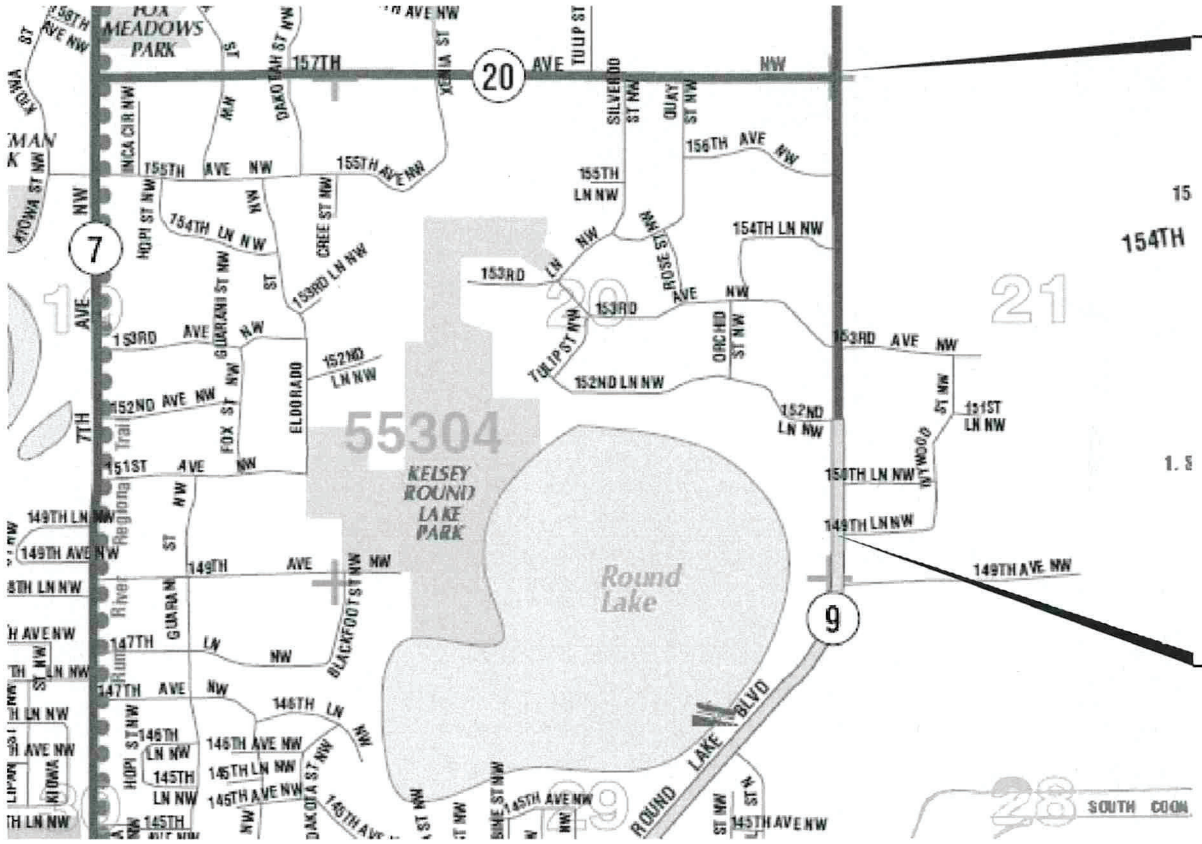
MINNESOTA DEPARTMENT OF TRANSPORTATION
ANOKA COUNTY

CONSTRUCTION PLAN FOR GRADING, BITUMINOUS SURFACING, CONCRETE MEDIAN, CURB AND GUTTER, DRAINAGE, SIGNAL WIRING, BITUMINOUS TRAIL & ADA IMPROVEMENTS.

LOCATED ON CSAH 9, ROUND LAKE BLVD BETWEEN 149TH LN AND 157TH AVE, CSAH 20 SOUTH

CSAH 9

GROSS LENGTH	4980.39	FEET	0.943	MILES
EXCEPTIONS	0.00	FEET	0.000	MILES
NET LENGTH	4980.39	FEET	0.943	MILES



END SAP 002-609-022
SAP 198-020-039
CSAH 9 LNB STA. 61+19.79

BEG SAP 002-609-022
SAP 198-020-039
CSAH 9 LNB STA. 11+39.40

The subsurface utility information in this plan is utility quality level "D". This utility quality level was determined according to the guidelines of CI/ASCE 38-02, entitled "Standard Guidelines for the Collection and depiction of Existing Subsurface Utility Data."

PLAN SYMBOLS

- COUNTY LINE
- TOWNSHIP OR RANGE LINE
- SECTION LINE
- QUARTER LINE
- SIXTEENTH LINE
- RIGHT OF WAY LINE
- SLOPE EASEMENT
- EXISTING RIGHT OF WAY
- PROPERTY LINE
- CORPORATE OR CITY LIMITS
- RETAINING WALL
- RAILROAD
- RAILROAD RIGHT OF WAY
- RIVER OR CREEK
- DRAINAGE DITCH
- CULVERT
- DROP INLET
- GUARD RAIL
- BARBED WIRE FENCE
- WOVEN WIRE FENCE
- CHAIN LINK FENCE
- WOOD FENCE
- STONE WALL OR FENCE
- HEDGE
- LOWLAND
- TIMBER, ORCHARD, BRUSH, NURSERY — TIMBER
- CATTLE GUARD — ROAD
- OVERPASS (Highway Over)
- UNDERPASS (Highway Under)
- BRIDGE
- BUILDING (One Story Frame) — 1-S-S
  - F-FRAME C-CONCRETE
  - S-STONE T-TILE
  - B-BRICK ST-STUCCO
- RAILROAD CROSSING BELL
- RAILROAD CROSSING GATE
- MANHOLE — M.H.
- CATCH BASIN — C.B.
- FIRE HYDRANT
- CAST IRON MONUMENT
- IRON PIN
- GRAVEL PIT — Ⓖ
- SAND PIT — Ⓢ
- BORROW PIT — Ⓑ
- ROCK QUARRY — Ⓠ

UTILITY SYMBOLS

- POWER POLE LINE
- TELEPHONE OR TELEGRAPH POLE LINE
- JOINT TELEPHONE & POWER
  - ON POWER POLES
  - ON TELEPHONE POLES
- ANCHOR
- STEEL TOWER — △
- STREET LIGHT
- PEDESTAL (Cable Terminal) — ⊠
- GAS MAIN
- WATERMAIN
- TELEPHONE CABLE IN CONDUIT — G
- ELECTRIC CABLE IN CONDUIT — P
- TELEPHONE MANHOLE — T
- ELECTRIC MANHOLE — P
- BURIED TELEPHONE CABLE — T-BUR
- BURIED ELECTRIC CABLE — P-BUR
- OVERHEAD UTILITY CABLE — OHU
- SEWER (Sanitary or Storm)
- SEWER MANHOLE

SCALES

PLAN	0'	100'
PROFILE HORIZONTAL	0'	100'
VERTICAL	0'	10'
X-SECTIONS HORIZONTAL	0'	10'
VERTICAL	0'	10'
INDEX MAP	0'	2000'

DESIGN DESIGNATION (CSAH 9)

ESAL 20	1,550,000	FUNCTIONAL CLASSIFICATION	A-MINOR EXPANDER
R VALUE	45	NO. OF TRAFFIC LANES 4	NO. OF PARKING LANES 0
ADT (2024)	12,090	DESIGN SPEED 55 MPH	
PROJ. ADT (2044)	13,299	STOPPING SIGHT DISTANCE BASED ON:	
TON DESIGN	10	HEIGHT OF EYE 3.5'	HEIGHT OF OBJECT 2.0'
		DESIGN SPEED NOT ACHIEVED AT :	
		STA. ____ TO STA. ____	MPH ____

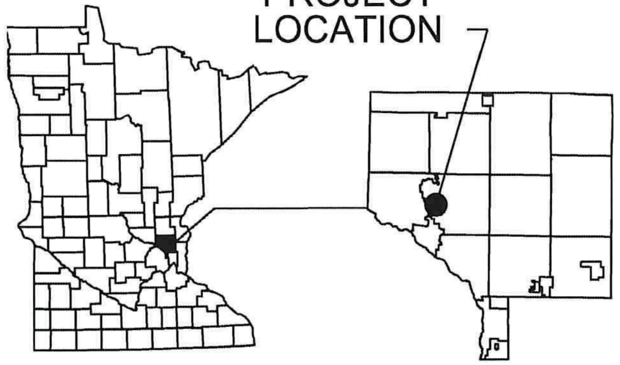
DESIGN DESIGNATION (BIKE PATH)

DESIGN SPEED MPH 20

BASED ON: 4.5 FT HEIGHT OF EYE 0.0 FT HEIGHT OF OBJECT

CITY OF ANDOVER
ANOKA COUNTY
MN/DOT TRANSPORTATION
DISTRICT - METRO
SECTION 27,28
TOWNSHIP 32 NORTH
RANGE 24 WEST

PROJECT LOCATION



GOVERNING SPECIFICATIONS

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

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

INDEX

THIS PLAN CONTAINS 167 SHEETS

Approved ____ 12.07, 20 23
ANOKA COUNTY ENGINEER

Approved ____ 12/7, 20 23
CITY OF ANDOVER ENGINEER

Lucas Lortie Digitally signed by Lucas Lortie Date: 2023.12.28 15:21:27 -06'00' DATE ____
DISTRICT STATE AID ENGINEER: REVIEWED FOR COMPLIANCE WITH STATE AID RULES/POLICY For

Lucas Lortie Digitally signed by Lucas Lortie Date: 2023.12.28 15:21:50 -06'00' DATE ____
STATE AID ENGINEER: APPROVED FOR STATE AID FUNDING For

NO	DATE	BY	CKD	APPR	REVISION

11/28/2023 11:20:05 AM

NAME: P:\002-609-022\Plan\002609022 TS.dgn

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

PRINT NAME: NICHOLAS J. DOBDA
SIGNATURE:
DATE: 11/22/23 LICENSE NO. 49046

DRAWN BY JCF DATE 10/27/23
DESIGN BY JCF DATE 10/27/23
CHECKED BY NJD DATE 11/02/23

ANOKA COUNTY
ANOKA COUNTY HIGHWAY DEPT.

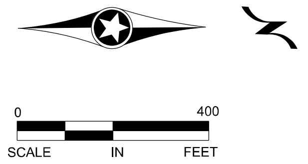
SAP 002-609-022
SAP 198-020-039

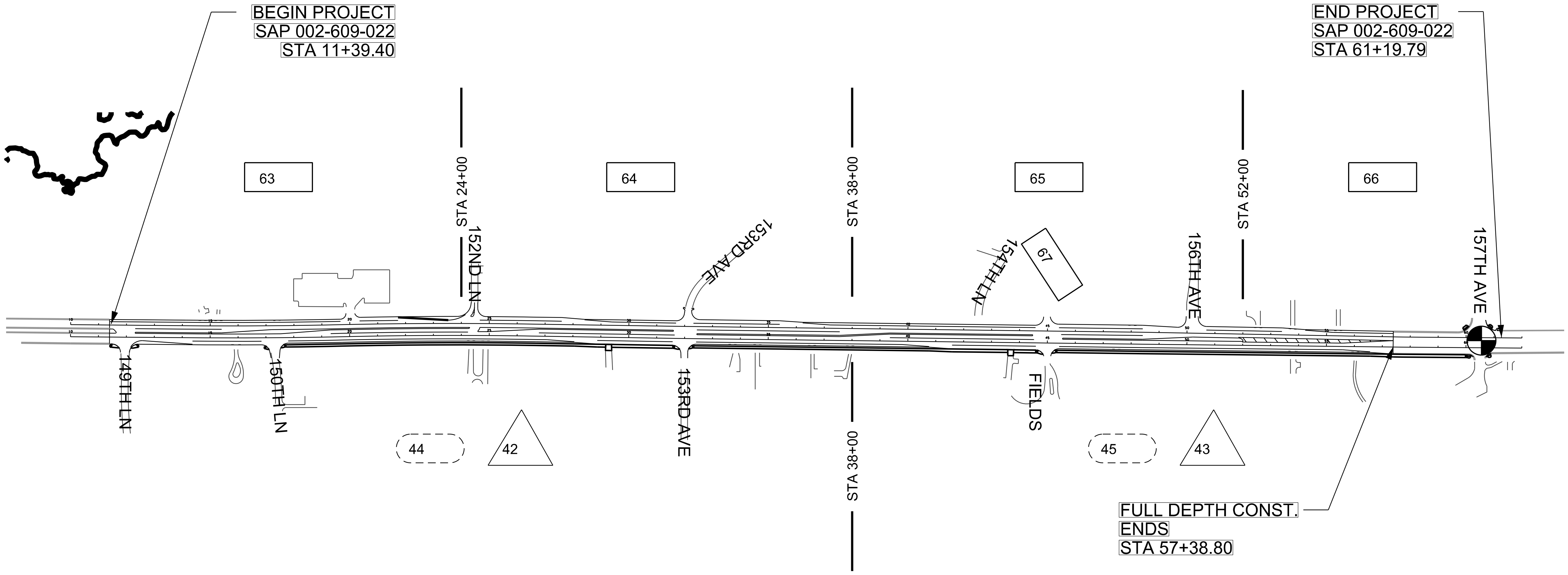
TITLE SHEET

Sheet 1 of 167 Sheets

LEGEND

⬭	44 - 45	REMOVAL PLAN
△	42 - 43	INPLACE TOPOGRAPHY AND UTILITIES
▭	63 - 67	CONSTRUCTION PLAN & PROFILE
◐		INPLACE SIGNAL SYSTEM





NO	DATE	BY	CKD	APPR	REVISION
1	8/09/21	JCF			ADDED CITY SAP NO. & BEG/END LABELS ON SUNWOOD DRIVE

NAME: P:\002-609-022\Plan\002609022 GL.dgn 10/25/2023 10:56:06 AM

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

PRINT NAME: NICHOLAS J DOBDA
SIGNATURE: NJ Dobda
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ANOKA COUNTY
HIGHWAY DEPT.

SAP 002-609-022
SAP 198-020-039

GENERAL LAYOUT

Sheet 2 of 167 Sheets

STATEMENT OF ESTIMATED QUANTITIES

TAB / NOTE	ITEM NO.	ITEM DESCRIPTION	UNIT	TOTAL PROJECT QUANTITIES ESTIMATED	ANOKA COUNTY SAP 002-609-022 ROADWAY QUANTITIES ESTIMATED	CITY OF ANDOVER SAP 198-020-039 ROADWAY QUANTITIES ESTIMATED	SAP 002-609-022 (80.7%) SAP 198-020-039 (19.3%) DRAINAGE QUANTITIES ESTIMATED
	2021.501	MOBILIZATION	LUMP SUM	1	0.75	0.05	0.20
	2031.502	FIELD OFFICE	EACH	1	0.75	0.05	0.20
A,1	2101.502	CLEARING	EACH	30	30		
A,1	2101.502	GRUBBING	EACH	30	30		
A,1	2101.505	CLEARING	ACRE	0.91	0.91		
A,1	2101.505	GRUBBING	ACRE	0.91	0.91		
O,2	2102.503	PAVEMENT MARKING REMOVAL	LIN FT	12108	12108		
M	2102.518	PAVEMENT MARKING REMOVAL	SQ FT	96	96		
C	2104.502	REMOVE CASTING	EACH	9	9		
C	2104.502	REMOVE DRAINAGE STRUCTURE	EACH	9	9		
B	2104.502	REMOVE BITUMINOUS FLUME	EACH	2	2		
L	2104.502	REMOVE SIGN TYPE C	EACH	47	47		
L	2104.502	REMOVE SIGN TYPE D	EACH	2	2		
L	2104.502	SALVAGE SIGN TYPE C	EACH	1	1		
L	2104.502	SALVAGE SIGN TYPE SPECIAL	EACH	7	7		
B,D	2104.503	SAWING CONCRETE PAVEMENT (FULL DEPTH)	LIN FT	65	65		
B,D	2104.503	SAWING BITUMINOUS PAVEMENT (FULL DEPTH)	LIN FT	1966	1966		
C,3	2104.503	REMOVE PIPE CULVERTS	LIN FT	278	278		
C	2104.503	REMOVE SEWER PIPE (STORM)	LIN FT	658	658		
B	2104.503	REMOVE CURB AND GUTTER	LIN FT	4264	4264		
O	2104.503	REMOVE UNDERGROUND WIRE (2-2/C#14)	LIN FT	749	749		
O	2104.503	REMOVE RIGID STEEL CONDUIT	LIN FT	443	443		
D	2104.504	REMOVE CONCRETE DRIVEWAY PAVEMENT	SQ YD	42	42		
D	2104.504	REMOVE BITUMINOUS DRIVEWAY PAVEMENT	SQ YD	1343	1343		
B	2104.504	REMOVE BITUMINOUS PAVEMENT	SQ YD	35876	35876		
B	2104.518	REMOVE CONCRETE MEDIAN	SQ FT	5682	5682		
CC,4	2106.507	EXCAVATION - COMMON	CU YD	15902	15902		
CC	2106.507	EXCAVATION - SUBGRADE	CU YD	14949	14949		
CC,4	2106.507	EXCAVATION - CHANNEL AND POND	CU YD	10656	10656		
CC	2106.507	SELECT GRANULAR EMBANKMENT (CV)	CU YD	16720	16720		
AA,CC,4	2106.507	COMMON EMBANKMENT (P)	CU YD	9135	9135		
E	2112.603	SHOULDER PREPARATION	LIN FT	4596	4596		
10	2123.510	DOZER	HOUR	20	20		
11	2130.523	WATER	M GAL	40	40		
E	2211.507	AGGREGATE BASE (CV) CLASS 5 (P)	CU YD	12519	12519		
D,E	2211.509	AGGREGATE BASE CLASS 5	TON	1571	241	1330	
B	2232.504	MILL BITUMINOUS SURFACE (2.0") JOINTS	SQ YD	156	156		
E	2357.506	BITUMINOUS MATERIAL FOR TACK COAT	GAL	4048	4048		
D,E	2360.509	TYPE SP 9.5 WEARING COURSE (2,B)	TON	645	97	548	
E	2360.509	TYPE SP 12.5 BIT MIXTURE FOR PATCHING	TON	11	11		
E	2360.509	TYPE SP 12.5 NON-WEAR COURSE MIX (3,B)	TON	7429	7429		
E	2360.509	TYPE SP 12.5 WEARING COURSE MIX (3,C)	TON	9310	9310		

NOTES:

[1] TREE CLEARING MUST BE COMPLETED PRIOR TO MARCH 31ST, 2024.

[2] INCLUDES ALL TYPES OF LINES AND WIDTHS

[3] LENGTH INCLUDES APRONS.

[4] INCLUDES EARTHWORK AND POND SUMMARIES.

[5] MEDIAN PAID FOR AS 4" CONCRETE WALK.

[6] FOLLOW ALL MNDOT LONGITUDINAL DROPOFF GUIDELINES AND REQUIREMENTS FOR BARRIER.

[7] ATTENUATOR TEST LEVEL 3 SHALL BE THE SAME CROSS SECTION AS CONCRETE BARRIER.

[8] THESE QUANTITIES HAVE BEEN PROVIDED AS A GUIDE BASED ON THE "CONSTRUCTION STAGING"-SHOWN IN PLAN. THE CONTRACTOR SHALL AFTER THE AWARD OF CONTRACT AND A MINIMUM OF 7-DAYS PRIOR TO THE PROJECT PRECON, SUBMIT A COMPLETE "TEMPORARY TRAFFIC CONTROL PLAN"-(CONSTRUCTION SIGNING, TEMPORARY PAVEMENT MARKINGS AND RELATED ITEMS) PRODUCED AND-SIGNED BY A LICENSED P.E. THAT SHALL INCLUDE LAYOUTS AND QUANTITIES FOR THE COUNTY TO-REVIEW AND APPROVE BEFORE ANY WORK SHALL TAKE PLACE.

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[12] THIS WORK CONSISTS OF PERFORMING INFILTRATION RATE TESTS, 1 - IN EACH INFILTRATION BASIN 100 & 200 DURING CONSTRUCTION OF THE BASINS AND 1 POST COMPLEATION OF INFILTRATION BASINS AND ANY RE-TESTING REQUIRED BY ENGINEER AND WATERSHEDS TO PASS INFILTRATION REQUIREMENTS. SEE SPEC 2506 AND CCWD ATTACHMENT IN THE PROPOSAL.
PAYMENT FOR TESTS IS LUMP SUM WHICH INCLUDES ALL TESTING OF BOTH PONDS 100 & 200.

[13] PIPE TIES SHALL BE INCIDENTAL. FIRST 3 JOINTS SHALL BE TIED AS DIRECTED BY ENGINEER.

[14] OVER-EXCAVATE 1.0' BELOW ALL CONTOURS OF POND 200 BELOW 888.50 INCLUDING POND BOTTOM AND SIDE SLOPES OF PONDS 300A & 300B BETWEEN 880.0 - 888.50 TO REMOVE SM SOILS. REPLACE AREA WITH 1.0' FILTER TOPSOIL BORROW,UNCOMPACTED. SEE POND GRADING SHEET 77 IN THIS PLAN FOR DETAILS AND NOTES.

[15] EMERGENCY TP DRAIN PIPE, HEADWALL AND GATE VALVE TO BE INSTALLED BETWEEN CONTOUR 881.0 AND SPECIAL STRUCTURE 309 IN POND 300B. GATE VALVE TO BE INSTALLED IN STRUCTURE 309. SEE POND GRADING SHEET 77 FOR DETAILS AND NOTES.

(P) PLAN QUANTITY.

1 OF 3

NO	DATE	BY	CKD	APPR	REVISION
1	1/16/2024	JF	ND		CHANGED TYPE 9.5 QTY TO MATCH TAB D&E

NAME: P:\002-609-022\Plan\002609022 SEQ.dgn 01/16/2024 2:08:40 PM

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PRINT NAME: NICHOLAS J DOBDA

SIGNATURE:

DATE: 1/17/24 LICENSE NO. 49046

DRAWN BY JCF DATE 10/27/23

DESIGN BY JCF DATE 10/27/23

CHECKED BY NJD DATE 11/02/23

ANOKA COUNTY
HIGHWAY DEPT.

SAP 002-609-022
SAP 198-020-039

STATEMENT OF ESTIMATED QUANTITIES

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TAB / NOTE	ITEM NO.	ITEM DESCRIPTION	UNIT	TOTAL PROJECT QUANTITIES ESTIMATED	ANOKA COUNTY SAP 002-609-022 ROADWAY QUANTITIES ESTIMATED	CITY OF ANDOVER SAP 198-020-039 ROADWAY QUANTITIES ESTIMATED	SAP 002-609-022 (80.7%) SAP 198-020-039 (19.3%) DRAINAGE QUANTITIES ESTIMATED
S,15	2411.502	CONCRETE HEADWALL	EACH	1	1		
J	2501.502	15" RC PIPE APRON	EACH	6			6
J,13	2501.502	18" RC PIPE APRON	EACH	3			3
J,13	2501.502	24" RC PIPE APRON	EACH	1			1
J,13	2501.502	27" RC PIPE APRON	EACH	1			1
J,13	2501.502	30" RC PIPE APRON	EACH	1			1
S,15	2502.503	6" TP PIPE DRAIN	LIN FT	28	28		
J	2503.503	12" RC PIPE SEWER CLASS V	LIN FT	82			82
J	2503.503	15" RC PIPE SEWER CLASS V	LIN FT	3671			3671
J	2503.503	18" RC PIPE SEWER CLASS III	LIN FT	1186			1186
J	2503.503	21" RC PIPE SEWER CLASS III	LIN FT	691			691
J	2503.503	24" RC PIPE SEWER CLASS III	LIN FT	836			836
J	2503.503	27" RC PIPE SEWER CLASS III	LIN FT	328			328
J	2503.503	30" RC PIPE SEWER CLASS III	LIN FT	48			48
J	2503.602	CONNECT TO EXISTING STORM SEWER	EACH	10			10
S,15	2504.602	GATE VALVE	EACH	1	1		
J	2506.502	CONST DRAINAGE STRUCTURE DESIGN SPEC 1	EACH	3			3
J	2506.502	CASTING ASSEMBLY	EACH	92			92
J	2506.503	CONST. DRAINAGE STRUCTURE DESIGN H	LIN FT	100.0			100.0
J	2506.503	CONST. DRAINAGE STRUCTURE DES 48-4020	LIN FT	221.6			221.6
J	2506.503	CONST. DRAINAGE STRUCTURE DES 54-4020	LIN FT	20.5			20.5
J	2506.503	CONST. DRAINAGE STRUCTURE DES 60-4020	LIN FT	9.0			9.0
J	2506.503	CONST. DRAINAGE STRUCTURE DES 72-4020	LIN FT	13.1			13.1
12	2506.601	INFILTRATION/FILTRATION SYSTEM (TESTING)	LS	1	1		
J	2506.602	CONNECT TO EXISTING STRUCTURE	EACH	1			1
J	2511.504	GEOTEXTILE FILTER TYPE 3	SQ YD	233	233		
J,H	2511.507	RANDOM RIPRAP CLASS II	CU YD	122	122		
G,5	2521.518	4" CONCRETE WALK	SQ FT	21512	21512		
G	2521.518	6" CONCRETE WALK (PEDESTRIAN RAMPS)	SQ FT	1971	693	1278	
G	2531.503	CONCRETE CURB & GUTTER DESIGN B418 (MOD)	LIN FT	7619	7619		
G	2531.503	CONCRETE CURB & GUTTER DESIGN B424	LIN FT	9520	4760	4760	
D	2531.504	6" CONCRETE DRIVEWAY PAVEMENT	SQ YD	101	101		
G	2531.602	CONCRETE MEDIAN NOSE-SPECIAL	EACH	9	9		
G	2531.604	CONCRETE DRAINAGE FLUME	SQ YD	15	15		
G	2531.618	TRUNCATED DOMES	SQ FT	368	118	250	
O,6,8	2533.503	PORTABLE PRECAST CONCRETE BARRIER DESIGN 8337	LIN FT	3787	3787		
D	2540.602	MAIL BOX SUPPORT	EACH	19	19		
D	2540.602	RELOCATE MAIL BOX SUPPORT	EACH	19	19		
I	2545.502	1.5" NON-METALLIC CONDUIT	LIN FT	4842	4842		
I	2550.602	PULL VAULT	EACH	5	5		

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(P) PLAN QUANTITY.

2 OF 3

NO	DATE	BY	CKD	APPR	REVISION
1	1/16/2024	JF	ND		MODIFIED CONCRETE DRAINAGE FLUME ITEM NUMBER

NAME: P:\002-609-022\Plan\002609022 SEQ.dgn 01/16/2024 2:08:47 PM

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PRINT NAME: NICHOLAS J DOBDA

SIGNATURE:

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CHECKED BY NJD DATE 11/02/23

ANOKA COUNTY

ANOKA COUNTY
HIGHWAY DEPT.

SAP 002-609-022
SAP 198-020-039

STATEMENT OF ESTIMATED QUANTITIES

Sheet 4 of 167 Sheets

STATEMENT OF ESTIMATED QUANTITIES

TAB / NOTE	ITEM NO.	ITEM DESCRIPTION	UNIT	TOTAL PROJECT QUANTITIES ESTIMATED	ANOKA COUNTY SAP 002-609-022 ROADWAY QUANTITIES ESTIMATED	CITY OF ANDOVER SAP 198-020-039 ROADWAY QUANTITIES ESTIMATED	SAP 002-609-022 (80.7%) SAP 198-020-039 (19.3%) DRAINAGE QUANTITIES ESTIMATED
	2563.601	TRAFFIC CONTROL SUPERVISOR	LUMP SUM	1	0.75	0.05	0.20
	2563.601	TRAFFIC CONTROL (STAGE 0)	LUMP SUM	1	0.75	0.05	0.20
	2563.601	TRAFFIC CONTROL (STAGE 1)	LUMP SUM	1	0.75	0.05	0.20
	2563.601	TRAFFIC CONTROL (STAGE 2)	LUMP SUM	1	0.75	0.05	0.20
	2563.601	TRAFFIC CONTROL (STAGE 3)	LUMP SUM	1	0.75	0.05	0.20
O,8	2563.602	RAISED PAVEMENT MARKER TEMPORARY	EACH	1048	1048		
O,8	2563.602	PORTABLE CHANGEABLE MESSAGE SIGN	EACH	2	2		
O,8	2563.602	PORTABLE BARRIER DELINEATOR	EACH	618	618		
	2563.610	POLICE OFFICER	HOUR	20	20		
O,6,7,8	2563.615	TEMPORARY IMPACT ATTENUATOR	ASSEMBLY	5	5		
L	2564.602	INSTALL SIGN TYPE SPECIAL	EACH	7	7		
N	2564.602	DELINEATOR / MARKER PANEL	EACH	21	21		
N	2564.618	SIGN TYPE C	SQ FT	508.57	508.57		
N	2564.618	SIGN TYPE D	SQ FT	18.00	18.00		
I	2565.616	REVISE SIGNAL SYSTEM	SYS	1	1		
	2573.501	EROSION CONTROL SUPERVISOR	LUMP SUM	1	1		
H	2573.502	STORM DRAIN INLET PROTECTION	EACH	94	94		
H	2573.502	CULVERT END CONTROLS	EACH	6	6		
H	2573.503	SILT FENCE, TYPE MS	LIN FT	5978	5978		
H	2573.503	FILTER BERM TYPE 3	LIN FT	148	148		
AA,CC,14	2574.507	FILTER TOPSOIL BORROW	CU YD	1779	1779		
H	2574.508	FERTILIZER TYPE 3	POUND	1204	1204		
H	2574.508	FERTILIZER TYPE 4	POUND	129	129		
H	2574.509	LIME	TON	13.74	13.74		
H	2575.504	ROLLED EROSION PREVENTION CAT 10	SQ YD	1607	1607		
H	2575.504	ROLLED EROSION PREVENTION CAT 25	SQ YD	3890	3890		
H	2575.505	SEEDING	ACRE	4.576	4.576		
H	2575.508	SEED MIXTURE 25-121	POUND	210.0	210.0		
H	2575.508	SEED MIXTURE 33-261	POUND	11.6	11.6		
H	2575.508	SEED MIXTURE 35-241	POUND	29.3	29.3		
H	2575.508	HYDRAULIC REINFORCED FIBER MATRIX	POUND	17850	17850		
H	2575.523	RAPID STABILIZATION METHOD 3	MGAL	27.46	27.46		
E	2580.503	INTERIM PAVEMENT MARKINGS	LIN FT	1195	1195		
O,8	2581.503	REMOVABLE PREFORMED PAVEMENT MESSAGE TAPE	LIN FT	10473	10473		
O,8	2581.603	REMOVABLE PREFORMED PLASTIC MASK (BLACK)	LIN FT	400	400		
O,8	2582.503	4" SOLID LINE PAINT	LIN FT	15160	15160		
O,8	2582.503	4" DOUBLE SOLID LINE PAINT	LIN FT	7580	7580		
M	2582.503	24" SOLID LINE PAINT	LIN FT	60	60		
M	2582.503	4" SOLID LINE MULTI COMP	LIN FT	21709	21709		
M	2582.503	4" BROKEN LINE MULTI COMP	LIN FT	1900	1900		
M	2582.503	4" DBLE SOLID LINE MULTI COMP	LIN FT	1386	1386		
M, 9	2582.503	24" SOLID LINE PREFORMED THERMO	LIN FT	393	393		
M	2582.518	CROSSWALK PAINT (3'X8')	SQ FT	576	576		

NOTES:

[1] TREE CLEARING MUST BE COMPLETED PRIOR TO MARCH 31ST, 2024.

[2] INCLUDES ALL TYPES OF LINES AND WIDTHS

[3] LENGTH INCLUDES APRONS.

[4] INCLUDES EARTHWORK AND POND SUMMARIES.

[5] MEDIAN PAID FOR AS 4" CONCRETE WALK.

[6] FOLLOW ALL MNDOT LONGITUDINAL DROPOFF GUIDELINES AND REQUIREMENTS FOR BARRIER.

[7] ATTENUATOR TEST LEVEL 3 SHALL BE THE SAME CROSS SECTION AS CONCRETE BARRIER.

[8] THESE QUANTITIES HAVE BEEN PROVIDED AS A GUIDE BASED ON THE "CONSTRUCTION STAGING"- SHOWN IN PLAN. THE CONTRACTOR SHALL AFTER THE AWARD OF CONTRACT AND A MINIMUM OF 7- DAYS PRIOR TO THE PROJECT PRECON, SUBMIT A COMPLETE "TEMPORARY TRAFFIC CONTROL PLAN"- (CONSTRUCTION SIGNING, TEMPORARY PAVEMENT MARKINGS AND RELATED ITEMS) PRODUCED AND- SIGNED BY A LICENSED P.E. THAT SHALL INCLUDE LAYOUTS AND QUANTITIES FOR THE COUNTY TO- REVIEW AND APPROVE BEFORE ANY WORK SHALL TAKE PLACE.

[9] GORE STRIPING 52+00 - END OF FULL DEPTH CONSTRUCTION.

[10] SHALL BE USED FOR MISCELLANEOUS GRADING ACTIVITIES AS DIRECTED BY ENGINEER.

[11] WATER TO BE USED ONLY FOR DUST CONTROL AS DIRECTED BY ENGINEER. WATER USED FOR- COMPACTION AND TURF ESTABLISHMENT SHALL BE INCIDENTAL.

[12] THIS WORK CONSISTS OF PERFORMING INFILTRATION RATE TESTS, 1 - IN EACH INFILTRATION BASIN 100 & 200 DURING CONSTRUCTION OF THE BASINS AND 1 POST COMPLEATION OF INFILTRATION BASINS AND ANY RE-TESTING REQUIRED BY ENGINEER AND WATERSHEDS TO PASS INFILTRATION REQUIREMENTS. SEE SPEC 2506 AND CCWD ATTACHMENT IN THE PROPOSAL. PAYMENT FOR TESTS IS LUMP SUM WHICH INCLUDES ALL TESTING OF BOTH PONDS 100 & 200.

[13] PIPE TIES SHALL BE INCIDENTAL. FIRST 3 JOINTS SHALL BE TIED AS DIRECTED BY ENGINEER.

[14] OVER-EXCAVATE 1.0' BELOW ALL CONTOURS OF POND 200 BELOW 888.50 INCLUDING POND BOTTOM AND SIDE SLOPES OF PONDS 300A & 300B BETWEEN 880.0 - 888.50 TO REMOVE SM SOILS. REPLACE AREA WITH 1.0' FILTER TOPSOIL BORROW,UNCOMPACTED. SEE POND GRADING SHEET 77 IN THIS PLAN FOR DETAILS AND NOTES.

[15] EMERGENCY TP DRAIN PIPE, HEADWALL AND GATE VALVE TO BE INSTALLED BETWEEN CONTOUR 881.0 AND SPECIAL STRUCTURE 309 IN POND 300B. GATE VALVE TO BE INSTALLED IN STRUCTURE 309. SEE POND GRADING SHEET 77 FOR DETAILS AND NOTES.

(P) PLAN QUANTITY.

3 OF 3

NO	DATE	BY	CKD	APPR	REVISION
1	1/16/2024	JF	ND		CHANGED ITEM 2575.504 ROLLED EROSION PREVENTION FROM- CAT 20 TO CAT 25

NAME: P:\002-609-022\Plan\002609022 SEQ.dgn 01/16/2024 2:08:56 PM

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

PRINT NAME: NICHOLAS J DOBDA

SIGNATURE:

DATE: 1/17/24 LICENSE NO. 49046

DRAWN BY JCF DATE 10/27/23

DESIGN BY JCF DATE 10/27/23

CHECKED BY NJD DATE 11/02/23

ANOKA COUNTY
HIGHWAY DEPT.

SAP 002-609-022
SAP 198-020-039

STATEMENT OF ESTIMATED QUANTITIES

Sheet 5 of 167 Sheets

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

STANDARD PLATES

PLATE NO.	DESCRIPTION
3000M	REINFORCED CONCRETE PIPE (6 SHEETS)
3006H	GASKET JOINT FOR R.C. PIPE (2 SHEETS)
3007F	SHEAR REINFORCEMENT FOR PRECAST DRAINAGE STRUCTURES
3022C	PRECAST CONCRETE SAFETY APRON (3 SHEETS)
3100G	CONCRETE APRON FOR REINFORCED CONCRETE PIPE
3128H	METAL SAFETY APRON & GRATE (2 SHEETS)
3133D	RIPRAP AT RCP OUTLETS
3145G	CONCRETE PIPE OR PRECAST BOX CULVERT TIES
4006L	MANHOLE OR CATCH BASIN PRECAST - DESIGNS G AND H
4010I	CONCRETE SHORT CONE & ADJUSTING RING (SECTIONAL CONCRETE)
4011E	PRECAST CONCRETE BASE
4018A	MANHOLE OR CATCH BASIN COVER (REDUCER CONE SECTION PRECAST) - DESIGN D
4020J	MANHOLE OR CATCH BASIN (FOR USE WITH OR WITHOUT TRAFFIC LOADS) (2 SHEETS)
4026B	CONCRETE ENCASED CONCRETE ADJUSTING RINGS
4101D	RING CASTING FOR MANHOLE OR CATCH BASIN
4125D	CATCH BASIN FRAME CASTING (FOR SQUARE GRATE) – CASTING NO. 806
4134A	CURB BOX CASTING FOR CATCH BASIN (FOR DESIGN B CURBS)- CASTING NO. 825
4143E	STOOL GRATE & CONCRETE FRAME (MEDIAN DRAINS) - CASTING NO. 731
4154B	CATCH BASIN GRATE CASTING - CASTING NO. 816
4180J	MANHOLE OR CATCH BASIN STEP
7020K	CONCRETE CURB AND GUTTER (DESIGN B AND DESIGN V, DESIGN S, DESIGN DR AND DESIGN BR) (2 SHEETS)
7038A	DETECTABLE WARNING SURFACE TRUNCATED DOMES
7100H	CONCRETE CURB AND GUTTER (DESIGN B AND DESIGN V)
7111J	INSTALLATION OF CATCH BASIN CASTINGS (CONCRETE CURB AND GUTTER)
7113A	CONCRETE APPROACH NOSE DETAIL
8000K	TEMPORARY CHANNELIZERS (3 SHEETS)
8150C	INSTALLATION OF CULVERT MARKERS
8337D	TEMPORARY PORTABLE PRECAST CONCRETE BARRIER (TYPE "F") (3 SHEETS)
9000E	APPROACHES AND ENTRANCES - RECOMMENDED STANDARDS
9350C	MAILBOX SUPPORT - SWING-AWAY TYPE

BASIS OF QUANTITIES

SPEC NO	DESCRIPTION	RATE
2213.610	STREET SWEEPER (WITH PICKUP BROOM)	PROJECT LENGTH / 3 MPH FOR 90 DAYS
2357.506	BITUMINOUS MATERIAL FOR TACK COAT	0.05 GAL / SQ YD / LIFT
2360.509	TYPE SP 9.5 WEARING COURSE MIXTURE	115 LBS / SQ YD / IN
2360.509	TYPE SP12.5 NON-WEAR COURSE MIXTURE	115 LBS / SQ YD / IN
2360.509	TYPE SP12.5 WEARING COURSE MIXTURE	115 LBS / SQ YD / IN
2574.509	LIME	3 TONS / ACRE
2574.508	FERTILIZER TYPE 3	350 LBS / ACRE
2574.508	FERTILIZER TYPE 4	150 LBS / ACRE
2575.508	SEED MIXTURE 25-121	61 LBS / ACRE
2575.508	SEED MIXTURE 33-261	35 LBS / ACRE
2575.508	SEED MIXTURE 35-241	36.5 LBS / ACRE
2575.508	HYDRALIC REINFORCED FIBER MATRIX	3900 LBS / ACRE
2575.523	RAPID STABILIZATION METHOD 3	6 MGAL / ACRE
2580.503	INTERIM PAVEMENT MARKINGS	PROJECT LENGTH X 2 LANES X 2 LIFTS / 50 X 3'

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PRINT NAME: NICHOLAS J DOBDA
SIGNATURE:
DATE: 12/21/23 LICENSE NO. 49046

DRAWN BY JCF DATE 10/27/23
DESIGN BY JCF DATE 10/27/23
CHECKED BY NJD DATE 11/02/23

ANOKA COUNTY

ANOKA COUNTY
HIGHWAY DEPT.

SAP 002-609-022
SAP 198-020-039

STANDARD PLATES,
BASIS OF QUANTITIES,
INDEX OF TABS

CLEARING AND GRUBBING

A

ALI	LOCATION	STATION	TO	STATION	OFFSET		SPEC (2101)			
							CLEARING	GRUBBING	CLEARING	GRUBBING
					LEFT	RIGHT	EACH	EACH	ACRE	ACRE
LNB	***150TH LN***									
		21+26	-	24+80		45			0.14	0.14
	POND	21+61	-	22+55		290			0.19	0.19
		25+72	-	29+16		45			0.13	0.13
		29+46	-	31+79		45			0.11	0.11
	153RD AVE									
		32+28				36	1	1		
		32+46				39	1	1		
		32+77				42	1	1		
		33+00				27	1	1		
		33+11				23	1	1		
		38+10	-	39+95		54			0.09	0.09
		40+55	-	42+90		54			0.10	0.10
		45+17	-	47+37		45			0.06	0.06
		47+50				43	1	1		
	157TH AVE									
LSB		21+02	-	23+39	42				0.06	0.06
	152ND LN									
		29+80	-	31+85	45				0.02	0.02
	153RD AVE									
		37+40			32		1	1		
		37+50			29		1	1		
		37+50			39		1	1		
		37+60			35		1	1		
		37+70			37		1	1		
		40+52	-	41+46	45				0.01	0.01
	154TH LN									
	POND	43+49			91		1	1		
		43+59			68		1	1		
		43+59			143		1	1		
		43+74			115		1	1		
		43+97			91		1	1		
		43+97			54		1	1		
		44+15			72		1	1		
		44+67			55		1	1		
		44+80			65		1	1		
		44+85			60		1	1		
		44+84			58		1	1		
		45+00			50		1	1		
		46+95			84		1	1		
	156TH AVE									
		51+77			27		1	1		
		52+10			29		1	1		
		53+00			29		1	1		
		53+40			28		1	1		
		53+68			29		1	1		
		54+02			22		1	1		
	157TH AVE									
						PROJECT TOTAL	**30**	**30**	**0.91**	**0.91**

GENERAL NOTES:

TREES SHALL BE CLEARED BY MARCH 31ST, 2024

TREE REMOVAL SHALL BE MARKED OUT BY THE ENGINEER PRIOR TO REMOVAL.

REMOVAL OF MISCELLANEOUS SHRUBS AND LANDSCAPING SHALL BE CONSIDERED INCIDENTAL.

REMOVALS

B

ALI	LOCATION	STATION	TO	STATION	REMOVE				SAWING		MILLING
					CONC. CURB & GUTTER	BIT. PAVEMENT [1]	BIT. FLUME	CONC. MEDIAN [2]	BIT. PAVEMENT	CONC. PAVEMENT	BIT. SURFACE 2" [JOINTS]
					LIN FT	SQ YD	EACH	SQ FT	LIN FT	LIN FT	SQ YD
LNB	MAINLINE AREA	11+39	-	57+39		30339					
	BIT TRAIL/ PED	11+39				18		50	8		
	BEG FULL DEPTH	11+39							39	23	17
	SHLDR CURB	11+39	-	11+80	56						
	CROSSOVER	11+39		16+80		2580			1150		
	149TH LN					160			31		14
	MED	11+39	-	16+79	542	446		4016			
	BIT TRAIL/PED	12+25	-	12+40		20		52	8		
	SHLDR CURB	12+11	-	17+13	540						
	BIT TRAIL/PED	16+90						72			
	150TH LN	16+83	-	17+55		192			27		12
	153RD AVE	31+57	-	32+34		219			24		11
	SHLDR	38+20	-	38+30			1				
	SHLDR	51+50	-	51+60			1				
	SHLDR	51+63	-	57+35	572						
	END FULL DEPTH	57+39							81		36
	PED RAMP	60+05	-	60+20	32	7		92	36		
	157TH AVE										
	PED RAMP	60+75		60+90	24	5		81	28		
LSB	MAINLINE	11+39	-	19+88	865						
	BEG FULL DEPTH	11+39							33		15
	MED	11+39	-	16+79	542						
	SHLDR	20+16	-	20+83	85						
	152ND LN	24+09	-	24+78		253			24		11
	153RD AVE	31+75	-	32+43		222			24		11
	154TH LN	42+22	-	43+73		1101			26		12
	SHLDR	49+46	-	49+98	85						
	ISLAND	49+98	-	50+38	166			1113			
	156TH AVE	49+46	-	50+92		266			39	5	17
	SHLDR	50+38	-	57+39	731						
	PED RAMP	59+85	-	60+05	24	5		134	28		
	157TH AVE										
	PED RAMP	60+80		60+95		43		72	84		
				PROJECT TOTAL	**4264**	**35876**	**2**	**5682**	**1690**	**28**	**156**

REMOVALS NOTES:

[1] INCLUDES REMOVAL OF BITUMINOUS CURB.

[2] INCLUDES REMOVAL OF CONCRETE PEDESTRIAN RAMPS.

REMOVE STORM / CULVERTS

C

ALI	LOCATION	STATION	TO	STATION	OFFSET			OFFSET		REMOVE			
										DRAINAGE STRUCTURE	CASTING	PIPE CULVERTS	STORM SEWER PIPE
					LEFT	RIGHT	TO	LEFT	RIGHT	EACH	EACH	LIN FT	LIN FT
LNB	***149TH LN***												
	MED /SHLDR	12+43			13	20				2	2		
	MED	12+43	-	12+43	13			29					16
	MED	14+26	-	14+26	13/25			25		1	1		12
	MED / SHLDR	16+72	-	16+72	13	25		-27		2	2		14
	150TH LN												
	X-CULVERT	20+85				34		-52					87
	DRWAY	24+21	-	24+54		23			23			33	
	DRWAY	29+10	-	29+42								32	
	153RD AVE												
	X-CULVERT	34+24				18		-65				82	
	FE	47+28	-	47+64		26			28			36	
	157TH AVE												
LSB	SHLDR	14+25	-	20+83	18			-9					407
		16+73			18					1	1		
	INLET	18+42	-	18+42	15			-28		1	1		13
	INLET	20+84	-	20+81	9			-24		1	1		15
	152ND LN	24+19	-	24+75	18			-18				57	
	153RD AVE												
	154TH LN												
	FE	47+87	-	48+25	21			-17				38	
	156TH AVE	49+52	-	50+38	19			-57					94
		50+38			57					1	1		
	157TH AVE												
									PROJECT TOTAL	**9**	**9**	**278**	**658**

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-609-022\Plan\002609022 SEQ.dgn 11/21/2023 10:48:13 AM

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PRINT NAME: NICHOLAS J DOBDA

SIGNATURE:

DATE: 11/22/23 LICENSE NO. 49046

DRAWN BY JCF DATE 10/27/23

DESIGN BY JCF DATE 10/27/23

CHECKED BY NJD DATE 11/02/23

ANOKA COUNTY

HIGHWAY DEPT.

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TABULATIONS

DRIVEWAY REMOVAL / DRIVEWAY CONSTRUCTION & MAILBOXES

D

ALI	LOCATION	STATION	TO	STATION	SAWING		REMOVE		CONSTRUCT			MAILBOXES	
					BIT. PAVEMENT FULL DEPTH	CONC. PAVEMENT FULL DEPTH	BIT. DRIVEWAY PAVEMENT	CONC. DRIVEWAY PAVEMENT	BASE CLASS 5	TYPE SP 9.5 WEAR (2,B)	6" CONCRETE DRIVEWAY PAVEMENT	RELOCATE MAILBOX SUPPORT	MAILBOX SUPPORT
							[1]	[1]	[1] [3]	[1] [3]	[1]	[2]	[2]
					LIN FT	LIN FT	SQ YD	SQ YD	TON	TON	SQ YD	EACH	EACH
LNB	PROJECT LENGTH	11+39	-	57+35									
	149TH LN												
	HSE 15011	15+80	-	16+05	22		12		4	2		1	1
	150TH LN												
	HSE 15127	24+21	-	24+50	14		62		10	5		1	1
	HSE 15135	24+64	-	25+03	18		91		12	6		3	3
	HSE 15167	29+04	-	29+47		18	83	8	16		52	1	1
	153RD AVE												
	HSE 15255	33+66	-	33+98	17		82		11	5		1	1
	HSE 15305	34+46	-	34+74	11		61		9	4		1	1
	HSE 15325 S	36+40	-	36+69	12		64		9	4		1	1
	HSE 15325 N	37+80	-	38+12	11		67		9	4		1	1
	HSE 15421 S	43+52	-	43+85		19	54	34	15		49	1	1
	HSE 15421 N	44+68	-	45+23	19		209		28	13			
	FIELD APPROACH	47+35	-	47+55			13		4	2			
	HSE 15557	53+67	-	53+91	17		64		13	6		1	1
	FE	55+89	-	56+15	12		59		9	4			
	157TH AVE												
	HSE 15709	61+00										1	1
LSB	HSE 14964	14+65	-	14+90	20		53		15	7		1	1
	HSE 15012	15+16	-	15+37	10		35		10	5		1	1
	CHURCH 15036	19+62	-	20+39	28		131		20	9			
	152ND LN												
	153RD AVE												
	HSE 3200 ON 154TH	43+00			22		48		27	13		1	1
	154TH LN												
	FIELD APR	47+82	-	48+23			26		4				
	156TH AVE												
	HSE 15548	52+47	-	52+64	14		44		1	1		1	1
	HSE 15554	53+68	-	53+90	15		44		7	3		1	1
	HSE 15620	55+30	-	55+53	14		41		8	4		1	1
	157TH AVE												
				PROJECT TOTAL	**276**	**37**	**1343**	**42**	**241**	**97**	**101**	**19**	**19**

NOTES:

[1] HOMEOWNERS MUST BE NOTIFIED 24HRS PRIOR TO ANY CONSTRUCTION THAT WOULD BLOCK OR NOT ALLOW FOR HOMEOWNERS TO MOVE FREELY IN AND OUT OF THEIR RESIDENCE.

[2] CONTRACTOR TO CONTACT POSTAL AUTHORITY AND HOMEOWNER PRIOR TO DISTURBING EXISTING MAILBOXES. CONTRACTOR SHALL COMPLY WITH ALL REQUIREMENTS OF THE POSTAL AUTHORITY AND NOTIFY HOMEOWNER OF ANY CHANGES IN LOCATTION DURING CONSTRUCTION.

[3] DRIVEWAY AGGREGATE BASE SHALL BE 6.0". DRIVEWAY BITUMINOUS SHALL BE 2.5".

AGGREGATE AND BITUMINOUS SUMMARY

E

ALI	LOCATION	STA	TO	STA	MAINLINE & STREET APPROACH							TRAIL & RAMPS	
					AGGREGATE BASE (CV) CLASS 5	BITUMINOUS MATERIAL FOR TACK COAT	TYPE SP 12.5 WEAR (3,C)	TYPE SP 12.5 NON-WEAR (3,C)	TYPE SP 12.5 BIT MIXTURE FOR PATCHING [1]	SHOULDER PREP [2]	INTERIM PAVEMENT MARKINGS	AGGREGATE BASE CLASS 5 [3]	TYPE SP 9.5 WEAR (2,B) [3]
					CU YD	GALLON	TON	TON	TON	LIN FT	LIN FT	TON	TON
LNB	MAINLINE CSAH 9	11+39	-	57+35	11436	3834	8817	6613		4596	1195		
	CROSS OVER ST-0	11+39	-	16+80	284			445					
	PED RAMP	11+39										5	
	149TH LN	11+52	-	12+36	62	15	34	25					
	PED RAMP	12+16										4	
	PED RAMP	16+83										2	
	150TH LN	16+83	-	17+52	76	20	47	35					
	PED RAMP	17+54										3	
	TRAIL	17+74	-	31+61								437	187
	PED RAMP	31+58										4	
	153RD AVE	31+61	-	32+34	59	14	33	25					
	PED RAMP	32+39										3	
	TRAIL	32+45	-	44+60								390	164
	PED RAMP	44+58										5	
	FIELDS N ENT	44+58	-	45+30	47	9	21	16					
	PED RAMP	45+14										3	
	TRAIL	45+40	-	60+10								460	197
	PED RAMP	59+99	-	60+16					2			4	
	157TH AVE												
	PED RAMP	60+72	-	60+90					2			3	
LSB	***152ND LN***	24+08	-	24+75	83	19	43	33					
	153RD AVE	31+85	-	32+51	51	14	32	24					
	154TH LN	45+00			343	102	235	177					
	156TH AVE	49+85	-	50+59	78	21	48	36					
	PED RAMP	59+82	-	60+08					2			4	
	157TH AVE												
	PED RAMP	60+77	-	60+92					5			3	
				PROJECT TOTAL	**12519**	**4048**	**9310**	**7429**	**11**	**4596**	**1195**	**1330**	**548**

BITUMINOUS SUMMARY NOTES:

[1] PATCHING PEDESTRIAN RAMP ADA CONSTRUCTION AT 157TH AVE.

[2] EXISTING LNB SHOULDER TO BE BROUGHT UP TO ELEV. OF EXISTING EDGE OF PAVEMENT WITH SHOULDERING BASE AGGREGATE CLASS 5 - INCIDENTAL TO ITEM 2112 SHOULDER PREP AND COMPACTED PRIOR TO STG 1. SEE SPECIAL PROVISIONS (2112)

[3] AGGREGATE BASE FOR THE TRAIL SHALL BE 6", TRAIL BITUMINOUS SHALL BE 2.5"

2 OF 4

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-609-022\Plan\002609022 SEQ.dgn 11/21/2023 10:48:41 AM

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

PRINT NAME: NICHOLAS J DOBDA
SIGNATURE:
DATE: 11/22/23 LICENSE NO. 49046

DRAWN BY JCF DATE 10/27/23
DESIGN BY JCF DATE 10/27/23
CHECKED BY NJD DATE 11/02/23

ANOKA COUNTY
HIGHWAY DEPT.

SAP 002-609-022
SAP 198-020-039

TABULATIONS

Sheet 8 of 167 Sheets

UTILITY OWNERS / CONTACTS

F

ANOKA COUNTY SIGNALS MARK LEKSON mark.lekson@anokacountymn.gov PH - 763-324-3139	LUMEN / CENTURYLINK CHUCK DAHER cdaher@congruex.com PH - 612-298-2825	CENTER POINT ENERGY MARIO.M.GILLAND mario.m.gilland@centerpointenergy.com PH - 612-321-5167
CITY OF ANDOVER DAVE BERKOWITZ D.Berkowitz@andovermn.gov PH - 763-767-5133	CONNEXUS ENERGY JOSH McDERMOTT josh.mcdermott@connexusenergy.com PH - 763-323-2754	GREAT RIVER ENERGY MICHELLE MACMILLAN mmacmillan@GREnergy.com
COMCAST LUKE BASTIL Luke_Bastil@comcast.com PH -651-262-6600	MCI - VERIZON STEVE HOTVEDT shotvedt@mi-tech.us	

CONCRETE

G

ALI	LOCATION	STATION	TO	STATION	OFFSET	CONCRETE CURB & GUTTER DESIGN B418 (MOD)	CONCRETE CURB & GUTTER DESIGN B424	4" CONCRETE WALK (MEDIAN) [4]	6" CONCRETE WALK (PED. RAMPS)	CONCRETE MEDIAN NOSE SPECIAL	CONCRETE DRAINAGE FLUME [5]	TRUNCATED DOMES [3]	NOTES
						LIN FT	LIN FT	SQ FT	SQ FT	EACH	SQ YD	SQ FT	
LNB	MED / SHLDR/ PED	11+39	-	11+71	LT / RT	35	58	310	244			52	[2]
	149TH LN												
	SHLDR/PED/NOSE	12+16	-	12+43	RT		571		177	1		38	[1][2]
	MEDIAN	12+30	-	24+30	LT	1195		7107					
	PED RAMP	16+94	-	17+09	RT				102			22	[2]
	150TH LN												
	SHLDR	17+42	-	31+88	RT		1508						
	PED RAMP	17+54	-	17+72	RT				123			22	[2]
	NOSE	24+30	-	24+58	LT					2			[1]
	MEDIAN	24+55	-	31+60	LT	701		4188					
	PED / NOSE	31+58	-	31+81	RT				187	1		34	[1][2]
	153RD AVE												
	MED/SHLDR/PED/NOSE	32+39	-	44+48	LT / RT	1204	1332	4813	123	1		22	[1][2]
	PED / NOSE	44+58	-	44+82	RT				206	1		38	[1][2]
	154TH AVE												
	SHLDR / PED/ NOSE	45+14	-	57+38	LT / RT		1244		116			22	[2]
	MED / NOSE	45+54	-	52+00	LT	643		5005		2			[1]
	PED RAMP	59+99	-	60+16	RT		29		193			26	[2]
	157TH AVE												
	PED RAMP	60+72		60+90	RT		22		147			30	[2]
LSB	MED / SHLDR	11+39	-	19+88	LT / RT	35	866						
	MED / SHLDR	12+30	-	24+22	RT	1195	458						
	152ND LN												
	ISLAND	24+30	-	24+46	LT	45		89					
	MED / SHLDR / NOSE	24+42	-	32+00	RT	708	802			1			[1]
	FLUME	32+00			LT						5		
	153RD AVE												
	MED / SHLDR	32+20	-	44+85	LT / RT	1204	1293						
	FLUME	32+25			LT						5		
	154TH LN												
	MED / SHLDR	45+13	-	49+97	LT / RT	654	519						
	156TH AVE												
	SHLDR	50+38	-	57+38	LT		726						
	PED RAMP	59+82	-	60+08	LT		23		201			32	[2]
	157TH AVE												
	PED RAMP	60+77	-	60+92	LT		69		152			30	[2]
	FLUME	61+10			LT						5		
				PROJECT TOTAL		**7619**	**9520**	**21512**	**1971**	**9**	**15**	**368**	

CONCRETE NOTES:

[1] MEDIAN NOSE PAID FOR AS CONCRETE MEDIAN NOSE SPECIAL.

[2] QUANTITY FOR RADIAL TRUNCATED DOME PLATES.

[3] SEE STANDARD PLATE 7038A FOR DETAILS.

[4] MEDIAN PAID FOR AS 4" CONCRETE WALK.

[5] CONSTRUCT CONCRETE DRAINAGE FLUME 3' X 16' (TO BOTTOM OF DITCH SLOPE AS DIRECTED BY ENGINEER).

3 OF 4

NO	DATE	BY	CKD	APPR	REVISION
1	1/16/2024	JF	ND		TAB G, CHANGED CONCRETE FLUME ITEM, UNIT AND QTY

NAME: P:\002-609-022\Plan\002609022 SEQ.dgn 01/16/2024 2:09:23 PM

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

PRINT NAME: NICHOLAS J DOBDA

SIGNATURE:

DATE: 1/17/24 LICENSE NO. 49046

DRAWN BY JCF DATE 10/27/23

DESIGN BY JCF DATE 10/27/23

CHECKED BY NJD DATE 11/02/23

ANOKA COUNTY

ANOKA COUNTY HIGHWAY DEPT.

SAP 002-609-022
SAP 198-020-039

TABULATIONS

TURF ESTABLISHMENT & EROSION CONTROL

H

ALI	LOCATION	STA	TO	STA	SILT FENCE TYPE MACHINE SLICED	STORM DRAIN INLET PROTECTION	CULVERT END CONTROLS	ROLLED EROSION PREVENTION CAT 10	ROLLED EROSION PREVENTION CAT 25	FILTER BERM TYPE 3 ROCK WEEPER	FERTILIZER TYPE 3	FERTILIZER TYPE 4	SEEDING	SEED MIXTURE 25-121	SEED MIXTURE 33-261	SEED MIXTURE 35-241	HYDRAULIC REINFORCED FIBER MATRIX	RAPID STABILIZATION METHOD 3	RIPRAP CLASS II	LIME
					LIN FT	EACH	EACH	SQ YD	SQ YD	LIN FT	POUND	POUND	ACRE	POUND	POUND	POUND	POUND	MGAL	CU YD	TON
LNB	BEG TO 149TH LN	11+39	-	11+79		1					1		0.004	0.2			16	0.02		0.01
	149TH LN																			
	149TH LN TO 150TH LN	12+11	-	17+13		5					15		0.041	2.5			160	0.25		0.12
	150TH LN																			
	150TH LN TO 153RD AVE	17+55	-	31+88	761	19	1				132		0.378	23.1			1474	2.27		1.13
	POND 100				604		1	832	690	53	105	47	0.615	18.4	6.0	5.2	2399	3.69		1.85
	153RD AVE																			
	153RD AVE TO N. FIELDS ENT	32+10	-	44+80	517	13	1				153		0.436	26.6			1700	2.62		1.31
	154TH AVE																			
	N. FIELDS ENT TO 157TH AVE	45+20	-	60+10	904	12					173		0.493	30.1			1923	2.96		1.48
	157TH AVE																			
	NE QUAD 157TH AVE RAMP												0.003	0.2			12	0.02		0.01
LSB	BEG TO 152ND LN	11+39	-	24+22	392	14	1				54		0.154	9.4			601	0.92		0.46
	152ND LN																			
	152ND LN TO 153RD AVE	24+55	-	32+00	718	5					50		0.142	8.7			554	0.85		0.43
	FLUME																		2	
	153RD AVE																			
	FLUME																		2	
	153RD AVE TO 154TH LN	32+29	-	44+80	960	13					111		0.318	19.4			1240	1.91		0.95
	POND 200, 300A & S. SIDE 154TH						1	775	1868	50	163	82	1.012	28.4	5.6	14.1	3947	6.07		3.04
	BETWEEN POND 200 & 300A									32									49	
	154TH LN																			
	154TH LN TO 156TH AVE	45+20	-	49+96	260	8					44		0.125	7.7			488	0.75		0.38
	POND 300B & N. SIDE 154TH				862		1		1332	13	157		0.723	27.3		10.0	2820	4.34		2.17
	156TH AVE																			
	156TH AVE TO 57+38.80	50+38	-	57+34		4					40		0.113	6.9			441	0.68		0.34
	SW QUAD 157TH AVE RAMP	60+00									1		0.004	0.2			16	0.02		0.01
	157TH AVE																			
	NW QUAD 157TH AVE RAMP	60+90									5		0.015	0.9			59	0.09		0.05
	FLUME	61+10																	2	
PROJECT TOTAL					**5978**	**94**	**6**	**1607**	**3890**	**148**	**1204**	**129**	**4.576**	**210.0**	**11.6**	**29.3**	**17850**	**27.46**	**55**	**13.74**

4 OF 4

NO	DATE	BY	CKD	APPR	REVISION

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

PRINT NAME: NICHOLAS J DOBDA
SIGNATURE: Nick Dobda
DATE: 11/22/23 LICENSE NO. 49046

DRAWN BY JCF DATE 10/27/23
DESIGN BY JCF DATE 10/27/23
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ANOKA COUNTY

ANOKA COUNTY
HIGHWAY DEPT.

SAP 002-609-022
SAP 198-020-039

TABULATIONS

1. TOP OF THE GRADING SUBGRADE (GRADING GRADE) IS DEFINED AS THE BOTTOM OF THE CLASS 5 AGGREGATE BASE LAYER.

2. BOTTOM OF THE SUBBASE GRADE SHALL BE DEFINED AS THE BOTTOM OF THE 1' SUBGRADE EXCAVATION (SEE CROSS-SECTIONS FOR DETAILS).

3. CONSTRUCT EMBANKMENTS IN ACCORDANCE WITH SPECIFICATION 2106 AND THE MnDOT ROAD DESIGN MANUAL. ALL EMBANKMENT CORE-WIDENING MATERIAL SHALL BE SELECT GRADING MATERIAL OR COMMON EMBANKMENT (CV) IN ACCORDANCE WITH OTHER REQUIREMENTS PROVIDED IN SPEC. 2106.

4. SELECT GRANULAR MATERIAL SHALL MEET THE REQUIREMENTS OF MnDOT SPEC. 3149.2B2.

5. ALL TOPSOIL STRIPPING WILL BE CONSIDERED TO BE A PART OF EXCAVATION - COMMON. TOPSOIL SHALL BE DEFINED AS EXISTING SOILS WHICH MEET MnDOT SPEC. 3877 THAT WOULD BE SUITABLE FOR REUSE. STRIP ALL TOPSOIL AND INPLACE SLOPE DRESSING WHERE PRESENT IN AREAS TO BE DISTURBED BY CONSTRUCTION AND REUSE AS SLOPE DRESSING. FOR ESTIMATING PURPOSES, THE DEPTH OF TOPSOIL AVAILABLE IS CONSIDERED TO BE 4 INCHES. CONTRACTOR SHALL VERIFY PRIOR TO PLACING BID.

6. SUITABLE GRADING MATERIAL SHALL BE USED TO BACK FILL THE EMBANKMENT UNDER THE NEW ROADWAY CORE, UP TO THE BOTTOM OF THE GRADING SUBGRADE.

7. SLOPE DRESSING ON THE PROJECT IS DEFINED AS THE TOPSOIL OR OTHER SOIL PLACED DURING PREVIOUS CONSTRUCTION TO PROVIDE A MEDIUM FOR ESTABLISHING TURF.

8. UNSUITABLE SOILS ARE DEFINED AS SOILS WHICH DO NOT MEET OR ARE NOT MANUFACTURED TO MEET ANY OF THE ABOVE DEFINED CATEGORIES, AND ARE THEREFORE NOT REUSABLE AS STRUCTURAL BACKFILL OR EMBANKMENT WITHIN THE ROADWAY CORE.

9. SUITABLE GRADING MATERIAL OBTAINED FROM COMMON EXCAVATION NOT MEETING THE REQUIREMENTS OF MnDOT SPEC. 3149.2B1 SHALL BE USED OUTSIDE THE ROADWAY CORE ON THE PROJECT AS APPROVED BY THE ENGINEER.

10. UNSUITABLE MATERIALS ARE TOPSOIL, PAVEMENT OR CONCRETE DEBRIS, PEAT, MUCK AND ORGANIC OR OTHER UNSTABLE SOILS.

11. UNLESS OTHERWISE SPECIFICALLY ALLOWED OR REQUIRED BY THE CONTRACT, BITUMINOUS AND CONCRETE ITEMS DISTURBED BY CONSTRUCTION SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE RECYCLED TO THE EXTENT ALLOWED IN BASE AND SURFACING ITEMS OR DISPOSED OF OUTSIDE THE RIGHT OF WAY IN ACCORDANCE WITH SPEC. 2104.3C3.

12. WHERE CONNECTING TO THE INPLACE ROADWAYS AT THE TERMINI OF PROPOSED NEW CONSTRUCTION, CUT VERTICALLY TO THE BOTTOM OF THE INPLACE SURFACING OR TO THE BOTTOM OF THE NEW SURFACING DESIGN, WHICHEVER IS DEEPER, THEN AT A 1:20 TAPER TO THE BOTTOM OF THE RECOMMENDED SUBGRADE EXCAVATION.

