

MINNESOTA DEPARTMENT OF TRANSPORTATION

CONSTRUCTION PLAN FOR APPROACHES, ADA IMPROVEMENTS, LIGHTING, REVISE TRAFFIC SIGNAL, AND BRIDGE NO. 69816

LOCATED ON TH 35 AT LAKE AVENUE

STATE PROJ. NO. 6982-331
 GROSS LENGTH..... FEET..... MILES
 BRIDGES-LENGTH..... FEET..... MILES
 EXCEPTIONS-LENGTH..... FEET..... MILES
 NET LENGTH..... FEET..... MILES
 REF. POINT 257+00.163
 REF. POINT IS BASED ON TH 35 NB ALIGNMENT

FED. PROJ. NO. NHPP I350(128)

GOVERNING SPECIFICATIONS

THE 2018 EDITION OF THE MINNESOTA DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR CONSTRUCTION" SHALL GOVERN.

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THIS PLAN CONTAINS 93 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.

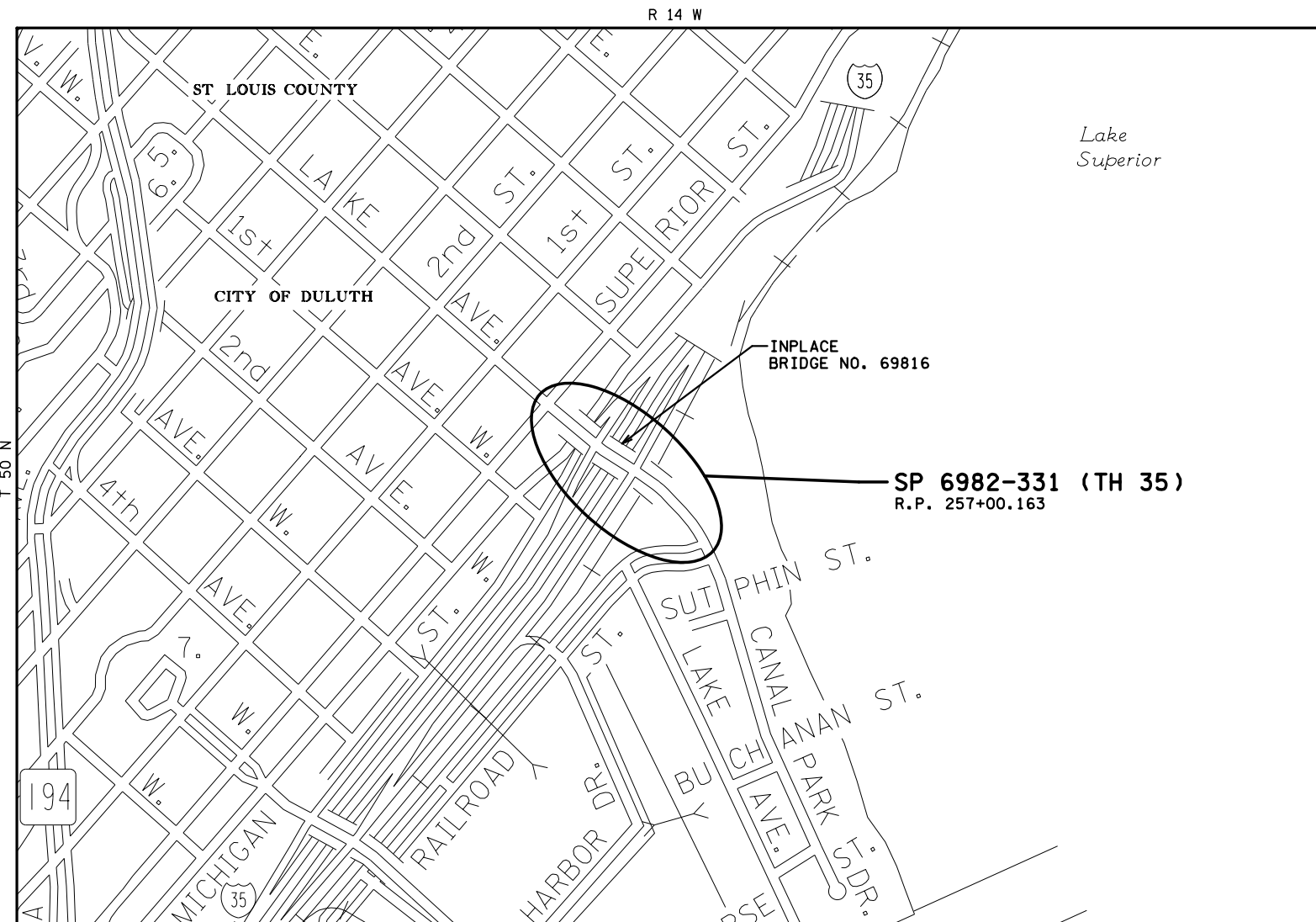


SIGNATURE: _____
 PRINTED NAME: JEFFREY A. HILDEN
 DATE: 12/3/2019 LIC. NO. 20781

RECOMMENDED FOR APPROVAL	DISTRICT TRANSPORTATION ENGINEER	20
RECOMMENDED FOR APPROVAL	DISTRICT MATERIALS ENGINEER	20
RECOMMENDED FOR APPROVAL	DISTRICT WATER RESOURCES/HYDRAULICS ENGINEER	20
RECOMMENDED FOR APPROVAL	DISTRICT TRAFFIC ENGINEER	20
RECOMMENDED FOR APPROVAL	STATE PRE-LETTING ENGINEER	20
OFFICE OF LAND MANAGEMENT APPROVAL	DIRECTOR, LAND MANAGEMENT	20
APPROVED	STATE DESIGN ENGINEER	20

I HEREBY CERTIFY THAT THE FINAL FIELD REVISIONS, IF ANY, OF THIS PLAN WERE MADE BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

DATE LIC. NO.



SCALES

- PLAN 10'
- INDEX MAP 400'
- GENERAL LAYOUT 50'

FOR PLANS AND UTILITIES SYMBOLS SEE TECHNICAL MANUAL

STATE PROJ. NO. CHARGE IDENTIFIER
 6982-331



PROJECT LOCATION

COUNTY : ST. LOUIS
 DISTRICT : 1 (DULUTH)

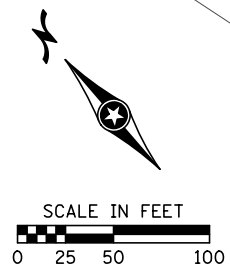
DESIGN DESIGNATION

ADT (CURRENT YEAR) 2020 = 19000 DESIGN SPEED 30 MPH
 ADT (FUTURE YEAR) 2040 = 21850 BASED ON SIGHT DISTANCE
 DHV (DESIGN HR. VOL.) = HT OF EYE HT OF OBJECT
 D (DIRECTIONAL DISTR.) =% DESIGN SPEED NOT ACHIEVED AT:
 T (HEAVY COMMERCIAL) =% STA. TO STA. MPH
 STA. TO STA. MPH

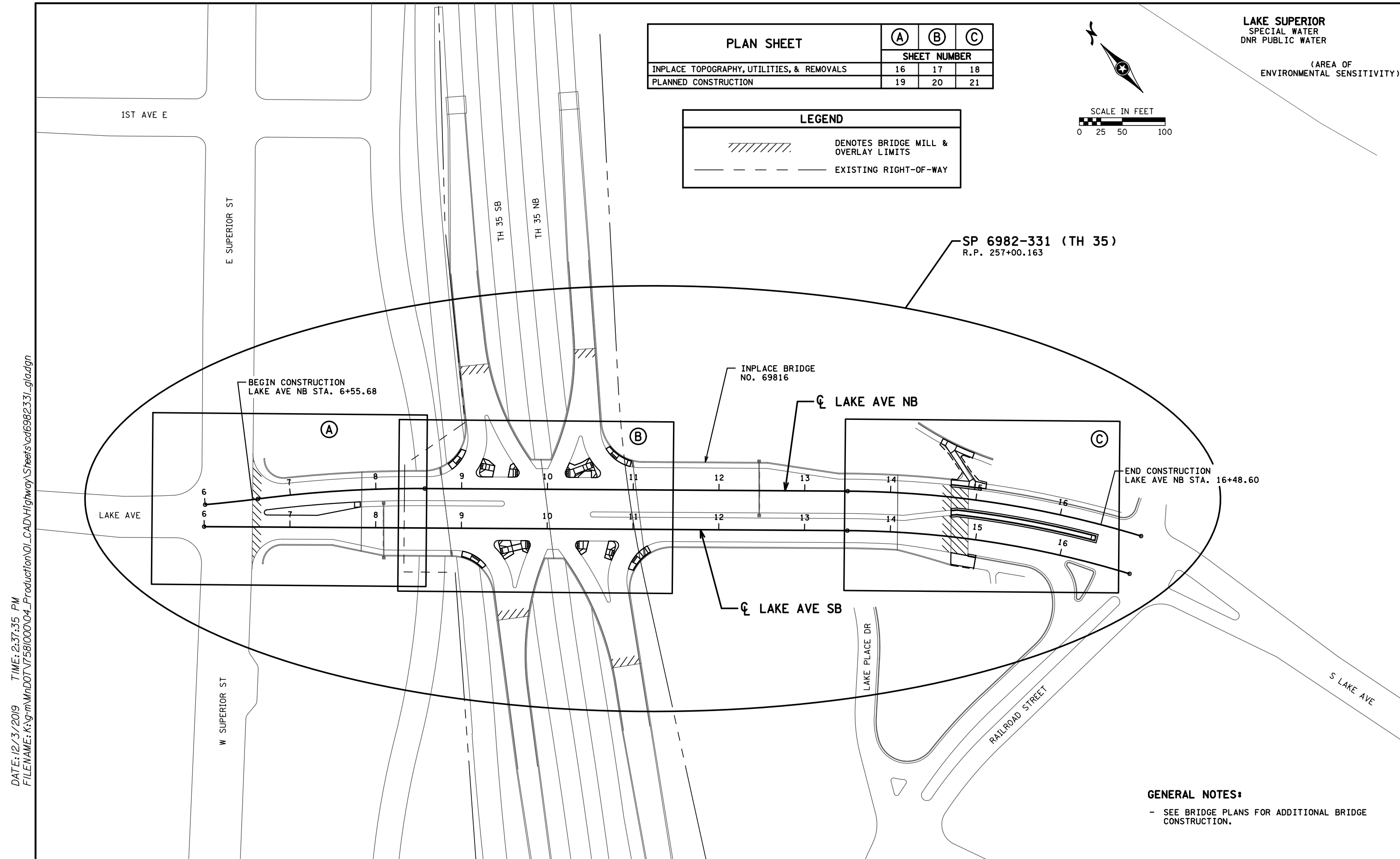
PLAN REVISIONS		
DATE	SHEET NO.	APPROVED BY

DATE: 12/3/2019 TIME: 2:37:34 PM FILENAME: K:\g-m\mndot\7581000\04_Production\01_CAD\Highway\Sheets\cd6982331_1a.dgn

PLAN SHEET	(A)	(B)	(C)
	SHEET NUMBER		
INPLACE TOPOGRAPHY, UTILITIES, & REMOVALS	16	17	18
PLANNED CONSTRUCTION	19	20	21



LEGEND	
	DENOTES BRIDGE MILL & OVERLAY LIMITS
	EXISTING RIGHT-OF-WAY



BEGIN CONSTRUCTION
LAKE AVE NB STA. 6+55.68

SP 6982-331 (TH 35)
R.P. 257+00.163

INPLACE BRIDGE
NO. 69816

END CONSTRUCTION
LAKE AVE NB STA. 16+48.60

GENERAL NOTES:
- SEE BRIDGE PLANS FOR ADDITIONAL BRIDGE CONSTRUCTION.

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DES: SJS	DRW: MRN	CHK: SJS
I HEREBY CERTIFY THAT THIS SHEET 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		
SIGNATURE: <i>Jeffrey A. Hilden</i> LIC. NO. 20781 DATE: 12/3/2019		
JEFFREY A. HILDEN		

NO.	DATE	BY	DESCRIPTION OF REVISIONS



DATE: 12/3/2019 TIME: 2:37:35 PM
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ESTIMATED QUANTITIES						
CHART LETTER	SHEET NO.	ITEM NO.	ITEM	NOTE NO.	UNIT	TOTAL ESTIMATED QUANTITY (A)
		2011.601	AS BUILT		LUMP SUM	1
		2021.501	MOBILIZATION		LUMP SUM	1
		2031.502	FIELD OFFICE TYPE D		EACH	1
		2051.501	MAINT & RESTORATION OF HAUL ROADS		LUMP SUM	1
C	60	2102.503	PAVEMENT MARKING REMOVAL		LIN FT	300
D	67	2104.502	REMOVE SIGN TYPE C		EACH	1
A	5	2104.503	SAWING CONCRETE PAVEMENT (FULL DEPTH)		LIN FT	398
A	5	2104.503	REMOVE CURB & GUTTER		LIN FT	391
A	5	2104.518	REMOVE CONCRETE WALK	(P)	SQ FT	1655
A	5	2104.518	REMOVE BITUMINOUS PAVEMENT	(P)	SQ FT	1733
		2104.601	HAUL SALVAGED MATERIAL	(B)	LUMP SUM	1
A	5	2106.507	EXCAVATION - COMMON	(P)	CU YD	28
B	5	2106.507	COMMON EMBANKMENT (CV)	(P)	CU YD	5
B	5	2211.507	AGGREGATE BASE (CV) CLASS 6	(P)	CU YD	23
B	5	2301.602	DRILL & GROUT REINF BAR (EPOXY COATED)		EACH	156
B	5	2360.509	TYPE SP 12.5 WEARING COURSE MIX (4,C)		TON	47
B	5	2506.502	ADJUST FRAME & RING CASTING		EACH	2
B	5	2521.518	4" CONCRETE WALK		SQ FT	1746
B	5	2521.518	6" CONCRETE WALK		SQ FT	193
B	5	2531.503	CONCRETE CURB & GUTTER DESIGN B624		LIN FT	388
F	25	2533.503	PORTABLE PRECAST CONC BARRIER DES 8337		LIN FT	336
F	25	2533.503	RELOCATE PORT PRECAST CONC BAR DES 8337		LIN FT	20
		73	2545.501	LIGHTING SYSTEM	LUMP SUM	1
F	25	2554.615	IMPACT ATTENUATOR		ASSEMBLY	2
		2563.601	TRAFFIC CONTROL		LUMP SUM	1
		2563.601	ALTERNATE PEDESTRIAN ROUTE		LUMP SUM	1
F	25	2563.602	RAISED PAVEMENT MARKER TEMPORARY		EACH	336
F	25	2563.602	PORTABLE CONCRETE BARRIER DELINEATOR		EACH	13
F	25	2563.602	SURFACE MOUNTED DELINEATOR		EACH	85

ESTIMATED QUANTITIES						
CHART LETTER	SHEET NO.	ITEM NO.	ITEM	NOTE NO.	UNIT	TOTAL ESTIMATED QUANTITY (A)
D	67	2564.518	SIGN PANELS TYPE C		SQ FT	37
D	67	2564.602	REPOSITION SIGN PANEL TYPE OH		EACH	7
E	74	2565.501	EMERGENCY VEHICLE PREEMPTION SYSTEM		LUMP SUM	1
E	74	2565.501	TRAFFIC CONTROL INTERCONNECT	(C)	LUMP SUM	1
E	74	2565.603	3" RIGID STEEL CONDUIT		LIN FT	100
E	74	2565.616	REVISE SIGNAL SYSTEM	(D)	SYSTEM	1
A	5	2573.502	STORM DRAIN INLET PROTECTION		EACH	2
B	5	2575.618	SITE RESTORATION		SQ FT	355
F	25	2581.503	REMOVABLE PREFORM PAVEMENT MARKING TAPE		LIN FT	5984
F	25	2581.603	REMOVABLE PREFORMED PLASTIC MASK (BLACK)		LIN FT	1150
C	60	2582.503	4" SOLID LINE MULTI COMP GR IN (WR)		LIN FT	5960
C	60	2582.503	8" SOLID LINE MULTI COMP GR IN (WR)		LIN FT	369
C	60	2582.503	12" SOLID LINE MULTI COMP GR IN (WR)		LIN FT	29
C	60	2582.503	4" DBLE SOLID LINE MULTI COMP GR IN (WR)		LIN FT	203
C	60	2582.503	4" SOLID LINE MULTI COMP GR IN (WR) CONT		LIN FT	634
C	60	2582.503	8" SOLID LINE MULTI COMP GR IN (WR) CONT		LIN FT	177
C	60	2582.503	4" BROKEN LINE PREF TAPE GR IN CONT	(1)	LIN FT	230
C	60	2582.503	4" DOTTED LINE PREF TAPE GR IN CONT	(1)	LIN FT	66
C	60	2582.503	8" DOTTED LINE PREF TAPE GR IN CONT	(1)	LIN FT	100
C	60	2582.503	24" SOLID LINE PREF THERMO GR IN		LIN FT	80
C	60	2582.503	4" DOTTED LINE PREF THERMO GR IN	(1)	LIN FT	272
C	60	2582.518	PAVT MSSG PREF THERMO GR IN		SQ FT	366
C	60	2582.518	CROSSWALK PREF THERMO GR IN		SQ FT	1776

NOTES:

- (A) 90% FEDERAL, 10% STATE FUNDS.
- (B) 100% STATE FUNDS.
- (C) 100% CITY OF DULUTH FUNDS. SEE AGREEMENT NO. _____.
- (D) 50% STATE, 50% CITY OF DULUTH FUNDS. SEE AGREEMENT NO. _____.

(1) LENGTH DOES NOT INCLUDE GAPS.

SOILS & CONSTRUCTION NOTES

SURVEYS AND RIGHT-OF-WAY

THE CONTRACTOR SHALL PRESERVE ALL LAND AND PROPERTY CORNERS, VERTICAL AND HORIZONTAL CONTROLS, AND RIGHT-OF-WAY MONUMENTS.

THE HORIZONTAL SURVEY DATUM IS BASED ON GSID STATION #29687 "URAN" ST. LOUIS COUNTY SOUTH ZONE COORDINATES (NAD83, 2011 ADJUSTMENT):
 X = 585942.202
 Y = 150875.737

THE VERTICAL SURVEY DATUM IS BASED ON GSID STATION #27569 "6982 AG" (NAVD88 ADJUSTMENT):
 EL. = 626.413

GRADING

ALL EXCAVATION IN THE ROAD BED SHALL BE SHAPED AND COMPACTED BY THE QUALITY COMPACTION METHOD.

COMPACTION FOR AGGREGATE BASE SHALL BE BY THE QUALITY COMPACTION METHOD.

BITUMINOUS

BITUMINOUS PAVEMENT SHALL BE CONSTRUCTED IN LAYERS OF THE THICKNESS SPECIFIED IN THE TYPICAL SECTIONS.

PLACE BITUMINOUS MATERIAL FOR TACK COAT IN ACCORDANCE WITH SPECIFICATION 2357. THIS WILL BE INCIDENTAL.

MISCELLANEOUS

EXCAVATED MATERIALS NOT SUITABLE FOR ROADWAY CONSTRUCTION SHALL BE DISPOSED OF BY THE CONTRACTOR IN ACCORDANCE WITH SPECIFICATION 2104.

ALL AREAS OUTSIDE THE PLANNED CONSTRUCTION DISTURBED BY THE CONTRACTOR'S EQUIPMENT SHALL BE RESTORED, AS APPROVED BY THE ENGINEER, AT THE CONTRACTOR'S EXPENSE.

REMOVAL LIMITS TO BE DETERMINED IN THE FIELD BASED ON THE REPAIRS NEEDED AND THE EXISTING JOINT AND CRACK LOCATIONS.

UTILITIES

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".

THE UTILITIES ON THIS PROJECT ARE LOCATED OUTSIDE THE LIMITS OF THE EXCAVATION AND WILL NOT BE AFFECTED.

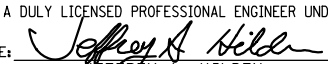

THE FOLLOWING UTILITY OWNERS HAVE FACILITIES IN THE VICINITY OF THE PROJECT:

CENTURYLINK
 CITY OF DULUTH PUBLIC WORKS AND UTILITIES
 CONSOLIDATED COMMUNICATIONS
 MINNESOTA DEPARTMENT OF TRANSPORTATION
 MINNESOTA POWER

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

STANDARD PLATES	
PLATE NO.	DESCRIPTION
4026A	CONCRETE ENCASED CONCRETE ADJUSTING RINGS
7038A	DETECTABLE WARNING SURFACE TRUNCATED DOMES
7100H	CONCRETE CURB AND GUTTER (DESIGN B AND DESIGN V)
7113A	CONCRETE APPROACH NOSE DETAIL
8000J	CHANNELIZERS
8110E	TRAFFIC SIGNAL BRACKETING (POLE MOUNTED)
8111E	TRAFFIC SIGNAL BRACKETING (PEDESTAL MOUNTED) (3 SHEETS)
8121H	TRANSFORMER BASE AND POLE BASE PLATE (PA85, PA90 AND PA100) (2 SHEETS)
8123G	POLE AND MAST ARM - LUMINAIRES AND TRAFFIC LIGHTS ASSEMBLY (FOR ALL POLE TYPES) (2 SHEETS)
8130E	SAW CUT LOOP DETECTORS

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		DRW: MRN	SIGNATURE:  LIC. NO. 20781 DATE: 12/3/2019 JEFFREY A. HILDEN				
		CHK: SJS					
NO.	DATE	BY	DESCRIPTION OF REVISIONS				
					SOILS & CONSTRUCTION NOTES, STANDARD PLATES		
			STATE PROJ. NO. 6982-331 (TH 35)		SHEET NO. 4 OF 93 SHEETS		

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REMOVALS (A)								A
ALIGNMENT	STATION	LOCATION	SAWING CONCRETE PAVEMENT (FULL DEPTH)	REMOVE CURB & GUTTER	REMOVE CONCRETE WALK	REMOVE BITUMINOUS PAVEMENT (1)	EXCAVATION - COMMON	STORM DRAIN INLET PROTECTION
			LIN FT	LIN FT	SQ FT	SQ FT	CU YD	EACH
LAKE AVE NB	14+53 TO 15+10	LT	36	36	838		10	1
LAKE AVE NB	14+72 TO 16+49	RT	182	174	450	1733	10	
LAKE AVE SB	14+69 TO 16+37	LT	171	172			4	
LAKE AVE SB	14+73 TO 15+03	RT	9	9	367		4	1
TOTALS			398	391	1655	1733	28	2


CONSTRUCTION (A)											B
ALIGNMENT	STATION	LOCATION	COMMON EMBANKMENT	AGGREGATE BASE (CV) CLASS 6	DRILL & GROUT REINF BAR (EPOXY COATED)	TYPE SP 12.5 WEARING COURSE MIX (4,C) (SPWEB440C) (2)	ADJUST FRAME & RING CASTING	4" CONCRETE WALK	6" CONCRETE WALK	CONCRETE CURB & GUTTER DESIGN B624	SITE RESTORATION
			CU YD	CU YD	EACH	TON	EACH	SQ FT	SQ FT	LIN FT	SQ FT
LAKE AVE NB	14+53 TO 15+10	LT	4	6	15		1	603	163	36	329
LAKE AVE NB	14+72 TO 16+49	RT		10	69	47		776	30	172	
LAKE AVE SB	14+69 TO 16+37	LT		4	68					171	
LAKE AVE SB	14+73 TO 15+03	RT	1	3	4		1	367		9	26
TOTALS			5	23	156	47	2	1746	193	388	355

NOTES:

(A) 90% FEDERAL, 10% STATE FUNDS.

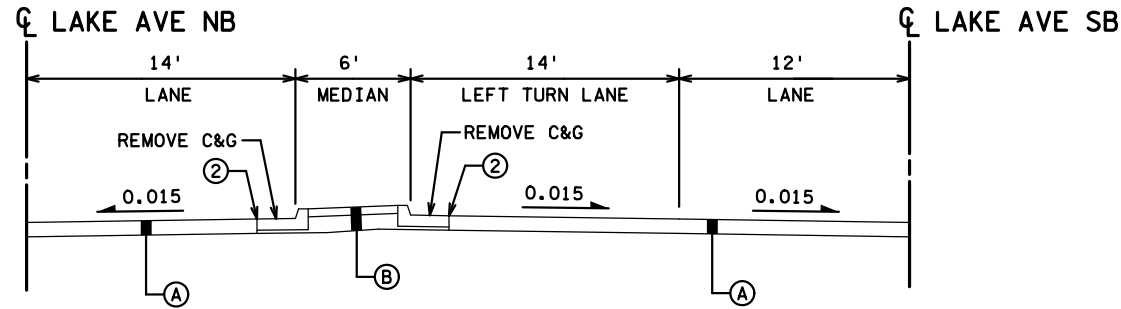
(1) FOR REMOVAL OF TEMPORARY BYPASS PAVEMENT.

(2) FOR TEMPORARY BYPASS CONSTRUCTION.

			DES: SJS	I HEREBY CERTIFY THAT THIS SHEET 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			REMOVALS, CONSTRUCTION	CONSTRUCTION CHARTS
			DRW: MRN	SIGNATURE: <i>Jeffrey A. Hilden</i> LIC. NO. 20781 DATE: 12/3/2019			STATE PROJ. NO. 6982-331 (TH 35)	SHEET NO. 5 OF 93 SHEETS
NO.	DATE	BY	CHK: SJS	DESCRIPTION OF REVISIONS				

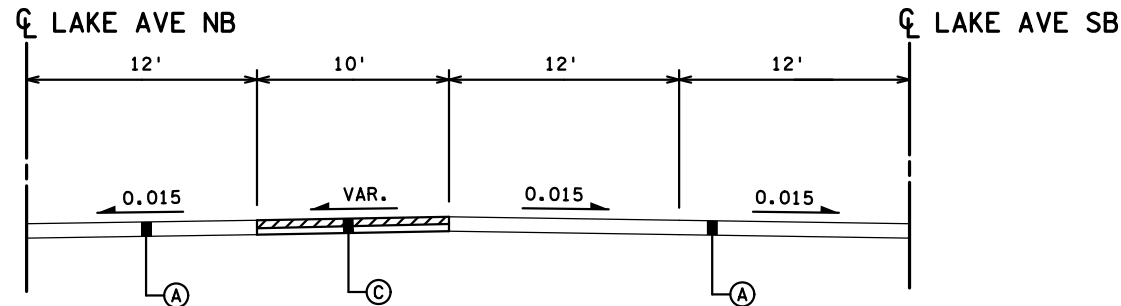
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EXISTING TYPICAL SECTION
 LAKE AVE NB STA. 14+72 TO STA. 16+49
 LAKE AVE SB STA. 14+69 TO STA. 16+37



PROPOSED BYPASS TYPICAL SECTION

LAKE AVE NB STA. 14+72 TO STA. 16+49
 LAKE AVE SB STA. 14+69 TO STA. 16+37



GENERAL NOTES:

- ALL CROSS SLOPES ARE EXPRESSED IN FT/FT.

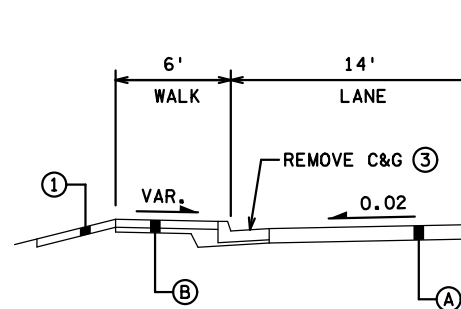
SPECIFIC NOTES:

- ① STRIP EXISTING TOPSOIL (4" MIN.) FROM ALL AREAS AFFECTED BY CONSTRUCTION. (PAID FOR AS EXCAVATION - COMMON).
- ② SAWING CONCRETE PAVEMENT (FULL DEPTH).
- ③ CURB AND GUTTER WORK ENDS AT LAKE AVE NB STA. 15+04.
- ④ CURB AND GUTTER WORK BEGINS AT LAKE AVE SB STA. 14+94.

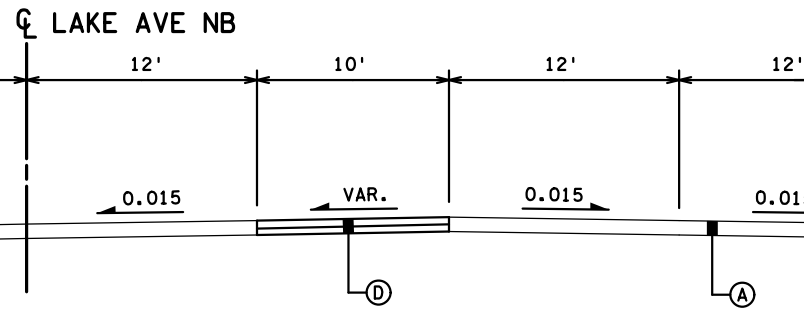
INSET NOTES:

- Ⓐ EXISTING 8" REINFORCED CONCRETE PAVEMENT
- Ⓑ REMOVE CONCRETE WALK - SPEC. 2104
2" EXCAVATION - COMMON - SPEC. 2106
- Ⓒ 2" TYPE SP 12.5 WEARING COURSE MIXTURE (SPWEB440C) - SPEC. 2360
2" TYPE SP 12.5 WEARING COURSE MIXTURE (SPWEB440C) - SPEC. 2360
PLACE TACK COAT BETWEEN BIT COURSES (INCIDENTAL) - SPEC. 2357
4" AGGREGATE BASE (CV) CLASS 6 - SPEC. 2211
LEVELING OF EXISTING AGGREGATE BASE IS INCIDENTAL
- Ⓓ REMOVE BITUMINOUS PAVEMENT (4") - SPEC. 2104
2" EXCAVATION - COMMON - SPEC. 2106
- Ⓔ 4" CONCRETE WALK - SPEC. 2521
2" MIN. AGGREGATE BASE (CV) CLASS 6 - SPEC. 2211
LEVELING OF EXISTING AGGREGATE BASE IS INCIDENTAL

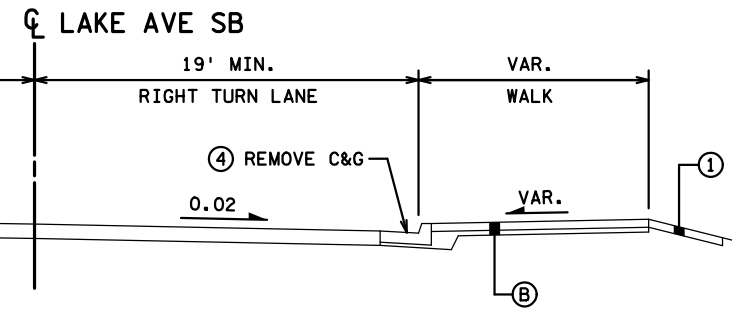
EXISTING TYPICAL SECTION
 LAKE AVE NB STA. 14+70 TO STA. 15+10



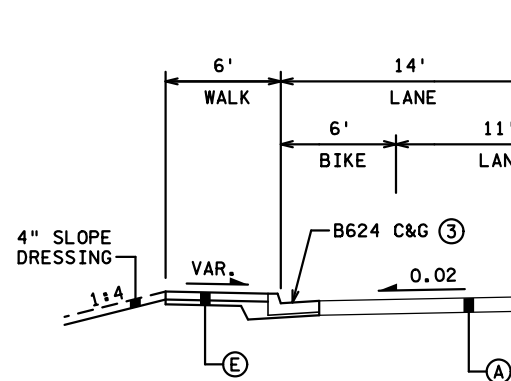
EXISTING BYPASS TYPICAL SECTION
 LAKE AVE NB STA. 14+72 TO STA. 16+49
 LAKE AVE SB STA. 14+69 TO STA. 16+37



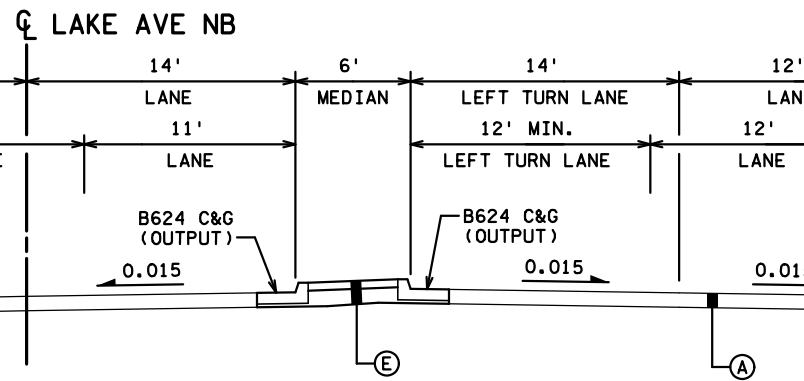
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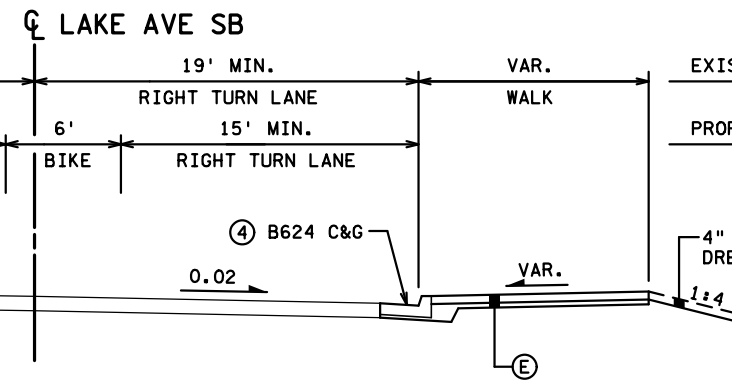
PROPOSED TYPICAL SECTION
 LAKE AVE NB STA. 14+70 TO STA. 15+10



PROPOSED TYPICAL SECTION
 LAKE AVE NB STA. 14+72 TO STA. 16+49
 LAKE AVE SB STA. 14+69 TO STA. 16+37



PROPOSED TYPICAL SECTION
 LAKE AVE SB STA. 14+73 TO STA. 15+03



EXISTING STRIPING CONFIGURATION

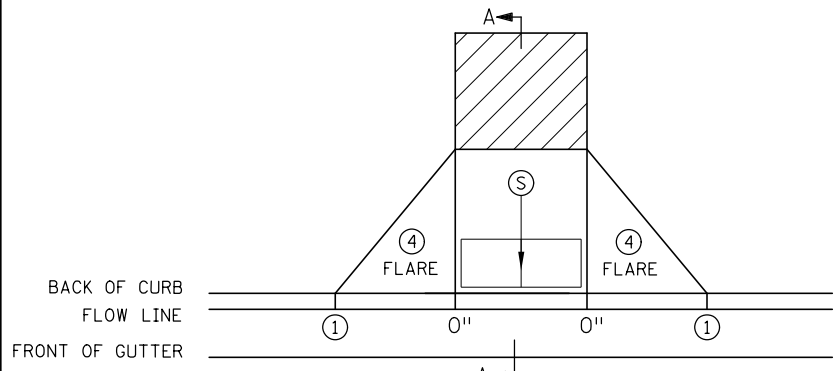
PROPOSED STRIPING CONFIGURATION

NO.	DATE	BY	DESCRIPTION OF REVISIONS

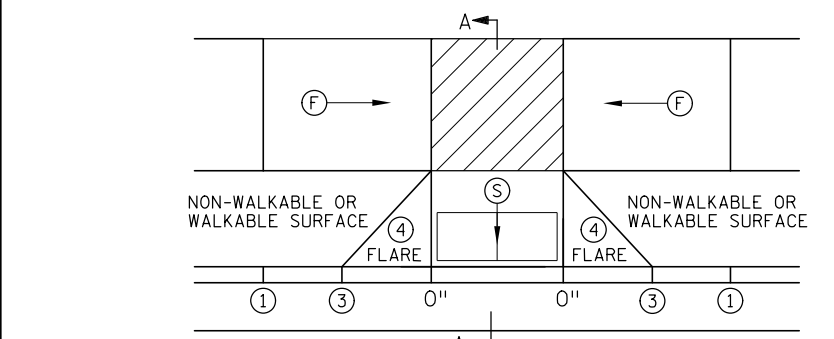
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 I HEREBY CERTIFY THAT THIS SHEET WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA
 SIGNATURE: *Jeffrey A. Hilden* LIC. NO. 20781 DATE: 12/3/2019
 JEFFREY A. HILDEN



