



Anoka County
MINNESOTA

Respectful, Innovative, Fiscally Responsible

ANOKA COUNTY TRANSPORTATION DIVISION

1440 BUNKER LAKE BLVD NW

ANDOVER, MN 55304

763-324-3176

highwaypermits@anokacountymn.gov

PERMIT NUMBER

23-538

RIGHT OF WAY X

COMMERCIAL ACCESS

CSAH 1

APPLICATION FOR PERMIT FOR INSTALLATION OF UTILITIES OR PLACING OBSTRUCTIONS ON THE COUNTY HIGHWAY SYSTEM
ALL APPLICANTS MUST BE REGISTERED PRIOR TO PERMIT APPROVAL

APPLICANT NAME **New Look Contracting**

CONTACT PERSON **Collin Kopitzke**

ADDRESS **14045 Northdale Blvd.**

CITY **Rogers**

PHONE NUMBER **320.447.9230**

EMAIL **ckopitzke@newlookcontracting.net**

COMPANY OR INDIVIDUAL PERFORMING WORK **New Look Contracting**

CONTACT PERSON **Collin Kopitzke**

EMAIL **ckopitzke@newlookcontracting.net**

PERMIT WORK TO START **09/20/2023**

PERMIT WORK TO BE COMPLETED **12/31/2023**

DURATION OF JOB **40 Days**

ARE YOU BEING ASKED TO RELOCATE DUE TO A COUNTY PROJECT? **No**

ANOKA COUNTY PROJECT NUMBER

WORK SITE ADDRESS **CSAH 1 & (Xavis and Crooked Lake)**

CITY **Coon Rapids**

METHOD OF INSTALLATION/CONSTRUCTION **Removal and Replacement**

NATURE OF WORK **Upgrading signal systems and pedestrian facilities on the above intersections. Removals, Temporary signal install, loop install, new signal system installation, Concrete and Pavement Install.**

SAP 002-601-063, 114-020-062, 002-601-064 City Project # CP-23-14-per approved plan

SURFACE TO BE DISTURBED

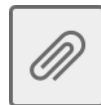
SITE PLAN

IF THE ROADWAY IS ENCROACHED, YOU MUST ATTACH A TRAFFIC CONTROL PLAN AND/OR REFERENCE THE MOST CURRENT VERSION OF THE MN TEMPORARY TRAFFIC CONTROL FIELD MANUAL (3+ DAYS REQUIRES PLANS TO BE SIGNED BY A LICENSED PE).

DITCH/BLVD



GRAVEL



BITUMINOUS

CONCRETE

NONE

IS SIGNING AND STRIPING REQUIRED? **Yes**

DEPTH FROM SURFACE **60" for Crossing. In Pavement for Loops**

(60" minimum under county roads)

SIZE AND KIND OF PIPE/CABLE **Electrical Lines in Conduit**

NUMBER OF EXCAVATIONS **4+**

SIZE OF EXCAVATIONS **3 (Dia) x 6'**

(Length, width, and depth)

LOCATION OF EXCAVATIONS

(Specific written descriptions of excavations - to be protected at all times and backfilled when unattended and/or overnight)

All Corners of the Crooked Lake and Xavis Intersections will receive temp signal poles set in the ground. Locations to be determined in the field. New Caissons for Signal mast Arms also as marked on plans attached....To be surveyed prior to installation. Loop installation will be milled into pavement and patched. Adjustment of handholes, manholes, and catch basins also included.

THIS PERMIT COVERS THE RIGHT OF WAY IN ANOKA COUNTY ONLY

ACTD reserves the right to make changes to these special conditions.



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PERMIT PHONE: 763-324-3176

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GENERAL INFORMATION

One permit must be approved for each county road on which work will be performed prior to any work within the right of way by any utility/contractor. Emergency conditions which threaten the safety of the public and require immediate repair are exceptions to this rule. Under those circumstances, the utility/contractor is permitted to begin and/or complete the necessary repairs. The Anoka County Transportation Division (ACTD) shall be notified of emergency repairs as soon as feasible and a written permit is to be completed within two business days of occurrence.

A license-permit bond is generally required of the contractor as part of the registration process, the amount of which will be determined by the nature of the utility work.

A sketch or drawing shall accompany each permit application which will show the location of the proposed work/utility with reference to the county highway center line and right of way line. A complete set of plans is required for all sewer/water projects.

It shall be the responsibility of the applicant to determine which of the special conditions apply to each permit.

ACTD reserves the right to revoke any utility permit and halt work, if, upon inspection of any job site, the special conditions are not met, and/or a hazard exists for the applicant or public safety is threatened. **The failure to comply with the terms and conditions of any applicable Federal, State, Regional, and local laws, rules and regulations, including any provision of Anoka County's Right-of-Way Ordinance shall be cause for immediate revocation of a permit.**

The applicant shall notify ACTD immediately upon completion of project so that the ACTD can inspect the site to determine if restoration has been satisfactorily completed.

The undersigned hereby accepts the terms and conditions of this permit and the regulations of Anoka County, and agrees to fully comply therewith to the satisfaction of the ACTD. The county of Anoka, its officials, employees, and agents, shall be held harmless, by the applicant/permittee, from any demands, claims, lawsuits, or damages relating to the work described in this permit.

APPLICANT'S SIGNATURE

DocuSigned by:

Collin Kopitzke

84AA6C25C892446...

DATE 9/15/2023

AUTHORIZATION OF PERMIT

In consideration of the applicant's agreement to comply in all respects with the regulations of the ACTD covering such operations, permission is hereby granted for the work to be done as described in the above application. Said work to be done in accordance with the general conditions listed above and the special conditions required as hereby stated. It is expressly understood that this permit is conditioned upon replacement or restoration of the county highway and its right of way to their original or to a satisfactory condition. It is further understood that this permit is issued subject to the approval of local city or township authorities having joint supervision over said street or highway.

APPROVED BY:

DocuSigned by:

Susan Burgmeier

05E91FE156D44EE...

DATE

9/21/2023

NOT VALID UNLESS SIGNED BY ANOKA COUNTY

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ANOKA COUNTY TRANSPORTATION DIVISION

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ANDOVER, MN 55304

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SPECIAL CONDITIONS

TRAFFIC CONTROL

- 1) Detours
 - a) Detailed detour layouts shall be submitted to the traffic engineer for approval.
 - b) No detours shall be permitted without prior approval of the Anoka county traffic engineer.
 - c) A ten day notice must be given prior to the installation of any detour.
 - d) It shall be the responsibility of the applicant to notify Anoka county central communications, local government bodies, and any affected bus companies ten days prior to any road closures/detours.
 - e) Immediately upon completion of work and/or detours, all posts, barricades, and signs shall be removed from the right of way.
- 2) Traffic control devices
 - a) All traffic control devices, barricades, flashers, etc., shall be furnished by the applicant and shall be in accordance with the most recent edition of the Minnesota manual on uniform traffic control devices and temporary traffic control zone layouts – field manual of the same manual.

CONSTRUCTION REQUIREMENTS

- 1) Open cutting of bituminous or concrete surfaced roads will be allowed only at the discretion of the county engineer.
- 2) Neither supplies nor excavation materials shall be placed on the bituminous or concrete surface at any time.
- 3) No trenches will be allowed to remain open overnight.
- 4) Materials removed from the trench shall be used as backfill insofar as they are suitable. All backfill material shall conform to MNDOT specifications for compaction. The use of heavy equipment on top of trench, slapping with backhoe bucket and/or back casting to achieve compaction is prohibited. Any additional material required to back fill to the original grade shall be furnished by the applicant at no expense to the ACTD. All the base and surface courses damaged during construction operations shall be restored to a condition equal to or better than before operations began. The applicant shall be responsible for and restore any settlement.
- 5) All culverts, ditches, shoulders, and backslopes shall be restored to their original condition unless otherwise directed by the ACTD. Shoulders which have been previously constructed or reconstructed with special materials shall be replaced in kind. Restoration of signs, guardrails, guard posts, etc., are the sole responsibility of the applicant and shall be restored to their original condition.
- 6) All roadway maintenance required within the limits of the utility project that is related to the applicant's activities shall be the sole responsibility of the applicant for one year after completion of the project. Upon completion of the restoration work, the applicant shall request a final inspection by the ACTD. The ACTD's approved completion date shall be the starting date of the applicant's one-year responsibility.

HORIZONTAL BORING AND JACKING

- 1) All hard surface roadways shall be jacked or bored.
- 2) All crossings of Anoka County maintained roadbeds, shall be made by boring inside a casing or carrier pipe, or by jacking unless otherwise directed by the Anoka County Engineer. The auger shall lead the casing or carrier pipe by at least six inches whenever possible and never lead the carrier pipe by more than one inch.
- 3) The use of pneumatic devices to facilitate the roadbed crossings will be allowed in most cases with prior approval. In the event approval is not granted and applicant uses a pneumatic device to cross a roadbed and encounters an obstruction and/or unstable subbase material which makes forward or reverse motion of pneumatic device impossible, said pneumatic device then becomes part of the roadway subbase and permission to excavate to retrieve device will not be granted.
- 4) If a pneumatic device is used for the work permitted herein, the installation must be kept to a minimum of four feet below the surface of the roadway if the pneumatic device is less than two inches in diameter, and a minimum of five feet below the surface of the roadway if the pneumatic device is two inches in diameter or larger.

BITUMINOUS RESTORATION

- 1) The locations and dimensions of all openings to be made in the bituminous surface shall be approved by the ACTD prior to any cutting or any surface opening operations.
- 2) All openings in bituminous surfaces shall be cut in a straight line with the sides smooth and vertical. No ragged edges will be permitted. Cutting shall be done with a concrete saw.
- 3) All necessary dust control operations shall be carried out by the applicant at no expense to Anoka County.
- 4) The minimum requirement for subgrade replacement shall be the upper twelve inches of material and shall meet MNDOT specifications for class five placed in six inch layers compacted to one hundred percent of optimum density.
- 5) All manhole casings, gate valves, and other utility structures shall be set one quarter inch below the top of the finished surface.
- 6) Bituminous tack coat materials and application thereof shall conform to MNDOT specification 2357.
- 7) All bituminous surfacing shall be replaced as soon as practicable after the base construction. All bituminous surfacing shall be machine laid. Any exceptions must be approved by the ACTD. Bituminous surfacing shall be replaced to original pavement depth or to a minimum of six inches of bituminous mixture (2360), whichever is greater. Bituminous mixtures must be placed in lifts not exceeding three inches in thickness for base and binder courses and not exceeding two inches for the wear course.
- 8) All surface restoration regardless of size shall conform to existing grades.
- 9) Any unnecessary or negligent damage to bituminous surface in conjunction with the installation and/or repair of a utility shall be cut out and replaced in kind as directed by the ACTD.

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CONCRETE RESTORATION

- 1) Curb and gutter, sidewalks, and driveways shall be restored in accordance with MNDOT specifications 2531 and 2521.

UTILITY LINES

- 1) There shall be only a single pole line on the county right of way on either side of the center line thereof.
- 2) Exact locations of longitudinal installations on county highways shall be located as directed by the ACTD.

SECTION CORNER MONUMENTS

- 1) Utility locations shall not interfere with the location of any section, quarter, witness, or right of way monuments. For assistance in locations, contact the Anoka County Surveyor's Office.
- 2) The applicant shall be responsible for replacement of any existing property irons disturbed during construction.
- 3) The applicant shall notify the Anoka County Surveyor's Office three working days in advance of any anticipated disturbance of any section, quarter, witness, or right of way monuments.
- 4) Any monument disturbed during the course of construction, shall be reset by the Anoka County Surveyor's Office at the expense of the applicant.

ATTACHING TO BRIDGES/STRUCTURES

- 1) No utility is permitted to be hung from, or otherwise attached to, any bridge or structure without having detailed plans approved by the Anoka County Engineer. These plans are to show approaches to the structure, method of installation, type, and dimension of housing for the utility.

ADDITIONAL PROVISIONS

- 1) All subcontractors, installers, and crew shall possess a copy of all documents in relation to the approved permit prior to the commencement of work and be kept on site. This includes, but it not limited to the following:
 - a) Approved permit
 - b) Any/all traffic control plans and/or layouts
- 2) Shall notify Andrea Schmid at 763-324-3128 or andrea.schmid@anokacountymn.gov
 - a) At least 36 hours prior to the commencement of work
 - b) When there is any change to traffic control set up (ex: stage 1 to stage 2)
 - c) When work is complete - including restorations
- 3) No work during inclement weather or when plows are out in any capacity
- 4) All traffic control shall be in accordance with the most current version of the MnDOT Temporary Traffic Control Field Manual
- 5) Pits/excavations are to be protected at all times and then backfilled when unattended and/or overnight

INITIAL
^{DS}



No additional comments.

PLAN SYMBOLS	
COUNTY LINE	----
TOWNSHIP OR RANGE LINE	----
SECTION LINE	----
QUARTER LINE	----
SIXTEENTH LINE	----
RIGHT OF WAY LINE	----
SLOPE EASEMENT	----
EXISTING RIGHT OF WAY	----
PROPERTY LINE	----
CORPORATE OR CITY LIMITS	----
RETAINING WALL	----
RAILROAD	----
RAILROAD RIGHT OF WAY	----
RIVER OR CREEK	----
DRAINAGE DITCH	----
CULVERT	----
DROP INLET	----
GUARD RAIL	----
BARBED WIRE FENCE	----
WOVEN WIRE FENCE	----
CHAIN LINK FENCE	----
WOOD FENCE	----
STONE WALL OR FENCE	----
HEDGE	----
LOWLAND	----
TIMBER	----
ORCHARD	----
BRUSH	----
NURSERY	----
CATTLE GUARD	----
OVERPASS (Highway Over)	----
UNDERPASS (Highway Under)	----
BRIDGE	----
BUILDING (One Story Frame)	----
F-FRAME CONCRETE	----
S-STONE T-TILE	----
B-BRICK S-STUCCO	----
RAILROAD CROSSING BELL	----
RAILROAD CROSSING GATE	----
MANHOLE	----
CATCH BASIN	----
FIRE HYDRANT	----
CAST IRON MONUMENT	----
IRON PIN	----
GRAVEL PIT	----
SAND PIT	----
BORROW PIT	----
ROCK QUARRY	----
UTILITY SYMBOLS	
POWER POLE LINE	----
TELEPHONE OR TELEGRAPH POLE LINE	----
JOINT TELEPHONE & POWER ON POWER POLES	----
ON TELEPHONE POLES	----
ANCHOR	----
STEEL TOWER	----
STREET LIGHT	----
PEDESTAL (Cable Terminal)	----
GAS MAIN	----
WATER MAIN	----
TELEPHONE CABLE IN CONDUIT	----
ELECTRIC CABLE IN CONDUIT	----
TELEPHONE MANHOLE	----
ELECTRIC MANHOLE	----
BURIED TELEPHONE CABLE	----
BURIED ELECTRIC CABLE	----
OVERHEAD UTILITY CABLE	----
SEWER (Sanitary or Storm)	----
SEWER MANHOLE	----
SCALES	
PLAN	0' 100'
PROFILE	0' 100'
HORIZONTAL	0' 10'
VERTICAL	0' 10'
X-SECTIONS	0' 10'
HORIZONTAL	0' 10'
VERTICAL	0' 1000'
INDEX MAP	0' 1000'

MINNESOTA DEPARTMENT OF TRANSPORTATION ANOKA COUNTY

CONSTRUCTION PLAN FOR PEDESTRIAN RAMP IMPROVEMENTS & SIGNAL REPLACEMENT

SAP 002-601-063 & SAP 114-020-062 LOCATED AT CSAH 1 (COON RAPIDS BLVD) AND XAVIS ST
ANOKA COUNTY SAP 002-601-063
CITY OF COON RAPIDS SAP 114-020-062
CITY OF COON RAPIDS PROJECT NO. 23-14

PROJECT LOCATION

PROJECT LOCATION

PROJECT LOCATION

UTILITY QUALITY LEVEL NOTE:
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."

GOVERNING SPECIFICATIONS

THE 2020 EDITION OF THE MINNESOTA DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR CONSTRUCTION" AND THE "SUPPLEMENTAL SPECIFICATIONS DATED SEPTEMBER 2022 SHALL GOVERN

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

INDEX

SHEET NO.	DESCRIPTION
1	TITLE SHEET
2	STATEMENT OF ESTIMATED QUANTITIES
3	TABULATIONS
4	EXISTING UTILITY & TOPOGRAPHY PLAN
5 - 17	STANDARD PLATES & BASIS OF QUANTITIES, INDEX TABS
18	REMOVAL PLAN
19	CONSTRUCTION PLAN
20	INTERSECTION DETAILS
21	TURF EST. AND EROSION CONTROL PLAN & DETAILS
22 - 25	SIGNING & STRIPING PLANS
27 - 43	SIGNAL PLANS

THIS PLAN CONTAINS 43 SHEETS

APPROVED	 Joseph MacPherson ANOKA COUNTY ENGINEER	Digitally signed by Joseph MacPherson Date: 2023.07.13 13:32:58 -05'00'	07/13/23	DATE
APPROVED	 Mark C. Hansen CITY OF COON RAPIDS ENGINEER	Digitally signed by Mark C. Hansen Date: 2023.07.25 08:34:12 -05'00'	07/25/23	DATE
	 Lucas Lortie For DISTRICT STATE AID ENGINEER: REVIEWED FOR COMPLIANCE WITH STATE AID RULES/POLICY	Digitally signed by Lucas Lortie Date: 2023.07.27 09:10:30 -05'00'		DATE
	 Lucas Lortie For STATE AID ENGINEER: APPROVED FOR STATE AID FUNDING	Digitally signed by Lucas Lortie Date: 2023.07.27 09:10:46 -05'00'		DATE

NO	DATE	BY	CHKD	APPR	REVISION

NAME: P:002-601-063 Xavis Signal Plan 002601063_19P01.dgn 06/27/2023 8:02:18 AM

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
 PRINT NAME: Aaron Anderson
 SIGNATURE:
 DATE: 06/27/23 LICENSE NO. 58657

DRAWN BY	APA	DATE	05/12/23
DESIGN BY	APA	DATE	05/12/23
CHECKED BY	ST	DATE	05/12/23

**ANOKA COUNTY
HIGHWAY DEPT.**

SAP 002-601-063
SAP 114-020-062
CP 23-14

TITLE SHEET

Sheet 1 of 43 Sheets

STATEMENT OF ESTIMATED QUANTITIES				PARTICIPATING		NON-PARTICIPATING	
TAB /NOTE	Item Number	ITEM DESCRIPTION	Unit	TOTAL PROJECT QUANTITIES ESTIMATED	ANOKA COUNTY 002-601-063 ROADWAY QUANTITIES ESTIMATED	CITY OF COON RAPIDS 114-020-062 ROADWAY QUANTITIES ESTIMATED	CITY OF COON RAPIDS 23-14 ROADWAY QUANTITIES ESTIMATED
	2021.501	MOBILIZATION	LUMP SUM	1	0.63		
[1]	2102.503	PAVEMENT MARKING REMOVAL	LIN FT	210	210	0.28	0.09
[1]	2102.518	PAVEMENT MARKING REMOVAL	SQ FT	48	48		
	2104.502	REMOVE CASTING	EACH	2	1		1
[1]	2104.502	REMOVE SIGN TYPE C	EACH	4	2		2
	2104.502	REMOVE SIGNAL SYSTEM	EACH	1	1		
	2104.502	SALVAGE CASTING	EACH	1			1
	2104.502	SALVAGE SIGN TYPE C	EACH	1			1
A	2104.503	SAWING CONCRETE PAVEMENT (FULL DEPTH)	LIN FT	109	78		31
A	2104.503	SAWING BITUMINOUS PAVEMENT (FULL DEPTH)	LIN FT	654	519		135
A	2104.503	REMOVE CURB AND GUTTER	LIN FT	390	276		114
A	2104.504	REMOVE BITUMINOUS PAVEMENT	SQ YD	502	69		433
A	2104.518	REMOVE CONCRETE WALK	SQ FT	1621	1366		255
A	2104.518	REMOVE CONCRETE MEDIAN	SQ FT	77	77		
A	2105.607	COMMON EXCAVATION	CU YD	80	40		40
B	2211.509	AGGREGATE BASE CLASS 5	TON	124	34		90
B	2357.506	BITUMINOUS MATERIAL FOR TACK COAT	GALLON	45	20		25
	2360.509	TYPE SP 9.5 WEARING COURSE MIXTURE (2:C)	TON	120			120
B	2360.509	TYPE SP 12.5 BITUMINOUS MIXTURE FOR PATCHING	TON	27	27		
	2504.602	ADJUST VALVE BOX	EACH	1			1
[2]	2506.502	CASTING ASSEMBLY	EACH	2	1		1
	2506.502	INSTALL CASTING	EACH	1			1
C	2521.518	4" CONCRETE WALK	SQ FT	306	96		210
C	2521.518	6" CONCRETE WALK	SQ FT	1671	1501		170
C	2521.602	DRILL AND GROUT REINF BAR (EPOXY COATED)	EACH	80	80		
C	2531.503	CONCRETE CURB AND GUTTER DESIGN B612	LIN FT	56	56		
C	2531.503	CONCRETE CURB AND GUTTER DESIGN B618	LIN FT	412	106	106	200
C	2531.602	CONCRETE MEDIAN NOSE-SPECIAL	EACH	2	2		
	2531.603	CONCRETE CURB DESIGN V	LIN FT	24	24		
C	2531.618	TRUNCATED DOMES	SQ FT	156	108		48
	2563.601	TRAFFIC CONTROL SUPERVISOR	LUMP SUM	1	0.63	0.28	0.09
[3]	2563.601	TRAFFIC CONTROL	LUMP SUM	1	0.63	0.28	0.09
	2563.601	ALTERNATE PEDESTRIAN ROUTE	LUMP SUM	1	0.63	0.28	0.09
[4]	2563.613	PORTABLE CHANGEABLE MESSAGE SIGN	UNIT DAY	20	20		
	2564.502	INSTALL SIGN PANEL TYPE C	EACH	1			1
	2564.618	SIGN TYPE C	SQ FT	34.50	14.50		20.00
	2565.501	EMERGENCY VEHICLE PREEMPTION SYSTEM	LUMP SUM	1	0	1	
	2565.501	TRAFFIC CONTROL INTERCONNECT	LUMP SUM	1	1		
	2565.516	TRAFFIC CONTROL SIGNAL SYSTEM	SYSTEM	1	0.5	0.5	
	2565.616	VIDEO DETECTOR SYSTEM	SYSTEM	1	1		
	2565.616	TEMPORARY SIGNAL SYSTEM	SYSTEM	1	1		
	2573.501	EROSION CONTROL SUPERVISOR	LUMP SUM	1	1		
D	2573.502	STORM DRAIN INLET PROTECTION	EACH	5	3		2
D	2574.507	COMMON TOPSOIL BORROW	CU YD	18	18		
	2574.507	ORGANIC TOPSOIL BORROW	CU YD	20			20
D	2574.508	FERTILIZER TYPE 3	POUND	14	14		
	2575.505	SEEDING	ACRE	0.04	0.04		
D	2575.508	SEED MIXTURE 25-121	POUND	4	4		
D	2575.508	HYDRAULIC REINFORCED FIBER MATRX	POUND	516	156		360
	2582.503	12" SOLID LINE PAINT	LIN FT	24			24
	2582.518	CROSSWALK PAINT	SQ FT	250			250
[5]	2582.518	CROSSWALK PREFORM THERMOPLASTIC	SQ FT	846	846		
[5],[6]	2582.603	PAVEMENT MARKING SPECIAL	LIN FT	139	139		

BASIS OF QUANTITIES		
SPEC NO	DESCRIPTION	RATE
2357.502	BITUMINOUS MATERIAL FOR TACK COAT	0.05 GAL / SQ YD / LIFT
2360.501	TYPE SP12.5 WEARING COURSE MIXTURE	116 LBS / SQ YD / IN
2575.508	SEED MIXTURE 25-121	61 LBS / ACRE
2575.508	HYDRAULIC REINFORCED FIBER MATRIX	3900 LBS / ACRE
2575.508	FERTILIZER TYPE 3	350 LBS / ACRE

INDEX OF TABULATION CHARTS		
TAB.	DESCRIPTION	SHEET NO.
A	REMOVALS, SAWING AND COMMON EX	3
B	AGGREGATE & BITUMINOUS SUMMARY	3
C	CONCRETE	3
D	TURF ESTABLISHMENT AND EROSION CONTROL	3


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

MNDOT STANDARD PLATES	
PLATE NO.	DESCRIPTION
4101D	RING CASTING FOR MANHOLE OR CATCH BASIN
4108F	ADJUSTING RINGS FOR CATCH BASINS AND MANHOLES
7038A	DETECTABLE WARNING SURFACE TRUNCATED DOMES
7100I	CONCRETE CURB AND GUTTER (DESIGN B AND DESIGN V)
7113A	CONCRETE APPROACH NOSE DETAIL
8000K	TEMPORARY CHANNELIZERS (3 SHEETS)

SEE TRAFFIC CONTROL SIGNAL SYSTEM PLANS ON PAGE 29 FOR MORE STANDARD PLATES

- [1] SEE SHEET NUMBER 22 FOR TABULATIONS AND LOCATIONS
- [2] NEED A 11 R-3030A WITH CURB BOX
- [3] CONTRACTOR SHALL PROVIDE A TRAFFIC CONTROL LAYOUT/PLAN TO THE ENGINEER FOR REVIEW AND APPROVAL AT LEAST 14 DAYS PRIOR TO COMMENCEMENT OF WORK. ALL TRAFFIC CONTROL MUST BE COMPLIANT WITH THE MOST CURRENT REVISIONS OF BOTH THE MMUTCD AND THE MNDOT TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS FIELD MANUAL.
- [4] PORTABLE CHANGEABLE MESSAGE SIGN TO BE INSTALLED 10 DAYS PRIOR TO COMMENCEMENT OF WORK
- [5] SEE SHEET NUMBER 24 FOR TABULATIONS AND LOCATIONS
- [6] ITEM REFERENCED AS "24" SOLID LINE STOP BAR PREFORMED THERMOPLASTIC" IN PERMANENT PAVEMENT MARKING TABULATION ON SHEET 24.

NO	DATE	BY	CHKD	APPR	REVISION
1	7-24-2023	AA	AA	AA	ADDED VIDEO DETECTOR SYSTEM TO SEQ

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
 PRINT NAME: Aaron Anderson
 SIGNATURE: 
 DATE: 07/24/23 LICENSE NO. 58957

DRAWN BY: APA DATE: 05/12/23
 DESIGN BY: APA DATE: 05/12/23
 CHECKED BY: ST DATE: 05/12/23



ANOKA COUNTY
 HIGHWAY DEPT.

SAP 002-601-063
 SAP 114-020-062
 CP 23-14

STATEMENT OF ESTIMATED QUANTITIES

Sheet 2 of 43 Sheets

REMOVALS, SAWING AND COMMON EX										A			
LOCATION	ALIGNMENT	STATION	TO	STATION	OFFSET	REMOVE (SPEC. 2104)				SAWING (SPEC. 2104)		COMMON EXCAVATION (SPEC. 2106)	NOTES
						BIT. PAVEMENT	CONC. MEDIAN	CONC. WALK	CONC. CURB & GUTTER	BIT. PAVEMENT	CONC. PAVEMENT		
						(SQ YD)	(SQ FT)	(SQ FT)	(LIN FT)	(LIN FT)	(LIN FT)		
NORTH QUAD	01NB_1	106+45	-	106+80	RT	12		204	49	58	10	10	
EAST QUAD	01NB_1	105+66	-	106+07	RT	12		345	54	61	16	10	[1]
SOUTH QUAD	01SB_1	15+76	-	16+10	LT	20		590	55	73	20	10	
WEST QUAD	01SB_1	16+44	-	16+84	LT	12		227	52	62	18	10	
MEDIAN	01NB_1	105+68	-	105+88	LT	15	80		56	75	8		
MEDIAN	01SB_1	16+66	-	16+83	RT	9	33		30	46	8		
PROJECT TOTAL						80	113	1366	296	375	80	40	

REMOVALS NOTES:
 [1] REMOVAL OF V CURB INCIDENTAL TO REMOVE CONC WALK


AGGRAGATE & BITUMINOUS SUMMARY										B	
LOCATION	ALIGNMENT	STATION	TO	STATION	OFFSET	2360 BITUMINOUS PATCHING MIXTURE TON		2357 BIT TACK COAT		AGGREGATE BASE CLASS 5 TON	NOTES
						GAL	TON	GAL	TON		
						NORTH QUAD	01NB_1	106+45	-		
EAST QUAD	01NB_1	105+66	-	106+07	RT	4	3	3	8		
SOUTH QUAD	01SB_1	15+76	-	16+10	LT	5	4	4	15		
WEST QUAD	01SB_1	16+44	-	16+84	LT	4	3	6	6		
MEDIAN	01NB_1	105+68	-	105+88	LT	7	4				
MEDIAN	01SB_1	16+66	-	16+83	RT	3	3				
PROJECT TOTAL						27	20	34			

CONCRETE												C	
LOCATION	ALIGNMENT	STATION TO	STATION	OFFSET	CONCRETE CURB & GUTTER DESIGN B616	CONCRETE CURB & GUTTER DESIGN B612	CONCRETE CURB DESIGN V10	6" CONCRETE WALK	4" CONCRETE WALK	DRILL AND GROUT REINF BAR (EPOXY COATED)	TRUNCATED DOMES	CONCRETE MEDIAN	CONCRETE MEDIAN NOSE SPECIAL
					LIN FT	LIN FT	LIN FT	SQ FT	SQ FT	EACH	SQ FT	SQ YD	EACH
NORTH QUAD	01NB_1	106+45	-	106+80	RT	50		217		20	36		
EAST QUAD	01NB_1	105+66	-	106+07	RT	54	24	387		20	24		
SOUTH QUAD	01SB_1	15+76	-	16+10	LT	56		602	96	20	24		
WEST QUAD	01SB_1	16+44	-	16+84	LT	62		235		20	24		
MEDIAN	01NB_1	105+68	-	105+88	LT		34					2	1
MEDIAN	01SB_1	16+66	-	16+83	RT		22					5	1
PROJECT TOTAL					212	56	24	1501	96	80	108	7	2

TURF ESTABLISHMENT AND EROSION CONTROL											D
LOCATION	ALIGNMENT	STATION	TO	STATION	OFFSET	STORM DRAIN INLET PROTECTION	COMMON TOPSOIL BORROW	SEEDING	SEED MIXTURE 25-121	HYDRAULIC REINFORCED FIBER MATRIX	FERTILIZER TYPE 3
						EACH	CU YD	ACRE	POUND	POUND	POUND
NORTH QUAD	01NB_1	106+45	-	106+80	RT	1	4	0.01	1	39	3.5
EAST QUAD	01NB_1	105+66	-	106+07	RT	1	4	0.01	1	39	3.5
SOUTH QUAD	01SB_1	15+76	-	16+10	LT		5	0.01	1	39	3.5
WEST QUAD	01SB_1	16+44	-	16+84	LT	1	5	0.01	1	39	3.5
MEDIAN	01NB_1	105+68	-	105+88	LT						
MEDIAN	01SB_1	16+66	-	16+83	RT						
PROJECT TOTAL						3	18	0.04	4	156	14

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-601-063 Xavle Sign\Plan\002601063_tab01.dgn 06/27/2023 8:02:24 AM

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
 PRINT NAME: Aaron Anderson
 SIGNATURE: 
 DATE: 06/27/23 LICENSE NO. 58657

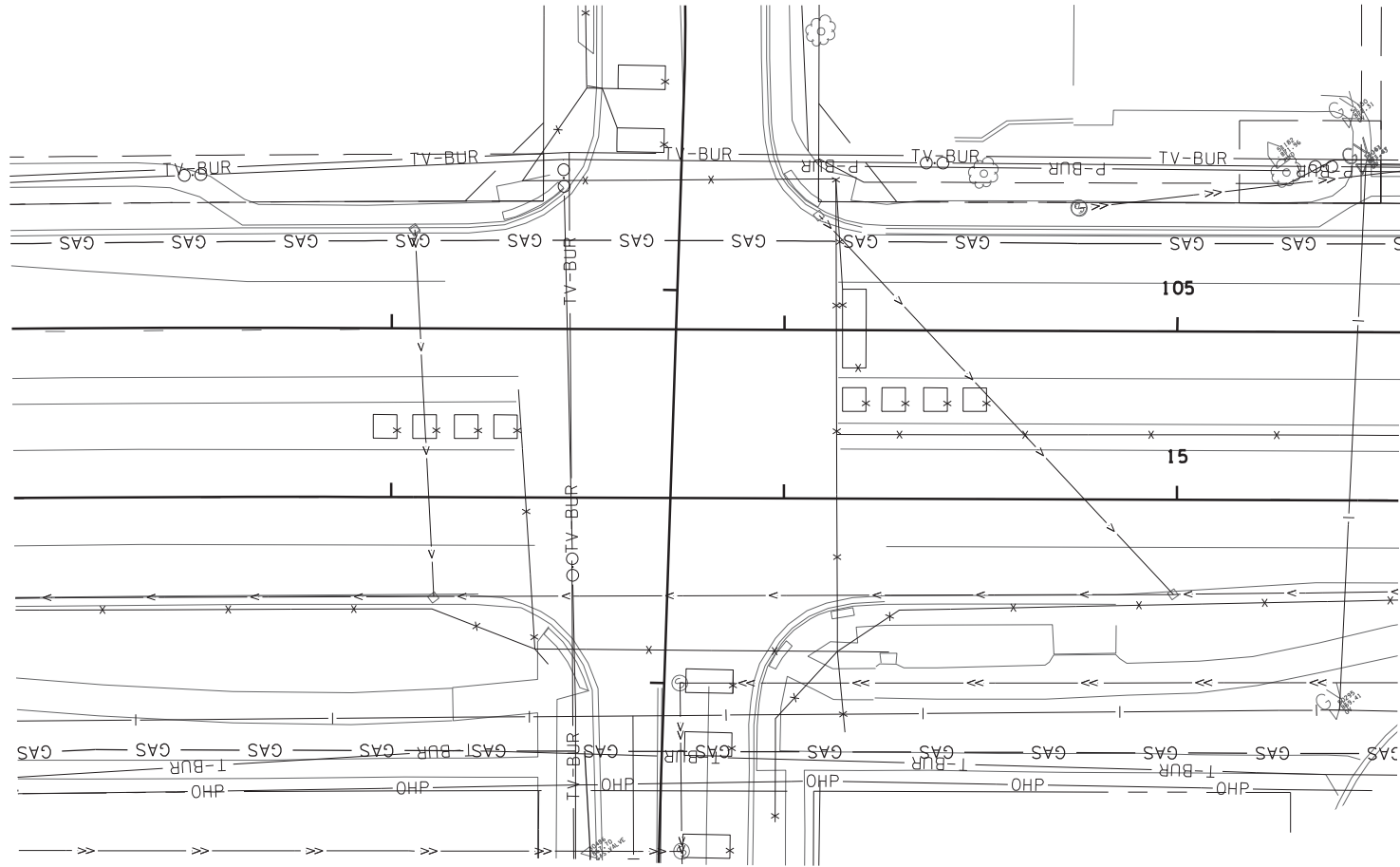
DRAWN BY: APA DATE: 05/12/23
 DESIGN BY: APA DATE: 05/12/23
 CHECKED BY: ST DATE: 05/12/23



ANOKA COUNTY
 HIGHWAY DEPT.

SAP 002-601-063
 SAP 114-020-062
 CP 23-14

TABULATIONS
 Sheet 3 of 43 Sheets



LEGEND

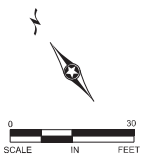
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— TV-BUR —	COMCAST
— P-BUR —	XCEL ENERGY
— OHP —	
— T-BUR —	ZAYO
*	TRAFFIC SIGNAL
->	EXISTING STORM SEWER
->>	EXISTING SAN SEWER
	EXISTING WATER MAIN
---	EXISTING R/W
---	INPLACE PERM ESMT

GENERAL NOTES:

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

THE CONTRACTOR SHALL CALL GOPHER STATE ONE CALL (GSOC) AT LEAST 48 HOURS PRIOR TO EXCAVATION OR CONSTRUCTION.

THE CONTRACTOR SHALL COORDINATE THEIR WORK AND COOPERATE WITH THE UTILITY OWNERS AND THEIR FORCES. SOME UTILITIES MAY NEED TO BE RELOCATED CONCURRENTLY WITH THE CONTRACTOR'S WORK.



NO	DATE	BY	CKD	APPR	REVISION

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

PRINT NAME: Aaron Anderson

SIGNATURE:

DATE: 06/27/23 LICENSE NO. 58657

DRAWN BY: APA DATE: 05/12/23

DESIGN BY: APA DATE: 05/12/23

CHECKED BY: ST DATE: 05/12/23



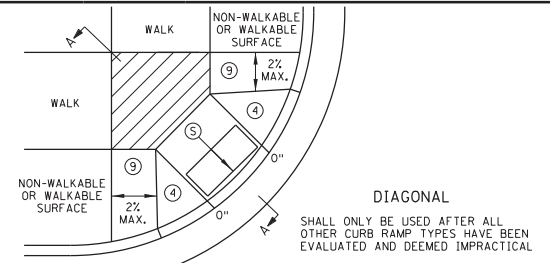
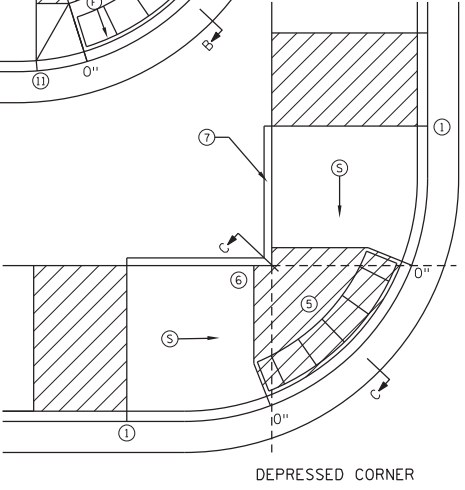
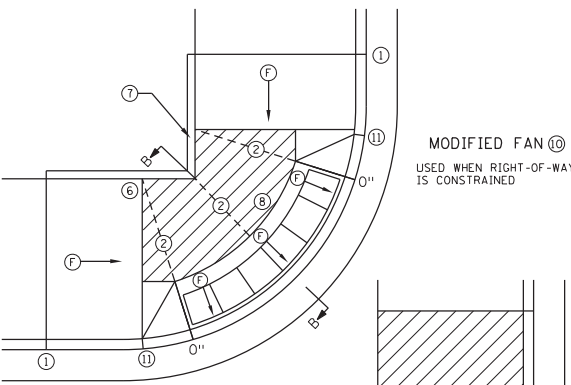
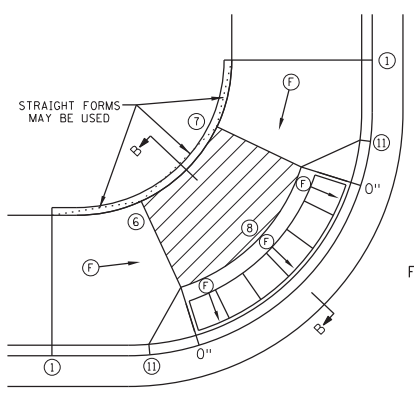
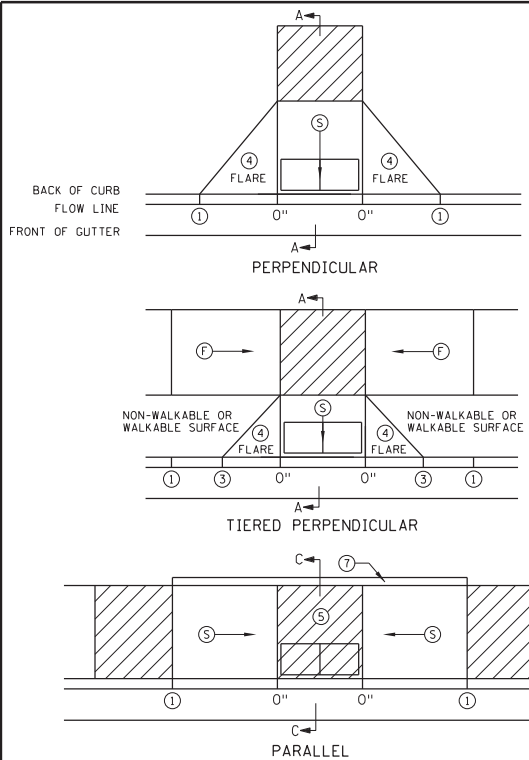
SAP 002-601-063
SAP 114-020-062
CP 23-14

INPLACE UTILITIES & TOPOGRAPHY PLAN

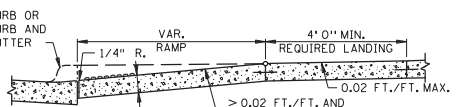
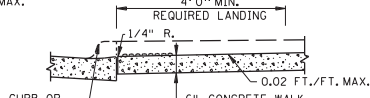
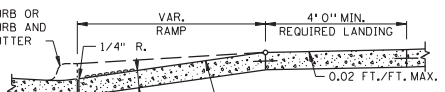
Sheet 4 of 43 Sheets

PLOTTED/REVISED: 06/27/2023

DISTRICT #: sse/p/015NAME/ess
PLOT NAME: sse/p/015NAME/ess
PATH & FILENAME: P:\002-601-063 Job's Signal Plan\002601063_5T01.dgn



- 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 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).
 - TO ENSURE RAMPS AND LANDINGS ARE PROPERLY CONSTRUCTED, ALL INITIAL LANDINGS AT A TOP OF A RAMPED SURFACE (RUNNING SLOPE GREATER THAN 2%) SHALL BE FORMED AND PLACED SEPARATELY IN AN INDEPENDENT CONCRETE POUR, FOLLOW SIDEWALK REINFORCEMENT DETAILS ON SHEET 6 OF 6 FOR ALL SEPARATELY POURED INITIAL LANDINGS.
 - WHEN SIDEWALK IS AT BACK OF CURB, TOP OF CURB SHALL MATCH PROPOSED ADJACENT WALK GRADE. MAINTAIN POSITIVE BOULEVARD DRAINAGE TO TOP OF CURB.
 - ALL RAMP TYPES SHOULD HAVE A MINIMUM 3' LONG RAMP LENGTH.
 - 4" MINIMUM WIDTH OF DETECTABLE WARNING IS REQUIRED FOR ALL RAMPS. DETECTABLE WARNINGS SHALL CONTINUOUSLY EXTEND FOR A MIN. OF 24" IN THE PATH OF TRAVEL. DETECTABLE WARNING TO COVER THE ENTIRE PAR WIDTH OF SHARED-USE PATHS AND THE ENTIRE PAR WIDTH OF THE WALK WITH THE EXCEPTION OF 3" MAXIMUM ON EACH OUTSIDE EDGE WHICH ENSURES THE DETECTABLE WARNINGS ARE ENCASED IN CONCRETE WHEN ADJACENT TO TURF. WHEN ADJACENT TO CONCRETE FLARES 0" - 3" OFFSET IS ALLOWED.
 - WHEN DESIGNING OR ORDERING RECTANGULAR DETECTABLE WARNING SURFACES SHOULD BE 6" LESS THAN THE INCOMING PAR. ARC LENGTH OF THE RADIAL DETECTABLE WARNINGS SHOULD NOT BE GREATER THAN 20 FEET.
 - RECTANGULAR DETECTABLE WARNINGS SHALL BE SETBACK 3" FROM THE BACK OF CURB. RADIAL DETECTABLE WARNINGS SHALL BE SETBACK 3" MINIMUM TO 6" MAXIMUM FROM THE BACK OF CURB.
 - MATCH FULL HEIGHT CURB.
 - 2" MINIMUM DEPTH LANDING REQUIRED ACROSS TOP OF RAMP.
 - 3" HIGH CURB WHEN USING A 3' LONG RAMP, 4" HIGH CURB WHEN USING A 4' LONG RAMP.
 - SEE SHEET 4 OF 6, TYPICAL SIDE TREATMENT OPTIONS, FOR DETAILS ON FLARES AND RETURNED CURBS.
 - 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.
 - 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)
 - WHEN ADJACENT TO GRASS, GRADING SHALL ALWAYS BE USED WHEN FEASIBLE. V CURB, IF USED, SHALL BE PLACED OUTSIDE THE SIDEWALK LIMITS WHEN RIGHT OF WAY ALLOWS. WHEN ADJACENT TO PARKING LOTS, CONCRETE OR BITUMINOUS TAPERS LESS THAN 5% RUNNING SLOPE SHOULD BE USED OVER V CURB TO REDUCE TRIPPING HAZARDS AND FACILITATE SNOW & ICE REMOVAL.
 - A 7" MIN TOP RADIUS GRADE BREAK IS REQUIRED TO BE CONSTRUCTIBLE.
 - PAVE FULL WALK WIDTH.
 - "S" SLOPES ON FANS SHALL ONLY BE USED WHEN ALL OTHER FEASIBLE OPTIONS HAVE BEEN EVALUATED AND DEEMED IMPRACTICAL.
 - INTERMEDIATE CURB HEIGHTS TAPER SHALL RISE AT 8-10% TO A MINIMUM 3" CURB HEIGHT. REDUCE INTERMEDIATE CURB HEIGHT TO 2" INCHES IF NECESSARY TO MATCH ADJACENT BOULEVARD OR SIDEWALK GRADES.



LEGEND

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

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

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

MINNESOTA
DEPARTMENT OF TRANSPORTATION

STANDARD PLAN 5-297.250 1 OF 6

APPROVED: 11-04-2021
REVISED:
Tom St...
THOMAS STYBICKI
STATE DESIGN ENGINEER

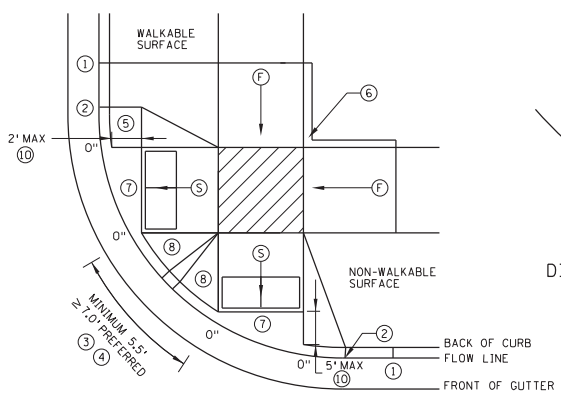
STATE PROJ. NO. SAP 002-601-063
SAP 114-020-062

PEDESTRIAN CURB RAMP DETAILS

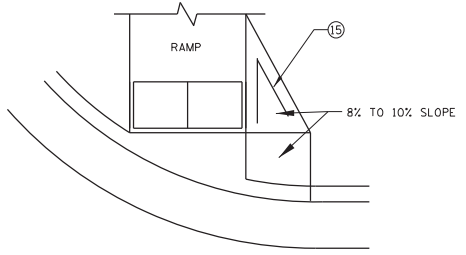
CP 23-14 SHEET NO. 5 OF 43 SHEETS

PLOTTED/REVISED: 06/27/2023

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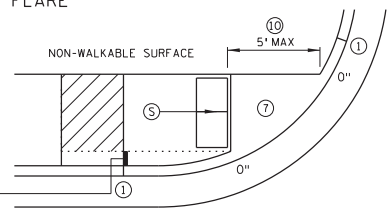


COMBINED DIRECTIONAL

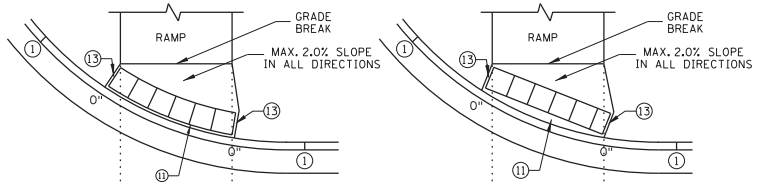


DIRECTIONAL RAMP WALKABLE FLARE

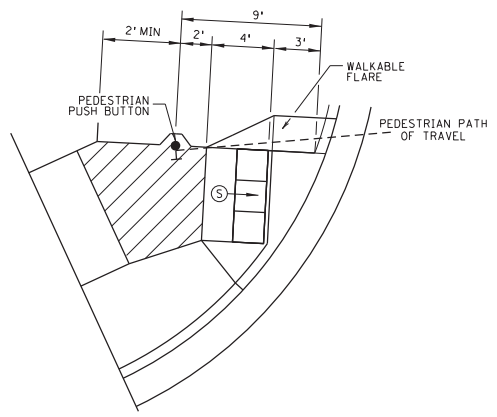
IF NON-CONCRETE BLVD. IS CONSTRUCTED AND IS LESS THAN 2' IN WIDTH AT TOP OF CURB TRANSITION, PAVE CONCRETE RAMP WIDTH TO ADJACENT BACK OF CURB.



STANDARD ONE-WAY DIRECTIONAL 9

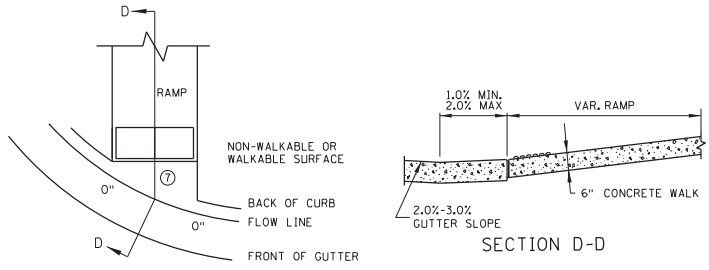


ONE-WAY DIRECTIONAL WITH DETECTABLE WARNING AT BACK OF CURB 12



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)



CURB FOR DIRECTIONAL RAMPS 14

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 8' FROM THE BACK OF CURB BEING THE PREFERRED DISTANCE, ONLY APPLICABLE WHEN THE INITIAL RAMP RUNNING SLOPE IS OVER 5.0%.
- SECONDARY CURB RAMP LANDINGS ARE REQUIRED FOR EVERY 30' OF VERTICAL RISE WHEN THE LONGITUDINAL SLOPE IS GREATER THAN 5.0%.
- CONTRACTION JOINTS SHALL BE CONSTRUCTED ALONG ALL GRADE BREAKS WITHIN THE PAR. 1/4" DEEP VISUAL JOINTS SHALL BE USED AT THE TOP GRADE BREAK OF CONCRETE FLARES ADJACENT TO WALKABLE SURFACES.
- ALL GRADE BREAKS WITHIN THE PAR SHALL BE PERPENDICULAR TO THE PATH OF TRAVEL. THUS BOTH SIDES OF A SLOPED WALKING SURFACE MUST BE EQUAL LENGTH.
- TO ENSURE INITIAL RAMPS AND INITIAL LANDINGS ARE PROPERLY CONSTRUCTED, LANDINGS SHALL BE CAST SEPARATELY, FOLLOW SIDEWALK REINFORCEMENT DETAILS ON SHEET 6 AND THE ADA SPECIAL PROVISION (PROSECUTION OF WORK).
- TOP OF CURB SHALL MATCH PROPOSED ADJACENT WALK GRADE.
- WHEN THE BOULEVARD IS 4' WIDE OR LESS, THE TOP OF CURB TAPER SHALL MATCH THE RAMP SLOPES TO REDUCE NEGATIVE BOULEVARD SLOPES FROM THE TOP BACK OF CURB TO THE PAR.
- ALL RAMP TYPES SHOULD HAVE A MINIMUM 3' LONG RAMP LENGTH.
- 4' MINIMUM WIDTH OF DETECTABLE WARNING IS REQUIRED FOR ALL RAMPS. DETECTABLE WARNINGS SHALL CONTINUOUSLY EXTEND FOR A MIN. OF 24" IN THE PATH OF TRAVEL. DETECTABLE WARNING TO COVER THE ENTIRE PAR WIDTH OF SHARED-USE PATHS AND THE ENTIRE PAR WIDTH OF THE WALK WITH THE EXCEPTION OF 3' MAXIMUM ON EACH OUTSIDE EDGE WHICH ENSURES THE DETECTABLE WARNINGS ARE ENCASED IN CONCRETE WHEN ADJACENT TO TURF. WHEN ADJACENT TO CONCRETE FLARES 0' - 3' OFFSET IS ALLOWED.
- WHEN DESIGNING OR ORDERING RECTANGULAR DETECTABLE WARNING SURFACES SHOULD BE 6" LESS THAN THE INCOMING PAR. ARC LENGTH OF THE RADIAL DETECTABLE WARNINGS SHOULD NOT BE GREATER THAN 20' FEET.
- RADIAL DETECTABLE WARNINGS SHALL BE SETBACK 3" MINIMUM TO 6" MAXIMUM FROM THE BACK OF CURB. SEE NOTES 10 & 11 FOR INFORMATION REGARDING RECTANGULAR DETECTABLE WARNING PLACEMENT.
- 1 MATCH FULL CURB HEIGHT.
- 2 3" HIGH CURB WHEN USING A 3' LONG RAMP
4" HIGH CURB WHEN USING A 4' LONG RAMP.
- 3 3" MINIMUM CURB HEIGHT (5.5' MIN. DISTANCE REQUIRED BETWEEN DOMES)
4" PREFERRED (7' MIN. DISTANCE REQUIRED BETWEEN DOMES).
- 4 THE "BUMP" IN BETWEEN THE RAMPS SHOULD NOT BE IN THE PATH OF TRAVEL FOR COMBINED DIRECTIONAL RAMPS. IF THIS OCCURS MODIFY THE RAMP LOCATION OR SWITCH RAMP TO A FAN/DEPRESSED CORNER.
- 5 WHEN USING CONCRETE PAVED FLARES ON THE OUTSIDE OF DIRECTIONAL RAMPS, AND ADJACENT TO A WALKABLE SURFACE, DIRECTIONAL RAMP FLARES SHALL BE USED. SEE THE DETAIL ON THIS SHEET.
- 6 GRADING SHALL ALWAYS BE USED WHEN FEASIBLE. V CURB, IF USED, SHALL BE PLACED OUTSIDE THE SIDEWALK LIMITS. WHEN RIGHT OF WAY ALLOWS, WHEN ADJACENT TO PARKING LOTS, CONCRETE OR BITUMINOUS TAPERS SHOULD BE USED OVER V CURB TO REDUCE TRIPPING HAZARDS AND FACILITATE SNOW & ICE REMOVAL.
- 7 MAX. 2.0% SLOPE IN ALL DIRECTIONS IN FRONT OF GRADE BREAK AND DRAIN TO FLOW LINE. SHALL BE CONSTRUCTED INTEGRAL WITH CURB AND GUTTER.
- 8 8% TO 10% WALKABLE FLARE.
- 9 PLACE DOMES AT THE BACK OF CURB WHEN ALLOWABLE SETBACK CRITERIA IS EXCEEDED.
- 10 FRONT EDGE OF DETECTABLE WARNING SHALL BE SET BACK 2' MAXIMUM WHEN ADJACENT TO WALKABLE SURFACE, AND 5' MAXIMUM WHEN ADJACENT TO NON-WALKABLE SURFACE WITH ONE CORNER SET 3' FROM BACK OF CURB. A WALKABLE SURFACE IS DEFINED AS A PAVED SURFACE ADJACENT TO A CURB RAMP WITHOUT RAISED OBSTACLES THAT COULD MISTAKENLY BE TRAVERSED BY A USER WHO IS VISUALLY IMPAIRED.
- 11 RECTANGULAR DETECTABLE WARNINGS MAY BE SETBACK UP TO 9" FROM THE BACK OF CURB WITH CORNERS SET 3" FROM BACK OF CURB. IF 9" SETBACK IS EXCEEDED USE RADIAL DETECTABLE WARNINGS.
- 12 FOR DIRECTIONAL RAMPS WITH DETECTABLE WARNINGS PLACED AT THE BACK OF CURB, THE DETECTABLE WARNINGS SHALL COVER THE ENTIRE WIDTH OF THE WALK/PATH. THIS ENSURES A DETECTABLE EDGE AND HELPS ELIMINATE THE CURB TAPER OBSTRUCTING THE PATH OF PEDESTRIAN TRAVEL.
- 13 THE CONCRETE WALK SHALL BE FORMED AND CONSTRUCTED PERPENDICULAR TO THE BACK OF CURB. MAINTAIN 3" BETWEEN EDGE OF DOMES AND EDGE OF CONCRETE.
- 14 TO BE USED FOR ALL DIRECTIONAL RAMPS, EXCEPT WHERE DOMES ARE PLACED ALONG THE BACK OF CURB.
- 15 PLACE 2 NO. 4 BARS 4 INCHES FROM SIDE OF FORMS WITH A MINIMUM 2 INCHES OF CONCRETE COVER ALONG EACH SIDE OF FLARE (INCIDENTAL).

