

WHITE BEAR LAKE SCHOOL DISTRICT

CONSTRUCTION PLAN FOR GRADING, BITUMINOUS SURFACE, ADA IMPROVEMENTS

LOCATED ON DIVISION AVE FROM 428' NORTH OF 8TH ST TO 65' NORTH OF DIVISION CT
 8TH ST FROM BLOOM AVE TO 140' WEST OF T.H. 61

PROJECT NO. 170689 (DIVISION AVE)
 GROSS LENGTH 1519.30 FEET 0.288 MILES
 BRIDGES-LENGTH FEET MILES
 EXCEPTIONS-LENGTH FEET MILES
 NET LENGTH 1519.30 FEET 0.288 MILES
 LENGTH AND DESCRIPTION BASED ON DIVISION AVE ALIGNMENT

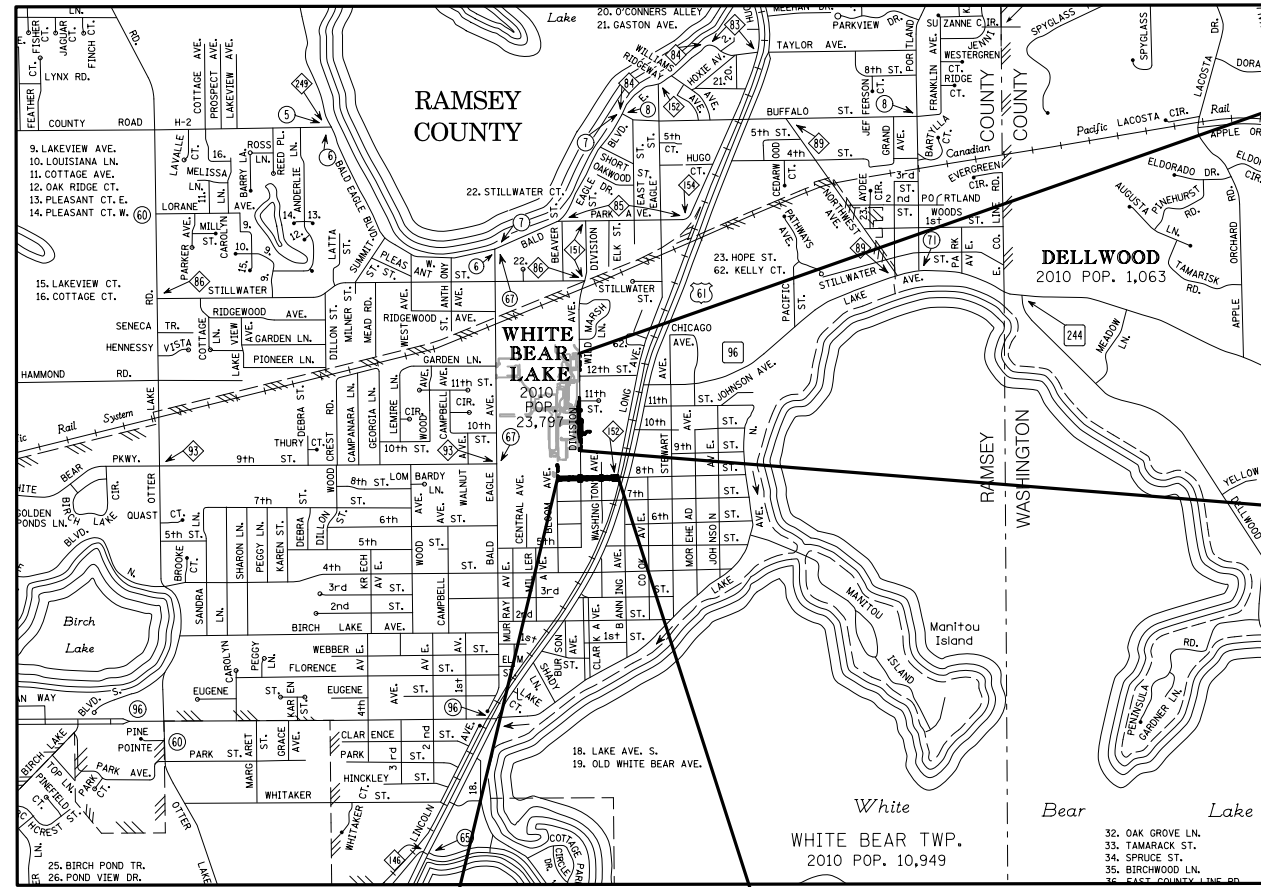
PROJECT NO. 170689 (8TH ST)
 GROSS LENGTH 938.54 FEET 0.178 MILES
 BRIDGES-LENGTH FEET MILES
 EXCEPTIONS-LENGTH FEET MILES
 NET LENGTH 938.54 FEET 0.178 MILES
 LENGTH AND DESCRIPTION BASED ON 8TH ST ALIGNMENT



GOVERNING SPECIFICATIONS
 THE 2020 EDITION OF THE MINNESOTA DEPARTMENT OF TRANSPORTATION
 "STANDARD SPECIFICATIONS FOR CONSTRUCTION" SHALL GOVERN.
 ALL TRAFFIC CONTROL DEVICES AND SIGNING SHALL CONFORM AND BE CONSTRUCTED IN
 ACCORDANCE TO THE "MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES"
 (MN MUTCD) AND PART VI, "FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS".

INDEX

SHEET NO.	DESCRIPTION
1	TITLE SHEET
2	GENERAL LAYOUT (GL1)
3	STATEMENT OF ESTIMATED QUANTITIES (EQ1)
4	STANDARD PLATES AND SOIL AND CONSTRUCTION NOTES (SCN1)
5	INPLACE UTILITY TABULATIONS (UT1)
6	TYPICAL SECTIONS (TS1)
7	MISCELLANEOUS DETAILS (MD1)
8-34	STANDARD PLAN SHEETS (SPN1-SPN27)
35	ALIGNMENT PLAN AND TABULATIONS (AL1)
36-39	INPLACE UTILITY AND TOPOGRAPHY PLAN (TP1-TP4)
40-43	REMOVAL PLAN (RMI-RM4)
44-47	CONSTRUCTION PLAN (CP1-CP4)
48-54	INTERSECTION AND PED RAMP DETAIL PLAN (PD1-PD7)
55-59	WATERMAIN AND DRAINAGE PLAN AND PROFILE (DR1-DR5)
60-62	STORM WATER POLLUTION PREVENTION PLAN (SWPP1-SWPP3)
63-66	EROSION CONTROL & TURF ESTABLISHMENT PLAN (TE1-TE4)
67-69	TRAFFIC CONTROL PLAN (TC1-TC3)
71-78	SIGNING AND PAVEMENT MARKING PLAN (SGN1-SGN8)
XS1-XS9	CROSS SECTIONS (XS1-XS9)



END CONSTRUCTION
 DIVISION AVE STA. 121+55.42

BEGIN CONSTRUCTION
 DIVISION AVE STA. 106+36.12

THIS PLAN CONTAINS **87** SHEETS

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.
 PRINT NAME: JOSHUA C. BREID LICENSE # 59756
 DATE: 02/09/2023 SIGNATURE: Joshua Breid
 DESIGN SQUAD JOSH BREID, MY TRAN, BRYCE SCHMIDGALL, NOAH ODALEN, CARL DUEBNER, JOSH PALMATEER, COLE ARVISION

APPROVED _____ CITY ENGINEER

SCALES

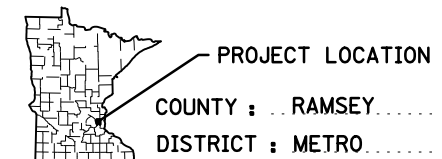
INDEX MAP	1500'
GENERAL LAYOUT	200'
PLAN	50'
CROSS SECTION	10' HORIZ. 10' VERT.

FOR PLANS AND UTILITIES SYMBOLS SEE TECHNICAL MANUAL

BEGIN CONSTRUCTION 8TH ST. STA. 200+10.31
 END CONSTRUCTION T.H. 61 INP. STA. 209+48.85

PLAN REVISIONS		
DATE	SHEET NO.	APPROVER

DESIGN DESIGNATION
 Design Speed 30 MPH
 Based on Sight Distance
 Height of eye 3.5' Height of object 2.0'
 Design Speed not achieved at: N/A

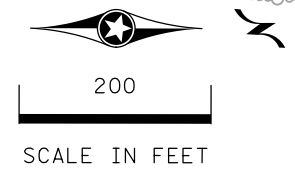


5:07:42 PM
 2/9/2024
 FILE: X:\F\N\150WB\170689\5-final-dsgn\51-drawings\40-Transhwy\Plansheets\CD170689-tsh.dgn
 MODEL: Default

5:07:43 PM

2/9/2024

FILE: X:\F\J\1\SDWB\170689\5-final-dsgn\51-drawings\40-Transitwy\Planisheets\CD170689_gli.dgn
MODEL: gli



BEGIN CONSTRUCTION
8TH ST STA. 200+10.31

☉ BLOOM AVE

BLOOM AVE

☉ 8TH ST

WASHINGTON AVE

END CONSTRUCTION
8TH ST STA. 209+48.85

BEGIN CONSTRUCTION
DIVISION AVE STA. 106+36.12

☉ DIVISION AVE

END CONSTRUCTION
DIVISION AVE STA. 121+55.42

RAMSEY
COUNTY

SB T.H. 61

NB T.H. 61

LEGEND			
	INPLACE PAVEMENT		INPLACE TOPOGRAPHY AND UTILITY PLAN SHEET NO.
	PROPOSED PAVEMENT		REMOVAL PLAN SHEET NO.
	TO BE CONSTRUCTED BY OTHERS		CONSTRUCTION PLAN SHEET NO.
	EXISTING RIGHT-OF-WAY		DIRECTION OF TRAFFIC
	PROPOSED TEMPORARY EASEMENT		

DESIGN TEAM				
DRAWN BY:	MTT			
DESIGNER:	JCB			
CHECKED BY:	JCB			
NO.	BY	DATE	REVISIONS	

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.

Certified By: *Joshua Breid* Lic. No. 59756
 Licensed Professional Engineer
 Printed Name: JOSHUA C. BREID Date: 02/09/2023



RAMSEY COUNTY, MINNESOTA
DIVISION AVE AND 8TH ST
 PROJECT NO. 170689

GENERAL LAYOUT

SEH FILE NO. ISDWB170689	2
GL 1 OF GL 1	78

STATEMENT OF ESTIMATED QUANTITIES

Table with 5 columns: ITEM NO., ITEM DESCRIPTION, UNIT, BASE BID 100% LOCAL FUNDS WHITE BEAR LAKE AREA ESTIMATED QUANTITY, BID ALTERNATE A 100% LOCAL FUNDS WHITE BEAR CENTER FOR THE ARTS ESTIMATED QUANTITY. Rows include items like AS BUILT, CONSTRUCTION SURVEYING, MOBILIZATION, PAVEMENT MARKING REMOVAL, DISCONNECT WATER SERVICE, etc.

STATEMENT OF ESTIMATED QUANTITIES

Table with 5 columns: ITEM NO., ITEM DESCRIPTION, UNIT, BASE BID 100% LOCAL FUNDS WHITE BEAR LAKE AREA ESTIMATED QUANTITY, BID ALTERNATE A 100% LOCAL FUNDS WHITE BEAR CENTER FOR THE ARTS ESTIMATED QUANTITY. Rows include items like CONCRETE CURB AND GUTTER DESIGN B412, ALTERNATE PEDESTRIAN ROUTE, TRAFFIC CONTROL, etc.

PROJECT WILL BE AWARDED AS BASE BID, OR BASE BID PLUS BID ALTERNATIVE A, AS DETERMINED BY THE OWNER, IN THEIR SOLE DISCRETION. ALL WORK SHOWN IN THE PLANS IS INCLUDED IN THE BASE BID, UNLESS OTHERWISE SPECIFIED.

QUANTITIES SHOWN ARE FOR INFORMATION ONLY. ALL WORK, AND ANY MATERIALS, LABOR OR OTHER COSTS AND EXPENSES TO COMPLETE THE PROJECT ARE INCLUDED AND PAID FOR IN THE PROJECT LUMP SUM.

DESIGN TEAM table with columns: DRAWN BY, DESIGNER, CHECKED BY, NO., BY, DATE, REVISIONS. Includes names like MTT, JCB.

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. Certified By: Joshua Breid, Lic. No. 59756. Printed Name: JOSHUA C. BREID Date: 02/15/2023



RAMSEY COUNTY, MINNESOTA
DIVISION AVE AND 8TH ST
PROJECT NO. 170689

STATEMENT OF ESTIMATED QUANTITIES

Table with columns: SEH FILE NO. (170689), EQ1 OF EQ1, 3, 78

SOIL AND CONSTRUCTION NOTES

1. THE CONTRACTOR IS HEREBY REMINDED OF THEIR RESPONSIBILITY UNDER STATE LAW TO CONTACT ALL UTILITIES THAT MAY HAVE FACILITIES IN THE AREA. CONTACT MUST BE MADE THROUGH GOPHER STATE ONE CALL.
2. STRIP ALL SOD AND TOPSOIL FROM AREAS TO BE DISTURBED BY CONSTRUCTION AND REUSE AS SLOPE DRESSING. TOPSOIL STRIPPING IS QUANTIFIED AS EXCAVATION - COMMON AND PLACEMENT OF SLOPE DRESSING IS QUANTIFIED AS COMMON EMBANKMENT (CV).
3. PROVIDE FOR THE REMOVAL AND DISPOSAL OF ANY INPLACE SURFACING, OTHER STRUCTURES, OR DEBRIS THAT WOULD INTERFERE WITH CONSTRUCTION. ALL SUCH MATERIALS SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL EITHER BE RECYCLED OR DISPOSED OF OFF THE PROJECT LIMITS IN ACCORDANCE WITH SPEC. 2104.
4. CONTRACTOR SHALL FIELD VERIFY THE EXISTING PAVEMENT DEPTH AND SHALL NOTIFY THE ENGINEER AT LEAST 48 HOURS PRIOR TO PAVING OPERATIONS IF THE EXISTING DEPTH IS MORE THAN 7.5"
5. ALL NEW EMBANKMENT AND EMBANKMENT WIDENING MATERIAL SHALL BE SELECT GRADING MATERIAL OR SELECT GRANULAR EMBANKMENT WHERE APPROPRIATE. IN EMBANKMENT WIDENING AREAS, THE MATERIAL SHOULD SUBSTANTIALLY MATCH THE INPLACE SUBGRADE SOILS RELATIVE TO THE TEXTURAL CLASSIFICATION, DENSITY, AND MOISTURE. THE EMBANKMENT MUST BE CONSTRUCTED IN ACCORDANCE WITH SPECIFICATION 2106.3C, "PREPARATION OF EMBANKMENT FOUNDATION".
6. THE "GRADING GRADE" IS DEFINED AS THE BOTTOM OF THE AGGREGATE BASE.
7. PROVIDE A FULL-DEPTH SAWCUT WHERE PLACING NEW PAVEMENT NEXT TO INPLACE PAVEMENT TO ENSURE A UNIFORM JOINT.
8. PROVIDE FOR UNIFORM BITUMINOUS TACK COAT BETWEEN ALL BITUMINOUS COURSES AND PRIOR TO PLACING ANY BITUMINOUS MIXTURES ON EXISTING PAVEMENT IN ACCORDANCE WITH SPEC. 2357 (NOT QUANTIFIED).
9. DITCH BOTTOMS, TOE OF FILL, CUT RUNOUTS, AND THE TOP EDGE OF THE BACKSLOPES SHALL BE ROUNDED REGARDLESS OF THE SECTION USED ON THE CROSS SECTION SHEETS.
10. EARTHWORK QUANTITIES ARE BASED ON DIMENSIONS SHOWN, NO ADDITIONAL PAYMENTS WILL BE MADE IF THE CONTRACTOR CHOOSES TO INCREASE DIMENSIONS IN ORDER TO FACILITATE CONSTRUCTION OPERATIONS.
11. EROSION CONTROL SUPERVISOR IS REQUIRED FOR THIS PROJECT.
12. EXISTING PAVEMENT DEPTHS ARE ASSUMED TO BE:
 - DIVISION AVE: 6" BITUMINOUS
 - 8TH ST: 4" BITUMINOUS
 IF ACTUAL PAVEMENT DEPTHS VARY FROM THE ABOVE, THE CONTRACTOR SHALL NOTIFY THE ENGINEER PRIOR TO PLACING ANY NEW PAVEMENT.

MNDOT STANDARD PLATES

THE FOLLOWING STANDARD PLATES, APPROVED BY THE DEPARTMENT OF TRANSPORTATION, FEDERAL HIGHWAY ADMINISTRATION, SHALL APPLY ON THIS PROJECT.

PLATE NO.	PLATE TITLE
3000M	REINFORCED CONCRETE PIPE (6 SHEETS)
3006H	GASKET JOINT FOR R.C. PIPE (2 SHEETS)
4003B	30" PRECAST CATCH BASIN - DESIGN N
4010I	CONCRETE ADJUSTING RINGS
4011E	PRECAST CONCRETE BASE
4020J	MANHOLE OR CATCH BASIN (FOR USE WITH OR WITHOUT TRAFFIC LOADS) (2 SHEETS)
4026B	CONCRETE ENCASED CONCRETE ADJUSTING RINGS
4110F	COVER CASTING FOR MANHOLE (FOR USE IN ALL TRAFFIC AREAS) - CASTING NO. 715 & 716
7038A	DETECTABLE WARNING SURFACE TRUNCATED DOMES
7102K	CONCRETE CURB AND GUTTER (DESIGN D, DESIGN S, AND DESIGN R)
7111J	INSTALLATION OF CATCH BASIN CASTINGS (CONCRETE CURB AND GUTTER)
7113A	CONCRETE APPROACH NOSE DETAIL
7038A	DETECTABLE WARNING SURFACE TRUNCATED DOMES
8000K	TEMPORARY CHANNELIZERS (3 SHEETS)

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: <u>MTT</u>				
DESIGNER: <u>JCB</u>				
CHECKED BY: <u>JCB</u>				

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.

Certified By: Joshua C. Breid Lic. No. 59756
 Licensed Professional Engineer
 Printed Name: JOSHUA C. BREID Date: 02/09/2023



RAMSEY COUNTY, MINNESOTA
DIVISION AVE AND 8TH ST
 PROJECT NO. 170689

**STANDARD PLATES AND
 SOIL AND CONSTRUCTION NOTES**

SEH FILE NO. ISDWB170689	4
SCN1 OF SCN1	78

LEGEND	UTILITY
— OHP —	OVERHEAD ELECTRIC LINE = POWER LINE-OVERHEAD
— P-BUR —	P-BUR = POWER LINE-UNDERGROUND
○	P POLE = POWER POLE
⊠	P PED = POWER PEDESTAL
┆	ANC = POWER POLE GUY WIRE ANCHOR
⊠ T	TEL PED = TELEPHONE/COMMUNICATION PEDESTAL
— ○ —	COM = COMMUNICATION LINE-UNDERGROUND
○ M	TEL MH = TELEPHONE MANHOLE
— G —	GAS = GAS LINE-UNDERGROUND
⊗	GAS METER
⊠ OM	EXISTING CATCH BASIN/MANHOLE
— V —	EXISTING RC PIPE = RC STORM SEWER PIPE
— I —	WATER = WATERMAIN
⊠ X	WATER VLV = WATERMAIN GATE VALVE
⊠	FIRE HYD = FIRE HYDRANT
— VV —	SAN = SANITARY SEWER PIPE
○ M	SAN MH = SANITARY MANHOLE

UTILITY IMPACTS						
ITEM	ALIGNMENT	STATION	OFFSET	OWNER	ACTION	NOTES
GAS MAIN	DIVISION	108+96.95 - 114+60.79	22.4' LT - 22.9' LT	XCEL ENERGY	UTILITY OWNER TO RELOCATE	RELOCATE PRIOR TO CONSTRUCTION
UTILITY POLE	DIVISION	109+01.37	20.6' LT	XCEL ENERGY	UTILITY OWNER TO RELOCATE	RELOCATE PRIOR TO CONSTRUCTION
UTILITY POLE	DIVISION	110+68.09	21.1' LT	XCEL ENERGY	UTILITY OWNER TO RELOCATE	RELOCATE PRIOR TO CONSTRUCTION
UTILITY POLE	DIVISION	112+49.90	20.6' LT	XCEL ENERGY	UTILITY OWNER TO RELOCATE	RELOCATE PRIOR TO CONSTRUCTION
UTILITY POLE	DIVISION	113+04.07	20.6' LT	XCEL ENERGY	UTILITY OWNER TO RELOCATE	RELOCATE PRIOR TO CONSTRUCTION
UTILITY POLE	DIVISION	113+89.13	19.8' LT	XCEL ENERGY	UTILITY OWNER TO RELOCATE	RELOCATE PRIOR TO CONSTRUCTION
UTILITY PEDESTAL	DIVISION	120+77.71	26.6' LT	CENTURYLINK	UTILITY OWNER TO RELOCATE	RELOCATE PRIOR TO CONSTRUCTION
UTILITY POLE	8TH	200+30.50	24.8' RT	XCEL ENERGY	UTILITY OWNER TO RELOCATE	RELOCATE PRIOR TO CONSTRUCTION
UTILITY POLE	8TH	201+73.46	24.6' RT	CENTURYLINK	UTILITY OWNER TO RELOCATE	RELOCATE PRIOR TO CONSTRUCTION
UTILITY POLE	8TH	203+13.01	23.0' RT	XCEL ENERGY	UTILITY OWNER TO RELOCATE	RELOCATE PRIOR TO CONSTRUCTION
UTILITY POLE	8TH	203+93.08	29.3' RT	XCEL ENERGY	UTILITY OWNER TO RELOCATE	RELOCATE PRIOR TO CONSTRUCTION
UTILITY POLE	8TH	207+16.74	24.7' RT	XCEL ENERGY	UTILITY OWNER TO RELOCATE	RELOCATE PRIOR TO CONSTRUCTION
UTILITY POLE	8TH	208+26.27	24.5' RT	XCEL ENERGY	UTILITY OWNER TO RELOCATE	RELOCATE PRIOR TO CONSTRUCTION
UTILITY POLE	8TH	209+35.92	25.0' RT	XCEL ENERGY	UTILITY OWNER TO RELOCATE	RELOCATE PRIOR TO CONSTRUCTION
UTILITY POLE	8TH	209+62.40	26.5' RT	UNKNOWN	UTILITY OWNER TO REMOVE	REMOVE PRIOR TO CONSTRUCTION
UTILITY POLE	8TH	210+18.69	42.0' RT	XCEL ENERGY	UTILITY OWNER TO RELOCATE	RELOCATE PRIOR TO CONSTRUCTION

UTILITY CONTACTS
THE FOLLOWING UTILITY OWNERS HAVE FACILITIES WITHIN THE LIMITS OF THIS PROJECT
CITY OF WHITE BEAR LAKE CENTURYLINK COMCAST CABLE, LLC CONSOLIDATED COMMUNICATIONS MCI COMMUNICATION SERVICES, LLC MINNESOTA COMMERCIAL RAILROAD MINNESOTA DEPARTMENT OF TRANSPORTATION RAMSEY COUNTY XCEL ENGERY

GENERAL NOTES:

1. THE SUBSURFACE UTILITY INFORMATION IN THIS PLAN IS UTILITY QUALITY LEVEL D. THIS UTILITY QUALITY LEVEL WAS DETERMINED ACCORDING TO THE GUIDELINES OF CI/ASCE 38-02, ENTITLED "STANDARD GUIDELINES FOR THE COLLECTION AND DEPICTION OF EXISTING SUBSURFACE UTILITY DATA".
2. NO PRIVATE UTILITY IMPACTS ARE EXPECTED.
3. SEE DRAINAGE PLANS AND WATERMAIN PLANS FOR RELOCATION AND ADJUSTMENT DETAILS.
4. ONLY IMPACTED FACILITIES HAVE BEEN TABULATED

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: MTT				
DESIGNER: JCB				
CHECKED BY: JCB				

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.

Certified By: Joshua Breid Lic. No. 59756
 Licensed Professional Engineer
 Printed Name: JOSHUA C. BREID Date: 02/09/2023



RAMSEY COUNTY, MINNESOTA
DIVISION AVE AND 8TH ST
 PROJECT NO. 170689

**INPLACE UTILITY
 TABULATIONS**

SEH
 FILE NO.
 ISDWB170689
 UT1
 OF UT1

5
 78

5:07:45 PM

2/9/2024

FILE: X:\F\J\1\ISDWB\170689\5-f\final-dsgn\51-drawings\40-Trans Hwy\Planisheets\CD170689-1.s1.dgn
MODEL: DeFault

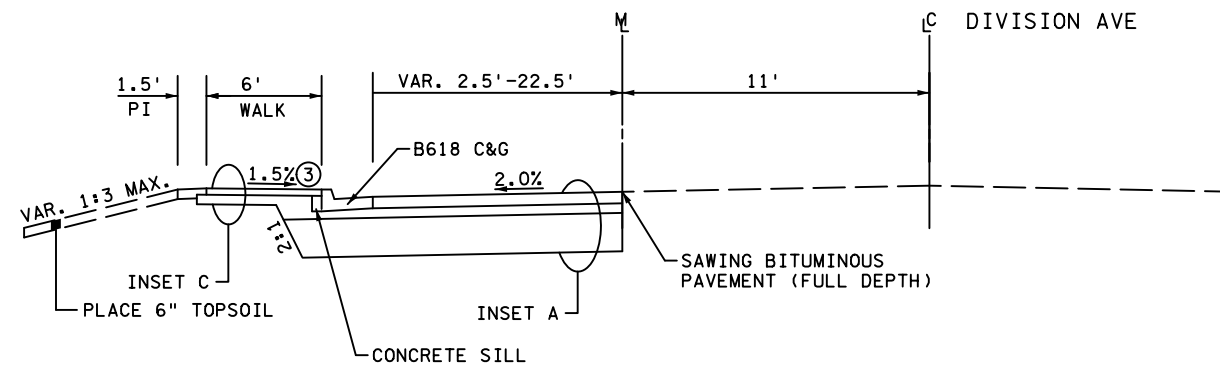
SPECIFIC NOTES:

- ① VERIFY AND MATCH EXISTING PAVEMENT DEPTH.
- ② TO BE OMITTED FOR ALL WATERMAIN DISCONNECT LOCATIONS.
- ③ FINISHED GRADE SHALL NOT EXCEED 2.0%.
- ④ SEE SHEETS 48 - 51 FOR LOCATIONS OF 4" AND 6" CONCRETE WALK.

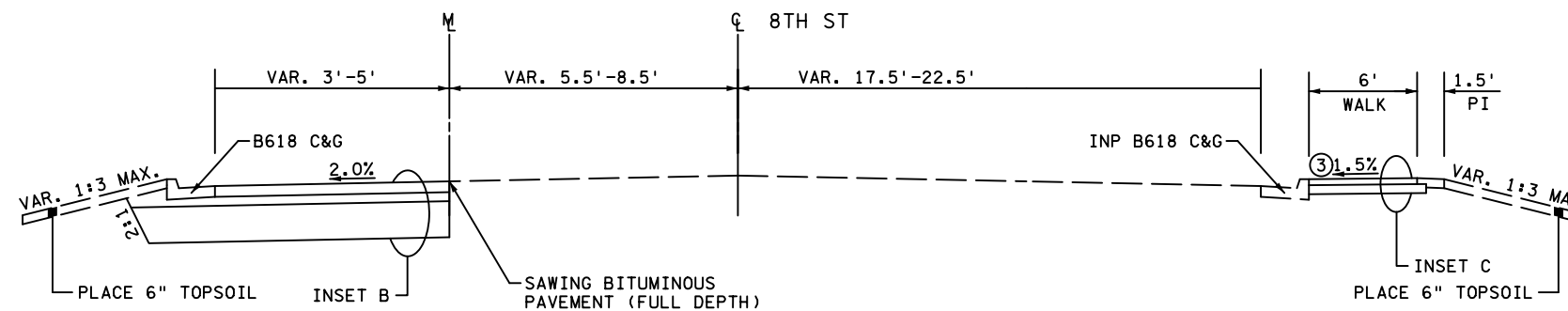
GENERAL NOTES:

ALL CROSS SLOPES ARE FOOT PER FOOT.
 INSLOPES, BACK SLOPES, AND DITCH GRADES MAY VARY FROM WHAT IS DEPICTED ON THE TYPICAL SECTIONS. SEE CROSS SECTIONS FOR FINAL SLOPES AND DITCH GRADES.
 MAXIMUM ROLLOVER 0.07 FOOT PER FOOT.
 UNLESS OTHERWISE SPECIFIED THE GRADING GRADE AND SUBCUT CROSS SLOPES SHALL BE THE SAME AS THE FINISHED SURFACE.

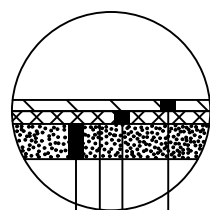
PROPOSED TYPICAL SECTION 1
DIVISION AVE



PROPOSED TYPICAL SECTION 2
8TH ST

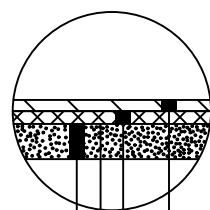


INSET A



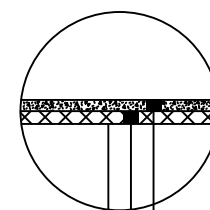
- PLACE 6.0" TYPE SP 12.5 WEARING ① COURSE MIXTURE (SPWEA440F) (2.0" LIFTS)
- PLACE 6.0" DEPTH AGGREGATE BASE (CV) CLASS 6
- GRADING GRADE
- PLACE 24" DEPTH SELECT ② GRANULAR EMBANKMENT (CV)

INSET B



- PLACE 4.0" TYPE SP 12.5 WEARING ① COURSE MIXTURE (SPWEA440F) (2.0" LIFTS)
- PLACE 6.0" DEPTH AGGREGATE BASE (CV) CLASS 6
- GRADING GRADE
- PLACE 24" DEPTH SELECT ② GRANULAR EMBANKMENT (CV)

INSET C



- PLACE 4" OR 6" CONCRETE WALK ④
- PLACE 6.0" DEPTH AGGREGATE BASE (CV) CLASS 6
- GRADING GRADE

DESIGN TEAM			
DRAWN BY:	MTT		
DESIGNER:	JCB		
CHECKED BY:	JCB		
NO.	BY	DATE	REVISIONS

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.
 Certified By: Joshua C. Breid Lic. No. 59756
 Licensed Professional Engineer
 Printed Name: JOSHUA C. BREID Date: 02/09/2023



RAMSEY COUNTY, MINNESOTA
DIVISION AVE AND 8TH ST
 PROJECT NO. 170689

TYPICAL SECTIONS

SEH FILE NO. ISDWB170689	6
TS1 OF TS1	78

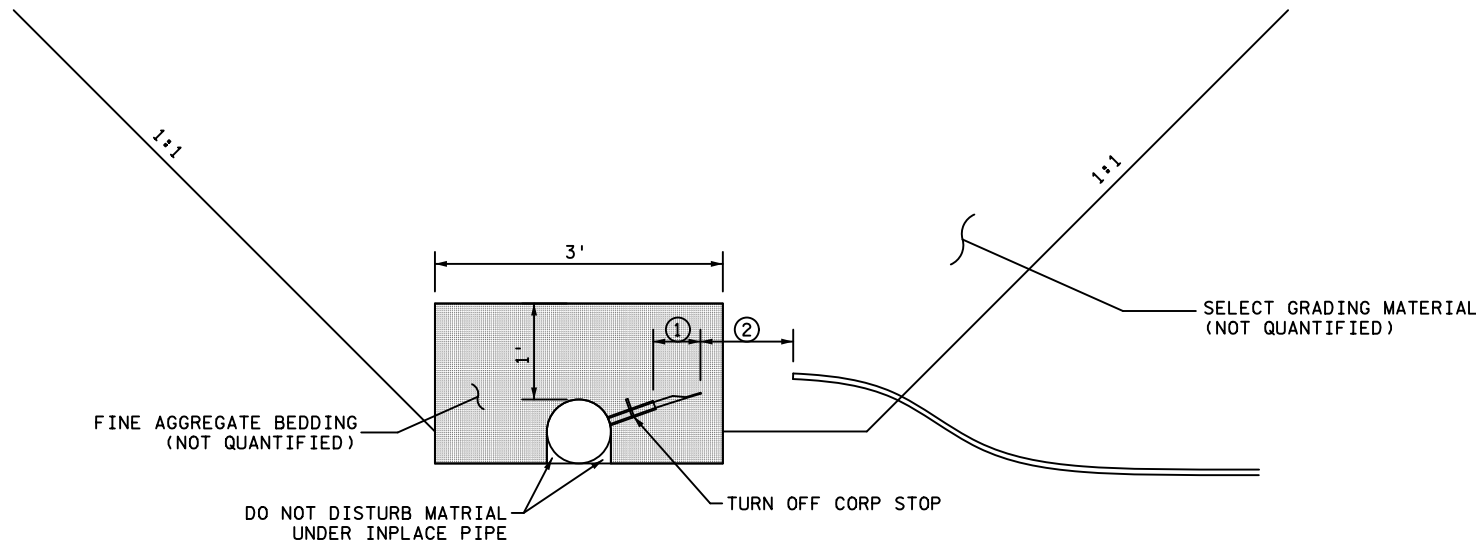
WATER SERVICE DISCONNECT

HYDRANT AND GATE VALVE & BOX

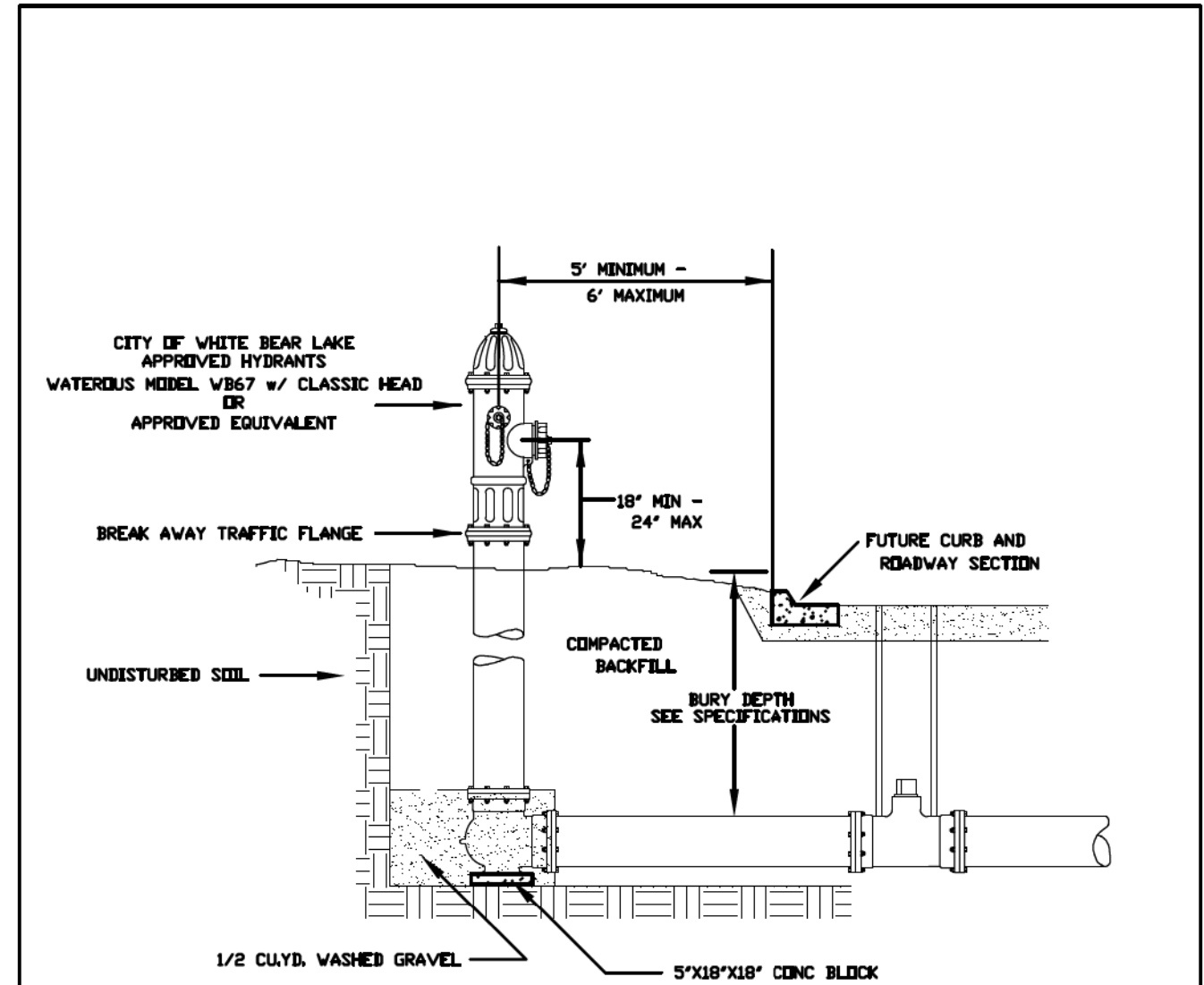
5:07:46 PM

2/9/2024

FILE: X:\F\J\1\ISDWB\170689\5-Final-dgn\51-drawings\40-Transition\Plansheets\C0170689_mdl.dgn
 MODEL: DeFault

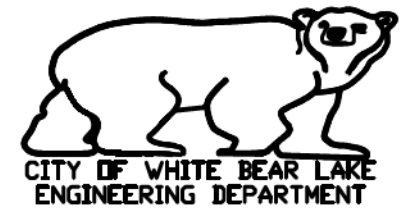


- SPECIFIC NOTES:
- ① 6" TAIL. CRIMP LAST 2".
 - ② REMOVE MINIMUM 1' WATER SERVICE LINE.



- NOTES:
- 1) 6" GATEVALVES TO BE INSTALLED A MINIMUM OF 6' FROM CENTER OF HYDRANT ON ALL HYDRANT LEADS.
 - 2) HYDRANT TO BE TIED TO TEE WITH APPROVED RESTRAINING DEVICES, MEG A LUGS OR AS APPROVED BY THE CITY ENGINEER

FIRE HYDRANT DETAIL
 TYPICAL INSTALLATION



EFFECTIVE APRIL 2009

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: <u>MTT</u>				
DESIGNER: <u>JCB</u>				
CHECKED BY: <u>JCB</u>				

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.
 Certified By: Joshua C. Breid Lic. No. 59756
 Printed Name: JOSHUA C. BREID Date: 02/09/2023



RAMSEY COUNTY, MINNESOTA
 DIVISION AVE AND 8TH ST
 PROJECT NO. 170689

MISCELLANEOUS DETAILS
 DISCONNECT WATER SERVICE

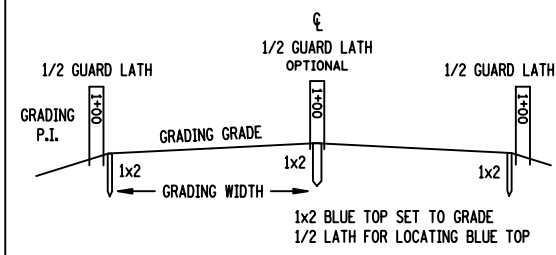
SEH FILE NO. ISDWB170689	7
MD1 OF MD1	78

5:07:47 PM

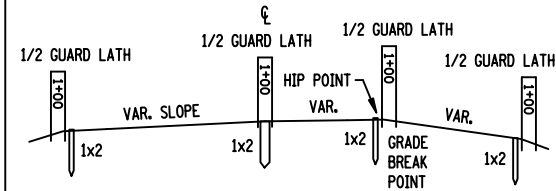
2/9/2024

FILE: X:\F\J\1\ISDWB\170689\5-final-dsgn\51-drw\ings\40-Tr\anshwy\Plansheets\C0170689_spn1.dgn
MODEL: 115.1

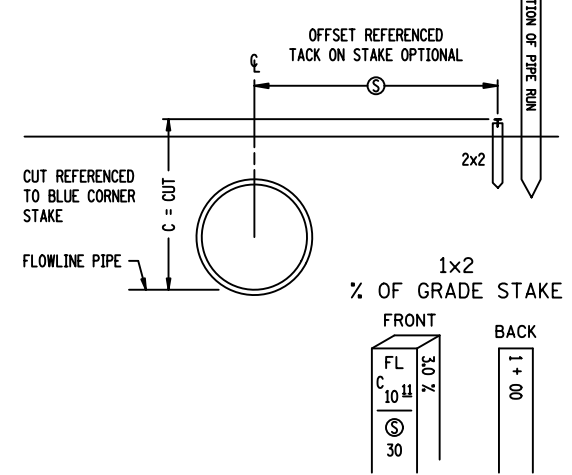
BLUE TOPS NORMAL SECTION



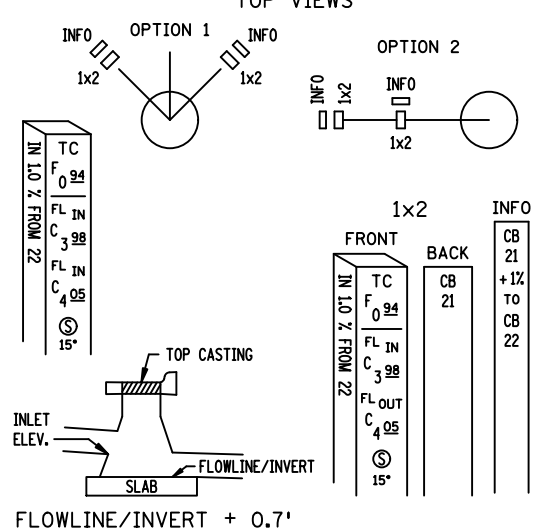
TRANSITION SECTION



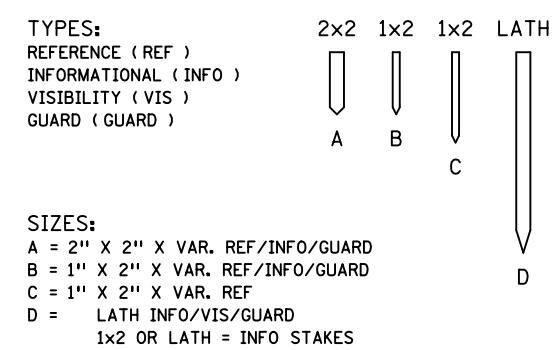
PIPE STAKING PROFILE VIEW CENTERLINE PIPE



CATCH BASIN OR MANHOLE (CB/MH) TOP VIEWS



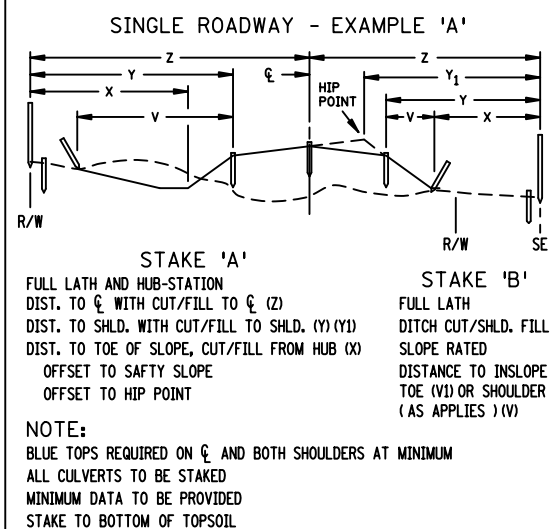
STANDARD STAKES



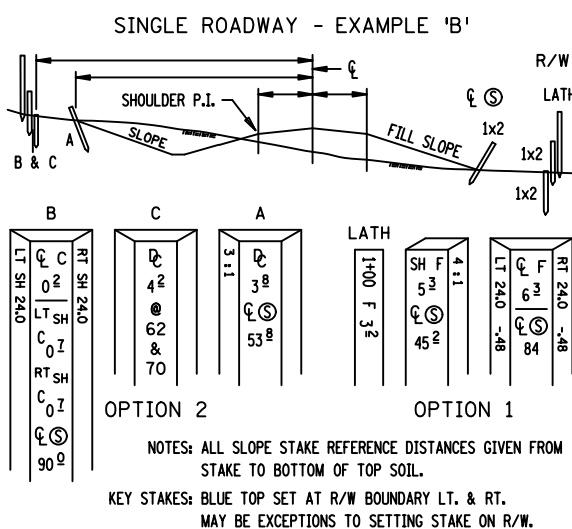
ABBREVIATIONS

- BBL = BARREL (PIPE)
- B.C. = BACK CURB
- C & G = CURB & GUTTER
- C = CUT
- CAP = CORR. ALUM. PIPE
- CB = CATCH BASIN
- COR = CORNER
- CR = CROWN
- CSP = CORR. STEEL PIPE
- D = DITCH CUT
- D.E. = DRAINAGE EASEMENT
- DI = DROP INLET
- EB = EASTBOUND
- E.M. = EDGE BITUMINOUS MAT
- E.S. = EDGE CONCRETE SLAB
- F = FILL
- FF = FRONT FACE
- FL = FLOW LINE
- FL IN = FLOWLINE INLET
- FL OUT = FLOWLINE OUTLET
- GR = GRADE
- GW = GRADING WIDTH
- HH = HANDHOLE
- HP = HIP POINT
- LT = LEFT
- MH = MANHOLE
- NB = NORTHBOUND
- ⊙ = OFFSET
- PAR = PARCEL
- % = PERCENT GRADE
- P.E. = PERM. EASEMENT
- RAD = RADIUS POINT
- RCP = REINF. CONC. PIPE
- RP = REFERENCE POINT
- RSC = REINF. SECT. CONC.
- RT = RIGHT
- R/W = RIGHT OF WAY
- SB = SOUTHBOUND
- SCP = SECT. CONC. PIPE
- SH = SHOULDER
- TC = TOP CASTING
- OR TOP CURB
- T.E. = TEMP. EASEMENT
- 3 : 1 = SLOPE (EXAMPLE)
- WB = WESTBOUND
- WP = WORKING POINTS

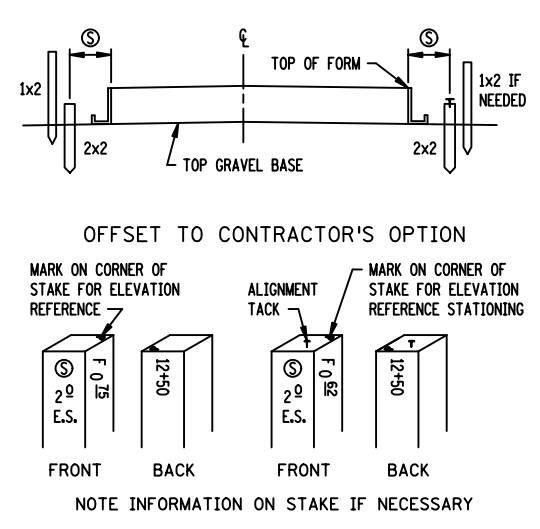
SLOPE STAKES



SLOPE STAKES



CONCRETE PAVING STATIONARY FORM



RECOMMENDED STAKING INTERVALS

FIGURE A

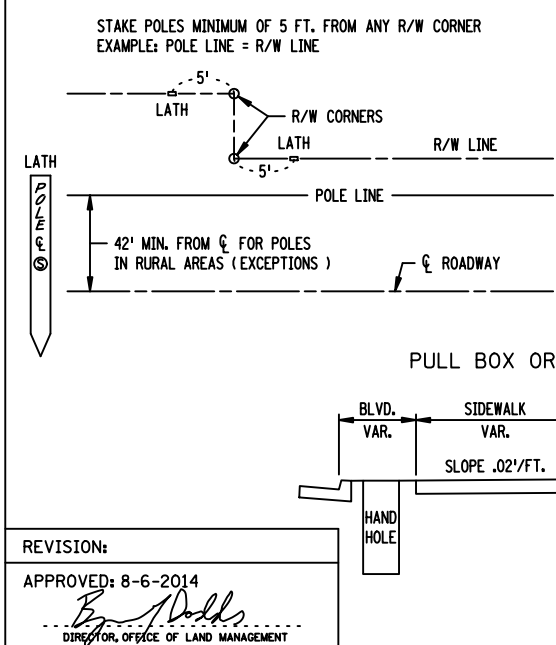
	SLOPE STAKES	SUB GRADE B.T.	CLASS MATERIAL B.T.	CONC PAVT	C & G	CL & GR LIMITS	MUCK EXC.	R/W	TEMP. EASE.
TANGENT	100	100	100	50	50	ALL CORNERS	100	ALL CORNERS	ALL CORNERS
HORIZ. CURVE						ALL CORNERS		ALL CORNERS	ALL CORNERS
0 - 3'	100	100	100	50	50	ALL CORNERS	100	ALL CORNERS	ALL CORNERS
OVER 3' -	100	50	50	25	25	ALL CORNERS	100	ALL CORNERS	ALL CORNERS
VERT. CURVE									
M' 100'	100	100	100	50	50				
0 - .25									
M' OVER .25	100	50	50	25	25				
TRAN.		50	50						

STAKING TOLERANCES (FEET)

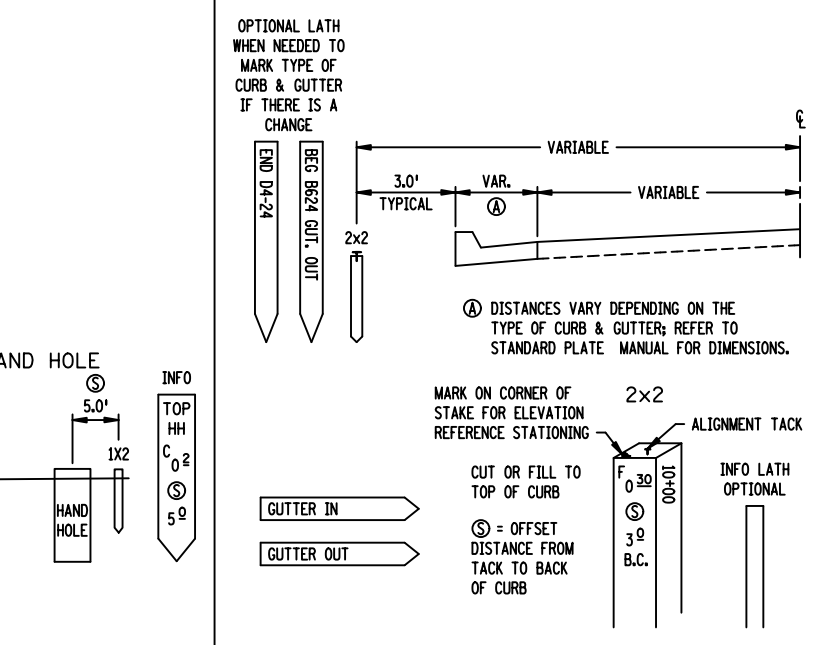
	HORIZONTAL	VERTICAL
CONSTRUCTION LIMITS	± 1.5	
CLEARING & GRUBBING	2.0	
SLOPES STAKES	2.0	± 0.2
KEY STAKES	0.2	0.03
DRAINAGE STAKES	0.05	0.05
CURB & GUTTER	0.07	0.03
PAVING	0.05	0.03
ALIGNMENT	0.07	
UTILITY	0.10	0.05
STRUCTURAL	0.02	0.02
GUARD RAIL	0.5	
BUILDINGS	0.04	
O.H. SIGNS	0.05	0.05
MUCK EXCAVATION LIMITS	2.0	
R/W B-POINTS	0.10	
NOISE WALLS	1.0	0.5

THE TOLERANCES ARE RELATIVE TO PROJECT DATUM

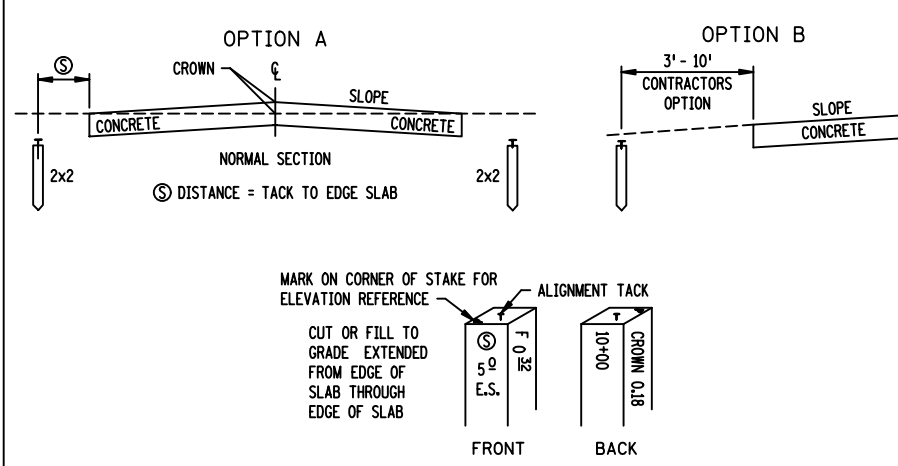
UTILITY (UTIL)



CURB & GUTTER (CURB)



CONCRETE PAVING - SLIP FORM



DISCLAIMER

THESE STAKING INFORMATION SHEETS ARE FOR INFORMATION PURPOSES ONLY. STAKING PROCEDURES VARY AND MAY BE SUBJECT TO CHANGE DURING CONSTRUCTION BY CIRCUMSTANCES AND/OR AGREEMENTS BETWEEN SURVEY CREW AND CONTRACTOR.

REVISION:
APPROVED: 8-6-2014
[Signature]
DIRECTOR, OFFICE OF LAND MANAGEMENT

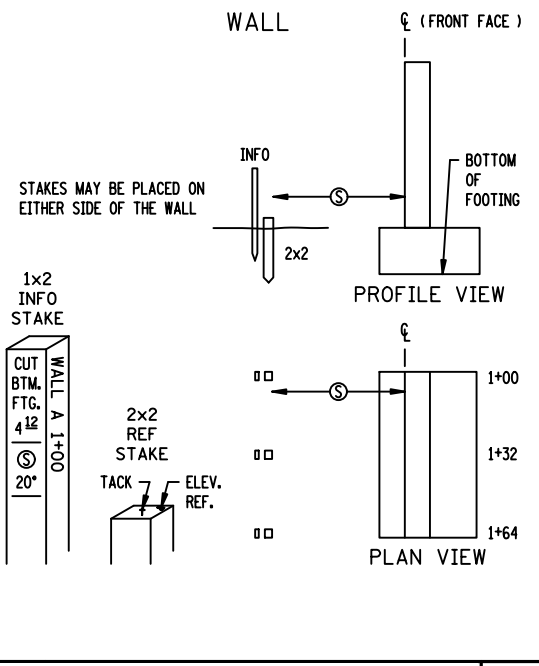
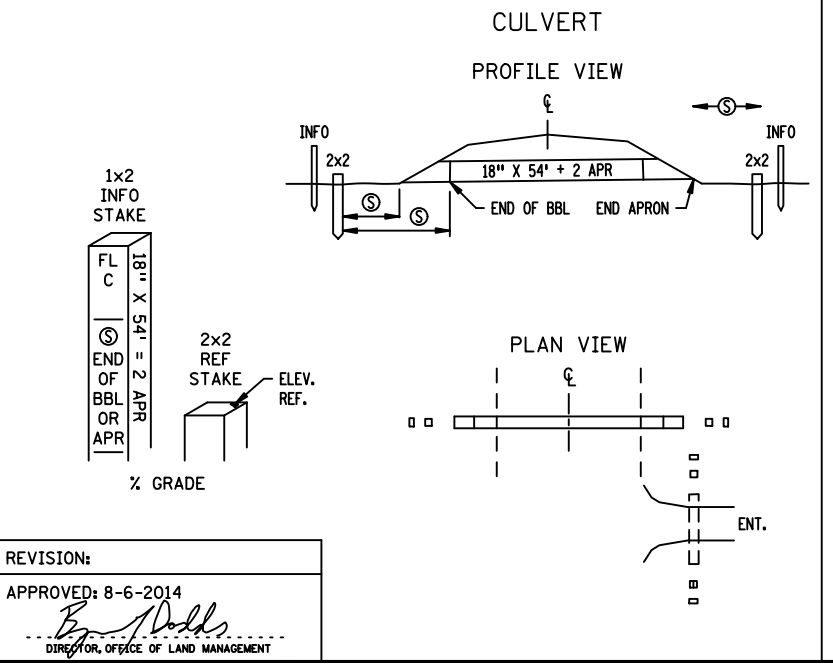
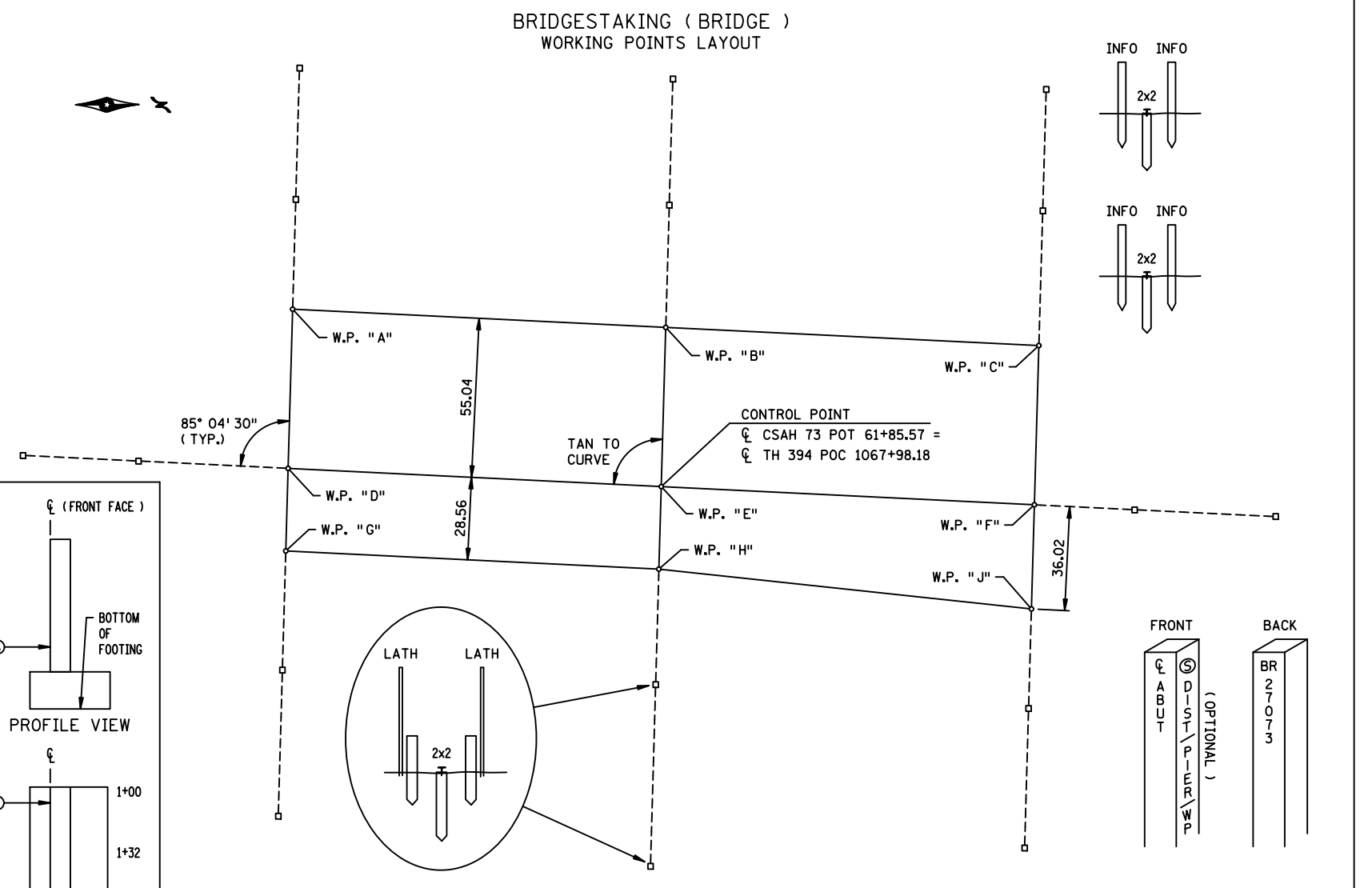
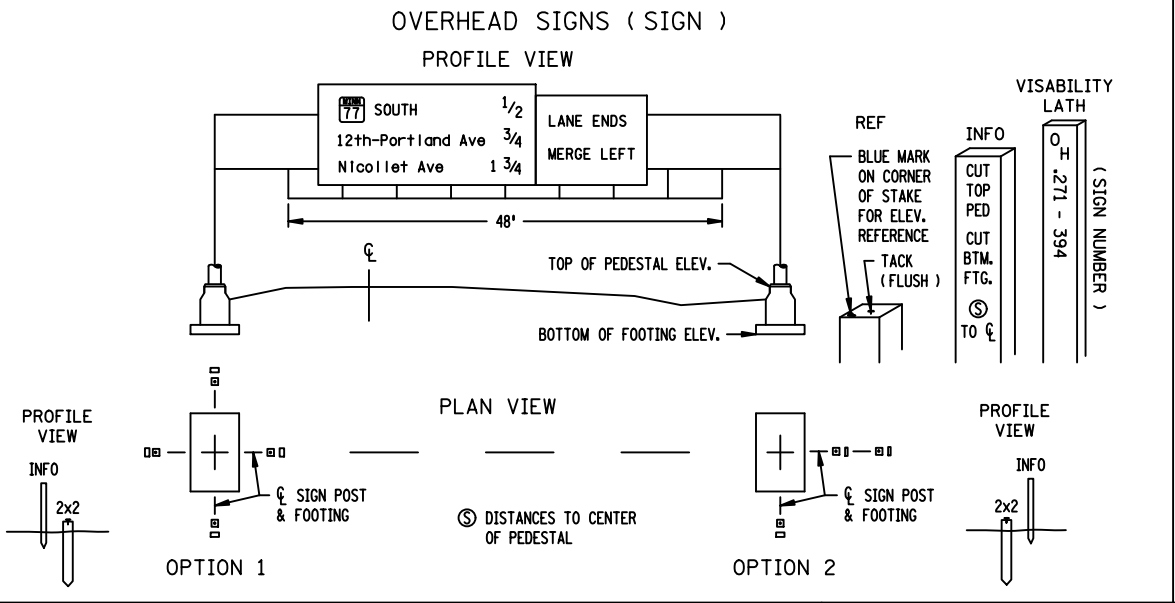
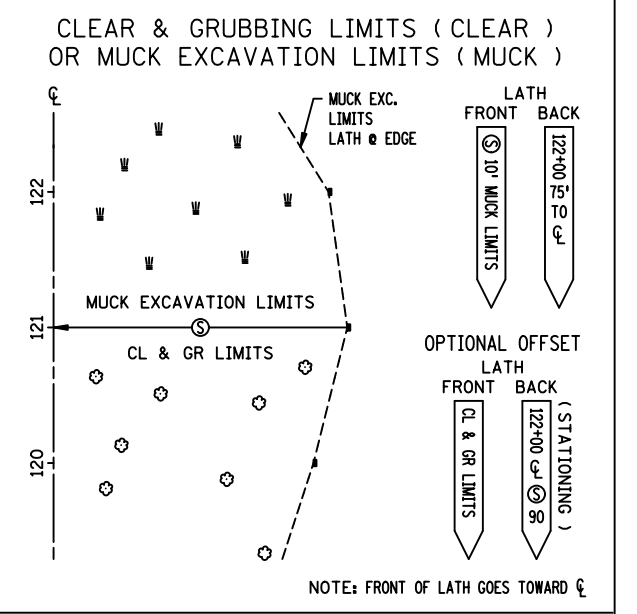
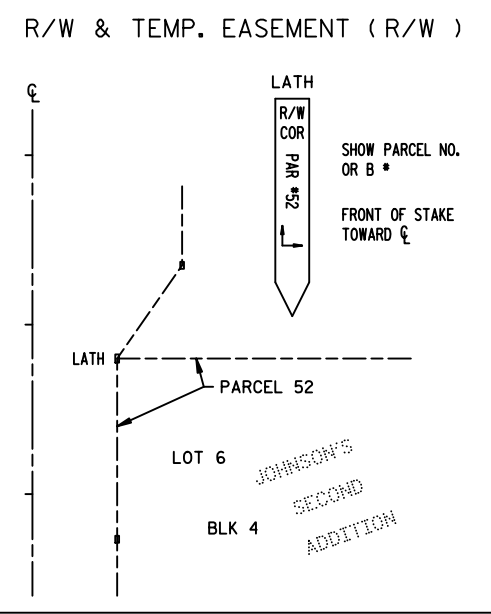
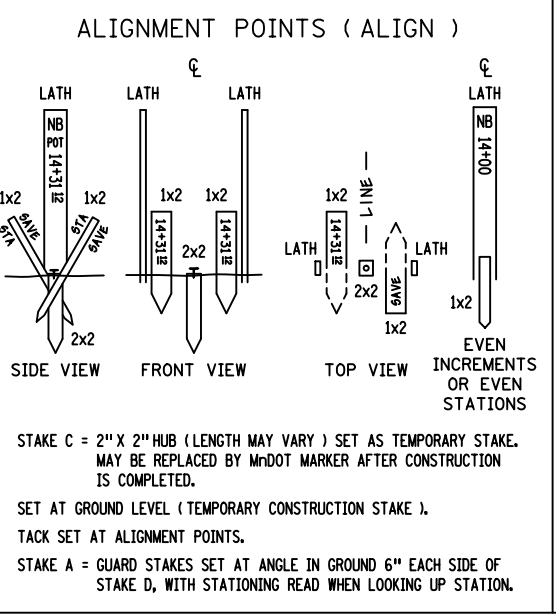
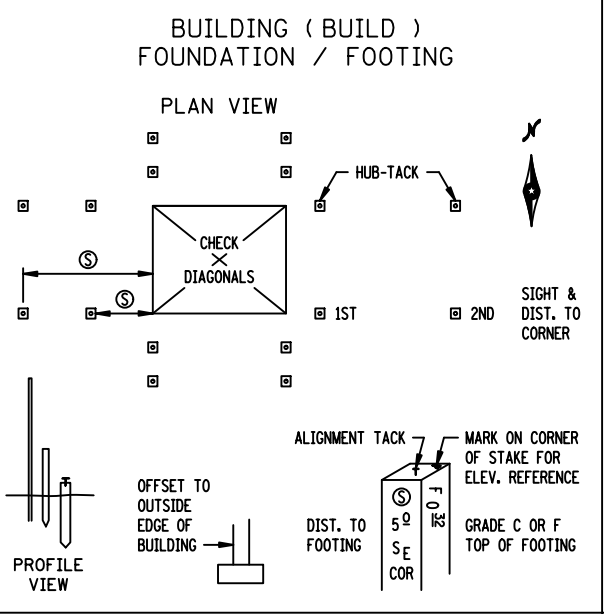
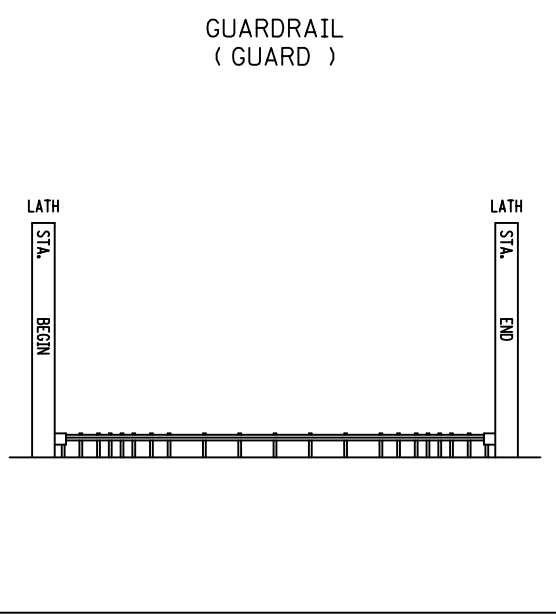
m MINNESOTA DEPARTMENT OF TRANSPORTATION
STANDARD PLAN 5-297.115 1 OF 2
APPROVED: 8-6-2014
REVISED:
[Signature]
STATE DESIGN ENGINEER

