

CITY OF COLUMBIA HEIGHTS

CONSTRUCTION PLANS FOR

CENTRAL AVENUE SEWER MANHOLE

IMPROVEMENTS

SANITARY SEWER, STORM SEWER, PAVEMENT & SIDEWALK RECONSTRUCTION

FEBRUARY, 2022

FOR CONSTRUCTION, REVISION NO. 2
5/27/2022

TYPICAL PLAN SCALE
UNLESS OTHERWISE NOTED:

0 50 100
Horizontal Scale In Feet

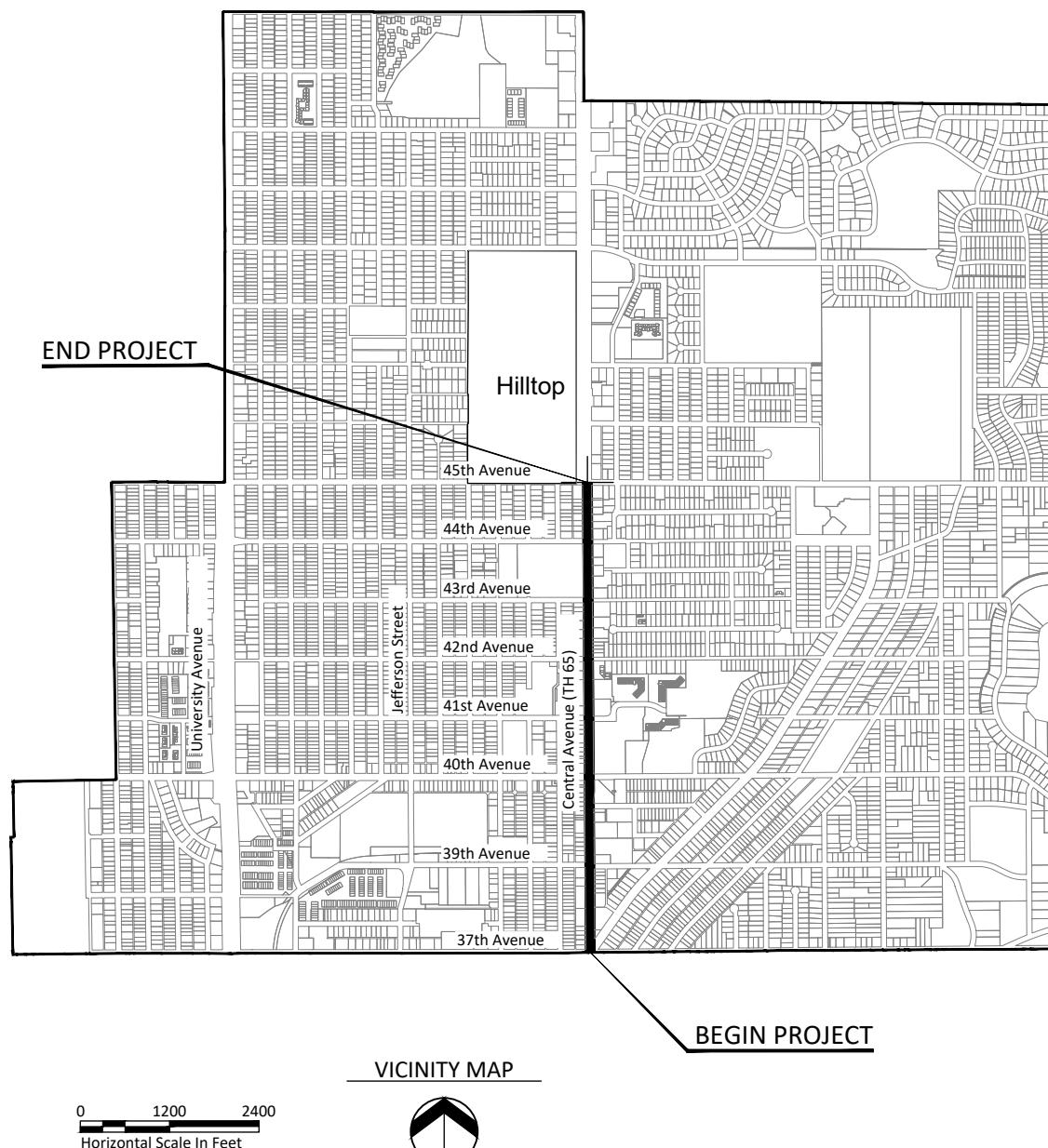
0 10 20
Vertical Scale In Feet

PROJECT LOCATION

CITY: COLUMBIA HEIGHTS
COUNTY: ANOKA
DISTRICT: METRO

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THE SUBSURFACE UTILITY INFORMATION IN THIS PLAN IS UTILITY
QUALITY LEVEL D UNLESS OTHERWISE NOTED. THIS UTILITY 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."



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

Kevin P. Kielb
KEVIN P. KIELB
LIC. NO. 23211 DATE 02/03/2022

 **BOLTON & MENK**

7533 SUNWOOD DR NW, SUITE 206
RAMSEY, MINNESOTA 55303
Phone: (763) 433-2851
Email: Ramsey@bolton-menk.com
www.bolton-menk.com



DESIGNED	NO.	ISSUED FOR	DATE
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CITY OF COLUMBIA HEIGHTS, MINNESOTA
CENTRAL AVENUE SEWER MANHOLE IMPROVEMENTS

SHEET
1
OF
47

--- GOVERNING SPECIFICATIONS ---
THE 2020 EDITION OF THE MINNESOTA DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATION FOR CONSTRUCTION" SHALL GOVERN.

ALL TRAFFIC CONTROL DEVICES AND SIGNING SHALL CONFORM AND BE INSTALLED IN ACCORDANCE WITH THE "MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MN MUTCD) AND PART VI, "FIELD MANUAL" FOR TEMPORARY TRAFFIC CONTROL DEVICES.

SHEET NUMBER	SHEET TITLE
GENERAL	
1	TITLE SHEET
2	LEGEND
3	STATEMENT OF ESTIMATED QUANTITIES
4	LOCATION PLAN
CIVIL	
5 - 9	EXISTING CONDITIONS REMOVALS & EROSION CONTROL
10	TYPICAL SECTIONS
11 - 12	DETAILS
13 - 20	STREET PLAN & PROFILE
21 - 47	TRAFFIC CONTROL PLANS

THIS PLAN SET CONTAINS 47 SHEETS.

1


APPROVED: COLUMBIA HEIGHTS CITY ENGINEER

DATE 2/10/22

STATEMENT OF ESTIMATED QUANTITIES - REVISION NO. 1

ITEM NO.	NOTES	MnDOT SPEC NO.	ITEM	UNIT	TOTAL
1		2021.501	MOBILIZATION	LUMP SUM	0.85
2		2104.502	SALVAGE SIGN	EACH	7
3		2104.502	REMOVE DRAINAGE STRUCTURE (STORM)	EACH	3
4		2104.502	REMOVE MANHOLE (SANITARY)	EACH	18
5		2104.503	REMOVE PIPE SEWERS (STORM)	LIN FT	70
6		2104.503	REMOVE PIPE SEWERS (SANITARY)	LIN FT	935
7		2104.503	REMOVE CURB AND GUTTER	LIN FT	995
8		2104.503	SAWING PAVEMENT (FULL DEPTH)	LIN FT	2,660
9		2104.504	REMOVE CONCRETE PAVEMENT	SQ YD	120
10		2104.504	REMOVE CONCRETE MEDIAN	SQ YD	585
11		2104.504	REMOVE CONCRETE WALK	SQ YD	630
12		2104.504	REMOVE ROADWAY PAVEMENT	SQ YD	3,195
13		2105.601	DEWATERING	LUMP SUM	1
14		2105.609	GRANULAR BORROW	CU YD	180
15		2106.507	EXCAVATION - COMMON	CU YD	605
16		2108.504	GEOTEXTILE FABRIC TYPE 5	SQ YD	3,195
17		2123.610	STREET SWEEPER (WITH PICKUP BROOM)	HOUR	20
18	1	2231.604	BITUMINOUS PATCH SPECIAL 1 (CENTRAL AVENUE)	SQ YD	2,930
19	1	2231.604	BITUMINOUS PATCH SPECIAL 2 (GOULD AVENUE)	SQ YD	170
20	2	2231.604	BITUMINOUS PATCH SPECIAL 3 (TEMPORARY PAVEMENT)	SQ YD	500
21		2452.618	Sheet Piling (Temporary)	SQ FT	7,410
22		2503.503	4" PVC PIPE SEWER SDR 26	LIN FT	50
23		2503.503	6" PVC PIPE SEWER SDR 26	LIN FT	30
24		2503.503	8" PVC PIPE SEWER SDR 26	LIN FT	30
25		2503.503	10" PVC PIPE SEWER, SDR 26	LIN FT	895
26		2503.503	10" DUCTILE IRON PIPE SEWER CL 52	LIN FT	25
27		2503.503	12" PVC PIPE SEWER, SDR 26	LIN FT	20
28		2503.503	15" RC PIPE SEWER DESIGN 3006 CLASS V	LIN FT	15
29		2503.503	21" RC PIPE SEWER DESIGN 3006 CLASS III	LIN FT	60
30		2503.602	CONNECT TO EXISTING STORM SEWER	EACH	1
31	3	2503.602	PVC WYE	EACH	8
32		2503.610	PUMPING (SANITARY BYPASS)	LUMP SUM	1
33		2506.502	CONSTRUCT SANITARY SEWER MANHOLE	LIN FT	217
34		2506.603	CONSTRUCT SANITARY SEWER OUTSIDE DROP MANHOLE	EACH	1
35	4	2506.502	CONSTRUCT DRAINAGE STRUCTURE DESIGN SPEC 1	LIN FT	8
36	5	2506.503	CONSTRUCT DRAINAGE STRUCTURE DESIGN SPEC 2	LIN FT	7
37		2521.518	6" CONCRETE WALK	SQ FT	4,000
38		2521.518	6" COLORED CONCRETE WALK	SQ FT	1,650
39		2531.503	CONCRETE CURB & GUTTER DES B618	LIN FT	995
40		2531.504	CONCRETE MEDIAN	SQ YD	585
41		2531.504	8" CONCRETE DRIVEWAY PAVEMENT	SQ YD	120
42		2531.604	8" CONCRETE VALLEY GUTTER	SQ YD	20
43		2533.503	PORTABLE PRECAST CONCRETE BARRIER DESIGN 8337 - ANCHORED	LIN FT	1,820
44		2563.601	TRAFFIC CONTROL	LUMP SUM	1
45		2563.610	FLAGGER	HOUR	20
46		2563.615	TEMPORARY IMPACT ATTENUATOR	AMBY	3
47		2564.502	INSTALL SIGN	EACH	7
48		2565.602	RIGID PVC LOOP DETECTOR 6' X 6'	EACH	
49		2573.502	STORM DRAIN INLET PROTECTION	EACH	24
50		2574.507	COMMON TOPSOIL BORROW	CU YD	20
51		2575.504	SODDING TYPE LAWN	SQ YD	125
52	6	2582.503	4" SOLID LINE PAINT (WR) (TEMPORARY)	LIN FT	21,700
53		2582.503	4" SOLID LINE MULTI COMP GR IN (WR)	LIN FT	3,270
54		2582.503	4" BROKEN LINE MULTI COMP GR IN (WR)	LIN FT	200
55		2582.518	CROSSWALK PREF THERMO GR IN ESR	SQ FT	330

NOTES:

- 1 ITEM INCLUDES SUBGRADE PREPARATION, AGGREGATE BASE, AND BITUMINOUS PAVING COMPLETE IN PLACE
- 2 ITEM INCLUDES REMOVAL OF TEMPORARY PAVEMENT
- 3 UNIT PRICE BID REGARDLESS OF SIZE, FIELD VERIFY EXISTING SERVICES
- 4 CATCH BASIN TYPE "Y". SEE CONSTRUCTION DETAILS
- 5 STORM MANHOLE TYPE "B". SEE CONSTRUCTION DETAILS
- 6 ITEM INCLUDES REMOVAL OF TEMPORARY STRIPING

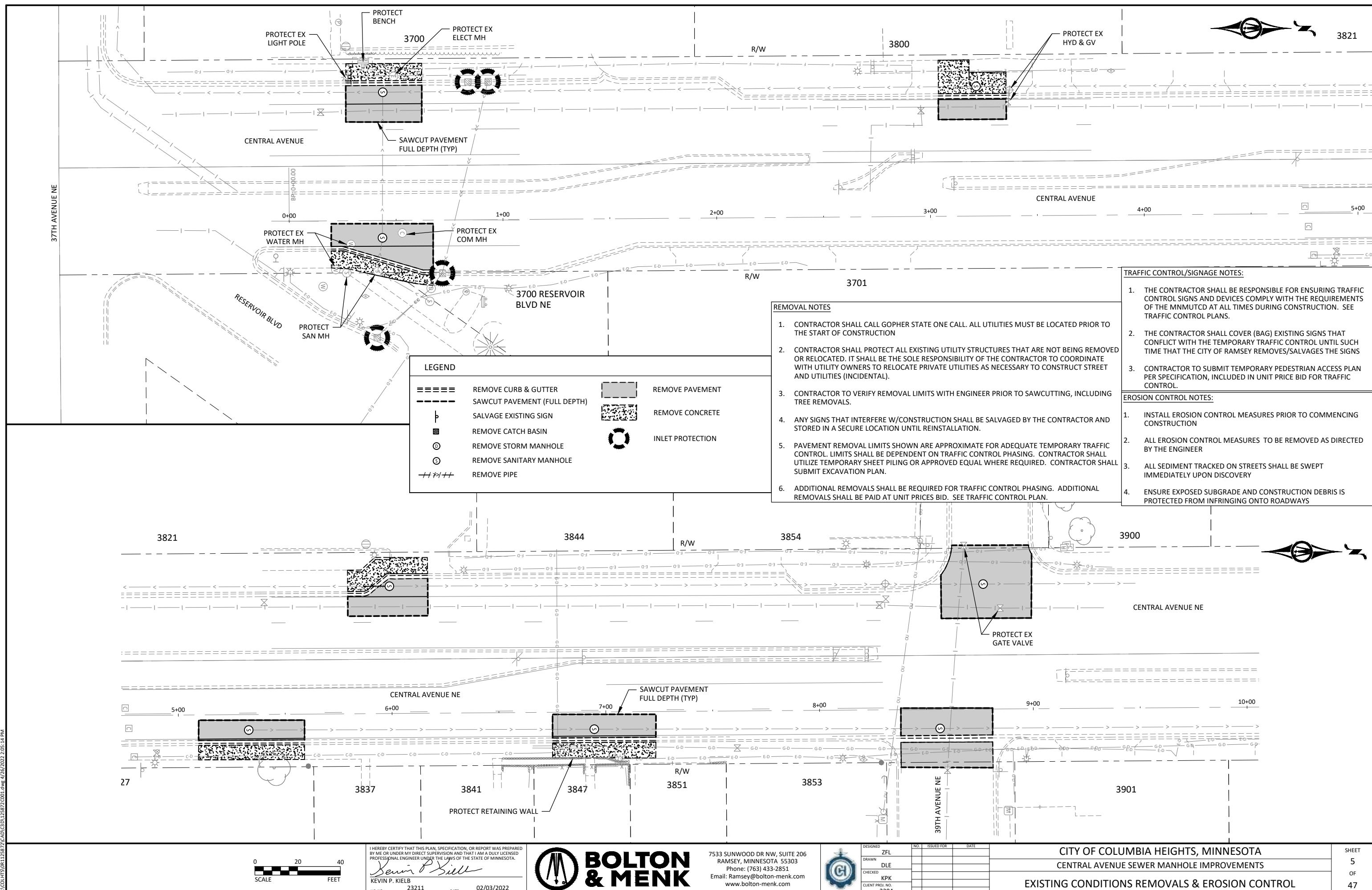
STANDARD PLATES

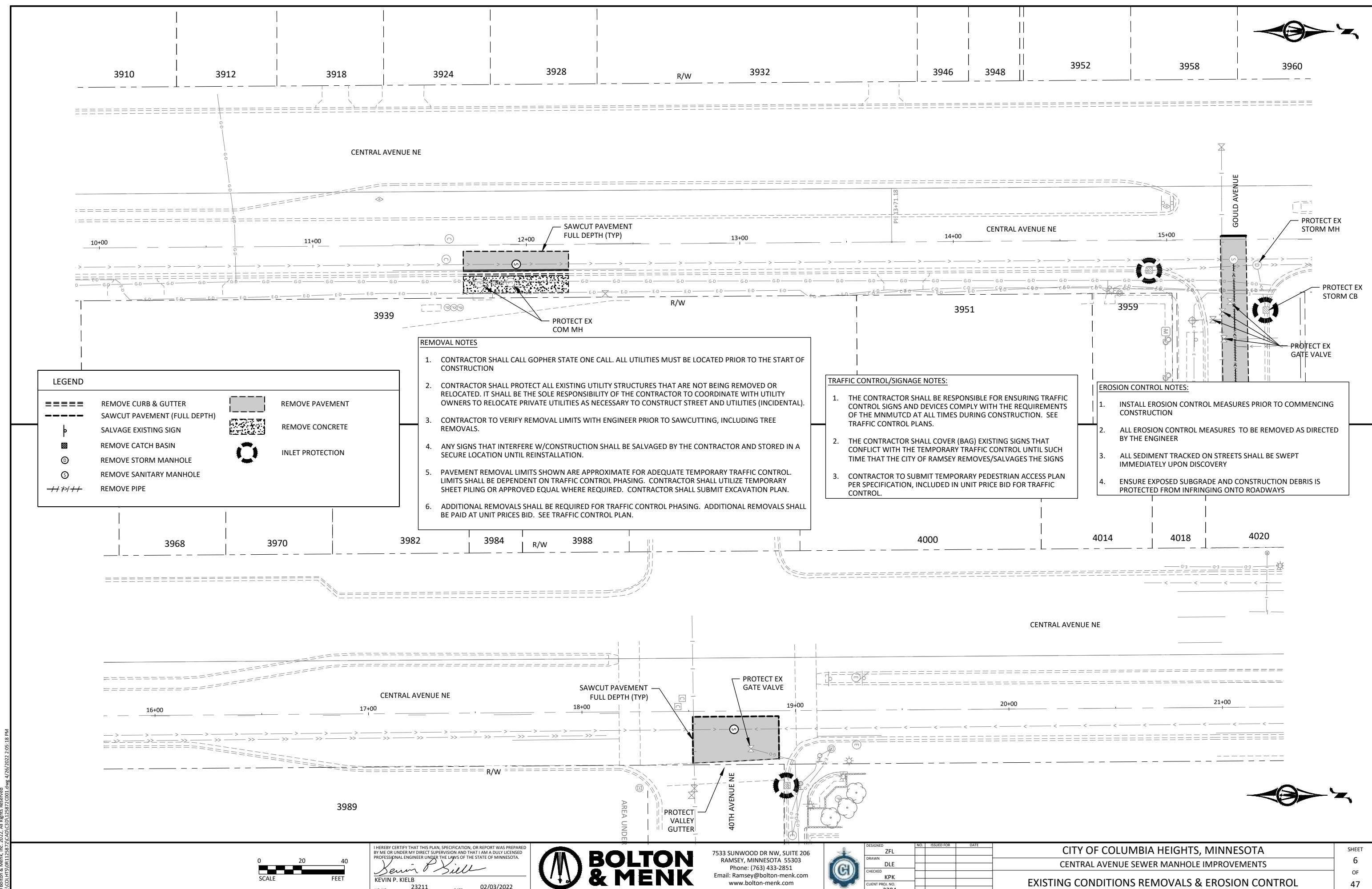
THE FOLLOWING STANDARD PLATES, APPROVED BY THE FEDERAL HIGHWAY ADMINISTRATION, SHALL APPLY ON THIS PROJECT

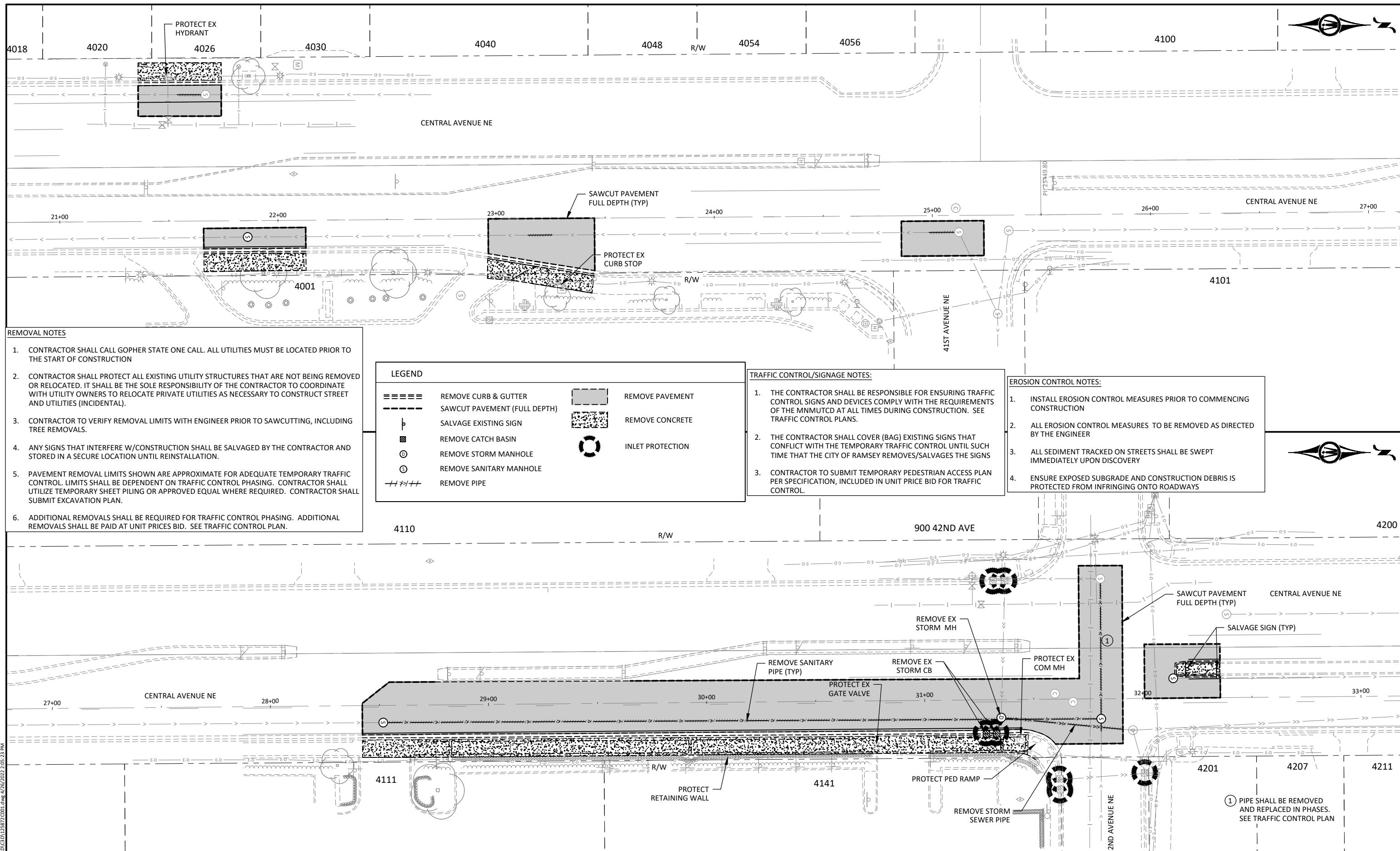
PLATE NO.	DESCRIPTION
3000M	REINFORCED CONCRETE PIPE (6 SHEETS)
3006H	GASKET JOINT FOR R.C. PIPE (2 SHEETS)
7100H	CONCRETE CURB AND GUTTER (DESIGN B & V)
7105C	CONCRETE MEDIAN (MOUNTABLE TYPE)
7113A	CONCRETE APPROACH NOSE DETAIL
8000K	CHANNELIZERS (3 SHEETS)

2









A scale bar with markings at 0, 20, and 40. The word 'SCALE' is printed below the 0 mark, and 'FEET' is printed below the 40 mark.