LEGEND

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

- (S) INDICATES PEDESTRIAN RAMP - SLOPE SHALL BE BETWEEN 5.0% MINIMUM AND 8.3% MAXIMUM IN THE DIRECTION SHOWN AND THE CROSS SLOPE SHALL NOT EXCEED 2.0%.
- (F) INDICATES PEDESTRIAN RAMP - SLOPE SHALL BE GREATER THAN 2.0% AND LESS THAN 5.0% IN THE DIRECTION SHOWN AND CROSS SLOPE SHALL NOT EXCEED 2.0%.
- [Hatched Box] LANDING AREA - 4' x 4' MIN. (5' x 5' MIN. PREFERRED) DIMENSIONS AND MAX 2.0% SLOPE IN ALL DIRECTIONS. LANDING SHALL BE FULL WIDTH OF INCOMING PAR.
- X" CURB HEIGHT

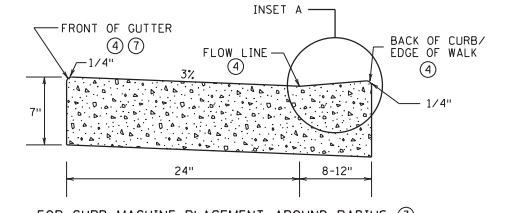
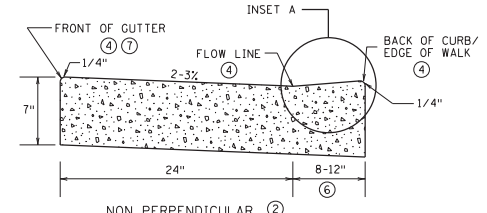
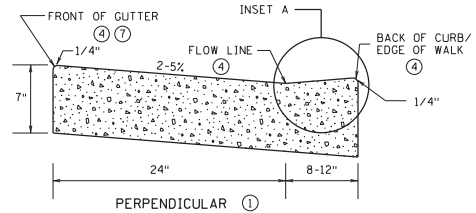
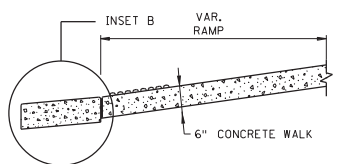
REVISION:
 APPROVED: 11-04-2021

 JEFF A. PERKINS
 OPERATIONS DIVISION

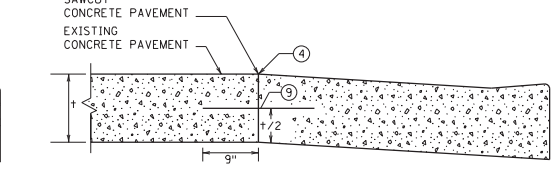
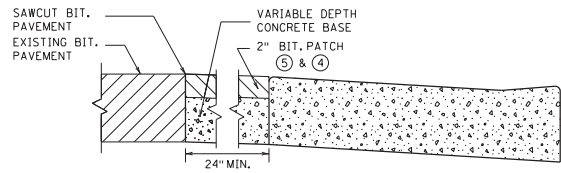
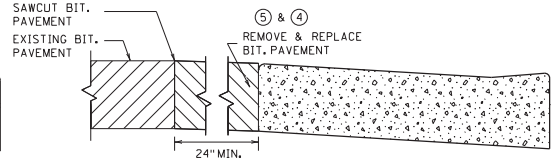
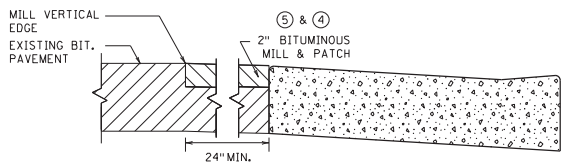
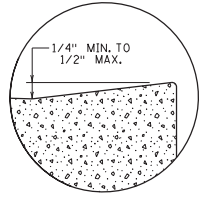
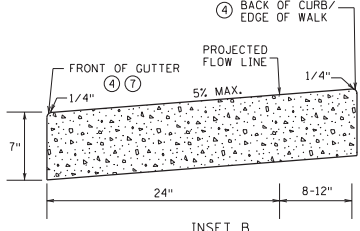
	STANDARD PLAN 5-297.250	2 OF 6	PEDESTRIAN CURB RAMP DETAILS
DEPARTMENT OF TRANSPORTATION	 THOMAS J. YRBIK STATE DESIGN ENGINEER	APPROVED: 11-04-2021 REVISED:	SAP 002-601-063 SAP 114-020-062
STATE PROJ. NO.		SAP 002-601-063 SAP 114-020-062	CP 23-14 SHEET NO. 6 OF 43 SHEETS

PLOTTED/REVISED: 06/27/2023

DISTRICT #: 556/PLOT/NAME/SS PATH & FILENAME: P:\002-601-063 Job's Signal\Plan\002601063_5701.dgn



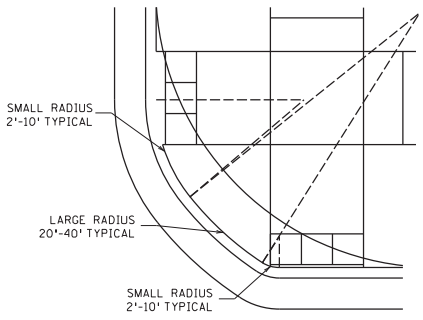
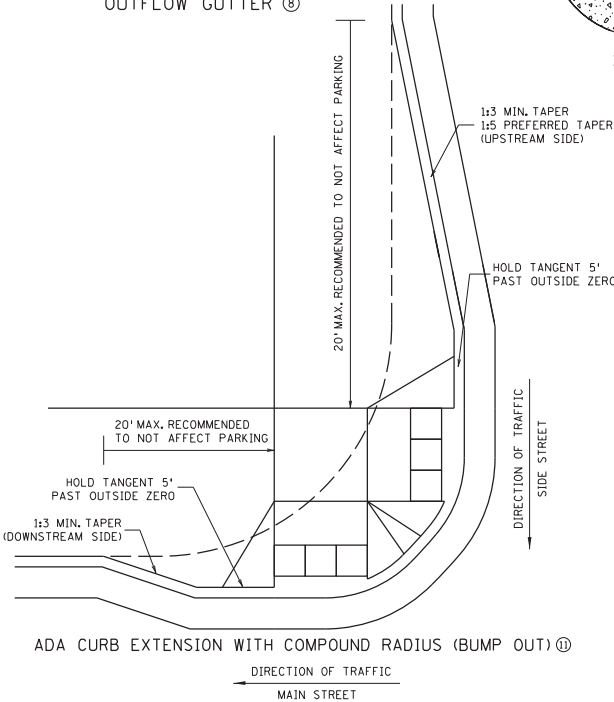
PEDESTRIAN ACCESS ROUTE CURB & GUTTER DETAIL



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



REVISION:
 APPROVED: 11-04-2021
 Jeff A. Perkins
 OPERATIONS DIVISION

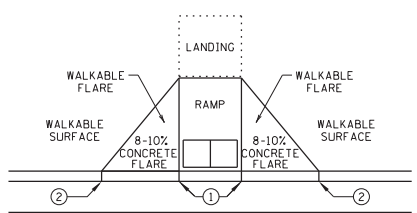
MINNESOTA DEPARTMENT OF TRANSPORTATION
 STANDARD PLAN 5-297.250 3 OF 6
 APPROVED: 11-04-2021
 REVISION:
 THOMAS STYBICKI
 STATE DESIGN ENGINEER

PEDESTRIAN CURB RAMP DETAILS

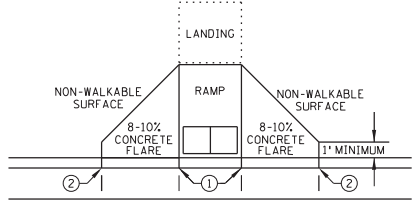
STATE PROJ. NO. SAP 002-601-063 SAP 114-020-062 CP 23-14 SHEET NO. 7 OF 43 SHEETS

PLOTTED/REVISED: 06/27/2023

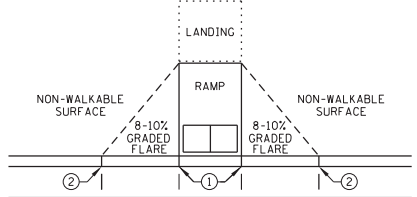
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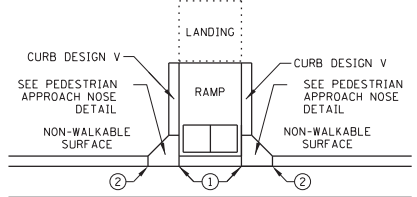
PAVED FLARES
ADJACENT TO WALKABLE SURFACE



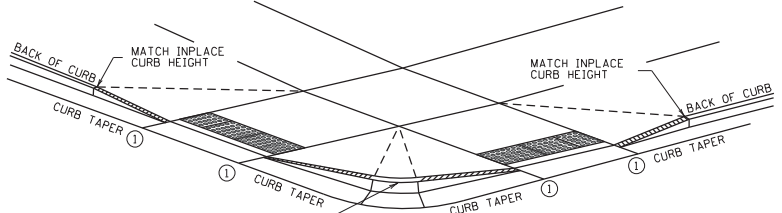
PAVED FLARES
ADJACENT TO NON-WALKABLE SURFACE



GRADED FLARES

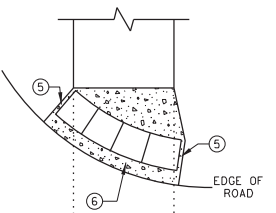


RETURNED CURB ④
TYPICAL SIDE TREATMENT OPTIONS ③ ⑩

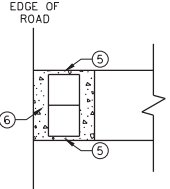


3" MINIMUM CURB HEIGHT, 4" PREFERRED (MEASURED AT FRONT FACE OF CURB)
 FOR A MIN. 6" LENGTH (MEASURED ALONG FLOW LINE)

DETECTABLE EDGE WITH CURB AND GUTTER ⑦

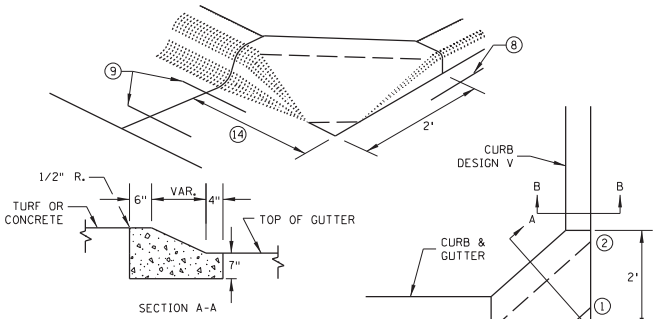


RADIAL DETECTABLE WARNING

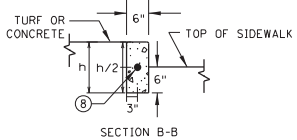


RECTANGULAR DETECTABLE WARNING

DETECTABLE EDGE WITHOUT CURB AND GUTTER

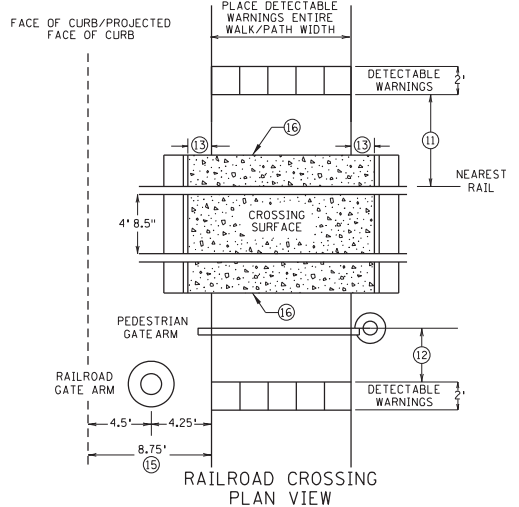


SECTION A-A



SECTION B-B

PEDESTRIAN APPROACH NOSE DETAIL (FOR RETURNED CURB SIDE TREATMENT)



RAILROAD CROSSING PLAN VIEW

- NOTES:**
- ① INTERMEDIATE CURB HEIGHTS TAPER SHALL RISE AT 8-10% TO A MINIMUM 3 INCH CURB HEIGHT. INCREASE CURB TAPER LENGTH AT LESS THAN 8% OR REDUCE INTERMEDIATE CURB HEIGHT TO 2+ INCHES IF NECESSARY TO MATCH ADJACENT BOULEVARD OR SIDEWALK GRADES.
 - ② 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 TRAVELED 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'S FROM THE BACK OF CURB.
 - ③ 0" CURB HEIGHT. SEE INSERT A ON SHEET 3 OF 6.
 - ④ FULL CURB HEIGHT.
 - ⑤ 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.
 - ⑥ TYPICALLY USED FOR MEDIANS AND ISLANDS.
 - ⑦ 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.
 - ⑧ 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.
 - ⑨ 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.
 - ⑩ 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.
 - ⑪ 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.
 - ⑫ SIDE TREATMENT EXAMPLES SHOWN ARE WHEN THE INITIAL LANDING IS APPROXIMATELY LEVEL WITH THE FULL HEIGHT CURB (I.E. 6" LONG RAMP FOR 6" HIGH CURB). WHEN THE INITIAL LANDING IS MORE THAN 1" BELOW FULL HEIGHT CURB REFER TO SHEETS 1 & 2 TO MODIFY THE CURB HEIGHT TAPERS AND MAINTAIN POSITIVE BOULEVARD DRAINAGE. CONSTRUCT THESE TAPERS AT 0'-3" AT 8-10%, THEN LESS THAN 5% FROM 3" CURB TO FULL CURB HEIGHT.
 - ⑬ 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.
 - ⑭ 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 ⑬.
 - ⑮ CROSSING SURFACE SHALL EXTEND 2' MINIMUM PAST THE OUTSIDE EDGE OF WALK OR SHARED-USE PATH.
 - ⑯ 3' FOR MEDIANS AND SPLITTER ISLANDS. NOSE CAN BE REDUCED TO 2' ON FREE RIGHT ISLANDS.
 - ⑰ 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.
 - ⑱ CONSTRUCT WITH EXPANSION MATERIAL PER MNDOT SPECIFICATION 3702 TYPES A-E. EXPANSION MATERIAL SHALL MATCH FULL HEIGHT OF ADJACENT CONCRETE.

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

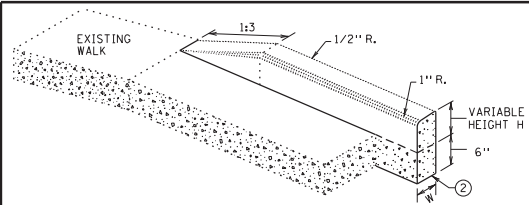


STANDARD PLAN 5-297.250	4 OF 6
APPROVED: 11-04-2021	REVISED:
<i>Tom Styrzbeck</i> THOMAS STYRZBECK STATE DESIGN ENGINEER	

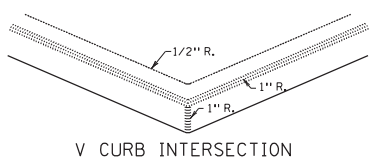
PEDESTRIAN CURB RAMP DETAILS

PLOTTED/REVISED: 06/27/2023

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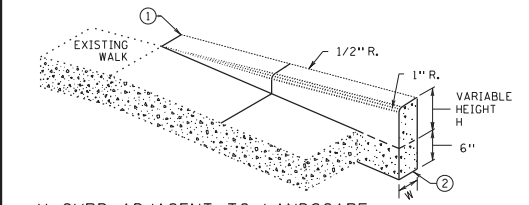


V CURB ADJACENT TO LANDSCAPE
CURB WITHIN SIDEWALK LIMITS

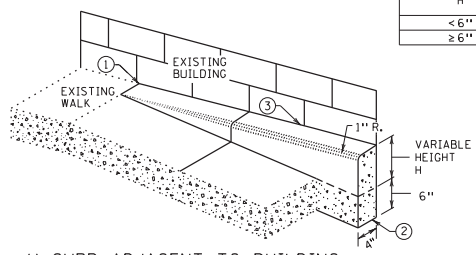


V CURB INTERSECTION

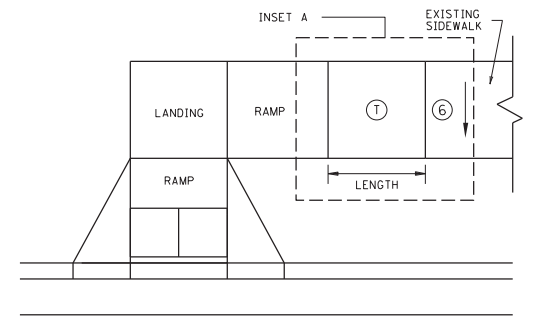
CONCRETE CURB DESIGN V	
CURB HEIGHT H	CURB WIDTH W
< 6"	4"
≥ 6"	6"



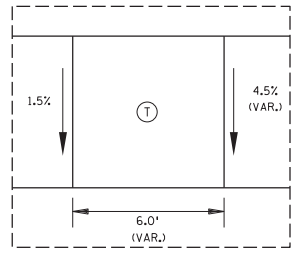
V CURB ADJACENT TO LANDSCAPE
CURB OUTSIDE SIDEWALK LIMITS



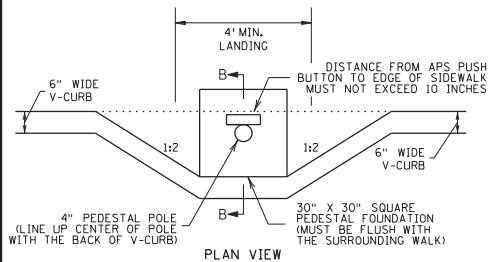
V CURB ADJACENT TO BUILDING
OR BARRIER



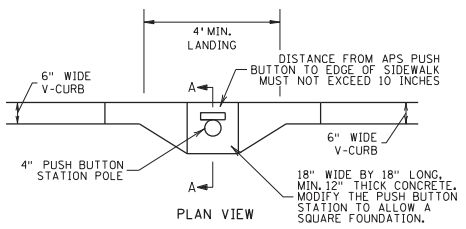
TRANSITION PANEL (4) (5)



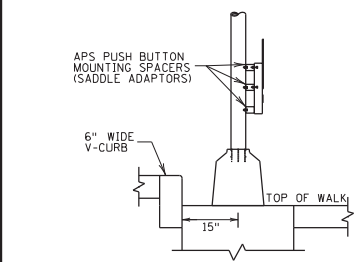
INSET A



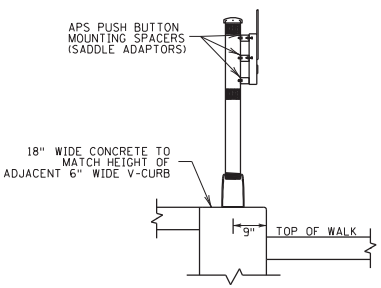
PLAN VIEW



PLAN VIEW



SECTION B-B



SECTION A-A

SIGNAL PEDESTAL & PUSH BUTTON (V-CURB)

PUSH BUTTON STATION (V-CURB)

NOTES:

- A WALKABLE FLARE IS AN 8-10% CONCRETE FLARE THAT IS REQUIRED WHEN THE FLARE IS ADJACENT TO A WALKABLE SURFACE, OR WHEN THE PEDESTRIAN PATH OF TRAVEL OF A PUSH BUTTON TRAVERSES THE FLARE.
- ALL V CURB CONTRACTION JOINTS SHALL MATCH CONCRETE WALK JOINTS.
- WHERE RIGHT-OF-WAY ALLOWS, USE OF V CURB SHOULD BE MINIMIZED. GRADING ADJACENT TURF OR SLOPING ADJACENT PAVEMENT IS PREFERRED.
- V CURB SHALL BE PLACED OUTSIDE THE SIDEWALK LIMITS WHEN RIGHT OF WAY ALLOWS.
- V CURB NEXT TO BUILDING SHALL BE A 4" WIDTH AND SHALL MATCH PREVIOUS TOP OF SIDEWALK ELEVATIONS.
- (1) END TAPERS AT TRANSITION SECTION SHALL MATCH INPLACE SIDEWALK GRADES.
- (2) ALL V CURB SHALL MATCH BOTTOM OF ADJACENT WALK.
- (3) CONSTRUCT USING APPROVED EXPANSION MATERIAL PER MNDOT TYPE A-E EXPANSION. LEAVE A MINIMUM 1/2" TOP GAP AND SEAL WITH MNDOT APPROVED SILICONE PER MNDOT SPEC 3722.
- (4) THE MAX. RATE OF CROSS SLOPE TRANSITIONING IS 1' LINEAR FOOT OF SIDEWALK PER HALF PERCENT CROSS SLOPE. WHEN PAR WIDTH IS GREATER THAN 6' OR THE RUNNING SLOPE IS GREATER THAN 5%, DOUBLE THE CALCULATED TRANSITION LENGTH.
- (5) TRANSITION PANEL(S) ARE TO ONLY BE USED AFTER THE RAMP, OR IF NEEDED, LANDING ARE AT THE FULL CURB HEIGHT (TYPICAL SECTION).
- (6) EXISTING CROSS SLOPE GREATER THAN 2.0%.

LEGEND

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

- (5) INDICATES PEDESTRIAN RAMP - SLOPE SHALL BE BETWEEN 5.0% MINIMUM AND 8.3% MAXIMUM IN THE DIRECTION SHOWN AND THE CROSS SLOPE SHALL NOT EXCEED 2.0%.
- LANDING AREA - 4' X 4' MIN. (5' X 5' MIN. PREFERRED) DIMENSIONS AND MAX 2.0% SLOPE IN ALL DIRECTIONS. LANDING SHALL BE FULL WIDTH OF INCOMING PARS.
- (1) TRANSITION PANEL(S) - TO BE USED FOR TRANSITIONING THE CROSS-SLOPE OF A RAMP TO THE EXISTING WALK CROSS-SLOPE. RATE OF TRANSITION SHOULD BE 0.5% PER 1 LINEAR FOOT OF WALK. SEE THIS SHEET FOR ADDITIONAL INFORMATION.

REVISION:
 APPROVED: 11-04-2021



STANDARD PLAN 5-297.250 5 OF 6
 APPROVED: 11-04-2021
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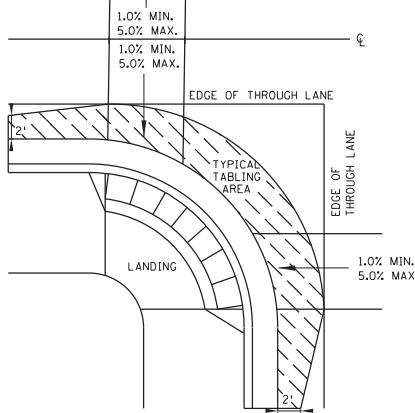
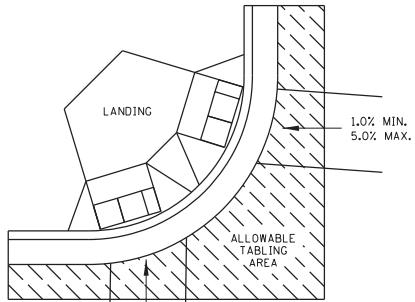
 THOMAS J. YRBIKI
 STATE DESIGN ENGINEER

PEDESTRIAN CURB RAMP DETAILS

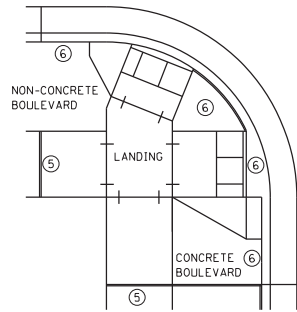
STATE PROJ. NO. SAP 002-601-063 CP 23-14 SHEET NO. 9 OF 43 SHEETS
 SAP 114-020-062

PLOTTED/REVISED: 06/27/2023

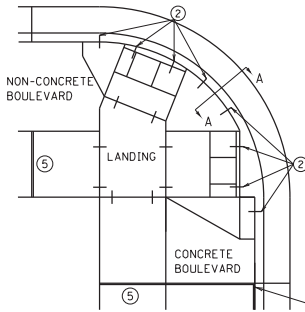
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CURB LINE AND ROAD CROSSING ADJUSTMENTS



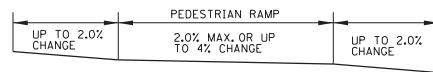
EXPANSION MATERIAL PLACEMENT FOR CONCRETE ROADWAYS



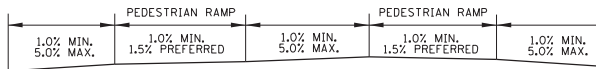
CURB LINE REINFORCEMENT PLACEMENT ON BITUMINOUS ROADWAYS



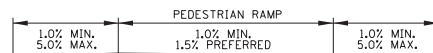
FLOW LINE PROFILE "TABLE" - TWIN PERPENDICULARS



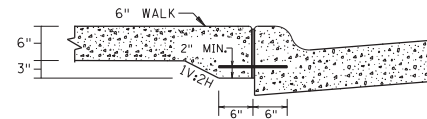
FLOW LINE PROFILE "TABLE" - FAN



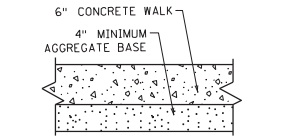
FLOW LINE PROFILE RAISE - TWIN PERPENDICULARS



FLOW LINE PROFILE RAISE - FAN

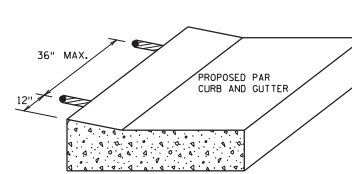


SECTION VIEW A-A THICKENED SECTION THROUGH CURB RAMP FLARES

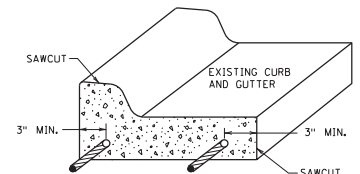


TYPICAL SIDEWALK SECTION WITHIN INTERSECTION CORNER

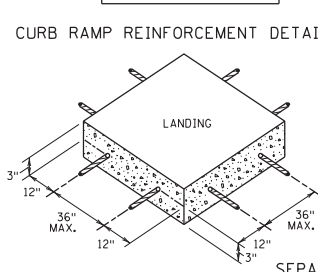
END SILL CURB AT TOP OF CURB RAMP AND DRIVEWAY FLARES.



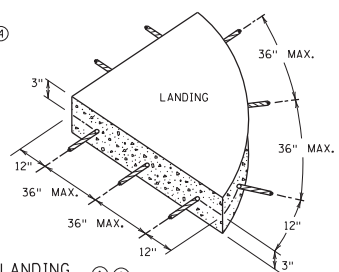
CURB RAMP REINFORCEMENT DETAILS



CURB AND GUTTER REINFORCEMENT



SEPARATE LANDING POUR REINFORCEMENT



GENERAL NOTES:

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

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

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

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

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

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

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

NOTES:

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

REVISION:
APPROVED: 11-04-2021
Jeff A. Perkins
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STANDARD PLAN 5-297.250 6 OF 6

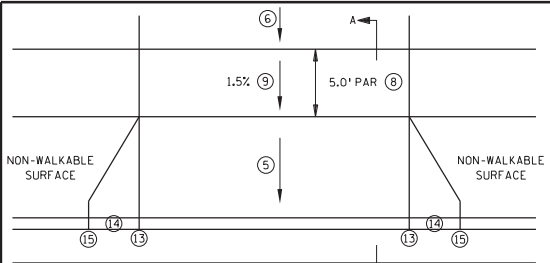
APPROVED: 11-04-2021
REVISOR:
Thomas J. Ybrcki
THOMAS JYBRCKI
STATE DESIGN ENGINEER

STATE PROJ. NO. SAP 002-601-063
SAP 114-020-062 CP 23-14 SHEET NO. 10 OF 43 SHEETS

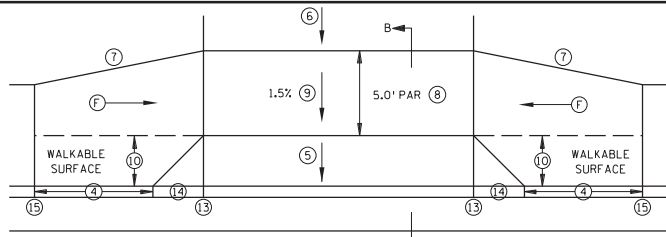
PEDESTRIAN CURB RAMP DETAILS

PLOTTED/REVISED: 06/27/2023

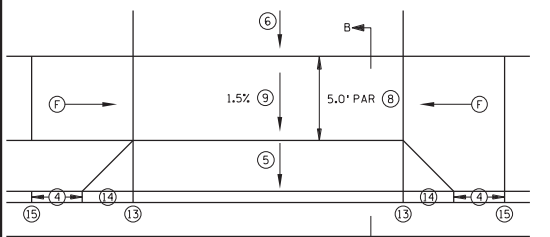
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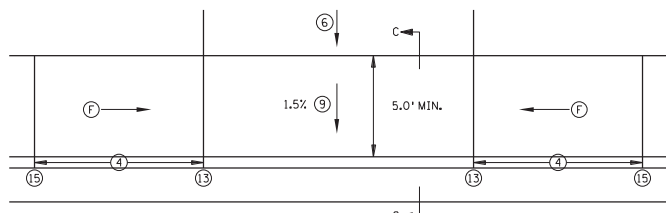
PERPENDICULAR DRIVEWAY ①



TIERED PERPENDICULAR OFFSET DRIVEWAY ②



TIERED PERPENDICULAR DRIVEWAY ②

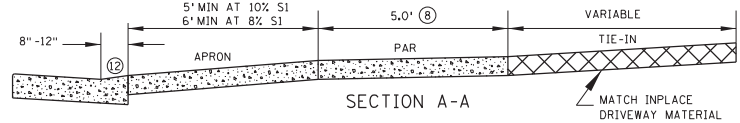


PARALLEL DRIVEWAY ③

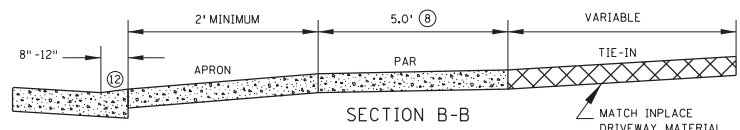
LEGEND

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

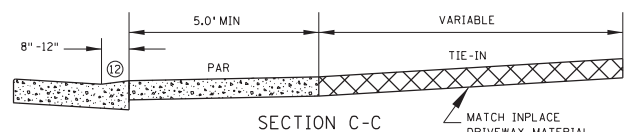
- NOTES:**
- ALL SIDEWALK AND BOULEVARD WIDTHS SHALL BE MEASURED FROM BACK OF CURB.
- IN URBAN ROADWAY SECTIONS, 6" CURB HEIGHT SHOULD BE USED WHEN 6' OR GREATER BOULEVARD WIDTH IS PROPOSED. WHEN BOULEVARD IS LESS THAN 6' WIDE, 4" CURB HEIGHT SHOULD BE USED.
- MAINTAIN EXISTING DRAINAGE PATTERNS FLOWING TO PUBLIC RIGHT OF WAY.
- ACQUIRE ADEQUATE L3 TO ALLOW FOR A CONTINUOUS PAR PROFILE (UNIFORM TYPICAL SIDEWALK SECTION) THROUGH THE DRIVEWAY APRON.
- IN NO CASE SHALL SIDEWALK PROFILES EXCEED 5.0%, EXCEPT SIDEWALK PROFILES CAN MATCH ROADWAY GRADE IF ROADWAY GRADE IS GREATER THAN 5.0% RAMP FOR DRIVEWAYS ARE REQUIRED TO FOLLOW THE ABOVE SIDEWALK CRITERIA.
- CONTRACTION JOINTS SHALL BE CONSTRUCTED ALONG ALL GRADE BREAKS WITHIN THE PEDESTRIAN ACCESS ROUTE (PAR). 1/4" DEEP VISUAL JOINTS SHALL BE USED AT THE TOPS OF CONCRETE FLARES ADJACENT TO WALKABLE SURFACES.
- DRIVEWAY TYPES FROM MOST PREFERRED TO LEAST PREFERRED ARE AS FOLLOWS: PERPENDICULAR, TIERED PERPENDICULAR, TIERED PERPENDICULAR OFFSET & PARALLEL.
- PERPENDICULAR DRIVEWAYS ARE THE STANDARD AND STARTING POINT FOR ALL DRIVEWAY DESIGN AND CONSTRUCTION. SHOULD BE USED TO ACHIEVE CONTINUOUS PAR PROFILE THROUGH THE DRIVEWAY. OBTAINING A PERPENDICULAR DRIVEWAY DESIGN BECOMES MORE CRITICAL WITH STEEP ROADWAY PROFILES.
 - TO BE USED WHEN PERPENDICULAR DRIVEWAY DESIGN CANNOT BE ACHIEVED, THE DRIVEWAY PAR IS BELOW ROADWAY CURB HEIGHT. THIS DRIVEWAY TYPE CAN BE USED FOR BOTH PAVED (AS SHOWN) AND GRASS BOULEVARDS.
 - TO BE USED WHEN PERPENDICULAR AND TIERED PERPENDICULAR DRIVEWAY DESIGN CANNOT BE ACHIEVED. CAN BE USED FOR STEEP NEGATIVE SLOPED DRIVEWAYS. DW CURB TYPE 2 SHOULD BE USED TO RAISE PAR ABOVE GUTTER AND REDUCE "ROLLER COASTER" EFFECT. 4" HIGH ROADWAY CURB SHOULD BE USED TO REDUCE "ROLLER COASTER" EFFECT ESPECIALLY WHEN MULTIPLE DRIVEWAYS ARE PRESENT.
 - TOP OF CURB SHALL MATCH PROPOSED ADJACENT WALK GRADE.
 - 8% STANDARD, 10% MAX. FOR COMMERCIAL AND 12% FOR RESIDENTIAL. SEE GENERAL NOTES ON SHEET 2 FOR MORE INFORMATION.
 - S3 8% MAXIMUM, IF THE SLOPE IS EXCEEDED OR CONTINUED FOR MORE THAN 5', ANALYZE VEHICLE TEMPLATES FOR VERTICAL CLEARANCE. IF EXISTING DRIVEWAY IS NEGATIVELY DRAINING, S3 CAN BECOME SLIGHTLY MORE NEGATIVE TO ACHIEVE PERPENDICULAR DRIVEWAY DESIGN IF THE VERTICAL CLEARANCE IS ACHIEVED IN VEHICLE TEMPLATES.
 - 1:3 MIN. 1:5 PREFERRED FOR DRIVEWAY RETROFIT PROJECTS. 1:10 PREFERRED FOR SIDEWALK REPLACEMENT PROJECTS.
 - 5.0' MIN. PAR WIDTH IS THE STANDARD THROUGH DRIVEWAYS. IF FEASIBLE WIDER DRIVEWAY PAR WIDTH TO MATCH APPROACHING SIDEWALK PAR WIDTHS. IN VERTICALLY CONSTRAINED AREAS PAR WIDTHS CAN INCREMENTALLY BE REDUCED TO 4.5' OR 4' MIN AFTER ALL OTHER OPTIONS HAVE BEEN APPLIED.
 - THE PEDESTRIAN ACCESS ROUTE, MAY NOT EXCEED 0.02 FT./FT. AS CONSTRUCTED.
 - SIDEWALK OFFSET TO BE LESS THAN OR EQUAL TO HALF THE APPROACHING SIDEWALK WIDTH.
 - INTEGRAL DRIVEWAY APRON TO BE POURED MONOLITHICALLY/INTEGRAL WITH THE CURB AND GUTTER. SEE SHEET 2 FOR MORE INFORMATION.
 - SEE SHEET 2 FOR CURB TYPE INFORMATION.
 - 0" CURB IS AT FLOW LINE. SEE DRIVEWAY TABLE FOR BACK OF CURB HEIGHTS.
 - 3" LONG AT 8-10% PREFERRED FOR INITIAL CURB TAPER. REDUCE CURB TAPER SLOPE IF NECESSARY TO MATCH ADJACENT SIDEWALK GRADES.
 - MATCH FULL CURB HEIGHT.
 - 1:2 TAPER RATE ON INTEGRAL DRIVEWAY APRONS.
 - SEE SHEET 4 FOR WHEN 6" WALK IS REQUIRED.



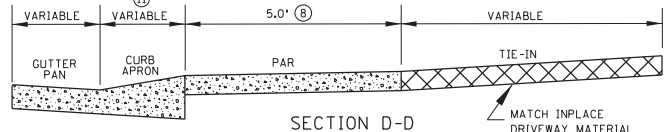
SECTION A-A



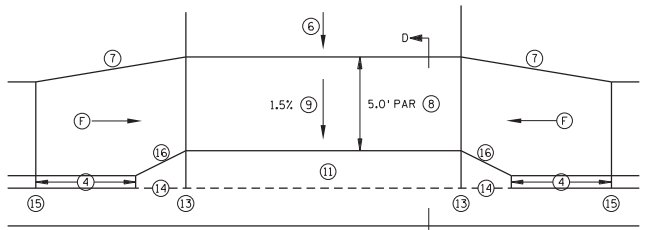
SECTION B-B



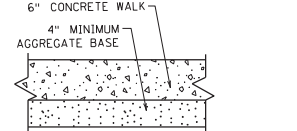
SECTION C-C



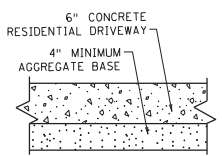
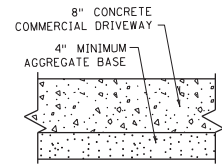
SECTION D-D



INTEGRAL DRIVEWAY APRON



TYPICAL SIDEWALK SECTION ⑰



TYPICAL DRIVEWAY SECTIONS

REVISION:
APPROVED: 11-04-2021
Jeff A. Pal
OPERATIONS DIVISION

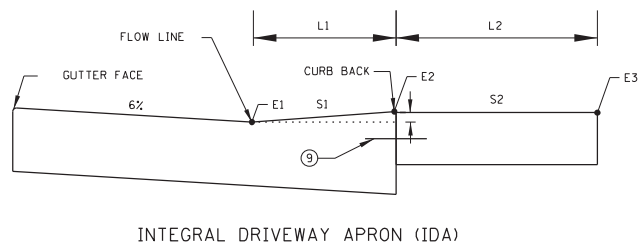
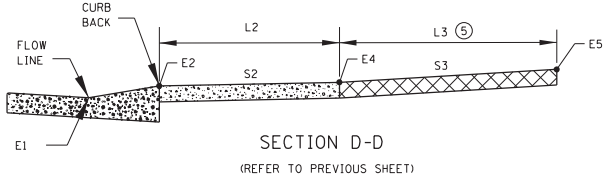
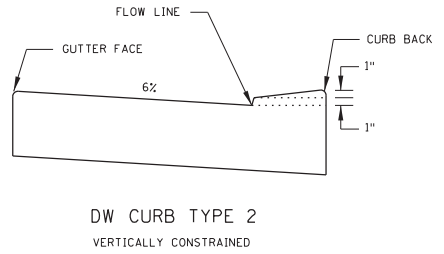
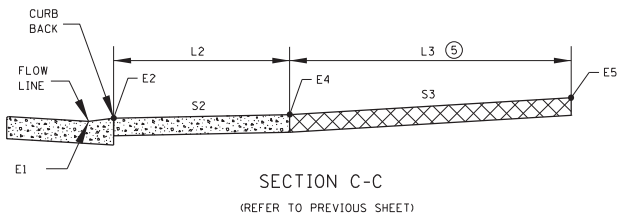
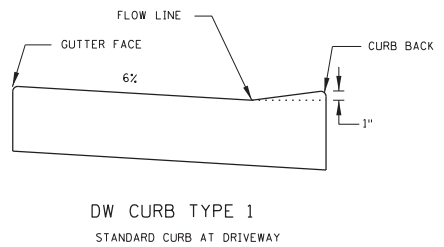
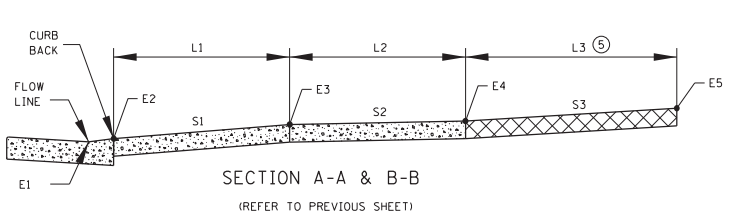
MINNESOTA DEPARTMENT OF TRANSPORTATION
STANDARD PLAN 5-297.254 1 OF 4
APPROVED: 11-04-2021
REVISED:
Tom St...
THOMAS STYRBECKI
STATE DESIGN ENGINEER

DRIVEWAY AND SIDEWALK DETAILS

PLOTTED/REVISED: 06/27/2023

DISTRICT #: 556/PLOT/NAME/SSS
 PLOT NAME: 556/PLOT/NAME/SSS
 PATH & FILENAME: P:\002-601-063_Xov's_Signal\Plan\002601063_S104.dgn

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



NOTES:

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

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

REVISION:
 APPROVED: 11-04-2021

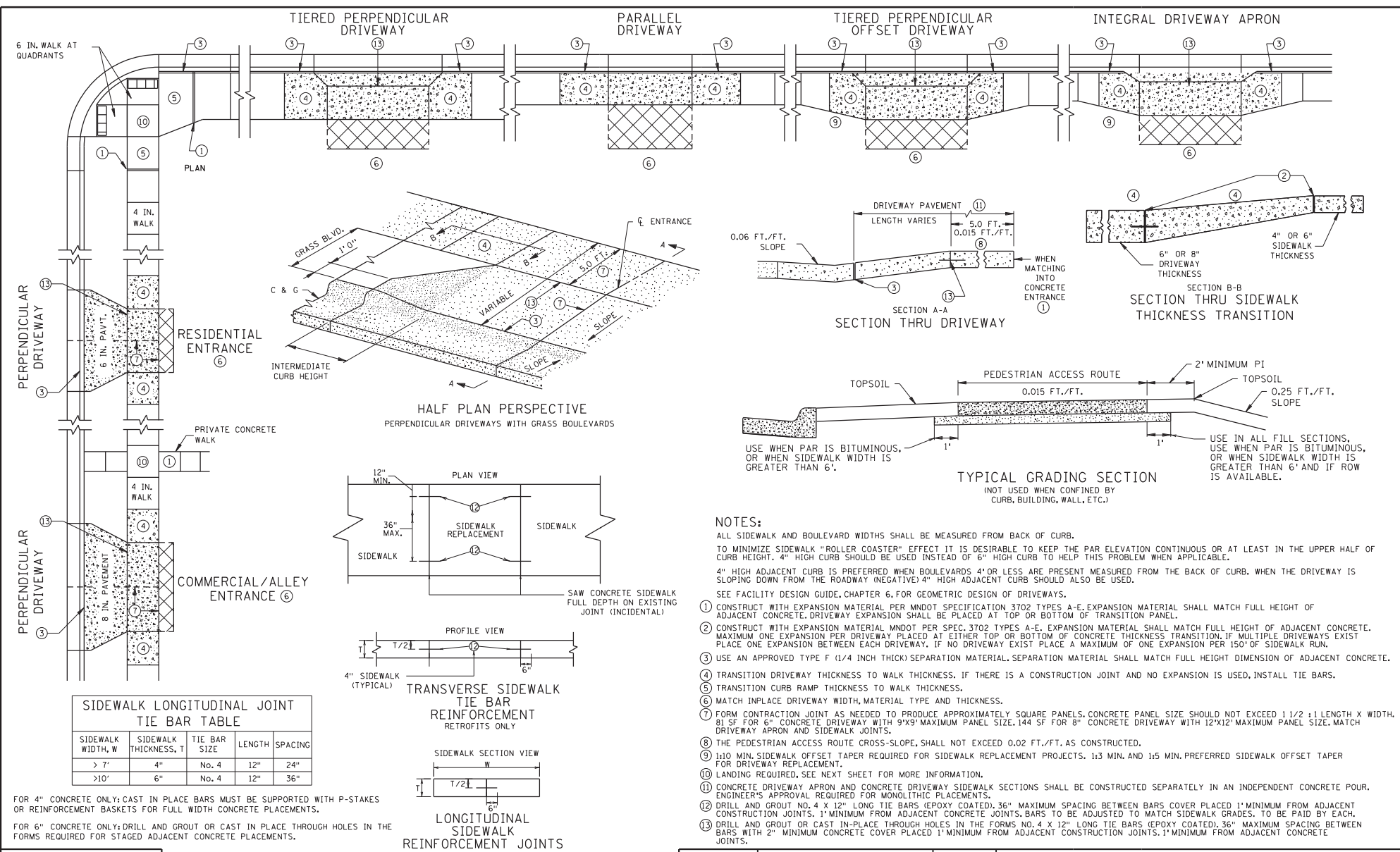
 JEFF A. PERKINS
 OPERATIONS DIVISION

MINNESOTA
 DEPARTMENT OF TRANSPORTATION
STANDARD PLAN 5-297.254
 2 OF 4
 APPROVED: 11-04-2021
 REVISED:

 THOMAS ZYBRCKI
 STATE DESIGN ENGINEER

DRIVEWAY AND SIDEWALK DETAILS

DISTRICT #: 550
 PLOT NAME: ssp\p\01\NAME003
 PATH & FILENAME: P:\002-601-063\Xov's_Signal\Plan\02601063_5T04.dgn
 PLOTTED/REVISED: 06/27/2023



SIDEWALK LONGITUDINAL JOINT TIE BAR TABLE

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

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

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

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

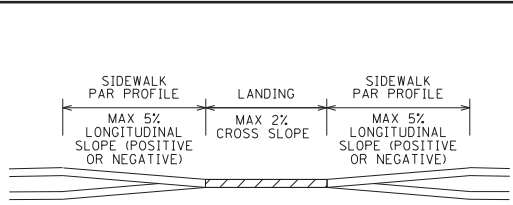
REVISION: 12-23-2021

APPROVED: 11-04-2021

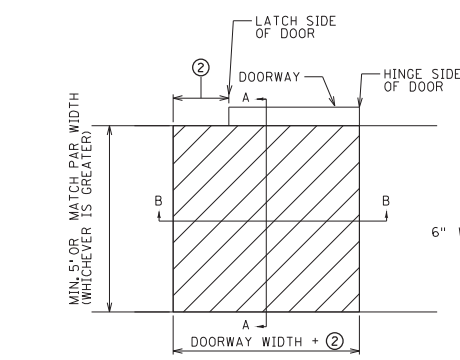
Jeff A. Pal
 OPERATIONS DIVISION

	STANDARD PLAN 5-297.254	3 OF 4	DRIVEWAY AND SIDEWALK DETAILS
	APPROVED: 11-04-2021 REVISED: 12-23-2021		
DEPARTMENT OF TRANSPORTATION	STATE PROJ. NO.	SAP 002-601-063 SAP 114-020-062	CP 23-14 SHEET NO. 13 OF 43 SHEETS

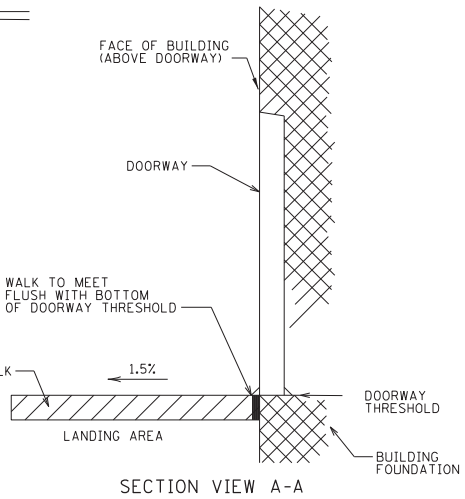
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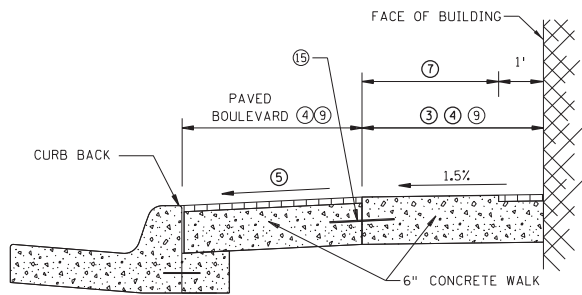
SECTION VIEW B-B



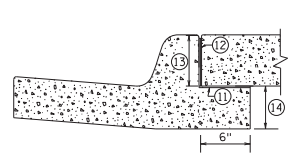
PLAN VIEW DOORWAY



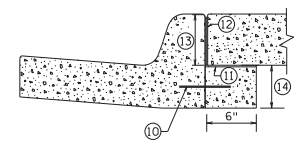
SECTION VIEW A-A



DOWNTOWN SIDEWALK TYPICAL SECTION



SLIP FORM SILL

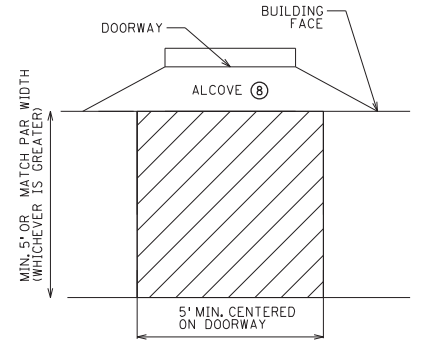


FIXED FORM SILL

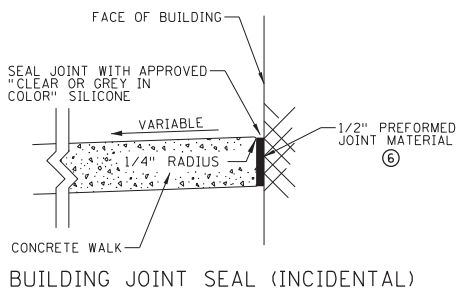
SILL CURB SHOULD BE USED AT ALL LOCATIONS WHEN CONCRETE WALK IS AT BACK OF CURB, INCLUDING PAVED BOULEVARD.
 SILL CURB SHALL NOT BE USED IN CURB RAMP AND DRIVEWAY AREAS, INCLUDING CONCRETE FLARES.
 SILL CURB WITH 4" WALK CAN USE FIXED OR SLIP FORM OPTIONS.

NOTES:

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



PLAN VIEW DOORWAY WITH ALCOVE
SIDEWALK LANDING REQUIREMENTS ①



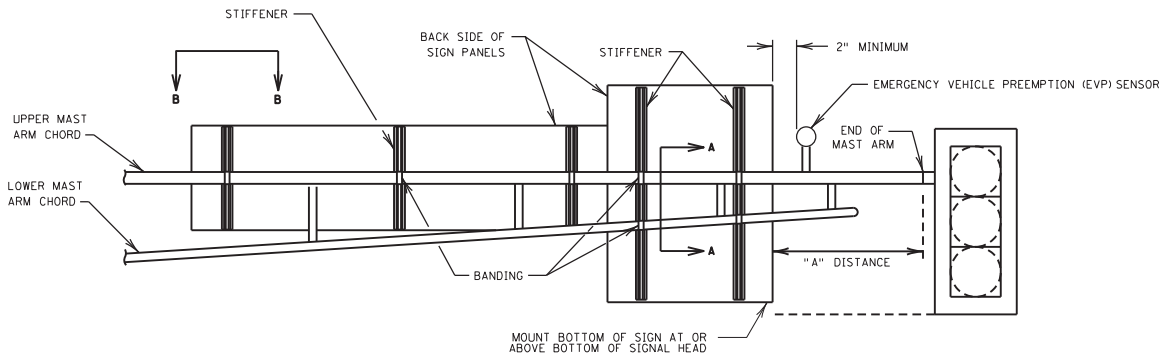
BUILDING JOINT SEAL (INCIDENTAL)

REVISION:
 APPROVED: 11-04-2021

 JEFF A. PERKINS
 OPERATIONS DIVISION

 DEPARTMENT OF TRANSPORTATION	STANDARD PLAN 5-297.254	4 OF 4	DRIVEWAY AND SIDEWALK DETAILS
	APPROVED: 11-04-2021 REVISED:		
STATE PROJ. NO.		SAP 002-601-063 SAP 114-020-062	CP 23-14 SHEET NO. 14 OF 43 SHEETS

7/2023



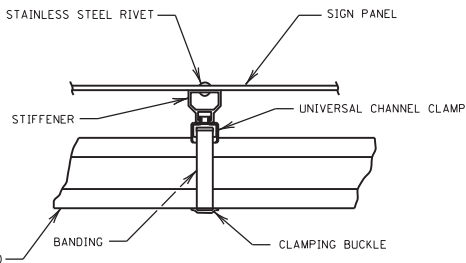
MAST ARM SIGN MOUNTING

		NUMBER OF EXTRUDED STIFFENERS REQUIRED*													
		PANEL WIDTH													
PANEL HEIGHT	2'	2'	3'	4'	5'	6'	7'	8'	9'	10'	11'	12'	13'	14'	
	2'	2	2	2	3	3	3	4	4	4	5	5	5	5	5
	3'	2	2	2	3	3	3	4	4	5	5	5	5	5	5
	4'	2	2	2	3	3	3	4	4	5	5	5	5	5	6
	5'	2	2	2	3	4	4	5	5	5	5	5	5	5	6
6'				2	3	4	4	5	5	5	5	5	5	6	
7'				4	4	5	5	5	5	5	5	5	5	6	

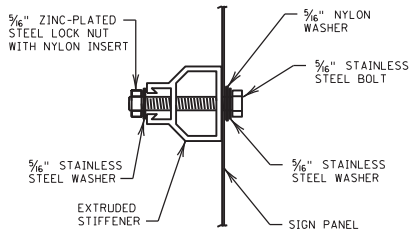
* WHERE SIGN PANEL DIMENSIONS FALL BETWEEN 1" INCREMENTS, USE NEXT HIGHER WIDTH AND/OR HEIGHT DIMENSION.

NOTES:

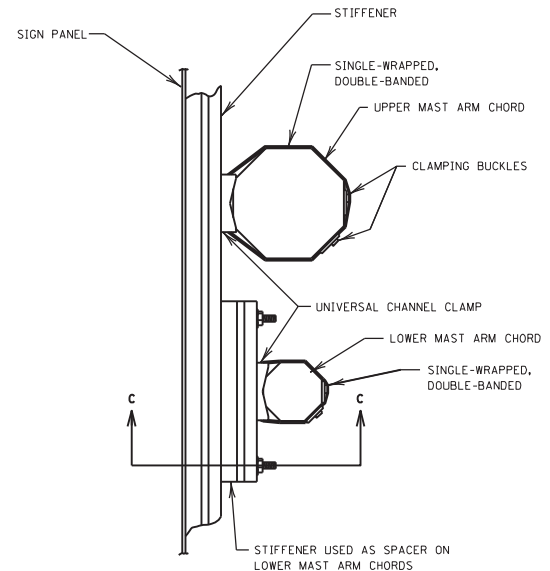
- FURNISH AND INSTALL AT LEAST ONE SPACER FOR EACH SIGN PANEL WHEN PANELS ARE ATTACHED TO THE LOWER MAST ARM CHORD.
- AFFIX SIGNS TO UPPER AND LOWER MAST ARM CHORDS WHEN POSSIBLE.
- POSITION BOTTOM OF SIGN PANEL AT LEAST 17' ABOVE ROADWAY.
- MOUNT SIGN PANELS PLUMB AND SHIM WITH REQUIRED SPACERS AS SHOWN.
- PROVIDE SPACING BETWEEN STIFFENERS OF NO MORE THAN 36".
- PROVIDE A HORIZONTAL DISTANCE OF NO MORE THAN 12" FROM PANEL EDGE TO STIFFENER.
- PROVIDE A VERTICAL DISTANCE OF NO MORE THAN 1" FROM PANEL EDGE TO STIFFENER.
- FURNISH AND INSTALL 1/4" STAINLESS STEEL RIVETS 3" FROM THE PANEL EDGE TO ATTACH THE STIFFENERS TO THE SIGN PANELS. FURNISH AND INSTALL 3/8" STAINLESS STEEL RIVETS AT 6" ON CENTER TO ATTACH THE REMAINDER OF THE STIFFENER TO THE SIGN PANEL.
- FURNISH TWO TYPE 201 STAINLESS STEEL 3/4" WIDE BY 1/32" THICK STRAPS, EACH WITH CLAMPING BUCKLES AND INSTALL SEPARATELY WITH A SINGLE WRAP AROUND THE MAST ARM CHORD. PLACE THE SECOND BANDING STRAP OVER THE FIRST STRAP AND STAGGER THE CLAMPING BUCKLES SO THE BUCKLES ARE NOT DIRECTLY OVER ONE ANOTHER.
- THE "A" DISTANCE IS SHOWN ON THE PLANS. IT IS THE DISTANCE FROM THE END OF THE MAST ARM TO THE EDGE OF EACH SIGN.



VIEW B-B

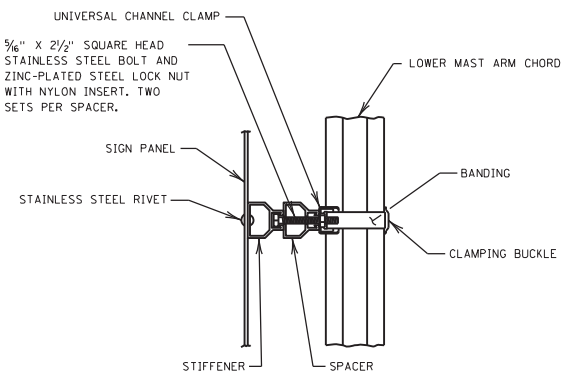


BOLT ATTACHMENT
ATTACH AT STANDARD PUNCH CODE LOCATIONS



VIEW A-A

① SIGN PANELS TALLER THAN 36" MUST BE BANDED TO THE LOWER MAST ARM CHORD AT A MINIMUM OF ONE LOCATION. SIGN PANEL SHALL BE BANDED TO THE LOWER MAST ARM AT A LOCATION THAT WILL PROVIDE THE CLOSEST TO PLUMB ALIGNMENT FOR THE SIGN PANEL.

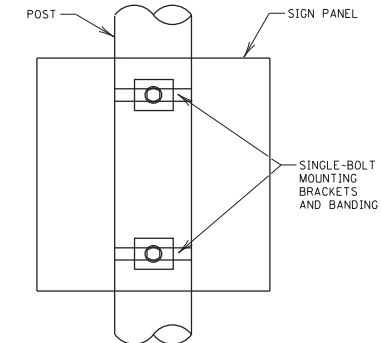
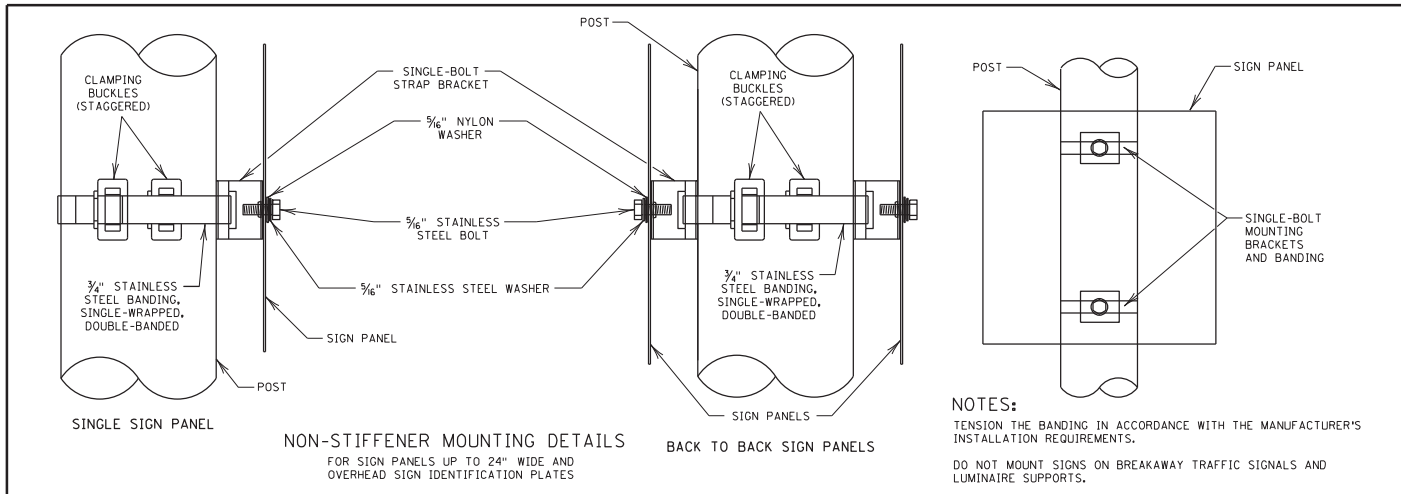


VIEW C-C

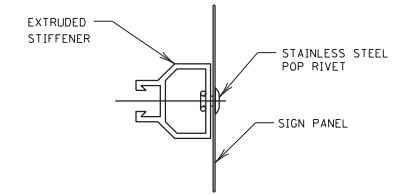
REVISION: APRIL 17, 2020
APPROVED: OCTOBER 16, 2019
Brian Sabersson
BRIAN SABERSSON
STATE TRAFFIC ENGINEER

m MINNESOTA DEPARTMENT OF TRANSPORTATION
STANDARD PLAN 5-297.731
Peter A. Harff
PETER A. HARFF
STATE DESIGN ENGINEER
APPROVED: 10-16-2019
REVISED: 4-17-2020

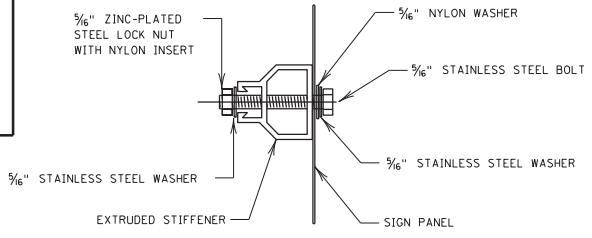
SIGN MOUNTING DETAILS FOR SIGNAL MAST ARMS



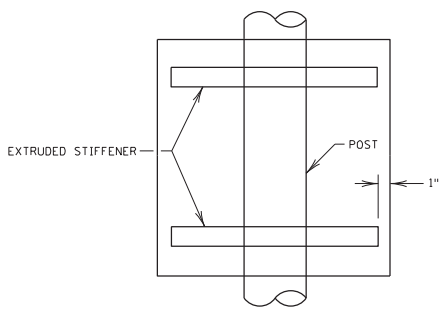
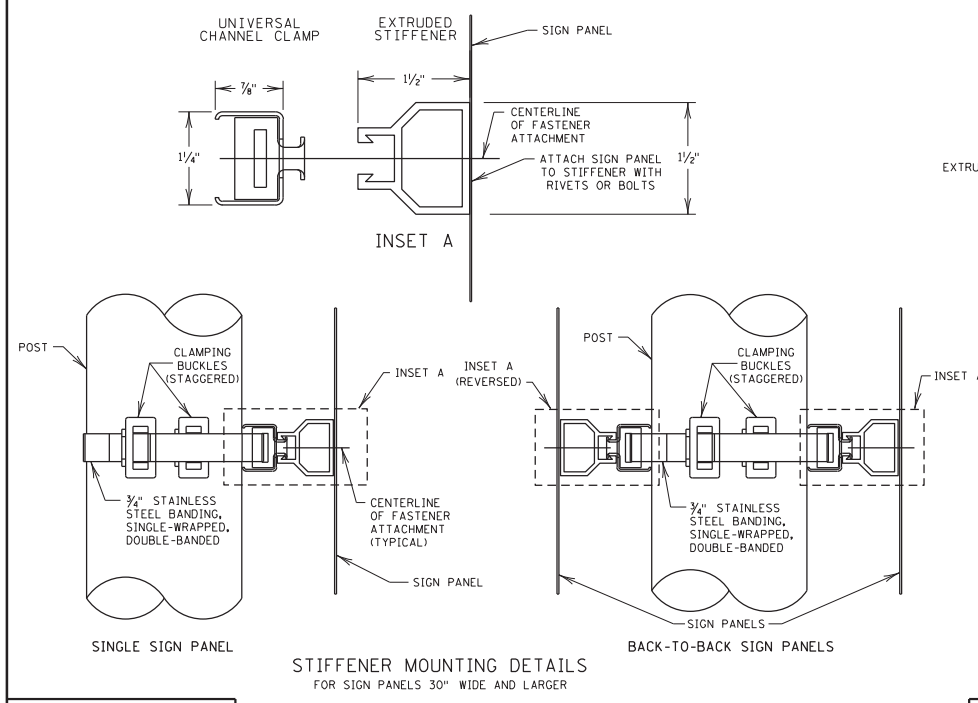
NOTES:
TENSION THE BANDING IN ACCORDANCE WITH THE MANUFACTURER'S INSTALLATION REQUIREMENTS.
DO NOT MOUNT SIGNS ON BREAKAWAY TRAFFIC SIGNALS AND LUMINAIRE SUPPORTS.