STAKING INFORMATION SHEET

5:07:48 PM

2/9/2024

FILE: X:\F\J\1\ISDWB\170689\5-Final-dgn\51-drawings\40-Transition\Plansheets\C0170689_spn1.dgn
MODEL: 115.2



REVISION:

APPROVED: 8-6-2014

By: [Signature]

DIRECTOR, OFFICE OF LAND MANAGEMENT

m MINNESOTA DEPARTMENT OF TRANSPORTATION

STANDARD PLAN 5-297.115 2 OF 2

APPROVED: 8-6-2014

REVISOR:

Christy Ky

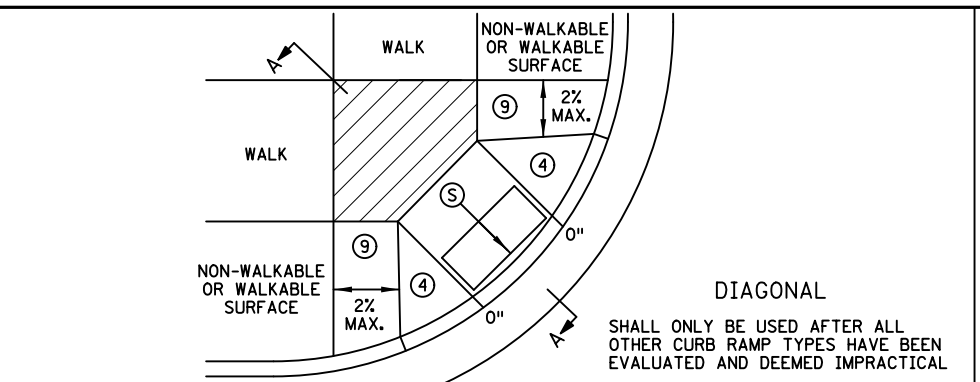
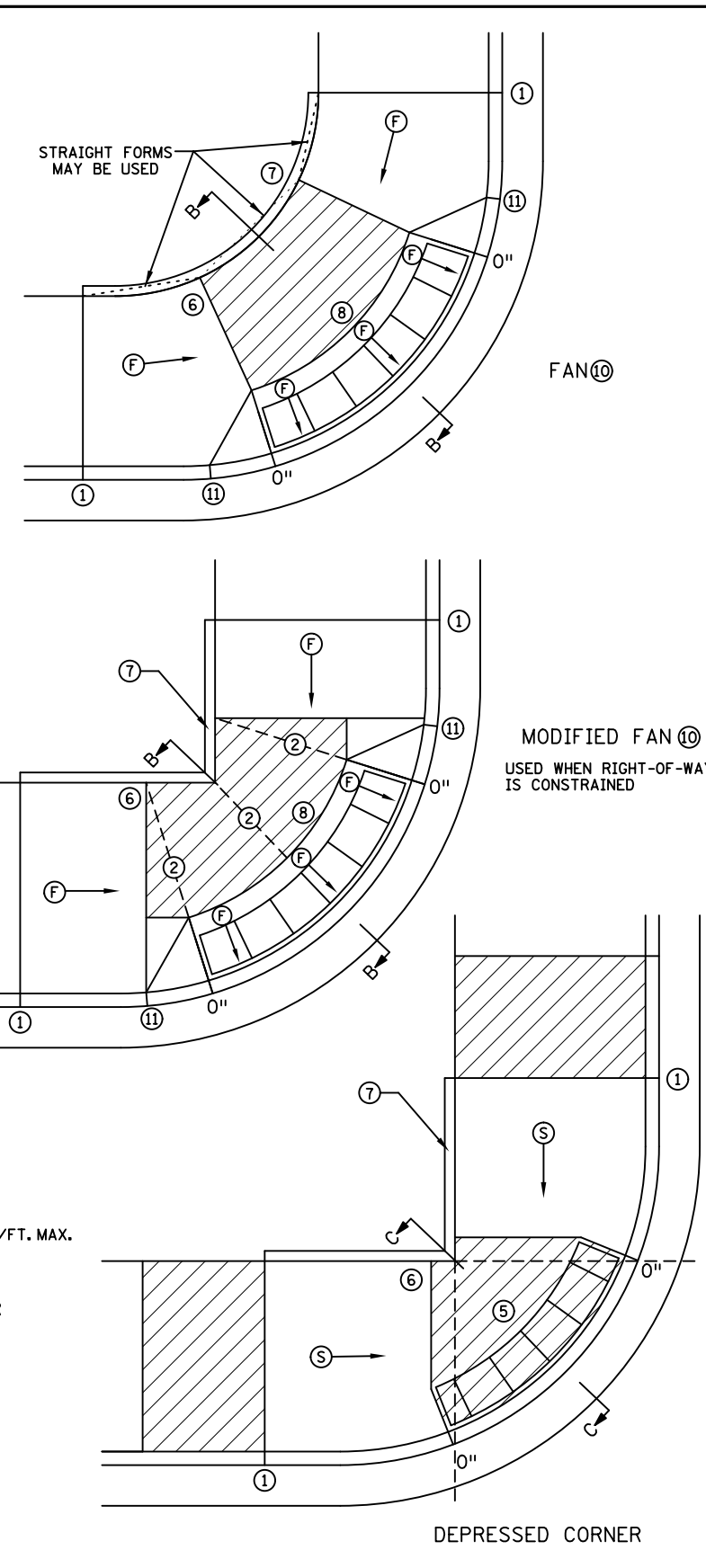
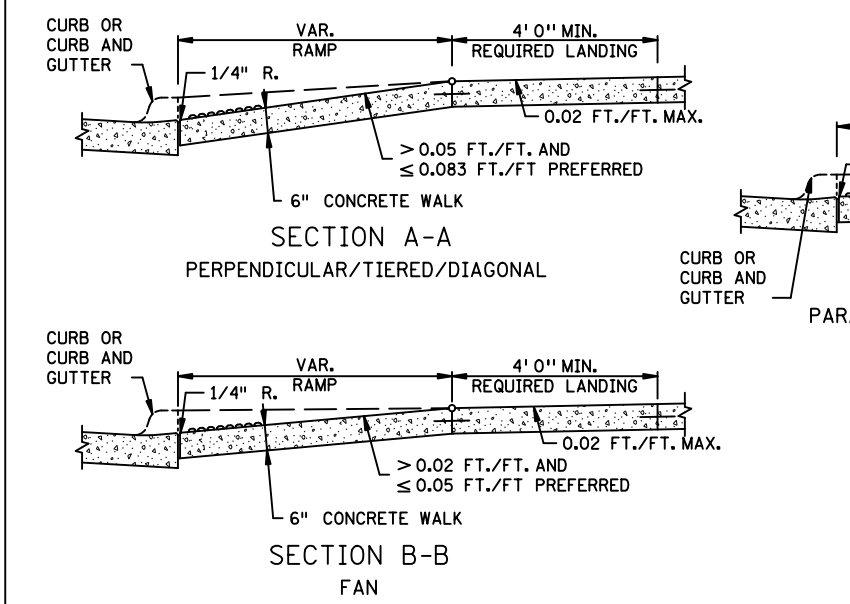
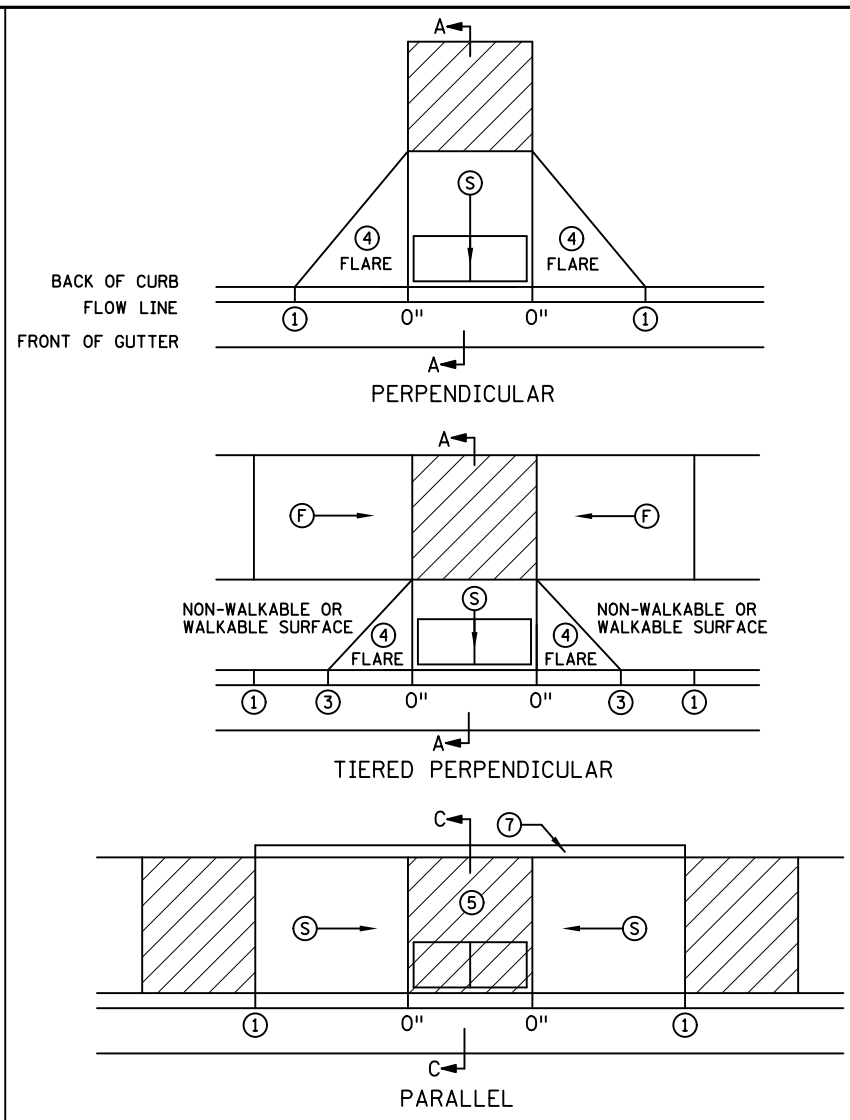
STATE DESIGN ENGINEER

STAKING INFORMATION SHEET

5:07:48 PM

2/9/2024

FILE: X:\F\J\1\ISDWB\170689\5-final-dsgn\51-drawings\40-Tr anshtwy \Plansheets\CD170689_spn1.dgn
MODEL: 250.1



- 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.	
(S)	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%.
(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%.
(Hatched Area)	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

REVISIONS:

APPROVED: 11-04-2021

Jeffrey Perkins
JEFFREY PERKINS
OPERATIONS DIVISION

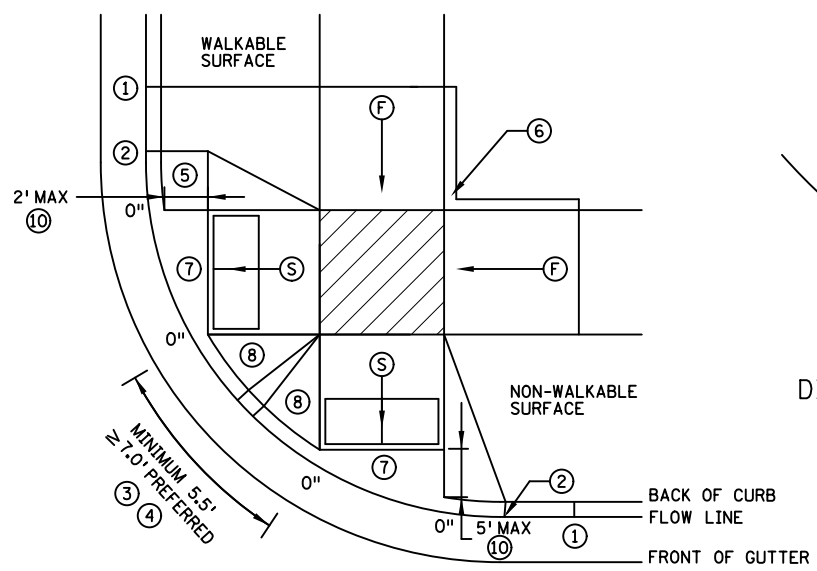
m MINNESOTA
DEPARTMENT OF TRANSPORTATION

STANDARD PLAN 5-297.250 1 OF 6

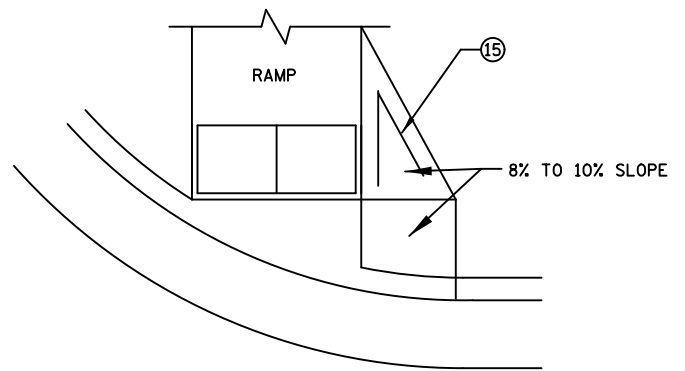
Thomas Tyrbicki
THOMAS TYRBICKI
STATE DESIGN ENGINEER

APPROVED: 11-04-2021
REVISED:

PEDESTRIAN CURB RAMP DETAILS

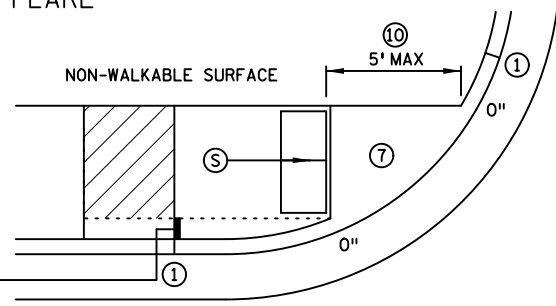


COMBINED DIRECTIONAL

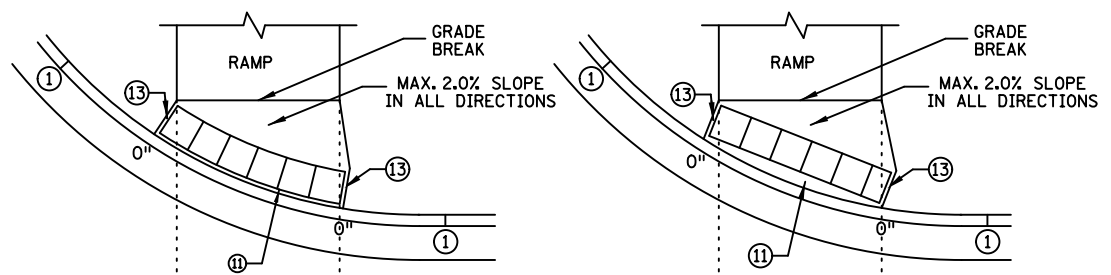


DIRECTIONAL RAMP WALKABLE FLARE

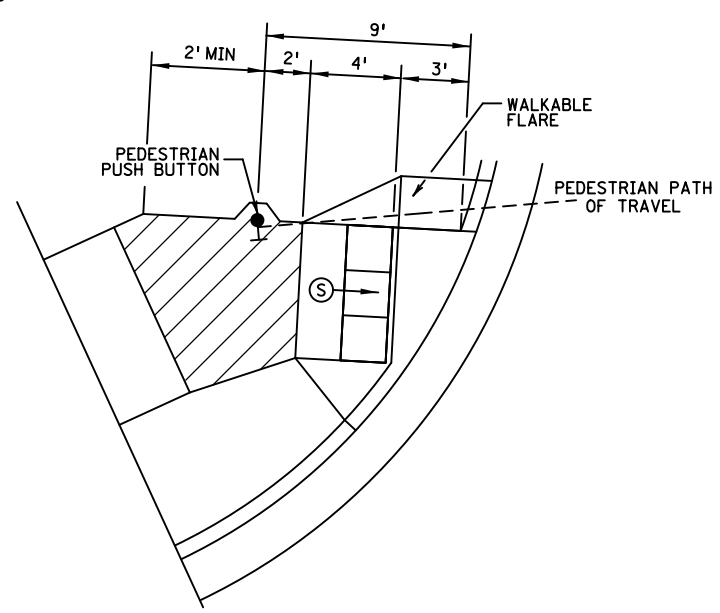
IF NON-CONCRETE BLVD. IS CONSTRUCTED AND IS LESS THAN 2' IN WIDTH AT TOP OF CURB TRANSITION, PAVE CONCRETE RAMP WIDTH TO ADJACENT BACK OF CURB.



STANDARD ONE-WAY DIRECTIONAL 9

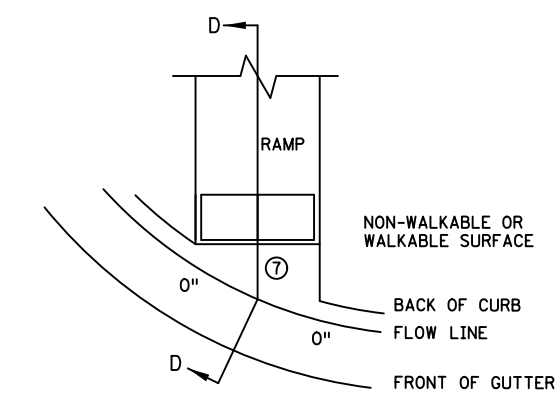


DETECTABLE WARNING PLACEMENT WHEN SETBACK CRITERIA IS EXCEEDED 12
ONE-WAY DIRECTIONAL WITH DETECTABLE WARNING AT BACK OF CURB

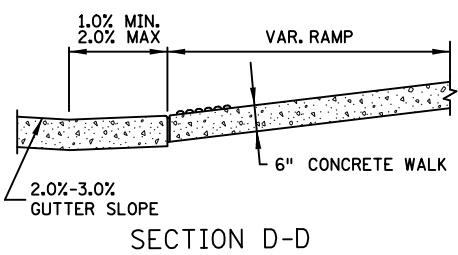


SEMI-DIRECTIONAL RAMP 3 4 9

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)



CURB FOR DIRECTIONAL RAMPS 14



SECTION D-D

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.	
(S)	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%.
(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%.
(Hatched Box)	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

REVISIONS:
APPROVED: 11-04-2021
Jeffrey A. Perkins
JEFFREY PERKINS
OPERATIONS DIVISION

MINNESOTA
DEPARTMENT OF TRANSPORTATION
STANDARD PLAN 5-297.250 2 OF 6
APPROVED: 11-04-2021
REVISED:
Tom Styrbicki
THOMAS STYRBICKI
STATE DESIGN ENGINEER

PEDESTRIAN CURB RAMP DETAILS

SEH
RAMSEY COUNTY, MINNESOTA
DIVISION AVE AND 8TH ST
PROJECT NO. 170689

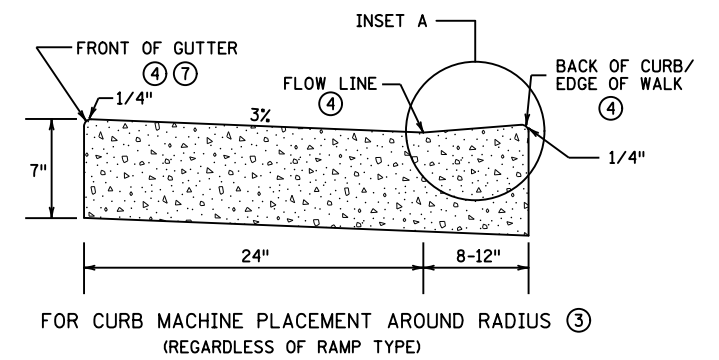
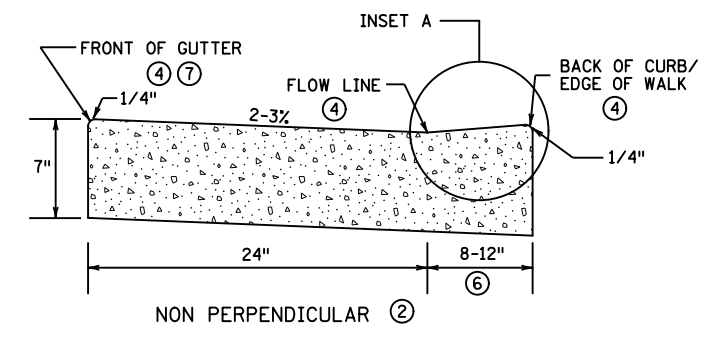
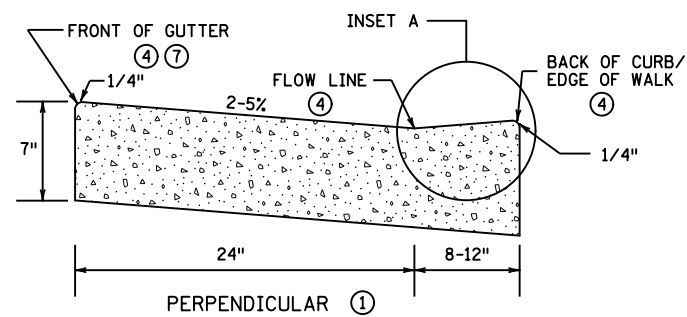
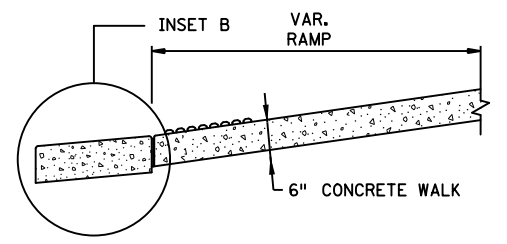
STANDARD PLAN SHEET

SEH
FILE NO.
ISDWB170689
SPN4
OF SPN27
11
78

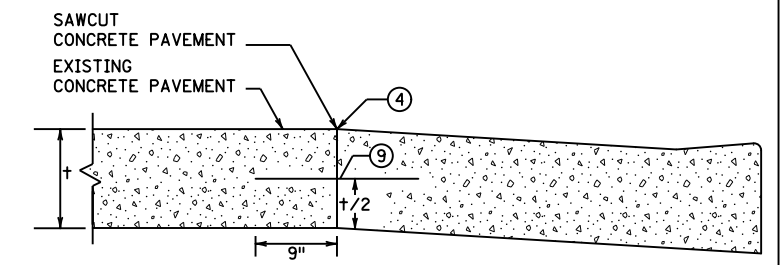
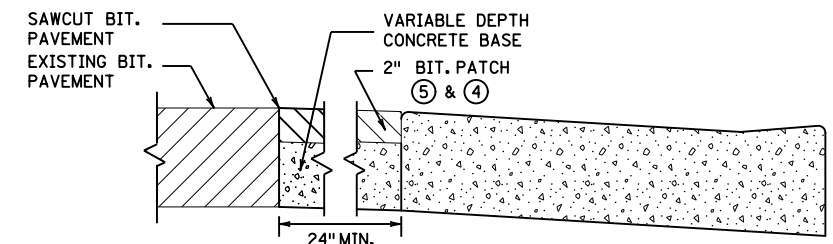
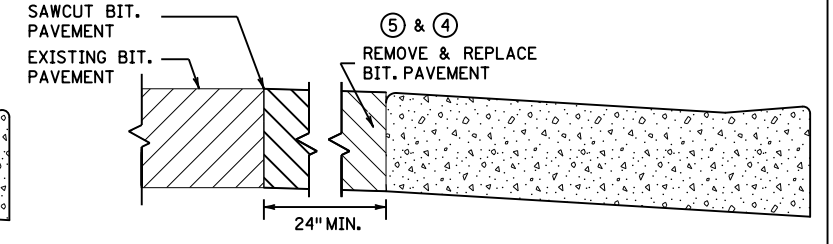
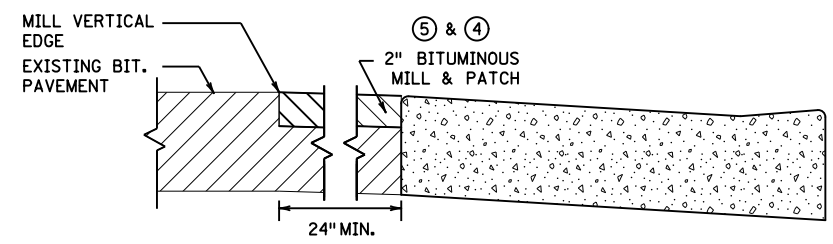
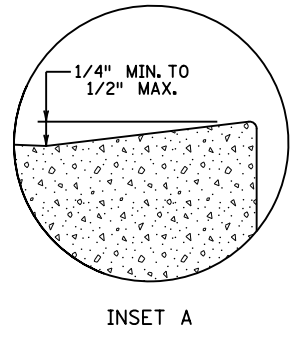
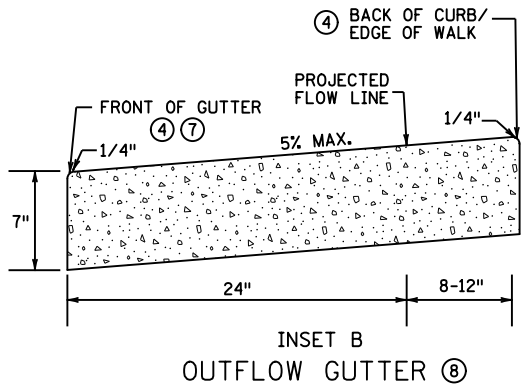
5:07:49 PM

2/9/2024

FILE: X:\F\J\1\ISDWB\170689\5-Final-dsgn\51-drawings\40-Trans Hwy\Plansheets\C0170689_spn1.dgn
MODEL: 250_3

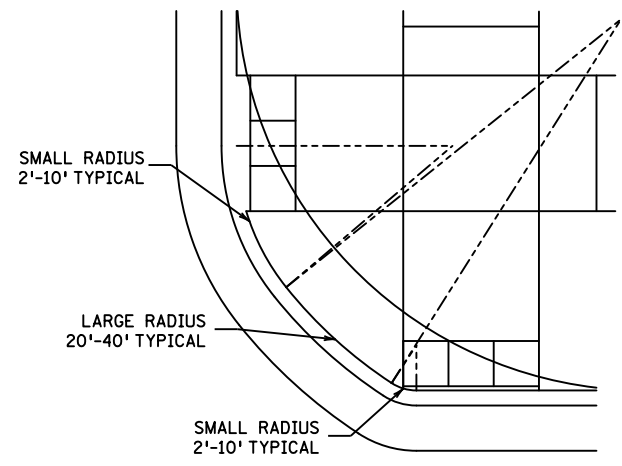
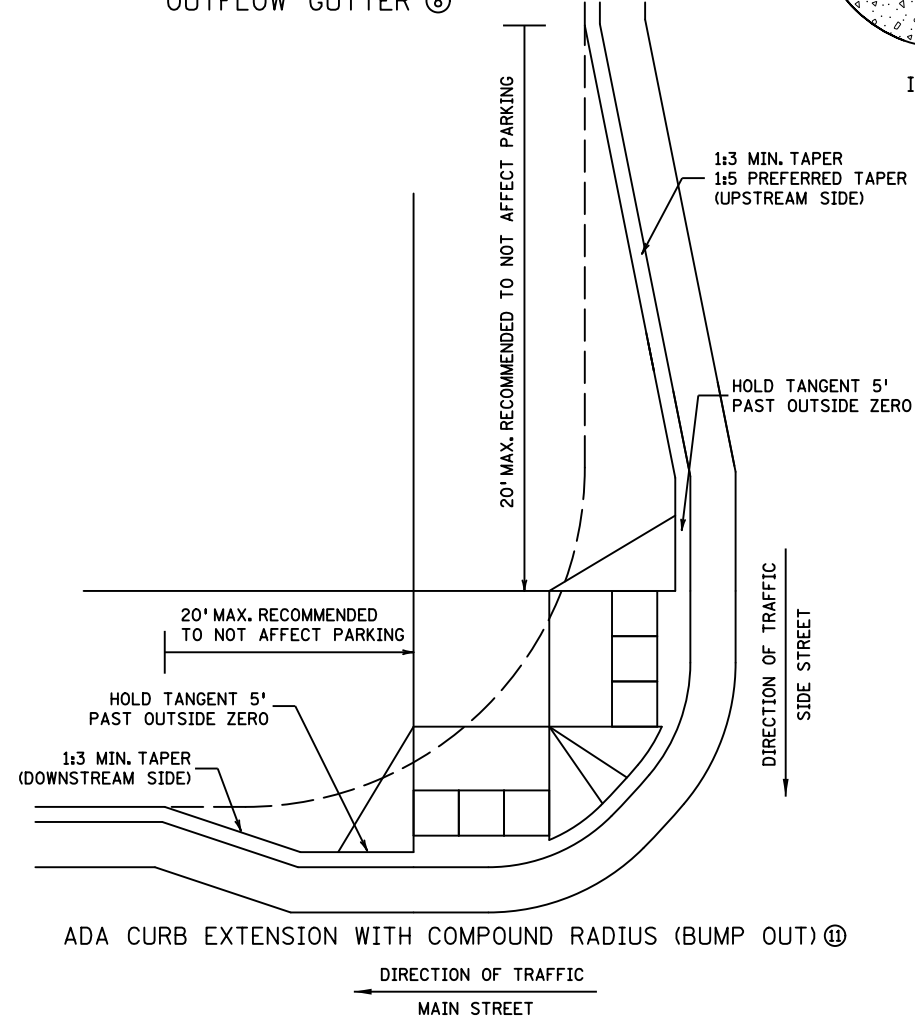


PEDESTRIAN ACCESS ROUTE CURB & GUTTER DETAIL



ONLY ALLOWED PER ENGINEER'S APPROVAL

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



COMBINED DIRECTIONAL (COMPOUND RADIUS)

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.

REVISIONS:

APPROVED: 11-04-2021

Jeffrey Perkins
JEFFREY PERKINS
OPERATIONS DIVISION

m MINNESOTA
DEPARTMENT OF TRANSPORTATION

STANDARD PLAN 5-297.250 3 OF 6

Tom Styrbicki
THOMAS STYRBICKI
STATE DESIGN ENGINEER

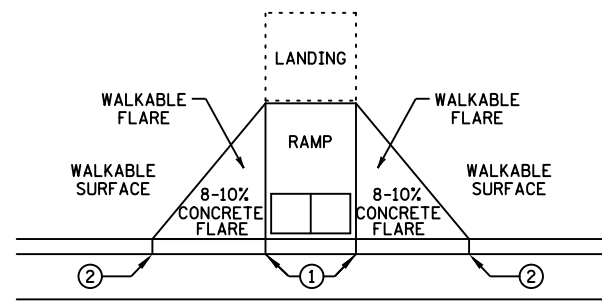
APPROVED: 11-04-2021
REVISED:

PEDESTRIAN CURB RAMP DETAILS

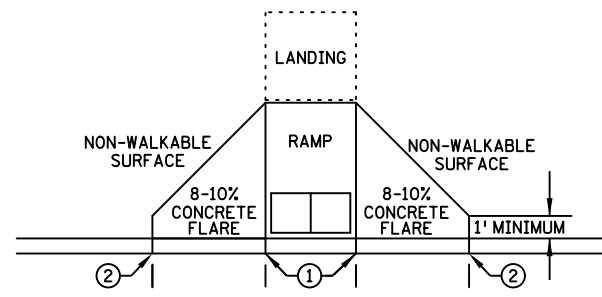
5:07:49 PM

2/9/2024

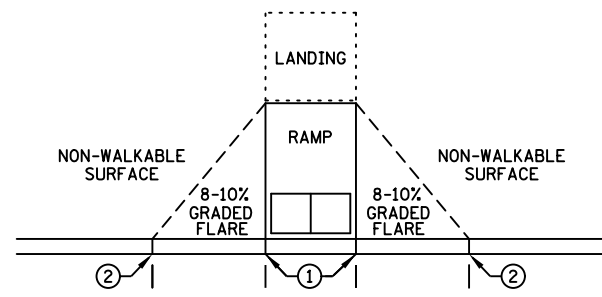
FILE: X:\F\J\1\ISDWB\170689\5-f\final-dsgn\51-dr\dwg\ngs\40-Tr\transhwy\plansheets\CD170689_spn1.dgn
MODEL: 250_4



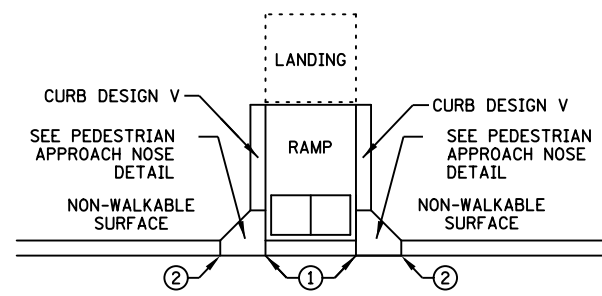
PAVED FLARES ADJACENT TO WALKABLE SURFACE



PAVED FLARES ADJACENT TO NON-WALKABLE SURFACE

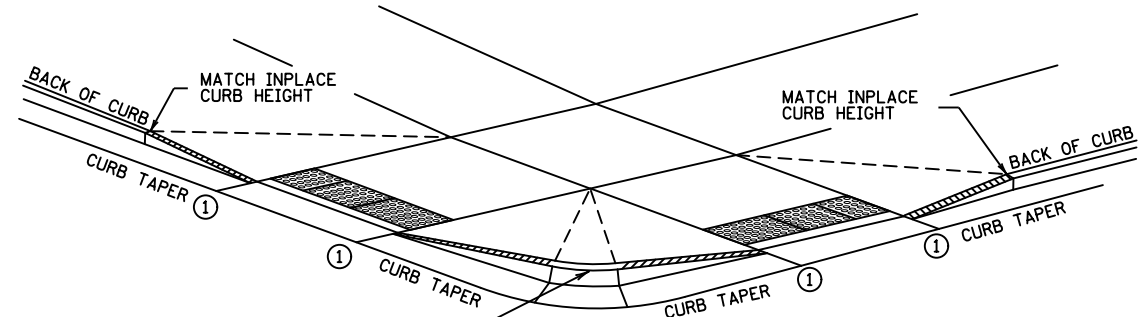


GRADED FLARES



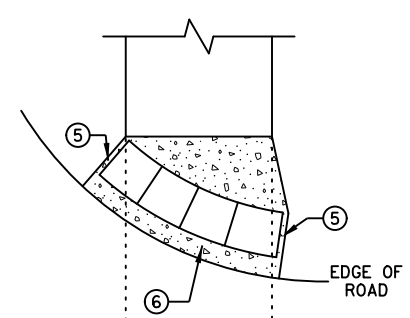
RETURNED CURB ④

TYPICAL SIDE TREATMENT OPTIONS ③ ⑩

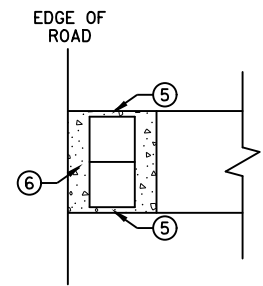


3" MINIMUM CURB HEIGHT, 4" PREFERRED (MEASURED AT FRONT FACE OF CURB)
FOR A MIN. 6" LENGTH (MEASURED ALONG FLOW LINE)

DETECTABLE EDGE WITH CURB AND GUTTER ⑦

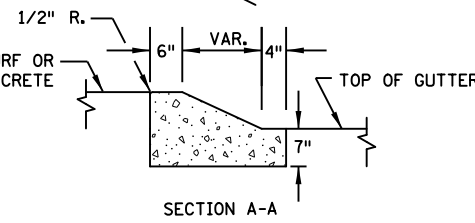
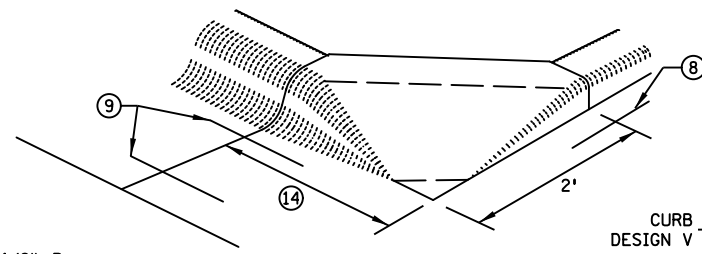


RADIAL DETECTABLE WARNING

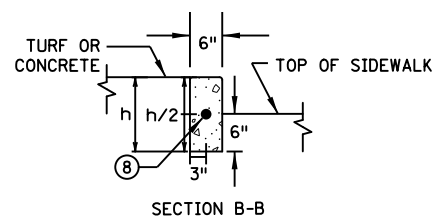


RECTANGULAR DETECTABLE WARNING

DETECTABLE EDGE WITHOUT CURB AND GUTTER

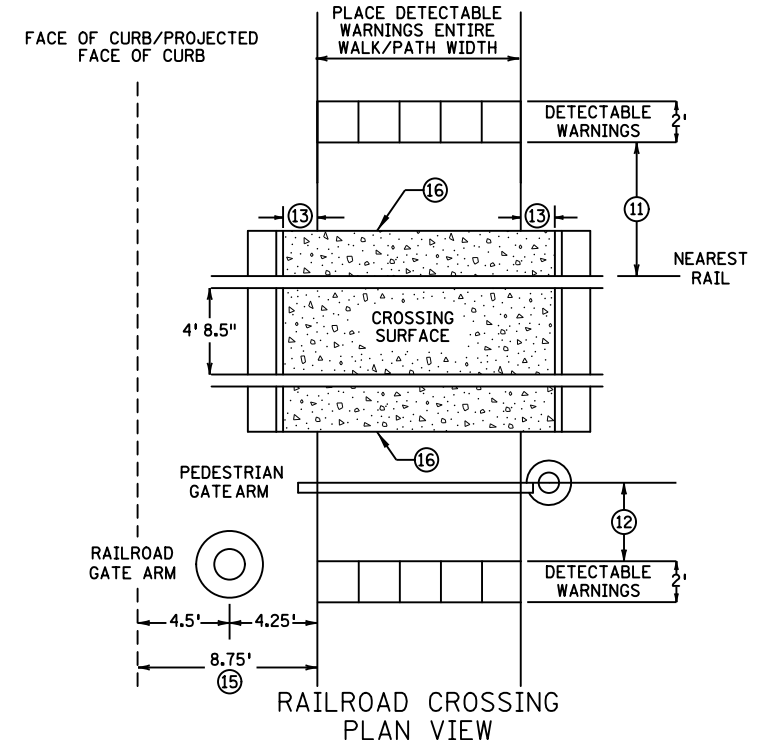


SECTION A-A



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 PLATE 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 RAMP 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.

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

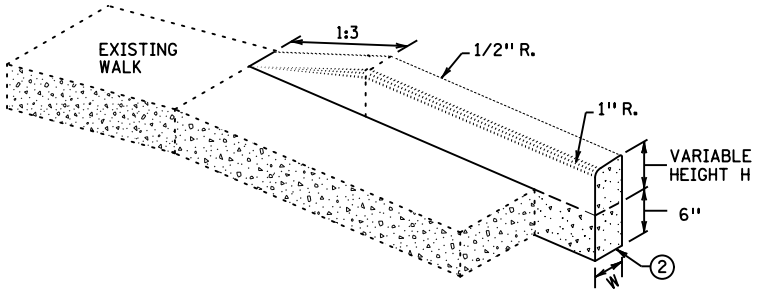
	STANDARD PLAN 5-297.250	4 OF 6
DEPARTMENT OF TRANSPORTATION THOMAS TYRBIICKI STATE DESIGN ENGINEER		APPROVED: 11-04-2021 REVISED:

PEDESTRIAN CURB RAMP DETAILS	
-------------------------------------	--

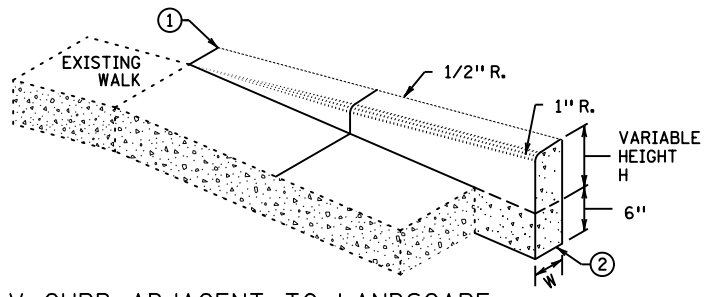
5:07:50 PM

2/9/2024

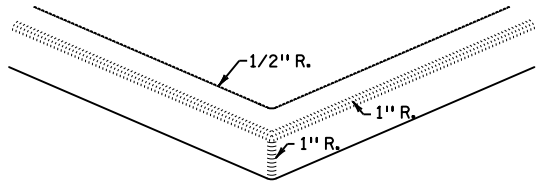
FILE: X:\F\J\1\ISDWB\170689\5-final-dsgn\51-drawings\40-Transition\Planisheets\CO170689_spn1.dgn
MODEL: 250.5



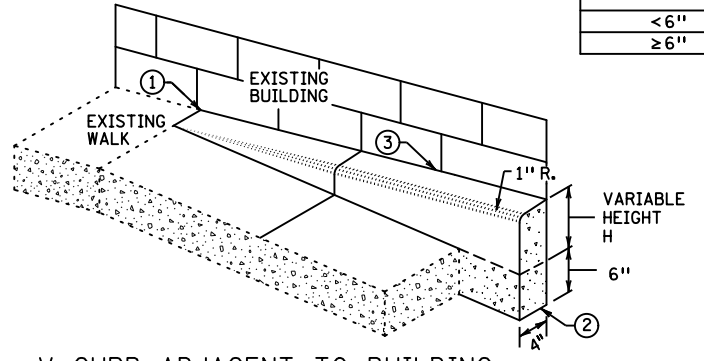
V CURB ADJACENT TO LANDSCAPE
CURB WITHIN SIDEWALK LIMITS



V CURB ADJACENT TO LANDSCAPE
CURB OUTSIDE SIDEWALK LIMITS

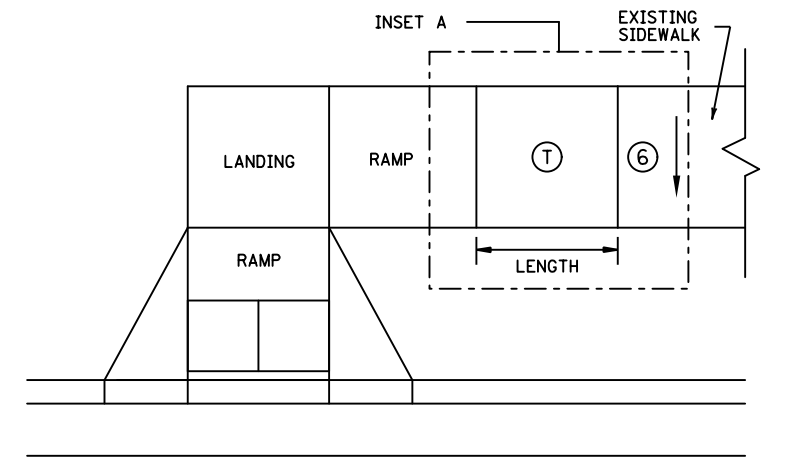


V CURB INTERSECTION

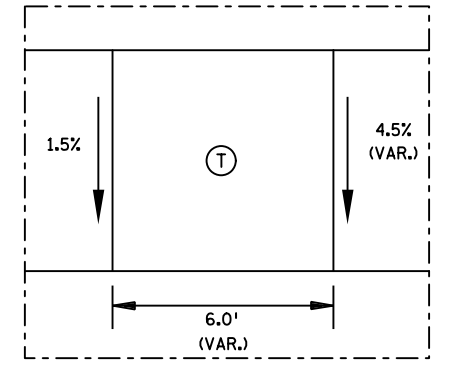


V CURB ADJACENT TO BUILDING
OR BARRIER

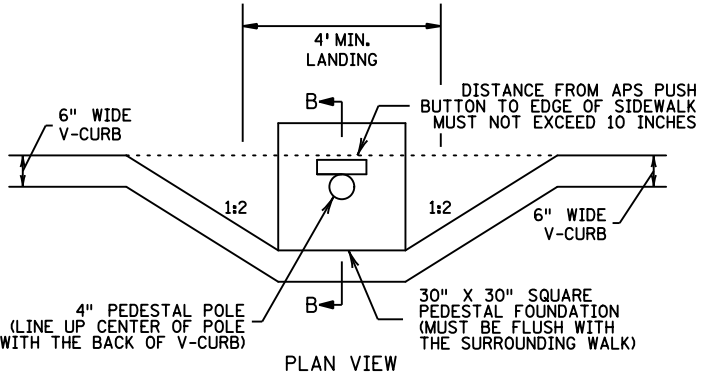
CONCRETE CURB DESIGN V	
CURB HEIGHT H	CURB WIDTH W
< 6"	4"
≥ 6"	6"



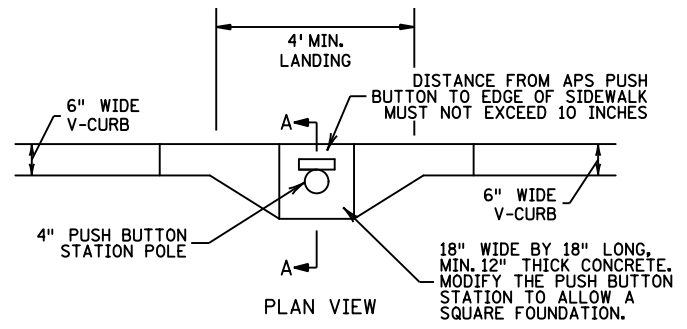
TRANSITION PANEL ④ ⑤



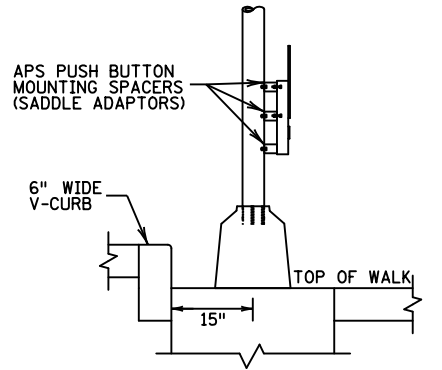
INSET A



PLAN VIEW

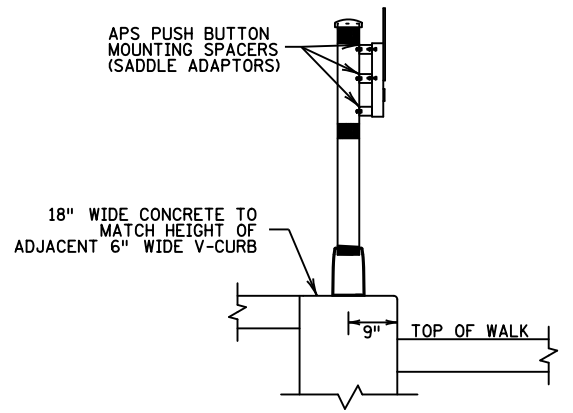


PLAN VIEW



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%.

④ 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.

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.

REVISIONS:

APPROVED: 11-04-2021

Jeffrey Perkins
JEFFREY PERKINS
OPERATIONS DIVISION



STANDARD PLAN 5-297.250 5 OF 6

APPROVED: 11-04-2021
REVISED:

Tom Styrbicki
THOMAS STYRBICKI
STATE DESIGN ENGINEER

PEDESTRIAN CURB RAMP DETAILS



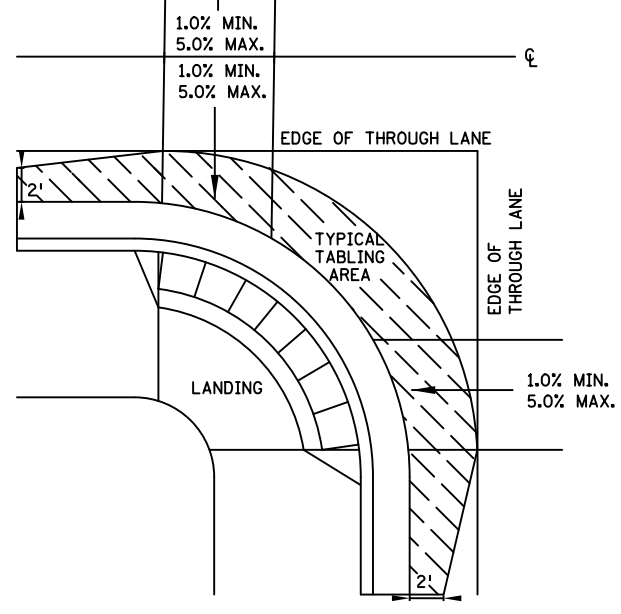
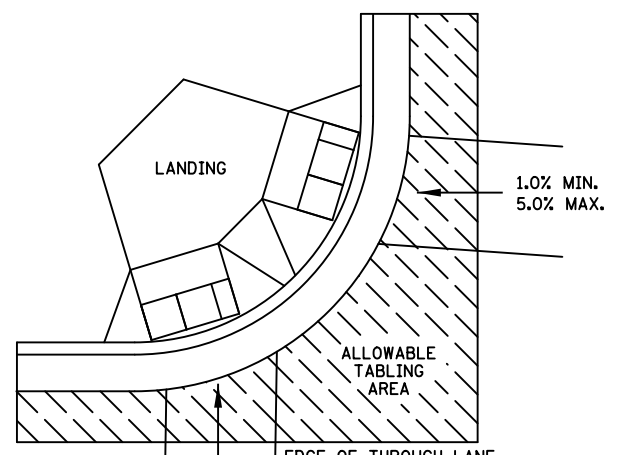
RAMSEY COUNTY, MINNESOTA
DIVISION AVE AND 8TH ST
PROJECT NO. 170689

STANDARD PLAN SHEET

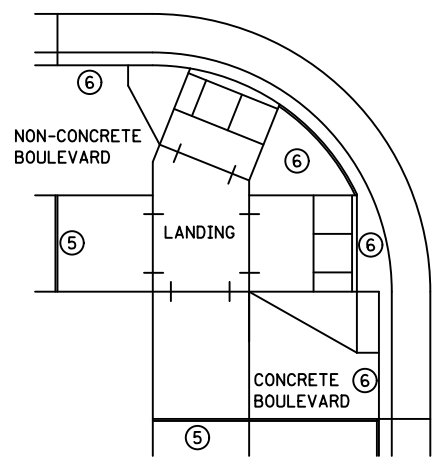
SEH
FILE NO.
ISDWB170689

SPN7
OF SPN27

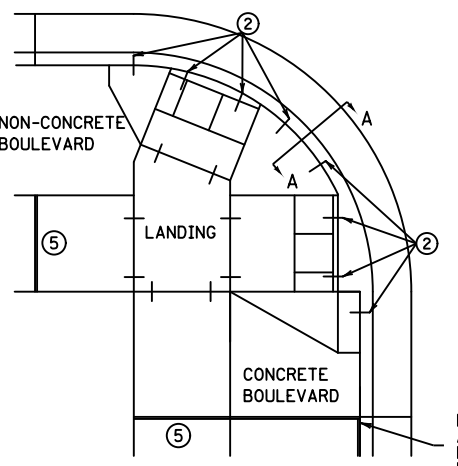
14
78



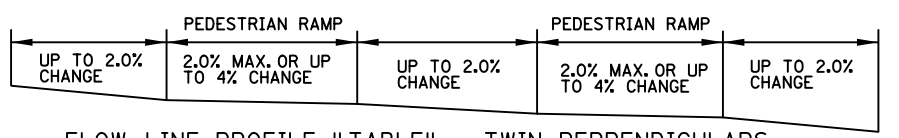
CURB LINE AND ROAD CROSSING ADJUSTMENTS



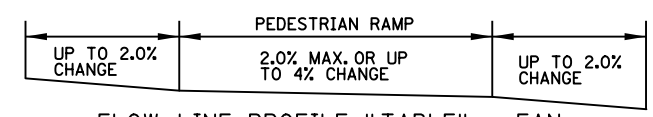
EXPANSION MATERIAL PLACEMENT FOR CONCRETE ROADWAYS



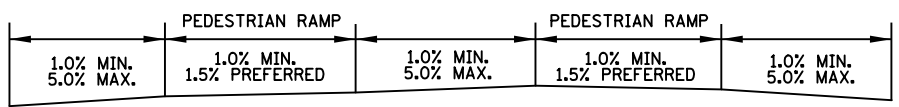
CURB LINE REINFORCEMENT PLACEMENT ON BITUMINOUS ROADWAYS



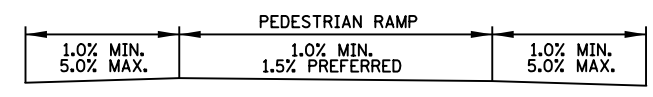
FLOW LINE PROFILE "TABLE" - TWIN PERPENDICULARS



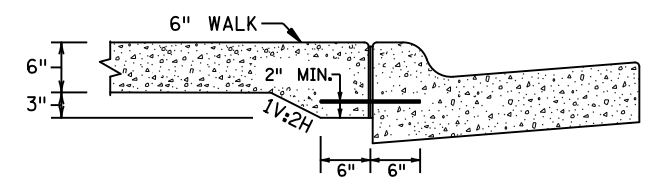
FLOW LINE PROFILE "TABLE" - FAN



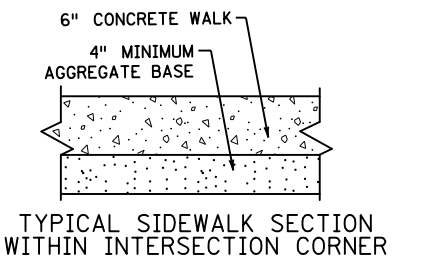
FLOW LINE PROFILE RAISE - TWIN PERPENDICULARS



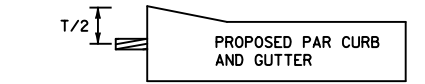
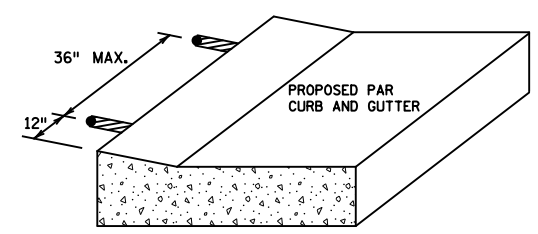
FLOW LINE PROFILE RAISE - FAN



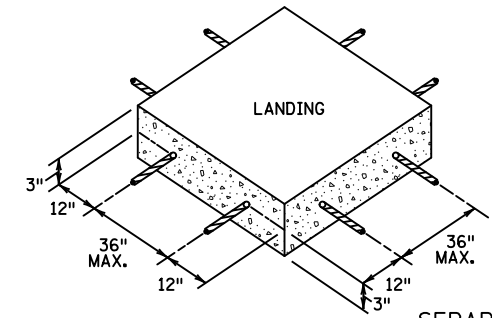
SECTION VIEW A-A THICKENED SECTION THROUGH CURB RAMP FLARES



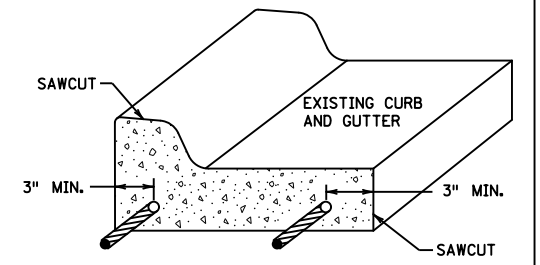
END SILL CURB AT TOP OF CURB RAMP AND DRIVEWAY FLARES.



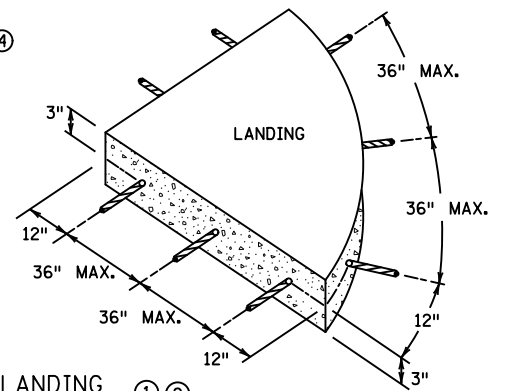
CURB RAMP REINFORCEMENT DETAILS



SEPARATE LANDING POUR REINFORCEMENT



CURB AND GUTTER REINFORCEMENT



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:
 - 1.0% MIN. CROSS-SLOPE OF THE ROAD
 - 5.0% MAX. CROSS-SLOPE OF THE ROAD
 - "TABLE" FLOW LINE UP TO 4% CHANGE FROM EXISTING SLOPE IN FRONT OF PEDESTRIAN RAMP
 - 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:
 - 1.0% MIN. AND 5.0% MAXIMUM CROSS-SLOPE OF THE ROAD
 - 1.0% MIN. FLOW LINE (ON EITHER SIDE OF PEDESTRIAN RAMP) TO MAINTAIN POSITIVE DRAINAGE
 - 5.0% RECOMMENDED MAX. FLOW LINE
 - 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.

REVISIONS:

APPROVED: 11-04-2021

Jeffrey A. Perkins
JEFFREY PERKINS
OPERATIONS DIVISION

m
MINNESOTA
DEPARTMENT OF TRANSPORTATION

STANDARD PLAN 5-297.250 6 OF 6

APPROVED: 11-04-2021
REVISED:

Tom Styrbicki
THOMAS STYRBICKI
STATE DESIGN ENGINEER

PEDESTRIAN CURB RAMP DETAILS

SEH

RAMSEY COUNTY, MINNESOTA
DIVISION AVE AND 8TH ST
PROJECT NO. 170689

STANDARD PLAN SHEET

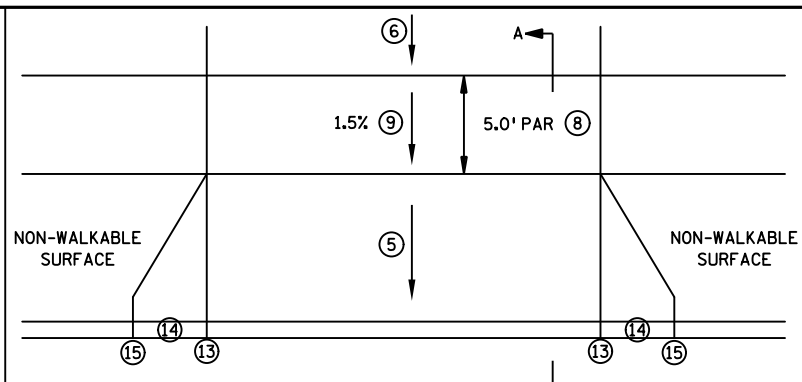
SEH FILE NO. ISDWB170689
SPN8 OF SPN27

15
78

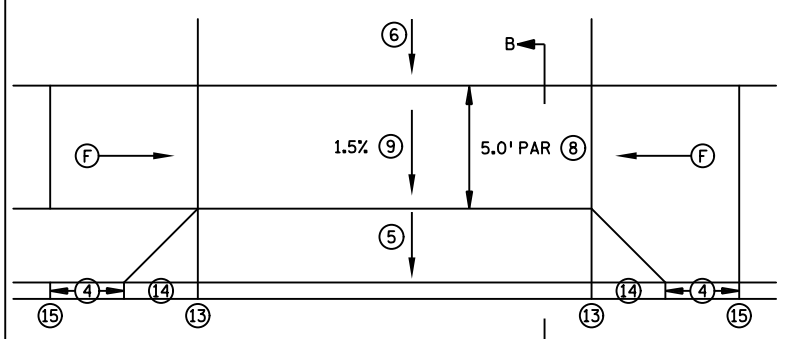
5:07:50 PM

2/9/2024

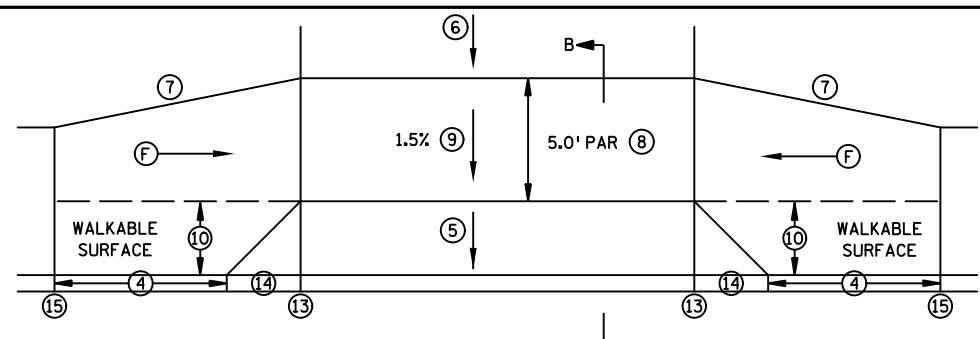
FILE: X:\F\J\1\ISDWB\170689\5-Final-dsgn\51-drawings\40-Transitwy\Plansheets\CD170689_spn1.dgn
MODEL: 254.1



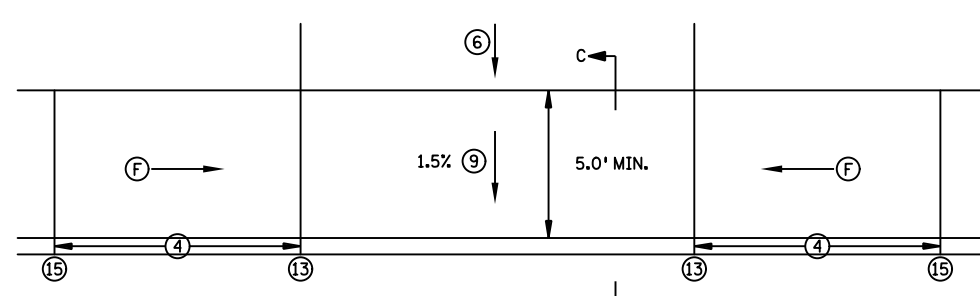
PERPENDICULAR DRIVEWAY ①



TIERED PERPENDICULAR DRIVEWAY ②



TIERED PERPENDICULAR OFFSET DRIVEWAY ③

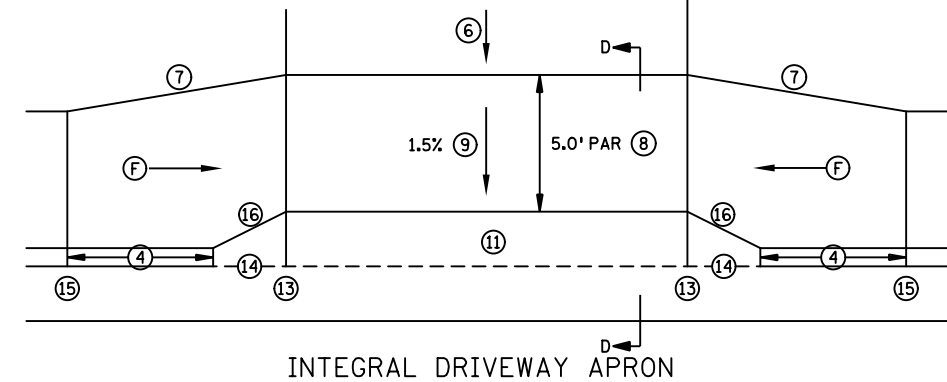
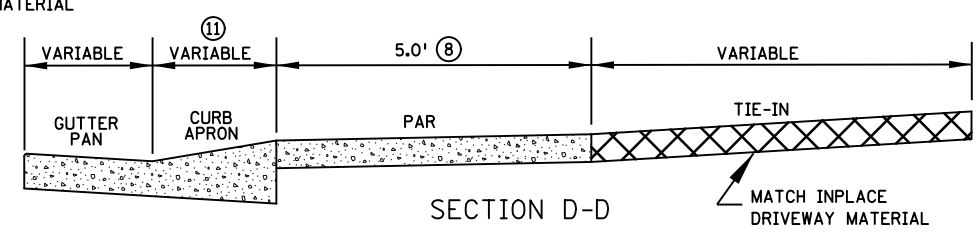
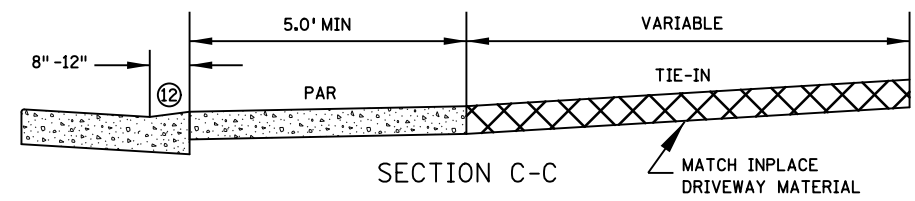
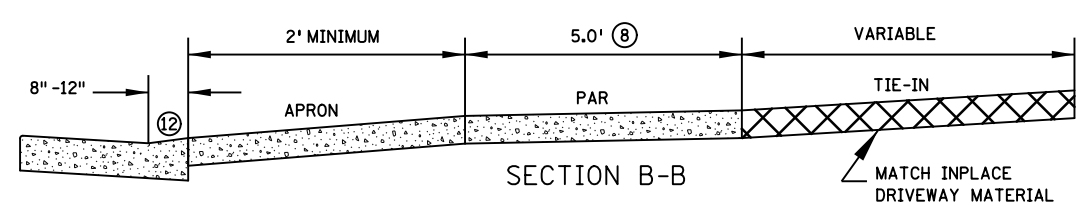
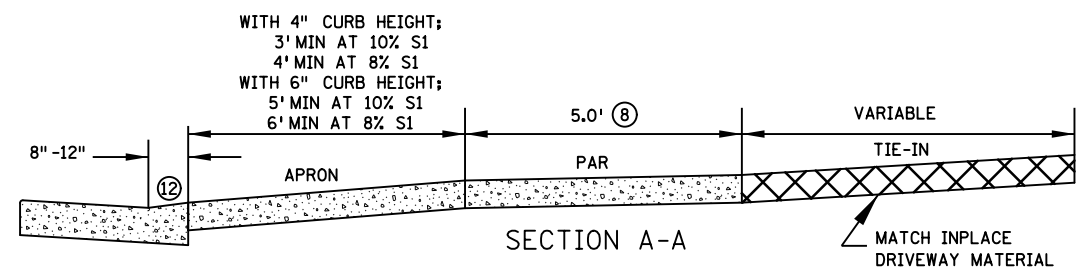


PARALLEL DRIVEWAY ④

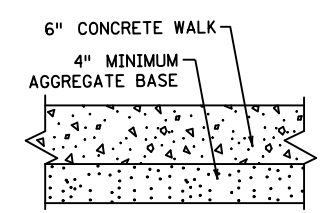
LEGEND

(F) INDICATES DRIVEWAY 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%

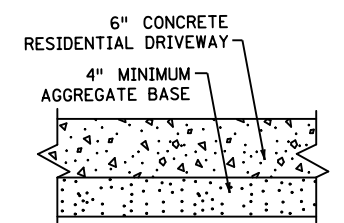
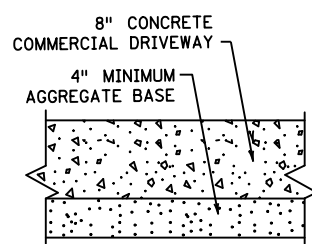
- NOTES:**
- ALL SIDEWALK AND BOULEVARD WIDTHS SHALL BE MEASURED FROM BACK OF CURB.
- IN URBAN ROADWAY SECTIONS, 6" CURB HEIGHT SHOULD BE USED WHEN 6' OR GREATER BOULEVARD WIDTH IS PROPOSED. WHEN BOULEVARD IS LESS THAN 6' WIDE, 4" CURB HEIGHT SHOULD BE USED.
- MAINTAIN EXISTING DRAINAGE PATTERNS FLOWING 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%. RAMPS 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.
- 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.
 - 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.
 - 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.
 - TOP OF CURB SHALL MATCH PROPOSED ADJACENT WALK GRADE.
 - 8% STANDARD, 10% MAX. FOR COMMERCIAL AND 12% MAX. FOR RESIDENTIAL. SEE GENERAL NOTES ON SHEET 2 FOR MORE INFORMATION.
 - 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.
 - 1:3 MIN. 1:5 PREFERRED FOR DRIVEWAY RETROFIT PROJECTS. 1:10 PREFERRED FOR SIDEWALK REPLACEMENT PROJECTS.
 - 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.
 - THE PEDESTRIAN ACCESS ROUTE, MAY NOT EXCEED 0.02 FT./FT. AS CONSTRUCTED.
 - SIDEWALK OFFSET TO BE LESS THAN OR EQUAL TO HALF THE APPROACHING SIDEWALK WIDTH.
 - INTEGRAL DRIVEWAY APRON TO BE POURED MONOLITHICALLY/INTEGRAL WITH THE CURB AND GUTTER. SEE SHEET 2 FOR MORE INFORMATION.
 - SEE SHEET 2 FOR CURB TYPE INFORMATION.
 - 0" CURB IS AT FLOW LINE. SEE DRIVEWAY TABLE FOR BACK OF CURB HEIGHTS.
 - 3' LONG AT 8-10% PREFERRED FOR INITIAL CURB TAPER. REDUCE CURB TAPER SLOPE IF NECESSARY TO MATCH ADJACENT SIDEWALK GRADES.
 - MATCH FULL CURB HEIGHT.
 - 1:2 TAPER RATE ON INTEGRAL DRIVEWAY APRONS.
 - SEE SHEET 4 FOR WHEN 6" WALK IS REQUIRED.



