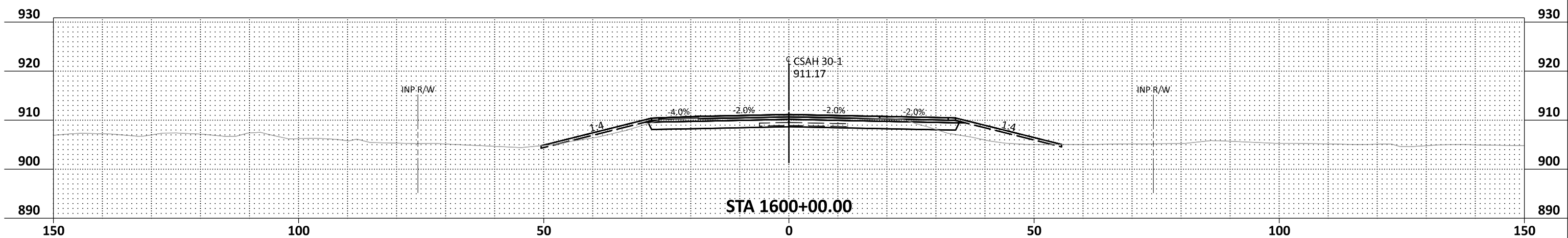
CSAH 30 (Forest Blvd) Improvements
Chisago County, Minnesota

CHISAGO COUNTY, MINNESOTA

CROSS SECTIONS
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Plan By:	GAD
Checked By:	AJP
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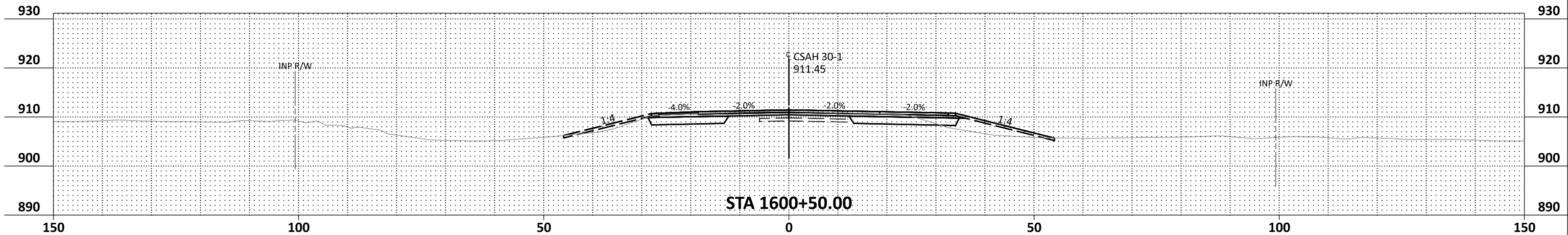
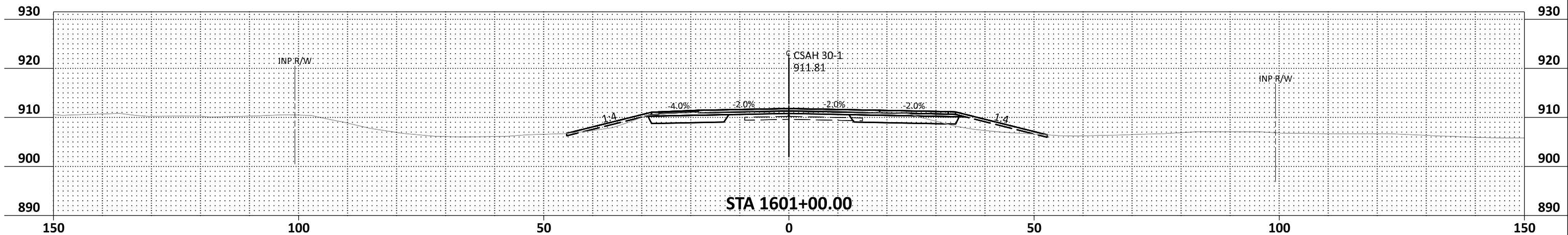
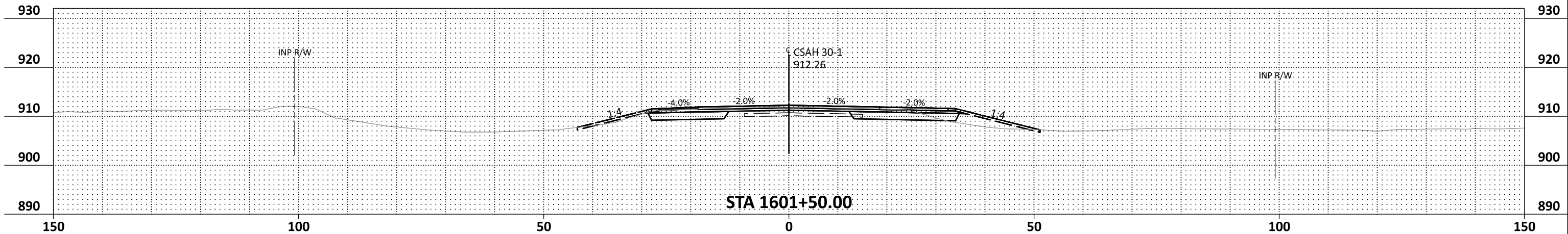
CSAH 30 (Forest Blvd) Improvements
Chisago County, Minnesota

CHISAGO COUNTY, MINNESOTA

CROSS SECTIONS
SAP 013-630-021 / SAP 225-591-007 / SAP 225-102-004

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Plan By:	GAD
Checked By:	AJP
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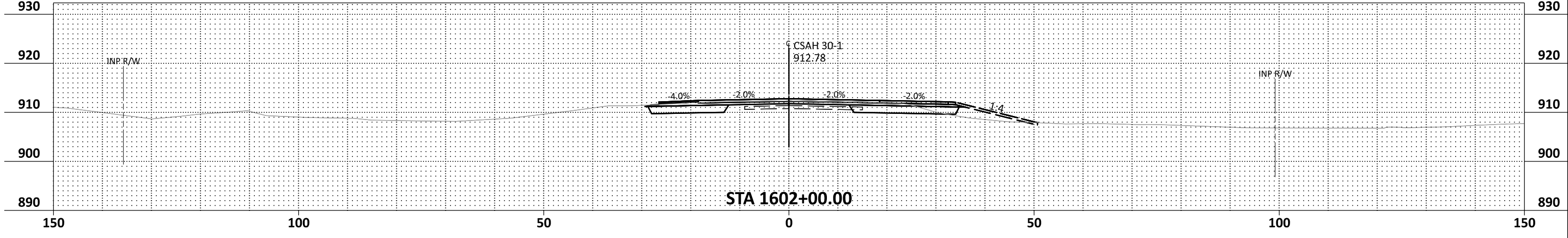
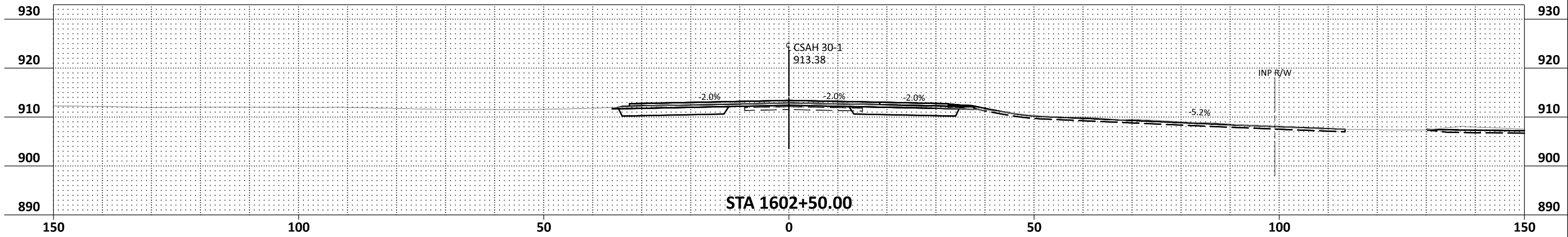
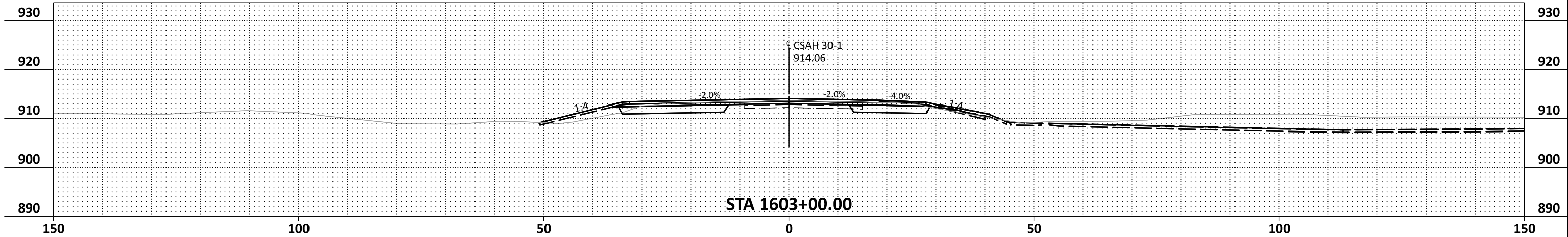
CSAH 30 (Forest Blvd) Improvements
Chisago County, Minnesota

CHISAGO COUNTY, MINNESOTA

CROSS SECTIONS
SAP 013-630-021 / SAP 225-591-007 / SAP 225-102-004

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DATE: 9/12/2024 2:12:43 PM
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NO.	DATE	BY	CHK	REVISIONS

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Plan By:	GAD
Checked By:	AJP
Approved By:	MKV



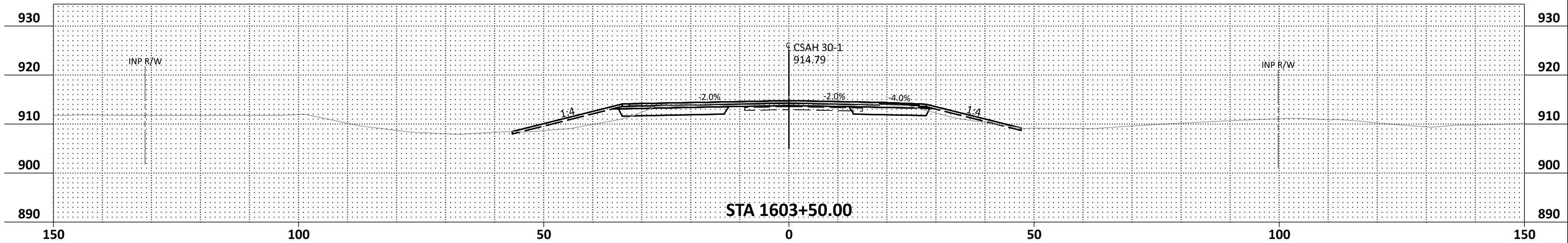
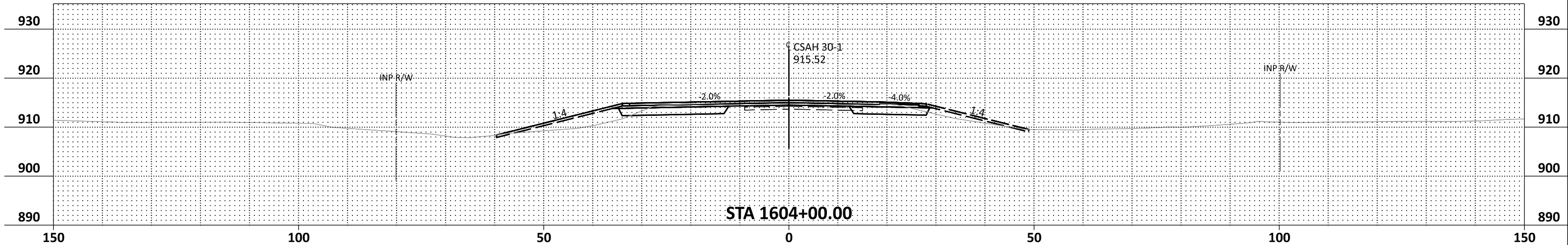
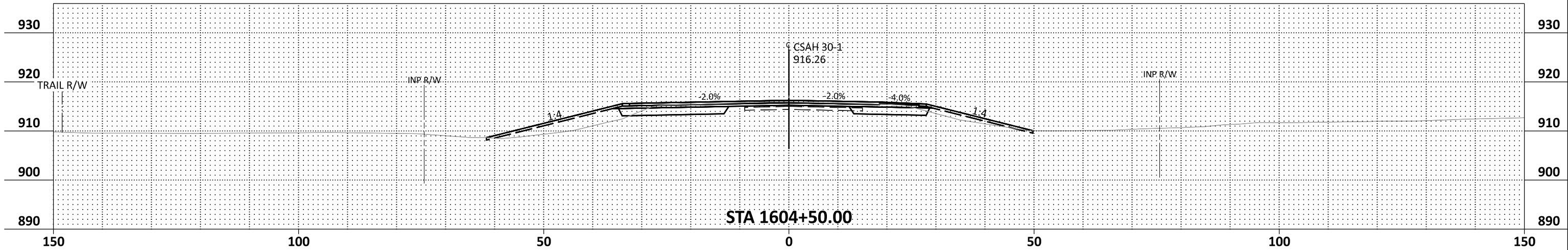
CSAH 30 (Forest Blvd) Improvements
Chisago County, Minnesota

CHISAGO COUNTY, MINNESOTA

CROSS SECTIONS
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Design By:	MKV
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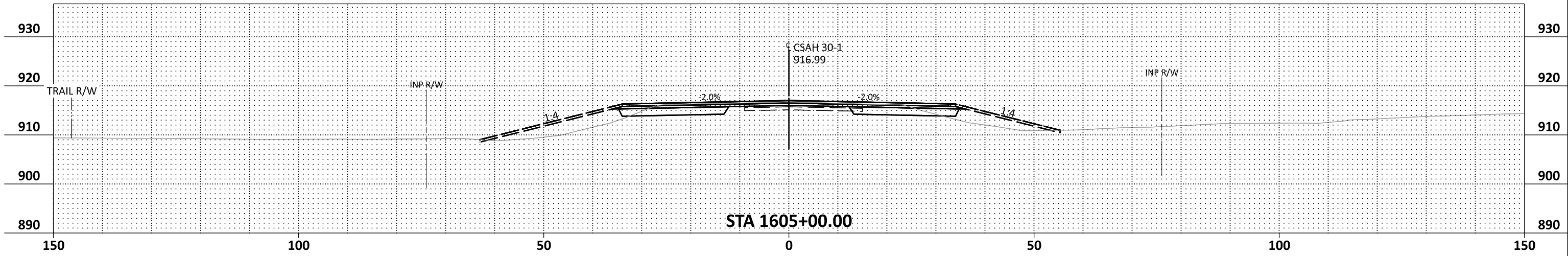
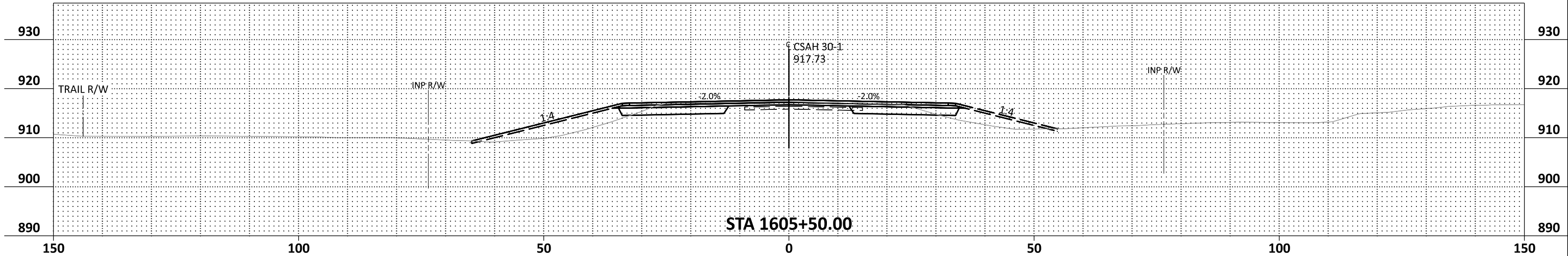
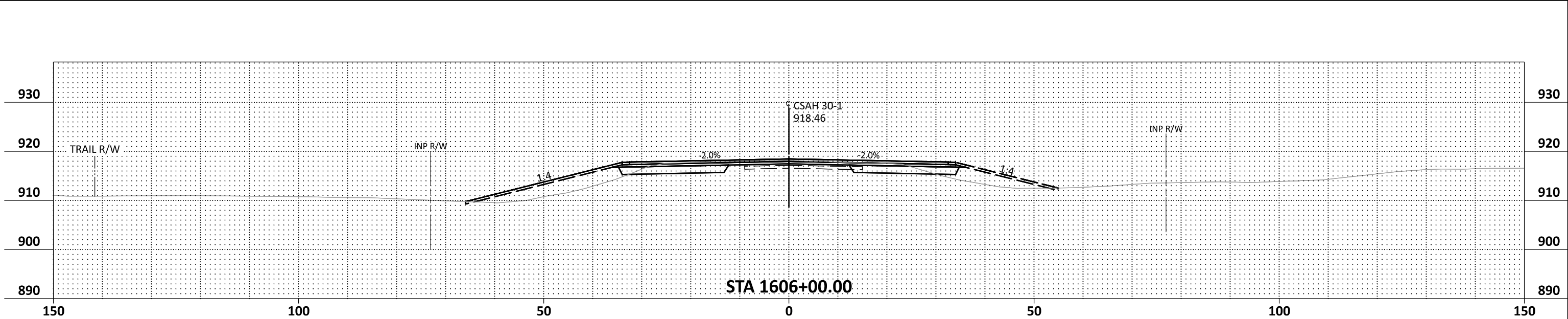
CSAH 30 (Forest Blvd) Improvements
Chisago County, Minnesota

CHISAGO COUNTY, MINNESOTA

CROSS SECTIONS
SAP 013-630-021 / SAP 225-591-007 / SAP 225-102-004

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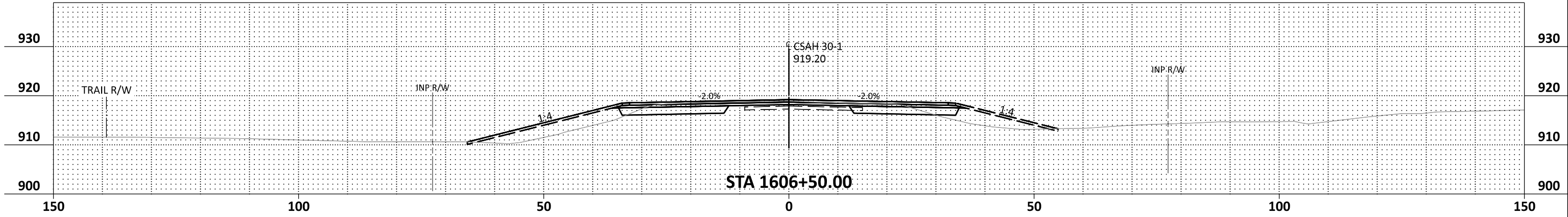
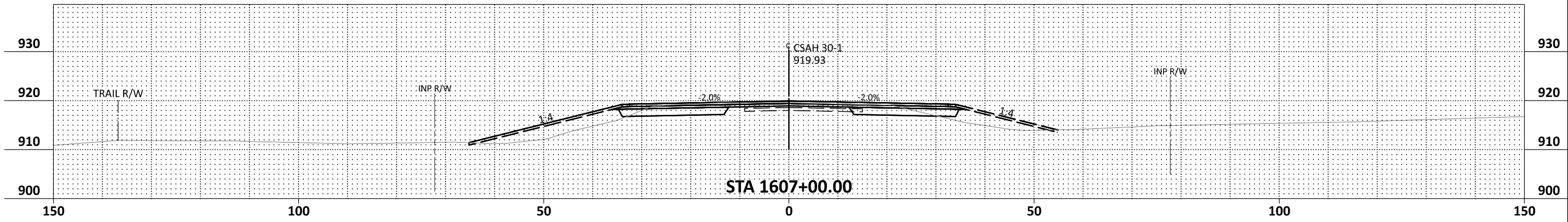
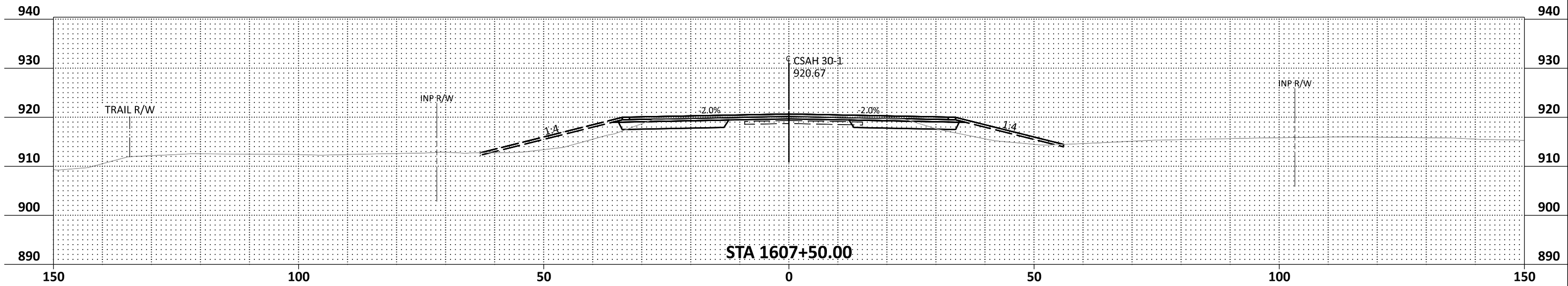
CSAH 30 (Forest Blvd) Improvements
Chisago County, Minnesota

CHISAGO COUNTY, MINNESOTA

CROSS SECTIONS
SAP 013-630-021 / SAP 225-591-007 / SAP 225-102-004

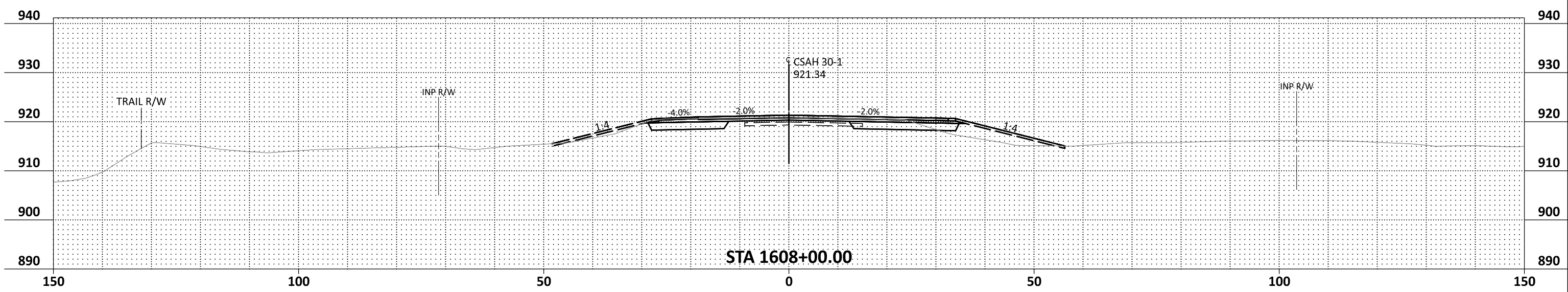
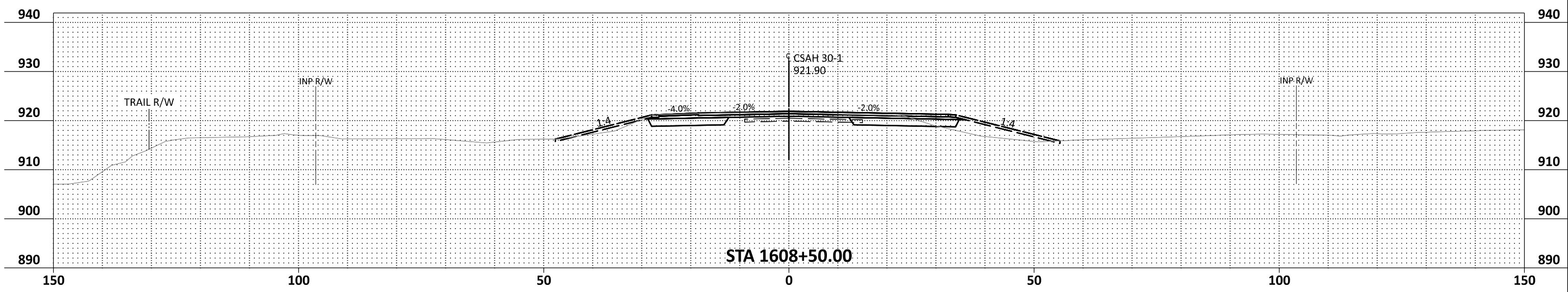
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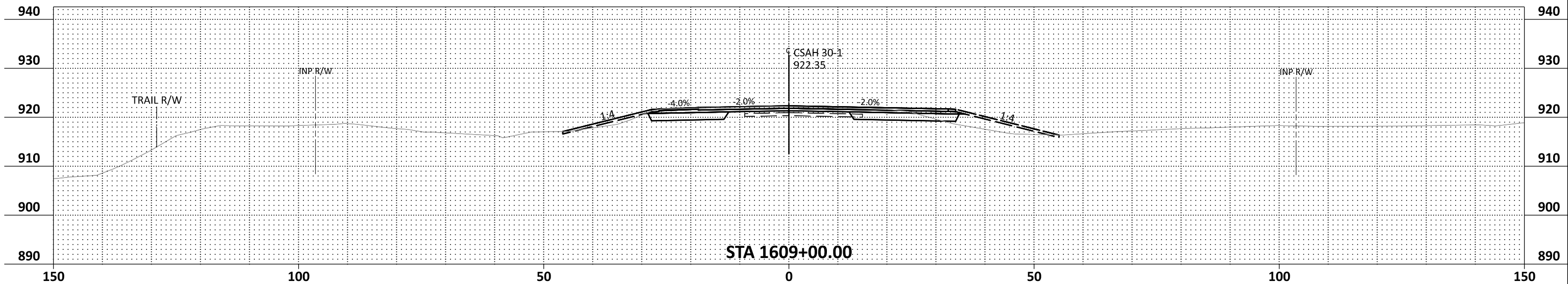
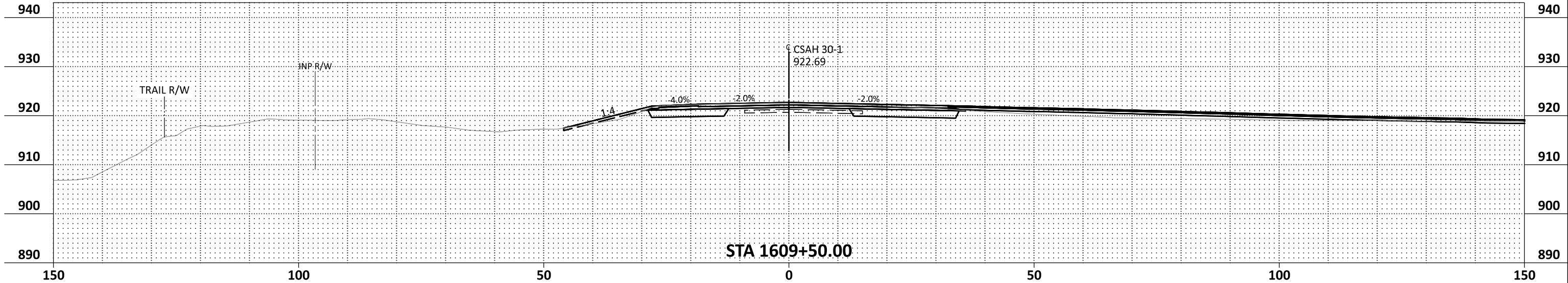
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											SAP 013-630-021 / SAP 225-591-007 / SAP 225-102-004	

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					Plan By: GAD				CROSS SECTIONS SAP 013-630-021 / SAP 225-591-007 / SAP 225-102-004		
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DATE: 9/12/2024 2:12:49 PM
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NO.	DATE	BY	CHK	REVISIONS

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Plan By:	GAD
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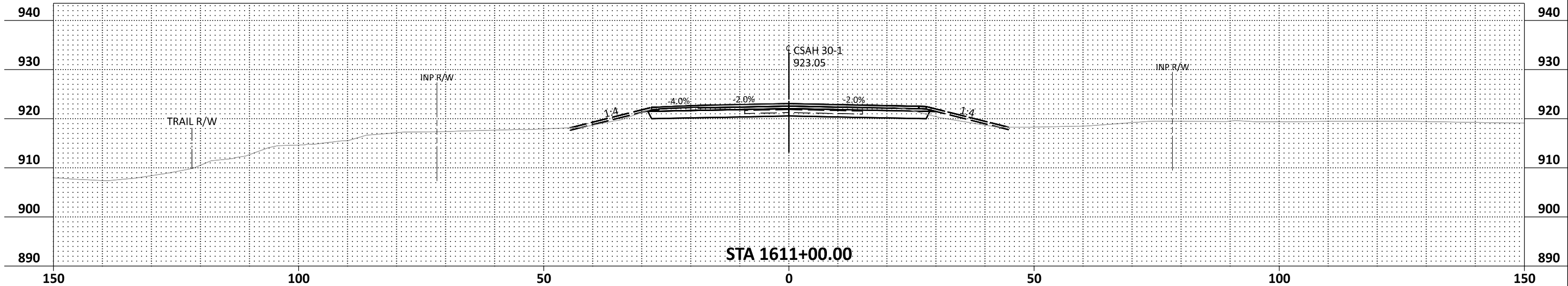
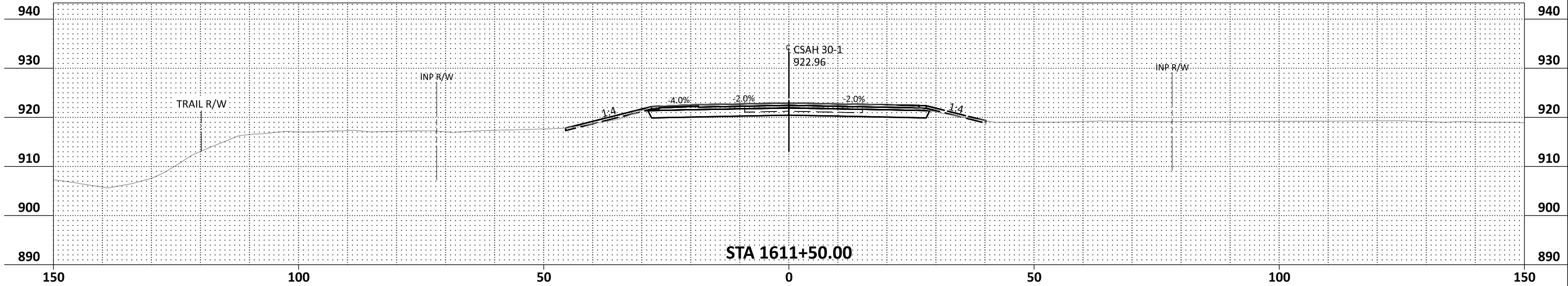
CSAH 30 (Forest Blvd) Improvements
Chisago County, Minnesota

CHISAGO COUNTY, MINNESOTA

CROSS SECTIONS
SAP 013-630-021 / SAP 225-591-007 / SAP 225-102-004

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NO.	DATE	BY	CHK	REVISIONS

Design By:	MKV
Plan By:	GAD
Checked By:	AJP
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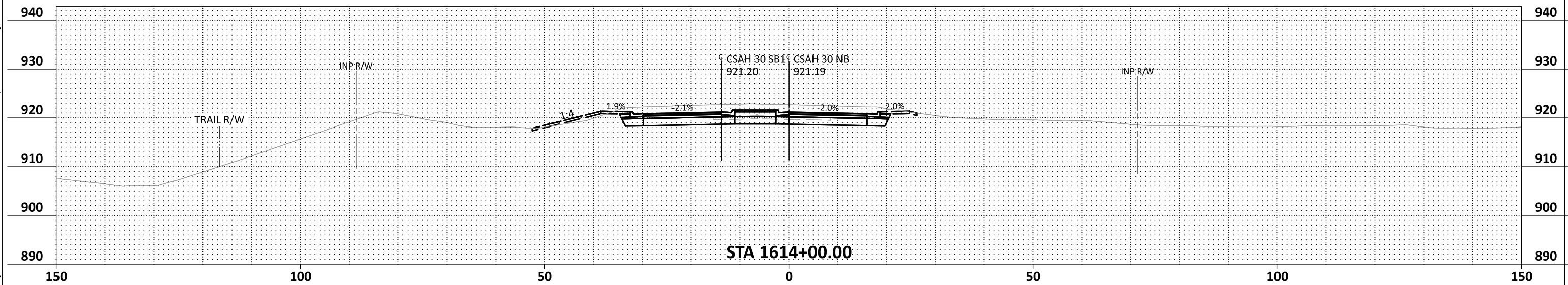
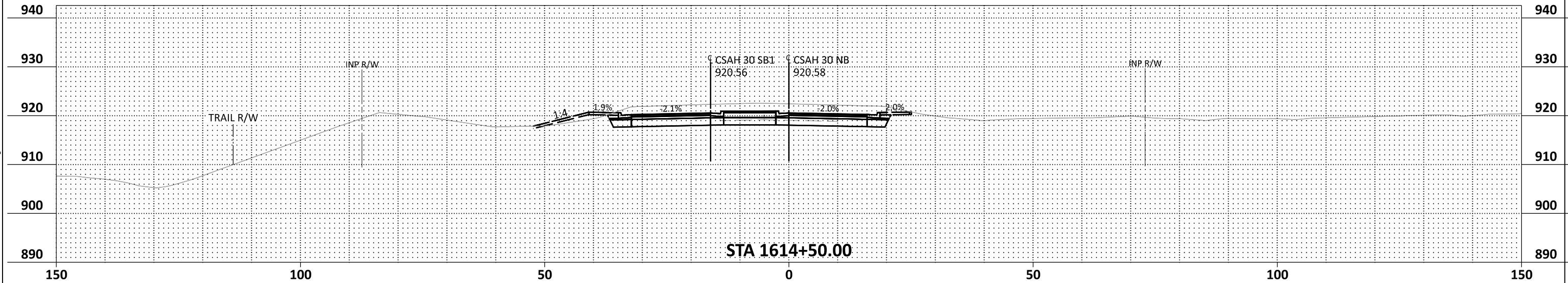
CSAH 30 (Forest Blvd) Improvements
Chisago County, Minnesota

CHISAGO COUNTY, MINNESOTA

CROSS SECTIONS
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NO.	DATE	BY	CHK	REVISIONS

Design By:	MKV
Plan By:	GAD
Checked By:	AJP
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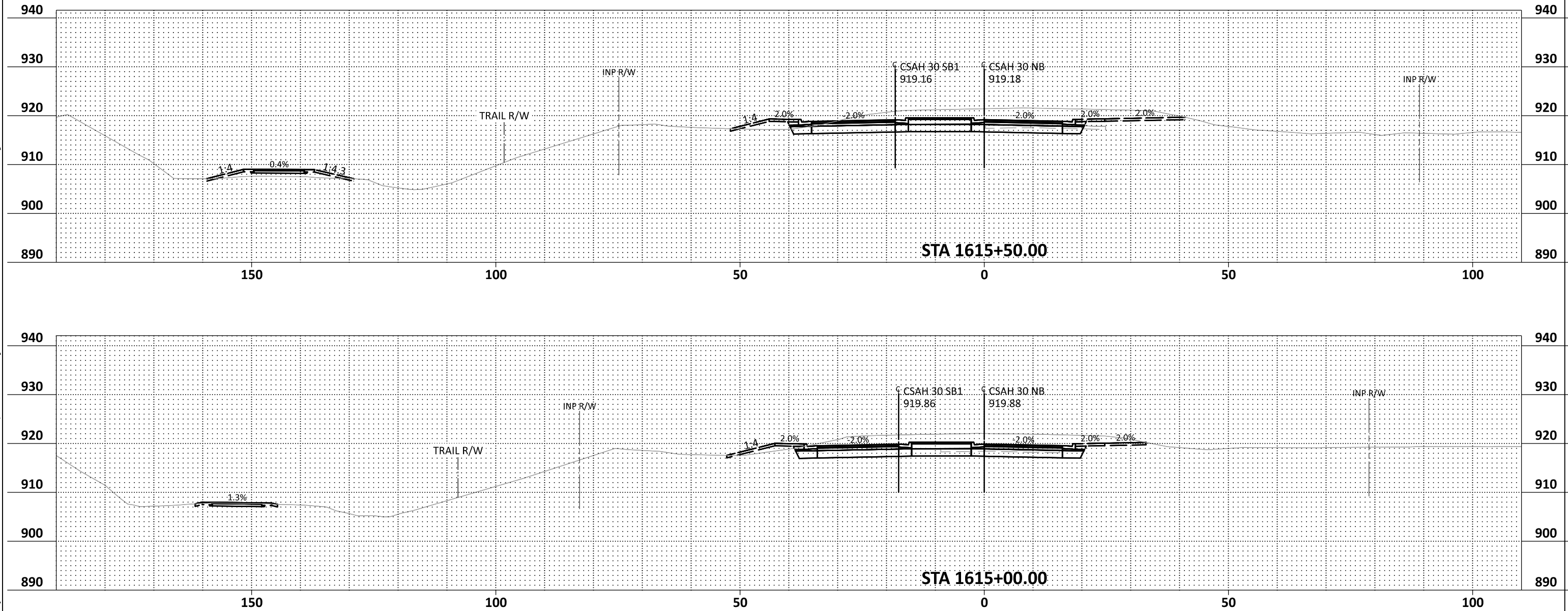
CSAH 30 (Forest Blvd) Improvements
Chisago County, Minnesota