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Kevin P. Kielb
KEVIN P. KIELB
23211 02/03/2022

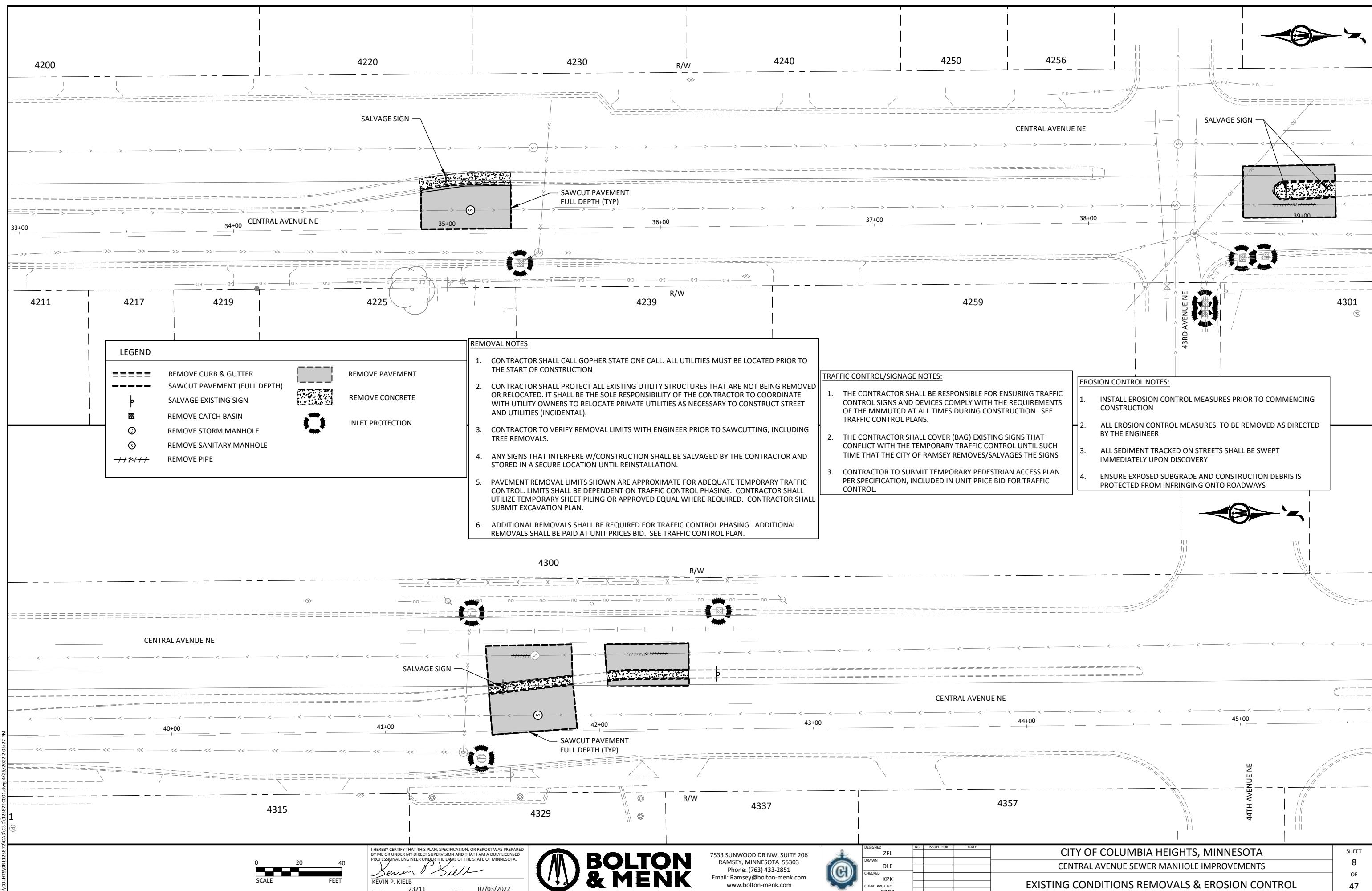


7533 SUNWOOD DR NW, SUITE 200
RAMSEY, MINNESOTA 55303
Phone: (763) 433-2851
Email: Ramsey@bolton-menk.com
www.bolton-menk.com



CITY OF COLUMBIA HEIGHTS, MINNESOTA
CENTRAL AVENUE SEWER MANHOLE IMPROVEMENTS

EXISTING CONDITIONS REMOVALS & EROSION CONTROL



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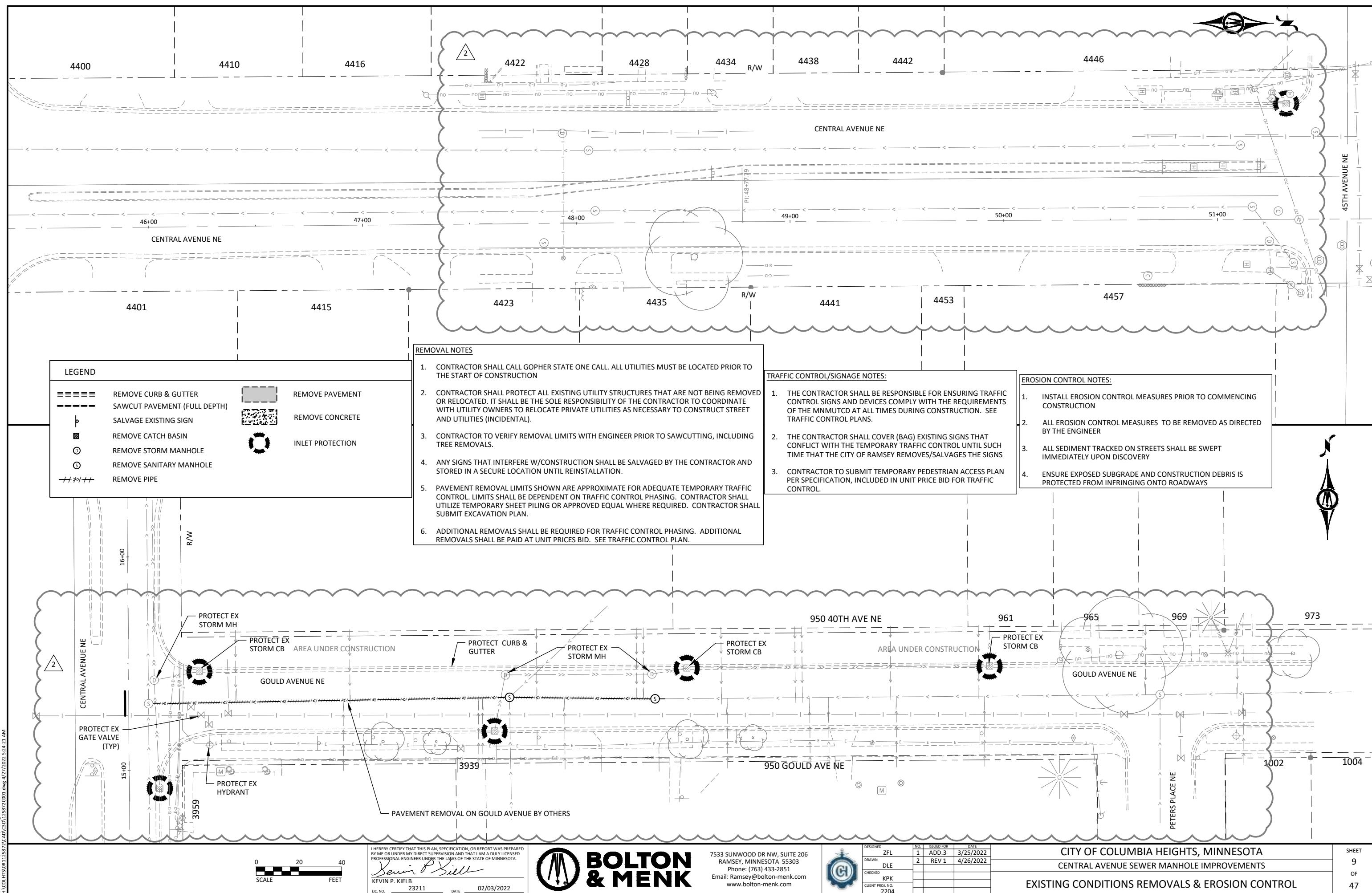


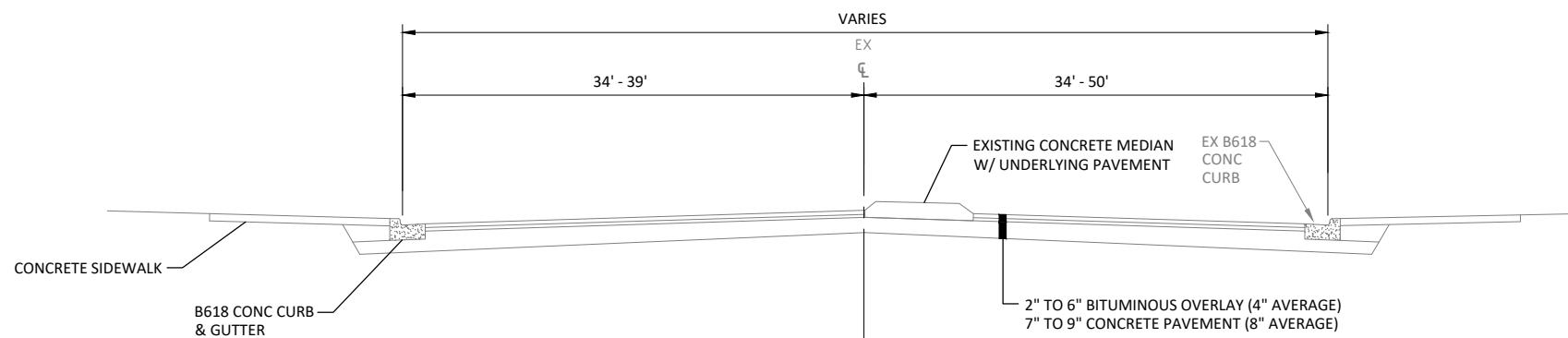
7533 SUNWOOD DR NW, SUITE
RAMSEY, MINNESOTA 55303
Phone: (763) 433-2851
Email: Ramsey@bolton-menk.com
www.bolton-menk.com



DESIGNED	NO.	ISSUED FOR	DATE
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CITY OF COLUMBIA HEIGHTS, MINNESOTA
CENTRAL AVENUE SEWER MANHOLE IMPROVEMENTS



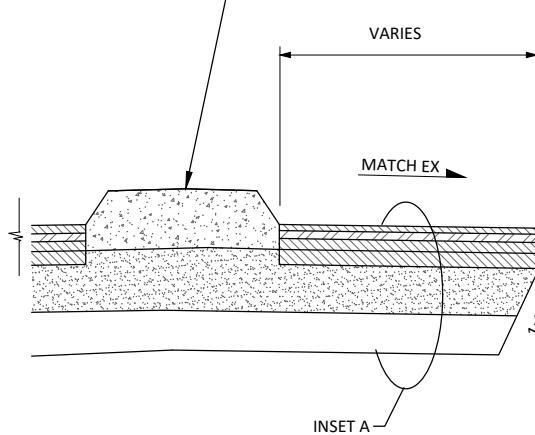


EXISTING TYPICAL SECTION

CENTRAL AVENUE

NOT TO SCALE

CONCRETE MEDIAN,
SEE MNDOT STANDARD
PLATE 7105C, 7113A



CENTRAL AVENUE

CENTRAL AVENUE

CENTRAL AVENUE

SAWING BITUMINOUS PAVEMENT (FULL DEPTH)

VARIABLES

MATCH EX

PAVEMENT TO REMAIN IN PLACE

INSET A

6" COLORED CONCRETE WALK

1'-2" (MATCH EX)

MATCH EX

5'-8" (MATCH EXISTING)

INSET A

6" CONCRETE WALK

2% MAX
MATCH EX

INSET B

1'-2" (MATCH EX)

1'

1:4 MAX
MATCH EX

INSET B

RESTORE WITH 6" MIN
COMMON TOPSOIL
BORROW & SODDING
TYPE SALT TOLERANT

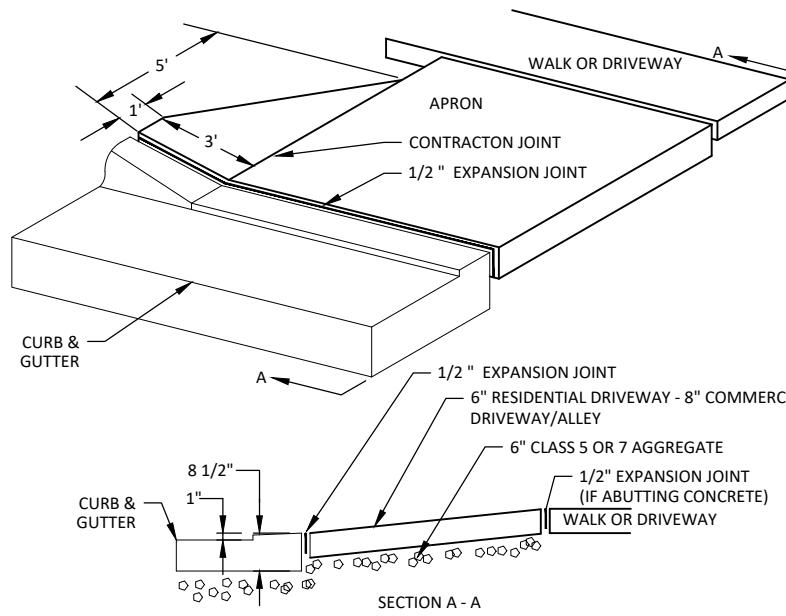
#4 REBAR 12" OC, 9"
EMBEDDED INTO
COLORED CONCRETE
AND 12" EMBEDDED
INTO CONCRETE WALK
(INCIDENTAL)

INSET B

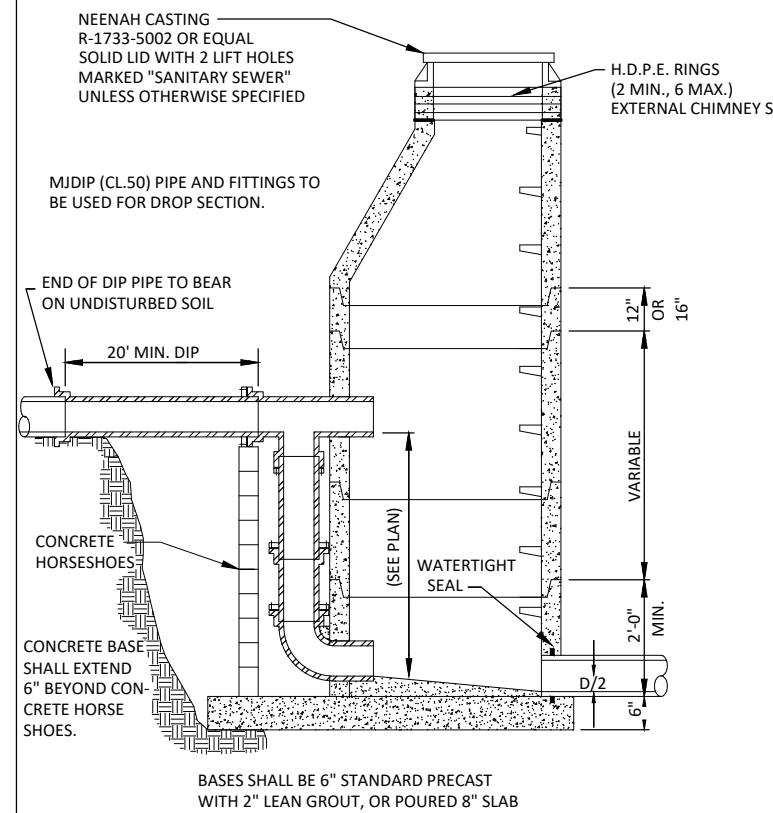
AGGREGATE BASE DEPTH SPECIFICATION

CONCRETE WALK -	4" CLASS 5 OR
CONCRETE STEP -	4" CLASS 5 OR
CONCRETE DRIVE -	6" CLASS 5 OR
CONCRETE ALLEY -	6" CLASS 5 OR
CURB & GUTTER -	9" CLASS 5 OR
CONCRETE X-GUTTER	9" CLASS 5 OR
BITUMINOUS TRAIL -	6" CLASS 5 OR
BITUMINOUS DRIVE -	6" CLASS 5 OR
BITUMINOUS ALLEY -	6" CLASS 5 OR
BITUMINOUS X DRAIN -	6" CLASS 5 OR

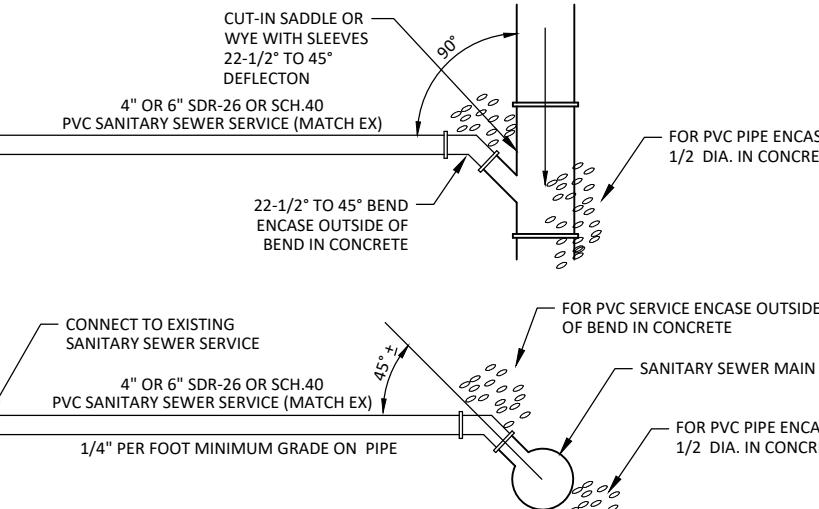
DRIVEWAY APRON DETAIL



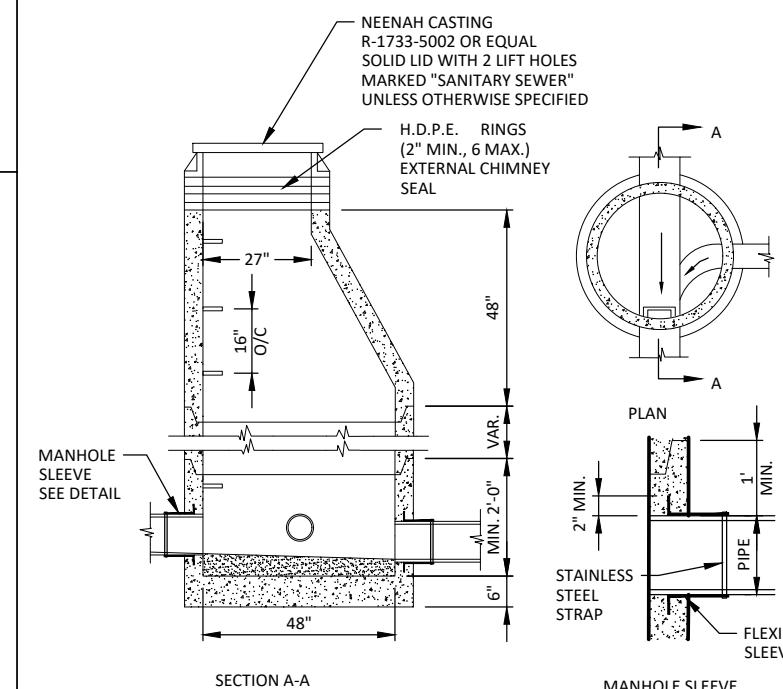
OUTSIDE DROP SANITARY SEWER MANHOLE



SANITARY SEWER SERVICE



STANDARD 4' DIA. SANITARY SEWER MANHOLE



NO WOOD SHALL BE USED FOR ADJUSTING CASTING
A 12" OR 16" BARREL SECTION SHALL BE INSTALLED UNDER THE CONE WHENEVER
POSSIBLE.

CAST IRON MANHOLE FRAME & SOLID COVER R-1733-5002 WITH 2 LIFT HOLES AND MARKED "SANITARY SEW
UNLESS OTHERWISE SPECIFIED.

PRECAST REINFORCED CONCRETE MANHOLE SECTIONS PER ASTM C478.

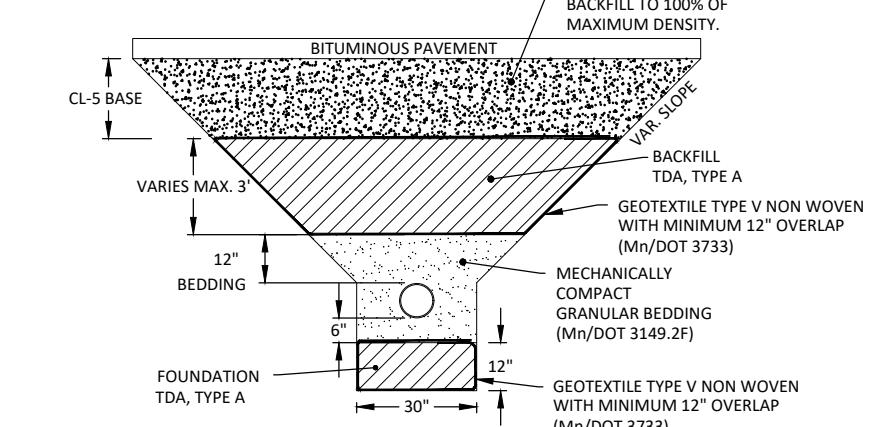
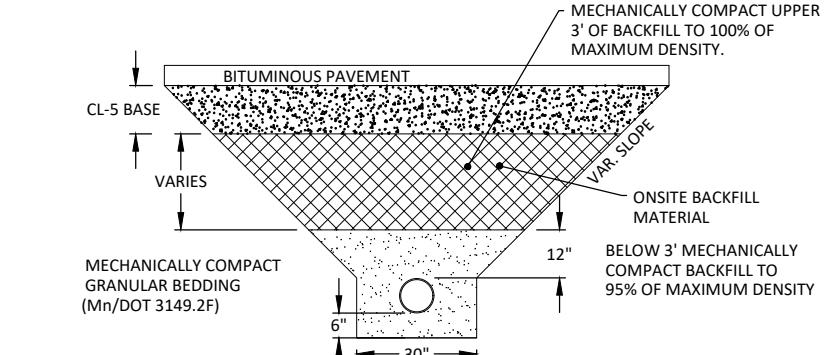
STEPS SHALL BE CAST IRON, ALUMINUM, OR STEEL REINFORCED PLASTIC,
LOCATED OVER DOWNSTREAM PIPE.

LIFT HOLES NOT PERMITTED IN MANHOLE SECTIONS.

PIPE CONNECTIONS TO MANHOLE SHALL BE MADE WATER TIGHT BY CAST INPLACE
RUBBER SLEEVE & CEMENT MORTAR. INSIDE SURFACE SHALL BE FINISHED SMOOTH.

ELASTIC EXTERNAL RUBBER SEAL REQUIRED ON JOINTS.

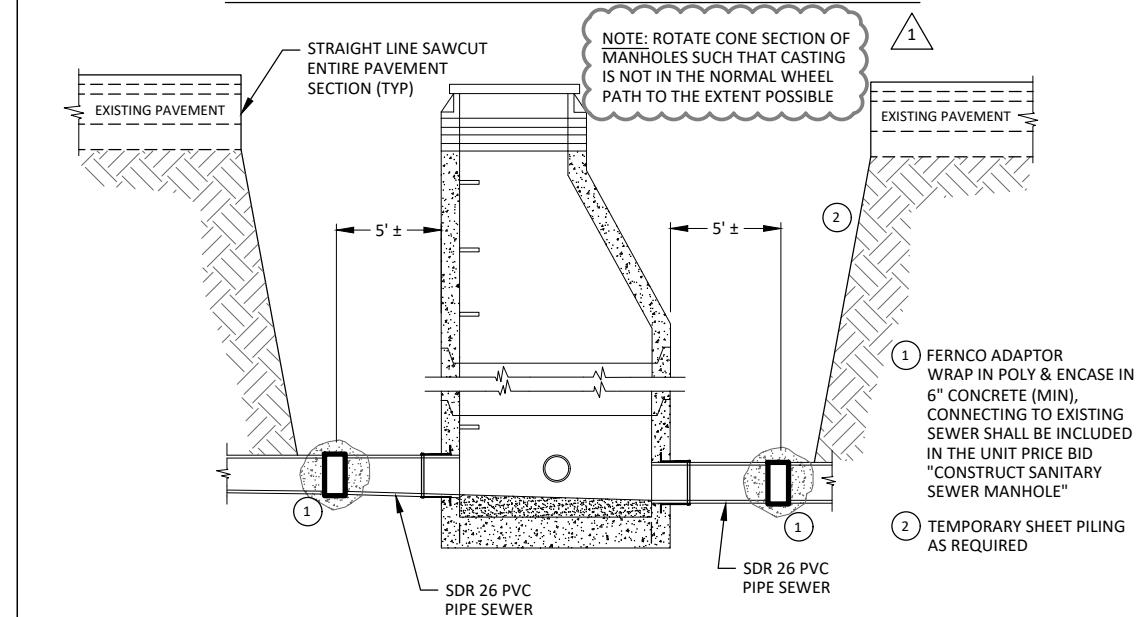
PIPE EMBEDMENT DETAIL



INSTALLATION OF GRANULAR BEDDING SHALL BE COMPAKTED WITH MOTOR DRIVEN EQUIPMENT UNTIL THERE IS NO VISIBLE ADDITIONAL COMPAKCTION. PARTICULAR CARE SHALL BE TAKEN TO ASSURE NO VOIDS UNDER PIPE HAUNCHES. GRANULAR BEDDING COMPLETE, IN PLACE, INCLUDED IN UNIT PRICE BID FOR PIPE SEWER BACKFILL OF TRENCHES SHALL BE UNIFORMLY COMPAKTED TO SPECIFIED DENSITY. TESTS SHALL BE TAKEN AT LOCATIONS DETERMINED IN THE FIELD AND AS DIRECTED BY THE ENGINEER. ALL EXCAVATIONS MUST COMPLY WITH THE REQUIREMENTS OF OSHA 29 CFR, PART 1926, SUBPART P. EXCAVATION AND TRENCHES.