INTEGRAL DRIVEWAY APRON



TYPICAL SIDEWALK SECTION ⑥



TYPICAL DRIVEWAY SECTIONS

REVISIONS:

APPROVED: 11-04-2021

Jeffrey A. Perkins
JEFFREY PERKINS
OPERATIONS DIVISION



STANDARD PLAN 5-297.254 1 OF 4

APPROVED: 11-04-2021
REVISED:

Tom Styrbicki
THOMAS STYRBICKI
STATE DESIGN ENGINEER

DRIVEWAY AND SIDEWALK DETAILS



RAMSEY COUNTY, MINNESOTA
DIVISION AVE AND 8TH ST
PROJECT NO. 170689

STANDARD PLAN SHEET

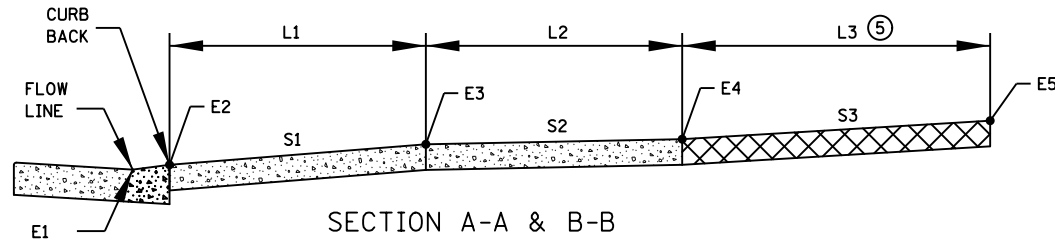
SEH
FILE NO.
ISDWB170689

SPN9
OF SPN27

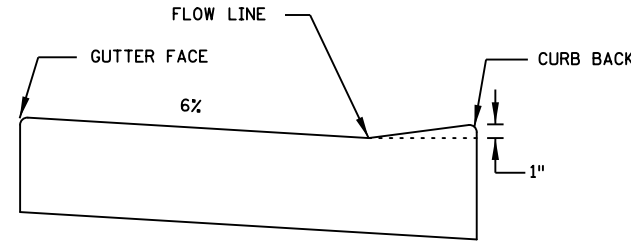
16
78

DRIVEWAY TABLE ①

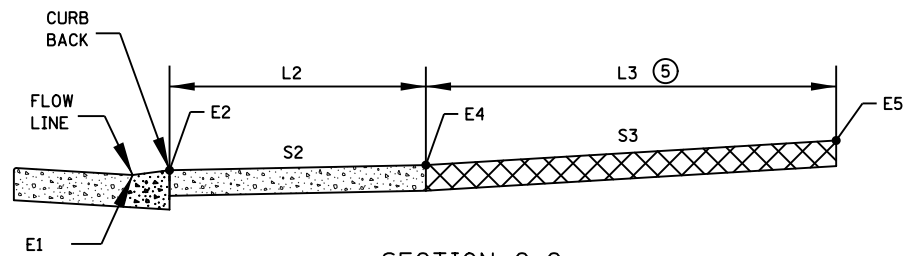
STATION	SIDE	DRIVEWAY TYPE ②	CURB TYPE ③	E1	E2	L1	S1	E3	L2	S2 ④	E4	L3 ⑤	S3	EXISTING ⑥	E5	COMMENTS
						FT	%		FT	%		FT	%			



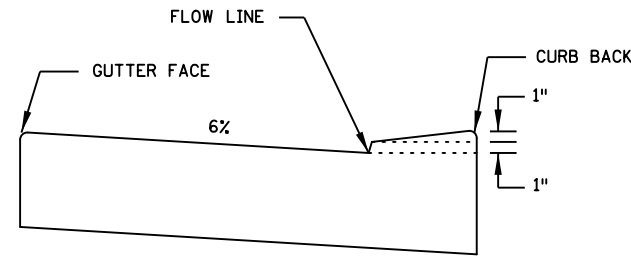
SECTION A-A & B-B
(REFER TO PREVIOUS SHEET)



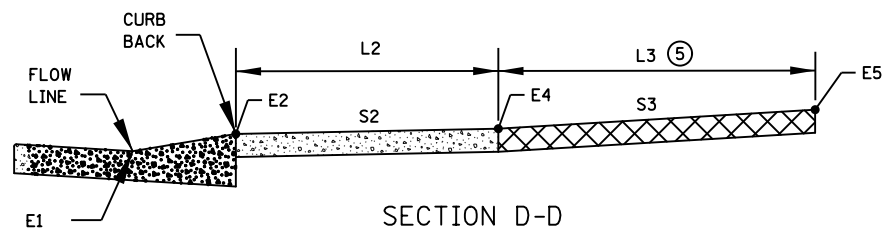
DW CURB TYPE 1
STANDARD CURB AT DRIVEWAY



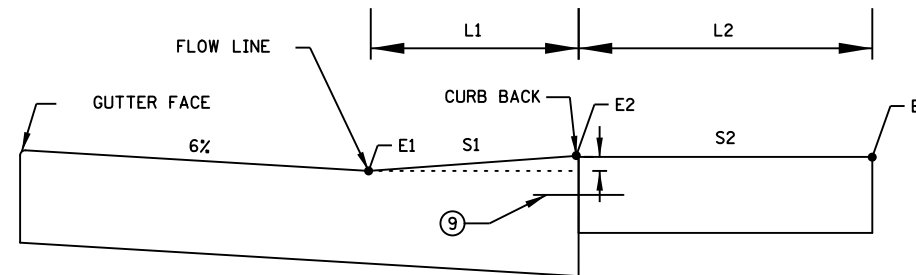
SECTION C-C
(REFER TO PREVIOUS SHEET)



DW CURB TYPE 2
VERTICALLY CONSTRAINED



SECTION D-D
(REFER TO PREVIOUS SHEET)



INTEGRAL DRIVEWAY APRON (IDA)

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.

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

REVISIONS:
APPROVED: 11-04-2021
Jeffrey A. Perkins
JEFFREY PERKINS
OPERATIONS DIVISION



STANDARD PLAN 5-297.254 2 OF 4
APPROVED: 11-04-2021
REVISED:
Thomas Styrbicki
THOMAS STYRBICKI
STATE DESIGN ENGINEER

DRIVEWAY AND SIDEWALK DETAILS



RAMSEY COUNTY, MINNESOTA
DIVISION AVE AND 8TH ST
PROJECT NO. 170689

STANDARD PLAN SHEET

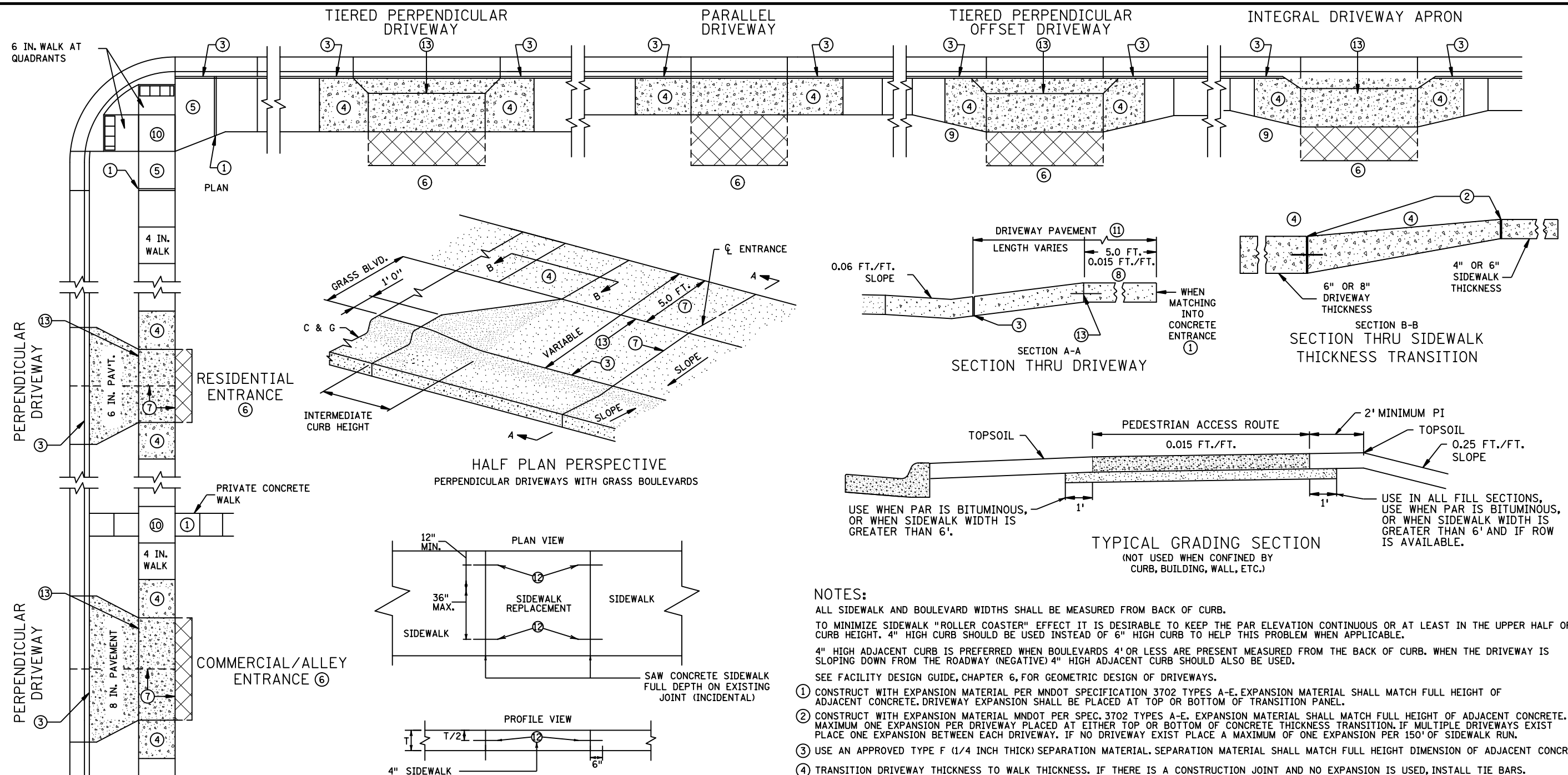
SEH
FILE NO.
ISDWB170689
SPN10
OF SPN27

17
78

5:07:51 PM

2/9/2024

FILE: X:\F\J\1\ISDWB\170689\5-Final-dsgn\51-drawings\40-Tr anshtwy \Plansheets\CD170689_spn1.dgn
MODEL: 254.3

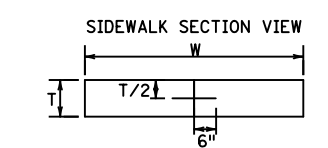
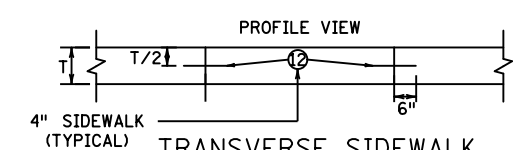
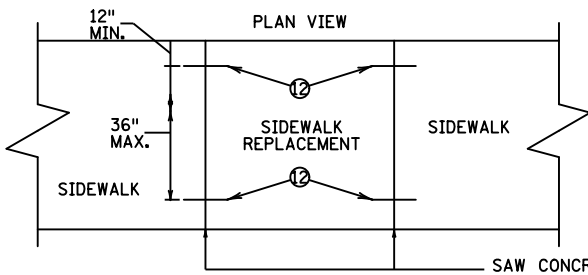


SIDEWALK LONGITUDINAL JOINT TIE BAR TABLE

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 J. Perkins
JEFFREY PERKINS
OPERATIONS DIVISION

MINNESOTA
DEPARTMENT OF TRANSPORTATION

STANDARD PLAN 5-297.254 3 OF 4

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

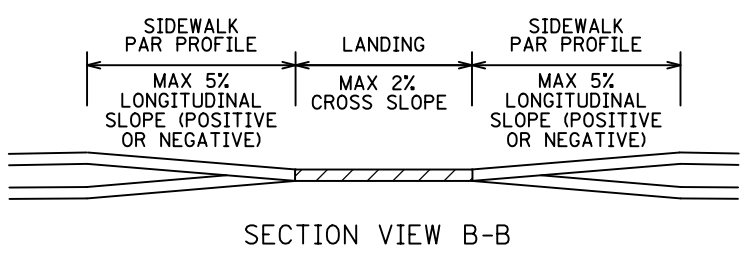
Tom Styrbicki
THOMAS STYRBICKI
STATE DESIGN ENGINEER

DRIVEWAY AND SIDEWALK DETAILS

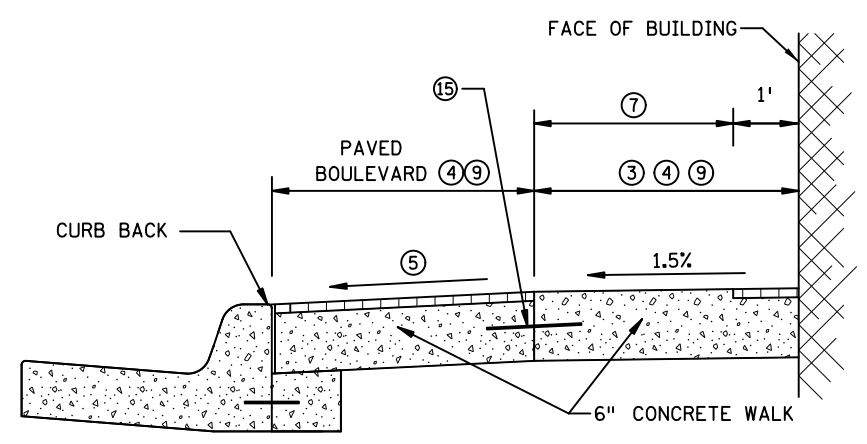
5:07:52 PM

2/9/2024

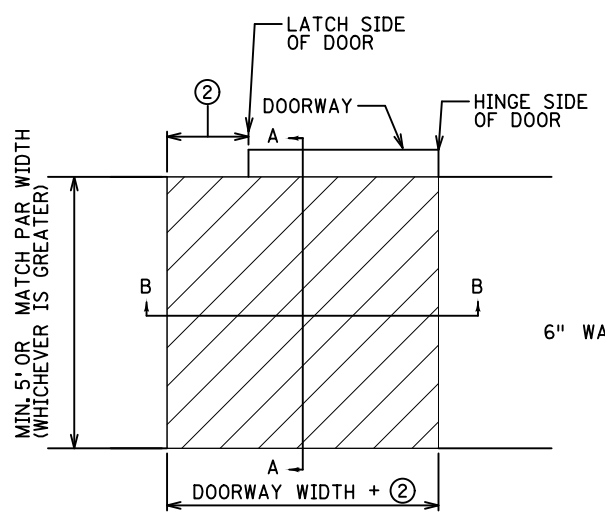
FILE: X:\F\J\1\ISDWB\170689\5-Final-dsgn\51-drawings\40-Transhwy\Plansheets\C0170689_spn1.dgn
MODEL: 254_4



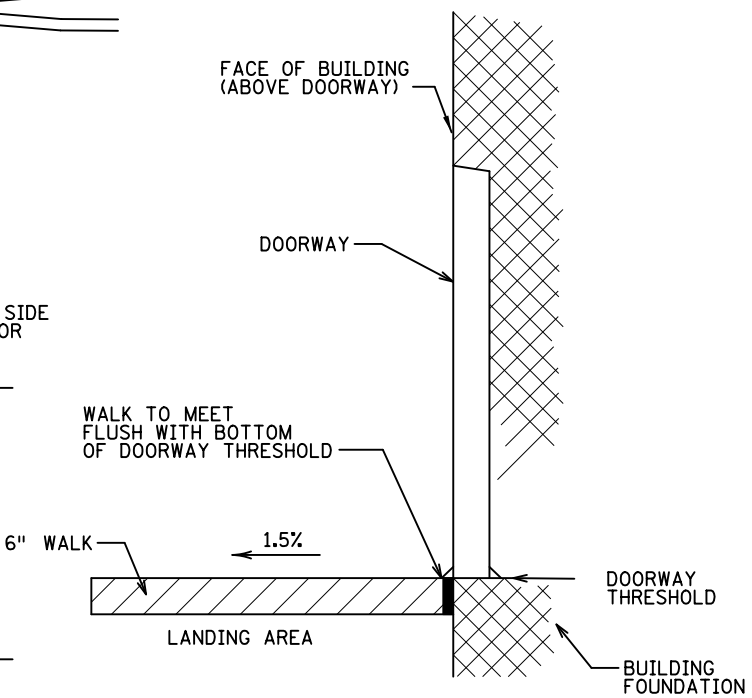
SECTION VIEW B-B



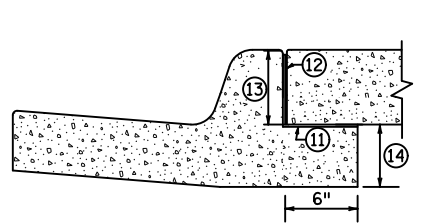
DOWNTOWN SIDEWALK TYPICAL SECTION



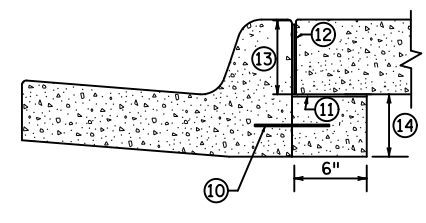
PLAN VIEW DOORWAY



SECTION VIEW A-A



SLIP FORM SILL

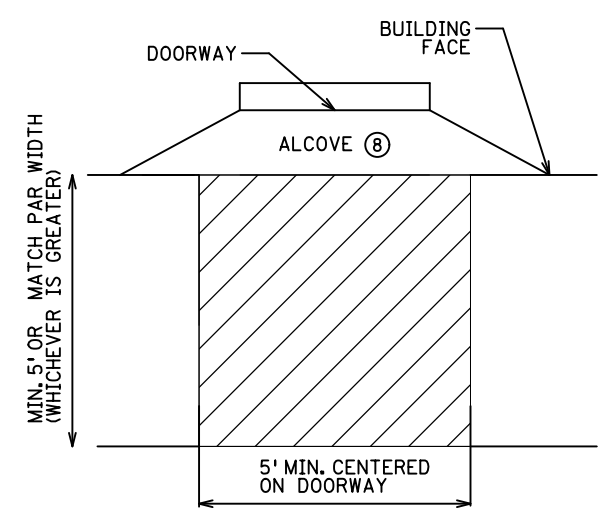


FIXED FORM SILL

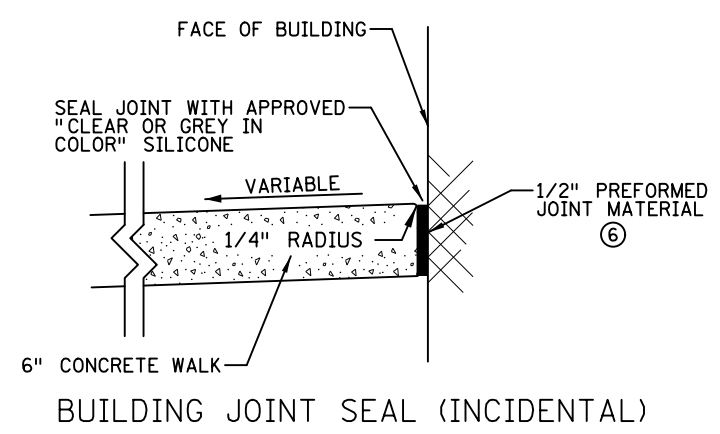
SILL CURB SHOULD BE USED AT ALL LOCATIONS WHEN CONCRETE WALK IS AT BACK OF CURB, INCLUDING PAVED BOULEVARD.
 SILL CURB SHALL NOT BE USED IN CURB RAMP AND DRIVEWAY AREAS, INCLUDING CONCRETE FLARES.
 SILL CURB WITH 4" WALK CAN USE FIXED OR SLIP FORM OPTIONS.

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 1/2 : 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.



PLAN VIEW DOORWAY WITH ALCOVE
SIDEWALK LANDING REQUIREMENTS ①

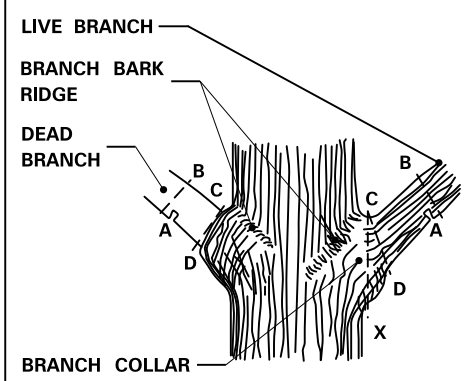


BUILDING JOINT SEAL (INCIDENTAL)

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

	STANDARD PLAN 5-297.254	4 OF 4
	 THOMAS STYRBICKI STATE DESIGN ENGINEER	
APPROVED: 11-04-2021		REVISED:

DRIVEWAY AND SIDEWALK DETAILS



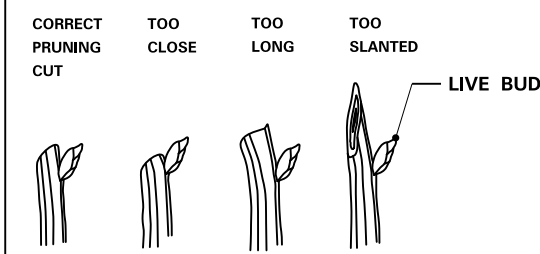
STEPS TO PRUNING WITH PRUNING SAW:

1. CUT PART WAY THROUGH THE BRANCH AT POINT A.
2. CUT COMPLETELY THROUGH BRANCH FROM POINT B TO A.
3. AT BRANCH COLLAR CUT FROM POINT C TO D.

INCORRECT CUT FROM POINT C TO X (TOO CLOSE) WILL RESULT IN DISCONTINUOUS CALLUS FORMATION AFTER ONE SEASON OF GROWTH.

CORRECT CUT FROM POINT C TO D (LEAVING BRANCH COLLAR BUT NOT THE STUB FROM POINT B TO A) WILL RESULT IN CONTINUOUS DOUGHNUT SHAPED CALLUS FORMATION AFTER ONE SEASON OF GROWTH.

BRANCHES PRUNED AT TRUNK (SHIGO METHOD)



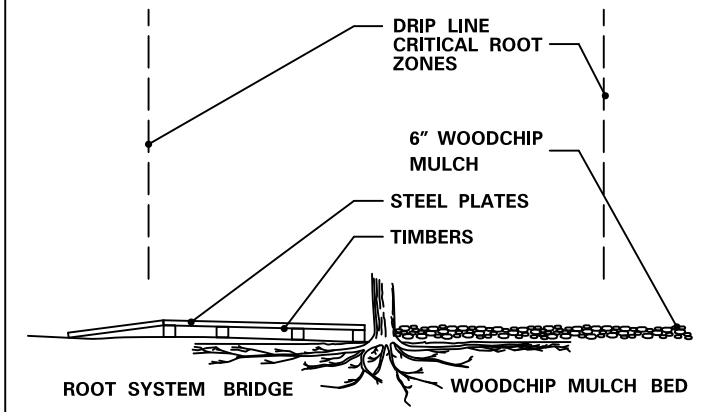
PRUNING NOTES:

1. PRUNE USING CLEAN AND SHARP SCISSOR-TYPE PRUNER OR PRUNING SAW.
2. THE BEST TIME TO PRUNE IS LATE DORMANT SEASON OR EARLY SPRING.
3. AVOID PRUNING OAKS IN APRIL, MAY, JUNE OR JULY.
4. IF PRUNING IS NECESSARY OR IF WOUNDS OCCUR TO OAK TREES IN APRIL, MAY, JUNE OR JULY, IMMEDIATELY PAINT CUT SURFACE OR WOUND WITH LATEX PAINT OR SHELLAC.

BRANCHES PRUNED TO LIVE BUD

PRUNING

(MnDOT 2571.3E.1 and 2571.3K.2.a(9))



IF CONSTRUCTION VEHICLES MUST PASS OVER ROOT ZONES, THE CONTRACTOR MUST EITHER:

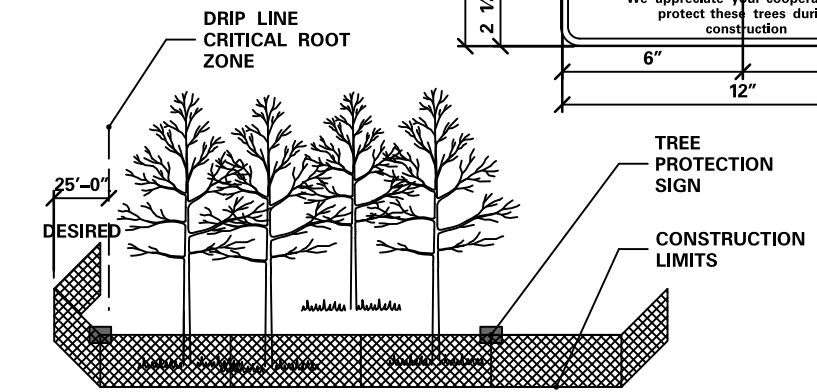
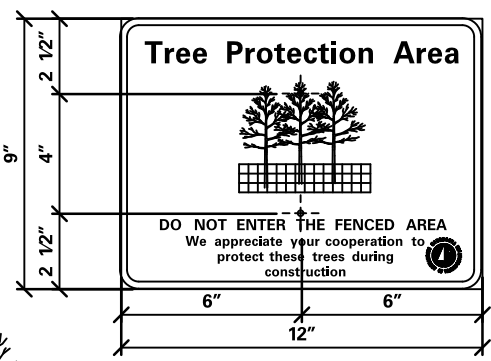
1. CONSTRUCT ROOT SYSTEM BRIDGES WITH STEEL PLATE SUPPORTED ON WOOD TIMBERS PLACED RADIALLY TO THE TREE TRUNK.
- OR
2. PLACE A 6 INCH LAYER OF WOODCHIP MULCH OVER A TYPE III GEOTEXTILE (MnDOT 3733).

OTHER VEGETATION PROTECTION MEASURES

(MnDOT 2572.3A.12)

REVISION:
APPROVED: DECEMBER 11, 2015
[Signature]
CHIEF ENVIRONMENTAL OFFICER

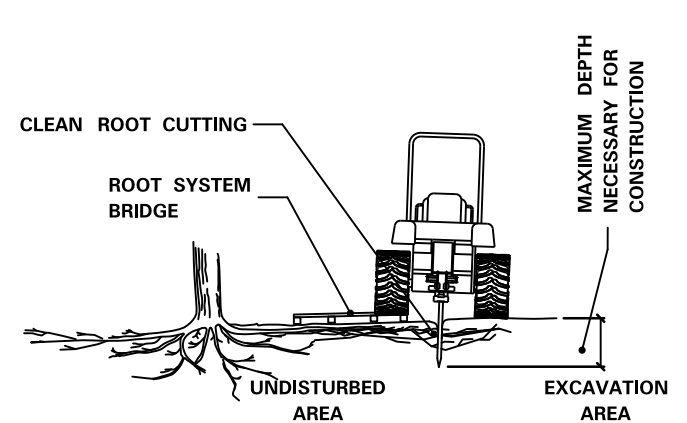
1. FABRICATE 12" X 9" X 3/8" SIGN WITH 0.75" RADIUS CORNERS. SIGN SHALL BE WHITE WITH BLACK LETTERING.
2. ATTACH SIGN TO POST USING 1" LENGTH WOOD SCREWS.



1. FURNISH AND INSTALL TEMPORARY FENCE AT THE TREE'S DRIPLINE OR CONSTRUCTION LIMITS AS SPECIFIED, PRIOR TO ANY CONSTRUCTION.
2. WHEN POSSIBLE PLACE FENCE 25 FEET BEYOND THE DRIP LINE.
3. PLACE TREE PROTECTION SIGNS ALONG FENCE AT 50' INTERVALS.

TEMPORARY FENCE

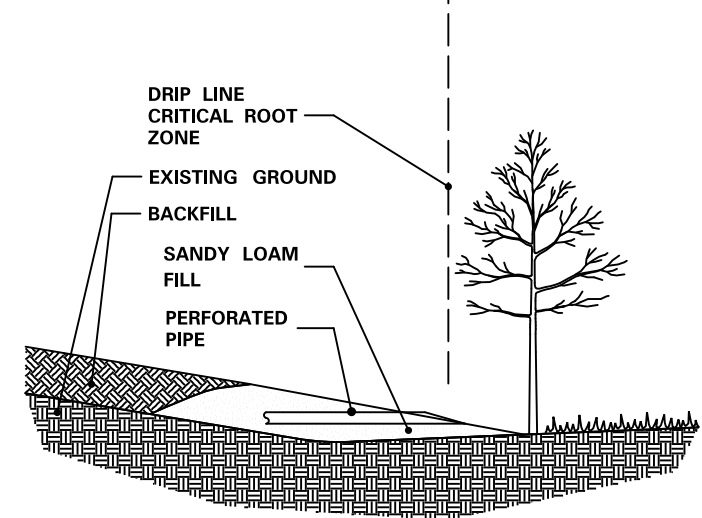
(MnDOT 2572.3A.1)



1. WHEN DESIGNATED IN THE PLAN OR DIRECTED BY THE ENGINEER, PRIOR TO EXCAVATION, ALL TREE ROOTS WILL BE CLEANLY CUT BY A VIBRATORY PLOW OR OTHER APPROVED ROOT CUTTER.
2. THE TREE ROOTS WILL BE CUT CLEANLY TO THE MINIMUM DEPTH NECESSARY FOR CONSTRUCTION.
3. IMMEDIATELY, AND CLEANLY CUT DAMAGED AND EXPOSED ROOTS.
4. ROOT ENDS EXPOSED BY EXCAVATION ACTIVITIES SHALL BE IMMEDIATELY COVERED WITH A 6" LAYER OF ADJACENT SOIL.
5. EXPOSED CUT OAK ROOTS SHALL BE IMMEDIATELY (WITHIN 5 MINUTES) TREATED WITH A WOUND DRESSING MATERIAL CONSISTING OF LATEX PAINT OR SHELLAC.

CLEAN ROOT CUTTING

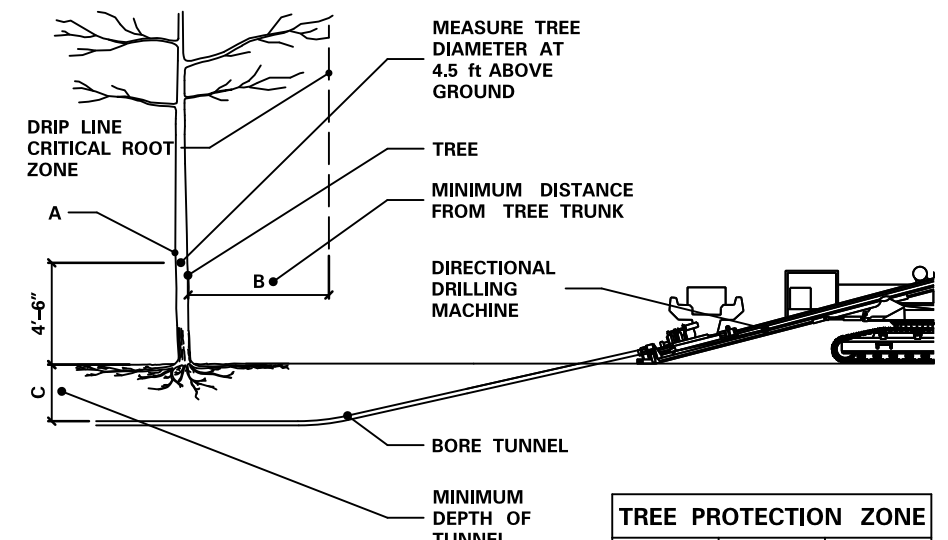
(MnDOT 2572.3A.2)



1. ANY FILL REQUIRED WITHIN THE DRIP LINE OF TREES, IS UNCOMPACTED ROOTING TOPSOIL BORROW.
2. EXCESSIVE FILL MAY REQUIRE PLACING PERFORATED PIPE WITH AT LEAST ONE DAYLIGHTED END OPENING AS AN AERATION SYSTEM.

ROOTING TOPSOIL BORROW

(MnDOT 2572.3A.4)



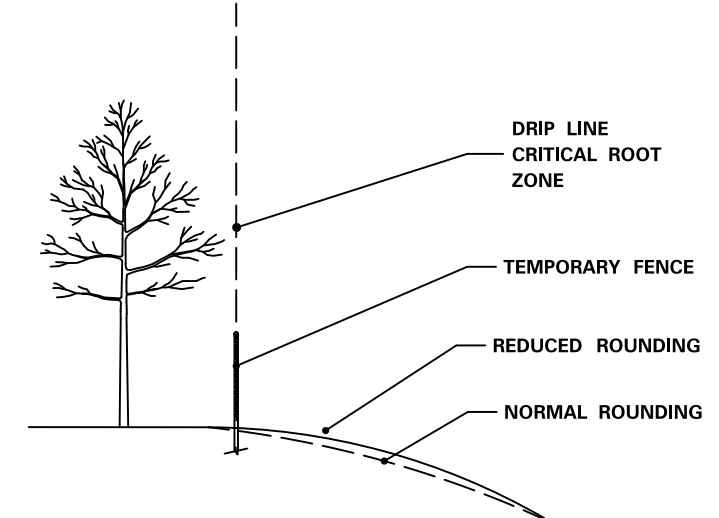
NOTE:

1. (A) IS THE DIAMETER OF TREES MEASURED 4'-6" FEET ABOVE THE GROUND AND IS TERMED THE "DIAMETER AT BREAST HEIGHT," (DBH).
2. USING A TREE DIAMETER TAPE, WRAP THE TAPE AROUND THE GIRTH OF THE TREE, AT THE DBH, BEING CAREFUL NOT TO TWIST THE TAPE.

TREE PROTECTION ZONE		
A	B	C
< 2"	2'	2'
2-4"	4'	2.5'
> 4-9"	6'	2.5'
> 9-14"	10'	3'
> 14-19"	12'	3.25'
> 19"	15'	4'

UTILITY CONSTRUCTION

(MnDOT 2572.3A.5)



SIGNIFICANT TREES NEAR THE PROPOSED CONSTRUCTION LIMITS WILL BE IDENTIFIED IN THE PLAN OR BY THE ENGINEER AND WILL BE PRESERVED BY THE CONTRACTOR.

1. PLACE THE TEMPORARY FENCE.
2. REDUCE SLOPE ROUNDING WHERE ROOT ZONES ARE DISTURBED BY NORMAL SLOPE ROUNDING.
3. VARY BACKSLOPE STEEPNESS TO AVOID TREE LOSS OR UNNECESSARY ROOT DAMAGE.

SLOPE ROUNDING

STANDARD PLAN 5-297.302 1 OF 1

APPROVED: 12-11-2015
REVISED:

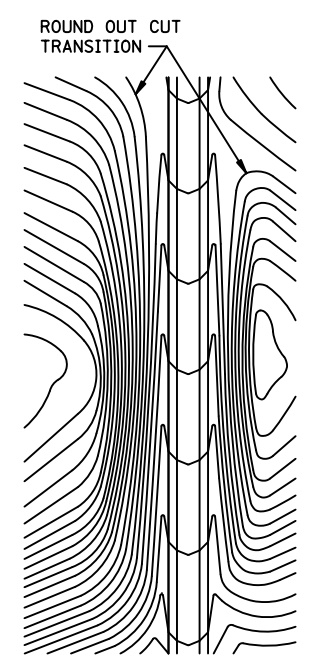
m MINNESOTA DEPARTMENT OF TRANSPORTATION
[Signature] STATE DESIGN ENGINEER

PROTECTION AND RESTORATION OF VEGETATION

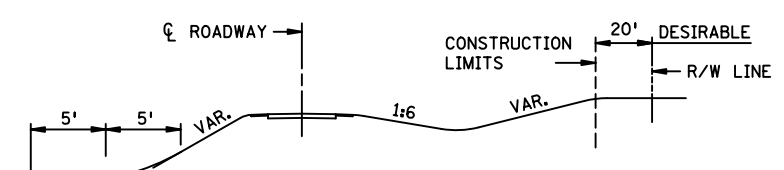
5:07:53 PM

2/9/2024

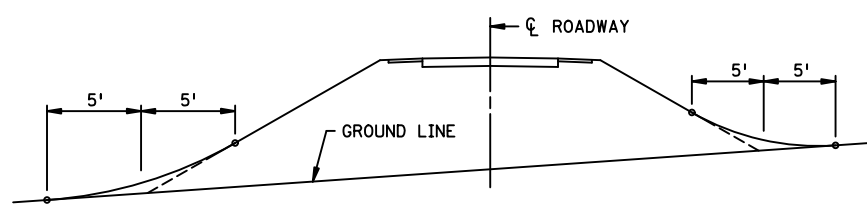
FILE: X:\F\J\1\ISDWB\170689\5-Final-dsgn\51-drawings\40-Transition\Plansheets\CD170689_spn1.dgn
MODEL: 404.1



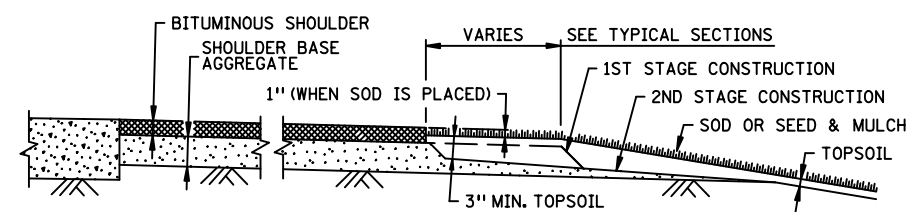
CONTOURING ROAD CUTS



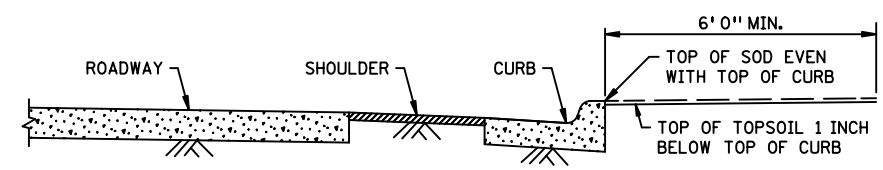
ROUNDING SHOULDERS AND BACKSLOPES



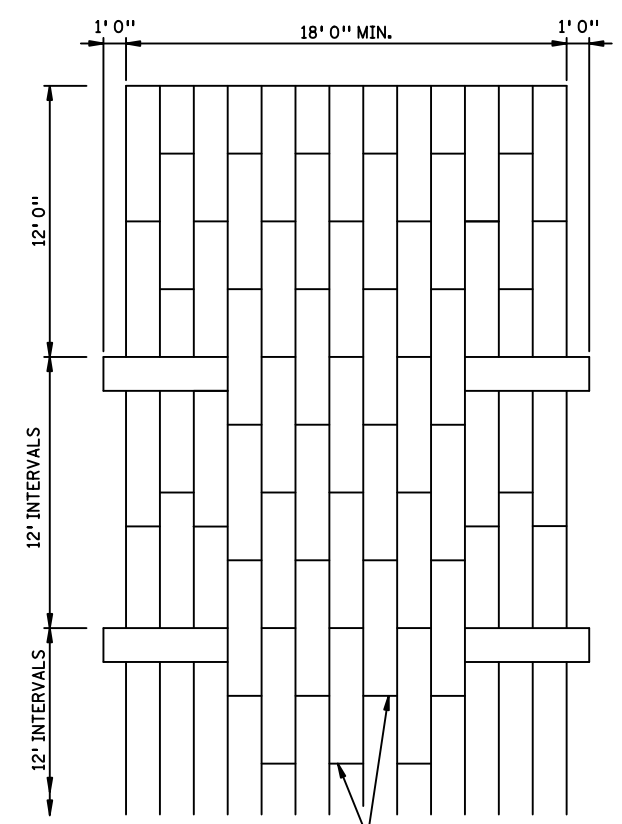
SHAPING FOR DRAINAGE ALONG THE TOE OF FILL SLOPES



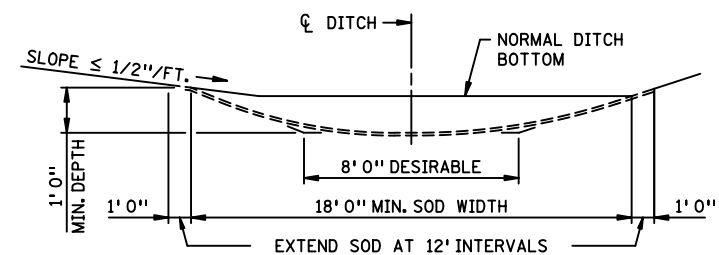
SHAPING AND TOPSOILING INSLOPES



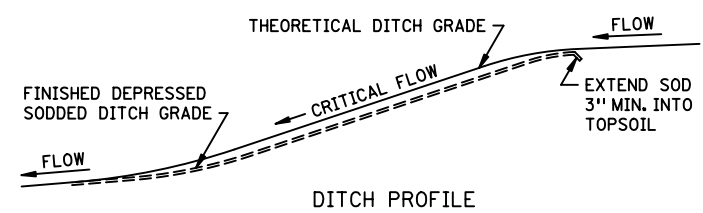
SHAPING ADJACENT TO CURBS WHEN SOD IS PLACED



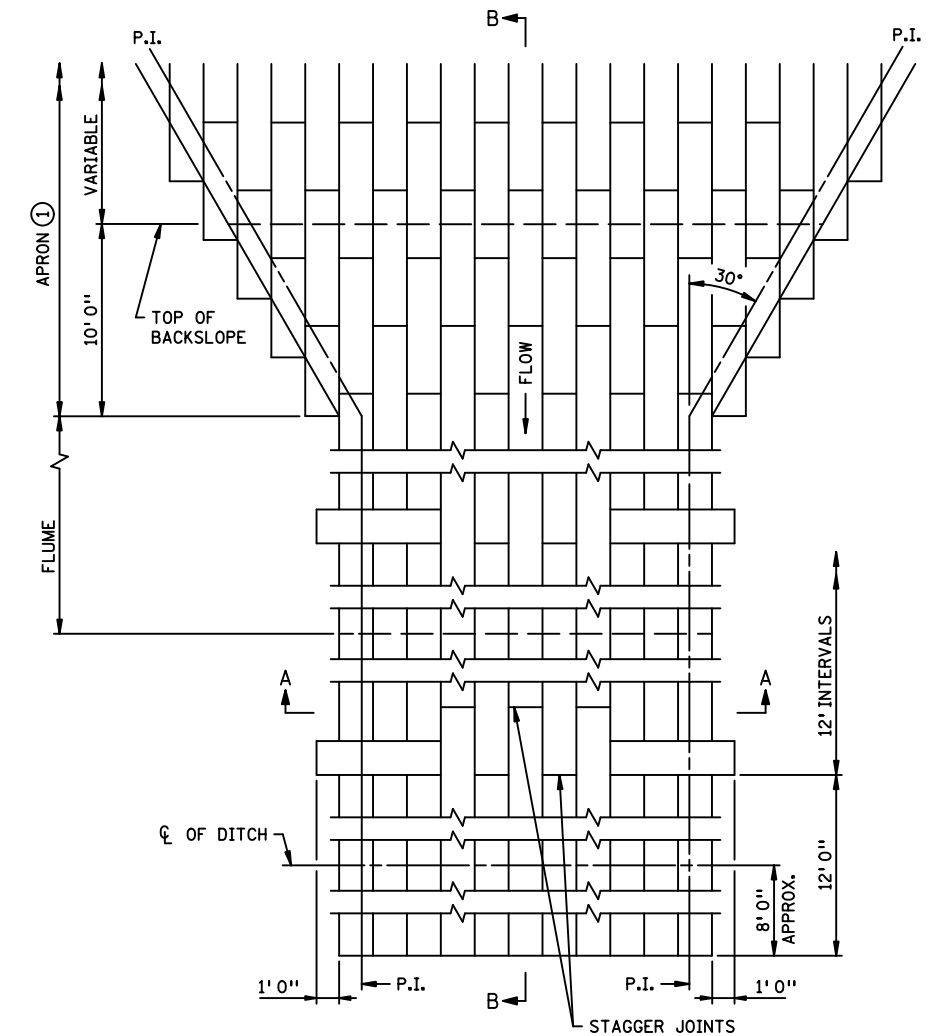
PLAN VIEW



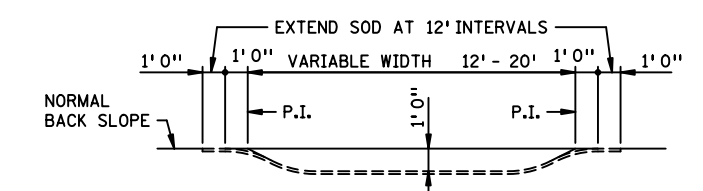
SODDED DITCH CROSS SECTION
WHERE FRONT OR BACK SLOPE IS FLAT (LESS THAN 1/2"/FT.), FIRST NOTCH DITCH AND THEN PROVIDE ROUNDING.



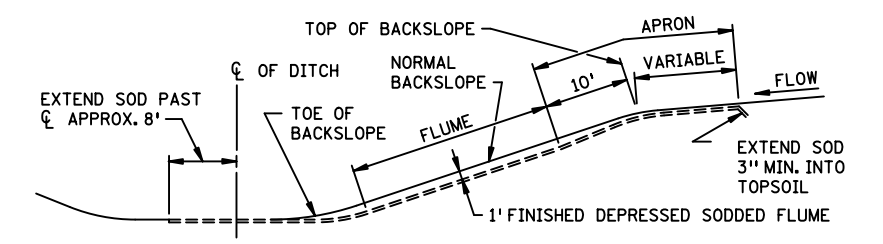
SODDED DITCH DETAILS



PLAN VIEW



SECTION A-A



SECTION B-B

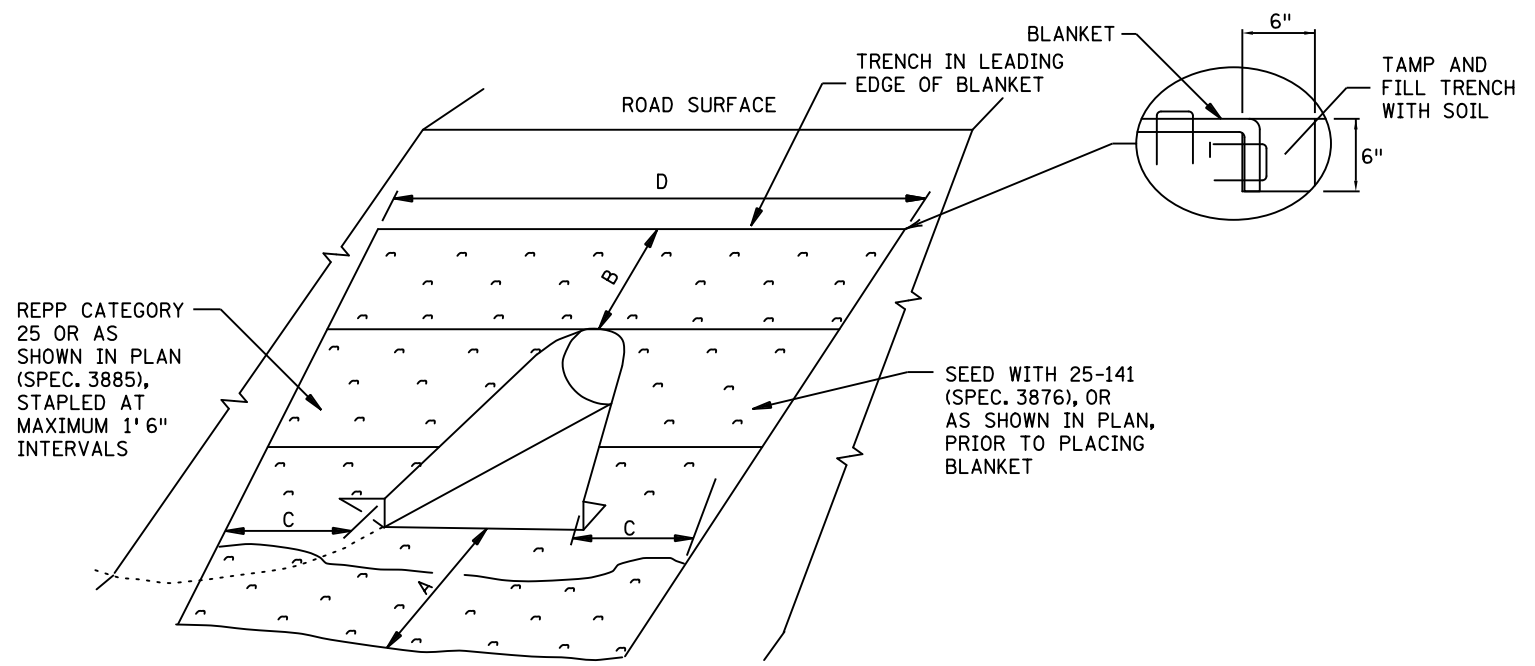
SODDED FLUME DETAILS

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

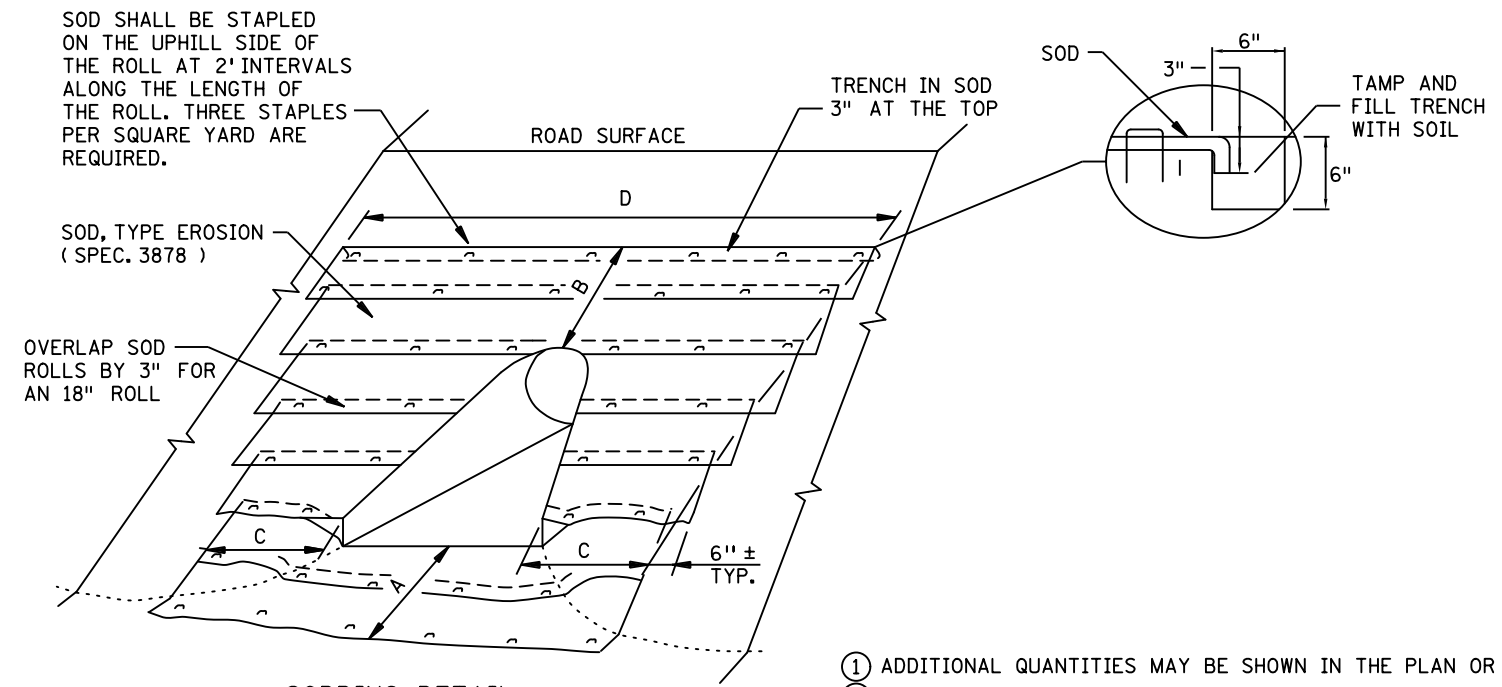
REVISION:
APPROVED: 2-28-2017
[Signature]
CHIEF ENVIRONMENTAL OFFICER

m MINNESOTA DEPARTMENT OF TRANSPORTATION
STANDARD PLAN 5-297.404 1 OF 3
[Signature] STATE DESIGN ENGINEER
APPROVED: 2-28-2017
REVISED:

**PERMANENT EROSION CONTROL
ALONG ROADWAYS, DITCHES AND FLUMES**



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 DIAMETER ②	CULVERT INLET APRON ①						"A"	"B"	"C"	"D"
	SOD OR REPP (SQ. YDS.)									
	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 (PLATE 3148)	CIRCULAR AND ARCH PIPE METAL SAFETY APRON (PLATE 3148)	CIRCULAR CORRUGATED METAL PIPE SAFETY APRON (PLATE 3128)	CIRCULAR CORRUGATED METAL PIPE SAFETY APRON (PLATE 3128)				
15"	9	9	8	8	N/A	N/A	3'	1.5'	3'	13'
18"	13	12	12	14	16	N/A	3'	3'	3'	16'
21"	14	14	14	16	18	14	3'	3'	3'	17'
24"	16	15	16	19	21	17	3'	3'	3'	18'
27"	N/A	20	N/A	N/A	N/A	N/A	3'	4.5'	3'	20'
30"	23	22	25	30	32	N/A	3'	4.5'	3'	22'
36"	34	34	39	48	51	37	4.5'	4.5'	4.5'	27'
42"	43	40	51	64	N/A	N/A	4.5'	6'	4.5'	30'
48"	54	50	66	82	N/A	N/A	4.5'	7.5'	4.5'	34'
54"	65	58	81	102	N/A	N/A	4.5'	9'	4.5'	37'
60"	69	59	91	115	N/A	N/A	4.5'	9'	4.5'	39'
66"	69	63	N/A	N/A	N/A	N/A	4.5'	9'	4.5'	39'
72"	78	72	99	122	N/A	N/A	4.5'	10.5'	4.5'	41'

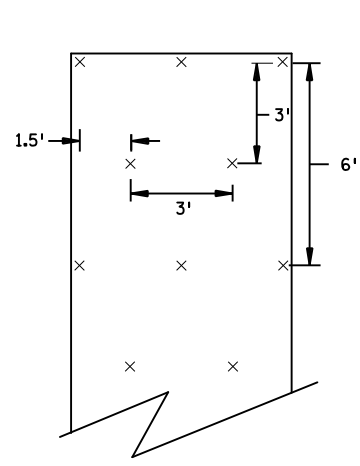
CULVERT DIAMETER ②	CULVERT OUTLET APRON ①						"A"	"B"	"C"	"D"
	SOD OR REPP (SQ. YDS.)									
	CIRCULAR AND ARCH PIPE METAL APRON (PLATE 3123, PLATE 3122)	CIRCULAR AND ARCH PIPE CONCRETE APRON (PLATE 3100, PLATE 3110)	CIRCULAR AND ARCH PIPE METAL SAFETY APRON (PLATE 3148)	CIRCULAR AND ARCH PIPE METAL SAFETY APRON (PLATE 3148)	CIRCULAR CORRUGATED METAL PIPE SAFETY APRON (PLATE 3128)	CIRCULAR CORRUGATED METAL PIPE SAFETY APRON (PLATE 3128)				
15"	10	10	9	10	N/A	N/A	4.5'	1.5'	3'	13'
18"	13	13	12	14	15	N/A	6'	1.5'	3'	14'
21"	16	14	16	18	19	15	6'	1.5'	3'	15'
24"	18	18	18	21	22	18	7.5'	1.5'	3'	16'
27"	N/A	19	N/A	N/A	N/A	N/A	7.5'	1.5'	3'	17'
30"	23	23	24	28	29	N/A	9'	1.5'	3'	18'
36"	36	35	38	47	48	37	10.5'	1.5'	4.5'	23'
42"	43	40	47	58	N/A	N/A	12'	1.5'	4.5'	25'
48"	50	46	57	70	N/A	N/A	13.5'	1.5'	4.5'	27'
54"	57	50	67	84	N/A	N/A	15'	1.5'	4.5'	29'
60"	74	63	90	113	N/A	N/A	16.5'	1.5'	6'	33'
66"	75	67	N/A	N/A	N/A	N/A	16.5'	1.5'	6'	33'
72"	77	70	92	114	N/A	N/A	16.5'	1.5'	6'	34'

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.

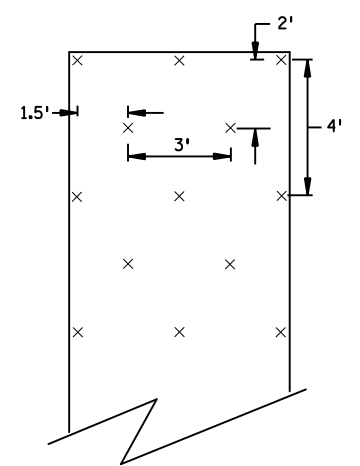
REVISIONS:
 APPROVED: JANUARY 8, 2020
 MARI KARNOWSKI
 CHIEF ENVIRONMENTAL OFFICER

MINNESOTA DEPARTMENT OF TRANSPORTATION
 STANDARD PLAN 5-297.404 2 OF 3
 APPROVED: 1-8-2020
 THOMAS STYRBICKI
 STATE DESIGN ENGINEER

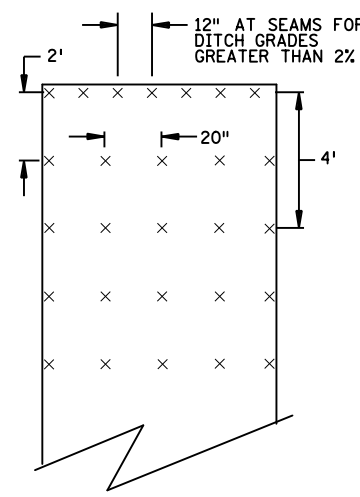
PERMANENT EROSION CONTROL
 TURF ESTABLISHMENT DETAIL AT CULVERT ENDS



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

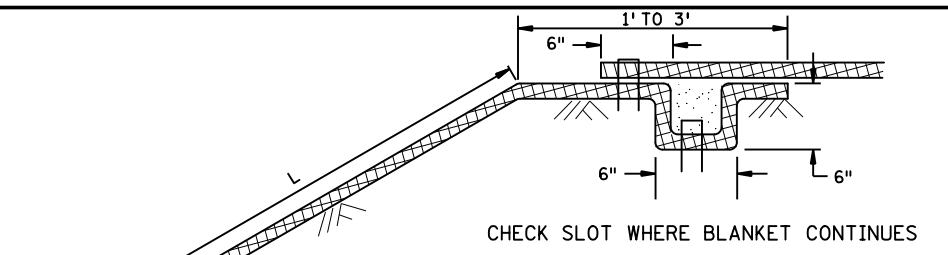


SLOPES 1:2 TO 1:1
170 STAPLES PER 100 SQ YD

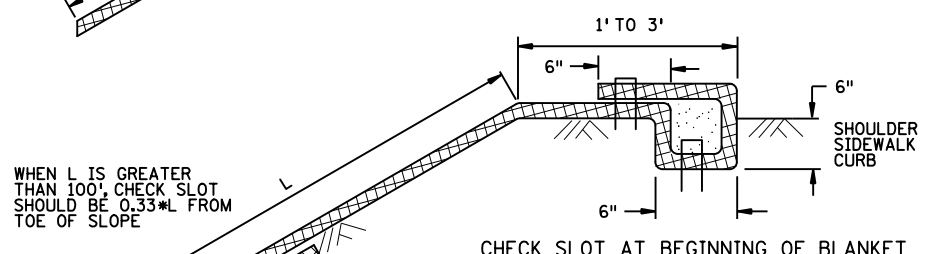


CHANNEL AND DITCH APPLICATIONS
350 STAPLES PER 100 SQ YD

BLANKET STAPLE PATTERN

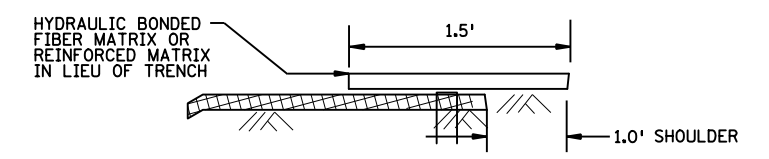


CHECK SLOT WHERE BLANKET CONTINUES

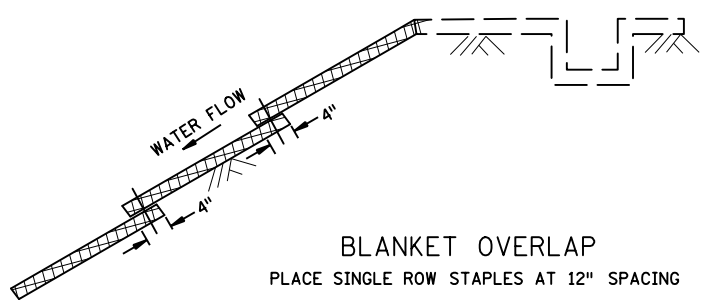


CHECK SLOT AT BEGINNING OF BLANKET

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.

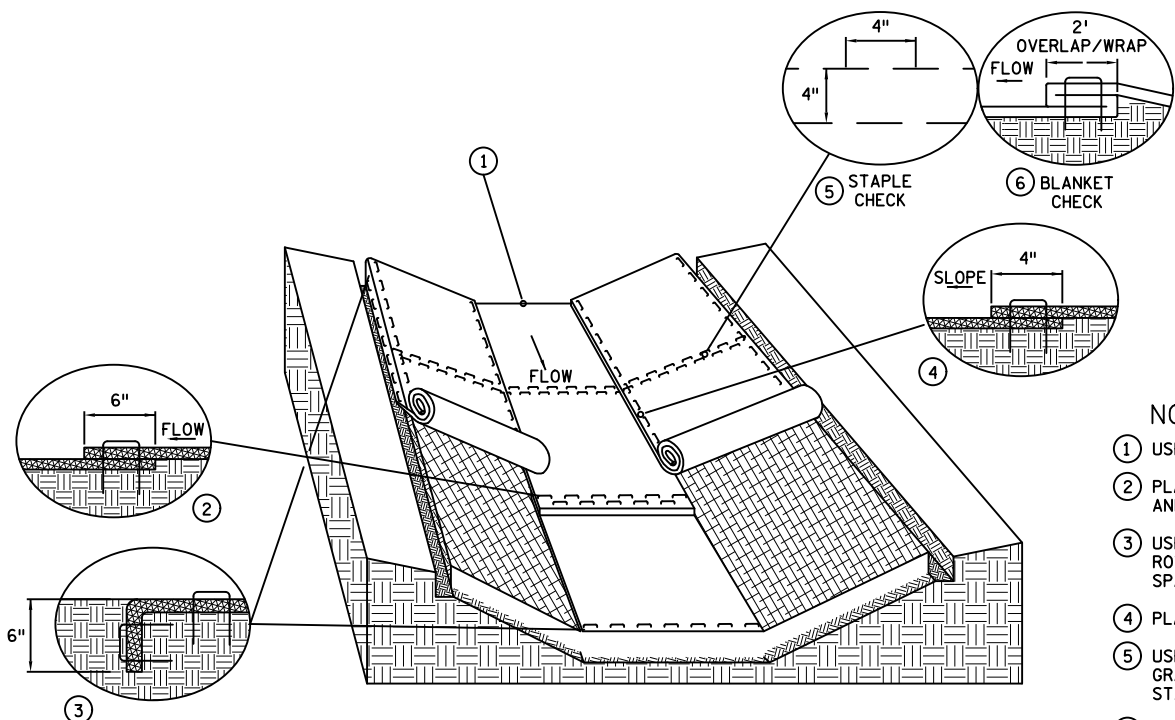


CHECK SLOT ALTERNATIVE
PLACE SINGLE ROW STAPLES AT 12" SPACING
CHECK SLOT DETAILS

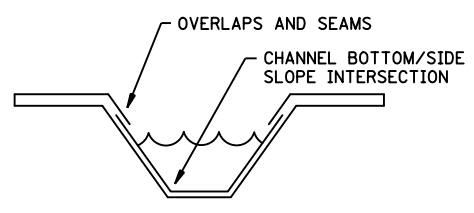


BLANKET OVERLAP
PLACE SINGLE ROW STAPLES AT 12" SPACING

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.