13. WHERE MATCHING INTO INPLACE CROSSROADS, CUT VERTICALLY TO THE BOTTOM OF THE INPLACE SURFACING OR TO THE BOTTOM OF NEW SURFACING DESIGN, WHICHEVER IS DEEPER, THEN AT A 1:4 TAPER TO THE BOTTOM OF THE RECOMMENDED SUBGRADE EXCAVATION.

14. WHERE WIDENING ADJACENT TO EXISTING PAVEMENT, CUT VERTICALLY TO THE BOTTOM OF THE CLASS 5 AGGREGATE BASE AND THEN AT A 1V:1/2H SLOPE TO THE BOTTOM OF THE RECOMMENDED SUBGRADE EXCAVATION (AS SHOWN ON THE TYPICAL SECTIONS AND THE CROSS SECTIONS). BACKFILL PROMPTLY TO AVOID UNDERMINING THE EXISTING PAVEMENT.

15. CONTRACTOR SHALL PROVIDE A FULL DEPTH SAWCUT WHERE PLACING NEW PAVEMENT ADJACENT TO INPLACE PAVEMENT TO ENSURE A UNIFORM JOINT. IF NO ITEM FOR THIS WORK IS SPECIFICALLY CALLED OUT, THEN THE WORK SHALL BE INCIDENTAL WITH NO DIRECT COMPENSATION.

16. CONTRACTOR SHALL PROVIDE A UNIFORM BITUMINOUS TACK COAT BETWEEN ALL BITUMINOUS LAYERS AND PRIOR TO PLACING ANY BITUMINOUS MIXTURES ON EXISTING PAVEMENT IN ACCORDANCE WITH SPEC. 2357.

17. EMBANKMENT QUANTITIES SHOWN ON THE EARTHWORK TABULATION REPRESENT ALL EARTHWORK QUANTITIES BELOW THE PROPOSED GRADING GRADE OF ALL PERMANENT ROADWAYS AND TOPSOIL DRESSING. QUANTITIES REQUIRED ABOVE THE GRADING GRADE ARE PROVIDED IN DETAIL ON THE BITUMINOUS SUMMARY TAB.

18. THE CONSTRUCTION LIMITS AS SHOWN IN THE PLANS REPRESENT THE POINT OF INTERSECTION BETWEEN THE REQUIRED FILL OR CUT SLOPE AND THE EXISTING GROUND LINE AS DEPICTED ON THE CROSS SECTIONS. THE CONSTRUCTION LIMITS DO NOT INCLUDE AREAS REQUIRED FOR SLOPE ROUNDING.

19. DITCH BOTTOMS, TOE OF FILL, CUT RUNOUTS AND THE TOP EDGE OF BACKSLOPES SHALL BE ROUNDED REGARDLESS OF THE SECTION USED ON THE CROSS SECTION SHEETS.

20. ANY DEBRIS WHICH MAY BE ENCOUNTERED DURING GRADING SHALL BE DISPOSED OF BY THE CONTRACTOR OFF THE PROJECT RIGHT OF WAY IN A SUITABLE DISPOSAL AREA AS APPROVED BY THE ENGINEER.

21. UNSUITABLE SOILS NOT USED ON THE PROJECT SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE REMOVED FROM THE PROJECT AND DISPOSED OF IN ACCORDANCE WITH MnDOT SPECIFICATIONS.

22. INPLACE BITUMINOUS PAVEMENT THICKNESS SHOWN IN TYPICALS FOR INFORMATION ONLY, NO WARRANTY IS MADE OR IMPLIED WITH THIS INFORMATION. CONTRACTOR MAY VERIFY PAVEMENT DEPTH PRIOR TO PLACING BID.

23. COMPACTION OF AGGREGATE BASE SHOULD BE IN ACCORDANCE WITH MnDOT "MODIFIED PENETRATION INDEX METHOD." COMPACTION OF SELECT GRANULAR MATERIAL SHOULD BE IN ACCORDANCE WITH MnDOT "SPECIFIED DENSITY METHOD."

24. COMPACTION OF THE MAINLINE BASE AND BINDER BITUMINOUS LIFTS SHALL BE BY THE "SPECIFIED DENSITY METHOD." COMPACTION OF MAINLINE WEAR AND ENTRANCES SHALL BE BY THE "QUALITY COMPACTION METHOD."

25. NO OVER-EXCAVATION WILL BE ALLOWED INSIDE THE COUNTY'S RIGHT OF WAY OR POND LOCATIONS FOR THIS PROJECT.

1 OF 1

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-609-022\Plan\002609022 SCN.dgn 10/25/2023 10:56:53 AM

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SOILS AND CONSTRUCTION NOTES

EARTHWORK TABULATIONS — AA

STATION	EXCAVATION TOTALS		EMBANKMENT TOTALS	
	EXCAVATION - COMMON	EXCAVATION - SUBGRADE	COMMON EMBANKMENT	SELECT GRANULAR EMBANKMENT
	CY	CY	CY	CY
CSAH 9				
10+00.00				
10+50.00	164	86	20	86
11+00.00	52	101	39	101
11+50.00	26	50	19	50
12+00.00	63	56	10	56
12+50.00	136	175	17	175
13+00.00	145	221	12	221
SUBTOTAL (A)	**586**	**689**	**117**	**689**

EARTHWORK TABULATIONS — AA

STATION	EXCAVATION TOTALS		EMBANKMENT TOTALS	
	EXCAVATION - COMMON	EXCAVATION - SUBGRADE	COMMON EMBANKMENT	SELECT GRANULAR EMBANKMENT
	CY	CY	CY	CY
CSAH 9 (CONTINUED)				
13+50.00	141	219	12	219
14+00.00	124	234	11	234
14+50.00	89	234	7	234
15+00.00	74	234	11	235
15+50.00	72	234	11	236
15+78.03	36	129	4	131
16+00.00	29	100	3	100
16+07.36	10	33	1	33
16+50.00	61	190	6	190
17+00.00	67	161	8	161
17+50.00	68	100	17	100
18+00.00	78	152	32	152
18+50.00	104	211	53	211
19+00.00	126	220	62	220
19+50.00	100	229	46	229
20+00.00	74	185	36	185
20+50.00	81	187	47	191
21+00.00	130	196	73	208
21+50.00	183	149	104	170
22+00.00	196	140	115	170
23+00.00	531	358	345	437
23+50.00	256	175	179	219
24+00.00	173	132	99	155
24+27.49	91	63	25	64
24+47.46	81	37	6	37
24+50.00	10	5	1	5
24+74.01	79	51	14	52
24+98.10	85	55	16	66
25+00.00	7	4	1	6
25+50.00	149	111	46	152
26+00.00	138	117	52	158
26+50.00	139	130	47	165
27+00.00	143	134	61	170
27+50.00	147	129	89	170
28+00.00	145	125	104	168
28+50.00	142	125	77	165
29+00.00	143	129	51	168
29+13.61	41	37	14	46
29+42.99	91	79	33	100
29+50.00	21	19	8	24
30+00.00	152	140	43	170
30+50.00	178	146	24	170
SUBTOTAL (B)	**4,785**	**5,838**	**1,994**	**6,476**

EARTHWORK TABULATIONS — AA

STATION	EXCAVATION TOTALS		EMBANKMENT TOTALS	
	EXCAVATION - COMMON	EXCAVATION - SUBGRADE	COMMON EMBANKMENT	SELECT GRANULAR EMBANKMENT
	CY	CY	CY	CY
CSAH 9 (CONTINUED)				
31+00.00	239	149	19	170
31+50.00	273	156	13	170
32+50.00	573	303	33	331
33+00.00	275	142	55	165
33+50.00	230	140	123	170
33+59.75	42	27	32	33
33+83.88	96	67	80	82
34+00.00	61	45	53	55
34+49.42	191	138	140	168
34+50.00	3	2	1	2
34+73.42	98	66	52	80
35+00.00	120	75	35	90
35+50.00	258	140	37	169
36+00.00	308	140	38	166
36+45.61	286	129	26	148
36+50.00	24	12	2	14
36+69.61	110	56	10	63
37+00.00	198	87	14	98
37+50.00	301	142	22	161
37+81.91	136	89	19	102
38+00.00	56	50	18	58
38+06.01	18	16	8	19
38+50.00	125	114	120	141
39+00.00	137	124	234	161
39+50.00	133	124	244	161
40+00.00	133	126	174	161
40+50.00	140	130	115	161
41+00.00	153	133	116	162
41+50.00	162	126	197	166
42+00.00	164	121	248	169
42+50.00	188	136	191	170
43+00.00	180	146	159	170
43+50.00	169	142	202	170
43+56.31	28	18	30	21
43+82.91	165	76	121	90
44+00.00	135	49	72	58
46+00.00	1366	557	657	679
46+50.00	259	134	145	170
47+00.00	242	133	189	170
47+50.00	193	127	156	170
48+00.00	151	145	110	170
48+50.00	132	165	147	187
SUBTOTAL (C)	**8,251**	**4,997**	**4,457**	**6,021**

POND TABULATIONS — AA

	EXCAVATION - CHANNEL AND POND	COMMON EMBANKMENT	FILTER TOPSOIL BORROW
	CY	CY	CY
POND 100	810	495	
POND 200	1,513	12	
POND 200 1.0' OVER-EXCAVATION	560		560
POND 300A	3,175	2	
POND 300A 1.0' OVER-EXCAVATION	591		591
POND 300B	3,379	706	
POND 300B 1.0' OVER-EXCAVATION	628		628
TOTAL (F)	**10,656**	**1,215**	**1,779**

EARTHWORK TABULATIONS — AA

STATION	EXCAVATION TOTALS		EMBANKMENT TOTALS	
	EXCAVATION - COMMON	EXCAVATION - SUBGRADE	COMMON EMBANKMENT	SELECT GRANULAR EMBANKMENT
	CY	CY	CY	CY
CSAH 9 (CONTINUED)				
49+00.00	108	108	168	148
49+50.00	111	107	144	136
50+00.00	107	130	102	141
50+50.00	95	101	80	101
51+00.00	114	158	88	158
51+50.00	141	176	111	176
52+50.00	279	371	244	371
53+00.00	123	234	96	234
53+50.00	110	231	64	231
53+66.87	35	77	16	77
53+94.88	57	125	22	125
54+00.00	10	22	5	22
54+50.00	86	216	56	216
55+00.00	85	212	50	212
55+50.00	94	210	28	210
55+92.19	103	175	17	175
56+00.00	23	32	3	32
56+16.22	46	67	7	67
56+50.00	86	139	11	139
57+00.00	104	206	10	206
SUBTOTAL (D)	**1,917**	**3,097**	**1,322**	**3,177**

EARTHWORK TABULATIONS 154TH LN — AA

STATION	EXCAVATION TOTALS		EMBANKMENT TOTALS	
	EXCAVATION - COMMON	EXCAVATION - SUBGRADE	COMMON EMBANKMENT	SELECT GRANULAR EMBANKMENT
	CY	CY	CY	CY
154TH LN				
10+00.00				
10+50.00	53	49	4	51
10+85.00	39	34	8	51
11+00.00	23	18	8	51
11+50.00	24	28	6	51
12+00.00	31	46	3	51
12+50.00	48	51	1	51
13+00.00	68	51		51
13+47.00	77	51		51
SUBTOTAL (E)	**363**	**328**	**30**	**357**

EARTHWORK SUMMARY — CC

	EXCAVATION TOTALS					
	EXCAVATION - COMMON	EXCAVATION - SUBGRADE	EXCAVATION - CHANNEL AND POND	COMMON EMBANKMENT	SELECT GRANULAR EMBANKMENT	FILTER TOPSOIL BORROW
	CY	CY	CY	CY	CY	CY
CSAH 9 SUBTOTAL (A)	586	689		117	689	
CSAH 9 SUBTOTAL (B)	4,785	5,838		1,994	6,476	
CSAH 9 SUBTOTAL (C)	8,251	4,997		4,457	6,021	
CSAH 9 SUBTOTAL (D)	1,917	3,097		1,322	3,177	
154TH LN SUBTOTAL (E)	363	328		30	357	
PONDS SUBTOTAL (F)			10,656	1,215		1,779
PROJECT TOTAL	**15,902**	**14,949**	**10,656**	**9,135**	**16,720**	**1,779**

1 OF 1

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-609-022\Plan\002609022 EW1.dgn 11/20/2023 2:02:54 PM

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

PRINT NAME: NICHOLAS J DOBDA
SIGNATURE: Nick Dobda
DATE: 11/22/23 LICENSE NO. 49046

DRAWN BY JCF DATE 10/27/23
DESIGN BY JCF DATE 10/27/23
CHECKED BY NJD DATE 11/02/23

ANOKA COUNTY

ANOKA COUNTY
HIGHWAY DEPT.

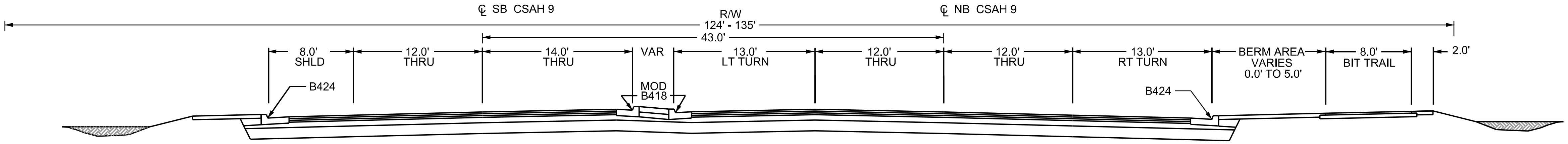
SAP 002-609-022
SAP 198-020-039

EARTHWORK TABULATION
AND SUMMARY

Sheet 12 of 167 Sheets

JCFoster

EXISTING - CSAH 9
STA. 11+39.40 - 16+90.00



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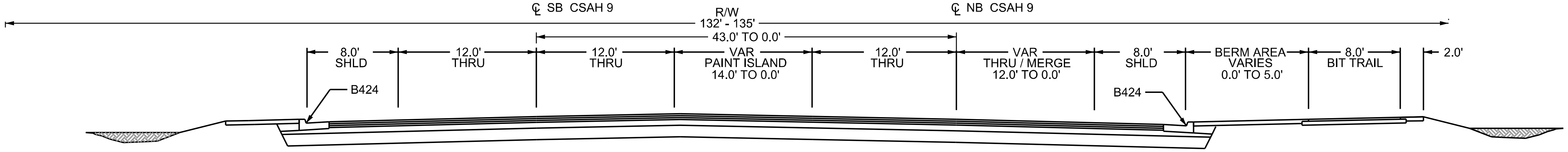

EXISTING - CSAH 9
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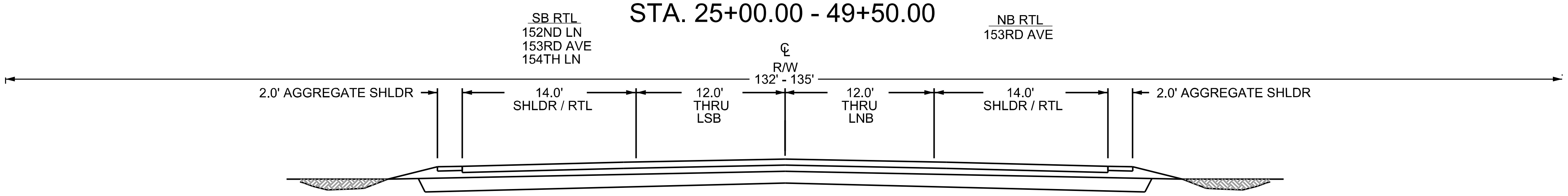

1 OF 6

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-609-022\Plan\002609022 TYP.dgn 10/25/2023 10:57:53 AM

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

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ANOKA COUNTY

ANOKA COUNTY
HIGHWAY DEPT.

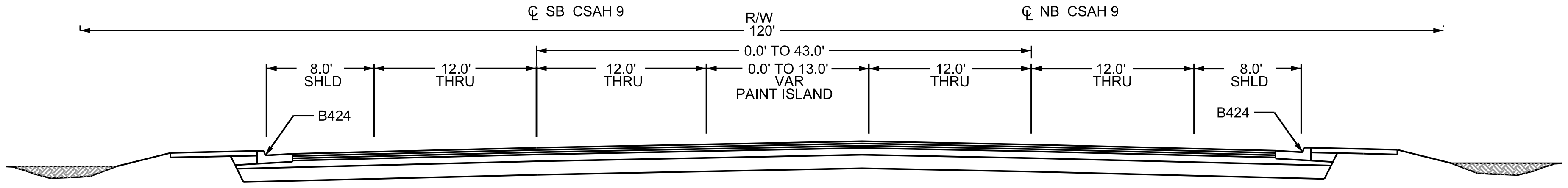
SAP 002-609-022
SAP 198-020-039

EXISTING
TYPICAL SECTIONS

Sheet 13 of 167 Sheets

JCFoster

EXISTING - CSAH 9
STA. 49+50.00 - 57+38.80



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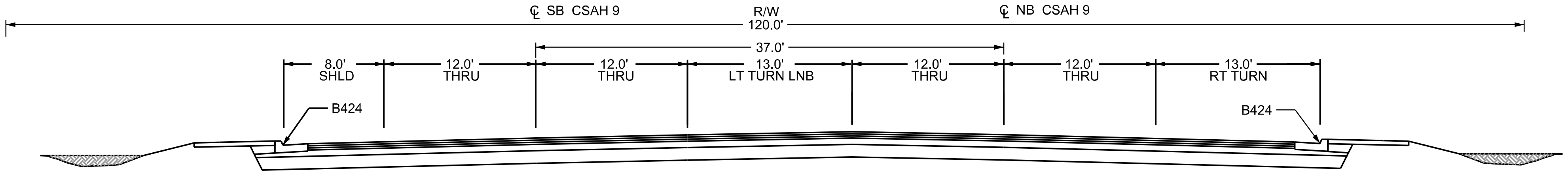

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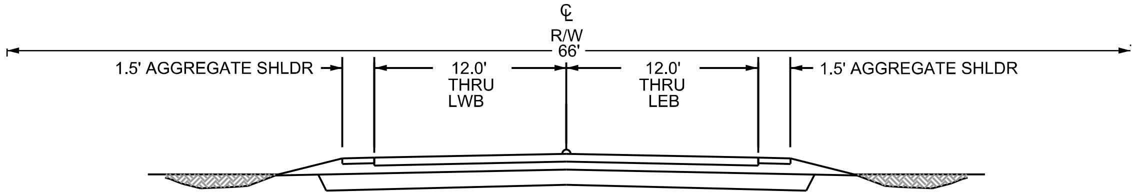

2 OF 6

NO	DATE	BY	CKD	APPR	REVISION

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ANOKA COUNTY

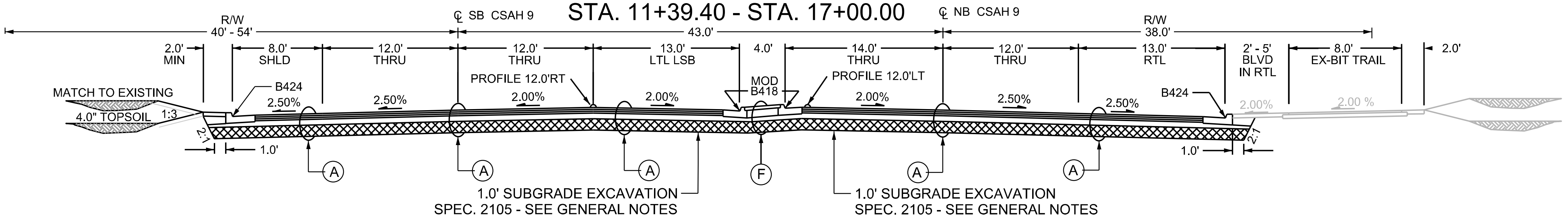
ANOKA COUNTY
HIGHWAY DEPT.

SAP 002-609-022
SAP 198-020-039

EXISTING
TYPICAL SECTIONS

Sheet 14 of 167 Sheets

STA. 11+39.40 - STA. 17+00.00



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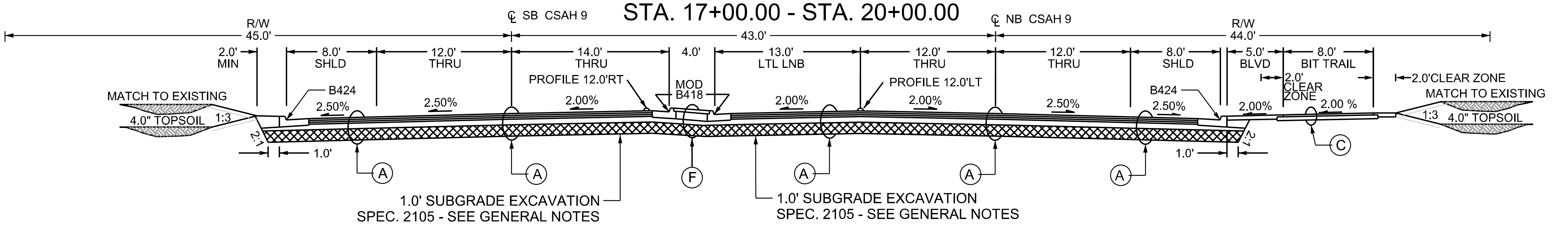

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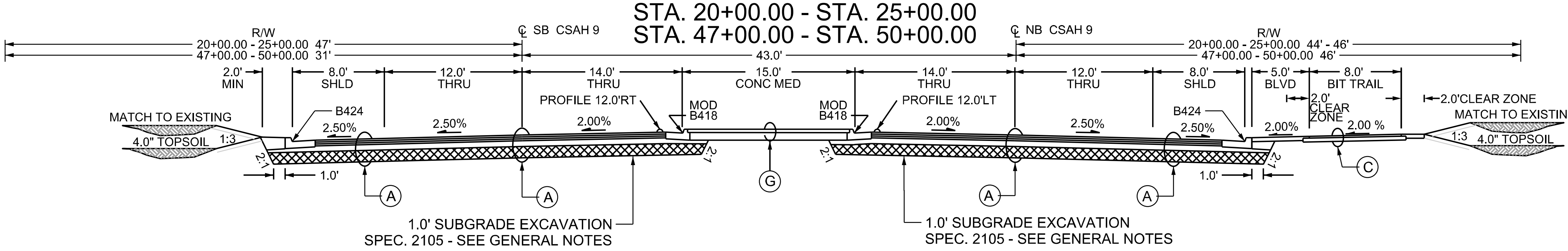
STA. 47+00.00 - STA. 50+00.00



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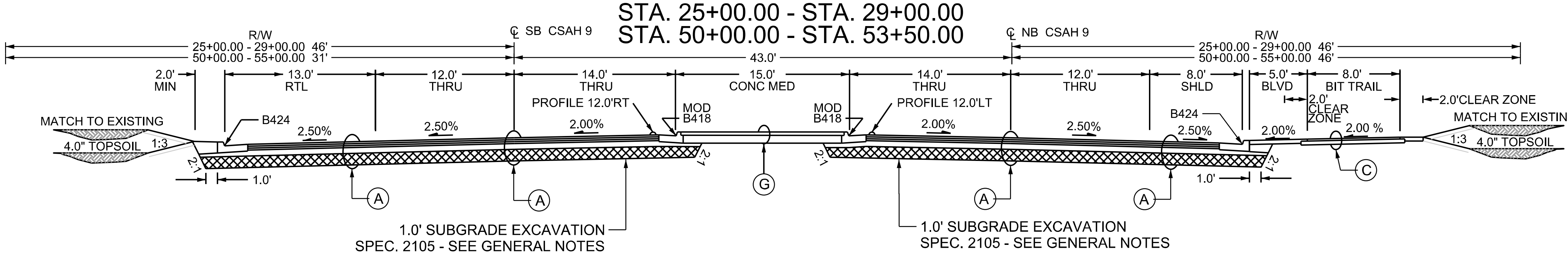
STA. 50+00.00 - STA. 53+50.00



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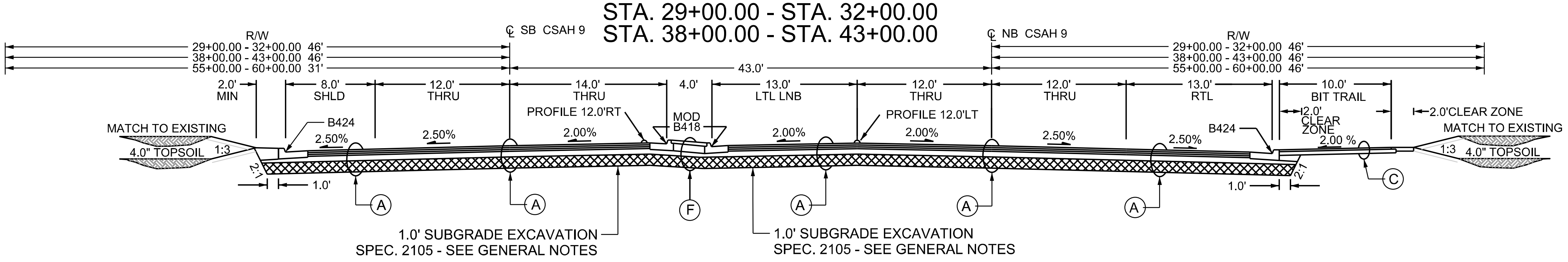
STA. 38+00.00 - STA. 43+00.00



3 OF 6

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-609-022\Plan\002609022 TYP.dgn 10/25/2023 10:57:54 AM

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SIGNATURE: Nic J Dobda

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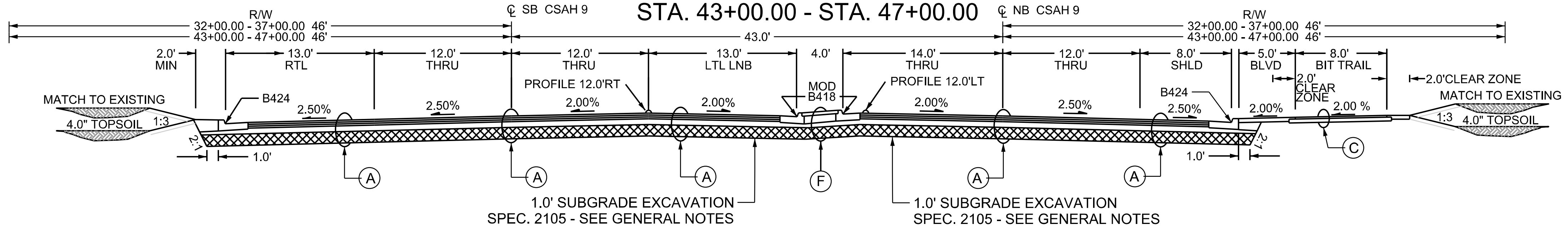
ANOKA COUNTY

ANOKA COUNTY
HIGHWAY DEPT.

SAP 002-609-022
SAP 198-020-039

PROPOSED
TYPICAL SECTIONS

STA. 32+00.00 - STA. 37+00.00
STA. 43+00.00 - STA. 47+00.00



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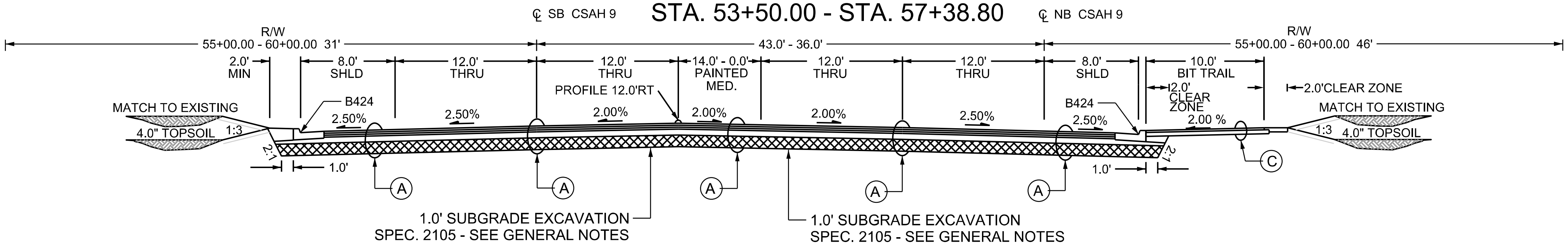
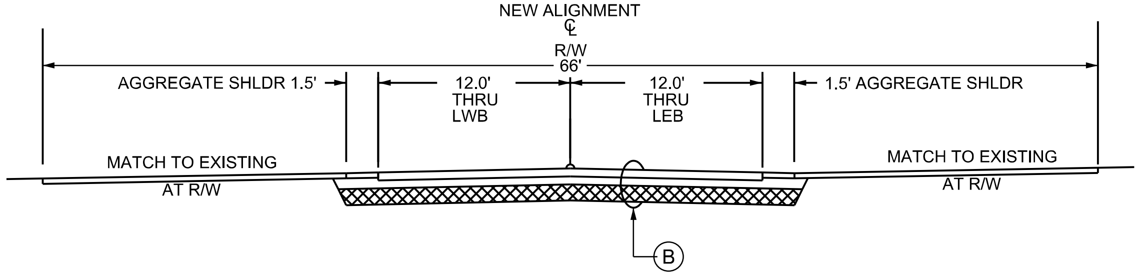


PROPOSED - 154TH LN
STA. 10+00.00 - 13+50.00



GENERAL NOTES:

- 1.0' SUBGRADE EXCAVATION SHALL BE THE BLENDING OF THE EXISTING SUBGRADE AS TO UNIFY THE SOILS AT LEAST 1.0' BENEATH THE GRADING GRADE. PAID FOR AS 2106.507 - (SUBGRADE EXCAVATION)
- SEE CONSTRUCTION PLANS FOR TURN LANE LOCATIONS
- ALL CROSS SLOPES ARE EXPRESSED AS A PERCENT
- UNLESS OTHERWISE SPECIFIED, THE GRADING GRADE CROSS SLOPES SHALL BE THE SAME AS THE FINISHED SURFACE OF THE MAINLINE.
- UNLESS OTHERWISE SPECIFIED, CLASS 5 AGGREGATE WILL EXTEND 1' BEYOND BACK OF CURB.
- 4.0" TOPSOIL & SEED ON ALL DISTURBED AREAS
- ALL STATIONING BASED ON ALIGNMENT (LNB CSAH 9) UNLESS OTHERWISE NOTED
- UNLESS OTHERWISE SPECIFIED CLASS 5 AGGREGATE WILL EXTEND 6" BEYOND THE EDGE OF BITUMINOUS TRAIL

4 OF 6

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-609-022\Plan\002609022 TYP.dgn 10/25/2023 10:57:54 AM

JCFoster

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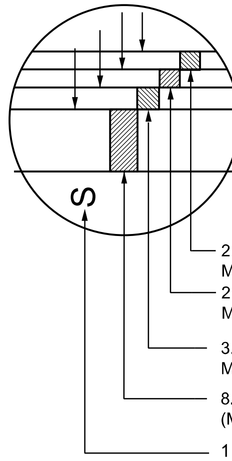
ANOKA COUNTY
HIGHWAY DEPT.

SAP 002-609-022
SAP 198-020-039

PROPOSED
TYPICAL SECTIONS

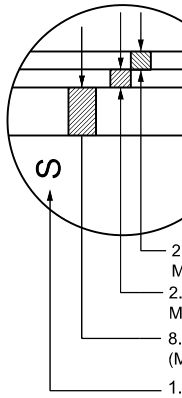
JCFoster

INSET " A "
MAINLINE



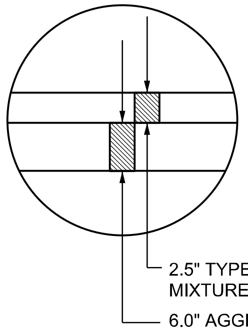
2.0" TYPE SP 12.5 WEAR COURSE
MIXTURE (SPWEB340C)
2.0" TYPE SP 12.5 WEAR COURSE
MIXTURE (SPWEB340C)
3.0" TYPE SP 12.5 NON-WEAR COURSE
MIXTURE (SPNWB330B)
8.0" AGGREGATE BASE, CLASS 5
(MNDOT SPEC.2211)
1.0' SUBGRADE EXCAVATION SPEC. 2106
1.0' SELECT GRANULAR

INSET " B "
154TH LN



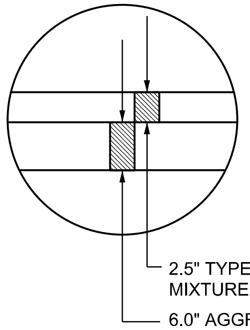
2.0" TYPE SP 12.5 WEAR COURSE
MIXTURE (SPWEB340C)
2.0" TYPE SP 12.5 WEAR COURSE
MIXTURE (SPWEB340C)
8.0" AGGREGATE BASE, CLASS 5
(MNDOT SPEC.2211)
1.0' SUBGRADE EXCAVATION SPEC. 2106
1.0' SELECT GRANULAR

INSET " C "
BITUMINOUS TRAIL



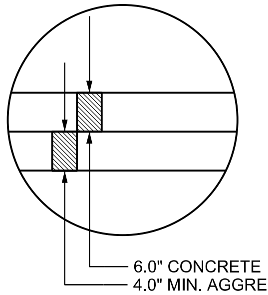
2.5" TYPE 9.5 WEAR COURSE
MIXTURE SPWEA230B
6.0" AGGREGATE BASE, CLASS 5
(MNDOT SPEC. 2211)

INSET " D "
BITUMINOUS DRIVEWAYS



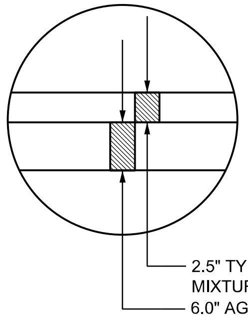
2.5" TYPE 9.5 WEAR COURSE
MIXTURE SPWEA230B
6.0" AGGREGATE BASE, CLASS 5
(MNDOT SPEC. 2211)

INSET " E "
CONCRETE DRIVEWAYS & PEDESTRIAN RAMPS



6.0" CONCRETE
4.0" MIN. AGGREGATE BASE CLASS 5
(MNDOT SPEC, 2211) ON SUITABLE
GRADING MATERIAL

TEMPORARY
PAVING / CROSSOVER



2.5" TYPE SP 12.5 NON-WEAR COURSE
MIXTURE SPNWB330B
6.0" AGGREGTE BASE, CLASS 5
(MNDOT SPEC. 2211) AS DIRECTED BY ENGINEER

5 OF 6

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-609-022\Plan\002609022 TYP.dgn 11/17/2023 11:08:55 AM

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

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SIGNATURE:
DATE: 11/22/23 LICENSE NO. 49046

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ANOKA COUNTY

ANOKA COUNTY
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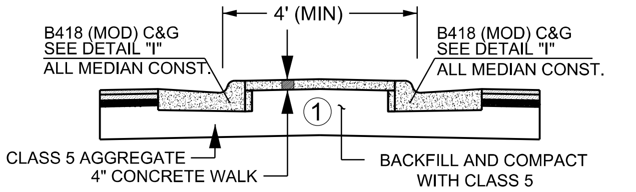
SAP 198-020-039

PROPOSED
TYPICAL SECTIONS

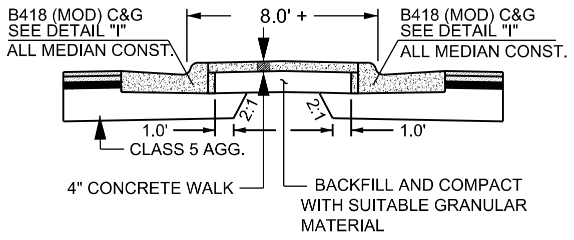
Sheet 17 of 167 Sheets

INSET / DETAIL " F "
4' - 8' MEDIAN

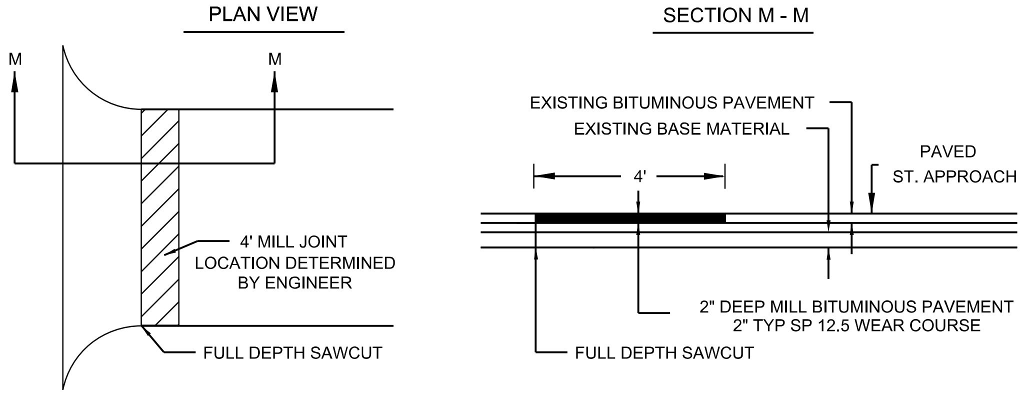


① SUBGRADE EXCAVATION, SELECT GRANULAR BORROW AND AGGREGATE BASE TO BE CARRIED THROUGH ENTIRE WIDTH OF MEDIAN WHEN MEDIAN WIDTH IS LESS THAN 8.0' MEASURED FROM FACE OF CURB TO FACE OF CURB.

INSET / DETAIL " G "
GREATER THAN 8' MEDIAN

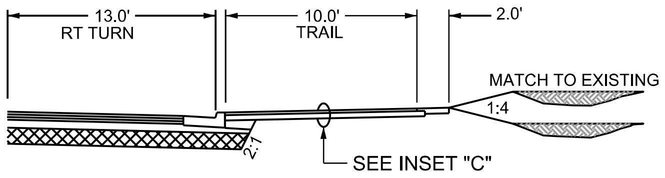


STREET APPROACH DETAIL
BITUMINOUS STREET MILL JOINTS



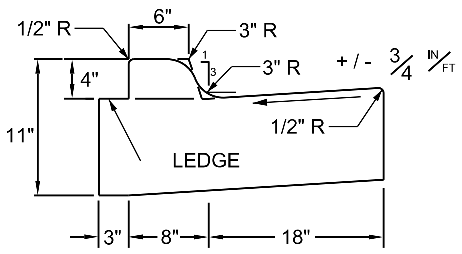
DETAIL " H "

8.0' BITUMINOUS TRAIL STANDARD
WHEN NOT TIGHT TO CURB
ALL AREAS THAT HAVE BITUMINOUS TRAIL
TIGHT TO CURB WITH NO BLVD. MUST BE 10.0' WIDE

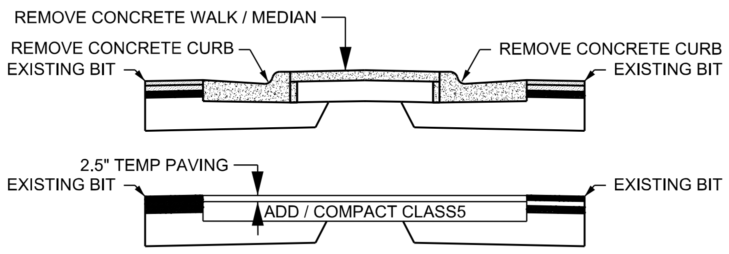


DETAIL " I "
CONCRETE CURB AND GUTTER
DESIGN B418 (MOD)

(NO VARIANCES ALLOWED)

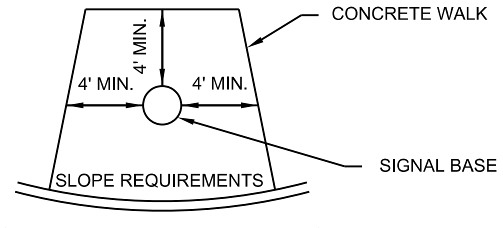


DETAIL " J "
STAGE CROSSOVER



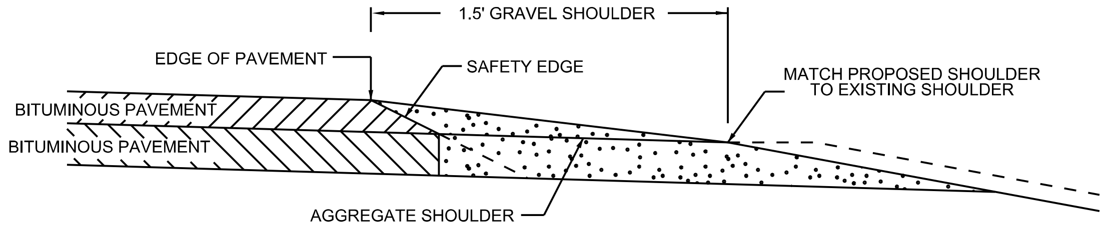
DETAIL " K "

6" CONCRETE PEDESTRIAN RAMPS
FOLLOW ALL CURRENT ADA REQUIREMENTS
SEE MNDOT STANDARD DETAILS



PROVIDE MINIMUM 4' CONCRETE
WALK ADJACENT TO ALL SIGNAL POLES.

DETAIL " L "
BITUMINOUS SAFETY EDGE
154TH LN



SAFETY EDGE TO BE USED IN ALL NON-CURB AREAS ON SHOULDER.

OPTIONAL DESIGN EXTENDS SAFETY EDGE DEEPER THAN 6" AND WIDER THAN 10.5". SEE SPECIAL PROVISIONS .

6 OF 6

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-609-022\Plan\002609022 TYP.dgn 11/17/2023 11:09:14 AM

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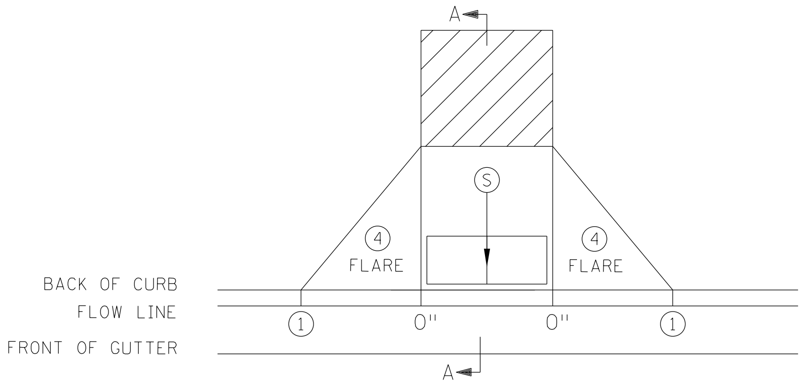
ANOKA COUNTY
HIGHWAY DEPT.

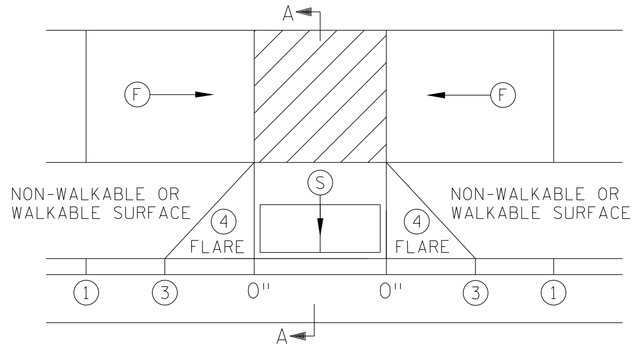
SAP 002-609-022
SAP 198-020-039

MISCELLANEOUS DETAILS

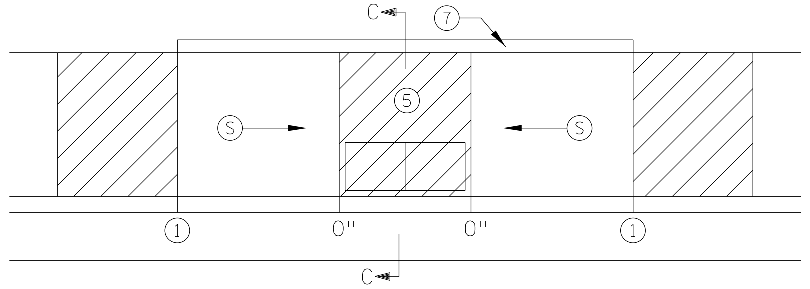
Sheet 18 of 167 Sheets



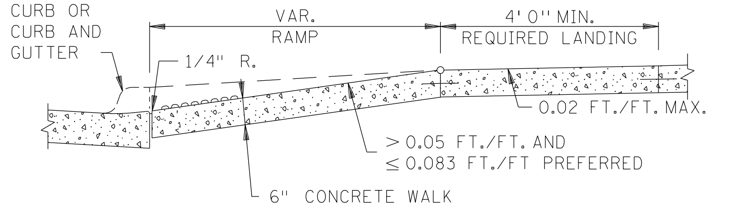
PERPENDICULAR



TIERED PERPENDICULAR

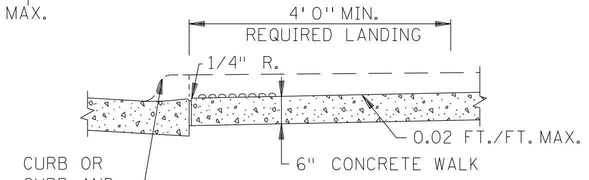


PARALLEL



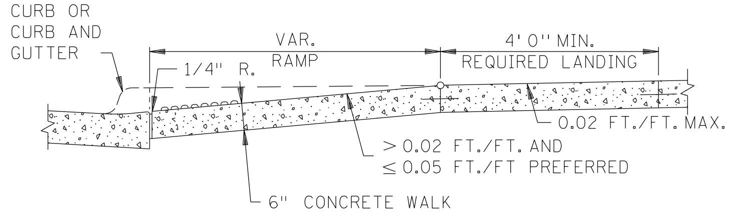
SECTION A-A

PERPENDICULAR/TIERED/DIAGONAL



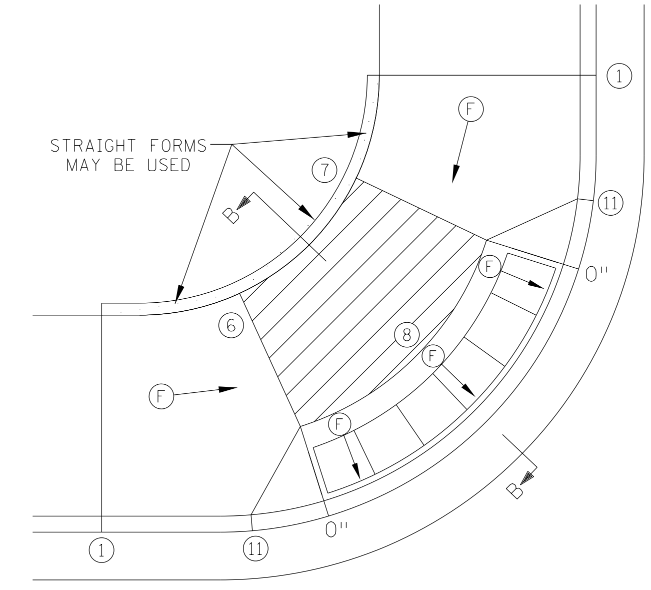
SECTION C-C

PARALLEL/DEPRESSED CORNER

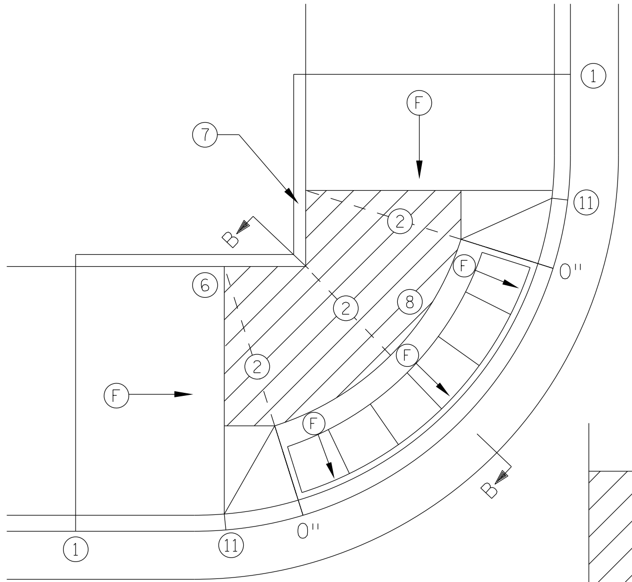


SECTION B-B

FAN

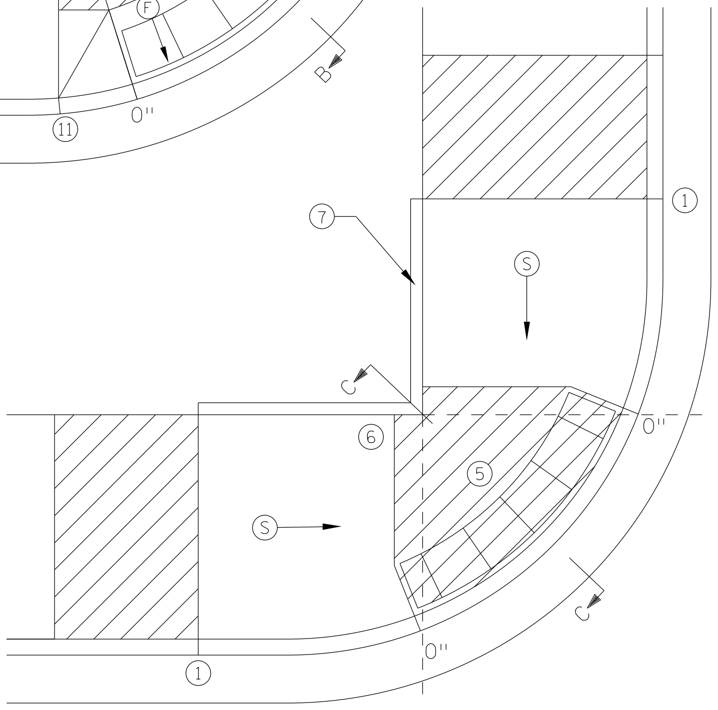


FAN⑩

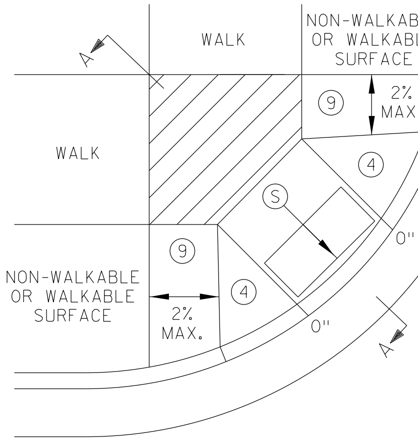


MODIFIED FAN⑩

USED WHEN RIGHT-OF-WAY IS CONSTRAINED



DEPRESSED CORNER



DIAGONAL

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

NOTES:

LANDINGS SHALL BE LOCATED ANYWHERE THE PEDESTRIAN ACCESS ROUTE (PAR) CHANGES DIRECTION, AT THE TOP OF RAMPS THAT HAVE RUNNING SLOPES GREATER THAN 5.0%, AND IF THE APPROACHING WALK IS INVERSE GRADE GREATER THAN 2%.

INITIAL CURB RAMP LANDINGS SHALL BE CONSTRUCTED WITHIN 15' FROM THE BACK OF CURB, WITH 6' FROM THE BACK OF CURB BEING THE PREFERRED DISTANCE, ONLY APPLICABLE WHEN THE INITIAL RAMP RUNNING SLOPE IS OVER 5.0%.

SECONDARY CURB RAMP LANDINGS ARE REQUIRED FOR EVERY 30" OF VERTICAL RISE WHEN THE LONGITUDINAL RUNNING SLOPE IS GREATER THAN 5.0%.

CONTRACTION JOINTS SHALL BE CONSTRUCTED ALONG ALL GRADE BREAKS WITHIN THE PAR. 1/4" DEEP VISUAL JOINTS SHALL BE USED AT THE TOPS OF CONCRETE FLARES ADJACENT TO WALKABLE SURFACES.

ALL GRADE BREAKS WITHIN THE PAR SHALL BE PERPENDICULAR TO THE PATH OF TRAVEL. THUS BOTH SIDES OF A SLOPED WALKING SURFACE MUST BE EQUAL LENGTH. (EXCEPT AS STATED IN ⑥ BELOW.

TO ENSURE RAMPS AND LANDINGS ARE PROPERLY CONSTRUCTED, ALL INITIAL LANDINGS AT A TOP OF A RAMPED SURFACE (RUNNING SLOPE GREATER THAN 2%) SHALL BE FORMED AND PLACED SEPARATELY IN AN INDEPENDENT CONCRETE POUR. FOLLOW SIDEWALK REINFORCEMENT DETAILS ON SHEET 6 OF 6 FOR ALL SEPARATELY POURED INITIAL LANDINGS.

WHEN SIDEWALK IS AT BACK OF CURB, TOP OF CURB SHALL MATCH PROPOSED ADJACENT WALK GRADE.

MAINTAIN POSITIVE BOULEVARD DRAINAGE TO TOP OF CURB.

ALL RAMP TYPES SHOULD HAVE A MINIMUM 3' LONG RAMP LENGTH.

4' MINIMUM WIDTH OF DETECTABLE WARNING IS REQUIRED FOR ALL RAMPS. DETECTABLE WARNINGS SHALL CONTINUOUSLY EXTEND FOR A MIN. OF 24" IN THE PATH OF TRAVEL. DETECTABLE WARNING TO COVER THE ENTIRE PAR WIDTH OF SHARED-USE PATHS AND THE ENTIRE PAR WIDTH OF THE WALK WITH THE EXCEPTION OF 3" MAXIMUM ON EACH OUTSIDE EDGE WHICH ENSURES THE DETECTABLE WARNINGS ARE ENCASED IN CONCRETE WHEN ADJACENT TO TURF. WHEN ADJACENT TO CONCRETE FLARES 0" - 3" OFFSET IS ALLOWED.

WHEN DESIGNING OR ORDERING RECTANGULAR DETECTABLE WARNING SURFACES SHOULD BE 6" LESS THAN THE INCOMING PAR. ARC LENGTH OF THE RADIAL DETECTABLE WARNINGS SHOULD NOT BE GREATER THAN 20 FEET.

RECTANGULAR DETECTABLE WARNINGS SHALL BE SETBACK 3" FROM THE BACK OF CURB. RADIAL DETECTABLE WARNINGS SHALL BE SETBACK 3" MINIMUM TO 6" MAXIMUM FROM THE BACK OF CURB.

① MATCH FULL HEIGHT CURB.

② 4' MINIMUM DEPTH LANDING REQUIRED ACROSS TOP OF RAMP.

③ 3" HIGH CURB WHEN USING A 3' LONG RAMP, 4" HIGH CURB WHEN USING A 4' LONG RAMP.

④ SEE SHEET 4 OF 6, TYPICAL SIDE TREATMENT OPTIONS, FOR DETAILS ON FLARES AND RETURNED CURBS.

⑤ DETECTABLE WARNINGS MAY BE PART OF THE 4' X 4' MIN. LANDING AREA IF IT IS NOT FEASIBLE TO CONSTRUCT THE LANDING OUTSIDE OF THE DETECTABLE WARNING AREA.

⑥ THE GRADE BREAK SHALL BE PERPENDICULAR TO THE BACK OF WALK. THIS WILL ENSURE THAT THE GRADE BREAK IS PERPENDICULAR TO THE DIRECTION OF TRAVEL. (TYPICAL FOR ALL)

⑦ WHEN ADJACENT TO GRASS, GRADING SHALL ALWAYS BE USED WHEN FEASIBLE. V CURB, IF USED, SHALL BE PLACED OUTSIDE THE SIDEWALK LIMITS WHEN RIGHT OF WAY ALLOWS. WHEN ADJACENT TO PARKING LOTS, CONCRETE OR BITUMINOUS TAPERS LESS THAN 5% RUNNING SLOPE SHOULD BE USED OVER V CURB TO REDUCE TRIPPING HAZARDS AND FACILITATE SNOW & ICE REMOVAL.

⑧ A 7' MIN TOP RADIUS GRADE BREAK IS REQUIRED TO BE CONSTRUCTIBLE.

⑨ PAVE FULL WALK WIDTH.

⑩ "S" SLOPES ON FANS SHALL ONLY BE USED WHEN ALL OTHER FEASIBLE OPTIONS HAVE BEEN EVALUATED AND DEEMED IMPRACTICAL.

⑪ INTERMEDIATE CURB HEIGHTS TAPER SHALL RISE AT 8-10% TO A MINIMUM 3" CURB HEIGHT. REDUCE INTERMEDIATE CURB HEIGHT TO 2+ INCHES IF NECESSARY TO MATCH ADJACENT BOULEVARD OR SIDEWALK GRADES.

LEGEND

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

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

PLOTTED/REVISED: 11/28/2023

DISTRICT #:
PLOT NAME: $$@IPLOT$NAME@$$
PATH & FILENAME: P:\002-609-022\Plan\2_MNDOT SHEETS FOR PLAN\MICRO\1_DGN SHEETS COMBINED.dgn

REVISION:
APPROVED: 11-04-2021
Jeffrey J. Perkins
JEFFREY PERKINS
OPERATIONS DIVISION

MINNESOTA
DEPARTMENT OF TRANSPORTATION

STANDARD PLAN 5-297.250
1 OF 6
APPROVED: 11-04-2021
REVISED:
THOMAS STYRBICKI
STATE DESIGN ENGINEER

PEDESTRIAN CURB RAMP DETAILS

STATE PROJ. NO.
SAP 002-609-022
SAP 198-020-039
SHEET NO. 19 OF 167 SHEETS

PLOTTED/REVISED: 11/28/2023

DISTRICT #:
PLOT NAME: $$@IPLOT$NAME@$$
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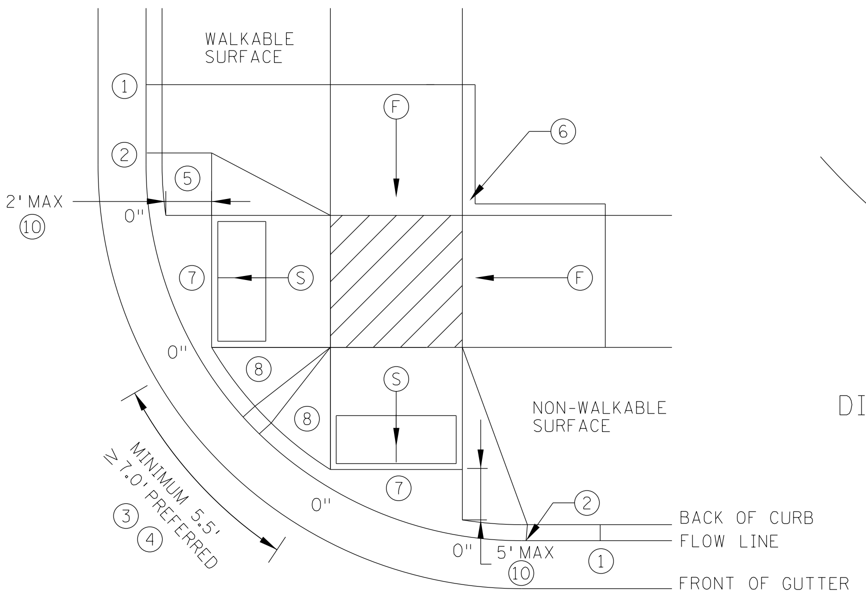
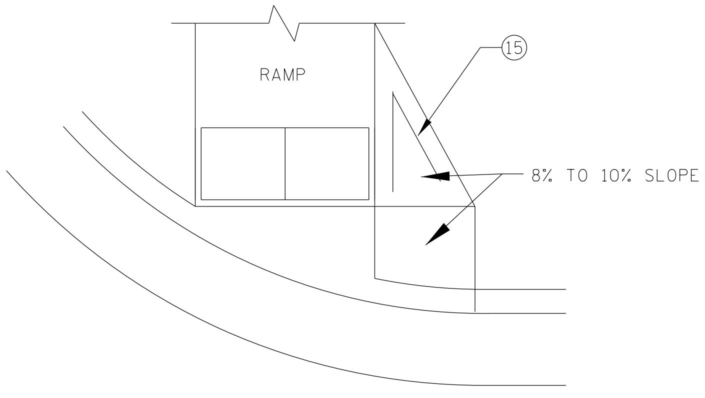
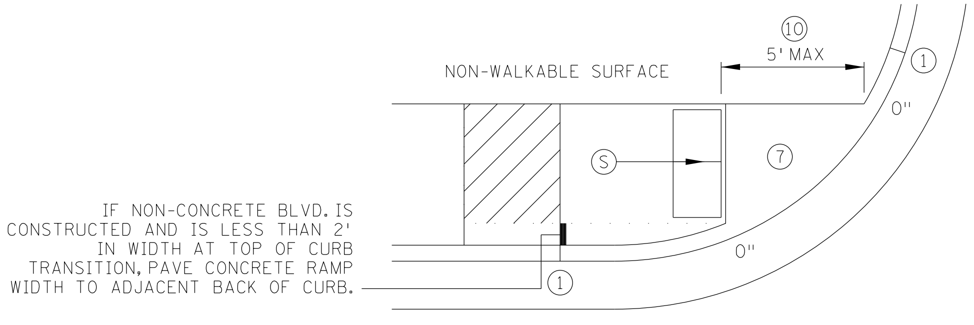


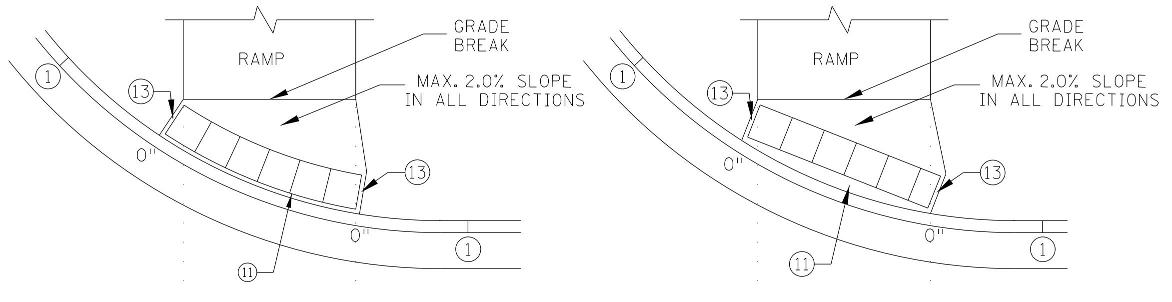
COMBINED DIRECTIONAL



DIRECTIONAL RAMP WALKABLE FLARE

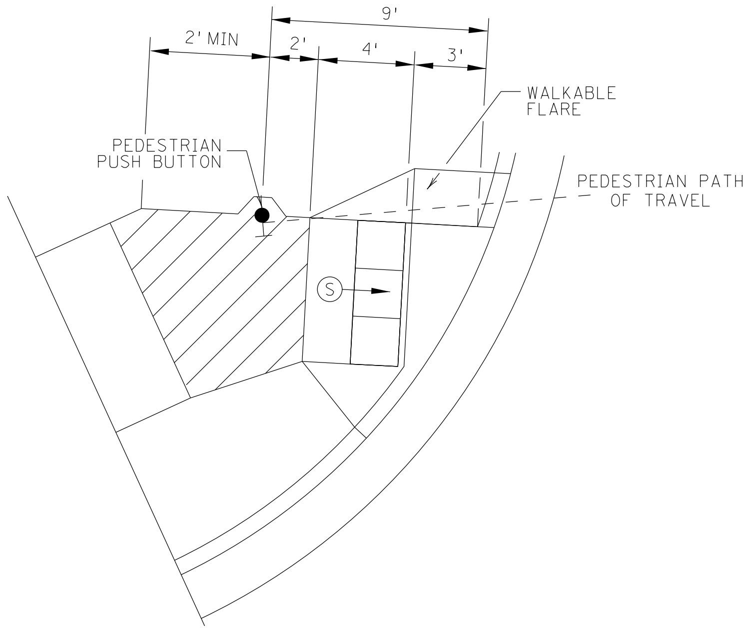


STANDARD ONE-WAY DIRECTIONAL ⑨



DETECTABLE WARNING PLACEMENT WHEN SETBACK CRITERIA IS EXCEEDED ⑫

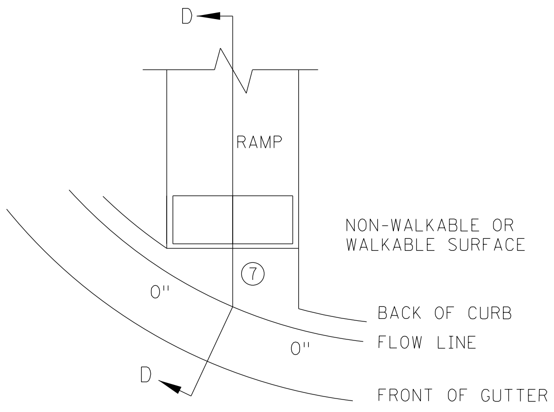
ONE-WAY DIRECTIONAL WITH DETECTABLE WARNING AT BACK OF CURB



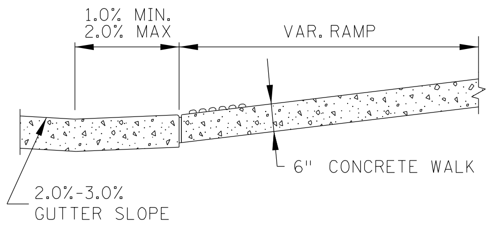
SEMI-DIRECTIONAL RAMP ③④⑨

3' DOME SETBACK, 4' LONG RAMP AND PUSH BUTTON 9' FROM THE BACK OF CURB

PRIMARILY USED FOR APS APPLICATIONS WHERE THE PAR DOES NOT CONTINUE PAST THE PUSH BUTTON (DEAD-END SIDEWALK)



CURB FOR DIRECTIONAL RAMPS ⑭



SECTION D-D

NOTES:

LANDINGS SHALL BE LOCATED ANYWHERE THE PEDESTRIAN ACCESS ROUTE (PAR) CHANGES DIRECTION, AT THE TOP OF RAMPS THAT HAVE RUNNING SLOPES GREATER THAN 5.0%, AND IF THE APPROACHING WALK IS INVERSE GRADE.

INITIAL CURB RAMP LANDINGS SHALL BE CONSTRUCTED WITHIN 15' FROM THE BACK OF CURB, WITH 6' FROM THE BACK OF CURB BEING THE PREFERRED DISTANCE, ONLY APPLICABLE WHEN THE INITIAL RAMP RUNNING SLOPE IS OVER 5.0%.

SECONDARY CURB RAMP LANDINGS ARE REQUIRED FOR EVERY 30" OF VERTICAL RISE WHEN THE LONGITUDINAL SLOPE IS GREATER THAN 5.0%.

CONTRACTION JOINTS SHALL BE CONSTRUCTED ALONG ALL GRADE BREAKS WITHIN THE PAR. 1/4" DEEP VISUAL JOINTS SHALL BE USED AT THE TOP GRADE BREAK OF CONCRETE FLARES ADJACENT TO WALKABLE SURFACES.