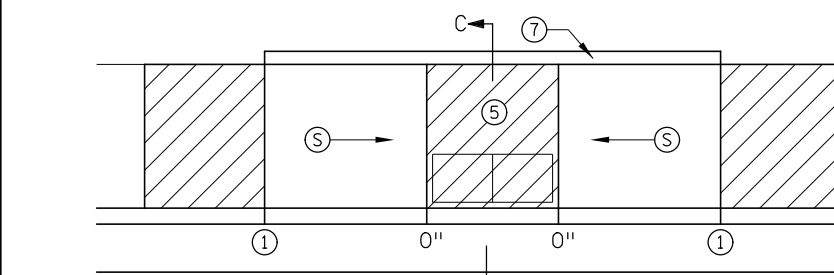
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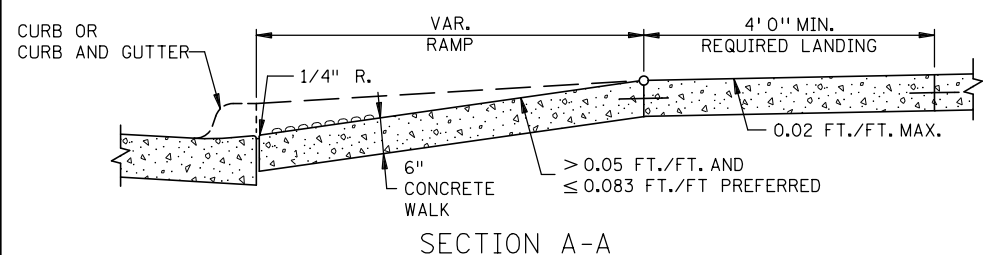
PERPENDICULAR



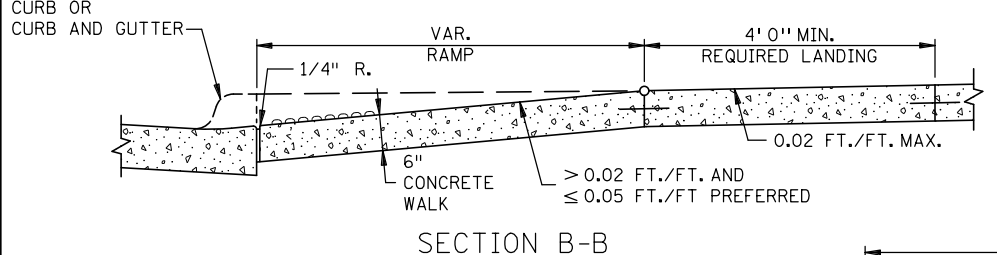
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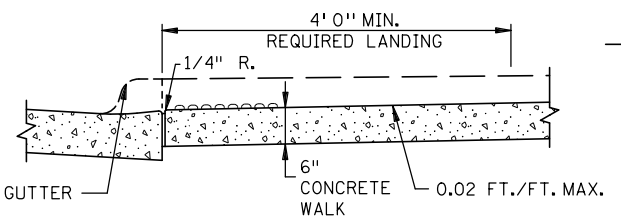
PARALLEL



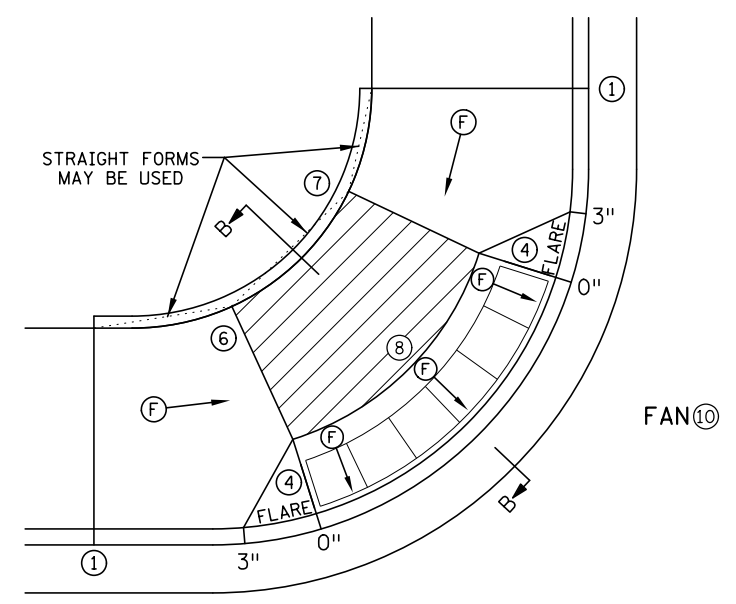
SECTION A-A
PERPENDICULAR/TIERED/DIAGONAL



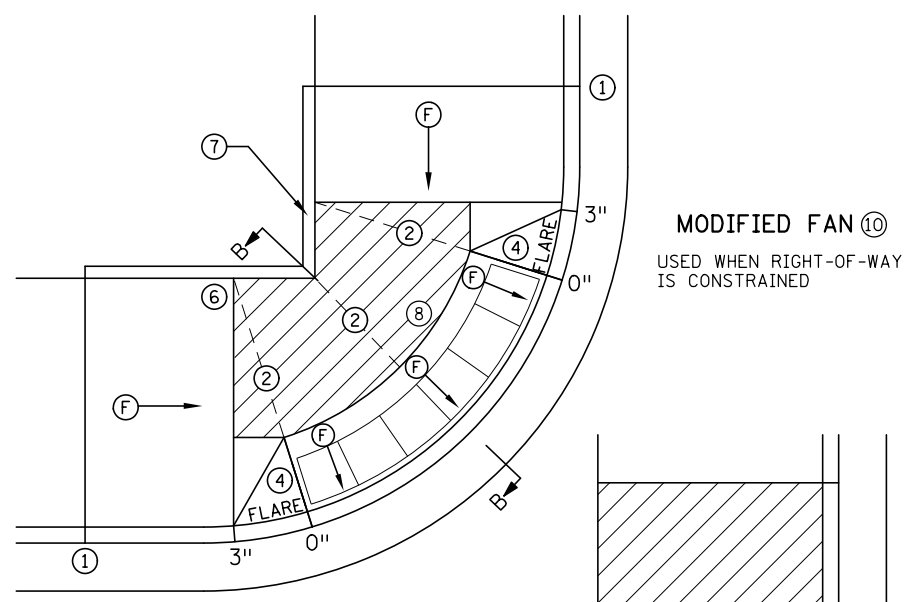
SECTION B-B
FAN



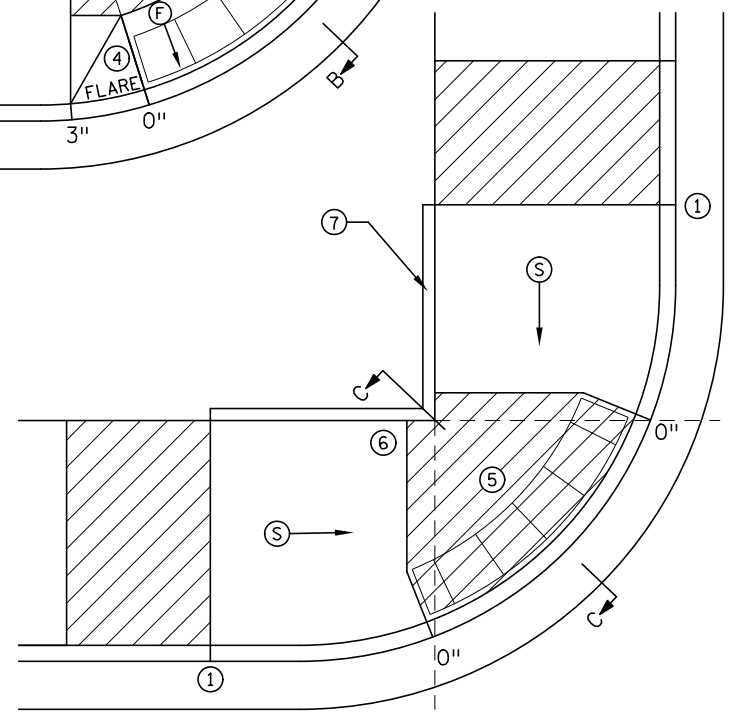
SECTION C-C
PARALLEL/DEPRESSED CORNER



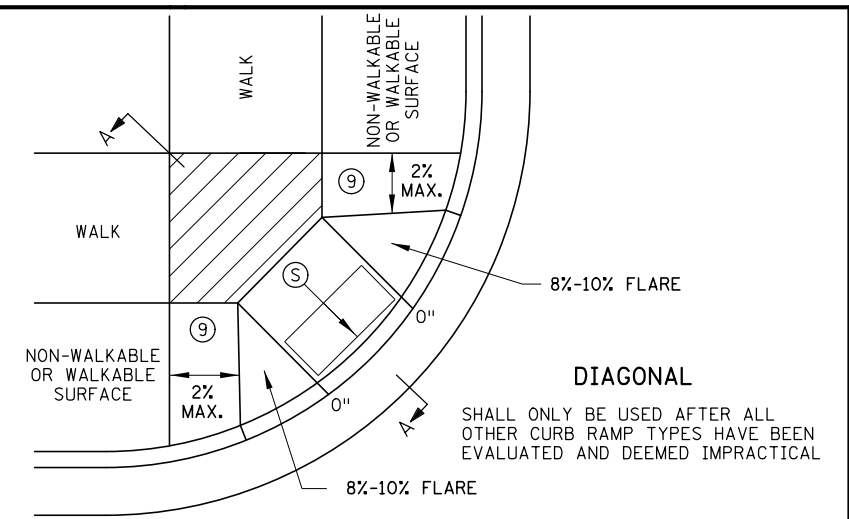
FAN ⑩



MODIFIED FAN ⑩
USED WHEN RIGHT-OF-WAY IS CONSTRAINED



DEPRESSED CORNER



DIAGONAL

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

NOTES:

- LANDINGS SHALL BE LOCATED ANYWHERE THE PEDESTRIAN ACCESS ROUTE (PAR) CHANGES DIRECTION, AT THE TOP OF RAMPS THAT HAVE RUNNING SLOPES GREATER THAN 5.0%, AND IF THE APPROACHING WALK IS INVERSE GRADE GREATER THAN 2%.
 - INITIAL CURB RAMP LANDINGS SHALL BE CONSTRUCTED WITHIN 15' FROM THE BACK OF CURB, WITH 6' FROM THE BACK OF CURB BEING THE PREFERRED DISTANCE, ONLY APPLICABLE WHEN THE INITIAL RAMP RUNNING SLOPE IS OVER 5.0%.
 - SECONDARY CURB RAMP LANDINGS ARE REQUIRED FOR EVERY 30' OF VERTICAL RISE WHEN THE LONGITUDINAL RUNNING SLOPE IS GREATER THAN 5.0%.
 - CONTRACTION JOINTS SHALL BE CONSTRUCTED ALONG ALL GRADE BREAKS WITHIN THE PAR. 1/4" DEEP VISUAL JOINTS SHALL BE USED AT THE TOPS OF CONCRETE FLARES ADJACENT TO WALKABLE SURFACES.
 - ALL GRADE BREAKS WITHIN THE PAR SHALL BE PERPENDICULAR TO THE PATH OF TRAVEL. THUS BOTH SIDES OF A SLOPED WALKING SURFACE MUST BE EQUAL LENGTH. (EXCEPT AS STATED IN ⑥ BELOW.)
 - TO ENSURE INITIAL RAMPS AND INITIAL LANDINGS ARE PROPERLY CONSTRUCTED, LANDINGS SHALL BE CAST SEPARATELY. FOLLOW SIDEWALK REINFORCEMENT DETAILS ON SHEET 6 AND THE ADA SPECIAL PROVISIONS - PROSECUTION OF WORK (ADA).
 - 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 ENTIRE WIDTH OF SHARED-USE PATHS AND THE ENTIRE PAR WIDTH OF THE WALK. DETECTABLE WARNING SHOULD BE 6" LESS THAN THE PAR/TRAIL WIDTH. ARC LENGTH OF 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, WHEN INITIAL LANDING IS AT FULL CURB HEIGHT.
 - 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 SHOULD BE USED OVER V CURB TO REDUCE TRIPPING HAZARDS AND FACILITATE SNOW & ICE REMOVAL.
 - ⑧ A 7' MIN TOP RADIUS GRADE BREAK 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.

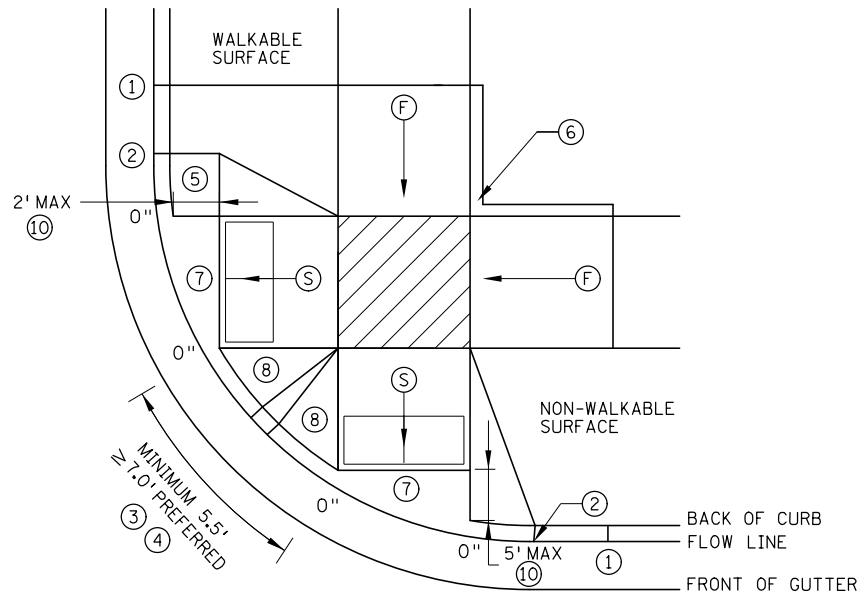
LEGEND	
⑩	INDICATES PEDESTRIAN RAMP - SLOPE SHALL BE BETWEEN 5.0% MINIMUM AND 8.3% MAXIMUM IN THE DIRECTION SHOWN AND THE CROSS SLOPE SHALL NOT EXCEED 2.0%.
⑨	INDICATES PEDESTRIAN RAMP - SLOPE SHALL BE GREATER THAN 2.0% AND LESS THAN 5.0% IN THE DIRECTION SHOWN AND CROSS SLOPE SHALL NOT EXCEED 2.0%.
⑧	LANDING AREA - 4' X 4' MIN. (5' X 5' MIN. PREFERRED) DIMENSIONS AND MAX 2.0% SLOPE IN ALL DIRECTIONS. LANDING SHALL BE FULL WIDTH OF INCOMING PARS.
X"	CURB HEIGHT

REVISION:
APPROVED: JANUARY 23, 2017
[Signature]
OPERATIONS ENGINEER

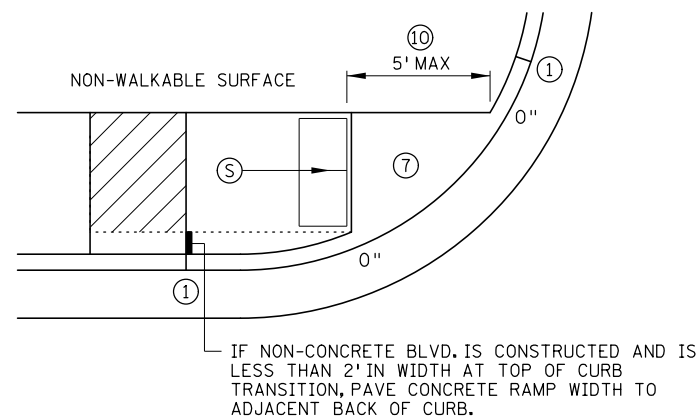
m MINNESOTA DEPARTMENT OF TRANSPORTATION
STANDARD PLAN 5-297.250 1 OF 6
 APPROVED: 1-23-2017
[Signature] STATE DESIGN ENGINEER

PEDESTRIAN CURB RAMP DETAILS

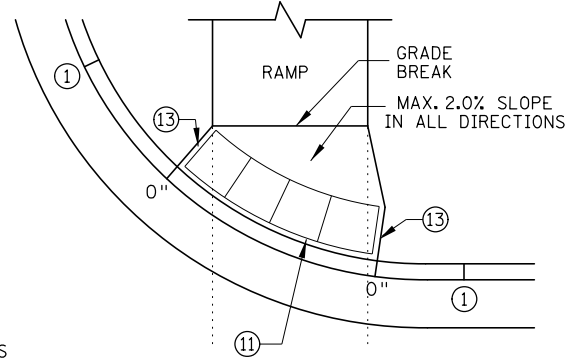
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COMBINED DIRECTIONAL ⑨

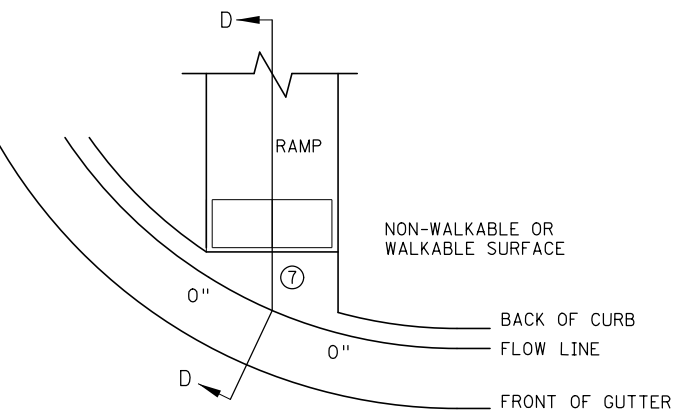
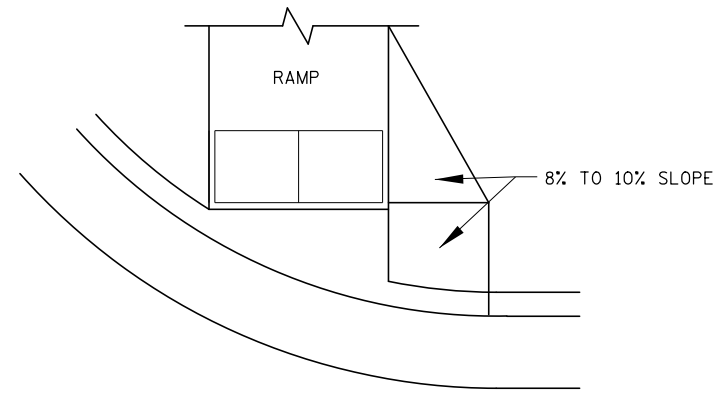


STANDARD ONE-WAY DIRECTIONAL ⑨

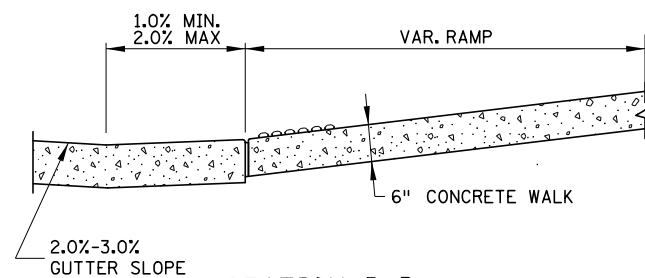


ONE-WAY DIRECTIONAL WITH DETECTABLE WARNING AT BACK OF CURB

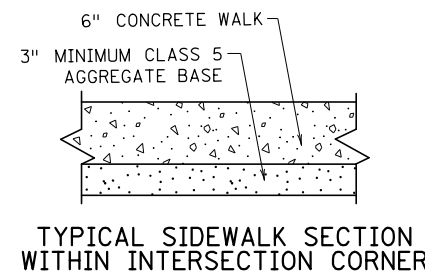
DIRECTIONAL RAMP WALKABLE FLARE



CURB FOR DIRECTIONAL RAMPS ⑭



SECTION D-D



TYPICAL SIDEWALK SECTION WITHIN INTERSECTION CORNER

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 ENTIRE WIDTH OF SHARED-USE PATH AND THE ENTIRE PAR WIDTH OF THE WALK. DETECTABLE WARNING SHOULD BE 6" LESS THAN THE PAR/PATH WIDTH. ARC LENGTH OF 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 SHOULD 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.

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

REVISION:
 APPROVED: JANUARY 23, 2017

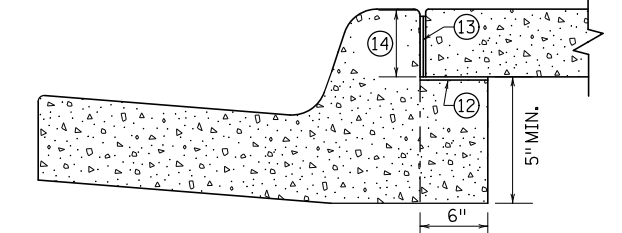
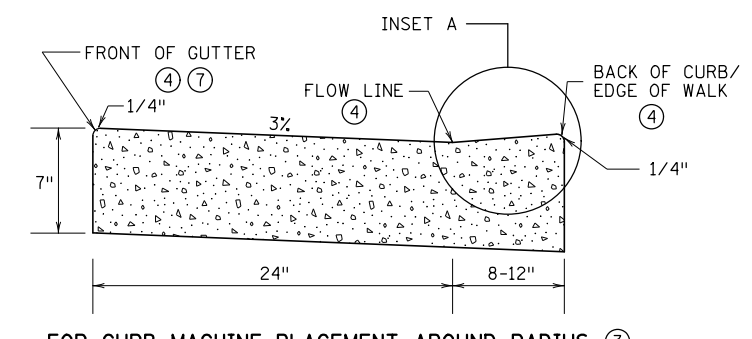
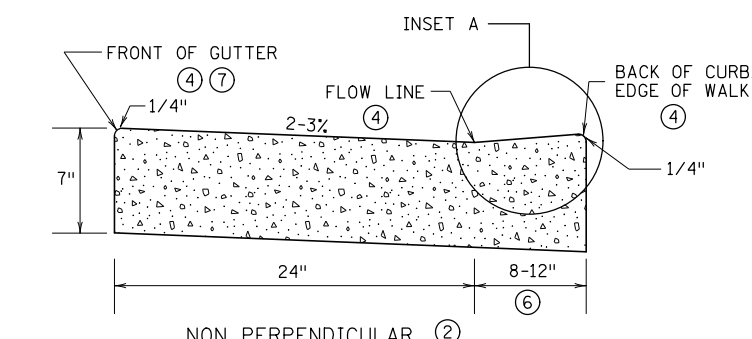
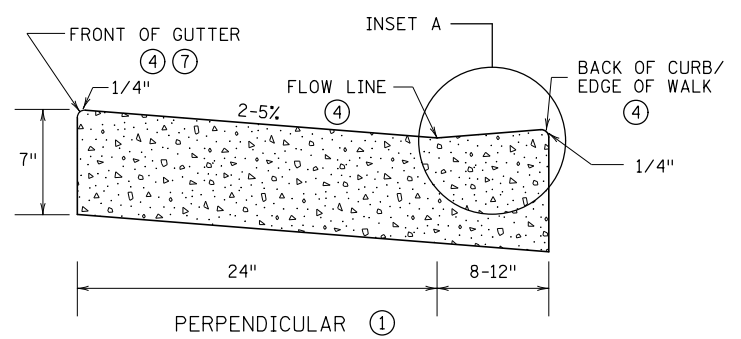


STANDARD PLAN 5-297.250 2 OF 6
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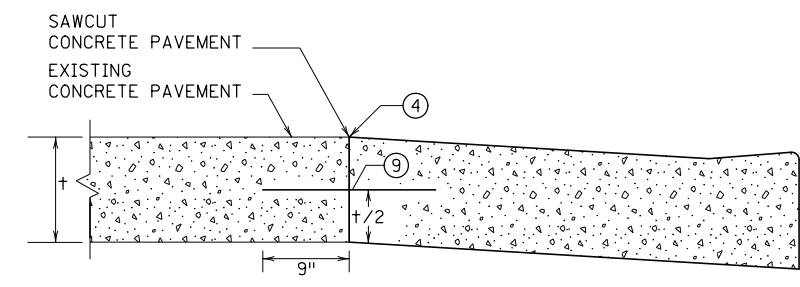
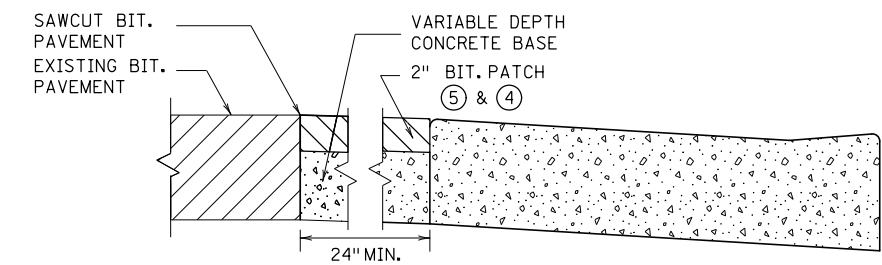
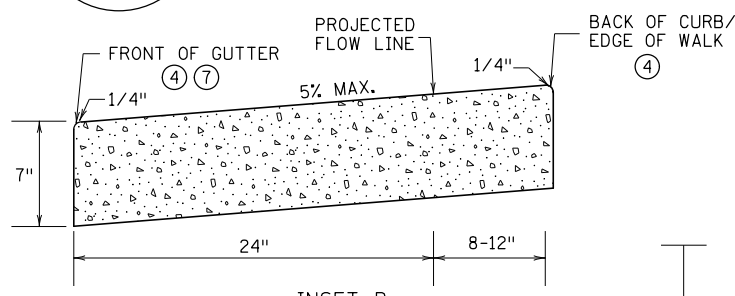
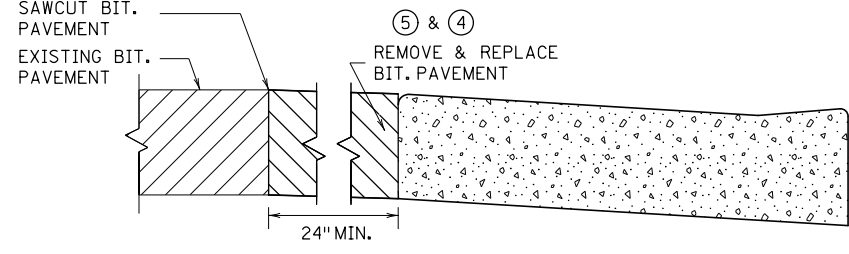
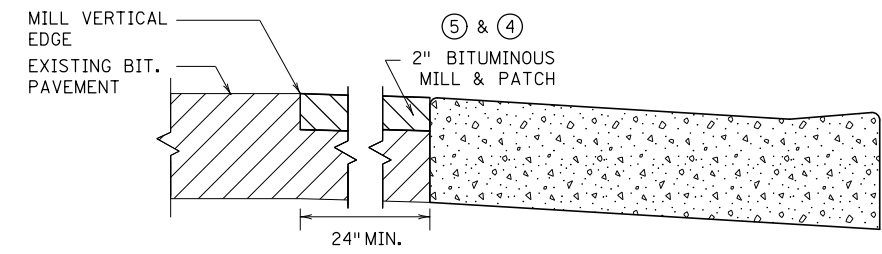
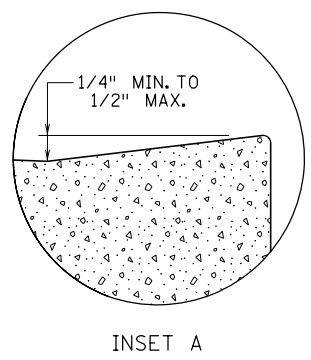
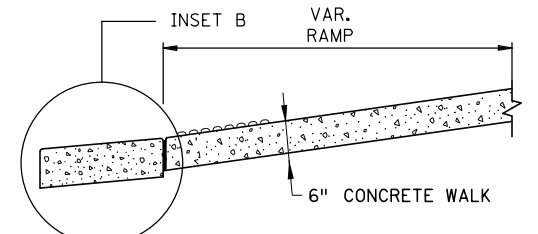
PEDESTRIAN CURB RAMP DETAILS

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OPTIONAL SILL CURB WHEN SIDEWALK IS AT BACK OF CURB
 CONCRETE SILL TO BE USED ONLY WHEN SPECIFIED IN THE PLAN.

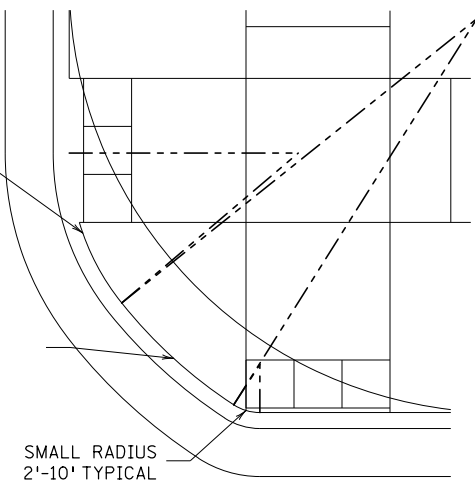
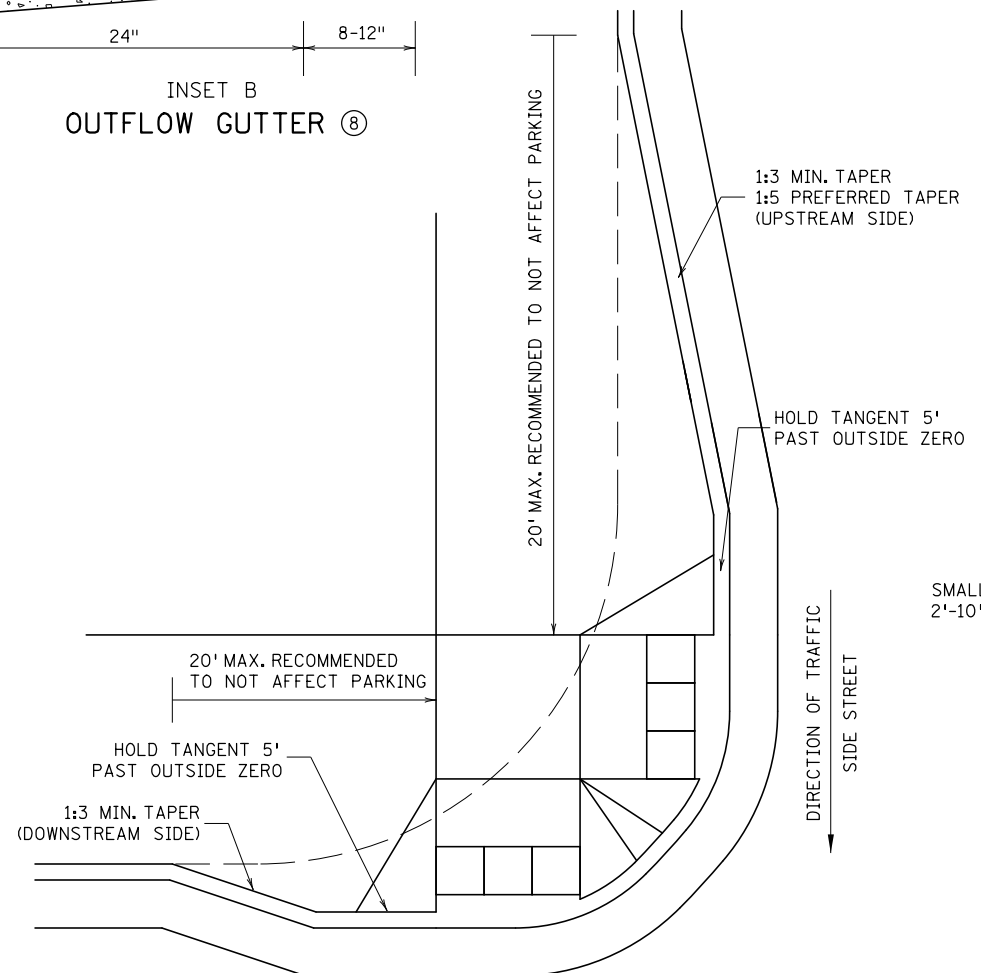
PEDESTRIAN ACCESS ROUTE CURB & GUTTER DETAIL



ONLY ALLOWED PER ENGINEER'S APPROVAL

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

- 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.
 - ① 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.
 - ② 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.
 - ③ BEGIN GUTTER SLOPE TRANSITION 10' OUTSIDE OF ALL CURB RAMPS.
 - ④ THERE SHALL BE NO VERTICAL DISCONTINUITIES GREATER THAN 1/4\".
 - ⑤ 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.
 - ⑥ VARIABLE WIDTH FOR DIRECTIONAL CURB APPLICATIONS. SEE SHEET 2 FOR DIRECTIONAL CURB SLOPE REQUIREMENTS.
 - ⑦ 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.
 - ⑧ SHOULD BE USED AT VERTICALLY CONSTRAINED AREAS WHEN AT A DRAINAGE HIGH POINT OR SUPER ELEVATED ROADWAY SEGMENTS.
 - ⑨ 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.
 - ⑩ 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.
 - ⑪ 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.
 - ⑫ PLACE BOND BREAKER BETWEEN WALK AND TOP OF SILL.
 - ⑬ 1/2\" PREFORMED JOINT FILLER PER MNDOT SPEC. 3702.
 - ⑭ DIMENSION TO BE SAME AS SIDEWALK THICKNESS, 4\" MIN.



