10:15:43 AM

9/25/2025

## PLAN SYMBOLS

STATELINE
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 (NAME)
DRY RUN (SIZE)
DRAINAGE DITCH
DRAIN TILE
CULVERT
DROP INLET
GUARDRAIL
BARBED WIRE FENCE
WOVEN WIRE FENCE (XW)
CHAIN LINK FENCE (XC)
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 (TIMBER)
CATCH BASIN C.B.
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 HUB
GRAVEL PIT (G)
SANDPIT (S)
BORROW PIT (B)
ROCK QUARRY (Q)

## UTILITY SYMBOLS

POWER POLE LINE
TELEPHONE OR TELEGRAPH POLE LINE
JOINT TELEPHONE AND POWER ON POWER POLES ON TELEPHONE POLES
ANCHOR
STEEL TOWER (TOWER)
STREET LIGHT
PEDESTAL (TELEPHONE CABLE TERMINAL.)
GAS MAIN (G)
WATER MAIN (I)
CONDUIT
TELEPHONE CABLE IN CONDUIT (T)
ELECTRIC CABLE IN CONDUIT (P)
TELEPHONE MANHOLE
ELECTRIC MANHOLE
BURIED COMMUNICATION CABLE (COM-BUR)
BURIED TELEPHONE CABLE (T-BUR)
BURIED ELECTRIC CABLE (P-BUR)
SEWER, (SANITARY)
SEWER, (STORM)
SEWER MANHOLE
HANDHOLE (H)
CATCH BASIN

SCALE
INDEX MAP 3750'
INTERSECTION LAYOUTS (SIGNALS) 20'

MINNESOTA DEPARTMENT OF TRANSPORTATION

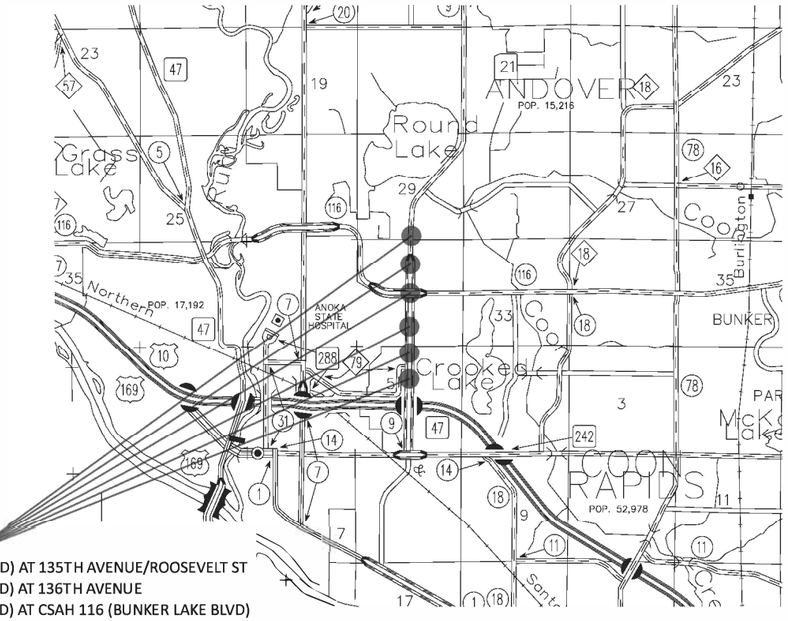
# ANOKA COUNTY, MINNESOTA

## CITIES OF ANDOVER AND ANOKA

CONSTRUCTION PLAN FOR: SIX (6) TRAFFIC CONTROL SIGNAL SYSTEMS, INTERCONNECT, TURN LANE CONSTRUCTION, AND ADA IMPROVEMENTS

STATE AID PROJECT NO. 002-609-023
CITY OF ANDOVER STATE AID PROJECT NO. 198-020-042, CITY PROJECT 25-13
CITY OF ANOKA STATE AID PROJECT NO. 103-020-020

LOCATED AT:
CSAH 9 (ROUND LAKE BOULEVARD) AT 135TH AVENUE/ROOSEVELT STREET (SYSTEM "A")
CSAH 9 (ROUND LAKE BOULEVARD) AT 136TH AVENUE (SYSTEM "B")
CSAH 9 (ROUND LAKE BOULEVARD) AT CSAH 116 (BUNKER LAKE BOULEVARD) (SYSTEM "C")
CSAH 9 (ROUND LAKE BOULEVARD) AT 138TH LANE (SYSTEM "D")
CSAH 9 (ROUND LAKE BOULEVARD) AT 140TH LANE (REVISE SIGNAL SYSTEM "E")
CSAH 9 (ROUND LAKE BOULEVARD) AT 143RD AVENUE (REVISE SIGNAL SYSTEM "F")

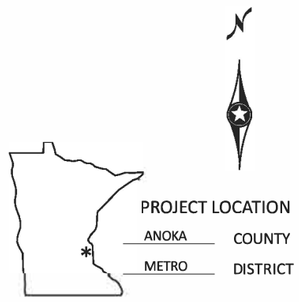



SAP 002-609-023
CITY OF ANDOVER SAP 198-020-042, CITY PROJECT 25-13
CITY OF ANOKA SAP 103-020-020

TRAFFIC SIGNAL SYSTEM "A" - CSAH 9 (ROUND LAKE BLVD) AT 135TH AVENUE/ROOSEVELT ST
TRAFFIC SIGNAL SYSTEM "B" - CSAH 9 (ROUND LAKE BLVD) AT 136TH AVENUE
TRAFFIC SIGNAL SYSTEM "C" - CSAH 9 (ROUND LAKE BLVD) AT CSAH 116 (BUNKER LAKE BLVD)
TRAFFIC SIGNAL SYSTEM "D" - CSAH 9 (ROUND LAKE BLVD) AT 138TH LANE
REVISE SIGNAL SYSTEM "E" - CSAH 9 (ROUND LAKE BLVD) AT 140TH LANE
REVISE SIGNAL SYSTEM "F" - CSAH 9 (ROUND LAKE BLVD) AT 143RD AVENUE

### GEOMETRICS DESIGN DESCRIPTION

| | CSAH 9 (ROUND LAKE BLVD) | 135TH AVENUE/ ROOSEVELT STREET | 136TH AVENUE | CSAH 116 (BUNKER LAKE BLVD) | 138TH LANE | 140TH LANE | 143RD AVENUE |
|---|---|---|---|---|---|---|---|
| EXISTING A.D.T. (2025) | 28,500 | 2,100 | 2,400 | 20,000 | 2,500 | 2,700 | 1,600 |
| PROJECTED A.D.T. (2045) | 38,000 | 2,600 | 3,200 | 27,000 | 3,300 | 3,300 | 2,200 |
| NO. OF TRAFFIC LANES | 4 | 2 | 2 | 4 | 2 | 2 | 2 |
| NO. OF PARKING LANES | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| DESIGN SPEED (MPH) | 45 | 30 | 30 | 45 | 30 | 30 | 30 |
| POSTED SPEED (MPH) | 45 | 30 | 30 | 45 | 30 | 30 | 30 |
| ROADWAY CLASSIFICATION | ARTERIAL | COLLECTOR | COLLECTOR | ARTERIAL | COLLECTOR | COLLECTOR | COLLECTOR |




ALL TRAFFIC CONTROL DEVICES AND SIGNING SHALL CONFORM AND BE INSTALLED IN ACCORDANCE WITH THE LATEST "MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MnMUTCD), INCLUDING THE LATEST FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS.

| PLAN REVISIONS | | |
|---|---|---|
| DATE | SHEET NO. | APPROVED BY |
| | | |
| | | |
| | | |
| | | |
| | | |

PROJECT NO.

### GOVERNING SPECIFICATIONS

THE 2025 EDITION OF THE MINNESOTA DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR CONSTRUCTION" SHALL GOVERN.

### INDEX


| SHEET NO. | DESCRIPTION |
|---|---|
| 1 | TITLE SHEET |
| 2 | STATEMENT OF ESTIMATED QUANTITIES |
| 3 | MISCELLANEOUS INFORMATION |
| 4 - 20 | SIGNAL SYSTEM DETAILS |
| 21 - 22 | TRAFFIC CONTROL PLANS |
| 23 - 25 | SWPPP |
| 26 - 33 | EROSION CONTROL PLANS |
| 34 - 41 | REMOVAL PLANS |
| 42 - 56 | ADA CURB RAMP PLANS |
| 57 - 74 | SIGNING AND PAVEMENT MARKING PLANS |
| 75 - 86 | TEMPORARY SIGNAL SYSTEM PLANS |
| 87 - 133 | TRAFFIC CONTROL SIGNAL SYSTEMS |


THIS PLAN CONTAINS 133 SHEETS.

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

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: _____ DATE: 09/23/2025

PRINTED NAME: JOHN M. GRAY LIC.NO. 22457

APPROVED: Joe MacPherson Digitally signed by Joe MacPherson DATE: 10/21/25
ANOKA COUNTY ENGINEER

APPROVED: _____ DATE: 10/30/25
CITY OF ANDOVER ENGINEER

APPROVED: _____ DATE: 11/5/2025
CITY OF ANOKA ENGINEER

Lucas Lortie Digitally signed by Lucas Lortie Date: 2025.11.06 14:14:20 -06'00' DATE:
DISTRICT STATE AID ENGINEER REVIEWED FOR COMPLIANCE WITH STATE AID RULES/POLICY

Lucas Lortie Digitally signed by Lucas Lortie Date: 2025.11.06 14:14:48 -06'00' DATE:
STATE AID ENGINEER
APPROVED FOR STATE AID FUNDING

ANOKA COUNTY
CITIES OF ANDOVER AND ANOKA

TITLE SHEET


SEH
PHONE: (651) 490-2000
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55116


SAP 002-609-023
CITY OF ANDOVER SAP 198-020-042, CITY PROJECT 25-13
CITY OF ANOKA SAP 103-020-020

10:16:05 AM
9/25/2025

## STATEMENT OF ESTIMATED QUANTITIES

| | ITEM NO | ITEM DESCRIPTION | UNIT | TOTAL ESTIMATED QUANTITY | PARTICIPATION | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | ANOKA COUNTY SAP 002-609-023 | ANDOVER SAP 198-020-020 C0011463 | ANDOVER SAP 198-020-020 C0011464 | ANOKA SAP 103-020-020 |
| | 2021.501 | MOBILIZATION | LUMP SUM | 1 | 0.81 | 0.06 | 0.07 | 0.06 |
| | 2101.501 | CLEARING & GRUBBING | LUMP SUM | 1 | 1 | | | |
| | 2102.503 | PAVEMENT MARKING REMOVAL | LIN FT | 274 | 274 | | | |
| | 2102.518 | PAVEMENT MARKING REMOVAL | SQ FT | 1836 | 1836 | | | |
| (1) | 2104.502 | REMOVE CATCH BASIN | EACH | 2 | 2 | | | |
| | 2104.502 | REMOVE CASTING | EACH | 4 | 4 | | | |
| | 2104.502 | REMOVE DELINEATOR/MARKER | EACH | 12 | 12 | | | |
| | 2104.502 | REMOVE SIGN | EACH | 50 | 50 | | | |
| | 2104.502 | REMOVE SIGNAL SYSTEM A | EACH | 1 | 1 | | | |
| | 2104.502 | REMOVE SIGNAL SYSTEM B | EACH | 1 | 1 | | | |
| | 2104.502 | REMOVE SIGNAL SYSTEM C | EACH | 1 | 1 | | | |
| | 2104.502 | REMOVE SIGNAL SYSTEM D | EACH | 1 | 1 | | | |
| | 2104.502 | SALVAGE SIGN | EACH | 7 | 7 | | | |
| | 2104.503 | SAWING CONCRETE PAVEMENT (FULL DEPTH) | LIN FT | 292 | 292 | | | |
| | 2104.503 | SAWING BITUMINOUS PAVEMENT (FULL DEPTH) | LIN FT | 2342 | 2342 | | | |
| (2) | 2104.503 | REMOVE CURB & GUTTER | LIN FT | 1640 | 1640 | | | |
| (2) | 2104.504 | REMOVE BITUMINOUS PAVEMENT | SQ YD | 973 | 973 | | | |
| (2) | 2104.518 | REMOVE BITUMINOUS WALK | SQ FT | 773 | 773 | | | |
| (3) (2) | 2104.518 | REMOVE CONCRETE WALK | SQ FT | 4502 | 4502 | | | |
| (4) (2) | 2104.518 | REMOVE CONCRETE MEDIAN | SQ FT | 5435 | 5435 | | | |
| | 2211.509 | AGGREGATE BASE CLASS 5 | TON | 347 | 347 | | | |
| | 2360.509 | TYPE SP 12.5 WEARING COURSE MIX (4,C) | TON | 371 | 371 | | | |
| | 2504.602 | ADJUST HYDRANT | EACH | 2 | | | 1 | 1 |
| (12) | 2504.602 | ADJUST VALVE BOX-WATER | EACH | 7 | | 2 | 5 | |
| (13) | 2504.602 | INSTALL GATE VALVE | EACH | 7 | | 2 | 5 | |
| | 2506.502 | CONST DRAINAGE STRUCTURE DESIGN 48-4020 | EACH | 2 | 2 | | | |
| | 2506.502 | CASTING ASSEMBLY | EACH | 6 | 6 | | | |
| | 2506.502 | ADJUST FRAME & RING CASTING | EACH | 7 | 7 | | | |
| | 2506.602 | ADJUST DRAINAGE STRUCTURE | EACH | 4 | 4 | | | |
| | 2506.602 | CONNECT INTO EXISTING STORM SEWER | EACH | 2 | 2 | | | |
| (5) | 2521.518 | 4" CONCRETE WALK | SQ FT | 1152 | 1152 | | | |
| (5) | 2521.518 | 6" CONCRETE WALK | SQ FT | 9238 | 9238 | | | |
| | 2531.504 | CONCRETE MEDIAN | SQ YD | 86 | 86 | | | |
| (6) | 2531.603 | CONCRETE CURB & GUTTER | LIN FT | 1452 | 1452 | | | |
| | 2531.603 | CONCRETE CURB DESIGN V | LIN FT | 65 | 65 | | | |
| (7) | 2531.618 | TRUNCATED DOMES | SQ FT | 605 | 605 | | | |
| | 2545.502 | SERVICE CABINET | EACH | 4 | 2.5 | 1 | | 0.5 |
| | 2550.502 | CCTV ASSEMBLY | EACH | 5 | 3 | 1 | | 1 |
| (9) | 2550.602 | PULL VAULT | EACH | 1 | 1 | | | |
| | 2550.602 | ADJUST FIBER OPTIC VAULT | EACH | 4 | 4 | | | |
| (8) | 2563.601 | TRAFFIC CONTROL | LUMP SUM | 1 | 0.81 | 0.06 | 0.07 | 0.06 |
| (8) | 2563.601 | ALTERNATE PEDESTRIAN ROUTE | LUMP SUM | 1 | 0.81 | 0.06 | 0.07 | 0.06 |
| | 2563.602 | PORTABLE CHANGEABLE MESSAGE SIGN | EACH | 4 | 4 | | | |
| | 2564.602 | INSTALL SIGN | EACH | 7 | 7 | | | |
| | 2564.602 | DELINEATOR/MARKER | EACH | 2 | 2 | | | |
| | 2564.602 | DELINEATOR/MARKER PANEL | EACH | 11 | 11 | | | |
| | 2564.618 | SIGN | SQ FT | 452 | 452 | | | |
| | 2564.618 | SIGN PANEL | SQ FT | 688 | 688 | | | |
| | 2565.501 | EMERGENCY VEHICLE PREEMPTION SYSTEM A | LUMP SUM | 1 | | 0.5 | | 0.5 |
| | 2565.501 | EMERGENCY VEHICLE PREEMPTION SYSTEM B | LUMP SUM | 1 | | 0.5 | | 0.5 |
| | 2565.501 | EMERGENCY VEHICLE PREEMPTION SYSTEM C | LUMP SUM | 1 | | 0.75 | | 0.25 |
| | 2565.501 | EMERGENCY VEHICLE PREEMPTION SYSTEM D | LUMP SUM | 1 | | | 1 | |
| | 2565.501 | TRAFFIC CONTROL INTERCONNECT | LUMP SUM | 1 | 1 | | | |
| | 2565.516 | TRAFFIC CONTROL SIGNAL SYSTEM A | SYSTEM | 1 | 0.5 | 0.25 | | 0.25 |
| | 2565.516 | TRAFFIC CONTROL SIGNAL SYSTEM B | SYSTEM | 1 | 0.5 | 0.25 | | 0.25 |
| | 2565.516 | TRAFFIC CONTROL SIGNAL SYSTEM C | SYSTEM | 1 | 1 | | | |
| | 2565.516 | TRAFFIC CONTROL SIGNAL SYSTEM D | SYSTEM | 1 | 0.5 | | 0.5 | |
| (9) | 2565.602 | RIGID PVC LOOP DETECTOR 6' X 6' | EACH | 1 | 1 | | | |
| (11) | 2565.602 | ADJUST HANDHOLE | EACH | 8 | 8 | | | |
| | 2565.616 | REVISE SIGNAL SYSTEM E | SYSTEM | 1 | 0.5 | | 0.5 | |
| | 2565.616 | REVISE SIGNAL SYSTEM F | SYSTEM | 1 | 0.67 | | 0.33 | |
| | 2565.616 | TEMPORARY SIGNAL SYSTEM A | SYSTEM | 1 | 1 | | | |
| | 2565.616 | TEMPORARY SIGNAL SYSTEM B | SYSTEM | 1 | 1 | | | |
| | 2565.616 | TEMPORARY SIGNAL SYSTEM C | SYSTEM | 1 | 1 | | | |
| | 2565.616 | TEMPORARY SIGNAL SYSTEM D | SYSTEM | 1 | 1 | | | |

## STATEMENT OF ESTIMATED QUANTITIES

| | ITEM NO | ITEM DESCRIPTION | UNIT | TOTAL ESTIMATED QUANTITY | PARTICIPATION | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | ANOKA COUNTY SAP 002-609-023 | ANDOVER SAP 198-020-020 C0011463 | ANDOVER SAP 198-020-020 C0011464 | ANOKA SAP 103-020-020 |
| | 2573.502 | STORM DRAIN INLET PROTECTION | EACH | 35 | 35 | | | |
| | 2573.503 | SEDIMENT CONTROL LOG TYPE WOOD FIBER | LIN FT | 1225 | 1225 | | | |
| (10) | 2575.602 | SITE RESTORATION | EACH | 24 | 24 | | | |
| | 2582.503 | 4" SOLID LINE MULTI COMP | LIN FT | 400 | 400 | | | |
| | 2582.503 | 12" SOLID LINE MULTI COMP | LIN FT | 2330 | 2330 | | | |
| | 2582.503 | 4" DOUBLE SOLID LINE MULTI COMP | LIN FT | 30 | 30 | | | |
| | 2582.503 | 24" SOLID LINE PREF THERMO | LIN FT | 290 | 290 | | | |
| | 2582.518 | PAVEMENT MESSAGE PREF THERMO (GR IN) | SQ FT | 75 | 75 | | | |
| | 2582.518 | CROSSWALK PREF THERMO (GR IN) | SQ FT | 1910 | 1910 | | | |

(1) = INCLUDES CASTING AND CURB BOX REMOVAL.
(2) = INCLUDES ALL REQUIRED EXCAVATION.
(3) = INCLUDES REMOVAL OF ALL INPLACE PEDESTRIAN CURB RAMPS.
(4) = INCLUDES APPLICABLE CURB REMOVALS AS NECESSARY.
(5) = 6" CONCRETE WALK IS FOR ALL SIDEWALKS AND PORK CHOP ISLAND.
4" CONCRETE WALK IS FOR ALL CENTER MEDIAN AREAS.
(6) = TIE INTO EXISTING CURB AND GUTTER. TWO (2) EPOXY COATED REBAR (#4, MIN 24" LENGTH) TO BE DRILLED AND EPOXIED INTO EXISTING CURB A MINIMUM OF 10 INCHES (INCIDENTAL).
(7) = TRUNCATED DOMES SHALL BE BARE METAL.
(8) = INCLUDES DEVELOPMENT OF A CONSTRUCTION PHASING AND TRAFFIC CONTROL PLAN SIGNED BY A LICENSED PROFESSIONAL ENGINEER IN MINNESOTA, TO BE SUBMITTED FOR APPROVAL BY THE ENGINEER.
(9) = ADDED PAY ITEMS, SHOULD ADDITIONAL FIBER OPTIC PULL VAULTS OR LOOP DETECTORS BE DETERMINED DURING CONSTRUCTION TO BE ADDED TO THE PROJECT AS DIRECTED BY THE ENGINEER.
(10) = INCLUDES ALL REQUIRED GRADING, COMMON TOPSOIL BORROW, FERTILIZER, SEED, AND WATERING.
(11) = FOR HANDHOLE ADJUSTMENT AT REVISE SIGNAL SYSTEMS "E-F".
(12) = INCLUDES EXCAVATE, SALVAGE/REPLACE/COMPACT MATERIAL (GRANULAR) TO EXPOSE GATE VALVE BOX. INCLUDES CHANGING ALL EXISTING BOLTS ON THE BONNET WITH NEW STAINLESS STEEL BOLTS (BOLTS FURNISHED BY CITY OF ANDOVER).
(13) = INCLUDES REMOVAL OF EXISTING VALVE BOX, FURNISH AND INSTALL NEW VALVE BOX, AND GATE VALVE ADAPTOR. INCLUDES ADJUSTMENT TO TEMPORARY AND FINISHED GRADE.

## MnDOT STANDARD PLANS

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

| NUMBER | DESCRIPTION | APPROVED | REVISED |
|---|---|---|---|
| | | | |
| 5-297.250 | PEDESTRIAN CURB RAMP DETAILS (SHEET 1 OF 6) | 11-04-2021 | |
| 5-297.250 | PEDESTRIAN CURB RAMP DETAILS (SHEET 2 OF 6) | 11-04-2021 | |
| 5-297.250 | PEDESTRIAN CURB RAMP DETAILS (SHEET 3 OF 6) | 11-04-2021 | |
| 5-297.250 | PEDESTRIAN CURB RAMP DETAILS (SHEET 4 OF 6) | 11-04-2021 | |
| 5-297.250 | PEDESTRIAN CURB RAMP DETAILS (SHEET 5 OF 6) | 11-04-2021 | |
| 5-297.250 | PEDESTRIAN CURB RAMP DETAILS (SHEET 6 OF 6) | 11-04-2021 | |
| 5-297.405 | TEMPORARY SEDIMENT CONTROL (SHEET 2 OF 8) | 01-08-2020 | |
| 5-297.405 | TEMPORARY SEDIMENT CONTROL (SHEET 4 OF 8) | 02-28-2017 | |
| 5-297.701 | STANDARD SIGN PLACEMENT | 08-09-2023 | |
| 5-297.702 | DELINEATOR AND MARKER PLACEMENT | 06-04-2024 | |
| 5-297.719 | SQUARE TUBE SIDE-BY-SIDE MOUNTING DETAILS | 08-09-2023 | |
| 5-297.730 | SIGN MOUNTING SYSTEMS FOR ROUND SUPPORTS | 10-16-2019 | |
| 5-297.731 | SIGN MOUNTING DETAILS FOR SIGNAL MAST ARMS | 10-16-2019 | 04-17-2020 |
| 5-297.811 | ALTERNATE PEDESTRIAN ROUTE (APR) LAYOUTS (SHEET 1 OF 2) | 03-18-2021 | |
| 5-297.811 | ALTERNATE PEDESTRIAN ROUTE (APR) LAYOUTS (SHEET 2 OF 2) | 03-18-2021 | |
| 5-297.813 | TEMPORARY PEDESTRIAN ACCESS ROUTE (TPAR) DEVICES (SHEET 1 OF 2) | 03-18-2021 | |
| 5-297.813 | TEMPORARY PEDESTRIAN ACCESS ROUTE (TPAR) DEVICES (SHEET 2 OF 2) | 03-18-2021 | |
| 5-297.885 | ACCESSIBLE PEDESTRIAN SIGNAL (APS) (SHEET 1 OF 2) | 02-21-2024 | |
| 5-297.885 | ACCESSIBLE PEDESTRIAN SIGNAL (APS) (SHEET 2 OF 2) | 02-01-2024 | |

## MnDOT STANDARD PLATES

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

| PLATE NO. | |
|---|---|
| 4005 M | MANHOLE OR CATCH BASIN TYPE A & B CONE SECTIONS PRECAST - DESIGN F |
| 4006 L | MANHOLE OR CATCH BASIN PRECAST - DESIGNS G & H |
| 4108 F | ADJUSTING RINGS FOR CATCH BASINS & MANHOLES |
| 4132 G | CATCH BASIN FRAME CASTING (FOR SQUARE GRATE) - CASTING NO. 805 |
| 4134 A | CURB BOX CASTING FOR CATCH BASIN (FOR DESIGN B CURBS) - CASTING NO. 825 |
| 4154 B | CATCH BASIN GRATE CASTING - CASTING NO. 816 |
| 4180 J | MANHOLE OR CATCH BASIN STEP |
| 7000 E | INTEGRANT CURBS (DESIGN B, V, AND D) |
| 7020 K | CONCRETE CURB (DESIGN B, V, S, DR & BR) (2 SHEETS) |
| 7038 A | DETECTABLE WARNING SURFACE TRUNCATED DOMES |
| 7100 H | CONCRETE CURB AND GUTTER (DESIGN B & V) |
| 7113 A | CONCRETE APPROACH NOSE DETAIL |
| 8000 K | TEMPORARY CHANNELIZERS, TYPE A (3 SHEETS) |
| 8110 E | TRAFFIC SIGNAL BRACKETING (POLE MOUNTED) |
| 8111 E | TRAFFIC SIGNAL BRACKETING (PEDESTAL MOUNTED) (3 SHEETS) |
| 8112 I | PEDESTAL FOUNDATION (FOR TRAFFIC CONTROL SIGNALS) |
| 8118 D | SERVICE EQUIPMENT & POLE-TRAFFIC CONTROL SIGNALS |
| 8122 F | PEDESTAL AND PEDESTAL BASE (FOR TRAFFIC CONTROL SIGNALS SUPPORT) (2 SHEETS) |
| 8129 A | SHIM AND WASHER (TRAFFIC CONTROL SIGNALS AND ROADWAY LIGHTING) |

"THE LISTED STANDARD PLANS AND PLATES ARE INCORPORATED BY REFERENCE INTO THE PLAN SET. THE CERTIFICATION ON THIS SHEET SIGNIFIES THAT THE ENGINEER SELECTED THE STANDARD PLANS AND PLATES AS APPROPRIATE FOR USE ON THIS PROJECT."

FILE: X:\AE\A\ANOK\181692\15-final-dsgn\51-drawings\40-TransHwy\Plansheets\CT181692_est_Sheets.dgn
MODEL: est01

| DESIGN TEAM | NO. | BY | DATE | REVISIONS |
|---|---|---|---|---|
| DRAWN BY: MRB | | | | |
| DESIGNER: MRB | | | | |
| 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.

Certified By: Licensed Professional Engineer — Printed Name: JOHN M. GRAY — Lic. No. 22457 — Date: 09/23/2025

SEH

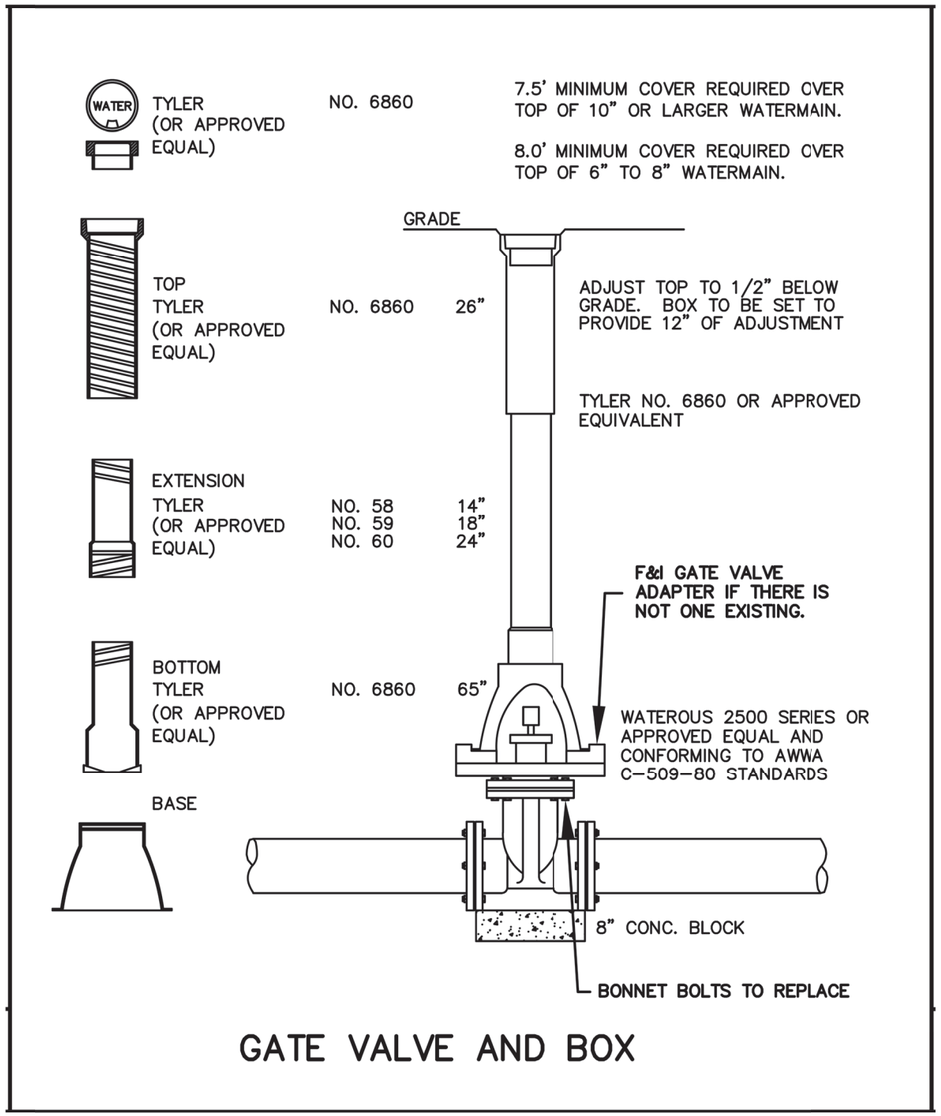
ANOKA COUNTY, MN
CSAH 9
SAP 002-609-023
CITY OF ANDOVER SAP 198-020-042, CITY PROJECT 25-13
CITY OF ANOKA SAP 103-020-020

STATEMENT OF ESTIMATED QUANTITIES

CSAH 9 (ROUND LAKE BOULEVARD)

10:16:25 AM
9/25/2025

## CITY OF ANDOVER DETAIL FOR WORK UNDER "ADJUST VALVE BOX-WATER" AND "INSTALL GATE VALVE" PAY ITEMS.




## GATE VALVE AND BOX

GENERAL NOTES:

1. THE SUBSURFACE UTILITY INFORMATION IN THIS PLAN IS UTILITY QUALITY LEVEL "D". THIS QUALITY LEVEL WAS DETERMINED ACCORDING TO THE GUIDELINES OF CI/ASCE 38-22, ENTITLED "STANDARD GUIDELINES FOR INVESTIGATING AND DOCUMENTING EXISTING UTILITIES."
2. 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).
3. THIS PROJECT DOES NOT MEET THE CRITERIA FOR A NPDES CONSTRUCTION GENERAL PERMIT INCLUDING SWPPP DEVELOPMENT. HOWEVER, THE CONTRACTOR SHALL USE ENVIRONMENTALLY FRIENDLY CONSTRUCTION TECHNIQUES WHILE PERFORMING THE WORK. THESE TECHNIQUES CAN INCLUDE BUT ARE NOT LIMITED TO: DO NOT DISTURB AREAS, PERIMETER CONTROL, INLET PROTECTION, DUST CONTROL, PROPER DEWATERING TECHNIQUES, TEMPORARY SOIL STABILIZATION, AND PERMANENT SOIL STABILIZATION.
4. THE CONTRACTOR SHALL STABILIZE ALL EXPOSED SOIL AREAS WITHIN 14 DAYS OF INACTIVITY. ALL AREAS THAT HAVE A POTENTIAL TO DISCHARGE TO AN ENVIRONMENTALLY SENSITIVE AREA MUST BE STABILIZED WITHIN 24 HOURS AS DIRECTED BY THE ENGINEER WITH CHANGING FIELD CONDITIONS.

STORMWATER MANAGEMENT/EROSION CONTROL NOTES:

1) DUST GENERATION MUST BE MINIMIZED AND CONTROLLED DURING SAW-CUTTING AND MILLING OPERATIONS.
2) SAW-CUT AND MILLING DEBRIS MUST BE PICKED UP AND REMOVED AS SOON AS POSSIBLE AND ADJACENT AREAS SWEPT. CLEAN-UP SHALL BE PERFORMED IMMEDIATELY AFTER COMPLETION OF SAWCUT AND MILLING OPERATIONS.
3) STORMWATER INLETS MUST BE PROTECTED FROM DEBRIS (SUCH AS FROM MILLING OPERATIONS) AND ANY DISTURBED SOIL. INLET PROTECTION SHOULD BE PROVIDED ON DOWNSTREAM INLETS IF MILLING OR SAW-CUTTING WILL OCCUR DURING WET WEATHER OR IF SOIL IS DISTURBED WHICH COULD BE WASHED INTO AN INLET PRIOR TO STABILIZATION. IF ANY SOIL OR DEBRIS INADVERTENTLY ENTERS AN INLET, IT MUST BE REMOVED IMMEDIATELY.
4) ANY DISTURBED TURF AREAS MUST BE RESTORED AS SOON AS POSSIBLE AFTER THE DISTURBANCE (RAPID STABILIZATION, METHOD 3).
5) CONCRETE WASHOUT FROM ANY CONCRETE PAVEMENT MUST BE DEALT WITH IN ACCORDANCE WITH: http://www.dot.state.mn.us/environment/pdf/concrete-washout.pdf
6) ALL STORMWATER MANAGEMENT AND EROSION CONTROL MITIGATION (INCLUDING ALL INLET PROTECTION) AND ALL RESTORATION OF ALL ROADWAYS SHALL BE MEASURED AND PAID FOR SEPARATELY. SEE STATEMENT OF ESTIMATED QUANTITIES AND SPECIAL PROVISIONS.

UTILITY NOTES:

1) THE FOLLOWING LIST SHOWS THE AGENCIES THAT MAY HAVE UTILITY FACILITIES WITHIN THE PROJECT LIMIT AREA (BASED ON GOPHER SATE ONE CALL REQUEST FOR LOCATES IN NOVEMBER 2024 AND SUBSEQUENT UTILITY FOLLOW-UPS):

| | SYSTEM A | SYSTEM B | SYSTEM C | SYSTEM D | SYSTEM E | SYSTEM F |
|---|---|---|---|---|---|---|
| ANOKA COUNTY HIGHWAY DEPARTMENT | X | X | X | X | X | X |
| CENTURYLINK (LUMEN) | X | X | X | X | X | X |
| CENTERPOINT ENERGY MINNESOTA GAS | X | X | X | X | X | X |
| CITY OF ANDOVER UTILITIES | X | X | X | X | X | X |
| CITY OF ANOKA UTILITIES | X | X | X | | | |
| COMCAST CABLE, LLC | X | X | X | X | X | X |
| CONNEXUS ENERGY | X | X | X | X | X | X |
| MCI COMMUNICATION SERVICES LLC | | | X | X | X | X |
| ZAYO GROUP LLC | X | X | X | X | X | |

2) CONTRACTOR IS RESPONSIBLE FOR ALL COORDINATION COSTS REQUIRED TO WORK WITH EXISTING UTILITY COMPANIES, FOR UTILITY COMPANIES TO PROPERLY LOCATE, MAINTAIN, ADJUST AND RELOCATE THEIR FACILITIES AS REQUIRED DUE TO PROJECT WORK.
3) ALL CONTRACTOR COSTS TO LOCATE AND WORK AROUND EXISTING UTILITIES (INCLUDING ANY CONDUIT BORING, POTHOLING, ROADWAY TRENCHING, ETC.) ARE INCIDENTAL TO THE ENTIRE PROJECT.
4) PROTECT ALL EXISTING PUBLIC AND PRIVATE UTILITIES AND STRUCTURES DURING CONSTRUCTION OF THE PROJECT.
5) CONTRACTOR SHALL PERFORM DETAILED FIELD REVIEW OF EACH INTERSECTION PRIOR TO CONSTRUCTION, LOCATE ANY SPRINKLER HEADS WITHIN THE BOULEVARD AREAS, AND COORDINATE WITH ADJACENT PROPERTY OWNER TO HAVE THESE IRRIGATION SYSTEMS MARKED PRIOR TO WORKING IN THE AREA OF THESE FACILITIES. REPAIR ANY IRRIGATION FACILITIES DAMAGED DURING CONSTRUCTION TO THE SATISFACTION OF THE OWNER AND THE COUNTY, AT NO COST TO THE COUNTY OR OWNER.
6) CONTRACTOR SHALL HAVE "ONE CALL" LOCATES COMPLETED PRIOR TO STARTING CONSTRUCTION TO CONFIRM LOCATIONS OF ALL EXISTING UTILITIES IN THE AREA OF THE CONSTRUCTION.
7) SYSTEM "A" = CSAH 9 (ROUND LAKE BLVD) AT 135TH AVENUE/ROOSEVELT STREET
SYSTEM "B" = CSAH 9 (ROUND LAKE BLVD) AT 136TH AVENUE
SYSTEM "C" = CSAH 9 (ROUND LAKE BLVD) AT CSAH 116 (BUNKER LAKE BLVD)
SYSTEM "D" = CSAH 9 (ROUND LAKE BLVD) AT 138TH LANE
SYSTEM "E" = CSAH 9 (ROUND LAKE BLVD) AT 140TH LANE
SYSTEM "F" = CSAH 9 (ROUND LAKE BLVD) AT 143RD AVENUE
8) ANTICIPATED PRIVATE UTILITY RELOCATIONS (TO BE COMPLETED BY LOCAL UTILITY AGENCY AT NO EXPENSE TO CONTRACTOR) EITHER BEFORE OR DURING CONSTRUCTION INCLUDES BUT IS NOT LIMITED TO:
SYSTEM "A" - NW = LUMEN TO RELOCATE THEIR FACILITIES (WEST OF SIDEWALK)
SYSTEM "A" - SW = ZAYO AND LUMEN WILL RELOCATE/ADJUST THEIR FACILITIES AS NEEDED
SYSTEM "B" - NW = LUMEN TO RELOCATE THEIR FACILITIES
SYSTEM "C" - NE = CENTERPOINT, CONNEXUS, AND MCI TO RELOCATE THEIR FACILITIES TO BE EAST OF SIDEWALK
SYSTEM "C" - NW = MCI TO RELOCATE THEIR FACILITIES FURTHER NORTH OF SIGNAL POLE
SYSTEM "C" - SW = ZAYO TO RELOCATE THEIR FACILITIES INTO BOULEVARD AREA
SYSTEM "D" - NO MOVEMENTS
SYSTEM "E" - NO MOVEMENTS
SYSTEM "F" - NO MOVEMENTS

## ABBREVIATIONS

| | |
|---|---|
| APS | ACCESSIBLE PEDESTRIAN SIGNAL |
| AWF | ADVANCED WARNING FLASHER |
| BL | BLUE |
| BL/BLK | BLUE WITH BLACK TRACER |
| BLK | BLACK |
| BLK/R | BLACK WITH RED TRACER |
| BLK/WH | BLACK WITH WHITE TRACER |
| C.D. | COUNT DOWN |
| CH. SW. | CHECK SWITCH |
| CLR | CLEAR |
| D2-1 (e.g.) | DETECTOR (PHASE 2, NO. 1) |
| DEG | DEGREES |
| DWK | DON'T WALK |
| EQ.G | EQUIPMENT GROUND |
| EVP | EMERGENCY VEHICLE PRE-EMPTION |
| F&I | FURNISH AND INSTALL |
| FL | FLASH/FLASHING |
| FYA | FLASHING YELLOW ARROW |
| FYLA | FLASHING YELLOW LEFT ARROW |
| G | GREEN |
| G/BLK | GREEN WITH BLACK TRACER |
| GLA | GREEN LEFT ARROW |
| GRN | GREEN INDICATION |
| GR. RD. | GROUND ROD |
| GRA | GREEN RIGHT ARROW |
| GTA | GREEN THRU ARROW |
| HH | HANDHOLE |
| HPS | HIGH PRESSURE SODIUM |
| IMC | INTERMEDIATE METAL CONDUIT |
| IND | INDICATION |
| INP | INPLACE |
| INS. GR. | INSULATED GROUND |
| JB | JUNCTION BOX |
| LED | LIGHT EMITTING DIODE |
| LHT | LIGHT |
| LUM | LUMINAIRE |
| NEU | NEUTRAL |
| NMC | NONMETALLIC CONDUIT |
| O | ORANGE |
| O/BLK | ORANGE WITH BLACK TRACER |
| P1-1 (e.g.) | PEDESTRIAN INDICATION (PHASE 1, NO. 1) |
| PB | PUSH BUTTON |
| PB2-1 (e.g.) | PUSH BUTTON (PHASE 2, NO. 1) |
| PEC | PHOTOELECTRIC CELL |
| PED | PEDESTRIAN |
| PVC | POLYVINYL CHLORIDE (CONDUIT) |
| RED | RED INDICATION |
| R&S | REMOVE AND SALVAGE |
| R/BLK | RED WITH BLACK TRACER |
| RLA | RED LEFT ARROW |
| RSC | RIGID STEEL CONDUIT |
| S & I | SALVAGE AND INSTALL |
| SOP | SOURCE OF POWER |
| SPR | SPARE |
| ST LHT | STREET LIGHT |
| STA | STATION |
| SW | SWITCH |
| SWD | SWITCHED |
| TDW | TELEPHONE DROP WIRE |
| WH | WHITE |
| WH/BLK | WHITE WITH BLACK TRACER |
| WH/R | WHITE WITH RED TRACER |
| WLK | WALK |
| YEL | YELLOW INDICATION |
| YLA | YELLOW LEFT ARROW |
| YRA | YELLOW RIGHT ARROW |

## SYMBOLS

- HANDHOLE
- EQ. G CONNECTION
- EVP CONFIRMATORY LIGHT
- EVP DETECTOR
- EVP DETECTOR & CONFIRMATORY LIGHT
- FO — FIBER OPTIC VAULT
- 2 — LUMINAIRE NO.
- 3 — SIGNAL BASE NO.
- 3-2 — SIGNAL FACE NO./FLASHER FACE NO.
- SPLICE
- V- — VIDEO DETECTION
- M- — MICROWAVE DETECTION
- S- — SONIC DETECTION

FOR PLANS AND UTILITIES SYMBOLS
SEE TECHNICAL MANUAL

## 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 16 | Signal Control Cable | SPEC. PROV. |
| 4/C 16 | Signal Control Cable | SPEC. PROV. |
| 6/C 16 | Signal Control Cable | SPEC. PROV. |
| 7/C 16 | Signal Control Cable | SPEC. PROV. |
| 4PR 24 | Ethernet Cable | 3815.2C.6.d |
| 6PR 19 | Telephone Cables Outdoor | 3815.2C.6.b |
| 3/C 20 | EVP Detector Cable | 3815.2C.5 |

## CABLE LABELING ABBREVIATIONS

| ABBREVIATION | LABEL REFERENCE DSISCRIPTION & 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.

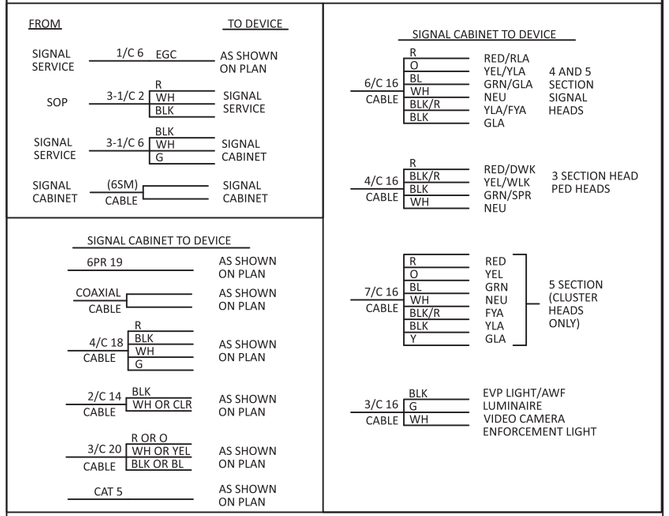
## TRAFFIC SIGNAL TABULATION

| ITEM NO | ITEM | UNIT | TOTAL ESTIMATED QUANTITY | PARTICIPATION | | | |
|---|---|---|---|---|---|---|---|
| | | | | SAP 002-609-023 | SAP 103-020-020 | SAP 198-020-042 | LOCAL FUNDS |
| 2104 | REMOVE SIGNAL SYSTEM A | EACH | 1 | 1 | | | |
| 2104 | REMOVE SIGNAL SYSTEM B | EACH | 1 | 1 | | | |
| 2104 | REMOVE SIGNAL SYSTEM C | EACH | 1 | 1 | | | |
| 2104 | REMOVE SIGNAL SYSTEM D | EACH | 1 | 1 | | | |
| 2545 | SERVICE CABINET | EACH | 4 | 2.5 | 0.5 | 1 | |
| 2550 | PULL VAULT | EACH | 1 | 1 | | | |
| 2550 | CCTV ASSEMBLY | EACH | 5 | 3 | 1 | 1 | |
| 2565 | EMERGENCY VEHICLE PREEMPTION SYSTEM A | LUMP SUM | 1 | | 0.5 | 0.5 | |
| 2565 | EMERGENCY VEHICLE PREEMPTION SYSTEM B | LUMP SUM | 1 | | 0.5 | 0.5 | |
| 2565 | EMERGENCY VEHICLE PREEMPTION SYSTEM C | LUMP SUM | 1 | | | 1 | |
| 2565 | EMERGENCY VEHICLE PREEMPTION SYSTEM D | LUMP SUM | 1 | | | 1 | |
| 2565 | TRAFFIC CONTROL INTERCONNECT | LUMP SUM | 1 | 1 | | | |
| 2565 | TRAFFIC CONTROL SIGNAL SYSTEM A | SYSTEM | 1 | 0.5 | 0.25 | 0.25 | |
| 2565 | TRAFFIC CONTROL SIGNAL SYSTEM B | SYSTEM | 1 | 0.5 | 0.25 | 0.25 | |
| 2565 | TRAFFIC CONTROL SIGNAL SYSTEM C | SYSTEM | 1 | 1 | | | |
| 2565 | TRAFFIC CONTROL SIGNAL SYSTEM D | SYSTEM | 1 | 0.5 | | 0.5 | |
| 2565 | REVISE SIGNAL SYSTEM E | SYSTEM | 1 | 0.5 | | 0.5 | |
| 2565 | REVISE SIGNAL SYSTEM F | SYSTEM | 1 | 0.67 | | 0.33 | |
| 2565 | TEMPORARY SIGNAL SYSTEM A | SYSTEM | 1 | 1 | | | |
| 2565 | TEMPORARY SIGNAL SYSTEM B | SYSTEM | 1 | 1 | | | |
| 2565 | TEMPORARY SIGNAL SYSTEM C | SYSTEM | 1 | 1 | | | |
| 2565 | TEMPORARY SIGNAL SYSTEM D | SYSTEM | 1 | 1 | | | |
| 2656 | RIGID PVC LOOP DETECTOR 6' X 6' | EACH | 1 | 1 | | | |
| 2656 | ADJUST HANDHOLE | EACH | 8 | 8 | | | |

## 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 COLOR CODE




NOTES:
ARRANGE AND TERMINATE CONDUCTORS AND CABLES AS SHOWN WITHOUT SPLICE.
NUMBER ONLY MEANS AWG CONDUCTOR SIZE (e.g. 16=16AWG)
1/C MEANS AN INDIVIDUAL CONDUCTOR NOT PART OF A CABLE ASSEMBLY

| DESIGN TEAM | NO. | BY | DATE | REVISIONS |
|---|---|---|---|---|
| DRAWN BY: MRB | | | | |
| DESIGNER: MRB | | | | |
| 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.
Certified By: Licensed Professional Engineer
Printed Name: JOHN M. GRAY
Lic. No. 22457 Date: 09/23/2025

SEH

ANOKA COUNTY, MN
CSAH 9
SAP 002-609-023
CITY OF ANDOVER SAP 198-020-042, CITY PROJECT 25-13
CITY OF ANOKA SAP 103-020-020

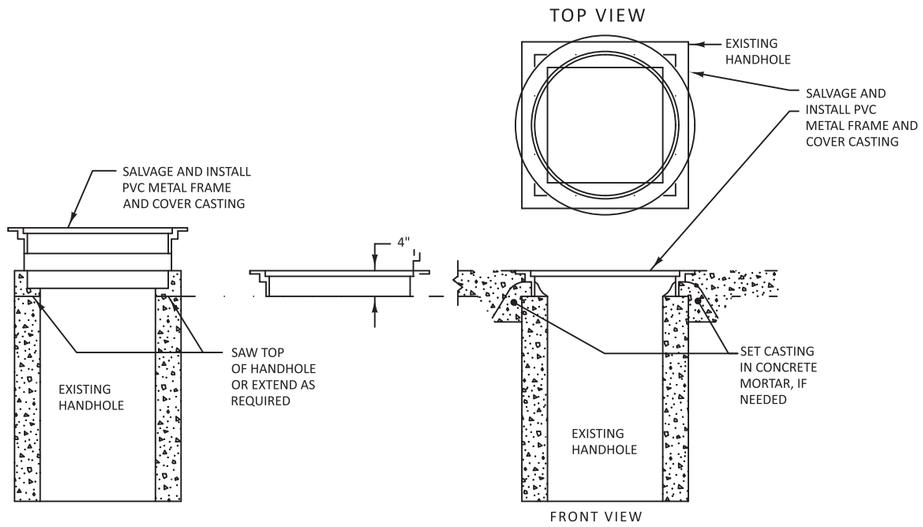
TRAFFIC SIGNAL SYSTEMS "A-F"
DETAILS
CSAH 9 (ROUND LAKE BOULEVARD)

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133

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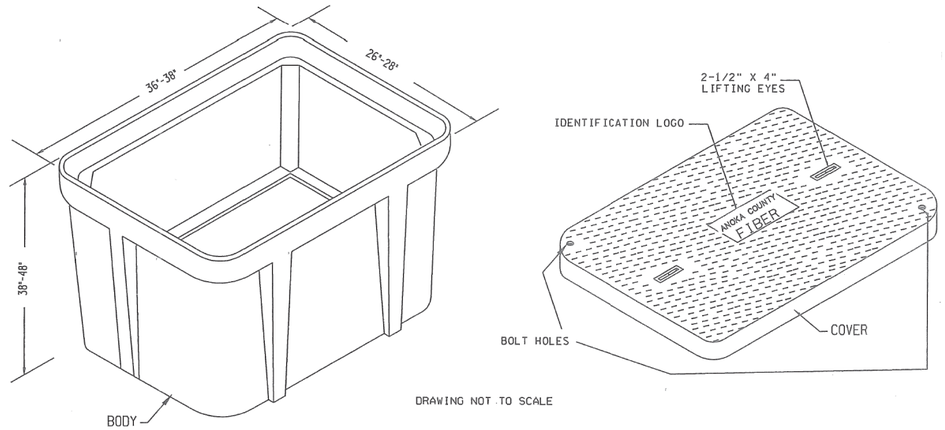
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## ADJUST SIGNAL HANDHOLE




WHERE EXISTING PVC HANDHOLES WITH METAL RINGS AND COVERS ARE REQUIRED TO BE ADJUSTED TO MATCH FINISHED SURROUNDING SIDEWALK, MEDIAN 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/MEDIAN/BOULEVARD. THIS WORK WILL BE MEASURED AND PAID FOR SEPARATELY FROM THE "REVISE SIGNAL SYSTEM E-F" PAY ITEMS.

## FIBER–OPTIC PULLING VAULT DETAIL




DRAWING NOT TO SCALE

| DESIGN TEAM | NO. | BY | DATE | REVISIONS |
|---|---|---|---|---|
| DRAWN BY: MRB | | | | |
| DESIGNER: MRB | | | | |
| 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.

Certified By: Licensed Professional Engineer — Printed Name: JOHN M. GRAY — Lic. No. 22457 — Date: 09/23/2025

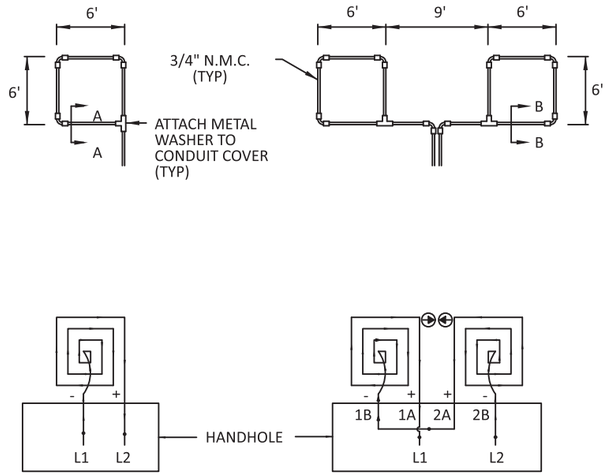
SEH

ANOKA COUNTY, MN
CSAH 9
SAP 002-609-023
CITY OF ANDOVER SAP 198-020-042, CITY PROJECT 25-13
CITY OF ANOKA SAP 103-020-020

TRAFFIC SIGNAL SYSTEMS "A-F"
DETAILS
CSAH 9 (ROUND LAKE BOULEVARD)



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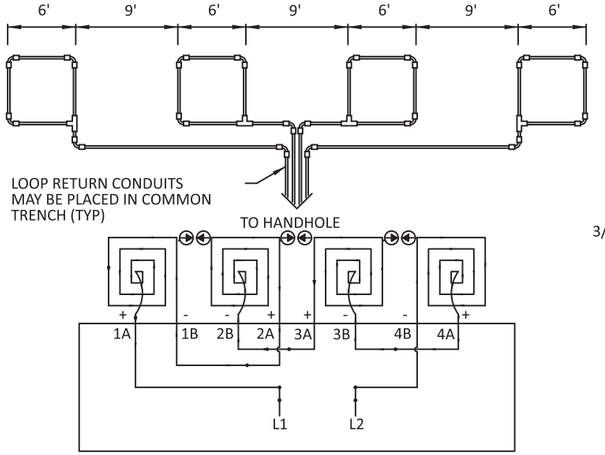

LOOP DETECTOR
DETAIL 'A'
(LOOP PHASING FOR
SINGLE CONNECTION)




LOOP CONNECTIONS SHALL BE
LABELED AND SPLICED IN THE
HANDHOLE AS FOLLOWS:

L1 TO 1A
1B TO 2A
2B TO L2

LOOP DETECTOR
DETAIL 'B'
(LOOP PHASING FOR
SERIES CONNECTION)

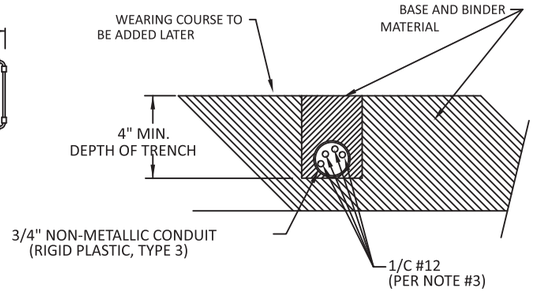



LOOP CONNECTIONS SHALL BE LABELED AND SPLICED
IN THE HANDHOLE AS FOLLOWS:

L1 TO 1A
1B TO 2A
2B TO 3A
3B TO 4A
4B TO L2

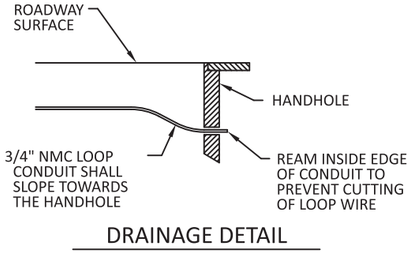
SPLICE CONTROL CABLE TO L1 & L2 IN HANDHOLE.
ALL CONDUCTORS SHALL BE TAGGED IN HANDHOLE
(1A, 1B, ECT)

LOOP DETECTOR
DETAIL 'C'
(LOOP PHASING FOR
SERIES CONNECTION)

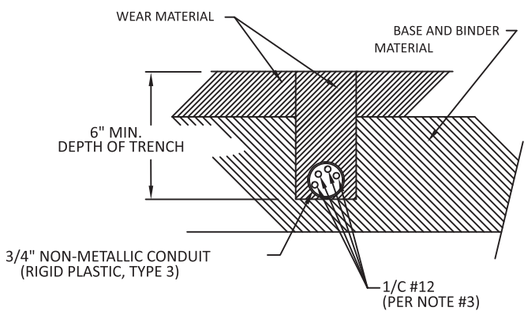



SECTION A-A

DETAIL FOR LOOP INSTALLATION
IN NEW ROADWAY




DRAINAGE DETAIL




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.

| DESIGN TEAM | NO. | BY | DATE | REVISIONS |
|---|---|---|---|---|
| DRAWN BY: MRB | | | | |
| DESIGNER: MRB | | | | |
| 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.

Certified By: Licensed Professional Engineer — Printed Name: JOHN M. GRAY — Lic. No. 22457 — Date: 09/23/2025

SEH

ANOKA COUNTY, MN
CSAH 9
SAP 002-609-023
CITY OF ANDOVER SAP 198-020-042, CITY PROJECT 25-13
CITY OF ANOKA SAP 103-020-020

TRAFFIC SIGNAL SYSTEMS "A-F"
PVC LOOP DETECTOR DETAILS
CSAH 9 (ROUND LAKE BOULEVARD)



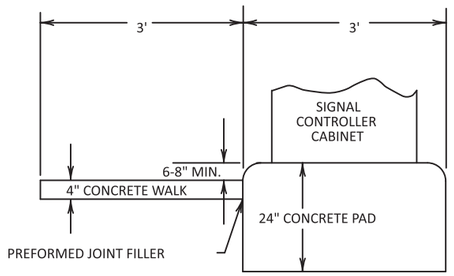
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# TYPICAL PAD WITH CONTROLLER CABINET AND SERVICE CABINET
# SEE INTERSECTION LAYOUT FOR CABLE INFORMATION (NOT TO SCALE)

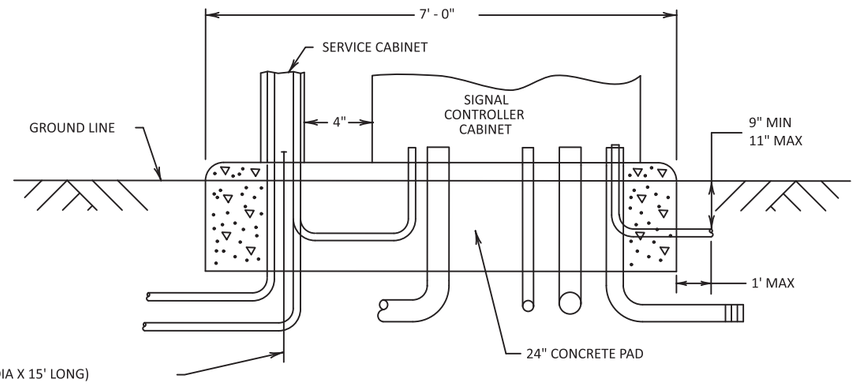
## NOTES:

1. THE ANCHOR RODS, NUTS AND WASHERS FOR THE COUNTY FURNISHED CONTROLLERS AND CABINETS (SYSTEMS "A-D") SHALL BE FURNISHED BY THE COUNTY AND INSTALLED BY THE CONTRACTOR.
2. THE UPPER PART OF EACH 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 THREADED AND 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 3A32 OR EQUAL SHALL BE USED FOR THE EQUIPMENT PADS AND SIDEWALKS.
6. CONDUITS WITH BOTH ENDS TERMINATING WITHIN THE PADS SHALL NOT BE INSTALLED BELOW THE CONCRETE.
7. THE EXACT LOCATION OF CONDUITS WITHIN EACH 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 EACH EQUIPMENT PAD FOUNDATION AS SHOWN.

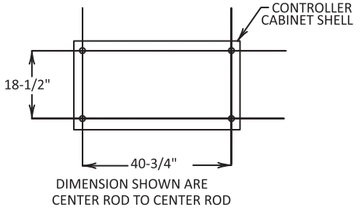
### SIDE VIEW



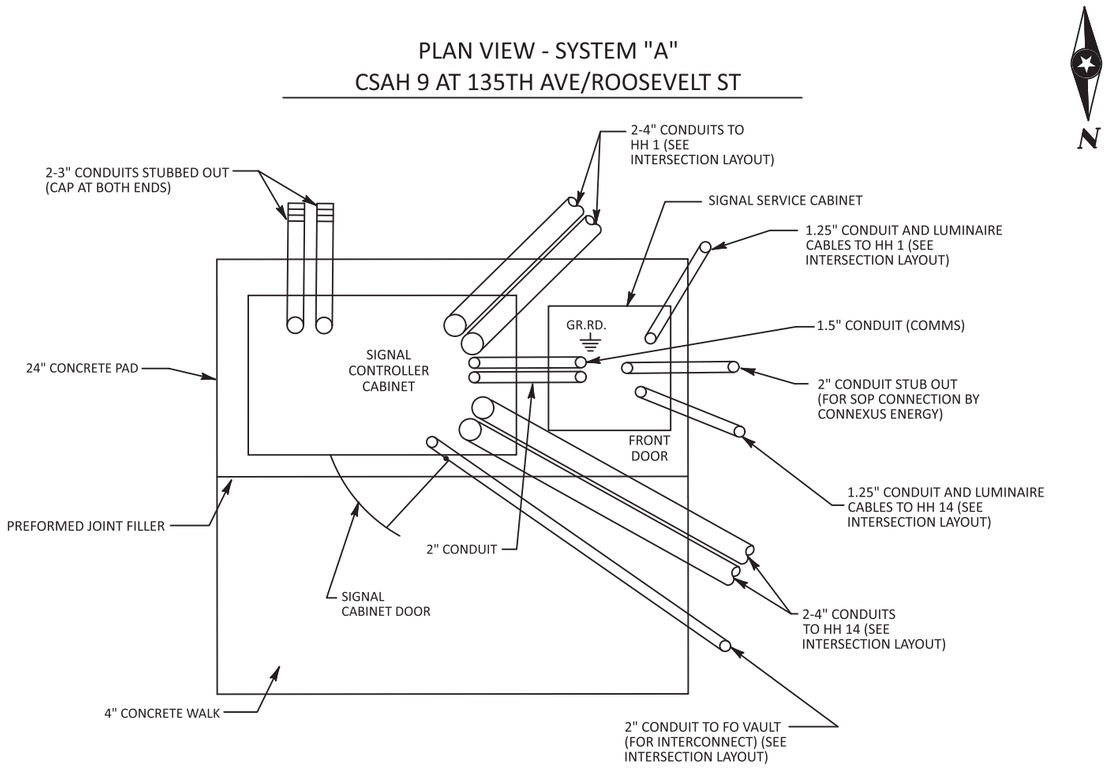

### FRONT VIEW



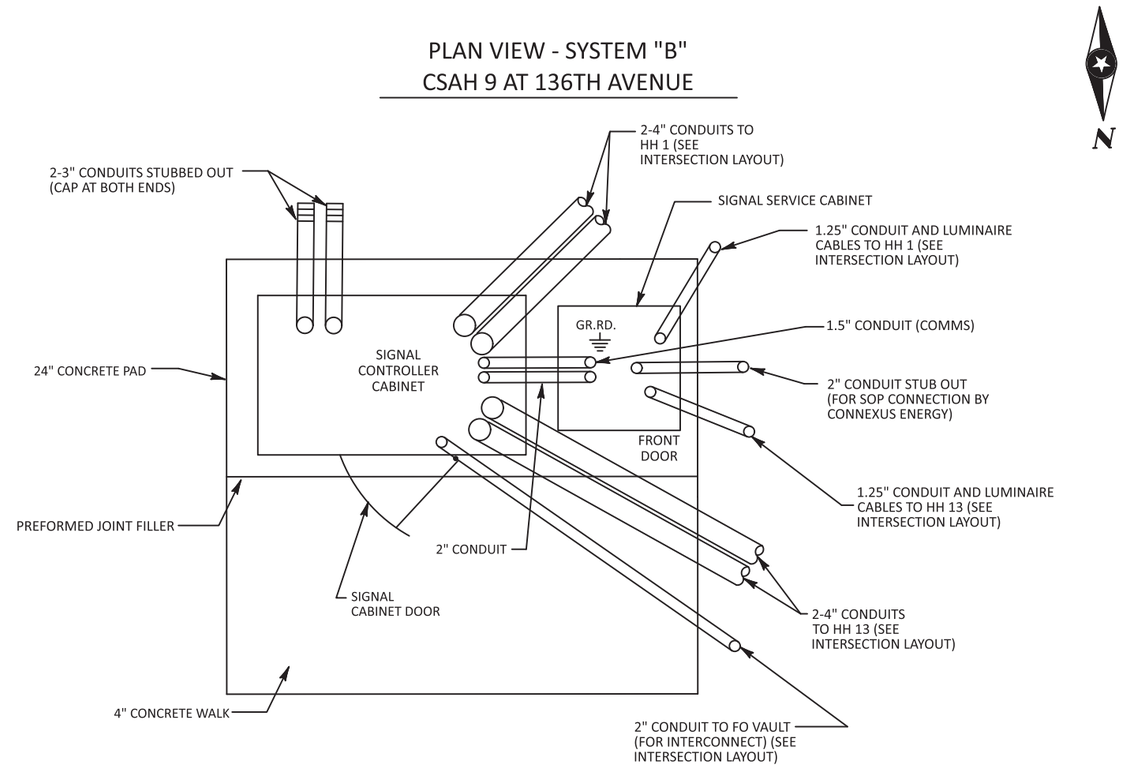

### CONTROLLER CABINET TYPE "P" & "R" BOLT PATTERN




### PLAN VIEW - SYSTEM "A"
### CSAH 9 AT 135TH AVE/ROOSEVELT ST




### PLAN VIEW - SYSTEM "B"
### CSAH 9 AT 136TH AVENUE




| DESIGN TEAM | NO. | BY | DATE | REVISIONS |
|---|---|---|---|---|
| DRAWN BY: MRB | | | | |
| DESIGNER: MRB | | | | |
| 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.

Certified By: Licensed Professional Engineer — Printed Name: JOHN M. GRAY — Lic. No. 22457 — Date: 09/23/2025

SEH

ANOKA COUNTY, MN
CSAH 9
SAP 002-609-023
CITY OF ANDOVER SAP 198-020-042, CITY PROJECT 25-13
CITY OF ANOKA SAP 103-020-020

TRAFFIC SIGNAL SYSTEMS "A-D"
EQUIPMENT PAD DETAILS
CSAH 9 (ROUND LAKE BOULEVARD)

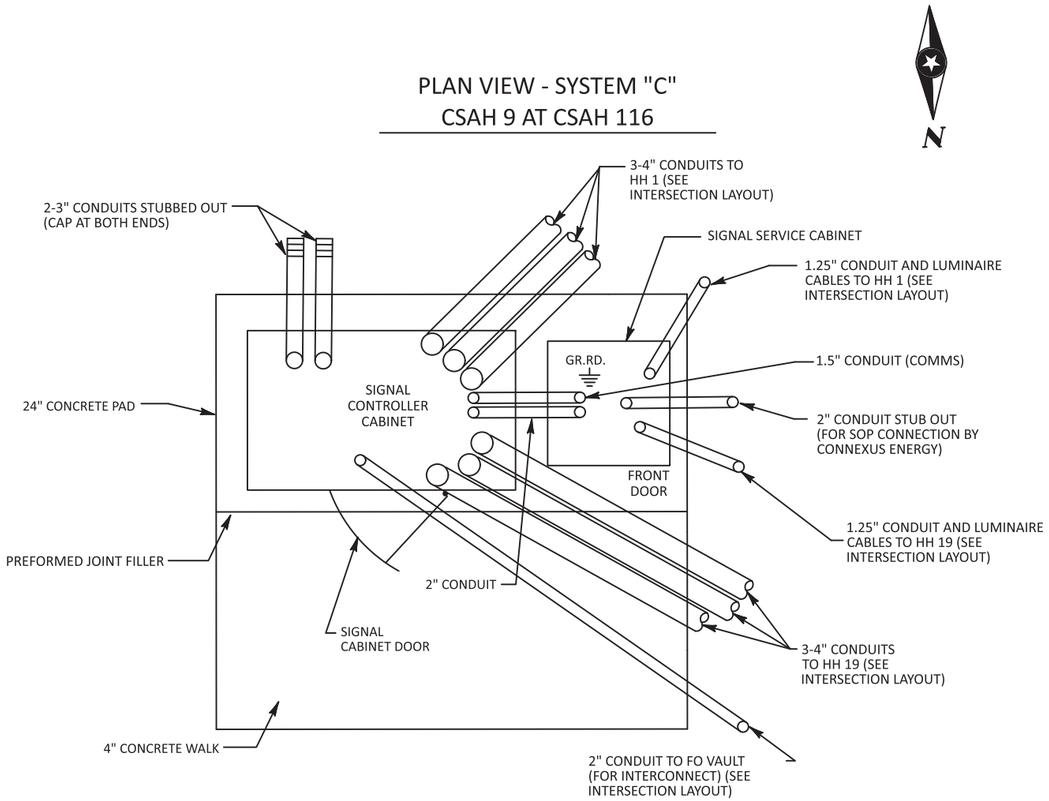


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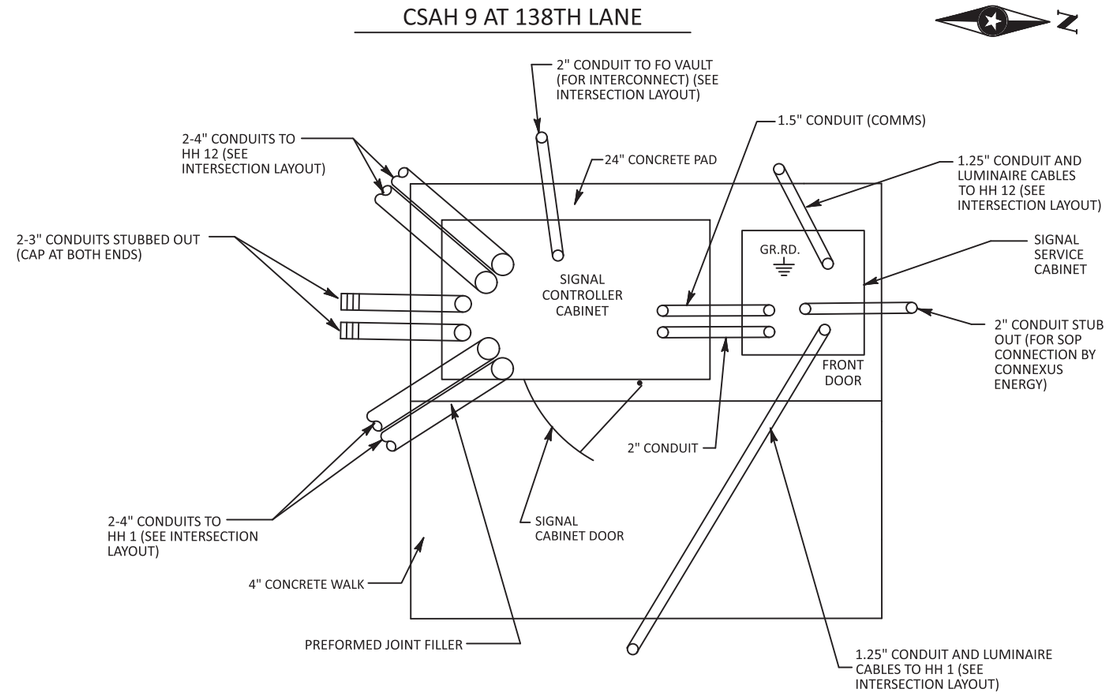
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9/25/2025

## PLAN VIEW - SYSTEM "C"
## CSAH 9 AT CSAH 116




## PLAN VIEW - SYSTEM "D"
## CSAH 9 AT 138TH LANE




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| DESIGN TEAM | NO. | BY | DATE | REVISIONS |
|---|---|---|---|---|
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| DESIGNER: MRB | | | | |
| CHECKED BY: JMG | | | | |

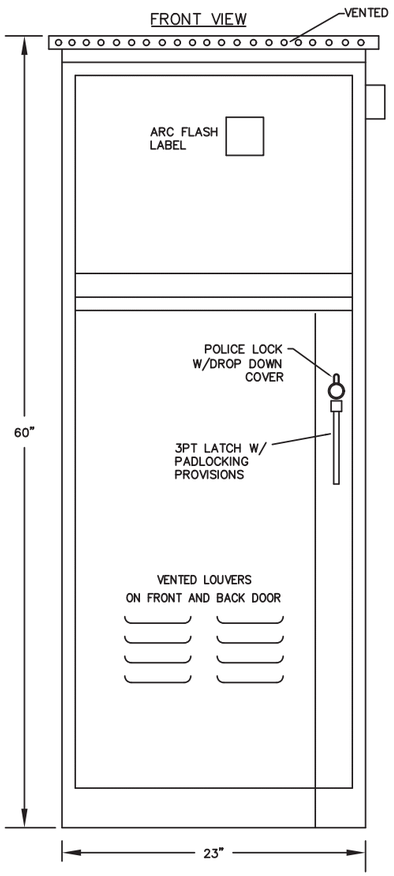
I hereby certify that this plan was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.

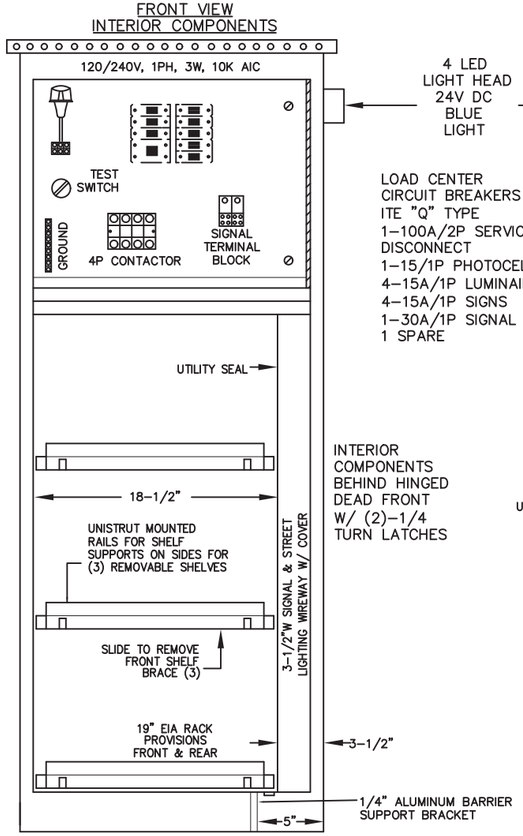
Certified By: Licensed Professional Engineer — Printed Name: JOHN M. GRAY — Lic. No. 22457 — Date: 09/23/2025

SEH

ANOKA COUNTY, MN
CSAH 9
SAP 002-609-023
CITY OF ANDOVER SAP 198-020-042, CITY PROJECT 25-13
CITY OF ANOKA SAP 103-020-020

TRAFFIC SIGNAL SYSTEMS "A-D"
EQUIPMENT PAD DETAILS
CSAH 9 (ROUND LAKE BOULEVARD)

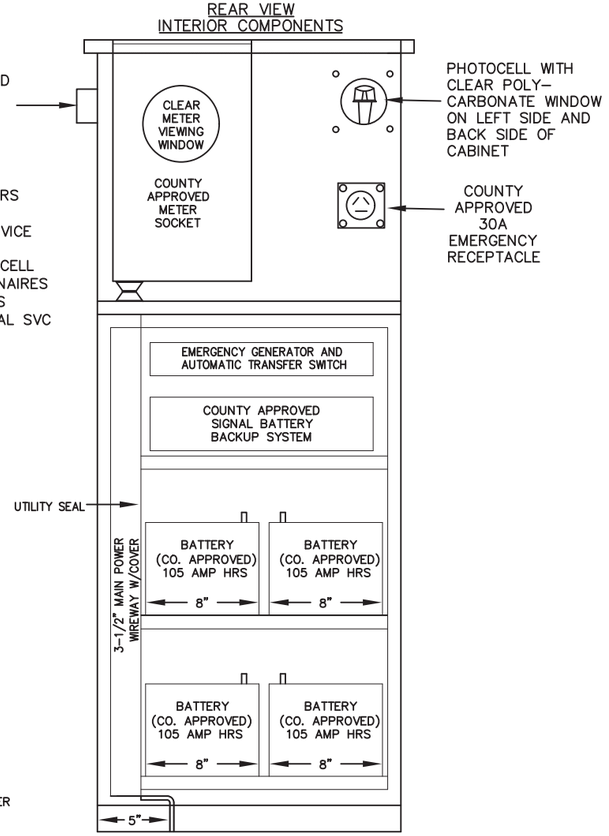


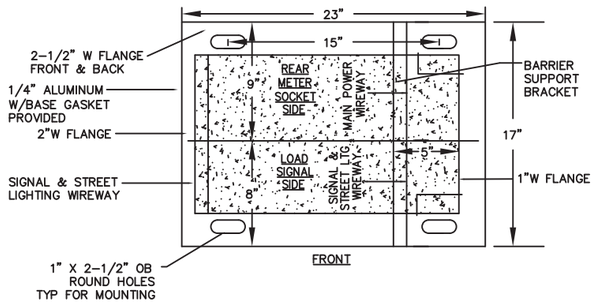




4 LED LIGHT HEAD 24V DC BLUE LIGHT

LOAD CENTER CIRCUIT BREAKERS
ITE "Q" 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

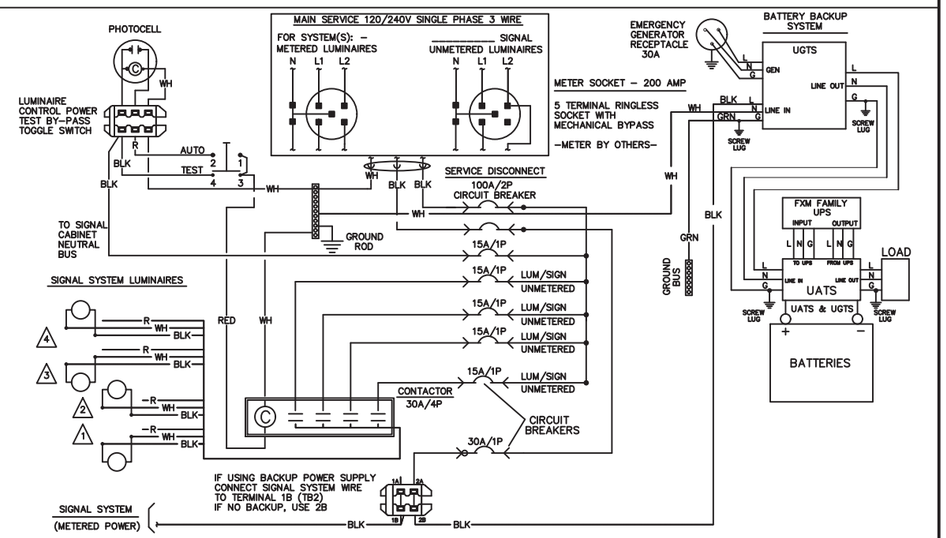



## CABINET CONSTRUCTION

-NEMA 3R
-1/8" ALUMINUM 5052-H32
-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.




FEED POINT WIRING DIAGRAM

| DESIGN TEAM | NO. | BY | DATE | REVISIONS |
|---|---|---|---|---|
| DRAWN BY: MRB | | | | |
| DESIGNER: MRB | | | | |
| CHECKED BY: JMG | | | | |

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Certified By: Licensed Professional Engineer Lic. No. 22457 Date: 09/23/2025

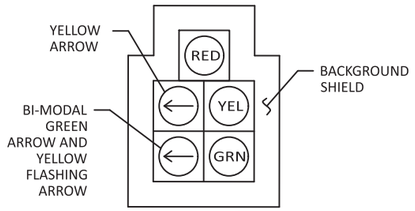
SEH

ANOKA COUNTY, MN
CSAH 9
SAP 002-609-023
CITY OF ANDOVER SAP 198-020-042, CITY PROJECT 25-13
CITY OF ANOKA SAP 103-020-020

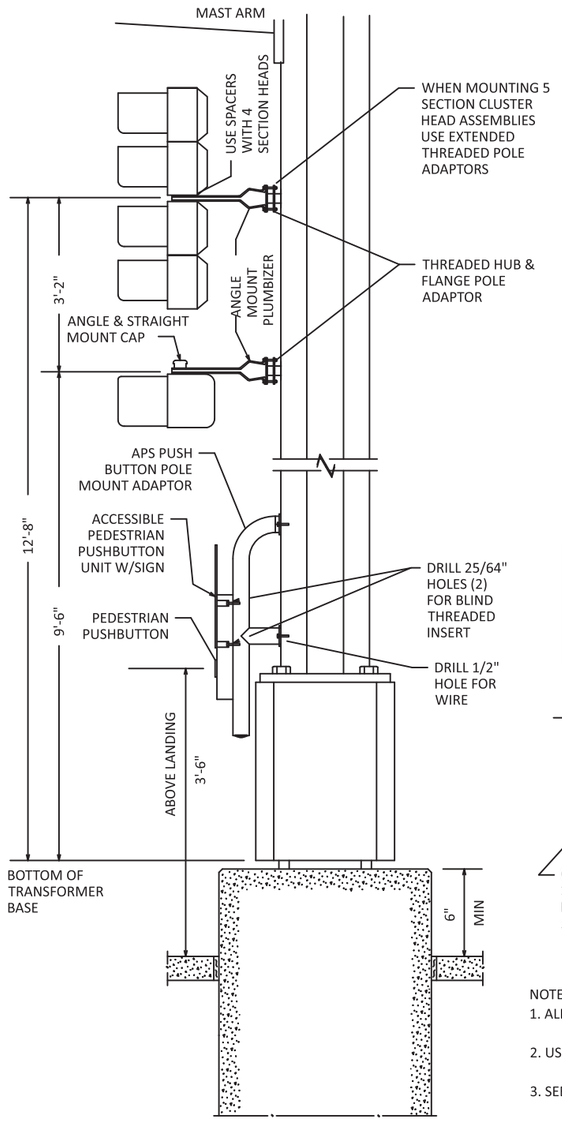
TRAFFIC SIGNAL SYSTEMS "A-D"
SIGNAL SERVICE CABINET DETAILS
CSAH 9 (ROUND LAKE BOULEVARD)

9
133

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9/25/2025
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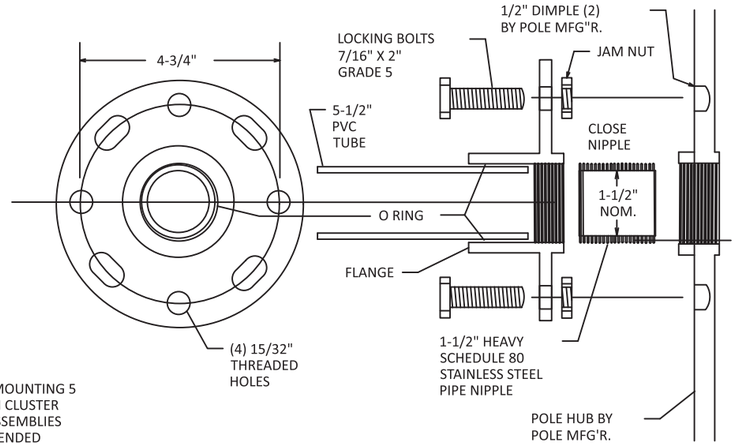



## 5 SECTION FYA CLUSTER HEAD DETAIL



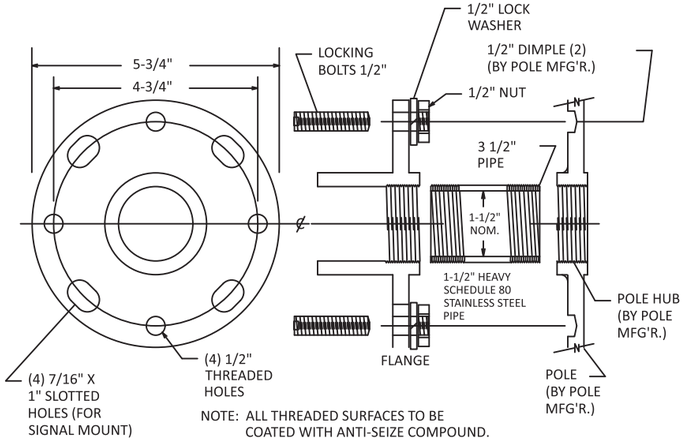

## TYPICAL SIGNAL POLE MOUNTING

NOT TO SCALE




## THREADED HUB AND FLANGE POLE ADAPTOR



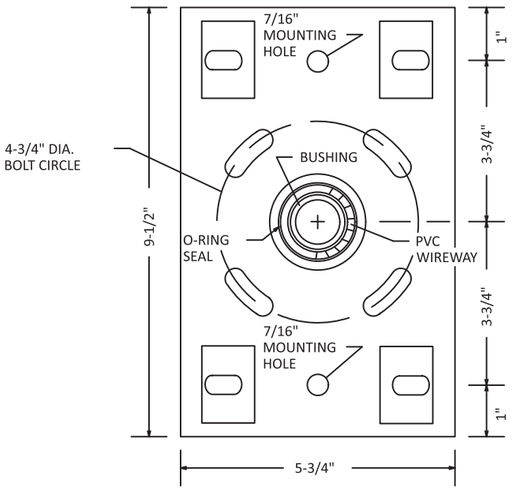



NOTE: ALL THREADED SURFACES TO BE COATED WITH ANTI-SEIZE COMPOUND.

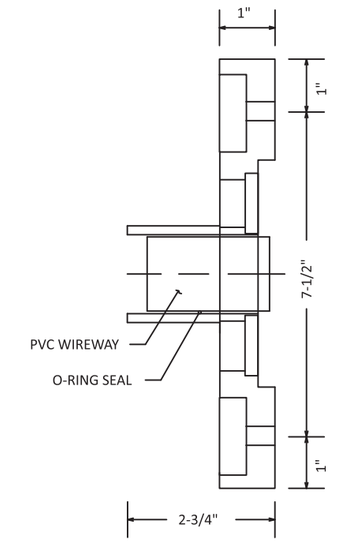
## EXTENDED THREADED POLE ADAPTER

NOTES:

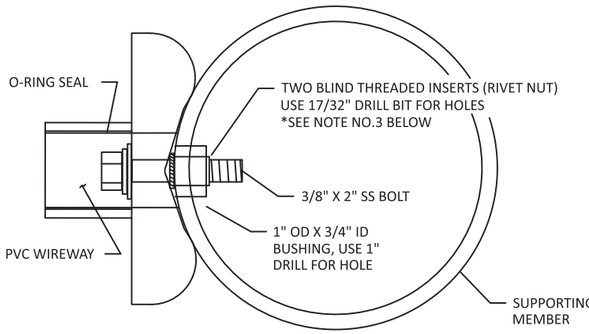
1. ALL THREADED SURFACES TO BE COATED WITH ANTI-SEIZE COMPOUND.
2. USE SIGNAL HEAD MOUNTED SPACERS FOR 4 SECTION POLY HEADS.
3. SEE STANDARD PLATE NUMBER 8123 FOR ADDITIONAL SIGNAL POLE DETAILS.
4. EXTENDED THREADED POLE ADAPTOR ONLY USED WITH 5 SECTION CLUSTER HEADS.




## BOLT ON HUB & FLANGE




## SIDE VIEW

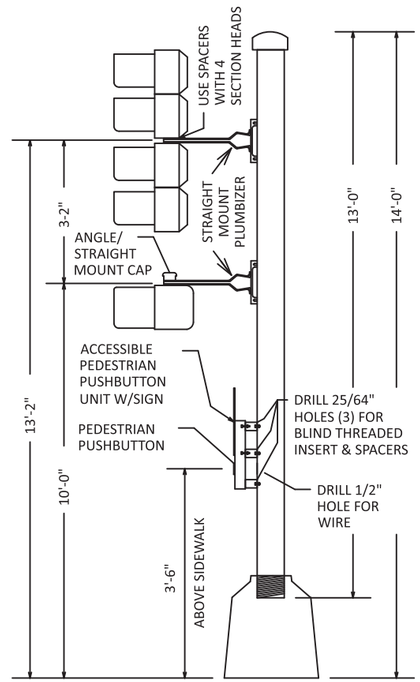



## TOP VIEW



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.




## TYPICAL PEDESTAL MOUNTING

NOT TO SCALE

| DESIGN TEAM | NO. | BY | DATE | REVISIONS |
|---|---|---|---|---|
| DRAWN BY: MRB | | | | |
| DESIGNER: MRB | | | | |
| CHECKED BY: JMG | | | | |

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SEH

ANOKA COUNTY, MN
CSAH 9
SAP 002-609-023
CITY OF ANDOVER SAP 198-020-042, CITY PROJECT 25-13
CITY OF ANOKA SAP 103-020-020

TRAFFIC SIGNAL SYSTEMS "A-D"
ONE WAY POLE MOUNT DETAILS
CSAH 9 (ROUND LAKE BOULEVARD)

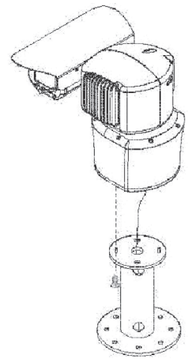
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10:19:11 AM

9/25/2025

## ISOMETRIC VIEW- CAMERA & MOUNT

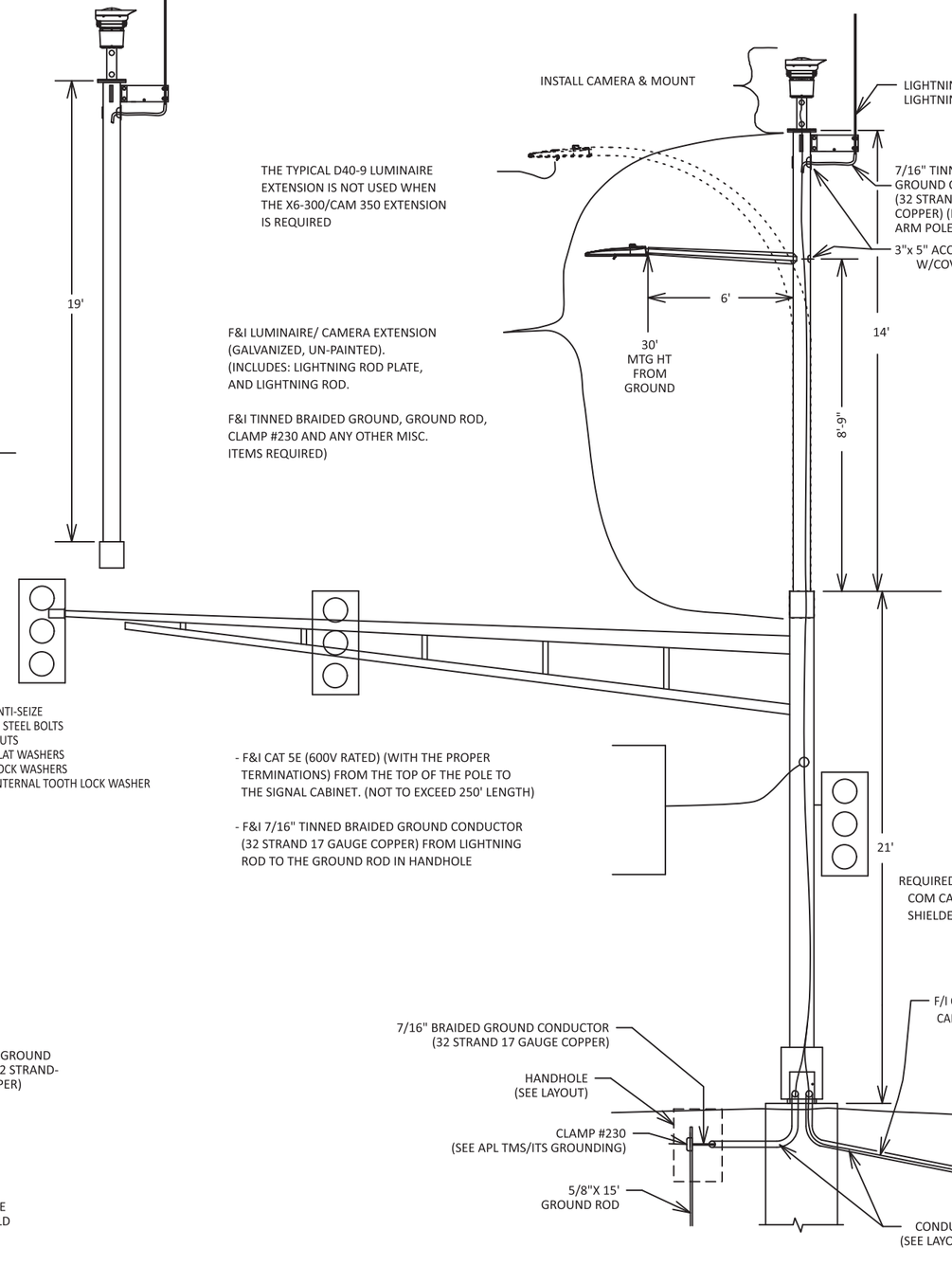


## X-350 CAMERA EXTENSION

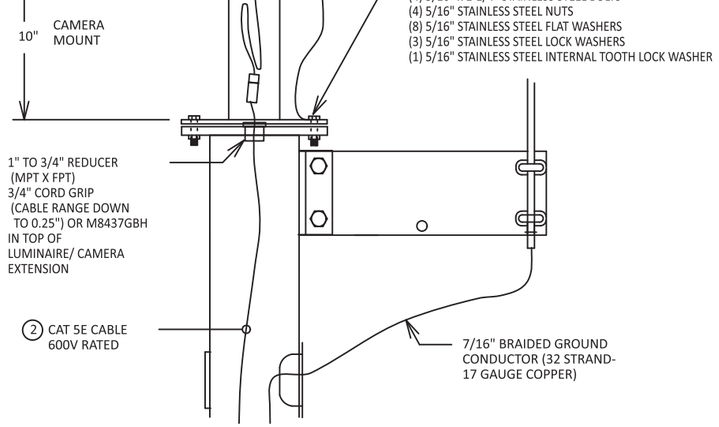
(USED WHEN A LUMINAIRE IS NOT REQUIRED)




## X6-300/CAM 350 EXTENSION



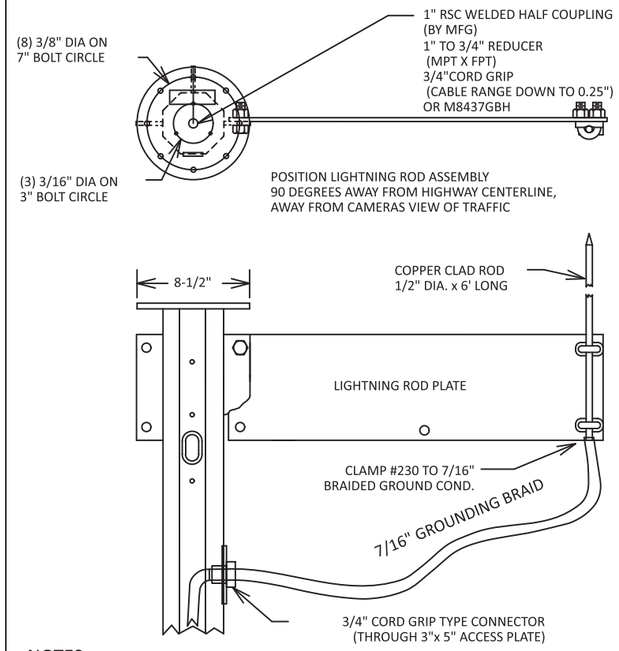

## CAMERA & MOUNT AT TOP OF EXTENSION




1. THE CAMERA IS SUPPLIED WITH 20" CABLE PIGTAIL. IT IS TERMINATED WITH A RJ45 PLUG AS INDICATED ON THE IP CAMERA CONNECTOR DETAIL SHEET.

2. F&I ETHERNET CABLE IN ACCORDANCE WITH 3815.2C.6.d (CAT 5E -300V RATED), BETWEEN THE SIGNAL CONTROL CABINET AND THE TOP OF THE POLE. TERMINATE THE END OF THE CABLE WITH UNSHIELDED RJ-45 (T-568B) CONNECTORS. ALL FIELD TERMINATIONS/CONNECTORS SHALL BE INSTALLED AS RECOMMENDED BY THE MANUFACTURER USING THE SPECIFIED INSTALLATION TOOL(S).

## EXTENSION TOP & LIGHTNING PROTECTION DETAIL




NOTES:

1) FURNISH & INSTALL 7/16" TINNED BRAIDED GROUND CONDUCTOR INSIDE MAST ARM POLE AND THROUGH INPLACE CONDUIT TO CLOSEST HANDHOLE (SEE LAYOUT).

2) CONTRACTOR SHALL CLAMP #230 7/16" BRAIDED GROUND WIRE TO GROUND ROD IN HANDHOLE.

3) NO SPLICES ALLOWED IN 7/16" TINNED BRAIDED GROUND WIRE.

4) CONTRACTOR SHALL CUT A 3/4 INCH KNOCK OUT HOLE IN THE INSPECTION PLATE NEAR THE CAMERA AND PLACE A 3/4 INCH CORD GRIP TYPE FITTING TO RUN THE 7/16 INCH TINNED BRAIDED GROUND CONDUCTOR INTO THE POLE.

| DESIGN TEAM | NO. | BY | DATE | REVISIONS |
|---|---|---|---|---|
| DRAWN BY: MRB | | | | |
| DESIGNER: MRB | | | | |
| CHECKED BY: JMG | | | | |

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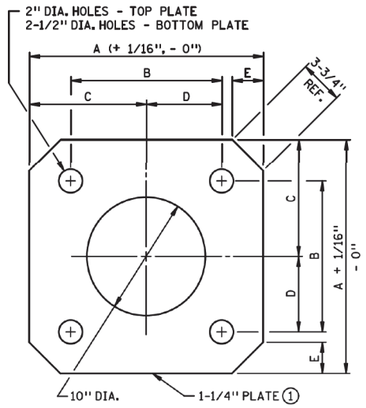
SEH

ANOKA COUNTY, MN
CSAH 9
SAP 002-609-023
CITY OF ANDOVER SAP 198-020-042, CITY PROJECT 25-13
CITY OF ANOKA SAP 103-020-020

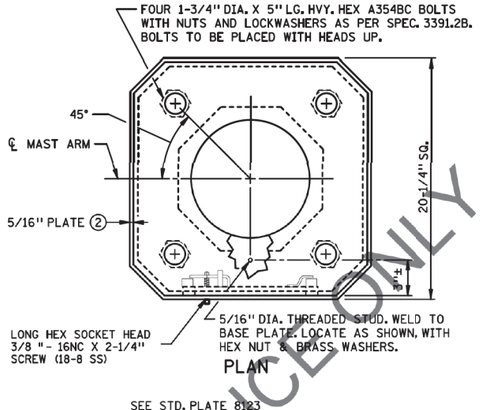
TRAFFIC SIGNAL SYSTEMS "A-F"
PTZ CAMERA DETAILS
CSAH 9 (ROUND LAKE BOULEVARD)

11
133

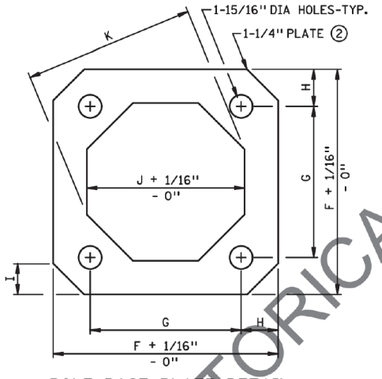
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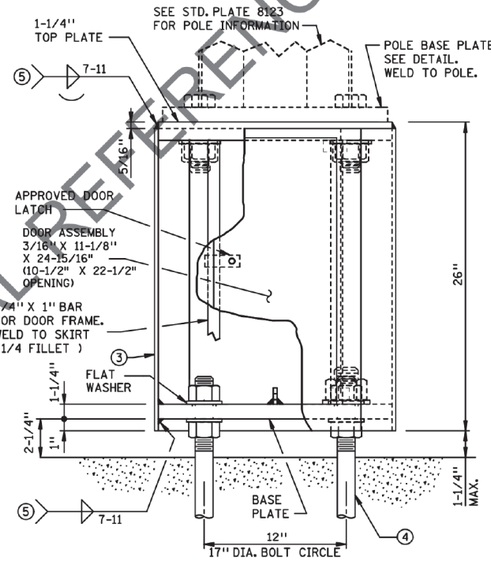

TOP & BASE PLATE DETAIL




PLAN




POLE BASE PLATE DETAIL




ELEVATION

| DIMENSION | TOP PLATE (1) | BASE PLATE (1) | POLE BASE PLATE (2) |
|---|---|---|---|
| A | 19-3/4" | 19-3/4" | |
| B | 12-3/4" | 12" | |
| C | 9-7/8" | 9-7/8" | |
| D | 6-3/8" | 6" | |
| E | 2-5/8" | 2-5/8" | |
| F | | | 19" |
| G | | | 12-3/4" |
| H | | | 3-1/8" |
| I | | | 2-5/8" |
| J | | | 13-3/16" |
| K | | | 14-5/16" |

NOTES:

ANTI-SEIZE COMPOUND THAT MEETS MIL-PRF-907E SPEC. SHALL BE APPLIED WITH A BRUSH TO ALL THREADS.

FOR SUBSTITUTION OF MATERIALS, SEE SPEC. 1605.

(1) STRUCTURAL STEEL AS PER SPEC. 3306.

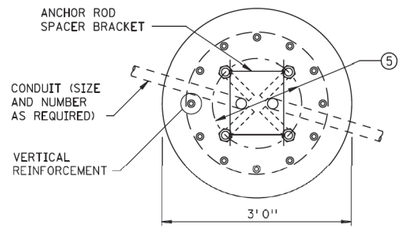
(2) STRUCTURAL STEEL AS PER SPEC. 3309.

(3) GALVANIZE TRANSFORMER BASE AS PER SPEC. 3394 AFTER FABRICATION. GALVANIZE ALL HARDWARE AS PER SPEC. 3392, EXCEPT STAINLESS STEEL AND BRASS.

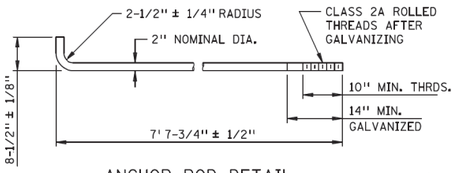
(4) SEE STANDARD PLATE 8126 FOR POLE FOUNDATION DETAILS.

(5) FABRICATE STRUCTURAL METALS PER SPEC. 2471.

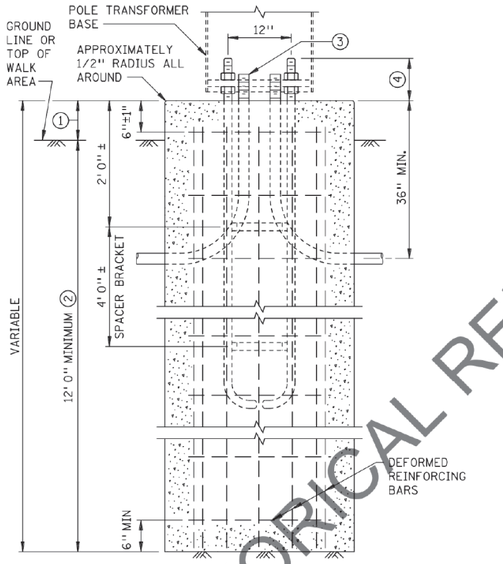
| APPROVED APRIL 5, 2013 STATE DESIGN ENGINEER | STATE OF MINNESOTA DEPARTMENT OF TRANSPORTATION TRANSFORMER BASE AND POLE BASE PLATE (PA90 AND PA100) | SPECIFICATION REFERENCE 2565 | STANDARD PLATE NO. 8121H 2 OF 2 |
|---|---|---|---|



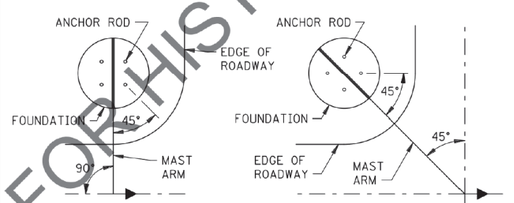

TOP VIEW




ANCHOR ROD DETAIL
(SPEC. 3385 TYPE C)




VERTICAL SECTION




ANCHOR ROD PLACEMENT
(WHEN USED WITH MAST ARM POLE)

NOTES:

REINFORCING BARS SHALL BE GRADE 60 AND MEET THE REQUIREMENTS OF ASTM A 706 (WELDABLE REBARS) AND ARE IDENTIFIED BY A DISTINGUISHING MARK OF "W" ROLLED ONTO THE SURFACE OF ONE SIDE OF THE BAR. WELDING SHALL BE PER ANSI/AWS D1.4. USE 12-NO. 7 BARS FOR VERTICAL REINFORCEMENT, SPACED ON A 28" DIA. CIRCLE. HORIZONTAL (CIRCULAR) BARS TO BE NO. 4 SPACED AT 1'-0" MAXIMUM VERTICAL SPACING. SECURELY TIE OR WELD (OR COMBINATION) ALL REINFORCEMENT TOGETHER.

ANCHOR RODS SHALL BE GALVANIZED IN ACCORDANCE WITH SPEC. 3392 AND SHALL BE 2" NOM. DIA. AND CUT LENGTH OF 96" BEFORE BENDING. (SEE ANCHOR ROD DETAIL). ANCHOR ROD CAGES SHALL BE DESIGNED WITHOUT WELDING.

ANTI-SIEZE COMPOUND THAT MEETS MIL-PRF-907E SPEC. SHALL BE APPLIED WITH A BRUSH TO ALL THREADS.

ALL BACKFILLING AROUND THE FOUNDATION MUST BE IN ACCORDANCE WITH 2451.

ALL EXCAVATION MUST BE PROPERLY COMPACTED IN ACCORDANCE WITH 2451.

CONCRETE MIX SHALL BE 3G52.

PREFORMED JOINT FILLER SHALL BE USED BETWEEN FOUNDATION AND SIDEWALK OR CONCRETE AREAS.

FIBER FORMING TUBE SHALL BE USED IN FORMING THE FOUNDATION, OR AS APPROVED BY THE ENGINEER.

OPEN ENDS OF ALL CONDUIT INTO FOUNDATION SHALL BE THREADED, POSITIONED INSIDE THE ANCHOR ROD BOLT CIRCLE, AND CAPPED UNTIL CABLES ARE PLACED.

MAST ARM POLE STANDARDS SHALL NOT BE PLACED ON FOUNDATIONS UNTIL AT LEAST SEVEN DAYS OF CURING PERIOD HAVE ELAPSED.

(1) THE ELEVATION OF THE TOP OF THE FOUNDATION SHALL ASSURE THAT THE VERTICAL CLEARANCE FROM THE BOTTOM OF ALL SIGNAL HEADS (INCLUDING BACKGROUND SHIELDS) TO THE PAVEMENT IS NOT LESS THAN 17 FEET NOR GREATER THAN 19 FEET. THE TOP OF THE FOUNDATION MUST BE A MINIMUM OF 6" ABOVE THE GROUND LINE OR TOP OF SIDEWALK.

(2) DEPTH OF FOUNDATION MAY VARY IN PLANS OR SPECIAL PROVISIONS. DEPTH OF FOUNDATION MAY BE REDUCED 2 FEET WHEN PLACED IN SIDEWALK OR CONCRETE RAISED MEDIAN. FOUNDATION DEPTHS ARE BASED ON A SOIL FRICTION ANGLE OF 30° AND A SOIL WEIGHT OF 120 LB/CF AND NO GROUNDWATER WITHIN THE GROUND SURFACE TO A DEPTH OF TWO TIMES THE WIDTH OR DIAMETER OF BOTTOM OF POLE FOUNDATION. A SOIL BORING OR CONE PENETRATION TEST (CPT) SOUNDING IS RECOMMENDED WHERE IN-SITU STRATIGRAPHY IS UNKNOWN OR QUESTIONABLE. ANY VARIATION IN THE DEPTH OF THE FOUNDATION REQUIRES AN APPROVAL BY THE SOILS ENGINEER.

(3) CONDUIT PER SPEC. 3801 OR 3803. SIZE AND NUMBER AS REQUIRED IN PLANS OR SPECIAL PROVISIONS, 4" MINIMUM AND 6" MAXIMUM PROJECTION ABOVE FOUNDATION, AND CAPPED UNTIL WIRING IS PLACED.

(4) 8" ANCHOR ROD PROJECTION (THREADED). SOME POLES (SUCH AS ROTATABLE T-BASE) REQUIRE GREATER PROJECTION.

(5) FOUR ANCHOR RODS EQUALLY SPACED ON 16.97" DIA. BOLT CIRCLE (12" C. TO C.). EACH ANCHORAGE ROD SHALL HAVE TWO (2) HEAVY HEX LEVELING NUTS, PER ASTM A563 GRADE DH.

| APPROVED JULY 15, 2015 STATE DESIGN ENGINEER | STATE OF MINNESOTA DEPARTMENT OF TRANSPORTATION POLE FOUNDATION (PA90 AND PA100) | SPECIFICATION REFERENCE 2565 | STANDARD PLATE NO. 8126L |
|---|---|---|---|

FOR HISTORICAL REFERENCE ONLY

THESE MnDOT STANDARD PLATES (CURRENTLY DISCONTINUED FOR USE ON TRUNK HIGHWAY SIGNALS) SHALL APPLY TO THE NEW TRAFFIC SIGNAL MAST ARM, POLE AND FOUNDATION INSTALLATIONS ON THIS PROJECT.

| DESIGN TEAM | NO. | BY | DATE | REVISIONS |
|---|---|---|---|---|
| DRAWN BY: MRB | | | | |
| DESIGNER: MRB | | | | |
| 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.

Certified By: Licensed Professional Engineer — Printed Name: JOHN M. GRAY — Lic. No. 22457 — Date: 09/23/2025

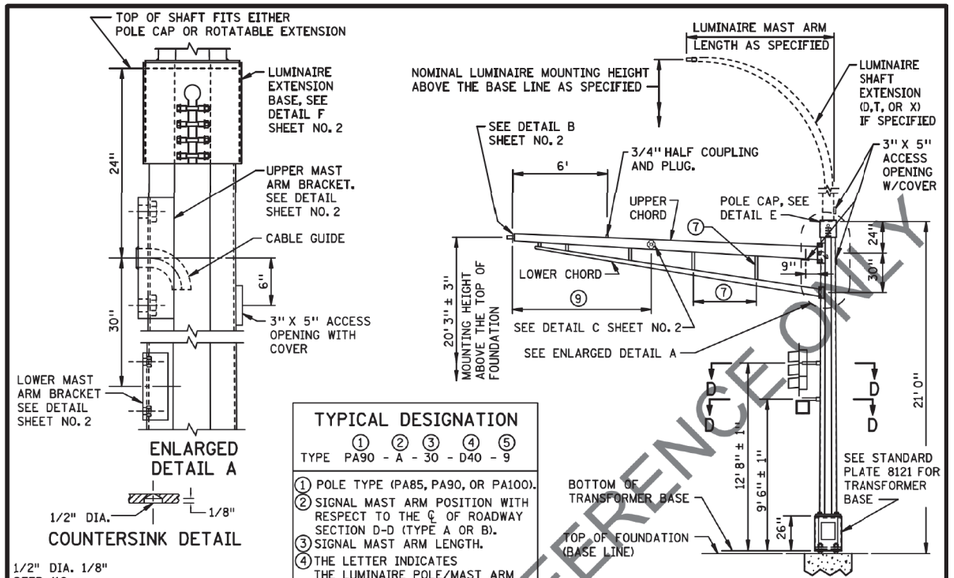
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ANOKA COUNTY, MN
CSAH 9
SAP 002-609-023
CITY OF ANDOVER SAP 198-020-042, CITY PROJECT 25-13
CITY OF ANOKA SAP 103-020-020

TRAFFIC SIGNAL SYSTEMS "A-D"
RECENT MNDOT STANDARD PLATES
CSAH 9 (ROUND LAKE BOULEVARD)

12 / 133

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## TYPICAL DESIGNATION

① ② ③ ④ ⑤

TYPE PA90 - A - 30 - D40 - 9

① POLE TYPE (PA85, PA90, OR PA100).
② SIGNAL MAST ARM POSITION WITH RESPECT TO THE ℄ OF ROADWAY SECTION D-D (TYPE A OR B).
③ SIGNAL MAST ARM LENGTH.
④ THE LETTER INDICATES THE LUMINAIRE POLE/MAST ARM TYPE (D=DAVIT, T=TRUSS, X=STRAIGHT). THE NUMBER INDICATES THE NOMINAL LUMINAIRE MOUNTING HEIGHT FROM THE BASELINE.
⑤ LUMINAIRE MAST ARM LENGTH.

## NOTES:

MATERIAL: HIGH STRENGTH LOW ALLOY STEEL SPEC. 3310 50,000 PSI MINIMUM YIELD.

GALVANIZED STRUCTURAL STEEL AS PER SPEC. 3394 AFTER FABRICATION. GALVANIZE ALL HARDWARE AS PER SPEC. 3392. PROVIDE VENT HOLES FOR GALVANIZING.

VERTICAL POST AND MAST ARM ELEMENTS SHALL BE OCTAGONAL TUBE, FABRICATED BY LONGITUDINAL SEAM WELDING WITH 60% PENETRATION.

EACH MAST ARM POLE STANDARD CONSTRUCTED IN ACCORDANCE WITH THIS SPECIFICATION SHALL BE IDENTIFIED BY THE MARKING "PA85, PA90 OR PA100" IMPRINTED INTO THE VERTICAL POST SHAFT APPROXIMATELY 6 FEET ABOVE THE BOTTOM OF THE TRANSFORMER BASE ON THE ZERO-DEGREE FACE WITH RESPECT TO THE TRAFFIC SIGNAL TRUSS-TYPE MAST ARM. THE IMPRINTED "PA85, PA90 OR PA100" SHALL BE CLEARLY LEGIBLE AFTER GALVANIZATION.

THE BASE LINE OR TOP OF FOUNDATION IS ESTABLISHED AT TOP OF THE FINISHED PAVEMENT BENEATH THE OUTER END OF THE MAST ARM.

SEE SPEC. 1605 FOR SUBSTITUTION OF MATERIALS.

SEE SPEC. 2471 FOR FABRICATION REQUIREMENTS.

THE MOUNTING HEIGHTS OF LUMINAIRES ARE MEASURED FROM THE BASELINE, WHICH PROVIDE MOUNTING HEIGHTS OF 30' TO 50'.

⑥ DIMENSION MEASURED OUTSIDE POINT TO OUTSIDE POINT THROUGH OCTAGON CENTER. ADJUST POLE WITH LEVELING NUTS SO THAT THE POLE IS VERTICAL.

⑦ VERTICAL BRACES SHALL BE SPACED AT 5' INTERVALS. MINIMUM SECTION FOR VERTICAL BRACE SHALL BE 1" SCHEDULE 40 PIPE WITH ALLOWABLE STRESS OF 42000 PSI. PIPE ENDS SHALL BE FLATTENED TO A MAXIMUM THICKNESS OF 1" PERPENDICULAR TO THE MAST ARM AXIS.

⑧ ALL ARMS SHALL BE SUPPLIED IN FIVE-FOOT INCREMENTS OF LENGTH.

⑨ ONE MID-MAST ARM MOUNT SHALL BE PLACED AT 11' FROM THE END FOR 30', 35' AND 40' LENGTH MAST ARMS. TWO MID MAST ARM MOUNTS SHALL BE PLACED AT 11' AND 23' FROM THE END FOR 45', 50' AND 55' LENGTH MAST ARMS. ALL MID-MAST ARMS SHALL BE CAPPED AND GALVANIZED. KEEP UNUSED MID-MAST ARM MOUNTS CAPPED AND GALVANIZED.

## TAPERED OCTAGONAL MAST ARM TRUSS AND POLE DIMENSIONS

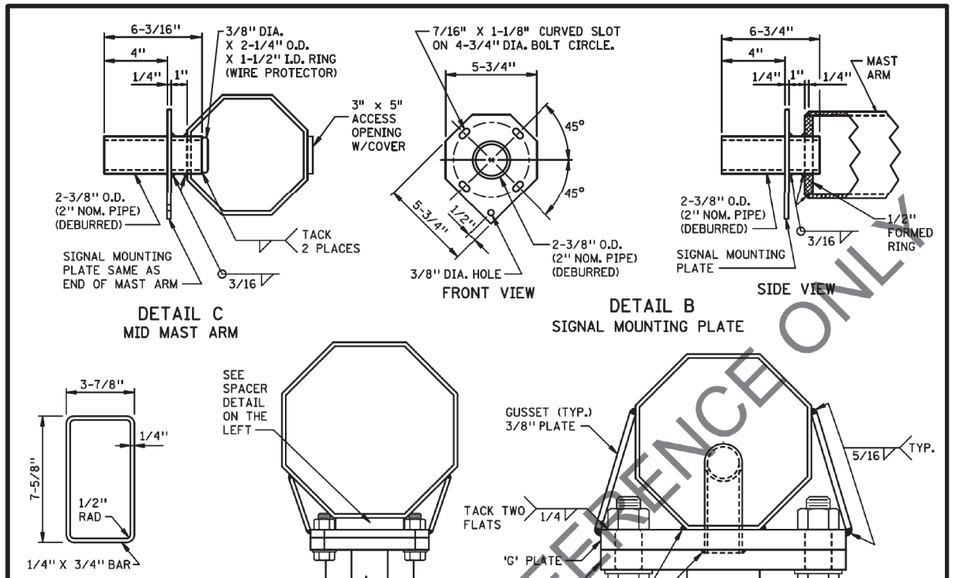
| POLE TYPE | MAST ARM LENGTH ⑧ | VERTICAL POLE ⑥ | | | UPPER CHORD ⑥ | | | LOWER CHORD ⑥ | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | LARGE END | SMALL END | WALL THICK | LARGE END | SMALL END | WALL THICK | LARGE END | SMALL END | WALL THICK |
| PA85 | 15'-30' | 13.0" | 11.8" | 0.179" | 9.6" | 4.0" | 0.120" | 5.6" | 2.8" | 0.120" |
| PA90 | 30'-40' | 14.0" | 11.8" | 0.250" | 10.9" | 5.0" | 0.179" | 5.6" | 2.8" | 0.120" |
| PA100 | 40'-55' | 14.0" | 11.8" | 0.312" | 11.6" | 5.0" | 0.250" | 5.6" | 2.8" | 0.120" |

APPROVED DECEMBER 20, 2011
STATE DESIGN ENGINEER

STATE OF MINNESOTA
DEPARTMENT OF TRANSPORTATION
**POLE AND MAST ARM**
LUMINAIRES AND TRAFFIC LIGHTS ASSEMBLY
( FOR ALL POLE TYPES )

SPECIFICATION REFERENCE: 2565

STANDARD PLATE NO.: 8123G
1 OF 2




## ARM AND POLE MOUNTING BRACKETS

| ARM MEMBER | FOUR HEX HEAD BOLTS & NUTS EACH BRACKET | TABULATED BRACKET DIMENSIONS | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | 'A' | 'B' | 'C' | 'D' | 'E' | 'F' | 'G' |
| UPPER | 1-1/2"-6UNC X 4-1/2" LG. | 15.50" | 12.00" | 7.75" | 1.75" | 1.688" | 1.25" | 1.25" |
| LOWER | 3/4"-10UNC X 2-1/4" LG. ① | (V) 8.50" (H) 7.75" | 6.25" 5.75" | 4.25" 3.87" | 1.125" 1.0" | 0.875" 0.875" | 3/4" 3/4" | 1/2" 1/2" |

## NOTES:

① THE (V) DIMENSIONS ARE MEASURED VERTICALLY AND THE (H) DIMENSIONS ARE MEASURED HORIZONTALLY, WHILE UNSPECIFIED ARE MEASURED BOTH VERTICALLY AND HORIZONTALLY.