ALL GRADE BREAKS WITHIN THE PAR SHALL BE PERPENDICULAR TO THE PATH OF TRAVEL. THUS BOTH SIDES OF A SLOPED WALKING SURFACE MUST BE EQUAL LENGTH.

TO ENSURE INITIAL RAMPS AND INITIAL LANDINGS ARE PROPERLY CONSTRUCTED, LANDINGS SHALL BE CAST SEPARATELY. FOLLOW SIDEWALK REINFORCEMENT DETAILS ON SHEET 6 AND THE ADA SPECIAL PROVISION (PROSECUTION OF WORK).

TOP OF CURB SHALL MATCH PROPOSED ADJACENT WALK GRADE.

WHEN THE BOULEVARD IS 4' WIDE OR LESS, THE TOP OF CURB TAPER SHALL MATCH THE RAMP SLOPES TO REDUCE NEGATIVE BOULEVARD SLOPES FROM THE TOP BACK OF CURB TO THE PAR.

ALL RAMP TYPES SHOULD HAVE A MINIMUM 3' LONG RAMP LENGTH.

4' MINIMUM WIDTH OF DETECTABLE WARNING IS REQUIRED FOR ALL RAMPS. DETECTABLE WARNINGS SHALL CONTINUOUSLY EXTEND FOR A MIN. OF 24" IN THE PATH OF TRAVEL. DETECTABLE WARNING TO COVER THE ENTIRE PAR WIDTH OF SHARED-USE PATHS AND THE ENTIRE PAR WIDTH OF THE WALK WITH THE EXCEPTION OF 3" MAXIMUM ON EACH OUTSIDE EDGE WHICH ENSURES THE DETECTABLE WARNINGS ARE ENCASED IN CONCRETE WHEN ADJACENT TO TURF. WHEN ADJACENT TO CONCRETE FLARES 0" - 3" OFFSET IS ALLOWED.

WHEN DESIGNING OR ORDERING RECTANGULAR DETECTABLE WARNING SURFACES SHOULD BE 6" LESS THAN THE INCOMING PAR. ARC LENGTH OF THE RADIAL DETECTABLE WARNINGS SHOULD NOT BE GREATER THAN 20 FEET.

RADIAL DETECTABLE WARNINGS SHALL BE SETBACK 3" MINIMUM TO 6" MAXIMUM FROM THE BACK OF CURB. SEE NOTES ⑩ & ⑪ FOR INFORMATION REGARDING RECTANGULAR DETECTABLE WARNING PLACEMENT.

① MATCH FULL CURB HEIGHT.

② 3" HIGH CURB WHEN USING A 3' LONG RAMP
4" HIGH CURB WHEN USING A 4' LONG RAMP.

③ 3" MINIMUM CURB HEIGHT (5.5' MIN. DISTANCE REQUIRED BETWEEN DOMES)
4" PREFERRED (7' MIN. DISTANCE REQUIRED BETWEEN DOMES).

④ THE "BUMP" IN BETWEEN THE RAMPS SHOULD NOT BE IN THE PATH OF TRAVEL FOR COMBINED DIRECTIONAL RAMPS. IF THIS OCCURS MODIFY THE RAMP LOCATION OR SWITCH RAMP TO A FAN/DEPRESSED CORNER.

⑤ WHEN USING CONCRETE PAVED FLARES ON THE OUTSIDE OF DIRECTIONAL RAMPS, AND ADJACENT TO A WALKABLE SURFACE, DIRECTIONAL RAMP FLARES SHALL BE USED. SEE THE DETAIL ON THIS SHEET.

⑥ GRADING SHALL ALWAYS BE USED WHEN FEASIBLE. V CURB, IF USED, SHALL BE PLACED OUTSIDE THE SIDEWALK LIMITS WHEN RIGHT OF WAY ALLOWS. WHEN ADJACENT TO PARKING LOTS, CONCRETE OR BITUMINOUS TAPERS SHOULD BE USED OVER V CURB TO REDUCE TRIPPING HAZARDS AND FACILITATE SNOW & ICE REMOVAL.

⑦ MAX. 2.0% SLOPE IN ALL DIRECTIONS IN FRONT OF GRADE BREAK AND DRAIN TO FLOW LINE. SHALL BE CONSTRUCTED INTEGRAL WITH CURB AND GUTTER.

⑧ 8% TO 10% WALKABLE FLARE.

⑨ PLACE DOMES AT THE BACK OF CURB WHEN ALLOWABLE SETBACK CRITERIA IS EXCEEDED.

⑩ FRONT EDGE OF DETECTABLE WARNING SHALL BE SET BACK 2' MAXIMUM WHEN ADJACENT TO WALKABLE SURFACE, AND 5' MAXIMUM WHEN ADJACENT TO NON-WALKABLE SURFACE WITH ONE CORNER SET 3" FROM BACK OF CURB. A WALKABLE SURFACE IS DEFINED AS A PAVED SURFACE ADJACENT TO A CURB RAMP WITHOUT RAISED OBSTACLES THAT COULD MISTAKENLY BE TRAVERSED BY A USER WHO IS VISUALLY IMPAIRED.

⑪ RECTANGULAR DETECTABLE WARNINGS MAY BE SETBACK UP TO 9" FROM THE BACK OF CURB WITH CORNERS SET 3" FROM BACK OF CURB. IF 9" SETBACK IS EXCEEDED USE RADIAL DETECTABLE WARNINGS.

⑫ FOR DIRECTIONAL RAMPS WITH THE DETECTABLE WARNINGS PLACED AT THE BACK OF CURB, THE DETECTABLE WARNINGS SHALL COVER THE ENTIRE WIDTH OF THE WALK/PATH. THIS ENSURES A DETECTABLE EDGE AND HELPS ELIMINATE THE CURB TAPER OBSTRUCTING THE PATH OF PEDESTRIAN TRAVEL.

⑬ THE CONCRETE WALK SHALL BE FORMED AND CONSTRUCTED PERPENDICULAR TO THE BACK OF CURB. MAINTAIN 3" BETWEEN EDGE OF DOMES AND EDGE OF CONCRETE.

⑭ TO BE USED FOR ALL DIRECTIONAL RAMPS, EXCEPT WHERE DOMES ARE PLACED ALONG THE BACK OF CURB.

⑮ PLACE 2 NO. 4 BARS 4 INCHES FROM SIDE OF FORMS WITH A MINIMUM 2 INCHES OF CONCRETE COVER ALONG EACH SIDE OF FLARE (INCIDENTAL).

LEGEND

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

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

REVISION:
APPROVED: 11-04-2021
Jeffrey J. Perkins
JEFFREY PERKINS
OPERATIONS DIVISION

MINNESOTA
DEPARTMENT OF TRANSPORTATION

STANDARD PLAN 5-297.250 **2 OF 6**

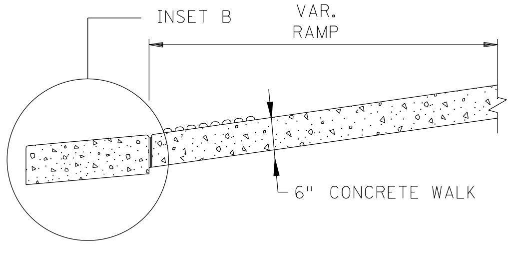
APPROVED: 11-04-2021
REVISED:

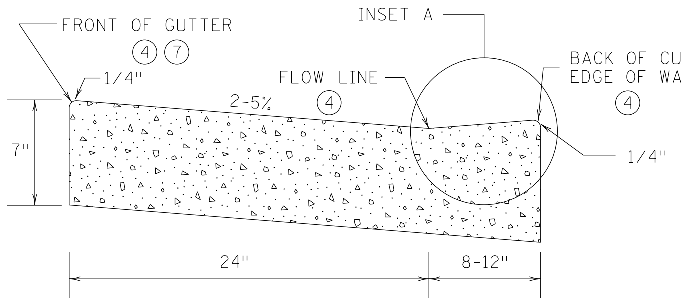
THOMAS STYRBICKI
STATE DESIGN ENGINEER

PEDESTRIAN CURB RAMP DETAILS

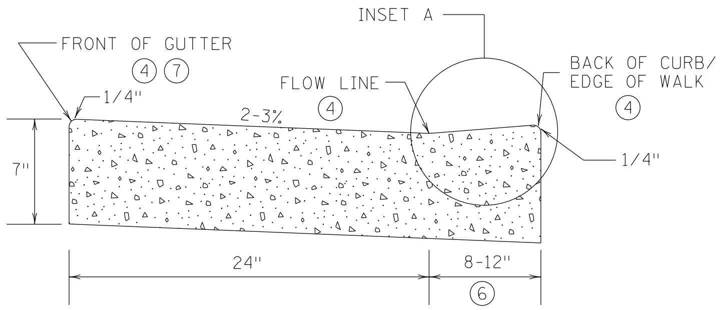
STATE PROJ. NO. SAP 002-609-022
SAP 198-020-039

SHEET NO. 20 OF 167 SHEETS

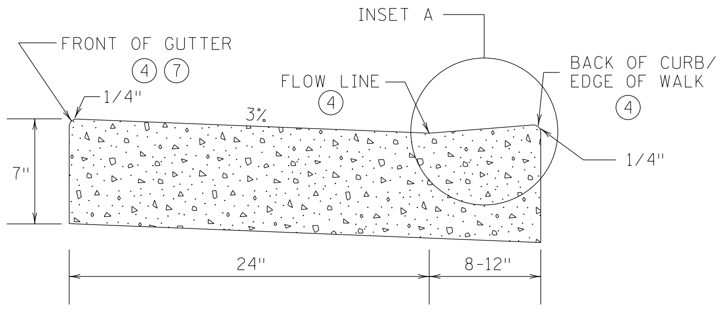




PERPENDICULAR ①

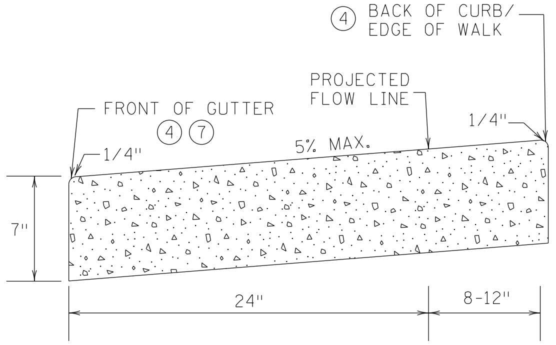


NON PERPENDICULAR ②



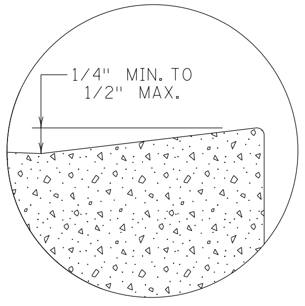
FOR CURB MACHINE PLACEMENT AROUND RADIUS ③
(REGARDLESS OF RAMP TYPE)

PEDESTRIAN ACCESS ROUTE CURB & GUTTER DETAIL

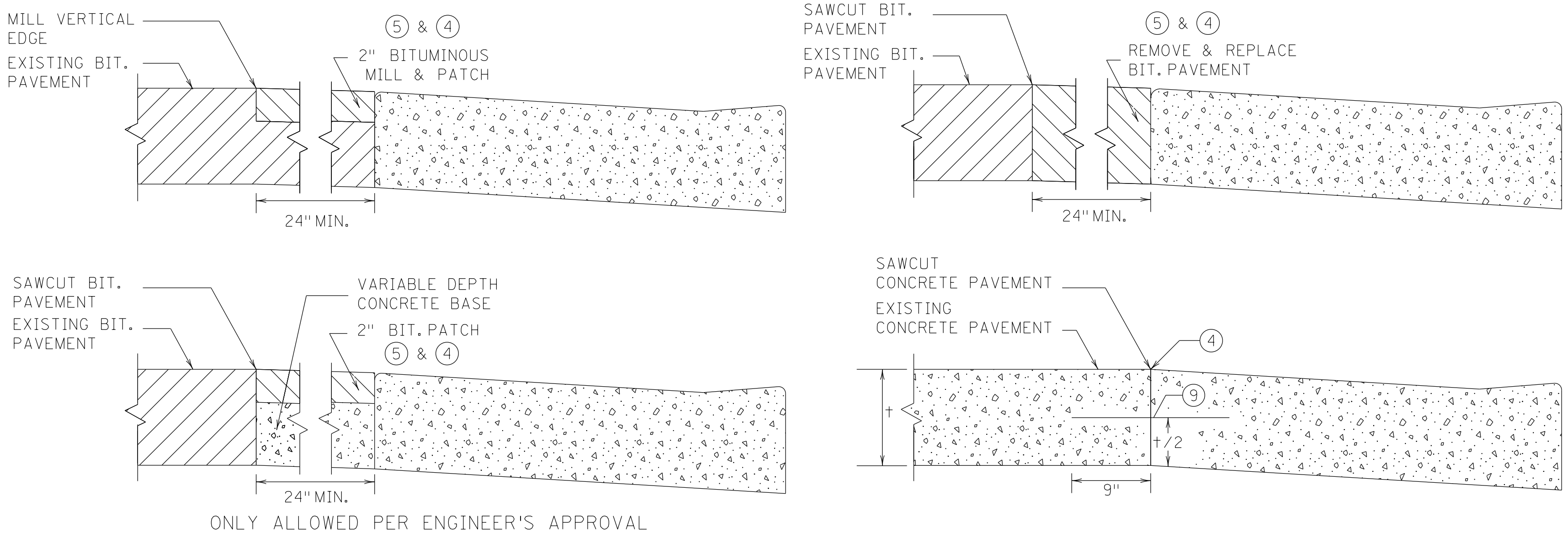


INSET B

OUTFLOW GUTTER ⑧



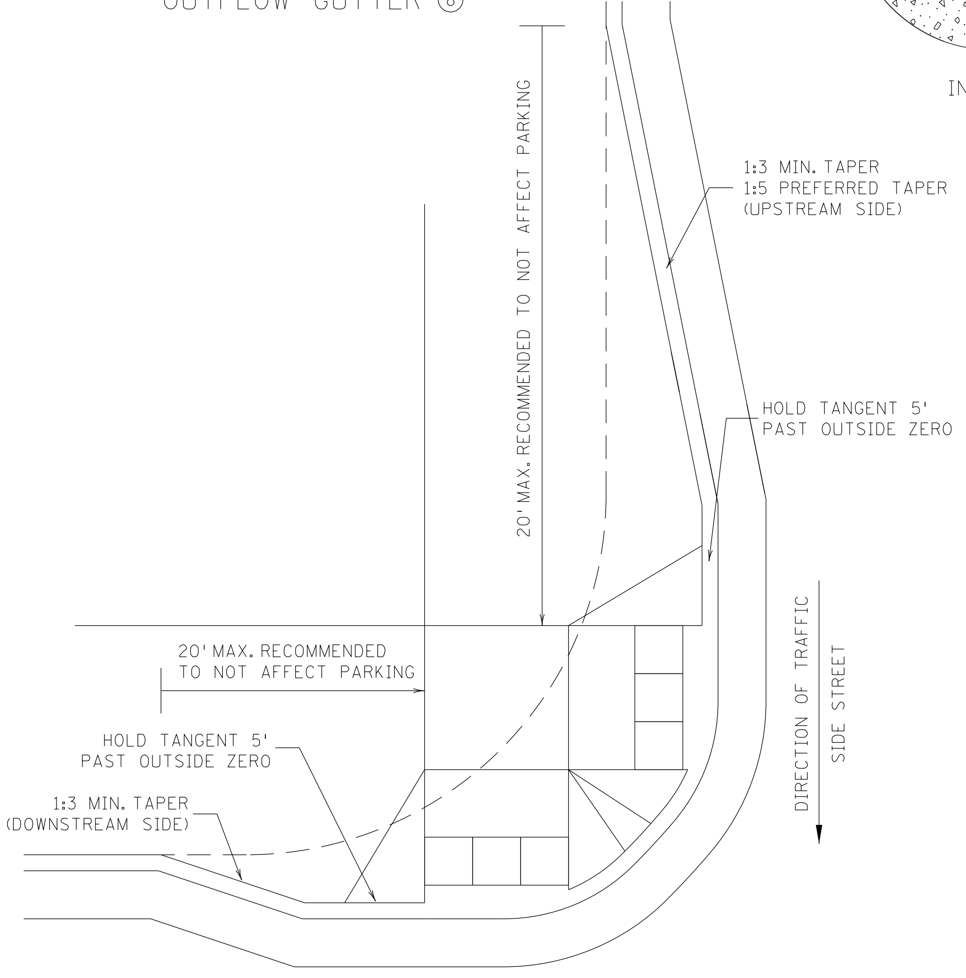
INSET A



ONLY ALLOWED PER ENGINEER'S APPROVAL

PAVEMENT TREATMENT OPTIONS IN FRONT OF CURB & GUTTER

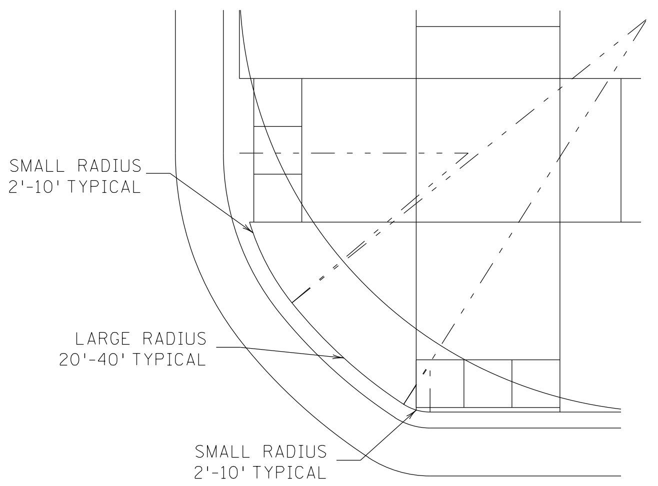
FOR USE ON CURB RAMP RETROFITS



ADA CURB EXTENSION WITH COMPOUND RADIUS (BUMP OUT) ⑪

DIRECTION OF TRAFFIC

MAIN STREET



COMBINED DIRECTIONAL ⑩
(COMPOUND RADIUS)

NOTES:

POSITIVE FLOW LINE DRAINAGE SHALL BE MAINTAINED THROUGH THE PEDESTRIAN ACCESS ROUTE (PAR) AT A 2% MAXIMUM.

NO PONDING SHALL BE PRESENT IN THE PAR.

ANY VERTICAL LIP THAT OCCURS AT THE FLOW LINE SHALL NOT BE GREATER THAN 1/4 INCH.

① FOR USE AT CURB CUTS WHERE THE PEDESTRIAN'S PATH OF TRAVEL IS ASSUMED PERPENDICULAR TO THE GUTTER FLOW LINE. RAMP TYPES INCLUDE: PERPENDICULAR, TIERED PERPENDICULAR, PARALLEL, AND DIAGONAL RAMPS.

② FOR USE AT CURB RAMPS WHERE THE PEDESTRIAN'S PATH OF TRAVEL IS ASSUMED NON PERPENDICULAR TO THE GUTTER FLOW LINE. RAMP TYPES INCLUDE: FANS & DEPRESSED CORNERS.

③ BEGIN GUTTER SLOPE TRANSITION 10' OUTSIDE OF ALL CURB RAMPS.

④ THERE SHALL BE NO VERTICAL DISCONTINUITIES GREATER THAN 1/4".

⑤ ELEVATION CHANGE TAKES PLACE FROM THE EXISTING TO NEW FRONT OF GUTTER. PATCH IS USED TO MATCH THE NEW GUTTER FACE INTO THE EXISTING ROADWAY.

⑥ VARIABLE WIDTH FOR DIRECTIONAL CURB APPLICATIONS. SEE SHEET 2 FOR DIRECTIONAL CURB SLOPE REQUIREMENTS.

⑦ TOP FRONT OF GUTTER SHALL BE CONSTRUCTED FLUSH WITH PROPOSED ADJACENT PAVEMENT ELEVATION. TOP 1.5" OF THE GUTTER FACE MUST BE A FORMED EDGE. PAR GUTTER SHALL NOT BE OVERLAID.

⑧ SHOULD BE USED AT VERTICALLY CONSTRAINED AREAS WHEN AT A DRAINAGE HIGH POINT OR SUPER ELEVATED ROADWAY SEGMENTS.

⑨ DRILL AND GROUT NO. 4 EPOXY-COATED 18" LONG TIE BARS AT 30" CENTER TO CENTER INTO EXISTING CONCRETE PAVEMENT 1' MINIMUM FROM ALL JOINTS.

⑩ HELPS PROVIDE TWO SEPARATE RAMPS, REDUCES THE DOME SETBACK LENGTH AND MINIMIZES DIRECTIONAL CURB. THIS RADIUS DESIGN CLOSELY FOLLOWS THE TURNING VEHICLE PATH WHILE OPTIMIZING CURB RAMP LENGTH.

⑪ CURB EXTENSIONS SHOULD BE USED IN VERTICALLY CONSTRAINED AREAS, USUALLY IN DOWNTOWN ROADWAY SEGMENTS WHERE ON-STREET PARKING IS AVAILABLE. CURB EXTENSIONS SHOULD BE CONSIDERED FOR APS INTERSECTIONS WHERE SPACE IS LIMITED.
PUSH BUTTONS MUST MEET APS CRITERIA AS DESCRIBED IN THE PUSH BUTTON LOCATION DETAIL SHEET.

REVISION:
APPROVED: 11-04-2021
Jeffrey J. Perkins
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OPERATIONS DIVISION

MINNESOTA
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OF
TRANSPORTATION

STANDARD PLAN 5-297.250 | **3 OF 6**

APPROVED: 11-04-2021
REVISED:

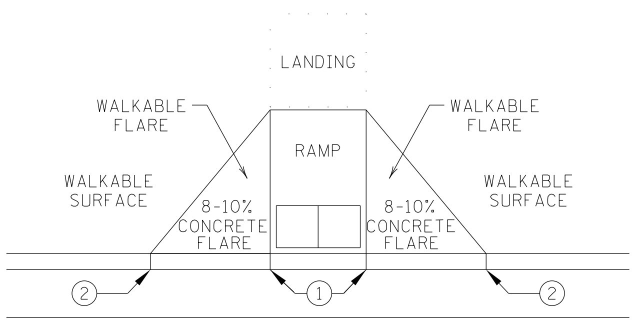
Tom Styrbicki
THOMAS STYRBICKI
STATE DESIGN ENGINEER

PEDESTRIAN CURB RAMP DETAILS

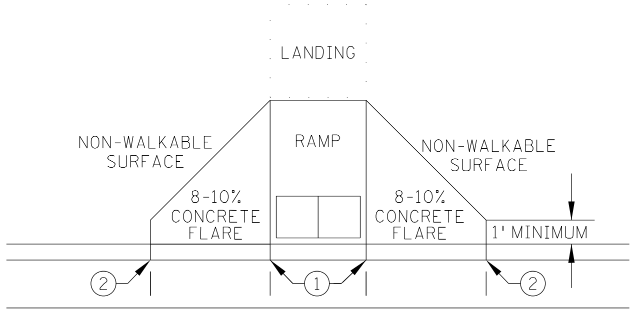
STATE PROJ. NO. SAP 002-609-022
SAP 198-020-039

SHEET NO. 21 OF 167 SHEETS

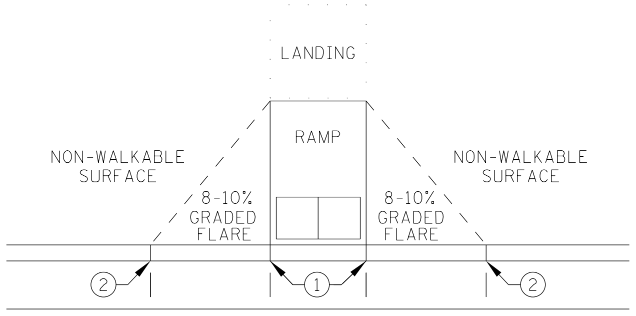
DISTRICT #:
PLOT NAME: $$@IPLOT$NAME@$$
PATH & FILENAME: P:\002-609-022\Plan\2_MNDOT SHEETS FOR PLAN\MICRO\1_DGN SHEETS COMBINED.dgn
PLOTTED/REVISED: 11/28/2023



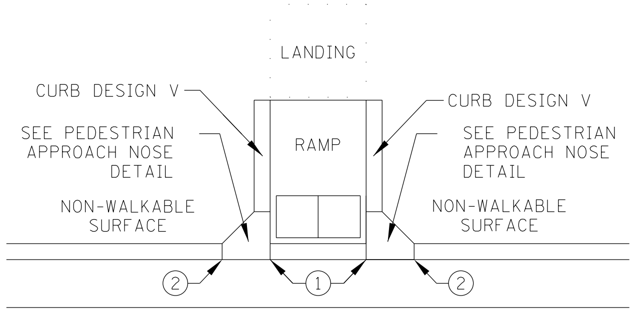
PAVED FLARES ADJACENT TO WALKABLE SURFACE



PAVED FLARES ADJACENT TO NON-WALKABLE SURFACE

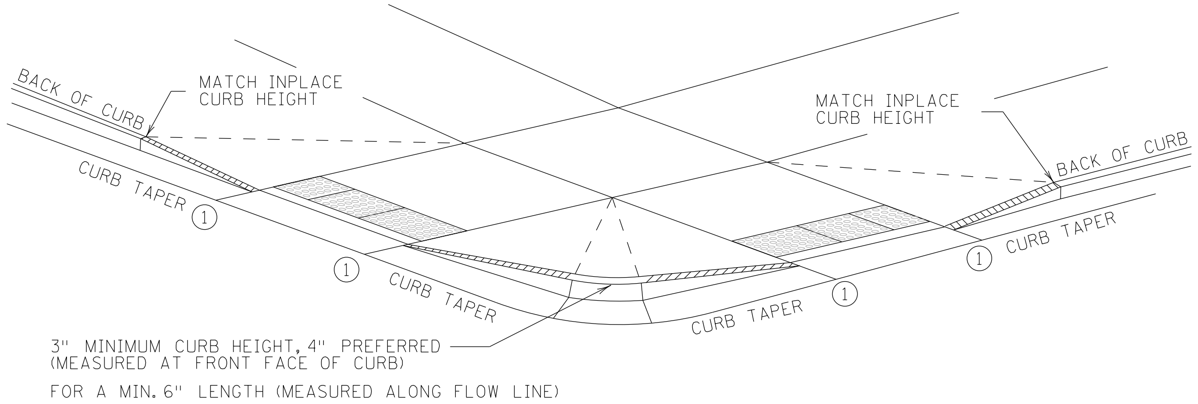


GRADED FLARES

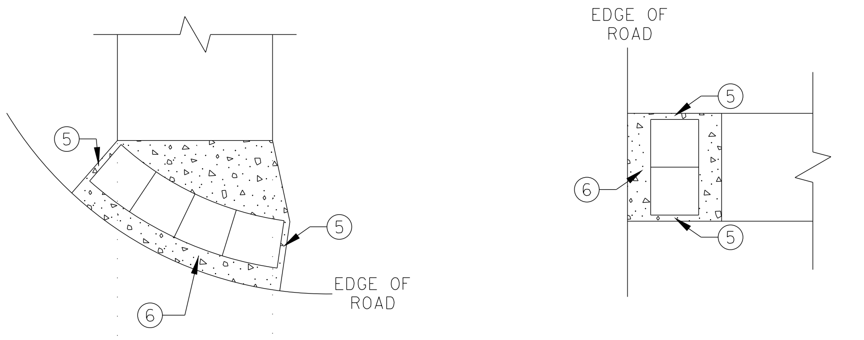


RETURNED CURB ④

TYPICAL SIDE TREATMENT OPTIONS ③ ⑩



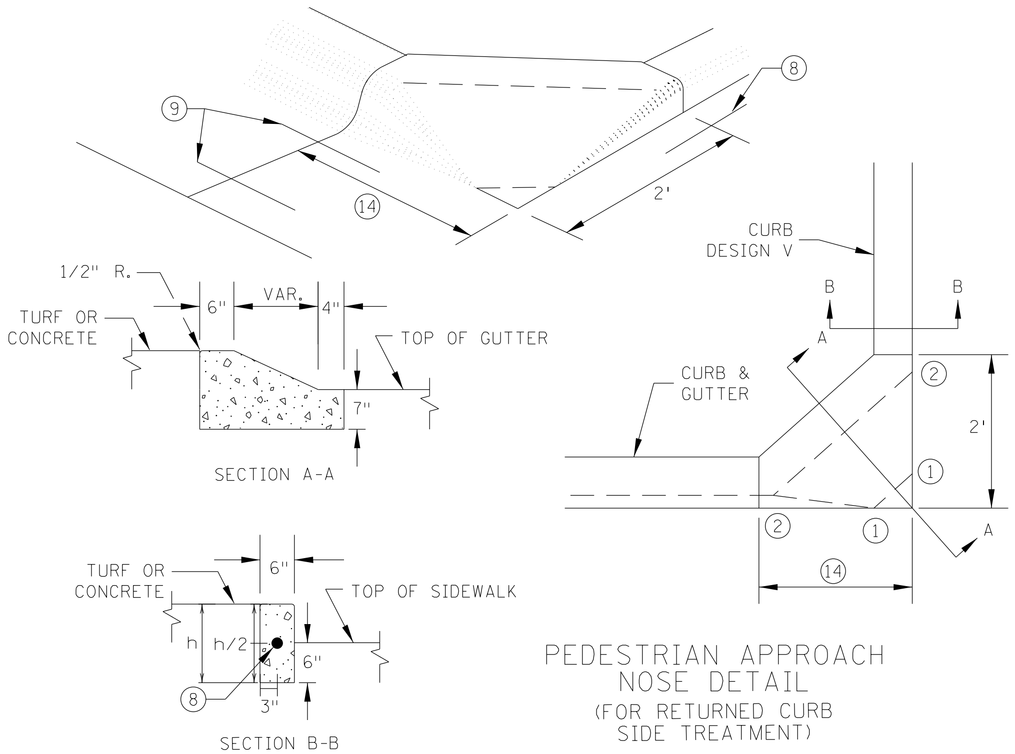
DETECTABLE EDGE WITH CURB AND GUTTER ⑦



RADIAL DETECTABLE WARNING

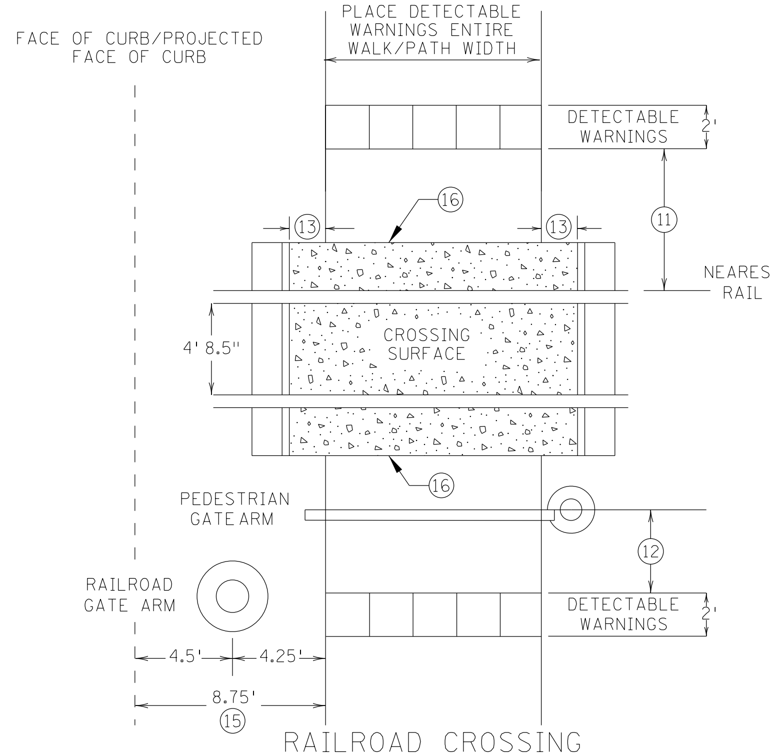
RECTANGULAR DETECTABLE WARNING

DETECTABLE EDGE WITHOUT CURB AND GUTTER



PEDESTRIAN APPROACH NOSE DETAIL

(FOR RETURNED CURB SIDE TREATMENT)



RAILROAD CROSSING PLAN VIEW

NOTES:

INTERMEDIATE CURB HEIGHTS TAPER SHALL RISE AT 8-10% TO A MINIMUM 3 INCH CURB HEIGHT. INCREASE CURB TAPER LENGTH AT LESS THAN 8% OR REDUCE INTERMEDIATE CURB HEIGHT TO 2+ INCHES IF NECESSARY TO MATCH ADJACENT BOULEVARD OR SIDEWALK GRADES.

SEE STANDARD PLATE 7038 AND THIS SHEET FOR ADDITIONAL DETAILS ON DETECTABLE WARNING.

A WALKABLE SURFACE IS DEFINED AS A PAVED SURFACE ADJACENT TO A CURB RAMP WITHOUT RAISED OBSTACLES THAT COULD MISTAKENLY BE TRAVERSED BY A USER WHO IS VISUALLY IMPAIRED.

CONCRETE FLARE LENGTHS ADJACENT TO NON-WALKABLE SURFACES SHOULD BE LESS THAN 8' LONG MEASURED ALONG THE RAMPS FROM THE BACK OF CURB.

① 0" CURB HEIGHT. SEE INSET A ON SHEET 3 OF 6.

② FULL CURB HEIGHT.

③ SIDE TREATMENTS ARE APPLICABLE TO ALL RAMP TYPES AND SHOULD BE IMPLEMENTED AS NEEDED AS FIELD CONDITIONS DICTATE. THE ENGINEER SHALL DETERMINE THE RAMP SIDE TREATMENTS BASED ON MAINTENANCE OF BOTH ROADWAY AND SIDEWALK, ADJACENT PROPERTY CONSIDERATIONS, AND MITIGATING CONSTRUCTION IMPACTS.

④ TYPICALLY USED FOR MEDIANS AND ISLANDS.

⑤ WHEN NO CONCRETE FLARES ARE PROPOSED, THE CONCRETE WALK SHALL BE FORMED AND CONSTRUCTED PERPENDICULAR TO THE EDGE OF ROADWAY. MAINTAIN 3" MAX. BETWEEN EDGE OF DOMES AND EDGE OF CONCRETE.

⑥ IF NO CURB AND GUTTER IS PLACED IN RURAL SECTIONS, DETECTABLE WARNINGS SHALL BE PLACED 1' FROM THE EDGE OF BITUMINOUS ROADWAY AND/OR BITUMINOUS SHARED-USE PATH TO PROVIDE VISUAL CONTRAST.

⑦ ALL CONSTRUCTED CURBS MUST HAVE A CONTINUOUS DETECTABLE EDGE FOR THE VISUALLY IMPAIRED. THIS DETECTABLE EDGE REQUIRES DETECTABLE WARNINGS WHEREVER THERE IS ZERO-INCH HIGH CURB. CURB TAPERS ARE CONSIDERED A DETECTABLE EDGE WHEN THE TAPER STARTS WITHIN 3" OF THE EDGE OF THE DETECTABLE WARNINGS, AND UNIFORMLY RISES TO A 3-INCH MINIMUM CURB HEIGHT. ANY CURB NOT PART OF A CURB TAPER AND LESS THAN 3 INCHES IN HEIGHT IS NOT CONSIDERED A DETECTABLE EDGE AND THEREFORE IS NOT COMPLIANT WITH ACCESSIBILITY STANDARDS.

⑧ DRILL AND GROUT 1 - NO. 4 12" LONG REINFORCEMENT BAR (EPOXY COATED) WITH 3" MIN. COVER. REINFORCEMENT BARS ARE NOT NEEDED IF THE APPROACH NOSE IS POURED INTEGRAL WITH THE V CURB.

⑨ DRILL AND GROUT 2 - NO. 4 12" LONG REINFORCEMENT BARS (EPOXY COATED) WITH 3" MIN. COVER. REINFORCEMENT BARS ARE NOT NEEDED IF THE APPROACH NOSE IS POURED INTEGRAL WITH THE CURB AND GUTTER.

⑩ SIDE TREATMENT EXAMPLES SHOWN ARE WHEN THE INITIAL LANDING IS APPROXIMATELY LEVEL WITH THE FULL HEIGHT CURB (I.E. 6' LONG RAMP FOR 6" HIGH CURB). WHEN THE INITIAL LANDING IS MORE THAN 1" BELOW FULL HEIGHT CURB REFER TO SHEETS 1 & 2 TO MODIFY THE CURB HEIGHT TAPERS AND MAINTAIN POSITIVE BOULEVARD DRAINAGE. CONSTRUCT THESE TAPERS AT 0"-3" AT 8-10%, THEN LESS THAN 5% FROM 3" CURB TO FULL CURB HEIGHT.

⑪ NEAREST EDGE OF DETECTABLE WARNING SURFACES SHALL BE PLACED 12' MINIMUM TO 15' MAXIMUM FROM THE NEAREST RAIL. FOR SKEWED RAILWAYS IN NO INSTANCE SHALL THE DETECTABLE WARNING BE CLOSER THAN 12' MEASURED PERPENDICULAR TO THE NEAREST RAIL.

⑫ WHEN PEDESTRIAN GATES ARE PROVIDED, DETECTABLE WARNING SURFACES SHALL BE PLACED ON THE SIDE OF THE GATES OPPOSITE THE RAIL, 2' FROM THE APPROACHING SIDE OF THE GATE ARM. THIS CRITERIA GOVERNS OVER NOTE ⑪.

⑬ CROSSING SURFACE SHALL EXTEND 2' MINIMUM PAST THE OUTSIDE EDGE OF WALK OR SHARED-USE PATH.

⑭ 3' FOR MEDIANS AND SPLITTER ISLANDS. NOSE CAN BE REDUCED TO 2' ON FREE RIGHT ISLANDS.

⑮ SIDEWALK TO BE PLACED 8.75' MIN. FROM THE FACE OF CURB/PROJECTED FACE OF CURB. THIS ENSURES MIN. CLEARANCE BETWEEN THE SIDEWALK AND GATE ARM COUNTERWEIGHT SUPPORTS.

⑯ CONSTRUCT WITH EXPANSION MATERIAL PER MNDOT SPECIFICATION 3702 TYPES A-E. EXPANSION MATERIAL SHALL MATCH FULL HEIGHT OF ADJACENT CONCRETE.

DISTRICT #:
PLOT NAME: $$@IPLOT$NAME@$$
PATH & FILENAME: P:\002-609-022\Plan\2_MNDOT SHEETS FOR PLAN\MICRO\1_DGN SHEETS COMBINED.dgn
PLOTTED/REVISED: 11/28/2023

REVISION:
APPROVED: 11-04-2021
Jeffrey J. Perkins
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OPERATIONS DIVISION

MINNESOTA
DEPARTMENT OF TRANSPORTATION

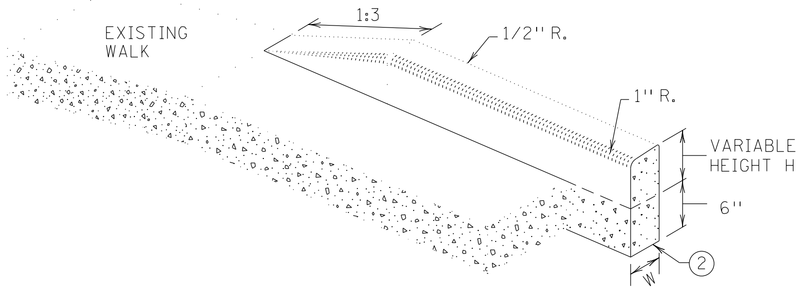
STANDARD PLAN 5-297.250 | 4 OF 6

APPROVED: 11-04-2021
REVISED:

THOMAS STYRBICKI
STATE DESIGN ENGINEER

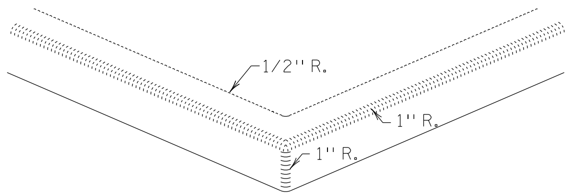
PEDESTRIAN CURB RAMP DETAILS

STATE PROJ. NO.
SAP 002-609-022
SAP 198-020-039



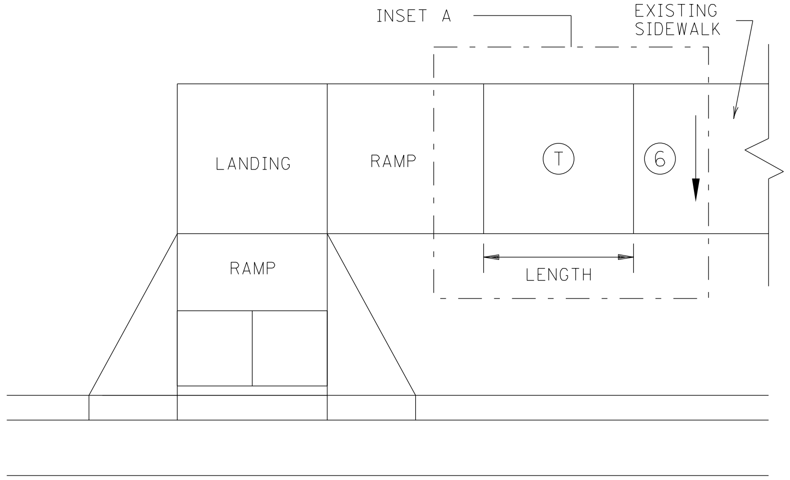
V CURB ADJACENT TO LANDSCAPE

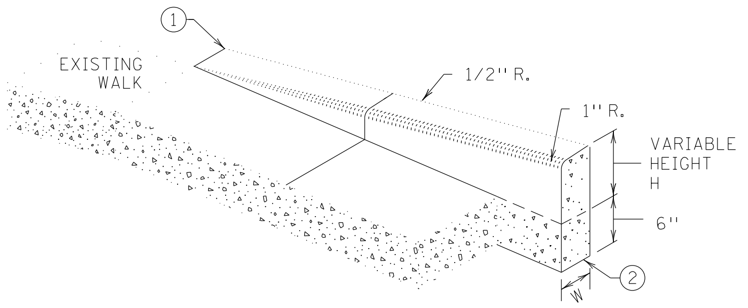
CURB WITHIN SIDEWALK LIMITS



V CURB INTERSECTION

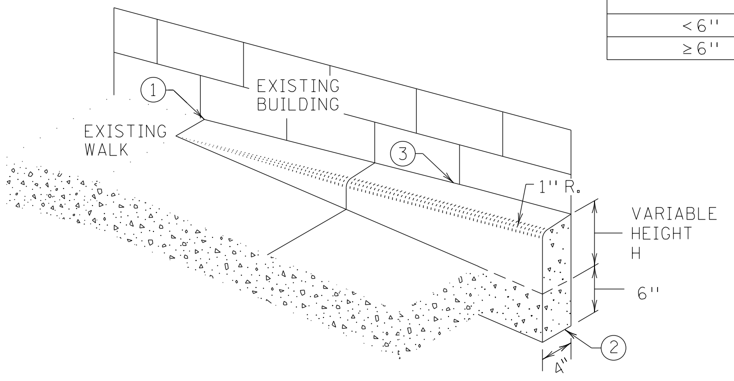
CONCRETE CURB DESIGN V	
CURB HEIGHT H	CURB WIDTH W
<6"	4"
≥6"	6"





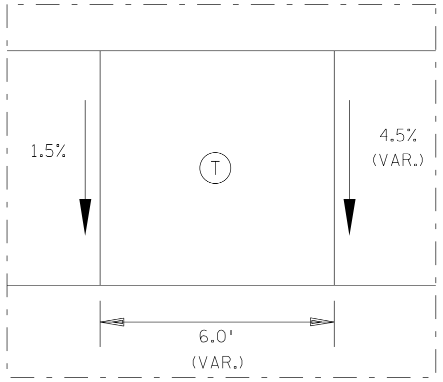
V CURB ADJACENT TO LANDSCAPE

CURB OUTSIDE SIDEWALK LIMITS

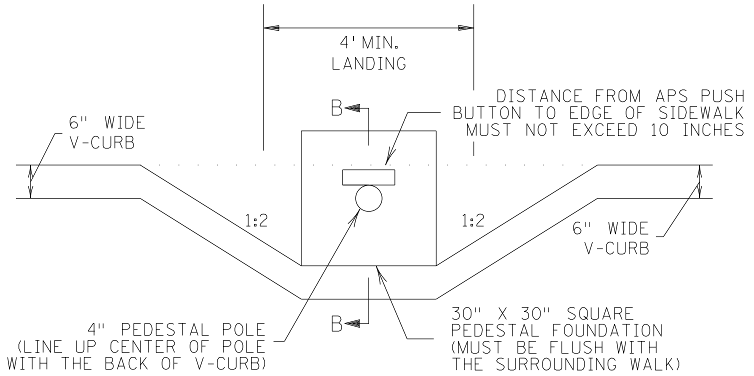


V CURB ADJACENT TO BUILDING OR BARRIER

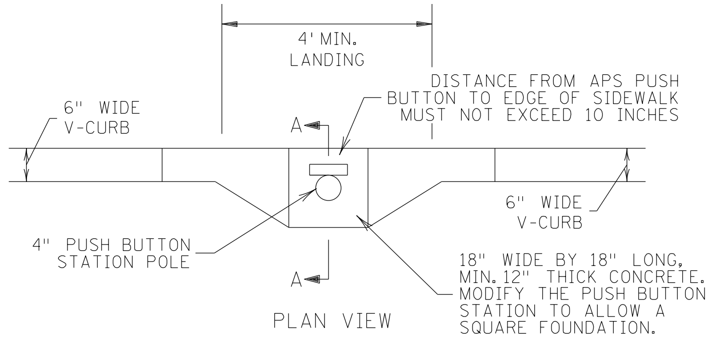
TRANSITION PANEL ④⑤



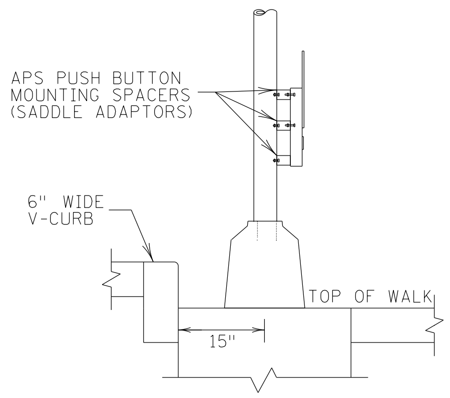
INSET A



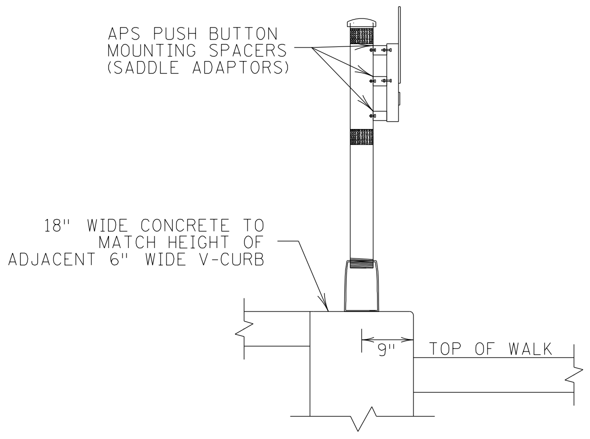
PLAN VIEW



PLAN VIEW



SECTION B-B



SECTION A-A

SIGNAL PEDESTAL & PUSH BUTTON (V-CURB)

PUSH BUTTON STATION (V-CURB)

NOTES:

A WALKABLE FLARE IS AN 8-10% CONCRETE FLARE THAT IS REQUIRED WHEN THE FLARE IS ADJACENT TO A WALKABLE SURFACE, OR WHEN THE PEDESTRIAN PATH OF TRAVEL OF A PUSH BUTTON TRAVERSES THE FLARE.

ALL V CURB CONTRACTION JOINTS SHALL MATCH CONCRETE WALK JOINTS.

WHERE RIGHT-OF-WAY ALLOWS, USE OF V CURB SHOULD BE MINIMIZED. GRADING ADJACENT TURF OR SLOPING ADJACENT PAVEMENT IS PREFERRED.

V CURB SHALL BE PLACED OUTSIDE THE SIDEWALK LIMITS WHEN RIGHT OF WAY ALLOWS.

V CURB NEXT TO BUILDING SHALL BE A 4" WIDTH AND SHALL MATCH PREVIOUS TOP OF SIDEWALK ELEVATIONS.

① END TAPERS AT TRANSITION SECTION SHALL MATCH INPLACE SIDEWALK GRADES.

② ALL V CURB SHALL MATCH BOTTOM OF ADJACENT WALK.

③ CONSTRUCT USING APPROVED EXPANSION MATERIAL PER MNDOT TYPE A-E EXPANSION. LEAVE A MINIMUM ½" TOP GAP AND SEAL WITH MNDOT APPROVED SILICONE PER MNDOT SPEC 3722.

④ THE MAX. RATE OF CROSS SLOPE TRANSITIONING IS 1' LINEAR FOOT OF SIDEWALK PER HALF PERCENT CROSS SLOPE. WHEN PAR WIDTH IS GREATER THAN 6' OR THE RUNNING SLOPE IS GREATER THAN 5%, DOUBLE THE CALCULATED TRANSITION LENGTH.

⑤ TRANSITION PANELS ARE TO ONLY BE USED AFTER THE RAMP, OR IF NEEDED, LANDING ARE AT THE FULL CURB HEIGHT (TYPICAL SECTION).

⑥ EXISTING CROSS SLOPE GREATER THAN 2.0%.

LEGEND

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

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

REVISION:
APPROVED: 11-04-2021
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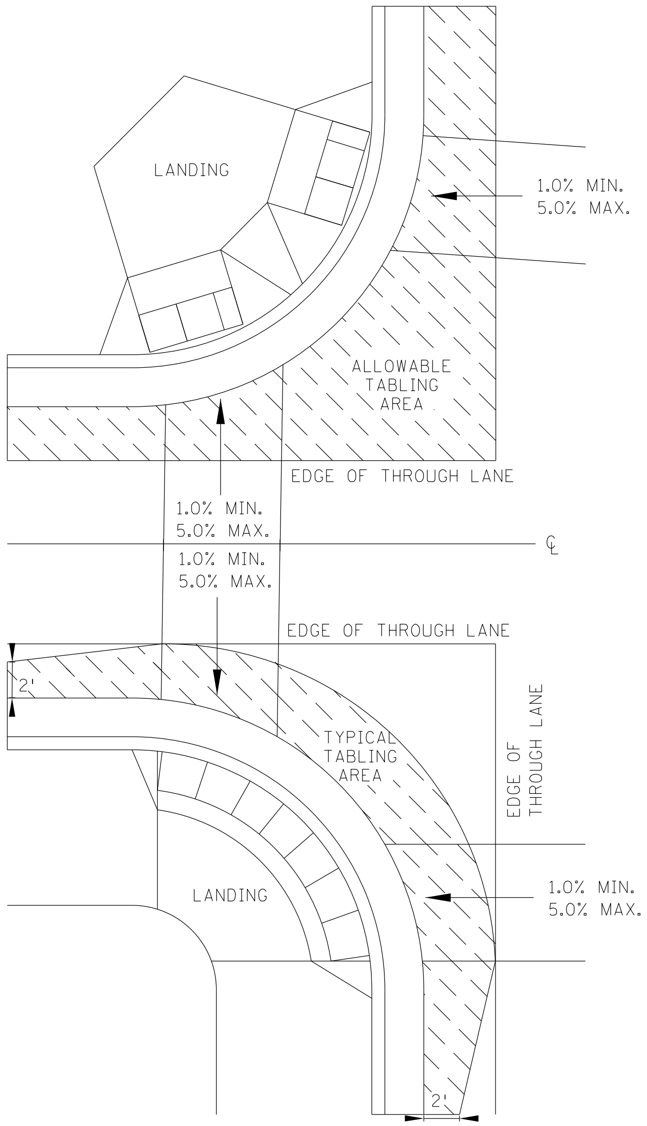
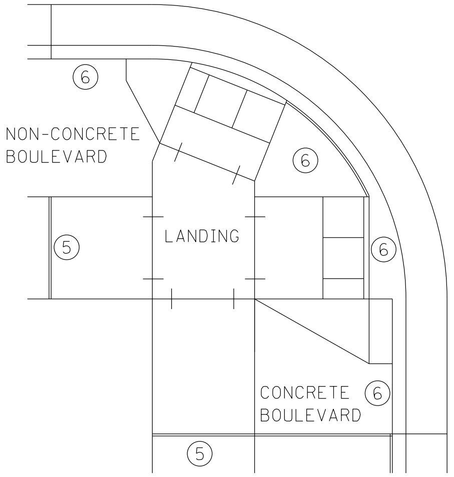
STANDARD PLAN 5-297.250
5 OF 6
APPROVED: 11-04-2021
REVISED:
THOMAS STYRBICKI
STATE DESIGN ENGINEER

PEDESTRIAN CURB RAMP DETAILS

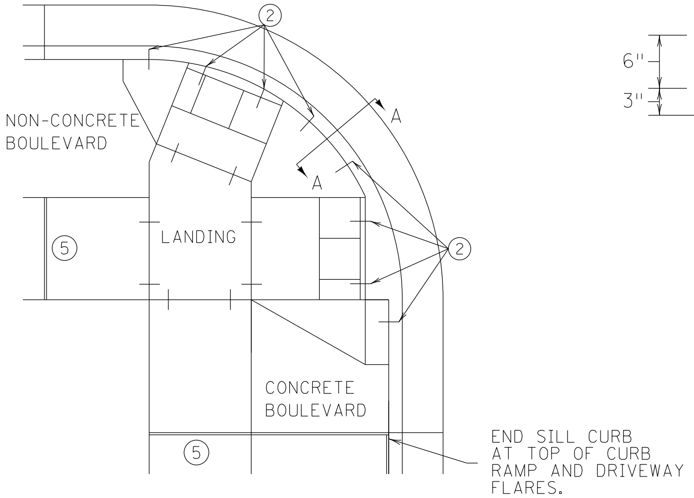
STATE PROJ. NO.
SAP 002-609-022
SAP 198-020-039



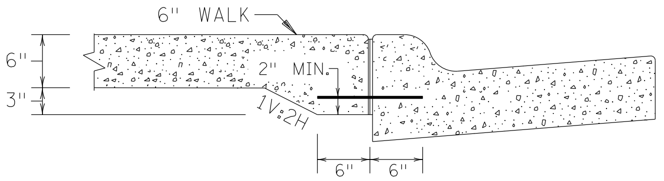
CURB LINE AND ROAD CROSSING ADJUSTMENTS



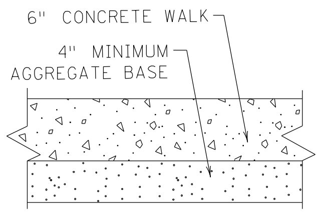
EXPANSION MATERIAL PLACEMENT FOR CONCRETE ROADWAYS



CURB LINE REINFORCEMENT ④ PLACEMENT ON BITUMINOUS ROADWAYS

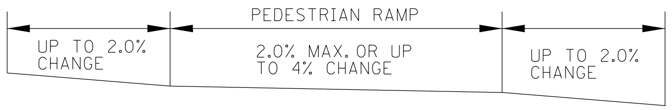


SECTION VIEW A-A
THICKENED SECTION THROUGH CURB RAMP FLARES



TYPICAL SIDEWALK SECTION WITHIN INTERSECTION CORNER

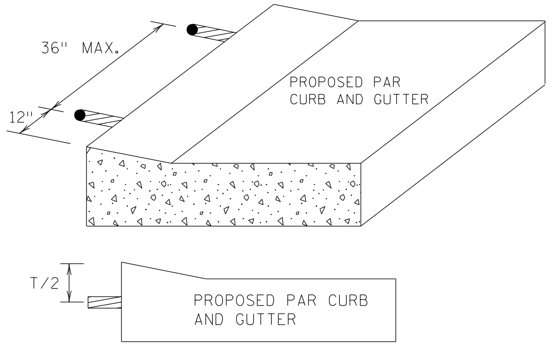
FLOW LINE PROFILE "TABLE" - TWIN PERPENDICULARS



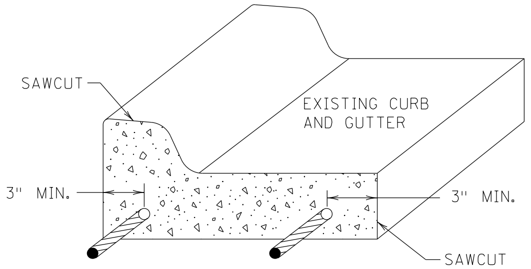
FLOW LINE PROFILE "TABLE" - FAN

FLOW LINE PROFILE RAISE - TWIN PERPENDICULARS

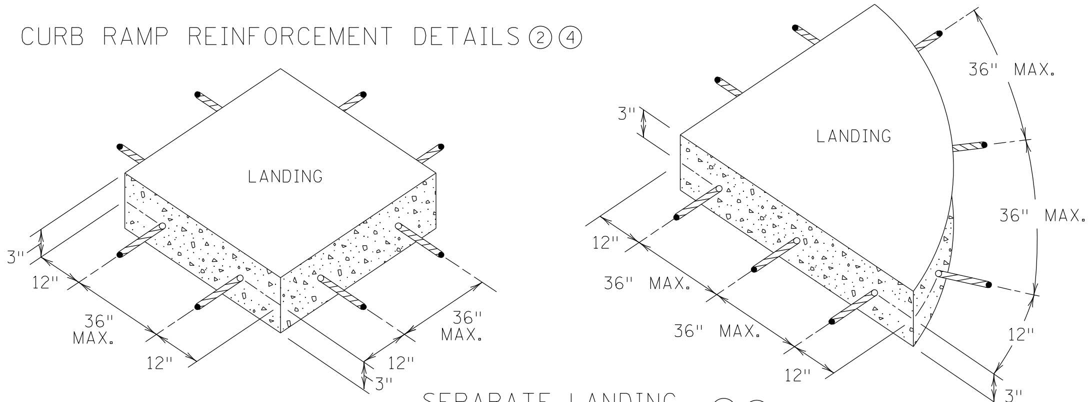
FLOW LINE PROFILE RAISE - FAN



CURB RAMP REINFORCEMENT DETAILS ②④



CURB AND GUTTER REINFORCEMENT ③



SEPARATE LANDING POUR REINFORCEMENT ①②

GENERAL NOTES:

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

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

MILL & OVERLAY PROJECTS: "TABLING" OF FLOW LINES, IN FRONT OF THE PEDESTRIAN RAMP, IS REQUIRED WHEN THE EXISTING FLOW LINE IS GREATER THAN 2%. WARPING OF THE BITUMINOUS PAVEMENT CAN NOT EXTEND INTO THE THROUGH LANE. TABLE THE FLOW LINE TO 2% OR AS MUCH AS POSSIBLE WHILE ADHERING TO THE FOLLOWING CRITERIA;
1) 1.0% MIN. CROSS-SLOPE OF THE ROAD
2) 5.0% MAX. CROSS-SLOPE OF THE ROAD
3) "TABLE" FLOW LINE UP TO 4% CHANGE FROM EXISTING SLOPE IN FRONT OF PEDESTRIAN RAMP
4) UP TO 2% CHANGE IN FLOW LINE FROM EXISTING SLOPE BEYOND THE PEDESTRIAN CURB RAMP

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

RAISING OF CURB LINES SHOULD OCCUR IN VERTICALLY CONSTRAINED AREAS. RAISE THE CURB LINES ENOUGH TO ALLOW COMPLIANT RAMPS OR AS MUCH AS POSSIBLE WHILE ADHERING TO THE FOLLOWING CRITERIA;
1) 1.0% MIN. AND 5.0% MAXIMUM CROSS-SLOPE OF THE ROAD
2) 1.0% MIN. FLOW LINE (ON EITHER SIDE OF PEDESTRIAN RAMP) TO MAINTAIN POSITIVE DRAINAGE
3) 5.0% RECOMMENDED MAX. FLOW LINE
4) LONGITUDINAL THROUGH LANE ROADWAY TAPERS SHOULD BE 1" VERTICAL PER 15' HORIZONTAL

NOTES:

① TO ENSURE RAMPS AND LANDINGS ARE PROPERLY CONSTRUCTED, ALL INITIAL LANDINGS AT A TOP OF A RAMPED SURFACE (RUNNING SLOPE GREATER THAN 2%) SHALL BE FORMED AND PLACED SEPARATELY IN AN INDEPENDENT CONCRETE POUR. FOLLOW SIDEWALK REINFORCEMENT DETAILS ON THIS SHEET FOR ALL SEPARATELY POURED INITIAL LANDINGS.

② DRILL AND GROUT NO. 4 12" LONG REINFORCEMENT BARS (EPOXY COATED) AT 36" MAXIMUM CENTER TO CENTER MINIMUM 12" SPACING FROM CONSTRUCTION JOINTS. BARS TO BE ADJUSTED TO MATCH RAMP GRADE. BARS TO BE PAID BY EACH.

③ DRILL AND GROUT 2 - NO. 4 X 12" LONG (6" EMBEDDED) REINFORCEMENT BARS (EPOXY COATED). REINFORCEMENT REQUIRED FOR ALL CONSTRUCTION JOINTS. BARS TO BE PAID BY EACH.

④ THIS CURB LINE REINFORCEMENT DETAIL SHALL BE USED ON BITUMINOUS ROADWAYS. FOR CONCRETE ROADWAYS, SEE NOTE 6.

⑤ CONSTRUCT WITH EXPANSION MATERIAL PER MNDOT SPECIFICATION 3702 TYPES A-E. EXPANSION MATERIAL SHALL MATCH FULL HEIGHT OF ADJACENT CONCRETE.

⑥ USE AN APPROVED TYPE F (1/4 INCH THICK) SEPARATION MATERIAL. SEPARATION MATERIAL SHALL MATCH FULL HEIGHT DIMENSION OF ADJACENT CONCRETE.