ATTACH 3/16" RIVETS AT 6" INTERVALS.
ATTACH END RIVETS 3" FROM SIGN EDGE.
USE 1/4" RIVETS FOR THE END RIVETS.
RIVET ATTACHMENT



ATTACH AT STANDARD PUNCH CODE LOCATIONS
BOLT ATTACHMENT



PANEL HEIGHT	PANEL WIDTH				
	2'	3'	4'	5'	6'
2'	2	2	2	2	3
3'	2	2	2	2	3
4'	2	2	2	2	3
5'	3	3	3	3	3
6'	3	3	3	4	4
7'	3	3	3	4	4

PROVIDE VERTICAL SPACING OF NO MORE THAN 36" BETWEEN STIFFENERS.
PROVIDE A VERTICAL DISTANCE OF NO MORE THAN 12" FROM PANEL EDGE TO STIFFENER.

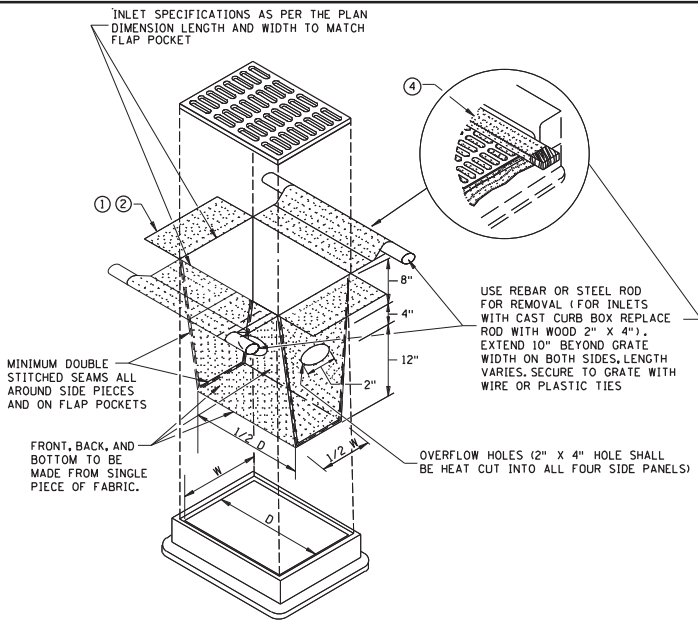
NOTES:
SPACE STIFFENERS IN ACCORDANCE WITH THE PUNCH CODES SHOWN IN THE MnDOT STANDARD SIGNS AND MARKINGS MANUAL.
ATTACH STIFFENERS TO SIGN PANELS USING FASTENERS. PLACE STIFFENERS AT THE VERTICAL LOCATIONS OF THE MOUNTING HOLES FOR EACH SIGN.
FURNISH AND INSTALL HARDWARE COMPATIBLE WITH STIFFENER MOUNTING SYSTEMS.
FURNISH TWO TYPE 201 STAINLESS STEEL 3/4" WIDE BY 1/2" THICK STRAPS, EACH WITH CLAMPING BUCKLES AND INSTALL SEPARATELY WITH A SINGLE WRAP AROUND THE MAST ARM CHORD. PLACE THE SECOND BANDING STRAP OVER THE FIRST STRAP AND STAGGER THE CLAMPING BUCKLES SO THE BUCKLES ARE NOT DIRECTLY OVER ONE ANOTHER.

REVISION:
APPROVED: OCTOBER 16, 2019
Brian Saberson
BRIAN SABERSON
STATE TRAFFIC ENGINEER

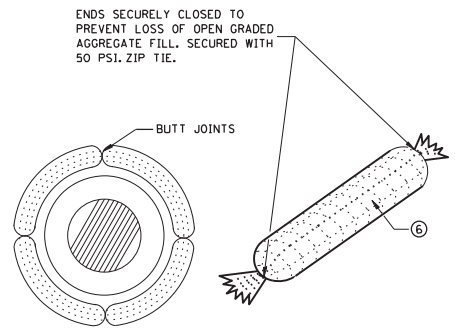
	STANDARD PLAN 5-297.730	1 OF 1	SIGN MOUNTING SYSTEMS FOR ROUND SUPPORTS
	<i>Peter A. Harff</i> PETER A. HARFF STATE DESIGN ENGINEER	APPROVED: 10-16-2019 REVISED:	
STATE PROJ. NO.		CP 23-14	SHEET NO. 16 OF 43 SHEETS

PLOTTED/REVISED: 06/27/2023

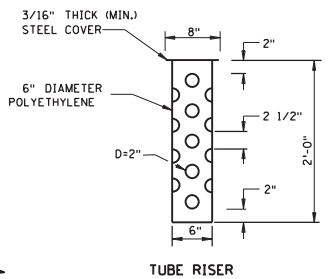
DISTRICT #: 550/PLOT#NAME063
 PILOT NAME: 550/PLOT#NAME063
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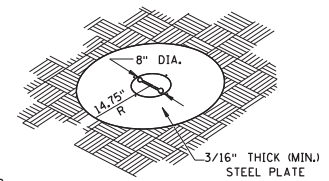
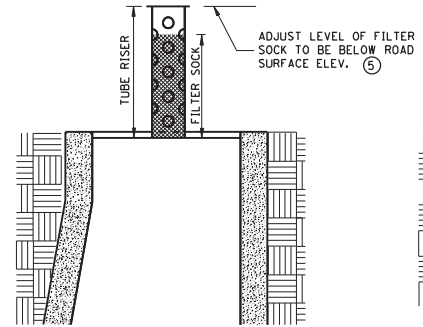
FILTER BAG INSERT ③
 (CAN BE INSTALLED IN ANY INLET TYPE WITH OR WITHOUT A CURB BOX)



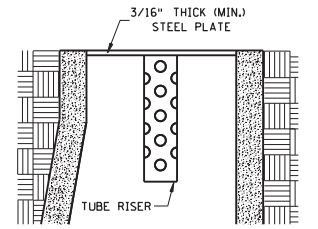
ROCK LOG/COMPOST LOG



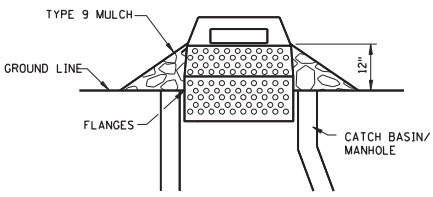
TUBE RISER



PERSPECTIVE VIEW

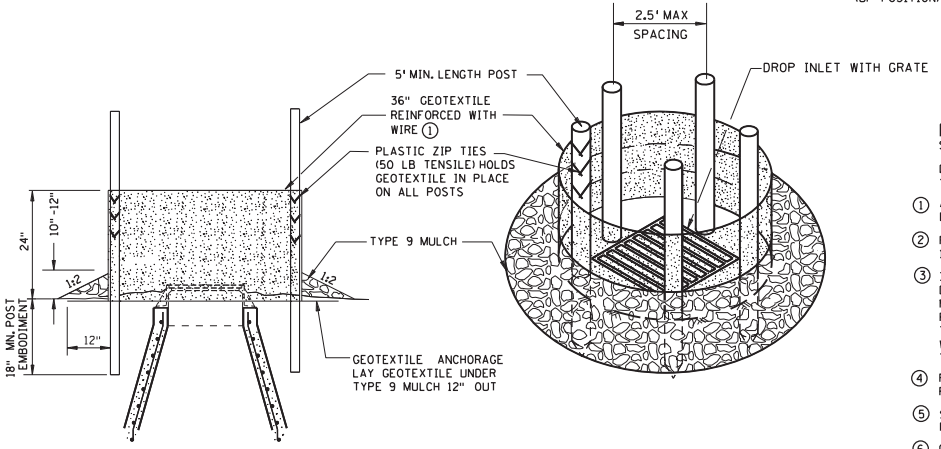


POP-UP HEAD



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.



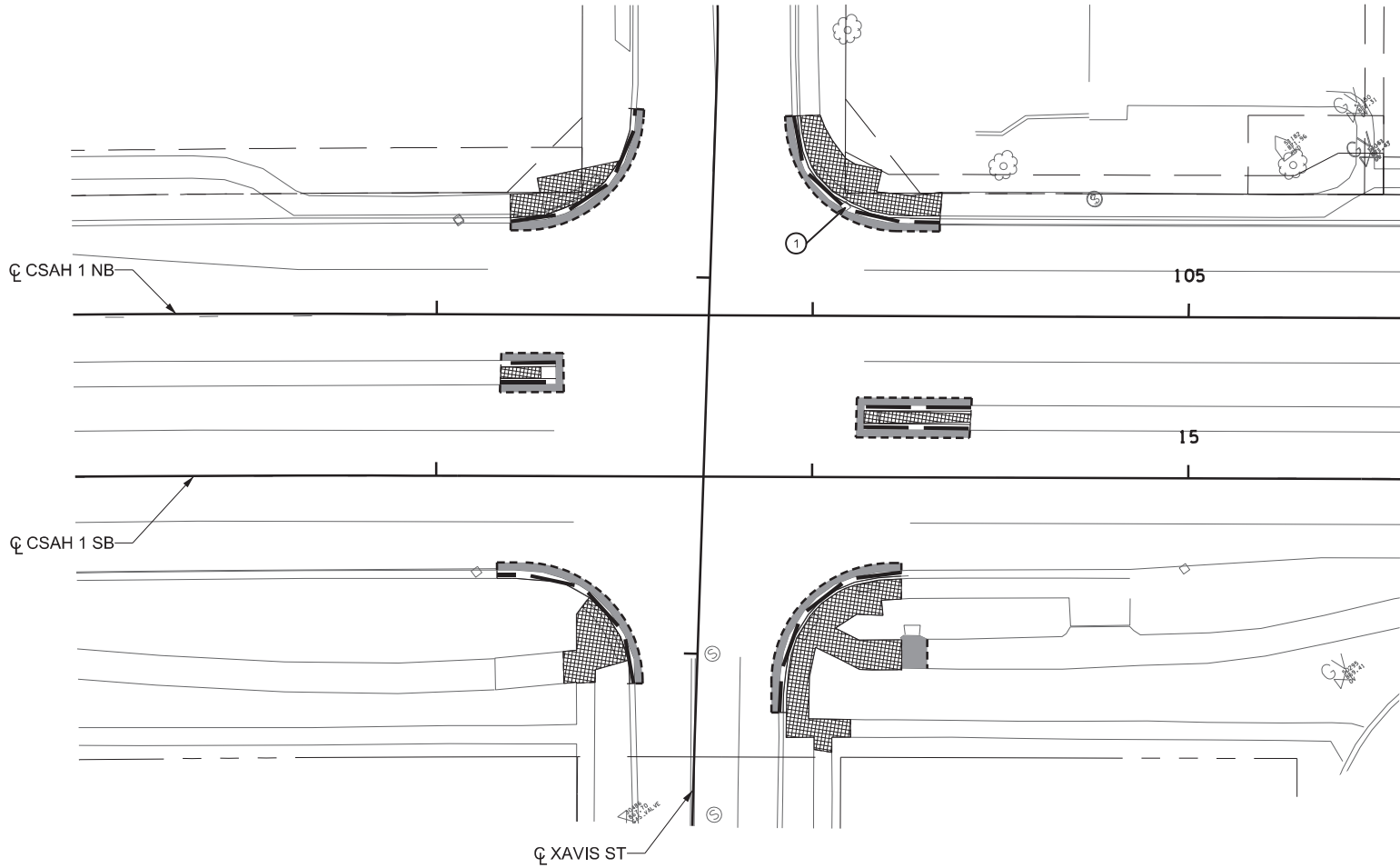
SILT FENCE RING AND ROCK FILTER BERM
 USE WHERE INLET DRAINS IN AN AREA WITH SLOPES AT 1:3 OR LESS

- NOTES:**
 SEE SPECS. 2573, 3137, & 3886.
- DEVICES MUST BE ADJUSTED ACCORDINGLY AS TO NOT CAUSE FLOODING ON ROADWAY THAT WOULD IMPEED TRAFFIC FLOW.
- ALL GEOTEXTILE USED FOR INLET PROTECTION SHALL BE MONOFILAMENT IN BOTH DIRECTIONS, MEETING SPEC. 3886.
 - FINISHED SIZE, INCLUDING POCKETS WHERE REQUIRED SHALL EXTEND A MINIMUM OF 10 INCHES AROUND THE PERIMETER TO FACILITATE MAINTENANCE OR REMOVAL.
 - 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.
 - 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.
 - SOCK HEIGHT MUST NOT BE SO HIGH AS TO SLOW DOWN WATER FILTRATION TO CAUSE FLOODING OF THE ROADWAY.
 - GEOTEXTILE SOCK BETWEEN 4-10 FEET LONG AND 4-6 INCH DIAMETER. SEAM TO BE JOINED BY TWO ROWS OF STITCHING WITH A PLASTIC MESH BACKING OR PROVIDE A HEAT BONDED SEAM (OR APPROVED EQUIVALENT). FILL ROCK LOG WITH OPEN GRADED AGGREGATE CONSISTING OF SOUND DURABLE PARTICLES OF COARSE AGGREGATE CONFORMING TO SPEC. 3137 TABLE 3137-1; CA-3 GRADATION.

REVISION:
 APPROVED: 2-28-2017

 CHIEF ENVIRONMENTAL OFFICER

	STANDARD PLAN 5-297.405	4 OF 8	TEMPORARY SEDIMENT CONTROL STORM DRAIN INLET PROTECTION
	APPROVED: 2-28-2017 REVISED:		
DEPARTMENT OF TRANSPORTATION STATE DESIGN ENGINEER			CP 23-14 SHEET NO. 17 OF 43 SHEETS



LEGEND

- REMOVE BITUMINOUS PAVEMENT
- REMOVE CONCRETE PAVEMENT
- REMOVE CURB AND GUTTER
- SAWING BITUMINOUS/ CONCRETE PAVEMENT
- REMOVE CASTING ASSEMBLY
- EASEMENT
- R/W

REMOVAL NOTES:

REFER TO TRAFFIC SIGNAL PLANS FOR TRAFFIC SIGNAL REMOVALS.

THE CONTRACTOR SHALL PERFORM ALL CLEARING AND GRUBBING AS DIRECTED AND MARKED IN THE FIELD BY THE ENGINEER. THE CONTRACTOR SHALL OTHERWISE PROTECT ALL EXISTING TREES NOT SPECIFICALLY MARKED FOR REMOVAL.

ALL MANHOLES AND CATCH BASINS WILL BE PAID FOR AS "REMOVE DRAINAGE STRUCTURE" ITEM 2104.509 CALLED OUT IN REMOVAL PLANS AS MH AND CB. FOR INFORMATION PURPOSES ONLY.

ALL PRIVATE UTILITIES TO BE RELOCATED BY OTHERS AS REQUIRED. SEE INPLACE UTILITY TABULATION FOR MORE INFORMATION.

ALL ROADWAY SIGNS WITHIN THE CONSTRUCTION LIMITS AND CONFLICTING SIGNS SHALL BE SALVAGED BY THE CONTRACTOR.

SEE CITY WATERMAIN AND SEWER PLANS FOR WATERMAIN, HYDRANT, AND SEWER REMOVAL ITEMS.

NO	DATE	BY	CKD	APPR	REVISION

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

PRINT NAME: Aaron Anderson

SIGNATURE:

DATE: 06/27/23 LICENSE NO. 58657

DRAWN BY APA DATE 05/12/23

DESIGN BY APA DATE 05/12/23

CHECKED BY ST DATE 05/12/23

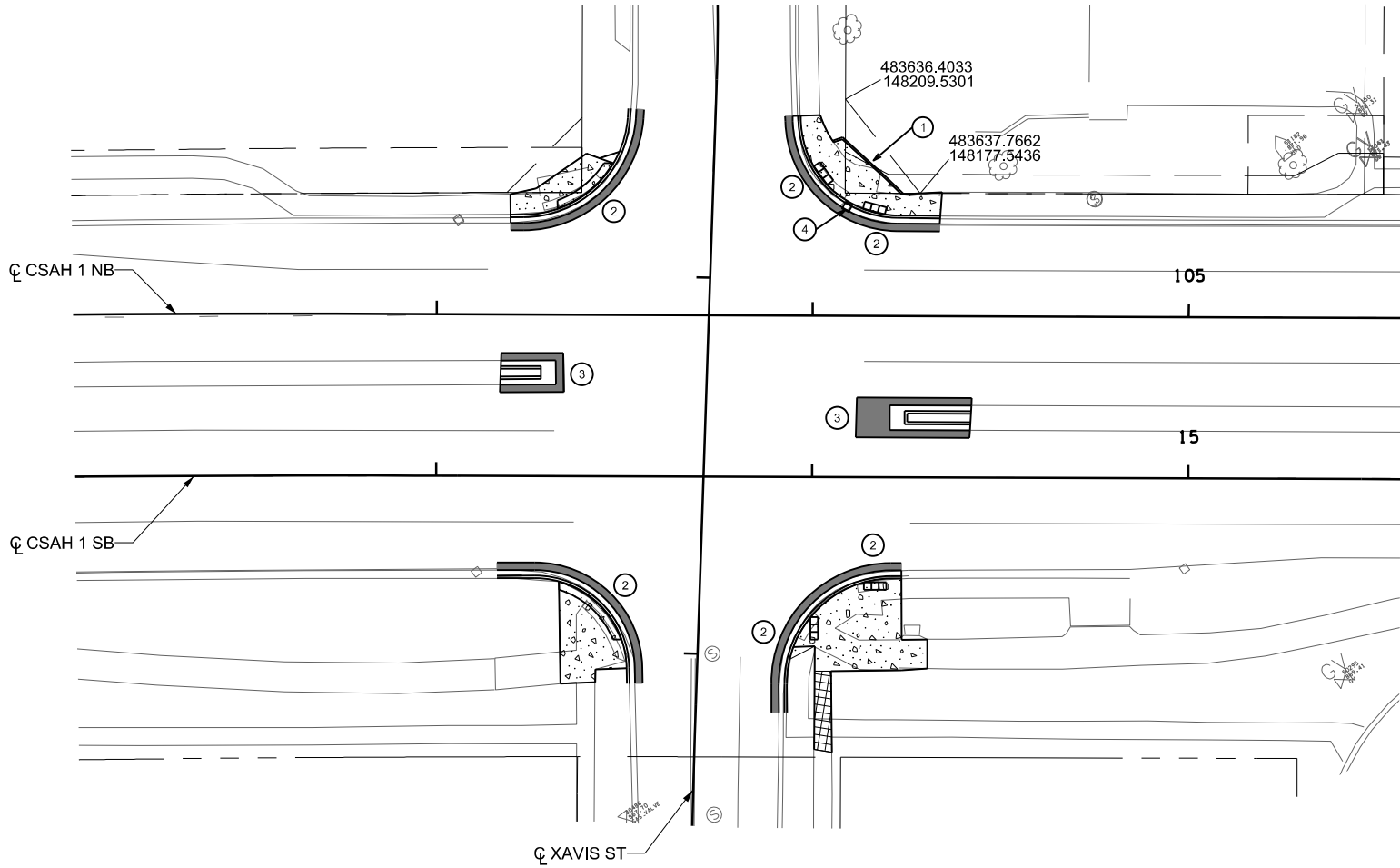


**ANOKA COUNTY
HIGHWAY DEPT.**

SAP 002-601-063
SAP 114-020-062
CP 23-14

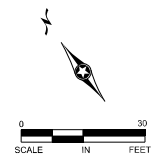
REMOVALS

Sheet 18 of 43 Sheets



LEGEND	
	BITUMINOUS PATCHING
	6" CONCRETE WALK
	4" CONCRETE WALK
	CONCRETE CURB & GUTTER
	CONCRETE CURB DESIGN V
	TRUNCATED DOMES
	MEDIAN NOSE (STAND PLATE 7113)
	CASTING ASSEMBLY
	EASEMENT
	R/W

NOTES:
BITUMINOUS PATCHING TO MATCH THICKNESS OF ADJACENT PAVEMENT



NO	DATE	BY	CHKD	APPR	REVISION
1	7-24-2023	AA	AA	AA	UPDATED SW QUADRANT PEDESTRIAN RAMP

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
 PRINT NAME: Aaron Anderson
 SIGNATURE:

DRAWN BY APA DATE 05/12/23
 DESIGN BY APA DATE 05/12/23
 CHECKED BY ST DATE 05/12/23



**ANOKA COUNTY
HIGHWAY DEPT.**

SAP 002-601-063
SAP 114-020-062
CP 23-14

CONSTRUCTION PLAN

Sheet 19 of 43 Sheets

NOTES (TYP)

1. ALL EXISTING SIGNING SHALL REMAIN IN PLACE DURING CONSTRUCTION. SIGNS LABELED FOR REMOVAL SHALL BE INSTALLED ON TEMPORARY SUPPORTS UNTIL THE PERMANENT INSTALLATION CAN BE MADE. THIS WILL BE CONSIDERED AS INCIDENTAL TO INSTALL SIGN TYPE C.

SIGNING NOTES

- ② INPLACE
- ⑤ REMOVE
- ⑨ RETAIN INPLACE

REMOVALS LEGEND

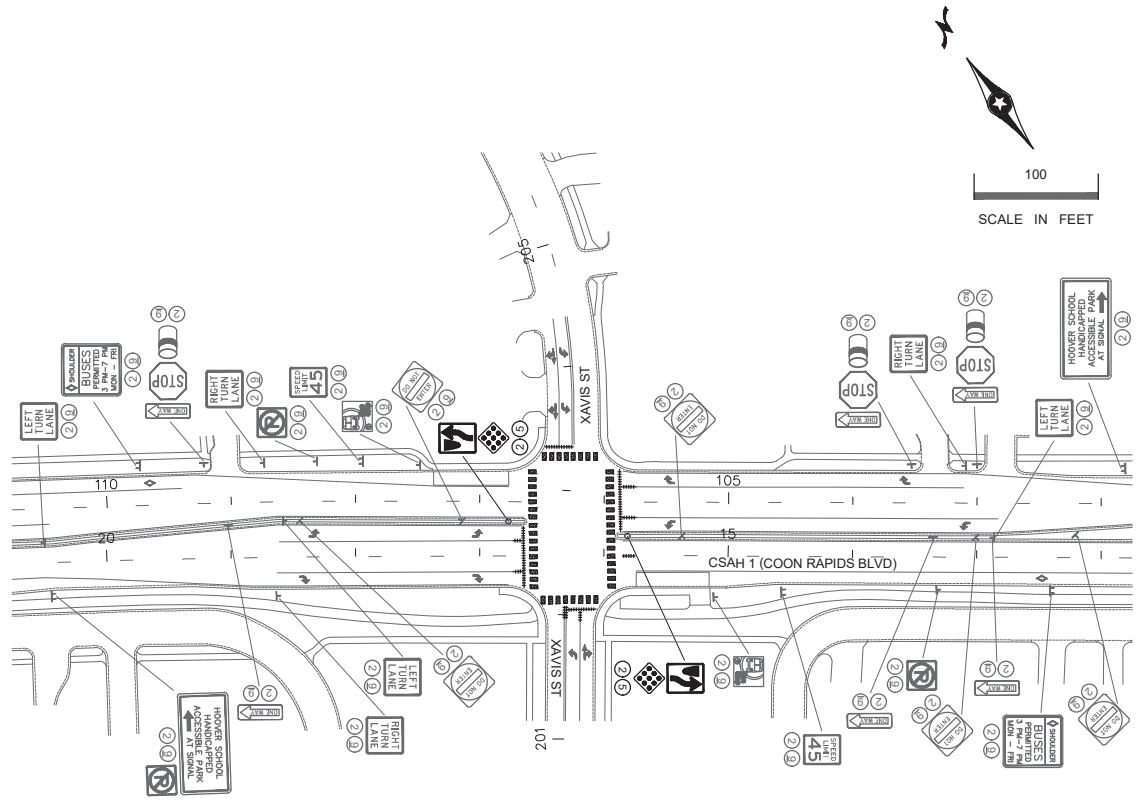
⑤⑨
+++++

EXISTING SIGN REMOVAL TABULATION

STATION	ADDRESS/ DESCRIPTION (NOTES)	REMOVE SIGN TYPE C EACH	SIGN CODE	SIGN LEGEND
103+23	MEDIAN	1	R4-7	KEEP RIGHT
			OM1-1	TYPE 1 OBJECT MARKER
104+19	MEDIAN	1	R4-7	KEEP RIGHT
			OM1-1	TYPE 1 OBJECT MARKER
TOTAL		2		

EXISTING PAVEMENT MARKING REMOVAL TABULATION

ITEM DESCRIPTION	UNIT	TOTAL QUANTITY	
		WHITE	YELLOW
PAVEMENT MARKING REMOVAL 4" SOLID LINE PAINT	LIN FT	45	
PAVEMENT MARKING REMOVAL 4" SOLID DOUBLE LINE PAINT	LIN FT		10
PAVEMENT MARKING REMOVAL 4" BROKEN LINE PAINT	LIN FT	10	
PAVEMENT MARKING REMOVAL 24" SOLID LINE	LIN FT	145	
PAVEMENT MARKING REMOVAL 3' X 6' CROSSWALK SOLID	SQ FT	48	



NO	DATE	BY	CHKD	APPR	REVISION

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
 PRINT NAME: SEAN R THIEL
 SIGNATURE: *Sean R Thiel*
 DATE: 07/07/2023 LICENSE NO. 45129

DRAWN BY ___ FL ___ DATE 05/09/23
 DESIGN BY ___ FL ___ DATE 05/09/23
 CHECKED BY ___ SRT ___ DATE

ANOKA COUNTY
HIGHWAY DEPT.

SAP 002-601-063
 SAP 114-020-062
 CP 23-14

EXISTING SIGNING AND STRIPING
 Sheet 22 of 43 Sheets

**PERMANENT PAVEMENT MARKING PLAN
NOTES & GUIDELINES**

GENERAL INFORMATION:

1. THE ENGINEER'S INVOLVEMENT IN THE APPLICATION OF THE MATERIAL SHALL BE LIMITED TO FIELD CONSULTATION AND INSPECTION. ANOKA COUNTY HIGHWAY DEPARTMENT WILL PLACE NECESSARY "SPOTTING" AT APPROPRIATE POINTS TO PROVIDE HORIZONTAL CONTROL FOR STRIPING AND TO DETERMINE NECESSARY STARTING AND CUTOFF POINTS. LONGITUDINAL JOINTS, PAVEMENT EDGES AND EXISTING MARKINGS MAY SERVE AS HORIZONTAL CONTROL WHEN SO DIRECTED.
2. EDGE LINES AND LANE LINES ARE TO BE BROKEN ONLY AT INTERSECTIONS WITH PUBLIC ROADS AND AT PRIVATE ENTRANCES IF THEY ARE CONTROLLED BY A YIELD SIGN, STOP SIGN OR TRAFFIC SIGNAL. THE BREAK POINT IS TO BE AT THE START OF THE RADIUS FOR THE INTERSECTION OR AT MARKED STOP LINES OR CROSSWALKS.
3. A TOLERANCE OF 1/4 INCH UNDER OR 1/4 INCH OVER THE SPECIFIED WIDTH WILL BE ALLOWED FOR STRIPING PROVIDED THE VARIATION IS GRADUAL AND DOES NOT DETRACT FROM THE GENERAL APPEARANCE. BROKEN LINE SEGMENTS MAY VARY UP TO ONE-HALF FOOT FROM THE SPECIFIED LENGTHS PROVIDED THE OVER AND UNDER VARIATIONS ARE REASONABLY COMPENSATORY. ALIGNMENT DEVIATIONS FROM THE CONTROL GUIDE SHALL NOT EXCEED 1 INCH. MATERIAL SHALL NOT BE APPLIED OVER LONGITUDINAL JOINTS. ESTABLISHMENT OF APPLICATION TOLERANCES SHALL NOT RELIEVE THE CONTRACTOR OF THEIR RESPONSIBILITY TO COMPLY AS CLOSELY AS PRACTICABLE WITH THE PLANNED DIMENSIONS.
4. PERMANENT PAVEMENT MARKINGS SHALL NOT BE PLACED OVER TEMPORARY TAPE MARKINGS.
5. THE FILLING OF TANKS, POURING OF MATERIALS OR CLEANING OF EQUIPMENT SHALL NOT BE PERFORMED ON UNPROTECTED PAVEMENT SURFACES UNLESS ADEQUATE PROVISIONS ARE MADE TO PREVENT SPILLAGE OF MATERIAL.

PREFORMED THERMOPLASTIC:

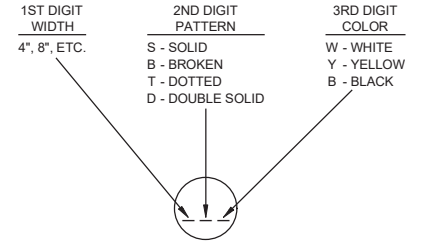
1. THE PREFORMED THERMOPLASTIC MARKINGS SHALL BE APPLIED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS ON CLEAN AND DRY SURFACES. SEE SPECIAL PROVISIONS FOR PREFORMED THERMOPLASTIC MARKING SPECIFICATIONS.

PAVEMENT MARKING SYMBOLS & MATERIALS LEGEND

■ CROSSWALK BLOCK

STRIPING KEY

○ OCTAGON - PREF THERMO



EXAMPLE: 4SW = 4" SOLID LINE WHITE MULTI-COMP

NO	DATE	BY	CHKD	APPR	REVISION

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
 PRINT NAME: SEAN R THIEL
 SIGNATURE: *Sean R Thiel*
 DATE: 07/07/2023 LICENSE NO. 45129

DRAWN BY FL DATE 05/09/23
 DESIGN BY FL DATE 05/09/23
 CHECKED BY SRT DATE



**ANOKA COUNTY
HIGHWAY DEPT.**

SAP 002-601-063
 SAP 114-020-062
 CP 23-14

PERMANENT PAVEMENT MARKING PLAN
 NOTES & GUIDELINES
 Sheet 23 of 43 Sheets

NOTES (TYP)

1. ALL TRAFFIC CONTROL DEVICES SHALL CONFORM AND BE PLACED IN ACCORDANCE TO THE MOST RECENT EDITION OF THE "MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MN MUTCD).
2. ALL EXISTING SIGNING SHALL REMAIN IN PLACE DURING CONSTRUCTION. ANY SALVAGED AND REINSTALLED SIGNS SHALL BE INSTALLED ON TEMPORARY SUPPORTS UNTIL THE PERMANENT INSTALLATION CAN BE MADE. THIS WILL BE CONSIDERED AS INCIDENTAL TO INSTALL SIGN TYPE C.
3. SIGNS ATTACHED TO THE SIGNAL SYSTEM EQUIPMENT ARE INCLUDED IN THE SIGNAL DESIGN WORK.
4. SIGNS UNAFFECTED BY CONSTRUCTION HAVE BEEN OMITTED FROM PLAN.
5. REFERENCE SIGNING AND STRIPING DETAILS SHEET AND PAVEMENT MARKING NOTES AND GUIDELINES SHEET FOR INSTALLATION DETAILS.

SIGNING NOTES

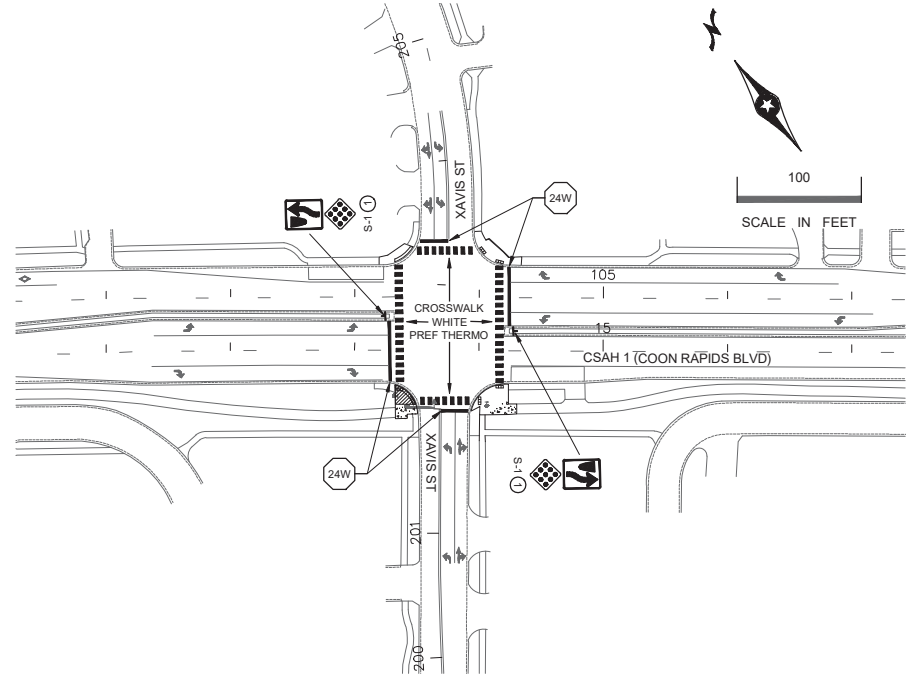
① FABRICATE AND INSTALL

STRIPING KEY

 OCTAGON - PREF THERMO

PERMANENT PAVEMENT MARKING TABULATION		
ITEM DESCRIPTION	UNIT	TOTAL QUANTITY
		WHITE
24" SOLID LINE STOP BAR PREFORMED THERMOPLASTIC	LIN FT	139
3' X 6' CROSSWALK PREFORMED THERMOPLASTIC	SQ FT	846

PERMANENT SIGNING TABULATION										
SIGN NUMBER	SIGNS QTY EACH	CODE NUMBER	PANEL LEGEND	TYPE	POSTS / MOUNTING			PANEL		
					SIZE (W X H)	AREA	TOTAL AREA	MTG HT	NUMBER OF POSTS	SURFACE TYPE
					INCH	SQ FT	SQ FT			
S-1	2	R4-7	KEEP RIGHT	C	24 X 30	5.00	10.00	7.0	1	CONCRETE
	2	OM1-1	TYPE 1 OBJECT MARKER	C	18 X 18	2.25	4.50			
TOTAL AREA =					14.50					



NO	DATE	BY	CHKD	APPR	REVISION

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
 PRINT NAME: SEAN R. THIEL
 SIGNATURE: *Sean R. Thiel*
 DATE: 07/26/2023 LICENSE NO. 45129

DRAWN BY: FL DATE: 05/09/23
 DESIGN BY: FL DATE: 05/09/23
 CHECKED BY: SRT DATE:



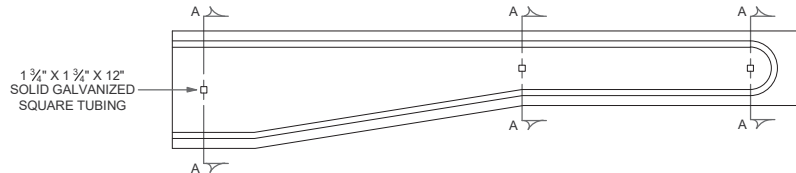
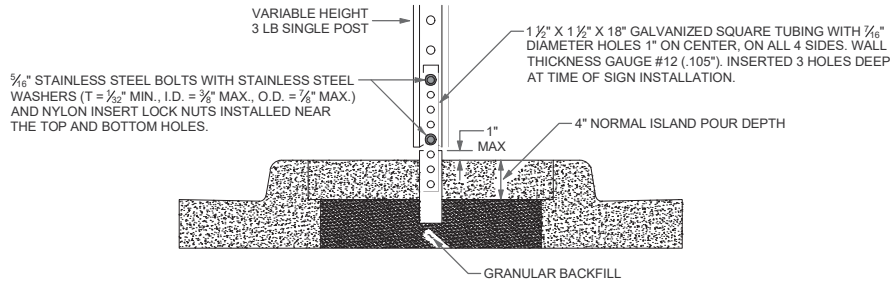
ANOKA COUNTY
HIGHWAY DEPT.

SAP 002-601-063
 SAP 114-020-062
 CP 23-14

PERMANENT SIGNING AND STRIPING
 Sheet 24 of 43 Sheets

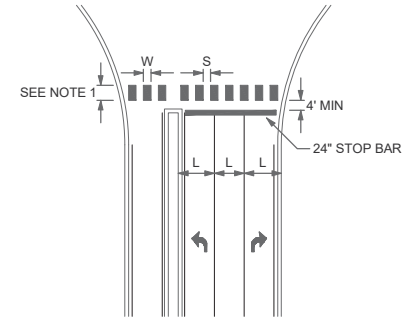
SIGN INSTALLATION TYPICALS

SECTION A-A



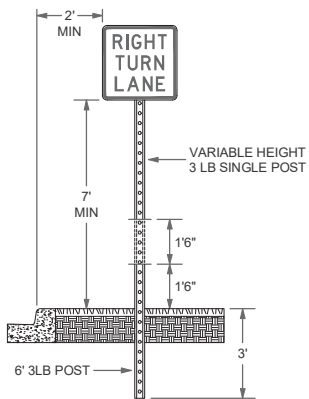
PAVEMENT MARKING TYPICAL

PEDESTRIAN CROSSWALK

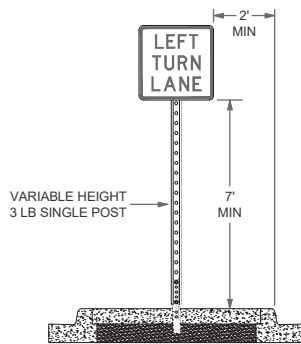


(L) WIDTH OF INSIDE LANE	(W) WIDTH OF PAINTED AREAS	(S) WIDTH OF SPACE
9'	2.0'	2.5'
10'	2.5'	2.5'
11'	2.5'	3.0'
12'	3.0'	3.0'
13'	3.0'	3.5'

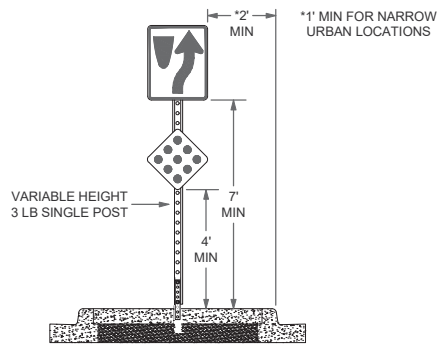
**GROUND POST MOUNT
SIGN INSTALLATION TYPICAL**



**ISLAND MOUNT, BREAK-AWAY
SIGN INSTALLATION TYPICAL**



**ISLAND MOUNT, BREAK-AWAY
SIGN INSTALLATION TYPICAL
KEEP RIGHT/CLUSTER**



CROSSWALK NOTES:

1. THE BLOCKS SHALL BE A MINIMUM OF 6' AND AT LEAST AS LONG AS THE TRUNCATED DOMES. FOR FANNED TRUNCATED DOMES THE BLOCKS SHALL BE AT LEAST AS LONG AS THE APPROACHING SIDEWALK OR SHARED-USE PATH.
2. BLOCKS TO BE CENTERED ON CENTERLINE AND LANE LINES.
3. A MINIMUM OF 1.5' CLEAR DISTANCE SHALL BE LEFT ADJACENT TO THE CURB FACE. IF BLOCK FALLS INTO THIS DISTANCE IT MUST BE OMITTED.
4. ON TWO LANE TWO WAY STREETS, USE SPACING SHOWN FOR AN 11' INSIDE LANE.
5. FOR DIVIDED ROADWAYS, ADJUSTMENTS IN SPACING OF THE BLOCKS SHOULD BE MADE IN THE MEDIAN SO THAT THE BLOCKS ARE MAINTAINED IN THEIR PROPER LOCATION ACROSS THE TRAVELED PORTION OF THE ROADWAY.
6. AT SKEWED CROSSWALKS, THE BLOCKS ARE TO REMAIN PARALLEL TO THE LANE LINES.
7. THE BLOCKS SHALL BE PLACED SO THAT THEY ARE NOT LOCATED IN THE WHEEL PATH OF THE VEHICLES.
8. LOCATION OF CROSSWALK BLOCKS, STOP BARS, SIGNAL LOOPS AND PEDESTRIAN RAMPS ARE APPROXIMATE. FINAL LOCATIONS TO BE DETERMINED AND FIELD VERIFIED DURING CONSTRUCTION BY THE FIELD ENGINEER.

SIGN NOTES:

- TELESAR INSERT NOT TO BE INSERTED MORE THAN 3 MOUNTING HOLES DEEP INTO BASE. TYPICAL ON ALL SIGN INSTALLATIONS.

INSTALLATION NEAR SHARED-USE PATHWAY (MN MUTCD):

- THE MINIMUM HEIGHT MEASURED VERTICALLY FROM THE SHARED-USE PATHWAY TO THE BOTTOM OF THE SIGN SHALL BE 7 FEET. IF A SECONDARY SIGN IS MOUNTED BELOW THE PRIMARY SIGN AND IS MOUNTED LESS THAN 7 FEET, IT SHALL NOT PROJECT MORE THAN 4 INCHES INTO THE SHARED-USE PATHWAY.

NO	DATE	BY	CHKD	APPR	REVISION

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

PRINT NAME: SEAN R. THIEL
SIGNATURE: *Sean R. Thiel*
DATE: 07/07/2023 LICENSE NO. 45129

DRAWN BY: FL DATE: 05/09/23
DESIGN BY: FL DATE: 05/09/23
CHECKED BY: SRT DATE:



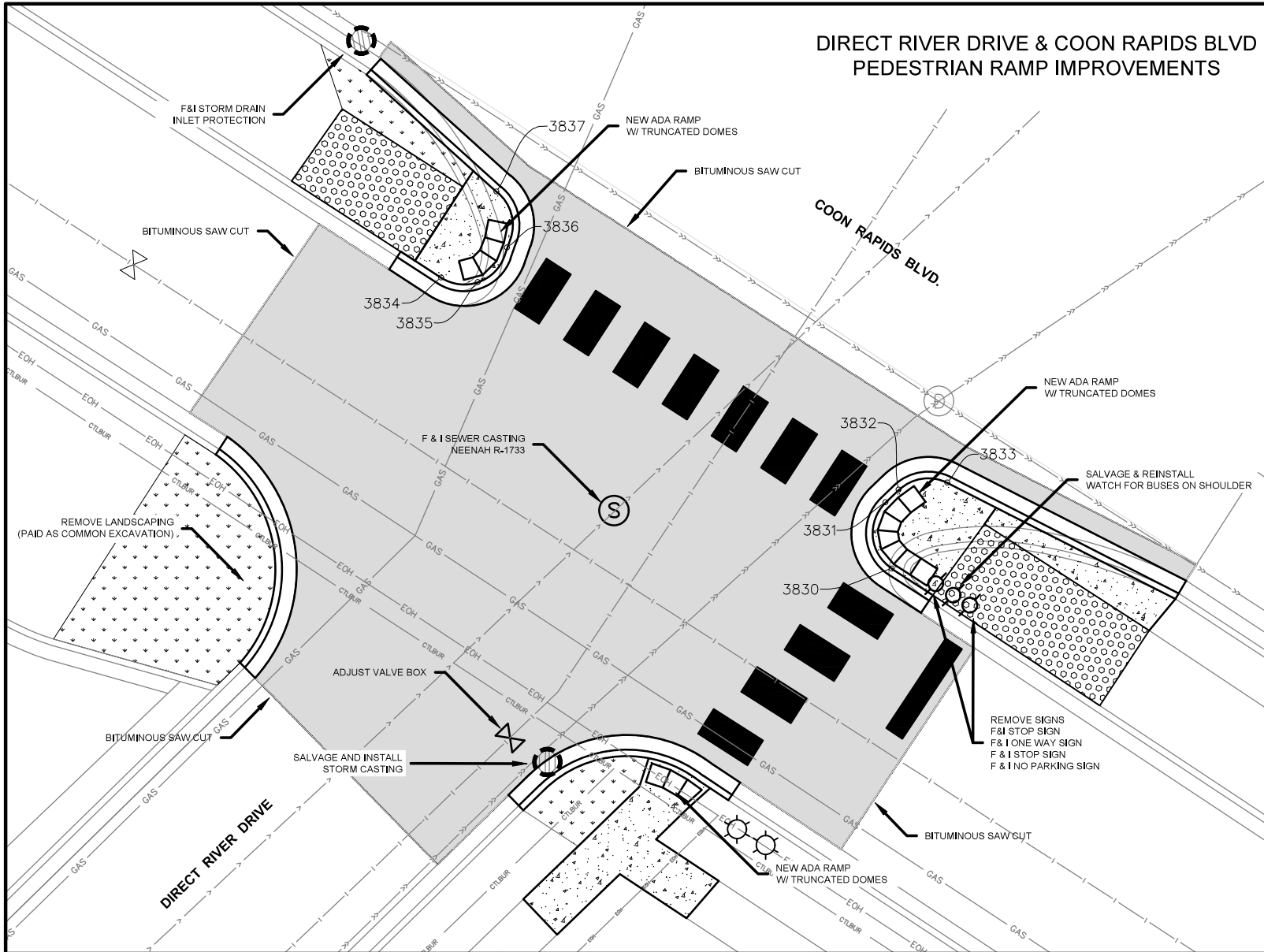
ANOKA COUNTY
HIGHWAY DEPT.

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SAP 114-020-062
CP 23-14

SIGNING & STRIPING
DETAILS

Sheet 25 of 43 Sheets

DIRECT RIVER DRIVE & COON RAPIDS BLVD PEDESTRIAN RAMP IMPROVEMENTS



Point Table				
Point #	Description	Elevation	Northing	Easting
3830	TBC	869.85	148460.40	483029.12
3831	TBC	869.80	148467.17	483028.47
3832	TBC	869.96	148468.45	483029.81
3833	TBC	870.05	148469.18	483034.77
3834	TBC	869.20	148490.11	482983.08
3835	TBC	869.39	148489.66	482986.83
3836	TBC	869.51	148493.19	482989.82
3837	TBC	869.61	148498.90	482988.73

LEGEND	
	CURB
	WATER MAIN
	SANITARY SEWER
	STORM DRAIN
	BITUMINOUS MATCH THICKNESS
	BITUMINOUS 2" THICKNESS
	CONCRETE PAVEMENT
	SEEDING
	WATER GATE VALVE
	SANITARY MANHOLE
	STORM MANHOLE
	STORM CATCH BASIN
	INLET PROTECTION
	SIGN

JULY 26, 2023 4:00 PM K:\2023 CAD\23-14 COON RAPIDS PEDS @ DRD\23-14

NO.	DATE	REVISIONS

CITY OF COON RAPIDS
ENGINEERING DEPARTMENT
11155 ROBINSON DRIVE
COON RAPIDS, MN. 55433-3781
763-795-2880
FAX 163-767-6491

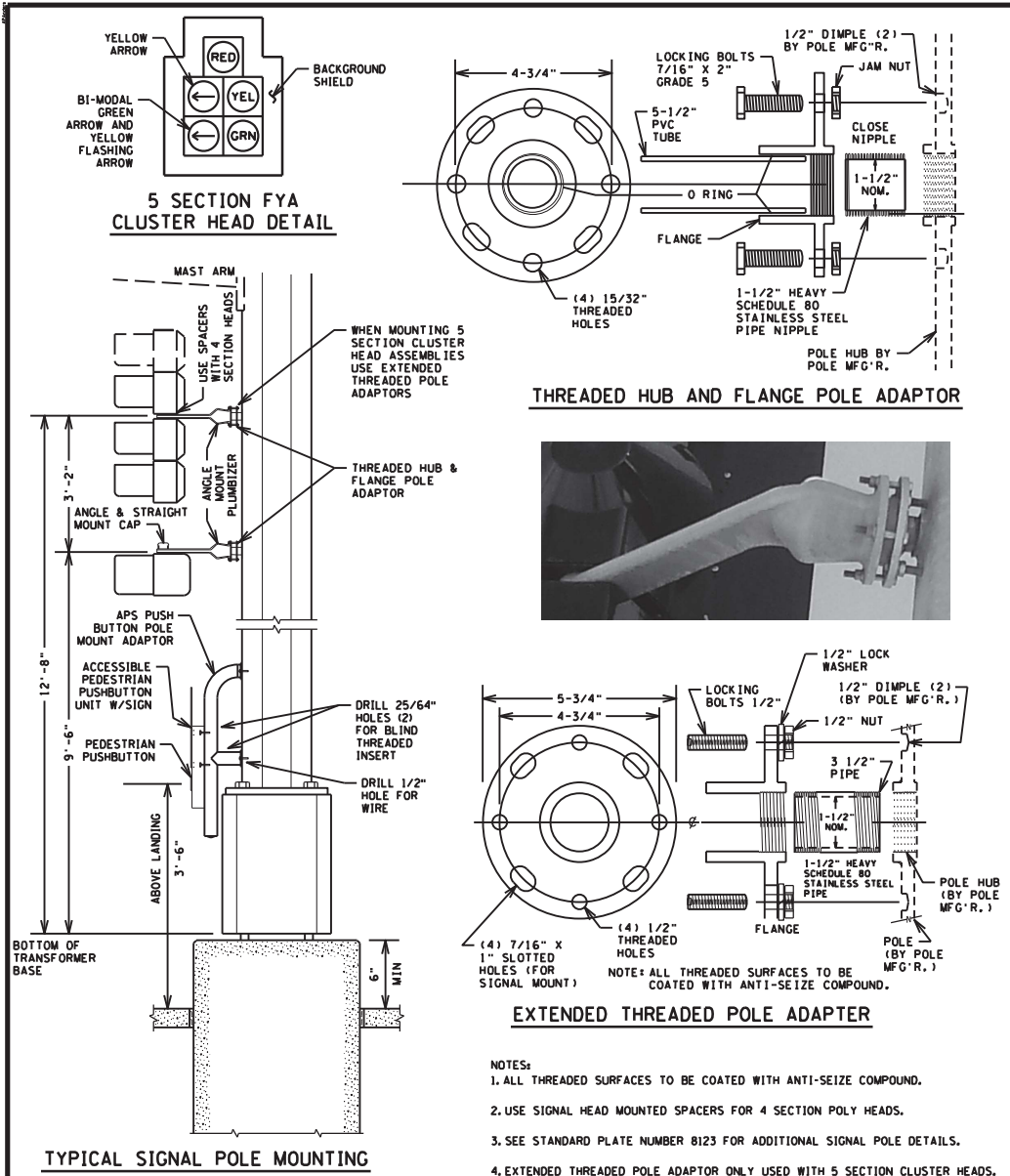
DESIGNED BY: R.T.
DRAWING BY: R.T.
CHECKED BY: M.C.H.
DATE: 7/26/2023

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

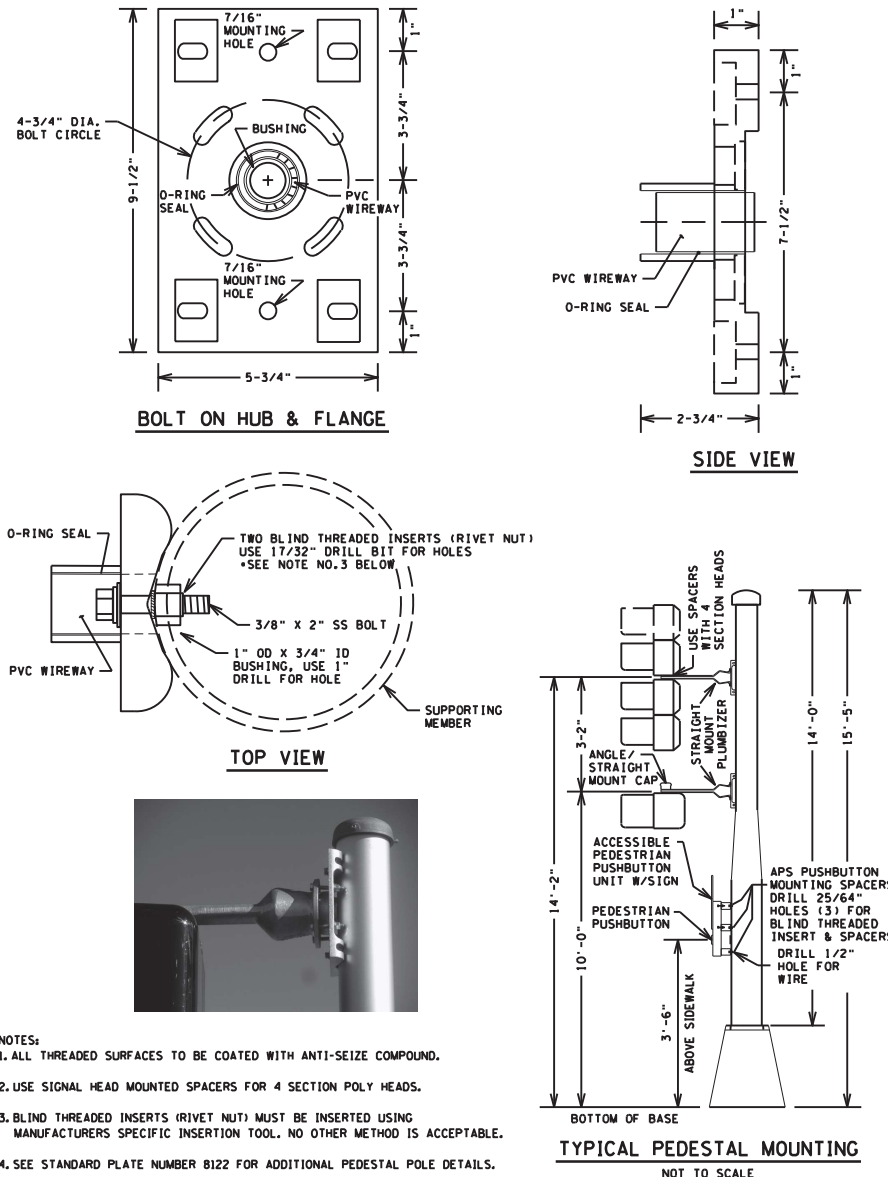
NAME: MARK C. HANSEN P.E.
LICENSE # 43920
DATE: 7/26/2023

23-14 PEDESTRIAN RAMP IMPROVEMENTS
CITY OF COON RAPIDS, MINNESOTA

CONSTRUCTION PLAN
SHEET NO. 26 OF 43 SHEETS



- NOTES:**
1. ALL THREADED SURFACES TO BE COATED WITH ANTI-SEIZE COMPOUND.
 2. USE SIGNAL HEAD MOUNTED SPACERS FOR 4 SECTION POLY HEADS.
 3. SEE STANDARD PLATE NUMBER 8123 FOR ADDITIONAL SIGNAL POLE DETAILS.
 4. EXTENDED THREADED POLE ADAPTOR ONLY USED WITH 5 SECTION CLUSTER HEADS.



- NOTES:**
1. ALL THREADED SURFACES TO BE COATED WITH ANTI-SEIZE COMPOUND.
 2. USE SIGNAL HEAD MOUNTED SPACERS FOR 4 SECTION POLY HEADS.
 3. BLIND THREADED INSERTS (RIVET NUT) MUST BE INSERTED USING MANUFACTURERS SPECIFIC INSERTION TOOL. NO OTHER METHOD IS ACCEPTABLE.
 4. SEE STANDARD PLATE NUMBER 8122 FOR ADDITIONAL PEDESTAL POLE DETAILS.

NOT TO SCALE

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:002-601-063 Xavle Signal Plan 002601063.dwg 06/27/2023 8:02:46 AM

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

PRINT NAME: Aaron Anderson
SIGNATURE:

DATE: 06/27/23 LICENSE NO. 58657

DRAWN BY: APA DATE: 05/12/23
DESIGN BY: APA DATE: 05/12/23
CHECKED BY: ST DATE: 05/12/23

ANOKA COUNTY HIGHWAY DEPT.

SAP 002-601-063
SAP 114-020-062
CP 23-14

TRAFFIC SIGNAL SYSTEM ONE WAY POLE MOUNT DETAILS

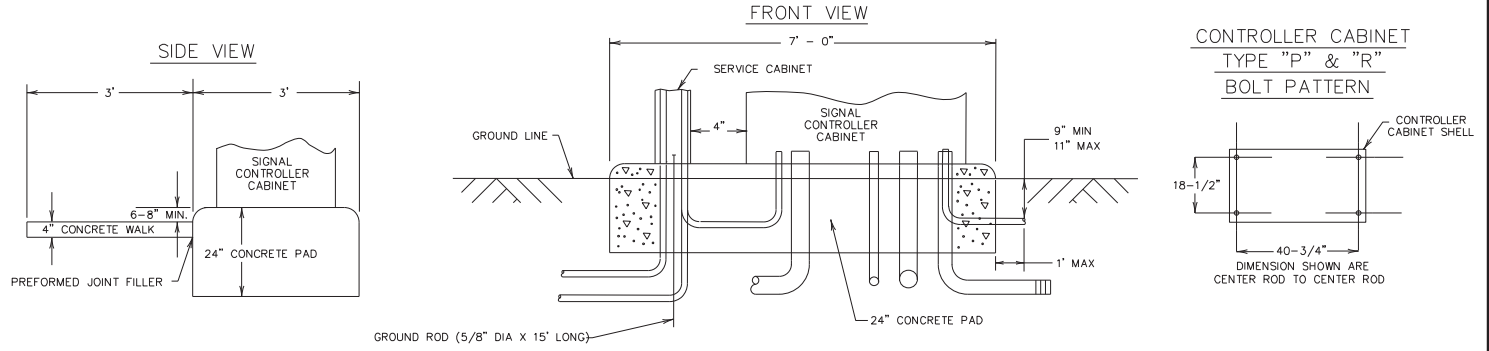
Sheet 27 of 43 Sheets

TYPICAL PAD WITH CONTROLLER CABINET AND SERVICE CABINET

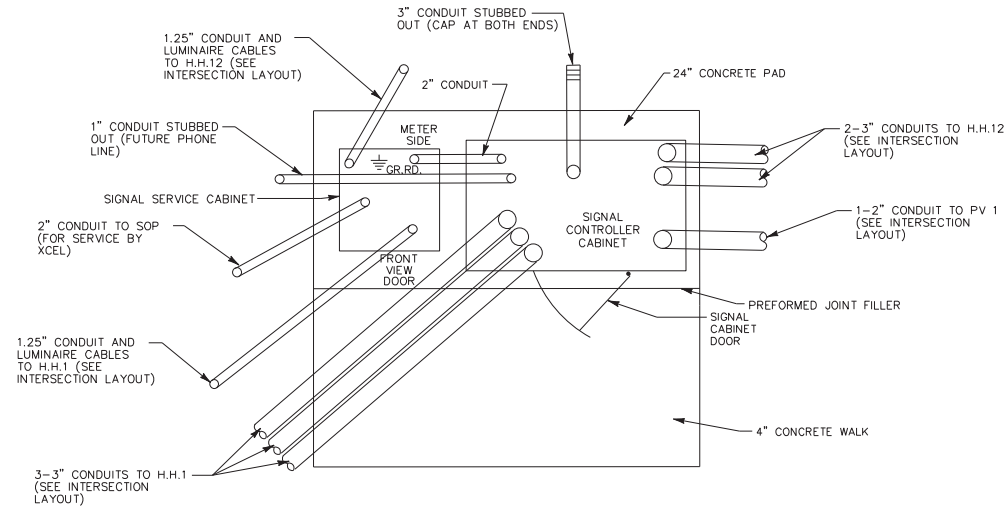
SEE INTERSECTION LAYOUT FOR CABLE INFORMATION (NOT TO SCALE)

NOTES:

1. THE ANCHOR RODS, NUTS AND WASHERS FOR THE COUNTY FURNISHED CONTROLLER AND CABINET SHALL BE FURNISHED BY THE COUNTY AND INSTALLED BY THE CONTRACTOR.
2. THE UPPER PART OF THE NEW EQUIPMENT PAD SHALL BE BEVELLED OR CHAMFERED IN A NEAT MANNER AS DIRECTED BY THE ENGINEER.
3. THE TOP OF THE CONDUITS SHALL BE CAPPED AFTER INSTALLATION (UNTIL CABLES ARE INSTALLED).
4. CONDUIT SHALL PROJECT A MINIMUM OF 2" ABOVE CONCRETE AND SHALL BE LOCATED INSIDE OF THE CABINET WHERE DIRECTED BY THE ENGINEER, BUT SHALL NOT INTERFERE WITH THE CABINET FUNCTIONS (SUPPORTING MEMBERS, ETC.).
5. CONCRETE MIX 3F52 OR EQUAL SHALL BE USED FOR THE EQUIPMENT PAD AND SIDEWALK.
6. CONDUITS WITH BOTH ENDS TERMINATING WITHIN THE PAD SHALL NOT BE INSTALLED BELOW THE CONCRETE.
7. THE EXACT LOCATION OF CONDUITS WITHIN THE PAD SHALL BE DETERMINED BY THE ENGINEER IN THE FIELD.
8. ANCHOR RODS SHALL PROJECT A MINIMUM OF 3" ABOVE THE CONCRETE BUT SHALL NOT INTERFERE WITH THE CABINET FUNCTIONS (SUPPORTING MEMBERS, ETC.).
9. CONTRACTOR SHALL PROVIDE MINIMUM 4-INCH CLEARANCE BETWEEN CONTROLLER AND SERVICE CABINETS ON THE EQUIPMENT PAD FOUNDATION AS SHOWN.