CHISAGO COUNTY, MINNESOTA

CROSS SECTIONS
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Plan By:	GAD
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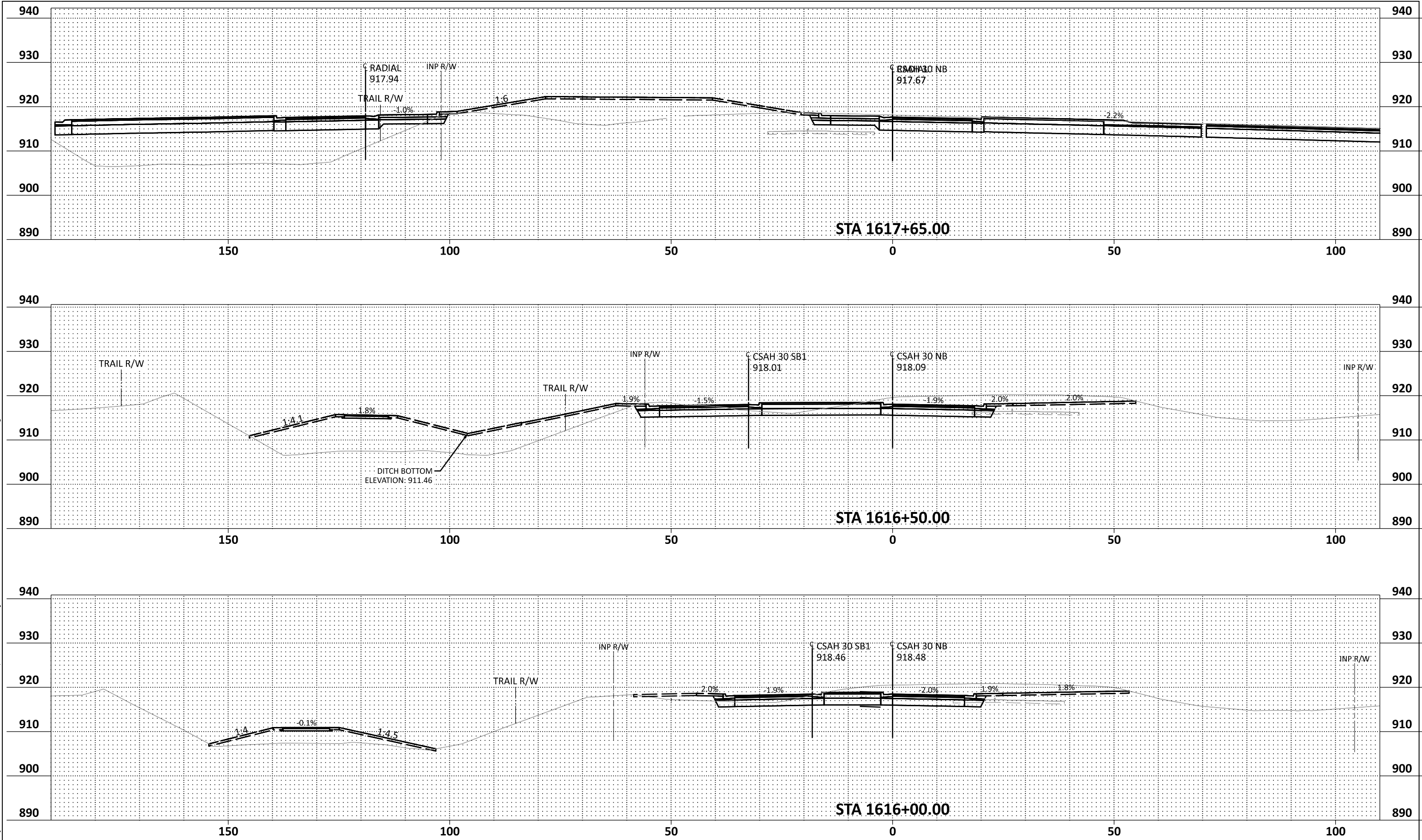
CSAH 30 (Forest Blvd) Improvements
Chisago County, Minnesota

CHISAGO COUNTY, MINNESOTA

CROSS SECTIONS
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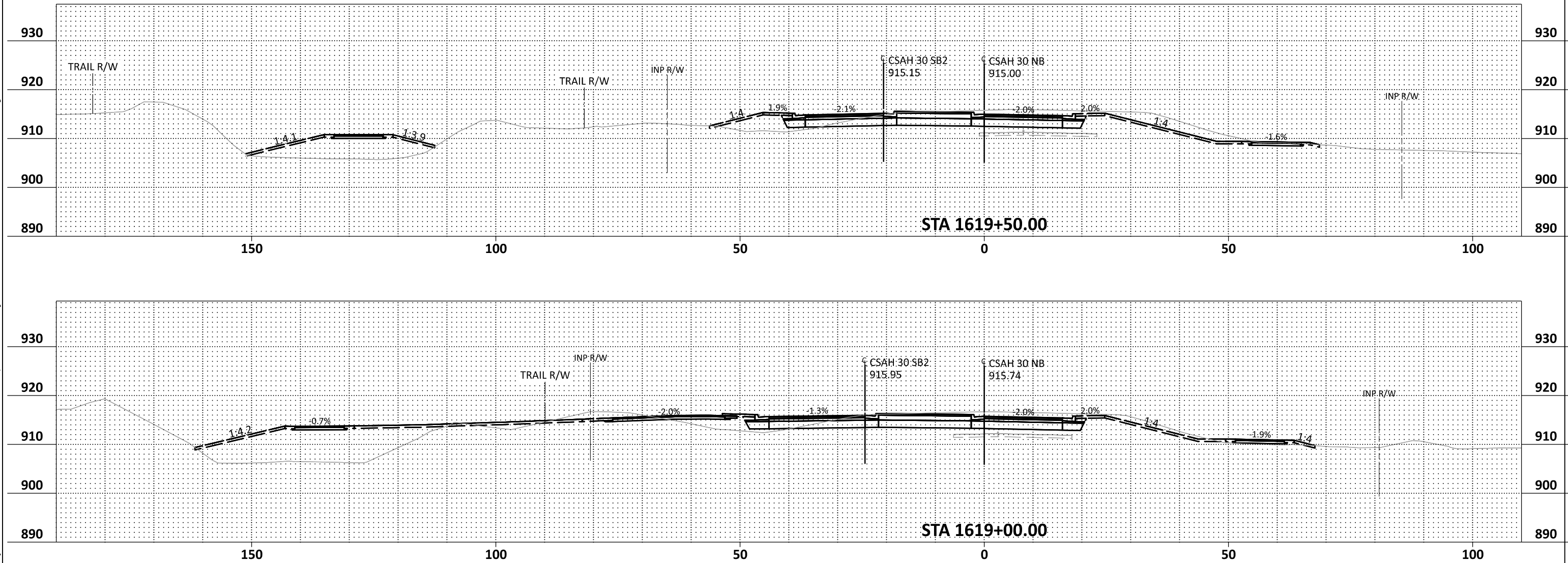
CSAH 30 (Forest Blvd) Improvements
Chisago County, Minnesota

CHISAGO COUNTY, MINNESOTA

CROSS SECTIONS
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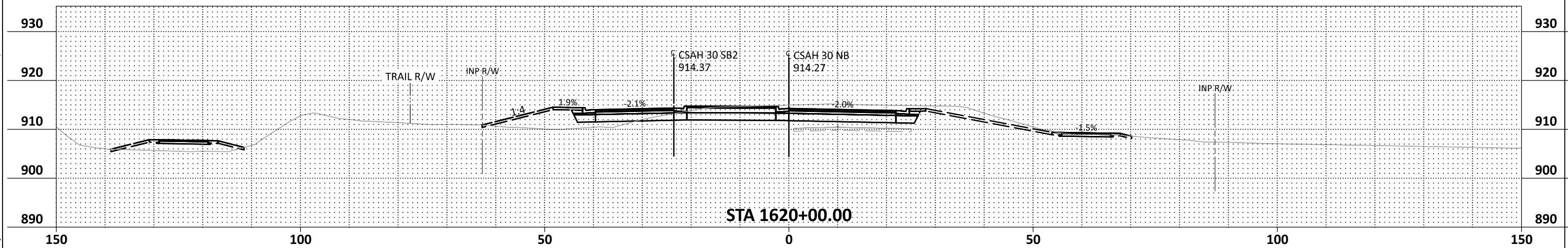
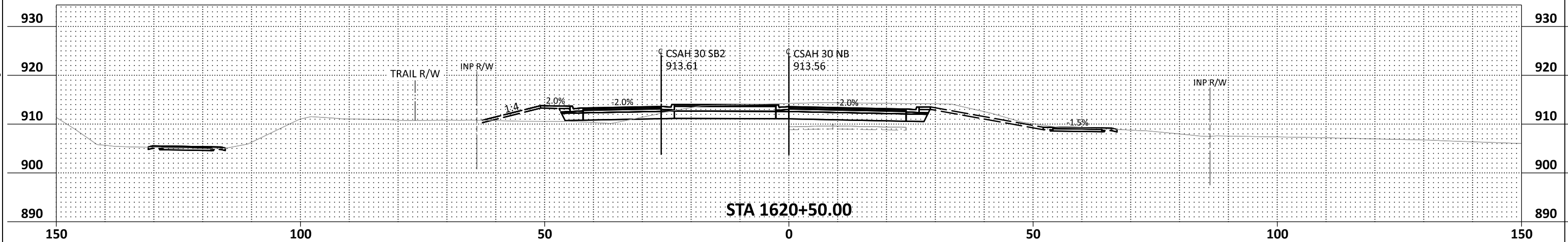
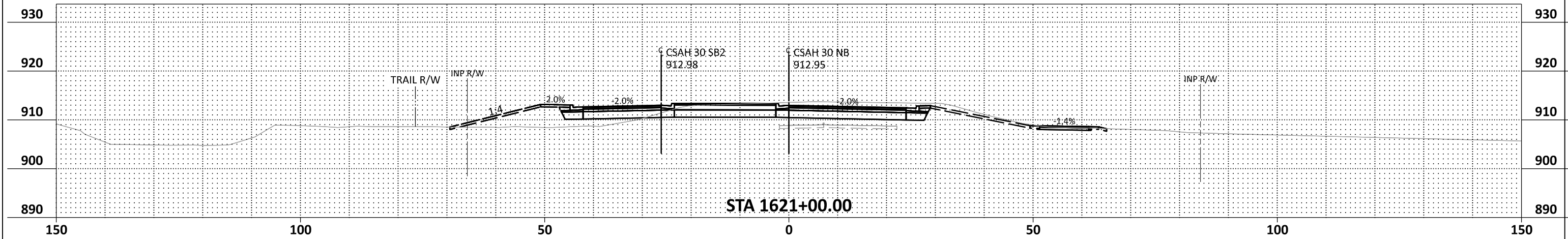


CSAH 30 (Forest Blvd) Improvements
Chisago County, Minnesota

CHISAGO COUNTY, MINNESOTA
CROSS SECTIONS
SAP 013-630-021 / SAP 225-591-007 / SAP 225-102-004

SHEET
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Design By:	MKV
Plan By:	GAD
Checked By:	AJP
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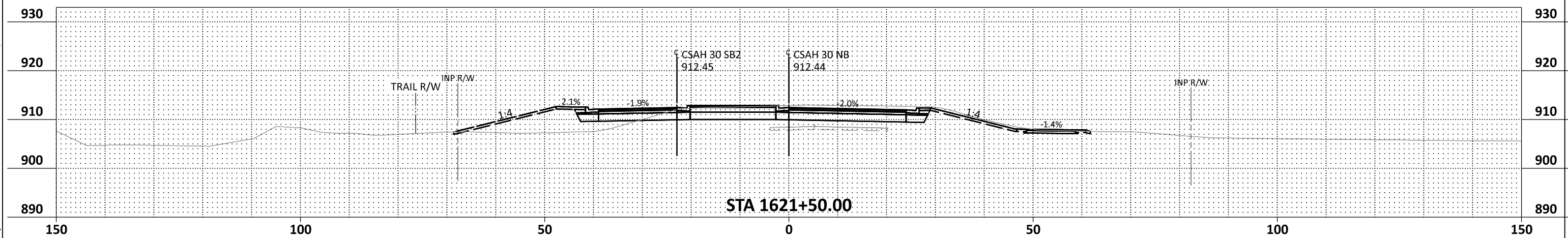
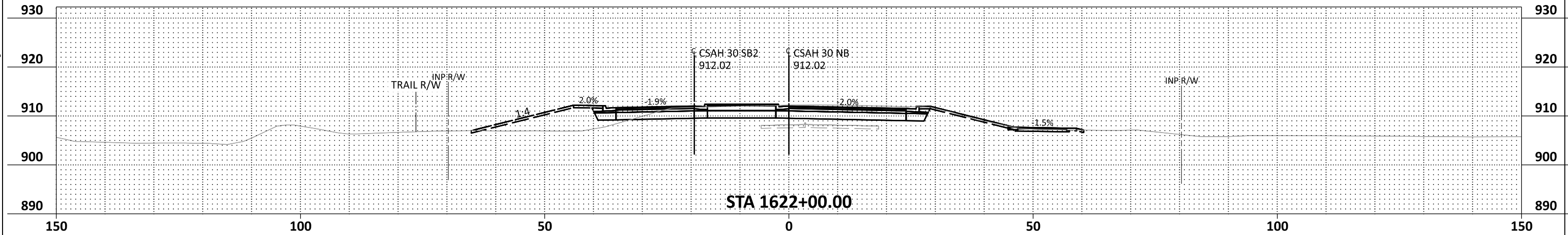
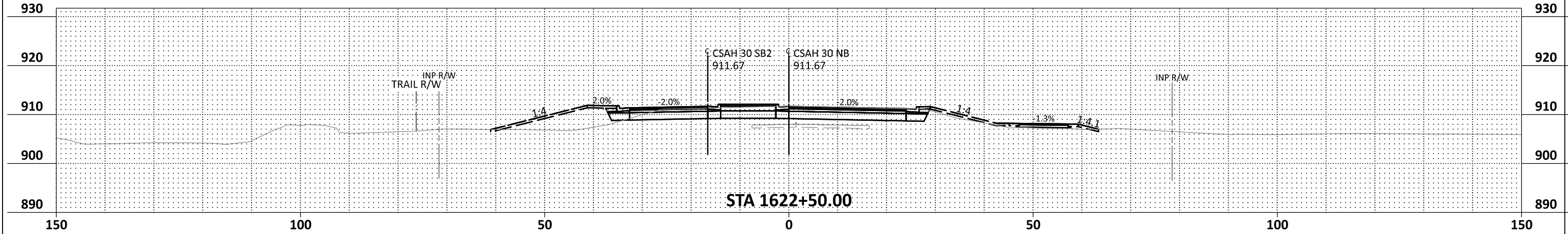
CSAH 30 (Forest Blvd) Improvements
Chisago County, Minnesota

CHISAGO COUNTY, MINNESOTA

CROSS SECTIONS
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DATE: 9/12/2024 2:13:20 PM
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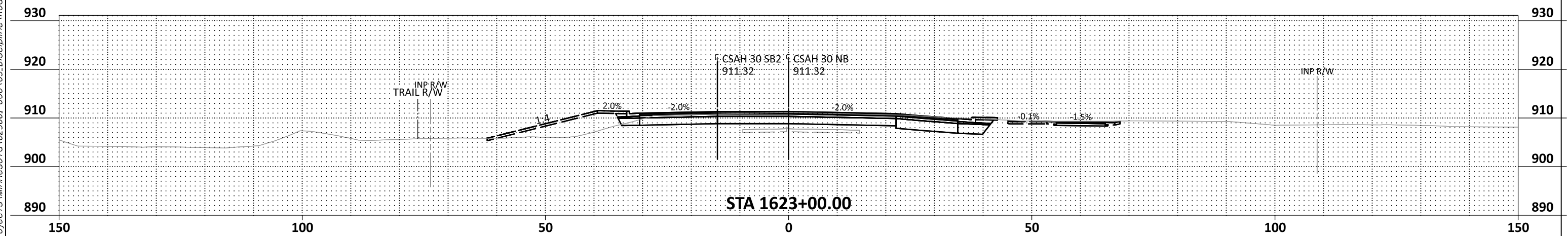
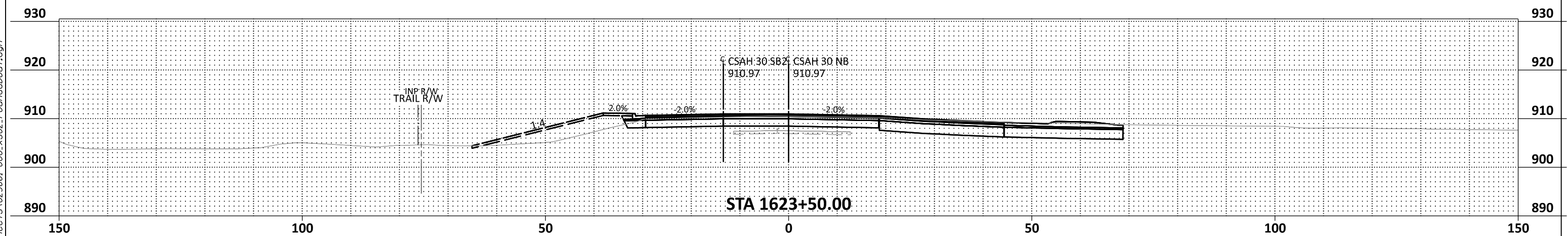
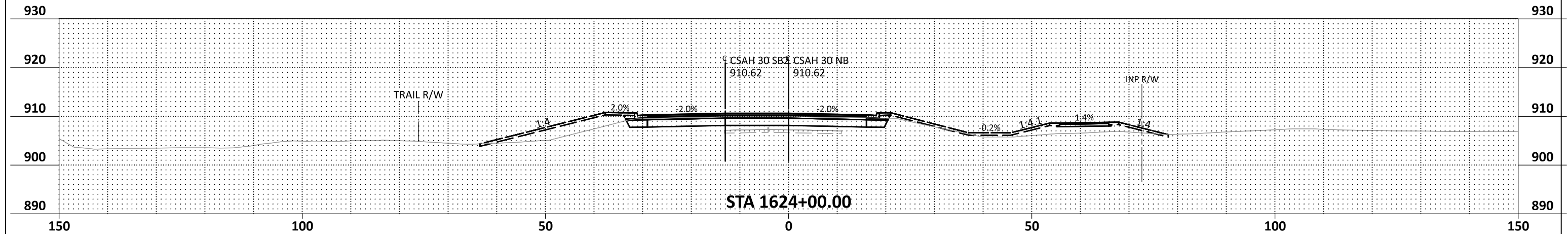


CSAH 30 (Forest Blvd) Improvements
Chisago County, Minnesota

CHISAGO COUNTY, MINNESOTA

CROSS SECTIONS
SAP 013-630-021 / SAP 225-591-007 / SAP 225-102-004

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NO.	DATE	BY	CHK	REVISIONS	Design By:
					MKV
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Design By:	MKV
Plan By:	GAD
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Approved By:	MKV



CSAH 30 (Forest Blvd) Improvements

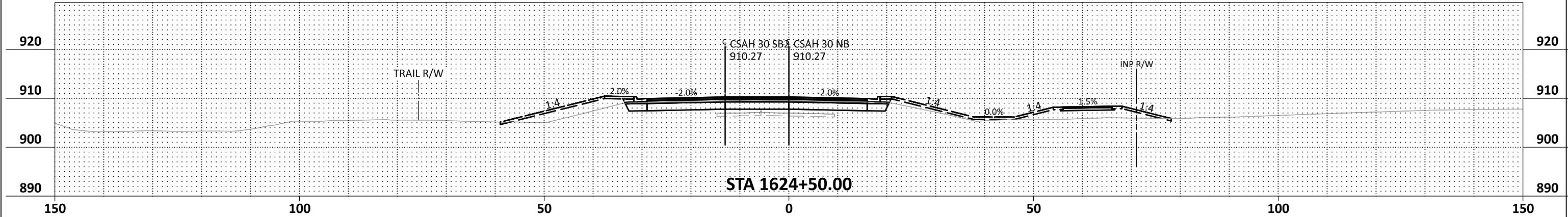
Chisago County, Minnesota

CHISAGO COUNTY, MINNESOTA

CROSS SECTIONS
SAP 013-630-021 / SAP 225-591-007 / SAP 225-102-004

SHEET
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SHEETS

DATE: 9/12/2024 2:13:23 PM
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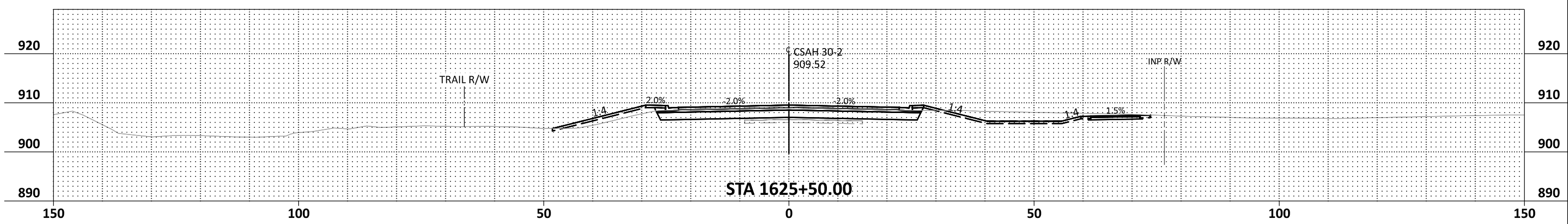
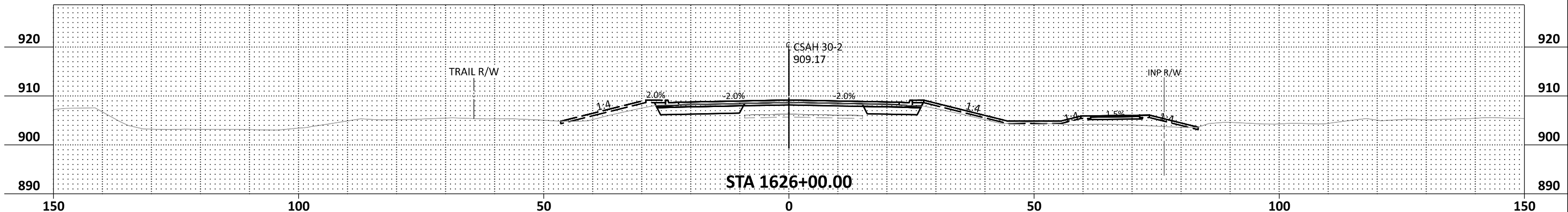
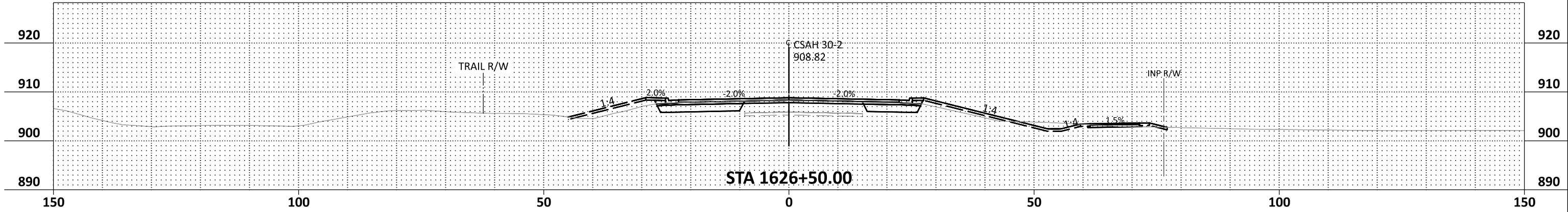
CSAH 30 (Forest Blvd) Improvements
Chisago County, Minnesota

CHISAGO COUNTY, MINNESOTA

CROSS SECTIONS
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SHEET
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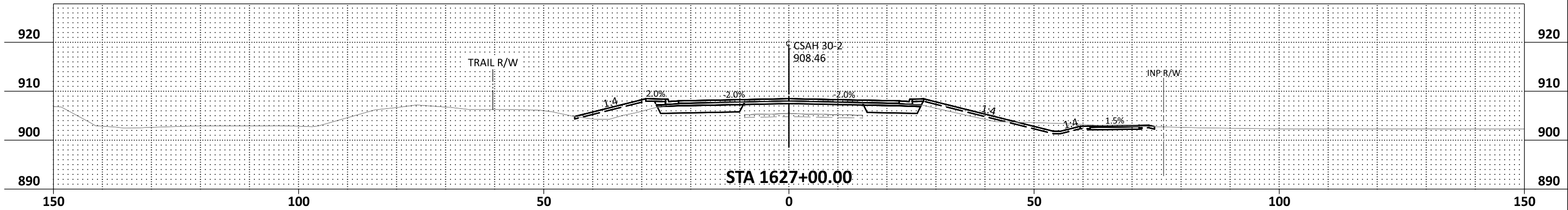
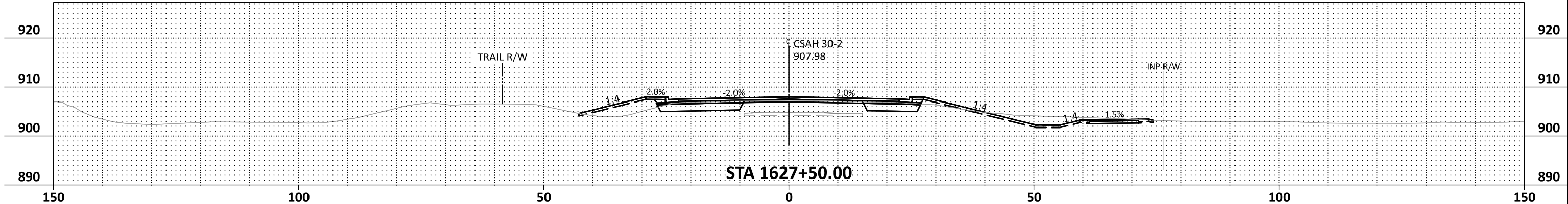
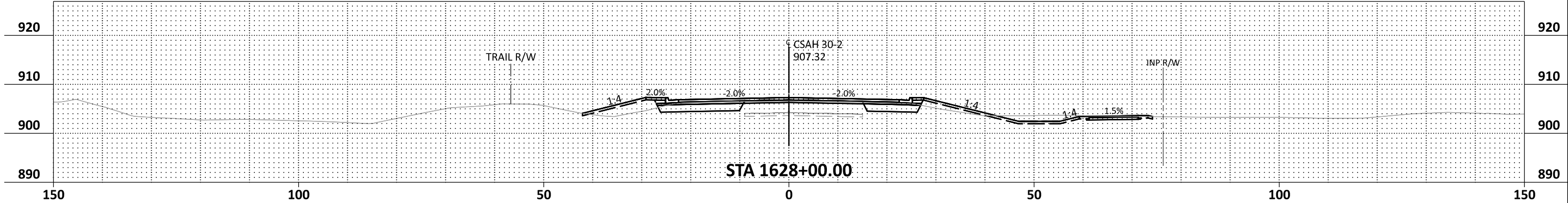


CSAH 30 (Forest Blvd) Improvements
Chisago County, Minnesota

CHISAGO COUNTY, MINNESOTA
CROSS SECTIONS
SAP 013-630-021 / SAP 225-591-007 / SAP 225-102-004

SHEET
X32
OF
X65
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DATE: 9/12/2024 2:13:46 PM
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NO.	DATE	BY	CHK	REVISIONS

Design By:	MKV
Plan By:	GAD
Checked By:	AJP
Approved By:	MKV



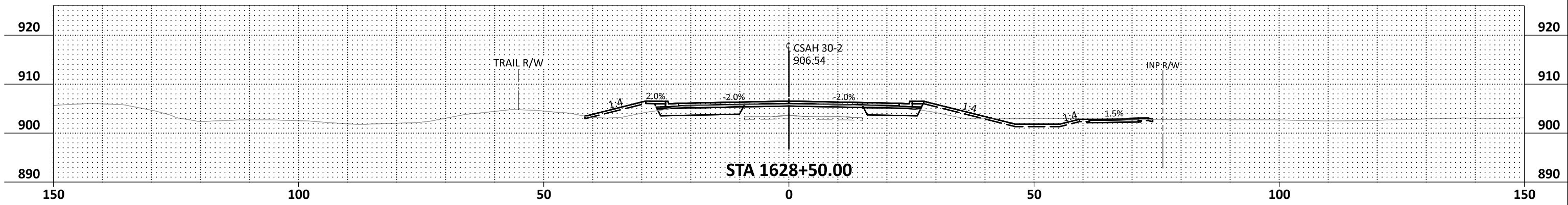
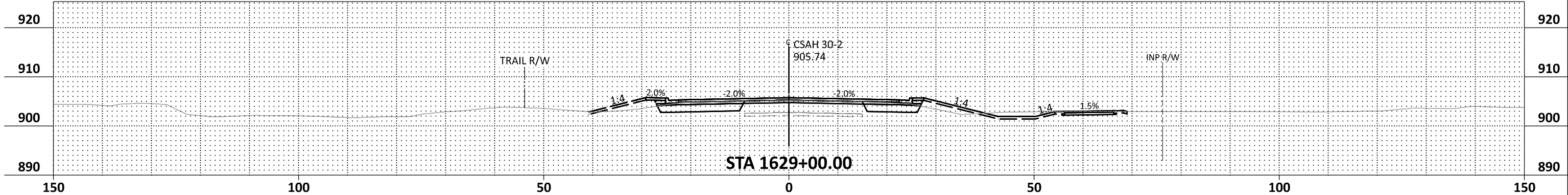
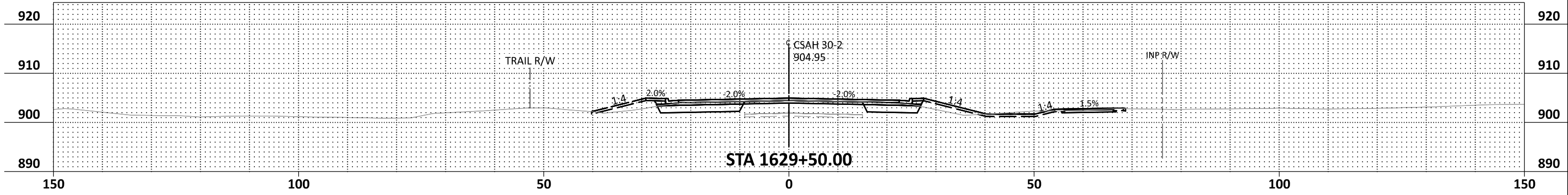
CSAH 30 (Forest Blvd) Improvements
Chisago County, Minnesota

CHISAGO COUNTY, MINNESOTA

CROSS SECTIONS
SAP 013-630-021 / SAP 225-591-007 / SAP 225-102-004

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Plan By:	GAD
Checked By:	AJP
Approved By:	MKV



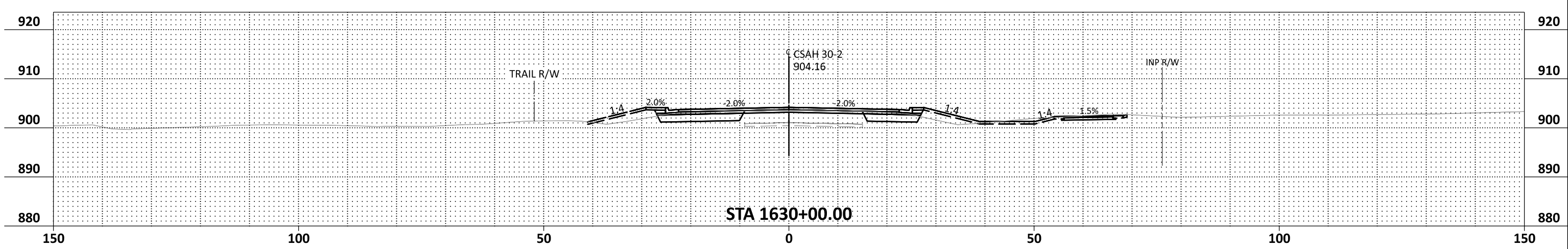
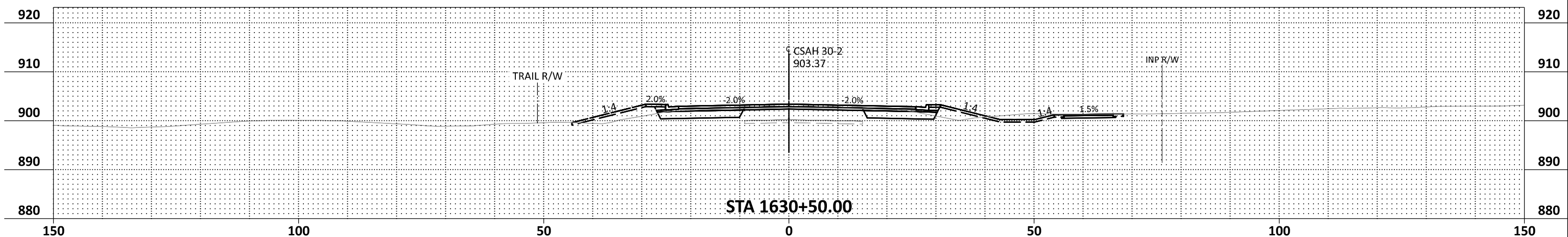
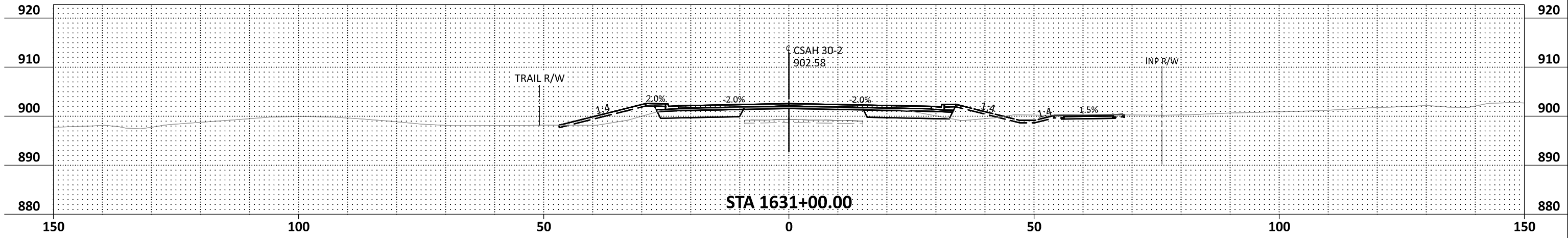
CSAH 30 (Forest Blvd) Improvements
Chisago County, Minnesota

CHISAGO COUNTY, MINNESOTA

CROSS SECTIONS
SAP 013-630-021 / SAP 225-591-007 / SAP 225-102-004

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Plan By:	GAD
Checked By:	AJP
Approved By:	MKV