REVISION:
APPROVED: 11-04-2021
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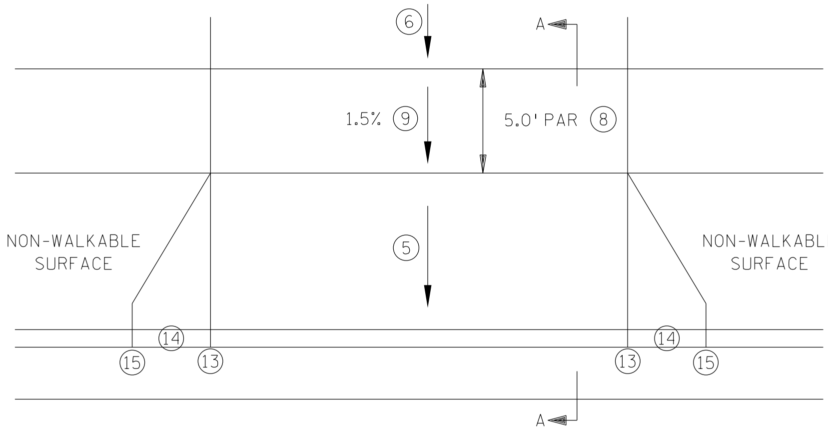
STANDARD PLAN 5-297.250 | **6 OF 6**
APPROVED: 11-04-2021
REVISED:
THOMAS STYRBICKI
STATE DESIGN ENGINEER

PEDESTRIAN CURB RAMP DETAILS

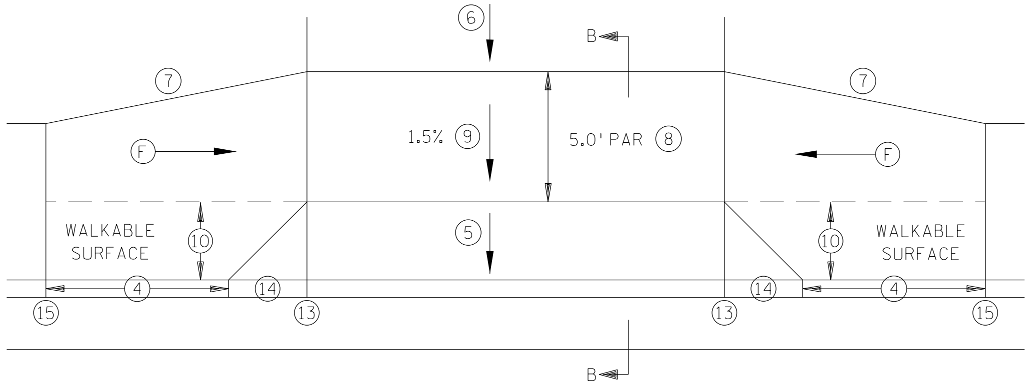
STATE PROJ. NO.
SAP 002-609-022
SAP 198-020-039

SHEET NO. 24 OF 167 SHEETS

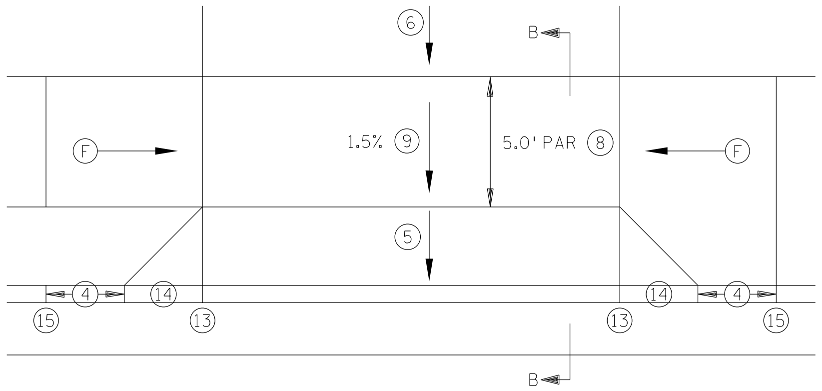
PLOTTED/REVISED: 11/28/2023
DISTRICT #:
PLOT NAME: $$@IPLOT$NAME@$$
PATH & FILENAME: P:\002-609-022\Plan\2_MNDOT SHEETS FOR PLAN\MICRO\1_DGN SHEETS COMBINED.dgn



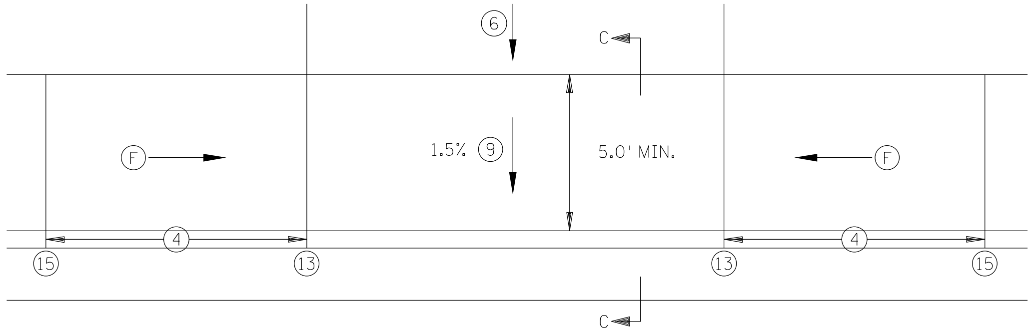
PERPENDICULAR DRIVEWAY ①



TIERED PERPENDICULAR OFFSET DRIVEWAY ②



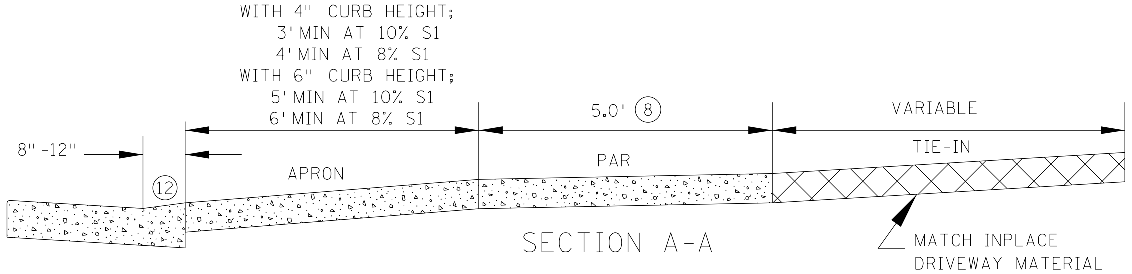
TIERED PERPENDICULAR DRIVEWAY ②



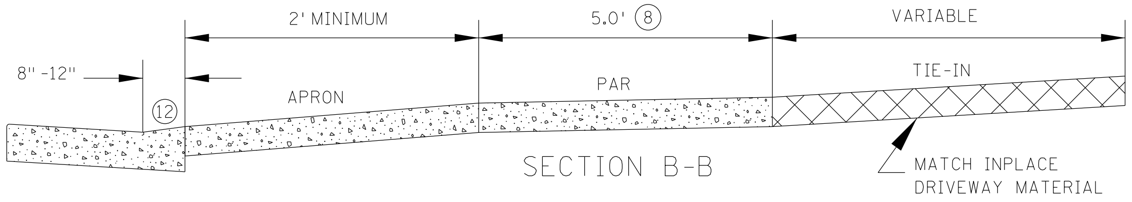
PARALLEL DRIVEWAY ③

LEGEND

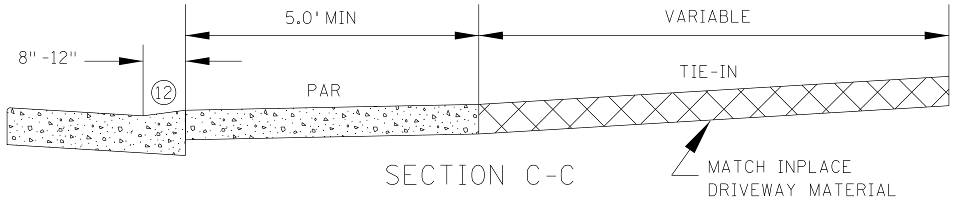
Ⓕ INDICATES DRIVEWAY RAMP - SLOPE SHALL BE GREATER THAN 2.0% AND LESS THAN 5.0% IN THE DIRECTION SHOWN AND CROSS SLOPE SHALL NOT EXCEED 2.0%



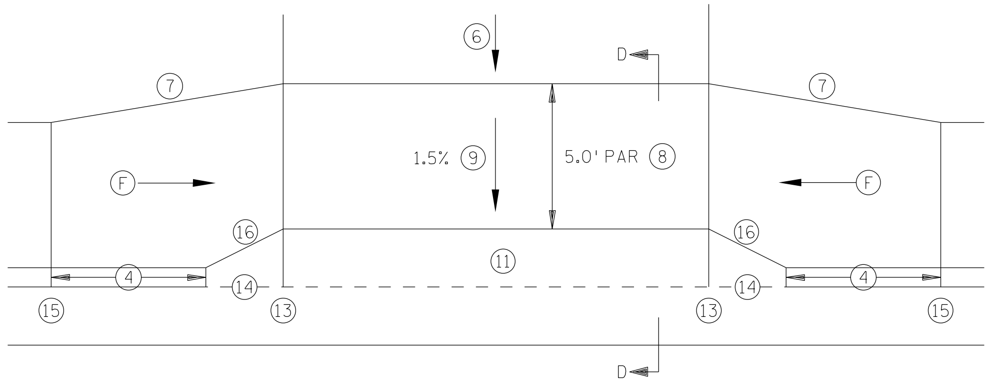
SECTION A-A



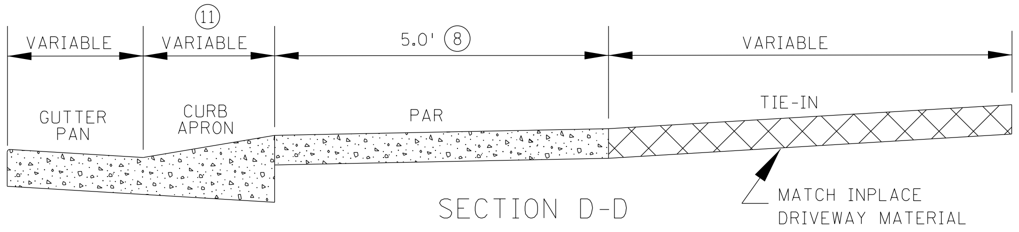
SECTION B-B



SECTION C-C



INTEGRAL DRIVEWAY APRON



SECTION D-D

NOTES:

ALL SIDEWALK AND BOULEVARD WIDTHS SHALL BE MEASURE FROM BACK OF CURB.

IN URBAN ROADWAY SECTIONS, 6" CURB HEIGHT SHOULD BE USED WHEN 6' OR GREATER BOULEVARD WIDTH IS PROPOSED. WHEN BOULEVARD IS LESS THAN 6' WIDE, 4" CURB HEIGHT SHOULD BE USED.

MAINTAIN EXISTING DRAINAGE PATTERNS FLOWING TO PUBLIC RIGHT OF WAY.

ACQUIRE ADEQUATE L3 TO ALLOW FOR A CONTINUOUS PAR PROFILE (UNIFORM TYPICAL SIDEWALK SECTION) THROUGH THE DRIVEWAY APRON.

IN NO CASE SHALL SIDEWALK PROFILES EXCEED 5.0%, EXCEPT SIDEWALK PROFILES CAN MATCH ROADWAY GRADE IF ROADWAY GRADE IS GREATER THAN 5.0%. RAMPS FOR DRIVEWAYS ARE REQUIRED TO FOLLOW THE ABOVE SIDEWALK CRITERIA.

CONTRACTION JOINTS SHALL BE CONSTRUCTED ALONG ALL GRADE BREAKS WITHIN THE PEDESTRIAN ACCESS ROUTE (PAR). 1/4" DEEP VISUAL JOINTS SHALL BE USED AT THE TOPS OF CONCRETE FLARES ADJACENT TO WALKABLE SURFACES.

DRIVEWAY TYPES FROM MOST PREFERRED TO LEAST PREFERRED ARE AS FOLLOWS: PERPENDICULAR, TIERED PERPENDICULAR, TIERED PERPENDICULAR OFFSET & PARALLEL.

① PERPENDICULAR DRIVEWAYS ARE THE STANDARD AND STARTING POINT FOR ALL DRIVEWAY DESIGN AND CONSTRUCTION. SHOULD BE USED TO ACHIEVE CONTINUOUS PAR PROFILE THROUGH THE DRIVEWAY. OBTAINING A PERPENDICULAR DRIVEWAY DESIGN BECOMES MORE CRITICAL WITH STEEP ROADWAY PROFILES.

② TO BE USED WHEN PERPENDICULAR DRIVEWAY DESIGN CANNOT BE ACHIEVED, THE DRIVEWAY PAR IS BELOW ROADWAY CURB HEIGHT. THIS DRIVEWAY TYPE CAN BE USED FOR BOTH PAVED (AS SHOWN) AND GRASS BOULEVARDS.

③ TO BE USED WHEN PERPENDICULAR AND TIERED PERPENDICULAR DRIVEWAY DESIGN CANNOT BE ACHIEVED. CAN BE USED FOR STEEP NEGATIVE SLOPED DRIVEWAYS. DW CURB TYPE 2 SHOULD BE USED TO RAISE PAR ABOVE GUTTER AND REDUCE "ROLLER COASTER" EFFECT. 4" HIGH ROADWAY CURB SHOULD BE USED TO REDUCE "ROLLER COASTER" EFFECT ESPECIALLY WHEN MULTIPLE DRIVEWAYS ARE PRESENT.

④ TOP OF CURB SHALL MATCH PROPOSED ADJACENT WALK GRADE.

⑤ 8% STANDARD, 10% MAX. FOR COMMERCIAL AND 12% MAX. FOR RESIDENTIAL. SEE GENERAL NOTES ON SHEET 2 FOR MORE INFORMATION.

⑥ S3 8% MAXIMUM, IF THE SLOPE IS EXCEEDED OR CONTINUED FOR MORE THAN 5', ANALYZE VEHICLE TEMPLATES FOR VERTICAL CLEARANCE. IF EXISTING DRIVEWAY IS NEGATIVELY DRAINING, S3 CAN BECOME SLIGHTLY MORE NEGATIVE TO ACHIEVE PERPENDICULAR DRIVEWAY DESIGN IF THE VERTICAL CLEARANCE IS ACHIEVED IN VEHICLE TEMPLATES.

⑦ 1:3 MIN. 1:5 PREFERRED FOR DRIVEWAY RETROFIT PROJECTS. 1:10 PREFERRED FOR SIDEWALK REPLACEMENT PROJECTS.

⑧ 5.0' MIN. PAR WIDTH IS THE STANDARD THROUGH DRIVEWAYS. IF FEASIBLE WIDEN DRIVEWAY PAR WIDTH TO MATCH APPROACHING SIDEWALK PAR WIDTHS. IN VERTICALLY CONSTRAINED AREAS PAR WIDTHS CAN INCREMENTALLY BE REDUCED TO 4.5' OR 4' MIN AFTER ALL OTHER OPTIONS HAVE BEEN APPLIED.

⑨ THE PEDESTRIAN ACCESS ROUTE, MAY NOT EXCEED 0.02 FT./FT. AS CONSTRUCTED.

⑩ SIDEWALK OFFSET TO BE LESS THAN OR EQUAL TO HALF THE APPROACHING SIDEWALK WIDTH.

⑪ INTEGRAL DRIVEWAY APRON TO BE POURED MONOLITHICALLY/INTEGRAL WITH THE CURB AND GUTTER. SEE SHEET 2 FOR MORE INFORMATION.

⑫ SEE SHEET 2 FOR CURB TYPE INFORMATION.

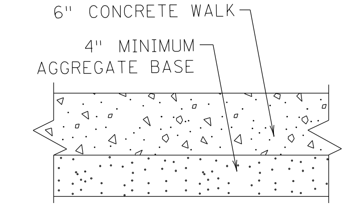
⑬ 0" CURB IS AT FLOW LINE. SEE DRIVEWAY TABLE FOR BACK OF CURB HEIGHTS.

⑭ 3' LONG AT 8-10% PREFERRED FOR INITIAL CURB TAPER. REDUCE CURB TAPER SLOPE IF NECESSARY TO MATCH ADJACENT SIDEWALK GRADES.

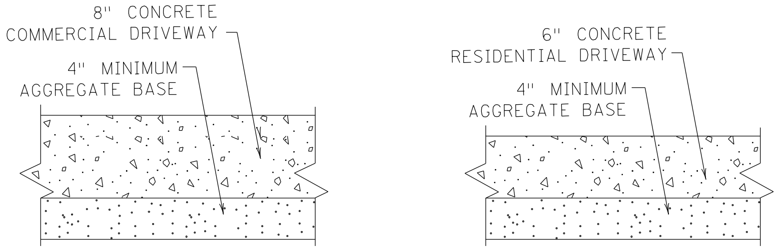
⑮ MATCH FULL CURB HEIGHT.

⑯ 1:2 TAPER RATE ON INTEGRAL DRIVEWAY APRONS.

⑰ SEE SHEET 4 FOR WHEN 6" WALK IS REQUIRED.



TYPICAL SIDEWALK SECTION ⑰



TYPICAL DRIVEWAY SECTIONS

REVISION:
APPROVED: 11-04-2021
Jeffrey J. Perkins
JEFFREY PERKINS
OPERATIONS DIVISION

MINNESOTA
DEPARTMENT OF TRANSPORTATION

STANDARD PLAN 5-297.254 **1 OF 4**

APPROVED: 11-04-2021
REVISED:

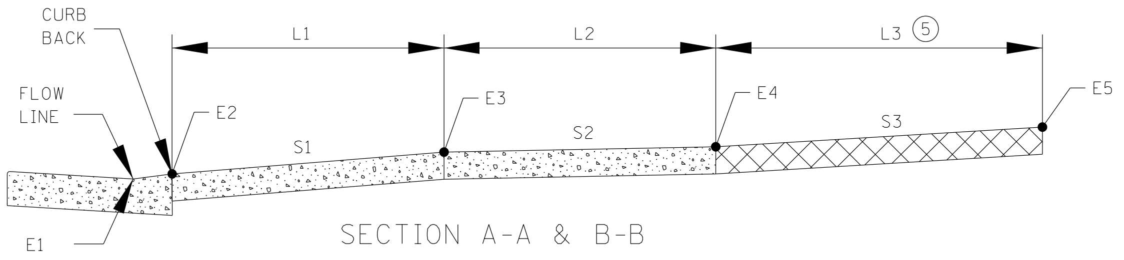
THOMAS STYRBICKI
STATE DESIGN ENGINEER

DRIVEWAY AND SIDEWALK DETAILS

STATE PROJ. NO.
SAP 002-609-022
SAP 198-020-039

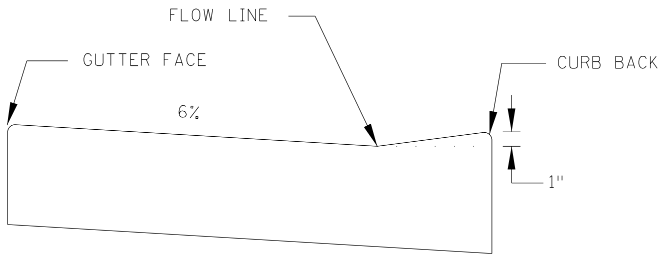
DRIVEWAY TABLE ①

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



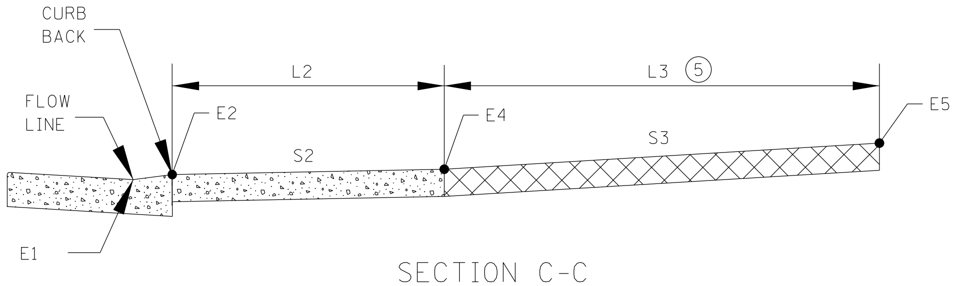
SECTION A-A & B-B

(REFER TO PREVIOUS SHEET)



DW CURB TYPE 1

STANDARD CURB AT DRIVEWAY



SECTION C-C

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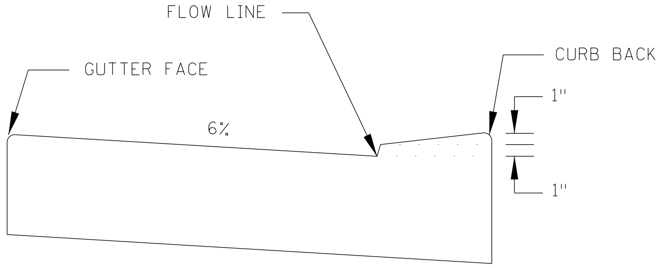
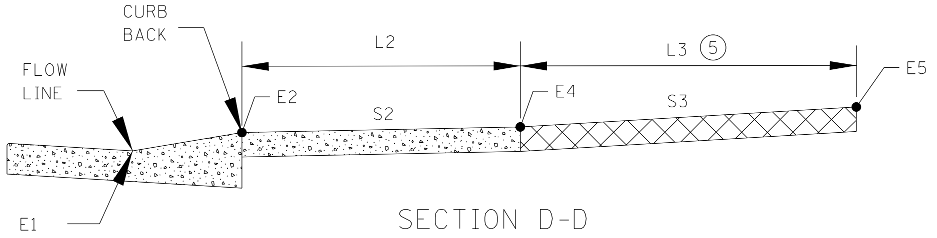


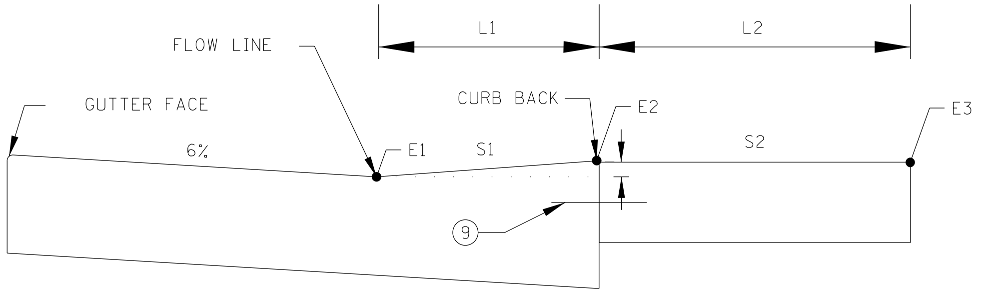
DW CURB TYPE 2

VERTICALLY CONSTRAINED



SECTION D-D

(REFER TO PREVIOUS SHEET)



INTEGRAL DRIVEWAY APRON (IDA)

NOTES:

ALL SIDEWALK AND BOULEVARD WIDTHS SHALL BE MEASURED FROM BACK OF CURB.

DW CURB TYPE 1 SHALL BE USED WHEN THE DRIVEWAY ACTS AS A PEDESTRIAN RAMP. THE MAX. APRON SLOPE MUST ADHERE TO ADA CRITERIA AS WELL. DW CURB TYPE 1 SHOULD BE USED IF THERE IS ON STREET PARKING.

WHERE ROADWAY DRAINAGE IS A CONCERN (NEGATIVE SLOPED APRON) DW CURB TYPE 2 CAN BE USED TO HELP KEEP THE WATER ON PUBLIC RIGHT OF WAY.

S1 8% STANDARD, 10% MAX. COMMERCIAL AND 12% MAX. RESIDENTIAL. IF EXISTING GRADES ARE STEEPER DO NOT MAKE GRADES APPRECIABLY WORSE BY USING BEST PRACTICES SUCH AS DRIVEWAY CURB HEIGHTS, EXTENDING L3 AND/OR STEEPEN S3.

S3 8% MAXIMUM, IF THIS SLOPE IS EXCEEDED OR CONTINUED FOR MORE THAN 5', ANALYZE VEHICLE TEMPLATES FOR VERTICAL CLEARANCE. SEE FACILITY DESIGN GUIDE, CHAPTER 6, FOR GEOMETRIC DESIGNS OF DRIVEWAYS.

① EXAMPLE SHOWN TO BE INCLUDED IN PLAN FOR EACH DRIVEWAY THAT HAS PAR THROUGH IT.

② REFERS TO THE FOLLOWING TYPES; PERPENDICULAR DRIVEWAY, TIERED PERPENDICULAR OFFSET DRIVEWAY, TIERED PERPENDICULAR DRIVEWAY, PARALLEL DRIVEWAY, AND INTEGRAL DRIVEWAY APRON.

③ DW CURB TYPE 1 IS THE STANDARD AND SHALL BE THE STARTING POINT FOR ALL PERPENDICULAR AND TIERED DRIVEWAYS. DW CURB TYPE 2 SHALL ONLY BE USED AFTER UTILIZING BEST PRACTICES SUCH AS MAXIMIZING S1, S3, AND L3.

④ SHOULD BE DESIGNED AT 1.5%.

⑤ ACQUIRE ADEQUATE L3 TO ALLOW FOR CONTINUOUS PAR PROFILE (UNIFORM SIDEWALK SECTION) THROUGH THE DRIVEWAY APRON.

⑥ PROVIDE INPLACE TIE-IN SLOPE INFORMATION AT BACK OF PROPOSED WALK (S3 AREA).

⑦ INFORMATION TO BE INCORPORATED INTO DRIVEWAY TABLE WHEN INTEGRAL DRIVEWAY APRON IS USED. OTHER CURB HEIGHTS & CURB APRON LENGTHS CAN BE USED.

⑧ L1 & S1 FOR INTEGRAL DRIVEWAY APRON IS TO FLOWLINE. 12.5% IS MAXIMUM PREFERRED SLOPE.

⑨ TIE ADJACENT SECTIONS. CONCRETE DRIVEWAY APRON AND CONCRETE DRIVEWAY SIDEWALK SHALL BE CONSTRUCTED SEPARATELY IN AN INDEPENDENT CONCRETE POUR. DRILL AND GROUT OR CAST IN-PLACE THROUGH HOLES IN THE FORMS NO. 4 X 12" LONG TIE BARS (EPOXY COATED). 36" MAXIMUM SPACING WITH 2" MINIMUM CONCRETE COVER PLACED 1' MINIMUM FROM ADJACENT CONSTRUCTION JOINT.

TYPICAL INTEGRAL DRIVEWAY APRON ⑦

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

DISTRICT #:
PLOT NAME: $$@IPLOT$NAME@$$
PATH & FILENAME: P:\002-609-022\Plan\2_MNDOT SHEETS FOR PLAN\MICRO\1_DGN SHEETS COMBINED.dgn
PLOTTED/REVISED: 11/28/2023

REVISION:
APPROVED: 11-04-2021
JEFFREY PERKINS
OPERATIONS DIVISION

MINNESOTA
DEPARTMENT OF TRANSPORTATION

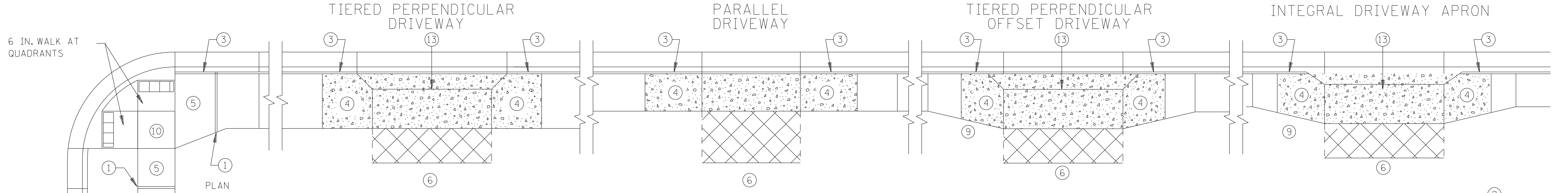
STANDARD PLAN 5-297.254 **2 OF 4**

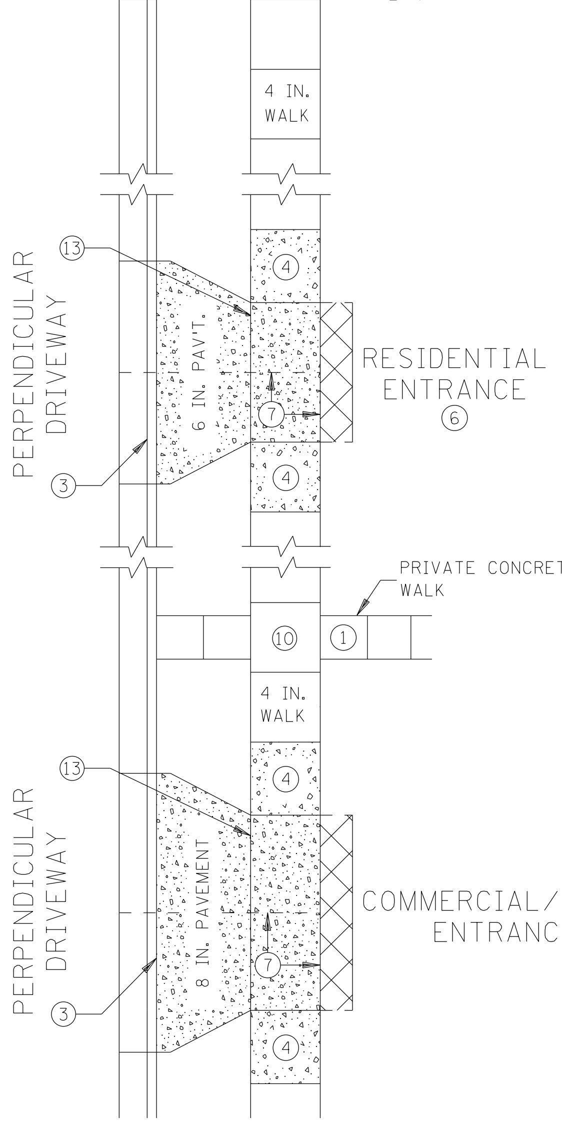
APPROVED: 11-04-2021
REVISED:

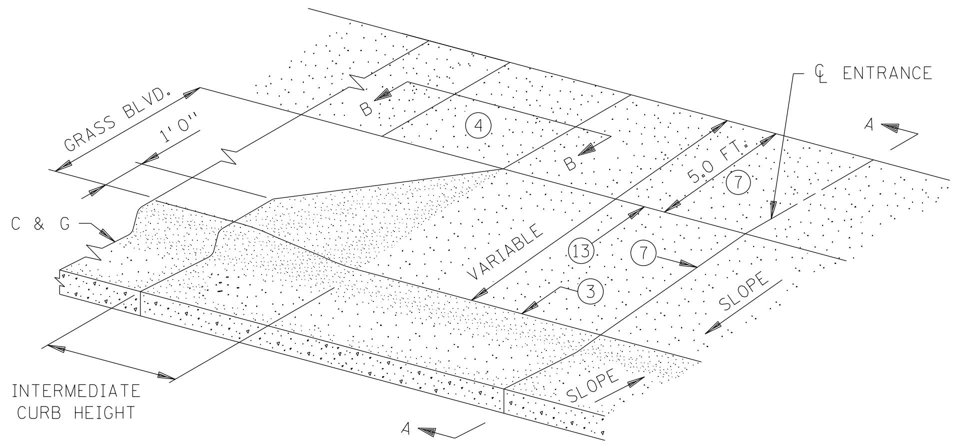
THOMAS STYRBICKI
STATE DESIGN ENGINEER

DRIVEWAY AND SIDEWALK DETAILS

STATE PROJ. NO. SAP 002-609-022
SAP 198-020-039

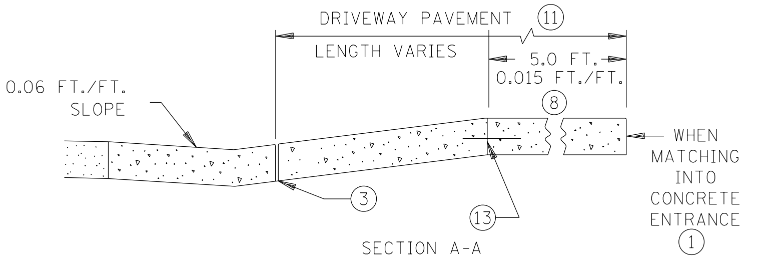






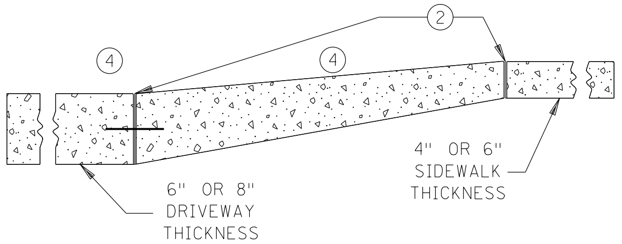
HALF PLAN PERSPECTIVE

PERPENDICULAR DRIVEWAYS WITH GRASS BOULEVARDS



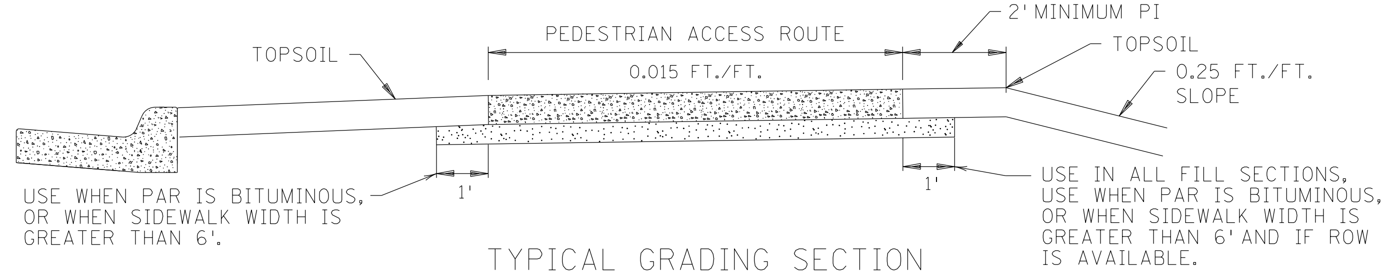
SECTION A-A

SECTION THRU DRIVEWAY



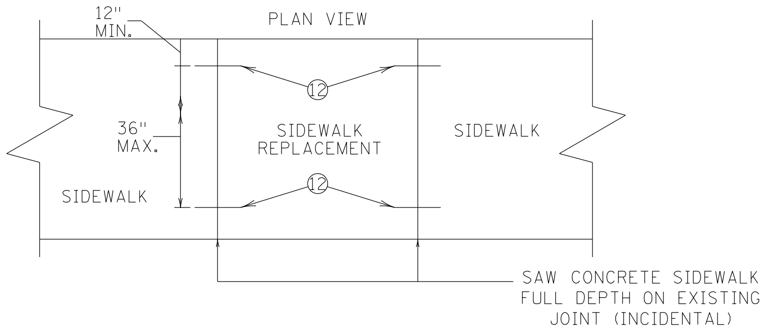
SECTION B-B

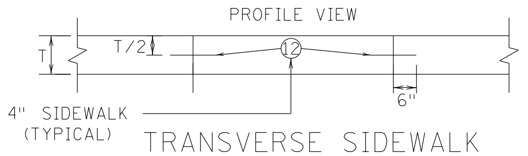
SECTION THRU SIDEWALK THICKNESS TRANSITION



TYPICAL GRADING SECTION

(NOT USED WHEN CONFINED BY CURB, BUILDING, WALL, ETC.)





TRANSVERSE SIDEWALK TIE BAR REINFORCEMENT

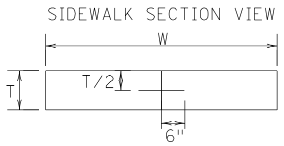
RETROFITS ONLY

SIDEWALK LONGITUDINAL JOINT TIE BAR TABLE

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

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

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



LONGITUDINAL SIDEWALK REINFORCEMENT JOINTS

NOTES:

ALL SIDEWALK AND BOULEVARD WIDTHS SHALL BE MEASURED FROM BACK OF CURB.

TO MINIMIZE SIDEWALK "ROLLER COASTER" EFFECT IT IS DESIRABLE TO KEEP THE PAR ELEVATION CONTINUOUS OR AT LEAST IN THE UPPER HALF OF CURB HEIGHT. 4" HIGH CURB SHOULD BE USED INSTEAD OF 6" HIGH CURB TO HELP THIS PROBLEM WHEN APPLICABLE.

4" HIGH ADJACENT CURB IS PREFERRED WHEN BOULEVARDS 4' OR LESS ARE PRESENT MEASURED FROM THE BACK OF CURB. WHEN THE DRIVEWAY IS SLOPING DOWN FROM THE ROADWAY (NEGATIVE) 4" HIGH ADJACENT CURB SHOULD ALSO BE USED.

SEE FACILITY DESIGN GUIDE, CHAPTER 6, FOR GEOMETRIC DESIGN OF DRIVEWAYS.

① CONSTRUCT WITH EXPANSION MATERIAL PER MNDOT SPECIFICATION 3702 TYPES A-E. EXPANSION MATERIAL SHALL MATCH FULL HEIGHT OF ADJACENT CONCRETE. DRIVEWAY EXPANSION SHALL BE PLACED AT TOP OR BOTTOM OF TRANSITION PANEL.

② CONSTRUCT WITH EXPANSION MATERIAL MNDOT PER SPEC. 3702 TYPES A-E. EXPANSION MATERIAL SHALL MATCH FULL HEIGHT OF ADJACENT CONCRETE. MAXIMUM ONE EXPANSION PER DRIVEWAY PLACED AT EITHER TOP OR BOTTOM OF CONCRETE THICKNESS TRANSITION. IF MULTIPLE DRIVEWAYS EXIST PLACE ONE EXPANSION BETWEEN EACH DRIVEWAY. IF NO DRIVEWAY EXIST PLACE A MAXIMUM OF ONE EXPANSION PER 150' OF SIDEWALK RUN.

③ USE AN APPROVED TYPE F (1/4 INCH THICK) SEPARATION MATERIAL. SEPARATION MATERIAL SHALL MATCH FULL HEIGHT DIMENSION OF ADJACENT CONCRETE.

④ TRANSITION DRIVEWAY THICKNESS TO WALK THICKNESS. IF THERE IS A CONSTRUCTION JOINT AND NO EXPANSION IS USED, INSTALL TIE BARS.

⑤ TRANSITION CURB RAMP THICKNESS TO WALK THICKNESS.

⑥ MATCH INPLACE DRIVEWAY WIDTH, MATERIAL TYPE AND THICKNESS.

⑦ FORM CONTRACTION JOINT AS NEEDED TO PRODUCE APPROXIMATELY SQUARE PANELS. CONCRETE PANEL SIZE SHOULD NOT EXCEED 1 1/2 : 1 LENGTH X WIDTH. 81 SF FOR 6" CONCRETE DRIVEWAY WITH 9'X9' MAXIMUM PANEL SIZE. 144 SF FOR 8" CONCRETE DRIVEWAY WITH 12'X12' MAXIMUM PANEL SIZE. MATCH DRIVEWAY APRON AND SIDEWALK JOINTS.

⑧ THE PEDESTRIAN ACCESS ROUTE CROSS-SLOPE, SHALL NOT EXCEED 0.02 FT./FT. AS CONSTRUCTED.

⑨ 1:10 MIN. SIDEWALK OFFSET TAPER REQUIRED FOR SIDEWALK REPLACEMENT PROJECTS. 1:3 MIN. AND 1:5 MIN. PREFERRED SIDEWALK OFFSET TAPER FOR DRIVEWAY REPLACEMENT.

⑩ LANDING REQUIRED, SEE NEXT SHEET FOR MORE INFORMATION.

⑪ CONCRETE DRIVEWAY APRON AND CONCRETE DRIVEWAY SIDEWALK SECTIONS SHALL BE CONSTRUCTED SEPARATELY IN AN INDEPENDENT CONCRETE POUR. ENGINEER'S APPROVAL REQUIRED FOR MONOLITHIC PLACEMENTS.

⑫ DRILL AND GROUT NO. 4 X 12" LONG TIE BARS (EPOXY COATED). 36" MAXIMUM SPACING BETWEEN BARS COVER PLACED 1' MINIMUM FROM ADJACENT CONSTRUCTION JOINTS. 1' MINIMUM FROM ADJACENT CONCRETE JOINTS. BARS TO BE ADJUSTED TO MATCH SIDEWALK GRADES. TO BE PAID BY EACH.

⑬ DRILL AND GROUT OR CAST IN-PLACE THROUGH HOLES IN THE FORMS NO. 4 X 12" LONG TIE BARS (EPOXY COATED). 36" MAXIMUM SPACING BETWEEN BARS WITH 2" MINIMUM CONCRETE COVER PLACED 1' MINIMUM FROM ADJACENT CONSTRUCTION JOINTS. 1' MINIMUM FROM ADJACENT CONCRETE JOINTS.

REVISION: 12-23-2021
APPROVED: 11-04-2021
Jeffrey J. Perkins
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OPERATIONS DIVISION

MINNESOTA
DEPARTMENT OF TRANSPORTATION

STANDARD PLAN 5–297.254 | **3 OF 4**

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

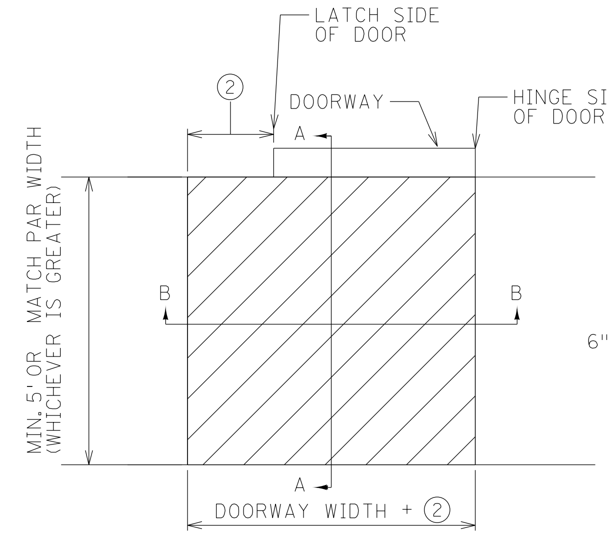
THOMAS STYRBICKI
STATE DESIGN ENGINEER

DRIVEWAY AND SIDEWALK DETAILS

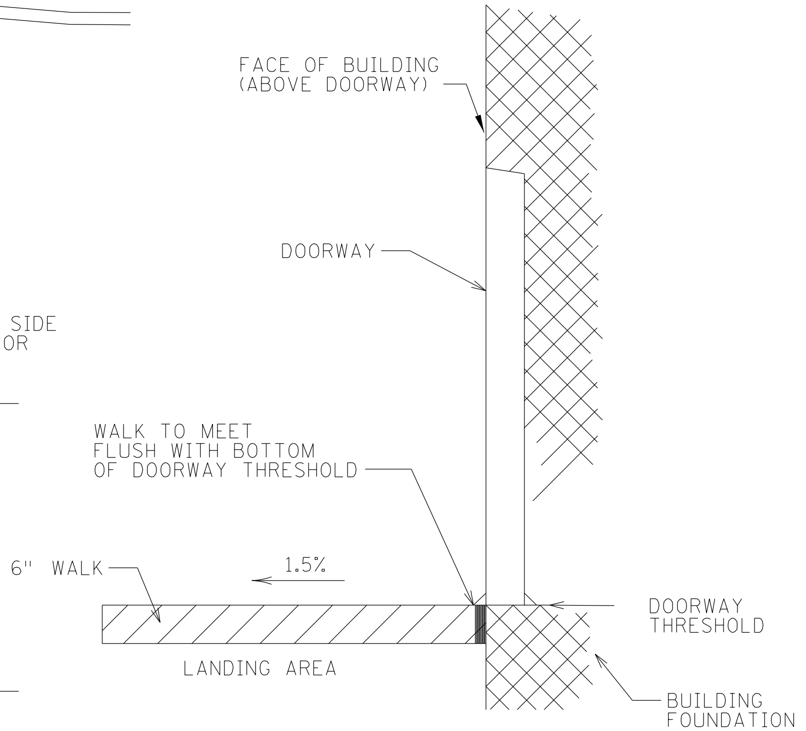
STATE PROJ. NO.
SAP 002-609-022
SAP 198-020-039

DISTRICT #:
PLOT NAME: $$@IPLOT$NAME@$$
PATH & FILENAME: P:\002-609-022\Plan\2_MNDOT SHEETS FOR PLAN\MICRO\1_DGN SHEETS COMBINED.dgn
PLOTTED/REVISED: 11/28/2023

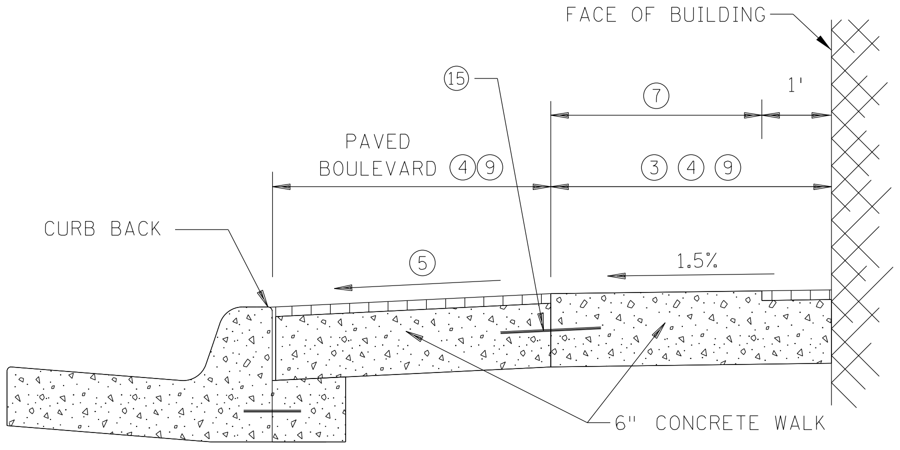
SECTION VIEW B-B



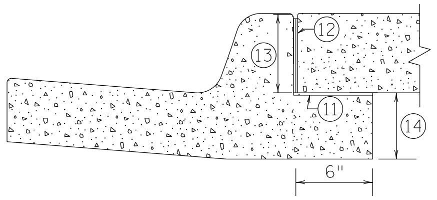
PLAN VIEW DOORWAY



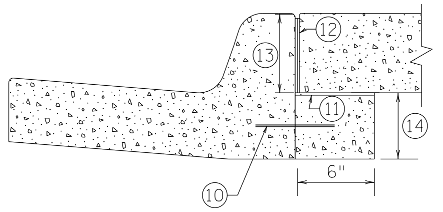
SECTION VIEW A-A



DOWNTOWN SIDEWALK TYPICAL SECTION



SLIP FORM SILL

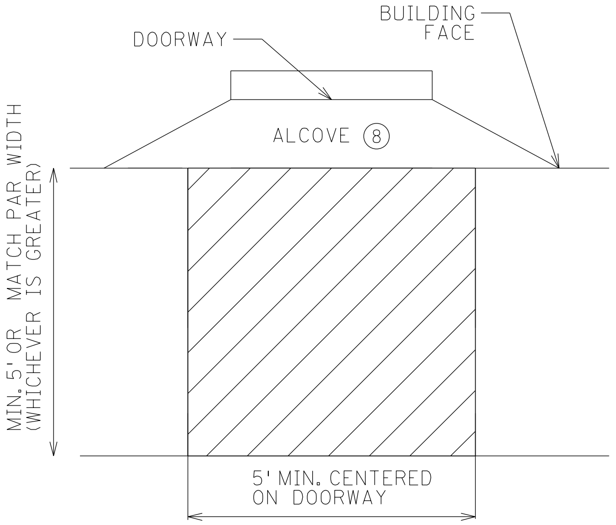


FIXED FORM SILL

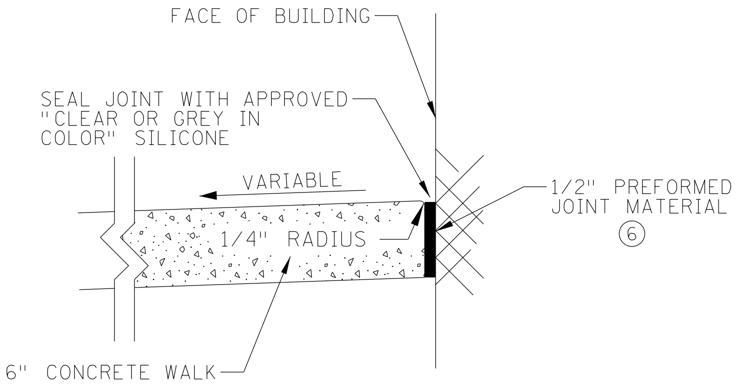
SILL CURB SHOULD BE USED AT ALL LOCATIONS WHEN CONCRETE WALK IS AT BACK OF CURB, INCLUDING PAVED BOULEVARD.

SILL CURB SHALL NOT BE USED IN CURB RAMP AND DRIVEWAY AREAS, INCLUDING CONCRETE FLARES.

SILL CURB WITH 4" WALK CAN USE FIXED OR SLIP FORM OPTIONS.



PLAN VIEW DOORWAY WITH ALCOVE



BUILDING JOINT SEAL (INCIDENTAL)

SIDEWALK LANDING REQUIREMENTS ①

NOTES:

6" WALK IS REQUIRED:
1) IN ALL SIDEWALK LOCATIONS WHERE VARIABLE SLOPED CONCRETE BOULEVARDS ARE PAVED, SUCH AS COMMERCIAL (STORE FRONT, DOWNTOWN) AREAS.
2) ANYTIME DRILL AND REINFORCEMENT IS USED TO TIE LONGITUDINAL JOINTS TOGETHER.
3) TO ELIMINATE LONGITUDINAL JOINT WHEN INCREASING PANEL SIZE OVER 36SF.
4) AT LOCATIONS WHERE MAINTENANCE EQUIPMENT WILL SUBJECT CONCRETE TO HEAVY LOADS.

ALL SIDEWALK AND BOULEVARD WIDTHS SHALL BE MEASURED FROM BACK OF CURB.

FIELD ADJUST SIDEWALK PROFILES TO MEET ALL DOORWAY THRESHOLDS.

SIDEWALK MUST MAINTAIN POSITIVE DRAINAGE AWAY FROM THE BUILDING TO THE ROADWAY.

SEE SPECIAL PROVISIONS FOR SILICONE SPECIFICATIONS.

① LANDING CRITERIA IS REQUIRED FOR ALL DOORS, STEPS, AND PRIVATE WALKS. FEASIBILITY DECREASES WITH NARROWER BOULEVARDS AND STEEPER SIDEWALK PROFILES.

② 18" MIN. WHEN DOOR SWINGS OUTWARD FROM BUILDING. 12" MIN WHEN DOOR SWINGS INWARD FROM BUILDING.

③ 6' MIN. PAR REQUIRED WHEN ADJACENT TO BUILDINGS.

④ 2/3 PAR TO 1/3 BOULEVARD SHOULD BE USED WHEN FEASIBLE. HOLD UNIFORM BOULEVARD WIDTH. 4' PREFERRED MINIMUM BOULEVARD.

⑤ 1%-5% FOR THE MAJORITY OF THE BLOCK, WITH EXCEPTIONS UP TO 8% IN CONSTRAINED AREAS.

⑥ CONSTRUCT USING APPROVED EXPANSION MATERIAL PER MNDOT TYPE A-E EXPANSION. LEAVE A MINIMUM $\frac{1}{2}$" TOP GAP AND SEAL WITH MNDOT APPROVED SILICONE PER MNDOT SPEC 3722.

⑦ TO MINIMIZE VIBRATION AND ROLLING RESISTANCE, AREA SHALL BE FREE OF PAVERS, STAMPED CONCRETE, AND/OR EXCESSIVE JOINTING.

⑧ 2% MAX. PER BUILDING CODE. IF GREATER THAN 2%, FLATTEN AS FEASIBLE.

⑨ FORM CONTRACTION JOINTS AS NEEDED TO PRODUCE APPROXIMATELY SQUARE PANEL SIZE. CONRETE PANEL SIZE SHOULD NOT EXCEED $1\frac{1}{2}$:1 LENGTH X WIDTH.

⑩ DRILL AND GROUT NO. 4 X 8" LONG TIE BARS (EPOXY COATED). 36" MAXIMUM SPACING BETWEEN BARS WITH 2" MINIMUM CONCRETE COVER PLACED 1' MINIMUM FROM ADJACENT CONSTRUCTION JOINTS. 1' MINIMUM FROM ADJACENT CONCRETE JOINTS. TIE BARS SHALL BE EMBEDDED 4" WITH 2" MINIMUM CONCRETE COVER AND ARE INCIDENTAL TO SILL PLACEMENT.

⑪ FURNISH AND INSTALL THE FULL WIDTH OF THE TOP OF SILL A MINIMUM 2ML THICK POLYTHENE SHEETING.

⑫ USE AN APPROVED TYPE F ($\frac{1}{4}$ INCH THICK) SEPARATION MATERIAL. SEPARATION MATERIAL SHALL MATCH FULL HEIGHT DIMENSION OF ADJACENT CONCRETE.

⑬ DIMENSION TO BE SAME AS SIDEWALK THICKNESS, 4" MIN.

⑭ 6" WALK: 5" MIN. FOR B424; 7" MIN. FOR B624
4" WALK: 7" MIN. FOR B424; 9" MIN. FOR B624

⑮ DRILL AND GROUT NO. 4 X 12" LONG TIE BARS (EPOXY COATED). 36" MAXIMUM SPACING BETWEEN BARS WITH 2" MINIMUM CONCRETE COVER PLACED 1' MINIMUM FROM ADJACENT CONCRETE JOINTS.

REVISION:
APPROVED: 11-04-2021
Jeffrey J. Perkins
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OPERATIONS DIVISION

MINNESOTA
DEPARTMENT OF TRANSPORTATION

STANDARD PLAN 5–297.254 | **4 OF 4**

THOMAS STYRBICKI
STATE DESIGN ENGINEER

APPROVED: 11-04-2021
REVISED:

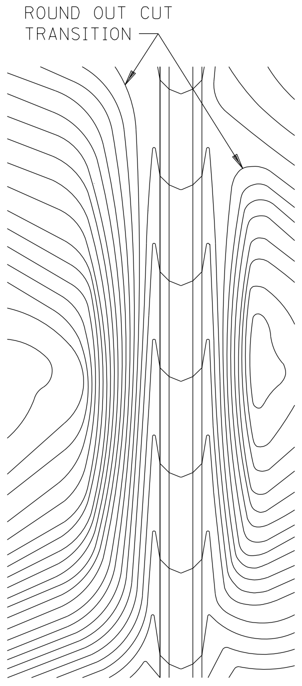
DRIVEWAY AND SIDEWALK DETAILS

STATE PROJ. NO.
SAP 002-609-022
SAP 198-020-039

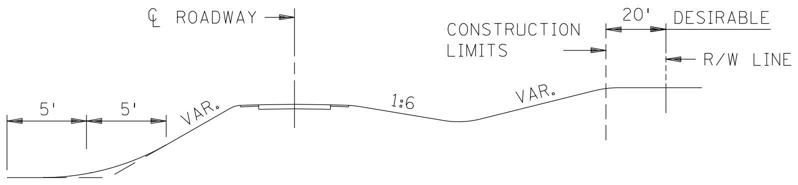
SHEET NO. 28 OF 167 SHEETS

PLOTTED/REVISED: 11/28/2023

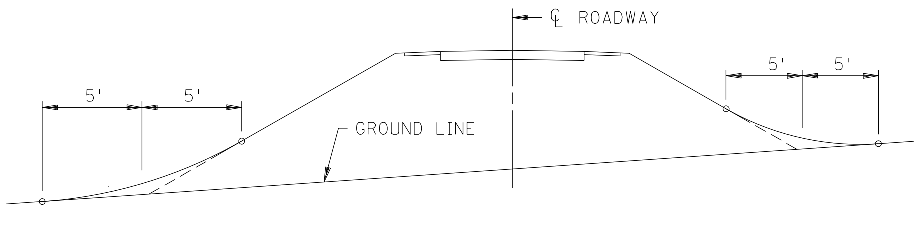
DISTRICT #:
IPLOT NAME: $$@IPLOT$NAME@$$
PATH & FILENAME: P:\002-609-022\Plan\2_MNDOT SHEETS FOR PLAN\MICROV_DGN SHEETS COMBINED.dgn



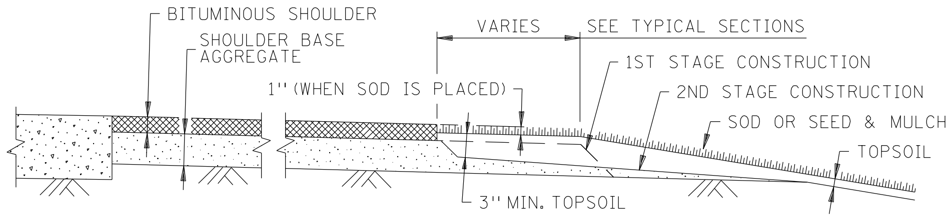
CONTOURING ROAD CUTS



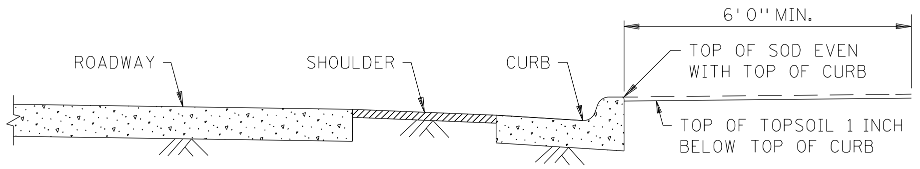
ROUNDING SHOULDERS AND BACKSLOPES



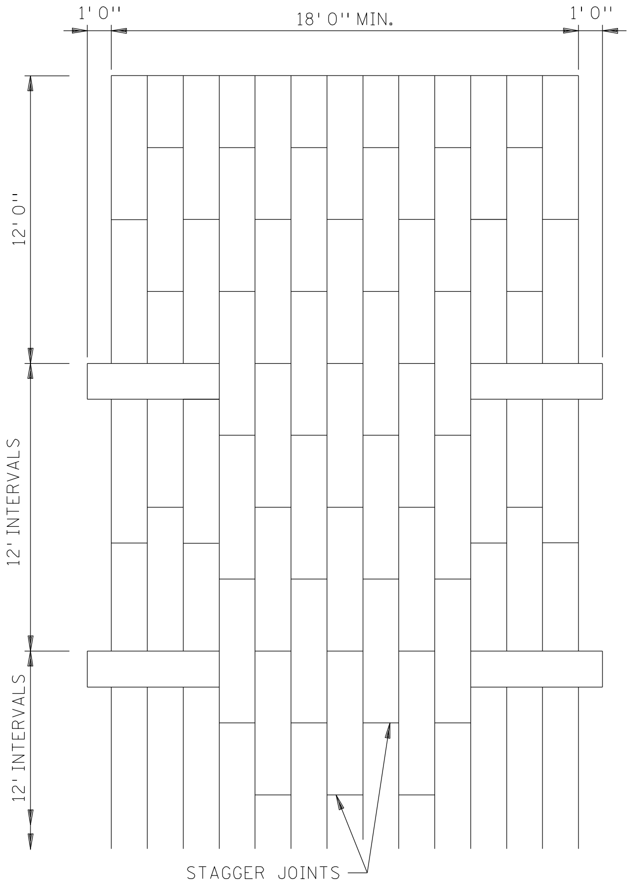
SHAPING FOR DRAINAGE ALONG THE TOE OF FILL SLOPES



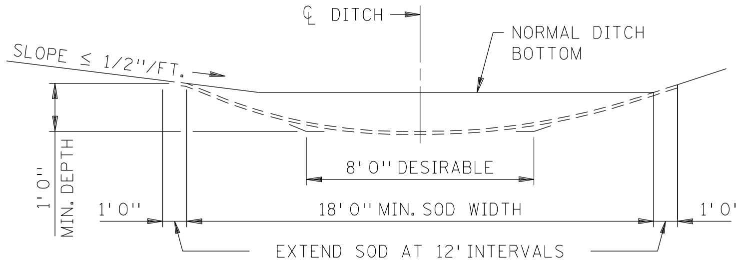
SHAPING AND TOPSOILING INSLOPES



SHAPING ADJACENT TO CURBS WHEN SOD IS PLACED

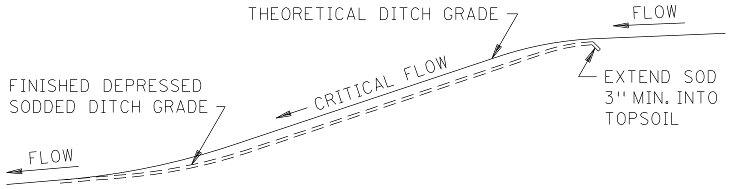


PLAN VIEW



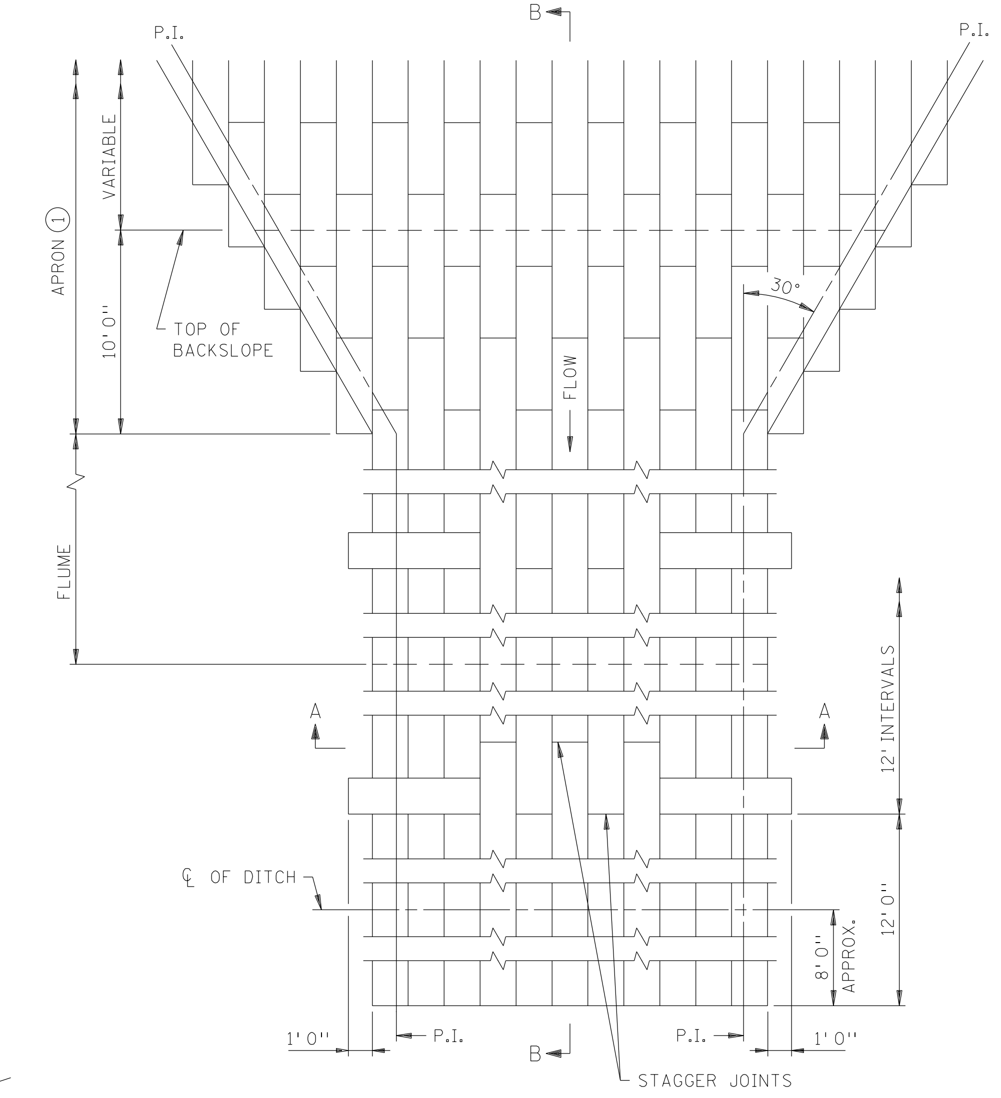
SODDED DITCH CROSS SECTION

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

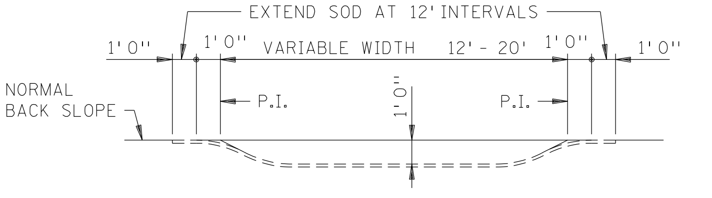


DITCH PROFILE

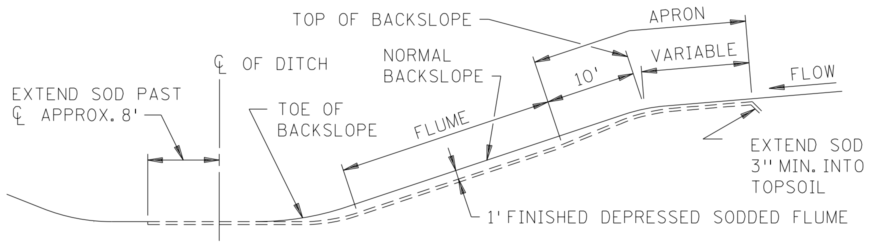
SODDED DITCH DETAILS



PLAN VIEW



SECTION A-A



SECTION B-B

SODDED FLUME DETAILS

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

REVISION:
APPROVED: 2-28-2017
CHIEF ENVIRONMENTAL OFFICER

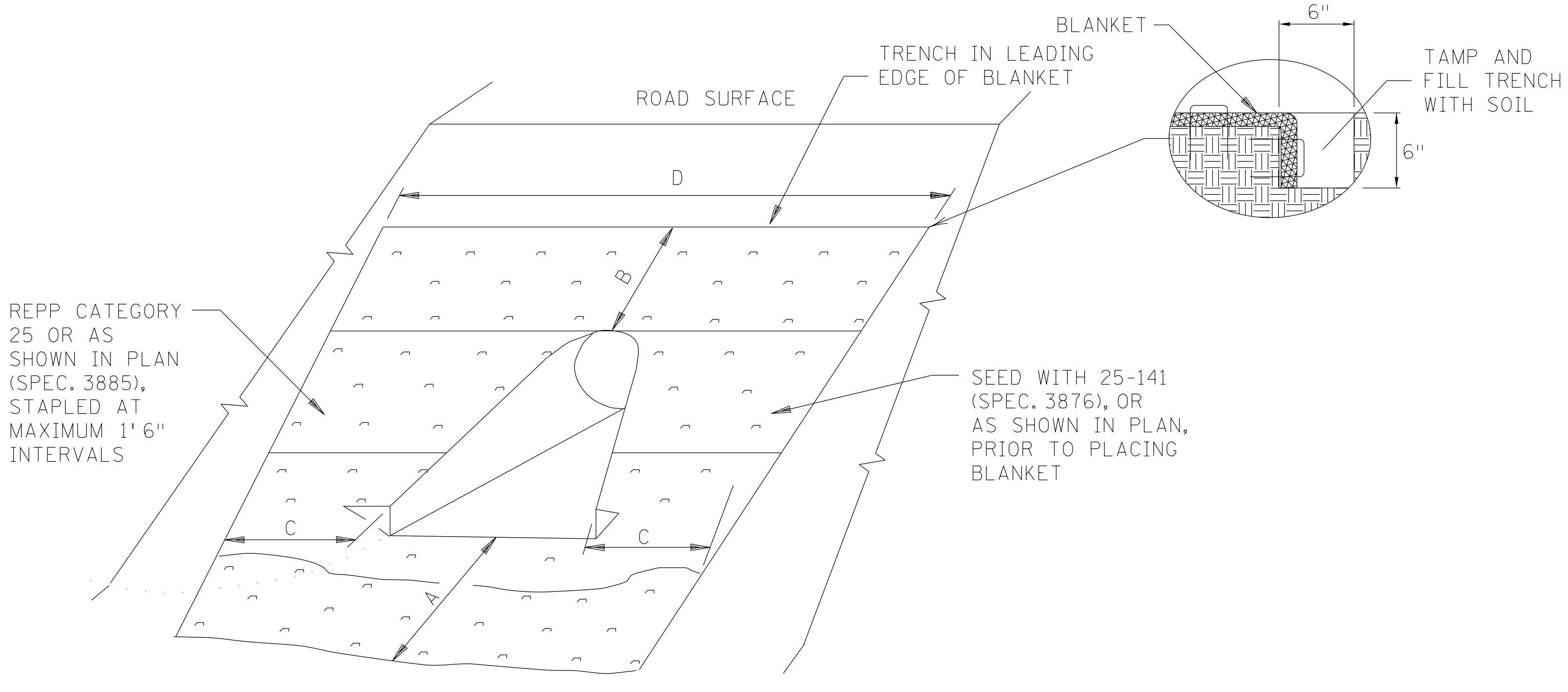
MINNESOTA
DEPARTMENT OF TRANSPORTATION

STANDARD PLAN 5-297.404 **1 OF 3**
STATE DESIGN ENGINEER
APPROVED: 2-28-2017
REVISED:

PERMANENT EROSION CONTROL
ALONG ROADWAYS, DITCHES AND FLUMES

STATE PROJ. NO. SAP 002-609-022
SAP 198-020-039

SHEET NO. 29 OF 167 SHEETS



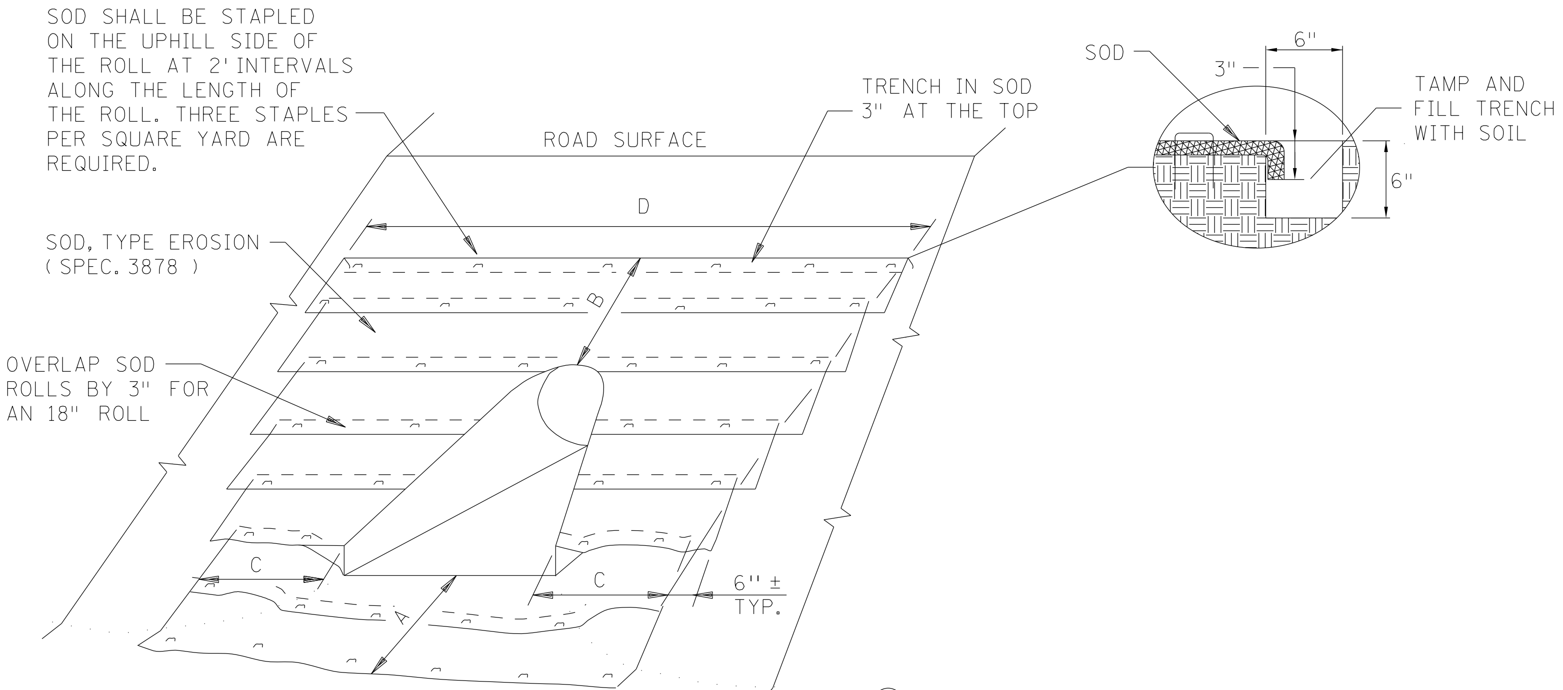
ROLLED EROSION PREVENTION PRODUCT (BLANKET) & SEED DETAIL

CULVERT INLET APRON ①

CULVERT DIAMETER ②	SOD OR REPP (SQ. YDS.)						"A"	"B"	"C"	"D"
	CIRCULAR AND ARCH PIPE METAL APRON (PLATE 3123, PLATE 3122)	CIRCULAR AND ARCH PIPE CONCRETE APRON (PLATE 3100, PLATE 3110)	CIRCULAR AND ARCH PIPE METAL SAFETY APRON 1:4 SLOPE (PLATE 3148)	CIRCULAR AND ARCH PIPE METAL SAFETY APRON 1:6 SLOPE (PLATE 3148)	CIRCULAR CORRUGATED METAL PIPE SAFETY APRON 1:6 SLOPE (PLATE 3128)	CIRCULAR CORRUGATED METAL PIPE SAFETY APRON 1:4 SLOPE (PLATE 3128)				
15"	9	9	8	8	N/A	N/A	3'	1.5'	3'	13'
18"	13	12	12	14	16	N/A	3'	3'	3'	16'
21"	14	14	14	16	18	14	3'	3'	3'	17'
24"	16	15	16	19	21	17	3'	3'	3'	18'
27"	N/A	20	N/A	N/A	N/A	N/A	3'	4.5'	3'	20'
30"	23	22	25	30	32	N/A	3'	4.5'	3'	22'
36"	34	34	39	48	51	37	4.5'	4.5'	4.5'	27'
42"	43	40	51	64	N/A	N/A	4.5'	6'	4.5'	30'
48"	54	50	66	82	N/A	N/A	4.5'	7.5'	4.5'	34'
54"	65	58	81	102	N/A	N/A	4.5'	9'	4.5'	37'
60"	69	59	91	115	N/A	N/A	4.5'	9'	4.5'	39'
66"	69	63	N/A	N/A	N/A	N/A	4.5'	9'	4.5'	39'
72"	78	72	99	122	N/A	N/A	4.5'	10.5'	4.5'	41'

CULVERT OUTLET APRON ①

CULVERT DIAMETER ②	SOD OR REPP (SQ. YDS.)						"A"	"B"	"C"	"D"
	CIRCULAR AND ARCH PIPE METAL APRON (PLATE 3123, PLATE 3122)	CIRCULAR AND ARCH PIPE CONCRETE APRON (PLATE 3100, PLATE 3110)	CIRCULAR AND ARCH PIPE METAL SAFETY APRON 1:4 SLOPE (PLATE 3148)	CIRCULAR AND ARCH PIPE METAL SAFETY APRON 1:6 SLOPE (PLATE 3148)	CIRCULAR CORRUGATED METAL PIPE SAFETY APRON 1:6 SLOPE (PLATE 3128)	CIRCULAR CORRUGATED METAL PIPE SAFETY APRON 1:4 SLOPE (PLATE 3128)				
15"	10	10	9	10	N/A	N/A	4.5'	1.5'	3'	13'
18"	13	13	12	14	15	N/A	6'	1.5'	3'	14'
21"	16	14	16	18	19	15	6'	1.5'	3'	15'
24"	18	18	18	21	22	18	7.5'	1.5'	3'	16'
27"	N/A	19	N/A	N/A	N/A	N/A	7.5'	1.5'	3'	17'
30"	23	23	24	28	29	N/A	9'	1.5'	3'	18'
36"	36	35	38	47	48	37	10.5'	1.5'	4.5'	23'
42"	43	40	47	58	N/A	N/A	12'	1.5'	4.5'	25'
48"	50	46	57	70	N/A	N/A	13.5'	1.5'	4.5'	27'
54"	57	50	67	84	N/A	N/A	15'	1.5'	4.5'	29'
60"	74	63	90	113	N/A	N/A	16.5'	1.5'	6'	33'
66"	75	67	N/A	N/A	N/A	N/A	16.5'	1.5'	6'	33'
72"	77	70	92	114	N/A	N/A	16.5'	1.5'	6'	34'



SODDING DETAIL

① ADDITIONAL QUANTITIES MAY BE SHOWN IN THE PLAN OR REQUIRED BY THE ENGINEER.