APPROVED DECEMBER 20, 2011
STATE DESIGN ENGINEER

STATE OF MINNESOTA
DEPARTMENT OF TRANSPORTATION
**POLE AND MAST ARM**
(DETAILS)

SPECIFICATION REFERENCE: 2565

STANDARD PLATE NO.: 8123G
2 OF 2

THESE MnDOT STANDARD PLATES (CURRENTLY DISCONTINUED FOR USE ON TRUNK HIGHWAY SIGNALS) SHALL APPLY TO THE NEW TRAFFIC SIGNAL MAST ARM, POLE AND FOUNDATION INSTALLATIONS ON THIS PROJECT.

FOR HISTORICAL REFERENCE ONLY

| DESIGN TEAM | NO. | BY | DATE | REVISIONS |
|---|---|---|---|---|
| DRAWN BY: MRB | | | | |
| DESIGNER: MRB | | | | |
| 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.
Printed Name: JOHN M. GRAY
Certified By: Licensed Professional Engineer Lic. No. 22457 Date: 09/23/2025

SEH

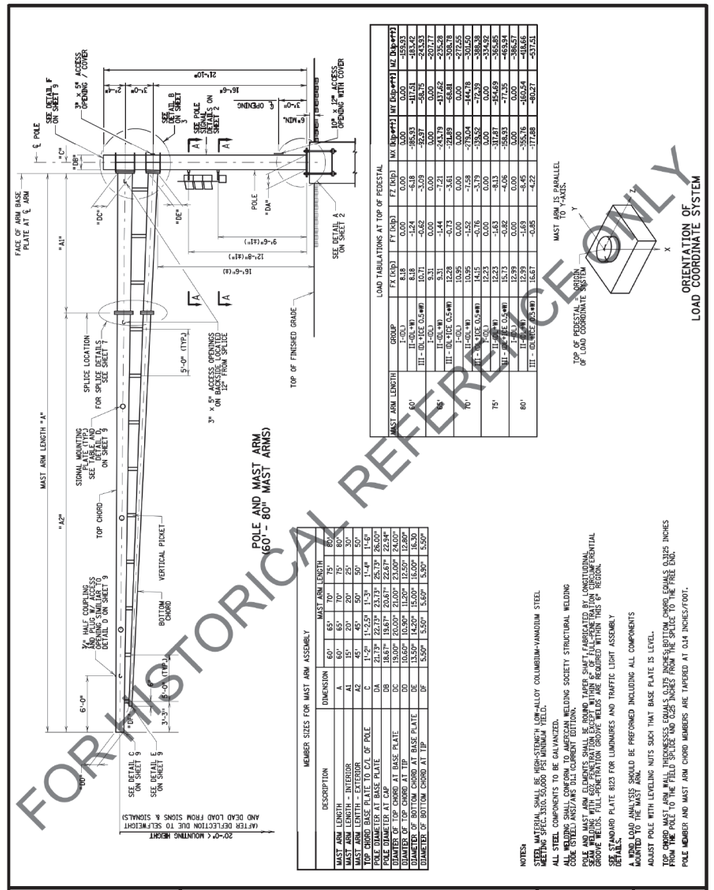
ANOKA COUNTY, MN
CSAH 9
SAP 002-609-023
CITY OF ANDOVER SAP 198-020-042, CITY PROJECT 25-13
CITY OF ANOKA SAP 103-020-020

TRAFFIC SIGNAL SYSTEMS "A-D"
RECENT MNDOT STANDARD PLATES
CSAH 9 (ROUND LAKE BOULEVARD)

13 / 133

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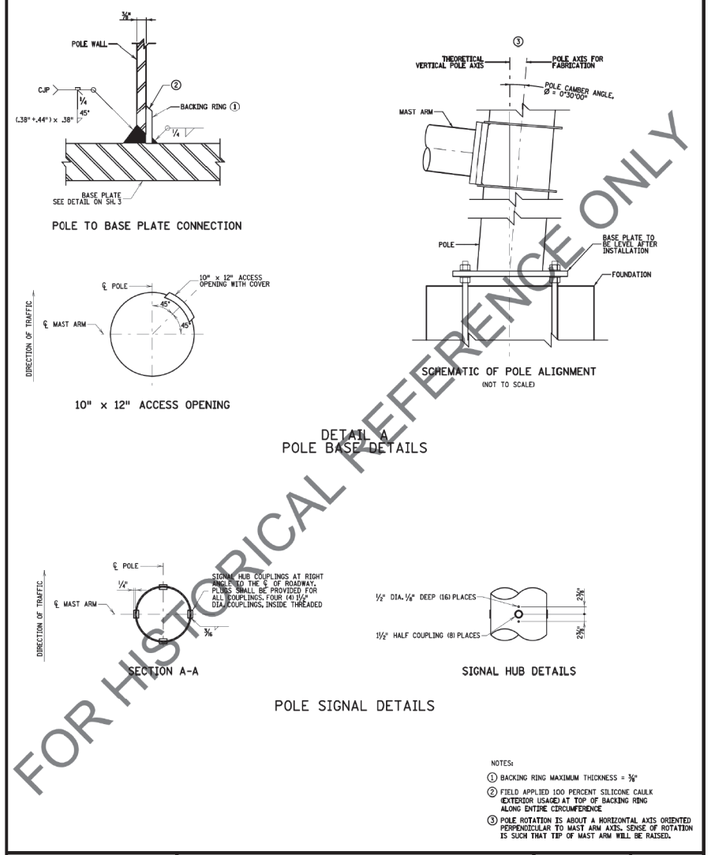

LOAD TABULATIONS AT TOP OF PEDESTAL

| MAST ARM LENGTH | GROUP | FX (KIP) | FY (KIP) | MX (Kip-FT) | MY (Kip-FT) | MZ (Kip-FT) |
|---|---|---|---|---|---|---|
| 60' | I (D) | 8.18 | 0.00 | 0.00 | 0.00 | -159.63 |
| | II (D+.9L+.9W) | 8.18 | -5.24 | -16.48 | -180.30 | -341.42 |
| | III (D+.9L+.9W) | 8.18 | -5.24 | -16.48 | -180.30 | -341.42 |
| 70' | I (D) | 9.31 | 0.00 | 0.00 | 0.00 | -201.17 |
| | II (D+.9L+.9W) | 9.31 | -5.44 | -17.21 | -243.79 | -437.62 |
| | III (D+.9L+.9W) | 9.31 | -5.44 | -17.21 | -243.79 | -437.62 |
| 75' | I (D) | 10.95 | 0.00 | 0.00 | 0.00 | -244.76 |
| | II (D+.9L+.9W) | 10.95 | -5.52 | -17.38 | -276.04 | -494.76 |
| | III (D+.9L+.9W) | 10.95 | -5.52 | -17.38 | -276.04 | -494.76 |
| 80' | I (D) | 12.25 | 0.00 | 0.00 | 0.00 | -334.92 |
| | II (D+.9L+.9W) | 12.25 | -5.63 | -17.73 | -314.89 | -565.85 |
| | III (D+.9L+.9W) | 12.25 | -5.63 | -17.73 | -314.89 | -565.85 |

| MEMBER SIZES FOR MAST ARM ASSEMBLY | | MAST ARM LENGTH | | | | |
|---|---|---|---|---|---|---|
| DESCRIPTION | DIMENSION | 60' | 65' | 70' | 75' | 80' |
| MAST ARM LENGTH | | 60' | 65' | 70' | 75' | 80' |
| MAST ARM LENGTH - INTERIOR | A | 55'-0" | 60'-0" | 65'-0" | 70'-0" | 75'-0" |
| MAST ARM LENGTH - EXTERIOR | A2 | 45' | 50' | 50' | 50' | 50' |
| MAST ARM WEIGHT (LBS) | | 1,140 | 1,270 | 1,400 | 1,545 | 1,675 |
| POLE DIAMETER AT BASE PLATE | DA | 21.73" | 22.73" | 23.73" | 25.73" | 26.50" |
| POLE DIAMETER AT CAP | DB | 18.67" | 19.67" | 20.67" | 22.67" | 23.44" |
| DIAMETER OF TOP CHORD AT BASE PLATE | DC | 15.00" | 15.00" | 15.00" | 15.00" | 15.00" |
| DIAMETER OF TOP CHORD AT TIP | DD | 10.60" | 10.60" | 12.50" | 12.50" | 12.80" |
| DIAMETER OF BOTTOM CHORD AT BASE PLATE | DE | 13.50" | 14.50" | 13.00" | 13.00" | 16.50" |
| DIAMETER OF BOTTOM CHORD AT TIP | DF | 5.50" | 5.50" | 5.50" | 5.50" | 5.50" |

NOTES:
ALL MATERIAL SHALL BE HIGH STRENGTH LOW ALLOY COLUMBIUM-VANADIUM STEEL CONFORMING TO ASTM SPEC. A 595, GR. 65,000 MIN. YIELD STRENGTH.
ALL STEEL COMPONENTS TO BE GALVANIZED.
ALL WELDING SHALL CONFORM TO AMERICAN WELDING SOCIETY STRUCTURAL WELDING CODE D1.1 LATEST EDITION.
POLE AND MAST ARM ELEMENTS SHALL BE ROUND TAPER SHAFT FABRICATED BY LONGITUDINAL SEAM WELDING, FULL PENETRATION GROOVE WELDS ARE REQUIRED WITHIN THIS SEAM.
SEE STANDARD PLATE 8123 FOR LUMINAIRES AND TRAFFIC LIGHT ASSEMBLY MOUNTED TO THE MAST ARM.
A FATIGUE ANALYSIS SHOULD BE PERFORMED INCLUDING ALL COMPONENTS
ADJUST POLE WITH LEVELING NUTS SUCH THAT BASE PLATE IS LEVEL.
TOP CHORD MAST ARM WILL INTERSECTS CHORD'S CLOSE PROJECTION. PROVIDE 12 INCH RADIUS CABLE GUIDE PROJECTS 6 INCHES BEYOND TOP CHORD BEARING PLATE AND HAS 3/16 INCH FILLET WELD ALL AROUND.
POLE MEMBERS AND MAST ARM CHORD MEMBERS ARE TAPERED AT 0.14 INCHES/FOOT.

| APPROVED AUGUST 20, 2012 | STATE OF MINNESOTA DEPARTMENT OF TRANSPORTATION | SPECIFICATION REFERENCE | STANDARD PLATE NO. |
|---|---|---|---|
| STATE DESIGN ENGINEER | POLE & MAST ARMS - TYPE BA<br>MAST ARM ASSEMBLY | 2565 | 8133A<br>1 OF 9 |



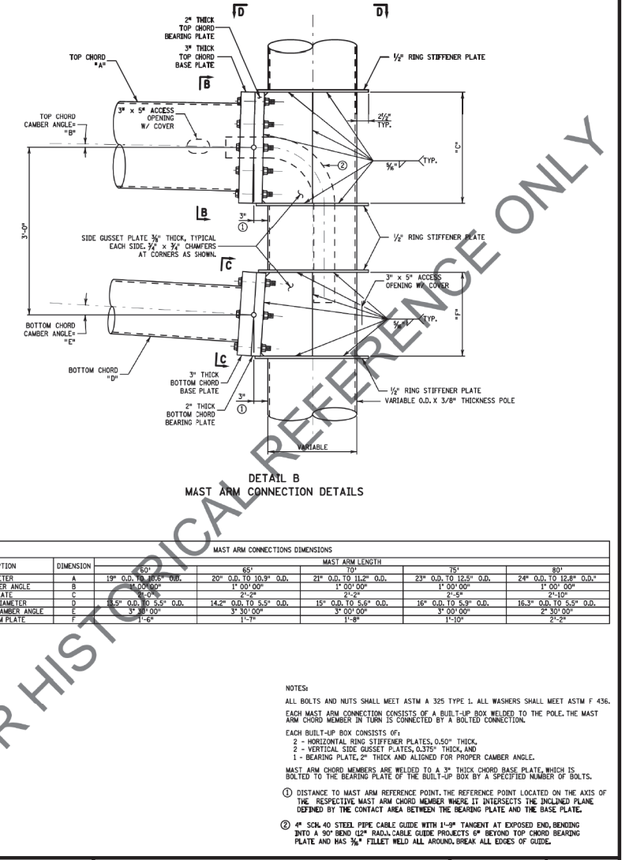

DETAIL A
POLE BASE DETAILS




POLE SIGNAL DETAILS

NOTES:
① BACKING RING MAXIMUM THICKNESS = 3/4"
② FIELD APPLIED 100 PERCENT SILICONE CAULK (EXTERIOR USAGE) AT TOP OF BACKING RING ALONG ENTIRE CIRCUMFERENCE
③ POLE ROTATION IS ABOUT A HORIZONTAL AXIS ORIENTED PERPENDICULAR TO MAST ARM AXIS. SENSE OF ROTATION IS SUCH THAT TIP OF MAST ARM WILL BE RAISED.

| APPROVED AUGUST 20, 2012 | STATE OF MINNESOTA DEPARTMENT OF TRANSPORTATION | SPECIFICATION REFERENCE | STANDARD PLATE NO. |
|---|---|---|---|
| STATE DESIGN ENGINEER | POLE & MAST ARMS - TYPE BA<br>POLE DETAILS | 2565 | 8133A<br>2 OF 9 |




DETAIL B
MAST ARM CONNECTION DETAILS

MAST ARM CONNECTIONS DIMENSIONS

| DESCRIPTION | DIMENSION | MAST ARM LENGTH 60' | 65' | 70' | 75' | 80' |
|---|---|---|---|---|---|---|
| TOP CHORD DIAMETER | A | 19" O.D. TO 10.5" O.D. | 20" O.D. TO 10.9" O.D. | 21" O.D. TO 11.2" O.D. | 23" O.D. TO 12.5" O.D. | 24" O.D. TO 12.8" O.D.* |
| TOP CHORD CAMBER ANGLE | B | 0° 30' 00" | 1° 00' 00" | 1° 00' 00" | 1° 00' 00" | 1° 00' 00" |
| HEIGHT OF TOP PLATE | C | 2'-0" | 2'-2" | 2'-2" | 2'-5" | 2'-10" |
| BOTTOM CHORD DIAMETER | D | 13.5" O.D. TO 5.5" O.D. | 14.2" O.D. TO 5.5" O.D. | 15" O.D. TO 5.6" O.D. | 16" O.D. TO 5.5" O.D. | 16.3" O.D. TO 5.5" O.D. |
| BOTTOM CHORD CAMBER ANGLE | E | 2° 30' 00" | 3° 00' 00" | 3° 00' 00" | 3° 00' 00" | 2° 30' 00" |
| HEIGHT OF BOTTOM PLATE | F | 1'-6" | 1'-7" | 1'-8" | 1'-10" | 2'-2" |

NOTES:
ALL BOLTS AND NUTS SHALL MEET ASTM A 325 TYPE 1. ALL WASHERS SHALL MEET ASTM F 436.
EACH MAST ARM CONNECTION CONSISTS OF A BUILT-UP BOX WELDED TO THE POLE. THE MAST ARM CHORD MEMBER IN TURN IS CONNECTED BY A BOLTED CONNECTION.
EACH BUILT-UP BOX CONSISTS OF:
2 - HORIZONTAL RING STIFFENER PLATES, 0.50" THICK.
2 - VERTICAL SIDE GUSSET PLATES, 0.375" THICK, AND
1 - BEARING PLATE, 2" THICK AND ALIGNED FOR PROPER CAMBER ANGLE.
MAST ARM CHORD MEMBERS ARE WELDED TO A 3" THICK CHORD BASE PLATE, WHICH IS BOLTED TO THE BEARING PLATE OF THE BUILT-UP BOX BY A SPECIFIED NUMBER OF BOLTS.
① DISTANCE TO MAST ARM REFERENCE POINT. THE REFERENCE POINT LOCATED ON THE AXIS OF THE RESPECTIVE MAST ARM CHORD MEMBER WHERE IT INTERSECTS THE INCLINED PLANE DEFINED BY THE CONTACT AREA BETWEEN THE BEARING PLATE AND THE BASE PLATE.
② 2" SCH. 40 STEEL PIPE CABLE GUIDE WITH 1'-0" TANGENT AT EXPOSED END, BENDING INTO A 90° BEND (12" RADIUS CABLE GUIDE PROJECTS 6" BEYOND TOP CHORD BEARING PLATE AND HAS 3/16" FILLET WELD ALL AROUND. BREAK ALL EDGES OF GUIDE.

| APPROVED AUGUST 20, 2012 | STATE OF MINNESOTA DEPARTMENT OF TRANSPORTATION | SPECIFICATION REFERENCE | STANDARD PLATE NO. |
|---|---|---|---|
| STATE DESIGN ENGINEER | POLE & MAST ARMS - TYPE BA<br>MAST ARM CONNECTION DETAILS | 2565 | 8133A<br>3 OF 9 |

FOR HISTORICAL REFERENCE ONLY

THESE MnDOT STANDARD PLATES (CURRENTLY DISCONTINUED FOR USE ON TRUNK HIGHWAY SIGNALS) SHALL APPLY TO THE NEW TRAFFIC SIGNAL MAST ARM, POLE AND FOUNDATION INSTALLATIONS ON THIS PROJECT.

| DESIGN TEAM | NO. | BY | DATE | REVISIONS |
|---|---|---|---|---|
| DRAWN BY: MRB | | | | |
| DESIGNER: MRB | | | | |
| 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.
Certified By: Licensed Professional Engineer
Printed Name: JOHN M. GRAY
Lic. No. 22457 Date: 09/23/2025

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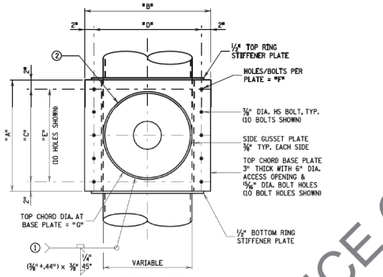
ANOKA COUNTY, MN
CSAH 9
SAP 002-609-023
CITY OF ANDOVER SAP 198-020-042, CITY PROJECT 25-13
CITY OF ANOKA SAP 103-020-020

TRAFFIC SIGNAL SYSTEMS "A-D"
RECENT MNDOT STANDARD PLATES
CSAH 9 (ROUND LAKE BOULEVARD)

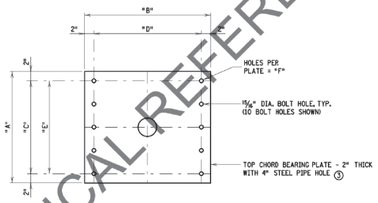
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SECTION B-B
TOP CHORD BASE PLATE
(FOR 60' MAST ARM SHOWN)

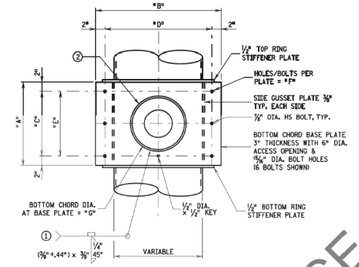



TOP CHORD BEARING PLATE
(FOR 60' MAST ARM SHOWN)

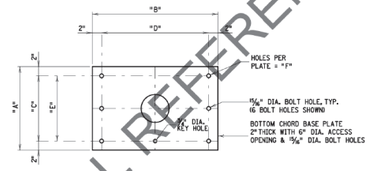
| TOP CHORD BEARING AND BASE PLATE DIMENSIONS | | | | | | |
|---|---|---|---|---|---|---|
| DESCRIPTION | DIMENSION | MAST ARM LENGTH 60' | 65' | 70' | 75' | 80' |
| PLATE HEIGHT | A | 2'-0" | 2'-2" | 2'-2" | 2'-5" | 2'-10" |
| PLATE WIDTH | B | 2'-3" | 2'-4" | 2'-5" | 2'-7" | 2'-8" |
| TOTAL HOLE SPACING VERTICAL | C | 1'-8" | 1'-10" | 1'-10" | 2'-0 3/4" | 2'-6" |
| TOTAL HOLE SPACING HORIZONTAL | D | 1'-11" | 2'-0" | 2'-1" | 2'-3" | 2'-4" |
| HOLE SPACING | E | 4 SPACES @ 5" | 4 SPACES @ 5-1/2" | 4 SPACES @ 5-1/2" | 6 SPACES @ 4-1/8" | 6 SPACES @ 5" |
| HOLES PER PLATE | F | 10 | 10 | 10 | 14 | 14 |
| BOLT CHORD O.D. AT BASE PLATE | G | 19" O.D. | 20" O.D. | 21" O.D. | 23" O.D. | 24" O.D. |

NOTES:
ALL BOLTS AND NUTS SHALL MEET ASTM A 325 TYPE 1. ALL WASHERS SHALL MEET ASTM F 436.
(1) MAXIMUM BACKING RING THICKNESS = 3/8"
(2) FIELD APPLY 100% SILICONE CAULK (EXTERIOR USAGE) AT TOP OF BACKING RING ALONG ENTIRE INTERIOR CIRCUMFERENCE OF ARM. SEE POLE TO BASE PLATE CONNECTION DETAIL FOR ADDITIONAL INFORMATION.
(3) 4" SCH. 40 STEEL PIPE CABLE GUIDE WITH 1'-0" TANGENT AT EXPOSED END, BENDING INTO A 90° BEND (12" RAD.). CABLE GUIDE PROJECTS 6" BEYOND TOP CHORD BEARING PLATE AND HAS 3/16" FILLET WELD ALL AROUND. BREAK ALL EDGES OF GUIDE.

| APPROVED AUGUST 20, 2012 | STATE OF MINNESOTA DEPARTMENT OF TRANSPORTATION | SPECIFICATION REFERENCE | STANDARD PLATE NO. |
|---|---|---|---|
| STATE DESIGN ENGINEER | POLE & MAST ARMS - TYPE BA<br>TOP CHORD CONNECTION DETAILS | 2565 | 8133A<br>4 OF 9 |




SECTION C-C
BOTTOM CHORD BASE PLATE
(FOR 60' MAST ARM SHOWN)

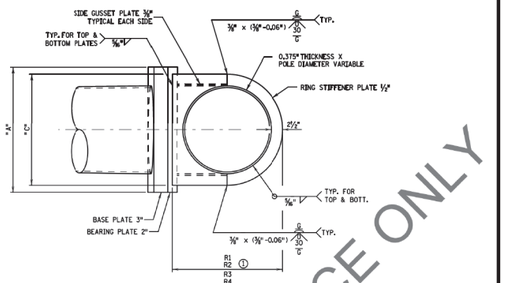



BOTTOM CHORD BEARING PLATE
(FOR 60' MAST ARM SHOWN)

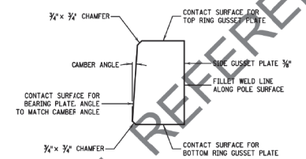
| BOTTOM CHORD BEARING AND BASE PLATE DIMENSIONS | | | | | | |
|---|---|---|---|---|---|---|
| DESCRIPTION | DIMENSION | MAST ARM LENGTH 60' | 65' | 70' | 75' | 80' |
| PLATE HEIGHT | A | 1'-6" | 1'-7" | 1'-8" | 1'-10" | 2'-2" |
| PLATE WIDTH | B | 2'-3" | 2'-4" | 2'-5" | 2'-7" | 2'-8" |
| TOTAL HOLE SPACING VERTICAL | C | 1'-2" | 1'-3" | 1'-4" | 1'-6" | 1'-10" |
| TOTAL HOLE SPACING HORIZONTAL | D | 1'-11" | 2'-0" | 2'-1" | 2'-3" | 2'-4" |
| HOLE SPACING | E | 2 SPACES @ 7" | 2 SPACES @ 7-1/2" | 2 SPACES @ 8" | 3 SPACES @ 6" | 4 SPACES @ 5-1/2" |
| HOLES PER PLATE | F | 6 | 6 | 6 | 9 | 10 |
| BOTTOM CHORD O.D. AT BASE PLATE | G | 12" O.D. | 13" O.D. | 15" O.D. | 16" O.D. | 16" O.D. |

NOTES:
ALL BOLTS AND NUTS SHALL MEET ASTM A 325 TYPE 1. ALL WASHERS SHALL MEET ASTM F 436.
(1) MAXIMUM BACKING RING THICKNESS = 3/8"
(2) FIELD APPLY 100% SILICONE CAULK (EXTERIOR USAGE) AT TOP OF BACKING RING ALONG ENTIRE INTERIOR CIRCUMFERENCE OF ARM. SEE POLE TO BASE PLATE CONNECTION DETAIL FOR ADDITIONAL INFORMATION.

| APPROVED AUGUST 20, 2012 | STATE OF MINNESOTA DEPARTMENT OF TRANSPORTATION | SPECIFICATION REFERENCE | STANDARD PLATE NO. |
|---|---|---|---|
| STATE DESIGN ENGINEER | POLE & MAST ARMS - TYPE BA<br>BOTTOM CHORD CONNECTION DETAILS | 2565 | 8133A<br>5 OF 9 |




SECTION D-D
STIFFENER PLATE DETAIL




SIDE GUSSET PLATE DETAIL

| MAST ARM CONNECTION | | | | | | |
|---|---|---|---|---|---|---|
| DESCRIPTION | DIMENSION | MAST ARM LENGTH 60' | 65' | 70' | 75' | 80' |
| PLATE WIDTH | A | 2'-3" | 2'-4" | 2'-5" | 2'-7" | 2'-8" |
| RING STIFFENER PLATE WIDTH | C | 2'-0" | 2'-1" | 2'-2" | 2'-4" | 2'-5" |
| TOP CHORD - TOP RING STIFFENER PLATE | R1 | 23-1/2" | 24-1/2" | 25" | 27" | 28-1/2" |
| TOP CHORD - BOTTOM RING STIFFENER PLATE | R2 | 23-3/4" | 24-1/2" | 25-1/4" | 24-1/4" | 28-3/4" |
| BOTTOM CHORD - TOP RING STIFFENER PLATE | R3 | 24" | 25" | 25-1/2" | 27-1/2" | 29" |
| BOTTOM CHORD - BOTTOM RING STIFFENER PLATE | R4 | 24-1/2" | 25-1/4" | 25-3/4" | 27-3/4" | 29-1/4" |

NOTES:
(1) ALL RING STIFFENER PLATES ARE IDENTICAL EXCEPT FOR THIS DIMENSION, WHICH DEPENDS ON THE PLATE LOCATION AND THE CAMBER ANGLE OF THE MAST ARM CHORD MEMBER.

| APPROVED AUGUST 20, 2012 | STATE OF MINNESOTA DEPARTMENT OF TRANSPORTATION | SPECIFICATION REFERENCE | STANDARD PLATE NO. |
|---|---|---|---|
| STATE DESIGN ENGINEER | POLE & MAST ARMS - TYPE BA<br>STIFFENER PLATE/GUSSET PLATE CONNECTION DETAILS | 2565 | 8133A<br>6 OF 9 |

FOR HISTORICAL REFERENCE ONLY

THESE MnDOT STANDARD PLATES (CURRENTLY DISCONTINUED FOR USE ON TRUNK HIGHWAY SIGNALS) SHALL APPLY TO THE NEW TRAFFIC SIGNAL MAST ARM, POLE AND FOUNDATION INSTALLATIONS ON THIS PROJECT.

| DESIGN TEAM | NO. | BY | DATE | REVISIONS |
|---|---|---|---|---|
| DRAWN BY: MRB | | | | |
| DESIGNER: MRB | | | | |
| 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.
Certified By: Licensed Professional Engineer
Printed Name: JOHN M. GRAY
Lic. No. 22457 Date: 09/23/2025

SEH

ANOKA COUNTY, MN
CSAH 9
SAP 002-609-023
CITY OF ANDOVER SAP 198-020-042, CITY PROJECT 25-13
CITY OF ANOKA SAP 103-020-020

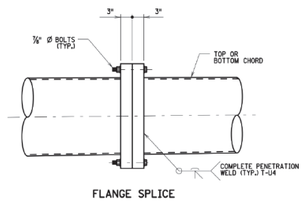
TRAFFIC SIGNAL SYSTEMS "A-D"
RECENT MNDOT STANDARD PLATES
CSAH 9 (ROUND LAKE BOULEVARD)

15
133

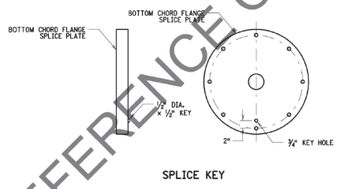
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9/25/2025

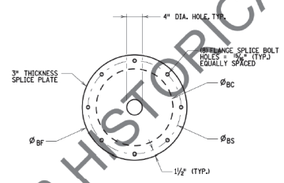
| FLANGE SPLICE PLATE | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | TOP CHORD | | | BOTTOM CHORD | | |
| POLE TYPE | MAST ARM LENGTH | FLANGE SPLICE PLATE DIAMETER Ø TF | BOLT CIRCLE DIAMETER Ø TS | CHORD DIAMETER @ SPLICE Ø TC | FLANGE SPLICE PLATE DIAMETER Ø BF | BOLT CIRCLE DIAMETER Ø BS | CHORD DIAMETER @ SPLICE Ø BC |
| BA60 | 60'-0" | 24" | 23" | 16.3" | 17" | 14" | 9.3" |
| BA65 | 65'-0" | 24.5" | 23.5" | 17.2" | 18" | 15" | 11.4" |
| BA70 | 70'-0" | 25.5" | 22.5" | 18.2" | 19.5" | 16.5" | 12.2" |
| BA75 | 75'-0" | 27" | 24" | 19.5" | 19.5" | 16.5" | 12.5" |
| BA80 | 80'-0" | 27" | 24" | 19.8" | 19" | 16" | 12.6" |



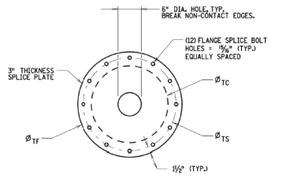

FLANGE SPLICE




SPLICE KEY



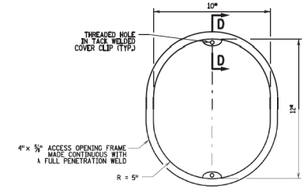

BOTTOM CHORD FLANGE SPLICE PLATE



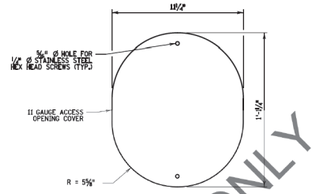

TOP CHORD FLANGE SPLICE PLATE

NOTE:
ALL BOLTS AND NUTS SHALL MEET ASTM A 325 TYPE 1.
ALL WASHERS SHALL MEET ASTM F 436.

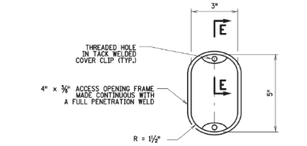
| APPROVED AUGUST 20, 2012 | STATE OF MINNESOTA DEPARTMENT OF TRANSPORTATION | SPECIFICATION REFERENCE | STANDARD PLATE NO. |
|---|---|---|---|
| STATE DESIGN ENGINEER | POLE & MAST ARMS - TYPE BA<br>FLANGE SPLICE DETAILS | 2565 | 8133A<br>7 OF 9 |



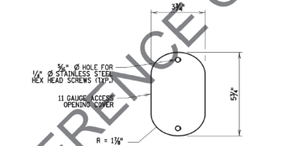

10" x 12" ACCESS OPENING FRAME



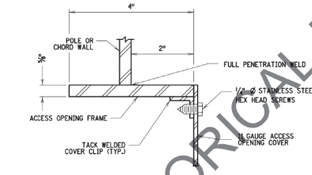

10" x 12" ACCESS OPENING COVER



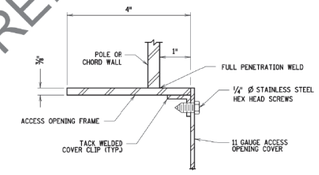

3" x 5" ACCESS OPENING FRAME




3" x 5" ACCESS OPENING COVER

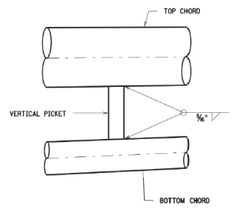



SECTION D-D




SECTION E-E

| VERTICAL PICKET | | |
|---|---|---|
| POLE TYPE | MAST ARM LENGTH | BAR DIMENSION |
| BA60 | 60'-0" | 4" x 5/8" |
| BA65 | 65'-0" | 4-1/2" x 5/8" |
| BA70 | 70'-0" | 4-1/2" x 5/8" |
| BA75 | 75'-0" | 5" x 5/8" ① |
| BA80 | 80'-0" | 5" x 5/8" ① |

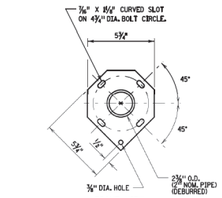



VERTICAL PICKET

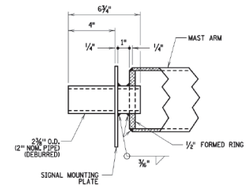
NOTE:
① 6" x 5/8" BARS REQUIRED AT THE TWO PICKET LOCATIONS NEAREST TO THE POLE.

| APPROVED AUGUST 20, 2012 | STATE OF MINNESOTA DEPARTMENT OF TRANSPORTATION | SPECIFICATION REFERENCE | STANDARD PLATE NO. |
|---|---|---|---|
| STATE DESIGN ENGINEER | POLE & MAST ARMS - TYPE BA<br>ACCESS OPENING AND VERTICAL PICKET DETAILS | 2565 | 8133A<br>8 OF 9 |

| SIGNAL MOUNTING PLATE LOCATIONS | | |
|---|---|---|
| MAST ARM LENGTH | NUMBER OF SIGNAL MOUNTING PLATES | DISTANCES FROM FACE OF ARM BASE PLATE AT C ARM TO CENTER OF SIGNAL MOUNTING PLATE |
| 60'-0" | 4 | 25', 37', 49', & 61' |
| 65'-0" | 4 | 29', 42', 54', & 66' |
| 70'-0" | 5 | 23', 33', 43', 59', & 70' |
| 75'-0" | 5 | 28', 40', 52', 64', & 75' |
| 80'-0" | 5 | 33', 45', 57', 69', & 80' |

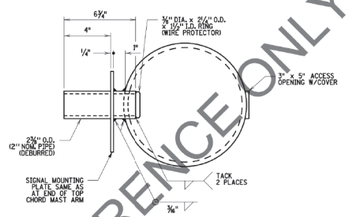



FRONT VIEW

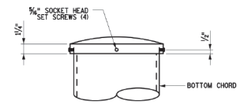



SIDE VIEW

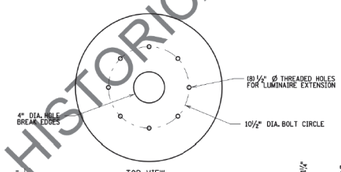
DETAIL C
SIGNAL MOUNTING PLATE
AT END OF TOP CHORD MAST ARM



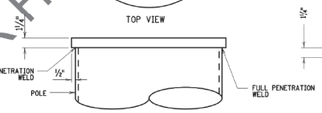

DETAIL D
SIGNAL MOUNTING PLATE
ON TOP CHORD MAST ARM



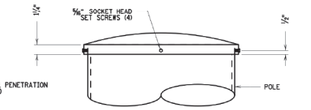

DETAIL E




TOP VIEW




POLE TOP WITH LUMINAIRE




POLE TOP WITHOUT LUMINAIRE

DETAIL F

| APPROVED AUGUST 20, 2012 | STATE OF MINNESOTA DEPARTMENT OF TRANSPORTATION | SPECIFICATION REFERENCE | STANDARD PLATE NO. |
|---|---|---|---|
| STATE DESIGN ENGINEER | POLE & MAST ARMS - TYPE BA<br>MISCELLANEOUS DETAILS | 2565 | 8133A<br>9 OF 9 |

FOR HISTORICAL REFERENCE ONLY

THESE MnDOT STANDARD PLATES (CURRENTLY DISCONTINUED FOR USE ON TRUNK HIGHWAY SIGNALS)
SHALL APPLY TO THE NEW TRAFFIC SIGNAL MAST ARM, POLE AND FOUNDATION INSTALLATIONS ON THIS PROJECT.

| DESIGN TEAM | NO. | BY | DATE | REVISIONS |
|---|---|---|---|---|
| DRAWN BY: MRB | | | | |
| DESIGNER: MRB | | | | |
| 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.

Certified By: Licensed Professional Engineer — Printed Name: JOHN M. GRAY — Lic. No. 22457 — Date: 09/23/2025

SEH

ANOKA COUNTY, MN
CSAH 9
SAP 002-609-023
CITY OF ANDOVER SAP 198-020-042, CITY PROJECT 25-13
CITY OF ANOKA SAP 103-020-020

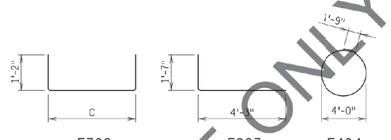
TRAFFIC SIGNAL SYSTEMS "A-D"
RECENT MNDOT STANDARD PLATES
CSAH 9 (ROUND LAKE BOULEVARD)

16
133

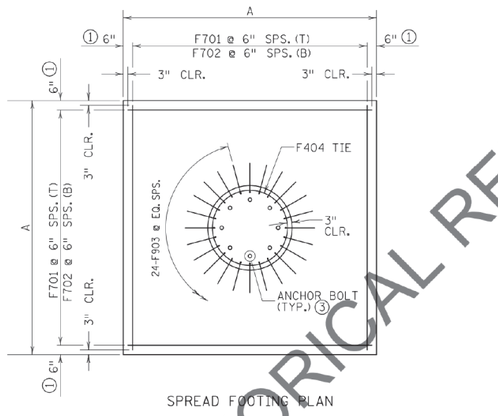
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| BILL OF REINFORCEMENT - SPREAD FOOTING | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| BAR | MAST ARM LENGTH | | | | | | | | | | SHAPE | LOCATION |
| | 60'-0" | | 65'-0" | | 70'-0" | | 75'-0" | | 80'-0" | | | |
| | NO. | LENGTH | NO. | LENGTH | NO. | LENGTH | NO. | LENGTH | NO. | LENGTH | | |
| F701 | 40 | 10'-0" | 44 | 10'-9" | 46 | 11'-3" | 48 | 12'-0" | 52 | 13'-0" | —— | SPREAD FOOTING TOP |
| F702 | 40 | 12'-4" | 44 | 13'-1" | 46 | 13'-7" | 48 | 14'-4" | 52 | 15'-4" | ⌊⌋ | SPREAD FOOTING BOTTOM |
| F903 | 24 | 5'-10" | 24 | 5'-10" | 24 | 5'-10" | 24 | 5'-10" | 24 | 5'-10" | L | PEDESTAL VERTICAL |
| F404 | 5 | 14'-4" | 5 | 14'-4" | 5 | 14'-4" | 5 | 14'-4" | 5 | 14'-4" | ○ | PEDESTAL TIE |

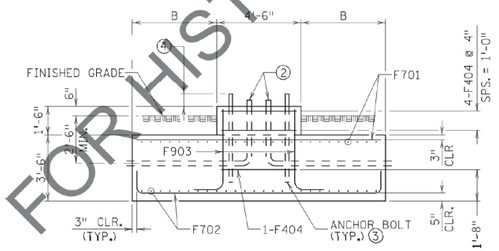
| SPREAD FOOTING FOUNDATION DATA | | | | | |
|---|---|---|---|---|---|
| POLE TYPE | MAST ARM LENGTH | SPREAD FOOTING DIMENSIONS | | | ANCHOR BOLT PROJECTION |
| | | A | B | C | G |
| BA60 | 60'-0" | 10'-6" | 3'-0" | 10'-0" | 8" |
| BA65 | 65'-0" | 11'-3" | 3'-4 1/2" | 10'-9" | 9" |
| BA70 | 70'-0" | 11'-9" | 3'-7 1/2" | 11'-3" | 10" |
| BA75 | 75'-0" | 12'-6" | 4'-0" | 12'-0" | 10" |
| BA80 | 80'-0" | 13'-6" | 4'-6" | 13'-0" | 11" |



F702 F903 F404



SPREAD FOOTING PLAN



SPREAD FOOTING ELEVATION

NOTES:

ANCHOR BOLTS SHALL BE GALVANIZED IN ACCORDANCE WITH SPEC. 3392.

PREFORMED JOINT FILLER SHALL BE USED BETWEEN FOUNDATION AND SIDEWALK OR CONCRETE AREAS.

CONCRETE SHALL BE MIX 3G52 PER MnDOT SPECIFICATION 2461.

NO COLD CONCRETE CONSTRUCTION JOINTS WILL BE PERMITTED.

CONCRETE FOUNDATIONS SHALL CURE A MINIMUM OF SEVEN DAYS PRIOR TO PLACING POLE AND MAST ARM.

THE APPLICABILITY OF THE SOIL PARAMETERS LISTED ON THE FOUNDATION STANDARD SHEETS SHALL BE VERIFIED BY THE DATA OBTAINED FROM 1 (ONE) SOIL BORING AT THE LOCATION OF EACH MAST ARM FOUNDATION.

MnDOT DISTRICT SOILS ENGINEER SHALL APPROVE THE TYPE OF FOUNDATION TO USE.

SPREAD FOOTINGS HAVE BEEN DESIGNED BASED ON AN ALLOWABLE BEARING PRESSURE OF 2.50 ksf. ANY EXCEEDANCE REQUIRES AN APPROVAL BY THE DISTRICT SOILS ENGINEER.

REINFORCEMENT BARS FOR THE FOUNDATIONS SHALL BE DEFORMED BILLET BARS PER AASHTO M 31, GRADE 60 (MnDOT SPECIFICATIONS 2472 AND 3301).

① 6" FOR 60'-0", 65'-0", 75'-0" & 80'-0" MAST ARM LENGTHS. 4-½" FOR 70'-0" MAST ARM LENGTH.

② CONDUIT PER SPEC. 3801 OR 3803, SIZE AND NUMBER AS REQUIRED IN PLANS OR SPECIAL PROVISIONS. 24" MINIMUM PROJECTION ABOVE FOUNDATION. OPEN ENDS OF ALL CONDUIT INTO FOUNDATION SHALL BE POSITIONED TO FIT INSIDE THE 12" DIA. OPENING IN THE BASE PLATE AND CAPPED UNTIL CABLES ARE PLACED.

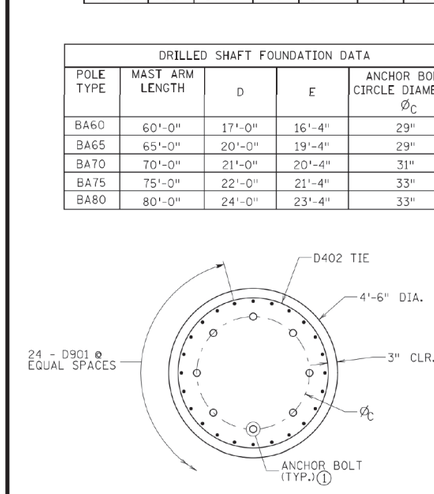
③ SEE ANCHOR BOLT ASSEMBLY DETAIL ON SHEET 3 OF 4.

④ FOR THREAD PROJECTION, SEE ANCHOR BOLT DETAIL ON SHEET 4 OF 4.

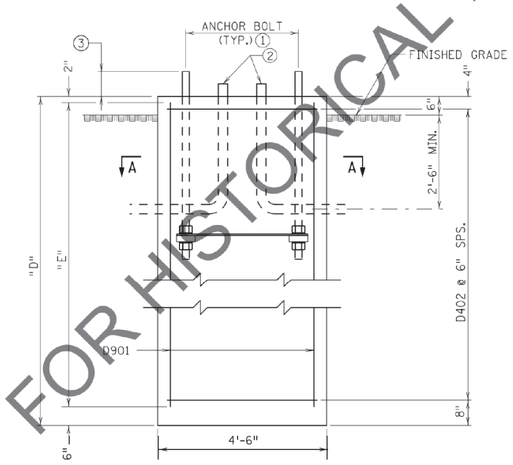
| APPROVED JULY 15, 2015 STATE DESIGN ENGINEER | STATE OF MINNESOTA DEPARTMENT OF TRANSPORTATION | SPECIFICATION REFERENCE | STANDARD PLATE NO. |
|---|---|---|---|
| | POLE FOUNDATION - TYPE BA<br>SPREAD FOOTING FOUNDATION | 2565 | 8134C<br>1 OF 4 |

| BILL OF REINFORCEMENT - DRILLED SHAFT | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| D901 | 24 | E | 24 | E | 24 | E | 24 | E | 24 | E | —— | DRILLED SHAFT VERTICAL |
| D402 | 33 | 14'-4" | 39 | 14'-4" | 41 | 14'-4" | 43 | 14'-4" | 47 | 14'-4" | ○ | DRILLED SHAFT TIE |

| DRILLED SHAFT FOUNDATION DATA | | | | |
|---|---|---|---|---|
| POLE TYPE | MAST ARM LENGTH | D | E | ANCHOR BOLT CIRCLE DIAMETER $\emptyset_C$ |
| BA60 | 60'-0" | 17'-0" | 16'-4" | 29" |
| BA65 | 65'-0" | 20'-0" | 19'-4" | 29" |
| BA70 | 70'-0" | 21'-0" | 20'-4" | 31" |
| BA75 | 75'-0" | 22'-0" | 21'-4" | 33" |
| BA80 | 80'-0" | 24'-0" | 23'-4" | 33" |



SECTION A-A



DRILLED SHAFT ELEVATION

NOTES:

ANCHOR BOLTS SHALL BE GALVANIZED IN ACCORDANCE WITH SPEC. 3392.

PREFORMED JOINT FILLER SHALL BE USED BETWEEN FOUNDATION AND SIDEWALK OR CONCRETE AREAS.

CONCRETE SHALL BE MIX 3G52 PER MnDOT SPECIFICATION 2461.

NO COLD CONCRETE CONSTRUCTION JOINTS WILL BE PERMITTED.

CONCRETE FOUNDATIONS SHALL CURE A MINIMUM OF SEVEN DAYS PRIOR TO PLACING POLE AND MAST ARM.

THE APPLICABILITY OF THE SOIL PARAMETERS LISTED ON THE FOUNDATION STANDARD SHEETS SHALL BE VERIFIED BY THE DATA OBTAINED FROM 1 (ONE) SOIL BORING AT THE LOCATION OF EACH MAST ARM FOUNDATION.

MnDOT DISTRICT SOILS ENGINEER SHALL APPROVE THE TYPE OF FOUNDATION TO USE.

A FIBER FORMING TUBE MAY ONLY BE USED FOR FORMING THE TOP FOUR (4) FEET OF THE DRILLED SHAFT FOUNDATION. THE DRILLED HOLE SHALL BE PROTECTED AGAINST COLLAPSING.

DRILLED SHAFTS HAVE BEEN DESIGNED BASED ON EITHER OF THE FOLLOWING SOIL PARAMETERS. ANY VARIATION REQUIRES AN APPROVAL BY THE SOILS ENGINEER:

COHESIVE SOILS:

| | |
|---|---|
| C = 1.0 ksf | SHEAR STRENGTH |
| $\gamma_s$ = 0.125 kcf | UNIT WEIGHT OF SOIL |

GRANULAR SOILS:

| | |
|---|---|
| Ø = 32° | ANGLE OF FRICTION |
| $\gamma_s$ = 0.125 kcf | UNIT WEIGHT OF SOIL |
| $K_o$ = 0.50 | AT-REST COEFFICIENT |
| μ = 0.70 | COEFFICIENT OF FRICTION |

REINFORCEMENT BARS FOR THE FOUNDATIONS SHALL BE DEFORMED BILLET BARS PER AASHTO M 31, GRADE 60 (MnDOT SPECIFICATIONS 2472 AND 3301).

① SEE ANCHOR BOLT ASSEMBLY DETAIL ON SHEET 3.

② CONDUIT PER SPEC. 3801 OR 3803, SIZE AND NUMBER AS REQUIRED IN PLANS OR SPECIAL PROVISIONS. 24" MINIMUM PROJECTION ABOVE FOUNDATION. OPEN ENDS OF ALL CONDUIT INTO FOUNDATION SHALL BE POSITIONED TO FIT INSIDE THE 12" DIA. OPENING IN THE BASE PLATE AND CAPPED UNTIL CABLES ARE PLACED.

③ FOR THREAD PROJECTION, SEE ANCHOR BOLT DETAIL ON SHEET 4.

| APPROVED JULY 15, 2015 STATE DESIGN ENGINEER | STATE OF MINNESOTA DEPARTMENT OF TRANSPORTATION | SPECIFICATION REFERENCE | STANDARD PLATE NO. |
|---|---|---|---|
| | POLE FOUNDATION - TYPE BA<br>DRILLED SHAFT FOUNDATION | 2565 | 8134C<br>2 OF 4 |

FOR HISTORICAL REFERENCE ONLY

THESE MnDOT STANDARD PLATES (CURRENTLY DISCONTINUED FOR USE ON TRUNK HIGHWAY SIGNALS) SHALL APPLY TO THE NEW TRAFFIC SIGNAL MAST ARM, POLE AND FOUNDATION INSTALLATIONS ON THIS PROJECT.

| DESIGN TEAM | NO. | BY | DATE | REVISIONS |
|---|---|---|---|---|
| DRAWN BY: MRB | | | | |
| DESIGNER: MRB | | | | |
| 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.

Certified By: Licensed Professional Engineer — Printed Name: JOHN M. GRAY — Lic. No. 22457 — Date: 09/23/2025

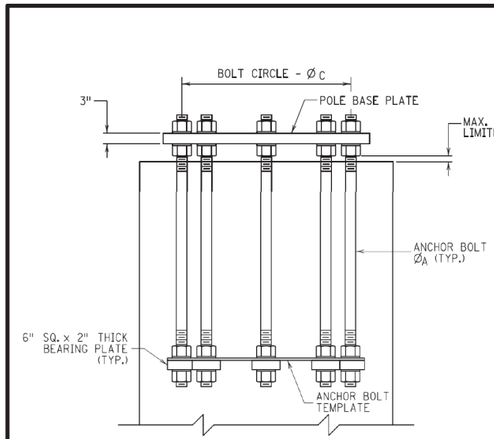
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ANOKA COUNTY, MN
CSAH 9
SAP 002-609-023
CITY OF ANDOVER SAP 198-020-042, CITY PROJECT 25-13
CITY OF ANOKA SAP 103-020-020

TRAFFIC SIGNAL SYSTEMS "A-D"
RECENT MNDOT STANDARD PLATES
CSAH 9 (ROUND LAKE BOULEVARD)

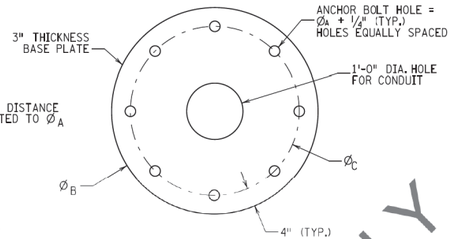
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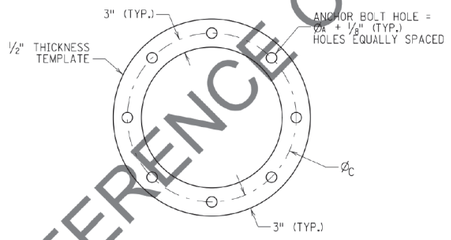



PARTIAL ELEVATION

(SHOWING BASE PLATE & ANCHOR BOLT ASSEMBLY)

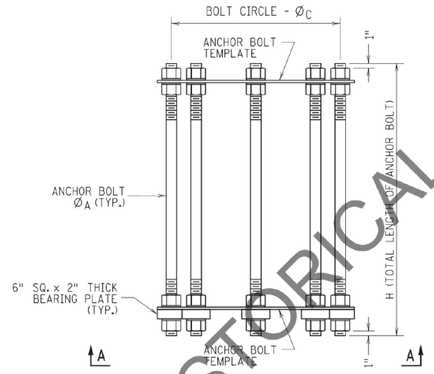



BASE PLATE OF MAST ARM POLE

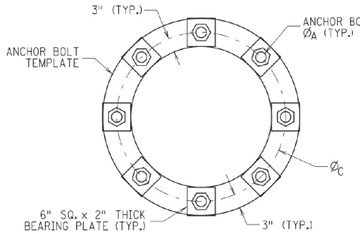



ANCHOR BOLT TEMPLATE

(2 PER ASSEMBLY)




ANCHOR BOLT ASSEMBLY




VIEW A-A

| POLE TYPE | MAST ARM LENGTH | BASE PLATE | ANCHOR BOLT | | |
|---|---|---|---|---|---|
| | | DIAMETER | ANCHOR BOLT DIAMETER | BOLT CIRCLE DIAMETER | TOTAL LENGTH |
| | | $\varnothing_B$ | $\varnothing_A$ | $\varnothing_C$ | H |
| BA60 | 60'-0" | 37" | 1.50" | 29" | 42" |
| BA65 | 65'-0" | 37" | 1.75" | 29" | 47" |
| BA70 | 70'-0" | 39" | 2.00" | 31" | 52" |
| BA75 | 75'-0" | 41" | 2.00" | 33" | 52" |
| BA80 | 80'-0" | 41" | 2.25" | 33" | 59" |

NOTES:

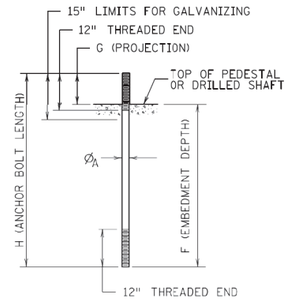
ALL EXPOSED HEX NUTS AND WASHERS SHALL BE GALVANIZED PER MNDOT SPEC. 3392.

ANCHOR BOLTS SHALL BE GALVANIZED PER MNDOT SPEC. 3392 TO THE LIMITS SHOWN ON SHEET 4 OF 4.

ANCHOR BOLT TEMPLATES AND HARDWARE EMBEDDED IN CONCRETE SHALL NOT BE GALVANIZED.

ANCHOR BOLT MATERIAL SHALL MEET SPEC. 3385 TYPE C. EACH ANCHOR BOLT TO BE PROVIDED WITH 4 (FOUR) HEAVY HEX NUTS, 4 (FOUR) HARDENED FLAT WASHERS, AND 1 (ONE) BEARING PLATE.

| APPROVED JULY 15, 2015 STATE DESIGN ENGINEER | STATE OF MINNESOTA DEPARTMENT OF TRANSPORTATION | SPECIFICATION REFERENCE | STANDARD PLATE NO. |
|---|---|---|---|
| | POLE FOUNDATION - TYPE BA<br>ANCHOR BOLT AND BASE PLATE DETAILS | 2565 | 8134C<br>3 OF 4 |




ANCHOR BOLT DETAIL

| POLE TYPE | MAST ARM LENGTH | ANCHOR BOLTS | | | |
|---|---|---|---|---|---|
| | | EMBEDMENT DEPTH | PROJECTION | TOTAL LENGTH | DIAMETER |
| | | F | G | H | $\varnothing_A$ |
| BA60 | 60'-0" | 34" | 8" | 42" | 1.50" |
| BA65 | 65'-0" | 38" | 9" | 47" | 1.75" |
| BA70 | 70'-0" | 42" | 10" | 52" | 2.00" |
| BA75 | 75'-0" | 42" | 10" | 52" | 2.00" |
| BA80 | 80'-0" | 48" | 11" | 59" | 2.25" |

| APPROVED JULY 15, 2015 STATE DESIGN ENGINEER | STATE OF MINNESOTA DEPARTMENT OF TRANSPORTATION | SPECIFICATION REFERENCE | STANDARD PLATE NO. |
|---|---|---|---|
| | POLE FOUNDATION - TYPE BA<br>ANCHOR BOLT DETAIL | 2565 | 8134C<br>4 OF 4 |

FOR HISTORICAL REFERENCE ONLY

THESE MnDOT STANDARD PLATES (CURRENTLY DISCONTINUED FOR USE ON TRUNK HIGHWAY SIGNALS) SHALL APPLY TO THE NEW TRAFFIC SIGNAL MAST ARM, POLE AND FOUNDATION INSTALLATIONS ON THIS PROJECT.

| DESIGN TEAM | NO. | BY | DATE | REVISIONS |
|---|---|---|---|---|
| DRAWN BY: MRB | | | | |
| DESIGNER: MRB | | | | |
| 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.

Certified By: Licensed Professional Engineer — Printed Name: JOHN M. GRAY — Lic. No. 22457 — Date: 09/23/2025

SEH

ANOKA COUNTY, MN
CSAH 9
SAP 002-609-023
CITY OF ANDOVER SAP 198-020-042, CITY PROJECT 25-13
CITY OF ANOKA SAP 103-020-020

TRAFFIC SIGNAL SYSTEMS "A-D"
RECENT MNDOT STANDARD PLATES
CSAH 9 (ROUND LAKE BOULEVARD)

18 / 133

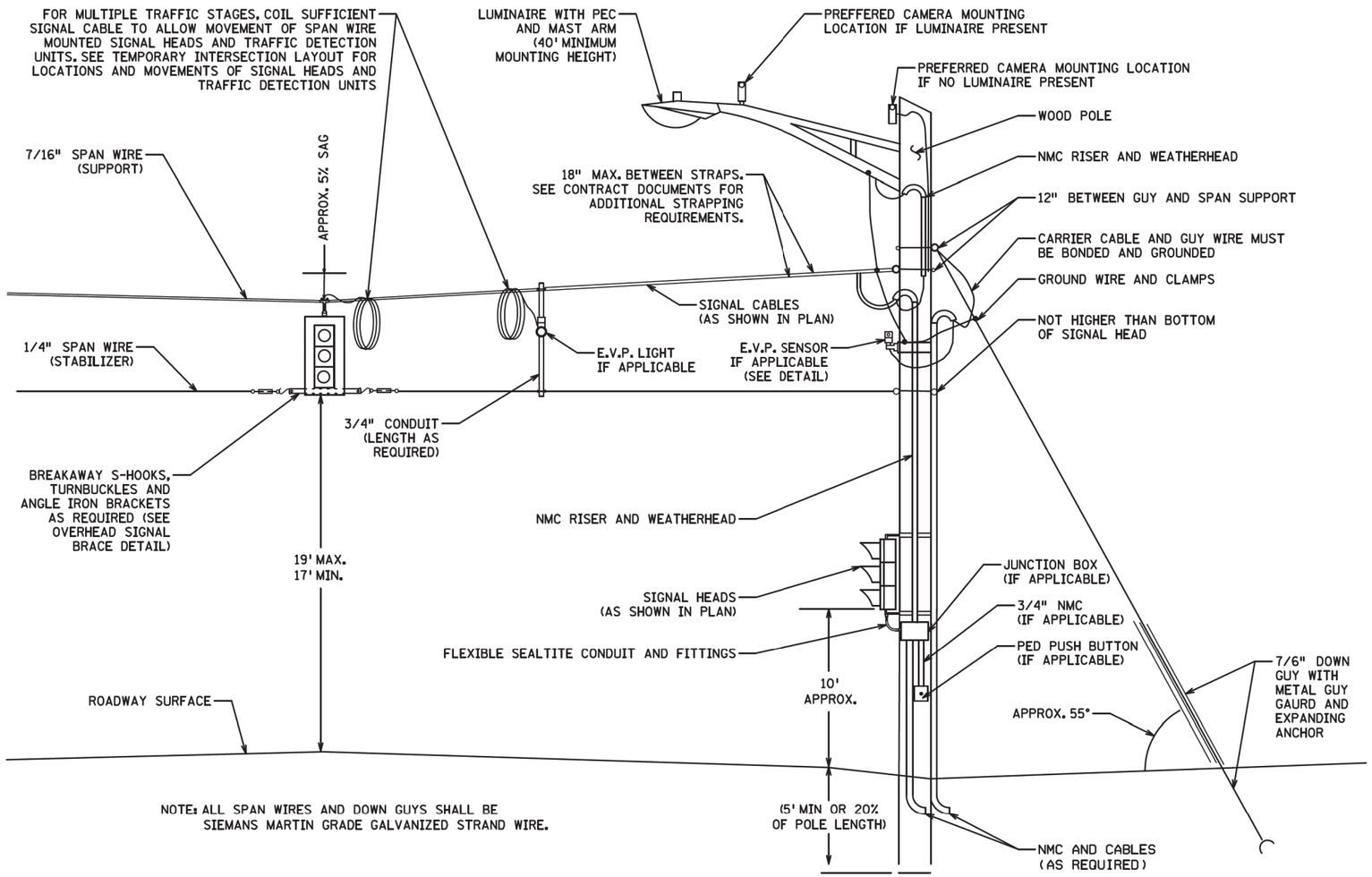
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## TYPICAL WOOD POLE AND SPAN WIRE MOUNTED TRAFFIC SIGNALS

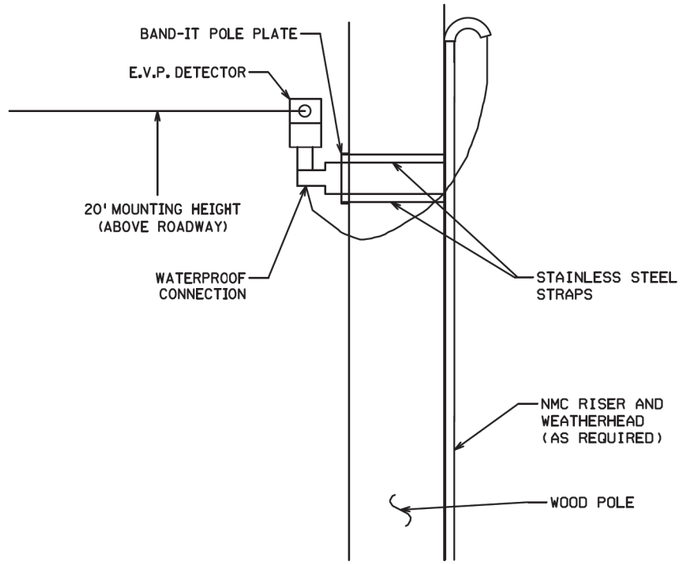
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NOTE: ALL SPAN WIRES AND DOWN GUYS SHALL BE SIEMANS MARTIN GRADE GALVANIZED STRAND WIRE.

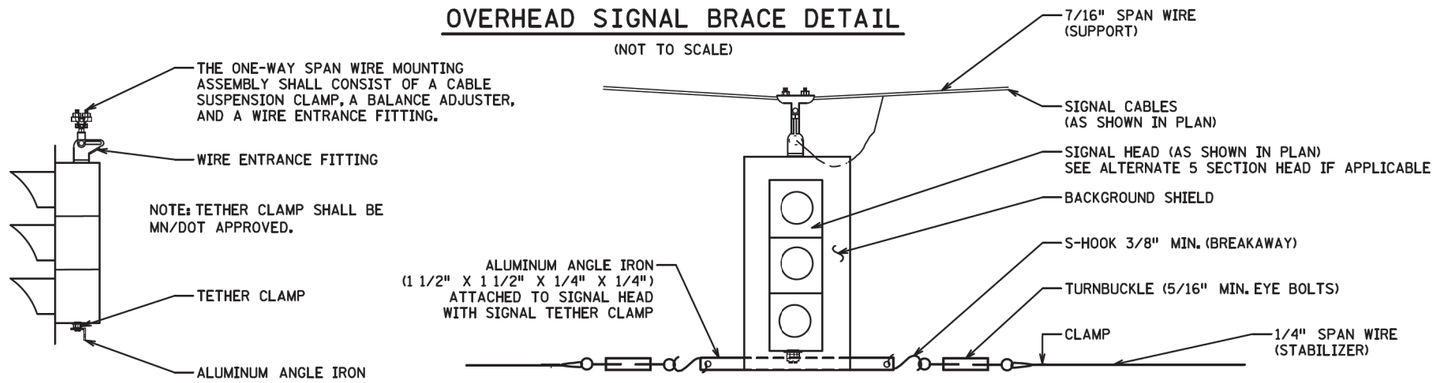
## E.V.P. OR TRAFFIC DETECTOR WOOD POLE MOUNT

(NOT TO SCALE)



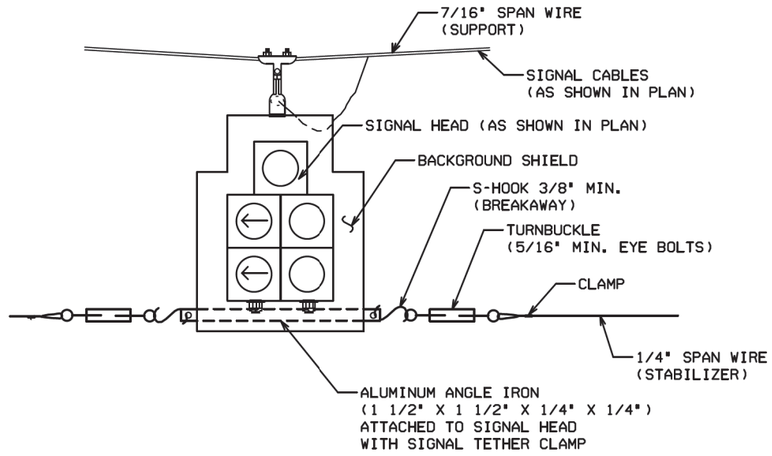

## OVERHEAD SIGNAL BRACE DETAIL

(NOT TO SCALE)




## 5 SECTION HEAD OVERHEAD SIGNAL BRACE DETAIL

(NOT TO SCALE)




| DESIGN TEAM | NO. | BY | DATE | REVISIONS |
|---|---|---|---|---|
| DRAWN BY: MRB | | | | |
| DESIGNER: MRB | | | | |
| 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.

Certified By: Licensed Professional Engineer — Printed Name: JOHN M. GRAY — Lic. No. 22457 — Date: 09/23/2025

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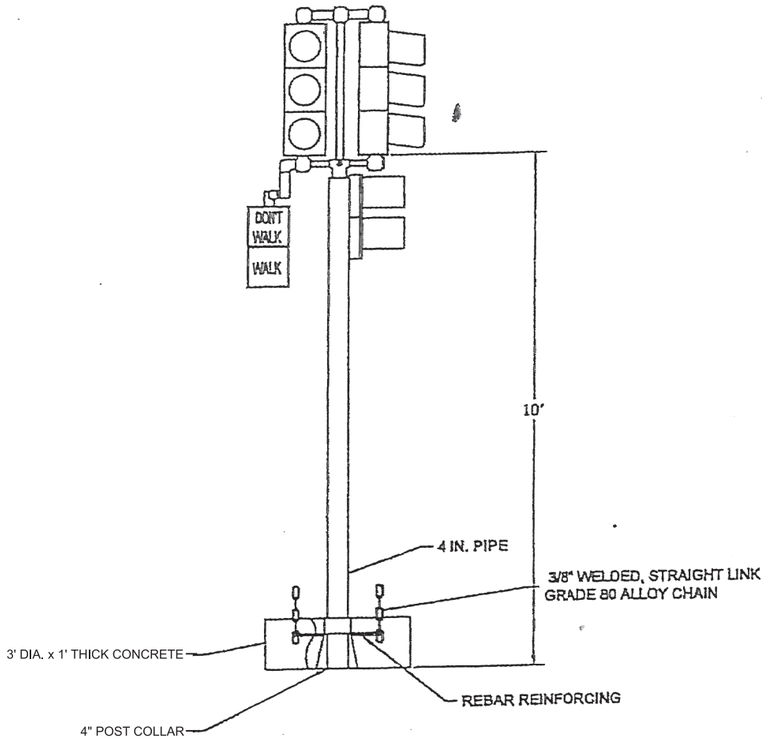
ANOKA COUNTY, MN
CSAH 9
SAP 002-609-023
CITY OF ANDOVER SAP 198-020-042, CITY PROJECT 25-13
CITY OF ANOKA SAP 103-020-020

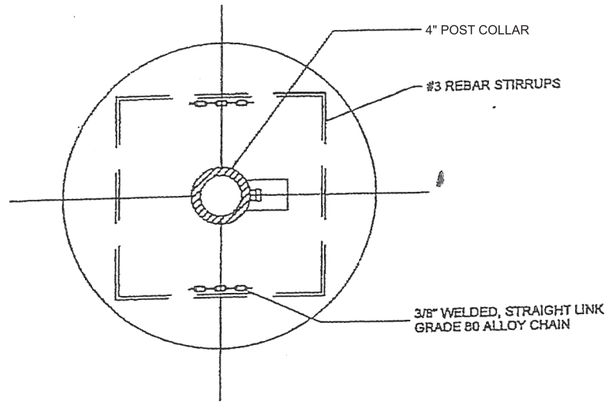
TEMPORARY TRAFFIC SIGNAL SYSTEMS "A-D"
TYPICAL WOOD POLE/SPAN WIRE DETAILS
CSAH 9 (ROUND LAKE BOULEVARD)

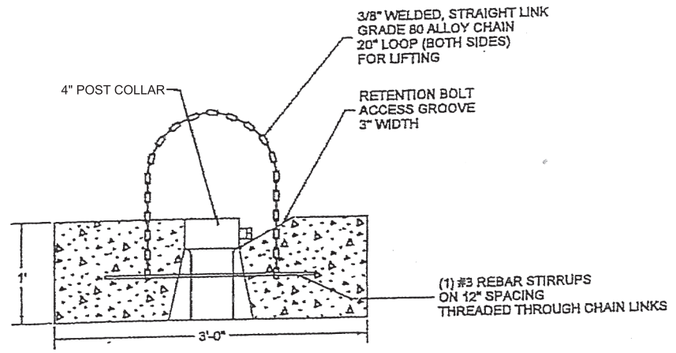


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# TEMPORARY TRAFFIC SIGNAL
# PEDESTAL POLE DETAILS




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| DESIGN TEAM | NO. | BY | DATE | REVISIONS |
|---|---|---|---|---|
| DRAWN BY: MRB | | | | |
| DESIGNER: MRB | | | | |
| CHECKED BY: JMG | | | | |

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Certified By: Licensed Professional Engineer — Printed Name: JOHN M. GRAY — Lic. No. 22457 — Date: 09/23/2025

SEH

ANOKA COUNTY, MN
CSAH 9
SAP 002-609-023
CITY OF ANDOVER SAP 198-020-042, CITY PROJECT 25-13
CITY OF ANOKA SAP 103-020-020

TEMPORARY TRAFFIC SIGNAL SYSTEMS "A-D"
MISCELLANEOUS DETAILS
CSAH 9 (ROUND LAKE BOULEVARD)

# TRAFFIC CONTROL PLAN

## GENERAL INFORMATION:

1) ALL DISTANCES ARE APPROXIMATE.

2) SEE STANDARD PLAN 5-297.813 TEMPORARY PEDESTRIAN ACCESS ROUTE (TPAR) DEVICES FOR DETAILS ON APPROVED CHANNELIZERS, SIDEWALK BARRICADES, PORTABLE STANDS, AND TEMPORARY CURB RAMPS AND WALKWAY SURFACES.

3) ITEM NO. 2563.601 SHALL INCLUDE ALL LABOR AND MATERIALS REQUIRED TO MAINTAIN VEHICULAR AND PEDESTRIAN TRAFFIC THROUGH EACH INTERSECTION DURING THE ENTIRE CONSTRUCTION PERIOD. THIS INCLUDES BUT IS NOT LIMITED TO: ALL REQUIRED SIGNS AND SIGN SUPPORTS ("STOP", "STOP AHEAD", "ROAD WORK AHEAD", "LEFT/RIGHT LANE CLOSED", "SIDEWALK CLOSED", ETC.), CONES, BARRELS, STANDARD BARRICADES, ARROW BOARDS, ETC. AS WELL AS SAND BAGS NEEDED TO KEEP SIGNS UPRIGHT/VISIBLE TO ONCOMING TRAFFIC AND PEDESTRIANS AT ALL TIMES.

4) ALL TRAFFIC CONTROL DEVICES AND SIGNING MUST CONFORM TO AND BE FURNISHED AND INSTALLED IN ACCORDANCE WITH THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MnMUTCD) AND PART IV "FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS" (CURRENT EDITION).

5) THE CONTRACTOR IS REQUIRED TO PROVIDE TO THE ENGINEER FOR REVIEW AND APPROVAL AT LEAST FOURTEEN (14) CALENDAR DAYS PRIOR TO COMMENCING ANY FIELD WORK A WRITTEN PLAN ON HOW THE CONTRACTOR INTENDS TO MEET THE CONTRACT REQUIREMENTS FOR MAINTENANCE OF TRAFFIC AND TRAFFIC CONTROL INCLUDING BUT NOT LIMITED TO PROVIDING TO THE ENGINEER A COMPLETE PLAN FOR WHICH MnMUTCD FIELD MANUAL LAYOUTS ARE PLANNED TO BE USED FOR EACH FIELD OPERATION. LAYOUTS MUST SHOW ALL DEVICES THE CONTRACTOR PROPOSES TO INSTALL AND MAINTAIN FOR EACH FIELD OPERATION.

6) CONTRACTOR MUST PROVIDE, MAINTAIN, COVER AND/OR TURN AWAY FROM TRAFFIC (WHEN NOT IN USE) ALL REQUIRED TRAFFIC CONTROL DEVICES AT ALL TIMES. NOTE THAT ENGINEER WILL SUSPEND WORK IF REQUIRED TRAFFIC CONTROL DEVICES ARE NOT INSTALLED AND MAINTAINED IN ACCORDANCE WITH THE FIELD MANUAL OR AS OTHERWISE APPROVED BY THE ENGINEER FOR THE APPROPRIATE TRAFFIC CONTROL SITUATIONS.

7) A SIGNAL SYSTEM MUST BE IN OPERATION AT EACH INTERSECTION AT ALL TIMES, EXCEPT THAT AN EXISTING SIGNAL SYSTEM MAY BE TURNED OFF OR PUT IN ALL RED FLASH (AND ALL-WAY STOP PROVIDED AND INSTALLED) DURING THE HOURS OF 9:00 AM TO 3:00 PM ONLY IN ORDER TO COMPLETE CONVERSION OF A SIGNAL SYSTEM FROM EXISTING TO TEMPORARY OPERATION, AND FROM TEMPORARY OPERATION TO NEW/REVISED PERMANENT SIGNAL OPERATION (OR FOR ANY OTHER WORK REQURING SIGNAL SYSTEM TO BE TURNED OFF OR PLACED IN RED FLASH TO EXPEDITE CONSTRUCTION). CONTRACTOR MUST NOTIFY THE COUNTY AND EACH CITY AT LEAST 48 HOURS PRIOR TO WHEN A SIGNAL SYSTEM IS REQUESTED TO BE TURNED OFF OR PLACED IN ALL RED FLASH, AND THE COUNTY AND EACH CITY HAVE THE RIGHT TO DENY THIS REQUEST DUE TO LOCAL CIRCUMSTANCES.

8) AT LEAST ONE LANE FOR THROUGH TRAFFIC PLUS ALL TURN LANES MUST BE KEPT OPEN TO TRAFFIC AT ALL TIMES ON ALL APPROACHES, UNLESS OTHERWISE APPROVED IN WRITING BY THE ENGINEER FOR A TURN LANE TO BE CLOSED TO EXPEDITE CONSTRUCTION.

   A MINIMUM OF 11 FEET SHALL BE MAINTAINED FOR ALL LANES OPEN TO TRAFFIC.

9) DURING ANY SIGNAL DOWN TIME, CONTRACTOR MUST PROVIDE, INSTALL, AND MAINTAIN AN ALL-WAY STOP AT THE INTERSECTION (TWO 48" STOP SIGNS AND TWO 48" STOP AHEAD SIGNS ON EACH APPROACH) (INCIDENTAL).

10) CONTRACTOR SHALL FURNISH, INSTALL, MAINTAIN, AND REMOVE FOUR (4) PORTABLE CHANGEABLE MESSAGE SIGNS (TO BE LOCATED FACING NB CSAH 9 NEAR NORTHDALE BOULEVARD, FACING SB CSAH 9 NEAR 149TH AVENUE, FACING EB CSAH 116 EAST OF 38TH AVENUE, AND FACING WB CSAH 116 WEST OF ROSE STREET). THESE SIGNS SHALL BE PROVIDED FOR THE FOLLOWING PERIODS, WITH THE FOLLOWING MESSAGES (TO BE MEASURED AND PAID FOR SEPARATELY UNDER ITEM NO. 2563 "PORTABLE CHANGEABLE MESSAGE SIGN"):

    - TEN (10) DAYS IN ADVANCE OF CONSTRUCTION, AND UP UNTIL WHEN EACH NEW/ REVISED SIGNAL SYSTEM IS ABLE TO BE MADE OPERATIONAL:

      "ROAD WORK / BEGINS (DATE) / EXPECT DELAYS"

    - TWENTY-ONE (21) DAYS AFTER NEW/REVISED SIGNAL SYSTEMS HAVE BEEN MADE OPERATIONAL:

      "TRAFFIC CONTROL CHANGE AHEAD / NEW SIGNAL SYSTEM"

11) ELECTRIC FLASHING ARROW BOARDS WILL BE REQUIRED TO BE PROVIDED, INSTALLED AND MAINTAINED BY THE CONTRACTOR FOR ALL SHORT TERM LANE CLOSURES IMPLEMENTED ON ANY INTERSECTION APPROACH (INCIDENTAL TO TRAFFIC CONTROL).

12) THE CONTRACTOR MUST MAINTAIN PEDESTRIAN ACCESS AT ALL TIMES UNLESS OTHERWISE APPROVED IN THE FIELD BY THE ENGINEER AND THE COUNTY. THIS INCLUDES PROVIDING AN ALTERNATE PEDESTRIAN ROUTE & PROVIDING ALL TRAFFIC CONTROL (TEMPORARY RAMPS, SIGNING, DRUMS, BARRIERS, ETC.) NECESSARY TO PROVIDE A SAFE PEDESTRIAN ACCESS IN THE AREA OF ALL CONSTRUCTION. ALL WORK AND TRAFFIC CONTROL REQUIRED TO MAINTAIN PEDESTRIAN ACCESS WILL BE MEASURED AND PAID FOR SEPARATELY UNDER ITEM NO. 2563 (ALTERNATIVE PEDESTRIAN ROUTE).

13) THE CONTRACTOR SHALL PROVIDE TO THE ENGINEER FOR REVIEW AND APPROVAL PRIOR TO COMMENCING ANY FIELD WORK A WRITTEN PLAN (SIGNED BY A PROFESSIONAL ENGINEER) ON HOW THE CONTRACTOR INTENDS TO PROVIDE AND MAINTAIN PEDESTRIAN ACCESS AT EACH INTERSECTION. LAYOUTS MUST SHOW ANY TEMPORARY RAMPS, SIGNS, PAVEMENT MARKINGS, DRUMS, BARRIER, BARRICADES AND OTHER DEVICES THE CONTRACTOR PROPOSES TO INSTALL AND MAINTAIN FOR PEDESTRIAN ACCESS.

14) THE CONTRACTOR SHALL NOT USE THE MOBILE AND SHORT DURATION TEMPORARY TRAFFIC CONTROL LAYOUTS FROM THE MnMUTCD "FIELD MANUAL." WORK ON THIS PROJECT IS RESTRICTED TO USING SHORT TERM STATIONARY TEMPORARY TRAFFIC CONTROL LAYOUTS, UNLESS OTHERWISE APPROVED BY THE ENGINEER.

15) SEE DIVISION S OF THE SPECIAL PROVISIONS FOR FURTHER INFORMATION REGARDING TRAFFIC CONTROL TO BE PROVIDED, INSTALLED, MAINTAINED AND REMOVED BY THE CONTRACTOR DURING THE ENTIRE PROJECT.

16) THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING AND RELOCATING (AS NEEDED) ALL EXISTING STREET NAME SIGNING SO THAT INTERSECTION NAMES ARE VISIBLE TO AREA TRAFFIC DURING CONSTRUCTION.

# TRAFFIC CONTROL PLAN

## SIGNING:

1. ALL TEMPORARY SIGNS ARE REQUIRED TO BE CRASHWORTHY PER THE AASHTO MANUAL FOR ASSESSING SAFETY HARDWARE 2016 (MASH-2016). TEMPORARY SIGN STRUCTURES THAT ARE CRASHWORTHY UNDER THE NATIONAL COOPERATIVE HIGHWAY RESEARCH PROGRAM REPORT 350 (NCHRP-350) MAY BE USED PROVIDED THAT DEVICES WERE ACQUIRED BY THE CONTRACTOR PRIOR TO DECEMBER 31ST, 2019. THE MINNESOTA TYPE "C" AND "D" BRACED LEG U-CHANNEL (KNEE BRACE) SIGN SUPPORT IS NOT ALLOWED.
2. THE CONTRACTOR SHALL COORDINATE THE INSTALLATION OF THE FINAL SIGNS TO ASSURE THAT THE FINAL SIGNS ARE PLACED AS NEEDED, OR PROVIDE TEMPORARY SIGNING UNTIL THE FINAL SIGNING IS PLACED.
3. WHEN MULTIPLE GROUND MOUNTED SIGN STRUCTURES ARE PLACED ADJACENT TO EACH OTHER THERE SHOULD BE NO MORE THAN 2 POSTS WITHIN 84" OF EACH OTHER. WHEN THIS SPACING CAN NOT BE MAINTAINED, THEN SIGN STRUCTURES SHALL BE OFFSET, AND STAGGERED WITH A MINIMUM OF 4' BETWEEN SIGN STRUCTURES.
4. WHEN A SIGN OR BARRICADE IS ORIENTED SUCH THAT VISIBILITY TO ROAD USERS INCLUDING BIKES AND PEDESTRIANS IS REDUCED ENOUGH TO CAUSE A HAZARD, DELINEATOR THE SIGN/BARRICADE WITH APPROPRIATE DEVICES.
5. TEMPORARY SIGNS SHALL BE PLACED SUCH THAT OBSTACLES DO NOT BLOCK THEM FROM BEING VIEWED BY APPROACHING ROAD USERS. OBSTACLES MAY INCLUDE, BUT ARE NOT LIMITED TO, LIGHT POLES, TREES, SIGNS, AND BUILDINGS.
6. TEMPORARY SIGNS SHALL BE PLACED AND ORIENTED APPROXIMATELY AS SHOWN IN THE PLAN, AT RIGHT ANGLES TO DIRECTION OF FACING THE TRAFFIC THEY ARE INTENTED TO SERVE, UNLESS OTHERWISE SPECIFIED.
7. LONGITUDINAL DROPOFFS SHALL BE SIGNED AS SHOWN IN THE "MINNESOTA TEMPORARY TRAFFIC CONTROL FIELD MANUAL" PAGES (6K-aj) THRU (6K-al) UNLESS OTHERWISE SPECIFIED IN THESE PLANS.
8. AFTER REMOVAL OF SIGN AND/OR SIGN BASE, BACK FILL, COMPACT, AND LEVEL SOIL TO MATCH SURROUNDING SOIL.

## TRAFFIC CONTROL:

GENERAL NOTES:

- CONTRACTOR TO PROVIDE A TRAFFIC CONTROL PLAN SIGNED BY A REGISTERED ENGINEER TO BE APPROVED BY ANOKA COUNTY. SUBMIT 14 DAYS PRIOR TO CLOSURE FOR APPROVAL.

- CONTRACTOR IS LIMITED TO CONSTRUCTION THAT IMPACTS TRAFFIC ON ONLY 3 INTERSECTIONS AT A TIME (I.E. CURB RAMP WORK IS ALLOWED AT THE SAME TIME BETWEEN 135TH AVENUE AND CSAH 116, FOLLOWED BY CURB RAMP WORK BEING COMPLETED AT THE SAME TIME BETWEEN 138TH LANE AND 143RD AVENUE). ALL 6 INTERSECTIONS ARE NOT ALLOWED TO HAVE CURB RAMP WORK ONGOING AT THE SAME TIME.

CSAH 9 (ROUND LAKE BOULEVARD) AT 135TH ST/ROOSEVELT STREET

CSAH 9 (ROUND LAKE BOULEVARD) AT 136TH AVENUE

- FOR SIGNAL AND CURB RAMP WORK ALONG CSAH 9 AT EACH QUADRANT, THE ADJACENT CURB-SIDE LANE MAY HAVE LONGER TERM LANE CLOSURES USED TO EXPEDITE CONSTRUCTION. AT LEAST TWO (2) THROUGH LANES PLUS THE DEDICATED LEFT TURN LANE MUST BE KEPT OPEN TO TRAFFIC ON EACH CSAH 9 APPROACH AT ALL TIMES WHILE CURB-SIDE LANES ARE RESTRICTED TO TRAFFIC.
- FOR SIGNAL AND CURB RAMP WORK ALONG THE SIDE STREET APPROACHES AT EACH QUADRANT, TWO-WAY TRAFFIC MUST BE MAINTAINED ON EACH APPROACH AT ALL TIMES.
- THE CONTRACTOR MAY COMPLETE CURB RAMP WORK ON TWO CORNERS AT THE SAME TIME ONLY (ALL 4 QUADRANTS SHALL NOT HAVE CURB RAMP CONSTRUCTION ON-GOING AT THE SAME TIME). CONTRACTOR MAY COMPLETE BOTH EAST SIDE CURB RAMPS WORK AT THE SAME TIME, AND MAY COMPLETE BOTH WEST SIDE CURB RAMPS WORK AT THE SAME TIME (i.e. KEEP EAST SIDE SIDEWALK OPEN WHILE WORK IS BEING COMPLETED ON THE WEST SIDE CURB RAMPS).
- SIDEWALK ACCESS ON THE SAME SIDE OF CSAH 9 SHALL BE MAINTAINED AT ALL TIMES FOR BOTH INTERSECTIONS (i.e. EAST SIDE WALK AT BOTH SIGNAL SYSTEMS SHALL BE KEPT OPEN AT THE SAME TIME).
- MAINTAIN SIGNAL OPERATION AT EACH INTERSECTION AT ALL TIMES, EXCEPT FOR ALLOWABLE DOWN TIME FOR CHANGEOVERS BETWEEN EXISTING-TEMPORARY SIGNAL OPERATION, AND BETWEEN TEMPORARY-PERMANENT SIGNAL OPERATION).

CSAH 9 (ROUND LAKE BOULEVARD) AT CSAH 116 (BUNKER LAKE BLVD)

- FOR SIGNAL AND CURB RAMP WORK ALONG CSAH 9 AND CSAH 116 ON THE NE, NW, AND SW QUADRANTS, ADJACENT CURB-SIDE LANE MAY HAVE LONGER TERM LANE CLOSURES USED TO EXPEDITE CONSTRUCTION. AT LEAST TWO (2) THROUGH LANES (ONE OF WHICH CAN BE A SHARED THROUGH/RIGHT TURN LANE) PLUS ALL DEDICATED LEFT TURN LANES MUST BE KEPT OPEN TO TRAFFIC ON EACH CSAH 9 AND CSAH 116 APPROACH AT ALL TIMES WHILE CURB-SIDE LANES ARE RESTRICTED TO TRAFFIC.
- FOR SIGNAL, CURB RAMP, AND MEDIAN ISLAND WORK ON THE SE QUADRANT OF CSAH 9 AND CSAH 116, NORTHBOUND CSAH 9 MUST HAVE TWO DEDICATED LEFT TURNS, AND ONE SHARED THROUGH/RIGHT TURN LANE PROVIDED TO TRAFFIC AT ALL TIMES. EASTBOUND CSAH 116 MAY BE RESTRICTED TO ONE LANE (WITH THE LANE ADJACENT TO THE SE MEDIAN ISLAND BEING CLOSED TO TRAFFIC TO ACCOMMODATE CONSTRUCTION).
- FOR LEFT TURN LANE CONSTRUCTION ON EASTBOUND CSAH 116, EASTBOUND CSAH 116 MUST HAVE AT LEAST ONE DEDICATED LEFT TURN, THROUGH, AND RIGHT TURN LANE PROVIDED TO TRAFFIC AT ALL TIMES. WESTBOUND CSAH 116 MAY BE RESTRICTED TO ONE LANE (WITH THE LANE ADJACENT TO THE CENTER MEDIAN BEING CLOSED TO TRAFFIC TO ACCOMMODATE CONSTRUCTION).
- NOTE THAT CONSTRUCTION OF THE EASTBOUND CSAH 116 LEFT TURN LANE AND CURB RAMP WORK ON THE NW QUADRANT SHALL NOT BE SCHEDULED TO OCCUR AT THE SAME TIME.
- THE CONTRACTOR MAY COMPLETE CURB RAMP WORK ON TWO CORNERS AT THE SAME TIME ONLY (ALL 4 QUADRANTS SHALL NOT HAVE CURB RAMP CONSTRUCTION ON-GOING AT THE SAME TIME). CONTRACTOR MAY COMPLETE BOTH EAST SIDE CURB RAMPS WORK AT THE SAME TIME, AND MAY COMPLETE BOTH WEST SIDE CURB RAMPS WORK AT THE SAME TIME (i.e. KEEP EAST SIDE SIDEWALK OPEN WHILE WORK IS BEING COMPLETED ON THE WEST SIDE CURB RAMPS).
- SIDEWALK ACCESS ON THE SAME SIDE OF CSAH 9 SHALL BE MAINTAINED AT ALL TIMES FOR THIS INTERSECTION (i.e. EAST SIDE WALK SHALL BE KEPT OPEN AT THE SAME TIME).
- MAINTAIN SIGNAL OPERATION AT THIS INTERSECTION AT ALL TIMES, EXCEPT FOR ALLOWABLE DOWN TIME FOR CHANGEOVERS BETWEEN EXISTING-TEMPORARY SIGNAL OPERATION, AND BETWEEN TEMPORARY-PERMANENT SIGNAL OPERATION).

CSAH 9 (ROUND LAKE BOULEVARD) AT 138TH LANE

- FOR SIGNAL AND CURB RAMP WORK ALONG CSAH 9 AT EACH QUADRANT, THE ADJACENT CURB-SIDE LANE MAY HAVE LONGER TERM LANE CLOSURES USED TO EXPEDITE CONSTRUCTION. AT LEAST ONE (1) THROUGH LANE PLUS THE DEDICATED LEFT TURN LANE MUST BE KEPT OPEN TO TRAFFIC ON EACH CSAH 9 APPROACH AT ALL TIMES WHILE CURB-SIDE LANES ARE RESTRICTED TO TRAFFIC.
- FOR SIGNAL AND CURB RAMP WORK ALONG THE SIDE STREET APPROACHES AT EACH QUADRANT, TWO-WAY TRAFFIC MUST BE MAINTAINED ON EACH APPROACH AT ALL TIMES.
- THE CONTRACTOR MAY COMPLETE CURB RAMP WORK ON TWO CORNERS AT THE SAME TIME ONLY (ALL 4 QUADRANTS SHALL NOT HAVE CURB RAMP CONSTRUCTION ON-GOING AT THE SAME TIME). CONTRACTOR MAY COMPLETE BOTH EAST SIDE CURB RAMPS WORK AT THE SAME TIME, AND MAY COMPLETE BOTH WEST SIDE CURB RAMPS WORK AT THE SAME TIME (i.e. KEEP EAST SIDE SIDEWALK OPEN WHILE WORK IS BEING COMPLETED ON THE WEST SIDE CURB RAMPS).
- SIDEWALK ACCESS ON THE SAME SIDE OF CSAH 9 SHALL BE MAINTAINED AT ALL TIMES (i.e. EAST SIDE WALK SHALL BE KEPT OPEN AT THE SAME TIME).
- MAINTAIN SIGNAL OPERATION AT THIS INTERSECTION AT ALL TIMES, EXCEPT FOR ALLOWABLE DOWN TIME FOR CHANGEOVERS BETWEEN EXISTING-TEMPORARY SIGNAL OPERATION, AND BETWEEN TEMPORARY-PERMANENT SIGNAL OPERATION).

CSAH 9 (ROUND LAKE BOULEVARD) AT 140TH LANE

CSAH 9 (ROUND LAKE BOULEVARD) AT 143RD AVENUE

- FOR SIGNAL AND CURB RAMP WORK ALONG CSAH 9 AT EACH QUADRANT, THE ADJACENT CURB-SIDE LANE MAY HAVE LONGER TERM LANE CLOSURES USED TO EXPEDITE CONSTRUCTION. AT LEAST ONE (1) DEDICATED LEFT TURN, THROUGH, AND RIGHT TURN LANE MUST BE KEPT OPEN TO TRAFFIC ON EACH CSAH 9 APPROACH AT ALL TIMES WHILE CURB-SIDE LANES ARE RESTRICTED TO TRAFFIC.
- FOR SIGNAL AND CURB RAMP WORK ALONG THE SIDE STREET APPROACHES AT EACH QUADRANT, TWO-WAY TRAFFIC MUST BE MAINTAINED ON EACH APPROACH AT ALL TIMES.
- THE CONTRACTOR MAY COMPLETE CURB RAMP WORK ON TWO CORNERS AT THE SAME TIME ONLY (ALL 4 QUADRANTS SHALL NOT HAVE CURB RAMP CONSTRUCTION ON-GOING AT THE SAME TIME). CONTRACTOR MAY COMPLETE BOTH EAST SIDE CURB RAMPS WORK AT THE SAME TIME, AND MAY COMPLETE BOTH WEST SIDE CURB RAMPS WORK AT THE SAME TIME (i.e. KEEP EAST SIDE SIDEWALK OPEN WHILE WORK IS BEING COMPLETED ON THE WEST SIDE CURB RAMPS).
- SIDEWALK ACCESS ON THE SAME SIDE OF CSAH 9 SHALL BE MAINTAINED AT ALL TIMES (i.e. EAST SIDE WALK SHALL BE KEPT OPEN AT THE SAME TIME).
- MAINTAIN SIGNAL OPERATION AT THIS INTERSECTION AT ALL TIMES, EXCEPT FOR ALLOWABLE DOWN TIME FOR CHANGEOVERS BETWEEN EXISTING-REVISED SIGNAL OPERATION.
- FOR SOUTH MEDIAN CATCH BASIN WORK, THE NORTHBOUND LEFT TURN LANE AND THE SOUTHBOUND THROUGH LANE (ADJACENT TO THE MEDIAN) MAY BE CLOSED LONGER TERM TO EXPEDITE CONSTRUCTION. DURING THIS TIME, THE NORTHBOUND APPROACH SHALL CONSIST OF A DEDICATED LEFT TURN LANE AND A SINGLE DEDICATED THROUGH LANE (PROVIDE ALL TRAFFIC CONTROL NEEDED TO CLOSE EACH LANE INCLUDING FLASHING ARROW BOARDS FOR THESE LANE CLOSURES).

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| DRAWN BY: MRB | | | | |
| DESIGNER: MRB | | | | |
| 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.

Certified By: Licensed Professional Engineer — Printed Name: JOHN M. GRAY — Lic. No. 22457 — Date: 09/23/2025

SEH

ANOKA COUNTY, MN
CSAH 9
SAP 002-609-023
CITY OF ANDOVER SAP 198-020-042, CITY PROJECT 25-13
CITY OF ANOKA SAP 103-020-020

TRAFFIC CONTROL PLAN
NOTES & GUIDELINES

# WATER POLLUTION PREVENTION PLAN (SWPPP) NARRATIVE

## PROJECT DESCRIPTION/LOCATION

LOCATED IN CITIES OF ANOKA AND ANDOVER IN ANOKA COUNTY MINNESOTA.
ANOKA COUNTY SAP 002-609-023, ANOKA SAP 198-020-020, ANDOVER SAP 103-020-020

THE PLANNED SCOPE OF THE PROJECT INCLUDES:

6 TRAFFIC CONTROL SIGNAL SYSTEMS, INTERCONNECT, TURN LANE CONSTRUCTION, AND ADA IMPROVEMENTS.

## LAND FEATURE CHANGES

| | |
|---|---|
| TOTAL DISTURBED AREA | 0.40 ACRES |
| TOTAL EXISTING IMPERVIOUS SURFACE AREA | 0.27 ACRES |
| TOTAL PROPOSED IMPERVIOUS SURFACE AREA | 0.23 ACRES |
| TOTAL PROPOSED NET CHANGE IN IMPERVIOUS SURFACE AREA | -0.04 ACRES |

## SOIL TYPES

SOILS ON SITE CONSIST PRIMARILY OF HUBBARD LOAMY SAND.

## SPECIAL AND IMPAIRED WATERS

RUNOFF FROM THE PROJECT DISCHARGES TO COON CREEK WHICH HAS A CONSTRUCTION RELATED IMPAIREMENT.

## AREAS OF ENVIRONMENTAL SENSITIVITY (AES) AND INFESTED WATERS

THE CONTRACTOR SHALL BE AWARE THAT THERE ARE WETLANDS AND EXISTING STORMWATER FACILITIES WITHIN AND NEAR THE PROJECT BOUNDARY. THERE IS A MAP OF KNOWN NATURAL RESOURCES ON THE LAST PAGE OF THE SWPPP.

WETLANDS AND EXISTING STORMWATER FACILITIES WITHIN AND NEAR THE PROJECT BOUNDARY ARE SHOWN ON THE PLANS.

## PROJECT PERSONNEL AND TRAINING

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

CONTRACTOR RESPONSIBILITIES

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

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

## CHAIN OF RESPONSIBILITY

THE CONTRACTOR IS RESPONSIBLE TO COMPLY WITH ALL ASPECTS OF THE NPDES CONSTRUCTION PERMIT AT ALL TIMES UNTIL THE NOTICE OF TERMINATION (NOT) HAS BEEN FILED WITH THE MPCA. THE CONTRACTOR WILL DEVELOP A CHAIN OF COMMAND WITH ALL OPERATORS (`INCLUDING UTILITY CONTRACTORS) ON THE SITE TO ENSURE THAT THE SWPPP WILL BE IMPLEMENTED AND STAY IN EFFECT UNTIL THE CONSTRUCTION PROJECT IS COMPLETE, THE ENTIRE SITE HAS UNDERGONE FINAL STABILIZATION, AND A NOTICE OF TERMINATION (NOT) HAS BEEN SUBMITTED TO THE MPCA.

THE PROJECT ENGINEER AND CONTRACTOR ARE RESPONSIBLE FOR IMPLEMENTATION OF THE SWPPP AND INSTALL MAINTENANCE OF THE EROSION PREVENTION AND SEDIMENT CONTROL BMPS BEFORE, DURING AND AFTER CONSTRUCTION UNTIL THE NOTICE OF TERMINATION HAS BEEN FILED. MNDOT (OR CONSULTANT) DESIGN STAFF ARE ALSO AVAILABLE FOR TECHNICAL ASSISTANCE.

IF ANY PORTIONS OF THE SWPPP ARE FOUND TO BE DEFICIENT, THE EC SUPERVISOR IS RESPONSIBLE FOR AMENDING THE SWPPP. ANY CHANGES TO THE SWPPP AND ASSOCIATED PLAN SHEETS MUST BE APPROVED BY THE ENGINEER. THIS SWPPP, AMENDMENTS, AND INSPECTION REPORTS MUST BE KEPT ON SITE OR MADE READILY AVAILABLE AND TURNED IN TO THE COUNTY AT THE TERMINATION OF THE PROJECT.

## PROJECT CONTACTS

| CONTACTS | NAME | PHONE |
|---|---|---|
| CONTRACTOR'S EROSION AND SEDIMENT CONTROL SUPERVISOR | | |
| CONTRACTOR'S EROSION AND SEDIMENT CONTROL INSTALLER | | |
| PROJECT MANAGER | | |
| CONSTRUCTION ENGINEER | | |
| MINNESOTA POLLUTION CONTROL AGENCY | MATT HOSKINS | 651-757-2864 |
| | | |
| SEH SWPPP DESIGNER | JESSICA ANDERSEN | 651-302-7666 |
| | | |
| | | |
| | | |
| | | |
| MPCA DUTY OFFICER 24 HR EMERGENCY NOTIFICATION | 651-649-5451 OR 1(800)-422-0798 | |

## LOCATION OF SWPPP REQUIREMENTS

THE REQUIRED SWPPP ELEMENTS MAY BE LOCATED IN MANY PLACES WITHIN THE PLAN SET AS WELL AS IN THE SPECIAL PROVISIONS, MNDOT SPEC BOOK (2025 EDITION), OR ON FILE WITH ANOKA COUNTY. THE NOTES AND TABLE BELOW ARE INTENDED TO BE A QUICK REFERENCE FOR THE CONTRACTOR AND PROJECT ENGINEER TO USE IN THE FIELD. THERE MAY BE ADDITIONAL REQUIRED SWPPP ELEMENTS INCLUDED ON THE PROJECT THAT ARE NOT LISTED ON THIS SHEET.

| DESCRIPTION | LOCATION |
|---|---|
| TEMPORARY EROSION CONTROL MEASURES SHEETS | NO. 26 - 33 |
| PERMANENT EROSION CONTROL MEASURES SHEETS | NO. 26 - 33 |
| SOILS AND CONSTRUCTION NOTES SHEETS | NO. - |
| EROSION AND SEDIMENT CONTROL DETAILS SHEETS | NO. - |
| EROS ION CONTROL TABULATION SHEETS | NO. |
| TURF ESTABLISHMENT TABULATION SHEETS | NO. - |
| SITE MAP SHEETS | NO. - |
| | |
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STORMWATER CALCULATIONS AND ADDITIONAL HYDRAULIC DESIGN INFORMATION IS STORED IN THE PROJECT'S DESIGN FILES. COPIES OF DESIGN INFORMATION AND CALCULATIONS ARE PART OF THE SWPPP AND WILL PROVIDED IN DIGITAL FORMAT UPON WRITTEN REQUEST TO THE ENGINEER..

## SITE INSPECTION AND MAINTENANCE

INSPECT THE ENTIRE CONSTRUCTION SITE AT A MINIMUM OF SEVEN DAYS DURING ACTIVE CONSTRUCTION AND WITHIN 24 HOURS AFTER A RAINFALL EVENT GREATER THAN .5 INCHES IN 24 HOURS. RAINFALL AMOUNTS MUST BE OBTAINED BY A PROPERLY MAINTAINED RAIN GAUGE INSTALLED ON SITE, BY A WEATHER STATION WITHIN ONE MILE, OR FROM A WEATHER REPORTING SYSTEM.

INSPECT ALL TEMPORARY AND PERMANENT WATER QUALITY MANAGEMENT EROSION PREVENTION AND SEDIMENT CONTROL BMPS UNTIL THE SITE HAS UNDERGONE FINAL STABILIZATION AND THE NOT HAS BEEN SUBMITTED. INSPECT SURFACE WATER INCLUDING DRAINAGE DITCHES FOR SIGNS OF EROSION AND SEDIMENT DEPOSITION. INSPECT CONSTRUCTION SITE VEHICLE EXIT LOCATIONS FOR EVIDENCE OF TRACKING ONTO PAVED SURFACES. INSPECT SURROUNDING PROPERTIES FOR EVIDENCE OF OFF SITE SEDIMENT ACCUMULATION. INSPECT INFILTRATION AREAS FOR SIGNS OF SEDIMENT DEPOSITION AND COMPACTION (TO ENSURE THAT EQUIPMENT IS NOT BEING DRIVEN ACROSS THE AREA.

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

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

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

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

### FINAL STABILIZATION AND PROJECT TERMINATION

FINAL STABILIZATION IS NOT COMPLETE UNTIL ALL OF THE FOLLOWING REQUIREMENTS HAVE BEEN MET:

1. ALL CONSTRUCTION ACTIVITY HAS BEEN COMPLETED AND PERMANENT COVER HAS BEEN INSTALLED OVER ALL AREAS OF THE PROJECT.
2. VEGETATIVE COVER HAS REACHED 70% OF THE EXPECTED FINAL GROWTH OF THE PLANNED PERENNIAL VEGETATION.
3. THE PERMANENT STORMWATER TREATMENT SYSTEM HAS BEEN CLEANED OF ANY ACCUMULATED SEDIMENT. THE SYSTEM AND BMP's HAVE BEEN INSTALLED TO PLAN AND ARE FUNCTIONING AS DESIGNED
4. ALL ACCUMULATED SEDIMENT HAS REMOVED FROM THE CONVEYANCE SYSTEMS.
5. ALL TEMPORARY SYNTHETIC EROSION CONTROL BMP's HAVE BEEN REMOVED.
6. THE NOTICE OF TERMINATION HAS BEEN SUBMITTED TO THE APPROPRIATE STATE AND LOCAL PERMITTING AGENCIES

## ENVIRONMENTAL REVIEW

THERE ARE NO STORMWATER MITIGATION MEASURES REQUIRED AS A RESULT OF AN ENVIRONMENTAL, ARCHEOLOGICAL OR AGENCY REVIEW. ALL MITIGATION MEASURES HAVE BEEN ADDRESSED IN THIS PLAN SET OR THE SPECIAL PROVISIONS.
THIS PROJECT IS NOT LOCATED IN A WELL HEAD PROTECTION AREA.
THIS PROJECT IS LOCATED IN A DRINKING WATER SUPPLY MANAGEMENT AREA.
THIS PROJECT IS NOT LOCATED IN A REGION WITH KNOWN KARST.
THIS PROJECT IS NOT LOCATED IN AN EMEERGENCY RESPONSE AREA (ERA)( PER DEPARTMENT OF HEALTH.

| DESIGN TEAM | NO. | BY | DATE | REVISIONS |
|---|---|---|---|---|
| DRAWN BY: MRB | | | | |
| DESIGNER: MRB | | | | |
| 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.

Certified By: Licensed Professional Engineer — Printed Name: JOHN M. GRAY — Lic. No. 22457 — Date: 09/23/2025

SEH

ANOKA COUNTY, MN
CSAH 9
SAP 002-609-023
CITY OF ANDOVER SAP 198-020-042, CITY PROJECT 25-13
CITY OF ANOKA SAP 103-020-020

SWPPP PLAN

NOTES & GUIDELINES



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

## STABILIZATION TIME FRAMES

| AREA | TIME FRAME | NOTES |
|---|---|---|
| LAST 200 LINEAL FEET OF DRAINAGE DITCH OR SWALE | WITHIN 24 HOURS OF CONNECTION TO SURFACE WATER OF PROPERTY EDGE | 1, 2, 3 |
| REMAINING PORTIONS OF DRAINAGE DITCH OR SWALE | 14 DAYS/7 DAYS | 1, 3 |
| PIPE AND CULVERT OUTLETS | 24 HOURS | |
| STOCKPILES | 14 DAYS/7 DAYS | |
| DNR PUBLIC WATERS WITH "WORK IN WATERS" RESTRICTIONS (EXPOSED SOIL WITHIN 200 FEET) | 24 HOURS | |

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

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

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

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

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

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

## GENERAL SWPPP NOTES FOR CONSTRUCTION ACTIVITY

1. PREPARE AND SUBMIT A SITE MANAGEMENT PLAN FOR THE ENGINEER'S ACCEPTANCE FOR CONCRETE MANAGEMENT, CONCRETE SLURRY APPLICATION AREAS, WORK IN AND NEAR AREAS OF ENVIRONMENTAL SENSITIVITY, AREAS IDENTIFIED IN THE PLANS AS "SITE MANAGEMENT PLAN AREA", ANY WORK THAT WILL REQUIRE DEWATERING, AND AS REQUESTED BY THE ENGINEER. SUBMIT ALL SITE MANAGEMENT PLANS TO THE ENGINEER IN WRITING. ALLOW A MINIMUM OF 7 DAYS FOR RAMSEY COUNTY TO REVIEW AND ACCEPT SITE MANAGEMENT PLAN SUBMITTALS. WORK WILL NOT BE ALLOWED TO COMMENCE IF A SITE MANAGEMENT PLAN IS REQUIRED UNTIL ACCEPTANCE HAS BEEN GRANTED BY THE ENGINEER. THERE WILL BE NO EXTRA TIME ADDED TO THE CONTRACT DUE TO THE UNTIMELY SUBMITTAL.

2. IT IS THE DESIGNER'S INTENT THAT THE CONTRACTOR BUILD PONDS AND INSTALL EROSION CONTROL BMP's BEFORE PUTTING THEM INTO ACTIVE SERVICE TO THE MAXIMUM EXTENT PRACTICABLE.

3. BURNING OF ANY MATERIAL IS NOT ALLOWED WITHIN PROJECT BOUNDARY.

4. DO NOT DISTURB AREAS OUTSIDE OF THE CONSTRUCTION LIMITS. DELINEATE AREAS NOT TO BE DISTURBED PRIOR TO STARTING GROUND DISTURBING ACTIVITIES. IF IT BECOMES NECESSARY TO DISTURB AREAS OUTSIDE OF THE CONSTRUCTION LIMITS OBTAIN WRITTEN PERMISSION FROM THE PROJECT ENGINEER PRIOR TO PROCEEDING. PRESERVE ALL NATURAL BUFFERS SHOWN ON THE PLANS.

5. ROUTE STORMWATER AROUND UNSTABILIZED AREAS OF THE SITE WHENEVER FEASIBLE. PROVIDE EROSION CONTROL AND VELOCITY DISSIPATION DEVICES AS NEEDED TO KEEP CHANNELS FROM ERODING AND TO PREVENT NUISANCE CONDITIONS AT THE OUTLET.

6. DIRECT DISCHARGES FROM BMPS TO VEGETATED AREAS WHENEVER FEASIBLE. PROVIDE VELOCITY DISSIPATION DEVICES AS NEEDED TO PREVENT EROSION.

7. THE EROSION PREVENTION AND SEDIMENT CONTROL BMPS SHALL BE PLACED AS NECESSARY TO MINIMIZE EROSION FROM DISTURBED SURFACES AND TO CAPTURE SEDIMENT ON SITE. ALL EROSION CONTROL MEASURES SHALL BE IN PLACE PRIOR TO COMMENCEMENT OF ANY REMOVAL WORK AND/OR GROUND DISTURBING ACTIVITIES COMMENCE.

8. ESTABLISH SEDIMENT CONTROL DEVICES ON ALL DOWN GRADIENT PERIMETERS AND UPGRADIENT OF ANY BUFFER ZONES BEFORE ANY UP GRADIENT LAND DISTURBING ACTIVITIES BEGIN. MAINTAIN SEDIMENT CONTROL DEVICES UNTIL CONSTRUCTION IS COMPLETE AND THE SITE IS STABILIZED.

9. 50-FOOT NATURAL BUFFERS MUST BE PRESERVED WHEN A SURFACE WATER IS LOCATED WITHIN 50 FEET AND DOWNGRADIENT OF THE PROJECT'S EARTH DISTURBANCES. IF MAINTAINING A BUFFER IS INFEASIBLE, REDUNDANT SEDIMENT CONTROLS PLACED AT LEAST 5 FEET APART MUST BE INSTALLED.

10. LOCATE PERIMETER CONTROL ON THE CONTOUR TO CAPTURE OVERLAND, LOW-VELOCITY SHEET FLOWS DOWN GRADIENT OF ALL EXPOSED SOILS AND PRIOR TO DISCHARGING TO SURFACE WATERS. PLACE J-HOOKS AT A MAXIMUM OF 100 FOOT INTERVALS.

11. PROVIDE PERIMETER CONTROL AROUND ALL STOCKPILES. PLACE BMP A MINIMUM 5 FEET FROM THE TOE OF SLOPE WHERE FEASIBLE. DO NOT PLACE STOCKPILES IN NATURAL BUFFER AREAS, SURFACE WATERS OR STORMWATER CONVEYANCES WITHOUT AN ACCEPTABLE STORMWATER BYPASS.

12. FLOATING SILT CURTAIN IS ALLOWED AS PERIMETER CONTROL FOR IN WATER WORK ONLY. INSTALL THE FLOATING SILT CURTAIN AS CLOSE TO SHORE AS POSSIBLE. PLACE PERIMETER CONTROL BMP ON LAND IMMEDIATELY AFTER THE IN WATER WORK IS COMPLETED.

13. DITCH CHECKS WILL BE PLACED AS INDICATED ON THE PLANS DURING ALL PHASES OF CONSTRUCTION.

14. PRESERVE TOPSOIL AND MINIMIZE COMPACTION OF SOILS IN AREAS WHERE VEGETATION WILL BE ESTABLISHED AND/OR INFILTRATION/FILTRATION BMP's WILL BE INSTALLED

15. PROTECT STORM SEWER INLETS AT ALL TIMES WITH THE APPROPRIATE INLET PROTECTION FOR EACH SPECIFIC PHASE OF CONSTRUCTION. PROVIDE INLET PROTECTION DEVICES WITH EMERGENCY OVERFLOW CAPABILITIES. SILT FENCE PLACED IN THE INLET GRATE IS NOT AN ACCEPTABLE INLET PROTECTION BMP FOR GRADING OPERATIONS. SILT FENCE PLACED IN THE GRATE IS ONLY ALLOWED FOR SHORT INTERVALS DURING MILLING OR PAVING OPERATIONS. INLET PROTECTION DEVICES MAY NEED TO BE PLACED MULTIPLE TIMES IN THE SAME LOCATION OVER THE LIFE OF THE CONTRACT. INLET PROTECTION DEVICES WILL BE PAID FOR ONCE PER INLET REGARDLESS OF THE NUMBER OF TIMES THE BMP IS PLACED. KEEP ALL STORM SEWER INLET PROTECTION DEVICES IN GOOD FUNCTIONAL CONDITION AT ALL TIMES. REPLACE INLET PROTECTION DEVICE WITH A SUITABLE ALTERNATIVE IF THE PROJECT ENGINEER DEEMS AN INLET PROTECTION DEVICE TO BE NONFUNCTIONAL, IN POOR CONDITION, INEFFECTIVE, OR NOT APPROPRIATE FOR THE CURRENT CONSTRUCTION ACTIVITIES. THERE WILL BE NO COST TO MNDOT FOR REPLACEMENT OF INLET PROTECTION DEVICES.

16. PLACE CONSTRUCTION EXITS, AS NECESSARY, TO PREVENT TRACKING OF SEDIMENT ONTO PAVED SURFACES BOTH ON AND OFF THE PROJECT SITE. PROVIDE CONSTRUCTION EXITS OF SUFFICIENT SIZE TO PREVENT TRACK OUT. MAINTAIN CONSTRUCTION EXITS WHEN EVIDENCE OF TRACKING IS DISCOVERED. REGULAR STREET SWEEPING IS NOT AN ACCEPTABLE ALTERNATIVE TO PROPER CONSTRUCTION EXIT INSTALLATION AND MAINTENANCE.

17. DISCHARGE TURBID OR SEDIMENT LADEN WATER TO TEMPORARY SEDIMENT BASINS WHENEVER FEASIBLE. IN THE EVENT THAT IT IS NOT FEASIBLE TO DISCHARGE THE SEDIMENT LADEN WATER TO A TEMPORARY SEDIMENT BASIN, THE WATER MUST BE TREATED SO THAT IT DOES NOT CAUSE A NUISANCE CONDITION IN THE RECEIVING WATERS OR TO DOWNSTREAM LANDOWNERS. IF CHEMICAL TREATMENT FOR TURBID WATER / FLOCCUL;ATION IS REQUIRED, SYSTEM DESIGNS AND METHODS MUST BE BASED ON SITE TESTING AND APPROVED BY THE ENGINEER.

18. CLEAN OUT ALL PERMANENT STORMWATER BASINS REGARDLESS OF WHETHER USED AS TEMPORARY SEDIMENT BASINS OR TEMPORARY SEDIMENT TRAPS TO THE DESIGN CAPACITY AFTER ALL UPGRADIENT LAND DISTURBING ACTIVITY IS COMPLETED.

19. PROVIDE SCOUR PROTECTION AT ANY OUTFALL FROM DEWATERING ACTIVITIES.

20. PROVIDE STABILIZATION IN ANY TRENCHES CUT FOR DEWATERING OR SITE DRAINING PURPOSES.

## POLLUTION PREVENTION

1. PROVIDE A SPILL KIT AT EACH WORK LOCATION ON THE SITE.

2. STORE ALL BUILDING MATERIALS THAT HAVE THE POTENTIAL TO LEACH POLLUTANTS, PESTICIDES, HERBICIDES, INSECTICIDES, FERTILIZERS, TREATMENT CHEMICALS, AND LANDSCAPE MATERIALS UNDER COVER AND WITH SECONDARY CONTAINMENT.

3. PROVIDE A SECURE STORAGE AREA WITH RESTRICTED ACCESS FOR ALL HAZARDOUS MATERIALS AND TOXIC WASTE. RETURN ALL HAZARDOUS MATERIALS AND TOXIC WASTE TO THE DESIGNATED STORAGE AREA AT THE END OF THE BUSINESS DAY UNLESS INFEASIBLE. STORE ALL HAZARDOUS MATERIALS AND TOXIC WASTE (INCLUDING BUT NOT LIMITED TO OIL, DIESEL FUEL, GASOLINE, HYDRAULIC FLUIDS, PAINT, PETROLEUM BASED PRODUCTS, WOOD PRESERVATIVES, ADDITIVES, CURING COMPOUNDS, AND ACIDS> IN SEALED CONTAINERS WITH SECONDARY CONTAINMENT. CLEAN UP SPILLS IMMEDIATELY.

4. STORE, COLLECT AND DISPOSE OF ALL SOLID WASTE.

5. POSITION ALL PORTABLE TOILETS SO THAT THEY ARE SECURE AND CANNOT BE TIPPED OR KNOCKED OVER. MAKE SURE THEY ARE PLACED AT LEAST 25 FEET AWAY FROM STORM INLETS AND RECEIVING WATERS. PROPERLY DISPOSE OF ALL SANITARY WASTE.

6. FUEL AND MAINTAIN VEHICLES IN A DESIGNATED CONTAINED AREA WHENEVER FEASIBLE. USE DRIP PANS OR ABSORBENT MATERIALS TO PREVENT SPILLS OR LEAKED CHEMICALS FROM DISCHARGING TO SURFACE WATER OR STORMWATER CONVEYANCES. PROVIDE A SPILL KIT AT EACH LOCATION THAT VEHICLES AND EQUIPMENT ARE FUELED OR MAINTAINED AT.

7. LIMIT VEHICLE AND EQUIPMENT WASHING TO A DEFINED AREA OF THE SITE. CONTAIN RUNOFF FROM THE WASHING AREA TO A TEMPORARY SEDIMENT BASIN OR OTHER EFFECTIVE CONTROL. PROPERLY DISPOSE OF ALL WASTE GENERATED BY VEHICLE AND EQUIPMENT WASHING. ENGINE DEGREASING IS NOT ALLOWED ON THE SITE.

8. PROVIDE EFFECTIVE CONTAINMENT FOR ALL LIQUID AND SOLID WASTES GENERATED BY WASHOUT OF CONCRETE, STUCCO, PAINT, FORM RELEASE OILS, CURING COMPOUNDS AND OTHER CONSTRUCTION MATERIALS. LIQUID AND SOLID WASHOUT WASTES MUST NOT CONTACT THE GROUND. DESIGN THE CONTAINMENT SO THAT IT DOES NOT RESULT IN RUNOFF FROM THE WASHOUT OPERATIONS OR CONTAINMENT AREA.

9. CREATE AND FOLLOW A WRITTEN DISPOSAL PLAN FOR ALL WASTE MATERIALS. INCLUDE IN THE PLAN HOW THE MATERIAL WILL BE DISPOSED OF AND THE LOCATION OF THE DISPOSAL SITE. SUBMIT PLAN TO THE ENGINEER.

10. USE METHODS AND OPERATIONAL PROCEDURES THAT PREVENT DISCHARGE OR PLACEMENT OF BITUMINOUS GRINDINGS, CUTTINGS, MILLINGS, AND OTHER BITUMINOUS WASTES FROM AREAS OF EXISTING OR FUTURE VEGETATED SOILS AND FROM ALL WATER CONVEYANCE SYSTEMS, INCLUDING INLETS, DITCHES AND CURB FLOW LINES.

11. USE METHODS AND OPERATIONAL PROCEDURES THAT PREVENT CONCRETE DUST, PARTICLES, CONCRETE WASH OUT, AND OTHER CONCRETE WASTES FROM LEAVING COUNTY RIGHT OF WAY, DEPOSITING IN EXISTING OR FUTURE VEGETATED AREAS, AND FROM ENTERING STORMWATER CONVEYANCE SYSTEMS, INCLUDING INLETS, DITCHES AND CURB FLOW LINES. USE METHODS AND OPERATIONAL PROCEDURES THAT PREVENT SAW CUT SLURRY AND PLANING WASTE FROM LEAVING COUNTY RIGHT OF WAY AND FROM ENTERING STORMWATER CONVEYANCE SYSTEMS INCLUDING DITCHES AND CULVERTS.

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

## WATER RESOURCES NOTES

THESE NOTES ALONG WITH THE STORMWATER POLLUTION PREVENTION PLAN (SWPPP) NARRATIVE ARE INTENDED TO GIVE INFORMATION ON CRITICAL DRAINAGE FEATURES, NATURAL RESOURCES AND CONTRACTOR OPERATIONS THAT MAY IMPACT DRAINAGE AND NATURAL RESOURCES.