PLAN VIEW
LOCATION



NO	DATE	BY	CHKD	APPR	REVISION

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 PRINT NAME: Aaron Anderson
 SIGNATURE: [Signature]
 DATE: 06/27/23 LICENSE NO. 58657

DRAWN BY APA DATE 05/12/23
 DESIGN BY APA DATE 05/12/23
 CHECKED BY ST DATE 05/12/23

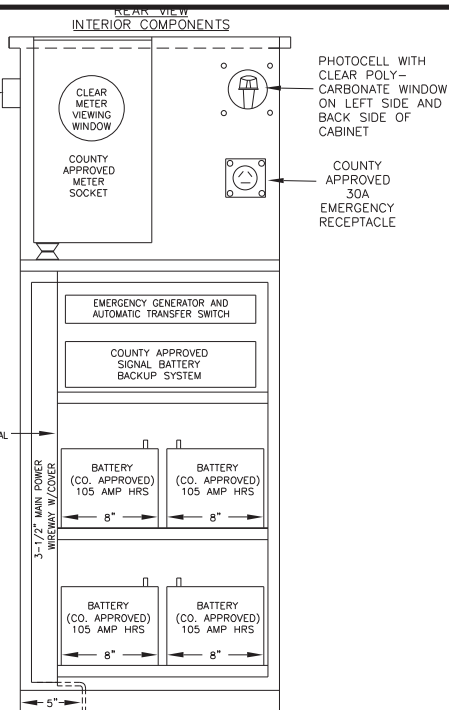
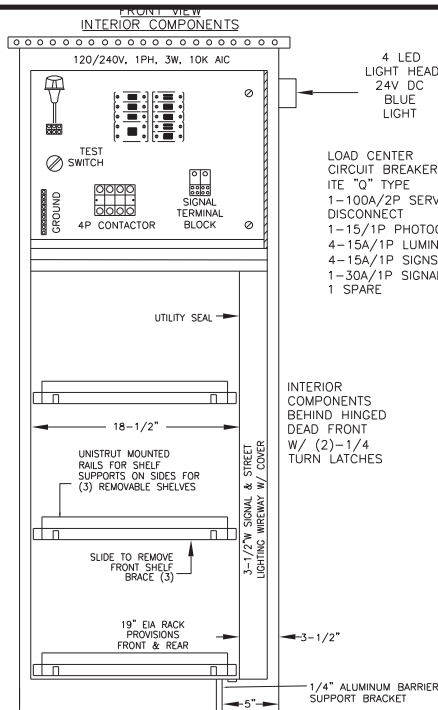
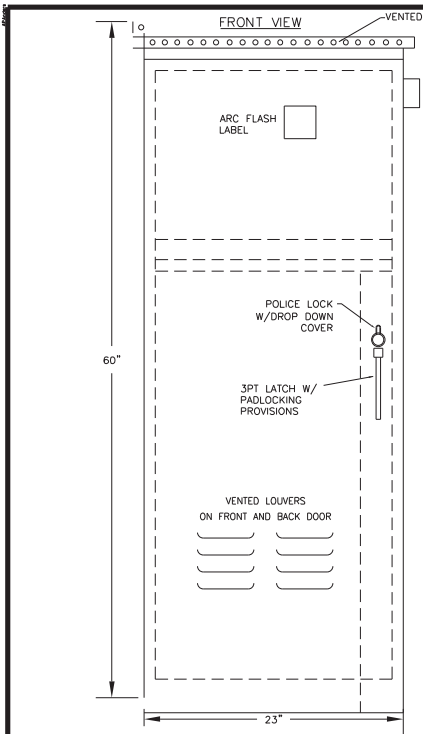


ANOKA COUNTY
HIGHWAY DEPT.

SAP 002-601-063
 SAP 114-020-062
 CP 23-14

CABINET EQUIPMENT
PAD DETAIL

Sheet 28 of 43 Sheets



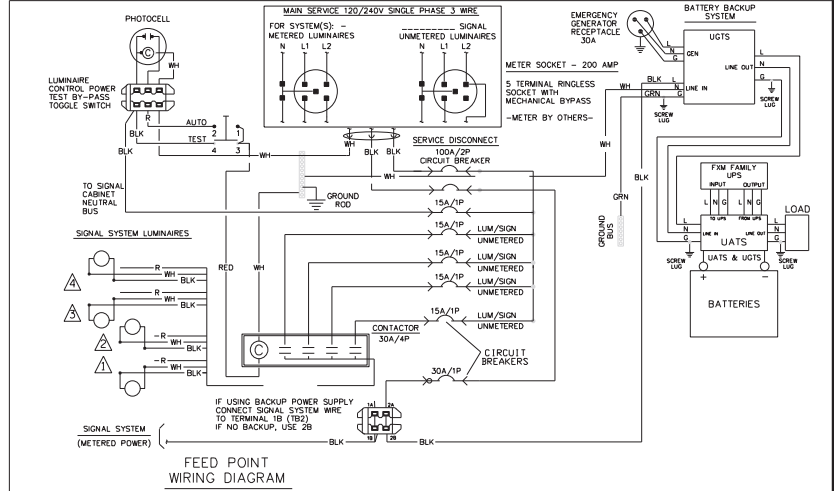
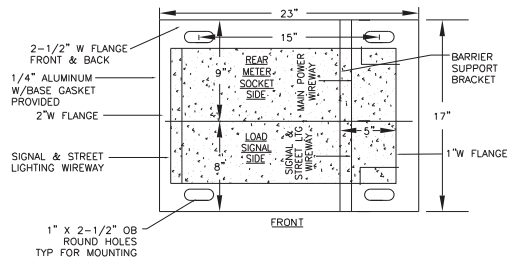
- LOAD CENTER
CIRCUIT BREAKERS
ITE "0" TYPE
1-100A/2P SERVICE DISCONNECT
1-15/1P PHOTOCELL
4-15A/1P LUMINAIRES
4-15A/1P SIGNS
1-30A/1P SIGNAL SVC
1 SPARE

INTERIOR COMPONENTS BEHIND HINGED DEAD FRONT W/ (2)-1/4 TURN LATCHES

CABINET CONSTRUCTION

- NEMA 3R
- 1/8" ALUMINUM 5052-H32
- ANODIZED 30 MINUTE CLEAR
- NEOPRENE GASKETED DOORS
- NON-CORRODING HARDWARE
- ETL LISTED IN ACCORDANCE W/UL508A

SEE SPECIAL PROVISIONS AND STATEMENT OF ESTIMATED QUANTITIES REGARDING SEPARATE PAY ITEM FOR FURNISHING & INSTALLING NEW BATTERY BACK-UP SIGNAL SERVICE CABINET.



NO	DATE	BY	CKD	APPR	REVISION

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
 PRINT NAME: Aaron Anderson
 SIGNATURE:

DRAWN BY: APA DATE: 09/12/23
 DESIGN BY: APA DATE: 09/12/23
 CHECKED BY: ST DATE: 09/12/23



ANOKA COUNTY
HIGHWAY DEPT.

SAP 002-601-063
SAP 114-020-062
CP 23-14

TRAFFIC SIGNAL SYSTEM
SIGNAL SERVICE
CABINET DETAILS

LEGEND OF SYMBOLS

CONTROLLER AND SERVICE EQUIP. NO'S	(A)
SIGNAL BASE NO.	(1)
SIGNAL FACE NO.	(2)
LUMINAIRE NO.	(3)
CONTROLLER AND CABINET	(4)
CONTROLLER AND CABINET - IN PLACE	(5)
HANDHOLE	(6)
HANDHOLE - IN PLACE	(7)
SCHEDULE 80 PVC CONDUIT	(8)
RIGID STEEL CONDUIT (RSC) - IN PLACE	(9)
SIGNAL FACE WITH BACKGROUND SHIELD	(10)
SIGNAL FACE W/O BACKGROUND SHIELD	(11)
SIGNAL FACE - IN PLACE	(12)
PEDESTRIAN INDICATORS	(13)
PEDESTRIAN INDICATORS - IN PLACE	(14)
PEDESTRIAN PUSH BUTTONS ON PEDESTAL OR POLE	(15)
PEDESTRIAN PUSH BUTTON STATION	(16)
TRAFFIC SIGNAL PEDESTAL	(17)
TRAFFIC SIGNAL PEDESTAL - IN PLACE	(18)
TRAFFIC SIGNAL POLE AND MAST ARM	(19)
TRAFFIC SIGNAL POLE AND MAST ARM - IN PLACE	(20)
STREET LIGHT POLE AND LUMINAIRE	(21)
STREET LIGHT POLE AND LUMINAIRE - IN PLACE	(22)
MAST ARM AND LUMINAIRE	(23)
MAST ARM AND LUMINAIRE - IN PLACE	(24)
WOOD POLE	(25)
WOOD POLE - IN PLACE	(26)
SOURCE OF POWER	(27)
RAILROAD SIGNAL - IN PLACE	(28)
RIGHT OF WAY LINE	(29)
CENTERLINE	(30)
EDGE OF ROADWAY	(31)
SHOULDERLINE	(32)
CURB LINE	(33)
STOP BAR	(34)
EMERGENCY VEHICLE PREEMPTION DETECTOR	(35)

ABBREVIATIONS

3-1(EG)	SIGNAL HEAD PHASE "3" - NO. "1"	P2-1(EG)	PEDESTRIAN INDICATION PHASE "2" - NO. "1"
BR, GR.	BARE GROUND	PB	PUSH BUTTON
CH, SW.	CHECK SWITCH	PB2-1(EG)	PUSH BUTTON PHASE "2" - NO. "1"
CLR	CLEAR	PEC	PHOTOELECTRIC CELL
D2-1(EG)	DETECTOR PHASE "2" - NO. "1"	PED	PEDESTRIAN
DWK	DON'T WALK	R	RED
EG	EQUIPMENT GROUND	R&S	REMOVE AND SALVAGE
EVP	EMERGENCY VEHICLE PRE-EMPTION	RLTA	RED LEFT TURN ARROW
F&I	FURNISH AND INSTALL	RRTA	RED RIGHT TURN ARROW
FL	FLASH/FLASHING	RSC	RIGID STEEL CONDUIT
G	GREEN	SOP	SOURCE OF POWER
GLTA	GREEN LEFT TURN ARROW	SPR	SPARE
GRN	GREEN	ST. LHT	STREET LIGHT
GR, R	GROUND ROD	STA	STATION
GRTA	GREEN RIGHT TURN ARROW	SW	SWITCH
GTHA	GREEN THRU ARROW	SWD	SWITCHED
HH	HANDHOLE	S&R	SALVAGE AND REINSTALL
HPS	HIGH PRESSURE SODIUM	TDW	TELEPHONE DROP WIRE
JB	JUNCTION BOX	WLK	WALK
LUM	LUMINAIRE	YEL	YELLOW
NEU	NEUTRAL	YLTA	YELLOW LEFT TURN ARROW
NMC	NONMETALLIC CONDUIT	YRTA	YELLOW RIGHT TURN ARROW
		YTHA	YELLOW THRU ARROW

CONDUCTOR COLOR CODE

R	RED
O	ORANGE
BL	BLUE
WH	WHITE
R/BLK	RED WITH BLACK TRACER
O/BLK	ORANGE WITH BLACK TRACER
BL/BLK	BLUE WITH BLACK TRACER
WH/BLK	WHITE WITH BLACK TRACER
BLK	BLACK
BLK/WH	BLACK WITH WHITE TRACER
C/BLK	GREEN WITH BLACK TRACER
G	GREEN

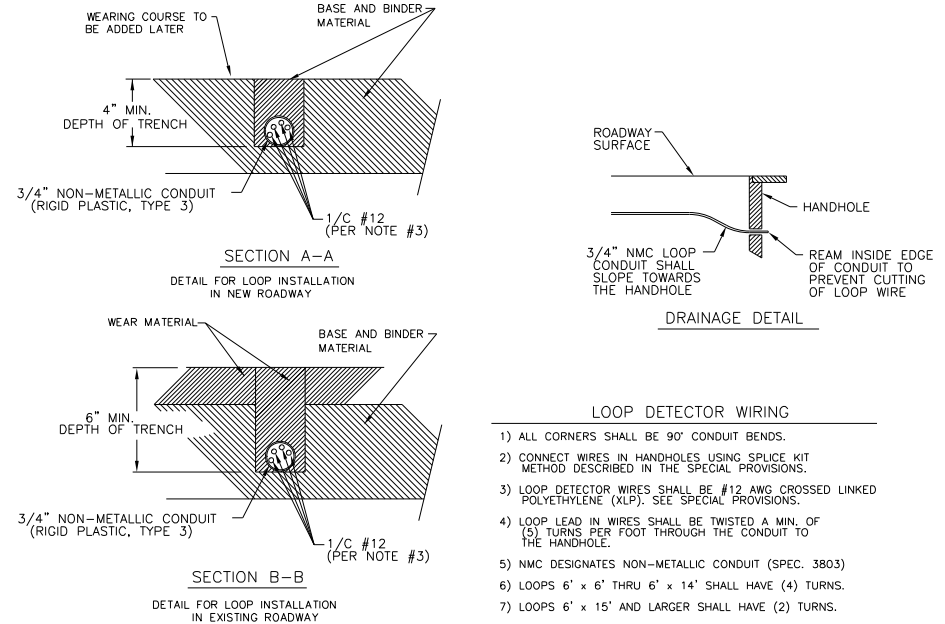
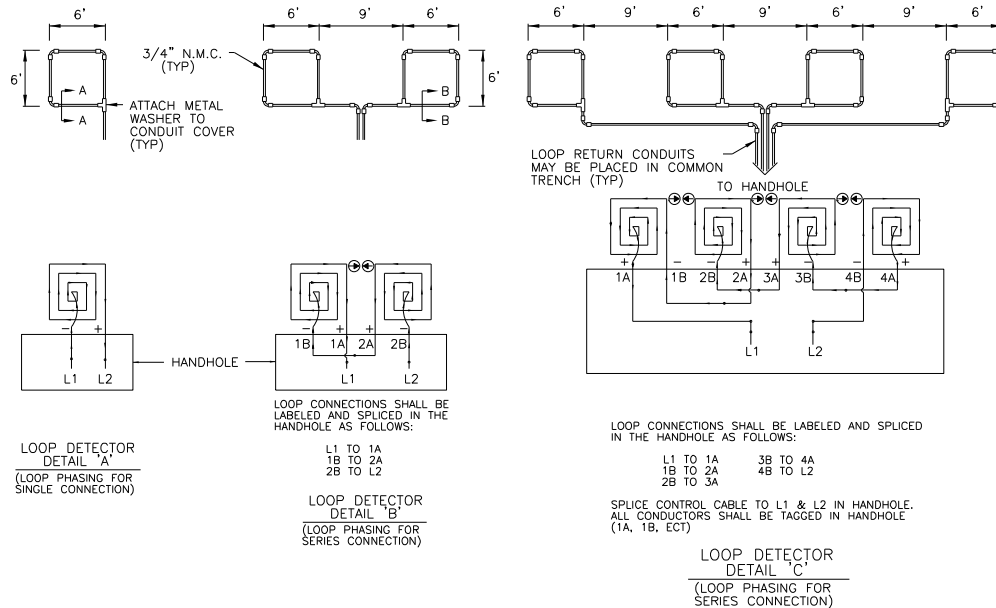
TABULATION OF SIGNAL QUANTITIES

ITEM NUMBER	ITEM	UNIT	TOTAL ESTIMATED QUANTITY	ANOKA COUNTY SAP 002-601-063	COON RAPIDS SAP 114-020-062
2104 502	REMOVE SIGNAL SYSTEM	EACH	1	1	
2565 501	EMERGENCY VEHICLE PREEMPTION SYSTEM	LUMP SUM	1		1
2565 501	TRAFFIC CONTROL INTERCONNECT	LUMP SUM	1	1	
2565 516	TRAFFIC CONTROL SIGNAL SYSTEM	SYSTEM	1	0.5	0.5
2565 616	VIDEO DETECTOR SYSTEM	SYSTEM	1	1	
2565 616	TEMPORARY SIGNAL SYSTEM	SYSTEM	1	1	

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

MNDOT STANDARD PLATES - SIGNAL SYSTEMS

PLATE NO.	DESCRIPTION
8111E	TRAFFIC SIGNAL BRACKETING (PEDESTAL MOUNTED) (3 SHEETS)
8119C	GROUND MOUNTED CABINET FOUNDATION
8120D	POLE FOUNDATION (PA85)
8121H	TRANSFORMER BASE AND POLE BASE PLATE (PA85, PA90 AND PA100) (2 SHEETS)
8122F	PEDESTAL AND PEDESTAL BASE (FOR TRAFFIC CONTROL SIGNALS SUPPORT) (2 SHEETS)
8123G	POLE AND MAST ARM - LUMINAIRES AND TRAFFIC LIGHTS ASSEMBLY (FOR ALL POLE TYPES) (2 SHEETS)
8126L	POLE FOUNDATION (PA90 AND PA100)
8129A	SHIM AND WASHER (TRAFFIC CONTROL SIGNALS AND ROADWAY LIGHTING)
8132B	PREFORMED RIGID PVC CONDUIT LOOP DETECTOR - LAYOUT DETAILS, LAYOUT NOTES, TYPICAL INSTALLATION (3 SHEETS)



LOOP DETECTOR WIRING

- 1) ALL CORNERS SHALL BE 90° CONDUIT BENDS.
- 2) CONNECT WIRES IN HANDHOLES USING SPLICE KIT METHOD DESCRIBED IN THE SPECIAL PROVISIONS.
- 3) LOOP DETECTOR WIRES SHALL BE #12 AWG CROSSED LINKED POLYETHYLENE (XLP). SEE SPECIAL PROVISIONS.
- 4) LOOP LEAD IN WIRES SHALL BE TWISTED A MIN. OF (5) TURNS PER FOOT THROUGH THE CONDUIT TO THE HANDHOLE.
- 5) NMC DESIGNATES NON-METALLIC CONDUIT (SPEC. 3803)
- 6) LOOPS 6' x 6' THRU 6' x 14' SHALL HAVE (4) TURNS.
- 7) LOOPS 6' x 15' AND LARGER SHALL HAVE (2) TURNS.

1	7-24-2023	AA	AA	AA	UPDATED TABULATION OF SIGNAL QUANTITIES
NO	DATE	BY	CKD	APPR	REVISION
NAME: P:\002-601-063 Xavis Signal Plan Backup Plansheets\002601063_s01_Backup.dgn 07/24/2023 12:34:12 PM					

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

PRINT NAME: Aaron Anderson

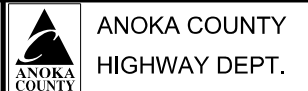
SIGNATURE:

DATE: 07/24/23 LICENSE NO. 58957

DRAWN BY: APA DATE: 05/12/23

DESIGN BY: APA DATE: 05/12/23

CHECKED BY: ST DATE: 05/12/23



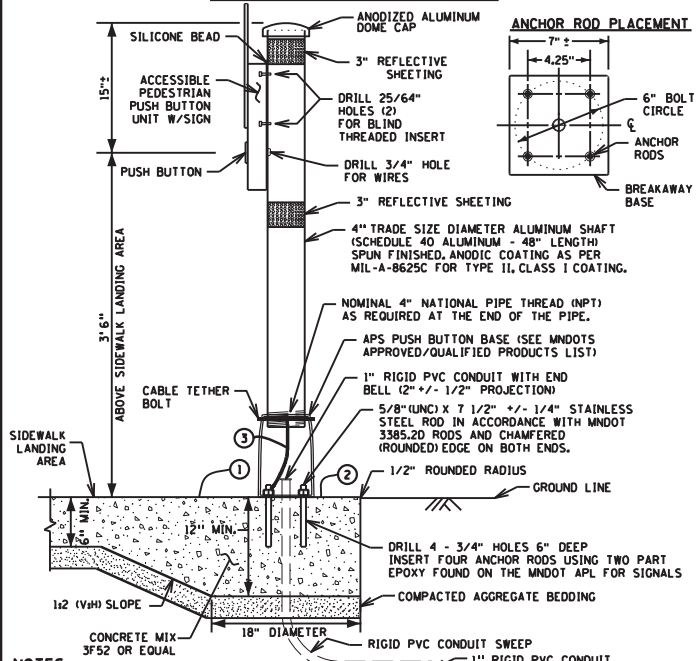
SAP 002-601-063
SAP 114-020-062
CP 23-14

STANDARDS &
LOOP DETECTOR DETAIL

Sheet 30 of 43 Sheets

7/2023

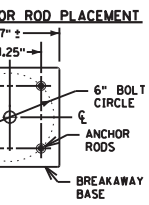
APS PUSH BUTTON STATION



- NOTES:**
- 1. PLACEMENT AND ORIENTATION OF THE PUSH BUTTON STATION IS CRITICAL. MOUNT THE BUTTON SO THAT THE FACE IS PARALLEL WITH THE ASSOCIATED CROSSWALK. SCREW IN SHAFT TO A TIGHTENED POSITION BEFORE MOUNTING ACCESSIBLE PEDESTRIAN PUSH BUTTON UNIT TO THE SHAFT.
 - 2. ORIENT ACCESS OPENING ON THE BREAKAWAY PEDESTAL DIRECTLY BELOW THE APS BUTTON.
 - 3. PLUMB THE PUSH BUTTON STATION WITH LEVELING SHIMS IN ACCORDANCE WITH STANDARD PLATE 8129.
 - 4. INSTALL BLIND THREADED INSERTS USING MANUFACTURER'S SPECIFIC INSERTION TOOL.
 - 5. USE ZINC PLATED STEEL 1/4 - 20 UNC BLIND THREADED INSERTS SUITABLE FOR MOUNTING ON SURFACE WALL THICKNESS OF .337. APPROVED BLIND INSERTS ARE LISTED ON MNDOT'S APPROVED/QUALITY PRODUCTS LIST WEBSITE FOR TRAFFIC SIGNALS.
 - 6. USE APS 1/4 - 20 STAINLESS STEEL MOUNTING BOLTS. APPLY BRUSH ON ANTI SEIZE COMPOUND TO BOLTS PRIOR TO ASSEMBLY.
 - 7. APPLY A BEAD OF 100% SILICONE SEALANT ALONG THE TOP OF THE PUSH BUTTON UNIT WHERE IT COMES IN CONTACT WITH THE 4" SHAFT.
 - 8. USE WHITE REFLECTIVE SHEETING AT INTERSECTION CORNERS AND YELLOW REFLECTIVE SHEETING IN CENTER MEDIANS. APPROVED TUBE DELINEATOR SHEETING IS LISTED ON MNDOT'S APPROVED/QUALIFIED PRODUCTS LIST WEBSITE FOR SIGNING.
 - 9. AN 18" X 6" FIBER FORMING TUBE MAY BE USED FOR THE LOWER HALF OF THE FOUNDATION WHEN CONDITIONS DO NOT ALLOW FOR THE 18" X 6" HOLE TO STAND OPEN.
 - 10. THE PUSH BUTTON STATION FOUNDATION IS MONOLITHIC (POURED AT ONE TIME) WITH THE SIDEWALK. PROVIDE A 1/2 (V/H) SLOPE GRADE WHERE THE 6" MIN SIDEWALK DEPTH TRANSITIONS TO THE 12" MIN FOUNDATION DEPTH. MAINTAIN THE COMPACTED AGGREGATE BEDDING AND THICKNESS USED FOR THE SIDEWALK THROUGHOUT THE SLOPE AND FOUNDATION GRADING. PROVIDE 1/2 (V/H) SLOPE GRADING 360 DEGREES FOR THE TRANSITION FROM THE SIDEWALK TO THE FOUNDATION WHEN THE FOUNDATION IS NOT LOCATED NEAR EDGE OF SIDEWALK AND IS SURROUNDED BY CONCRETE WALK.
 - 11. ENSURE CONCRETE CONTROL JOINTS AND EDGE OF CONCRETE WALK ARE A MINIMUM 9" FROM THE CENTER OF THE PUSH BUTTON FOUNDATION.
 - 12. INSTALL THE MANUFACTURER PROVIDED CABLE TETHER ASSEMBLY IN ACCORDANCE WITH THE MANUFACTURER'S INSTALLATION INSTRUCTIONS.

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-601-063 Xavls Signal\Fan\002601063_005.dgn 06/27/2023 8:02:50 AM

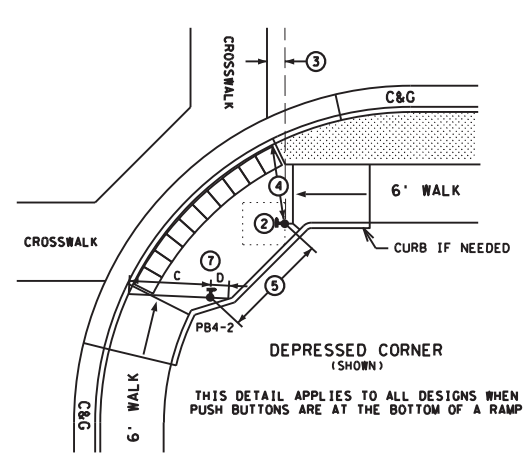
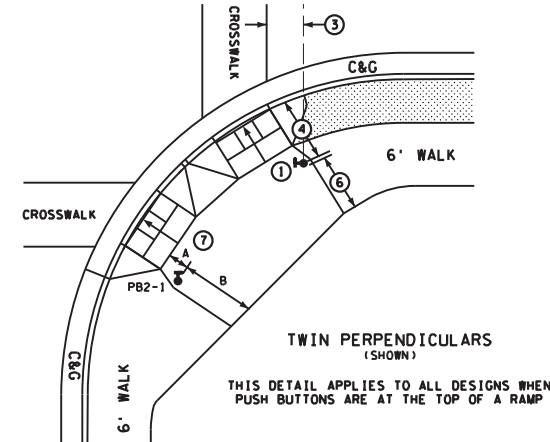


TYPICAL APS PEDESTRIAN PUSH BUTTON LOCATION

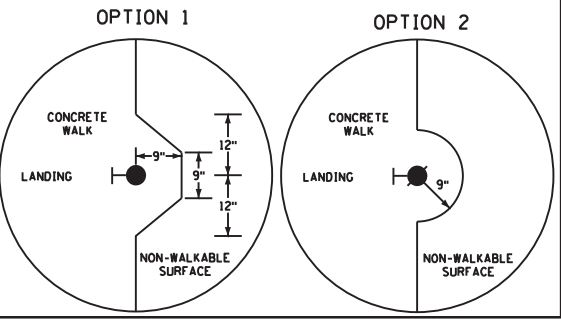
THIS IS A GENERAL DETAIL INTENDED TO SHOW THE REQUIREMENTS OF APS PUSH BUTTON LOCATION. FOR PROJECT SPECIFIC INFORMATION REGARDING PEDESTRIAN RAMP LAYOUT AND PUSH BUTTON LOCATIONS, SEE THE PLAN.

SUPPLEMENTAL GUIDANCE FOR CONSTRUCTING COMPLIANT APS PUSH BUTTONS:

1. THE FACE OF THE BUTTON SHALL BE PARALLEL WITH THE OUTSIDE EDGE OF CROSSWALK.
2. A MINIMUM 4 FT X 4 FT LANDING AREA SHALL BE PROVIDED ADJACENT TO EACH BUTTON, WITH A 2 PERCENT MAXIMUM SLOPE IN ALL DIRECTIONS.
3. BUTTONS SHALL BE WITHIN 5 FT OF THE OUTSIDE EDGE OF THE CROSSWALK.
4. BUTTONS SHALL BE BETWEEN 1.5 FT AND 10 FT FROM THE BACK OF CURB OR EDGE OF ROADWAY, MEASURED IN THE DIRECTION OF TRAVEL. STANDALONE PUSH BUTTON STATIONS SHOULD BE 4' MINIMUM FROM THE BACK OF CURB TO AVOID KNOCKDOWNS.
5. BUTTONS SHALL BE AT LEAST 10 FT APART.
6. PROVIDE A MAINTENANCE ACCESS ROUTE (MAR) WHEREVER POSSIBLE FOR SNOW REMOVAL PURPOSES. A MAR REQUIRES A 6 FT MINIMUM CLEAR DISTANCE BETWEEN A PUSH BUTTON AND ANY OBSTRUCTIONS, INCLUDING BUILDINGS, V-CURB, ELECTRICAL FOUNDATIONS, SIGNAL CABINETS, OR ANOTHER PUSH BUTTON.
7. BUTTON SHOULD BE 2 FT MINIMUM FROM RAMP GRADE BREAK AND BACK OF WALK.



CONTRACTOR MUST USE OPTION 1 OR 2 WHEN THE APS PUSH BUTTON IS SHOWN AT THE EDGE OF WALK. OPTION USED (OR SELECTED) MUST BE THE SAME THROUGHOUT THE ENTIRE PROJECT.



SIGNAL CONTROL POINTS	X	Y	DISTANCE TO FRONT OF LANDING (FT)	DISTANCE TO BACK OF LANDING (FT)
PB2-1	-	-	A	B
PB4-2	-	-	C	D

- A - DISTANCE MEASURED FROM THE PUSH BUTTON TO THE FRONT OF LANDING/TOP OF RAMP
- B - CLEAR DISTANCE MEASURED FROM THE PUSH BUTTON TO THE BACK OF LANDING/EDGE OF WALK
- C - CLEAR DISTANCE MEASURED FROM THE PUSH BUTTON TO THE OUTSIDE EDGE OF DOMES IN THE DIRECTION OF TRAVEL
- D - CLEAR DISTANCE FROM THE PUSH BUTTON TO THE BACK OF LANDING MEASURED IN THE OPPOSITE DIRECTION OF TRAVEL

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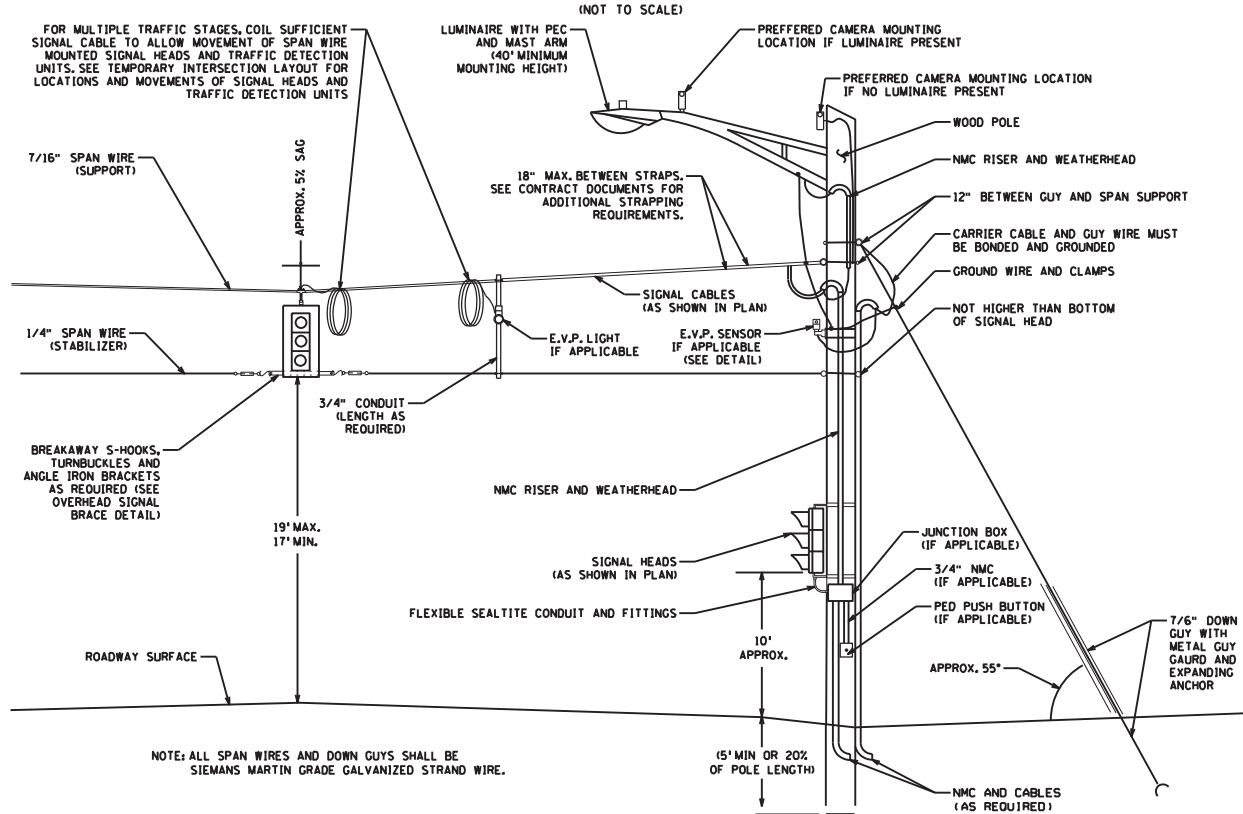
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APS PUSH BUTTON
 STATION DETAILS

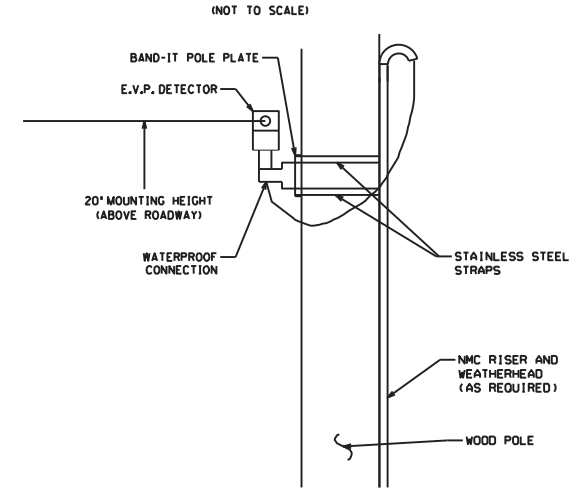
Sheet 31 of 43 Sheets

TYPICAL WOOD POLE AND SPAN WIRE MOUNTED TRAFFIC SIGNALS

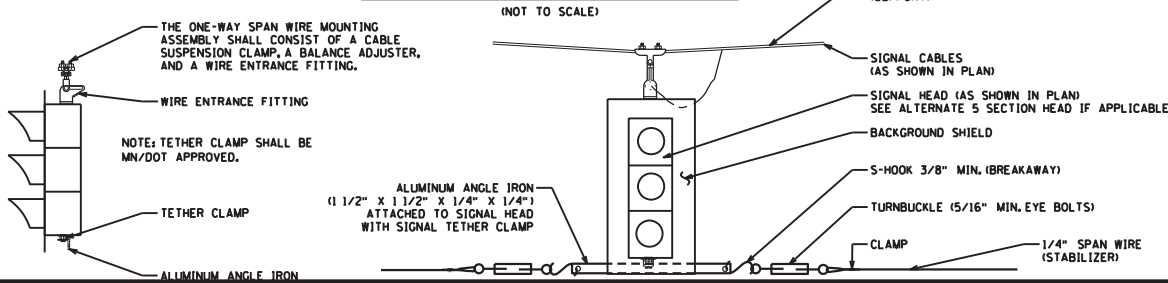


NOTE: ALL SPAN WIRES AND DOWN GUYS SHALL BE SIEMANS MARTIN GRADE GALVANIZED STRAND WIRE.

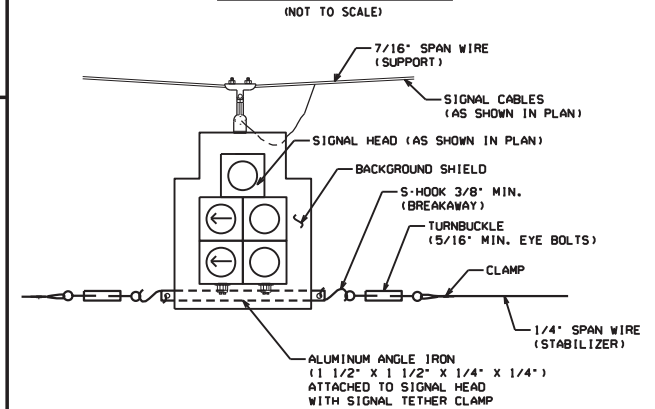
E.V.P. OR TRAFFIC DETECTOR WOOD POLE MOUNT



OVERHEAD SIGNAL BRACE DETAIL



5 SECTION HEAD OVERHEAD SIGNAL BRACE DETAIL



NO	DATE	BY	CKD	APPR	REVISION

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
 PRINT NAME: Aaron Anderson
 SIGNATURE: [Signature]
 DATE: 06/27/23 LICENSE NO. 58657

DRAWN BY APA DATE 05/12/23
 DESIGN BY APA DATE 05/12/23
 CHECKED BY ST DATE 05/12/23



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WOOD POLE & SPAN
WIRE DETAIL

Sheet 32 of 43 Sheets

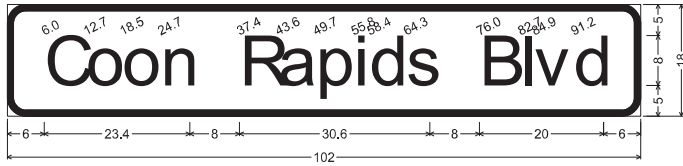
7/20/23

SIGN PANELS ON SIGNALS					
POLE NUMBER	"A" DISTANCE (FEET) OR POLE	PANEL			
		CODE NUMBER	LEGEND	SIZE (INCHES)	AREA (SQ. FT)
1	32	D-2	XAVIS ST	54 x 18	6.75
1	0	R10-X12	LEFT TURN YIELD ON FLASHING YELLOW ARROW	36 x 42	10.50
1	POLE	R6-1L	ONE WAY LEFT	36 x 12	3.00
1	POLE	R6-1R	ONE WAY RIGHT	36 x 12	3.00
2	14.5	D-3	ANOKA COUNTY 1 DOUBLE ARROW	36 x 54	13.50
2	0	R10-X12	LEFT TURN YIELD ON FLASHING YELLOW ARROW	36 x 42	10.50
3	32	D-2	XAVIS ST	54 x 18	6.75
3	0	R10-X12	LEFT TURN YIELD ON FLASHING YELLOW ARROW	36 x 42	10.50
3	POLE	R6-1L	ONE WAY LEFT	36 x 12	3.00
3	POLE	R6-1R	ONE WAY RIGHT	36 x 12	3.00
4	17	D-1	COON RAPIDS BLVD	102 x 18	12.75
4	0	R10-X12	LEFT TURN YIELD ON FLASHING YELLOW ARROW	36 x 42	10.50

GENERAL NOTE(S):

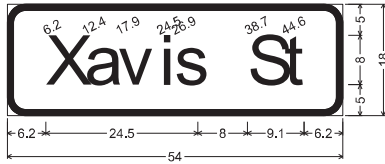
- SEE MNDOT STANDARD SIGNS AND MARKINGS MANUAL FOR STANDARD SIGN DESIGNS, ARROW DETAILS AND SPLICE PLATE DETAILS.
- FOR NON STANDARD SIGN DESIGNS, LAYOUTS ARE INCLUDED. SIGN PANEL DIMENSIONS ARE IN INCHES.
- SEE STANDARD PLAN 5-297.731 FOR SIGN MOUNTING TO MAST ARM.
- SEE STANDARD PLAN 5-297.730 FOR SIGN MOUNTING TO ROUND POST.
- MOUNTING HEIGHT OF POLE MOUNTED SIGN PANELS MUST BE 7 FOOT MINIMUM. MOUNTING HEIGHT IS MEASURED FROM BOTTOM OF SIGN PANEL TO SURFACE IMMEDIATELY BELOW THE SIGN PANEL.
- "A" DISTANCE = DISTANCE FROM THE END OF THE MAST ARM TO THE EDGE OF EACH SIGN PANEL.
- SEE INTERSECTION LAYOUT FOR SIGN PLACEMENT OF POLE MOUNTED SIGNS.

D-1



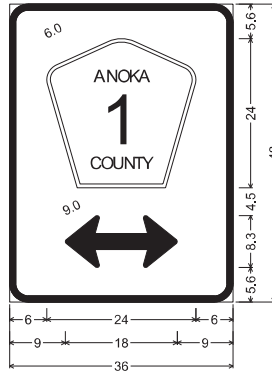
3.0" Radius, 1.0" Border, White on, Green;

D-2



3.0" Radius, 1.0" Border, White on, Green;

D-3



3.0" Radius, 1.0" Border, White on, Green;
Pentagonal County 1 M1-6;
Double Headed Arrow 3 - 18.0" 0';

CONDUCTOR COLOR CODE

FROM	TO DEVICE	SIGNAL CABINET TO DEVICE
SIGNAL SERVICE 1/C 6 EGC	AS SHOWN ON PLAN	R RED/RLA O YEL/YLA BLK GRN/GLA WH NEU BLK/YR YLA/FYA BLK GLA
SOP 3-1/C 2 WH	SIGNAL SERVICE	4 AND 5 SECTION HEADS
SIGNAL SERVICE 3-1/C 6 WH	SIGNAL CABINET	R RED/DWK BLK/YR YEL/WLK BLK GRN/SPR WH NEU
SIGNAL CABINET (6SM)	SIGNAL CABINET	3 SECTION HEAD PED HEADS
SIGNAL CABINET TO DEVICE 6PR 19	AS SHOWN ON PLAN	R RED/YEL BLK/YR GRN WH NEU
COAXIAL CABLE	AS SHOWN ON PLAN	R FYA BLK/YR YLA WH GLA WH NEU
4/C 18 WH	AS SHOWN ON PLAN	5 SECTION (CLUSTER HEADS ONLY)
2/C 14 BLK WH OR CLR	AS SHOWN ON PLAN	R BLK/YR BLK GRN WH NEU
R OR O WH OR YEL	AS SHOWN ON PLAN	R FYA BLK/YR YLA WH GLA WH NEU
3/C 20 WH OR BLK	AS SHOWN ON PLAN	3/C 14 BLK EYP LIGHT/AWF WH LUMINAIRE WH VIDEO CAMERA WH ENFORCEMENT LIGHT
CAT 5	AS SHOWN ON PLAN	

NOTES:
ARRANGE AND TERMINATE CONDUCTORS AND CABLES AS SHOWN WITHOUT SPLICE.
NUMBER ONLY MEANS AWG CONDUCTOR SIZE (e.g. 14=14AWG)
1/C MEANS AN INDIVIDUAL CONDUCTOR NOT PART OF A CABLE ASSEMBLY

CABLE LABELING ABBREVIATIONS

ABBREVIATION	LABEL REFERENCE DISCRIPTION & EXAMPLE	COMPONENT
X-Y	INDICATION NUMBER 2-1	SIGNAL HEAD
X-Y	LOOP NUMBER D2-1	DETECTOR
X-Y	PUSH BUTTON NUMBER PB2-1	PUSH BUTTON
X-Y	PED INDICATION NUMBER P2-1	PED INDICATION
X-Y	LUMINAIRE NUMBER L1	LUMINAIRE
X-Y	EVP PHASE NUMBER EVP 2+5	EVP DETECTOR
X-Y	EVP LIGHT PHASE NUMBER EVPL 2+5	EVP CON. LIGHT
X-Y	VIDEO DETECTION PHASE V2-1	VIDEO DETECTION
X-Y	RADAR DETECTION PHASE RD2-1	RADAR DETECTION
SS	SIGNAL SERVICE	SERVICE WIRE
CC	CABINET COMMS	COMMS CABLE
FO	FIBER OPTIC	FIBER CABLE
SPARE Y	SPARE WIRE TO POLE NUMB. SPAREI	SPARE WIRE
ELYZ #	ENFORC. LIGHT POLE & DIRECTION	ENFORCEMENT LIGHT
PTZI	PTZ CAMERA POLE NUMBER PTZI	PTZ CAMERA
IC	INTERCONNECT CABLE	INTERCONNECT
EGC	EQUIPMENT GROUNDING CONDUCTOR	GROUND

X = SIGNAL SYSTEM PHASE NUMBER; REFER TO THE PLAN
Y = SIGNAL SYSTEM ASSIGNED COMPONENT NUMBER; REFER TO THE PLAN
Z = DIRECTION
FURNISH AND INSTALL LABELS ON CABLES WITH ABBREVIATIONS SHOWN ON THIS TABLE AND IN ACCORDANCE WITH THE WIRING DIAGRAM.

WIRE COLOR CODE KEY

R	Red
O	Orange
BL	Blue
WH	White
BLK	Black
BRN	Brown
CL	Clear
G	Green
R/BLK	Red with Black Stripe
O/BLK	Orange with Black Stripe
BL/BLK	Blue with Black Stripe
WH/BLK	White with Black Stripe
WH/R	White with Red Stripe
BLK/WH	Black with White Stripe
BLK/R	Black with Red Stripe

CONDUCTOR AND CABLE SPECIFICATION CHART

NUMBER OF CONDUCTORS & AWG SIZE	TYPE	Specification Number
1/C 2	INDIVIDUAL SERVICE CONDUCTORS	3815.2B.1
1/C 6	FEEDER AND BRANCH CONDUCTORS	3815.2B.1
1/C 6 INS.GR.	Grounding Conductors	3815.2B.5
2/C 14	Loop Detector Lead-In Cable	3815.2C.4
3/C 14	Signal Control Cable	3815.2C.3
4/C 14	Signal Control Cable	3815.2C.3
6/C 14	Signal Control Cable	3815.2C.3
12/C 14	Signal Control Cable	3815.2C.3
6PR 19	Telephone Cables Outdoor	3815.2C.6.b
3/C 20	EVP Detector Cable	3815.2C.5

NO	DATE	BY	CKD	APPR	REVISION

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
PRINT NAME: Aaron Anderson
SIGNATURE:

DRAWN BY: APA DATE: 09/12/23
DESIGN BY: APA DATE: 09/12/23
CHECKED BY: ST DATE: 09/12/23



ANOKA COUNTY
HIGHWAY DEPT.

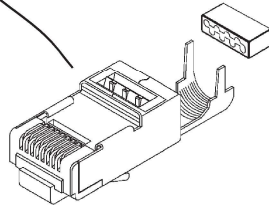
SAP 002-601-063
SAP 114-020-062
CP 23-14

COLOR CODE DETAIL

Sheet 33 of 43 Sheets

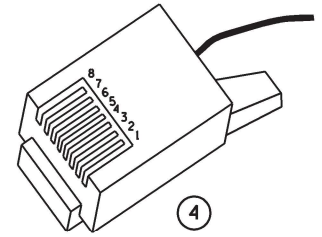
2 CAT 5E (600V RATED) CABLE TERMINATION

F&I RJ45 CABLE TERMINATION - FOR HIGH SPEED APPLICATION. CAT 6 UNSHIELDED MODULAR PLUG, RJ45 (8 CONDUCTOR), GOLD PLATED CONTACTS, ACCEPTS CABLES WITH DIAMETERS UP TO 0.310 INCHES. MEETS CATEGORY 6 ANSI/EIA 568-C.2



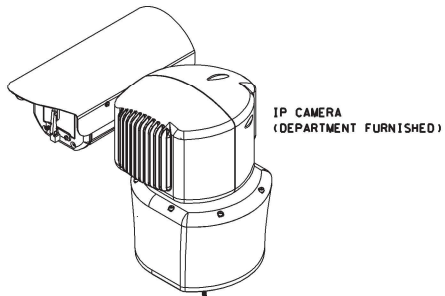
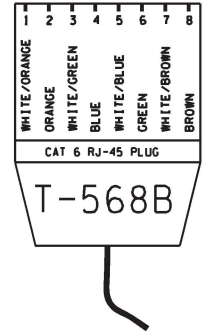
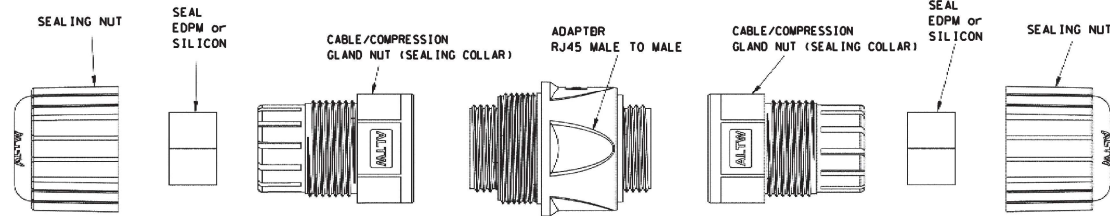
3 CAT 5E (600V RATED)

F&I ETHERNET CABLE CAT 5E IN ACCORDANCE WITH 3815.2C.6d. "ETHERNET CABLE (OUTSIDE PLANT)" L-COM PART NO. TFDL5089 MEETS THE REQUIREMENTS. QUABBIN PART NO. 5089 MEETS THE REQUIREMENTS.



1 WATERPROOF SHIELDED RJ-45 (MALE TO MALE) INLINE COUPLER/ADAPTER

IP67
COPPER ALLOY CONTACT MATERIAL
GOLD CONTACT PLATING
NYLON HOUSING
AMPHENOL PART NO. RDP-00BFFA-SLM7001 &
VPI PART NO. CAT5E-WTP-FF MEETS REQUIREMENTS



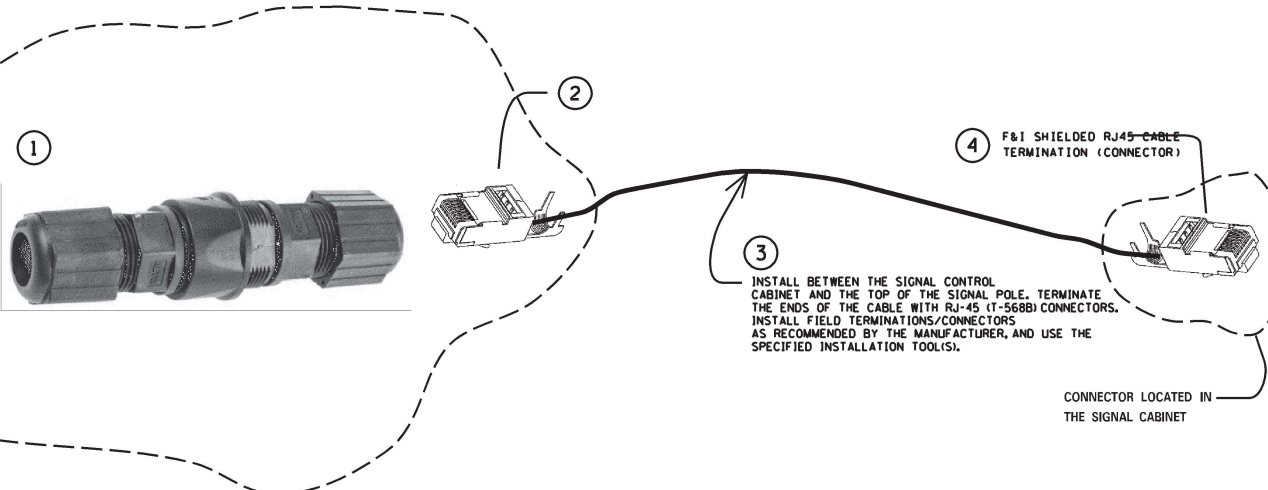
IP CAMERA (DEPARTMENT FURNISHED)

FACTORY INSTALLED 20" PIGTAIL WITH CONNECTOR (RJ-45 PLUG)

ETHERNET CABLE 4/PR

RJ-45 PLUG (T-568B) (SUPPLIED WITH CAMERA)

CONNECTORS LOCATED AT THE TOP OF THE SIGNAL POLE (IN CAMERA MOUNT)



INSTALL BETWEEN THE SIGNAL CONTROL CABINET AND THE TOP OF THE SIGNAL POLE. TERMINATE THE ENDS OF THE CABLE WITH RJ-45 (T-568B) CONNECTORS. INSTALL FIELD TERMINATIONS/CONNECTORS AS RECOMMENDED BY THE MANUFACTURER, AND USE THE SPECIFIED INSTALLATION TOOL(S).

CONNECTOR LOCATED IN THE SIGNAL CABINET

NO	DATE	BY	CHKD	APPR	REVISION

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
PRINT NAME: Aaron Anderson
SIGNATURE: [Signature]
DATE: 06/27/23 LICENSE NO. 58657

DRAWN BY APA DATE 05/12/23
DESIGN BY APA DATE 05/12/23
CHECKED BY ST DATE 05/12/23



**ANOKA COUNTY
HIGHWAY DEPT.**

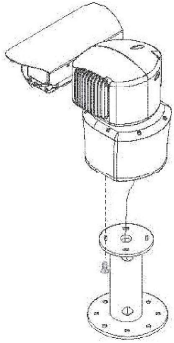
SAP 002-601-063
SAP 114-020-062
CP 23-14

IP CAMERA CONNECTOR DETAILS

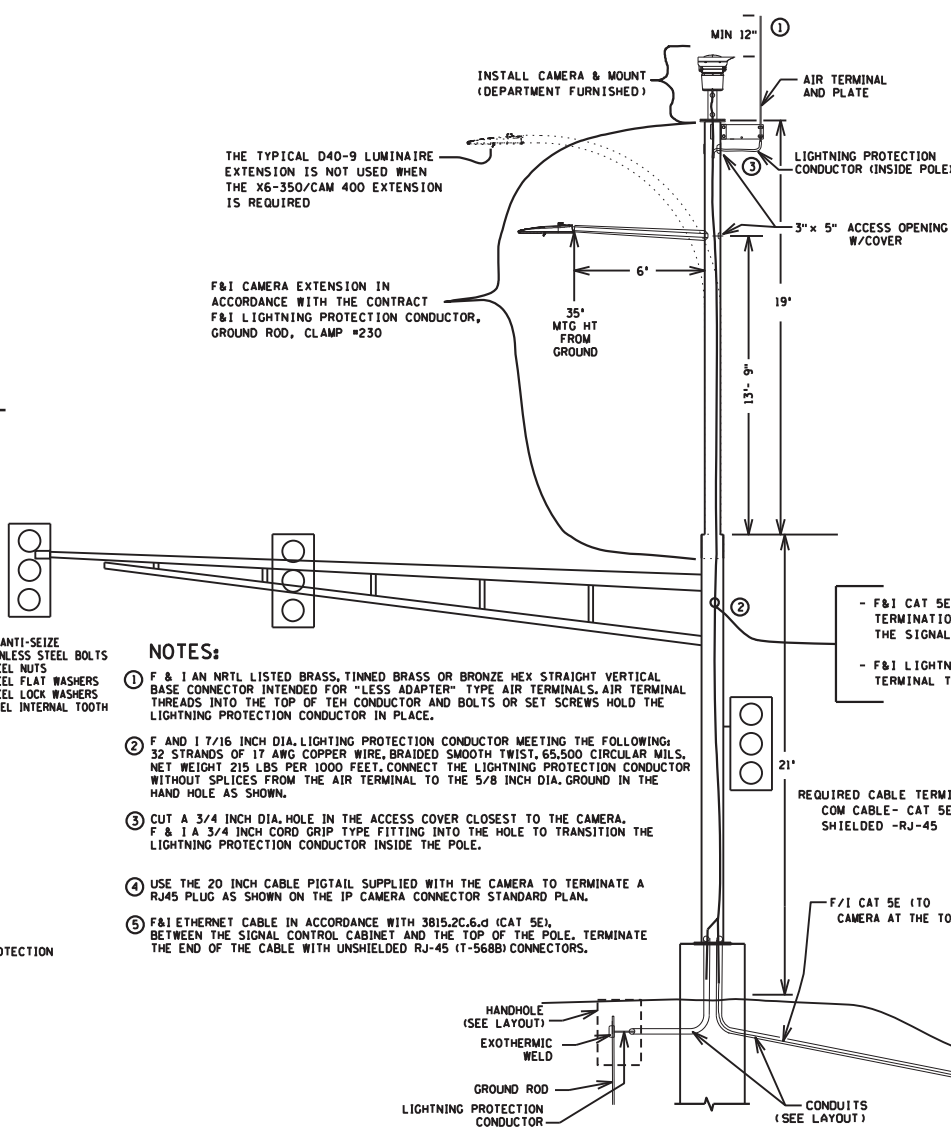
Sheet 34 of 43 Sheets

ISOMETRIC VIEW- CAMERA & MOUNT

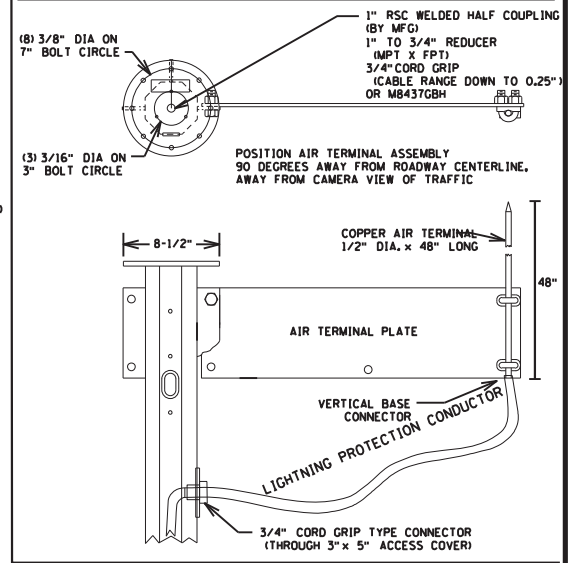
(DEPARTMENT FURNISHED)



X6-350/CAM 400

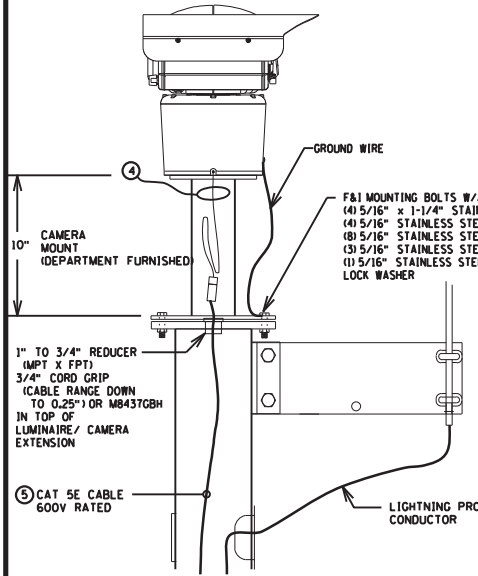


EXTENSION TOP & LIGHTNING PROTECTION DETAIL



CAMERA & MOUNT AT TOP OF EXTENSION

IP CAMERA (DEPARTMENT FURNISHED)



NOTES:

- 1 F & I AN NRTL LISTED BRASS, TINNED BRASS OR BRONZE HEX STRAIGHT VERTICAL BASE CONNECTOR INTENDED FOR "LESS ADAPTER" TYPE AIR TERMINALS. AIR TERMINAL THREADS INTO THE TOP OF THE CONDUCTOR AND BOLTS OR SET SCREWS HOLD THE LIGHTNING PROTECTION CONDUCTOR IN PLACE.
- 2 F & I 1 7/16 INCH DIA. LIGHTNING PROTECTION CONDUCTOR MEETING THE FOLLOWING: 32 STRANDS OF 17 AWG COPPER WIRE, BRAIDED SMOOTH TWIST, 65,500 CIRCULAR MILS, NET WEIGHT 215 LBS PER 1000 FEET. CONNECT THE LIGHTNING PROTECTION CONDUCTOR WITHOUT SPLICES FROM THE AIR TERMINAL TO THE 5/8 INCH DIA. GROUND IN THE HAND HOLE AS SHOWN.
- 3 CUT A 3/4 INCH DIA. HOLE IN THE ACCESS COVER CLOSEST TO THE CAMERA. F & I A 3/4 INCH CORD GRIP TYPE FITTING INTO THE HOLE TO TRANSITION THE LIGHTNING PROTECTION CONDUCTOR INSIDE THE POLE.
- 4 USE THE 20 INCH CABLE PIGTAIL SUPPLIED WITH THE CAMERA TO TERMINATE A RJ45 PLUG AS SHOWN ON THE IP CAMERA CONNECTOR STANDARD PLAN.
- 5 F&I ETHERNET CABLE IN ACCORDANCE WITH 3815.2C.6.d (CAT 5E), BETWEEN THE SIGNAL CONTROL CABINET AND THE TOP OF THE POLE. TERMINATE THE END OF THE CABLE WITH UNSHIELDED RJ-45 (T-568B) CONNECTORS.