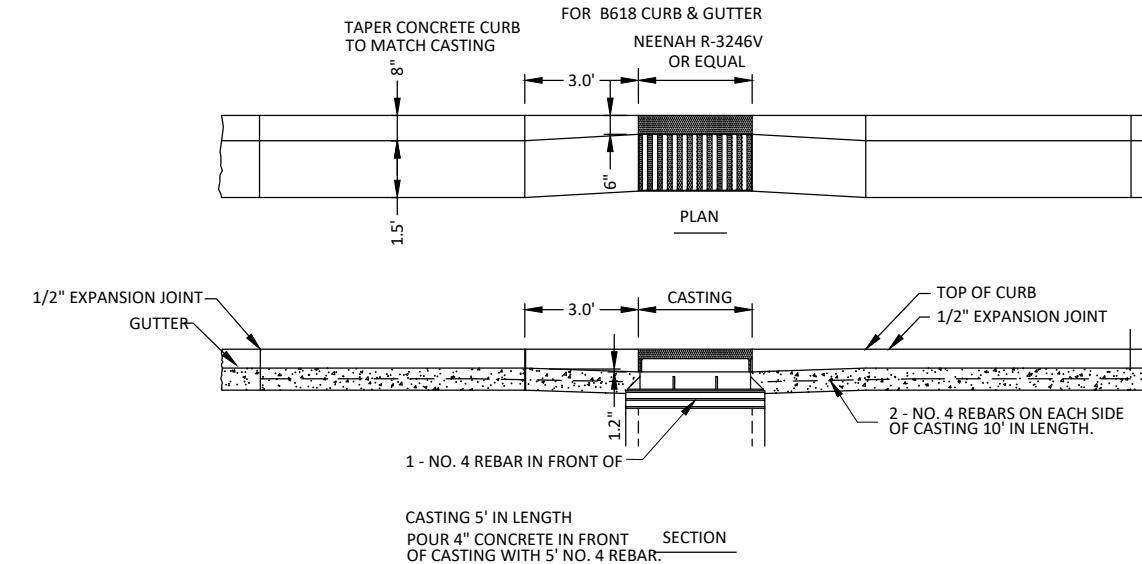
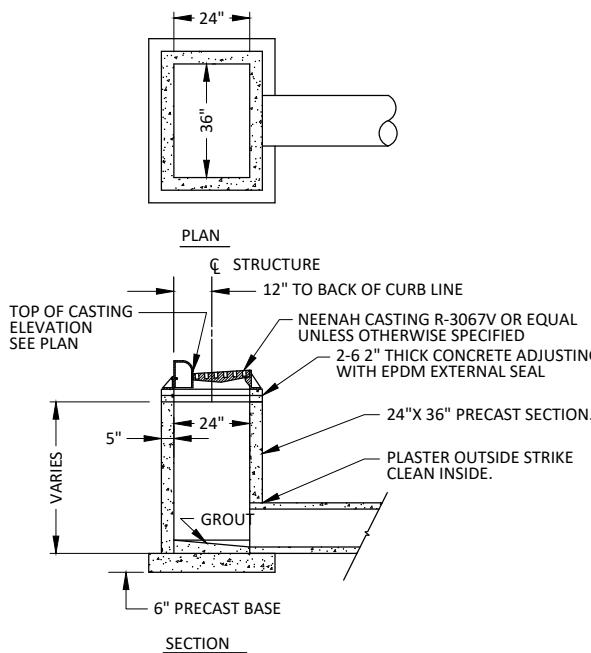
CITY OF COLUMBIA HEIGHTS-ENGINEERING DEPT. EMBEDMENT DETAILS FOR P.V.C. OR HDPE PIPE

TYPICAL SANITARY SEWER MANHOLE INSTALLATION

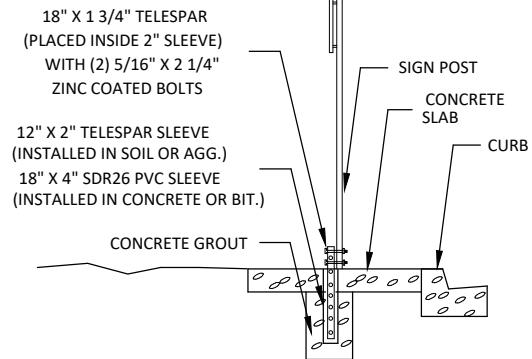


CATCH BASIN INSTALLATION

TYPE "X" CATCH BASIN



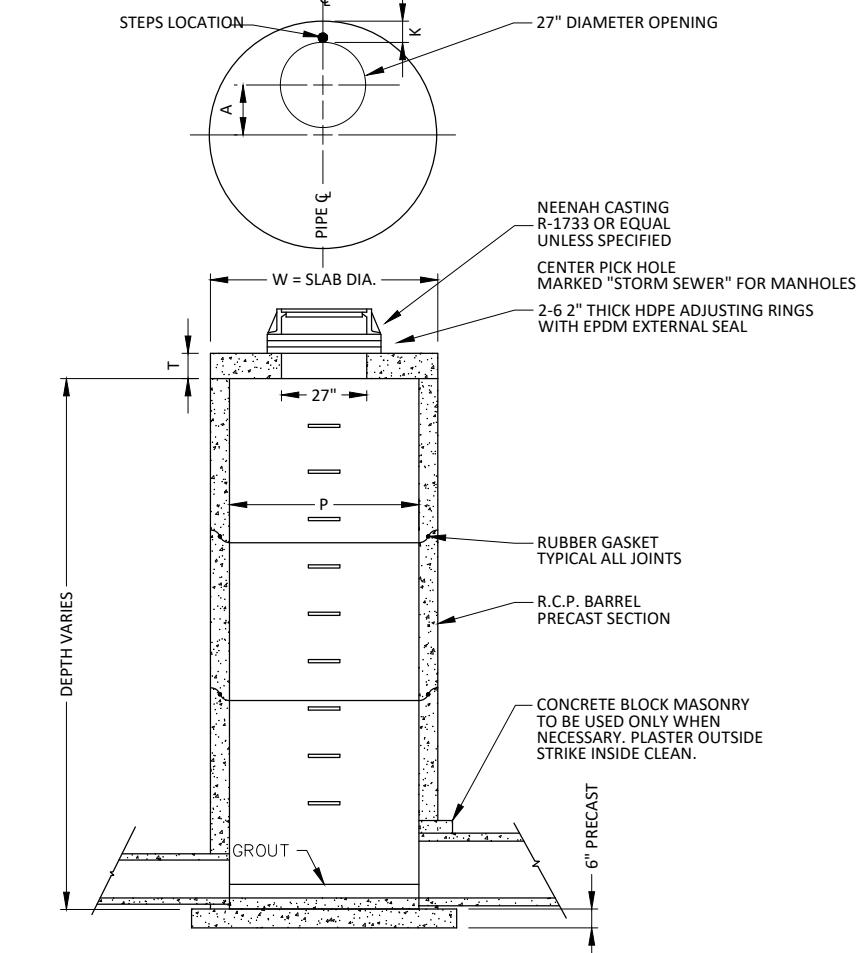
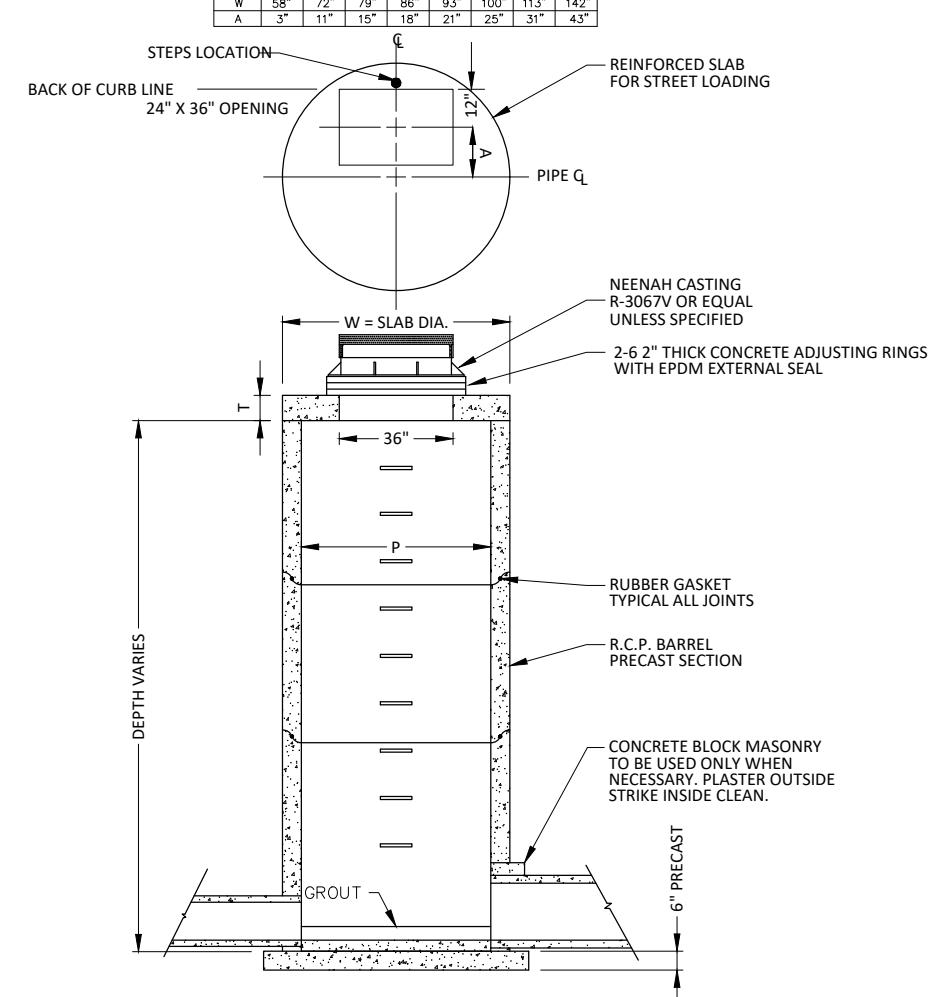
SIGN POST INSTALLATION DETAIL

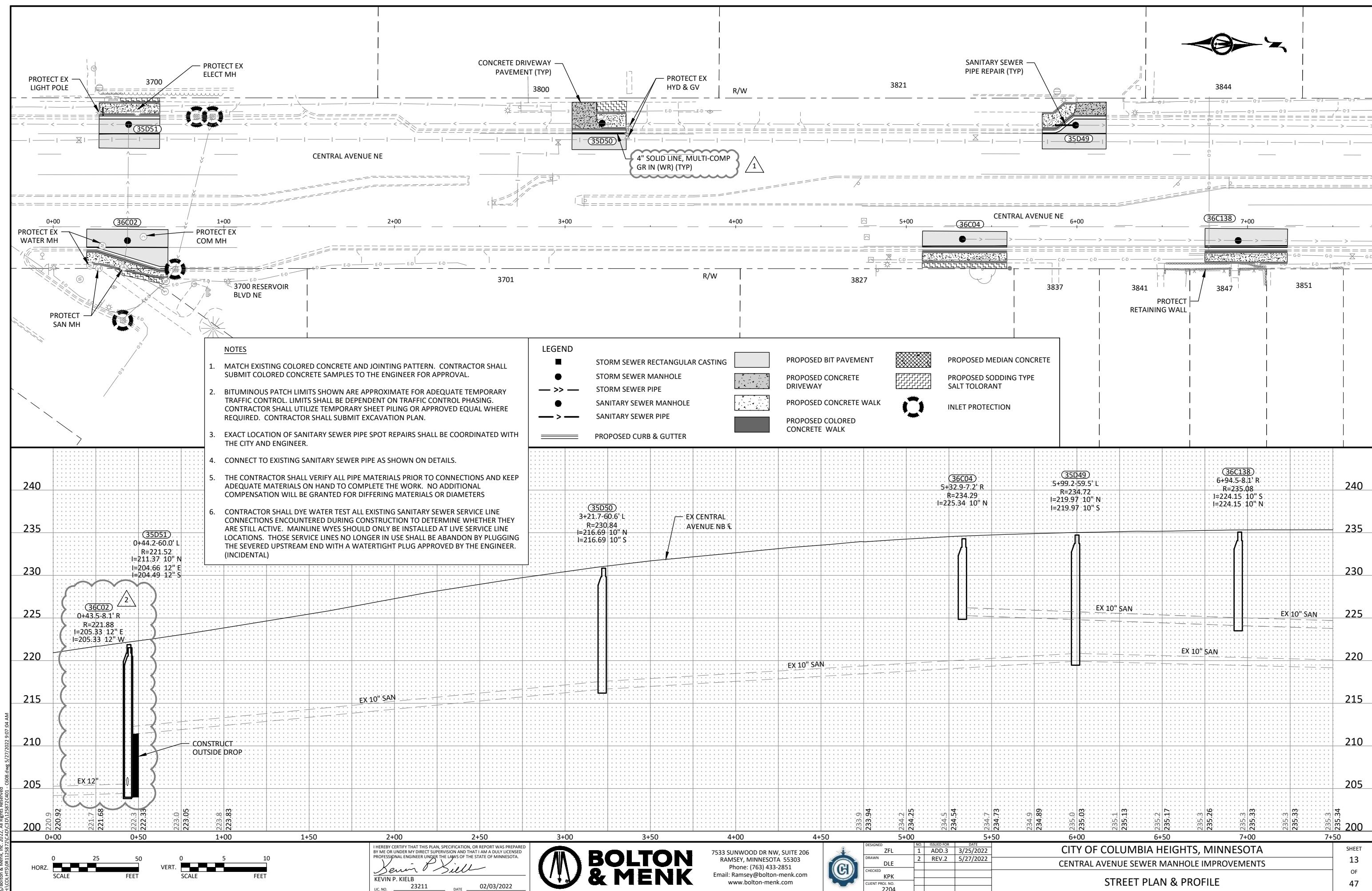


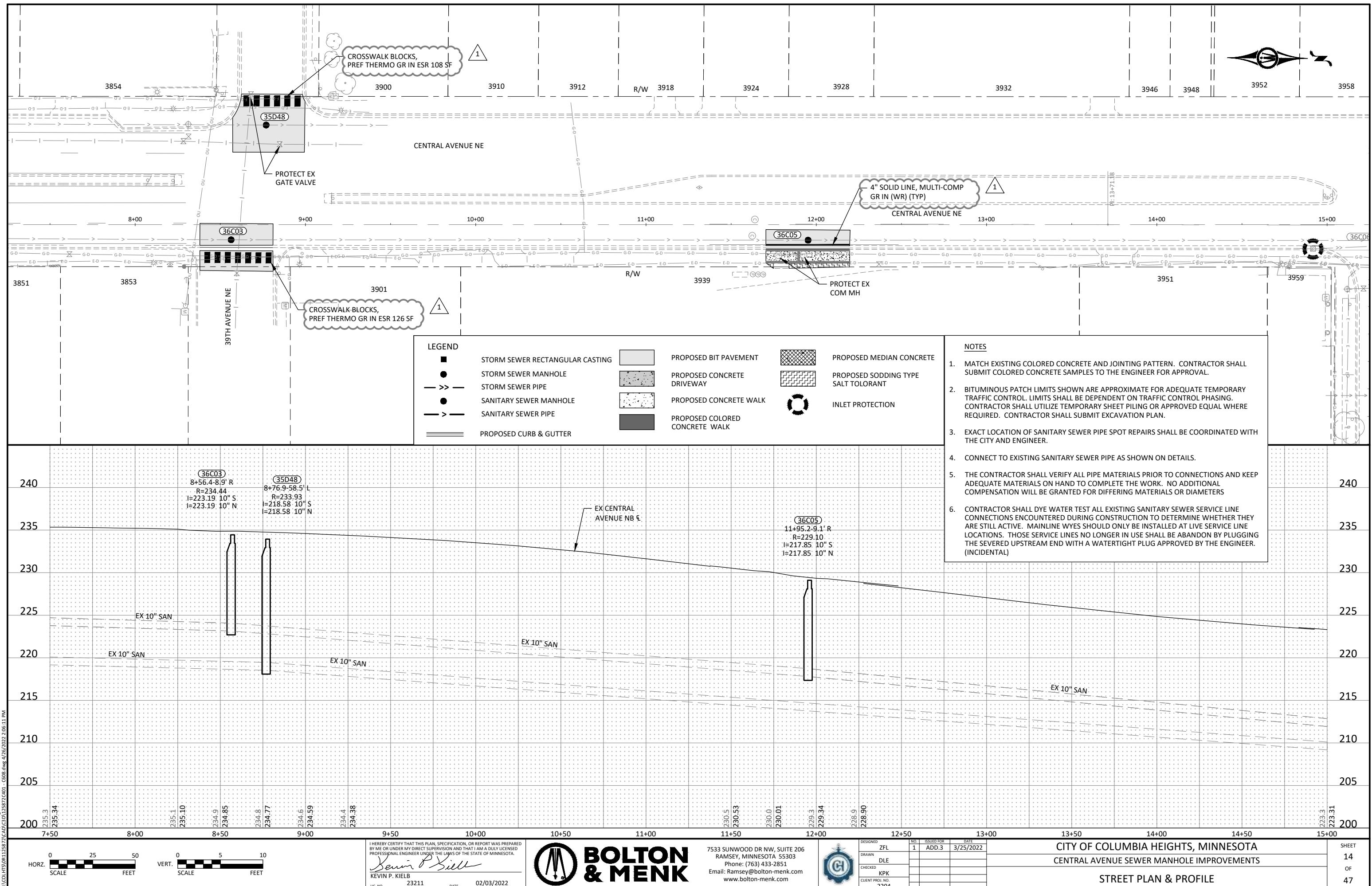
MANHOLE TYPE B THRU I

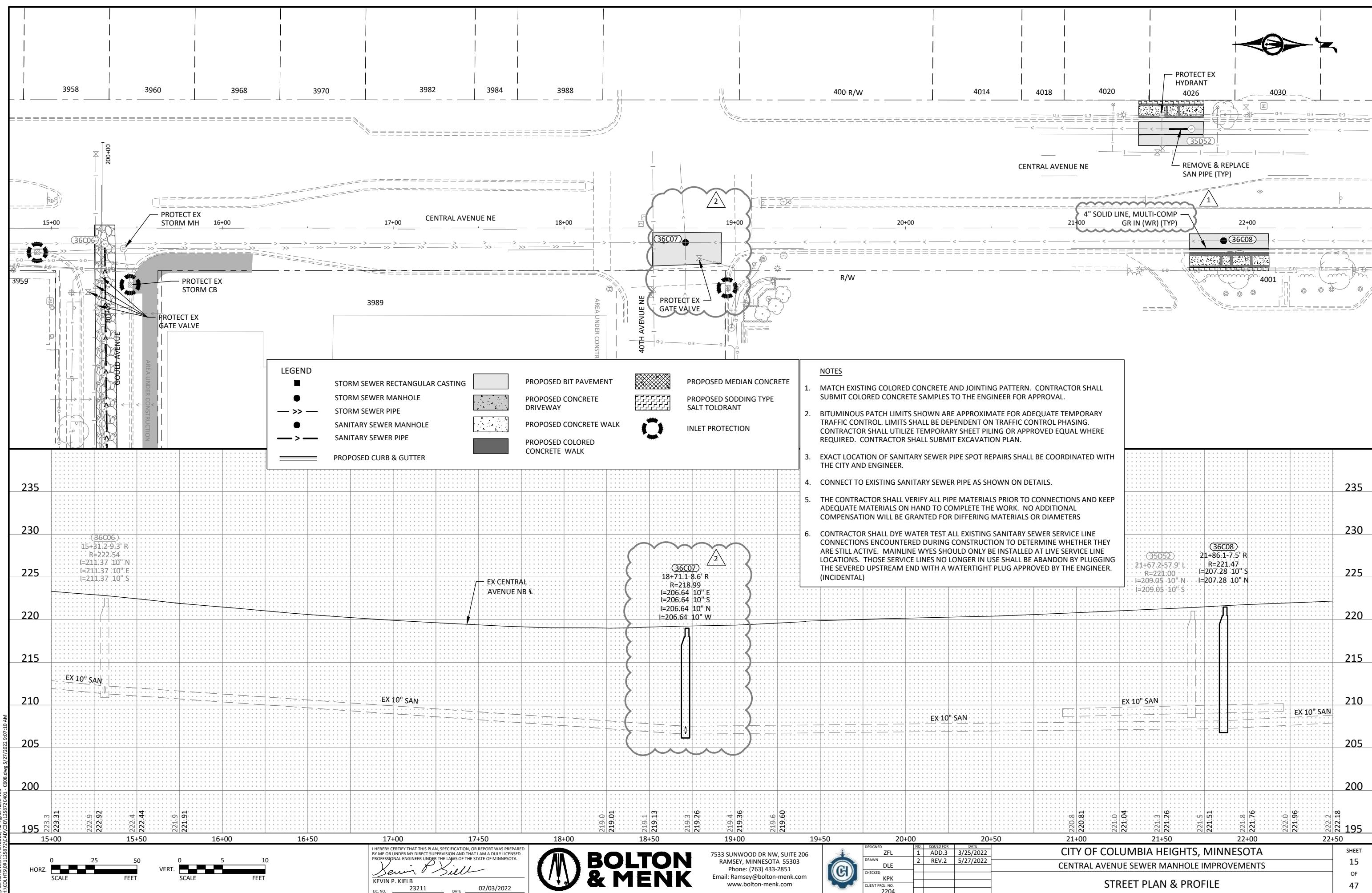
MANHOLE TYPE								
B	C	D	E	F	G	H	I	J
P 48"	60"	66"	72"	78"	84"	96"	120"	
K 14"	13"	13"	13"	13"	13"	9"	9"	12"
T 6"	8"	8"	8"	8"	8"	9"	9"	12"
W 58"	72"	79"	86"	93"	100"	113"	142"	
A 9.5"	15.5"	18.5"	21.5"	24.5"	27.5"	34.5"	46"	