1. THE SIZE AND ELEVATION OF CULVERTS, STORM SEWER PIPES, AND CATCH BASINS HAVE BEEN SPECIFICALLY DESIGNED TO CONFORM TO STATE AID STANDARDS REQUIREMENTS. THE DESIGN COMPUTATIONS ARE ON FILE WITH THE DESIGN CONSULTANT. CHANGING THESE ITEMS OR THE DIRECTION OF FLOW FROM WHAT IS SHOWN ON THE PLANS MAY CAUSE PROBLEMS OFF THE PROJECT AND COULD MEAN THE PROJECT IS OUT OF COMPLIANCE WITH APPROVED DRAINAGE PERMITS. ANY CHANGES TO THE SIZE, ELEVATION, OR DIRECTION OF FLOW OF THE DRAINAGE SYSTEM MUST BE APPROVED BY THE COUNTY ENGINEER.

2. SUBSOIL ALL DISTURBED GREEN SPACES EXCEPT AS LISTED IN 2574.3A.2.

3. PERFORM POST INSTALLATION MANDREL TESTING OF ALL PLASTIC PIPE.

4. ANY SUBSURFACE DRAINAGE TILES DAMAGED DURING CONSTRUCTION SHALL BE REPAIRED, REPLACED OR REROUTED, AND CONNECTED TO THE EXISTING TILE OR DRAINAGE SYSTEM TO ENSURE THAT EXISTING UPLAND DRAINAGE IS PERPETUATED. THIS SHOULD BE DONE TO THE APPROVAL AND SATISFACTION OF THE ENGINEER.

5. THE FOLLOWING WATER RELATED PERMITS APPLY TO THIS PROJECT:

| PROJECT PERMITS | |
|---|---|
| AGENCY | PERMIT TYPE |
| | |
| | |
| | |
| | |

REVIEW ALL PERMITS FOR ANY SPECIAL CONDITIONS THAT WILL AFFECT CONSTRUCTION OF THE PROJECT.

TEMPORARY DEWATERING ACTIVITIES MAY BE REQUIRED FOR ROADWAY CONSTRUCTION AND UTILITY WORK. THEREFORE IT IS POSSIBLE THAT A PERMIT FOR THE TEMPORARY APPROPRIATION OF WATERS OF THE STATE, NON-IRRIGATION FROM MNDNR WILL BE REQUIRED FOR THIS PROJECT. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING THIS PERMIT PRIOR TO COMMENCING DEWATERING ACTIVITIES. ALL TEMPORARY DEWATERING SHALL BE DISCHARGED TO AN APPROVED LOCATION FOR TREATMENT PRIOR TO DISCHARGE TO THE RECEIVING WATER. SUBMIT A SITE MANAGEMENT PLAN TO THE ENGINEER FOR APPROVAL PRIOR TO COMMENCING WORK.

### POND CONSTRUCTION NOTES

1. DO NOT STOCKPILE MATERIALS OR PARK EQUIPMENT OR VEHICLES IN A CONSTRUCTED POND OR OTHER PERMANENT STORMWATER MANAGEMENT BMP.

2. WET PONDS MAY BE USED AS TEMPORARY SEDIMENT TRAPS OR TEMPORARY SEDIMENT BASINS. CLEAN OUT ALL PERMANENT STORMWATER BASINS TO THE DESIGN CAPACITY AFTER ALL UPGRADIENT LAND DISTURBING ACTIVITY IS COMPLETED REGARDLESS OF WHETHER USED AS TEMPORARY SEDIMENT BASINS OR TEMPORARY SEDIMENT TRAPS.

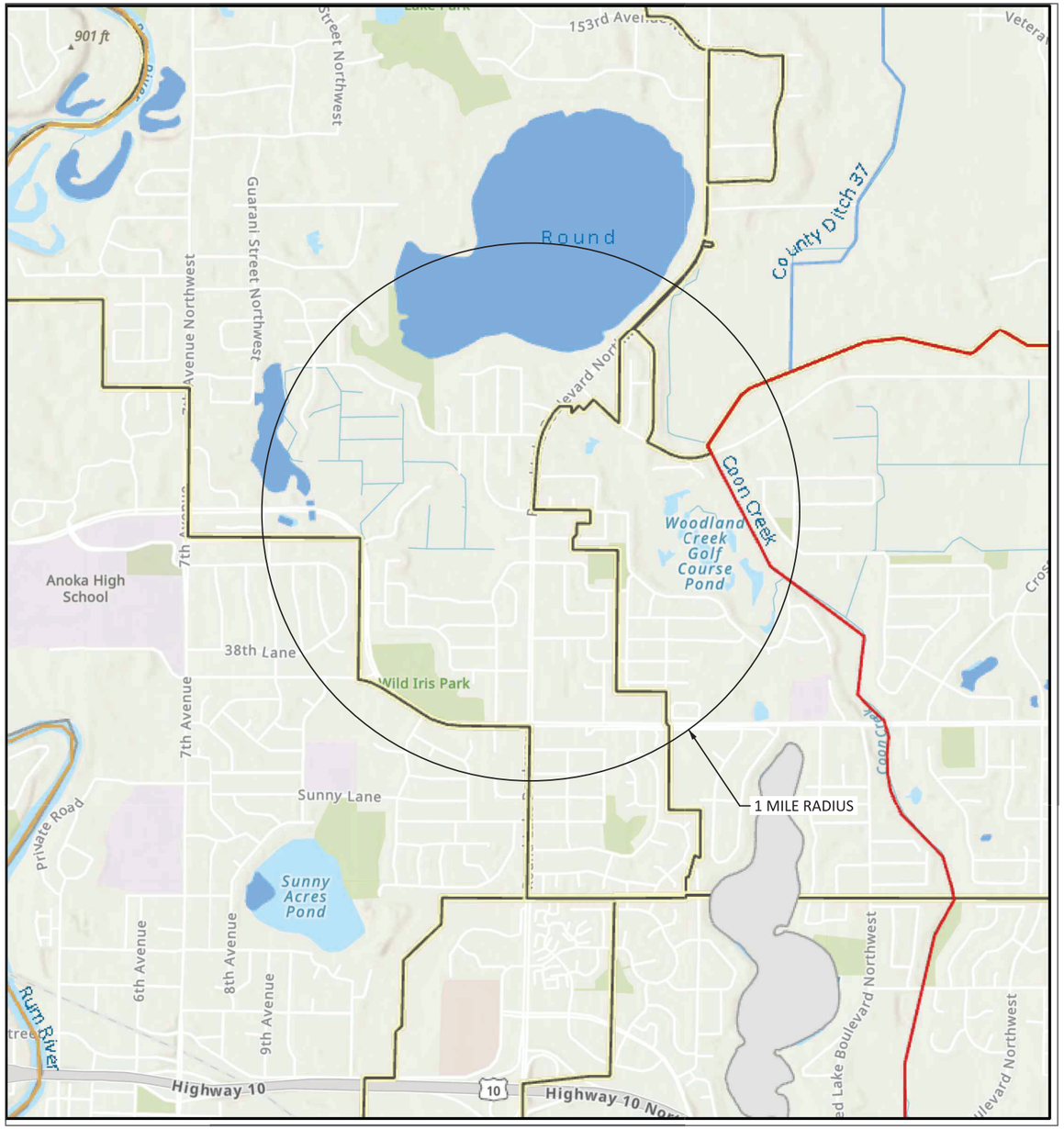
3. THE CONTRACTOR MAY NOT DRIVE ANY EQUIPMENT ON FINISHED POND BOTTOMS OR POND CORNERS. IF DISTURBED, POND BOTTOM AND POND CORNERS MUST BE RESTORED TO PRE-EXISTING CONDITIONS WITHIN 24 HOURS. ANY RUTS OR DAMAGED TURF THAT COULD CREATE SEDIMENT DISCHARGE TO POND BOTTOMS MUST BE REPAIRED WITHIN 24 HOURS.

### LANDSCAPE NOTES

1. FILTER LOGS SHALL BE PLACED, AS NEEDED, TO TRAP SEDIMENT ON THE LOWER EDGE OF BEDS OR TREE HOLES. FILTER LOGS WILL BE LEFT TO PHOTO DEGRADE.

2. TILLING FOR BEDS OR TREE HOLES MUST BE PLANTED AND MULCHED WITH WOOD CHIP WITHIN 7 DAYS OR STRAW MULCHED UNTIL PLANTING OPERATIONS CAN BE COMPLETED.

3. ANY POND CORNERS OPENED DUE TO TILLING FOR SHRUB BEDS OR TREE HOLES MUST BE PLANTED AND MULCHED WITH WOOD CHIP WITHIN 24 HOURS OR STRAW MULCHED UNTIL PLANTING OPERATIONS CAN BE COMPLETED.




| DESIGN TEAM | NO. | BY | DATE | REVISIONS |
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| DRAWN BY: MRB | | | | |
| DESIGNER: MRB | | | | |
| 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.

Certified By: Licensed Professional Engineer — Printed Name: JOHN M. GRAY — Lic. No. 22457 — Date: 09/23/2025

SEH

ANOKA COUNTY, MN
CSAH 9
SAP 002-609-023
CITY OF ANDOVER SAP 198-020-042, CITY PROJECT 25-13
CITY OF ANOKA SAP 103-020-020

SWPPP PLAN

NOTES & GUIDELINES



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9/25/2025

PROPERTY OWNER IS AWARE OF PROJECT WORK THAT WILL IMPACT THEIR LANDSCAPING ON THE COUNTY RIGHT OF WAY. CONTRACTOR SHALL NOTIFY THE PROPERTY OWNER AT LEAST SEVEN (7) CALENDAR DAYS PRIOR TO COMMENCING CONSTRUCTION ON THIS CORNER, SO THAT PROPERTY OWNER IS ABLE TO COMPLETE ANY LANDSCAPING MATERIAL REMOVALS BEFORE CONSTRUCTION BEGINS ON THIS QUADRANT (INCIDENTAL).

ROOSEVELT ST

135TH AVE

CSAH 9 (ROUND LAKE BLVD)

20

SCALE IN FEET

NOTE: ALL RESTORATION SHALL BE COMPLETED WITHIN COUNTY/CITY RIGHT OF WAY BY THE CONTRACTOR, INCLUDING ANY AREAS DISTURBED DUE TO TRAFFIC CONTROL INTERCONNECT CONDUIT AND VAULT INSTALLATION WORK. RESTORATION WORK ON EACH QUADRANT (DUE TO SIGNAL AND CURB RAMP/MEDIAN WORK) IS INCLUDING AS PART OF THE "SITE RESTORATION" PAY ITEM. RESTORATION WORK IN THE BOULEVARD AREAS DUE TO TRAFFIC CONTROL INTERCONNECT WORK WILL BE INCLUDED AS PART OF THE "TRAFFIC CONTROL INTERCONNECT" PAY ITEM.

## LEGEND

- SITE RESTORATION (INCLUDES COMMON TOPSOIL BORROW, FERTILIZER TYPE 3, HYDRAULIC REINFORCED FIBER MATRIX/SEED MIXTURE 25-151)
- STORM DRAIN INLET PROTECTION
- SEDIMENT CONTROL LOG TYPE WOOD FIBER

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Lic. No. 22457 Date: 09/23/2025

SEH

ANOKA COUNTY, MN
CSAH 9
SAP 002-609-023
CITY OF ANDOVER SAP 198-020-042, CITY PROJECT 25-13
CITY OF ANOKA SAP 103-020-020

EROSION CONTROL PLAN

CSAH 9 (ROUND LAKE BOULEVARD) AT 135TH AVENUE/ROOSEVELT STREET

26/133

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NOTE: THESE EXISTING CATCH BASINS ARE LOCATED FURTHER NORTH FROM THE LIMITS OF THIS PLAN SHEET.

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N

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SCALE IN FEET

136TH AVE

CSAH 9 (ROUND LAKE BLVD)

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- STORM DRAIN INLET PROTECTION
- SEDIMENT CONTROL LOG TYPE WOOD FIBER

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ANOKA COUNTY, MN
CSAH 9
SAP 002-609-023
CITY OF ANDOVER SAP 198-020-042, CITY PROJECT 25-13
CITY OF ANOKA SAP 103-020-020

EROSION CONTROL PLAN

CSAH 9 (ROUND LAKE BOULEVARD) AT 136TH AVENUE

27/133

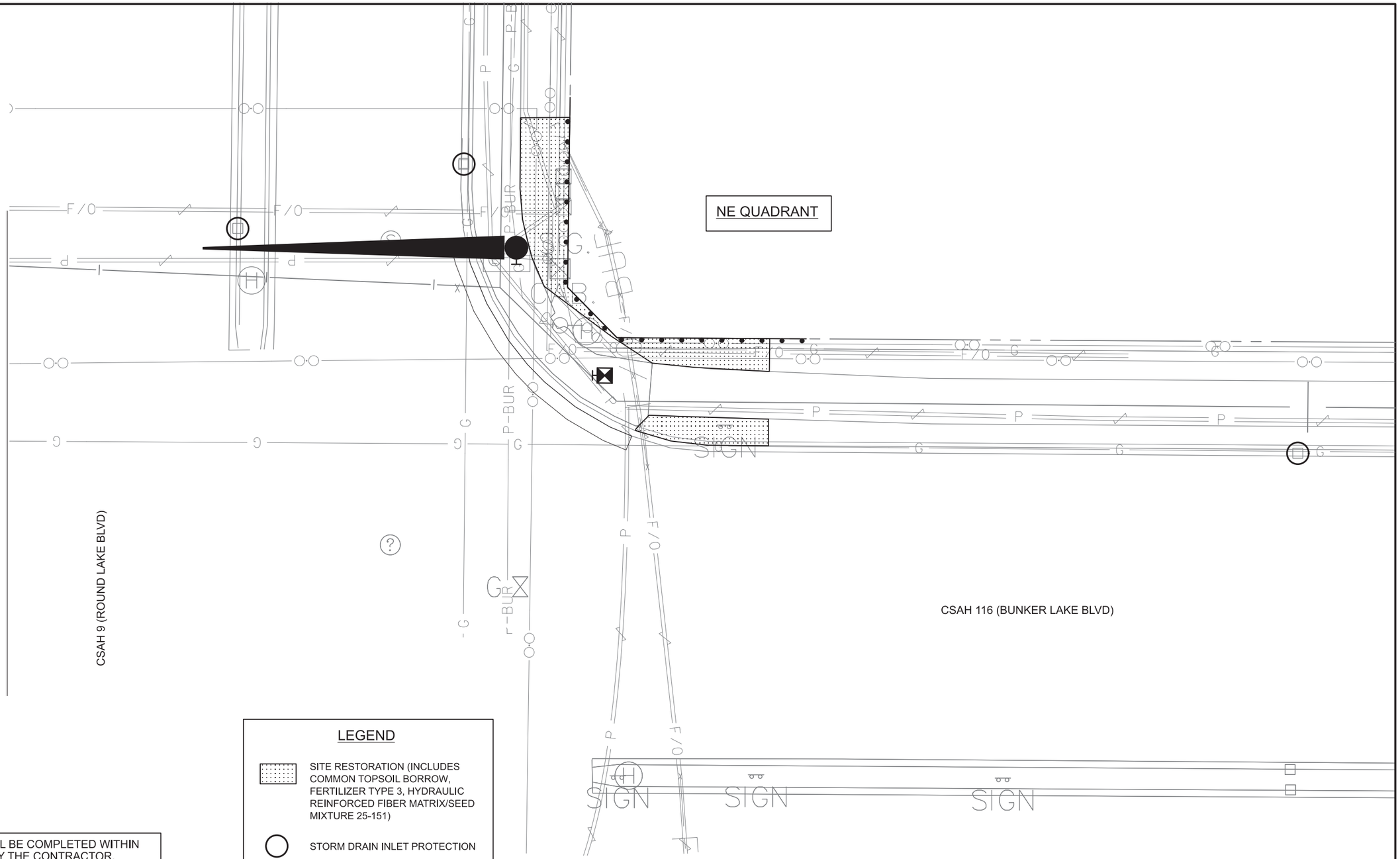
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SCALE IN FEET




## LEGEND

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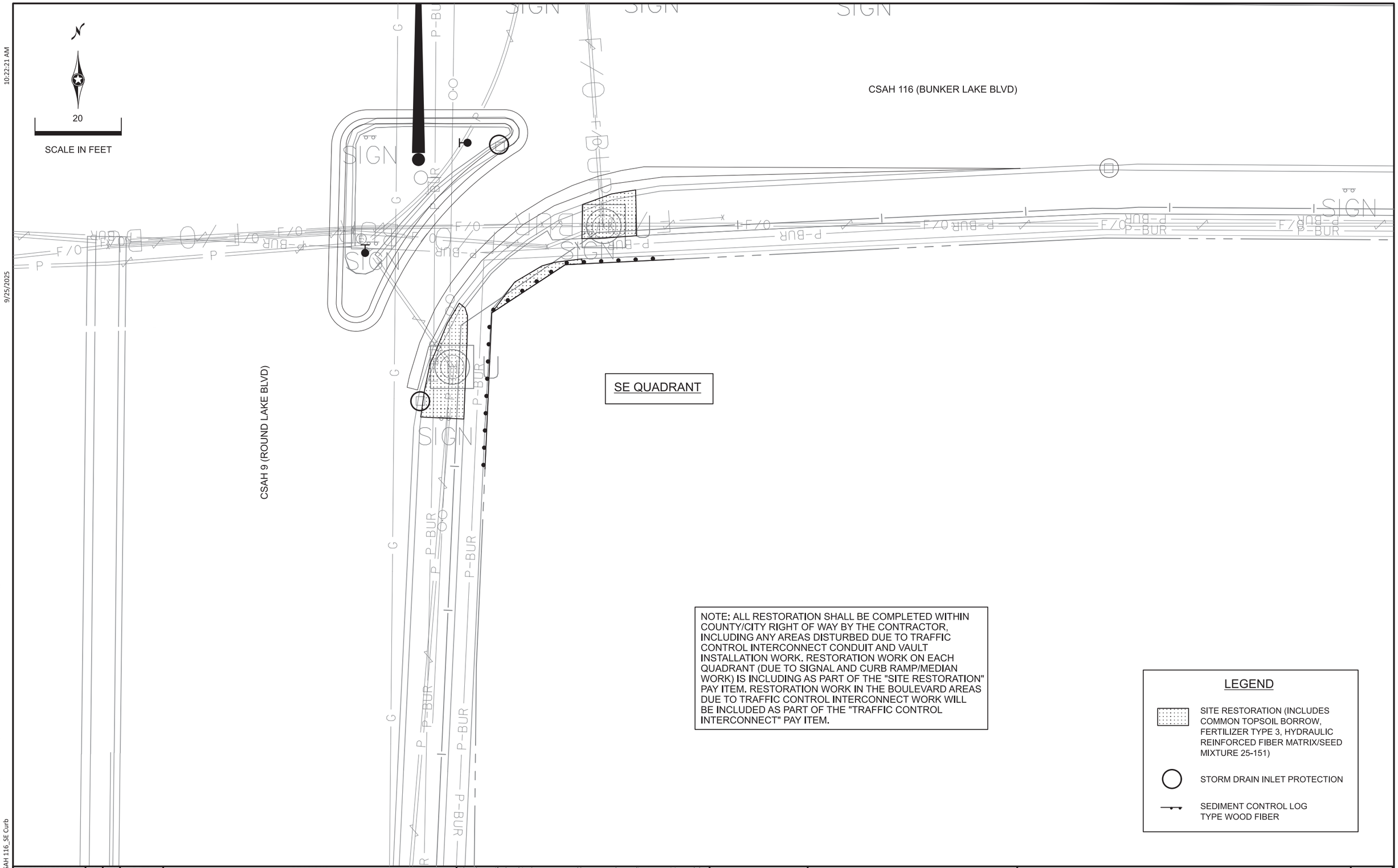
ANOKA COUNTY, MN
CSAH 9
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CITY OF ANDOVER SAP 198-020-042, CITY PROJECT 25-13
CITY OF ANOKA SAP 103-020-020

EROSION CONTROL PLAN

CSAH 9 (ROUND LAKE BOULEVARD) AT CSAH 116 (BUNKER LAKE BOULEVARD)

28/133

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SEH

ANOKA COUNTY, MN
CSAH 9
SAP 002-609-023
CITY OF ANDOVER SAP 198-020-042, CITY PROJECT 25-13
CITY OF ANOKA SAP 103-020-020

EROSION CONTROL PLAN

CSAH 9 (ROUND LAKE BOULEVARD) AT CSAH 116 (BUNKER LAKE BOULEVARD)



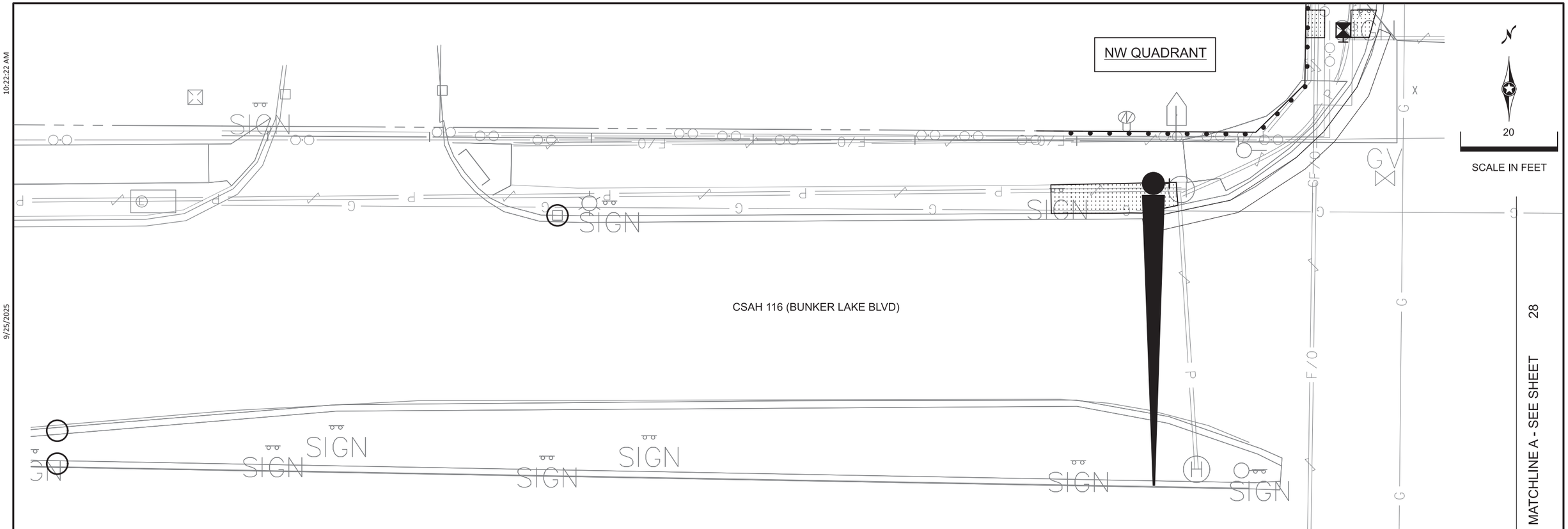
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9/25/2025

NW QUADRANT




N

20

SCALE IN FEET

MATCHLINE A - SEE SHEET 28

NOTE: ALL RESTORATION SHALL BE COMPLETED WITHIN COUNTY/CITY RIGHT OF WAY BY THE CONTRACTOR, INCLUDING ANY AREAS DISTURBED DUE TO TRAFFIC CONTROL INTERCONNECT CONDUIT AND VAULT INSTALLATION WORK. RESTORATION WORK ON EACH QUADRANT (DUE TO SIGNAL AND CURB RAMP/MEDIAN WORK) IS INCLUDING AS PART OF THE "SITE RESTORATION" PAY ITEM. RESTORATION WORK IN THE BOULEVARD AREAS DUE TO TRAFFIC CONTROL INTERCONNECT WORK WILL BE INCLUDED AS PART OF THE "TRAFFIC CONTROL INTERCONNECT" PAY ITEM.

SW QUADRANT

## LEGEND

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- STORM DRAIN INLET PROTECTION
- SEDIMENT CONTROL LOG TYPE WOOD FIBER

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SEH

ANOKA COUNTY, MN
CSAH 9
SAP 002-609-023
CITY OF ANDOVER SAP 198-020-042, CITY PROJECT 25-13
CITY OF ANOKA SAP 103-020-020

# EROSION CONTROL PLAN

CSAH 9 (ROUND LAKE BOULEVARD) AT CSAH 116 (BUNKER LAKE BOULEVARD)

30 / 133

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MODEL: CSAH 116

NOTE: THESE EXISTING CATCH BASINS ARE LOCATED FURTHER NORTH FROM THE LIMITS OF THIS PLAN SHEET.

138TH LANE

FRONTAGE RD

CSAH 9 (ROUND LAKE BLVD)

N

20

SCALE IN FEET

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- SITE RESTORATION (INCLUDES COMMON TOPSOIL BORROW, FERTILIZER TYPE 3, HYDRAULIC REINFORCED FIBER MATRIX/SEED MIXTURE 25-151)
- STORM DRAIN INLET PROTECTION
- SEDIMENT CONTROL LOG TYPE WOOD FIBER

| DESIGN TEAM | NO. | BY | DATE | REVISIONS |
|---|---|---|---|---|
| DRAWN BY: MRB | | | | |
| DESIGNER: MRB | | | | |
| 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.

Certified By: Licensed Professional Engineer

Printed Name: JOHN M. GRAY

Lic. No. 22457 Date: 09/23/2025

SEH

ANOKA COUNTY, MN
CSAH 9
SAP 002-609-023
CITY OF ANDOVER SAP 198-020-042, CITY PROJECT 25-13
CITY OF ANOKA SAP 103-020-020

EROSION CONTROL PLAN

CSAH 9 (ROUND LAKE BOULEVARD) AT 138TH LANE

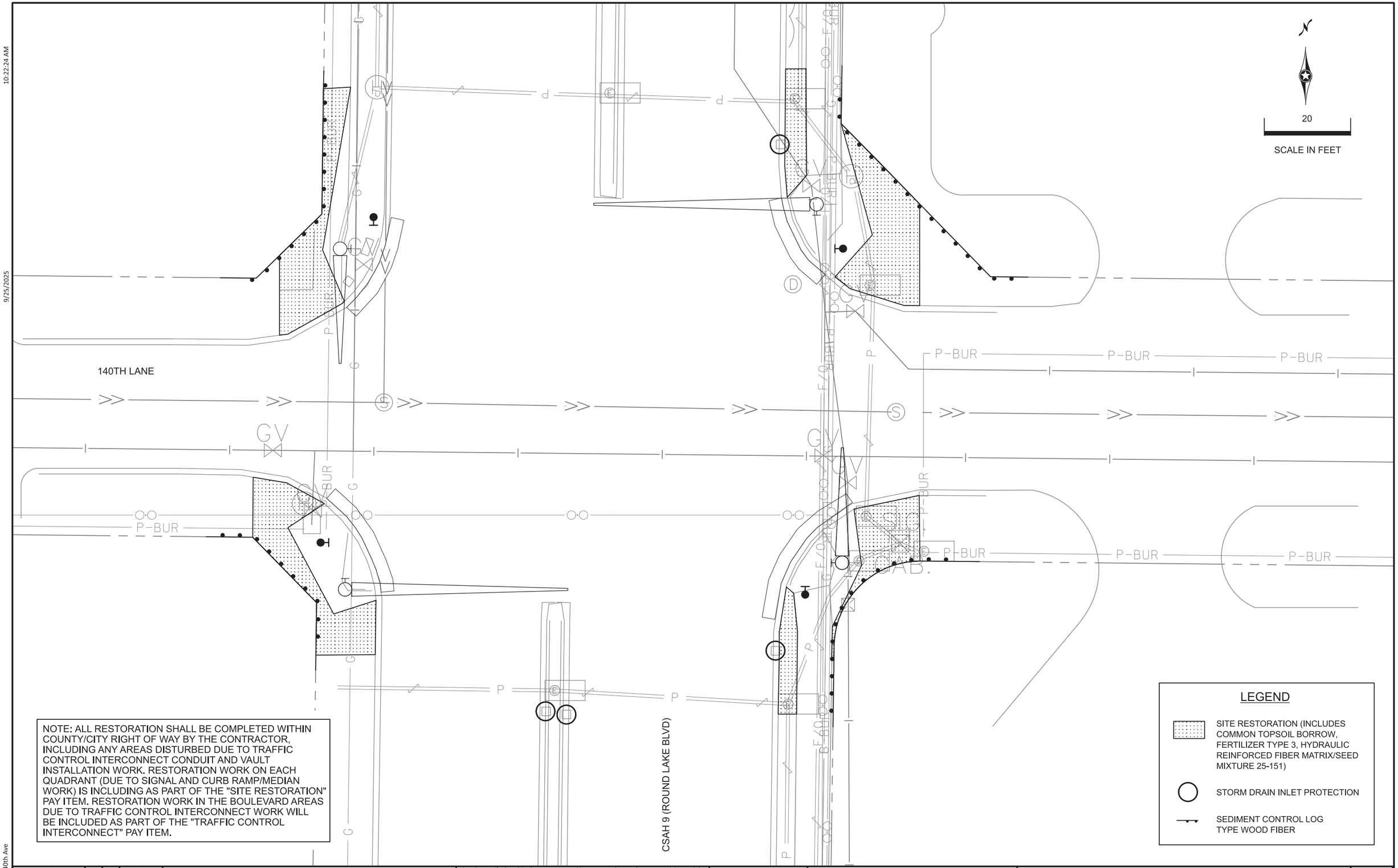
31
133

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9/25/2025

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MODEL: 138th Ave

10:22:24 AM

9/25/2025




NOTE: ALL RESTORATION SHALL BE COMPLETED WITHIN COUNTY/CITY RIGHT OF WAY BY THE CONTRACTOR, INCLUDING ANY AREAS DISTURBED DUE TO TRAFFIC CONTROL INTERCONNECT CONDUIT AND VAULT INSTALLATION WORK. RESTORATION WORK ON EACH QUADRANT (DUE TO SIGNAL AND CURB RAMP/MEDIAN WORK) IS INCLUDING AS PART OF THE "SITE RESTORATION" PAY ITEM. RESTORATION WORK IN THE BOULEVARD AREAS DUE TO TRAFFIC CONTROL INTERCONNECT WORK WILL BE INCLUDED AS PART OF THE "TRAFFIC CONTROL INTERCONNECT" PAY ITEM.

| DESIGN TEAM | NO. | BY | DATE | REVISIONS |
|---|---|---|---|---|
| DRAWN BY: MRB | | | | |
| DESIGNER: MRB | | | | |
| CHECKED BY: JMG | | | | |

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Printed Name: JOHN M. GRAY

Lic. No. 22457 Date: 09/23/2025

SEH

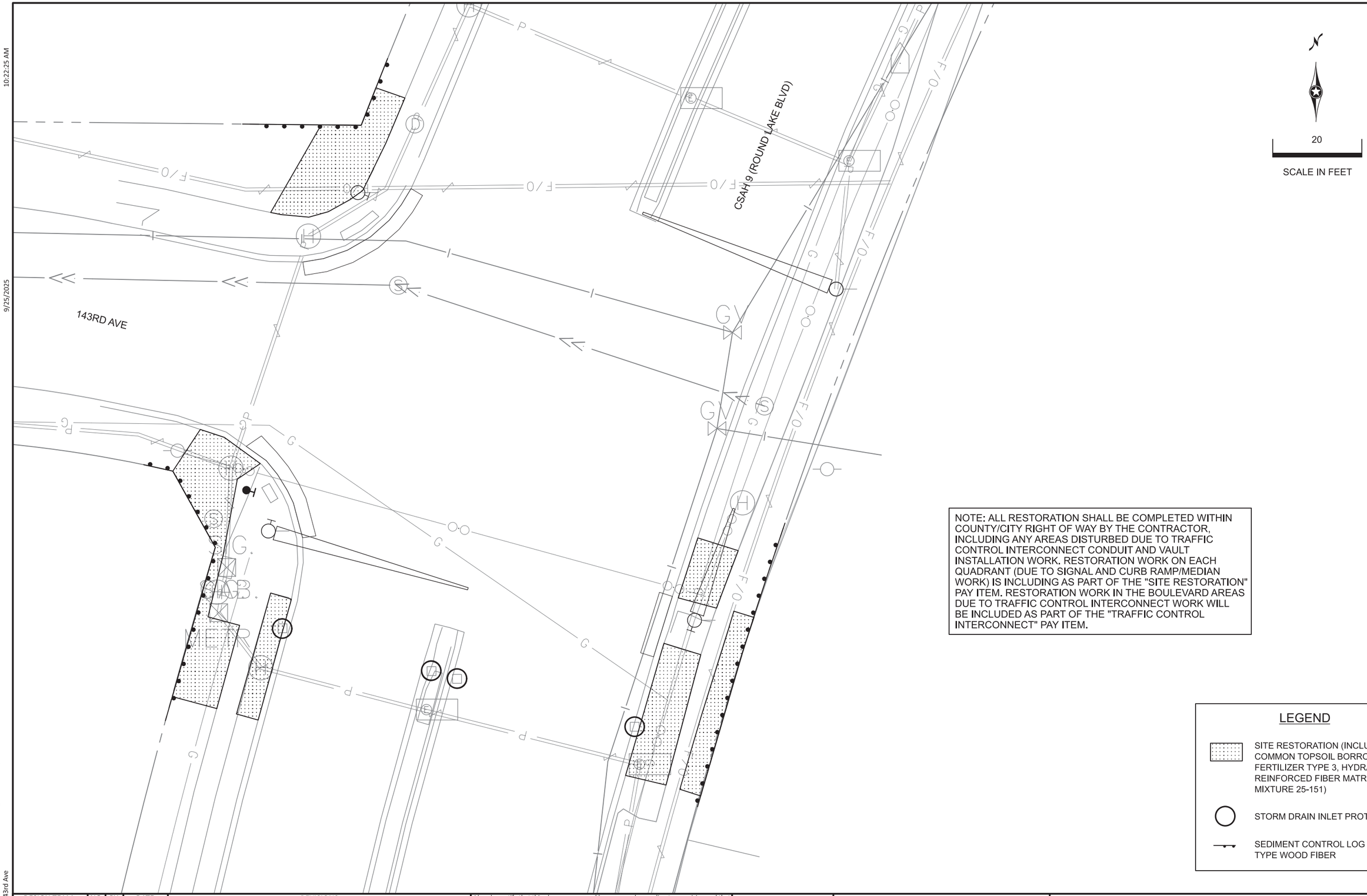
ANOKA COUNTY, MN
CSAH 9
SAP 002-609-023
CITY OF ANDOVER SAP 198-020-042, CITY PROJECT 25-13
CITY OF ANOKA SAP 103-020-020

# EROSION CONTROL PLAN

CSAH 9 (ROUND LAKE BOULEVARD) AT 140TH LANE



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MODEL: 140th Ave




NOTE: ALL RESTORATION SHALL BE COMPLETED WITHIN COUNTY/CITY RIGHT OF WAY BY THE CONTRACTOR, INCLUDING ANY AREAS DISTURBED DUE TO TRAFFIC CONTROL INTERCONNECT CONDUIT AND VAULT INSTALLATION WORK. RESTORATION WORK ON EACH QUADRANT (DUE TO SIGNAL AND CURB RAMP/MEDIAN WORK) IS INCLUDING AS PART OF THE "SITE RESTORATION" PAY ITEM. RESTORATION WORK IN THE BOULEVARD AREAS DUE TO TRAFFIC CONTROL INTERCONNECT WORK WILL BE INCLUDED AS PART OF THE "TRAFFIC CONTROL INTERCONNECT" PAY ITEM.

## LEGEND

- SITE RESTORATION (INCLUDES COMMON TOPSOIL BORROW, FERTILIZER TYPE 3, HYDRAULIC REINFORCED FIBER MATRIX/SEED MIXTURE 25-151)
- STORM DRAIN INLET PROTECTION
- SEDIMENT CONTROL LOG TYPE WOOD FIBER

10:22:25 AM
9/25/2025

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MODEL: 143rd Ave

| DESIGN TEAM | NO. | BY | DATE | REVISIONS |
|---|---|---|---|---|
| DRAWN BY: MRB | | | | |
| DESIGNER: MRB | | | | |
| CHECKED BY: JMG | | | | |

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Certified By: Licensed Professional Engineer — Printed Name: JOHN M. GRAY — Lic. No. 22457 — Date: 09/23/2025

SEH

ANOKA COUNTY, MN
CSAH 9
SAP 002-609-023
CITY OF ANDOVER SAP 198-020-042, CITY PROJECT 25-13
CITY OF ANOKA SAP 103-020-020

EROSION CONTROL PLAN

CSAH 9 (ROUND LAKE BOULEVARD) AT 143RD AVENUE

10:22:51 AM

9/25/2025

NORTHWEST QUADRANT

CLEARING AND GRUBBING
(REMOVE TREE AND STUMP)

NORTHEAST QUADRANT

CSAH 9 (ROUND LAKE BLVD)

ROOSEVELT ST

135TH AVE

SOUTHWEST QUADRANT

SOUTHEAST QUADRANT

N

20

SCALE IN FEET

## REMOVAL QUANTITIES

| LOCATION | SAWING CONC. PVMT. (FULL DEPTH) | SAWING BIT. PVMT. (FULL DEPTH) | REMOVE CURB & GUTTER | REMOVE CONC. WALK | REMOVE BIT. PVMT. | REMOVE CONC. MEDIAN |
|---|---|---|---|---|---|---|
| | LF | LF | LF | SF | SY | SF |
| NW QUAD | 5 | 44 | 37 | 192 | 9 | |
| NE QUAD | 5 | 49 | 40 | 254 | 14 | |
| NORTH MEDIAN | 14 | | | | | 102 |
| SOUTH MEDIAN | 13 | | | | | 75 |
| SE QUAD | 5 | 53 | 44 | 204 | 17 | |
| SW QUAD | 5 | 52 | 42 | 205 | 15 | |
| TOTALS | 47 | 198 | 163 | 855 | 55 | 177 |

## LEGEND

- REMOVE CONCRETE WALK
- REMOVE BITUMINOUS PAVEMENT
- REMOVE BITUMINOUS WALK
- REMOVE CONCRETE MEDIAN
- REMOVE CURB & GUTTER
- SAW BITUMINOUS PAVEMENT (FULL DEPTH)
- SAW CONCRETE PAVEMENT (FULL DEPTH)

| DESIGN TEAM | NO. | BY | DATE | REVISIONS |
|---|---|---|---|---|
| DRAWN BY: MRB | | | | |
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SEH

ANOKA COUNTY, MN
CSAH 9
SAP 002-609-023
CITY OF ANDOVER SAP 198-020-042, CITY PROJECT 25-13
CITY OF ANOKA SAP 103-020-020

REMOVAL PLAN

CSAH 9 (ROUND LAKE BOULEVARD) AT 135TH AVENUE/ROOSEVELT STREET

34/133

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MODEL: 135th Ave

10:22:52 AM

9/25/2025

WORK IN THIS AREA IS WITHIN PERMANENT SIDEWALK EASEMENT

NORTHWEST QUADRANT

NORTHEAST QUADRANT

SOUTHWEST QUADRANT

SOUTHEAST QUADRANT

136TH AVE

CSAH 9 (ROUND LAKE BLVD)

N

20

SCALE IN FEET

## REMOVAL QUANTITIES

| LOCATION | SAWING CONC. PVMT. (FULL DEPTH) | SAWING BIT. PVMT. (FULL DEPTH) | REMOVE CURB & GUTTER | REMOVE CONC. WALK | REMOVE BIT. PVMT. | REMOVE CONC. MEDIAN |
|---|---|---|---|---|---|---|
| | LF | LF | LF | SF | SY | SF |
| NW QUAD | 5 | 40 | 30 | 211 | 9 | |
| NE QUAD | 5 | 30 | 22 | 197 | 8 | |
| NORTH MEDIAN | 22 | | | | | 157 |
| SOUTH MEDIAN | 16 | | | | | 91 |
| SE QUAD | 5 | 38 | 29 | 179 | 11 | |
| SW QUAD | 5 | 39 | 28 | 156 | 11 | |
| TOTALS | 58 | 147 | 109 | 743 | 39 | 248 |

## LEGEND

- REMOVE CONCRETE WALK
- REMOVE BITUMINOUS PAVEMENT
- REMOVE BITUMINOUS WALK
- REMOVE CONCRETE MEDIAN
- REMOVE CURB & GUTTER
- SAW BITUMINOUS PAVEMENT (FULL DEPTH)
- SAW CONCRETE PAVEMENT (FULL DEPTH)

| DESIGN TEAM | NO. | BY | DATE | REVISIONS |
|---|---|---|---|---|
| DRAWN BY: MRB | | | | |
| DESIGNER: MRB | | | | |
| CHECKED BY: JMG | | | | |

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Certified By: Licensed Professional Engineer — Printed Name: JOHN M. GRAY — Lic. No. 22457 — Date: 09/23/2025

SEH

ANOKA COUNTY, MN
CSAH 9
SAP 002-609-023
CITY OF ANDOVER SAP 198-020-042, CITY PROJECT 25-13
CITY OF ANOKA SAP 103-020-020

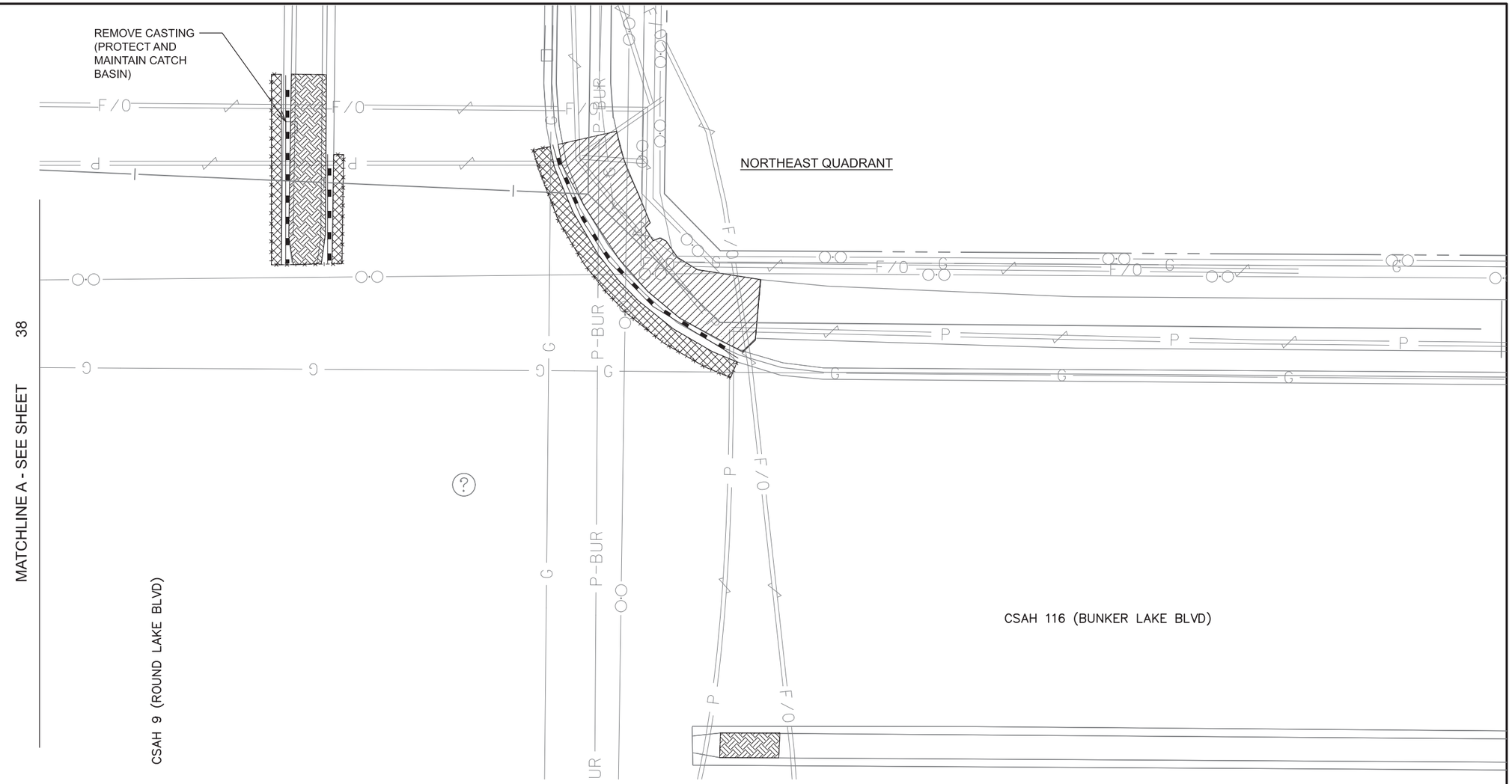
REMOVAL PLAN

CSAH 9 (ROUND LAKE BOULEVARD) AT 136TH AVENUE

35
133

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MODEL: 136th Ave




## REMOVAL QUANTITIES

| LOCATION | SAWING CONC. PVMT. (FULL DEPTH) | SAWING BIT. PVMT. (FULL DEPTH) | REMOVE CURB & GUTTER | REMOVE CONC. WALK | REMOVE BIT. PVMT. | REMOVE CONC. MEDIAN | REMOVE CASTING |
|---|---|---|---|---|---|---|---|
| | LF | LF | LF | SF | SY | SF | EACH |
| NE QUAD | 22 | 62 | 52 | 441 | 160 | | |
| NORTH MEDIAN | 7 | 69 | 53 | | 94 | 208 | 1 |
| EAST MEDIAN | 9 | | | | | 46 | |
| TOTALS | 38 | 131 | 105 | 441 | 254 | 254 | 1 |

## LEGEND

- REMOVE CONCRETE WALK
- REMOVE BITUMINOUS PAVEMENT
- REMOVE BITUMINOUS WALK
- REMOVE CONCRETE MEDIAN
- REMOVE CURB & GUTTER
- SAW BITUMINOUS PAVEMENT (FULL DEPTH)
- SAW CONCRETE PAVEMENT (FULL DEPTH)

| DESIGN TEAM | NO. | BY | DATE | REVISIONS |
|---|---|---|---|---|
| DRAWN BY: MRB | | | | |
| DESIGNER: MRB | | | | |
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SEH

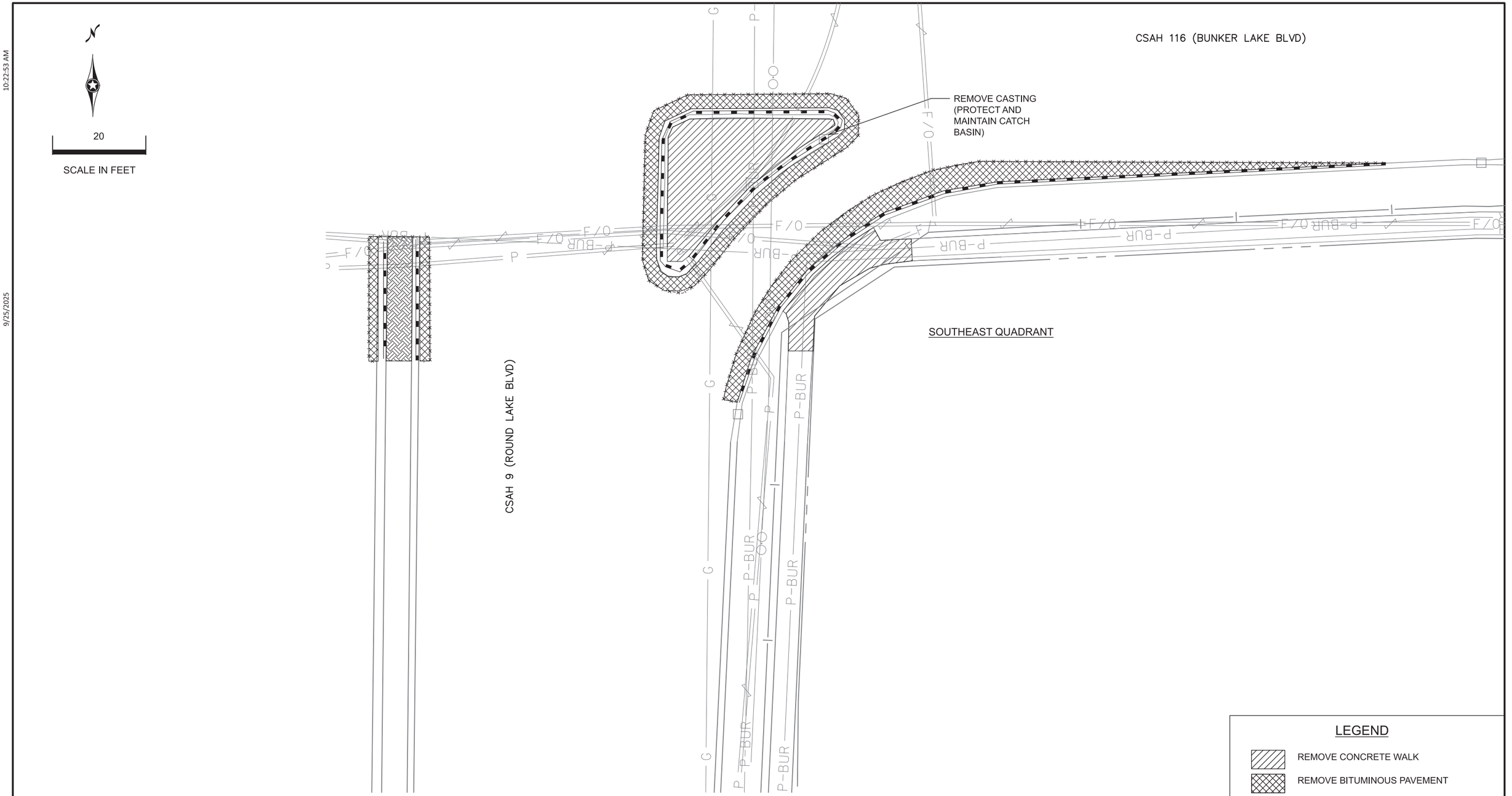
ANOKA COUNTY, MN
CSAH 9
SAP 002-609-023
CITY OF ANDOVER SAP 198-020-042, CITY PROJECT 25-13
CITY OF ANOKA SAP 103-020-020

REMOVAL PLAN

CSAH 9 (ROUND LAKE BOULEVARD) AT CSAH 116 (BUNKER LAKE BOULEVARD)



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MODEL: CSAH 116_Northeast




## REMOVAL QUANTITIES

| LOCATION | SAWING CONC. PVMT. (FULL DEPTH) | SAWING BIT. PVMT. (FULL DEPTH) | REMOVE CURB & GUTTER | REMOVE CONC. WALK | REMOVE BIT. PVMT. | REMOVE CONC. MEDIAN | REMOVE CASTING |
|---|---|---|---|---|---|---|---|
| | LF | LF | LF | SF | SY | SF | EACH |
| SOUTH MEDIAN | 6 | 71 | 52 | | 114 | 143 | |
| SE QUAD | 11 | 318 | 283 | 224 | 104 | 558 | 1 |
| TOTALS | 17 | 452 | 335 | 224 | 218 | 701 | 1 |

## LEGEND

- REMOVE CONCRETE WALK
- REMOVE BITUMINOUS PAVEMENT
- REMOVE BITUMINOUS WALK
- REMOVE CONCRETE MEDIAN
- REMOVE CURB & GUTTER
- SAW BITUMINOUS PAVEMENT (FULL DEPTH)
- SAW CONCRETE PAVEMENT (FULL DEPTH)

| DESIGN TEAM | NO. | BY | DATE | REVISIONS |
|---|---|---|---|---|
| DRAWN BY: MRB | | | | |
| DESIGNER: MRB | | | | |
| CHECKED BY: JMG | | | | |

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Certified By: Licensed Professional Engineer — Printed Name: JOHN M. GRAY — Lic. No. 22457 — Date: 09/23/2025

SEH

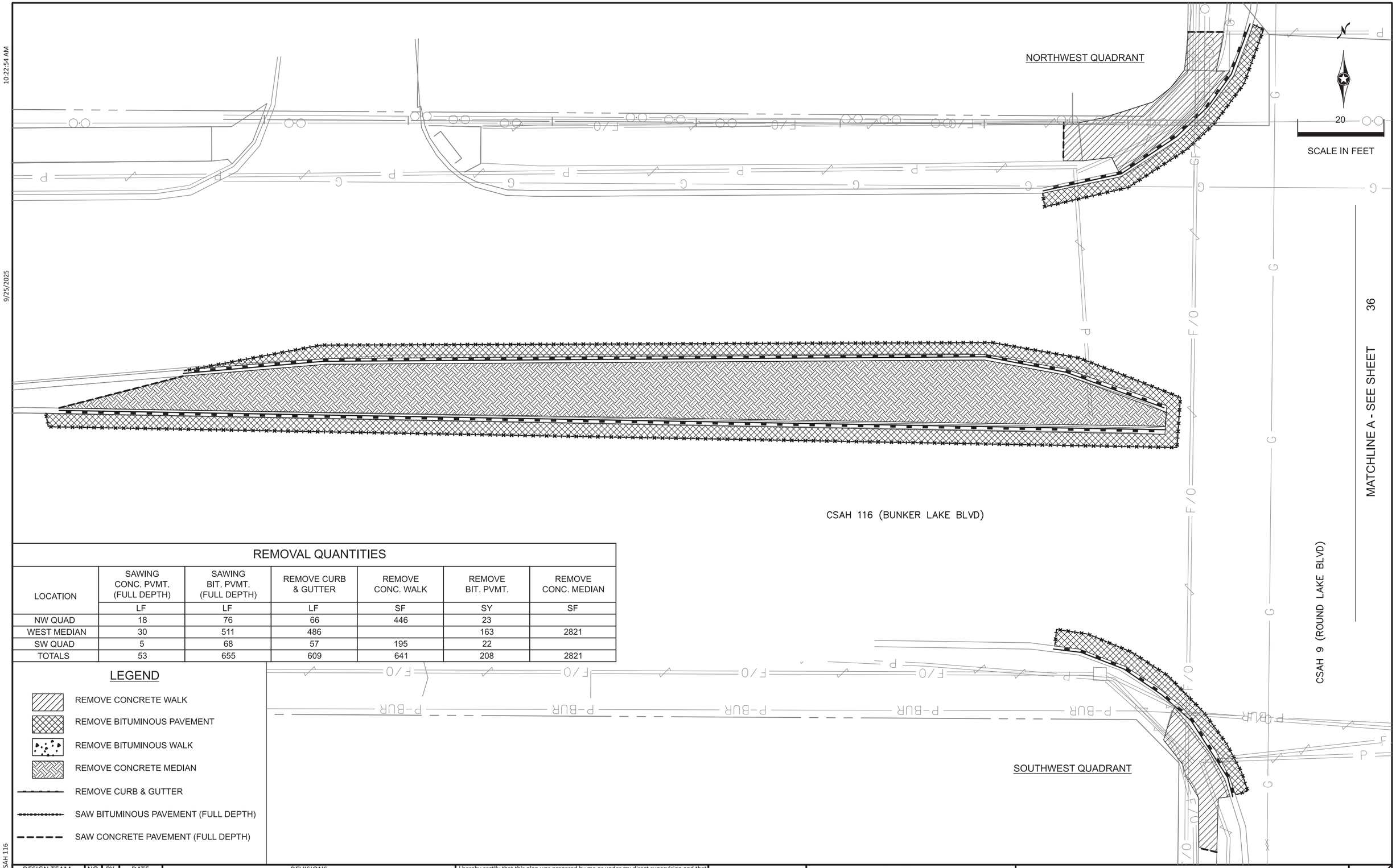
ANOKA COUNTY, MN
CSAH 9
SAP 002-609-023
CITY OF ANDOVER SAP 198-020-042, CITY PROJECT 25-13
CITY OF ANOKA SAP 103-020-020

REMOVAL PLAN

CSAH 9 (ROUND LAKE BOULEVARD) AT CSAH 116 (BUNKER LAKE BOULEVARD)



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MODEL: CSAH 116_East




## REMOVAL QUANTITIES

| LOCATION | SAWING CONC. PVMT. (FULL DEPTH) | SAWING BIT. PVMT. (FULL DEPTH) | REMOVE CURB & GUTTER | REMOVE CONC. WALK | REMOVE BIT. PVMT. | REMOVE CONC. MEDIAN |
|---|---|---|---|---|---|---|
| | LF | LF | LF | SF | SY | SF |
| NW QUAD | 18 | 76 | 66 | 446 | 23 | |
| WEST MEDIAN | 30 | 511 | 486 | | 163 | 2821 |
| SW QUAD | 5 | 68 | 57 | 195 | 22 | |
| TOTALS | 53 | 655 | 609 | 641 | 208 | 2821 |

## LEGEND

- REMOVE CONCRETE WALK
- REMOVE BITUMINOUS PAVEMENT
- REMOVE BITUMINOUS WALK
- REMOVE CONCRETE MEDIAN
- REMOVE CURB & GUTTER
- SAW BITUMINOUS PAVEMENT (FULL DEPTH)
- SAW CONCRETE PAVEMENT (FULL DEPTH)

| DESIGN TEAM | NO. | BY | DATE | REVISIONS |
|---|---|---|---|---|
| DRAWN BY: MRB | | | | |
| DESIGNER: MRB | | | | |
| CHECKED BY: JMG | | | | |

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SEH

ANOKA COUNTY, MN
CSAH 9
SAP 002-609-023
CITY OF ANDOVER SAP 198-020-042, CITY PROJECT 25-13
CITY OF ANOKA SAP 103-020-020

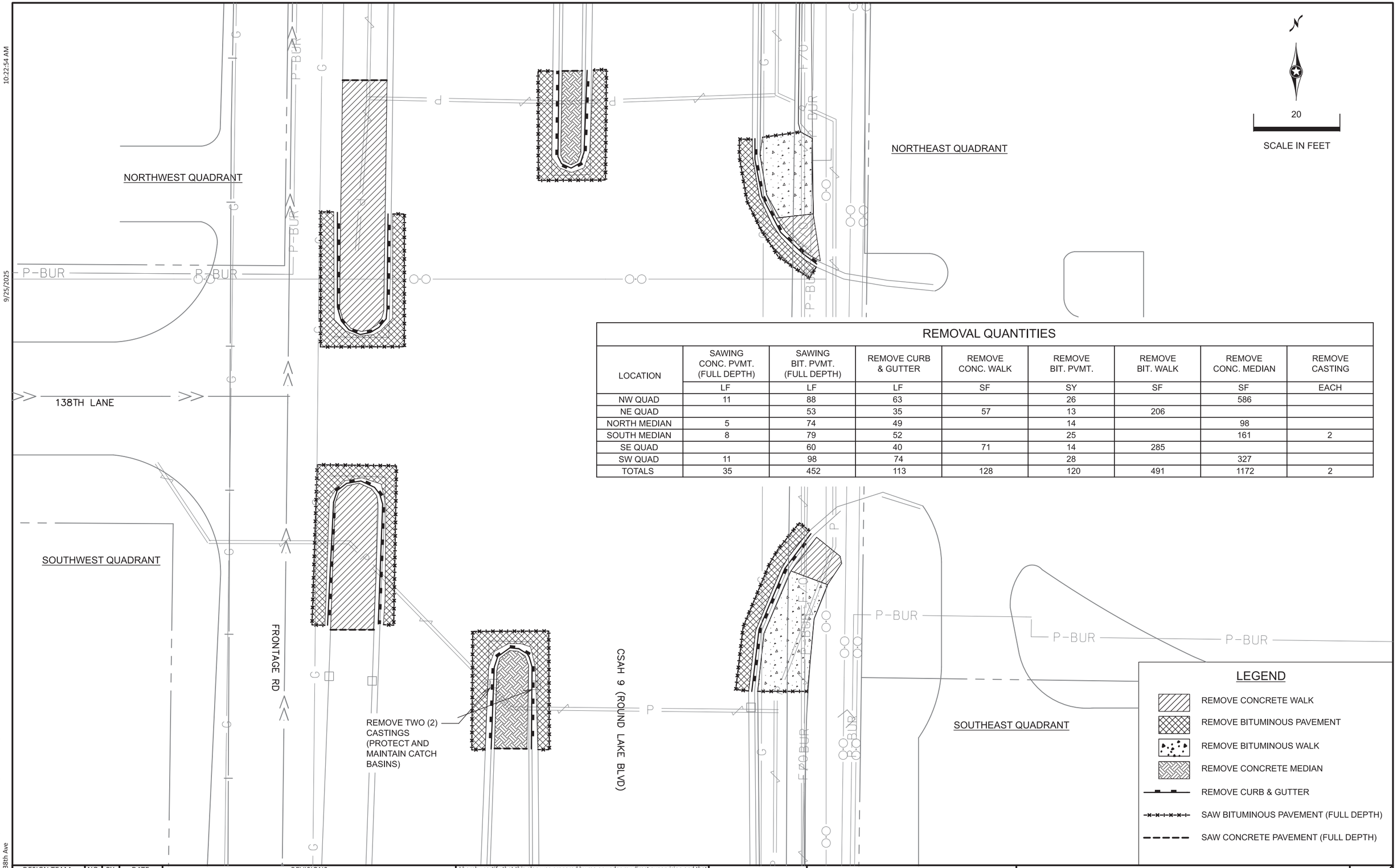
# REMOVAL PLAN

CSAH 9 (ROUND LAKE BOULEVARD) AT CSAH 116 (BUNKER LAKE BOULEVARD)

38 / 133

FILE: X:\AE\A\ANOK\181692\5-final-dsgn\51-drawings\40-TransHwy\Plansheets\CT181692_rem_Sheets.dgn
MODEL: CSAH 116

9/25/2025 10:22:54 AM




## REMOVAL QUANTITIES

| LOCATION | SAWING CONC. PVMT. (FULL DEPTH) | SAWING BIT. PVMT. (FULL DEPTH) | REMOVE CURB & GUTTER | REMOVE CONC. WALK | REMOVE BIT. PVMT. | REMOVE BIT. WALK | REMOVE CONC. MEDIAN | REMOVE CASTING |
|---|---|---|---|---|---|---|---|---|
| | LF | LF | LF | SF | SY | SF | SF | EACH |
| NW QUAD | 11 | 88 | 63 | | 26 | | 586 | |
| NE QUAD | | 53 | 35 | 57 | 13 | 206 | | |
| NORTH MEDIAN | 5 | 74 | 49 | | 14 | | 98 | |
| SOUTH MEDIAN | 8 | 79 | 52 | | 25 | | 161 | 2 |
| SE QUAD | | 60 | 40 | 71 | 14 | 285 | | |
| SW QUAD | 11 | 98 | 74 | | 28 | | 327 | |
| TOTALS | 35 | 452 | 113 | 128 | 120 | 491 | 1172 | 2 |

## LEGEND

- REMOVE CONCRETE WALK
- REMOVE BITUMINOUS PAVEMENT
- REMOVE BITUMINOUS WALK
- REMOVE CONCRETE MEDIAN
- REMOVE CURB & GUTTER
- SAW BITUMINOUS PAVEMENT (FULL DEPTH)
- SAW CONCRETE PAVEMENT (FULL DEPTH)

| DESIGN TEAM | NO. | BY | DATE | REVISIONS |
|---|---|---|---|---|
| DRAWN BY: MRB | | | | |
| DESIGNER: MRB | | | | |
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SEH

ANOKA COUNTY, MN
CSAH 9
SAP 002-609-023
CITY OF ANDOVER SAP 198-020-042, CITY PROJECT 25-13
CITY OF ANOKA SAP 103-020-020

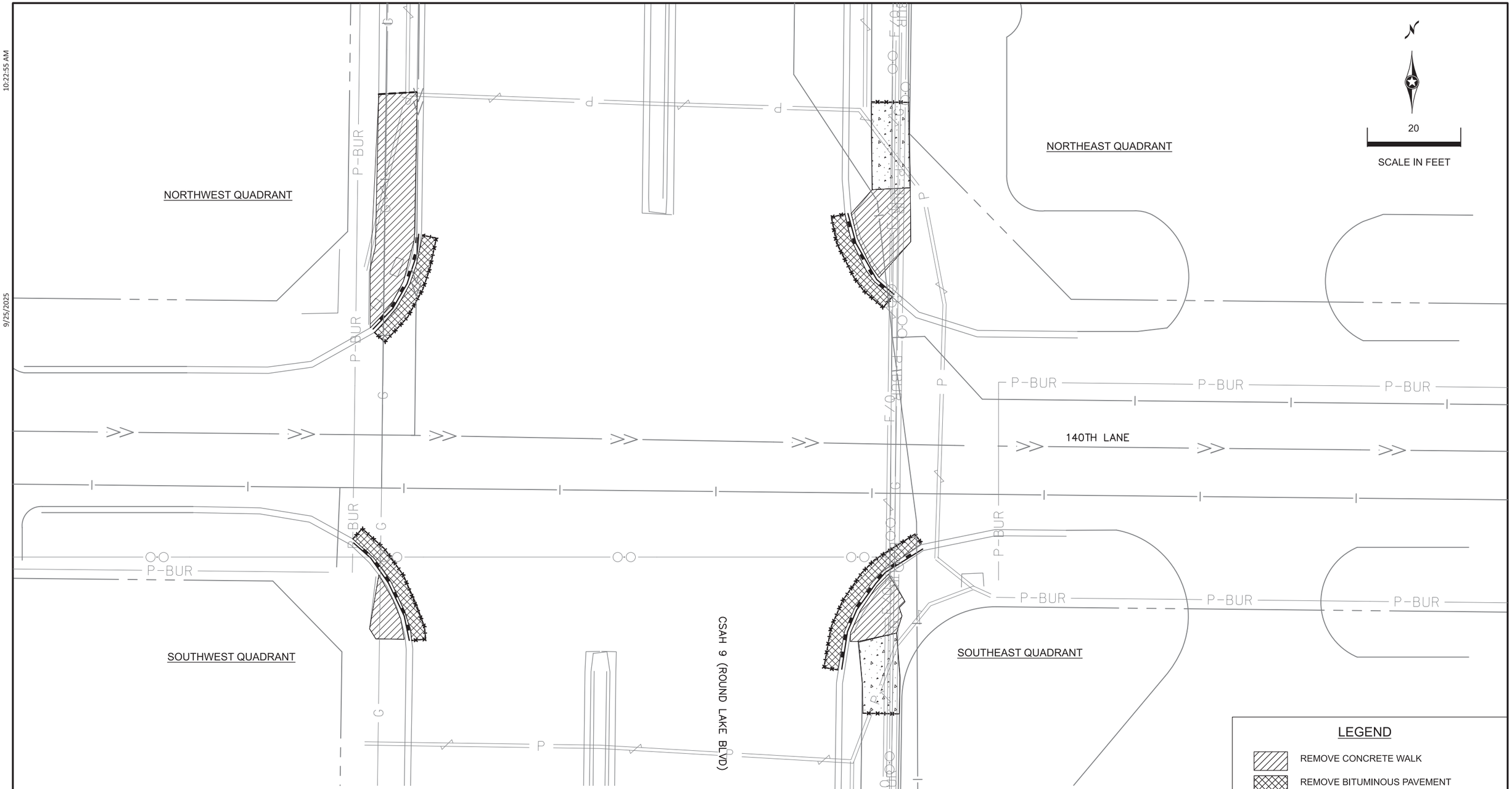
REMOVAL PLAN

CSAH 9 (ROUND LAKE BOULEVARD) AT 138TH LANE

39 / 133

FILE: X:\AE\A\ANOKC\181692\5-final-dsgn\51-drawings\40-TransHwy\Plansheets\CT181692_rem_Sheets.dgn
MODEL: 138th Ave

9/25/2025 10:22:54 AM




## REMOVAL QUANTITIES

| LOCATION | SAWING CONC. PVMT. (FULL DEPTH) | SAWING BIT. PVMT. (FULL DEPTH) | REMOVE CURB & GUTTER | REMOVE CONC. WALK | REMOVE BIT. PVMT. | REMOVE BIT. WALK |
|---|---|---|---|---|---|---|
| | LF | LF | LF | SF | SY | SF |
| NW QUAD | 8 | 32 | 24 | 370 | 9 | |
| NE QUAD | | 37 | 21 | 171 | 8 | 150 |
| SE QUAD | | 50 | 27 | 99 | 12 | 132 |
| SW QUAD | | 34 | 25 | 61 | 9 | |
| TOTALS | 8 | 153 | 97 | 701 | 38 | 282 |

## LEGEND

- REMOVE CONCRETE WALK
- REMOVE BITUMINOUS PAVEMENT
- REMOVE BITUMINOUS WALK
- REMOVE CONCRETE MEDIAN
- REMOVE CURB & GUTTER
- SAW BITUMINOUS PAVEMENT (FULL DEPTH)
- SAW CONCRETE PAVEMENT (FULL DEPTH)

| DESIGN TEAM | NO. | BY | DATE | REVISIONS |
|---|---|---|---|---|
| DRAWN BY: MRB | | | | |
| DESIGNER: MRB | | | | |
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SEH

ANOKA COUNTY, MN
CSAH 9
SAP 002-609-023
CITY OF ANDOVER SAP 198-020-042, CITY PROJECT 25-13
CITY OF ANOKA SAP 103-020-020

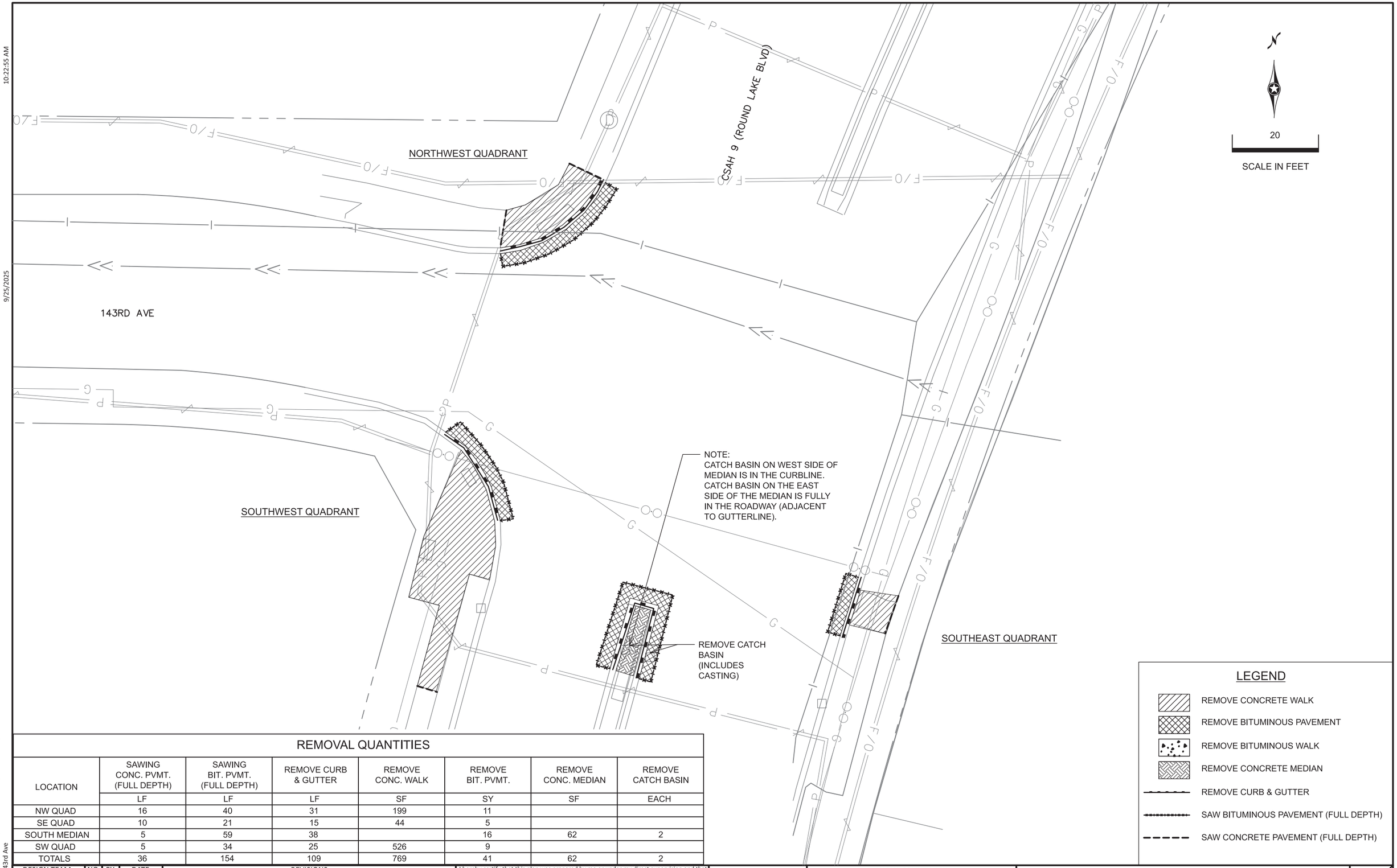
REMOVAL PLAN

CSAH 9 (ROUND LAKE BOULEVARD) AT 140TH LANE

40 / 133

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MODEL: 140th Ave

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9/25/2025




## REMOVAL QUANTITIES

| LOCATION | SAWING CONC. PVMT. (FULL DEPTH) | SAWING BIT. PVMT. (FULL DEPTH) | REMOVE CURB & GUTTER | REMOVE CONC. WALK | REMOVE BIT. PVMT. | REMOVE CONC. MEDIAN | REMOVE CATCH BASIN |
|---|---|---|---|---|---|---|---|
| | LF | LF | LF | SF | SY | SF | EACH |
| NW QUAD | 16 | 40 | 31 | 199 | 11 | | |
| SE QUAD | 10 | 21 | 15 | 44 | 5 | | |
| SOUTH MEDIAN | 5 | 59 | 38 | | 16 | 62 | 2 |
| SW QUAD | 5 | 34 | 25 | 526 | 9 | | |
| TOTALS | 36 | 154 | 109 | 769 | 41 | 62 | 2 |

## LEGEND

- REMOVE CONCRETE WALK
- REMOVE BITUMINOUS PAVEMENT
- REMOVE BITUMINOUS WALK
- REMOVE CONCRETE MEDIAN
- REMOVE CURB & GUTTER
- SAW BITUMINOUS PAVEMENT (FULL DEPTH)
- SAW CONCRETE PAVEMENT (FULL DEPTH)

| DESIGN TEAM | NO. | BY | DATE | REVISIONS |
|---|---|---|---|---|
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| DESIGNER: MRB | | | | |
| CHECKED BY: JMG | | | | |

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Certified By: Licensed Professional Engineer — Printed Name: JOHN M. GRAY — Lic. No. 22457 — Date: 09/23/2025

SEH

ANOKA COUNTY, MN
CSAH 9
SAP 002-609-023
CITY OF ANDOVER SAP 198-020-042, CITY PROJECT 25-13
CITY OF ANOKA SAP 103-020-020

REMOVAL PLAN

CSAH 9 (ROUND LAKE BOULEVARD) AT 143RD AVENUE

41 / 133

FILE: X:\AE\A\ANOK\181692\5-final-dsgn\51-drawings\40-TransHwy\Plansheets\CT181692_rem_Sheets.dgn
MODEL: 143rd Ave
9/25/2025
10:22:55 AM

NW QUADRANT

NE QUADRANT

SW QUADRANT

SE QUADRANT

N

20

SCALE IN FEET

16 PB8-2

6" 17

0"

15 ④ PB6-1

14

ADJUST FRAME & RING CASTING (GATE VALVE)

0"

6"

② ① PB8-1

3 PB2-2

6"

① 0"

0"

6"

4

GRADING OF ALL CURB PATCH AREAS SHALL BE COMPLETED BEFORE BITUMINOUS PATCHING. REMOVE ALL DEBRIS WITHIN PATCH AREAS AND THEN GRADE AGGREGATE BASE CL5 TO ALLOW FOR 6 INCHES OF BITUMINOUS (TYP.)

135TH AVE

6"

0"

10

0"

13

ADJUST HYDRANT

12 PB6-2

③ PB4-1 11

6"

CONCRETE CURB DESIGN V (15LF)

9

6"

0"

5

0"

6"

7 ②

6 PB2-1

8 PB4-2

CSAH 9 (ROUND LAKE BLVD)

NOTE: LUMEN AND ZAYO HAVE FACILITIES ON THE NW AND SW CORNERS OF THIS INTERSECTION THAT NEED TO BE RELOCATED TO ACCOMMODATE SIGNAL FOUNDATION INSTALLATION WORK. THIS WORK WILL LIKELY NEED TO BE COORDINATED BY THE CONTRACTOR SO THAT THE UTILITY RELOCATION WORK IS DONE AT THE SAME TIME THAT THESE CORNERS ARE OPENED BY THE CONTRACTOR. THE CONTRACTOR SHALL CONTACT ANTHONY VANDERHAGEN (LUMEN - 320-345-1863) AND JEREMY WEIGLEITNER (ZAYO-651-336-6557) EARLY IN CONSTRUCTION TO COORDINATE THE UTILITY RELOCATION WORK SO THAT NO DELAYS TO THE CONTRACTOR'S WORK ARE INCURRED DUE TO THESE RELOCATIONS.

## LEGEND

- LANDING AREA -4'X4' MIN. DIMS. MAX 2.0% SLOPE IN ALL DIRECTIONS
- BITUMINOUS PAVEMENT
- CONCRETE SIDEWALK/PAVEMENT (6" FOR SIDEWALKS, 4" FOR MEDIANS)
- TRUNCATED DOMES, SEE STANDARD PLATE 7038
- ① FLOWLINE AND SIGNAL CONTROL POINTS
- DRAINAGE FLOW ARROW
- (S) 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%
- (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%
- CONSTRUCT CONCRETE CURB & GUTTER
- PUSH BUTTON STATION
- PROPOSED SIGNAL POLE (SP)

NOTE: ALL PEDESTRIAN CURB RAMPS SHALL BE INSTALLED PER MNDOT STANDARD PLAN 5-297.250.

| DESIGN TEAM | NO. | BY | DATE | REVISIONS |
|---|---|---|---|---|
| DRAWN BY: MRB | | | | |
| DESIGNER: MRB | | | | |
| 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.

Certified By: Licensed Professional Engineer — Printed Name: JOHN M. GRAY — Lic. No. 22457 — Date: 09/23/2025

SEH

ANOKA COUNTY, MN
CSAH 9
SAP 002-609-023
CITY OF ANDOVER SAP 198-020-042, CITY PROJECT 25-13
CITY OF ANOKA SAP 103-020-020

# CURB RAMP PLAN

CSAH 9 (ROUND LAKE BOULEVARD) AT 135TH AVENUE/ROOSEVELT STREET

42/133

10:24:44 AM
9/25/2025
FILE: X:\AE\A\ANOKC\181692\5-final-dsgn\51-drawings\40-TransHwy\Plansheets\CT181692_CR_Sheets.dgn
MODEL: 135th Ave

SP = SIGNAL POLE

## POINT TABLE

| POINT # | RAW DESCRIPTION | ELEVATION | NORTHING | EASTING |
|---|---|---|---|---|
| 1 | LANDING | 876.29 | 476662.5914 | 165756.4869 |
| 2 | SP 1 / PB8-1 | | 476668.8833 | 165763.1720 |
| 3 | PB2-2 | 876.73 | 476676.6812 | 165749.0253 |
| 4 | LANDING | 876.23 | 476672.2229 | 165744.0223 |
| 5 | LANDING | 875.92 | 476669.7533 | 165683.7054 |
| 6 | PB2-1 | 876.42 | 476672.1769 | 165677.7487 |
| 7 | SP2 | | 476680.0626 | 165682.7289 |
| 8 | PB4-2 | 876.29 | 476665.5108 | 165669.7981 |
| 9 | LANDING | 875.89 | 476662.9838 | 165675.0589 |
| 10 | LANDING | 875.85 | 476550.2620 | 165674.7100 |
| 11 | SP 3 / PB4-1 | | 476544.3902 | 165669.9309 |
| 12 | PB6-2 | 876.25 | 476537.6761 | 165679.4229 |
| 13 | LANDING | 875.80 | 476543.2059 | 165683.4159 |
| 14 | LANDING | 876.37 | 476544.0984 | 165741.0492 |
| 15 | SP 4 / PB6-1 | | 476539.8146 | 165745.1032 |
| 16 | PB8-2 | 876.60 | 476549.2880 | 165755.5615 |
| 17 | LANDING | 876.10 | 476553.7808 | 165752.5963 |

NOTE: ELEVATION OF TOPS OF TRAFFIC SIGNAL FOUNDATIONS TO BE DETERMINED IN THE FIELD BY THE CONTRACTOR (AFTER FINAL CURB ELEVATIONS HAVE BEEN ESTABLISHED)

## ADA PEDESTRIAN RAMP CONSTRUCTION ITEMS

| LOCATION | 6" CONC. WALK | 4" CONC. WALK | CONC. CURB & GUTTER | TRUNCATED DOMES | ADJUST HYDRANT | TYPE SP12.5 WEARING COURSE MIX | ADJUST FRAME AND RING CASTING | CONCRETE CURB DESIGN V |
|---|---|---|---|---|---|---|---|---|
| | SF | SF | LF | SF | EACH | TON | EACH | LF |
| NW QUAD | 275 | | 37 | 30 | | 4 | 1 | |
| NE QUAD | 381 | | 40 | 37 | | 6 | | |
| NORTH MEDIAN | | 102 | | | | | | |
| SOUTH MEDIAN | | 75 | | | | | | |
| SE QUAD | 305 | | 43 | 26 | | 7 | | |
| SW QUAD | 383 | | 42 | 23 | 1 | 6 | | 15 |
| TOTALS | 1344 | 177 | 162 | 116 | 1 | 23 | 1 | 15 |

10:24:46 AM
9/25/2025
FILE: X:\AE\A\ANOK\181692\5-final-dsgn\51-drawings\40-TransHwy\Plansheets\CT181692_CR_Sheets.dgn
MODEL: 135th Ave - Det

| DESIGN TEAM | NO. | BY | DATE | REVISIONS |
|---|---|---|---|---|
| DRAWN BY: MRB | | | | |
| DESIGNER: MRB | | | | |
| CHECKED BY: JMG | | | | |

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Certified By: Licensed Professional Engineer — Printed Name: JOHN M. GRAY — Lic. No. 22457 — Date: 09/23/2025

SEH

ANOKA COUNTY, MN
CSAH 9
SAP 002-609-023
CITY OF ANDOVER SAP 198-020-042, CITY PROJECT 25-13
CITY OF ANOKA SAP 103-020-020

CURB RAMP PLAN

CSAH 9 (ROUND LAKE BOULEVARD) AT 135TH AVENUE/ROOSEVELT STREET

WORK IN THIS AREA IS WITHIN PERMANENT SIDEWALK EASEMENT

NW QUADRANT

NE QUADRANT

SW QUADRANT

SE QUADRANT

16 PB8-2

2 1 PB8-1

3 PB2-2

4 PB6-1 15

17

14

13

12 PB6-2

3 PB4-1 11

10

8 PB4-2

6 PB2-1

7 2

5

9

1

4

6"

0"

136TH AVE

CSAH 9 (ROUND LAKE BLVD)

GRADING OF ALL CURB PATCH AREAS SHALL BE COMPLETED BEFORE BITUMINOUS PATCHING. REMOVE ALL DEBRIS WITHIN PATCH AREAS AND THEN GRADE AGGREGATE BASE CL5 TO ALLOW FOR 6 INCHES OF BITUMINOUS (TYP.)

NOTE: LUMEN AND ZAYO HAVE FACILITIES ON THE NW CORNER OF THIS INTERSECTION THAT NEED TO BE RELOCATED TO ACCOMMODATE SIGNAL FOUNDATION INSTALLATION WORK. THIS WORK WILL LIKELY NEED TO BE COORDINATED BY THE CONTRACTOR SO THAT THE UTILITY RELOCATION WORK IS DONE AT THE SAME TIME THAT THESE CORNERS ARE OPENED BY THE CONTRACTOR. THE CONTRACTOR SHALL CONTACT ANTHONY VANDERHAGEN (LUMEN - 320-345-1863) AND JEREMY WEIGLEITNER (ZAYO-651-336-6557) EARLY IN CONSTRUCTION TO COORDINATE THE UTILITY RELOCATION WORK SO THAT NO DELAYS TO THE CONTRACTOR'S WORK ARE INCURRED DUE TO THESE RELOCATIONS.

## LEGEND

- LANDING AREA -4'X4' MIN. DIMS. MAX 2.0% SLOPE IN ALL DIRECTIONS
- BITUMINOUS PAVEMENT
- CONCRETE SIDEWALK/PAVEMENT (6" FOR SIDEWALKS, 4" FOR MEDIANS)
- TRUNCATED DOMES, SEE STANDARD PLATE 7038
- (1) FLOWLINE AND SIGNAL CONTROL POINTS
- DRAINAGE FLOW ARROW
- (S) 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%
- (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%
- CONSTRUCT CONCRETE CURB & GUTTER
- PUSH BUTTON STATION
- PROPOSED SIGNAL POLE (SP)

NOTE: ALL PEDESTRIAN CURB RAMPS SHALL BE INSTALLED PER MNDOT STANDARD PLAN 5-297.250.

N

20

SCALE IN FEET

| DESIGN TEAM | NO. | BY | DATE | REVISIONS |
|---|---|---|---|---|
| DRAWN BY: MRB | | | | |
| DESIGNER: MRB | | | | |
| 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.

Certified By: Licensed Professional Engineer — Printed Name: JOHN M. GRAY — Lic. No. 22457 — Date: 09/23/2025

SEH

ANOKA COUNTY, MN
CSAH 9
SAP 002-609-023
CITY OF ANDOVER SAP 198-020-042, CITY PROJECT 25-13
CITY OF ANOKA SAP 103-020-020

# CURB RAMP PLAN

CSAH 9 (ROUND LAKE BOULEVARD) AT 136TH AVENUE



FILE: X:\AE\A\ANOK\L181692\5-final-dsgn\51-drawings\40-TransHwy\Plansheets\CT181692_CR_Sheets.dgn
MODEL: 136th Ave
9/25/2025
10:24:46 AM

SP = SIGNAL POLE

## POINT TABLE

| POINT # | RAW DESCRIPTION | ELEVATION | NORTHING | EASTING |
|---|---|---|---|---|
| 1 | LANDING | 875.22 | 476664.0415 | 166484.2498 |
| 2 | SP 1 / PB8-1 | | 476668.1828 | 166490.2949 |
| 3 | PB2-2 | 875.79 | 476674.6220 | 166481.9090 |
| 4 | LANDING | 875.29 | 476671.6847 | 166477.7958 |
| 5 | LANDING | 875.72 | 476671.4782 | 166437.8187 |
| 6 | PB2-1 | 876.22 | 476676.0263 | 166434.4672 |
| 7 | SP 2 | | 476679.6665 | 166435.6523 |
| 8 | PB4-2 | 876.29 | 476666.7545 | 166426.4439 |
| 9 | LANDING | 875.79 | 476663.8743 | 166430.9955 |
| 10 | LANDING | 875.90 | 476548.9390 | 166421.5336 |
| 11 | SP 3 / PB4-1 | | 476545.3741 | 166415.3984 |
| 12 | PB6-2 | 876.49 | 476537.5285 | 166425.7740 |
| 13 | LANDING | 875.99 | 476540.9596 | 166428.9798 |
| 14 | LANDING | 875.44 | 476544.6171 | 166479.5961 |
| 15 | SP 4 / PB6-1 | | 476539.1988 | 166481.4550 |
| 16 | PB8-2 | 875.85 | 476546.4091 | 166492.8857 |
| 17 | LANDING | 875.35 | 476550.1106 | 166489.4849 |

NOTE: ELEVATION OF TOPS OF TRAFFIC SIGNAL FOUNDATIONS TO BE DETERMINED IN THE FIELD BY THE CONTRACTOR (AFTER FINAL CURB ELEVATIONS HAVE BEEN ESTABLISHED)

## ADA PEDESTRIAN RAMP CONSTRUCTION ITEMS

| LOCATION | 6" CONC. WALK | 4" CONC. WALK | CONC. CURB & GUTTER | TRUNCATED DOMES | TYPE SP12.5 WEARING COURSE MIX |
|---|---|---|---|---|---|
| | SF | SF | LF | SF | TON |
| NW QUAD | 237 | | 21 | 26 | 4 |
| NE QUAD | 309 | | 43 | 19 | 4 |
| NORTH MEDIAN | | 157 | | | |
| SOUTH MEDIAN | | 91 | | | |
| SE QUAD | 262 | | 43 | 28 | 5 |
| SW QUAD | 204 | | 19 | 26 | 5 |
| TOTALS | 1012 | 248 | 126 | 99 | 18 |

10:24:47 AM

9/25/2025

FILE: X:\AE\A\ANOKC\181692\5-final-dsgn\51-drawings\40-TransHwy\Plansheets\CT181692_CR_Sheets.dgn
MODEL: 136th Ave - Det

| DESIGN TEAM | NO. | BY | DATE | REVISIONS |
|---|---|---|---|---|
| DRAWN BY: MRB | | | | |
| DESIGNER: MRB | | | | |
| CHECKED BY: JMG | | | | |

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Certified By: Licensed Professional Engineer — Printed Name: JOHN M. GRAY — Lic. No. 22457 — Date: 09/23/2025

SEH

ANOKA COUNTY, MN
CSAH 9
SAP 002-609-023
CITY OF ANDOVER SAP 198-020-042, CITY PROJECT 25-13
CITY OF ANOKA SAP 103-020-020

CURB RAMP PLAN

CSAH 9 (ROUND LAKE BOULEVARD) AT 136TH AVENUE

10:24:48 AM

9/25/2025

N

20

SCALE IN FEET

MATCHLINE A - SEE SHEET 48

CSAH 9 (ROUND LAKE BLVD)

ADJUST VALVE BOX-WATER AND INSTALL GATE VALVE (SEE SPECIAL PROVISIONS)

INPLACE FIBER VAULT (TO BE RELOCATED BY OTHERS)

NE QUADRANT

2 (1) PB8-1

4 (2) PB2-2

ADJUST FRAME & RING CASTING (TELEPHONE MANHOLE)

CONCRETE CURB DESIGN V (30LF)

F&I CASTING ASSEMBLY (CASTING TYPE D-NEENAH R-3030L OR APPROVED EQUAL)

F&I CURB BOX CASTING (FOR DESIGN B CURB) (INCIDENTAL TO CASTING ASSEMBLY PAY ITEM)

(NOTE - EXISTING CASTING IS 27" DIA, WITH 24" CURB BOX CASTING AND 4' DEEP STRUCTURE)

RING HEIGHT = 1.4' (INCIDENTAL)

ADJUST DRAINAGE STRUCTURE (INCLUDES CLEANING OF DRAINAGE STRUCTURE)

GRADING OF ALL CURB PATCH AREAS SHALL BE COMPLETED BEFORE BITUMINOUS PATCHING. REMOVE ALL DEBRIS WITHIN PATCH AREAS AND THEN GRADE AGGREGATE BASE CL5 TO ALLOW FOR 6 INCHES OF BITUMINOUS (TYP.)

CSAH 116 (BUNKER LAKE BLVD)

## LEGEND

- LANDING AREA -4'X4' MIN. DIMS. MAX 2.0% SLOPE IN ALL DIRECTIONS
- BITUMINOUS PAVEMENT
- CONCRETE SIDEWALK/PAVEMENT (6" FOR SIDEWALKS, 4" FOR MEDIANS)
- TRUNCATED DOMES, SEE STANDARD PLATE 7038
- (1) FLOWLINE AND SIGNAL CONTROL POINTS
- DRAINAGE FLOW ARROW
- (S) 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%
- (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%
- CONSTRUCT CONCRETE CURB & GUTTER
- PUSH BUTTON STATION
- PROPOSED SIGNAL POLE (SP)

NOTE: ALL PEDESTRIAN CURB RAMPS SHALL BE INSTALLED PER MNDOT STANDARD PLAN 5-297.250.

| DESIGN TEAM | NO. | BY | DATE | REVISIONS |
|---|---|---|---|---|
| DRAWN BY: MRB | | | | |
| DESIGNER: MRB | | | | |
| CHECKED BY: JMG | | | | |

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Certified By: Licensed Professional Engineer — Printed Name: JOHN M. GRAY — Lic. No. 22457 — Date: 09/23/2025

SEH

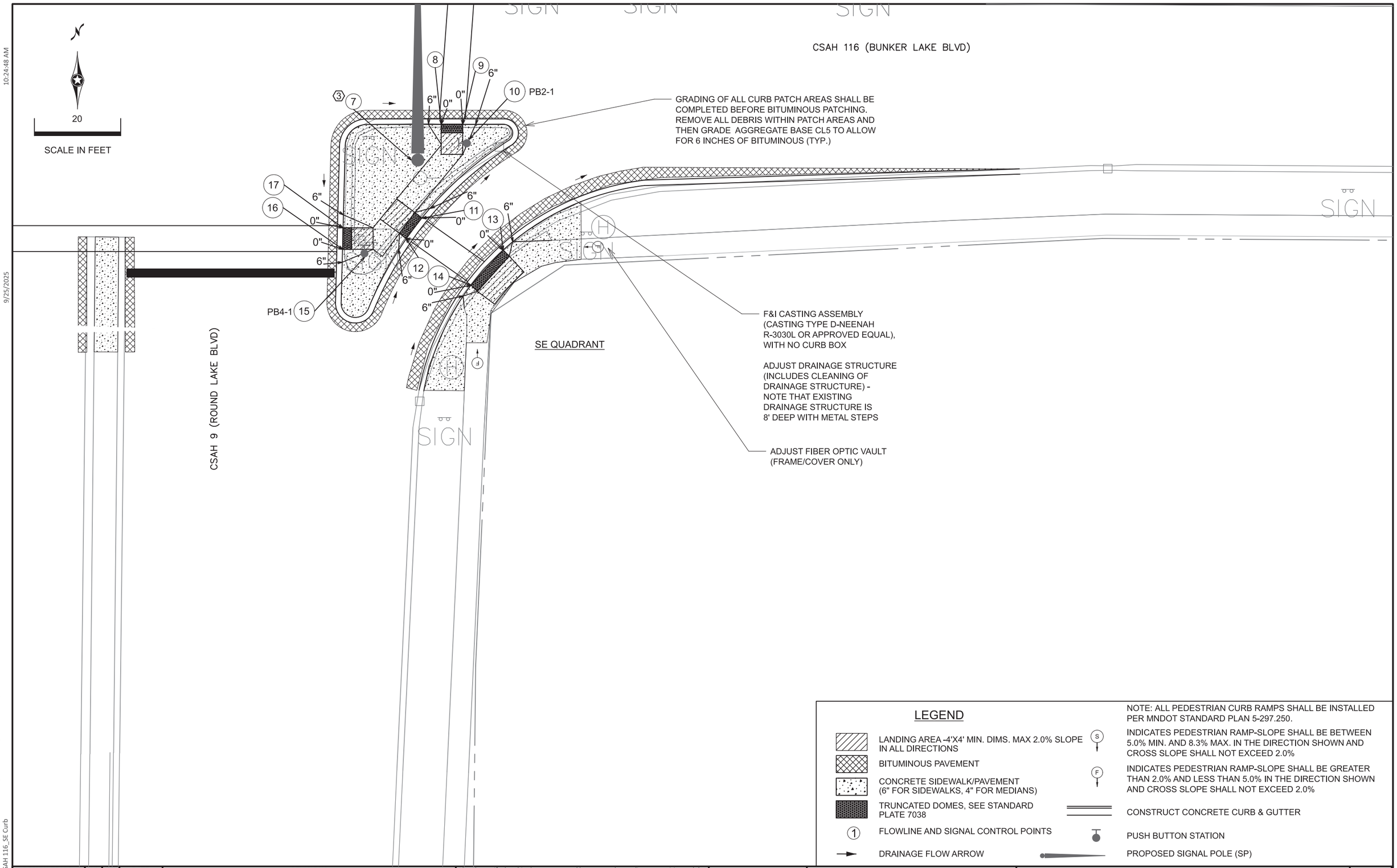
ANOKA COUNTY, MN
CSAH 9
SAP 002-609-023
CITY OF ANDOVER SAP 198-020-042, CITY PROJECT 25-13
CITY OF ANOKA SAP 103-020-020

CURB RAMP PLAN

CSAH 9 (ROUND LAKE BOULEVARD) AT CSAH 116 (BUNKER LAKE BOULEVARD)



FILE: X:\AE\A\ANOK\181692\5-final-dgn\51-drawings\40-TransHwy\Plansheets\CT181692_CR_Sheets.dgn
MODEL: CSAH 116_Median




## LEGEND

- LANDING AREA -4'X4' MIN. DIMS. MAX 2.0% SLOPE IN ALL DIRECTIONS
- BITUMINOUS PAVEMENT
- CONCRETE SIDEWALK/PAVEMENT (6" FOR SIDEWALKS, 4" FOR MEDIANS)
- TRUNCATED DOMES, SEE STANDARD PLATE 7038
- (1) FLOWLINE AND SIGNAL CONTROL POINTS
- DRAINAGE FLOW ARROW
- (S) 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%
- (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%
- CONSTRUCT CONCRETE CURB & GUTTER
- PUSH BUTTON STATION
- PROPOSED SIGNAL POLE (SP)

NOTE: ALL PEDESTRIAN CURB RAMPS SHALL BE INSTALLED PER MNDOT STANDARD PLAN 5-297.250.

| DESIGN TEAM | NO. | BY | DATE | REVISIONS |
|---|---|---|---|---|
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| DESIGNER: MRB | | | | |
| CHECKED BY: JMG | | | | |

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SEH

ANOKA COUNTY, MN
CSAH 9
SAP 002-609-023
CITY OF ANDOVER SAP 198-020-042, CITY PROJECT 25-13
CITY OF ANOKA SAP 103-020-020

# CURB RAMP PLAN

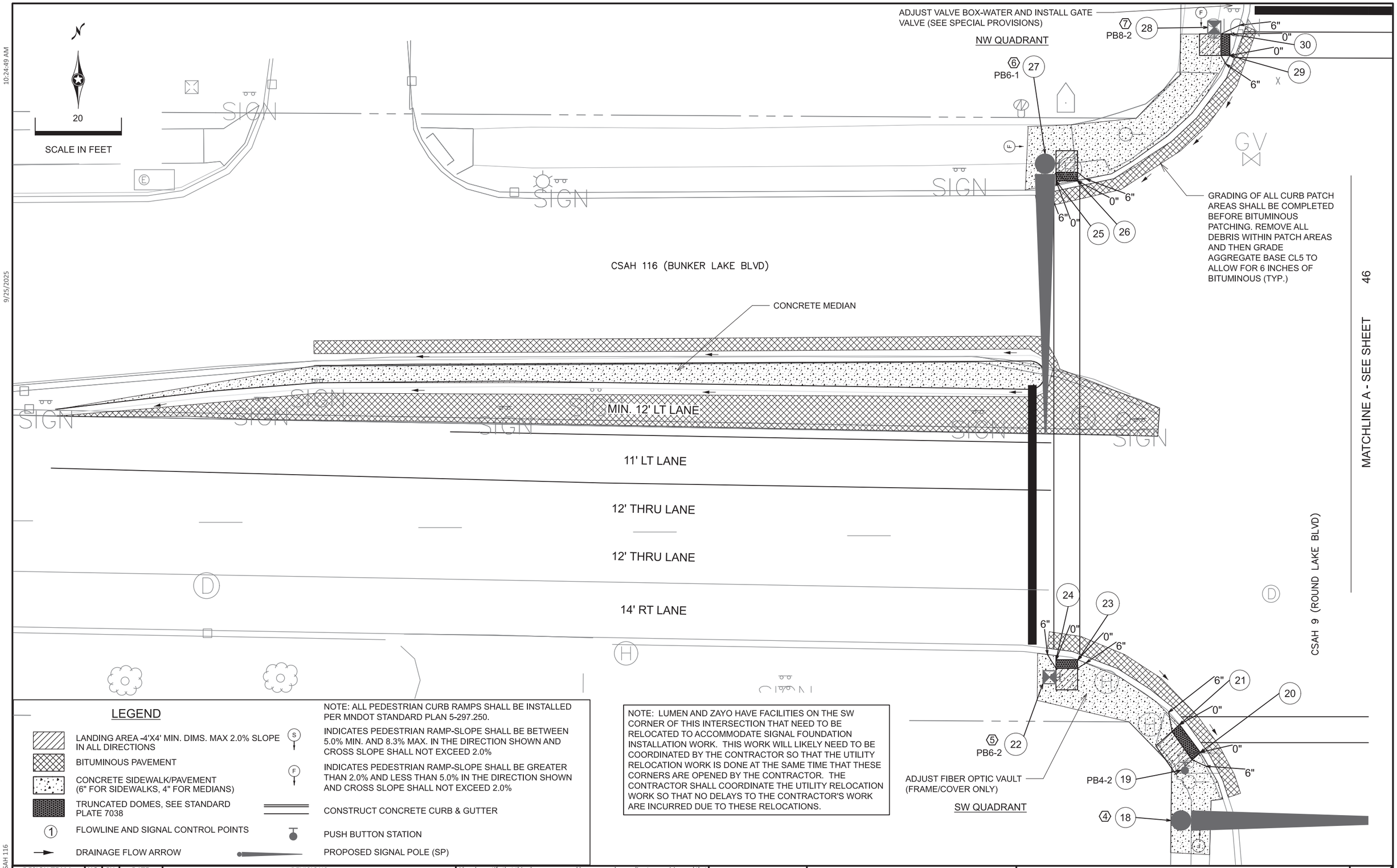
CSAH 9 (ROUND LAKE BOULEVARD) AT CSAH 116 (BUNKER LAKE BOULEVARD)



10:24:48 AM
9/25/2025
FILE: X:\AE\A\ANOKC\181692\5-final-dsgn\51-drawings\40-TransHwy\Plansheets\CT181692_CR_Sheets.dgn
MODEL: CSAH 116_SE Curb

10:24:49 AM

9/25/2025




## LEGEND

- LANDING AREA -4'X4' MIN. DIMS. MAX 2.0% SLOPE IN ALL DIRECTIONS
- BITUMINOUS PAVEMENT
- CONCRETE SIDEWALK/PAVEMENT (6" FOR SIDEWALKS, 4" FOR MEDIANS)
- TRUNCATED DOMES, SEE STANDARD PLATE 7038
- (1) FLOWLINE AND SIGNAL CONTROL POINTS
- DRAINAGE FLOW ARROW
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- PUSH BUTTON STATION
- PROPOSED SIGNAL POLE (SP)

NOTE: ALL PEDESTRIAN CURB RAMPS SHALL BE INSTALLED PER MNDOT STANDARD PLAN 5-297.250.

NOTE: LUMEN AND ZAYO HAVE FACILITIES ON THE SW CORNER OF THIS INTERSECTION THAT NEED TO BE RELOCATED TO ACCOMMODATE SIGNAL FOUNDATION INSTALLATION WORK. THIS WORK WILL LIKELY NEED TO BE COORDINATED BY THE CONTRACTOR SO THAT THE UTILITY RELOCATION WORK IS DONE AT THE SAME TIME THAT THESE CORNERS ARE OPENED BY THE CONTRACTOR. THE CONTRACTOR SHALL COORDINATE THE UTILITY RELOCATION WORK SO THAT NO DELAYS TO THE CONTRACTOR'S WORK ARE INCURRED DUE TO THESE RELOCATIONS.

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|---|---|---|---|---|
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| DESIGNER: MRB | | | | |
| CHECKED BY: JMG | | | | |

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SEH

ANOKA COUNTY, MN
CSAH 9
SAP 002-609-023
CITY OF ANDOVER SAP 198-020-042, CITY PROJECT 25-13
CITY OF ANOKA SAP 103-020-020

# CURB RAMP PLAN

CSAH 9 (ROUND LAKE BOULEVARD) AT CSAH 116 (BUNKER LAKE BOULEVARD)



FILE: X:\AE\A\ANOK\L181692\5-final-dsgn\51-drawings\40-TransHwy\Plansheets\CT181692_CR_Sheets.dgn
MODEL: CSAH 116

SP = SIGNAL POLE

## POINT TABLE

| POINT # | RAW DESCRIPTION | ELEVATION | NORTHING | EASTING |
|---|---|---|---|---|
| 1 | LANDING | 877.24 | 476590.2580 | 167243.2075 |
| 2 | SP 1 / PB8-1 | | 476674.3167 | 167293.2623 |
| 3 | LANDING | 877.23 | 476675.1862 | 167273.8860 |
| 4 | SP 2 / PB2-2 | | 476687.3790 | 167270.9338 |
| 5 | LANDING | 877.22 | 476680.1625 | 167278.7924 |
| 6 | LANDING | 877.21 | 476609.3671 | 167215.1158 |
| 7 | SP 3 | | 476668.6662 | 167147.7380 |
| 8 | LANDING | 876.59 | 476550.7138 | 167266.6959 |
| 9 | LANDING | 876.59 | 476671.2470 | 167147.8585 |
| 10 | PB2-1 | 878.08 | 476679.5270 | 167157.6319 |
| 11 | LANDING | 876.60 | 476676.6562 | 167122.0356 |
| 12 | LANDING | 876.59 | 476542.5436 | 167240.1180 |
| 13 | LANDING | 876.58 | 476557.6634 | 167229.3481 |
| 14 | LANDING | 877.59 | 476650.6968 | 167126.8671 |
| 15 | PB4-1 | 877.73 | 476655.8032 | 167126.0971 |
| 16 | LANDING | 876.58 | 476544.6664 | 167122.6892 |
| 17 | LANDING | 876.59 | 476527.9274 | 167242.6697 |
| 18 | SP 4 | | 476539.6978 | 167108.4647 |
| 19 | PB4-2 | 877.09 | 476540.5201 | 167117.9856 |
| 20 | LANDING | 876.59 | 476536.1493 | 167266.9702 |
| 21 | LANDING | 876.60 | 476721.8638 | 167127.3171 |
| 22 | SP 5 / PB6-2 | | 476533.7056 | 167128.0954 |
| 23 | LANDING | 876.59 | 476536.1493 | 167266.9702 |
| 24 | LANDING | 876.60 | 476693.2254 | 167142.3749 |
| 25 | LANDING | 876.58 | 476693.2255 | 167253.4134 |
| 26 | LANDING | 876.59 | 476530.9984 | 167271.5529 |
| 27 | SP 6 / PB6-1 | | 476508.1828 | 167260.7633 |
| 28 | SP 7 / PB8-2 | | 476539.4457 | 167279.4035 |
| 29 | LANDING | 876.59 | 476539.4457 | 167279.4035 |
| 30 | LANDING | 876.60 | 476733.4920 | 167287.4937 |

NOTE: ELEVATION OF TOPS OF TRAFFIC SIGNAL FOUNDATIONS TO BE DETERMINED IN THE FIELD BY THE CONTRACTOR (AFTER FINAL CURB ELEVATIONS HAVE BEEN ESTABLISHED)

## ADA PEDESTRIAN RAMP CONSTRUCTION ITEMS

| LOCATION | 6" CONC. WALK | 4" CONC. WALK | CONC. CURB & GUTTER | TRUNCATED DOMES | CONCRETE MEDIAN | TYPE SP12.5 WEARING COURSE MIX | ADJUST FIBER OPTIC VAULT | ADJUST FRAME & RING CASTING | CONCRETE CURB DESIGN V |
|---|---|---|---|---|---|---|---|---|---|
| | SF | SF | LF | SF | SY | TON | EACH | EACH | LF |
| NW QUAD | 583 | | 67 | 20 | | 9 | | | |
| NE QUAD | 529 | | 26 | 26 | | 57 | | 1 | 30 |
| SE QUAD | 1283 | | 302 | 54 | | 37 | 1 | | |
| SW QUAD | 553 | | 50 | 30 | | 9 | 1 | | |
| NORTH MEDIAN | | 209 | 112 | | | 34 | | | |
| SOUTH MEDIAN | | 146 | 54 | | | 41 | | | |
| EAST MEDIAN | | 46 | | | | | | | |
| WEST MEDIAN | | | 26 | | 86 | 58 | | | |
| TOTALS | 2948 | 401 | 637 | 130 | 86 | 245 | 2 | 1 | 30 |

## STORM DRAINAGE AND WATER ITEMS

| LOCATION | CASTING ASSEMBLY | ADJUST DRAINAGE STRUCTURE | ADJUST VALVE BOX-WATER | INSTALL GATE VALVE |
|---|---|---|---|---|
| | EACH | EACH | EACH | EACH |
| NW QUAD | | | 1 | 1 |
| NE QUAD | | | 1 | 1 |
| SE QUAD | 1 | 1 | | |
| SW QUAD | | | | |
| NORTH MEDIAN | 1 | 1 | | |
| SOUTH MEDIAN | | | | |
| EAST MEDIAN | | | | |
| WEST MEDIAN | | | | |
| TOTALS | 2 | 2 | 2 | 2 |

| DESIGN TEAM | NO. | BY | DATE | REVISIONS |
|---|---|---|---|---|
| DRAWN BY: MRB | | | | |
| DESIGNER: MRB | | | | |
| CHECKED BY: JMG | | | | |

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Certified By: Licensed Professional Engineer — Printed Name: JOHN M. GRAY — Lic. No. 22457 — Date: 09/23/2025

SEH

ANOKA COUNTY, MN
CSAH 9
SAP 002-609-023
CITY OF ANDOVER SAP 198-020-042, CITY PROJECT 25-13
CITY OF ANOKA SAP 103-020-020

CURB RAMP PLAN

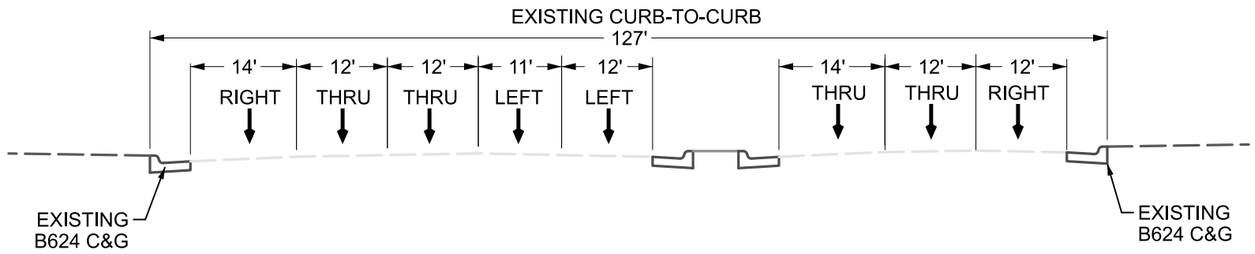
CSAH 9 (ROUND LAKE BOULEVARD) AT CSAH 116 (BUNKER LAKE BOULEVARD)



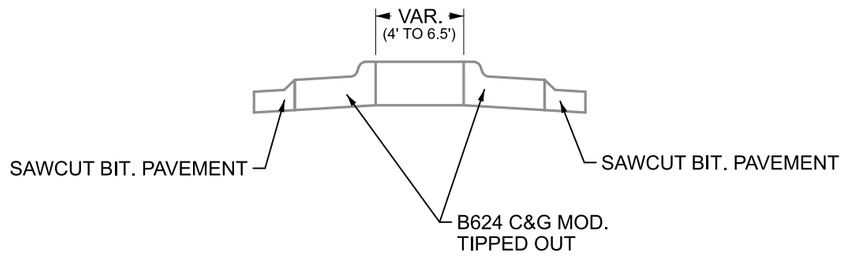
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FILE: X:\AE\A\ANOK\C181692\5-final-dsgn\51-drawings\40-TransHwy\Plansheets\CT181692_CR_Sheets.dgn
MODEL: CSAH 116_Median - Det

9:21:45 AM
11/6/2025

## CSAH 116 (BUNKER LAKE BLVD) MID-BLOCK TYPICAL SECTION




## CSAH 116 (BUNKER LAKE BLVD) MEDIAN DETAIL




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MODEL: CSAH 116 - Typical

| DESIGN TEAM | NO. | BY | DATE | REVISIONS |
|---|---|---|---|---|
| DRAWN BY: MRB | | | | |
| DESIGNER: MRB | | | | |
| CHECKED BY: JMG | | | | |

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SEH

ANOKA COUNTY, MN
CSAH 9
SAP 002-609-023
CITY OF ANDOVER SAP 198-020-042, CITY PROJECT 25-13
CITY OF ANOKA SAP 103-020-020

MEDIAN TYPICAL SECTION

CSAH 9 (ROUND LAKE BOULEVARD) AT CSAH 116 (BUNKER LAKE BOULEVARD)

10:24:52 AM

9/25/2025

N

20

SCALE IN FEET

NW QUADRANT

NE QUADRANT

SW QUADRANT

SE QUADRANT

138TH LANE

FRONTAGE RD

CSAH 9 (ROUND LAKE BLVD)

PROTECT RETAINING WALL (INCIDENTAL)

ADJUST FRAME AND RING CASTING (2) (IRRIGATION)

CABLE BOX (TO BE RELOCATED BY OTHERS)

PLOW NOSE

PLOW NOSE

PLOW NOSE

GRADING OF ALL CURB PATCH AREAS SHALL BE COMPLETED BEFORE BITUMINOUS PATCHING. REMOVE ALL DEBRIS WITHIN PATCH AREAS AND THEN GRADE AGGREGATE BASE CL5 TO ALLOW FOR 6 INCHES OF BITUMINOUS (TYP.)

ADJUST FRAME AND RING CASTING (GATE VALVE)

ADJUST FIBER OPTIC VAULT (FRAME/COVER ONLY)

F&I CASTING ASSEMBLY (CASTING TYPE D-NEENAH R-3030L OR APPROVED EQUAL)

F&I CURB BOX CASTING (FOR DESIGN B CURB) (INCIDENTAL TO CASTING ASSEMBLY PAY ITEM)

ADJUST DRAINAGE STRUCTURE (INCLUDES CLEANING OF DRAINAGE STRUCTURE)

4 15 PB8-2

2 PB8-1

3 1

4 PB2-2

5

14

16

13

11

3 PB4-1

12

9

10

2 6

7 PB2-1

8 PB4-2

1

0" 6" 16

## LEGEND

- LANDING AREA -4'X4' MIN. DIMS. MAX 2.0% SLOPE IN ALL DIRECTIONS
- BITUMINOUS PAVEMENT
- CONCRETE SIDEWALK/PAVEMENT (6" FOR SIDEWALKS, 4" FOR MEDIANS)
- TRUNCATED DOMES, SEE STANDARD PLATE 7038
- (1) FLOWLINE AND SIGNAL CONTROL POINTS
- DRAINAGE FLOW ARROW
- (S) 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%
- (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%
- CONSTRUCT CONCRETE CURB & GUTTER
- PUSH BUTTON STATION
- PROPOSED SIGNAL POLE (SP)

NOTE: ALL PEDESTRIAN CURB RAMPS SHALL BE INSTALLED PER MNDOT STANDARD PLAN 5-297.250.

| DESIGN TEAM | NO. | BY | DATE | REVISIONS |
|---|---|---|---|---|
| DRAWN BY: MRB | | | | |
| DESIGNER: MRB | | | | |
| CHECKED BY: JMG | | | | |

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SEH

ANOKA COUNTY, MN
CSAH 9
SAP 002-609-023
CITY OF ANDOVER SAP 198-020-042, CITY PROJECT 25-13
CITY OF ANOKA SAP 103-020-020

# CURB RAMP PLAN

CSAH 9 (ROUND LAKE BOULEVARD) AT 138TH LANE

51 / 133

FILE: X:\AE\A\ANOKC\181692\5-final-dsgn\51-drawings\40-TransHwy\Plansheets\CT181692_CR_Sheets.dgn

MODEL: 138th Ave

SP = SIGNAL POLE

## POINT TABLE

| POINT # | RAW DESCRIPTION | ELEVATION | NORTHING | EASTING |
|---|---|---|---|---|
| 1 | LANDING | 876.44 | 476674.0349 | 168062.1960 |
| 2 | PB8-1 | 876.94 | 476678.6856 | 168068.4978 |
| 3 | SP 1 | | 476684.5485 | 168067.6255 |
| 4 | PB2-2 | 876.84 | 476685.4609 | 168057.2774 |
| 5 | LANDING | 876.34 | 476681.5425 | 168053.8679 |
| 6 | SP 2 | | 476689.5944 | 167975.6924 |
| 7 | PB2-1 | 877.07 | 476682.1260 | 167975.7055 |
| 8 | PB4-2 | 877.09 | 476675.4635 | 167965.1446 |
| 9 | LANDING | 876.59 | 476639.3698 | 167992.5191 |
| 10 | LANDING | 876.57 | 476671.2964 | 167969.4147 |
| 11 | LANDING | 877.25 | 476580.9708 | 167973.8701 |
| 12 | SP 3 / PB4-1 | | 476573.0737 | 167966.5816 |
| 13 | LANDING | 877.16 | 476570.8363 | 167973.8701 |
| 14 | LANDING | 876.48 | 476572.8627 | 168057.0544 |
| 15 | SP 4 / PB8-2 | | 476578.0819 | 168063.6354 |
| 16 | LANDING | 876.46 | 476583.2330 | 168062.0557 |

NOTE: ELEVATION OF TOPS OF TRAFFIC SIGNAL FOUNDATIONS TO BE DETERMINED IN THE FIELD BY THE CONTRACTOR (AFTER FINAL CURB ELEVATIONS HAVE BEEN ESTABLISHED)

## ADA PEDESTRIAN RAMP CONSTRUCTION ITEMS

| LOCATION | 6" CONC. WALK | 4" CONC. WALK | CONC. CURB & GUTTER | TRUNCATED DOMES | TYPE SP12.5 WEARING COURSE MIX | ADJUST FIBER OPTIC VAULT | ADJUST FRAME & RING CASTING |
|---|---|---|---|---|---|---|---|
| | SF | SF | LF | SF | TON | EACH | EACH |
| NW QUAD | 590 | | 63 | 20 | 10 | | |
| NE QUAD | 311 | | 36 | 23 | 6 | | 2 |
| NORTH MEDIAN | | 98 | 50 | | 6 | | |
| SOUTH MEDIAN | | 166 | 51 | | 10 | | |
| SE QUAD | 398 | | 40 | 39 | 6 | 1 | 1 |
| SW QUAD | 350 | | 82 | 20 | 11 | | |
| TOTALS | 1649 | 264 | 322 | 102 | 49 | 1 | 3 |

## STORM DRAINAGE ITEMS

| CASTING ASSEMBLY | ADJUST DRAINAGE STRUCTURE |
|---|---|
| EACH | EACH |
| | |
| | |
| | |
| 2 | 2 |
| | |
| | |
| 2 | 2 |

| DESIGN TEAM | NO. | BY | DATE | REVISIONS |
|---|---|---|---|---|
| DRAWN BY: MRB | | | | |
| DESIGNER: MRB | | | | |
| CHECKED BY: JMG | | | | |

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SEH

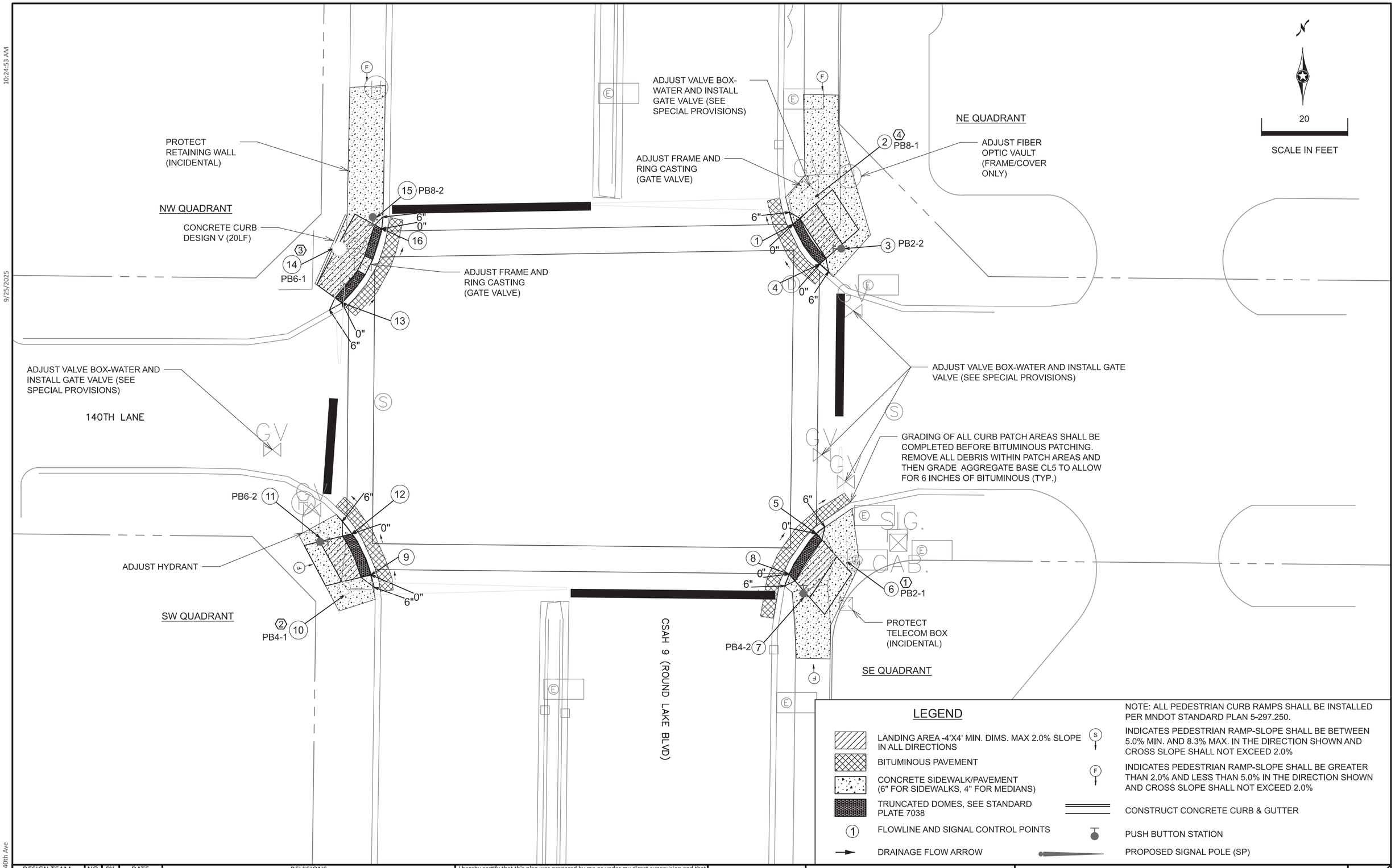
ANOKA COUNTY, MN
CSAH 9
SAP 002-609-023
CITY OF ANDOVER SAP 198-020-042, CITY PROJECT 25-13
CITY OF ANOKA SAP 103-020-020

CURB RAMP PLAN

CSAH 9 (ROUND LAKE BOULEVARD) AT 138TH LANE



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MODEL: 138th Ave - Det




## LEGEND

- LANDING AREA -4'X4' MIN. DIMS. MAX 2.0% SLOPE IN ALL DIRECTIONS
- BITUMINOUS PAVEMENT
- CONCRETE SIDEWALK/PAVEMENT (6" FOR SIDEWALKS, 4" FOR MEDIANS)
- TRUNCATED DOMES, SEE STANDARD PLATE 7038
- (1) FLOWLINE AND SIGNAL CONTROL POINTS
- DRAINAGE FLOW ARROW
- (S) 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%
- (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%
- CONSTRUCT CONCRETE CURB & GUTTER
- PUSH BUTTON STATION
- PROPOSED SIGNAL POLE (SP)

NOTE: ALL PEDESTRIAN CURB RAMPS SHALL BE INSTALLED PER MNDOT STANDARD PLAN 5-297.250.

| DESIGN TEAM | NO. | BY | DATE | REVISIONS |
|---|---|---|---|---|
| DRAWN BY: MRB | | | | |
| DESIGNER: MRB | | | | |
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SEH

ANOKA COUNTY, MN
CSAH 9
SAP 002-609-023
CITY OF ANDOVER SAP 198-020-042, CITY PROJECT 25-13
CITY OF ANOKA SAP 103-020-020

# CURB RAMP PLAN

CSAH 9 (ROUND LAKE BOULEVARD) AT 140TH LANE



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MODEL: 140th Ave
9/25/2025
10:24:53 AM

SP = SIGNAL POLE

## POINT TABLE

| POINT # | RAW DESCRIPTION | ELEVATION | NORTHING | EASTING |
|---|---|---|---|---|
| 1 | LANDING | 880.23 | 476691.9491 | 169700.4674 |
| 2 | SP 4 / PB8-1 | — | 476697.0220 | 169705.1190 |
| 3 | PB2-2 | 880.87 | 476703.1455 | 169694.8465 |
| 4 | LANDING | 880.37 | 476698.0985 | 169691.2247 |
| 5 | LANDING | 880.54 | 476697.3278 | 169628.6757 |
| 6 | SP 1 / PB2-1 | — | 476702.9300 | 169622.1090 |
| 7 | PB4-2 | 881.17 | 476694.3811 | 169614.7232 |
| 8 | LANDING | 880.67 | 476691.0081 | 169619.2646 |
| 9 | LANDING | 880.73 | 476593.6351 | 169629.3257 |
| 10 | SP 2 / PB4-1 | — | 476587.8020 | 169615.9310 |
| 11 | PB6-2 | 881.21 | 476580.2048 | 169628.5994 |
| 12 | LANDING | 880.71 | 476588.2622 | 169630.3422 |
| 13 | LANDING | 880.38 | 476564.7498 | 169696.2058 |
| 14 | SP 3 / PB6-1 | — | 476586.6570 | 169694.8240 |
| 15 | PB8-2 | 880.85 | 476594.4056 | 169702.1516 |
| 16 | LANDING | 880.35 | 476596.4330 | 169698.8850 |

NOTE: ELEVATION OF TOPS OF TRAFFIC SIGNAL FOUNDATIONS TO BE DETERMINED IN THE FIELD BY THE CONTRACTOR (AFTER FINAL CURB ELEVATIONS HAVE BEEN ESTABLISHED)

## ADA PEDESTRIAN RAMP CONSTRUCTION ITEMS

| LOCATION | 6" CONC. WALK | CONC. CURB & GUTTER | TRUNCATED DOMES | TYPE SP12.5 WEARING COURSE MIX | ADJUST FIBER OPTIC VAULT | ADJUST FRAME & RING CASTING | ADJUST HYDRANT | CONCRETE CURB DESIGN V | ADJUST VALVE BOX-WATER | INSTALL GATE VALVE |
|---|---|---|---|---|---|---|---|---|---|---|
| | SF | LF | SF | TON | EACH | EACH | EACH | LF | EACH | EACH |
| NW QUAD | 394 | 24 | 32 | 4 | | 1 | | 20 | | |
| NE QUAD | 452 | 21 | 23 | 4 | 1 | 1 | | | 2 | 2 |
| SE QUAD | 329 | 27 | 23 | 5 | | | | | 2 | 2 |
| SW QUAD | 200 | 25 | 24 | 4 | | | 1 | | 1 | 1 |
| TOTALS | 1375 | 97 | 102 | 17 | 1 | 2 | 1 | 20 | 5 | 5 |

| DESIGN TEAM | NO. | BY | DATE | REVISIONS |
|---|---|---|---|---|
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| DESIGNER: MRB | | | | |
| CHECKED BY: JMG | | | | |

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SEH

ANOKA COUNTY, MN
CSAH 9
SAP 002-609-023
CITY OF ANDOVER SAP 198-020-042, CITY PROJECT 25-13
CITY OF ANOKA SAP 103-020-020

CURB RAMP PLAN

CSAH 9 (ROUND LAKE BOULEVARD) AT 140TH LANE



FILE: X:\AE\A\ANOKC\181692\5-final-dsgn\51-drawings\40-TransHwy\Plansheets\CT181692_CR_Sheets.dgn
MODEL: 140th Ave - Det
9/25/2025
10:24:58 AM

NW QUADRANT

NE QUADRANT

SW QUADRANT

SE QUADRANT

143RD AVE

CSAH 9 (ROUND LAKE BLVD)

PB6-1

PB6-2

PB4-1

PB4-2

6"

0"

GRADING OF ALL CURB PATCH AREAS SHALL BE COMPLETED BEFORE BITUMINOUS PATCHING. REMOVE ALL DEBRIS WITHIN PATCH AREAS AND THEN GRADE AGGREGATE BASE CL5 TO ALLOW FOR 6 INCHES OF BITUMINOUS (TYP.)