- F&I CAT 5E (600V RATED) (WITH THE PROPER TERMINATIONS) FROM THE TOP OF THE POLE TO THE SIGNAL CABINET. (NOT TO EXCEED 250' LENGTH)
- F&I LIGHTNING PROTECTION CONDUCTOR FROM AIR TERMINAL TO THE GROUND ROD IN HANDHOLE

REQUIRED CABLE TERMINATION:
COM CABLE - CAT 5E
SHIELDED - RJ-45 (T-568B)

F&I CAT 5E (TO CAMERA AT THE TOP OF THE POLE)

PROPOSED SIGNAL CONTROL CABINET (DEPARTMENT FURNISHED OR INPLACE)

DEPARTMENT FURNISHED/INSTALLED:
CAMERA POWER OVER ETHERNET (POE) INJECTOR
PATCH CORDS
SIGNAL CONTROLLER
MMU
ETHERNET SWITCH

NO	DATE	BY	CHKD	APPR	REVISION

NAME: P:\002-601-063 Xavls Signal\Fan\002601063_008.dgn 06/27/2023 8:02:58 AM

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
PRINT NAME: Aaron Anderson
SIGNATURE:

DRAWN BY: APA DATE: 05/12/23
DESIGN BY: APA DATE: 05/12/23
CHECKED BY: ST DATE: 05/12/23

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IP CAMERA DETAIL
Sheet 35 of 43 Sheets

SIGNAL HEAD CHART

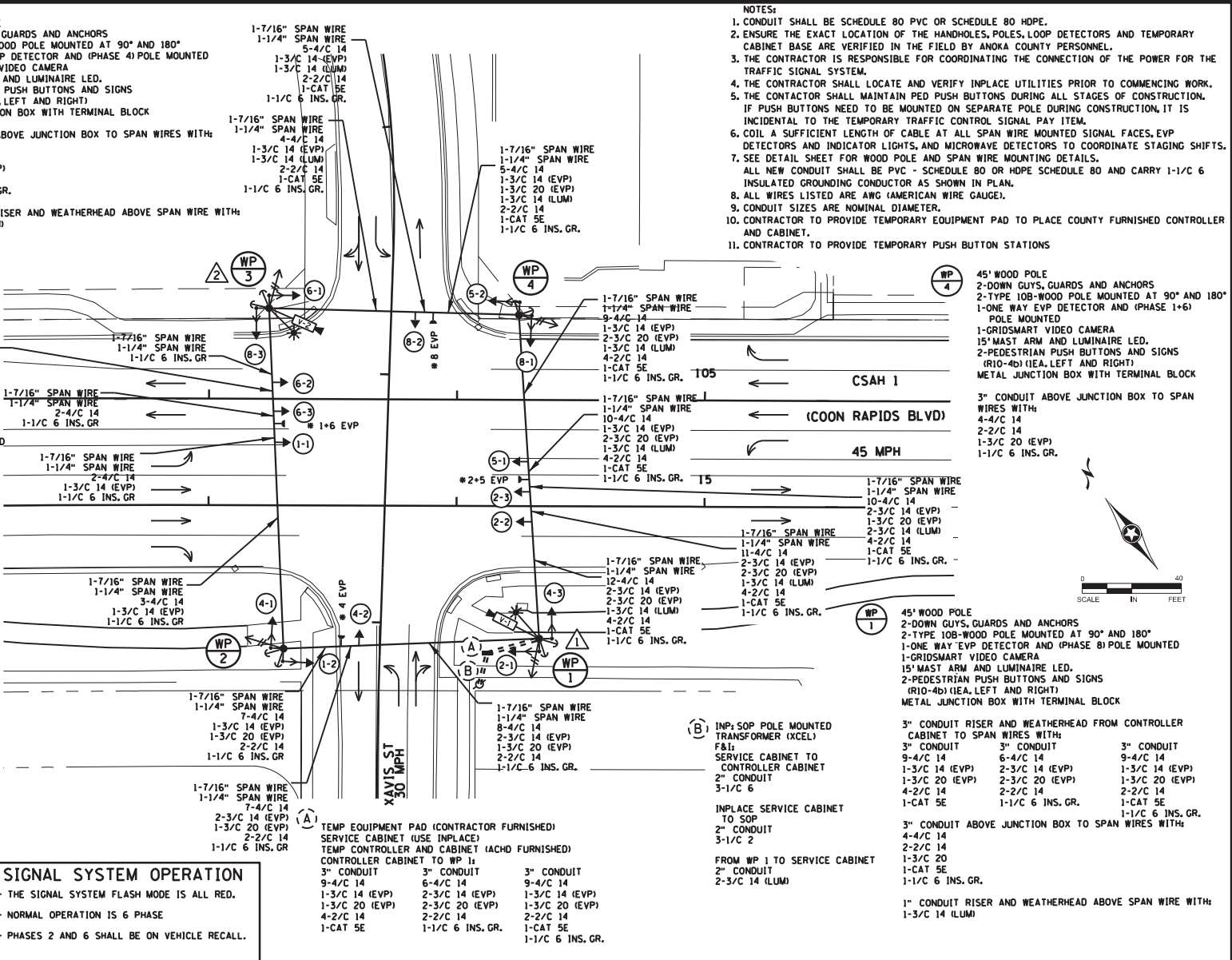
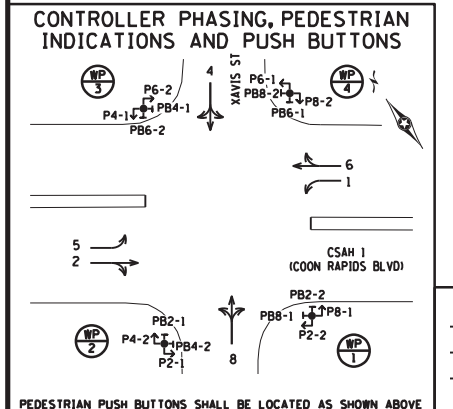
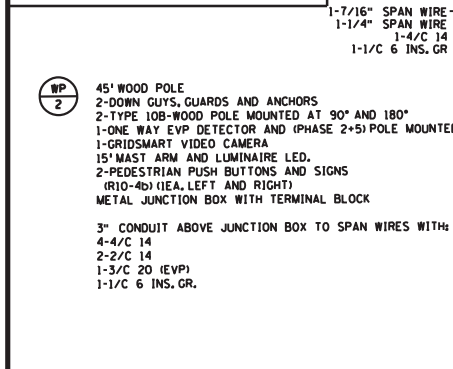
FACE	R	Y	G
1-1, 1-2	←	←	←
2-1, 2-2, 2-3	●	●	●
4-1, 4-2, 4-3	●	●	●
5-1, 5-2	←	←	←
6-1, 6-2, 6-3	●	●	●
8-1, 8-2, 8-3	●	●	●

-ALL SIGNAL INDICATIONS SHALL BE 12" LED
 -ALL SIGNAL HEADS SHALL BE BLACK POLYCARBONATE WITH BACKGROUND SHIELDS

GRIDSART VIDEO DETECTION

NUMBER	LOCATION	PHASE
V-1	POLE 1	2 & 5
V-1	POLE 1	4
V-2	POLE 3	1 & 6
V-2	POLE 3	8

VIDEO DETECTION CAMERAS AND MOUNTING HARDWARE PROVIDED BY CONTRACTOR



- NOTES:
1. CONDUIT SHALL BE SCHEDULE 80 PVC OR SCHEDULE 80 HOPE.
 2. ENSURE THE EXACT LOCATION OF THE HANDHOLES, POLES, LOOP DETECTORS AND TEMPORARY CABINET BASE ARE VERIFIED IN THE FIELD BY ANOKA COUNTY PERSONNEL.
 3. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING THE CONNECTION OF THE POWER FOR THE TRAFFIC SIGNAL SYSTEM.
 4. THE CONTRACTOR SHALL LOCATE AND VERIFY INPLACE UTILITIES PRIOR TO COMMENCING WORK.
 5. THE CONTRACTOR SHALL MAINTAIN PED PUSH BUTTONS DURING ALL STAGES OF CONSTRUCTION. IF PUSH BUTTONS NEED TO BE MOUNTED ON SEPARATE POLE DURING CONSTRUCTION, IT IS INCIDENTAL TO THE TEMPORARY TRAFFIC CONTROL SIGNAL PAY ITEM.
 6. COIL A SUFFICIENT LENGTH OF CABLE AT ALL SPAN WIRE MOUNTED SIGNAL FACES, EVP DETECTORS AND INDICATOR LIGHTS, AND MICROWAVE DETECTORS TO COORDINATE STAGING SHIFTS.
 7. SEE DETAIL SHEET FOR WOOD POLE AND SPAN WIRE MOUNTING DETAILS.
 8. ALL NEW CONDUIT SHALL BE PVC - SCHEDULE 80 OR HOPE SCHEDULE 80 AND CARRY 1-1/C 6 INSULATED GROUNDING CONDUCTOR AS SHOWN IN PLAN.
 9. ALL WIRES LISTED ARE AWG (AMERICAN WIRE GAUGE).
 9. CONDUIT SIZES ARE NOMINAL DIAMETER.
 10. CONTRACTOR TO PROVIDE TEMPORARY EQUIPMENT PAD TO PLACE COUNTY FURNISHED CONTROLLER AND CABINET.
 11. CONTRACTOR TO PROVIDE TEMPORARY PUSH BUTTON STATIONS

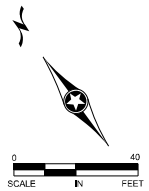


I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA. PRINT NAME: Aaron Anderson SIGNATURE:				DRAWN BY: APA DATE: 05/12/23 DESIGN BY: APA DATE: 05/12/23 CHECKED BY: ST DATE: 05/12/23		ANOKA COUNTY HIGHWAY DEPT.		SAP 002-601-063 SAP 114-020-062 CP 23-14		CSAH 1 & XAVIS TEMP SIGNAL SYSTEM	
NO	DATE	BY	CKD	APPR	REVISION	DATE	LICENSE NO.	DATE	LICENSE NO.	DATE	LICENSE NO.
						06/27/23	58657	06/27/23	58657	06/27/23	58657

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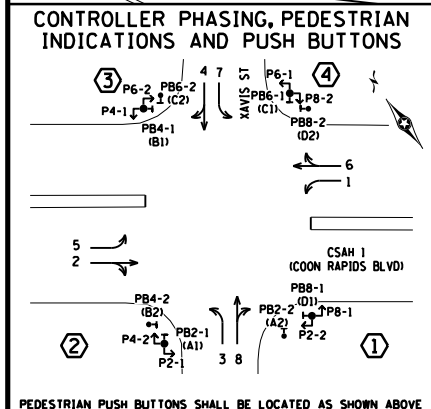
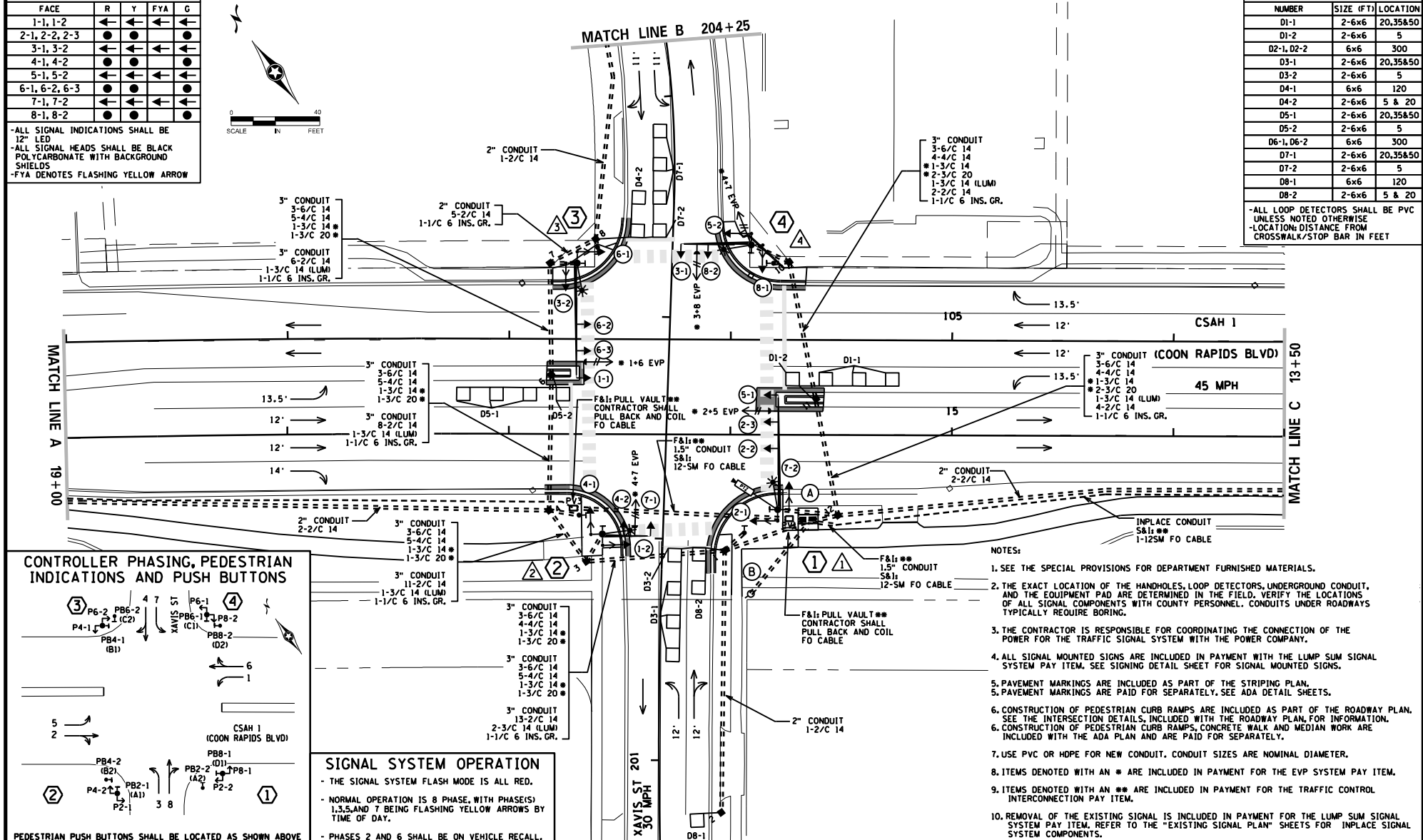
SIGNAL HEAD CHART				
FACE	R	Y	FYA	G
1-1, 1-2	●	●	←	●
2-1, 2-2, 2-3	●	●	←	●
3-1, 3-2	●	●	←	●
4-1, 4-2	●	●	←	●
5-1, 5-2	●	●	←	●
6-1, 6-2, 6-3	●	●	←	●
7-1, 7-2	●	●	←	●
8-1, 8-2	●	●	←	●

-ALL SIGNAL INDICATIONS SHALL BE 12" LED
 -ALL SIGNAL HEADS SHALL BE BLACK POLYCARBONATE WITH BACKGROUND SHIELDS
 -FYA DENOTES FLASHING YELLOW ARROW



LOOP DETECTOR CHART		
NUMBER	SIZE (FT)	LOCATION
D1-1	2-6x6	20,35&50
D1-2	2-6x6	5
D2-1, D2-2	6x6	300
D3-1	2-6x6	20,35&50
D3-2	2-6x6	5
D4-1	6x6	120
D4-2	2-6x6	5 & 20
D5-1	2-6x6	20,35&50
D5-2	2-6x6	5
D6-1, D6-2	6x6	300
D7-1	2-6x6	20,35&50
D7-2	2-6x6	5
D8-1	6x6	120
D8-2	2-6x6	5 & 20

-ALL LOOP DETECTORS SHALL BE PVC UNLESS NOTED OTHERWISE
 -LOCATION: DISTANCE FROM CROSSWALK/STOP BAR IN FEET



SIGNAL SYSTEM OPERATION

- THE SIGNAL SYSTEM FLASH MODE IS ALL RED.
- NORMAL OPERATION IS 8 PHASE, WITH PHASE(S) 1,3,5, AND 7 BEING FLASHING YELLOW ARROWS BY TIME OF DAY.
- PHASES 2 AND 6 SHALL BE ON VEHICLE RECALL.

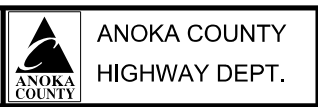
- ### NOTES:
1. SEE THE SPECIAL PROVISIONS FOR DEPARTMENT FURNISHED MATERIALS.
 2. THE EXACT LOCATION OF THE HANDHOLES, LOOP DETECTORS, UNDERGROUND CONDUIT, AND THE EQUIPMENT PAD ARE DETERMINED IN THE FIELD. VERIFY THE LOCATIONS OF ALL SIGNAL COMPONENTS WITH COUNTY PERSONNEL. CONDUITS UNDER ROADWAYS TYPICALLY REQUIRE BORING.
 3. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING THE CONNECTION OF THE POWER FOR THE TRAFFIC SIGNAL SYSTEM WITH THE POWER COMPANY.
 4. ALL SIGNAL MOUNTED SIGNS ARE INCLUDED IN PAYMENT WITH THE LUMP SUM SIGNAL SYSTEM PAY ITEM. SEE SIGNING DETAIL SHEET FOR SIGNAL MOUNTED SIGNS.
 5. PAVEMENT MARKINGS ARE INCLUDED AS PART OF THE STRIPING PLAN.
 6. CONSTRUCTION OF PEDESTRIAN CURB RAMPS ARE INCLUDED AS PART OF THE ROADWAY PLAN. SEE THE INTERSECTION DETAILS, INCLUDED WITH THE ROADWAY PLAN, FOR INFORMATION.
 7. USE PVC OR HDPE FOR NEW CONDUIT. CONDUIT SIZES ARE NOMINAL DIAMETER.
 8. ITEMS DENOTED WITH AN * ARE INCLUDED IN PAYMENT FOR THE EVP SYSTEM PAY ITEM.
 9. ITEMS DENOTED WITH AN ** ARE INCLUDED IN PAYMENT FOR THE TRAFFIC CONTROL INTERCONNECTION PAY ITEM.
 10. REMOVAL OF THE EXISTING SIGNAL IS INCLUDED IN PAYMENT FOR THE LUMP SUM SIGNAL SYSTEM PAY ITEM. REFER TO THE "EXISTING SIGNAL PLAN" SHEETS FOR "INPLACE SIGNAL SYSTEM COMPONENTS."

NO	DATE	BY	CKD	APPR	REVISION
1	7-24-2023	AA	AA	AA	UPDATED SW QUAD PEDESTRIAN RAMP & SIGNAL POLE LOCATION

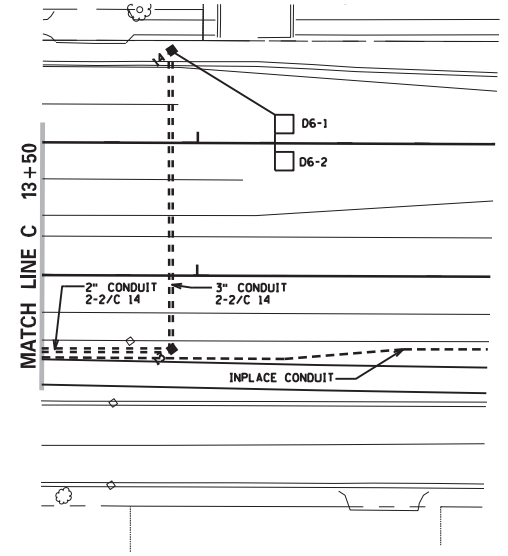
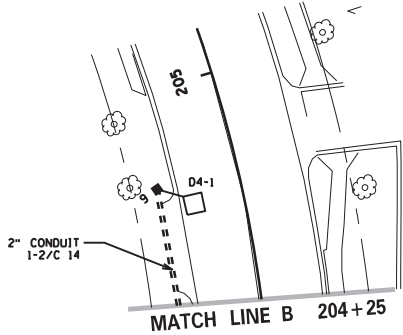
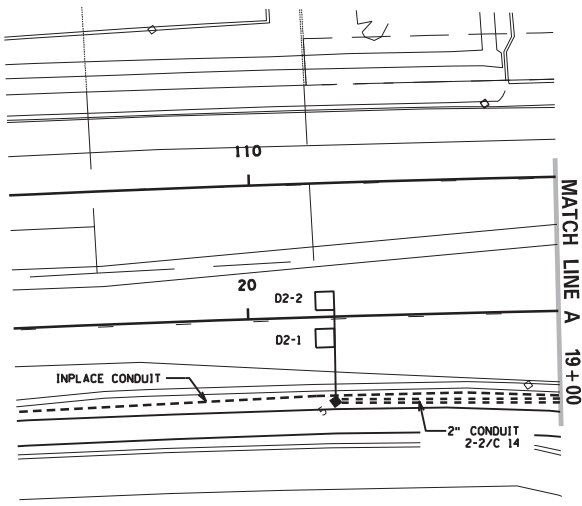
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I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
 PRINT NAME: Aaron Anderson
 SIGNATURE:

DRAWN BY: APA DATE: 05/12/23
 DESIGN BY: APA DATE: 05/12/23
 CHECKED BY: ST DATE: 05/12/23



SAP 002-601-063
 SAP 114-020-062
 CP 23-14



INTERSECTION NOTES

- ① **PA100 POLE FOUNDATION**
 TYPE PA100-A-50-X6-350/CAM 400 EXTENSION
 1-LUMINAIRE-LED (FOR 30' MOUNTING HEIGHT)
 1-ANGLE MOUNT SIGNAL OVERHEAD AT 0'
 2-STRAIGHT MOUNT SIGNALS OVERHEAD AT 11' AND 23'
 2-ANGLE MOUNT SIGNALS AT 90 AND 180 DEG
 2-ANGLE MOUNT C.D.PED HEADS AT 90 AND 180 DEG
 1-PTZ CAMERA
 * 1-ONE WAY EVP DETECTOR AND CONFIRMATORY LIGHT (PHASES 2+5)
 1-APS PB, SIGN (LT ARROW) AND APS MAST ARM POLE ADAPTOR (PB8-1)
 1-RIO-X12 SIGN ADJACENT TO HEAD (5-1)
 1-R6-1L SIGN POLE MOUNTED (36 X 12)
 1-R6-1R SIGN POLE MOUNTED (36 X 12)
 1-TYPE D SIGN (D-1) (SEE SIGN DETAILS)
 3" CONDUIT INTO HH 12:
 3-6/C 14
 5-4/C 14
 * 1-3/C 14
 * 1-3/C 20
 1-3/C 14 (LUM)
 1-2/C 14
 1-CAT 5E
 1-1/C 6 INS. GR.
- ② **PA85 POLE FOUNDATION**
 TYPE PA85-A-20-D30-9 (DAVIT AT 350 DEG)
 1-LUMINAIRE-LED (FOR 30' MOUNTING HEIGHT)
 1-ANGLE MOUNT SIGNAL OVERHEAD AT 0'
 1-STRAIGHT MOUNT SIGNALS OVERHEAD AT 11'
 2-ANGLE MOUNT SIGNALS AT 90 AND 180 DEG
 2-ANGLE MOUNT C.D.PED HEADS AT 90 AND 180 DEG
 * 1-ONE WAY EVP DETECTOR AND CONFIRMATORY LIGHT (PHASES 4+7)
 1-APS PB, SIGN (LT ARROW) AND APS MAST ARM POLE ADAPTOR (PB2-1)
 1-RIO-X12 SIGN ADJACENT TO HEAD (7-1)
 1-TYPE D SIGN (D-3) (SEE SIGN DETAILS)
 3" CONDUIT INTO HH 3:
 3-6/C 14
 4-4/C 14
 * 1-3/C 14
 * 1-3/C 20
 1-3/C 14 (LUM)
 1-2/C 14
 1-1/C 6 INS. GR.
- ③ **PA100 POLE FOUNDATION**
 TYPE PA100-A-50-D30-9 (DAVIT AT 350 DEG)
 1-LUMINAIRE-LED (FOR 30' MOUNTING HEIGHT)
 1-ANGLE MOUNT SIGNAL OVERHEAD AT 0'
 2-STRAIGHT MOUNT SIGNALS OVERHEAD AT 11' AND 23'
 2-ANGLE MOUNT SIGNALS AT 90 AND 180 DEG
 2-ANGLE MOUNT C.D.PED HEADS AT 90 AND 180 DEG
 * 1-ONE WAY EVP DETECTOR AND CONFIRMATORY LIGHT (PHASES 1+6)
 1-APS PB, SIGN (LT ARROW) AND APS MAST ARM POLE ADAPTOR (PB4-1)
 1-RIO-X12 SIGN ADJACENT TO HEAD (1-1)
 1-R6-1L SIGN POLE MOUNTED (36 X 12)
 1-R6-1R SIGN POLE MOUNTED (36 X 12)
 1-TYPE D SIGN (D-1) (SEE SIGN DETAILS)
 3" CONDUIT INTO HH 7:
 3-6/C 14
 5-4/C 14
 * 1-3/C 14
 * 1-3/C 20
 1-3/C 14 (LUM)
 1-2/C 14
 1-1/C 6 INS. GR.
- ④ **PA90 POLE FOUNDATION**
 TYPE PA90-A-30-D30-9 (DAVIT AT 350 DEG)
 1-LUMINAIRE-LED (FOR 30' MOUNTING HEIGHT)
 1-ANGLE MOUNT SIGNAL OVERHEAD AT 0'
 1-STRAIGHT MOUNT SIGNALS OVERHEAD AT 11'
 2-ANGLE MOUNT SIGNALS AT 90 AND 180 DEG
 2-ANGLE MOUNT C.D.PED HEADS AT 90 AND 180 DEG
 * 1-ONE WAY EVP DETECTOR (PHASES 4+7)
 * 1-ONE WAY EVP DETECTOR AND CONFIRMATORY LIGHT (PHASES 3+8)
 1-APS PB, SIGN (LT ARROW) AND APS MAST ARM POLE ADAPTOR (PB6-1)
 1-RIO-X12 SIGN ADJACENT TO HEAD (3-1)
 1-TYPE D SIGN (D-1) (SEE SIGN DETAILS)
 3" CONDUIT INTO HH 10:
 3-6/C 14
 4-4/C 14
 * 1-3/C 14
 * 2-3/C 20
 1-3/C 14 (LUM)
 1-2/C 14
 1-1/C 6 INS. GR.
- Ⓐ **EQUIPMENT PAD (SEE DETAIL SHEET)**
 SERVICE CABINET (SSB) NO BATTERY BACKUP SYSTEM OR BATTERIES
 CONTROLLER AND CABINET (COUNTY FURNISHED)
 3" CONDUIT TO HH 1:
 3-6/C 14
 4-4/C 14
 * 1-3/C 14
 * 1-3/C 20
 3" CONDUIT TO HH 1:
 3-6/C 14
 5-4/C 14
 * 1-3/C 14
 * 1-3/C 20
 3" CONDUIT TO HH 1:
 17-2/C 14
 1-1/C 6 INS. GR.
- Ⓑ **SOP-INPLACE WOOD POLE**
 TRANSFORMER (XCEL ENERGY)
 2" CONDUIT RISER AND WEATHERHEAD
 3-1/C 2
 2" CONDUIT INTO SERVICE CABINET:
 3-1/C 2
- GROUND WIRE AND GROUND ROD - MIN 8' OUT FROM PAD**
 2-2" AND 1-3" CONDUIT STUBBED OUT (CAPPED BOTH ENDS)
 * 1.5" CONDUIT TO PULL VAULT:
 * 1-FO PIGTAIL (6SM)
 * CONTROLLER CABINET TO SERVICE CABINET:
 2" CONDUIT
 3-1/C 6
 CONTROLLER CABINET TO SERVICE CABINET (COMMS):
 2" CONDUIT
 1-4/C 14
 SERVICE CABINET TO SOP:
 2" CONDUIT
 3-1/C 2
- SERVICE CABINET TO HH 1:**
 1.25" CONDUIT
 2-3/C 14 (LUM)
SERVICE CABINET TO HH 12:
 1.25" CONDUIT
 2-3/C 14 (LUM)
 SERVICE CABINET TO EXTERNAL GR. RD.:
 1" CONDUIT
 1-1/C 6 INS. GR.
 (SEE EQUIPMENT PAD LAYOUT)

NO	DATE	BY	CHKD	APPR	REVISION

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
 PRINT NAME: Aaron Anderson
 SIGNATURE:
 DATE: 06/27/23 LICENSE NO. 58657

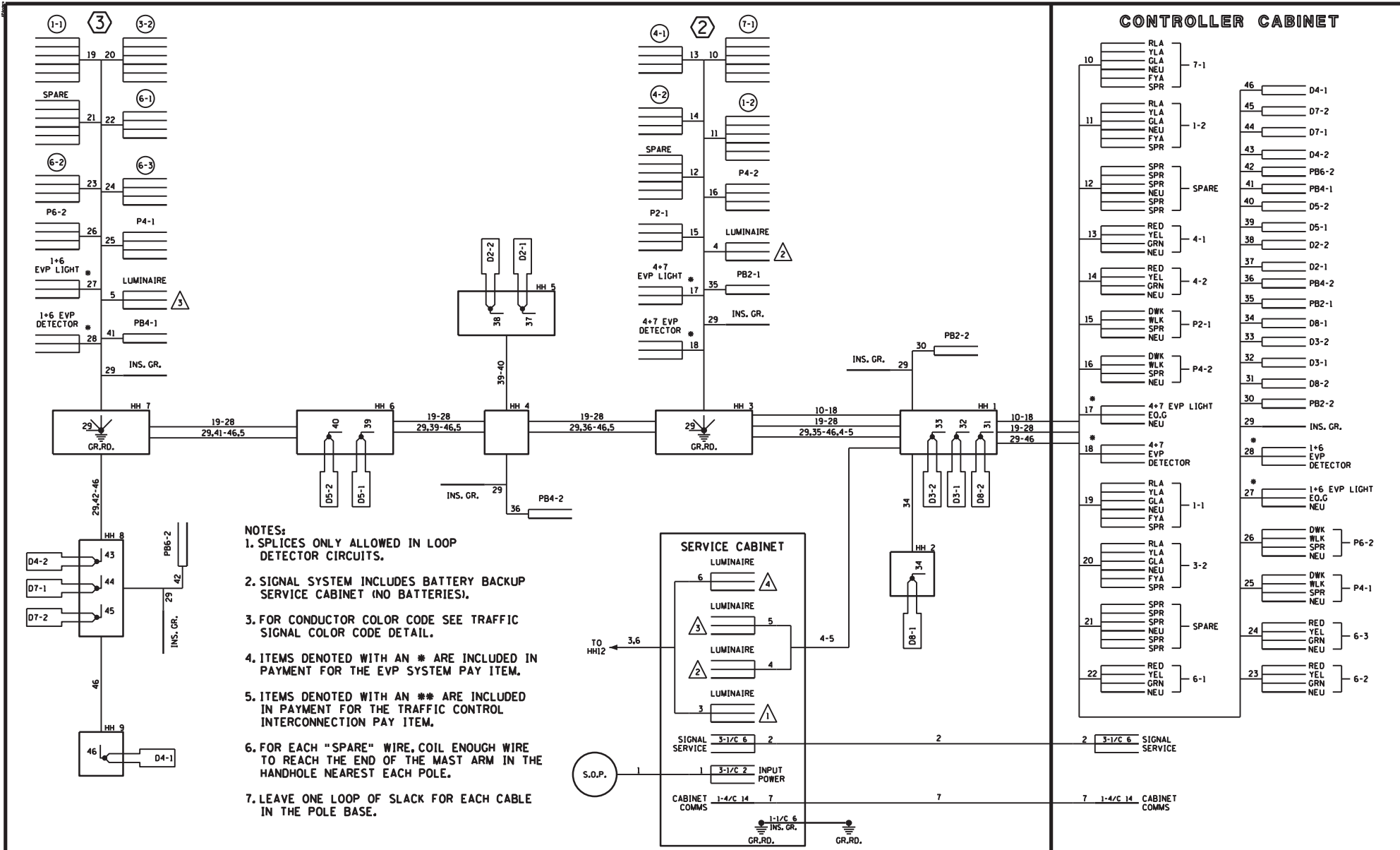
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ANOKA COUNTY
HIGHWAY DEPT.

SAP 002-601-063
 SAP 114-020-062
 CP 23-14

POLE NOTES
 Sheet 39 of 43 Sheets



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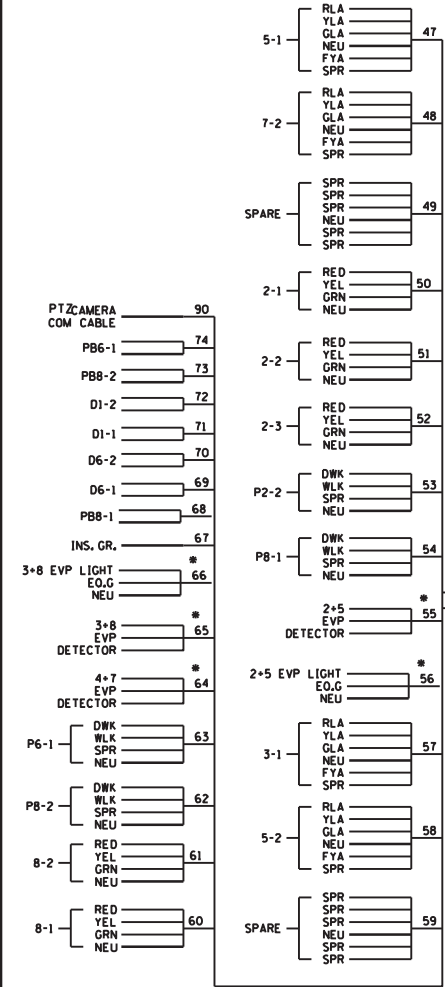
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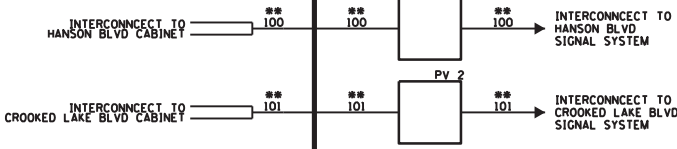
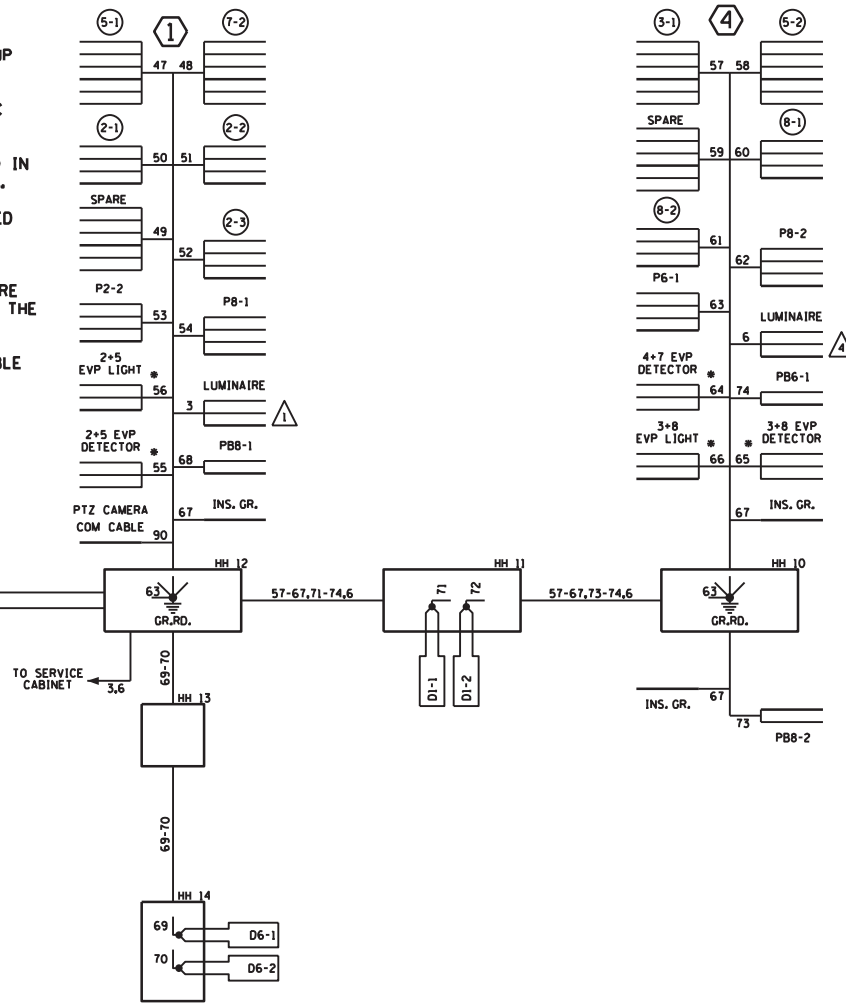
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 SAP 114-020-062
 CP 23-14

CONTROLLER CABINET



NOTES:

1. SPLICES ONLY ALLOWED IN LOOP DETECTOR CIRCUITS.
2. SIGNAL SYSTEM INCLUDES BATTERY BACKUP SERVICE CABINET (NO BATTERIES).
3. FOR CONDUCTOR COLOR CODE SEE TRAFFIC SIGNAL COLOR CODE DETAIL.
4. ITEMS DENOTED WITH AN * ARE INCLUDED IN PAYMENT FOR THE EVP SYSTEM PAY ITEM.
5. ITEMS DENOTED WITH AN ** ARE INCLUDED IN PAYMENT FOR THE TRAFFIC CONTROL INTERCONNECTION PAY ITEM.
6. FOR EACH "SPARE" WIRE, COIL ENOUGH WIRE TO REACH THE END OF THE MAST ARM IN THE HANDHOLE NEAREST EACH POLE.
7. LEAVE ONE LOOP OF SLACK FOR EACH CABLE IN THE POLE BASE.



NO	DATE	BY	CKD	APPR	REVISION

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 SIGNATURE: *[Signature]*
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ANOKA COUNTY
HIGHWAY DEPT.

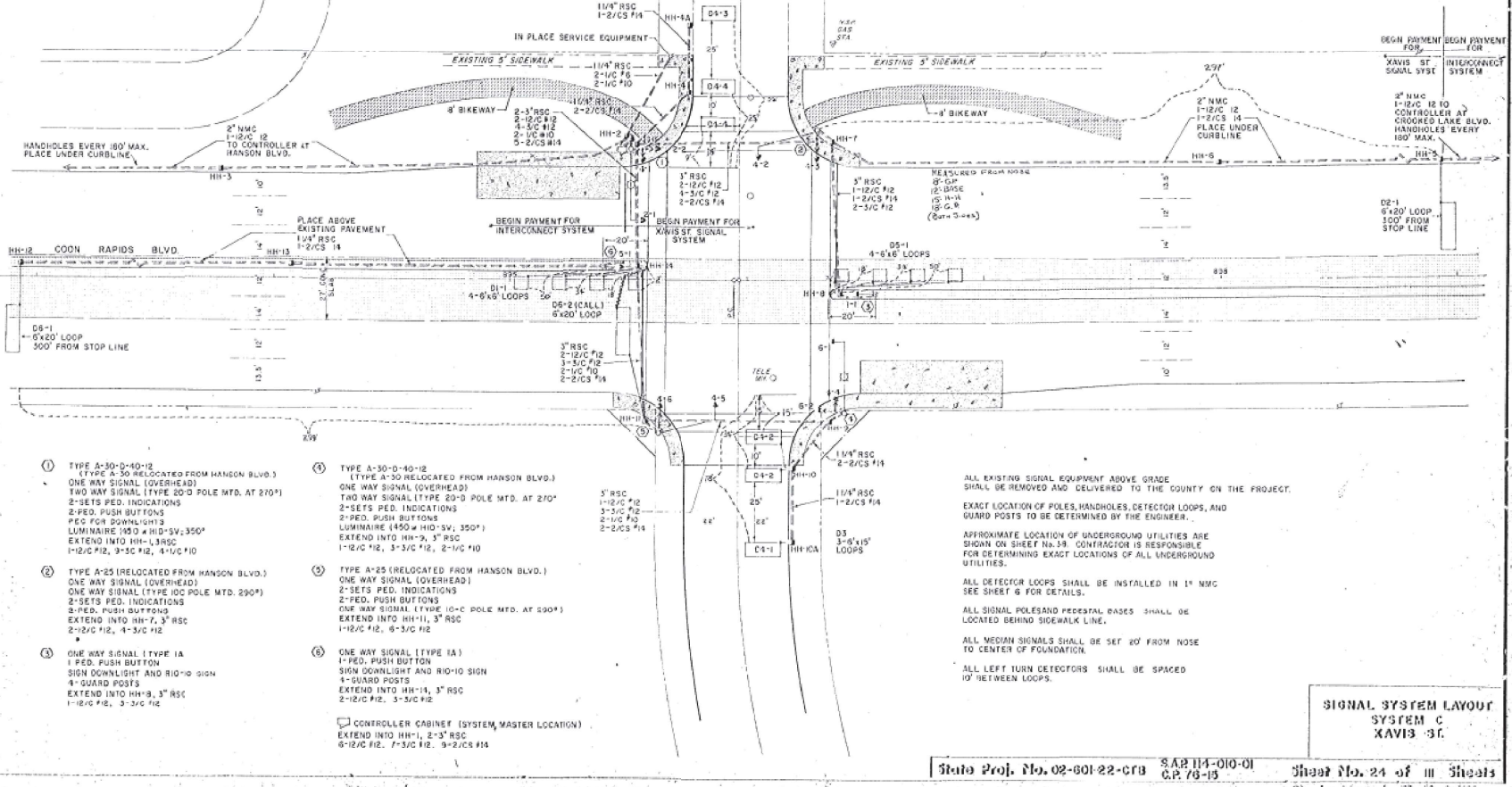
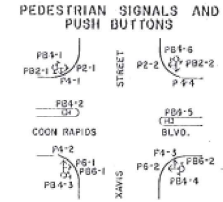
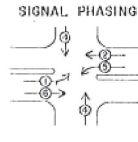
SAP 002-601-063
 SAP 114-020-062
 CP 23-14

FOR INFORMATION ONLY

SIGNAL INDICATIONS									
FACE	PHASE	FLASH	INDICATION			SIZE			
			R	Y	G	R	Y	G	
2-1	3	R	12	12	12				
2-2	3	R	12	12	12				
1-1	4	R	12	12	12				
3-2	4	R	12	12	12				
1-1	4	R	12	12	12				
6-1	5	H	12	12	12				12
4-1	1	R	12	12	12				
6-2	6	R	12	12	12				
4-3	4	R	12	12	12				
4-2	4	R	12	12	12				
5-1	3	R	12	12	12				

* SPECIAL SIGNAL

LEGEND	
	CONTROLLER CABINET
	PEDESTAL
	HANDHOLE (4" x 4" BOX)
	CONDUIT
	SIGNAL FACE WITH BACKGROUND SHIELD
	PEDESTRIAN INDICATION
	LUMINAIRE
	MAST ARM AND POLE
	SERVICE PEDESTAL
	SERVICE POINT



- ① TYPE A-30-D-40-12 (TYPE A-30 RELOCATED FROM HANSON BLVD.) ONE WAY SIGNAL (OVERHEAD) TWO WAY SIGNAL (TYPE 20-D POLE MTD. AT 270°) 2-SETS PED. INDICATIONS 2-PED. PUSH BUTTONS PED. FOR DOWNLIGHTS LUMINAIRE (80" x 110" SV, 350") EXTEND INTO HH-1, 3" RSC 1-12/C #12, 3-3/C #12, 4-1/C #10
- ② TYPE A-25 (RELOCATED FROM HANSON BLVD.) ONE WAY SIGNAL (OVERHEAD) ONE WAY SIGNAL (TYPE JOC POLE MTD. 290°) 2-SETS PED. INDICATIONS 2-PED. PUSH BUTTONS EXTEND INTO HH-7, 3" RSC 2-12/C #12, 4-3/C #12
- ③ ONE WAY SIGNAL (TYPE 1A) 1-PED. PUSH BUTTON SIGN DOWNLIGHT AND RIO-10 SIGN 4-GUARD POSTS EXTEND INTO HH-9, 3" RSC 1-12/C #12, 2-3/C #12
- ④ TYPE A-30-D-40-12 (TYPE A-30 RELOCATED FROM HANSON BLVD.) ONE WAY SIGNAL (OVERHEAD) TWO WAY SIGNAL (TYPE 20-D POLE MTD. AT 270°) 2-SETS PED. INDICATIONS 2-PED. PUSH BUTTONS LUMINAIRE (80" x 110" SV, 350") EXTEND INTO HH-9, 3" RSC 1-12/C #12, 3-3/C #12, 2-1/C #10
- ⑤ TYPE A-25 (RELOCATED FROM HANSON BLVD.) ONE WAY SIGNAL (OVERHEAD) 2-SETS PED. INDICATIONS ONE WAY SIGNAL (TYPE 10-C POLE MTD. AT 290°) EXTEND INTO HH-11, 3" RSC 1-12/C #12, 4-3/C #12
- ⑥ ONE WAY SIGNAL (TYPE 1A) 1-PED. PUSH BUTTON SIGN DOWNLIGHT AND RIO-10 SIGN 4-GUARD POSTS EXTEND INTO HH-11, 2-3" RSC 6-12/C #12, 7-3/C #12, 9-2/C #14

ALL EXISTING SIGNAL EQUIPMENT ABOVE GRADE SHALL BE REMOVED AND DELIVERED TO THE COUNTY ON THE PROJECT. EXACT LOCATION OF POLES, HANDHOLES, DETECTOR LOOPS, AND GUARD POSTS TO BE DETERMINED BY THE ENGINEER.

APPROXIMATE LOCATION OF UNDERGROUND UTILITIES ARE SHOWN ON SHEET NO. 24. CONTRACTOR IS RESPONSIBLE FOR DETERMINING EXACT LOCATIONS OF ALL UNDERGROUND UTILITIES.

ALL DETECTOR LOOPS SHALL BE INSTALLED IN 1" NMC SEE SHEET 6 FOR DETAILS.

ALL SIGNAL POLES AND PEDESTAL BASES SHALL BE LOCATED BEHIND SIDEWALK LINE.

ALL MEDIAN SIGNALS SHALL BE SET 20' FROM NOSE TO CENTER OF FOUNDATION.

ALL LEFT TURN DETECTORS SHALL BE SPACED 10' BETWEEN LOOPS.

SIGNAL SYSTEM LAYOUT SYSTEM C XAVIS ST.

State Proj. No. 02-601-22-CRB SAP 114-010-01 C.P. 76-15 Sheet No. 24 of 43 Sheets

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ANOKA COUNTY HIGHWAY DEPT.

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 SAP 114-020-062
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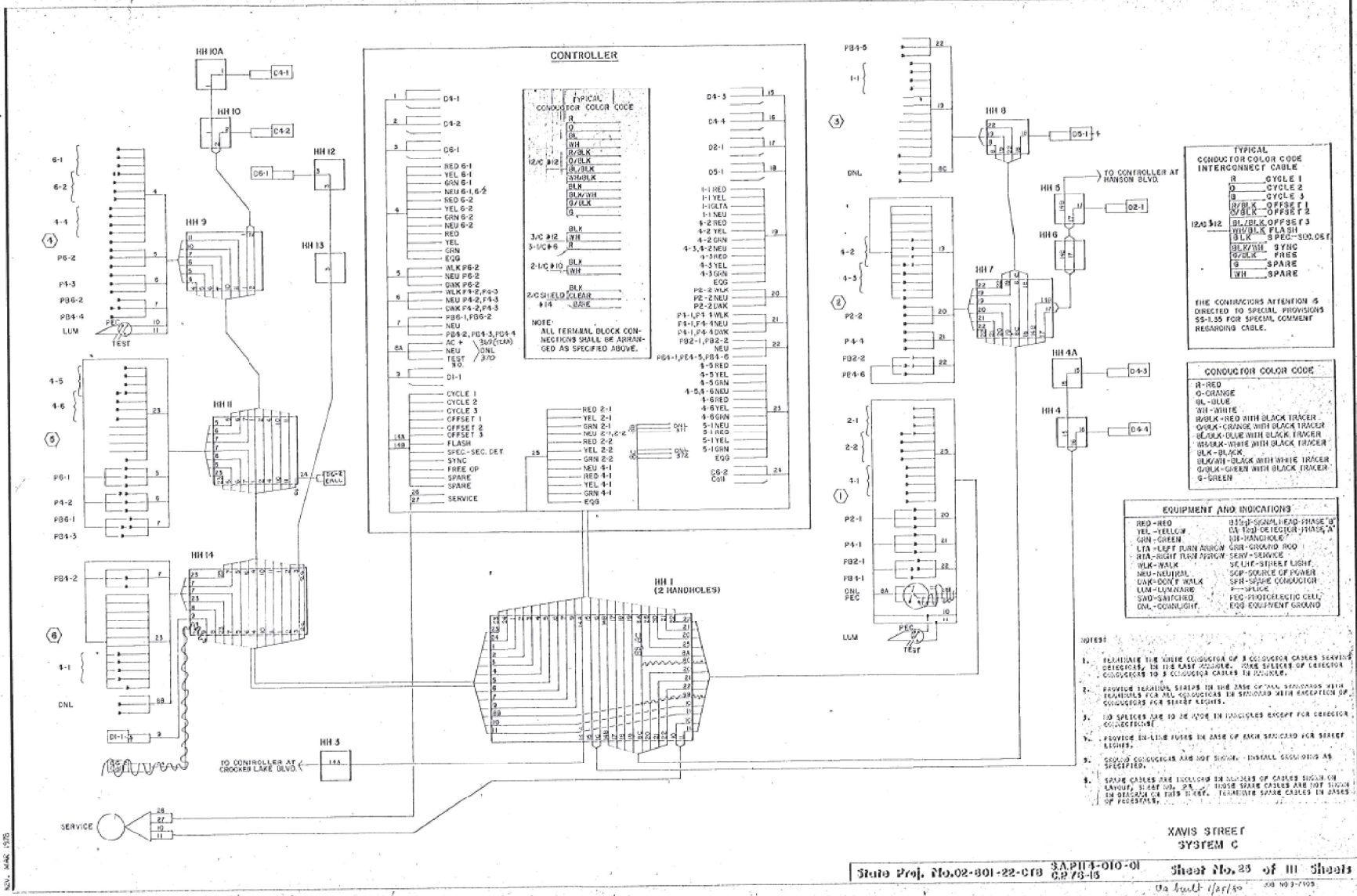
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Sheet 24 of 43 Sheets

NAME: P:002-601-063 Xavis Signal Plan 02601063.dwg

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ANOKA COUNTY
HIGHWAY DEPT.

SAP 002-601-063
 SAP 114-020-062
 CP 23-14

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Sheet 43 of 43 Sheets

PLAN SYMBOLS

- STATE LINE _____
- COUNTY LINE _____
- TOWNSHIP OR RANGE LINE _____
- SECTION LINE _____
- QUARTER LINE _____
- SIXTEENTH LINE _____
- RIGHT-OF-WAY LINE _____
- PRESENT RIGHT-OF-WAY LINE _____
- CONTROL OF ACCESS LINE _____
- PROPERTY LINE (Except Land Lines) _____
- VACATED PLATTED PROPERTY _____
- CORPORATE OR CITY LIMITS _____
- TRUNK HIGHWAY CENTER LINE _____
- RETAINING WALL _____
- RAILROAD _____
- RAILROAD RIGHT-OF-WAY LINE _____
- RIVER OR CREEK _____
- DRY RUN _____
- DRAINAGE DITCH _____
- DRAIN TILE _____
- CULVERT _____
- DROP INLET _____
- GUARD RAIL _____
- BARBED WIRE FENCE _____
- WOVEN WIRE FENCE _____
- CHAIN LINK FENCE _____
- WOODEN FENCE _____
- STONE WALL OR FENCE _____
- HEDGE _____
- RAILROAD CROSSING SIGN _____
- RAILROAD CROSSING BELL _____
- ELECTRIC WARNING SIGN _____
- CROSSING GATE _____
- MEANDER CORNER _____
- SPRINGS _____
- MARSH _____
- TIMBER _____
- ORCHARD _____
- BRUSH _____
- NURSERY _____
- CATCH BASIN _____
- FIRE HYDRANT _____
- CATTLE GUARD _____
- OVERPASS (Highway Over) _____
- UNDERPASS (Highway Under) _____
- BRIDGE _____
- BUILDING (One Story Frame) _____
- F-FRAME C-CONCRETE
- S-STONE T-TILE
- B-BRICK ST-STUCCO
- IRON PIPE OR ROD _____
- MONUMENT (STONE, CONCRETE, OR METAL) _____
- WOODEN P.M.B. _____
- GRAVEL PIT _____
- SAND PIT _____
- BORROW PIT _____
- ROCK QUARRY _____

UTILITY SYMBOLS

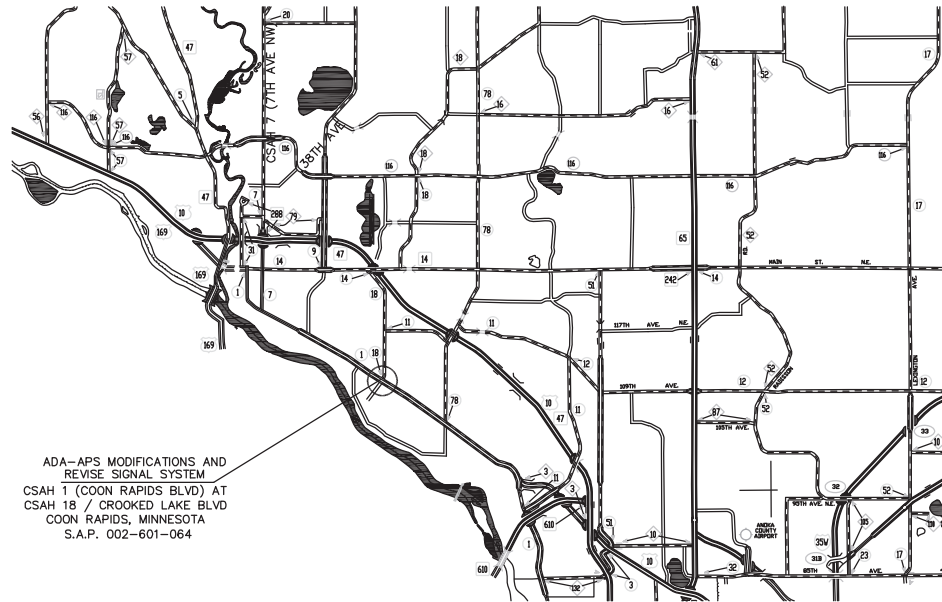
- POWER POLE LINE _____
- TELEPHONE OR TELEGRAPH POLE LINE _____
- JOINT TELEPHONE AND POWER ON POWER POLES _____
- ON TELEPHONE POLES _____
- ANCHOR _____
- STEEL TOWER _____
- STREET LIGHT _____
- PEDESTAL (TELEPHONE CABLE TERMINAL) _____
- GAS MAIN _____
- WATER MAIN _____
- CONDUIT _____
- TELEPHONE CABLE IN CONDUIT _____
- ELECTRIC CABLE IN CONDUIT _____
- TELEPHONE MANHOLE _____
- ELECTRIC MANHOLE _____
- BURIED COMMUNICATION CABLE _____
- BURIED TELEPHONE CABLE _____
- BURIED ELECTRIC CABLE _____
- SEWER (SANITARY) _____
- SEWER (STORM) _____
- SEWER MANHOLE _____
- HANDHOLE _____
- CATCH BASIN _____

SCALE

- INDEX MAP 1" = 4000'
- GENERAL LAYOUT 1" = 20'

**MINNESOTA DEPARTMENT OF TRANSPORTATION
ANOKA COUNTY, MINNESOTA
CITY OF COON RAPIDS**

**CONSTRUCTION PLAN FOR: ADA/APS MODIFICATIONS AND
REVISE SIGNAL SYSTEM
CSAH 1 (COON RAPIDS BLVD) AT CSAH 18 / CROOKED LAKE BLVD
STATE AID PROJECT NO. 002-601-064**

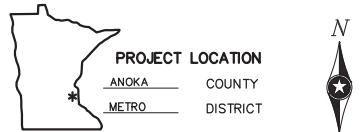


ADA-APS MODIFICATIONS AND
REVISE SIGNAL SYSTEM
CSAH 1 (COON RAPIDS BLVD) AT
CSAH 18 / CROOKED LAKE BLVD
COON RAPIDS, MINNESOTA
S.A.P. 002-601-064

PLAN REVISIONS		
DATE	SHEET NO.	APPROVED BY

THE EXACT LOCATION OF UNDERGROUND UTILITIES SUCH AS GAS, TELEPHONE, FIBEROPTIC, ELECTRIC, CABLE TV AND PIPE LINES ARE UNKNOWN. THE CONTRACTOR SHALL CONTACT GOPHER STATE ONE CALL BEFORE COMMENCING EXCAVATION. GOPHER STATE ONE CALL SYSTEM - 1-800-252-1166

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



GEOMETRICS DESIGN DESCRIPTION	CSAH 1 (COON RAPIDS BLVD)	CSAH 18 / CROOKED LAKE BLVD
	EXISTING A.D.T. (2023)	17,000
PROJECTED A.D.T. (2043)	23,000	6,700
NO. OF TRAFFIC LANES	4	2
NO. OF PARKING LANES	4	2
DESIGN SPEED (MPH)	45	30/35
POSTED SPEED (MPH)	45	30/35
ROADWAY CLASSIFICATION	ARTERIAL	COLLECTOR

GOVERNING SPECIFICATIONS

THE 2020 EDITION OF THE MINNESOTA DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR CONSTRUCTION" AND THE "SUPPLEMENTAL SPECIFICATIONS" DATED SEPTEMBER 2022 SHALL GOVERN.

ALL TRAFFIC CONTROL DEVICES SHALL CONFORM AND BE INSTALLED IN ACCORDANCE WITH THE "MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MMUTCD) AND PART VI FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS" (CURRENT EDITION).

INDEX

SHEET NO.	DESCRIPTION
1	TITLE SHEET
2	STATEMENT OF ESTIMATED QUANTITIES, STANDARD PLATES, AND OTHER INFORMATION
3-4	MISCELLANEOUS SIGNAL CHARTS AND DETAILS
5	APS PUSH BUTTON STATION DETAILS
6-11	PEDESTRIAN CURB RAMP DETAILS
12	REMOVALS PLAN
13	CONSTRUCTION PLAN
14	INTERSECTION DETAIL
15	EROSION CONTROL PLAN
16	SIGNING AND STRIPING NOTES AND TABULATIONS
17	SIGNING AND STRIPING LAYOUT
18-21	REVISE SIGNAL SYSTEM
22-23	EXISTING SIGNAL SYSTEM

THIS PLAN CONTAINS 23 SHEETS.