② FOR ARCH PIPE USE CLOSEST CIRCULAR PIPE DIAMETER AND APRON SLOPE. DIAMETERS LARGER THAN 72" REQUIRE SPECIAL DESIGNS.

NOTES:

REPP = ROLLED EROSION PREVENTION PRODUCT.

AREA SHOWN IN SQUARE YARDS IS FOR ONE CULVERT END.

QUANTITIES ARE CALCULATED TO INCLUDE SOD REQUIRED TO PROVIDE A 3" OVERLAP ON ALL 18" WIDE ROLLS. THIS ALLOWS FOR SHRINKAGE OF THE SOD.

FOR PIPE ARCHES USE EQUIVALENT PIPE DIAMETER TO APPROXIMATE AREA.

FOR CORRUGATED POLYETHYLENE PIPE METAL APRON (PLATE 3129), USE THE METAL APRON COLUMN (PLATE 3123).

AREAS AND DIMENSIONS ARE APPROXIMATE AND ARE BASED ON APRON SIDE SLOPES OF NO STEEPER THAN 1:2, UNLESS INDICATED AS FOR SAFETY APRONS.

CARE SHOULD BE TAKEN IN SELECTING SOD TO STABILIZE THE APRON. RIP-RAP SHOULD BE USED FOR FLOW VELOCITIES GREATER THAN 6 FPS.

DISTRICT #:
IPLOT NAME: $$@IPLOT$NAME@$$
PATH & FILENAME: P:\002-609-022\Plan\2_MNDOT SHEETS FOR PLAN\MICROV_DGN SHEETS COMBINED.dgn

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

MINNESOTA
DEPARTMENT OF TRANSPORTATION

STANDARD PLAN 5-297.404 **2 OF 3**

APPROVED: 1-8-2020
REVISED:

THOMAS STYRBICKI
STATE DESIGN ENGINEER

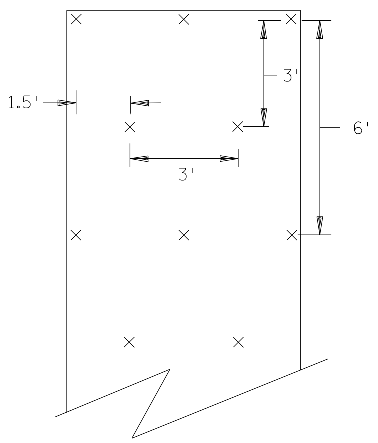
STATE PROJ. NO.

PERMANENT EROSION CONTROL

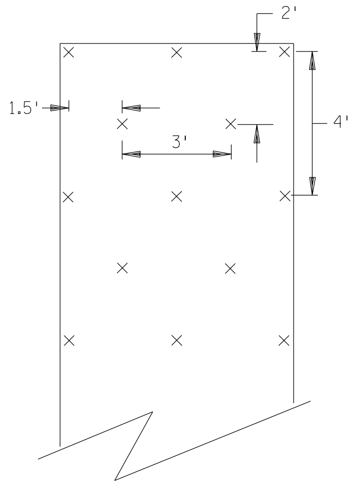
TURF ESTABLISHMENT DETAIL AT CULVERT ENDS

SAP 002-609-022
SAP 198-020-039

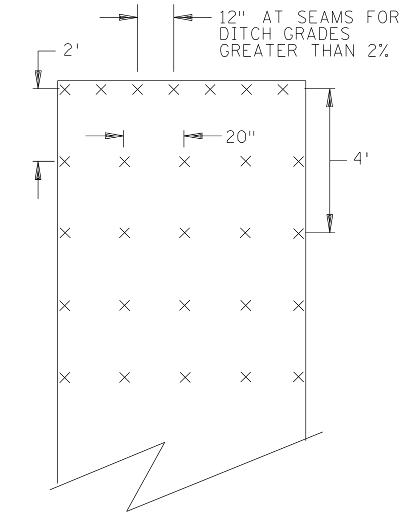
DISTRICT #:
IPLOT NAME: $$@IPLOT$NAME@$$
PATH & FILENAME: P:\002-609-022\Plan\2_MNDOT SHEETS FOR PLAN\MICROV_DGN SHEETS COMBINED.dgn
PLOTTED/REVISED: 11/28/2023



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

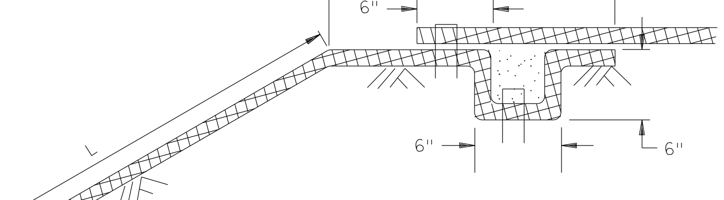


SLOPES 1:2 TO 1:1
170 STAPLES PER 100 SQ YD

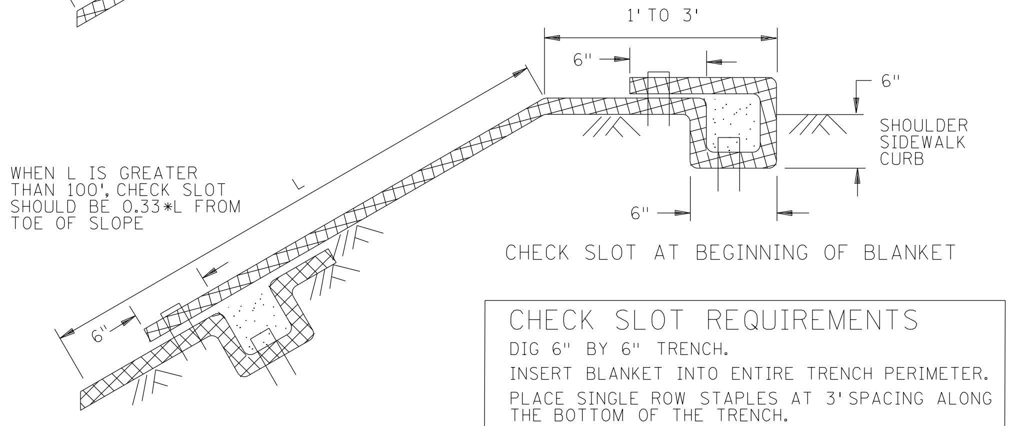


CHANNEL AND DITCH APPLICATIONS
350 STAPLES PER 100 SQ YD

BLANKET STAPLE PATTERN



CHECK SLOT WHERE BLANKET CONTINUES



CHECK SLOT AT BEGINNING OF BLANKET

CHECK SLOT REQUIREMENTS

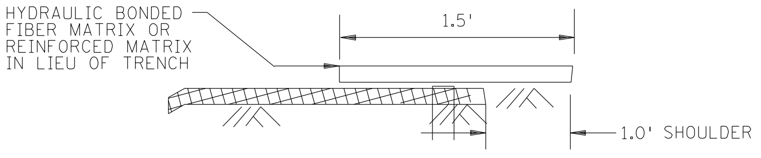
DIG 6" BY 6" TRENCH.

INSERT BLANKET INTO ENTIRE TRENCH PERIMETER.

PLACE SINGLE ROW STAPLES AT 3' SPACING ALONG THE BOTTOM OF THE TRENCH.

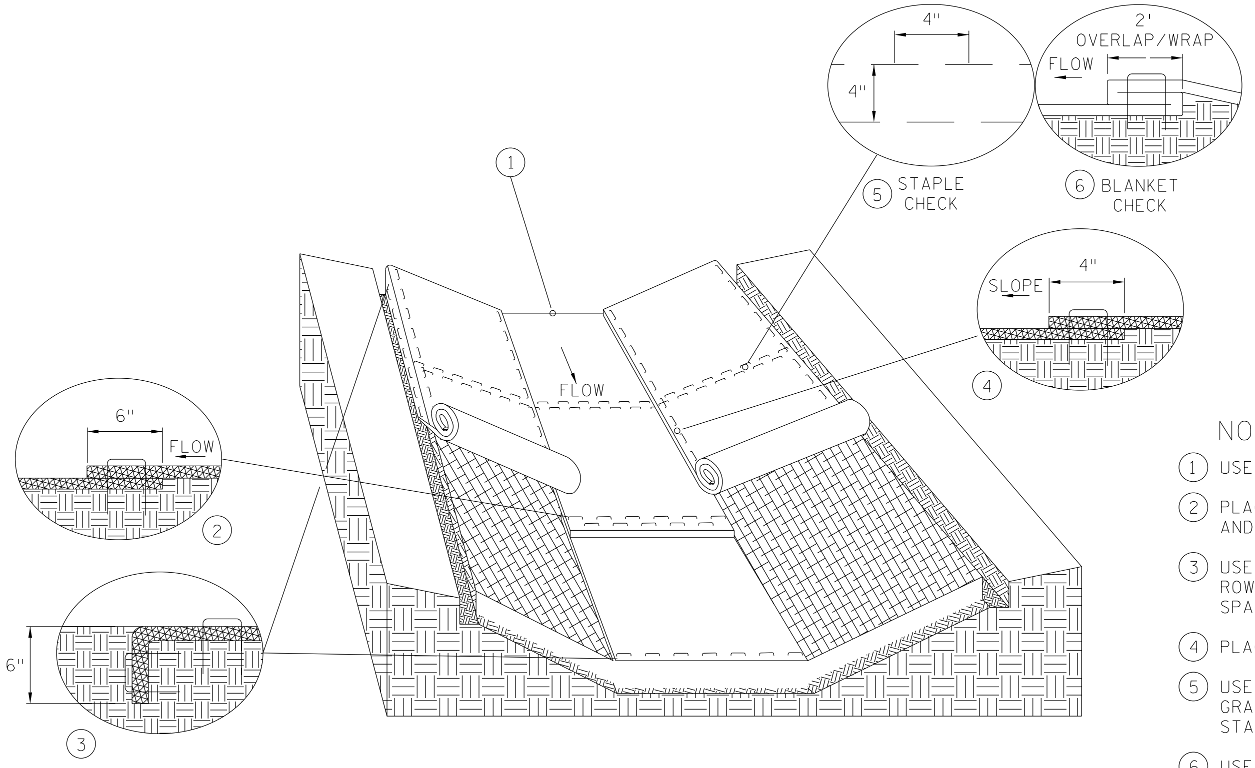
BACKFILL TRENCH WITH SOIL AND TAMP.

PLACE SINGLE ROW STAPLES AT 3' SPACING ON OVERLAP.

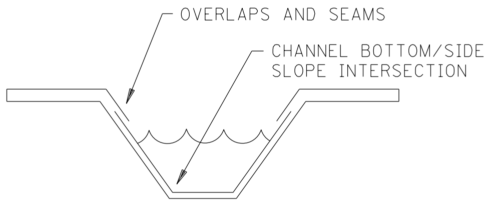


CHECK SLOT ALTERNATIVE
PLACE SINGLE ROW STAPLES AT 12" SPACING

CHECK SLOT DETAILS



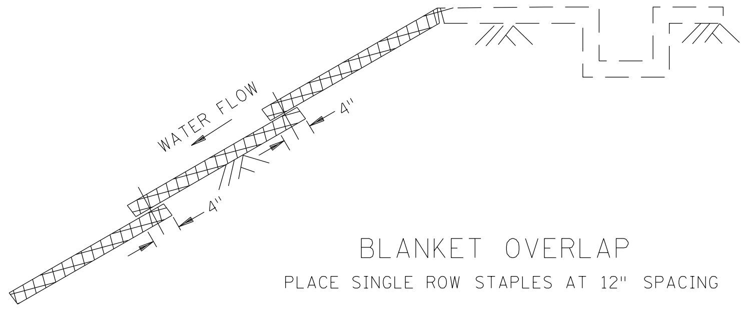
DITCH BLANKET STAPLE DETAIL



DITCH BLANKET CRITICAL POINTS ⑦

NOTES:

1. USE CHECK SLOT DETAIL (NO ALTERNATES).
2. PLACE DOUBLE ROW OF STAPLES STAGGERED 4" APART AND 4" ON CENTER.
3. USE 6" X 6" TRENCH TO PLACE BLANKET. PLACE SINGLE ROW OF STAPLES ON TOP AND TRENCH SIDES AT 12" SPACING. BACKFILL TRENCH WITH SOIL AND TAMP.
4. PLACE SINGLE ROW OF STAPLES AT 12" SPACING.
5. USE STAPLE CHECK FOR CHANNEL SLOPES LESS THAN 2.5%. GRADE AT 100' INTERVALS. PLACE DOUBLE ROW OF STAPLES STAGGERED 4" APART AND AT 4" SPACING.
6. USE BLANKET CHECKS FOR THE FOLLOWING SLOPES:
   2.5%-3% 100' INTERVALS
   3%-5% 50' INTERVALS
   5%-7% 25' INTERVALS
7. CRITICAL POINTS SHALL BE SECURED WITH PROPER STAPLE PATTERNS.



BLANKET OVERLAP
PLACE SINGLE ROW STAPLES AT 12" SPACING

GENERAL BLANKET INSTALLATION REQUIREMENTS

REPP = ROLLED EROSION PREVENTION PRODUCT.

PREPARE SOIL AS PER SPECIFICATION 2574.

LAY PARALLEL OR PERPENDICULAR TO THE DIRECTION OF WATER FLOW.

OVERLAP ADJACENT STRIP EDGES A MINIMUM OF 4".

OVERLAP BLANKET 6" (MINIMUM) AT EACH END. OVERLAP BOTTOM END OF UPPER BLANKET OVER TOP END OF LOWER BLANKET. STAPLE ALONG OVERLAP EVERY 1.5'.

THE UPPERMOST BLANKET OF ALL SLOPE APPLICATIONS MUST START IN A CHECK SLOT. IF SLOPE LENGTH (L) IS 100' OR GREATER, INSERT BLANKET INTO A CHECK SLOT ⅓ FROM THE BOTTOM OF THE SLOPE.

REVISION:

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

MINNESOTA
DEPARTMENT OF TRANSPORTATION

STANDARD PLAN 5-297.404 **3 OF 3**

APPROVED: 1-8-2020
REVISED:

THOMAS STYRBICKI
STATE DESIGN ENGINEER

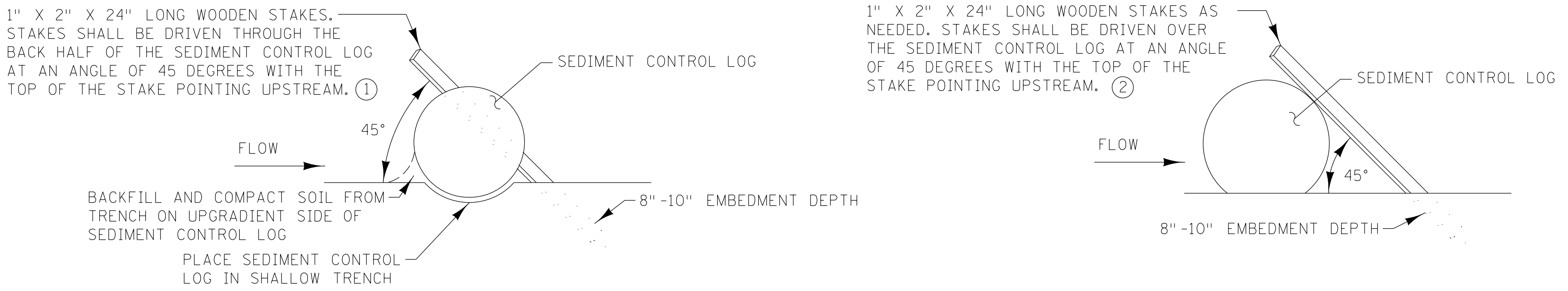
STATE PROJ. NO.

PERMANENT EROSION CONTROL

REPP (BLANKET) STAPLE PATTERN FOR SLOPES

SAP 002-609-022
SAP 198-020-039

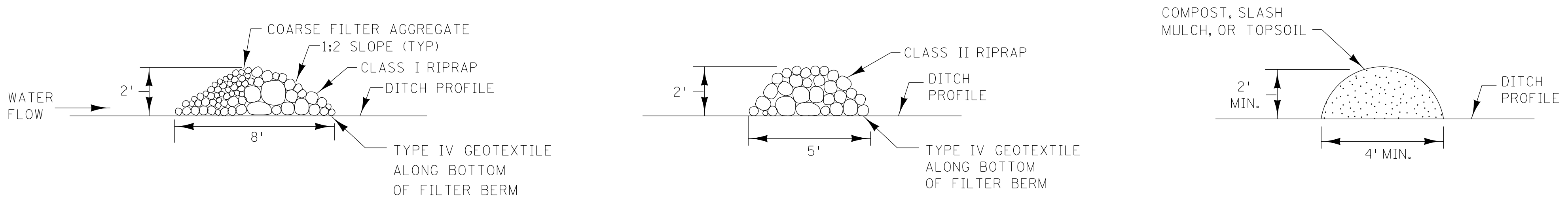
SHEET NO. 31 OF 167 SHEETS



TYPES: STRAW, WOOD FIBER, OR COIR

TYPES: WOOD CHIP, COMPOST, OR ROCK

SEDIMENT CONTROL LOGS

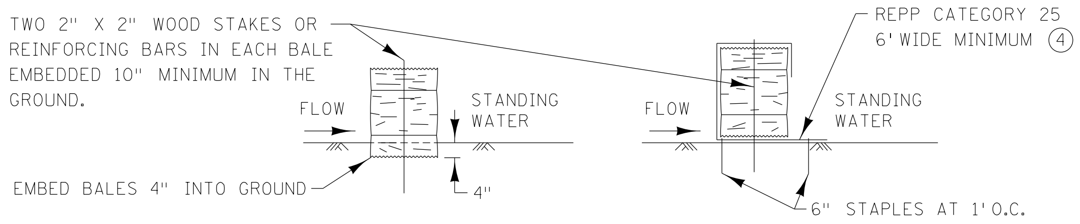


TYPE 3 (ROCK WEEPER)

TYPE 5 (ROCK)

TYPE 1 (COMPOST), TYPE 2 (SLASH MULCH), OR TYPE 4 (TOPSOIL)

FILTER BERMS



EMBEDMENT METHOD

REPP (BLANKET) METHOD (ALTERNATE)

BALE BARRIERS③

NOTES:

REPP = ROLLED EROSION PREVENTION PRODUCT.

SEE SPECS. 2573, 3149, 3874, 3882, 3885, 3886, AND 3897.

① SPACE BETWEEN STAKES SHALL BE A MAXIMUM OF 1' FOR DITCH CHECKS OR 2' FOR OTHER APPLICATIONS.

② PLACE STAKES AS NEEDED TO PREVENT MOVEMENT OF SEDIMENT CONTROL LOGS PLACED ON SLOPES OR AS NEEDED DUE TO OTHER FACTORS. STAKES SHALL BE INCIDENTAL.

③ TO BE USED FOR CRITICAL PERIMETER CONTROL AREAS WHERE STANDING WATER OCCURS (6" MAXIMUM DEPTH). BALES SHALL CONSIST OF TYPE 1 MULCH OF APPROXIMATELY 14" X 18" X 36" LONG. BALES SHALL BE PLACED ON EDGE AND BUTTED TIGHT TO ADJACENT BALES.

④ INSTEAD OF TRENCHING, PLACE BALE ON THE REPP (BLANKET) AND WRAP BLANKET AROUND THE BALE. PLACE STAKE THROUGH BALE AND BLANKET.

DISTRICT #:
IPLOT NAME: $$@IPLOT$NAME@$$
PATH & FILENAME: P:\002-609-022\Plan\2_MNDOT SHEETS FOR PLAN\MICROV_DGN SHEETS COMBINED.dgn

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

MINNESOTA
DEPARTMENT OF TRANSPORTATION

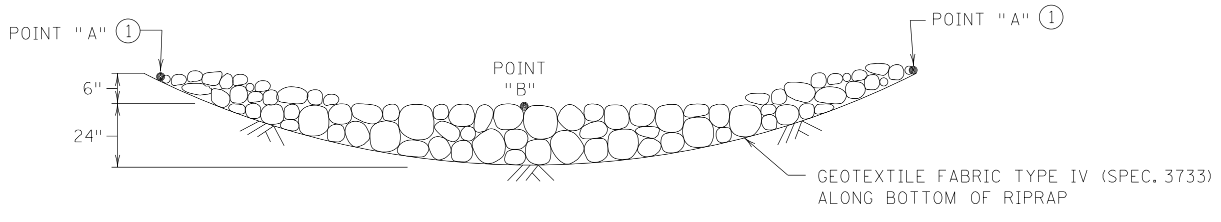
STANDARD PLAN 5-297.405 **2 OF 8**
APPROVED: 1-8-2020
REVISED:
THOMAS STYRBICKI
STATE DESIGN ENGINEER

TEMPORARY SEDIMENT CONTROL
FILTER BERMS, SEDIMENT CONTROL LOGS, AND BALE BARRIERS

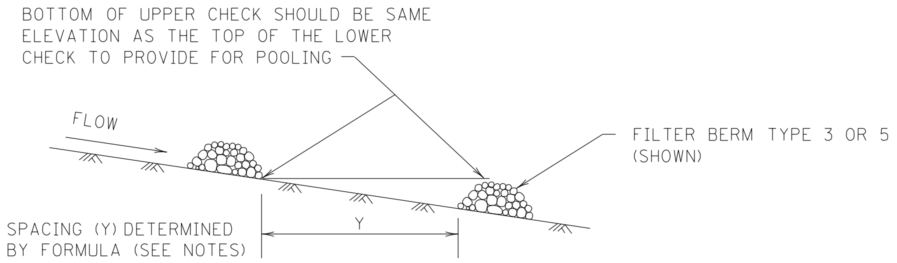
STATE PROJ. NO. SAP 002-609-022 SAP 198-020-039

PLOTTED/REVISED: 11/28/2023

DISTRICT #:
IPLOT NAME: $$@IPLOT$NAME@$$
PATH & FILENAME: P:\002-609-022\Plan\2_MNDOT SHEETS FOR PLAN\MICROV_DGN SHEETS COMBINED.dgn

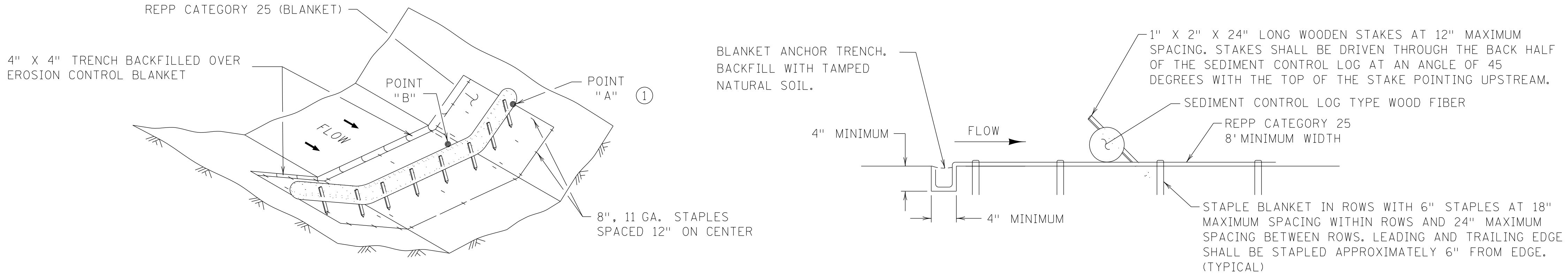


ROCK DITCH CHECKS
FILTER BERMS TYPE 3 (ROCK WEEPER) OR FILTER TYPE 5 (ROCK) ③
FOR USE ON ROUGH-GRADED AREAS
ONLY FOR USE OUTSIDE CLEAR ZONE ②

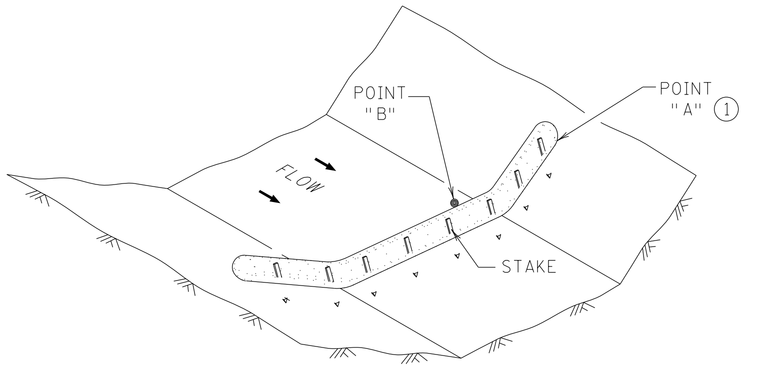


DITCH CHECK SPACING

FOR ALL FILTER BERM TYPES



SEDIMENT CONTROL LOG TYPE REPP (BLANKET) SYSTEM ④



SEDIMENT CONTROL LOG TYPE WOOD FIBER, OR TYPE COMPOST ⑤

FOR USE ON ROUGH GRADED AREAS

NOTES:

REPP = ROLLED EROSION PREVENTION PRODUCT.

SEE SPECS. 2573, 3601, 3733, 3885, 3886 & 3889.

FOR DITCH CHECKS, PLACE SEDIMENT CONTROL LOG PERPENDICULAR TO FLOW AND IN A CRESCENT SHAPE WITH THE ENDS FACING UPSTREAM.

APPROXIMATE SPACING BETWEEN EACH DITCH CHECK SHOULD BE DETERMINED FROM THE FOLLOWING SPACING FORMULA:

$$\text{APPROXIMATE SPACING OF DITCH CHECKS (FT.)} = Y = \frac{\text{DITCH CHECK HEIGHT (FT.)}}{\text{\% CHANNEL SLOPE}} \times 100$$

① POINT "A" MUST BE A MINIMUM OF 6" HIGHER THAN POINT "B" TO ENSURE THAT WATER FLOWS OVER THE DIKE AND NOT AROUND THE ENDS.

② ROCK DITCH CHECKS PLACED WITHIN THE CLEAR ZONE ARE TO BE 18" OR LESS IN HEIGHT. A 1:6 APPROACH AND DEPARTURE SLOPE SHALL BE PROVIDED.

③ DITCH GRADE 3% - 5%, MAX. FLOW VELOCITY 12 FT./SEC.

④ DITCH GRADE 1.5% - 3%, MAX. FLOW VELOCITY 4.5 FT./SEC.

⑤ DITCH GRADE 1.5% - 3%, MAX. FLOW VELOCITY 1.5 FT./SEC.

REVISION:

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

MINNESOTA
DEPARTMENT OF TRANSPORTATION

STANDARD PLAN 5-297.405 **3 OF 8**

APPROVED: 1-8-2020
REVISED:

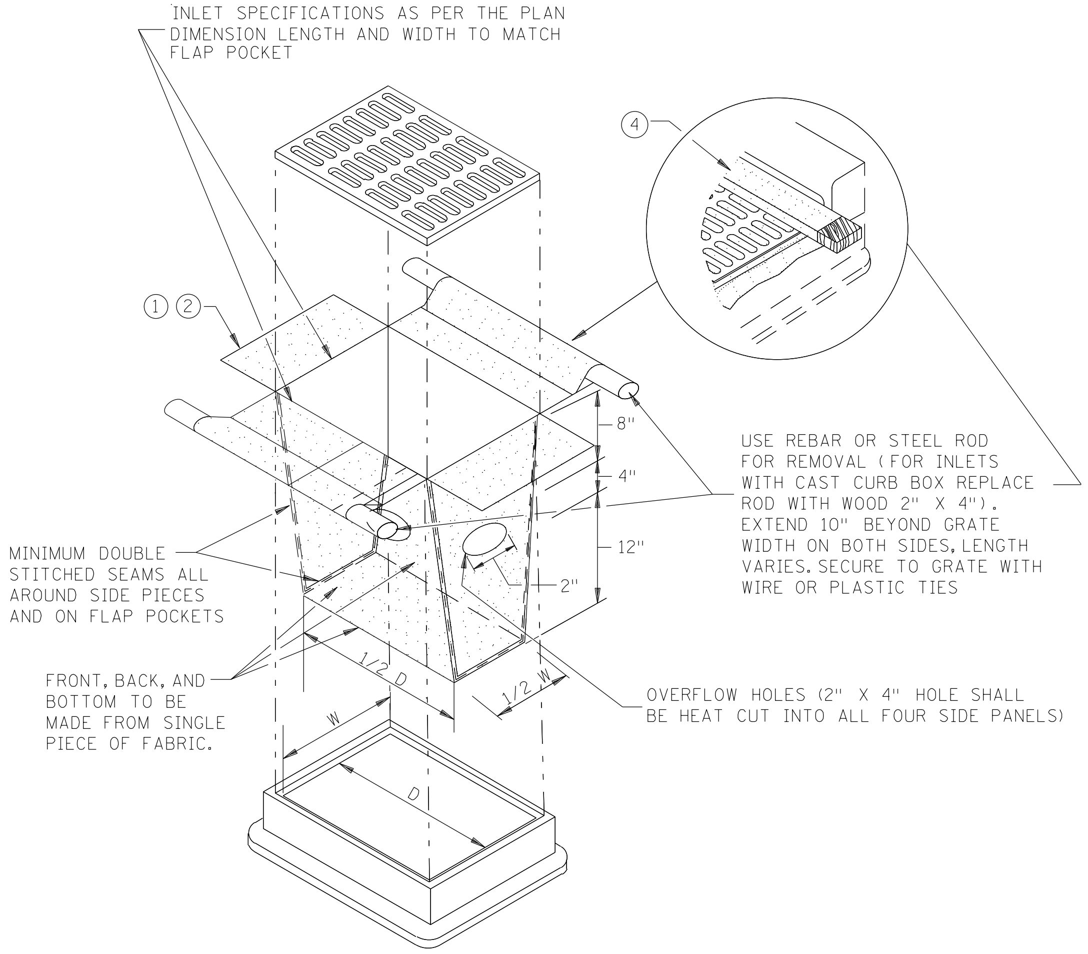
THOMAS STYRBICKI
STATE DESIGN ENGINEER

TEMPORARY SEDIMENT CONTROL

DITCH CHECK

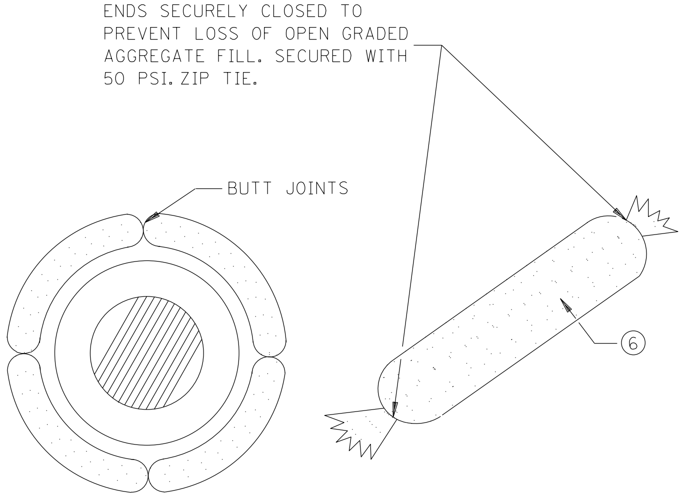
STATE PROJ. NO. SAP 002-609-022
SAP 198-020-039

SHEET NO. 33 OF 167 SHEETS

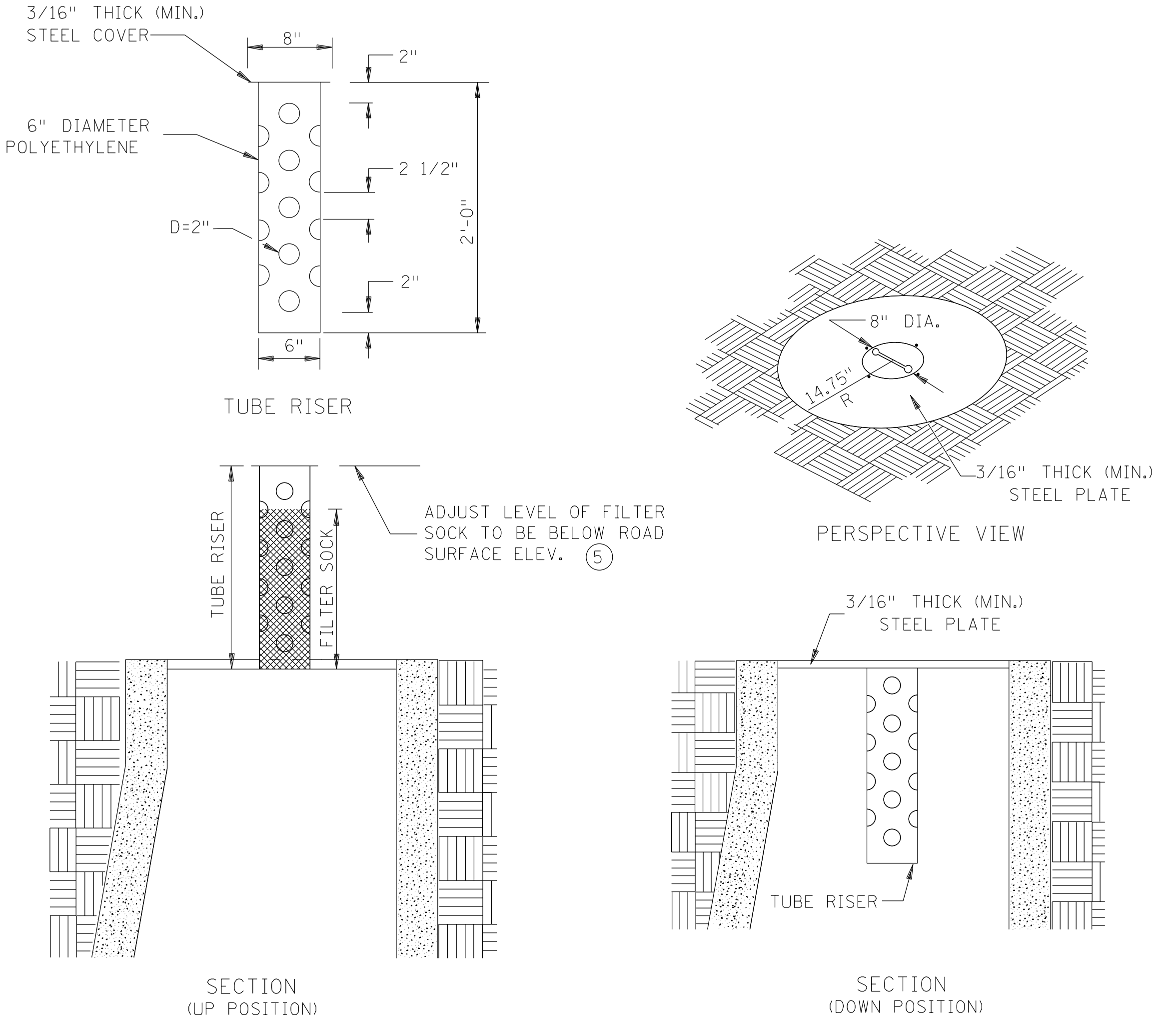


FILTER BAG INSERT ③

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



ROCK LOG/COMPOST LOG



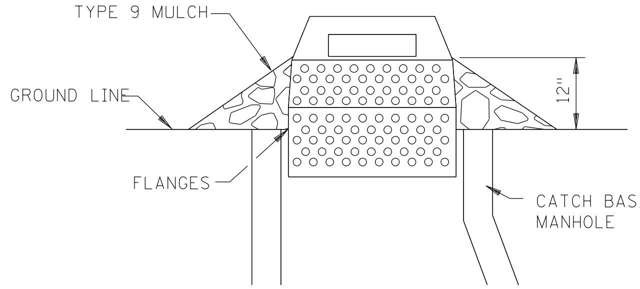
TUBE RISER

PERSPECTIVE VIEW

SECTION
(UP POSITION)

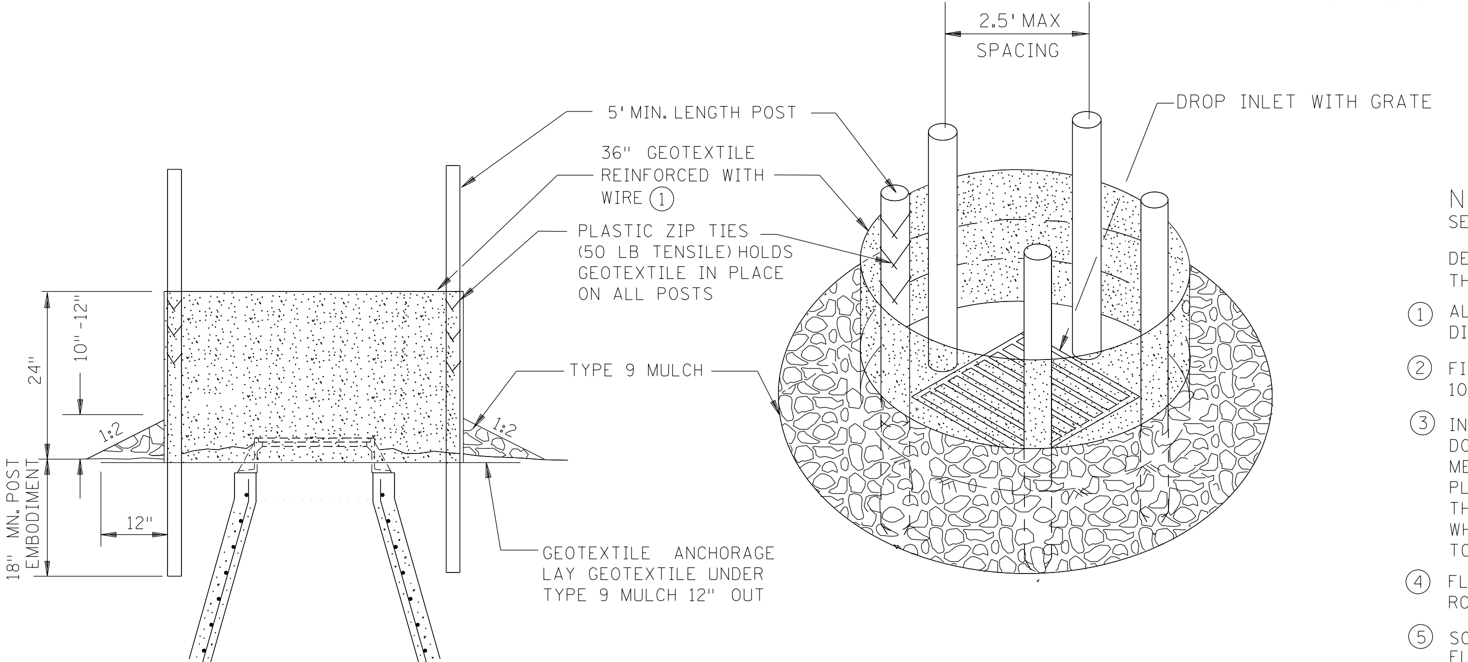
SECTION
(DOWN POSITION)

POP-UP HEAD



SEDIMENT CONTROL INLET HAT

NOTE:
THE SEDIMENT CONTROL BARRIER SHALL BE A METAL OR PLASTIC/POLYETHYLENE RISER SIZED TO FIT INSIDE THE CATCH BASIN/MANHOLE; HAVE PERFORATIONS TO ALLOW FOR WATER INFILTRATION; HAVE AN OVERFLOW OPENING, FLANGES AND A LID/COVER.



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

NOTES:
SEE SPECS. 2573, 3137, & 3886.

DEVICES MUST BE ADJUSTED ACCORDINGLY AS TO NOT CAUSE FLOODING ON ROADWAY THAT WOULD IMPEED TRAFFIC FLOW.

① ALL GEOTEXTILE USED FOR INLET PROTECTION SHALL BE MONOFILAMENT IN BOTH DIRECTIONS, MEETING SPEC. 3886.

② FINISHED SIZE, INCLUDING POCKETS WHERE REQUIRED SHALL EXTEND A MINIMUM OF 10 INCHES AROUND THE PERIMETER TO FACILITATE MAINTENANCE OR REMOVAL.

③ INSTALLATION NOTES:
DO NOT PLACE FILTER BAG INSERT IN INLETS SHALLOWER THAN 30 INCHES, MEASURED FROM THE BOTTOM OF THE INLET TO THE TOP OF THE GRATE. THE PLACED BAG SHALL HAVE A MINIMUM SIDE CLEARANCE OF 3 INCHES BETWEEN THE INLET WALLS AND THE BAG, MEASURED AT THE BOTTOM OF THE OVERFLOW HOLES. WHERE NECESSARY THE CONTRACTOR SHALL CLINCH THE BAG, USING PLASTIC ZIP TIES, TO ACHIEVE THE 3 INCH SIDE CLEARANCE.

④ FLAP POCKETS SHALL BE LARGE ENOUGH TO ACCEPT WOOD 2 INCH X 4 INCH OR USE A ROCK SOCK OR SAND BAGS IN PLACE OF THE FLAP POCKETS.

⑤ SOCK HEIGHT MUST NOT BE SO HIGH AS TO SLOW DOWN WATER FILTRATION TO CAUSE FLOODING OF THE ROADWAY.

⑥ GEOTEXTILE SOCK BETWEEN 4-10 FEET LONG AND 4-6 INCH DIAMETER. SEAM TO BE JOINED BY TWO ROWS OF STITCHING WITH A PLASTIC MESH BACKING OR PROVIDE A HEAT BONDED SEAM (OR APPROVED EQUIVALENT). FILL ROCK LOG WITH OPEN GRADED AGGREGATE CONSISTING OF SOUND DURABLE PARTICLES OF COARSE AGGREGATE CONFORMING TO SPEC. 3137 TABLE 3137-1; CA-3 GRADATION.

PLOTTED/REVISED: 11/28/2023

DISTRICT #:
IPLOT NAME: $$@IPLOT$NAME@$$
PATH & FILENAME: P:\002-609-022\Plan\2_MNDOT SHEETS FOR PLAN\MICROV_DGN SHEETS COMBINED.dgn

REVISION:
APPROVED: 2-28-2017
CHIEF ENVIRONMENTAL OFFICER

MINNESOTA
DEPARTMENT OF TRANSPORTATION

STANDARD PLAN 5-297.405 | **4 OF 8**

APPROVED: 2-28-2017
REVISED:
STATE DESIGN ENGINEER

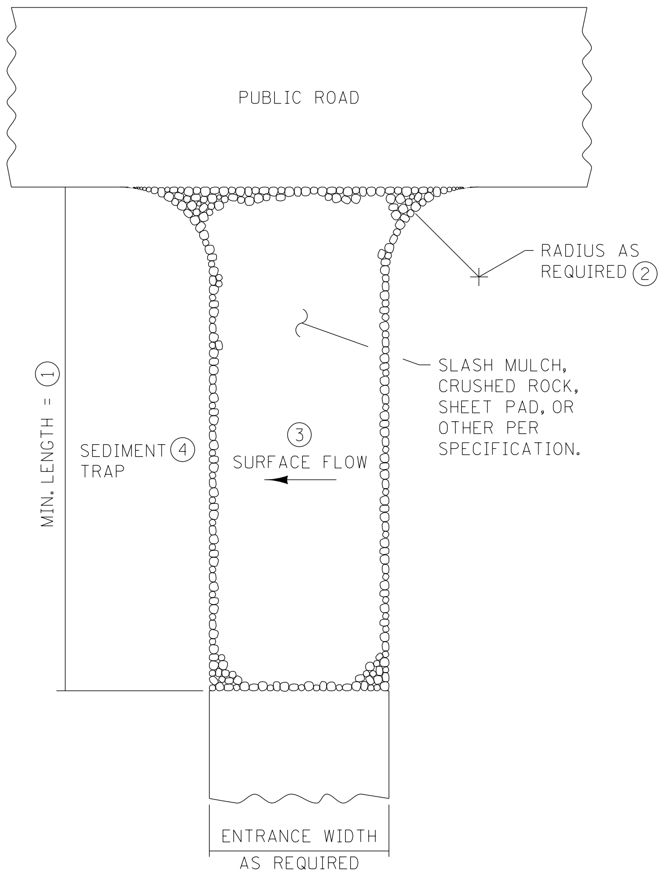
TEMPORARY SEDIMENT CONTROL
STORM DRAIN INLET PROTECTION

STATE PROJ. NO. SAP 002-609-022
SAP 198-020-039

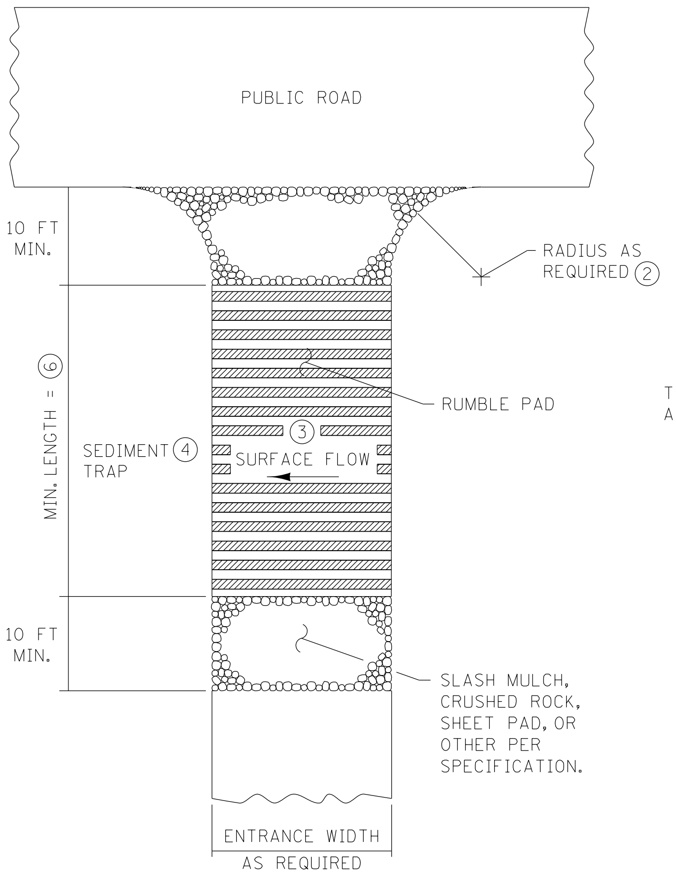
SHEET NO. 34 OF 167 SHEETS

PLOTTED/REVISED: 11/28/2023

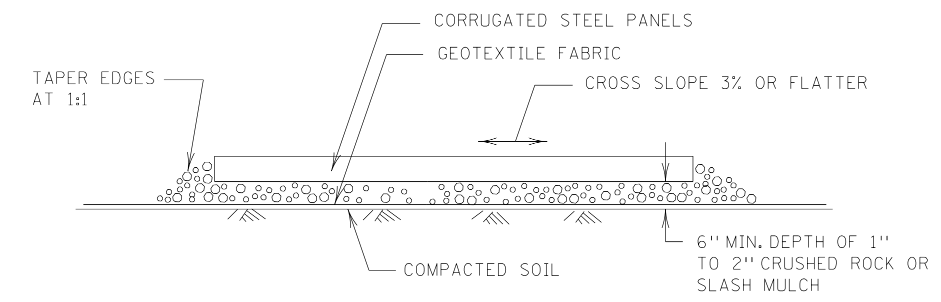
DISTRICT #:
IPLOT NAME: $$@IPLOT$NAME@$$
PATH & FILENAME: P:\002-609-022\Plan\2_MNDOT SHEETS FOR PLAN\MICROV_DGN SHEETS COMBINED.dgn



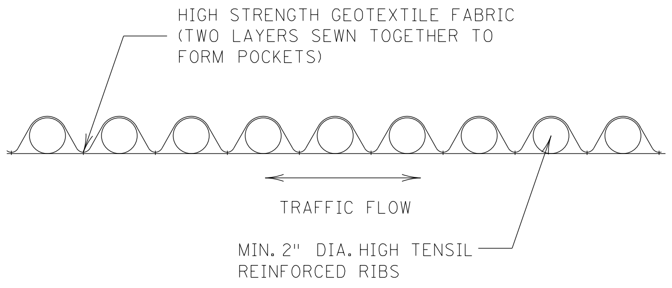
SLASH MULCH, CRUSHED ROCK, OR SHEET PAD CONSTRUCTION EXIT ⑤⑦



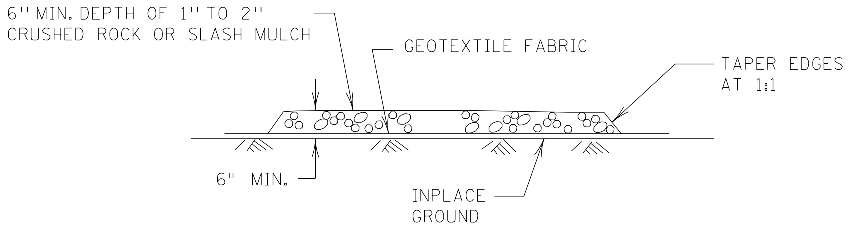
RUMBLE PAD CONSTRUCTION EXIT ⑤⑦



RUMBLE PAD



SHEET PAD



SLASH MULCH OR CRUSHED ROCK

NOTES:

SEE SPECS. 2573 & 3882.

① MINIMUM LENGTH SHALL BE THE GREATER OF 50 FEET OR A LENGTH SUFFICIENT TO ALLOW A MINIMUM OF 5 TIRE ROTATIONS ON THE PROVIDED PAD. MINIMUM LENGTH SHALL BE CALCULATED USING THE LARGEST TIRE WHICH WILL BE USED IN TYPICAL OPERATIONS.

② PROVIDE RADIUS OR WIDEN PAD SUFFICIENTLY TO PREVENT VEHICLE TIRES FROM TRACKING OFF OF PAD WHEN LEAVING SITE.

③ IF RUNOFF FROM DISTURBED AREAS FLOWS TOWARD CONSTRUCTION EXITS, PREVENT RUNOFF FROM DRAINING DIRECTLY TO PUBLIC ROAD OVER CONSTRUCTION EXIT BY CROWNING THE EXIT OR SLOPING TO ONE SIDE. IF SURFACE GRADING IS INSUFFICIENT, PROVIDE OTHER MEANS OF INTERCEPTING RUNOFF.

④ IF RUNOFF FROM CONSTRUCTION EXITS WILL DRAIN OFF OF PROJECT SITE, PROVIDE SEDIMENT TRAP WITH STABILIZED OVERFLOW.

⑤ IF A TIRE WASH OFF IS REQUIRED THE CONSTRUCTION EXITS SHALL BE GRADED TO DRAIN THE WASH WATER TO A SEDIMENT TRAP.

⑥ MINIMUM LENGTH OF RUMBLE PAD SHALL BE 20 FEET, OR AS REQUIRED TO REMOVE SEDIMENT FROM TIRES. IF SIGNIFICANT SEDIMENT IS TRACKED FROM THE SITE, THE RUMBLE PAD SHALL BE LENGTHENED OR THE DESIGN MODIFIED TO PROVIDE ADDITIONAL VIBRATION. WASH-OFF LENGTH SHALL BE AS REQUIRED TO EFFECTIVELY REMOVE CONSTRUCTION SEDIMENT FROM VEHICLE TIRES.

⑦ MAINTENANCE OF CONSTRUCTION EXITS SHALL OCCUR WHEN THE EFFECTIVENESS OF SEDIMENT REMOVAL HAS BEEN REDUCED. MAINTENANCE SHALL CONSIST OF REMOVING SEDIMENT AND CLEANING THE MATERIALS OR PLACING ADDITIONAL MATERIAL (SLASH MULCH OR CRUSHED ROCK) OVER SEDIMENT FILLED MATERIAL TO RESTORE EFFECTIVENESS.

REVISION:
APPROVED: 2-28-2017
CHIEF ENVIRONMENTAL OFFICER

MINNESOTA
DEPARTMENT OF TRANSPORTATION

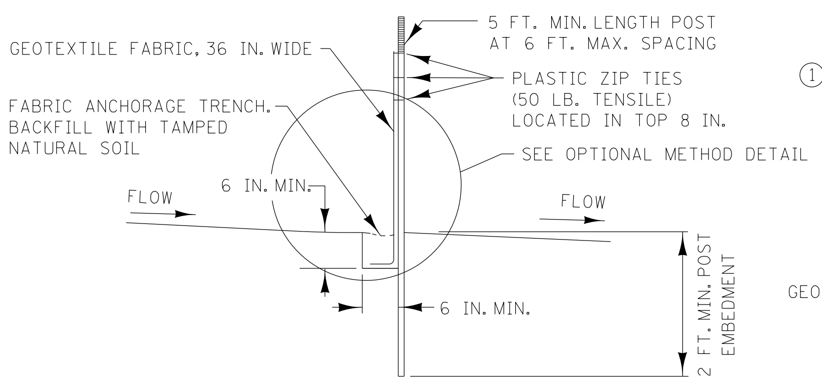
STANDARD PLAN 5-297.405 | 5 OF 8
APPROVED: 2-28-2017
REVISED:
STATE DESIGN ENGINEER

TEMPORARY SEDIMENT CONTROL

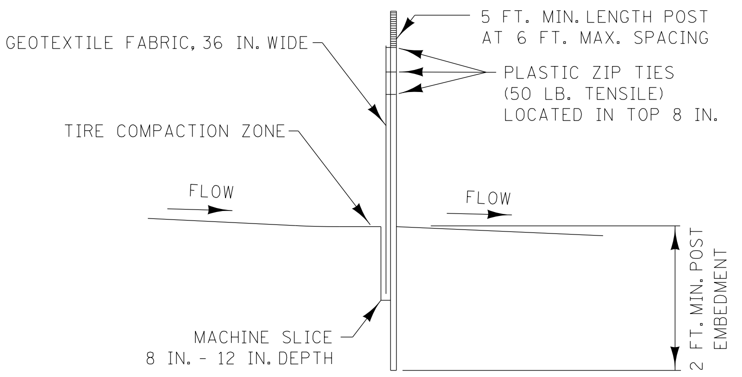
STABILIZED CONSTRUCTION EXIT

STATE PROJ. NO. SAP 002-609-022
SAP 198-020-039

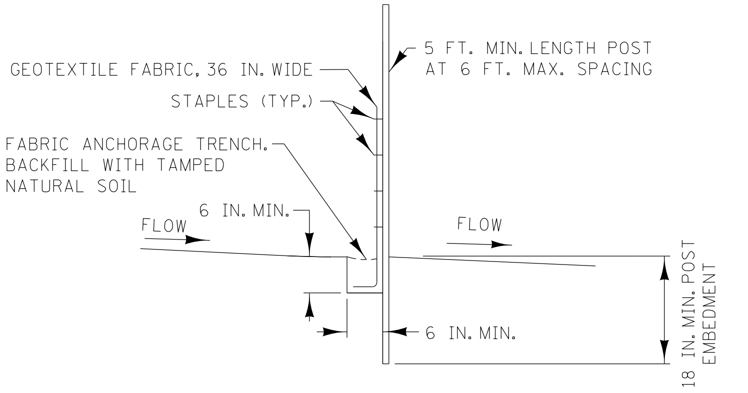
DISTRICT #:
IPLOT NAME: $$@IPLOT$NAME@$$
PATH & FILENAME: P:\002-609-022\Plan\2_MNDOT SHEETS FOR PLAN\MICROV_DGN SHEETS COMBINED.dgn
PLOTTED/REVISED: 11/28/2023



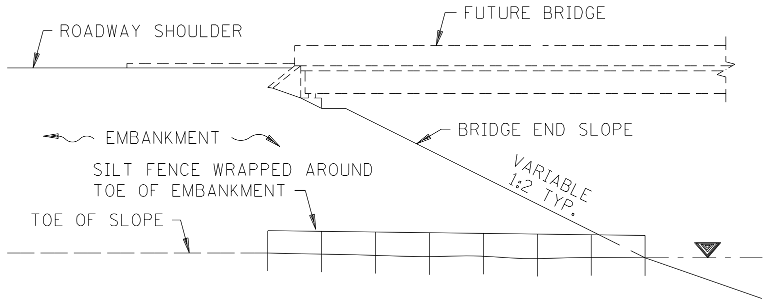
SILT FENCE TYPE HI ②
(HAND INSTALLED)



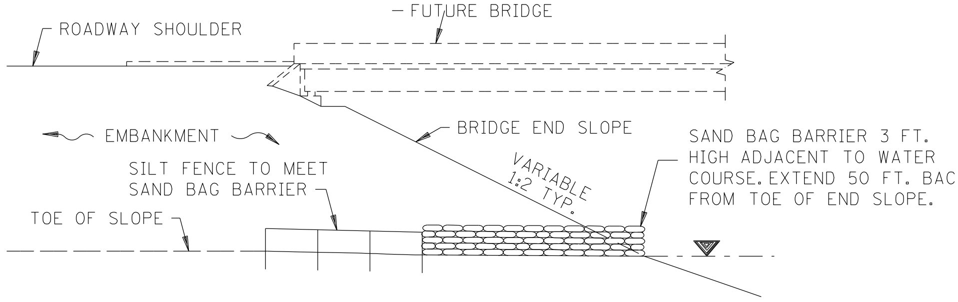
SILT FENCE TYPE MS ②
(MACHINE SLICED)



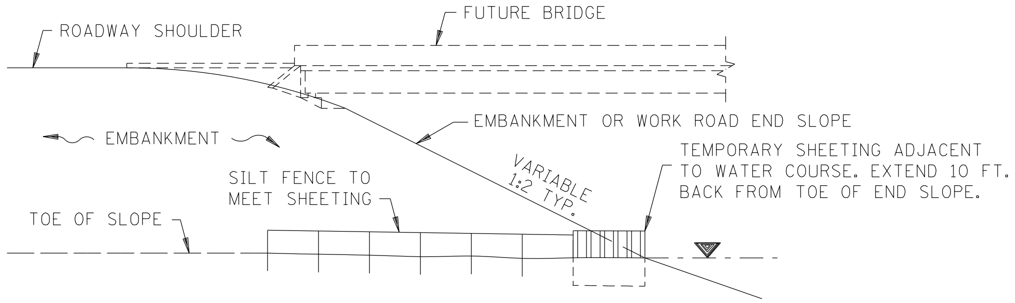
SILT FENCE TYPE PA ③
(PREASSEMBLED)



SILT FENCE ONLY ④

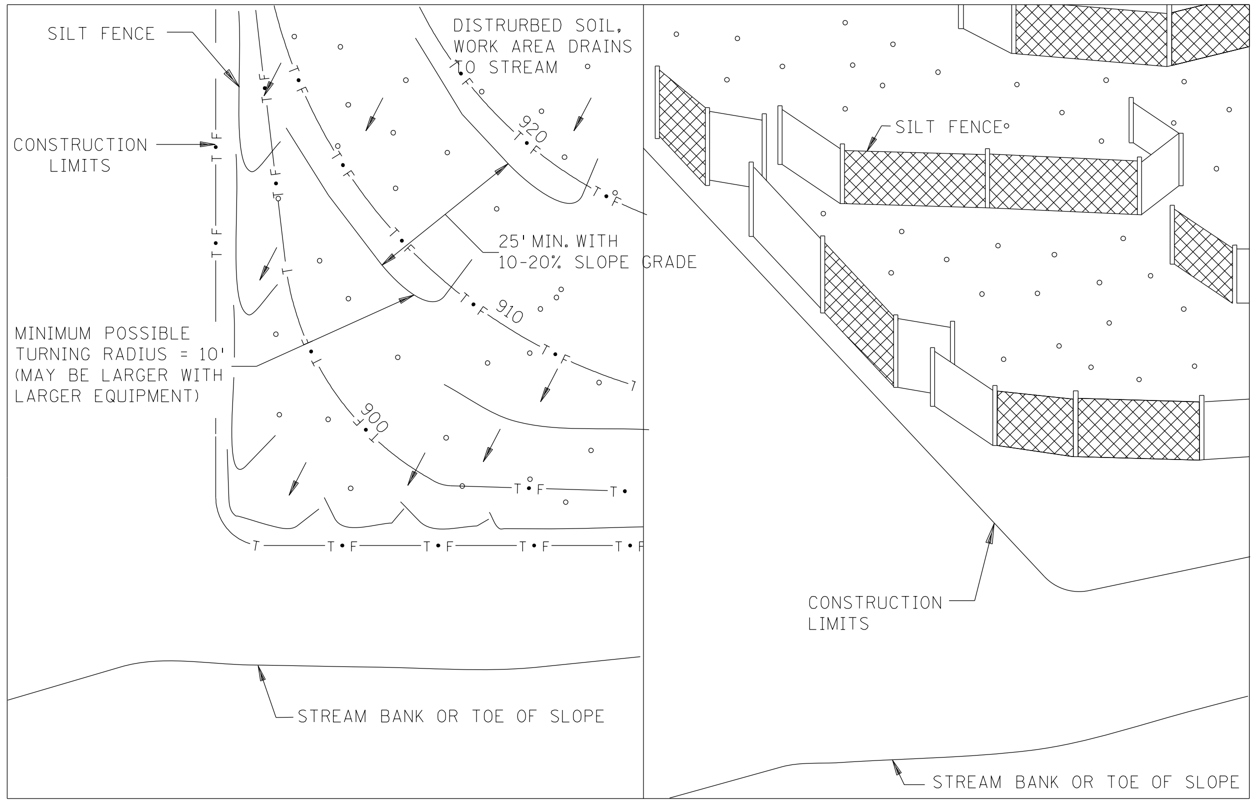


SILT FENCE WITH SAND BAGS ⑤



SILT FENCE WITH SHEETING ⑥

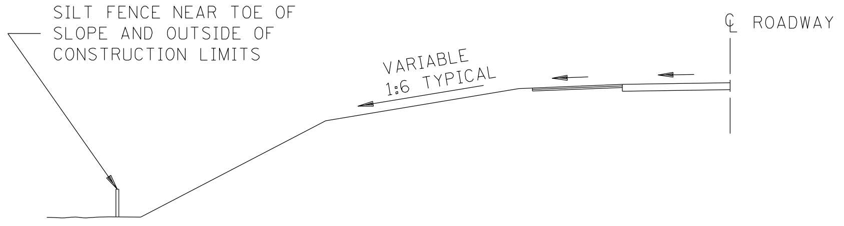
INSTALLATION AT BRIDGE EMBANKMENT ADJACENT TO WATER



PLAN VIEW

PERSPECTIVE VIEW

J-HOOK INSTALLATION



LOCATION AT TOE OF ROADWAY EMBANKMENT

NOTES:

SEE SPECS. 2573, 3149 & 3886.