F&I CONSTRUCT DRAINAGE STRUCTURE DESIGN 48-4020

F&I CASTING ASSEMBLY (CASTING TYPE D-NEENAH TYPE R-3030L OR APPROVED EQUAL)

F&I CURB BOX CASTING (FOR DESIGN B CURB) (INCIDENTAL TO CASTING ASSEMBLY PAY ITEM)

F&I CONNECT INTO EXISTING STORM SEWER (NOTE THAT INVERTS OF EXISTING PIPES ARE ABOUT 5.9" FROM TOP OF CASTING)

F&I LINE UP CASTINGS TO FIT WITHIN CURB LINES (PLACE NEW STRUCTURES TO FIT) (INCIDENTAL TO CONSTRUCT DRAINAGE STRUCTURE 48-4020 PAY ITEM)

N

20

SCALE IN FEET

## LEGEND

- LANDING AREA -4'X4' MIN. DIMS. MAX 2.0% SLOPE IN ALL DIRECTIONS
- BITUMINOUS PAVEMENT
- CONCRETE SIDEWALK/PAVEMENT (6" FOR SIDEWALKS, 4" FOR MEDIANS)
- TRUNCATED DOMES, SEE STANDARD PLATE 7038
- FLOWLINE AND SIGNAL CONTROL POINTS
- 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%
- CONSTRUCT CONCRETE CURB & GUTTER
- PUSH BUTTON STATION
- PROPOSED SIGNAL POLE (SP)

NOTE: ALL PEDESTRIAN CURB RAMPS SHALL BE INSTALLED PER MNDOT STANDARD PLAN 5-297.250.

| DESIGN TEAM | NO. | BY | DATE | REVISIONS |
|---|---|---|---|---|
| DRAWN BY: MRB | | | | |
| DESIGNER: MRB | | | | |
| CHECKED BY: JMG | | | | |

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SEH

ANOKA COUNTY, MN
CSAH 9
SAP 002-609-023
CITY OF ANDOVER SAP 198-020-042, CITY PROJECT 25-13
CITY OF ANOKA SAP 103-020-020

CURB RAMP PLAN

CSAH 9 (ROUND LAKE BOULEVARD) AT 143RD AVENUE



FILE: X:\AE\A\ANOK\181692\5-final-dsgn\51-drawings\40-TransHwy\Plansheets\CT181692_CR_Sheets.dgn
MODEL: 143rd Ave

SP = SIGNAL POLE

## POINT TABLE

| POINT # | RAW DESCRIPTION | ELEVATION | NORTHING | EASTING |
|---|---|---|---|---|
| 1 | LANDING | 875.36 | 476822.7169 | 171520.4996 |
| 2 | SP 4 / PB4-2 | — | 476828.1830 | 171520.8840 |
| 3 | LANDING | 875.33 | 476821.1311 | 171515.7560 |
| 4 | LANDING | 877.59 | 476738.0424 | 171544.2251 |
| 5 | SP 1 / PB4-1 | — | 476732.5490 | 171540.9230 |
| 6 | PB6-2 | 878.07 | 476727.6190 | 171550.0915 |
| 7 | LANDING | 877.57 | 476732.7146 | 171554.2657 |
| 8 | LANDING | 877.50 | 476749.8140 | 171604.9830 |
| 9 | SP 2 / PB6-1 | — | 476752.6300 | 171616.9040 |
| 10 | LANDING | 877.51 | 476758.6990 | 171611.6100 |

NOTE: ELEVATION OF TOPS OF TRAFFIC SIGNAL FOUNDATIONS TO BE DETERMINED IN THE FIELD BY THE CONTRACTOR (AFTER FINAL CURB ELEVATIONS HAVE BEEN ESTABLISHED)

## ADA PEDESTRIAN RAMP CONSTRUCTION ITEMS

| LOCATION | 6" CONC. WALK | 4" CONC. WALK | CONC. CURB & GUTTER | TRUNCATED DOMES | TYPE SP12.5 WEARING COURSE MIX |
|---|---|---|---|---|---|
| | SF | SF | LF | SF | TON |
| NW QUAD | 279 | | 31 | 23 | 5 |
| SOUTH MEDIAN | | 62 | 37 | | 3 |
| SE QUAD | 83 | | 15 | 10 | 7 |
| SW QUAD | 548 | | 25 | 23 | 4 |
| TOTALS | 910 | 62 | 108 | 56 | 19 |

## STORM DRAINAGE ITEMS

| CASTING ASSEMBLY | CONSTRUCT DRAINAGE STRUCTURE DESIGN 48-4020 | CONNECT INTO STORM SEWER |
|---|---|---|
| EACH | EACH | EACH |
| | | |
| 2 | 2 | 2 |
| | | |
| | | |
| 2 | 2 | 2 |

| DESIGN TEAM | NO. | BY | DATE | REVISIONS |
|---|---|---|---|---|
| DRAWN BY: MRB | | | | |
| DESIGNER: MRB | | | | |
| CHECKED BY: JMG | | | | |

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SEH

ANOKA COUNTY, MN
CSAH 9
SAP 002-609-023
CITY OF ANDOVER SAP 198-020-042, CITY PROJECT 25-13
CITY OF ANOKA SAP 103-020-020

CURB RAMP PLAN

CSAH 9 (ROUND LAKE BOULEVARD) AT 143RD AVENUE



FILE: X:\AE\A\ANOKC\181692\5-final-dsgn\51-drawings\40-TransHwy\Plansheets\CT181692_CR_Sheets.dgn
MODEL: 143rd Ave - Det

9/25/2025 10:25:00 AM

# SIGNING AND PAVEMENT MARKING PLAN

## NOTES & GUIDELINES

### GENERAL SIGNING INFORMATION:

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

### GENERAL PAVEMENT MARKING INFORMATION:

1. SEE 2582 IN THE SPECIAL PROVISIONS FOR PAVEMENT MARKING SPOTTING RESPONSIBILITIES.
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 AN AGENCY PLACED YIELD SIGN, STOP SIGN OR TRAFFIC SIGNAL. THE BREAK POINT IS TO BE AT THE START OF THE MAINLINE RADIUS.
3. DO NOT APPLY THE PAVEMENT MARKINGS WHEN WEATHER AND OTHER CONDITIONS CAUSE A FILM OF DUST OR DEBRIS TO BE DEPOSITED ON THE PAVEMENT SURFACE AFTER CLEANING AND BEFORE THE MARKING MATERIAL IS APPLIED.
4. 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.

## SIGNING AND PAVEMENT MARKING PLAN INDEX


| SHEET NO. | DESCRIPTION |
|---|---|
| 57 | TITLE SHEET |
| 58 - 62 | DETAILS |
| 63 - 67 | TABULATIONS & SIGN PANEL DETAILS |
| 68 - 74 | ROADWAY LAYOUTS |


## ABBREVIATIONS

| | |
|---|---|
| MA | MAST ARM |
| R | ROUND POST / SIGNAL POLE MOUNTED |
| SQ-CONC | SQUARE TUBE ON CONCRETE |
| U-SOIL | U-CHANNEL POST IN SOIL |

## SIGNING LEGEND




## STATEMENT OF ESTIMATED QUANTITIES

| ITEM NO. | ITEM | UNIT | TOTAL |
|---|---|---|---|
| | | | |
| 2104.502 | REMOVE DELINEATOR/MARKER | EACH | 12 |
| 2104.502 | REMOVE SIGN | EACH | 50 |
| 2104.502 | SALVAGE SIGN | EACH | 7 |
| 2564.602 | INSTALL SIGN | EACH | 7 |
| 2564.602 | DELINEATOR/MARKER PANEL | EACH | 11 |
| 2564.602 | DELINEATOR/MARKER | EACH | 2 |
| 2564.618 | SIGN | SQ FT | 452 |
| 2564.618 | SIGN PANEL | SQ FT | 688 |

## PAVEMENT MARKING TABULATION

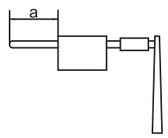
| | ITEM NO. | ITEM | UNIT | TOTAL |
|---|---|---|---|---|
| | 2102.503 | PAVEMENT MARKING REMOVAL | LIN FT | 274 |
| | 2102.518 | PAVEMENT MARKING REMOVAL | SQ FT | 1836 |
| | 2582.503 | 4" SOLID LINE MULTI-COMPONENT | LIN FT | 400 |
| | 2582.503 | 4" DOUBLE LINE MULTI-COMPONENT | LIN FT | 30 |
| | 2582.503 | 12" SOLID LINE MULTI-COMPONENT | LIN FT | 2330 |
| | 2582.503 | 24" SOLID LINE PREF-THERMO | LIN FT | 290 |
| (1) | 2582.518 | PAVEMENT MESSAGE PREF THERMO (GR IN) | SQ FT | 75 |
| | 2582.518 | CROSSWALK PREF THERMO (GR IN) | SQ FT | 1910 |

SPECIFIC NOTE:
(1) PAVEMENT MESSAGES: 4 LEFT ARROWS; 1 RIGHT ARROW
(EACH NEW ARROW SHALL BE MEASURED AS 15 SQ FT PER ARROW.)

## MnDOT STANDARD PLANS

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

| NUMBER | DESCRIPTION | APPROVED | REVISED |
|---|---|---|---|
| | | | |
| 5-297.701 | STANDARD SIGN PLACEMENT | 08-09-2023 | |
| 5-297.702 | DELINEATOR AND MARKER PLACEMENT | 06-04-2024 | |
| 5-297.719 | SQUARE TUBE SIDE-BY-SIDE MOUNTING DETAILS | 08-09-2023 | |
| 5-297.730 | SIGN MOUNTING SYSTEMS FOR ROUND SUPPORTS | 10-16-2019 | |
| 5-297.731 | SIGN MOUNTING DETAILS FOR SIGNAL MAST ARMS | 10-16-2019 | 04-17-2020 |




"a" distance = distance from end of mast arm to the edge of the sign panel.

## PAVEMENT MARKING SYMBOLS & MATERIALS LEGEND

- CROSSWALK BLOCKS
- CROSSWALK STRIPES (12" SOLID WHITE)
- PAVEMENT MESSAGE (LEFT ARROW, RIGHT ARROW)
- STOP BAR (24" SOLID WHITE PREF. THERMO)

### STRIPING KEY

CIRCLE-MULTI COMP | BOX-PREF TAPE | OCTAGON-PREF THERMO

1ST DIGIT WIDTH: 4", 8", ETC.

2ND DIGIT PATTERN:
S - SOLID
B - BROKEN
T - DOTTED
D - DOUBLE SOLID
K - DOUBLE BROKEN
H - DOUBLE DOTTED

3RD DIGIT COLOR:
W - WHITE
Y - YELLOW
B - BLACK

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

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

| DESIGN TEAM | NO. | BY | DATE | REVISIONS |
|---|---|---|---|---|
| DRAWN BY: MRB | | | | |
| DESIGNER: MRB | | | | |
| 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.
Certified By: Licensed Professional Engineer — Printed Name: JOHN M. GRAY — Lic. No. 22457 — Date: 09/23/2025

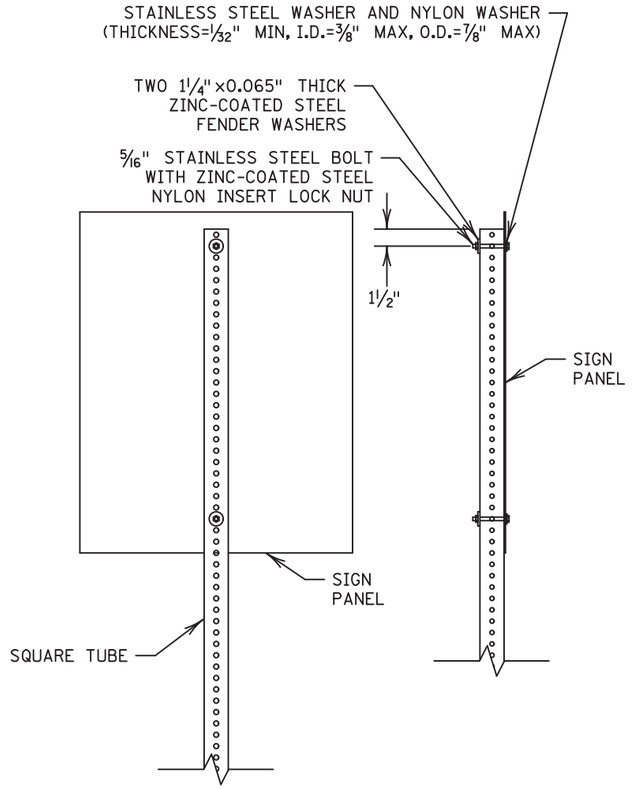
SEH

ANOKA COUNTY, MN
CSAH 9
SAP 002-609-023
CITY OF ANDOVER SAP 198-020-042, CITY PROJECT 25-13
CITY OF ANOKA SAP 103-020-020

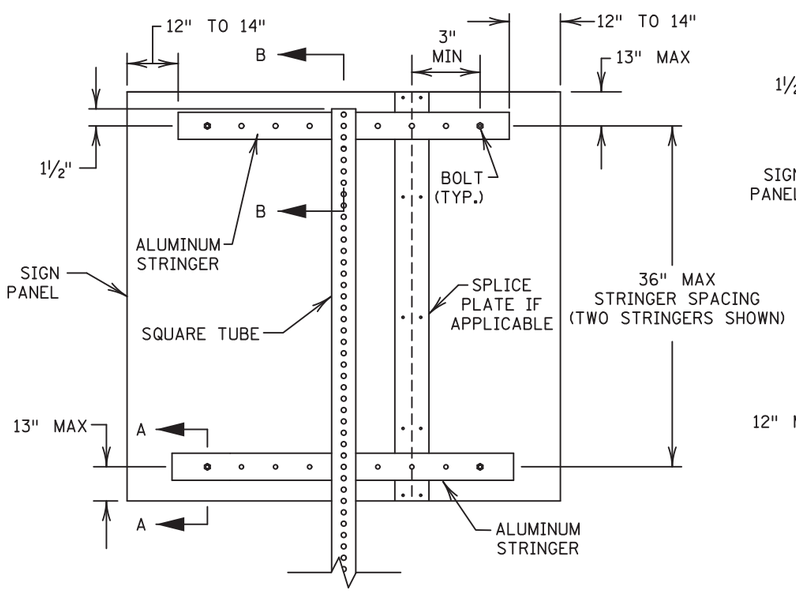
SIGNING AND PAVEMENT MARKING PLAN
TITLE SHEET

57
133

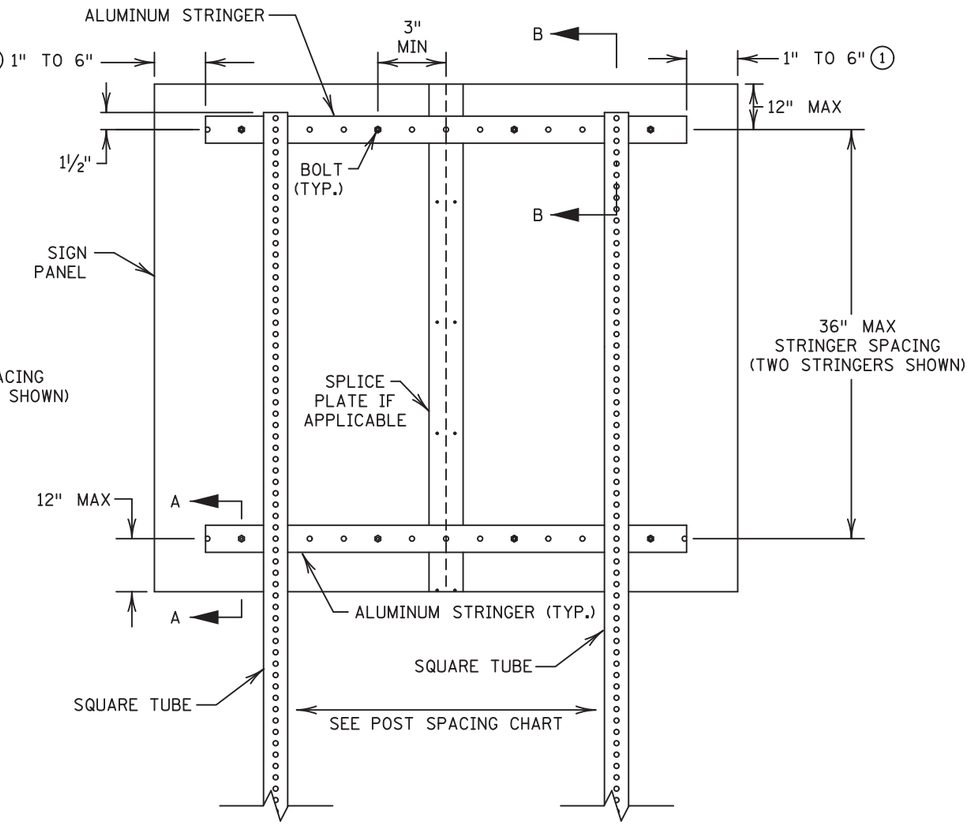
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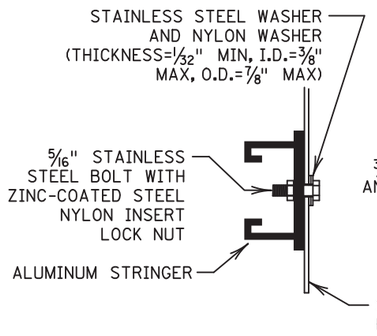

FOR SIGN PANELS UP TO 30" WIDE



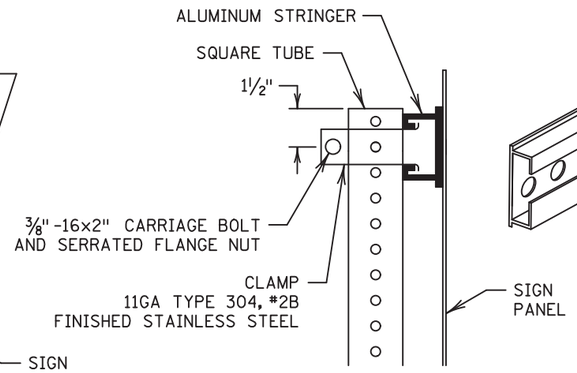

FOR SIGN PANELS 36" WIDE OR GREATER ON ONE POST



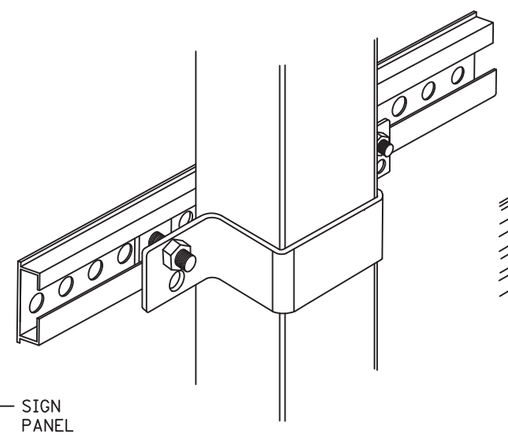

FOR SIGN PANELS ON TWO OR MORE POSTS



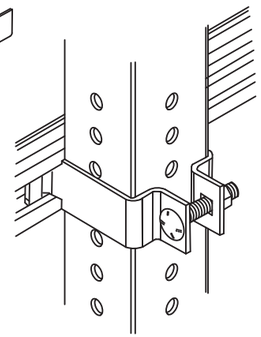

VIEW A-A



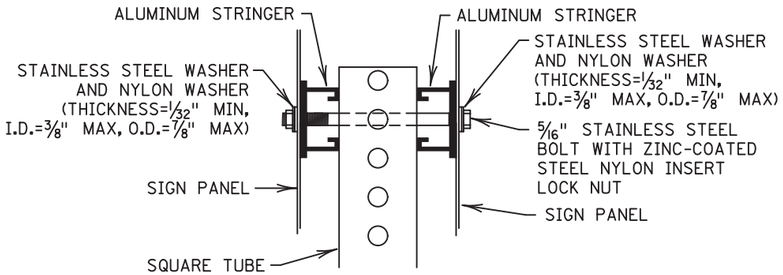

VIEW B-B



CLAMP DETAIL
4" SQUARE TUBE



CLAMP DETAIL
2" AND 2 1/2" SQUARE TUBE




BACK-TO-BACK SIGN MOUNTING WITH STRINGERS

NOTES:

BOLT SIGN PANELS TO STRINGERS OR RISER POSTS AT NO GREATER THAN 24" SPACING OR ACCORDING TO THE MNDOT STANDARD SIGNS AND MARKINGS MANUAL FOR MOUNTING HOLES (PUNCH CODES) INFORMATION.

CENTER STRINGERS ON SIGN PANEL.

(1) IF POST SPACING REQUIRES PLACEMENT OF A POST WITHIN THIS AREA, EXTEND STRINGERS AS NEEDED TO ACCOMMODATE THE STRINGER TO POST CLAMP.



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9/25/2025
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MODEL: ss02

| DESIGN TEAM | NO. | BY | DATE | REVISIONS |
|---|---|---|---|---|
| DRAWN BY: MRB | | | | |
| DESIGNER: MRB | | | | |
| 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.
Printed Name: JOHN M. GRAY
Certified By: Licensed Professional Engineer
Lic. No. 22457 Date: 09/23/2025

SEH

ANOKA COUNTY, MN
CSAH 9
SAP 002-609-023
CITY OF ANDOVER SAP 198-020-042, CITY PROJECT 25-13
CITY OF ANOKA SAP 103-020-020

SIGNING AND PAVEMENT MARKING PLAN
SQUARE-TUBE SIGN MOUNTING DETAILS

| PANEL WIDTH | SQUARE TUBE POST SPACING | | | | | | |
|---|---|---|---|---|---|---|---|
| | 2 POSTS | 3 POSTS | 4 POSTS | 5 POSTS | 6 POSTS | 7 POSTS | 8 POSTS |
| (IN) | (IN) | (IN) | (IN) | (IN) | (IN) | (IN) | (IN) |
| 42 | 15 | | | | | | |
| 48 | 21 | | | | | | |
| 54 | 30 | | | | | | |
| 60 | 36 | | | | | | |
| 66 | 36 | | | | | | |
| 72 | 42 | | | | | | |
| 78 | 42 | | | | | | |
| 84 | 48 | | | | | | |
| 90 | 48 | 42 | | | | | |
| 96 | 48 | 42 | | | | | |
| 102 | 54 | 42 | | | | | |
| 108 | 54 | 42 | | | | | |
| 114 | 60 | 42 | | | | | |
| 120 | 60 | 48 | | | | | |
| 126 | 66 | 48 | | | | | |
| 132 | 66 | 48 | 42 | | | | |
| 138 | 72 | 48 | 42 | | | | |
| 144 | 72 | 48 | 42 | | | | |
| 150 | 78 | 54 | 42 | | | | |
| 156 | 78 | 54 | 42 | | | | |
| 162 | 84 | 54 | 42 | | | | |
| 168 | 84 | 60 | 48 | | | | |
| 174 | 90 | 60 | 48 | 42 | | | |
| 180 | 90 | 60 | 48 | 42 | | | |
| 186 | 96 | 66 | 48 | 42 | | | |
| 192 | 96 | 66 | 48 | 42 | | | |
| 198 | 102 | 66 | 54 | 42 | | | |
| 204 | 102 | 72 | 54 | 42 | | | |
| 210 | 108 | 72 | 54 | 42 | | | |
| 216 | 108 | 72 | 54 | 48 | 42 | | |
| 222 | 114 | 78 | 60 | 48 | 42 | | |
| 228 | 114 | 78 | 60 | 48 | 42 | | |
| 234 | 120 | 78 | 60 | 48 | 42 | | |
| 240 | 120 | 84 | 60 | 48 | 42 | | |
| 246 | | 84 | 66 | 54 | 42 | | |
| 252 | | 84 | 66 | 54 | 42 | | |
| 258 | | 90 | 66 | 54 | 42 | 42 | |
| 264 | | 90 | 66 | 54 | 48 | 42 | |
| 270 | | 90 | 72 | 54 | 48 | 42 | |
| 276 | | 96 | 72 | 60 | 48 | 42 | |
| 282 | | 96 | 72 | 60 | 48 | 42 | |
| 288 | | 96 | 72 | 60 | 48 | 42 | |
| 294 | | 102 | 78 | 60 | 54 | 42 | |
| 300 | | 102 | 78 | 60 | 54 | 42 | 42 |
| 306 | | 102 | 78 | 66 | 54 | 42 | 42 |
| 312 | | 108 | 78 | 66 | 54 | 48 | 42 |
| 318 | | 108 | 84 | 66 | 54 | 48 | 42 |
| 324 | | 108 | 84 | 66 | 54 | 48 | 42 |
| 330 | | 114 | 84 | 66 | 60 | 48 | 42 |
| 336 | | 114 | 84 | 72 | 60 | 48 | 42 |

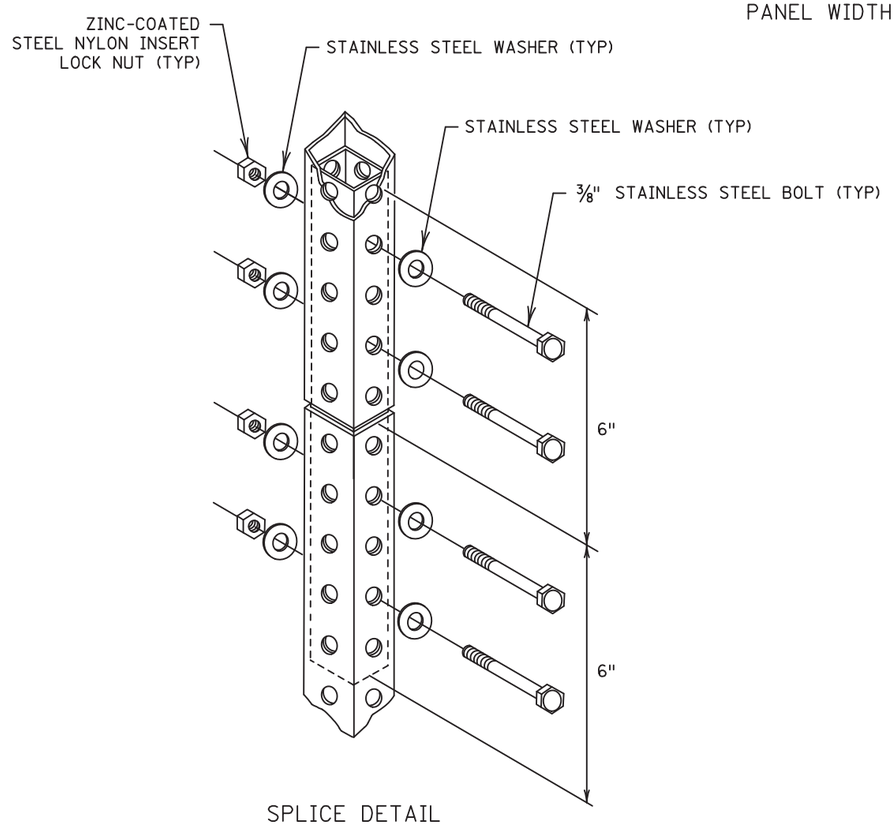
DISTANCES ARE CENTER-TO-CENTER OF POSTS

## NUMBER OF ALUMINUM STRINGERS FOR 2½" OR SMALLER POSTS

| PANEL HEIGHT (INCHES) | 12 | 18 | 24 | 30 | 36 | 42 | 48 | 54 | 60 | 66 | 72 | 78 | 84 | 90 | 96 | 102 | 108 | 114 | 120 | 126 | 132 | 138 | 144 | 150 | 156 | 162 | 168 | 174 | 180 | 186 | 192 | 198 | 204 | 210 | 216 | 222 | 228 | 234 | 240 | 246 | 252 | 258 | 264 | 270 | 276 | 282 | 288 | 294 | 300 | 306 | 312 | 318 | 324 | 330 | 336 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 120 | 0 | 0 | 0 | 0 | 4 | 4 | 4 | 4 | 4 | | | | 4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 114 | 0 | 0 | 0 | 0 | 4 | 4 | 4 | 4 | 4 | 4 | | | 4 | 4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 108 | 0 | 0 | 0 | 0 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | | 4 | 4 | 4 | | | | 4 | 4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 102 | 0 | 0 | 0 | 0 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | | 4 | 4 | 4 | 4 | 4 | 4 | | 4 | 4 | 4 | 4 | | | | 4 | 4 | 4 | | | | 4 | 4 | | | | | | | | | | | | | | | | | | | | | |
| 96 | 0 | 0 | 0 | 0 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | | 3 | 3 | 3 | 3 | 3 | 3 | | 3 | 3 | 3 | 3 | 3 | 3 | | 3 | 3 | 3 | 3 | 3 | 3 | | 3 | 3 | 3 | 3 | 3 | | | | | | | | | | | | | | | | | |
| 90 | 0 | 0 | 0 | 0 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | | | | | | | | | | | | | | | | | |
| 84 | 0 | 0 | 0 | 0 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | | | | | | | | | |
| 78 | 0 | 0 | 0 | 0 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | | | | | |
| 72 | 0 | 0 | 0 | 0 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| 66 | 0 | 0 | 0 | 0 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| 60 | 0 | 0 | 0 | 0 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| 54 | 0 | 0 | 0 | 0 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| 48 | 0 | 0 | 0 | 0 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| 42 | 0 | 0 | 0 | 0 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| 36 | 0 | 0 | 0 | 0 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| 30 | 0 | 0 | 0 | 0 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| 24 | 0 | 0 | 0 | 0 | 2 | 2 | 2 | 2 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 18 | 0 | 0 | 0 | 0 | 2 | 2 | 2 | 2 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 12 | 0 | 0 | 0 | 0 | 2 | 2 | 2 | 2 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |

1 POST | 2 POST | 3 POST | 4 POST | 5 POST | 6 POST

PANEL WIDTH (INCHES)




SPLICE DETAIL

NOTES:

NO MORE THAN ONE SPLICE PER POST.

WHEN USED, THE SPLICE MUST BE PLACED AT LEAST 8' ABOVE GROUND. THE PREFERRED PLACEMENT LOCATION IS BEHIND THE SIGN PANEL.

INTERIOR POST STUD SHALL BE ONE SIZE SMALLER FOR TIGHT FIT. IF RISER POST IS 2½", INTERIOR POST IS 2³⁄₁₆". IF RISER POST IS 2", INTERIOR POST IS 1¾".



| DESIGN TEAM | NO. | BY | DATE | REVISIONS |
|---|---|---|---|---|
| DRAWN BY: MRB | | | | |
| DESIGNER: MRB | | | | |
| 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.

Certified By: Licensed Professional Engineer — Printed Name: JOHN M. GRAY — Lic. No. 22457 — Date: 09/23/2025

SEH

ANOKA COUNTY, MN
CSAH 9
SAP 002-609-023
CITY OF ANDOVER SAP 198-020-042, CITY PROJECT 25-13
CITY OF ANOKA SAP 103-020-020

SIGNING AND PAVEMENT MARKING PLAN

SQUARE-TUBE SIGN MOUNTING DETAIL

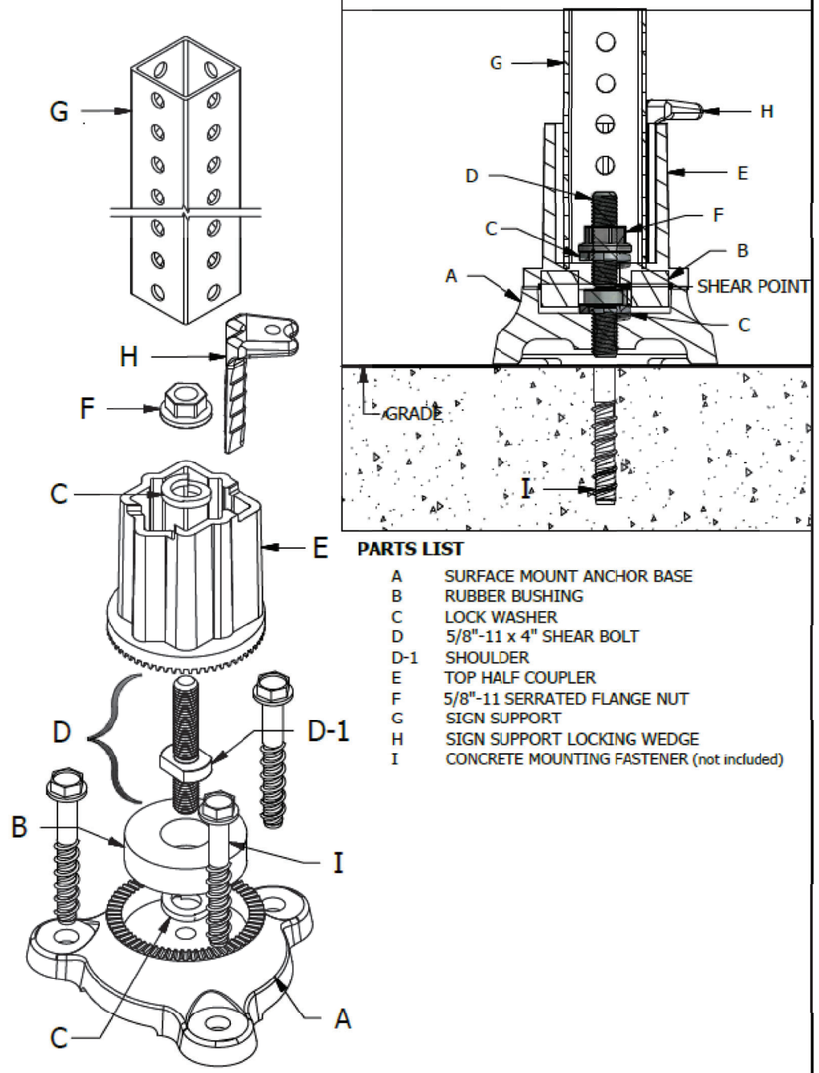


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MODEL: ss03

## CONCRETE SURFACE SIGN INSTALLATION
## SHIM WASHERS LESS THAN 1/2"

| DATE: | |
|---|---|
| 8-13-21 | |

INSTALLED CROSS SECTION VIEW




**PARTS LIST**

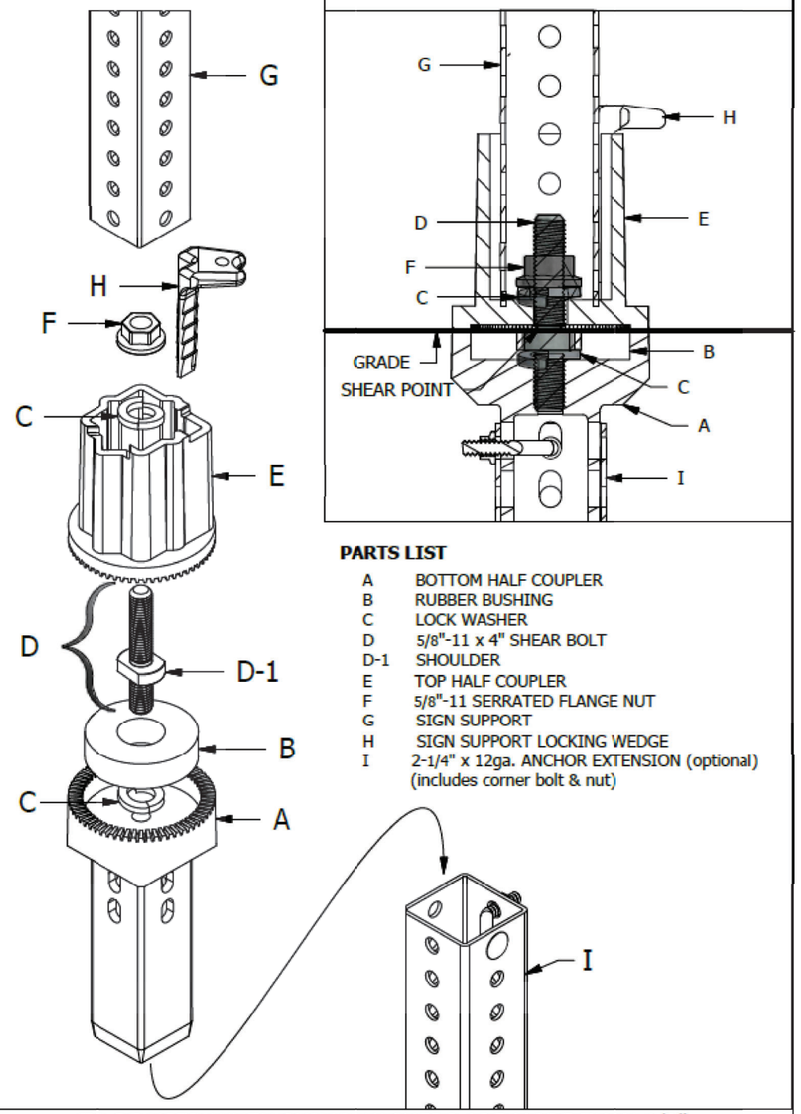
| | |
|---|---|
| A | SURFACE MOUNT ANCHOR BASE |
| B | RUBBER BUSHING |
| C | LOCK WASHER |
| D | 5/8"-11 x 4" SHEAR BOLT |
| D-1 | SHOULDER |
| E | TOP HALF COUPLER |
| F | 5/8"-11 SERRATED FLANGE NUT |
| G | SIGN SUPPORT |
| H | SIGN SUPPORT LOCKING WEDGE |
| I | CONCRETE MOUNTING FASTENER (not included) |

**KLEEN BREAK MODEL 425** FOR **SURFACE MOUNT CONCRETE INSTALLATIONS**
SQUARE POST SIGN SUPPORT INSTALLATION INSTRUCTIONS (RECEIVES 1- 3/4"& 2" SQUARE POST)

## CONCRETE SURFACE SIGN INSTALLATION
## SHIM WASHERS 1/2" OR MORE

| DATE: | **KLEEN BREAK MODEL 425 FOR CONCRETE INSTALLATIONS** |
|---|---|
| 8-13-21 | SQUARE POST SIGN SUPPORT INSTALLATION INST. (RECEIVES 1- 3/4"& 2" POST) |

INSTALLED CROSS SECTION VIEW




**PARTS LIST**

| | |
|---|---|
| A | BOTTOM HALF COUPLER |
| B | RUBBER BUSHING |
| C | LOCK WASHER |
| D | 5/8"-11 x 4" SHEAR BOLT |
| D-1 | SHOULDER |
| E | TOP HALF COUPLER |
| F | 5/8"-11 SERRATED FLANGE NUT |
| G | SIGN SUPPORT |
| H | SIGN SUPPORT LOCKING WEDGE |
| I | 2-1/4" x 12ga. ANCHOR EXTENSION (optional) (includes corner bolt & nut) |

TO BE USED WHEN SHIMS WASHERS ARE MORE THAN 1/2"



| DESIGN TEAM | NO. | BY | DATE | REVISIONS |
|---|---|---|---|---|
| DRAWN BY: MRB | | | | |
| DESIGNER: MRB | | | | |
| 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.
Certified By: Licensed Professional Engineer — Printed Name: JOHN M. GRAY — Lic. No. 22457 — Date: 09/23/2025

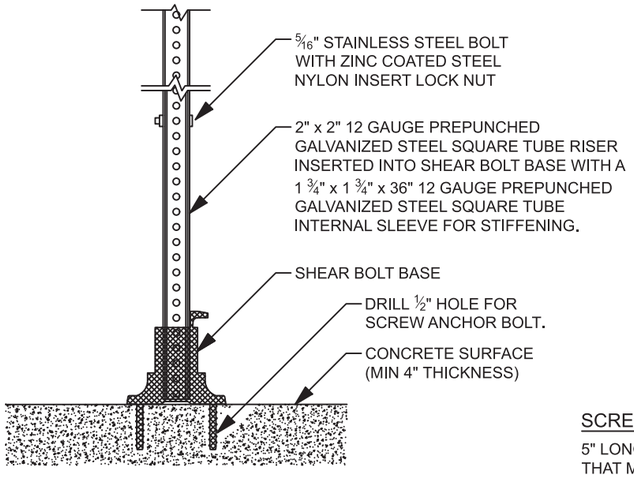
SEH

ANOKA COUNTY, MN
CSAH 9
SAP 002-609-023
CITY OF ANDOVER SAP 198-020-042, CITY PROJECT 25-13
CITY OF ANOKA SAP 103-020-020

SIGNING AND PAVEMENT MARKING PLAN
SHEAR BOLT BASE DETAIL



10:26:29 AM
9/25/2025
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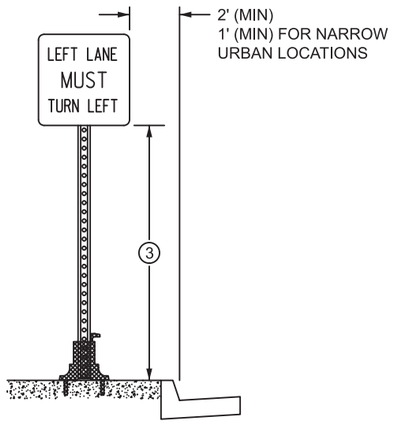



SHEAR BOLT BASE MOUNTED
CONCRETE SURFACE

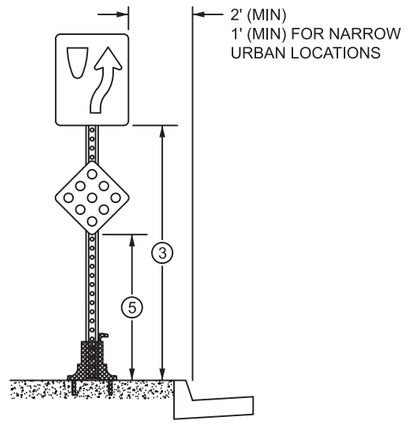


SCREW ANCHOR BOLT

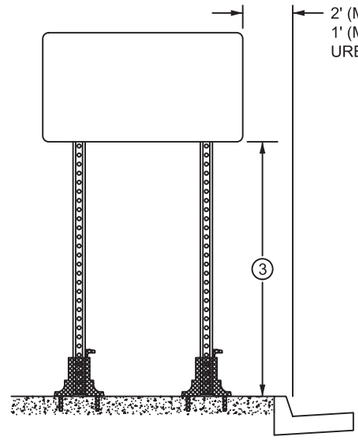
5" LONG CARBON STEEL THAT MUST MEET A MINIMUM ALLOWABLE TENSION LOAD OF 2270 PSI.



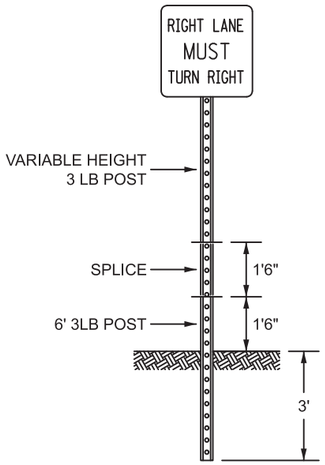

SHEAR BOLT BASE
CONCRETE SURFACE



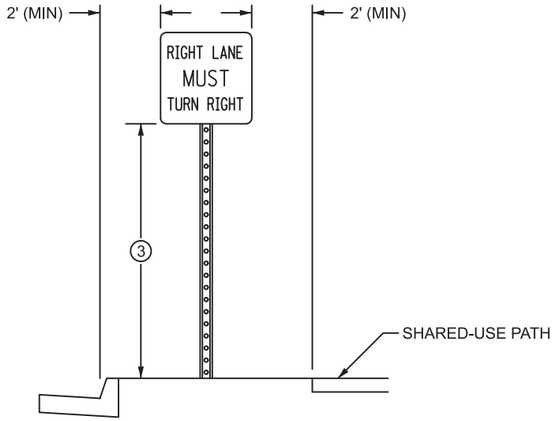

KEEP RIGHT & TYPE ONE OBJECT MARKER
SHEAR BOLT BASE
CONCRETE SURFACE



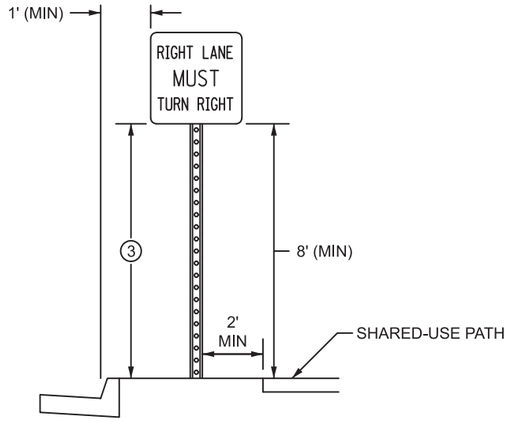

2-POST FOR SIGNS 66"-126" WIDE
SHEAR BOLT BASE
CONCRETE SURFACE



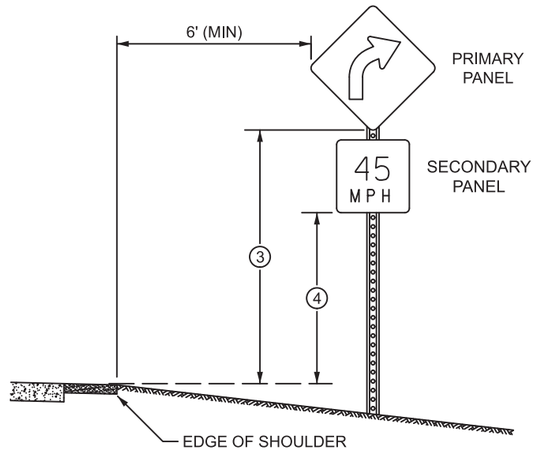

U-CHANNEL POST
SOIL SURFACE




BOULEVARD LOCATIONS
6' TO 12' WIDE




BOULEVARD LOCATIONS ②
LESS THAN 6' WIDE




## SHEAR BOLT BASE NOTES:

1. INSTALLATION OF SHEAR BOLT BASE MUST NOT BE EARLIER THAN 3 DAYS AFTER CONCRETE IS PLACED.
2. FOR SHEAR BOLT BASE USE APPROVED PRODUCT FROM MnDOT APPROVED PRODUCTS LIST.
3. USE ANTI-SEIZE ON THE SHEAR BOLT CONNECTIONS.
4. FOR SIGN MOUNTING DETAILS SEE SQUARE TUBE SIGN MOUNTING DETAILS.
5. SQUARE TUBE SIGN POSTS PER MnDOT SPEC. 3402.

## NOTES:

1. ALL DIMENSIONS ARE MINIMUMS.

② USE ONLY WHEN BOULEVARD IS TOO NARROW TO OBTAIN ADEQUATE SIGN OFFSETS.

③ MOUNTING HEIGHT (PRIMARY PANEL):
- 5 FEET IN RURAL AREAS.
- 7 FEET IN BUSINESS, COMMERCIAL OR RESIDENTIAL AREAS WITH PARKING OR PEDESTRIANS AND IN SIDEWALK AREAS.
- 8 FEET WHEN SIGN IS MOUNTED ABOVE OR WITHIN 2 FEET OF A SHARED-USE PATH.

④ SECONDARY PANEL MOUNTING HEIGHT MAY BE ONE FOOT LESS THAN THAT SHOWN IN NOTE 3.

⑤ OBJECT MARKER MAY BE INSTALLED AT A MININUM 4 FEET.



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MODEL: ss05

| DESIGN TEAM | NO. | BY | DATE | REVISIONS |
|---|---|---|---|---|
| DRAWN BY: MRB | | | | |
| DESIGNER: MRB | | | | |
| 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.

Certified By: Licensed Professional Engineer — Printed Name: JOHN M. GRAY — Lic. No. 22457 — Date: 09/23/2025

SEH

ANOKA COUNTY, MN
CSAH 9
SAP 002-609-023
CITY OF ANDOVER SAP 198-020-042, CITY PROJECT 25-13
CITY OF ANOKA SAP 103-020-020

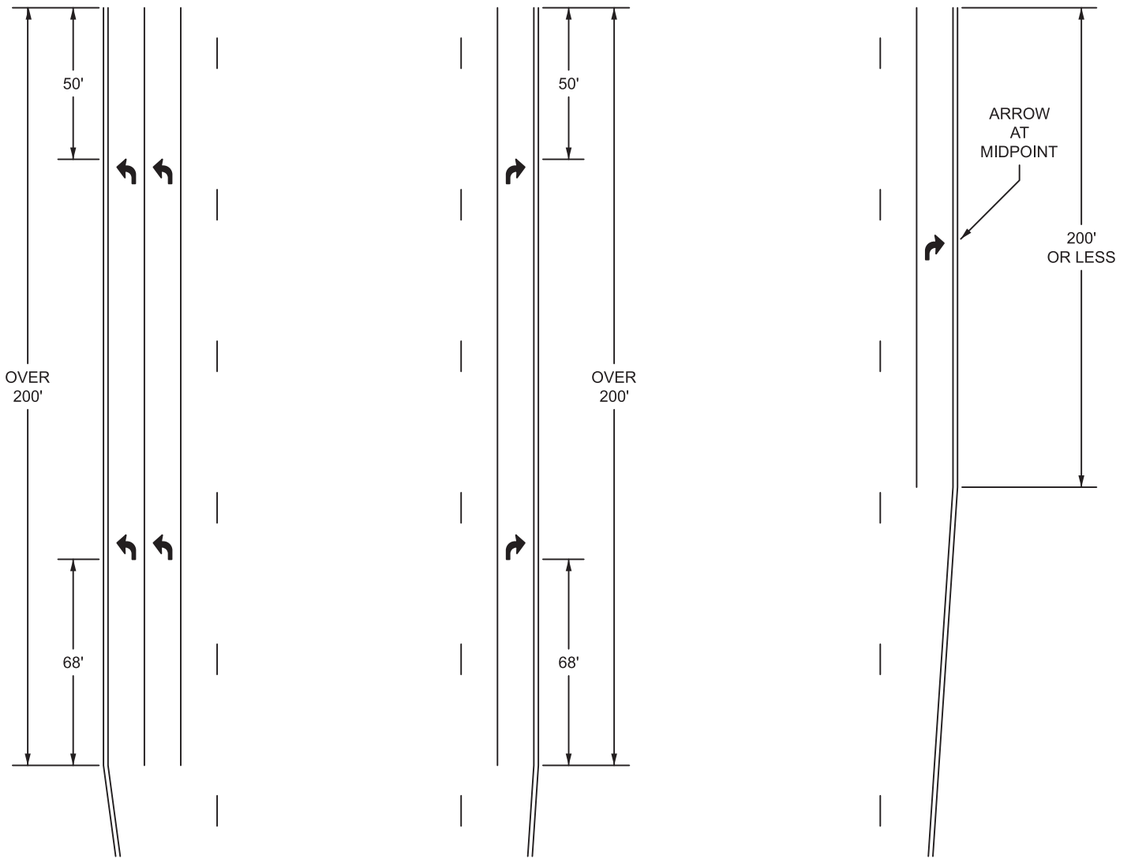
SIGNING AND PAVEMENT MARKING PLAN

SIGN INSTALLATION AND PLACEMENT DETAIL

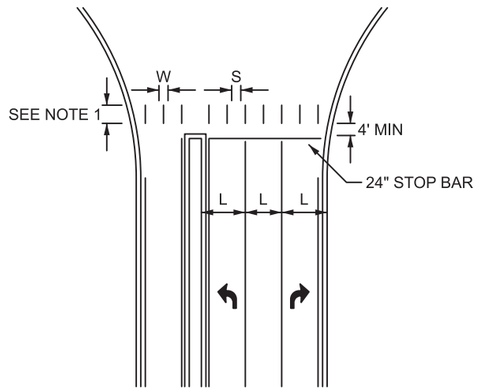
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## TURN LANE ARROW PLACEMENT

ONLY AT SIGNALS OR LOCATIONS WITH LANE DESIGNATION SIGNS

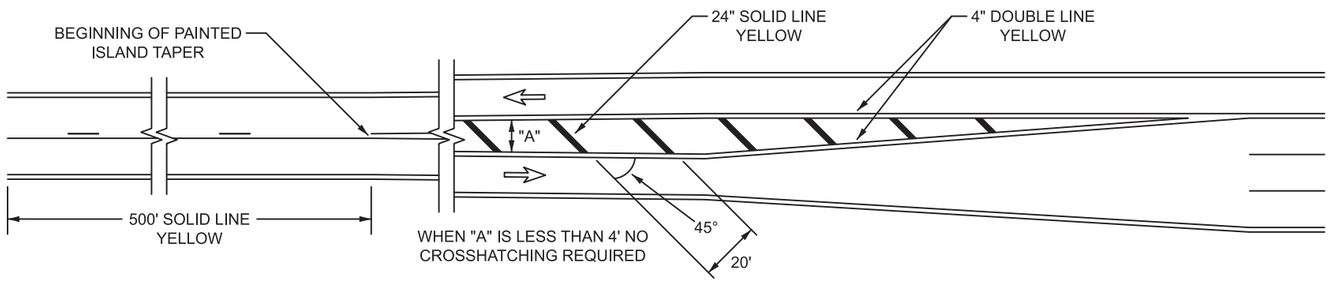



## PEDESTRIAN CROSSWALK




| (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' |

## LEFT TURN ISLAND MARKINGS




## 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.



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MODEL: ss06

| DESIGN TEAM | NO. | BY | DATE | REVISIONS |
|---|---|---|---|---|
| DRAWN BY: MRB | | | | |
| DESIGNER: MRB | | | | |
| 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.

Certified By: Licensed Professional Engineer — Printed Name: JOHN M. GRAY — Lic. No. 22457 — Date: 09/23/2025

SEH

ANOKA COUNTY, MN
CSAH 9
SAP 002-609-023
CITY OF ANDOVER SAP 198-020-042, CITY PROJECT 25-13
CITY OF ANOKA SAP 103-020-020

SIGNING AND PAVEMENT MARKING PLAN

PAVEMENT MARKING PLACEMENT DETAILS

# SIGN AND DELINEATOR / MARKER

| | SIGN NUMBER | PANEL | | | | | SUPPORT | | | REMOVE SIGN | SIGN | SALVAGE SIGN | INSTALL SIGN | SIGN PANEL | REMOVE DELINEATOR /MARKER | DELINEATOR /MARKER | DELINEATOR /MARKER PANEL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | PANEL CODE | LEGEND | SIZE (W x H) | MOUNTING HEIGHT | A DISTANCE | TYPE | RISER POST SIZE | NUMBER OF POSTS | | | | | | | | |
| | | | | INCHES | FEET | FEET | | INCHES | | EACH | SQ FT | EACH | EACH | SQ FT | EACH | EACH | EACH |
| | S-1 | R2-1 | SPEED LIMIT 45 | 30 x 36 | 7 | | U-SOIL | - | 1 | | 7.50 | 1 | 1 | | | | |
| | | R8-3 | NO PARKING | 30 x 30 | | | | | | | | | | | | | |
| | S-2 | R10-X12 | LEFT TURN YIELD ON FLASHING YELLOW ARROW | 36 x 42 | | 1 | MA | | | | | | | 10.50 | | | |
| | S-3 | R6-1L | ONE WAY LEFT | 36 x 12 | 7 | | R | | | | | | | 3.00 | | | |
| | S-4 | R6-1R | ONE WAY RIGHT | 36 x 12 | 7 | | R | | | | | | | 3.00 | | | |
| | S-5 | DESIGN | LT ARROW 135TH AVE ROOSEVELT ST RT ARROW | 96 x 36 | | 40 | MA | | | | | | | 24.00 | | | |
| | S-6 | DESIGN | ROUND LAKE BLVD | 102 x 24 | | 12 | MA | | | | | | | 17.00 | | | |
| | S-7 | R4-7 | KEEP RIGHT | 24 x 30 | 7 | | SQ-CONC | 2 | 1 | 1 | 5.00 | | | | 1 | | |
| | | OM1-2 | TYPE 1 OBJECT MARKER | 18 x 18 | 4 | | | | | | | | | | | | 1 |
| | S-8 | R5-1 | DO NOT ENTER | 36 x 36 | 7 | | SQ-CONC | 2 | 1 | 1 | 9.00 | | | | | | |
| | S-9 | R3-7L | LEFT LANE MUST TURN LEFT | 36 x 36 | 7 | | SQ-CONC | 2 | 1 | 1 | 9.00 | | | | | | |
| | S-10 | R10-X12 | LEFT TURN YIELD ON FLASHING YELLOW ARROW | 36 x 42 | | 1 | MA | | | | | | | 10.50 | | | |
| | S-11 | DESIGN | LT ARROW ROOSEVELT ST 135TH AVE RT ARROW | 96 x 36 | | 40 | MA | | | | | | | 24.00 | | | |
| | S-12 | R6-1L | ONE WAY LEFT | 36 x 12 | 7 | | R | | | | | | | 3.00 | | | |
| | S-13 | R6-1R | ONE WAY RIGHT | 36 x 12 | 7 | | R | | | | | | | 3.00 | | | |
| | S-14 | DESIGN | ROUND LAKE BLVD | 102 x 24 | | 16 | MA | | | | | | | 17.00 | | | |
| | S-15 | R4-7 | KEEP RIGHT | 24 x 30 | 7 | | SQ-CONC | 2 | 1 | 1 | 5.00 | | | | 1 | | |
| | | OM1-2 | TYPE 1 OBJECT MARKER | 18 x 18 | 4 | | | | | | | | | | | | 1 |
| | S-16 | R5-1 | DO NOT ENTER | 36 x 36 | 7 | | SQ-CONC | 2 | 1 | 1 | 9.00 | | | | | | |
| | S-17 | R3-7L | LEFT LANE MUST TURN LEFT | 36 x 36 | 7 | | SQ-CONC | 2 | 1 | 1 | 9.00 | | | | | | |
| | S-18 | OM3-L | TYPE 3 OBJECT MARKER LEFT | 12 x 36 | 4 | | SQ-CONC | 2 | 1 | | | | | | 1 | 1 | |
| | S-19 | R5-1 | DO NOT ENTER | 36 x 36 | 7 | | SQ-CONC | 2 | 1 | 1 | 9.00 | | | | | | |
| | S-20 | R4-7 | KEEP RIGHT | 24 x 30 | 7 | | SQ-CONC | 2 | 1 | 1 | 5.00 | | | | 1 | | |
| | | OM1-2 | TYPE 1 OBJECT MARKER | 18 x 18 | 4 | | | | | | | | | | | | 1 |
| | S-21 | R10-X12 | LEFT TURN YIELD ON FLASHING YELLOW ARROW | 36 x 42 | | 1 | MA | | | | | | | 10.50 | | | |
| | S-22 | DESIGN | LT ARROW 136TH AVE | 84 x 24 | | 40 | MA | | | | | | | 14.00 | | | |
| | S-23 | R6-1L | ONE WAY LEFT | 36 x 12 | 7 | | R | | | | | | | 3.00 | | | |
| | S-24 | R6-1R | ONE WAY RIGHT | 36 x 12 | 7 | | R | | | | | | | 3.00 | | | |
| | S-25 | R3-8DA | LT-R | 36 x 30 | 7 | | U-SOIL | - | 1 | | 7.50 | | | | | | |
| | S-26 | DESIGN | ROUND LAKE BLVD | 102 x 24 | | 6 | MA | | | | | | | 17.00 | | | |
| | S-27 | R4-7 | KEEP RIGHT | 24 x 30 | 7 | | SQ-CONC | 2 | 1 | 1 | 5.00 | | | | 1 | | |
| | | OM1-2 | TYPE 1 OBJECT MARKER | 18 x 18 | 4 | | | | | | | | | | | | 1 |
| | S-28 | R5-1 | DO NOT ENTER | 36 x 36 | 7 | | SQ-CONC | 2 | 1 | 1 | 9.00 | | | | | | |
| | S-29 | R3-7L | LEFT LANE MUST TURN LEFT | 36 x 36 | 7 | | SQ-CONC | 2 | 1 | 1 | 9.00 | | | | | | |
| | S-30 | R10-X12 | LEFT TURN YIELD ON FLASHING YELLOW ARROW | 36 x 42 | | 1 | MA | | | | | | | 10.50 | | | |
| | S-31 | DESIGN | 136TH AVE RT ARROW | 84 x 24 | | 40 | MA | | | | | | | 14.00 | | | |
| | S-32 | R6-1L | ONE WAY LEFT | 36 x 12 | 7 | | R | | | | | | | 3.00 | | | |
| | S-33 | R6-1R | ONE WAY RIGHT | 36 x 12 | 7 | | R | | | | | | | 3.00 | | | |
| | S-34 | DESIGN | ROUND LAKE BLVD | 102 x 24 | | 18 | MA | | | | | | | 17.00 | | | |
| | S-35 | R3-7L | LEFT LANE MUST TURN LEFT | 36 x 36 | 7 | | SQ-CONC | 2 | 1 | 1 | 9.00 | | | | | | |
| | S-36 | R10-X12 | LEFT TURN YIELD ON FLASHING YELLOW ARROW | 36 x 42 | | 1 | MA | | | | | | | 10.50 | | | |
| | S-37 | DESIGN | BUNKER LAKE BLVD | 108 x 24 | | 52 | MA | | | | | | | 18.00 | | | |
| | S-38 | R6-1L | ONE WAY LEFT | 36 x 12 | 7 | | R | | | | | | | 3.00 | | | |
| | S-39 | R6-1R | ONE WAY RIGHT | 36 x 12 | 7 | | R | | | | | | | 3.00 | | | |
| (1) | S-40 | M1-6M | ANOKA COUNTY 9 | 24 x 24 | 7 | | U-SOIL | - | 2 | | | 5 | 5 | | | | |
| | | M6-4 | DOUBLE ARROW (WHITE ON BLUE) | 21 x 15 | | | | | | | | | | | | | |
| | | R8-3 | NO PARKING | 30 x 30 | | | | | | | | | | | | | |
| | | M1-6M | ANOKA COUNTY 116 | 24 x 24 | | | | | | | | | | | | | |
| | | M6-3 | ARROW UP (WHITE ON BLUE) | 21 x 15 | | | | | | | | | | | | | |
| (3) | S-41 | R10-6L | STOP HERE ON RED LEFT | 24 x 30 | 7 | | U-SOIL | - | 1 | | 5.00 | | | | | | |
| | S-42 | R10-6R | STOP HERE ON RED RIGHT | 24 x 30 | 7 | | | | | | | | | 5.00 | | | |
| | S-43 | R4-7 | KEEP RIGHT | 24 x 30 | 7 | | SQ-CONC | 2 | 1 | 1 | 5.00 | | | | | | |
| | | OM1-2 | TYPE 1 OBJECT MARKER | 18 x 18 | 4 | | | | | | | | | | | | 1 |
| | S-44 | R6-1L | ONE WAY LEFT | 36 x 12 | 7 | | R | | | | | | | 3.00 | | | |
| | S-45 | R6-1R | ONE WAY RIGHT | 36 x 12 | 7 | | R | | | | | | | 3.00 | | | |
| | S-46 | R3-7R | RIGHT LANE MUST TURN RIGHT | 36 x 36 | 7 | | U-SOIL | - | 1 | 1 | 9.00 | | | | | | |
| | S-47 | R5-1 | DO NOT ENTER | 36 x 36 | 7 | | SQ-CONC | 2 | 1 | 1 | 9.00 | | | | | | |
| | S-48 | DESIGN | ROUND LAKE BLVD | 102 x 24 | | 42 | MA | | | | | | | 17.00 | | | |
| | S-49 | R10-X12 | LEFT TURN YIELD ON FLASHING YELLOW ARROW | 36 x 42 | | 1 | MA | | | | | | | 10.50 | | | |
| (2) | S-50 | R10-6L | STOP HERE ON RED LEFT | 24 x 30 | 4 | | U-SOIL | | | | 5.00 | | | | | | |

SEE TOTALS ON LAST SHEET OF TABULATIONS

SPECIFIC NOTE(S):
(1) SEE STANDARD PLAN 5-297.719 FOR SIDE BY SIDE SIGN MOUNTING DETAILS.
(2) INSTALL WITH EXISTING SIGN. SEE PLANS.
(3) INSTALL BACK-TO-BACK WITH OTHER SIGN.

GENERAL NOTE(S):
1. MOUNTING HEIGHT IS MINIMUM FROM ADJACENT GROUND LINE TO BOTTOM OF LOWEST SIGN PANEL AT EACH INSTALLATION.

| DESIGN TEAM | NO. | BY | DATE | REVISIONS |
|---|---|---|---|---|
| DRAWN BY: MRB | | | | |
| DESIGNER: MRB | | | | |
| 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.
Printed Name: JOHN M. GRAY
Certified By: Licensed Professional Engineer Lic. No. 22457 Date: 09/23/2025

SEH

ANOKA COUNTY, MN
CSAH 9
SAP 002-609-023
CITY OF ANDOVER SAP 198-020-042, CITY PROJECT 25-13
CITY OF ANOKA SAP 103-020-020

SIGNING AND PAVEMENT MARKING PLAN
TABULATION



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MODEL: ss07

# SIGN AND DELINEATOR / MARKER

| | SIGN NUMBER | PANEL | | | | | SUPPORT | | | REMOVE SIGN | SIGN | SALVAGE SIGN | INSTALL SIGN | SIGN PANEL | REMOVE DELINEATOR /MARKER | DELINEATOR /MARKER | DELINEATOR /MARKER PANEL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | PANEL CODE | LEGEND | SIZE (W x H) | MOUNTING HEIGHT | A DISTANCE | TYPE | RISER POST SIZE | NUMBER OF POSTS | | | | | | | | |
| | | | | INCHES | FEET | FEET | | INCHES | | EACH | SQ FT | EACH | EACH | SQ FT | EACH | EACH | EACH |
| | S-51 | R4-7 | KEEP RIGHT | 24 x 30 | 7 | | SQ-CONC | 2 | 1 | 1 | 5.00 | | | | 1 | | |
| | | OM1-2 | TYPE 1 OBJECT MARKER | 18 x 18 | 4 | | | | | | | | | | | | 1 |
| (3) | S-52 | R10-6R | STOP HERE ON RED RIGHT | 24 x 30 | 7 | | | | | | | | | 5.00 | | | |
| | S-53 | R3-7R | RIGHT LANE MUST TURN RIGHT | 36 x 36 | 7 | | U-SOIL | - | 1 | 1 | 9.00 | | | | | | |
| | S-54 | R5-1 | DO NOT ENTER | 36 x 36 | 7 | | SQ-CONC | 2 | 1 | 1 | 9.00 | | | | | | |
| | S-55 | R10-X12 | LEFT TURN YIELD ON FLASHING YELLOW ARROW | 36 x 42 | | 1 | MA | | | | | | | 10.50 | | | |
| | S-56 | DESIGN | BUNKER LAKE BLVD | 108 x 24 | | 48 | MA | | | | | | | 18.00 | | | |
| | S-57 | R6-1L | ONE WAY LEFT | 36 x 12 | 7 | | R | | | | | | | 3.00 | | | |
| | S-58 | R6-1R | ONE WAY RIGHT | 36 x 12 | 7 | | R | | | | | | | 3.00 | | | |
| (2) | S-59 | R10-6L | STOP HERE ON RED LEFT | 24 x 30 | 4 | | | | | | | | | 5.00 | | | |
| | S-60 | R3-7R | RIGHT LANE MUST TURN RIGHT | 36 x 36 | 7 | | U-SOIL | - | 1 | 2 | 9.00 | | | | | | |
| | | R8-3 | NO PARKING | 18 x 18 | | | | | | | | | | 2.25 | | | |
| | S-61 | R5-1 | DO NOT ENTER | 36 x 36 | 7 | | SQ-CONC | 2 | 1 | 1 | 9.00 | | | | | | |
| (3) | S-62 | R10-6R | STOP HERE ON RED RIGHT | 24 x 30 | 7 | | | | | | | | | 5.00 | | | |
| | S-63 | R4-7 | KEEP RIGHT | 24 x 30 | 7 | | SQ-CONC | 2 | 1 | 1 | 5.00 | | | | 1 | | |
| | | OM1-2 | TYPE 1 OBJECT MARKER | 18 x 18 | 4 | | | | | | | | | | | | 1 |
| | S-64 | OM3-R | TYPE 3 OBJECT MARKER RIGHT | 12 x 36 | 4 | | SQ-CONC | 1-3/4 | 1 | | | | | | 1 | 1 | |
| | S-65 | R10-6L | STOP HERE ON RED LEFT | 24 x 30 | 7 | | SQ-CONC | 2-1/2 | 1 | 1 | | | | 5.00 | | | |
| | | W12-1 | DOUBLE ARROW | 30 x 30 | | | | | | | 6.25 | | | | | | |
| | S-66 | R6-1L | ONE WAY LEFT | 36 x 12 | 7 | | R | | | | | | | 3.00 | | | |
| | S-67 | R6-1R | ONE WAY RIGHT | 36 x 12 | 7 | | R | | | | | | | 3.00 | | | |
| | S-68 | R4-7 | KEEP RIGHT | 24 x 30 | 7 | | SQ-CONC | 2 | 1 | 1 | 5.00 | | | | 1 | | |
| | | OM1-2 | TYPE 1 OBJECT MARKER | 18 x 18 | 4 | | | | | | | | | | | | 1 |
| | S-69 | DESIGN | ROUND LAKE BLVD | 102 x 24 | | 48 | MA | | | | | | | 17.00 | | | |
| (3) | S-70 | R10-6R | STOP HERE ON RED RIGHT | 24 x 30 | 7 | | | | | | | | | 5.00 | | | |
| | S-71 | R5-1 | DO NOT ENTER | 36 x 36 | 7 | | SQ-CONC | 2 | 1 | 1 | 9.00 | | | | | | |
| | S-72 | R3-7R | RIGHT LANE MUST TURN RIGHT | 36 x 36 | | | | | | | | 1 | | | | | |
| | S-73 | R3-7R | RIGHT LANE MUST TURN RIGHT | 36 x 36 | 7 | | U-SOIL | - | 1 | 1 | | | 1 | | | | |
| | S-74 | R10-X12 | LEFT TURN YIELD ON FLASHING YELLOW ARROW | 36 x 42 | | 1 | MA | | | | | | | 10.50 | | | |
| | S-75 | R3-7R | RIGHT LANE MUST TURN RIGHT | 36 x 36 | 7 | | U-SOIL | - | 1 | 1 | 9.00 | | | | | | |
| | S-76 | R6-1R | ONE WAY RIGHT | 36 x 12 | 7 | | SQ-CONC | 2 | 1 | 1 | 3.00 | | | | | | |
| | S-77 | R5-1 | DO NOT ENTER | 36 x 36 | 7 | | SQ-CONC | 2 | 1 | 1 | 9.00 | | | | | | |
| | S-78 | R3-7L | LEFT LANE MUST TURN LEFT | 36 x 36 | 7 | | SQ-CONC | 2 | 1 | 1 | 9.00 | | | | | | |
| | S-79 | R3-7R | RIGHT LANE MUST TURN RIGHT | 36 x 36 | 7 | | U-SOIL | - | 1 | 1 | 9.00 | | | | | | |
| | S-80 | R3-7L | LEFT LANE MUST TURN LEFT | 36 x 36 | 7 | | SQ-CONC | 2 | 1 | 1 | 9.00 | | | | | | |
| | S-81 | R3-7R | RIGHT LANE MUST TURN RIGHT | 36 x 36 | 7 | | U-SOIL | - | 1 | 1 | 9.00 | | | | | | |
| | | R8-3 | NO PARKING | 18 x 18 | | | | | | | | | | 2.25 | | | |
| | S-82 | R6-1R | ONE WAY RIGHT | 36 x 12 | 7 | | SQ-CONC | 2 | 1 | 1 | 3.00 | | | | | | |
| | S-83 | R3-8AB | L-L | 36 x 30 | 7 | | SQ-CONC | 2 | 1 | | 7.50 | | | | | | |
| | S-84 | R5-1 | DO NOT ENTER | 36 x 36 | 7 | | SQ-CONC | 2 | 1 | 1 | 9.00 | | | | | | |
| | S-85 | R4-7 | KEEP RIGHT | 24 x 30 | 7 | | SQ-CONC | 2 | 1 | 1 | 5.00 | | | | 1 | | |
| | | OM1-2 | TYPE 1 OBJECT MARKER | 18 x 18 | 4 | | | | | | | | | | | | 1 |
| | S-86 | R10-X12 | LEFT TURN YIELD ON FLASHING YELLOW ARROW | 36 x 42 | | 1 | MA | | | | | | | 10.50 | | | |
| | S-87 | DESIGN | 138TH LANE RT ARROW | 90 x 24 | | 28 | MA | | | | | | | 15.00 | | | |
| | S-88 | R6-1L | ONE WAY LEFT | 36 x 12 | 7 | | R | | | | | | | 3.00 | | | |
| | S-89 | R6-1R | ONE WAY RIGHT | 36 x 12 | 7 | | R | | | | | | | 3.00 | | | |
| | S-90 | R1-1 | STOP | 30 x 30 | 7 | | SQ-CONC | 2 | 1 | 1 | 6.25 | | | | | | |
| | | X4-3 | CYLINDER STYLE DELINEATOR (WHITE) | - | | | | | | | | | | | 1 | | 1 |
| | S-91 | DESIGN | ROUND LAKE BLVD | 102 x 24 | | 20 | MA | | | | | | | 17.00 | | | |
| | S-92 | R10-6L | STOP HERE ON RED LEFT | 24 x 30 | 7 | | SQ-CONC | 2 | 1 | | 5.00 | | | | | | |
| | S-93 | R4-7 | KEEP RIGHT | 24 x 30 | 7 | | SQ-CONC | 2 | 1 | 1 | 5.00 | | | | 1 | | |
| | | OM1-2 | TYPE 1 OBJECT MARKER | 18 x 18 | 4 | | | | | | | | | | | | 1 |
| (3) | S-94 | R10-6R | STOP HERE ON RED RIGHT | 24 x 30 | 7 | | | | | | | | | 5.00 | | | |
| | S-95 | R3-7L | LEFT LANE MUST TURN LEFT | 36 x 36 | 7 | | SQ-CONC | 2 | 1 | 1 | 9.00 | | | | | | |
| | S-96 | R5-1 | DO NOT ENTER | 36 x 36 | 7 | | SQ-CONC | 2 | 1 | 1 | 9.00 | | | | | | |
| | S-97 | R10-X12 | LEFT TURN YIELD ON FLASHING YELLOW ARROW | 36 x 42 | | 1 | MA | | | | | | | 10.50 | | | |
| | S-98 | DESIGN | LT ARROW 138TH LANE | 90 x 24 | | 40 | MA | | | | | | | 15.00 | | | |
| | S-99 | R6-1R | ONE WAY RIGHT | 36 x 12 | 7 | | R | | | | | | | 3.00 | | | |
| | S-100 | R6-1L | ONE WAY LEFT | 36 x 12 | 7 | | R | | | | | | | 3.00 | | | |

SEE TOTALS ON LAST SHEET OF TABULATIONS

SPECIFIC NOTE(S):
(1) SEE STANDARD PLAN 5-297.719 FOR SIDE BY SIDE SIGN MOUNTING DETAILS.
(2) INSTALL WITH EXISTING SIGN. SEE PLANS.
(3) INSTALL BACK-TO-BACK WITH OTHER SIGN.

GENERAL NOTE(S):
1. MOUNTING HEIGHT IS MINIMUM FROM ADJACENT GROUND LINE TO BOTTOM OF LOWEST SIGN PANEL AT EACH INSTALLATION.

# SIGN AND DELINEATOR / MARKER

| | SIGN NUMBER | PANEL | | | | | SUPPORT | | | REMOVE SIGN | SIGN | SALVAGE SIGN | INSTALL SIGN | SIGN PANEL | REMOVE DELINEATOR /MARKER | DELINEATOR /MARKER | DELINEATOR /MARKER PANEL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | PANEL CODE | LEGEND | SIZE (W x H) | MOUNTING HEIGHT | A DISTANCE | TYPE | RISER POST SIZE | NUMBER OF POSTS | | | | | | | | |
| | | | | INCHES | FEET | FEET | | INCHES | | EACH | SQ FT | EACH | EACH | SQ FT | EACH | EACH | EACH |
| | S-101 | R10-6L | STOP HERE ON RED LEFT | 24 x 30 | 7 | | U-SOIL | - | 1 | | 5.00 | | | | | | |
| | S-102 | DESIGN | ROUND LAKE BLVD | 102 x 24 | | 20 | MA | | | | | | | 17.00 | | | |
| | S-103 | R10-6L | STOP HERE ON RED LEFT | 24 x 30 | 7 | | U-SOIL | - | 1 | | 5.00 | | | | | | |
| (3) | S-104 | R10-6R | STOP HERE ON RED RIGHT | 24 x 30 | 7 | | | | | | | | | 5.00 | | | |
| | S-105 | R5-1 | DO NOT ENTER | 36 x 36 | 7 | | SQ-CONC | 2 | 1 | 1 | 9.00 | | | | | | |
| | S-106 | R3-7L | LEFT LANE MUST TURN LEFT | 36 x 36 | 7 | | SQ-CONC | 2 | 1 | 1 | 9.00 | | | | | | |
| | S-107 | R3-7R | RIGHT LANE MUST TURN RIGHT | 36 x 36 | 7 | | U-SOIL | - | 1 | 1 | 9.00 | | | | | | |
| | S-108 | R10-X12 | LEFT TURN YIELD ON FLASHING YELLOW ARROW | 36 x 42 | | 1 | MA | | | | | | | 10.50 | | | |
| | S-109 | DESIGN | 140TH LANE NW | 90 x 24 | | 28 | MA | | | | | | | 15.00 | | | |
| | S-110 | R6-1L | ONE WAY LEFT | 36 x 12 | 7 | | R | | | | | | | 3.00 | | | |
| | S-111 | R6-1R | ONE WAY RIGHT | 36 x 12 | 7 | | R | | | | | | | 3.00 | | | |
| | S-112 | R10-6L | STOP HERE ON RED LEFT | 24 x 30 | 7 | | U-SOIL | - | 1 | | 5.00 | | | | | | |
| | S-113 | R10-6L | STOP HERE ON RED LEFT | 24 x 30 | 7 | | U-SOIL | - | 1 | | 5.00 | | | | | | |
| | S-114 | DESIGN | ROUND LAKE BLVD | 102 x 24 | | 12 | MA | | | | | | | 17.00 | | | |
| (3) | S-115 | R10-6R | STOP HERE ON RED RIGHT | 24 x 30 | 7 | | | | | | | | | 5.00 | | | |
| | S-116 | R3-7R | RIGHT LANE MUST TURN RIGHT | 36 x 36 | 7 | | U-SOIL | - | 1 | 1 | 9.00 | | | | | | |
| | S-117 | R3-7L | LEFT LANE MUST TURN LEFT | 36 x 36 | 7 | | SQ-CONC | 2 | 1 | 1 | 9.00 | | | | | | |
| | S-118 | R10-X12 | LEFT TURN YIELD ON FLASHING YELLOW ARROW | 36 x 42 | | 1 | MA | | | | | | | 10.50 | | | |
| | S-119 | DESIGN | 140TH LANE NW | 90 x 24 | | 28 | MA | | | | | | | 15.00 | | | |
| | S-120 | R6-1L | ONE WAY LEFT | 36 x 12 | 7 | | R | | | | | | | 3.00 | | | |
| | S-121 | R6-1R | ONE WAY RIGHT | 36 x 12 | 7 | | R | | | | | | | 3.00 | | | |
| | S-122 | R10-6L | STOP HERE ON RED LEFT | 24 x 30 | 7 | | U-SOIL | - | 1 | | 5.00 | | | | | | |
| | S-123 | R10-6L | STOP HERE ON RED LEFT | 24 x 30 | 7 | | U-SOIL | - | 1 | | 5.00 | | | | | | |
| | S-124 | DESIGN | ROUND LAKE BLVD | 102 x 24 | | 12 | MA | | | | | | | 17.00 | | | |
| (3) | S-125 | R10-6R | STOP HERE ON RED RIGHT | 24 x 30 | 7 | | | | | | | | | 5.00 | | | |
| | S-126 | R3-7R | RIGHT LANE MUST TURN RIGHT | 36 x 36 | 7 | | U-SOIL | - | 1 | 1 | 9.00 | | | | | | |
| | S-127 | R3-7L | LEFT LANE MUST TURN LEFT | 36 x 36 | 7 | | SQ-CONC | 2 | 1 | 1 | 9.00 | | | | | | |
| | S-128 | R3-7L | LEFT LANE MUST TURN LEFT | 36 x 36 | 7 | | SQ-CONC | 2 | 1 | 1 | 9.00 | | | | | | |
| | S-129 | R10-X12 | LEFT TURN YIELD ON FLASHING YELLOW ARROW | 36 x 42 | | 1 | MA | | | | | | | 10.50 | | | |
| | S-130 | DESIGN | 143RD AVE NW | 90 x 24 | | 28 | MA | | | | | | | 15.00 | | | |
| | S-131 | R6-1R | ONE WAY RIGHT | 36 x 12 | 7 | | R | | | | | | | 3.00 | | | |
| | S-132 | R10-6L | STOP HERE ON RED LEFT | 24 x 30 | 7 | | U-SOIL | - | 1 | | 5.00 | | | | | | |
| | S-133 | R9-3 | NO PEDESTRIANS | 18 x 18 | 7 | | R | | | | | | | 2.25 | | | |
| | S-134 | R10-6L | STOP HERE ON RED LEFT | 24 x 30 | 7 | | U-SOIL | - | 1 | | 5.00 | | | | | | |
| | S-135 | R3-7L | LEFT LANE MUST TURN LEFT | 36 x 36 | 7 | | SQ-CONC | 2 | 1 | 1 | 9.00 | | | | | | |
| | S-136 | R3-7R | RIGHT LANE MUST TURN RIGHT | 36 x 36 | 7 | | U-SOIL | - | 1 | 1 | 9.00 | | | | | | |
| (3) | S-137 | R10-6R | STOP HERE ON RED RIGHT | 24 x 30 | 7 | | | | | | | | | 5.00 | | | |
| | S-138 | R10-X12 | LEFT TURN YIELD ON FLASHING YELLOW ARROW | 36 x 42 | | 1 | MA | | | | | | | 10.50 | | | |
| | S-139 | DESIGN | 143RD AVE NW | 90 x 24 | | 28 | MA | | | | | | | 15.00 | | | |
| | S-140 | R9-3 | NO PEDESTRIANS | 18 x 18 | 7 | | R | | | | | | | 2.25 | | | |
| | S-141 | R6-1L | ONE WAY LEFT | 36 x 12 | 7 | | R | | | | | | | 3.00 | | | |
| | S-142 | R10-6L | STOP HERE ON RED LEFT | 24 x 30 | 7 | | U-SOIL | - | 1 | | 5.00 | | | | | | |
| | S-143 | DESIGN | ROUND LAKE BLVD | 102 x 24 | | 8 | MA | | | | | | | 17.00 | | | |
| (3) | S-144 | R10-6R | STOP HERE ON RED RIGHT | 24 x 30 | 7 | | | | | | | | | 5.00 | | | |
| | | | | | | | | | TOTAL | 50 | 452 | 7 | 7 | 688 | 12 | 2 | 11 |

SPECIFIC NOTE(S):
(1) SEE STANDARD PLAN 5-297.719 FOR SIDE BY SIDE SIGN MOUNTING DETAILS.
(2) INSTALL WITH EXISTING SIGN. SEE PLANS.
(3) INSTALL BACK-TO-BACK WITH OTHER SIGN.

GENERAL NOTE(S):
1. MOUNTING HEIGHT IS MINIMUM FROM ADJACENT GROUND LINE TO BOTTOM OF LOWEST SIGN PANEL AT EACH INSTALLATION.

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9/25/2025
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| DESIGN TEAM | NO. | BY | DATE | REVISIONS |
|---|---|---|---|---|
| DRAWN BY: MRB | | | | |
| DESIGNER: MRB | | | | |
| 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.
Printed Name: JOHN M. GRAY
Certified By: Licensed Professional Engineer Lic. No. 22457 Date: 09/23/2025

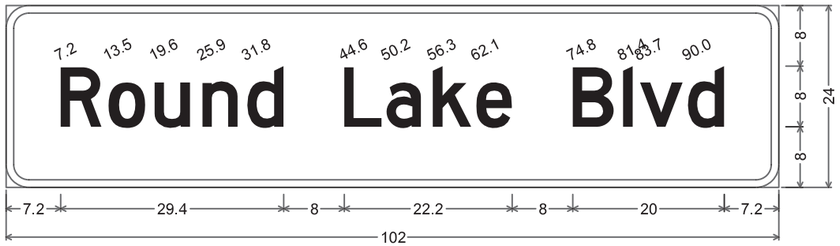
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ANOKA COUNTY, MN
CSAH 9
SAP 002-609-023
CITY OF ANDOVER SAP 198-020-042, CITY PROJECT 25-13
CITY OF ANOKA SAP 103-020-020

SIGNING AND PAVEMENT MARKING PLAN
TABULATION

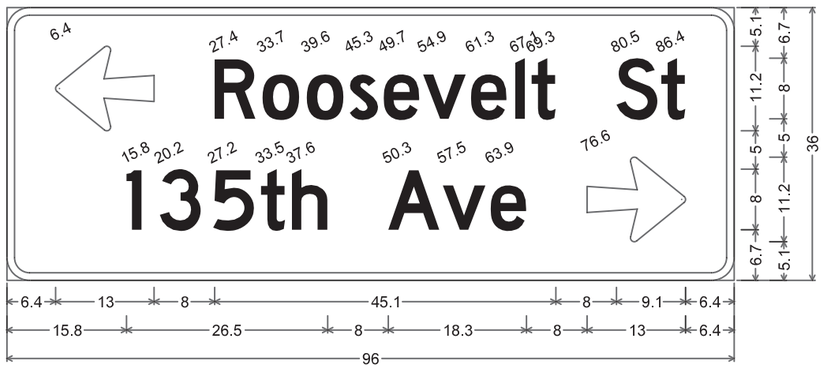
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P2, P4, P6, P8, P10, P12, P14, P16, P17, P19, P23



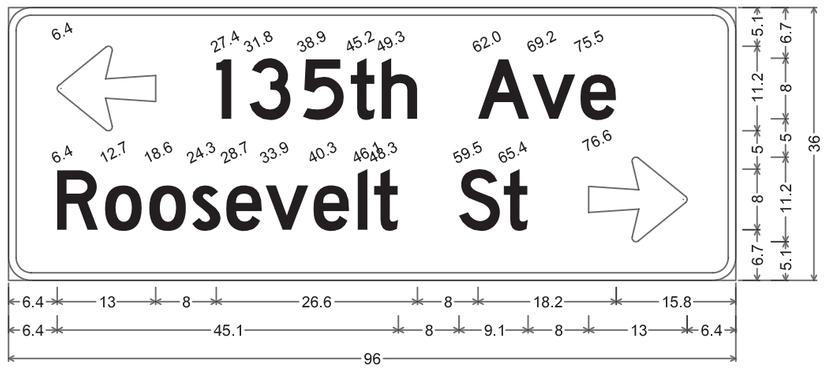

3.0" Radius, 1.0" Border, White on Green;
"Round Lake Blvd", D 2K;

P1



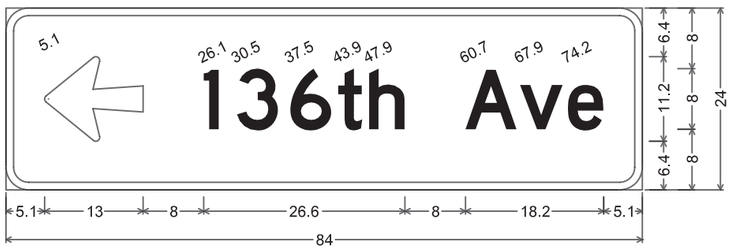

3.0" Radius, 1.0" Border, White on Green;
Arrow 5 - 13.0" 180°; "Roosevelt St", D 2K; "135th Ave", D 2K; Arrow 5 - 13.0" 0°;

P3




3.0" Radius, 1.0" Border, White on Green;
Arrow 5 - 13.0" 180°; "135th Ave", D 2K; "Roosevelt St", D 2K; Arrow 5 - 13.0" 0°;

P7




3.0" Radius, 1.0" Border, White on Green;
Arrow 5 - 13.0" 180°; "136th Ave", D 2K;

P5




3.0" Radius, 1.0" Border, White on Green;
"136th Ave", D 2K; Arrow 5 - 13.0" 0°;

GENERAL NOTE(S):

1. ALL DIMENSIONS ARE IN INCHES.
2. "P" NUMBERS REFER TO SIGN NUMBERING ON TRAFFIC SIGNAL "POLE AND CABINET NOTES" PLAN SHEETS.

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| DESIGN TEAM | NO. | BY | DATE | REVISIONS |
|---|---|---|---|---|
| DRAWN BY: MRB | | | | |
| DESIGNER: MRB | | | | |
| CHECKED BY: JMG | | | | |

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Certified By: Licensed Professional Engineer — Printed Name: JOHN M. GRAY — Lic. No. 22457 — Date: 09/23/2025

SEH

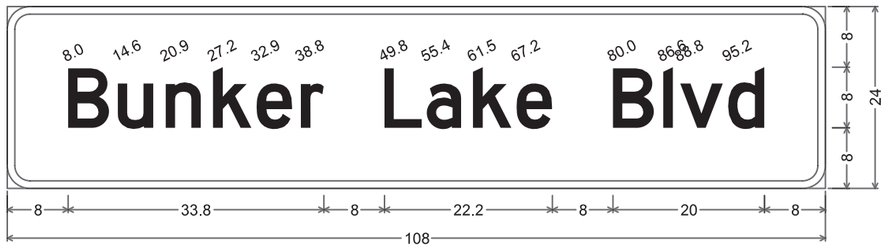
ANOKA COUNTY, MN
CSAH 9
SAP 002-609-023
CITY OF ANDOVER SAP 198-020-042, CITY PROJECT 25-13
CITY OF ANOKA SAP 103-020-020

SIGNING AND PAVEMENT MARKING PLAN

SIGN PANEL DETAILS

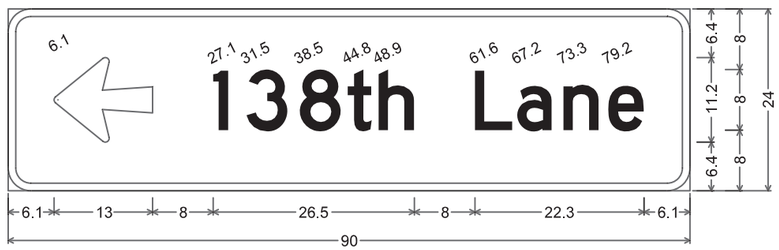
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P9, P11



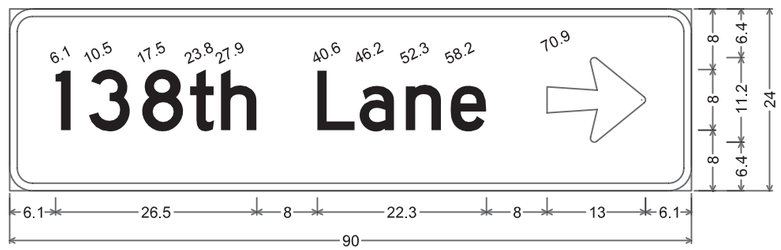

3.0" Radius, 1.0" Border, White on Green;
"Bunker Lake Blvd", D 2K;

P13



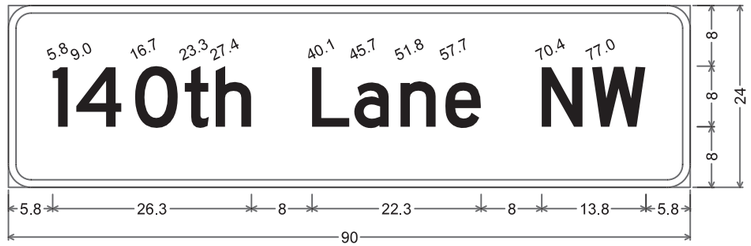

3.0" Radius, 1.0" Border, White on Green;
Arrow 5 - 13.0" 180°; "138th Lane", D 2K;

P15




3.0" Radius, 1.0" Border, White on Green;
"138th Lane", D 2K; Arrow 5 - 13.0" 0°;

P18, P20




3.0" Radius, 1.0" Border, White on Green;
"140th Lane NW", D 2K;

P21, P22




3.0" Radius, 1.0" Border, White on Green;
"143rd Ave NW", D 2K;

GENERAL NOTE(S):

1. ALL DIMENSIONS ARE IN INCHES.
2. "P" NUMBERS REFER TO SIGN NUMBERING ON TRAFFIC SIGNAL "POLE AND CABINET NOTES" PLAN SHEETS.

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| DESIGN TEAM | NO. | BY | DATE | REVISIONS |
|---|---|---|---|---|
| DRAWN BY: MRB | | | | |
| DESIGNER: MRB | | | | |
| 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.

Certified By: Licensed Professional Engineer — Printed Name: JOHN M. GRAY — Lic. No. 22457 — Date: 09/23/2025

SEH

ANOKA COUNTY, MN
CSAH 9
SAP 002-609-023
CITY OF ANDOVER SAP 198-020-042, CITY PROJECT 25-13
CITY OF ANOKA SAP 103-020-020

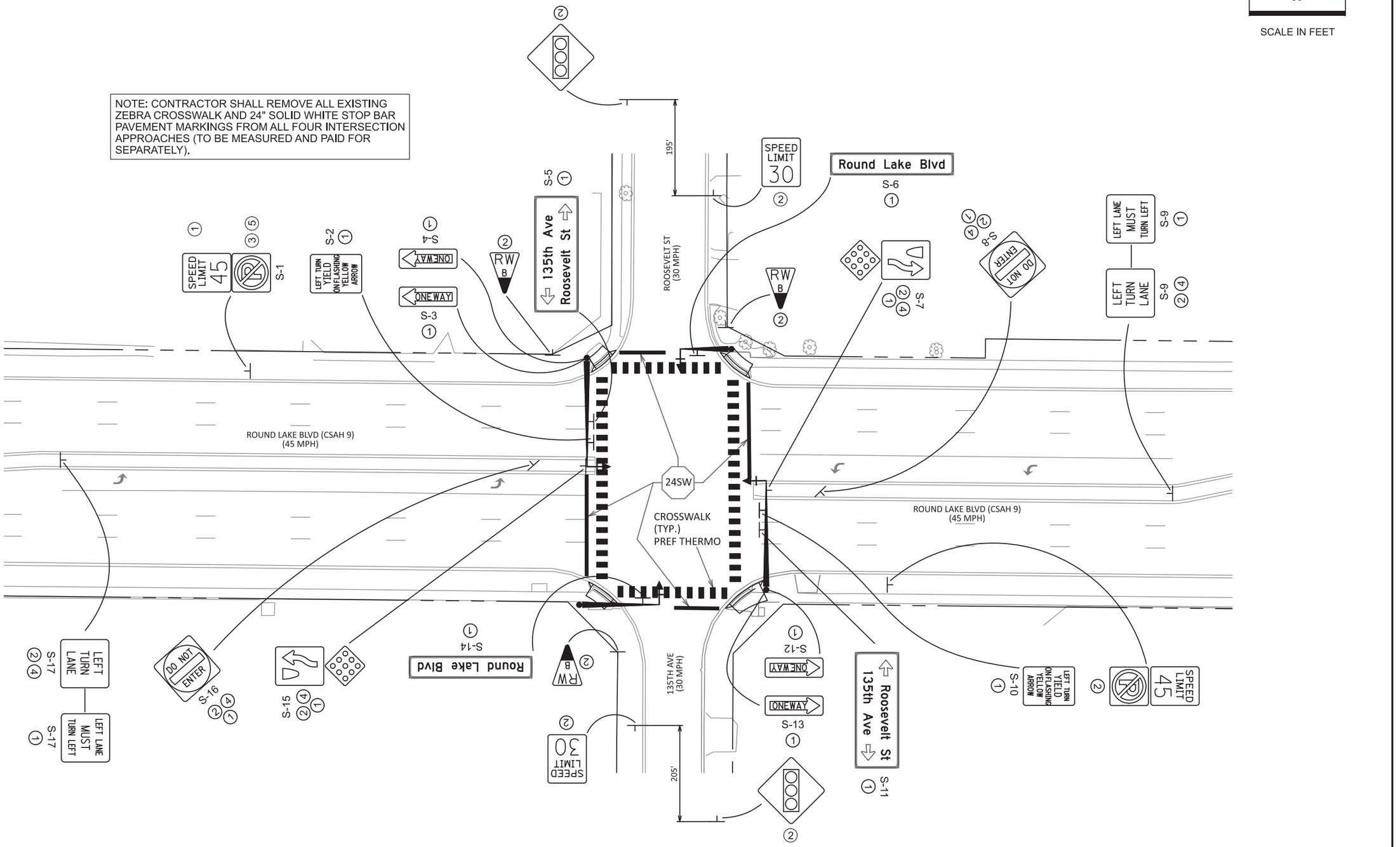
SIGNING AND PAVEMENT MARKING PLAN

SIGN PANEL DETAILS

SIGNING NOTES:

1. FURNISH AND INSTALL SIGN
2. INPLACE
3. SALVAGE
4. REMOVE
5. INSTALL

NOTE: CONTRACTOR SHALL REMOVE ALL EXISTING ZEBRA CROSSWALK AND 24" SOLID WHITE STOP BAR PAVEMENT MARKINGS FROM ALL FOUR INTERSECTION APPROACHES (TO BE MEASURED AND PAID FOR SEPARATELY).




| DESIGN TEAM | NO. | BY | DATE | REVISIONS |
|---|---|---|---|---|
| DRAWN BY: MRB | | | | |
| DESIGNER: MRB | | | | |
| CHECKED BY: JMG | | | | |

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Certified By: Licensed Professional Engineer — Printed Name: JOHN M. GRAY — Lic. No. 22457 — Date: 09/23/2025

SEH

ANOKA COUNTY, MN
CSAH 9
SAP 002-609-023
CITY OF ANDOVER SAP 198-020-042, CITY PROJECT 25-13
CITY OF ANOKA SAP 103-020-020

SIGNING AND PAVEMENT MARKING PLAN

CSAH 9 (ROUND LAKE BOULEVARD) AT 135TH AVENUE/ROOSEVELT STREET

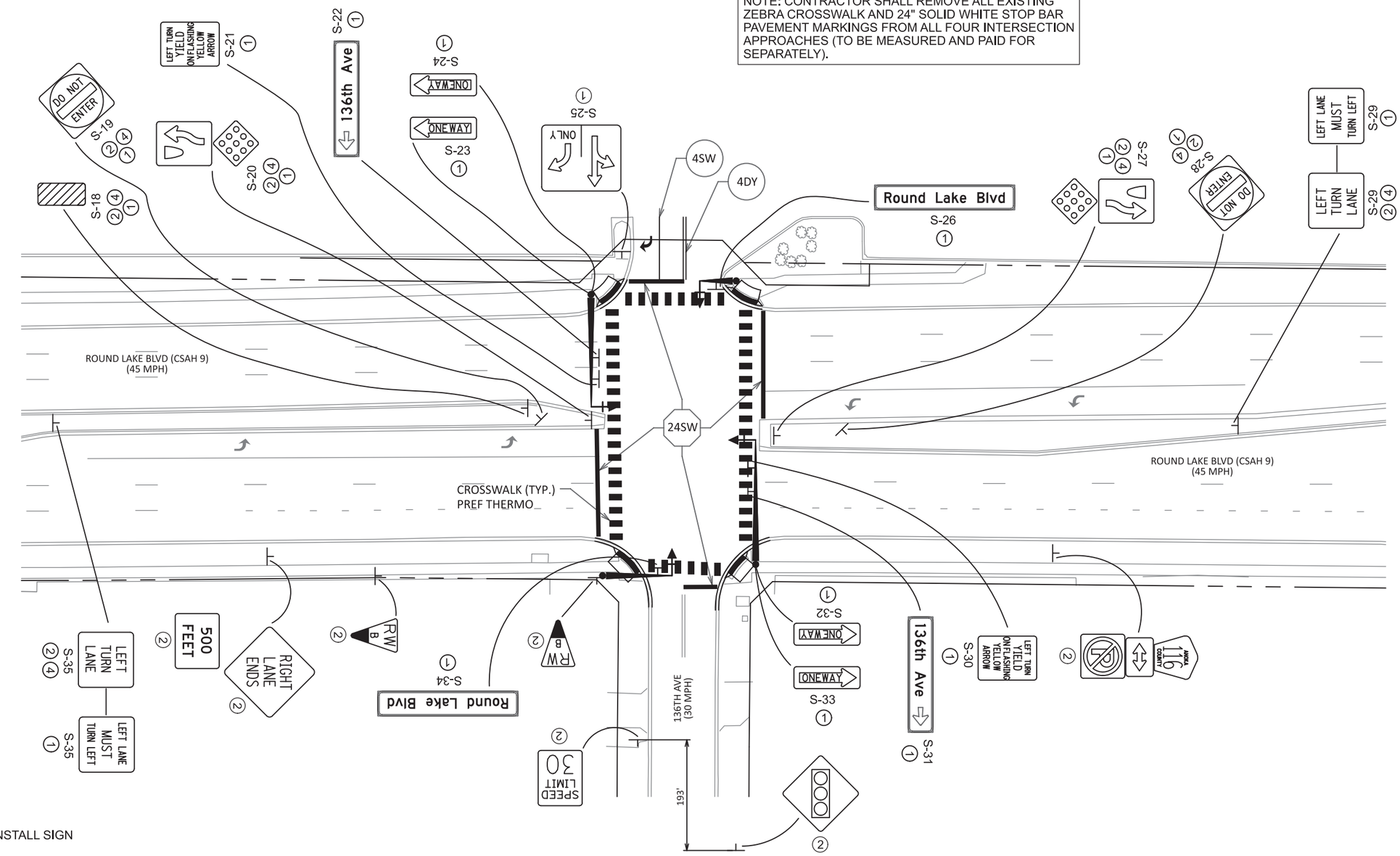
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9/25/2025

50
SCALE IN FEET

NOTE: CONTRACTOR SHALL REMOVE ALL EXISTING ZEBRA CROSSWALK AND 24" SOLID WHITE STOP BAR PAVEMENT MARKINGS FROM ALL FOUR INTERSECTION APPROACHES (TO BE MEASURED AND PAID FOR SEPARATELY).




SIGNING NOTES:

1. FURNISH AND INSTALL SIGN
2. INPLACE
3. SALVAGE
4. REMOVE
5. INSTALL

| DESIGN TEAM | NO. | BY | DATE | REVISIONS |
|---|---|---|---|---|
| DRAWN BY: MRB | | | | |
| DESIGNER: MRB | | | | |
| CHECKED BY: JMG | | | | |

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Printed Name: JOHN M. GRAY

Certified By: Licensed Professional Engineer  Lic. No. 22457  Date: 09/23/2025

SEH

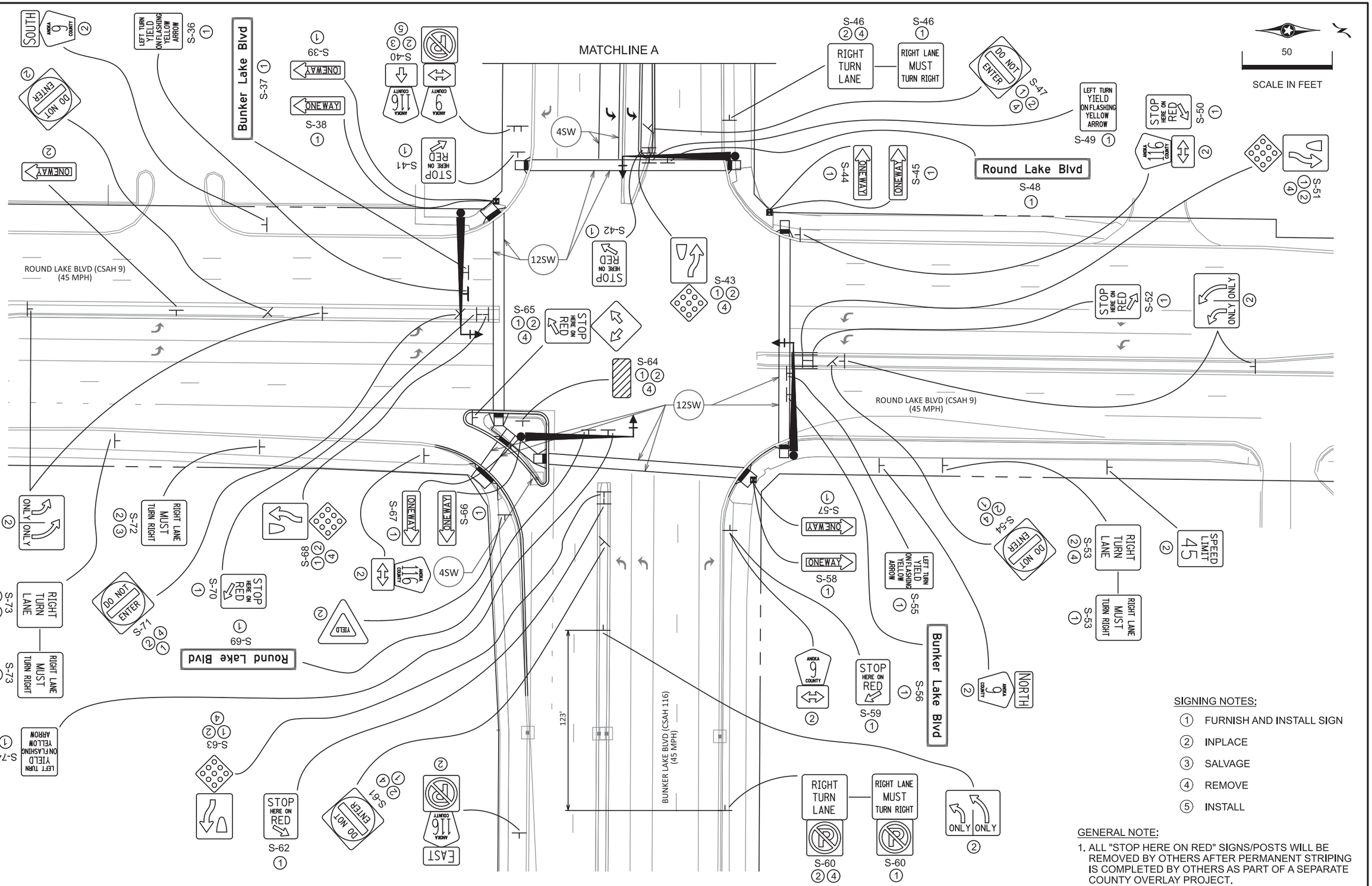
ANOKA COUNTY, MN
CSAH 9
SAP 002-609-023
CITY OF ANDOVER SAP 198-020-042, CITY PROJECT 25-13
CITY OF ANOKA SAP 103-020-020

SIGNING AND PAVEMENT MARKING PLAN

CSAH 9 (ROUND LAKE BOULEVARD) AT 136TH AVENUE



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SIGNING NOTES:

1. FURNISH AND INSTALL SIGN
2. INPLACE
3. SALVAGE
4. REMOVE
5. INSTALL

GENERAL NOTE:

1. ALL "STOP HERE ON RED" SIGNS/POSTS WILL BE REMOVED BY OTHERS AFTER PERMANENT STRIPING IS COMPLETED BY OTHERS AS PART OF A SEPARATE COUNTY OVERLAY PROJECT.

| DESIGN TEAM | NO. | BY | DATE | REVISIONS |
|---|---|---|---|---|
| DRAWN BY: MRB | | | | |
| DESIGNER: MRB | | | | |
| CHECKED BY: JMG | | | | |

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Certified By: Licensed Professional Engineer — Printed Name: JOHN M. GRAY — Lic. No. 22457 — Date: 09/23/2025

SEH

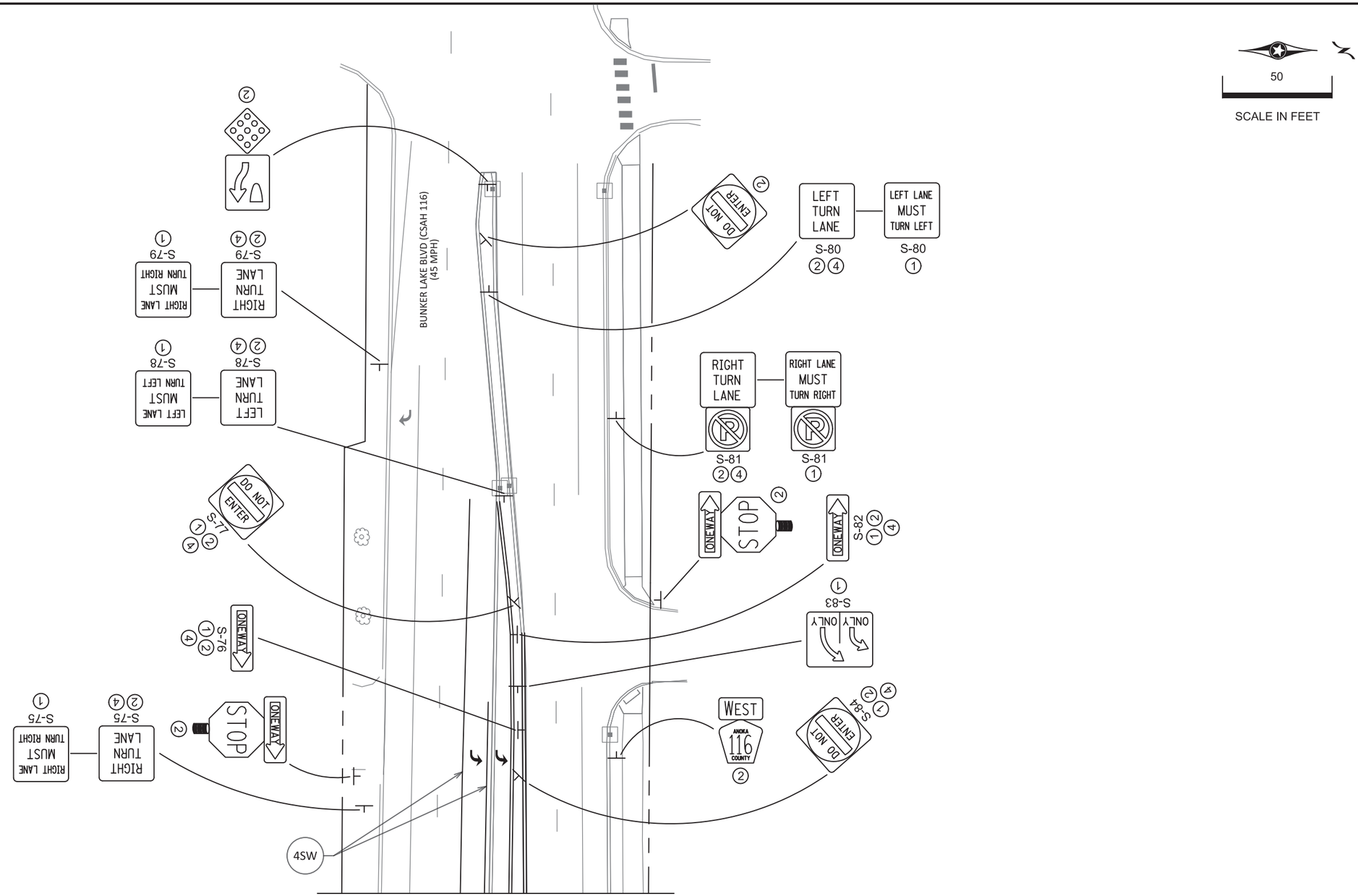
ANOKA COUNTY, MN
CSAH 9
SAP 002-609-023
CITY OF ANDOVER SAP 198-020-042, CITY PROJECT 25-13
CITY OF ANOKA SAP 103-020-020

SIGNING AND PAVEMENT MARKING PLAN

CSAH 9 (ROUND LAKE BOULEVARD) AT CSAH 116 (BUNKER LAKE BOULEVARD)

70
133

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MATCHLINE A

SIGNING NOTES:

1. FURNISH AND INSTALL SIGN
2. INPLACE
3. SALVAGE
4. REMOVE
5. INSTALL

| DESIGN TEAM | NO. | BY | DATE | REVISIONS |
|---|---|---|---|---|
| DRAWN BY: MRB | | | | |
| DESIGNER: MRB | | | | |
| CHECKED BY: JMG | | | | |

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Certified By: Licensed Professional Engineer — Printed Name: JOHN M. GRAY — Lic. No. 22457 — Date: 09/23/2025

SEH

ANOKA COUNTY, MN
CSAH 9
SAP 002-609-023
CITY OF ANDOVER SAP 198-020-042, CITY PROJECT 25-13
CITY OF ANOKA SAP 103-020-020

SIGNING AND PAVEMENT MARKING PLAN

CSAH 9 (ROUND LAKE BOULEVARD) AT CSAH 116 (BUNKER LAKE BOULEVARD)

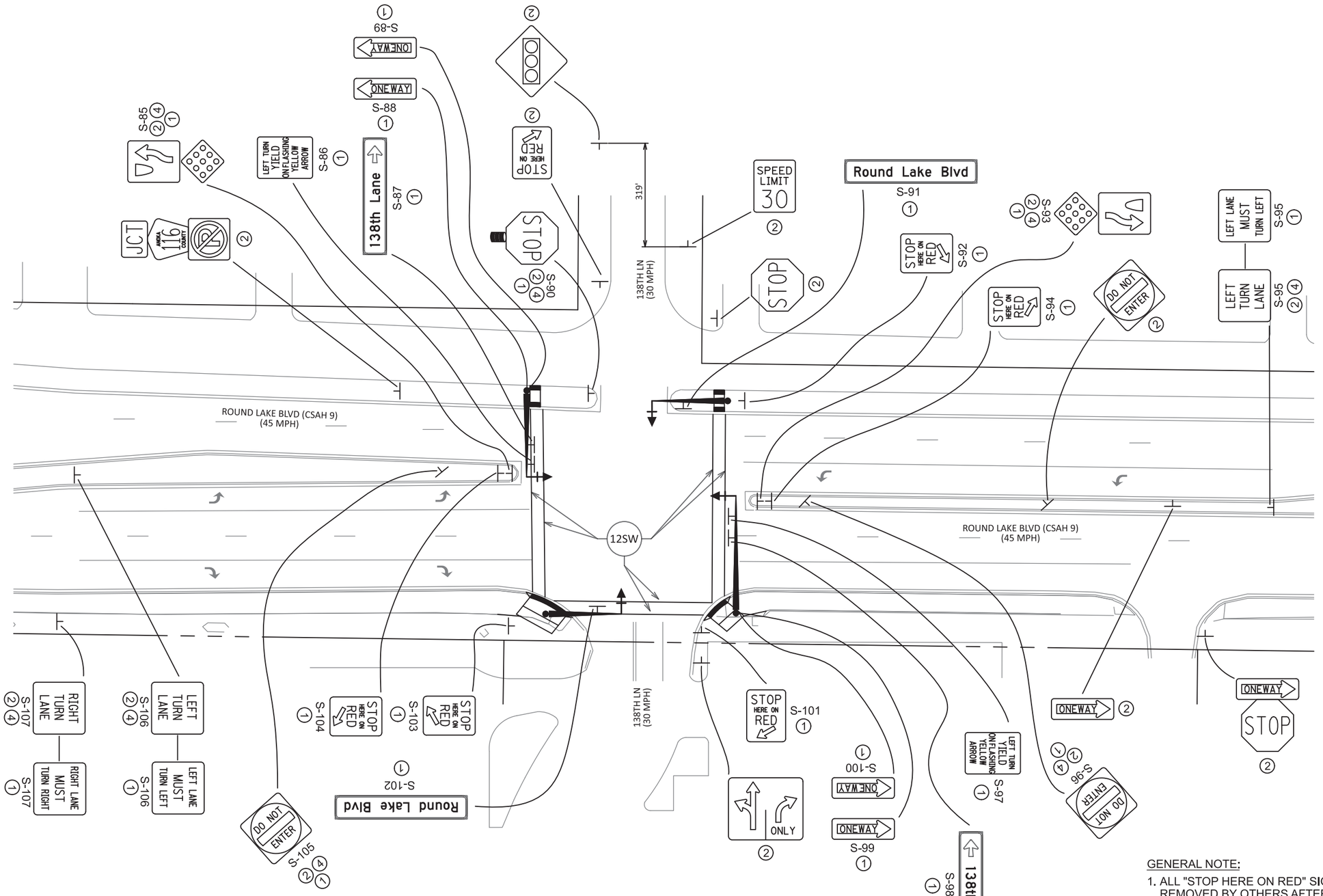
71
133

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SIGNING NOTES:

1. FURNISH AND INSTALL SIGN
2. INPLACE
3. SALVAGE
4. REMOVE
5. INSTALL




GENERAL NOTE:

1. ALL "STOP HERE ON RED" SIGNS/POSTS WILL BE REMOVED BY OTHERS AFTER PERMANENT STRIPING IS COMPLETED BY OTHERS AS PART OF A SEPARATE COUNTY OVERLAY PROJECT.

| DESIGN TEAM | NO. | BY | DATE | REVISIONS |
|---|---|---|---|---|
| DRAWN BY: MRB | | | | |
| DESIGNER: MRB | | | | |
| 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.