COMBINED DIRECTIONAL (COMPOUND RADIUS)

ADA CURB EXTENSION WITH COMPOUND RADIUS (BUMP OUT)

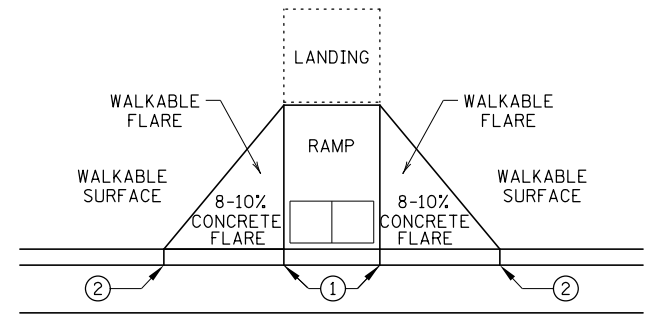
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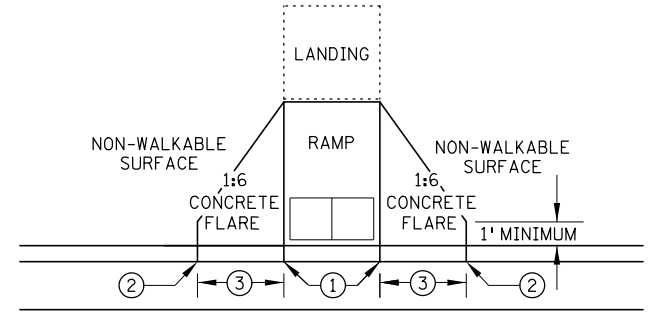
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PEDESTRIAN CURB RAMP DETAILS

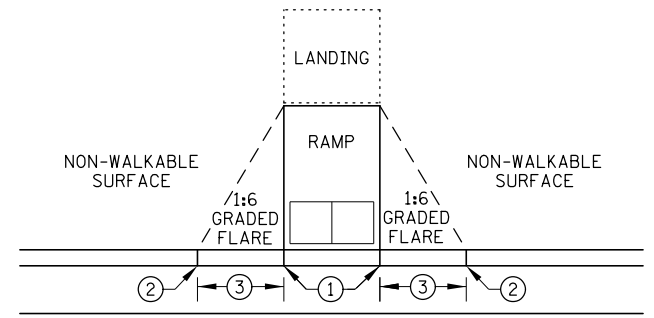
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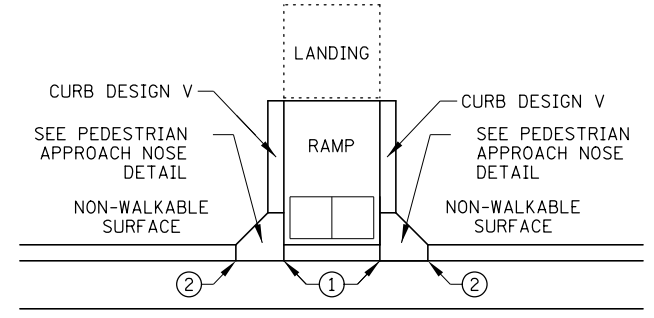
PAVED FLARES ADJACENT TO WALKABLE SURFACE



PAVED FLARES ADJACENT TO NON-WALKABLE SURFACE

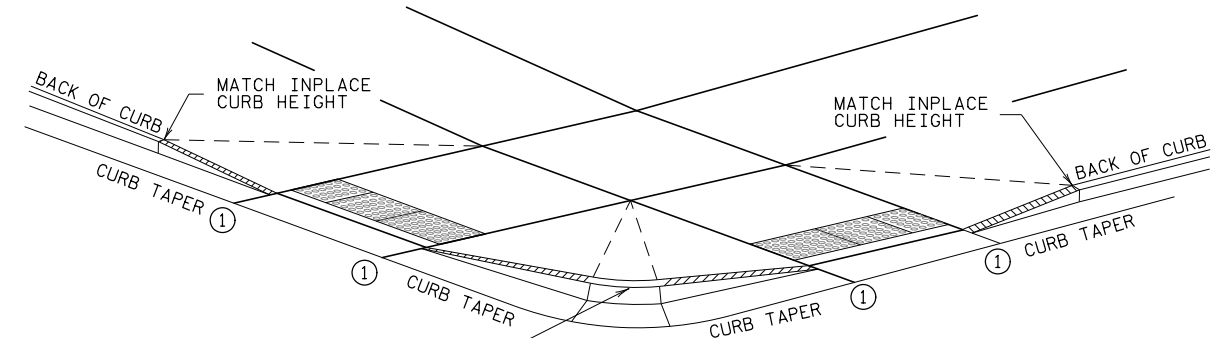


GRADED FLARES



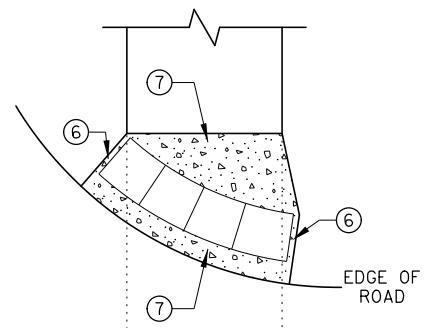
RETURNED CURB ⑤

TYPICAL SIDE TREATMENT OPTIONS ④ ⑪

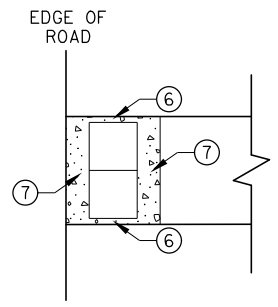


3" MINIMUM CURB HEIGHT, 4" PREFERRED (MEASURED AT FRONT FACE OF CURB)
FOR A MIN. 6" LENGTH (MEASURED ALONG FLOW LINE)

DETECTABLE EDGE WITH ⑧ CURB AND GUTTER

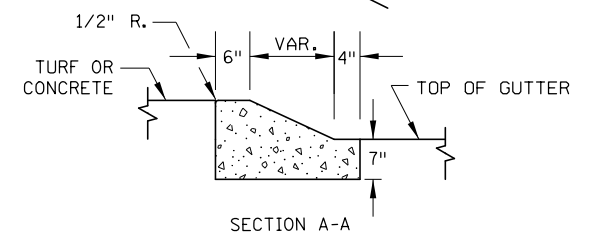
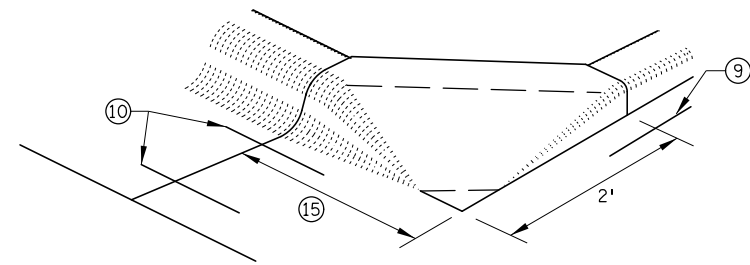


RADIAL DETECTABLE WARNING

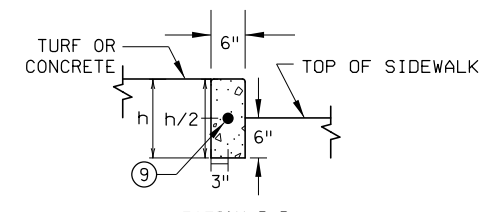


RECTANGULAR DETECTABLE WARNING

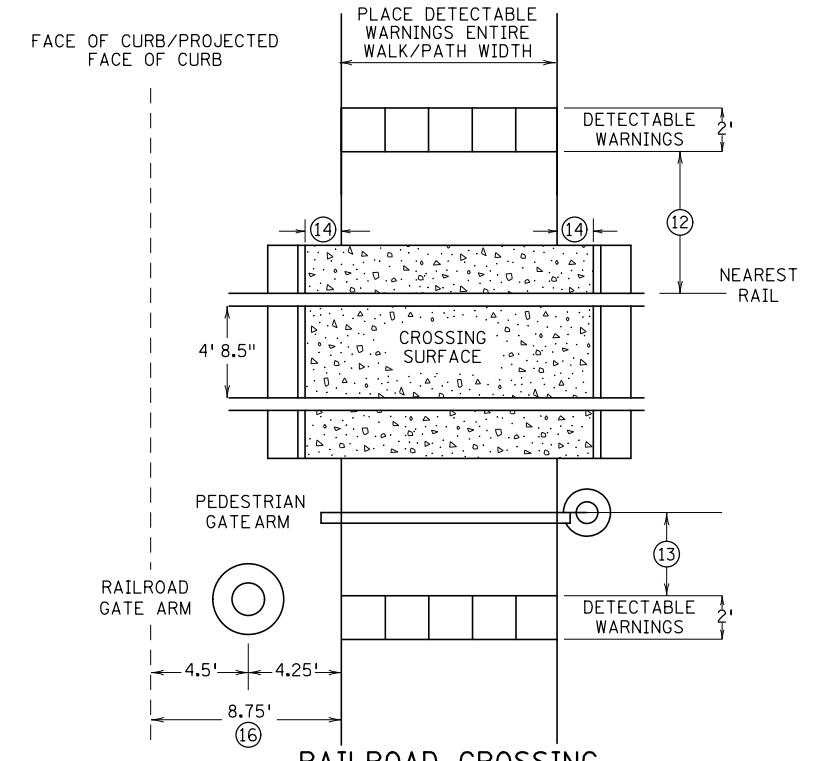
DETECTABLE EDGE WITHOUT CURB AND GUTTER



SECTION A-A



SECTION B-B



RAILROAD CROSSING PLAN VIEW

NOTES:

- 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.
- ② FULL CURB HEIGHT.
- ③ 2' FOR 4" HIGH CURB AND 3' FOR 6" HIGH CURB.
- ④ 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.
- ⑤ TYPICALLY USED FOR MEDIANS AND ISLANDS.
- ⑥ 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.
- ⑦ 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.
- ⑧ 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.
- ⑨ 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.
- ⑩ 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.
- ⑪ 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.
- ⑫ 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.
- ⑬ 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 ⑫.
- ⑭ CROSSING SURFACE SHALL EXTEND 2' MINIMUM PAST THE OUTSIDE EDGE OF WALK OR SHARED-USE PATH.
- ⑮ 3' FOR MEDIANS AND SPLITTER ISLANDS. NOSE CAN BE REDUCED TO 2' ON FREE RIGHT ISLANDS.
- ⑯ 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.

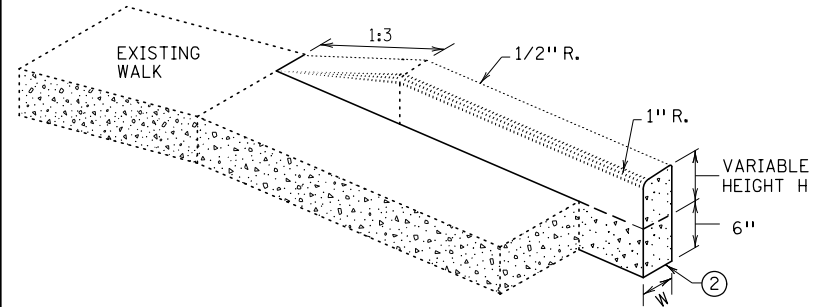
REVISION:
APPROVED: JANUARY 23, 2017
<i>[Signature]</i> OPERATIONS ENGINEER

PEDESTRIAN APPROACH NOSE DETAIL (FOR RETURNED CURB SIDE TREATMENT)

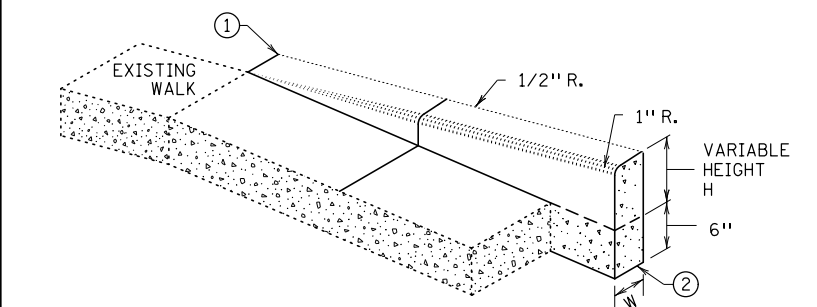
	STANDARD PLAN 5-297.250	4 OF 6
	APPROVED: 1-23-2017 REVISION:	
		STATE PROJ. NO. 6982-331 (TH 35)

PEDESTRIAN CURB RAMP DETAILS

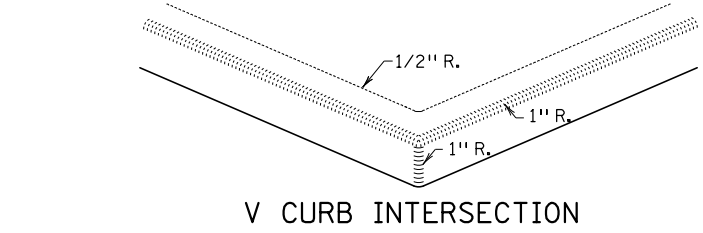
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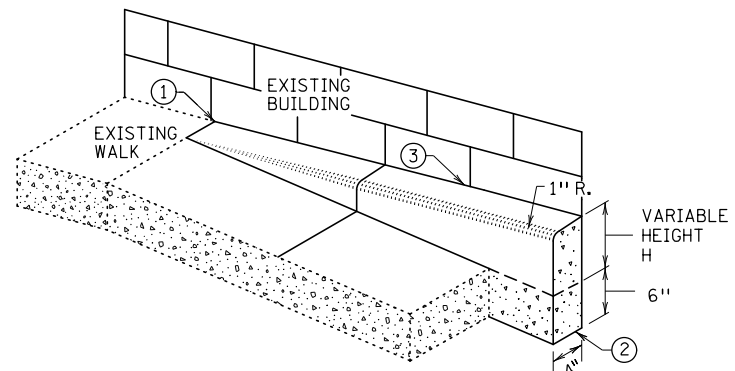
V CURB ADJACENT TO LANDSCAPE
CURB WITHIN SIDEWALK LIMITS



V CURB ADJACENT TO LANDSCAPE
CURB OUTSIDE SIDEWALK LIMITS

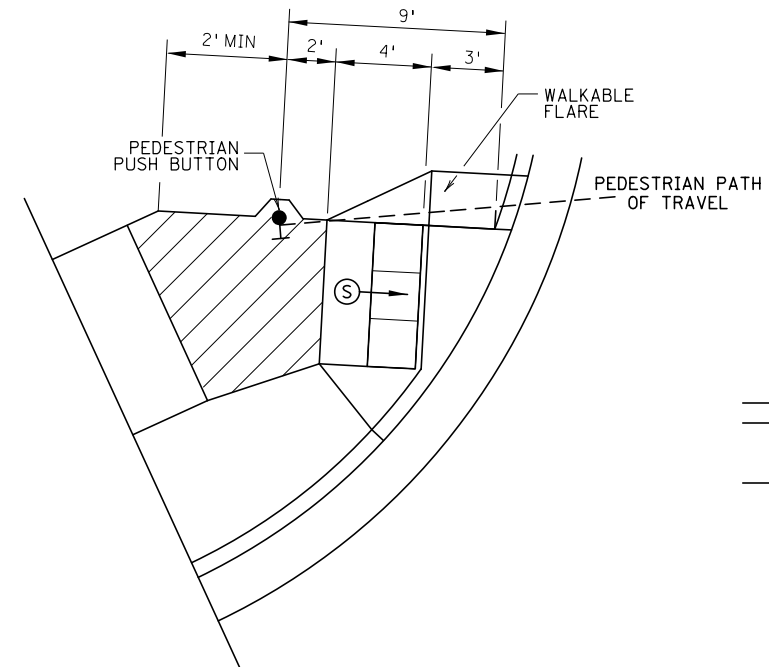


V CURB INTERSECTION



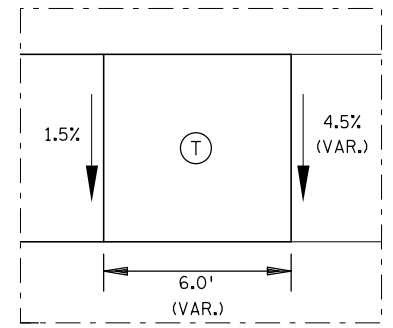
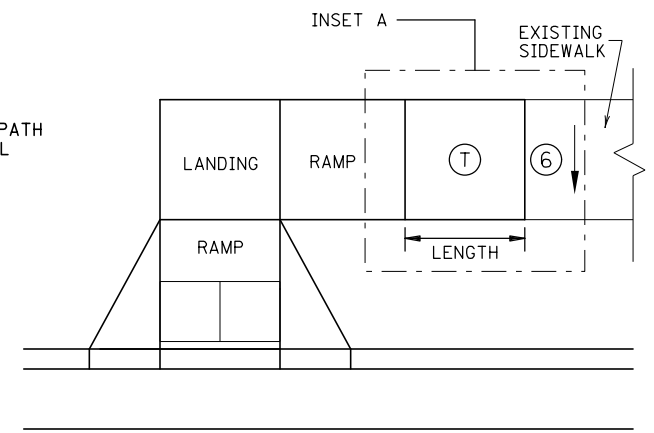
V CURB ADJACENT TO BUILDING OR BARRIER

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

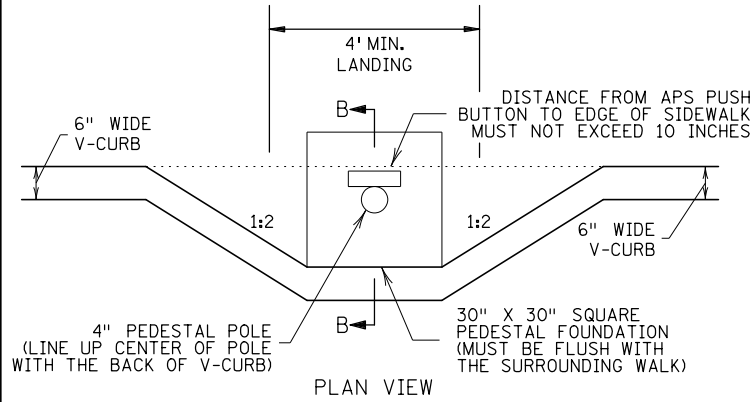


SEMI-DIRECTIONAL RAMP (3,4,9)

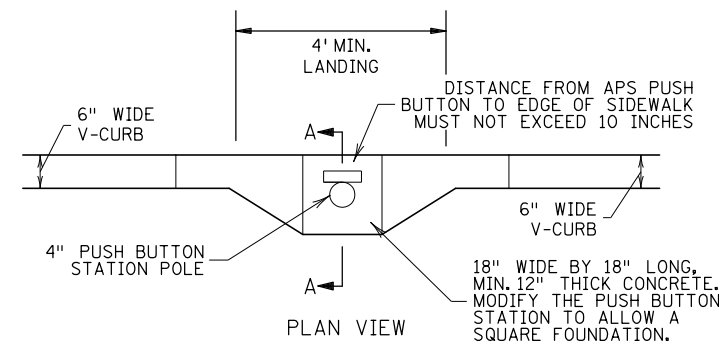
3' DOME SETBACK, 4' LONG RAMP AND PUSH BUTTON 9' FROM THE BACK OF CURB
 PRIMARILY USED FOR APS APPLICATIONS WHERE THE PAR DOES NOT CONTINUE PAST THE PUSH BUTTON (DEAD-END SIDEWALK)



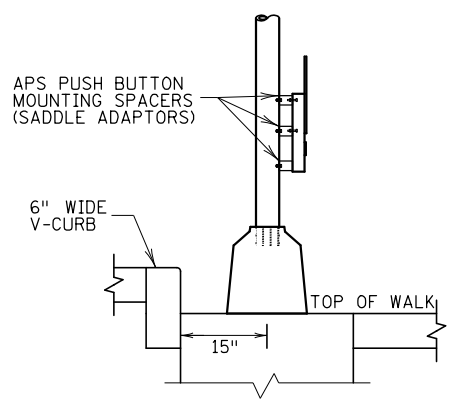
TRANSITION PANEL (4,5)



PLAN VIEW

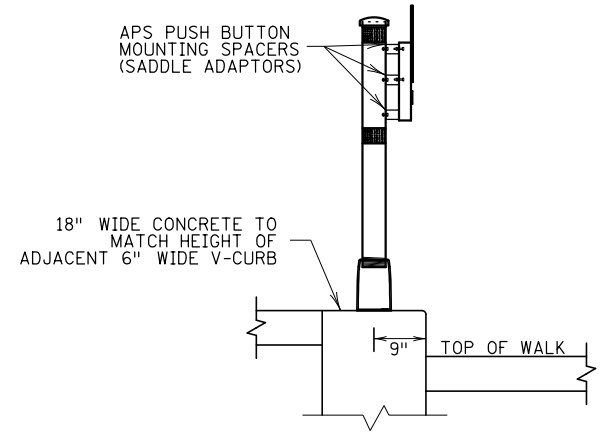


PLAN VIEW



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) EDGE BETWEEN NEW V CURB AND INPLACE STRUCTURE SHALL BE SEALED AND BOND BREAKER SHALL BE USED BETWEEN EXISTING STRUCTURE AND PLACED V-CURB.
- (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.

- (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%.
- (L) 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.
- (T) TRANSITION PANEL(S) - TO BE USED FOR TRANSITIONING THE CROSS-SLOPE OF A RAMP TO THE EXISTING WALK CROSS-SLOPE. RATE OF TRANSITION SHOULD BE 0.5% PER 1 LINEAR FOOT OF WALK. SEE THIS SHEET FOR ADDITIONAL INFORMATION.

REVISION:
 APPROVED: JANUARY 23, 2017
 OPERATIONS ENGINEER

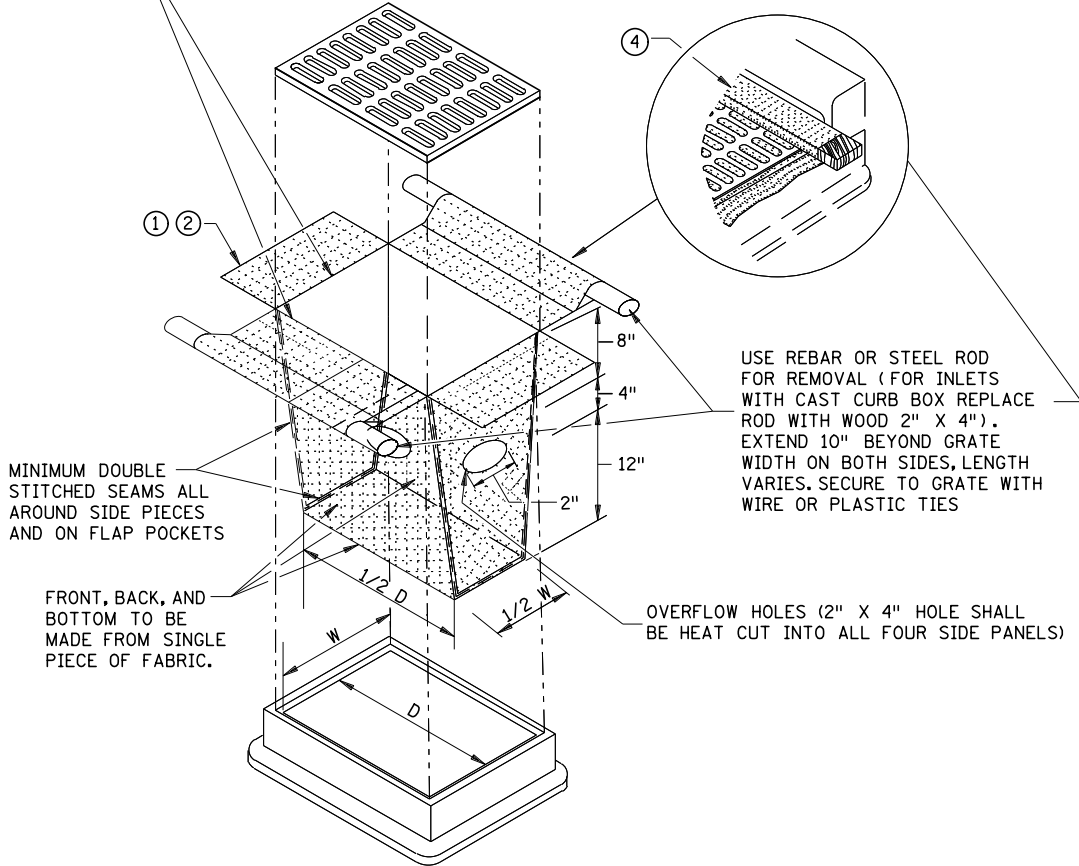


STANDARD PLAN 5-297.250 5 OF 6
 APPROVED: 1-23-2017
 REVISOR:
 STATE DESIGN ENGINEER

PEDESTRIAN CURB RAMP DETAILS

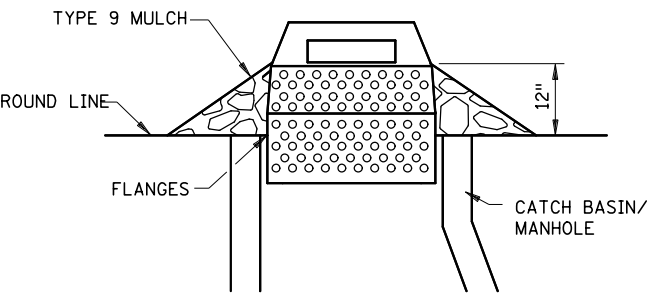
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INLET SPECIFICATIONS AS PER THE PLAN DIMENSION LENGTH AND WIDTH TO MATCH FLAP POCKET



FILTER BAG INSERT ③

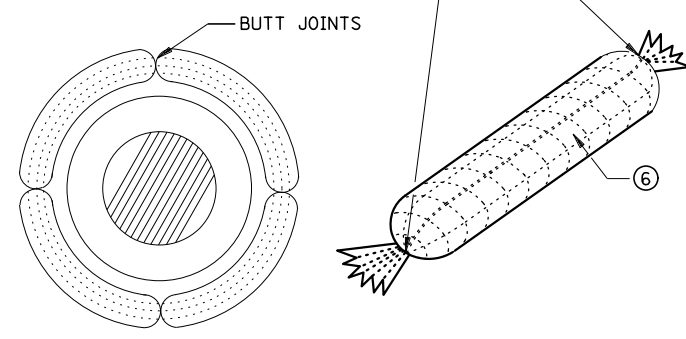
(CAN BE INSTALLED IN ANY INLET TYPE WITH OR WITHOUT A CURB BOX)



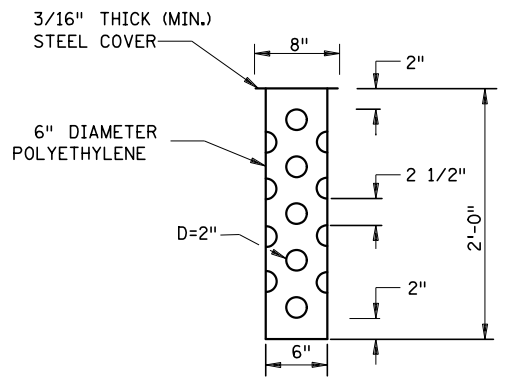
SEDIMENT CONTROL INLET HAT

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.

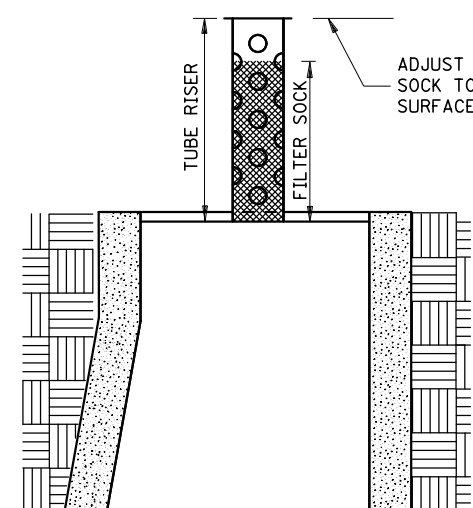
ENDS SECURELY CLOSED TO PREVENT LOSS OF OPEN GRADED AGGREGATE FILL. SECURED WITH 50 PSI. ZIP TIE.



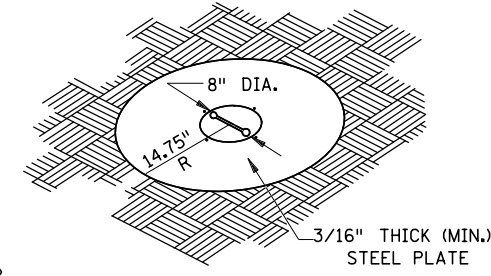
ROCK LOG/COMPOST LOG



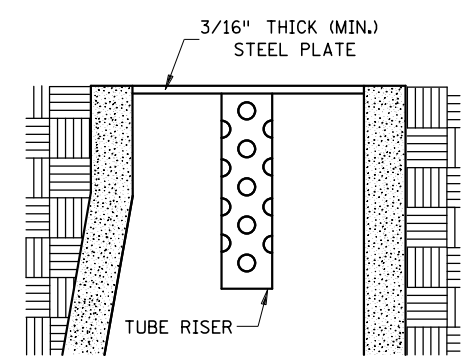
TUBE RISER



SECTION (UP POSITION)

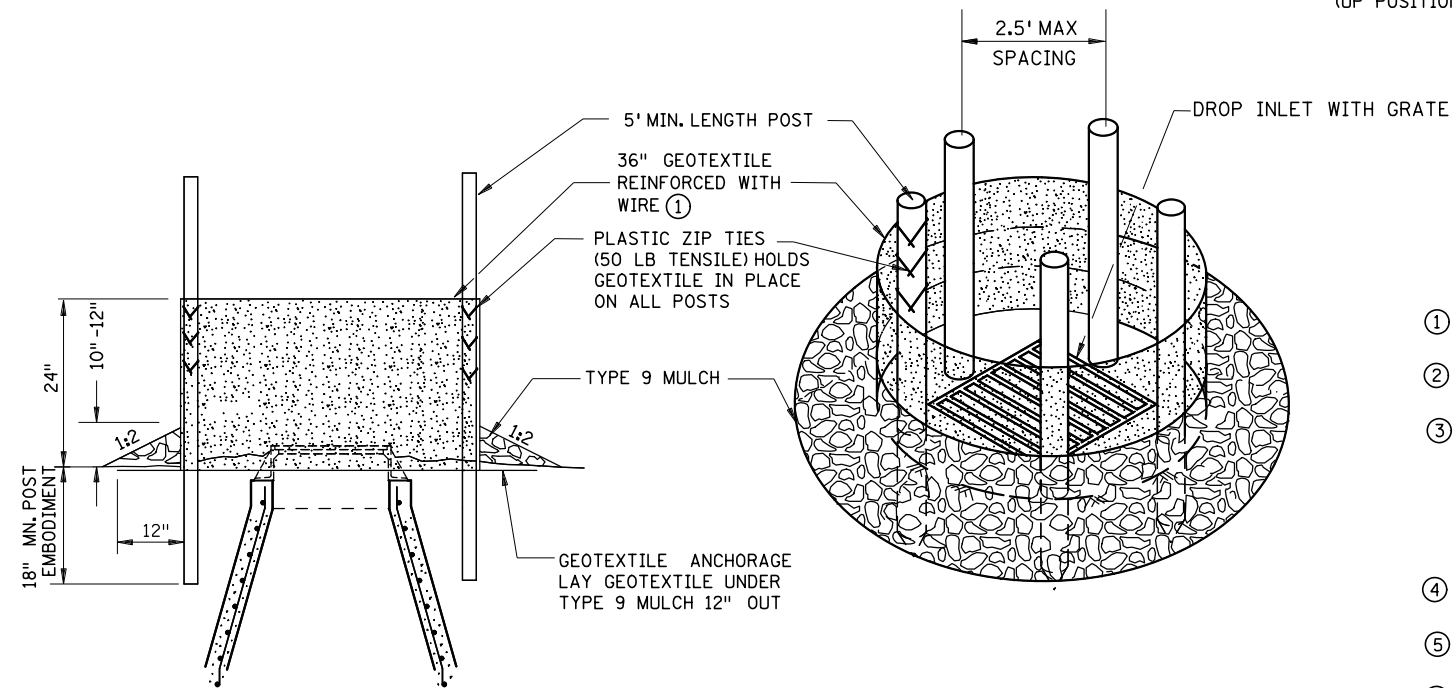


PERSPECTIVE VIEW



SECTION (DOWN POSITION)

POP-UP HEAD



SILT FENCE RING AND ROCK FILTER BERM

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

NOTES:

- SEE SPECS. 2573, 3137, & 3886.
- DEVICES MUST BE ADJUSTED ACCORDINGLY AS TO NOT CAUSE FLOODING ON ROADWAY THAT WOULD IMPEDE TRAFFIC FLOW.
- ① ALL GEOTEXTILE USED FOR INLET PROTECTION SHALL BE MONOFILAMENT IN BOTH DIRECTIONS, MEETING SPEC. 3886.
- ② FINISHED SIZE, INCLUDING POCKETS WHERE REQUIRED SHALL EXTEND A MINIMUM OF 10 INCHES AROUND THE PERIMETER TO FACILITATE MAINTENANCE OR REMOVAL.
- ③ INSTALLATION NOTES: DO NOT PLACE FILTER BAG INSERT IN INLETS SHALLOWER THAN 30 INCHES, MEASURED FROM THE BOTTOM OF THE INLET TO THE TOP OF THE GRATE. THE PLACED BAG SHALL HAVE A MINIMUM SIDE CLEARANCE OF 3 INCHES BETWEEN THE INLET WALLS AND THE BAG, MEASURED AT THE BOTTOM OF THE OVERFLOW HOLES. WHERE NECESSARY THE CONTRACTOR SHALL CLINCH THE BAG, USING PLASTIC ZIP TIES, TO ACHIEVE THE 3 INCH SIDE CLEARANCE.
- ④ FLAP POCKETS SHALL BE LARGE ENOUGH TO ACCEPT WOOD 2 INCH X 4 INCH OR USE A ROCK SOCK OR SAND BAGS IN PLACE OF THE FLAP POCKETS.
- ⑤ SOCK HEIGHT MUST NOT BE SO HIGH AS TO SLOW DOWN WATER FILTRATION TO CAUSE FLOODING OF THE ROADWAY.
- ⑥ GEOTEXTILE SOCK BETWEEN 4-10 FEET LONG AND 4-6 INCH DIAMETER. SEAM TO BE JOINED BY TWO ROWS OF STITCHING WITH A PLASTIC MESH BACKING OR PROVIDE A HEAT BONDED SEAM (OR APPROVED EQUIVALENT). FILL ROCK LOG WITH OPEN GRADED AGGREGATE CONSISTING OF SOUND DURABLE PARTICLES OF COARSE AGGREGATE CONFORMING TO SPEC. 3137 TABLE 3137-1; CA-3 GRADATION.