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

SIGNATURE: *J. M. Gray* DATE: 07/17/2023
 PRINTED NAME: JOHN M. GRAY LIC.NO. 22457

SIGNAL DESIGN ENGINEER: I HEREBY CERTIFY THAT THESE SIGNAL PLANS WERE PREPARED BY ME OR UNDER MY DIRECT SUPERVISION, THAT THIS PLAN CONFORMS TO THE MMUTCD (EXCEPT WHERE A VARIANCE HAS BEEN GRANTED), AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

SIGNATURE: *J. M. Gray* DATE: 07/17/2023
 PRINTED NAME: JOHN M. GRAY LIC.NO. 22457

APPROVED **Mark C. Hansen** Digitally signed by Mark C. Hansen Date: 2023.07.25 16:32:16 -0500 DATE 07/25/23
 CITY OF COON RAPIDS ENGINEER

APPROVED **Joseph MacPherson** Digitally signed by Joseph MacPherson Date: 2023.07.25 15:26:59 -0500 DATE 07/25/23
 ANOKA COUNTY ENGINEER

APPROVED **Lucas Lortie** Digitally signed by Lucas Lortie Date: 2023.07.27 09:14:00 -0500 DATE _____
 For DISTRICT STATE AID ENGINEER: REVIEWED FOR COMPLIANCE WITH STATE AID RULES/POLICY

APPROVED **Lucas Lortie** Digitally signed by Lucas Lortie Date: 2023.07.27 09:14:15 -0500 DATE _____
 For APPROVED FOR STATE AID FUNDING: STATE AID ENGINEER

ANOKA COUNTY, MINNESOTA
CITY OF COON RAPIDS

TITLE SHEET



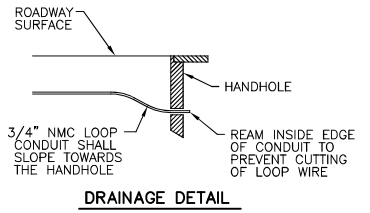
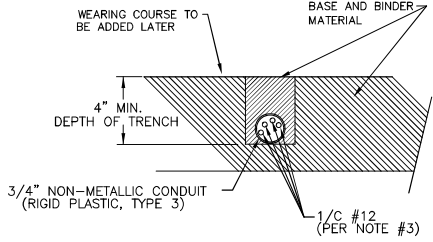
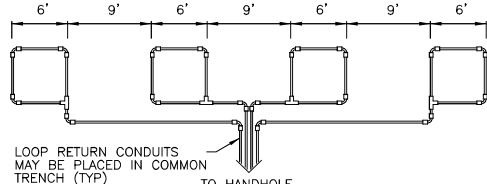
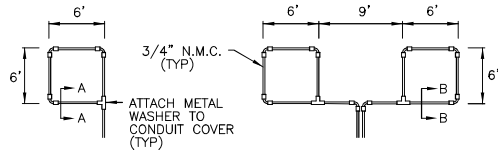
PHONE: (651) 490-2000
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

ADA-APS MODIFICATIONS AND
REVISE SIGNAL SYSTEM
CSAH 1 (COON RAPIDS BLVD) AT
CSAH 18 / CROOKED LAKE BLVD

FILE NO.
ANOKC 173548

STATE AID PROJ NO: 002-601-064

1
23



LOOP DETECTOR DETAIL A
(LOOP PHASING FOR SINGLE CONNECTION)

LOOP CONNECTIONS SHALL BE LABELED AND SPICED IN THE HANDHOLE AS FOLLOWS:
L1 TO 1A
1B TO 2A
2B TO L2

LOOP DETECTOR DETAIL B
(LOOP PHASING FOR SERIES CONNECTION)

LOOP CONNECTIONS SHALL BE LABELED AND SPICED IN THE HANDHOLE AS FOLLOWS:
L1 TO 1A 3B TO 4A
1B TO 2A 4B TO L2
2B TO 3A

SPICE CONTROL CABLE TO L1 & L2 IN HANDHOLE. ALL CONDUCTORS SHALL BE TAGGED IN HANDHOLE (1A, 1B, ECT)

LOOP DETECTOR DETAIL C
(LOOP PHASING FOR SERIES CONNECTION)

SECTION A-A
DETAIL FOR LOOP INSTALLATION IN NEW ROADWAY

SECTION B-B
DETAIL FOR LOOP INSTALLATION IN EXISTING ROADWAY

LOOP DETECTOR WIRING

- 1) ALL CORNERS SHALL BE 90° CONDUIT BENDS.
- 2) CONNECT WIRES IN HANDHOLES USING SPLICE KIT METHOD DESCRIBED IN THE SPECIAL PROVISIONS.
- 3) LOOP DETECTOR WIRES SHALL BE #12 AWG CROSSED LINKED POLYETHYLENE (XLP). SEE SPECIAL PROVISIONS.
- 4) LOOP LEAD IN WIRES SHALL BE TWISTED A MIN. OF (5) TURNS PER FOOT THROUGH THE CONDUIT TO THE HANDHOLE.
- 5) NMC DESIGNATES NON-METALLIC CONDUIT (SPEC. 3803)
- 6) LOOPS 6' x 6' THRU 6' x 14' SHALL HAVE (4) TURNS.
- 7) LOOPS 6' x 15' AND LARGER SHALL HAVE (2) TURNS.

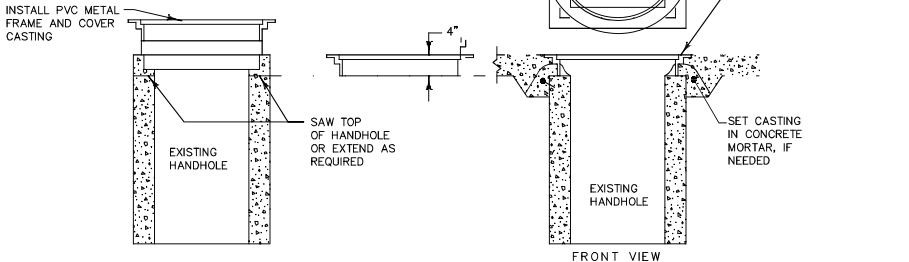
NUMBER OF CONDUCTORS & AWG SIZE	TYPE	Specification Number
1/C 2	INDIVIDUAL SERVICE CONDUCTORS	3815,2B,1
1/C 6	FEEDER AND BRANCH CONDUCTORS	3815,2B,1
1/C 6 INS.GR.	Grounding Conductors	3815,2B,5
2/C 14	Loop Detector Lead-In Cables	3815,2C,4
3/C 14	Signal Control Cable	3815,2C,3
4/C 14	Signal Control Cable	3815,2C,3
6/C 14	Signal Control Cable	3815,2C,3
12/C 14	Signal Control Cable	3815,2C,3
6PR 19	Telephone Cables Outdoor	3815,2C,6,b
3/C 20	EVP Detector Cable	3815,2C,5

ABBREVIATION	LABEL REFERENCE DESCRIPTION & EXAMPLE	COMPONENT
X-Y	INDICATION NUMBER 2-1	SIGNAL HEAD
X-Y	LOOP NUMBER D2-1	DETECTOR
X-Y	PUSH BUTTON NUMBER PB2-1	PUSH BUTTON
X-Y	PED INDICATION NUMBER P2-1	PED INDICATION
X-Y	LUMINAIRE NUMBER L1	LUMINAIRE
X-Y	EVP PHASE NUMBER EVP 2+5	EVP DETECTOR
X-Y	EVP LIGHT PHASE NUMBER EVPL 2+5	EVP CON. LIGHT
X-Y	VIDEO DETECTION PHASE V2-1	VIDEO DETECTION
X-Y	RADAR DETECTION PHASE RD2-1	RADAR DETECTION
SS	SIGNAL SERVICE	SERVICE WIRE
CC	CABINET COMMS	COMMS CABLE
FO	FIBER OPTIC	FIBER CABLE
SPARE Y	SPARE WIRE TO POLE NUMB. SPARE1	SPARE WIRE
ELYZ *	ENFORC. LIGHT POLE & DIRECTION	ENFORCEMENT LIGHT
PTZ1	PTZ CAMERA POLE NUMBER PTZ1	PTZ CAMERA
IC	INTERCONNECT CABLE	INTERCONNECT
EGC	EQUIPMENT GROUNDING CONDUCTOR	GROUND

X = SIGNAL SYSTEM PHASE NUMBER; REFER TO THE PLAN
Y = SIGNAL SYSTEM ASSIGNED COMPONENT NUMBER; REFER TO THE PLAN
Z * = DIRECTION
FURNISH AND INSTALL LABELS ON CABLES WITH ABBREVIATIONS SHOWN ON THIS TABLE AND IN ACCORDANCE WITH THE WIRING DIAGRAM.

ADJUST SIGNAL HANDHOLE

WHERE EXISTING PVC HANDHOLES WITH METAL RINGS AND COVERS ARE REQUIRED TO BE ADJUSTED TO MATCH FINISHED SURROUNDING SIDEWALK OR BOULEVARD GRADE, CONTRACTOR SHALL REUSE THE EXISTING METAL RING & COVER. ADJUSTMENT WORK WILL REQUIRE EITHER THE CUTTING THE TOP OF THE HANDHOLE OR EXTENDING THE PVC HANDHOLE CYLINDER SO THAT THE TOP OF THE SALVAGED AND REINSTALLED PVC METAL RING AND COVER FITS THE ELEVATION OF THE SURROUNDING SIDEWALK/BOULEVARD. THIS WORK WILL BE MEASURED AND PAID FOR SEPARATELY FROM ITEM NO. 2565 (REVISE SIGNAL SYSTEM). SEE SPECIAL PROVISIONS AND STATEMENT OF ESTIMATED QUANTITIES.



SEH Project 173548
Drawn By JMG
Designed By JMG
Checked By JMG

Rev.# Revision Issue Description Date

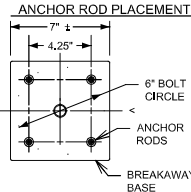
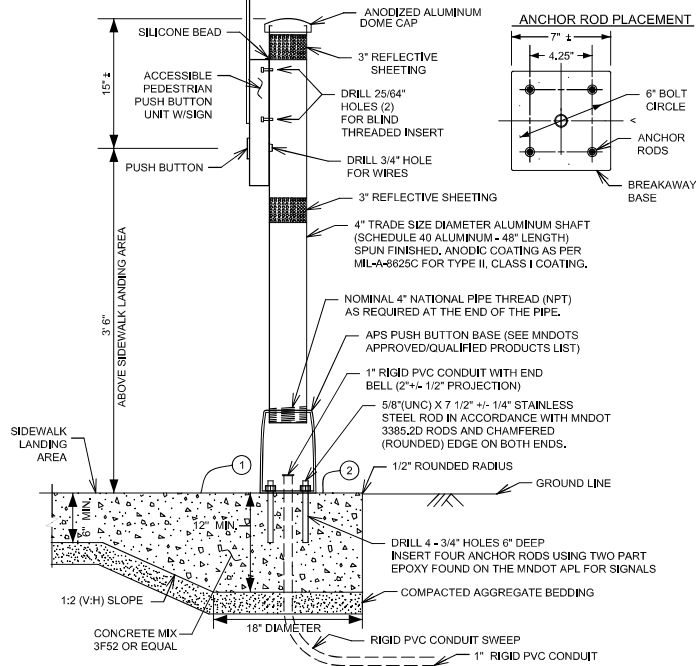
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I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
JOHN M. GRAY, PE
DATE: 07-17-2023 LICENSE NO. 22457

ANOKA COUNTY / CITY OF COON RAPIDS, MINNESOTA
SAP 002-601-064

ADA/APS MODIFICATIONS
MISCELLANEOUS SIGNAL CHARTS AND DETAILS
CSAH 1 (COON RAPIDS BLVD) & CSAH 18 / CROOKED LAKE BLVD NW

APS PUSH BUTTON STATION



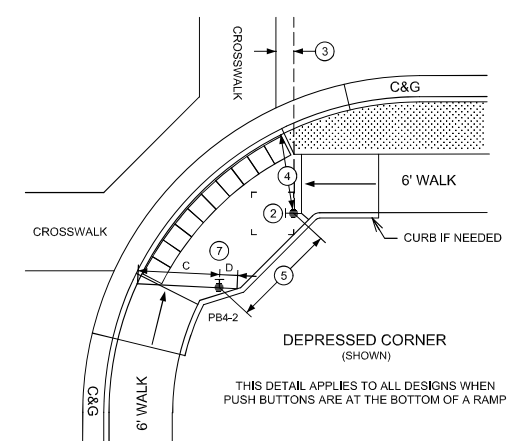
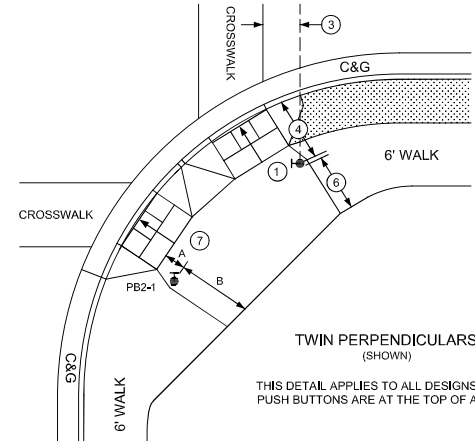
- NOTES:**
- PLACEMENT AND ORIENTATION OF THE PUSH BUTTON STATION IS CRITICAL. MOUNT THE BUTTON SO THAT THE FACE IS PARALLEL WITH THE ASSOCIATED CROSSWALK. SCREW IN SHAFT TO A TIGHTENED POSITION BEFORE MOUNTING ACCESSIBLE PEDESTRIAN PUSH BUTTON UNIT TO THE SHAFT.
 - ORIENT ACCESS OPENING ON THE BREAKAWAY PEDESTAL DIRECTLY BELOW THE APS BUTTON.
 - PLUMB THE PUSH BUTTON STATION WITH LEVELING SHIMS IN ACCORDANCE WITH STANDARD PLATE 8129.
 - INSTALL BLIND THREADED INSERTS USING MANUFACTURER'S SPECIFIC INSERTION TOOL.
 - USE ZINC PLATED STEEL 1/4 - 20 UNC BLIND THREADED INSERTS SUITABLE FOR MOUNTING ON SURFACE WALL THICKNESS OF .337. APPROVED BLIND INSERTS ARE LISTED ON MNDOT'S APPROVED/QUALITY PRODUCTS LIST WEBSITE FOR TRAFFIC SIGNALS.
 - USE APS 1/4 - 20 STAINLESS STEEL MOUNTING BOLTS. APPLY BRUSH ON ANTI SEIZE COMPOUND TO BOLTS PRIOR TO ASSEMBLY.
 - APPLY A BEAD OF 100% SILICONE SEALANT ALONG THE TOP OF THE PUSH BUTTON UNIT WHERE IT COMES IN CONTACT WITH THE 4" SHAFT.
 - USE WHITE REFLECTIVE SHEETING AT INTERSECTION CORNERS AND YELLOW REFLECTIVE SHEETING IN CENTER MEDIANS. APPROVED TUBE DELINEATOR SHEETING IS LISTED ON MNDOT'S APPROVED/QUALIFIED PRODUCTS LIST WEBSITE FOR SIGNALS.
 - AN 18" X 6" FIBER FORMING TUBE MAY BE USED FOR THE LOWER HALF OF THE FOUNDATION WHEN CONDITIONS DO NOT ALLOW FOR THE 18" X 6" HOLE TO STAND OPEN.
- THE PUSH BUTTON STATION FOUNDATION IS MONOLITHIC (POURED AT ONE TIME) WITH THE SIDEWALK. PROVIDE A 1:2 (V:H) SLOPE GRADE WHERE THE 6" MIN SIDEWALK DEPTH TRANSITIONS TO THE 12" MIN FOUNDATION DEPTH. MAINTAIN THE COMPACTED AGGREGATE BEDDING AND THICKNESS USED FOR THE SIDEWALK THROUGHOUT THE SLOPE AND FOUNDATION GRADING. PROVIDE 1:2 (V:H) SLOPE GRADING 360 DEGREES FOR THE TRANSITION FROM THE SIDEWALK TO THE FOUNDATION WHEN THE FOUNDATION IS NOT LOCATED NEAR EDGE OF SIDEWALK AND IS SURROUNDED BY CONCRETE WALK.
 - ENSURE CONCRETE CONTROL JOINTS AND EDGE OF CONCRETE WALK ARE A MINIMUM 9" FROM THE CENTER OF THE PUSH BUTTON FOUNDATION.

TYPICAL APS PEDESTRIAN PUSH BUTTON LOCATION

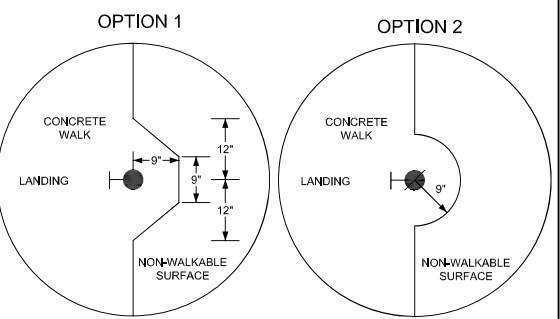
THIS IS A GENERAL DETAIL INTENDED TO SHOW THE REQUIREMENTS OF APS PUSH BUTTON LOCATION. FOR PROJECT SPECIFIC INFORMATION REGARDING PEDESTRIAN RAMP LAYOUT AND PUSH BUTTON LOCATIONS, SEE THE PLAN.

SUPPLEMENTAL GUIDANCE FOR CONSTRUCTING COMPLIANT APS PUSH BUTTONS:

- THE FACE OF THE BUTTON SHALL BE PARALLEL WITH THE OUTSIDE EDGE OF CROSSWALK.
- A MINIMUM 4 FT X 4 FT LANDING AREA SHALL BE PROVIDED ADJACENT TO EACH BUTTON, WITH A 2 PERCENT MAXIMUM SLOPE IN ALL DIRECTIONS.
- BUTTONS SHALL BE WITHIN 5 FT OF THE OUTSIDE EDGE OF THE CROSSWALK.
- BUTTONS SHALL BE BETWEEN 1.5 FT AND 10 FT FROM THE BACK OF CURB OR EDGE OF ROADWAY, MEASURED IN THE DIRECTION OF TRAVEL. STANDALONE PUSH BUTTON STATIONS SHOULD BE 4' MINIMUM FROM THE BACK OF CURB TO AVOID KNOCKDOWNS.
- BUTTONS SHALL BE AT LEAST 10 FT APART.
- PROVIDE A MAINTENANCE ACCESS ROUTE (MAR) WHEREVER POSSIBLE FOR SNOW REMOVAL PURPOSES. A MAR REQUIRES A 6 FT MINIMUM CLEAR DISTANCE BETWEEN A PUSH BUTTON AND ANY OBSTRUCTIONS, INCLUDING BUILDINGS, V-CURB, ELECTRICAL FOUNDATIONS, SIGNAL CABINETS, OR ANOTHER PUSH BUTTON.
- BUTTON SHOULD BE 2 FT MINIMUM FROM RAMP GRADE BREAK AND BACK OF WALK.



CONTRACTOR MUST USE OPTION 1 OR 2 WHEN THE APS PUSH BUTTON IS SHOWN AT THE EDGE OF WALK. OPTION USED (OR SELECTED) MUST BE THE SAME THROUGHOUT THE ENTIRE PROJECT.



SIGNAL CONTROL POINTS			DISTANCE TO FRONT OF LANDING (FT)	DISTANCE TO BACK OF LANDING (FT)
SIGNAL NO.	X	Y	A	B
PB2-1	-	-	A	B
PB4-2	-	-	C	D

- A - DISTANCE MEASURED FROM THE PUSH BUTTON TO THE FRONT OF LANDING/TOP OF RAMP
- B - CLEAR DISTANCE MEASURED FROM THE PUSH BUTTON TO THE BACK OF LANDING/EDGE OF WALK
- C - CLEAR DISTANCE MEASURED FROM THE PUSH BUTTON TO THE OUTSIDE EDGE OF DOMES IN THE DIRECTION OF TRAVEL
- D - CLEAR DISTANCE FROM THE PUSH BUTTON TO THE BACK OF LANDING MEASURED IN THE OPPOSITE DIRECTION OF TRAVEL

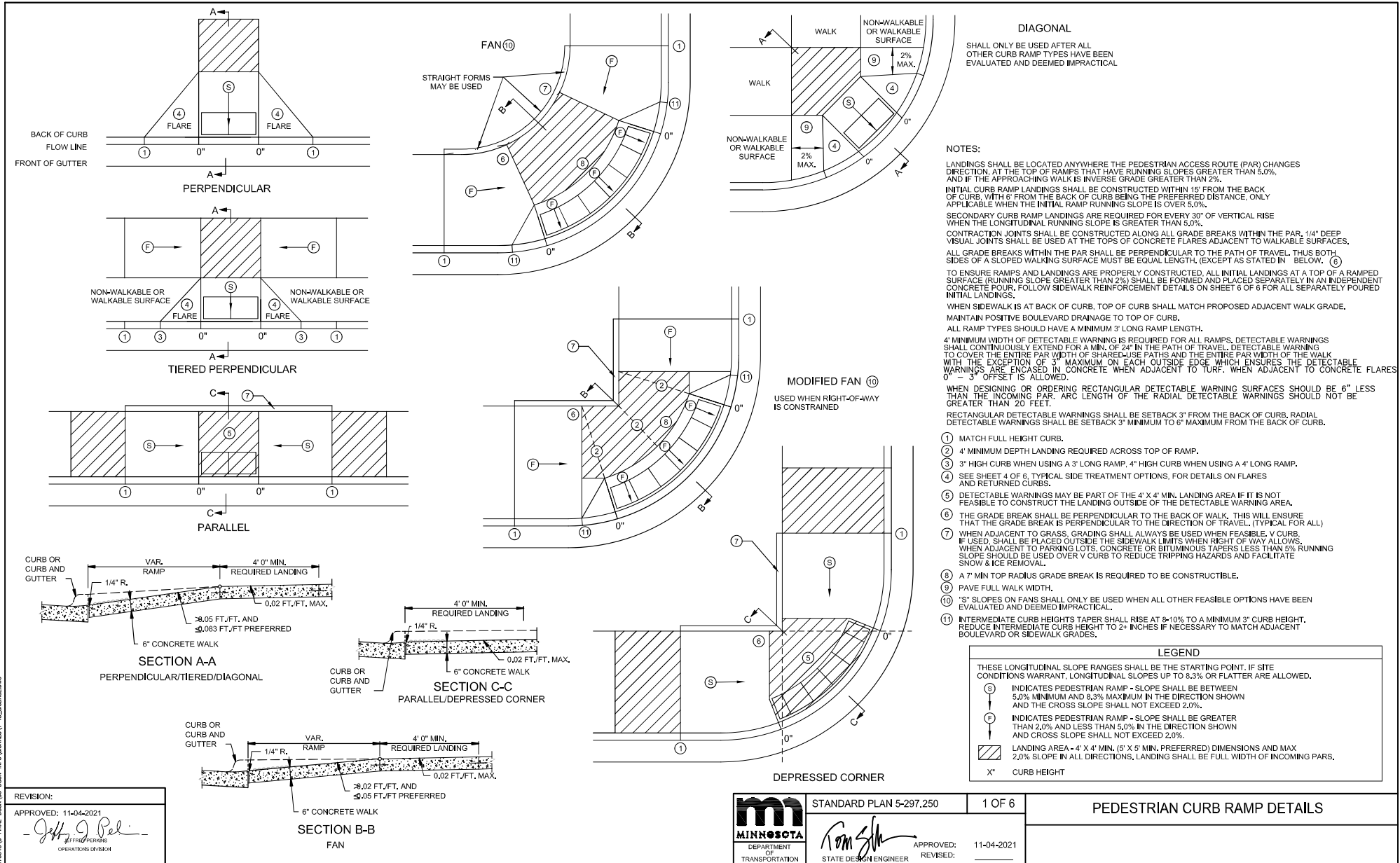
SEH Project	173548	Rev.#	Revision Issue Description	Date	Rev.#	Revision Issue Description	Date
Drawn By	JMG						
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Checked By	JMG						

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SEH
JOHN M. GRAY, PE
DATE: 07-17-2023 LICENSE NO. 22457

ANOKA COUNTY / CITY OF COON RAPIDS, MINNESOTA
SAP 002-601-064

ADA/APS MODIFICATIONS
APS PUSH BUTTON STATION DETAILS
CSAH 1 (COON RAPIDS BLVD) & CSAH 18 / CROOKED LAKE BLVD NW



REVISION:
APPROVED: 11-04-2021
Jeff J. Pel...
OPERATIONS DIVISION

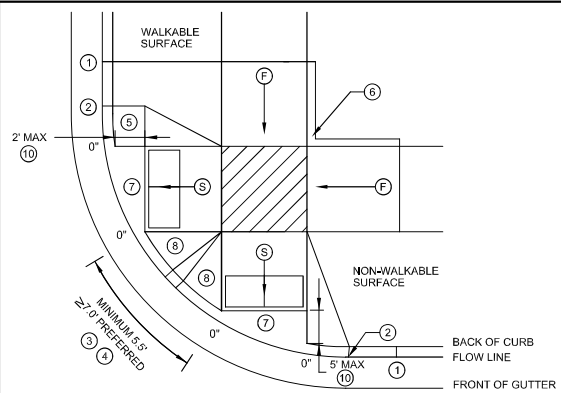
STANDARD PLAN 5-297.250 1 OF 6
MINNESOTA DEPARTMENT OF TRANSPORTATION
APPROVED: 11-04-2021
REVISOR: *Tom...*

PEDESTRIAN CURB RAMP DETAILS

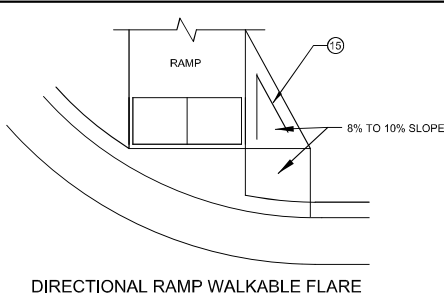
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ANOKA COUNTY / CITY OF COON RAPIDS, MINNESOTA
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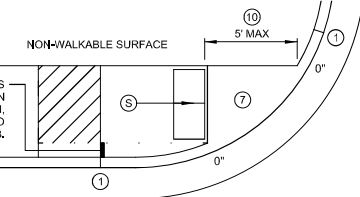
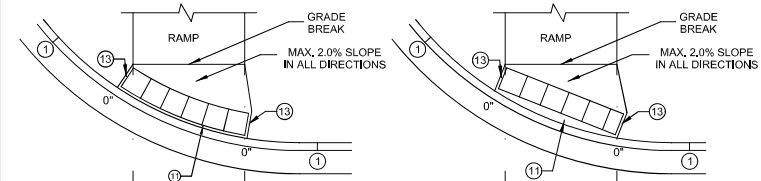
ADA/APS MODIFICATIONS CURB RAMP DETAILS
CSAH 1 (COON RAPIDS BLVD) & CSAH 18 / CROOKED LAKE BLVD NW



COMBINED DIRECTIONAL

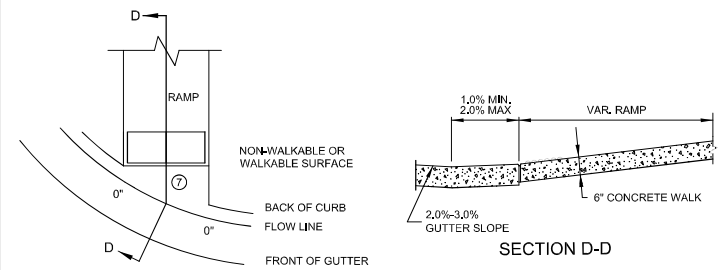


DIRECTIONAL RAMP WALKABLE FLARE

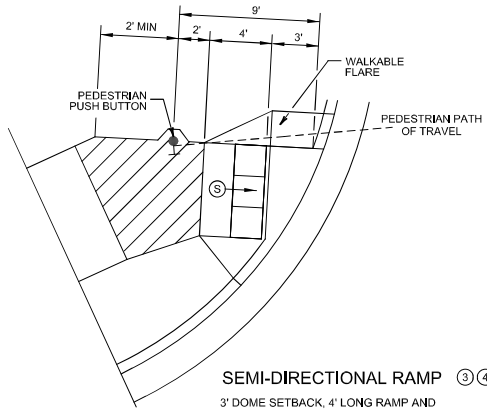


STANDARD ONE-WAY DIRECTIONAL

ONE-WAY DIRECTIONAL WITH DETECTABLE WARNING AT BACK OF CURB



CURB FOR DIRECTIONAL RAMPS



SEMI-DIRECTIONAL RAMP

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)

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. THIS 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 SLOPE TO REDUCE NEGATIVE BOULEVARD SLOPES FROM THE TOP BACK OF CURB TO THE PAR.
 ALL RAMP TYPES SHOULD HAVE A MINIMUM 3' LONG RAMP LENGTH.
 4' MINIMUM WIDTH OF DETECTABLE WARNING IS REQUIRED FOR ALL RAMPS. DETECTABLE WARNINGS SHALL CONTINUOUSLY EXTEND FOR A MIN. OF 24" IN THE PATH OF TRAVEL. DETECTABLE WARNING TO COVER THE ENTIRE PAR WIDTH OF SHARED-USE PATHS AND THE ENTIRE PAR WIDTH OF THE WALK WITH THE EXCEPTION OF 3' MAXIMUM ON EACH OUTSIDE EDGE WHICH ENSURES THE DETECTABLE WARNINGS ARE ENCASED IN CONCRETE WHEN ADJACENT TO CURB. WHEN ADJACENT TO CONCRETE FLARES 0' - 3' OFFSET IS ALLOWED.

WHEN DESIGNING OR ORDERING RECTANGULAR DETECTABLE WARNING SURFACES SHOULD BE 6" LESS THAN THE INCOMING PAR. ARC LENGTH OF THE RADIAL DETECTABLE WARNINGS SHOULD NOT BE GREATER THAN 20 FEET.
 RADIAL DETECTABLE WARNINGS SHALL BE SETBACK 3' MINIMUM TO 6' MAXIMUM FROM THE BACK OF CURB. SEE NOTES (6) & (10) FOR INFORMATION REGARDING RECTANGULAR DETECTABLE WARNING DIMENSIONS.

- 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 FANDEPRESSED CORNER.
- 5 WHEN USING CONCRETE PAVED FLARES ON THE OUTSIDE OF DIRECTIONAL RAMPS, AND ADJACENT TO A WALKABLE SURFACE, DIRECTIONAL RAMP FLARES SHALL BE USED, SEE THE DETAIL ON THIS SHEET.
- 6 GRADING SHALL ALWAYS BE USED WHEN FEASIBLE. V CURB, IF USED, SHALL BE PLACED OUTSIDE THE SIDEWALK LIMITS WHEN RIGHT OF WAY ALLOWS. WHEN ADJACENT TO PARKING LOTS, CONCRETE OR BITUMINOUS TAPERS SHOULD BE USED OVER V CURB TO REDUCE TRIPPING HAZARDS AND FACILITATE SNOW & ICE REMOVAL.
- 7 MAX. 2.0% SLOPE IN ALL DIRECTIONS IN FRONT OF GRADE BREAK AND DRAIN TO FLOW LINE. SHALL BE CONSTRUCTED INTEGRAL WITH CURB AND GUTTER.
- 8 8% TO 10% WALKABLE FLARE.
- 9 PLACE DOMES AT THE BACK OF CURB WHEN ALLOWABLE SETBACK CRITERIA IS EXCEEDED.
- 10 FRONT EDGE OF DETECTABLE WARNING SHALL BE SET BACK 2' MAXIMUM WHEN ADJACENT TO WALKABLE SURFACE, AND 5' MAXIMUM WHEN ADJACENT TO NON-WALKABLE SURFACE WITH ONE CORNER SET 3' FROM BACK OF CURB. A WALKABLE SURFACE IS DEFINED AS A PAVED SURFACE ADJACENT TO A CURB RAMP WITHOUT RAISED OBSTACLES THAT COULD MISTAKENLY BE TRAVERSED BY A USER WHO IS VISUALLY IMPAIRED.
- 11 RECTANGULAR DETECTABLE WARNINGS MAY BE SETBACK UP TO 8" FROM THE BACK OF CURB WITH CORNERS SET 3" FROM BACK OF CURB. IF 8" 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 WALKPATH. THIS ENSURES A DETECTABLE EDGE AND HELPS ELIMINATE THE CURB TAPER OBSTRUCTING THE PATH OF PEDESTRIAN TRAVEL.
- 13 THE CONCRETE WALK SHALL BE FORMED AND CONSTRUCTED PERPENDICULAR TO THE BACK OF CURB. MAINTAIN 3" BETWEEN EDGE OF DOMES AND EDGE OF CONCRETE.
- 14 TO BE USED FOR ALL DIRECTIONAL RAMPS, EXCEPT WHERE DOMES ARE PLACED ALONG THE BACK OF CURB.
- 15 PLACE 2 NO. 4 BARS 4 INCHES FROM SIDE OF FORMS WITH A MINIMUM 2 INCHES OF CONCRETE COVER ALONG EACH SIDE OF FLARE (INCIDENTAL).

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

REVISION:
 APPROVED: 11-04-2021
 Jeff J. Pel...
 OPERATIONS DIVISION

STANDARD PLAN 5-297.250 2 OF 6

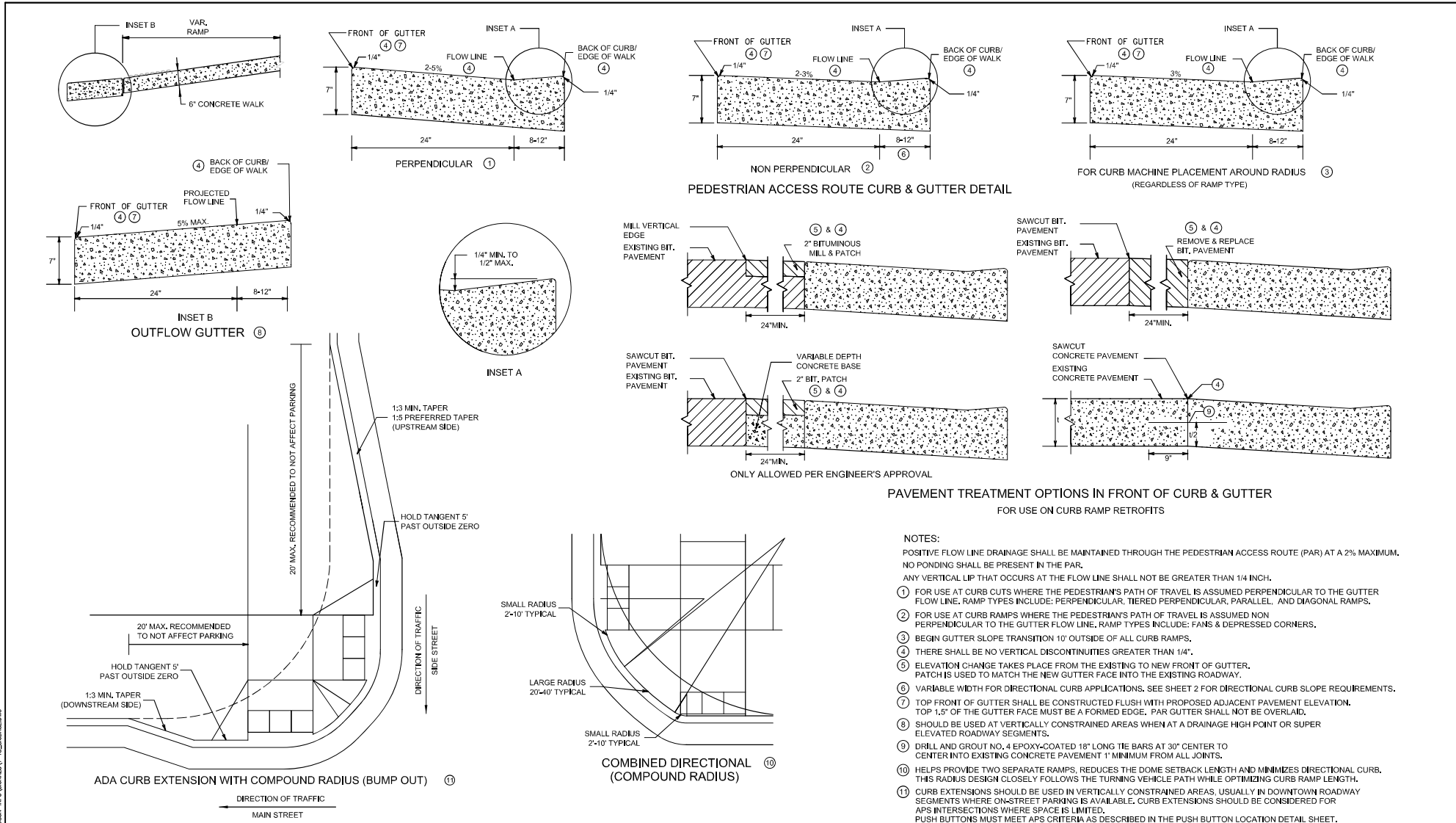
 DEPARTMENT OF TRANSPORTATION
 STATE DESIGN ENGINEER
 APPROVED: 11-04-2021
 REVISOR:

PEDESTRIAN CURB RAMP DETAILS

SEH Project	173548	Rev.#	Revision Issue Description	Date	Rev.#	Revision Issue Description	Date
Drawn By	JMG						
Designed By	JMG						
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ANOKA COUNTY /
 CITY OF COON RAPIDS,
 MINNESOTA
 SAP 002-601-064

ADA/APS MODIFICATIONS
 CURB RAMP DETAILS
 CSAH 1 (COON RAPIDS BLVD) &
 CSAH 18 / CROOKED LAKE BLVD NW



REVISION:
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Jeff J. Pel...
 OPERATIONS DIVISION

STANDARD PLAN 5-297.250 3 OF 6

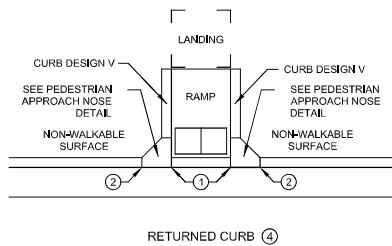
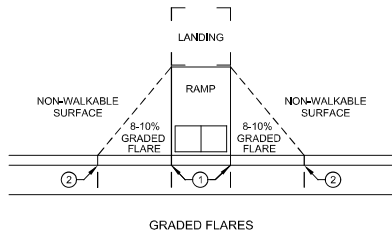
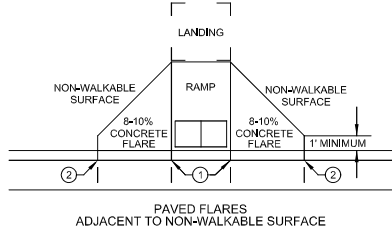
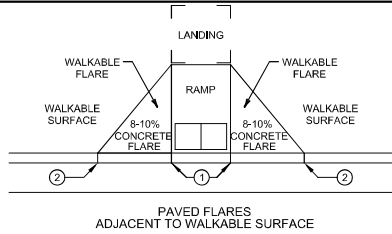
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PEDESTRIAN CURB RAMP DETAILS

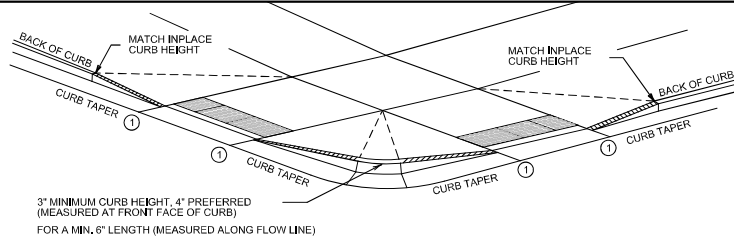
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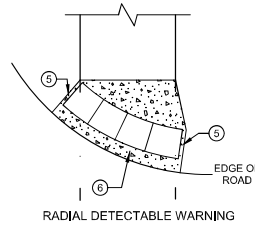


TYPICAL SIDE TREATMENT OPTIONS ③ ⑩

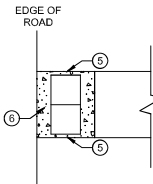


3" MINIMUM CURB HEIGHT, 4" PREFERRED (MEASURED AT FRONT FACE OF CURB) FOR A MIN. 6" LENGTH (MEASURED ALONG FLOW LINE)

DETECTABLE EDGE WITH CURB AND GUTTER ⑦

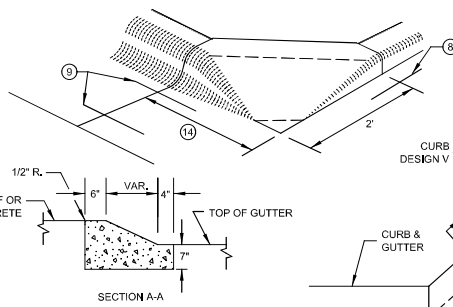


RADIAL DETECTABLE WARNING



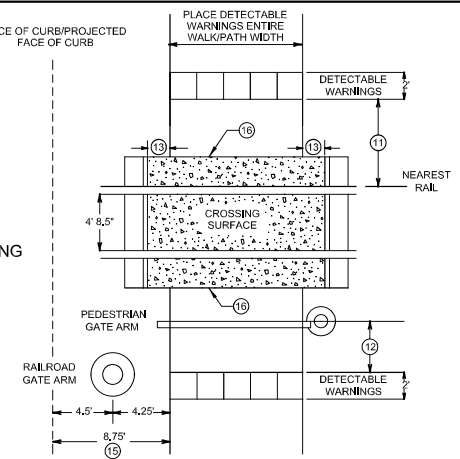
RECTANGULAR DETECTABLE WARNING

DETECTABLE EDGE WITHOUT CURB AND GUTTER



PEDESTRIAN APPROACH NOSE DETAIL (FOR RETURNED CURB SIDE TREATMENT)

RAILROAD CROSSING PLAN VIEW



- NOTES:
- INTERMEDIATE CURB HEIGHTS TAPER SHALL RISE AT 8-10% TO A MINIMUM 3 INCH CURB HEIGHT, INCREASE CURB TAPER LENGTH AT LESS THAN 8% OR REDUCE INTERMEDIATE CURB HEIGHT TO 2+ INCHES IF NECESSARY TO MATCH ADJACENT BOULEVARD OR SIDEWALK GRADES.
 - SEE STANDARD PLATE 7038 AND THIS SHEET FOR ADDITIONAL DETAILS ON DETECTABLE WARNING.
 - A WALKABLE SURFACE IS DEFINED AS A PAVED SURFACE ADJACENT TO A CURB RAMP WITHOUT RAISED OBSTACLES THAT COULD MISTAKENLY BE TRAVERSED BY A USER WHO IS VISUALLY IMPAIRED. CONCRETE FLARE LENGTHS ADJACENT TO NON-WALKABLE SURFACES SHOULD BE LESS THAN 6' LONG MEASURED ALONG THE RAMP FROM THE BACK OF CURB.
 - ① 0" CURB HEIGHT, SEE INSET A ON SHEET 3 OF 6.
 - ② FULL CURB HEIGHT.
 - ③ SIDE TREATMENTS ARE APPLICABLE TO ALL RAMP TYPES AND SHOULD BE IMPLEMENTED AS NEEDED AS FIELD CONDITIONS DICTATE. THE ENGINEER SHALL DETERMINE THE RAMP SIDE TREATMENTS BASED ON MAINTENANCE OF BOTH ROADWAY AND SIDEWALK, ADJACENT PROPERTY CONSIDERATIONS, AND MITIGATING CONSTRUCTION IMPACTS.
 - ④ TYPICALLY USED FOR MEDIANS AND ISLANDS.
 - ⑤ WHEN NO CONCRETE FLARES ARE PROPOSED, THE CONCRETE WALK SHALL BE FORMED AND CONSTRUCTED PERPENDICULAR TO THE EDGE OF ROADWAY, MAINTAIN 3" MAX. BETWEEN EDGE OF DOMES AND EDGE OF CONCRETE.
 - ⑥ IF NO CURB AND GUTTER IS PLACED IN RURAL SECTIONS, DETECTABLE WARNINGS SHALL BE PLACED 1' FROM THE EDGE OF BITUMINOUS ROADWAY AND/OR BITUMINOUS SHARED-USE PATH TO PROVIDE VISUAL CONTRAST.
 - ⑦ ALL CONSTRUCTED CURBS MUST HAVE A CONTINUOUS DETECTABLE EDGE FOR THE VISUALLY IMPAIRED. THIS DETECTABLE EDGE REQUIRES DETECTABLE WARNINGS WHEREVER THERE IS ZERO-INCH HIGH CURB, CURB TAPERS ARE CONSIDERED A DETECTABLE EDGE WHEN THE TAPER STARTS WITHIN 3" OF THE EDGE OF THE DETECTABLE WARNINGS, AND UNIFORMLY RISES TO A 3-INCH MINIMUM CURB HEIGHT. ANY CURB NOT PART OF A CURB TAPER AND LESS THAN 3 INCHES IN HEIGHT IS NOT CONSIDERED A DETECTABLE EDGE AND THEREFORE IS NOT COMPLIANT WITH ACCESSIBILITY STANDARDS.
 - ⑧ DRILL AND GROUT 1 - NO. 4 12" LONG REINFORCEMENT BAR (EPOXY COATED) WITH 3" MIN. COVER, REINFORCEMENT BARS ARE NOT NEEDED IF THE APPROACH NOSE IS POURED INTEGRAL WITH THE V CURB.
 - ⑨ DRILL AND GROUT 2 - NO. 4 12" LONG REINFORCEMENT BARS (EPOXY COATED) WITH 3" MIN. COVER, REINFORCEMENT BARS ARE NOT NEEDED IF THE APPROACH NOSE IS POURED INTEGRAL WITH THE CURB AND GUTTER.
 - ⑩ SIDE TREATMENT EXAMPLES SHOWN ARE WHEN THE INITIAL LANDING IS APPROXIMATELY LEVEL WITH THE FULL HEIGHT CURB (I.E. 6" LONG RAMP FOR 6" HIGH CURB). WHEN THE INITIAL LANDING IS MORE THAN 1" BELOW FULL HEIGHT CURB REFER TO SHEETS 1 & 2 TO MODIFY THE CURB HEIGHT TAPERS AND MAINTAIN POSITIVE BOULEVARD DRAINAGE, CONSTRUCT THESE TAPERS AT 0%-3% AT 8-10%, THEN LESS THAN 5% FROM 3" CURB TO FULL CURB HEIGHT.
 - ⑪ NEAREST EDGE OF DETECTABLE WARNING SURFACES SHALL BE PLACED 12' MINIMUM TO 15' MAXIMUM FROM THE NEAREST RAIL, FOR SKEWED RAILWAYS IN NO INSTANCE SHALL THE DETECTABLE WARNING BE CLOSER THAN 12' MEASURED PERPENDICULAR TO THE NEAREST RAIL.
 - ⑫ WHEN PEDESTRIAN GATES ARE PROVIDED, DETECTABLE WARNING SURFACES SHALL BE PLACED ON THE SIDE OF THE GATES OPPOSITE THE RAIL, 2' FROM THE APPROACHING SIDE OF THE GATE ARM, THIS CRITERIA GOVERNS OVER NOTE 11.
 - ⑬ CROSSING SURFACE SHALL EXTEND 2' MINIMUM PAST THE OUTSIDE EDGE OF WALK OR SHARED-USE PATH.
 - ⑭ 3' FOR MEDIANS AND SPLITTER ISLANDS. NOSE CAN BE REDUCED TO 2' ON FREE RIGHT ISLANDS.
 - ⑮ SIDEWALK TO BE PLACED 8.75' MIN. FROM THE FACE OF CURB/PROJECTED FACE OF CURB, THIS ENSURES MIN. CLEARANCE BETWEEN THE SIDEWALK AND GATE ARM COUNTERWEIGHT SUPPORTS.
 - ⑯ CONSTRUCT WITH EXPANSION MATERIAL PER MNDOT SPECIFICATION 3702 TYPES A-E. EXPANSION MATERIAL SHALL MATCH FULL HEIGHT OF ADJACENT CONCRETE.

REVISION:
APPROVED: 11-04-2021
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PROJECT ENGINEER
OPERATIONS DIVISION



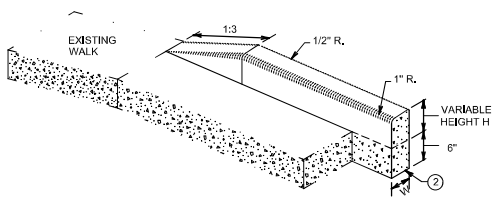
STANDARD PLAN 5-297.250	4 OF 6
<i>Tom...</i>	APPROVED: 11-04-2021
STATE DESIGN ENGINEER	REVISED:

PEDESTRIAN CURB RAMP DETAILS

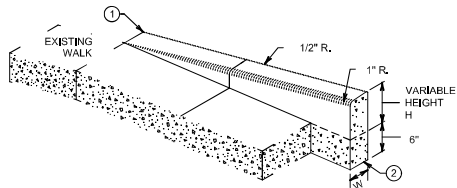
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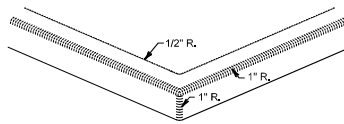
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CSAH 1 (COON RAPIDS BLVD) &
CSAH 18 / CROOKED LAKE BLVD NW



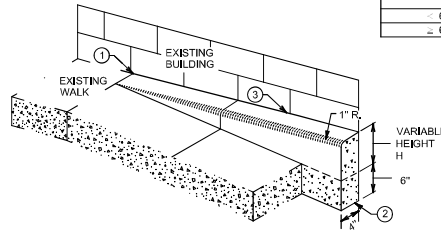
V CURB ADJACENT TO LANDSCAPE
CURB WITHIN SIDEWALK LIMITS



V CURB ADJACENT TO LANDSCAPE
CURB OUTSIDE SIDEWALK LIMITS

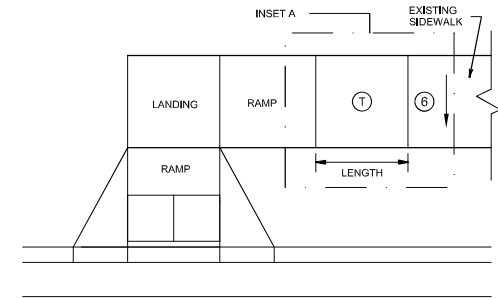


V CURB INTERSECTION

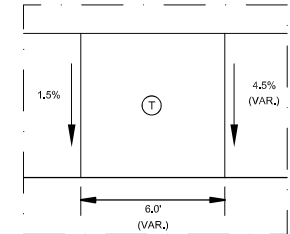


V CURB ADJACENT TO BUILDING
OR BARRIER

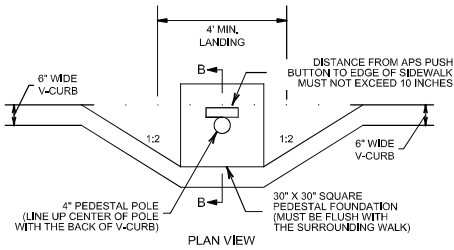
CONCRETE CURB DESIGN V	
CURB HEIGHT H	CURB WIDTH W
< 6"	4"
≥ 6"	6"



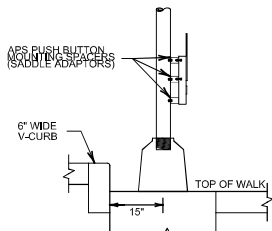
TRANSITION PANEL ④ ⑤



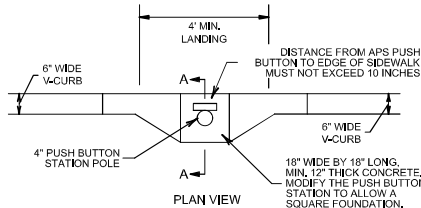
INSET A



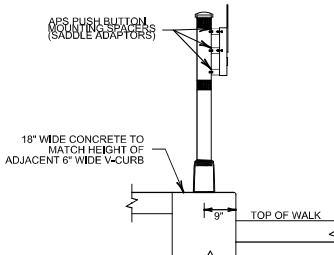
PLAN VIEW



SECTION B-B
SIGNAL PEDESTAL & PUSH BUTTON (V-CURB)



PLAN VIEW



SECTION A-A
PUSH BUTTON STATION (V-CURB)

NOTES:

- 1 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.
- 2 ALL V CURB CONSTRUCTION JOINTS SHALL MATCH CONCRETE WALK JOINTS.
- 3 WHERE RIGHT-OF-WAY ALLOWS, USE OF V CURB SHOULD BE MINIMIZED. GRADING ADJACENT TURF OR SLOPING ADJACENT PAVEMENT IS PREFERRED.
- 4 V CURB SHALL BE PLACED OUTSIDE THE SIDEWALK LIMITS WHEN RIGHT OF WAY ALLOWS.
- 5 V CURB NEXT TO BUILDING SHALL BE A 4' WIDTH AND SHALL MATCH PREVIOUS TOP OF SIDEWALK ELEVATIONS.
- 6 END TAPERS AT TRANSITION SECTION SHALL MATCH INPLACE SIDEWALK GRADES.
- 7 ALL V CURB SHALL MATCH BOTTOM OF ADJACENT WALK.
- 8 CONSTRUCT USING APPROVED EXPANSION MATERIAL PER MNDOT TYPE A-E EXPANSION. LEAVE A MINIMUM 1" TOP GAP AND SEAL WITH MNDOT APPROVED SILICONE PER MNDOT SPEC 3722.
- 9 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.
- 10 TRANSITION PANELS ARE TO ONLY BE USED AFTER THE RAMP, OR IF NEEDED, LANDING ARE AT THE FULL CURB HEIGHT (TYPICAL SECTION).
- 11 EXISTING CROSS SLOPE GREATER THAN 2.0%.

LEGEND

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

⑤ INDICATES PEDESTRIAN RAMP - SLOPE SHALL BE BETWEEN 5.0% MINIMUM AND 8.3% MAXIMUM IN THE DIRECTION SHOWN AND THE CROSS SLOPE SHALL NOT EXCEED 2.0%.

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

③ 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.

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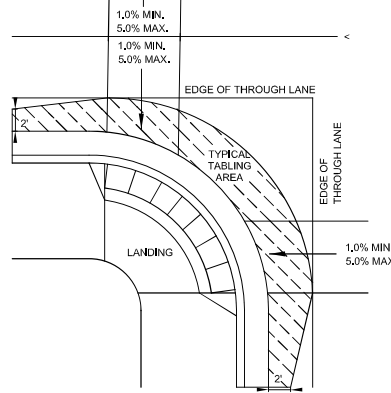
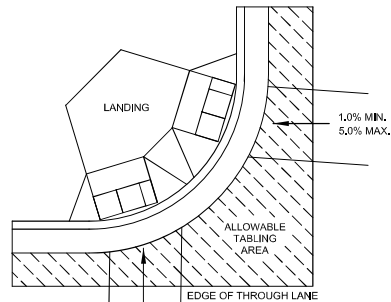
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	STANDARD PLAN 5-297.250	5 OF 6
	APPROVED: 11-04-2021	REVISED:

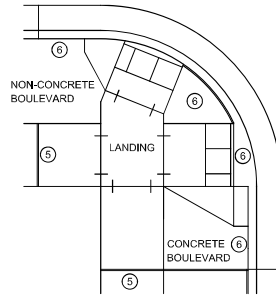
PEDESTRIAN CURB RAMP DETAILS	
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ADA/APS MODIFICATIONS CURB RAMP DETAILS CSAH 1 (COON RAPIDS BLVD) & CSAH 18 / CROOKED LAKE BLVD NW	10 of 23
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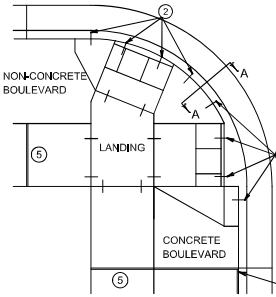
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CURB LINE AND ROAD CROSSING ADJUSTMENTS



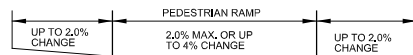
EXPANSION MATERIAL PLACEMENT FOR CONCRETE ROADWAYS



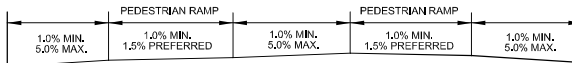
CURB LINE REINFORCEMENT PLACEMENT ON BITUMINOUS ROADWAYS



FLOW LINE PROFILE "TABLE" - TWIN PERPENDICULARS



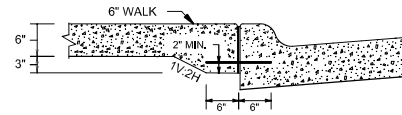
FLOW LINE PROFILE "TABLE" - FAN



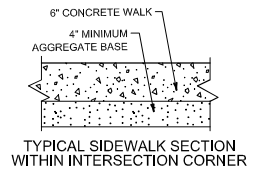
FLOW LINE PROFILE RAISE - TWIN PERPENDICULARS



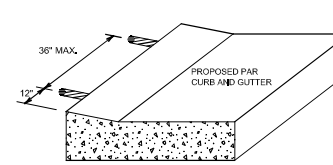
FLOW LINE PROFILE RAISE - FAN



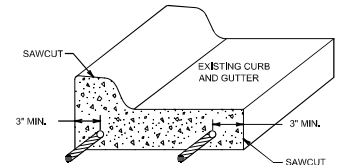
SECTION VIEW A-A THICKENED SECTION THROUGH CURB RAMP FLARES



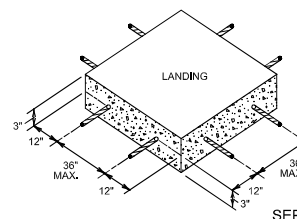
TYPICAL SIDEWALK SECTION WITHIN INTERSECTION CORNER



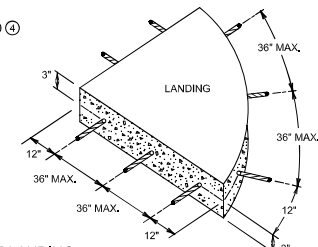
CURB RAMP REINFORCEMENT DETAILS ②④



CURB AND GUTTER REINFORCEMENT ③



SEPARATE LANDING POUR REINFORCEMENT ①②



GENERAL NOTES:

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

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

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

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

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

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

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

NOTES:

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

REVISION:
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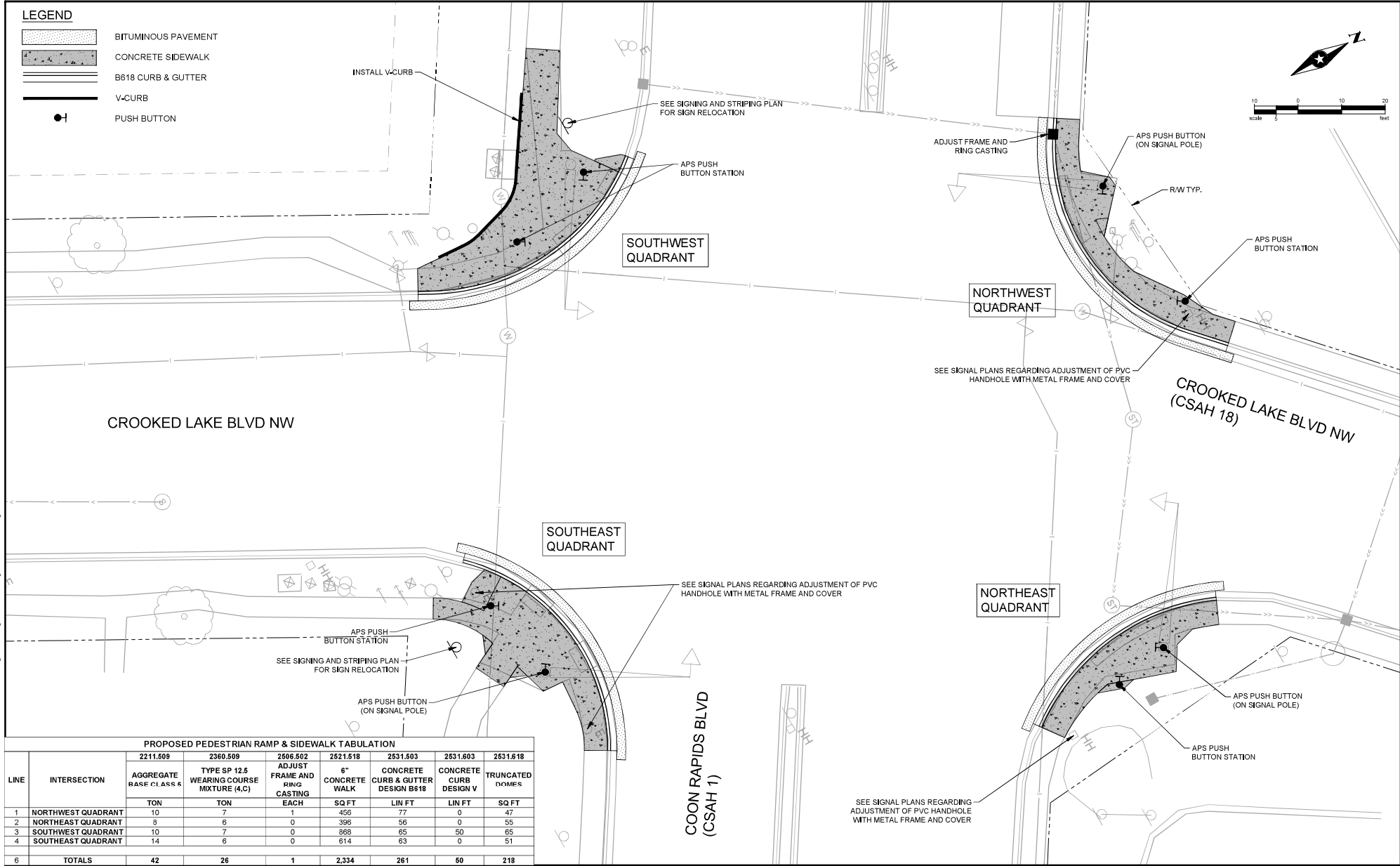
STANDARD PLAN 5-297.250 6 OF 6
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PEDESTRIAN CURB RAMP DETAILS

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 CSAH 18 / CROOKED LAKE BLVD NW



CROOKED LAKE BLVD NW

CROOKED LAKE BLVD NW
(CSAH 18)

SOUTHWEST
QUADRANT

NORTHWEST
QUADRANT

SOUTHWEST
QUADRANT

NORTHEAST
QUADRANT

COON RAPIDS BLVD
(CSAH 1)

PROPOSED PEDESTRIAN RAMP & SIDEWALK TABULATION

LINE	INTERSECTION	2211.509	2360.509	2506.502	2521.518	2531.503	2531.603	2531.618
		AGGREGATE BASE CLASS 6	TYPE SP 12.5 WEARING COURSE MIXTURE (4,C)	ADJUST FRAME AND RING CASTING	6" CONCRETE WALK	CONCRETE CURB & GUTTER DESIGN B618	CONCRETE CURB DESIGN V	TRUNCATED DOMES
		TON	TON	EACH	SQ FT	LIN FT	LIN FT	SQ FT
1	NORTHWEST QUADRANT	10	7	1	456	77	0	47
2	NORTHEAST QUADRANT	8	6	0	396	56	0	55
3	SOUTHWEST QUADRANT	10	7	0	868	65	50	65
4	SOUTHWEST QUADRANT	14	6	0	614	63	0	51
6	TOTALS	42	26	1	2,334	261	50	218

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Checked By	JG	##	##	##	##	##	##

SEH
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.
JERRY M. GRAY, PE
DATE: 01-17-2023 LICENSE NO.: 22457

ANOKA COUNTY/
CITY OF COON RAPIDS,
MINNESOTA
SAP 002-601-064

ADA/APS MODIFICATIONS
CONSTRUCTION PLAN
CSAH 1 (COON RAPIDS BLVD) & CSAH
18 / CROOKED LAKE BLVD NW

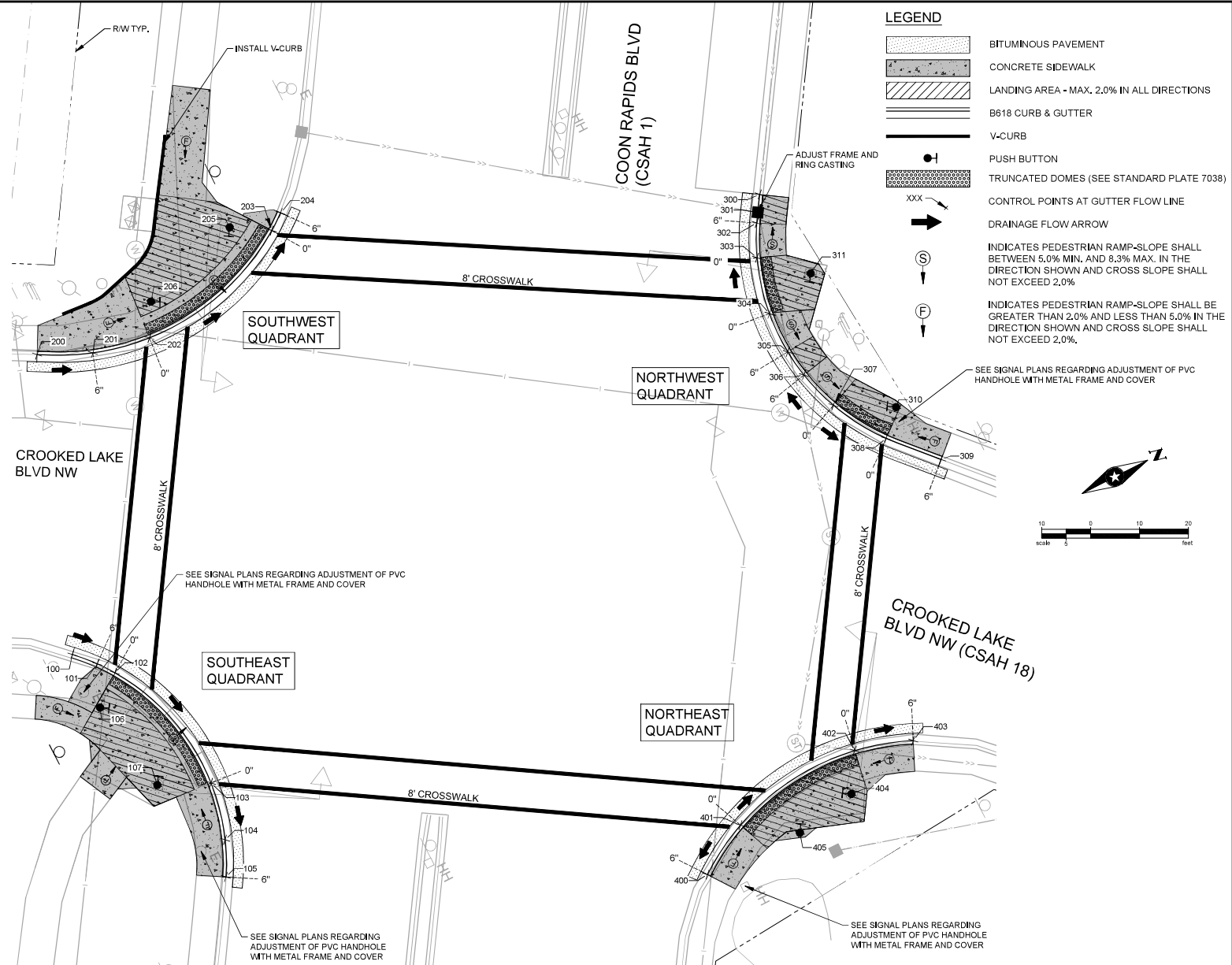
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SOUTHEAST QUADRANT				
POINT #	RAW DESCRIPTION	ELEVATION	NORTHING	EASTING
100	FLOW LINE	870.38	149563.90	481273.52
101	FLOW LINE, 6"	870.32	149567.54	481277.51
102	FLOW LINE, 0"	870.27	149569.94	481280.79
103	FLOW LINE, 0"	869.91	149577.22	481309.77
104	FLOW LINE, 6"	869.76	149574.51	481321.42
105	FLOW LINE	869.67	149571.21	481326.26
106	PUSH BUTTON STATION (PB 2-2)	870.38	149564.02	481285.75
107	PUSH BUTTON, EX. SIGNAL (PB 6-1)	0.00	149567.24	481305.16

SOUTHWEST QUADRANT				
POINT #	RAW DESCRIPTION	ELEVATION	NORTHING	EASTING
200	FLOW LINE	870.05	149585.28	481215.85
201	FLOW LINE, 6"	869.83	149595.58	481220.51
202	FLOW LINE, 0"	869.59	149607.28	481223.04
203	FLOW LINE, 0"	869.25	149638.51	481214.84
204	FLOW LINE	869.23	149642.78	481212.45
205	PUSH BUTTON STATION (PB 4-2)	869.52	149632.15	481210.35
206	PUSH BUTTON STATION (PB 2-1)	869.78	149610.93	481216.57

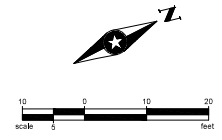
NORTHWEST QUADRANT				
POINT #	RAW DESCRIPTION	ELEVATION	NORTHING	EASTING
300	FLOW LINE	868.84	149731.70	481253.52
301	FLOW LINE, CB	868.81	149729.68	481256.62
302	FLOW LINE, 6"	868.83	149728.52	481258.44
303	FLOW LINE, 0"	868.88	149725.35	481264.80
304	FLOW LINE, 0"	868.95	149722.43	481276.14
305	FLOW LINE, 6"	869.01	149722.23	481284.80
306	FLOW LINE, 6"	869.05	149723.02	481290.52
307	FLOW LINE, 0", HP	869.10	149725.57	481288.76
308	FLOW LINE, 0"	869.04	149732.09	481309.66
309	FLOW LINE	869.98	149740.15	481318.80
310	PUSH BUTTON STATION (PB 6-2)	869.14	149736.83	481304.91
311	PUSH BUTTON, EX. SIGNAL (PB 4-1)	869.07	149733.68	481272.64

NORTHEAST QUADRANT				
POINT #	RAW DESCRIPTION	ELEVATION	NORTHING	EASTING
400	FLOW LINE, 6"	868.98	149659.12	481372.52
401	FLOW LINE, 0", HP	869.88	149669.69	481366.56
402	FLOW LINE, 0"	869.55	149697.42	481363.61
403	FLOW LINE, 6"	869.41	149709.01	481367.21
404	PUSH BUTTON, EX. SIGNAL (PB 6-1)	0.00	149692.81	481371.20
405	PUSH BUTTON STATION (PB 8-2)	869.88	149679.81	481373.47



LEGEND

- BITUMINOUS PAVEMENT
- CONCRETE SIDEWALK
- LANDING AREA - MAX. 2.0% IN ALL DIRECTIONS
- B618 CURB & GUTTER
- V-CURB
- PUSH BUTTON
- TRUNCATED DOMES (SEE STANDARD PLATE 7038)
- CONTROL POINTS AT GUTTER FLOW LINE
- DRAINAGE FLOW ARROW
- INDICATES PEDESTRIAN RAMP-SLOPE SHALL BE BETWEEN 5.0% MIN. AND 8.3% MAX. 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%.