Certified By: Licensed Professional Engineer — Printed Name: JOHN M. GRAY — Lic. No. 22457 — Date: 09/23/2025

SEH

ANOKA COUNTY, MN
CSAH 9
SAP 002-609-023
CITY OF ANDOVER SAP 198-020-042, CITY PROJECT 25-13
CITY OF ANOKA SAP 103-020-020

SIGNING AND PAVEMENT MARKING PLAN

CSAH 9 (ROUND LAKE BOULEVARD) AT 138TH LANE

72
133

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9/25/2025

50
SCALE IN FEET

ROUND LAKE BLVD (CSAH 9)
(45 MPH)

140TH LN
(30 MPH)

142'

304'

12SW

Round Lake Blvd
S-114
①

140th Lane NW
S-109
①

LEFT TURN
YIELD
ON FLASHING
YELLOW
ARROW
S-108
①

ONE WAY
S-111
①

ONE WAY
S-110
①

STOP
HERE ON
RED
S-112
①

②

STOP
HERE ON
RED
S-113
①

②

DO NOT
ENTER
②

STOP
HERE ON
RED
S-115
①

RIGHT LANE
MUST
TURN RIGHT
S-116
①

RIGHT
TURN
LANE
S-116
②④

LEFT LANE
MUST
TURN LEFT
S-117
①

LEFT
TURN
LANE
S-117
②④

ROUND LAKE BLVD (CSAH 9)
(45 MPH)

LEFT
TURN
LANE
S-127
②④

LEFT LANE
MUST
TURN LEFT
S-127
①

RIGHT
TURN
LANE
S-126
②④

RIGHT LANE
MUST
TURN RIGHT
S-126
①

Rose
Park
②

DO NOT
ENTER
②

STOP
HERE ON
RED
S-125
①

②

STOP
HERE ON
RED
S-123
①

140TH LN
(30 MPH)

Round Lake Blvd
S-124
①

S-120
①

ONE WAY
ONE WAY
S-121
①

LEFT TURN
YIELD
ON FLASHING
YELLOW
ARROW
S-118
①

140th Lane NW
S-119
①

STOP
HERE ON
RED
S-122
①

ONLY
②

SPEED
LIMIT
30
②

②

SIGNING NOTES:

① FURNISH AND INSTALL SIGN
② INPLACE
③ SALVAGE
④ REMOVE
⑤ INSTALL

GENERAL NOTE:

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| DESIGNER: MRB | | | | |
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SEH

ANOKA COUNTY, MN
CSAH 9
SAP 002-609-023
CITY OF ANDOVER SAP 198-020-042, CITY PROJECT 25-13
CITY OF ANOKA SAP 103-020-020

SIGNING AND PAVEMENT MARKING PLAN

CSAH 9 (ROUND LAKE BOULEVARD) AT 140TH LANE

73
133

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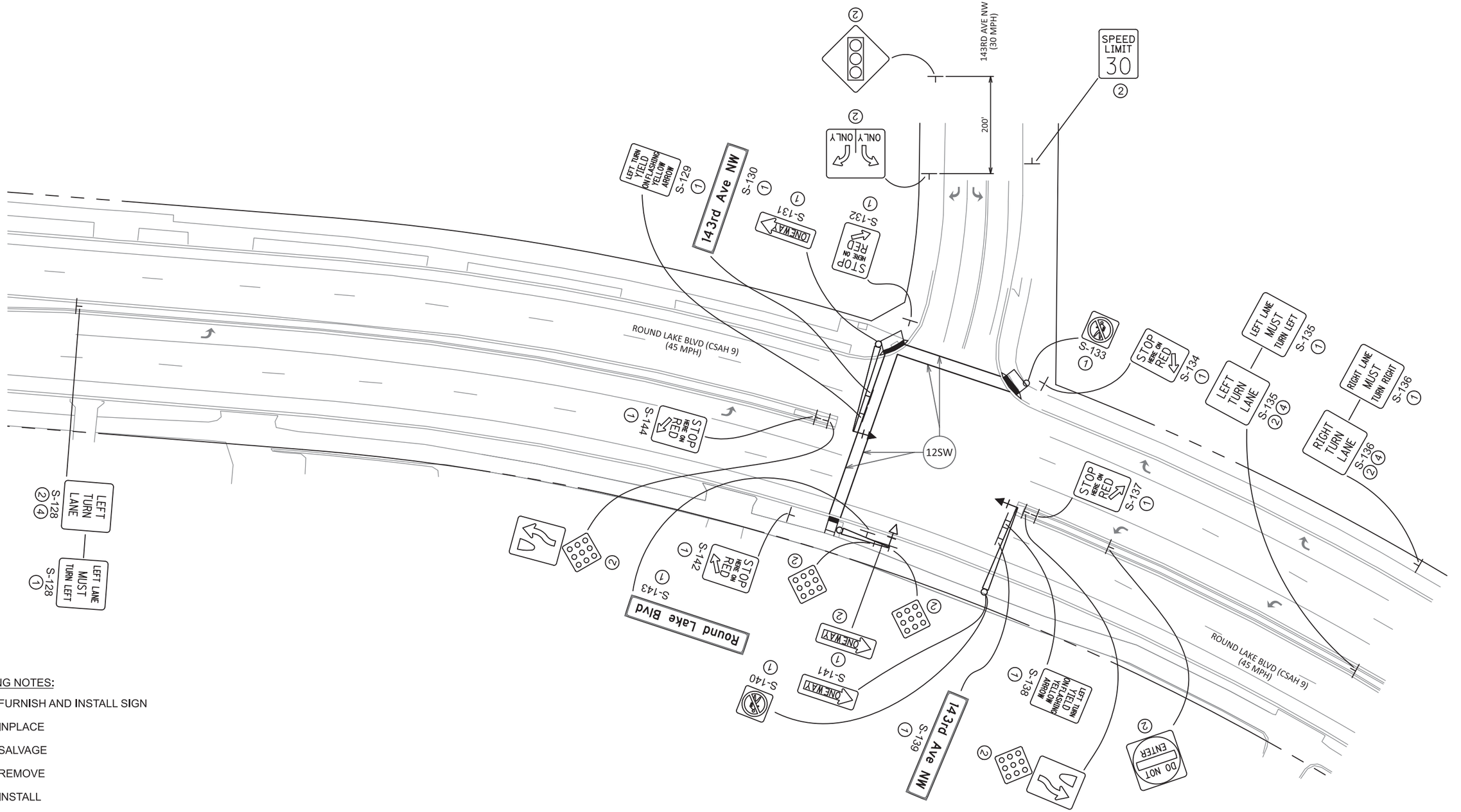
9/25/2025

GENERAL NOTE:

1. ALL "STOP HERE ON RED" SIGNS/POSTS WILL BE REMOVED BY OTHERS AFTER PERMANENT STRIPING IS COMPLETED BY OTHERS AS PART OF A SEPARATE COUNTY OVERLAY PROJECT.

50

SCALE IN FEET




SIGNING NOTES:

① FURNISH AND INSTALL SIGN

② INPLACE

③ SALVAGE

④ REMOVE

⑤ INSTALL

| DESIGN TEAM | NO. | BY | DATE | REVISIONS |
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Printed Name: JOHN M. GRAY

Lic. No. 22457 Date: 09/23/2025

SEH

ANOKA COUNTY, MN
CSAH 9
SAP 002-609-023
CITY OF ANDOVER SAP 198-020-042, CITY PROJECT 25-13
CITY OF ANOKA SAP 103-020-020

SIGNING AND PAVEMENT MARKING PLAN

CSAH 9 (ROUND LAKE BOULEVARD) AT 143RD AVENUE

74/133

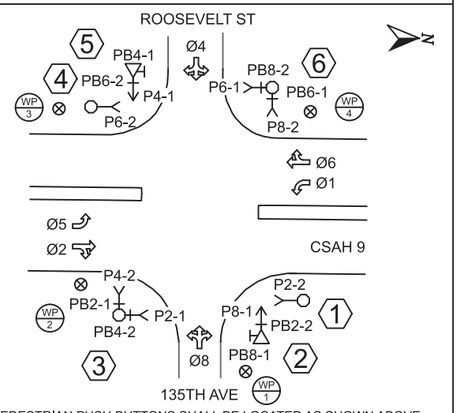
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## LED SIGNAL HEAD CHART

| SIGNAL HEAD | R | Y | G | 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 ARE 12" LED AND ARE INPLACE (REUSE AS SHOWN IN PLANS).
- INPLACE SIGNAL HEADS 4-3 AND 8-3 SHALL BE RELOCATED BY CONTRACTOR TO TEMPORARY PEDESTAL POLES 2 AND 5 RESPECTIVELY (INCIDENTAL).

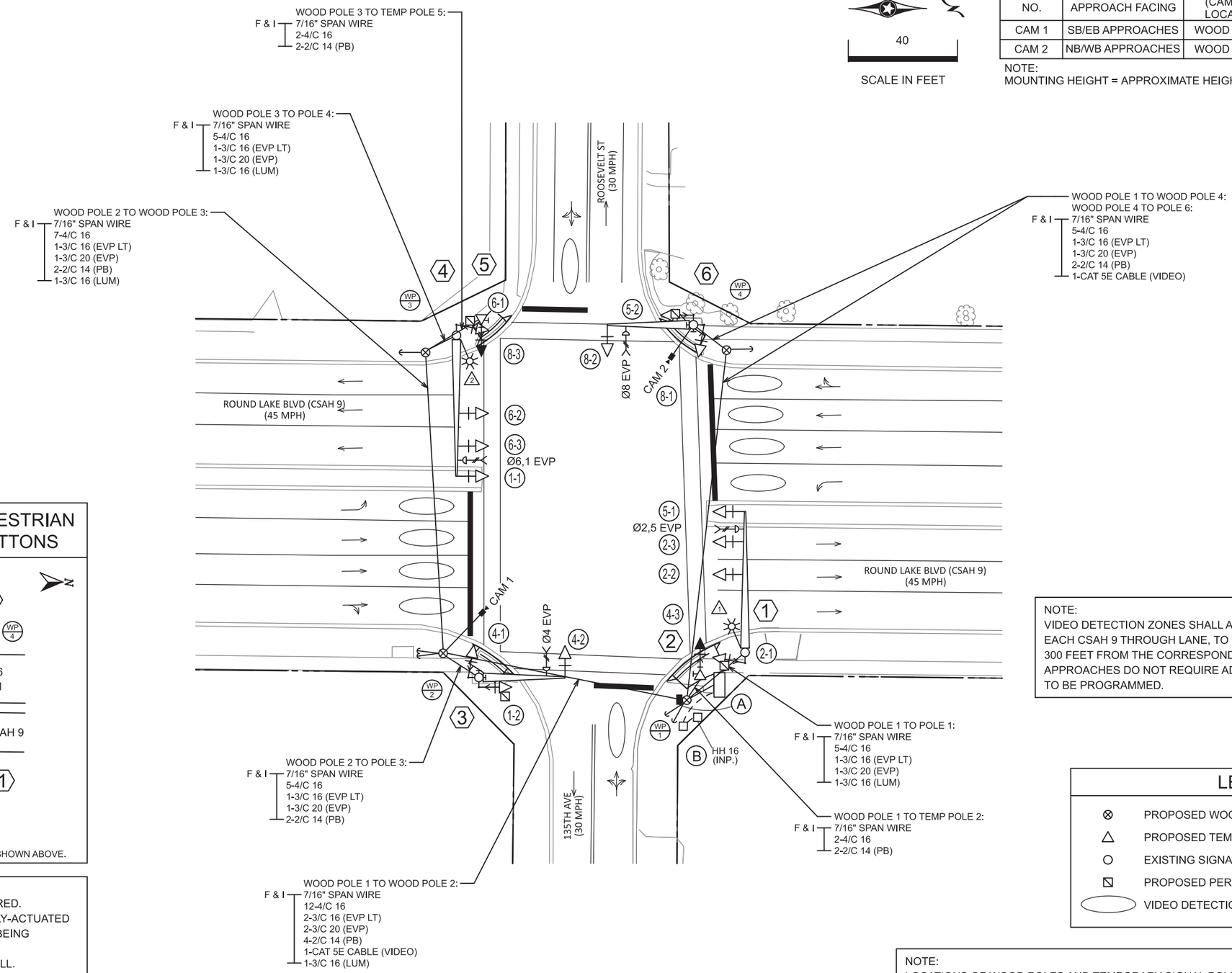
## CONTROLLER PHASING, PEDESTRIAN INDICATIONS AND PUSH BUTTONS




PEDESTRIAN PUSH BUTTONS SHALL BE LOCATED AS SHOWN ABOVE.

SIGNAL SYSTEM OPERATIONS:
- SIGNAL SYSTEM FLASH MODE SHALL BE ALL RED.
- NORMAL OPERATION SHALL BE 6 PHASE FULLY-ACTUATED VEHICLE OPERATION, WITH PHASES 1 AND 5 BEING PROTECTED LEFT TURN PHASES.
- PHASES 2 AND 6 SHALL BE ON VEHICLE RECALL.

SEE NEXT SHEET FOR DETAILED POLE AND CONTROLLER CABINET NOTES.




40

SCALE IN FEET

## FURNISH & INSTALL VIDEO DETECTORS

| CAMERA NO. | INTERSECTION APPROACH FACING | SIGNAL POLE (CAMERA) LOCATION | CAMERA MOUNTED AT | MOUNTING HEIGHT |
|---|---|---|---|---|
| CAM 1 | SB/EB APPROACHES | WOOD POLE 2 | ON WOOD POLE | 30' |
| CAM 2 | NB/WB APPROACHES | WOOD POLE 4 | ON WOOD POLE | 30' |

NOTE:
MOUNTING HEIGHT = APPROXIMATE HEIGHT ABOVE ADJACENT GROUND LINE.

NOTE:
VIDEO DETECTION ZONES SHALL ALSO BE PROGRAMMED FOR EACH CSAH 9 THROUGH LANE, TO BE PLACED APPROXIMATELY 300 FEET FROM THE CORRESPONDING STOP BARS. SIDE STREET APPROACHES DO NOT REQUIRE ADVANCE DETECTION ZONES TO BE PROGRAMMED.

## LEGEND

- ⊗ PROPOSED WOOD POLE LOCATION
- △ PROPOSED TEMPORARY PEDESTAL POLE LOCATION
- ○ EXISTING SIGNAL FOUNDATION
- ⧅ PROPOSED PERMANENT POLE LOCATION
- ⬭ VIDEO DETECTION ZONE

NOTE:
LOCATIONS OF WOOD POLES AND TEMPORARY SIGNAL POLES CURRENTLY SHOWN ON THIS PLAN ARE ESTIMATED LOCATIONS ONLY AND SHALL BE COORDINATED TO AVOID CONFLICTS WITH EXISTING SIGNAL POLES, NEW SIGNAL POLES, AND CURB RAMP LANDING AREAS.

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| DESIGN TEAM | NO. | BY | DATE | REVISIONS |
|---|---|---|---|---|
| DRAWN BY: MRB | | | | |
| DESIGNER: MRB | | | | |
| CHECKED BY: JMG | | | | |

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Certified By: Licensed Professional Engineer — Printed Name: JOHN M. GRAY — Lic. No. 22457 — Date: 09/23/2025

SEH

ANOKA COUNTY, MN
CSAH 9
SAP 002-609-023
CITY OF ANDOVER SAP 198-020-042, CITY PROJECT 25-13
CITY OF ANOKA SAP 103-020-020

TEMPORARY SIGNAL SYSTEM "A"
INTERSECTION LAYOUT
CSAH 9 (ROUND LAKE BOULEVARD) AT 135TH AVENUE/ROOSEVELT STREET

NOTES:

1) LOCATION OF WOOD POLES AND TEMPORARY SIGNAL STANDARDS SHALL BE DETERMINED IN FIELD BY THE ENGINEER.
2) ALL VEHICLE AND PEDESTRIAN SIGNAL HEADS ARE INPLACE AND SHALL BE REUSED AND MADE OPERATIONAL AS SHOWN.
3) ALL TRAFFIC SIGNAL MATERIALS AND ELECTRICAL EQUIPMENT TO BE FURNISHED AND INSTALLED BY CONTRACTOR FOR THE TEMPORARY SIGNAL SYSTEM SHALL BE APPROVED BY ENGINEER PRIOR TO INSTALLATION AT THE INTERSECTION. SEE SPECIAL PROVISIONS.
4) MOVEMENT/RELOCATION OF TEMPORARY POLES AND VIDEO CAMERAS SHALL BE INCLUDED IN THE PAY ITEM FOR "TEMPORARY SIGNAL SYSTEM A." SEE SPECIAL PROVISIONS.
5) RELOCATION OF SPAN WIRES AND CABLES FROM WOOD POLES AND EXISTING SIGNAL POLES (AS NECESSARY) TO ACCOMMODATE SIDEWALK AND SIGNAL CONSTRUCTION WILL BE CONSIDERED INCIDENTAL.
6) SEE SPECIAL PROVISIONS REGARDING VIDEO DETECTION SYSTEM (NEW AND LATEST MODEL "GRIDSMART" SYSTEM COMPONENTS) TO BE FURNISHED AND INSTALLED BY THE CONTRACTOR, AND FOR ALL VIDEO DETECTION SYSTEM COMPONENTS TO BE TURNED OVER TO THE COUNTY (FOR THE COUNTY TO OWN) AFTER TEMPORARY SIGNAL SYSTEM IS REMOVED AND NEW PERMANENT SIGNAL SYSTEM IS MADE OPERATIONAL (INCLUDED AS PART OF PAY ITEM FOR "TEMPORARY SIGNAL SYSTEM A").
7) (F & I) = ITEMS TO BE FURNISHED & INSTALLED BY CONTRACTOR.
   (S & I) = ITEMS TO BE SALVAGED & INSTALLED BY CONTRACTOR.
8) CONTRACTOR SHALL BAG (AND MAKE IN-OPERATIONAL) ALL VEHICLE SIGNAL HEADS NOT IN USE DURING CONSTRUCTION.
9) 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 TURNED OFF DURING NON-PEAK TRAFFIC PERIODS (FOR SWITCHOVERS FROM EXISTING SIGNAL SYSTEM TO TEMPORARY SIGNAL SYSTEM, AND FROM TEMPORARY SIGNAL SYSTEM TO NEW PERMANENT SIGNAL SYSTEM).
10) CONTRACTOR SHALL PROTECT AND MAINTAIN ALL ITEMS OF THE EXISTING PERMANENT SIGNAL SYSTEM THAT WILL BE REUSED AS PART OF THE TEMPORARY SIGNAL SYSTEM AND SHALL REPLACE ITEMS DAMAGED DURING CONSTRUCTION WITH NEW ITEMS (AT NO EXPENSE TO THE COUNTY).
11) EXISTING EVP DETECTORS AND CONFIRMATION LIGHTS, AND EXISTING STREET NAME SIGNS SHALL BE REUSED, MAINTAINED INPLACE, AND KEPT IN OPERATION AS PART OF THE TEMPORARY SIGNAL SYSTEM.
12) REMOVAL OF ALL TEMPORARY SIGNAL SYSTEM COMPONENTS BY THE CONTRACTOR IS INCLUDED AS PART OF THE "TEMPORARY SIGNAL SYSTEM A" PAY ITEM.

**(1)**

INPLACE (MAINTAIN INPLACE)
- A100 POLE FOUNDATION
- TYPE A100-A-50-D40-9 (DAVIT AT 350 DEG)
- LUMINAIRE-250 W HPS W/ PEC & CHECK SWITCH
- 3-ONE WAY SIGNALS-OVERHEAD (0', 11' & 23' FROM END OF MAST ARM)
- TYPE 10B-POLE MOUNTED 180 DEG
- STREET NAME SIGN PANEL-OVERHEAD
- ONE WAY EVP DETECTOR AND LIGHT (Ø2,5)

F & I
- EXTEND TO WOOD POLE 1:
- 7/16" SPAN WIRE
- 5-4/C 16
- 1-3/C 16 (EVP LT)
- 1-3/C 20 (EVP)
- 1-3/C 16 (LUM)

**(2)**

F & I
- TEMPORARY SIGNAL STANDARD (PEDESTAL POLE WITH 3' DIAMETER X 1' THICK MOVEABLE CONCRETE BASE) - SEE DETAILS
- 12' (MIN.) PEDESTAL POLE AND POST COLLAR
- 1-TYPE 1C BRACKETING (FOR 4-3, P8-1)
- 2-PEDESTRIAN PUSH BUTTONS & SIGNS (R10-3e)
- EXTEND TO WOOD POLE 1:
- 7/16" SPAN WIRE
- 2-4/C 16
- 2-2/C 14 (PB)

INPLACE (S & I)
- 1-ONE WAY SIGNAL (4-3)
- 1-PED SIGNAL (P8-1)

SALVAGE FROM INPLACE PED POLE AND INSTALL ON TEMP SIGNAL STD.

**(3)**

INPLACE (MAINTAIN INPLACE)
- P90 POLE FOUNDATION
- TYPE P90-A-30
- ONE WAY SIGNAL-OVERHEAD
- 2-TYPE 10B-POLE MOUNTED 90 DEG AND 180 DEG
- 2-PEDESTRIAN PUSH BUTTONS AND SIGNS
- STREET NAME SIGN PANEL-OVERHEAD
- ONE WAY EVP DETECTOR AND LIGHT (Ø4)

F & I
- EXTEND TO WOOD POLE 2:
- 7/16" SPAN WIRE
- 5-4/C 16
- 1-3/C 16 (EVP LT)
- 1-3/C 20 (EVP)
- 2-2/C 14 (PB)

**(4)**

INPLACE (MAINTAIN INPLACE)
- A100 POLE FOUNDATION
- TYPE A100-A-50-D40-9 (DAVIT AT 350 DEG)
- LUMINAIRE-LED
- 3-ONE WAY SIGNALS-OVERHEAD (0', 11' & 23' FROM END OF MAST ARM)
- TYPE 10B-POLE MOUNTED 180 DEG
- STREET NAME SIGN PANEL-OVERHEAD
- ONE WAY EVP DETECTOR AND LIGHT (Ø6,1)

F & I
- EXTEND TO WOOD POLE 3:
- 7/16" SPAN WIRE
- 5-4/C 16
- 1-3/C 16 (EVP LT)
- 1-3/C 20 (EVP)
- 1-3/C 16 (LUM)

**(5)**

F & I
- TEMPORARY SIGNAL STANDARD (PEDESTAL POLE WITH 3' DIAMETER X 1' THICK MOVEABLE CONCRETE BASE) - SEE DETAILS
- 12' (MIN.) PEDESTAL POLE AND POST COLLAR
- 1-TYPE 1C BRACKETING (FOR 8-3, P4-1)
- 2-PEDESTRIAN PUSH BUTTONS & SIGNS (R10-3e)
- EXTEND TO WOOD POLE 3:
- 7/16" SPAN WIRE
- 2-4/C 16
- 2-2/C 14 (PB)

INPLACE (S & I)
- 1-ONE WAY SIGNAL (8-3)
- 1-PED SIGNAL (P4-1)

SALVAGE FROM INPLACE PED POLE AND INSTALL ON TEMP SIGNAL STD.

**(6)**

INPLACE (MAINTAIN INPLACE)
- P90 POLE FOUNDATION
- TYPE P90-A-30
- ONE WAY SIGNAL-OVERHEAD
- 2-TYPE 10B-POLE MOUNTED 90 DEG AND 180 DEG
- 2-PEDESTRIAN PUSH BUTTONS AND SIGNS
- STREET NAME SIGN PANEL-OVERHEAD
- ONE WAY EVP DETECTOR AND LIGHT (Ø8)

F & I
- EXTEND TO WOOD POLE 4:
- 7/16" SPAN WIRE
- 5-4/C 16
- 1-3/C 16 (EVP LT)
- 1-3/C 20 (EVP)
- 2-2/C 14 (PB)

**(A)**

INPLACE (S & I) — CONTROLLER AND CABINET

F & I
- TEMPORARY CABINET BASE (PLACE NEXT TO WOOD POLE 1)
- VIDEO DETECTION SYSTEM CABINET COMPONENTS
- EXTEND INTO HH 16:
- 2" CONDUIT
- 2-3/C 16 (LUM)
- 3-1/C 6 (SIGNAL SERVICE)

**(B)**

INPLACE (MAINTAIN INPLACE)
- SERVICE CABINET
- CABINET FOUNDATION
- EXTENDED TO SOP:
- 2" RSC
- 3-1/C 6 (INPUT POWER)
- EXTENDED INTO HH 16:
- 1.5" CONDUIT

F & I
- 2-3/C 16 (LUM)
- 3-1/C 6 (SIGNAL SERVICE)

**(WP 1)**

F & I
- 50' WOOD POLE-CLASS 2
- 2-SIDEWALK DOWN GUYS, GUY GUARDS, AND SCREW ANCHORS
- EXTEND FROM SPAN WIRES TO WOOD POLE MOUNTED CONTROLLER CABINET:
- 24-4/C 16
- 4-3/C 16 (EVP LT)
- 4-3/C 20 (EVP)
- 8-2/C 14 (PB)
- 2-CAT 5E CABLES (VIDEO)
- 2-3/C 16 (LUM)

**(WP 2)**

F & I
- 50' WOOD POLE-CLASS 2
- 2-SIDEWALK DOWN GUYS, GUY GUARDS, AND SCREW ANCHORS
- VIDEO CAMERA (CAM 1)
- WOOD POLE MOUNTING HARDWARE FOR VIDEO CAMERA

**(WP 3)**

F & I
- 50' WOOD POLE-CLASS 2
- 1-SIDEWALK DOWN GUY, GUY GUARD, AND SCREW ANCHOR

**(WP 4)**

F & I
- 50' WOOD POLE-CLASS 2
- 1-SIDEWALK DOWN GUY, GUY GUARD. AND SCREW ANCHOR
- VIDEO CAMERA (CAM 2)
- WOOD POLE MOUNTING HARDWARE FOR VIDEO CAMERA

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| DESIGN TEAM | NO. | BY | DATE | REVISIONS |
|---|---|---|---|---|
| DRAWN BY: MRB | | | | |
| DESIGNER: MRB | | | | |
| CHECKED BY: JMG | | | | |

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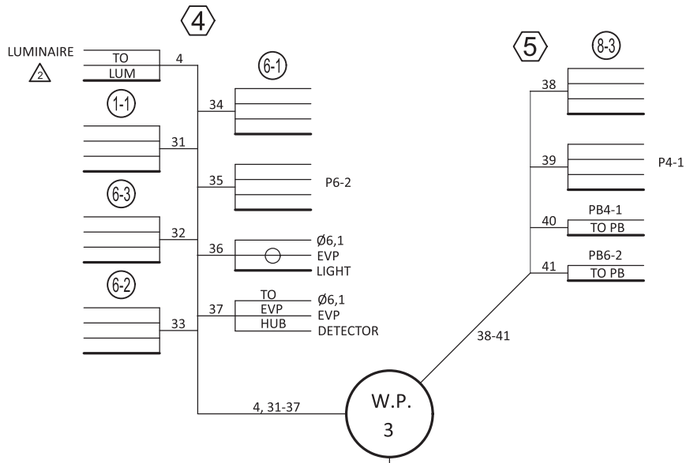
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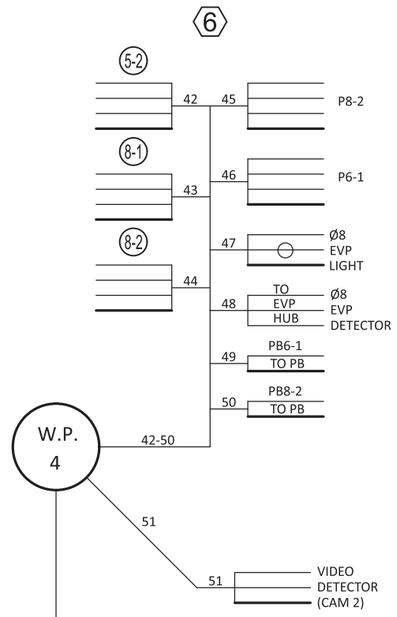
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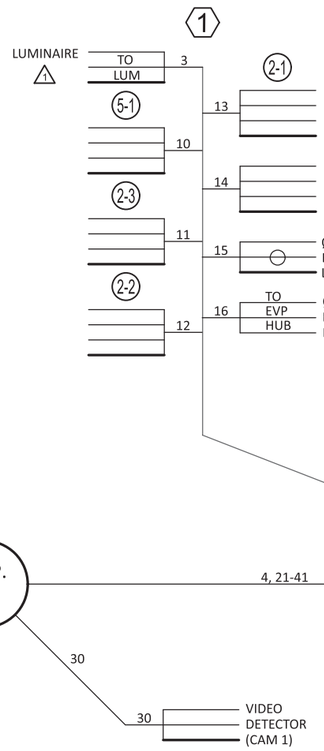
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CSAH 9
SAP 002-609-023
CITY OF ANDOVER SAP 198-020-042, CITY PROJECT 25-13
CITY OF ANOKA SAP 103-020-020

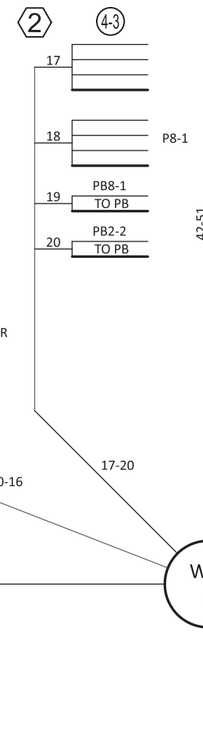
# TEMPORARY SIGNAL SYSTEM "A"

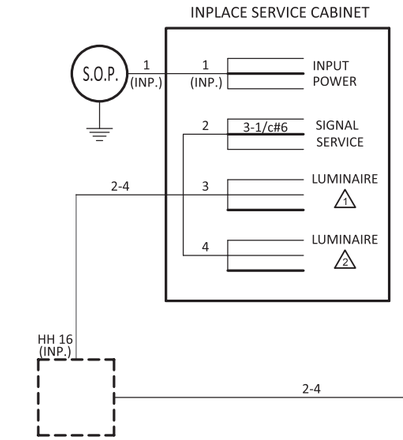
POLE AND CABINET NOTES
CSAH 9 (ROUND LAKE BOULEVARD) AT 135TH AVENUE/ROOSEVELT STREET




## NOTES:

1) ALL CABLES AND CONDUCTORS SHALL BE NEW AND SHALL BE F & I BY CONTRACTOR EXCEPT AS OTHERWISE NOTED.

2) NO SPLICES ARE ALLOWED FOR ANY CABLE FROM CABINETS TO THE DEVICES ON EACH POLE.

## RELOCATED CONTROLLER AND CABINET

| | | |
|---|---|---|
| 2 — 3-1/c#6 — SIGNAL SERVICE | 30 — VIDEO DETECTOR (CAM 1) | 51 — VIDEO DETECTOR (CAM 2) |
| 10 — RLA 5-1, YLA 5-1, GLA 5-1, NEU 5-1 | 31 — RLA 1-1, YLA 1-1, GLA 1-1, NEU 1-1 | |
| 11 — RED 2-3, YEL 2-3, GRN 2-3, NEU 2-3 | 32 — RED 6-3, YEL 6-3, GRN 6-3, NEU 6-3 | |
| 12 — RED 2-2, YEL 2-2, GRN 2-2, NEU 2-2 | 33 — RED 6-2, YEL 6-2, GRN 6-2, NEU 6-2 | |
| 13 — RED 2-1, YEL 2-1, GRN 2-1, NEU 2-1 | 34 — RED 6-1, YEL 6-1, GRN 6-1, NEU 6-1 | |
| 14 — DWK P2-2, WLK P2-2, SPR, NEU P2-2 | 35 — DWK P6-2, WLK P6-2, SPR, NEU P6-2 | |
| 15 — Ø2,5 EVP LT, EQG, NEU | 36 — Ø6,1 EVP LT, EQG, NEU | |
| 16 — Ø2,5 EVP DETECTOR | 37 — Ø6,1 EVP DETECTOR | |
| 17 — RED 4-3, YEL 4-3, GRN 4-3, NEU 4-3 | 38 — RED 8-3, YEL 8-3, GRN 8-3, NEU 8-3 | |
| 18 — DWK P8-1, WLK P8-1, SPR, NEU P8-1 | 39 — DWK P4-1, WLK P4-1, SPR, NEU P4-1 | |
| 19 — PB8-1 NEU | 40 — PB4-1 NEU | |
| 20 — PB2-2 NEU | 41 — PB6-2 NEU | |
| 21 — RLA 1-2, YLA 1-2, GLA 1-2, NEU 1-2 | 42 — RLA 5-2, YLA 5-2, GLA 5-2, NEU 5-2 | |
| 22 — RED 4-1, YEL 4-1, GRN 4-1, NEU 4-1 | 43 — RED 8-1, YEL 8-1, GRN 8-1, NEU 8-1 | |
| 23 — RED 4-2, YEL 4-2, GRN 4-2, NEU 4-2 | 44 — RED 8-2, YEL 8-2, GRN 8-2, NEU 8-2 | |
| 24 — DWK P4-2, WLK P4-2, SPR, NEU P4-2 | 45 — DWK P8-2, WLK P8-2, SPR, NEU P8-2 | |
| 25 — DWK P2-1, WLK P2-1, SPR, NEU P2-1 | 46 — DWK P6-1, WLK P6-1, SPR, NEU P6-1 | |
| 26 — PB2-1 NEU | 47 — Ø8 EVP LT, EQG, NEU | |
| 27 — PB4-2 NEU | 48 — Ø8 EVP DETECTOR | |
| 28 — Ø4 EVP LT, EQG, NEU | 49 — PB6-1 NEU | |
| 29 — Ø4 EVP DETECTOR | 50 — PB8-2 NEU | |

| DESIGN TEAM | NO. | BY | DATE | REVISIONS |
|---|---|---|---|---|
| DRAWN BY: MRB | | | | |
| DESIGNER: MRB | | | | |
| 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.

Certified By: Licensed Professional Engineer — Printed Name: JOHN M. GRAY — Lic. No. 22457 — Date: 09/23/2025

SEH

ANOKA COUNTY, MN
CSAH 9
SAP 002-609-023
CITY OF ANDOVER SAP 198-020-042, CITY PROJECT 25-13
CITY OF ANOKA SAP 103-020-020

# TEMPORARY SIGNAL SYSTEM "A"

FIELD WIRING DIAGRAM
CSAH 9 (ROUND LAKE BOULEVARD) AT 135TH AVENUE/ROOSEVELT STREET

77 / 133

FILE: X:\AE\A\ANOK\181692\5-final-dsgn\51-drawings\40-TransHwy\Plansheets\CT181692_tsgl_Sheets.dgn
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9/25/2025
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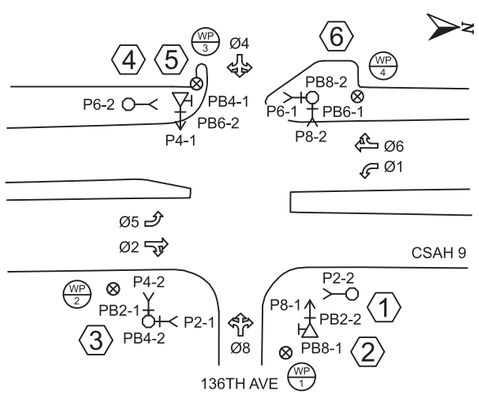
9/25/2025

## LED SIGNAL HEAD CHART

| SIGNAL HEAD | R | Y | G | 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 ARE 12" LED AND ARE INPLACE (REUSE AS SHOWN IN PLANS).
- INPLACE SIGNAL HEADS 4-3 AND 8-3 SHALL BE RELOCATED BY CONTRACTOR TO TEMPORARY PEDESTAL POLES 2 AND 5 RESPECTIVELY (INCIDENTAL).

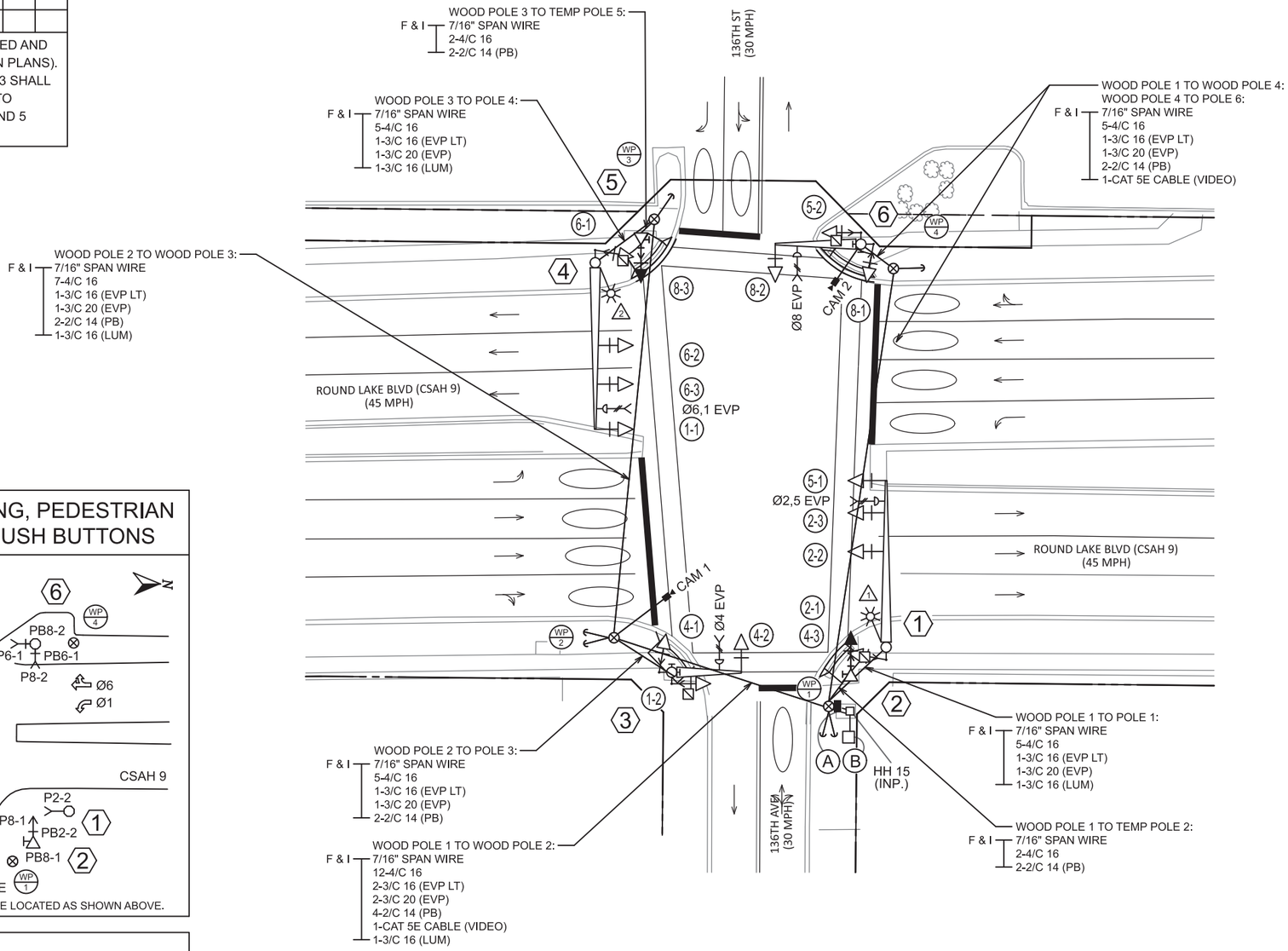
## CONTROLLER PHASING, PEDESTRIAN INDICATIONS AND PUSH BUTTONS




PEDESTRIAN PUSH BUTTONS SHALL BE LOCATED AS SHOWN ABOVE.

SIGNAL SYSTEM OPERATIONS:
- SIGNAL SYSTEM FLASH MODE SHALL BE ALL RED.
- NORMAL OPERATION SHALL BE 6 PHASE FULLY-ACTUATED VEHICLE OPERATION, WITH PHASES 1 AND 5 BEING PROTECTED LEFT TURN PHASES.
- PHASES 2 AND 6 SHALL BE ON VEHICLE RECALL.

SEE NEXT SHEET FOR DETAILED POLE AND CONTROLLER CABINET NOTES.




## FURNISH & INSTALL VIDEO DETECTORS

| CAMERA NO. | INTERSECTION APPROACH FACING | SIGNAL POLE (CAMERA) LOCATION | CAMERA MOUNTED AT | MOUNTING HEIGHT |
|---|---|---|---|---|
| CAM 1 | SB/EB APPROACHES | WOOD POLE 2 | ON WOOD POLE | 30' |
| CAM 2 | NB/WB APPROACHES | WOOD POLE 4 | ON WOOD POLE | 30' |

NOTE:
MOUNTING HEIGHT = APPROXIMATE HEIGHT ABOVE ADJACENT GROUND LINE.

NOTE:
VIDEO DETECTION ZONES SHALL ALSO BE PROGRAMMED FOR EACH CSAH 9 THROUGH LANE, TO BE PLACED APPROXIMATELY 300 FEET FROM THE CORRESPONDING STOP BARS. SIDE STREET APPROACHES DO NOT REQUIRE ADVANCE DETECTION ZONES TO BE PROGRAMMED.

## LEGEND

- ⊗ PROPOSED WOOD POLE LOCATION
- △ PROPOSED TEMPORARY PEDESTAL POLE LOCATION
- ○ EXISTING SIGNAL FOUNDATION
- ⧅ PROPOSED PERMANENT POLE LOCATION
- ⬭ VIDEO DETECTION ZONE

NOTE:
LOCATIONS OF WOOD POLES AND TEMPORARY SIGNAL POLES CURRENTLY SHOWN ON THIS PLAN ARE ESTIMATED LOCATIONS ONLY AND SHALL BE COORDINATED TO AVOID CONFLICTS WITH EXISTING SIGNAL POLES, NEW SIGNAL POLES, AND CURB RAMP LANDING AREAS.

FILE: X:\AE\A\ANOK\181692\5-final-dsgn\51-drawings\40-TransHwy\Plansheets\CT181692_tsgl_Sheets.dgn
MODEL: tsgl04

| DESIGN TEAM | NO. | BY | DATE | REVISIONS |
|---|---|---|---|---|
| DRAWN BY: MRB | | | | |
| DESIGNER: MRB | | | | |
| 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.

Certified By: Licensed Professional Engineer — Printed Name: JOHN M. GRAY — Lic. No. 22457 — Date: 09/23/2025

SEH

ANOKA COUNTY, MN
CSAH 9
SAP 002-609-023
CITY OF ANDOVER SAP 198-020-042, CITY PROJECT 25-13
CITY OF ANOKA SAP 103-020-020

TEMPORARY SIGNAL SYSTEM "B"
INTERSECTION LAYOUT
CSAH 9 (ROUND LAKE BOULEVARD) AT 136TH AVENUE

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9/25/2025

NOTES:

1) LOCATION OF WOOD POLES AND TEMPORARY SIGNAL STANDARDS SHALL BE DETERMINED IN FIELD BY THE ENGINEER.
2) ALL VEHICLE AND PEDESTRIAN SIGNAL HEADS ARE INPLACE AND SHALL BE REUSED AND MADE OPERATIONAL AS SHOWN.
3) ALL TRAFFIC SIGNAL MATERIALS AND ELECTRICAL EQUIPMENT TO BE FURNISHED AND INSTALLED BY CONTRACTOR FOR THE TEMPORARY SIGNAL SYSTEM SHALL BE APPROVED BY ENGINEER PRIOR TO INSTALLATION AT THE INTERSECTION. SEE SPECIAL PROVISIONS.
4) MOVEMENT/RELOCATION OF TEMPORARY POLES AND VIDEO CAMERAS SHALL BE INCLUDED IN THE PAY ITEM FOR "TEMPORARY SIGNAL SYSTEM B." SEE SPECIAL PROVISIONS.
5) RELOCATION OF SPAN WIRES AND CABLES FROM WOOD POLES AND EXISTING SIGNAL POLES (AS NECESSARY) TO ACCOMMODATE SIDEWALK AND SIGNAL CONSTRUCTION WILL BE CONSIDERED INCIDENTAL.
6) SEE SPECIAL PROVISIONS REGARDING VIDEO DETECTION SYSTEM TO (NEW AND LATEST MODEL "GRIDSMART" SYSTEM COMPONENTS) TO BE FURNISHED AND INSTALLED BY THE CONTRACTOR, AND FOR ALL VIDEO DETECTION SYSTEM COMPONENTS TO BE TURNED OVER TO THE COUNTY (FOR THE COUNTY TO OWN) AFTER TEMPORARY SIGNAL SYSTEM IS REMOVED AND NEW PERMANENT SIGNAL SYSTEM IS MADE OPERATIONAL (INCLUDED AS PART OF PAY ITEM FOR "TEMPORARY SIGNAL SYSTEM B").
7) (F & I) = ITEMS TO BE FURNISHED & INSTALLED BY CONTRACTOR.
   (S & I) = ITEMS TO BE SALVAGED & INSTALLED BY CONTRACTOR.
8) CONTRACTOR SHALL BAG (AND MAKE IN-OPERATIONAL) ALL VEHICLE SIGNAL HEADS NOT IN USE DURING CONSTRUCTION.
9) 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 TURNED OFF DURING NON-PEAK TRAFFIC PERIODS (FOR SWITCHOVERS FROM EXISTING SIGNAL SYSTEM TO TEMPORARY SIGNAL SYSTEM, AND FROM TEMPORARY SIGNAL SYSTEM TO NEW PERMANENT SIGNAL SYSTEM).
10) CONTRACTOR SHALL PROTECT AND MAINTAIN ALL ITEMS OF THE EXISTING PERMANENT SIGNAL SYSTEM THAT WILL BE REUSED AS PART OF THE TEMPORARY SIGNAL SYSTEM AND SHALL REPLACE ITEMS DAMAGED DURING CONSTRUCTION WITH NEW ITEMS (AT NO EXPENSE TO THE COUNTY).
11) EXISTING EVP DETECTORS AND CONFIRMATION LIGHTS, AND EXISTING STREET NAME SIGNS SHALL BE REUSED, MAINTAINED INPLACE, AND KEPT IN OPERATION AS PART OF THE TEMPORARY SIGNAL SYSTEM.
12) REMOVAL OF ALL TEMPORARY SIGNAL SYSTEM COMPONENTS BY THE CONTRACTOR IS INCLUDED AS PART OF THE "TEMPORARY SIGNAL SYSTEM B" PAY ITEM.

**1**

INPLACE (MAINTAIN INPLACE)
- A100 POLE FOUNDATION
- TYPE A100-A-50-D40-9 (DAVIT AT 350 DEG)
- LUMINAIRE-200 W HPS W/ PEC & CHECK SWITCH
- 3-ONE WAY SIGNALS-OVERHEAD (0', 11' & 22' FROM END OF MAST ARM)
- TYPE 10B-POLE MOUNTED 180 DEG
- STREET NAME SIGN PANEL-OVERHEAD
- ONE WAY EVP DETECTOR AND LIGHT (Ø2,5)

F & I
- EXTEND TO WOOD POLE 1:
- 7/16" SPAN WIRE
- 5-4/C 16
- 1-3/C 16 (EVP LT)
- 1-3/C 20 (EVP)
- 1-3/C 16 (LUM)

**2**

F & I
- TEMPORARY SIGNAL STANDARD (PEDESTAL POLE WITH 3' DIAMETER X 1' THICK MOVEABLE CONCRETE BASE) - SEE DETAILS
- 12' (MIN.) PEDESTAL POLE AND POST COLLAR
- TYPE 1C BRACKETING (FOR 4-3, P8-1)
- 2-PEDESTRIAN PUSH BUTTONS & SIGNS (R10-3e)
- EXTEND TO WOOD POLE 1:
- 7/16" SPAN WIRE
- 2-4/C 16
- 2-2/C 14 (PB)

INPLACE (S & I)
- 1-ONE WAY SIGNAL (4-3)
- 1-PED SIGNAL (P8-1)

SALVAGE FROM INPLACE PED POLE AND INSTALL ON TEMP SIGNAL STD.

**3**

INPLACE (MAINTAIN INPLACE)
- P80 POLE FOUNDATION
- TYPE P80-A-20
- ONE WAY SIGNAL-OVERHEAD
- 2-TYPE 10B-POLE MOUNTED 90 DEG AND 180 DEG
- 2-PEDESTRIAN PUSH BUTTONS AND SIGNS
- STREET NAME SIGN PANEL-OVERHEAD
- ONE WAY EVP DETECTOR AND LIGHT (Ø4)

F & I
- EXTEND TO WOOD POLE 2:
- 7/16" SPAN WIRE
- 5-4/C 16
- 1-3/C 16 (EVP LT)
- 1-3/C 20 (EVP)
- 2-2/C 14 (PB)

**4**

INPLACE (MAINTAIN INPLACE)
- A100 POLE FOUNDATION
- TYPE A100-A-50-D40-9 (DAVIT AT 350 DEG)
- LUMINAIRE-200 W HPS W/ PEC & CHECK SWITCH
- 3-ONE WAY SIGNALS-OVERHEAD (0', 14' & 26' FROM END OF MAST ARM)
- TYPE 10B-POLE MOUNTED 180 DEG
- STREET NAME SIGN PANEL-OVERHEAD
- ONE WAY EVP DETECTOR AND LIGHT (Ø6,1)

F & I
- EXTEND TO WOOD POLE 3:
- 7/16" SPAN WIRE
- 5-4/C 16
- 1-3/C 16 (EVP LT)
- 1-3/C 20 (EVP)
- 1-3/C 16 (LUM)

**5**

F & I
- TEMPORARY SIGNAL STANDARD (PEDESTAL POLE WITH 3' DIAMETER X 1' THICK MOVEABLE CONCRETE BASE) - SEE DETAILS
- 12' (MIN.) PEDESTAL POLE AND POST COLLAR
- TYPE 1C BRACKETING (FOR 8-3, P4-1)
- 2-PEDESTRIAN PUSH BUTTONS & SIGNS (R10-3e)
- EXTEND TO WOOD POLE 3:
- 7/16" SPAN WIRE
- 2-4/C 16
- 2-2/C 14 (PB)

INPLACE (S & I)
- 1-ONE WAY SIGNAL (8-3)
- 1-PED SIGNAL (P4-1)

SALVAGE FROM INPLACE PED POLE AND INSTALL ON TEMP SIGNAL STD.

**6**

INPLACE (MAINTAIN INPLACE)
- P80 POLE FOUNDATION
- TYPE P80-A-25
- ONE WAY SIGNAL-OVERHEAD
- 2-TYPE 10B-POLE MOUNTED 90 DEG AND 180 DEG
- 2-PEDESTRIAN PUSH BUTTONS AND SIGNS
- STREET NAME SIGN PANEL-OVERHEAD
- ONE WAY EVP DETECTOR AND LIGHT (Ø8)

F & I
- EXTEND TO WOOD POLE 4:
- 7/16" SPAN WIRE
- 5-4/C 16
- 1-3/C 16 (EVP LT)
- 1-3/C 20 (EVP)
- 2-2/C 14 (PB)

**A**

INPLACE (S & I) — CONTROLLER AND CABINET

F & I
- TEMPORARY CABINET BASE (PLACE NEXT TO WOOD POLE 1)
- VIDEO DETECTION SYSTEM CABINET COMPONENTS
- EXTEND INTO HH 15:
- 2" CONDUIT
- 2-3/C 16 (LUM)
- 3-1/C 6 (SIGNAL SERVICE)

**B**

INPLACE (MAINTAIN INPLACE)
- SERVICE CABINET
- CABINET FOUNDATION
- EXTENDED TO SOP:
- 2" RSC
- 3-1/C 6 (INPUT POWER)
- EXTENDED INTO HH 15:
- 1.5" CONDUIT

F & I
- 2-3/C 16 (LUM)
- 3-1/C 6 (SIGNAL SERVICE)

**WP 1**

F & I
- 50' WOOD POLE-CLASS 2
- 2-SIDEWALK DOWN GUYS, GUY GUARDS, AND SCREW ANCHORS
- EXTEND FROM SPAN WIRES TO WOOD POLE MOUNTED CONTROLLER CABINET:
- 24-4/C 16
- 4-3/C 16 (EVP LT)
- 4-3/C 20 (EVP)
- 8-2/C 14 (PB)
- 2-CAT 5E CABLES (VIDEO)
- 2-3/C 16 (LUM)

**WP 2**

F & I
- 50' WOOD POLE-CLASS 2
- 2-SIDEWALK DOWN GUYS, GUY GUARDS, AND SCREW ANCHORS
- VIDEO CAMERA (CAM 1)
- WOOD POLE MOUNTING HARDWARE FOR VIDEO CAMERA

**WP 3**

F & I
- 50' WOOD POLE-CLASS 2
- 1-SIDEWALK DOWN GUY, GUY GUARD, AND SCREW ANCHOR

**WP 4**

F & I
- 50' WOOD POLE-CLASS 2
- 1-SIDEWALK DOWN GUY, GUY GUARD, AND SCREW ANCHOR
- VIDEO CAMERA (CAM 2)
- WOOD POLE MOUNTING HARDWARE FOR VIDEO CAMERA

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MODEL: tsgl05

| DESIGN TEAM | NO. | BY | DATE | REVISIONS |
|---|---|---|---|---|
| DRAWN BY: MRB | | | | |
| DESIGNER: MRB | | | | |
| 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.

Certified By: Licensed Professional Engineer — Printed Name: JOHN M. GRAY — Lic. No. 22457 — Date: 09/23/2025

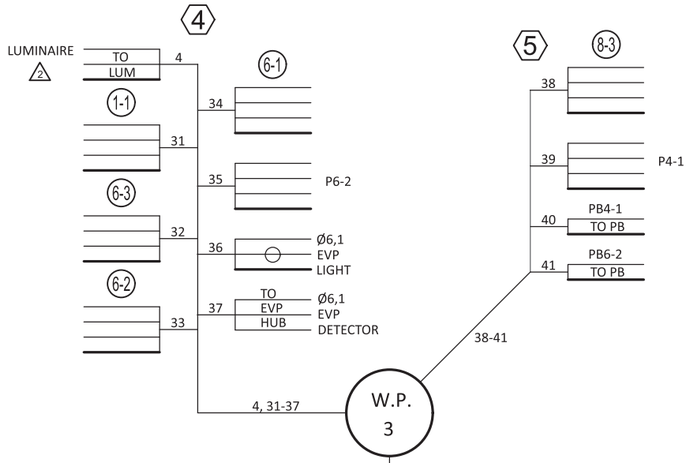
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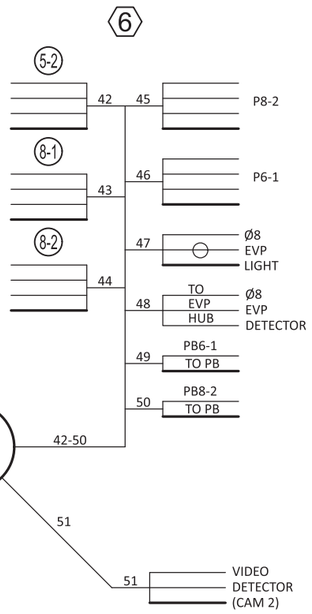
ANOKA COUNTY, MN
CSAH 9
SAP 002-609-023
CITY OF ANDOVER SAP 198-020-042, CITY PROJECT 25-13
CITY OF ANOKA SAP 103-020-020

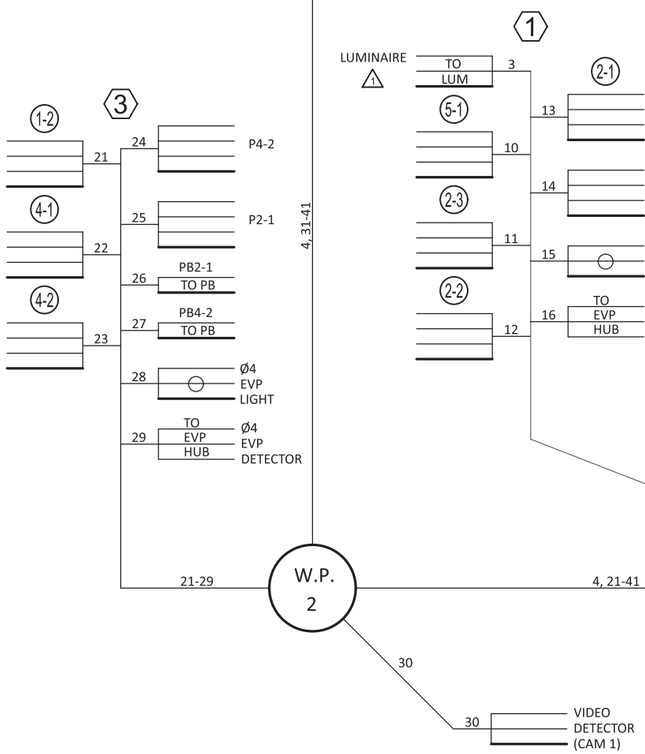
TEMPORARY SIGNAL SYSTEM "B"
POLE AND CABINET NOTES
CSAH 9 (ROUND LAKE BOULEVARD) AT 136TH AVENUE

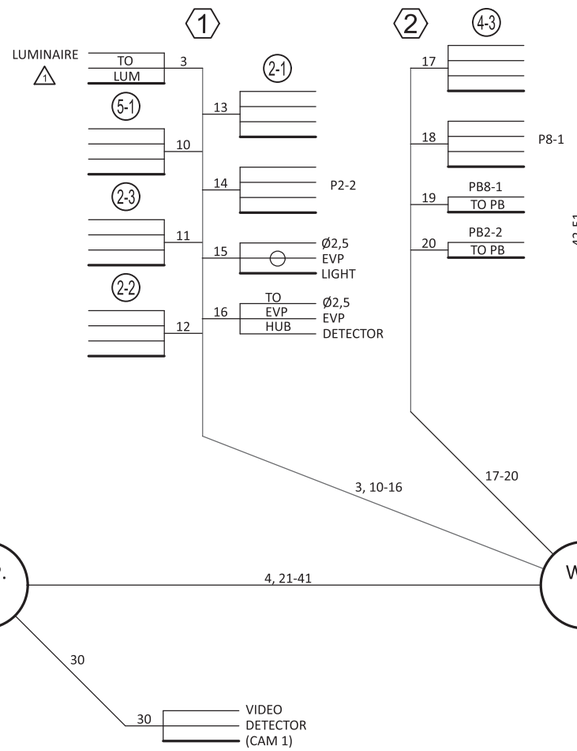
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9/25/2025







3-4, 10-51

## NOTES:

1) ALL CABLES AND CONDUCTORS SHALL BE NEW AND SHALL BE F & I BY CONTRACTOR EXCEPT AS OTHERWISE NOTED.

2) NO SPLICES ARE ALLOWED FOR ANY CABLE FROM CABINETS TO THE DEVICES ON EACH POLE.

## RELOCATED CONTROLLER AND CABINET

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 2 | 3-1/c#6 SIGNAL SERVICE | 30 | VIDEO DETECTOR (CAM 1) | 51 | VIDEO DETECTOR (CAM 2) | | |
| 10 | RLA 5-1<br>YLA 5-1<br>GLA 5-1<br>NEU 5-1 | 31 | RLA 1-1<br>YLA 1-1<br>GLA 1-1<br>NEU 1-1 | | | | |
| 11 | RED 2-3<br>YEL 2-3<br>GRN 2-3<br>NEU 2-3 | 32 | RED 6-3<br>YEL 6-3<br>GRN 6-3<br>NEU 6-3 | | | | |
| 12 | RED 2-2<br>YEL 2-2<br>GRN 2-2<br>NEU 2-2 | 33 | RED 6-2<br>YEL 6-2<br>GRN 6-2<br>NEU 6-2 | | | | |
| 13 | RED 2-1<br>YEL 2-1<br>GRN 2-1<br>NEU 2-1 | 34 | RED 6-1<br>YEL 6-1<br>GRN 6-1<br>NEU 6-1 | | | | |
| 14 | DWK P2-2<br>WLK P2-2<br>SPR<br>NEU P2-2 | 35 | DWK P6-2<br>WLK P6-2<br>SPR<br>NEU P6-2 | | | | |
| 15 | Ø2,5 EVP LT<br>EQG<br>NEU | 36 | Ø6,1 EVP LT<br>EQG<br>NEU | | | | |
| 16 | Ø2,5<br>EVP<br>DETECTOR | 37 | Ø6,1<br>EVP<br>DETECTOR | | | | |
| 17 | RED 4-3<br>YEL 4-3<br>GRN 4-3<br>NEU 4-3 | 38 | RED 8-3<br>YEL 8-3<br>GRN 8-3<br>NEU 8-3 | | | | |
| 18 | DWK P8-1<br>WLK P8-1<br>SPR<br>NEU P8-1 | 39 | DWK P4-1<br>WLK P4-1<br>SPR<br>NEU P4-1 | | | | |
| 19 | PB8-1<br>NEU | 40 | PB4-1<br>NEU | | | | |
| 20 | PB2-2<br>NEU | 41 | PB6-2<br>NEU | | | | |
| 21 | RLA 1-2<br>YLA 1-2<br>GLA 1-2<br>NEU 1-2 | 42 | RLA 5-2<br>YLA 5-2<br>GLA 5-2<br>NEU 5-2 | | | | |
| 22 | RED 4-1<br>YEL 4-1<br>GRN 4-1<br>NEU 4-1 | 43 | RED 8-1<br>YEL 8-1<br>GRN 8-1<br>NEU 8-1 | | | | |
| 23 | RED 4-2<br>YEL 4-2<br>GRN 4-2<br>NEU 4-2 | 44 | RED 8-2<br>YEL 8-2<br>GRN 8-2<br>NEU 8-2 | | | | |
| 24 | DWK P4-2<br>WLK P4-2<br>SPR<br>NEU P4-2 | 45 | DWK P8-2<br>WLK P8-2<br>SPR<br>NEU P8-2 | | | | |
| 25 | DWK P2-1<br>WLK P2-1<br>SPR<br>NEU P2-1 | 46 | DWK P6-1<br>WLK P6-1<br>SPR<br>NEU P6-1 | | | | |
| 26 | PB2-1<br>NEU | 47 | Ø8 EVP LT<br>EQG<br>NEU | | | | |
| 27 | PB4-2<br>NEU | 48 | Ø8<br>EVP<br>DETECTOR | | | | |
| 28 | Ø4 EVP LT<br>EQG<br>NEU | 49 | PB6-1<br>NEU | | | | |
| 29 | Ø4<br>EVP<br>DETECTOR | 50 | PB8-2<br>NEU | | | | |

| DESIGN TEAM | NO. | BY | DATE | REVISIONS |
|---|---|---|---|---|
| DRAWN BY: MRB | | | | |
| DESIGNER: MRB | | | | |
| CHECKED BY: JMG | | | | |

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Certified By: Licensed Professional Engineer — Printed Name: JOHN M. GRAY — Lic. No. 22457 — Date: 09/23/2025

SEH

ANOKA COUNTY, MN
CSAH 9
SAP 002-609-023
CITY OF ANDOVER SAP 198-020-042, CITY PROJECT 25-13
CITY OF ANOKA SAP 103-020-020

# TEMPORARY SIGNAL SYSTEM "B"

FIELD WIRING DIAGRAM
CSAH 9 (ROUND LAKE BOULEVARD) AT 136TH AVENUE

80 / 133

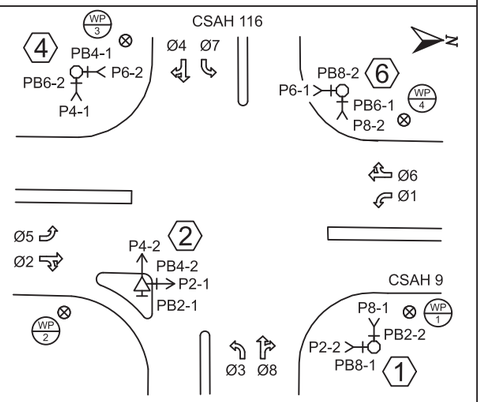
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MODEL: tsgl06

## LED SIGNAL HEAD CHART

| SIGNAL HEAD | R | Y | G | Y | G |
|---|---|---|---|---|---|
| 1-1, 5-1 | ⬅ | ⬅ | ⬅ | | |
| 1-2, 5-2 | ⇦ | ⇦ | ⇦ | | |
| 2-1, 2-2, 2-3, 2-4 | ○ | ○ | ○ | | |
| 3-1 | ⬅ | ⬅ | ⬅ | | |
| 3-2 | ⇦ | ⇦ | ⇦ | | |
| 4-1 | ○ | ○ | ○ | | |
| 4-2 | ● | ● | ● | | |
| 6-1, 6-2, 6-3, 6-4 | ○ | ○ | ○ | | |
| 7-1 | ⬅ | ⬅ | ⬅ | | |
| 7-2 | ⇦ | ⇦ | ⇦ | | |
| 8-1, 8-2, 8-3, 8-4 | ○ | ○ | ○ | | |

- ALL SIGNAL INDICATIONS ARE 12" LED AND ARE INPLACE, EXCEPT THAT HEADS 1-1, 3-1, 4-2, 5-1, AND 7-1 (AND OVERHEAD SPAN WIRE MOUNTING HARDWARE) SHALL BE FURNISHED AND INSTALLED BY THE CONTRACTOR.
- EACH SIGNAL HEAD SHALL HAVE A BACKGROUND SHIELD.
- INPLACE SIGNAL HEADS 1-2, 2-1, AND 4-1 SHALL BE RELOCATED BY CONTRACTOR TO TEMPORARY PEDESTAL POLE 2 (INCIDENTAL).

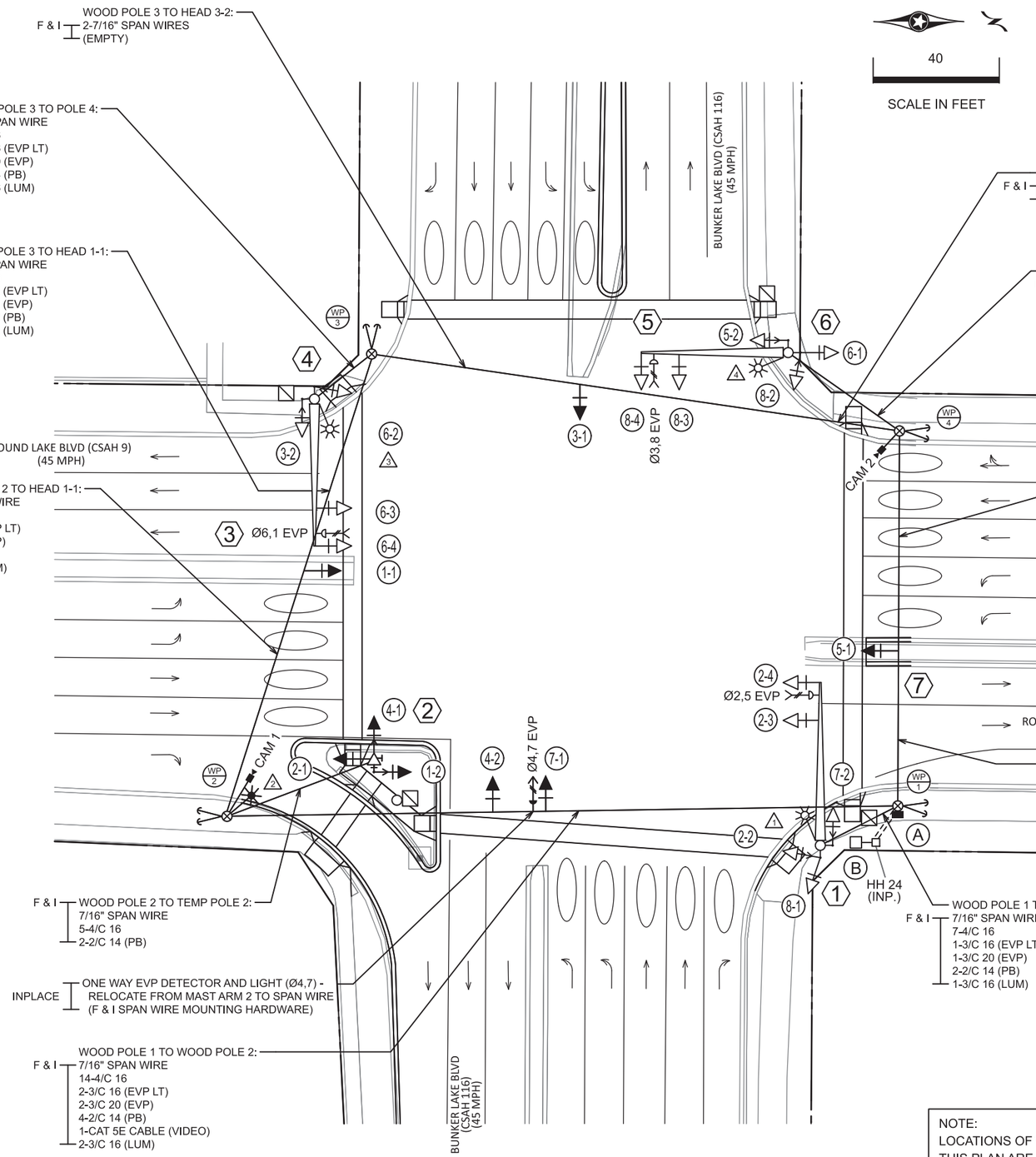
## CONTROLLER PHASING, PEDESTRIAN INDICATIONS AND PUSH BUTTONS




PEDESTRIAN PUSH BUTTONS SHALL BE LOCATED AS SHOWN ABOVE.

SIGNAL SYSTEM OPERATIONS:
- SIGNAL SYSTEM FLASH MODE SHALL BE ALL RED.
- NORMAL OPERATION SHALL BE 8 PHASE FULLY-ACTUATED VEHICLE OPERATION, WITH PHASES 1, 3, 5, AND 7 BEING PROTECTED LEFT TURN PHASES.
- PHASES 2 AND 6 SHALL BE ON VEHICLE RECALL.

SEE NEXT SHEET FOR DETAILED POLE AND CONTROLLER CABINET NOTES.




## FURNISH & INSTALL VIDEO DETECTORS

| CAMERA NO. | INTERSECTION APPROACH FACING | SIGNAL POLE (CAMERA) LOCATION | CAMERA MOUNTED AT | MOUNTING HEIGHT |
|---|---|---|---|---|
| CAM 1 | EB/SB APPROACHES | WOOD POLE 2 | ON WOOD POLE | 30' |
| CAM 2 | NB/WB APPROACHES | WOOD POLE 4 | ON WOOD POLE | 30' |

NOTE:
MOUNTING HEIGHT = APPROXIMATE HEIGHT ABOVE ADJACENT GROUND LINE.

NOTE:
VIDEO DETECTION ZONES SHALL ALSO BE PROGRAMMED FOR EACH CSAH 9 AND CSAH 116 THROUGH LANE, TO BE PLACED APPROXIMATELY 300 FEET FROM THE CORRESPONDING STOP BARS.

## LEGEND

- ⊗ PROPOSED WOOD POLE LOCATION
- △ PROPOSED TEMPORARY PEDESTAL POLE LOCATION
- ○ EXISTING SIGNAL FOUNDATION
- ⊠ PROPOSED PERMANENT POLE LOCATION
- ⬭ VIDEO DETECTION ZONE

NOTE:
LOCATIONS OF WOOD POLES AND OVERHEAD VEHICLE SIGNAL HEADS CURRENTLY SHOWN ON THIS PLAN ARE ESTIMATED LOCATIONS ONLY AND SHALL BE COORDINATED TO AVOID CONFLICTS WITH EXISTING SIGNAL POLES, NEW SIGNAL POLES, AND CURB RAMP LANDING AREAS.

| DESIGN TEAM | NO. | BY | DATE | REVISIONS |
|---|---|---|---|---|
| DRAWN BY: MRB | | | | |
| DESIGNER: MRB | | | | |
| 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.

Certified By: Licensed Professional Engineer — Printed Name: JOHN M. GRAY — Lic. No. 22457 — Date: 09/23/2025

SEH

ANOKA COUNTY, MN
CSAH 9
SAP 002-609-023
CITY OF ANDOVER SAP 198-020-042, CITY PROJECT 25-13
CITY OF ANOKA SAP 103-020-020

TEMPORARY SIGNAL SYSTEM "C"
INTERSECTION LAYOUT
CSAH 9 (ROUND LAKE BOULEVARD) AT CSAH 116 (BUNKER LAKE BOULEVARD)

81
133

10:28:36 AM
9/25/2025
FILE: X:\AE\A\ANOKC\181692\5-final-dsgn\51-drawings\40-TransHwy\Plansheets\CT181692_tsgl_Sheets.dgn
MODEL: tsgl07

10:28:37 AM

9/25/2025

NOTES:

1) LOCATION OF WOOD POLES AND TEMPORARY SIGNAL STANDARDS SHALL BE DETERMINED IN FIELD BY THE ENGINEER.
2) ALL VEHICLE AND PEDESTRIAN SIGNAL HEADS ARE INPLACE AND SHALL BE REUSED AND MADE OPERATIONAL AS SHOWN, EXCEPT AS OTHERWISE NOTED.
3) ALL TRAFFIC SIGNAL MATERIALS AND ELECTRICAL EQUIPMENT TO BE FURNISHED AND INSTALLED BY CONTRACTOR FOR THE TEMPORARY SIGNAL SYSTEM SHALL BE APPROVED BY ENGINEER PRIOR TO INSTALLATION AT THE INTERSECTION. SEE SPECIAL PROVISIONS.
4) MOVEMENT/RELOCATION OF TEMPORARY POLES AND VIDEO CAMERAS SHALL BE INCLUDED IN THE PAY ITEM FOR "TEMPORARY SIGNAL SYSTEM C." SEE SPECIAL PROVISIONS.
5) RELOCATION OF SPAN WIRES AND CABLES FROM WOOD POLES AND EXISTING SIGNAL POLES (AS NECESSARY) TO ACCOMMODATE SIDEWALK AND SIGNAL CONSTRUCTION WILL BE CONSIDERED INCIDENTAL.
6) SEE SPECIAL PROVISIONS REGARDING VIDEO DETECTION SYSTEM (NEW AND LATEST MODEL "GRIDSMART" SYSTEM COMPONENTS) TO BE FURNISHED AND INSTALLED BY THE CONTRACTOR, AND FOR ALL VIDEO DETECTION SYSTEM COMPONENTS TO BE TURNED OVER TO THE COUNTY (FOR THE COUNTY TO OWN) AFTER TEMPORARY SIGNAL SYSTEM IS REMOVED AND NEW PERMANENT SIGNAL SYSTEM IS MADE OPERATIONAL (INCLUDED AS PART OF PAY ITEM FOR "TEMPORARY SIGNAL SYSTEM C").
7) (F & I) = ITEMS TO BE FURNISHED & INSTALLED BY CONTRACTOR. (S & I) = ITEMS TO BE SALVAGED & INSTALLED BY CONTRACTOR.
8) CONTRACTOR SHALL BAG (AND MAKE IN-OPERATIONAL) ALL VEHICLE SIGNAL HEADS NOT IN USE DURING CONSTRUCTION.
9) 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 TURNED OFF DURING NON-PEAK TRAFFIC PERIODS (FOR SWITCHOVERS FROM EXISTING SIGNAL SYSTEM TO TEMPORARY SIGNAL SYSTEM, AND FROM TEMPORARY SIGNAL SYSTEM TO NEW PERMANENT SIGNAL SYSTEM).
10) CONTRACTOR SHALL PROTECT AND MAINTAIN ALL ITEMS OF THE EXISTING PERMANENT SIGNAL SYSTEM THAT WILL BE REUSED AS PART OF THE TEMPORARY SIGNAL SYSTEM AND SHALL REPLACE ITEMS DAMAGED DURING CONSTRUCTION WITH NEW ITEMS (AT NO EXPENSE TO THE COUNTY).
11) EXISTING EVP DETECTORS AND CONFIRMATION LIGHTS, AND EXISTING STREET NAME SIGNS SHALL BE REUSED, AND KEPT IN OPERATION AS PART OF THE TEMPORARY SIGNAL SYSTEM.
12) REMOVAL OF ALL TEMPORARY SIGNAL SYSTEM COMPONENTS BY THE CONTRACTOR IS INCLUDED AS PART OF THE "TEMPORARY SIGNAL SYSTEM C" PAY ITEM.

**1**

INPLACE (MAINTAIN INPLACE)
- A100 POLE FOUNDATION
- TYPE A100-A-50-D40-9 (DAVIT AT 350 DEG)
- LUMINAIRE-250 W HPS W/ PEC & CHECK SWITCH
- 2-ONE WAY SIGNALS-OVERHEAD (0' & 12' FROM END OF MAST ARM)
- 2-TYPE 10B-POLE MOUNTED 90 DEG AND 270 DEG
- 1-TYPE 10A-POLE MOUNTED 180 DEG
- 2-PEDESTRIAN PUSH BUTTONS AND SIGNS
- STREET NAME SIGN PANEL-OVERHEAD
- ONE WAY EVP DETECTOR AND LIGHT (Ø2,5)

F & I
- EXTEND TO WOOD POLE 1:
- 7/16" SPAN WIRE
- 7-4/C 16
- 1-3/C 16 (EVP LT)
- 1-3/C 20 (EVP)
- 2-2/C 14 (PB)
- 1-3/C 16 (LUM)

**2**

INPLACE (REMOVE)
- PA100 POLE FOUNDATION
- PA100-A-55-D40-9
- LUMINAIRE
- 3-ONE WAY SIGNALS-OVERHEAD
- STREET NAME SIGN PANEL

F & I
- TEMPORARY SIGNAL STANDARD (PEDESTAL POLE WITH 3' DIAMETER X 1' THICK MOVEABLE CONCRETE BASE) - SEE DETAILS
- 12' (MIN.) PEDESTAL POLE AND POST COLLAR
- 1-TYPE 3C BRACKETING (FOR 1-2, 2-1, 4-1, P2-1, P4-2)
- 2-PEDESTRIAN PUSH BUTTONS AND SIGNS (R10-3e)
- EXTEND TO WOOD POLE 2:
- 7/16" SPAN WIRE
- 5-4/C 16
- 2-2/C 14 (PB)

INPLACE (S & I)
- 3-ONE WAY SIGNALS (1-2, 2-1, 4-1)
- 2-PED SIGNALS (P2-1, P4-2)

SALVAGE FROM INPLACE MAST ARM POLE AND INSTALL ON TEMP SIGNAL STD.

**3**

INPLACE (REMOVE)
- PEDESTAL FOUNDATION
- PEDESTAL POLE AND BASE
- 2-ONE WAY SIGNALS

**4**

INPLACE (MAINTAIN INPLACE)
- A100 POLE FOUNDATION
- TYPE A100-A-45-D40-9 (DAVIT AT 350 DEG)
- LUMINAIRE-200 W HPS W/ PEC & SHOCK SWITCH
- 2-ONE WAY SIGNALS-OVERHEAD (0' & 12' FROM END OF MAST ARM)
- 2-TYPE 10B-POLE MOUNTED 90 DEG AND 180 DEG
- 2-PEDESTRIAN PUSH BUTTONS AND SIGNS
- STREET NAME SIGN PANEL-OVERHEAD
- ONE WAY EVP DETECTOR AND LIGHT (Ø6,1)

F & I
- EXTEND TO WOOD POLE 3:
- 7/16" SPAN WIRE
- 6-4/C 16
- 1-3/C 16 (EVP LT)
- 1-3/C 20 (EVP)
- 2-2/C 14 (PB)
- 1-3/C 16 (LUM)

**5**

INPLACE (REMOVE)
- PEDESTAL FOUNDATION
- PEDESTAL POLE AND BASE
- 2-ONE WAY SIGNALS

**6**

INPLACE (MAINTAIN INPLACE)
- A100 POLE FOUNDATION
- TYPE A100-A-45-D40-9 (DAVIT AT 350 DEG)
- LUMINAIRE-LED
- 2-ONE WAY SIGNALS-OVERHEAD (0' & 12' FROM END OF MAST ARM)
- 2-TYPE 10B-POLE MOUNTED 90 DEG AND 270 DEG
- 1-TYPE 10A-POLE MOUNTED 180 DEG
- 2-PEDESTRIAN PUSH BUTTONS AND SIGNS
- STREET NAME SIGN PANEL-OVERHEAD
- ONE WAY EVP DETECTOR AND LIGHT (Ø3,8)

F & I
- EXTEND TO WOOD POLE 4:
- 7/16" SPAN WIRE
- 7-4/C 16
- 1-3/C 16 (EVP LT)
- 1-3/C 20 (EVP)
- 2-2/C 14 (PB)
- 1-3/C 16 (LUM)

**A**

INPLACE (S & I)
- CONTROLLER AND CABINET

F & I
- TEMPORARY CABINET BASE (PLACE NEXT TO WOOD POLE 1)
- VIDEO DETECTION SYSTEM CABINET COMPONENTS
- EXTEND INTO HH 24:
- 2" CONDUIT
- 4-3/C 16 (LUM)
- 3-1/C 6 (SIGNAL SERVICE)

**B**

INPLACE (MAINTAIN INPLACE)
- SERVICE CABINET
- CABINET FOUNDATION
- EXTENDED TO SOP:
- 2" RSC
- 3-1/C 6 (INPUT POWER)
- EXTENDED INTO HH 24:
- 1.5" CONDUIT

F & I
- 4-3/C 16 (LUM)
- 3-1/C 6 (SIGNAL SERVICE)

**WP 1**

F & I
- 50' WOOD POLE-CLASS 2
- 2-SIDEWALK DOWN GUYS, GUY GUARDS, AND SCREW ANCHORS
- EXTEND FROM SPAN WIRES TO WOOD POLE MOUNTED CONTROLLER CABINET:
- 30-4/C 16
- 4-3/C 16 (EVP LT)
- 4-3/C 20 (EVP)
- 8-2/C 14 (PB)
- 2-CAT 5E CABLES (VIDEO)
- 4-3/C 16 (LUM)

**WP 2**

F & I
- 50' WOOD POLE-CLASS 2
- 2-SIDEWALK DOWN GUYS, GUY GUARDS, AND SCREW ANCHORS
- VIDEO CAMERA (CAM 1)
- WOOD POLE MOUNTING HARDWARE FOR VIDEO CAMERA
- LUMINAIRE AND 15' MAST ARM
- 1-3/C 16 (LUM)

**WP 3**

F & I
- 50' WOOD POLE-CLASS 2
- 2-SIDEWALK DOWN GUYS, GUY GUARDS, AND SCREW ANCHORS

**WP 4**

F & I
- 50' WOOD POLE-CLASS 2
- 2-SIDEWALK DOWN GUYS, GUY GUARDS, AND SCREW ANCHORS
- VIDEO CAMERA (CAM 2)
- WOOD POLE MOUNTING HARDWARE FOR VIDEO CAMERA

**7**

INPLACE (REMOVE)
- PEDESTAL FOUNDATION
- PEDESTAL POLE AND BASE
- 2-ONE WAY SIGNALS

| DESIGN TEAM | NO. | BY | DATE | REVISIONS |
|---|---|---|---|---|
| DRAWN BY: MRB | | | | |
| DESIGNER: MRB | | | | |
| 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.

Certified By: Licensed Professional Engineer — Printed Name: JOHN M. GRAY — Lic. No. 22457 — Date: 09/23/2025

SEH

ANOKA COUNTY, MN
CSAH 9
SAP 002-609-023
CITY OF ANDOVER SAP 198-020-042, CITY PROJECT 25-13
CITY OF ANOKA SAP 103-020-020

# TEMPORARY SIGNAL SYSTEM "C"

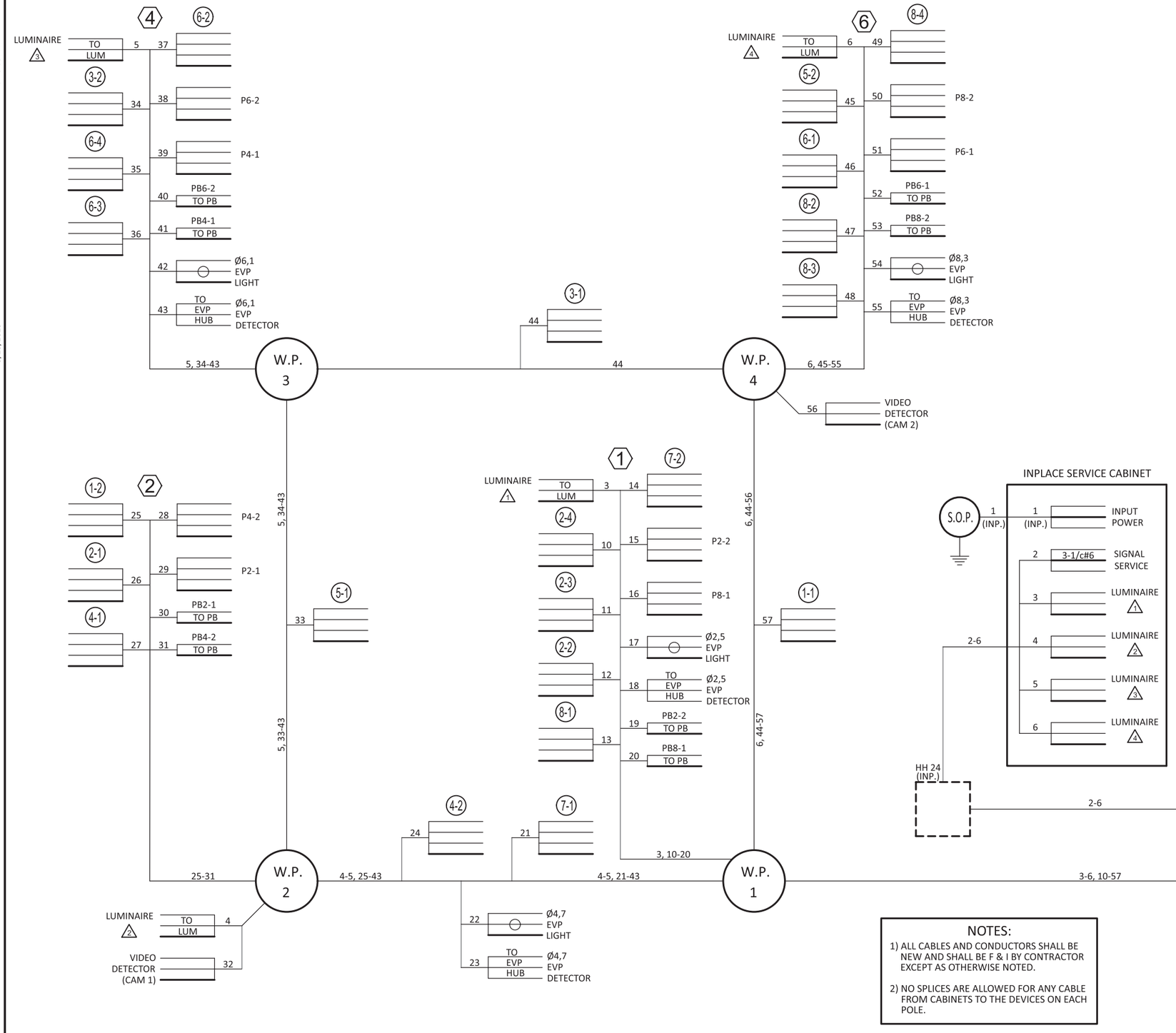
POLE AND CABINET NOTES
CSAH 9 (ROUND LAKE BOULEVARD) AT CSAH 116 (BUNKER LAKE BOULEVARD)



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## RELOCATED CONTROLLER AND CABINET

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 2 | 3-1/c#6 SIGNAL SERVICE | 29 | DWK P2-1<br>WLK P2-1<br>SPR<br>NEU P2-1 | 48 | RED 8-3<br>YEL 8-3<br>GRN 8-3<br>NEU 8-3 |
| 10 | RED 2-4<br>YEL 2-4<br>GRN 2-4<br>NEU 2-4 | 30 | PB2-1<br>NEU | 49 | RED 8-4<br>YEL 8-4<br>GRN 8-4<br>NEU 8-4 |
| 11 | RED 2-3<br>YEL 2-3<br>GRN 2-3<br>NEU 2-3 | 31 | PB4-2<br>NEU | 50 | DWK P8-2<br>WLK P8-2<br>SPR<br>NEU P8-2 |
| 12 | RED 2-2<br>YEL 2-2<br>GRN 2-2<br>NEU 2-2 | 32 | VIDEO<br>DETECTOR<br>(CAM 1) | 51 | DWK P6-1<br>WLK P6-1<br>SPR<br>NEU P6-1 |
| 13 | RED 8-1<br>YEL 8-1<br>GRN 8-1<br>NEU 8-1 | 33 | RLA 5-1<br>YLA 5-1<br>GLA 5-1<br>NEU 5-1 | 52 | PB6-1<br>NEU |
| 14 | RLA 7-2<br>YLA 7-2<br>GLA 7-2<br>NEU 7-2 | 34 | RLA 3-2<br>YLA 3-2<br>GLA 3-2<br>NEU 3-2 | 53 | PB8-2<br>NEU |
| 15 | DWK P2-2<br>WLK P2-2<br>SPR<br>NEU P2-2 | 35 | RED 6-4<br>YEL 6-4<br>GRN 6-4<br>NEU 6-4 | 54 | Ø8,3 EVP LT<br>EQG<br>NEU |
| 16 | DWK P8-1<br>WLK P8-1<br>SPR<br>NEU P8-1 | 36 | RED 6-3<br>YEL 6-3<br>GRN 6-3<br>NEU 6-3 | 55 | Ø8,3<br>EVP<br>DETECTOR |
| 17 | Ø2,5 EVP LT<br>EQG<br>NEU | 37 | RED 6-2<br>YEL 6-2<br>GRN 6-2<br>NEU 6-2 | 56 | VIDEO<br>DETECTOR<br>(CAM 2) |
| 18 | Ø2,5<br>EVP<br>DETECTOR | 38 | DWK P6-2<br>WLK P6-2<br>SPR<br>NEU P6-2 | 57 | RLA 1-1<br>YLA 1-1<br>GLA 1-1<br>NEU 1-1 |
| 19 | PB2-2<br>NEU | 39 | DWK P4-1<br>WLK P4-1<br>SPR<br>NEU P4-1 | | |
| 20 | PB8-1<br>NEU | 40 | PB6-2<br>NEU | | |
| 21 | RLA 7-1<br>YLA 7-1<br>GLA 7-1<br>NEU 7-1 | 41 | PB4-1<br>NEU | | |
| 22 | Ø4,7 EVP LT<br>EQG<br>NEU | 42 | Ø6,1 EVP LT<br>EQG<br>NEU | | |
| 23 | Ø4,7<br>EVP<br>DETECTOR | 43 | Ø6,1<br>EVP<br>DETECTOR | | |
| 24 | RED 4-2<br>YEL 4-2<br>GRN 4-2<br>NEU 4-2 | 44 | RLA 3-1<br>YLA 3-1<br>GLA 3-1<br>NEU 3-1 | | |
| 25 | RLA 1-2<br>YLA 1-2<br>GLA 1-2<br>NEU 1-2 | 45 | RLA 5-2<br>YLA 5-2<br>GLA 5-2<br>NEU 5-2 | | |
| 26 | RED 2-1<br>YEL 2-1<br>GRN 2-1<br>NEU 2-1 | 46 | RED 6-1<br>YEL 6-1<br>GRN 6-1<br>NEU 6-1 | | |
| 27 | RED 4-1<br>YEL 4-1<br>GRN 4-1<br>NEU 4-1 | 47 | RED 8-2<br>YEL 8-2<br>GRN 8-2<br>NEU 8-2 | | |
| 28 | DWK P4-2<br>WLK P4-2<br>SPR<br>NEU P4-2 | | | | |

### NOTES:

1) ALL CABLES AND CONDUCTORS SHALL BE NEW AND SHALL BE F & I BY CONTRACTOR EXCEPT AS OTHERWISE NOTED.

2) NO SPLICES ARE ALLOWED FOR ANY CABLE FROM CABINETS TO THE DEVICES ON EACH POLE.

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| DESIGN TEAM | NO. | BY | DATE | REVISIONS |
|---|---|---|---|---|
| DRAWN BY: MRB | | | | |
| DESIGNER: MRB | | | | |
| 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.

Certified By: Licensed Professional Engineer — Printed Name: JOHN M. GRAY — Lic. No. 22457 — Date: 09/23/2025

SEH

ANOKA COUNTY, MN
CSAH 9
SAP 002-609-023
CITY OF ANDOVER SAP 198-020-042, CITY PROJECT 25-13
CITY OF ANOKA SAP 103-020-020

# TEMPORARY SIGNAL SYSTEM "C"

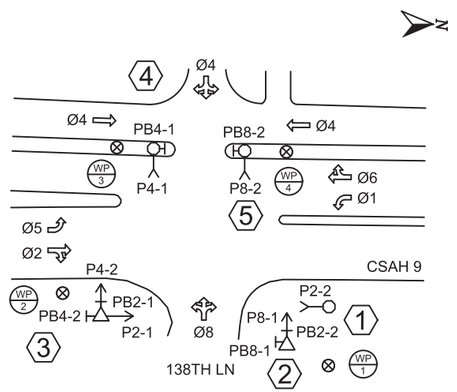
FIELD WIRING DIAGRAM
CSAH 9 (ROUND LAKE BOULEVARD) AT CSAH 116 (BUNKER LAKE BOULEVARD)

## LED SIGNAL HEAD CHART

| SIGNAL HEAD | R | Y | G | Y | G |
|---|---|---|---|---|---|
| 1-1, 1-2 | ⇦ | ⇦ | ⇦ | | |
| 2-1, 2-2, 2-3 | ○ | ○ | ○ | | |
| 4-1, 4-3 | ○ | ○ | ○ | | |
| 4-2 | ● | ● | ● | | |
| 5-1, 5-2 | ⇦ | ⇦ | ⇦ | | |
| 6-1, 6-2, 6-3 | ○ | ○ | ○ | | |
| 8-1, 8-2, 8-3 | ○ | ○ | ○ | | |

- ALL SIGNAL INDICATIONS ARE 12" LED AND ARE INPLACE, EXCEPT THAT HEAD 4-2 SHALL BE FURNISHED AND INSTALLED BY THE CONTRACTOR.
- EACH SIGNAL HEAD SHALL HAVE A BACKGROUND SHIELD.
- INPLACE SIGNAL HEAD 4-3 SHALL BE RELOCATED BY CONTRACTOR TO TEMPORARY PEDESTAL POLE 2 (INCIDENTAL).
- INPLACE SIGNAL HEADS 1-2 AND 4-1 SHALL BE RELOCATED BY CONTRACTOR TO TEMPORARY PEDESTAL POLE 3 (INCIDENTAL).

## CONTROLLER PHASING, PEDESTRIAN INDICATIONS AND PUSH BUTTONS




PEDESTRIAN PUSH BUTTONS SHALL BE LOCATED AS SHOWN ABOVE.

SIGNAL SYSTEM OPERATIONS:
- SIGNAL SYSTEM FLASH MODE SHALL BE ALL RED.
- NORMAL OPERATION SHALL BE 6 PHASE FULLY-ACTUATED VEHICLE OPERATION, WITH PHASES 1 AND 5 BEING PROTECTED LEFT TURN PHASES.
- PHASES 2 AND 6 SHALL BE ON VEHICLE RECALL.

SEE NEXT SHEET FOR DETAILED POLE AND CONTROLLER CABINET NOTES.

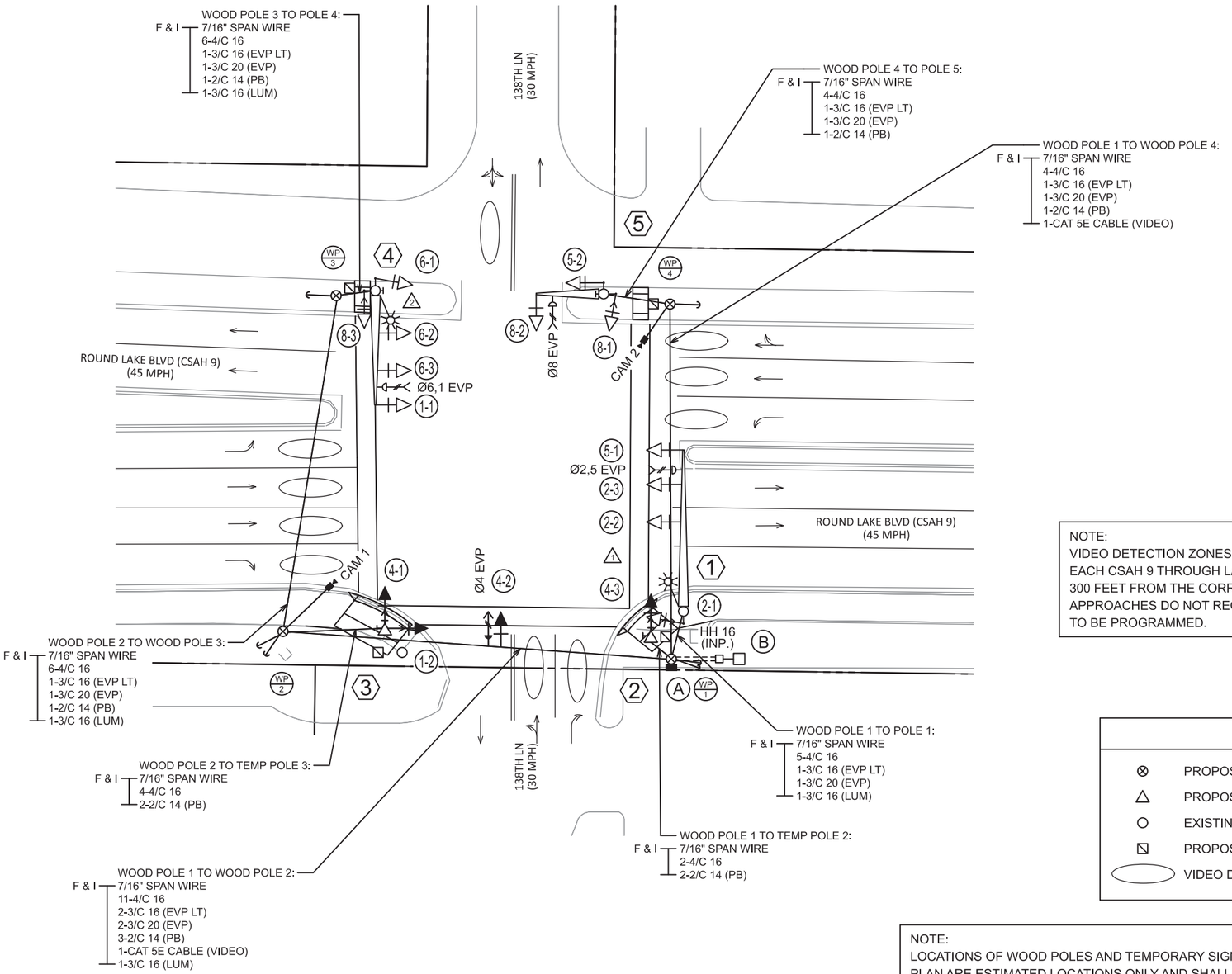
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SCALE IN FEET

## FURNISH & INSTALL VIDEO DETECTORS

| CAMERA NO. | INTERSECTION APPROACH FACING | SIGNAL POLE (CAMERA) LOCATION | CAMERA MOUNTED AT | MOUNTING HEIGHT |
|---|---|---|---|---|
| CAM 1 | SB/EB APPROACHES | WOOD POLE 2 | ON WOOD POLE | 30' |
| CAM 2 | NB/WB APPROACHES | WOOD POLE 4 | ON WOOD POLE | 30' |

NOTE:
MOUNTING HEIGHT = APPROXIMATE HEIGHT ABOVE ADJACENT GROUND LINE.




NOTE:
VIDEO DETECTION ZONES SHALL ALSO BE PROGRAMMED FOR EACH CSAH 9 THROUGH LANE, TO BE PLACED APPROXIMATELY 300 FEET FROM THE CORRESPONDING STOP BARS. SIDE STREET APPROACHES DO NOT REQUIRE ADVANCE DETECTION ZONES TO BE PROGRAMMED.

## LEGEND

- ⊗ PROPOSED WOOD POLE LOCATION
- △ PROPOSED TEMPORARY PEDESTAL POLE LOCATION
- ○ EXISTING SIGNAL FOUNDATION
- ⧅ PROPOSED PERMANENT POLE LOCATION
- ⬭ VIDEO DETECTION ZONE

NOTE:
LOCATIONS OF WOOD POLES AND TEMPORARY SIGNAL POLES CURRENTLY SHOWN ON THIS PLAN ARE ESTIMATED LOCATIONS ONLY AND SHALL BE COORDINATED TO AVOID CONFLICTS WITH EXISTING SIGNAL POLES, NEW SIGNAL POLES, AND CURB RAMP LANDING AREAS.

| DESIGN TEAM | NO. | BY | DATE | REVISIONS |
|---|---|---|---|---|
| DRAWN BY: MRB | | | | |
| DESIGNER: MRB | | | | |
| 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.

Certified By: Licensed Professional Engineer — Printed Name: JOHN M. GRAY — Lic. No. 22457 — Date: 09/23/2025

SEH

ANOKA COUNTY, MN
CSAH 9
SAP 002-609-023
CITY OF ANDOVER SAP 198-020-042, CITY PROJECT 25-13
CITY OF ANOKA SAP 103-020-020

TEMPORARY SIGNAL SYSTEM "D"
INTERSECTION LAYOUT
CSAH 9 (ROUND LAKE BOULEVARD) AT 138TH LANE

84/133

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9/25/2025
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MODEL: tsgl10

NOTES:

1) LOCATION OF WOOD POLES AND TEMPORARY SIGNAL STANDARDS SHALL BE DETERMINED IN FIELD BY THE ENGINEER.
2) ALL VEHICLE AND PEDESTRIAN SIGNAL HEADS ARE INPLACE AND SHALL BE REUSED AND MADE OPERATIONAL AS SHOWN.
3) ALL TRAFFIC SIGNAL MATERIALS AND ELECTRICAL EQUIPMENT TO BE FURNISHED AND INSTALLED BY CONTRACTOR FOR THE TEMPORARY SIGNAL SYSTEM SHALL BE APPROVED BY ENGINEER PRIOR TO INSTALLATION AT THE INTERSECTION. SEE SPECIAL PROVISIONS.
4) MOVEMENT/RELOCATION OF TEMPORARY POLES AND VIDEO CAMERAS SHALL BE INCLUDED IN THE PAY ITEM FOR "TEMPORARY SIGNAL SYSTEM D." SEE SPECIAL PROVISIONS.
5) RELOCATION OF SPAN WIRES AND CABLES FROM WOOD POLES AND EXISTING SIGNAL POLES (AS NECESSARY) TO ACCOMMODATE SIDEWALK AND SIGNAL CONSTRUCTION WILL BE CONSIDERED INCIDENTAL.
6) SEE SPECIAL PROVISIONS REGARDING VIDEO DETECTION SYSTEM (NEW AND LATEST MODEL "GRIDSMART" SYSTEM COMPONENTS) TO BE FURNISHED AND INSTALLED BY THE CONTRACTOR, AND FOR ALL VIDEO DETECTION SYSTEM COMPONENTS TO BE TURNED OVER TO THE COUNTY (FOR THE COUNTY TO OWN) AFTER TEMPORARY SIGNAL SYSTEM IS REMOVED AND NEW PERMANENT SIGNAL SYSTEM IS MADE OPERATIONAL (INCLUDED AS PART OF PAY ITEM FOR "TEMPORARY SIGNAL SYSTEM D").
7) (F & I) = ITEMS TO BE FURNISHED & INSTALLED BY CONTRACTOR. (S & I) = ITEMS TO BE SALVAGED & INSTALLED BY CONTRACTOR.
8) CONTRACTOR SHALL BAG (AND MAKE IN-OPERATIONAL) ALL VEHICLE SIGNAL HEADS NOT IN USE DURING CONSTRUCTION.
9) 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 TURNED OFF DURING NON-PEAK TRAFFIC PERIODS (FOR SWITCHOVERS FROM EXISTING SIGNAL SYSTEM TO TEMPORARY SIGNAL SYSTEM, AND FROM TEMPORARY SIGNAL SYSTEM TO NEW PERMANENT SIGNAL SYSTEM).
10) CONTRACTOR SHALL PROTECT AND MAINTAIN ALL ITEMS OF THE EXISTING PERMANENT SIGNAL SYSTEM THAT WILL BE REUSED AS PART OF THE TEMPORARY SIGNAL SYSTEM AND SHALL REPLACE ITEMS DAMAGED DURING CONSTRUCTION WITH NEW ITEMS (AT NO EXPENSE TO THE COUNTY).
11) EXISTING EVP DETECTORS AND CONFIRMATION LIGHTS, AND EXISTING STREET NAME SIGNS SHALL BE REUSED, MAINTAINED INPLACE, AND KEPT IN OPERATION AS PART OF THE TEMPORARY SIGNAL SYSTEM.
12) REMOVAL OF ALL TEMPORARY SIGNAL SYSTEM COMPONENTS BY THE CONTRACTOR IS INCLUDED AS PART OF THE "TEMPORARY SIGNAL SYSTEM D" PAY ITEM.

**1**

INPLACE (MAINTAIN INPLACE)
- A100 POLE FOUNDATION
- TYPE A100-A-50-D40-9 (DAVIT AT 350 DEG)
- LUMINAIRE-200 W HPS W/ PEC & CHECK SWITCH
- 3-ONE WAY SIGNALS-OVERHEAD (0', 11' & 23' FROM END OF MAST ARM)
- TYPE 10B-POLE MOUNTED 180 DEG
- STREET NAME SIGN PANEL-OVERHEAD
- ONE WAY EVP DETECTOR AND LIGHT (Ø2,5)

F & I
- EXTEND TO WOOD POLE 1:
- 7/16" SPAN WIRE
- 5-4/C 16
- 1-3/C 16 (EVP LT)
- 1-3/C 20 (EVP)
- 1-3/C 16 (LUM)

**2**

F & I
- TEMPORARY SIGNAL STANDARD (PEDESTAL POLE WITH 3' DIAMETER X 1' THICK MOVEABLE CONCRETE BASE) - SEE DETAILS
- 12' (MIN.) PEDESTAL POLE AND POST COLLAR
- 1-TYPE 1C-BRACKETING (FOR 4-3, P8-1)
- 2-PEDESTRIAN PUSH BUTTONS & SIGNS (R10-3e)
- EXTEND TO WOOD POLE 1:
- 7/16" SPAN WIRE
- 2-4/C 16
- 2-2/C 14 (PB)

INPLACE (S & I)
- 1-ONE WAY SIGNAL (4-3)
- 1-PED SIGNAL (P8-1)

SALVAGE FROM INPLACE PED POLE AND INSTALL ON TEMP SIGNAL STD.

**3**

F & I
- TEMPORARY SIGNAL STANDARD (PEDESTAL POLE WITH 3' DIAMETER X 1' THICK MOVEABLE CONCRETE BASE) - SEE DETAILS
- 12' (MIN.) PEDESTAL POLE AND POST COLLAR
- TYPE 2C-BRACKETING (FOR 4-1, P2-1 AND 1-2, P4-2)
- 2-PEDESTRIAN PUSH BUTTONS & SIGNS (R10-3e)
- EXTEND TO WOOD POLE 2:
- 7/16" SPAN WIRE
- 4-4/C 16
- 2-2/C 14 (PB)

INPLACE (S & I)
- 2-ONE WAY SIGNALS (4-1, 1-2)
- 2-PED SIGNALS (P2-1, P4-2)

SALVAGE FROM INPLACE MAST ARM POLE AND INSTALL ON TEMP SIGNAL STD.

**4**

INPLACE (MAINTAIN INPLACE)
- P100 POLE FOUNDATION
- TYPE P100-A-35-D40-9 (DAVIT AT 350 DEG)
- LUMINAIRE-200 W HPS W/ PEC & CHECK SWITCH
- 3-ONE WAY SIGNALS-OVERHEAD (0', 11' & 23' FROM END OF MAST ARM)
- TYPE 20B-POLE MOUNTED 270 DEG
- 1-PEDESTRIAN PUSH BUTTON AND SIGN
- STREET NAME SIGN PANEL-OVERHEAD
- ONE WAY EVP DETECTOR AND LIGHT (Ø6,1)

F & I
- EXTEND TO WOOD POLE 3:
- 7/16" SPAN WIRE
- 6-4/C 16
- 1-3/C 16 (EVP LT)
- 1-3/C 20 (EVP)
- 1-2/C 14 (PB)
- 1-3/C 16 (LUM)

**5**

INPLACE (MAINTAIN INPLACE)
- P80 POLE FOUNDATION
- TYPE P80-A-20
- ONE WAY SIGNAL-OVERHEAD
- 1-TYPE 10A-POLE MOUNTED 270 DEG
- 1-TYPE 10B-POLE MOUNTED 180 DEG
- 1-PEDESTRIAN PUSH BUTTON AND SIGN
- STREET NAME SIGN PANEL-OVERHEAD
- ONE WAY EVP DETECTOR AND LIGHT (Ø8)

F & I
- EXTEND TO WOOD POLE 4:
- 7/16" SPAN WIRE
- 4-4/C 16
- 1-3/C 16 (EVP LT)
- 1-3/C 20 (EVP)
- 1-2/C 14 (PB)

**A**

INPLACE (S & I)
- CONTROLLER AND CABINET

F & I
- TEMPORARY CABINET BASE (PLACE NEXT TO WOOD POLE 1)
- VIDEO DETECTION SYSTEM CABINET COMPONENTS
- EXTEND INTO HH 16:
- 2" CONDUIT
- 2-3/C 16 (LUM)
- 3-1/C 6 (SIGNAL SERVICE)

**B**

INPLACE (MAINTAIN INPLACE)
- SERVICE CABINET
- CABINET FOUNDATION
- EXTENDED TO SOP:
- 2" RSC
- 3-1/C 6 (INPUT POWER)
- EXTENDED INTO HH 16:
- 1.5" CONDUIT

F & I
- 2-3/C 16 (LUM)
- 3-1/C 6 (SIGNAL SERVICE)

**WP 1**

F & I
- 50' WOOD POLE-CLASS 2
- 2-SIDEWALK DOWN GUYS, GUY GUARDS, AND SCREW ANCHORS
- EXTEND FROM SPAN WIRES TO WOOD POLE MOUNTED CONTROLLER CABINET:
- 22-4/C 16
- 4-3/C 16 (EVP LT)
- 4-3/C 20 (EVP)
- 6-2/C 14 (PB)
- 2-CAT 5E CABLES (VIDEO)
- 2-3/C 16 (LUM)

**WP 2**

F & I
- 50' WOOD POLE-CLASS 2
- 2-SIDEWALK DOWN GUYS, GUY GUARDS, AND SCREW ANCHORS
- VIDEO CAMERA (CAM 1)
- WOOD POLE MOUNTING HARDWARE FOR VIDEO CAMERA

**WP 3**

F & I
- 50' WOOD POLE-CLASS 2
- 1-SIDEWALK DOWN GUY, GUY GUARD, AND SCREW ANCHOR

**WP 4**

F & I
- 50' WOOD POLE-CLASS 2
- 1-SIDEWALK DOWN GUY, GUY GUARD. AND SCREW ANCHOR
- VIDEO CAMERA (CAM 2)
- WOOD POLE MOUNTING HARDWARE FOR VIDEO CAMERA

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| DESIGN TEAM | NO. | BY | DATE | REVISIONS |
|---|---|---|---|---|
| DRAWN BY: MRB | | | | |
| DESIGNER: MRB | | | | |
| CHECKED BY: JMG | | | | |

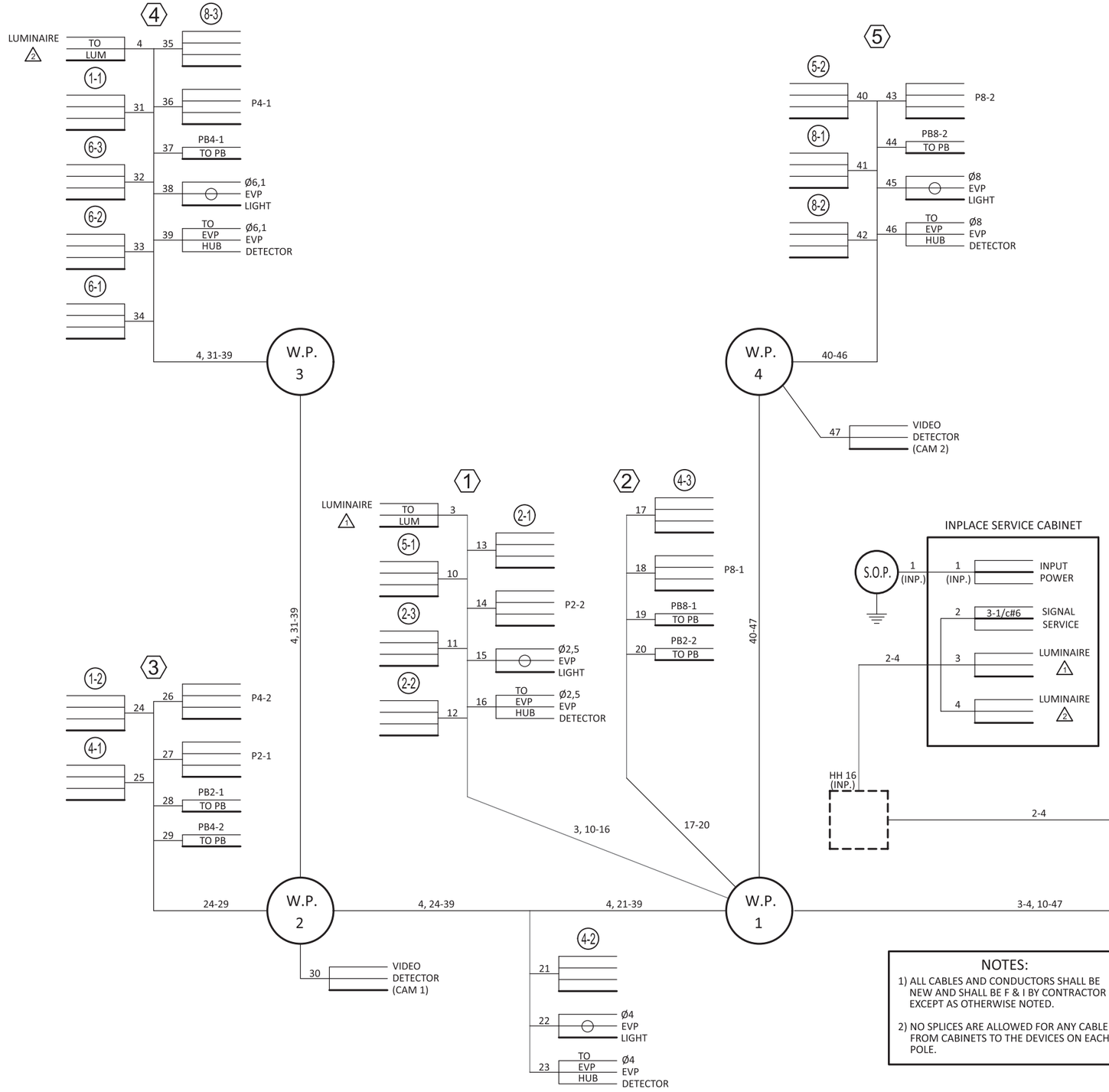
I hereby certify that this plan was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.