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

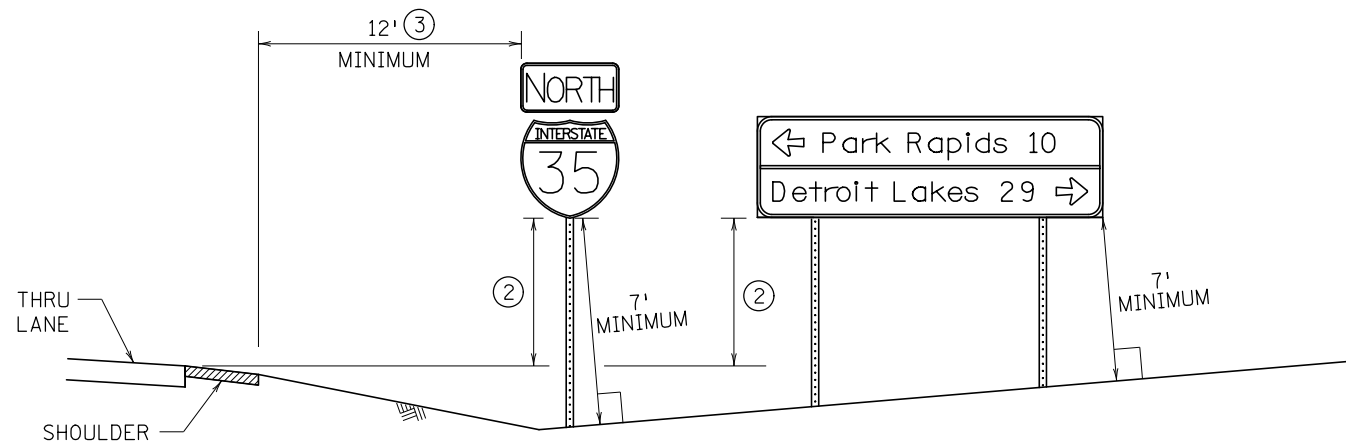


STANDARD PLAN 5-297.405 4 OF 8
APPROVED: 2-28-2017
REVISOR:
[Signature]
STATE DESIGN ENGINEER

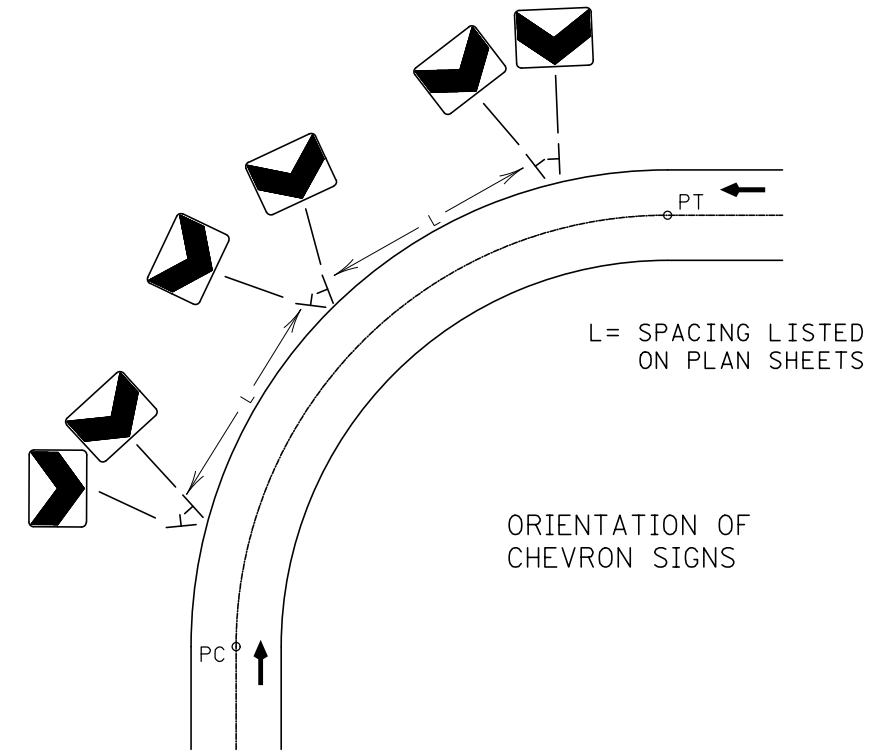
**TEMPORARY SEDIMENT CONTROL
STORM DRAIN INLET PROTECTION**

STATE PROJ. NO. 6982-331 (TH 35) SHEET NO. 13 OF 93 SHEETS

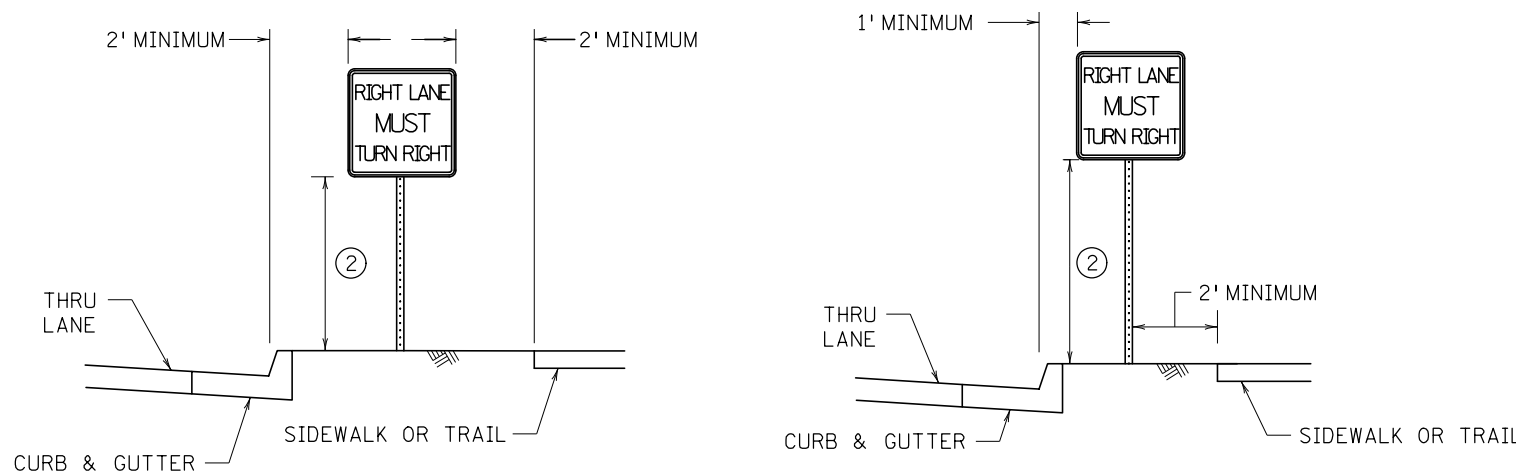
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RURAL LOCATIONS



ORIENTATION OF CHEVRON SIGNS



URBAN LOCATIONS

NARROW URBAN LOCATIONS ①

NOTES:

- URBAN LOCATIONS ARE PAVEMENT SECTIONS WITH CURB AND GUTTER.
 - RURAL LOCATIONS ARE PAVEMENT SECTIONS WITHOUT CURB AND GUTTER.
 - SIGNS SHALL BE PLACED AND ORIENTED APPROXIMATELY AS SHOWN IN THE PLAN, AT RIGHT ANGLES TO THE DIRECTION OF, AND FACING, THE TRAFFIC THEY ARE INTENDED TO SERVE, UNLESS OTHERWISE SPECIFIED. TO AVOID SPECULAR GLARE, TURN SIGNS APPROXIMATELY THREE DEGREES AWAY FROM APPROACHING TRAFFIC.
 - IF A SIGN NEEDS TO BE REPOSITIONED FROM THE PROPOSED PLAN LOCATION IN ORDER TO AVOID CONFLICTS WITH UTILITIES OR OBSTACLES, CONTACT THE PROJECT ENGINEER.
 - SIGN FACES SHALL BE MOUNTED PLUMB.
 - LATERAL CLEARANCES GIVEN APPLY TO RIGHT AND/OR LEFT SIDE INSTALLATION.
 - SIGNS SHALL NOT BE ERECTED OR CONSTRUCTED SO AS TO CAUSE ANY PORTION OF THE SIGN TO BE WITHIN 8.5' OF THE CENTERLINE OF A RAILROAD TRACK.
 - SIGNS SHALL BE PLACED SUCH THAT OBSTACLES DO NOT BLOCK THEM FROM BEING VIEWED BY THE APPROACHING TRAFFIC.
 - SIGNS SHALL BE PLACED A MINIMUM OF 10' FROM THE NEAREST OBSTACLE. OBSTACLES MAY INCLUDE, BUT ARE NOT LIMITED TO, LIGHT POLES, TREES, SIGNS, AND BUILDINGS. SIGNS MAY BE PLACED CLOSER TO SIGNS IN TIGHT AREAS, BUT NO MORE THAN TWO POSTS IN A 7' DIAMETER CIRCLE.
- ① TO BE USED ONLY WHEN BOULEVARD IS TOO NARROW TO OBTAIN ADEQUATE URBAN LOCATION SIGN OFFSETS.
 - ② ALL SIGN MOUNTING HEIGHTS ARE MEASURED VERTICALLY FROM THE BOTTOM OF THE SIGN TO THE TOP OF THE CURB, OR IN ABSENCE OF CURB, TO THE NEAR EDGE OF THE THRU-LANE PAVEMENT. SEE SIGN TABULATIONS.
 - ③ MINIMUM MAY BE REDUCED TO 6' FROM SHOULDER AND 12' FROM THRU LANE IF SITE CONDITIONS PROHIBIT A 12' OFFSET FROM SHOULDER. IF ADEQUATE RIGHT OF WAY IS NOT AVAILABLE TO PLACE SIGN AT REDUCED MINIMUM, SIGN SHALL BE PLACED SUCH THAT PANEL EDGE IS 1' FROM RIGHT OF WAY AND NEAR PANEL EDGE IS AT LEAST 2' FROM EDGE OF SHOULDER.


REVISION:
 APPROVED: OCTOBER 16, 2019
 BRIAN SOBERSON
 STATE TRAFFIC ENGINEER

m MINNESOTA
 DEPARTMENT OF TRANSPORTATION
 STANDARD PLAN 5-297.701
 1 OF 1
 Peter A Harff
 PETER A. HARFF
 STATE DESIGN ENGINEER
 APPROVED: 10-16-2019
 REVISED:

STANDARD SIGN PLACEMENT
 TYPE C & D
 STATE PROJ. NO. 6982-331 (TH 35) SHEET NO. 14 OF 93 SHEETS

DATE: 12/3/2019 TIME: 2:37:45 PM
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ALIGNMENT CHART										
POINT NUMBER OR CURVE NAME	POINT	STATION	CIRCULAR CURVE DATA					COORDINATES		AZIMUTH
			DELTA	DEGREE	RADIUS	TANGENT	LENGTH	X	Y	
			SPIRAL CURVE DATA							
			ANGLE (θs)	DEGREE	ST	LT	LS			
LAKE AVE NB (LAKENB)										
CURVE LAKENB-1	PC	6+00.000						588,128.6615	150,173.0430	126° 11' 20.23"
	PI	6+31.005	2° 28' 48.00" LT	4° 00' 00.00"	1,432.394'	31.005'	62.000'	588,153.6847	150,154.7362	PI
	CC							588,974.4190	151,329.0916	123° 42' 32.23"
PRC	6+62.000						588,179.4767	150,137.5293		
CURVE LAKENB-2	PI	7+59.651	7° 48' 00.00" RT	4° 00' 00.00"	1,432.394'	97.651'	195.000'	588,260.7092	150,083.3355	PI
	CC							587,384.5343	148,945.9670	131° 30' 32.23"
	PT	8+57.000						588,333.8353	150,018.6187	
CURVE LAKENB-3	PC	13+50.000						588,703.0194	149,691.8893	148° 12' 28.17"
	PI	15+24.932	16° 41' 55.94" RT	4° 48' 25.32"	1,191.916'	174.932'	347.384'	588,834.0177	149,575.9553	
	CC							587,913.0927	148,799.3207	
	PT	16+97.384						588,926.1789	149,427.2692	
LAKE AVE SB (LAKESB)										
1060	POT	6+00.000						588,110.8944	150,154.4949	131° 30' 32.23"
CURVE LAKESB-1	PC	13+50.000						588,672.5335	149,657.4421	148° 12' 28.17"
	PI	15+18.181	16° 41' 55.94" RT	5° 00' 00.00"	1,145.916'	168.181'	333.977'	588,798.4761	149,545.9824	
	CC							587,913.0927	148,799.3207	
	PT	16+83.977						588,887.0805	149,403.0346	

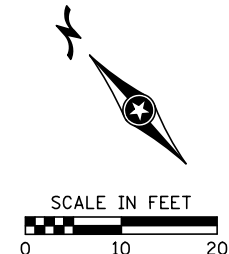
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	DRW: MRN	SIGNATURE: <i>Jeffrey A. Hilden</i> LIC. NO. 20781 DATE: 12/3/2019		
NO.	DATE	BY	DESCRIPTION OF REVISIONS	CHK: SJS
				STATE PROJ. NO. 6982-331 (TH 35) SHEET NO. 15 OF 93 SHEETS

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LEGEND

SEE BRIDGE PLANS FOR MEDIAN REMOVALS

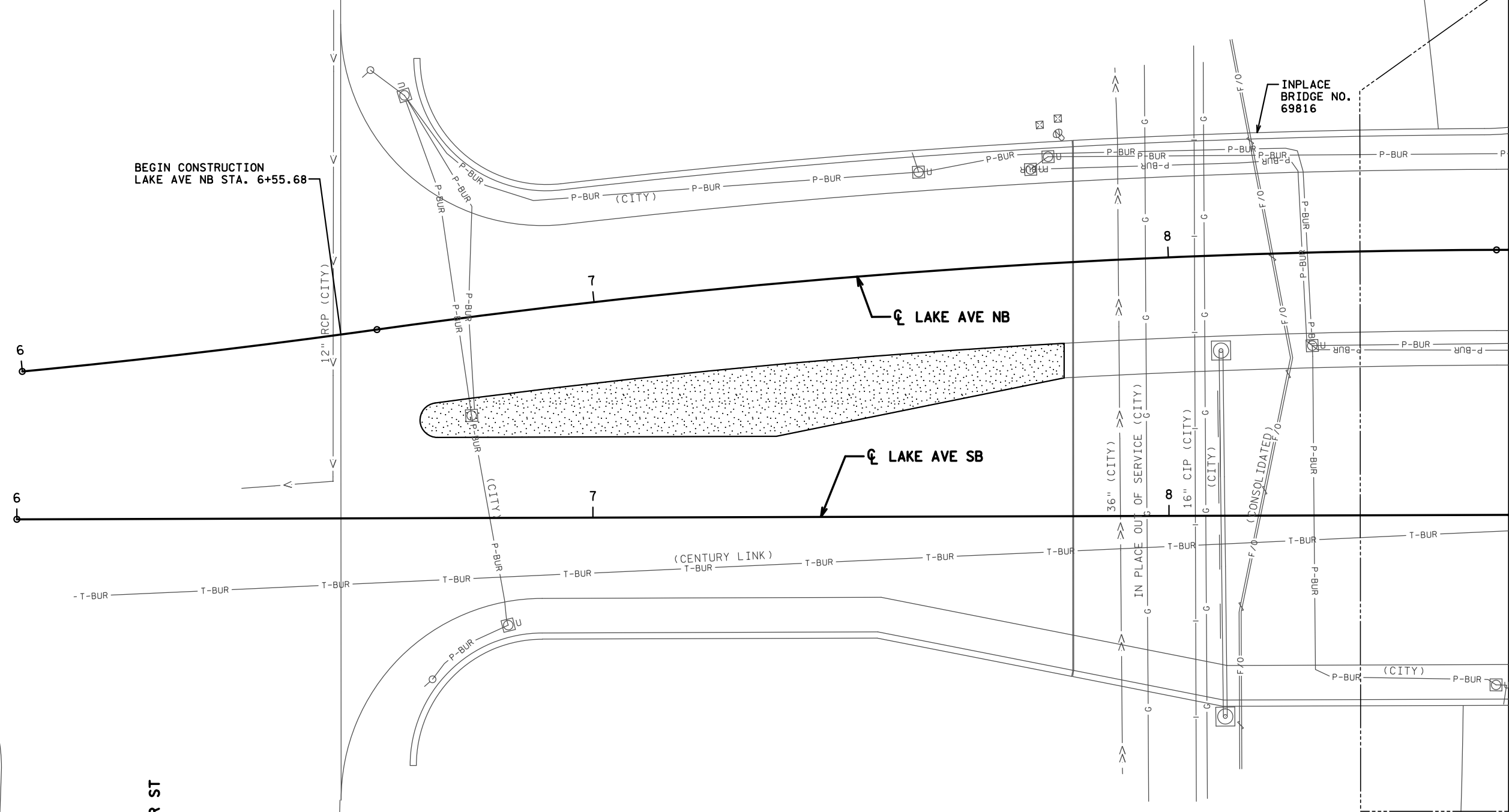
EXISTING RIGHT-OF-WAY



W SUPERIOR ST

E SUPERIOR ST

BEGIN CONSTRUCTION
 LAKE AVE NB STA. 6+55.68



GENERAL NOTES:
 - SEE BRIDGE PLANS FOR ADDITIONAL BRIDGE CONSTRUCTION.

DES: SJS	DRW: MRN	CHK: SJS
NO. DATE BY DESCRIPTION OF REVISIONS		

I HEREBY CERTIFY THAT THIS SHEET 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

SIGNATURE: *Jeffrey A. Hilden* LIC. NO. 20781 DATE: 12/3/2019
 JEFFREY A. HILDEN

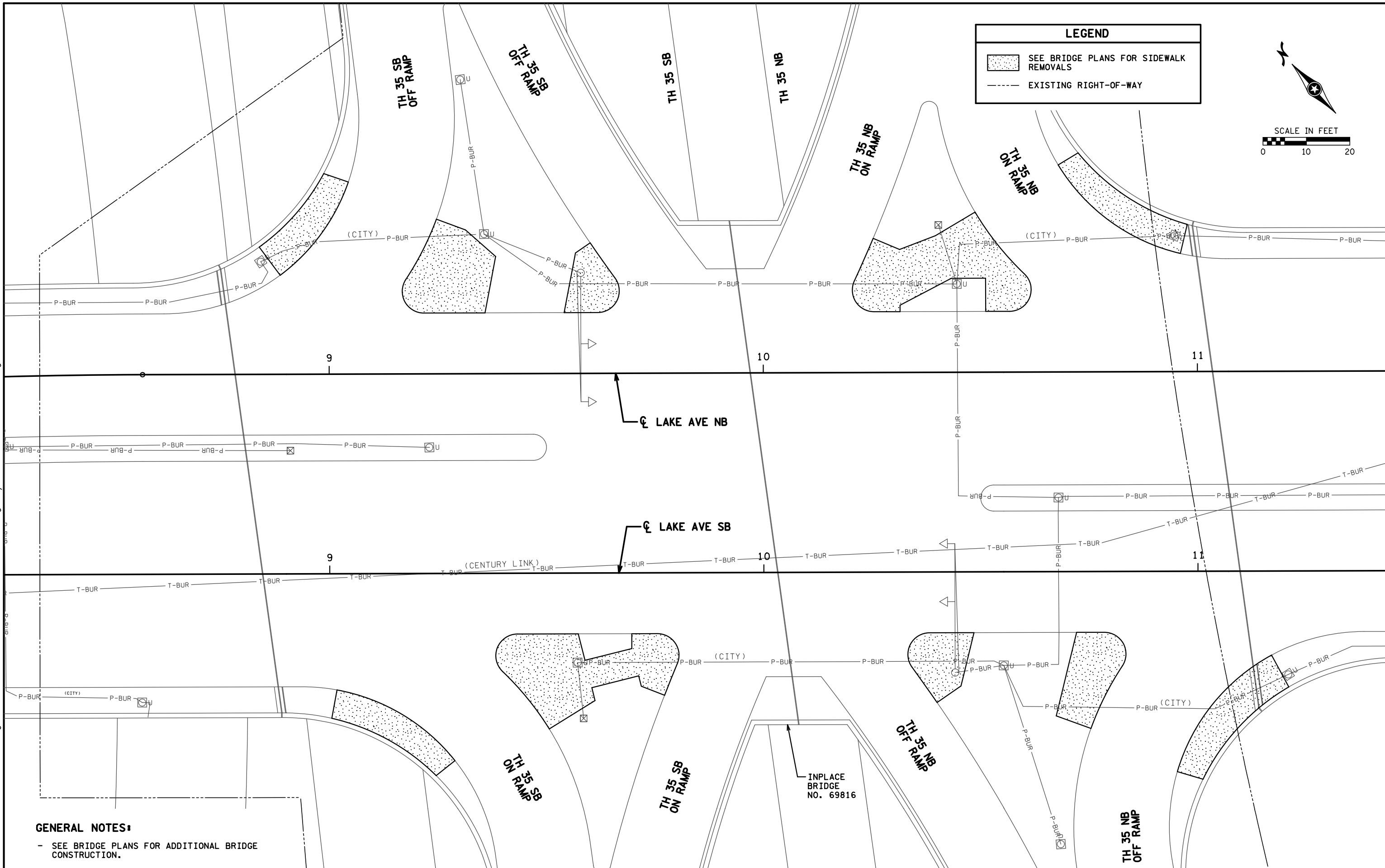


LAKE AVE NB STA. 6+00 TO STA. 8+50

INPLACE TOPOGRAPHY, UTILITIES, & REMOVALS

STATE PROJ. NO. 6982-331 (TH 35) SHEET NO. 16 OF 93 SHEETS

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GENERAL NOTES:

- SEE BRIDGE PLANS FOR ADDITIONAL BRIDGE CONSTRUCTION.

NO.	DATE	BY	DESCRIPTION OF REVISIONS

DES: SJS
 DRW: MRN
 CHK: SJS

I HEREBY CERTIFY THAT THIS SHEET 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

SIGNATURE: *Jeffrey A. Hilden* LIC. NO. 20781 DATE: 12/3/2019
 JEFFREY A. HILDEN








LAKE AVE NB STA. 8+50 TO STA. 11+40

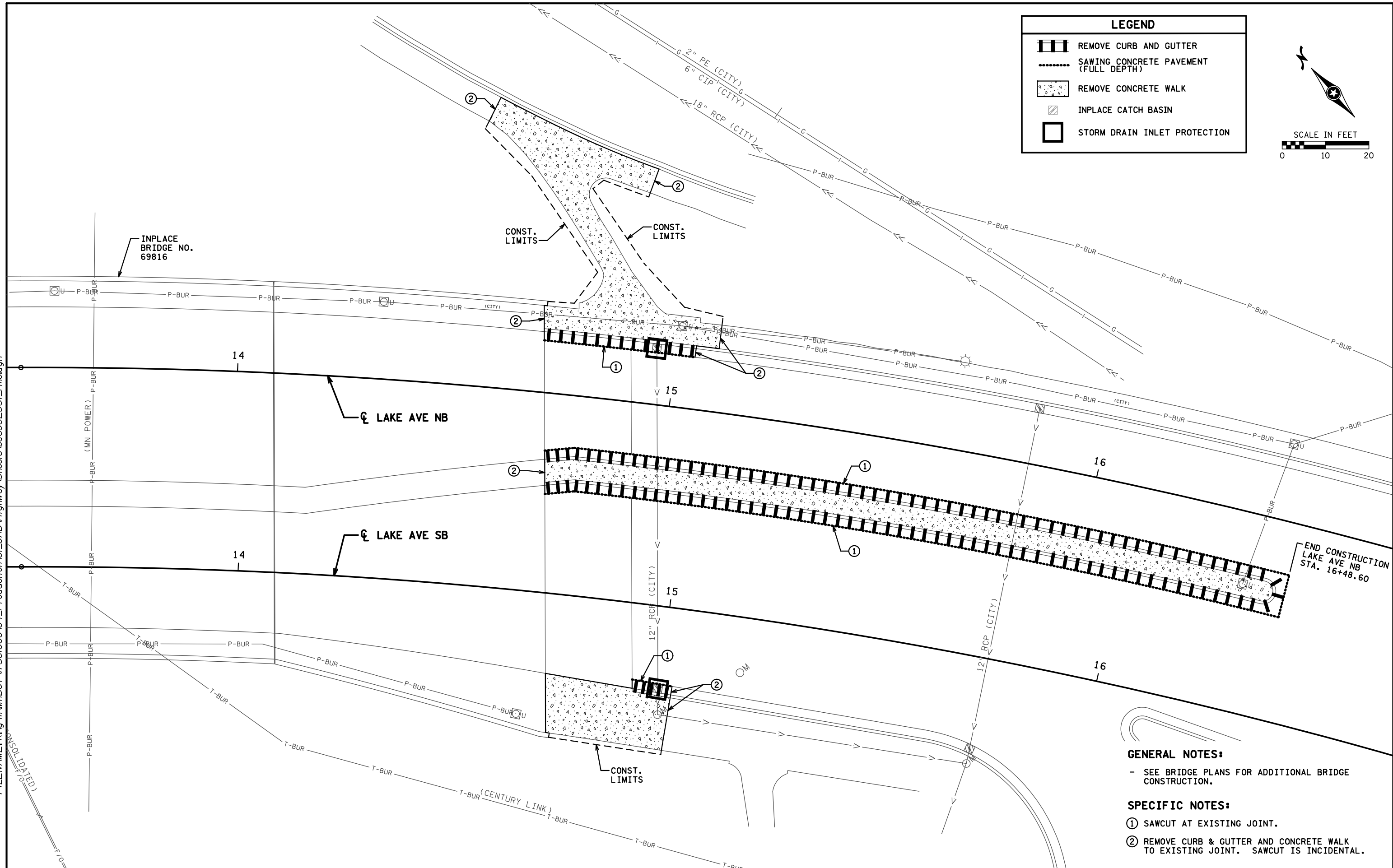
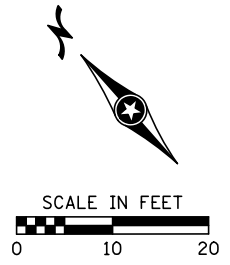
INPLACE TOPOGRAPHY, UTILITIES, & REMOVALS

STATE PROJ. NO. 6982-331 (TH 35) SHEET NO. 17 OF 93 SHEETS

DATE: 12/3/2019 TIME: 2:37:48 PM
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LEGEND

-  REMOVE CURB AND GUTTER
-  SAWING CONCRETE PAVEMENT (FULL DEPTH)
-  REMOVE CONCRETE WALK
-  INPLACE CATCH BASIN
-  STORM DRAIN INLET PROTECTION



- GENERAL NOTES:**
- SEE BRIDGE PLANS FOR ADDITIONAL BRIDGE CONSTRUCTION.
- SPECIFIC NOTES:**
- ① SAWCUT AT EXISTING JOINT.
 - ② REMOVE CURB & GUTTER AND CONCRETE WALK TO EXISTING JOINT. SAWCUT IS INCIDENTAL.

NO.	DATE	BY	DESCRIPTION OF REVISIONS

DES: SJS
 DRW: MRN
 CHK: SJS

I HEREBY CERTIFY THAT THIS SHEET 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

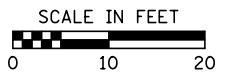
SIGNATURE: *Jeffrey A. Hilden* LIC. NO. 20781 DATE: 12/3/2019
 JEFFREY A. HILDEN



DATE: 12/3/2019 TIME: 2:37:50 PM
 FILENAME: K:\g-m\MnDOT\7581000\04_Production\01_CAD\Highway\Sheets\cd6982331_cpb.dgn

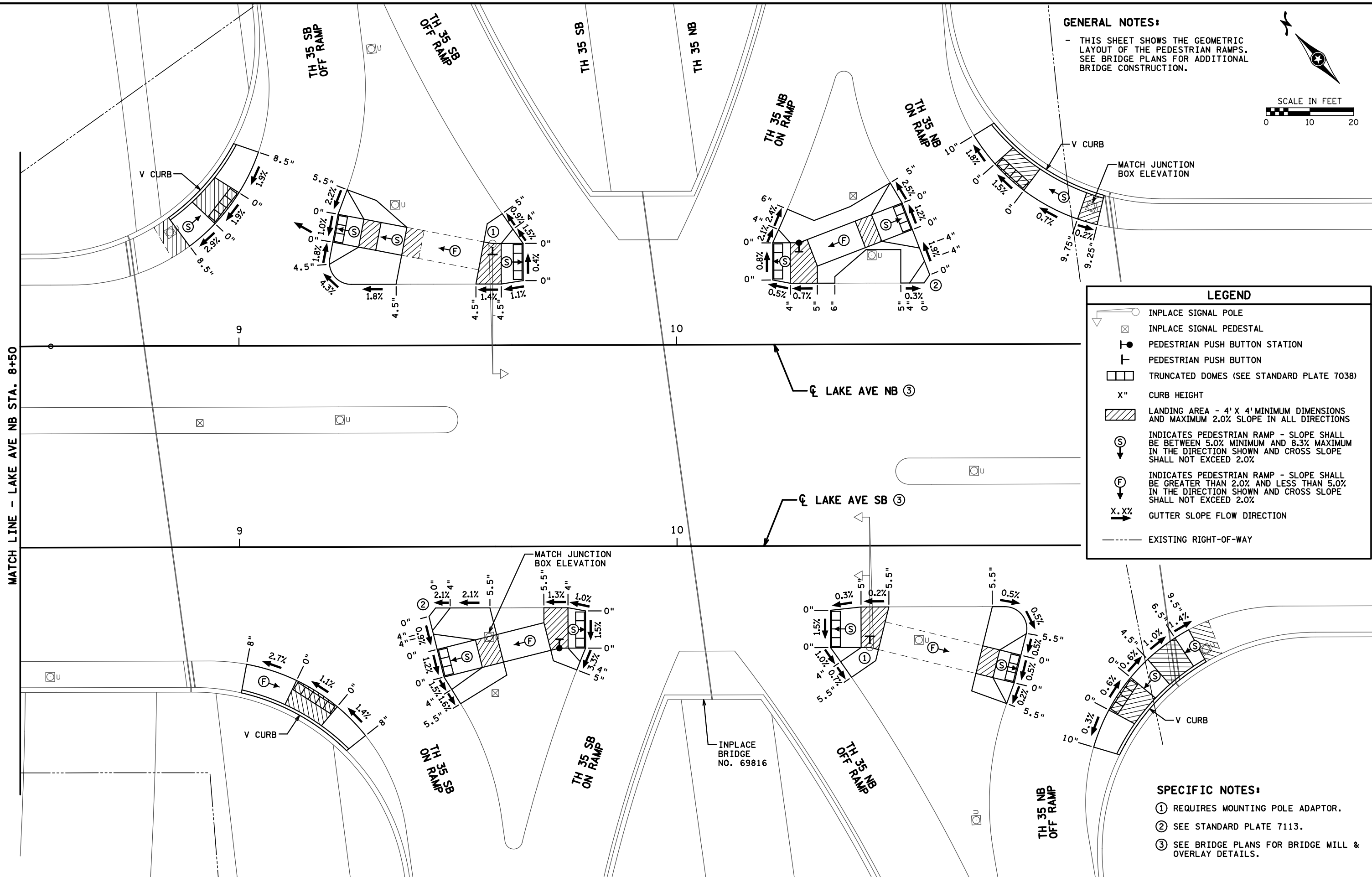
GENERAL NOTES:

- THIS SHEET SHOWS THE GEOMETRIC LAYOUT OF THE PEDESTRIAN RAMPS. SEE BRIDGE PLANS FOR ADDITIONAL BRIDGE CONSTRUCTION.



MATCH LINE - LAKE AVE NB STA. 8+50

MATCH LINE - LAKE AVE SB STA. 11+50



LEGEND

- INPLACE SIGNAL POLE
- INPLACE SIGNAL PEDESTAL
- PEDESTRIAN PUSH BUTTON STATION
- PEDESTRIAN PUSH BUTTON
- TRUNCATED DOMES (SEE STANDARD PLATE 7038)
- X" CURB HEIGHT
- LANDING AREA - 4' X 4' MINIMUM DIMENSIONS AND MAXIMUM 2.0% SLOPE IN ALL DIRECTIONS
- INDICATES PEDESTRIAN RAMP - SLOPE SHALL BE BETWEEN 5.0% MINIMUM AND 8.3% MAXIMUM IN THE DIRECTION SHOWN AND CROSS SLOPE SHALL NOT EXCEED 2.0%
- INDICATES PEDESTRIAN RAMP - SLOPE SHALL BE GREATER THAN 2.0% AND LESS THAN 5.0% IN THE DIRECTION SHOWN AND CROSS SLOPE SHALL NOT EXCEED 2.0%
- X.X% GUTTER SLOPE FLOW DIRECTION
- EXISTING RIGHT-OF-WAY

SPECIFIC NOTES:

- ① REQUIRES MOUNTING POLE ADAPTOR.
- ② SEE STANDARD PLATE 7113.
- ③ SEE BRIDGE PLANS FOR BRIDGE MILL & OVERLAY DETAILS.

NO.	DATE	BY	DESCRIPTION OF REVISIONS

DES: SJS
 DRW: MRN
 CHK: SJS

I HEREBY CERTIFY THAT THIS SHEET 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

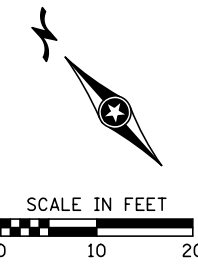
SIGNATURE: *Jeffrey A. Hilden* LIC. NO. 20781 DATE: 12/3/2019
 JEFFREY A. HILDEN



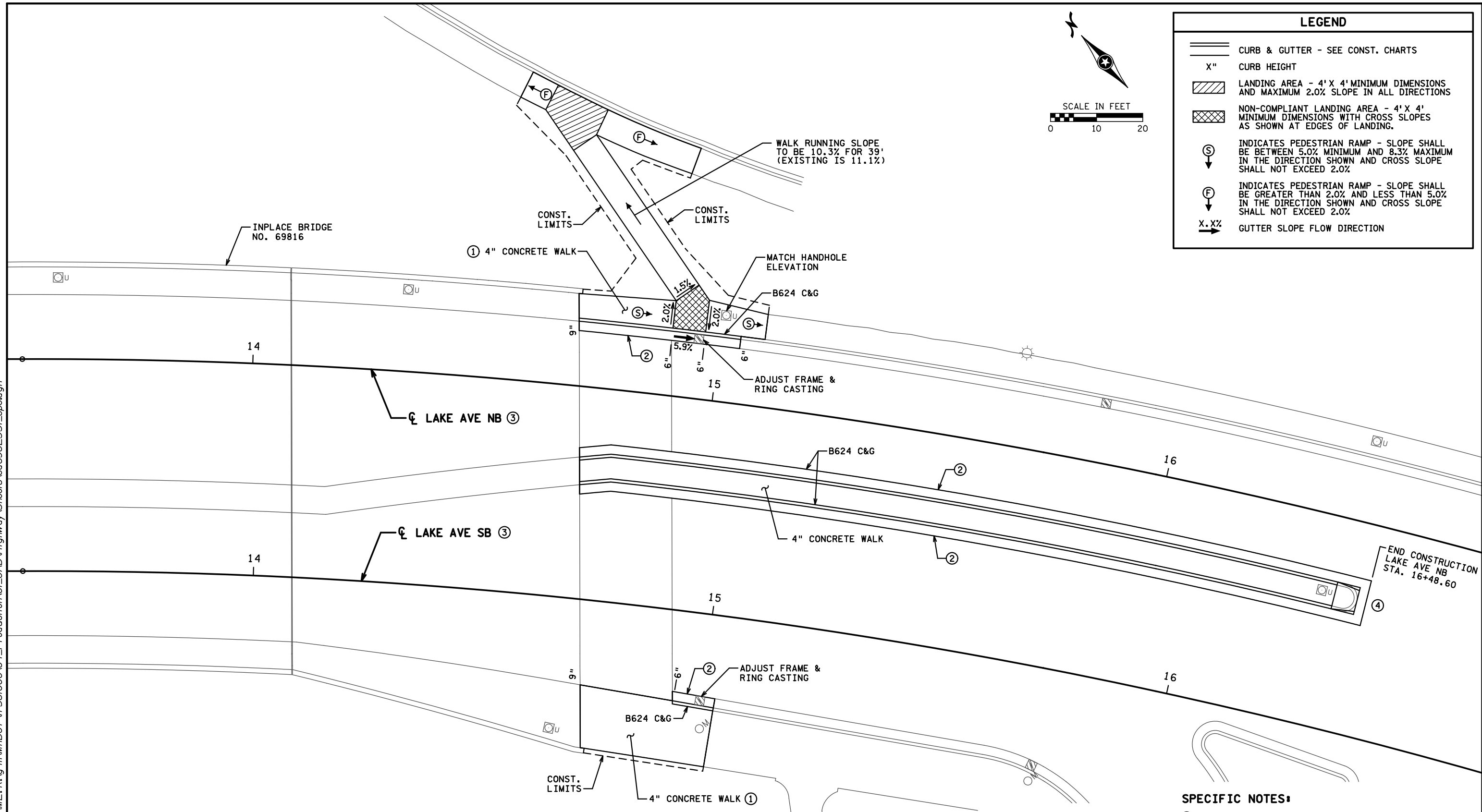
LAKE AVE NB STA. 8+50 TO STA. 11+50
 STATE PROJ. NO. 6982-331 (TH 35)

PLANNED CONSTRUCTION
 SHEET NO. 20 OF 93 SHEETS

DATE: 12/3/2019 TIME: 2:37:50 PM
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LEGEND	
	CURB & GUTTER - SEE CONST. CHARTS
X"	CURB HEIGHT
	LANDING AREA - 4' X 4' MINIMUM DIMENSIONS AND MAXIMUM 2.0% SLOPE IN ALL DIRECTIONS
	NON-COMPLIANT LANDING AREA - 4' X 4' MINIMUM DIMENSIONS WITH CROSS SLOPES AS SHOWN AT EDGES OF LANDING.
	INDICATES PEDESTRIAN RAMP - SLOPE SHALL BE BETWEEN 5.0% MINIMUM AND 8.3% MAXIMUM IN THE DIRECTION SHOWN AND CROSS SLOPE SHALL NOT EXCEED 2.0%
	INDICATES PEDESTRIAN RAMP - SLOPE SHALL BE GREATER THAN 2.0% AND LESS THAN 5.0% IN THE DIRECTION SHOWN AND CROSS SLOPE SHALL NOT EXCEED 2.0%
X.X%	GUTTER SLOPE FLOW DIRECTION



GENERAL NOTES:

- ALL DISTURBED SOIL AREAS SHALL BE PERMANENTLY STABILIZED WITH SEED MIXTURE 25-131, FERTILIZER TYPE 3 (22-5-10 @ 350 POUNDS/ACRE), AND EROSION CONTROL BLANKETS CATEGORY 3N (STRAW, NATURAL NETTING). PAID FOR AS SITE RESTORATION.
- SEE BRIDGE PLANS FOR ADDITIONAL BRIDGE CONSTRUCTION.