① COARSE FILTER AGGREGATE (SPEC. 3149) SHALL BE INCIDENTAL.

② TO PROTECT AREAS FROM SHEET FLOW. MAXIMUM CONTRIBUTING AREA: 1 ACRE.

③ TO PROTECT AREAS FROM SHEET FLOW. MAXIMUM CONTRIBUTING AREA: 0.25 ACRE.

④ WATER COURSE FLOW VELOCITY: STANDING.
CONTRIBUTING SLOPE AREA: 1./2 ACRE.

⑤ WATER COURSE FLOW VELOCITY: 1 TO 7 FT./SEC.
CONTRIBUTING SLOPE AREA: 1. ACRE.

⑥ WATER COURSE FLOW VELOCITY: 8 TO 15 FT./SEC.
CONTRIBUTING SLOPE AREA: 3 ACRES.

REVISION:
APPROVED: 2-28-2017
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DEPARTMENT OF TRANSPORTATION

STANDARD PLAN 5-297.405 | **6 OF 8**
APPROVED: 2-28-2017
REVISED:
STATE DESIGN ENGINEER

TEMPORARY SEDIMENT CONTROL
SILT FENCE

STATE PROJ. NO. SAP 002-609-022
SAP 198-020-039

PLOTTED/REVISED: 11/28/2023

DISTRICT #:
IPLOT NAME: $$@IPLOT$NAME@$$
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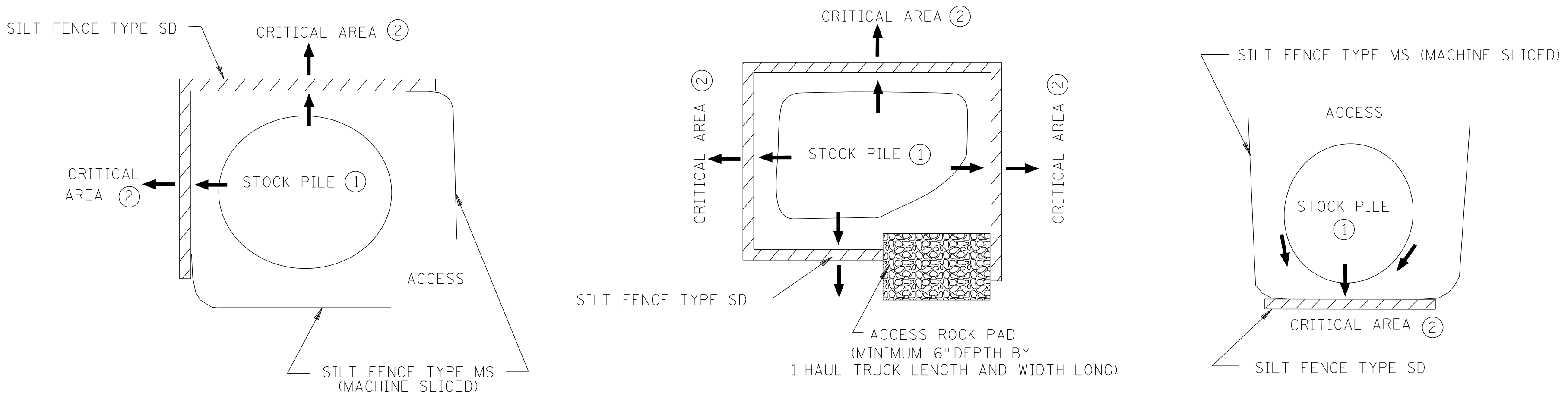
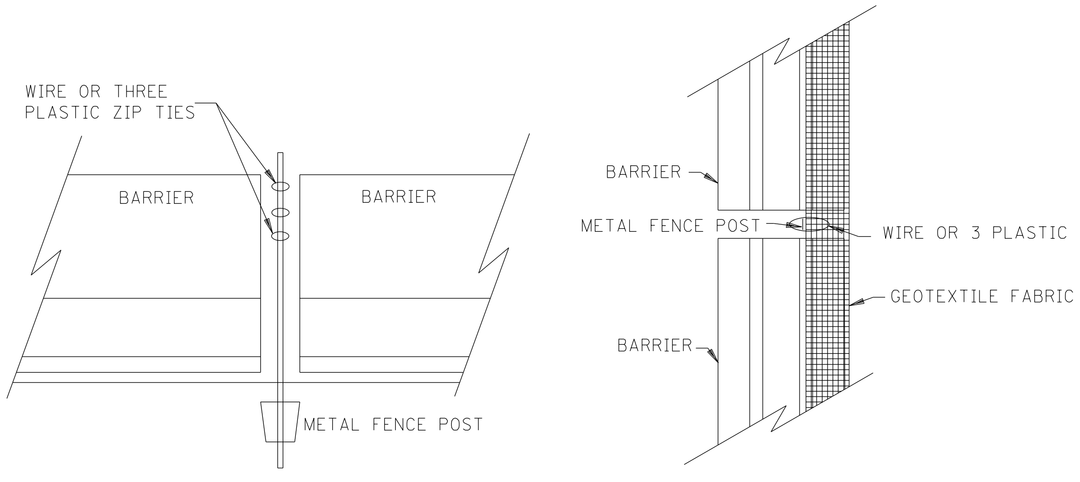


STOCK PILE CONTAINMENT

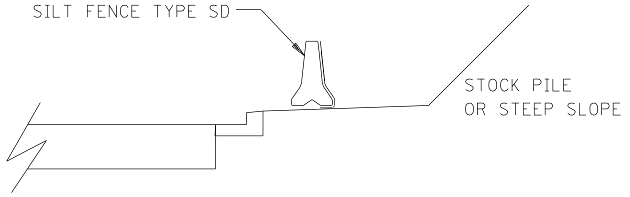
STOCKPILE SEDIMENT CONTROL



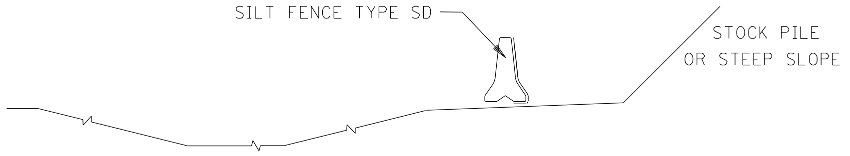
PROFILE VIEW

TOP VIEW

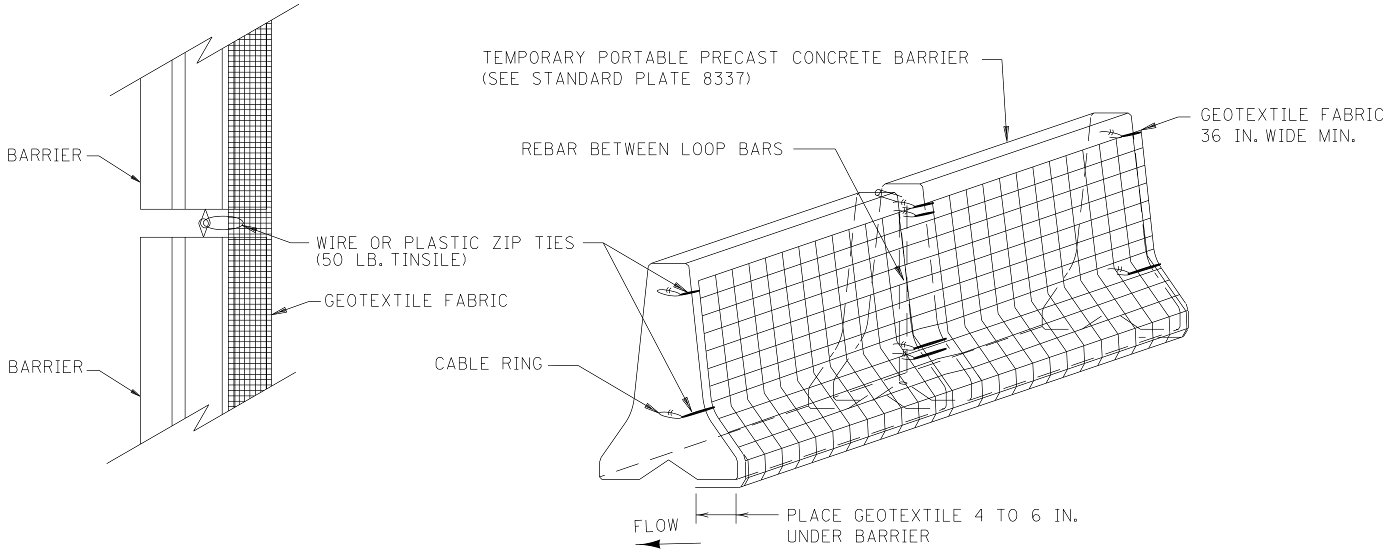
SILT FENCE TYPE SD (SUPER DUTY)
BARRIER WITHOUT LOOP BARS



CURB AND GUTTER PROTECTION SYSTEM



DITCH PROTECTION SYSTEM



TOP VIEW

PERSPECTIVE VIEW

SILT FENCE TYPE SD (SUPER DUTY)
BARRIER WITH LOOP BARS

NOTES:

SEE SPECS. 2533, 2573 & 3886.

SILT FENCE TYPE SD USED TO PROTECT CRITICAL AREAS FROM SHEET FLOW, AND AREAS WHERE OTHER SILT FENCES CANNOT BE PLACED. MAXIMUM CONTRIBUTING AREA: 1 ACRE.

PLACE SILT FENCE TYPE SD ALONG A CONSTANT ELEVATION.

SILT FENCE TYPE SD CAN UTILIZE EITHER A CONCRETE, OR WATER FILLED, TEMPORARY MEDIAN BARRIER.

① PLACING STOCK PILES NEXT TO AN ENVIRONMENTALLY SENSITIVE AREA IS NOT RECOMMENDED. WHEN THERE ARE NO FEASIBLE ALTERNATIVES, PLACE SILT FENCE SD AS SHOWN OR AS DIRECTED BY THE ENGINEER.

② CRITICAL AREAS INCLUDE WETLANDS, JUDICIAL DITCHES, STREAMS, WATER BODIES, AND OTHER AREAS REQUIRING PROTECTION.

REVISION:
APPROVED: 2-28-2017
CHIEF ENVIRONMENTAL OFFICER

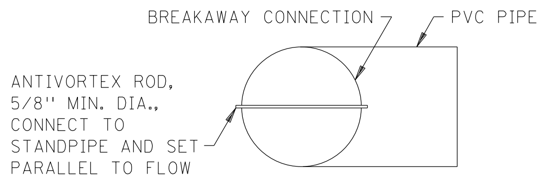
MINNESOTA
DEPARTMENT OF TRANSPORTATION

STANDARD PLAN 5-297.405 **7 OF 8**
APPROVED: 2-28-2017
REVISED:
STATE DESIGN ENGINEER

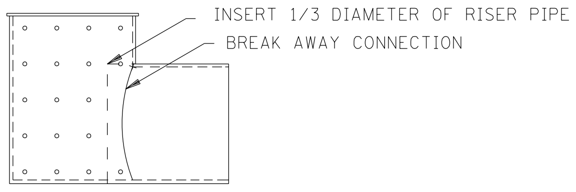
TEMPORARY SEDIMENT CONTROL
SUPER DUTY SILT FENCE

STATE PROJ. NO. SAP 002-609-022
SAP 198-020-039

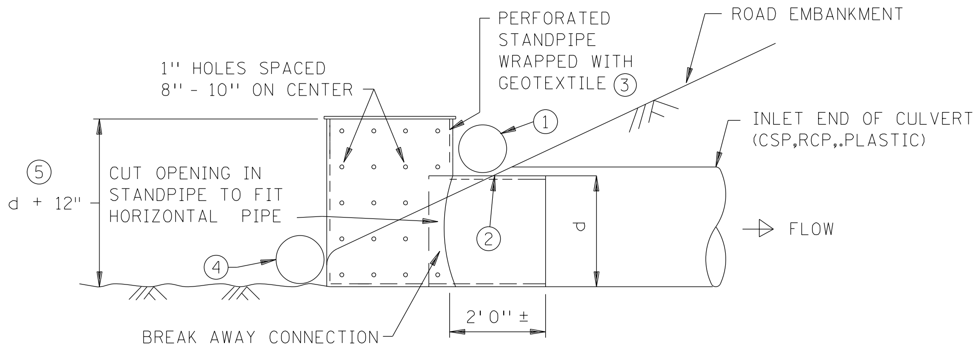
SHEET NO. 37 OF 167 SHEETS



PLAN VIEW



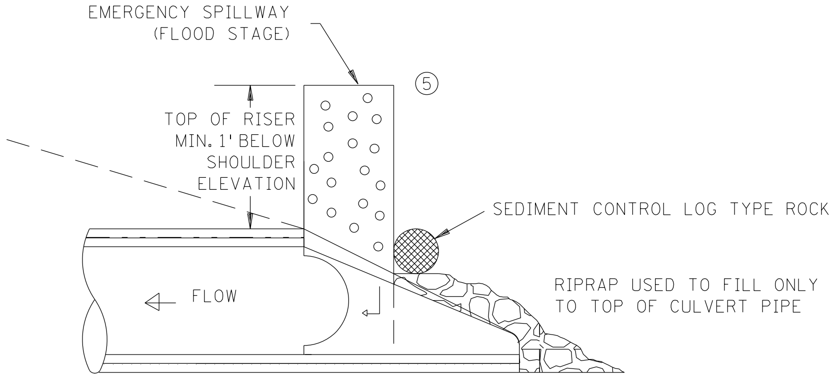
CULVERT STANDPIPE



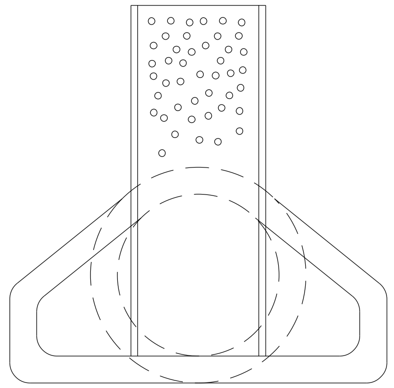
ELEVATION VIEW OF CULVERT INSTALLATION

CULVERT STANDPIPE INSERT (D-RISER)

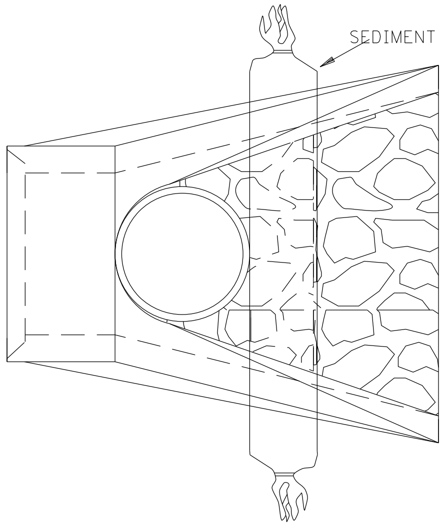
d= CULVERT SIZE: 12'' - 36''



LONGITUDINAL SECTION



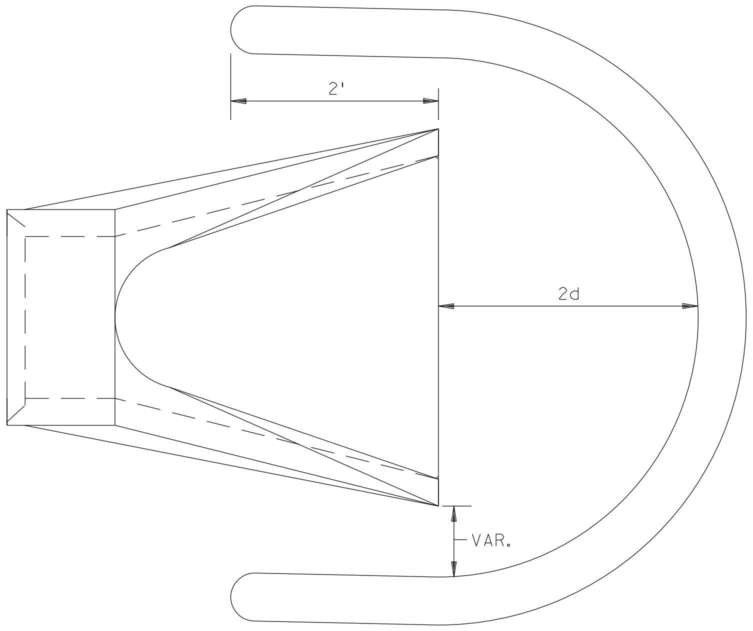
END VIEW



NOTE: SEDIMENT CONTROL LOG TYPE ROCK MAY BE WRAPPED AROUND RISER

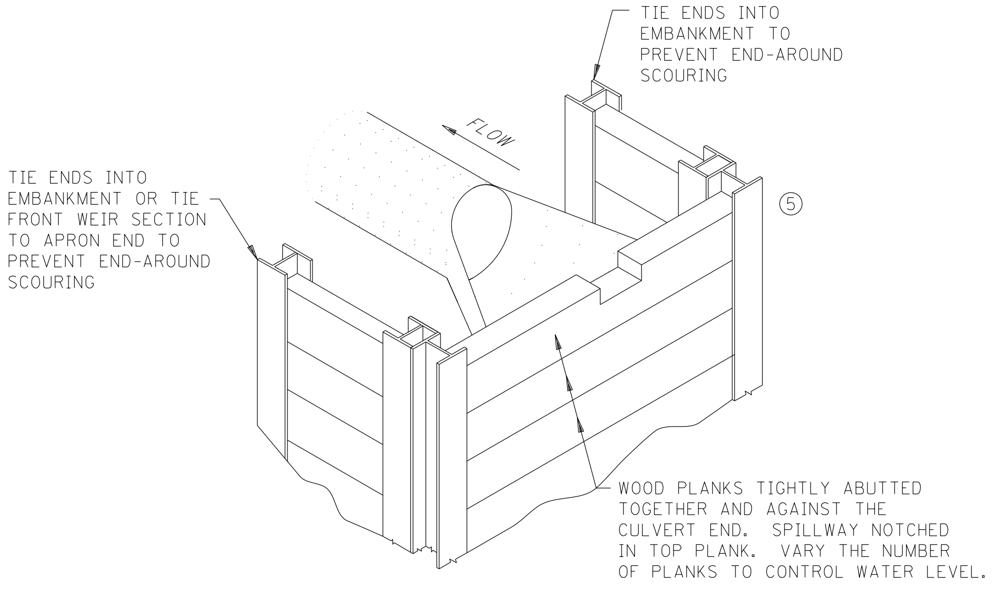
TOP VIEW

CULVERT STANDPIPE INSERT (D-RISER)



SEDIMENT CONTROL LOG WEIR
(COMPOST, WOOD CHIP, OR ROCK)

d = CULVERT SIZE: 12''-36''



WOOD PLANK WEIR

NOTES:

SEE SPECS. 2573, 3891 & 3893.

FOR USE WHEN TEMPORARY PONDING IS NEEDED IN DITCH SECTIONS FOR SEDIMENT CONTROL.

MANUFACTURED ALTERNATIVES LISTED ON MnDOT'S APPROVED PRODUCTS LIST MAY BE SUBSTITUTED AT NO ADDITIONAL COST.

① ROCK LOG OR SANDBAG TO HOLD STANDPIPE AND ACT AS A SEAL BETWEEN RISER PIPE AND CULVERT.

② PLACE CULVERT APRON AND SLIDE TEMPORARY STANDPIPE INTO CSP OR RCP CULVERT.

③ ALL GEOTEXTILE USED FOR CULVERT PROTECTION SHALL BE MONOFILAMENT IN BOTH DIRECTIONS, MEETING SPEC. 3886 FOR MACHINE SLICED.

④ ROCK LOG OR RIP RAP TO HOLD STANDPIPE AND ACT AS A FILTER BETWEEN RISER PIPE AND CULVERT.

⑤ HEIGHT OVERFLOW NOT TO CAUSE FLOODING OF ROAD OR ADJACENT PROPERTIES.

DISTRICT #:
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REVISION:
APPROVED: 2-28-2017
CHIEF ENVIRONMENTAL OFFICER

MINNESOTA
DEPARTMENT OF TRANSPORTATION

STANDARD PLAN 5-297.405 **8 OF 8**

APPROVED: 2-28-2017
REVISED:
STATE DESIGN ENGINEER

TEMPORARY SEDIMENT CONTROL
CULVERT END CONTROLS

STATE PROJ. NO. SAP 002-609-022
SAP 198-020-039

JCFoster

ALIGNMENT TABULATION

POINT NUMBER	POINT	STATION	CIRCULAR CURVE DATA					COORDINATES		AZIMUTH
			DELTA	DEGREE	RADIUS	TANGENT	LENGTH	E	N	
℄ C.S.A.H. 9 SOUTHBOUND <9SB_10>										
9050	POT	10+00.000						479,319.0801	175,258.5816	
	PC	14+13.113						479,322.8136	175,671.6780	N 0° 31' 04.14" E
9SB_101	PI	16+91.813	1° 47' 15.05" LT	0° 19' 14.57"	17,865.065'	278.700'	557.354'	479,325.3323	175,950.3662	PI
	CC							461,458.4785	175,833.1331	
	PRC	19+70.467						479,319.1567	176,228.9974	N 1° 16' 10.91" W
	PRC	19+70.467						479,319.1567	176,228.9974	N 1° 16' 10.91" W
9SB_102	PI	23+19.367	2° 11' 42.21" RT	0° 18' 52.59"	18,211.857'	348.900'	697.715'	479,311.4256	176,577.8118	PI
	CC							497,526.5420	176,632.5461	
	PT	26+68.182						479,317.0603	176,926.6663	N 0° 55' 31.31" E
9051	POT	31+80.605						479,325.3359	177,439.0221	
9052	POT	48+41.337						479,346.0692	179,099.6250	
9053	POT	57+77.872						479,363.6385	180,035.9950	
9054	POT	62+00.002						479,366.9836	180,458.1117	

ALIGNMENT TABULATION

POINT NUMBER	POINT	STATION	CIRCULAR CURVE DATA					COORDINATES		AZIMUTH
			DELTA	DEGREE	RADIUS	TANGENT	LENGTH	E	N	
℄ C.S.A.H. 9 NORTHBOUND <9NB_10>										
9012	POT	10+00.000						479,362.0783	175,258.1930	
	PC	14+13.113						479,365.8118	175,671.2894	N 0° 31' 04.14" E
9NB_101	PI	16+92.484	1° 47' 15.05" LT	0° 19' 11.80"	17,908.065'	279.370'	558.696'	479,368.3366	175,950.6484	PI
	CC							461,458.4785	175,833.1331	
	PRC	19+71.809						479,362.1462	176,229.9502	N 1° 16' 10.91" W
	PRC	19+71.809						479,362.1462	176,229.9502	N 1° 16' 10.91" W
9NB_102	PI	23+19.885	2° 11' 42.21" RT	0° 18' 55.27"	18,168.857'	348.076'	696.067'	479,354.4333	176,577.9410	PI
	CC							497,526.5420	176,632.5461	
	PT	26+67.876						479,360.0547	176,925.9719	N 0° 55' 31.31" E
9013	POT	31+80.378						479,368.3316	177,438.4064	
9014	POT	48+41.235						479,389.0665	179,099.1349	
9015	POT	57+77.153						479,399.6291	180,034.9933	
9016	POT	62+00.000						479,402.9817	180,457.8266	

ALIGNMENT TABULATION

POINT NUMBER	POINT	STATION	CIRCULAR CURVE DATA					COORDINATES		AZIMUTH
			DELTA	DEGREE	RADIUS	TANGENT	LENGTH	E	N	
℄ 154TH LN <ALI154_10>										
	PC	10+00.000						478,977.2317	178,624.6735	N 88° 34' 15.95" E
ALI154_101	PI	10+76.664	34° 05' 48.33" LT	22° 55' 05.92"	250.000'	76.664'	148.775'	479,053.8714	178,626.5853	PI
	CC							478,970.9976	178,874.5958	
	PT	11+48.775						479,116.2645	178,671.1320	N 54° 28' 27.63" E
	PC	12+17.407						479,172.0312	178,711.1371	N 54° 20' 44.41" E
ALI154_102	PI	12+97.804	35° 39' 15.59" RT	22° 55' 05.92"	250.000'	80.397'	155.571'	479,237.3576	178,758.0000	PI
	CC							479,317.7546	178,508.0000	
	PT	13+72.978						479,317.7546	178,758.0000	Due East
	POT	14+67.872						479,412.6481	178,758.0000	

1 OF 1

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-609-022\Plan\002609022 AL1.dgn 10/25/2023 10:55:08 AM

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

PRINT NAME: NICHOLAS J DOBDA
SIGNATURE: Nick Dobda
DATE: 11/22/23 LICENSE NO. 49046

DRAWN BY JCF DATE 10/27/23
DESIGN BY JCF DATE 10/27/23
CHECKED BY NJD DATE 11/02/23

ANOKA COUNTY

ANOKA COUNTY
HIGHWAY DEPT.

SAP 002-609-022
SAP 198-020-039

ALIGNMENT
TABULATION

Sheet 39 of 167 Sheets

ALIGNMENT TABULATION

POINT NUMBER	POINT	STATION	CIRCULAR CURVE DATA					COORDINATES		AZIMUTH
			DELTA	DEGREE	RADIUS	TANGENT	LENGTH	E	N	
℄ STAGE 1 ALI <STG1ALI>										
	PC	10+00.000						479,254.5075	174,508.5016	N 19° 29' 35.20" E
ALI_STA_11	PI	12+22.317	19° 38' 18.43" LT	4° 27' 37.86"	1,284.510'	222.317'	440.273'	479,328.6933	174,718.0760	PI
	CC							478,043.6239	174,937.1341	
	PT	14+40.273						479,328.1294	174,940.3925	N 0° 08' 43.23" W
2011	POT	17+51.951						479,331.1444	175,252.0558	
	PC	18+93.957						479,332.5770	175,394.0546	N 0° 17' 00.08" E
ALI_STA_12	PI	20+51.975	6° 10' 55.54" RT	1° 57' 28.92"	2,926.189'	158.018'	315.730'	479,333.3585	175,552.0708	PI
	CC							482,258.7304	175,379.5833	
	PRC	22+09.686						479,351.1520	175,709.0840	N 6° 27' 55.62" E
	PRC	22+09.686						479,351.1520	175,709.0840	N 7° 38' 27.95" E
ALI_STA_13	PI	23+69.343	8° 42' 34.04" LT	2° 43' 58.17"	2,096.576'	159.656'	318.698'	479,372.3810	175,867.3227	PI
	CC							477,273.1926	175,987.8602	
	PCC	25+28.384						479,369.4042	176,026.9514	N 1° 04' 06.09" W
	PCC	25+28.384						479,369.4042	176,026.9514	N 0° 18' 21.88" W
ALI_STA_14	PI	27+47.482	1° 00' 59.82" LT	0° 13' 55.22"	24,695.729'	219.098'	438.184'	479,368.2338	176,246.0458	PI
	CC							454,674.0279	175,895.0257	
	PRC	29+66.568						479,363.1763	176,465.0849	N 1° 19' 21.70" W
	PRC	29+66.568						479,363.1763	176,465.0849	N 1° 56' 40.56" W
ALI_STA_15	PI	31+55.959	1° 51' 04.58" RT	0° 29' 19.63"	11,722.068'	189.391'	378.750'	479,356.7496	176,654.3671	PI
	CC							491,078.4937	176,862.8518	
	PT	33+45.317						479,356.4411	176,843.7581	N 0° 05' 35.98" W
2012	POT	37+96.889						479,361.1131	177,295.3061	
2013	POT	43+17.077						479,367.0505	177,815.4592	
2014	POT	52+21.465						479,381.9064	178,719.7260	
	PC	61+08.553						479,395.3581	179,606.7120	N 0° 24' 44.26" W
ALI_STA_16	PI	62+09.591	5° 26' 08.08" LT	2° 41' 30.80"	2,128.461'	101.038'	201.924'	479,394.6310	179,707.7473	PI
	CC							477,266.9524	179,591.3959	
	PRC	63+10.478						479,384.3365	179,808.2595	N 5° 50' 52.34" W
	PRC	63+10.478						479,384.3365	179,808.2595	N 3° 58' 46.70" W
ALI_STA_17	PI	64+10.442	3° 41' 02.34" RT	1° 50' 35.85"	3,108.341'	99.964'	199.859'	479,377.3988	179,907.9824	PI
	CC							482,485.1822	180,023.9845	
	PT	65+10.337						479,376.8830	180,007.9450	N 0° 17' 44.36" W
2015	POT	67+59.593						479,378.8110	180,257.1940	
2016	POT	73+49.085						479,375.1210	180,846.6740	
2017	POT	79+04.556						479,381.1361	181,402.1131	
2018	POT	85+47.717						479,374.9820	182,045.2440	

1 OF 2

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-609-022\Plan\002609022 AL1.dgn 10/25/2023 10:55:08 AM

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

PRINT NAME: NICHOLAS J DOBDA

SIGNATURE:

DATE: 11/22/23 LICENSE NO. 49046

DRAWN BY JCF DATE 10/27/23

DESIGN BY JCF DATE 10/27/23

CHECKED BY NJD DATE 11/02/23

ANOKA COUNTY

ANOKA COUNTY
HIGHWAY DEPT.

SAP 002-609-022
SAP 198-020-039

STAGING
ALIGNMENT
TABULATION

JCFoster

ALIGNMENT TABULATION

POINT NUMBER	POINT	STATION	CIRCULAR CURVE DATA					COORDINATES		AZIMUTH
			DELTA	DEGREE	RADIUS	TANGENT	LENGTH	E	N	
℄ STAGE 2 ALI <STG2ALI>										
	PC	10+00.000						479,271.5029	174,501.9649	N 19° 25' 00.09" E
ALI_STA_21	PI	12+25.630	19° 30' 02.92" LT	4° 21' 49.02"	1,313.035'	225.630'	446.896'	479,346.5104	174,714.7626	PI
	CC							478,033.1460	174,938.4647	
	PT	14+46.896						479,346.1792	174,940.3925	N 0° 05' 02.83" W
2024	POT	17+65.553						479,349.3640	175,259.0340	
	PC	18+88.903						479,350.8090	175,382.3749	N 0° 00' 10.20" W
ALI_STA_22	PI	20+50.265	6° 09' 44.37" LT	1° 54' 40.69"	2,997.733'	161.363'	322.415'	479,350.8010	175,543.7378	PI
	CC							476,353.0762	175,382.2267	
	PRC	22+11.317						479,333.4715	175,704.1675	N 6° 09' 54.57" W
	PRC	22+11.317						479,333.4715	175,704.1675	N 6° 09' 54.57" W
ALI_STA_23	PI	23+49.560	5° 16' 50.91" RT	1° 54' 40.78"	2,997.697'	138.243'	276.290'	479,318.6249	175,841.6110	PI
	CC							482,313.8313	176,026.1045	
	PRC	24+87.607						479,316.4913	175,979.8375	N 0° 53' 03.66" W
	PRC	24+87.607						479,316.4913	175,979.8375	N 0° 22' 10.54" W
ALI_STA_24	PI	26+12.610	0° 48' 08.85" LT	0° 19' 15.53"	17,850.170'	125.003'	250.002'	479,315.6849	176,104.8377	PI
	CC							461,466.6925	175,864.6936	
	PT	27+37.609						479,313.1280	176,229.8144	N 1° 10' 19.39" W
	PC	27+47.020						479,312.9355	176,239.2232	N 1° 10' 19.39" W
ALI_STA_25	PI	29+96.070	1° 33' 58.21" RT	0° 18' 52.01"	18,221.104'	249.051'	498.070'	479,307.8413	176,488.2217	PI
	CC							497,530.2271	176,611.9312	
	PT	32+45.090						479,309.5544	176,737.2665	N 0° 23' 38.82" E
	PC	61+40.699						479,349.6964	179,632.5968	N 1° 55' 59.55" E
ALI_STA_26	PI	62+22.929	9° 05' 12.00" RT	5° 32' 12.14"	1,034.835'	82.231'	164.117'	479,352.4704	179,714.7808	PI
	CC							480,383.9427	179,597.6872	
	PRC	63+04.815						479,368.1888	179,795.4954	N 11° 01' 11.55" E
	PRC	63+04.815						479,368.1888	179,795.4954	N 11° 01' 11.55" E
ALI_STA_27	PI	64+04.290	10° 58' 53.74" LT	5° 32' 12.43"	1,034.820'	99.474'	198.339'	479,387.2032	179,893.1353	PI
	CC							478,352.4496	179,993.3008	
	PT	65+03.154						479,387.2697	179,992.6094	N 0° 02' 17.81" E
2025	POT	67+66.432						479,390.2290	180,255.8710	
2026	POT	70+40.568						479,389.0670	180,530.0040	
2027	POT	79+12.713						479,381.1361	181,402.1131	
2028	POT	85+55.873						479,374.9820	182,045.2440	

2 OF 2

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-609-022\Plan\002609022 AL1.dgn 10/25/2023 10:55:08 AM

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PRINT NAME: NICHOLAS J DOBDA

SIGNATURE:

DATE: 11/22/23 LICENSE NO. 49046

DRAWN BY JCF DATE 10/27/23

DESIGN BY JCF DATE 10/27/23

CHECKED BY NJD DATE 11/02/23

ANOKA COUNTY

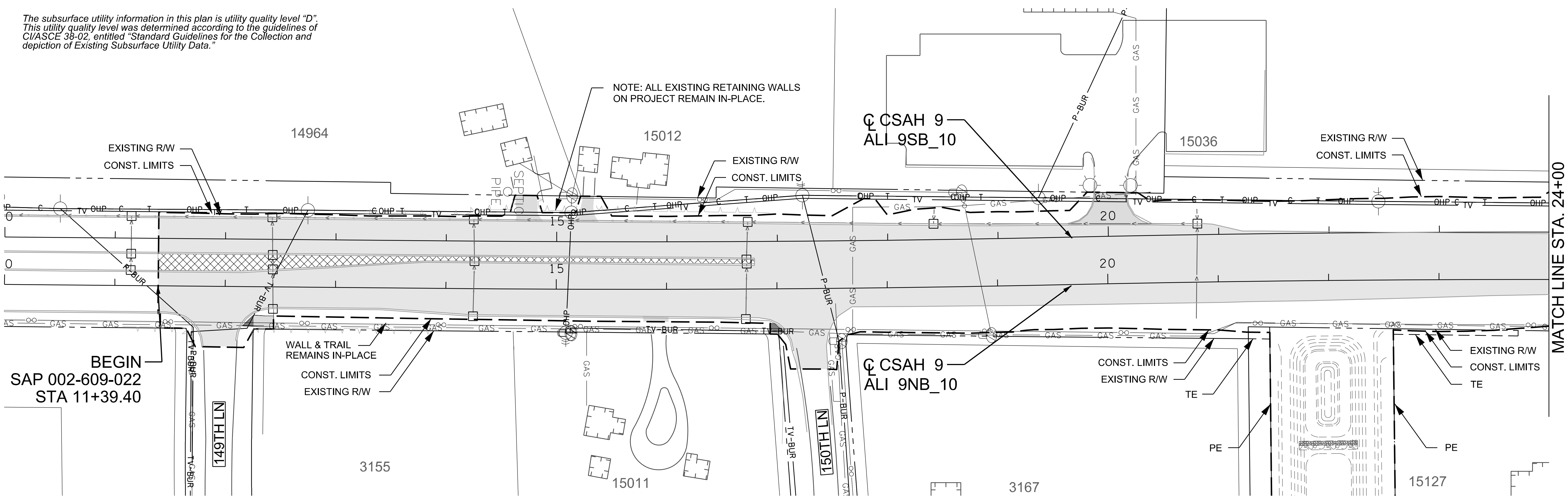
ANOKA COUNTY
HIGHWAY DEPT.

SAP 002-609-022
SAP 198-020-039

STAGING
ALIGNMENT
TABULATION

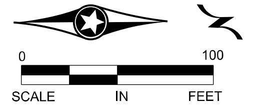
JCFoster

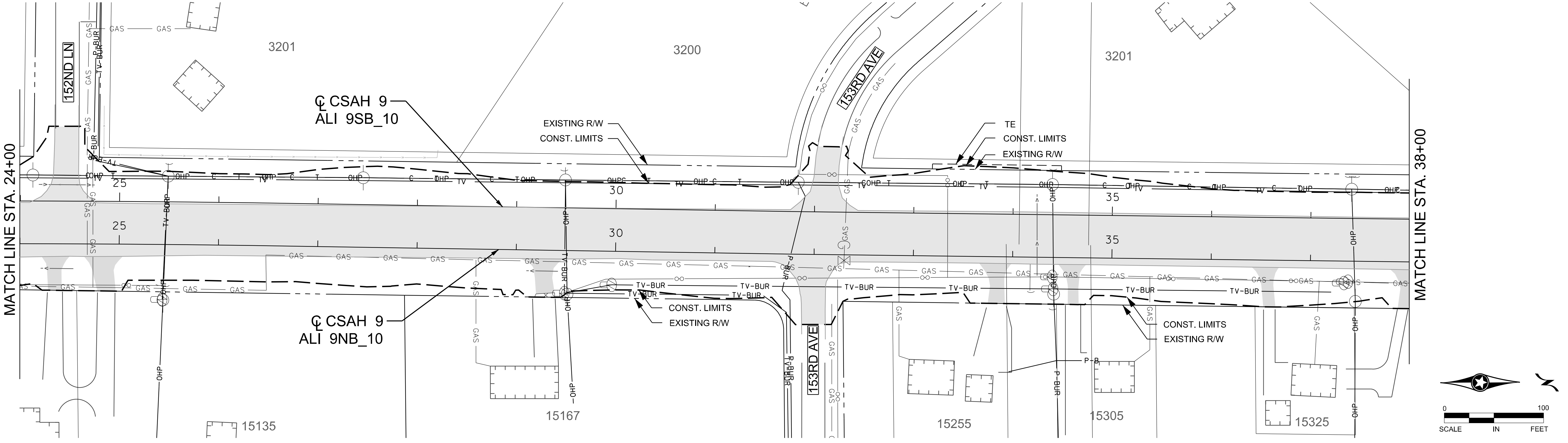
The subsurface utility information in this plan is utility quality level "D". This utility quality level was determined according to the guidelines of CI/ASCE 38-02, entitled "Standard Guidelines for the Collection and depiction of Existing Subsurface Utility Data."



LEGEND

▇	EXISTING BITUMINOUS
▨	EXISTING CONCRETE
— - - - —	EXISTING R/W
— - —	CONST. LIMITS
— GAS —	GAS - CENTERPOINT
— OHP —	PWR OH - CONNEXUS
P-BUR –	PWR UG - CONNEXUS
━━━	POWER - AC SIGNAL
—o·o—	LUMEN
— TV —	COMCAST OH
—TV-BUR—	COMCAST UG
— C-T —	MCI-VERIZON
-<——	EXISTING STORM
⌃ ⌃	EXISTING WALL
—○—	POWER POLE
⌒	GUY LINE
○—	SIGNAL POLE
☼	LIGHT POLE
⊠	SPLICE BOX COMMUNICATIONS
⊖	HAND HOLE
G ⋈	GAS VALVE





1 OF 2

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-609-022\Plan\002609022 UT1.dgn 10/25/2023 10:57:58 AM

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

PRINT NAME: NICHOLAS J DOBDA

SIGNATURE: N J Dobda

DATE: 11/22/23 LICENSE NO. 49046

DRAWN BY JCF DATE 10/27/23

DESIGN BY JCF DATE 10/27/23

CHECKED BY NJD DATE 11/02/23

ANOKA COUNTY

ANOKA COUNTY
HIGHWAY DEPT.

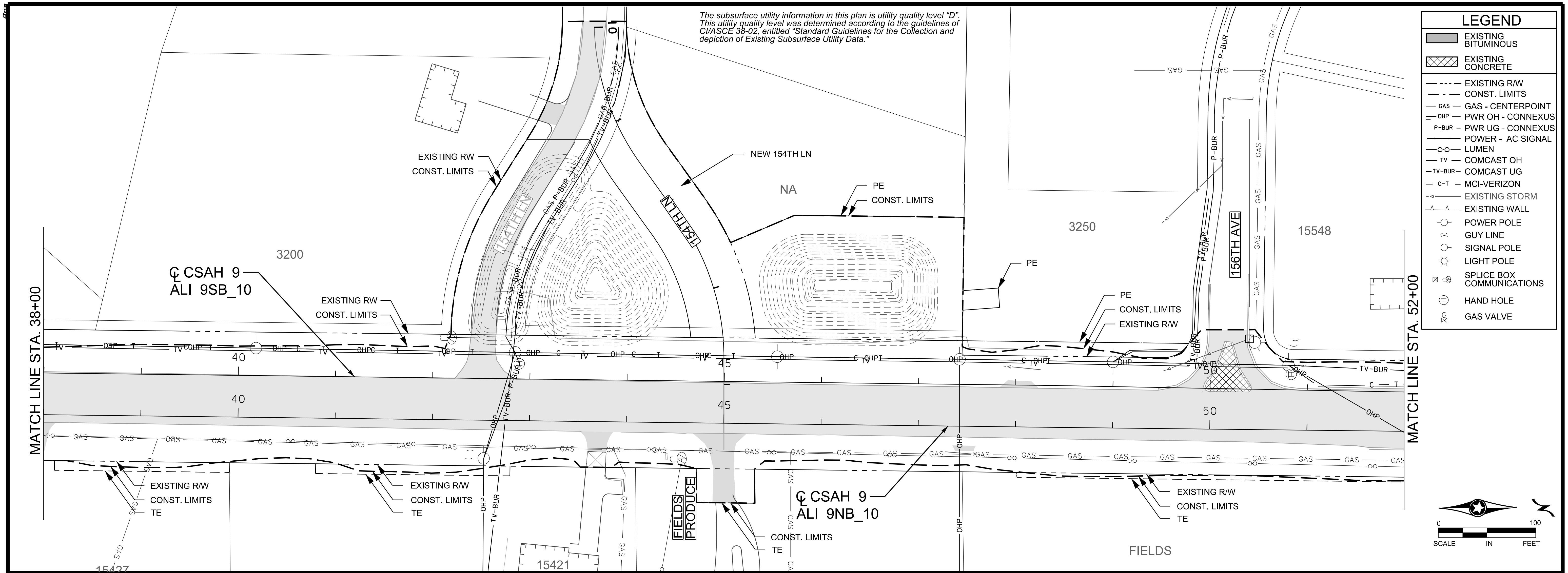
SAP 002-609-022
SAP 198-020-039

TOPO / EXISTING UTILITIES

STA 11+39.40 TO 38+00

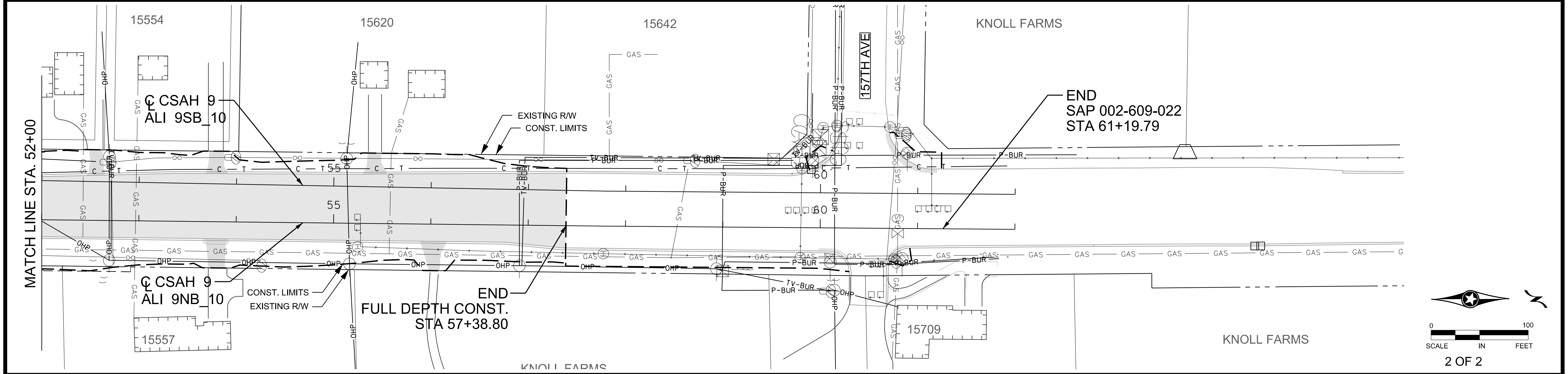
Sheet 42 of 167 Sheets

The subsurface utility information in this plan is utility quality level "D". This utility quality level was determined according to the guidelines of CI/ASCE 38-02, entitled "Standard Guidelines for the Collection and depiction of Existing Subsurface Utility Data."



LEGEND

▨	EXISTING BITUMINOUS
▩	EXISTING CONCRETE
- - - -	EXISTING R/W
— - —	CONST. LIMITS
— GAS —	GAS - CENTERPOINT
— OHP —	PWR OH - CONNEXUS
— P-BUR —	PWR UG - CONNEXUS
——	POWER - AC SIGNAL
—o—o—	LUMEN
— TV —	COMCAST OH
—TV-BUR—	COMCAST UG
— C-T —	MCI-VERIZON
—<—	EXISTING STORM
—⋏—	EXISTING WALL
○	POWER POLE
≈	GUY LINE
○	SIGNAL POLE
☼	LIGHT POLE
⊠	SPLICE BOX COMMUNICATIONS
Ⓗ	HAND HOLE
⌘	GAS VALVE



2 OF 2

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-609-022\Plan\002609022 UT2.dgn 10/25/2023 10:57:59 AM

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

PRINT NAME: NICHOLAS J DOBDA

SIGNATURE: Nick Dobda

DATE: 11/22/23 LICENSE NO. 49046

DRAWN BY JCF DATE 10/27/23

DESIGN BY JCF DATE 10/27/23

CHECKED BY NJD DATE 11/02/23

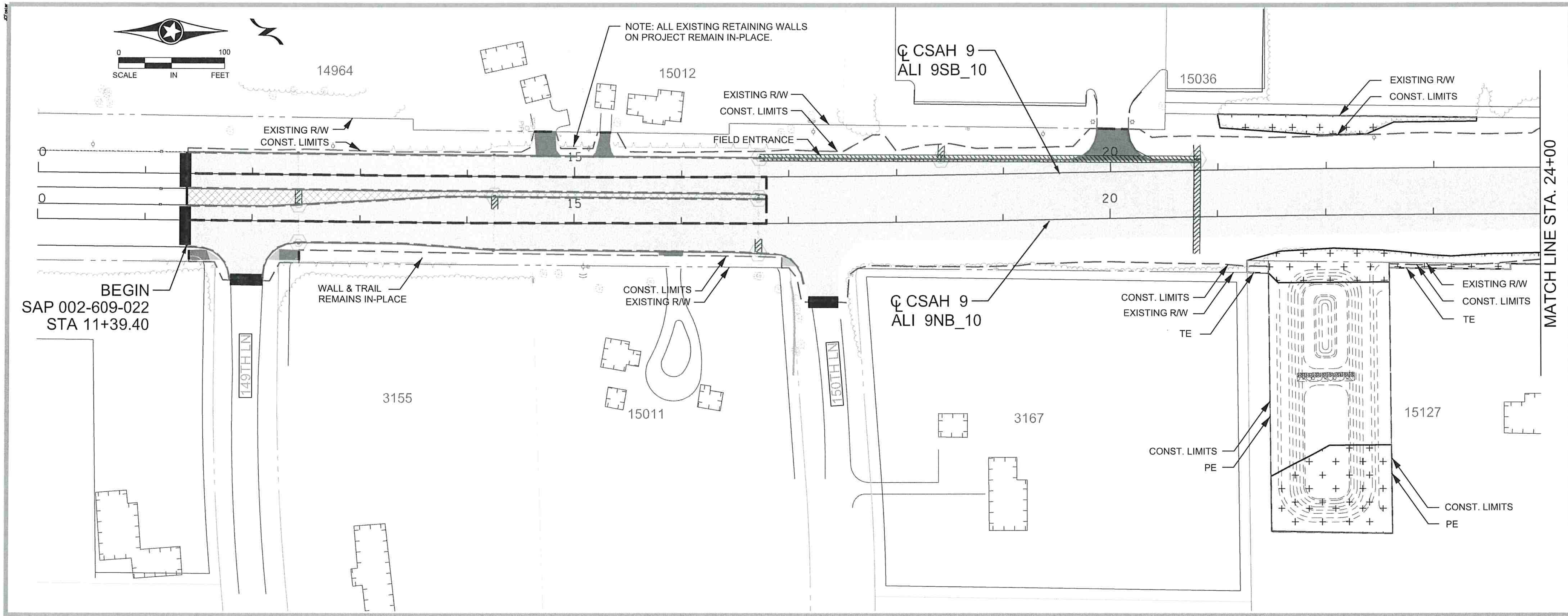
ANOKA COUNTY
HIGHWAY DEPT.

SAP 002-609-022
SAP 198-020-039

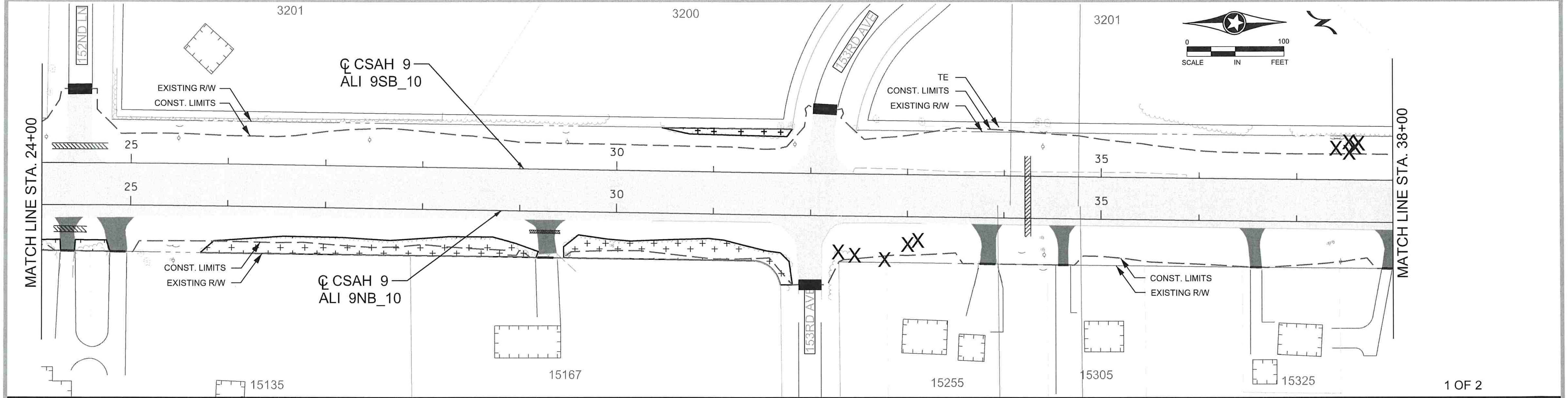
TOPO / EXISTING UTILITIES

STA 38+00 TO 61+19.79

Sheet 43 of 167 Sheets



LEGEND	
▭	REMOVE BITUMINOUS PAVEMENT, (MAINLINE & ST. APPROACH)
■	REMOVE BITUMINOUS DRIVEWAY PAVEMENT
☒	REMOVE CONCRETE DRIVEWAY PAVEMENT
▨	REMOVE CONCRETE MEDIAN & PED RAMP
═	REMOVE CONC CURB & GUTTER
— —	SAWING BIT / CONC FULL DEPTH
━	MILL BIT (JOINTS)
☒	CLEAR / GRUB / EACH
⊞	CLEAR / GRUB / ACRE
⬡	REMOVE DRAINAGE STRUCTURE
▨	REMOVE PIPE
— · —	CONST LIMIT
- - -	EXISTING R/W
···	TEMP EASM.
— · —	PERM EASM.



1 OF 2

NO	DATE	BY	CKD	APPR	REVISION
1	1/3/24	JF	ND		ADDED "CLEAR" TO CLEAR AND GRUB ON LEGEND

NAME: P:\002-609-022\Plan\002609022 RM1.dgn 01/08/2024 1:55:41 PM

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CHECKED BY NJD DATE 11/02/23

ANOKA COUNTY

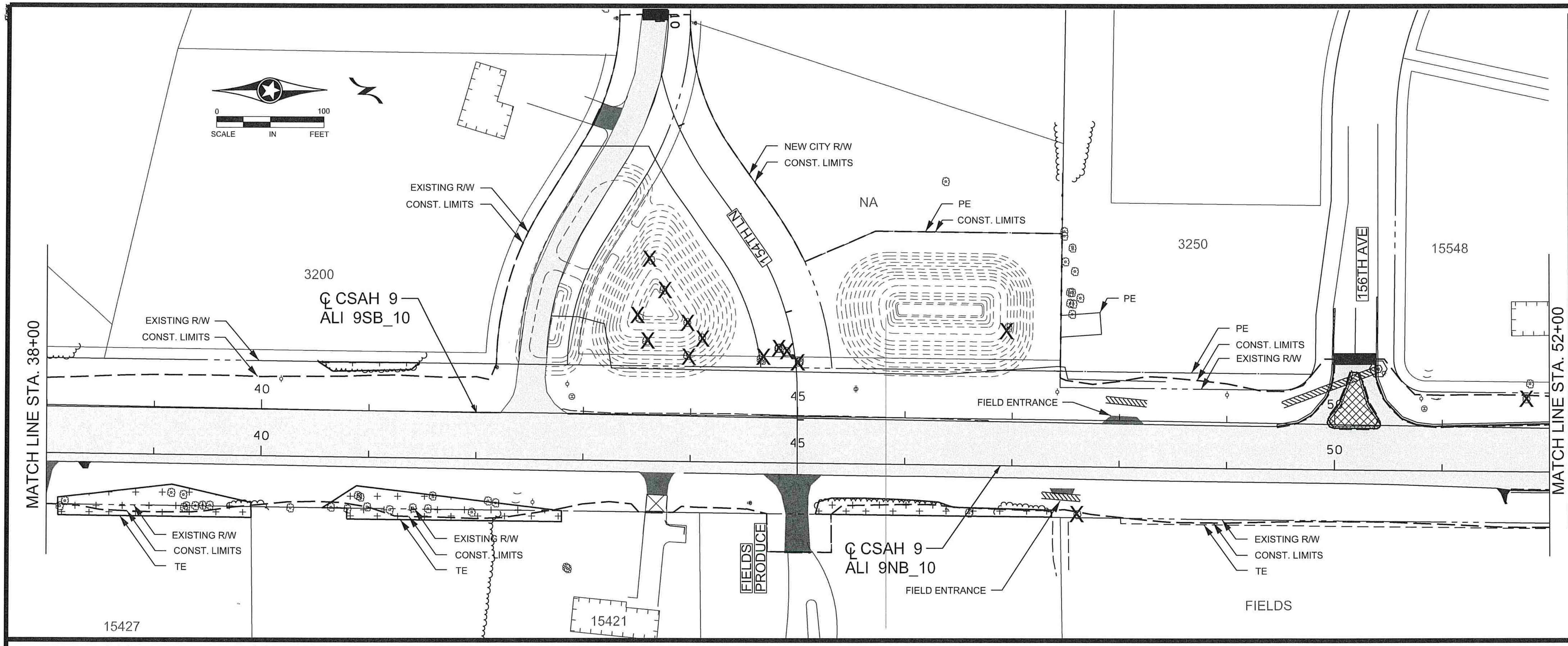
ANOKA COUNTY
HIGHWAY DEPT.

SAP 002-609-022
SAP 198-020-039

REMOVALS

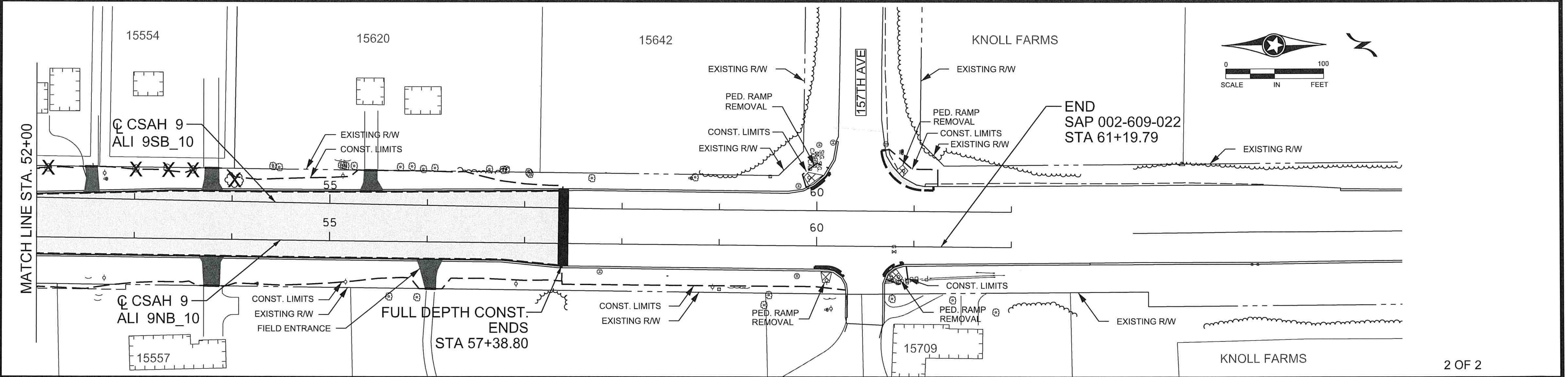
STA 11+39.40 TO 38+00

Sheet 44 of 167 Sheets



LEGEND

▭	REMOVE BITUMINOUS PAVEMENT, (MAINLINE & ST. APPROACH)
▬	REMOVE BITUMINOUS DRIVEWAY PAVEMENT
☒	REMOVE CONCRETE DRIVEWAY PAVEMENT
▨	REMOVE CONCRETE MEDIAN & PED RAMP
━	REMOVE CONC CURB & GUTTER
— —	SAWING BIT / CONC FULL DEPTH
━	MILL BIT (JOINTS)
✕	CLEAR / GRUB / EACH
☐	CLEAR / GRUB / ACRE
⬡	REMOVE DRAINAGE STRUCTURE
▨	REMOVE PIPE
—·—·	CONST LIMIT
- - - -	EXISTING R/W
— —	TEMP EASM.
—·—	PERM EASM.



END
SAP 002-609-022
STA 61+19.79

FULL DEPTH CONST. ENDS
STA 57+38.80

2 OF 2

NO	DATE	BY	CKD	APPR	REVISION
1	1/3/24	JF	ND		ADDED "CLEAR" TO CLEAR AND GRUB ON LEGEND

NAME: P:\002-609-022\Plan\002609022 RM2.dgn 01/08/2024 1:56:35 PM

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ANOKA COUNTY

ANOKA COUNTY
HIGHWAY DEPT.

SAP 002-609-022
SAP 198-020-039

REMOVALS
STA 38+00 TO 61+19.79
Sheet 45 of 167 Sheets

STAGE-0, PREP NARRATIVE

Alignments used for stage prep " 9NB_10 & 9SB_10 "

South crossover -

1) Use temp lane closers, using the "Minnesota Temporary Traffic Control Field Manual". Put in-place stage prep traffic control. Buffer area / barrels shown for lane configurations during stage prep. follow Traffic control plans for layout, barrel spacing and quantities.

2) Sawcut bituminous roadway full depth, concrete median and curb and gutter. Remove bituminous, concrete median, curb & gutter. Remove catch basin castings of existing storm sewer structures in crossover area and temp plate structures.

3) Add and compact class 5 up to 2.5" from bituminous surface.

4) Temp pave 2.5" bituminous to match in-place bituminous surface & remove any conflicting pavement markings. Place temp pavement markings - and complete crossover.

North crossover -

5) Signal to be put into flash. Contractor to coordinate with Anoka County signal department.

6) Use temp lane closers, using "Minnesota Temporary Traffic Control Field Manual".

7) Remove conflicting pavement markings. Place temp pavement markings and complete crossover.

STAGE-1 NARRATIVE

Alignment used for stage 1 " STAGE 1 ALI "

1) Install stage 1 traffic control. traffic moved to east shoulder. Remove existing centerline striping and any conflicting striping. Proposed construction on west / SB work zone. Buffer area / barrels shown for lane configurations during stage 1. Install concrete barrier in dropoff areas. Follow traffic control plans for layout, barrel spacing and quantities. Contractor to allow and maintain access through construction area at all city streets.

2) Complete all LSB removals and LSB utility relocations for LSB construction.

3) All LSB storm sewer, stubbed out as far to the east as possible. Ponds constructed to completion.

4) Construct 154th Ln and pave base course.

5) LSB grading, shoulder & median curb and gutter, bituminous paving up to binder course.

6) SB driveway construction.

7) Apply all permanent LSB turf establishment, erosion control and inlet protection.

STAGE-2 NARRATIVE

Alignment used for stage 2 " STAGE 2 ALI "

1) Install stage 2 traffic control. Remove conflicting striping. Traffic moved to West / new LSB. Proposed construction on East / NB work zone. Buffer area / barrels shown for lane configurations during stage 1. Follow Traffic control plans for layout, barrel spacing and quantities. Contractor to allow and maintain access through construction area at all city streets.

2) Complete all LNB removals and LNB utility relocations for LNB construction.

3) All LNB storm sewer.

4) LNB Grading, shoulder & median curb and gutter, bituminous paving up to binder course.

5) Construct North #15421 full access across from new 154th Ln.

6) Construct all LNB concrete pedestrian ramps.

7) LNB driveway construction.

8) LNB bituminous trail construction.

9) Apply all permanent LNB turf establishment, erosion control and inlet protection.

STAGE-3 NARRATIVE

Alignments used for stage 3 " 9NB_10 & 9SB_10 "

South Crossover-

1) Install stage 3 traffic control. Remove conflicting striping. Traffic moved to outside LNB & LSB on binder course. Buffer area / barrels shown for lane configurations during stage 3 Follow Traffic control plans for layout, barrel spacing and quantities. Contractor to allow and maintain access through construction area at all city streets.

2) Remove temp pavement in South crossover

3) Complete crossover area proposed grading, storm sewer and curb & gutter and paving up to binder course.

North Crossover-

4) Install stage 3 traffic control. Remove conflicting striping. Traffic moved to outside LNB & LSB on binder course. Buffer area / barrels shown for lane configurations during stage 3. Follow Traffic control plans for layout, barrel spacing and quantities. Contractor to allow and maintain access through construction area at all city streets.

5) Remove existing pavement in center of CSAH 9, North crossover.

6) Complete crossover area proposed grading and paving up to binder course.

Completion-

7) Fill, compact and complete all median concrete flatwork for all medians.

8) Bituminous wear paving LNB & LSB starting in the center and working to shoulder.

9) Follow the "Minnesota Temporary Traffic Control Field Manual" once paved to centerlane for RT-THRU / SHLDR paving operations.

10) Signal to be put into flash during paving operations within 1000' of CSAH 20, 157th ave signal. Contractor to coordinate with Anoka County signal department. Contractor to maintain proposed lane configuration at signal when signal is in operation as to lign up with signal heads.

11) Final permanent pavement striping / pavement markings

12) Complete any areas of turf establishment and erosion control that have not been completed or require additional applications.

TEMPORARY PAVEMENT MARKINGS & RELATED STAGING ITEMS — O

	TEMPORARY RAISED MARKERS			PAINT		REMOVABLE PREFORMED PLASTIC MARKING			REMOVALS		MISC		
STAGE	TRPM WHITE	TRPM YELLOW	PORTABLE BARRIER DELINEATOR	4" SOLID LINE WHITE	4" SOLID LINE DBL YELLOW	4" WHITE	4" YELLOW	4" BLACK MASK	REMOVE PAVEMENT MARKING TEMPORARY	REMOVE PAVEMENT MARKING	PORTABLE CHANGEABLE MESSAGE SIGN	PORTABLE CONCRETE BARRIER DES 8337	TEMPORARY IMPACT ATTENUATOR
	(1)	(1)	(2)	(3)	(3)	(4)	(4)	(5)	(6)	(7)	(8)	(9)	(9) (10)
	EACH	EACH	EACH	LIN FT	LIN FT	LIN FT	LIN FT	LIN FT	LIN FT	LIN FT	EACH	LIN FT	ASSEMBLY
STAGE 0	60	60	84			600	600	400		1380		1060	2
STAGE 1	335	267	303	7580	3790	2670	3348		455			3787	5
STAGE 2	259	67	106	7580	3790	2585	670		4318			1325	4
STAGE 3			125						5955			1572	4
DURATION											2		
TOTALS	**654**	**394**	**618**	**15160**	**7580**	**5855**	**4618**	**400**	**10728**	**1380**	**2**	**3787**	**5**

THESE QUANTITIES HAVE BEEN PROVIDED AS A GUIDE BASED ON THE "CONSTRUCTION STAGING SHOWN IN PLAN". THE CONTRACTOR SHALL AFTER THE AWARD OF CONTRACT AND A MINIMUM OF 7 DAYS PRIOR TO THE PROJECT PRECON MEETING SUBMIT A COMPLETE TEMPORARY TRAFFIC CONTROL PLAN (CONSTRUCTION SIGNING, PAVEMENT MARKINGS AND RELATED ITEMS) PRODUCED AND SIGNED BY A LICENSED P.E. THAT SHALL INCLUDE LAYOUTS AND QUANTITIES FOR THE COUNTY TO REVIEW AND APPROVE BEFORE ANY WORK SHALL TAKE PLACE.

NOTES: TAB O

1). SPACED EVERY 10 FEET ON PREFORMED PLASTIC PAVEMENT MARKINGS.
2). SPACED EVERY 12' 6".
3). USED INSIDE THE CONSTRUCTION LIMITS.
4). USED OUTSIDE CONSTRUCTION LIMITS, INSIDE CROSSOVERS.
5). USED TO COVER CONFLICTING LINEAL PAVEMENT MARKINGS OUTSIDE CONSTRUCTION LIMITS.
6). REMOVAL OF TEMP PAVEMENT MARKINGS, ITEM INCLUDES REMOVAL OF TRPM'S.
7). REMOVAL OF EXISTING STRIPING AND PAVEMENT MARKINGS INCLUDES ALL TYPES OF LINES AND WIDTHS.
8). 2 PORTABLE MESSAGE SIGNS, ONE ON EACH END OF PROJECT, FOR THE DURATION OF PROJECT.
9). MAXIMUM USED IN ANY ONE STAGE.
10). MUST BE SAME CROSS SECTION / WIDTH AS BARRIER.