Certified By: Licensed Professional Engineer — Printed Name: JOHN M. GRAY — Lic. No. 22457 — Date: 09/23/2025

SEH

ANOKA COUNTY, MN
CSAH 9
SAP 002-609-023
CITY OF ANDOVER SAP 198-020-042, CITY PROJECT 25-13
CITY OF ANOKA SAP 103-020-020

TEMPORARY SIGNAL SYSTEM "D"
POLE AND CABINET NOTES
CSAH 9 (ROUND LAKE BOULEVARD) AT 138TH LANE




## RELOCATED CONTROLLER AND CABINET

| | | |
|---|---|---|
| 2 | 3-1/c#6 | SIGNAL SERVICE |
| 10 | | RLA 5-1<br>YLA 5-1<br>GLA 5-1<br>NEU 5-1 |
| 11 | | RED 2-3<br>YEL 2-3<br>GRN 2-3<br>NEU 2-3 |
| 12 | | RED 2-2<br>YEL 2-2<br>GRN 2-2<br>NEU 2-2 |
| 13 | | RED 2-1<br>YEL 2-1<br>GRN 2-1<br>NEU 2-1 |
| 14 | | DWK P2-2<br>WLK P2-2<br>SPR<br>NEU P2-2 |
| 15 | | Ø2,5 EVP LT<br>EQG<br>NEU |
| 16 | | Ø2,5<br>EVP<br>DETECTOR |
| 17 | | RED 4-3<br>YEL 4-3<br>GRN 4-3<br>NEU 4-3 |
| 18 | | DWK P8-1<br>WLK P8-1<br>SPR<br>NEU P8-1 |
| 19 | | PB8-1<br>NEU |
| 20 | | PB2-2<br>NEU |
| 21 | | RED 4-2<br>YEL 4-2<br>GRN 4-2<br>NEU 4-2 |
| 22 | | Ø4 EVP LT<br>EQG<br>NEU |
| 23 | | Ø4<br>EVP<br>DETECTOR |
| 24 | | RLA 1-2<br>YLA 1-2<br>GLA 1-2<br>NEU 1-2 |
| 25 | | RED 4-1<br>YEL 4-1<br>GRN 4-1<br>NEU 4-1 |
| 26 | | DWK P4-2<br>WLK P4-2<br>SPR<br>NEU P4-2 |
| 27 | | DWK P2-1<br>WLK P2-1<br>SPR<br>NEU P2-1 |
| 28 | | PB2-1<br>NEU |
| 29 | | PB4-2<br>NEU |
| 30 | | VIDEO<br>DETECTOR<br>(CAM 1) |
| 31 | | RLA 1-1<br>YLA 1-1<br>GLA 1-1<br>NEU 1-1 |
| 32 | | RED 6-3<br>YEL 6-3<br>GRN 6-3<br>NEU 6-3 |
| 33 | | RED 6-2<br>YEL 6-2<br>GRN 6-2<br>NEU 6-2 |
| 34 | | RED 6-1<br>YEL 6-1<br>GRN 6-1<br>NEU 6-1 |
| 35 | | RED 8-3<br>YEL 8-3<br>GRN 8-3<br>NEU 8-3 |
| 36 | | DWK P4-1<br>WLK P4-1<br>SPR<br>NEU P4-1 |
| 37 | | PB4-1<br>NEU |
| 38 | | Ø6,1 EVP LT<br>EQG<br>NEU |
| 39 | | Ø6,1<br>EVP<br>DETECTOR |
| 40 | | RLA 5-2<br>YLA 5-2<br>GLA 5-2<br>NEU 5-2 |
| 41 | | RED 8-1<br>YEL 8-1<br>GRN 8-1<br>NEU 8-1 |
| 42 | | RED 8-2<br>YEL 8-2<br>GRN 8-2<br>NEU 8-2 |
| 43 | | DWK P8-2<br>WLK P8-2<br>SPR<br>NEU P8-2 |
| 44 | | PB8-2<br>NEU |
| 45 | | Ø8 EVP LT<br>EQG<br>NEU |
| 46 | | Ø8<br>EVP<br>DETECTOR |
| 47 | | VIDEO<br>DETECTOR<br>(CAM 2) |

### NOTES:

1) ALL CABLES AND CONDUCTORS SHALL BE NEW AND SHALL BE F & I BY CONTRACTOR EXCEPT AS OTHERWISE NOTED.

2) NO SPLICES ARE ALLOWED FOR ANY CABLE FROM CABINETS TO THE DEVICES ON EACH POLE.

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| DESIGN TEAM | NO. | BY | DATE | REVISIONS |
|---|---|---|---|---|
| DRAWN BY: MRB | | | | |
| DESIGNER: MRB | | | | |
| 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.

Certified By: Licensed Professional Engineer — Printed Name: JOHN M. GRAY — Lic. No. 22457 — Date: 09/23/2025

SEH

ANOKA COUNTY, MN
CSAH 9
SAP 002-609-023
CITY OF ANDOVER SAP 198-020-042, CITY PROJECT 25-13
CITY OF ANOKA SAP 103-020-020

# TEMPORARY SIGNAL SYSTEM "D"

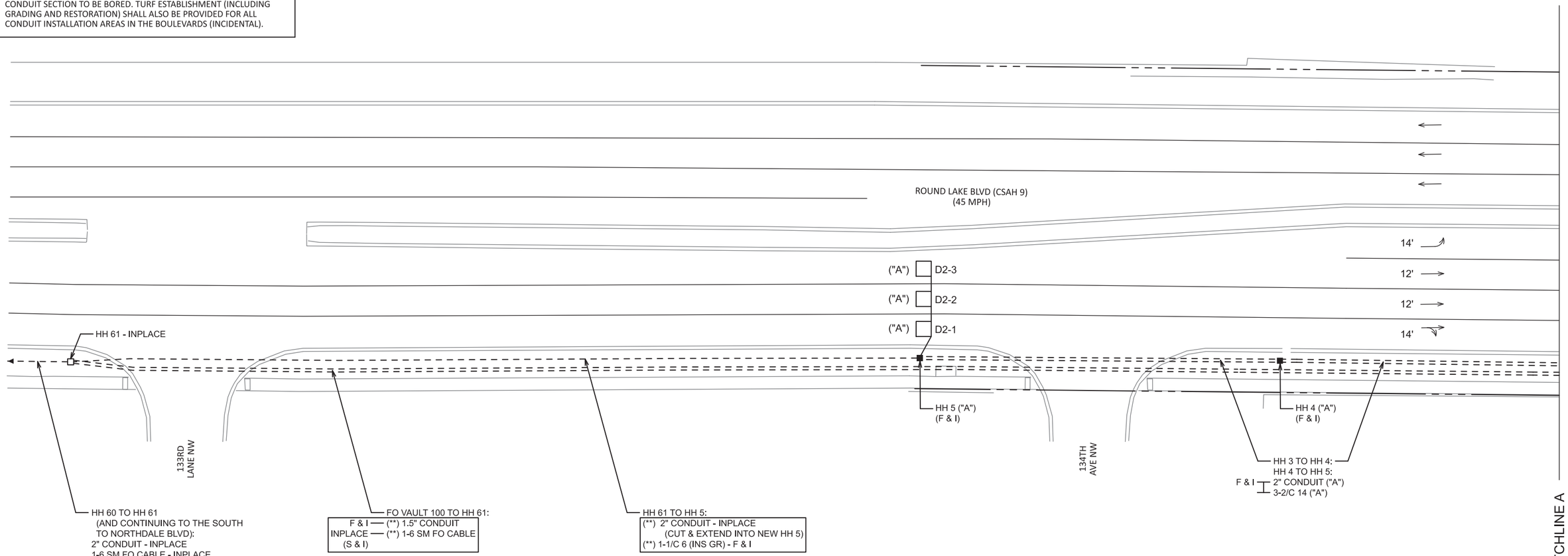
FIELD WIRING DIAGRAM
CSAH 9 (ROUND LAKE BOULEVARD) AT 138TH LANE

INTERCONNECT NOTES:

1) IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO UTILIZE THE "ONE CALL EXCAVATION NOTICE SYSTEM" (TELEPHONE NUMBER 651-454-0002) AS REQUIRED BY MINNESOTA STATUTE 2160.
2) DISTANCE OFF SHOULDER OR CURB FOR NEW INTERCONNECT CONDUIT SHALL BE 1-2 FEET UNLESS OTHERWISE APPROVED BY ENGINEER.
3) (**) DENOTES ITEMS TO BE FURNISHED AND INSTALLED BY THE CONTRACTOR UNDER ITEM NO. 2565 (TRAFFIC CONTROL INTERCONNECT). SEE STATEMENT OF ESTIMATED QUANTITIES AND SPECIAL PROVISIONS.
4) ITEMS DENOTED BY "A" SHALL BE INCLUDED AS PART OF THE PAY ITEM FOR ITEM NO. 2565 (TRAFFIC CONTROL SIGNAL SYSTEM "A").
5) (F & I) DENOTES ITEMS TO BE FURNISHED AND INSTALLED BY CONTRACTOR AS PART OF THIS PROJECT.
   (S & I) DENOTES INPLACE ITEMS TO BE SALVAGED AND INSTALLED BY CONTRACTOR AS PART OF THIS PROJECT.
6) ALL NEW INTERCONNECT CONDUIT INSTALLATIONS (UNDER ROADWAYS, SIDEWALKS, AND IN BOULEVARD AREAS) SHALL BE DIRECTIONALLY BORED UNLESS OTHERWISE APPROVED BY THE ENGINEER IN THE FIELD (DURING CONSTRUCTION) FOR A CONDUIT SECTION TO BE TRENCHED-IN DUE TO UTILITY OR OTHER CONFLICTS THAT WILL NOT ALLOW FOR A CONDUIT SECTION TO BE BORED. TURF ESTABLISHMENT (INCLUDING GRADING AND RESTORATION) SHALL ALSO BE PROVIDED FOR ALL CONDUIT INSTALLATION AREAS IN THE BOULEVARDS (INCIDENTAL).

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| DESIGN TEAM | NO. | BY | DATE | REVISIONS |
|---|---|---|---|---|
| DRAWN BY: MRB | | | | |
| DESIGNER: MRB | | | | |
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SEH

ANOKA COUNTY, MN
CSAH 9
SAP 002-609-023
CITY OF ANDOVER SAP 198-020-042, CITY PROJECT 25-13
CITY OF ANOKA SAP 103-020-020

TRAFFIC SIGNAL SYSTEM "A"
INTERSECTION LAYOUT AND INTERCONNECT
ROUND LAKE BLVD (CSAH 9) AT 135TH AVENUE/ROOSEVELT STREET

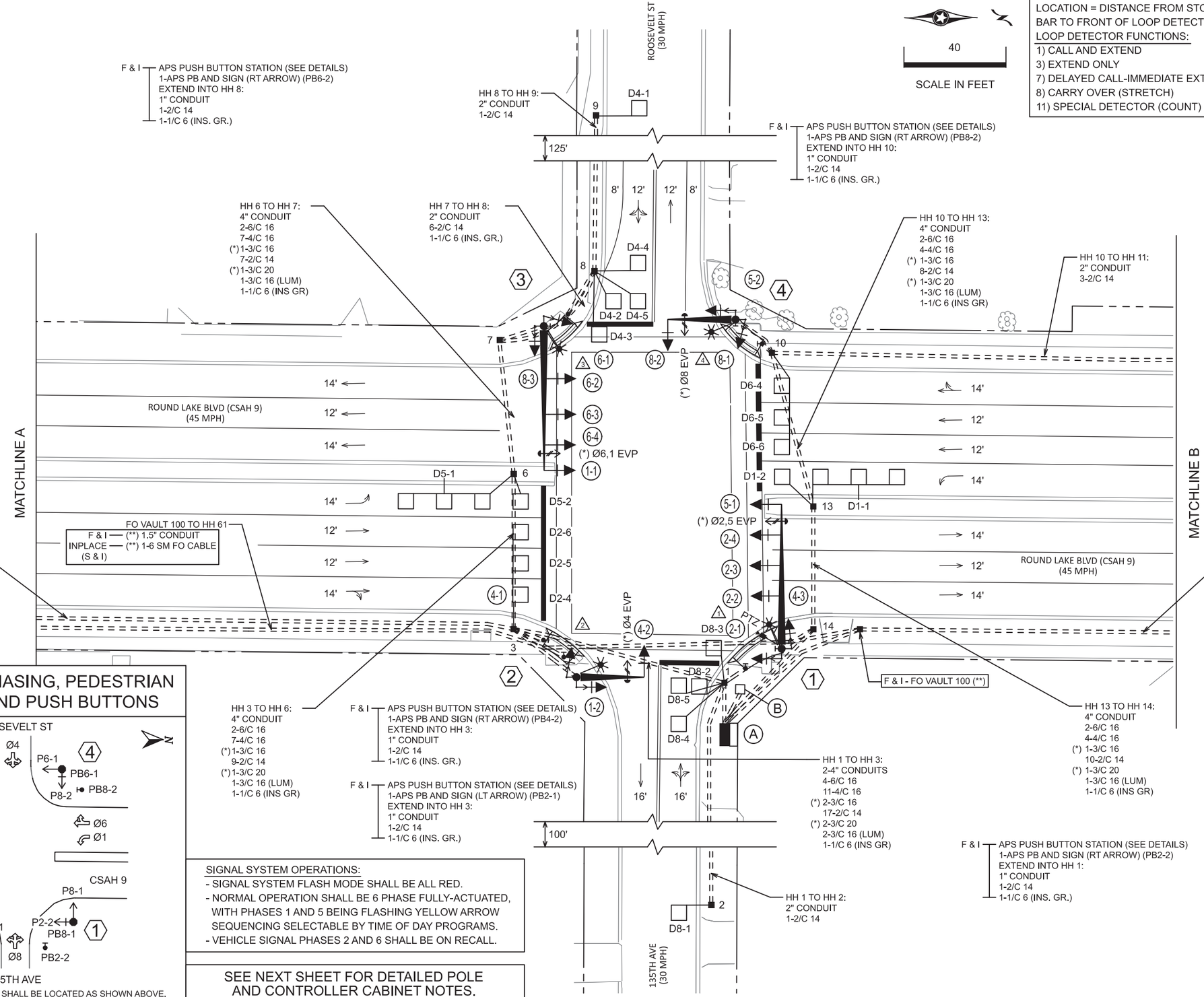
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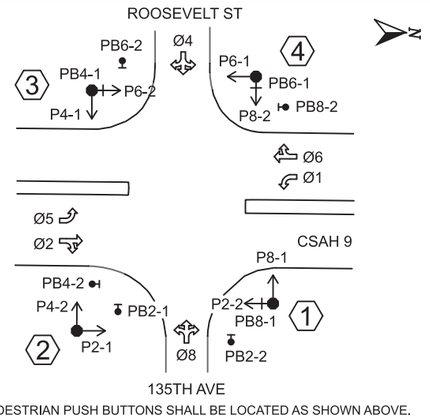
NOTE:
LOCATION = DISTANCE FROM STOP BAR TO FRONT OF LOOP DETECTOR
LOOP DETECTOR FUNCTIONS:
1) CALL AND EXTEND
3) EXTEND ONLY
7) DELAYED CALL-IMMEDIATE EXTEND
8) CARRY OVER (STRETCH)
11) SPECIAL DETECTOR (COUNT)

## PVC LOOP DETECTORS

| NUMBER | SIZE (FT.) | LOCATION | FUNCTION |
|---|---|---|---|
| D1-1 | 3-6X6 | 20', 35', 50' | 1 |
| D1-2 | 6X6 | 5' | 1 |
| D2-1 | 6X6 | 450' | 1 |
| D2-2 | 6X6 | 450' | 1 |
| D2-3 | 6X6 | 450' | 1 |
| D2-4 | 6X6 | 5' | 11 |
| D2-5 | 6X6 | 5' | 11 |
| D2-6 | 6X6 | 5' | 11 |
| D4-1 | 6X6 | 200' | 3,8 |
| D4-2 | 6X6 | 5' | 7 |
| D4-3 | 6X6 | -5' | 7 |
| D4-4 | 6X6 | 20' | 7 |
| D4-5 | 6X6 | 5' | 7 |
| D5-1 | 3-6X6 | 20', 35', 50' | 1 |
| D5-2 | 6X6 | 5' | 1 |
| D6-1 | 6X6 | 450' | 1 |
| D6-2 | 6X6 | 450' | 1 |
| D6-3 | 6X6 | 450' | 1 |
| D6-4 | 6X6 | 5' | 11 |
| D6-5 | 6X6 | 5' | 11 |
| D6-6 | 6X6 | 5' | 11 |
| D8-1 | 6X6 | 180' | 3,8 |
| D8-2 | 6X6 | 5' | 7 |
| D8-3 | 6X6 | -5' | 7 |
| D8-4 | 6X6 | 20' | 7 |
| D8-5 | 6X6 | 5' | 7 |




## CONTROLLER PHASING, PEDESTRIAN INDICATIONS AND PUSH BUTTONS




PEDESTRIAN PUSH BUTTONS SHALL BE LOCATED AS SHOWN ABOVE.

SIGNAL SYSTEM OPERATIONS:
- SIGNAL SYSTEM FLASH MODE SHALL BE ALL RED.
- NORMAL OPERATION SHALL BE 6 PHASE FULLY-ACTUATED, WITH PHASES 1 AND 5 BEING FLASHING YELLOW ARROW SEQUENCING SELECTABLE BY TIME OF DAY PROGRAMS.
- VEHICLE SIGNAL PHASES 2 AND 6 SHALL BE ON RECALL.

SEE NEXT SHEET FOR DETAILED POLE AND CONTROLLER CABINET NOTES.

## LED SIGNAL HEAD CHART

| SIGNAL HEAD | R | Y | FYA | G |
|---|---|---|---|---|
| 1-1, 1-2 | ⬅ | ⬅ | ⬅ | ⬅ |
| 2-1, 2-2, 2-3, 2-4 | ● | ● | | ● |
| 4-1, 4-2, 4-3 | ● | ● | | ● |
| 5-1, 5-2 | ⬅ | ⬅ | ⬅ | ⬅ |
| 6-1, 6-2, 6-3, 6-4 | ● | ● | | ● |
| 8-1, 8-2, 8-3 | ● | ● | | ● |

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

| DESIGN TEAM | NO. | BY | DATE | REVISIONS |
|---|---|---|---|---|
| DRAWN BY: MRB | | | | |
| DESIGNER: MRB | | | | |
| CHECKED BY: JMG | | | | |

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Certified By: Licensed Professional Engineer
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Lic. No. 22457 Date: 09/23/2025

SEH

ANOKA COUNTY, MN
CSAH 9
SAP 002-609-023
CITY OF ANDOVER SAP 198-020-042, CITY PROJECT 25-13
CITY OF ANOKA SAP 103-020-020

TRAFFIC SIGNAL SYSTEM "A"
INTERSECTION LAYOUT
CSAH 9 (ROUND LAKE BOULEVARD) AT 135TH AVENUE/ROOSEVELT STREET

88
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INTERCONNECT NOTES:

1) IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO UTILIZE THE "ONE CALL EXCAVATION NOTICE SYSTEM" (TELEPHONE NUMBER 651-454-0002) AS REQUIRED BY MINNESOTA STATUTE 2160.

2) DISTANCE OFF SHOULDER OR CURB FOR NEW INTERCONNECT CONDUIT SHALL BE 1-2 FEET UNLESS OTHERWISE APPROVED BY ENGINEER.

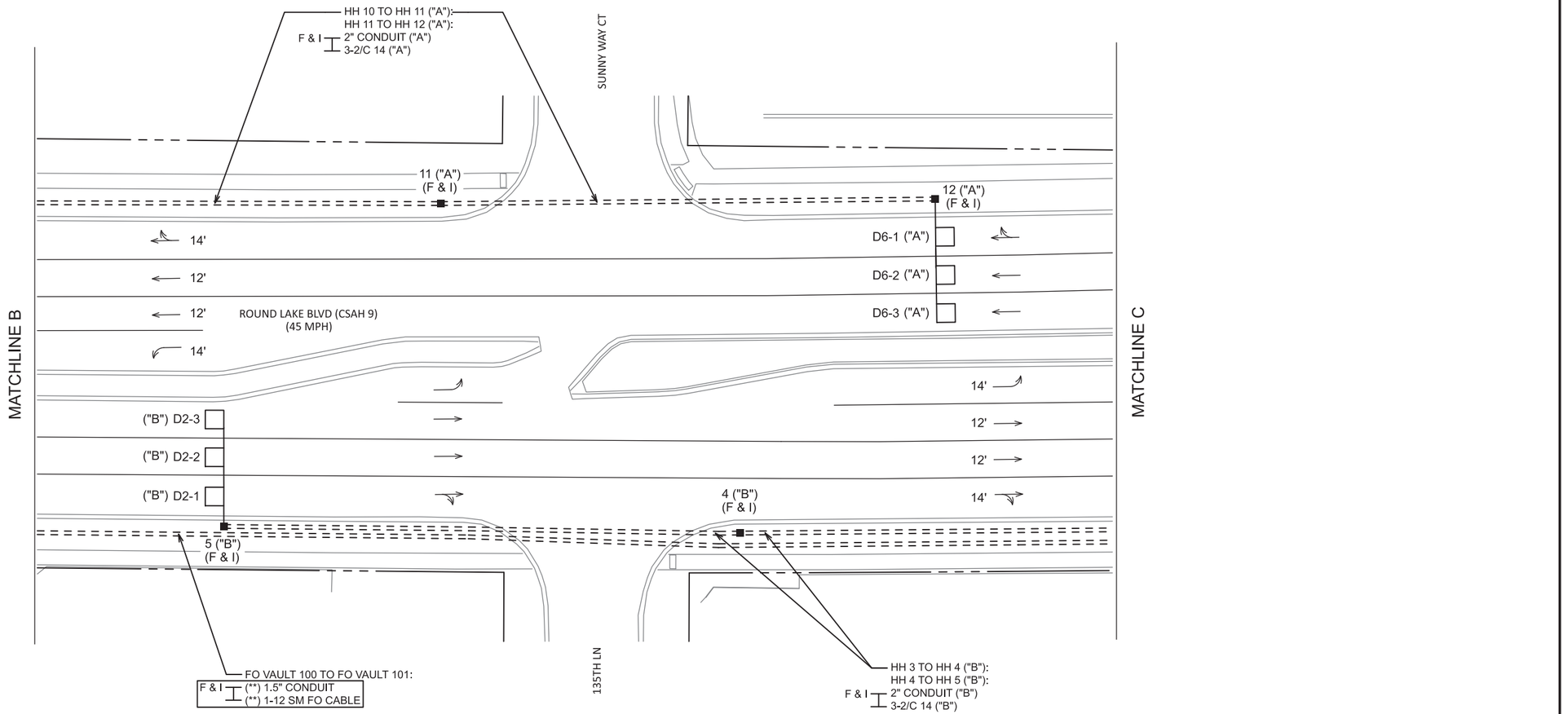
3) (**) DENOTES ITEMS TO BE FURNISHED AND INSTALLED BY THE CONTRACTOR UNDER ITEM NO. 2565 (TRAFFIC CONTROL INTERCONNECT). SEE STATEMENT OF ESTIMATED QUANTITIES AND SPECIAL PROVISIONS.

4) ITEMS DENOTED BY "A" SHALL BE INCLUDED AS PART OF THE PAY ITEM FOR ITEM NO. 2565 (TRAFFIC CONTROL SIGNAL SYSTEM "A").

   ITEMS DENOTED BY "B" SHALL BE INCLUDED AS PART OF THE PAY ITEM FOR ITEM NO. 2565 (TRAFFIC CONTROL SIGNAL SYSTEM "B").

5) (F & I) DENOTES ITEMS TO BE FURNISHED AND INSTALLED BY CONTRACTOR AS PART OF THIS PROJECT.

6) ALL NEW INTERCONNECT CONDUIT INSTALLATIONS (UNDER ROADWAYS, SIDEWALKS, AND IN BOULEVARD AREAS) SHALL BE DIRECTIONALLY BORED UNLESS OTHERWISE APPROVED BY THE ENGINEER IN THE FIELD (DURING CONSTRUCTION) FOR A CONDUIT SECTION TO BE TRENCHED-IN DUE TO UTILITY OR OTHER CONFLICTS THAT WILL NOT ALLOW FOR A CONDUIT SECTION TO BE BORED. TURF ESTABLISHMENT (INCLUDING GRADING AND RESTORATION) SHALL ALSO BE PROVIDED FOR ALL CONDUIT INSTALLATION AREAS IN THE BOULEVARDS (INCIDENTAL).




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| DESIGN TEAM | NO. | BY | DATE | REVISIONS |
|---|---|---|---|---|
| DRAWN BY: MRB | | | | |
| DESIGNER: MRB | | | | |
| 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.

Certified By: Licensed Professional Engineer — Printed Name: JOHN M. GRAY — Lic. No. 22457 — Date: 09/23/2025

SEH

ANOKA COUNTY, MN
CSAH 9
SAP 002-609-023
CITY OF ANDOVER SAP 198-020-042, CITY PROJECT 25-13
CITY OF ANOKA SAP 103-020-020

TRAFFIC SIGNAL SYSTEMS "A-B"
INTERSECTION LAYOUT AND INTERCONNECT
CSAH 9 (ROUND LAKE BOULEVARD) BETWEEN 135TH AVENUE AND 136TH AVENUE

NOTES:

1) LOCATION OF FOUNDATIONS, LOOP DETECTORS, HANDHOLES, AND PUSH BUTTON STATIONS SHALL BE DETERMINED IN FIELD BY THE ENGINEER.
2) SEE SPECIAL PROVISIONS FOR COUNTY FURNISHED MATERIALS.
3) ALL HANDHOLES, CONDUIT, AND CABLES AND CONDUCTORS SHALL BE NEW AND SHALL BE FURNISHED AND INSTALLED BY CONTRACTOR UNLESS OTHERWISE NOTED.
4) NEW HANDHOLES SHALL BE IN ACCORDANCE WITH THE MnDOT APPROVED/ QUALIFIED PRODUCTS LIST AND THE SPECIAL PROVISIONS.
5) A 3/4" HALF COUPLING, 3/4" PIPE NIPPLE & CONDUIT OUTLET BODY SHALL BE FURNISHED AND INSTALLED 6 FEET FROM THE END OF EACH MAST ARM (FOR EVP).
6) THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING THE POWER COMPANY TO ARRANGE FOR THE POWER CONNECTION (CONNEXUS). SEE SPECIAL PROVISIONS.
7) SEE SPECIAL PROVISIONS & DETAILS REGARDING SIGNS TO BE FURNISHED AND INSTALLED BY CONTRACTOR (TO BE MEASURED AND PAID FOR SEPARATELY FROM THE "TRAFFIC CONTROL SIGNAL SYSTEM A" PAY ITEM).
8) EACH PEDESTRIAN INDICATION SHALL BE ONE SECTION LED COUNTDOWN TIMER "HAND/WALKING PERSON" INDICATION.
9) SEE DETAILS, SPECIAL PROVISIONS & STATEMENT OF ESTIMATED QUANTITIES REGARDING BATTERY BACK-UP SIGNAL SERVICE CABINET TO BE FURNISHED AND INSTALLED BY CONTRACTOR (SEPARATE FROM ITEM NO. 2565 FOR THIS SIGNAL SYSTEM).
10) LOOP DETECTOR WIRES SHALL BE CROSS-LINKED POLYETHYLENE (XLP) #12 AWG IN 3/4" N.M.C. SEE SPECIAL PROVISIONS.
11) (*) DENOTES ITEMS TO BE INCLUDED AS PART OF THE PAY ITEM FOR ITEM INO. 2565 (EMERGENCY VEHICLE PREEMPTION SYSTEM A). SEE STATEMENT OF ESTIMATED QUANTITIES AND SPECIAL PROVISIONS.
12) (**) DENOTES ITEMS TO BE FURNISHED AND INSTALLED BY CONTRACTOR UNDER ITEM NO. 2565 (TRAFFIC CONTROL INTERCONNECT). SEE STATEMENT OF ESTIMATED QUANTITIES AND SPECIAL PROVISIONS.
13) NO SPLICING IS ALLOWED ON ANY CABLE OR CONDUCTOR BETWEEN THE CONTROLLER/SERVICE CABINETS AND EACH POLE OR MAST ARM MOUNTED COMPONENT (EXCEPT THAT LOOP DETECTORS SPLICES ARE ALLOWED IN ADJACENT HANDHOLES ONLY).
14) SEE SPECIAL PROVISIONS REGARDING REMOVAL OF EXISTING SIGNAL SYSTEM (TO BE MEASURED AND PAID FOR SEPARATELY FROM ITEM NO. 2565 - "TRAFFIC CONTROL SIGNAL SYSTEM A").
15) CONTRACTOR SHALL MAINTAIN OPERATION OF A SIGNAL SYSTEM AT THIS INTERSECTION AT ALL TIMES (EITHER VIA THE EXISTING SIGNAL SYSTEM OR A TEMPORARY SIGNAL SYSTEM), EXCEPT AS OTHERWISE APPROVED BY THE COUNTY FOR THE SIGNAL SYSTEM TO BE TURNED OFF FOR CHANGEOVER FROM EXISTING TO TEMPORARY (AND/OR PERMANENT) SIGNAL SYSTEM. SEE SPECIAL PROVISIONS AND "TEMPORARY SIGNAL SYSTEM A" PLANS FOR FURTHER INFORMATION.
16) CONTRACTOR SHALL PROVIDE, INSTALL, AND MAKE OPERATIONAL ALL COMPONENTS RELATED TO THE COMPLETE PTZ CAMERA INSTALLATION (TO BE MEASURED AND PAID FOR SEPARATELY FROM THE "TRAFFIC CONTROL SIGNAL SYSTEM A" PAY ITEM). SEE SPECIAL PROVISIONS AND STATEMENT OF ESTIMATED QUANTITIES.

**(1)** F & I
- PA100 POLE FOUNDATION
- TYPE PA100-A-55-X6-300 CAM 350 (DAVIT AT 0 DEG)
- LUMINAIRE-LED
- 1-ANGLE MOUNT SIGNAL-OVERHEAD AT 0'
- 3-STRAIGHT MOUNT SIGNALS-OVERHEAD AT 13', 25', 37'
- 2-ANGLE MOUNT SIGNALS-POLE MOUNTED 90 DEG AND 180 DEG
- 2-ANGLE MOUNT C.D. PED INDICATIONS-POLE MOUNTED AT 90 DEG AND 180 DEG
- 1-APS PB, SIGN (LT ARROW) AND APS MAST ARM POLE ADAPTOR (PB8-1)
- 2-R6-1 (ONE WAY) SIGNS-POLE MOUNTED 0/180 DEG
- R10-X12 SIGN PANEL-ADJACENT TO 5-1
- STREET NAME SIGN PANEL-OVERHEAD (P1)
- (*) EVP MOUNTING HARDWARE & LED CONFIRMATION LIGHT - OVERHEAD AT 6' (Ø2,5)
- 1-PTZ CAMERA AND MOUNTING HARDWARE (MOUNT ATOP CAMERA EXTENSION)
- EXTEND INTO HH 14:
- 3" CONDUIT
- 2-6/C 16 (INCLUDING 1 SPARE)
- 7-4/C 16
- (*) 1-3/C 16
- 1-2/C 14
- (*) 1-3/C 20
- 1-CAT 5E CABLE (PTZ)
- 1-3/C 16 (LUM)
- 1-1/C 6 (GRD)

INSTALL (FURNISHED BY COUNTY) — (*) ONE WAY EVP DETECTOR (Ø2,5)

**(2)** F & I
- PA100 POLE FOUNDATION
- TYPE PA100-A-25-D30-9 (DAVIT AT 350 DEG)
- LUMINAIRE-LED
- 1-ANGLE MOUNT SIGNAL-OVERHEAD AT 0'
- 2-ANGLE MOUNT SIGNALS-POLE MOUNTED 90 DEG AND 180 DEG
- 2-ANGLE MOUNT C.D. PED INDICATIONS-POLE MOUNTED AT 90 DEG AND 180 DEG
- STREET NAME SIGN PANEL-OVERHEAD (P2)
- (*) EVP MOUNTING HARDWARE & LED CONFIRMATION LIGHT - OVERHEAD AT 6' (Ø4)
- EXTEND INTO HH 3:
- 3" CONDUIT
- 2-6/C 16 (INCLUDING 1 SPARE)
- 4-4/C 16
- (*) 1-3/C 16
- (*) 1-3/C 20
- 1-3/C 16 (LUM)
- 1-1/C 6 (GRD)

INSTALL (FURNISHED BY COUNTY) — (*) ONE WAY EVP DETECTOR (Ø4)

**(3)** F & I
- PA100 POLE FOUNDATION
- TYPE PA100-A-55-D30-9 (DAVIT AT 350 DEG)
- LUMINAIRE-LED
- 1-ANGLE MOUNT SIGNAL-OVERHEAD AT 0'
- 3-STRAIGHT MOUNT SIGNALS-OVERHEAD AT 12', 24', 36'
- 2-ANGLE MOUNT SIGNALS-POLE MOUNTED 90 DEG AND 180 DEG
- 2-ANGLE MOUNT C.D. PED INDICATIONS-POLE MOUNTED AT 90 DEG AND 180 DEG
- 1-APS PB, SIGN (LT ARROW) AND APS MAST ARM POLE ADAPTOR (PB4-1)
- 2-R6-1 (ONE WAY) SIGNS-POLE MOUNTED 0/180 DEG
- R10-X12 SIGN PANEL-ADJACENT TO 1-1
- STREET NAME SIGN PANEL-OVERHEAD (P3)
- (*) EVP MOUNTING HARDWARE & LED CONFIRMATION LIGHT - OVERHEAD AT 6' (Ø6,1)
- EXTEND INTO HH 7:
- 3" CONDUIT
- 2-6/c 14 (INCLUDING 1 SPARE)
- 7-4/c 14
- (*) 1-3/C 16
- 1-2/C 14
- (*) 1-3/C 20
- 1-3/C 16 (LUM)
- 1-1/C 6 (GRD)

INSTALL (FURNISHED BY COUNTY) — (*) ONE WAY EVP DETECTOR (Ø6,1)

**(4)** F & I
- PA100 POLE FOUNDATION
- TYPE PA100-A-25-D30-9 (DAVIT AT 350 DEG)
- LUMINAIRE-LED
- 1-ANGLE MOUNT SIGNAL-OVERHEAD AT 0'
- 2-ANGLE MOUNT SIGNALS-POLE MOUNTED 90 DEG AND 180 DEG
- 2-ANGLE MOUNT C.D. PED INDICATIONS-POLE MOUNTED AT 90 DEG AND 180 DEG
- 1-APS PB, SIGN (LT ARROW) AND APS MAST ARM POLE ADAPTOR (PB6-1)
- STREET NAME SIGN PANEL-OVERHEAD (P4)
- (*) EVP MOUNTING HARDWARE & LED CONFIRMATION LIGHT - OVERHEAD AT 6' (Ø8)
- EXTEND INTO HH 10:
- 3" CONDUIT
- 2-6/C 16 (INCLUDING 1 SPARE)
- 4-4/C 16
- (*) 1-3/C 16
- 1-2/C 14
- (*) 1-3/C 20
- 1-3/C 16 (LUM)
- 1-1/C 6 (GRD)

INSTALL (FURNISHED BY COUNTY) — (*) ONE WAY EVP DETECTOR (Ø8)

**(A)** INSTALL (FURNISHED BY COUNTY) — CONTROLLER AND CABINET

F & I
- EQUIPMENT PAD FOUNDATION
- BBU SIGNAL SERVICE CABINET
- BETWEEN CONTROLLER CABINET AND SERVICE CABINET:
- METERED SIGNAL SERVICE
- 2" CONDUIT
- 3-1/C 6
- 1.5" CONDUIT (COMMS)
- 1-6 PR 19 (COMMS)
- CONTROLLER CABINET TO HH 1:

| | |
|---|---|
| 4" CONDUIT | 4" CONDUIT |
| 2-6/C 16 | 2-6/C 16 |
| 4-4/C 16 | 7-4/C 16 |
| (*) 1-3/C 16 | (*) 1-3/C 16 |
| 14-2/C 14 | 9-2/C 14 |
| (*) 1-3/C 20 | (*) 1-3/C 20 |
| 1-1/C 6 (GRD) | |

- CONTROLLER CABINET TO HH 14:

| | |
|---|---|
| 4" CONDUIT | 4" CONDUIT |
| 2-6/C 16 | 2-6/C 16 |
| 7-4/C 16 | 4-4/C 16 |
| (*) 1-3/C 16 | (*) 1-3/C 16 |
| 1-2/C 14 | 10-2/C 14 |
| (*) 1-3/C 20 | (*) 1-3/C 20 |

- 1-CAT 5E CABLE (PTZ)
- 1-1/C 6 (GRD)

F & I
- SERVICE CABINET TO HH 1:
- 1.25" CONDUIT
- METERED STREET LIGHT SERVICE
- 2-3/C 16 (LUM)
- SERVICE CABINET TO HH 14:
- 1.25" CONDUIT
- METERED STREET LIGHT SERVICE
- 2-3/C 16 (LUM)
- STUB OUT 2" CONDUIT FROM SERVICE CABINET (FOR POWER CONNECTION BY CONNEXUS)
- STUB OUT 2-3" CONDUITS FROM CONTROLLER CABINET TO SOUTH (CAP BOTH ENDS- FOR FUTURE USE)
- CONTROLLER CABINET TO FO-VAULT 100:
- (**) 2" CONDUIT
- (**) 1-6 SM FO (TO NORTHDALE) - INPLACE (S & I)
- (**) 1-12 SM FO (TO 136TH)

**(B)** INPLACE — GROUND MOUNTED TRANSFORMER (SOP - CONNEXUS)

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MODEL: sgl4

| DESIGN TEAM | NO. | BY | DATE | REVISIONS |
|---|---|---|---|---|
| DRAWN BY: MRB | | | | |
| DESIGNER: MRB | | | | |
| 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.
Certified By: Licensed Professional Engineer — Printed Name: JOHN M. GRAY — Lic. No. 22457 — Date: 09/23/2025

SEH

ANOKA COUNTY, MN
CSAH 9
SAP 002-609-023
CITY OF ANDOVER SAP 198-020-042, CITY PROJECT 25-13
CITY OF ANOKA SAP 103-020-020

TRAFFIC SIGNAL SYSTEM "A"
POLE & CABINET NOTES
CSAH 9 (ROUND LAKE BOULEVARD) AT 135TH AVENUE/ROOSEVELT STREET

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9/25/2025

## CONTROLLER AND CABINET

### LUMINAIRE 2

TO LUM 4
- 1-2: 19 — (SPARE) (SEE NOTE 6)
- 16
- 4-1: 20 — P4-2
- 17
- 4-2: 21 — P2-1
- 18
- 22 — Ø4 EVP LIGHT
- 23 — TO Ø4 EVP HUB DETECTOR
- 49 — GROUND

### HH 2
12 — 12
- D8-1

### HH 4 / HH 5
HH 4 — 26-28 — HH 5 (26, 27, 28)
- D2-1, D2-2, D2-3

### HH 3
5, 29-49; 25, 49; 24, 49
- 13, 14, 15, 49 GR.RD.
- D2-4, D2-5, D2-6
- 26-28
- 4, 13-28, 45
- 5, 29-46

### HH 1
7, 8, 9, 10, 49 GR.RD.
- D8-2, D8-3, D8-4, D8-5
- 12 — 7-28, 49 — 29-48
- 4-5 — TO SERVICE CABINET
- 24 — PB2-1 TO PB — GROUND 49
- 25 — PB4-2 TO PB — GROUND 49
- 11 — PB2-2 TO PB — GROUND 49

### LUMINAIRE 3
TO LUM 5
- 1-1: 36
- 31: 37 — (SPARE) (SEE NOTE 6)
- 6-4: 38 — P6-2
- 32
- 6-3: 39 — P4-1
- 33
- 40 — PB4-1 TO PB
- 6-2: 41 — Ø6,1 EVP LIGHT
- 34
- 6-1: 42 — TO Ø6,1 EVP HUB DETECTOR
- 35
- 49 — GROUND

### HH 6
5, 29-49 — 29, 30 — 5, 31-49
- D5-1, D5-2

### HH 9
48 — 48
- D4-1

### HH 8
48 — 43, 44, 45, 46, 49 GR.RD.
- D4-2, D4-3, D4-4, D4-5
- 47 — PB6-2 TO PB — GROUND 49

### HH 7
5, 31-49 — 43-49 — 49 GR.RD.

### 6 SM FO CABLE TO NORTHDALE BLVD
- 2 SIGNAL SERVICE
- 7 D8-2
- 8 D8-3
- 9 D8-4
- 10 D8-5
- 11 PB2-2 NEU
- 12 D8-1
- 13 D2-4
- 14 D2-5
- 15 D2-6
- 16 RLA 1-2, YLA 1-2, GLA 1-2, NEU 1-2, FYLA 1-2, SPR
- 17 RED 4-1, YEL 4-1, GRN 4-1, NEU 4-1
- 18 RED 4-2, YEL 4-2, GRN 4-2, NEU 4-2
- 19 SPR, SPR, SPR, NEU, SPR, SPR
- 20 DWK P4-2, WLK P4-2, SPR, NEU P4-2
- 21 DWK P2-1, WLK P2-1, SPR, NEU P2-1
- 22 Ø4 EVP LT, EQG, NEU
- 23 Ø4 EVP DETECTOR
- 24 PB2-1 NEU
- 25 PB4-2 NEU
- 26 D2-1
- 27 D2-2
- 28 D2-3
- 29 D5-1
- 30 D5-2
- 31 RLA 1-1, YLA 1-1, GLA 1-1, NEU 1-1, FYLA 1-1, SPR
- 32 RED 6-4, YEL 6-4, GRN 6-4, NEU 6-4
- 110 (INP.)

### 12 SM FO CABLE TO 136TH ST
- 33 RED 6-3, YEL 6-3, GRN 6-3, NEU 6-3
- 34 RED 6-2, YEL 6-2, GRN 6-2, NEU 6-2
- 35 RED 6-1, YEL 6-1, GRN 6-1, NEU 6-1
- 36 RED 8-3, YEL 8-3, GRN 8-3, NEU 8-3
- 37 SPR, SPR, SPR, NEU, SPR, SPR
- 38 DWK P6-2, WLK P6-2, SPR, NEU P6-2
- 39 DWK P4-1, WLK P4-1, SPR, NEU P4-1
- 40 PB4-1 NEU
- 41 Ø6,1 EVP LT, EQG, NEU
- 42 Ø6,1 EVP DETECTOR
- 43 D4-2
- 44 D4-3
- 45 D4-4
- 46 D4-5
- 47 PB6-2 NEU
- 48 D4-1
- 49 GROUND
- 50 RLA 5-1, YLA 5-1, GLA 5-1, NEU 5-1, FYLA 5-1, SPR
- 51 RED 2-4, YEL 2-4, GRN 2-4, NEU 2-4
- 52 RED 2-3, YEL 2-3, GRN 2-3, NEU 2-3
- 53 RED 2-2, YEL 2-2, GRN 2-2, NEU 2-2
- 54 RED 2-1, YEL 2-1, GRN 2-1, NEU 2-1
- 55 RED 4-3, YEL 4-3, GRN 4-3, NEU 4-3
- 111

- 56 SPR, SPR, SPR, NEU, SPR, SPR
- 57 DWK P2-2, WLK P2-2, SPR, NEU P2-2
- 58 DWK P8-1, WLK P8-1, SPR, NEU P8-1
- 6 PR 19 (COMMS) — 90
- 59 PB8-1 NEU
- 60 Ø2,5 EVP LT, EQG, NEU
- 61 Ø2,5 EVP DETECTOR
- 62 VIDEO DETECTOR (PTZ)
- 63 D1-1
- 64 D1-2
- 65 D6-4
- 66 D6-5
- 67 D6-6
- 68 RLA 5-2, YLA 5-2, GLA 5-2, NEU 5-2, FYLA 5-2, SPR
- 69 RED 8-1, YEL 8-1, GRN 8-1, NEU 8-1
- 70 RED 8-2, YEL 8-2, GRN 8-2, NEU 8-2
- 71 SPR, SPR, SPR, NEU, SPR, SPR
- 72 DWK P8-2, WLK P8-2, SPR, NEU P8-2
- 73 DWK P6-1, WLK P6-1, SPR, NEU P6-1
- 74 Ø8 EVP LT, EQG, NEU
- 75 Ø8 EVP DETECTOR
- 76 PB6-1 NEU
- 77 PB8-2 NEU
- 78 D6-1
- 79 D6-2
- 110 (INP.), 111
- 80 D6-3
- 81 GROUND

### S.O.P.
1

### SIGNAL SERVICE CABINET
SIGNALS, NEUTRAL, LIGHTING — 1 — 1
- 90 — 6 PR 19 (COMMS)
- 2 — SIGNAL SERVICE
- 4 — LUMINAIRE 2
- 5 — LUMINAIRE 3
- 3 — LUMINAIRE 1
- 6 — LUMINAIRE 4

TO HH 1 — 4-5

3, 6

### LUMINAIRE 1
TO LUM 3
- 5-1: 55
- 50: 56 — (SPARE) (SEE NOTE 6)
- 2-4: 57 — P2-2
- 51
- 2-3: 58 — P8-1
- 52
- 59 — PB8-1 TO PB
- 2-2: 60 — Ø2,5 EVP LIGHT
- 53
- 2-1: 61 — TO Ø2,5 EVP HUB DETECTOR
- 54
- 62 — VIDEO DETECTOR (PTZ)
- 81 — GROUND

### HH 14
81 GR.RD.

3, 6 — 50-62, 81 — 63-80 — 6, 63-81

### NOTES:
1) SEE DETAILS FOR CONDUCTOR COLOR CODE.
2) LUMINAIRES SHALL BE METERED.
3) SIGNAL SYSTEM INCLUDES BATTERY BACK-UP SERVICE CABINET (WITH BATTERIES AND BACK-UP SYSTEM EQUIPMENT).
4) SPLICES ARE ONLY ALLOWED ON LOOP DETECTOR CIRCUITS (IN HANDHOLES).
5) ALL CABLES AND CONDUCTORS ARE NEW AND SHALL BE F & I BY CONTRACTOR.
6) FOR EACH "SPARE" CABLE, COIL SUFFICIENT CABLE TO REACH THE END OF THE MAST ARM IN THE HANDHOLE ADJACENT TO EACH POLE.
7) LEAVE ONE LOOP OF SLACK FOR EACH CABLE IN EACH POLE BASE.

### HH 12
78-80 — 78, 79, 80
- D6-1, D6-2, D6-3

### HH 11
78-80 — 78-80

### FO VAULT 100
- 110 (INP.) — INTERCONNECT TO NORTHDALE BLVD
- 111 — INTERCONNECT TO 136TH ST

### LUMINAIRE 4
TO LUM 6
- 5-2: 71 — (SPARE) (SEE NOTE 6)
- 68
- 8-1: 72 — P8-2
- 69
- 8-2: 73 — P6-1
- 70
- 74 — Ø8 EVP LIGHT
- 75 — TO Ø8 EVP HUB DETECTOR
- 76 — PB6-1 TO PB
- 81 — GROUND

### HH 13
63, 64 — 6, 63-81 — 6, 65-81
- D1-1, D1-2

### HH 10
65, 66, 67, 81 GR.RD. — 6, 65-81
- D6-4, D6-5, D6-6
- 77 — PB8-2 TO PB — GROUND 81

| DESIGN TEAM | NO. | BY | DATE | REVISIONS |
|---|---|---|---|---|
| DRAWN BY: MRB | | | | |
| DESIGNER: MRB | | | | |
| 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.

Certified By: Licensed Professional Engineer — Printed Name: JOHN M. GRAY — Lic. No. 22457 — Date: 09/23/2025

SEH

ANOKA COUNTY, MN
CSAH 9
SAP 002-609-023
CITY OF ANDOVER SAP 198-020-042, CITY PROJECT 25-13
CITY OF ANOKA SAP 103-020-020

# TRAFFIC SIGNAL SYSTEM "A"
FIELD WIRING DIAGRAM
CSAH 9 (ROUND LAKE BOULEVARD) AT 135TH AVENUE/ROOSEVELT STREET

91/133

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MODEL: sgl5

| LOOP DETECTORS | | | |
|---|---|---|---|
| NUMBER | SIZE (FT) | LOCATION | FUNCTION |
| D1–1 | 2–6x6 | 20' | 1 |
| D1–2 | 2–6x6 | 5' | 1 |
| D2–1 | 3–6x6 | 330' | 1 |
| D4–1 | 6x6 | 120' | 3,8 |
| D4–2 | 6x6 | 5' | 7 |
| D4–3 | 2–6x6 | 5' | 1 |
| D5–1 | 2–6x6 | 20' | 1 |
| D5–2 | 2–6x6 | 5' | 1 |
| D6–1 | 3–6x6 | 300' | 1 |
| D8–1 | 6x6 | 120' | 3,8 |
| D8–2 | 6x6 | 5' | 7 |
| D8–3 | 2–6x6 | 5' | 1 |

LOCATION = DISTANCE FROM STOP BAR TO LOOP DETECTOR.

FUNCTIONS:
1) CALL AND EXTEND
2) CALL ONLY
3) EXTEND ONLY
4) CALL ONLY DENSITY
5) DELAYED CALL ONLY
6) DELAYED CALL ONLY DENSITY
7) DELAYED CALL, MMEDIATE EXTEND
8) CARRY OVER (STRETCH)
9) ADVISORY DETECTOR
10) SAMPLING DETECTOR
11) SPECIAL DETECTOR

(4) A100 POLE FOUNDATION
TYPE A100–A–50–D40–9 (DAVIT AT 350°)
LUMINAIRE–250 W HPS W/PEC & CHECK SWITCH
3–ONE WAY SIGNALS–OVERHEAD (0', 11' & 23' FROM END OF MAST ARM)
TYPE 10B–POLE MOUNTED 180°
TYPE D SIGN PANEL–OVERHEAD
ONE WAY EVP DETECTOR AND LIGHT (ø6,1)
EXTENDED INTO H.H.8:
3"R.S.C.
2–12/c#12
1–3/c#12
1–3/c#20
2–1/c#10

(5) PEDESTAL FOUNDATION
10' PEDESTAL POLE, BASE & WIND COLLAR
TYPE 1C
2–PEDESTRIAN PUSH BUTTONS
EXTENDED INTO H.H.9:
2"R.S.C.
1–12/c#12
1–3/c#12

(6) P90 POLE FOUNDATION
TYPE P90–A–30
ONE WAY SIGNAL–OVERHEAD
2–TYPE 10B–POLE MOUNTED 90° AND 180°
2–PEDESTRIAN PUSH BUTTONS
TYPE D SIGN PANEL–OVERHEAD
ONE WAY EVP DETECTOR AND LIGHT (ø8)
EXTENDED INTO H.H.13:
3"R.S.C.
2–12/c#12
2–3/c#12
1–3/c#20

(A) CONTROLLER AND CABINET
CABINET FOUNDATION
EXTENDED INTO H.H.16:
METERED SIGNAL SERVICE
1 1/4"R.S.C.
3–1/c#6
EXTENDED INTO H.H.1:
4"R.S.C.
5–12/c#12
4–3/c#12
2–3/c#20
9–2/c#14
EXTENDED INTO H.H.11:
4"R.S.C.
5–12/c#12
4–3/c#12
2–3/c#20
3–2/c#14

EXTENDED INTO H.H.11:
2"R.S.C.
1–6 Pr.#19
EXTENDED INTO H.H.1:
2"R.S.C.–INPLACE

(**) 1–6 SM FIBER–OPTIC CABLE–F & I

20 10 0 20 40
scale feet

N

ROOSEVELT STREET (30 MPH)

SUNNY WAY COURT

ROUND LAKE BLVD. (C.S.A.H.9)
(45 MPH)

MATCH LINE "G" – INTERCONNECT TO NORTHDALE BLVD

H.H.6 TO H.H.61 (SOUTH):
(**) 2" CONDUIT
(**) 1–6 SM FIBER–OPTIC CABLE
(TO CSAH 9/NORTHDALE BLVD SIGNAL SYSTEM)

(**) 1–6 SM FIBER–OPTIC CABLE

(**) 1–6 SM FIBER–OPTIC CABLE

(**) 1–6 SM FIBER–OPTIC CABLE

(3) P90 POLE FOUNDATION
TYPE P90–A–30
ONE WAY SIGNAL–OVERHEAD
2–TYPE 10B–POLE MOUNTED 90° AND 180°
2–PEDESTRIAN PUSH BUTTONS
TYPE D SIGN PANEL–OVERHEAD
ONE WAY EVP DETECTOR AND LIGHT (ø4)
EXTENDED INTO H.H.3:
3"R.S.C.
2–12/c#12
2–3/c#12
1–3/c#20

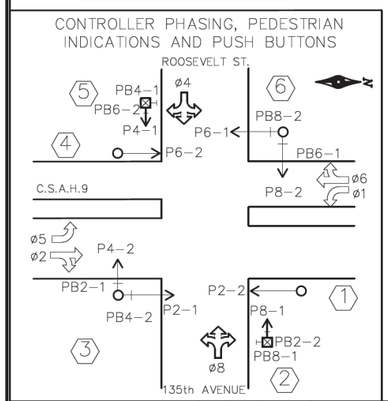
(1) A100 POLE FOUNDATION
TYPE A100–A–50–D40–9 (DAVIT AT 350°)
LUMINAIRE–250 W HPS W/PEC & CHECK SWITCH
3–ONE WAY SIGNALS–OVERHEAD (0', 11' & 23' FROM END OF MAST ARM)
TYPE 10B–POLE MOUNTED 180°
TYPE D SIGN PANEL–OVERHEAD
ONE WAY EVP DETECTOR AND LIGHT (ø2,5)
EXTENDED INTO H.H.11:
3"R.S.C.
2–12/c#12
1–3/c#12
1–3/c#20
2–1/c#10

(2) PEDESTAL FOUNDATION
10' PEDESTAL POLE, BASE & WIND COLLAR
TYPE 1C
2–PEDESTRIAN PUSH BUTTONS
EXTENDED INTO H.H.11:
2"R.S.C.
1–12/c#12
1–3/c#12

(B) SERVICE CABINET
CABINET FOUNDATION
EXTENDED INTO H.H.17:
2"R.S.C.
(FOR SERVICE BY CONNEXUS)
EXTENDED INTO H.H.16:
METERED SIGNAL SERVICE
1 1/4"R.S.C.
3–1/c#6
EXTENDED INTO H.H.1:
UNMETERED STREET LIGHT SERVICE
1 1/4"R.S.C.
4–1/c#10
BETWEEN H.H.1 AND H.H.11:
2"R.S.C.
2–1/c#10

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

CONTROLLER PHASING, PEDESTRIAN INDICATIONS AND PUSH BUTTONS




| LED SIGNAL FACES ALL 12". | | | |
|---|---|---|---|
| SIGNAL 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 | ● | ● | ● |

| DESIGN TEAM | NO. | BY | DATE | REVISIONS |
|---|---|---|---|---|
| DRAWN BY: MRB | | | | |
| DESIGNER: MRB | | | | |
| CHECKED BY: JMG | | | | |

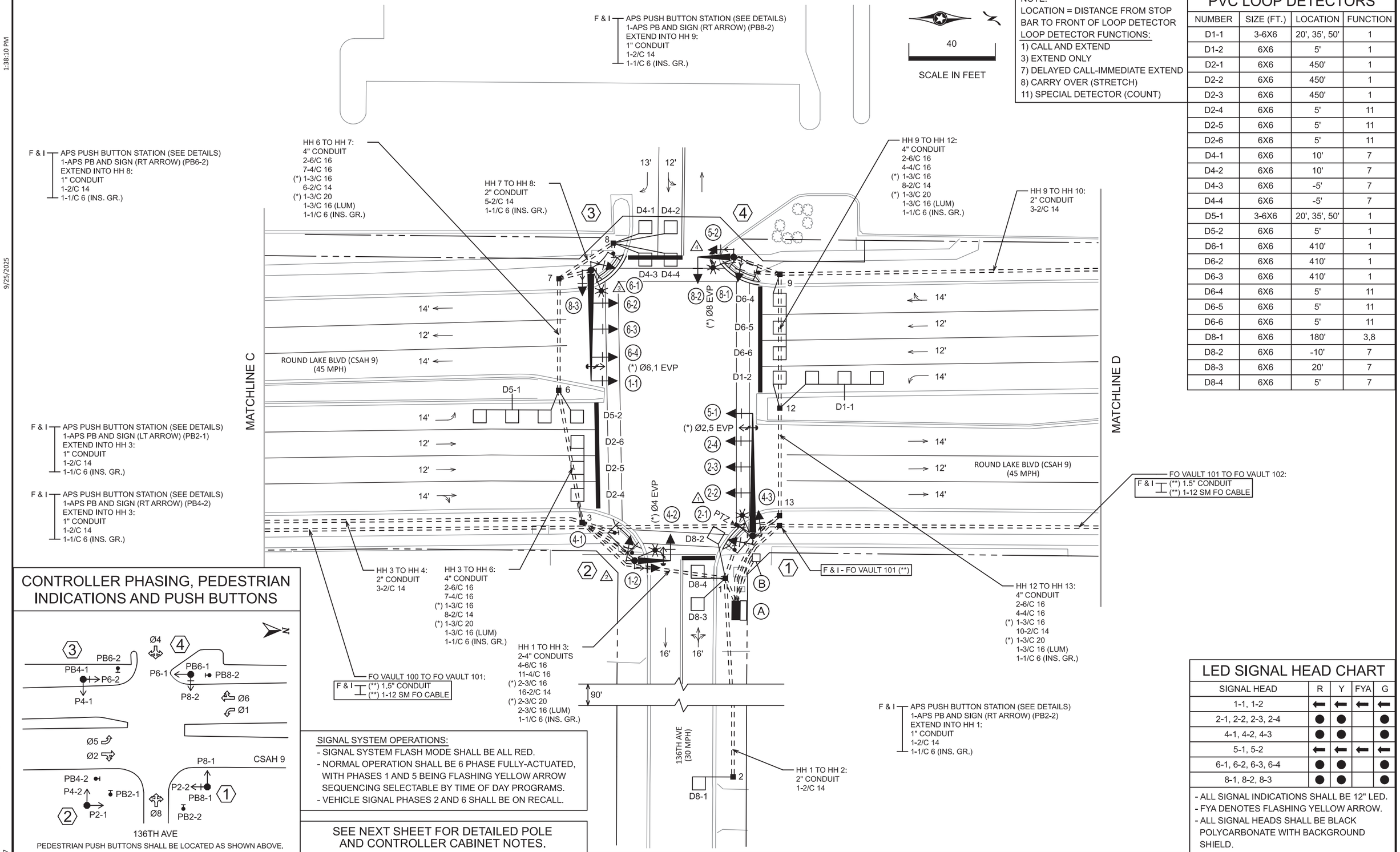
SEH

ANOKA COUNTY, MN
CSAH 9
SAP 002-609-023
CITY OF ANDOVER SAP 198-020-042, CITY PROJECT 25-13
CITY OF ANOKA SAP 103-020-020

EXISTING SIGNAL SYSTEM "A"
FOR INFORMATION ONLY
CSAH 9 (ROUND LAKE BOULEVARD) AT 135TH AVENUE/ROOSEVELT STREET

92
133

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9/25/2025
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MODEL: sgl6




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

LOOP DETECTOR FUNCTIONS:
1) CALL AND EXTEND
3) EXTEND ONLY
7) DELAYED CALL-IMMEDIATE EXTEND
8) CARRY OVER (STRETCH)
11) SPECIAL DETECTOR (COUNT)

## PVC LOOP DETECTORS

| NUMBER | SIZE (FT.) | LOCATION | FUNCTION |
|---|---|---|---|
| D1-1 | 3-6X6 | 20', 35', 50' | 1 |
| D1-2 | 6X6 | 5' | 1 |
| D2-1 | 6X6 | 450' | 1 |
| D2-2 | 6X6 | 450' | 1 |
| D2-3 | 6X6 | 450' | 1 |
| D2-4 | 6X6 | 5' | 11 |
| D2-5 | 6X6 | 5' | 11 |
| D2-6 | 6X6 | 5' | 11 |
| D4-1 | 6X6 | 10' | 7 |
| D4-2 | 6X6 | 10' | 7 |
| D4-3 | 6X6 | -5' | 7 |
| D4-4 | 6X6 | -5' | 7 |
| D5-1 | 3-6X6 | 20', 35', 50' | 1 |
| D5-2 | 6X6 | 5' | 1 |
| D6-1 | 6X6 | 410' | 1 |
| D6-2 | 6X6 | 410' | 1 |
| D6-3 | 6X6 | 410' | 1 |
| D6-4 | 6X6 | 5' | 11 |
| D6-5 | 6X6 | 5' | 11 |
| D6-6 | 6X6 | 5' | 11 |
| D8-1 | 6X6 | 180' | 3,8 |
| D8-2 | 6X6 | -10' | 7 |
| D8-3 | 6X6 | 20' | 7 |
| D8-4 | 6X6 | 5' | 7 |

## CONTROLLER PHASING, PEDESTRIAN INDICATIONS AND PUSH BUTTONS




PEDESTRIAN PUSH BUTTONS SHALL BE LOCATED AS SHOWN ABOVE.

SIGNAL SYSTEM OPERATIONS:
- SIGNAL SYSTEM FLASH MODE SHALL BE ALL RED.
- NORMAL OPERATION SHALL BE 6 PHASE FULLY-ACTUATED, WITH PHASES 1 AND 5 BEING FLASHING YELLOW ARROW SEQUENCING SELECTABLE BY TIME OF DAY PROGRAMS.
- VEHICLE SIGNAL PHASES 2 AND 6 SHALL BE ON RECALL.

SEE NEXT SHEET FOR DETAILED POLE AND CONTROLLER CABINET NOTES.

## LED SIGNAL HEAD CHART

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

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

| DESIGN TEAM | NO. | BY | DATE | REVISIONS |
|---|---|---|---|---|
| DRAWN BY: MRB | | | | |
| DESIGNER: MRB | | | | |
| 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.

Certified By: Licensed Professional Engineer — Printed Name: JOHN M. GRAY — Lic. No. 22457 — Date: 09/23/2025

SEH

ANOKA COUNTY, MN
CSAH 9
SAP 002-609-023
CITY OF ANDOVER SAP 198-020-042, CITY PROJECT 25-13
CITY OF ANOKA SAP 103-020-020

TRAFFIC SIGNAL SYSTEM "B"
INTERSECTION LAYOUT
CSAH 9 (ROUND LAKE BOULEVARD) AT 136TH AVENUE

93
133

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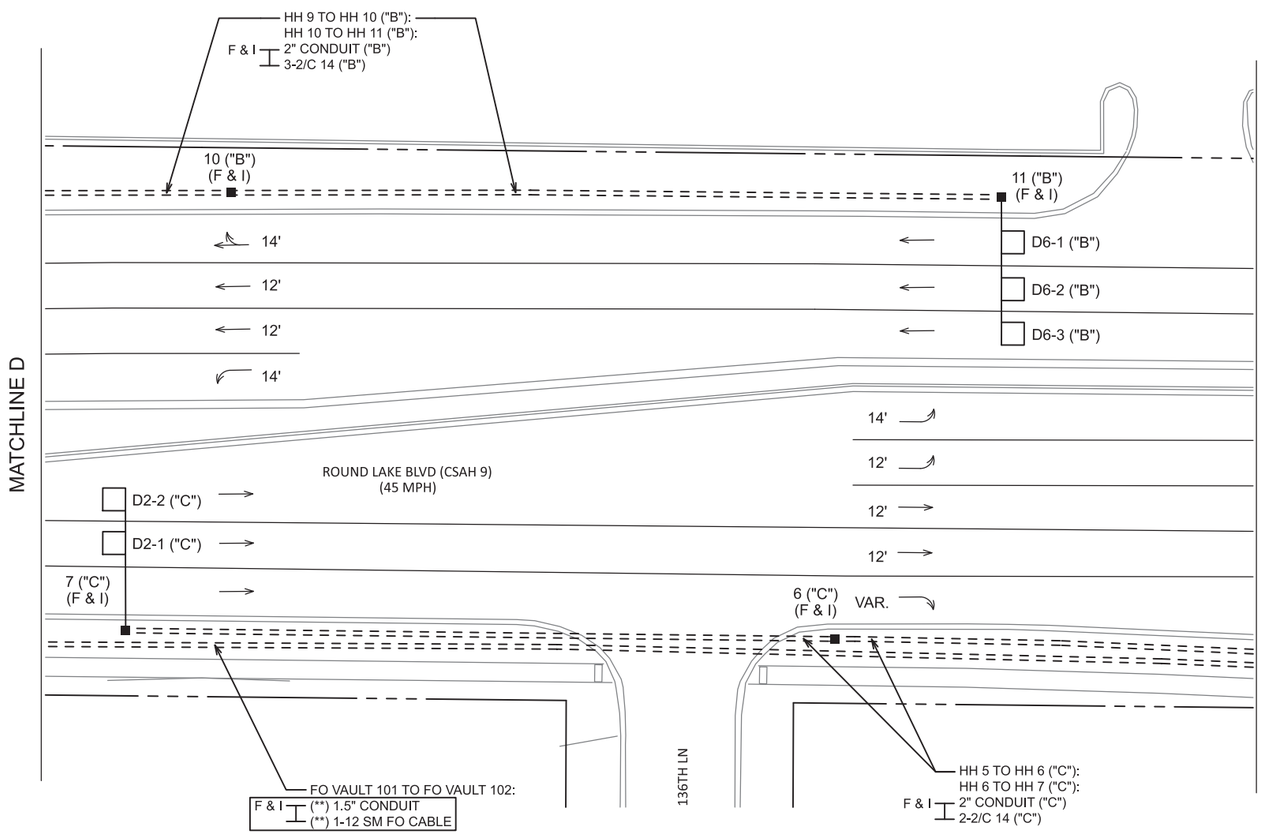
INTERCONNECT NOTES:

1) IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO UTILIZE THE "ONE CALL EXCAVATION NOTICE SYSTEM" (TELEPHONE NUMBER 651-454-0002) AS REQUIRED BY MINNESOTA STATUTE 2160.
2) DISTANCE OFF SHOULDER OR CURB FOR NEW INTERCONNECT CONDUIT SHALL BE 1-2 FEET UNLESS OTHERWISE APPROVED BY ENGINEER.
3) (**) DENOTES ITEMS TO BE FURNISHED AND INSTALLED BY THE CONTRACTOR UNDER ITEM NO. 2565 (TRAFFIC CONTROL INTERCONNECT). SEE STATEMENT OF ESTIMATED QUANTITIES AND SPECIAL PROVISIONS.
4) ITEMS DENOTED BY "B" SHALL BE INCLUDED AS PART OF THE PAY ITEM FOR ITEM NO. 2565 (TRAFFIC CONTROL SIGNAL SYSTEM "B").

   ITEMS DENOTED BY "C" SHALL BE INCLUDED AS PART OF THE PAY ITEM FOR ITEM NO. 2565 (TRAFFIC CONTROL SIGNAL SYSTEM "C").
5) (F & I) DENOTES ITEMS TO BE FURNISHED AND INSTALLED BY CONTRACTOR AS PART OF THIS PROJECT.
6) ALL NEW INTERCONNECT CONDUIT INSTALLATIONS (UNDER ROADWAYS, SIDEWALKS, AND IN BOULEVARD AREAS) SHALL BE DIRECTIONALLY BORED UNLESS OTHERWISE APPROVED BY THE ENGINEER IN THE FIELD (DURING CONSTRUCTION) FOR A CONDUIT SECTION TO BE TRENCHED-IN DUE TO UTILITY OR OTHER CONFLICTS THAT WILL NOT ALLOW FOR A CONDUIT SECTION TO BE BORED. TURF ESTABLISHMENT (INCLUDING GRADING AND RESTORATION) SHALL ALSO BE PROVIDED FOR ALL CONDUIT INSTALLATION AREAS IN THE BOULEVARDS (INCIDENTAL).

40

SCALE IN FEET




| DESIGN TEAM | NO. | BY | DATE | REVISIONS |
|---|---|---|---|---|
| DRAWN BY: MRB | | | | |
| DESIGNER: MRB | | | | |
| 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.

Certified By: Licensed Professional Engineer — Printed Name: JOHN M. GRAY — Lic. No. 22457 — Date: 09/23/2025

SEH

ANOKA COUNTY, MN
CSAH 9
SAP 002-609-023
CITY OF ANDOVER SAP 198-020-042, CITY PROJECT 25-13
CITY OF ANOKA SAP 103-020-020

TRAFFIC SIGNAL SYSTEMS "B-C"
INTERSECTION LAYOUT AND INTERCONNECT
CSAH 9 (ROUND LAKE BLVD) BETWEEN 136TH AVENUE AND CSAH 116 (BUNKER LAKE BLVD)

94/133

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9/25/2025
136TH ST
(30 MPH)
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MODEL: sgl8

NOTES:

1) LOCATION OF FOUNDATIONS, LOOP DETECTORS, HANDHOLES, AND PUSH BUTTON STATIONS SHALL BE DETERMINED IN FIELD BY THE ENGINEER.
2) SEE SPECIAL PROVISIONS FOR COUNTY FURNISHED MATERIALS.
3) ALL HANDHOLES, CONDUIT, AND CABLES AND CONDUCTORS SHALL BE NEW AND SHALL BE FURNISHED AND INSTALLED BY CONTRACTOR UNLESS OTHERWISE NOTED.
4) NEW HANDHOLES SHALL BE IN ACCORDANCE WITH THE MnDOT APPROVED/ QUALIFIED PRODUCTS LIST AND THE SPECIAL PROVISIONS.
5) A 3/4" HALF COUPLING, 3/4" PIPE NIPPLE & CONDUIT OUTLET BODY SHALL BE FURNISHED AND INSTALLED 6 FEET FROM THE END OF EACH MAST ARM (FOR EVP).
6) THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING THE POWER COMPANY TO ARRANGE FOR THE POWER CONNECTION (CONNEXUS). SEE SPECIAL PROVISIONS.
7) SEE SPECIAL PROVISIONS & DETAILS REGARDING SIGNS TO BE FURNISHED AND INSTALLED BY CONTRACTOR (TO BE MEASURED AND PAID FOR SEPARATELY FROM THE "TRAFFIC CONTROL SIGNAL SYSTEM B" PAY ITEM).
8) EACH PEDESTRIAN INDICATION SHALL BE ONE SECTION LED COUNTDOWN TIMER "HAND/WALKING PERSON" INDICATION.
9) SEE DETAILS, SPECIAL PROVISIONS & STATEMENT OF ESTIMATED QUANTITIES REGARDING BATTERY BACK-UP SIGNAL SERVICE CABINET TO BE FURNISHED AND INSTALLED BY CONTRACTOR (SEPARATE FROM ITEM NO. 2565 FOR THIS SIGNAL SYSTEM).
10) LOOP DETECTOR WIRES SHALL BE CROSS-LINKED POLYETHYLENE (XLP) #12 AWG IN 3/4" N.M.C. SEE SPECIAL PROVISIONS.
11) (*) DENOTES ITEMS TO BE INCLUDED AS PART OF THE PAY ITEM FOR ITEM INO. 2565 (EMERGENCY VEHICLE PREEMPTION SYSTEM B). SEE STATEMENT OF ESTIMATED QUANTITIES AND SPECIAL PROVISIONS.
12) (**) DENOTES ITEMS TO BE FURNISHED AND INSTALLED BY CONTRACTOR UNDER ITEM NO. 2565 (TRAFFIC CONTROL INTERCONNECT). SEE STATEMENT OF ESTIMATED QUANTITIES AND SPECIAL PROVISIONS.
13) NO SPLICING IS ALLOWED ON ANY CABLE OR CONDUCTOR BETWEEN THE CONTROLLER/SERVICE CABINETS AND EACH POLE OR MAST ARM MOUNTED COMPONENT (EXCEPT THAT LOOP DETECTORS SPLICES ARE ALLOWED IN ADJACENT HANDHOLES ONLY).
14) SEE SPECIAL PROVISIONS REGARDING REMOVAL OF EXISTING SIGNAL SYSTEM (TO BE MEASURED AND PAID FOR SEPARATELY FROM ITEM NO. 2565 - "TRAFFIC CONTROL SIGNAL SYSTEM B").
15) CONTRACTOR SHALL MAINTAIN OPERATION OF A SIGNAL SYSTEM AT THIS INTERSECTION AT ALL TIMES (EITHER VIA THE EXISTING SIGNAL SYSTEM OR A TEMPORARY SIGNAL SYSTEM), EXCEPT AS OTHERWISE APPROVED BY THE COUNTY FOR THE SIGNAL SYSTEM TO BE TURNED OFF FOR CHANGEOVER FROM EXISTING TO TEMPORARY (AND/OR PERMANENT) SIGNAL SYSTEM. SEE SPECIAL PROVISIONS AND "TEMPORARY SIGNAL SYSTEM B" PLANS FOR FURTHER INFORMATION.
16) CONTRACTOR SHALL PROVIDE, INSTALL, AND MAKE OPERATIONAL ALL COMPONENTS RELATED TO THE COMPLETE PTZ CAMERA INSTALLATION (TO BE MEASURED AND PAID FOR SEPARATELY FROM THE "TRAFFIC CONTROL SIGNAL SYSTEM B" PAY ITEM). SEE SPECIAL PROVISIONS AND STATEMENT OF ESTIMATED QUANTITIES.

**(1) F & I**
- PA100 POLE FOUNDATION
- TYPE PA100-A-55-X6-300 CAM 350 (DAVIT AT 0 DEG)
- LUMINAIRE-LED
- 1-ANGLE MOUNT SIGNAL-OVERHEAD AT 0'
- 3-STRAIGHT MOUNT SIGNALS-OVERHEAD AT 12', 24', 36'
- 2-ANGLE MOUNT SIGNALS-POLE MOUNTED 90 DEG AND 180 DEG
- 2-ANGLE MOUNT C.D. PED INDICATIONS-POLE MOUNTED AT 90 DEG AND 180 DEG
- 1-APS PB, SIGN (LT ARROW) AND APS MAST ARM POLE ADAPTOR (PB8-1)
- 2-R6-1 (ONE WAY) SIGNS-POLE MOUNTED 0/180 DEG
- R10-X12 SIGN PANEL-ADJACENT TO 5-1
- STREET NAME SIGN PANEL-OVERHEAD (P5)
- (*) EVP MOUNTING HARDWARE & LED CONFIRMATION LIGHT - OVERHEAD AT 6' (Ø2,5)
- 1-PTZ CAMERA AND MOUNTING HARDWARE (MOUNT ATOP CAMERA EXTENSION)
- EXTEND INTO HH 13:
- 3" CONDUIT
- 2-6/C 16 (INCLUDING 1 SPARE)
- 7-4/C 16
- (*) 1-3/C 16
- 1-2/C 14
- (*) 1-3/C 20
- 1-CAT 5E CABLE (PTZ)
- 1-3/C 16 (LUM)
- 1-1/C 6 (GRD)

INSTALL (FURNISHED BY COUNTY) — (*) ONE WAY EVP DETECTOR (Ø2,5)

**(2) F & I**
- PA100 POLE FOUNDATION
- TYPE PA100-A-15-D30-9 (DAVIT AT 350 DEG)
- LUMINAIRE-LED
- 1-ANGLE MOUNT SIGNAL-OVERHEAD AT 0'
- 2-ANGLE MOUNT SIGNALS-POLE MOUNTED 90 DEG AND 180 DEG
- 2-ANGLE MOUNT C.D. PED INDICATIONS-POLE MOUNTED AT 90 DEG AND 180 DEG
- STREET NAME SIGN PANEL-OVERHEAD (P6)
- (*) EVP MOUNTING HARDWARE & LED CONFIRMATION LIGHT - OVERHEAD AT 6' (Ø4)
- (*) 3/4" RSC EXTENSION FOR EVP (OVER SIGN)
- EXTEND INTO HH 3:
- 3" CONDUIT
- 2-6/C 16 (INCLUDING 1 SPARE)
- 4-4/C 16
- (*) 1-3/C 16
- (*) 1-3/C 20
- 1-3/C 16 (LUM)
- 1-1/C 6 (GRD)

INSTALL (FURNISHED BY COUNTY) — (*) ONE WAY EVP DETECTOR (Ø4)

**(3) F & I**
- PA100 POLE FOUNDATION
- TYPE PA100-A-50-D30-9 (DAVIT AT 350 DEG)
- LUMINAIRE-LED
- 1-ANGLE MOUNT SIGNAL-OVERHEAD AT 0'
- 3-STRAIGHT MOUNT SIGNALS-OVERHEAD AT 12', 24', 36'
- 2-ANGLE MOUNT SIGNALS-POLE MOUNTED 90 DEG AND 180 DEG
- 2-ANGLE MOUNT C.D. PED INDICATIONS-POLE MOUNTED AT 90 DEG AND 180 DEG
- 1-APS PB, SIGN (LT ARROW) AND APS MAST ARM POLE ADAPTOR (PB4-1)
- 2-R6-1 (ONE WAY) SIGNS-POLE MOUNTED 0/180 DEG
- R10-X12 SIGN PANEL-ADJACENT TO 1-1
- STREET NAME SIGN PANEL-OVERHEAD (P7)
- (*) EVP MOUNTING HARDWARE & LED CONFIRMATION LIGHT - OVERHEAD AT 6' (Ø6,1)
- EXTEND INTO HH 7:
- 3" CONDUIT
- 2-6/C 16 (INCLUDING 1 SPARE)
- 7-4/C 14
- (*) 1-3/C 16
- 1-2/C 14
- (*) 1-3/C 20
- 1-3/C 16 (LUM)
- 1-1/C 6 (GRD)

INSTALL (FURNISHED BY COUNTY) — (*) ONE WAY EVP DETECTOR (Ø6,1)

**(4) F & I**
- PA100 POLE FOUNDATION
- TYPE PA100-A-15-D30-9 (DAVIT AT 350 DEG)
- LUMINAIRE-LED
- 1-ANGLE MOUNT SIGNAL-OVERHEAD AT 0'
- 2-ANGLE MOUNT SIGNALS-POLE MOUNTED 90 DEG AND 180 DEG
- 2-ANGLE MOUNT C.D. PED INDICATIONS-POLE MOUNTED AT 90 DEG AND 180 DEG
- 1-APS PB, SIGN (LT ARROW) AND APS MAST ARM POLE ADAPTOR (PB6-1)
- STREET NAME SIGN PANEL-OVERHEAD (P8)
- (*) EVP MOUNTING HARDWARE & LED CONFIRMATION LIGHT - OVERHEAD AT 6' (Ø8)
- (*) 3/4" RSC EXTENSION FOR EVP (OVER SIGN)
- EXTEND INTO HH 9:
- 3" CONDUIT
- 2-6/C 16 (INCLUDING 1 SPARE)
- 4-4/C 16
- (*) 1-3/C 16
- 1-2/C 14
- (*) 1-3/C 20
- 1-3/C 16 (LUM)
- 1-1/C 6 (GRD)

INSTALL (FURNISHED BY COUNTY) — (*) ONE WAY EVP DETECTOR (Ø8)

**(A) INSTALL (FURNISHED BY COUNTY)** — CONTROLLER AND CABINET

**F & I**
- EQUIPMENT PAD FOUNDATION
- BBU SIGNAL SERVICE CABINET
- BETWEEN CONTROLLER CABINET AND SERVICE CABINET:
- METERED SIGNAL SERVICE
- 2" CONDUIT
- 3-1/C 6
- 1.5" CONDUIT (COMMS)
- 1-6 PR 19 (COMMS)
- CONTROLLER CABINET TO HH 1:

| | |
|---|---|
| 4" CONDUIT | 4" CONDUIT |
| 2-6/C 16 | 2-6/C 16 |
| 4-4/C 16 | 7-4/C 16 |
| (*) 1-3/C 16 | (*) 1-3/C 16 |
| 13-2/C 14 | 8-2/C 14 |
| (*) 1-3/C 20 | (*) 1-3/C 20 |
| 1-1/C 6 (GRD) | |

- CONTROLLER CABINET TO HH 13:

| | |
|---|---|
| 4" CONDUIT | 4" CONDUIT |
| 2-6/C 16 | 2-6/C 16 |
| 7-4/C 16 | 4-4/C 16 |
| (*) 1-3/C 16 | (*) 1-3/C 16 |
| 1-2/C 14 | 10-2/C 14 |
| (*) 1-3/C 20 | (*) 1-3/C 20 |
| 1-CAT 5E CABLE (PTZ) | |
| 1-1/C 6 (GRD) | |

**F & I**
- SERVICE CABINET TO HH 1:
- 1.25" CONDUIT
- METERED STREET LIGHT SERVICE
- 2-3/C 16 (LUM)
- SERVICE CABINET TO HH 13:
- 1.25" CONDUIT
- METERED STREET LIGHT SERVICE
- 2-3/C 16 (LUM)
- STUB OUT 2" CONDUIT FROM SERVICE CABINET (FOR POWER CONNECTION BY CONNEXUS)
- STUB OUT 2-3" CONDUITS FROM CONTROLLER CABINET TO SOUTH (CAP BOTH ENDS- FOR FUTURE USE)
- CONTROLLER CABINET TO FO-VAULT 101:
- (**) 2" CONDUIT
- (**) 1-12 SM FO (TO 136TH)
- (**) 1-12 SM FO (TO BUNKER)

**(B) INPLACE** — GROUND MOUNTED TRANSFORMER (SOP - CONNEXUS)

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| DESIGN TEAM | NO. | BY | DATE | REVISIONS |
|---|---|---|---|---|
| DRAWN BY: MRB | | | | |
| DESIGNER: MRB | | | | |
| 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.
Printed Name: JOHN M. GRAY
Certified By: Licensed Professional Engineer Lic. No. 22457 Date: 09/23/2025

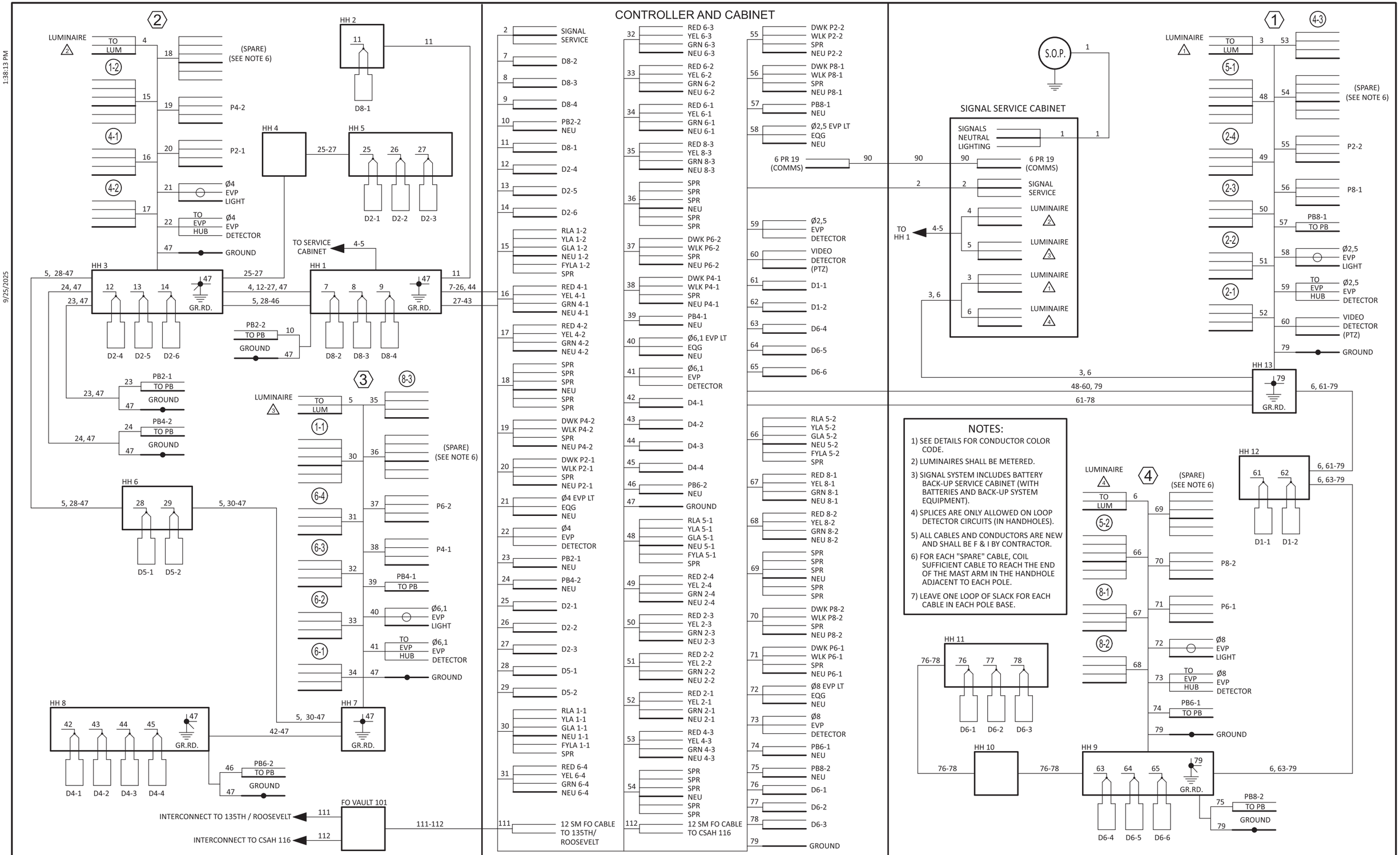
SEH

ANOKA COUNTY, MN
CSAH 9
SAP 002-609-023
CITY OF ANDOVER SAP 198-020-042, CITY PROJECT 25-13
CITY OF ANOKA SAP 103-020-020

TRAFFIC SIGNAL SYSTEM "B"
POLE & CABINET NOTES
CSAH 9 (ROUND LAKE BOULEVARD) AT 136TH AVENUE

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9/25/2025




| DESIGN TEAM | NO. | BY | DATE | REVISIONS |
|---|---|---|---|---|
| DRAWN BY: MRB | | | | |
| DESIGNER: MRB | | | | |
| CHECKED BY: JMG | | | | |

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Certified By: Licensed Professional Engineer — Printed Name: JOHN M. GRAY — Lic. No. 22457 — Date: 09/23/2025

SEH

ANOKA COUNTY, MN
CSAH 9
SAP 002-609-023
CITY OF ANDOVER SAP 198-020-042, CITY PROJECT 25-13
CITY OF ANOKA SAP 103-020-020

# TRAFFIC SIGNAL SYSTEM "B"

FIELD WIRING DIAGRAM
CSAH 9 (ROUND LAKE BOULEVARD) AT 136TH AVENUE



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NOTES:

1) ALL ITEMS OF SIGNAL SYSTEM ARE INPLACE AND SHALL BE REUSED AND MAINTAINED INPLACE, UNLESS OTHERWISE NOTED ON PLANS.
2) ALL SIGNAL FACES HAVE BACKGROUND SHIELDS.
3) CONTRACTOR SHALL SALVAGE INPLACE 12 x 12 PEDESTRIAN SIGNAL INDICATIONS, AND SHALL INSTALL NEW CITY FURNISHED ONE SECTION LED "HAND/WALKING PERSON" PEDESTRIAN INDICATIONS IN THEIR PLACE (SEE SPECIAL PROVISIONS).
4) CONTRACTOR SHALL REMOVE ALL INPLACE INCANDESCENT VEHICLE SIGNAL INDICATION LENSES, AND SHALL INSTALL NEW CITY FURNISHED LED INDICATIONS IN THEIR PLACE (SEE SPECIAL PROVISIONS).
5) CONTRACTOR SHALL BE RESPONSIBLE FOR ALL WORK REQUIRED TO MODIFY POLE MOUNTED BRACKETING TO ACCOMMODATE NEW PEDESTRIAN SIGNAL INDICATIONS, AND SHALL ALSO TOUCH-UP PAINT ANY AREAS ON EACH POLE THAT WERE DISTURBED DUE TO BRACKETING OR BANDING MODIFICATIONS ON EACH POLE. SEE SPECIAL PROVISIONS.
6) SEE SPECIAL PROVISIONS REGARDING REMOVAL, SALVAGING AND REINSTALLATION OF INPLACE SIGNAL EQUIPMENT.

LOOP DETECTORS

| NUMBER | SIZE (FT.) | LOCATION | FUNCTION |
|---|---|---|---|
| D1-1 | 2-6x6 | 20' | 7,11 |
| D1-2 | 2-6x6 | 5' | 7,11 |
| D2-1 | 3-6x6 | 280' | 1 |
| D4-1 | 2-6x6 | 5' | 7 |
| D4-2 | 2-6x6 | 5' | 7 |
| D5-1 | 2-6x6 | 20' | 7,11 |
| D5-2 | 2-6x6 | 5' | 7,11 |
| D6-1 | 3-6x6 | 330' | 1 |
| D8-1 | 6x6 | 120' | 3,8 |
| D8-2 | 2-6x6 | 5' | 7 |

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

FUNCTIONS:

1) CALL AND EXTEND
2) CALL ONLY
3) EXTEND ONLY
4) CALL ONLY DENSITY
5) DELAYED CALL ONLY
6) DELAYED CALL ONLY DENSITY
7) DELAYED CALL, IMMEDIATE EXTEND
8) CARRY OVER (STRETCH)
9) ADVISORY DETECTOR
10) SAMPLING DETECTOR
11) IMMEDIATE CALL DURING PHASE 4/8 GREEN

(4) A100 POLE FOUNDATION
TYPE A100-A-50-D40-9 (DAVIT AT 350°)
LUMINAIRE-200 W HPS W/PEC & CHECK SWITCH
3-ONE WAY SIGNALS-OVERHEAD (0', 14' AND 26' FROM END OF MAST ARM)
TYPE 10B-POLE MOUNTED 180°
TYPE D SIGN PANEL-OVERHEAD
ONE WAY EVP DETECTOR AND LIGHT (#6,1)
EXTEND INTO H.H.6:
3"R.S.C.
2-12/c#12
1-3/c#12
1-3/c#20
2-1/c#10

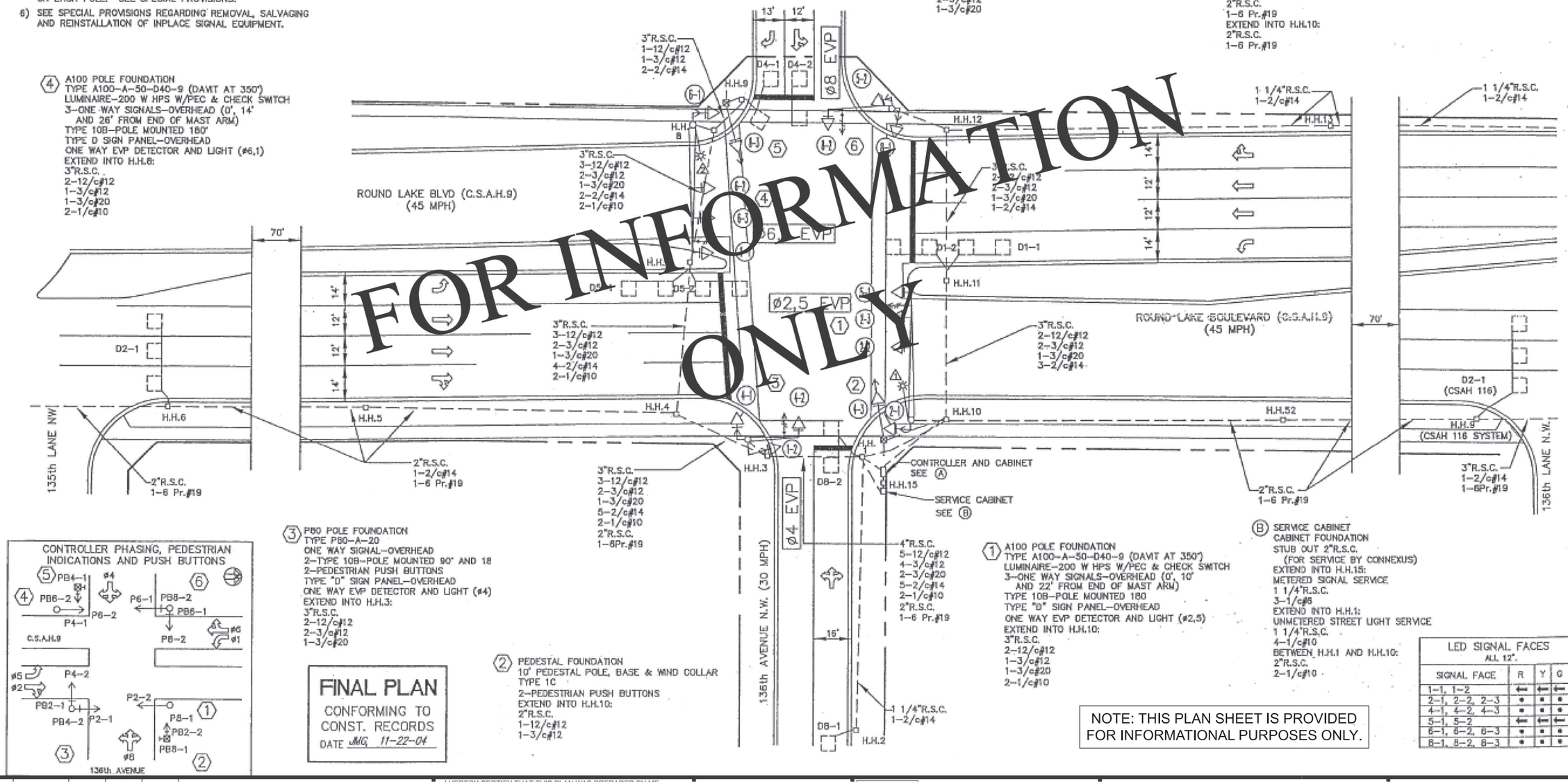
(5) PEDESTAL FOUNDATION
10' PEDESTAL POLE, BASE & WIND COLLAR
TYPE 1C
2-PEDESTRIAN PUSH BUTTONS
EXTEND INTO H.H.9:
2"R.S.C.
1-12/c#12
1-3/c#12

(6) PB0 POLE FOUNDATION
TYPE PB0-A-25
ONE WAY SIGNAL-OVERHEAD
2-TYPE 10B-POLE MOUNTED 90° AND 180°
2-PEDESTRIAN PUSH BUTTONS
TYPE D SIGN PANEL-OVERHEAD
ONE WAY EVP DETECTOR AND LIGHT (#8)
EXTEND INTO H.H.12:
3"R.S.C.
2-12/c#12
2-3/c#12
1-3/c#20

(A) CONTROLLER AND CABINET
CABINET FOUNDATION
EXTEND INTO H.H.15:
METERED SIGNAL SERVICE
1 1/4"R.S.C.
3-1/c#6
EXTEND INTO H.H.1:
4"R.S.C.
5-12/c#12
4-3/c#12
2-3/c#20
7-2/c#14
EXTEND INTO H.H.10:
4"R.S.C.
5-12/c#12
4-3/c#12
2-3/c#20
3-2/c#14
EXTEND INTO H.H.1:
2"R.S.C.
1-6 Pr.#19
EXTEND INTO H.H.10:
2"R.S.C.
1-6 Pr.#19

20 10 0 20 40
scale feet

N




CONTROLLER PHASING, PEDESTRIAN INDICATIONS AND PUSH BUTTONS




(3) PB0 POLE FOUNDATION
TYPE PB0-A-20
ONE WAY SIGNAL-OVERHEAD
2-TYPE 10B-POLE MOUNTED 90° AND 18
2-PEDESTRIAN PUSH BUTTONS
TYPE "D" SIGN PANEL-OVERHEAD
ONE WAY EVP DETECTOR AND LIGHT (#4)
EXTEND INTO H.H.3:
3"R.S.C.
2-12/c#12
2-3/c#12
1-3/c#20

(2) PEDESTAL FOUNDATION
10' PEDESTAL POLE, BASE & WIND COLLAR
TYPE 1C
2-PEDESTRIAN PUSH BUTTONS
EXTEND INTO H.H.10:
2"R.S.C.
1-12/c#12
1-3/c#12

(1) A100 POLE FOUNDATION
TYPE A100-A-50-D40-9 (DAVIT AT 350°)
LUMINAIRE-200 W HPS W/PEC & CHECK SWITCH
3-ONE WAY SIGNALS-OVERHEAD (0', 10' AND 22' FROM END OF MAST ARM)
TYPE 10B-POLE MOUNTED 180
TYPE "D" SIGN PANEL-OVERHEAD
ONE WAY EVP DETECTOR AND LIGHT (#2,5)
EXTEND INTO H.H.10:
3"R.S.C.
2-12/c#12
1-3/c#12
1-3/c#20
2-1/c#10

(B) SERVICE CABINET
CABINET FOUNDATION
STUB OUT 2"R.S.C.
(FOR SERVICE BY CONNEXUS)
EXTEND INTO H.H.15:
METERED SIGNAL SERVICE
1 1/4"R.S.C.
3-1/c#6
EXTEND INTO H.H.1:
UNMETERED STREET LIGHT SERVICE
1 1/4"R.S.C.
4-1/c#10
BETWEEN H.H.1 AND H.H.10:
2"R.S.C.
2-1/c#10

LED SIGNAL FACES
ALL 12".

| SIGNAL 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 | • | • | • |

FINAL PLAN
CONFORMING TO CONST. RECORDS
DATE JMG 11-22-04

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

FOR INFORMATION ONLY

| DESIGN TEAM | NO. | BY | DATE | REVISIONS |
|---|---|---|---|---|
| DRAWN BY: MRB | | | | |
| DESIGNER: MRB | | | | |
| CHECKED BY: JMG | | | | |

SEH

ANOKA COUNTY, MN
CSAH 9
SAP 002-609-023
CITY OF ANDOVER SAP 198-020-042, CITY PROJECT 25-13
CITY OF ANOKA SAP 103-020-020

EXISTING SIGNAL SYSTEM "B"
FOR INFORMATION ONLY
CSAH 9 (ROUND LAKE BOULEVARD) AT 136TH AVENUE

97
133

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## LED SIGNAL HEAD CHART

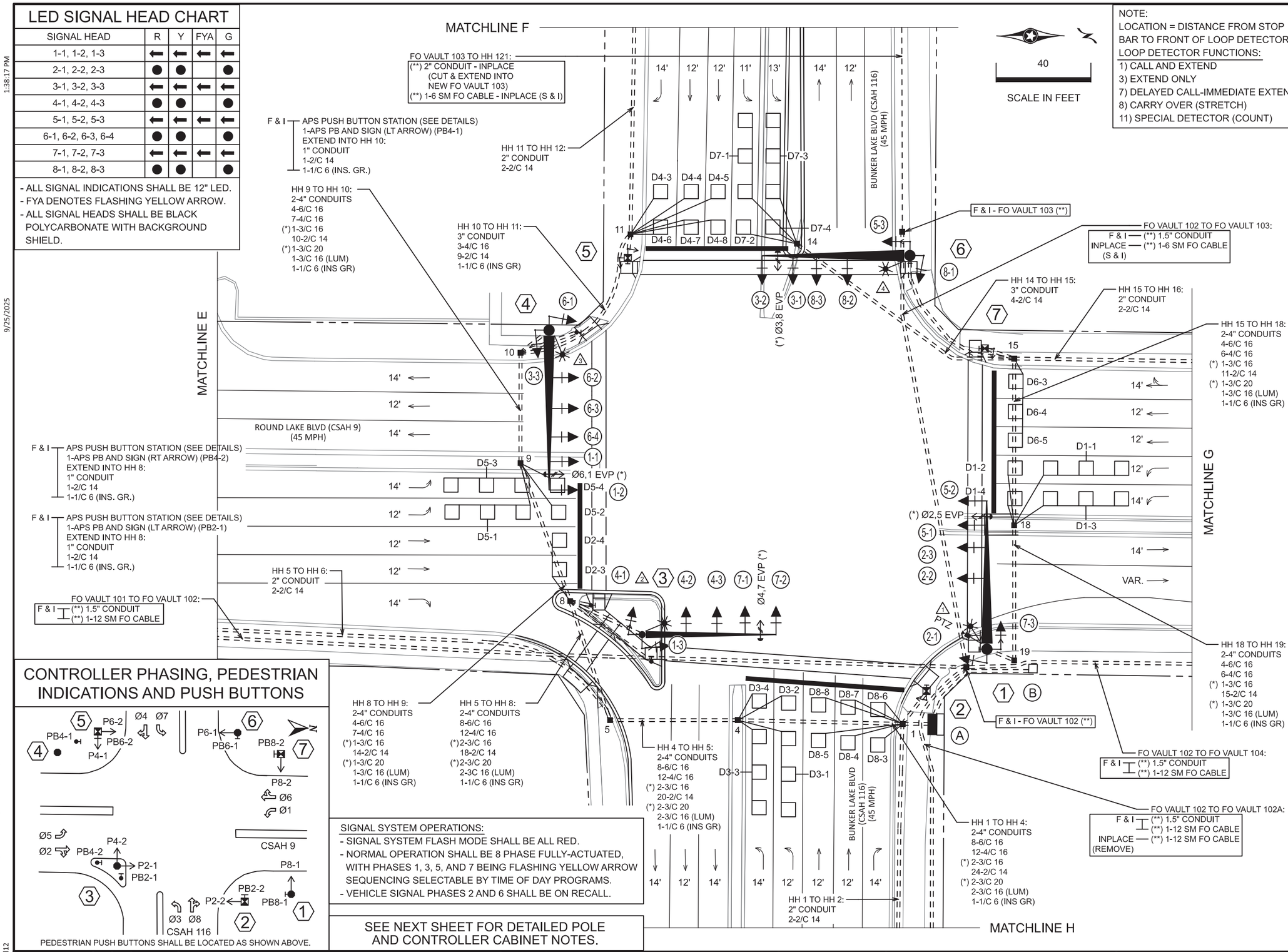
| SIGNAL HEAD | R | Y | FYA | G |
|---|---|---|---|---|
| 1-1, 1-2, 1-3 | ⬅ | ⬅ | ⬅ | ⬅ |
| 2-1, 2-2, 2-3 | ● | ● | | ● |
| 3-1, 3-2, 3-3 | ⬅ | ⬅ | ⬅ | ⬅ |
| 4-1, 4-2, 4-3 | ● | ● | | ● |
| 5-1, 5-2, 5-3 | ⬅ | ⬅ | ⬅ | ⬅ |
| 6-1, 6-2, 6-3, 6-4 | ● | ● | | ● |
| 7-1, 7-2, 7-3 | ⬅ | ⬅ | ⬅ | ⬅ |
| 8-1, 8-2, 8-3 | ● | ● | | ● |

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

NOTE:
LOCATION = DISTANCE FROM STOP BAR TO FRONT OF LOOP DETECTOR
LOOP DETECTOR FUNCTIONS:
1) CALL AND EXTEND
3) EXTEND ONLY
7) DELAYED CALL-IMMEDIATE EXTEND
8) CARRY OVER (STRETCH)
11) SPECIAL DETECTOR (COUNT)

## PVC LOOP DETECTORS

| NUMBER | SIZE (FT.) | LOCATION | FUNCTION |
|---|---|---|---|
| D1-1 | 3-6X6 | 20', 35', 50' | 1 |
| D1-2 | 6X6 | 5' | 1 |
| D1-3 | 3-6X6 | 20', 35', 50' | 1 |
| D1-4 | 6X6 | 5' | 1 |
| D2-1 | 6X6 | 450' | 1 |
| D2-2 | 6X6 | 450' | 1 |
| D2-3 | 6X6 | 5' | 11 |
| D2-4 | 6X6 | 5' | 11 |
| D3-1 | 3-6X6 | 20', 35', 50' | 1 |
| D3-2 | 6X6 | 5' | 1 |
| D3-3 | 3-6X6 | 20', 35', 50' | 1 |
| D3-4 | 6X6 | 5' | 1 |
| D4-1 | 6X6 | 430' | 3,8 |
| D4-2 | 6X6 | 430' | 3,8 |
| D4-3 | 6X6 | 20' | 7 |
| D4-4 | 6X6 | 20' | 1 |
| D4-5 | 6X6 | 20' | 1 |
| D4-6 | 6X6 | 5' | 11 |
| D4-7 | 6X6 | 5' | 11 |
| D4-8 | 6X6 | 5' | 11 |
| D5-1 | 3-6X6 | 20', 35', 50' | 1 |
| D5-2 | 6X6 | 5' | 1 |
| D5-3 | 3-6X6 | 20', 35', 50' | 1 |
| D5-4 | 6X6 | 5' | 1 |
| D6-1 | 6X6 | 450' | 1 |
| D6-2 | 6X6 | 450' | 1 |
| D6-3 | 6X6 | 5' | 11 |
| D6-4 | 6X6 | 5' | 11 |
| D6-5 | 6X6 | 5' | 11 |
| D7-1 | 3-6X6 | 20', 35', 50' | 1 |
| D7-2 | 6X6 | 5' | 1 |
| D7-3 | 3-6X6 | 20', 35', 50' | 1 |
| D7-4 | 6X6 | 5' | 1 |
| D8-1 | 6X6 | 450' | 3,8 |
| D8-2 | 6X6 | 450' | 3,8 |
| D8-3 | 6X6 | 20' | 7 |
| D8-4 | 6X6 | 20' | 1 |
| D8-5 | 6X6 | 20' | 1 |
| D8-6 | 6X6 | 5' | 11 |
| D8-7 | 6X6 | 5' | 11 |
| D8-8 | 6X6 | 5' | 11 |




## CONTROLLER PHASING, PEDESTRIAN INDICATIONS AND PUSH BUTTONS




PEDESTRIAN PUSH BUTTONS SHALL BE LOCATED AS SHOWN ABOVE.

SIGNAL SYSTEM OPERATIONS:
- SIGNAL SYSTEM FLASH MODE SHALL BE ALL RED.
- NORMAL OPERATION SHALL BE 8 PHASE FULLY-ACTUATED, WITH PHASES 1, 3, 5, AND 7 BEING FLASHING YELLOW ARROW SEQUENCING SELECTABLE BY TIME OF DAY PROGRAMS.
- VEHICLE SIGNAL PHASES 2 AND 6 SHALL BE ON RECALL.

SEE NEXT SHEET FOR DETAILED POLE AND CONTROLLER CABINET NOTES.

| DESIGN TEAM | NO. | BY | DATE | REVISIONS |
|---|---|---|---|---|
| DRAWN BY: MRB | | | | |
| DESIGNER: MRB | | | | |
| 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.
Certified By: Licensed Professional Engineer
Printed Name: JOHN M. GRAY
Lic. No. 22457 Date: 09/23/2025

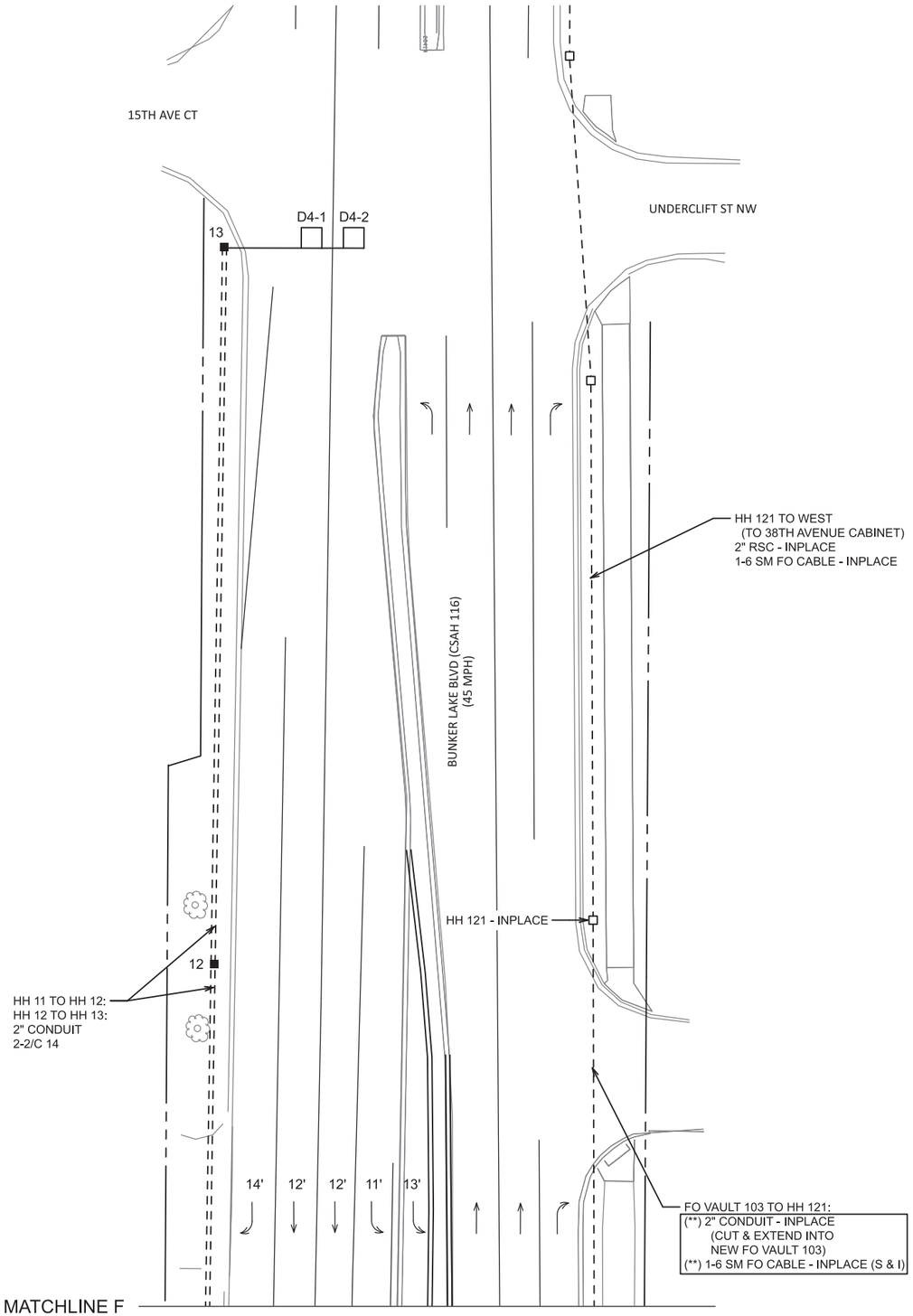
SEH

ANOKA COUNTY, MN
CSAH 9
SAP 002-609-023
CITY OF ANDOVER SAP 198-020-042, CITY PROJECT 25-13
CITY OF ANOKA SAP 103-020-020

TRAFFIC SIGNAL SYSTEM "C"
INTERSECTION LAYOUT
CSAH 9 (ROUND LAKE BOULEVARD) AT CSAH 116 (BUNKER LAKE BOULEVARD)

98
133

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|---|---|---|---|---|
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Printed Name: JOHN M. GRAY

Certified By: Licensed Professional Engineer Lic. No. 22457 Date: 09/23/2025

SEH

ANOKA COUNTY, MN
CSAH 9
SAP 002-609-023
CITY OF ANDOVER SAP 198-020-042, CITY PROJECT 25-13
CITY OF ANOKA SAP 103-020-020

TRAFFIC SIGNAL SYSTEM "C"

INTERSECTION LAYOUT
CSAH 9 (ROUND LAKE BOULEVARD) AT CSAH 116 (BUNKER LAKE BOULEVARD)

MATCHLINE H

40

SCALE IN FEET

BUNKER LAKE BLVD (CSAH 116)
(45 MPH)

14' 12' 12' 12' 14'

2

HH 1 TO HH 2:
HH 2 TO HH 3:
2" CONDUIT
2-2/C 14

FO VAULT 102 TO
FO VAULT 102A:
F & I — (**) 1.5" CONDUIT
(**) 1-12 SM FO CABLE
INPLACE — (**) 1-12 SM FO CABLE
(REMOVE)

D8-2 D8-1

3

MATCHLINE
SEE UPPER RIGHT

MATCHLINE
SEE LOWER LEFT

FO VAULT 102 TO
FO VAULT 102A:
F & I — (**) 1.5" CONDUIT
(**) 1-12 SM FO CABLE
INPLACE — (**) 1-12 SM FO CABLE
(REMOVE)

BUNKER LAKE BLVD (CSAH 116)
(45 MPH)

ROSE ST

ROSE ST

CONTROLLER CABINET TO VAULT 102A:
2" CONDUIT - INPLACE
F & I — (**) 1-12 SM FO CABLE

INPLACE FO VAULT 102A

INPLACE CONTROLLER
CABINET

40

SCALE IN FEET

| DESIGN TEAM | NO. | BY | DATE | REVISIONS |
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SEH

ANOKA COUNTY, MN
CSAH 9
SAP 002-609-023
CITY OF ANDOVER SAP 198-020-042, CITY PROJECT 25-13
CITY OF ANOKA SAP 103-020-020

TRAFFIC SIGNAL SYSTEM "C"
INTERSECTION LAYOUT
CSAH 9 (ROUND LAKE BOULEVARD) AT CSAH 116 (BUNKER LAKE BOULEVARD)

100
133

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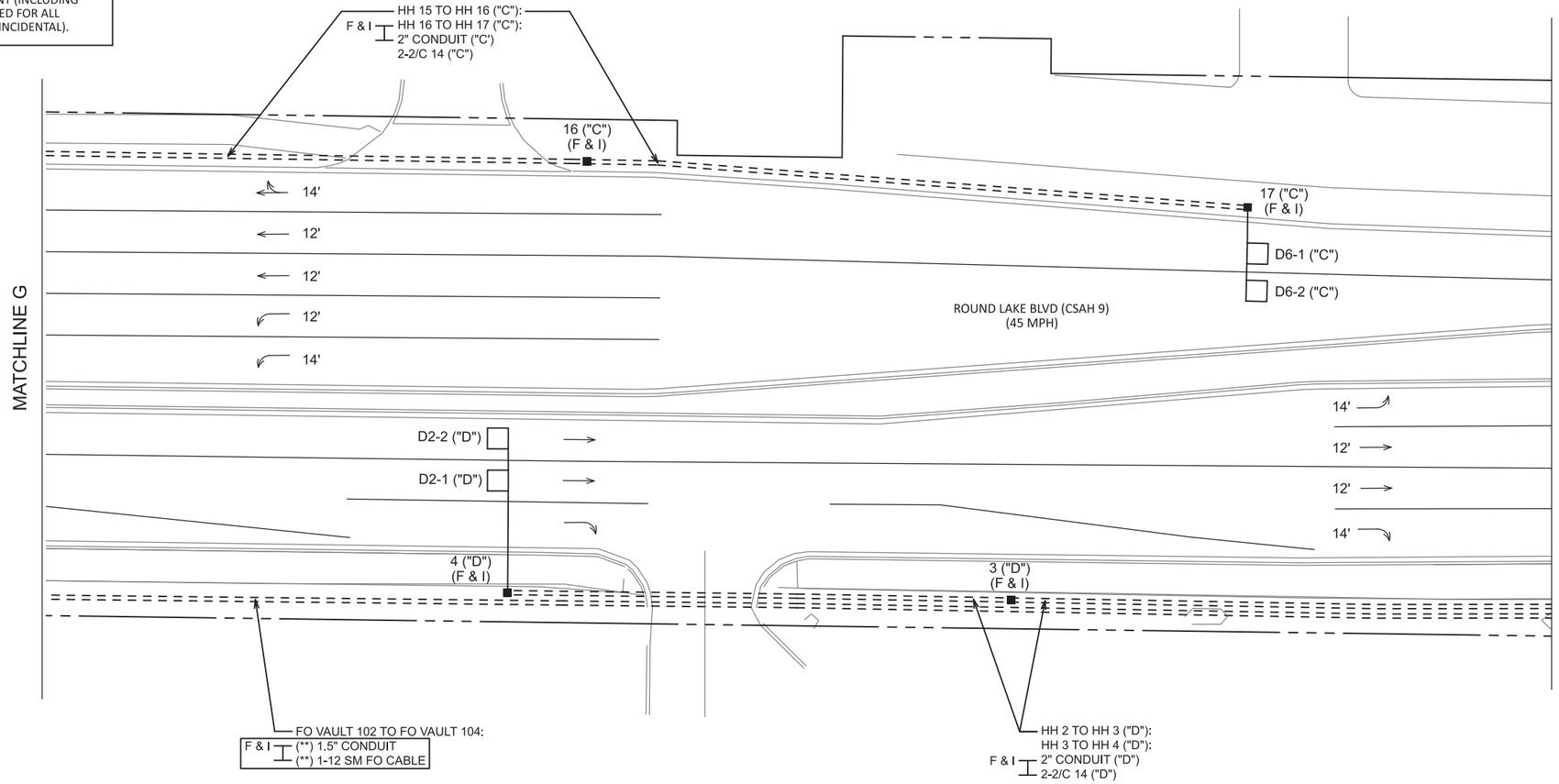
INTERCONNECT NOTES:

1) IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO UTILIZE THE "ONE CALL EXCAVATION NOTICE SYSTEM" (TELEPHONE NUMBER 651-454-0002) AS REQUIRED BY MINNESOTA STATUTE 2160.
2) DISTANCE OFF SHOULDER OR CURB FOR NEW INTERCONNECT CONDUIT SHALL BE 1-2 FEET UNLESS OTHERWISE APPROVED BY ENGINEER.
3) (**) DENOTES ITEMS TO BE FURNISHED AND INSTALLED BY THE CONTRACTOR UNDER ITEM NO. 2565 (TRAFFIC CONTROL INTERCONNECT). SEE STATEMENT OF ESTIMATED QUANTITIES AND SPECIAL PROVISIONS.
4) ITEMS DENOTED BY "C" SHALL BE INCLUDED AS PART OF THE PAY ITEM FOR ITEM NO. 2565 (TRAFFIC CONTROL SIGNAL SYSTEM "C").

   ITEMS DENOTED BY "D" SHALL BE INCLUDED AS PART OF THE PAY ITEM FOR ITEM NO. 2565 (TRAFFIC CONTROL SIGNAL SYSTEM "D").
5) (F & I) DENOTES ITEMS TO BE FURNISHED AND INSTALLED BY CONTRACTOR AS PART OF THIS PROJECT.
6) ALL NEW INTERCONNECT CONDUIT INSTALLATIONS (UNDER ROADWAYS, SIDEWALKS, AND IN BOULEVARD AREAS) SHALL BE DIRECTIONALLY BORED UNLESS OTHERWISE APPROVED BY THE ENGINEER IN THE FIELD (DURING CONSTRUCTION) FOR A CONDUIT SECTION TO BE TRENCHED-IN DUE TO UTILITY OR OTHER CONFLICTS THAT WILL NOT ALLOW FOR A CONDUIT SECTION TO BE BORED. TURF ESTABLISHMENT (INCLUDING GRADING AND RESTORATION) SHALL ALSO BE PROVIDED FOR ALL CONDUIT INSTALLATION AREAS IN THE BOULEVARDS (INCIDENTAL).

40

SCALE IN FEET




| DESIGN TEAM | NO. | BY | DATE | REVISIONS |
|---|---|---|---|---|
| DRAWN BY: MRB | | | | |
| DESIGNER: MRB | | | | |
| CHECKED BY: JMG | | | | |

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Certified By: Licensed Professional Engineer — Printed Name: JOHN M. GRAY — Lic. No. 22457 — Date: 09/23/2025

SEH

ANOKA COUNTY, MN
CSAH 9
SAP 002-609-023
CITY OF ANDOVER SAP 198-020-042, CITY PROJECT 25-13
CITY OF ANOKA SAP 103-020-020

TRAFFIC SIGNAL SYSTEMS "C-D"
INTERSECTION LAYOUT AND INTERCONNECT
CSAH 9 (ROUND LAKE BLVD) BETWEEN CSAH 116 (BUNKER LAKE BLVD) AND 138TH LN

101/133

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NOTES:

1) LOCATION OF FOUNDATIONS, LOOP DETECTORS, HANDHOLES, AND PUSH BUTTON STATIONS SHALL BE DETERMINED IN FIELD BY THE ENGINEER.
2) SEE SPECIAL PROVISIONS FOR COUNTY FURNISHED MATERIALS.
3) ALL HANDHOLES, CONDUIT, AND CABLES AND CONDUCTORS SHALL BE NEW AND SHALL BE FURNISHED AND INSTALLED BY CONTRACTOR UNLESS OTHERWISE NOTED.
4) NEW HANDHOLES SHALL BE IN ACCORDANCE WITH THE MnDOT APPROVED/ QUALIFIED PRODUCTS LIST AND THE SPECIAL PROVISIONS.
5) A 3/4" HALF COUPLING, 3/4" PIPE NIPPLE & CONDUIT OUTLET BODY SHALL BE FURNISHED AND INSTALLED 6 FEET FROM THE END OF EACH MAST ARM (FOR EVP).
6) THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING THE POWER COMPANY TO ARRANGE FOR THE POWER CONNECTION (CONNEXUS). SEE SPECIAL PROVISIONS.
7) SEE SPECIAL PROVISIONS & DETAILS REGARDING SIGNS TO BE FURNISHED AND INSTALLED BY CONTRACTOR (TO BE MEASURED AND PAID FOR SEPARATELY FROM THE "TRAFFIC CONTROL SIGNAL SYSTEM C" PAY ITEM).
8) EACH PEDESTRIAN INDICATION SHALL BE ONE SECTION LED COUNTDOWN TIMER "HAND/WALKING PERSON" INDICATION.
9) SEE DETAILS, SPECIAL PROVISIONS & STATEMENT OF ESTIMATED QUANTITIES REGARDING BATTERY BACK-UP SIGNAL SERVICE CABINET TO BE FURNISHED AND INSTALLED BY CONTRACTOR (SEPARATE FROM ITEM NO. 2565 FOR THIS SIGNAL SYSTEM).
10) LOOP DETECTOR WIRES SHALL BE CROSS-LINKED POLYETHYLENE (XLP) #12 AWG IN 3/4" N.M.C. SEE SPECIAL PROVISIONS.
11) (*) DENOTES ITEMS TO BE INCLUDED AS PART OF THE PAY ITEM FOR ITEM INO. 2565 (EMERGENCY VEHICLE PREEMPTION SYSTEM C). SEE STATEMENT OF ESTIMATED QUANTITIES AND SPECIAL PROVISIONS.
12) (**) DENOTES ITEMS TO BE FURNISHED AND INSTALLED BY CONTRACTOR UNDER ITEM NO. 2565 (TRAFFIC CONTROL INTERCONNECT). SEE STATEMENT OF ESTIMATED QUANTITIES AND SPECIAL PROVISIONS.
13) NO SPLICING IS ALLOWED ON ANY CABLE OR CONDUCTOR BETWEEN THE CONTROLLER/SERVICE CABINETS AND EACH POLE OR MAST ARM MOUNTED COMPONENT (EXCEPT THAT LOOP DETECTORS SPLICES ARE ALLOWED IN ADJACENT HANDHOLES ONLY).
14) SEE SPECIAL PROVISIONS REGARDING REMOVAL OF EXISTING SIGNAL SYSTEM (TO BE MEASURED AND PAID FOR SEPARATELY FROM ITEM NO. 2565 - "TRAFFIC CONTROL SIGNAL SYSTEM C").
15) CONTRACTOR SHALL MAINTAIN OPERATION OF A SIGNAL SYSTEM AT THIS INTERSECTION AT ALL TIMES (EITHER VIA THE EXISTING SIGNAL SYSTEM OR A TEMPORARY SIGNAL SYSTEM), EXCEPT AS OTHERWISE APPROVED BY THE COUNTY FOR THE SIGNAL SYSTEM TO BE TURNED OFF FOR CHANGEOVER FROM EXISTING TO TEMPORARY (AND/OR PERMANENT) SIGNAL SYSTEM. SEE SPECIAL PROVISIONS AND "TEMPORARY SIGNAL SYSTEM C" PLANS FOR FURTHER INFORMATION.
16) CONTRACTOR SHALL PROVIDE, INSTALL, AND MAKE OPERATIONAL ALL COMPONENTS RELATED TO THE COMPLETE PTZ CAMERA INSTALLATION (TO BE MEASURED AND PAID FOR SEPARATELY FROM THE "TRAFFIC CONTROL SIGNAL SYSTEM C" PAY ITEM). SEE SPECIAL PROVISIONS AND STATEMENT OF ESTIMATED QUANTITIES.