SPECIFIC NOTES:

- ① CONCRETE WALK TO BE RECONSTRUCTED DUE TO POOR CONDITION AND/OR FOR CROSS SLOPE CORRECTION.
- ② DRILL AND GROUT 18" LONG NO. 4 REINFORCEMENT BARS (EPOXY COATED) AT 30" SPACING AND PLACED 9" INTO EXISTING CONCRETE PAVEMENT.
- ③ SEE BRIDGE PLANS FOR BRIDGE MILL & OVERLAY DETAILS.
- ④ SEE STANDARD PLATE 7113.

				DES: SJS	I HEREBY CERTIFY THAT THIS SHEET 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 SIGNATURE: <i>Jeffrey A. Hilden</i> LIC. NO. 20781 DATE: 12/3/2019 JEFFREY A. HILDEN		LAKE AVE NB STA. 13+50 TO STA. 16+70	PLANNED CONSTRUCTION
				DRW: MRN			STATE PROJ. NO. 6982-331 (TH 35)	SHEET NO. 21 OF 93 SHEETS
				CHK: SJS				
NO.	DATE	BY	DESCRIPTION OF REVISIONS					

STORM WATER POLLUTION PREVENTION PLAN (SWPPP) NARRATIVE (SHEET 1 OF 2)

PROJECT DESCRIPTION/LOCATION

SP 6982-331 IS LOCATED ON TH 35 AT LAKE AVENUE IN THE CITY OF DULUTH IN SAINT LOUIS COUNTY.
 THE PLANNED SCOPE OF THE PROJECT INCLUDES: APPROACHES, ADA IMPROVEMENTS, REVISE TRAFFIC SIGNAL, AND BRIDGE NO. 69816

RECEIVING WATERS

RECEIVING WATER	DNR	STA. OR R.P.	SPECIAL WATER	IMPAIRED WATER	TROUT	TMDL	INVASIVE
LAKE SUPERIOR	YES	R.P. 257+00.163	YES	YES (A)	NO	NO	YES

(A) NON-CONSTRUCTION RELATED IMPAIRMENT

THE RECEIVING WATERS LISTED IN THE TABLE ABOVE ARE LOCATED WITHIN ONE MILE (AERIAL RADIUS) OF THE PROJECT LIMITS AND RECEIVE RUNOFF FROM THE PROJECT SITE.

AREAS OF ENVIRONMENTAL SENSITIVITY (AES) AND INFESTED WATERS

SEVERAL AQUATIC INVASIVE SPECIES ARE PRESENT IN LAKE SUPERIOR AND SEVERAL OF IT'S TRIBUTARIES. NO WORK ALLOWED IN THEM AND NO PUMPING OF WATER FROM THEM FOR CONSTRUCTION PURPOSES WITHOUT ENGINEER APPROVAL. INVASIVE SPECIES ARE AS FOLLOWS: ROUND GOBY, RUFFE, VHS, AND WHITE PERCH.

SOIL TYPES

THE SOIL TYPES TYPICALLY FOUND ON THIS PROJECT ARE URBAN LAND OUTCROP COMPLEX.

LONG TERM MAINTENANCE AND OPERATION

MNDOT DISTRICT 1 MAINTENANCE STAFF ARE RESPONSIBLE FOR THE LONG TERM MAINTENANCE AND OPERATION OF THE PERMANENT STORMWATER SYSTEM.

PROJECT PERSONNEL AND TRAINING

THIS SWPPP WAS PREPARED BY PERSONNEL THAT ARE CERTIFIED IN THE DESIGN OF CONSTRUCTION SWPPPS. COPIES OF THE CERTIFICATIONS ARE ON FILE WITH MNDOT AND ARE AVAILABLE UPON REQUEST.

PROVIDE A CERTIFIED EROSION CONTROL SUPERVISOR IN GOOD STANDING WHO IS KNOWLEDGEABLE AND EXPERIENCED IN THE APPLICATION OF EROSION PREVENTION AND SEDIMENT CONTROL BEST MANAGEMENT PRACTICES. THE EROSION CONTROL SUPERVISOR WILL WORK WITH THE PROJECT ENGINEER TO OVERSEE THE IMPLEMENTATION OF THE SWPPP AND THE INSTALLATION, INSPECTION, AND MAINTENANCE OF THE EROSION PREVENTION AND SEDIMENT CONTROL BMPs BEFORE, DURING AND AFTER CONSTRUCTION. PROVIDE PROOF OF CERTIFICATION AT THE PRECONSTRUCTION MEETING. WORK WILL NOT BE ALLOWED TO COMMENCE UNTIL PROOF OF CERTIFICATION HAS BEEN PROVIDED TO THE PROJECT ENGINEER.

THE EROSION CONTROL SUPERVISOR IS INCIDENTAL.

PROVIDE AT LEAST ONE CERTIFIED INSTALLER FOR EACH CONTRACTOR OR SUBCONTRACTOR THAT INSTALLS THE PRODUCTS LISTED IN SPECIFICATION SECTION 2573.3.A.2. PROVIDE PROOF OF CERTIFICATION AT THE PRECONSTRUCTION MEETING. WORK WILL NOT BE ALLOWED TO COMMENCE UNTIL PROOF OF CERTIFICATION HAS BEEN PROVIDED TO THE PROJECT ENGINEER.

PROJECT CONTACTS

THE PROJECT ENGINEER AND CONTRACTOR ARE RESPONSIBLE FOR IMPLEMENTATION OF THE SWPPP AND INSTALLATION, INSPECTION, AND MAINTENANCE OF THE EROSION PREVENTION AND SEDIMENT CONTROL BMPs BEFORE, DURING AND AFTER CONSTRUCTION. MNDOT DISTRICT 1 STAFF ARE ALSO AVAILABLE FOR TECHNICAL ASSISTANCE.

ORGANIZATION	CONTACT NAME	PHONE
MNDOT DISTRICT 1 HYDRAULICS ENGINEER	DAVE MOHAR	218-725-2796
MNDOT DISTRICT 1 ENVIRONMENTAL COORDINATOR	MATT MEYER	218-725-2758
MNDOT DISTRICT 1 CONST. RESIDENT ENGINEER	KEN SLAMA	218-725-2743
MNDOT DISTRICT 1 MAINTENANCE CONTACT	ANDY JOHNSON	218-742-1061
MNDOT AGRICULTURE SPECIALIST	KEN GRAEVE	651-366-3613

MPCA DUTY OFFICER 24 HOUR EMERGENCY NOTIFICATION: 651-649-5451 OR 800-422-0798

LOCATION OF SWPPP REQUIREMENTS

THE REQUIRED SWPPP ELEMENTS MAY BE LOCATED IN MANY PLACES WITHIN THE PLAN SET AS WELL AS IN THE SPECIAL PROVISIONS, MNDOT SPEC BOOK (2018 EDITION), OR ON FILE WITH MNDOT. THE NOTES AND TABLE BELOW ARE INTENDED TO BE A QUICK REFERENCE FOR THE CONTRACTOR AND PROJECT ENGINEER TO USE IN THE FIELD. THERE MAY BE ADDITIONAL REQUIRED SWPPP ELEMENTS INCLUDED ON THE PROJECT THAT ARE NOT LISTED ON THIS SHEET.

LOCATION OF SWPPP REQUIREMENTS IN PROJECT PLAN

DESCRIPTION	LOCATION
TEMPORARY EROSION CONTROL MEASURES	N/A
PERMANENT EROSION CONTROL MEASURES	SHEET NO. 21
DIRECTION OF FLOW	SHEET NO. 19-21
FINAL STABILIZATION	SHEET NO. 21
SOILS AND CONSTRUCTION NOTES	SHEET NO. 4
DRAINAGE STRUCTURES (INPLACE)	SHEET NO. 18, 21
DRAINAGE TABULATION	N/A
STORM SEWER PROFILE SHEETS	N/A
STORM SEWER TABULATION	N/A
EROSION AND SEDIMENT CONTROL DETAILS	SHEET NO. 13
EROSION CONTROL TABULATION	N/A
TURF ESTABLISHMENT TABULATION	N/A
SITE MAP	SHEET NO. 2
STORMWATER TREATMENT CONSTRUCTION STAGING	N/A
STORMWATER CALCULATIONS	N/A
WATER RESOURCES NOTES	SHEET NO. 23

STORMWATER CALCULATIONS AND ADDITIONAL HYDRAULIC DESIGN INFORMATION IS ON FILE WITH MNDOT. MNDOT WILL MAKE THIS INFORMATION AVAILABLE UPON REQUEST.

SITE INSPECTION AND MAINTENANCE

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 UNTIL THE SITE HAS UNDERGONE FINAL STABILIZATION. INSPECT SURFACE WATER INCLUDING DRAINAGE DITCHES FOR SIGNS OF EROSION AND SEDIMENT DEPOSITION. INSPECT CONSTRUCTION SITE VEHICLE EXIT LOCATIONS FOR EVIDENCE OF TRACKING ONTO PAVED SURFACES. INSPECT SURROUNDING PROPERTIES FOR EVIDENCE OF OFF SITE SEDIMENT ACCUMULATION.

RECORD ALL INSPECTIONS AND MAINTENANCE ACTIVITIES IN WRITING WITHIN 24 HOURS. SUBMIT INSPECTION REPORTS IN A FORMAT THAT IS ACCEPTABLE TO THE PROJECT ENGINEER. INCLUDE THE FOLLOWING IN THE RECORDS OF EACH INSPECTION AND MAINTENANCE ACTIVITY:

- A. DATE AND TIME OF INSPECTIONS
- B. NAME OF PERSONS CONDUCTING INSPECTIONS
- C. FINDINGS OF INSPECTIONS, INCLUDING RECOMMENDATIONS FOR CORRECTIVE ACTIONS
- D. CORRECTIVE ACTIONS TAKEN, INCLUDING DATES, TIMES, AND PARTY COMPLETING MAINTENANCE ACTIVITIES
- E. DATE AND AMOUNT OF ALL RAINFALL EVENTS GREATER THAN 0.5 INCH IN 24 HOURS
- F. DOCUMENTS AND CHANGES MADE TO THE SWPPP

REPLACE, REPAIR OR SUPPLEMENT ALL NONFUNCTIONAL BMPs BY THE END OF THE NEXT BUSINESS DAY FOLLOWING DISCOVERY UNLESS LISTED DIFFERENTLY BELOW:

- A. REPAIR, REPLACE, OR SUPPLEMENT PERIMETER CONTROL DEVICES WHEN IT BECOMES NONFUNCTIONAL OR SEDIMENT REACHES 1/2 THE HEIGHT OF THE DEVICE. COMPLETE REPAIRS BY THE END OF THE NEXT BUSINESS DAY FOLLOWING DISCOVERY.
- B. REPAIR OR REPLACE INLET PROTECTION DEVICES WHEN THEY BECOME NONFUNCTIONAL OR SEDIMENT REACHES 1/2 THE HEIGHT AND/OR DEPTH OF THE DEVICE.
- C. DRAIN AND REMOVE SEDIMENT FROM TEMPORARY AND PERMANENT SEDIMENT BASINS ONCE THE SEDIMENT HAS REACHED 1/2 THE STORAGE VOLUME. COMPLETE WORK WITHIN 72 HOURS OF DISCOVERY.
- D. REMOVE ALL DELTAS AND SEDIMENT DEPOSITED IN SURFACE WATERS INCLUDING DRAINAGE WAYS, CATCH BASINS, AND OTHER DRAINAGE SYSTEMS. RESTABILIZE ANY AREAS THAT ARE DISTURBED BY SEDIMENT REMOVAL OPERATIONS. SEDIMENT REMOVAL AND STABILIZATION MUST BE COMPLETED WITHIN 7 DAYS OF DISCOVERY. PREPARE AND SUBMIT A SITE MANAGEMENT PLAN FOR WORKING IN SURFACE WATERS. CONTACT ALL APPROPRIATE AUTHORITIES PRIOR TO WORKING IN SURFACE WATERS.
- E. REMOVE TRACKED SEDIMENT FROM PAVED SURFACES BOTH ON AND OFF SITE WITHIN 24 HOURS OF DISCOVERY. STREET SWEEPING MAY HAVE TO OCCUR MORE OFTEN TO MINIMIZE OFF SITE IMPACTS. LIGHTLY WET THE PAVEMENT PRIOR TO SWEEPING.
- F. MAINTAIN ALL BMPs UNTIL WORK HAS BEEN COMPLETED AND THE SITE HAS GONE UNDER FINAL STABILIZATION.

ENVIRONMENTAL REVIEW

THERE ARE NO STORMWATER MITIGATION MEASURES REQUIRED AS A RESULT OF AN ENVIRONMENTAL, ARCHEOLOGICAL OR AGENCY REVIEW. ALL MITIGATION MEASURES HAVE BEEN ADDRESSED IN THIS PLAN SET OR THE SPECIAL PROVISIONS.

THIS PROJECT IS NOT LOCATED IN A WELL HEAD PROTECTION AREA.

THIS PROJECT IS NOT LOCATED IN A DRINKING WATER SUPPLY MANAGEMENT AREA (DWSMA).

LAND FEATURE CHANGES

TOTAL DISTURBED AREA	0.11 ACRES
TOTAL EXISTING IMPERVIOUS SURFACE AREA	0.10 ACRES
TOTAL PROPOSED IMPERVIOUS SURFACE AREA	0.10 ACRES
TOTAL PROPOSED NET CHANGE IN IMPERVIOUS SURFACE AREA	0.00 ACRES

STABILIZATION TIME FRAMES

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

1. INITIATE STABILIZATION IMMEDIATELY WHEN CONSTRUCTION HAS TEMPORARILY OR PERMANENTLY CEASED ON ANY PORTION OF THE SITE. COMPLETE STABILIZATION WITHIN THE TIME FRAME LISTED. IN MANY INSTANCES THIS WILL REQUIRE STABILIZATION TO OCCUR MORE THAN ONCE DURING THE COURSE OF THE PROJECT. TEMPORARY SOIL STOCKPILES WITHOUT SIGNIFICANT CLAY OR SILT AND STOCKPILED AND CONSTRUCTED ROAD BASE ARE EXEMPT FROM THE STABILIZATION REQUIREMENT.

2. STABILIZE WETTED PERIMETER OF DITCH (I.E. WHERE THE DITCH GETS WET).

3. APPLICATION OF MULCH, HYDROMULCH, TACKIFIER AND POLYACRYLAMIDE ARE NOT ACCEPTABLE STABILIZATION METHODS IN THESE AREAS.

4. STABILIZE ALL AREAS OF THE SITE PRIOR TO THE ONSET OF WINTER. ANY WORK STILL BEING PERFORMED WILL BE SNOW MULCHED, SEEDED, AND BLANKETED WITHIN THE TIME FRAMES IN THE NPDES PERMIT.

5. TOPSOIL BERMS MUST BE STABILIZED IN ORDER TO BE CONSIDERED PERIMETER CONTROL BMPs. USE RAPID STABILIZATION METHOD 2, 3, OR 4 AS DIRECTED BY THE ENGINEER. THE SEED MIX USED IN THE RAPID STABILIZATION MAY BE SUBSTITUTED AS FOLLOWS:
 A. SINGLE YEAR CONSTRUCTION BETWEEN MAY 1 - AUGUST 1, SEED WITH SEED MIXTURE 21-111
 B. SINGLE YEAR CONSTRUCTION BETWEEN AUGUST 1 AND OCTOBER 31, SEED WITH SEED MIXTURE 21-112
 C. MULTI YEAR CONSTRUCTION 22-111

6. KEEP DITCHES AND EXPOSED SOILS IN AN EVEN ROUGH GRADED CONDITION IN ORDER TO BE ABLE TO APPLY EROSION CONTROL MULCHES, HYDROMULCHES AND BLANKETS.

7. SEE WATER RESOURCES NOTES FOR A LIST OF PUBLIC WATER EXCLUSION DATES. TWENTY FOUR HOUR STABILIZATION REQUIREMENT ONLY APPLIES DURING THE EXCLUSION DATES.

DATE: 12/3/2019 TIME: 2:37:51 PM FILENAME: K:\g-m\MnDOT\7581000\04_Production\01_CAD\Highway\Sheets\cd6982331_swa.dgn

DES: MAW	I HEREBY CERTIFY THAT THIS SHEET 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
DRW: MRN	SIGNATURE: <i>Matthew A. Wassman</i> LIC. NO. 26883 DATE: 12/3/2019
CHK: MAW	MATTHEW A. WASSMAN



NOTES & GUIDELINES

GENERAL INFORMATION:

1. ALL DISTANCES ARE APPROXIMATE.

SIGNING:

- BARRICADES SHALL BE FABRICATED WITH SIGN SHEETING MATERIAL AS LISTED ON STANDARD PLATE 8000J.
- LONGITUDINAL DROPOFFS SHALL BE SIGNED AS SHOWN IN THE "MINNESOTA TEMPORARY TRAFFIC CONTROL FIELD MANUAL" PAGES (6K-aJ) THRU (6K-dI) UNLESS OTHERWISE SPECIFIED IN THESE PLANS.
- 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.
- THIS WORK IS INCLUDED IN THE TRAFFIC CONTROL LUMP SUM PAY ITEM.

PAVEMENT MARKING:

- MASK OR REMOVE ANY CONFLICTING PAVEMENT MARKINGS AS DIRECTED BY THE ENGINEER.
- ALL TEMPORARY PAVEMENT MARKINGS SHALL BE A WET REFLECTIVE MATERIAL FROM THE WET REFLECTIVE MARKING MATERIALS QUALIFIED PRODUCTS LIST. ALL PAVEMENT MARKINGS IN TAPERS AND TRANSITIONS SHALL BE 6" IN WIDTH.
- SEE 2582 IN THE SPECIAL PROVISIONS FOR PAVEMENT MARKING SPOTTING RESPONSIBILITIES.

BARRIER & DELINEATION:

- PLACE AND MAINTAIN TEMPORARY BARRIER DELINEATORS ANY TIME TRAFFIC IS WITHIN 10' OF BARRIER. DELINEATORS WILL EACH HAVE A MINIMUM OF 24 SQ. IN. OF RETROREFLECTIVE SURFACE ON BOTH SIDES PLACED AT 25' SPACING ON TOP OF THE BARRIER. IF THE ENGINEER OR PLAN REQUIRES SIDE MOUNTED TEMPORARY BARRIER DELINEATORS, THEY WILL HAVE A MINIMUM OF 12 SQ. IN. OF RETROREFLECTIVE SURFACE AREA AND BE PLACED AT 12.5' SPACING. IF A SMALLER APPROVED BARRIER DELINEATOR IS USED IT SHALL BE A MINIMUM OF 6 SQ. IN. OF RETROREFLECTIVE SURFACE AREA AND BE PLACED ON BOTH SIDES AT 6.25' SPACING. TEMPORARY BARRIER DELINEATOR COLOR SHALL MATCH APPLICABLE PAVEMENT MARKING.

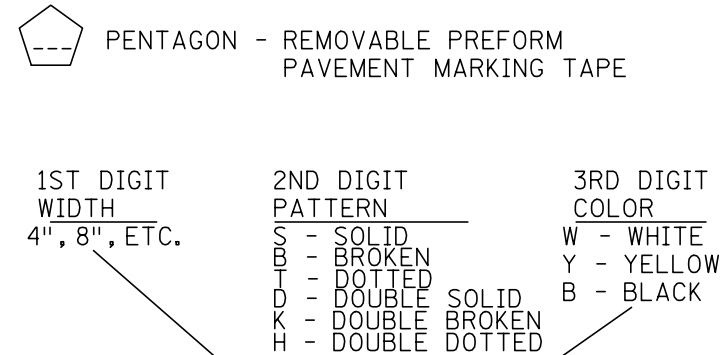
CONSTRUCTION INFORMATION SIGNING:

- THE CONTRACTOR SHALL USE CONSTRUCTION INFORMATION SIGNING AS SHOWN IN THE PLAN WHICH ARE TO BE USED AS FOLLOWS:
 PLACE THE G20-X1 ADVANCE CLOSURE NOTICE SIGN(S) X DAYS PRIOR TO THE PLANNED CLOSURE DATE.
 PLACE G20-X2 ADVANCE NOTICE SIGNS X DAYS PRIOR TO THE WORK STARTING DATE. ONCE WORK BEGINS, COVER THE START DATE LEGEND WITH SUGGESTED PLAQUE CONTAINED IN THIS PLAN. IF NO ALTERNATE MESSAGE IS SUGGESTED OR IF DIRECTED BY THE ENGINEER, DISPLAY THE CORRECT ESTIMATED FINISH DATE, MONTH, OR SEASON
 IF CONSTRUCTION INFORMATION SIGNING IS NO LONGER VISIBLE TO THE MOTORING PUBLIC ONCE WORK BEGINS, MOVE SAID SIGNING TO A SITE IN ADVANCE OF THE WORK ZONE OR CLOSURE AS DIRECTED BY THE PLAN OR ENGINEER.
- THIS WORK IS INCLUDED IN THE TRAFFIC CONTROL LUMP SUM PAY ITEM.

PAVEMENT MARKING SYMBOLS AND MATERIALS LEGEND

- TEMPORARY RAISED PAVEMENT MARKERS AT 10' SPACES (DOUBLE YELLOW)
- — — — BROKEN LINE-50' CYCLE (10' LINE, 40' GAP)
- - - - DOTTED LINE-15' CYCLE (3' LINE, 12' GAP), UNLESS SHOWN OTHER WISE IN THE PLAN

STRIPING KEY



G=GROUND IN W=WET REFLECTIVE
 C=CONTRAST E=ENHANCED SKID RESISTANCE

EXAMPLE: = 4" SOLID LINE WHITE PREF THERMO
 GCW = GROUND IN, CONTRAST, WET REFLECTIVE

INDEX

TRAFFIC CONTROL SHEET NO.	DESCRIPTIONS
24	TITLE SHEET
25	PAY ITEM TABULATION SHEET
26	TRAFFIC CONTROL TABULATION SHEET
27	SPECIAL SIGN DETAILS
28	STAGING NARRATIVE
29-32	STAGING APR & TPAR DETAILS
33-59	STAGING

TRAFFIC CONTROL DEVICES & SYMBOLS LEGEND

SYMBOL DESCRIPTION

- AREA CLOSED TO TRAFFIC / WORK AREA
- TRAFFIC CONTROL SIGN
- TYPE III BARRICADE =
- DRUM-LIKE CHANNELIZER (TYPE B) =
- SURFACE MOUNTED DELINEATOR
- TYPE A FLASHING WARNING LIGHT

SYMBOL DESCRIPTION

- FLASHING ARROW BOARD TYPE C = (4' X 8' UNLESS OTHERWISE NOTED).
- PORTABLE CHANGEABLE MESSAGE SIGN (PCMS)
- PORTABLE PRECAST CONC BARRIER DES 8337 WITH DELINEATORS AT 25' SPACES
- IMPACT ATTENUATOR

LAST REVISED
09/19/2019

DATE: 12/3/2019 TIME: 2:37:52 PM FILENAME: K:\g-m\MinDOT\7581000\04_Production\01_CAD\Highway\Sheets\cd6982331_to0a.dgn

DES: LKG		I HEREBY CERTIFY THAT THIS SHEET 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		TKDA	NOTES, LEGEND, AND INDEX	TRAFFIC CONTROL PLAN
DRW: LKG		SIGNATURE: LIC. NO. 20781 DATE: 12/3/2019				
NO.	DATE	BY	DESCRIPTION OF REVISIONS	CHK: JAH	STATE PROJ. NO. 6982-331 (TH 35)	SHEET NO. 24 OF 93 SHEETS

DATE: 12/3/2019 TIME: 2:37:53 PM
 FILENAME: K:\g-m\MnDOT\7581000\04_Production\01_CAD\Highway\Sheets\cd6982331_to0b.dgn

TRAFFIC CONTROL TABUATION (A)									F
STAGE	PORTABLE PRECAST CONC BARRIER DES 8337 LIN FT	RELOCATE PORT PRECAST CONC BAR DES 8337 LIN FT	IMPACT ATTENUATOR ASSEMBLY	RAISED PAVEMENT MARKER TEMPORARY	PORTABLE CONCRETE BARRIER DELINEATOR EACH	SURFACE MOUNTED DELINEATOR EACH	REMOVABLE PREFORM PAVEMENT MARKING TAPE		REMOVABLE PREFORMED PLASTIC MASK (BLACK) LIN FT
				YELLOW			WHITE	YELLOW	
				EACH			LIN FT		
LAKE AVENUE INTERCHANGE									
STAGE 1	155		1		6	5	661	710	600
STAGE 2	61		1	75	2	18	626	485	100
STAGE 3		20		119		28	220	1063	300
STAGE 4	120			142	5	34	1320	899	150
TOTAL	336	20	2	336	13	85	5984		1150

NOTES:
 (A) 90% FEDERAL, 10% STATE FUNDS.

NO.	DATE	BY	DESCRIPTION OF REVISIONS

DES: LKG
 DRW: LKG
 CHK: JAH

I HEREBY CERTIFY THAT THIS SHEET 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

SIGNATURE: *Jeffrey A. Hilden* LIC. NO. 20781 DATE: 12/3/2019
 JEFFREY A. HILDEN



PAY ITEM TABULATION

STATE PROJ. NO. 6982-331 (TH 35)

TRAFFIC CONTROL PLAN

SHEET NO. 25 OF 93 SHEETS

TRAFFIC CONTROL TABULATION SHEET

"R" SERIES			
SIGN	SIGN NO.	COLOR	SIZE
	R3-1	BLACK ON RED AND WHITE	36" x 36"
	R3-2	BLACK ON RED AND WHITE	36" x 36"
	R3-8AA	BLACK ON WHITE	36" x 30"
	R4-7C	BLACK ON WHITE	18" x 30"
	R5-1	BLACK ON WHITE	36" x 36"
	R11-2P	BLACK ON WHITE	48" x 30"
	R11-2R	BLACK ON WHITE	48" x 30"

DEVICES			
ITEM	SIGN NO.	COLOR	SIZE
	DRUM LIKE CHANNELIZER	WHITE ON ORANGE	
	TYPE III	WHITE ON ORANGE	6 FOOT 8 FOOT
	WARNING FLASHER LIGHT	AMBER	TYPE A
	ARROW BOARD		96" x 48"

"G" SERIES			
SIGN	SIGN NO.	COLOR	SIZE
	G20-X1	BLACK ON ORANGE	72" x 60"
	G20-X9	BLACK ON ORANGE	30" x 36"

"W" SERIES			
SIGN	SIGN NO.	COLOR	SIZE
	W1-4L	BLACK ON ORANGE	48" x 48"
	W1-4R	BLACK ON ORANGE	48" x 48"
	W1-6L	BLACK ON ORANGE	48" x 24"
	W1-6R	BLACK ON ORANGE	48" x 24"
	W1-7	BLACK ON ORANGE	48" x 24"
	W4-2L	BLACK ON ORANGE	48" x 48"
	W6-3	BLACK ON ORANGE	48" x 48"
	W13-1P	BLACK ON ORANGE	30" x 30"
	W20-1	BLACK ON ORANGE	48" x 48"
	W20-2	BLACK ON ORANGE	48" x 48"
	W20-3	BLACK ON ORANGE	48" x 48"
	W20-100F	BLACK ON ORANGE	42" x 24"
	W20-X18	BLACK ON ORANGE	48" x 48"
	W21-X5L	BLACK ON ORANGE	48" x 48"

"M" SERIES			
SIGN	SIGN NO.	COLOR	SIZE
	M1-1A	WHITE ON RED AND BLUE	24" x 24"
	M3-1	BLACK ON WHITE	24" x 12" 36" x 18"
	M3-1a	WHITE ON BLUE	24" x 12" 36" x 18"
	M3-3	BLACK ON WHITE	24" x 12" 36" x 18"
	M4-8	BLACK ON ORANGE	24" x 12"
	M4-8A	BLACK ON ORANGE	24" x 18"
	M4-9mAL	BLACK ON ORANGE	30" x 24" 42" x 36"
	M4-9mAR	BLACK ON ORANGE	30" x 24" 42" x 36"
	M4-9mATR45	BLACK ON ORANGE	42" x 36"
	M4-9mL	BLACK ON ORANGE	30" x 24" 42" x 36"
	M4-9mR	BLACK ON ORANGE	30" x 24" 42" x 36"
	M4-9mR45	BLACK ON ORANGE	42" x 36"
	M4-9mT	BLACK ON ORANGE	30" x 24"
	M5-1La	WHITE ON BLUE	21" x 15"
	M5-1Ra	WHITE ON BLUE	21" x 15"
	M6-1aL	WHITE ON BLUE	21" x 15"
	M6-1aR	WHITE ON BLUE	21" x 15"

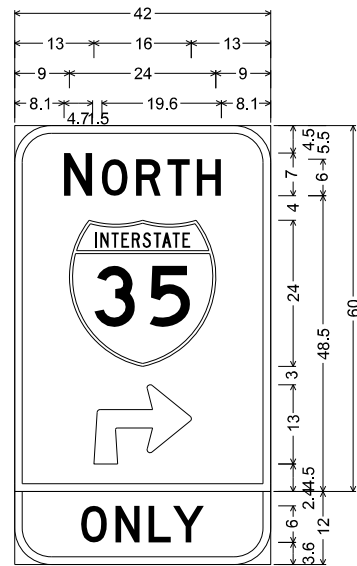
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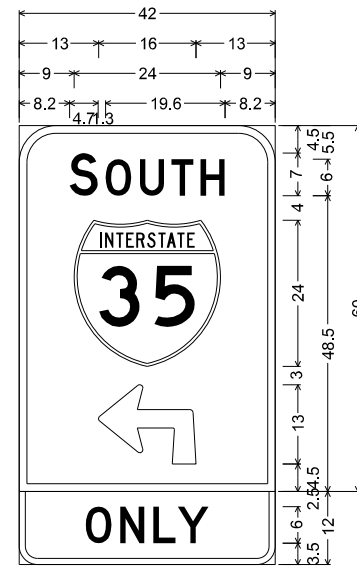
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 [LAKE AVE] B;



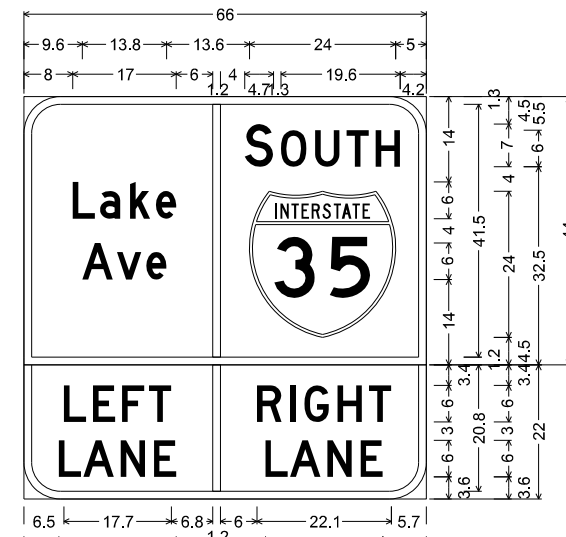
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 [LAKE AVE] B;



Identifier : CS-3;
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 [NORTH] D;
 Interstate 35 M1-1;
 90 Deg Advance Turn Arrow 16.0" X 13.0";
 6.0" Radius, 1.3" Border, Black on Yellow;
 [ONLY] D;



Identifier : CS-5;
 6.0" Radius, 1.3" Border, Black on Orange;
 [SOUTH] D;
 Interstate 35 M1-1;
 90 Deg Advance Turn Arrow 16.0" X 13.0";
 3.0" Radius, 1.0" Border, Black on Yellow;
 [ONLY] D;



Identifier : CS-6;
 6.0" Radius, 1.3" Border, Black on Orange;
 [Lake] D; [Ave] D; [SOUTH] D;
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 6.0" Radius, 1.3" Border, Black on Yellow;
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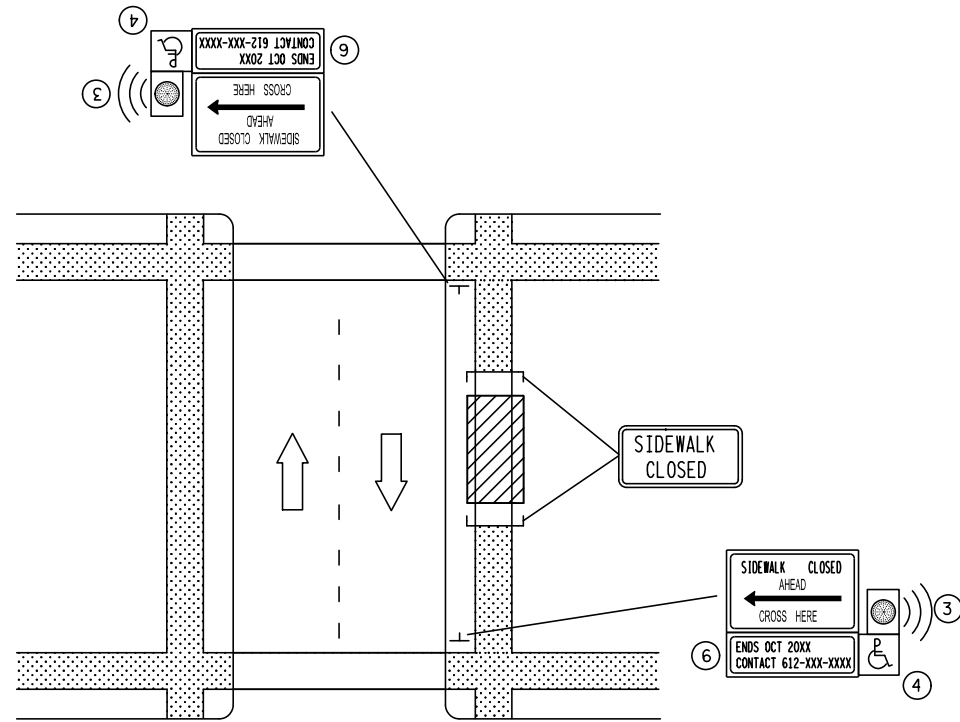
GENERAL NOTES:

- ALL DIMENSIONS ARE IN INCHES.