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.

REVISION:
 APPROVED: JANUARY 8, 2020
Marni Karnowski
 MARNI KARNOWSKI
 CHIEF ENVIRONMENTAL OFFICER

m MINNESOTA
 DEPARTMENT OF TRANSPORTATION
 STANDARD PLAN 5-297.404 3 OF 3
 APPROVED: 1-8-2020
 REVISED:
Tom Styrbicki
 THOMAS STYRBICKI
 STATE DESIGN ENGINEER

PERMANENT EROSION CONTROL
 REPP (BLANKET) STAPLE PATTERN FOR SLOPES

SEH
 RAMSEY COUNTY, MINNESOTA
 DIVISION AVE AND 8TH ST
 PROJECT NO. 170689

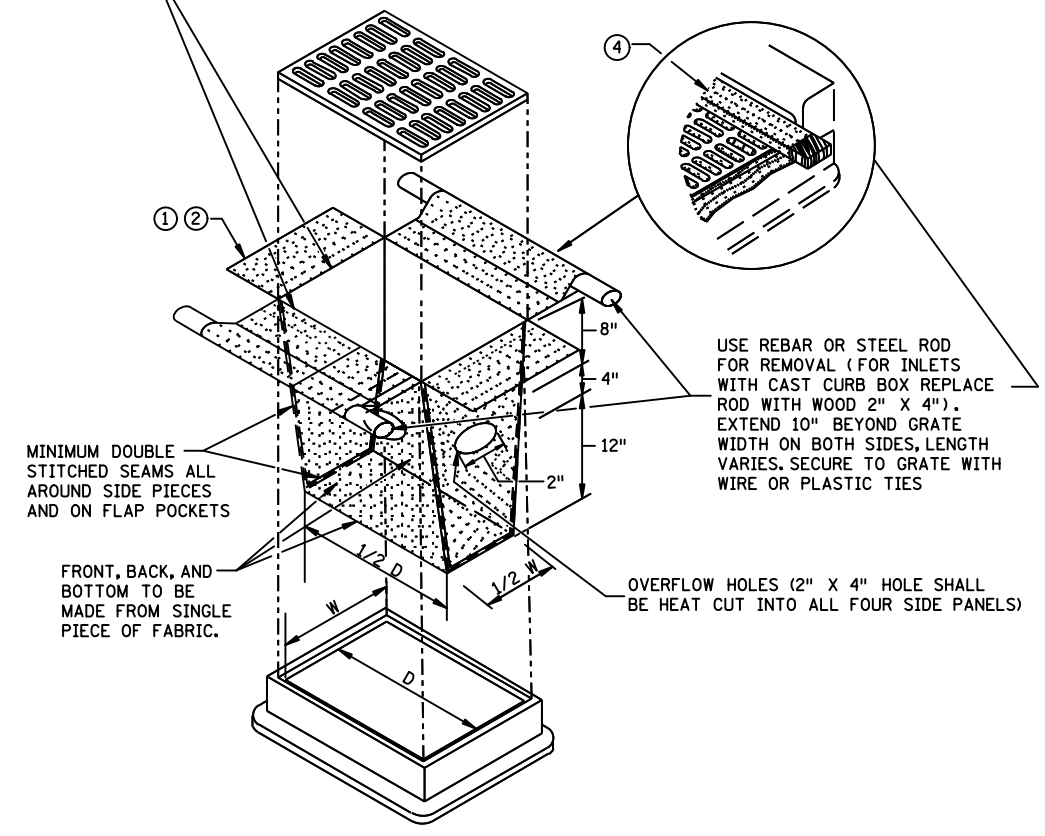
STANDARD PLAN SHEET
 SEH FILE NO. ISDWB170689
 SPN16 OF SPN27
 23
 78

5:07:54 PM

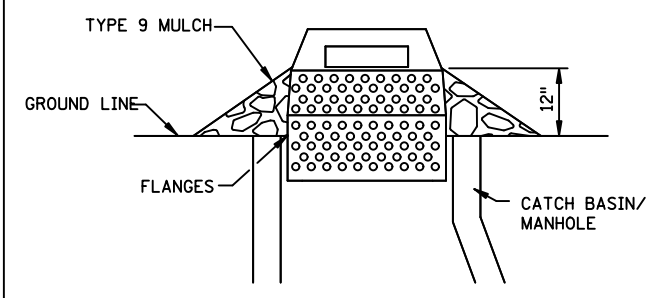
2/9/2024

FILE: X:\F\J\1\ISDWB\170689\5-Final-dsgn\51-drawings\40-Transition\Plansheets\CD170689_spn1.dgn
MODEL: 405_4

INLET SPECIFICATIONS AS PER THE PLAN
DIMENSION LENGTH AND WIDTH TO MATCH
FLAP POCKET



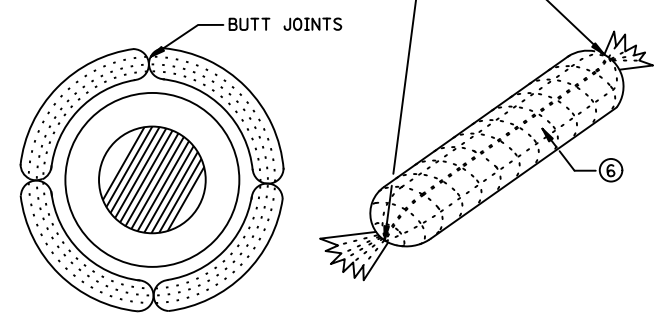
FILTER BAG INSERT ③
(CAN BE INSTALLED IN ANY INLET TYPE WITH OR WITHOUT A CURB BOX)



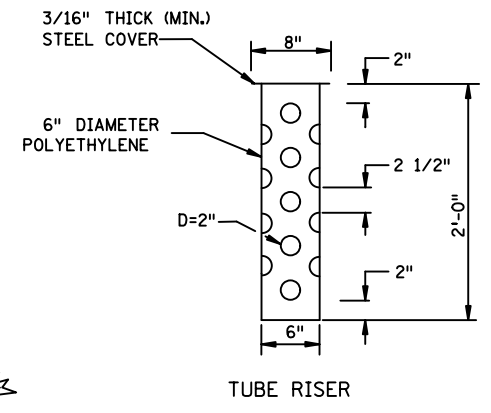
SEDIMENT CONTROL INLET HAT

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.

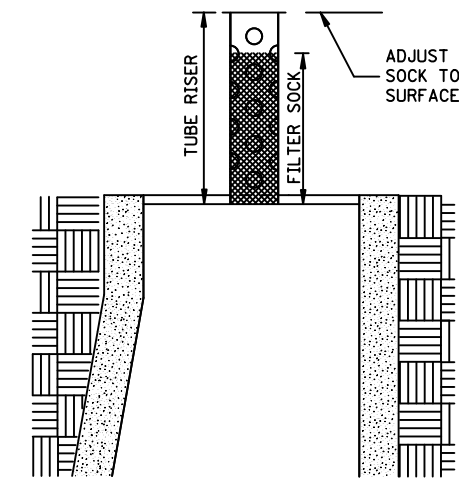
ENDS SECURELY CLOSED TO PREVENT LOSS OF OPEN GRADED AGGREGATE FILL. SECURED WITH 50 PSI. ZIP TIE.



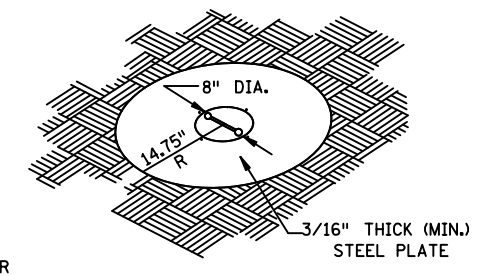
ROCK LOG/COMPOST LOG



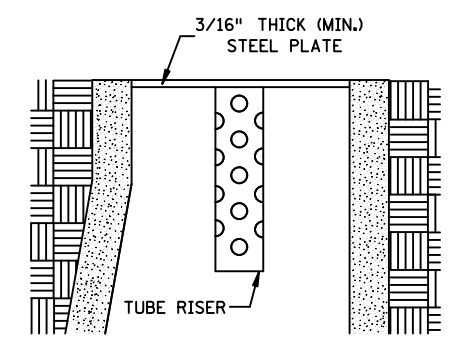
TUBE RISER



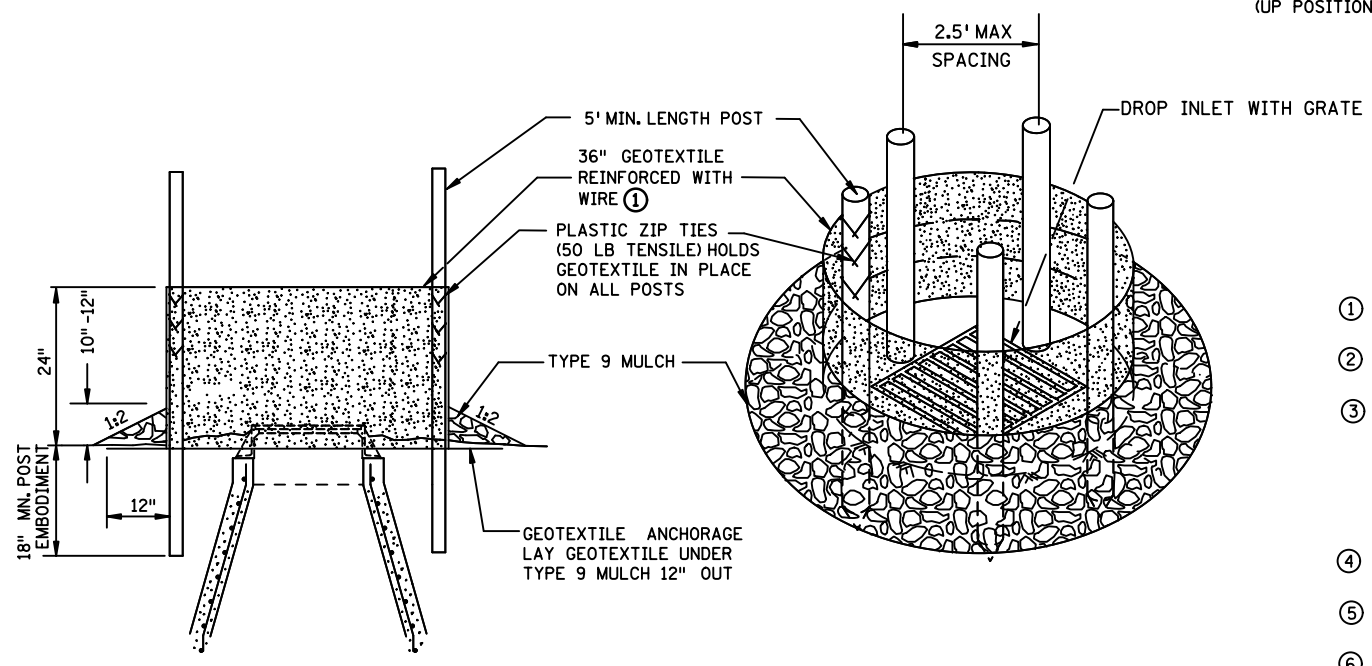
SECTION (UP POSITION)



PERSPECTIVE VIEW



SECTION (DOWN POSITION)



SILT FENCE RING AND ROCK FILTER BERM
USE WHERE INLET DRAINS IN AN AREA WITH SLOPES AT 1:3 OR LESS

POP-UP HEAD

NOTES:

- SEE SPECS. 2573, 3137, & 3886.
- DEVICES MUST BE ADJUSTED ACCORDINGLY AS TO NOT CAUSE FLOODING ON ROADWAY THAT WOULD IMPEED 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.

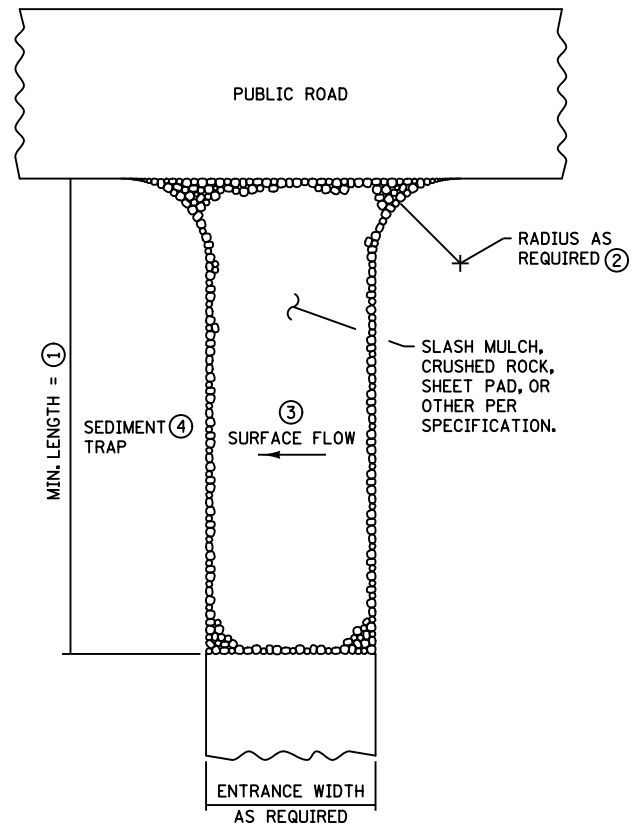
REVISION:

APPROVED: 2-28-2017

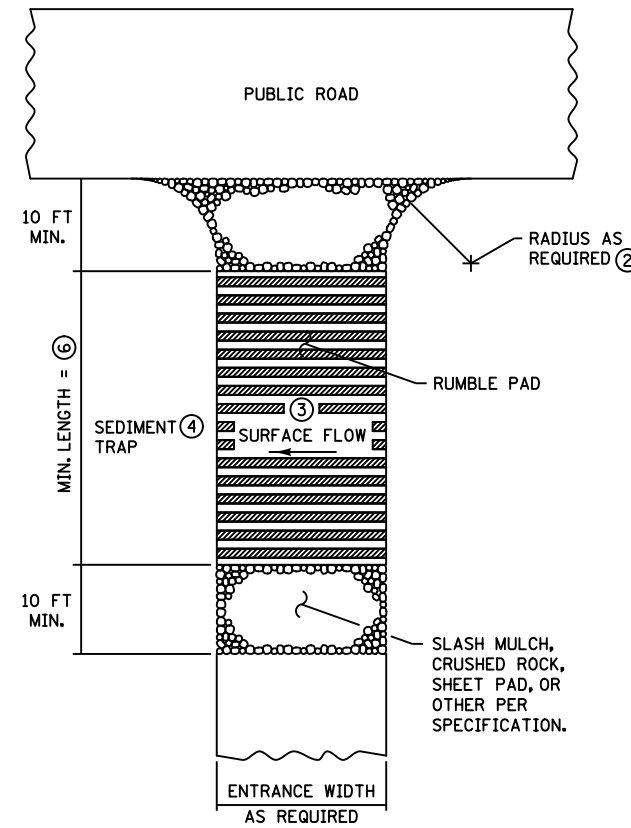
[Signature]
CHIEF ENVIRONMENTAL OFFICER

	STANDARD PLAN 5-297.405	4 OF 8
	APPROVED: 2-28-2017 REVISED:	
DEPARTMENT OF TRANSPORTATION STATE DESIGN ENGINEER	<i>[Signature]</i>	

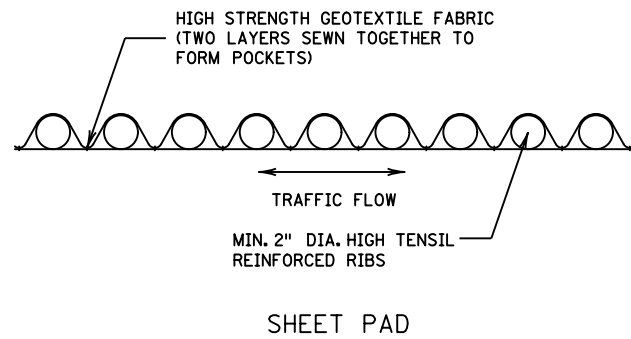
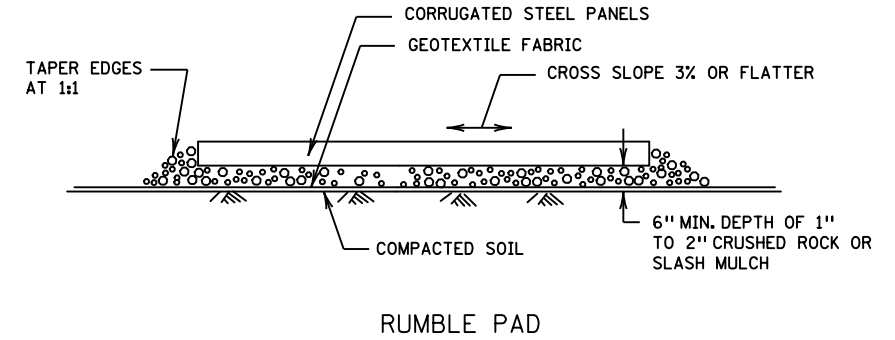
TEMPORARY SEDIMENT CONTROL
STORM DRAIN INLET PROTECTION



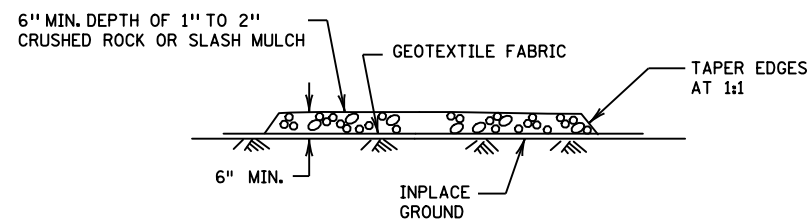
SLASH MULCH, CRUSHED ROCK, OR SHEET PAD CONSTRUCTION EXIT ⑤⑦



RUMBLE PAD CONSTRUCTION EXIT ⑤⑦



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.

REVISION:

APPROVED: 2-28-2017

[Signature]
CHIEF ENVIRONMENTAL OFFICER

	STANDARD PLAN 5-297.405	5 OF 8
	APPROVED: 2-28-2017 REVISED:	
DEPARTMENT OF TRANSPORTATION STATE DESIGN ENGINEER		

TEMPORARY SEDIMENT CONTROL
STABILIZED CONSTRUCTION EXIT

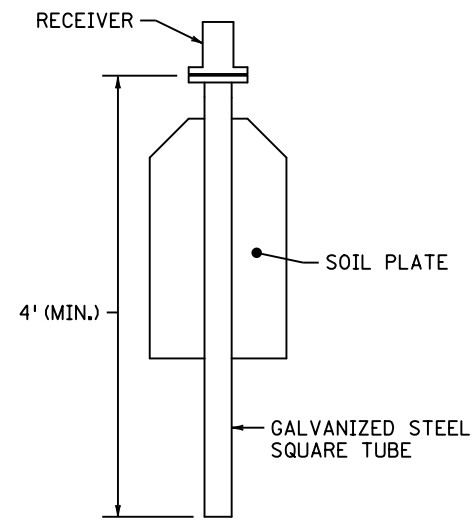


RAMSEY COUNTY, MINNESOTA
DIVISION AVE AND 8TH ST
 PROJECT NO. 170689

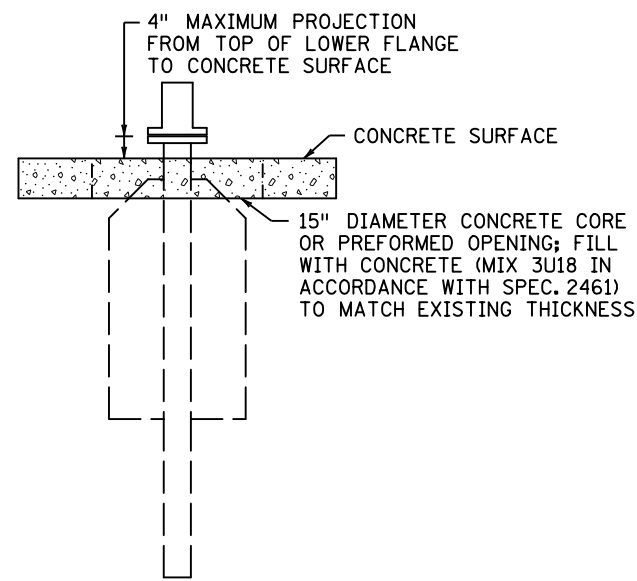
STANDARD PLAN SHEET

SEH
 FILE NO.
 ISDWB170689
 SPN18
 OF SPN27

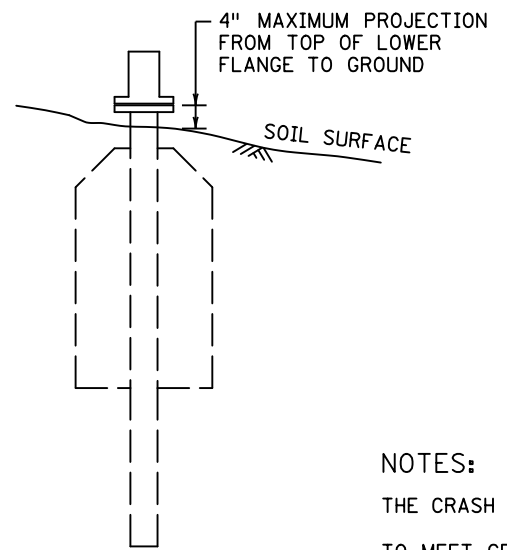
25
 78



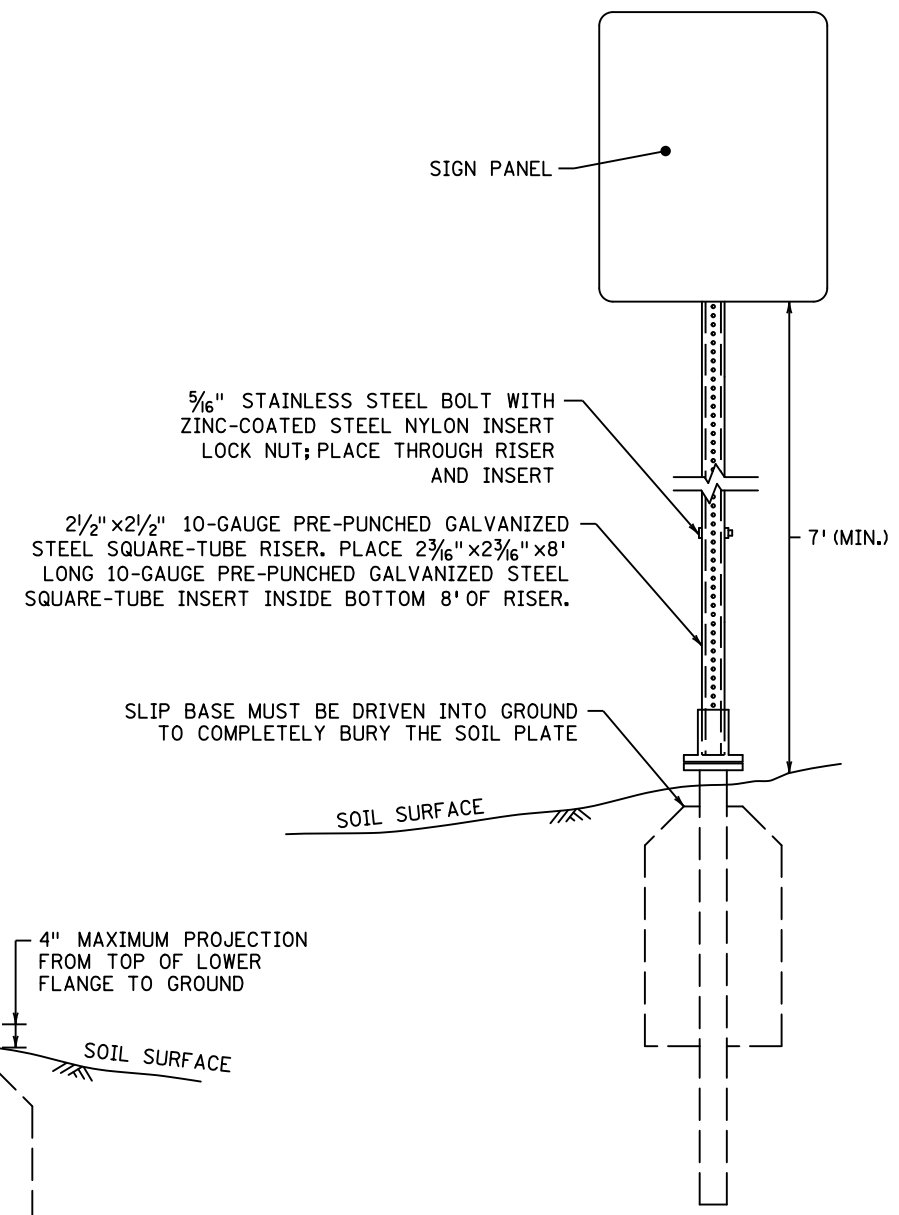
PROPRIETARY SLIP BASE ASSEMBLY ①



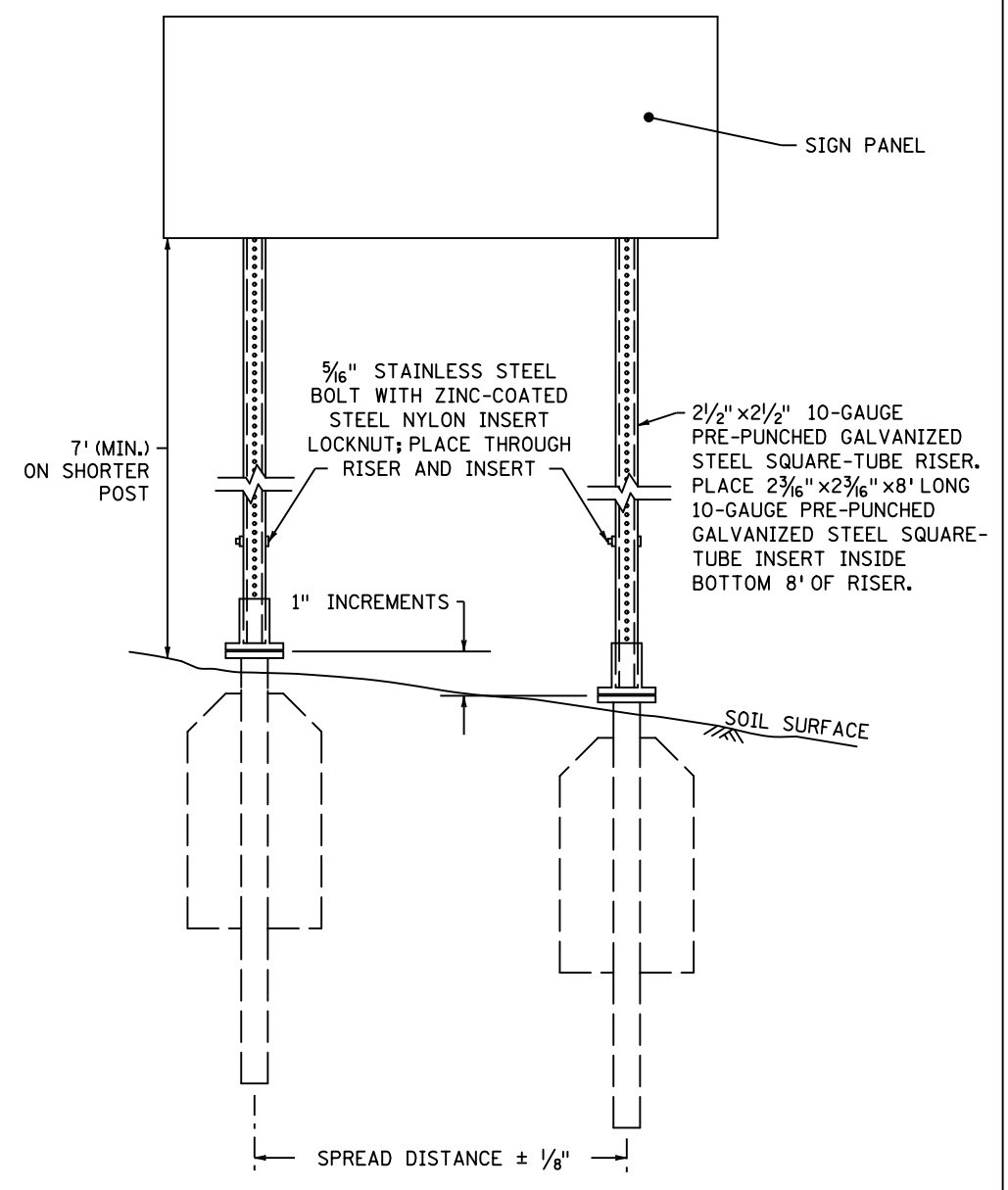
SLIP BASE ASSEMBLY IN CONCRETE



SLIP BASE ASSEMBLY IN SOIL



SLIP BASE ASSEMBLY WITH SINGLE-POST SIGN
TYPICAL PLACEMENT IN SOIL



SLIP BASE ASSEMBLY WITH MULTIPLE-POST SIGN ②
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.

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 MnDOT 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

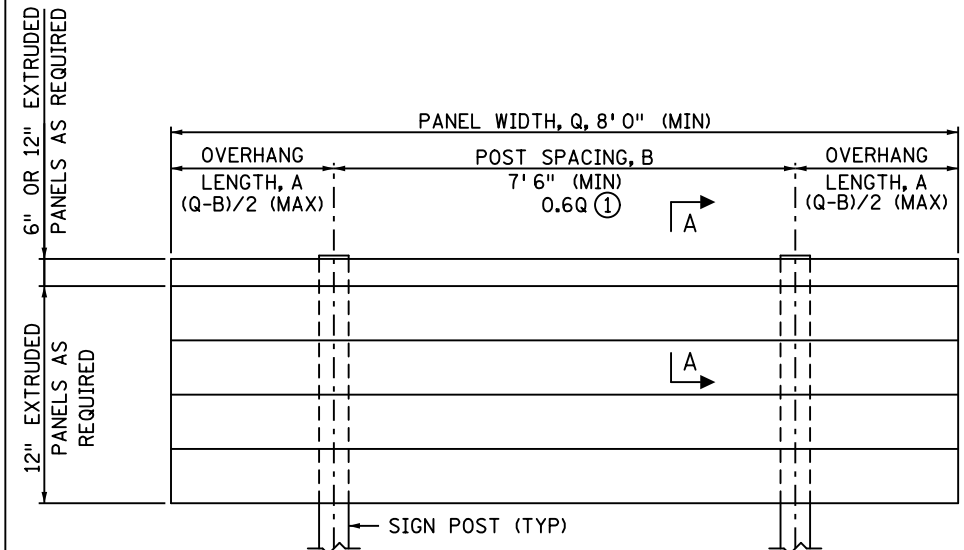
m MINNESOTA
DEPARTMENT OF TRANSPORTATION

STANDARD PLAN 5-297.724 1 OF 1

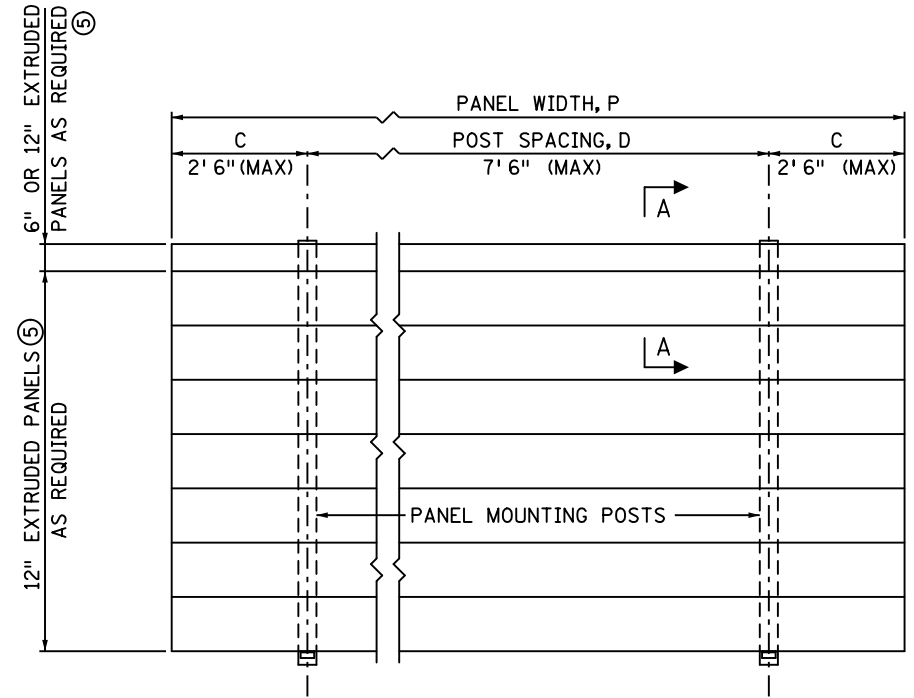
APPROVED: 08-09-2023
REVISED:

THOMAS TYRBICKI
STATE DESIGN ENGINEER

SLIP BASE ASSEMBLY
FOR 2 1/2" SQUARE-TUBE RISER POST



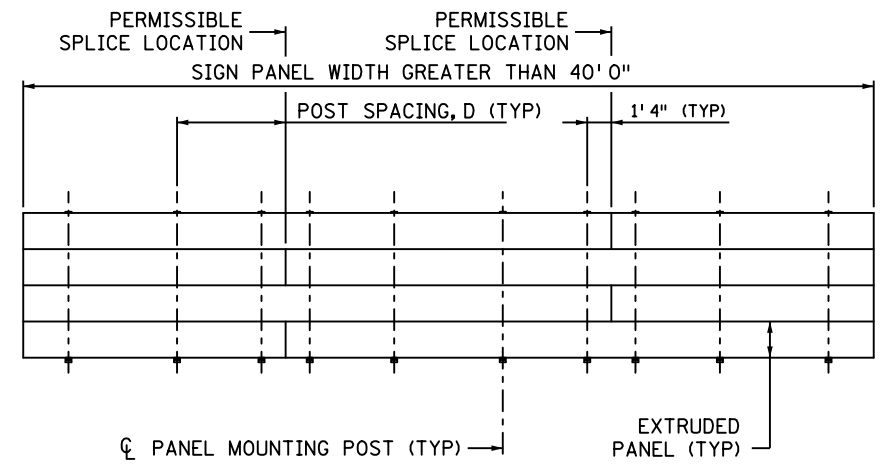
I-BEAM MOUNTED EXTRUDED PANEL ELEVATION ②



OVERHEAD SIGN STRUCTURE EXTRUDED PANEL ELEVATION

NO. OF POSTS	PANEL MOUNTING POST		
	P	C	D
2	12' 0" (144") OR LESS	0.207P	0.586P
3	12' 6" (150") THRU 17' 0" (204")	0.145P	0.355P
4	17' 6" (210") THRU 23' 0" (276")	0.107P	0.262P
5	23' 6" (282") THRU 29' 0" (348")	0.084P	0.208P
6	29' 6" (354") THRU 35' 0" (420")	0.070P	0.172P
7	35' 6" (426") THRU 40' 0" (480")	0.059P	0.147P
9	40' 6" (486") THRU 41' 0" (492")	0.059P	0.147P
10	41' 6" (498") THRU 47' 0" (564")	0.052P	0.128P
11	47' 6" (570") THRU 53' 0" (636")	0.048P	0.113P
12	53' 6" (642") THRU 59' 0" (708")	0.041P	0.102P
13	59' 6" (714") THRU 65' 0" (780")	0.040P	0.092P

POST SPACING MAY BE ADJUSTED ±12" AS REQUIRED IF CONFLICT WITH TRUSS MEMBERS IS ENCOUNTERED.



EXTRUDED PANEL SPLICE STAGGER DIAGRAM
EXTRUDED PANEL WIDTH EXAGGERATED FOR CLARITY

DESIGN CRITERIA:

THE DETAILS SHOWN ON THESE STANDARD PLANS ARE BASED ON THE AASHTO "LRFD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES, AND TRAFFIC SIGNALS", FIRST EDITION, 2015 AND THE 2017, 2018, 2019, AND 2020 INTERIM REVISIONS.

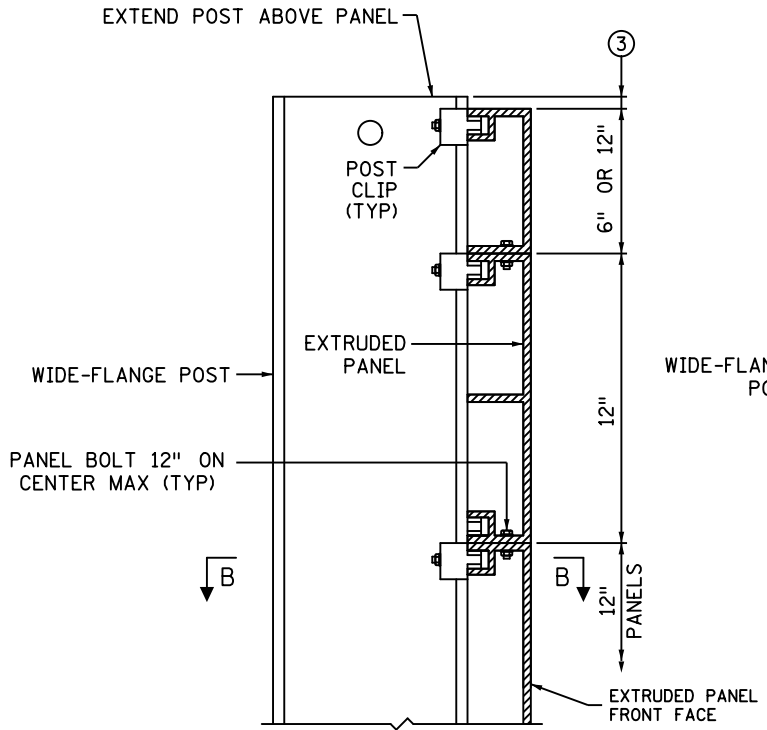
STRENGTH LIMIT WIND LOADING OF 120 MPH
SERVICE LIMIT WIND LOADING OF 76 MPH

GENERAL NOTES:

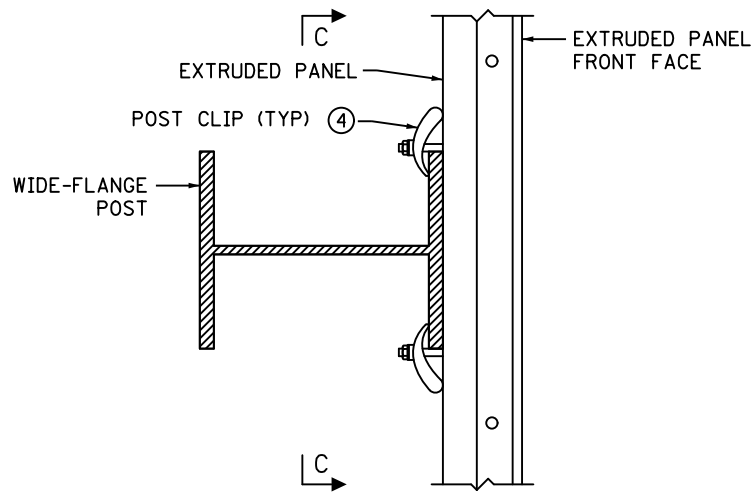
FOR POST CLIP DETAILS, SEE SHEET 3 OF 4.

SAW CUT ALL POST CUTS. PLATES MAY BE SHEARED OR FLAME CUT USING A MECHANICALLY GUIDED CUTTING TORCH. PREPARE EDGES IN ACCORDANCE WITH SPEC. 2471.3.C.4 AND SPEC. 2471.3.D.4.

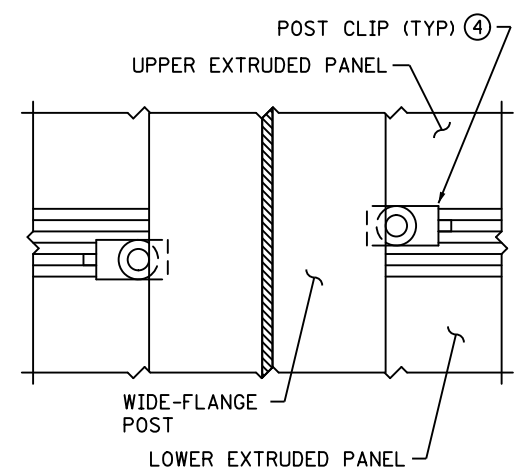
- ① ROUND TO THE NEAREST EVEN INCH FOR DIMENSION D.
- ② SEE I-BEAM-SUPPORTED SIGN STRUCTURAL ELEVATION FOR PANEL WIDTH, POST SPACING, AND OVERHANG LENGTHS.
- ③ 1/2" - OVERHEAD SIGN STRUCTURE SUPPORTED
1/2" MIN.; 1" MAX. - I-BEAM SUPPORTED
- ④ PLACE ONE POST CLIP ON THE UPPER EXTRUDED PANEL AND THE ADJACENT POST CLIP ON THE LOWER EXTRUDED PANEL ON THE OPPOSITE SIDE OF THE WIDE FLANGE POST.
- ⑤ EXTRUDED PANELS FOR INDIVIDUAL SIGN WIDTHS GREATER THAN 40' 0" MAY BE SPLICED.
USE NO MORE THAN ONE SPLICE PER EXTRUDED PANEL.
LOCATE SPLICES AS SHOWN. USE AN ADDITIONAL PANEL MOUNTING POST AT EACH SPLICE LOCATION.
SPLICED EXTRUDED PANEL SEGMENTS MUST SPAN A MINIMUM OF THREE POSTS.
STAGGER SPLICE LOCATIONS.



SECTION A-A



SECTION B-B



VIEW C-C

LEAD EXPERT OFFICE

EDWARD LUTGEN
OFFICE DIRECTOR
BRIDGE OFFICE



STANDARD PLAN 5-297.710 1 OF 4

APPROVED: 11-29-2022
REVISED:

THOMAS STYRBICKI
STATE DESIGN ENGINEER

EXTRUDED PANEL MOUNTING DETAILS



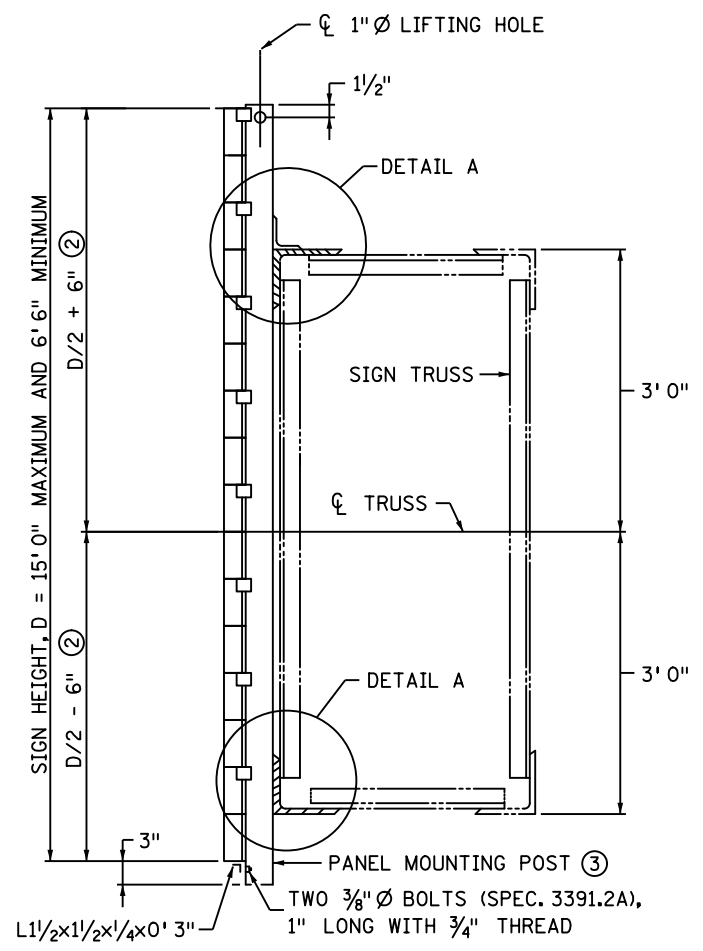
RAMSEY COUNTY, MINNESOTA
DIVISION AVE AND 8TH ST
PROJECT NO. 170689

STANDARD PLAN SHEET

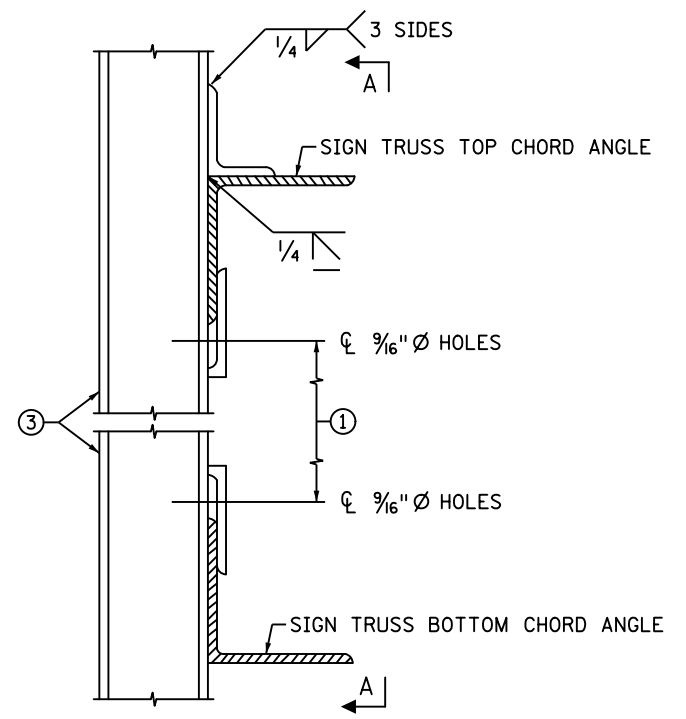
5:07:56 PM

2/9/2024

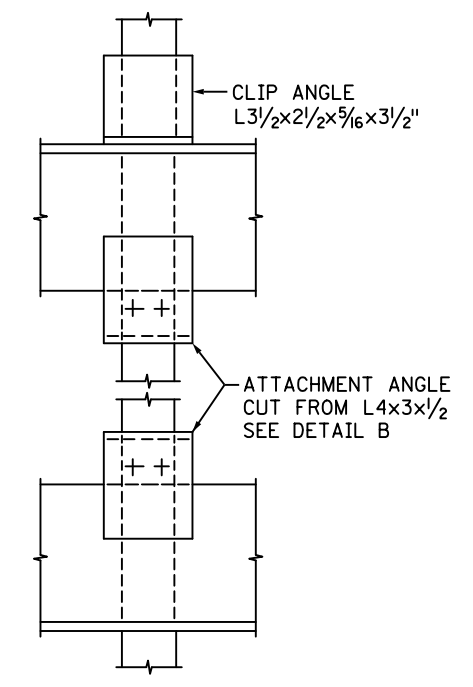
FILE: X:\F\J\1\ISDWB\170689\5-final-dsgn\51-drawings\40-Transition\Plansheets\CD170689_spn1.dgn
MODEL: 710.2



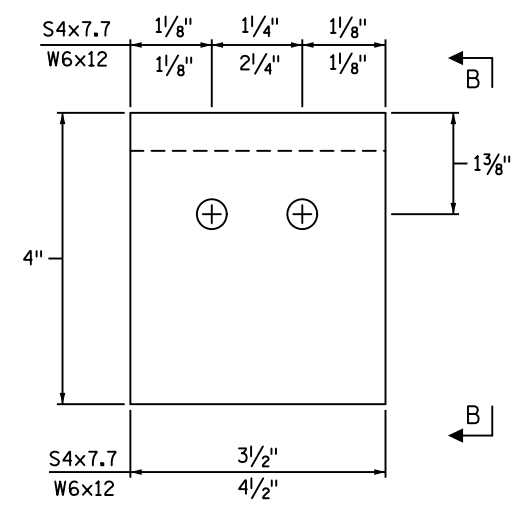
TYPICAL SECTION
DESIGN D TRUSS SHOWN



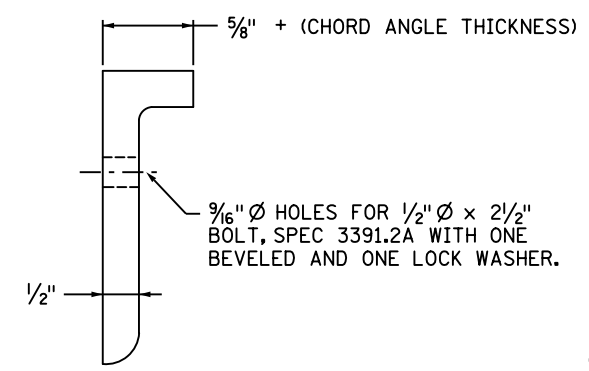
DETAIL A



VIEW A-A



DETAIL B



VIEW B-B

DESIGN D PANEL MOUNTING POST QUANTITIES INCLUDES MOUNTING ANGLES	
PANEL HEIGHT	WEIGHT PER POST (LBS.)
6' 6" (78")	70
7' 0" (84")	74
7' 6" (90")	78
8' 0" (96")	82
8' 6" (102")	86
9' 0" (108")	90
9' 6" (114")	93
10' 0" (120")	97
10' 6" (126")	101
11' 0" (132")	105
11' 6" (138")	160
12' 0" (144")	166
12' 6" (150")	172
13' 0" (156")	178
13' 6" (162")	184
14' 0" (168")	190
14' 6" (174")	196
15' 0" (180")	202

NOTES:

- PROVIDE STRUCTURAL STEEL IN ACCORDANCE WITH SPEC 3308. GALVANIZE STRUCTURAL STEEL IN ACCORDANCE WITH SPEC. 3394 AND HARDWARE IN ACCORDANCE WITH SPEC. 3392. FURNISH BOLTS IN ACCORDANCE WITH SPEC. 3391.2A. PLACE COMMON BOLTS IN ACCORDANCE WITH SPEC. 2402.
- (1) (TRUSS DEPTH) - (TOP & BOTTOM CHORD ANGLE LEGS) - 1/4".
- (2) SEE NOTE (1) ON STANDARD PLAN 5-297.761 WHEN STANDARD PANELS AND DMS ARE MOUNTED ON THE SAME SPAN.
- (3) S4x7.7 FOR SIGN HEIGHTS LESS THAN OR EQUAL TO 11' 0". W6x12 FOR SIGN HEIGHTS OVER 11' 0".

LEAD EXPERT OFFICE

EDWARD LUTGEN
OFFICE DIRECTOR
BRIDGE OFFICE

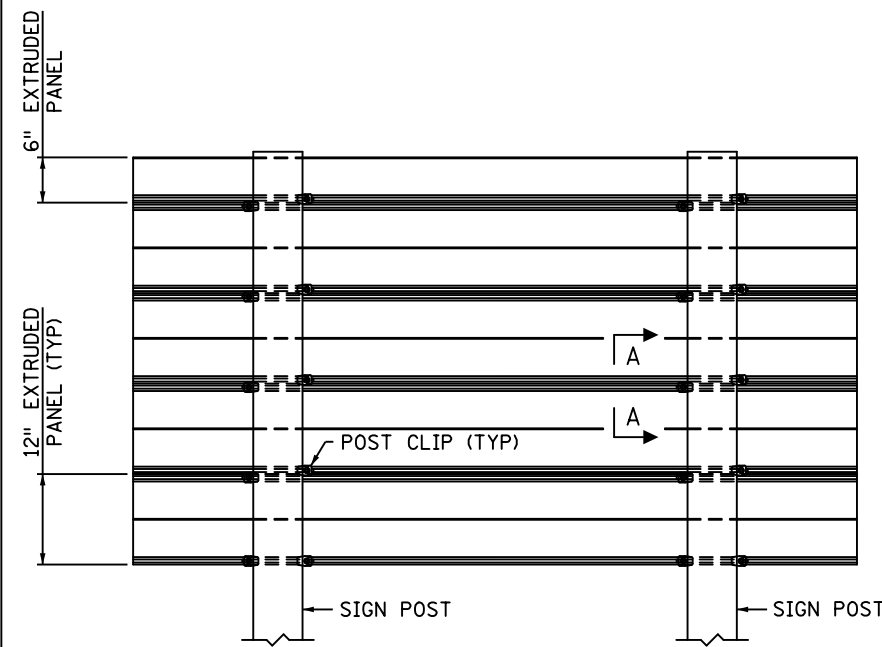
m MINNESOTA
DEPARTMENT OF TRANSPORTATION

STANDARD PLAN 5-297.710 2 OF 4

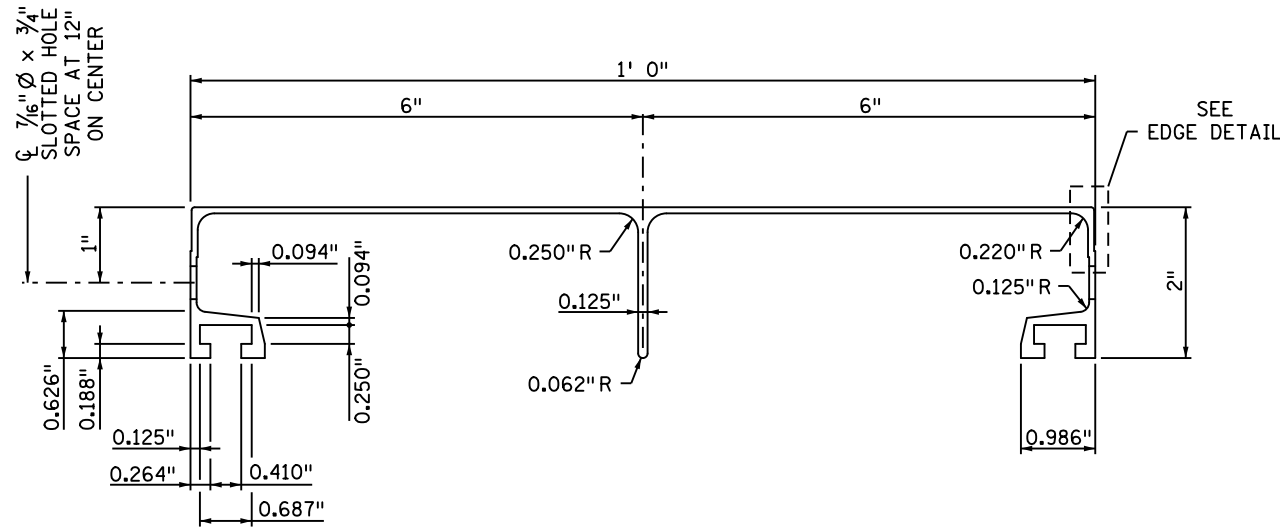
APPROVED: 11-29-2022
REVISED:

Tom Styrbicki
THOMAS STYRBICKI
STATE DESIGN ENGINEER

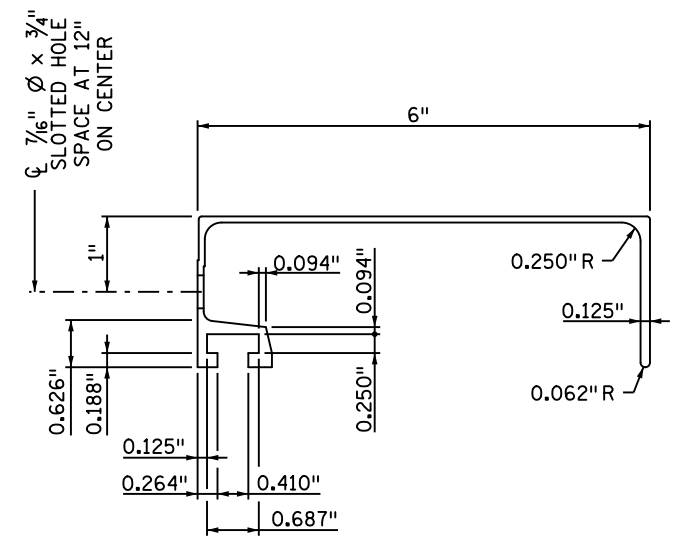
EXTRUDED PANEL MOUNTING DETAILS
PANEL MOUNTING POST DETAILS



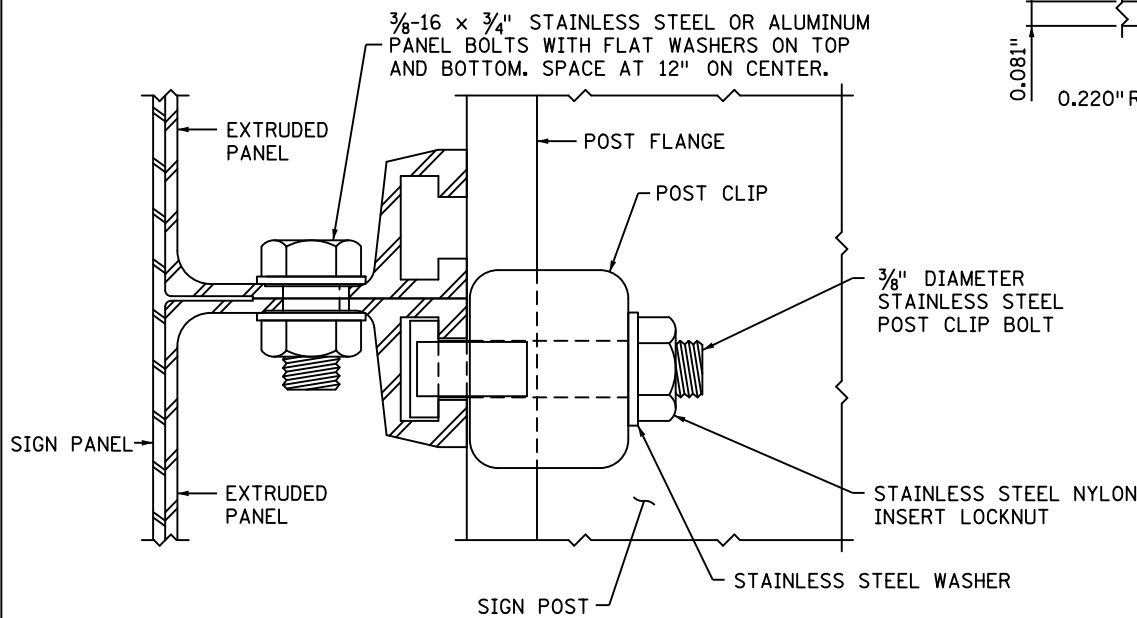
TYPICAL PANEL MOUNTING



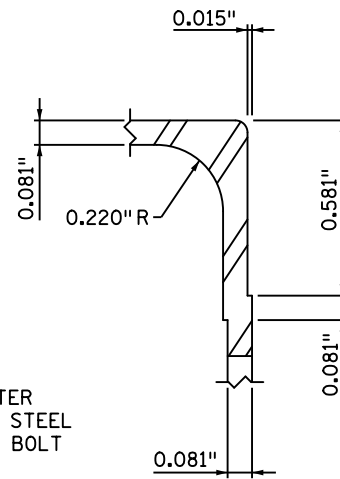
EXTRUDED PANEL - 12"
MINIMUM UNIT WEIGHT = 2.53 LB PER FT OF LENGTH



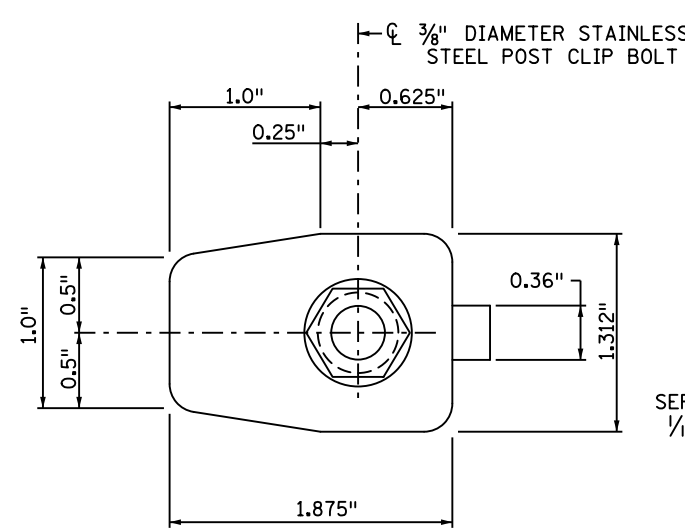
EXTRUDED PANEL - 6"
MINIMUM UNIT WEIGHT = 1.02 LB PER FT OF LENGTH



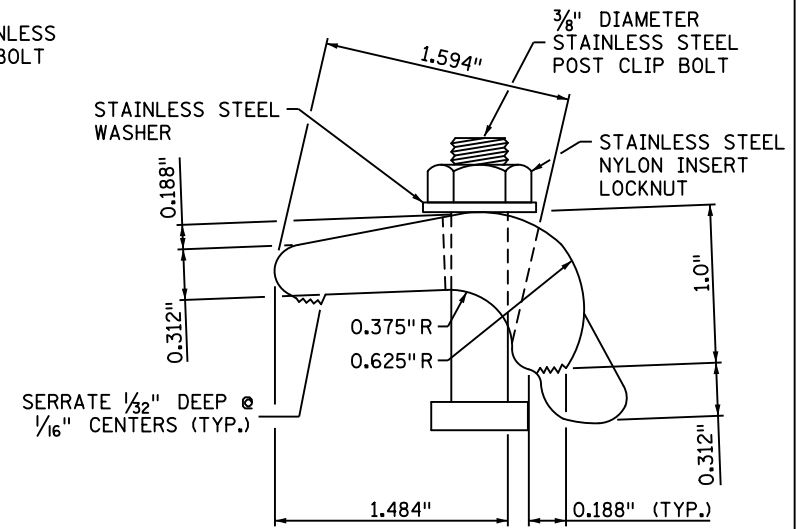
SECTION A-A



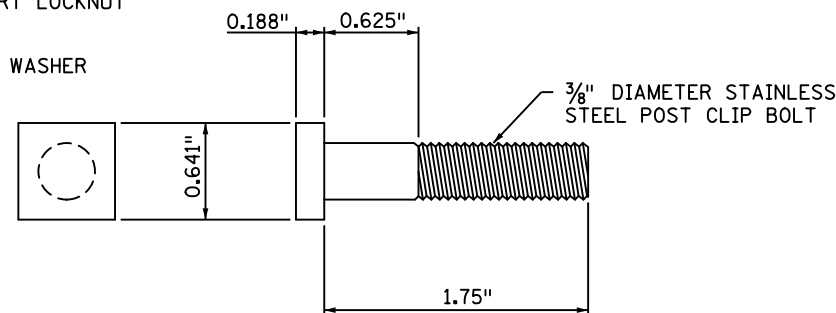
EDGE DETAIL



POST CLIP PLAN



POST CLIP ELEVATION



POST CLIP BOLT

NOTES:

- PROVIDE EXTRUDED PANELS IN ACCORDANCE WITH SPEC. 3352.
- PROVIDE POST CLIPS IN ACCORDANCE WITH ASTM B26 OR B108 CAST ALUMINUM ALLOY 356.0-76.
- PROVIDE STAINLESS STEEL POST CLIP BOLTS IN ACCORDANCE WITH SPEC. 3391.
- PROVIDE ALUMINUM PANEL BOLTS AND FLAT WASHERS IN ACCORDANCE WITH ASTM 2024-T4. PROVIDE ALUMINUM NUTS IN ACCORDANCE WITH ASTM 6061-T6.
- TORQUE ALUMINUM PANEL BOLTS TO 12 FT-LBS. TORQUE STAINLESS STEEL POST CLIP BOLTS TO 21 FT-LBS. OVERTIGHTENING IS PROHIBITED.