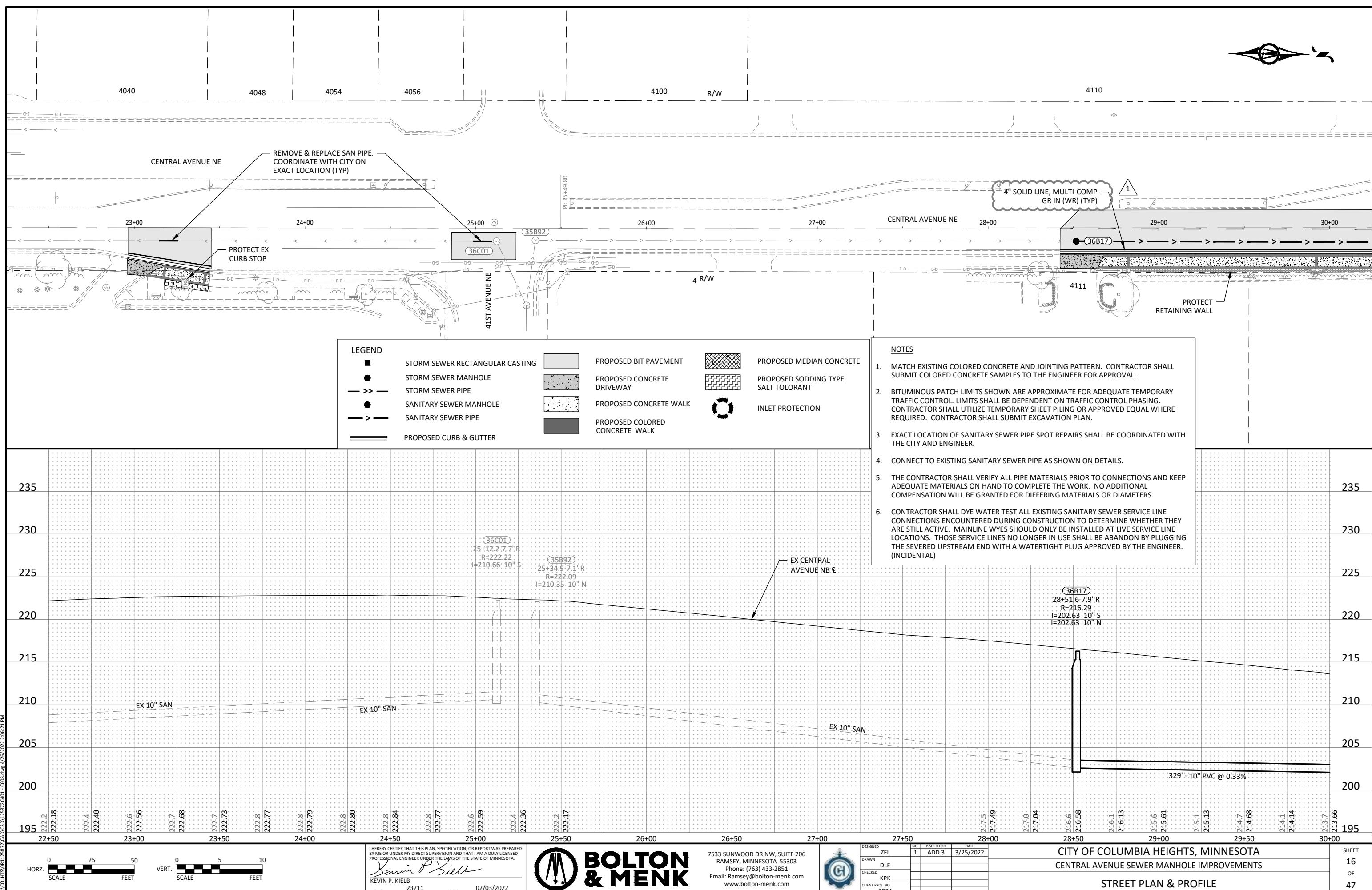
MANHOLE/CATCH BASIN TYPE B-1 THRU I-1

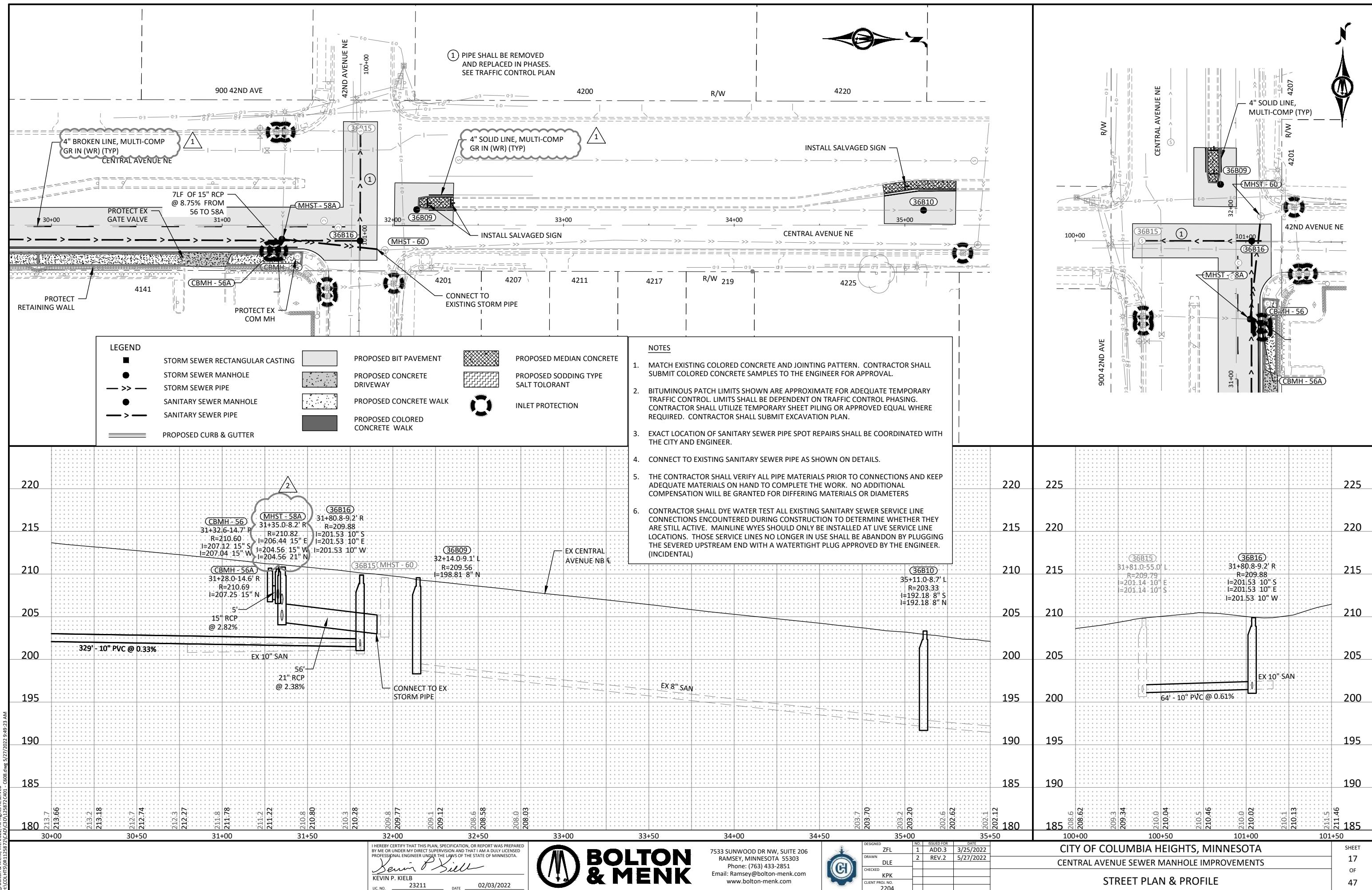


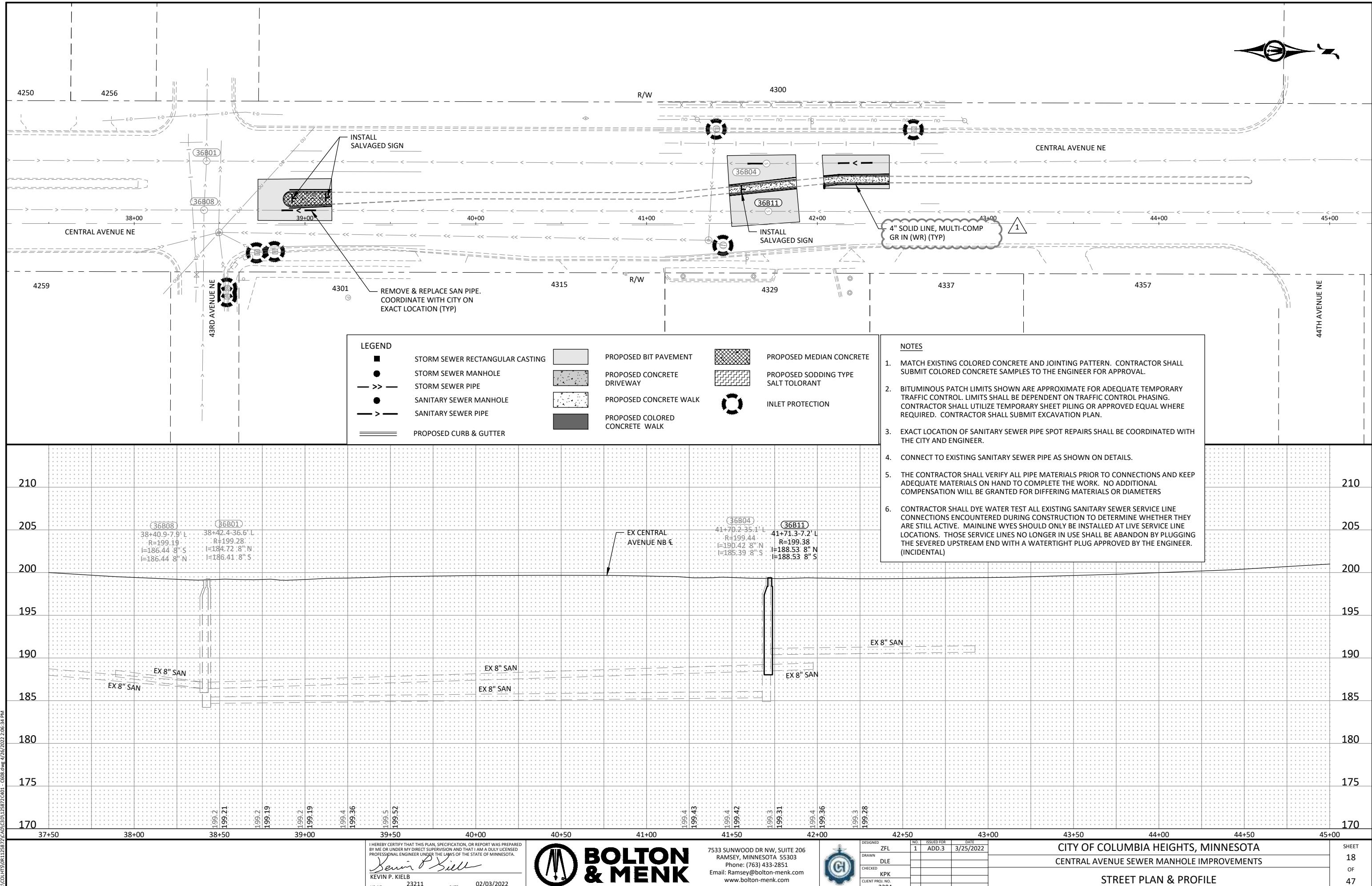


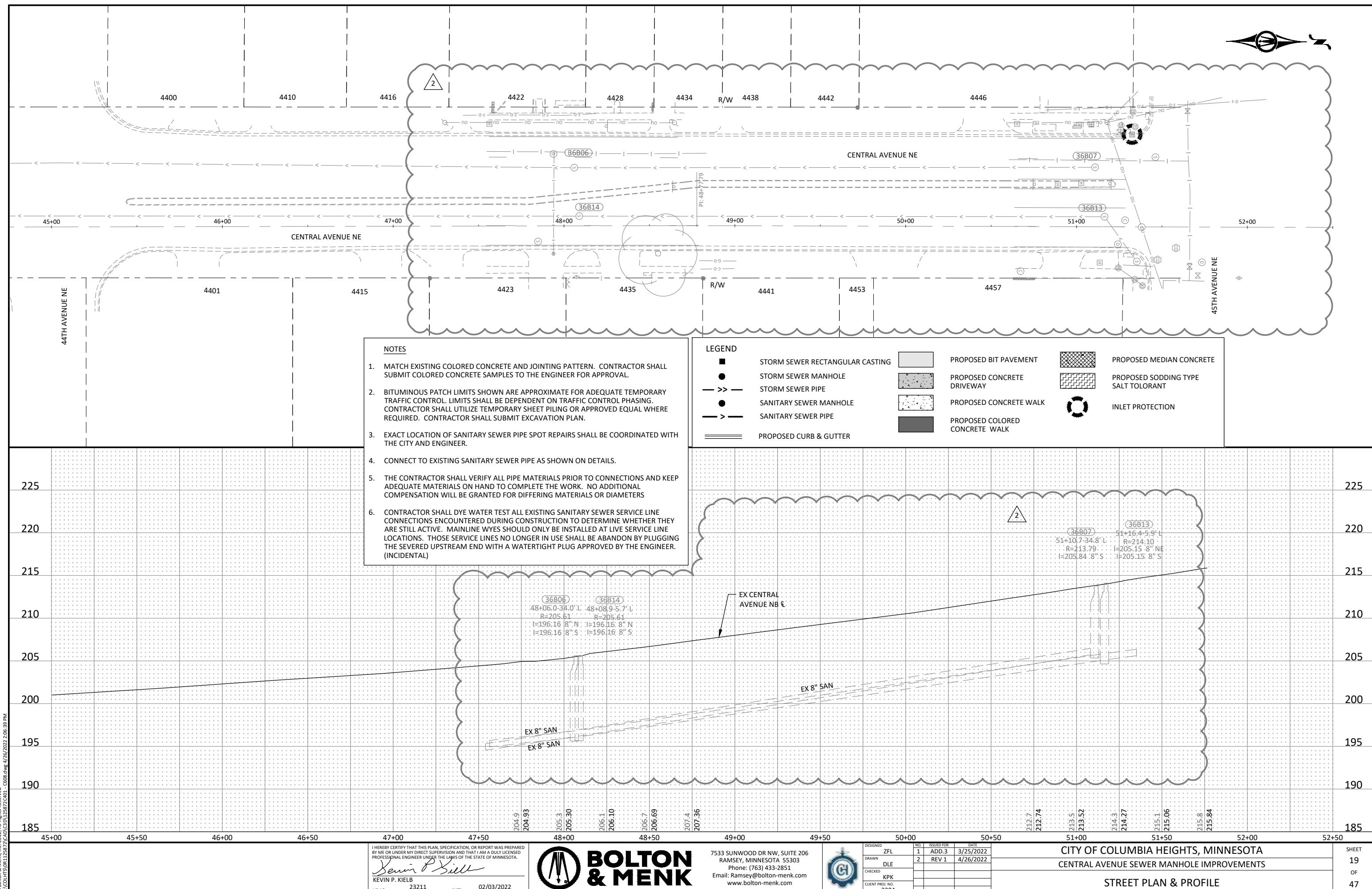


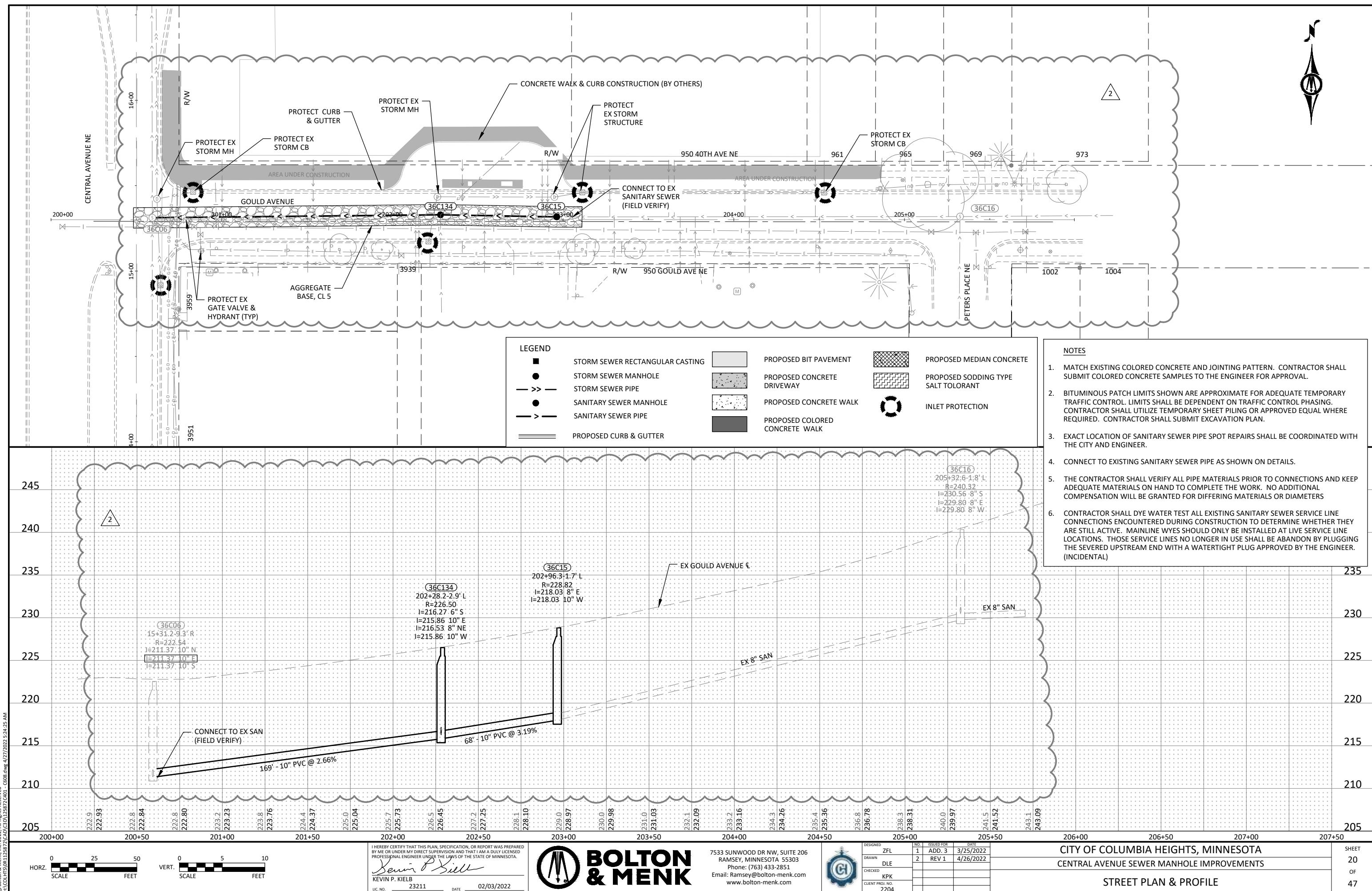












STAGING AND TRAFFIC CONTROL PLAN

NOTES & GUIDELINES

GENERAL INFORMATION:

1. THE CONTRACTOR SHALL FURNISH, INSTALL, AND MAINTAIN THE DEVICES IN THIS TRAFFIC CONTROL PLAN UNLESS OTHERWISE NOTED.
2. FIELD CONDITIONS MAY REQUIRE MODIFICATIONS OF THIS LAYOUT AS DEEMED NECESSARY BY THE ENGINEER.
3. ALL DISTANCES ARE APPROXIMATE.
4. THE CONTRACTOR IS RESPONSIBLE FOR PROTECTING ANY WORK AREAS NEAR TRAFFIC IN ACCORDANCE WITH THE MN MUTCD.
5. THE CONTRACTOR SHALL MAINTAIN ACCESS TO ALL RESIDENCES AND BUSINESSES AT ALL TIMES DURING CONSTRUCTION. (NOT SHOWN IN THE PLANS)
6. SIGN PLACEMENTS SHALL NOT OBSTRUCT EXISTING SIGNS.
7. ALL TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE MOST RECENT EDITION OF THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, INCLUDING "FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS."
8. ALL TRAFFIC CONTROL DEVICES PROVIDED BY THE CONTRACTOR FOR TRAFFIC CONTROL DURING CONSTRUCTION SHALL REMAIN THE PROPERTY OF THE CONTRACTOR AND SHALL BE REMOVED FROM THE JOB SITE WHEN THEY ARE NO LONGER NEEDED.
9. THE CONTRACTOR IS RESPONSIBLE FOR PROTECTING ANY WORK AREAS IN ACCORDANCE WITH THE MnMUTCD.
10. THE USE OF TEMPORARY ORANGE CONSTRUCTION FENCING MAY BE REQUIRED BY THE ENGINEER TO COMPLETELY CLOSE OFF ANY SPECIFIC WORK AREA.

SIGNING:

1. ALL TRAFFIC CONTROL DEVICES ON ROADS OPEN TO TRAFFIC THAT ARE NOT CONSISTENT WITH TRAFFIC OPERATION SHALL BE COVERED, REMOVED OR REVISED AS DIRECTED BY THE ENGINEER.
2. WHEN SIGNS ARE PLACED, THEY SHALL BE MOUNTED ON POSTS DRIVEN INTO THE GROUND AT THE PROPER HEIGHT AND LATERAL OFFSET AS SHOWN IN THE "TYPICAL TEMPORARY SIGN FRAMING & INSTALLATION DETAILS" IN THE PLAN. IF THIS IS NOT POSSIBLE, THEY WILL BE MOUNTED ON PORTABLE SUPPORTS AS APPROVED BY THE ENGINEER. WHEN THE SIGNS ARE REMOVED THE SIGN POSTS SHALL ALSO BE REMOVED AS SOON AS POSSIBLE.
3. ALL ORANGE WARNING AND ORANGE GUIDE SIGNS SHALL BE FABRICATED WITH SIGN SHEETING MATERIAL AS LISTED ON THE MnDOT APPROVED PRODUCT LIST FOR "SHEETING FOR RIGID TEMPORARY WORK ZONE SIGNS, DELINEATORS, AND MARKERS".
4. BARRICADES SHALL BE TYPE III AND FABRICATED WITH SIGN SHEETING MATERIAL AS LISTED ON THE MnDOT APPROVED PRODUCT LIST FOR "BARRICADE SHEETING".
5. THE CONTRACTOR SHALL COORDINATE THE PLACEMENT OF THE FINAL SIGNS TO ASSURE THAT THE FINAL SIGNS ARE PLACED AS NEEDED, OR PROVIDE TEMPORARY SIGNING AT THEIR EXPENSE UNTIL THE FINAL SIGNING IS PLACED.
6. STAGING AND TRAFFIC CONTROL SIGNAGE (F&I, REMOVE, ECT.) SHALL BE INCLUDED IN LUMP SUM TRAFFIC CONTROL.
7. THE ACTUAL NUMBER OF BARRICADES REQUIRED AT EACH LOCATION MAY VARY DEPENDING UPON THE SIZE OF BARRICADES USED, THE WIDTH OF THE ROAD CLOSURE AND THE MOVEMENT OF LOCAL AND CONSTRUCTION TRAFFIC.
8. ALL SIGN POSTS USED FOR CONSTRUCTION SIGNS SHALL BE REMOVED AND THE SURROUNDING GROUND RETURNED TO ITS ORIGINAL CONDITION WHEN SIGNS ARE NO LONGER NEEDED.

PAVEMENT MARKING:

1. THE ENGINEER'S INVOLVEMENT IN THE APPLICATION OF THE MATERIAL SHALL BE LIMITED TO FIELD CONSULTATION AND INSPECTION. THE CONTRACTOR 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. MASK ANY CONFLICTING PAVEMENT MARKINGS AS DIRECTED BY THE ENGINEER.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE LOCATION AND PLACEMENT OF TEMPORARY AND FINAL STRIPING.

CONSTRUCTION INFORMATION SIGNING:

1. THE CONTRACTOR SHALL USE CONSTRUCTION INFORMATION SIGNING AS SHOWN IN THE PLAN AND WHICH ARE TO BE USED AS FOLLOWS:
2. G20-X2 WORK ZONE ADVANCE NOTICE SIGNS WITH THE CORRECT STARTING DATE DISPLAYED BEFORE WORK BEGINS. ONCE WORK BEGINS, THE START DATE LEGEND SHALL BE COVERED BY THE SUGGESTED PLAQUE CONTAINED IN THIS PLAN.
3. CONSTRUCTION INFORMATION SIGNING NOT VISIBLE TO THE MOTORING PUBLIC ONCE WORK BEGINS WILL BE MOVED BY THE CONTRACTOR TO A SITE IN ADVANCE OF THE WORK ZONE OR CLOSURE AS DIRECTED BY THE PLAN OR PROJECT ENGINEER.

BARRIER AND DELINEATION:

1. PLACE AND MAINTAIN PORTABLE BARRIER DELINEATORS ANY TIME TRAFFIC IS WITHIN 10' OF BARRIER. DELINEATORS WILL EACH HAVE A MINIMUM OF 24 SQ. IN. OF RETROREFLECTIVE SURFACE ON BOTH SIDES PLACED AT 25" SPACING ON TOP OF THE BARRIER. SIDE MOUNTED PORTABLE BARRIER DELINEATORS WILL HAVE A MINIMUM OF 12 SQ. IN. OF RETROREFLECTIVE SURFACE AREA AND BE PLACED AT 12.5" SPACING. IF A SMALLER APPROVED BARRIER DELINEATOR IS USED IT SHALL BE A MINIMUM OF 6 SQ. IN. OF RETROREFLECTIVE SURFACE AREA AND BE PLACED ON BOTH SIDES AT 6.25" SPACING. TEMPORARY BARRIER DELINEATOR COLOR SHALL MATCH APPLICABLE PAVEMENT MARKINGS.
2. BARRIER DELINEATORS TO BE PAID FOR UNDER PORTABLE PRECAST CONCRETE BARRIER.

TRAFFIC CONTROL NOTES:

1. PLACE "END DETOUR" SIGNS PER PLAN. THESE SHALL BE PLACED AT THE BEGINNING OF CONSTRUCTION AND SHOULD STAY INPLACE UNTIL ALL WORK HAS BEEN COMPLETED.
2. ALL TRAFFIC SIGNALS TO MAINTAIN NORMAL OPERATION

TRAFFIC CONTROL NOTES:

1. TRAFFIC SIGNAL REVISIONS FOR CONSTRUCTION OPERATIONS TO BE PAID FOR UNDER LUMP SUM TRAFFIC CONTROL
2. FURNISHING, INSTALLING, TESTING, AND MARKING OPERATIONAL NEW LOOP DETECTORS TO BE PAID FOR UNDER "RIGID PVC LOOP DETECTORS 6' X 6'".

THIS WORK SHALL CONSIST OF PROVIDING, INSTALLING, AND MAKING OPERATIONAL NEW LOOP DETECTORS DUE TO MILLING AND ROADWAY CONSTRUCTION IN ACCORDANCE WITH THE APPLICABLE PROVISIONS OF MNDOT 2565; STANDARD PLATE 8132; WITH THE CURRENT EDITION OF THE NATIONAL ELECTRICAL CODE; WITH THE PLANS; AS DIRECTED BY THE ENGINEER; AND AS FOLLOWS:

THE CONTRACTOR SHALL PROVIDE AND INSTALL LOOP DETECTOR SPLICE ENCAPSULATION KITS.

MNDOT APPROVED SPLICE ENCAPSULATION KITS ARE LISTED ON MNDOT'S APPROVED/QUALIFIED PRODUCTS LIST FOR SIGNALS:
HTTP://WWW.DOT.STATE.MN.US/PRODUCTS/INDEX.HTML

THE CONTRACTOR SHALL INSTALL LOOP DETECTORS IN ACCORDANCE WITH STANDARD PLATE 8132; AS MARKED BY THE ENGINEER; AND WITH THE APPLICABLE PROVISIONS OF MNDOT 2565.3G.

THE LOOP DETECTOR ROADWAY CONDUCTORS AND THE LOOP DETECTOR LEAD-IN CABLE CONDUCTORS SHALL BE PROPERLY PREPARED AND CLEANED BEFORE SPLICING. PRIOR TO INSTALLING THE APPROVED LOOP DETECTOR SPLICE KIT, THE CONTRACTOR SHALL SOLDER THE ENDS OF THE LOOP DETECTOR LEAD-IN CONDUCTORS TO THE ROADWAY LOOP DETECTOR CONDUCTORS AND SHALL PROVIDE AND INSTALL AN APPROPRIATELY SIZED WIRE NUT TO THE SOLDERED ENDS PRIOR TO INSTALLATION OF THE SPLICE KIT.

SPLICE KITS SHALL BE INSTALLED IN HANDBOLES IN SUCH A MANNER AS TO ENSURE THAT EACH SPLICE KIT IS SUSPENDED AND/OR SECURED NEAR THE TOP OF THE HANDBOLE TO THE SATISFACTION OF THE ENGINEER. PLACING SPLICE KITS ON TOP OF THE ELECTRICAL CABLES AND CONDUCTORS IS NOT ACCEPTABLE.

MAKE ALL LOOPS FULLY OPERATIONAL WITHIN ONE (1) DAY AFTER INSTALLATION.

PROVIDE A LOOP DETECTOR TEST REPORT IN ACCORDANCE WITH 2565.3G.2.

INDEX

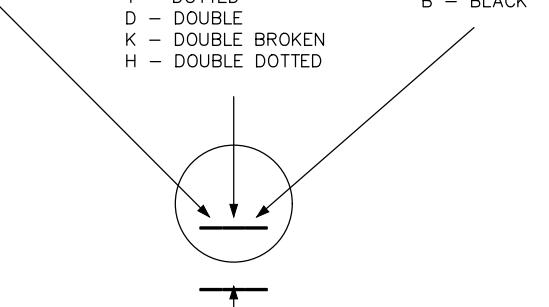
TRAFFIC CONTROL

SHEET NO.	DESCRIPTION
21	TITLE SHEET
22	INDEX MAP
23-27	PHASE 1
28-30	PHASE 2
31-33	PHASE 3
34-36	PHASE 4
37-40	STANDARD DETAILS
41-45	SIGNAL SYSTEM MODIFICATIONS
46-47	DETOUR ROUTE

STRIPING KEY

	TRIANGLE – PAINT
	BOX-PREF TAPE
	PENTAGON – REMOVABLE PREFORMED PLASTIC MARKING

1ST DIGIT WIDTH	2ND DIGIT PATTERN	3RD DIGIT COLOR
4", 8", ETC.	S – SOLID B – BROKEN T – DOTTED D – DOUBLE K – DOUBLE BROKEN H – DOUBLE DOTTED	W – WHITE Y – YELLOW B – BLACK



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

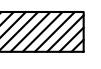
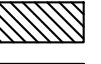
I HEREBY CERTIFY THAT SHEETS 21 THROUGH 47 OF THIS PLAN WERE PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

PRINT NAME: ZACH A. PARSONS LICENSE # 57761

DATE: 02/03/2022 SIGNATURE: 

DESIGNER: BKK

TRAFFIC CONTROL SYMBOLS

	CONCRETE BARRIER		TYPE C BARRICADE = 
	AREA CLOSED TO TRAFFIC / WORK AREA		TYPE A FLASHING WARNING LIGHT
	REMOVALS		PAVEMENT MESSAGE (LEFT ARROW) REMOVABLE PREFORMED PLASTIC MARKING
	SURFACE MOUNTED DELINEATOR		PAVEMENT MESSAGE (ONLY MESSAGE) REMOVABLE PREFORMED PLASTIC MARKING
	TRAFFIC CONTROL SIGN		



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Phone: (763) 433-2851
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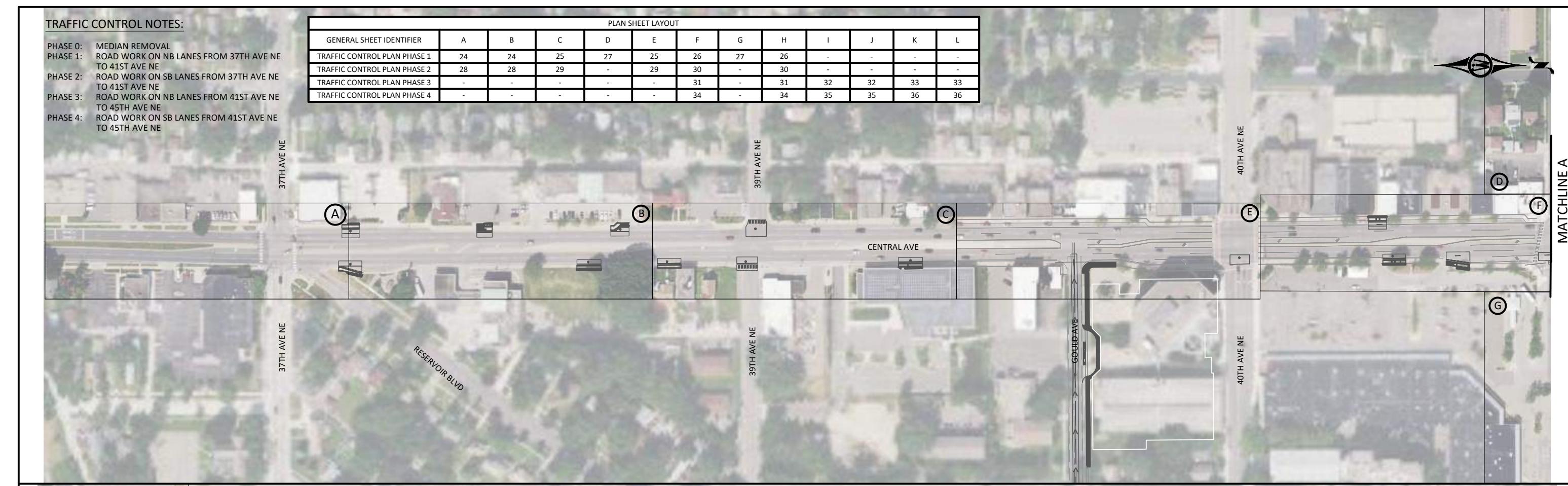


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3/25/2022

CITY OF COLUMBIA HEIGHTS, MINNESOTA
CENTRAL AVENUE SEWER MANHOLE IMPROVEMENTS
TITLE PAGE

SHEET
21
OF
47





0 20 40
HORZ. FEET
SCALE

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Bob Parsons
BOB A. PARSONS
LIC. NO. 57761 DATE 02/03/2022

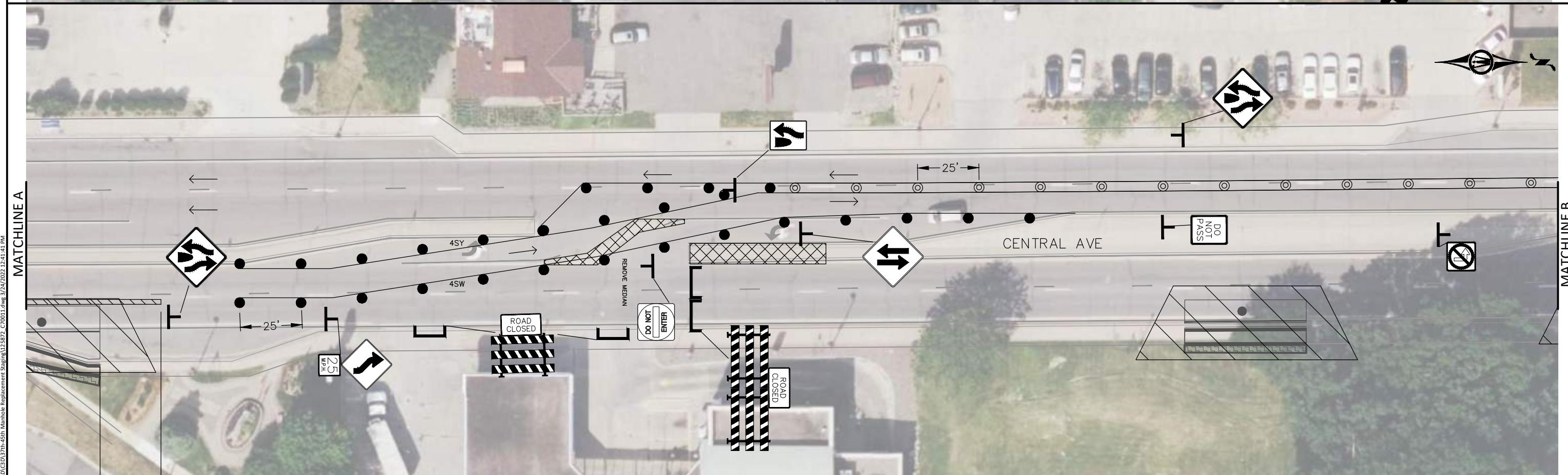
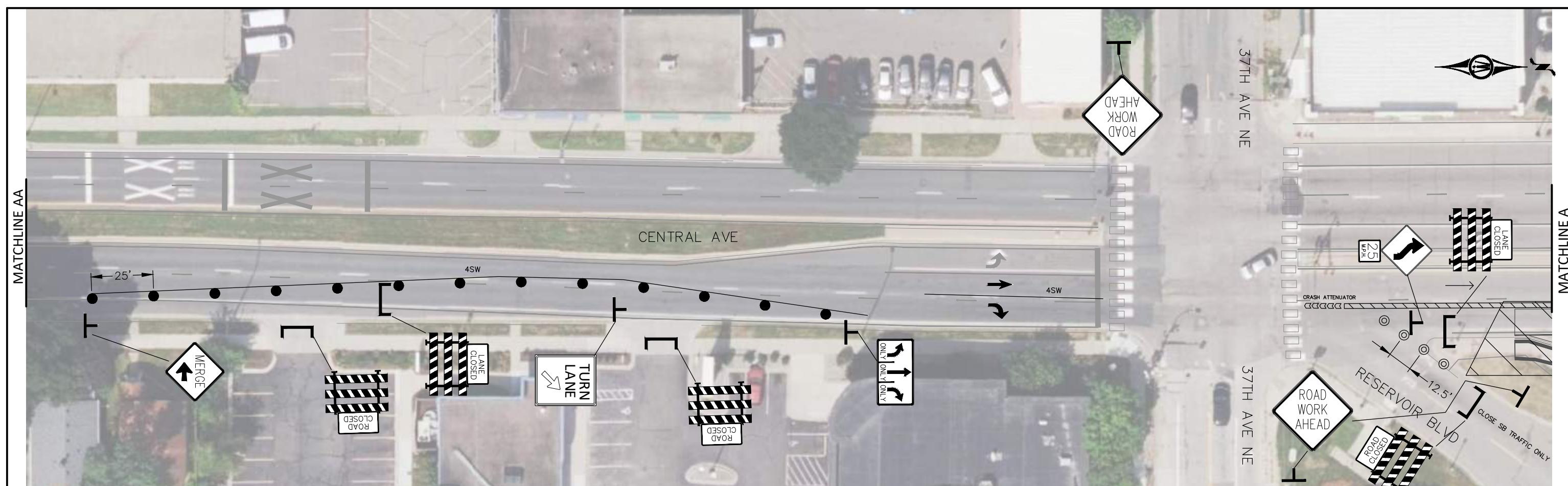


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CITY OF COLUMBIA HEIGHTS, MINNESOTA
CENTRAL AVENUE SEWER MANHOLE IMPROVEMENTS
TRAFFIC CONTROL PLAN PHASE 1



A scale bar for horizontal distance. It features a black horizontal line with a series of white and black square segments. Above the line, the numbers 0, 20, and 40 are printed. Below the line, the word 'HORZ.' is on the left, 'SCALE' is in the center, and 'FEET' is on the right.