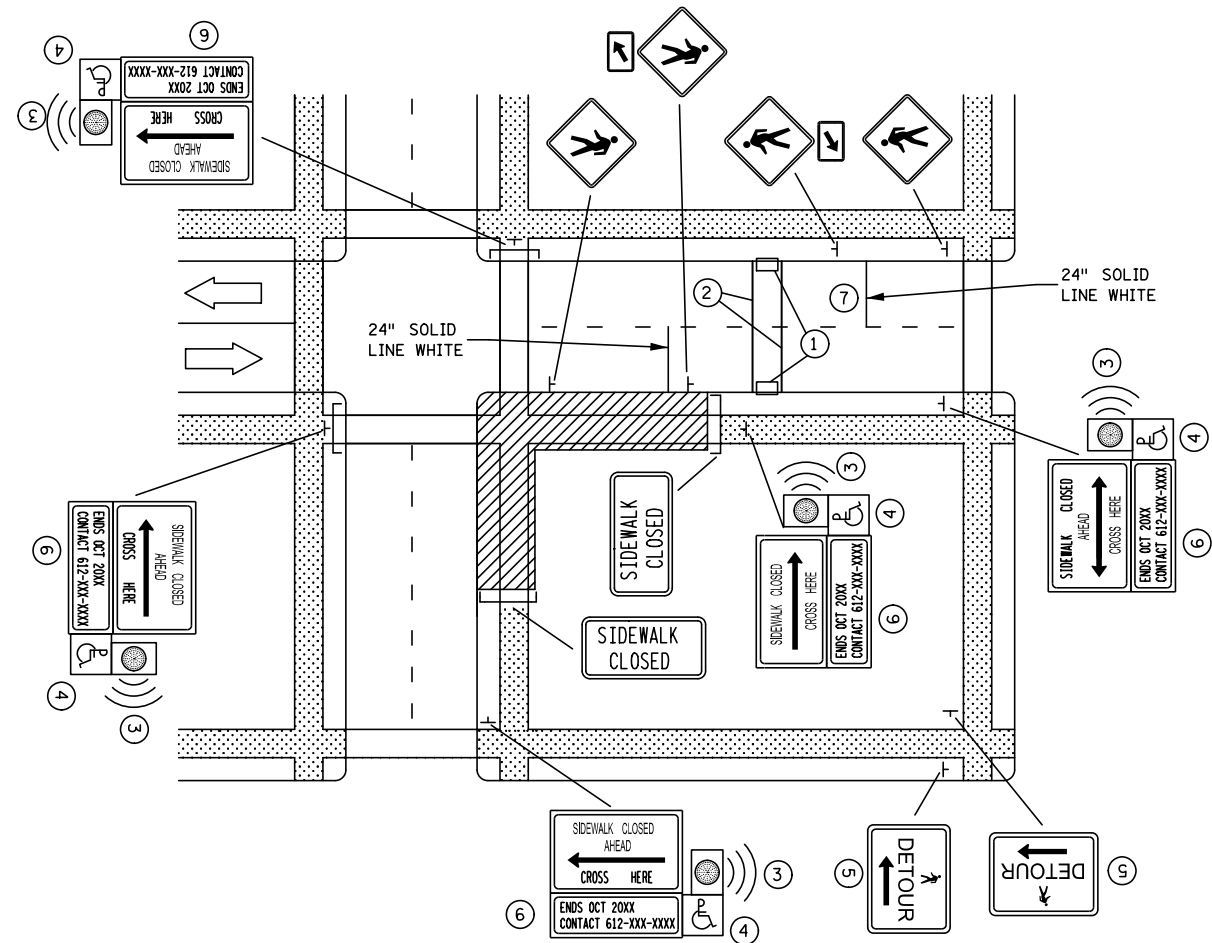
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			DES: LKG	I HEREBY CERTIFY THAT THIS SHEET WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA		CONSTRUCTION SIGN PANELS		TRAFFIC CONTROL PLAN		
			DRW: LKG			SIGNATURE: <i>Jeffrey A. Hilden</i> LIC. NO. 20781 DATE: 12/3/2019	STATE PROJ. NO. 6982-331 (TH 35)		SHEET NO. 27 OF 93 SHEETS	
NO.	DATE	BY	CHK: JAH							
DESCRIPTION OF REVISIONS										

DATE: 12/3/2019 TIME: 2:37:55 PM
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OTHER SIDE OF STREET DETOUR
 (FOR MID-BLOCK CLOSURE)



OTHER SIDE OF STREET DETOUR OR DETOUR WITH TRAILBLAZING SIGNS
 (FOR CORNER SIDEWALK CLOSURE WITH OPTIONAL TEMPORARY CROSSWALK)

GENERAL NOTES

WHEN CLOSING OR RELOCATING CROSSWALKS OR SIDEWALKS, PROVIDE DETECTABLE TEMPORARY FACILITIES AND INCLUDE ACCESSIBILITY FEATURES CONSISTENT WITH EXISTING PEDESTRIAN FACILITIES. THE MINIMUM TEMPORARY WALKWAY WIDTH SHOULD BE THE WIDTH OF THE EXISTING FACILITY. IF THE EXISTING FACILITY HAS A WIDTH OF GREATER THAN 60 IN, THE WIDTH OF THE TEMPORARY FACILITY MAY BE 60 INCHES. IF THE WIDTH OF THE DETOUR IS LESS THAN 60 INCHES, THEN A 60 INCH BY 60 INCH PASSING SPACE IS REQUIRED EVERY 200 FT.

TEMPORARY TRAFFIC CONTROL DEVICES FOR PEDESTRIANS ARE SHOWN. OTHER DEVICES MAY BE NECESSARY TO CONTROL VEHICULAR TRAFFIC. STAGE WORK, AS NECESSARY, TO PROVIDE AN ALTERNATE PEDESTRIAN ROUTE (APR) AT ALL TIMES. FOR ROADWAYS WITH NO AVAILABLE DETOURS, MAINTAIN ONE OPEN SIDEWALK AT ALL TIMES.

PROVIDE A SMOOTH, CONTINUOUS, HARD SURFACE THROUGH THE LENGTH OF THE APR. PROVIDE A FIRM, STABLE, FREE-DRAINING, AND NON-SLIP TEMPORARY WALKWAY SURFACE, REGARDLESS OF WEATHER CONDITIONS. THE TEMPORARY WALKWAY SURFACE SHALL BE SUPPORTED BY 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 INCHES OR THICKER), AND PLASTIC ARE ACCEPTABLE SURFACE MATERIALS FOR THE TEMPORARY WALKWAY SURFACE. GRAVEL, MILLINGS, OR OTHER UNEVEN SURFACES ARE NOT ACCEPTABLE SURFACE MATERIALS.

THE PEDESTRIAN TRAFFIC SIGNALS CONTROLLING CLOSED CROSSWALKS SHALL BE COVERED OR DEACTIVATED.

POST MOUNTED SIGNS LOCATED ADJACENT TO A SIDEWALK SHALL HAVE A 7 FOOT MINIMUM CLEARANCE FROM THE BOTTOM OF THE SIGN TO THE SIDEWALK SURFACE.

WHEN A SIGN OR BARRICADE IS ORIENTED SUCH THAT VISIBILITY TO TRAFFIC (BIKES, PEDESTRIANS) IS REDUCED ENOUGH TO CAUSE HAZARD, DELINEATE THE SIGN/BARRICADE WITH APPROPRIATE DEVICES.

ANY PORTABLE SIGN OR BARRICADE PLACED IN A PEDESTRIAN WALKWAY THAT COULD BE A HAZARD TO A VISUALLY IMPAIRED PEDESTRIAN SHOULD HAVE A DETECTABLE EDGE TO GUIDE THE PEDESTRIAN AROUND THE HAZARD.

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 STREET AS THE DISRUPTED ROUTE UTILIZING BYPASSES.
2. WHERE IT IS NOT FEASIBLE TO PROVIDE A SAME SIDE APR, PROVIDE A DETOUR ON THE OTHER SIDE OF THE STREET.
3. WHERE IT IS NOT FEASIBLE TO PROVIDE AN APR ON THE OTHER SIDE OF THE ROADWAY, PROVIDE AN APR DETOUR WITH TRAILBLAZING SIGNS.

IF NOT ALREADY LIT, LIGHTING SHOULD BE CONSIDERED AT MID-BLOCK CROSSINGS IN ORDER TO ILLUMINATE PEDESTRIANS.

SPECIFIC NOTES

- 1 TEMPORARY CURB RAMPS WITH DETECTABLE WARNINGS.
- 2 TEMPORARY PAVEMENT MARKINGS FOR CROSSWALKS MAY USE CROSSWALK BLOCKS OR TWO TRANSVERSE LINES. TWO STRIPS OF 18 INCH PREFORMED MARKING MATERIAL MAY BE USED TO FORM 36 INCH WIDE CROSSWALK BLOCKS.
- 3 PROVIDE AN APPROVED AUDIBLE MESSAGE DEVICE OR TACTILE MESSAGE FOR SIGHT-IMPAIRED PEDESTRIANS.
- 4 THE INTERNATIONAL SYMBOL OF ACCESSIBILITY SHOULD BE DISPLAYED WHEN ANY WALKWAY THROUGH A WORK ZONE HAS BEEN DETERMINED TO BE FULLY ACCESSIBLE. THE SYMBOL OF ACCESSIBILITY SHALL NOT BE DISPLAYED IF PERSONS WITH DISABILITIES SHOULD NOT USE THE PRIMARY TEMPORARY PEDESTRIAN DETOUR. THE REASON FOR THE NON-COMPLIANCE SHOULD BE DOCUMENTED.
- 5 PEDESTRIAN DETOUR TRAILBLAZING SIGNS SHOULD BE USED IF THE PEDESTRIAN DETOUR IS LOCATED SOMEPLACE OTHER THAN ACROSS THE STREET FROM THE SIDEWALK CLOSURE.

- 6 TYPICAL SIGN MESSAGE FOR A TEMPORARY PEDESTRIAN DETOUR SHOULD 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. TYPICAL INFORMATION INCLUDED IN AN AUDIBLE MESSAGE CAN BE FOUND IN "TPAR - AUDIBLE MESSAGE CONTENT GUIDELINES" WHICH CAN BE FOUND ON THE MNDOT TRAFFIC ENGINEERING WEBSITE ON THE PEDESTRIAN ACCOMMODATIONS THROUGH WORK ZONES WEB-PAGE. ADDITIONALLY, A SUMMARY OF THE MESSAGE CONTENT GUIDELINES CAN BE FOUND WITHIN THE PEDESTRIAN ACCOMMODATIONS THROUGH WORK ZONES DESIGN GUIDANCE DOCUMENT.
- 7 STOP BAR SHOULD BE LOCATED 20 TO 50 FEET PRIOR TO THE CROSSWALK. RESTRICT PARKING BETWEEN THE STOP BAR AND THE CROSSWALK. ON TWO-WAY ROADWAYS, RESTRICT PARKING BOTH PRIOR TO AND AFTER THE CROSSWALK FOR BOTH DIRECTIONS.

LEGEND

	SIGN		DIRECTION OF TRAFFIC
	EXISTING PEDESTRIAN SURFACE		TRAFFIC CONTROL DEVICE
	WORK AREA		AUDIBLE MESSAGE DEVICE (AMD)
	PEDESTRIAN CHANNELIZATION DEVICE		
	SIDEWALK BARRICADE		

TRAFFIC CONTROL
 ALTERNATE PEDESTRIAN ROUTE (APR) DETOUR

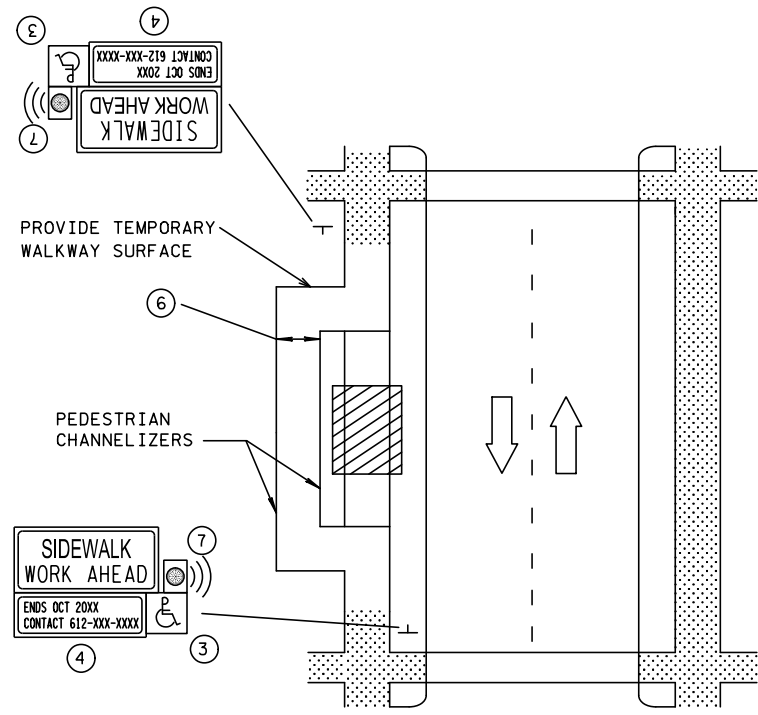
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DRW: LKG	
CHK: JAH	SIGNATURE: <i>Jeffrey A. Hilden</i> LIC. NO. 20781 DATE: 12/3/2019
NO.	DATE
BY	DESCRIPTION OF REVISIONS

SIGNATURE: *Jeffrey A. Hilden* LIC. NO. 20781 DATE: 12/3/2019

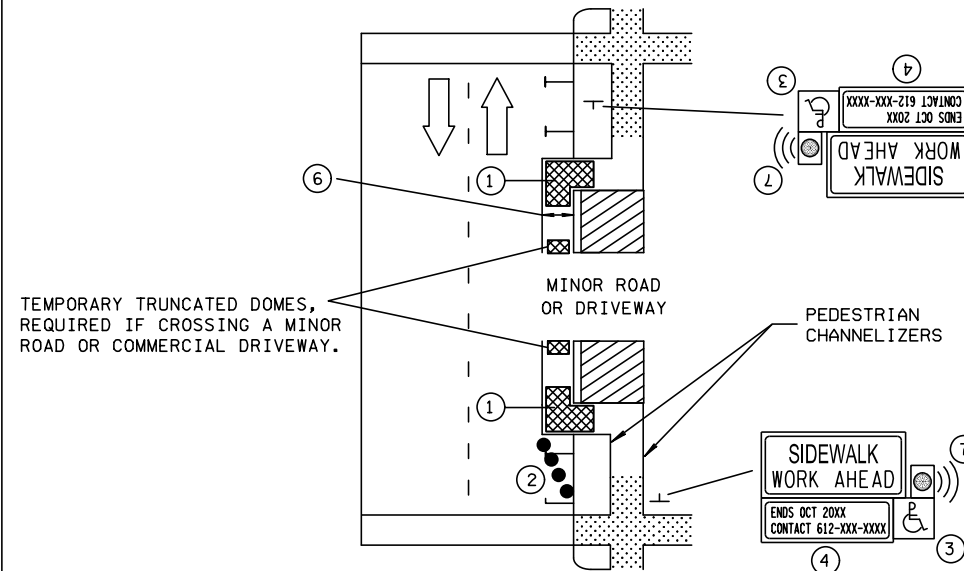


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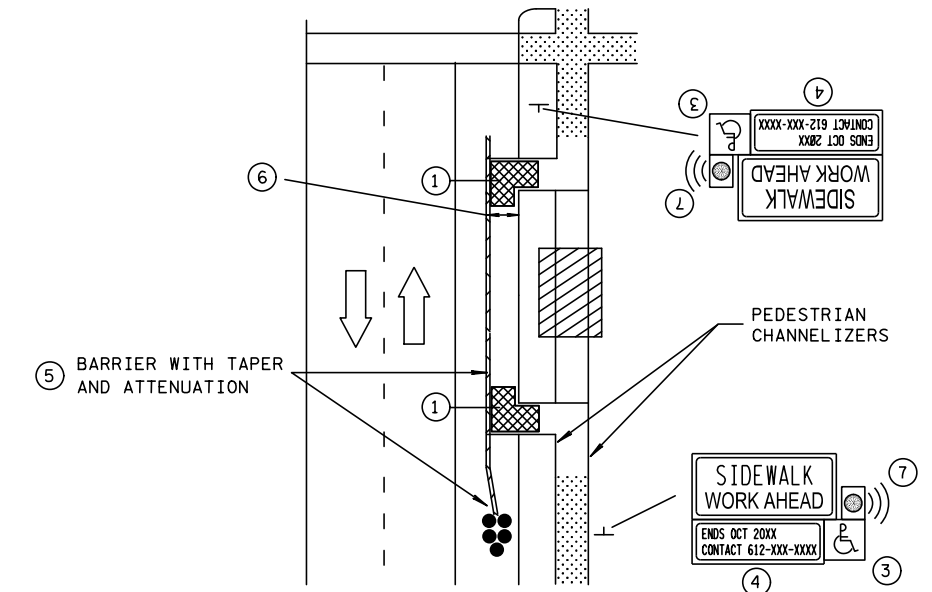


BYPASS ON ADJACENT AVAILABLE RIGHT OF WAY
BYPASS TYPE A

NOTE: MAY ONLY BE USED ON ROADWAY WITH POSTED SPEED OF 45 MPH OR LESS.



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



SIDEWALK BYPASS USING SHOULDER OR PARKING LANE HIGH SPEED ROADWAY
BYPASS TYPE C

GENERAL 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 ALTERNATE PEDESTRIAN ROUTE (APR) AT ALL TIMES. FOR ROADWAYS WITH NO AVAILABLE DETOURS, MAINTAIN ONE OPEN SIDEWALK AT ALL TIMES.

PROVIDE A SMOOTH, CONTINUOUS, HARD SURFACE THROUGH THE LENGTH OF THE APR. PROVIDE A FIRM, STABLE, FREE-DRAINING, AND NON-SLIP TEMPORARY WALKWAY SURFACE, REGARDLESS OF WEATHER CONDITIONS. THE TEMPORARY WALKWAY SURFACE SHALL BE SUPPORTED BY 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 INCHES OR THICKER), AND PLASTIC ARE ACCEPTABLE SURFACE MATERIALS FOR THE TEMPORARY WALKWAY SURFACE. GRAVEL, MILLINGS, OR OTHER UNEVEN SURFACES ARE NOT ACCEPTABLE SURFACE MATERIALS.

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POST MOUNTED SIGNS LOCATED ADJACENT TO A SIDEWALK SHALL HAVE A 7 FOOT MINIMUM CLEARANCE FROM THE BOTTOM OF THE SIGN TO THE SIDEWALK SURFACE.

WHEN A SIGN OR BARRICADE IS ORIENTED SUCH THAT VISIBILITY TO TRAFFIC (BIKES, PEDESTRIANS) IS REDUCED ENOUGH TO CAUSE HAZARD, DELINEATE THE SIGN/BARRICADE WITH APPROPRIATE DEVICES.

ANY PORTABLE SIGN OR BARRICADE PLACED IN A PEDESTRIAN WALKWAY THAT COULD BE A HAZARD TO A VISUALLY IMPAIRED PEDESTRIAN SHOULD HAVE A DETECTABLE EDGE TO GUIDE THE PEDESTRIAN AROUND THE HAZARD.

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1. PROVIDE THE APR ON THE SAME SIDE OF THE STREET AS THE DISRUPTED ROUTE UTILIZING BYPASSES.
2. WHERE IT IS NOT FEASIBLE TO PROVIDE A SAME SIDE APR, PROVIDE A DETOUR ON THE OTHER SIDE OF THE STREET.
3. WHERE IT IS NOT FEASIBLE TO PROVIDE AN APR ON THE OTHER SIDE OF THE ROADWAY, PROVIDE AN APR DETOUR WITH TRAILBLAZING SIGNS.

SPECIFIC NOTES

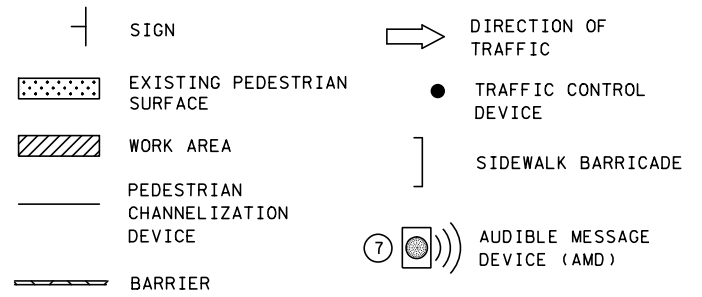
- ① TEMPORARY CURB RAMPS WITH DETECTABLE WARNINGS.
- ② 5 DEVICE TAPER 25 FEET LONG, RECOMMENDED WHEN THE CLOSED AREA WAS USED AS AN INTERMITTENT TRAFFIC LANE OR BYPASS LANE. STREET PARKING SHALL BE PROHIBITED FOR AT LEAST 50 FEET IN ADVANCE OF THE MID-BLOCK CROSSWALK.
- ③ THE INTERNATIONAL SYMBOL OF ACCESSIBILITY SHOULD BE DISPLAYED WHEN ANY WALKWAY THROUGH A WORK ZONE HAS BEEN DETERMINED TO BE FULLY ACCESSIBLE.
- ④ TYPICAL SIGN MESSAGE FOR A TEMPORARY PEDESTRIAN DETOUR SHOULD 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.
- ⑤ SEE MN MUTCD FOR GUIDANCE ON PLACEMENT AND USAGE OF BARRIER.

- ⑥ IF A 60 INCH PEDESTRIAN WALKWAY WIDTH ISN'T PROVIDED FOR THE ROUTE, THEN A 60 INCH BY 60 INCH PASSING SPACE IS REQUIRED EVERY 200 FEET. THE MINIMUM WIDTH OF THE WALKWAY IS 48 INCHES.

DESIGNER NOTE

- ⑦ AN APPROVED AUDIBLE MESSAGE DEVICE OR TACTILE MESSAGE MAY BE PROVIDED FOR SIGHT-IMPAIRED PEDESTRIANS.

LEGEND



TRAFFIC CONTROL
ALTERNATE PEDESTRIAN ROUTE (APR) BYPASS

PUBLISHED BY OTST: 3/30/2018 MODIFIED:

DES: LKG	DRW: LKG	CHK: JAH
NO.	DATE	BY

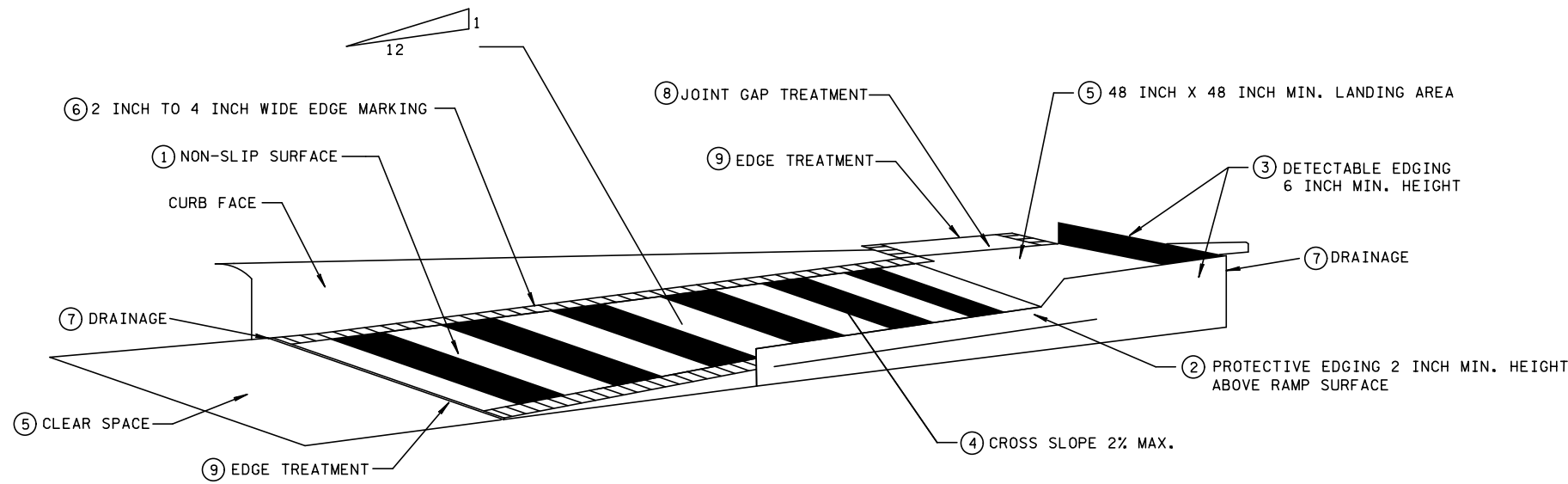
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SIGNATURE: *Jeffrey A. Hilden* LIC. NO. 20781 DATE: 12/3/2019
JEFFREY A. HILDEN



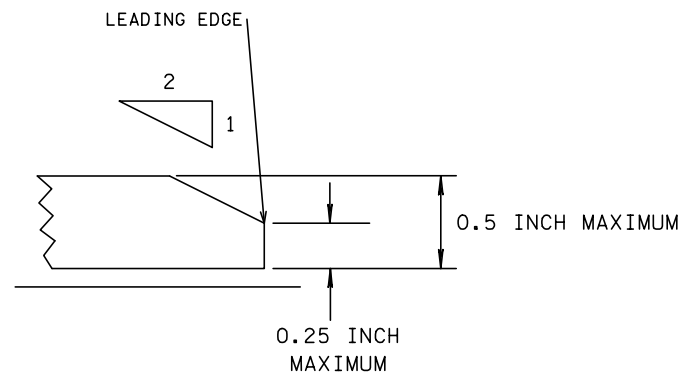
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SPECIFIC NOTES

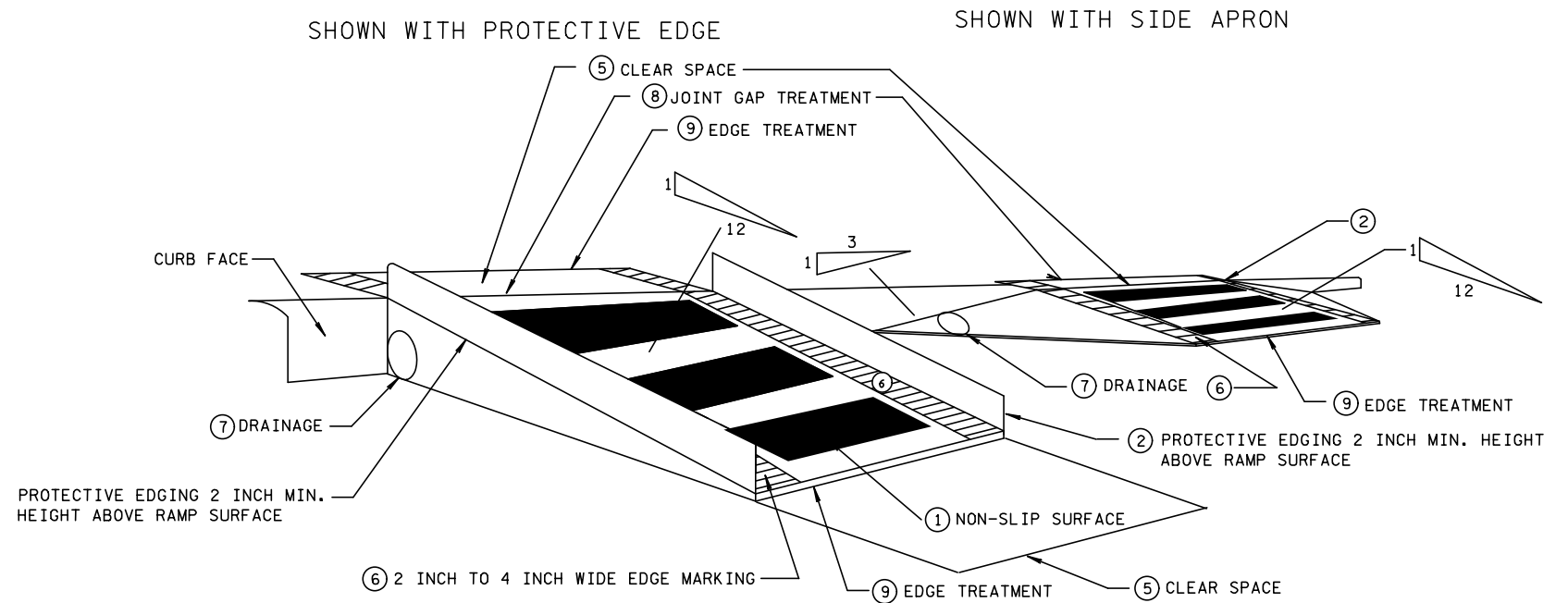
- ① CURB RAMPS SHALL BE 48 INCHES MIN. WIDTH WITH A FIRM, STABLE AND SLIP RESISTANT SURFACE.
- ② PROTECTIVE EDGING WITH A 2 INCH MIN. HEIGHT SHALL BE PLACED WHEN A CURB RAMP OR LANDING PLATFORM HAS A VERTICAL DROP OF 6 INCHES OR GREATER OR HAS A SIDE APRON SLOPE STEEPER THAN 1:3. PROTECTIVE EDGING SHOULD BE CONSIDERED WHEN CURB RAMPS OR LANDING PLATFORMS HAVE A VERTICAL DROP OF 3 INCHES OR MORE.
- ③ DETECTABLE EDGING WITH 6 INCH MIN. HEIGHT AND CONTRASTING COLOR SHALL BE PLACED ON ALL CURB RAMP LANDINGS WHERE THE WALKWAY CHANGES DIRECTION (TURNS).
- ④ CURB RAMPS AND LANDINGS SHALL HAVE A 2% MAX. CROSS SLOPE.
- ⑤ CLEAR SPACE OF 48 INCH X 48 INCH MIN. SHALL BE PROVIDED ABOVE AND BELOW THE CURB RAMP.
- ⑥ THE CURB RAMP WALKWAY EDGE SHALL BE MARKED WITH A CONTRASTING COLOR, 2 INCH TO 4 INCH WIDE MARKING. THE MARKING IS OPTIONAL WHERE COLOR CONTRASTING EDGING IS USED.
- ⑦ WATER FLOW IN THE GUTTER SYSTEM SHALL NOT BE IMPEDED.
- ⑧ LATERAL JOINTS OR GAPS BETWEEN SURFACES SHALL BE LESS THAN 1/2 INCH WIDE.
- ⑨ CHANGES BETWEEN SURFACE HEIGHTS SHALL NOT EXCEED 1/2 INCH. LATERAL EDGES SHOULD BE VERTICAL UP TO 1/4 INCH HIGH, AND BEVELED AT 1:2 BETWEEN 1/4 INCH AND 1/2 INCH HEIGHT.



TEMPORARY CURB RAMP
 PARALLEL TO CURB



⑨ EDGE TREATMENT



TEMPORARY CURB RAMP
 PERPENDICULAR TO CURB

TEMPORARY PEDESTRIAN ACCESS ROUTE (TPAR) RAMPS

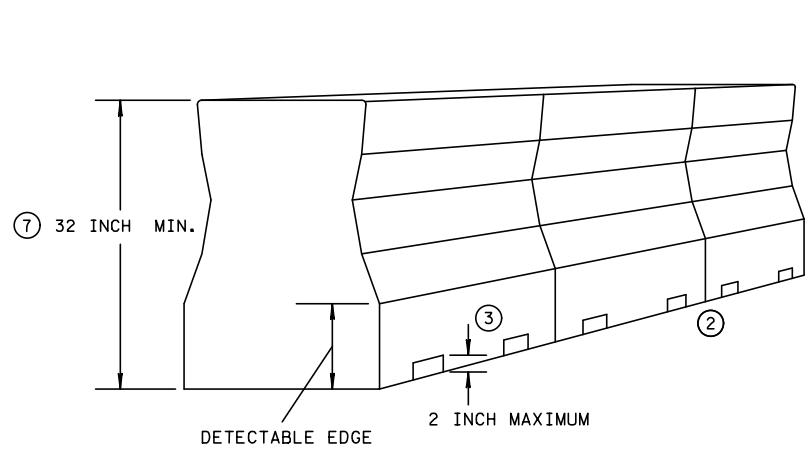
DES: LKG	DRW: LKG	CHK: JAH
NO. DATE BY DESCRIPTION OF REVISIONS		

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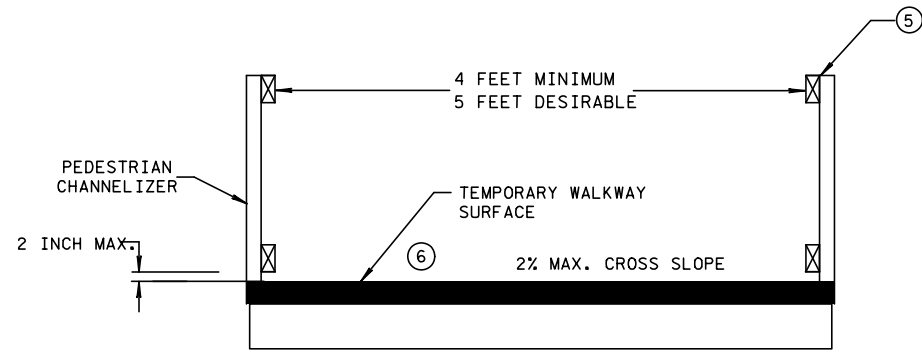


PUBLISHED BY OTST: 3/30/2018		MODIFIED:	
TPAR DETAILS		TRAFFIC CONTROL PLAN	
STATE PROJ. NO. 6982-331 (TH 35)		SHEET NO. 31 OF 93 SHEETS	

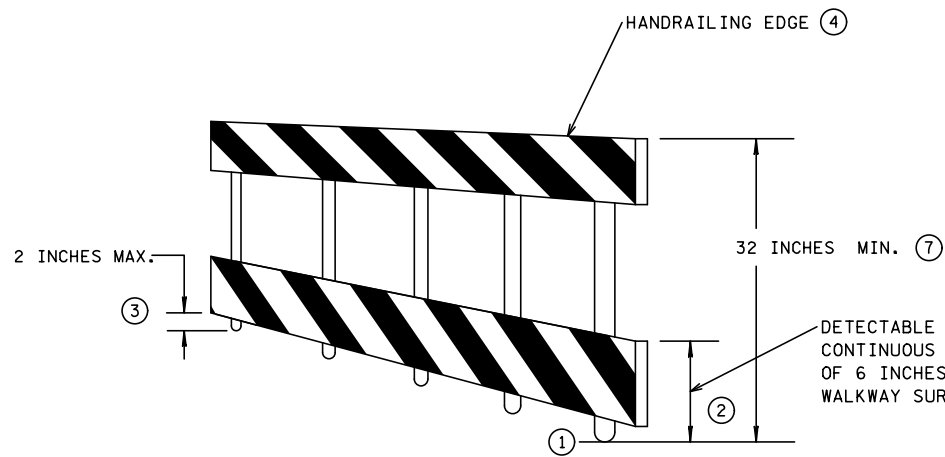
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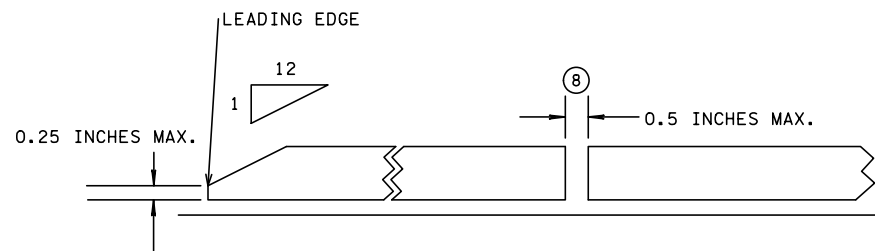
PEDESTRIAN CHANNELIZER USING A BARRIER



TEMPORARY WALKWAY SURFACE WITH PEDESTRIAN CHANNELIZERS



PEDESTRIAN CHANNELIZER



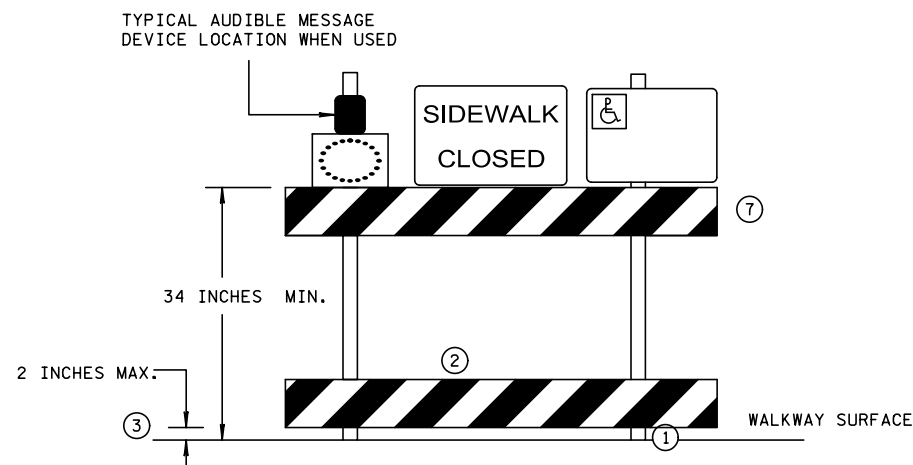
TEMPORARY WALKWAY SURFACE

GENERAL NOTES

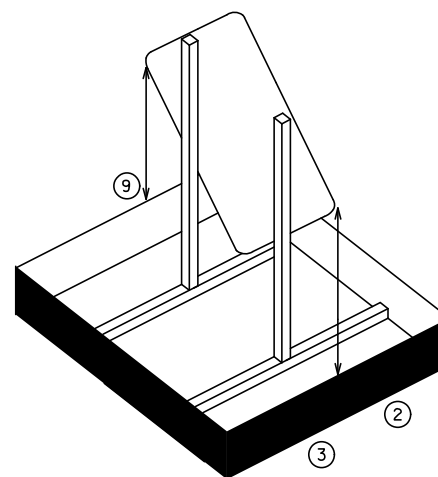
- RAILINGS OR OTHER OBJECTS MAY PROTRUDE A MAXIMUM OF 4 INCHES INTO THE WALKWAY CLEAR SPACE WHEN LOCATED A MINIMUM OF 27 INCHES ABOVE THE WALKWAY SURFACE.
- ANY PEDESTRIAN DEVICES USED TO PROVIDE POSITIVE PROTECTION FOR PEDESTRIANS OR WORKERS SHALL MEET CRASHWORTHY REQUIREMENTS APPROPRIATE FOR THE BARRIER APPLICATION.
- SIDEWALK BARRICADES SHALL BE PLACED ACROSS THE ENTIRE WIDTH OF THE WALKWAY SURFACE.
- ALL DEVICES USED TO CHANNELIZE PEDESTRIAN FLOW SHOULD INTERLOCK SUCH THAT GAPS DO NOT ALLOW PEDESTRIANS TO STRAY FROM THE CHANNELIZED PATH.