REVISIONS:
APPROVED: 12-16-2021 <i>Kevin Western</i> KEVIN WESTERN STATE BRIDGE ENGINEER



STANDARD PLAN 5-297.710 3 OF 4
APPROVED: 12-16-2021
REVISED:
Tom Styrbicki
THOMAS STYRBICKI
STATE DESIGN ENGINEER

EXTRUDED PANEL MOUNTING DETAILS



RAMSEY COUNTY, MINNESOTA
DIVISION AVE AND 8TH ST
PROJECT NO. 170689

STANDARD PLAN SHEET

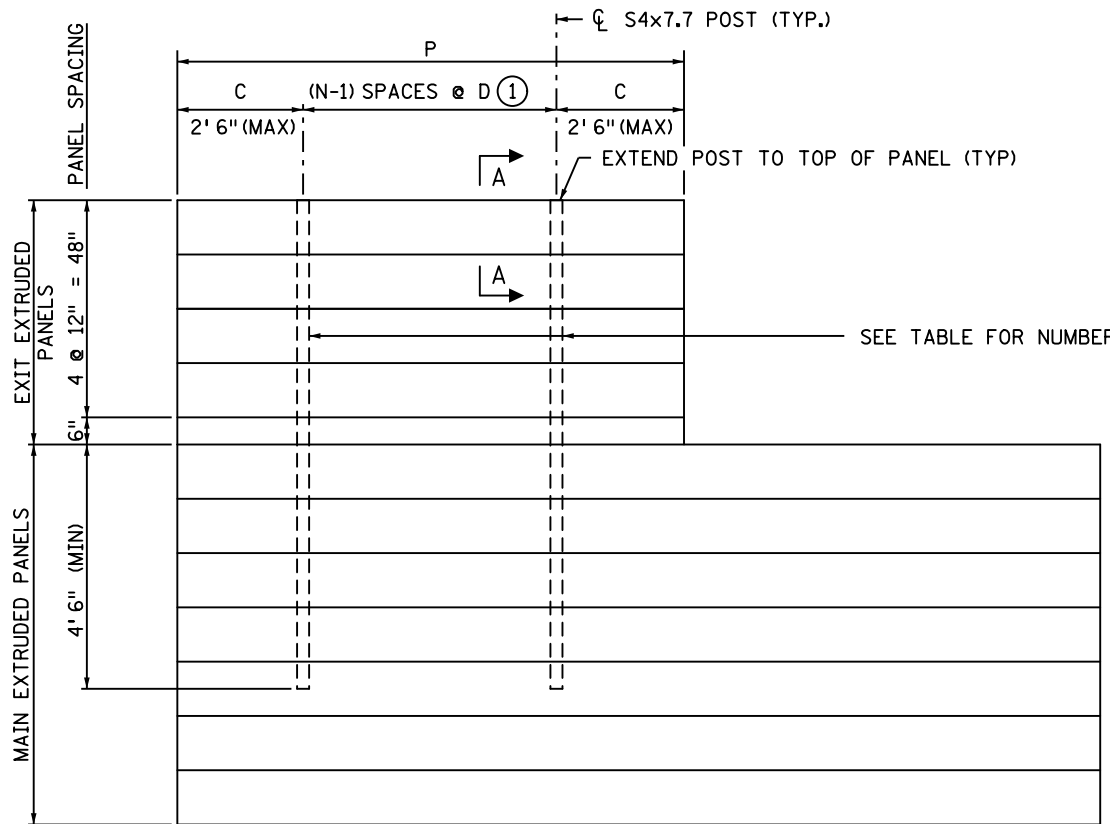
SEH
FILE NO.
ISDWB170689
SPN22
OF SPN27

29
78

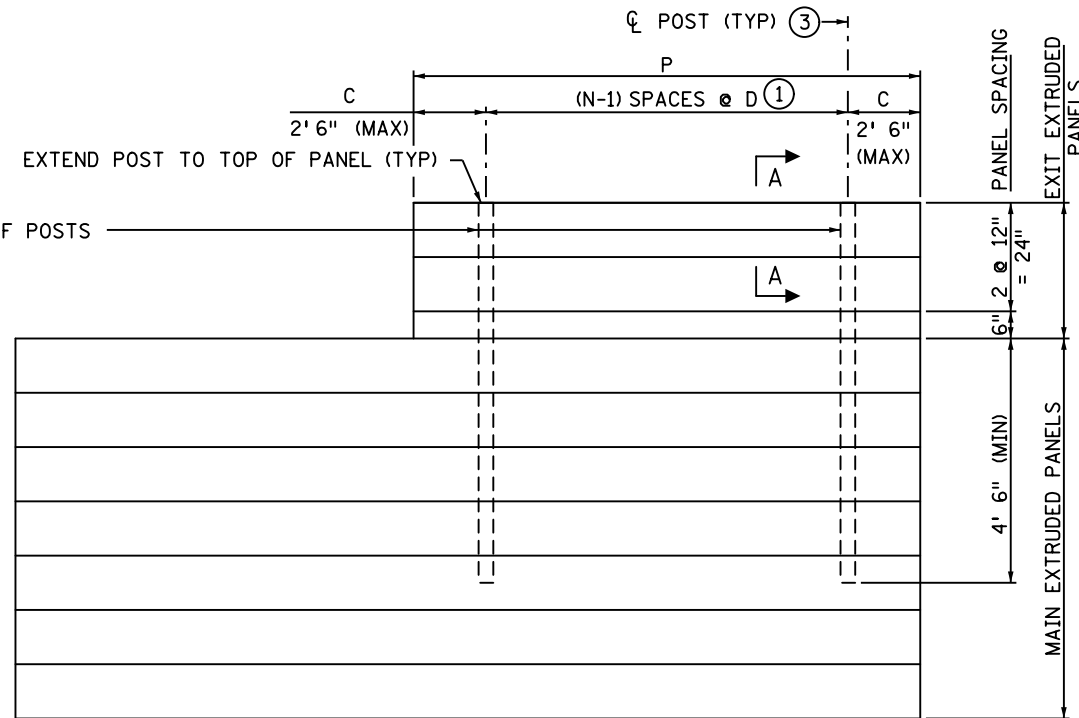
5:07:57 PM

2/9/2024

FILE: X:\F\J\1\ISDWB\170689\5-Final-dsgn\51-drawings\40-Transhwy\Plansheets\C0170689_spn1.dgn
MODEL: T10_4



54" PANEL MOUNTING



30" PANEL MOUNTING

NOTES:
 FOR POST CLIP DETAILS, SEE SHEET 3 OF 4.
 FOR I-BEAM-MOUNTED OR OVERHEAD SIGN STRUCTURES, LEFT-JUSTIFY EXTRUDED PANELS FOR LEFT EXITS AND RIGHT-JUSTIFY FOR RIGHT EXITS.

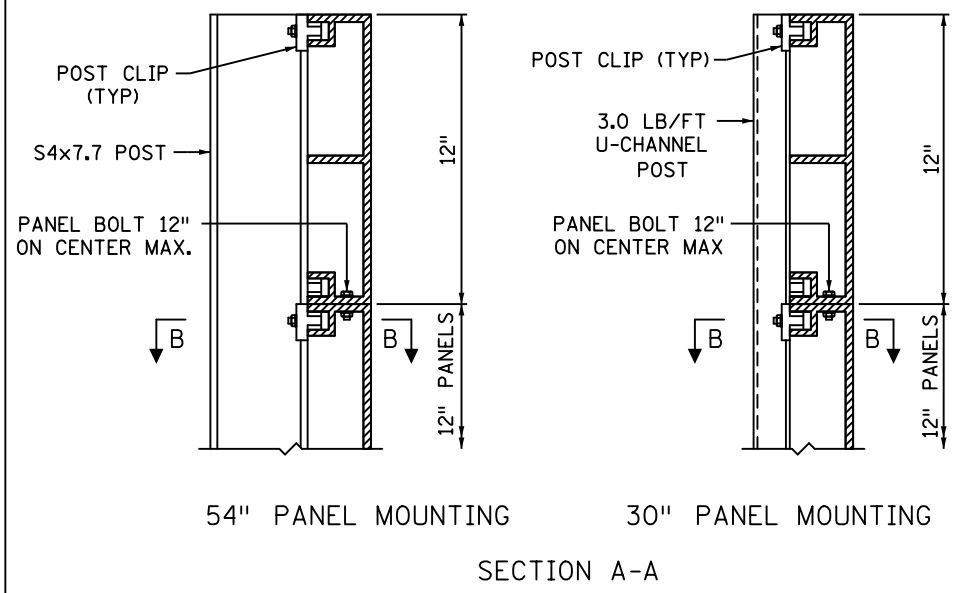
PROVIDE STRUCTURAL STEEL IN ACCORDANCE WITH SPEC. 3306. GALVANIZE STRUCTURAL STEEL IN ACCORDANCE WITH SPEC. 3394 AND HARDWARE IN ACCORDANCE WITH SPEC. 3392. PROVIDE FASTENERS IN ACCORDANCE WITH SPEC. 3391.

- ① SPACING AND LOCATION MAY BE ADJUSTED WHERE NECESSARY TO AVOID CONFLICTS WITH I-BEAM-MOUNTED OR OVERHEAD SIGN STRUCTURE POSTS.
- ② PLACE ONE POST CLIP ON THE UPPER EXTRUDED PANEL AND THE ADJACENT POST CLIP ON THE LOWER EXTRUDED PANEL ON THE OPPOSITE SIDE OF THE POST FLANGE.
- ③ PROVIDE U-CHANNEL POST IN ACCORDANCE WITH SPEC. 3401.

30" PANEL MOUNTING POSTS			
PANEL WIDTH, P	NUMBER OF POSTS, N	C	D
8' 0" OR LESS	2	0.200P	0.600P
8' 6" TO 11' 6"	3	0.145P	0.355P
12' 0" TO 14' 0"	4	0.080P	0.280P

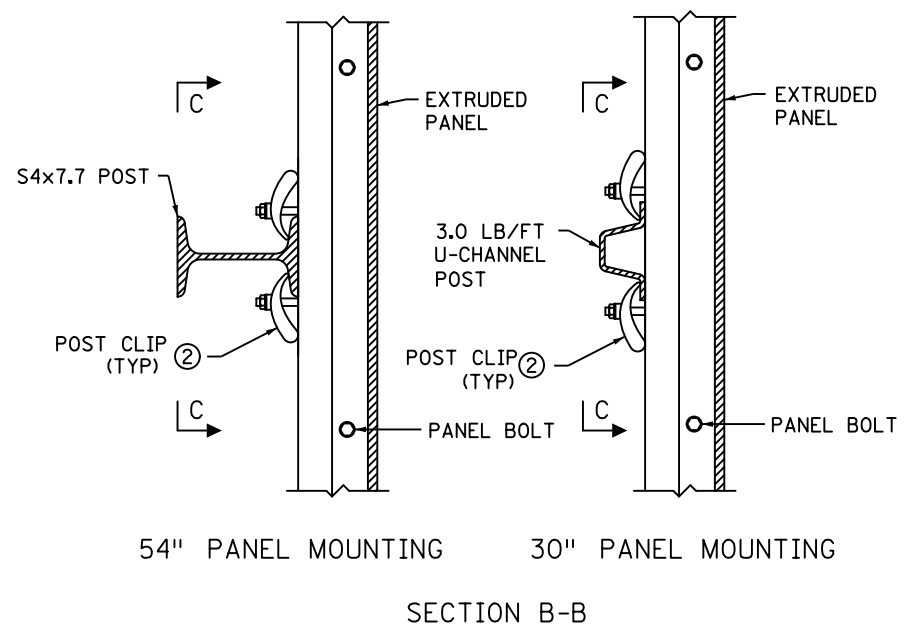
54" PANEL MOUNTING POSTS			
PANEL WIDTH, P	NUMBER OF POSTS, N	C	D
12' 0" OR LESS	2	0.207P	0.586P
12' 6" TO 17' 0"	3	0.145P	0.355P

30" AND 54" PANEL MOUNTING POST QUANTITIES		
POST LENGTH	POST TYPE	WEIGHT PER POST (LBS.)
7' 0" (84")	U-CHANNEL	21
9' 0" (108")	S4x7.7	70



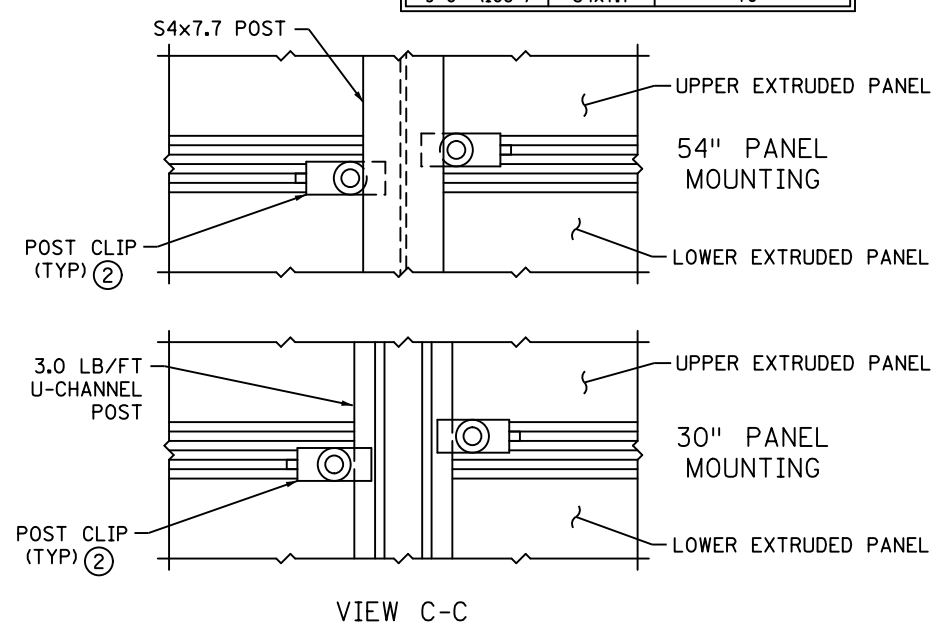
54" PANEL MOUNTING

30" PANEL MOUNTING



54" PANEL MOUNTING

30" PANEL MOUNTING



REVISIONS:

APPROVED: 12-16-2021

Kevin Western
 KEVIN WESTERN
 STATE BRIDGE ENGINEER

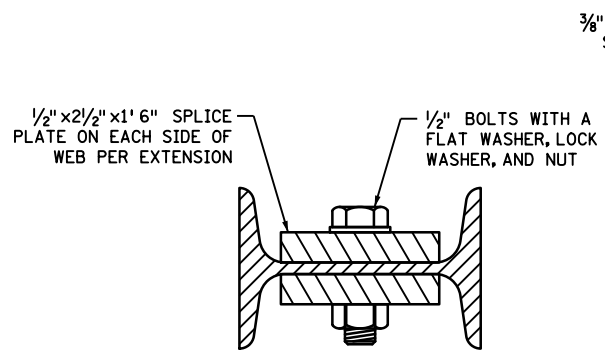
STANDARD PLAN 5-297.710 4 OF 4

APPROVED: 12-16-2021

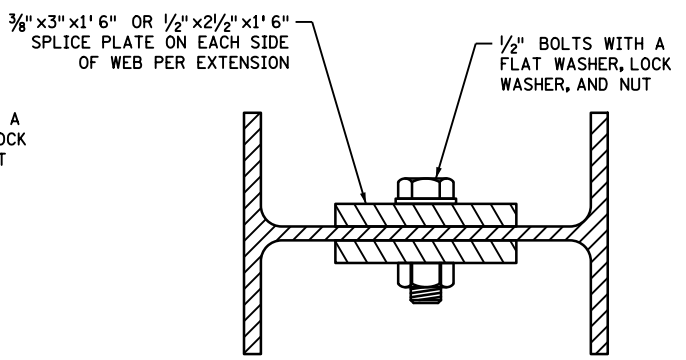
REVISED:

Tom Styrbicki
 THOMAS STYRBICKI
 STATE DESIGN ENGINEER

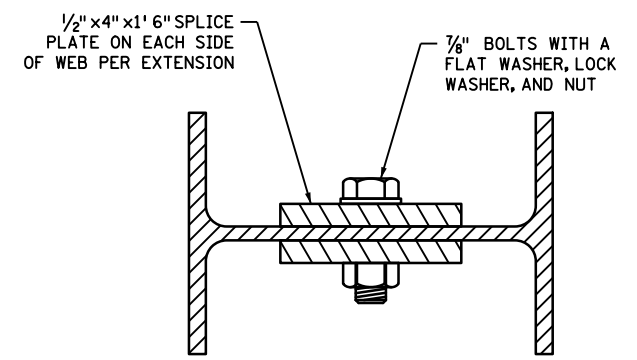
EXTRUDED PANEL MOUNTING DETAILS



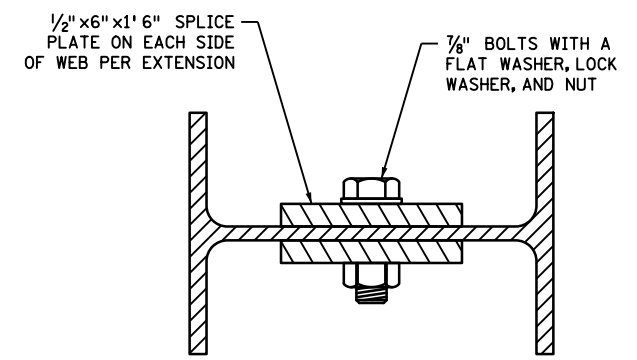
SECTION A-A



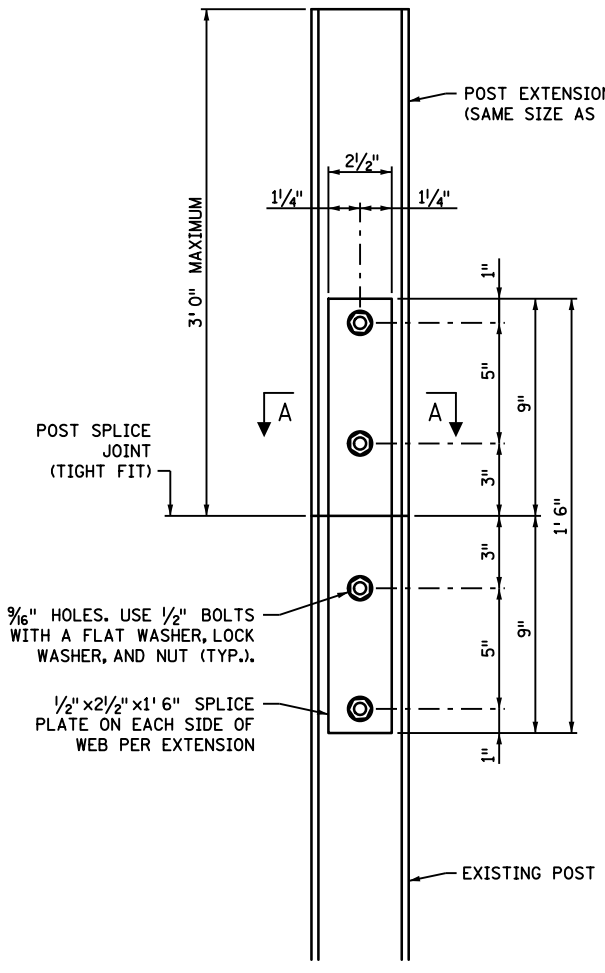
SECTION B-B



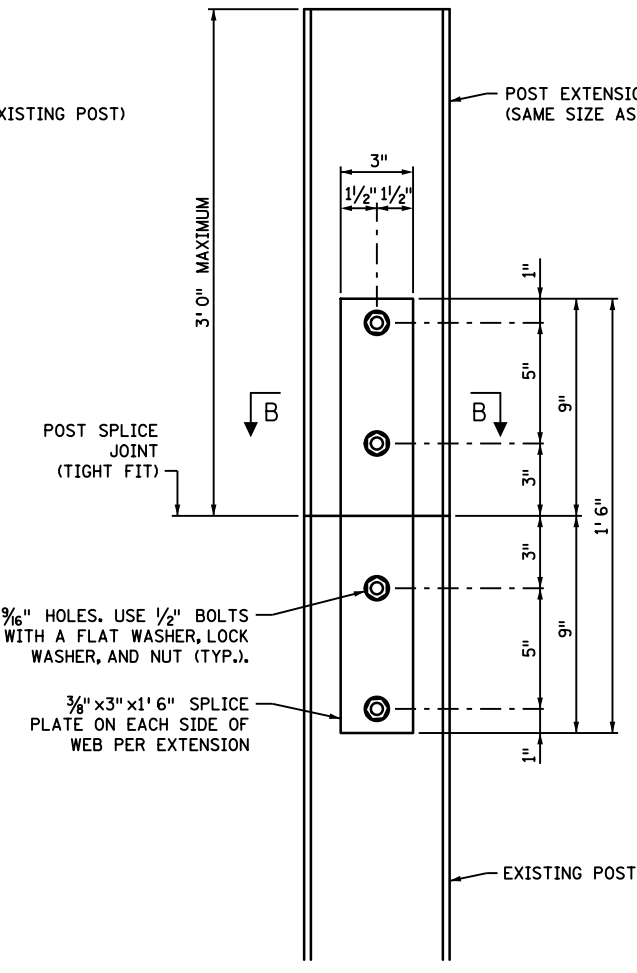
SECTION C-C



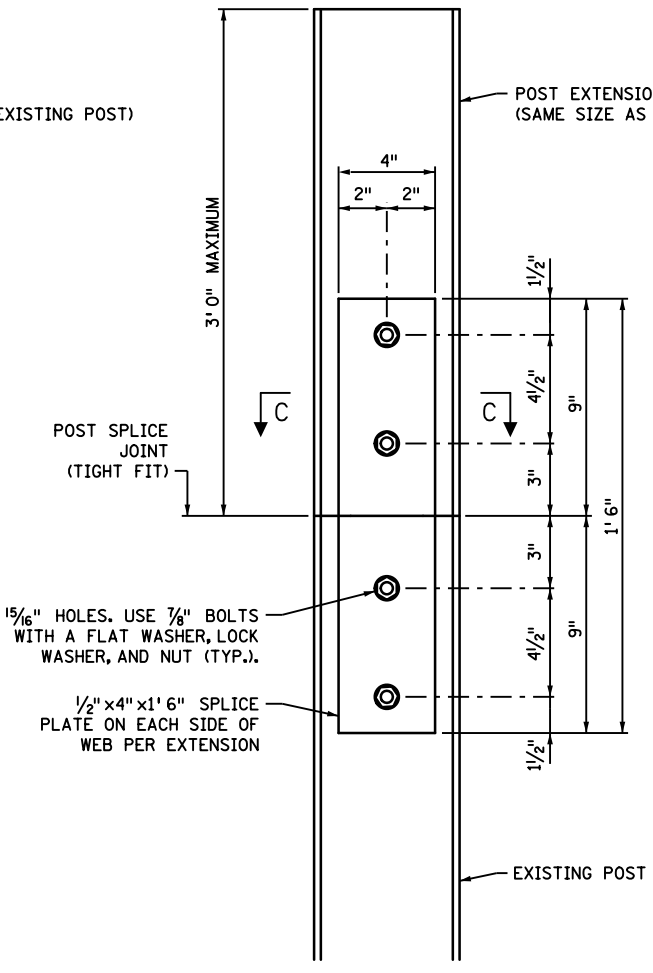
SECTION D-D



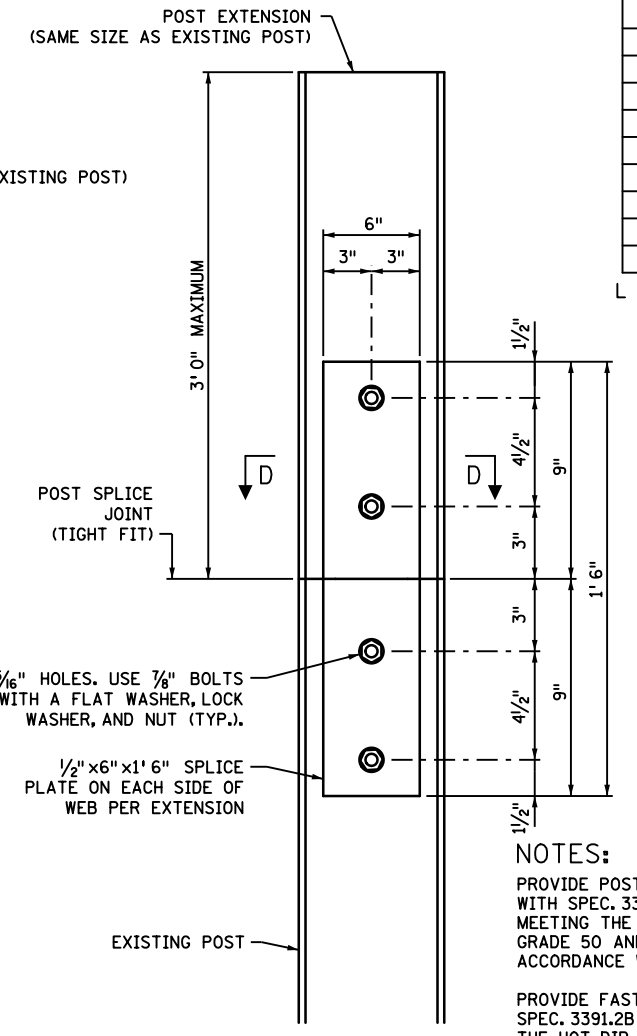
S4x7.7, W4x13 POST



W6x9, W6x12, W6x20 POST
3/8\"/>



W8x24, W8x31 POST



W10x39 POST

STEEL QUANTITY FOR EXTENSION	
POST	WEIGHT (LBS)
S4x7.7	13+7.7L
W4x13	13+13L
W6x9	13+9L
W6x12	13+12L
W6x20	13+20L
W8x24	22+24L
W8x31	22+31L
W10x39	32+39L

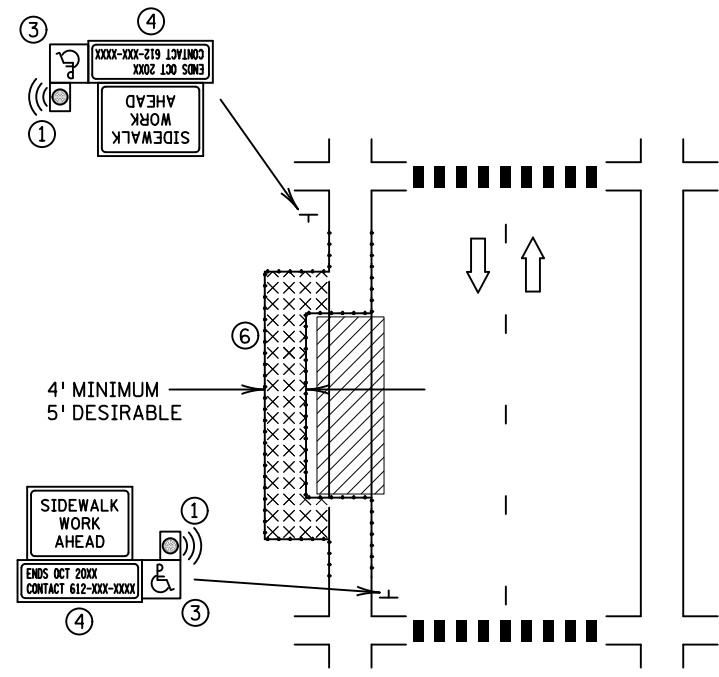
L = LENGTH OF EXTENSION

NOTES:
 PROVIDE POST EXTENSIONS IN ACCORDANCE WITH SPEC. 3306. PROVIDE SPLICE PLATES MEETING THE REQUIREMENTS OF ASTM A709 GRADE 50 AND SPEC. 3308. GALVANIZE IN ACCORDANCE WITH SPEC. 2471.3L2.
 PROVIDE FASTENERS IN ACCORDANCE WITH SPEC. 3391.2B AND GALVANIZE EITHER BY THE HOT-DIP PROCESS IN ACCORDANCE WITH ASTM A153, OR BY THE MECHANICAL PROCESS IN ACCORDANCE WITH ASTM B695, CLASS 50 OR GREATER.
 PLACE FASTENERS WITH A MINIMUM TORQUE OF 135 FT-LBS.
 PLACE MODIFICATION AT TOP OF EXISTING POST.

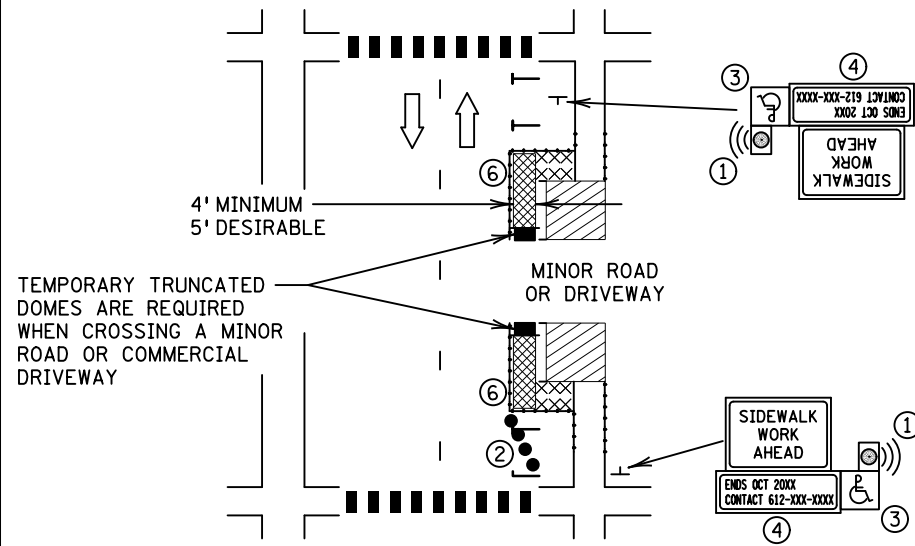
LEAD EXPERT OFFICE
 EDWARD LUTGEN
 OFFICE DIRECTOR
 BRIDGE OFFICE

m MINNESOTA
 DEPARTMENT OF TRANSPORTATION
 STANDARD PLAN 5-297.750 1 OF 1
 APPROVED: 08-09-2023
 REVISED:
 THOMAS STYRBICKI
 STATE DESIGN ENGINEER

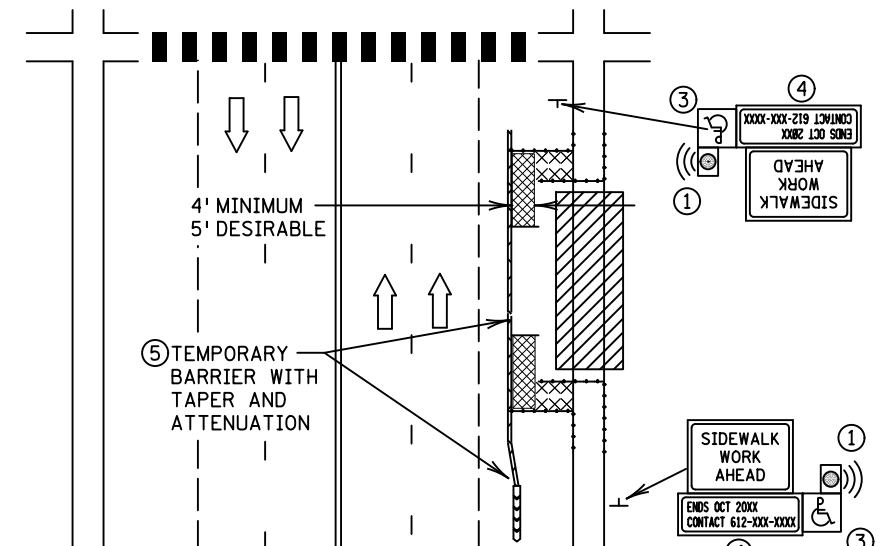
**I-BEAM AND PANEL MOUNTING
 POST MODIFICATION DETAILS**



BYPASS TYPE A
BYPASS ON ADJACENT AVAILABLE
RIGHT OF WAY



BYPASS TYPE B
SIDEWALK BYPASS USING PARKING OR
SHOULDER ON LOW-SPEED ROADWAY



BYPASS TYPE C
SIDEWALK BYPASS USING SHOULDER
OR PARKING LANE ON A MULTI-LANE
OR HIGH-SPEED ROADWAY

NOTES:

WHEN CLOSING OR RELOCATING CROSSWALKS OR SIDEWALKS, PROVIDE DETECTABLE TEMPORARY FACILITIES AND INCLUDE ACCESSIBILITY FEATURES CONSISTENT WITH EXISTING PEDESTRIAN FACILITIES. THE ALTERNATE PEDESTRIAN ROUTE (APR) MUST REMAIN OPEN AT ALL TIMES.

TEMPORARY TRAFFIC CONTROL DEVICES FOR PEDESTRIANS ARE SHOWN. OTHER DEVICES MAY BE NECESSARY TO CONTROL VEHICULAR TRAFFIC. STAGE WORK AS NECESSARY TO PROVIDE AN APR AT ALL TIMES FOR ROADWAYS WITH NO AVAILABLE DETOURS. PROVIDE A SMOOTH, CONTINUOUS, HARD SURFACE THROUGH THE LENGTH OF THE APR.

PROVIDE A FIRM, STABLE, FREE-DRAINING, NON-SLIP, TEMPORARY WALKWAY SURFACE REGARDLESS OF WEATHER CONDITIONS. SUPPORT THE TEMPORARY WALKWAY SURFACE WITH A SOLID BASE TO COVER SHORT SEGMENTS OF ROUGH, SOFT, OR UNEVEN GROUND. THE TEMPORARY WALKWAY SURFACE WILL ALLOW NORMAL USAGE OF WHEELCHAIRS, WALKERS, STROLLERS, AND OTHER MOBILITY DEVICES. CONCRETE, BITUMINOUS, STEEL, RUBBER, WOOD (3/4" OR THICKER), AND PLASTIC ARE ACCEPTABLE SURFACE MATERIALS FOR THE TEMPORARY WALKWAY SURFACE. GRAVEL, MILLINGS, AND OTHER UNEVEN SURFACES ARE NOT ACCEPTABLE SURFACE MATERIALS. IF NEEDED, PROVIDE SOIL STABILIZATION TO PREVENT EROSION AROUND TEMPORARY SURFACES. IF NEEDED, PROVIDE SOIL STABILIZATION TO PREVENT EROSION AROUND TEMPORARY SURFACES.

IF A 60" PEDESTRIAN WALKWAY WIDTH ISN'T PROVIDED FOR THE ROUTE, THEN A 60" BY 60" PASSING SPACE IS REQUIRED EVERY 200'. THE MINIMUM WIDTH OF THE WALKWAY IS 48".

COVER OR DEACTIVATE ANY PEDESTRIAN TRAFFIC SIGNALS CONTROLLING CLOSED CROSSWALKS.

POST-MOUNTED SIGNS LOCATED ADJACENT TO A SIDEWALK SHALL HAVE A 7' MINIMUM CLEARANCE FROM THE BOTTOM OF THE LOWEST SIGN TO THE SIDEWALK SURFACE. SHARED-USE PATH SHALL HAVE 8' MINIMUM CLEARANCE FROM THE BOTTOM OF THE LOWEST SIGN TO THE SHARED USE PATH SURFACE.

APR SHOULD BE KEPT FREE OF TRASH, SEDIMENT, AND DEBRIS.

ANY PORTABLE SIGN OR BARRICADE PLACED OR STORED IN A PEDESTRIAN WALKWAY THAT COULD POSE A HAZARD TO A VISUALLY-IMPAIRED PEDESTRIAN SHALL HAVE A DETECTABLE EDGE TO GUIDE THE PEDESTRIAN AROUND THE HAZARD. FOR ADDITIONAL GUIDANCE, SEE THE "DETECTABLE EDGE FOR SIGN ON PORTABLE STAND" DETAIL ON STANDARD PLAN 5-297.813.

MINIMIZE DISRUPTION TO PEDESTRIANS TO THE MAXIMUM EXTENT FEASIBLE BY PROVIDING AN APR IN THE FOLLOWING ORDER OF PREFERENCE:

1. PROVIDE THE APR ON THE SAME SIDE OF THE ROADWAY AS THE DISRUPTED ROUTE UTILIZING 2. BYPASSES.

3. WHERE NOT FEASIBLE TO PROVIDE A SAME-SIDE APR, PROVIDE AN APR DETOUR ON THE OTHER SIDE OF THE ROADWAY.

4. WHERE NOT FEASIBLE TO PROVIDE AN APR ON EITHER SIDE OF THE ROADWAY, PROVIDE AN APR DETOUR WITH TRAILBLAZING SIGNS.

① CONSIDER PROVIDING AN APPROVED AUDIBLE MESSAGE DEVICE OR TACTILE MESSAGE FOR PEDESTRIANS WITH VISUAL DISABILITIES.

② RECOMMENDED TAPER WHEN THE CLOSED AREA WAS PREVIOUSLY USED AS AN INTERMITTENT TRAFFIC LANE OR BYPASS LANE IS 25' LONG USING FIVE EQUALLY-SPACED CHANNELIZING DEVICES.

③ FOR FULLY-ACCESSIBLE WALKWAYS THROUGH WORKZONES, CONSIDER DISPLAYING THE INTERNATIONAL SYMBOL OF ACCESSIBILITY.

④ INCLUDE INFORMATION SUCH AS THE DURATION OF THE WALKWAY RESTRICTIONS (BEGINNING AND/OR END DATES) AND A PROJECT CONTACT NUMBER FOR 24/7 QUESTIONS OR REPORTING HAZARDS ON SIGNS FOR TEMPORARY PEDESTRIAN DETOURS.

⑤ SEE THE MOST CURRENT EDITION OF THE MNDOT TEMPORARY BARRIER GUIDANCE MANUAL FOR GUIDANCE ON PLACEMENT AND USAGE OF TEMPORARY BARRIER.

⑥ PROVIDE SOIL STABILIZATION AROUND TEMPORARY SURFACES TO PREVENT EROSION, IF NEEDED.

LEGEND

- ⊕ SIGN
- ▨ WORK AREA
- PEDESTRIAN CHANNELIZATION DEVICE
- TEMPORARY BARRIER
- ➡ DIRECTION OF TRAFFIC
- CHANNELIZER
- Ⓜ AUDIBLE MESSAGE DEVICE (AMD)
- ▩ TEMPORARY CURB RAMP WITH DETECTABLE EDGES
- ▨ TEMPORARY WALKWAY SURFACE

REVISIONS:
APPROVED: 03-18-2021
BRIAN SOBENSON STATE TRAFFIC ENGINEER



STANDARD PLAN 5-297.811 1 OF 2

APPROVED: 03-18-2021
REVISED:

THOMAS STYRBICKI
STATE DESIGN ENGINEER

ALTERNATE PEDESTRIAN ROUTE (APR) LAYOUTS



RAMSEY COUNTY, MINNESOTA
DIVISION AVE AND 8TH ST
PROJECT NO. 170689

STANDARD PLAN SHEET

SEH
FILE NO.
ISDWB170689

SPN25
OF SPN27

32
78

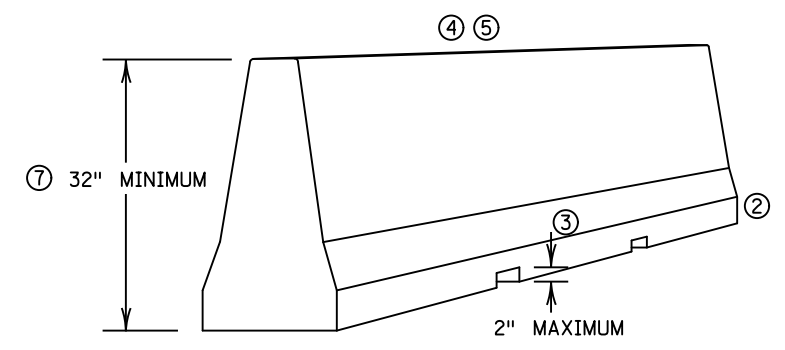
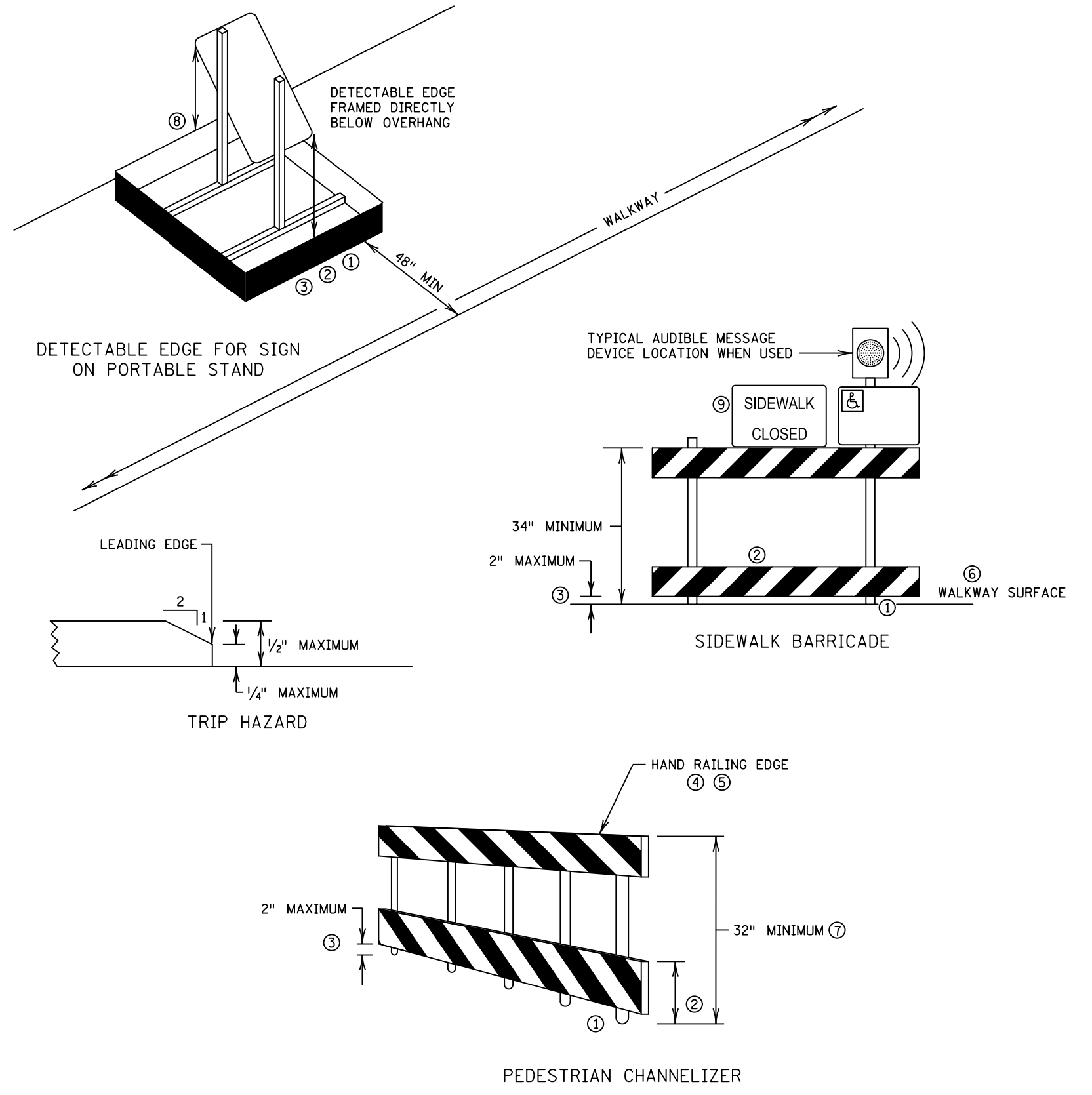
5:07:58 PM

2/9/2024

FILE: X:\F\J\1\ISDWB\170689\5-Final-dsgn\51-drawings\40-Transitwy\Plansheets\C0170689_spn1.dgn
MODEL: 813.1

NOTES;

- TPAR SHOULD BE KEPT FREE OF TRASH, SEDIMENT, AND DEBRIS.
 - RAILINGS OR OTHER OBJECTS MAY PROTRUDE A MAXIMUM OF 4" INTO THE WALKWAY CLEAR SPACE WHEN LOCATED A MINIMUM OF 27" ABOVE THE WALKWAY SURFACE.
 - USE CRASHWORTHY TEMPORARY BARRIERS WHEN USED AS A PEDESTRIAN CHANNELIZERS.
 - PLACE SIDEWALK BARRICADES ACROSS THE ENTIRE WIDTH OF THE WALKWAYSURFACE, WHEN USED.
 - USE INTERLOCKING DEVICES TO CHANNELIZE PEDESTRIAN FLOW TO PREVENT GAPS THAT COULD ALLOW PEDESTRIANS TO STRAY FROM THE CHANNELIZED PATH.
- ① PROVIDE DETECTABLE EDGE TO ANY TRIPPING HAZARD IN THE WALKWAY. LOCATE BALLAST BEHIND THE DETECTABLE EDGE OR INTEGRAL TO THE DEVICE. ANY SUPPORT ON THE FRONT OF THE DEVICE SHOULD NOT EXTEND INTO THE 48" MINIMUM WALKWAY CLEAR SPACE. ANY SUPPORT THAT EXTENDS INTO THE WALKWAY SHALL NOT EXCEED 1/2" HEIGHT ABOVE THE WALKWAY SURFACE; IF GREATER THAN 1/4", BEVEL AS SHOWN IN THE TRIP HAZARD DETAIL.
 - ② PROVIDE CONTINUOUS DETECTABLE EDGES EXTENDING AT LEAST 6" ABOVE THE WALKWAY SURFACE. MARK DETECTABLE EDGES WITH A COLOR THAT CONTRASTS WITH THE WALKWAY SURFACE. PLACE THE DETECTABLE EDGE AROUND ANY PORTABLE SIGN STAND IN THE WALKWAY AREA WHERE THE SIGN POSES A HAZARD TO A VISUALLY-IMPAIRED PEDESTRIAN.
 - ③ DEVICES AND DETECTABLE EDGES SHALL NOT BLOCK WATER DRAINAGE FROM THE WALKWAY. A GAP HEIGHT OR OPENING FROM THE WALKWAY SURFACE UP TO A MAXIMUM OF 2" IS ALLOWED FOR DRAINAGE PURPOSES.
 - ④ USE HAND AND GUIDE RAILS WHEN REQUIRED. INSTALL TOP RAIL OR TOP SURFACE IN A VERTICAL PLANE PERPENDICULAR TO THE WALKWAY, ABOVE THE DETECTABLE EDGE. PROVIDE CONTINUOUS RAIL AT A HEIGHT OF 34" TO 38" ABOVE THE WALKWAY SURFACE. USE RAIL SUPPORTS THAT MINIMIZE CONTACT WITH PEDESTRIAN'S HANDS AND FINGERS. SEE "PUBLIC RIGHTS OF WAY ACCESSIBILITY GUIDELINES (PROWAG) 2005" FOR ADDITIONAL GUIDANCE ON USE OF HAND AND GUIDE RAILS.
 - ⑤ USE DEVICES FREE OF SHARP OR ROUGH EDGES, AND USE ROUNDED FASTENERS (BOLTS) TO PREVENT HARM TO A PEDESTRIAN'S HANDS, ARMS, AND CLOTHING.
 - ⑥ REGARDLESS OF WEATHER CONDITIONS PROVIDE FIRM, STABLE, FREE-DRAINING, AND NON-SLIP TEMPORARY WALKWAY SURFACES. TEMPORARY WALKWAY SURFACES SHALL ALLOW NORMAL USAGE OF WHEELCHAIRS, WALKERS, STROLLERS, OR OTHER MOBILITY DEVICES. CONCRETE, BITUMINOUS, STEEL, RUBBER, WOOD (3/4" OR THICKER), AND PLASTIC ARE ACCEPTABLE SURFACE MATERIALS FOR A TEMPORARY WALKWAY SURFACE. GRAVEL, MILLINGS, AND OTHER UNEVEN SURFACES ARE NOT ACCEPTABLE SURFACE MATERIALS.
 - ⑦ PROVIDE 32" HIGH OR GREATER LONGITUDINAL CHANNELIZING DEVICES FOR PEDESTRIANS.
 - ⑧ AN EDGE OF THE FRAMING MAY BE REMOVED IF IT IS NOT NEEDED FOR PEDESTRIAN GUIDANCE. STABILITY OF THE DETECTABLE EDGE SHOULD BE MAINTAINED.
 - ⑨ TYPICAL. SEE SIGNING PLAN FOR DETAILS.



PEDESTRIAN CHANNELIZER DEVICE USING A PORTABLE CONCRETE BARRIER

REVISION:
APPROVED: 03-18-2021
<i>Brian Sobenson</i> BRIAN SOBENSON STATE TRAFFIC ENGINEER

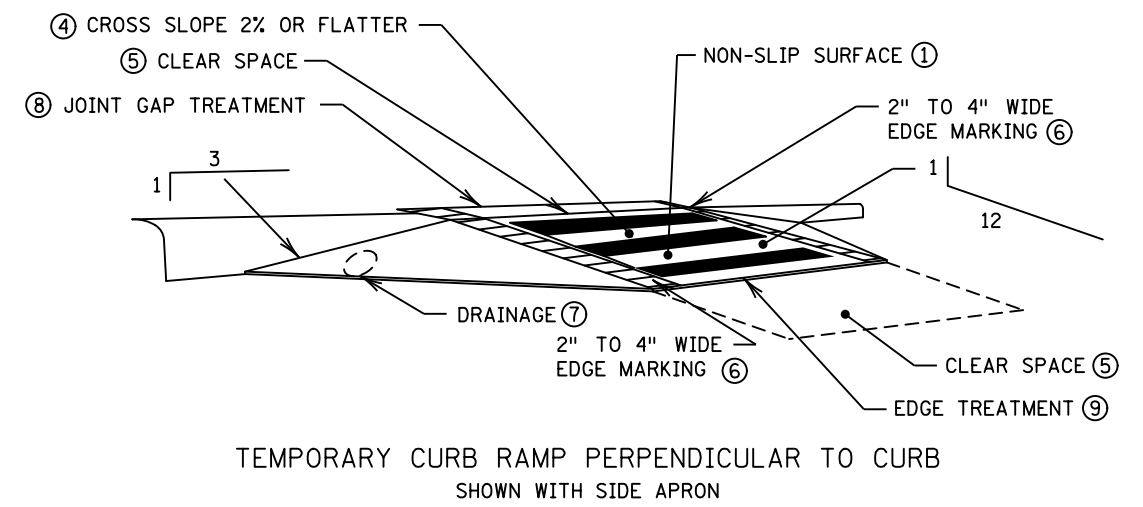
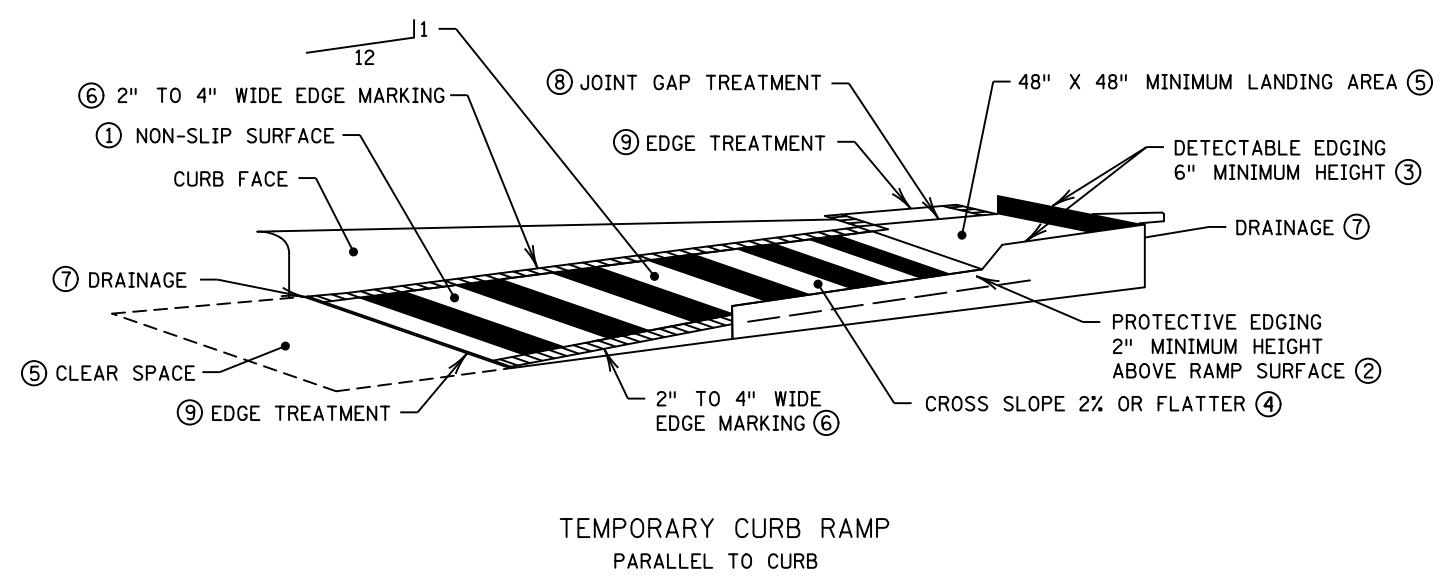
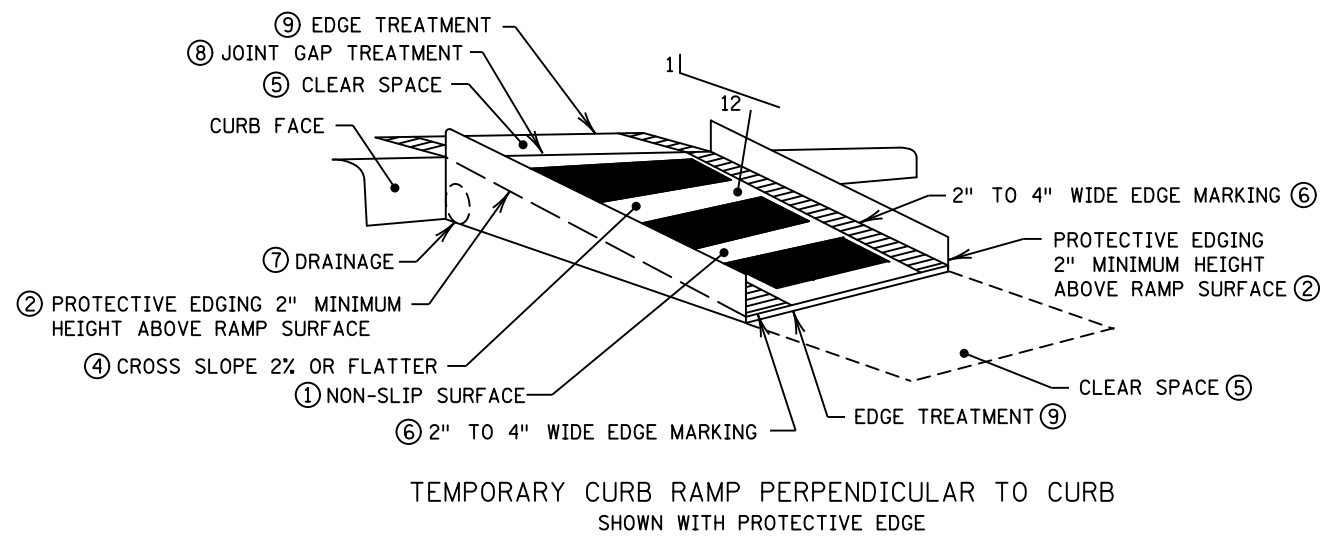
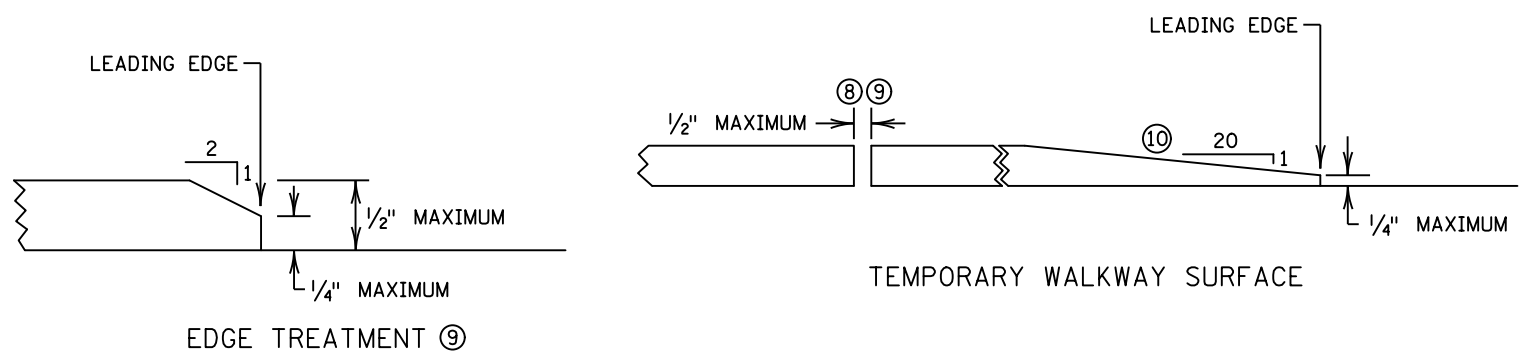
m MINNESOTA DEPARTMENT OF TRANSPORTATION	STANDARD PLAN 5-297.813 <i>Tom Styrbicki</i> THOMAS STYRBICKI STATE DESIGN ENGINEER	1 OF 2 APPROVED: 03-18-2021 REVISED:
---	--	--

TEMPORARY PEDESTRIAN ACCESS ROUTE (TPAR) DEVICES CHANNELIZERS, SIDEWALK BARRICADES, AND PORTABLE STANDS

NOTES:

CONSTRUCT SLOPES AS INDICATED OR FLATTER, BUT NOT STEEPER.
TPAR SHOULD BE KEPT FREE OF TRASH, SEDIMENT, AND DEBRIS.

- ① CONSTRUCT CURB RAMPS AT LEAST 48" WIDE WITH A FIRM, STABLE, AND SLIP-RESISTANT SURFACE.
- ② PLACE PROTECTIVE EDGING WITH A 2" MINIMUM HEIGHT WHEN A CURB RAMP OR LANDING PLATFORM HAS A VERTICAL DROP OF 6" OR GREATER OR HAS A SIDE APRON SLOPE STEEPER THAN 1V:3H. CONSIDER PROTECTIVE EDGING WHEN CURB RAMPS OR LANDING PLATFORMS HAVE A VERTICAL DROP OF 3" OR MORE.
- ③ PLACE DETECTABLE EDGING WITH 6" MINIMUM HEIGHT AND CONTRASTING COLOR ON ALL CURB RAMP LANDINGS WHERE THE WALKWAY CHANGES DIRECTION.
- ④ CONSTRUCT CURB RAMPS AND LANDINGS WITH A 2% OR FLATTER CROSS SLOPE.
- ⑤ PROVIDE A CLEAR SPACE OF AT LEAST 48" X 48" ABOVE AND BELOW THE CURB RAMP.
- ⑥ MARK THE CURB RAMP WALKWAY EDGE WITH A 2" TO 4" WIDE MARKING OF CONTRASTING COLOR. THE MARKING IS OPTIONAL WHERE COLOR-CONTRASTING EDGING IS USED.
- ⑦ DO NOT IMPEDE WATER FLOW IN THE GUTTER SYSTEM.
- ⑧ NO LATERAL JOINTS OR GAPS BETWEEN SURFACES SHALL EXCEED 1/2" WIDTH.
- ⑨ CHANGES BETWEEN SURFACE HEIGHTS SHALL NOT EXCEED 1/2". USE VERTICAL LATERAL EDGES UP TO 1/4" HIGH, AND BEVELED AT 1V:2H FOR LATERAL EDGES BETWEEN 1/4" AND 1/2" HEIGHT.
- ⑩ BEVEL THE EDGE OF TEMPORARY WALKWAY SURFACES 1/2" OR THINNER AT 1V:2H. FOR THICKER WALKWAY SURFACE BEVEL EDGE 1V:20H OR FLATTER.



REVISIONS:
APPROVED: 03-18-2021
<i>Brian Sobenson</i> BRIAN SOBENSON STATE TRAFFIC ENGINEER

	STANDARD PLAN 5-297.813	2 OF 2
	 THOMAS STYRBICKI STATE DESIGN ENGINEER	
APPROVED: 03-18-2021 REVISED:		

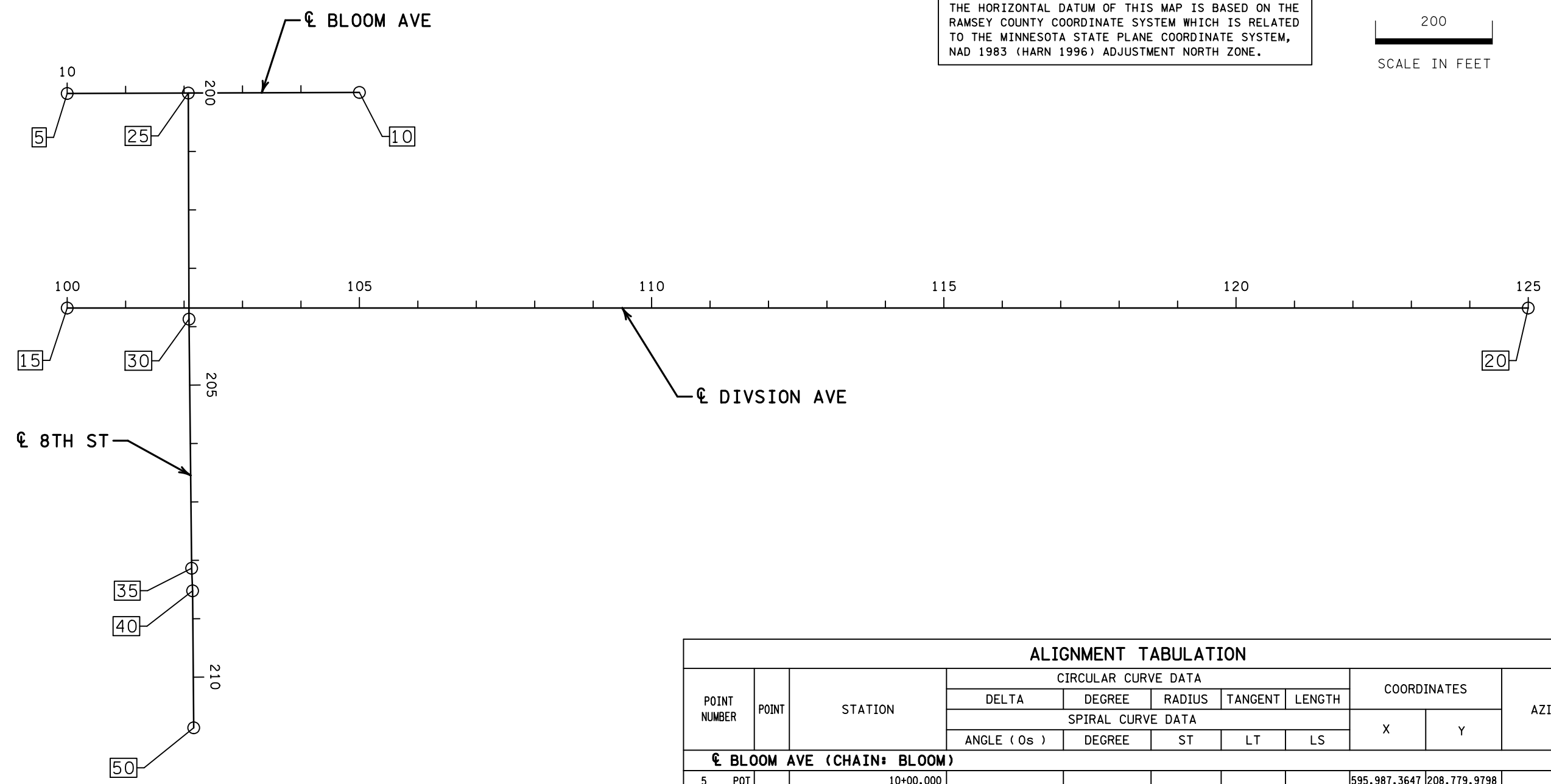
TEMPORARY PEDESTRIAN ACCESS ROUTE (TPAR) DEVICES
TEMPORARY CURB RAMPS AND WALKWAY SURFACES

5:07:59 PM

2/9/2024

FILE: X:\F\J\1\ISDWB\170689\5-Final-dgn\51-drawings\40-Transhwy\Plansheets\CD170689.dtl.dgn
MODEL: all

HORIZONTAL CONTROL DATUM
 THE HORIZONTAL DATUM OF THIS MAP IS BASED ON THE RAMSEY COUNTY COORDINATE SYSTEM WHICH IS RELATED TO THE MINNESOTA STATE PLANE COORDINATE SYSTEM, NAD 1983 (HARN 1996) ADJUSTMENT NORTH ZONE.