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT 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.

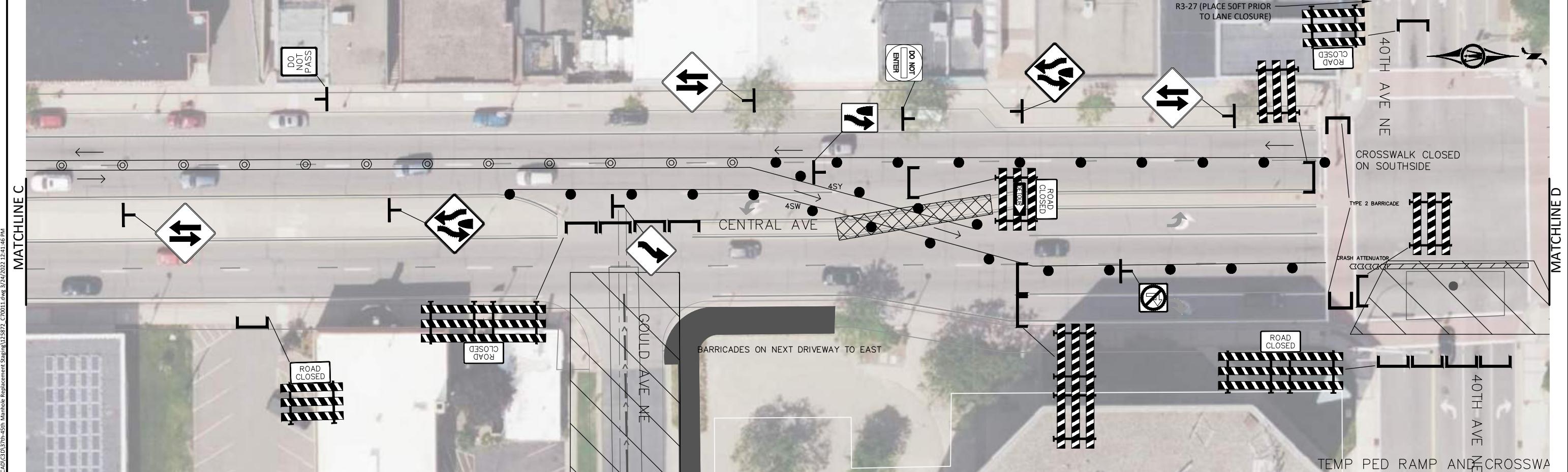
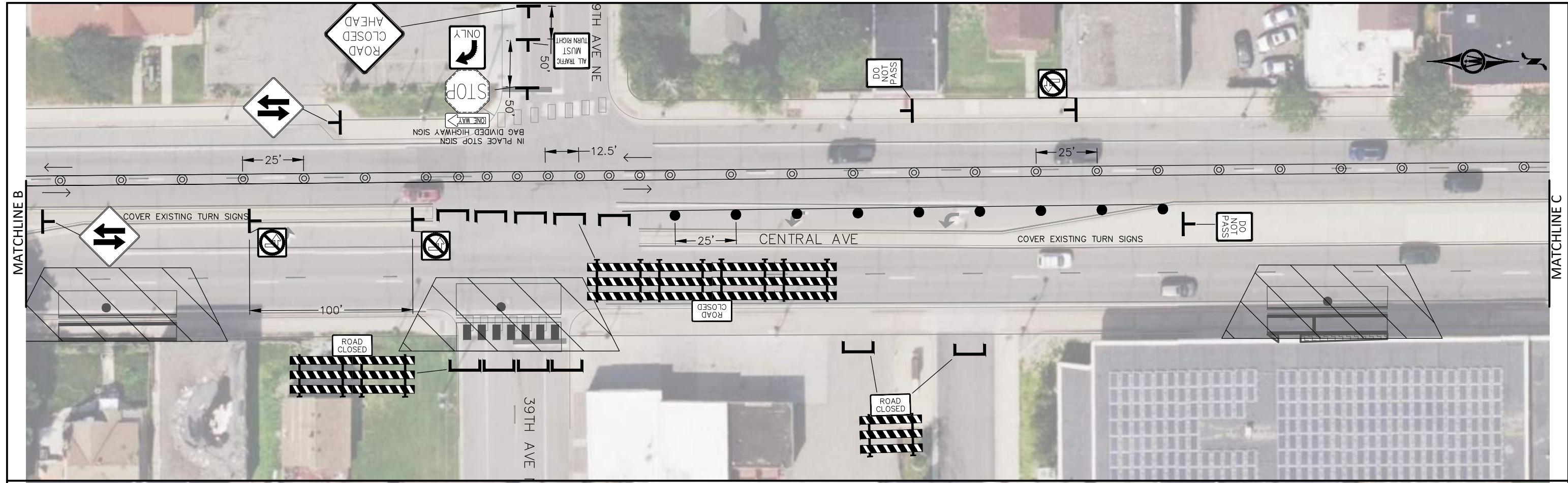
Zach Parsons
ZACH A. PARSONS
57761
02/03/2024



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Email: Ramsey@bolton-menk.com
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CITY OF COLUMBIA HEIGHTS, MINNESOTA
CENTRAL AVENUE SEWER MANHOLE IMPROVEMENTS
TRAFFIC CONTROL PLAN PHASE 1



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A scale bar for horizontal distance. It features a black and white checkered pattern on the left, followed by a long black line. Above the line, the word "HORZ." is written vertically. Below the line, the word "SCALE" is written vertically. Above the line, the number "0" is at the start, "20" is in the middle, and "200" is at the end. Below the line, the word "FEET" is written vertically.

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT 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.

Zach Parsons
ZACH A. PARSONS
LIC. NO. 57761 DATE 02/03/2022

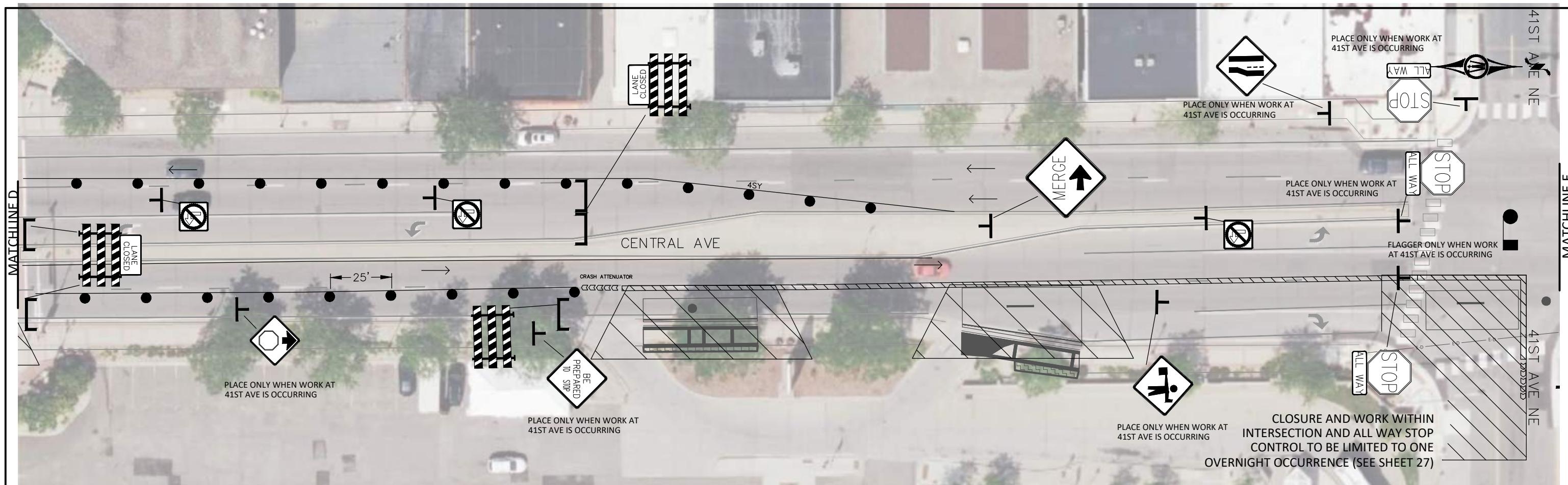


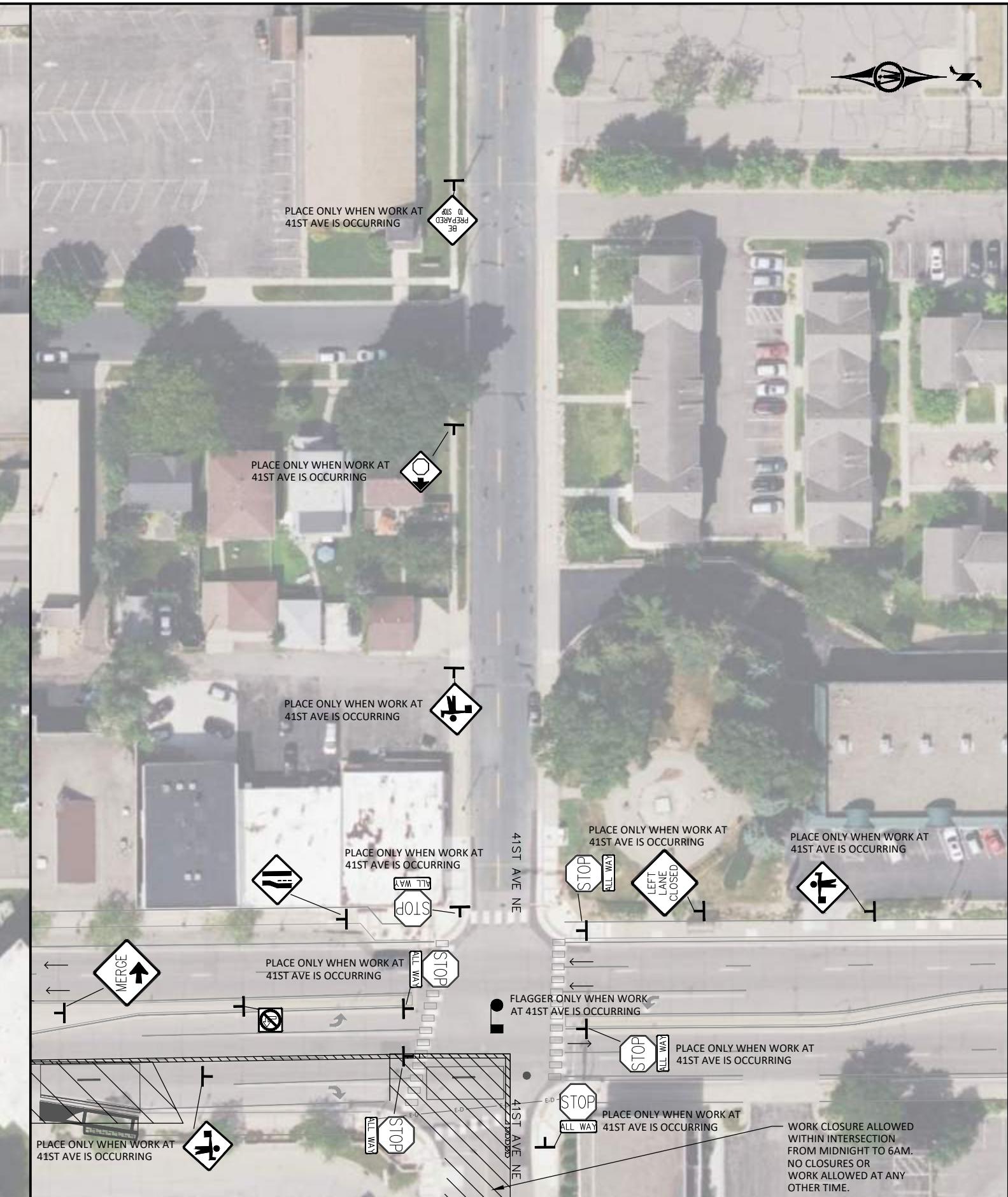
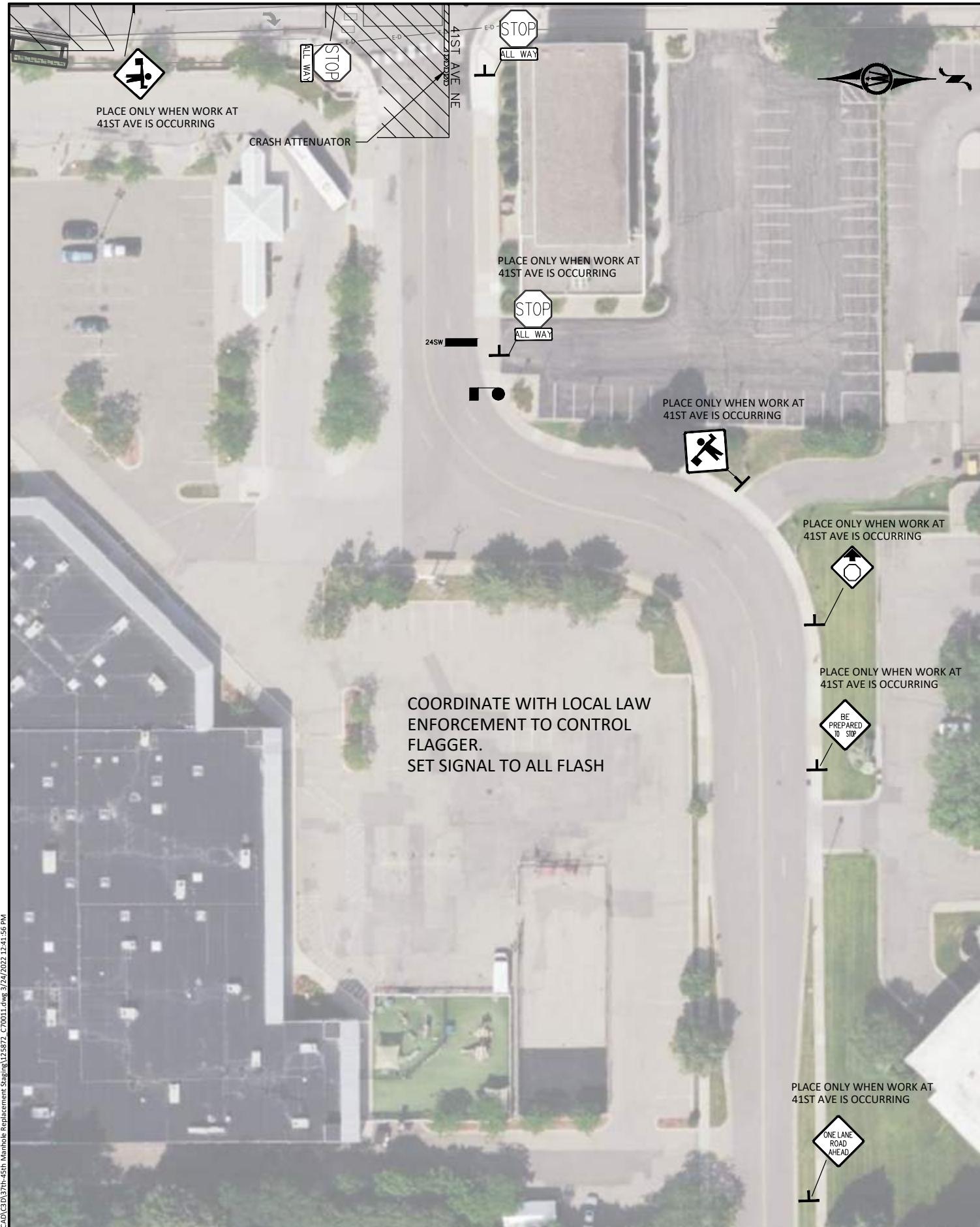
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CITY OF COLUMBIA HEIGHTS, MINNESOTA
CENTRAL AVENUE SEWER MANHOLE IMPROVEMENTS
TRAFFIC CONTROL PLAN PHASE 1

SHEET
25
OF
47





תְּלִימָדָה בְּבִנְיָמִינָה וְבְבִנְיָמִינָה

A horizontal scale bar with a black and white checkered pattern. The word 'HORZ.' is written vertically to its left, and 'SCALE' is written below it. The number '0' is at the left end, '30' is in the middle, and '60' is at the right end. The word 'FEET' is written to the right of the '60'.

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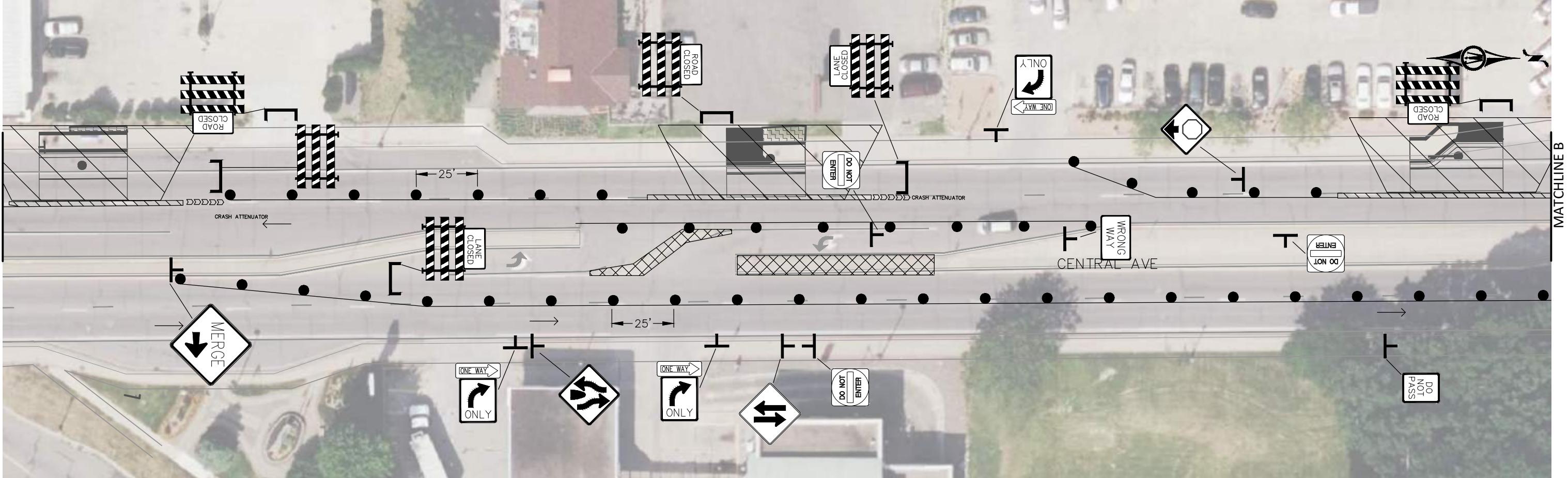
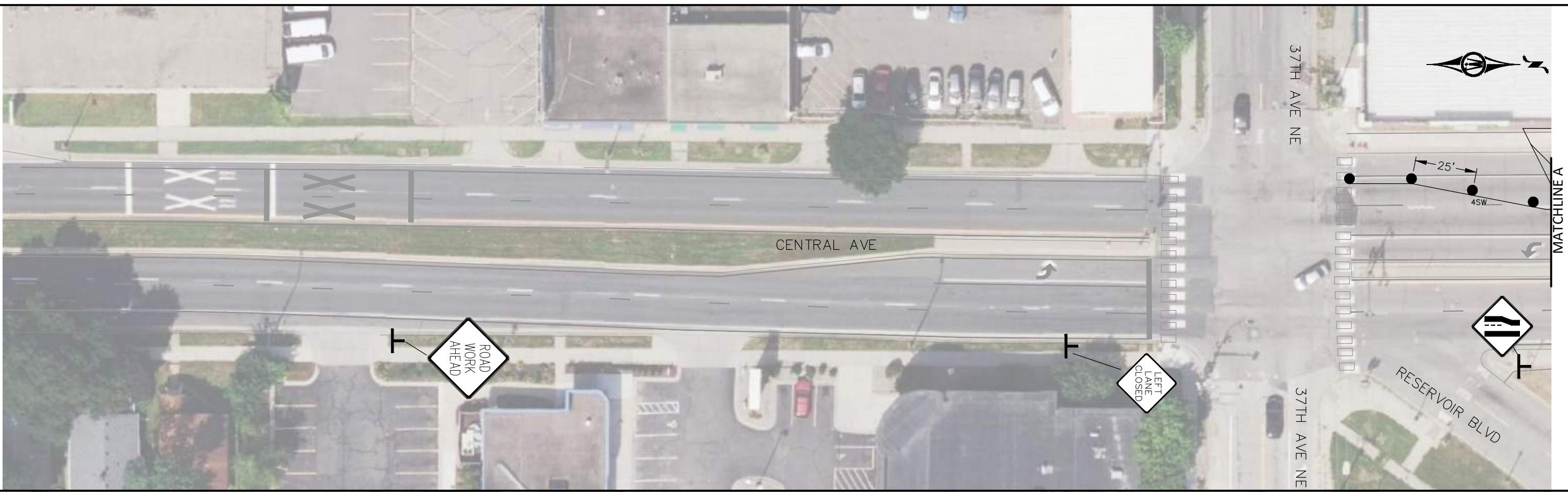
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CENTRAL AVENUE SEWER MANHOLE IMPROVEMENTS
TRAFFIC CONTROL PLAN PHASE 1: 41ST FL

TRAFFIC CONTROL PLAN PHASE 1: 41ST FLAGGER



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A scale bar for horizontal distance. It features a black horizontal line with a series of white and black square segments. Above the line, the numbers 0, 20, and 40 are printed. Below the line, the word 'HORZ.' is on the left, 'SCALE' is in the center, and 'FEET' is on the right.