SPECIFIC NOTES

- (1) ANY TRIPPING HAZARD IN THE WALKWAY NEEDS A DETECTABLE EDGE. BALLAST SHALL BE LOCATED BEHIND OR INTERNAL TO THE DEVICE. ANY SUPPORT ON THE FRONT OF THE DEVICE SHALL NOT EXTEND INTO THE 48 INCH MINIMUM WALKWAY CLEAR SPACE AND SHALL NOT EXCEED 0.5 INCHES IN HEIGHT ABOVE THE WALKWAY SURFACE.
- (2) DETECTABLE EDGES SHALL BE CONTINUOUS AND 6 INCHES MIN. HIGH ABOVE WALKWAY SURFACE AND HAVE COLOR MARKINGS CONTRASTING WITH THE WALKWAY SURFACE. THE DETECTABLE EDGE AROUND A PORTABLE SIGN STAND SHOULD BE PLACED IN THE WALKWAY AREA IN WHICH THE SIGN POSES A HAZARD TO A VISUALLY IMPAIRED PEDESTRIAN.
- (3) DEVICES SHALL NOT BLOCK WATER DRAINAGE FROM THE WALKWAY. A GAP HEIGHT OR OPENING FROM THE WALKWAY SURFACE UP TO A MAXIMUM OF 2 INCHES IS ALLOWED FOR DRAINAGE PURPOSES.
- (4) WHEN HAND GUIDANCE IS REQUIRED, THE TOP RAIL OR TOP SURFACE SHALL:
 - BE IN A VERTICAL PLANE PERPENDICULAR TO THE WALKWAY ABOVE THE DETECTABLE EDGE,
 - BE CONTINUOUS AT A HEIGHT OF 34 TO 38 INCHES ABOVE THE WALKWAY SURFACE, AND
 - BE SUPPORTED WITH MINIMAL INTERFERENCE TO THE PEDESTRIAN'S HANDS OR FINGERS.
- (5) ALL DEVICES SHALL BE FREE OF SHARP OR ROUGH EDGES, AND FASTENERS (BOLTS) SHALL BE ROUNDED TO PREVENT HARM TO HANDS, ARMS OR CLOTHING OF PEDESTRIANS.
- (6) TEMPORARY WALKWAY SURFACES SHALL PROVIDE A FIRM, STABLE, FREE-DRAINING AND NON-SLIP REGARDLESS OF WEATHER CONDITIONS. TEMPORARY WALKWAY SURFACES SHALL ALLOW NORMAL USAGE OF WHEELCHAIRS, WALKERS, STROLLERS, OR OTHER MOBILITY DEVICES. CONCRETE, BITUMINOUS, STEEL, RUBBER, WOOD (3/4 INCHES OR THICKER), AND PLASTIC ARE ACCEPTABLE SURFACE MATERIALS FOR A TEMPORARY WALKWAY SURFACE. GRAVEL, MILLINGS, OR OTHER UNEVEN SURFACES ARE NOT ACCEPTABLE SURFACE MATERIALS.
- (7) LONGITUDINAL CHANNELIZING DEVICES FOR PEDESTRIANS SHALL BE 32 INCHES HIGH OR GREATER.
- (8) SURFACE VERTICAL DISCONTINUITIES SHOULD NOT EXCEED 0.25 INCHES, IF IT DOES SEE "EDGE-TREATMENT DETAIL" ON THE TPAR RAMP SHEET.
- (9) AN EDGE OF THE FRAMING MAY BE REMOVED IF IT IS NOT NEEDED FOR PED GUIDANCE. STABILITY OF THE DETECTABLE EDGE SHOULD BE MAINTAINED.



SIDEWALK BARRICADE



NOTE: DETECTABLE EDGE FRAMED IMMEDIATELY BELOW OVERHANG

DETECTABLE EDGE FOR SIGN ON PORTABLE STAND

TEMPORARY PEDESTRIAN ACCESS ROUTE (TPAR) WALKWAY DEVICES

NO.	DATE	BY	DESCRIPTION OF REVISIONS

DES: LKG
 DRW: LKG
 CHK: JAH

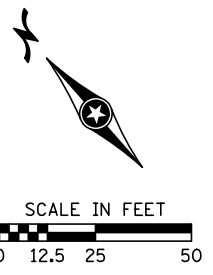
I HEREBY CERTIFY THAT THIS SHEET WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA

SIGNATURE: *Jeffrey A. Hilden* LIC. NO. 20781 DATE: 12/3/2019
 JEFFREY A. HILDEN



PUBLISHED BY OTST: 3/30/2018		MODIFIED:	
TPAR DETAILS		TRAFFIC CONTROL PLAN	
STATE PROJ. NO. 6982-331 (TH 35)		SHEET NO. 32 OF 93 SHEETS	

DATE: 12/3/2019 TIME: 2:37:59 PM
 FILENAME: K:\g-m\MnDOT\7581000\04_Production\01_CAD\Highway\Sheets\cd6982331_tola.dgn



2ND STREET

1ST STREET

LAKE AVE.

ROAD CLOSED AHEAD
 SEE DETOUR PLAN FOR LOCATION

ONLY ONLY

250 FEET ROAD CLOSED AHEAD

MATCH LINE - A (LAKE AVENUE)

NO.	DATE	BY	DESCRIPTION OF REVISIONS

DES: LKG
 DRW: LKG
 CHK: JAH

I HEREBY CERTIFY THAT THIS SHEET 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

SIGNATURE: *Jeffrey A. Hilden* LIC. NO. 20781 DATE: 12/3/2019
 JEFFREY A. HILDEN

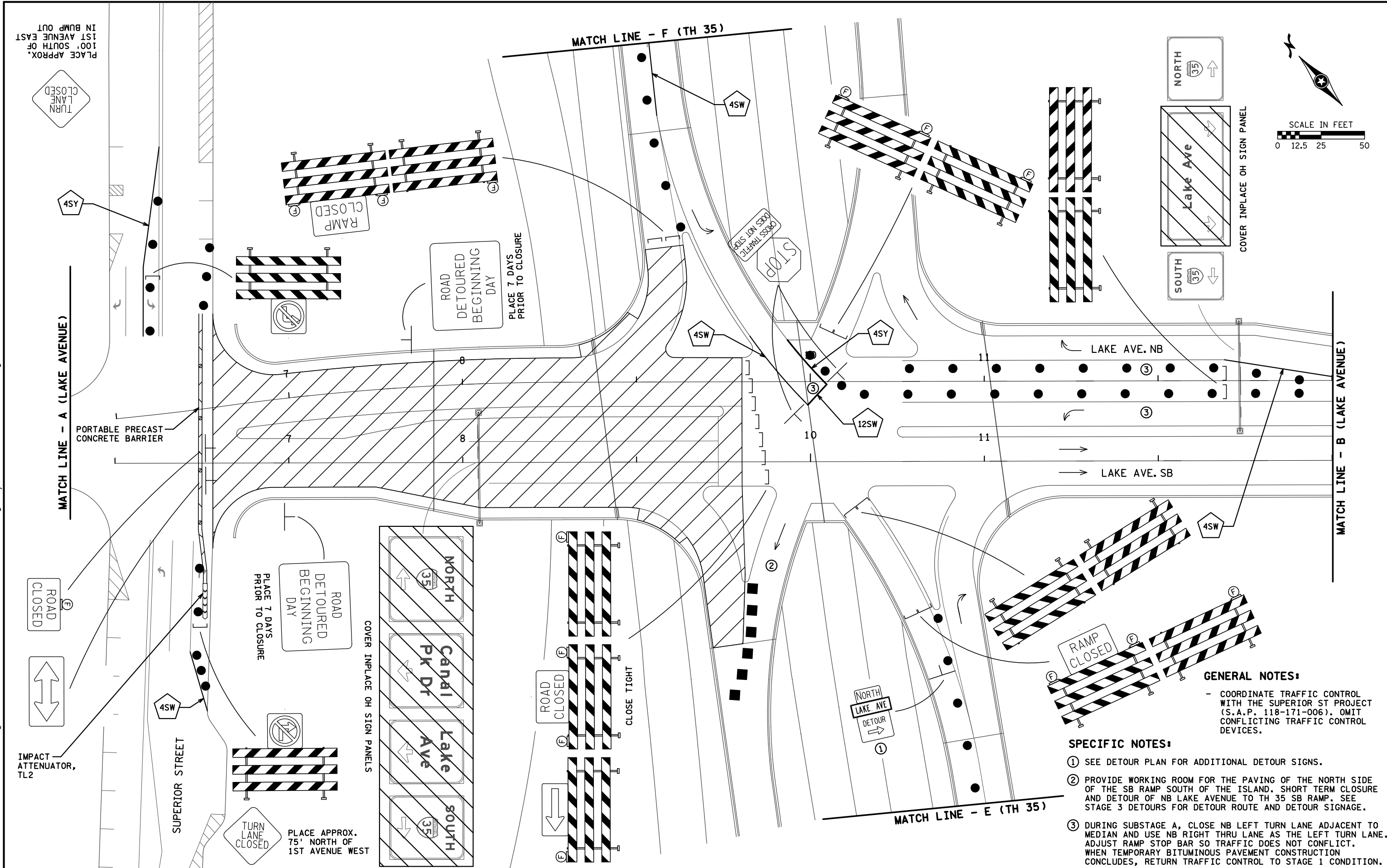


STAGE 1

TRAFFIC CONTROL PLAN

STATE PROJ. NO. 6982-331 (TH 35) SHEET NO. 33 OF 93 SHEETS

DATE: 12/3/2019 TIME: 2:36:00 PM
 FILENAME: K:\g-m\MinDOT\7581000\04_Production\01_CAD\Highway\Sheets\cd6982331_fclb.dgn



GENERAL NOTES:
 - COORDINATE TRAFFIC CONTROL WITH THE SUPERIOR ST PROJECT (S.A.P. 118-171-006). OMIT CONFLICTING TRAFFIC CONTROL DEVICES.

- SPECIFIC NOTES:**
- ① SEE DETOUR PLAN FOR ADDITIONAL DETOUR SIGNS.
 - ② PROVIDE WORKING ROOM FOR THE PAVING OF THE NORTH SIDE OF THE SB RAMP SOUTH OF THE ISLAND. SHORT TERM CLOSURE AND DETOUR OF NB LAKE AVENUE TO TH 35 SB RAMP. SEE STAGE 3 DETOURS FOR DETOUR ROUTE AND DETOUR SIGNAGE.
 - ③ DURING SUBSTAGE A, CLOSE NB LEFT TURN LANE ADJACENT TO MEDIAN AND USE NB RIGHT THRU LANE AS THE LEFT TURN LANE. ADJUST RAMP STOP BAR SO TRAFFIC DOES NOT CONFLICT. WHEN TEMPORARY BITUMINOUS PAVEMENT CONSTRUCTION CONCLUDES, RETURN TRAFFIC CONTROL TO STAGE 1 CONDITION.

NO.	DATE	BY	DESCRIPTION OF REVISIONS

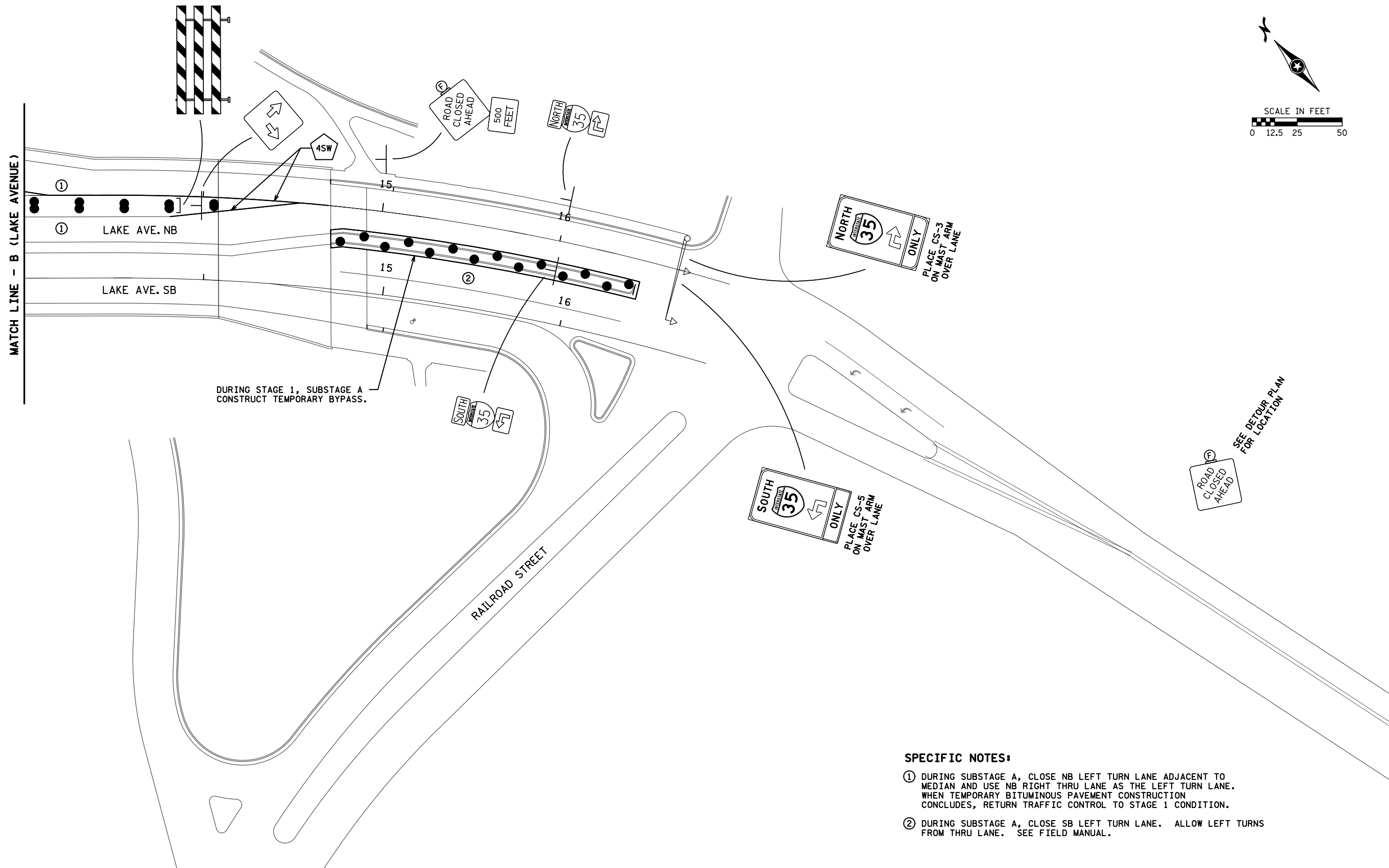
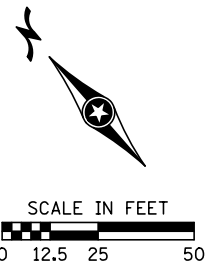
DES: LKG
 DRW: LKG
 CHK: JAH

I HEREBY CERTIFY THAT THIS SHEET 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

SIGNATURE: *Jeffrey A. Hilden* LIC. NO. 20781 DATE: 12/3/2019
 JEFFREY A. HILDEN



DATE: 12/3/2019 TIME: 2:36:01 PM
 FILENAME: K:\g-m\MnDOT\7581000\04_Production\01_CAD\Highway\Sheets\cd6982331_tclc.dgn



SPECIFIC NOTES:

- ① DURING SUBSTAGE A, CLOSE NB LEFT TURN LANE ADJACENT TO MEDIAN AND USE NB RIGHT THRU LANE AS THE LEFT TURN LANE. WHEN TEMPORARY BITUMINOUS PAVEMENT CONSTRUCTION CONCLUDES, RETURN TRAFFIC CONTROL TO STAGE 1 CONDITION.
- ② DURING SUBSTAGE A, CLOSE SB LEFT TURN LANE. ALLOW LEFT TURNS FROM THRU LANE. SEE FIELD MANUAL.

NO.	DATE	BY	DESCRIPTION OF REVISIONS

DES: LKG
 DRW: LKG
 CHK: JAH

I HEREBY CERTIFY THAT THIS SHEET 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

SIGNATURE: *Jeffrey A. Hilden* LIC. NO. 20781 DATE: 12/3/2019
 JEFFREY A. HILDEN

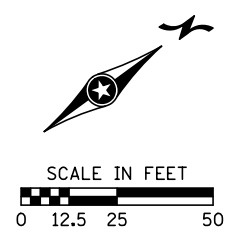


STAGE 1

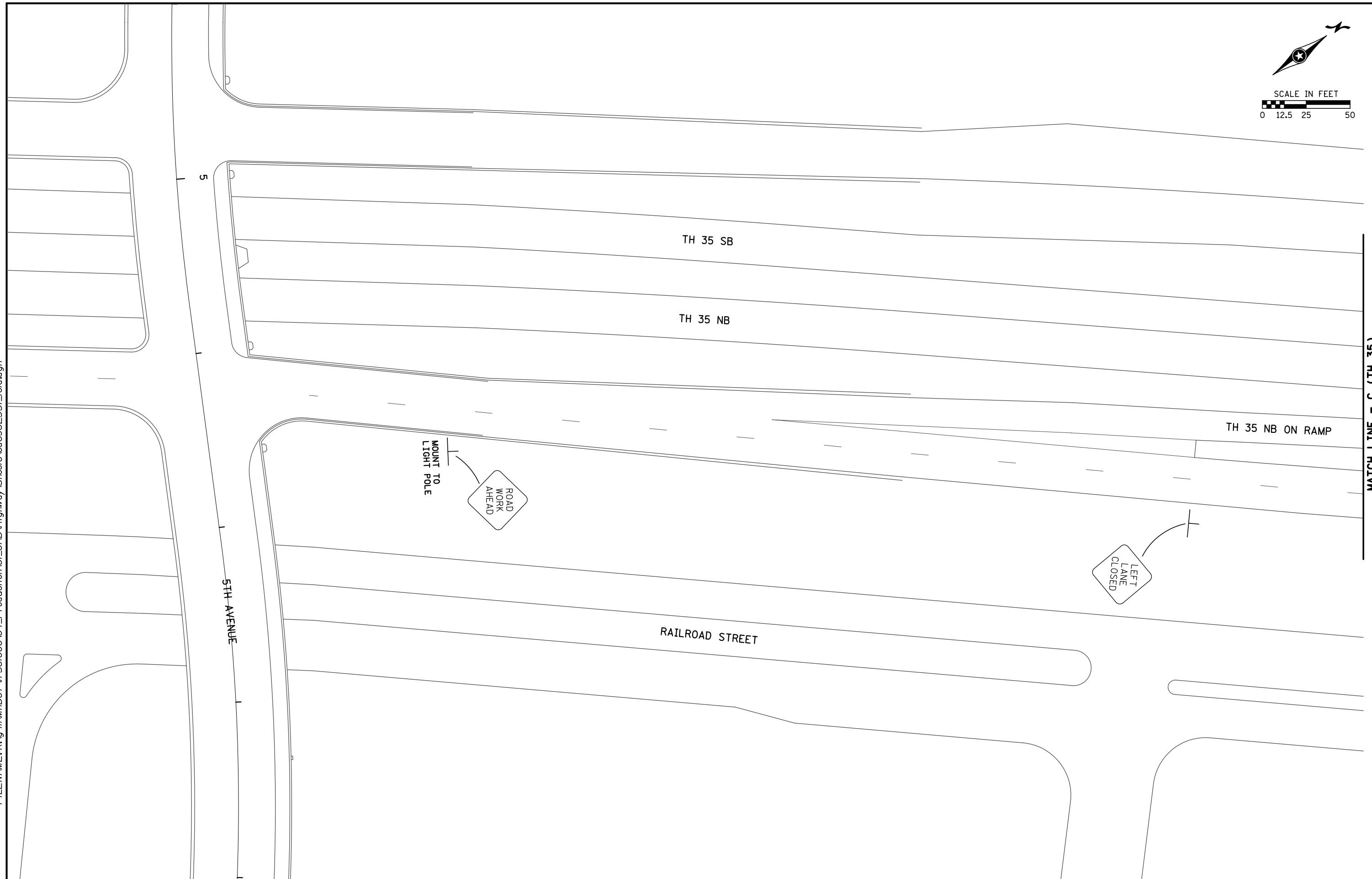
STATE PROJ. NO. 6982-331 (TH 35)

TRAFFIC CONTROL PLAN

SHEET NO. 35 OF 93 SHEETS



DATE: 12/3/2019 TIME: 2:38:01 PM
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NO.	DATE	BY	DESCRIPTION OF REVISIONS

DES: LKG
 DRW: LKG
 CHK: JAH

I HEREBY CERTIFY THAT THIS SHEET 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

SIGNATURE: *Jeffrey A. Hilden* LIC. NO. 20781 DATE: 12/3/2019
 JEFFREY A. HILDEN



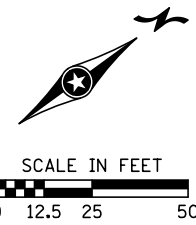
STAGE 1

STATE PROJ. NO. 6982-331 (TH 35)

TRAFFIC CONTROL PLAN

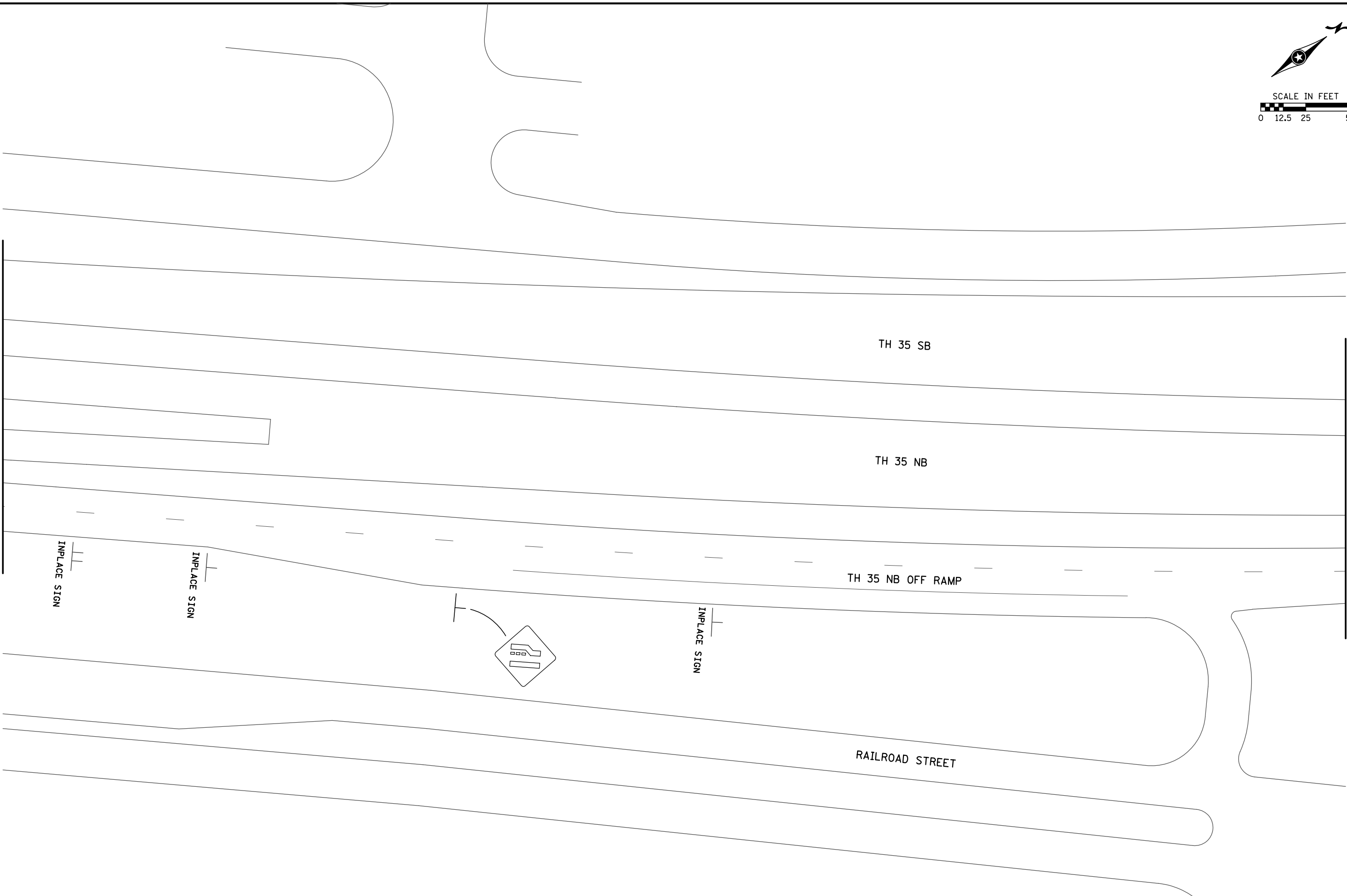
SHEET NO. 36 OF 93 SHEETS

DATE: 12/3/2019 TIME: 2:36:02 PM
 FILENAME: K:\g-m\MnDOT\7581000\04_Production\01_CAD\Highway\Sheets\cd6982331_tole.dgn



MATCH LINE - C (TH 35)

MATCH LINE - D (TH 35)



NO.	DATE	BY	DESCRIPTION OF REVISIONS

DES: LKG
 DRW: LKG
 CHK: JAH

I HEREBY CERTIFY THAT THIS SHEET 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

SIGNATURE: *Jeffrey A. Hilden* LIC. NO. 20781 DATE: 12/3/2019
 JEFFREY A. HILDEN



STAGE 1

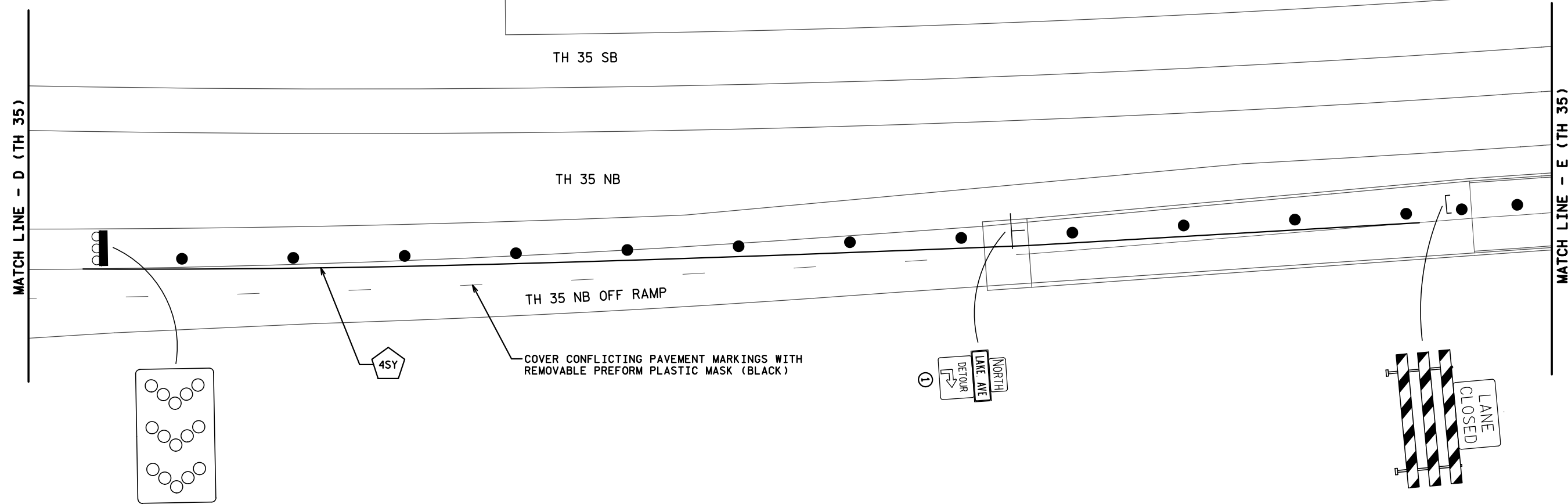
STATE PROJ. NO. 6982-331 (TH 35)

TRAFFIC CONTROL PLAN

SHEET NO. 37 OF 93 SHEETS



SCALE IN FEET
0 12.5 25 50



SPECIFIC NOTES:

① SEE DETOUR PLAN FOR ADDITIONAL DETOUR SIGNS.