ALIGNMENT TABULATION										
POINT NUMBER	POINT	STATION	CIRCULAR CURVE DATA					COORDINATES		AZIMUTH
			DELTA	DEGREE	RADIUS	TANGENT	LENGTH	X	Y	
			SPIRAL CURVE DATA							
ANGLE (Os)	DEGREE	ST	LT	LS						
CL BLOOM AVE (CHAIN: BLOOM)										
5	POT	10+00.000						595,987.3647	208,779.9798	
10	POT	15+00.000						595,984.5673	209,279.9720	
CL DIVISION AVE (CHAIN: DIVISION)										
15	POT	100+00.000						596,354.6071	208,780.7080	
20	POT	125+00.000						596,349.6501	211,280.7031	
CL 8TH ST (CHAIN: 8TH)										
25	POT	200+00.000						595,986.2054	208,987.1959	
30	POT	203+87.015						596,373.2152	208,989.1578	
35	POT	208+13.482						596,799.6485	208,994.5452	
40	POT	208+52.189						596,838.3188	208,996.2291	
45	POT	210+86.643						597,072.7607	208,998.6199	

DESIGN TEAM			
DRAWN BY:	MTT		
DESIGNER:	JCB		
CHECKED BY:	JCB		
NO.	BY	DATE	REVISIONS

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.
 Certified By: Joshua C. Breid Lic. No. 59756
 Licensed Professional Engineer
 Printed Name: JOSHUA C. BREID Date: 02/09/2023



RAMSEY COUNTY, MINNESOTA
DIVISION AVE AND 8TH ST
 PROJECT NO. 170689

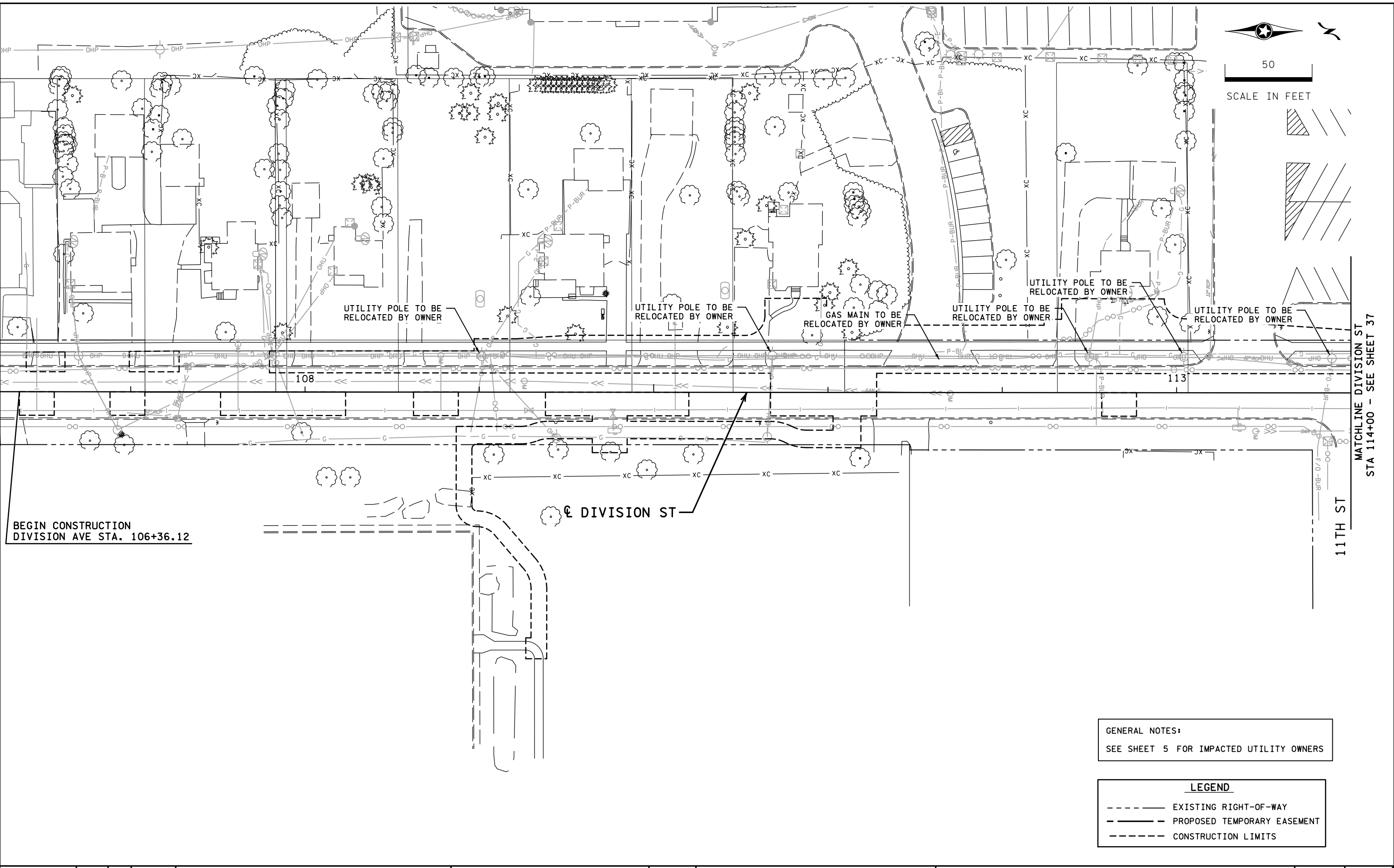
ALIGNMENT PLAN AND TABULATION
 DIVISION AVE, 8TH ST, BLOOM AVE

SEH
 FILE NO.
 ISDWB170689
 AL 1
 OF AL 1
35
78

5:08:00 PM

2/9/2024

FILE: X:\F\J\1\ISDWB\170689\5-final-dgn\51-drawings\40-Trans Hwy\Plansheets\0170689-tp1.dgn
MODEL: tp1



UTILITY POLE TO BE RELOCATED BY OWNER

UTILITY POLE TO BE RELOCATED BY OWNER

GAS MAIN TO BE RELOCATED BY OWNER

UTILITY POLE TO BE RELOCATED BY OWNER

UTILITY POLE TO BE RELOCATED BY OWNER

BEGIN CONSTRUCTION
DIVISION AVE STA. 106+36.12

8 DIVISION ST

11TH ST

MATCHLINE DIVISION ST
STA 114+00 - SEE SHEET 37

GENERAL NOTES:
SEE SHEET 5 FOR IMPACTED UTILITY OWNERS

LEGEND
 - - - - - EXISTING RIGHT-OF-WAY
 _____ PROPOSED TEMPORARY EASEMENT
 - - - - - CONSTRUCTION LIMITS

DESIGN TEAM			
DRAWN BY:	MTT		
DESIGNER:	JCB		
CHECKED BY:	JCB		
NO.	BY	DATE	REVISIONS

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.
 Certified By: *Joshua Breid* Lic. No. 59756
 Printed Name: JOSHUA C. BREID Date: 02/09/2023



RAMSEY COUNTY, MINNESOTA
DIVISION AVE AND 8TH ST
 PROJECT NO. 170689

**INPLACE UTILITY
 AND TOPOGRAPHY PLAN**
 DIVISION AVE STA 106+82.63 TO 114+00.00

SEH
 FILE NO.
 ISDWB170689
 TP1
 OF TP4
36
78

MATCHLINE DIVISION ST
STA 114+00 - SEE SHEET 36

11TH ST

115

☉ DIVISION ST

12TH ST

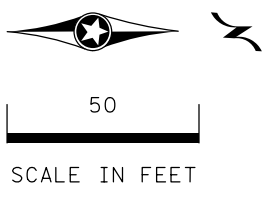
120

DIVISION CT

END CONSTRUCTION
DIVISION AVE STA. 121+55.42

GENERAL NOTES:
SEE SHEET 5 FOR IMPACTED UTILITY OWNERS

LEGEND
- - - - - EXISTING RIGHT-OF-WAY
- - - - - PROPOSED TEMPORARY EASEMENT
- - - - - CONSTRUCTION LIMITS



DESIGN TEAM				REVISIONS
DRAWN BY:	MIT			
DESIGNER:	JCB			
CHECKED BY:	JCB			
NO.	BY	DATE		

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.
 Certified By: Joshua Breid Lic. No. 59756
 Licensed Professional Engineer
 Printed Name: JOSHUA C. BREID Date: 02/09/2023



RAMSEY COUNTY, MINNESOTA
DIVISION AVE AND 8TH ST
 PROJECT NO. 170689

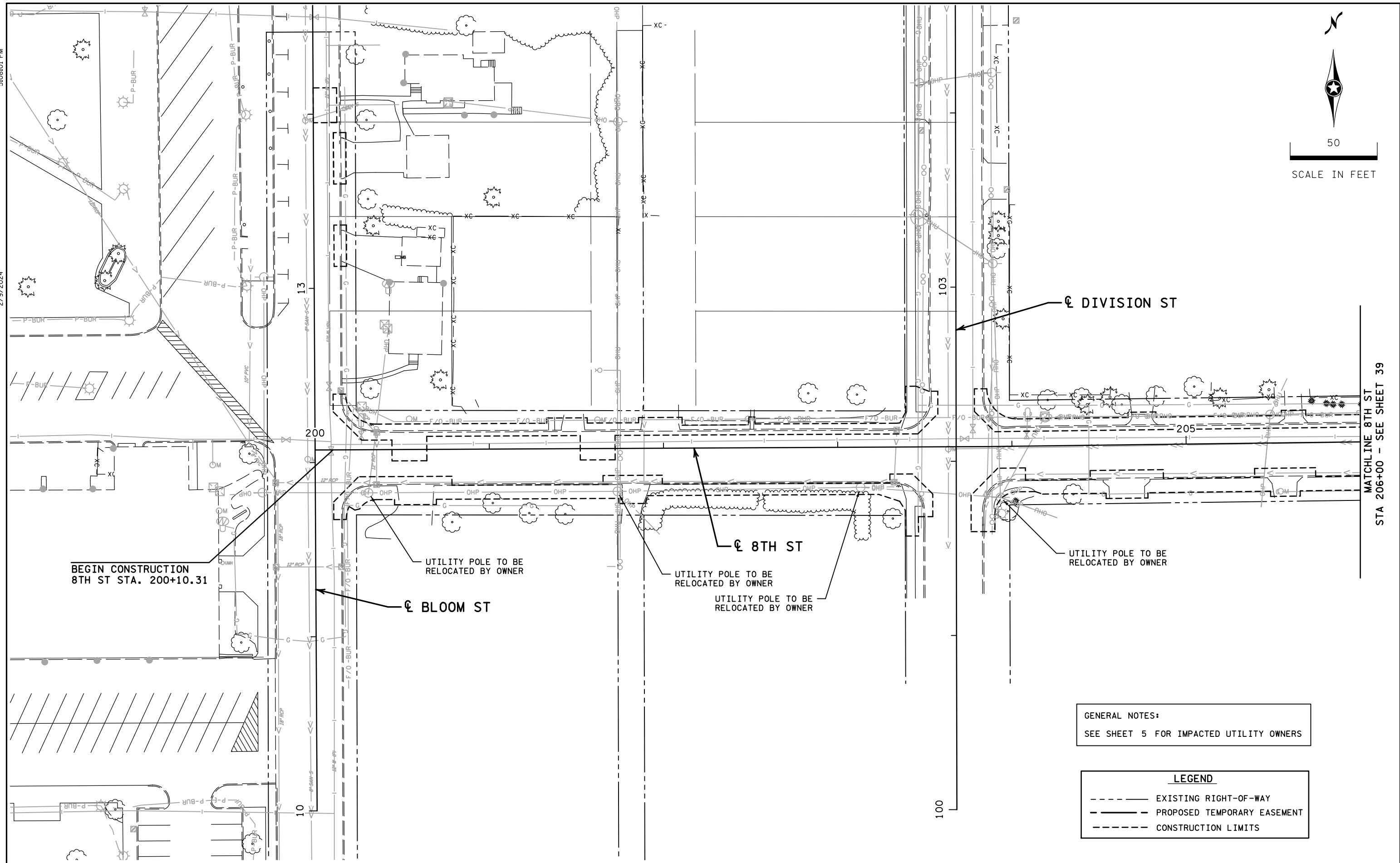
**INPLACE UTILITY
 AND TOPOGRAPHY PLAN**
 DIVISION AVE STA 114+00.00 TO 121+55.42

SEH FILE NO. ISDWB170689	37
TP2 OF TP4	78

5:08:01 PM

2/9/2024

FILE: X:\F\J\1\ISDWB\170689\5-final-dsgn\51-drawings\40-Transhwy\Plansheets\C0170689_tp1.dgn
MODEL: tp3



BEGIN CONSTRUCTION
8TH ST STA. 200+10.31

UTILITY POLE TO BE
RELOCATED BY OWNER

UTILITY POLE TO BE
RELOCATED BY OWNER

UTILITY POLE TO BE
RELOCATED BY OWNER

UTILITY POLE TO BE
RELOCATED BY OWNER

GENERAL NOTES:
SEE SHEET 5 FOR IMPACTED UTILITY OWNERS

LEGEND
- - - - - EXISTING RIGHT-OF-WAY
- - - - - PROPOSED TEMPORARY EASEMENT
- - - - - CONSTRUCTION LIMITS

DESIGN TEAM			
DRAWN BY:	MTT		
DESIGNER:	JCB		
CHECKED BY:	JCB		
NO.	BY	DATE	REVISIONS

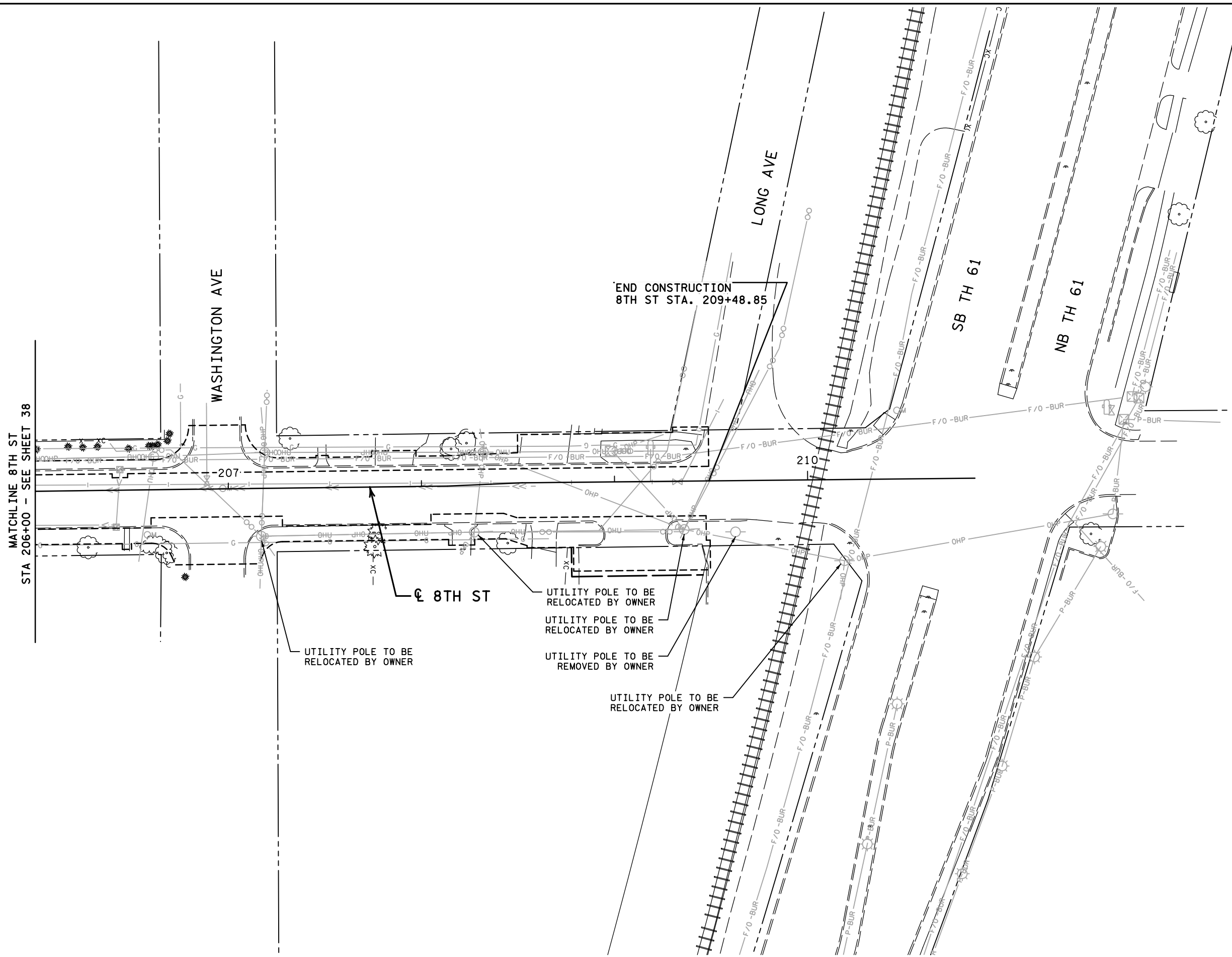
I hereby certify that this plan was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.
Certified By: Joshua Breid Lic. No. 59756
Printed Name: JOSHUA C. BREID Date: 02/09/2023



RAMSEY COUNTY, MINNESOTA
DIVISION AVE AND 8TH ST
PROJECT NO. 170689

INPLACE UTILITY
AND TOPOGRAPHY PLAN
8TH ST STA 200+10.31 TO 206+00

SEH
FILE NO.
ISDWB170689
TP3
OF TP4
38
78



END CONSTRUCTION
8TH ST STA. 209+48.85

UTILITY POLE TO BE
RELOCATED BY OWNER

UTILITY POLE TO BE
RELOCATED BY OWNER

UTILITY POLE TO BE
REMOVED BY OWNER

UTILITY POLE TO BE
RELOCATED BY OWNER

GENERAL NOTES:
SEE SHEET 5 FOR IMPACTED UTILITY OWNERS

LEGEND
- - - - - EXISTING RIGHT-OF-WAY
- - - - - PROPOSED TEMPORARY EASEMENT
- - - - - CONSTRUCTION LIMITS

DESIGN TEAM				REVISIONS			
DRAWN BY:	MTT			NO.	BY	DATE	
DESIGNER:	JCB						
CHECKED BY:	JCB						

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.
Certified By: *Joshua Breid* Lic. No. 59756
Printed Name: JOSHUA C. BREID Date: 02/09/2023



RAMSEY COUNTY, MINNESOTA
DIVISION AVE AND 8TH ST
PROJECT NO. 170689

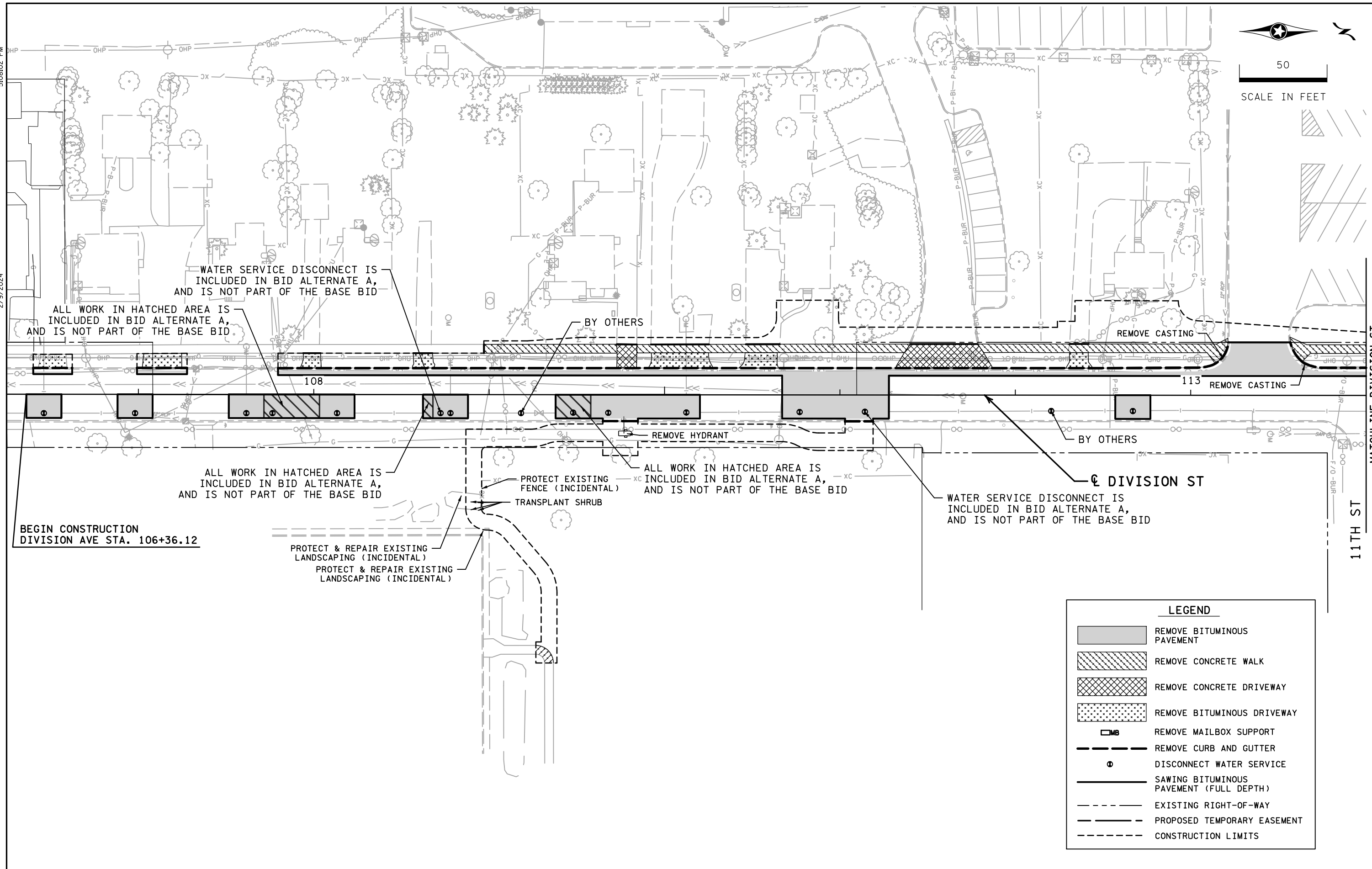
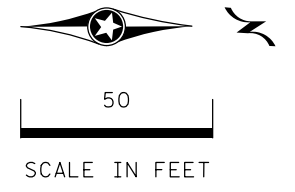
**INPLACE UTILITY
AND TOPOGRAPHY PLAN**
8TH ST STA 206+00 TO 209+48.85

SEH
FILE NO.
1SDWB170689
39
TP4
OF TP4
78

5:08:02 PM

2/9/2024

FILE: X:\F\J\1\ISDWB\170689\5-final-dgn\51-drawings\40-Transhwy\Plansheets\C0170689_r.eml.dgn
MODEL: rem1



WATER SERVICE DISCONNECT IS INCLUDED IN BID ALTERNATE A, AND IS NOT PART OF THE BASE BID

ALL WORK IN HATCHED AREA IS INCLUDED IN BID ALTERNATE A, AND IS NOT PART OF THE BASE BID

BY OTHERS

REMOVE CASTING

108

113 REMOVE CASTING

REMOVE HYDRANT

BY OTHERS

ALL WORK IN HATCHED AREA IS INCLUDED IN BID ALTERNATE A, AND IS NOT PART OF THE BASE BID

PROTECT EXISTING FENCE (INCIDENTAL)
TRANSPLANT SHRUB

ALL WORK IN HATCHED AREA IS INCLUDED IN BID ALTERNATE A, AND IS NOT PART OF THE BASE BID

WATER SERVICE DISCONNECT IS INCLUDED IN BID ALTERNATE A, AND IS NOT PART OF THE BASE BID

÷ DIVISION ST

BEGIN CONSTRUCTION
DIVISION AVE STA. 106+36.12

PROTECT & REPAIR EXISTING LANDSCAPING (INCIDENTAL)
PROTECT & REPAIR EXISTING LANDSCAPING (INCIDENTAL)

MATCHLINE DIVISION ST
STA 114+00 - SEE SHEET 41
11TH ST

LEGEND	
	REMOVE BITUMINOUS PAVEMENT
	REMOVE CONCRETE WALK
	REMOVE CONCRETE DRIVEWAY
	REMOVE BITUMINOUS DRIVEWAY
	REMOVE MAILBOX SUPPORT
	REMOVE CURB AND GUTTER
	DISCONNECT WATER SERVICE
	SAWING BITUMINOUS PAVEMENT (FULL DEPTH)
	EXISTING RIGHT-OF-WAY
	PROPOSED TEMPORARY EASEMENT
	CONSTRUCTION LIMITS

DESIGN TEAM				
DRAWN BY:	MTT			
DESIGNER:	JCB			
CHECKED BY:	JCB			
NO.	BY	DATE	REVISIONS	

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.
Certified By: *Joshua Breid* Lic. No. 59756
Printed Name: JOSHUA C. BREID Date: 02/09/2023



RAMSEY COUNTY, MINNESOTA
DIVISION AVE AND 8TH ST
PROJECT NO. 170689

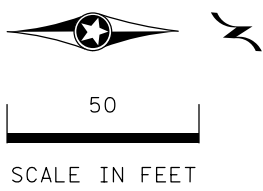
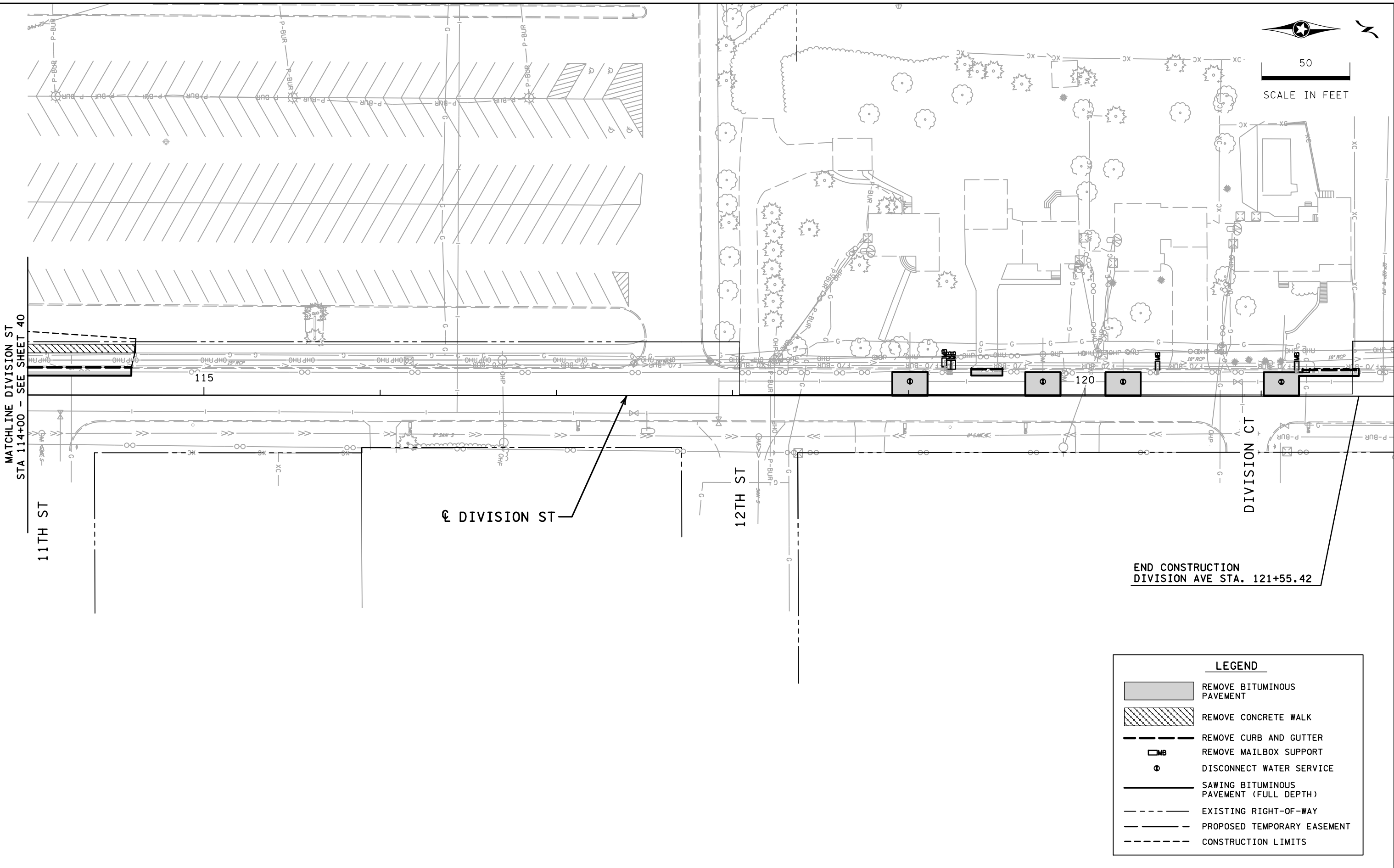
REMOVAL PLAN
DIVISION AVE STA 106+82.63 TO 114+00.00

SEH FILE NO. ISDWB170689	40
RM1 OF RM4	78

5:08:02 PM

2/9/2024

FILE: X:\FJV\ISDWB\170689\5-final-dsgn\51-drawings\40-Transhwy\Plansheets\C0170689_rem1.dgn
MODEL: rem2



MATCHLINE DIVISION ST
STA 114+00 - SEE SHEET 40

11TH ST

☉ DIVISION ST

12TH ST

DIVISION CT

END CONSTRUCTION
DIVISION AVE STA. 121+55.42

LEGEND	
	REMOVE BITUMINOUS PAVEMENT
	REMOVE CONCRETE WALK
	REMOVE CURB AND GUTTER
	REMOVE MAILBOX SUPPORT
	DISCONNECT WATER SERVICE
	SAWING BITUMINOUS PAVEMENT (FULL DEPTH)
	EXISTING RIGHT-OF-WAY
	PROPOSED TEMPORARY EASEMENT
	CONSTRUCTION LIMITS

DESIGN TEAM				
DRAWN BY:	MIT			
DESIGNER:	JCB			
CHECKED BY:	JCB			
NO.	BY	DATE	REVISIONS	

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.

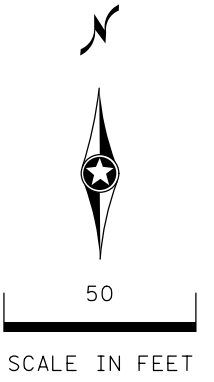
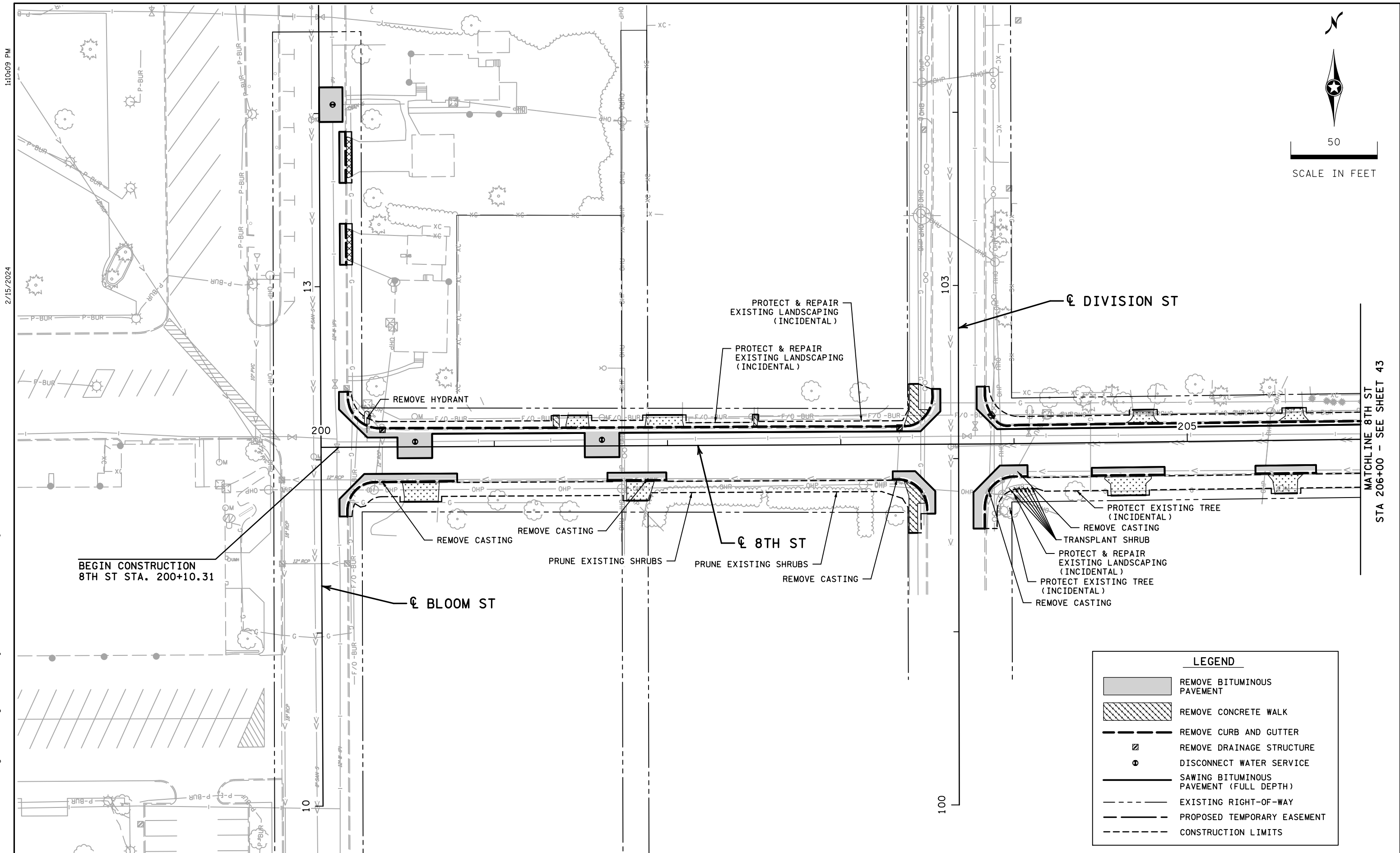
Certified By: Joshua Breid Lic. No. 59756
 Licensed Professional Engineer
 Printed Name: JOSHUA C. BREID Date: 02/09/2023



RAMSEY COUNTY, MINNESOTA
DIVISION AVE AND 8TH ST
 PROJECT NO. 170689

REMOVAL PLAN
 DIVISION AVE STA 114+00.00 TO 121+55.42

SEH FILE NO. ISDWB170689	41
RM2 OF RM4	78



LEGEND	
	REMOVE BITUMINOUS PAVEMENT
	REMOVE CONCRETE WALK
	REMOVE CURB AND GUTTER
	REMOVE DRAINAGE STRUCTURE
	DISCONNECT WATER SERVICE
	SAWING BITUMINOUS PAVEMENT (FULL DEPTH)
	EXISTING RIGHT-OF-WAY
	PROPOSED TEMPORARY EASEMENT
	CONSTRUCTION LIMITS

1:10:09 PM

2/15/2024

FILE: X:\F\1\15DWB\170689\5-final-dsgn\51-drawings\40-Transhwy\Plansheets\C0170689_r.eml.dgn
MODEL: rem3

DESIGN TEAM				
DRAWN BY:	MTT			
DESIGNER:	JCB			
CHECKED BY:	JCB			
NO.	BY	DATE	REVISIONS	

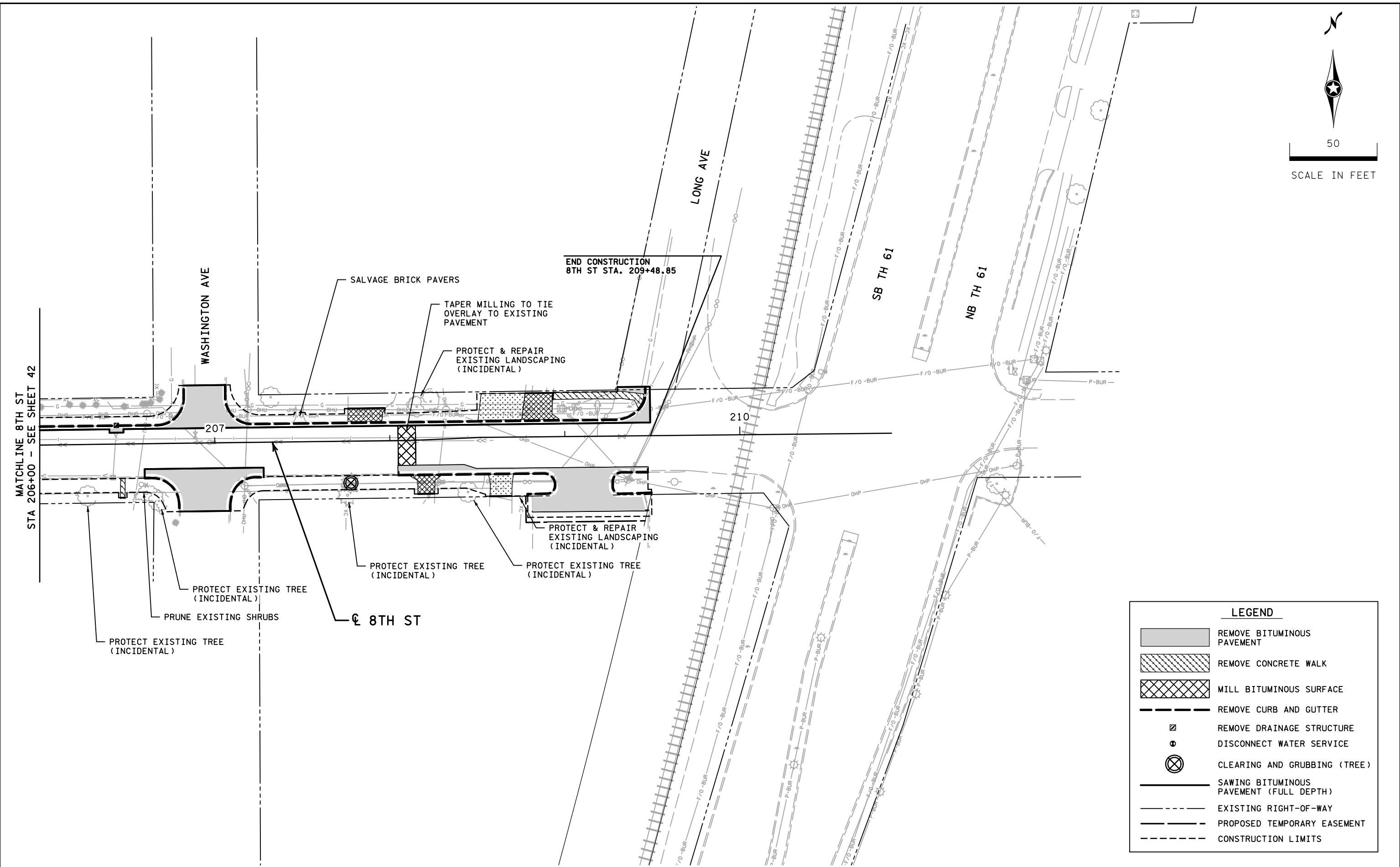
I hereby certify that this plan was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.
Certified By: Joshua Breid Lic. No. 59756
Printed Name: JOSHUA C. BREID Date: 02/15/2023



RAMSEY COUNTY, MINNESOTA
DIVISION AVE AND 8TH ST
PROJECT NO. 170689

REMOVAL PLAN
8TH ST STA 200+10.31 TO 206+00

SEH FILE NO. 15DWB170689	42
RM3 OF RM4	78



LEGEND

	REMOVE BITUMINOUS PAVEMENT
	REMOVE CONCRETE WALK
	MILL BITUMINOUS SURFACE
	REMOVE CURB AND GUTTER
	REMOVE DRAINAGE STRUCTURE
	DISCONNECT WATER SERVICE
	CLEARING AND GRUBBING (TREE)
	SAWING BITUMINOUS PAVEMENT (FULL DEPTH)
	EXISTING RIGHT-OF-WAY
	PROPOSED TEMPORARY EASEMENT
	CONSTRUCTION LIMITS

DESIGN TEAM			
DRAWN BY:	MTT		
DESIGNER:	JCB		
CHECKED BY:	JCB		
NO.	BY	DATE	REVISIONS

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.
 Certified By: *Joshua Breid* Lic. No. 59756
 Licensed Professional Engineer
 Printed Name: JOSHUA C. BREID Date: 02/09/2023

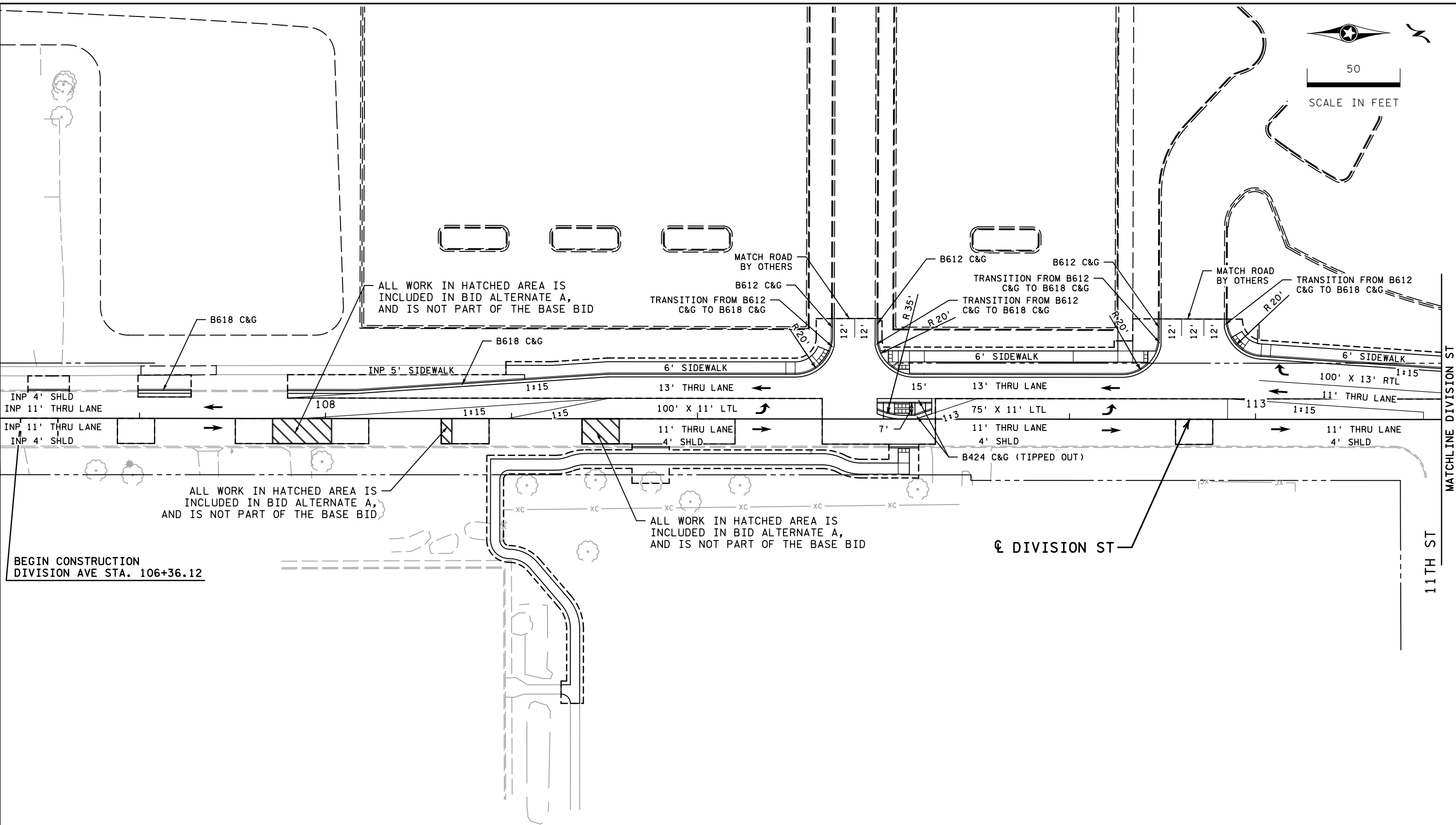
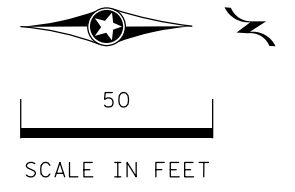


RAMSEY COUNTY, MINNESOTA
DIVISION AVE AND 8TH ST
 PROJECT NO. 170689

REMOVAL PLAN		SEH FILE NO. ISDWB170689	43
8TH ST STA 206+00 TO 209+48.85		RM4 OF RM4	78

5:08:03 PM

2/9/2024



BEGIN CONSTRUCTION
DIVISION AVE STA. 106+36.12

MATCHLINE DIVISION ST
STA 114+00 - SEE SHEET 45

11TH ST

LEGEND	
---	EXISTING RIGHT-OF-WAY
---	PROPOSED TEMPORARY EASEMENT
---	CONSTRUCTION LIMITS

FILE: X:\F\J\1\ISDWB\170689\5-final-dsgn\51-drawings\40-Transition\Plansheets\CD170689_cpl.dgn
MODEL: cpl

DESIGN TEAM				
DRAWN BY:	MTT			
DESIGNER:	JCB			
CHECKED BY:	JCB			
NO.	BY	DATE	REVISIONS	

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.
Certified By: *Joshua Breid* Lic. No. 59756
Printed Name: JOSHUA C. BREID Date: 02/09/2023



RAMSEY COUNTY, MINNESOTA
DIVISION AVE AND 8TH ST
PROJECT NO. 170689

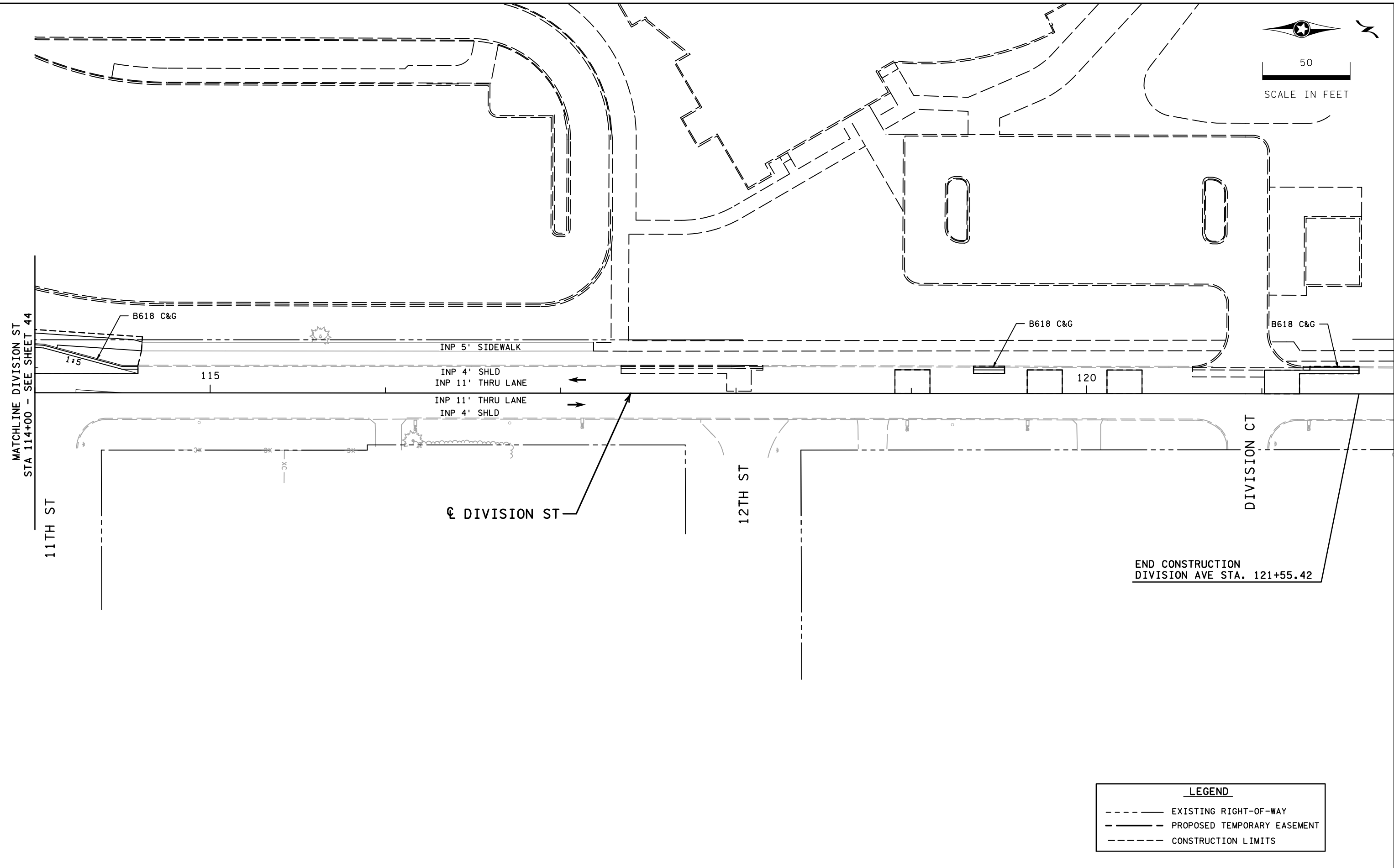
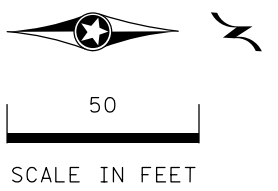
CONSTRUCTION PLAN
DIVISION AVE STA 106+82.63 TO 114+00.00

SEH FILE NO. ISDWB170689	44
CP1 OF CP4	78

5:08:04 PM

2/9/2024

FILE: X:\F\J\1\ISDWB\170689\5-final-dsgn\51-drawings\40-Transhwy\Plansheets\CD170689_cpl.dgn
MODEL: cp2



LEGEND	
-----	EXISTING RIGHT-OF-WAY
-----	PROPOSED TEMPORARY EASEMENT
-----	CONSTRUCTION LIMITS

DESIGN TEAM				
DRAWN BY:	MTT			
DESIGNER:	JCB			
CHECKED BY:	JCB			
NO.	BY	DATE	REVISIONS	

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.

Certified By: Joshua Breid Lic. No. 59756

Printed Name: JOSHUA C. BREID Date: 02/09/2023



RAMSEY COUNTY, MINNESOTA
DIVISION AVE AND 8TH ST
PROJECT NO. 170689

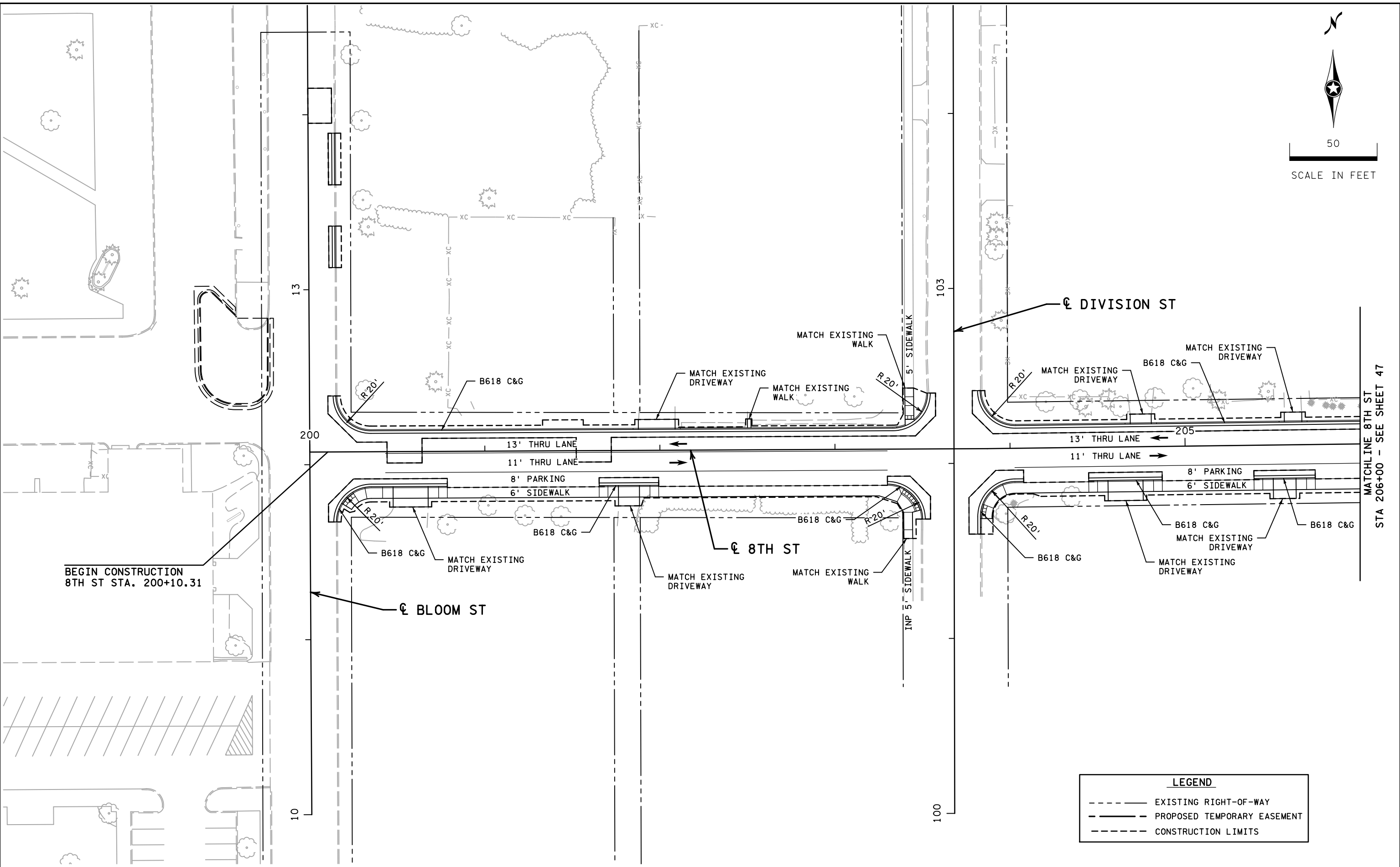
CONSTRUCTION PLAN
DIVISION AVE STA 114+00.00 TO 121+55.42

SEH FILE NO. ISDWB170689	45
CP2 OF CP4	78

5:08:04 PM

2/9/2024

FILE: X:\F\J\1\ISDWB\170689\5-final-dsgn\51-drawings\40-Transitwy\Plansheets\CD170689_cpl.dgn
MODEL: cp3



LEGEND	
---	EXISTING RIGHT-OF-WAY
---	PROPOSED TEMPORARY EASEMENT
---	CONSTRUCTION LIMITS

DESIGN TEAM			
DRAWN BY:	MTT		
DESIGNER:	JCB		
CHECKED BY:	JCB		
NO.	BY	DATE	REVISIONS

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.
 Certified By: Joshua Breid Lic. No. 59756
 Licensed Professional Engineer
 Printed Name: JOSHUA C. BREID Date: 02/09/2023



RAMSEY COUNTY, MINNESOTA
DIVISION AVE AND 8TH ST
 PROJECT NO. 170689

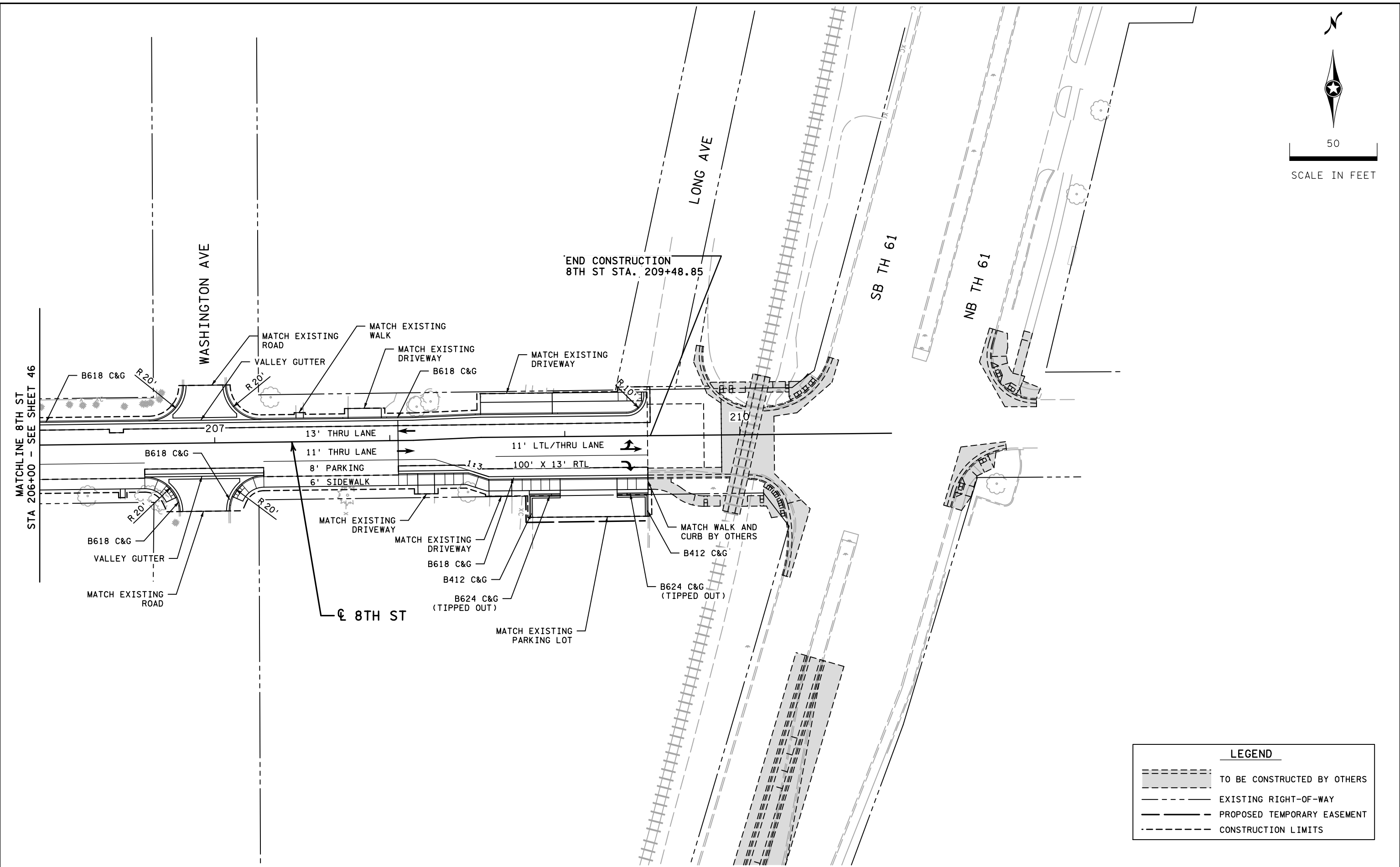
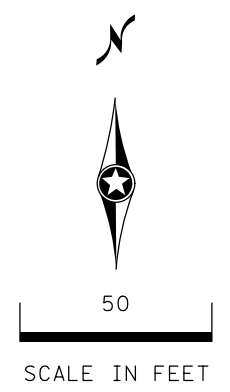
CONSTRUCTION PLAN
 8TH ST STA 200+10.31 TO 206+00

SEH FILE NO. ISDWB170689	46
CP3 OF CP4	78

5:08:04 PM

2/9/2024

FILE: X:\F\J\1\ISDWB\170689\5-f\final-dsgn\51-dr\dwg\40-Trans\hwy\Plansheets\0170689_cp1.dgn
MODEL: cp4



LEGEND	
	TO BE CONSTRUCTED BY OTHERS
	EXISTING RIGHT-OF-WAY
	PROPOSED TEMPORARY EASEMENT
	CONSTRUCTION LIMITS

DESIGN TEAM				
DRAWN BY:	MTT			
DESIGNER:	JCB			
CHECKED BY:	JCB			
NO.	BY	DATE	REVISIONS	

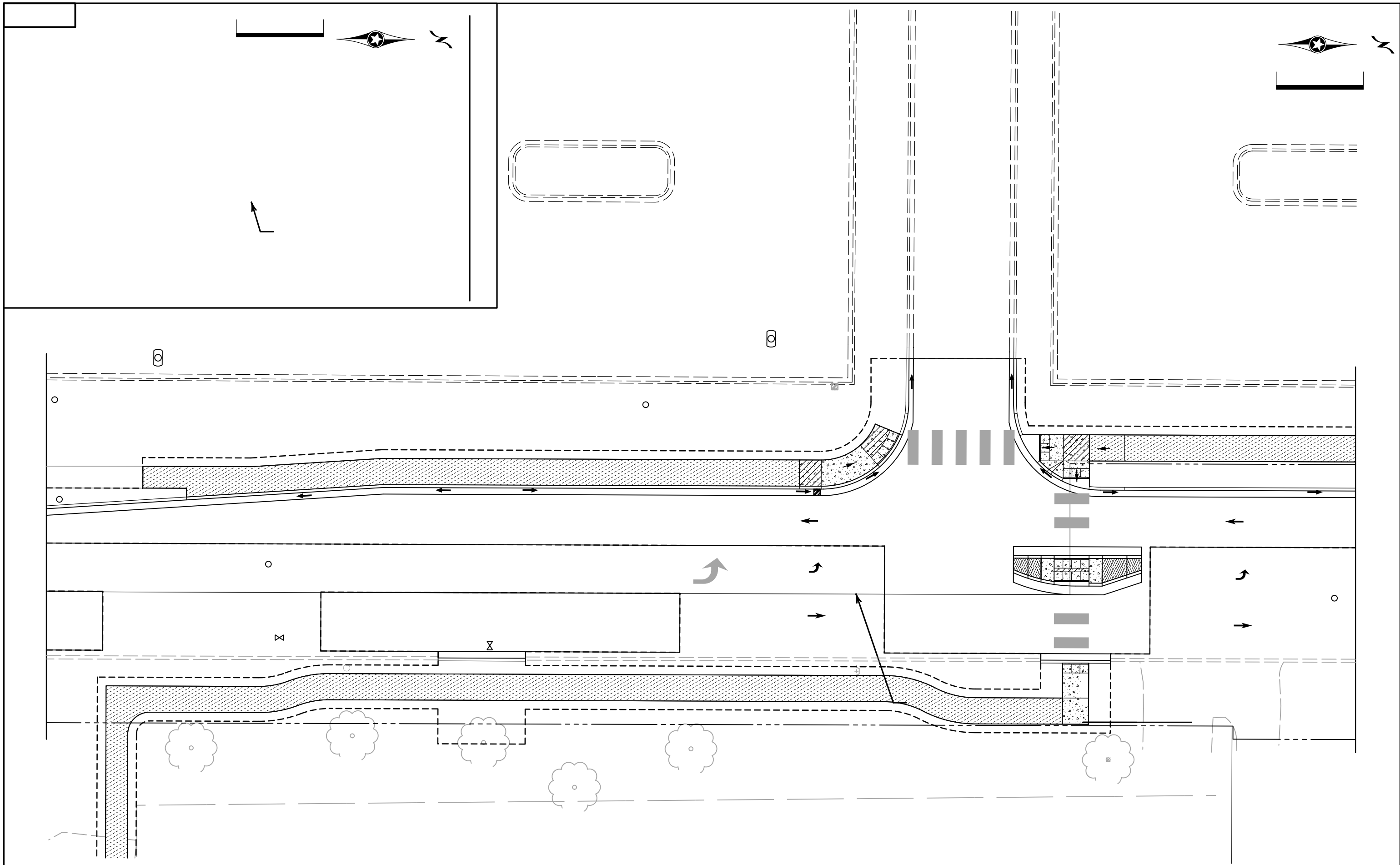
I hereby certify that this plan was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.
 Certified By: Joshua Breid Lic. No. 59756
 Licensed Professional Engineer
 Printed Name: JOSHUA C. BREID Date: 02/09/2023



RAMSEY COUNTY, MINNESOTA
DIVISION AVE AND 8TH ST
 PROJECT NO. 170689

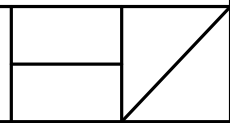
CONSTRUCTION PLAN
 8TH ST STA 206+00 TO 209+48.85

SEH FILE NO. ISDWB170689	47
CP4 OF CP4	78



—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—

Joshua Breid



DRAINAGE TABULATION

STRUCTURE NO.		STRUCTURE LOCATION			DRAINAGE STRUCTURES				CASTING ASSEMBLY TYPE	TOP OF CASTING ELEV	OUTLET ELEV.	INLET ELEV.	CONNECT TO EXISTING STORM SEWER	CONNECT TO EXISTING DRAINAGE STRUCTURE	12" RCP CL LIN FT	
FLOWS FROM	FLOWS TO	ALIGN.	STATION	OFFSET	TYPE	PAY HEIGHT										
						N LIN FT	48-4020 LIN FT	60-4020 LIN FT								66-4020 LIN FT
CB 6100	EXISTING	DIVISION	110+51.48	23.0' LT	CB	2.9				CB	937.31	934.30	934.05	1	26	
CB 6101	MH 6102	DIVISION	112+27.19	23.0' LT	CB	2.9				CB	936.61	933.60	932.90	1	91	
MH 6102	MH 6104	DIVISION	113+18.46	20.9' LT						MH	936.17					
	MH 6104	DIVISION	113+18.46	20.2' LT	MH											
CB 6103	MH 6104	DIVISION	113+65.16	28.7' LT	CB	2.9				CB	935.78	932.81	932.70	1	12	
MH 6104	CB 6005	DIVISION	113+64.99	17.3' LT						MH	936.00					
	CB 6005	DIVISION	113+64.99	16.5' LT	MH											
CB 6105	EXISTING	DIVISION	114+41.24	16.3' LT						CB	936.27					
	EXISTING	DIVISION	114+41.45	17.0' LT	CB											
CB 6006	EXISTING	8TH	206+43.94	12.0' LT						CB	936.04					
	EXISTING	8TH	206+43.94	11.2' LT	CB		3.1					933.45	933.45	1		
CB 6007	CB 6009	8TH	203+88.62	18.0' LT						CB	935.53					
	CB 6009	8TH	203+87.37	16.7' LT	CB			3.1						2		
MH 6008	CB 6009	8TH	204+01.92	18.0' RT						MH	936.02					
	CB 6009	8TH	204+01.92	18.0' RT	MH											
CB 6009	EXISTING	8TH	203+85.26	27.4' RT						CB	935.90					
	EXISTING	8TH	203+85.26	27.4' RT	CB											
CB 6010	CB 6011	8TH	203+33.93	11.0' LT						CB	934.93					
	CB 6011	8TH	203+33.98	9.7' LT	CB		2.9							1		
CB 6011	MH 6012	8TH	203+32.44	19.2' RT						CB	935.74					
	MH 6012	8TH	203+32.44	19.2' RT	CB											
MH 6012	CB 6014	8TH	201+88.64	19.0' RT						MH	935.69					
	CB 6014	8TH	201+88.64	19.0' RT	MH											
CB 6013	CB 6014	8TH	200+35.50	11.0' LT						CB	934.80					
	CB 6014	8TH	200+35.50	9.4' LT	CB			3.1						2		
CB 6014	EXISTING	8TH	200+35.16	19.0' RT						CB	934.66					
	EXISTING	8TH	200+35.16	19.0' RT	CB											

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 INVERT ELEVATIONS ON THE PROFILES ARE AT THE CENTER OF THE 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 CB CASSTING ASSEMBLY TYPE USE NEENAH CASTING ASSEMBLY R-3067 WITH VANE GRATE AND CURB BOX.
 FOR MH CASTING ASSEMBLY TYPE USE NEENAH CASTING ASSEMBLY R-1733 WITH VENTED LID.