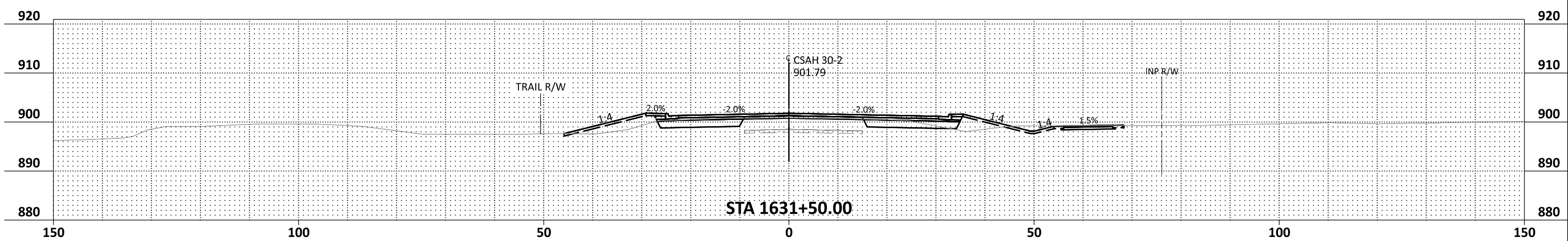
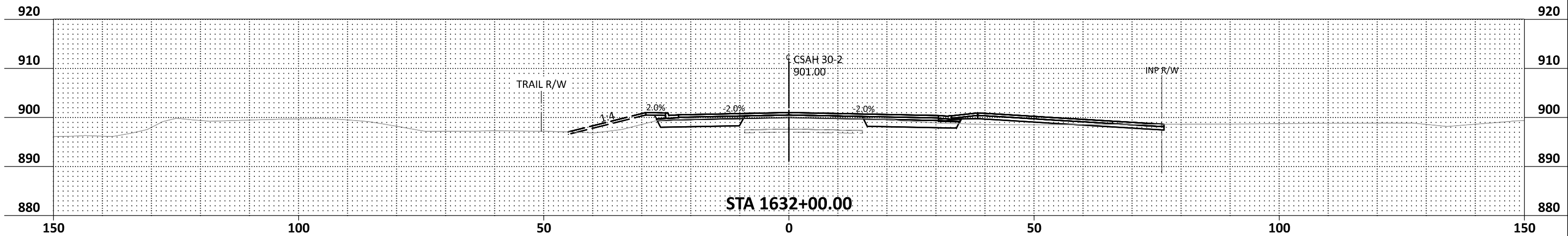
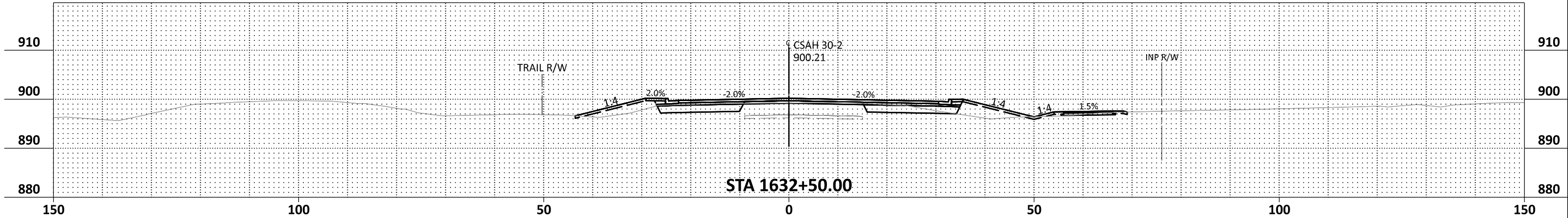


CSAH 30 (Forest Blvd) Improvements
Chisago County, Minnesota

CHISAGO COUNTY, MINNESOTA
CROSS SECTIONS
SAP 013-630-021 / SAP 225-591-007 / SAP 225-102-004

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Design By:	MKV
Plan By:	GAD
Checked By:	AJP
Approved By:	MKV

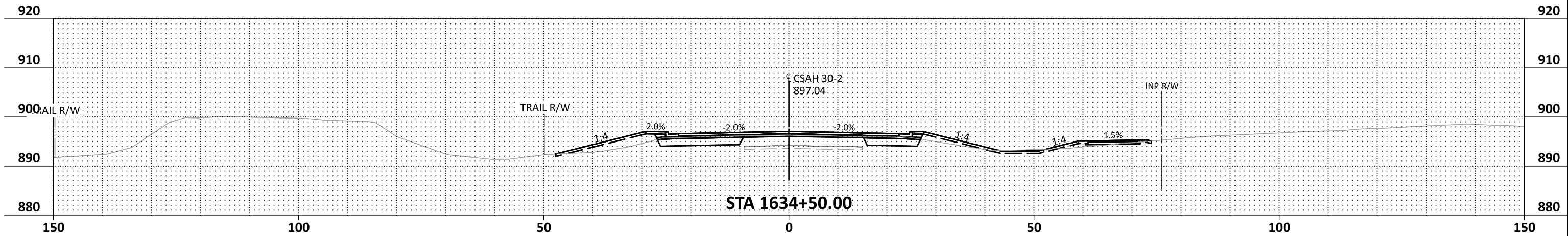
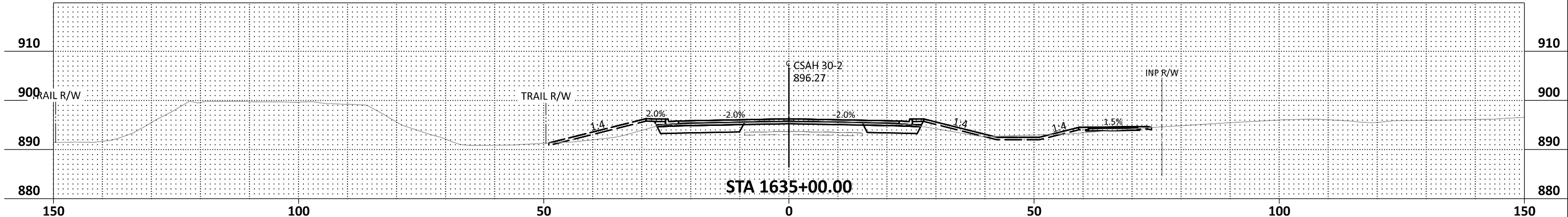
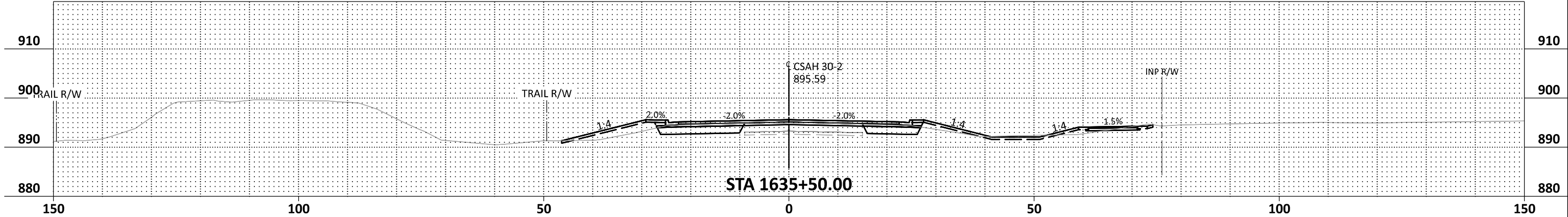


CSAH 30 (Forest Blvd) Improvements
Chisago County, Minnesota

CHISAGO COUNTY, MINNESOTA
CROSS SECTIONS
SAP 013-630-021 / SAP 225-591-007 / SAP 225-102-004

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Plan By:	GAD
Checked By:	AJP
Approved By:	MKV

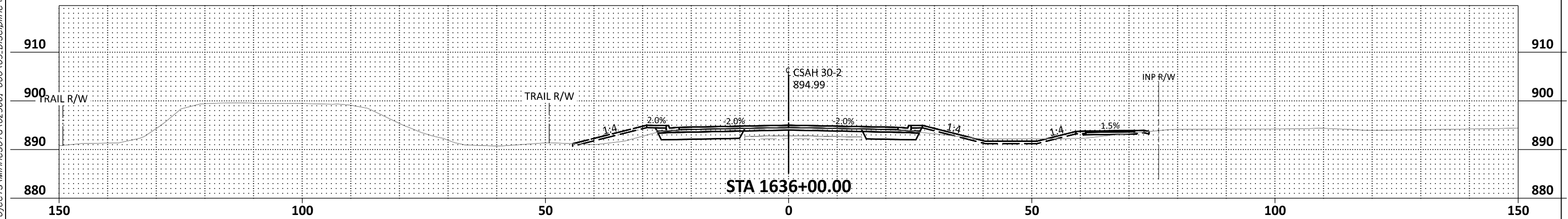
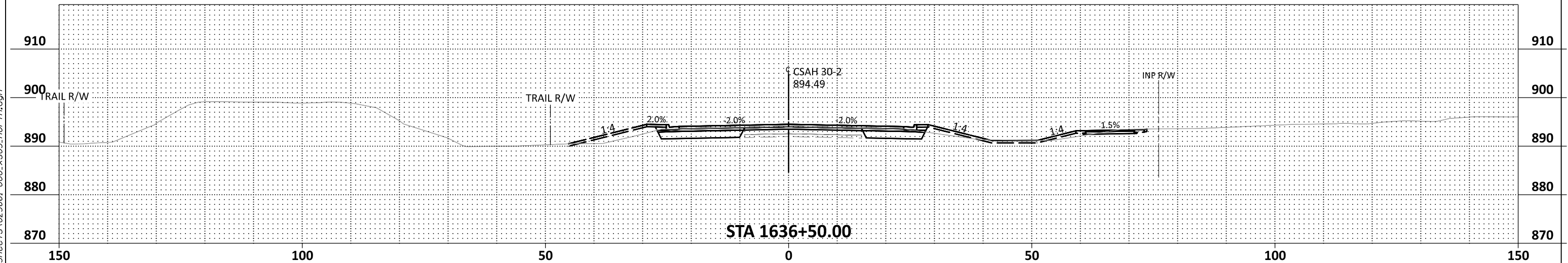
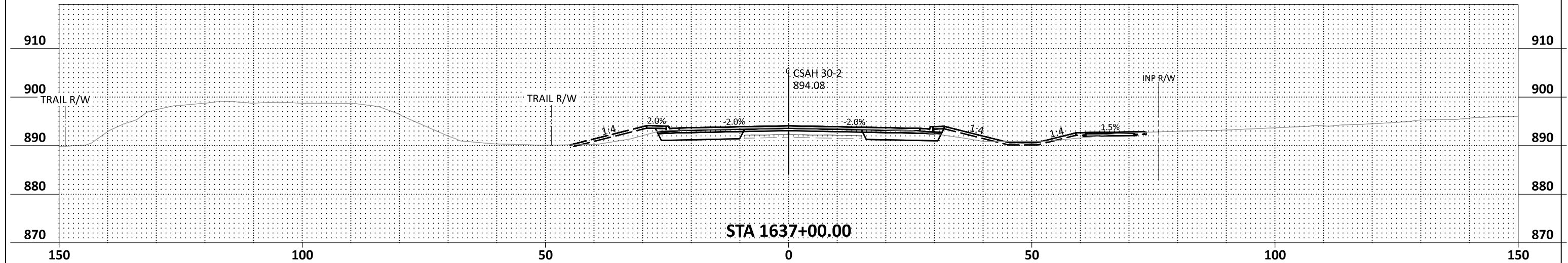


CSAH 30 (Forest Blvd) Improvements
Chisago County, Minnesota

CHISAGO COUNTY, MINNESOTA

CROSS SECTIONS
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					Plan By:	GAD
					Checked By:	AJP
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Design By:	MKV
Plan By:	GAD
Checked By:	AJP
Approved By:	MKV



CSAH 30 (Forest Blvd) Improvements

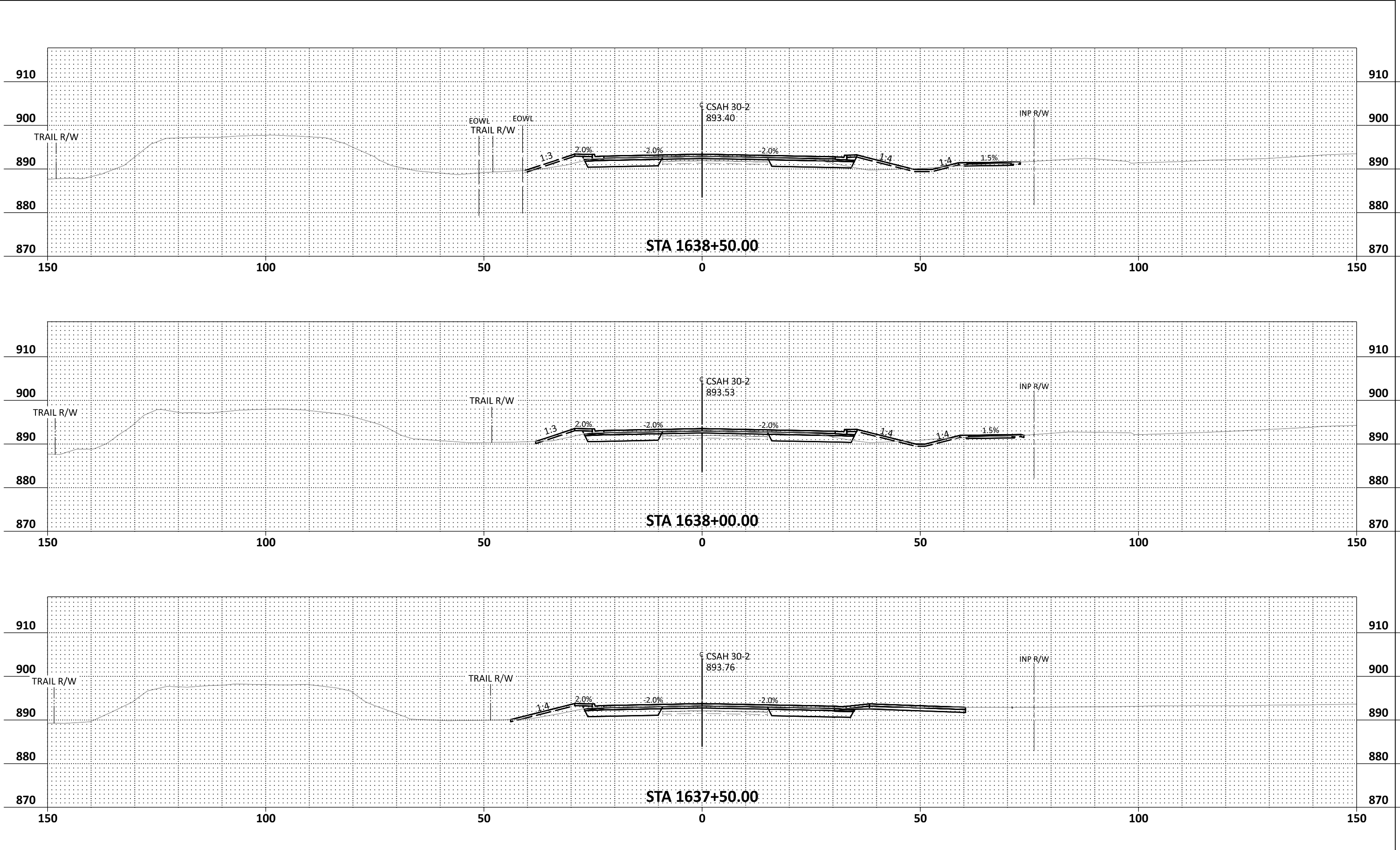
Chisago County, Minnesota

CHISAGO COUNTY, MINNESOTA

CROSS SECTIONS
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Design By:	MKV
Plan By:	GAD
Checked By:	AJP
Approved By:	MKV



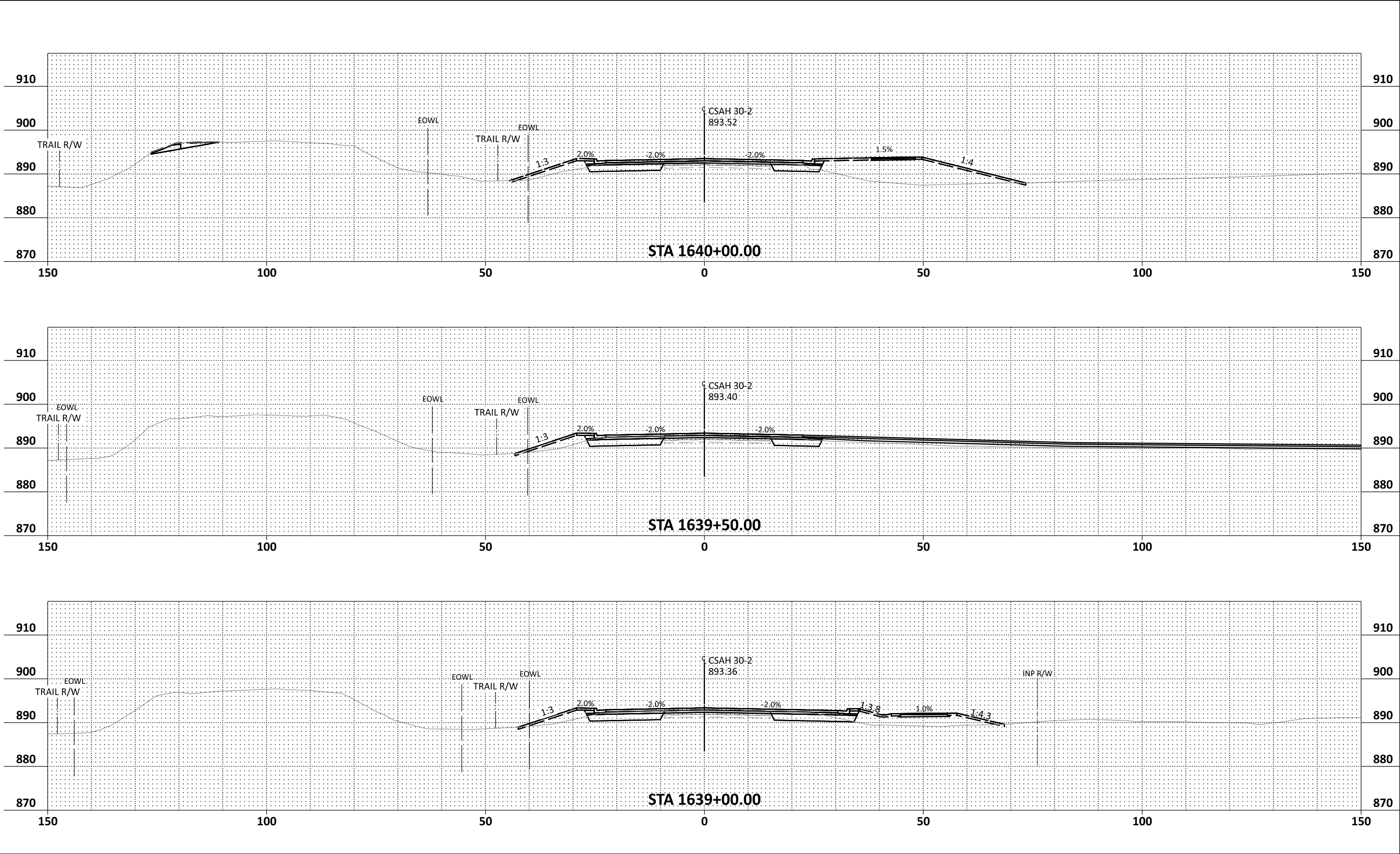
CSAH 30 (Forest Blvd) Improvements
Chisago County, Minnesota

CHISAGO COUNTY, MINNESOTA

CROSS SECTIONS
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SHEET
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Design By:	MKV
Plan By:	GAD
Checked By:	AJP
Approved By:	MKV



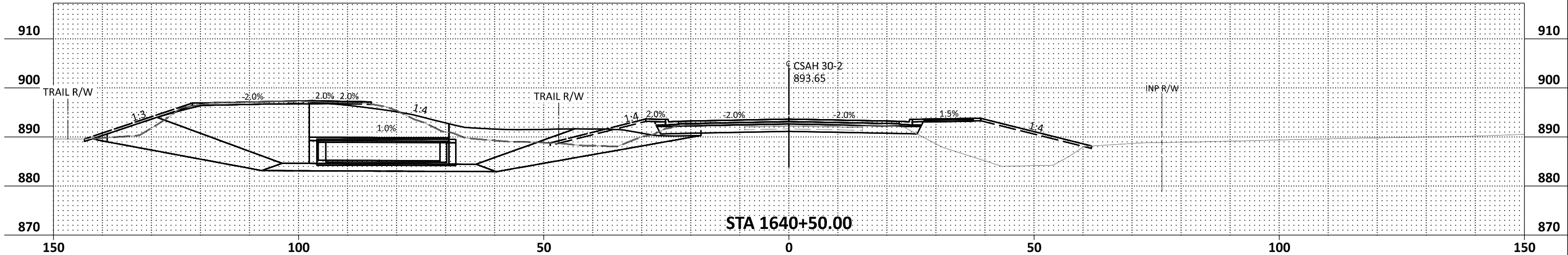
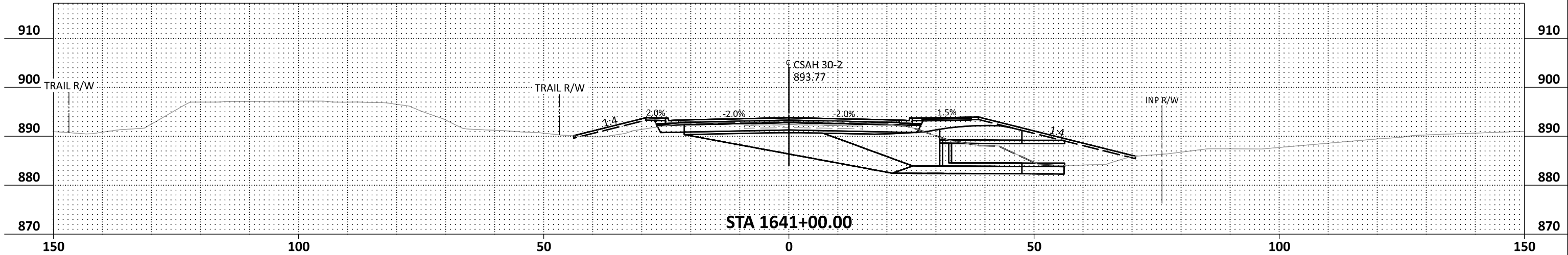
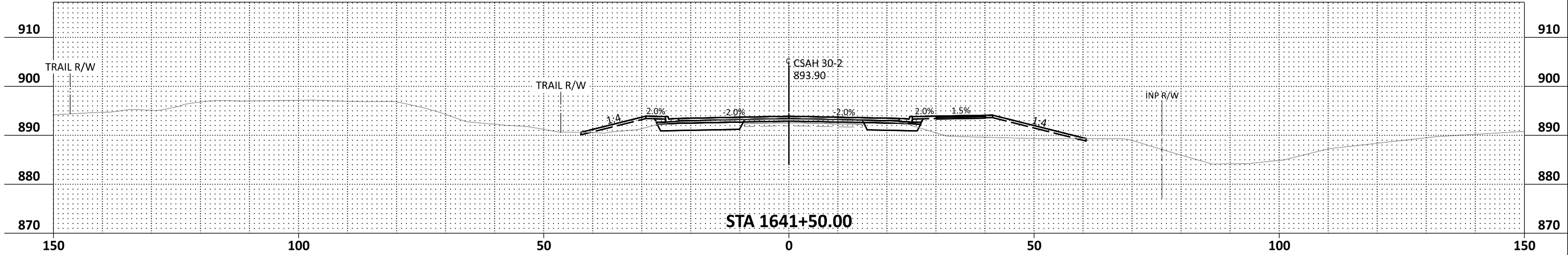
CSAH 30 (Forest Blvd) Improvements
Chisago County, Minnesota

CHISAGO COUNTY, MINNESOTA

CROSS SECTIONS
SAP 013-630-021 / SAP 225-591-007 / SAP 225-102-004

SHEET
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OF
X65
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NO.	DATE	BY	CHK	REVISIONS

Design By:	MKV
Plan By:	GAD
Checked By:	AJP
Approved By:	MKV

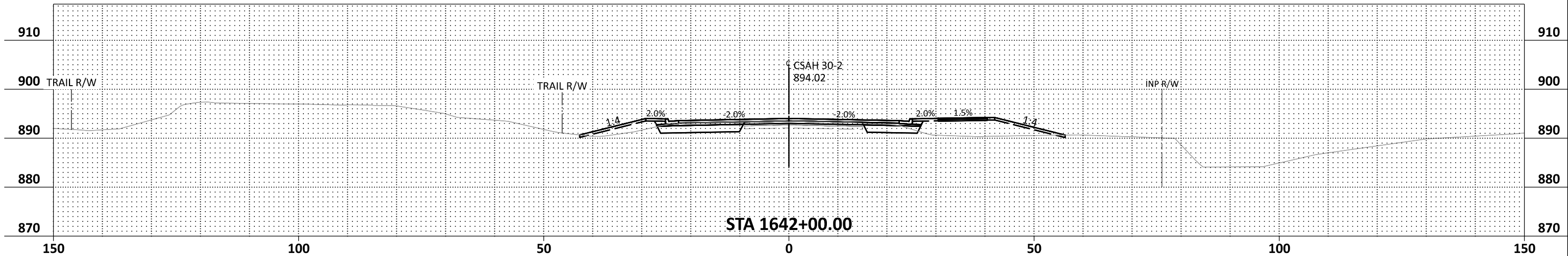
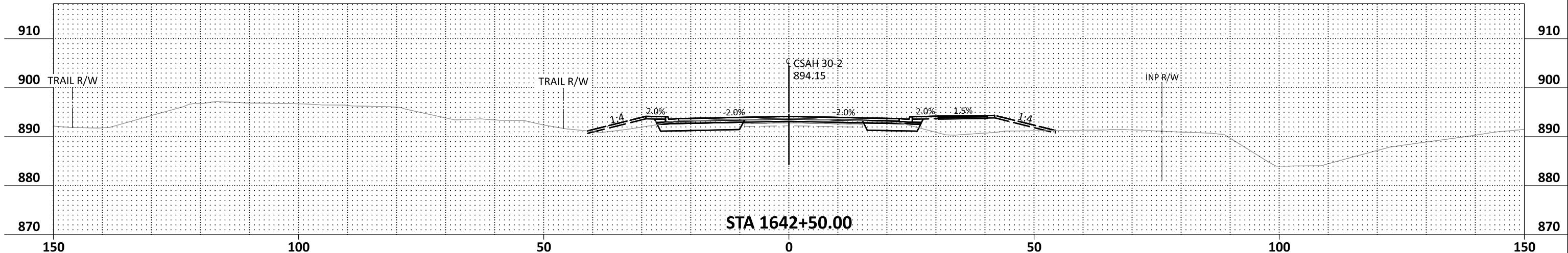
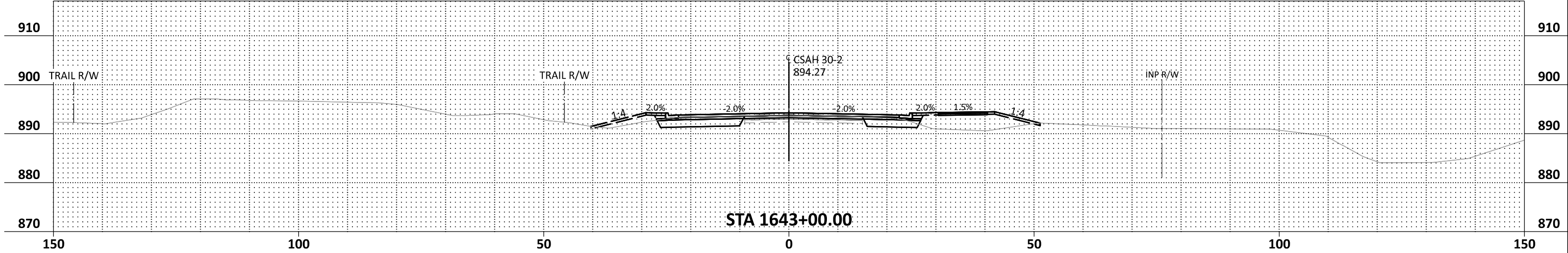


CSAH 30 (Forest Blvd) Improvements
Chisago County, Minnesota

CHISAGO COUNTY, MINNESOTA
CROSS SECTIONS
SAP 013-630-021 / SAP 225-591-007 / SAP 225-102-004

SHEET
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SHEETS

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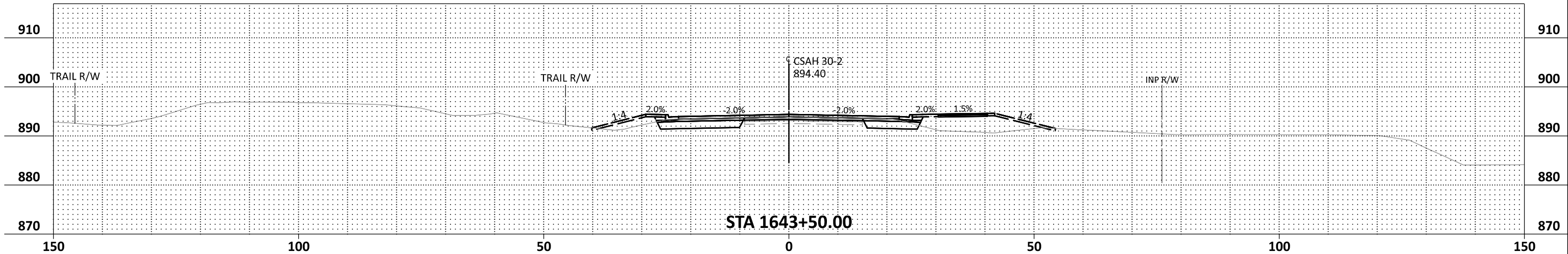
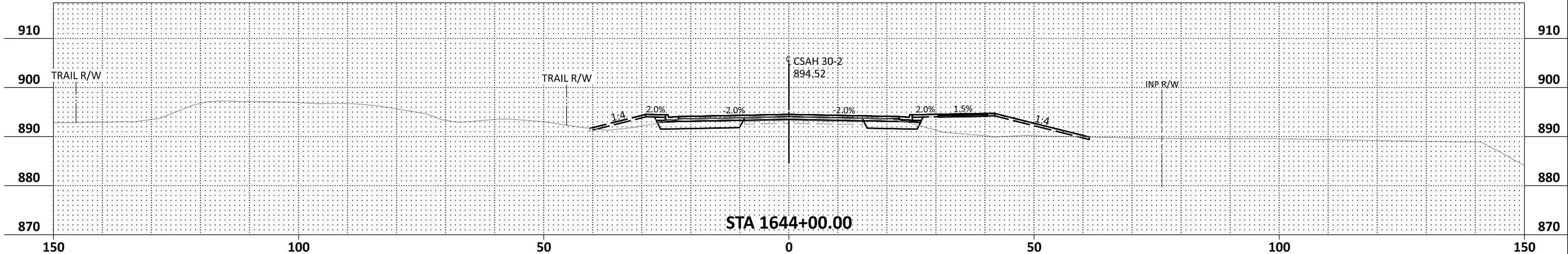
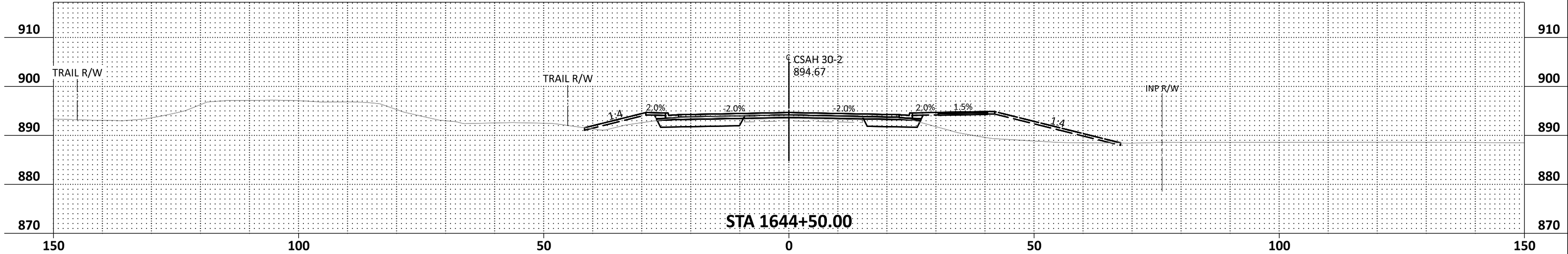
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Plan By:	GAD
Checked By:	AJP
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CSAH 30 (Forest Blvd) Improvements
Chisago County, Minnesota

CHISAGO COUNTY, MINNESOTA	SHEET X43
CROSS SECTIONS	OF
SAP 013-630-021 / SAP 225-591-007 / SAP 225-102-004	X65
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NO.	DATE	BY	CHK	REVISIONS

Design By:	MKV
Plan By:	GAD
Checked By:	AJP
Approved By:	MKV



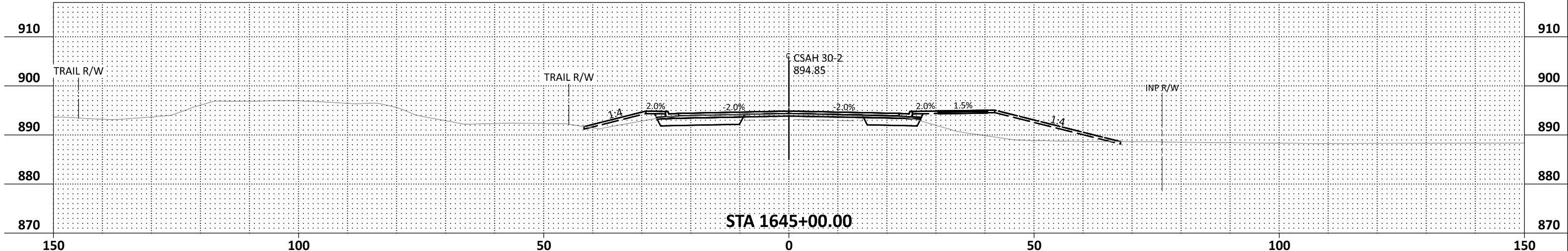
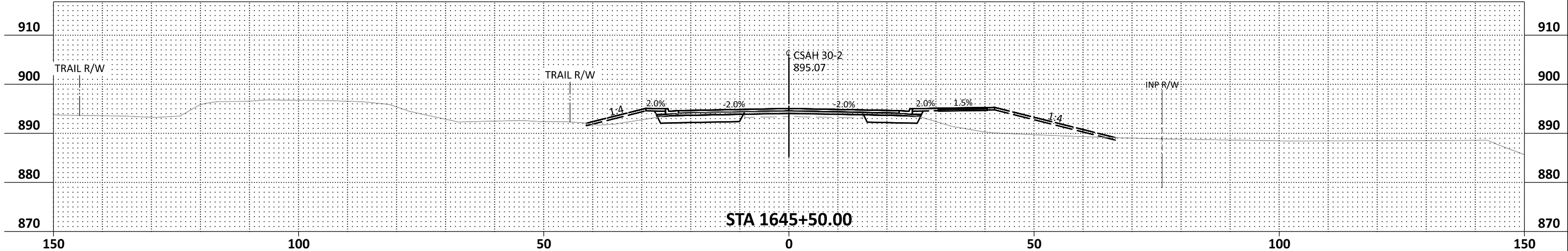
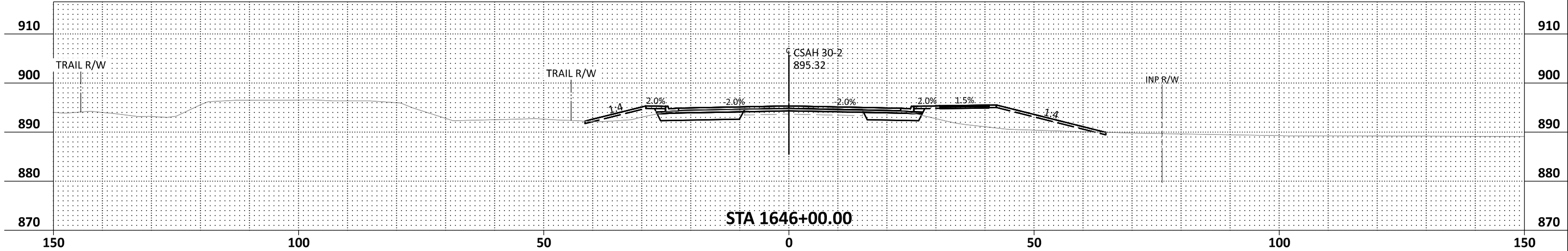
CSAH 30 (Forest Blvd) Improvements
Chisago County, Minnesota