SEH Project 173548
 Drawn By ACB
 Designed By ACB
 Checked By JG

SEH Project	173548	Rev.#	Rev. Issue Description	Date	Rev.#	Rev. Issue Description	Date
Drawn By	ACB	##	##	##	##	##	##
Designed By	ACB	##	##	##	##	##	##
Checked By	JG	##	##	##	##	##	##

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.
 JERRY M. GRAY, PE
 DATE: 01-11-2023 LICENSE NO.: 22457

ANOKA COUNTY/
 CITY OF COON RAPIDS,
 MINNESOTA
 SAP 002-601-064

ADA/APS MODIFICATIONS
 INTERSECTION DETAIL
 CSAH 1 (COON RAPIDS BLVD) & CSAH
 18 / CROOKED LAKE BLVD NW

14
 of 23

SALVAGE SIGNS				
CODE NO.	TOTAL PROJECT QUANTITY	NO. OF POSTS & TYPE	PANEL SIZE (IN)	PANEL LEGEND
D11-1	2	1-U	24 x 18	BIKE ROUTE

INSTALL SIGN PANEL					
CODE NO.	TOTAL PROJECT QUANTITY	NO. OF POSTS & TYPE	MTG. HT. (FT)	PANEL SIZE (IN)	PANEL LEGEND
D11-1	2	1-U POST (INPLACE-S & I)	7	24 x 18	BIKE ROUTE

REMOVE SIGNS				
CODE NO.	TOTAL PROJECT QUANTITY	NO. OF POSTS & TYPE	PANEL SIZE (IN)	PANEL LEGEND
R10-12	2	(1)	36 x 48	LEFT TURN YIELD ON GREEN

SIGNS FOR TRAFFIC SIGNAL SYSTEM SIGN PANELS (FURNISH AND INSTALL)						
SIGN PANEL	POLE NO.	α (FT)	SIZE (IN)	AREA/SIGN (SQ. FT.)	NO. REQ.	PANEL LEGEND
R10-X12	1,2,3,4	1'	36 x 42	10.50	4	LEFT TURN YIELD ON FLASHING YELLOW ARROW
TOTAL QUANTITIES				42.00	4	

PAVEMENT MARKING REMOVAL TABULATION		
ITEM	UNIT	TOTAL ESTIMATED QUANTITY
EB CSAH 1 - 24" STOP BAR	SQ. FT.	104
WB CSAH 1 - 24" STOP BAR	SQ. FT.	104
SB CSAH 18 - 24" STOP BAR	SQ. FT.	52
NB CROOKED LAKE BLVD - 24" STOP BAR	SQ. FT.	72
EB CSAH 1 - ZEBRA CROSSWALK (6' x 3' BLOCKS)	SQ. FT.	288
WB CSAH 1 - ZEBRA CROSSWALK (6' x 3' BLOCKS)	SQ. FT.	306
SB CSAH 18 - ZEBRA CROSSWALK (6' x 3' BLOCKS)	SQ. FT.	216
NB CROOKED LAKE BLVD - ZEBRA CROSSWALK (6' x 3' BLOCKS)	SQ. FT.	234
TOTAL		1376

PAVEMENT MARKING TABULATION		
ITEM	UNIT	TOTAL ESTIMATED QUANTITY
24" SOLID LINE WHITE - PREFORM THERMO (EB CSAH 1)	LIN. FT.	52
24" SOLID LINE WHITE - PREFORM THERMO (WB CSAH 1)	LIN. FT.	53
24" SOLID LINE WHITE - PREFORM THERMO (CSAH 18)	LIN. FT.	30
24" SOLID LINE WHITE - PREFORM THERMO (CROOKED LAKE BLVD)	LIN. FT.	40
TOTAL		175
CROSSWALK PREFORM THERMOPLASTIC (EB CSAH 1)	SQ. FT.	384
CROSSWALK PREFORM THERMOPLASTIC (WB CSAH 1)	SQ. FT.	408
CROSSWALK PREFORM THERMOPLASTIC (CSAH 18)	SQ. FT.	240
CROSSWALK PREFORM THERMOPLASTIC (CROOKED LAKE BLVD)	SQ. FT.	264
TOTAL		1296

STRIPING NOTES & GUIDELINES

PREFORM THERMOPLASTIC (0.9 MIL) APPLICATION:

MAT TEMPERATURE SHALL BE CHECKED USING A THERMOMETER TO MAKE SURE THE INLAY IS BEING DONE IN THE PROPER TEMPERATURE RANGE. THE TEMPERATURE SHOULD MEASURE BETWEEN 150 DEGREES F (ASPHALT FIRM ENOUGH TO WALK ON) AND 120 DEGREES F. APPLICATION BELOW 120 DEGREES F MAY NOT GET A PROPER INLAY. INLAYS ARE NOT RECOMMENDED AFTER SEPTEMBER 15 AS THE ASPHALT COOLS TOO FAST AT THIS TIME OF YEAR.

NO PRIMERS ARE USED FOR INLAY APPLICATION. DO NOT INSTALL LANE LINES ON AN ASPHALT SEAM. ROLLING OF ALL THE MARKINGS SHOULD BE LENGTHWISE IN THE DIRECTION THEY WERE LAID. FOR CROSSWALKS AND STOP BARS, INITIAL TAMPING WITH THE TAMPING CART IS RECOMMENDED USING ONLY 100 LBS OF WEIGHT.

USE COMPACTION ROLLER TO EMBED (INLAY) MARKINGS INTO PAVEMENT SURFACE. USE MINIMUM SPEED AND WATER ON ROLLER. DO NOT USE VIBRATOR IF MARKING BUCKLES OR DISTORTS SEVERELY IN FRONT OF ROLLER. MAT TEMPERATURE OR ROLLER SPEED MAY BE TOO HIGH.

GENERAL INFORMATION:

THE ENGINEER'S INVOLVEMENT IN THE APPLICATION OF THE MATERIAL SHALL BE LIMITED TO FIELD CONSULTATION AND INSPECTION. THE ENGINEER WILL PLACE NECESSARY "SPOTTING" AT APPROPRIATE POINTS TO PROVIDE HORIZONTAL CONTROL FOR STRIPING AND TO DETERMINE NECESSARY STARTING AND CUTOFF POINTS. LONGITUDINAL JOINTS, PAVEMENT EDGES AND EXISTING MARKINGS MAY SERVE AS HORIZONTAL CONTROL WHEN SO DIRECTED.

EDGE LINES AND LANE LINES ARE TO BE BROKEN ONLY AT INTERSECTIONS WITH PUBLIC ROADS AND AT PRIVATE ENTRANCES IF THEY ARE CONTROLLED BY A YIELD SIGN, STOP SIGN OR TRAFFIC SIGNAL. THE BREAK POINT IS TO BE AT THE START OF THE RADIUS FOR THE INTERSECTION OR AT MARKED STOP LINES OR CROSSWALKS.

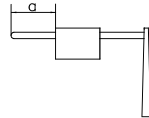
A TOLERANCE OF 1/4 INCH UNDER OR 1/4 INCH OVER THE SPECIFIED WIDTH WILL BE ALLOWED FOR STRIPING PROVIDED THE VARIATION IS GRADUAL AND DOES NOT DETRACT FROM THE GENERAL APPEARANCE. BROKEN LINE SEGMENTS MAY VARY UP TO ONE-HALF FOOT FROM THE SPECIFIED LENGTHS PROVIDED THE OVER AND UNDER VARIATIONS ARE REASONABLY COMPENSATORY. ALIGNMENT DEVIATIONS FROM THE CONTROL GUIDE SHALL NOT EXCEED 1 INCH. MATERIAL SHALL NOT BE APPLIED OVER LONGITUDINAL JOINTS. ESTABLISHMENT OF APPLICATION TOLERANCES SHALL NOT RELIEVE THE CONTRACTOR OF THEIR RESPONSIBILITY TO COMPLY AS CLOSELY AS PRACTICABLE WITH THE PLANNED DIMENSIONS.

JUST PRIOR TO THE PLACEMENT OF PAVEMENT MARKINGS, THE ROAD SURFACE SHALL BE CLEANED AND FREE OF CONTAMINATION AS RECOMMENDED BY THE MATERIAL MANUFACTURER AND ACCEPTABLE TO THE ENGINEER. PORTLAND CEMENT CONCRETE SURFACES SHALL BE SANDBLAST CLEANED TO REMOVE ANY SURFACE TREATMENTS AND/OR LAITANCE.

APPLY ALL PAVEMENT MARKINGS AS RECOMMENDED BY THE MATERIAL MANUFACTURER.

THE FILLING OF TANKS, POURING OF MATERIALS OR CLEANING OF EQUIPMENT SHALL NOT BE PERFORMED ON UNPROTECTED PAVEMENT SURFACES UNLESS ADEQUATE PROVISIONS ARE MADE TO PREVENT SPILLAGE OF MATERIAL.

REFER TO SPECIAL PROVISIONS OR SPEC BOOK FOR GROUND IN/RECESSED PAVEMENT MARKING APPLICATION REQUIREMENTS.



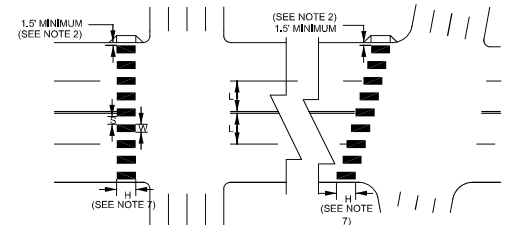
"G" DENOTES DISTANCE FROM END OF MAST ARM TO LEFT EDGE OF MAST ARM MOUNTED SIGN PANEL IN FEET.

SIGNING NOTES:

- 1) SALVAGING AND REINSTALLING INPLACE GROUND MOUNTED SIGN PANELS AND POSTS SHALL BE COMPLETED BY THE CONTRACTOR AND WILL BE MEASURED AND PAID FOR SEPARATELY. REMOVAL OF INPLACE TRAFFIC SIGNAL MAST ARM MOUNTED SIGNS AND MOUNTING HARDWARE, AND FURNISHING AND INSTALLING NEW TRAFFIC SIGNAL MAST ARM MOUNTED SIGNS AND MOUNTING HARDWARE WILL BE MEASURED AND PAID FOR SEPARATELY.
- 2) POST MOUNTED SIGNS MUST BE MOUNTED AT LEAST 7 FEET FROM ADJACENT GROUND LINE TO BOTTOM OF SIGN PANEL (MEASURED TO SURFACE IMMEDIATELY BELOW SIGN PANEL).
- 3) ALL TRAFFIC CONTROL, MOBILIZATION AND WORK RELATED TO INSTALLATION OF THE SIGNING AND PAVEMENT MARKINGS SHOWN IN THE PLANS IS INCIDENTAL.
- 4) ALL SIGN DIMENSIONS ARE IN INCHES.
- 5) (1) DENOTES SIGN PANEL MOUNTED ON TRAFFIC SIGNAL MAST ARM.
- 6) SEE MN/DOT STANDARD SIGNS AND MARKINGS MANUAL FOR DETAILED DRAWING OF NEW R10-X12 SIGN PANEL.
- 7) SEE STANDARD PLAN 5-297.731 FOR SIGN MOUNTING TO MAST ARM.

PEDESTRIAN CROSSWALK MARKINGS

WIDTH OF INSIDE LANE (L)	WIDTH OF MARKED AREA (W)	WIDTH OF SPACE (S)
9'	3'	3'
10'	3'	3'
11'	3'	3'
12'	3'	3'
13'	3'	3'



NOTES:

1. PAINTED AREAS TO BE CENTERED ON CENTERLINE AND LANE LINES.
2. A MINIMUM OF 1.5 FT. CLEAR DISTANCE SHALL BE LEFT ADJACENT TO THE CURB FACE. IF LAST PAINTED AREA FALLS INTO THIS DISTANCE IT MUST BE OMITTED.
3. ON TWO LANE TWO WAY STREETS, USE SPACING SHOWN FOR AN 11 FT. INSIDE LANE.
4. FOR DIVIDED ROADWAYS, ADJUSTMENTS IN SPACING OF THE BLOCKS SHOULD BE MADE IN THE MEDIAN SO THAT THE BLOCKS ARE MAINTAINED IN THEIR PROPER LOCATION ACROSS THE TRAVELED PORTION OF THE ROADWAY.
5. AT SKEWED CROSSWALKS, THE BLOCKS ARE TO REMAIN PARALLEL TO THE LANE LINES AS SHOWN.
6. THE BLOCKS SHALL BE PLACED SO THAT THEY ARE NOT LOCATED IN THE WHEEL PATH OF THE VEHICLES.
7. THE BLOCKS SHALL BE A MINIMUM OF 6' LONG AND AT LEAST AS LONG AS THE TRUNCATED DOMES. FOR FANNED TRUNCATED DOMES THE BLOCKS SHALL BE AT LEAST AS LONG AS THE APPROACHING SIDEWALK OR SHARED USE PATH.

PUBLISHED BY OTE: 20 NOV 2016

MODIFIED: _____

SEH Project	173548	Rev.#	Revision Issue Description	Date	Rev.#	Revision Issue Description	Date
Drawn By	JMG						
Designed By	JMG						
Checked By	JMG						

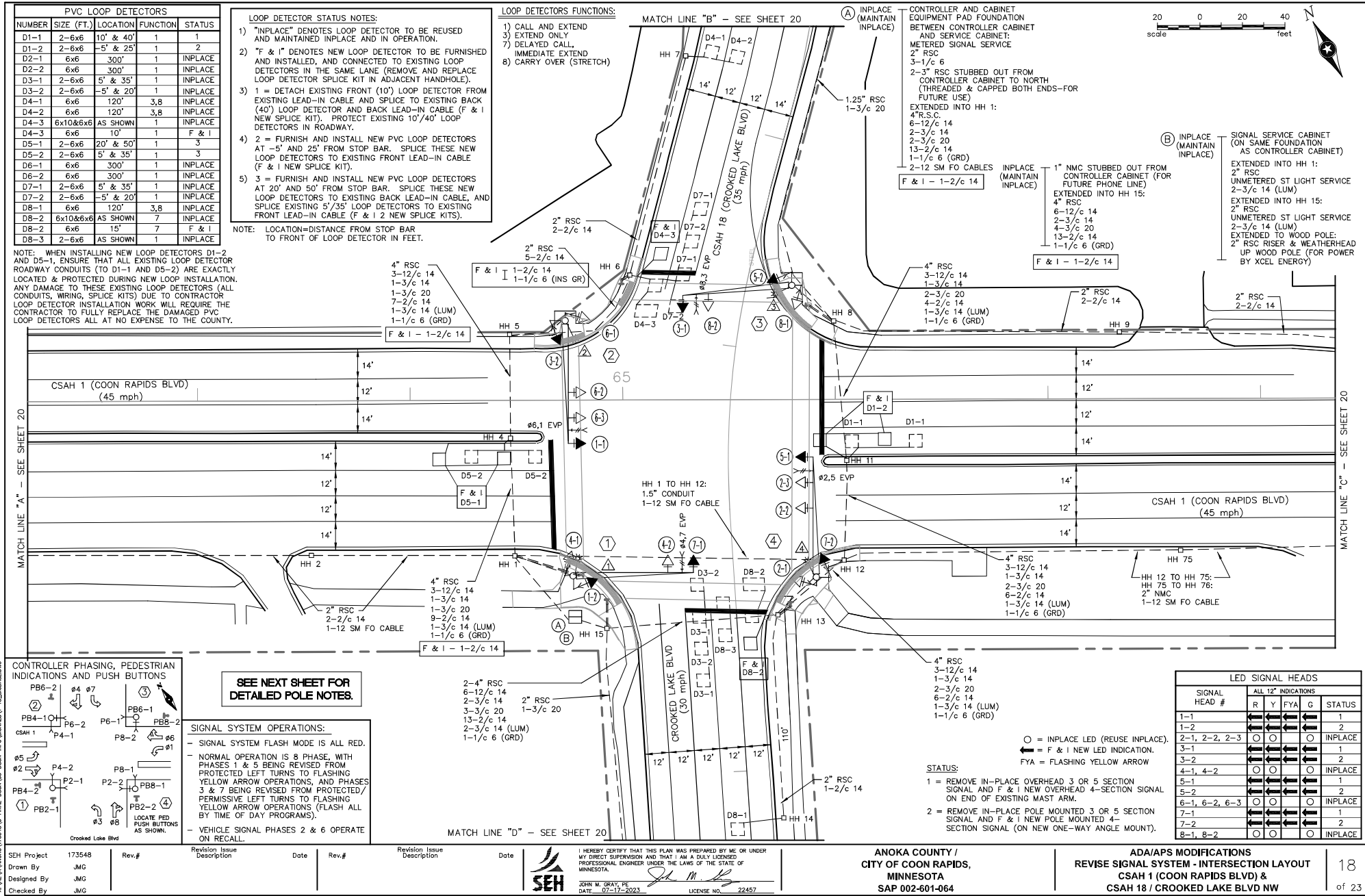


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JOHN M. GRAY, PE
DATE: 07-17-2023
LICENSE NO.: 22457

ANOKA COUNTY /
CITY OF COON RAPIDS,
MINNESOTA
SAP 002-601-664

ADA/APS MODIFICATIONS
SIGNING AND STRIPING NOTES AND TABULATIONS
CSAH 1 (COON RAPIDS BLVD) &
CSAH 18 / CROOKED LAKE BLVD NW



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SEH Project 173548
 Drawn By JMG
 Designed By JMG
 Checked By JMG

Rev.#	Description	Date	Rev.#	Description	Date

SEH
 JOHN M. GRAY, PE
 DATE: 07-17-2023 LICENSE NO. 22457

ANOKA COUNTY / CITY OF COON RAPIDS, MINNESOTA
 SAP 002-601-064

ADA/APS MODIFICATIONS
 REVISE SIGNAL SYSTEM - INTERSECTION LAYOUT
 CSAH 1 (COON RAPIDS BLVD) & CSAH 18 / CROOKED LAKE BLVD NW

18 of 23

REVISE SIGNAL SYSTEM NOTES:

- ALL ITEMS OF THIS SIGNAL SYSTEM ARE INPLACE AND SHALL BE REUSED AND MAINTAINED INPLACE, UNLESS BOXED IN AND NOTED OTHERWISE ON PLANS.
- ALL HANDHOLES (PVC WITH METAL FRAMES AND COVERS) ARE INPLACE AND SHALL BE REUSED MAINTAINED INPLACE, EXCEPT AS FOLLOWS:
 - ADJUST HANDHOLES 6, 8, 12, 13, AND 15 TO FINISHED SURROUNDING SIDEWALK OR BOULEVARD GRADE AFTER ALL WORK IS COMPLETED (REUSE EXISTING METAL FRAME & COVER).
 - ALL HANDHOLE ADJUSTMENT WORK WILL BE MEASURED AND PAID FOR SEPARATELY FROM ITEM NO. 2565 (REVISE SIGNAL SYSTEM). SEE DETAILS, SPECIAL PROVISIONS, AND STATEMENT OF ESTIMATED QUANTITIES.
- LOCATION OF NEW LOOP DETECTORS AND PUSH BUTTON STATIONS SHALL BE DETERMINED IN THE FIELD BY THE ENGINEER.
- ALL CABLES AND CONDUCTORS, CONDUIT, HANDHOLES, AND LOOP DETECTORS ARE INPLACE AND SHALL BE REUSED AND MAINTAINED INPLACE, EXCEPT WHERE BOXED IN AND DENOTED OTHERWISE.
- LOOP DETECTOR WIRES SHALL BE CROSS-LINKED POLYETHYLENE (XLPE) 12 AWG IN 3/4" NMC. LOOP DETECTORS IMPACTED BY EITHER CURB RAMP WORK OR RE-STRIPING WORK SHALL BE FURNISHED, INSTALLED & MADE OPERATIONAL BY CONTRACTOR TO SATISFACTION OF ENGINEER. SEE DETAILS & SPECIAL PROVISIONS.
- CONTRACTOR SHALL REMOVE AND DISPOSE OF ALL EXISTING LOOP DETECTOR SPLICE KITS (FOR ANY LOOP DETECTOR BEING REPLACED OR MODIFIED AS PART OF THIS PROJECT) AND SHALL FURNISH AND INSTALL NEW LOOP DETECTOR SPLICE KITS IN THE ADJACENT HANDHOLE FOR THESE LOOP DETECTORS AS CALLED FOR IN THE SPECIAL PROVISIONS.
- A SEPARATE PAY ITEM HAS BEEN ADDED (2565 - RIGID PVC LOOP DETECTOR 6' x 6') FOR BOTH MODIFICATION OF LOOP DETECTORS D1-2, D4-3, D5-1, AND D8-2 AS SHOWN AND FOR ANY ADDITIONAL REPLACEMENT OF LOOP DETECTORS (SHOULD ANY OTHER LOOP DETECTORS BE REQUIRED TO BE REPLACED BY THE CONTRACTOR DUE TO CURB RAMP/CURB AND GUTTER WORK, OR SIGNIFICANT STOP BAR RELOCATIONS) THAT CAUSES THE EXISTING LOOP DETECTOR TO BE DAMAGED OR NO LONGER IN AN OPTIMAL LOCATION FOR DETECTION. THE CONTRACTOR SHALL MAKE EVERY EFFORT TO PROTECT AND MAINTAIN EXISTING LOOP DETECTORS (INCLUDING LEAD-IN CONDUITS FROM HANDHOLE TO IN-PAVEMENT LOOP DETECTOR CONDUIT) AND SHALL NOTIFY THE ENGINEER IF THEY ANTICIPATE THAT A LOOP DETECTOR WILL BE DAMAGED DUE TO THEIR WORK. COUNTY WILL PROVIDE INITIAL LOCATION OF THE EXISTING LOOP DETECTORS FOR CONTRACTOR TO BE ABLE TO PLAN FOR WORKING AROUND THESE LOOP DETECTORS.

ALL LOOP DETECTOR REPLACEMENT OR INSTALLATION WORK WILL BE MEASURED AND PAID FOR SEPARATELY FROM ITEM NO. 2565 (REVISE SIGNAL SYSTEM). SEE DETAILS, SPECIAL PROVISIONS, AND STATEMENT OF ESTIMATED QUANTITIES.
- CONTRACTOR SHALL MAINTAIN A SIGNAL SYSTEM IN OPERATION AT THIS INTERSECTION AT ALL TIMES, UNLESS OTHERWISE APPROVED BY THE ENGINEER FOR THE SIGNAL SYSTEM TO BE PLACED INTO ALL-RED FLASH DURING NON-PEAK TRAFFIC PERIODS (FOR WORK THAT REQUIRES THE SIGNAL SYSTEM TO BE OUT OF OPERATION OR TO ACCOMMODATE ROAD WORK AT THE INTERSECTION).
- ANY DAMAGE TO INPLACE TRAFFIC SIGNAL FACILITIES (CONDUIT, CABLES, HANDHOLES, SIGNAL POLES, ETC.), DUE TO TRAFFIC SIGNAL OR ROAD WORK, SHALL BE REPAIRED BY CONTRACTOR TO SATISFACTION OF THE ENGINEER, AT NO EXPENSE TO THE COUNTY.
- F & I = NEW, FURNISH AND INSTALL.
S & I = INPLACE, SALVAGE AND INSTALL.
- ALL VEHICULAR AND PEDESTRIAN SIGNAL HEADS ARE INPLACE AND SHALL BE REUSED AND MAINTAINED INPLACE AND IN OPERATION AT ALL TIMES, UNLESS OTHERWISE NOTED IN THE PLANS FOR VEHICLE SIGNAL HEADS TO BE REMOVED AND REPLACED TO ACCOMMODATE FLASHING YELLOW ARROW WORK. (INCIDENTAL TO ITEM NO. 2565 - REVISE SIGNAL SYSTEM).
- ALL NEW VEHICULAR SIGNAL HEADS SHALL HAVE BACKGROUND SHIELDS FURNISHED & INSTALLED BY CONTRACTOR. ALL INPLACE VEHICULAR SIGNAL HEADS BEING REUSED AS PART OF THE REVISE SIGNAL SYSTEM HAVE BACKGROUND SHIELDS (REUSE AND MAINTAIN INPLACE).

ALL NEW VEHICULAR SIGNAL HOUSINGS, BACKGROUND SHIELDS AND VISORS SHALL BE FABRICATED USING BLACK POLYCARBONATE MATERIALS. SEE SPECIAL PROVISIONS.
- SEE STATEMENT OF ESTIMATED QUANTITIES, SPECIAL PROVISIONS AND SIGN TABULATION PLANS REGARDING NEW OVERHEAD SIGN PANELS TO BE FURNISHED AND INSTALLED BY THE CONTRACTOR, AND FOR INPLACE R10-12 SIGN PANELS TO BE REMOVED BY THE CONTRACTOR (ALL TO BE MEASURED AND PAID FOR SEPARATELY FROM ITEM NO. 2565 - REVISE SIGNAL SYSTEM).

① INPLACE (MAINTAIN INPLACE) PA100 POLE FOUNDATION
TYPE PA100-A-55-D40-9 (DAVIT AT 270 DEG)
LUMINAIRE-250 W HPS
1-STRAIGHT MOUNT SIGNAL-OVERHEAD AT 11' (4-2)
1-ANGLE MOUNT SIGNAL-POLE MOUNTED 180 DEG (4-1)
2-ANGLE MOUNT SETS CD PEDESTRIAN INDICATIONS-POLE MOUNTED 90/180 DEG
TYPE D SIGN PANEL-OVERHEAD
ONE WAY EVP DETECTOR & LIGHT (#4,7)
EXTENDED INTO HH 1:
3" RSC
3-12/c 14
1-3/c 14
1-3/c 20
1-3/c 14 (LUM)
2-1/c 6 (GRD)

INPLACE (SALVAGE) 1-ONE WAY SIGNAL AND MOUNT-OVERHEAD AT 0' (OLD 4-3)
1-ONE WAY SIGNAL AND MOUNT-POLE MTD 90 DEG (OLD 1-2)
2-PED PUSH BUTTONS (SOLID-STATE) AND R10-3e METAL SIGNS AT 0/90 DEG

INPLACE (REMOVE) R10-12 SIGN PANEL-OVERHEAD

INPLACE (S & I) 1-2/c 14 (CABLE 10) - SALVAGE BACK TO HH 1 AND REINSTALL TO NEW PB STATION (FOR PB4-2)

INPLACE 1-2/c 14 (CABLE 11) - TAPE END OF CABLE, COIL IN POLE BASE, AND LABEL "NOT USED"

F & I 1-ONE WAY SIGNAL & ANGLE MOUNT-OVERHEAD AT 0' (NEW 7-1)
1-ONE WAY SIGNAL & ANGLE MOUNT-POLE MTD 90 DEG (NEW 1-2)
R10-X12 SIGN PANEL-ADJACENT TO 1-1
1-1/c 6 (INS GR) - SPLICE ONTO EXISTING GROUND WIRE IN BASE OF POLE 1, AND INSTALL BACK TO HH 1 AND TO NEW PB STATION (FOR PB4-2)
PLUG HOLES ON MAST ARM POLE WHERE PUSH BUTTONS AND SIGNS USED TO BE (AT 0/90 DEG)

③ INPLACE (MAINTAIN INPLACE) PA100 POLE FOUNDATION
TYPE PA100-A-55-D40-9 (DAVIT AT 350 DEG)
LUMINAIRE-250 W HPS
1-STRAIGHT MOUNT SIGNAL-OVERHEAD AT 11' (8-2)
1-ANGLE MOUNT SIGNAL-POLE MOUNTED 180 DEG (8-1)
2-ANGLE MOUNT SETS CD PEDESTRIAN INDICATIONS-POLE MOUNTED 90/180 DEG
TYPE D SIGN PANEL-OVERHEAD
ONE WAY EVP DETECTOR & LIGHT (#8,3)
EXTENDED INTO HH 8:
3" RSC
3-12/c 14
1-3/c 14
1-3/c 20
1-2/c 14 (USE CABLE 48 FOR APS PB6-1)
1-3/c 14 (LUM)
2-1/c 6 (GRD)

INPLACE (SALVAGE) 1-ONE WAY SIGNAL AND MOUNT-OVERHEAD AT 0' (OLD 8-3)
1-ONE WAY SIGNAL AND MOUNT-POLE MTD 90 DEG (OLD 5-2)
2-PED PUSH BUTTONS (SOLID-STATE) AND R10-3e METAL SIGNS AT 0/270 DEG

INPLACE (REMOVE) R10-12 SIGN PANEL-OVERHEAD

INPLACE (S & I) 1-2/c 14 (CABLE 48) - SALVAGE BACK TO HH 8 AND REINSTALL TO NEW PB STATION (FOR PB8-2)

F & I 1-ONE WAY SIGNAL & ANGLE MOUNT-OVERHEAD AT 0' (NEW 3-1)
1-ONE WAY SIGNAL & ANGLE MOUNT-POLE MTD 90 DEG (NEW 5-2)
R10-X12 SIGN PANEL-ADJACENT TO 3-1
1-APS PB, SIGN (LT ARROW) AND APS MAST ARM POLE ADAPTOR (PB6-1)
1-1/c 6 (INS GR) - SPLICE ONTO EXISTING GROUND WIRE IN BASE OF POLE 3, AND INSTALL BACK TO HH 8 AND TO NEW PB STATION (FOR PB8-2)
PLUG HOLES ON MAST ARM POLE WHERE PUSH BUTTONS AND SIGNS USED TO BE (AT 0/270 DEG)

② INPLACE (MAINTAIN INPLACE) PA100 POLE FOUNDATION
TYPE PA100-A-55-D40-9 (DAVIT AT 350 DEG)
LUMINAIRE-250 W HPS
2-STRAIGHT MOUNT SIGNALS-OVERHEAD AT 11'/23' (6-3, 6-2)
1-ANGLE MOUNT SIGNAL-POLE MOUNTED 180 DEG (6-1)
2-ANGLE MOUNT SETS CD PEDESTRIAN INDICATIONS-POLE MOUNTED 90/180 DEG
2-R6-1 SIGN PANELS-POLE MOUNTED 0/180 DEG
TYPE D SIGN PANEL-OVERHEAD
ONE WAY EVP DETECTOR & LIGHT (#6,1)
EXTENDED INTO HH 5:
3" RSC
3-12/c 14
1-3/c 14
1-3/c 20
1-2/c 14 (USE CABLE 22 FOR APS PB4-1)
1-3/c 14 (LUM)
1-1/c 6 (GRD)

INPLACE (SALVAGE) 1-ONE WAY SIGNAL AND MOUNT-OVERHEAD AT 0' (OLD 1-1)
1-ONE WAY SIGNAL AND MOUNT-POLE MTD 90 DEG (OLD 8-4)
2-PED PUSH BUTTONS (SOLID-STATE) AND R10-3e METAL SIGNS AT 0/270 DEG

INPLACE 1-2/c 14 (CABLE 21) - TAPE END OF CABLE, COIL IN POLE BASE, AND LABEL "NOT USED"

F & I 1-ONE WAY SIGNAL & ANGLE MOUNT-OVERHEAD AT 0' (NEW 1-1)
1-ONE WAY SIGNAL & ANGLE MOUNT-POLE MTD 90 DEG (NEW 3-2)
R10-X12 SIGN PANEL-ADJACENT TO 1-1
1-APS PB, SIGN (LT ARROW) AND APS MAST ARM POLE ADAPTOR (PB4-1)
1-1/c 6 (INS GR) - SPLICE ONTO EXISTING GROUND WIRE IN BASE OF POLE 2, AND INSTALL BACK TO HH 5, HH 6, AND TO NEW PB STATION (FOR PB6-2)
PLUG HOLES ON MAST ARM POLE WHERE PUSH BUTTONS AND SIGNS USED TO BE (AT 0/270 DEG)

④ INPLACE (MAINTAIN INPLACE) PA100 POLE FOUNDATION
TYPE PA100-A-55-D40-9 (DAVIT AT 350 DEG)
LUMINAIRE-LED
2-STRAIGHT MOUNT SIGNALS-OVERHEAD AT 11'/23' (2-3, 2-2)
1-ANGLE MOUNT SIGNAL-POLE MOUNTED 180 DEG (2-1)
2-ANGLE MOUNT SETS CD PEDESTRIAN INDICATIONS-POLE MOUNTED 90/180 DEG
2-R6-1 SIGN PANELS-POLE MOUNTED 0/180 DEG
TYPE D SIGN PANEL-OVERHEAD
ONE WAY EVP DETECTOR & LIGHT (#2,5)
EXTENDED INTO HH 13:
3" RSC
3-12/c 14
1-3/c 14
1-3/c 20
1-2/c 14 (USE CABLE 35 FOR APS PB8-1)
1-3/c 14 (LUM)
2-1/c 6 (GRD)

INPLACE (SALVAGE) 1-ONE WAY SIGNAL AND MOUNT-OVERHEAD AT 0' (OLD 5-1)
1-ONE WAY SIGNAL AND MOUNT-POLE MTD 90 DEG (OLD 4-4)
2-PED PUSH BUTTONS (SOLID-STATE) AT 0/270 DEG

INPLACE (S & I) 1-2/c 14 (CABLE 34) - SALVAGE BACK TO HH 13 AND REINSTALL TO NEW PB STATION (FOR PB2-2)

INPLACE (REMOVE) 2-R10-4b STICKER SIGNS AT 0/270 DEG

F & I 1-ONE WAY SIGNAL & ANGLE MOUNT-OVERHEAD AT 0' (NEW 5-1)
1-ONE WAY SIGNAL & ANGLE MOUNT-POLE MTD 90 DEG (NEW 7-2)
R10-X12 SIGN PANEL-ADJACENT TO 5-1
1-APS PB, SIGN (LT ARROW) AND APS MAST ARM POLE ADAPTOR (PB8-1)
1-1/c 6 (INS GR) - SPLICE ONTO EXISTING GROUND WIRE IN BASE OF POLE 4, AND INSTALL BACK TO HH 13 AND TO NEW PB STATION (FOR PB2-2)
PLUG HOLES ON MAST ARM POLE WHERE PUSH BUTTONS AND SIGNS USED TO BE (AT 0/270 DEG)

SW QUADRANT

F & I 1-APS PUSH BUTTON STATION (SEE DETAILS)
1-APS PB & SIGN (RT ARROW) (PB4-2)
EXTEND INTO HH 1:
1" CONDUIT
1-1/c 6 (INS GR)

INPLACE (S & I) 1-2/c 14 (SALVAGE INPLACE CABLE 10)
BACK FROM POLE 1 TO HH 1 AND REINSTALL CABLE TO PB STATION

SW QUADRANT

F & I 1-APS PUSH BUTTON STATION (SEE DETAILS)
1-APS PB & SIGN (LT ARROW) (PB2-1)
EXTEND INTO HH 15:
1" CONDUIT
1-2/c 14
1-1/c 6 (INS GR)

SE QUADRANT

F & I 1-APS PUSH BUTTON STATION (SEE DETAILS)
1-APS PB & SIGN (RT ARROW) (PB2-2)
EXTEND INTO HH 13:
1" CONDUIT
1-1/c 6 (INS GR)

INPLACE (S & I) 1-2/c 14 (SALVAGE INPLACE CABLE 34)
BACK FROM POLE 4 TO HH 13 AND REINSTALL CABLE TO PB STATION

NW QUADRANT

F & I 1-APS PUSH BUTTON STATION (SEE DETAILS)
1-APS PB & SIGN (RT ARROW) (PB6-2)
EXTEND INTO HH 6:
1" CONDUIT
1-2/c 14
1-1/c 6 (INS GR)

NE QUADRANT

F & I 1-APS PUSH BUTTON STATION (SEE DETAILS)
1-APS PB & SIGN (RT ARROW) (PB8-2)
EXTEND INTO HH 8:
1" CONDUIT
1-1/c 6 (INS GR)

INPLACE (S & I) 1-2/c 14 (SALVAGE INPLACE CABLE 49)
BACK FROM POLE 3 TO HH 8 AND REINSTALL CABLE TO PB STATION

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SEH Project	173548	Rev.#	Revision Issue Description	Date	Rev.#	Revision Issue Description	Date
Drawn By	JMG						
Designed By	JMG						
Checked By	JMG						

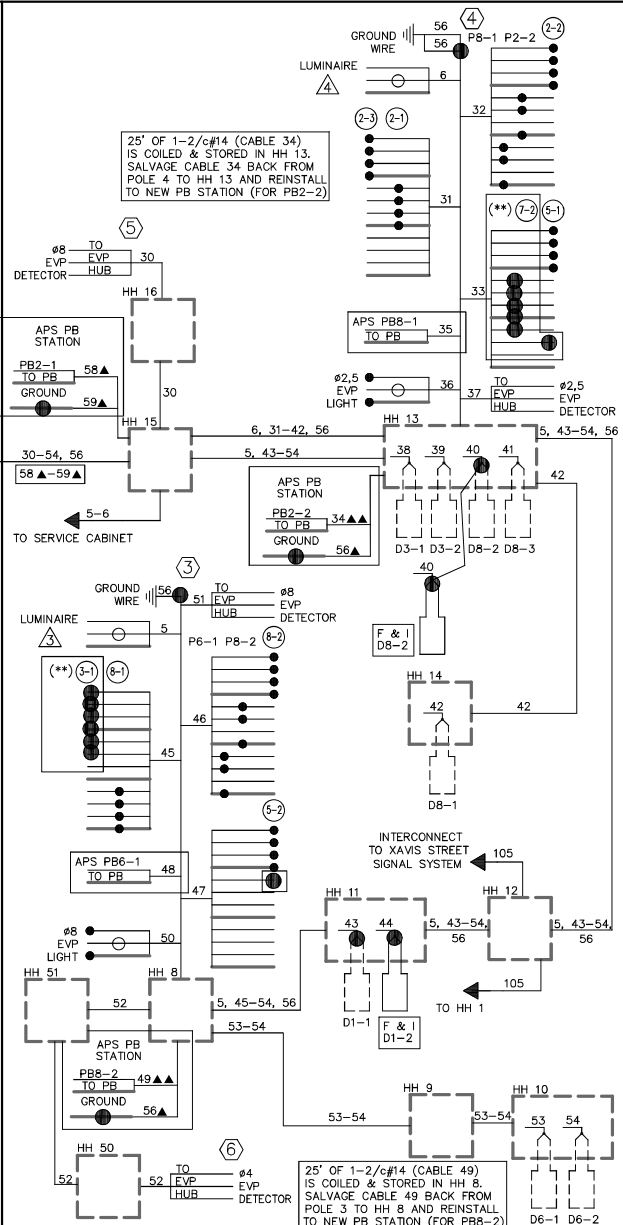
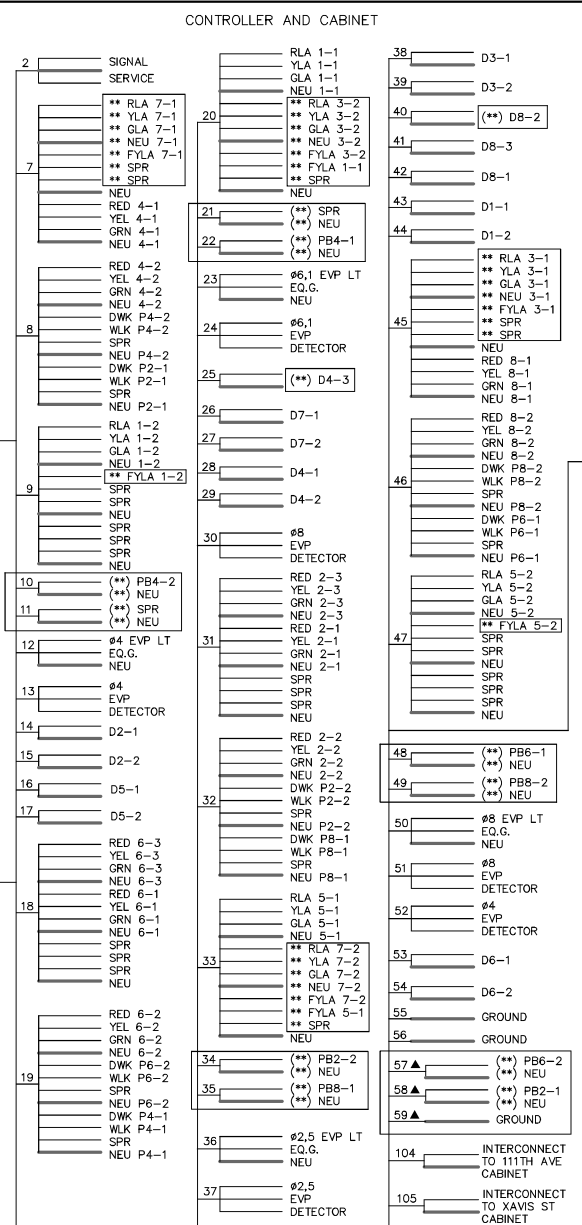
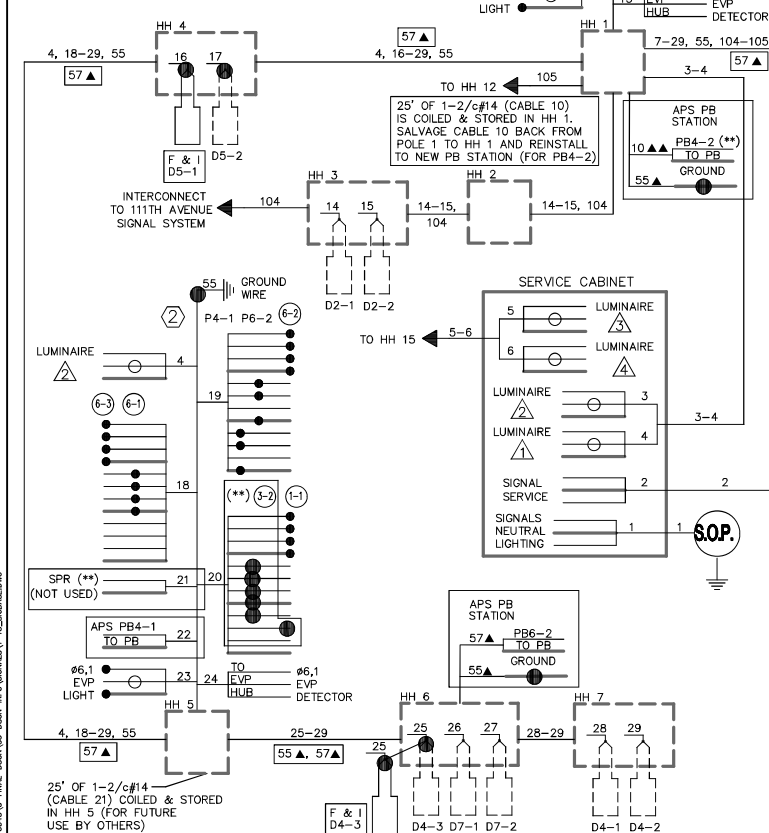
I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

SEH
JOHN M. GRAY, PE
DATE: 07-17-2023 LICENSE NO. 22457

ANOKA COUNTY /
CITY OF COON RAPIDS,
MINNESOTA
SAP 002-601-664

ADA/APS MODIFICATIONS
REVISE SIGNAL SYSTEM - POLE AND GENERAL NOTES
CSAH 1 (COON RAPIDS BLVD) &
CSAH 18 / CROOKED LAKE BLVD NW

- REVISE SIGNAL SYSTEM NOTES:**
- 1) ALL CABLES AND CONDUCTORS, HANDHOLES, AND LOOP DETECTORS ARE INPLACE AND SHALL BE REUSED AND MAINTAINED INPLACE, EXCEPT AS OTHERWISE NOTED.
 - 2) ▲ DENOTES NEW CABLES & CONDUCTORS TO BE FURNISHED AND INSTALLED BY CONTRACTOR.
 - 3) ▲▲ DENOTES INPLACE CABLES & CONDUCTORS TO BE SALVAGED FROM SIGNAL POLE BACK TO HANDHOLE(S) AND REINSTALLED TO NEW PUSH BUTTON STATION.
 - 4) (**) DENOTES NEW LABELING/TERMINATIONS ON INPLACE CABLES/CONDUCTORS IN POLE BASE AND IN CONTROLLER CABINET.
 - 5) (F & I) DENOTES NEW LOOP DETECTORS TO BE FURNISHED AND INSTALLED BY CONTRACTOR (ADD NEW LOOPS TO INPLACE CABLES 16, 17, 25 40, 43, 44).
 - 6) ALL GROUND WIRES ARE INPLACE AND SHALL BE REUSED AS SHOWN, EXCEPT AS FOLLOWS: FURNISH AND INSTALL NEW 1/2" 6 INCH GROUND WIRES FROM EACH POLE BASE AS SHOWN TO ADJACENT PUSH BUTTON STATIONS, EXCEPT FOR NEED TO FURNISH AND INSTALL NEW GROUND WIRE FROM CONTROLLER CABINET TO HH 15 AND PB STATION PB2-1.
 - 7) ● DENOTES NEW TERMINATIONS ON INPLACE OR NEW CABLES AND CONDUCTORS.
● DENOTES INPLACE TERMINATIONS (REUSE INPLACE).



SEH Project	173548	Rev.#	Revision Description	Date	Rev.#	Revision Description	Date
Drawn By	JMG						
Designed By	JMG						
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JOHN M. GRAY, PE
DATE: 07-17-2023 LICENSE NO. 22457

ANOKA COUNTY /
CITY OF COON RAPIDS,
MINNESOTA
SAP 002-601-064

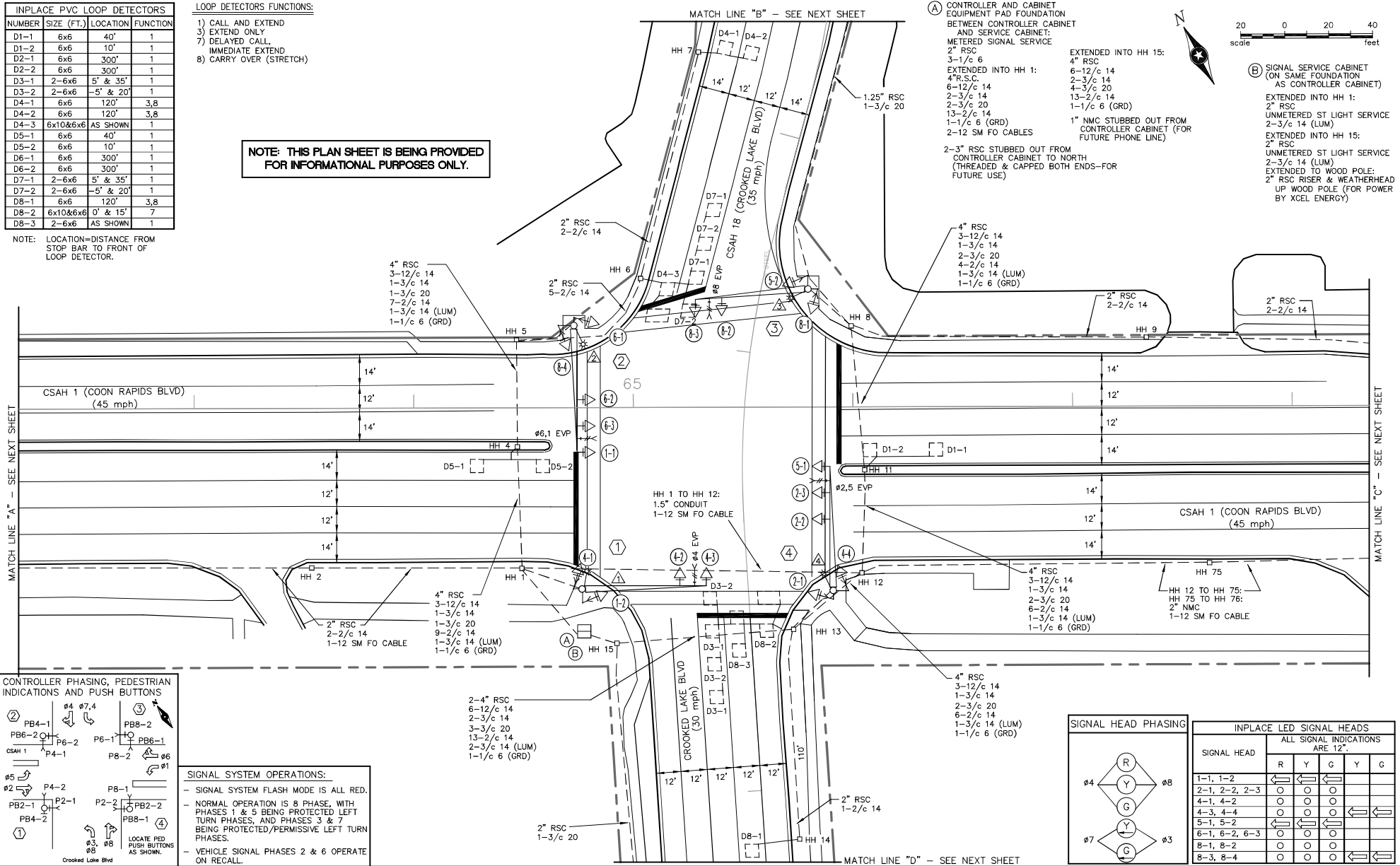
ADA/APS MODIFICATIONS
REVISE SIGNAL SYSTEM - FIELD WIRING DIAGRAM
CSAH 1 (COON RAPIDS BLVD) &
CSAH 18 / CROOKED LAKE BLVD NW

NUMBER	SIZE (FT.)	LOCATION	FUNCTION
D1-1	6x6	40'	1
D1-2	6x6	10'	1
D2-1	6x6	300'	1
D2-2	6x6	300'	1
D3-1	2-6x6	5' & 35'	1
D3-2	2-6x6	-5' & 20'	1
D4-1	6x6	120'	3,8
D4-2	6x6	120'	3,8
D4-3	6x10&6x6	AS SHOWN	1
D5-1	6x6	40'	1
D5-2	6x6	10'	1
D6-1	6x6	300'	1
D6-2	6x6	300'	1
D7-1	2-6x6	5' & 35'	1
D7-2	2-6x6	-5' & 20'	1
D8-1	6x6	120'	3,8
D8-2	6x10&6x6	0' & 15'	7
D8-3	2-6x6	AS SHOWN	1

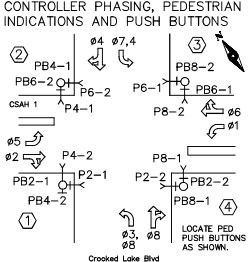
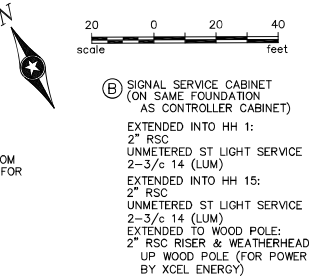
- LOOP DETECTORS FUNCTIONS:**
- 1) CALL AND EXTEND
 - 3) EXTEND ONLY
 - 7) DELAYED CALL IMMEDIATE EXTEND
 - 8) CARRY OVER (STRETCH)

NOTE: THIS PLAN SHEET IS BEING PROVIDED FOR INFORMATIONAL PURPOSES ONLY.

NOTE: LOCATION=DISTANCE FROM STOP BAR TO FRONT OF LOOP DETECTOR.



- (A) CONTROLLER AND CABINET EQUIPMENT PAD FOUNDATION BETWEEN CONTROLLER CABINET AND SERVICE CABINET:**
- METERED SIGNAL SERVICE
 - 2" RSC
 - 3-1/c 6
 - EXTENDED INTO HH 1:
 - 6-12/c 14
 - 4/R.S.C.
 - 2-3/c 14
 - 6-12/c 14
 - 2-3/c 14
 - 2-3/c 20
 - 13-2/c 14
 - 1-1/c 6 (GRD)
 - 2-12 SM FO CABLES
 - EXTENDED INTO HH 15:
 - 4" RSC
 - 6-12/c 14
 - 2-3/c 14
 - 4-3/c 20
 - 13-2/c 14
 - 1-1/c 6 (GRD)
 - 1" NMC STUBBED OUT FROM CONTROLLER CABINET (FOR FUTURE PHONE LINE)
 - 2-3" RSC STUBBED OUT FROM CONTROLLER CABINET TO NORTH (THREADED & CAPPED BOTH ENDS-FOR FUTURE USE)



- SIGNAL SYSTEM OPERATIONS:**
- SIGNAL SYSTEM FLASH MODE IS ALL RED.
 - NORMAL OPERATION IS 8 PHASE, WITH PHASES 1 & 5 BEING PROTECTED LEFT TURN PHASES, AND PHASES 3 & 7 BEING PROTECTED/PERMISSIVE LEFT TURN PHASES.
 - VEHICLE SIGNAL PHASES 2 & 6 OPERATE ON RECALL.