DESIGN TEAM				
DRAWN BY: <u>MTT</u>				
DESIGNER: <u>xxx</u>				
CHECKED BY: <u>xxx</u>				
NO.	BY	DATE	REVISIONS	

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.
 Certified By: Joshua Breid Lic. No. 59756
 Printed Name: JOSHUA C. BREID Date: 02/15/2023

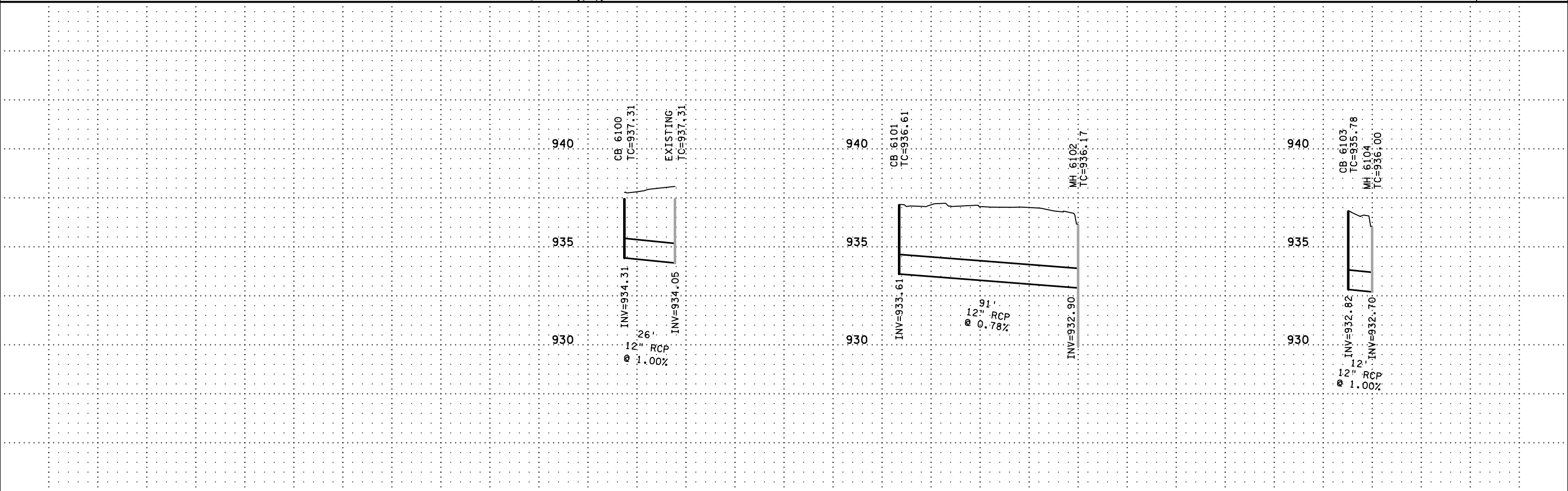
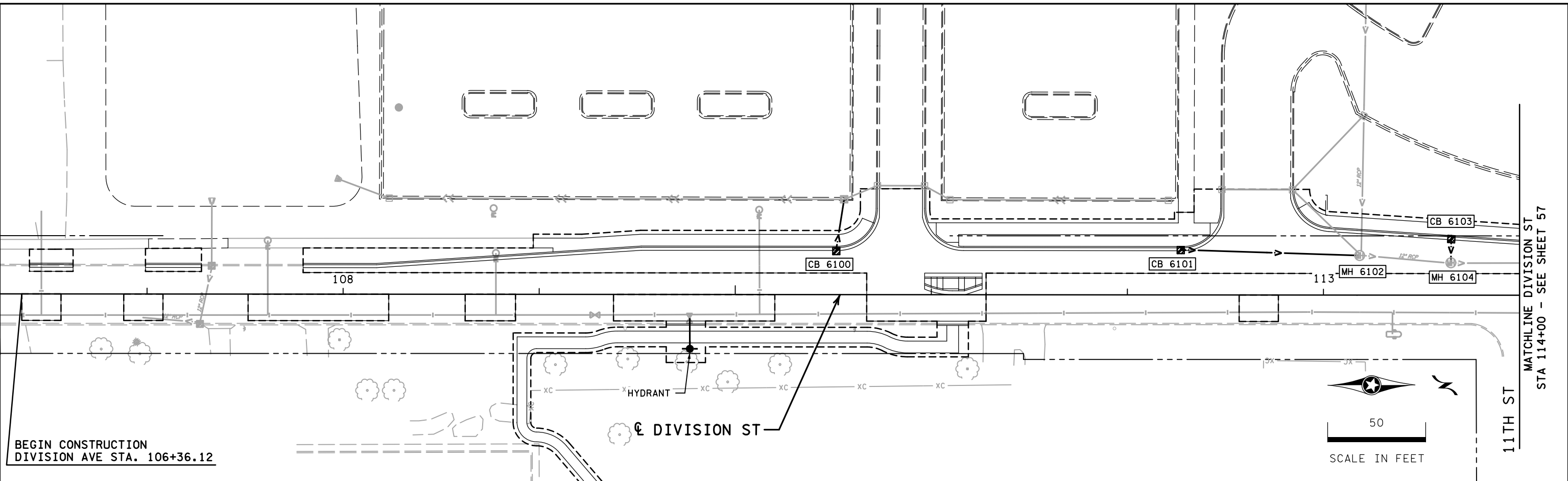


RAMSEY COUNTY, MINNESOTA
DIVISION AVE AND 8TH ST
 PROJECT NO. 170689

WATERMAIN AND DRAINAGE PLAN AND PROFILE

1:10:14 PM

2/15/2024



FILE: X:\F\J\1\ISDWB\170689\5-final-dsgn\51-drawings\40-Transhwy\Plansheets\CHI70689_dr1.dgn
MODEL: dr2

DESIGN TEAM			
DRAWN BY:	MTT		
DESIGNER:	xxx		
CHECKED BY:	xxx		
NO.	BY	DATE	REVISIONS

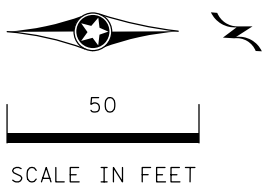
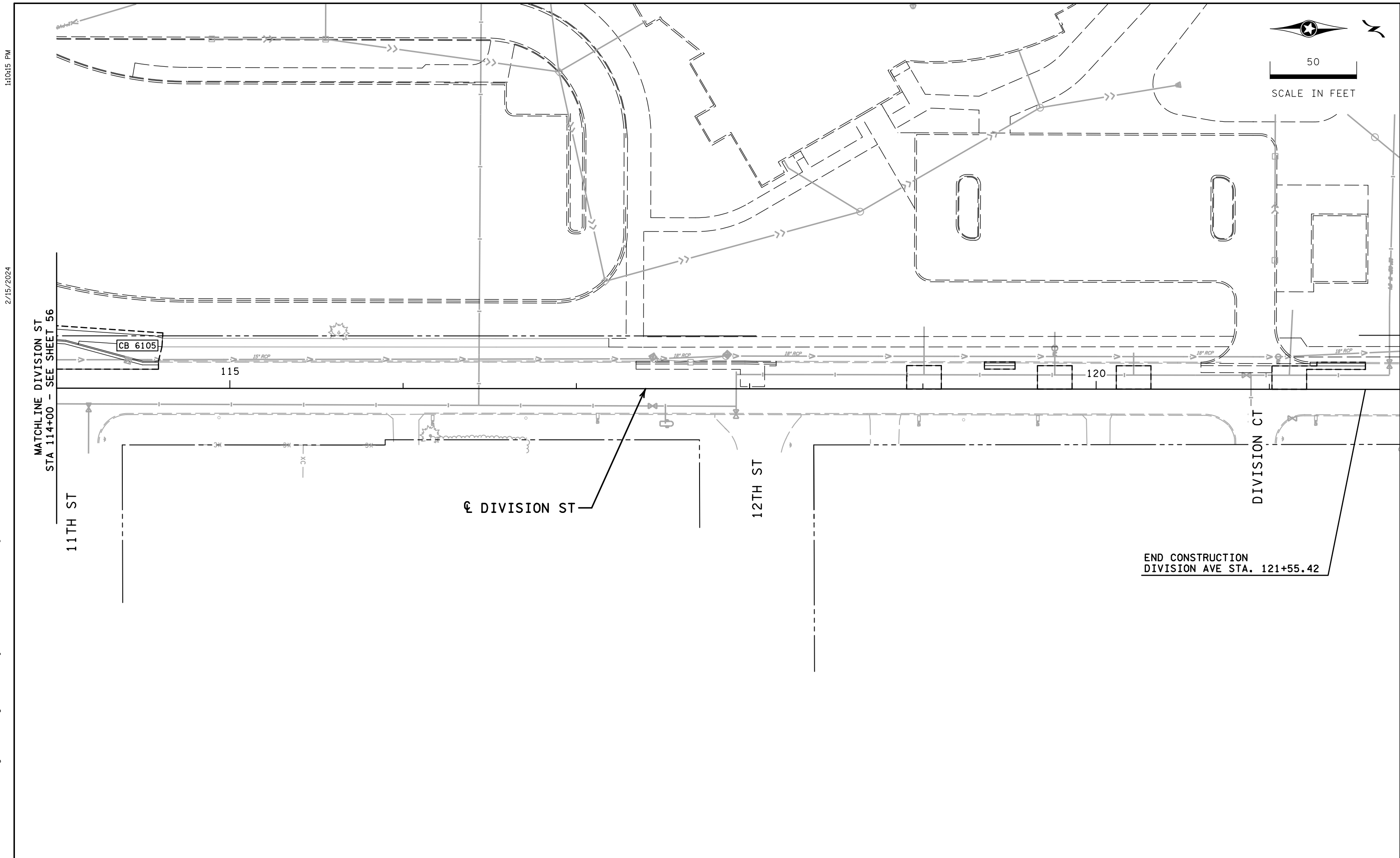
I hereby certify that this plan was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.
 Certified By: Joshua C. Breid Lic. No. 59756
 Licensed Professional Engineer
 Printed Name: JOSHUA C. BREID Date: 02/15/2023



RAMSEY COUNTY, MINNESOTA
DIVISION AVE AND 8TH ST
 PROJECT NO. 170689

WATERMAIN AND DRAINAGE PLAN AND PROFILE
 DIVISION AVE STA 106+82.63 TO 114+00.00

SEH FILE NO. ISDWB170689	56
DR2 OF DR5	78



FILE: X:\FJV\1\ISDWB\170689\5-final-dsgn\51-drawings\40-Transhwy\Plansheets\CHI70689_dr-1.dgn
 MODEL: dr3
 2/15/2024 1:10:15 PM

DESIGN TEAM				
DRAWN BY:	MTT			
DESIGNER:	xxx			
CHECKED BY:	xxx			
NO.	BY	DATE	REVISIONS	

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.
 Certified By: Joshua Breid Lic. No. 59756
 Licensed Professional Engineer
 Printed Name: JOSHUA C. BREID Date: 02/15/2023

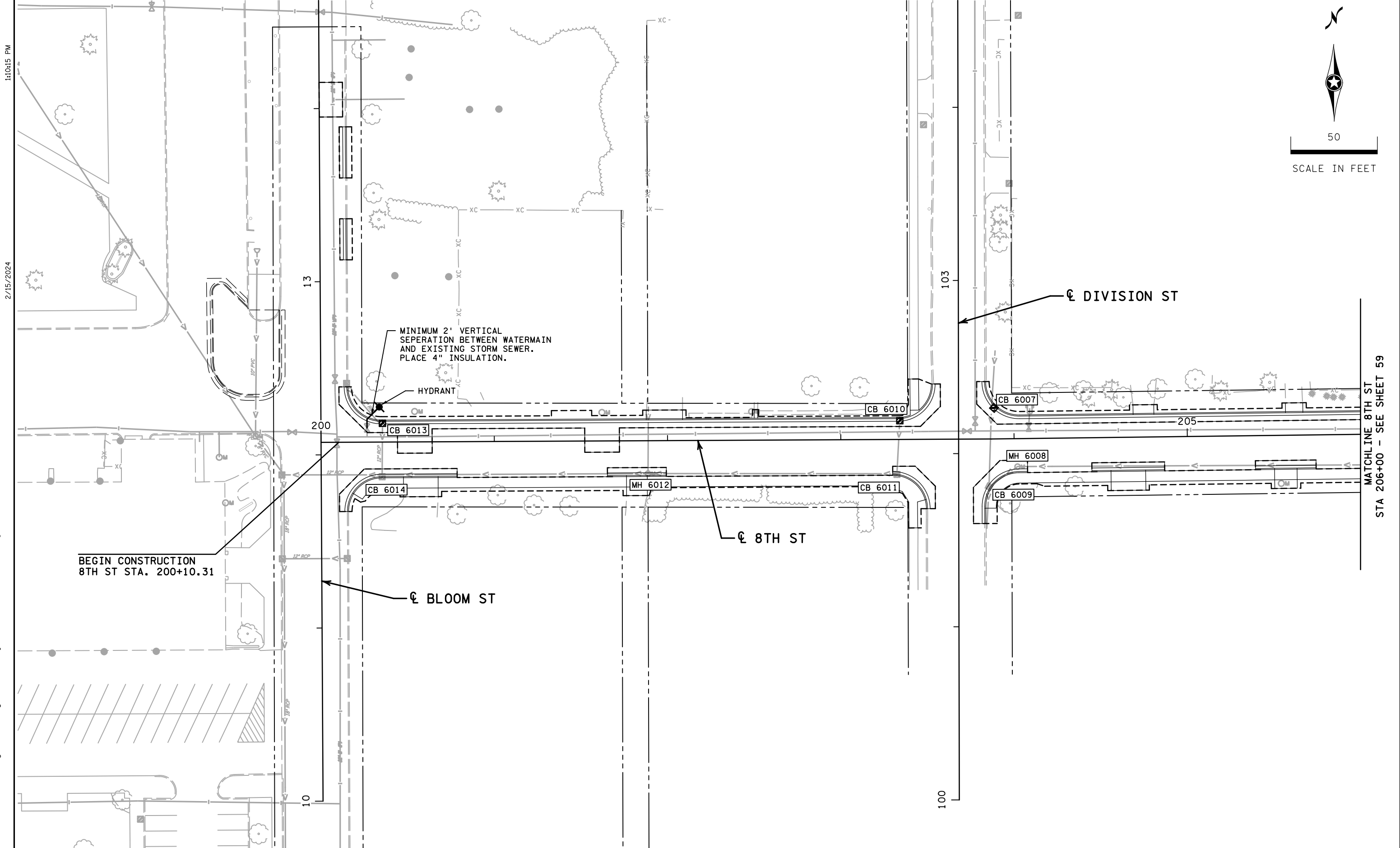


RAMSEY COUNTY, MINNESOTA
DIVISION AVE AND 8TH ST
 PROJECT NO. 170689

WATERMAIN AND DRAINAGE PLAN AND PROFILE
 DIVISION AVE STA 114+00.00 TO 121+55.42

SEH FILE NO. ISDWB170689	57
DR3 OF DR5	78

END CONSTRUCTION
 DIVISION AVE STA. 121+55.42



FILE: X:\F\J\1\ISDWB\170689\5-final-dgn\51-drawings\40-Transhwy\Plansheets\CHI70689_dr-1.dgn
 MODEL: dr-4
 2/15/2024 1:10:15 PM

BEGIN CONSTRUCTION
8TH ST STA. 200+10.31

MINIMUM 2' VERTICAL
SEPERATION BETWEEN WATERMAIN
AND EXISTING STORM SEWER.
PLACE 4" INSULATION.

HYDRANT

DESIGN TEAM			
DRAWN BY:	MTT		
DESIGNER:	xxx		
CHECKED BY:	xxx		
NO.	BY	DATE	REVISIONS

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.
 Certified By: Joshua Breid Lic. No. 59756
 Printed Name: JOSHUA C. BREID Date: 02/15/2023

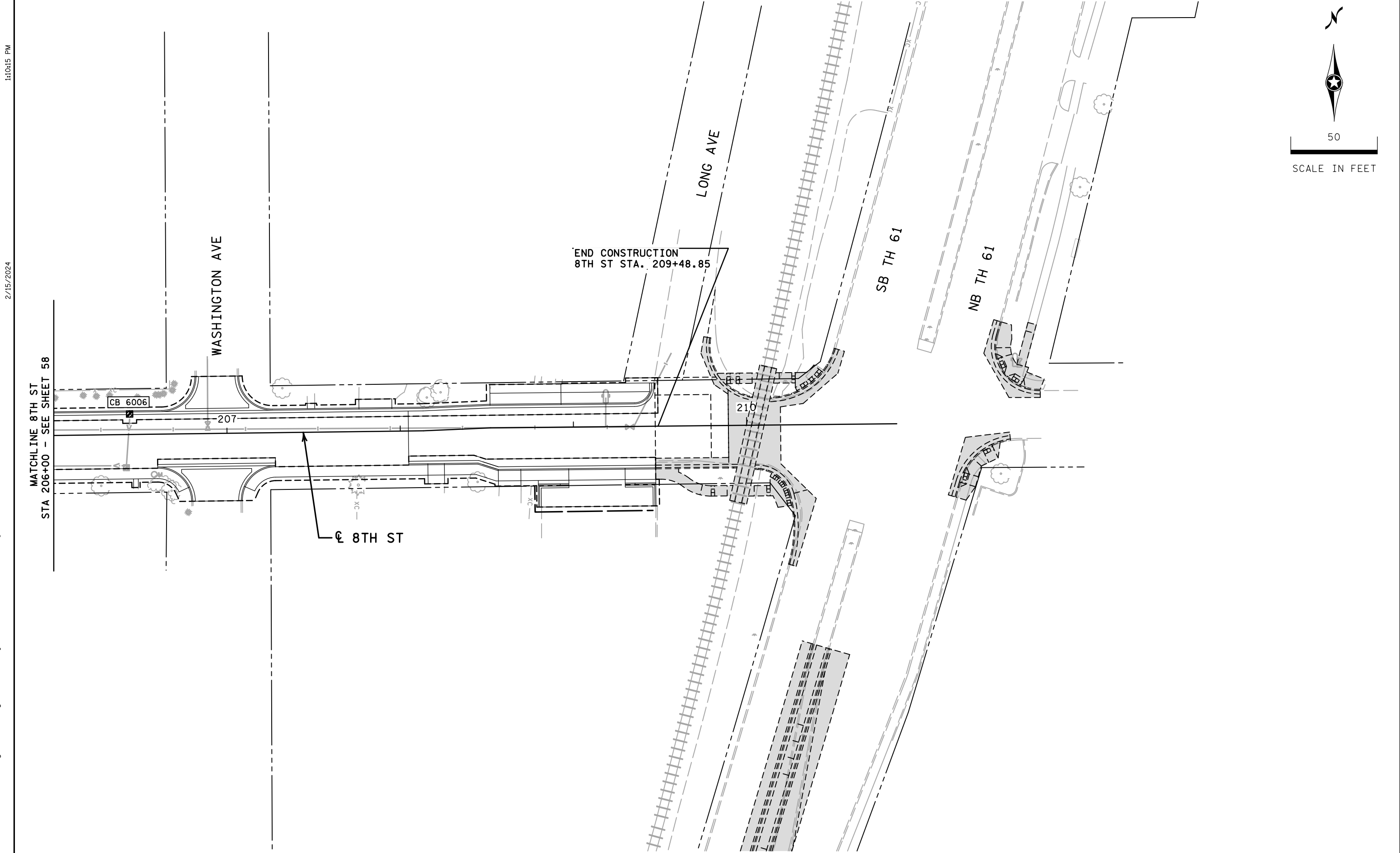


RAMSEY COUNTY, MINNESOTA
DIVISION AVE AND 8TH ST
 PROJECT NO. 170689

WATERMAIN AND DRAINAGE PLAN AND PROFILE
 8TH ST STA 200+10.31 TO 206+00

SEH FILE NO. ISDWB170689	58
DR4 OF DR5	78

MATCHLINE 8TH ST
STA 206+00 - SEE SHEET 59



FILE: X:\F\J\1\ISDWB\170689\5-final-dsgn\51-drawings\40-Transhwy\Plansheets\CHI70689_dr-1.dgn
 MODEL: dr-5
 2/15/2024 1:10:15 PM

DESIGN TEAM			
DRAWN BY:	MTT		
DESIGNER:	xxx		
CHECKED BY:	xxx		
NO.	BY	DATE	REVISIONS

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.
 Certified By: Joshua Breid Lic. No. 59756
 Licensed Professional Engineer
 Printed Name: JOSHUA C. BREID Date: 02/15/2023



RAMSEY COUNTY, MINNESOTA
DIVISION AVE AND 8TH ST
 PROJECT NO. 170689

WATERMAIN AND DRAINAGE PLAN AND PROFILE
 8TH ST STA 206+00 TO 209+48.85

SEH FILE NO. ISDWB170689	59
DR5 OF DR5	78

BEAR LAKE IN RAMSEY COUNTY.

THE PROJECT AREA DISCHARGES TO A REGIONAL OR IMPAIRED WATERS LOCATED WITHIN ONE MILE (AERIAL) RADIUS OF THE PROJECT LIMITS.

INSPECTION TIMEFRAMES AND REQUIREMENTS

INSPECT THE ENTIRE CONSTRUCTION SITE A MINIMUM OF ONCE EVERY SEVEN DAYS DURING ACTIVE CONSTRUCTION AND WITHIN 24 HOURS AFTER A RAINFALL EVENT GREATER THAN 0.5 INCHES IN 24 HOURS. INSPECT ALL TEMPORARY AND PERMANENT WATER QUALITY MANAGEMENT, EROSION PREVENTION AND SEDIMENT CONTROL BMPs, SURFACE WATERS AND CONSTRUCTION SITE EXITS UNTIL ALL CONSTRUCTION IS COMPLETE AND THE SITE HAS UNDERGONE FINAL STABILIZATION. RECORD ALL INSPECTIONS AND MAINTENANCE ACTIVITIES IN WRITING WITHIN 24 HOURS. INSPECTION RECORDS MUST INCLUDE DATE AND TIME OF INSPECTION, FINDINGS, CORRECTIVE ACTIONS TAKEN, DATE AND DEPTH OF RAINFALL, PHOTOGRAPHS AND DESCRIPTIONS OF ANY OBSERVED DISCHARGES, AND ANY AMENDMENTS TO THE SWPPP PROPOSED AS RESULT OF INSPECTION. AMENDMENTS MUST BE MADE WITHIN 7 CALENDAR DAYS OF FINDINGS.

STORM WATER POLLUTION PREVENTION PLAN (SWPPP) NARRATIVE (CONTINUED)

EROSION AND SEDIMENT CONTROL MEASURES

AREA	TIME FRAME
ESTABLISH SEDIMENT CONTROL DEVICES ON ALL DOWN GRADIENT PERIMETERS AND UPGRADIENT OF ANY BUFFER ZONES	BEFORE ANY UP GRADIENT LAND DISTURBING ACTIVITIES BEGIN
REPAIR, REPLACE OR SUPPLEMENT PERIMETER CONTROL BMPS	WHEN BMP BECOMES NONFUNCTIONAL OR SEDIMENT REACHES 1/2 THE HEIGHT OF THE BMP BY THE END OF THE NEXT BUSINESS DAY AFTER DISCOVERY.
REPLACE, REPAIR OR SUPPLEMENT ALL NONFUNCTIONAL BMPS	BY THE END OF THE NEXT BUSINESS DAY AFTER DISCOVERY.
REPAIR, REPLACE, OR SUPPLEMENT INLET PROTECTION BMPS	WHEN THEY BECOME NONFUNCTIONAL OR SEDIMENT REACHES 1/2 THE HEIGHT AND/OR DEPTH OF THE BMP BY THE END OF THE NEXT BUSINESS DAY AFTER DISCOVERY.
REMOVE TRACKED SEDIMENT FROM PAVED SURFACES BOTH ON AND OFF SITE (LIGHTLY WET PRIOR TO SWEEPING)	WITHIN 24 HOURS OF DISCOVERY
REMOVE ALL DELTAS AND SEDIMENT DEPOSITED IN SURFACE WATERS AND RESTABILIZE	WITHIN 7 DAYS OF DISCOVERY

1. PROVIDE PERIMETER CONTROL AROUND ALL STOCKPILE LOCATIONS PRIOR TO INITIATION OF STOCKPILING AND DO NOT PLACE STOCKPILES IN NATURAL BUFFER AREAS, SURFACE WATERS OR STORMWATER CONVEYANCES. TOPSOIL BERMS MUST BE STABILIZED WITHIN 24 HOURS IN ORDER TO BE CONSIDERED PERIMETER CONTROL BMPS.
2. PROTECT STORM SEWER INLETS AT ALL TIMES WITH THE APPROPRIATE INLET PROTECTION BMP AND PROVIDE EMERGENCY OVERFLOW CAPABILITIES. SILT FENCE PLACED IN THE INLET GRATE IS NOT AN ACCEPTABLE INLET PROTECTION BMP FOR GRADING OPERATIONS.
3. PLACE AND MAINTAIN CONSTRUCTION EXITS OF SUFFICIENT SIZE TO PREVENT TRACKING OF SEDIMENT ONTO PAVED SURFACES BOTH ON AND OFF THE PROJECT SITE. REGULAR STREET SWEEPING IS NOT AN ACCEPTABLE ALTERNATIVE TO PROPER CONSTRUCTION EXIT INSTALLATION AND MAINTENANCE.
4. PROVIDE SCOUR PROTECTION AT OUTFALL OF DEWATERING ACTIVITIES. PROVIDE STABILIZATION IN TRENCHES CUT FOR DEWATERING OR SITE DRAINING PURPOSES.
5. PREPARE AND SUBMIT A SITE MANAGEMENT PLAN AND CONTACT ALL APPROPRIATE AUTHORITIES PRIOR TO WORKING IN SURFACE WATERS.
6. MAINTAIN ALL BMPS UNTIL WORK HAS BEEN COMPLETED, SITE HAS GONE UNDER FINAL STABILIZATION FOR PERMIT TERMINATION, AND THE NOTICE OF TERMINATION (NOT) HAS BEEN SUBMITTED TO THE MPCA.

STABILIZATION

AREA	TIME FRAME	NOTES
LAST 200 LINEAL FEET OF DRAINAGE DITCH OR SWALE	WITHIN 24 HOURS OF CONNECTION TO SURFACE WATER OR PROPERTY EDGE	2A, 3A
REMAINING PORTIONS OF DRAINAGE DITCH OR SWALE	7 DAYS	3A
PIPE AND CULVERT OUTLETS	24 HOURS	
EXPOSED SOILS AND STOCKPILES	7 DAYS	1A
WHEN CONSTRUCTION HAS TEMP. OR PERM. CEASED	IMMEDIATELY	

- 1A. TEMPORARY SOIL STOCKPILES WITHOUT SIGNIFICANT CLAY OR SILT AND STOCKPILED AND CONSTRUCTED ROAD BASE ARE EXEMPT FROM THE STABILIZATION REQUIREMENT.
- 2A. STABILIZE WETTED PERIMETER OF DITCH (I.E. WHERE THE DITCH GETS WET).
- 3A. APPLICATION OF MULCH, HYDROMULCH (SLOPE>2%), DISANCHORED MULCH (SLOPE>2%), TACKIFIER AND POLYACRYLAMIDE ARE NOT ACCEPTABLE STABILIZATION METHODS IN DITCHES AND SWALES.

MATERIAL STORAGE, WASTE MANAGEMENT, FUELING AND DUST CONTROL

1. PROVIDE A SPILL KIT AT EACH WORK LOCATION ON THE SITE. ENSURE ALL SPILLS ARE CLEANED UP IMMEDIATELY.
2. STORE ALL LIQUID CHEMICALS UNDER COVER WITH SECONDARY CONTAINMENT. CREATE AND FOLLOW A WRITTEN DISPOSAL PLAN FOR ALL WASTE MATERIALS. STORE, COLLECT AND DISPOSE OF ALL SOLID WASTE.
3. FUEL AND MAINTAIN VEHICLES IN A DESIGNATED CONTAINED AREA WHENEVER FEASIBLE. USE DRIP PANS OR ABSORBENT MATERIALS TO PREVENT SPILLS OR LEAKED CHEMICALS FROM DISCHARGING TO SURFACE WATER OR STORMWATER CONVEYANCES.
4. PROVIDE EFFECTIVE CONTAINMENT FOR ALL LIQUID AND SOLID WASTES GENERATED BY WASHOUT OF CONCRETE, STUCCO, PAINT, FORM RELEASE OILS, CURING COMPOUNDS AND OTHER CONSTRUCTION MATERIALS. LIQUID AND SOLID WASHOUT WASTES MUST NOT CONTACT THE GROUND. DESIGN THE CONTAINMENT SO THAT IT DOES NOT RESULT IN RUNOFF FROM THE WASHOUT OPERATIONS OR CONTAINMENT AREA.
5. 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.
6. USE METHODS AND OPERATIONAL PROCEDURES THAT PREVENT CONCRETE DUST, STREET SWEEPING DUST, SAWCUT SLURRY, PLANING WASTE, CONCRETE WASH OUT, AND OTHER CONCRETE WASTES FROM LEAVING MNDOT RIGHT OF WAY, DEPOSITING IN EXISTING OR FUTURE VEGETATED AREAS, AND FROM ENTERING STORMWATER CONVEYANCE SYSTEMS, INCLUDING INLETS, DITCHES AND CURB FLOW LINES.

IMPORTANT SWPPP NOTES FOR CONSTRUCTION ACTIVITY

1. PREPARE AND SUBMIT A SITE MANAGEMENT PLAN FOR THE ENGINEER'S ACCEPTANCE FOR CONCRETE MANAGEMENT, CONCRETE SLURRY APPLICATION AREAS, WORK IN AND NEAR AREAS OF ENVIRONMENTAL SENSITIVITY, AREAS IDENTIFIED IN THE PLANS AS "SITE MANAGEMENT PLAN AREA", ANY WORK THAT WILL REQUIRE DEWATERING, AND AS REQUESTED BY THE ENGINEER. SUBMIT ALL SITE MANAGEMENT PLANS TO THE ENGINEER IN WRITING. ALLOW A MINIMUM OF 7 DAYS FOR MNDOT 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.
2. DO NOT BUILD INFILTRATION AREAS OR PLACE FINAL FILTRATION MEDIA UNTIL THE PROJECT IS NEARLY COMPLETE. PROTECT THESE AREAS FROM COMPACTION AND FROM CONSTRUCTION STORMWATER RUNOFF.
3. ROUTE STORMWATER AROUND UNSTABILIZED AREAS OF THE SITE WHENEVER FEASIBLE.
4. CONSTRUCTION PROJECT SHOULD BE PHASED TO MINIMIZE THE DURATION OF EXPOSED SOILS.
5. MINIMIZE COMPACTION OF SOILS AND PRESERVE TOPSOIL IN AREAS WHERE VEGETATION WILL BE ESTABLISHED.
6. DIRECT DISCHARGES FROM BMPS TO VEGETATED AREAS WHENEVER FEASIBLE. PROVIDE VELOCITY DISSIPATION DEVICES AS NEEDED TO PREVENT EROSION.
7. FLOATING SILT CURTAIN IS ALLOWED AS PERIMETER CONTROL FOR IN WATER WORK ONLY. PLACE THE FLOATING SILT CURTAIN AS CLOSE TO SHORE AS POSSIBLE. PLACE PERIMETER CONTROL BMP ON LAND IMMEDIATELY AFTER THE IN WATER WORK IS COMPLETED.
8. DISCHARGE TURBID OR SEDIMENT LADEN WATER TO TEMPORARY SEDIMENT BASINS WHENEVER FEASIBLE. (REQUIRED IF DRAINAGE AREA IS 10 ACRES OR LARGER OR 5 ACRES OR LARGER AND WITHIN 1 MILE OF IMPAIRED WATER) 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. MUST DOCUMENT WHY SEDIMENT BASIN IS NOT
9. PROVIDE STABILIZATION IN ANY TRENCHES CUT FOR DEWATERING OR SITE DRAINING PURPOSES.
10. REMOVE SEDIMENT FROM STORMWATER SYSTEM AND BMPS AT THE END OF PROJECT.
11. PRESERVE A 50 FOOT NATURAL BUFFER OR (IF BUFFER IS INFEASIBLE) PROVIDE A DOUBLE ROW OF SEDIMENT CONTROLS WHEN A SURFACE WATER IS LOCATED WITHIN 50 FEET OF LAND DISTURBANCE AND STORMWATER FLOWS TO THE SURFACE WATER.
12. SUBSOIL ALL DISTURBED GREEN SPACES EXCEPT AS LISTED IN 2574.3A.5.

PIPE AND STRUCTURE NOTES

1. SIZE AND ELEVATION OF CULVERTS, STORM SEWER PIPES, AND CATCH BASINS HAVE BEEN SPECIFICALLY DESIGNED TO CONFORM TO MNDOT DESIGN STANDARDS AND PERMIT REQUIREMENTS. THE DESIGN COMPUTATIONS ARE ON FILE WITH SEH. CHANGING THESE ITEMS OR THE DIRECTION OF FLOW FROM WHAT IS SHOWN ON THE PLANS MAY CAUSE PROBLEMS OFF THE PROJECT AND COULD MEAN THE PROJECT IS OUT OF COMPLIANCE WITH APPROVED DRAINAGE PERMITS. ANY CHANGES OF THE DRAINAGE SYSTEM MUST BE APPROVED BY THE PROJECT ENGINEER.
2. SUBSURFACE DRAINAGE TILES DAMAGED DURING CONSTRUCTION SHALL BE REPAIRED, REPLACED OR REROUTED, AND CONNECTED TO THE EXISTING TILE OR DRAINAGE SYSTEM TO ENSURE THAT EXISTING UPLAND DRAINAGE IS PERPETUATED. THIS SHALL BE DONE TO THE APPROVAL AND SATISFACTION OF THE ENGINEER.

5:08:14 PM
2/9/2024
FILE: X:\F\J\1\ISDWB\170689\5-Final-dsgn\51-drawings\40-Transition\Plansheets\CD170689_swppl.dgn
MODEL: swpp

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: <u>MTT</u>				
DESIGNER: <u>JCB</u>				
CHECKED BY: <u>JCB</u>				

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.
 Certified By: Joshua C. Breid Lic. No. 59756
 Printed Name: JOSHUA C. BREID Date: 02/09/2023



RAMSEY COUNTY, MINNESOTA
DIVISION AVE AND 8TH ST
 PROJECT NO. 170689

STORMWATER POLLUTION PREVENTION PLAN

SEH FILE NO. ISDWB170689	61
SWP2 OF SWP3	78

STORM WATER POLLUTION PREVENTION PLAN (SWPPP) NARRATIVE (CONTINUED)

LONG TERM MAINTENANCE AND OPERATION

POND CONSTRUCTION NOTES

- 1. DO NOT STOCKPILE MATERIALS OR PARK EQUIPMENT OR VEHICLES IN INFILTRATION AREAS.

NOTICE OF TERMINATION REQUIREMENTS

- 1. WHEN SUBMITTING THE NOT PERMITEES MUST INLCUDE GROUND OR AERIAL PHOTOGRAPHS WITH DATE TAKEN SHOWING THAT VEGETATIVE COVER REQUIREMENTS TO CLOSE THE PERMIT HAVE BEEN MET. EVERY SITE COMPONENT DOES NOT NEED TO BE PHOTOGRAPHED, BUT PHOTOGRAPHS SHOULD BE INDICATIVE OF ENTIRE SITE CONDITIONS.

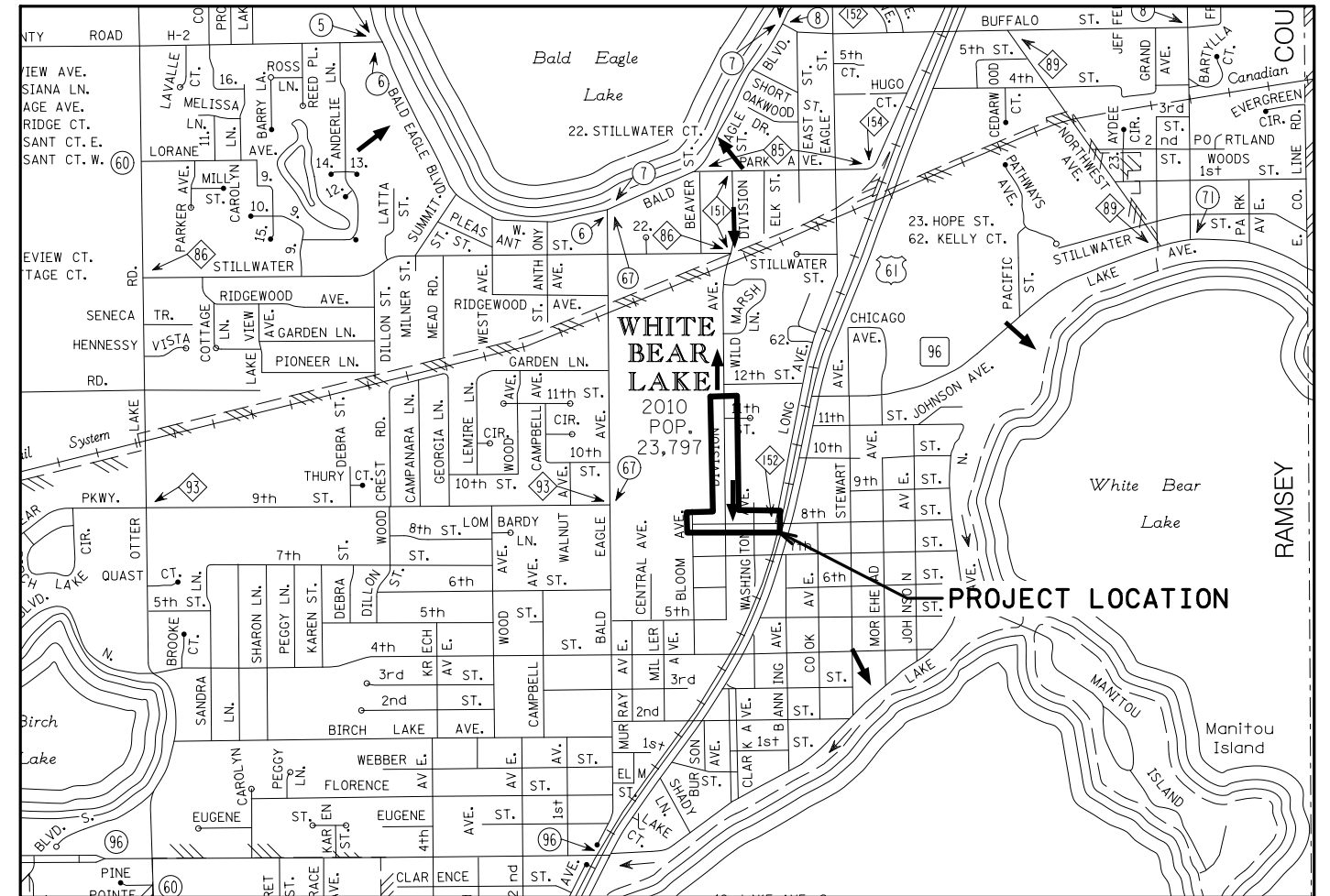
STORM WATER POLLUTION PREVENTION PLAN (SWPPP) NARRATIVE (CONTINUED)



1500

SCALE IN FEET

OFFSITE FLOW INFORMATION DRAWING



5:08:15 PM

2/9/2024

FILE: X:\F\J\1\ISDWB\170689\5-final-dsgn\51-drawings\40-Transition\Plansheets\0170689_swpp1.dgn
MODEL: swpp

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: <u>MTT</u>				
DESIGNER: <u>JCB</u>				
CHECKED BY: <u>JCB</u>				

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.
 Certified By: Joshua Breid Lic. No. 59756
 Licensed Professional Engineer
 Printed Name: JOSHUA C. BREID Date: 02/09/2023



RAMSEY COUNTY, MINNESOTA
DIVISION AVE AND 8TH ST
 PROJECT NO. 170689

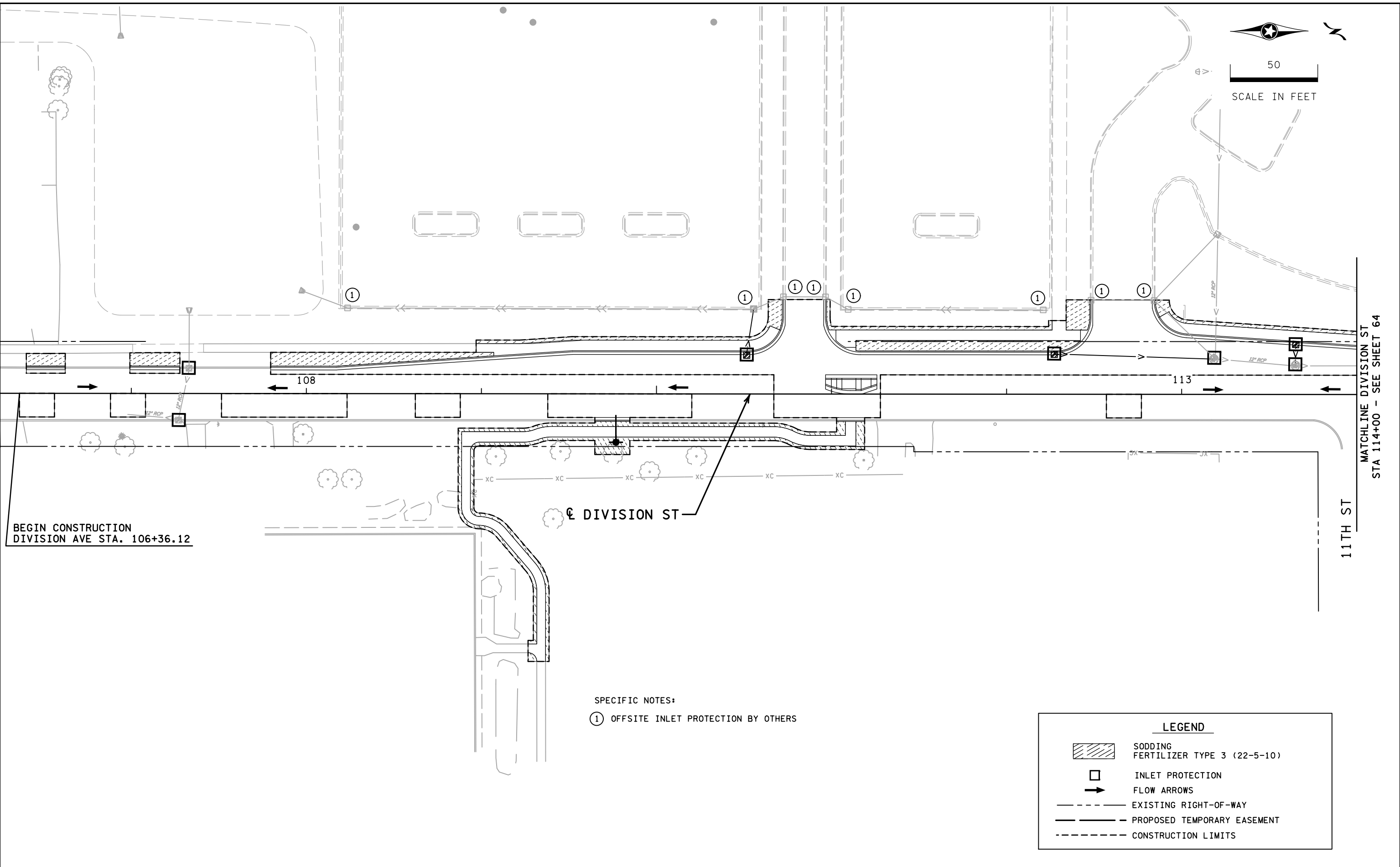
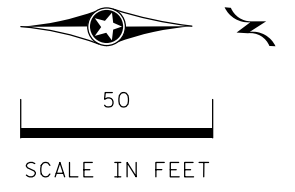
STORMWATER POLLUTION PREVENTION PLAN

SEH FILE NO. ISDWB170689	62
SWP3 OF SWP3	78

5:08:17 PM

2/9/2024

FILE: X:\F\J\1\ISDWB\170689\5-final-dsgn\51-drawings\40-Transhwy\Plansheets\CD170689_tel.dgn
MODEL: te1



SPECIFIC NOTES:
 ① OFFSITE INLET PROTECTION BY OTHERS

LEGEND	
	SODDING FERTILIZER TYPE 3 (22-5-10)
	INLET PROTECTION
	FLOW ARROWS
	EXISTING RIGHT-OF-WAY
	PROPOSED TEMPORARY EASEMENT
	CONSTRUCTION LIMITS

DESIGN TEAM				
DRAWN BY:	MTT			
DESIGNER:	JCB			
CHECKED BY:	JCB			
NO.	BY	DATE	REVISIONS	

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.
 Certified By: Joshua Breid Lic. No. 59756
 Printed Name: JOSHUA C. BREID Date: 02/09/2023



RAMSEY COUNTY, MINNESOTA
DIVISION AVE AND 8TH ST
 PROJECT NO. 170689

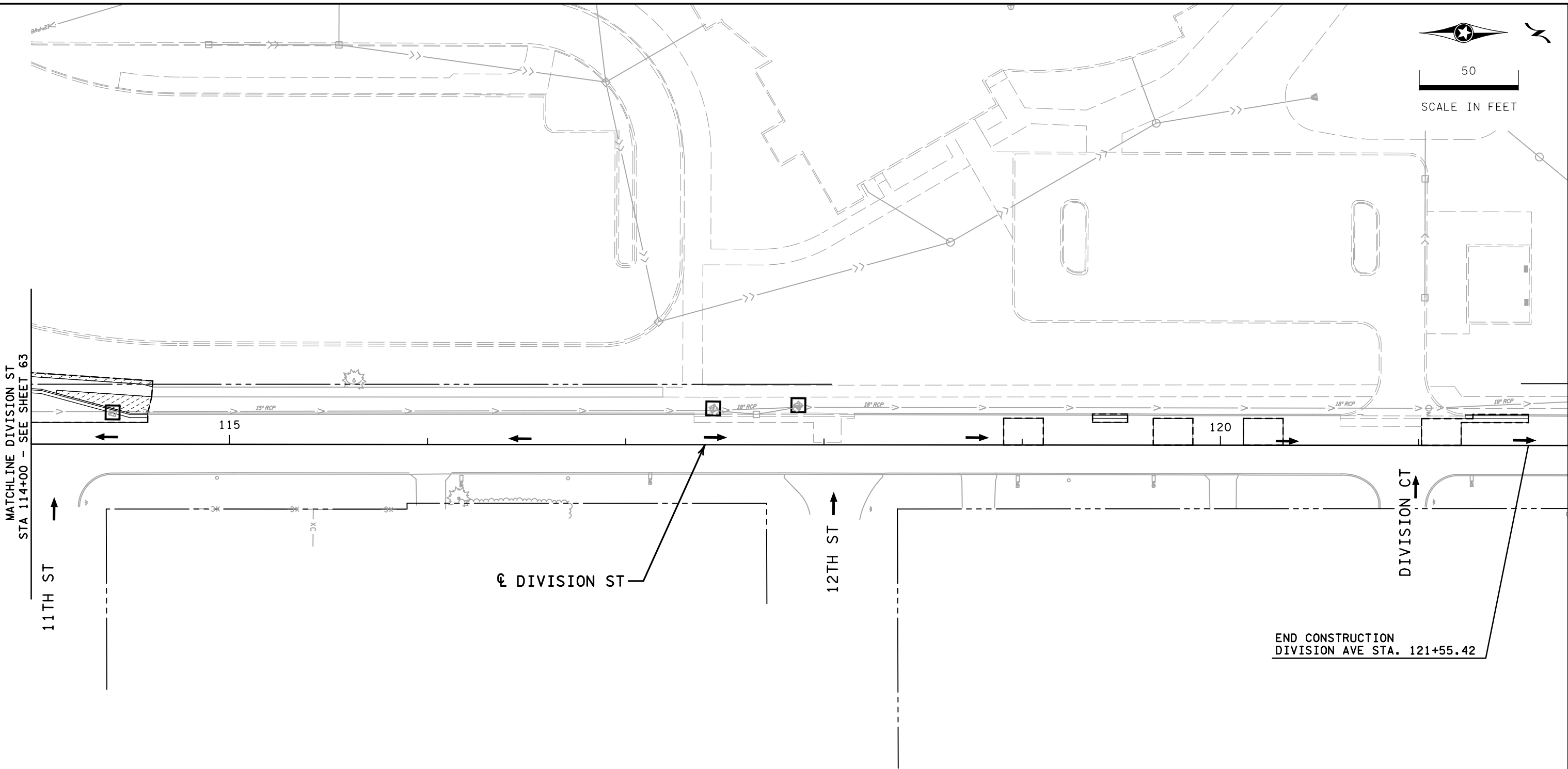
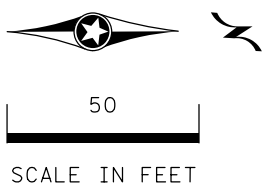
**EROSION CONTROL AND
 TURF ESTABLISHMENT PLAN**
 DIVISION AVE STA 106+82.63 TO 114+00.00

SEH FILE NO. ISDWB170689	63
TE1 OF TE4	78

5:08:18 PM

2/9/2024

FILE: X:\F\J\1\ISDWB\170689\5-final-dsgn\51-drawings\40-Transhwy\Plansheets\CD170689_tel.dgn
MODEL: te2



LEGEND	
	SODDING FERTILIZER TYPE 3 (22-5-10)
	INLET PROTECTION
	FLOW ARROWS
	EXISTING RIGHT-OF-WAY
	PROPOSED TEMPORARY EASEMENT
	CONSTRUCTION LIMITS

DESIGN TEAM				
DRAWN BY:	MTT			
DESIGNER:	JCB			
CHECKED BY:	JCB			
NO.	BY	DATE	REVISIONS	

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.
 Certified By: Joshua Breid Lic. No. 59756
 Printed Name: JOSHUA C. BREID Date: 02/09/2023



RAMSEY COUNTY, MINNESOTA
DIVISION AVE AND 8TH ST
 PROJECT NO. 170689

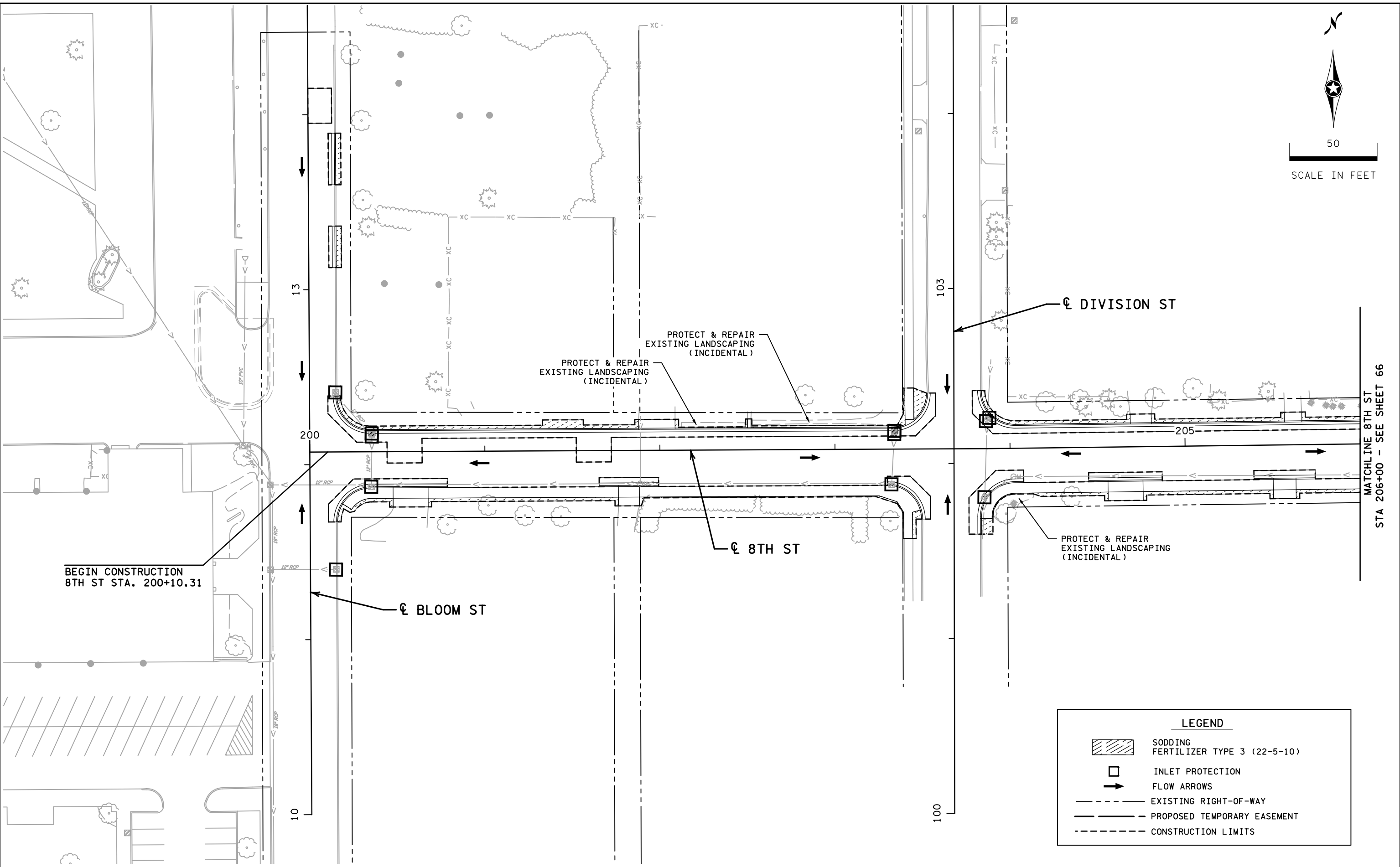
EROSION CONTROL AND TURF ESTABLISHMENT PLAN
 DIVISION AVE STA 114+00.00 TO 121+55.42

SEH FILE NO. ISDWB170689	64
TE2 OF TE4	78

5:08:18 PM

2/9/2024

FILE: X:\F\J\1\ISDWB\170689\5-final-dsgn\51-drawings\40-Transhwy\Plansheets\C0170689_tel.dgn
MODEL: te3




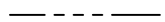




BEGIN CONSTRUCTION
8TH ST STA. 200+10.31

PROTECT & REPAIR
EXISTING LANDSCAPING
(INCIDENTAL)

PROTECT & REPAIR
EXISTING LANDSCAPING
(INCIDENTAL)

LEGEND

-  SODDING FERTILIZER TYPE 3 (22-5-10)
-  INLET PROTECTION
-  FLOW ARROWS
-  EXISTING RIGHT-OF-WAY
-  PROPOSED TEMPORARY EASEMENT
-  CONSTRUCTION LIMITS

DESIGN TEAM			
DRAWN BY:	MTT		
DESIGNER:	JCB		
CHECKED BY:	JCB		
NO.	BY	DATE	REVISIONS

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.

Certified By: Joshua Breid Lic. No. 59756
 Licensed Professional Engineer
 Printed Name: JOSHUA C. BREID Date: 02/09/2023



RAMSEY COUNTY, MINNESOTA
DIVISION AVE AND 8TH ST
 PROJECT NO. 170689

**EROSION CONTROL AND
 TURF ESTABLISHMENT PLAN**
 8TH ST STA 200+10.31 TO 206+00

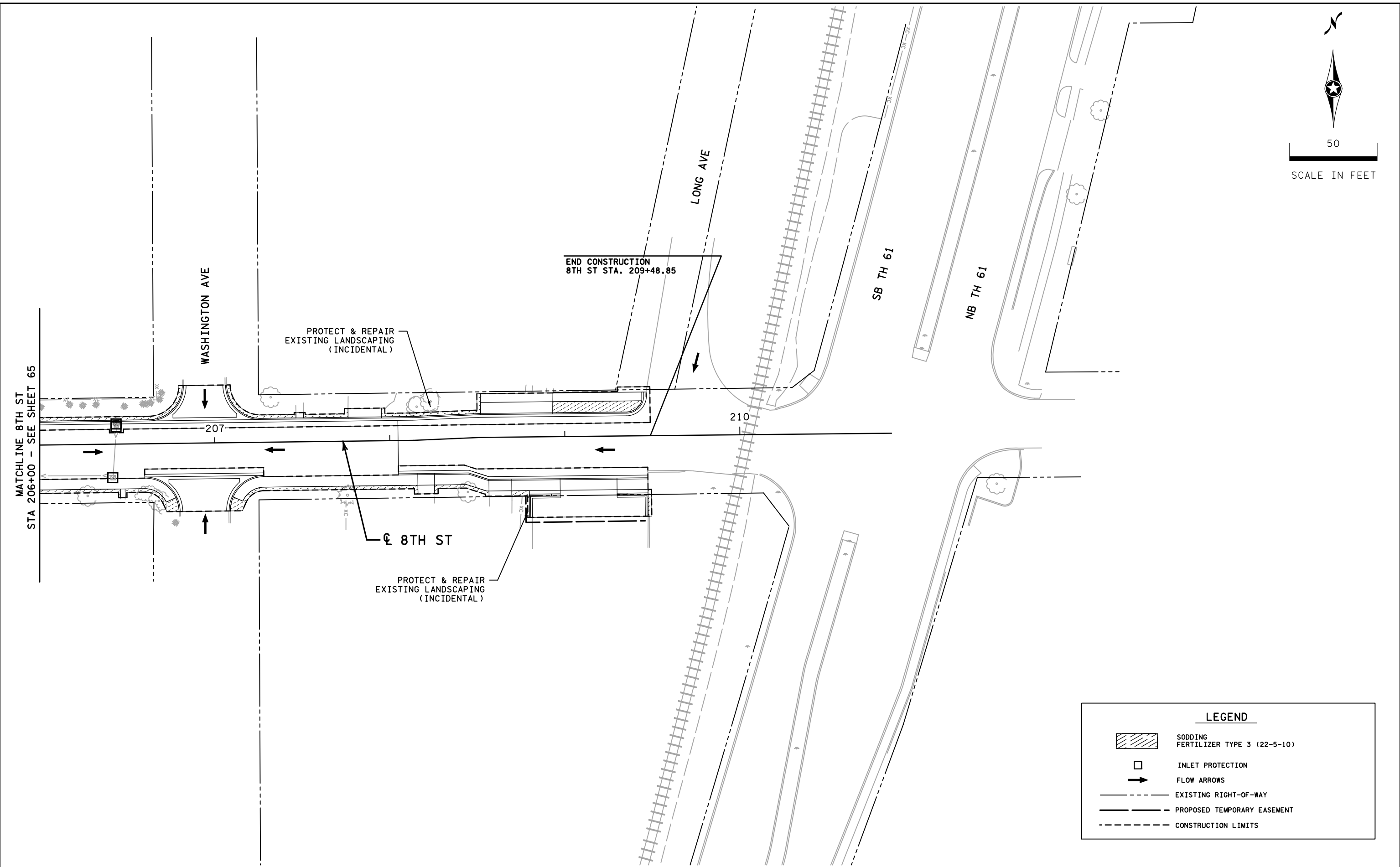
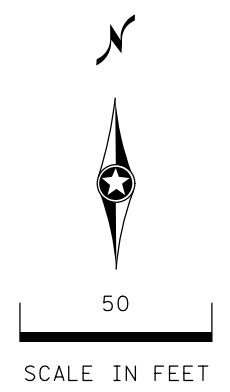
SEH FILE NO. ISDWB170689	65
TE3 OF TE4	78

MATCHLINE 8TH ST
STA 206+00 - SEE SHEET 66

5:08:18 PM

2/9/2024

FILE: X:\F\J\1\ISDWB\170689\5-final-dsgn\51-drawings\40-Transhwy\Plansheets\C0170689_tel.dgn
MODEL: te4



LEGEND	
	SODDING FERTILIZER TYPE 3 (22-5-10)
	INLET PROTECTION
	FLOW ARROWS
	EXISTING RIGHT-OF-WAY
	PROPOSED TEMPORARY EASEMENT
	CONSTRUCTION LIMITS

DESIGN TEAM				
NO.	BY	DATE	REVISIONS	
1	MTT		DRAWN BY:	
2	JCB		DESIGNER:	
3	JCB		CHECKED 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.

Certified By: Joshua C. Breid Lic. No. 59756
 Licensed Professional Engineer
 Printed Name: JOSHUA C. BREID Date: 02/09/2023



RAMSEY COUNTY, MINNESOTA
DIVISION AVE AND 8TH ST
 PROJECT NO. 170689

**EROSION CONTROL AND
 TURF ESTABLISHMENT PLAN**
 8TH ST STA 206+00 TO 209+48.85

SEH FILE NO. ISDWB170689	66
TE4 OF TE4	78

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 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-qj) THRU (6K-dl) 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.

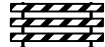
CONSTRUCTION INFORMATION SIGNING:

1. THE CONTRACTOR SHALL USE CONSTRUCTION INFORMATION SIGNING AS SHOWN IN THE PLAN WHICH ARE TO BE USED AS FOLLOWS:
PLACE G20-X1 ADVANCE NOTICE SIGNS 7 DAYS PRIOR TO THE WORK STARTING DATE. ONCE WORK BEGINS, REMOVE THE SIGNS.

INDEX

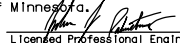
DETOUR SHEET NO.	DESCRIPTIONS
67	TITLE SHEET
68	TABULATION
69	SPECIAL SIGN DETAILS
70	SIGNAGE LAYOUT

TRAFFIC CONTROL DEVICES & SYMBOLS LEGEND

SYMBOL	DESCRIPTION
┆	TRAFFIC CONTROL SIGN
┌	TYPE III BARRICADE = 

5:08:19 PM
2/9/2024
FILE: X:\F\J\1\ISDWB\170689\5-final-dsgn\51-drawings\40-Transitwy\Plansheets\CD170689-tcl.dgn
MODEL: tcl

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: <u>CAA</u>				
DESIGNER: <u>CAA</u>				
CHECKED BY: <u>JJP</u>				


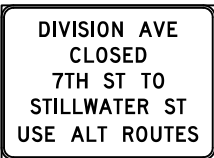

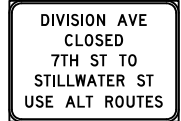

I hereby certify that this plan was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.
Certified By:  Lic. No. 56671
Printed Name: JOSHUA J. PALMATEER Date: 02/09/2023




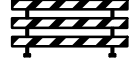
RAMSEY COUNTY, MINNESOTA
DIVISION AVE AND 8TH ST
PROJECT NO. 170689

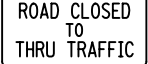
TRAFFIC CONTROL PLAN
TITLE SHEET

SEH FILE NO. ISDWB170689	67
TC1 OF TC4	78

"G" SERIES						
SIGN	SIGN NO.	COLOR	SIZE (IN. X IN.) (WxH)	ASSEMBLY (IN. X IN.) (WxH)	NUMBER OF POST	POST SPACING INCHES
	G20-X1	BLACK ON ORANGE	72" X 60"	72" X 60"	2	42
	WZ-1	BLACK ON ORANGE	108" X 78"	108" X 78"	2	54
	WZ-2	BLACK ON ORANGE	108" X 78"	108" X 78"	2	54
	WZ-3	BLACK ON ORANGE	84" X 60"	84" X 60"	2	48
	WZ-4	BLACK ON ORANGE	84" X 60"	84" X 60"	2	48

"W" SERIES						
SIGN	SIGN NO.	COLOR	SIZE (IN. X IN.) (WxH)	ASSEMBLY (IN. X IN.) (WxH)	NUMBER OF POST	POST SPACING INCHES
	W20-3	BLACK ON ORANGE	36" X 36"		1	

DEVICES			
SIGN	SIGN NO.	COLOR	SIZE (IN. X IN.) (WxH)
	TYPE III BARRICADE	ORANGE ON WHITE	

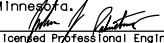
BARRICADE MOUNTED SIGNS			
SIGN	SIGN NO.	COLOR	SIZE (IN. X IN.) (WxH)
	R11-4	BLACK ON WHITE	60" X 30"

GENERAL NOTES:

- SIGN STRUCTURE TABULATIONS INDICATE SQUARE TUBE GROUND MOUNTED SIGN STRUCTURES THAT ARE MASH-16 COMPLIANT.
- 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.
- 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.
- UNLESS OTHERWISE INDICATED, USE 2-1/2 INCH RISER POSTS FOR GROUND MOUNTED SIGN STRUCTURES.