CHISAGO COUNTY, MINNESOTA

CROSS SECTIONS
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SHEET
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Plan By:	GAD
Checked By:	AJP
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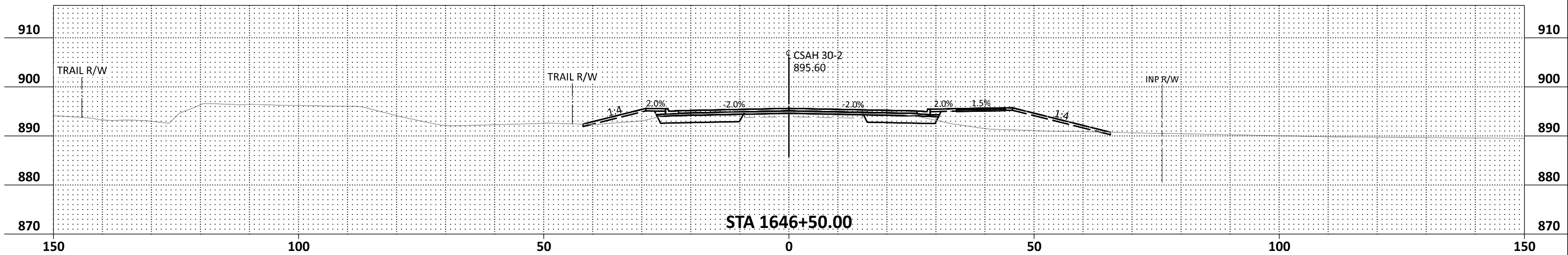
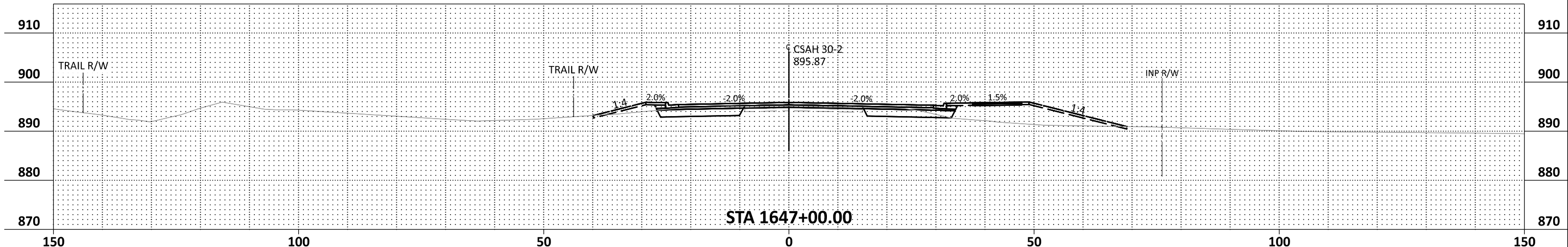
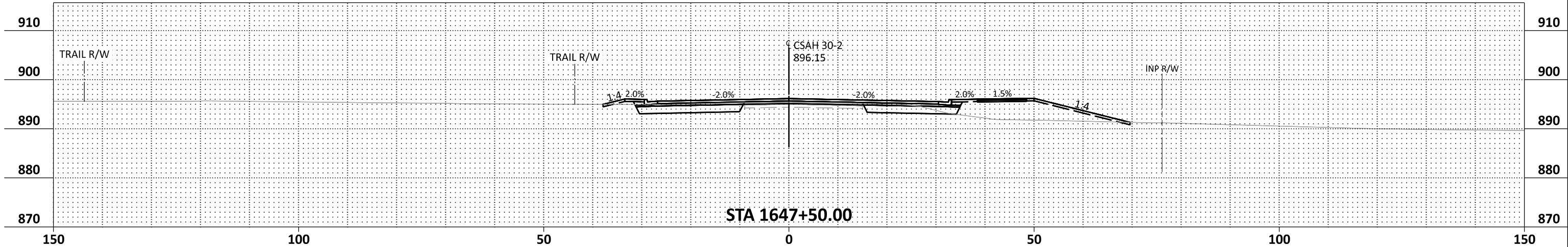
CSAH 30 (Forest Blvd) Improvements
Chisago County, Minnesota

CHISAGO COUNTY, MINNESOTA

CROSS SECTIONS
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Plan By:	GAD
Checked By:	AJP
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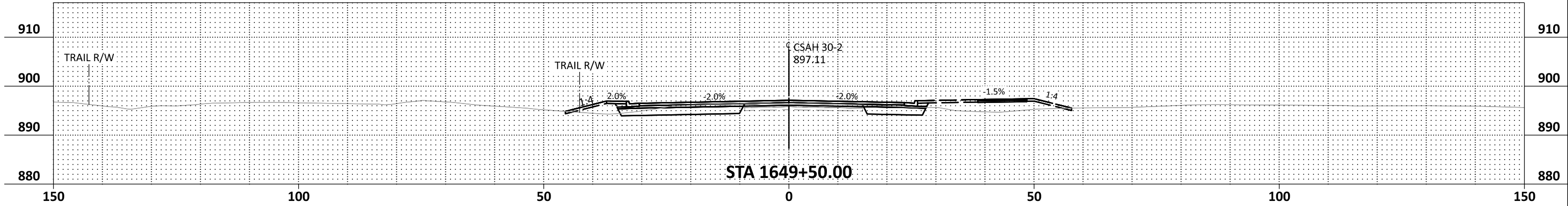
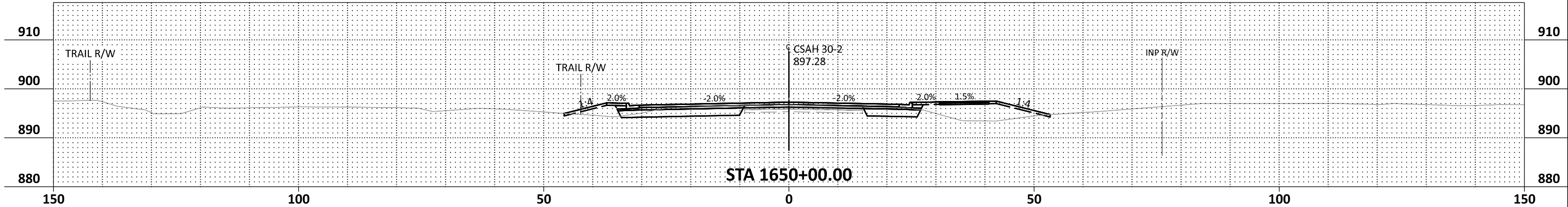
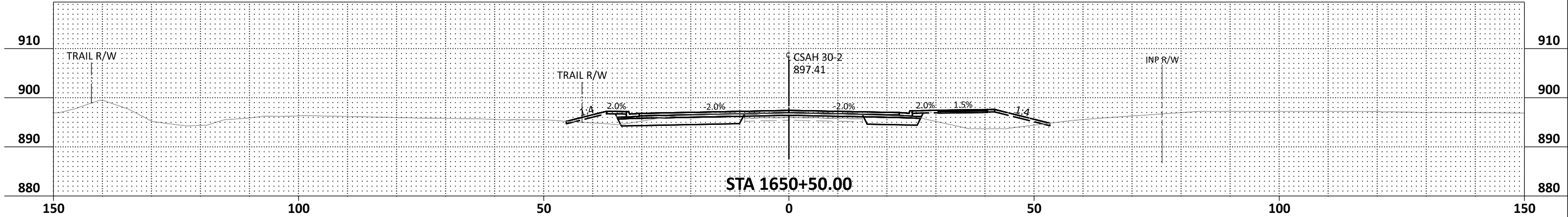
CSAH 30 (Forest Blvd) Improvements
Chisago County, Minnesota

CHISAGO COUNTY, MINNESOTA

CROSS SECTIONS
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Design By:	MKV
Plan By:	GAD
Checked By:	AJP
Approved By:	MKV



CSAH 30 (Forest Blvd) Improvements
Chisago County, Minnesota

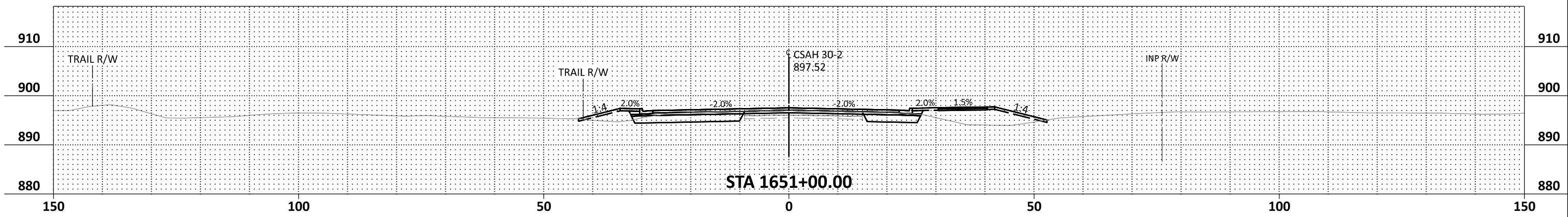
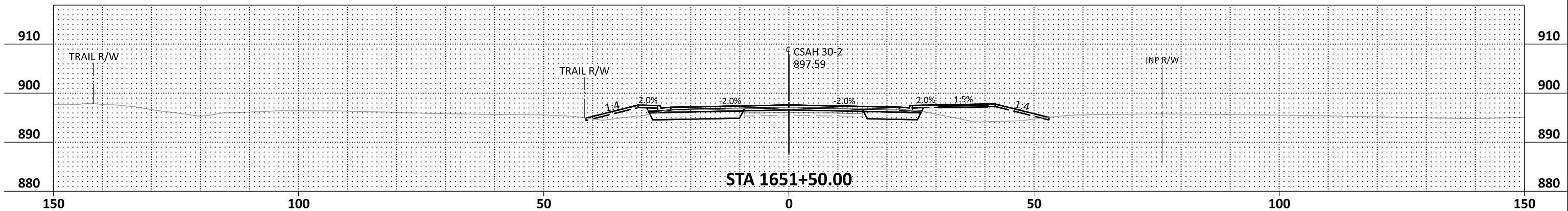
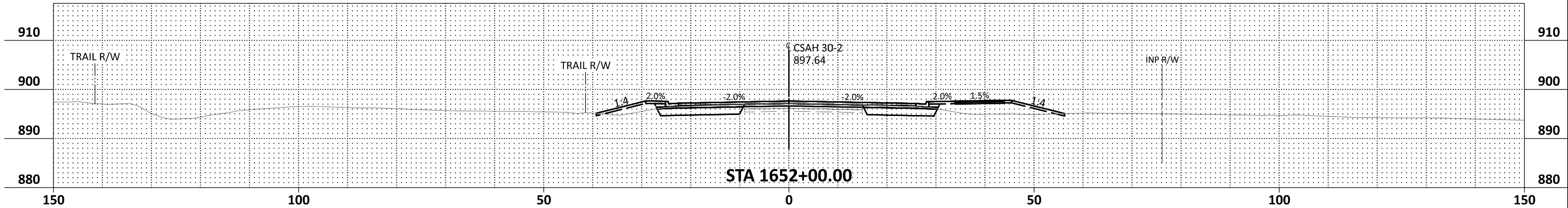
CHISAGO COUNTY, MINNESOTA

CROSS SECTIONS

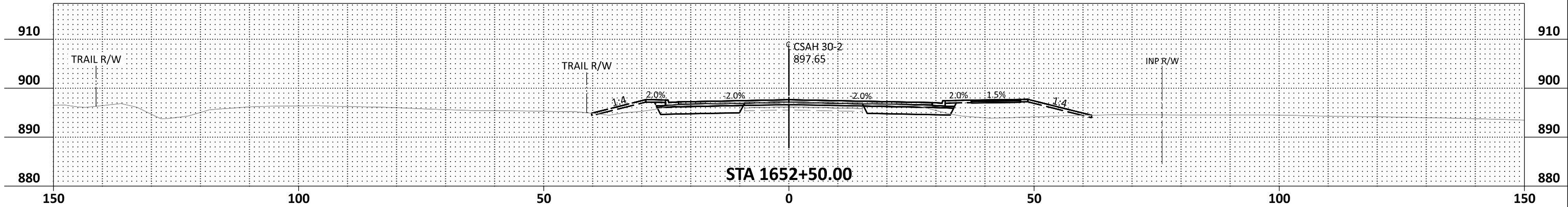
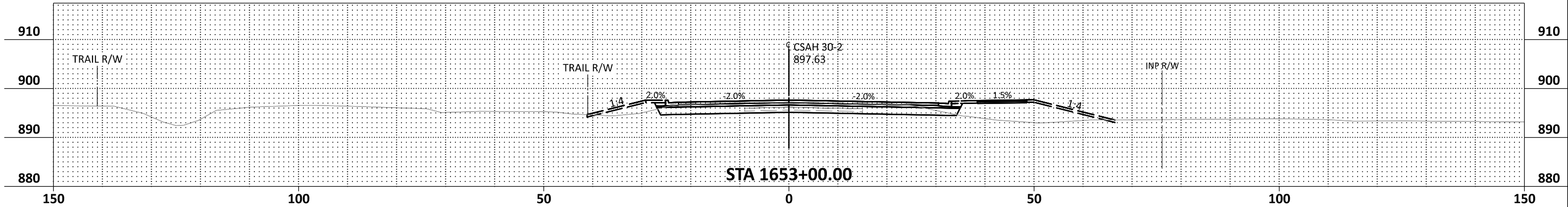
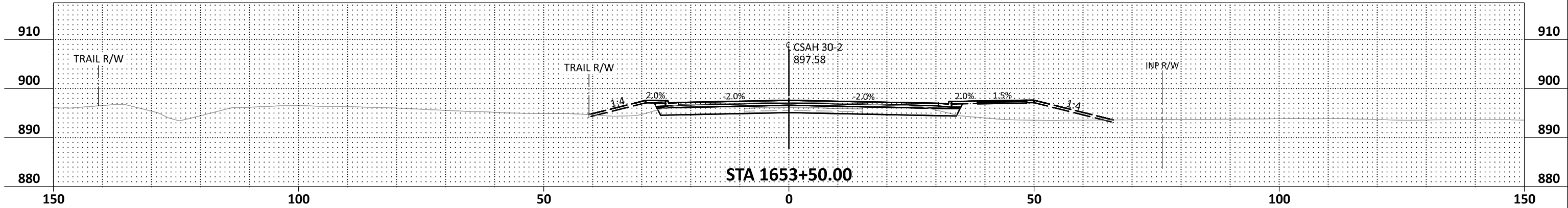
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Design By:	MKV
Plan By:	GAD
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Approved By:	MKV



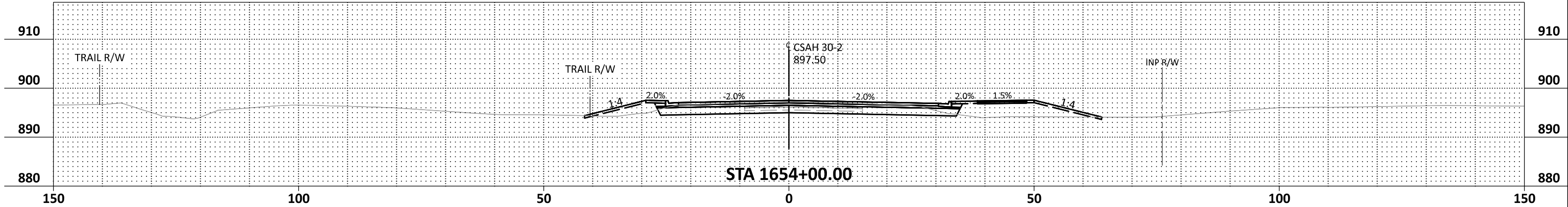
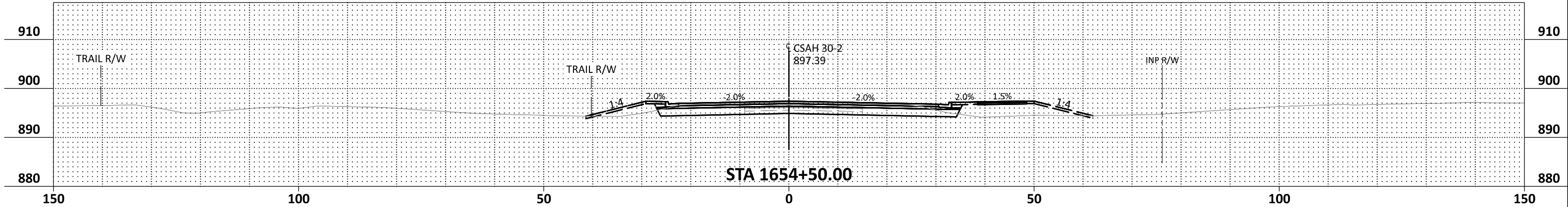
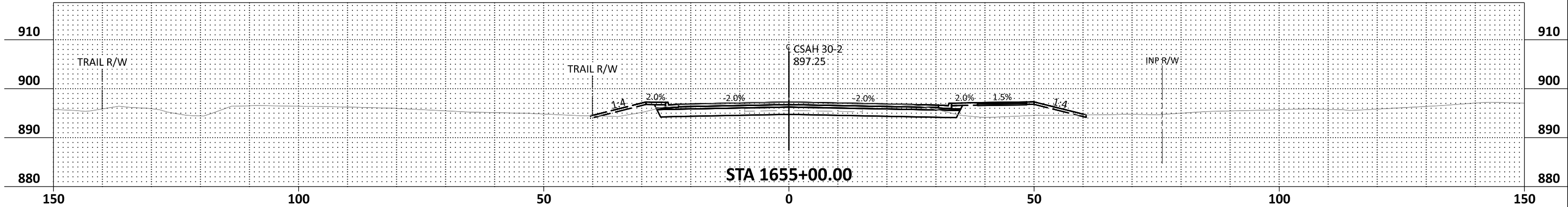
CSAH 30 (Forest Blvd) Improvements
Chisago County, Minnesota

CHISAGO COUNTY, MINNESOTA

CROSS SECTIONS
SAP 013-630-021 / SAP 225-591-007 / SAP 225-102-004

SHEET
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DATE: 9/12/2024 2:14:22 PM
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Plan By:	GAD
Checked By:	AJP
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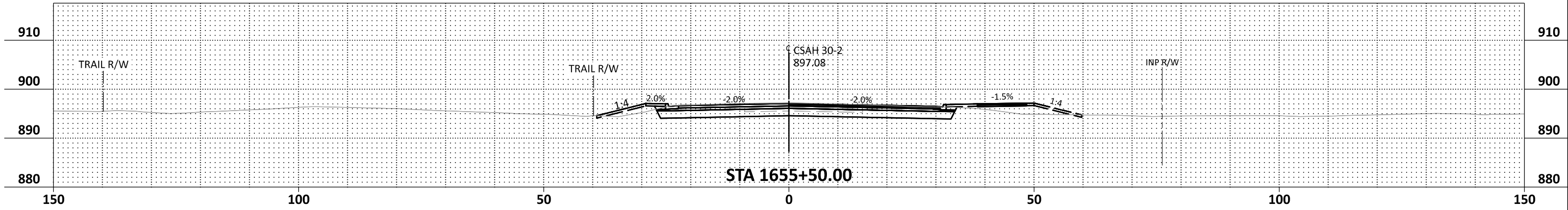
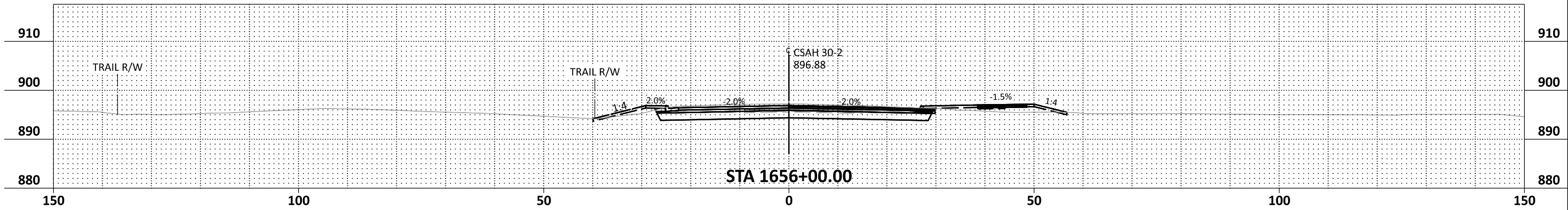
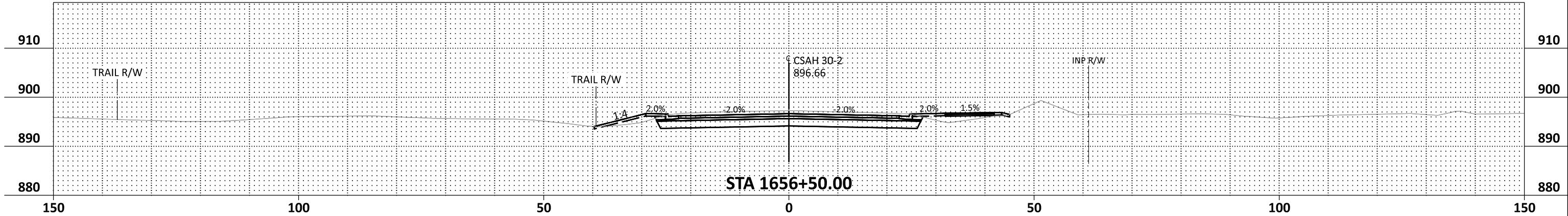
CSAH 30 (Forest Blvd) Improvements
Chisago County, Minnesota

CHISAGO COUNTY, MINNESOTA

CROSS SECTIONS
SAP 013-630-021 / SAP 225-591-007 / SAP 225-102-004

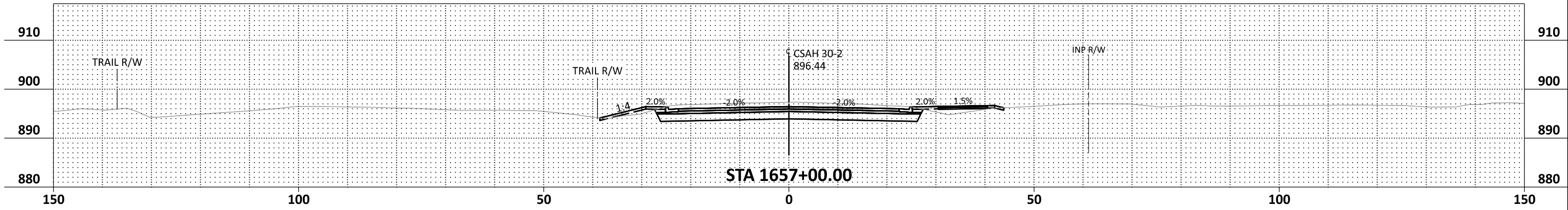
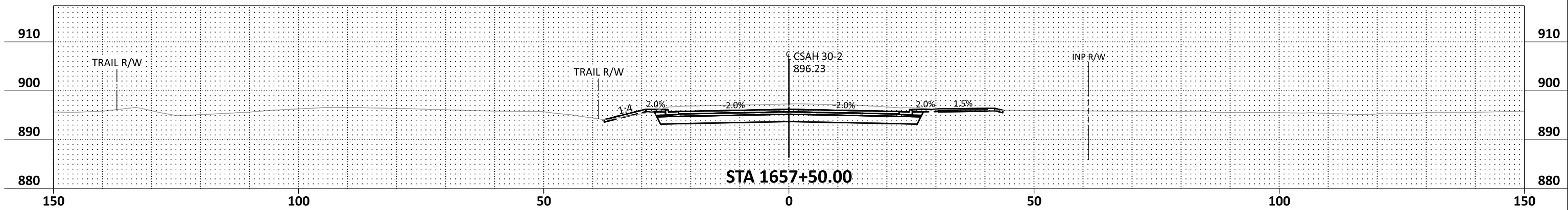
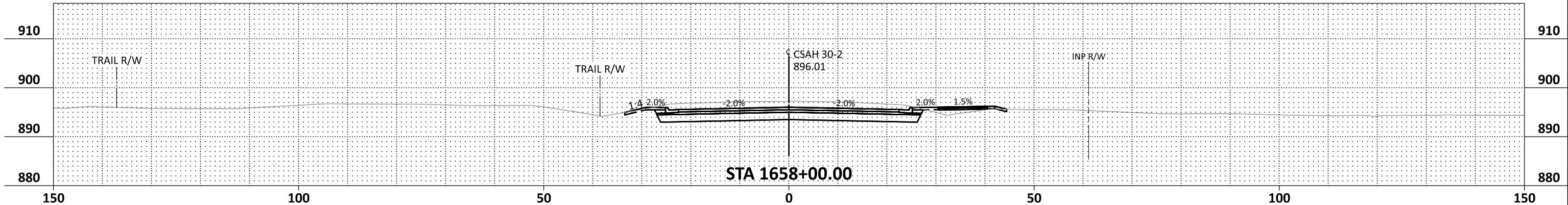
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NO.	DATE	BY	CHK	REVISIONS	Design By: MKV			CSAH 30 (Forest Blvd) Improvements Chisago County, Minnesota	CHISAGO COUNTY, MINNESOTA	SHEET X52 OF X65 SHEETS
					Plan By: GAD					
					Checked By: AJP					
					Approved By: MKV					
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DATE: 9/12/2024 2:14:26 PM
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Plan By:	GAD
Checked By:	AJP
Approved By:	MKV

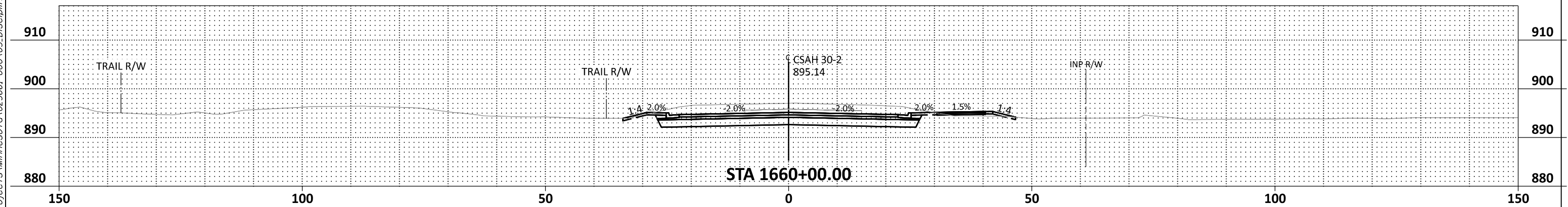
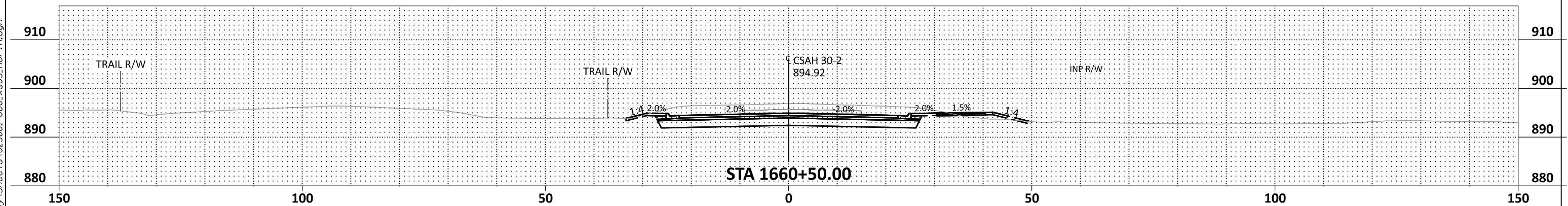
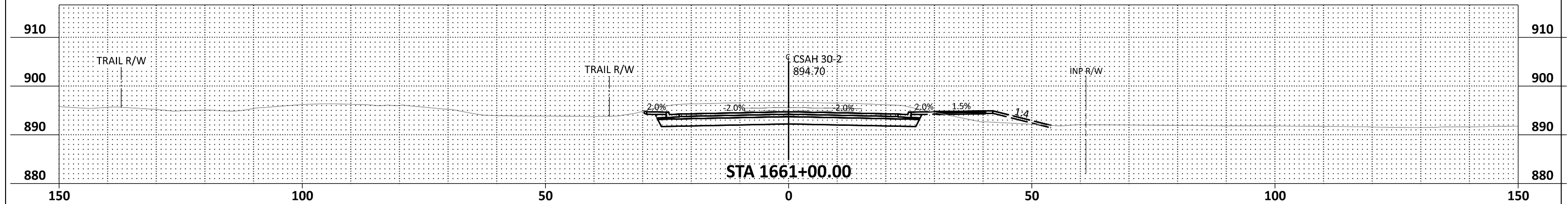


CSAH 30 (Forest Blvd) Improvements
Chisago County, Minnesota

CHISAGO COUNTY, MINNESOTA

CROSS SECTIONS
SAP 013-630-021 / SAP 225-591-007 / SAP 225-102-004

SHEET
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NO.	DATE	BY	CHK	REVISIONS	Design By:
					MKV
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					Checked By: AJP
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Design By:	MKV
Plan By:	GAD
Checked By:	AJP
Approved By:	MKV



CSAH 30 (Forest Blvd) Improvements

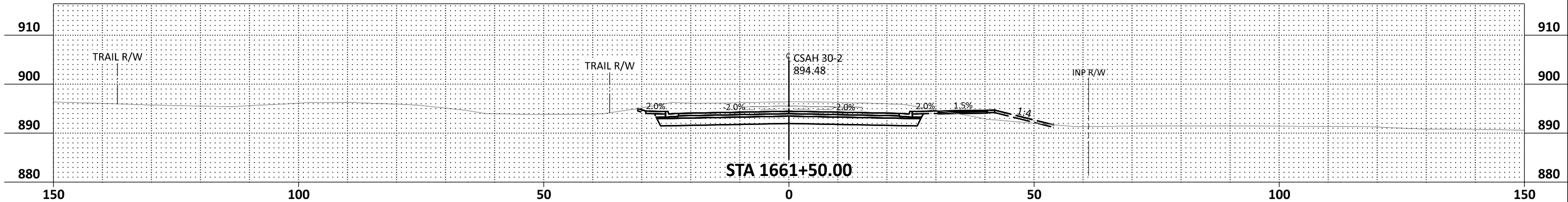
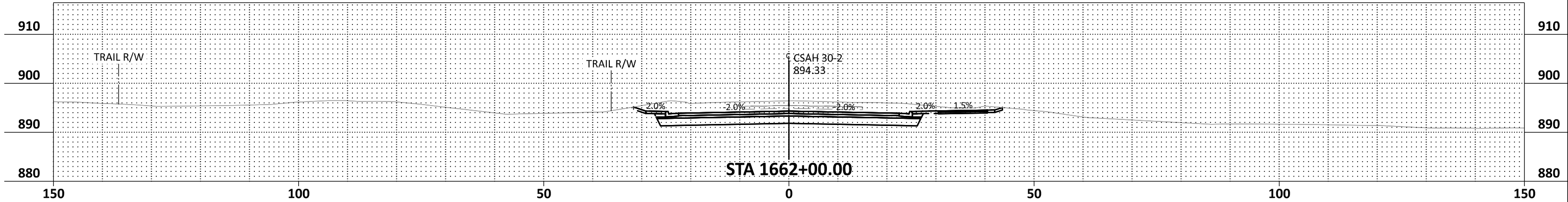
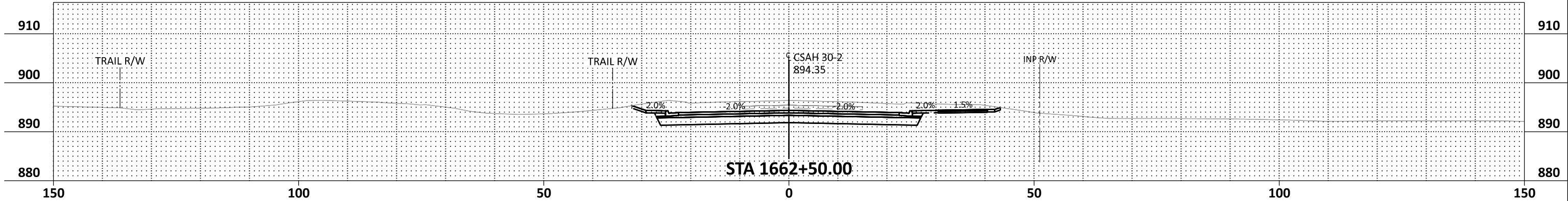
Chisago County, Minnesota

CHISAGO COUNTY, MINNESOTA

CROSS SECTIONS
SAP 013-630-021 / SAP 225-591-007 / SAP 225-102-004

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 SHEETS

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NO.	DATE	BY	CHK	REVISIONS

Design By:	MKV
Plan By:	GAD
Checked By:	AJP
Approved By:	MKV

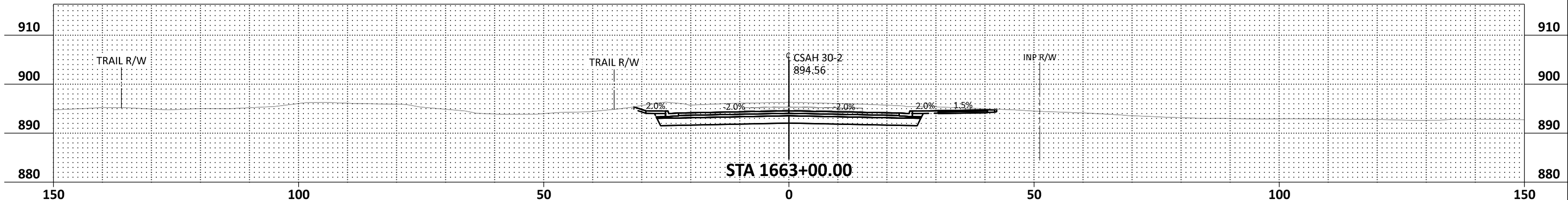
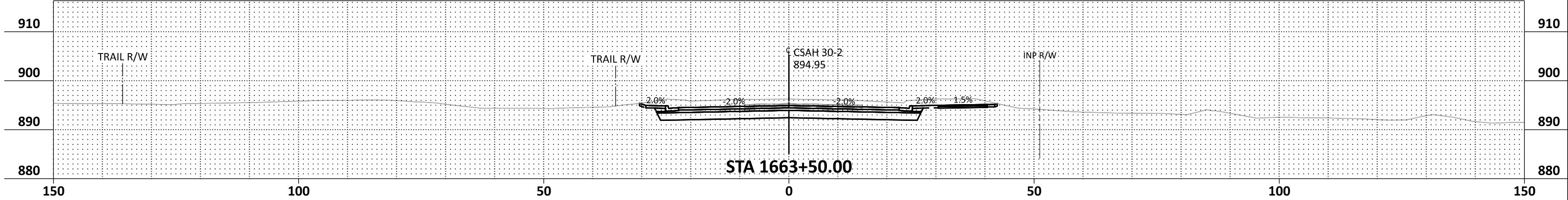
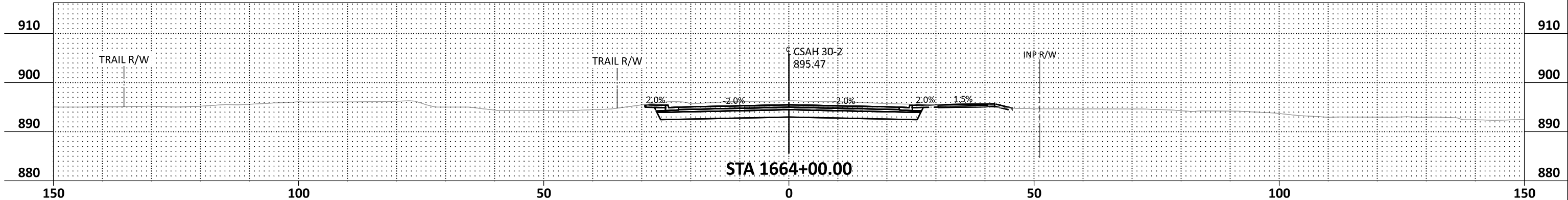