**1** F & I
- BA POLE FOUNDATION
- TYPE BA-A-60-X6-300 CAM 350 (DAVIT AT 0 DEG)
- LUMINAIRE-LED
- 1-ANGLE MOUNT SIGNAL-OVERHEAD AT 0'
- 3-STRAIGHT MOUNT SIGNALS-OVERHEAD AT 12', 24', 36'
- 2-ANGLE MOUNT SIGNALS-POLE MOUNTED 90 DEG AND 180 DEG
- 1-ANGLE MOUNT C.D. PED INDICATION-POLE MOUNTED 90 DEG
- 1-APS PB, SIGN (LT ARROW) AND APS MAST ARM POLE ADAPTOR (PB8-1)
- R10-X12 SIGN PANEL - BETWEEN 5-1 AND 5-2
- STREET NAME SIGN PANEL-OVERHEAD (P9)
- (*) EVP MOUNTING HARDWARE & LED CONFIRMATION LIGHT - OVERHEAD AT 6' (Ø2,5)
- 1-PTZ CAMERA AND MOUNTING HARDWARE (MOUNT ATOP CAMERA EXTENSION)
- EXTEND INTO HH 19:
- 3" CONDUIT
- 4-6/C 16 (INCLUDING 1 SPARE)
- 4-4/C 16
- (*) 1-3/C 16
- 1-2/C 14
- (*) 1-3/C 20
- 1-CAT 5E CABLE (PTZ)
- 1-3/C 16 (LUM)
- 1-1/C 6 (GRD)

INSTALL (FURNISHED BY COUNTY) — (*) ONE WAY EVP DETECTOR (Ø2,5)

**2** F & I
- PEDESTAL FOUNDATION
- 14' PEDESTAL POLE, BASE, WIND COLLAR
- 1-STRAIGHT MOUNT C.D. PED INDICATION
- 1-APS PB, SIGN (RT ARROW), AND POLE SPACERS (PB2-2)
- 2-R6-1 (ONE WAY) SIGNS-POLE MOUNTED
- EXTEND INTO HH 1:
- 3" CONDUIT
- 2-4/C 16 (INCLUDING 1 SPARE)
- 1-2/C 14
- 1-1/C 6 (INS GRD)

**3** F & I
- PA100 POLE FOUNDATION
- TYPE PA100-A-55-D30-9 (DAVIT AT 350 DEG)
- LUMINAIRE-LED
- 1-ANGLE MOUNT SIGNAL-OVERHEAD AT 0'
- 3-STRAIGHT MOUNT SIGNALS-OVERHEAD AT 12', 24', 36'
- 2-ANGLE MOUNT SIGNALS-POLE MOUNTED 90 DEG AND 180 DEG
- 2-ANGLE MOUNT C.D. PED INDICATIONS-POLE MOUNTED AT 90 DEG AND 180 DEG
- 2-R6-1 (ONE WAY) SIGNS-POLE MOUNTED 0/180 DEG
- R10-X12 SIGN PANEL - BETWEEN 7-1 AND 7-2
- STREET NAME SIGN PANEL-OVERHEAD (P10)
- (*) EVP MOUNTING HARDWARE & LED CONFIRMATION LIGHT - OVERHEAD AT 6' (Ø4,7)
- EXTEND INTO HH 8:
- 3" CONDUIT
- 4-6/C 16 (INCLUDING 1 SPARE)
- 5-4/C 16
- (*) 1-3/C 16
- (*) 1-3/C 20
- 1-3/C 16 (LUM)
- 1-1/C 6 (GRD)

INSTALL (FURNISHED BY COUNTY) — (*) ONE WAY EVP DETECTOR (Ø4,7)

**4** F & I
- BA POLE FOUNDATION
- TYPE BA-A-65-D30-9 (DAVIT AT 350 DEG)
- LUMINAIRE-LED
- 1-ANGLE MOUNT SIGNAL-OVERHEAD AT 0'
- 4-STRAIGHT MOUNT SIGNALS-OVERHEAD AT 12', 24', 36', 48'
- 2-ANGLE MOUNT SIGNALS-POLE MOUNTED 90 DEG AND 180 DEG
- R10-X12 SIGN PANEL - BETWEEN 1-1 AND 1-2
- STREET NAME SIGN PANEL-OVERHEAD (P11)
- (*) EVP MOUNTING HARDWARE & LED CONFIRMATION LIGHT - OVERHEAD AT 6' (Ø6,1)
- EXTEND INTO HH 10:
- 3" CONDUIT
- 4-6/C 16 (INCLUDING 1 SPARE)
- 4-4/C 16
- (*) 1-3/C 16
- (*) 1-3/C 20
- 1-3/C 16 (LUM)
- 1-1/c 6 (GRD)

INSTALL (FURNISHED BY COUNTY) — (*) ONE WAY EVP DETECTOR (Ø6,1)

**5** F & I
- PEDESTAL FOUNDATION
- 14' PEDESTAL POLE, BASE, WIND COLLAR
- 2-STRAIGHT MOUNT C.D. PED INDICATIONS
- 1-APS PB, SIGN (RT ARROW), AND POLE SPACERS (PB6-2)
- 2-R6-1 (ONE WAY) SIGNS-POLE MOUNTED
- EXTEND INTO HH 11:
- 3" CONDUIT
- 3-4/C 16 (INCLUDING 1 SPARE)
- 1-2/C 14
- 1-1/C 6 (INS GRD)

**6** F & I
- BA POLE FOUNDATION
- TYPE BA-A-60-D30-9 (DAVIT AT 350 DEG)
- LUMINAIRE-LED
- 1-ANGLE MOUNT SIGNAL-OVERHEAD AT 0'
- 3-STRAIGHT MOUNT SIGNALS-OVERHEAD AT 12', 24', 36'
- 2-ANGLE MOUNT SIGNALS-POLE MOUNTED 90 DEG AND 180 DEG
- 1-ANGLE MOUNT C.D. PED INDICATION-POLE MOUNTED 90 DEG
- (*) 1-APS PB, SIGN (LT ARROW) AND APS MAST ARM POLE ADAPTOR (PB6-1)
- R10-X12 SIGN PANEL - BETWEEN 3-1 AND 3-2
- STREET NAME SIGN PANEL-OVERHEAD (P12)
- (*) EVP MOUNTING HARDWARE & LED CONFIRMATION LIGHT - OVERHEAD AT 6' (Ø8,3)
- EXTEND INTO HH 15:
- 3" CONDUIT
- 4-6/C 16 (INCLUDING 1 SPARE)
- 4-4/C 16
- (*) 1-3/C 16
- 1-2/C 14
- (*) 1-3/C 20
- 1-3/C 16 (LUM)
- 1-1/C 6 (GRD)

INSTALL (FURNISHED BY COUNTY) — (*) ONE WAY EVP DETECTOR (Ø8,3)

**7** F & I
- PEDESTAL FOUNDATION
- 14' PEDESTAL POLE, BASE, WIND COLLAR
- 1-STRAIGHT MOUNT C.D. PED INDICATION
- 1-APS PB, SIGN (RT ARROW), AND POLE SPACERS (PB8-2)
- 2-R6-1 (ONE WAY) SIGNS-POLE MOUNTED 0/180 DEG
- EXTEND INTO HH 15:
- 3" CONDUIT
- 2-4/C 16 (INCLUDING 1 SPARE)
- 1-2/C 14
- 1-1/C 6 (INS GRD)

**A** INSTALL (FURNISHED BY COUNTY) — CONTROLLER AND CABINET

F & I
- EQUIPMENT PAD FOUNDATION
- BBU SIGNAL SERVICE CABINET
- BETWEEN CONTROLLER CABINET AND SERVICE CABINET:
- METERED SIGNAL SERVICE
- 2" CONDUIT
- 3-1/C 6
- 1.5" CONDUIT (COMMS)
- 1-6 PR 19 (COMMS)
- CONTROLLER CABINET TO HH 1:
- 2-4" CONDUITS
- 4-6/C 16
- 7-4/C 16
- (*) 1-3/C 16
- 19-2/C 14
- (*) 1-3/C 20
- 1-1/C 6 (GRD)
- 4" CONDUIT
- 4-6/C 16
- 7-4/C 16
- (*) 1-3/C 16
- 14-2/C 14
- (*) 1-3/C 20
- CONTROLLER CABINET TO HH 19:
- 2-4" CONDUITS
- 4-6/C 16
- 4-4/C 16
- (*) 1-3/C 16
- 1-2/C 14
- (*) 1-3/C 20
- 1-CAT 5E CABLE (PTZ)
- 1-1/C 6 (GRD)
- 4" CONDUIT
- 4-6/C 16
- 6-4/C 16
- (*) 1-3/C 16
- 15-2/C 14
- (*) 1-3/C 20

F & I
- SERVICE CABINET TO HH 1:
- 1.25" CONDUIT
- METERED STREET LIGHT SERVICE
- 2-3/C 16 (LUM)
- SERVICE CABINET TO HH 19:
- 1.25" CONDUIT
- METERED STREET LIGHT SERVICE
- 2-3/C 16 (LUM)
- STUB OUT 2" CONDUIT FROM SERVICE CABINET (FOR POWER CONNECTION BY CONNEXUS)
- STUB OUT 2-3" CONDUITS FROM CONTROLLER CABINET TO SOUTH (CAP BOTH ENDS- FOR FUTURE USE)
- CONTROLLER CABINET TO FO-VAULT 102:
- (**) 2" CONDUIT
- (**) 1-12 SM FO (TO 136TH)
- (**) 1-12 SM FO (TO 138TH)
- (**) 1-6 SM FO (TO 38TH) - INPLACE (S & I)
- (**) 1-12 SM FO (TO ROSE)

**B** INPLACE — GROUND MOUNTED TRANSFORMER (SOP - CONNEXUS)

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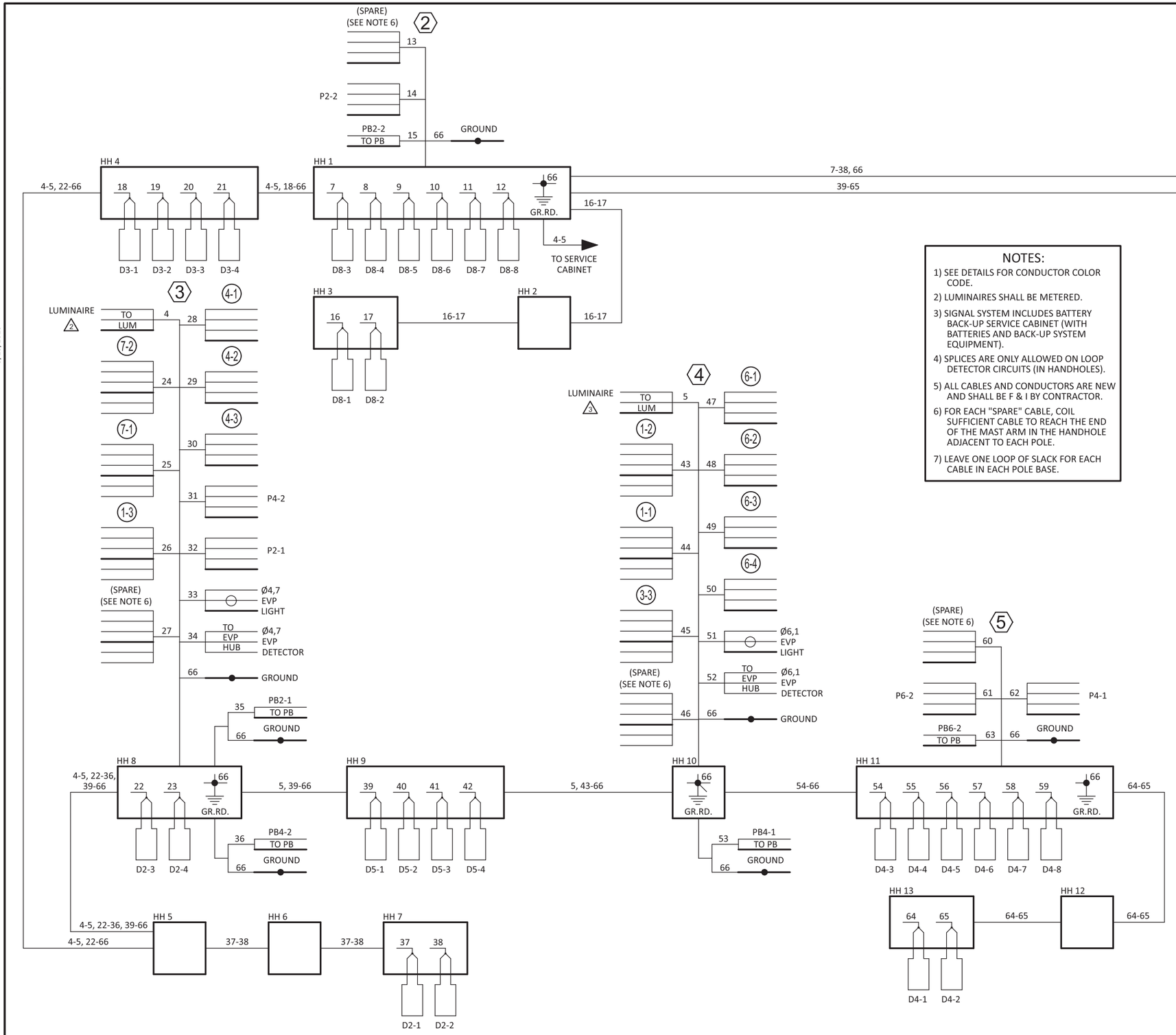
| DESIGN TEAM | NO. | BY | DATE | REVISIONS |
|---|---|---|---|---|
| DRAWN BY: MRB | | | | |
| DESIGNER: MRB | | | | |
| CHECKED BY: JMG | | | | |

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.
Printed Name: JOHN M. GRAY
Certified By: Licensed Professional Engineer Lic. No. 22457 Date: 09/23/2025

SEH

ANOKA COUNTY, MN
CSAH 9
SAP 002-609-023
CITY OF ANDOVER SAP 198-020-042, CITY PROJECT 25-13
CITY OF ANOKA SAP 103-020-020

TRAFFIC SIGNAL SYSTEM "C"
POLE & CABINET NOTES
CSAH 9 (ROUND LAKE BOULEVARD) AT CSAH 116 (BUNKER LAKE BOULEVARD)




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| DESIGNER: MRB | | | | |
| CHECKED BY: JMG | | | | |

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Lic. No. 22457 Date: 09/23/2025

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ANOKA COUNTY, MN
CSAH 9
SAP 002-609-023
CITY OF ANDOVER SAP 198-020-042, CITY PROJECT 25-13
CITY OF ANOKA SAP 103-020-020

TRAFFIC SIGNAL SYSTEM "C"
FIELD WIRING DIAGRAM
CSAH 9 (ROUND LAKE BOULEVARD) AT CSAH 116 (BUNKER LAKE BOULEVARD)

## CONTROLLER AND CABINET

67
- RLA 5-2
- YLA 5-2
- GLA 5-2
- NEU 5-2
- FYLA 5-2
- SPR

68
- RLA 5-1
- YLA 5-1
- GLA 5-1
- NEU 5-1
- FYLA 5-1
- SPR

69
- RLA 7-3
- YLA 7-3
- GLA 7-3
- NEU 7-3
- FYLA 7-3
- SPR

70
- SPR
- SPR
- SPR
- NEU
- SPR
- SPR

71
- RED 2-1
- YEL 2-1
- GRN 2-1
- NEU 2-1

72
- RED 2-2
- YEL 2-2
- GRN 2-2
- NEU 2-2

73
- RED 2-3
- YEL 2-3
- GRN 2-3
- NEU 2-3

74
- DWK P8-1
- WLK P8-1
- SPR
- NEU P8-1

75
- Ø2,5 EVP LT
- EQG
- NEU

76
- Ø2,5
- EVP
- DETECTOR

77
- VIDEO
- DETECTOR
- (PTZ)

78
- PB8-1
- NEU

79
- D1-1

80
- D1-2

81
- D1-3

82
- D1-4

83
- D6-3

84
- D6-4

85
- D6-5

86
- SPR
- SPR
- SPR
- NEU

87
- DWK P8-2
- WLK P8-2
- SPR
- NEU P8-2

88
- PB8-2
- NEU

89
- RLA 3-2
- YLA 3-2
- GLA 3-2
- NEU 3-2
- FYLA 3-2
- SPR

90
- RLA 3-1
- YLA 3-1
- GLA 3-1
- NEU 3-1
- FYLA 3-1
- SPR

91
- RLA 5-3
- YLA 5-3
- GLA 5-3
- NEU 5-3
- FYLA 5-3
- SPR

92
- SPR
- SPR
- SPR
- NEU
- SPR
- SPR

93
- RED 8-1
- YEL 8-1
- GRN 8-1
- NEU 8-1

94
- RED 8-2
- YEL 8-2
- GRN 8-2
- NEU 8-2

95
- RED 8-3
- YEL 8-3
- GRN 8-3
- NEU 8-3

96
- DWK P6-1
- WLK P6-1
- SPR
- NEU P6-1

97
- Ø3,8 EVP LT
- EQG
- NEU

98
- Ø3,8
- EVP
- DETECTOR

99
- PB6-1
- NEU

100
- D7-1

101
- D7-2

102
- D7-3

103
- D7-4

104
- D6-1

105
- D6-2

106
- GROUND

112
- 12 SM FO CABLE
- TO 136TH AVE

113
- 12 SM FO CABLE
- TO 138TH LANE

114 (INP.)
- 12 SM FO CABLE
- TO 38TH AVE

115
- 12 SM FO CABLE
- TO ROSE STREET

6 PR 19 (COMMS) — 120

## SIGNAL SERVICE CABINET

- SIGNALS NEUTRAL LIGHTING — 1 — 1 — S.O.P.
- 120 — 6 PR 19 (COMMS) — 120
- 2 — SIGNAL SERVICE — 2
- 4 — LUMINAIRE ② — 4-5 — TO HH 1
- 5 — LUMINAIRE ③
- 3 — LUMINAIRE ①
- 6 — LUMINAIRE ④ — 3, 6

### ① — LUMINAIRE ①

TO LUM — 3

5-2: 71 → 2-1
67 → 2-2
5-1: 72 → 2-3
68 → 73
7-3: 74 → P8-1
69 → 75 Ø2,5 EVP LIGHT
(SPARE) (SEE NOTE 6)
70 → 76 TO EVP HUB; Ø2,5 EVP DETECTOR
77 VIDEO DETECTOR (PTZ)
78 PB8-1 TO PB
106 GROUND

### ⑥ — LUMINAIRE ④

TO LUM — 3

3-2: 89 → 93 → 8-1; 94 → 8-2
3-1: 90 → 95 → 8-3; 96 → P6-1
5-3: 91 → 97 Ø3,8 EVP LIGHT
(SPARE) (SEE NOTE 6)
92 → 98 TO EVP HUB; Ø3,8 EVP DETECTOR
99 PB6-1 TO PB
106 GROUND

### ⑦

(SPARE) (SEE NOTE 6) — 86
P8-2 — 87
PB8-2 TO PB — 88 — 106 GROUND

86-88, 106
3, 89-99, 106

HH 16 — 104-105 — HH 17 (104, 105) — D6-1, D6-2

HH 19: 3, 6; 67-78, 106; 79-105; 106 GR.RD.
HH 18: 3, 79-106; 79, 80, 81, 82 — D1-1, D1-2, D1-3, D1-4
HH 15: 3, 83-106; 83, 84, 85; 106 GR.RD. — D6-3, D6-4, D6-5
104-105; 100-103
HH 14: 100, 101, 102, 103 — D7-1, D7-2, D7-3, D7-4

FO VAULT 102 — 112, 113, 114 (INP.), 115
- 112 → INTERCONNECT TO 136TH AVENUE
- 113 → INTERCONNECT TO 138TH LANE
- 114 (INP.) → INTERCONNECT TO 38TH AVENUE
- 115 → INTERCONNECT TO ROSE STREET

### NOTES:

1) SEE DETAILS FOR CONDUCTOR COLOR CODE.
2) LUMINAIRES SHALL BE METERED.
3) SIGNAL SYSTEM INCLUDES BATTERY BACK-UP SERVICE CABINET (WITH BATTERIES AND BACK-UP SYSTEM EQUIPMENT).
4) SPLICES ARE ONLY ALLOWED ON LOOP DETECTOR CIRCUITS (IN HANDHOLES).
5) ALL CABLES AND CONDUCTORS ARE NEW AND SHALL BE F & I BY CONTRACTOR.
6) FOR EACH "SPARE" CABLE, COIL SUFFICIENT CABLE TO REACH THE END OF THE MAST ARM IN THE HANDHOLE ADJACENT TO EACH POLE.
7) LEAVE ONE LOOP OF SLACK FOR EACH CABLE IN EACH POLE BASE.



| DESIGN TEAM | NO. | BY | DATE | REVISIONS |
|---|---|---|---|---|
| DRAWN BY: MRB | | | | |
| DESIGNER: MRB | | | | |
| CHECKED BY: JMG | | | | |

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Certified By: Licensed Professional Engineer — Printed Name: JOHN M. GRAY — Lic. No. 22457 — Date: 09/23/2025

SEH

ANOKA COUNTY, MN
CSAH 9
SAP 002-609-023
CITY OF ANDOVER SAP 198-020-042, CITY PROJECT 25-13
CITY OF ANOKA SAP 103-020-020

# TRAFFIC SIGNAL SYSTEM "C"

FIELD WIRING DIAGRAM
CSAH 9 (ROUND LAKE BOULEVARD) AT CSAH 116 (BUNKER LAKE BOULEVARD)

INTERCONNECT NOTES:

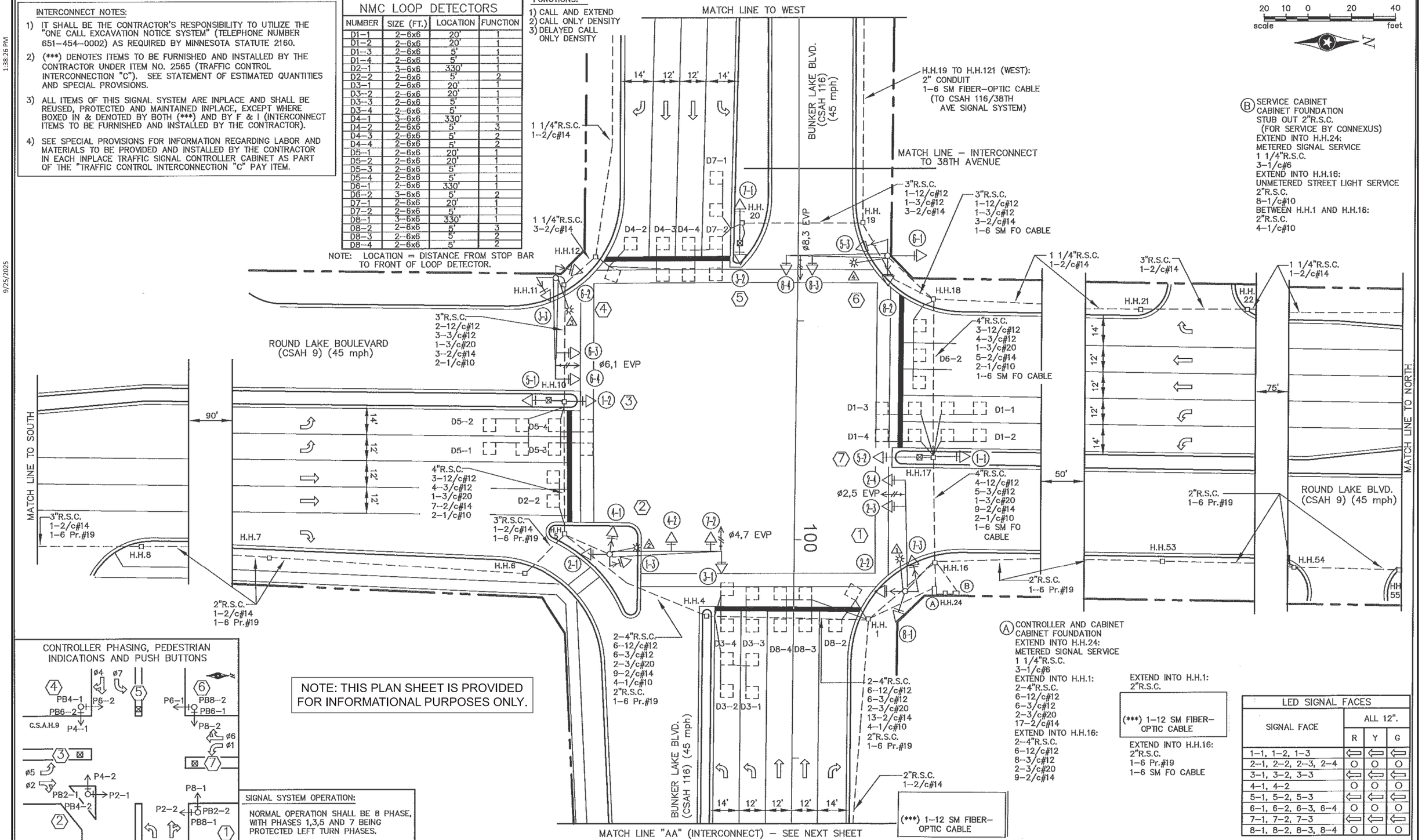
1) IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO UTILIZE THE "ONE CALL EXCAVATION NOTICE SYSTEM" (TELEPHONE NUMBER 651-454-0002) AS REQUIRED BY MINNESOTA STATUTE 216D.
2) (***) DENOTES ITEMS TO BE FURNISHED AND INSTALLED BY THE CONTRACTOR UNDER ITEM NO. 2565 (TRAFFIC CONTROL INTERCONNECTION "C"). SEE STATEMENT OF ESTIMATED QUANTITIES AND SPECIAL PROVISIONS.
3) ALL ITEMS OF THIS SIGNAL SYSTEM ARE INPLACE AND SHALL BE REUSED, PROTECTED AND MAINTAINED INPLACE, EXCEPT WHERE BOXED IN & DENOTED BY BOTH (***) AND BY F & I (INTERCONNECT ITEMS TO BE FURNISHED AND INSTALLED BY THE CONTRACTOR).
4) SEE SPECIAL PROVISIONS FOR INFORMATION REGARDING LABOR AND MATERIALS TO BE PROVIDED AND INSTALLED BY THE CONTRACTOR IN EACH INPLACE TRAFFIC SIGNAL CONTROLLER CABINET AS PART OF THE "TRAFFIC CONTROL INTERCONNECTION "C" PAY ITEM.

## NMC LOOP DETECTORS

| NUMBER | SIZE (FT.) | LOCATION | FUNCTION |
|---|---|---|---|
| D1-1 | 2-6x6 | 20' | 1 |
| D1-2 | 2-6x6 | 20' | 1 |
| D1-3 | 2-6x6 | 5' | 1 |
| D1-4 | 2-6x6 | 5' | 1 |
| D2-1 | 3-6x6 | 330' | 1 |
| D2-2 | 2-6x6 | 5' | 2 |
| D3-1 | 2-6x6 | 20' | 1 |
| D3-2 | 2-6x6 | 20' | 1 |
| D3-3 | 2-6x6 | 5' | 1 |
| D3-4 | 2-6x6 | 5' | 1 |
| D4-1 | 3-6x6 | 330' | 1 |
| D4-2 | 2-6x6 | 5' | 3 |
| D4-3 | 2-6x6 | 5' | 2 |
| D4-4 | 2-6x6 | 5' | 2 |
| D5-1 | 2-6x6 | 20' | 1 |
| D5-2 | 2-6x6 | 20' | 1 |
| D5-3 | 2-6x6 | 5' | 1 |
| D5-4 | 2-6x6 | 5' | 1 |
| D6-1 | 2-6x6 | 330' | 1 |
| D6-2 | 3-6x6 | 5' | 2 |
| D7-1 | 2-6x6 | 20' | 1 |
| D7-2 | 2-6x6 | 5' | 1 |
| D8-1 | 3-6x6 | 330' | 1 |
| D8-2 | 2-6x6 | 5' | 3 |
| D8-3 | 2-6x6 | 5' | 2 |
| D8-4 | 2-6x6 | 5' | 2 |

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

FUNCTIONS:
1) CALL AND EXTEND
2) CALL ONLY DENSITY
3) DELAYED CALL ONLY DENSITY




(B) SERVICE CABINET
CABINET FOUNDATION
STUB OUT 2"R.S.C.
(FOR SERVICE BY CONNEXUS)
EXTEND INTO H.H.24:
METERED SIGNAL SERVICE
1 1/4"R.S.C.
3-1/c#6
EXTEND INTO H.H.16:
UNMETERED STREET LIGHT SERVICE
2"R.S.C.
8-1/c#10
BETWEEN H.H.1 AND H.H.16:
2"R.S.C.
4-1/c#10

(A) CONTROLLER AND CABINET
CABINET FOUNDATION
EXTEND INTO H.H.24:
METERED SIGNAL SERVICE
1 1/4"R.S.C.
3-1/c#6
EXTEND INTO H.H.1:
2-4"R.S.C.
6-12/c#12
6-3/c#12
2-3/c#20
17-2/c#14
EXTEND INTO H.H.16:
2-4"R.S.C.
6-12/c#12
8-3/c#12
2-3/c#20
9-2/c#14

EXTEND INTO H.H.1:
2"R.S.C.
(***) 1-12 SM FIBER-OPTIC CABLE
EXTEND INTO H.H.16:
2"R.S.C.
1-6 Pr.#19
1-6 SM FO CABLE

## CONTROLLER PHASING, PEDESTRIAN INDICATIONS AND PUSH BUTTONS




SIGNAL SYSTEM OPERATION:

NORMAL OPERATION SHALL BE 8 PHASE, WITH PHASES 1,3,5 AND 7 BEING PROTECTED LEFT TURN PHASES.

SIGNAL SYSTEM FLASH MODE SHALL BE ALL RED.

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

## LED SIGNAL FACES

| SIGNAL FACE | ALL 12". R | Y | G |
|---|---|---|---|
| 1-1, 1-2, 1-3 | ⇦ | ⇦ | ⇦ |
| 2-1, 2-2, 2-3, 2-4 | ○ | ○ | ○ |
| 3-1, 3-2, 3-3 | ⇦ | ⇦ | ⇦ |
| 4-1, 4-2 | ○ | ○ | ○ |
| 5-1, 5-2, 5-3 | ⇦ | ⇦ | ⇦ |
| 6-1, 6-2, 6-3, 6-4 | ○ | ○ | ○ |
| 7-1, 7-2, 7-3 | ⇦ | ⇦ | ⇦ |
| 8-1, 8-2, 8-3, 8-4 | ○ | ○ | ○ |

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|---|---|---|---|---|
| DRAWN BY: MRB | | | | |
| DESIGNER: MRB | | | | |
| CHECKED BY: JMG | | | | |

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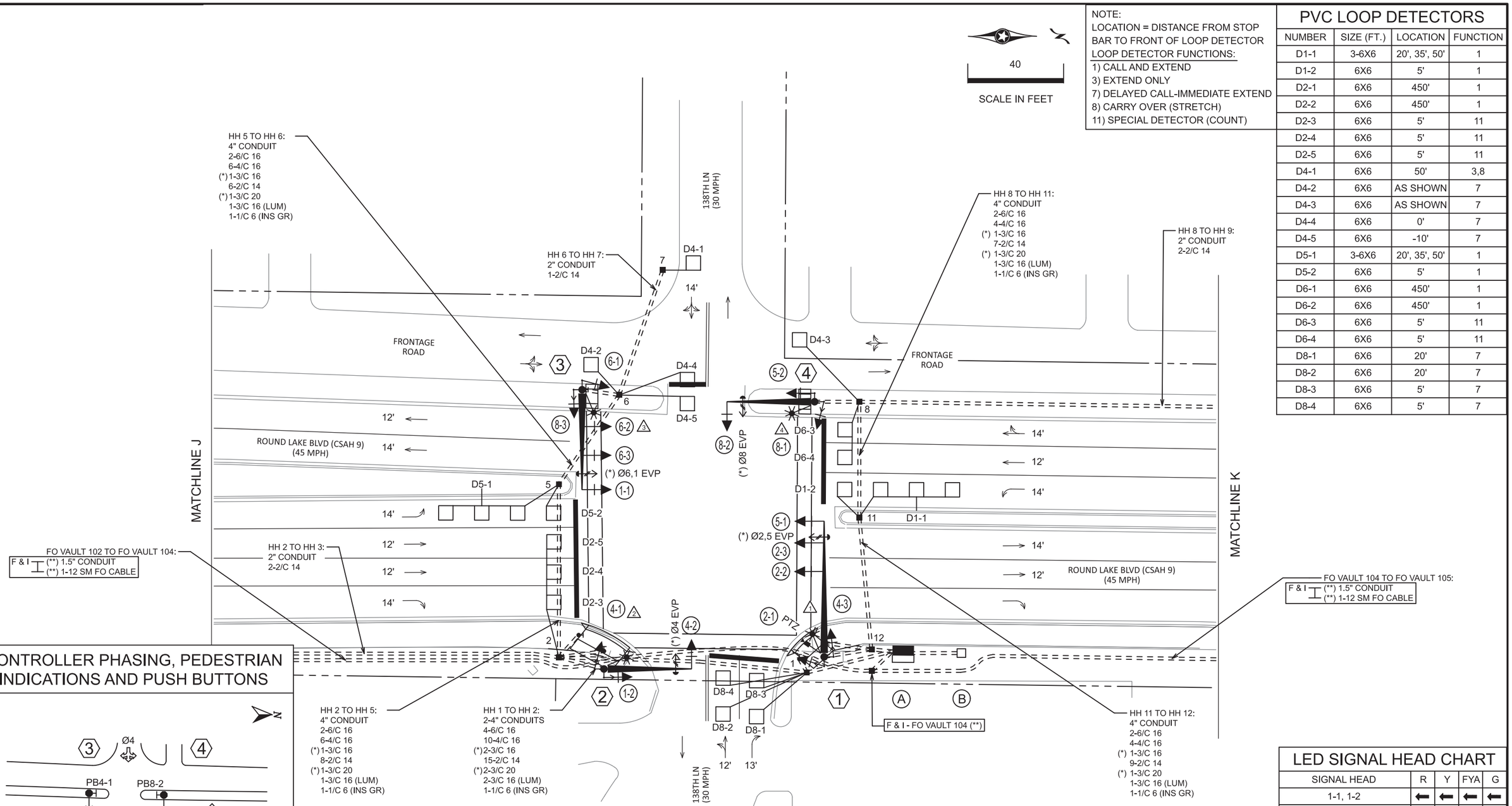
ANOKA COUNTY, MN
CSAH 9
SAP 002-609-023
CITY OF ANDOVER SAP 198-020-042, CITY PROJECT 25-13
CITY OF ANOKA SAP 103-020-020

EXISTING SIGNAL SYSTEM "C"
FOR INFORMATION ONLY
CSAH 9 (ROUND LAKE BOULEVARD) AT CSAH 116 (BUNKER LAKE BOULEVARD)

105
133

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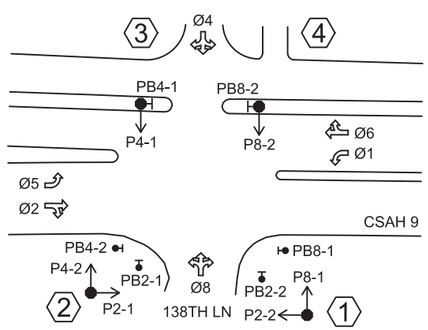



NOTE:
LOCATION = DISTANCE FROM STOP BAR TO FRONT OF LOOP DETECTOR
LOOP DETECTOR FUNCTIONS:
1) CALL AND EXTEND
3) EXTEND ONLY
7) DELAYED CALL-IMMEDIATE EXTEND
8) CARRY OVER (STRETCH)
11) SPECIAL DETECTOR (COUNT)

## PVC LOOP DETECTORS

| NUMBER | SIZE (FT.) | LOCATION | FUNCTION |
|---|---|---|---|
| D1-1 | 3-6X6 | 20', 35', 50' | 1 |
| D1-2 | 6X6 | 5' | 1 |
| D2-1 | 6X6 | 450' | 1 |
| D2-2 | 6X6 | 450' | 1 |
| D2-3 | 6X6 | 5' | 11 |
| D2-4 | 6X6 | 5' | 11 |
| D2-5 | 6X6 | 5' | 11 |
| D4-1 | 6X6 | 50' | 3,8 |
| D4-2 | 6X6 | AS SHOWN | 7 |
| D4-3 | 6X6 | AS SHOWN | 7 |
| D4-4 | 6X6 | 0' | 7 |
| D4-5 | 6X6 | -10' | 7 |
| D5-1 | 3-6X6 | 20', 35', 50' | 1 |
| D5-2 | 6X6 | 5' | 1 |
| D6-1 | 6X6 | 450' | 1 |
| D6-2 | 6X6 | 450' | 1 |
| D6-3 | 6X6 | 5' | 11 |
| D6-4 | 6X6 | 5' | 11 |
| D8-1 | 6X6 | 20' | 7 |
| D8-2 | 6X6 | 20' | 7 |
| D8-3 | 6X6 | 5' | 7 |
| D8-4 | 6X6 | 5' | 7 |

## CONTROLLER PHASING, PEDESTRIAN INDICATIONS AND PUSH BUTTONS




PEDESTRIAN PUSH BUTTONS SHALL BE LOCATED AS SHOWN ABOVE.

SIGNAL SYSTEM OPERATIONS:
- SIGNAL SYSTEM FLASH MODE SHALL BE ALL RED.
- NORMAL OPERATION SHALL BE 6 PHASE FULLY-ACTUATED, WITH PHASES 1 AND 5 BEING FLASHING YELLOW ARROW SEQUENCING SELECTABLE BY TIME OF DAY PROGRAMS.
- VEHICLE SIGNAL PHASES 2 AND 6 SHALL BE ON RECALL.

SEE NEXT SHEET FOR DETAILED POLE AND CONTROLLER CABINET NOTES.

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

F & I — APS PUSH BUTTON STATION (SEE DETAILS)
1-APS PB AND SIGN (RT ARROW) (PB4-2)
EXTEND INTO HH 2:
1" CONDUIT
1-2/C 14
1-1/C 6 (INS. GR.)

F & I — APS PUSH BUTTON STATION (SEE DETAILS)
1-APS PB AND SIGN (LT ARROW) (PB8-1)
EXTEND INTO HH 12:
1" CONDUIT
1-2/C 14
1-1/C 6 (INS. GR.)

F & I — APS PUSH BUTTON STATION (SEE DETAILS)
1-APS PB AND SIGN (RT ARROW) (PB2-2)
EXTEND INTO HH 1:
1" CONDUIT
1-2/C 14
1-1/C 6 (INS. GR.)

## LED SIGNAL HEAD CHART

| SIGNAL HEAD | R | Y | FYA | 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.
- FYA DENOTES FLASHING YELLOW ARROW.
- ALL SIGNAL HEADS SHALL BE BLACK POLYCARBONATE WITH BACKGROUND SHIELD.

| DESIGN TEAM | NO. | BY | DATE | REVISIONS |
|---|---|---|---|---|
| DRAWN BY: MRB | | | | |
| DESIGNER: MRB | | | | |
| CHECKED BY: JMG | | | | |

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SEH

ANOKA COUNTY, MN
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TRAFFIC SIGNAL SYSTEM "D"
INTERSECTION LAYOUT
CSAH 9 (ROUND LAKE BOULEVARD) AT 138TH LANE

106
133

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INTERCONNECT NOTES:

1) IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO UTILIZE THE "ONE CALL EXCAVATION NOTICE SYSTEM" (TELEPHONE NUMBER 651-454-0002) AS REQUIRED BY MINNESOTA STATUTE 2160.
2) DISTANCE OFF SHOULDER OR CURB FOR NEW INTERCONNECT CONDUIT SHALL BE 1-2 FEET UNLESS OTHERWISE APPROVED BY ENGINEER.
3) (**) DENOTES ITEMS TO BE FURNISHED AND INSTALLED BY THE CONTRACTOR UNDER ITEM NO. 2565 (TRAFFIC CONTROL INTERCONNECT). SEE STATEMENT OF ESTIMATED QUANTITIES AND SPECIAL PROVISIONS.
4) ITEMS DENOTED BY "D" SHALL BE INCLUDED AS PART OF THE PAY ITEM FOR ITEM NO. 2565 (TRAFFIC CONTROL SIGNAL SYSTEM "D").
5) (F & I) DENOTES ITEMS TO BE FURNISHED AND INSTALLED BY CONTRACTOR AS PART OF THIS PROJECT.
6) ALL NEW INTERCONNECT CONDUIT INSTALLATIONS (UNDER ROADWAYS, SIDEWALKS, AND IN BOULEVARD AREAS) SHALL BE DIRECTIONALLY BORED UNLESS OTHERWISE APPROVED BY THE ENGINEER IN THE FIELD (DURING CONSTRUCTION) FOR A CONDUIT SECTION TO BE TRENCHED-IN DUE TO UTILITY OR OTHER CONFLICTS THAT WILL NOT ALLOW FOR A CONDUIT SECTION TO BE BORED. TURF ESTABLISHMENT (INCLUDING GRADING AND RESTORATION) SHALL ALSO BE PROVIDED FOR ALL CONDUIT INSTALLATION AREAS IN THE BOULEVARDS (INCIDENTAL).

40

SCALE IN FEET

MATCHLINE L

HH 8 TO HH 9 ("D"):
2" CONDUIT ("D")
2-2/C 14 ("D")

HH 9 TO HH 10 ("D"):
2" CONDUIT ("D")
2-2/C 14 ("D")

FRONTAGE ROAD

9 ("D")

10 ("D")

14'

12'

14'

D6-1 ("D")

D6-2 ("D")

ROUND LAKE BLVD (CSAH 9)
(45 MPH)

F & I - FO VAULT 105 (**)

139TH AVE

MATCHLINE K

FO VAULT 104 TO FO VAULT 105:
F & I (**) 1.5" CONDUIT
(**) 1-12 SM FO CABLE

FO VAULT 105 TO FO VAULT 106:
F & I (**) 1.5" CONDUIT
(**) 1-12 SM FO CABLE

| DESIGN TEAM | NO. | BY | DATE | REVISIONS |
|---|---|---|---|---|
| DRAWN BY: MRB | | | | |
| DESIGNER: MRB | | | | |
| CHECKED BY: JMG | | | | |

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Certified By: Licensed Professional Engineer

Printed Name: JOHN M. GRAY

Lic. No. 22457 Date: 09/23/2025

SEH

ANOKA COUNTY, MN
CSAH 9
SAP 002-609-023
CITY OF ANDOVER SAP 198-020-042, CITY PROJECT 25-13
CITY OF ANOKA SAP 103-020-020

TRAFFIC SIGNAL SYSTEM "D"
INTERSECTION LAYOUT AND INTERCONNECT
CSAH 9 (ROUND LAKE BOULEVARD) AT 138TH LANE

107
133

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MODEL: sgl20

NOTES:

1) LOCATION OF FOUNDATIONS, LOOP DETECTORS, HANDHOLES, AND PUSH BUTTON STATIONS SHALL BE DETERMINED IN FIELD BY THE ENGINEER.
2) SEE SPECIAL PROVISIONS FOR COUNTY FURNISHED MATERIALS.
3) ALL HANDHOLES, CONDUIT, AND CABLES AND CONDUCTORS SHALL BE NEW AND SHALL BE FURNISHED AND INSTALLED BY CONTRACTOR UNLESS OTHERWISE NOTED.
4) NEW HANDHOLES SHALL BE IN ACCORDANCE WITH THE MnDOT APPROVED/ QUALIFIED PRODUCTS LIST AND THE SPECIAL PROVISIONS.
5) A 3/4" HALF COUPLING, 3/4" PIPE NIPPLE & CONDUIT OUTLET BODY SHALL BE FURNISHED AND INSTALLED 6 FEET FROM THE END OF EACH MAST ARM (FOR EVP).
6) THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING THE POWER COMPANY TO ARRANGE FOR THE POWER CONNECTION (CONNEXUS). SEE SPECIAL PROVISIONS.
7) SEE SPECIAL PROVISIONS & DETAILS REGARDING SIGNS TO BE FURNISHED AND INSTALLED BY CONTRACTOR (TO BE MEASURED AND PAID FOR SEPARATELY FROM THE "TRAFFIC CONTROL SIGNAL SYSTEM D" PAY ITEM).
8) EACH PEDESTRIAN INDICATION SHALL BE ONE SECTION LED COUNTDOWN TIMER "HAND/WALKING PERSON" INDICATION.
9) SEE DETAILS, SPECIAL PROVISIONS & STATEMENT OF ESTIMATED QUANTITIES REGARDING BATTERY BACK-UP SIGNAL SERVICE CABINET TO BE FURNISHED AND INSTALLED BY CONTRACTOR (SEPARATE FROM ITEM NO. 2565 FOR THIS SIGNAL SYSTEM).
10) LOOP DETECTOR WIRES SHALL BE CROSS-LINKED POLYETHYLENE (XLP) #12 AWG IN 3/4" N.M.C. SEE SPECIAL PROVISIONS.
11) (*) DENOTES ITEMS TO BE INCLUDED AS PART OF THE PAY ITEM FOR ITEM INO. 2565 (EMERGENCY VEHICLE PREEMPTION SYSTEM D). SEE STATEMENT OF ESTIMATED QUANTITIES AND SPECIAL PROVISIONS.
12) (**) DENOTES ITEMS TO BE FURNISHED AND INSTALLED BY CONTRACTOR UNDER ITEM NO. 2565 (TRAFFIC CONTROL INTERCONNECT). SEE STATEMENT OF ESTIMATED QUANTITIES AND SPECIAL PROVISIONS.
13) NO SPLICING IS ALLOWED ON ANY CABLE OR CONDUCTOR BETWEEN THE CONTROLLER/SERVICE CABINETS AND EACH POLE OR MAST ARM MOUNTED COMPONENT (EXCEPT THAT LOOP DETECTORS SPLICES ARE ALLOWED IN ADJACENT HANDHOLES ONLY).
14) SEE SPECIAL PROVISIONS REGARDING REMOVAL OF EXISTING SIGNAL SYSTEM (TO BE MEASURED AND PAID FOR SEPARATELY FROM ITEM NO. 2565 - "TRAFFIC CONTROL SIGNAL SYSTEM D").
15) CONTRACTOR SHALL MAINTAIN OPERATION OF A SIGNAL SYSTEM AT THIS INTERSECTION AT ALL TIMES (EITHER VIA THE EXISTING SIGNAL SYSTEM OR A TEMPORARY SIGNAL SYSTEM), EXCEPT AS OTHERWISE APPROVED BY THE COUNTY FOR THE SIGNAL SYSTEM TO BE TURNED OFF FOR CHANGEOVER FROM EXISTING TO TEMPORARY (AND/OR PERMANENT) SIGNAL SYSTEM. SEE SPECIAL PROVISIONS AND "TEMPORARY SIGNAL SYSTEM D" PLANS FOR FURTHER INFORMATION.
16) CONTRACTOR SHALL PROVIDE, INSTALL, AND MAKE OPERATIONAL ALL COMPONENTS RELATED TO THE COMPLETE PTZ CAMERA INSTALLATION (TO BE MEASURED AND PAID FOR SEPARATELY FROM THE "TRAFFIC CONTROL SIGNAL SYSTEM D" PAY ITEM). SEE SPECIAL PROVISIONS AND STATEMENT OF ESTIMATED QUANTITIES.

**(1)** F & I
- PA100 POLE FOUNDATION
- TYPE PA100-A-55-X6-300 CAM 350 (DAVIT AT 0 DEG)
- LUMINAIRE-LED
- 1-ANGLE MOUNT SIGNAL-OVERHEAD AT 0'
- 2-STRAIGHT MOUNT SIGNALS-OVERHEAD AT 9', 12'
- 2-ANGLE MOUNT SIGNALS-POLE MOUNTED 90 DEG AND 180 DEG
- 2-ANGLE MOUNT C.D. PED INDICATIONS-POLE MOUNTED AT 90 DEG AND 180 DEG
- 2-R6-1 (ONE WAY) SIGNS-POLE MOUNTED 0/180 DEG
- R10-X12 SIGN PANEL-ADJACENT TO 5-1
- STREET NAME SIGN PANEL-OVERHEAD (P13)
- (*) EVP MOUNTING HARDWARE & LED CONFIRMATION LIGHT - OVERHEAD AT 6' (Ø2,5)
- 1-PTZ CAMERA AND MOUNTING HARDWARE (MOUNT ATOP CAMERA EXTENSION)
- EXTEND INTO HH 12:
- 3" CONDUIT
- 2-6/C 16 (INCLUDING 1 SPARE)
- 6-4/C 16
- (*) 1-3/C 16
- (*) 1-3/C 20
- 1-CAT 5E CABLE (PTZ)
- 1-3/C 16 (LUM)
- 1-1/C 6 (GRD)

INSTALL (FURNISHED BY COUNTY) — (*) ONE WAY EVP DETECTOR (Ø2,5)

**(2)** F & I
- PA100 POLE FOUNDATION
- TYPE PA100-A-35-D30-9 (DAVIT AT 350 DEG)
- LUMINAIRE-LED
- 1-ANGLE MOUNT SIGNAL-OVERHEAD AT 0'
- 2-ANGLE MOUNT SIGNALS-POLE MOUNTED 90 DEG AND 180 DEG
- 2-ANGLE MOUNT C.D. PED INDICATIONS-POLE MOUNTED AT 90 DEG AND 180 DEG
- STREET NAME SIGN PANEL-OVERHEAD (P14)
- (*) EVP MOUNTING HARDWARE & LED CONFIRMATION LIGHT - OVERHEAD AT 6' (Ø4)
- EXTEND INTO HH 2:
- 3" CONDUIT
- 2-6/C 16 (INCLUDING 1 SPARE)
- 4-4/C 16
- (*) 1-3/C 16
- (*) 1-3/C 20
- 1-3/C 16 (LUM)
- 1-1/C 6 (GRD)

INSTALL (FURNISHED BY COUNTY) — (*) ONE WAY EVP DETECTOR (Ø4)

**(3)** F & I
- PA100 POLE FOUNDATION
- TYPE PA100-A-40-D30-9 (DAVIT AT 350 DEG)
- LUMINAIRE-LED
- 1-ANGLE MOUNT SIGNAL-OVERHEAD AT 0'
- 2-STRAIGHT MOUNT SIGNALS-OVERHEAD AT 12', 24'
- 2-ANGLE MOUNT SIGNALS-POLE MOUNTED 90 DEG AND 180 DEG
- 1-ANGLE MOUNT C.D. PED INDICATION-POLE MOUNTED AT 90 DEG
- 1-APS PB, SIGN (LT ARROW) AND APS MAST ARM POLE ADAPTOR (PB4-1)
- 2-R6-1 (ONE WAY) SIGNS-POLE MOUNTED 0/180 DEG
- R10-X12 SIGN PANEL-ADJACENT TO 1-1
- STREET NAME SIGN PANEL-OVERHEAD (P15)
- (*) EVP MOUNTING HARDWARE & LED CONFIRMATION LIGHT - OVERHEAD AT 6' (Ø6,1)
- EXTEND INTO HH 6:
- 3" CONDUIT
- 2-6/C 16 (INCLUDING 1 SPARE)
- 6-4/C 16
- (*) 1-3/C 16
- 2-2/C 14 (INCLUDING 1 SPARE)
- (*) 1-3/C 20
- 1-3/C 16 (LUM)
- 1-1/C 6 (GRD)

INSTALL (FURNISHED BY COUNTY) — (*) ONE WAY EVP DETECTOR (Ø6,1)

**(4)** F & I
- PA100 POLE FOUNDATION
- TYPE PA100-A-35-D30-9 (DAVIT AT 350 DEG)
- LUMINAIRE-LED
- 1-ANGLE MOUNT SIGNAL-OVERHEAD AT 0'
- 2-ANGLE MOUNT SIGNALS-POLE MOUNTED 90 DEG AND 180 DEG
- 1-ANGLE MOUNT C.D. PED INDICATION-POLE MOUNTED AT 180 DEG
- 1-APS PB, SIGN (RT ARROW) AND APS MAST ARM POLE ADAPTOR (PB8-2)
- STREET NAME SIGN PANEL-OVERHEAD (P16)
- (*) EVP MOUNTING HARDWARE & LED CONFIRMATION LIGHT - OVERHEAD AT 6' (Ø8)
- EXTEND INTO HH 8:
- 3" CONDUIT
- 2-6/C 16 (INCLUDING 1 SPARE)
- 4-4/C 16
- (*) 1-3/C 16
- 2-2/C 14 (INCLUDING 1 SPARE)
- (*) 1-3/C 20
- 1-3/C 16 (LUM)
- 1-1/C 6 (GRD)

INSTALL (FURNISHED BY COUNTY) — (*) ONE WAY EVP DETECTOR (Ø8)

**(A)** INSTALL (FURNISHED BY COUNTY) — CONTROLLER AND CABINET

F & I
- EQUIPMENT PAD FOUNDATION
- BBU SIGNAL SERVICE CABINET
- BETWEEN CONTROLLER CABINET AND SERVICE CABINET:
- METERED SIGNAL SERVICE
- 2" CONDUIT
- 3-1/C 6
- 1.5" CONDUIT (COMMS)
- 1-6 PR 19 (COMMS)
- CONTROLLER CABINET TO HH 1:

| | |
|---|---|
| 4" CONDUIT | 4" CONDUIT |
| 2-6/C 16 | 2-6/C 16 |
| 4-4/C 16 | 6-4/C 16 |
| (*) 1-3/C 16 | (*) 1-3/C 16 |
| 12-2/C 14 | 8-2/C 14 |
| (*) 1-3/C 20 | (*) 1-3/C 20 |
| 1-1/C 6 (GRD) | |

- CONTROLLER CABINET TO HH 12:

| | |
|---|---|
| 4" CONDUIT | 4" CONDUIT |
| 2-6/C 16 | 2-6/C 16 |
| 6-4/C 16 | 4-4/C 16 |
| (*) 1-3/C 16 | (*) 1-3/C 16 |
| 1-2/C 14 | 9-2/C 14 |
| (*) 1-3/C 20 | (*) 1-3/C 20 |

- 1-CAT 5E CABLE (PTZ)
- 1-1/C 6 (GRD)

F & I
- SERVICE CABINET TO HH 1:
- 1.25" CONDUIT
- METERED STREET LIGHT SERVICE
- 2-3/C 16 (LUM)
- SERVICE CABINET TO HH 12:
- 1.25" CONDUIT
- METERED STREET LIGHT SERVICE
- 2-3/C 16 (LUM)
- STUB OUT 2" CONDUIT FROM SERVICE CABINET (FOR POWER CONNECTION BY CONNEXUS)
- STUB OUT 2-3" CONDUITS FROM CONTROLLER CABINET TO SOUTH (CAP BOTH ENDS- FOR FUTURE USE)
- CONTROLLER CABINET TO FO-VAULT 104:
- (**) 2" CONDUIT
- (**) 1-12 SM FO (TO BUNKER)
- (**) 1-12 SM FO (TO 140TH)

**(B)** INPLACE — GROUND MOUNTED TRANSFORMER (SOP - CONNEXUS)

| DESIGN TEAM | NO. | BY | DATE | REVISIONS |
|---|---|---|---|---|
| DRAWN BY: MRB | | | | |
| DESIGNER: MRB | | | | |
| 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.

Certified By: Licensed Professional Engineer — Printed Name: JOHN M. GRAY — Lic. No. 22457 — Date: 09/23/2025

SEH

ANOKA COUNTY, MN
CSAH 9
SAP 002-609-023
CITY OF ANDOVER SAP 198-020-042, CITY PROJECT 25-13
CITY OF ANOKA SAP 103-020-020

TRAFFIC SIGNAL SYSTEM "D"
POLE & CABINET NOTES
CSAH 9 (ROUND LAKE BOULEVARD) AT 138TH LANE



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9/25/2025

## CONTROLLER AND CABINET

2 SIGNAL SERVICE
7 D8-1
8 D8-2
9 D8-3
10 D8-4
11 PB2-2 NEU
12 D2-3
13 D2-4
14 D2-5
15 RLA 1-2 YLA 1-2 GLA 1-2 NEU 1-2 FYLA 1-2 SPR
16 RED 4-1 YEL 4-1 GRN 4-1 NEU 4-1
17 RED 4-2 YEL 4-2 GRN 4-2 NEU 4-2
18 SPR SPR SPR NEU SPR SPR
19 DWK P4-2 WLK P4-2 SPR NEU P4-2
20 DWK P2-1 WLK P2-1 SPR NEU P2-1
21 Ø4 EVP LT EQG NEU
22 Ø4 EVP DETECTOR
23 PB2-1 NEU
24 PB4-2 NEU
25 D2-1
26 D2-2
27 D5-1
28 D5-2
29 D4-2
30 D4-3
31 D4-4
32 RLA 1-1 YLA 1-1 GLA 1-1 NEU 1-1 FYLA 1-1 SPR
113 12 SM FO CABLE TO CSAH 116
116 12 SM FO CABLE TO 140TH LANE

33 RED 6-3 YEL 6-3 GRN 6-3 NEU 6-3
34 RED 6-2 YEL 6-2 GRN 6-2 NEU 6-2
35 RED 6-1 YEL 6-1 GRN 6-1 NEU 6-1
36 RED 8-3 YEL 8-3 GRN 8-3 NEU 8-3
37 SPR SPR SPR SPR NEU SPR SPR
38 DWK P4-1 WLK P4-1 SPR NEU P4-1
39 SPR SPR SPR NEU
40 PB4-1 NEU
41 SPR NEU
42 Ø6,1 EVP LT EQG NEU
43 Ø6,1 EVP DETECTOR
44 D4-1
45 GROUND
46 RLA 5-1 YLA 5-1 GLA 5-1 NEU 5-1 FYLA 5-1 SPR
47 RED 2-3 YEL 2-3 GRN 2-3 NEU 2-3
48 RED 2-2 YEL 2-2 GRN 2-2 NEU 2-2
49 RED 2-1 YEL 2-1 GRN 2-1 NEU 2-1
50 RED 4-3 YEL 4-3 GRN 4-3 NEU 4-3
51 SPR SPR SPR NEU SPR SPR
52 DWK P2-2 WLK P2-2 SPR NEU P2-2
53 DWK P8-1 WLK P8-1 SPR NEU P8-1
54 Ø2,5 EVP LT EQG NEU

55 Ø2,5 EVP DETECTOR
56 VIDEO DETECTOR (PTZ)
57 PB8-1 NEU
58 D1-1
59 D1-2
6 PR 19 (COMMS) 90
60 D4-5
61 D6-3
62 D6-4
63 RLA 5-2 YLA 5-2 GLA 5-2 NEU 5-2 FYLA 5-2 SPR
64 RED 8-1 YEL 8-1 GRN 8-1 NEU 8-1
65 RED 8-2 YEL 8-2 GRN 8-2 NEU 8-2
66 SPR SPR SPR NEU SPR SPR
67 DWK P8-2 WLK P8-2 SPR NEU P8-2
68 SPR SPR SPR NEU
69 Ø8 EVP LT EQG NEU
70 Ø8 EVP DETECTOR
71 PB8-2 NEU
72 SPR NEU
73 D6-1
74 D6-2
75 GROUND

## 2

LUMINAIRE ② TO LUM 4
18 (SPARE) (SEE NOTE 6)
1-2
15
19 P4-2
4-1
20 P2-1
16
4-2
17
21 Ø4 EVP LIGHT
22 TO EVP HUB Ø4 EVP DETECTOR
45 GROUND

HH 3 — 25-26 — HH 4 (25, 26) — D2-1, D2-2

HH 2: 5, 27-45; 12, 13, 14, 45 GR.RD.; 25-26; 4, 12-26, 45; 5, 27-44
D2-3, D2-4, D2-5
23 PB2-1 TO PB — 45 GROUND
24 PB4-2 TO PB — 45 GROUND

HH 1: 4-5 → TO SERVICE CABINET; 7, 8, 9, 10, 45 GR.RD.; 7-26, 45; 27-44
D8-1, D8-2, D8-3, D8-4
11 PB2-2 TO PB — 45 GROUND

## 3

LUMINAIRE ③ TO LUM 5
36
1-1
32
37 (SPARE) (SEE NOTE 6)
6-3
33
38 P4-1
6-2
34
39 (SPARE) (SEE NOTE 6)
40 PB4-1 TO PB
6-1
35
41 (SPARE) (SEE NOTE 6)
42 Ø6,1 EVP LIGHT
GROUND 45
43 TO EVP HUB Ø6,1 EVP DETECTOR

HH 5: 5, 27-45; 5, 29-45; 27, 28
D5-1, D5-2

HH 7: 44; 44
D4-1

HH 6: 44; 29, 30, 31, 45 GR.RD.; 5, 29-45
D4-2, D4-3, D4-4

FO VAULT 104
INTERCONNECT TO CSAH 116 — 113
INTERCONNECT TO 140TH LANE — 116
113, 116

## 1

LUMINAIRE ① TO LUM 3
5-1
46
51 (SPARE) (SEE NOTE 6)
2-3
47
52 P2-2
2-2
48
53 P8-1
2-1
49
54 Ø2,5 EVP LIGHT
4-3
50
55 TO EVP HUB Ø2,5 EVP DETECTOR
75 GROUND
56 VIDEO DETECTOR (PTZ)

S.O.P. 1

SIGNAL SERVICE CABINET
SIGNALS NEUTRAL LIGHTING 1 — 1
90 6 PR 19 (COMMS)
2 SIGNAL SERVICE
4 LUMINAIRE ②
5 LUMINAIRE ③
3 LUMINAIRE ①
6 LUMINAIRE ④

TO HH 1 — 4-5
3, 6

HH 12: 75 GR.RD.; 3, 6; 46-57, 75; 58-74; 6, 58-75
57 PB8-1 TO PB
75 GROUND

## 4

LUMINAIRE ④ TO LUM 6
66 (SPARE) (SEE NOTE 6)
5-2
63
67 P8-2
8-1
64
68 (SPARE) (SEE NOTE 6)
8-2
65
69 Ø8 EVP LIGHT
70 TO EVP HUB Ø8 EVP DETECTOR
71 PB8-2 TO PB
72 (SPARE) (SEE NOTE 6)
75 GROUND

HH 11: 58, 59; 6, 58-75; 6, 60-75
D1-1, D1-2

HH 10: 73, 74
D6-1, D6-2

HH 9: 73-74; 73-74

HH 8: 60, 61, 62, 75 GR.RD.; 6, 60-75
D4-5, D6-3, D6-4

### NOTES:

1) SEE DETAILS FOR CONDUCTOR COLOR CODE.
2) LUMINAIRES SHALL BE METERED.
3) SIGNAL SYSTEM INCLUDES BATTERY BACK-UP SERVICE CABINET (WITH BATTERIES AND BACK-UP SYSTEM EQUIPMENT).
4) SPLICES ARE ONLY ALLOWED ON LOOP DETECTOR CIRCUITS (IN HANDHOLES).
5) ALL CABLES AND CONDUCTORS ARE NEW AND SHALL BE F & I BY CONTRACTOR.
6) FOR EACH "SPARE" CABLE, COIL SUFFICIENT CABLE TO REACH THE END OF THE MAST ARM IN THE HANDHOLE ADJACENT TO EACH POLE.
7) LEAVE ONE LOOP OF SLACK FOR EACH CABLE IN EACH POLE BASE.

| DESIGN TEAM | NO. | BY | DATE | REVISIONS |
|---|---|---|---|---|
| DRAWN BY: MRB | | | | |
| DESIGNER: MRB | | | | |
| 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.

Certified By: Licensed Professional Engineer — Printed Name: JOHN M. GRAY — Lic. No. 22457 — Date: 09/23/2025

SEH

ANOKA COUNTY, MN
CSAH 9
SAP 002-609-023
CITY OF ANDOVER SAP 198-020-042, CITY PROJECT 25-13
CITY OF ANOKA SAP 103-020-020

# TRAFFIC SIGNAL SYSTEM "D"

FIELD WIRING DIAGRAM
CSAH 9 (ROUND LAKE BOULEVARD) AT 138TH LANE

109 / 133

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MODEL: sgl22

NOTES:

1) ALL ITEMS OF SIGNAL SYSTEM ARE INPLACE AND SHALL BE REUSED AND MAINTAINED INPLACE, EXCEPT AS DENOTED BELOW AND ELSEWHERE ON THIS PLAN SHEET.
2) CONTRACTOR SHALL SALVAGE ALL INPLACE INCANDESCENT VEHICLE SIGNAL INDICATIONS AND SHALL FURNISH AND INSTALL NEW LED SIGNAL INDICATIONS IN THEIR PLACE (INCIDENTAL TO ITEM NO. 2565.616–REVISE SIGNAL SYSTEM).
3) CONTRACTOR SHALL SALVAGE ALL INPLACE PEDESTRIAN INDICATIONS, AND SHALL FURNISH AND INSTALL NEW ONE SECTION "HAND/WALKING PERSON" LED SIGNAL INDICATIONS AND HOUSINGS IN THEIR PLACE (INCIDENTAL TO ITEM NO. 2565.616–REVISE SIGNAL SYSTEM).
4) SIGNAL SYSTEM FLASH MODE SHALL BE ALL RED.
5) EACH SIGNAL FACE HAS BACKGROUND SHIELD.
6) LOOP DETECTOR WIRES ARE CROSS–LINKED POLYETHYLENE (XLP) IN 1"N.M.C.
7) EACH HANDHOLE IS A CONCRETE HANDHOLE WITH TYPE "C" COVER PER Mn/DOT STANDARD PLATE NO.8117F.
8) F & I = ITEMS TO BE FURNISHED AND INSTALLED BY CONTRACTOR. SALVAGE = ITEMS TO BE REMOVED AND SALVAGED BY CONTRACTOR.
9) (INTERCONNECT) DENOTES MATERIALS TO BE FURNISHED AND INSTALLED BY CONTRACTOR UNDER ITEM NO. 2565.601 (TRAFFIC CONTROL INTERCONNECTION).
10) (EVP) DENOTES MATERIALS TO BE FURNISHED AND INSTALLED BY CONTRACTOR UNDER ITEM NO. 2565.601 (EMERGENCY VEHICLE PREEMPTION SYSTEM "C").
11) INPLACE ITEMS TO BE REUSED INPLACE AS PART OF REVISE SIGNAL SYSTEM SHALL BE PROTECTED AND MAINTAINED INPLACE.
12) CONTRACTOR SHALL MAINTAIN OPERATION OF SIGNAL SYSTEM AT ALL TIMES, UNLESS APPROVED BY ENGINEER TO BE TURNED OFF.

| LED SIGNAL FACES | | | |
|---|---|---|---|
| SIGNAL FACE | ALL 12". | | |
| | 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 | ● | ● | ● |

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

FUNCTIONS:

1) CALL AND EXTEND
2) CALL ONLY
3) EXTEND ONLY
4) CALL ONLY DENSITY
5) DELAYED CALL ONLY
6) DELAYED CALL ONLY DENSITY
7) DELAYED CALL–IMMEDIATE EXTEND
8) CARRY OVER (STRETCH)
9) ADVISORY DETECTOR
10) SAMPLING DETECTOR
11) IMMEDIATE CALL DURING PHASE 4/8 GREEN

| NMC LOOP DETECTORS (INPLACE) | | | |
|---|---|---|---|
| NUMBER | SIZE (FT.) | LOCATION | FUNCTION |
| D1–1 | 2–6x6 | 20' | 7,11 |
| D1–2 | 2–6x6 | 5' | 7,11 |
| D2–1 | 2–6x6 | 330' | 1 |
| D4–1 | 2–6x6 | 5' | 7 |
| D4–2 | 2–6x6 | 5' | 7 |
| D4–3 | 2–6x6 | 5' | 7 |
| D4–4 | 6x6 | 5' | 7 |
| D5–1 | 2–6x6 | 20' | 7,11 |
| D5–2 | 2–6x6 | 5' | 7,11 |
| D6–1 | 2–6x6 | 330' | 1 |
| D8–1 | 2–6x6 | 5' | 7 |
| D8–2 | 2–6x6 | 5' | 7 |

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

(4) INPLACE (MAINTAIN INPLACE) — P100 POLE FOUNDATION
TYPE P100–A–35–D40–9 (DAVIT AT 350°)
LUMINAIRE–200 W HPS WITH PEC & CHECK SWITCH
3–ONE WAY SIGNALS–OVERHEAD (0', 11' AND 23' FROM END OF MAST ARM)
TYPE 20B–POLE MOUNTED 270°
1–PEDESTRIAN PUSH BUTTON
TYPE D SIGN PANEL–OVERHEAD
2–R6–1 SIGN PANELS–POLE MOUNTED 0° & 180°
EXTENDED INTO H.H.7:
3"R.S.C.
3–12/c#12
1–3/c#12
2–1/c#10

INPLACE (SALVAGE) — 1–SET PEDESTRIAN INDICATIONS

F & I — 1–SET PEDESTRIAN INDICATIONS
ONE WAY EVP DETECTOR AND LIGHT (ø6,1) (EVP)
1–3/c#12 (EVP)
1–3/c#20 (EVP)

(5) INPLACE (MAINTAIN INPLACE) — P80 POLE FOUNDATION
TYPE P80–A–20
ONE WAY SIGNAL–OVERHEAD
TYPE 10A–POLE MOUNTED 0°
TYPE 10B–POLE MOUNTED 180°
1–PEDESTRIAN PUSH BUTTON
TYPE D SIGN PANEL–OVERHEAD
EXTENDED INTO H.H.13:
3"R.S.C.
2–12/c#12
1–3/c#12

INPLACE (SALVAGE) — 1–SET PEDESTRIAN INDICATIONS

F & I — 1–SET PEDESTRIAN INDICATIONS
ONE WAY EVP DETECTOR AND LIGHT (ø8) (EVP)
1–3/c#12 (EVP)
1–3/c#20 (EVP)

(A) CONTROLLER AND CABINET
CABINET FOUNDATION
EXTENDED INTO H.H.16:
METERED SIGNAL SERVICE
1 1/4"R.S.C.
3–1/c#6
EXTENDED INTO H.H.1:
4"R.S.C.
6–12/c#12
3–3/c#12
8–2/c#14

F & I — 2–3/c#12 (EVP), 2–3/c#20 (EVP)

EXTENDED INTO H.H.10:
4"R.S.C.
4–12/c#12
1–3/c#12
4–2/c#14

F & I — 2–3/c#12 (EVP), 2–3/c#20 (EVP)

EXTENDED INTO H.H.1:
2"R.S.C.
1–6 Pr.#19

(B) SERVICE CABINET
CABINET FOUNDATION
2"R.S.C. STUB OUT (FOR SERVICE BY CONNEXUS)
EXTENDED INTO H.H.16:
METERED SIGNAL SERVICE
1 1/4"R.S.C.
3–1/c#6
EXTENDED INTO H.H.10:
UNMETERED STREET LIGHT SERVICE
1 1/4"R.S.C.
4–1/c#10
BETWEEN H.H.1 AND H.H.10:
2"R.S.C.
2–1/c#10

EXTENDED INTO H.H.10:
2"R.S.C.

1–6 Pr.#19–INPLACE (REMOVE) (INTERCONNECT)
1–6 Pr.#19 (INTERCONNECT)

(3) INPLACE (MAINTAIN INPLACE) — P90 POLE FOUNDATION
TYPE P90–A–30
ONE WAY SIGNAL–OVERHEAD
2–TYPE 10B–POLE MOUNTED 90° & 180°
2–PEDESTRIAN PUSH BUTTONS
TYPE D SIGN PANEL–OVERHEAD
EXTENDED INTO H.H.2:
3"R.S.C.
2–12/c#12
1–3/c#12

INPLACE (SALVAGE) — 2–SETS PEDESTRIAN INDICATIONS

F & I — 2–SETS PEDESTRIAN INDICATIONS
ONE WAY EVP DETECTOR AND LIGHT (ø4) (EVP)
1–3/c#12 (EVP)
1–3/c#20 (EVP)

(2) INPLACE (MAINTAIN INPLACE) — PEDESTAL FOUNDATION
10' PEDESTAL POLE AND BASE
TYPE 1C
2–PEDESTRIAN PUSH BUTTONS
EXTENDED INTO H.H.1:
2"R.S.C.
1–12/c#12
1–3/c#12

INPLACE (SALVAGE) — 1–SET PEDESTRIAN INDICATIONS

F & I — 1–SET PEDESTRIAN INDICATIONS

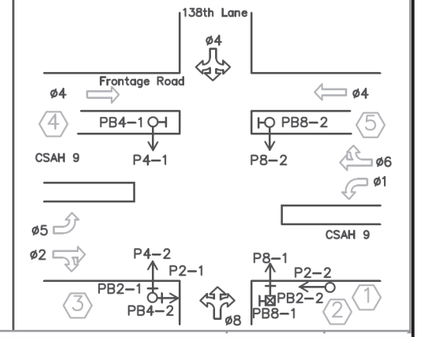
(1) INPLACE (MAINTAIN INPLACE) — A100 POLE FOUNDATION
TYPE A100–A–50–D40–9 (DAVIT AT 350°)
LUMINAIRE–200 W HPS WITH PEC & CHECK SWITCH
3–ONE WAY SIGNALS–OVERHEAD (0', 11' AND 23'–FROM END OF MAST ARM)
TYPE 10B–POLE MOUNTED 180°
2–R6–1 SIGN PANELS–POLE MOUNTED 0° & 180°
TYPE D SIGN PANEL–OVERHEAD
EXTENDED INTO H.H.10:
3"R.S.C.
2–12/c#12
2–1/c#10

INPLACE (SALVAGE) — 1–SET PEDESTRIAN INDICATIONS

F & I — 1–SET PEDESTRIAN INDICATIONS
ONE WAY EVP DETECTOR AND LIGHT (ø2,5) (EVP)
1–3/c#12 (EVP)
1–3/c#20 (EVP)

2"R.S.C.–INPLACE
1–6 Pr.#19–INPLACE (REMOVE) (INTERCONNECT)
1–6 Pr.#19 (INTERCONNECT)

CONTROLLER PHASING, PEDESTRIAN INDICATIONS AND PUSH BUTTONS




| DESIGN TEAM | NO. | BY | DATE | REVISIONS |
|---|---|---|---|---|
| DRAWN BY: MRB | | | | |
| DESIGNER: MRB | | | | |
| CHECKED BY: JMG | | | | |

SEH

ANOKA COUNTY, MN
CSAH 9
SAP 002-609-023
CITY OF ANDOVER SAP 198-020-042, CITY PROJECT 25-13
CITY OF ANOKA SAP 103-020-020

EXISTING SIGNAL SYSTEM "D"
FOR INFORMATION ONLY
CSAH 9 (ROUND LAKE BOULEVARD) AT 138TH LANE

110
133

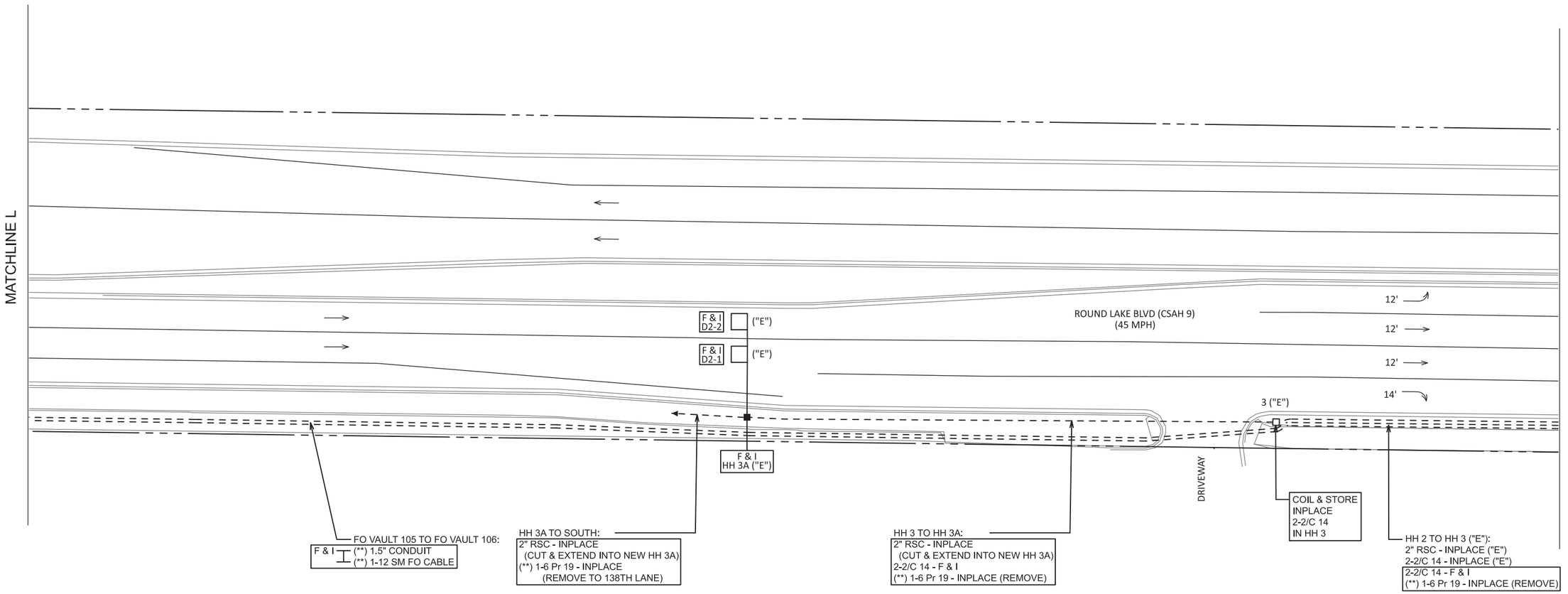
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INTERCONNECT NOTES:

1) IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO UTILIZE THE "ONE CALL EXCAVATION NOTICE SYSTEM" (TELEPHONE NUMBER 651-454-0002) AS REQUIRED BY MINNESOTA STATUTE 2160.
2) DISTANCE OFF SHOULDER OR CURB FOR NEW INTERCONNECT CONDUIT SHALL BE 1-2 FEET UNLESS OTHERWISE APPROVED BY ENGINEER.
3) (**) DENOTES ITEMS TO BE FURNISHED AND INSTALLED BY THE CONTRACTOR UNDER ITEM NO. 2565 (TRAFFIC CONTROL INTERCONNECT). SEE STATEMENT OF ESTIMATED QUANTITIES AND SPECIAL PROVISIONS.
4) ITEMS DENOTED BY "E" SHALL BE INCLUDED AS PART OF THE PAY ITEM FOR ITEM NO. 2565 (TRAFFIC CONTROL SIGNAL SYSTEM "E").
5) (F & I) DENOTES ITEMS TO BE FURNISHED AND INSTALLED BY CONTRACTOR AS PART OF THIS PROJECT.
6) ALL NEW INTERCONNECT CONDUIT INSTALLATIONS (UNDER ROADWAYS, SIDEWALKS, AND IN BOULEVARD AREAS) SHALL BE DIRECTIONALLY BORED UNLESS OTHERWISE APPROVED BY THE ENGINEER IN THE FIELD (DURING CONSTRUCTION) FOR A CONDUIT SECTION TO BE TRENCHED-IN DUE TO UTILITY OR OTHER CONFLICTS THAT WILL NOT ALLOW FOR A CONDUIT SECTION TO BE BORED. TURF ESTABLISHMENT (INCLUDING GRADING AND RESTORATION) SHALL ALSO BE PROVIDED FOR ALL CONDUIT INSTALLATION AREAS IN THE BOULEVARDS (INCIDENTAL).

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SCALE IN FEET




| DESIGN TEAM | NO. | BY | DATE | REVISIONS |
|---|---|---|---|---|
| DRAWN BY: MRB | | | | |
| DESIGNER: MRB | | | | |
| 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.

Certified By: Licensed Professional Engineer — Printed Name: JOHN M. GRAY — Lic. No. 22457 — Date: 09/23/2025

SEH

ANOKA COUNTY, MN
CSAH 9
SAP 002-609-023
CITY OF ANDOVER SAP 198-020-042, CITY PROJECT 25-13
CITY OF ANOKA SAP 103-020-020

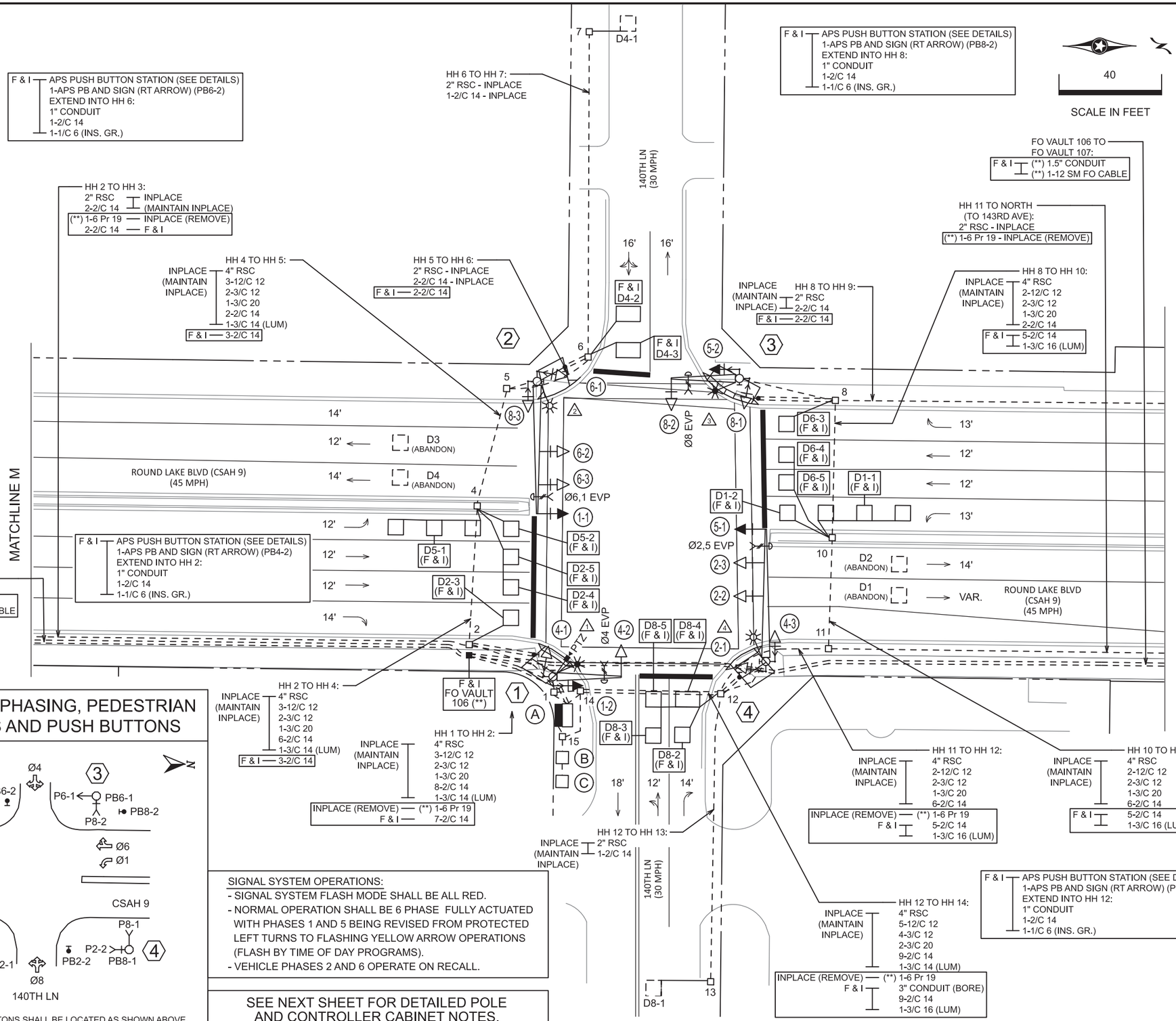
# REVISE SIGNAL SYSTEM "E"

INTERSECTION LAYOUT AND INTERCONNECT
CSAH 9 (ROUND LAKE BOULEVARD) AT 140TH LANE

111
133

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## PVC LOOP DETECTORS

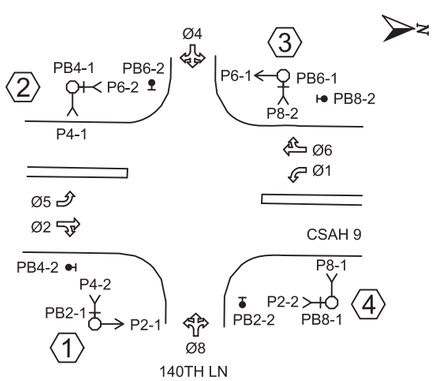
| NUMBER | SIZE (FT.) | LOCATION | FUNCTION | STATUS |
|---|---|---|---|---|
| D1-1, D5-1 | 3-6X6 | 20', 35', 50' | 1 | 1 |
| D1-2, D5-2 | 6X6 | 5' | 1 | 2 |
| D2-1, D2-2 | 6X6 | 450' | 1 | 3 |
| D2-3 | 6X6 | 5' | 11 | 3 |
| D2-4, D2-5 | 6X6 | 5' | 11 | 4 |
| D4-1 | 6X6 | 120' | 3,8 | INPLACE |
| D4-2 | 6X10 | 20' | 7 | 4 |
| D4-3 | 6X10 | 5' | 7 | 3 |
| D6-1, D6-2 | 6X6 | 450' | 1 | 3 |
| D6-3 | 6X6 | 5' | 11 | 3 |
| D6-4, D6-5 | 6X6 | 5' | 11 | 4 |
| D8-1 | 6X6 | 120' | 3,8 | INPLACE |
| D8-2 | 6X6 | 20' | 7 | 4 |
| D8-3 | 6X6 | 20' | 7 | 4 |
| D8-4 | 6X10 | 5' | 7 | 3 |
| D8-5 | 6X6 | 5' | 7 | 3 |

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

LOOP DETECTOR FUNCTIONS:
1) CALL AND EXTEND
3) EXTEND ONLY
7) DELAYED CALL-IMMEDIATE EXTEND
8) CARRY OVER (STRETCH)
11) SPECIAL DETECTOR (COUNTING)

LOOP DETECTOR STATUS:
1) DETACH EXISTING FRONT (10') AND BACK (40') LOOP DETECTORS FROM EXISTING LEAD-IN CABLES, FURNISH & INSTALL NEW PVC LOOP DETECTOR, AND SPLICE ALL 3 LOOP DETECTORS TO BACK LEAD-IN CABLE (F & I NEW SPLICE KIT).
2) FURNISH & INSTALL NEW PVC LOOP DETECTOR AT 5' FROM STOP BAR. SPLICE THE NEW LOOP DETECTOR TO THE EXISTING FRONT LEAD-IN CABLE (F & I NEW SPLICE KIT).
3) FURNISH & INSTALL NEW PVC LOOP DETECTOR AND NEW LEAD-IN CABLE.
4) FURNISH & INSTALL NEW PVC LOOP DETECTOR AND CONNECT TO INPLACE LEAD-IN CABLE (F & I NEW SPLICE KIT).

## CONTROLLER PHASING, PEDESTRIAN INDICATIONS AND PUSH BUTTONS




PEDESTRIAN PUSH BUTTONS SHALL BE LOCATED AS SHOWN ABOVE.

SIGNAL SYSTEM OPERATIONS:
- SIGNAL SYSTEM FLASH MODE SHALL BE ALL RED.
- NORMAL OPERATION SHALL BE 6 PHASE FULLY ACTUATED WITH PHASES 1 AND 5 BEING REVISED FROM PROTECTED LEFT TURNS TO FLASHING YELLOW ARROW OPERATIONS (FLASH BY TIME OF DAY PROGRAMS).
- VEHICLE PHASES 2 AND 6 OPERATE ON RECALL.

SEE NEXT SHEET FOR DETAILED POLE AND CONTROLLER CABINET NOTES.

## LED SIGNAL HEAD CHART

| SIGNAL HEAD | R | Y | FYA | G | STATUS |
|---|---|---|---|---|---|
| 1-1 | ⬅ | ⬅ | ⬅ | ⬅ | 1 |
| 1-2 | ⬅ | ⬅ | ⬅ | ⬅ | 2 |
| 2-1, 2-2, 2-3 | ○ | ○ | | ○ | INPLACE |
| 4-1, 4-2, 4-3 | ○ | ○ | | ○ | INPLACE |
| 5-1 | ⬅ | ⬅ | ⬅ | ⬅ | 1 |
| 5-2 | ⬅ | ⬅ | ⬅ | ⬅ | 2 |
| 6-1, 6-2, 6-3 | ○ | ○ | | ○ | INPLACE |
| 8-1, 8-2, 8-3 | ○ | ○ | | ○ | INPLACE |

○ = INPLACE LED (REUSE INPLACE)
⬅ = F & I NEW LED INDICATION
FYA = FLASHING YELLOW ARROW

STATUS:
1) REMOVE IN-PLACE OVERHEAD 3-SECTION SIGNAL AND F & I NEW OVERHEAD 4-SECTION SIGNAL ON END OF EXISTING MAST ARM.
2) REMOVE IN-PLACE POLE MOUNTED 3-SECTION SIGNAL AND F & I NEW POLE MOUNTED 4-SECTION SIGNAL (ON NEW SIGNAL BRACKETING).

| DESIGN TEAM | NO. | BY | DATE | REVISIONS |
|---|---|---|---|---|
| DRAWN BY: MRB | | | | |
| DESIGNER: MRB | | | | |
| 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.

Certified By: Licensed Professional Engineer — Printed Name: JOHN M. GRAY — Lic. No. 22457 — Date: 09/23/2025

SEH

ANOKA COUNTY, MN
CSAH 9
SAP 002-609-023
CITY OF ANDOVER SAP 198-020-042, CITY PROJECT 25-13
CITY OF ANOKA SAP 103-020-020

REVISE SIGNAL SYSTEM "E"
INTERSECTION LAYOUT
CSAH 9 (ROUND LAKE BOULEVARD) AT 140TH LANE

112
133

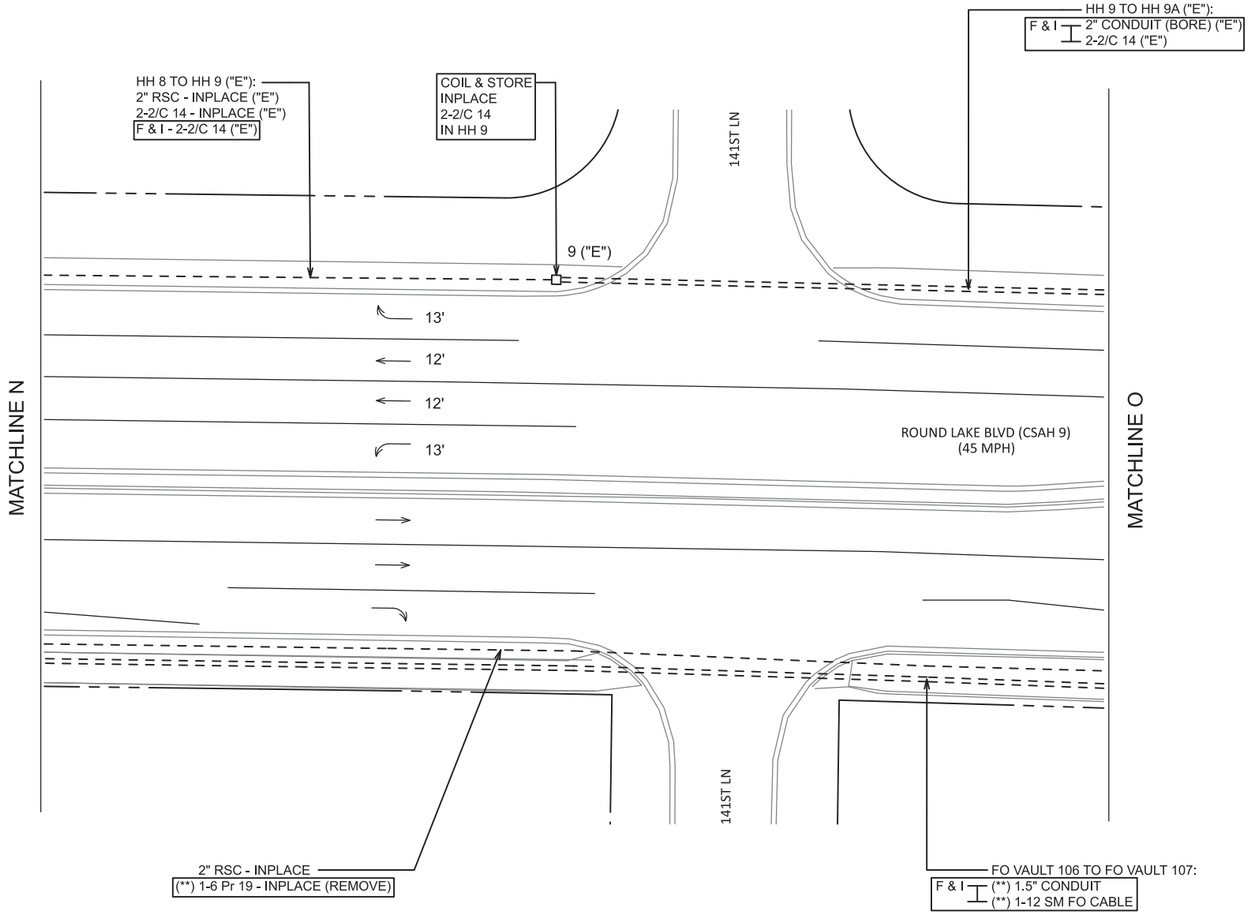
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INTERCONNECT NOTES:

1) IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO UTILIZE THE "ONE CALL EXCAVATION NOTICE SYSTEM" (TELEPHONE NUMBER 651-454-0002) AS REQUIRED BY MINNESOTA STATUTE 2160.
2) DISTANCE OFF SHOULDER OR CURB FOR NEW INTERCONNECT CONDUIT SHALL BE 1-2 FEET UNLESS OTHERWISE APPROVED BY ENGINEER.
3) (**) DENOTES ITEMS TO BE FURNISHED AND INSTALLED BY THE CONTRACTOR UNDER ITEM NO. 2565 (TRAFFIC CONTROL INTERCONNECT). SEE STATEMENT OF ESTIMATED QUANTITIES AND SPECIAL PROVISIONS.
4) ITEMS DENOTED BY "E" SHALL BE INCLUDED AS PART OF THE PAY ITEM FOR ITEM NO. 2565 (TRAFFIC CONTROL SIGNAL SYSTEM "E").
5) (F & I) DENOTES ITEMS TO BE FURNISHED AND INSTALLED BY CONTRACTOR AS PART OF THIS PROJECT.
6) ALL NEW INTERCONNECT CONDUIT INSTALLATIONS (UNDER ROADWAYS, SIDEWALKS, AND IN BOULEVARD AREAS) SHALL BE DIRECTIONALLY BORED UNLESS OTHERWISE APPROVED BY THE ENGINEER IN THE FIELD (DURING CONSTRUCTION) FOR A CONDUIT SECTION TO BE TRENCHED-IN DUE TO UTILITY OR OTHER CONFLICTS THAT WILL NOT ALLOW FOR A CONDUIT SECTION TO BE BORED. TURF ESTABLISHMENT (INCLUDING GRADING AND RESTORATION) SHALL ALSO BE PROVIDED FOR ALL CONDUIT INSTALLATION AREAS IN THE BOULEVARDS (INCIDENTAL).

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SCALE IN FEET




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| DESIGNER: MRB | | | | |
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SEH

ANOKA COUNTY, MN
CSAH 9
SAP 002-609-023
CITY OF ANDOVER SAP 198-020-042, CITY PROJECT 25-13
CITY OF ANOKA SAP 103-020-020

REVISE SIGNAL SYSTEM "E"
INTERSECTION LAYOUT AND INTERCONNECT
CSAH 9 (ROUND LAKE BOULEVARD) AT 140TH LANE

113
133

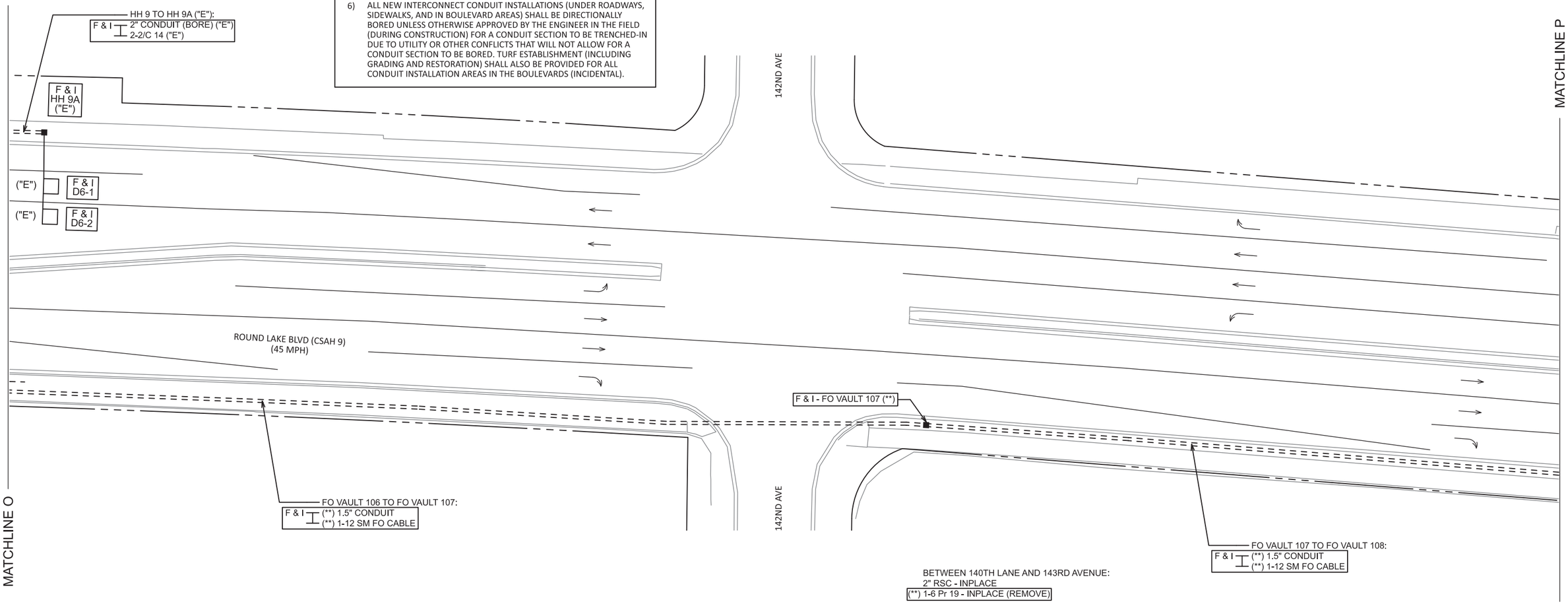
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INTERCONNECT NOTES:

1) IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO UTILIZE THE "ONE CALL EXCAVATION NOTICE SYSTEM" (TELEPHONE NUMBER 651-454-0002) AS REQUIRED BY MINNESOTA STATUTE 2160.
2) DISTANCE OFF SHOULDER OR CURB FOR NEW INTERCONNECT CONDUIT SHALL BE 1-2 FEET UNLESS OTHERWISE APPROVED BY ENGINEER.
3) (**) DENOTES ITEMS TO BE FURNISHED AND INSTALLED BY THE CONTRACTOR UNDER ITEM NO. 2565 (TRAFFIC CONTROL INTERCONNECT). SEE STATEMENT OF ESTIMATED QUANTITIES AND SPECIAL PROVISIONS.
4) ITEMS DENOTED BY "E" SHALL BE INCLUDED AS PART OF THE PAY ITEM FOR ITEM NO. 2565 (TRAFFIC CONTROL SIGNAL SYSTEM "E").
5) (F & I) DENOTES ITEMS TO BE FURNISHED AND INSTALLED BY CONTRACTOR AS PART OF THIS PROJECT.
6) ALL NEW INTERCONNECT CONDUIT INSTALLATIONS (UNDER ROADWAYS, SIDEWALKS, AND IN BOULEVARD AREAS) SHALL BE DIRECTIONALLY BORED UNLESS OTHERWISE APPROVED BY THE ENGINEER IN THE FIELD (DURING CONSTRUCTION) FOR A CONDUIT SECTION TO BE TRENCHED-IN DUE TO UTILITY OR OTHER CONFLICTS THAT WILL NOT ALLOW FOR A CONDUIT SECTION TO BE BORED. TURF ESTABLISHMENT (INCLUDING GRADING AND RESTORATION) SHALL ALSO BE PROVIDED FOR ALL CONDUIT INSTALLATION AREAS IN THE BOULEVARDS (INCIDENTAL).

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SCALE IN FEET




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SEH

ANOKA COUNTY, MN
CSAH 9
SAP 002-609-023
CITY OF ANDOVER SAP 198-020-042, CITY PROJECT 25-13
CITY OF ANOKA SAP 103-020-020

TRAFFIC SIGNAL INTERCONNECT
INTERCONNECT
CSAH 9 (ROUND LAKE BOULEVARD) BETWEEN 140TH LANE AND 143RD AVENUE



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NOTES:

1) LOCATION OF NEW LOOP DETECTORS AND PUSH BUTTON STATIONS SHALL BE DETERMINED IN FIELD BY THE ENGINEER.
2) SEE SPECIAL PROVISIONS FOR COUNTY FURNISHED MATERIALS.
3) ALL ITEMS OF THIS SIGNAL SYSTEM ARE INPLACE AND SHALL BE REUSED AND MAINTAINED INPLACE, UNLESS OTHERWISE NOTED ON THE PLANS.
4) ALL HANDHOLES ARE PVC HANDHOLES WITH METAL FRAMES AND COVERS AND ARE INPLACE (REUSE AND MAINTAIN INPLACE), EXCEPT AS FOLLOWS:
   - ADJUST HANDHOLE FRAME, RING, AND COVER FOR HANDHOLES 1, 2, 6, 8, 11, AND 12 TO FINISHED SURROUNDING GRADE AFTER ALL CURB RAMP WORK IS COMPLETED (TO BE MEASURED AND PAID FOR SEPARATELY FROM "REVISE SIGNAL SYSTEM E" PAY ITEM).
   - FURNISH AND INSTALL NEW HANDHOLES 3A AND 9A (SEE SPECIAL PROVISIONS - INCIDENTAL TO "REVISE SIGNAL SYSTEM E" PAY ITEM).
5) ALL PEDESTRIAN SIGNAL HEADS ARE ONE-SECTION LED "HAND/WALKING PERSON" COUNTDOWN TIMER INDICATIONS AND SHALL REMAIN AND BE REUSED INPLACE AS SHOWN IN THE PLANS.
6) ALL LOOP DETECTORS SHALL BE NEW LOOP DETECTORS IN PVC (EXCEPT FOR LOOP DETECTORS D4-1 AND D8-1) PER DETAILS INCLUDED ELSEWHERE IN THE PLANS. LOOP DETECTOR WIRES SHALL BE CROSS-LINKED POLY-ETYLENE (XLP) #12 AWG IN 3/4-INCH PVC. SEE SPECIAL PROVISIONS.
7) ANY DAMAGE TO INPLACE TRAFFIC SIGNAL FACILITIES (CONDUIT, CABLES, HANDHOLES, SIGNAL POLES, ETC.), DUE TO TRAFFIC SIGNAL REVISION WORK, SHALL BE REPAIRED BY CONTRACTOR TO SATISFACTION OF THE ENGINEER, AT NO EXPENSE TO THE COUNTY.
8) CONTRACTOR SHALL MAINTAIN OPERATION OF THE SIGNAL SYSTEM AT ALL TIMES, EXCEPT AS OTHERWISE APPROVED BY ENGINEER.
9) ALL NEW VEHICULAR SIGNAL HEADS SHALL HAVE BACKGROUND SHIELDS FURNISHED & INSTALLED BY CONTRACTOR. ALL INPLACE VEHICULAR SIGNAL HEADS BEING REUSED AS PART OF REVISE SIGNAL SYSTEM "E" HAVE BACKGROUND SHIELDS (REUSE AND MAINTAIN INPLACE).
10) SEE SPECIAL PROVISIONS & DETAILS REGARDING SIGNS TO BE FURNISHED AND INSTALLED BY CONTRACTOR (TO BE MEASURED AND PAID FOR SEPARATELY FROM THE "REVISE SIGNAL SYSTEM E" PAY ITEM).
11) F & I = NEW, FURNISH AND INSTALL.
    S & I = INPLACE, SALVAGE AND INSTALL.
12) (**) DENOTES ITEMS TO BE FURNISHED AND INSTALLED BY CONTRACTOR UNDER ITEM NO. 2565 (TRAFFIC CONTROL INTERCONNECT). SEE STATEMENT OF ESTIMATED QUANTITIES AND SPECIAL PROVISIONS.
13) ALL NEW VEHICULAR SIGNAL HOUSINGS, BACKGROUND SHIELDS AND VISORS SHALL BE FABRICATED USING BLACK POLYCARBONATE MATERIALS. SEE SPECIAL PROVISIONS.
14) CONTRACTOR SHALL PROVIDE, INSTALL, AND MAKE OPERATIONAL ALL COMPONENTS RELATED TO THE COMPLETE PTZ CAMERA INSTALLATION (TO BE MEASURED AND PAID FOR SEPARATELY FROM THE "TRAFFIC CONTROL SIGNAL SYSTEM D" PAY ITEM). SEE SPECIAL PROVISIONS AND STATEMENT OF ESTIMATED QUANTITIES.

**(A)**
- INPLACE (MAINTAIN INPLACE)
  - CONTROLLER CABINET FOUNDATION
  - 2-3" RSC STUB OUTS FROM CONTROLLER CABINET TO NORTH (BOTH ENDS THREADED AND CAPPED-FOR FUTURE USE)
  - EXTENDED INTO HH 15:
    METERED SIGNAL SERVICE
    2" RSC
    3-1/C 6
  - CONTROLLER CABINET TO HH 1:
    4" RSC
    5-12/C 12
    4-3/C 12
    2-3/C 20
    8-2/C 14
- INPLACE (REMOVE) — (**) 1-6 PR 19
- F & I
  - 8-2/C 14
  - 1-CAT 5E CABLE (PTZ)

- INPLACE (MAINTAIN INPLACE)
  - CONTROLLER CABINET TO HH 14:
    4" RSC
    5-12/C 12
    4-3/C 12
    2-3/C 20
    9-2/C 14
- INPLACE (REMOVE) — (**) 1-6 PR 19
- F & I — 9-2/C 14

- F & I
  - (**) 1.5" CONDUIT (EXTEND FROM NEW FO-VAULT 106, THROUGH 3" RSC STUB OUT AND INTO CONTROLLER CABINET
  - (**) 1-12 SM FO (TO 138TH)
  - (**) 1-12 SM FO (TO 143RD)

- INPLACE (SALVAGE) — CONTROLLER AND CABINET
- INSTALL (FURNISHED BY COUNTY) — CONTROLLER AND CABINET

**(B)**
- INPLACE (MAINTAIN INPLACE)
  - SERVICE CABINET FOUNDATION
  - COUNTY-STYLE BBU SERVICE CABINET WITH BATTERIES, INVERTER, STROBE
  - EXTENDED TO SOP TRANSFORMER:
    2" RSC
    3-1/C 2
    EXTENDED INTO HH 15:
    METERED SIGNAL SERVICE
    2" RSC
    3-1/C 6
    METERED STREET LIGHT SERVICE
    2-3/C 12 (LUM)
- F & I — 2-3/C 16 (LUM)

- INPLACE (MAINTAIN INPLACE)
  - HH 14 TO HH 15:
    2" RSC
    2-3/C 12 (LUM)
- F & I — 2-3/C 16 (LUM)

**(C)**
- INPLACE (MAINTAIN INPLACE)
  - GROUND MOUNTED TRANSFORMER (SOP)
  - EXTENDED INTO SERVICE CABINET
  - 2" RSC
  - 3-1/C 2

**(1)**
- INPLACE (MAINTAIN INPLACE)
  - PA85 POLE FOUNDATION
  - TYPE PA85-A-25
  - ONE WAY SIGNAL-OVERHEAD AT 0' (4-2)
  - 1-TYPE 10B-POLE MOUNTED 180 DEG (4-1, P4-2)
  - ONE WAY EVP DETECTOR AND LIGHT AT 6' (Ø4)
  - EXTENDED INTO HH 1:
    3" RSC
    2-12/C 12
    2-3/C 12
    1-3/C 20

- INPLACE (REMOVE)
  - ONE WAY SIGNAL-POLE MOUNTED 90 DEG (OLD 1-2)
  - TYPE 10B BRACKETING-POLE MOUNTED 90 DEG
  - 2-PEDESTRIAN PUSH BUTTONS AND SIGNS (R10-3e)
  - STREET NAME SIGN PANEL-OVERHEAD
- INPLACE (S & I)
  - 1-SET CD PED INDICATIONS (HOUSING, VISOR, LENS) AT 90 DEG (P2-1)
- F & I
  - TYPE X6-300 CAM 350 LUMINAIRE EXTENSION (DAVIT AT 0 DEG)
  - LUMINAIRE-LED
  - TYPE 10B BRACKETING-POLE MOUNTED 90 DEG (FOR 1-2, P2-1)
  - 1-ONE WAY SIGNAL-POLE MOUNTED 90 DEG (NEW 1-2)
  - 1-APS PB, SIGN (LT ARROW) AND APS MAST ARM POLE ADAPTOR (PB2-1)
  - PLUG HOLES ON MAST ARM POLE WHERE PUSH BUTTONS/SIGNS USED TO BE (AT 0/270 DEG)
  - STREET NAME SIGN PANEL-OVERHEAD (P17)
  - 1-PTZ CAMERA AND MOUNTING HARDWARE (MOUNT ATOP CAMERA EXTENSION)
  - 1-2/C 14
  - 1-CAT 5E CABLE (PTZ)
  - 1-3/C 16 (LUM)

**(2)**
- INPLACE (MAINTAIN INPLACE)
  - PA100 POLE FOUNDATION
  - TYPE PA100-A-50-D40-9 (DAVIT AT 350 DEG)
  - LUMINAIRE-LED
  - 2-ONE WAY SIGNALS-OVERHEAD AT 11', 23' (6-3, 6-2)
  - 2-TYPE 10B-POLE MOUNTED 90/180 DEG
  - ONE WAY EVP DETECTOR AND LIGHT AT 6' (Ø6,1)
  - EXTENDED INTO HH 5:
    3" RSC
    3-12/C 12
    2-3/C 12
    1-3/C 20
    1-3/C 12 (LUM)

- INPLACE (REMOVE)
  - ONE WAY SIGNAL AND MOUNT-OVERHEAD AT 0' (OLD 1-1)
  - 2-PEDESTRIAN PUSH BUTTONS AND SIGNS (R10-3e)
  - 2-R6-1 (ONE WAY) SIGN PANELS-POLE MOUNTED 0/180 DEG
  - STREET NAME SIGN PANEL-OVERHEAD
- F & I
  - 1-ONE WAY SIGNAL AND ANGLE MOUNT-OVERHEAD AT 0' (NEW 1-1)
  - 1-APS PB, SIGN (LT ARROW) AND APS MAST ARM POLE ADAPTOR (PB4-1)
  - PLUG HOLES ON MAST ARM POLE WHERE PUSH BUTTONS/SIGNS USED TO BE (AT 0/270 DEG)
  - R10-X12 SIGN PANEL-ADJACENT TO 1-1
  - 2-R6-1 (ONE WAY) SIGNS-POLE MOUNTED 0/180 DEG
  - STREET NAME SIGN PANEL-OVERHEAD (P18)
  - 1-2/C 14

**(3)**
- INPLACE (MAINTAIN INPLACE)
  - PA85 POLE FOUNDATION
  - TYPE PA85-A-25
  - ONE WAY SIGNAL-OVERHEAD AT 0' (8-2)
  - 1-TYPE 10B-POLE MOUNTED 180 DEG (8-1, P8-2)
  - ONE WAY EVP DETECTOR AND LIGHT AT 6' (Ø8)
  - EXTENDED INTO HH 8:
    3" RSC
    2-12/C 12
    2-3/C 12
    1-3/C 20

- INPLACE (REMOVE)
  - ONE WAY SIGNAL-POLE MOUNTED 90 DEG (OLD 5-2)
  - TYPE 10B BRACKETING-POLE MOUNTED 90 DEG
  - 2-PEDESTRIAN PUSH BUTTONS AND SIGNS (R10-3e)
  - STREET NAME SIGN PANEL-OVERHEAD
- INPLACE (S & I)
  - 1-SET CD PED INDICATIONS (HOUSING, VISOR, LENS) AT 90 DEG (P6-1)
- F & I
  - TYPE D30-9 LUMINAIRE EXTENSION (DAVIT AT 350 DEG)
  - LUMINAIRE-LED
  - TYPE 10B BRACKETING-POLE MOUNTED 90 DEG (FOR 5-2, P6-1)
  - 1-ONE WAY SIGNAL-POLE MOUNTED 90 DEG (NEW 5-2)
  - 1-APS PB, SIGN (LT ARROW) AND APS MAST ARM POLE ADAPTOR (PB6-1)
  - PLUG HOLES ON MAST ARM POLE WHERE PUSH BUTTONS/SIGNS USED TO BE (AT 0/270 DEG)
  - STREET NAME SIGN PANEL-OVERHEAD (P18)
  - 1-2/C 14
  - 1-3/C 16 (LUM)

**(4)**
- INPLACE (MAINTAIN INPLACE)
  - PA100 POLE FOUNDATION
  - TYPE PA100-A-50-D40-9 (DAVIT AT 350 DEG)
  - LUMINAIRE-LED
  - 2-ONE WAY SIGNALS-OVERHEAD AT 11', 23' (2-3, 2-2)
  - 2-TYPE 10B-POLE MOUNTED 90/180 DEG
  - ONE WAY EVP DETECTOR AND LIGHT AT 6' (Ø2,5)
  - EXTENDED INTO HH 12:
    3" RSC
    3-12/C 12
    2-3/C 12
    1-3/C 20
    1-3/C 12 (LUM)

- INPLACE (REMOVE)
  - ONE WAY SIGNAL AND MOUNT-OVERHEAD AT 0' (OLD 5-1)
  - 2-PEDESTRIAN PUSH BUTTONS AND SIGNS (R10-3e)
  - 2-R6-1 (ONE WAY) SIGN PANELS-POLE MOUNTED 0/180 DEG
  - STREET NAME SIGN PANEL-OVERHEAD
- F & I
  - 1-ONE WAY SIGNAL AND ANGLE MOUNT-OVERHEAD AT 0' (NEW 5-1)
  - 1-APS PB, SIGN (LT ARROW) AND APS MAST ARM POLE ADAPTOR (PB8-1)
  - PLUG HOLES ON MAST ARM POLE WHERE PUSH BUTTONS/SIGNS USED TO BE (AT 0/270 DEG)
  - R10-X12 SIGN PANEL-ADJACENT TO 5-1
  - 2-R6-1 (ONE WAY) SIGNS-POLE MOUNTED 0/180 DEG
  - STREET NAME SIGN PANEL-OVERHEAD (P19)
  - 1-2/C 14

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| DESIGN TEAM | NO. | BY | DATE | REVISIONS |
|---|---|---|---|---|
| DRAWN BY: MRB | | | | |
| DESIGNER: MRB | | | | |
| 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.
Certified By: Licensed Professional Engineer
Printed Name: JOHN M. GRAY
Lic. No. 22457 Date: 09/23/2025

SEH

ANOKA COUNTY, MN
CSAH 9
SAP 002-609-023
CITY OF ANDOVER SAP 198-020-042, CITY PROJECT 25-13
CITY OF ANOKA SAP 103-020-020

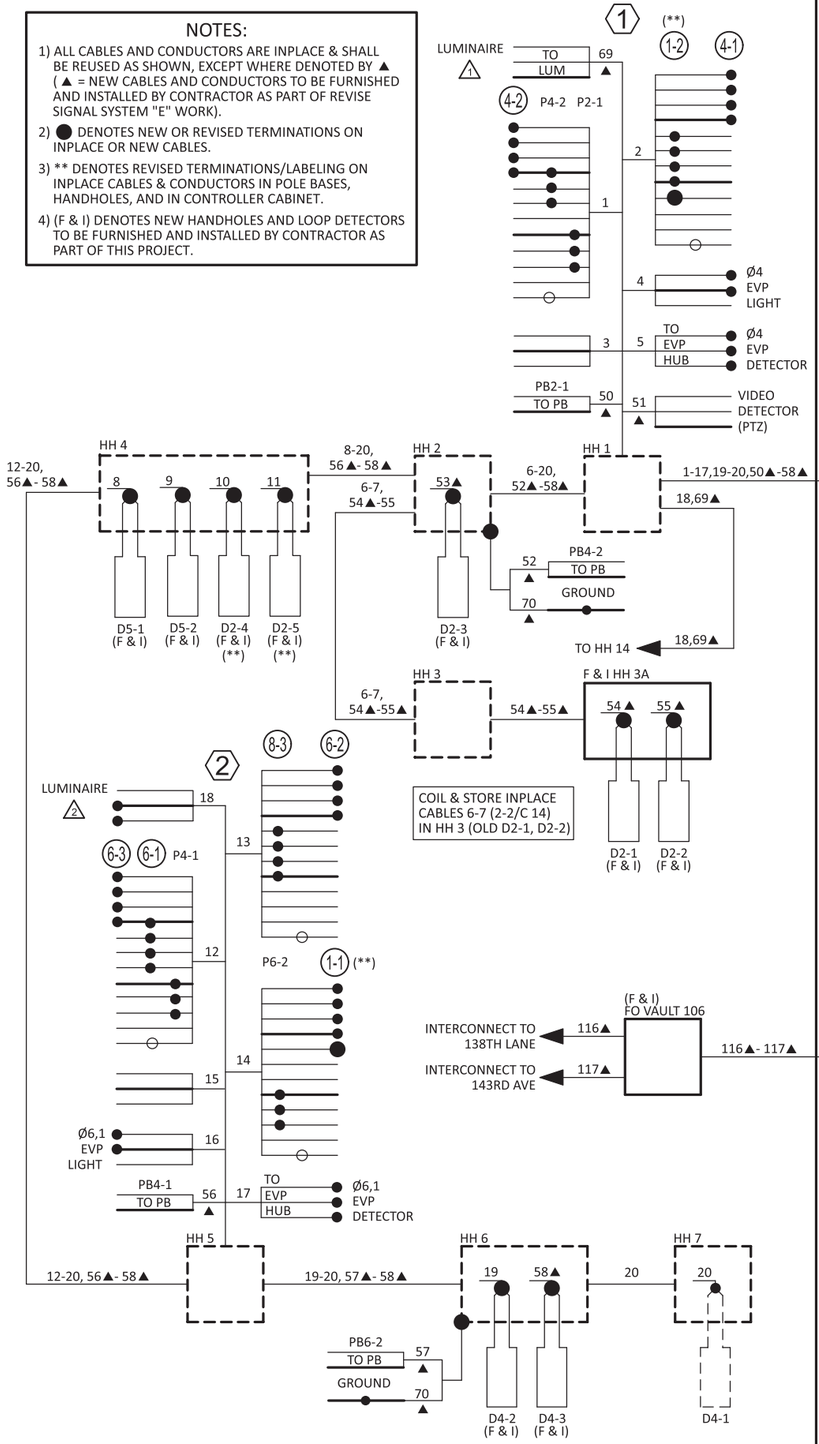
REVISE SIGNAL SYSTEM "E"
POLE & CABINET NOTES
CSAH 9 (ROUND LAKE BOULEVARD) AT 140TH LANE

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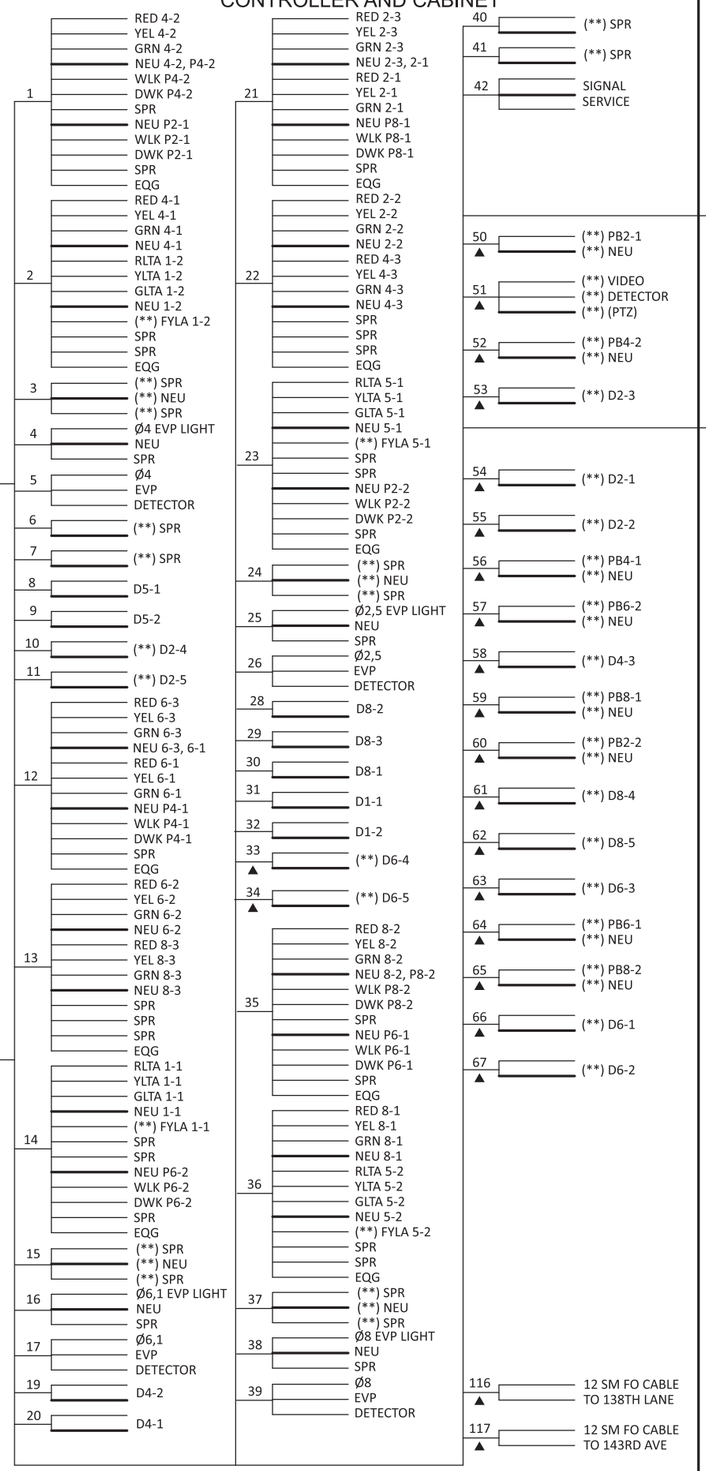
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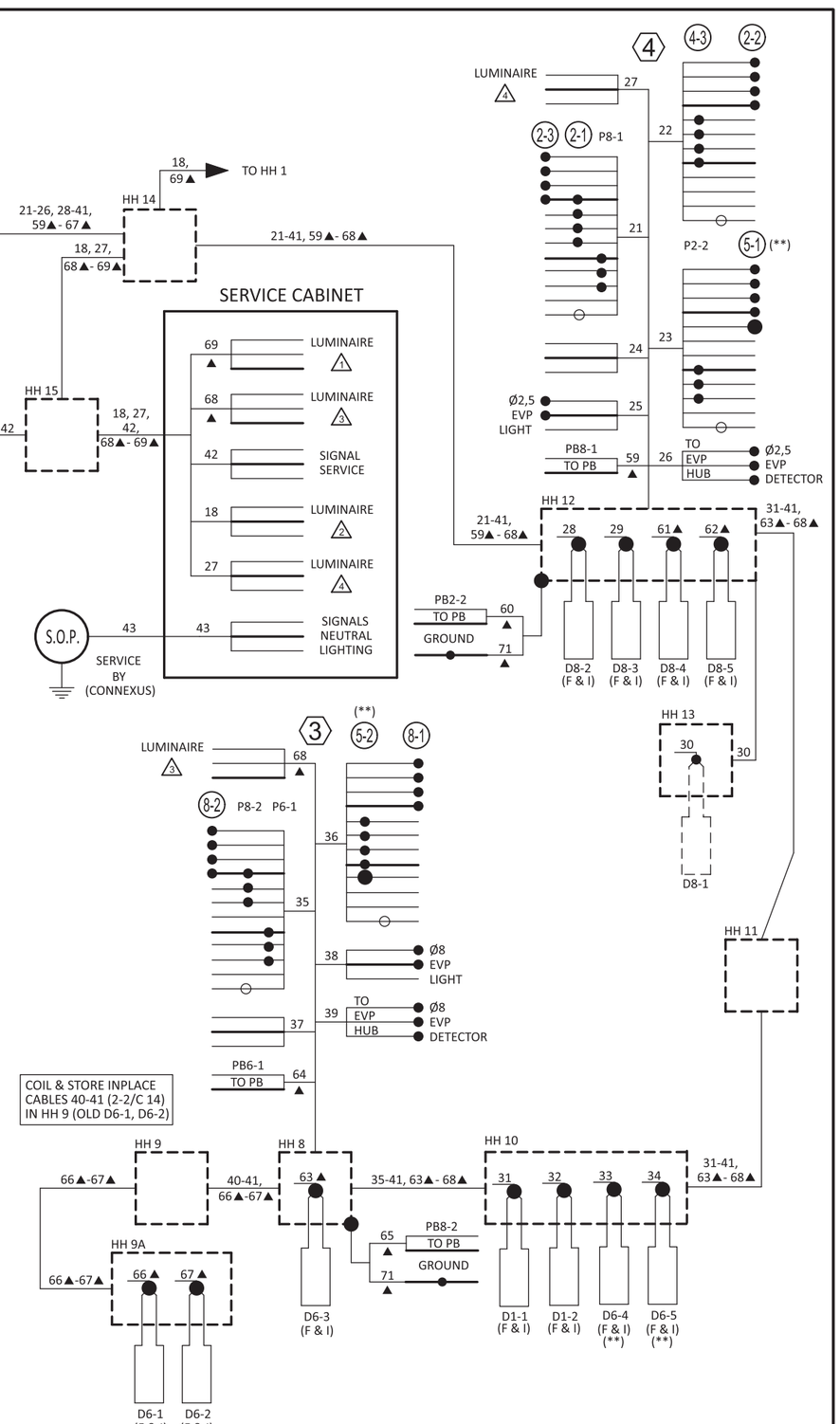
## NOTES:

1) ALL CABLES AND CONDUCTORS ARE INPLACE & SHALL BE REUSED AS SHOWN, EXCEPT WHERE DENOTED BY ▲ ( ▲ = NEW CABLES AND CONDUCTORS TO BE FURNISHED AND INSTALLED BY CONTRACTOR AS PART OF REVISE SIGNAL SYSTEM "E" WORK).
2) ● DENOTES NEW OR REVISED TERMINATIONS ON INPLACE OR NEW CABLES.
3) ** DENOTES REVISED TERMINATIONS/LABELING ON INPLACE CABLES & CONDUCTORS IN POLE BASES, HANDHOLES, AND IN CONTROLLER CABINET.
4) (F & I) DENOTES NEW HANDHOLES AND LOOP DETECTORS TO BE FURNISHED AND INSTALLED BY CONTRACTOR AS PART OF THIS PROJECT.