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ZACH A. PARSONS

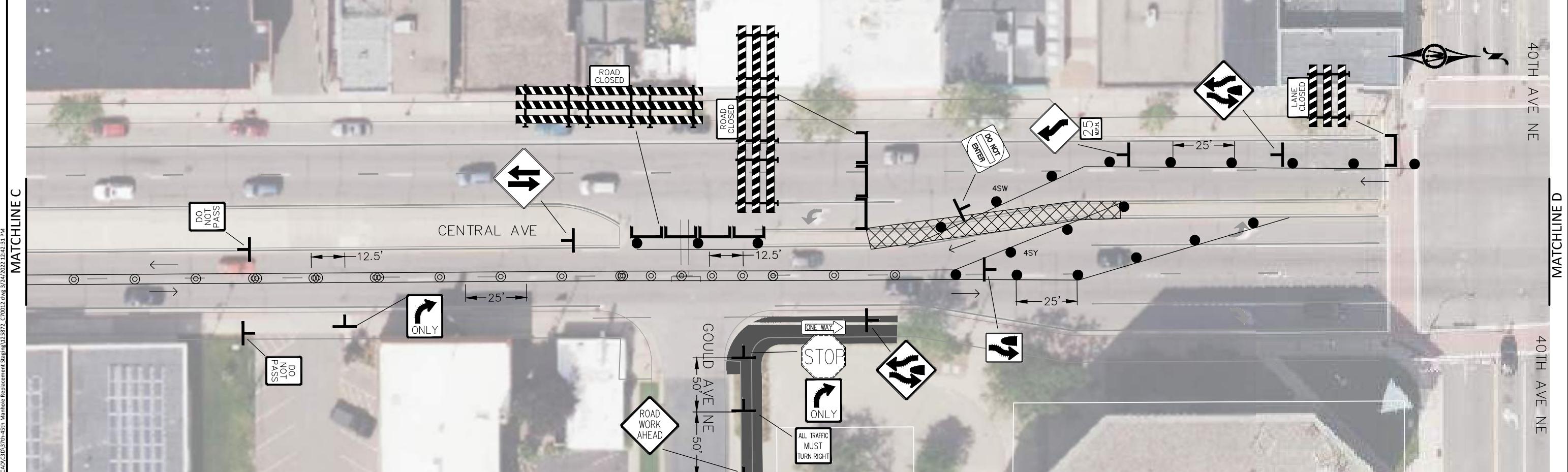
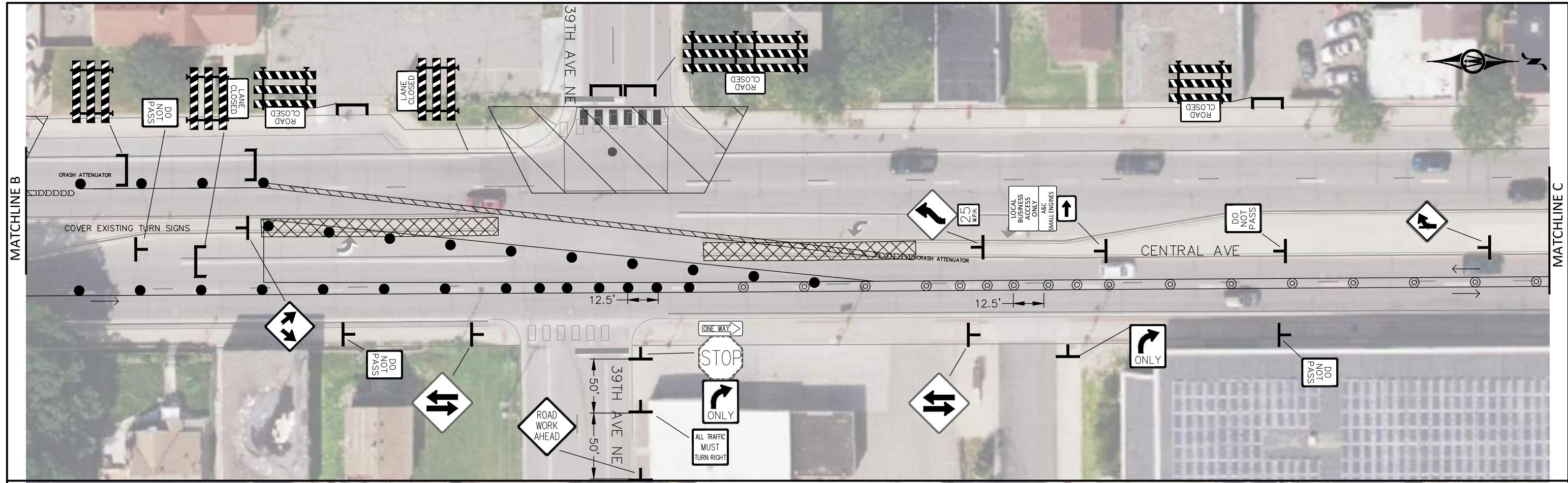


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CITY OF COLUMBIA HEIGHTS, MINNESOTA
CENTRAL AVENUE SEWER MANHOLE IMPROVEMENTS
TRAFFIC CONTROL PLAN PHASE 2

SHEET
28
OF
47



מאת מילא מילר, מילר ושות' – משרד עורכי דין, תל אביב, ירושלים וטהראן | סטטוס: מילר ושות'

HURZ. SCALE FEET

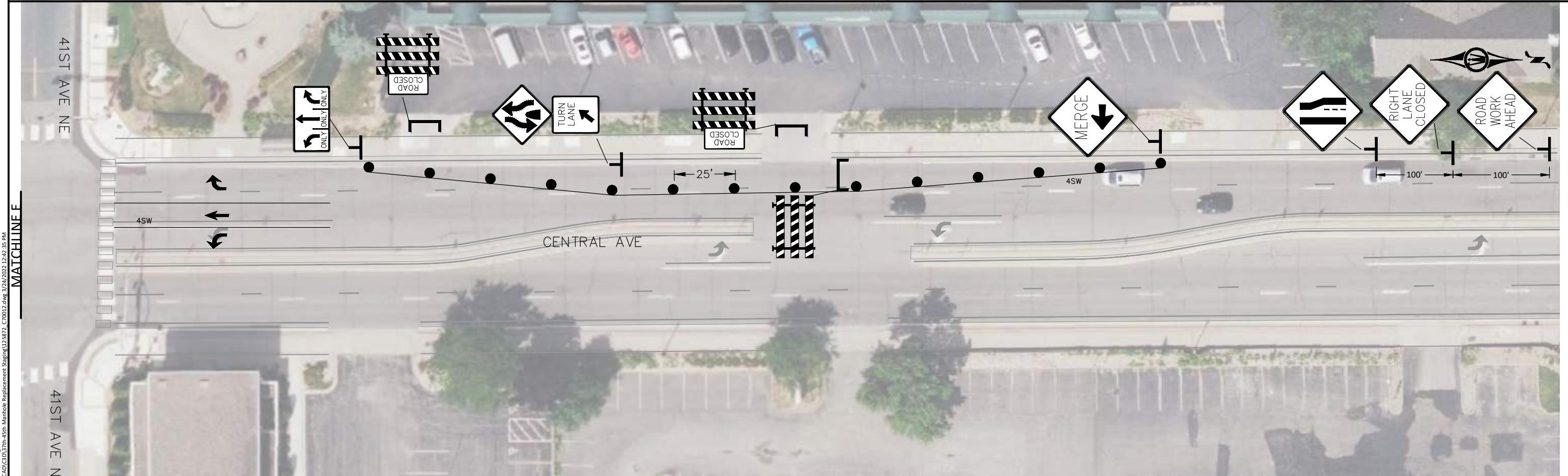
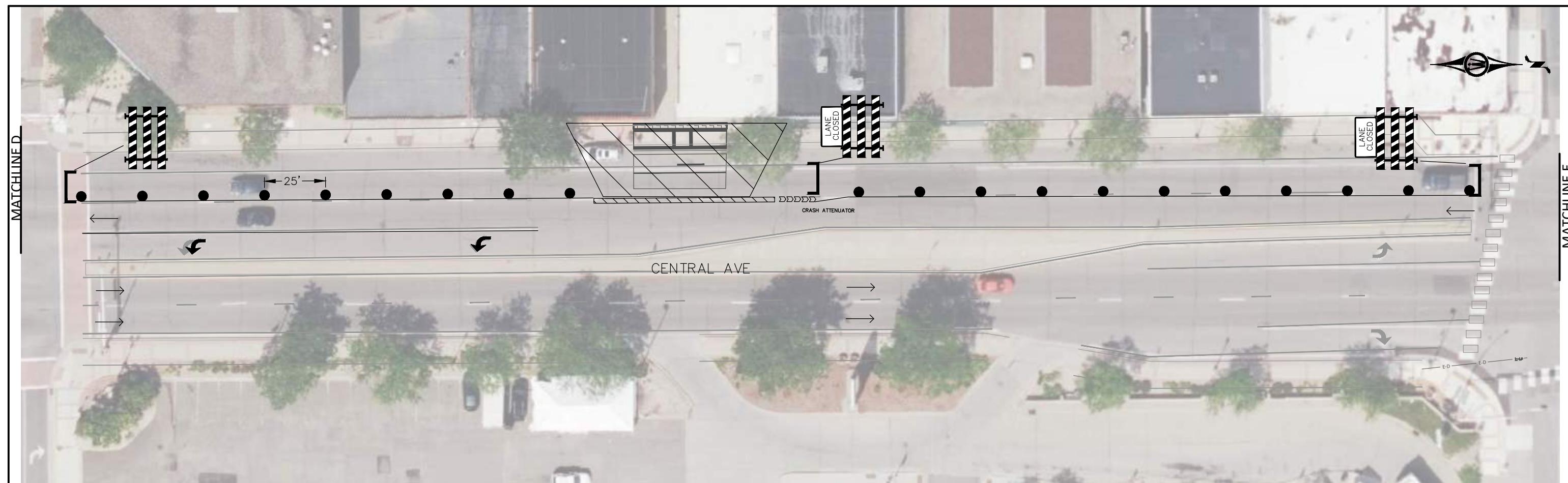
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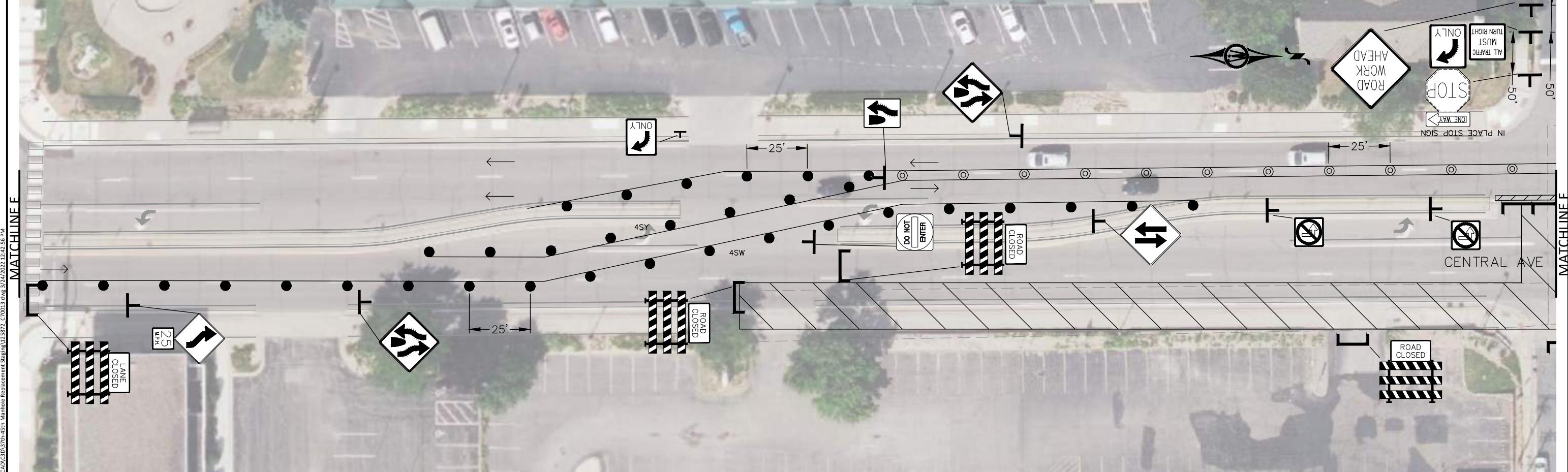
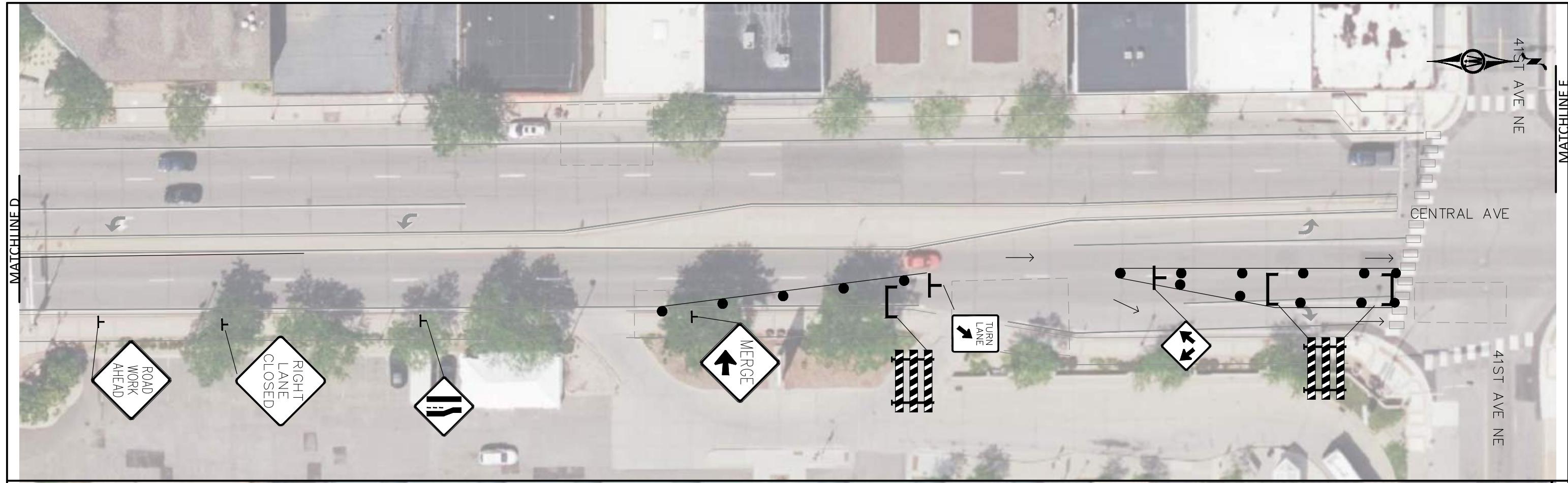


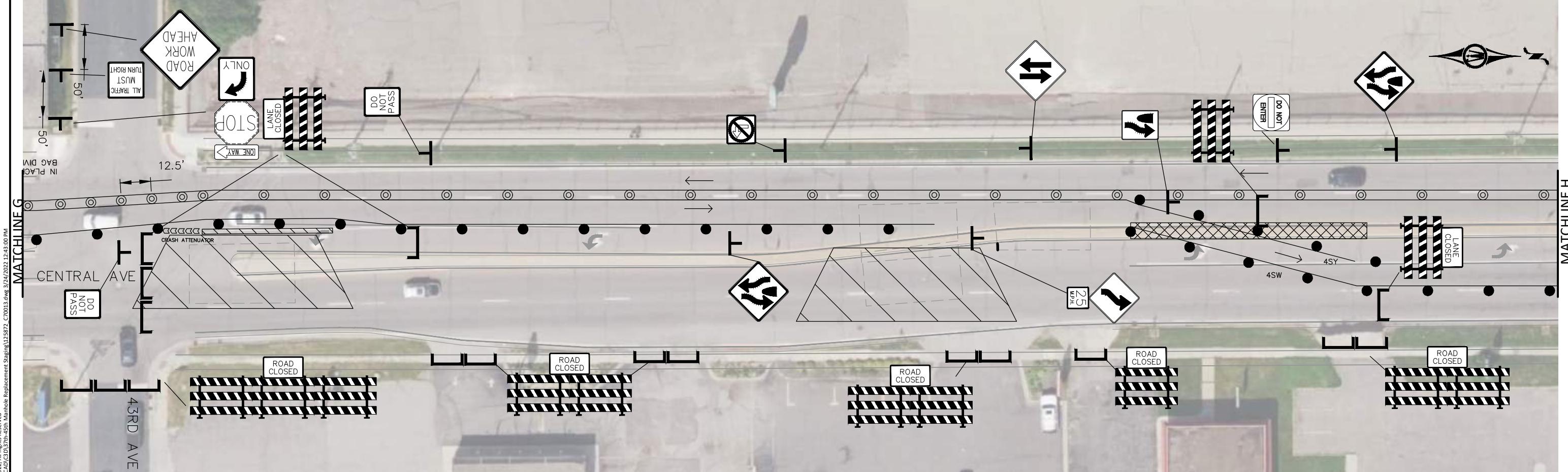
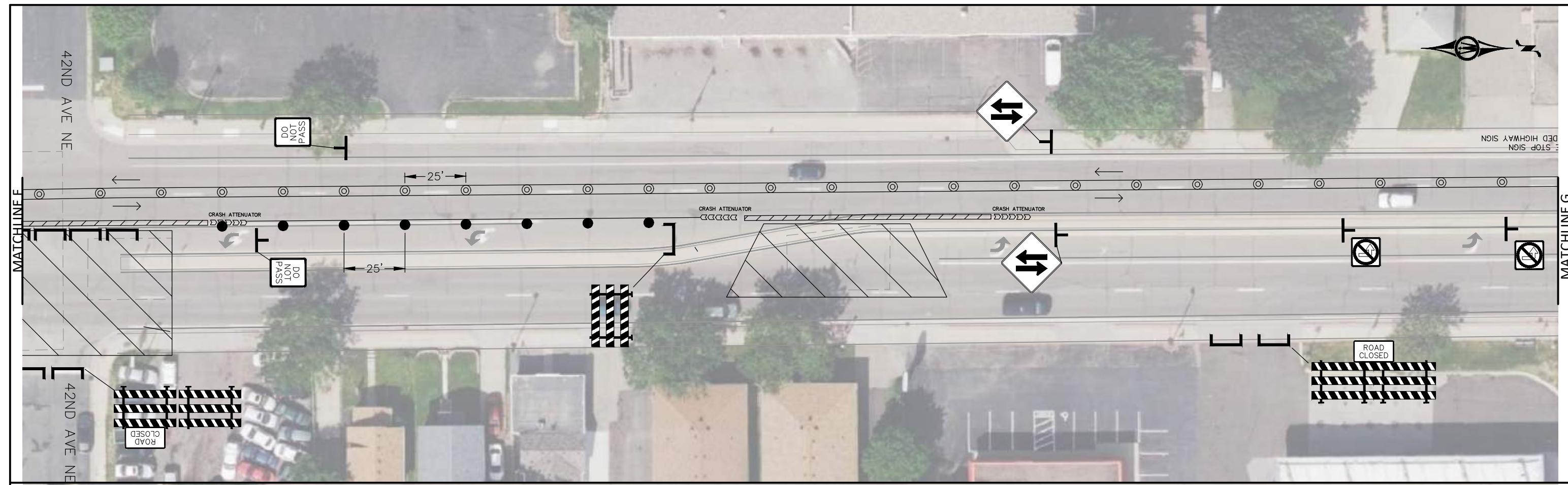
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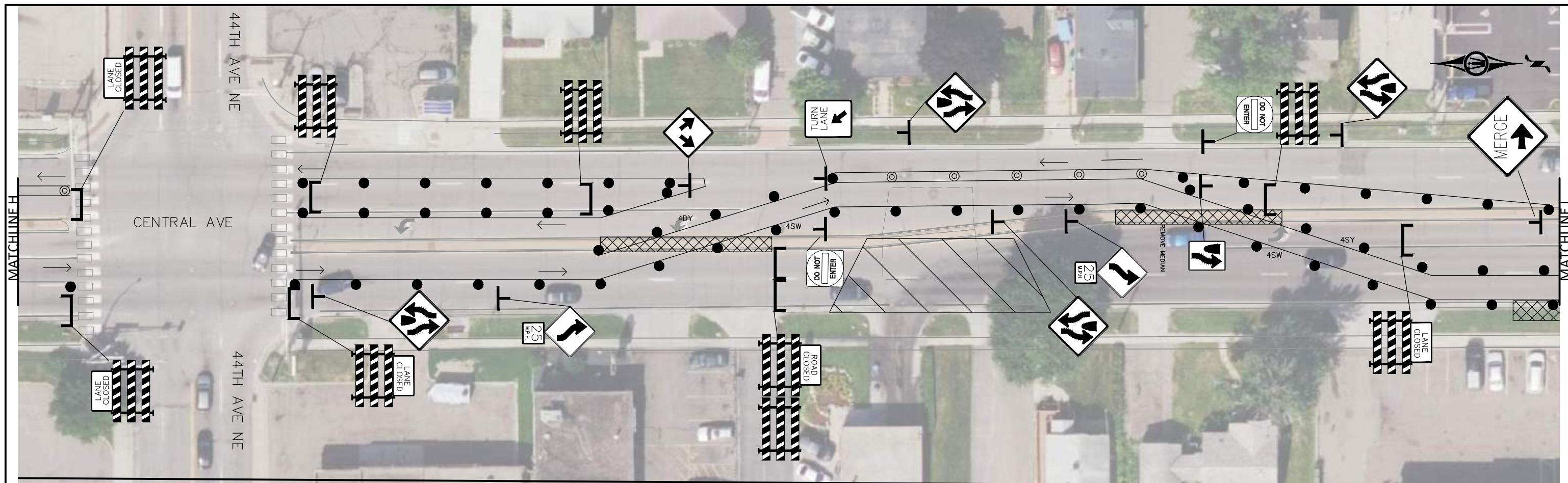
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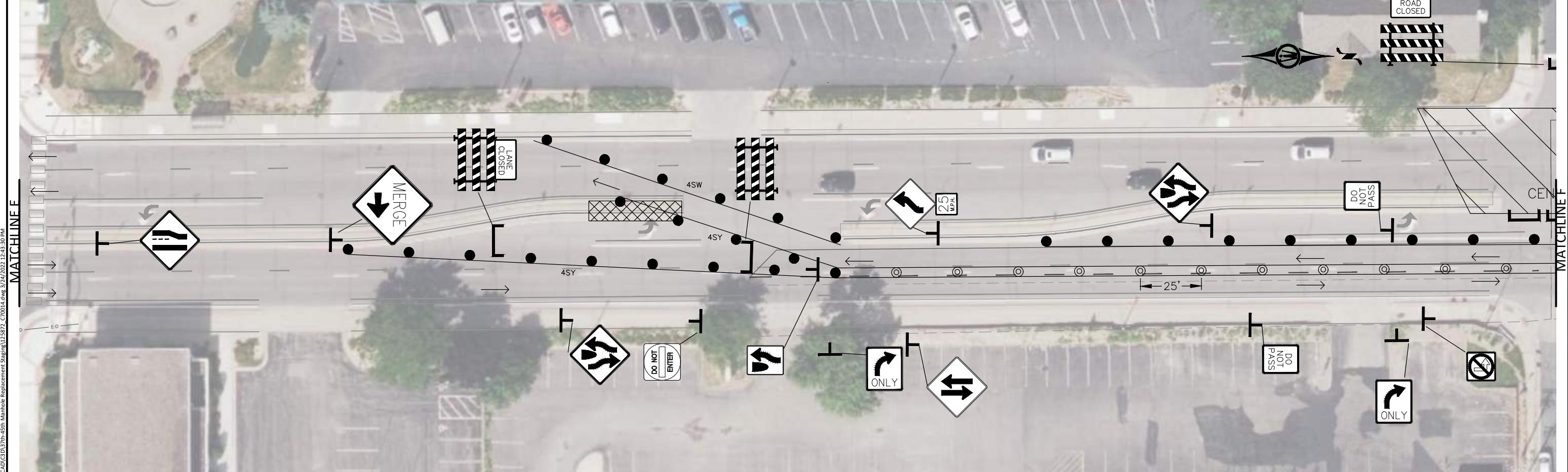
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CENTRAL AVENUE SEWER MANHOLE IMPROVEMENTS
TRAFFIC CONTROL PLAN PHASE 2

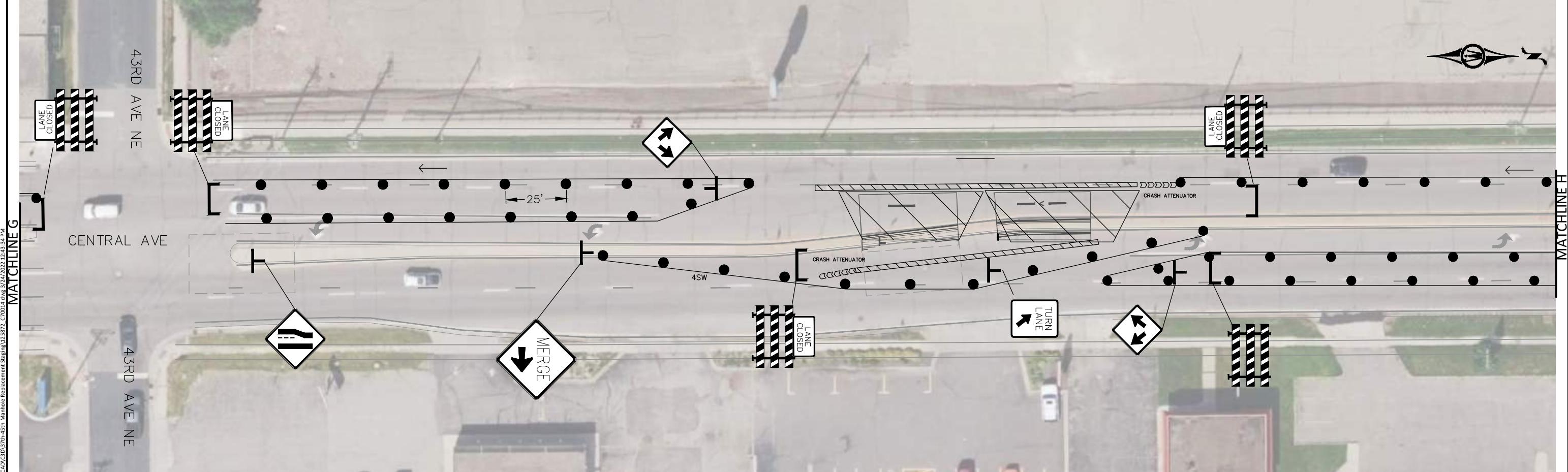
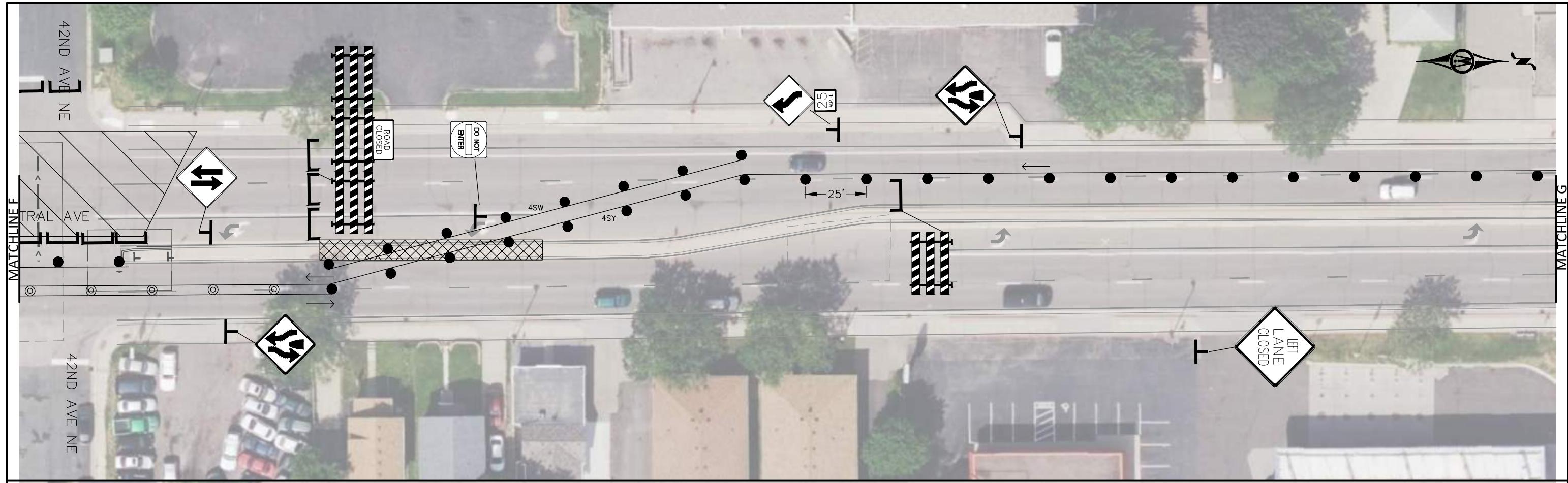