CSAH 30 (Forest Blvd) Improvements
Chisago County, Minnesota

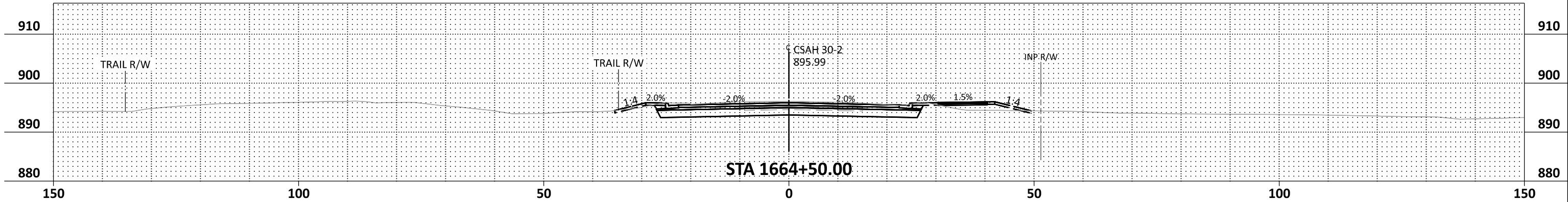
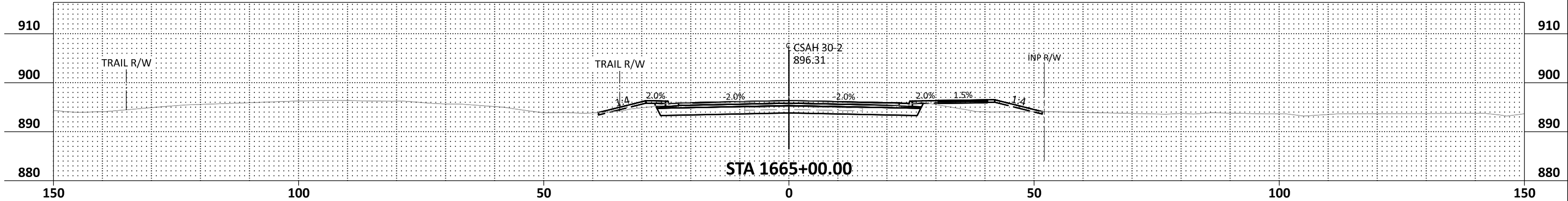
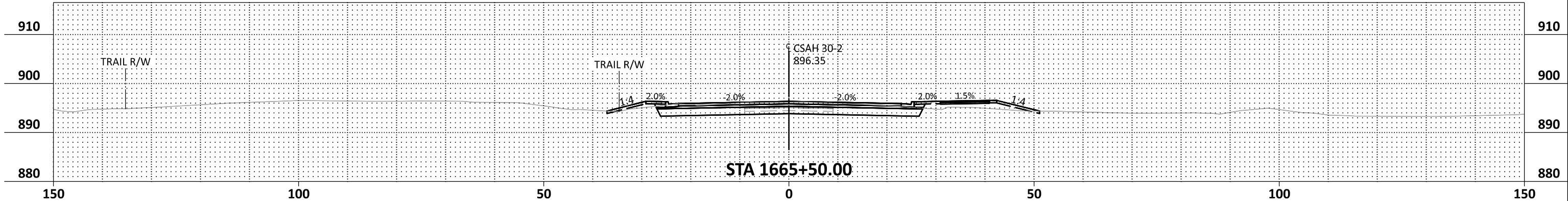
CHISAGO COUNTY, MINNESOTA
CROSS SECTIONS
SAP 013-630-021 / SAP 225-591-007 / SAP 225-102-004

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NO.	DATE	BY	CHK	REVISIONS

Design By:	MKV
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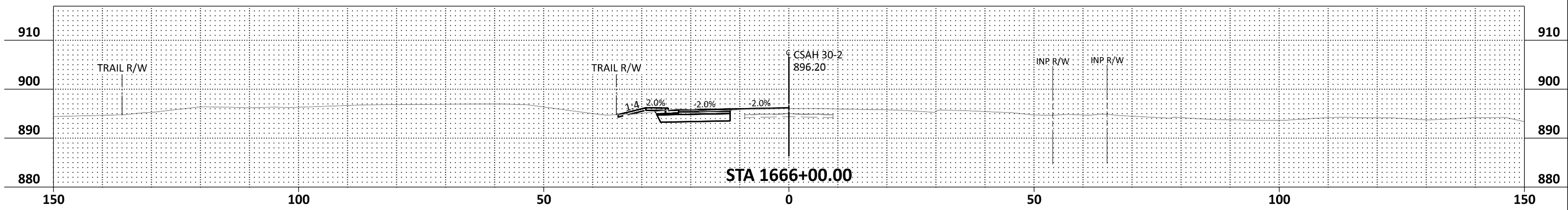
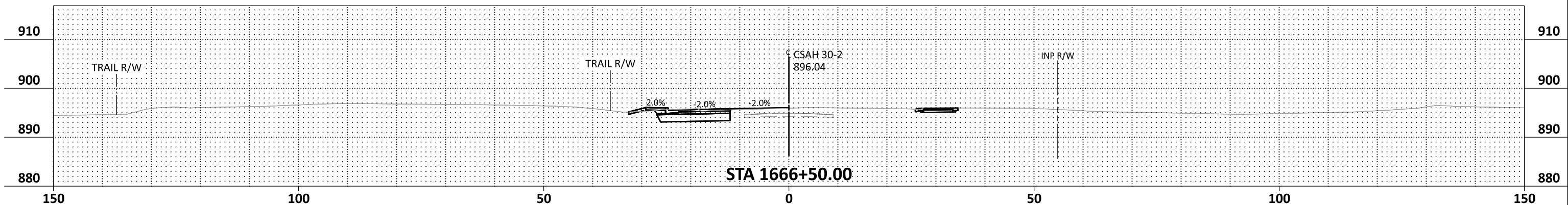
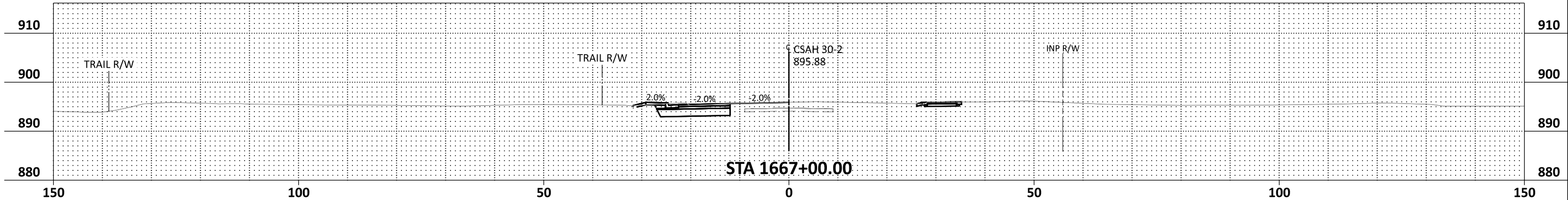
CSAH 30 (Forest Blvd) Improvements
Chisago County, Minnesota

CHISAGO COUNTY, MINNESOTA

CROSS SECTIONS
SAP 013-630-021 / SAP 225-591-007 / SAP 225-102-004

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NO.	DATE	BY	CHK	REVISIONS

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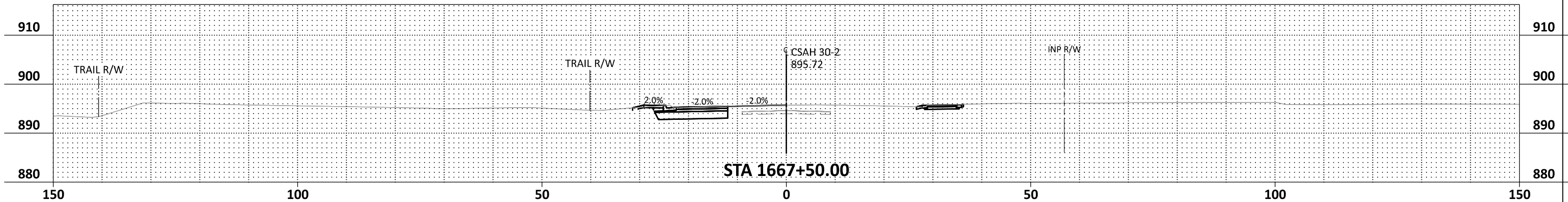
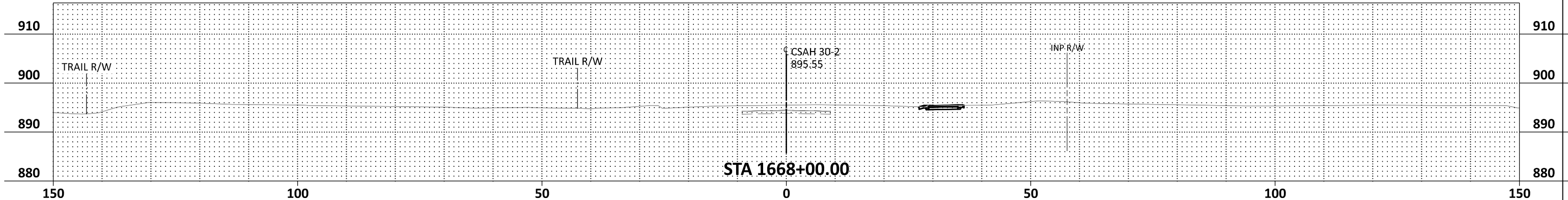
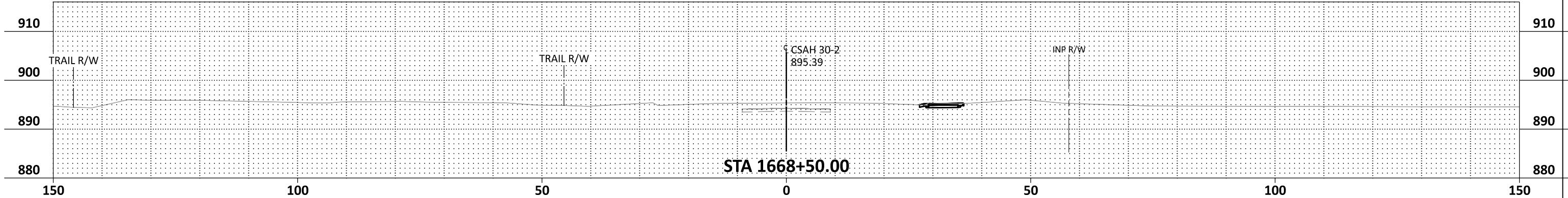
CSAH 30 (Forest Blvd) Improvements
Chisago County, Minnesota

CHISAGO COUNTY, MINNESOTA

CROSS SECTIONS
SAP 013-630-021 / SAP 225-591-007 / SAP 225-102-004

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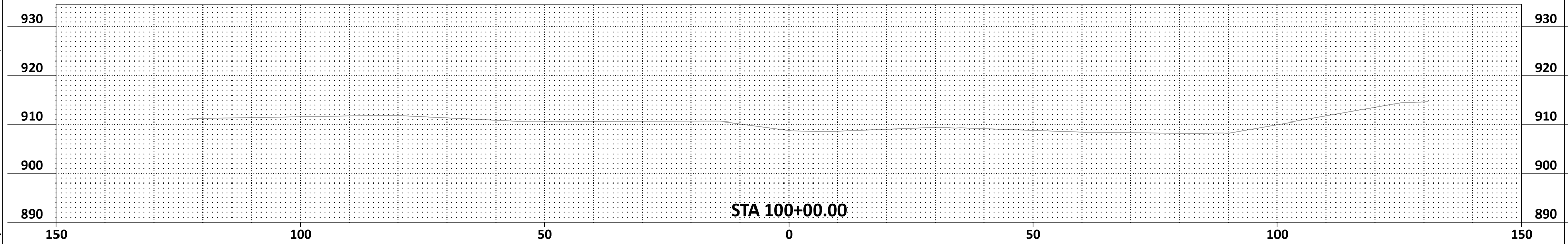
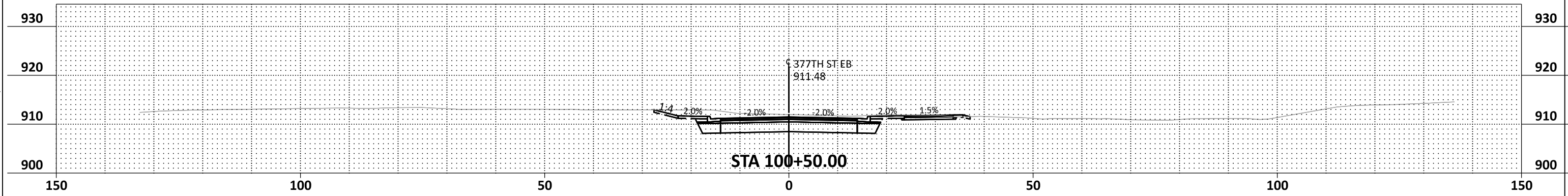
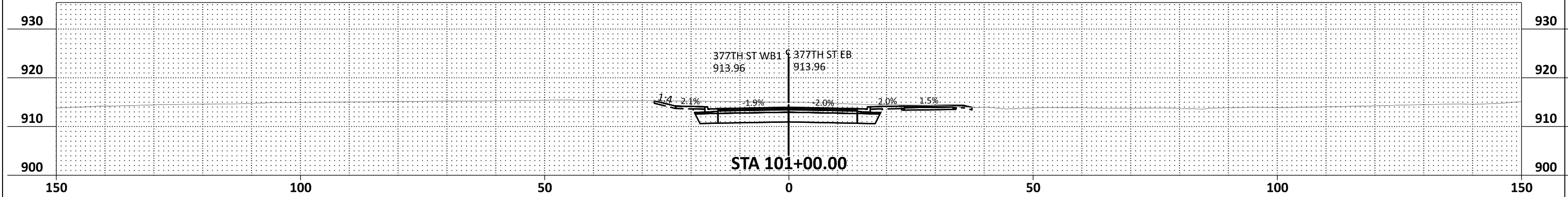
CSAH 30 (Forest Blvd) Improvements
Chisago County, Minnesota

CHISAGO COUNTY, MINNESOTA

CROSS SECTIONS
SAP 013-630-021 / SAP 225-591-007 / SAP 225-102-004

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NO.	DATE	BY	CHK	REVISIONS

Design By:	MKV
Plan By:	GAD
Checked By:	AJP
Approved By:	MKV



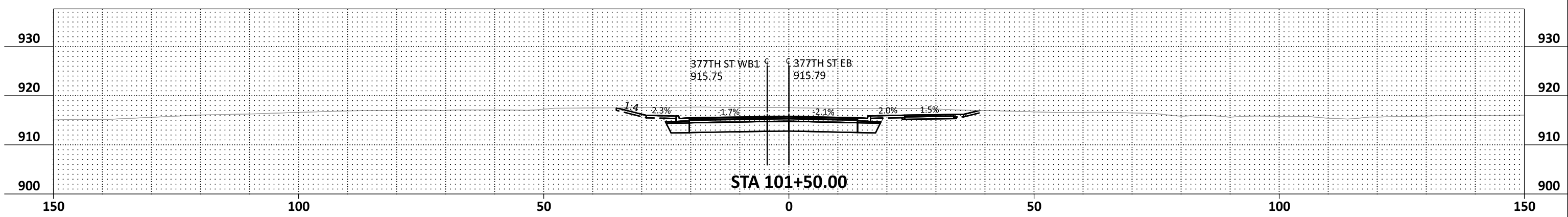
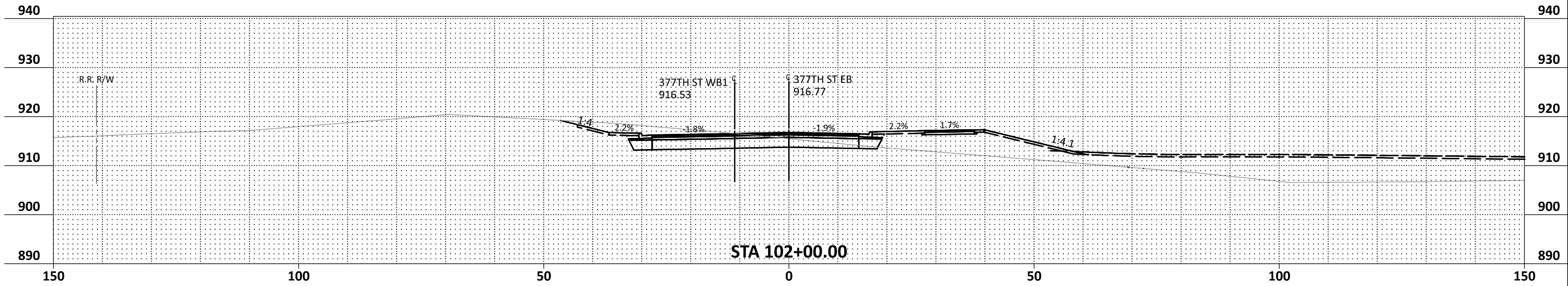
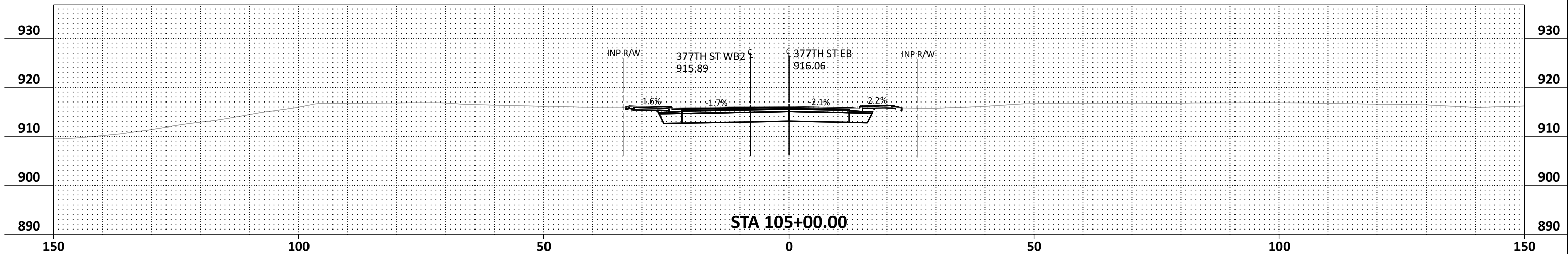
CSAH 30 (Forest Blvd) Improvements
Chisago County, Minnesota

CHISAGO COUNTY, MINNESOTA

CROSS SECTIONS
SAP 013-630-021 / SAP 225-591-007 / SAP 225-102-004

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NO.	DATE	BY	CHK	REVISIONS

Design By:	MKV
Plan By:	GAD
Checked By:	AJP
Approved By:	MKV



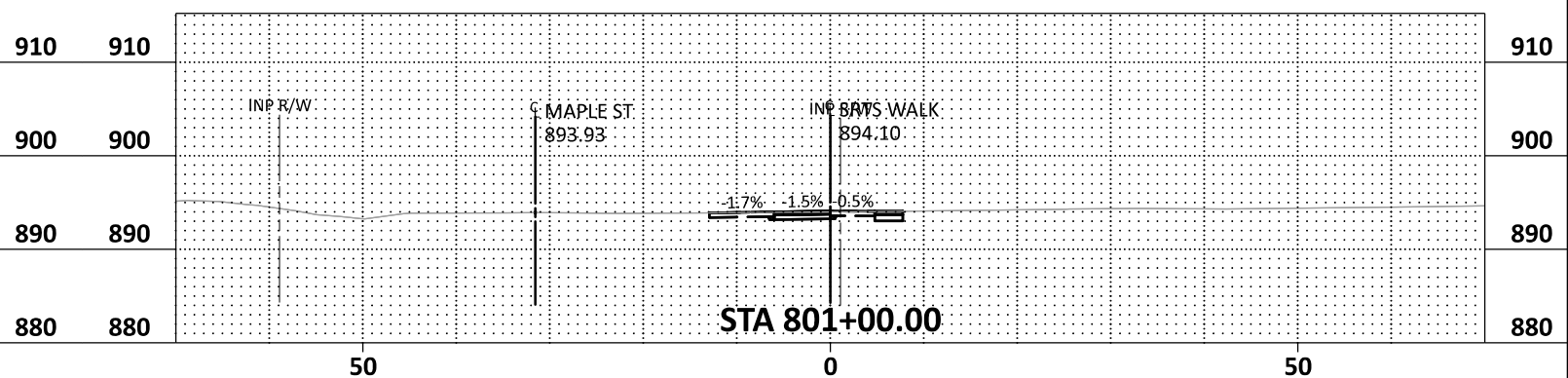
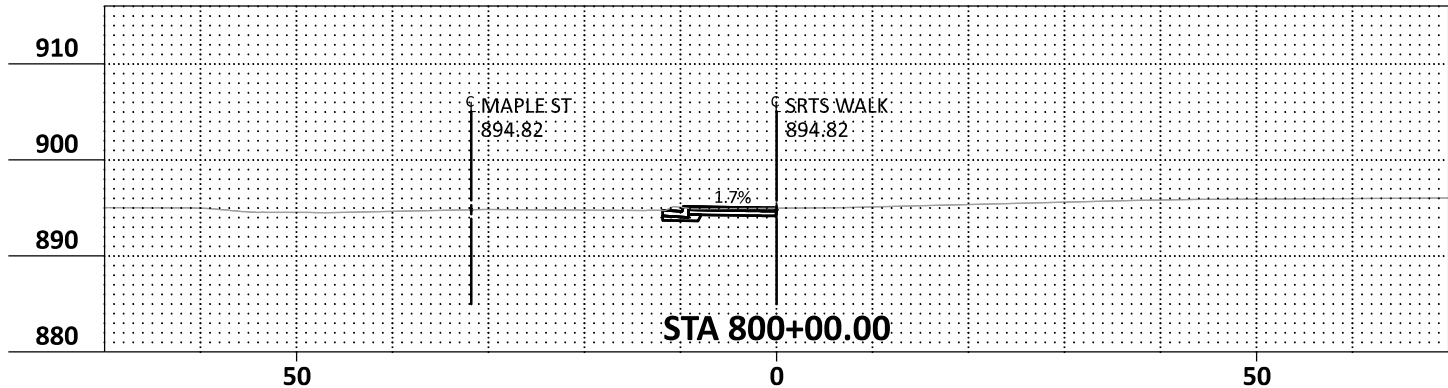
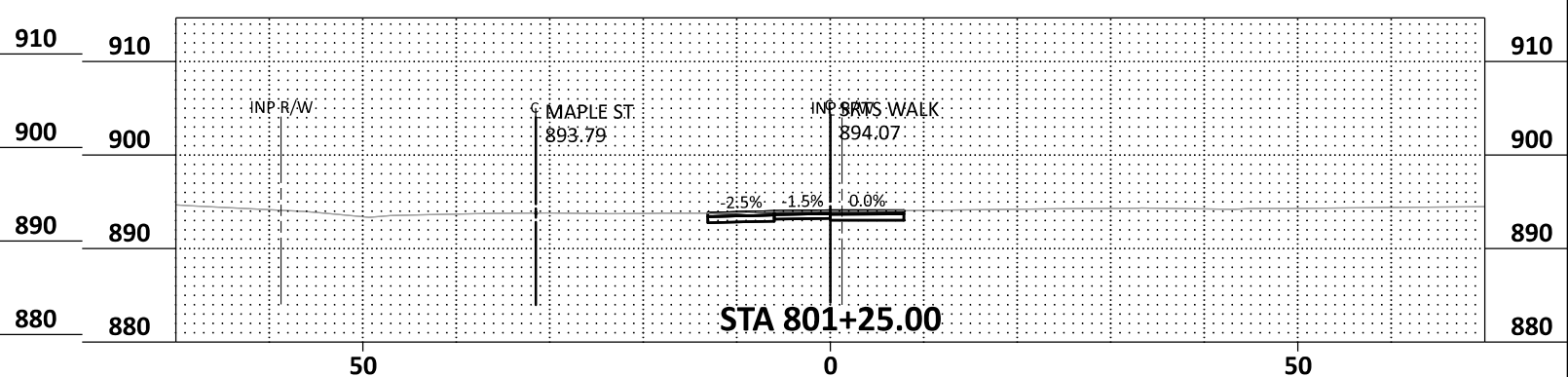
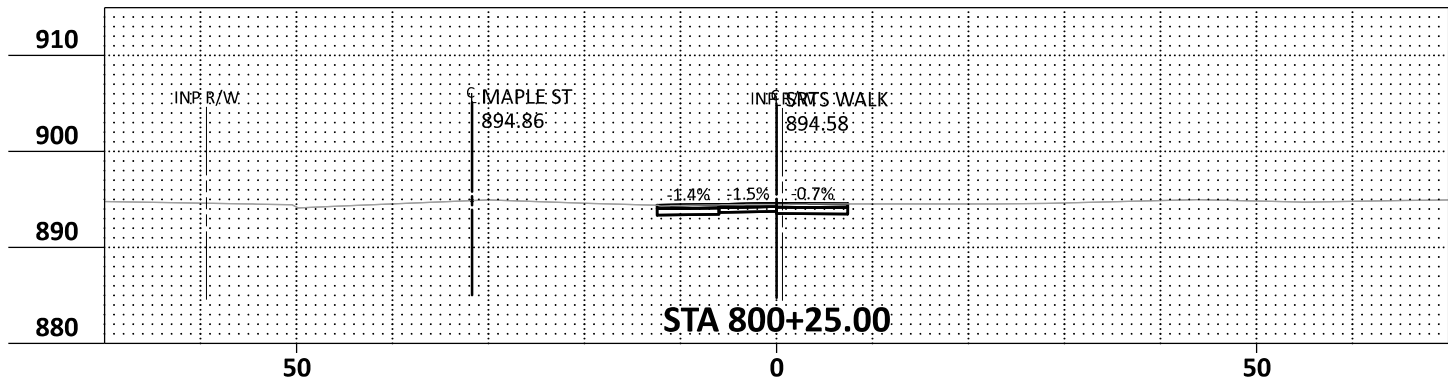
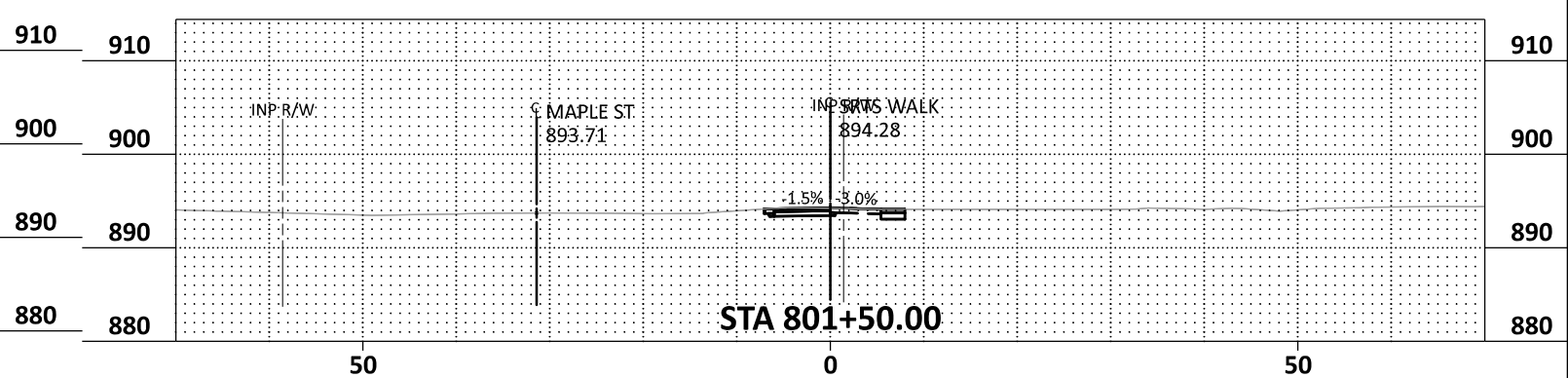
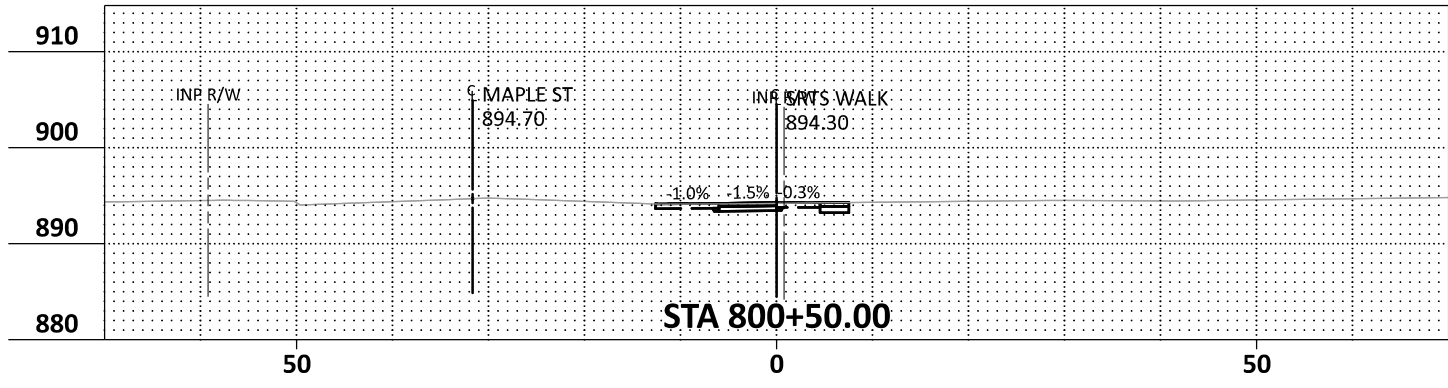
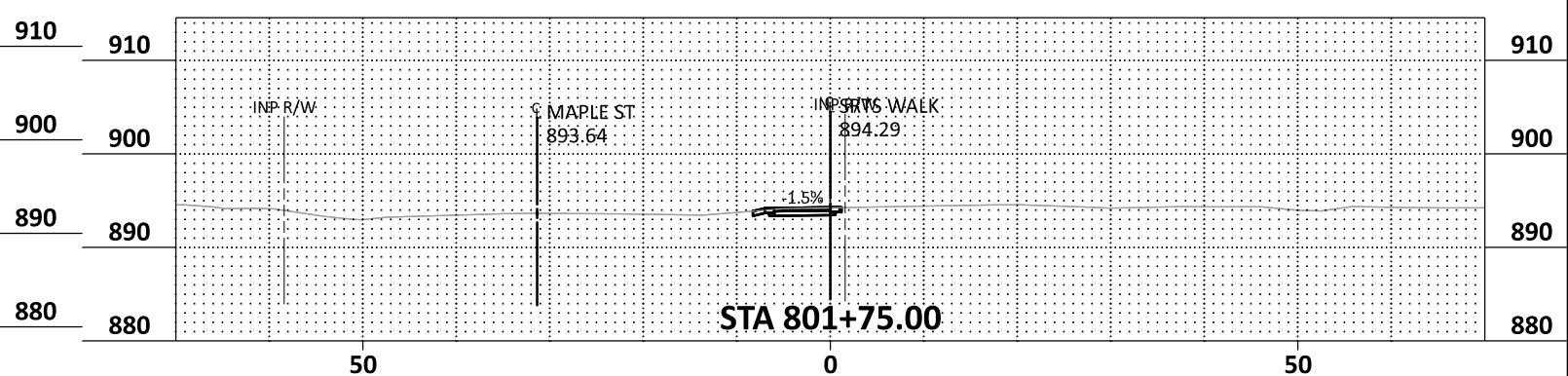
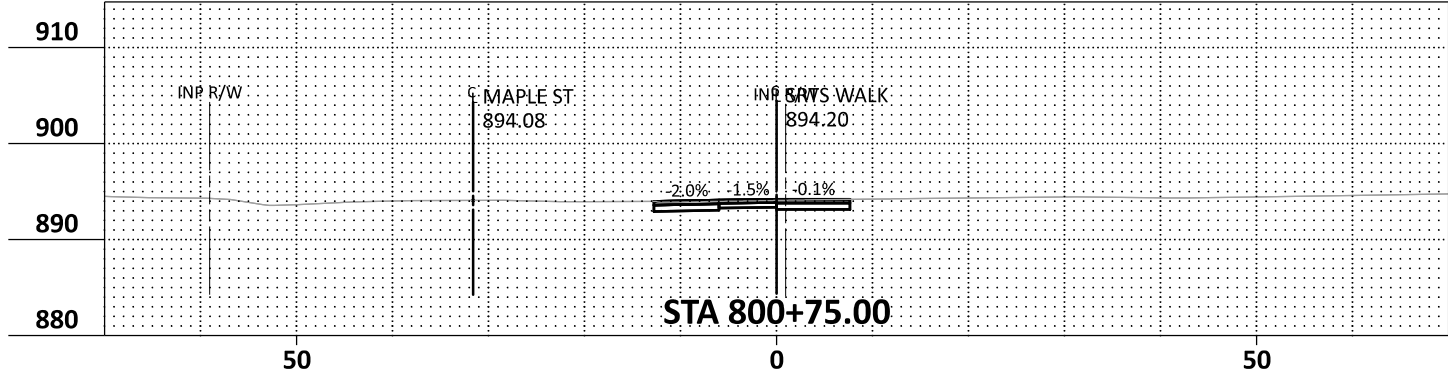
CSAH 30 (Forest Blvd) Improvements
Chisago County, Minnesota