DATE: 12/3/2019 TIME: 2:36:02 PM
FILENAME: K:\g-m\MinDOT\7581000\04_Production\01_CAD\Highway\Sheets\cd6982331_tcf.dgn

NO.	DATE	BY	DESCRIPTION OF REVISIONS

DES: LKG
 DRW: LKG
 CHK: JAH

I HEREBY CERTIFY THAT THIS SHEET 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

SIGNATURE: *Jeffrey A. Hilden* LIC. NO. 20781 DATE: 12/3/2019
 JEFFREY A. HILDEN



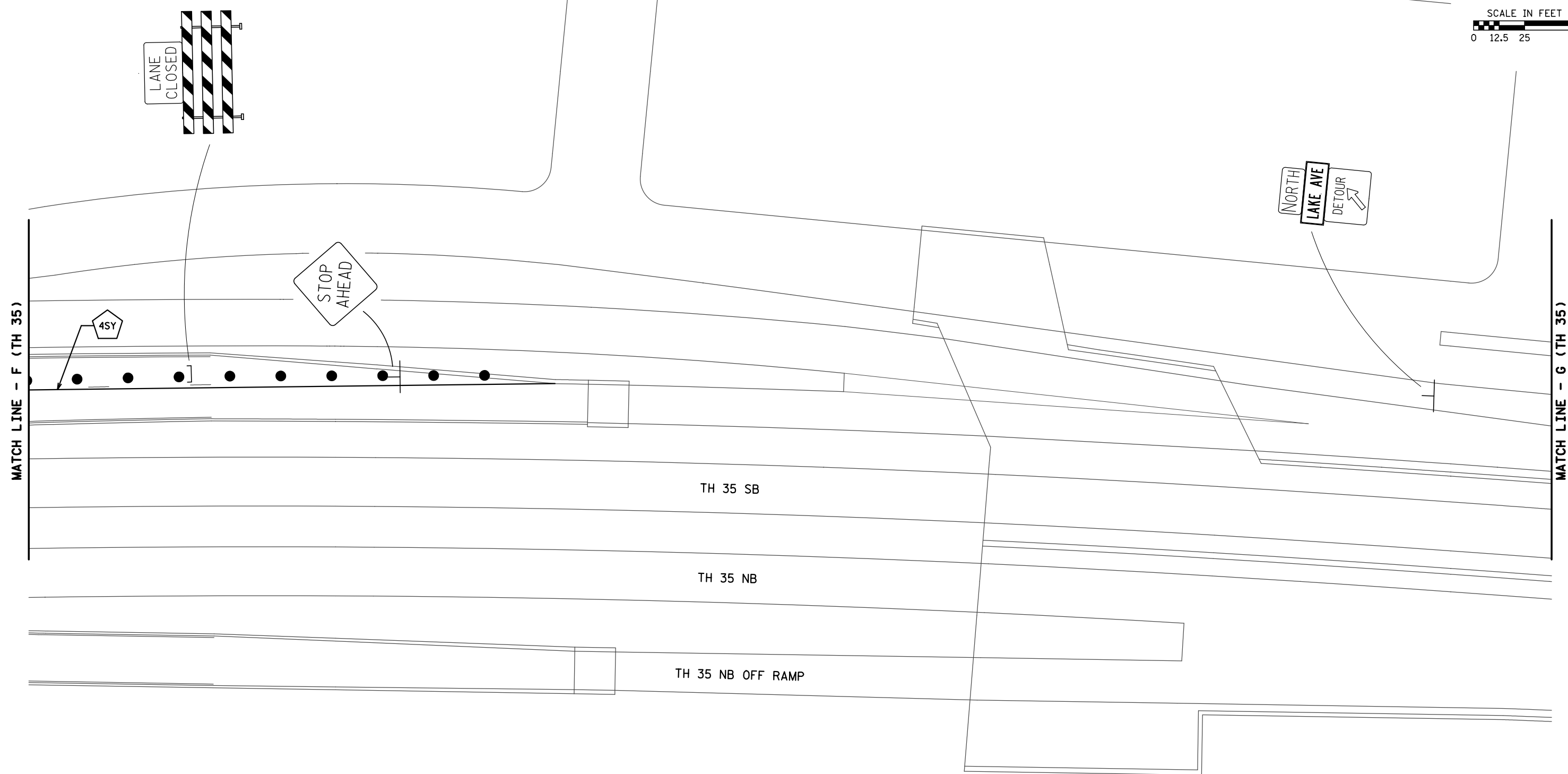
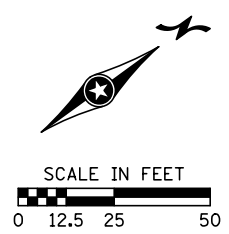
STAGE 1

STATE PROJ. NO. 6982-331 (TH 35)

TRAFFIC CONTROL PLAN

SHEET NO. 38 OF 93 SHEETS

DATE: 12/3/2019 TIME: 2:38:03 PM
 FILENAME: K:\g-m\MnDOT\7581000\04_Production\01_CAD\Highway\Sheets\cd6982331_tctlg.dgn



NO.	DATE	BY	DESCRIPTION OF REVISIONS

DES: LKG
 DRW: LKG
 CHK: JAH

I HEREBY CERTIFY THAT THIS SHEET 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

SIGNATURE: *Jeffrey A. Hilden* LIC. NO. 20781 DATE: 12/3/2019
 JEFFREY A. HILDEN

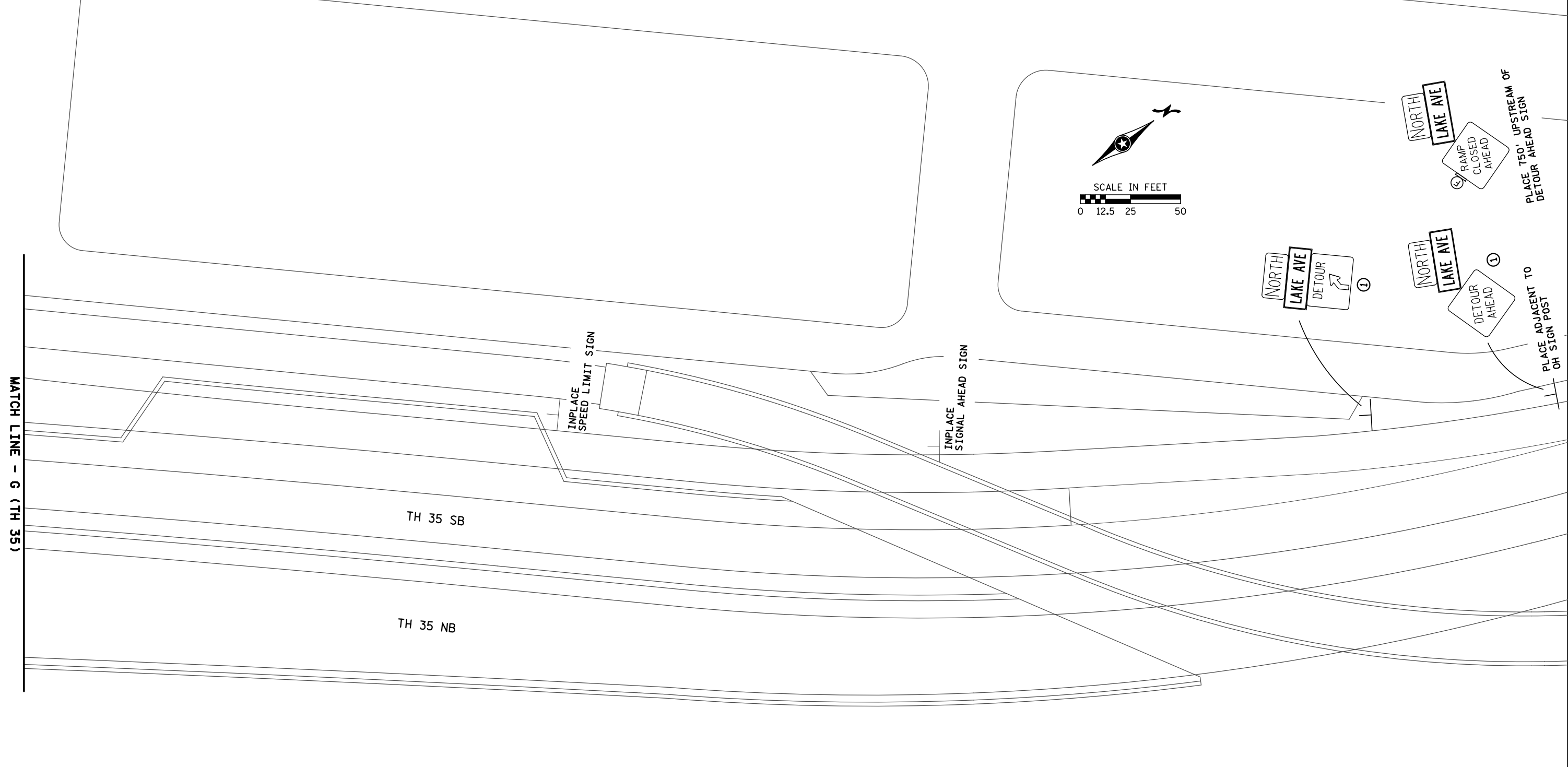


STAGE 1

TRAFFIC CONTROL PLAN

STATE PROJ. NO. 6982-331 (TH 35) SHEET NO. 39 OF 93 SHEETS

DATE: 12/3/2019 TIME: 2:36:04 PM
 FILENAME: K:\g-m\MnDOT\7581000\04_Production\01_CAD\Highway\Sheets\cd6982331_tch.dgn



SPECIFIC NOTES:

① SEE DETOUR PLAN FOR ADDITIONAL DETOUR SIGNS.

NO.	DATE	BY	DESCRIPTION OF REVISIONS

DES: LKG
 DRW: LKG
 CHK: JAH

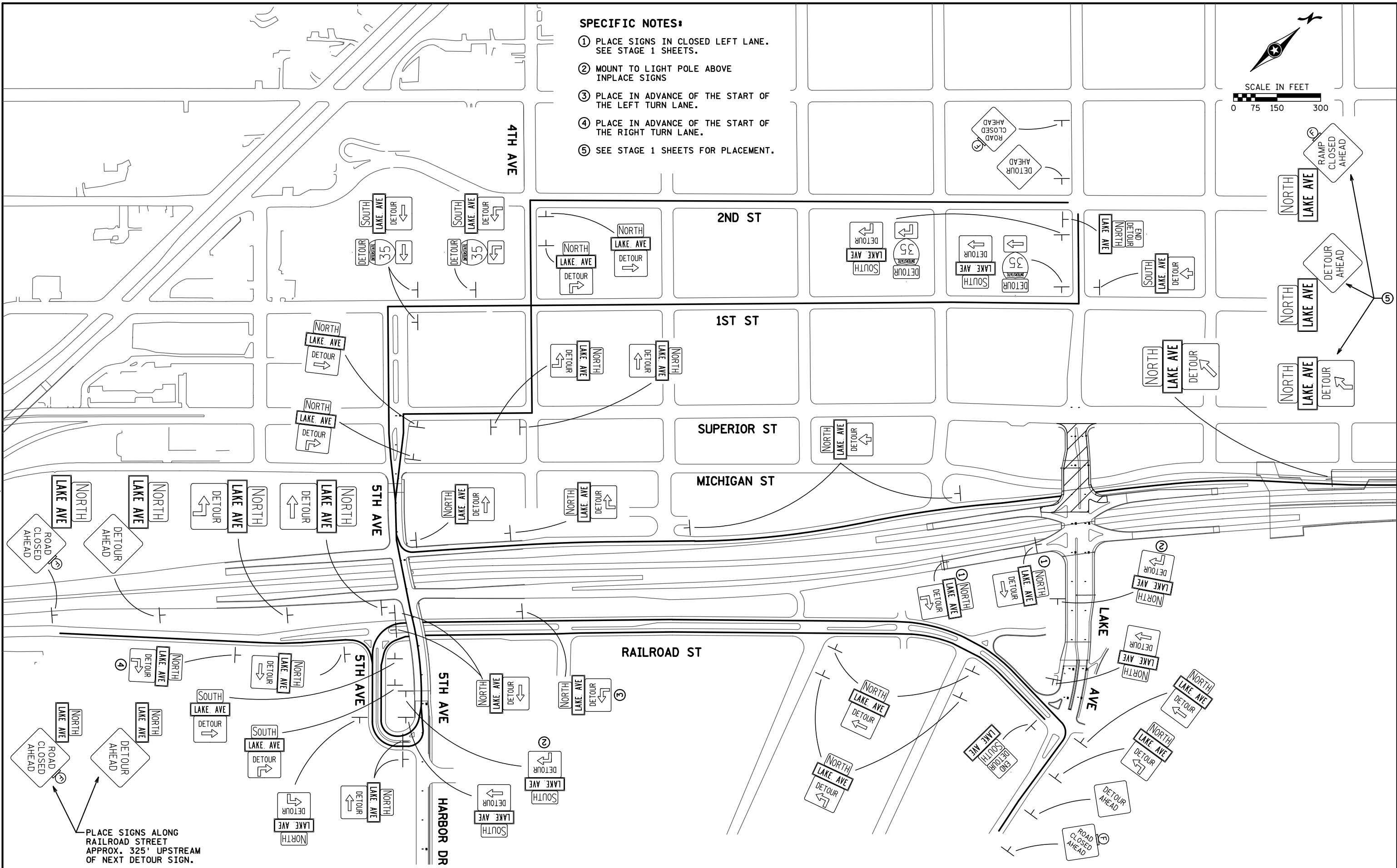
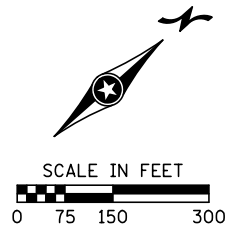
I HEREBY CERTIFY THAT THIS SHEET WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA

SIGNATURE: *Jeffrey A. Hilden* LIC. NO. 20781 DATE: 12/3/2019
 JEFFREY A. HILDEN



DATE: 12/3/2019 TIME: 2:36:05 PM
 FILENAME: K:\g-m\MnDOT\7581000\04_Production\01_CAD\Highway\Sheets\cd6982331_fall.dgn

- SPECIFIC NOTES:**
- 1 PLACE SIGNS IN CLOSED LEFT LANE. SEE STAGE 1 SHEETS.
 - 2 MOUNT TO LIGHT POLE ABOVE INPLACE SIGNS
 - 3 PLACE IN ADVANCE OF THE START OF THE LEFT TURN LANE.
 - 4 PLACE IN ADVANCE OF THE START OF THE RIGHT TURN LANE.
 - 5 SEE STAGE 1 SHEETS FOR PLACEMENT.



PLACE SIGNS ALONG RAILROAD STREET APPROX. 325' UPSTREAM OF NEXT DETOUR SIGN.

NO.	DATE	BY	DESCRIPTION OF REVISIONS

DES: LKG
 DRW: LKG
 CHK: JAH

I HEREBY CERTIFY THAT THIS SHEET 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

SIGNATURE: *Jeffrey A. Hilden* LIC. NO. 20781 DATE: 12/3/2019
 JEFFREY A. HILDEN



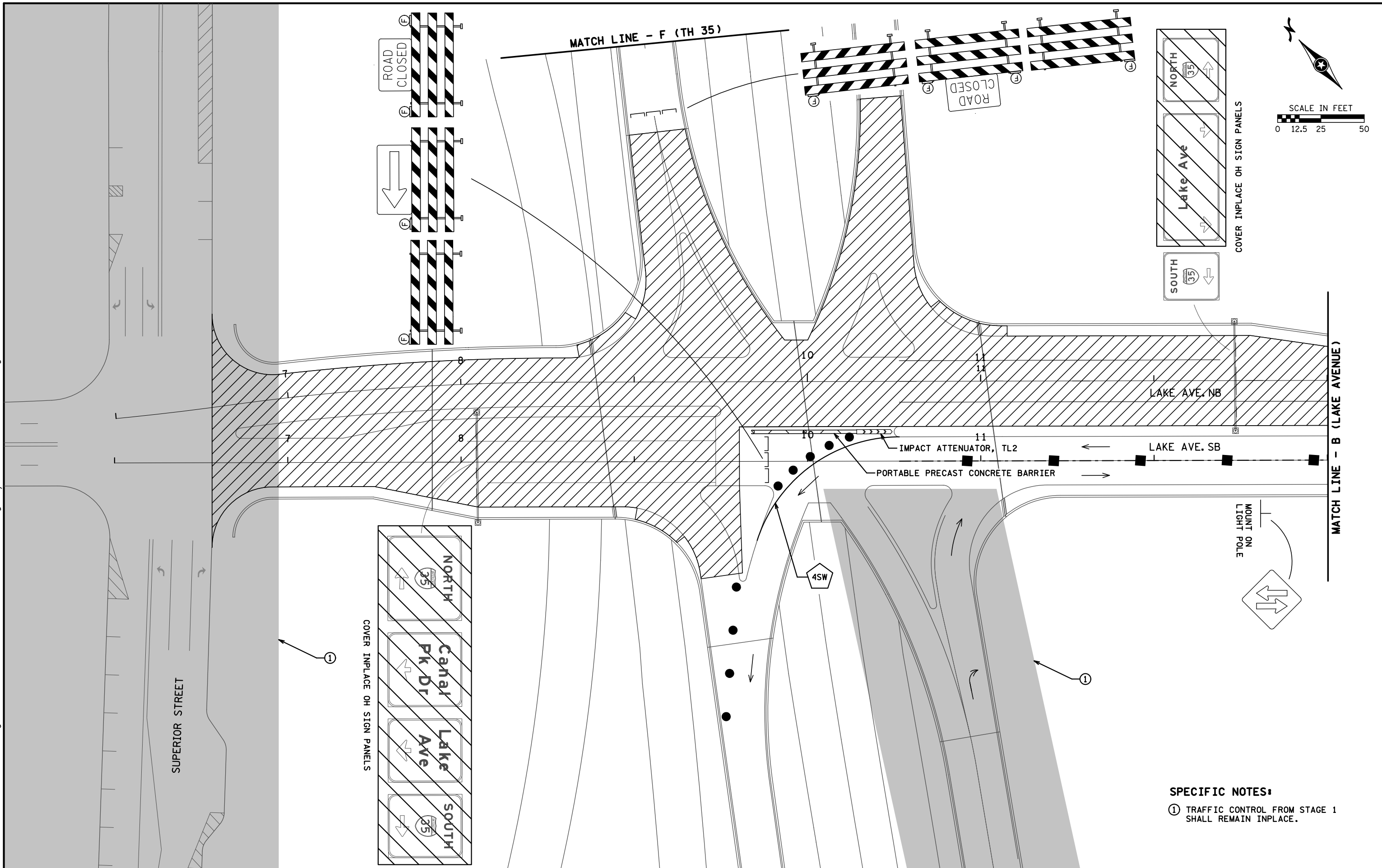
STAGE 1
 DETOURS

STATE PROJ. NO. 6982-331 (TH 35)

TRAFFIC CONTROL PLAN

SHEET NO. 41 OF 93 SHEETS

DATE: 12/3/2019 TIME: 2:38:06 PM
 FILENAME: K:\g-m\MnDOT\7581000\04_Production\01_CAD\Highway\Sheets\cd6982331_fc2b.dgn



SPECIFIC NOTES:
 ① TRAFFIC CONTROL FROM STAGE 1 SHALL REMAIN INPLACE.

NO.	DATE	BY	DESCRIPTION OF REVISIONS

DES: LKG
 DRW: LKG
 CHK: JAH

I HEREBY CERTIFY THAT THIS SHEET 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

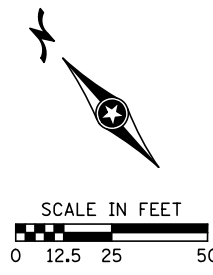
SIGNATURE: *Jeffrey A. Hilden* LIC. NO. 20781 DATE: 12/3/2019
 JEFFREY A. HILDEN



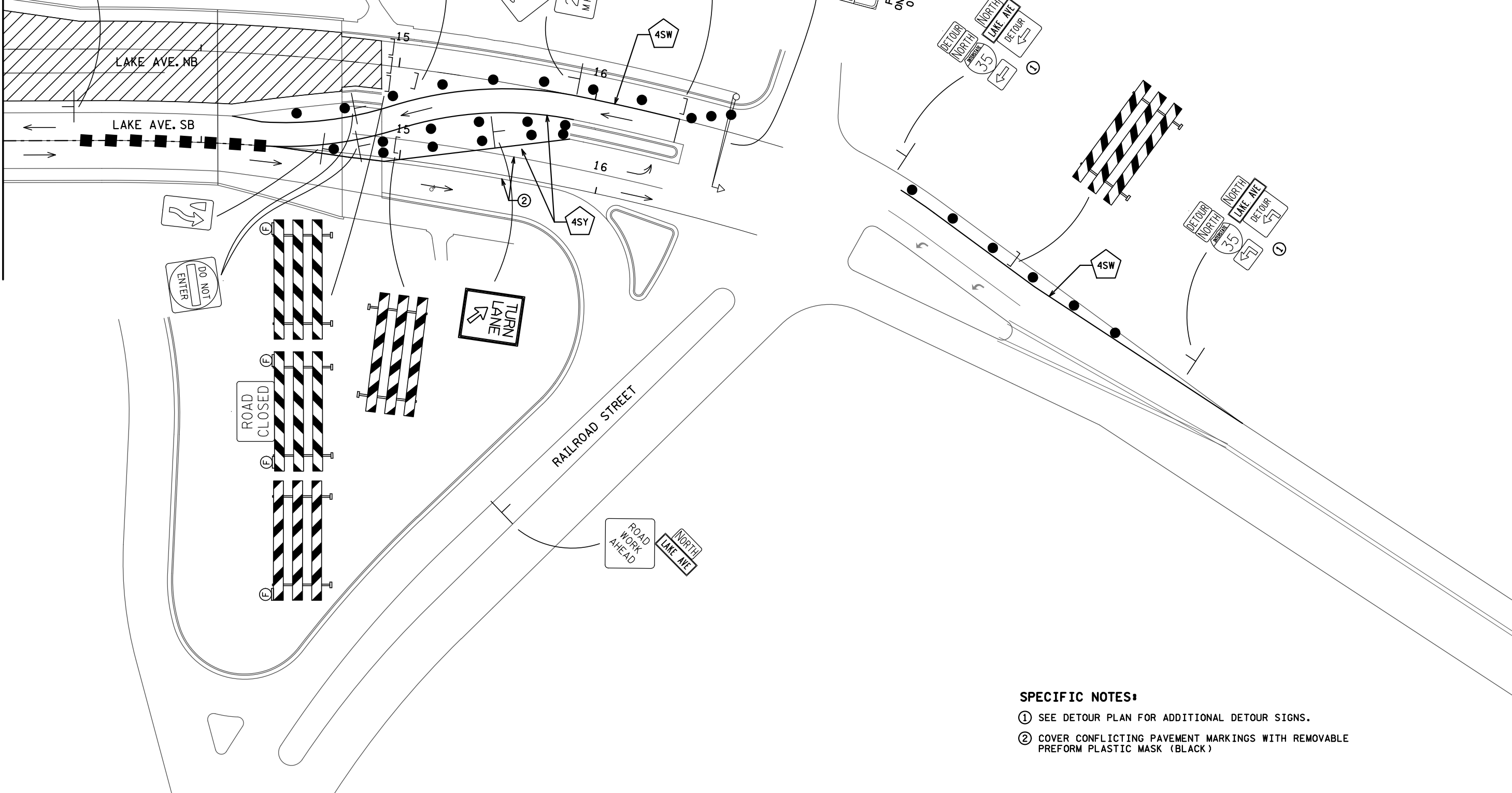
STAGE 2
 STATE PROJ. NO. 6982-331 (TH 35)

TRAFFIC CONTROL PLAN
 SHEET NO. 42 OF 93 SHEETS

DATE: 12/3/2019 TIME: 2:38:06 PM
 FILENAME: K:\g-m\MinDOT\7581000\04_Production\01_CAD\Highway\Sheets\cd6982331_to2c.dgn



MATCH LINE - B (LAKE AVENUE)



SPECIFIC NOTES:

- ① SEE DETOUR PLAN FOR ADDITIONAL DETOUR SIGNS.
- ② COVER CONFLICTING PAVEMENT MARKINGS WITH REMOVABLE PREFORM PLASTIC MASK (BLACK)

NO.	DATE	BY	DESCRIPTION OF REVISIONS

DES: LKG
 DRW: LKG
 CHK: JAH

I HEREBY CERTIFY THAT THIS SHEET 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

SIGNATURE: *Jeffrey A. Hilden* LIC. NO. 20781 DATE: 12/3/2019
 JEFFREY A. HILDEN



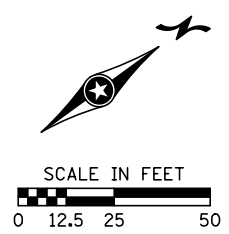
STAGE 2

STATE PROJ. NO. 6982-331 (TH 35)

TRAFFIC CONTROL PLAN

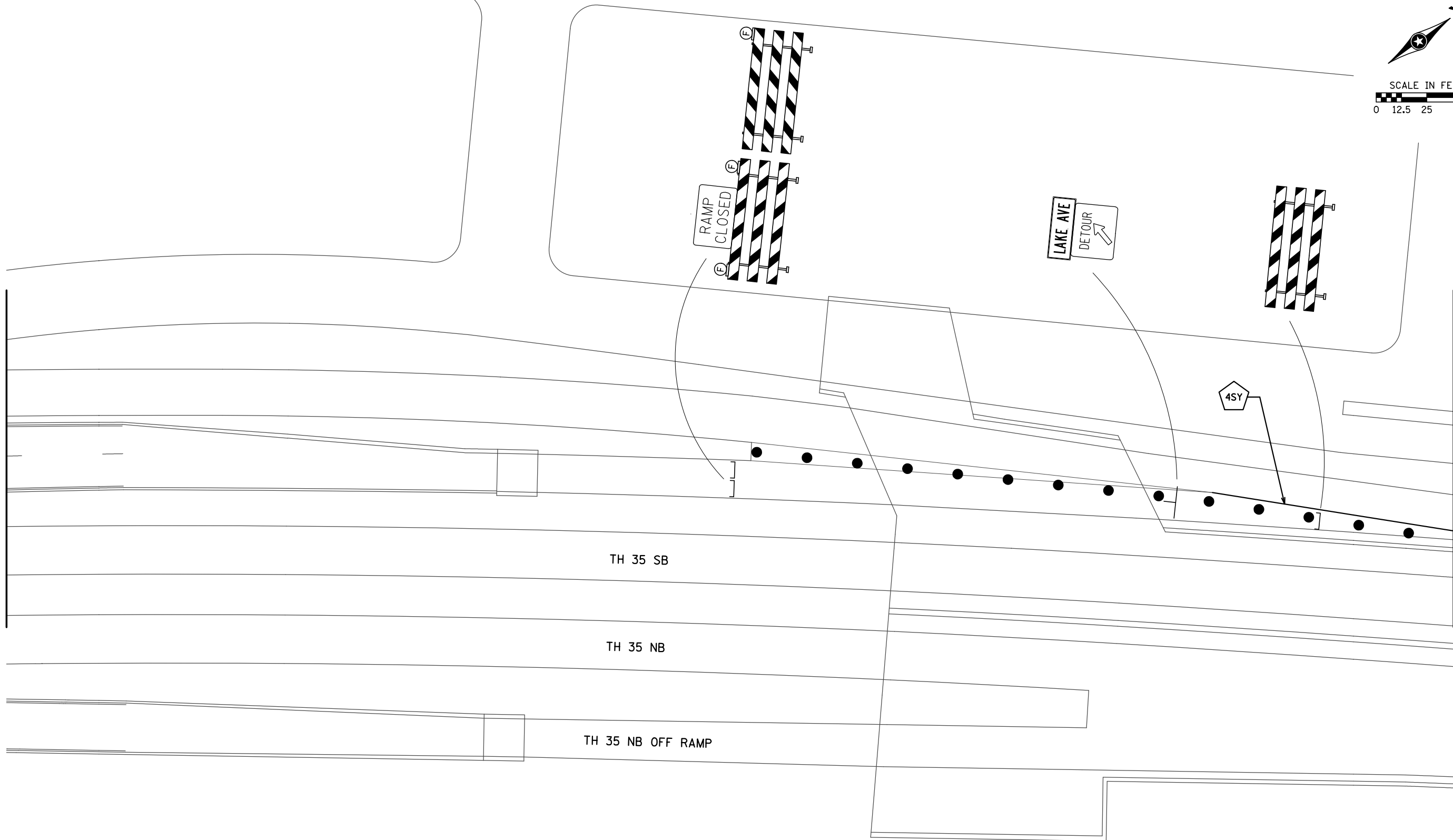
SHEET NO. 43 OF 93 SHEETS

DATE: 12/3/2019 TIME: 2:36:07 PM
 FILENAME: K:\g-m\MnDOT\7581000\04_Production\01_CAD\Highway\Sheets\cd6982331_to2g.dgn



MATCH LINE - F (TH 35)

MATCH LINE - G (TH 35)



NO.	DATE	BY	DESCRIPTION OF REVISIONS

DES: LKG
 DRW: LKG
 CHK: JAH

I HEREBY CERTIFY THAT THIS SHEET 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

SIGNATURE: *Jeffrey A. Hilden* LIC. NO. 20781 DATE: 12/3/2019
 JEFFREY A. HILDEN



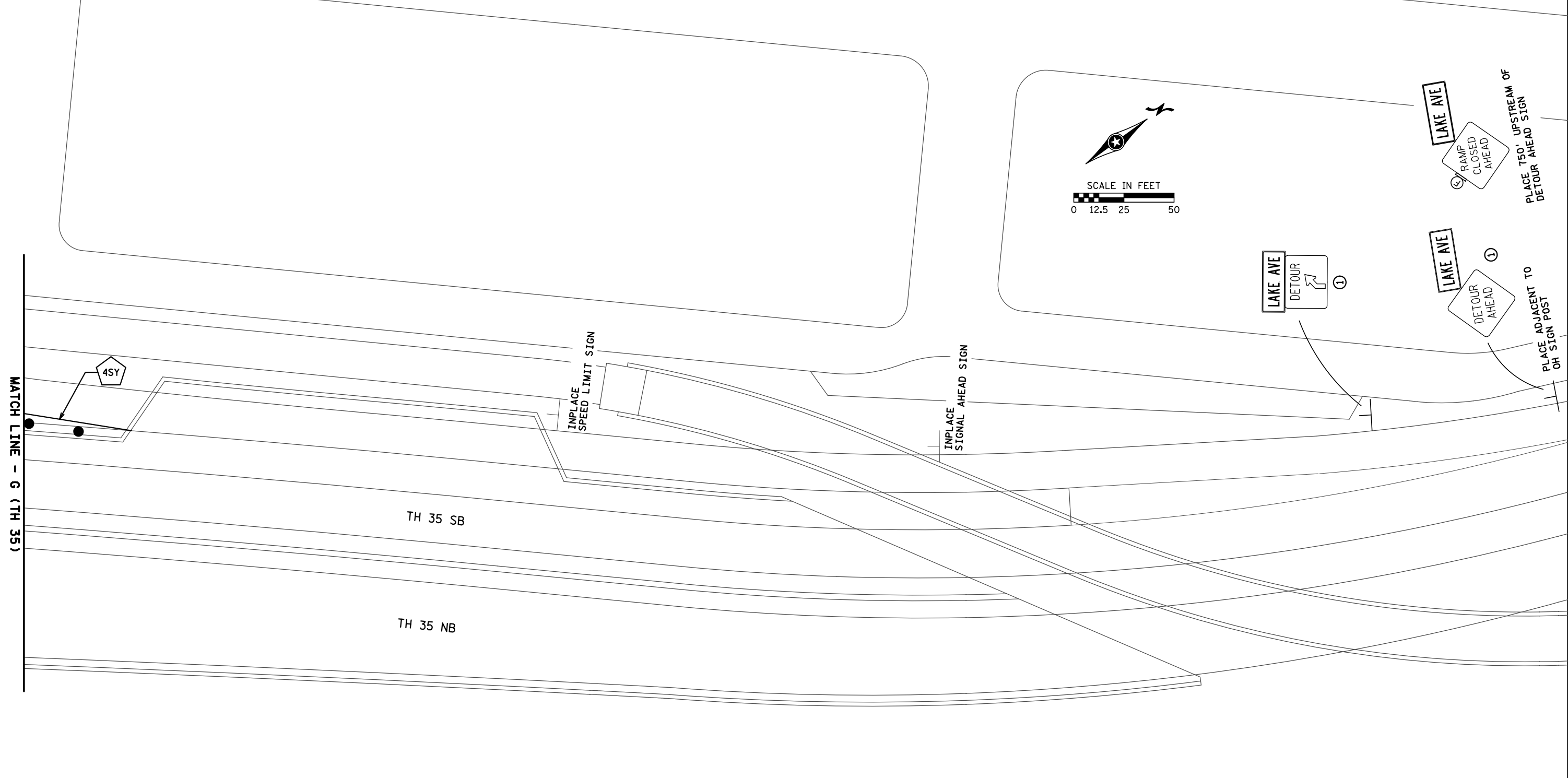
STAGE 2

STATE PROJ. NO. 6982-331 (TH 35)

TRAFFIC CONTROL PLAN

SHEET NO. 44 OF 93 SHEETS

DATE: 12/3/2019 TIME: 2:36:08 PM
 FILENAME: K:\g-m\MnDOT\7581000\04_Production\01_CAD\Highway\Sheets\cd6982331_to2hdgn



SPECIFIC NOTES:
 ① SEE DETOUR PLAN FOR ADDITIONAL DETOUR SIGNS.

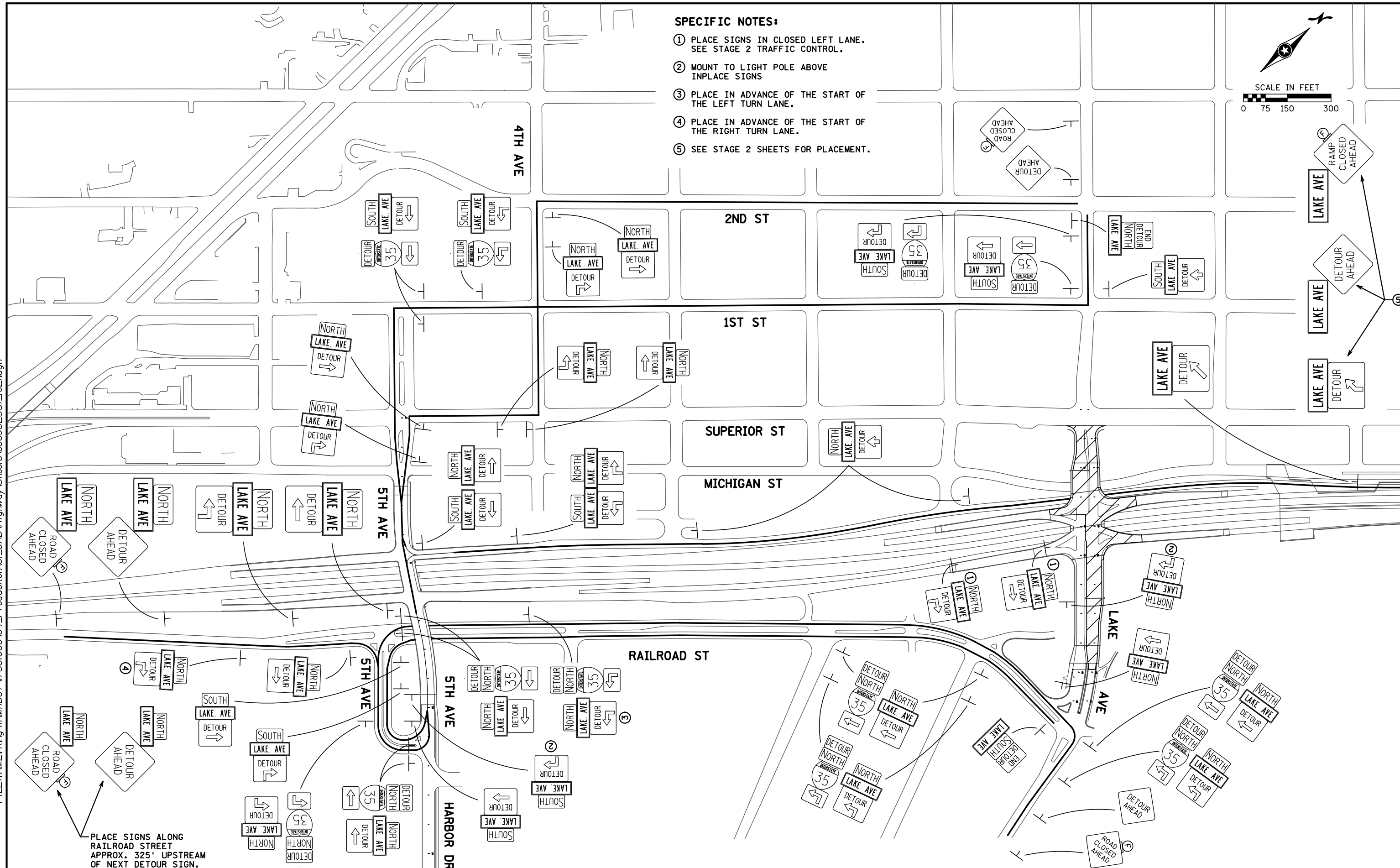
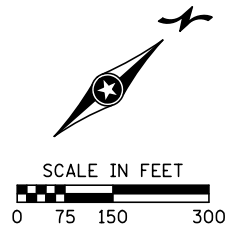
DES: LKG	DRW: LKG	CHK: JAH	
I HEREBY CERTIFY THAT THIS SHEET WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA SIGNATURE: <i>Jeffrey A. Hilden</i> LIC. NO. 20781 DATE: 12/3/2019 JEFFREY A. HILDEN			
NO.	DATE	BY	DESCRIPTION OF REVISIONS

TKDA

DATE: 12/3/2019 TIME: 2:36:08 PM
 FILENAME: K:\g-m\MnDOT\7581000\04_Production\01_CAD\Highway\Sheets\cd6982331_to21.dgn

SPECIFIC NOTES:

- ① PLACE SIGNS IN CLOSED LEFT LANE. SEE STAGE 2 TRAFFIC CONTROL.
- ② MOUNT TO LIGHT POLE ABOVE INPLACE SIGNS
- ③ PLACE IN ADVANCE OF THE START OF THE LEFT TURN LANE.
- ④ PLACE IN ADVANCE OF THE START OF THE RIGHT TURN LANE.
- ⑤ SEE STAGE 2 SHEETS FOR PLACEMENT.



NO.	DATE	BY	DESCRIPTION OF REVISIONS

DES: LKG
 DRW: LKG
 CHK: JAH

I HEREBY CERTIFY THAT THIS SHEET 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

SIGNATURE: *Jeffrey A. Hilden* LIC. NO. 20781 DATE: 12/3/2019
 JEFFREY A. HILDEN



STAGE 2
 DETOURS

STATE PROJ. NO. 6982-331 (TH 35)

TRAFFIC CONTROL PLAN

SHEET NO. 46 OF 93 SHEETS