1 OF 1

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-609-022\Plan\002609022 STN.dgn 12/07/2023 8:30:35 AM

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

PRINT NAME: NICHOLAS J DOBDA
SIGNATURE: NJ Dobda
DATE: 11/22/23 LICENSE NO. 49046

DRAWN BY JCF DATE 10/27/23
DESIGN BY JCF DATE 10/27/23
CHECKED BY NJD DATE 11/02/23

ANOKA COUNTY
HIGHWAY DEPT.

SAP 002-609-022
SAP 198-020-039

STAGING NARRATIVES /
STAGING QUANTITIES

JCFoster

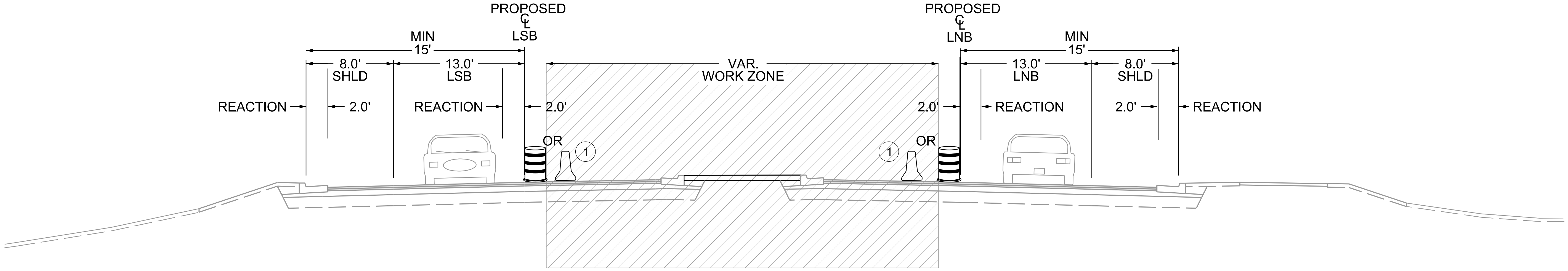
NOTES:

① MIN. 8' BUFFER ZONE REQUIRED WHERE CHANNELIZERS ARE USED IN PLACE OF PORTABLE CONCRETE BARRIER

② BARRIER USED LSB LEFT TURN LANES STAGE 2 WHEN REQUIRED BY DROPOFF REQUIREMENTS

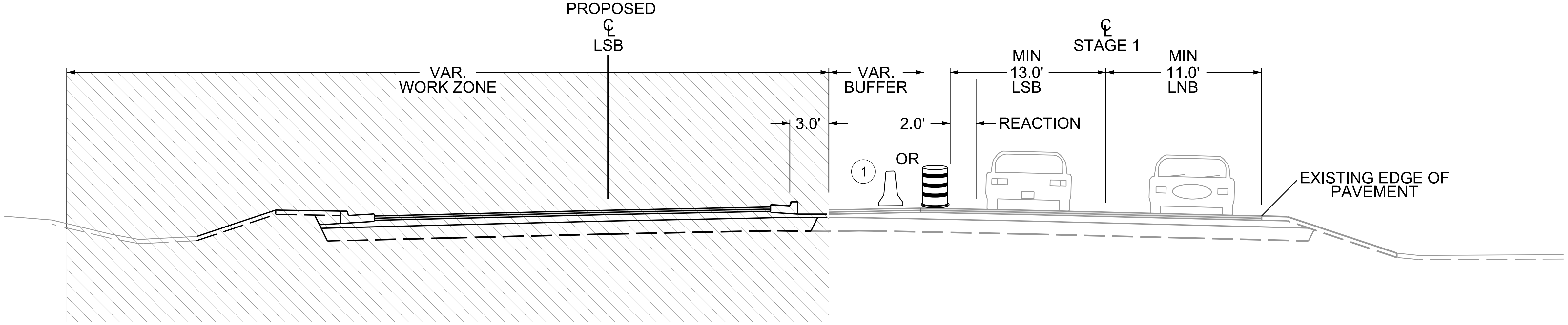
CSAH 9 (ROUND LK BLVD) STAGE 0

SOUTH END CROSSOVER WORK.
REMOVAL OF MEDIAN, PLATING IN-PLACE STORM SEWER.
TEMP PAVING MEDIAN CROSSOVER.



CSAH 9 (ROUND LK BLVD) STAGE 1

CONSTRUCTION ON WEST SIDE OF THE ROAD.
TWO WAY TRAFFIC ON EAST SIDE OF ROAD-
ALONG EXISTING EDGE OF PAVEMENT



1 OF 2

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-609-022\Plan\002609022 STT.dgn 10/25/2023 10:57:39 AM

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
PRINT NAME: NICHOLAS J DOBDA
SIGNATURE: Nick Dobda
DATE: 11/22/23 LICENSE NO. 49046

DRAWN BY JCF DATE 10/27/23
DESIGN BY JCF DATE 10/27/23
CHECKED BY NJD DATE 11/02/23

ANOKA COUNTY
HIGHWAY DEPT.

SAP 002-609-022
SAP 198-020-039

STAGE TYPICALS

Sheet 47 of 167 Sheets

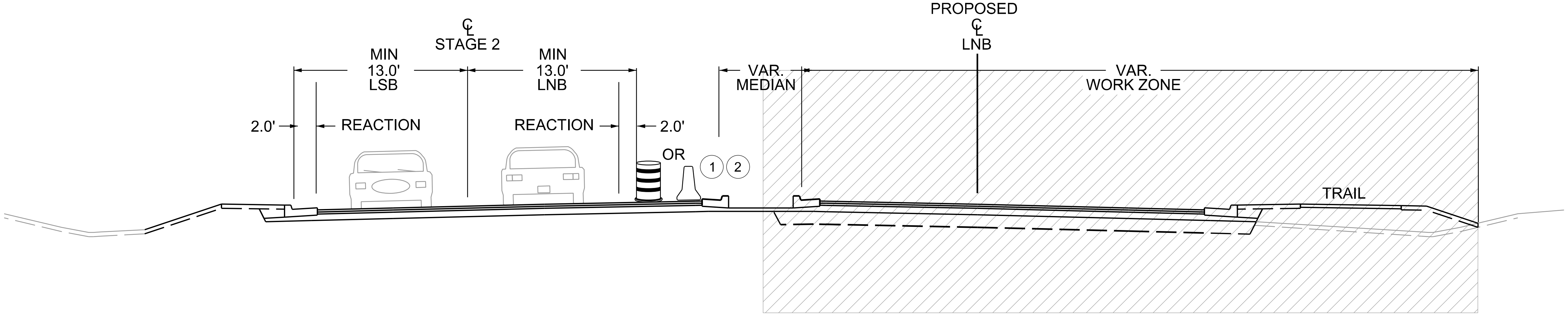
NOTES:

① MIN. 8' BUFFER ZONE REQUIRED WHERE CHANNELIZERS ARE USED IN PLACE OF PORTABLE CONCRETE BARRIER

② BARRIER USED LSB LEFT TURN LANES STAGE 2 WHEN REQUIRED BY DROPOFF REQUIREMENTS

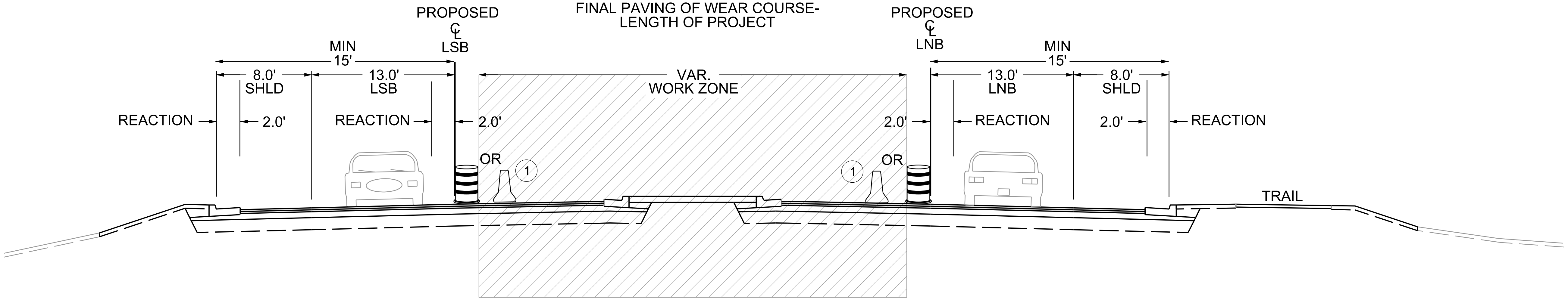
CSAH 9 (ROUND LK BLVD) STAGE 2

CONSTRUCTION ON EAST SIDE OF THE ROAD.
TWO WAY TRAFFIC ON WEST SIDE OF ROAD-
ON NEWLY CONSTRUCTED BINDER COURSE



CSAH 9 (ROUND LK BLVD) STAGE 3

STAGE 3
CROSSOVER WORK.
STORM SEWER COMPLETION.
MEDIAN RESTORATION AND CONCRETE FLATWORK.
FINAL PAVING OF WEAR COURSE-
LENGTH OF PROJECT



2 OF 2

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-609-022\Plan\002609022 STT.dgn 10/25/2023 10:57:38 AM

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

PRINT NAME: NICHOLAS J DOBDA
SIGNATURE:
DATE: 11/22/23 LICENSE NO. 49046

DRAWN BY JCF DATE 10/27/23
DESIGN BY JCF DATE 10/27/23
CHECKED BY NJD DATE 11/02/23

ANOKA COUNTY

ANOKA COUNTY
HIGHWAY DEPT.

SAP 002-609-022
SAP 198-020-039

STAGE TYPICALS

Sheet 48 of 167 Sheets

STAGE-0, PREP NARRATIVE

ALIGNMENTS USED FOR STAGE PREP " 9NB_10 & 9SB_10 "

SOUTH CROSSOVER -

1) USE TEMP LANE CLOSERS, USING THE "MINNESOTA TEMPORARY TRAFFIC CONTROL FIELD MANUAL". PUT IN-PLACE STAGE PREP TRAFFIC CONTROL. BUFFER AREA / BARRELS SHOWN FOR LANE CONFIGURATIONS DURING STAGE PREP. FOLLOW TRAFFIC CONTROL PLANS FOR LAYOUT, BARREL SPACING AND QUANTITIES.

2) SAWCUT BITUMINOUS ROADWAY FULL DEPTH, CONCRETE MEDIAN AND CURB AND GUTTER. REMOVE BITUMINOUS, CONCRETE MEDIAN, CURB & GUTTER. REMOVE CATCH BASIN CASTINGS OF EXISTING STORM SEWER STRUCTURES IN CROSSOVER AREA AND TEMP PLATE STRUCTURES.

3) ADD AND COMPACT CLASS 5 UP TO 2.5" FROM BITUMINOUS SURFACE.

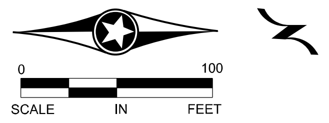
4) TEMP PAVE 2.5" BITUMINOUS TO MATCH IN-PLACE BITUMINOUS SURFACE & REMOVE ANY CONFLICTING PAVEMENT MARKINGS. PLACE TEMP PAVEMENT MARKINGS - AND COMPLETE CROSSOVER.

NORTH CROSSOVER -

5) SIGNAL TO BE PUT INTO FLASH. CONTRACTOR TO COORDINATE WITH ANOKA COUNTY SIGNAL DEPARTMENT.

6) USE TEMP LANE CLOSERS, USING "MINNESOTA TEMPORARY TRAFFIC CONTROL FIELD MANUAL".

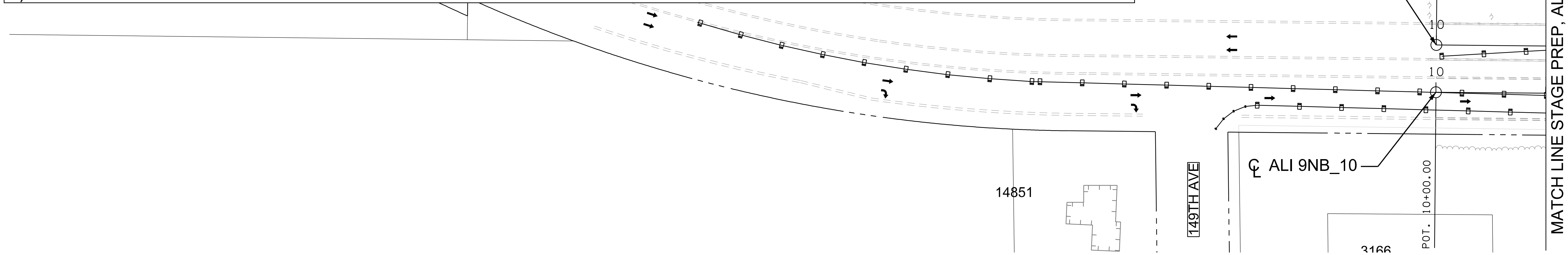
7) REMOVE CONFLICTING PAVEMENT MARKINGS. PLACE TEMP PAVEMENT MARKINGS AND COMPLETE CROSSOVER.

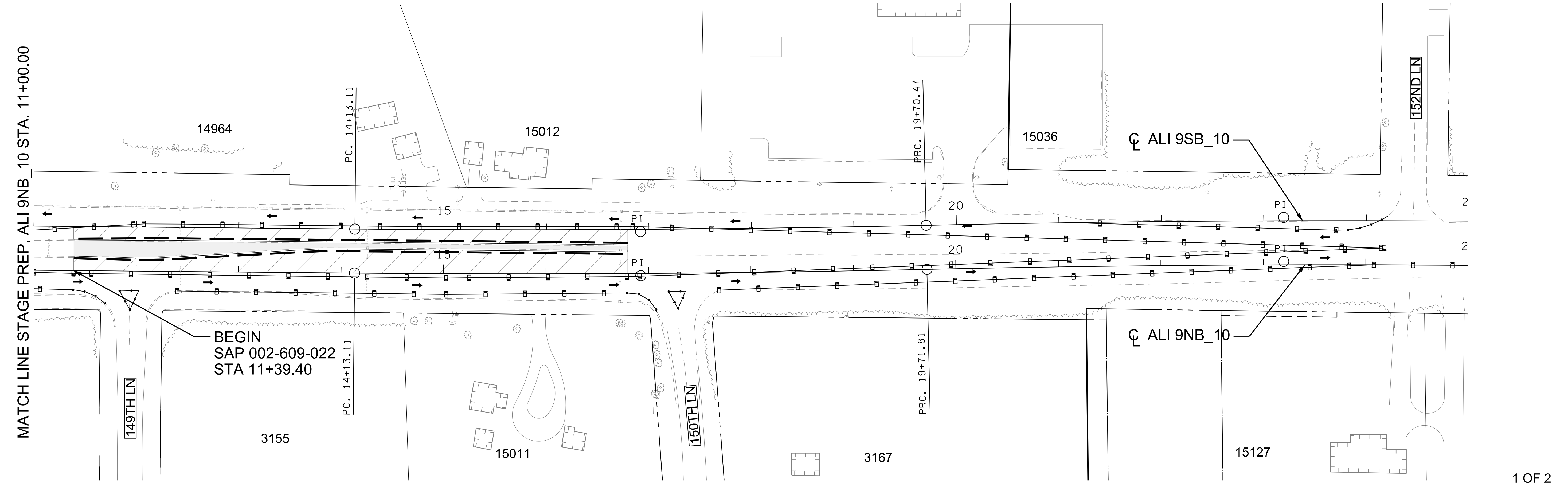


STAGE 0, PREP LEGEND

▨	REMOVE BIT PAVEMENT
░	REMOVE CONC MEDIAN
━	REMOVE CONC CURB & GUTTER
▬ ▪	SAW BIT FULL DEPTH
▫ ─	EXISTING STORM SEWER
▫─▫	3' BUFFER / BARRELS
- - -	EXISTING TOPO

PORTABLE PRECAST BARRIER AND TEMP IMPACT ATTENUATORS TO BE USED IN LOCATIONS WHERE DROPOFF REQUIREMENTS ARE NOT MET. FOLLOW ALL GUIEDLINES FOR USE OF BARRIER AS DIRECTED IN THE MINNESOTA TEMPORARY TRAFFIC CONTROL FIELD MANUAL, LONGITUDINAL DROP-OFF GUIDELINES, SECTION 6K AND THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, PART 6, SECTION 6F, TEMPORARY TRAFFIC BARRIER.





NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-609-022\Plan\002609022 ST0_1.dgn 10/25/2023 10:57:06 AM

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

PRINT NAME: NICHOLAS J DOBDA
SIGNATURE: Nic J Dobda
DATE: 11/22/23 LICENSE NO. 49046

DRAWN BY JCF DATE 10/27/23
DESIGN BY JCF DATE 10/27/23
CHECKED BY NJD DATE 11/02/23

ANOKA COUNTY

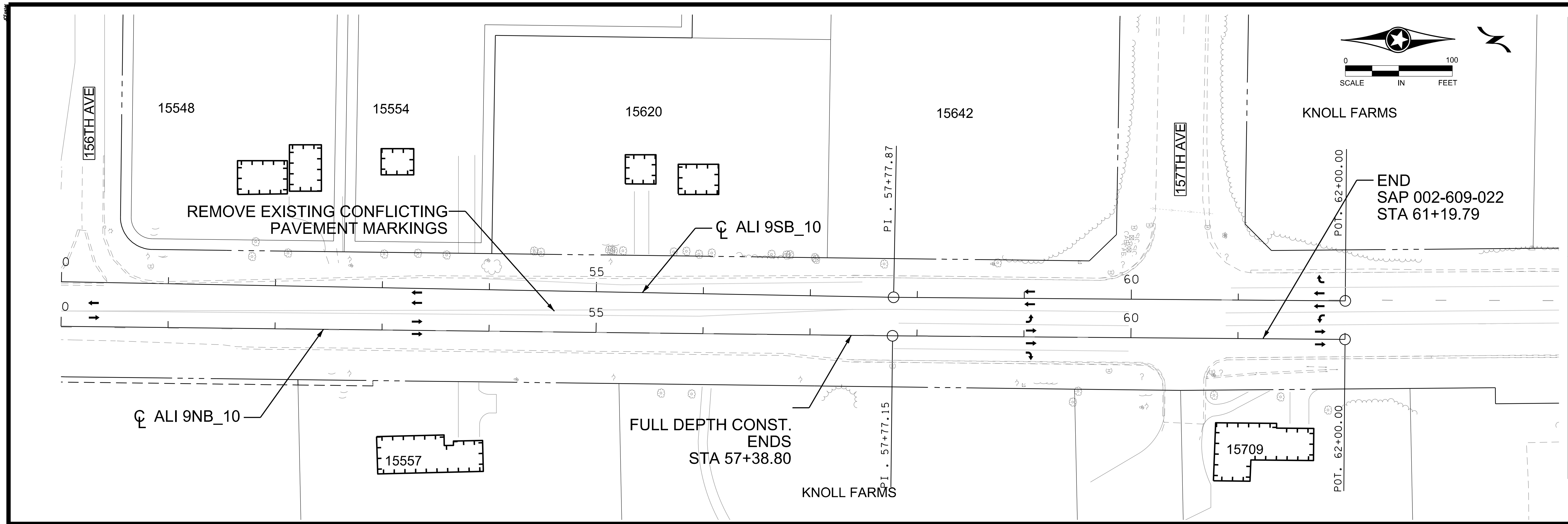
ANOKA COUNTY
HIGHWAY DEPT.

SAP 002-609-022
SAP 198-020-039

STAGE PREP,
SOUTH CROSSOVER
STA 11+00.00 TO 25+00.00

Sheet 49 of 167 Sheets

JCFoster



STAGE 0, PREP LEGEND

▨	REMOVE BIT PAVEMENT
▒	REMOVE CONC MEDIAN
━	REMOVE CONC CURB & GUTTER
▬ ▪	SAW BIT FULL DEPTH
▫	EXISTING STORM SEWER
▫—▫	3' BUFFER / BARRELS
- - -	EXISTING TOPO

PORTABLE PRECAST BARRIER AND TEMP IMPACT ATTENUATORS TO BE USED IN LOCATIONS WHERE DROPOFF REQUIREMENTS ARE NOT MET. FOLLOW ALL GUIEDLINES FOR USE OF BARRIER AS DIRECTED IN THE MINNESOTA TEMPORARY TRAFFIC CONTROL FIELD MANUAL, LONGITUDINAL DROP-OFF GUIDELINES, SECTION 6K AND THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, PART 6, SECTION 6F, TEMPORARY TRAFFIC BARRIER.

2 OF 2

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-609-022\Plan\002609022 ST0_2.dgn 10/25/2023 10:57:08 AM

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

PRINT NAME: NICHOLAS J DOBDA
SIGNATURE: Nick Dobda
DATE: 11/22/23 LICENSE NO. 49046

DRAWN BY JCF DATE 10/27/23
DESIGN BY JCF DATE 10/27/23
CHECKED BY NJD DATE 11/02/23

ANOKA COUNTY
HIGHWAY DEPT.

SAP 002-609-022
SAP 198-020-039

STAGE PREP,
NORTH CROSSOVER
STA 50+00.00 TO 60+84.43

Sheet 50 of 167 Sheets

JCFoster

STAGE 1 LEGEND

⬜	CONSTRUCTION AREA
▨	CONSTRUCT UNDER TRAFFIC
■—	STORM SEWER CONSTRUCTION
▫	EXISTING STORM SEWER
▫—	3' BUFFER / BARRELS
- - -	EXISTING TOPO

PORTABLE PRECAST BARRIER AND TEMP IMPACT ATTENUATORS TO BE USED IN LOCATIONS WHERE DROPOFF REQUIREMENTS ARE NOT MET. FOLLOW ALL GUIEDLINES FOR USE OF BARRIER AS DIRECTED IN THE MINNESOTA TEMPORARY TRAFFIC CONTROL FIELD MANUAL, LONGITUDINAL DROP-OFF GUIDELINES, SECTION 6K AND THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, PART 6, SECTION 6F, TEMPORARY TRAFFIC BARRIER.

STAGE-1 NARRATIVE

ALIGNMENT USED FOR STAGE 1 " STAGE 1 ALI "

1) INSTALL STAGE 1 TRAFFIC CONTROL. TRAFFIC MOVED TO EAST SHOULDER. REMOVE EXISTING CENTERLINE STRIPING AND ANY CONFLICTING STRIPING. PROPOSED CONSTRUCTION ON WEST / SOUTH BOUND WORK ZONE. BUFFER AREA / BARRELS SHOWN FOR LANE CONFIGURATIONS DURING STAGE 1. INSTALL CONCRETE BARRIER IN DROPOFF AREAS. FOLLOW TRAFFIC CONTROL PLANS FOR LAYOUT / BARREL SPACING AND QUANTITIES. CONTRACTOR TO ALLOW AND MAINTAIN ACCESS THROUGH CONSTRUCTION AREA AT ALL CITY STREETS.

2) COMPLETE ALL LSB REMOVALS AND LSB UTILITY RELOCATIONS FOR LSB CONSTRUCTION.

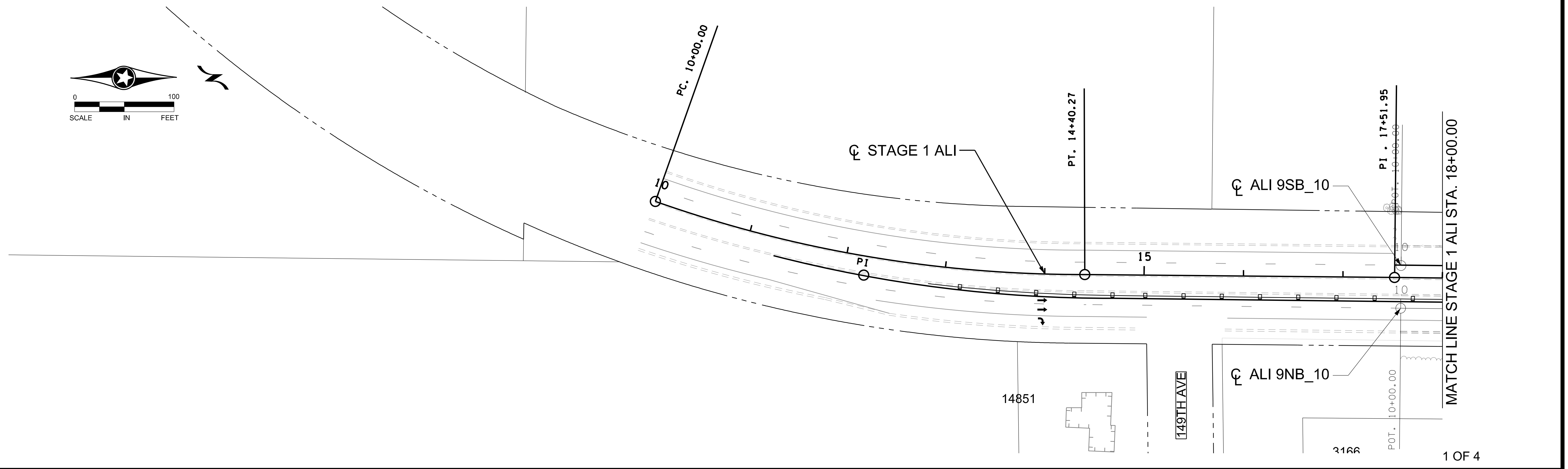
3) ALL LSB STORM SEWER, STUBBED OUT AS FAR TO THE EAST AS POSSIBLE. PONDS CONSTRUCTED TO COMPLETION.

4) CONSTRUCT 154TH LN AND PAVE BASE COURSE.

5) LSB GRADING, SHOULDER & MEDIAN CURB AND GUTTER, BITUMINOUS PAVING UP TO BINDER COURSE.

6) SB DRIVEWAY CONSTRUCTION.

7) APPLY ALL PERMANENT LSB TURF ESTABLISHMENT, EROSION CONTROL AND INLET PROTECTION.



1 OF 4

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-609-022\Plan\002609022 ST1_1.dgn 12/07/2023 8:39:17 AM

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

PRINT NAME: NICHOLAS J DOBDA

SIGNATURE: Nick Dobda

DATE: 11/22/23 LICENSE NO. 49046

DRAWN BY JCF DATE 10/27/23

DESIGN BY JCF DATE 10/27/23

CHECKED BY NJD DATE 11/02/23

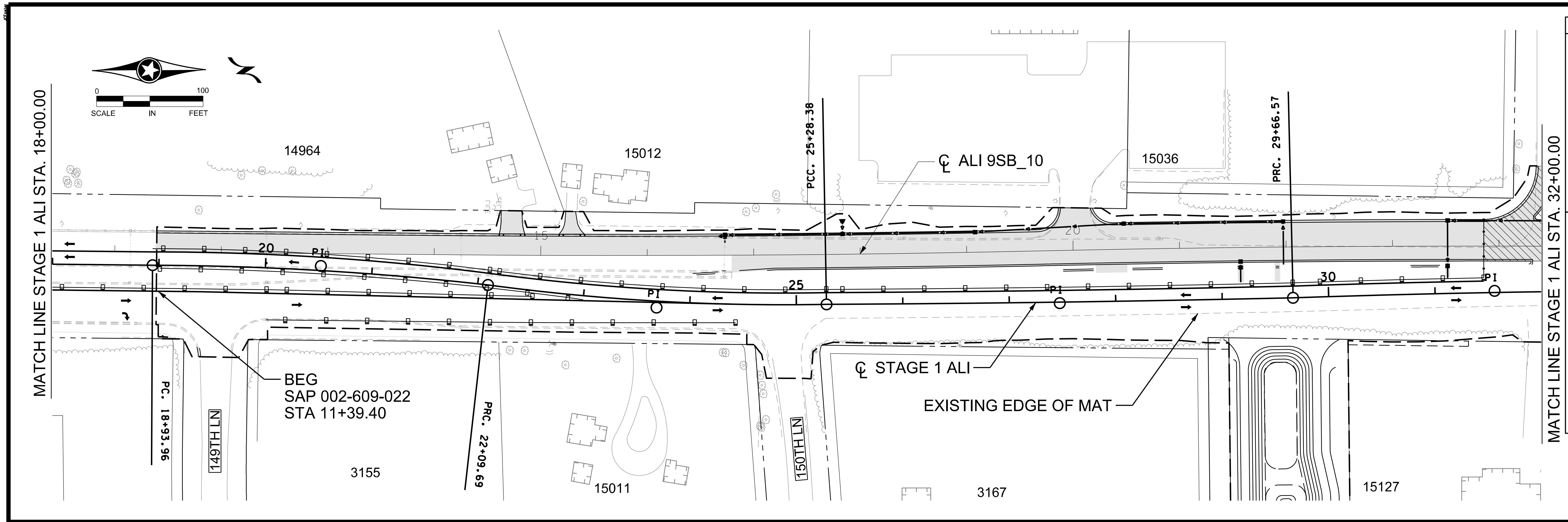
ANOKA COUNTY

ANOKA COUNTY
HIGHWAY DEPT.

SAP 002-609-022
SAP 198-020-039

STAGE 1
(STAGE 1 ALI)
STA 10+00.00 TO 18+00.00

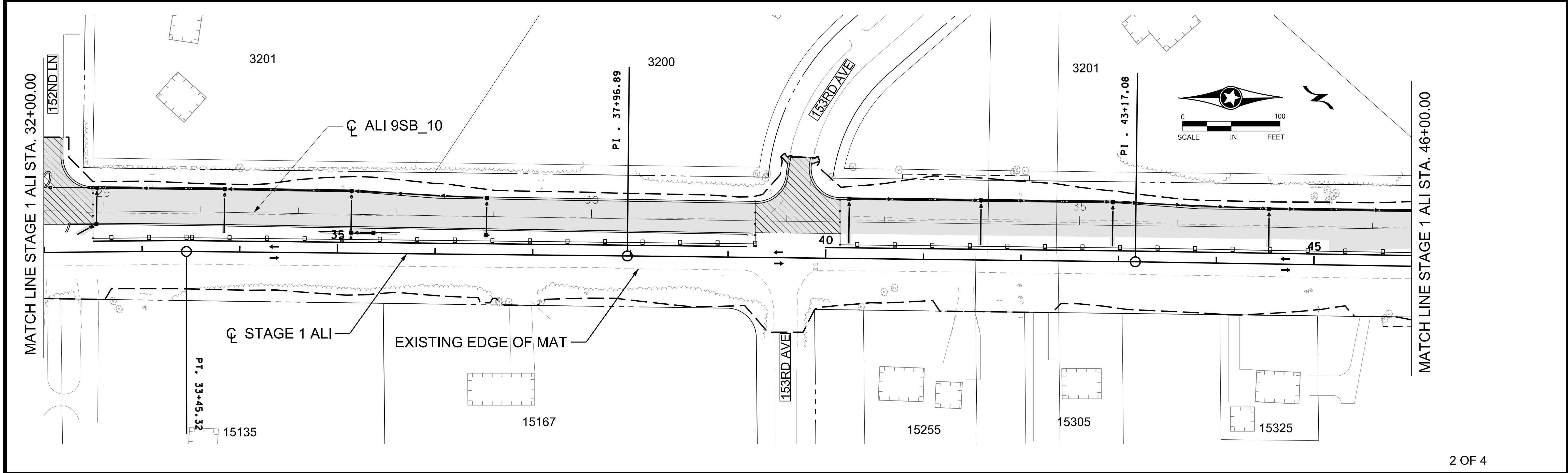
Sheet 51 of 167 Sheets



STAGE 1 LEGEND

▒	CONSTRUCTION AREA
▨	CONSTRUCT UNDER TRAFFIC
━■━	STORM SEWER CONSTRUCTION
─▫─	EXISTING STORM SEWER
─▫─	3' BUFFER / BARRELS
- - -	EXISTING TOPO

PORTABLE PRECAST BARRIER AND TEMP IMPACT ATTENUATORS TO BE USED IN LOCATIONS WHERE DROPOFF REQUIREMENTS ARE NOT MET. FOLLOW ALL GUIEDLINES FOR USE OF BARRIER AS DIRECTED IN THE MINNESOTA TEMPORARY TRAFFIC CONTROL FIELD MANUAL, LONGITUDINAL DROP-OFF GUIDELINES, SECTION 6K AND THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, PART 6, SECTION 6F, TEMPORARY TRAFFIC BARRIER.



2 OF 4

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-609-022\Plan\002609022 ST1_2.dgn 10/25/2023 10:57:11 AM

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

PRINT NAME: NICHOLAS J DOBDA
SIGNATURE: N J Dobda
DATE: 11/22/23 LICENSE NO. 49046

DRAWN BY JCF DATE 10/27/23
DESIGN BY JCF DATE 10/27/23
CHECKED BY NJD DATE 11/02/23

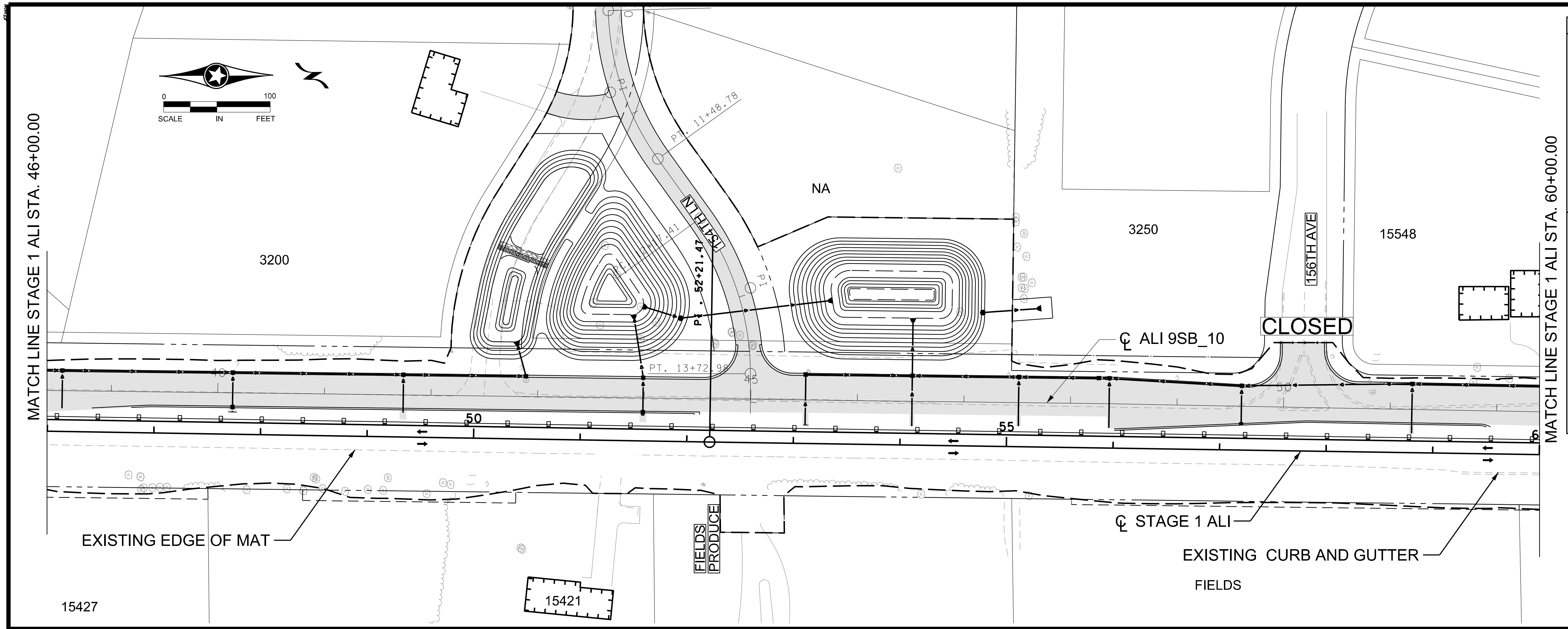
ANOKA COUNTY
HIGHWAY DEPT.

SAP 002-609-022
SAP 198-020-039

STAGE 1
(STAGE 1 ALI)
STA 18+00.00 TO 46+00.00

Sheet 52 of 167 Sheets

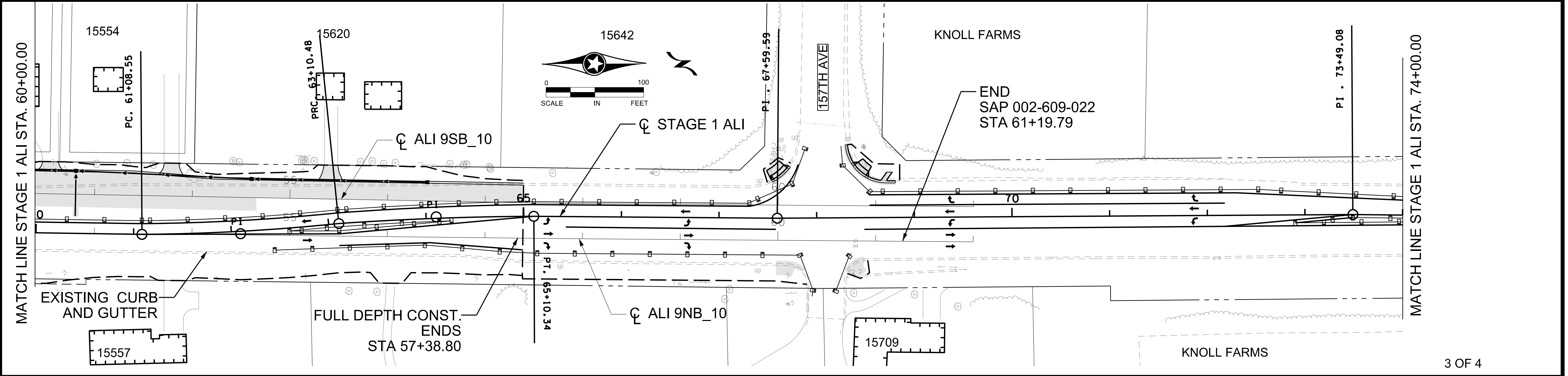
JCFoster



STAGE 1 LEGEND

■	CONSTRUCTION AREA
▨	CONSTRUCT UNDER TRAFFIC
■—	STORM SEWER CONSTRUCTION
▫—	EXISTING STORM SEWER
▫—	3' BUFFER / BARRELS
- - -	EXISTING TOPO

PORTABLE PRECAST BARRIER AND TEMP IMPACT ATTENUATORS TO BE USED IN LOCATIONS WHERE DROPOFF REQUIREMENTS ARE NOT MET. FOLLOW ALL GUIEDLINES FOR USE OF BARRIER AS DIRECTED IN THE MINNESOTA TEMPORARY TRAFFIC CONTROL FIELD MANUAL, LONGITUDINAL DROP-OFF GUIDELINES, SECTION 6K AND THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, PART 6, SECTION 6F, TEMPORARY TRAFFIC BARRIER.



NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-609-022\Plan\002609022 ST1_3.dgn 10/25/2023 10:57:12 AM

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

PRINT NAME: NICHOLAS J DOBDA

SIGNATURE: Nick Dobda

DATE: 11/22/23 LICENSE NO. 49046

DRAWN BY JCF DATE 10/27/23

DESIGN BY JCF DATE 10/27/23

CHECKED BY NJD DATE 11/02/23

ANOKA COUNTY

ANOKA COUNTY HIGHWAY DEPT.

SAP 002-609-022

SAP 198-020-039

STAGE 1
(STAGE 1 ALI)
STA 46+00.00 TO 74+00.00

Sheet 53 of 167 Sheets

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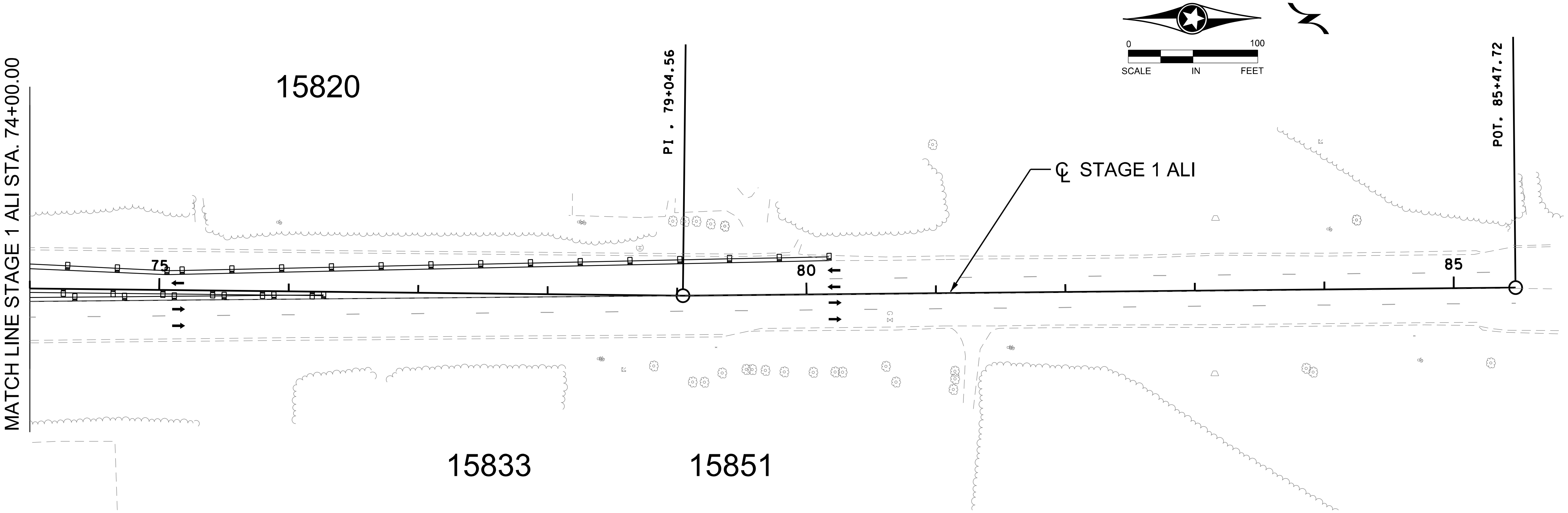

STAGE 1 LEGEND

▢	CONSTRUCTION AREA
▨	CONSTRUCT UNDER TRAFFIC
■—	STORM SEWER CONSTRUCTION
▫	EXISTING STORM SEWER
▫—	3' BUFFER / BARRELS
- -	EXISTING TOPO

PORTABLE PRECAST BARRIER AND TEMP IMPACT ATTENUATORS TO BE USED IN LOCATIONS WHERE DROPOFF REQUIREMENTS ARE NOT MET. FOLLOW ALL GUIEDLINES FOR USE OF BARRIER AS DIRECTED IN THE MINNESOTA TEMPORARY TRAFFIC CONTROL FIELD MANUAL, LONGITUDINAL DROP-OFF GUIDELINES, SECTION 6K AND THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, PART 6, SECTION 6F, TEMPORARY TRAFFIC BARRIER.

4 OF 4

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-609-022\Plan\002609022 ST1_4.dgn 10/25/2023 10:57:13 AM

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

PRINT NAME: NICHOLAS J DOBDA
SIGNATURE: N J Dobda
DATE: 11/22/23 LICENSE NO. 49046

DRAWN BY JCF DATE 10/27/23
DESIGN BY JCF DATE 10/27/23
CHECKED BY NJD DATE 11/02/23

ANOKA COUNTY

ANOKA COUNTY
HIGHWAY DEPT.

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SAP 198-020-039

STAGE 1
STA 74+00.00 TO 85+47.72
&
154TH LN

Sheet 54 of 167 Sheets

JCFoster

STAGE-2 NARRATIVE

ALIGNMENT USED FOR STAGE 2 " STAGE 2 ALI "

1) INSTALL STAGE 2 TRAFFIC CONTROL. REMOVE CONFLICTING STRIPING. TRAFFIC MOVED TO WEST / NEW LSB. PROPOSED CONSTRUCTION ON EAST / NB WORK ZONE. BUFFER AREA / BARRELS SHOWN FOR LANE CONFIGURATIONS DURING STAGE 1. FOLLOW TRAFFIC CONTROL PLANS FOR LAYOUT, BARREL SPACING AND QUANTITIES. CONTRACTOR TO ALLOW AND MAINTAIN ACCESS THROUGH CONSTRUCTION AREA AT ALL CITY STREETS.

2) COMPLETE ALL LNB REMOVALS AND LNB UTILITY RELOCATIONS FOR LNB CONSTRUCTION.

3) ALL LNB STORM SEWER.

4) LNB GRADING, SHOULDER & MEDIAN CURB AND GUTTER, BITUMINOUS PAVING UP TO BINDER COURSE.

5) CONSTRUCT NORTH #15421 FULL ACCESS ACROSS FROM NEW 154TH LN.

6) CONSTRUCT ALL LNB CONCRETE PEDESTRIAN RAMPS.

7) LNB DRIVEWAY CONSTRUCTION.

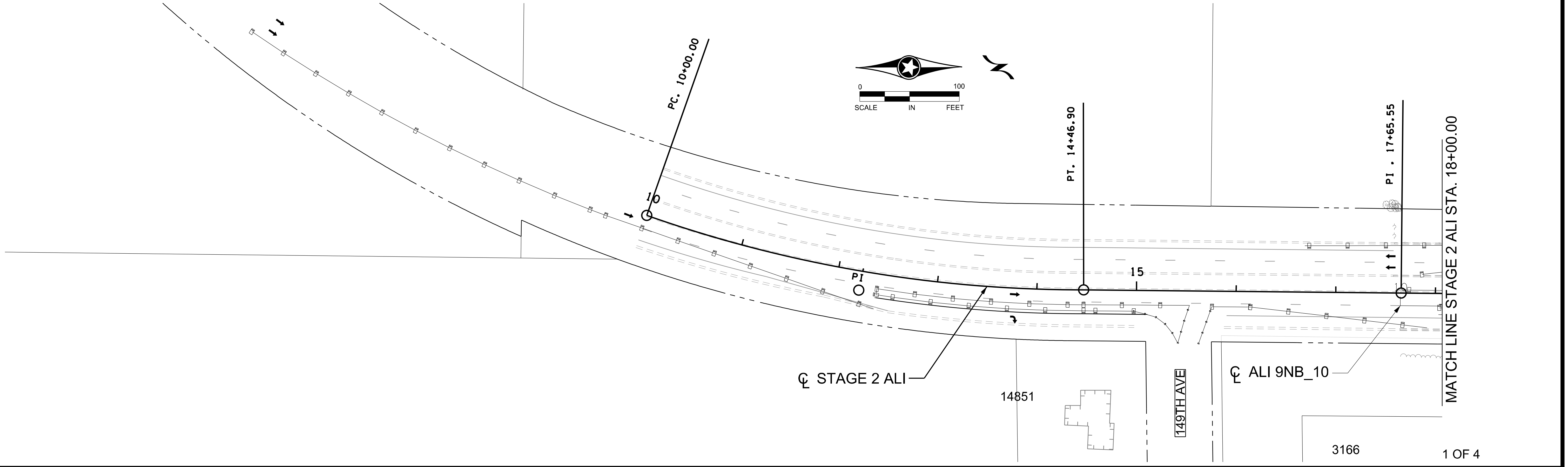
8) LNB BITUMINOUS TRAIL CONSTRUCTION.

9) APPLY ALL PERMANENT LNB TURF ESTABLISHMENT, EROSION CONTROL AND INLET PROTECTION.

STAGE 2 LEGEND

▢	CONSTRUCTION AREA
▨	CONSTRUCT UNDER TRAFFIC
■━	STORM SEWER CONSTRUCTION
◦┄	EXISTING STORM SEWER
▫─	3' BUFFER / BARRELS
┄	EXISTING TOPO

PORTABLE PRECAST BARRIER AND TEMP IMPACT ATTENUATORS TO BE USED IN LOCATIONS WHERE DROPOFF REQUIREMENTS ARE NOT MET. FOLLOW ALL GUIEDLINES FOR USE OF BARRIER AS DIRECTED IN THE MINNESOTA TEMPORARY TRAFFIC CONTROL FIELD MANUAL, LONGITUDINAL DROP-OFF GUIDELINES, SECTION 6K AND THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, PART 6, SECTION 6F, TEMPORARY TRAFFIC BARRIER.



1 OF 4

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-609-022\Plan\002609022 ST2_1.dgn 10/25/2023 10:57:15 AM

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

PRINT NAME: NICHOLAS J DOBDA

SIGNATURE: N J Dobda

DATE: 11/22/23 LICENSE NO. 49046

DRAWN BY JCF DATE 10/27/23

DESIGN BY JCF DATE 10/27/23

CHECKED BY NJD DATE 11/02/23

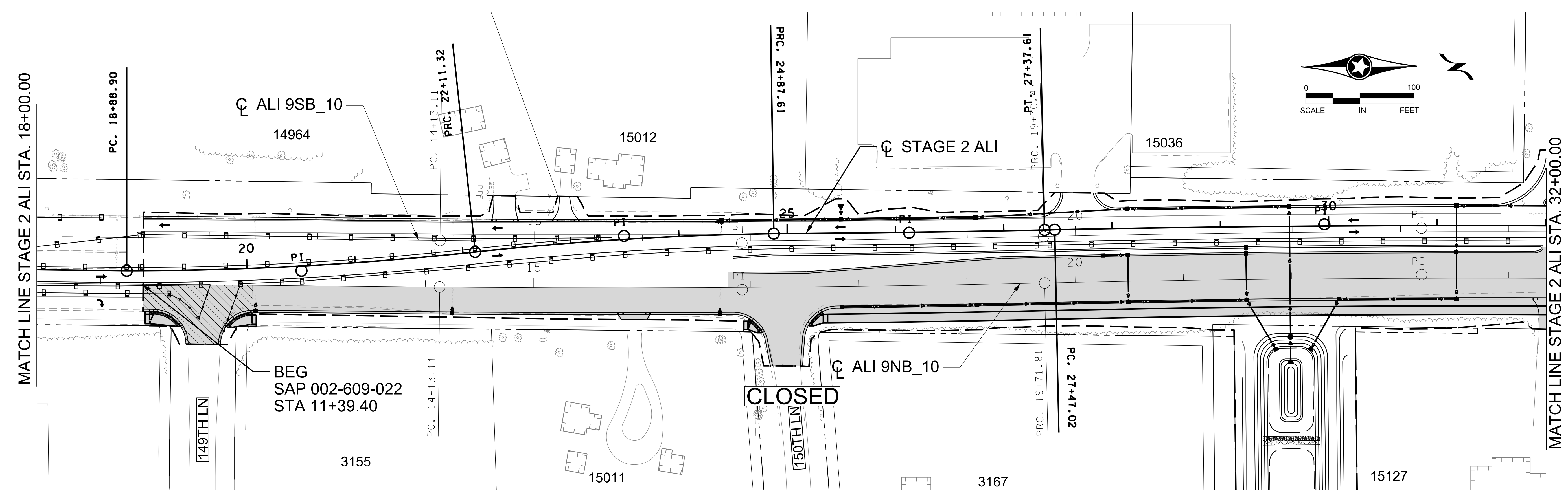
ANOKA COUNTY

ANOKA COUNTY
HIGHWAY DEPT.

SAP 002-609-022
SAP 198-020-039

STAGE 2
(STAGE 2 ALI)
STA 10+00.00 TO 18+00.00

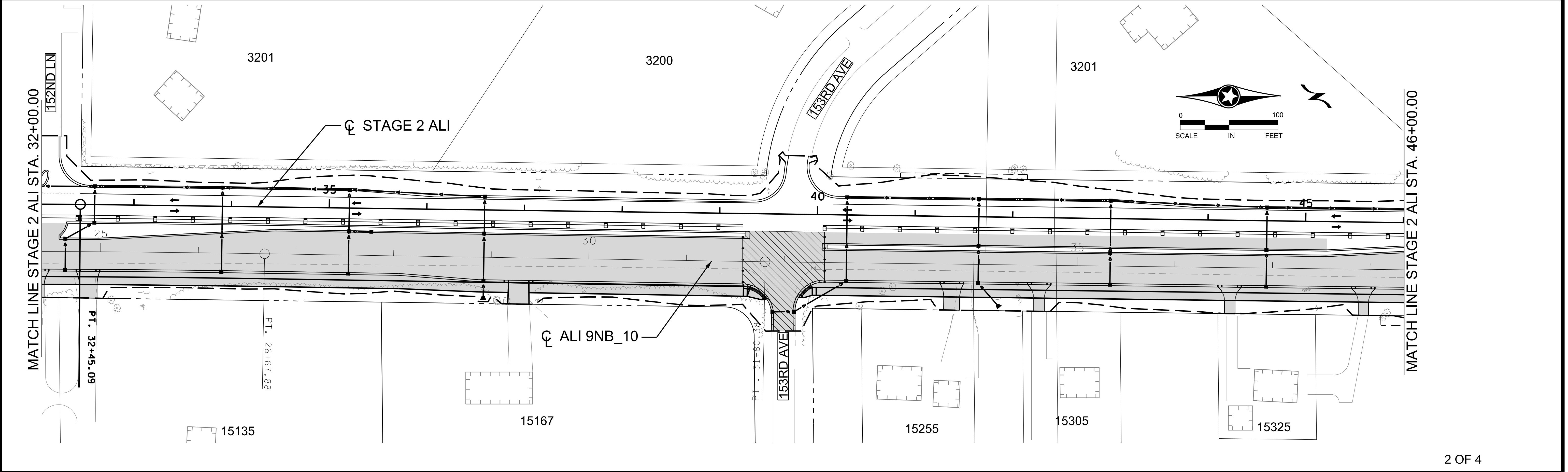
Sheet 55 of 167 Sheets



STAGE 2 LEGEND

▒	CONSTRUCTION AREA
▨	CONSTRUCT UNDER TRAFFIC
━	STORM SEWER CONSTRUCTION
─	EXISTING STORM SEWER
─▪─	3' BUFFER / BARRELS
┄	EXISTING TOPO

PORTABLE PRECAST BARRIER AND TEMP IMPACT ATTENUATORS TO BE USED IN LOCATIONS WHERE DROPOFF REQUIREMENTS ARE NOT MET. FOLLOW ALL GUIDELINES FOR USE OF BARRIER AS DIRECTED IN THE MINNESOTA TEMPORARY TRAFFIC CONTROL FIELD MANUAL, LONGITUDINAL DROP-OFF GUIDELINES, SECTION 6K AND THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, PART 6, SECTION 6F, TEMPORARY TRAFFIC BARRIER.



2 OF 4

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-609-022\Plan\002609022 ST2_2.dgn 10/25/2023 10:57:17 AM

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

PRINT NAME: NICHOLAS J DOBDA
SIGNATURE: Nick Dobda
DATE: 11/22/23 LICENSE NO. 49046

DRAWN BY JCF DATE 10/27/23
DESIGN BY JCF DATE 10/27/23
CHECKED BY NJD DATE 11/02/23

ANOKA COUNTY

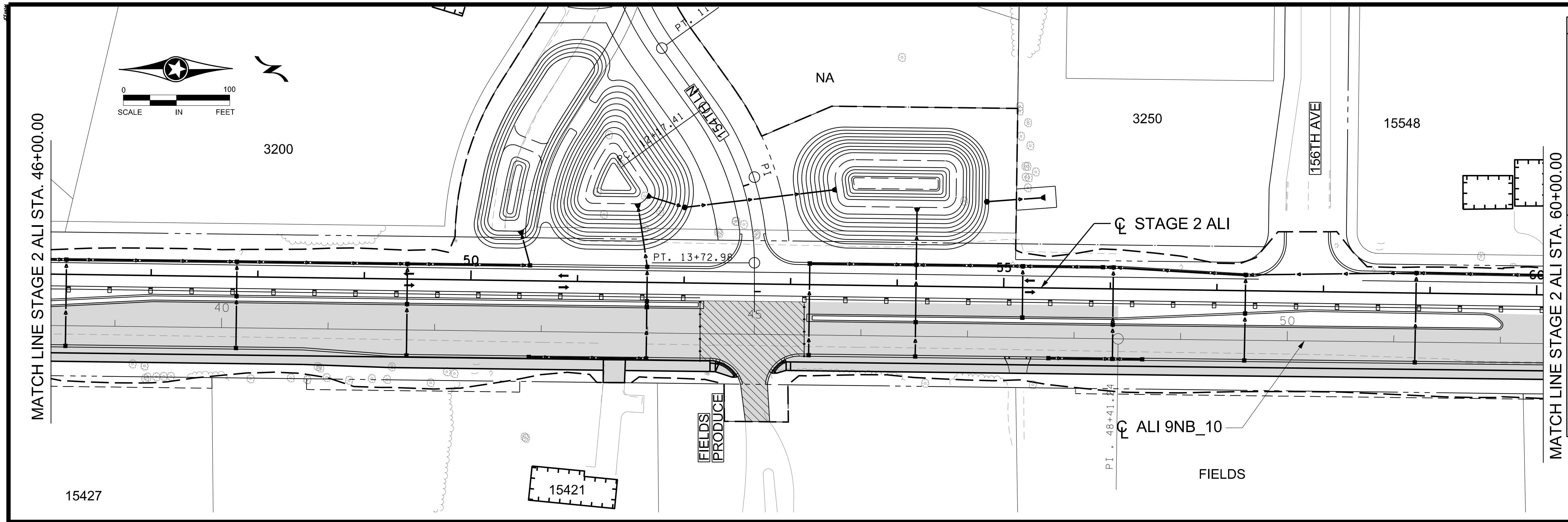
ANOKA COUNTY
HIGHWAY DEPT.

SAP 002-609-022
SAP 198-020-039

STAGE 2
(STAGE 2 ALI)
STA 18+00.00 TO 46+00.00

Sheet 56 of 167 Sheets

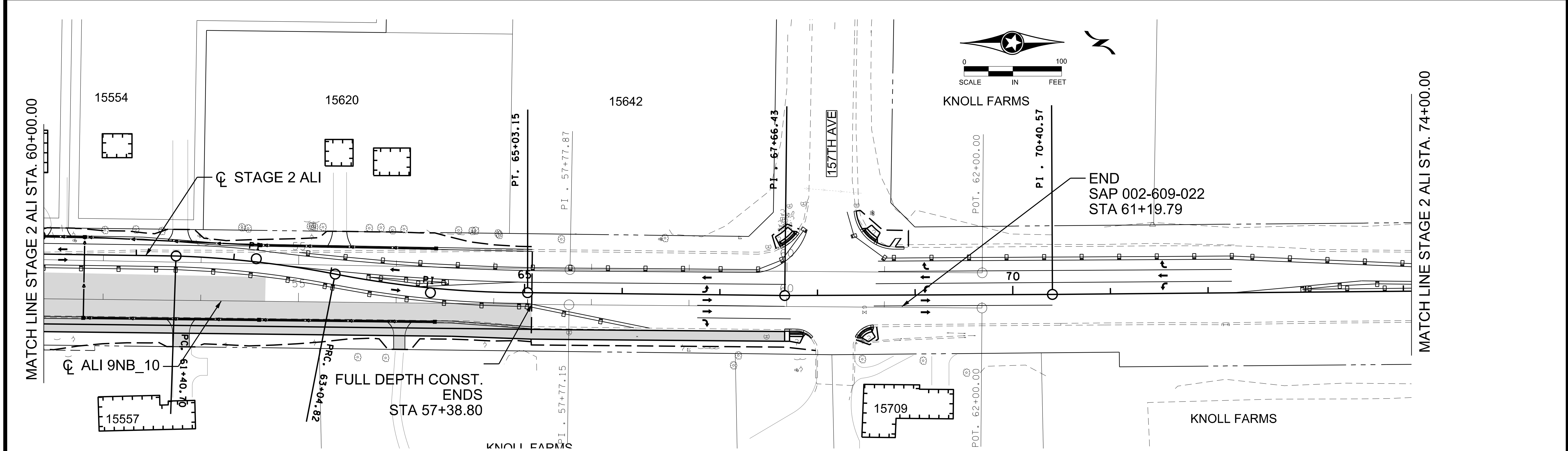
JCFoster



STAGE 2 LEGEND

- ░ CONSTRUCTION AREA
- ▨ CONSTRUCT UNDER TRAFFIC
- ▬ STORM SEWER CONSTRUCTION
- ─ EXISTING STORM SEWER
- ─ 3' BUFFER / BARRELS
- - - EXISTING TOPO

PORTABLE PRECAST BARRIER AND TEMP IMPACT ATTENUATORS TO BE USED IN LOCATIONS WHERE DROPOFF REQUIREMENTS ARE NOT MET. FOLLOW ALL GUIEDLINES FOR USE OF BARRIER AS DIRECTED IN THE MINNESOTA TEMPORARY TRAFFIC CONTROL FIELD MANUAL, LONGITUDINAL DROP-OFF GUIDELINES, SECTION 6K AND THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, PART 6, SECTION 6F, TEMPORARY TRAFFIC BARRIER.



3 OF 4

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-609-022\Plan\002609022 ST2_3.dgn 10/25/2023 10:57:18 AM

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

PRINT NAME: NICHOLAS J DOBDA

SIGNATURE: Nic J Dobda

DATE: 11/22/23 LICENSE NO. 49046

DRAWN BY JCF DATE 10/27/23

DESIGN BY JCF DATE 10/27/23

CHECKED BY NJD DATE 11/02/23

ANOKA COUNTY

ANOKA COUNTY
HIGHWAY DEPT.

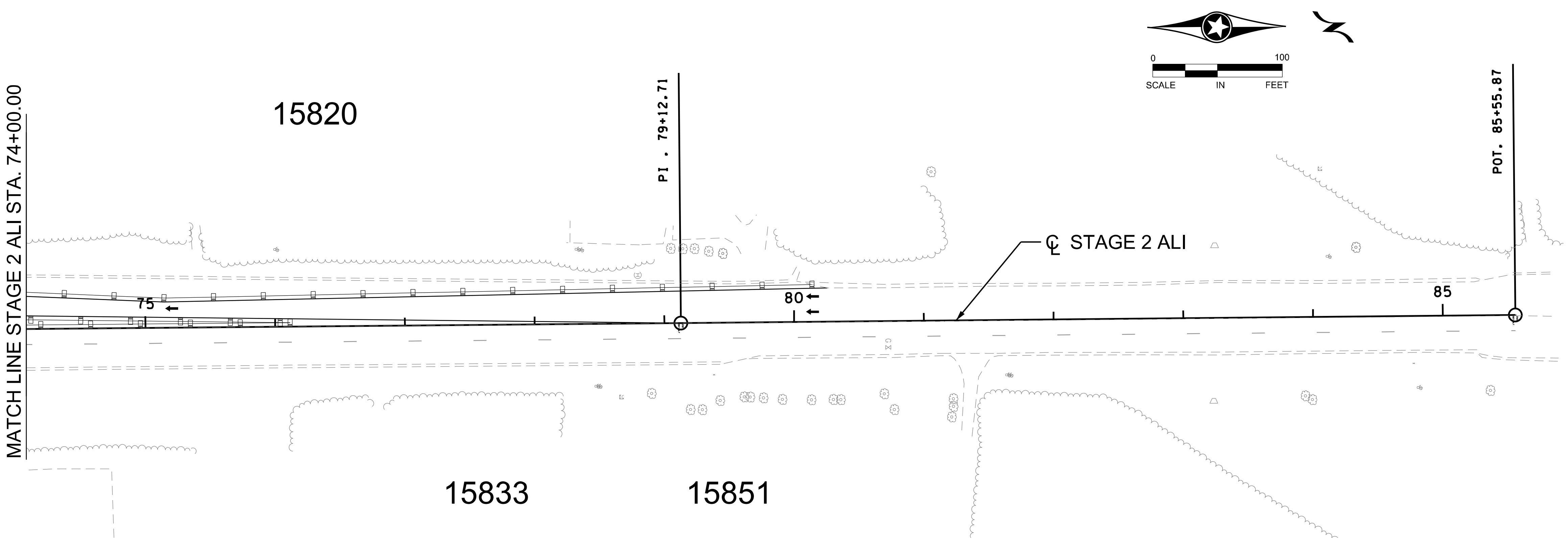
SAP 002-609-022
SAP 198-020-039

STAGE 2
(STAGE 2 ALI)
STA 46+00.00 TO 74+00.00

Sheet 57 of 167 Sheets

an R. Reid

JCFoster



STAGE 2 LEGEND

▒	CONSTRUCTION AREA
▨	CONSTRUCT UNDER TRAFFIC
▪—	STORM SEWER CONSTRUCTION
▫	EXISTING STORM SEWER
▫—	3' BUFFER / BARRELS
- -	EXISTING TOPO

PORTABLE PRECAST BARRIER AND TEMP IMPACT ATTENUATORS TO BE USED IN LOCATIONS WHERE DROPOFF REQUIREMENTS ARE NOT MET. FOLLOW ALL GUIEDLINES FOR USE OF BARRIER AS DIRECTED IN THE MINNESOTA TEMPORARY TRAFFIC CONTROL FIELD MANUAL, LONGITUDINAL DROP-OFF GUIDELINES, SECTION 6K AND THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, PART 6, SECTION 6F, TEMPORARY TRAFFIC BARRIER.

4 OF 4

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-609-022\Plan\002609022 ST2_4.dgn 10/25/2023 10:57:19 AM

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

PRINT NAME: NICHOLAS J DOBDA

SIGNATURE: Nick Dobda

DATE: 11/22/23 LICENSE NO. 49046

DRAWN BY JCF DATE 10/27/23

DESIGN BY JCF DATE 10/27/23

CHECKED BY NJD DATE 11/02/23

ANOKA COUNTY

ANOKA COUNTY

HIGHWAY DEPT.

SAP 002-609-022

SAP 198-020-039

STAGE 2

(STAGE 2 ALI)

STA 74+00.00 TO 85+47.72

Sheet 58 of 167 Sheets

JCFoster

STAGE-3 NARRATIVE

ALIGNMENTS USED FOR STAGE 3 " 9NB_10 & 9SB_10 "

SOUTH CROSSOVER-

1) INSTALL STAGE 3 TRAFFIC CONTROL. REMOVE CONFLICTING STRIPING. TRAFFIC MOVED TO OUTSIDE LNB & LSB ON BINDER COURSE. BUFFER AREA / BARRELS SHOWN FOR LANE CONFIGURATIONS DURING STAGE 3 FOLLOW TRAFFIC CONTROL PLANS FOR LAYOUT, BARREL SPACING AND QUANTITIES. CONTRACTOR TO ALLOW AND MAINTAIN ACCESS THROUGH CONSTRUCTION AREA AT ALL CITY STREETS.

2) REMOVE TEMP PAVEMENT IN SOUTH CROSSOVER

3) COMPLETE CROSSOVER AREA PROPOSED GRADING, STORM SEWER AND CURB & GUTTER AND PAVING UP TO BINDER COURSE.

NORTH CROSSOVER-

4) INSTALL STAGE 3 TRAFFIC CONTROL. REMOVE CONFLICTING STRIPING. TRAFFIC MOVED TO OUTSIDE LNB & LSB ON BINDER COURSE. BUFFER AREA / BARRELS SHOWN FOR LANE CONFIGURATIONS DURING STAGE 3. FOLLOW TRAFFIC CONTROL PLANS FOR LAYOUT, BARREL SPACING AND QUANTITIES. CONTRACTOR TO ALLOW AND MAINTAIN ACCESS THROUGH CONSTRUCTION AREA AT ALL CITY STREETS.