CHISAGO COUNTY, MINNESOTA

CROSS SECTIONS
SAP 013-630-021 / SAP 225-591-007 / SAP 225-102-004

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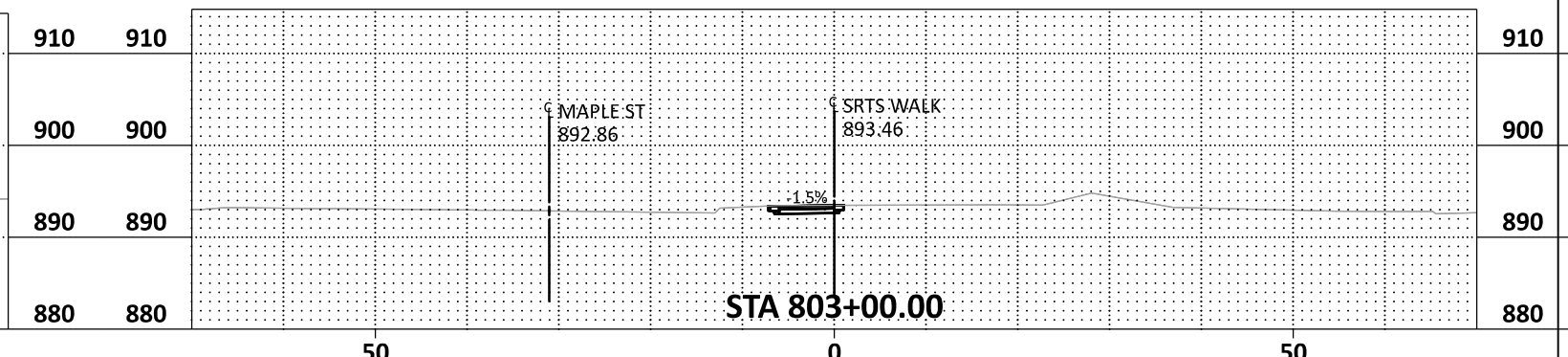
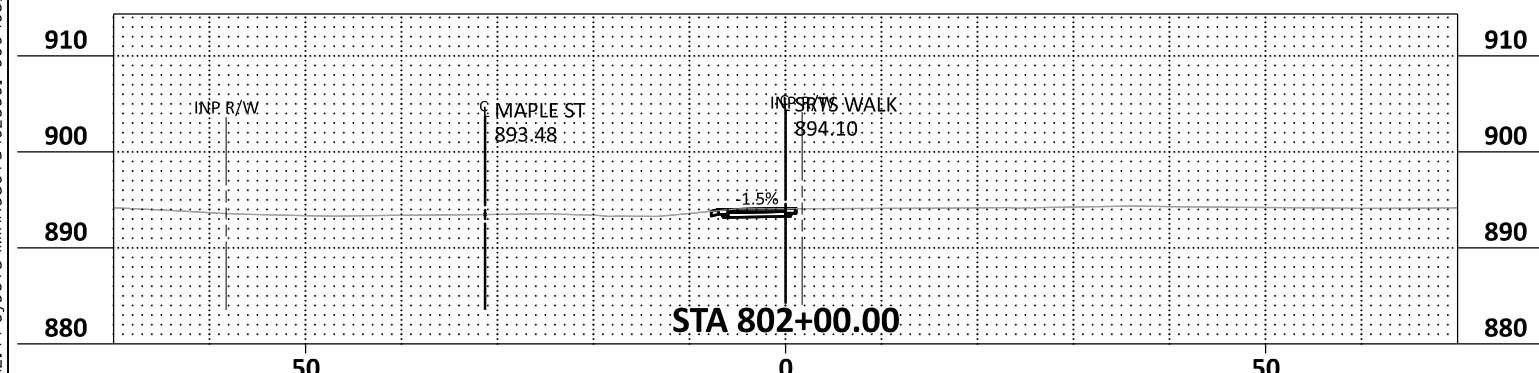
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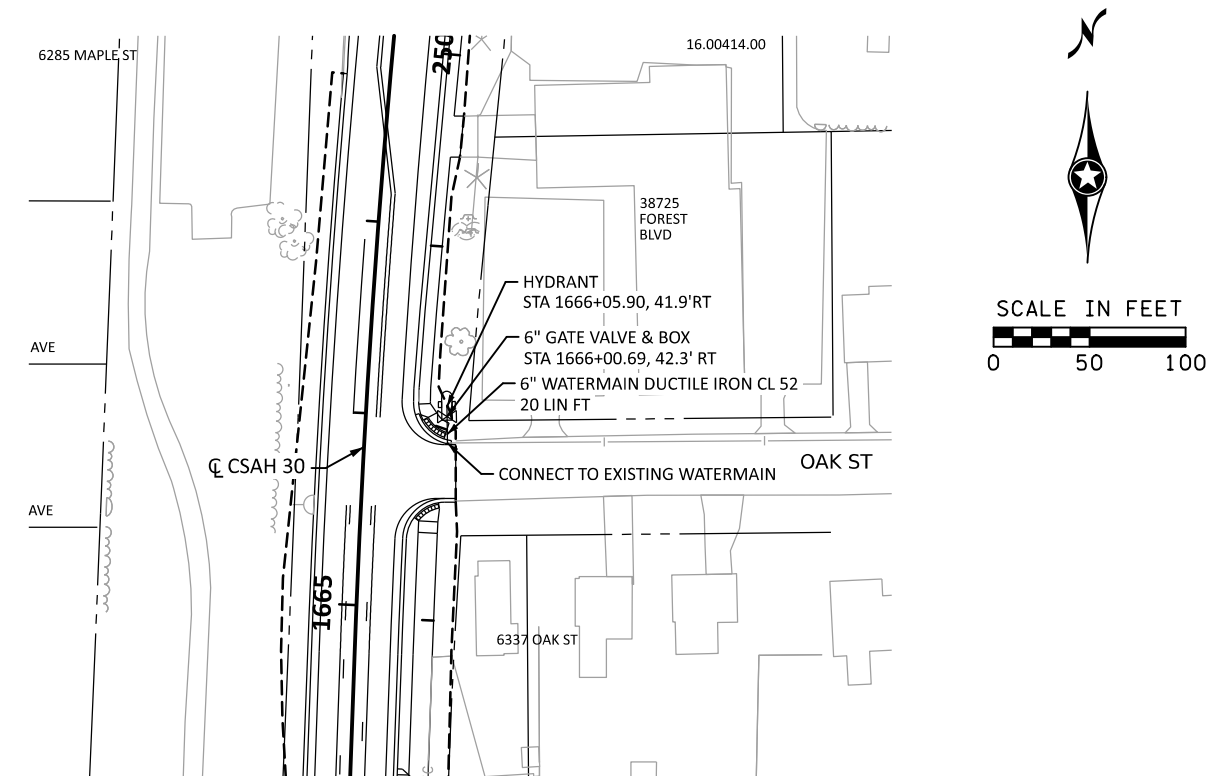
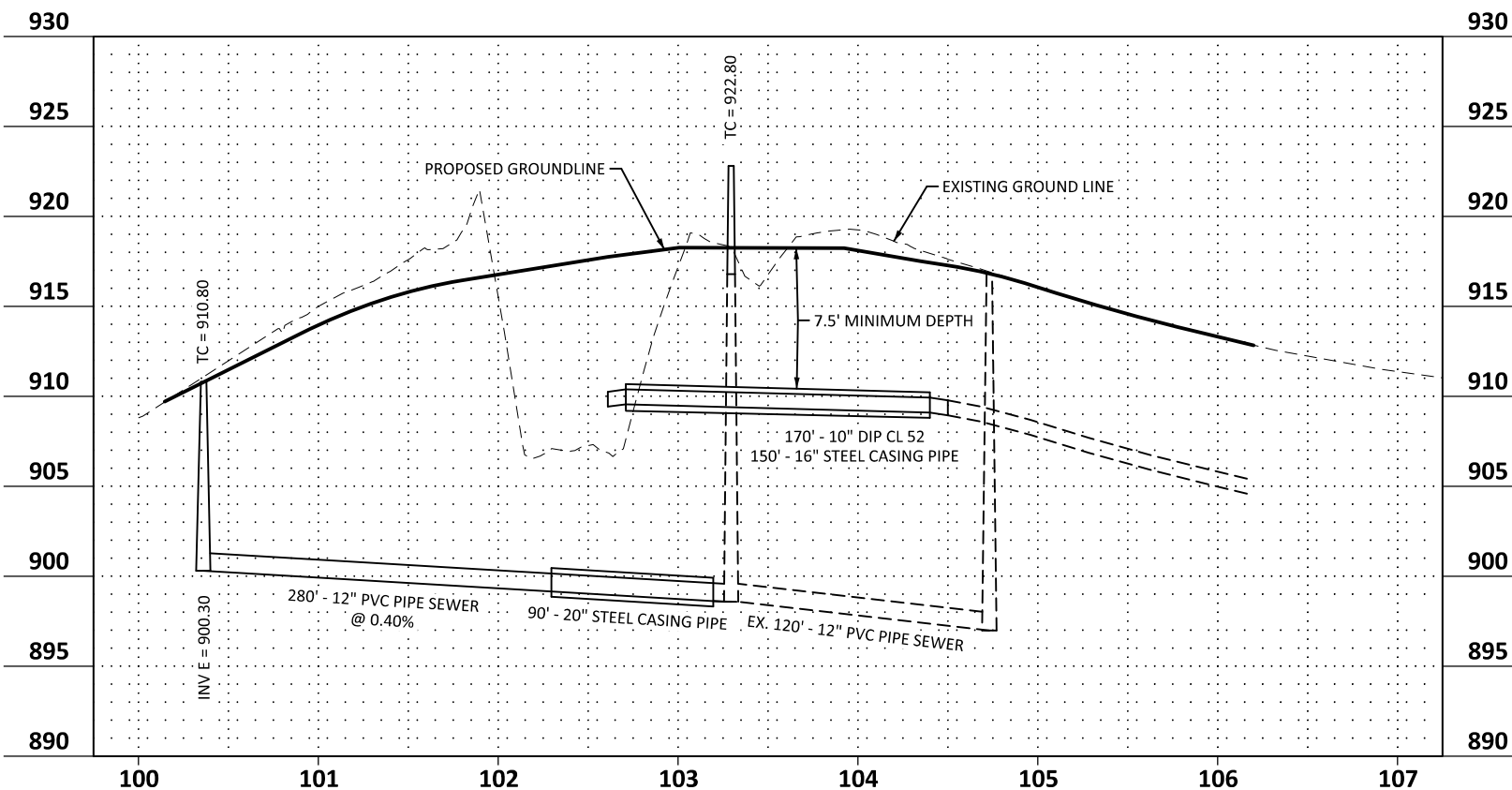
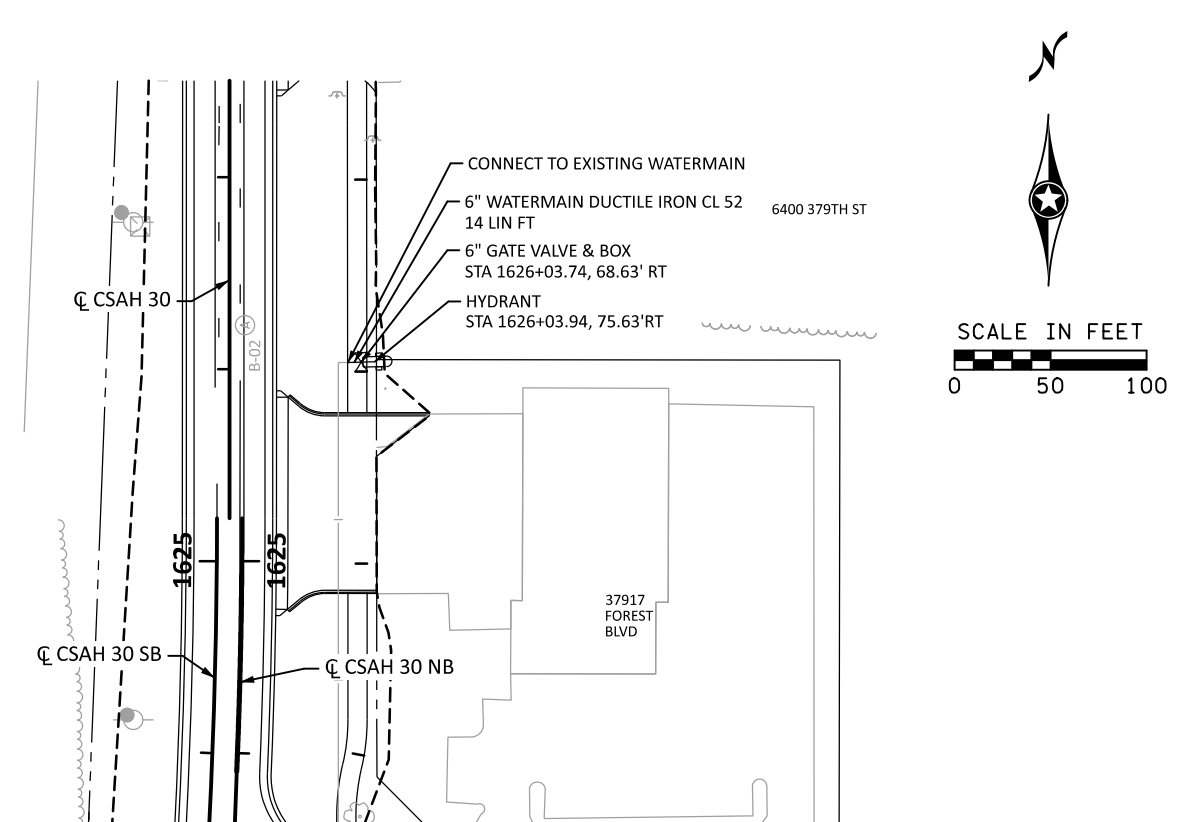
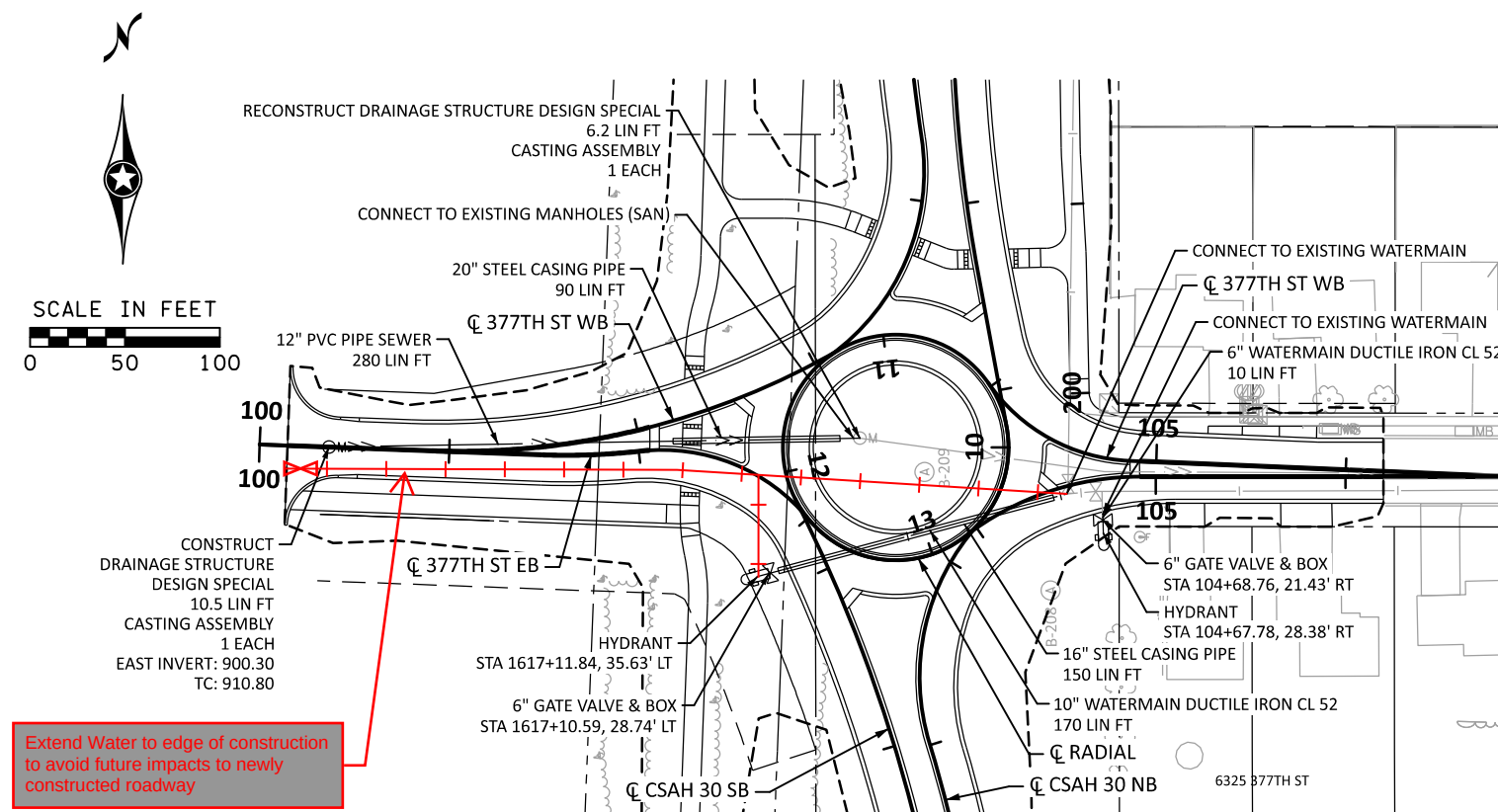
Design By:	MKV
Plan By:	GAD
Checked By:	AJP
Approved By:	MKV

CSAH 30 (Forest Blvd) Improvements
Chisago County, Minnesota

CHISAGO COUNTY, MINNESOTA
CROSS SECTIONS
SAP 013-630-021 / SAP 225-591-007 / SAP 225-102-004

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Design By:
Plan By:
Checked By:
Approved By:

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



NICHOLAS E. HENTGES, PE

DATE: 9/12/2024 LICENSE NO. 44620

wsb



Chisago
COUNTY

CSAH 30 (Forest Blvd) Improvements

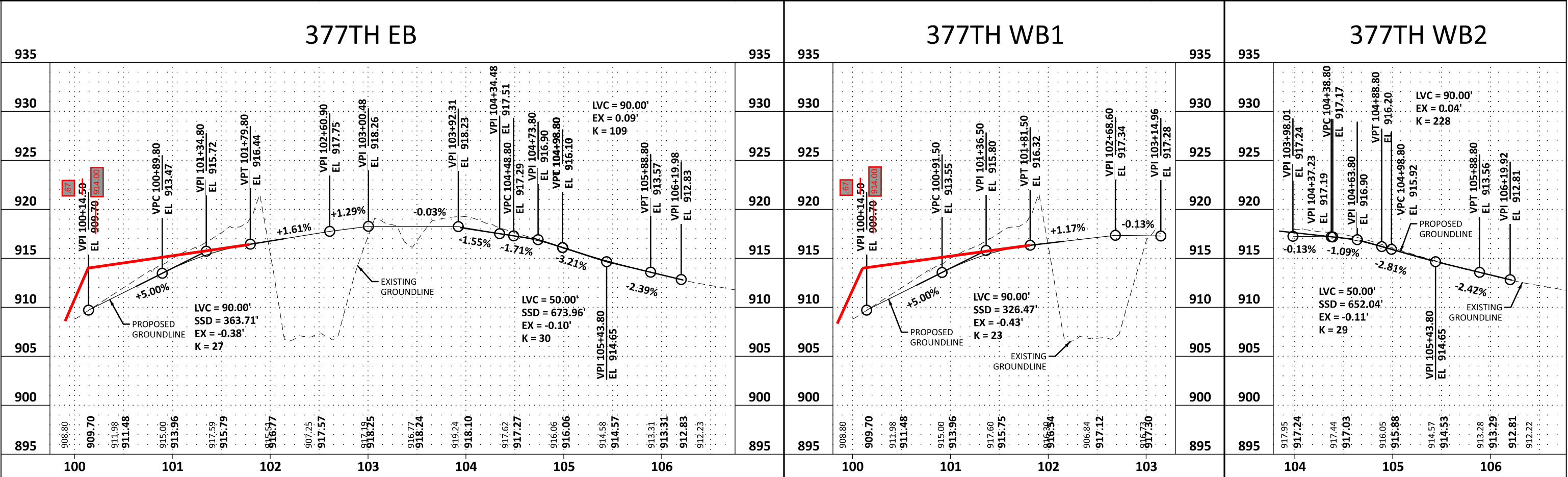
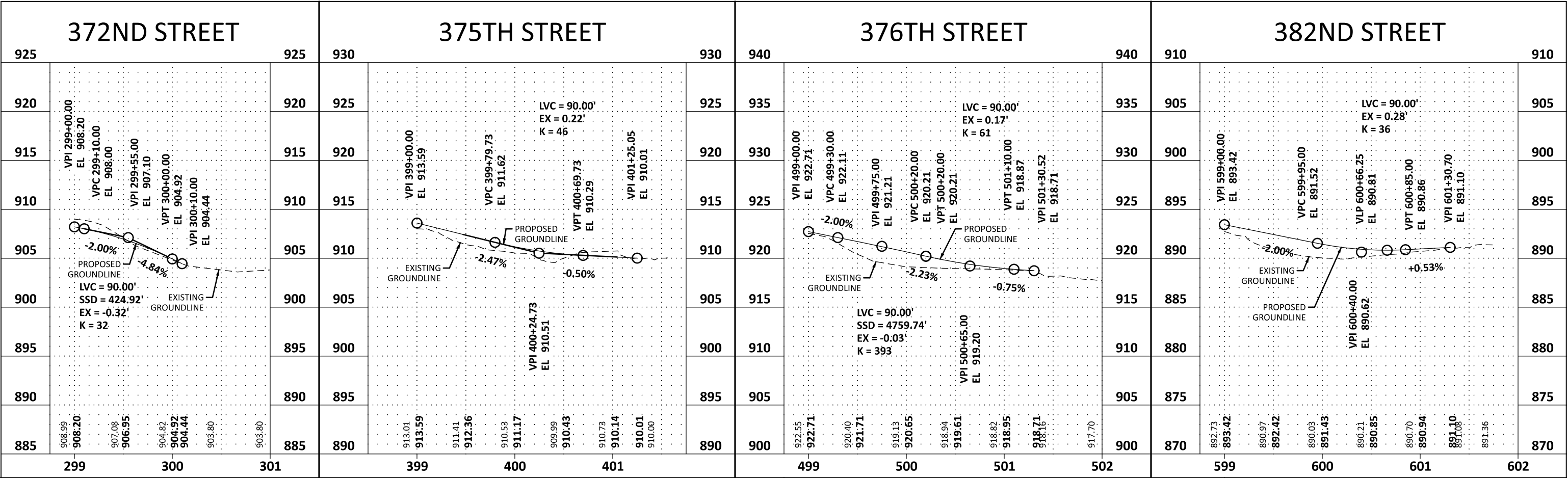
Chisago County, Minnesota

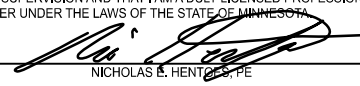
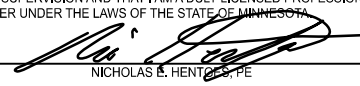
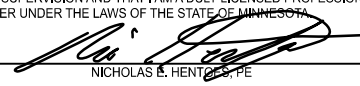
CHISAGO COUNTY, MINNESOTA

SANITARY AND WATERMAIN PLAN
SAP 013-630-021 / SAP 225-591-007 / SAP 225-102-004

SHEET
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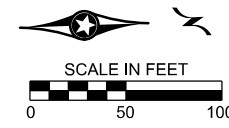
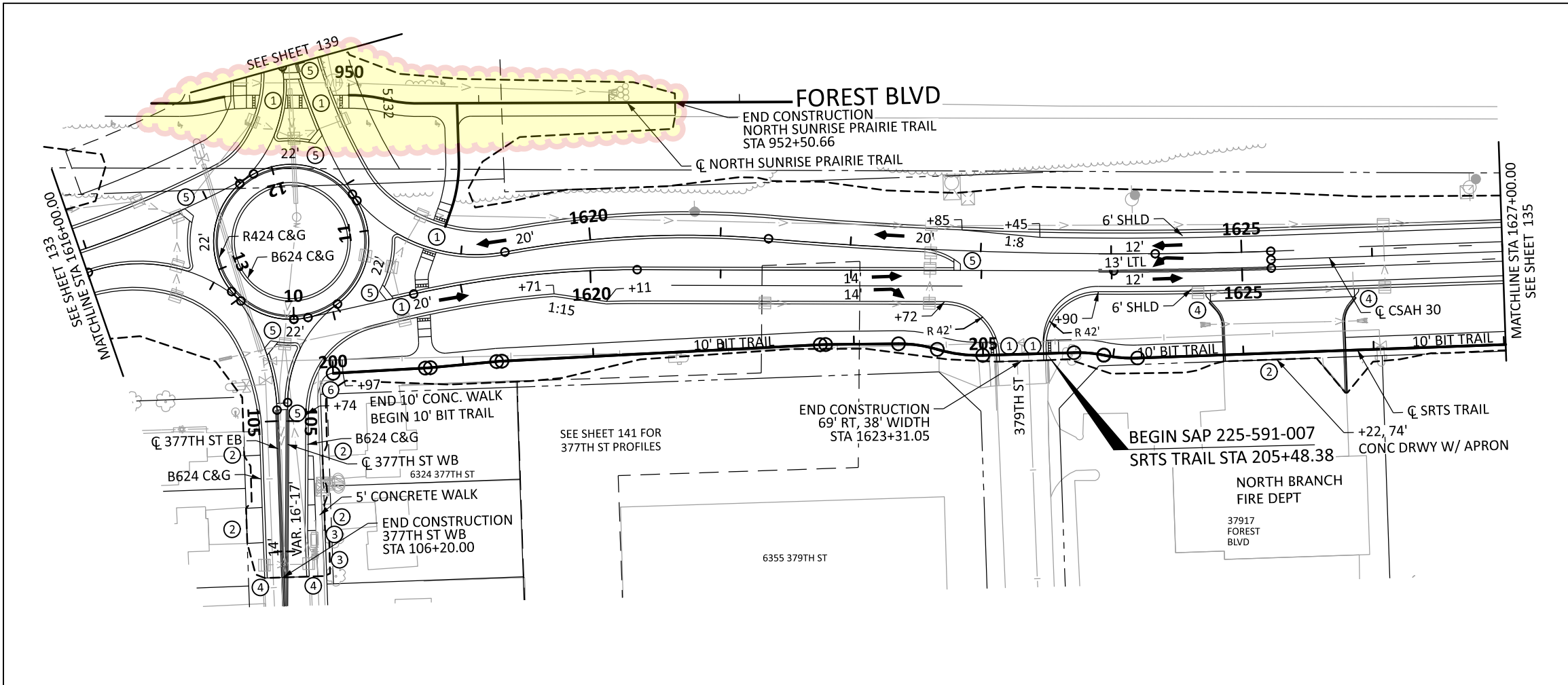


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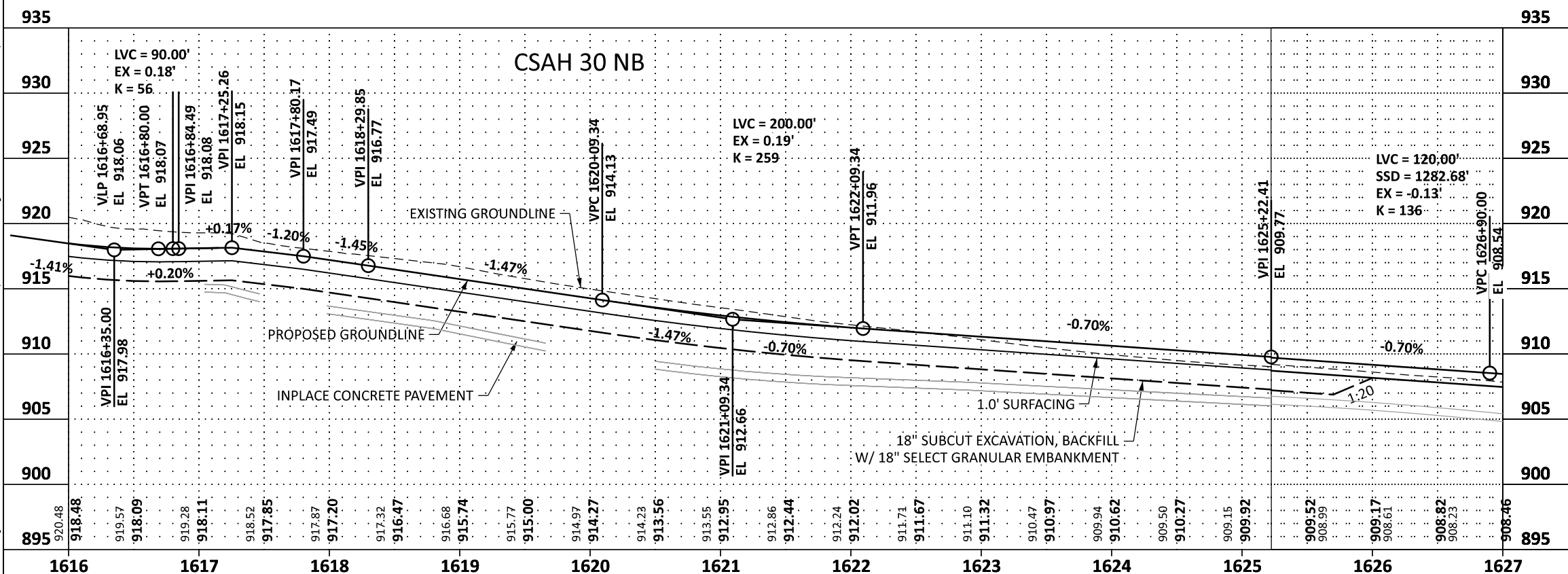
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MN/DOT SPECIFICATION NO.	DESCRIPTION	UNIT	ESTIMATED QUANTITY	UNIT PRICE	ESTIMATED TOTAL
2021.501	MOBILIZATION	LS	1	\$21,029.00	\$21,029.00
2105.607	EXCAVATION - COMMON	C Y	1200	\$6.00	\$7,200.00
2112.519	SUBGRADE PREPARATION	RDST	3	\$200.00	\$600.00
2123.610	STREET SWEEPER (WITH PICKUP BROOM)	HOURL	10	\$175.00	\$1,750.00
2130.523	WATER	MGAL	10	\$50.00	\$500.00
2211.509	AGGREGATE BASE CLASS 5	TON	500	\$42.00	\$21,000.00
2331.603	JOINT ADHESIVE	L F	500	\$1.00	\$500.00
2357.506	BITUMINOUS MATERIAL FOR TACK COAT	GAL	130	\$2.50	\$325.00
2360.509	TYPE SP 9.5 WEARING COURSE MIX (4,F)	TON	140	\$114.00	\$15,960.00
2360.509	TYPE SP 12.5 NON WEARING COURSE MIX (4,F)	TON	140	\$110.00	\$15,400.00
2501.502	30" RC PIPE APRON	EACH	2	\$3,400.00	\$6,800.00
2503.503	12" PVC PIPE SEWER	LIN FT	280	\$54.00	\$15,120.00
2503.503	15" RC PIPE SEWER DESIGN 3006 CLASS V	LIN FT	272	\$38.10	\$10,363.20
2503.503	30" RC PIPE SEWER DESIGN 3006 CLASS III	LIN FT	470	\$73.00	\$34,310.00
2503.603	20" STEEL CASING PIPE	LIN FT	90	\$140.00	\$12,600.00
2504.602	CONNECT TO EXISTING WATER MAIN	EACH	1	\$4,000.00	\$4,000.00
2504.602	HYDRANT	EACH	1	\$7,600.00	\$7,600.00
2504.602	6" GATE VALVE AND BOX	EACH	1	\$2,884.00	\$2,884.00
2504.603	6" WATERMAIN DUCTILE IRON CL 52	LIN FT	20	\$54.00	\$1,080.00
2504.603	10" WATERMAIN DUCTILE IRON CL 52	LIN FT	420	\$84.00	\$35,280.00
2504.603	16" STEEL CASING PIPE	LIN FT	150	\$100.00	\$15,000.00
2506.502	CASTING ASSEMBLY	EACH	1	\$1,000.00	\$1,000.00
2506.502	ADJUST FRAME & RING CASTING	EACH	8	\$950.00	\$7,600.00
2506.503	CONSTRUCT DRAINAGE STRUCTURE DESIGN G	LIN FT	3.4	\$960.00	\$3,264.00
2506.503	CONSTRUCT DRAINAGE STRUCTURE DESIGN 48-4020	LIN FT	22	\$705.00	\$15,510.00
2506.503	CONSTRUCT DRAINAGE STRUCTURE DESIGN 60-4020	LIN FT	11.6	\$600.00	\$6,960.00
2506.603	CONSTRUCT DRAINAGE STRUCTURE DESIGN SPECIAL	LIN FT	10.5	\$600.00	\$6,300.00
2506.603	RECONSTRUCT DRAINAGE STRUCTURE SPECIAL	LIN FT	6.2	\$516.00	\$3,199.20
2521.518	6" CONCRETE WALK	S F	1160	\$9.50	\$11,020.00
2521.518	3" BITUMINOUS WALK	S F	2430	\$3.80	\$9,234.00
2531.503	CONCRETE CURB & GUTTER DESIGN	L F	400	\$24.50	\$9,800.00
2531.618	TRUNCATED DOMES	S F	48	\$50.00	\$2,400.00
2563.601	TRAFFIC CONTROL	LS	1	\$1,500.00	\$1,500.00
2563.610	FLAGGER	HOURL	10	\$85.00	\$850.00
2564.502	SIGN	S F	23	\$73.50	\$1,690.50
2573.502	STORM DRAIN INLET PROTECTION	EACH	2	\$200.00	\$400.00
2574.507	COMMON TOPSOIL BORROW	C Y	150	\$38.00	\$5,700.00
2575.604	SITE RESTORATION	S Y	1280	\$5.00	\$6,400.00

construction total \$322,128.90
 +25% engineering, admin, construction \$80,532.23
 subtotal \$402,661.13

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- ### LEGEND
- CONSTRUCTION LIMITS
 - - - EXISTING R/W
 - - - PROPOSED R/W
 - - - TEMPORARY EASEMENT
 - - - PERMANENT EASEMENT
 - WETLAND DELINEATION- AREA OF ENVIRONMENTAL SENSITIVITY
 - TRAFFIC FLOW ARROW
 - MILL AND OVERLAY
- ① PEDESTRIAN CURB RAMP
SEE PEDESTRAIN RAMP DETAILS.
 - ② SEE DRIVEWAY TABULATION
FOR MORE INFORMATION.
FIELD VERIFY TIE IN LOCATION
 - ③ MAIL BOX SUPPORT
 - ④ CURB TRANSITION. SEE MISCELLANEOUS DETAILS.
 - ⑤ CONSTRUCT CONCRETE MEDIAN NOSE
PER MNDOT STANDARD PLATE 7113
 - ⑥ INSTALL LIGHTING UNIT
LIGHT FOUNDATION DESIGN E



- ### GENERAL NOTES
- ALL DIMENSIONS ARE TO FACE OF CURB OR EDGE OF BITUMINOUS UNLESS OTHERWISE NOTED.
 - SEE INTERSECTION DETAILS FOR ADDITIONAL INFORMATION AT INTERSECTIONS.
 - SEE DRIVEWAY DETAIL SHEETS FOR DETAILED DRIVEWAY INFORMATION.
 - ALL CURB AND GUTTER TO BE B624 UNLESS OTHERWISE NOTED.

NO.	DATE	BY	CHK	REVISIONS

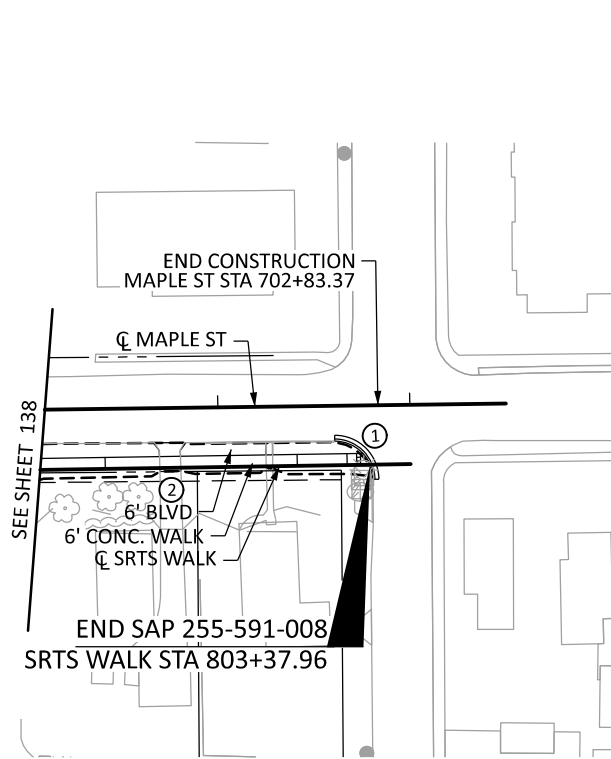
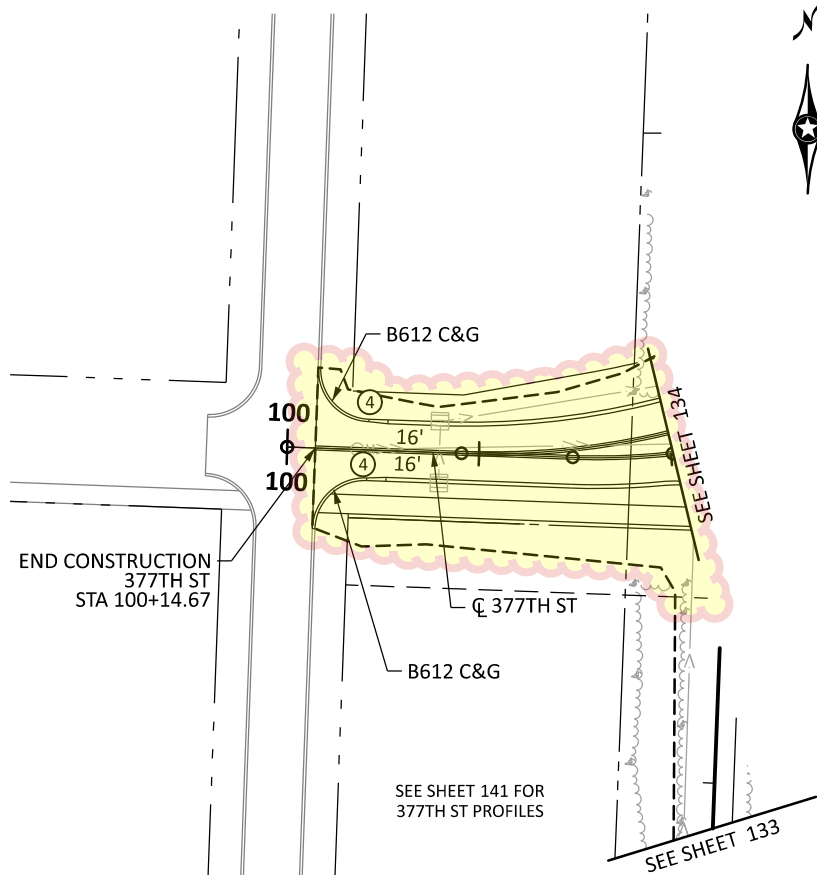
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Checked By:	MAN
Approved By:	NEH

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.