SIGNAL HEAD PHASING

SIGNAL HEAD	INPLACE LED SIGNAL HEADS				
	ALL SIGNAL INDICATIONS ARE 12".				
	R	Y	G	Y	G
1-1, 1-2	◀	◀	○	○	
2-1, 2-2, 2-3	○	○	○	○	
4-1, 4-2	○	○	○	○	
4-3, 4-4	○	○	○	○	◀
5-1, 5-2	○	○	○	○	◀
6-1, 6-2, 6-3	○	○	○	○	
8-1, 8-2	○	○	○	○	
8-3, 8-4	○	○	○	○	◀

SEH Project	173548	Rev.#	Revision Issue Description	Date	Rev.#	Revision Issue Description	Date
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Designed By	JMG						
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SEH

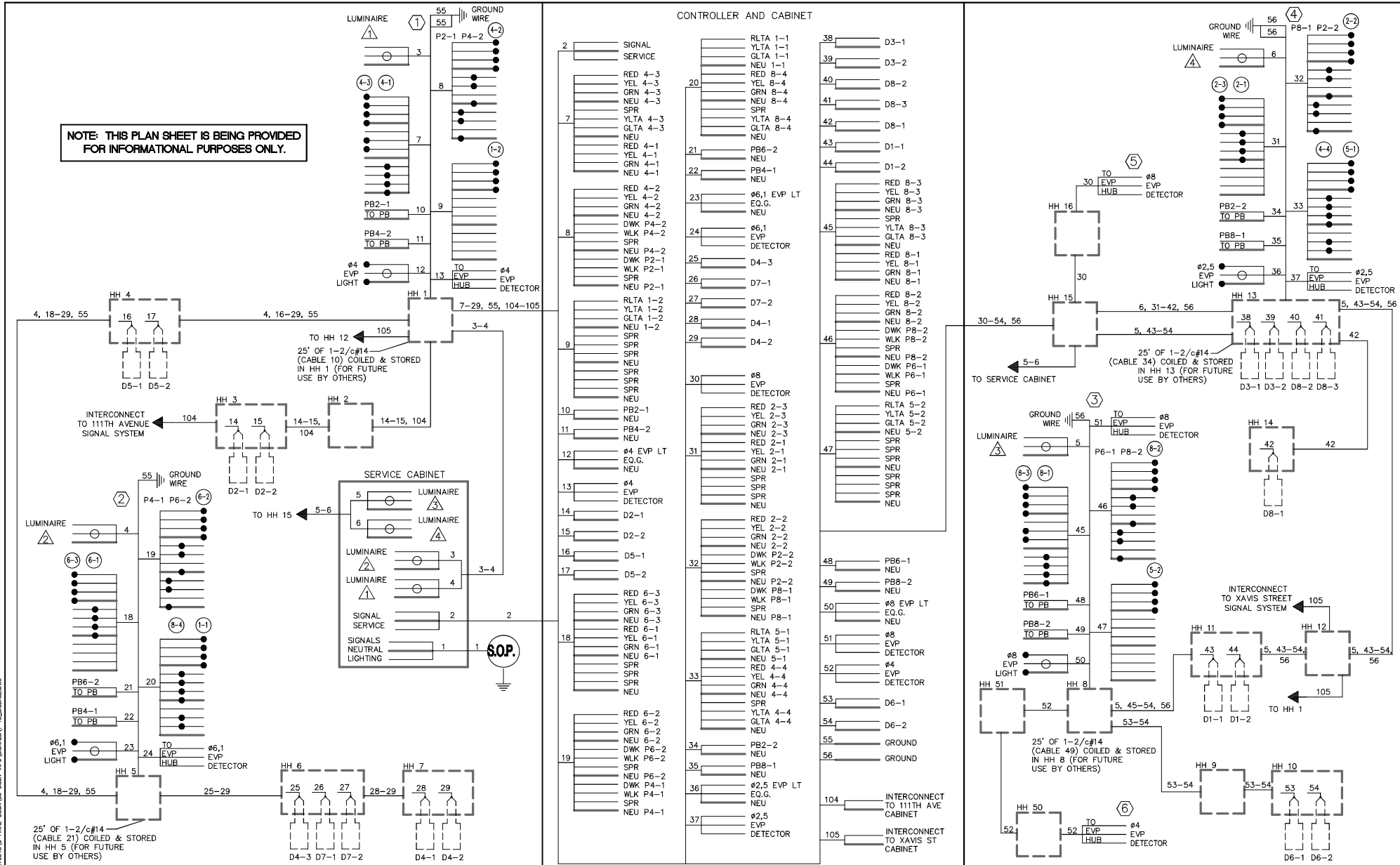
I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

JOHN W. GRAY, PE
DATE: 07-17-2023 LICENSE NO. 22457


ANOKA COUNTY / CITY OF COON RAPIDS, MINNESOTA
SAP 002-601-064

ADA/APS MODIFICATIONS EXISTING SIGNAL SYSTEM - INTERSECTION LAYOUT CSAH 1 (COON RAPIDS BLVD) & CSAH 18 / CROOKED LAKE BLVD NW

22 of 23



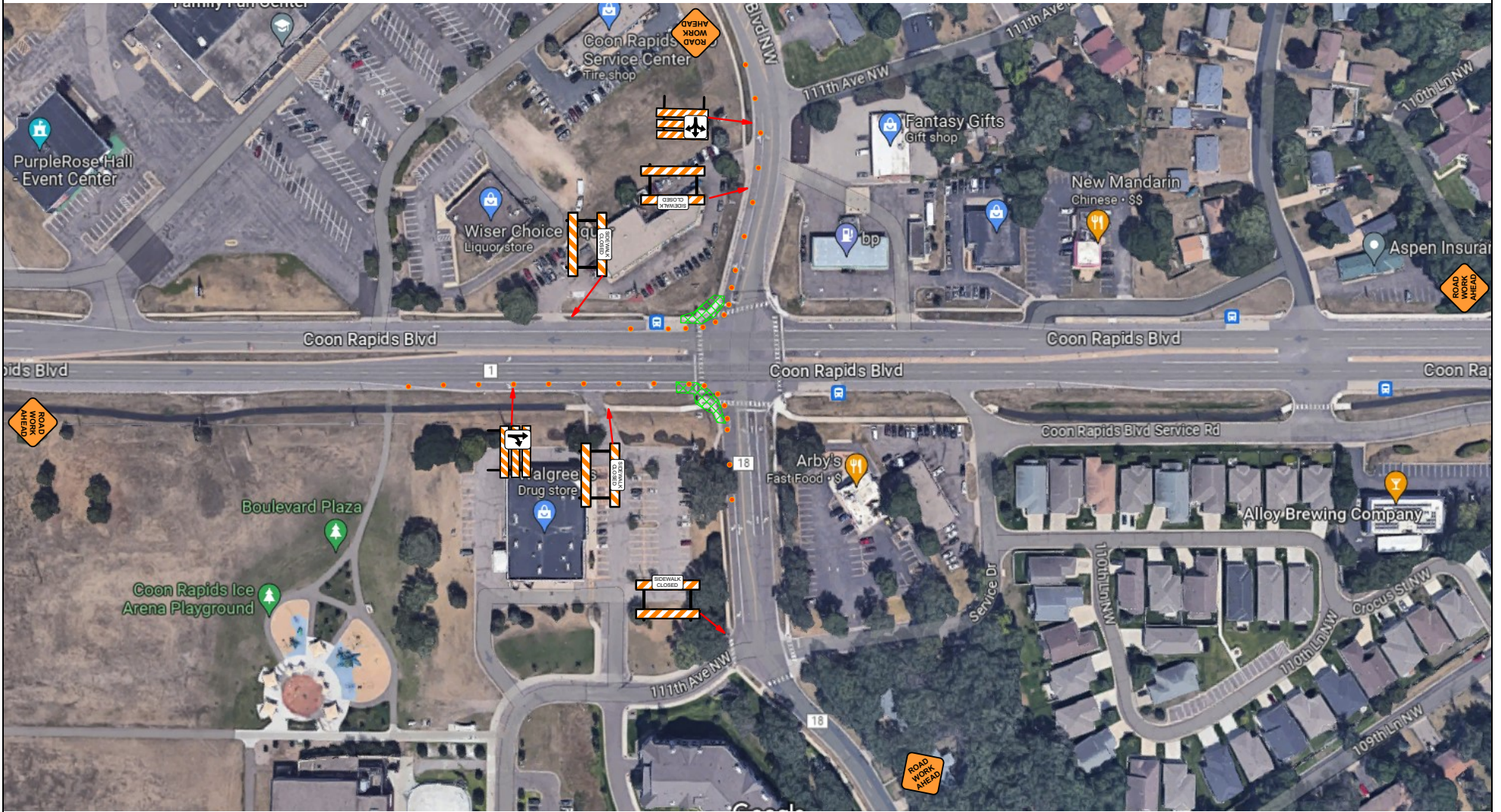
SEH Project	173548	Rev.#	Revision Issue Description	Date	Rev.#	Revision Issue Description	Date
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ANOKA COUNTY /
 CITY OF COON RAPIDS,
 MINNESOTA
 SAP 002-601-064

ADA/APs MODIFICATIONS
 EXISTING SIGNAL SYSTEM - FIELD WIRING DIAGRAM
 CSAH 1 (COON RAPIDS BLVD) &
 CSAH 18 / CROOKED LAKE BLVD NW

23
 of 23



STAGE 1

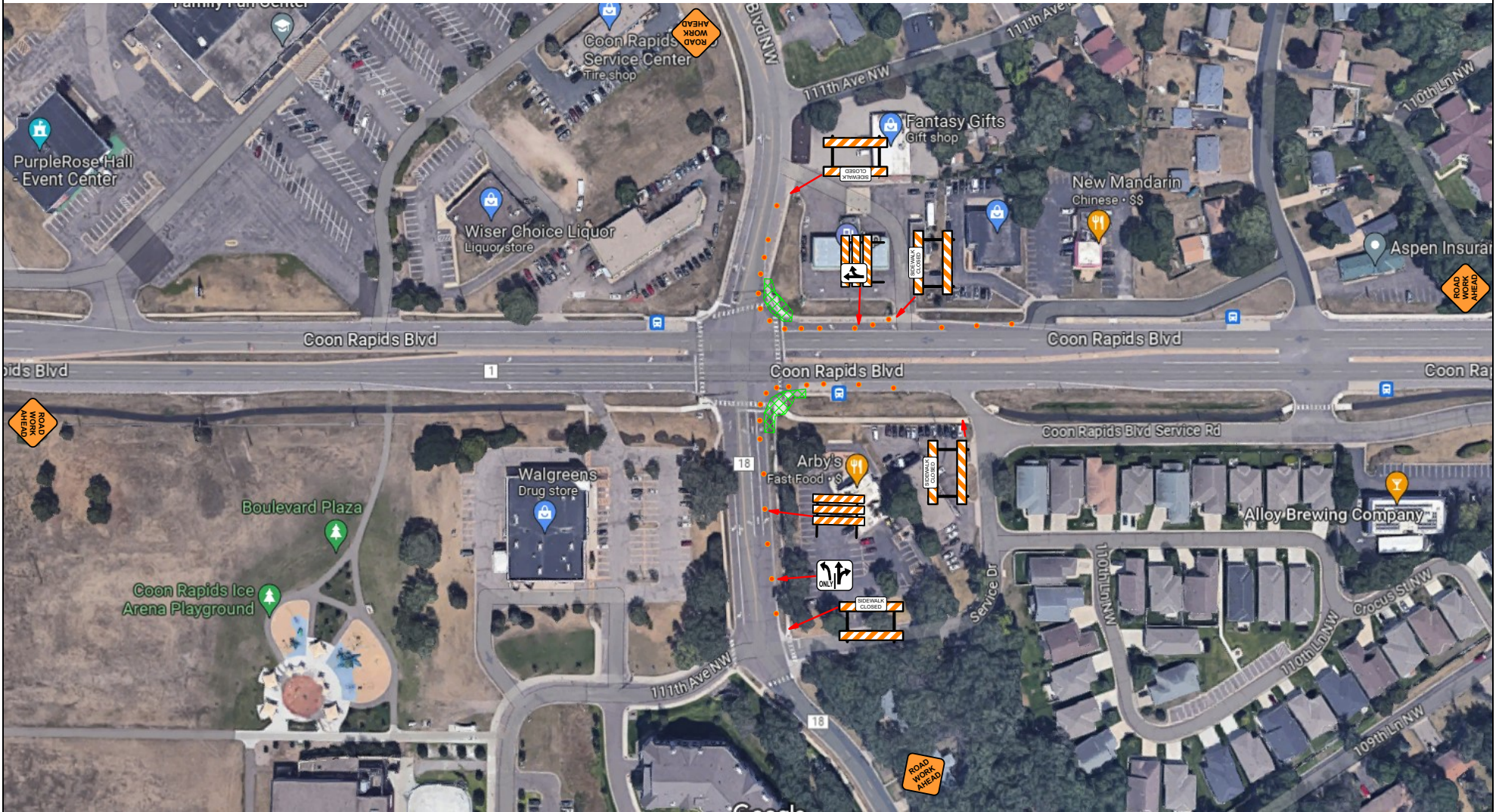


NOTE: ANY SCHEDULING OF EQUIPMENT MUST BE DONE THROUGH WARNING LITES OF MN, INC- FRONT OFFICE 612-521-4200

CONTACT: Collin Kopitzke
PHONE: 320-447-9230
PROJECT:
START DATE: **DURATION:**
WORK TYPE: Signal and ADA Ramp
HOURS OF OPERATION: 24-HOUR SETUP

AUTHOR: PJ Pitschka
MN TCS CERT#: 3852
MAP PAGE: 1
CITY: Coon Rapids
DATE: 9/14/23
PAGE: 1 OF 2
SCALE: NONE
GOV. AGENCY: Anoka County

WARNING LITES
 4700 LYNDALE AVE N
 MINNEAPOLIS, MN 55430
 TEL: 612-366-8849
 FAX: 612-521-0646
 pjpitshka@warninglitesmn.com



STAGE 2



NOTE: ANY SCHEDULING OF EQUIPMENT MUST BE DONE THROUGH WARNING LITES OF MN, INC- FRONT OFFICE 612-521-4200

CONTACT: Collin Kopitzke
PHONE: 320-447-9230
PROJECT:
START DATE: **DURATION:**
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AUTHOR: PJ Pitschka
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CITY: Coon Rapids
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 NOTE: ANY SCHEDULING OF EQUIPMENT MUST BE DONE THROUGH WARNING LITES OF MN, INC- FRONT OFFICE 612-521-4200

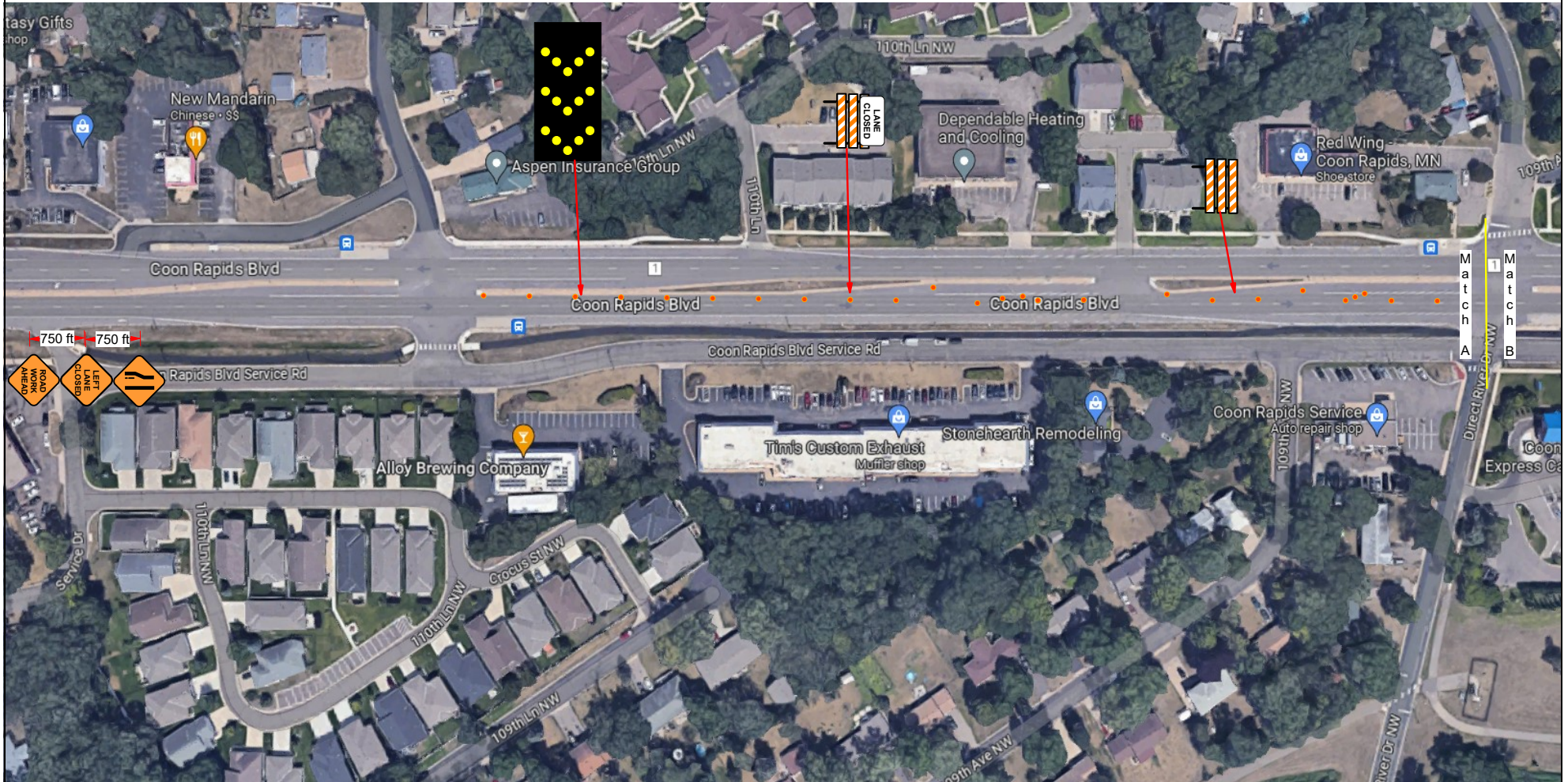
STAGE 1



CONTACT: Collin Kopitzke
PHONE: 320-447-9230
PROJECT:
START DATE: **DURATION:**
WORK TYPE: Signal and ADA Ramp
HOURS OF OPERATION: 24-HOUR SETUP

AUTHOR: PJ Pitschka
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STAGE 2 Match A

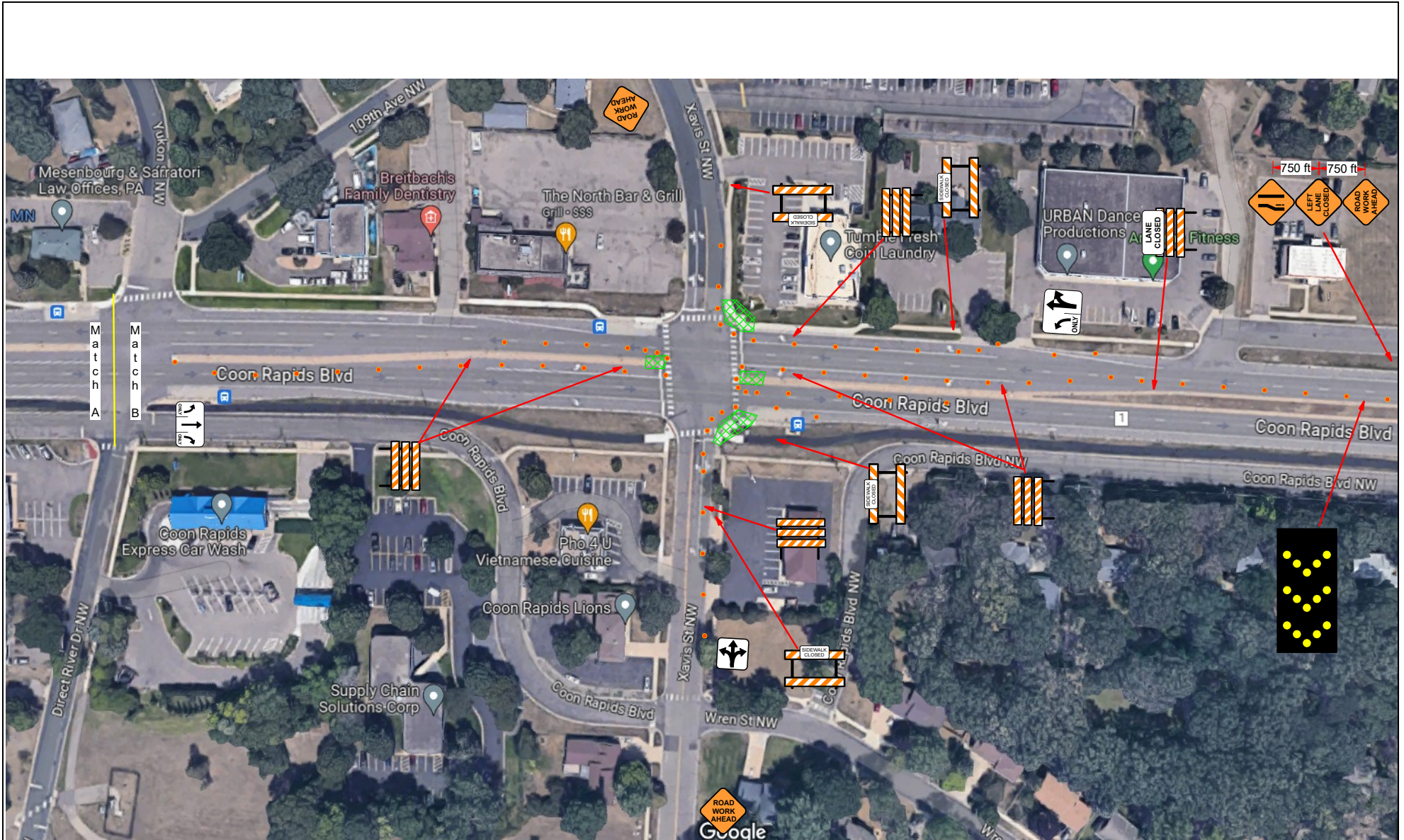


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CONTACT: Collin Kopitzke
PHONE: 320-447-9230
PROJECT:
START DATE: **DURATION:**
WORK TYPE: Signal and ADA Ramp
HOURS OF OPERATION: 24-HOUR SETUP

AUTHOR: PJ Pitschka
MN TCS CERT#: 3852
MAP PAGE: 1
CITY: Coon Rapids
DATE: 9/14/23
PAGE: 2 OF 2
SCALE: NONE
GOV. AGENCY: Anoka County

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 pjpitshka@warninglitesmn.com



NOTE: ANY SCHEDULING OF EQUIPMENT MUST BE DONE THROUGH WARNING LITES OF MN, INC- FRONT OFFICE 612-521-4200

STAGE 2 Match B



CONTACT: Collin Kopitzke
PHONE: 320-447-9230
PROJECT:
START DATE: **DURATION:**
WORK TYPE: Signal and ADA Ramp
HOURS OF OPERATION: 24-HOUR SETUP

AUTHOR: PJ Pitschka
MN TCS CERT#: 3852
MAP PAGE: 1
CITY: Coon Rapids
DATE: 9/14/23
PAGE: 2 OF 2
SCALE: NONE
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Joe MacPherson, P.E.
Chief Officer, Transportation, County Engineer

Jerry Auge, P.E.
Department Director, Assistant County Engineer

EXCAVATOR AND OPERATOR NOTICE

This notice is for all excavators and operators applying for permits involving excavations - your obligations to comply with Minnesota State Statutes 216D are attached to this notice.

This notice is a requirement of State Statute 216D.02; Notice to Excavators and Operators.

Our Passion Is Your Safe Way Home

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216D.03 NOTIFICATION CENTER.

Subdivision 1. **Participation.** An operator shall participate in and share in the costs of one statewide notification center operated by a vendor selected under subdivision 2.

Subd. 2. **Establishment of notification center; rules.** (a) The notification center services must be provided by a nonprofit corporation approved in writing by the commissioner. The nonprofit corporation must be governed by a board of directors of up to 20 members, one of whom is the director of the Office of Pipeline Safety. The other board members must represent and be elected by operators, excavators, and other persons eligible to participate in the center. In deciding to approve a nonprofit corporation, the commissioner shall consider whether it meets the requirements of this paragraph and whether it demonstrates that it has the ability to contract for and implement the notification center service.

(b) The commissioner shall adopt rules:

(1) establishing a notification process and competitive bidding procedure for selecting a vendor to provide the notification service;

(2) governing the operating procedures and technology needed for a statewide notification center; and

(3) setting forth the method for assessing the cost of the service among operators.

(c) The commissioner shall select a vendor to provide the notification center service. The commissioner may advertise for bids as provided in section 16C.06, subdivisions 1 and 2, and base the selection of a vendor on best value as provided in section 16C.06, subdivision 6. The commissioner shall select and contract with the vendor to provide the notification center service, but all costs of the center must be paid by the operators. The commissioner may at any time appoint a task force to advise on the renewal of the contract or any other matter involving the center's operations.

(d) An operator may submit a bid and be selected to contract to provide the notification center service under paragraph (a) or (c). The commissioner shall annually review the services provided by the nonprofit corporation approved under paragraph (a) or the vendor selected under paragraph (c).

Subd. 3. **Cooperation with local government.** In establishing operating procedures and technology for the statewide notification center, the board of directors or the commissioner must work in cooperation with the League of Minnesota Cities, the Association of Minnesota Counties, and the Township Officers' Association. The purpose of this cooperation is to maximize the participation of local governmental units that issue permits for activities involving excavation to assure that excavators receive notice of and comply with the requirements of sections 216D.01 to 216D.07.

Subd. 4. **Notice to local government.** The notification center shall provide local governmental units with a master list, by county, of the operators in the county who are participants in the notification center, and the telephone number and mailing address of the notification center.

History: 1987 c 353 s 9; 1997 c 187 art 1 s 15; 1998 c 386 art 2 s 69

216D.04 EXCAVATION; LAND SURVEY.

Subdivision 1. **Notice required; contents.** (a) Except in an emergency, an excavator shall and a land surveyor may contact the notification center and provide notice at least 48 hours, excluding Saturdays, Sundays, and holidays and not more than 14 calendar days before beginning any excavation or boundary survey. An excavation or boundary survey begins, for purposes of this requirement, the first time excavation or a boundary survey occurs in an area that was not previously identified by the excavator or land surveyor in the notice.

(b) The notice may be oral or written, and must contain the following information:

- (1) the name of the individual providing the notice;
- (2) the precise location of the proposed area of excavation or survey;
- (3) the name, address, and telephone number of the individual or individual's company;
- (4) the field telephone number, if one is available;
- (5) the type and extent of the activity;
- (6) whether or not the discharge of explosives is anticipated;
- (7) the date and time when the excavation or survey is to commence; and
- (8) the estimated duration of the activity.

Subd. 1a. **Plans for excavation.** (a) Any person, prior to soliciting bids or entering into a contract for excavation, shall provide a proposed notice to the notification center to obtain from the affected operators of underground facilities the type, size, and general location of underground facilities. Affected operators shall provide the information within 15 working days. An operator who provides information to a person who is not a unit of government may indicate any portions of the information which are proprietary and may require the person to provide appropriate confidentiality protection. The information obtained from affected operators must be submitted on the final drawing used for the bid or contract and must depict the utility quality level of that information. This information must be updated not more than 90 days before completion of the final drawing used for the bid or contract.

(b) This subdivision does not apply to bids and contracts for:

- (1) routine maintenance of underground facilities or installation, maintenance, or repair of service lines;
- (2) excavation for operators of underground facilities performed on a unit of work or similar basis; or
- (3) excavation for home construction and projects by home owners.

(c) A person required by this section to show existing underground facilities on its drawings shall conduct one or more preliminary design meetings during the design phase to communicate the project design and coordinate utility relocation. Affected facility operators shall attend these meetings or make other arrangements to provide information.

(d) A person required by this section to show existing underground facilities on its drawings shall conduct one or more preconstruction meetings to communicate the project design and coordinate utility relocation. Affected facility operators and contractors shall attend these meetings or make other arrangements to provide information.

(e) This subdivision does not affect the obligation to provide a notice of excavation as required under subdivision 1.

Subd. 2. Duties of notification center; regarding notice. The notification center shall assign an inquiry identification number to each notice and retain a record of all notices received for at least six years. The center shall immediately transmit the information contained in a notice to every operator that has an underground facility in the area of the proposed excavation or boundary survey.

Subd. 3. Locating underground facility; operator. (a) Prior to the excavation start time on the notice, an operator shall locate and mark or otherwise provide the approximate horizontal location of the underground facilities of the operator and provide readily available information regarding the operator's abandoned and out-of-service underground facilities as shown on maps, drawings, diagrams, or other records used in the operator's normal course of business, without cost to the excavator. The excavator shall determine the precise location of the underground facility, without damage, before excavating within two feet of the marked location of the underground facility.

(b) Within 96 hours or the time specified in the notice, whichever is later, after receiving a notice for boundary survey from the notification center, excluding Saturdays, Sundays, and holidays, unless otherwise agreed to between the land surveyor and operator, an operator shall locate and mark or otherwise provide the approximate horizontal location of the underground facilities of the operator, without cost to the land surveyor.

(c) For the purpose of this section, the approximate horizontal location of the underground facilities is a strip of land two feet on either side of the underground facilities.

(d) Markers used to designate the approximate location of underground facilities must follow the current color code standard used by the American Public Works Association.

(e) If the operator cannot complete marking of the excavation or boundary survey area before the excavation or boundary survey start time stated in the notice, the operator shall promptly contact the excavator or land surveyor.

(f) After December 31, 1998, operators shall maintain maps, drawings, diagrams, or other records of any underground facility abandoned or out-of-service after December 31, 1998.

(g) An operator or other person providing information pursuant to this subdivision is not responsible to any person, for any costs, claims, or damages for information provided in good faith regarding abandoned, out-of-service, or private or customer-owned underground facilities.

Subd. 4. Locating underground facility; excavator or land surveyor. (a) The excavator or land surveyor shall determine the precise location of the underground facility, without damage, before excavating within two feet on either side of the marked location of the underground facility.

(b) If the excavator or land surveyor cancels the excavation or boundary survey, the excavator or land surveyor shall cancel the notice through the notification center.

(c) The notice is valid for 14 calendar days from the start time stated on the notice. If the activity will continue after the expiration time, then the person responsible for the activity shall serve an additional notice at least 48 hours, excluding Saturdays, Sundays, and holidays, before the expiration time of the original notice, unless the excavator makes arrangements with the operators affected to periodically verify or refresh the marks, in which case the notice is valid for six months from the start time stated on the notice.

(d) The excavator is responsible for reasonably protecting and preserving the marks until no longer required for proper and safe excavation near the underground facility. If the excavator has reason to believe the marks are obliterated, obscured, missing, or incorrect, the excavator shall notify the facility operator or notification center in order to have an operator verify or refresh the marks.

History: *1987 c 353 s 10; 1992 c 493 s 5; 1993 c 341 art 1 s 21; 1997 c 196 s 1; 1998 c 348 s 1-3; 2004 c 163 s 2-6*

216D.05 PRECAUTIONS TO AVOID DAMAGE.

An excavator shall:

- (1) plan the excavation to avoid damage to and minimize interference with underground facilities in and near the construction area;
- (2) use white markings for proposed excavations except where it can be shown that it is not practical;
- (3) maintain a clearance between an underground facility and the cutting edge or point of any mechanized equipment, considering the known limit of control of the cutting edge or point to avoid damage to the facility;
- (4) provide support for underground facilities in and near the construction area, including during backfill operations, to protect the facilities; and
- (5) conduct the excavation in a careful and prudent manner.

History: *1987 c 353 s 11; 1998 c 348 s 4; 2004 c 163 s 7*

216D.06 DAMAGE TO FACILITY.

Subdivision 1. **Notice; repair.** (a) If any damage occurs to an underground facility or its protective covering, the excavator shall notify the operator promptly. When the operator receives a damage notice, the operator shall promptly dispatch personnel to the damage area to investigate. If the damage results in the escape of any flammable, toxic, or corrosive gas or liquid or endangers life, health, or property, the excavator responsible shall immediately notify the operator and the 911 public safety answering point, as defined in section 403.02, subdivision 19, and take immediate action to protect the public and property. The excavator shall also attempt to minimize the hazard until arrival of the operator's personnel or until emergency responders have arrived and completed their assessment. The 911 public safety answering point shall maintain a response plan for notifications generated by this section.

(b) An excavator shall delay backfilling in the immediate area of the damaged underground facilities until the damage has been investigated by the operator, unless the operator authorizes otherwise. The repair of damage must be performed by the operator or by qualified personnel authorized by the operator.

(c) An excavator who knowingly damages an underground facility, and who does not notify the operator as soon as reasonably possible or who backfills in violation of paragraph (b), is guilty of a misdemeanor.

Subd. 2. **Cost reimbursement.** (a) If an excavator damages an underground facility, the excavator shall reimburse the operator for the cost of necessary repairs, and for a pipeline the cost of the product that was being carried in the pipeline and was lost as a direct result of the damage.

(b) Reimbursement is not required if the damage to the underground facility was caused by the sole negligence of the operator or the operator failed to comply with section 216D.04, subdivision 3.

Subd. 3. **Prima facie evidence of negligence.** It is prima facie evidence of the excavator's negligence in a civil court action if damage to the underground facilities of an operator resulted from excavation, and the excavator failed to give an excavation notice under section 216D.04 or provide support as required by section 216D.05.

History: 1987 c 353 s 12; 1999 c 43 s 1

216D.07 EFFECT ON LOCAL ORDINANCES.

(a) Sections 216D.01 to 216D.07 do not affect or impair local ordinances, charters, or other provisions of law requiring permits to be obtained before excavating.

(b) A person with a permit for excavation from the state or a public agency is subject to sections 216D.01 to 216D.07. The state or public agency that issued a permit for excavation is not liable for the actions of an excavator who fails to comply with sections 216D.01 to 216D.07.

History: *1987 c 353 s 13*

CHAPTER 7560
OFFICE OF PIPELINE SAFETY
EXCAVATION NOTICE SYSTEM

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7560.0100 DEFINITIONS.

Subpart 1. **Scope.** The terms used in this chapter have the meanings given them. Terms not defined in this part have the meanings given them in Minnesota Statutes, section 216D.01.

Subp. 1a. **Abandoned facility.** "Abandoned facility" means an underground facility that is no longer in service and is physically disconnected from a portion of the operating facility that is in use or still carries service. An abandoned facility has been deemed abandoned by the operator.

Subp. 2. **Director.** "Director" means the director of the Office of Pipeline Safety of the Minnesota Department of Public Safety.

Subp. 3. **Good cause to believe.** "Good cause to believe" means grounds put forth in good faith that are not arbitrary, irrational, unreasonable, or irrelevant and that are based on at least one of the following sources:

- A. information from a person;
- B. facts supplied by the notification center defined in Minnesota Statutes, section 216D.01, subdivision 8;
- C. facts of which the director or an agent of the director has personal knowledge; and
- D. information provided by excavators or operators.

Subp. 4. **Locate.** "Locate" means an operator's markings of an underground facility.

Subp. 5. [Renumbered as subp 8]

Subp. 5a. [Renumbered as subp 9]

Subp. 6. [Renumbered as subp 11]

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Subp. 7. **Meet.** When used as a noun in this chapter, "meet" refers to a meeting at the site of proposed excavation requested at the time of notice by the excavator with all affected underground facility operators to further clarify the precise geographic location of excavation, schedule locating, propose future contacts, and share other information concerning the excavation and facilities.

Subp. 8. **Office.** "Office" means the Office of Pipeline Safety of the Minnesota Department of Public Safety.

Subp. 9. **Out-of-service facility.** "Out-of-service facility" means an underground facility that is no longer maintained and is not intended for future use, but has not been deemed abandoned. An out-of-service facility may still be connected to a portion of the operating facility that is in use or still carries service.

Subp. 10. **Public right-of-way.** "Public right-of-way" means the area on, below, or above a public roadway, highway, street, cartway, bicycle lane, and sidewalk in which a government unit has an interest, including other rights-of-way dedicated for travel purposes and utility easements of government units.

Subp. 11. **Remuneration.** "Remuneration" means direct or indirect compensation or consideration paid to the person or the person's agent, employer, employee, subcontractor, or contractor. A person who excavates as part of the person's duties as an employee, employer, agent, subcontractor, or contractor is considered to be acting for remuneration.

Subp. 12. **Service lateral.** "Service lateral" means an underground facility that is used to transmit, distribute, or furnish gas, electricity, communications, or water from a common source to an end-use customer. A service lateral is also an underground facility that is used in the removal of wastewater from a customer's premises.

Statutory Authority: *MS s 14.06; 216D.08; 299F.56; 299F.60; 299F.641; 299J.04*

History: *16 SR 135; 24 SR 448; 29 SR 1503*

Published Electronically: *July 20, 2005*

7560.0125 ABANDONED AND OUT-OF-SERVICE FACILITIES.

Subpart 1. **Duty of operators to provide readily available information.** Operators shall provide readily available information, as shown on maps, drawings, diagrams, or other records used in the normal course of business, on the approximate location of abandoned and out-of-service facilities to an excavator by the excavation date and time noted on the excavation or location notice unless otherwise agreed between the excavator and the operator. An operator fulfills an obligation to provide information on these facilities by doing one or more of the following:

A. locating and marking the approximate location of the facility according to the current color code standard used by the American Public Works Association, as required in Minnesota Statutes, section 216D.04, subdivision 3, with an abandoned or out-of-service facility identified by an uppercase A surrounded by a circle;

B. providing informational flags at the area of proposed excavation;

C. communicating information verbally; or

D. providing copies of maps, diagrams, or records.

Subp. 2. **Duty to notify operator.** An excavator shall notify the operator:

A. before moving, removing, or otherwise altering a facility that is thought to be abandoned or out of service; or

B. if damage to the facility occurs, pursuant to Minnesota Statutes, section 216D.01, subdivision 2.

Subp. 3. **Verification of abandoned or out-of-service facility.** Upon receipt of notification by an excavator pursuant to subpart 2, an operator shall verify that an underground facility is abandoned or out of service, by either reference to installation records, testing, or other comparable standard of verification, before an excavator is allowed to move, remove, or otherwise alter an underground facility.

Subp. 4. **Liability.** An operator providing information pursuant to Minnesota Statutes, section 216D.04, subdivision 3, is not responsible to any person for any costs, claims, or damages for information provided in good faith regarding abandoned and out-of-service underground facilities.

Statutory Authority: *MS s 14.06; 216D.08; 299J.04; 299F.60*

History: *24 SR 448*

Published Electronically: *July 20, 2005*

7560.0150 PUBLIC RIGHT-OF-WAY MAPPING AND INSTALLATION.

Subpart 1. **Duty of operator to map.** After December 31, 2005, an operator shall maintain a map, a diagram, a drawing, or geospatial information regarding the location of its underground facility within a public right-of-way installed after that date.

Subp. 2. **Duty to install locating wire.** After December 31, 2005, an operator shall install a locating wire or have an equally effective means of marking the location of each nonconductive underground facility within a public right-of-way installed after that date. This requirement does not apply when making minor repairs to an existing nonconductive facility. As applied to this chapter, "minor repairs" means repairs to or partial replacement of portions of existing service laterals located within a public right-of-way for purposes of routine maintenance and upkeep.

Statutory Authority: *MS s 299J.04*

History: *29 SR 1503*

Published Electronically: *July 20, 2005*

7560.0200 [Repealed, 24 SR 448]

Published Electronically: *July 20, 2005*

7560.0225 EXCAVATOR RESPONSIBILITIES REGARDING A LOCATE.

Subpart 1. [Repealed, 29 SR 1503]

Subp. 2. **Responsibility to protect and preserve.** The excavator is responsible for reasonably protecting and preserving a locate until no longer required for proper and safe excavation near the underground facility. If the excavator has reason to believe a locate is obliterated, obscured, missing, or incorrect, the excavator shall notify the facility operator or notification center in order to have an operator verify, refresh, or re-mark the locate.

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Subp. 3. **Use of locate.** A locate is valid for 14 days from the excavation commencement time stated on the excavation or location notice, unless the excavator has made previous arrangements with the operators affected to periodically verify, refresh, or re-mark the locate.

Statutory Authority: *MS s 14.06; 216D.08; 299J.04; 299F.60*

History: *24 SR 448; 29 SR 1503*

Published Electronically: *July 20, 2005*

7560.0250 LOCATE STANDARDS.

Subpart 1. **Facility locate.** Unless otherwise agreed to between the excavator and operator, an operator shall locate an underground facility using stakes, flags, paint, or other suitable materials in varying combinations dependent upon the surface. The locate must be in sufficient detail to clearly identify the approximate route of the underground facility. The locate must also include:

- A. name, abbreviation, or logo of the operator when more than one operator listed on the notice uses the same color markings;
- B. width of the underground facility if it is greater than eight inches; and
- C. number of underground facilities if greater than one.

Subp. 2. **Operator duties in no conflict situation.** After December 31, 2005, an operator who receives notice and determines that an underground facility is not in conflict with the proposed excavation shall complete one or more of the following:

- A. mark the area "NO" followed by the operator's name, abbreviation, or logo in the color code of the underground facility not in conflict;
- B. place a clear plastic flag at the area that:
 - (1) states "N/C" or "NO CONFLICT" in lettering matching the color code of the underground facility that is not in conflict; and
 - (2) includes the operator's name, abbreviation, or logo, the date, a contact telephone number, and the ticket number; or
- C. contact the notification center through procedures required by the notification center and indicate that there are no underground facilities in conflict with the proposed excavation and that no markings or flags were left at the proposed excavation site.

Subp. 3. **Placement of flags or markings.** If using N/C (no conflict) flags or markings pursuant to subpart 2, an operator shall place the flags or markings in a location that can be readily observed by an excavator. When an area of proposed excavation is delineated by the use of white markings, an operator shall place the N/C flags or markings within, or as near as practicable to, the delineated area.

Subp. 4. **Duties of notification center.** After December 31, 2005, the notification center shall make the information received under subpart 2 available to the excavator before the start date and time on the notice. The notification center may fulfill this requirement by making the information accessible through one or more Internet addresses, by transmitting the information to a continuously working facsimile machine maintained by the excavator, or by other methodology developed by the notification center. The notification center shall make available the information received by operators pursuant to this section through

an electronic means. The notification center is not required by this subpart to contact an excavator verbally via telephone.

Statutory Authority: *MS s 299J.04*

History: *29 SR 1503*

Published Electronically: *July 20, 2005*

7560.0300 OPERATOR PARTICIPATES AND SHARES COSTS.

An operator shall participate in and share the costs of the one call excavation notice system by:

- A. submitting the information required by the notification center to allow the center to notify the operator of excavation activity;
- B. updating the information provided to the notification center on a timely basis;
- C. installing and paying for equipment reasonably requested by the notification center to facilitate receipt of notice of excavation from the center;
- D. paying the costs charged by the notification center on a timely basis; and
- E. receiving and responding to excavation notices, including emergency notices, as required by Minnesota Statutes, chapter 216D.

Statutory Authority: *MS s 14.06; 216D.08; 299F.56; 299F.641*

History: *16 SR 135*

Published Electronically: *July 20, 2005*

7560.0325 EMERGENCY EXCAVATION NOTICES.

Subpart 1. **Duty of excavator to provide notice.** An excavator shall provide notice to the notification center before commencing an emergency excavation, unless subpart 2 applies. All emergency notices, regardless whether made prior to excavation, must be verbal or in a manner accepted by the notification center. In addition to the information required by the notification center, the notice must also contain:

- A. a description of the situation requiring the emergency excavation;
- B. the precise location of the proposed area of the emergency excavation;
- C. at least one continuously staffed telephone number where the excavator can be contacted by the operator throughout the emergency; and
- D. the excavation start date and time if the need for excavation is not immediate.

Subp. 2. **Excavating before notice.** If an emergency is such that providing notice or waiting for an operator would result in an undue risk to life, health, or significant loss of property, the excavator may excavate without providing prior notice or waiting for an operator to mark an underground facility. In this situation, the excavator shall provide notice as soon as practicable and take all reasonable precautions to avoid or minimize damage. Excavation prior to notice under this subpart does not relieve an excavator from any responsibility for damage to an underground facility pursuant to Minnesota Statutes, section 216D.06.

Subp. 3. **Emergency notice requesting immediate response.** Upon receiving an emergency excavation notice requesting an immediate response, an operator shall:

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A. attempt to contact the excavator within one hour at the telephone number provided in subpart 1, item C, to provide any information concerning facilities at or near the area of excavation including an anticipated response time; and

B. locate and mark the underground facility within three hours of notice unless:

- (1) otherwise agreed between the parties;
- (2) the operator notifies the excavator that not locating does not present an immediate danger to life or health, or a significant loss of property; or
- (3) there is an event or situation that cannot be reasonably anticipated or controlled by the operator.

Subp. 4. **Emergency notice requesting scheduled response.** Upon receiving an emergency excavation notice that does not require an immediate response, and before the scheduled excavation start date and time, an operator shall:

A. locate and mark the underground facility, unless otherwise agreed between the parties; or

B. notify the excavator at the telephone number provided in subpart 1, item C, that there is not an underground facility within the area of proposed excavation.

For purposes of this subpart, a requested start time of three hours or less from the time notice is provided to the center is considered an emergency notice requesting immediate response under subpart 3.

Statutory Authority: *MS s 299J.04*

History: *29 SR 1503*

Published Electronically: *July 20, 2005*

7560.0350 EXCAVATION NOTICE REQUESTING MEET.

Subpart 1. **Excavator duties.** When requesting a meet through the notification center, an excavator must provide at least one contact name and telephone number to assist in facilitating the meet. An excavator shall contact the notification center to cancel or reschedule the meet and the notification center shall relay this information to the affected operators. When a meet is requested, an excavator's notice must include the entire geographic area of the proposed excavation and the specific location of the meet. This part does not relieve an excavator from the duty to provide a precise geographic location of the proposed area of excavation, or to use white markings except where it can be shown that to do so is not practical.

Subp. 2. **Operator duties.** When a meet is requested, an affected operator shall make a reasonable effort to attend the meet at the proposed date and time, or contact the excavator before the meet and reschedule for a mutually agreed date and time.

Subp. 3. **Excavation start date and time.** When a meet is requested, the meet date and time must be at least 48 hours after notice is provided, excluding Saturdays, Sundays, and holidays, and the excavation start date and time must be at least 24 hours after the proposed meet date and time specified on the notice, excluding Saturdays, Sundays, and holidays. This subpart does not apply if these matters are provided for in a written agreement with all affected operators.

Subp. 4. **Meet request documentation.** An excavator shall maintain written documentation of each meet with an underground facility operator or representative. This documentation must be kept for the duration of the excavation conducted under the notice. The documentation must include:

- A. the date and time of each meet;
- B. the names, company affiliations, and contact information of the attendees of each meet;
- C. a diagram, sketch, or description of the precise excavation locations, dates, and times; and
- D. the agreed schedule of any future meets or communications.

Statutory Authority: *MS s 299J.04*

History: *29 SR 1503*

Published Electronically: *July 20, 2005*

7560.0375 LOCATING A SERVICE LATERAL.

Subpart 1. **Operator duties.** Unless otherwise agreed, an underground facility operator shall locate a service lateral before the start date and time on the notice and in accordance with items A through C:

A. An operator of a natural gas, propane, or electric facility shall locate a service lateral up to the meter or the connection to a customer's underground facility, whichever is closer to the end-use customer. If the meter or connection to the customer's underground facility is within a public right-of-way, at a minimum the operator shall locate that portion of the service lateral within the public right-of-way up to the point where the service lateral first leaves the public right-of-way.

B. An operator of a communication facility shall locate a service lateral up to the entry of the first building. If the service lateral does not enter a building, the operator shall locate up to the utilization equipment, fence, or wall that surrounds the equipment.

C. After December 31, 2005, an operator of a sewage or water facility, at a minimum, shall locate that portion of the service lateral within a public right-of-way installed after that date up to the point where the service lateral first leaves the public right-of-way. The operator shall either locate or provide information as shown on maps, drawings, diagrams, or other records, on the location of a sewer or water service lateral installed before January 1, 2006. If no information is available on a sewer or water service lateral installed before January 1, 2006, then notifying the excavator that no information exists fulfills the requirements of this section.

Subp. 2. **Exception.** An operator is not required to locate a service lateral of a customer who currently participates in the statewide notification system, provided the customer and operator mutually agree that the customer will assume locate responsibilities. The agreement must be in writing.

Statutory Authority: *MS s 299J.04*

History: *29 SR 1503*

Published Electronically: *July 20, 2005*

7560.0400 CITATIONS.

Subpart 1. **Notice of violation.** The office shall issue a notice of probable violation when the office has good cause to believe a violation of Minnesota Statutes, sections 216D.01 to 216D.09 or this chapter has occurred.

Subp. 2. **Contents of notice of violation.** A notice of violation must include:

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- A. a statement of the statute or rule allegedly violated by the person and a description of the evidence on which the allegation is based;
- B. notice of response options available to the person cited;
- C. notice that the person has 30 days in which to respond;
- D. notice that failure to respond within 30 days precludes administrative review under this chapter; and
- E. if a civil penalty is proposed, the amount of the proposed civil penalty and the maximum civil penalty applicable under law.

Subp. 3. **Receipt of notice.** The notice of violation is deemed received three days after mailing to the person's last known address.

Statutory Authority: *MS s 14.06; 216D.08; 299F.56; 299F.60; 299F.641; 299J.04*

History: *16 SR 135; 24 SR 448*

Published Electronically: *July 20, 2005*

7560.0500 RESPONSE OPTIONS.

The person shall respond to the notice of violation in the following way:

- A. When the notice contains a proposed compliance order, the person shall:
 - (1) agree to the proposed compliance order;
 - (2) request the execution of a consent order;
 - (3) object to the proposed compliance order and submit written explanations, information, or other materials in answer to the allegations in the notice; or
 - (4) request the office to initiate a hearing under Minnesota Statutes, sections 14.50 to 14.69.
- B. When the notice contains a proposed civil penalty, the person shall:
 - (1) pay the penalty and close the case;
 - (2) submit an offer in compromise of the proposed civil penalty;
 - (3) submit a written explanation, information, or other material in answer to the allegations or in mitigation of the proposed civil penalty; or
 - (4) request the office to initiate a hearing under Minnesota Statutes, sections 14.50 to 14.69.
- C. Failure to respond in writing within 30 days precludes administrative review under this chapter. A final order will be issued and penalties will be forwarded for collection.

Statutory Authority: *MS s 14.06; 216D.08; 299F.56; 299F.60; 299F.641; 299J.04*

History: *16 SR 135; 24 SR 448*

Published Electronically: *July 20, 2005*

7560.0600 DIRECTOR REVIEW.

If the person objects to the proposed civil penalty or compliance order and submits written explanations, information, or other materials in response to a notice of violation, within the time specified in part 7560.0500, the director shall review the submissions and determine whether to negotiate further, to change or withdraw the notice of violation, or to initiate a hearing under Minnesota Statutes, sections 14.50 to 14.69.

Statutory Authority: *MS s 14.06; 216D.08; 299F.56; 299F.60; 299F.641; 299J.04*

History: *16 SR 135; 24 SR 448*

Published Electronically: *July 20, 2005*

7560.0700 CONSENT ORDER.

An executed consent order must contain:

- A. an admission by the person of the jurisdictional facts;
- B. a waiver of further procedural steps and the right to seek judicial or administrative review or otherwise challenge or contest the validity of the consent order; and
- C. an agreement that the notice of violation may be used to construe the terms of the consent order.

Statutory Authority: *MS s 14.06; 216D.08; 299F.56; 299F.641*

History: *16 SR 135*

Published Electronically: *July 20, 2005*

7560.0800 CIVIL PENALTIES.

Subpart 1. **Proceedings against excavators.** When the office has good cause to believe that an excavator is engaging or has engaged in conduct that violates Minnesota Statutes, section 216D.04, subdivision 1, 2, or 3; 216D.05, clause (1), (2), (3), or (4); or 216D.06, subdivision 1, or a rule adopted under Minnesota Statutes, section 216D.08, subdivision 4, the office, if appropriate, shall negotiate a civil penalty under Minnesota Statutes, section 216D.08, subdivision 2. A penalty imposed under Minnesota Statutes, section 216D.08, is subject to the contested case and judicial review provisions of Minnesota Statutes, chapter 14. An operator who engages or has engaged in excavation that violates Minnesota Statutes, chapter 216D, is subject to the proceedings specified in subpart 2 and is subject to the penalties specified in subpart 4, item B or C.

Subp. 2. **Proceedings against underground facility operators.** The office may negotiate a civil penalty under item A or B.

A. When the office has good cause to believe that an underground facility operator, other than an operator set forth in item B, is engaging or has engaged in conduct that violates Minnesota Statutes, sections 216D.01 to 216D.07, or a rule adopted under Minnesota Statutes, section 216D.08, subdivision 4, the office, if appropriate, shall negotiate a civil penalty under Minnesota Statutes, section 216D.08, subdivision 2. A penalty imposed under Minnesota Statutes, section 216D.08, is subject to the contested case and judicial review provisions of Minnesota Statutes, chapter 14.

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B. When the office has good cause to believe that an operator who engages in the transportation of gas or hazardous liquids or who owns or operates a gas or hazardous liquid pipeline facility is engaging or has engaged in conduct that violates Minnesota Statutes, sections 299F.56 to 299F.641, or a rule adopted under Minnesota Statutes, section 299F.60, subdivision 5, the office, if appropriate, shall negotiate a civil penalty under Minnesota Statutes, section 299F.60, subdivision 2. A penalty imposed under Minnesota Statutes, section 299F.60, is subject to the contested case and judicial review provisions of Minnesota Statutes, chapter 14.

Subp. 3. **Assessment considerations.** In assessing a civil penalty under this part, the office shall consider the following factors:

- A. the nature, circumstances, and gravity of the violation;
- B. the degree of the person's culpability;
- C. the person's history of previous offenses;
- D. the person's ability to pay;
- E. good faith on the part of the person in attempting to remedy the cause of the violation;
- F. the effect of the penalty on the person's ability to continue in business; and
- G. past reports of damage to an underground facility by a person.

Subp. 4. **Maximum penalties.** For the purposes of this part, penalties imposed under this part must not exceed the limits in items A to C.

A. Penalties imposed against excavators must not exceed \$1,000 for each violation per day of violation.

B. Penalties imposed against underground facility operators, other than an operator set forth in item C, must not exceed \$1,000 for each violation per day of violation.

C. Penalties imposed against an operator who engages in the transportation of gas or hazardous liquids or who owns or operates a gas or hazardous liquid pipeline facility must not exceed \$10,000 for each violation for each day that the violation persists, except that the maximum civil penalty must not exceed \$500,000 for a related series of violations.

Subp. 5. **Payment procedure.** The person shall pay a civil penalty that has been proposed, assessed, or compromised by submitting to the office a check or money order in the correct amount, payable to the commissioner of public safety.

Statutory Authority: *MS s 14.06; 216D.08; 299F.56; 299F.60; 299F.641; 299J.04*

History: *16 SR 135; 24 SR 448*

Published Electronically: *July 20, 2005*

Certificate Of Completion

Envelope Id: 4DC830FC665940E79D8A26CC4ABE2C52	Status: Completed
Subject: Collin Kopitzke - ROW Permit Application	
Source Envelope:	
Document Pages: 93	Signatures: 2
Certificate Pages: 4	Initials: 1
AutoNav: Enabled	Envelope Originator:
Envelopeld Stamping: Enabled	Highway Permits
Time Zone: (UTC-06:00) Central Time (US & Canada)	Anoka County Government Center
	2100 3rd Avenue
	Anoka, MN 55303
	HighwayPermits@co.anoka.mn.us
	IP Address: 70.58.129.25


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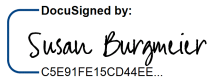
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 Anoka County
 Signing Group: Highway Permits
 Security Level: Email, Account Authentication (Optional)

DocuSigned by:

 C5E91FE15CD44E...
 Signature Adoption: Pre-selected Style
 Using IP Address: 156.98.106.233

Sent: 9/15/2023 12:27:51 PM
 Viewed: 9/15/2023 12:31:05 PM
 Signed: 9/21/2023 7:43:54 AM

Electronic Record and Signature Disclosure:

Accepted: 9/14/2023 2:17:12 PM
 ID: 2ac23b50-bb98-47d8-8687-cbacec1b6c69

In Person Signer Events	Signature	Timestamp
Editor Delivery Events	Status	Timestamp
Agent Delivery Events	Status	Timestamp
Intermediary Delivery Events	Status	Timestamp
Certified Delivery Events	Status	Timestamp
Carbon Copy Events	Status	Timestamp
Witness Events	Signature	Timestamp
Notary Events	Signature	Timestamp

Envelope Summary Events	Status	Timestamps
Envelope Sent	Hashed/Encrypted	9/15/2023 10:11:34 AM
Envelope Updated	Security Checked	9/15/2023 12:27:33 PM
Certified Delivered	Security Checked	9/15/2023 12:31:05 PM
Signing Complete	Security Checked	9/21/2023 7:43:54 AM
Envelope Updated	Security Checked	9/21/2023 7:43:55 AM
Completed	Security Checked	9/21/2023 7:43:54 AM

Payment Events	Status	Timestamps
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Electronic Record and Signature Disclosure

ELECTRONIC RECORD AND SIGNATURE DISCLOSURE

The following information constitutes Anoka County's (we, us or Company) written notices or disclosures relating to your use of DocuSign in relation to Anoka County's license. Described below are the terms and conditions for providing notices and disclosures electronically through the DocuSign system. Please read the information below carefully and thoroughly, and if you agree to this Electronic Record and Signature Disclosure (ERSD), please confirm your agreement by selecting the check-box next to 'I agree to use electronic records and signatures' before clicking 'CONTINUE' within the DocuSign system.

Getting paper copies

At any time, you may request from us a paper copy of any record provided or made available electronically to you by us. You will have the ability to download and print documents we send to you through the DocuSign system during and immediately after the signing session and, if you elect to create a DocuSign account, you may access the documents for a limited period of time (30 days) after the documents are first sent to you. At any time, if you request paper copies of any documents, you may be charged a fee. You may request paper copies from us by following the procedure described below.

Withdrawing your consent

If you decide to receive notices, disclosures and documents from us electronically, you may change your mind and tell us that going forward you want to receive documents only in paper format. Please note, processing time will be slowed down dramatically as we will be required to print and send the document through the mail and await your return of the documents. The process to change the method of receipt is described below.

All notices and disclosures will be sent to you electronically

Upon your acceptance to receive electronic notifications, all required notices, disclosures, authorizations, acknowledgements, and other documents that are required to be provided or made available to you during the course of our relationship with you will be provided electronically through the DocuSign system. All of the required documents will be provided to you at the address that you have given us.

How to contact Anoka County:

You may change your preferred method of contact whether electronically, or paper copies, or change your email address. You may also request paper copies of certain information from us, or withdraw your prior consent to receive documents. Please use the contact information below for your request and in the body of your correspondence, identify your desired action. If you are

changing an email address, please include your prior email address as well as your new address. If you no longer wish to receive future documents in electronic format, please include that request in the body of your email.

Email: helpdesk@co.anoka.mn.us

Phone: (763)-324-4110

Address: Anoka County Government Center
Attn: Information Technology, #300
2100 3rd Avenue
Anoka, MN 55303

Required hardware and software

The minimum system requirements for using the DocuSign system may change over time. The current system requirements are found here: <https://support.docusign.com/guides/signer-guide-signing-system-requirements>.

ACKNOWLEDGEMENT

To confirm your access to the electronic notices and disclosures, which will be similar to other electronic notices and disclosures that we may provide to you, please acknowledge that you have read this ERSD by selecting the check-box next to 'I agree to use electronic records and signatures' before clicking 'CONTINUE' within the DocuSign system.

By selecting the check-box next to 'I agree to use electronic records and signatures', you confirm that:

- You can access and read this Electronic Record and Signature Disclosure; and
- You can print this Electronic Record and Signature Disclosure, or save or send this Electronic Record and Disclosure to a location where you can print it, for future reference and access; and
- Until or unless you notify Anoka County as described above, you consent to receive exclusively through electronic means all notices, disclosures, authorizations, acknowledgements, and other documents that are required to be provided or made available to you by Anoka County during the course of your relationship with Anoka County.