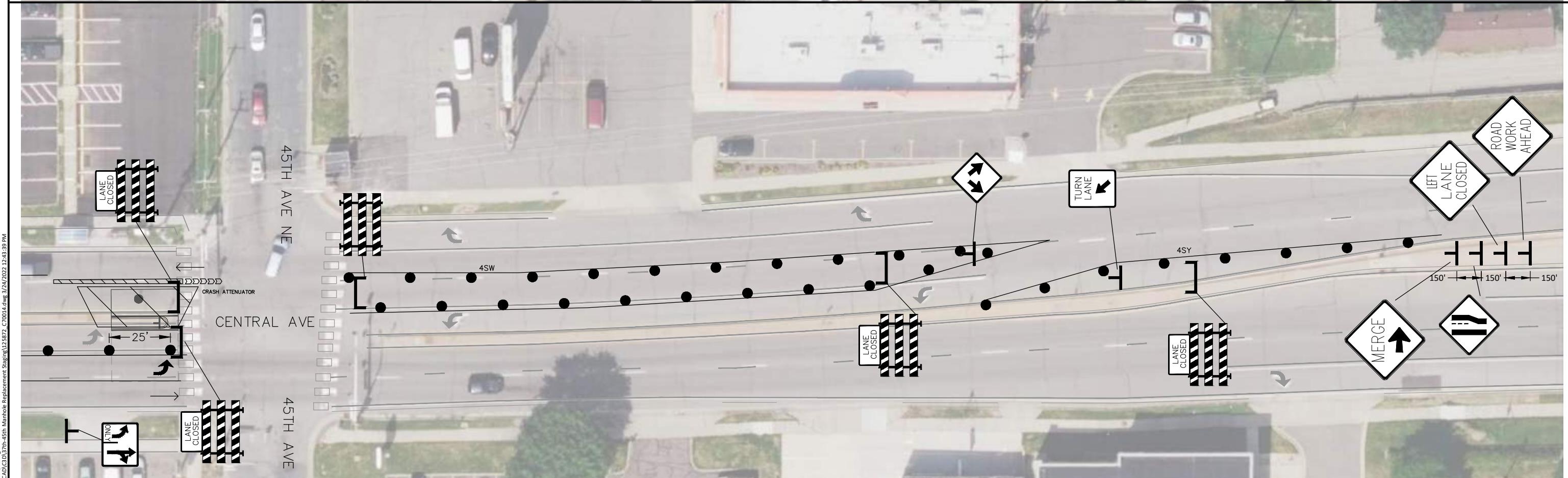
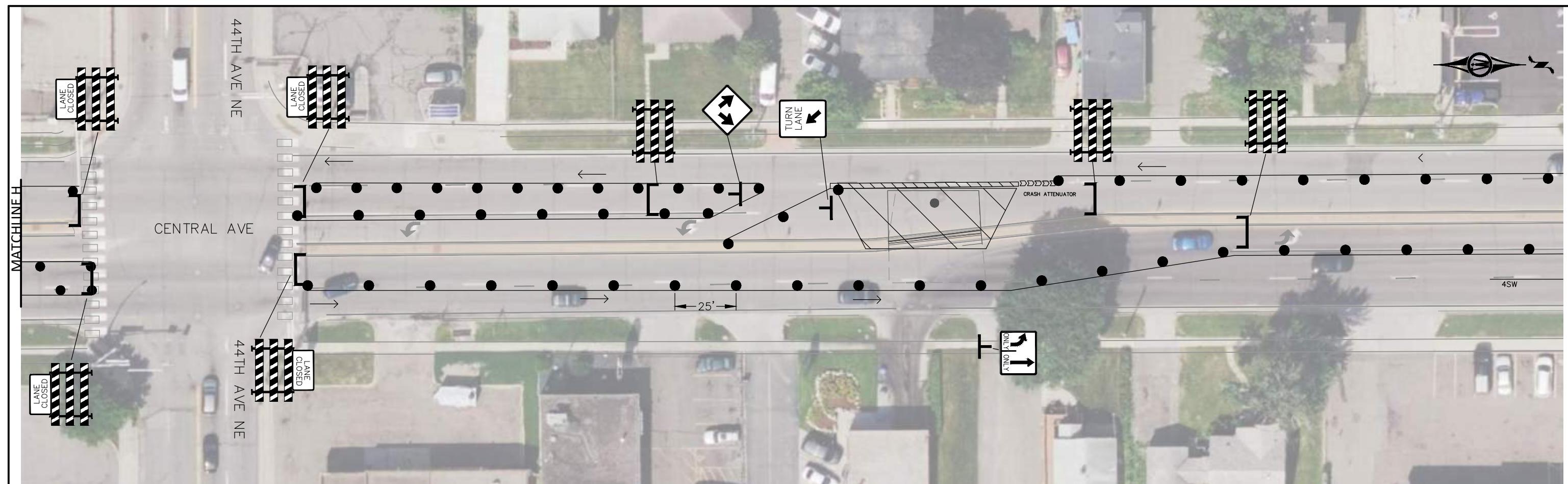


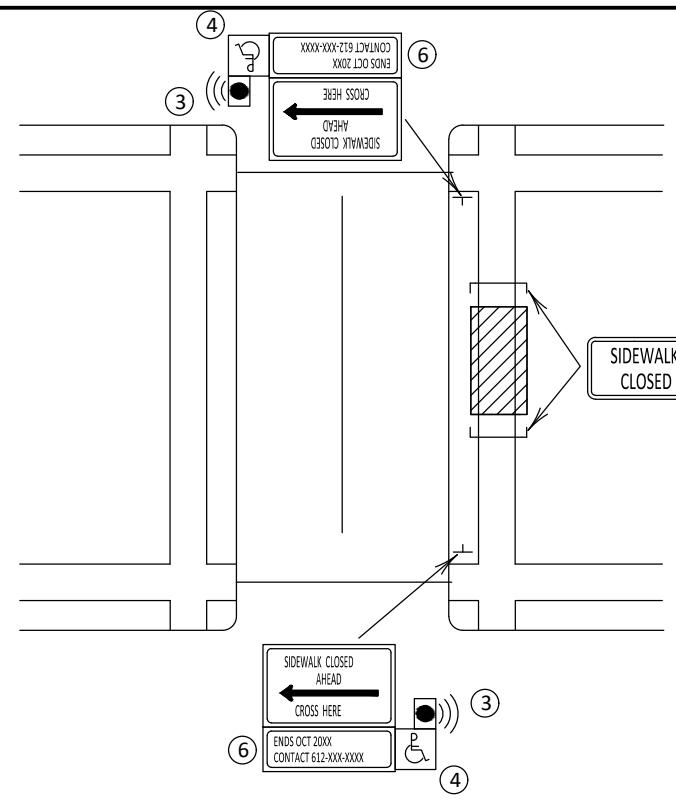












OTHER SIDE OF ROADWAY DETOUR
FOR MID-BLOCK CLOSURE

NOTES:
WHEN CLOSING OR RELOCATING CROSSWALKS OR SIDEWALKS, PROVIDE DETECTABLE TEMPORARY FACILITIES AND INCLUDE ACCESSIBILITY FEATURES CONSISTENT WITH EXISTING PEDESTRIAN FACILITIES. THE MINIMUM TEMPORARY WALKWAY WIDTH SHOULD BE THE WIDTH OF THE EXISTING FACILITY. IF THE EXISTING FACILITY HAS A WIDTH GREATER THAN 60", THE WIDTH OF THE TEMPORARY FACILITY MAY BE 60". IF THE WIDTH OF THE DETOUR IS LESS THAN 60", A 60"-WIDE PASSING SPACE IS REQUIRED EVERY 200'.

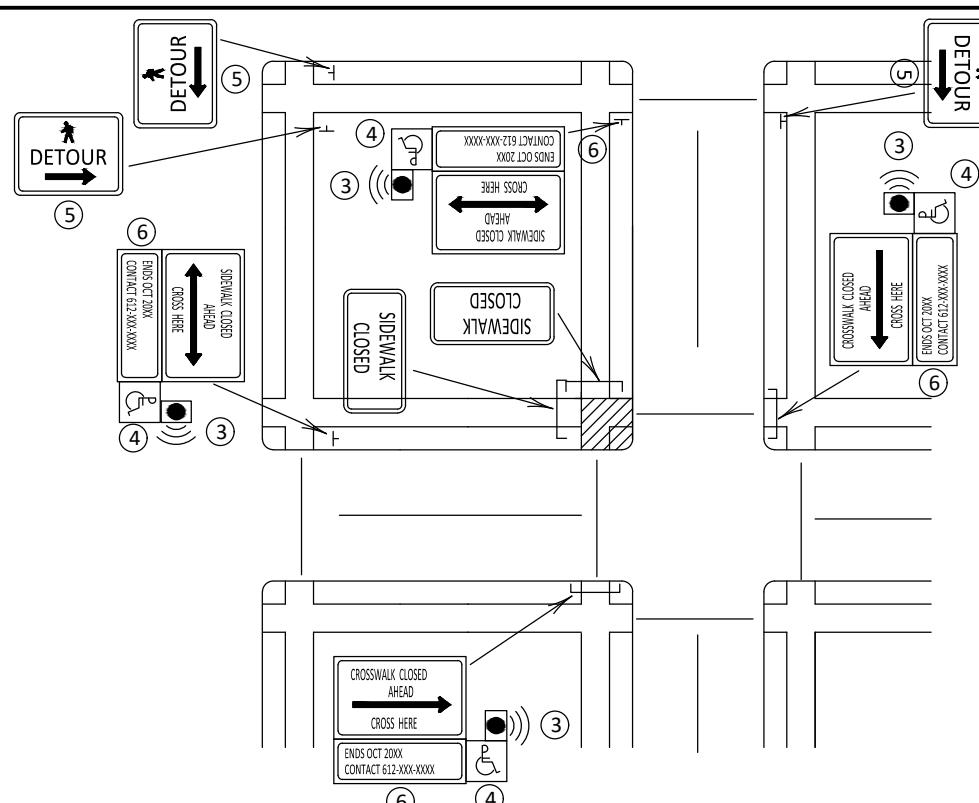
TEMPORARY TRAFFIC CONTROL DEVICES FOR PEDESTRIANS ARE SHOWN. OTHER TRAILBLAZING SIGNS OR DEVICES MAY BE NEEDED FOR ADEQUATE ROUTING. STAGE WORK AS NECESSARY TO PROVIDE AN ALTERNATE PEDESTRIAN ROUTE (APR) AT ALL TIMES.

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

COVER OR DEACTIVATE ANY PEDESTRIAN TRAFFIC SIGNALS CONTROLLING CLOSED CROSSWALKS.

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

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



ONE QUADRANT CLOSED

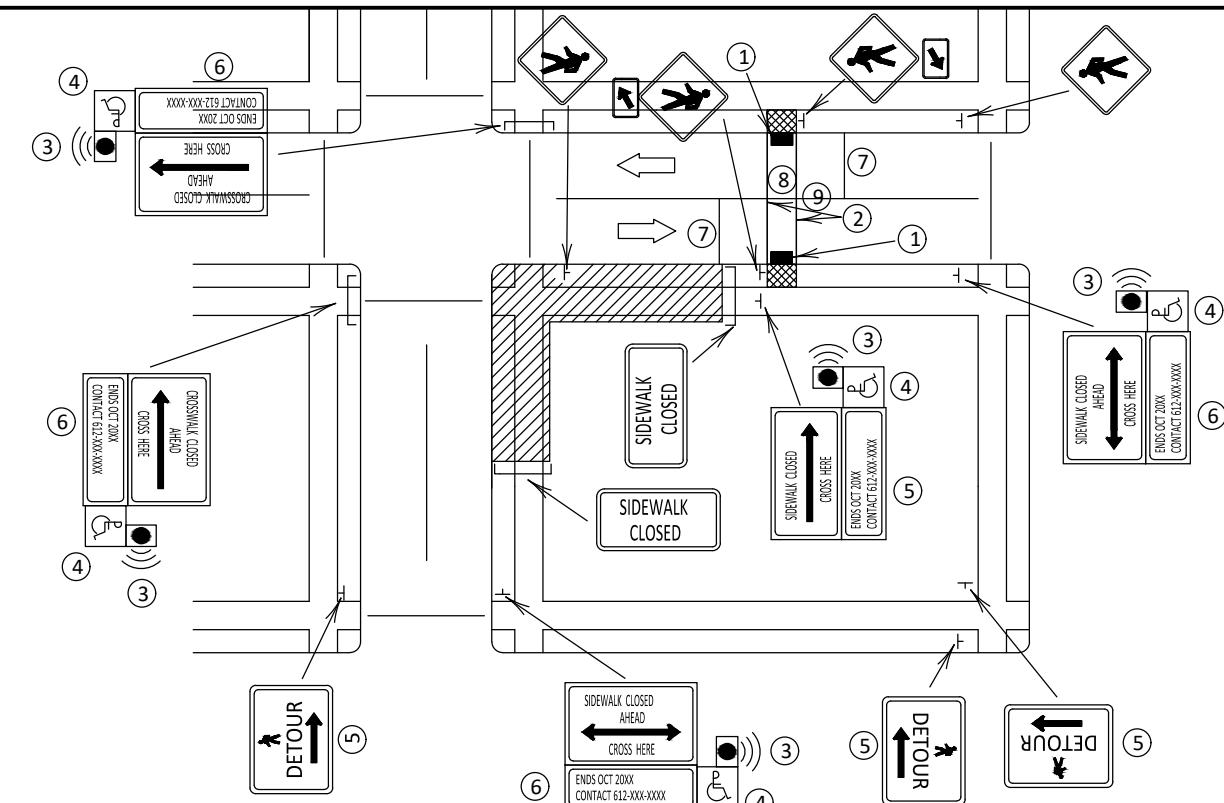
POST-MOUNTED SIGNS ADJACENT TO SIDEWALKS SHALL HAVE 7" MINIMUM CLEARANCE FROM THE BOTTOM OF THE LOWEST SIGN TO THE SIDEWALK SURFACE. SHARED-USE PATHS SHALL HAVE 8" MINIMUM CLEARANCE FROM THE BOTTOM OF THE LOWEST SIGN TO THE SHARED-USE PATH SURFACE.

ANY PORTABLE SIGN OR BARRICADE PLACED OR STORED IN A PEDESTRIAN WALKWAY THAT COULD BE A HAZARD TO A VISUALLY-IMPAIRED PEDESTRIAN SHALL HAVE A DETECTABLE EDGE TO GUIDE THE PEDESTRIAN AROUND THE HAZARD. FOR ADDITIONAL GUIDANCE SEE THE "TEMPORARY PEDESTRIAN ACCESS ROUTE (TPAR) DEVICES" STANDARD PLAN, "DETECTABLE EDGE FOR SIGN ON PORTABLE STAND" DETAIL.

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

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

- ① TEMPORARY CURB RAMPS WITH DETECTABLE WARNINGS.
- ② TEMPORARY PAVEMENT MARKINGS FOR CROSSWALKS MAY USE CROSSWALK BLOCKS, TWO TRANSVERSE LINES OR TWO STRIPS OF 18" PREFORMED MARKING MATERIAL TO FORM 36" WIDE CROSSWALK BLOCKS.
- ③ PROVIDE AN APPROVED AUDIBLE MESSAGE DEVICE OR TACTILE MESSAGE FOR PEDESTRIANS WITH VISUAL DISABILITIES.



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

④ FOR FULLY ACCESSIBLE WALKWAYS THROUGH WORKZONES, CONSIDER DISPLAYING THE INTERNATIONAL SYMBOL OF ACCESSIBILITY.

⑤ USE PEDESTRIAN DETOUR TRAILBLAZING SIGNS IF THE PEDESTRIAN DETOUR IS NOT LOCATED ACROSS THE ROADWAY FROM THE SIDEWALK CLOSURE.

⑥ TYPICAL SIGN MESSAGE FOR AN ALTERNATE PEDESTRIAN ROUTE SHOULD INCLUDE INFORMATION SUCH AS THE DURATION OF THE WALKWAY RESTRICTIONS (BEGINNING AND/OR END DATES) AND A PROJECT CONTACT NUMBER FOR 24/7 QUESTIONS OR REPORTING HAZARDS. TYPICAL INFORMATION INCLUDED IN AN AUDIBLE MESSAGE CAN BE FOUND IN "TPAR - AUDIBLE MESSAGE CONTENT GUIDELINES" AVAILABLE ON THE MNDOT TRAFFIC ENGINEERING WEBSITE ON THE PEDESTRIAN ACCOMMODATIONS THROUGH WORK ZONES WEB PAGE. ADDITIONALLY, A SUMMARY OF THE MESSAGE CONTENT GUIDELINES CAN BE FOUND WITHIN THE PEDESTRIAN ACCOMMODATIONS THROUGH WORK ZONES DESIGN GUIDANCE DOCUMENT.

⑦ LOCATE STOP BAR 20' TO 50' BEFORE THE CROSSWALK. RESTRICT PARKING BETWEEN THE STOP BAR AND THE CROSSWALK. ON TWO-WAY ROADWAYS, RESTRICT PARKING BOTH BEFORE AND AFTER THE CROSSWALK FOR BOTH DIRECTIONS.

⑧ CONSIDER LIGHTING AT MID-BLOCK CROSSINGS IN ORDER TO ILLUMINATE PEDESTRIANS, IF NOT ALREADY LIT.

⑨ CONSIDER THE ADDITION OF R1-6a SIGNS AS MOTORISTS ARE NOT EXPECTING MID-BLOCK CROSSING.

LEGEND

— SIGN

→ DIRECTION OF TRAFFIC

■ WORK AREA

■ SIDEWALK BARRICADE

■ TEMPORARY CURB RAMP WITH DETECTABLE EDGES



R1-6a

ALTERNATE PEDESTRIAN ROUTE (APR) LAYOUTS

STATE PROJ. NO. _____ (TH _____) SHEET NO. _____ OF _____ SHEETS



STANDARD PLAN 5-297.811

2 OF 2

APPROVED: 03-18-2021
REVISED:

THOMAS STYRICKI
STATE DESIGN ENGINEER



DESIGNED
RD NO. 1 ISSUED FOR 3/25/2022
DRAWN WM ADD.3
CHECKED RD
CLIENT PROJ. NO. 2204

CITY OF COLUMBIA HEIGHTS, MINNESOTA
CENTRAL AVENUE SEWER MANHOLE IMPROVEMENTS
STANDARD PLAN 5-297.813

NOTES;

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

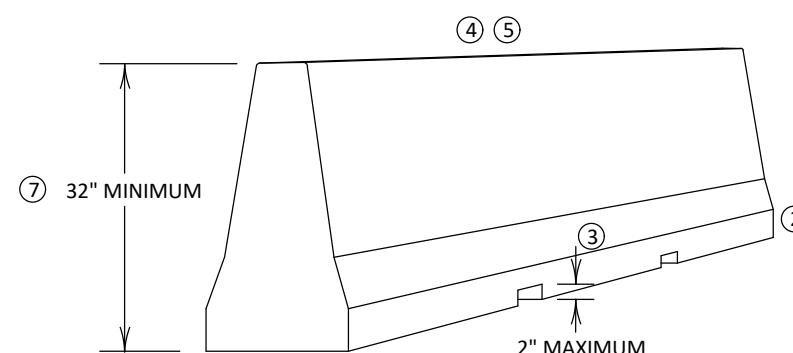
RAILINGS OR OTHER OBJECTS MAY PROTRUDE A MAXIMUM OF 4" INTO THE WALKWAY CLEAR SPACE WHEN LOCATED A MINIMUM OF 27" ABOVE THE WALKWAY SURFACE.

USE CRASHWORTHY TEMPORARY BARRIERS WHEN USED AS A PEDESTRIAN CHANNELIZERS.

PLACE SIDEWALK BARRICADES ACROSS THE ENTIRE WIDTH OF THE WALKWAY SURFACE, WHEN USED.

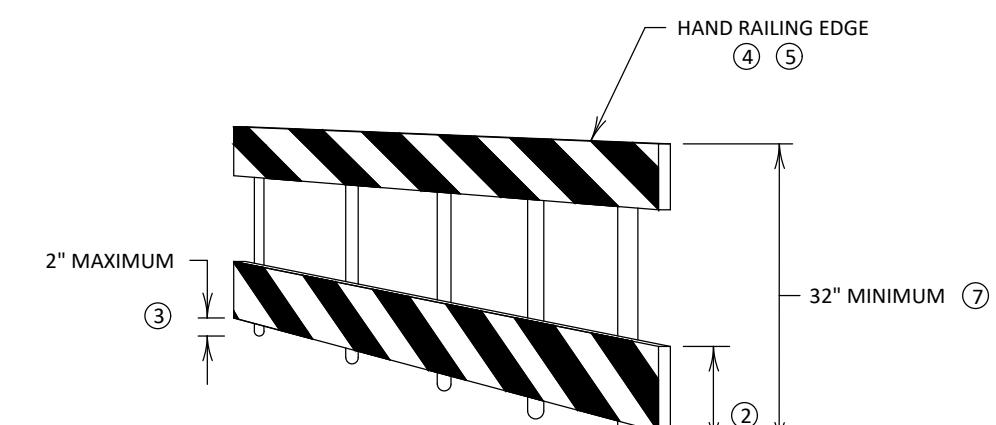
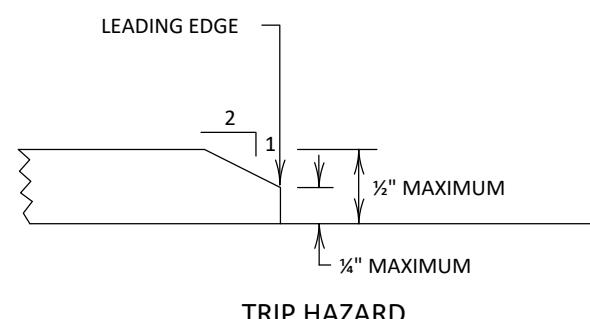
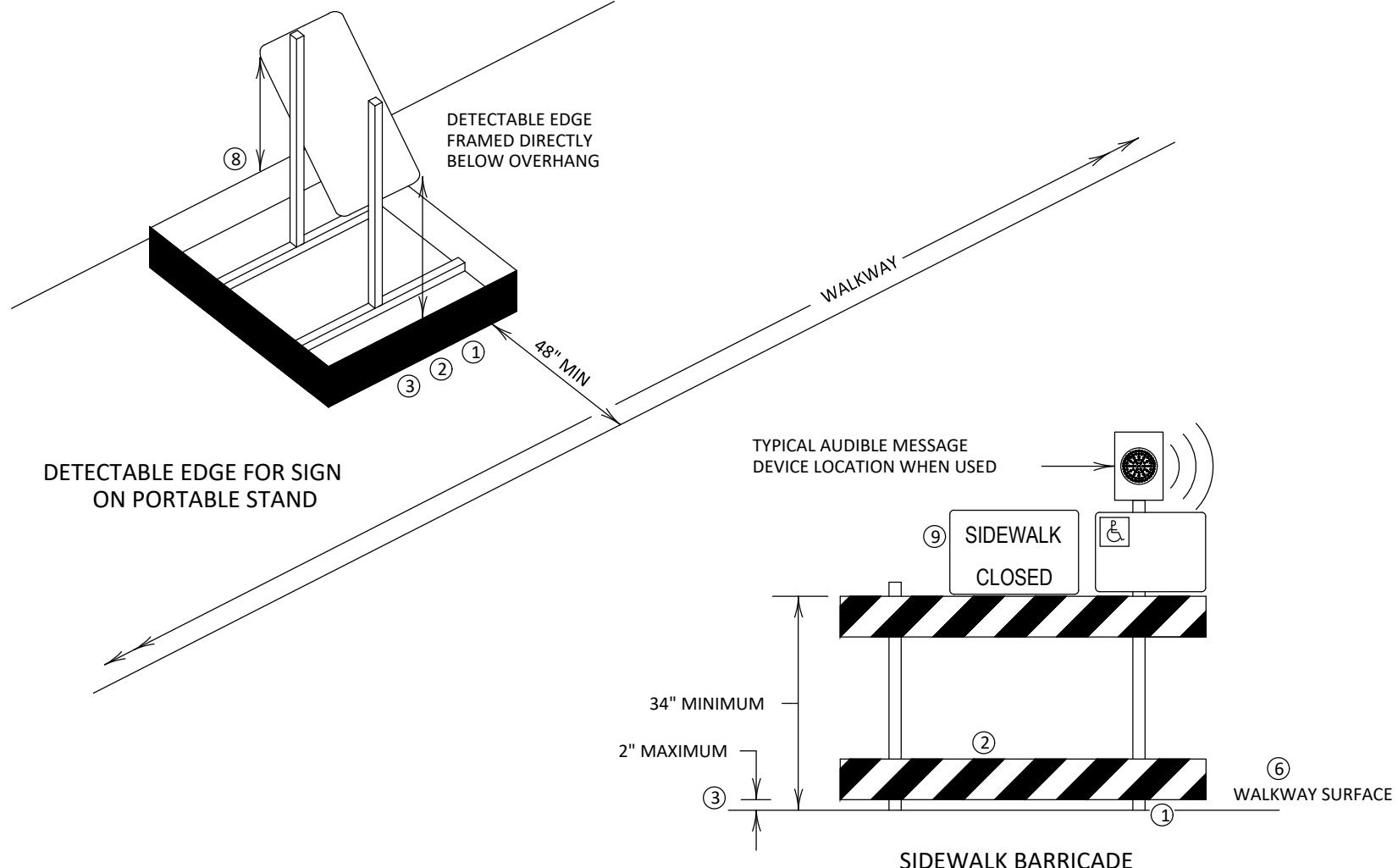
USE INTERLOCKING DEVICES TO CHANNELIZE PEDESTRIAN FLOW TO PREVENT GAPS THAT COULD ALLOW PEDESTRIANS TO STRAY FROM THE CHANNELIZED PATH.

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



PEDESTRIAN CHANNELIZER DEVICE USING
A PORTABLE CONCRETE BARRIER

REVISION:	
APPROVED: 03-18-2021	
BRIAN SORENSEN STATE TRAFFIC ENGINEER	



TEMPORARY PEDESTRIAN ACCESS
ROUTE (TPAR) DEVICES

CHANNELIZERS, SIDEWALK BARRICADES, AND PORTABLE STANDS

(TH ____) SHEET NO. ____ OF ____ SHEETS



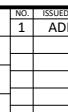
STANDARD PLAN 5-297.813 1 OF 2

APPROVED: 03-18-2021

REVISED:

STATE PROJ. NO. _____

DESIGNED	NO.	ISSUED FOR	DATE
RD	1	ADD.3	3/25/2022



THOMAS SYRBICKI

STATE DESIGN ENGINEER

CITY OF COLUMBIA HEIGHTS, MINNESOTA

CENTRAL AVENUE SEWER MANHOLE IMPROVEMENTS

STANDARD PLAN 5-297.813

NOTES:

CONSTRUCT SLOPES AS INDICATED OR FLATTER, BUT NOT STEEPER.

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

① CONSTRUCT CURB RAMPS AT LEAST 48" WIDE WITH A FIRM, STABLE, AND SLIP-RESISTANT SURFACE.

② PLACE PROTECTIVE EDGING WITH A 2" MINIMUM HEIGHT WHEN A CURB RAMP OR LANDING PLATFORM HAS A VERTICAL DROP OF 6" OR GREATER OR HAS A SIDE APRON SLOPE STEEPER THAN 1V:3H. CONSIDER PROTECTIVE EDGING WHEN CURB RAMPS OR LANDING PLATFORMS HAVE A VERTICAL DROP OF 3" OR MORE.

③ PLACE DETECTABLE EDGING WITH 6" MINIMUM HEIGHT AND CONTRASTING COLOR ON ALL CURB RAMP LANDINGS WHERE THE WALKWAY CHANGES DIRECTION.