Nicholas E. Hentrich, PE
NICHOLAS E. HENTRICH, PE
DATE: 9/12/2024 LICENSE NO. 44620

CSAH 30 (Forest Blvd) Improvements
Chisago County, Minnesota

CHISAGO COUNTY, MINNESOTA	SHEET 134 OF 216 SHEETS
CONSTRUCTION PLAN & PROFILE SAP 013-630-021 / SAP 225-591-007 / SAP 225-102-004	



- LEGEND**
- CONSTRUCTION LIMITS
 - - - EXISTING R/W
 - - - PROPOSED R/W
 - - - TEMPORARY EASEMENT
 - - - PERMANENT EASEMENT
 - WETLAND DELINEATION-
AREA OF ENVIRONMENTAL
SENSITIVITY
 - TRAFFIC FLOW ARROW
 - MILL AND OVERLAY
- ① PEDESTRIAN CURB RAMP
SEE PEDESTRAIN RAMP DETAILS.
- ② SEE DRIVEWAY TABULATION
FOR MORE INFORMATION.
FIELD VERIFY TIE IN LOCATION
- ③ MAIL BOX SUPPORT
- ④ CURB TRANSITION. SEE MISCELLANEOUS DETAILS.
- ⑤ CONSTRUCT CONCRETE MEDIAN NOSE
PER MNDOT STANDARD PLATE 7113
- ⑥ INSTALL LIGHTING UNIT
LIGHT FOUNDATION DESIGN E

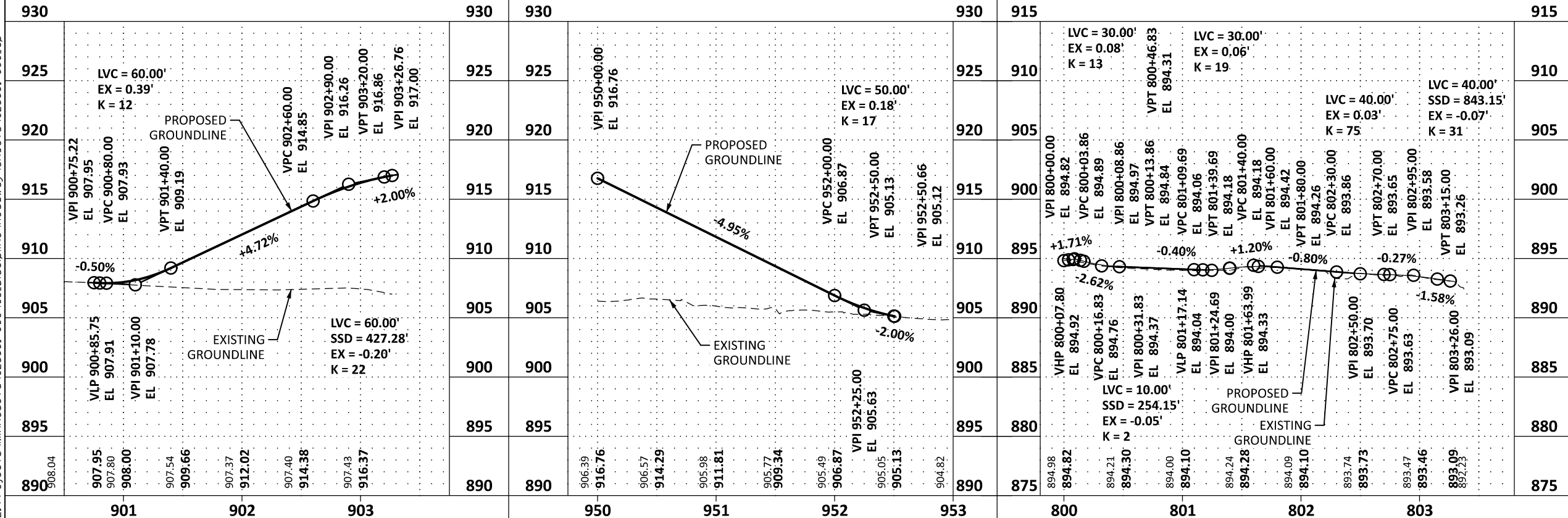
SOUTH SUNRISE PRAIRIE TRAIL

NORTH SUNRISE PRAIRIE TRAIL

SRTS WALK

GENERAL NOTES

- ALL DIMENSIONS ARE TO FACE OF CURB OR EDGE OF BITUMINOUS UNLESS OTHERWISE NOTED.
- SEE INTERSECTION DETAILS FOR ADDITIONAL INFORMATION AT INTERSECTIONS.
- SEE DRIVEWAY DETAIL SHEETS FOR DETAILED DRIVEWAY INFORMATION.
- ALL CURB AND GUTTER TO BE B624 UNLESS OTHERWISE NOTED.



NO.	DATE	BY	CHK	REVISIONS

Design By: NEH
Plan By: MKV
Checked By: MAN
Approved By: NEH

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.

NICHOLAS E. HENTZ, P.E.
DATE: 9/12/2024 LICENSE NO. 44620



CSAH 30 (Forest Blvd) Improvements
Chisago County, Minnesota

CHISAGO COUNTY, MINNESOTA

CONSTRUCTION PLAN & PROFILE
SAP 013-630-021 / SAP 225-591-007 / SAP 225-102-004

SHEET
139
OF
216
SHEETS

CSAH 30 Improvements - Low Bid Schedule I																				
Project: CSAH 30 (Forest Blvd) Improvements Project Location: North Branch, Chisago County, MN Project No.: SAP 013-630-021, SAP 225-102-004, SAP 225-591-007 Letting Date: 10/29/2024 10/30/2024																				
STATEMENT OF ESTIMATED QUANTITIES																				
Item No.	Description	Notes	Unit	Unit Price	PROJECT TOTAL		CHISAGO COUNTY SAP 013-630-021						50% CHISAGO COUNTY SAP 013-630-021 50% CITY OF NORTH BRANCH SAP 225-102-004				SAP 225-591-007 CITY OF NORTH BRANCH		CITY OF NORTH BRANCH	
							ROADWAY				STORM SEWER		ROADWAY		STORM SEWER		SAFE ROUTES TO SCHOOL			
					Estimated Quantity	Estimated Cost	Estimated Quantity	Estimated Cost	Estimated Quantity	Estimated Cost									Estimated Quantity	Estimated Cost
2021.501	MOBILIZATION		LUMP SUM	\$460,000.00	1	\$460,000.00	0.08	\$36,800.00	0.49	\$225,400.00	0.17	\$78,200.00	0.13	\$59,800.00	0.03	\$13,800.00	0.05	\$23,000.00	0.05	\$23,000.00
2051.501	MAINT AND RESTORATION OF HAUL ROADS		LUMP SUM	\$10,500.00	1	\$10,500.00			1	\$10,500.00										
2101.502	CLEARING		EACH	\$199.00	51	\$10,149.00							1	\$199.00			50	\$9,950.00		
2101.502	GRUBBING		EACH	\$199.00	51	\$10,149.00							1	\$199.00			50	\$9,950.00		
2101.505	CLEARING		ACRE	\$2,501.00	0.7	\$1,750.70			0.1	\$250.10			0.5	\$1,250.50			0.1	\$250.10		
2101.505	GRUBBING		ACRE	\$2,501.00	0.7	\$1,750.70			0.1	\$250.10			0.5	\$1,250.50			0.1	\$250.10		
2104.502	REMOVE BOX CULVERT		EACH	\$3,700.00	2	\$7,400.00					2	\$7,400.00								
2104.502	REMOVE BOX CULVERT END		EACH	\$3,700.00	4	\$14,800.00					4	\$14,800.00								
2104.502	REMOVE GATE VALVE AND BOX		EACH	\$1,800.00	4	\$7,200.00							2	\$3,600.00			2	\$3,600.00		
2104.502	REMOVE HYDRANT		EACH	\$1,500.00	4	\$6,000.00							2	\$3,000.00			2	\$3,000.00		
2104.502	REMOVE DELINEATOR / MARKER		EACH	\$175.00	5	\$875.00			5	\$875.00										
2104.502	REMOVE SIGN		EACH	\$25.00	25	\$625.00			22	\$550.00			1	\$25.00					2	\$50.00
2104.502	REMOVE LIGHT FOUNDATION		EACH	\$150.00	6	\$900.00			5	\$750.00			1	\$150.00						
2104.502	SALVAGE LIGHTING UNIT		EACH	\$635.32	6	\$3,811.92			5	\$3,176.60			1	\$635.32						
2104.502	SALVAGE SIGN		EACH	\$25.00	5	\$125.00			5	\$125.00										
2104.502	SALVAGE MAIL BOX SUPPORT		EACH	\$200.00	14	\$2,800.00			8	\$1,600.00			2	\$400.00					4	\$800.00
2104.503	SAWING CONCRETE PAVEMENT (FULL DEPTH)		LIN FT	\$6.00	695	\$4,170.00			671	\$4,026.00			24	\$144.00						
2104.503	SAWING BITUMINOUS PAVEMENT (FULL DEPTH)		LIN FT	\$1.90	758	\$1,440.20			648	\$1,231.20							70	\$133.00	40	\$76.00
2104.503	REMOVE PIPE CULVERTS		LIN FT	\$17.00	914	\$15,538.00			806	\$13,702.00			108	\$1,836.00						
2104.503	REMOVE WATER MAIN		LIN FT	\$15.00	110	\$1,650.00													110	\$1,650.00
2104.503	REMOVE CURB AND GUTTER		LIN FT	\$4.50	1120	\$5,040.00			1002	\$4,509.00							78	\$351.00	40	\$180.00
2104.503	REMOVE GUARDRAIL-PLATE BEAM		LIN FT	\$18.00	465	\$8,370.00			465	\$8,370.00										
2104.503	REMOVE STEEL CASING		LIN FT	\$10.00	100	\$1,000.00													100	\$1,000.00
2104.503	REMOVE TENSION CABLE GUARDRAIL		LIN FT	\$20.00	505	\$10,100.00			505	\$10,100.00										
2104.504	REMOVE PAVEMENT	(3) (4)	SQ YD	\$2.00	10531	\$21,062.00			8185	\$16,370.00			2346	\$4,692.00						
2104.504	REMOVE CONCRETE DRIVEWAY PAVEMENT		SQ YD	\$2.75	431	\$1,185.25			431	\$1,185.25										
2104.504	REMOVE BITUMINOUS DRIVEWAY PAVEMENT		SQ YD	\$2.00	710	\$1,420.00			540	\$1,080.00							161	\$322.00	9	\$18.00
2104.504	REMOVE BITUMINOUS PAVEMENT	(4)	SQ YD	\$2.00	35469	\$70,938.00			32033	\$64,066.00			2861	\$5,722.00					575	\$1,150.00
2104.518	REMOVE BITUMINOUS WALK		SQ FT	\$2.00	10035	\$20,070.00							10035	\$20,070.00						
2104.518	REMOVE CONCRETE WALK		SQ FT	\$2.00	970	\$1,940.00			237	\$474.00									733	\$1,466.00
2104.602	REMOVE SIGN SPECIAL		EACH	\$25.00	1	\$25.00							1	\$25.00						
2104.602	SALVAGE SIGN SPECIAL		EACH	\$25.00	7	\$175.00			7	\$175.00										
2104.602	SALVAGE SIGN PANEL SPECIAL		EACH	\$25.00	3	\$75.00			3	\$75.00										
2106.507	EXCAVATION - COMMON	(P)	CU YD	\$6.00	22005	\$132,030.00			13093	\$78,558.00			4649	\$27,894.00			3103	\$18,618.00	1160	\$6,960.00
2106.507	EXCAVATION - SUBGRADE	(P)	CU YD	\$8.50	20871	\$177,403.50			16511	\$140,343.50			3510	\$29,835.00					850	\$7,225.00
2106.507	SELECT GRANULAR EMBANKMENT (CV)	(P)	CU YD	\$11.50	24404	\$280,646.00			18751	\$215,636.50			4794	\$55,131.00					859	\$9,878.50
2106.507	SELECT GRANULAR EMBANKMENT MOD 10% (CV)	(P)	CU YD	\$11.50	1022	\$11,753.00					1022	\$11,753.00								
2106.507	COMMON EMBANKMENT (CV)	(P)	CU YD	\$8.00	13075	\$104,600.00			4181	\$33,448.00			1278	\$10,224.00			7277	\$58,216.00	339	\$2,712.00
2106.601	DEWATERING	(2)	LUMP SUM	\$42,000.00	1	\$42,000.00			1	\$42,000.00										
2130.523	WATER	(6)	M GALLON	\$50.00	400	\$20,000.00			400	\$20,000.00										
2211.507	AGGREGATE BASE (CV) CLASS 5	(P)	CU YD	\$42.00	12188	\$511,896.00			9420	\$395,640.00			1630	\$68,460.00			801	\$33,642.00	337	\$14,154.00
2221.509	SHOULDER BASE AGGREGATE CLASS 5 MOD		TON	\$44.50	494	\$21,983.00			494	\$21,983.00										
2232.504	MILL BITUMINOUS SURFACE (2.0")		SQ YD	\$1.80	40837	\$73,506.60	36863	\$66,353.40	3974	\$7,153.20										
2355.506	BITUMINOUS MATERIAL FOR FOG SEAL		GALLON	\$6.00	2163	\$12,978.00	2163	\$12,978.00												
2357.506	BITUMINOUS MATERIAL FOR TACK COAT		GALLON	\$2.50	11170	\$27,925.00	3326	\$8,315.00	7319	\$18,297.50			403	\$1,007.50					122	\$305.00
2360.509	TYPE SP 12.5 NON WEARING COURSE MIXTURE (3,B)		TON	\$67.00	5102	\$341,834.00			4799	\$321,533.00			303	\$20,301.00						
2360.509	TYPE SP 12.5 WEARING COURSE MIXTURE (3,C)		TON	\$82.00	17081	\$1,400,642.00	4413	\$361,866.00	11693	\$958,826.00			605	\$49,610.00			36	\$2,952.00	334	\$27,388.00
2360.509	TYPE SP 12.5 WEARING COURSE MIXTURE (4,F)		TON	\$114.00	477	\$54,378.00							477	\$54,378.00						
2360.509	TYPE SP 12.5 NON WEARING COURSE MIXTURE (4,F)		TON	\$106.00	239	\$25,334.00							239	\$25,334.00						
2411.507	STRUCTURE EXCAVATION CLASS E		CU YD	\$10.00	2743	\$27,430.00					2743	\$27,430.00								
2412.502	9X4 PRECAST CONCRETE BOX CULVERT END SECTION	(9)	EACH	\$12,000.00	2	\$24,000.00					2	\$24,000.00								
2412.503	9X4 PRECAST CONCRETE BOX CULVERT	(9)	LIN FT	\$1,650.00	200	\$330,000.00					200	\$330,000.00								
2451.507	GRANULAR BEDDING (CV)		CU YD	\$11.50	183	\$2,104.50					183	\$2,104.50								

CSAH 30 Improvements - Low Bid Schedule I																					
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STATEMENT OF ESTIMATED QUANTITIES																					
Item No.	Description	Notes	Unit	Unit Price	PROJECT TOTAL		CHISAGO COUNTY SAP 013-630-021						50% CHISAGO COUNTY SAP 013-630-021 50% CITY OF NORTH BRANCH SAP 225-102-004				SAP 225-591-007 CITY OF NORTH BRANCH		CITY OF NORTH BRANCH		
							ROADWAY				STORM SEWER		ROADWAY		STORM SEWER		SAFE ROUTES TO SCHOOL				
							Estimated Quantity	Estimated Cost	Estimated Quantity	Estimated Cost											Estimated Quantity
2501.502	18" GS PIPE APRON		EACH	\$300.00	14	\$4,200.00			14	\$4,200.00											
2501.502	15" RC PIPE APRON		EACH	\$2,700.00	2	\$5,400.00					2	\$5,400.00									
2501.502	18" RC PIPE APRON		EACH	\$2,900.00	8	\$23,200.00			8	\$23,200.00											
2501.502	24" RC PIPE APRON		EACH	\$3,200.00	6	\$19,200.00			6	\$19,200.00											
2501.502	30" RC PIPE APRON		EACH	\$3,400.00	3	\$10,200.00					1	\$3,400.00			2	\$6,800.00					
2501.502	36" RC PIPE APRON		EACH	\$3,800.00	1	\$3,800.00					1	\$3,800.00									
2501.502	15" RC SAFETY APRON		EACH	\$2,775.00	2	\$5,550.00									2	\$5,550.00					
2501.502	18" RC SAFETY APRON		EACH	\$2,950.00	2	\$5,900.00			2	\$5,900.00											
2501.503	18" CAS PIPE CULVERT		LIN FT	\$38.00	320	\$12,160.00			320	\$12,160.00											
2501.503	18" RC PIPE CULVERT DESIGN 3006 CLASS III		LIN FT	\$46.00	376	\$17,296.00			367	\$16,882.00									9	\$414.00	
2501.503	24" RC PIPE CULVERT DESIGN 3006 CLASS III		LIN FT	\$57.50	300	\$17,250.00			300	\$17,250.00											
2502.503	4" PERF TP PIPE DRAIN		LIN FT	\$18.00	600	\$10,800.00			400	\$7,200.00			200	\$3,600.00							
2503.503	12" PVC PIPE SEWER		LIN FT	\$54.00	280	\$15,120.00													280	\$15,120.00	
2503.503	15" RC PIPE SEWER DESIGN 3006 CLASS V		LIN FT	\$38.10	3307	\$125,996.70					1944	\$74,066.40			1363	\$51,930.30					
2503.503	18" RC PIPE SEWER DESIGN 3006 CLASS III		LIN FT	\$42.40	1012	\$42,908.80					1012	\$42,908.80									
2503.503	24" RC PIPE SEWER DESIGN 3006 CLASS III		LIN FT	\$52.50	2054	\$107,835.00					2054	\$107,835.00									
2503.503	30" RC PIPE SEWER DESIGN 3006 CLASS III		LIN FT	\$73.00	947	\$69,131.00					477	\$34,821.00			470	\$34,310.00					
2503.503	36" RC PIPE SEWER DESIGN 3006 CLASS III		LIN FT	\$101.40	267	\$27,073.80					267	\$27,073.80									
2503.602	CONNECT TO EXISTING MANHOLES (SAN)		EACH	\$4,500.00	1	\$4,500.00													1	\$4,500.00	
2503.603	20" STEEL CASING PIPE		LIN FT	\$140.00	90	\$12,600.00													90	\$12,600.00	
2504.602	CONNECT TO EXISTING WATER MAIN		EACH	\$4,000.00	4	\$16,000.00													4	\$16,000.00	
2504.602	HYDRANT		EACH	\$7,600.00	4	\$30,400.00													4	\$30,400.00	
2504.602	ADJUST HYDRANT AND GATE VALVE		EACH	\$1,500.00	1	\$1,500.00											1	\$1,500.00			
2504.602	ADJUST GATE VALVE AND BOX		EACH	\$500.00	2	\$1,000.00							2	\$1,000.00							
2504.602	6" GATE VALVE AND BOX		EACH	\$2,884.00	4	\$11,536.00													4	\$11,536.00	
2504.603	6" WATERMAIN DUCTILE IRON CL 52		LIN FT	\$54.00	44	\$2,376.00													44	\$2,376.00	
2504.603	10" WATERMAIN DUCTILE IRON CL 52		LIN FT	\$84.00	170	\$14,280.00													170	\$14,280.00	
2504.603	16" STEEL CASING PIPE		LIN FT	\$100.00	150	\$15,000.00													150	\$15,000.00	
2506.502	CASTING ASSEMBLY	(13)	EACH	\$1,000.00	70	\$70,000.00					50	\$50,000.00			18	\$18,000.00			2	\$2,000.00	
2506.502	ADJUST FRAME AND RING CASTING		EACH	\$950.00	2	\$1,900.00			1	\$950.00									1	\$950.00	
2506.503	CONSTRUCT DRAINAGE STRUCTURE DESIGN G		LIN FT	\$960.00	94.2	\$90,432.00					82	\$78,720.00			12.2	\$11,712.00					
2506.503	CONSTRUCT DRAINAGE STRUCTURE DESIGN 48-4020		LIN FT	\$705.00	276.7	\$195,073.50					188.3	\$132,751.50			88.4	\$62,322.00					
2506.503	CONSTRUCT DRAINAGE STRUCTURE DESIGN 60-4020		LIN FT	\$600.00	26.9	\$16,140.00					16	\$9,600.00			10.9	\$6,540.00					
2506.602	ADJUST FRAME AND RING CASTING (SPECIAL)		EACH	\$650.00	2	\$1,300.00			1	\$650.00			1	\$650.00							
2506.603	CONSTRUCT DRAINAGE STRUCTURE DESIGN SPECIAL	(10)	LIN FT	\$600.00	10.5	\$6,300.00													10.5	\$6,300.00	
2506.603	RECONSTRUCT DRAINAGE STRUCTURE SPECIAL		LIN FT	\$516.00	6.2	\$3,199.20													6.2	\$3,199.20	
2511.504	GEOTEXTILE FILTER TYPE 7		SQ YD	\$3.80	398	\$1,512.40					398	\$1,512.40									
2511.507	RANDOM RIPRAP CLASS I		CU YD	\$125.00	7	\$875.00					7	\$875.00									
2511.507	RANDOM RIPRAP CLASS II	(1)	CU YD	\$125.00	62.8	\$7,850.00			35.8	\$4,475.00	18.8	\$2,350.00			8.2	\$1,025.00					
2511.507	RANDOM RIPRAP CLASS III		CU YD	\$120.00	400	\$48,000.00					400	\$48,000.00									
2521.518	4" CONCRETE WALK		SQ FT	\$5.79	19101	\$110,594.79			485	\$2,808.15			14310	\$82,854.90			3546	\$20,531.34	760	\$4,400.40	
2521.518	7" CONCRETE WALK	(8)	SQ FT	\$13.35	3525	\$47,058.75							3525	\$47,058.75							
2521.518	3" BITUMINOUS WALK		SQ FT	\$1.75	49336	\$86,338.00							11408	\$19,964.00			37928	\$66,374.00			
2521.602	DRILL AND GROUT REINF BAR (EPOXY COATED)	(7)	EACH	\$8.50	93	\$790.50							33	\$280.50			60	\$510.00			
2521.618	CONCRETE CURB RAMP WALK		SQ FT	\$9.50	4449	\$42,265.50			528	\$5,016.00			1619	\$15,380.50			2302	\$21,869.00			
2531.503	CONCRETE CURB AND GUTTER DESIGN B612		LIN FT	\$24.50	270	\$6,615.00			163	\$3,993.50									107	\$2,621.50	
2531.503	CONCRETE CURB AND GUTTER DESIGN B624		LIN FT	\$20.25	9892	\$200,313.00			9004	\$182,331.00			286	\$5,791.50			32	\$648.00	570	\$11,542.50	
2531.503	CONCRETE CURB AND GUTTER DESIGN R424		LIN FT	\$26.50	374	\$9,911.00							374	\$9,911.00							
2531.503	CONCRETE CURB AND GUTTER DESIGN S524		LIN FT	\$22.75	3687	\$83,879.25							3687	\$83,879.25							
2531.504	6" CONCRETE DRIVEWAY PAVEMENT		SQ YD	\$71.00	340	\$24,140.00			340	\$24,140.00											
2531.504	8" CONCRETE DRIVEWAY PAVEMENT		SQ YD	\$84.00	628	\$52,752.00			503	\$42,252.00									125	\$10,500.00	
2531.618	TRUNCATED DOMES		SQ FT	\$50.00	580	\$29,000.00							160	\$8,000.00			420	\$21,000.00			
2540.602	INSTALL MAIL BOX SUPPORT	(5)	EACH	\$275.00	14	\$3,850.00			8	\$2,200.00			2	\$550.00					4	\$1,100.00	
2545.502	LIGHTING UNIT TYPE 9-30		EACH	\$3,801.18	11	\$41,812.98							11	\$41,812.98							
2545.502	LIGHT FOUNDATION DESIGN E		EACH	\$1,052.09	6	\$6,312.54			5	\$5,260.45			1	\$1,052.09							

CSAH 30 Improvements - Low Bid Schedule I																					
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Item No.	Description	Notes	Unit	Unit Price	PROJECT TOTAL		CHISAGO COUNTY SAP 013-630-021						50% CHISAGO COUNTY SAP 013-630-021 50% CITY OF NORTH BRANCH SAP 225-102-004				SAP 225-591-007 CITY OF NORTH BRANCH		CITY OF NORTH BRANCH		
							ROADWAY				STORM SEWER		ROADWAY		STORM SEWER		SAFE ROUTES TO SCHOOL				
					Estimated Quantity	Estimated Cost	Estimated Quantity	Estimated Cost	Estimated Quantity	Estimated Cost									Estimated Quantity	Estimated Cost	Estimated Quantity
2545.502	LIGHT FOUNDATION DESIGN STEEL E		EACH	\$1,440.28	11	\$15,843.08							11	\$15,843.08							
2545.502	SERVICE CABINET -TYPE L1		EACH	\$9,718.81	1	\$9,718.81							1	\$9,718.81							
2545.502	SERVICE EQUIPMENT		EACH	\$1,326.23	1	\$1,326.23							1	\$1,326.23							
2545.502	EQUIPMENT PAD B		EACH	\$1,140.75	1	\$1,140.75							1	\$1,140.75							
2545.503	2" NON-METALLIC CONDUIT		LIN FT	\$4.79	1500	\$7,185.00							1500	\$7,185.00							
2545.503	UNDERGROUND WIRE 1/C 8 AWG		LIN FT	\$1.14	6500	\$7,410.00							6500	\$7,410.00							
2545.602	INSTALL LIGHTING UNIT		EACH	\$1,123.50	6	\$6,741.00			5	\$5,617.50			1	\$1,123.50							
2554.502	GUIDE POST TYPE B	(11)	EACH	\$85.00	21	\$1,785.00			13	\$1,105.00	4	\$340.00			4	\$340.00					
2557.503	WIRE FENCE DESIGN 48V-9322		LIN FT	\$80.00	50	\$4,000.00			50	\$4,000.00											
2563.601	TRAFFIC CONTROL	(12)	LUMP SUM	\$34,000.00	1	\$34,000.00	0.08	\$2,720.00	0.49	\$16,660.00	0.17	\$5,780.00	0.13	\$4,420.00	0.03	\$1,020.00	0.05	\$1,700.00	0.05	\$1,700.00	
2563.613	PORTABLE CHANGEABLE MESSAGE SIGN		UNIT DAY	\$75.00	100	\$7,500.00			100	\$7,500.00											
2563.618	CONSTRUCTION SIGN SPECIAL	(14)	SQ FT	\$200.00	7	\$1,400.00			7	\$1,400.00											
2564.602	INSTALL SIGN		EACH	\$450.00	5	\$2,250.00			5	\$2,250.00											
2564.602	INSTALL SIGN SPECIAL		EACH	\$250.00	7	\$1,750.00			7	\$1,750.00											
2564.602	INSTALL SIGN PANEL SPECIAL		EACH	\$250.00	3	\$750.00			3	\$750.00											
2564.602	DELINEATOR / MARKER		EACH	\$350.00	3	\$1,050.00			1	\$350.00			2	\$700.00							
2564.602	DELINEATOR / MARKER PANEL		EACH	\$95.00	13	\$1,235.00			6	\$570.00			4	\$380.00					3	\$285.00	
2564.618	SIGN		SQ FT	\$73.50	682	\$50,127.00			441	\$32,413.50			173	\$12,715.50					68	\$4,998.00	
2565.602	RIGID PVC LOOP DETECTOR 6'X6'	(15)	EACH	\$1,097.52	9	\$9,877.68			9	\$9,877.68											
2565.616	PEDESTRIAN CROSSWALK FLASHER SYSTEM		SYSTEM	\$26,666.16	3	\$79,998.48			1	\$26,666.16			1	\$26,666.16					1	\$26,666.16	
2573.501	STABILIZED CONSTRUCTION EXIT		LUMP SUM	\$1,500.00	1	\$1,500.00			1	\$1,500.00											
2573.501	EROSION CONTROL SUPERVISOR		LUMP SUM	\$765.34	1	\$765.34			1	\$765.34											
2573.502	STORM DRAIN INLET PROTECTION		EACH	\$200.00	78	\$15,600.00			58	\$11,600.00			16	\$3,200.00					4	\$800.00	
2573.502	CULVERT END CONTROLS		EACH	\$220.00	17	\$3,740.00			9	\$1,980.00							8	\$1,760.00			
2573.503	SILT FENCE, TYPE MS		LIN FT	\$1.95	8278	\$16,142.10			6915	\$13,484.25			474	\$924.30			889	\$1,733.55			
2573.503	SEDIMENT CONTROL LOG TYPE STRAW		LIN FT	\$2.35	3678	\$8,643.30			2078	\$4,883.30			729	\$1,713.15			597	\$1,402.95	274	\$643.90	
2573.602	TEMPORARY STREAM DIVERSION SYSTEM		EACH	\$10,000.00	1	\$10,000.00					1	\$10,000.00									
2574.508	FERTILIZER TYPE 3		POUND	\$0.74	3378	\$2,499.72			2320	\$1,716.80			549	\$406.26			404	\$298.96	105	\$77.70	
2575.504	RAPID STABILIZATION METHOD 4		SQ YD	\$1.70	31170	\$52,989.00			24484	\$41,622.80							5450	\$9,265.00	1236	\$2,101.20	
2575.505	SEEDING		ACRE	\$525.00	12.3	\$6,457.50			8	\$4,200.00			1.9	\$997.50			1.8	\$945.00	0.6	\$315.00	
2575.505	DISK ANCHORING		ACRE	\$175.00	8.4	\$1,470.00			6.4	\$1,120.00			1.5	\$262.50					0.5	\$87.50	
2575.508	HYDRAULIC STABILIZED FIBER MATRIX		POUND	\$0.91	9445	\$8,594.95			4609	\$4,194.19			1306	\$1,188.46			3420	\$3,112.20	110	\$100.10	
2575.509	MULCH MATERIAL TYPE 3		TON	\$650.00	12.4	\$8,060.00			9.7	\$6,305.00			2.2	\$1,430.00					0.5	\$325.00	
2575.523	RAPID STABILIZATION METHOD 3		M GALLON	\$495.00	22	\$10,890.00			10.5	\$5,197.50			3	\$1,485.00			8	\$3,960.00	0.5	\$247.50	
2575.608	SEED TURFGRASS		POUND	\$3.45	645	\$2,225.25			314	\$1,083.30			89	\$307.05			234	\$807.30	8	\$27.60	
2575.608	SEED MESIC INSLOPE		POUND	\$10.30	648	\$6,674.40			441	\$4,542.30			105	\$1,081.50			80	\$824.00	22	\$226.60	
2582.503	4" SOLID LINE PAINT		LIN FT	\$0.13	9597	\$1,247.61	3065	\$398.45	6532	\$849.16											
2582.503	6" SOLID LINE PAINT		LIN FT	\$0.17	44609	\$7,583.53	25698	\$4,368.66	18911	\$3,214.87											
2582.503	24" SOLID LINE PAINT		LIN FT	\$3.70	545	\$2,016.50			503	\$1,861.10									42	\$155.40	
2582.503	4" BROKEN LINE PAINT		LIN FT	\$0.13	3950	\$513.50	2610	\$339.30	1340	\$174.20											
2582.503	6" DOTTED LINE PAINT		LIN FT	\$0.17	37	\$6.29			37	\$6.29											
2582.503	10" DOTTED LINE PAINT		LIN FT	\$0.40	88	\$35.20	88	\$35.20													
2582.503	4" DOUBLE SOLID LINE PAINT		LIN FT	\$0.26	6680	\$1,736.80			5904	\$1,535.04									776	\$201.76	
2582.503	4" SOLID LINE PAINT GROUND IN (WR)		LIN FT	\$1.10	2869	\$3,155.90			1089	\$1,197.90			1543	\$1,697.30					237	\$260.70	
2582.503	6" SOLID LINE PAINT GROUND IN (WR)		LIN FT	\$1.30	3856	\$5,012.80			1815	\$2,359.50			2041	\$2,653.30							
2582.503	6" DOTTED LINE PAINT GROUND IN (WR)		LIN FT	\$1.30	46	\$59.80			23	\$29.90			23	\$29.90							
2582.503	12" DOTTED LINE PREFORM THERMO GROUND IN		LIN FT	\$20.00	86	\$1,720.00							43	\$860.00					43	\$860.00	
2582.518	PAVEMENT MESSAGE PAINT		SQ FT	\$4.00	1105	\$4,420.00	79	\$316.00	995	\$3,980.00			31	\$124.00							
2582.518	CROSSWALK PREFORM THERMOPLASTIC		SQ FT	\$13.00	474	\$6,162.00			474	\$6,162.00											
2582.518	CROSSWALK PREFORM THERMOPLASTIC GROUND IN		SQ FT	\$15.00	360	\$5,400.00							180	\$2,700.00					180	\$2,700.00	
TOTAL						\$6,586,316.60		\$494,490.01		\$3,238,801.63		\$1,134,921.40		\$876,647.54		\$213,349.30		\$322,475.50		\$305,631.22	



Prepared By: Kevin Schieber, Mayor

Presenter: Kevin Schieber, Mayor

Date: 07/02/2025

Board & Commission: City Council

Subject: Consider approval of Resolution # R-204-2025 adopting amendment to the City of North Branch Policies & Procedures Manual (Code of Conduct and Bylaws).

Background Information: The Council recently discussed changes to the public comments section of the city's by-laws, specifically, and only, rule C.9 has been changed, to promote and encourage additional public participation at meetings. The council, by consensus, agreed to the following changes to the Bylaws:

Requested action:

Motion and second to approve resolution R-204-2025 to approve the change to the Bylaws as presented.

Voting Requirements:

Voting Options Simple Majority

**RESOLUTION # R-204-2025
CITY OF NORTH BRANCH**

**A RESOLUTION ADOPTING AMENDMENT TO THE CITY OF NORTH BRANCH POLICIES &
PROCEDURES MANUAL (CODE OF CONDUCT AND BYLAWS)**

WHEREAS, the City of North Branch is committed to maintaining a clear and effective set of policies and procedures for its Elected Officials and Appointed Commissioners; and

WHEREAS, the City Council deems it necessary to amend a section of the City of North Branch Policies & Procedures Manual (Code of Conduct and Bylaws), to ensure clarity, consistency, and alignment with current best practices and legal requirements; and

WHEREAS, the proposed amendment addresses a change in section IX. C. 9., to promote and encourage additional public participation at meetings; and

WHEREAS, the City Council believes that adopting this amendment will contribute to a more efficient and respectful working environment for all City residents.

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF NORTH BRANCH, MINNESOTA, AS FOLLOWS:

1. The City Council of North Branch hereby adopts the attached amendment to the City of North Branch Policies & Procedures Manual (Code of Conduct and Bylaws) effective July 8, 2025.
2. The City Administrator is hereby authorized and directed to implement these adopted amendments and to ensure that all relevant Council and Commission members are properly informed and trained on the updated policies and procedures.
3. These amendments shall supersede any previously adopted policies or procedures that are in conflict herewith.

Adopted by the City Council of the City of North Branch, Minnesota, this 8th day of July, 2025.

Kevin Schieber, Mayor

ATTEST:

Matthew Hill, City Administrator

IX. PUBLIC COMMENT AT COUNCIL MEETINGS AND AT PUBLIC HEARINGS

A. Public participation and comment at council meetings. City Council meetings are the forum for the City Council to conduct the City's business. While City Council meetings are open to the public pursuant to the Minnesota Open Meeting Law, they are not a forum for public expression. While the city council is welcoming of public comment at public meetings, members of the public are not allowed to participate in Council discussion and debate without a specific invitation and/or formal recognition by the presiding officer. Members of the public shall not applaud, engage in conversation, or engage in other behavior through words or action that may disrupt the proceedings of council.

B. Members of the public shall follow the direction of the presiding officer. Members of the public who do not follow the direction of the presiding officer will be warned that further disruptive conduct will result in removal from the meeting. After warning, if the conduct continues, the presiding officer may ask the member of the public to leave the meeting room. If the member of the public refuses to follow the direction of the presiding officer, the presiding officer may direct the sergeant-at-arms to remove the person through any lawful means. In emergency situations, or where conduct is an egregious threat to the safety of the public or the council, a warning is not necessary before the sergeant-at-arms is directed to remove the person.