## CONTROLLER AND CABINET




| DESIGN TEAM | NO. | BY | DATE | REVISIONS |
|---|---|---|---|---|
| DRAWN BY: MRB | | | | |
| DESIGNER: MRB | | | | |
| 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.

Certified By: Licensed Professional Engineer — Printed Name: JOHN M. GRAY — Lic. No. 22457 — Date: 09/23/2025

SEH

ANOKA COUNTY, MN
CSAH 9
SAP 002-609-023
CITY OF ANDOVER SAP 198-020-042, CITY PROJECT 25-13
CITY OF ANOKA SAP 103-020-020

# REVISE SIGNAL SYSTEM "E"

FIELD WIRING DIAGRAM
CSAH 9 (ROUND LAKE BOULEVARD) AT 140TH LANE



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NOTES:

1) LOCATION OF POLES, CONTROLLER CABINET, SERVICE CABINET, LOOP DETECTORS AND HANDHOLES SHALL BE DETERMINED IN THE FIELD BY THE ENGINEER.
2) SEE SPECIAL PROVISIONS FOR COUNTY FURNISHED MATERIALS.
3) LOOP DETECTOR WIRES SHALL BE CROSS-LINKED POLYETHYLENE (XLP) IN 3/4" N.M.C. SEE SPECIAL PROVISIONS.
4) NEW HANDHOLES SHALL BE PVC HANDHOLES WITH METAL FRAMES AND COVERS.
5) EACH SIGNAL FACE SHALL HAVE BACKGROUND SHIELD.
6) EACH PEDESTRIAN INDICATION SHALL BE ONE SECTION HAND/WALKING PERSON INDICATION.
7) ALL VEHICLE SIGNAL INDICATIONS, AND ALL PEDESTRIAN SIGNAL INDICATIONS SHALL BE LED.
8) SEE SPECIAL PROVISIONS AND DETAILS REGARDING SIGNS TO BE FURNISHED & INSTALLED BY CONTRACTOR (INCIDENTAL TO ITEM NO. 2565.511 FOR THIS SIGNAL SYSTEM).
9) CONTRACTOR SHALL PROVIDE EXTENDED BRACKETS FOR EACH POLE MOUNTED VEHICLE AND PEDESTRIAN SIGNAL FACE.
10) A 3/4" HALF COUPLING, 3/4" PIPE NIPPLE AND CONDUIT OUTLET BODY SHALL BE FURNISHED AND INSTALLED 6 FEET FROM THE END OF EACH MAST ARM (FOR EVP).
11) SEE SPECIAL PROVISIONS & ESTIMATED QUANTITIES REGARDING INPLACE SIGNAL SYSTEM TO BE REMOVED AND SALVAGED BY CONTRACTOR (SEPARATE FROM ITEM NO. 2565.511).
12) CONTRACTOR SHALL MAINTAIN OPERATION OF INPLACE SIGNAL SYSTEM AT ALL TIMES, UNTIL APPROVED BY ENGINEER FOR SIGNAL SYSTEM TO BE TURNED OFF.
13) CONTRACTOR SHALL COORDINATE ALL TRAFFIC SIGNAL INSTALLATION WORK WITH ROAD CONSTRUCTION TO BE COMPLETED BY OTHERS AS PART OF ENTIRE PROJECT.
14) (INTERCONNECT) DENOTES ITEMS TO BE FURNISHED & INSTALLED BY CONTRACTOR UNDER ITEM NO. 2565.601 (TRAFFIC CONTROL INTERCONNECTION). SEE ESTIMATED QUANTITIES & SPECIAL PROVISIONS.

N.M.C. LOOP DETECTORS

| 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 |
| D4-1 | 6x6 | 120' | 3,8 |
| D4-2 | 2-6x10 | 5' | 7 |
| D5-1 | 6x6 | 40' | 1 |
| D5-2 | 6x6 | 10' | 1 |
| D6-1 | 6x6 | 300' | 1 |
| D6-2 | 6x6 | 300' | 1 |
| D8-1 | 6x6 | 120' | 3,8 |
| D8-2 | 6x10&6x6 | 5' | 7 |
| D8-3 | 2-6x6 | 5' | 7 |
| D1 | 6x6 | 50' | 11 |
| D2 | 6x6 | 50' | 11 |
| D3 | 6x6 | 50' | 11 |
| D4 | 6x6 | 50' | 11 |

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

LOOP DETECTORS FUNCTIONS:

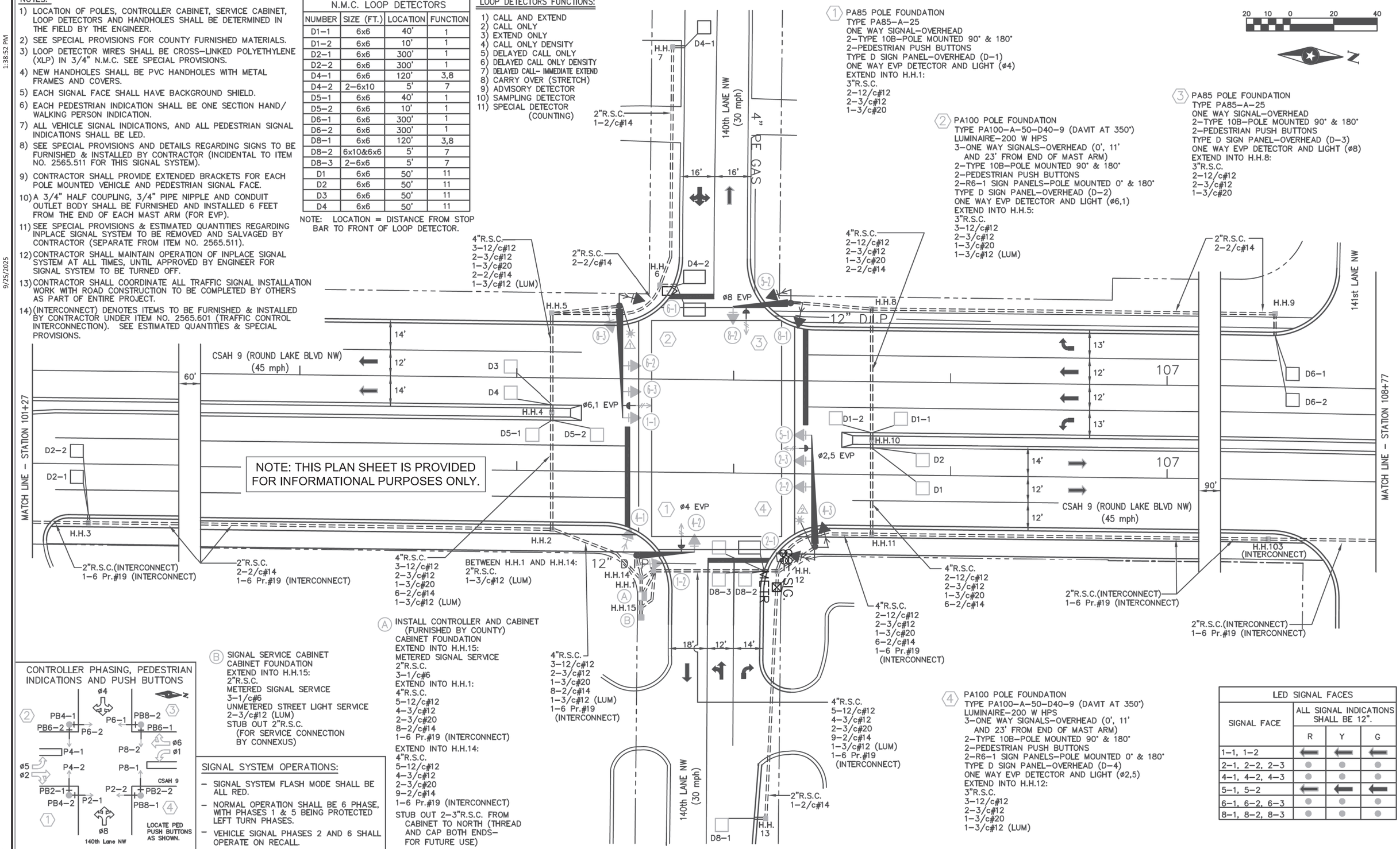
1) CALL AND EXTEND
2) CALL ONLY
3) EXTEND ONLY
4) CALL ONLY DENSITY
5) DELAYED CALL ONLY
6) DELAYED CALL ONLY DENSITY
7) DELAYED CALL- IMMEDIATE EXTEND
8) CARRY OVER (STRETCH)
9) ADVISORY DETECTOR
10) SAMPLING DETECTOR
11) SPECIAL DETECTOR (COUNTING)




(B) SIGNAL SERVICE CABINET
CABINET FOUNDATION
EXTEND INTO H.H.15:
2"R.S.C.
METERED SIGNAL SERVICE
3-1/c#6
UNMETERED STREET LIGHT SERVICE
2-3/c#12 (LUM)
STUB OUT 2"R.S.C.
(FOR SERVICE CONNECTION BY CONNEXUS)

SIGNAL SYSTEM OPERATIONS:

- SIGNAL SYSTEM FLASH MODE SHALL BE ALL RED.
- NORMAL OPERATION SHALL BE 6 PHASE, WITH PHASES 1 & 5 BEING PROTECTED LEFT TURN PHASES.
- VEHICLE SIGNAL PHASES 2 AND 6 SHALL OPERATE ON RECALL.




(A) INSTALL CONTROLLER AND CABINET (FURNISHED BY COUNTY)
CABINET FOUNDATION
EXTEND INTO H.H.15:
METERED SIGNAL SERVICE
2"R.S.C.
3-1/c#6
EXTEND INTO H.H.1:
4"R.S.C.
5-12/c#12
4-3/c#12
2-3/c#20
8-2/c#14
1-6 Pr.#19 (INTERCONNECT)
EXTEND INTO H.H.14:
4"R.S.C.
5-12/c#12
4-3/c#12
2-3/c#20
9-2/c#14
1-6 Pr.#19 (INTERCONNECT)
STUB OUT 2-3"R.S.C. FROM CABINET TO NORTH (THREAD AND CAP BOTH ENDS- FOR FUTURE USE)

(1) PA85 POLE FOUNDATION
TYPE PA85-A-25
ONE WAY SIGNAL-OVERHEAD
2-TYPE 10B-POLE MOUNTED 90° & 180°
2-PEDESTRIAN PUSH BUTTONS
TYPE D SIGN PANEL-OVERHEAD (D-1)
ONE WAY EVP DETECTOR AND LIGHT (ø4)
EXTEND INTO H.H.1:
3"R.S.C.
2-12/c#12
2-3/c#12
1-3/c#20

(2) PA100 POLE FOUNDATION
TYPE PA100-A-50-D40-9 (DAVIT AT 350°)
LUMINAIRE-200 W HPS
3-ONE WAY SIGNALS-OVERHEAD (0', 11' AND 23' FROM END OF MAST ARM)
2-TYPE 10B-POLE MOUNTED 90° & 180°
2-PEDESTRIAN PUSH BUTTONS
2-R6-1 SIGN PANELS-POLE MOUNTED 0° & 180°
TYPE D SIGN PANEL-OVERHEAD (D-2)
ONE WAY EVP DETECTOR AND LIGHT (ø6,1)
EXTEND INTO H.H.5:
3"R.S.C.
3-12/c#12
2-3/c#12
1-3/c#20
1-3/c#12 (LUM)

(3) PA85 POLE FOUNDATION
TYPE PA85-A-25
ONE WAY SIGNAL-OVERHEAD
2-TYPE 10B-POLE MOUNTED 90° & 180°
2-PEDESTRIAN PUSH BUTTONS
TYPE D SIGN PANEL-OVERHEAD (D-3)
ONE WAY EVP DETECTOR AND LIGHT (ø8)
EXTEND INTO H.H.8:
3"R.S.C.
2-12/c#12
2-3/c#12
1-3/c#20

(4) PA100 POLE FOUNDATION
TYPE PA100-A-50-D40-9 (DAVIT AT 350°)
LUMINAIRE-200 W HPS
3-ONE WAY SIGNALS-OVERHEAD (0', 11' AND 23' FROM END OF MAST ARM)
2-TYPE 10B-POLE MOUNTED 90° & 180°
2-PEDESTRIAN PUSH BUTTONS
TYPE D SIGN PANEL-OVERHEAD (D-4)
ONE WAY EVP DETECTOR AND LIGHT (ø2,5)
EXTEND INTO H.H.12:
3"R.S.C.
3-12/c#12
2-3/c#12
1-3/c#20
1-3/c#12 (LUM)

LED SIGNAL FACES

| SIGNAL FACE | ALL SIGNAL INDICATIONS SHALL BE 12". | | |
|---|---|---|---|
| | 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 | ● | ● | ● |

| DESIGN TEAM | NO. | BY | DATE | REVISIONS |
|---|---|---|---|---|
| DRAWN BY: MRB | | | | |
| DESIGNER: MRB | | | | |
| CHECKED BY: JMG | | | | |

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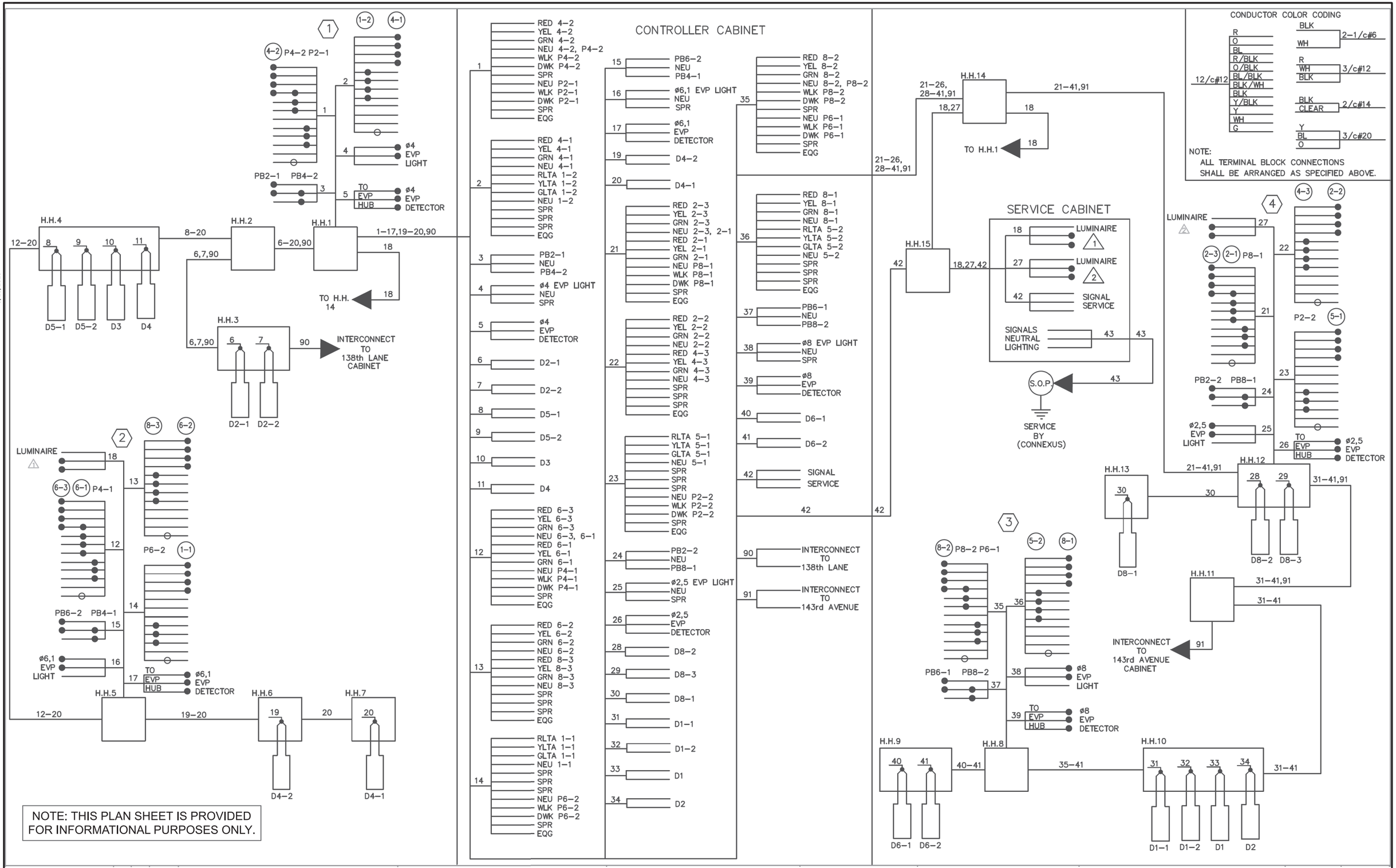
ANOKA COUNTY, MN
CSAH 9
SAP 002-609-023
CITY OF ANDOVER SAP 198-020-042, CITY PROJECT 25-13
CITY OF ANOKA SAP 103-020-020

EXISTING SIGNAL SYSTEM "E"
FOR INFORMATION ONLY
CSAH 9 (ROUND LAKE BOULEVARD) AT 140TH LANE

117/133

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| DESIGN TEAM | NO. | BY | DATE | REVISIONS |
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| DRAWN BY: MRB | | | | |
| DESIGNER: MRB | | | | |
| CHECKED BY: JMG | | | | |

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ANOKA COUNTY, MN
CSAH 9
SAP 002-609-023
CITY OF ANDOVER SAP 198-020-042, CITY PROJECT 25-13
CITY OF ANOKA SAP 103-020-020

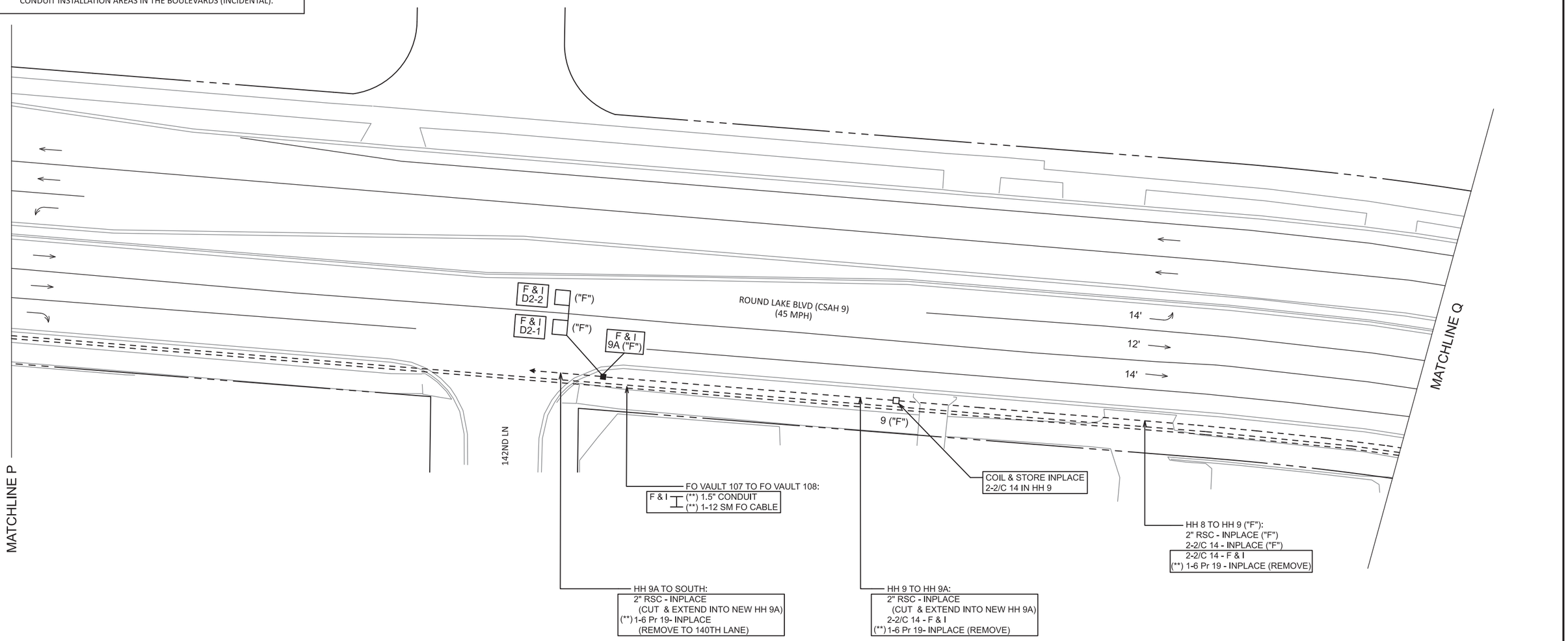
EXISTING SIGNAL SYSTEM "E"
FOR INFORMATION ONLY
CSAH 9 (ROUND LAKE BOULEVARD) AT 140TH LANE

INTERCONNECT NOTES:

1) IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO UTILIZE THE "ONE CALL EXCAVATION NOTICE SYSTEM" (TELEPHONE NUMBER 651-454-0002) AS REQUIRED BY MINNESOTA STATUTE 2160.
2) DISTANCE OFF SHOULDER OR CURB FOR NEW INTERCONNECT CONDUIT SHALL BE 1-2 FEET UNLESS OTHERWISE APPROVED BY ENGINEER.
3) (**) DENOTES ITEMS TO BE FURNISHED AND INSTALLED BY THE CONTRACTOR UNDER ITEM NO. 2565 (TRAFFIC CONTROL INTERCONNECT). SEE STATEMENT OF ESTIMATED QUANTITIES AND SPECIAL PROVISIONS.
4) ITEMS DENOTED BY "F" SHALL BE INCLUDED AS PART OF THE PAY ITEM FOR ITEM NO. 2565 (TRAFFIC CONTROL SIGNAL SYSTEM "F").
5) (F & I) DENOTES ITEMS TO BE FURNISHED AND INSTALLED BY CONTRACTOR AS PART OF THIS PROJECT.
6) ALL NEW INTERCONNECT CONDUIT INSTALLATIONS (UNDER ROADWAYS, SIDEWALKS, AND IN BOULEVARD AREAS) SHALL BE DIRECTIONALLY BORED UNLESS OTHERWISE APPROVED BY THE ENGINEER IN THE FIELD (DURING CONSTRUCTION) FOR A CONDUIT SECTION TO BE TRENCHED-IN DUE TO UTILITY OR OTHER CONFLICTS THAT WILL NOT ALLOW FOR A CONDUIT SECTION TO BE BORED. TURF ESTABLISHMENT (INCLUDING GRADING AND RESTORATION) SHALL ALSO BE PROVIDED FOR ALL CONDUIT INSTALLATION AREAS IN THE BOULEVARDS (INCIDENTAL).

40

SCALE IN FEET




| DESIGN TEAM | NO. | BY | DATE | REVISIONS |
|---|---|---|---|---|
| DRAWN BY: MRB | | | | |
| DESIGNER: MRB | | | | |
| 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.

Certified By: Licensed Professional Engineer — Printed Name: JOHN M. GRAY — Lic. No. 22457 — Date: 09/23/2025

SEH

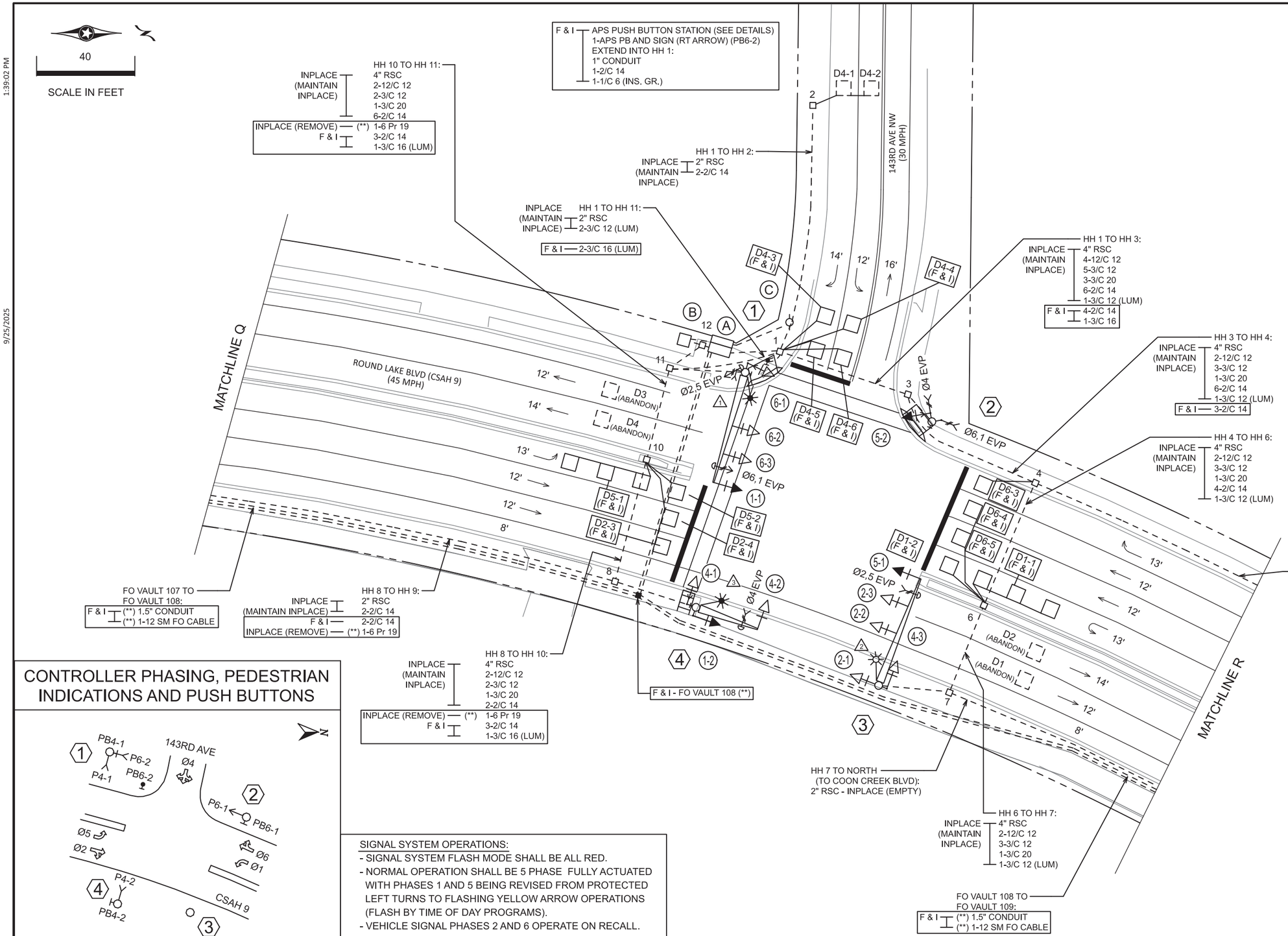
ANOKA COUNTY, MN
CSAH 9
SAP 002-609-023
CITY OF ANDOVER SAP 198-020-042, CITY PROJECT 25-13
CITY OF ANOKA SAP 103-020-020

REVISE SIGNAL SYSTEM "F"
INTERSECTION LAYOUT AND INTERCONNECT
CSAH 9 (ROUND LAKE BOULEVARD) AT 143RD AVENUE

119
133

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## PVC LOOP DETECTORS

| NUMBER | SIZE (FT.) | LOCATION | FUNCTION | STATUS |
|---|---|---|---|---|
| D1-1, D5-1 | 3-6X6 | 20', 35', 50' | 1 | 1 |
| D1-2, D5-2 | 6X6 | 5' | 1 | 2 |
| D2-1, D2-2 | 6X6 | 450' | 1 | 3 |
| D2-3, D2-4 | 6X6 | 5' | 11 | 4 |
| D4-1, D4-2 | 6X6 | 120' | 3,8 | INPLACE |
| D4-3, D4-4 | 6X6 | 20' | 3,8 | 4 |
| D4-5, D4-6 | 6X6 | 5' | 3,8 | 3 |
| D6-1, D6-2 | 6X6 | 450' | 1 | 3 |
| D6-3 | 6X6 | 5' | 11 | 3 |
| D6-4, D6-5 | 6X6 | 5' | 11 | 4 |

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

LOOP DETECTOR FUNCTIONS:
1) CALL AND EXTEND
3) EXTEND ONLY
7) DELAYED CALL-IMMEDIATE EXTEND
8) CARRY OVER (STRETCH)
11) SPECIAL DETECTOR (COUNTING)

LOOP DETECTOR STATUS:
1) DETACH EXISTING FRONT (10') AND BACK (40') LOOP FROM EXISTING LEAD-IN CABLES, FURNISH & INSTALL NEW PVC LOOP DETECTOR, AND SPLICE ALL 3 LOOP DETECTORS TO BACK LEAD-IN CABLE (F & I NEW SPLICE KIT).
2) FURNISH & INSTALL NEW PVC LOOP DETECTOR AT 5' FROM STOP BAR. SPLICE THE NEW LOOP DETECTOR TO THE EXISTING FRONT LEAD-IN CABLE (F & I NEW SPLICE KIT).
3) FURNISH & INSTALL NEW PVC LOOP DETECTOR AND NEW LEAD-IN CABLE.
4) FURNISH & INSTALL NEW PVC LOOP DETECTOR AND CONNECT TO INPLACE LEAD-IN CABLE (F & I NEW SPLICE KIT).

## CONTROLLER PHASING, PEDESTRIAN INDICATIONS AND PUSH BUTTONS




PEDESTRIAN PUSH BUTTONS SHALL BE LOCATED AS SHOWN ABOVE.

SIGNAL SYSTEM OPERATIONS:
- SIGNAL SYSTEM FLASH MODE SHALL BE ALL RED.
- NORMAL OPERATION SHALL BE 5 PHASE FULLY ACTUATED WITH PHASES 1 AND 5 BEING REVISED FROM PROTECTED LEFT TURNS TO FLASHING YELLOW ARROW OPERATIONS (FLASH BY TIME OF DAY PROGRAMS).
- VEHICLE SIGNAL PHASES 2 AND 6 OPERATE ON RECALL.

SEE NEXT SHEET FOR DETAILED POLE AND CONTROLLER CABINET NOTES.

## LED SIGNAL HEAD CHART

| SIGNAL HEAD | R | Y | FYA | G | STATUS |
|---|---|---|---|---|---|
| 1-1 | ↶ | ↶ | ↶ | ↶ | 1 |
| 1-2 | ↶ | ↶ | ↶ | ↶ | 2 |
| 2-1, 2-2, 2-3 | ○ | ○ | | ○ | INPLACE |
| 4-1, 4-2, 4-3 | ○ | ○ | | ○ | INPLACE |
| 5-1 | ← | ← | ← | ← | 1 |
| 5-2 | ← | ← | ← | ← | 2 |
| 6-1, 6-2, 6-3 | ○ | ○ | | ○ | INPLACE |

○ = INPLACE LED (REUSE INPLACE)
↶ ← = F & I NEW LED INDICATION
FYA = FLASHING YELLOW ARROW

STATUS:
1) REMOVE IN-PLACE OVERHEAD 3-SECTION SIGNAL AND F & I NEW OVERHEAD 4-SECTION SIGNAL ON END OF EXISTING MAST ARM.

2) REMOVE IN-PLACE POLE MOUNTED 3-SECTION SIGNAL AND F & I NEW POLE MOUNTED 4-SECTION SIGNAL (ON NEW SIGNAL BRACKETING).

| DESIGN TEAM | NO. | BY | DATE | REVISIONS |
|---|---|---|---|---|
| DRAWN BY: MRB | | | | |
| DESIGNER: MRB | | | | |
| 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.

Certified By: Licensed Professional Engineer — Printed Name: JOHN M. GRAY — Lic. No. 22457 — Date: 09/23/2025

SEH

ANOKA COUNTY, MN
CSAH 9
SAP 002-609-023
CITY OF ANDOVER SAP 198-020-042, CITY PROJECT 25-13
CITY OF ANOKA SAP 103-020-020

REVISE SIGNAL SYSTEM "F"
INTERSECTION LAYOUT
CSAH 9 (ROUND LAKE BOULEVARD) AT 143RD AVENUE

120/133

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MODEL: sgl33

INTERCONNECT NOTES:

1) IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO UTILIZE THE "ONE CALL EXCAVATION NOTICE SYSTEM" (TELEPHONE NUMBER 651-454-0002) AS REQUIRED BY MINNESOTA STATUTE 2160.
2) DISTANCE OFF SHOULDER OR CURB FOR NEW INTERCONNECT CONDUIT SHALL BE 1-2 FEET UNLESS OTHERWISE APPROVED BY ENGINEER.
3) (**) DENOTES ITEMS TO BE FURNISHED AND INSTALLED BY THE CONTRACTOR UNDER ITEM NO. 2565 (TRAFFIC CONTROL INTERCONNECT). SEE STATEMENT OF ESTIMATED QUANTITIES AND SPECIAL PROVISIONS.
4) ITEMS DENOTED BY "F" SHALL BE INCLUDED AS PART OF THE PAY ITEM FOR ITEM NO. 2565 (TRAFFIC CONTROL SIGNAL SYSTEM "F").
5) (F & I) DENOTES ITEMS TO BE FURNISHED AND INSTALLED BY CONTRACTOR AS PART OF THIS PROJECT.
6) ALL NEW INTERCONNECT CONDUIT INSTALLATIONS (UNDER ROADWAYS, SIDEWALKS, AND IN BOULEVARD AREAS) SHALL BE DIRECTIONALLY BORED UNLESS OTHERWISE APPROVED BY THE ENGINEER IN THE FIELD (DURING CONSTRUCTION) FOR A CONDUIT SECTION TO BE TRENCHED-IN DUE TO UTILITY OR OTHER CONFLICTS THAT WILL NOT ALLOW FOR A CONDUIT SECTION TO BE BORED. TURF ESTABLISHMENT (INCLUDING GRADING AND RESTORATION) SHALL ALSO BE PROVIDED FOR ALL CONDUIT INSTALLATION AREAS IN THE BOULEVARDS (INCIDENTAL).

40

SCALE IN FEET

MATCHLINE R

HH 4 TO HH 5 ("F"):
2" RSC - INPLACE ("F")
2-2/C 14 - INPLACE ("F")
2-2/C 14 - F & I ("F")

COIL & STORE
INPLACE
2-2/C 14 IN HH 5

5 ("F")

144TH AVE NW

HH 5 TO HH 5A ("F"):
F & I — 2" CONDUIT (BORE) ("F")
2-2/C 14 ("F")

F & I
HH 5A
("F")

("F") F & I D6-1

("F") F & I D6-2

ROUND LAKE BLVD (CSAH 9)
(45 MPH)

ROUND LAKE BLVD (CSAH 9)
(45 MPH)

FO VAULT 108 TO FO VAULT 109:
F & I — (**) 1.5" CONDUIT
(**) 1-12 SM FO CABLE

BETWEEN HH 7 (143RD LANE) AND
HH 50 (SOUTH COON CREEK DRIVE):
2" RSC - INPLACE (EMPTY)

MATCHLINE S

| DESIGN TEAM | NO. | BY | DATE | REVISIONS |
|---|---|---|---|---|
| DRAWN BY: MRB | | | | |
| DESIGNER: MRB | | | | |
| 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.

Certified By: Licensed Professional Engineer — Printed Name: JOHN M. GRAY — Lic. No. 22457 — Date: 09/23/2025

SEH

ANOKA COUNTY, MN
CSAH 9
SAP 002-609-023
CITY OF ANDOVER SAP 198-020-042, CITY PROJECT 25-13
CITY OF ANOKA SAP 103-020-020

REVISE SIGNAL SYSTEM "F"
INTERSECTION LAYOUT AND INTERCONNECT
CSAH 9 (ROUND LAKE BOULEVARD) AT 143RD AVENUE

121
133

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NOTES:

1) LOCATION OF NEW LOOP DETECTORS AND PUSH BUTTON STATIONS SHALL BE DETERMINED IN FIELD BY THE ENGINEER.

2) SEE SPECIAL PROVISIONS FOR COUNTY FURNISHED MATERIALS.

3) ALL ITEMS OF THIS SIGNAL SYSTEM ARE INPLACE AND SHALL BE REUSED AND MAINTAINED INPLACE, UNLESS OTHERWISE NOTED ON THE PLANS.

4) ALL HANDHOLES ARE PVC HANDHOLES WITH METAL FRAMES AND COVERS AND ARE INPLACE (REUSE AND MAINTAIN INPLACE), EXCEPT AS FOLLOWS:
   - ADJUST HANDHOLE FRAME, RING, AND COVER FOR HANDHOLES 1 AND 3 TO FINISHED SURROUNDING GRADE AFTER ALL CURB RAMP WORK IS COMPLETED (TO BE MEASURED AND PAID FOR SEPARATELY FROM "REVISE SIGNAL SYSTEM F" PAY ITEM).
   - FURNISH AND INSTALL NEW HANDHOLES 5A AND 9A (SEE SPECIAL PROVISIONS - INCIDENTAL TO "REVISE SIGNAL SYSTEM F" PAY ITEM).

5) ALL PEDESTRIAN SIGNAL HEADS ARE ONE-SECTION LED "HAND/WALKING PERSON" COUNTDOWN TIMER INDICATIONS AND SHALL REMAIN AND BE REUSED INPLACE AS SHOWN IN THE PLANS.

6) ALL LOOP DETECTORS SHALL BE NEW LOOP DETECTORS IN PVC (EXCEPT FOR INPLACE LOOP DETECTORS D4-1 AND D4-2) PER DETAILS INCLUDED ELSEWHERE IN THE PLANS. LOOP DETECTOR WIRES SHALL BE CROSS-LINKED POLY-ETYLENE (XLP) #12 AWG IN 3/4-INCH PVC. SEE SPECIAL PROVISIONS.

7) ANY DAMAGE TO INPLACE TRAFFIC SIGNAL FACILITIES (CONDUIT, CABLES, HANDHOLES, SIGNAL POLES, ETC.), DUE TO TRAFFIC SIGNAL REVISION WORK, SHALL BE REPAIRED BY CONTRACTOR TO SATISFACTION OF THE ENGINEER, AT NO EXPENSE TO THE COUNTY.

8) CONTRACTOR SHALL MAINTAIN OPERATION OF THE SIGNAL SYSTEM AT ALL TIMES, EXCEPT AS OTHERWISE APPROVED BY ENGINEER.

9) ALL NEW VEHICULAR SIGNAL HEADS SHALL HAVE BACKGROUND SHIELDS FURNISHED & INSTALLED BY CONTRACTOR. ALL INPLACE VEHICULAR SIGNAL HEADS BEING REUSED AS PART OF REVISE SIGNAL SYSTEM "F" HAVE BACKGROUND SHIELDS (REUSE AND MAINTAIN INPLACE).

10) SEE SPECIAL PROVISIONS & DETAILS REGARDING SIGNS TO BE FURNISHED AND INSTALLED BY CONTRACTOR (TO BE MEASURED AND PAID FOR SEPARATELY FROM THE "REVISE SIGNAL SYSTEM F" PAY ITEM).

11) F & I = NEW, FURNISH AND INSTALL.
S & I = INPLACE, SALVAGE AND INSTALL.

12) (**) DENOTES ITEMS TO BE FURNISHED AND INSTALLED BY CONTRACTOR UNDER ITEM NO. 2565 (TRAFFIC CONTROL INTERCONNECT). SEE STATEMENT OF ESTIMATED QUANTITIES AND SPECIAL PROVISIONS.

13) ALL NEW VEHICULAR SIGNAL HOUSINGS, BACKGROUND SHIELDS AND VISORS SHALL BE FABRICATED USING BLACK POLYCARBONATE MATERIALS. SEE SPECIAL PROVISIONS.

**(A)**

INPLACE (MAINTAIN INPLACE)
- CONTROLLER CABINET FOUNDATION
- 2-3" RSC STUB OUTS FROM CONTROLLER CABINET TO EAST (BOTH ENDS THREADED AND CAPPED-FOR FUTURE USE)
- EXTENDED INTO HH 12:
- METERED SIGNAL SERVICE
- 2" RSC
- 3-1/C 6
- CONTROLLER CABINET TO HH 1:
- 4" RSC
- 4-12/C 12
- 5-3/C 12
- 3-3/C 20
- 10-2/C 14

F & I
- 7-2/C 14

INPLACE (MAINTAIN INPLACE)
- CONTROLLER CABINET TO HH 11:
- 4" RSC
- 5-12/C 12
- 4-3/C 12
- 3-3/C 20
- 6-2/C 14

INPLACE (REMOVE)
- (**) 1-6 PR 19

F & I
- 4-2/C 14
- 1-CAT 5E CABLE

F & I
- (**) 1.5" CONDUIT (EXTEND FROM NEW FO-VAULT 108, THROUGH 3" RSC STUB OUT AND INTO CONTROLLER CABINET
- (**) 1-12 SM FO (TO 140TH)
- (**) 1-12 SM FO (TO 157TH)

INPLACE (SALVAGE)
- CONTROLLER AND CABINET

INSTALL (FURNISHED BY COUNTY)
- CONTROLLER AND CABINET

**(B)**

INPLACE (MAINTAIN INPLACE)
- SERVICE CABINET FOUNDATION
- COUNTY-STYLE BBU SERVICE CABINET WITH BATTERIES, INVERTER, STROBE
- EXTENDED TO SOP TRANSFORMER:
- 2" RSC
- 3-1/C 2
- EXTENDED INTO HH 12:
- METERED SIGNAL SERVICE
- 2" RSC
- 3-1/C 6
- UNMETERED STREET LIGHT SERVICE
- 2-3/C 12 (LUM)

F & I
- 2-3/C 16 (LUM)

INPLACE (MAINTAIN INPLACE)
- HH 11 TO HH 12:
- 2" RSC
- 2-3/C 12 (LUM)

F & I
- 2-3/C 16 (LUM)

**(C)**

INPLACE (MAINTAIN INPLACE)
- WOOD POLE (SOP)
- 2" RSC RISER AND WEATHERHEAD
- 3-1/C 2
- EXTENDED TO SERVICE CABINET:
- 2" RSC
- 3-1/C 2

**(1)**

INPLACE (MAINTAIN INPLACE)
- PA100 POLE FOUNDATION
- TYPE PA100-A-45
- 2-ONE WAY SIGNALS-OVERHEAD AT 11', 23' (6-3, 6-2)
- TYPE 30A-POLE MOUNTED 90 DEG
- TYPE 10B-POLE MOUNTED 180 DEG
- ONE WAY EVP DETECTOR AND LIGHT AT 6' (Ø6,1)
- ONE WAY EVP DETECTOR-POLE MOUNTED 90 DEG (Ø2,5)
- EXTENDED INTO HH 11:
- 3" RSC
- 3-12/C 12
- 2-3/C 12
- 2-3/C 20
- 1-3/C 12 (LUM)

INPLACE (REMOVE)
- D40-9 DAVIT AND LUMINAIRE
- ONE WAY SIGNAL AND MOUNT-OVERHEAD AT 0' (OLD 1-1)
- 2-PEDESTRIAN PUSH BUTTONS AND SIGNS (R10-4b)
- R6-1 (ONE WAY) SIGN PANEL-POLE MOUNTED 180 DEG
- STREET NAME SIGN PANEL-OVERHEAD

F & I
- TYPE X6-300 CAM 350 LUMINAIRE EXTENSION (DAVIT AT 0 DEG)
- LUMINAIRE-LED
- 1-ONE WAY SIGNAL AND ANGLE MOUNT-OVERHEAD AT 0' (NEW 1-1)
- 1-APS PB, SIGN (LT ARROW) AND APS MAST ARM POLE ADAPTOR (PB4-1)
- PLUG HOLES ON MAST ARM POLE WHERE PUSH BUTTONS/SIGNS USED TO BE (AT 180/270 DEG)
- R10-X12 SIGN PANEL-ADJACENT TO 1-1
- R6-1R (ONE WAY) SIGN-POLE MOUNTED 180 DEG
- STREET NAME SIGN PANEL-OVERHEAD (P21)
- 1-2/C 14
- 1-CAT 5E CABLE (SPARE, COIL 40' IN BASE)

**(2)**

INPLACE (MAINTAIN INPLACE)
- PA85 POLE FOUNDATION
- TYPE PA85-A MAST ARM POLE
- TWO-WAY TWO-CHANNEL EVP DETECTOR-POLE MOUNTED 180 DEG (Ø4 & Ø6,1 EVP)
- EXTENDED INTO HH 3:
- 3" RSC
- 2-12/C 12
- 2-3/C 12
- 2-3/C 20

INPLACE (REMOVE)
- ONE WAY SIGNAL-POLE MOUNTED 90 DEG (OLD 5-2)
- TYPE 10B BRACKETING-POLE MOUNTED 90 DEG
- 1-PEDESTRIAN PUSH BUTTON AND SIGN (R10-4b)
- R9-3 (NO PED XING) SIGN-FACING POLE 3

INPLACE (S & I)
- 1-SET CD PED INDICATIONS (HOUSING, VISOR, LENS) AT 90 DEG (P6-1)

F & I
- TYPE 10B BRACKETING-POLE MOUNTED 90 DEG (FOR 5-2, P6-1)
- 1-ONE WAY SIGNAL-POLE MOUNTED 90 DEG (NEW 5-2)
- 1-APS PB, SIGN (LT ARROW) AND APS MAST ARM POLE ADAPTOR (PB6-1)
- PLUG HOLES ON MAST ARM POLE WHERE PUSH BUTTON/SIGN USED TO BE (AT 270 DEG)
- R9-3 (NO PED XING) SIGN-FACING POLE 3
- 1-2/C 14
- 1-3/C 16 (SPARE)

**(3)**

INPLACE (MAINTAIN INPLACE)
- PA100 POLE FOUNDATION
- TYPE PA100-A-45-D40-9 (DAVIT AT 350 DEG)
- LUMINAIRE-LED
- 2-ONE WAY SIGNALS-OVERHEAD AT 11', 23' (2-3, 2-2)
- 2-TYPE 10A-POLE MOUNTED 90/270 DEG
- ONE WAY EVP DETECTOR AND LIGHT AT 6' (Ø2,5)
- EXTENDED INTO HH 7:
- 3" RSC
- 2-12/C 12
- 3-3/C 12
- 1-3/C 20
- 1-3/C 12 (LUM)

INPLACE (REMOVE)
- ONE WAY SIGNAL AND MOUNT-OVERHEAD AT 0' (OLD 5-1)
- R9-3 (NO PED XING) SIGN-FACING POLE 2
- R6-1 (ONE WAY) SIGN PANEL-POLE MOUNTED 0 DEG
- STREET NAME SIGN PANEL-OVERHEAD

F & I
- 1-ONE WAY SIGNAL AND ANGLE MOUNT-OVERHEAD AT 0' (NEW 5-1)
- R6-1L (ONE WAY) SIGN-POLE MOUNTED 0 DEG
- R9-3 (NO PED XING) SIGN-FACING POLE 2
- R10-X12 SIGN PANEL-ADJACENT TO 5-1
- STREET NAME SIGN PANEL-OVERHEAD (P22)

**(4)**

INPLACE (MAINTAIN INPLACE)
- PA85 POLE FOUNDATION
- TYPE PA85-A-20
- ONE WAY SIGNAL-OVERHEAD AT 0' (4-2)
- 1-TYPE 10B-POLE MOUNTED 180 DEG (4-1, P4-2)
- ONE WAY EVP DETECTOR AND LIGHT AT 6' (Ø4)
- EXTENDED INTO HH 8:
- 3" RSC
- 2-12/C 12
- 2-3/C 12
- 1-3/C 20

INPLACE (REMOVE)
- ONE WAY SIGNAL-POLE MOUNTED 90 DEG (OLD 1-2)
- TYPE 10A BRACKETING-POLE MOUNTED 90 DEG
- 1-PEDESTRIAN PUSH BUTTON AND SIGN (R10-4b)
- STREET NAME SIGN PANEL-OVERHEAD

F & I
- TYPE D30-9 LUMINAIRE EXTENSION (DAVIT AT 350 DEG)
- LUMINAIRE-LED
- TYPE 10A BRACKETING-POLE MOUNTED 90 DEG (FOR 1-2)
- 1-ONE WAY SIGNAL-POLE MOUNTED 90 DEG (NEW 1-2)
- 1-APS PB, SIGN (LT ARROW) AND APS MAST ARM POLE ADAPTOR (PB4-2)
- PLUG HOLES ON MAST ARM POLE WHERE PUSH BUTTON/SIGN USED TO BE (AT 180 DEG)
- STREET NAME SIGN PANEL-OVERHEAD (P23)
- 1-2/C 14
- 1-3/C 16 (LUM)

| DESIGN TEAM | NO. | BY | DATE | REVISIONS |
|---|---|---|---|---|
| DRAWN BY: MRB | | | | |
| DESIGNER: MRB | | | | |
| 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.

Certified By: Licensed Professional Engineer — Printed Name: JOHN M. GRAY — Lic. No. 22457 — Date: 09/23/2025

SEH

ANOKA COUNTY, MN
CSAH 9
SAP 002-609-023
CITY OF ANDOVER SAP 198-020-042, CITY PROJECT 25-13
CITY OF ANOKA SAP 103-020-020

REVISE SIGNAL SYSTEM "F"
POLE & CABINET NOTES
CSAH 9 (ROUND LAKE BOULEVARD) AT 143RD AVENUE

122
133

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## CONTROLLER AND CABINET

### ② (F & I) HH 1 / HH 2 / HH 3 / HH 4 / HH 5 / HH 6 / HH 7

FUTURE LUMINAIRE 63 ▲ — (**) 5-2 P6-1
5 — TO EVP HUB — Ø4 EVP DETECTOR
6
FUTURE EVP LIGHT 7 — 9 TO EVP HUB — Ø6,1 EVP DETECTOR
8 — 10
PB6-1 TO PB 53 ▲
HH 2: 3-4, 3, 4 — D4-1, D4-2
HH 3: 11-23, 54▲- 56▲
HH 1: 3-4, 1, 2, 51▲, 52▲ — D4-3 (F & I), D4-4 (F & I), D4-5 (F & I), D4-6 (F & I)
5-23, 53▲- 56▲, 63▲
1-22, 50▲- 56▲
23, 63▲ — TO HH 11
PB6-2 TO PB 50 ▲
GROUND 70 ▲
HH 4: 11-23, 54▲- 56▲; 11-12, 55▲- 56▲; 54▲ — D6-3 (F & I)
13-23
HH 5: 11-12, 55▲- 56▲
COIL & STORE INPLACE CABLES 11-12 (2-2/C 14) IN HH 5
F & I HH 5A: 55▲- 56▲; 55▲, 56▲ — D6-1 (F & I), D6-2 (F & I)
HH 6: 13, 14, 15, 16 — D1-1 (F & I), D1-2 (F & I), D6-4 (F & I) (**), D6-5 (F & I) (**)
13-23
17-23
HH 7

### ③

LUMINAIRE ② 23
(**) 2-3, 2-1, 4-3 — 17, 18
(**) 5-1, 2-2
FOR FUTURE USE 19, 21 — Ø2,5 EVP LIGHT
FOR FUTURE USE 20, 22 — TO EVP HUB — Ø2,5 EVP DETECTOR

### (F & I) FO VAULT 108

INTERCONNECT TO 140TH LANE 117▲
INTERCONNECT TO 157TH AVE 118▲
117▲- 118▲

### CONTROLLER CABINET

| | | |
|---|---|---|
| 1 | D4-3 | |
| 2 | D4-4 | |
| 3 | D4-1 | |
| 4 | D4-2 | |
| 5 | RLTA 5-2, YLTA 5-2, GLTA 5-2, NEU 5-2, (**) FYLA 5-2, SPR, SPR, NEU P6-1, WLK P6-1, DWK P6-1, SPR, EQG | |
| 6 | SPR, SPR, SPR, NEU, SPR, SPR, SPR, NEU, SPR, SPR, SPR, EQG | |
| 7 | (**) SPR, (**) NEU, (**) SPR | |
| 8 | FUTURE EVP LIGHT | |
| 9 | Ø4 EVP DETECTOR | |
| 10 | Ø6,1 EVP DETECTOR | |
| 11 | (**) SPR | |
| 12 | (**) SPR | |
| 13 | D1-1 | |
| 14 | D1-2 | |
| 15 | (**) D6-4 | |
| 16 | (**) D6-5 | |
| 17 | RED 2-3, YEL 2-3, GRN 2-3, NEU 2-3, 2-1, RED 2-1, YEL 2-1, GRN 2-1, (**) NEU 4-3, (**) RED 4-3, (**) YEL 4-3, (**) GRN 4-3, EQG | |
| 18 | RED 2-2, YEL 2-2, GRN 2-2, NEU 2-2, (**) RLA 5-1, (**) YLA 5-1, (**) GLA 5-1, (**) NEU 5-1, (**) FYLA 5-1, SPR, SPR, EQG | |
| 19 | SPR, NEU, SPR | |
| 20 | SPR, NEU, SPR | |
| 21 | Ø2,5 EVP LIGHT, NEU, SPR | |
| 22 | Ø2,5 EVP DETECTOR | |
| 24 | RED 6-3, YEL 6-3, GRN 6-3, NEU 6-3, 6-1, RED 6-1, YEL 6-1, GRN 6-1, NEU P4-1, WLK P4-1, DWK P4-1, SPR, EQG | |
| 25 | RED 6-2, YEL 6-2, GRN 6-2, NEU 6-2, P6-2, WLK P6-2, DWK P6-2, (**) FYLA 1-1, NEU 1-1, RLTA 1-1, YLTA 1-1, GLTA 1-1, EQG | |
| 26 | SPR, SPR, SPR, NEU, SPR, SPR, SPR, NEU, SPR, SPR, SPR, EQG | |
| 27 | (**) SPR, (**) NEU, (**) SPR | |
| 28 | Ø6,1 EVP LIGHT, NEU, SPR | |
| 29 | Ø6,1 EVP DETECTOR | |
| 30 | Ø2,5 EVP DETECTOR | |
| 32 | D5-1 | |
| 33 | D5-2 | |
| 34 | (**) D2-3 | |
| 35 | (**) D2-4 | |
| 36 | RED 4-2, YEL 4-2, GRN 4-2, NEU 4-2, P4-2, WLK P4-2, DWK P4-2, SPR, NEU, SPR, SPR, SPR, EQG | |
| 37 | RED 4-1, YEL 4-1, GRN 4-1, NEU 4-1, RLTA 1-2, YLTA 1-2, GLTA 1-2, NEU 1-2, (**) FYLA 1-2, SPR, SPR, EQG | |
| 38 | (**) SPR, (**) NEU, (**) SPR | |
| 39 | Ø4 EVP LIGHT, NEU, SPR | |
| 40 | Ø4 EVP DETECTOR | |
| 41 | (**) SPR | |
| 42 | (**) SPR | |
| 43 | SIGNAL SERVICE | |
| 50 | (**) PB6-2, (**) NEU | |
| 51 | (**) D4-5 | |
| 52 | (**) D4-6 | |
| 53 | (**) PB6-1, (**) NEU | |
| 54 | (**) D6-3 | |
| 55 | (**) D6-1 | |
| 56 | (**) D6-2 | |
| 57 | (**) PB4-1, (**) NEU | |
| 58 | (**) VIDEO, (**) DETECTOR, (**) (PTZ) | |
| 59 | (**) PB4-2, (**) NEU | |
| 60 | (**) D2-1 | |
| 61 | (**) D2-2 | |
| 117 | 12 SM FO CABLE TO 140TH LANE | |
| 118 | 12 SM FO CABLE TO 157TH AVE | |

### ① HH 11 / HH 10 / HH 12

LUMINAIRE ① 31
(**) 1-1 P6-2 — 6-2
6-3, 6-1 P4-1 — 25, 24, 26, 27
Ø6,1 EVP LIGHT 28
Ø6,1 EVP DETECTOR — TO EVP HUB 29 — 57 ▲ PB4-1 TO PB
Ø2,5 EVP DETECTOR — TO EVP HUB 30 — 58 ▲ PTZ CABLE
24-30, 32-42, 57▲- 61▲
HH 11: 23, 31, 62▲- 63▲
23, 63▲ — TO HH 1
32-42, 59▲- 62▲
HH 10: 32, 33, 34, 35 — D5-1 (F & I), D5-2 (F & I), D2-3 (F & I), D2-4 (F & I)
36-42, 59▲- 62▲

### SERVICE CABINET

HH 12: 43; 23, 31, 43, 62▲- 63▲
23 LUMINAIRE ②
31 LUMINAIRE ①
43 SIGNAL SERVICE
63 ▲ FUTURE LUMINAIRE
62 ▲ LUMINAIRE ③
44 SIGNALS NEUTRAL LIGHTING
S.O.P. 44 — SERVICE BY (CONNEXUS)

### ④

LUMINAIRE ③ 62 ▲
4-2 P4-2 — 1-2, 4-1
37, 36, 39
Ø4 EVP LIGHT
TO EVP HUB 38 — 40 Ø4 EVP DETECTOR
PB4-2 TO PB 59 ▲
F & I HH 9A: 60▲, 61▲ — D2-1 (F & I), D2-2 (F & I)
60▲- 61▲
HH 9
41-42, 60▲- 61▲
HH 8
36-42, 59▲- 62▲
COIL & STORE INPLACE CABLES 41-42 (2-2/C 14) IN HH 9 (OLD D2-1, D2-2)

### NOTES:

1) ALL CABLES AND CONDUCTORS ARE INPLACE & SHALL BE REUSED AS SHOWN, EXCEPT WHERE DENOTED BY ▲ ( ▲ = NEW CABLES AND CONDUCTORS TO BE FURNISHED AND INSTALLED BY CONTRACTOR AS PART OF REVISE SIGNAL SYSTEM "F" WORK).
2) ● DENOTES NEW OR REVISED TERMINATIONS ON INPLACE OR NEW CABLES.
3) ** DENOTES REVISED TERMINATIONS/LABELING ON INPLACE CABLES & CONDUCTORS IN POLE BASES, HANDHOLES, AND IN CONTROLLER CABINET.
4) (F & I) DENOTES NEW HANDHOLES AND LOOP DETECTORS TO BE FURNISHED AND INSTALLED BY CONTRACTOR AS PART OF THIS PROJECT.

| DESIGN TEAM | NO. | BY | DATE | REVISIONS |
|---|---|---|---|---|
| DRAWN BY: MRB | | | | |
| DESIGNER: MRB | | | | |
| 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.
Certified By: Licensed Professional Engineer — Printed Name: JOHN M. GRAY — Lic. No. 22457 — Date: 09/23/2025

SEH

ANOKA COUNTY, MN
CSAH 9
SAP 002-609-023
CITY OF ANDOVER SAP 198-020-042, CITY PROJECT 25-13
CITY OF ANOKA SAP 103-020-020

REVISE SIGNAL SYSTEM "F"
FIELD WIRING DIAGRAM
CSAH 9 (ROUND LAKE BOULEVARD) AT 143RD AVENUE

123 / 133

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NOTES:

1) LOCATION OF POLES, CONTROLLER CABINET, SERVICE CABINET, LOOP DETECTORS AND HANDHOLES SHALL BE DETERMINED IN THE FIELD BY THE ENGINEER.
2) SEE SPECIAL PROVISIONS FOR COUNTY FURNISHED MATERIALS.
3) LOOP DETECTOR WIRES SHALL BE CROSS-LINKED POLYETHYLENE (XLP) IN 3/4" N.M.C. SEE SPECIAL PROVISIONS.
4) NEW HANDHOLES SHALL BE PVC HANDHOLES WITH METAL FRAMES AND COVERS.
5) EACH SIGNAL FACE SHALL HAVE BACKGROUND SHIELD.
6) EACH PEDESTRIAN INDICATION SHALL BE ONE SECTION HAND/WALKING PERSON INDICATION.
7) ALL VEHICLE SIGNAL INDICATIONS, AND ALL PEDESTRIAN SIGNAL INDICATIONS SHALL BE LED.
8) SEE SPECIAL PROVISIONS AND DETAILS REGARDING SIGNS TO BE FURNISHED & INSTALLED BY CONTRACTOR (INCIDENTAL TO ITEM NO. 2565.511 FOR THIS SIGNAL SYSTEM).
9) CONTRACTOR SHALL PROVIDE EXTENDED BRACKETS FOR EACH POLE MOUNTED VEHICLE AND PEDESTRIAN SIGNAL FACE.
10) A 3/4" HALF COUPLING, 3/4" PIPE NIPPLE AND CONDUIT OUTLET BODY SHALL BE FURNISHED AND INSTALLED 6 FEET FROM THE END OF EACH MAST ARM (FOR EVP).
11) CONTRACTOR SHALL COORDINATE ALL TRAFFIC SIGNAL INSTALLATION WORK WITH ROAD CONSTRUCTION TO BE COMPLETED BY OTHERS AS PART OF ENTIRE PROJECT.
12) (INTERCONNECT) DENOTES ITEMS TO BE FURNISHED & INSTALLED BY CONTRACTOR UNDER ITEM NO. 2565.601 (TRAFFIC CONTROL INTERCONNECTION). SEE ESTIMATED QUANTITIES & SPECIAL PROVISIONS.

| N.M.C. LOOP DETECTORS | | | |
|---|---|---|---|
| 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 |
| D4-1 | 6x6 | 120' | 3,8 |
| D4-2 | 6x6 | 120' | 3,8 |
| D4-3 | 2-6x6 | 5' | 7 |
| D4-4 | 2-6x6 | 5' | 7 |
| D5-1 | 6x6 | 40' | 1 |
| D5-2 | 6x6 | 10' | 1 |
| D6-1 | 6x6 | 300' | 1 |
| D6-2 | 6x6 | 300' | 1 |
| D1 | 6x6 | 50' | 11 |
| D2 | 6x6 | 50' | 11 |
| D3 | 6x6 | 50' | 11 |
| D4 | 6x6 | 50' | 11 |

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

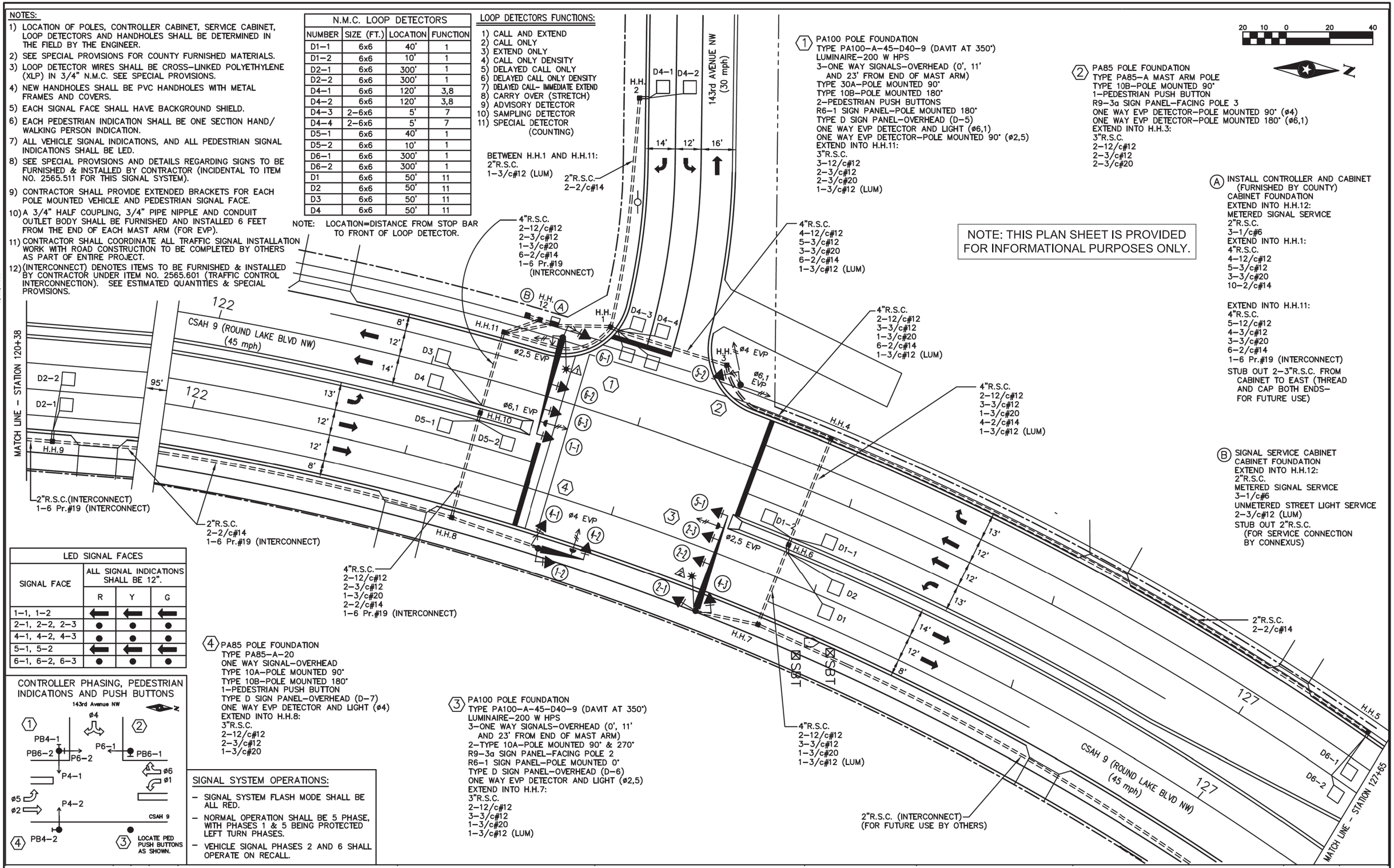
LOOP DETECTORS FUNCTIONS:

1) CALL AND EXTEND
2) CALL ONLY
3) EXTEND ONLY
4) CALL ONLY DENSITY
5) DELAYED CALL ONLY
6) DELAYED CALL ONLY DENSITY
7) DELAYED CALL- IMMEDIATE EXTEND
8) CARRY OVER (STRETCH)
9) ADVISORY DETECTOR
10) SAMPLING DETECTOR
11) SPECIAL DETECTOR (COUNTING)

BETWEEN H.H.1 AND H.H.11:
2"R.S.C.
1-3/c#12 (LUM)

2"R.S.C.
2-2/c#14

4"R.S.C.
2-12/c#12
2-3/c#12
1-3/c#20
6-2/c#14
1-6 Pr.#19
(INTERCONNECT)




| LED SIGNAL FACES | | | |
|---|---|---|---|
| SIGNAL FACE | ALL SIGNAL INDICATIONS SHALL BE 12". | | |
| | 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 | ● | ● | ● |

CONTROLLER PHASING, PEDESTRIAN INDICATIONS AND PUSH BUTTONS




SIGNAL SYSTEM OPERATIONS:

- SIGNAL SYSTEM FLASH MODE SHALL BE ALL RED.
- NORMAL OPERATION SHALL BE 5 PHASE, WITH PHASES 1 & 5 BEING PROTECTED LEFT TURN PHASES.
- VEHICLE SIGNAL PHASES 2 AND 6 SHALL OPERATE ON RECALL.

(4) PA85 POLE FOUNDATION
TYPE PA85-A-20
ONE WAY SIGNAL-OVERHEAD
TYPE 10A-POLE MOUNTED 90°
TYPE 10B-POLE MOUNTED 180°
1-PEDESTRIAN PUSH BUTTON
TYPE D SIGN PANEL-OVERHEAD (D-7)
ONE WAY EVP DETECTOR AND LIGHT (ø4)
EXTEND INTO H.H.8:
3"R.S.C.
2-12/c#12
2-3/c#12
1-3/c#20

(3) PA100 POLE FOUNDATION
TYPE PA100-A-45-D40-9 (DAVIT AT 350°)
LUMINAIRE-200 W HPS
3-ONE WAY SIGNALS-OVERHEAD (0', 11' AND 23' FROM END OF MAST ARM)
2-TYPE 10A-POLE MOUNTED 90° & 270°
R9-3a SIGN PANEL-FACING POLE 2
R6-1 SIGN PANEL-POLE MOUNTED 0°
TYPE D SIGN PANEL-OVERHEAD (D-6)
ONE WAY EVP DETECTOR AND LIGHT (ø2,5)
EXTEND INTO H.H.7:
3"R.S.C.
2-12/c#12
3-3/c#12
1-3/c#20
1-3/c#12 (LUM)

(1) PA100 POLE FOUNDATION
TYPE PA100-A-45-D40-9 (DAVIT AT 350°)
LUMINAIRE-200 W HPS
3-ONE WAY SIGNALS-OVERHEAD (0', 11' AND 23' FROM END OF MAST ARM)
TYPE 30A-POLE MOUNTED 90°
TYPE 10B-POLE MOUNTED 180°
2-PEDESTRIAN PUSH BUTTONS
R6-1 SIGN PANEL-POLE MOUNTED 180°
TYPE D SIGN PANEL-OVERHEAD (D-5)
ONE WAY EVP DETECTOR AND LIGHT (ø6,1)
ONE WAY EVP DETECTOR-POLE MOUNTED 90° (ø2,5)
EXTEND INTO H.H.11:
3"R.S.C.
3-12/c#12
2-3/c#12
2-3/c#20
1-3/c#12 (LUM)

4"R.S.C.
4-12/c#12
5-3/c#12
3-3/c#20
6-2/c#14
1-3/c#12 (LUM)

4"R.S.C.
2-12/c#12
3-3/c#12
1-3/c#20
6-2/c#14
1-3/c#12 (LUM)

4"R.S.C.
2-12/c#12
3-3/c#12
1-3/c#20
4-2/c#14
1-3/c#12 (LUM)

4"R.S.C.
2-12/c#12
3-3/c#12
1-3/c#20
1-3/c#12 (LUM)

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

(2) PA85 POLE FOUNDATION
TYPE PA85-A MAST ARM POLE
TYPE 10B-POLE MOUNTED 90°
1-PEDESTRIAN PUSH BUTTON
R9-3a SIGN PANEL-FACING POLE 3
ONE WAY EVP DETECTOR-POLE MOUNTED 90° (ø4)
ONE WAY EVP DETECTOR-POLE MOUNTED 180° (ø6,1)
EXTEND INTO H.H.3:
3"R.S.C.
2-12/c#12
2-3/c#12
2-3/c#20

(A) INSTALL CONTROLLER AND CABINET (FURNISHED BY COUNTY)
CABINET FOUNDATION
EXTEND INTO H.H.12:
METERED SIGNAL SERVICE
2"R.S.C.
3-1/c#6
EXTEND INTO H.H.1:
4"R.S.C.
4-12/c#12
5-3/c#12
3-3/c#20
10-2/c#14

EXTEND INTO H.H.11:
4"R.S.C.
5-12/c#12
4-3/c#12
3-3/c#20
6-2/c#14
1-6 Pr.#19 (INTERCONNECT)
STUB OUT 2-3"R.S.C. FROM CABINET TO EAST (THREAD AND CAP BOTH ENDS-FOR FUTURE USE)

(B) SIGNAL SERVICE CABINET
CABINET FOUNDATION
EXTEND INTO H.H.12:
2"R.S.C.
METERED SIGNAL SERVICE
3-1/c#6
UNMETERED STREET LIGHT SERVICE
2-3/c#12 (LUM)
STUB OUT 2"R.S.C.
(FOR SERVICE CONNECTION BY CONNEXUS)

| DESIGN TEAM | NO. | BY | DATE | REVISIONS |
|---|---|---|---|---|
| DRAWN BY: MRB | | | | |
| DESIGNER: MRB | | | | |
| CHECKED BY: JMG | | | | |

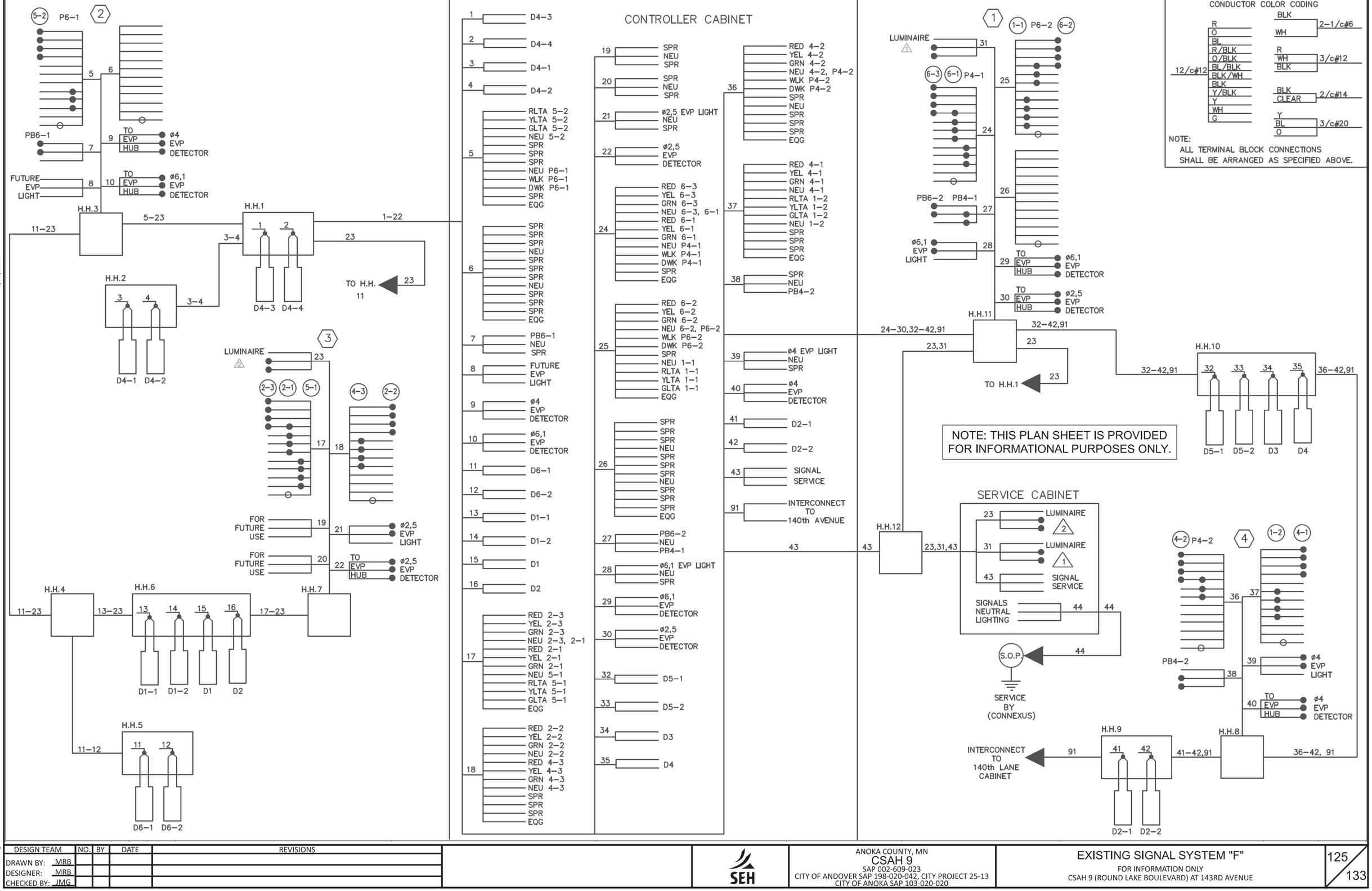
SEH

ANOKA COUNTY, MN
CSAH 9
SAP 002-609-023
CITY OF ANDOVER SAP 198-020-042, CITY PROJECT 25-13
CITY OF ANOKA SAP 103-020-020

EXISTING SIGNAL SYSTEM "F"
FOR INFORMATION ONLY
CSAH 9 (ROUND LAKE BOULEVARD) AT 143RD AVENUE

124
133

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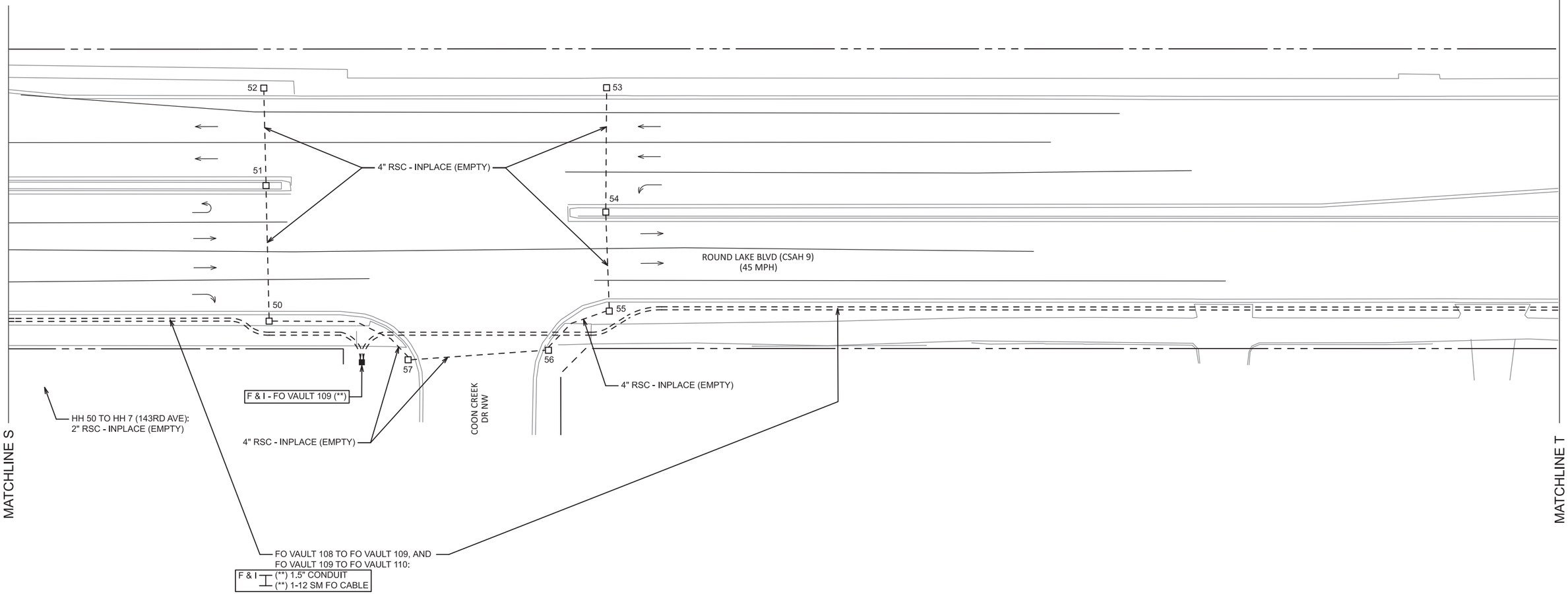

CONTROLLER CABINET
CONDUCTOR COLOR CODING
R
O
BL
R/BLK
O/BLK
BL/BLK
BLK/WH
BLK
Y/BLK
Y
WH
G
12/c#12
BLK
WH
2-1/c#6
R
WH
BLK
3/c#12
BLK
CLEAR
2/c#14
Y
BL
O
3/c#20
NOTE:
ALL TERMINAL BLOCK CONNECTIONS
SHALL BE ARRANGED AS SPECIFIED ABOVE.
NOTE: THIS PLAN SHEET IS PROVIDED FOR INFORMATIONAL PURPOSES ONLY.
SERVICE CABINET
LUMINAIRE
LUMINAIRE
SIGNAL SERVICE
SIGNALS NEUTRAL LIGHTING
S.O.P.
SERVICE BY (CONNEXUS)
INTERCONNECT TO 140th LANE CABINET
INTERCONNECT TO 140th AVENUE
TO H.H.1
TO H.H. 11
H.H.1
H.H.2
H.H.3
H.H.4
H.H.5
H.H.6
H.H.7
H.H.8
H.H.9
H.H.10
H.H.11
H.H.12
PB6-1
PB6-2
PB4-1
PB4-2
FUTURE EVP LIGHT
TO EVP HUB
ø4 EVP DETECTOR
ø6,1 EVP DETECTOR
ø2,5 EVP DETECTOR
ø2,5 EVP LIGHT
ø4 EVP LIGHT
ø6,1 EVP LIGHT
FOR FUTURE USE
SPR
NEU
RED 6-3
YEL 6-3
GRN 6-3
NEU 6-3, 6-1
RED 6-1
YEL 6-1
GRN 6-1
NEU P4-1
WLK P4-1
DWK P4-1
EQG
RED 6-2
YEL 6-2
GRN 6-2
NEU 6-2, P6-2
WLK P6-2
DWK P6-2
NEU 1-1
RLTA 1-1
YLTA 1-1
GLTA 1-1
RED 4-2
YEL 4-2
GRN 4-2
NEU 4-2, P4-2
WLK P4-2
DWK P4-2
RED 4-1
YEL 4-1
GRN 4-1
NEU 4-1
RLTA 1-2
YLTA 1-2
GLTA 1-2
NEU 1-2
PB4-2
SIGNAL SERVICE
D4-1
D4-2
D4-3
D4-4
D6-1
D6-2
D1-1
D1-2
D1
D2
D2-1
D2-2
D3
D4
D5-1
D5-2
RLTA 5-2
YLTA 5-2
GLTA 5-2
NEU 5-2
NEU P6-1
WLK P6-1
DWK P6-1
RLTA 5-1
YLTA 5-1
GLTA 5-1
RED 2-3
YEL 2-3
GRN 2-3
NEU 2-3, 2-1
RED 2-1
YEL 2-1
GRN 2-1
NEU 5-1
RED 2-2
YEL 2-2
GRN 2-2
NEU 2-2
RED 4-3
YEL 4-3
GRN 4-3
NEU 4-3
11-23
5-23
1-22
3-4
23
11-12
13-23
17-23
24-30,32-42,91
23,31
32-42,91
23,31,43
41-42,91
36-42, 91
91
43
44

INTERCONNECT NOTES:

1) IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO UTILIZE THE "ONE CALL EXCAVATION NOTICE SYSTEM" (TELEPHONE NUMBER 651-454-0002) AS REQUIRED BY MINNESOTA STATUTE 2160.
2) DISTANCE OFF SHOULDER OR CURB FOR NEW INTERCONNECT CONDUIT SHALL BE 1-2 FEET UNLESS OTHERWISE APPROVED BY ENGINEER.
3) (**) DENOTES ITEMS TO BE FURNISHED AND INSTALLED BY THE CONTRACTOR UNDER ITEM NO. 2565 (TRAFFIC CONTROL INTERCONNECT). SEE STATEMENT OF ESTIMATED QUANTITIES AND SPECIAL PROVISIONS.
4) HANDHOLES 50-57 AND 4" RSC BETWEEN THESE HANDHOLES SHOWN ON THE PLAN ARE INPLACE AND SHALL BE MAINTAINED INPLACE.
5) (F & I) DENOTES ITEMS TO BE FURNISHED AND INSTALLED BY CONTRACTOR AS PART OF THIS PROJECT.
6) ALL NEW INTERCONNECT CONDUIT INSTALLATIONS (UNDER ROADWAYS, SIDEWALKS, AND IN BOULEVARD AREAS) SHALL BE DIRECTIONALLY BORED UNLESS OTHERWISE APPROVED BY THE ENGINEER IN THE FIELD (DURING CONSTRUCTION) FOR A CONDUIT SECTION TO BE TRENCHED-IN DUE TO UTILITY OR OTHER CONFLICTS THAT WILL NOT ALLOW FOR A CONDUIT SECTION TO BE BORED. TURF ESTABLISHMENT (INCLUDING GRADING AND RESTORATION) SHALL ALSO BE PROVIDED FOR ALL CONDUIT INSTALLATION AREAS IN THE BOULEVARDS (INCIDENTAL).

40

SCALE IN FEET




| DESIGN TEAM | NO. | BY | DATE | REVISIONS |
|---|---|---|---|---|
| DRAWN BY: MRB | | | | |
| DESIGNER: MRB | | | | |
| 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.

Certified By: Licensed Professional Engineer — Printed Name: JOHN M. GRAY — Lic. No. 22457 — Date: 09/23/2025

SEH

ANOKA COUNTY, MN
CSAH 9
SAP 002-609-023
CITY OF ANDOVER SAP 198-020-042, CITY PROJECT 25-13
CITY OF ANOKA SAP 103-020-020

TRAFFIC SIGNAL INTERCONNECT
INTERCONNECT
CSAH 9 (ROUND LAKE BOULEVARD) BETWEEN 143RD AVENUE AND 157TH AVE

126
133

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INTERCONNECT NOTES:

1) IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO UTILIZE THE "ONE CALL EXCAVATION NOTICE SYSTEM" (TELEPHONE NUMBER 651-454-0002) AS REQUIRED BY MINNESOTA STATUTE 2160.
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3) (**) DENOTES ITEMS TO BE FURNISHED AND INSTALLED BY THE CONTRACTOR UNDER ITEM NO. 2565 (TRAFFIC CONTROL INTERCONNECT). SEE STATEMENT OF ESTIMATED QUANTITIES AND SPECIAL PROVISIONS.
4) THE 2" RSC BETWEEN SOUTH COON CREEK DRIVE AND JONQUIL STREET (ALONG WITH SEVERAL PVC HANDHOLES) ARE INPLACE AND SHALL BE MAINTAINED INPLACE.
5) (F & I) DENOTES ITEMS TO BE FURNISHED AND INSTALLED BY CONTRACTOR AS PART OF THIS PROJECT.
6) ALL NEW INTERCONNECT CONDUIT INSTALLATIONS (UNDER ROADWAYS, SIDEWALKS, AND IN BOULEVARD AREAS) SHALL BE DIRECTIONALLY BORED UNLESS OTHERWISE APPROVED BY THE ENGINEER IN THE FIELD (DURING CONSTRUCTION) FOR A CONDUIT SECTION TO BE TRENCHED-IN DUE TO UTILITY OR OTHER CONFLICTS THAT WILL NOT ALLOW FOR A CONDUIT SECTION TO BE BORED. TURF ESTABLISHMENT (INCLUDING GRADING AND RESTORATION) SHALL ALSO BE PROVIDED FOR ALL CONDUIT INSTALLATION AREAS IN THE BOULEVARDS (INCIDENTAL).

MATCHLINE T

MATCHLINE U

40

SCALE IN FEET

ROUND LAKE BLVD (CSAH 9)
(55 MPH)

FO VAULT 109 TO FO VAULT 110:
F & I — (**) 1.5" CONDUIT
(**) 1-12 SM FO CABLE

HH 55 (SOUTH COON CREEK DRIVE)
TO HH 114 (JONQUIL STREET):
2" RSC - INPLACE (EMPTY)

MATCHLINE U

MATCHLINE V

40

SCALE IN FEET

ROUND LAKE BLVD (CSAH 9)
(55 MPH)

HH 114
(INP.)

HH 115
(INP.)

JONQUIL
ST NW

HH 55 (SOUTH COON CREEK DRIVE) TO HH 114;
HH 114 TO HH 115, AND HH 115
TO HH 60 (FUTURE ANDOVER BLVD):
2" RSC - INPLACE (EMPTY)

F & I - FO VAULT 110 (**)

FO VAULT 109 TO FO VAULT 110, AND
FO VAULT 110 TO FO VAULT 111:
F & I — (**) 1.5" CONDUIT
(**) 1-12 SM FO CABLE

| DESIGN TEAM | NO. | BY | DATE | REVISIONS |
|---|---|---|---|---|
| DRAWN BY: MRB | | | | |
| DESIGNER: MRB | | | | |
| CHECKED BY: JMG | | | | |

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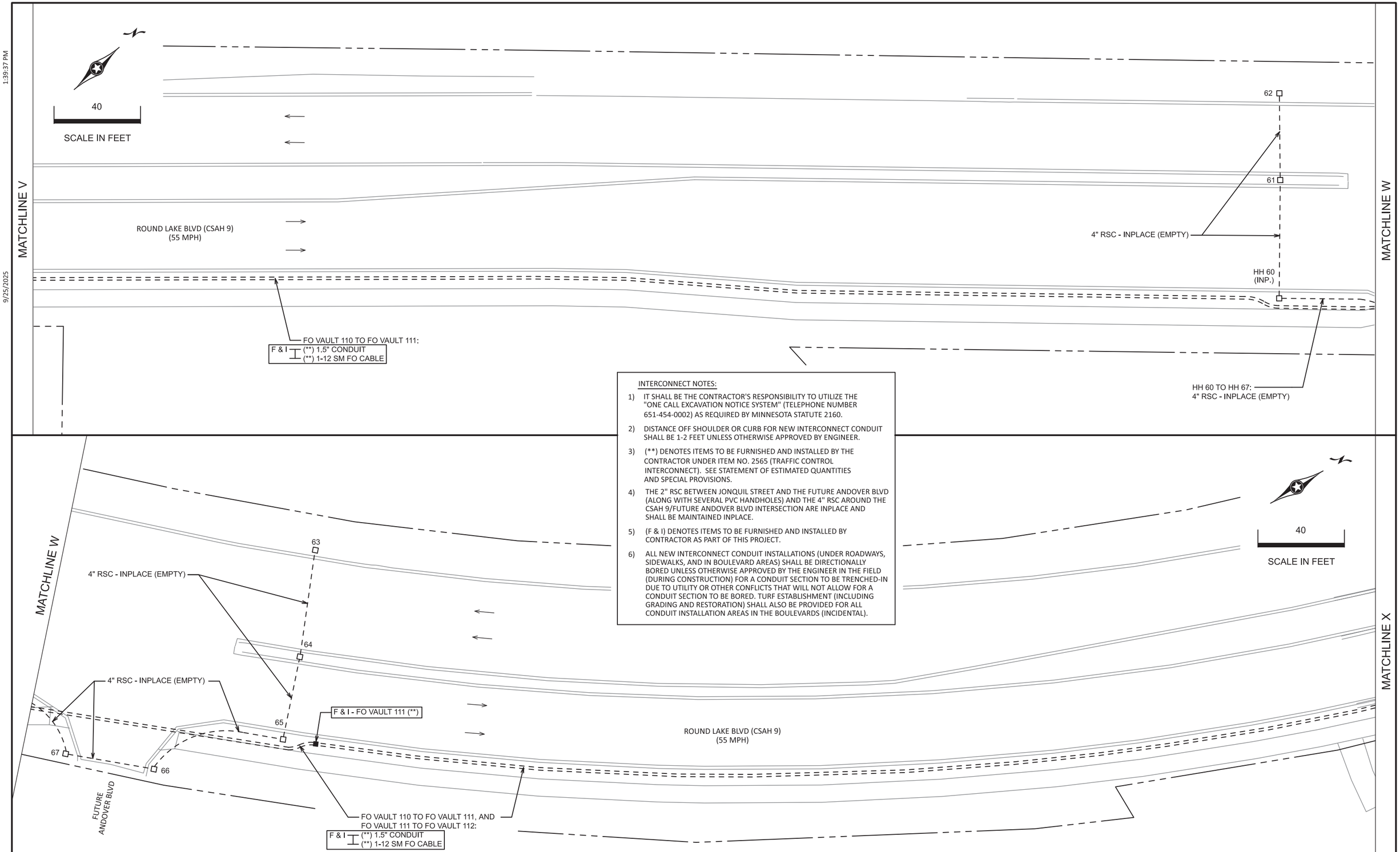
SEH

ANOKA COUNTY, MN
CSAH 9
SAP 002-609-023
CITY OF ANDOVER SAP 198-020-042, CITY PROJECT 25-13
CITY OF ANOKA SAP 103-020-020

TRAFFIC SIGNAL INTERCONNECT
INTERCONNECT
CSAH 9 (ROUND LAKE BOULEVARD) BETWEEN 143RD AVENUE AND 157TH AVE

127
133

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INTERCONNECT NOTES:

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2) DISTANCE OFF SHOULDER OR CURB FOR NEW INTERCONNECT CONDUIT SHALL BE 1-2 FEET UNLESS OTHERWISE APPROVED BY ENGINEER.
3) (**) DENOTES ITEMS TO BE FURNISHED AND INSTALLED BY THE CONTRACTOR UNDER ITEM NO. 2565 (TRAFFIC CONTROL INTERCONNECT). SEE STATEMENT OF ESTIMATED QUANTITIES AND SPECIAL PROVISIONS.
4) THE 2" RSC BETWEEN JONQUIL STREET AND THE FUTURE ANDOVER BLVD (ALONG WITH SEVERAL PVC HANDHOLES) AND THE 4" RSC AROUND THE CSAH 9/FUTURE ANDOVER BLVD INTERSECTION ARE INPLACE AND SHALL BE MAINTAINED INPLACE.
5) (F & I) DENOTES ITEMS TO BE FURNISHED AND INSTALLED BY CONTRACTOR AS PART OF THIS PROJECT.
6) ALL NEW INTERCONNECT CONDUIT INSTALLATIONS (UNDER ROADWAYS, SIDEWALKS, AND IN BOULEVARD AREAS) SHALL BE DIRECTIONALLY BORED UNLESS OTHERWISE APPROVED BY THE ENGINEER IN THE FIELD (DURING CONSTRUCTION) FOR A CONDUIT SECTION TO BE TRENCHED-IN DUE TO UTILITY OR OTHER CONFLICTS THAT WILL NOT ALLOW FOR A CONDUIT SECTION TO BE BORED. TURF ESTABLISHMENT (INCLUDING GRADING AND RESTORATION) SHALL ALSO BE PROVIDED FOR ALL CONDUIT INSTALLATION AREAS IN THE BOULEVARDS (INCIDENTAL).

| DESIGN TEAM | NO. | BY | DATE | REVISIONS |
|---|---|---|---|---|
| DRAWN BY: MRB | | | | |
| DESIGNER: MRB | | | | |
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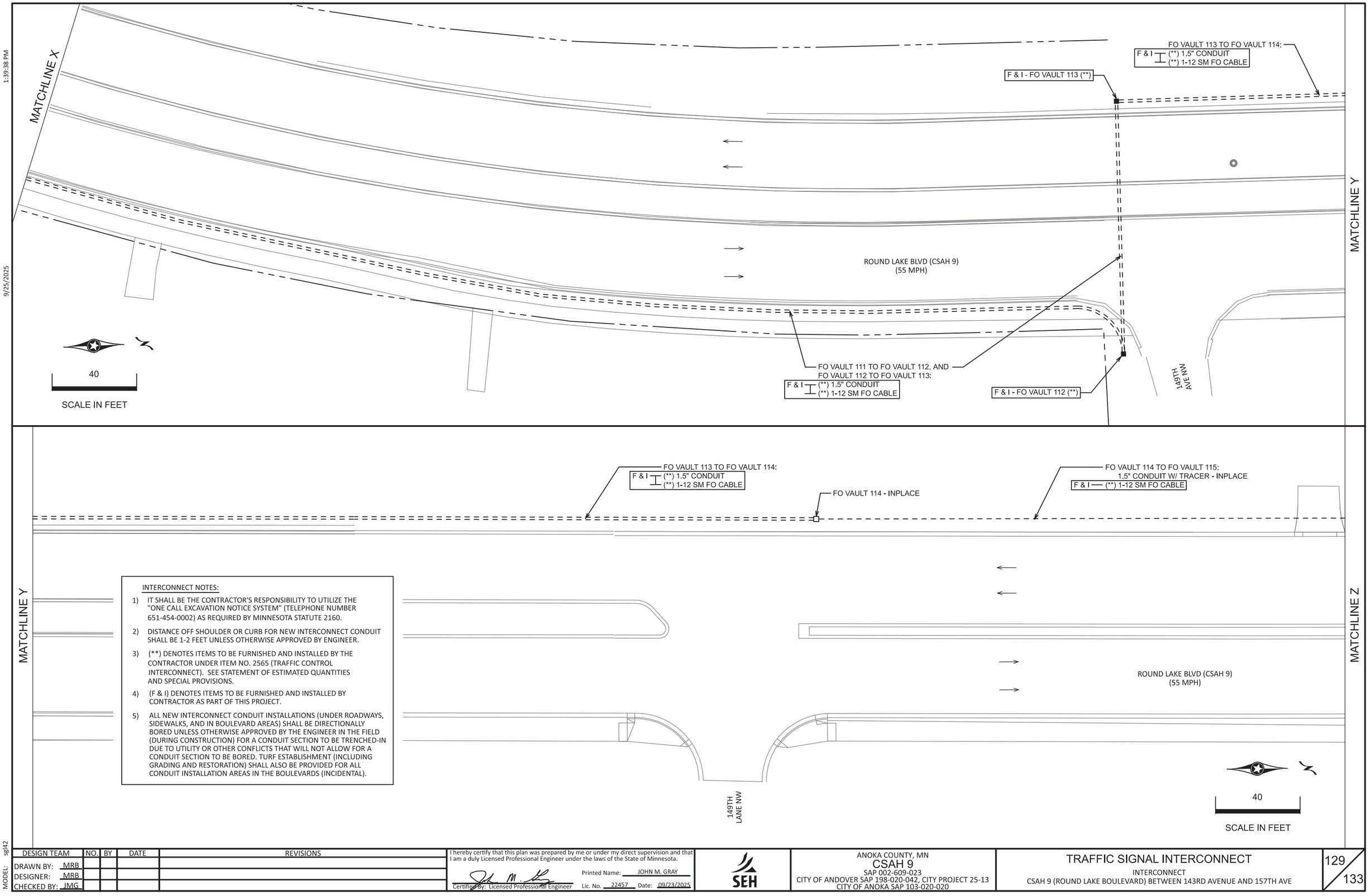
SEH

ANOKA COUNTY, MN
CSAH 9
SAP 002-609-023
CITY OF ANDOVER SAP 198-020-042, CITY PROJECT 25-13
CITY OF ANOKA SAP 103-020-020

TRAFFIC SIGNAL INTERCONNECT
INTERCONNECT
CSAH 9 (ROUND LAKE BOULEVARD) BETWEEN 143RD AVENUE AND 157TH AVE



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INTERCONNECT NOTES:

1) IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO UTILIZE THE "ONE CALL EXCAVATION NOTICE SYSTEM" (TELEPHONE NUMBER 651-454-0002) AS REQUIRED BY MINNESOTA STATUTE 2160.
2) DISTANCE OFF SHOULDER OR CURB FOR NEW INTERCONNECT CONDUIT SHALL BE 1-2 FEET UNLESS OTHERWISE APPROVED BY ENGINEER.
3) (**) DENOTES ITEMS TO BE FURNISHED AND INSTALLED BY THE CONTRACTOR UNDER ITEM NO. 2565 (TRAFFIC CONTROL INTERCONNECT). SEE STATEMENT OF ESTIMATED QUANTITIES AND SPECIAL PROVISIONS.
4) (F & I) DENOTES ITEMS TO BE FURNISHED AND INSTALLED BY CONTRACTOR AS PART OF THIS PROJECT.
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| DESIGN TEAM | NO. | BY | DATE | REVISIONS |
|---|---|---|---|---|
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| DESIGNER: MRB | | | | |
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SEH

ANOKA COUNTY, MN
CSAH 9
SAP 002-609-023
CITY OF ANDOVER SAP 198-020-042, CITY PROJECT 25-13
CITY OF ANOKA SAP 103-020-020

TRAFFIC SIGNAL INTERCONNECT
INTERCONNECT
CSAH 9 (ROUND LAKE BOULEVARD) BETWEEN 143RD AVENUE AND 157TH AVE

129/133

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9/25/2025

MATCHLINE Z

40
SCALE IN FEET

FO VAULT 114 TO FO VAULT 115:
1.5" CONDUIT W/ TRACER - INPLACE
F & I — (**) 1-12 SM FO CABLE

ROUND LAKE BLVD (CSAH 9)
(55 MPH)

150TH
LN NW

MATCHLINE AA

MATCHLINE AA

FO VAULT 114 TO FO VAULT 115, AND
FO VAULT 115 TO FO VAULT 116:
1.5" CONDUIT W/ TRACER - INPLACE
F & I — (**) 1-12 SM FO CABLE

152ND
LN NW

FO VAULT 115 - INPLACE

ROUND LAKE BLVD (CSAH 9)
(55 MPH)

MATCHLINE BB

INTERCONNECT NOTES:

1) IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO UTILIZE THE "ONE CALL EXCAVATION NOTICE SYSTEM" (TELEPHONE NUMBER 651-454-0002) AS REQUIRED BY MINNESOTA STATUTE 2160.
2) DISTANCE OFF SHOULDER OR CURB FOR NEW INTERCONNECT CONDUIT SHALL BE 1-2 FEET UNLESS OTHERWISE APPROVED BY ENGINEER.
3) (**) DENOTES ITEMS TO BE FURNISHED AND INSTALLED BY THE CONTRACTOR UNDER ITEM NO. 2565 (TRAFFIC CONTROL INTERCONNECT). SEE STATEMENT OF ESTIMATED QUANTITIES AND SPECIAL PROVISIONS.
4) (F & I) DENOTES ITEMS TO BE FURNISHED AND INSTALLED BY CONTRACTOR AS PART OF THIS PROJECT.

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| DESIGN TEAM | NO. | BY | DATE | REVISIONS |
|---|---|---|---|---|
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SEH

ANOKA COUNTY, MN
CSAH 9
SAP 002-609-023
CITY OF ANDOVER SAP 198-020-042, CITY PROJECT 25-13
CITY OF ANOKA SAP 103-020-020

TRAFFIC SIGNAL INTERCONNECT
INTERCONNECT
CSAH 9 (ROUND LAKE BOULEVARD) BETWEEN 143RD AVENUE AND 157TH AVE

MATCHLINE BB

40

SCALE IN FEET

153RD AVE NW

FO VAULT 115 TO FO VAULT 116, AND
FO VAULT 116 TO FO VAULT 117:
1.5" CONDUIT W/ TRACER - INPLACE
F & I — (**) 1-12 SM FO CABLE

FO VAULT 116 - INPLACE

ROUND LAKE BLVD (CSAH 9)
(55 MPH)

153RD AVE NW

MATCHLINE CC

INTERCONNECT NOTES:

1) IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO UTILIZE THE "ONE CALL EXCAVATION NOTICE SYSTEM" (TELEPHONE NUMBER 651-454-0002) AS REQUIRED BY MINNESOTA STATUTE 2160.
2) DISTANCE OFF SHOULDER OR CURB FOR NEW INTERCONNECT CONDUIT SHALL BE 1-2 FEET UNLESS OTHERWISE APPROVED BY ENGINEER.
3) (**) DENOTES ITEMS TO BE FURNISHED AND INSTALLED BY THE CONTRACTOR UNDER ITEM NO. 2565 (TRAFFIC CONTROL INTERCONNECT). SEE STATEMENT OF ESTIMATED QUANTITIES AND SPECIAL PROVISIONS.
4) (F & I) DENOTES ITEMS TO BE FURNISHED AND INSTALLED BY CONTRACTOR AS PART OF THIS PROJECT.

MATCHLINE CC

FO VAULT 116 TO FO VAULT 117:
1.5" CONDUIT W/ TRACER - INPLACE
F & I — (**) 1-12 SM FO CABLE

ROUND LAKE BLVD (CSAH 9)
(55 MPH)

MATCHLINE DD

40

SCALE IN FEET

| DESIGN TEAM | NO. | BY | DATE | REVISIONS |
|---|---|---|---|---|
| DRAWN BY: MRB | | | | |
| DESIGNER: MRB | | | | |
| 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.

Certified By: Licensed Professional Engineer — Printed Name: JOHN M. GRAY — Lic. No. 22457 — Date: 09/23/2025

SEH

ANOKA COUNTY, MN
CSAH 9
SAP 002-609-023
CITY OF ANDOVER SAP 198-020-042, CITY PROJECT 25-13
CITY OF ANOKA SAP 103-020-020

TRAFFIC SIGNAL INTERCONNECT
INTERCONNECT
CSAH 9 (ROUND LAKE BOULEVARD) BETWEEN 143RD AVENUE AND 157TH AVE

131/133

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9/25/2025

40

SCALE IN FEET

MATCHLINE DD

FO VAULT 116 TO FO VAULT 117, AND
FO VAULT 117 TO FO VAULT 118:
1.5" CONDUIT W/ TRACER - INPLACE
F & I — (**) 1-12 SM FO CABLE

FO VAULT 117 - INPLACE

154TH
LN NW

MATCHLINE EE

INTERCONNECT NOTES:

1) IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO UTILIZE THE "ONE CALL EXCAVATION NOTICE SYSTEM" (TELEPHONE NUMBER 651-454-0002) AS REQUIRED BY MINNESOTA STATUTE 2160.

2) DISTANCE OFF SHOULDER OR CURB FOR NEW INTERCONNECT CONDUIT SHALL BE 1-2 FEET UNLESS OTHERWISE APPROVED BY ENGINEER.

3) (**) DENOTES ITEMS TO BE FURNISHED AND INSTALLED BY THE CONTRACTOR UNDER ITEM NO. 2565 (TRAFFIC CONTROL INTERCONNECT). SEE STATEMENT OF ESTIMATED QUANTITIES AND SPECIAL PROVISIONS.

4) (F & I) DENOTES ITEMS TO BE FURNISHED AND INSTALLED BY CONTRACTOR AS PART OF THIS PROJECT.

FO VAULT 117 TO FO VAULT 118:
1.5" CONDUIT W/ TRACER - INPLACE
F & I — (**) 1-12 SM FO CABLE

156TH
AVE NW

MATCHLINE EE

ROUND LAKE BLVD (CSAH 9)
(55 MPH)

MATCHLINE FF

40

SCALE IN FEET

| DESIGN TEAM | NO. | BY | DATE | REVISIONS |
|---|---|---|---|---|
| DRAWN BY: MRB | | | | |
| DESIGNER: MRB | | | | |
| CHECKED BY: JMG | | | | |

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Certified By: Licensed Professional Engineer

Printed Name: JOHN M. GRAY

Lic. No. 22457 Date: 09/23/2025

SEH

ANOKA COUNTY, MN
CSAH 9
SAP 002-609-023
CITY OF ANDOVER SAP 198-020-042, CITY PROJECT 25-13
CITY OF ANOKA SAP 103-020-020

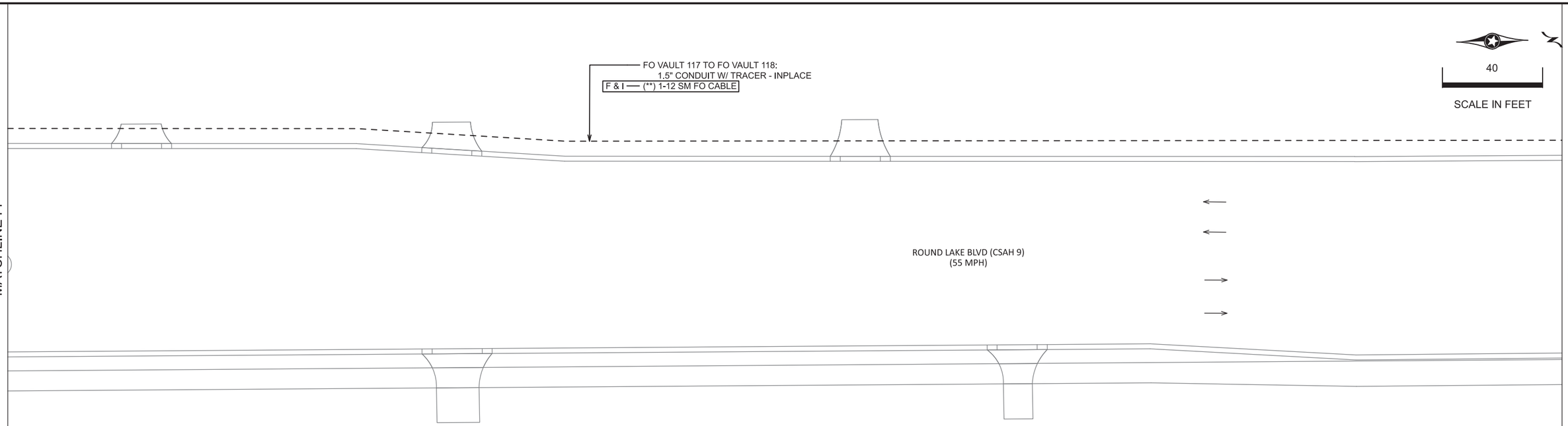
TRAFFIC SIGNAL INTERCONNECT
INTERCONNECT
CSAH 9 (ROUND LAKE BOULEVARD) BETWEEN 143RD AVENUE AND 157TH AVE

132
133

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9/25/2025

MATCHLINE FF

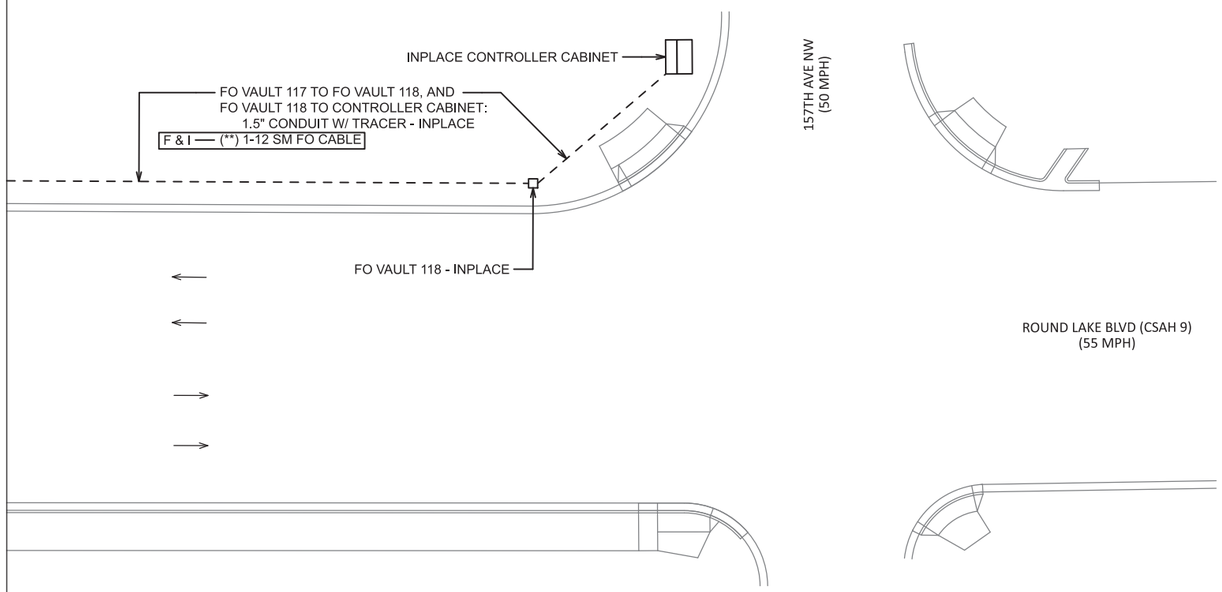



MATCHLINE GG

INTERCONNECT NOTES:

1) IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO UTILIZE THE "ONE CALL EXCAVATION NOTICE SYSTEM" (TELEPHONE NUMBER 651-454-0002) AS REQUIRED BY MINNESOTA STATUTE 2160.
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4) (F & I) DENOTES ITEMS TO BE FURNISHED AND INSTALLED BY CONTRACTOR AS PART OF THIS PROJECT.

MATCHLINE GG




| DESIGN TEAM | NO. | BY | DATE | REVISIONS |
|---|---|---|---|---|
| DRAWN BY: MRB | | | | |
| DESIGNER: MRB | | | | |
| CHECKED BY: JMG | | | | |

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Certified By: Licensed Professional Engineer — Printed Name: JOHN M. GRAY — Lic. No. 22457 — Date: 09/23/2025

SEH

ANOKA COUNTY, MN
CSAH 9
SAP 002-609-023
CITY OF ANDOVER SAP 198-020-042, CITY PROJECT 25-13
CITY OF ANOKA SAP 103-020-020

TRAFFIC SIGNAL INTERCONNECT
INTERCONNECT
CSAH 9 (ROUND LAKE BOULEVARD) BETWEEN 143RD AVENUE AND 157TH AVE

133
133

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