④ CONSTRUCT CURB RAMPS AND LANDINGS WITH A 2% OR FLATTER CROSS SLOPE.

⑤ PROVIDE A CLEAR SPACE OF AT LEAST 48" X 48" ABOVE AND BELOW THE CURB RAMP.

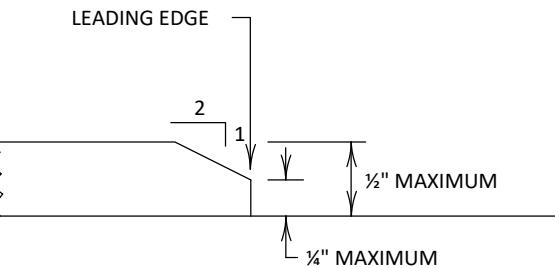
⑥ MARK THE CURB RAMP WALKWAY EDGE WITH A 2" TO 4" WIDE MARKING OF CONTRASTING COLOR. THE MARKING IS OPTIONAL WHERE COLOR-CONTRASTING EDGING IS USED.

⑦ DO NOT IMPEDE WATER FLOW IN THE GUTTER SYSTEM.

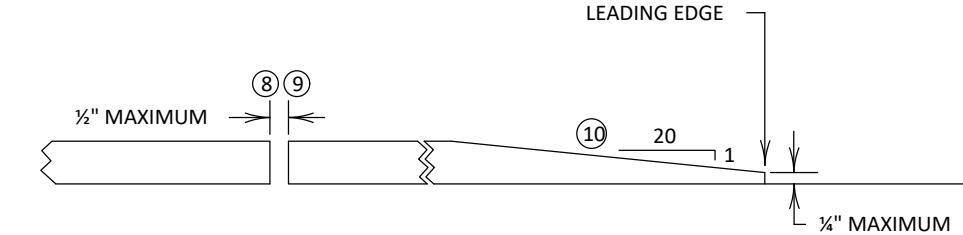
⑧ NO LATERAL JOINTS OR GAPS BETWEEN SURFACES SHALL EXCEED $\frac{1}{2}$ " WIDTH.

⑨ CHANGES BETWEEN SURFACE HEIGHTS SHALL NOT EXCEED $\frac{1}{2}$ ". USE VERTICAL LATERAL EDGES UP TO $\frac{1}{4}$ " HIGH, AND BEVELED AT 1V:2H FOR LATERAL EDGES BETWEEN $\frac{1}{4}$ " AND $\frac{1}{2}$ " HEIGHT.

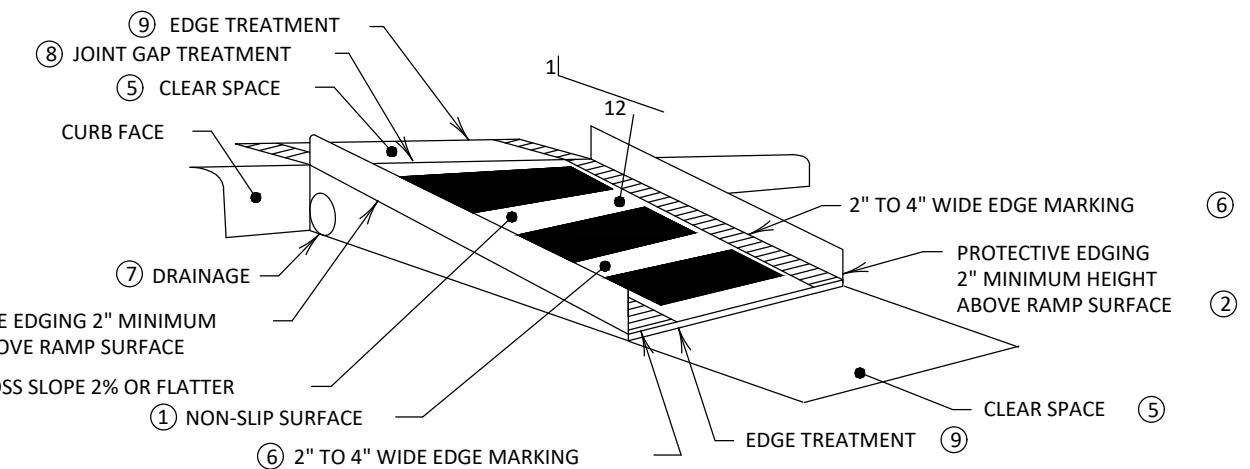
⑩ BEVEL THE EDGE OF TEMPORARY WALKWAY SURFACES $\frac{1}{2}$ " OR THINNER AT 1V:2H. FOR THICKER WALKWAY SURFACE BEVEL EDGE 1V:20H OR FLATTER.



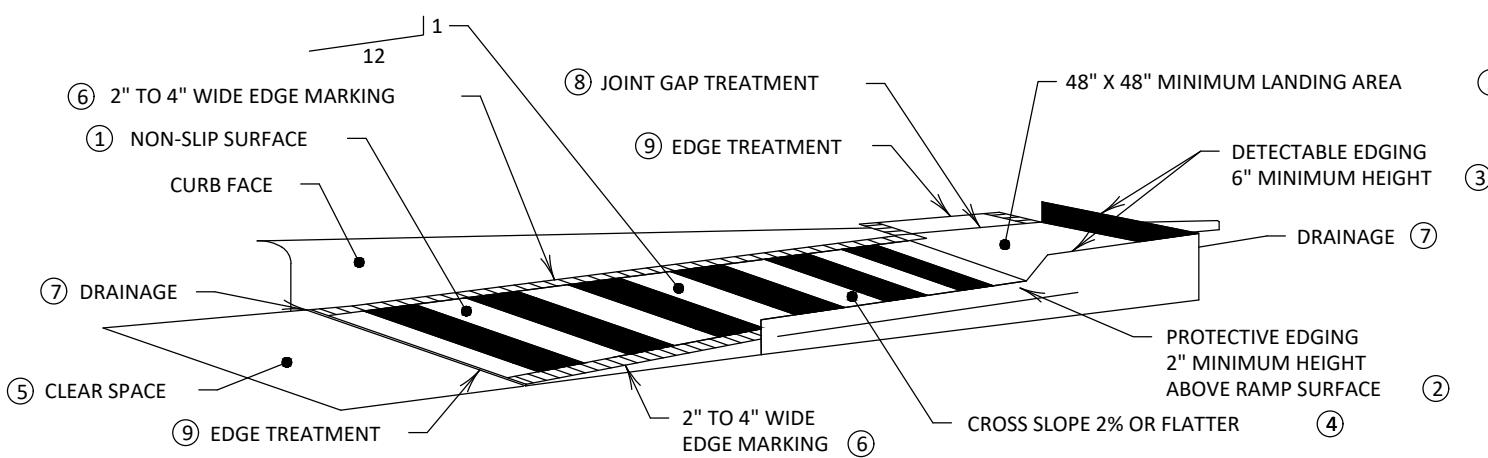
EDGE TREATMENT ⑨



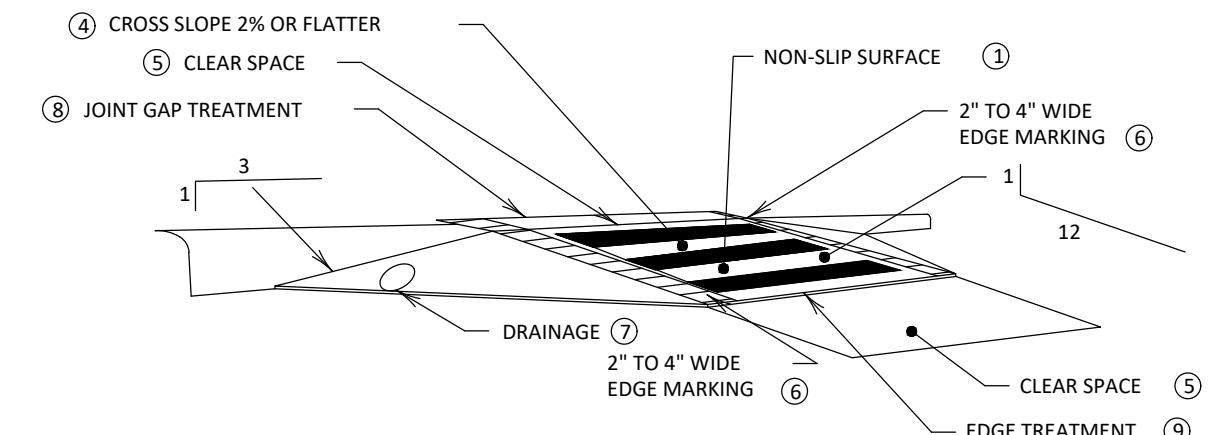
TEMPORARY WALKWAY SURFACE



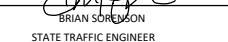
TEMPORARY CURB RAMP PERPENDICULAR TO CURB
SHOWN WITH PROTECTIVE EDGE



TEMPORARY CURB RAMP
PARALLEL TO CURB



TEMPORARY CURB RAMP PERPENDICULAR TO CURB
SHOWN WITH SIDE APRON

REVISION:	
APPROVED: 03-18-2021	
	BRIAN SORENSEN STATE TRAFFIC ENGINEER



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

STATE PROJ. NO. _____ (TH ____) SHEET NO. ____ OF ____ SHEETS
DESIGNED RD NO. 1 ISSUED FOR 3/25/2022
DRAWN WM ADD.3
CHECKED RD
CLIENT PROJ. NO. 2204

TEMPORARY PEDESTRIAN ACCESS
ROUTE (TPAR) DEVICES
TEMPORARY CURB RAMPS AND WALKWAY SURFACES
CITY OF COLUMBIA HEIGHTS, MINNESOTA
CENTRAL AVENUE SEWER MANHOLE IMPROVEMENTS
STANDARD PLAN 5-297.813

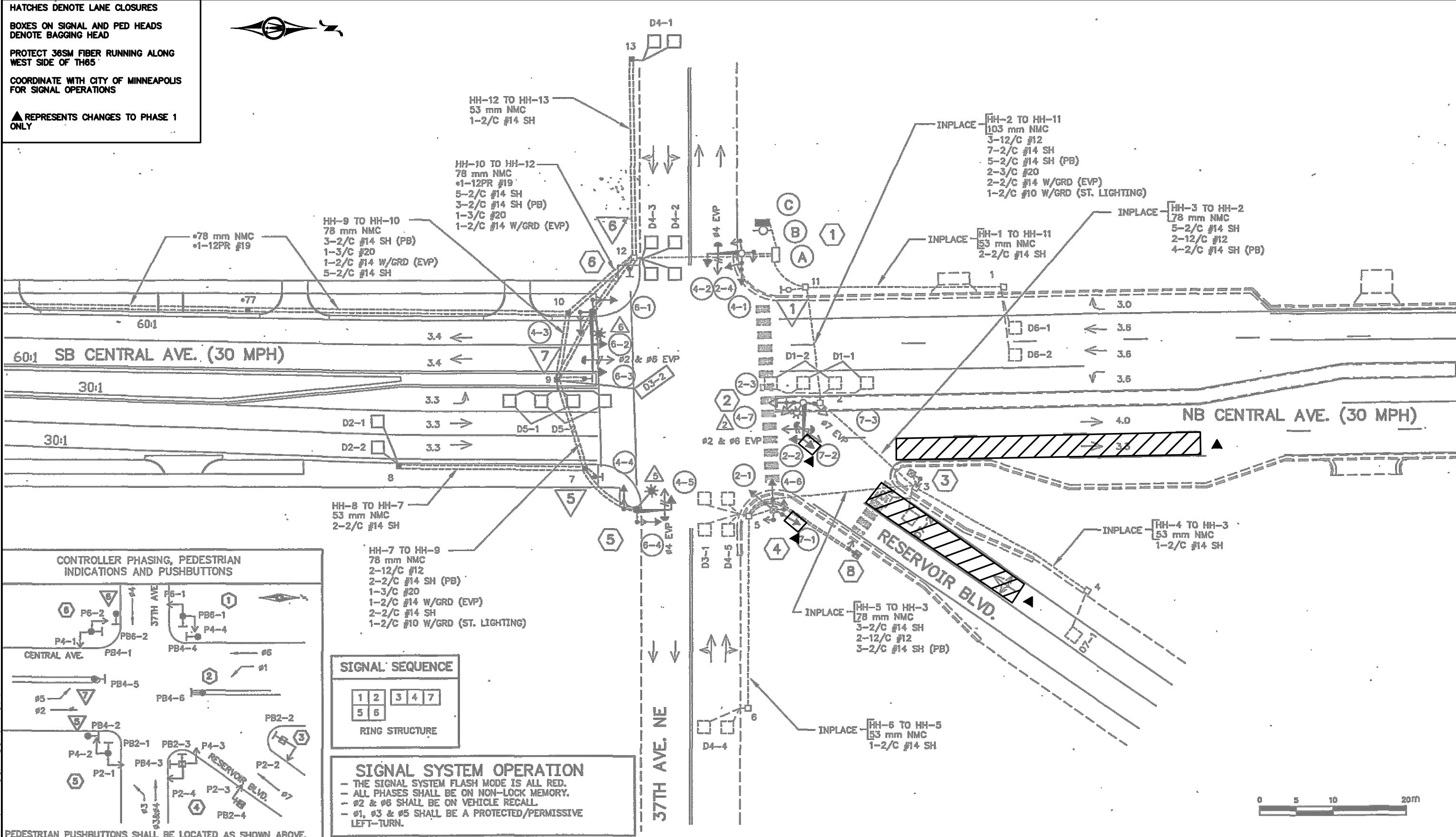
HATCHES DENOTE LANE CLOSURES

**BOXES ON SIGNAL AND PED HEADS
DENOTE BAGGING HEAD**

PROTECT 36SM FIBER RUNNING ALONG
WEST SIDE OF TH65

**COORDINATE WITH CITY OF MINNEAPOLIS
FOR SIGNAL OPERATIONS**

▲ REPRESENTS CHANGES TO PHASE 1
ONLY



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PEDESTRIAN PUSHBUTTONS SHALL BE LOCATED AS SHOWN ABOVE.

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT 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.



7533 SUNWOOD DR NW, SUITE
RAMSEY, MINNESOTA 55374
Phone: (763) 433-2851
Email: Ramsey@bolton-menk.com
www.bolton-menk.com

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DESIGNED RD
DRAWN WM
CHECKED RD
CLIENT PROJ. NO.

NO.	ISSUED FOR	DATE
1	ADD.3	3/25/2022

**CITY OF COLUMBIA HEIGHTS, MINNESOTA
CENTRAL AVENUE SEWER MANHOLE IMPROVEMENTS
SIGNAL SYSTEM MODIFICATION: 37TH AV**

SHEET
41
OF
47

LOOP DETECTOR CHART		
NUMBER	SIZE (FT)	LOCATION
D1-1, D5-1	2-6X6	10 & 40'
D2-1,D2-2,D6-1,D6-2	6X6	120'
D3-1,D7-1	2-6X6	20 & 50'
D3-2, D7-2	2-6X6	5 & 35'
D4-1	2-6X6	120'
D4-2,D8-2	2-6X6	5 & 20'
D4-3,D8-3	6X6	10'
D8-1	6X6	115'

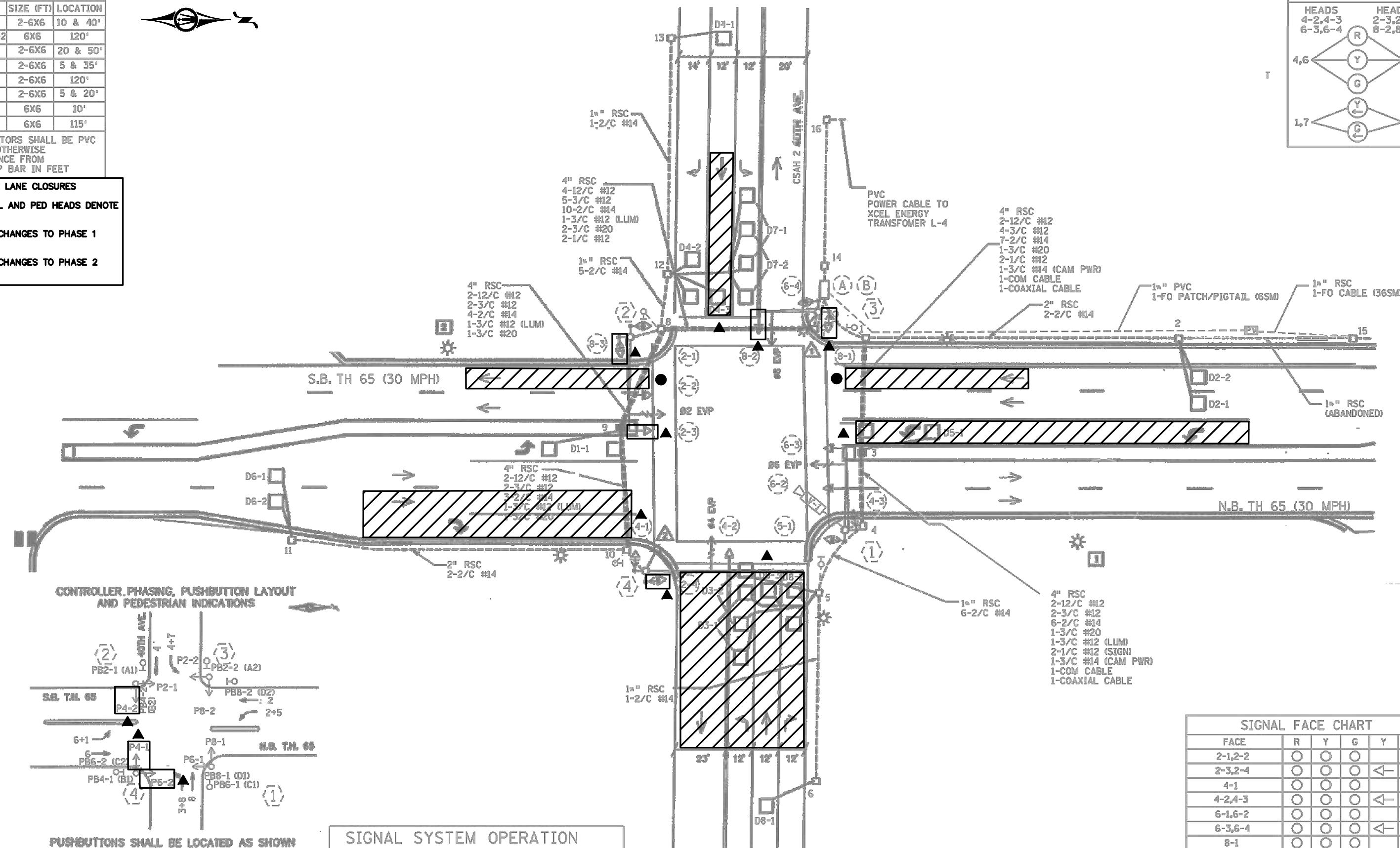
ALL LOOP DETECTORS SHALL BE PVC
UNLESS NOTED OTHERWISE
LOCATION: DISTANCE FROM
CROSSWALK/STOP BAR IN FEET

HATCHES DENOTE LANE CLOSURES

BOXES ON SIGNAL AND PED HEADS DENOTE
BAGGING HEAD

▲ REPRESENTS CHANGES TO PHASE 1
ONLY

● REPRESENTS CHANGES TO PHASE 2
ONLY



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

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

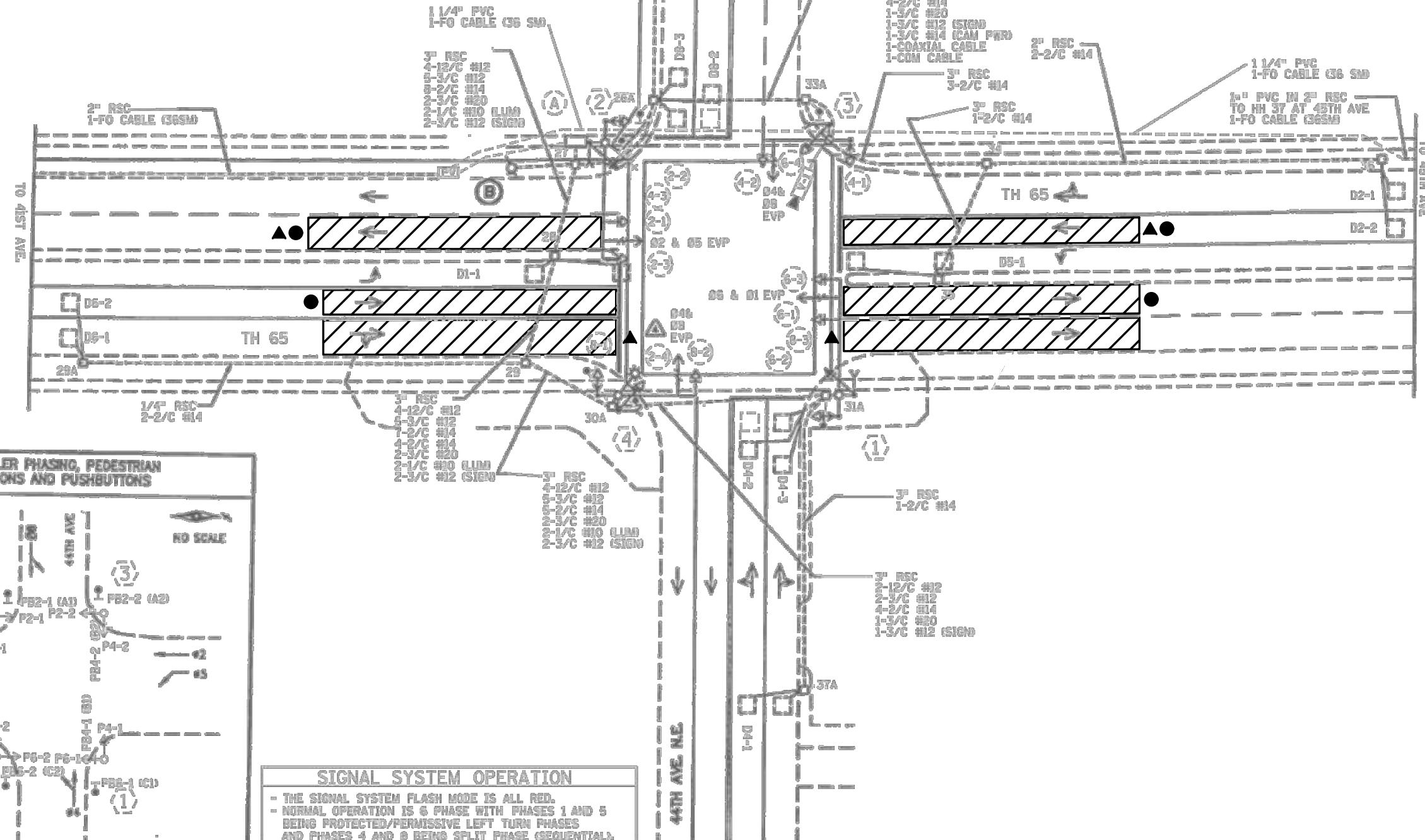
DETECTOR CHART			
NUMBER	SIZE (FT)	LOCATION	TYPE
D1-1	2-6X6	5920	PVC
D2-1,D2-2	6X6	200	PVC
D4-1	2-6X6	110	SACR
D4-2	2-6X6	15415	SACR
D4-3	2-6X6	5820	SACR
D5-1	2-6X6	5920	PVC
D6-1,D6-2	6X6	200	PVC
D8-1	2-6X6	110	SACR
D8-2	2-6X6	15415	SACR
D8-3	2-6X6	5920	SACR



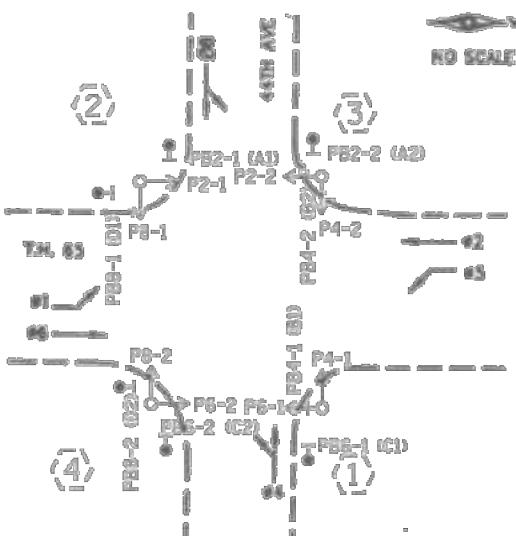
DETECTOR CHART

NUMBER	SIZE (FT)	LOCATION	TYPE
D1-1	2-6X6	5920	PVC
D2-1,D2-2	6X6	200	PVC
D4-1	2-6X6	110	SANCI
D4-2	2-6X6	150.15	SANCI
D4-3	2-6X6	5920	SANCI
D5-1	2-6X6	5920	PVC
D6-1,D6-2	6X6	200	PVC
DB-1	2-6X6	110	SANCI
DB-2	2-6X6	150.15	SANCI
DB-3	2-6X6	5920	SANCI

**-LOCATION: DISTANCE FROM
CROSSWALK/STOP BAR IN FEET.**



CONTROLLER PHASING, PEDESTRIAN INDICATIONS AND PUSHBUTTONS



SIGNAL SYSTEM OPERATION

- THE SIGNAL SYSTEM FLASH MODE IS ALL RED.
- NORMAL OPERATION IS 6 PHASE WITH PHASES 1 AND 2 BEING PROTECTED/PERMISSIVE LEFT TURN PHASES AND PHASES 4 AND 6 BEING SPLIT PHASE (SEQUENTIALLY).

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H:\COLHTS\01\125872\CAD\C3D\37th-45th Manhole Replacement Staging\125872_SignalSystem.dwg 3/24/2022 12:44:09 PM



I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT 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.

7533 SUNWOOD DR NW, SUITE 2
RAMSEY, MINNESOTA 55303
Phone: (763) 433-2851
Email: Ramsey@bolton-menk.com
www.bolton-menk.com



SIGNAL FACES

FACE	R	Y	G	Y	G
2-1, 2-2	○	○	○		
2-3, 2-4	○	○	○	△	△
4-1	○	○	○		
4-2	○	○	○		
4-3	○	○	△	△	
6-1, 6-2	○	○	○		
6-3, 6-4	○	○	○	△	△
8-1	○	○	○		
8-2	○	○	○		
8-3	○	△	△	△	

- ALL SIGNAL INDICATIONS ARE 12"
- ALL SIGNAL INDICATIONS ARE LED
- ALL SIGNAL FACES HAVE A BACKGROUND SHIELD

HATCHES DENOTE LANE CLOSURES

**▲ REPRESENTS CHANGES TO PHASE 3
ONLY**

● REPRESENTS CHANGES TO PHASE 4
ONLY

NOTES:
1. LUMINAIRES & INTERNALLY LIT SIGNS
ARE MAINTAINED BY COLUMBIA HEIGHTS
2. ENTRANCE ITEMS MAINTAINED BY METRO TRANSIT

CITY OF COLUMBIA HEIGHTS, MINNESOTA
CENTRAL AVENUE SEWER MANHOLE IMPROVEMENTS