C. Public comment period. A limited forum for individuals to speak with the Council is provided on the agenda for the Council regular meeting. Public comments during the public comment period are subject to these limitations:

1. Speakers must be recognized by the presiding officer before speaking and are limited to five minutes for comment.
2. When multiple speakers appear to speak on the same topic (and they appear to be part of an organized group), comments should not continue to be repetitive. The presiding officer may request speakers to appoint a spokesperson.
3. The presiding officer may place a time limit on the public comment period if necessary to allow for the conduct of City business. If there is not sufficient time at the meeting to hear all public comments, the comment period may be deferred to the next regular Council meeting or at a continued meeting.
4. Speakers must sign up prior to speaking and provide a name, address, and brief summary of the subject matter they wish to address. The sign-up sheet will be available at the start of the City Council meeting.
5. When speakers approach the podium, they are only required to state their full name, and confirm whether or not they are a citizen of the city of North Branch. For safety reasons, they are not required to verbalize their home address. Although speakers are required to take direction from the presiding officer, they will be allowed to direct their public comment at any of the city council members.
6. Speakers shall not use obscene, profane or threatening language, nor conduct themselves in a threatening, loud, or boisterous manner that disrupts the conduct of the meeting or the security of the public.
7. Speakers who do not follow the direction of the presiding officer will be warned that further disruptive conduct will result in removal from the meeting. After warning, if the conduct continues the presiding officer may ask the speaker to leave. If the

speaker refuses to follow the direction of the presiding officer, the presiding officer may direct the sergeant-at-arms to remove the speaker through any lawful means. In emergency situations, or when conduct is an egregious threat to the safety of the public or the council, a warning is not necessary before the sergeant-at-arms is directed to remove the speaker.

8. Council will generally not respond at the same meeting where an issue is initially raised by a member of the public, but Council Members are encouraged to acknowledge the speaker, thank them for their comments, and let them know any matter they present may be referred to city staff for further research and possible report or action at a future Council meeting. The goal of the council is to ensure citizens feel their voices are being heard, but also to make sure their matters are being addressed by the appropriate subject matter experts.

9. Public comment is now allowed on any agenda item that is scheduled to be an action item at the same meeting. While the city council and various city commissions allow public comment at the same meeting where action (voting) is scheduled to take place, we also encourage questions and presentation of any information ahead of a meeting so that staff and/or council members/commissioners can have adequate time to evaluate any new information that might be presented during public comment. To be clear, it is welcomed to communicate and work with city staff and/or council members/commissioners ahead of a meeting, yet still provide the same questions/comments/concerns/info during a public comment portion of a public meeting too.

City of North Branch Policies & Procedures Manual

Policy Name: City Council & Commissions
Standards of Conduct &
Bylaws

Policy Section: City Council

Date Approved By Council: 5/24/17

**Date
Amended:**
7/8/2025

STANDARDS OF CONDUCT

Purpose

The Mayor and City Council of the City of North Branch determine that standards of conduct for Council members, as well as the members of the various advisory boards and commissions of the City of North Branch (the City Council and the members of the various boards and commissions are individually and collectively referred to as "Members"), is essential for the efficient and proper conduct of the public affairs of the City. By eliminating conflicts of interest, acknowledging the laws impacting elected officials and appointed committee members regarding meetings, decision making and public service, and providing aspirational goals for individual behavior while serving the interests of the City, the City Council hopes to promote the faith and confidence of the citizens of North Branch in their government and hopes to encourage its citizens to serve on its Council and Boards and Commissions.

DECORUM OF MEMBERS.

- A. ***Aspirational statement:*** All Members shall assist the presiding officer in preserving order and decorum and in providing for the efficient operation of the meeting.
- B. ***Aspirational statement:*** No Member shall engage in conduct which delays or interrupts the proceedings or which hinders honest, respectful discussion and debate.
- C. ***Aspirational statement:*** Meetings shall be conducted in a courteous manner that recognizes the validity of differing points of view and promotes the ideal of democratic discussion and debate free of insult, slander, and personal attacks and threats.
- D. To effectuate these aspirational goals, Members shall conduct themselves at meetings in a manner consistent with the following:

1. No Member shall engage in private conversation or pass private messages while in the chamber in order to not interrupt the meeting.
2. No Member shall leave his or her seat or make any noise of disturbance while a vote is being taken and until the result of the vote is announced.
3. No Member shall use profane or obscene words or unparliamentary language or use language that threatens harm or violence toward another person during a meeting. No Member shall speak on any subject other than the subject in debate.
4. No Member shall speak without being recognized by the presiding officer; nor shall any Member interrupt the speech of another Member.
5. No Member shall disobey the decision of the presiding officer on questions of order or practice or upon the interpretation of the rules of Council or committee.
6. No Member shall engage in disorderly conduct that disturbs or disrupts the orderly conduct of any meeting.

RULES OF CONDUCT

No Member may knowingly:

- a. Violate the open meeting law.
- b. Participate in a matter that is before the City Council or relevant board that affects the person's financial interests or those of a business with which the person is associated, unless the effect on the person or business is no greater than on other members of the same business classification, profession, or occupation. If a conflict of interest does exist, the person will remove themselves from the table and sit with the audience until the discussion / action on the item has been concluded.
- c. Use the person's public position to secure special privileges or exemptions for the person or for others.
- d. Use the person's public position to solicit personal gifts or favors.
- e. Use the person's public position for personal gain.
- f. Except as specifically permitted pursuant to Minnesota Statute §471.895, accept or receive any gift of substance, whether in the form of money, services, loan, travel, entertainment, hospitality, promise, or any other form, under circumstances in which it could be reasonably expected to influence the person, the person's performance of official action, or be intended as a reward

for the person's official action.

- g. Disclose to the public, or use for the person's or another person's personal gain, information that was gained by reason of the person's public position if the information was not public data or was discussed at a closed session of the City Council or City board or commission.
- h. Disclose information that was received, discussed, or decided in conference with the City's legal counsel that is protected by the attorney-client privilege unless a majority of the City Council has authorized the disclosure.
- i. Make discriminatory statements, including, but not limited to, those related to age, disability, ethnicity, gender, marital status, national origin, race, religion, sexual orientation, and income.

Except as prohibited by the provisions of Minnesota Statute Section §471.87, there is no violation of item b. of this section for a matter that comes before the Council, Board, or Commission, if the Member publicly discloses the circumstances that would violate these standards and refrains from participating in the discussion and vote on the matter. Nothing herein shall be construed to prohibit a contract with an elected official under the circumstances described under Minnesota Statute Section §471.88, if proper statutory procedures are followed.

Annual Training

All new members of the Council or Commissions will be provided a current copy of the League of Minnesota Cities Memorandums on Conflict of Interest and Ethics. In the first quarter of each year, the City Attorney or City Administrator will conduct a training session on the matter. Attendance by Members is required. If a Member is unable to attend they must within 30 days of the training view a video of the training. All Members must sign documentation acknowledging attendance at the training as may be requested by the City Clerk.

Agenda Preparation

All items on meeting agendas will include a memo from the staff, Councilmember or Commission member with background information and the reason for the discussion. The City Administrator and the Mayor will review the agendas and remove those items deemed to be inappropriate or outside the realm of the scope of a commission's authority. The deadline for requests from Members for items to be included on a meeting agenda must be received one week prior to the meeting and be accompanied by written materials to be included in the agenda packet. After the agenda is published, only time sensitive items may be added or deleted from the agenda until the day prior to the meeting. After that time, only emergency items may be added.

Respect for Staff Time and Knowledge

If a Member is utilizing an inordinate amount of staff time, the City Administrator will address the matter with the Member. If the situation persists the City Administrator will

bring the matter to the full City Council.

Focused Discussions

Members shall work to keep discussions and debates focused on the item under discussion.

Complaints

Any person may file a written complaint with the City Administrator alleging a violation of the Rules of Conduct (a - i above). The complaint must contain supporting facts for the allegation.

Data practices

For the purposes of processing complaints, Members are **not** personnel under the Minnesota Government Data Practices Act ("MGDPA").

This means:

- The existence and status of any complaint or charges against a Member, regardless of whether the complaint or charge resulted in disciplinary action, prior to completion of the investigation are **public**. Minn. Stat. 13.43, subd. 2(a)(4).
- Until the preliminary consideration of an allegation is conducted, **all information about the allegation is private as preliminary consideration data**.
- The preliminary consideration of an allegation against a Member shall take place in a **closed** meeting under Minn. Stat. 13D.05, subdivision 2 (b), **unless the Member requests the meeting to be open**.
- If the Council concludes a hearing is warranted, the hearing and all subsequent meetings on the allegations shall be **open to the public** and the underlying data (i.e., complaint and any evidence provided) becomes **public**.
- All data relating to a complaint or charge involving a "public official" are **public upon completion of any investigation** (or if the public official resigns or is terminated while charges are pending). Minn. Stat. 13.43, subdivision 2(e).

*Other MGDPA provisions or other data privacy laws may require different classifications of data than those listed.

Process

The City Administrator shall forward the complaint to the City Attorney for a review of the complaint and any referenced or provided evidence. The City Attorney may issue advice to the City Council on whether the complaint provides a sufficient factual basis to state a claim of a violation of the Rules of Conduct.

Preliminary consideration of complaints

Upon receipt of the City Attorney's advice or upon the council's own initiative, the City Council shall hold a closed session to consider the preliminary allegations against a Member. During the preliminary consideration, the Council shall decide if a full hearing must be conducted under the following standard.

A hearing must be held only if the City Council determines (1) upon advice of the City Attorney, designee, or other attorney appointed by the Council, that the factual allegations state a sufficient claim of a violation of these standards or rise to the level of a legally-recognized conflict of interest, and (2) that the complaint has been lodged in good faith and not for impermissible purposes such as delay or harassment. The City Council's determination must be made within 30 days of the filing of the allegation with the City Administrator.

The Council may choose to hold a hearing, even when not required under this policy. During a hearing, the City Attorney's advice related to the preliminary determination of whether the complaint provides a sufficient factual basis to state a claim may not be considered evidence for or against an allegation.

If the Council decides to hold a hearing, the hearing must be held within 30 days of the City Council's decision.

Hearing process

At the hearing, the person accused and the accuser must have the opportunity to be heard. All parties may be represented by counsel, present evidence, and call witnesses. If witnesses are called, the opposing party shall have the right to cross-examine the witness(es). The Mayor shall act as the presiding officer unless the Mayor is one of the parties. In such cases, the acting mayor shall preside.

If, after the hearing, the Council finds that a violation of a standard has occurred or does exist, the Council may censure the person, refer the matter for criminal prosecution, request a member not participate in a related decision, and/or remove an appointed member of a board or commission from office.

North Branch City Council Bylaws

- I. **AUTHORITY.** City councils are authorized to adopt rules of procedure and provide for order at their meetings pursuant to Minn. Stat. § 412.191. In all points not covered by these rules, the city council shall be governed in its procedure by Robert's Rules of Order, Newly Revised.
- II. **PURPOSE.** The purpose of this policy on City Council meetings is to set the groundwork for orderly and respectful communications between and among Councilmembers, City Staff, and citizens to promote the efficient working of the public's business at City Council meetings.
- III. **THE OPEN MEETING LAW.** The Minnesota Open Meeting Law, Minn. Stat. Chapter 13D, generally requires that all meetings of public bodies be open to the public.
 - A. This presumption of openness serves three basic purposes:
 1. To prohibit actions from being taken at a secret meeting, where it is impossible for the interested public to become fully informed concerning decisions of public bodies, or to detect improper influences.
 2. To ensure the public's right to be informed.
 3. To afford the public an opportunity to present its views to the public body.
 - B. The City Council views providing and encouraging citizen access to city meetings as one of its most important duties. As a result, all Council and Council committee meetings, including special and adjourned meetings, with the exception of closed meetings, as provided by Minn. Stat. Chapter 13D, shall be open to the public.
 - C. In calculating the number of days for providing notice under the Minnesota Open Meeting Law, the first day that the notice is given is not counted, but the last day is counted. If the last day is a Saturday, Sunday, or legal holiday, that day is omitted from the calculation and the following day is considered the last day (unless, it happens to be a Saturday, Sunday, or legal holiday).
 - D. In keeping with the intent of the Minnesota Open Meeting Law, City Councilmembers shall not use any form of electronic communications technology, such as text messaging or e-mail, to communicate with one another or third parties during a public meeting in a manner that is hidden or shielded from the public view.
 - E. Pursuant to Minn. Stat. § 13D.01, subd. 6, at least one copy of the written materials made available to Council at or before the meeting shall also be made available for inspection by the public, excluding any non-public data, attorney-client privileged or materials related to agenda items of closed meetings.

IV. QUORUM. A simple majority (three members) of the Council shall constitute a quorum for the valid transaction of any scheduled business to come before the Council.

V. COUNCIL MEETINGS.

- A. **Location.** All meetings, including special, recessed, and continued meetings, shall be held in the City Council Chambers, unless otherwise designated, pursuant to Minn. Stat. § 13D.04, subd. 2.
- B. **Regular meetings.** A schedule of regular meetings shall be kept on file with the City Administrator. All regular City Council meetings held in City Council Chambers must be recorded.
- C. **Special meetings.** A special meeting is a meeting that is held at a time or location different from that of a regular meeting. A special meeting may be called by the Mayor or any two City Councilmembers by filing a request for the meeting at least three days before the meeting. Days shall be counted as provided in Article III, paragraph C above. Notice to the public of special meetings must be given pursuant to Minn. Stat. § 13D.04, subd. 2. All special City Council meetings held in City Council Chambers must be recorded.
- D. **Emergency meetings.** An emergency meeting may be called by the Mayor or any two City Councilmembers. An emergency meeting is a special meeting called because of circumstances that, in the judgment of the public body require immediate consideration by the public body. Posted or published notice of an emergency meeting is not required. However, the City will make a good faith effort to notify each news outlet that has filed a written request for notice. Notice must be given by telephone or any other method to notify members of the public body. The notice must include the subject of the meeting.
- E. **Closed meetings.** The Minnesota Open Meeting Law allows some meetings to be closed to the public for defined purposes. When a meeting is closed, the presiding officer at the Council meeting will state the reason for closing the meeting on the record and cite the state statute that permits closure.
- F. **Recessed or continued meetings.** When a meeting is recessed or continued, the presiding officer shall state the time and place for the next meeting to occur pursuant to Minn. Stat. § 13D.04, subd 4. The time and place shall be noted in the minutes. If the time and place is stated and noted in the minutes, no additional notice of the meeting is required. However, if the time and place is not stated, the notice procedures for special meeting shall be required.
- G. **Organizational meetings.** The Council will conduct its organizational meeting concurrent with the first regular Council meeting in January of each year to:
 - 1. Appoint an Acting Mayor pursuant to Minn. Stat. § 412.121.
 - 2. Select an official newspaper pursuant to Minn. Stat. § 412.831.

3. Select an official depository for City funds. This must be done within 30 days of the start of the city's fiscal year pursuant to Minn. Stat. §§ 427.01-.02; 118A.02, subd 1; 427.09.
4. Review Council's bylaws and make any needed changes.
5. Assign committee duties to members.
6. Appoint representatives to the various advisory boards and commissions of the City of North Branch as required by the City Code.
7. Approve official bonds that have been filed with the clerk.

VI. PRESIDING OFFICER. The Mayor shall preside at all meetings of the City Council.

- A. **Role of the presiding officer.** The presiding officer shall preserve order, enforce the City Council Rules of Order and Procedure, and determine, without debate, all questions of procedure and order, subject to the final decision of the Council on appeal as provided in Article VI, paragraph F below. The presiding officer shall determine the order in which each member may speak and may move matters to a vote once the officer has determined that all members have spoken. The presiding officer may determine whether a motion or proposed amendment is in order and may call members to order.
- B. **Adjourning meetings.** If considered necessary, because of grave disorder, the presiding officer may adjourn or continue the meeting to another time or suspend the meeting for a specified time.
- C. **Designation of a sergeant-at-arms.** The presiding officer may request that local law enforcement designate a member to serve as a sergeant-at-arms at City Council meetings. The sergeant-at-arms shall carry out all orders or instructions given by the presiding officer for the purpose of maintaining order and decorum at meetings.
- D. **Motions and voting.** The presiding officer may make motions, second motions, speak on any questions, and vote on any matter properly before the Council.
- E. **Absences of the presiding officer.** In the absence of the Mayor, the Acting Mayor shall preside. In the absence of both the Mayor and the Acting Mayor, the City Administrator shall call the meeting to order. The first order of business shall be to select a presiding officer for the meeting from the members present. The City Administrator shall preside until the Councilmembers present choose a member to act as presiding officer.
- F. **Appeals of rulings of the presiding officer.** Any member of the Council may appeal to the full Council a ruling on order or procedure made by the presiding officer.
 1. **Procedure for appeals.** An appeal is made by motion. No second is need for

the motion. The member making the motion may speak once solely on the question involved, and the presiding officer may speak once solely to explain his or her ruling, but no other Councilmember may participate in the discussion.

2. Once both the maker of the motion and the presiding officer has spoken, the matter must be voted upon by the Council as a whole.
3. The appeal shall be sustained if it is approved by a majority of the members present, exclusive of the presiding officer.

G. **Temporary designation of a presiding officer.** The presiding officer may choose to designate a temporary presiding officer before participating in debate on a given matter. In the alternative, the Council may by majority vote designate a temporary presiding officer to preside over the debate on a given matter. The presiding officer shall resume presiding as soon as action on the matter is concluded.

VII. MOTIONS. The purpose of this policy is to foster debate and discussion in an orderly manner, and not to suppress honest discussion with excessive formality. Without rules, confusion and disorderly proceedings would hamper all city action, no matter how well intended. Rules allow City business to be conducted as efficiently as possible, protect minority groups by giving every person a chance to be heard, prevent discussion of multiple topics at once, and allow decisions to be made by majority rule.

- A. **Rights of Councilmembers.** All Councilmembers are equal and have the same rights to make motions; object to motions in a timely manner; participate in debate; have their votes counted; and speak, when recognized, free of interruption.
- B. **Obligations of Councilmembers.** The rights of individual Councilmembers cannot be realized unless all Councilmembers also recognize their obligations as members of the political body. Councilmembers are obligated to receive the recognition of the presiding officer before speaking, except as otherwise provided by these rules. No one has the right to speak at whim.

Councilmembers are obligated to speak directly on the subject being considered and observe time limits for comment. Finally, Councilmembers are obligated to address all remarks to the presiding officer, avoid personal attacks, and refrain from using any insulting or demeaning language or indecent or threatening behavior.

1. Motions.

All formal actions of Council must be by motion. A Councilmember may make only one motion at a time.

2. *Language for making a motion.*

The appropriate language for making a motion shall be substantially similar to "I move to _____."

3. *Procedure for consideration of a motion.*

All motions must be seconded for consideration and discussion. Once a motion has been made, the presiding officer shall restate the motion and (if applicable) open the motion up for debate, provided that the presiding officer determines that the motion is in order and no objections to the motion have been.

A motion is in order if it is made at a proper time in the proper format and does not violate any applicable rules of law, ordinance, or City policy, including City policies on decorum and civility, and is not made for the purpose of unduly delaying the proceedings. Debate shall follow the procedures in Article VII, paragraph 5 below. Once debate has concluded, the presiding officer shall restate the motion and call for a vote on the issue. A motion shall be considered passed if it receives a majority vote of those present at the meeting, unless otherwise required by law.

4. *Objections to a motion.*

- a. Any member of the Council may make an objection to a motion if he or she believes the motion is not in order. A motion is in order if it is made at a proper time in the proper format and does not violate any applicable rules of law, ordinance, or City policy, including city policies on decorum and civility, and is not made for the purpose of unduly delaying the proceedings.
- b. An objection to a motion must be made immediately following the motion and at no other time. The objector does not need to be recognized by the presiding officer in order to voice their objection. The appropriate language for making an objection shall be substantially similar to "I object to the motion as being out of order, and call for a ruling by the presiding officer."
- c. A motion may be objected to as not being made at a proper time if the motion was made by a person not called upon by the presiding officer to speak, or if it does not follow the agreed upon agenda for the meeting.
- d. The presiding officer shall determine whether the motion is in order.
- e. In determining whether the motion is in order, the presiding officer shall let the objector to the motion speak once explaining his or her position. Next, the presiding officer shall let the maker of the motion speak once to answer the concerns of the objector. Then the presiding officer shall make a formal ruling as to whether the motion was in order.
- f. If the motion is ruled out of order, the motion shall not be considered. If the motion is ruled in order, the presiding officer shall open the motion for

debate (if applicable).

- g. The presiding officer's ruling may be appealed as provided in Article VII, paragraph 7 below.

5. *Debate.* Generally only one motion may be considered at a time in debate. Once a motion has been made and seconded, the presiding officer shall restate the motion and open the motion for debate, if the motion is debatable. The presiding officer shall conduct the debate in accordance with the following:

- a. For initial comments, all comments shall be limited to five minutes. For subsequent comments, all comments shall be limited to two minutes.
- b. The maker of the motion shall be permitted to speak first on the issue.
- c. To the extent possible, the debate shall alternate between proponents and opponents of the measure.
- d. Everyone who wishes to speak on the issue must be permitted to speak once, before Councilmembers who have already spoken are permitted to speak again.
- e. Councilmembers shall avoid repeating points already made in the debate or other duplicative conduct that may delay the proceedings. Where a point has already been made, Councilmembers may affirm agreement or disagreement.
- f. Generally only one motion may be considered at a time in debate. Debate may only be interrupted by a motion to amend the original motion, a motion to take a brief recess, a motion to withdraw the motion by the motion's maker, a motion to divide a complex question, a motion to table or defer consideration to a later date, a motion to refer an issue to committee, motion for the previous question, a motion to limit debate, or a motion for a call to order. When debate is interrupted by any of these motions, the interrupting motion shall be resolved prior to resuming debate.

6. *Definitions of motions that may interrupt debate (secondary motions).*

As explained in Article VII, paragraph 5 above, only certain motions may interrupt debate on a motion. These are called secondary motions. When a secondary motion is made, the presiding officer must follow the same procedures in Article VII, paragraph 3 above to consider the secondary motion.

A secondary motion must be resolved, either by being ruled out of order by the presiding officer or debated and voted upon by the council, before debate on the main motion can resume. Secondary motions may also be made

outside of debate, where appropriate. For example, a motion to take a brief recess can be made before, during, or after a debate.

- a. **Motion to amend the original motion.** The maker of the motion does not need to consent to a motion to amend. However, he or she may vote against the amendment or withdraw their motion via a motion to withdraw prior to any amendment being approved. Only two amendments may be made to an original motion to avoid confusion. The amendments should be voted on in reverse order, with the last amendment being voted upon first. To avoid confusion, complex language should be put in writing. A motion may not be amended so substantially as to essentially reject the original motion, though different language may be proposed so as to entirely substitute for the original language.

The appropriate language for making a motion to amend shall be substantially similar to "I move to amend the motion by inserting between . . . and" or "I move to amend the motion by adding after . . ." or "I move to amend the motion by striking out . . ." or "I move to amend the motion by striking out . . . and inserting . . ." or "I move to amend by striking out the motion . . . and substituting the following."

- b. **Motion to take a brief recess** is not a motion to adjourn or continue the meeting to another time or place. Instead, it is a motion to take a brief respite no greater than 20 minutes. If a motion to take a brief recess is granted, the presiding officer may set a time for the meeting to resume. In addition, the presiding officer is authorized to call for a brief recess on his or her own initiative; without a vote, to maintain order in the meeting.

The appropriate language for making a motion to recess shall be substantially similar to "I move to take a brief recess for _____ minutes."

- c. **Motion to withdraw a motion** is not subject to debate, and it can only be made by the motion's maker before a motion is amended.

The appropriate language for making a motion to withdraw shall be substantially similar to "I move to withdraw my motion."

- d. **Motion to divide a complex question** may be used for complex items of business. It allows the Council to break larger questions into smaller parts, which are considered separately.

The appropriate language for making a motion to divide a complex question shall be substantially similar to "I move to divide the question into _____ parts. Part 1 shall be _____. Part 2 shall be _____."

- e. **Motion to table or defer consideration to a later date** is not subject to debate. It may be used to defer or delay consideration of a matter.

The appropriate language for making a motion to defer consideration shall be substantially similar to "I move to defer consideration of the main motion/this item until _____."

- f. **Motion to refer an issue to committee** is not subject to debate. It may be used to refer an issue to a City committee, such as the Park Commission or Planning Commission, for their report. The motion should contain an expected receipt day for the report.

The appropriate language for making a motion to refer an issue shall be substantially similar to "I move to refer the main motion/this issue to the _____ committee for its consideration and recommendation. The committee should report back to the council in ____ days/weeks."

- g. **Motion for call of the previous question** is not subject to debate. It may be used only after at least 20 minutes of debate on a single motion or when all members of the Council have been permitted to speak at least once on the motion. If approved by the majority, a vote must be taken on the motion under debate immediately.

The appropriate language for making a motion to call the previous question shall be substantially similar to "I move to call the previous question" or "I move for an immediate vote on this issue."

- h. **Motion to limit debate** is not subject to debate. It may be used to establish time limits for debate.

The appropriate language for making a motion to limit debate shall be substantially similar to "I move to limit debate on this issue to ____ minutes per person" or "I move to limit council debate on this issue to no more than ____ minutes total."

- i. **Motion for a call to order** is not subject to debate. It may be used to signal to the presiding officer that the Councilmember feels the proceedings have gotten disorderly.

The appropriate language for making a motion for a call to order shall be substantially similar to "I move for a call to order by the presiding officer."

NOTE: Most secondary motions should not literally interrupt debate. They may not be made in the midst of the comments of a speaker duly recognized by the presiding officer, or silence the speaker's speech. To make a secondary motion, the maker must be called upon and recognized

by the presiding officer. There are two exceptions to this rule—a motion for a call of the previous question and a motion for a call to order. These motions may be made at any time—even in a manner that interrupts a speaker. However, these motions should be made only in the rare instance where a meeting has become out of control, strayed from the agenda, or become disorderly.

7. *Appealing procedural decisions of the presiding officer.*

- a. Any member of the Council may appeal to the full Council a ruling on order or procedure made by the presiding officer.
- b. ***Procedure for appeals.*** An appeal is made by motion. No second is needed for the motion. The member making the motion may speak once solely on the question involved, and the presiding officer may speak once solely to explain his or her ruling, but no other Councilmember may participate in the discussion.
- c. Once both the maker of the motion and the presiding officer has spoken, the matter must be voted upon by the Council as a whole.
- d. The appeal shall be sustained if it is approved by a majority of the members present, exclusive of the presiding officer.

8. *Other special motions explained.*

- a. ***Motion to adjourn*** is not subject to debate. It may be used to suggest a conclusion to the meeting. The presiding officer may adjourn a meeting on his or her own initiative, without a vote, if necessary to maintain order. The presiding officer's decision to adjourn can be overruled by affirmative vote of the Council.

The appropriate language for making a motion to adjourn shall be substantially similar to "I move to adjourn the meeting."

- b. ***Motion to go into closed session*** may be used to close the meeting pursuant to the Minnesota Open Meeting Law. When the motion is made, the basis for closing the meeting and the applicable law must be stated into the record. The presiding officer may also close the meeting on his or her own initiative, without a Council vote, if closing the meeting is mandatory under the law or if directed by the City Attorney.

The appropriate language for making a motion to go into closed session shall be substantially similar to "I move to close the meeting in order to consider _____ pursuant to _____ of the Minnesota Open Meeting Law."

- c. ***Motion to leave a closed session*** may be used to conclude a closed session and return to an open meeting.

The appropriate language for making a motion to leave a closed session shall be substantially similar to "I move to open the meeting."

- d. **Motion to revive consideration of an issue** may be used to request consideration of an issue previously tabled, deferred, or referred to committee at any prior meeting.

The appropriate language for making a motion to revive shall be substantially similar to "I move to revive consideration of _____ previously tabled/deferred/referred to committee."

- e. **Motion to reconsider** may be made only at the **same** meeting where the issue was originally considered and voted upon. It may be made only by a person on the prevailing side of an issue. In the event of a tie vote, those voting against the issue shall be considered the prevailing side.

The appropriate language for making a motion to reconsider shall be substantially similar to "I move to reconsider _____."

- f. **Motion to rescind or repeal** may be made at any meeting following the meeting where the issue was originally considered and voted upon. It may be made by any Councilmember, whether or not he or she was on the prevailing side. It may not be made when prevented by law or where substantial reliance on the Council's previous decision has occurred (for example, in the area of contracts or hiring/termination of employees).

The appropriate language for making a motion to reconsider shall be substantially similar to "I move to rescind/repeal the Council's previous action related to _____ as stated in resolution number _____."

- g. **Motion to prevent reintroduction of an issue for months** is not subject to debate. It may be used to limit discussion of an issue that has been raised and/or moved for reconsideration several previous times.

The appropriate language for making a motion to prevent reintroduction shall be substantially similar to "I move to prevent reintroduction of this issue for _____ months."

- h. **Motion to suspend the rules or to consider a motion informally** should be used sparingly on issues likely to be uncontroversial. Complex motions and resolutions should still be put in writing. This motion may permit informal discussion of an issue (such as a roundtable discussion, brainstorming session, visioning session, etc.) where appropriate.

The appropriate language for making a motion to proceed informally shall be substantially similar to "I move that we suspend the rules and proceed informally in discussing the issue of _____."

- 9. Resolutions and ordinances.** Simple motions shall be used only for procedural and meeting matters. Substantive issues, such as the approval or disapproval of street improvement projects and contracts; the censure of Councilmembers; zoning issues, and the adoption of City policies, rules, and ordinances shall be by resolution. An exception to this general rule may be made in instances where significant documentation of the Council's decision exists, rendering an additional resolution repetitive (for example, where a written contract spells out all the terms that would be listed in the resolution). All resolutions shall be written and numbered in a manner consistent with the City's record keeping policies.

The appropriate language for a motion for the adoption of a resolution shall be substantially similar to "I move to adopt the resolution numbered ____."

VIII. VOTING.

- A. The votes of the City Council will be taken by voice vote. The presiding officer shall announce the results of all votes of the Council.
- B. A clear statement of the matter being voted upon and the names of those voting for and against the matter shall be recorded in the official minutes.
- C. Councilmembers may ask for a roll call of the vote by the presiding officer on any motion or resolution.
- D. The City Administrator may ask for a verification roll call if the vote of a Councilmember is not clear on the voice vote.
- E. A majority vote shall be sufficient for all matters before the Council, unless otherwise provided by state law.
- F. Whenever a matter is put forward for a vote, every Councilmember shall vote, except as follows:
 - 1. A conflict of interest exists under state law;
 - 2. A Councilmember determines that voting on the matter, given his or her individual circumstances, would give rise to an appearance of impropriety that could negatively affect the public trust; or
 - 3. A Councilmember determines that he or she does not have enough

information to vote yes or no on a matter. This exception shall only apply if the Councilmember has identified the lacking information and made an attempt to have the matter continued so the information can be developed or obtained.

Whenever a Councilmember abstains from voting, he or she must state on the record the reason(s) for abstaining and the exception(s) on which the abstention is based.

IX. PUBLIC COMMENT AT COUNCIL MEETINGS AND AT PUBLIC HEARINGS

- A. ***Public participation and comment at council meetings.*** City Council meetings are the forum for the City Council to conduct the City's business. While City Council meetings are open to the public pursuant to the Minnesota Open Meeting Law, they are not a forum for public expression. While the city council is welcoming of public comment at public meetings, members of the public are not allowed to participate in Council discussion and debate without a specific invitation and/or formal recognition by the presiding officer. Members of the public shall not applaud, engage in conversation, or engage in other behavior through words or action that may disrupt the proceedings of council.
- B. ***Members of the public shall follow the direction of the presiding officer.*** Members of the public who do not follow the direction of the presiding officer will be warned that further disruptive conduct will result in removal from the meeting. After warning, if the conduct continues, the presiding officer may ask the member of the public to leave the meeting room. If the member of the public refuses to follow the direction of the presiding officer, the presiding officer may direct the sergeant-at-arms to remove the person through any lawful means. In emergency situations, or where conduct is an egregious threat to the safety of the public or the council, a warning is not necessary before the sergeant-at-arms is directed to remove the person.
- C. ***Public comment period.*** A limited forum for individuals to speak with the Council is provided on the agenda for the Council regular meeting. Public comments during the public comment period are subject to these limitations:
1. Speakers must be recognized by the presiding officer before speaking and are limited to five minutes for comment.
 2. When multiple speakers appear to speak on the same topic (and they appear to be part of an organized group), comments should not continue to be repetitive. The presiding officer may request speakers to appoint a spokesperson.
 3. The presiding officer may place a time limit on the public comment period if necessary to allow for the conduct of City business. If there is not sufficient time at the meeting to hear all public comments, the comment period may be deferred to the next regular Council meeting or at a continued meeting.
 4. Speakers must sign up prior to speaking and provide a name, address, and brief summary of the subject matter they wish to address. The sign-up sheet

will be available at the start of the City Council meeting.

5. When speakers approach the podium, they are only required to state their full name, and confirm whether or not they are a citizen of the city of North Branch. For safety reasons, they are not required to verbalize their home address. Although speakers are required to take direction from the presiding officer, they will be allowed to direct their public comment at any of the city council members.
6. Speakers shall not use obscene, profane or threatening language, nor conduct themselves in a threatening, loud, or boisterous manner that disrupts the conduct of the meeting or the security of the public.
7. Speakers who do not follow the direction of the presiding officer will be warned that further disruptive conduct will result in removal from the meeting. After warning, if the conduct continues the presiding officer may ask the speaker to leave. If the speaker refuses to follow the direction of the presiding officer, the presiding officer may direct the sergeant-at-arms to remove the speaker through any lawful means. In emergency situations, or when conduct is an egregious threat to the safety of the public or the council, a warning is not necessary before the sergeant-at-arms is directed to remove the speaker.
8. Council will generally not respond at the same meeting where an issue is initially raised by a member of the public, but Council Members are encouraged to acknowledge the speaker, thank them for their comments, and let them know any matter they present may be referred to city staff for further research and possible report or action at a future Council meeting. The goal of the council is to ensure citizens feel their voices are being heard, but also to make sure their matters are being addressed by the appropriate subject matter experts.
9. Public comment is now allowed on any agenda item that is scheduled to be an action item at the same meeting. While the City Council and various City Commissions allow public comment at the same meeting where action (voting) is scheduled to take place, we also encourage questions and presentation of any information ahead of a meeting so that staff and/or council members/Commissioners can have adequate time to evaluate any new information that might be presented during public comment. To be clear, it is welcomed to communicate and work with city staff and/or council members/commissioner ahead of a meeting, yet still provide the same questions/comments/concerns/info during a public comment portion of a public meeting.

D. A summary of these rules for public comment may be provided in the Council meeting room.

X. PUBLIC HEARINGS. Public hearings are sometimes required by law to allow the public to offer input on City Council decisions. When public hearings are required by law, notice shall be provided as required by state statute. Public hearings shall be commenced at the time advertised in any notice required by law.

A. General procedure for public hearings. The order of business for all public hearings conducted by Council shall be:

1. Opening comments by presiding officer announcing the purpose of the public hearing.
2. Presiding officer opens the public hearing portion of the meeting.
3. Staff presentation (including city administrator, attorney, engineering reports if any).
4. Developer/other presentations (if any).
5. Public comments.
6. Reading of written comments.
7. Presiding officer formally closes the public hearing portion of the meeting.

B. Speakers who wish to address the City Council at a public hearing must follow the same rules in Article X above. However, the presiding officer may allow additional time for speakers, as required, to comply with applicable state law.

C. Speakers may also provide written comments to the City Council before or at the meeting. Written comments may be read aloud by the City Administrator or their designee. Anonymous, unsigned communications will not be read.

D. The Council may continue the hearing, if necessary, following the procedures in Article V, paragraph F above.

XI. PROCEDURE FOR RESOLUTION AND ORDINANCE ADOPTION. All resolutions and ordinances shall be in writing. Unless otherwise provided by law, all ordinances shall be adopted by a majority vote of Councilmembers present at the Council meeting. Unless otherwise provided by law, ordinances do not require multiple readings, and may be adopted as presented at the first available meeting.

XII. BOARD, COMMISSION, AND COMMITTEE ASSIGNMENTS. All assignments of Councilmembers to serve on City boards, commissions, and committees shall be by a majority vote of Councilmembers present at the meeting, unless otherwise provided by law. The Council will discuss board, commission and committee assignments at the first regular City Council meeting in January each year. Approval of the appointments by the City Council will be completed at the first meeting of each year.

XIII. SEATING ASSIGNMENTS. Councilmembers shall occupy the chairs assigned to them by the presiding officer.

XIV. SUSPENSION OR AMENDMENT OF THESE RULES. Any or all of these rules may be temporarily suspended by a majority vote of the Councilmembers present at the meeting, except as otherwise required by Minnesota law. These rules shall not be repealed or amended except by a majority vote of the whole Council after notice has been given at a preceding Council meeting.

Acknowledgement of Conflict of Interest Training

I hereby certify that I () attended or () reviewed the recording of Conflict of Interest training conducted on (Insert Date) by _____.

Name: _____

Commission: _____

Date: _____

Signature: _____

Please return the form to the City Administrator when completed.