UPDATED 04/24/2020

DESIGN TEAM			
DRAWN BY:	CAA		
DESIGNER:	CAA		
CHECKED BY:	JJP		
NO.	BY	DATE	REVISIONS

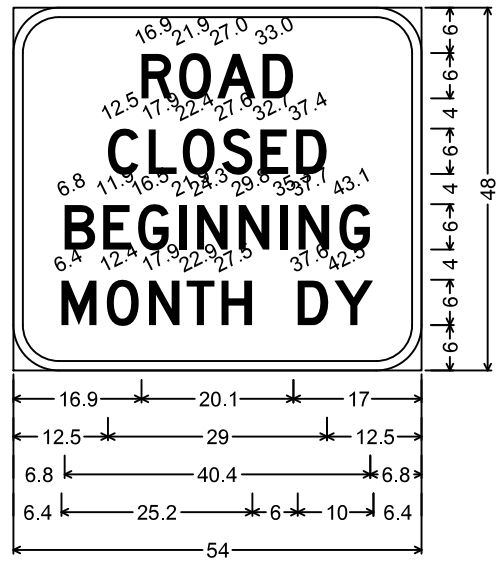
I hereby certify that this plan was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.
 Certified By:  Lic. No. 56671
 Printed Name: JOSHUA J. PALMATEER Date: 02/09/2023



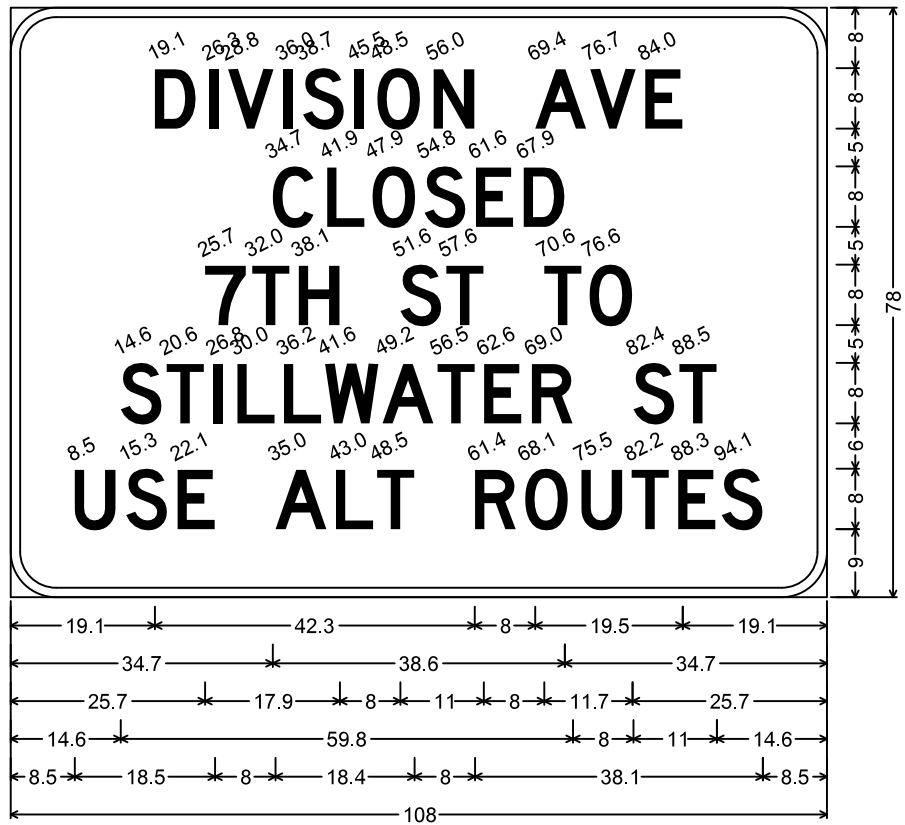
RAMSEY COUNTY, MINNESOTA
DIVISION AVE AND 8TH ST
 PROJECT NO. 170689

TRAFFIC CONTROL PLAN
 TABULATION

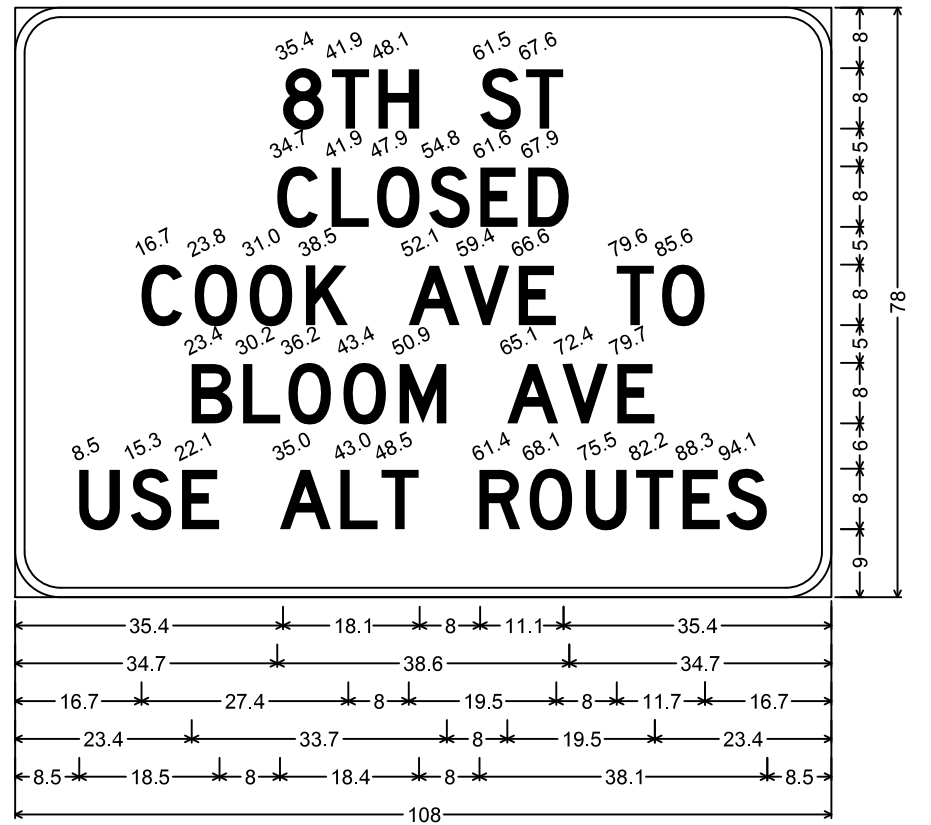
SEH FILE NO. ISDWB170689	68
TC2 OF TC4	78



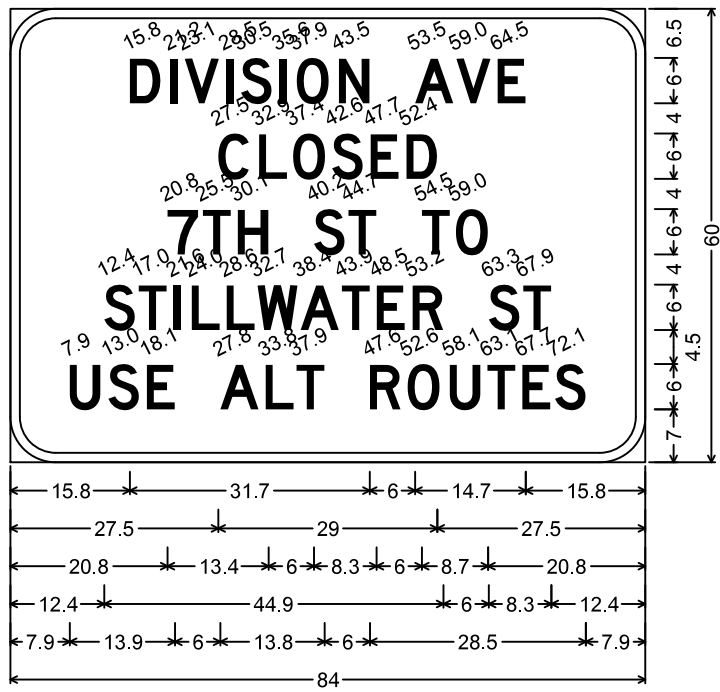
WZ-1; ROAD CLOSED BEGINNING MONTH DY;
6.0" Radius, 1.3" Border, Black on, Orange;
"ROAD", D 2K; "CLOSED", D 2K;
"BEGINNING", D 2K;
"MONTH DY", D 2K;



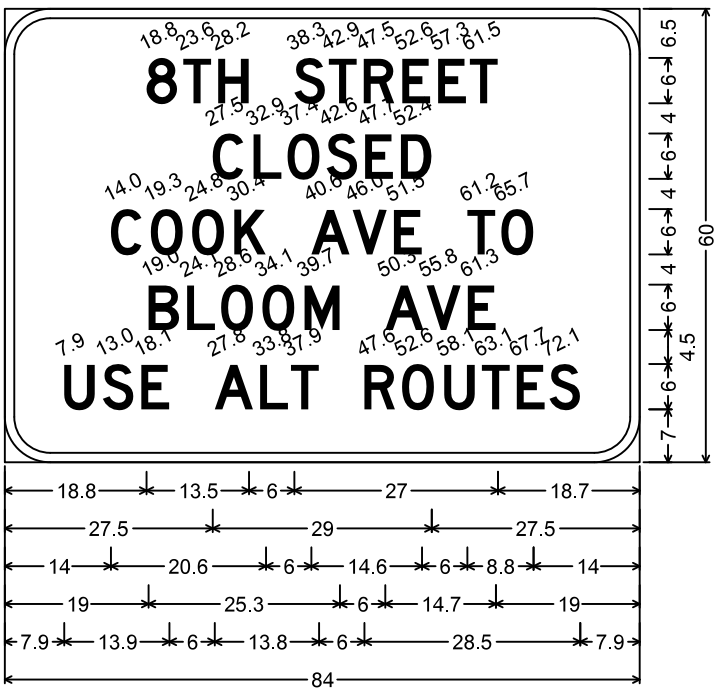
WZ-2; DIVISION AVE CLOSED 7TH ST TO STILLWATER ST USE ALT ROUTES;
6.0" Radius, 1.3" Border, Black on, Orange;
"DIVISION AVE", D 2K; "CLOSED", D 2K; "7TH ST TO", D 2K;
"STILLWATER ST", D 2K; "USE ALT ROUTES", D 2K;



WZ-3; 8TH ST CLOSED COOK AVE TO BLOOM AVE USE ALT ROUTES;
6.0" Radius, 1.3" Border, Black on, Orange;
"8TH ST", D 2K; "CLOSED", D 2K; "COOK AVE TO", D 2K;
"BLOOM AVE", D 2K; "USE ALT ROUTES", D 2K;



WZ-4; DIVISION AVE CLOSED 7TH ST TO STILLWATER ST USE ALT ROUTES;
6.0" Radius, 1.3" Border, Black on, Orange;
"DIVISION AVE", D 2K; "CLOSED", D 2K;
"7TH ST TO", D 2K; "STILLWATER ST", D 2K;
"USE ALT ROUTES", D 2K;



WZ-5; 8TH ST CLOSED COOK AVE TO BLOOM AVE USE ALT ROUTES;
6.0" Radius, 1.3" Border, Black on, Orange;
"8TH STREET", D 2K; "CLOSED", D 2K;
"COOK AVE TO", D 2K; "BLOOM AVE", D 2K;
"USE ALT ROUTES", D 2K;

NOTE: ALL DIMENTIONS IN INCHES

DESIGN TEAM			
DRAWN BY:	CAA		
DESIGNER:	CAA		
CHECKED BY:	JJP		
NO.	BY	DATE	REVISIONS

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.
Certified By: *[Signature]* Lic. No. 56671
Printed Name: JOSHUA J. PALMATEER Date: 02/09/2023



RAMSEY COUNTY, MINNESOTA
DIVISION AVE AND 8TH ST
PROJECT NO. 170689

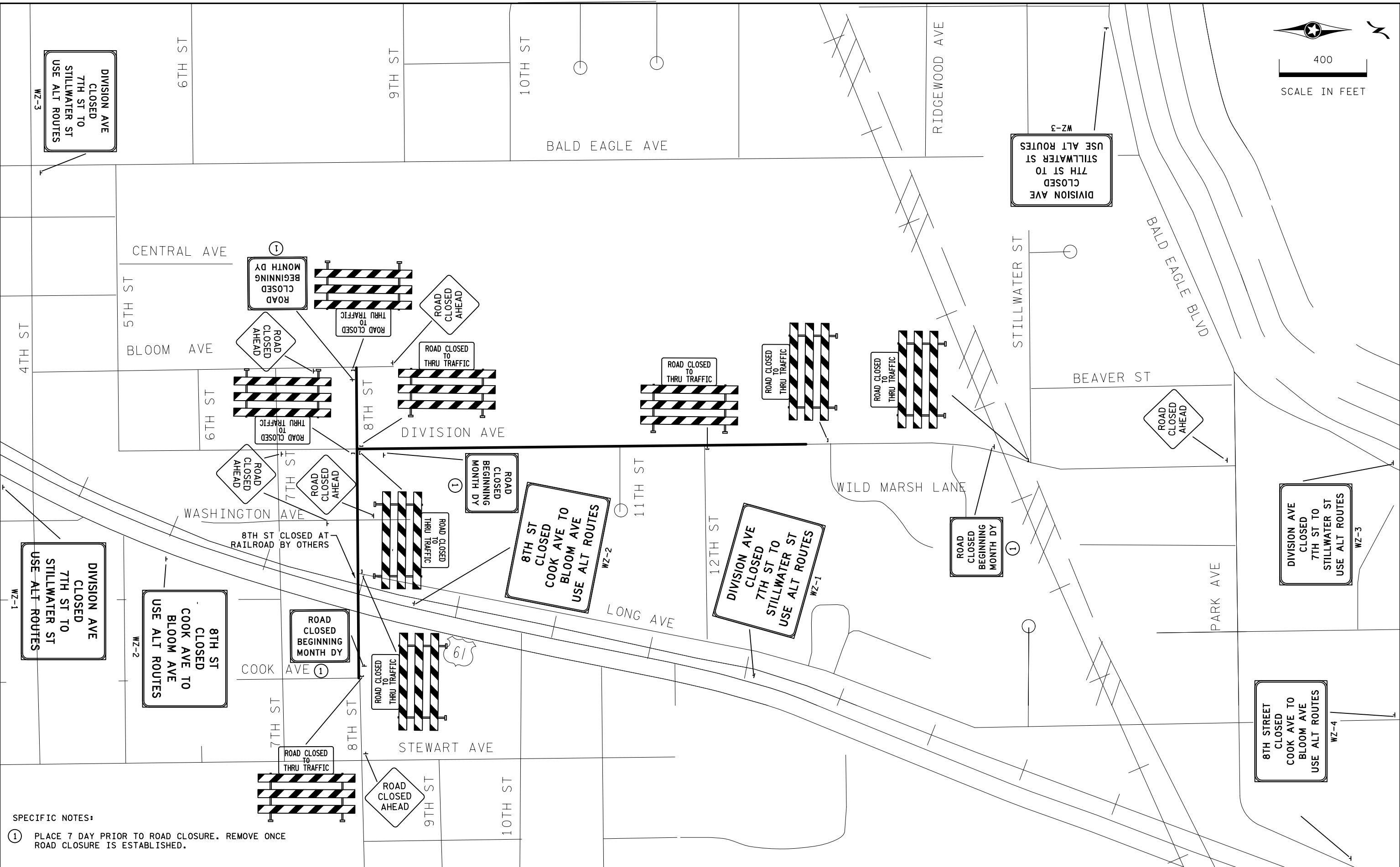
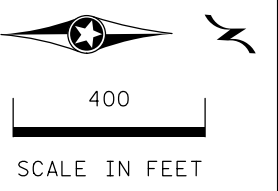
TRAFFIC CONTROL PLAN
SPECIAL SIGN DETAILS

SEH FILE NO. ISDWB170689	69
TC3 OF TC4	78

5:08:20 PM

2/9/2024

FILE: X:\F\J\1\ISDWB\170689\5-final-dsgn\51-drawings\40-Trans Hwy\Planisheets\0170689_tcl.dgn
MODEL: tc4



SPECIFIC NOTES:

① PLACE 7 DAY PRIOR TO ROAD CLOSURE. REMOVE ONCE ROAD CLOSURE IS ESTABLISHED.

DESIGN TEAM			
DRAWN BY:	CAA		
DESIGNER:	CAA		
CHECKED BY:	JJP		
NO.	BY	DATE	REVISIONS

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.

Certified By: *[Signature]* Lic. No. 56671
Printed Name: JOSHUA J. PALMATEER Date: 02/09/2023



RAMSEY COUNTY, MINNESOTA
DIVISION AVE AND 8TH ST
PROJECT NO. 170689

TRAFFIC CONTROL PLAN
SIGNAGE LAYOUT

SEH
FILE NO.
ISDWB170689
TC4
OF TC4

70
78

SIGN NUMBER	SIGN AND DELINEATOR / MARKER				SUPPORT		
	PANEL CODE	LEGEND	SIZE (W x H)	MOUNTING HEIGHT	TYPE	RISER POST SIZE	NUMBER OF POSTS
			INCHES	FEET		INCHES	
S-1	R3-7L	LEFT LANE MUST TURN LEFT	30 x 30	7	SQ-SOIL	2	1
S-2	R4-7	KEEP RIGHT	24 x 30	7	SQ-SOIL	2	1
	X4-3	CYLINDER STYLE DELINEATOR (WHITE)	6 x 9	4			
S-3	S1-1	SCHOOL XING	36 x 36	7	SQ-SOIL	2-1/2	1
	W16-7PL	DOWN ARROW LEFT PLAQUE (FLUORESCENT YELLOW-GREEN)	30 x 18				
S-4	R3-7L	LEFT LANE MUST TURN LEFT	30 x 30	7	SQ-SOIL	2-1/2	1
	R8-3	NO PARKING	24 x 24				
S-5	R4-7	KEEP RIGHT	24 x 30	7	SQ-SOIL	2	1
	X4-3	CYLINDER STYLE DELINEATOR (WHITE)	6 x 9				
S-6	S1-1	SCHOOL XING	36 x 36	7	SQ-SOIL	2-1/2	1
	W16-7PL	DOWN ARROW LEFT PLAQUE (FLUORESCENT YELLOW-GREEN)	30 x 18				
S-7	R2-1	SPEED LIMIT 30	24 x 30	7	SQ-SOIL	2	1
	R8-3	NO PARKING	24 x 24				
S-8	R3-7R	RIGHT LANE MUST TURN RIGHT	30 x 30	7	SQ-SOIL	2	1
	R1-1	STOP	30 x 30				
S-9	R1-3P	ALL WAY PLAQUE	18 x 6	7	SQ-SOIL	2	1
	R1-1	STOP	30 x 30				
S-10	R1-3P	ALL WAY PLAQUE	18 x 6	7	SQ-SOIL	2	1
	R1-3P	ALL WAY PLAQUE	18 x 6				
S-11	R8-3	NO PARKING	24 x 24	7	SQ-SOIL	2	1
		8TH ST					
S-12		DIVISION AVE		7	SQ-SOIL	2-1/2	1
	R1-1	STOP	30 x 30				
	R1-3P	ALL WAY PLAQUE	18 x 6				
S-13	R1-1	STOP	30 x 30	7	SQ-SOIL	2	1
	R1-3P	ALL WAY PLAQUE	18 x 6				
S-14	R8-3	NO PARKING	24 x 24	7	SQ-SOIL	2	1
S-15	R8-3	NO PARKING	24 x 24	7	SQ-SOIL	2	1
S-16		8TH ST		7	SQ-SOIL	2-1/2	1
		DIVISION AVE					
	R1-1	STOP	30 x 30				
S-17	W10-1	RR ADVANCE WARNING	36" DIA.	7	SQ-SOIL	2	1
S-18	R3-8DA	LT-R	36 x 30	7	SQ-SOIL	2	1
S-19	R8-3	NO PARKING	24 x 24	7	SQ-SOIL	2	1
S-20	R8-3	NO PARKING	24 x 24	7	SQ-SOIL	2	1
S-21	R8-3	NO PARKING	24 x 24	7	SQ-SOIL	2	1

SIGNING PLAN INDEX

SHEET NO.	DESCRIPTION
71	TITLE SHEET
72	PAVEMENT MARKING DETAILS
73	SIGNING DETAILS
74 - 78	LAYOUTS

ABBREVIATIONS

SQ SQUARE TUBE

SIGNING SYMBOLS

—L SIGN

GENERAL INFORMATION:

- MOUNTING HEIGHT IS MINIMUM (WITH A + 6 INCH TOLERANCE)
- SEE CURRENT MNDOT STANDARD SIGNS AND MARKINGS MANUAL FOR STANDARD SIGN DESIGNS, SPLICE PLATES, STRINGERS AND PUNCHING CODES.
- SEE PANEL LAYOUTS FOR DESIGNS OF PANEL OVERLAYS OR PANEL CODES THAT BEGIN WITH THE LETTER "P" (P1, P2 ETC.).
- SEE STANDARD PLANS AND DETAILS FOR SIGN STRUCTURE INSTALLATION AND PLACEMENT.
- STANDARD SIGN PANELS ARE LISTED IN THE TABULATIONS WITH TWO DIMENSIONS THAT MAY NOT BE THEIR ACTUAL WIDTH OR HEIGHT, BUT INSTEAD ARE LENGTHS OF THEIR SIDES OR DIAMETER. SEE THE MNDOT STANDARD SIGNS AND MARKINGS MANUAL FOR ACTUAL DIMENSIONS OF THESE PANELS BASED UPON THE CORRESPONDING DIMENSIONS FROM THE TABULATIONS
- SIGNS AND DELINEATOR/MARKER TABULATIONS DISPLAY SIGN PANEL AND SUPPORT INFORMATION FOR NEW SIGNS
SIGNS BEING REMOVED OR SALVAGED MAY NOT INCLUDE PANEL OR SUPPORT INFORMATION IN THE TABULATION
- INSTALL SIGNS AFTER FINAL GRADING IS COMPLETE.

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: CAA				
DESIGNER: CAA				
CHECKED BY: JJP				

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.
 Certified By: *[Signature]* Lic. No. 56671
 Printed Name: JOSHUA J. PALMATEER Date: 02/09/2023



RAMSEY COUNTY, MINNESOTA
DIVISION AVE AND 8TH ST
 PROJECT NO. 170689

SIGNING AND PAVEMENT MARKING PLAN

TITLE SHEET

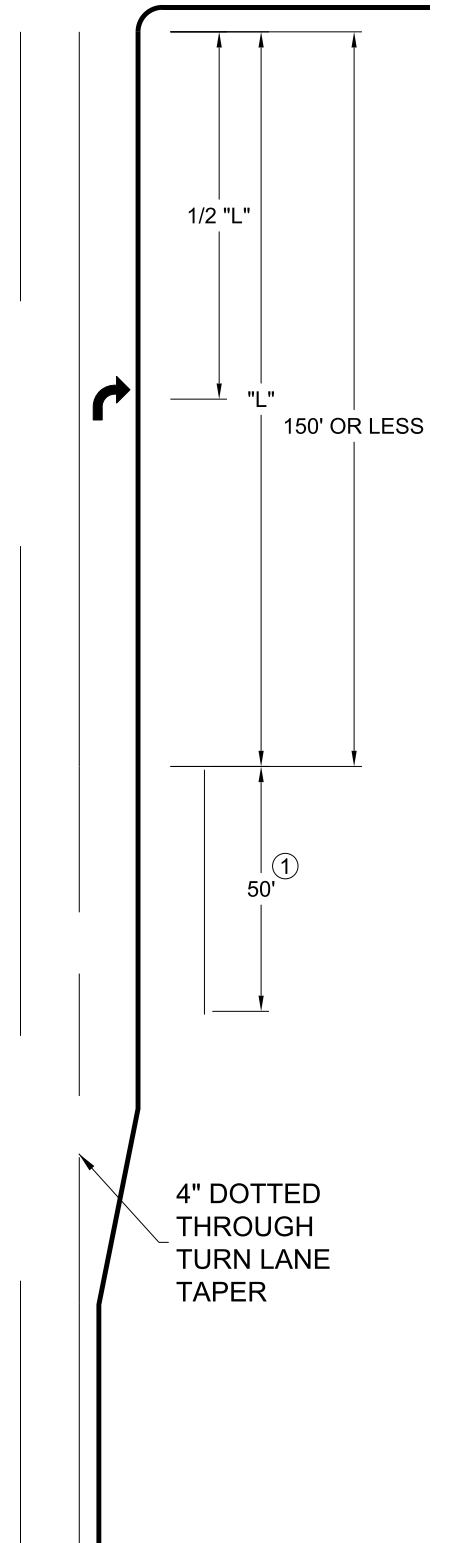
SEH FILE NO. ISDWB170689	71
SS1 OF SS8	78

5:08:25 PM

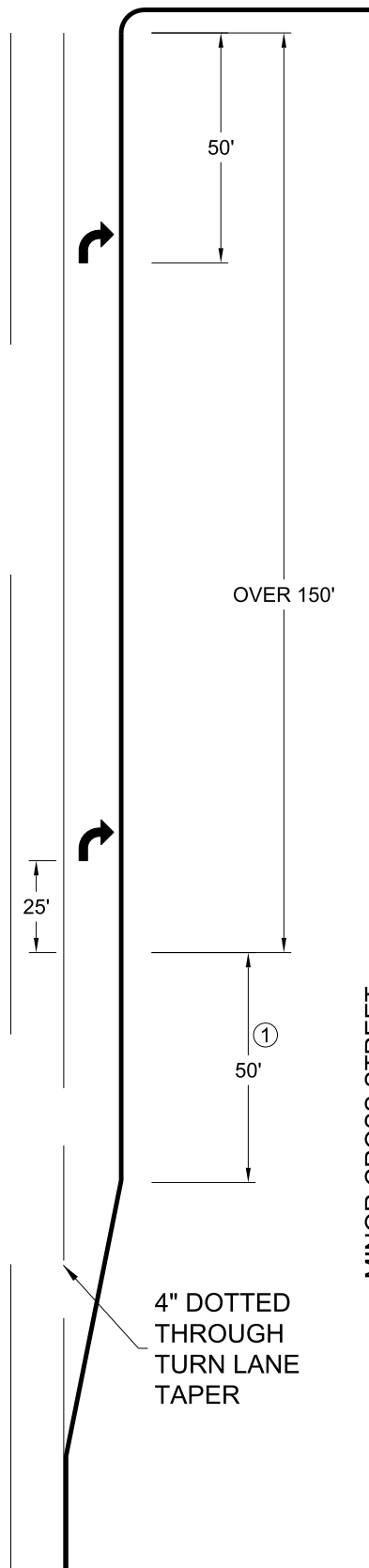
2/9/2024

FILE: X:\F\J\1\15DWB\170689\5-final-dsgn\51-drawings\40-Transhwy\Plansheets\CD170689_ssi.dgn
MODEL: ssp

TURN LANE ARROW MESSAGE LANE LESS THAN 200' LONG

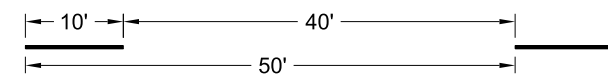


TURN LANE ARROW MESSAGE LANE GREATER THAN 200' LONG



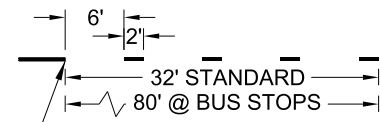
4" BROKEN CYCLES

CENTERLINE AND CENTER TURN LANE
10' SKIP WITH 40' SPACE (50' OVERALL CYCLE)

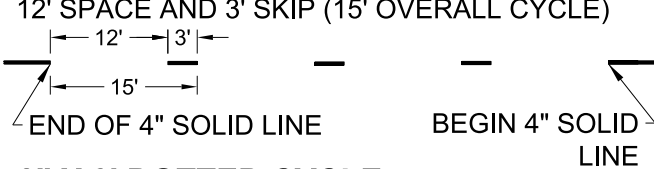


4" DOTTED CYCLES

BIKE LANES APPROACHING INTERSECTIONS AND BUS STOPS
6' SPACE AND 2' SKIP (8' OVERALL CYCLE)
32' STANDARD LENGTH WHEN APPROACHING INTERSECTION
80' WHEN BUS STOP PRESENT

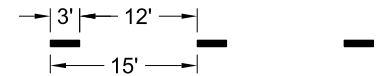


END OF 4" SOLID LINE
DOTTED 4" LINES CONNECTING SOLID EDGE LINES TO TURN LANE LINES



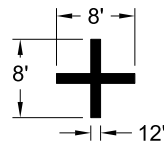
8" X 3' DOTTED CYCLE

LANE ENDS
12' SPACE AND 3' SKIP (15' OVERALL CYCLE)



SURVEY MARKER

16" OF 12" SOLID WHITE

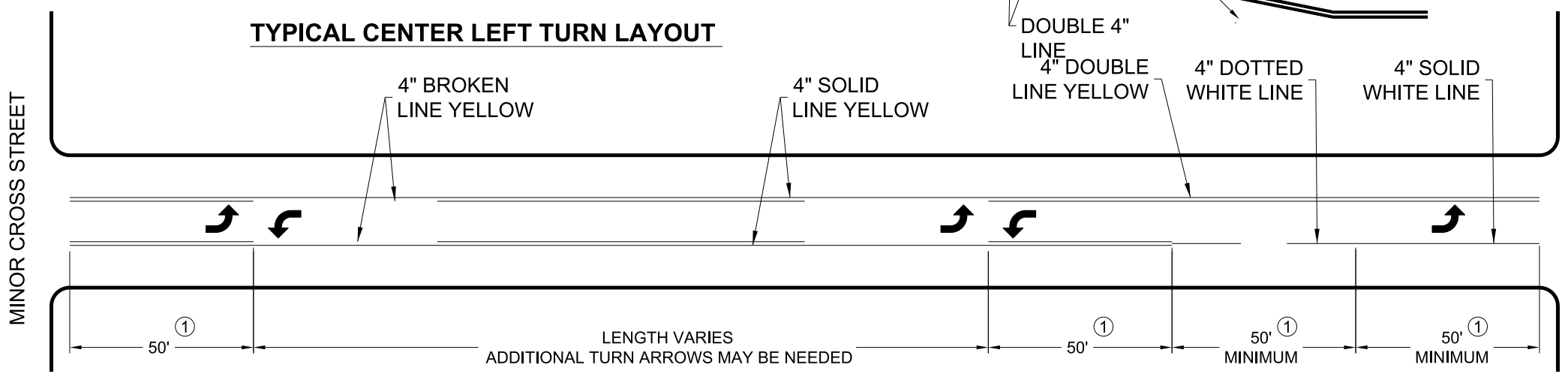


BIKE SYMBOL AND ARROW

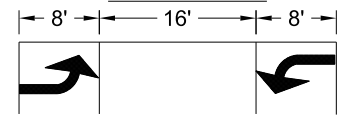
6' 6' 6'



TYPICAL CENTER LEFT TURN LAYOUT



TYPICAL CENTER LEFT TURN ARROWS

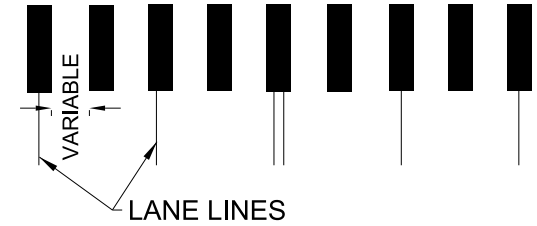


CROSSWALK BLOCKS

ALL CROSSWALK BLOCKS SHALL BE CENTERED ON AND IN BETWEEN LANE LINES AND BE A TYPICAL 8' IN LENGTH

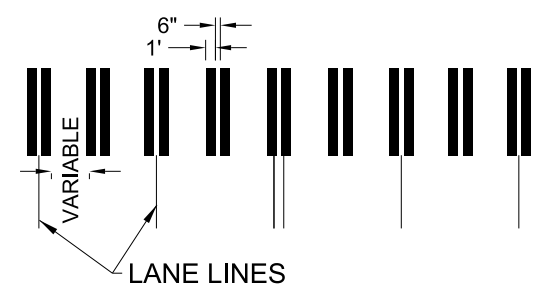
MULTI-COMPONENT

TYPICAL SOLID BLOCK 2.5' IN WIDTH



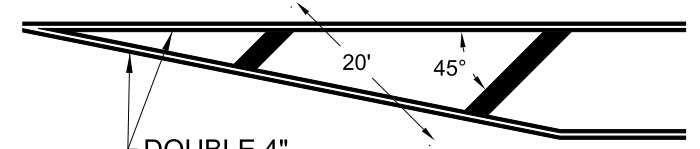
THERMO PLASTIC

TYPICAL 2- 1' STRIPES WITH A 6" SPACE



PAINTED MEDIAN

24" SOLID LINE AT 45° ANGLE
SPACE 20' FROM FRONT EDGE OF LINES



NOTES

ALL DIMENSIONS ARE TYPICAL, SEE PLAN FOR SPECIFIC LAYOUT
① FIELD CONDITIONS MAY EXCEED TYPICAL OR MINIMUM REQUIREMENTS; STRIPE AS DIRECTED BY ENGINEER

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: CAA				
DESIGNER: CAA				
CHECKED BY: JJP				

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.
 Certified By: *[Signature]* Lic. No. 56671
 Printed Name: JOSHUA J. PALMATEER Date: 02/09/2023



RAMSEY COUNTY, MINNESOTA
 DIVISION AVE AND 8TH ST
 PROJECT NO. 170689

SIGNING AND PAVEMENT MARKING PLAN
 PAVEMENT MARKING DETAILS

SEH FILE NO. ISDWB170689	72
SS2 OF SSB	78

7/27/2023

5:08:25 PM

2/9/2024

FILE: X:\F\J\1\ISDWB\170689\5-Final-dsgn\51-drawings\40-Trans Hwy\Plan sheets\C0170689_ssi.dgn
MODEL: ssi

GENERAL REQUIREMENTS

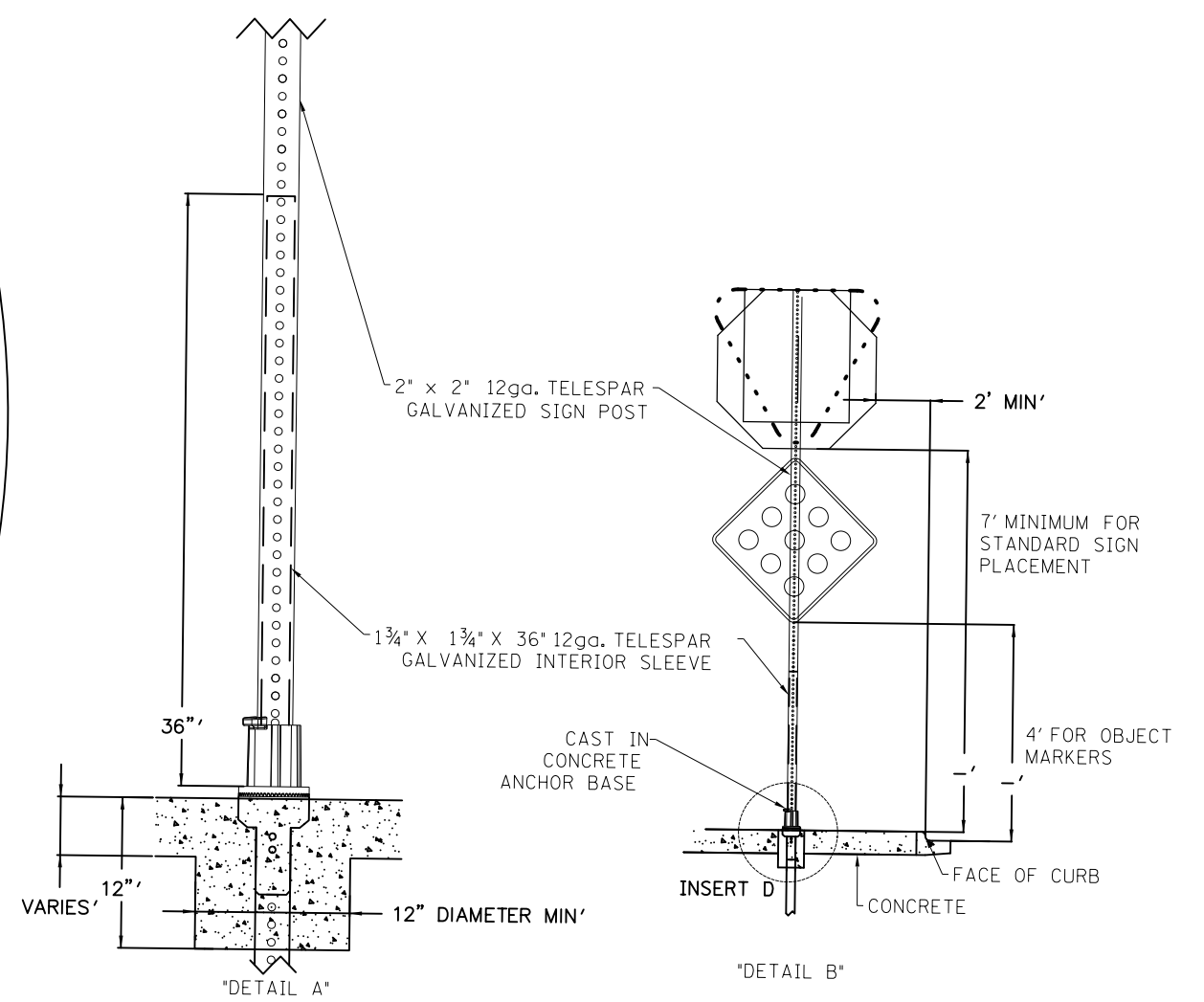
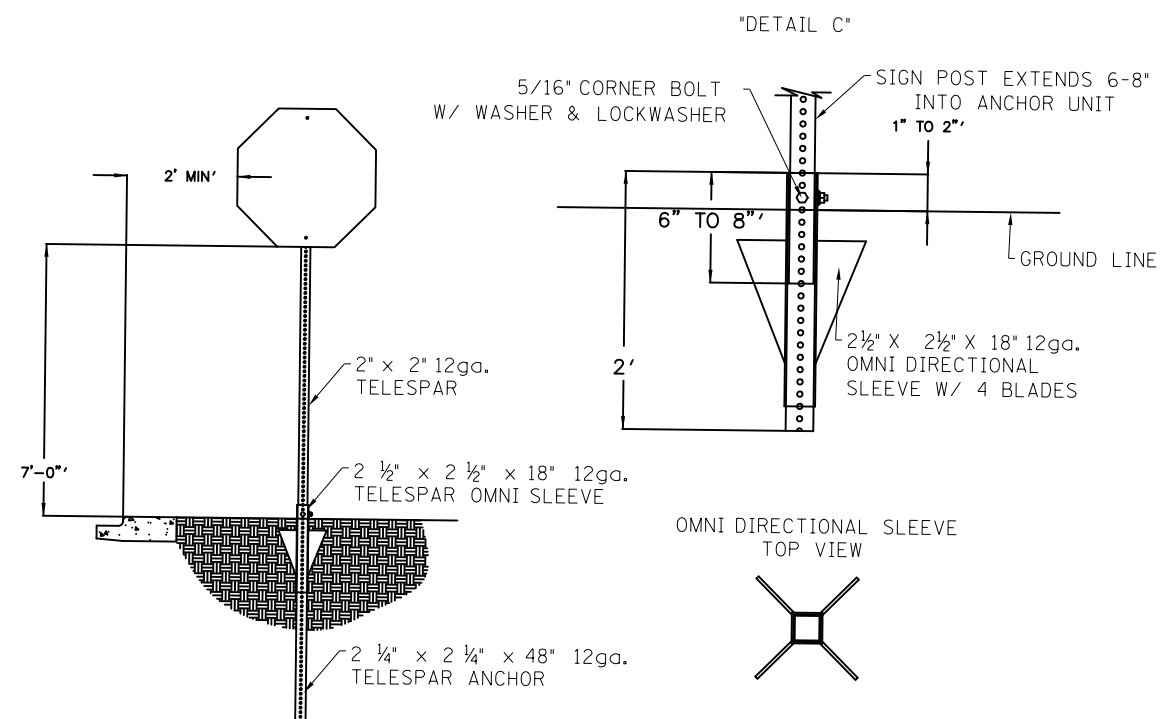
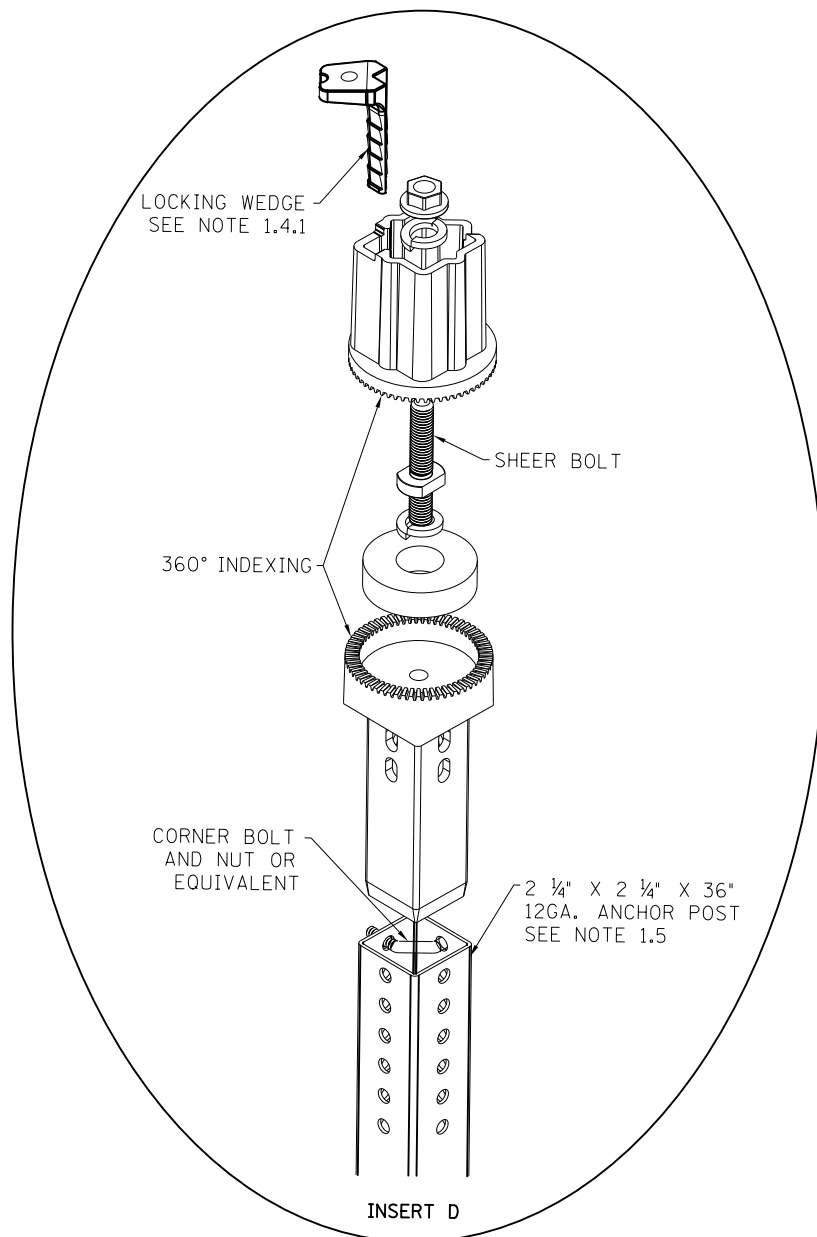
1. ALL SIGN POSTS SHALL BE 2" X 2" GALVANIZED STEEL TUBING, 12 GAUGE WITH 7/16" HOLES SPACED 1" APART ON ALL SIDES (TELSPAR)
2. MOUNTING (PUNCHING CODE) FOR TYPE "C" SIGN PANELS SHALL BE AS INDICATED IN THE STANDARD SIGNS MANUAL UNLESS OTHERWISE SPECIFIED. PLATED STEEL NYLON INSERT LOCK NUTS AS SHOWN.
3. USE STAINLESS STEEL 5/16" BOLTS AND WASHERS WITH PLATED STEEL NYLON INSERT LOCK NUTS FOR SIGN MOUNTING
4. STAINLESS STEEL WASHER WITH THE SAME DIMENSIONS SHALL BE PROVIDED BETWEEN ALL NYLON WASHERS AND BOLT HEADS.
5. ALL TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, INCLUDING "FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS - FEBRUARY 2011 OR NEWER.
6. ALL TRAFFIC CONTROL DEVICES SHALL HAVE DIAMOND GRADE (DG3) RETROREFLECTIVE SHEETING.

CONCRETE INSTALLATION

1. ALL SIGNS INSTALLED IN CONCRETE SURFACES SHALL CONSIST OF A BREAK AWAY UNIT
 - 1.1. UNIT SHALL ALLOW FOR 360° INDEXING FOR PROPER SIGN ORIENTATION AFTER INSTALLATION
 - 1.2. UNIT SHALL HAVE A STUB HEIGHT LESS THAN 4" AFTER BREAK AWAY.
 - 1.3. UNIT SHALL UTILIZE A SHEER BOLT AS IT'S MEANS OF BREAKING AWAY
 - 1.4. UNIT SHALL UTILIZE A LOCKING WEDGE OR SHIM TO ELIMINATE ALL TOLERANCE BETWEEN MOUNTING UNIT AND POST
 - 1.4.1. LOCKING WEDGE SHALL BE TAPPED INTO PLACE UNTIL SNUG. AVOID FORCING WEDGE INTO PLACE TO ELIMINATE POSSIBLE DAMAGE TO THE TOP COUPLING
 - 1.5. BREAK AWAY BASE SHALL BE INSERTED INTO A 2 1/4" X 2 1/4" 12 GAUGE ANCHOR POST WITH A MINIMUM LENGTH OF 36".
 - 1.6. BREAK AWAY BASE SHALL BE SECURED TO ANCHOR POST WITH A CORNER BOLT, OR 2 STRAIGHT BOLTS OR EQUIVALENT AS DETERMINED BY THE ENGINEER.
 - 1.7. UNIT SHALL BE ON THE MnDOT PRE APPROVED PRODUCTS LIST
2. UNIT SHALL BE INSTALLED TO MANUFACTURERS SPECIFICATIONS
3. CONCRETE FOOTING FOR SIGN BASE IS REQUIRED AND SHALL BE A MINIMUM OF 12" IN DIAMETER AND 12" IN DEPTH. CONCRETE FOOTING SHALL BE INCIDENTAL. SEE "DETAIL A".
4. IF CORING IS REQUIRED FOR SIGN PLACEMENT, THE CORING AND CONCRETE SHALL BE INCIDENTAL.
5. UNIT PLACEMENT MAY DEPEND ON SIZE OF SIGN, SEE "DETAIL B" AND MN MUTCD FOR GUIDANCE.
6. A 1 3/4" X 1 3/4" GALVANIZED STEEL TUBING, 12 GAUGE WITH 7/16" HOLES SPACED 1" APART ON ALL SIDES (TELSPAR), 36" IN LENGTH SHALL BE SUPPLIED AND INSERTED INTO THE SIGN POST FOR ADDED STABILITY. SEE "DETAIL A"
7. A SLIP BASE UNIT MAY BE SUBSTITUTED UPON ENGINEERS APPROVAL. CONTRACTOR SHALL SUPPLY PRODUCT SPECIFICATIONS AND INFORMATION TO THE ENGINEER FOR REVIEW PRIOR TO APPROVAL.

GROUND INSTALLATION

1. ALL SIGNS INSTALLED IN GROUND SHALL CONSIST OF A BREAK AWAY UNIT
 - 1.1. UNIT SHALL BE STEM BASE MOUNT ATTACHED TO A SOIL ANCHOR THAT IS 4' IN DEPTH AND INCORPORATES A SOIL SPADE DRIVEN WITHIN 1' TO 2" ABOVE GRADE. SEE "DETAIL C"
 - 1.2. UNIT SHALL HAVE A STUB HEIGHT LESS THAN 4" AFTER BREAK AWAY.
2. UNIT SHALL BE INSTALLED TO MANUFACTURERS SPECIFICATIONS
3. UNIT PLACEMENT MAY DEPEND ON SIZE AND TYPE OF SIGN, SEE "DETAIL B" AND MN MUTCD FOR GUIDANCE.
4. A SLIP BASE UNIT MAY BE SUBSTITUTED UPON ENGINEERS APPROVAL. CONTRACTOR SHALL SUPPLY PRODUCT SPECIFICATIONS AND INFORMATION TO THE ENGINEER FOR REVIEW PRIOR TO APPROVAL.



9/21/2018

DESIGN TEAM				
DRAWN BY:	CAA			
DESIGNER:	CAA			
CHECKED BY:	JJP			
NO.	BY	DATE	REVISIONS	

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.

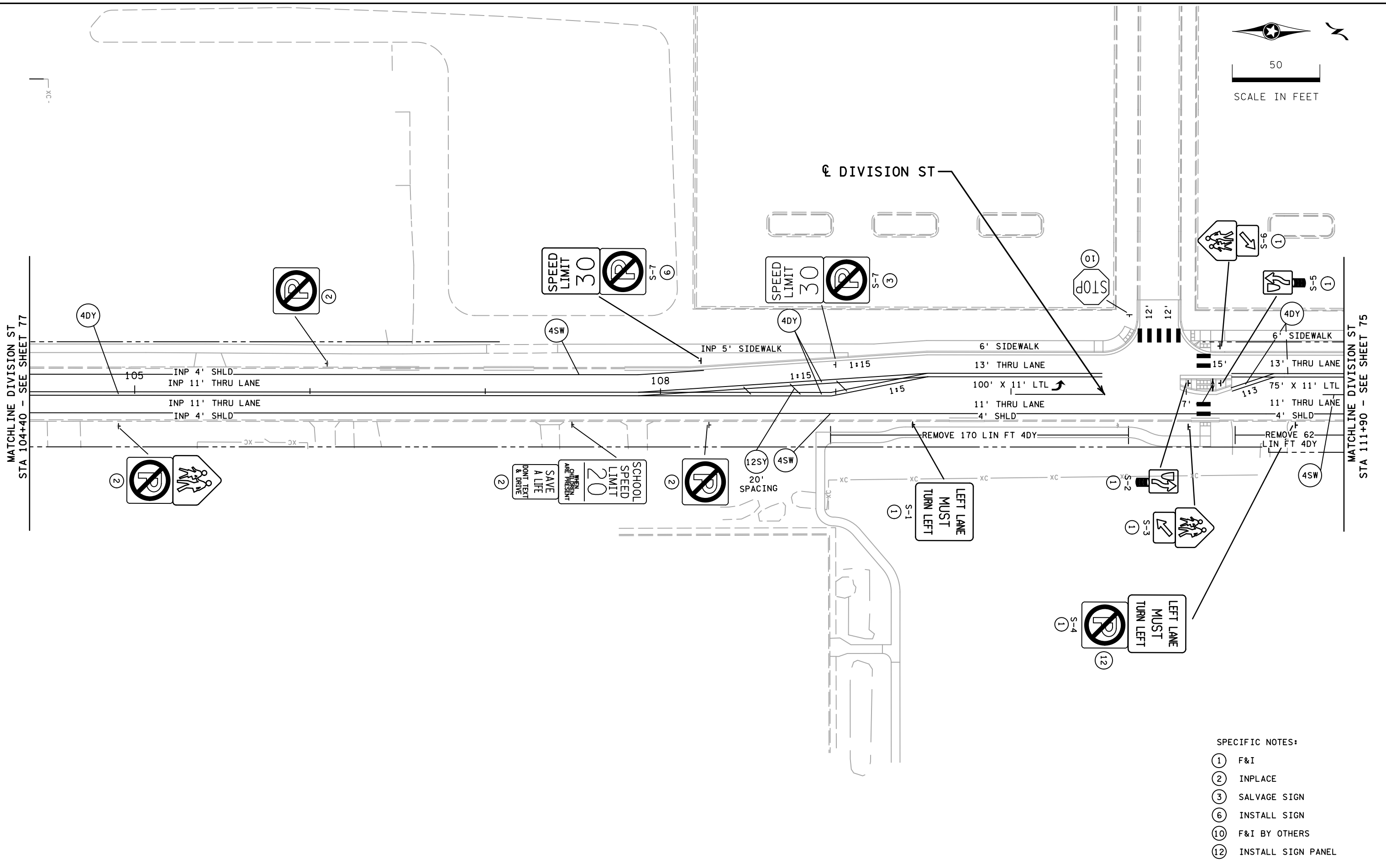
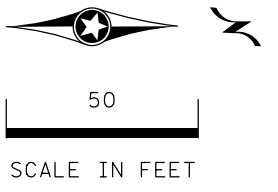
Certified By: *[Signature]* Lic. No. 56671
 Printed Name: JOSHUA J. PALMATEER Date: 02/09/2023



RAMSEY COUNTY, MINNESOTA
 DIVISION AVE AND 8TH ST
 PROJECT NO. 170689

SIGNING AND PAVEMENT MARKING PLAN
 SIGNING DETAILS

SEH FILE NO. ISDWB170689
 SS3 OF SS8
 73
 78



- SPECIFIC NOTES:**
- ① F&I
 - ② INPLACE
 - ③ SALVAGE SIGN
 - ⑥ INSTALL SIGN
 - ⑩ F&I BY OTHERS
 - ⑫ INSTALL SIGN PANEL

DESIGN TEAM				
DRAWN BY:	CAA			
DESIGNER:	CAA			
CHECKED BY:	JJP			
NO.	BY	DATE	REVISIONS	

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.

Certified By: *[Signature]* Lic. No. 56671
 Licensed Professional Engineer
 Printed Name: JOSHUA J. PALMATEER Date: 02/09/2023



RAMSEY COUNTY, MINNESOTA
DIVISION AVE AND 8TH ST
 PROJECT NO. 170689

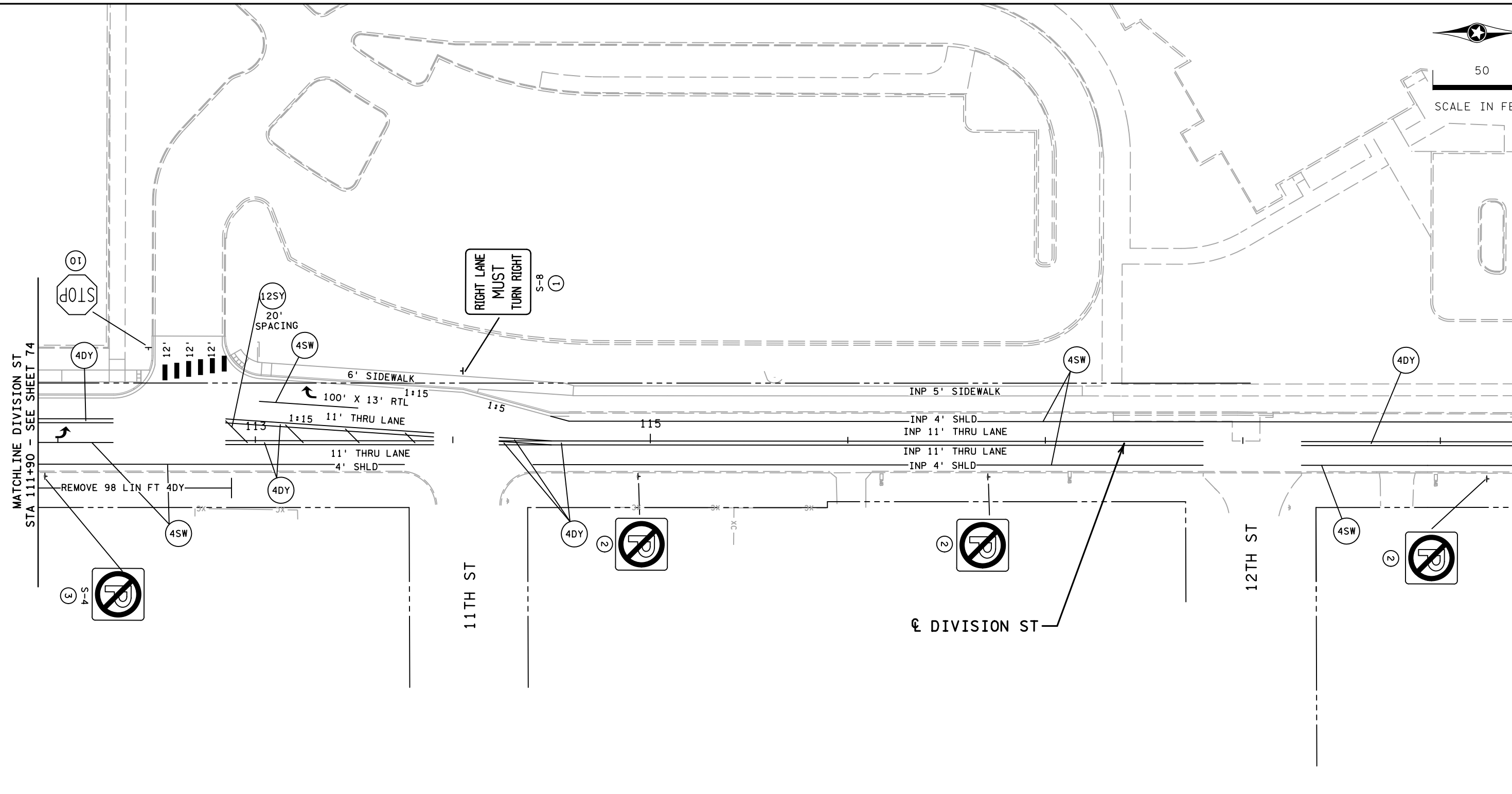
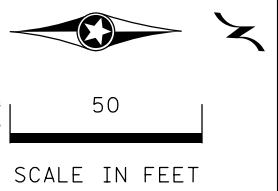
SIGNING AND PAVEMENT MARKING PLAN
 DIVISION AVE STA 104+40 TO 111+90

SEH FILE NO. ISDWB170689	74
SS4 OF SS8	78

5:08:26 PM

2/9/2024

FILE: X:\F\J\1\ISDWB\170689\5-final-dsgn\51-drawings\40-Transhwy\Plansheets\CD170689_ssi.dgn
MODEL: ss5



SPECIFIC NOTES:

- ① F&I
- ② INPLACE
- ③ SALVAGE SIGN
- ⑩ F&I BY OTHERS

DESIGN TEAM			
DRAWN BY:	CAA		
DESIGNER:	CAA		
CHECKED BY:	JJP		
NO.	BY	DATE	REVISIONS

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.

Certified By: *[Signature]* Lic. No. 56671
 Printed Name: JOSHUA J. PALMATEER Date: 02/09/2023



RAMSEY COUNTY, MINNESOTA
DIVISION AVE AND 8TH ST
 PROJECT NO. 170689

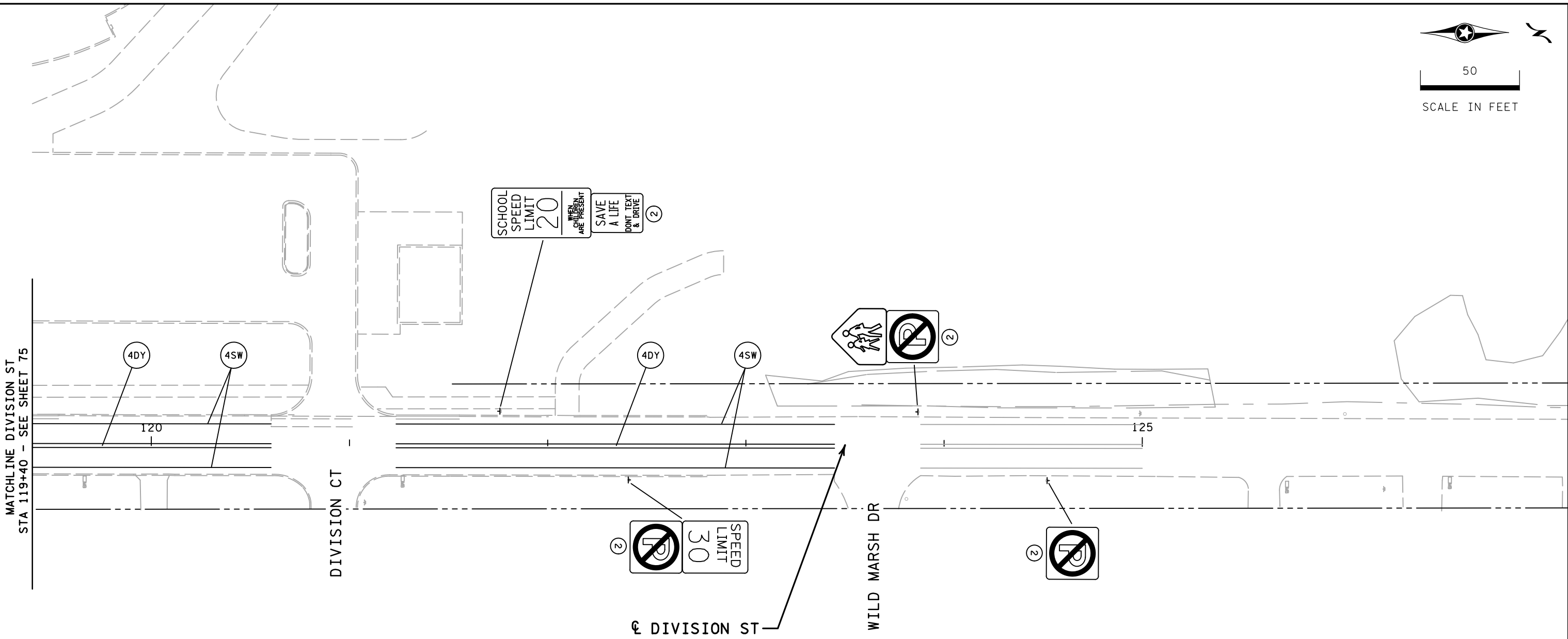
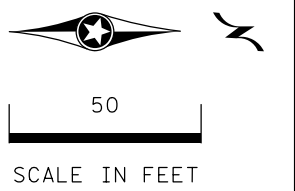
SIGNING AND PAVEMENT MARKING PLAN
 DIVISION AVE STA 111+90 TO 119+40

SEH FILE NO. ISDWB170689	75
SS5 OF SS8	78

5:08:26 PM

2/9/2024

FILE: X:\F\J\1\ISDWB\170689\5-final-dsgn\51-drawings\40-Transhwy\Plansheets\CD170689_ssi.dgn
MODEL: ss6



SPECIFIC NOTES:
② INPLACE

DESIGN TEAM			
DRAWN BY:	CAA		
DESIGNER:	CAA		
CHECKED BY:	JJP		
NO.	BY	DATE	REVISIONS

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.
 Certified By: *[Signature]* Lic. No. 56671
 Printed Name: JOSHUA J. PALMATEER Date: 02/09/2023



RAMSEY COUNTY, MINNESOTA
DIVISION AVE AND 8TH ST
 PROJECT NO. 170689

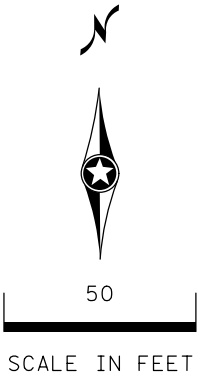
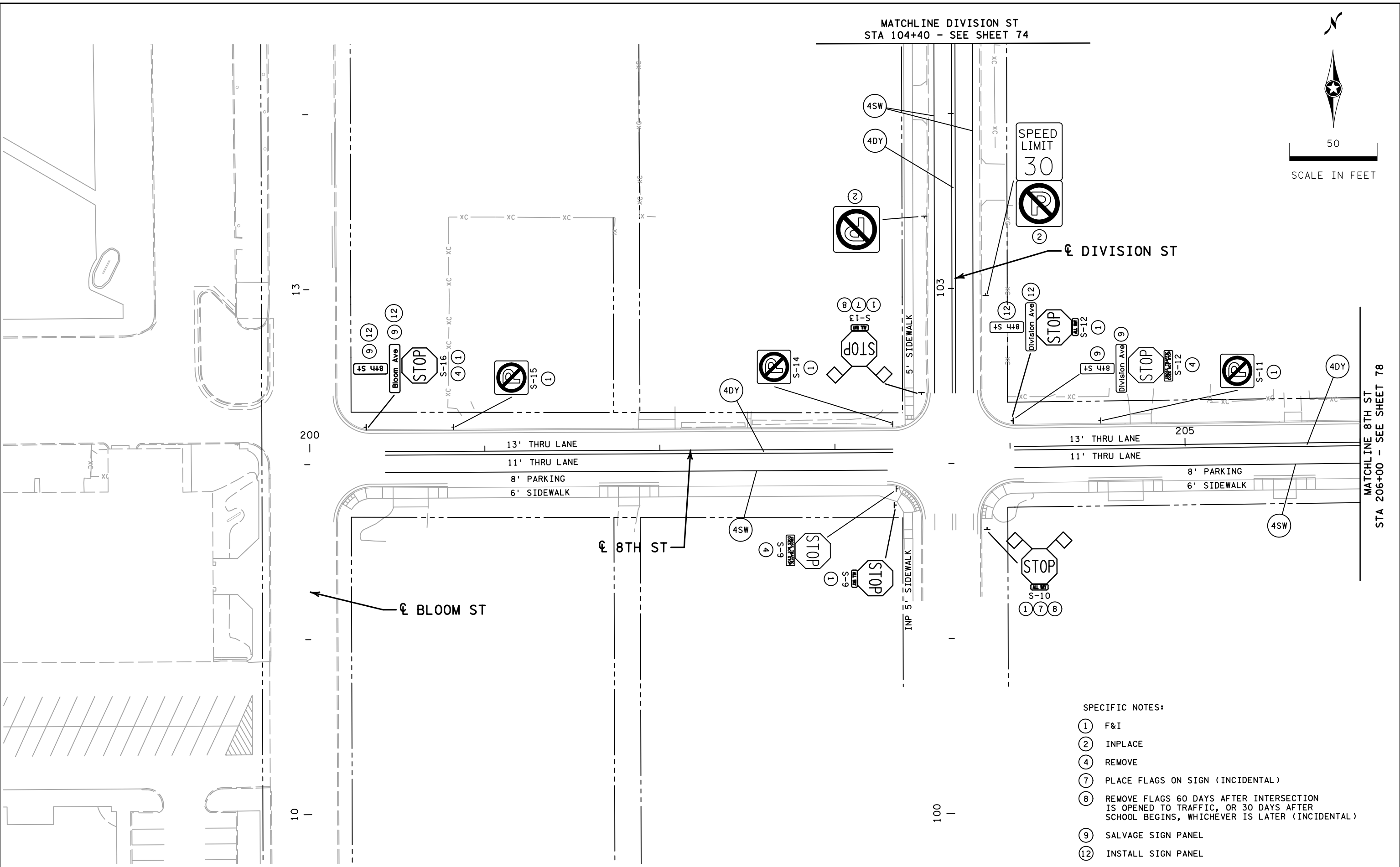
SIGNING AND PAVEMENT MARKING PLAN
 DIVISION AVE STA 111+90 TO 119+40

SEH FILE NO. ISDWB170689	76
SS6 OF SS8	78

5:08:26 PM

2/9/2024

FILE: X:\F\J\1\SDWB\170689\5-final-dsgn\51-drawings\40-Trans Hwy\Planisheets\0170689_ssi.dgn
MODEL: ss7



- SPECIFIC NOTES:
- ① F&I
 - ② INPLACE
 - ④ REMOVE
 - ⑦ PLACE FLAGS ON SIGN (INCIDENTAL)
 - ⑧ REMOVE FLAGS 60 DAYS AFTER INTERSECTION IS OPENED TO TRAFFIC, OR 30 DAYS AFTER SCHOOL BEGINS, WHICHEVER IS LATER (INCIDENTAL)
 - ⑨ SALVAGE SIGN PANEL
 - ⑫ INSTALL SIGN PANEL

DESIGN TEAM			
DRAWN BY:	CAA		
DESIGNER:	CAA		
CHECKED BY:	JJP		
NO.	BY	DATE	REVISIONS

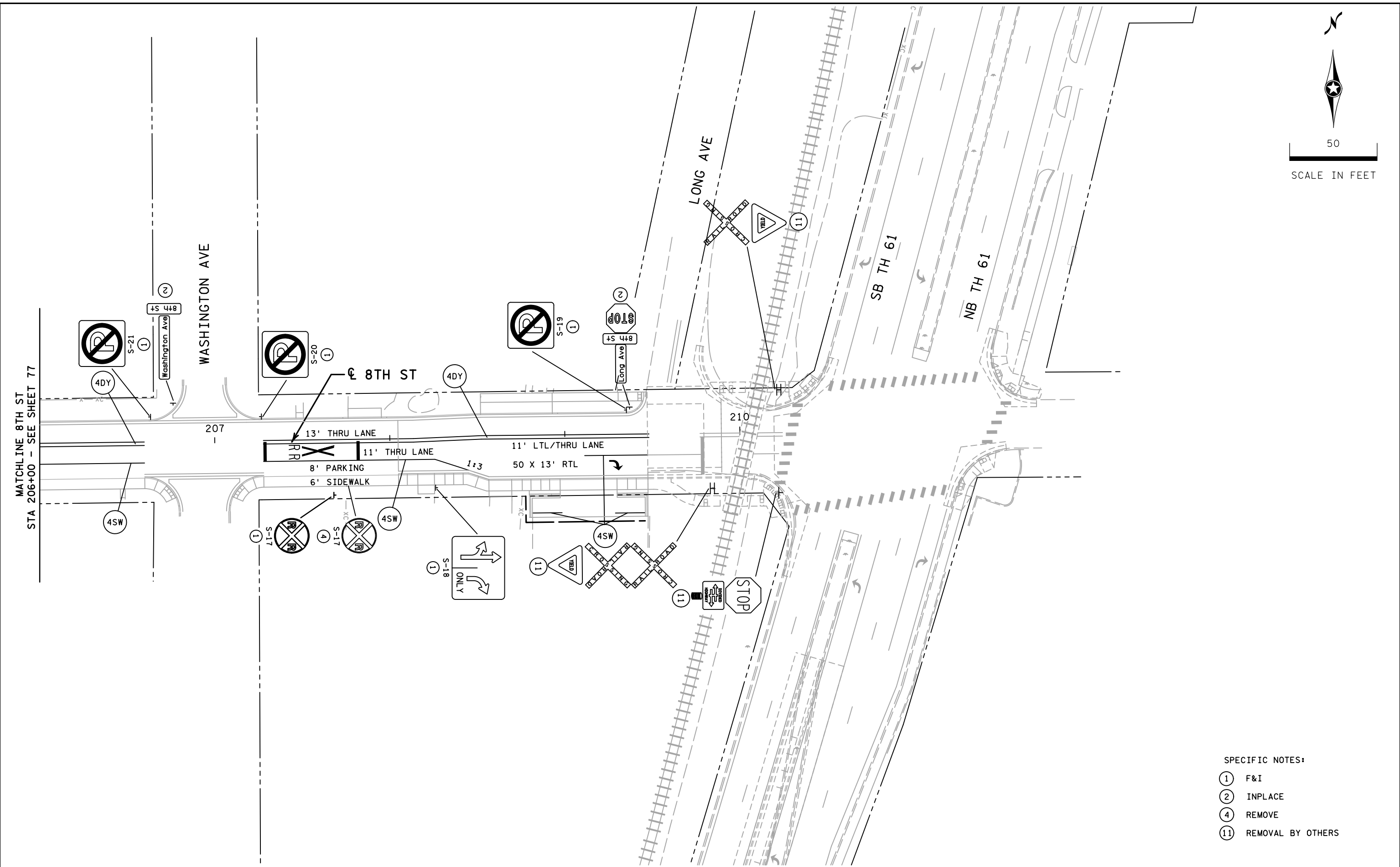
I hereby certify that this plan was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.
 Certified By: *[Signature]* Lic. No. 56671
 Printed Name: JOSHUA J. PALMATEER Date: 02/09/2023



RAMSEY COUNTY, MINNESOTA
DIVISION AVE AND 8TH ST
 PROJECT NO. 170689

SIGNING AND PAVEMENT MARKING PLAN
 8TH ST STA 200+10.31 TO 206+00

SEH FILE NO. ISDWB170689	77
SS7 OF SS8	78



- SPECIFIC NOTES:
- ① F&I
 - ② INPLACE
 - ④ REMOVE
 - ⑪ REMOVAL BY OTHERS

DESIGN TEAM				
DRAWN BY:	CAA			
DESIGNER:	CAA			
CHECKED BY:	JJP			
NO.	BY	DATE	REVISIONS	

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.
 Certified By: *[Signature]* Lic. No. 56671
 Printed Name: JOSHUA J. PALMATEER Date: 02/09/2023



RAMSEY COUNTY, MINNESOTA
 DIVISION AVE AND 8TH ST
 PROJECT NO. 170689

SIGNING AND PAVEMENT MARKING PLAN
 8TH ST STA 206+00 TO 209+48.85

SEH FILE NO. ISDWB170689	78
SS8 OF SS8	78