5) REMOVE EXISTING PAVEMENT IN CENTER OF CSAH 9, NORTH CROSSOVER.

6) COMPLETE CROSSOVER AREA PROPOSED GRADING AND PAVING UP TO BINDER COURSE.

COMPLETION-

7) FILL, COMPACT AND COMPLETE ALL MEDIAN CONCRETE FLATWORK FOR ALL MEDIANS.

8) BITUMINOUS WEAR PAVING LNB & LSB STARTING IN THE CENTER AND WORKING TO SHOULDER.

9) FOLLOW THE "MINNESOTA TEMPORARY TRAFFIC CONTROL FIELD MANUAL" ONCE PAVED TO CENTERLANE FOR RT-THRU / SHLDR PAVING OPERATIONS.

10) SIGNAL TO BE PUT INTO FLASH DURING PAVING OPERATIONS WITHIN 1000' OF CSAH 20, 157TH AVE SIGNAL. CONTRACTOR TO COORDINATE WITH ANOKA COUNTY SIGNAL DEPARTMENT. CONTRACTOR TO MAINTAIN PROPOSED LANE CONFIGURATION AT SIGNAL WHEN SIGNAL IS IN OPERATION AS TO LIGN UP WITH SIGNAL HEADS.

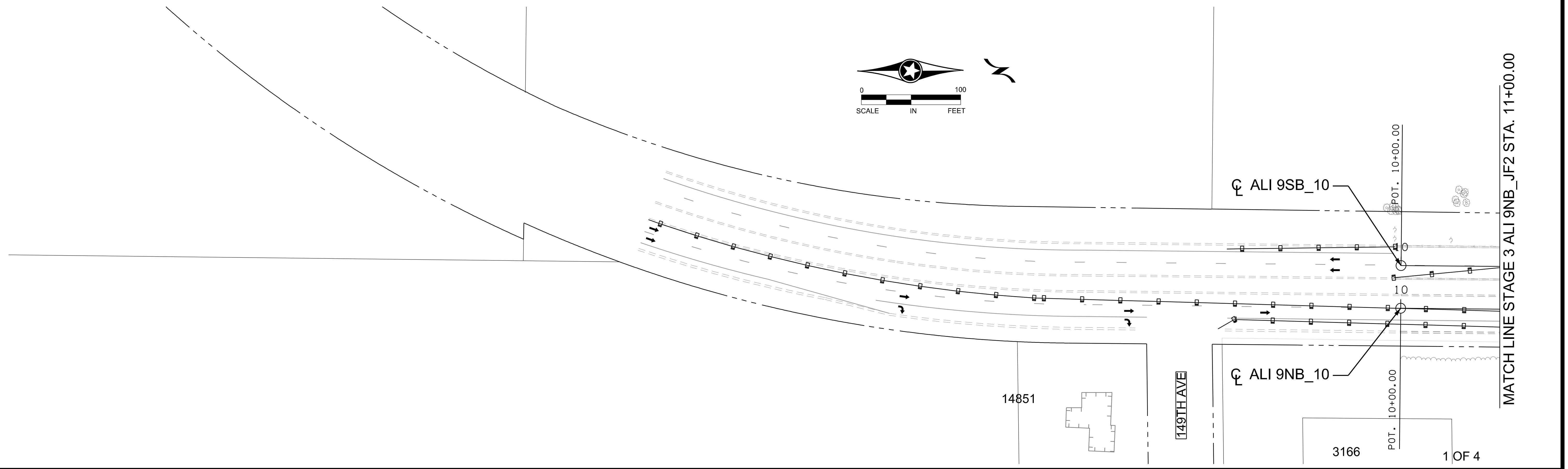
11) FINAL PERMANENT PAVEMENT STRIPING / PAVEMENT MARKINGS

12) COMPLETE ANY AREAS OF TURF ESTABLISHMENT AND EROSION CONTROL THAT HAVE NOT BEEN COMPLETED OR REQUIRE ADDITIONAL APPLICATIONS.

STAGE 3 LEGEND

▨	CONSTRUCTION AREA
■—	COMPLETED STORM SEWER
▫—	EXISTING STORM SEWER
▫—▫	3' BUFFER / BARRELS
- - -	EXISTING TOPO

PORTABLE PRECAST BARRIER AND TEMP IMPACT ATTENUATORS TO BE USED IN LOCATIONS WHERE DROPOFF REQUIREMENTS ARE NOT MET. FOLLOW ALL GUIEDLINES FOR USE OF BARRIER AS DIRECTED IN THE MINNESOTA TEMPORARY TRAFFIC CONTROL FIELD MANUAL, LONGITUDINAL DROP-OFF GUIDELINES, SECTION 6K AND THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, PART 6, SECTION 6F, TEMPORARY TRAFFIC BARRIER.



NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-609-022\Plan\002609022 ST3_1.dgn 10/25/2023 10:57:19 AM

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

PRINT NAME: NICHOLAS J DOBDA

SIGNATURE: Nic J Dobda

DATE: 11/22/23 LICENSE NO. 49046

DRAWN BY JCF DATE 10/27/23

DESIGN BY JCF DATE 10/27/23

CHECKED BY NJD DATE 11/02/23

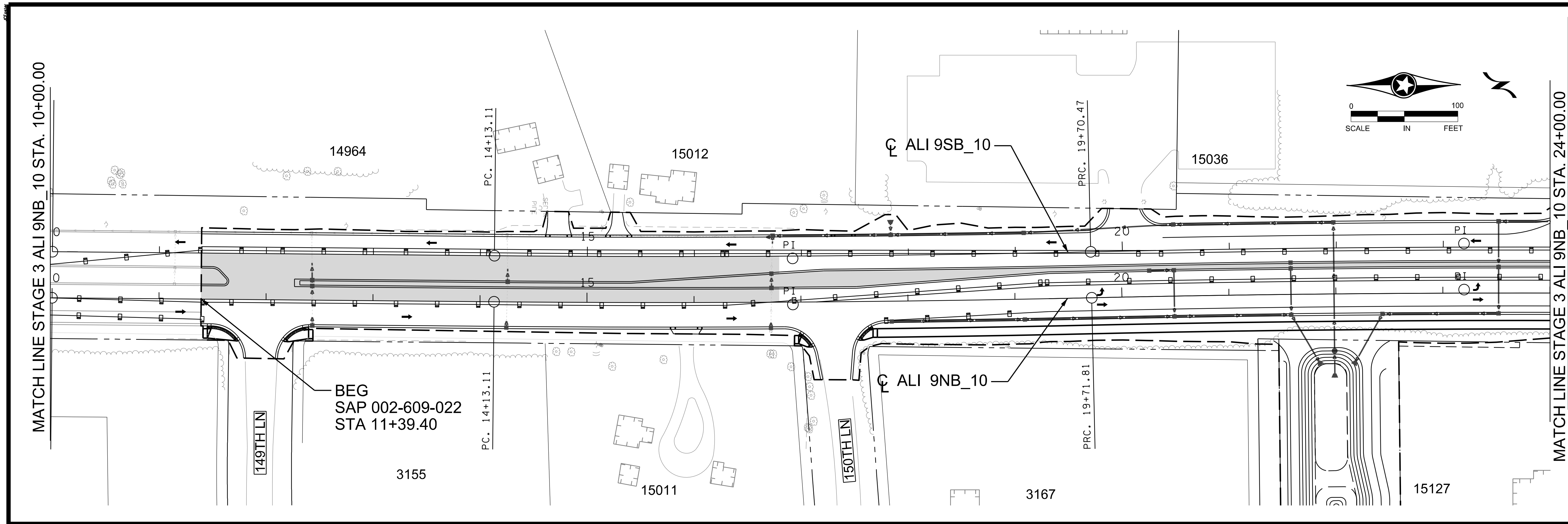
ANOKA COUNTY

ANOKA COUNTY
HIGHWAY DEPT.

SAP 002-609-022
SAP 198-020-039

STAGE 3
(ALI 9SB_10)
(ALI 9NB_10)
STA 10+00.00 TO 18+00.00

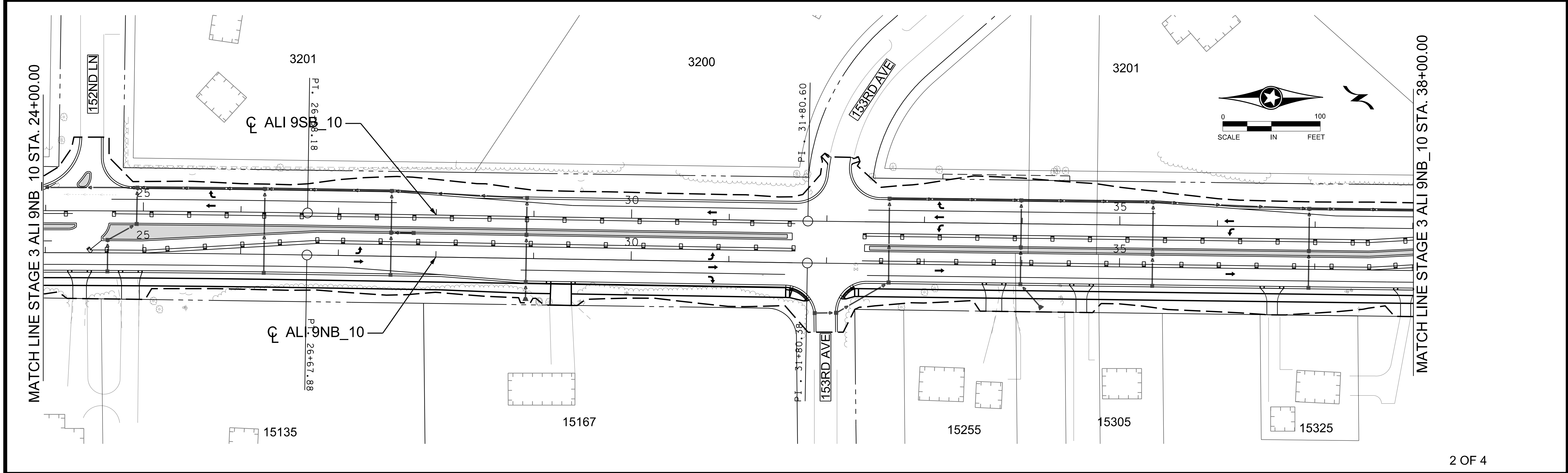
Sheet 59 of 167 Sheets



STAGE 3 LEGEND

▨	CONSTRUCTION AREA
	COMPLETED STORM SEWER
	EXISTING STORM SEWER
	3' BUFFER / BARRELS
	EXISTING TOPO

PORTABLE PRECAST BARRIER AND TEMP IMPACT ATTENUATORS TO BE USED IN LOCATIONS WHERE DROPOFF REQUIREMENTS ARE NOT MET. FOLLOW ALL GUIDELINES FOR USE OF BARRIER AS DIRECTED IN THE MINNESOTA TEMPORARY TRAFFIC CONTROL FIELD MANUAL, LONGITUDINAL DROP-OFF GUIDELINES, SECTION 6K AND THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, PART 6, SECTION 6F, TEMPORARY TRAFFIC BARRIER.



2 OF 4

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-609-022\Plan\002609022 ST3_2.dgn 10/25/2023 10:57:30 AM

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

PRINT NAME: NICHOLAS J DOBDA

SIGNATURE: Nick Dobda

DATE: 11/22/23 LICENSE NO. 49046

DRAWN BY JCF DATE 10/27/23

DESIGN BY JCF DATE 10/27/23

CHECKED BY NJD DATE 11/02/23

ANOKA COUNTY

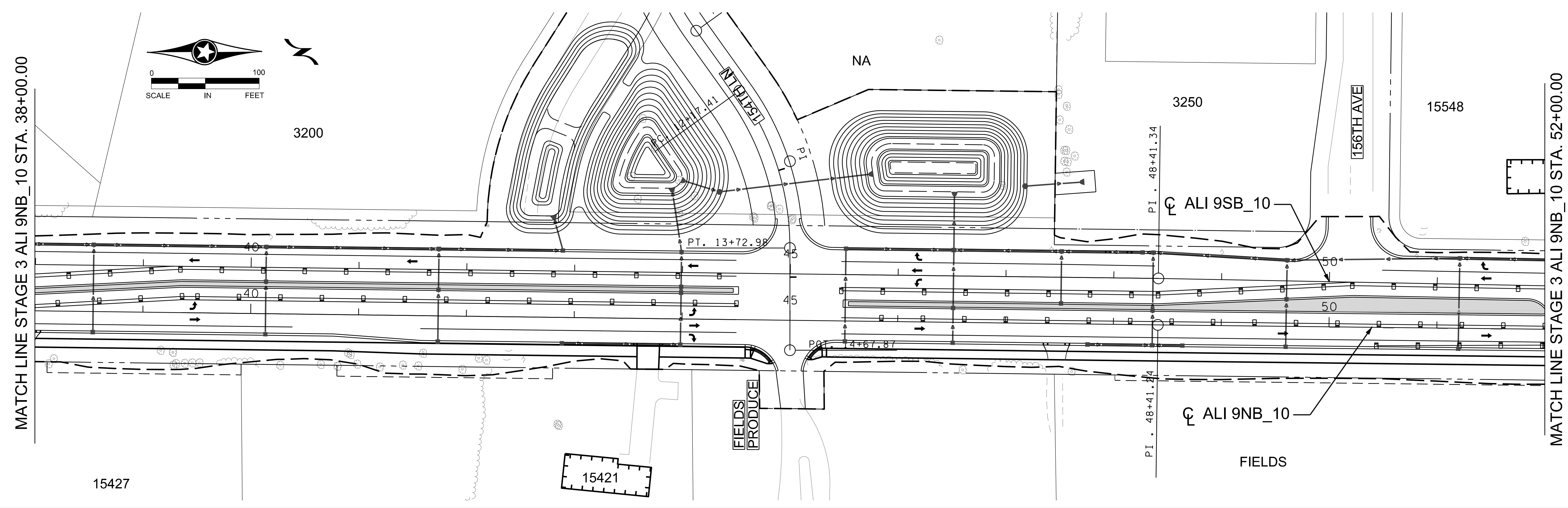
ANOKA COUNTY
HIGHWAY DEPT.

SAP 002-609-022
SAP 198-020-039

STAGE 3
(ALI 9SB_10)
(ALI 9NB_10)
STA 10+00.00 TO 38+00.00

Sheet 60 of 167 Sheets

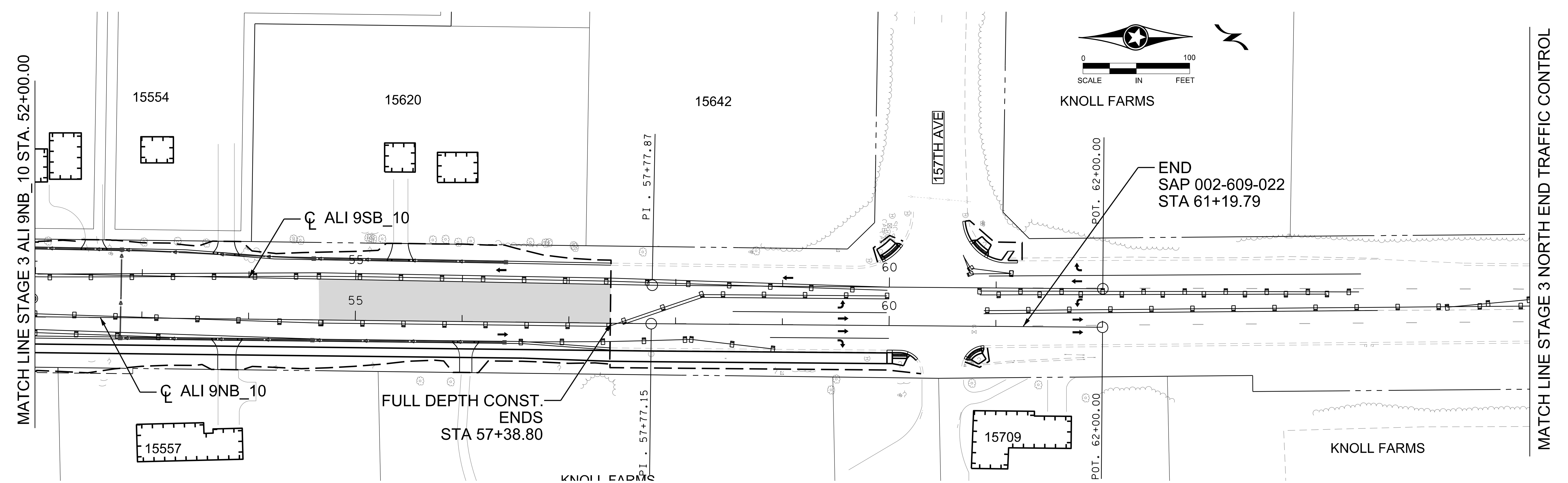
JCFoster



STAGE 3 LEGEND

▨	CONSTRUCTION AREA
	COMPLETED STORM SEWER
	EXISTING STORM SEWER
	3' BUFFER / BARRELS
	EXISTING TOPO

PORTABLE PRECAST BARRIER AND TEMP IMPACT ATTENUATORS TO BE USED IN LOCATIONS WHERE DROPOFF REQUIREMENTS ARE NOT MET. FOLLOW ALL GUIDELINES FOR USE OF BARRIER AS DIRECTED IN THE MINNESOTA TEMPORARY TRAFFIC CONTROL FIELD MANUAL, LONGITUDINAL DROP-OFF GUIDELINES, SECTION 6K AND THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, PART 6, SECTION 6F, TEMPORARY TRAFFIC BARRIER.



3 OF 4

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-609-022\Plan\002609022 ST3_3.dgn 10/25/2023 10:57:31 AM

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

PRINT NAME: NICHOLAS J DOBDA
SIGNATURE: Nick Dobda
DATE: 11/22/23 LICENSE NO. 49046

DRAWN BY JCF DATE 10/27/23
DESIGN BY JCF DATE 10/27/23
CHECKED BY NJD DATE 11/02/23

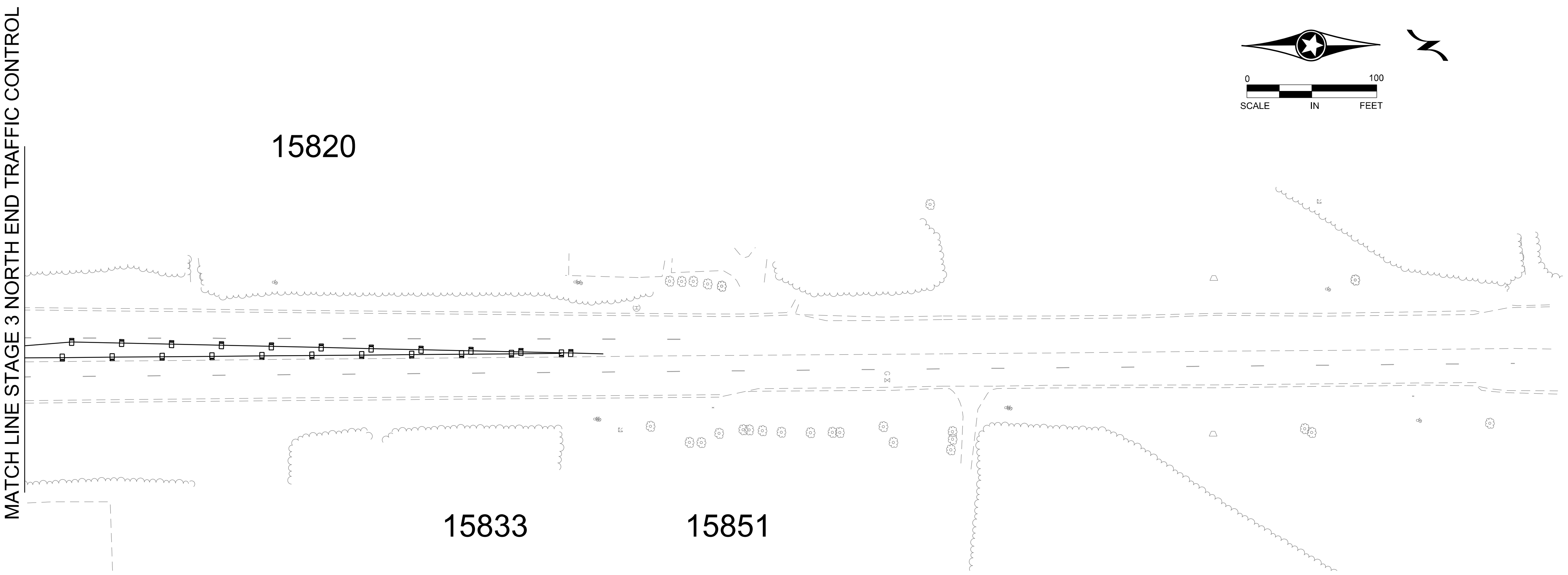
ANOKA COUNTY
ANOKA COUNTY
HIGHWAY DEPT.

SAP 002-609-022
SAP 198-020-039

STAGE 3
(ALI 9SB_10)
(ALI 9NB_10)
STA 38+00.00 TO 74+00.00

Sheet 61 of 167 Sheets

JCFoster



STAGE 3 LEGEND

▨	CONSTRUCTION AREA
▪—	COMPLETED STORM SEWER
▫—	EXISTING STORM SEWER
▫—▫	3' BUFFER / BARRELS
- -	EXISTING TOPO

PORTABLE PRECAST BARRIER AND TEMP IMPACT ATTENUATORS TO BE USED IN LOCATIONS WHERE DROPOFF REQUIREMENTS ARE NOT MET. FOLLOW ALL GUIEDLINES FOR USE OF BARRIER AS DIRECTED IN THE MINNESOTA TEMPORARY TRAFFIC CONTROL FIELD MANUAL, LONGITUDINAL DROP-OFF GUIDELINES, SECTION 6K AND THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, PART 6, SECTION 6F, TEMPORARY TRAFFIC BARRIER.

4 OF 4

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-609-022\Plan\002609022 ST3_4.dgn 10/25/2023 10:57:32 AM

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

PRINT NAME: NICHOLAS J DOBDA
SIGNATURE: Nich J Dobda
DATE: 11/22/23 LICENSE NO. 49046

DRAWN BY JCF DATE 10/27/23
DESIGN BY JCF DATE 10/27/23
CHECKED BY NJD DATE 11/02/23

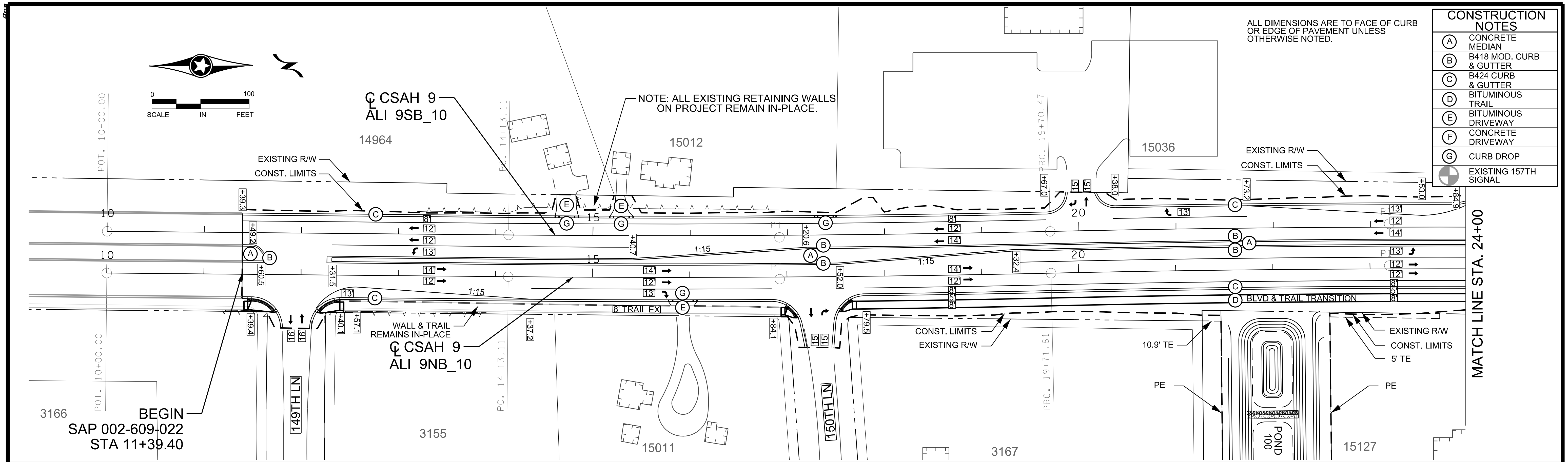
ANOKA COUNTY

ANOKA COUNTY
HIGHWAY DEPT.

SAP 002-609-022
SAP 198-020-039

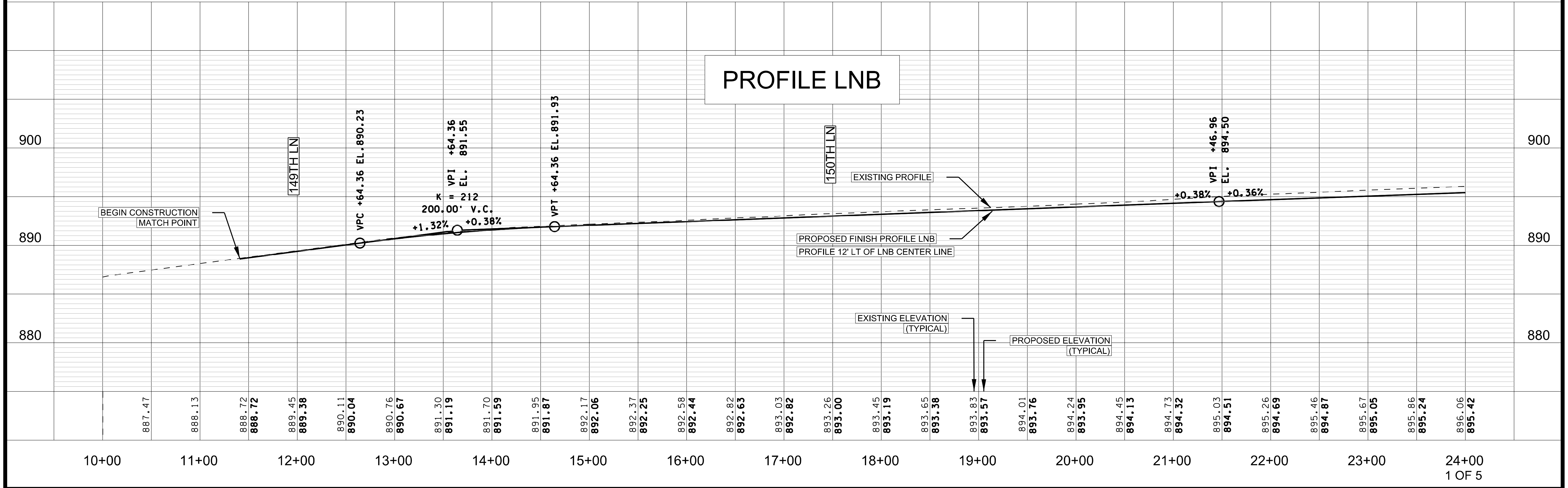
STAGE 3
NORTH END TRAFFIC CONTROL

Sheet 62 of 167 Sheets



CONSTRUCTION NOTES

Ⓐ	CONCRETE MEDIAN
Ⓑ	B418 MOD. CURB & GUTTER
Ⓒ	B424 CURB & GUTTER
Ⓓ	BITUMINOUS TRAIL
Ⓔ	BITUMINOUS DRIVEWAY
Ⓕ	CONCRETE DRIVEWAY
Ⓖ	CURB DROP
◐	EXISTING 157TH SIGNAL



NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-609-022\Plan\002609022 PP1.dgn 10/25/2023 12:49:27 PM

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

PRINT NAME: NICHOLAS J DOBDA

SIGNATURE: Nick Dobda

DATE: 11/22/23 LICENSE NO. 49046

DRAWN BY JCF DATE 10/27/23

DESIGN BY JCF DATE 10/27/23

CHECKED BY NJD DATE 11/02/23

ANOKA COUNTY

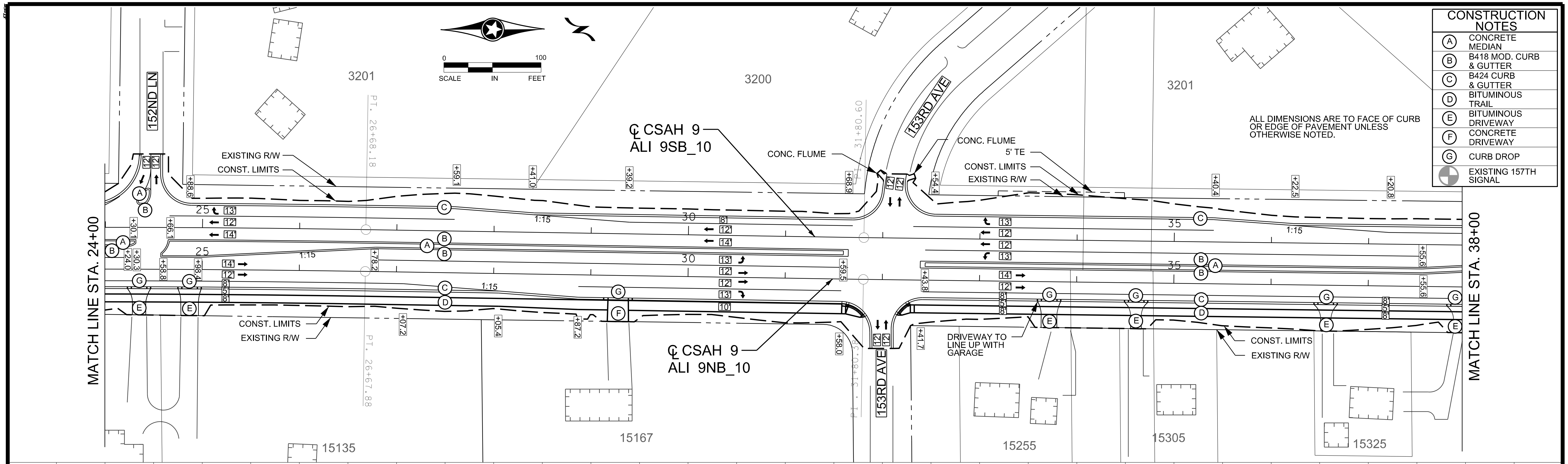
ANOKA COUNTY
HIGHWAY DEPT.

SAP 002-609-022
SAP 198-020-039

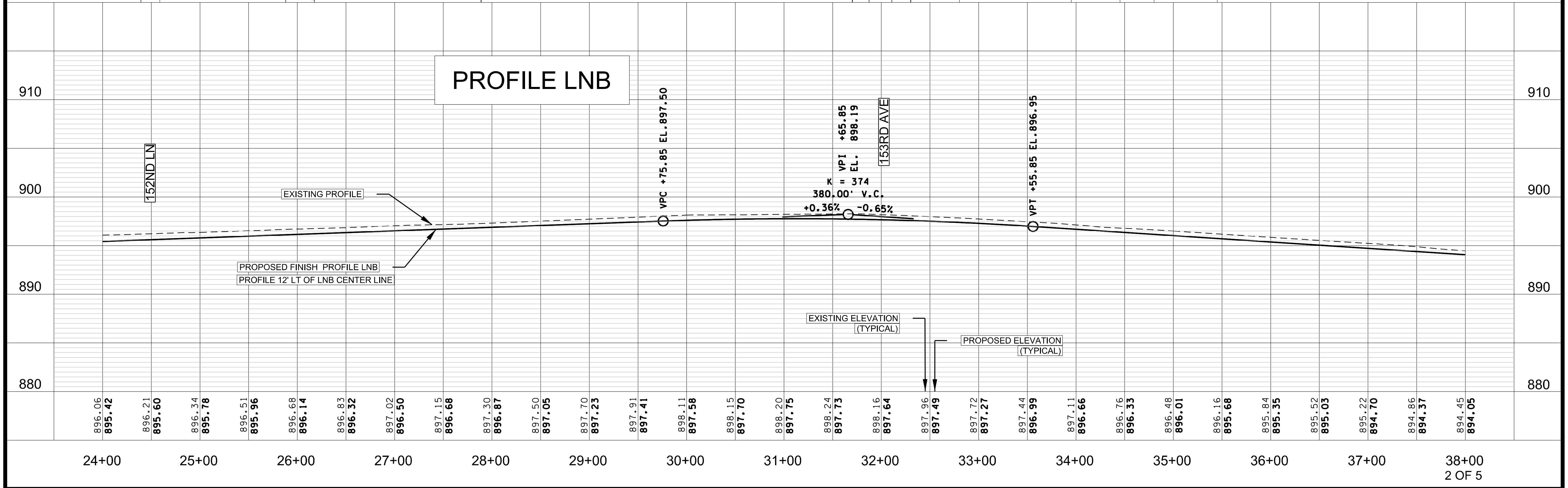
CONSTRUCTION PLAN

STA 11+39.04 TO 24+00

Sheet 63 of 167 Sheets



CONSTRUCTION NOTES	
Ⓐ	CONCRETE MEDIAN
Ⓑ	B418 MOD. CURB & GUTTER
Ⓒ	B424 CURB & GUTTER
Ⓓ	BITUMINOUS TRAIL
Ⓔ	BITUMINOUS DRIVEWAY
Ⓕ	CONCRETE DRIVEWAY
Ⓖ	CURB DROP
◐	EXISTING 157TH SIGNAL



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NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-609-022\Plan\002609022 PP2.dgn 10/25/2023 10:56:45 AM

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

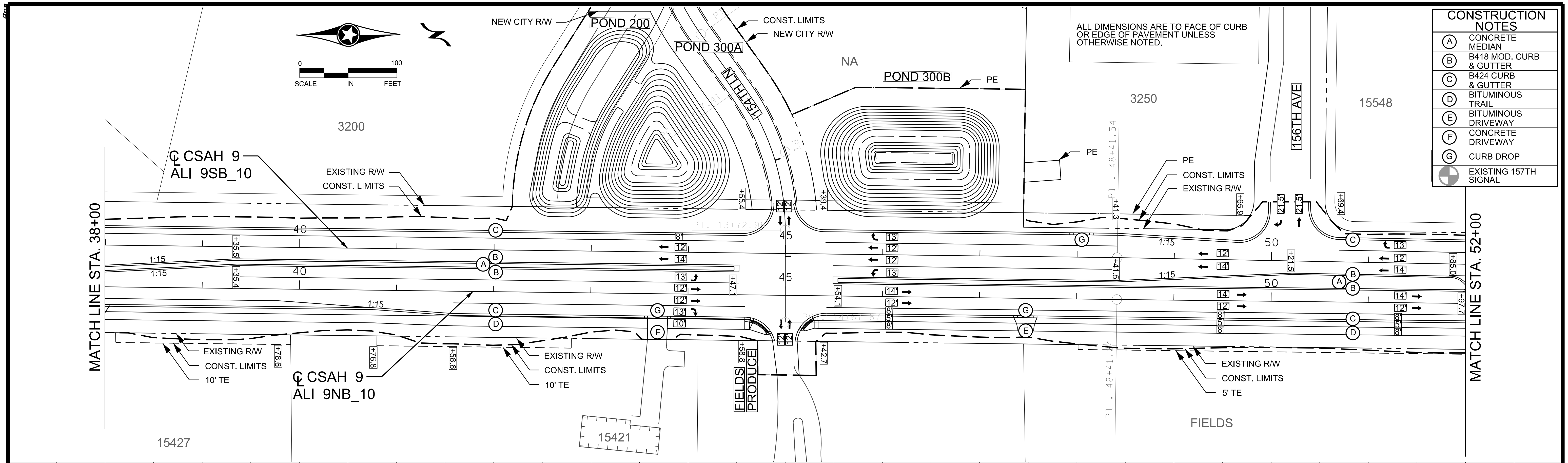
PRINT NAME: NICHOLAS J DOBDA
SIGNATURE: Nick Dobda
DATE: 11/22/23 LICENSE NO. 49046

DRAWN BY JCF DATE 10/27/23
DESIGN BY JCF DATE 10/27/23
CHECKED BY NJD DATE 11/02/23

ANOKA COUNTY
HIGHWAY DEPT.

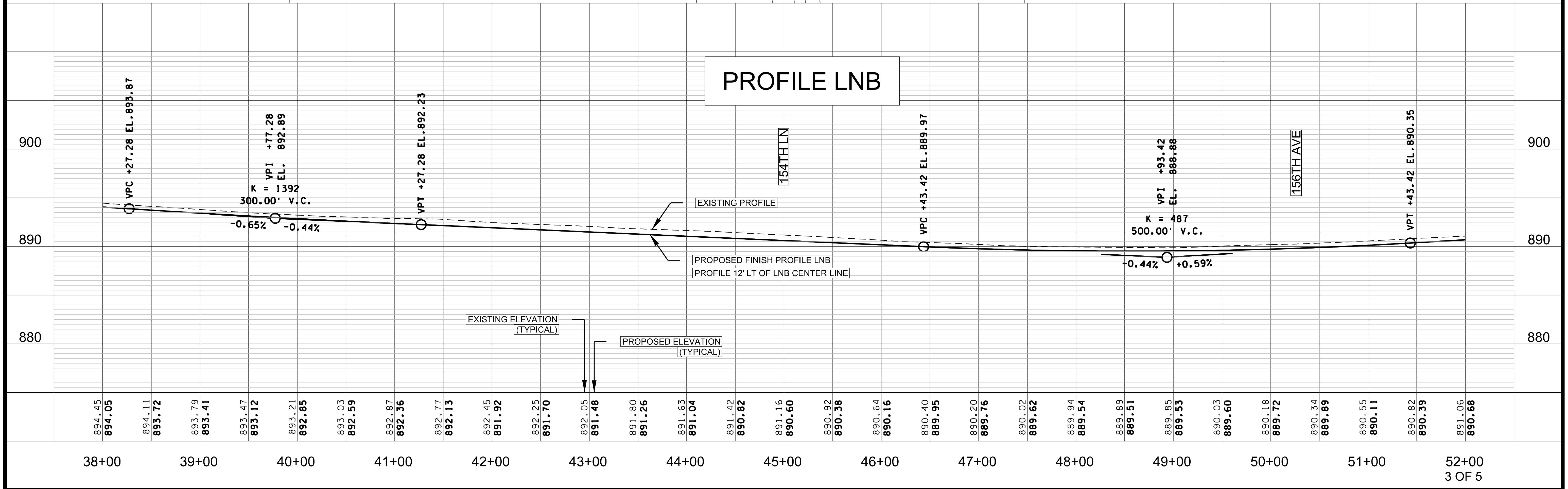
SAP 002-609-022
SAP 198-020-039

CONSTRUCTION PLAN
STA 24+00 TO 38+00
Sheet 64 of 167 Sheets



CONSTRUCTION NOTES

Ⓐ	CONCRETE MEDIAN
Ⓑ	B418 MOD. CURB & GUTTER
Ⓒ	B424 CURB & GUTTER
Ⓓ	BITUMINOUS TRAIL
Ⓔ	BITUMINOUS DRIVEWAY
Ⓕ	CONCRETE DRIVEWAY
Ⓖ	CURB DROP
◐	EXISTING 157TH SIGNAL



PROFILE LNB

3 OF 5

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-609-022\Plan\002609022 PP3.dgn 10/25/2023 10:56:46 AM

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

PRINT NAME: NICHOLAS J DOBDA

SIGNATURE: Nick Dobda

DATE: 11/22/23 LICENSE NO. 49046

DRAWN BY JCF DATE 10/27/23

DESIGN BY JCF DATE 10/27/23

CHECKED BY NJD DATE 11/02/23

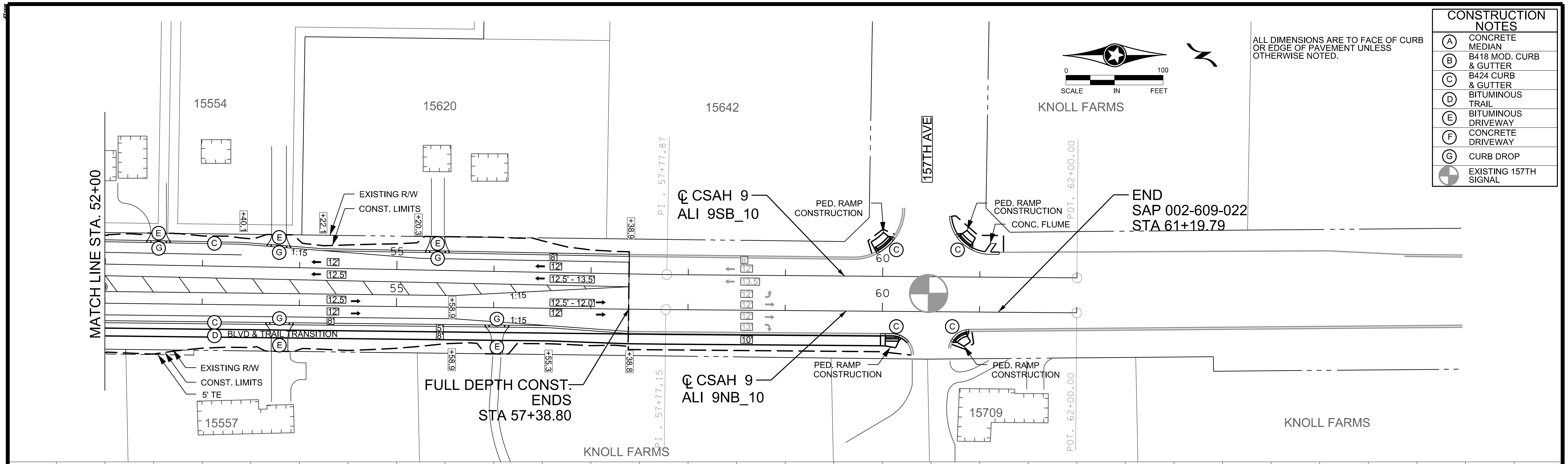
ANOKA COUNTY

ANOKA COUNTY
HIGHWAY DEPT.

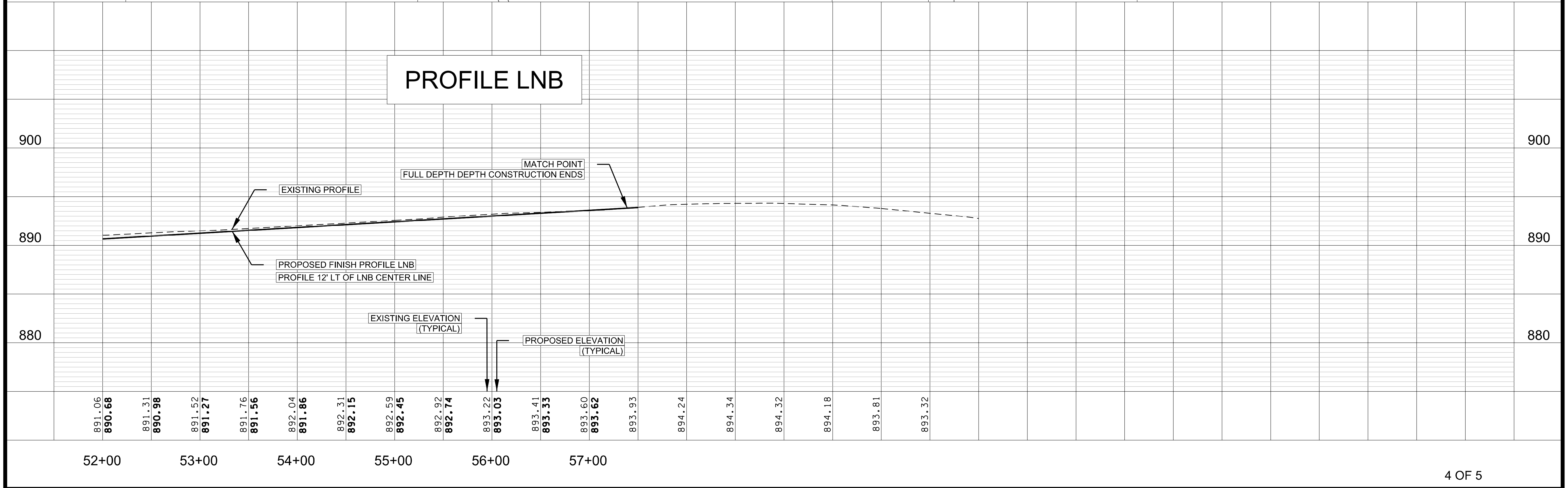
SAP 002-609-022
SAP 198-020-039

CONSTRUCTION PLAN

STA 38+00 TO 52+00



CONSTRUCTION NOTES	
Ⓐ	CONCRETE MEDIAN
Ⓑ	B418 MOD. CURB & GUTTER
Ⓒ	B424 CURB & GUTTER
Ⓓ	BITUMINOUS TRAIL
Ⓔ	BITUMINOUS DRIVEWAY
Ⓕ	CONCRETE DRIVEWAY
Ⓖ	CURB DROP
◕	EXISTING 157TH SIGNAL



4 OF 5

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-609-022\Plan\002609022 PP4.dgn 10/25/2023 10:56:47 AM

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

PRINT NAME: NICHOLAS J DOBDA
SIGNATURE: NJ Dobda
DATE: 11/22/23 LICENSE NO. 49046

DRAWN BY JCF DATE 10/27/23
DESIGN BY JCF DATE 10/27/23
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ANOKA COUNTY

ANOKA COUNTY
HIGHWAY DEPT.

SAP 002-609-022
SAP 198-020-039

CONSTRUCTION PLAN
STA 52+00 TO 61+19.79

Sheet 66 of 167 Sheets

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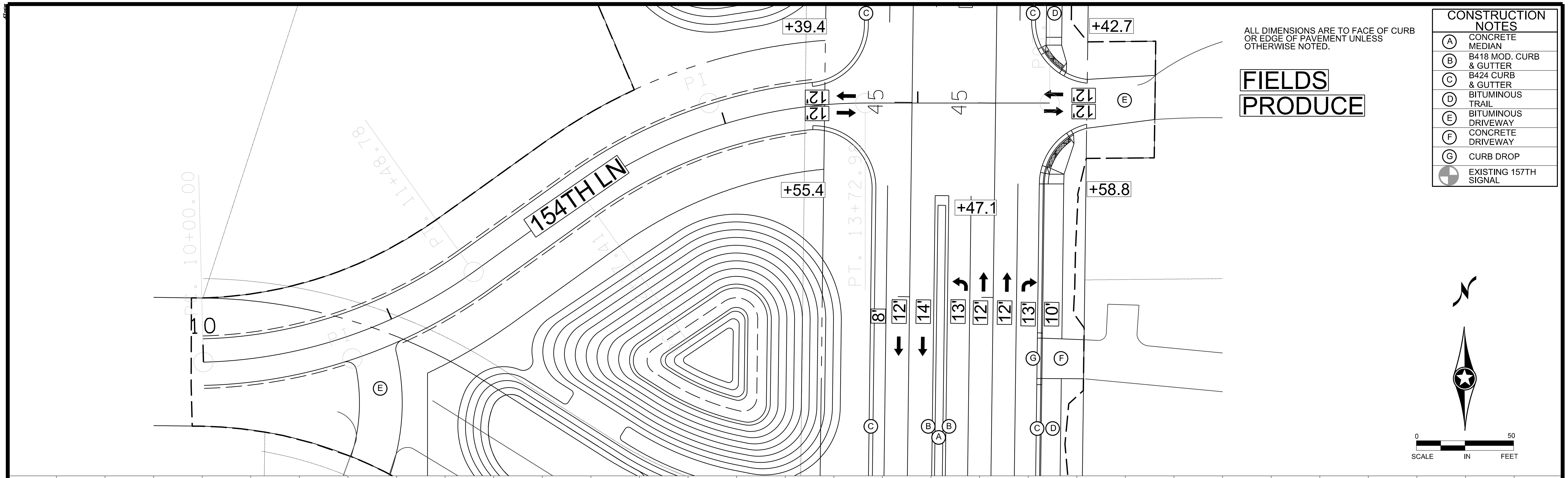
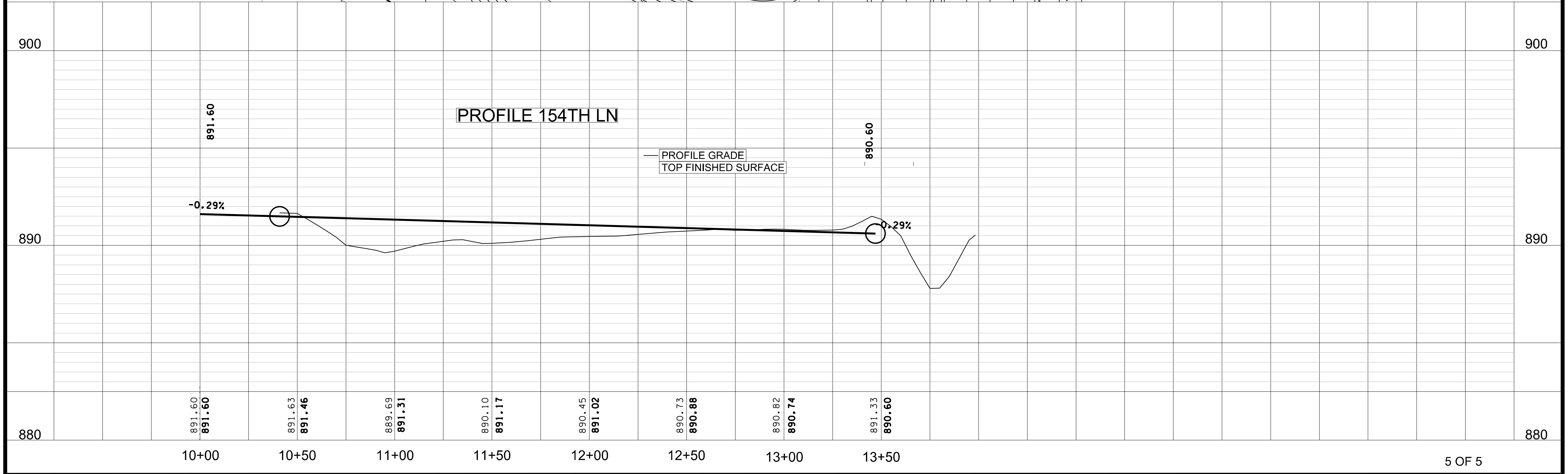


ALL DIMENSIONS ARE TO FACE OF CURB OR EDGE OF PAVEMENT UNLESS OTHERWISE NOTED.

CONSTRUCTION NOTES

Ⓐ	CONCRETE MEDIAN
Ⓑ	B418 MOD. CURB & GUTTER
Ⓒ	B424 CURB & GUTTER
Ⓓ	BITUMINOUS TRAIL
Ⓔ	BITUMINOUS DRIVEWAY
Ⓕ	CONCRETE DRIVEWAY
Ⓖ	CURB DROP
◐	EXISTING 157TH SIGNAL



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	891.60	**891.46**	**891.31**	**891.17**	**891.02**	**890.88**	**890.74**	**890.60**

5 OF 5

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-609-022\Plan\002609022 PP5.dgn 10/25/2023 10:56:49 AM

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

PRINT NAME: NICHOLAS J DOBDA
SIGNATURE: NJ Dobda
DATE: 11/22/23 LICENSE NO. 49046

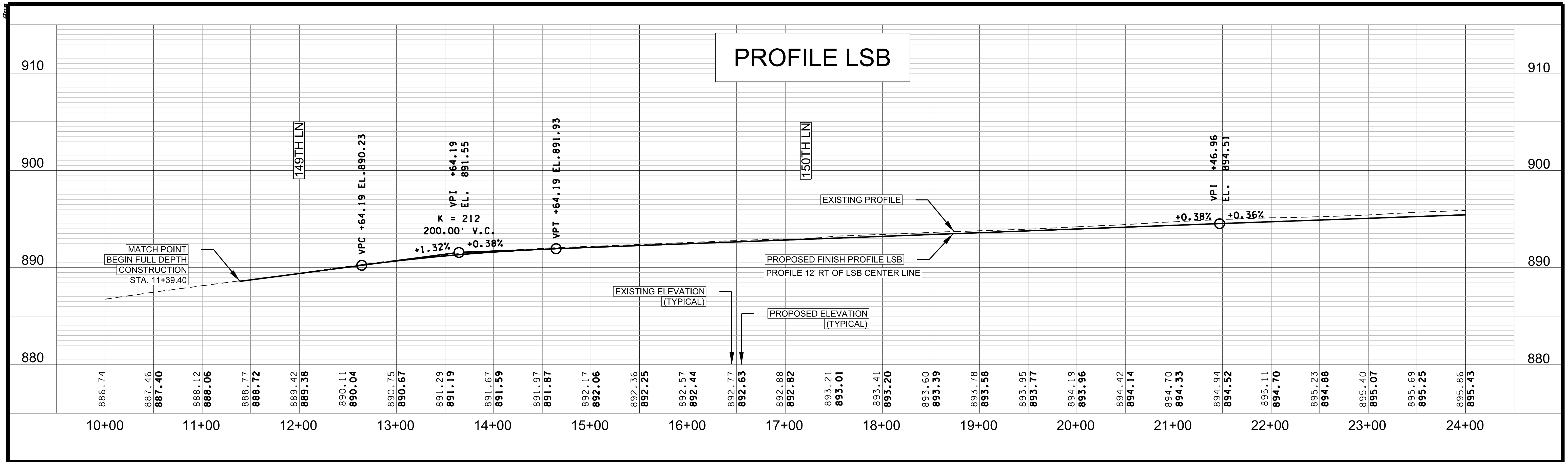
DRAWN BY JCF DATE 10/27/23
DESIGN BY JCF DATE 10/27/23
CHECKED BY NJD DATE 11/02/23

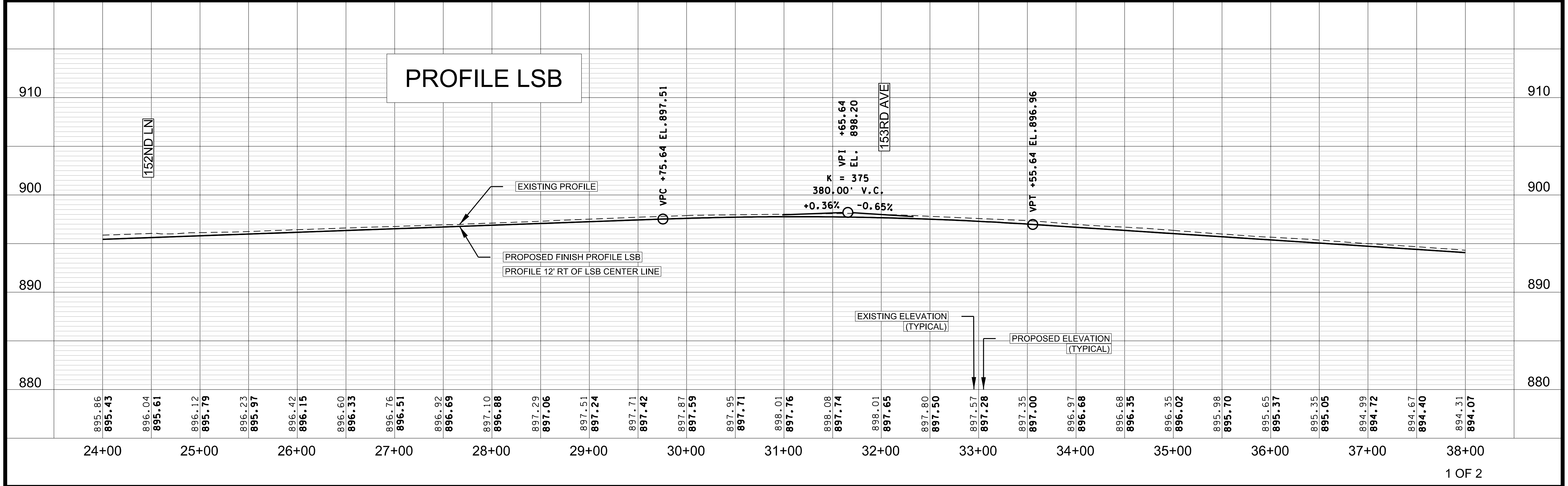
ANOKA COUNTY

ANOKA COUNTY
HIGHWAY DEPT.

SAP 002-609-022
SAP 198-020-039

CONSTRUCTION PLAN
154TH LN
STA 10+00 TO 13+72.98





1 OF 2

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-609-022\Plan\002609022 SBP1.dgn 10/25/2023 10:56:52 AM

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

PRINT NAME: NICHOLAS J DOBDA

SIGNATURE: NJ Dobda

DATE: 11/22/23 LICENSE NO. 49046

DRAWN BY JCF DATE 10/27/23

DESIGN BY JCF DATE 10/27/23

CHECKED BY NJD DATE 11/02/23

ANOKA COUNTY

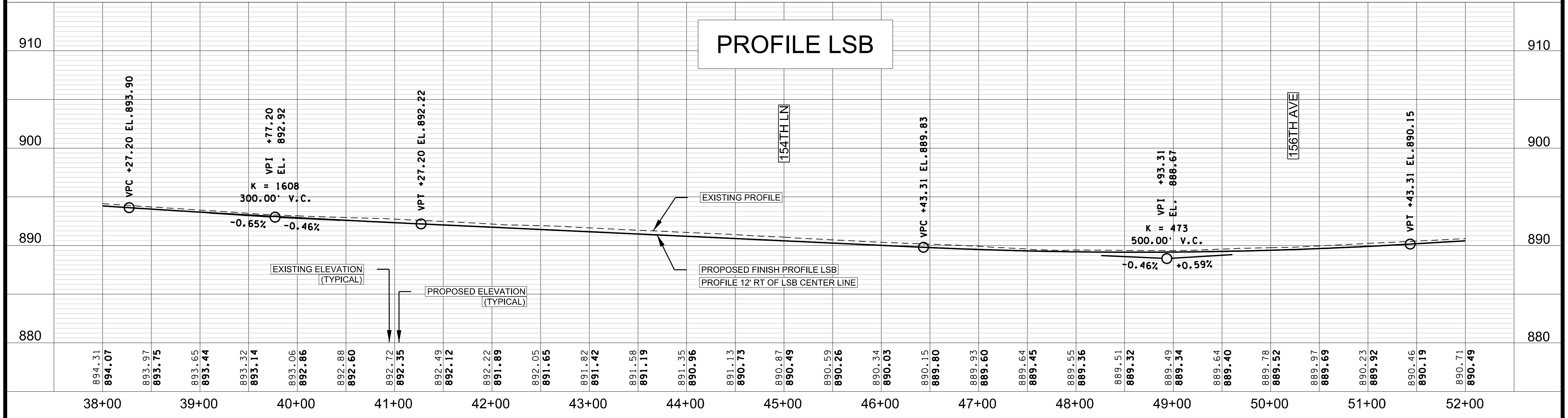
ANOKA COUNTY
HIGHWAY DEPT.

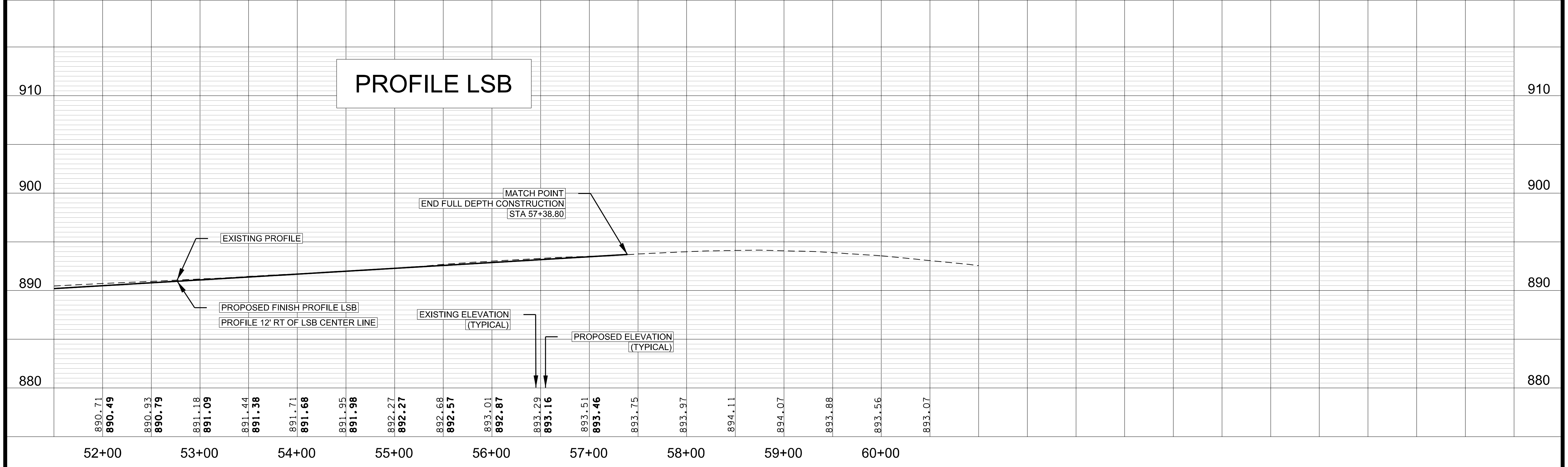
SAP 002-609-022
SAP 198-020-039

SB PROFILE

STA 10+00 TO 38+00

Sheet 68 of 167 Sheets





2 OF 2

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-609-022\Plan\002609022 SBP2.dgn 10/25/2023 10:56:52 AM

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

PRINT NAME: NICHOLAS J DOBDA
SIGNATURE: Nick Dobda
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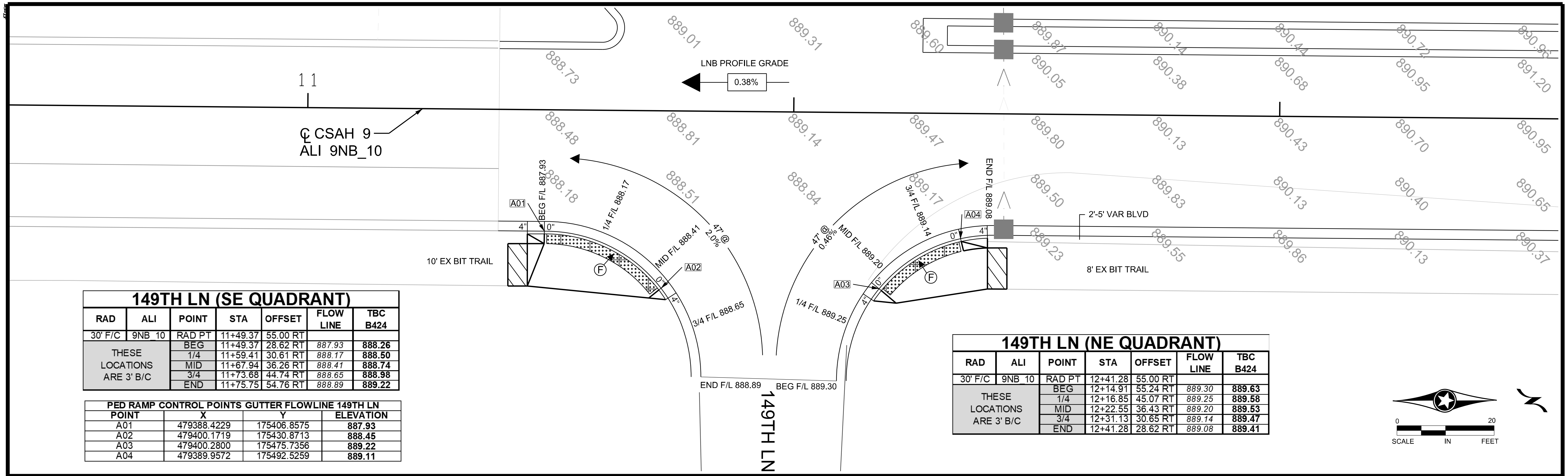
ANOKA COUNTY

ANOKA COUNTY
HIGHWAY DEPT.

SAP 002-609-022
SAP 198-020-039

SB PROFILE
STA 38+00 TO 57+38.80

Sheet 69 of 167 Sheets



149TH LN (SE QUADRANT)

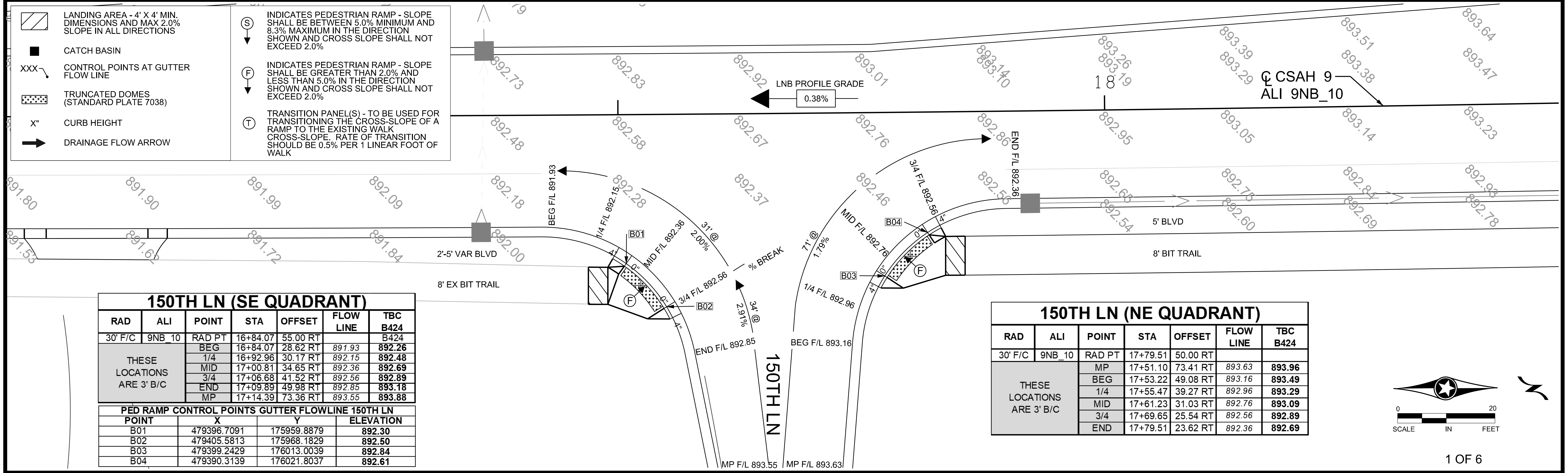
RAD	ALI	POINT	STA	OFFSET	FLOW LINE	TBC B424
30' F/C	9NB_10	RAD PT	11+49.37	55.00 RT		
THESE LOCATIONS ARE 3' B/C		BEG	11+49.37	28.62 RT	*887.93*	**888.26**
		1/4	11+59.41	30.61 RT	*888.17*	**888.50**
		MID	11+67.94	36.26 RT	*888.41*	**888.74**
		3/4	11+73.68	44.74 RT	*888.65*	**888.98**
		END	11+75.75	54.76 RT	*888.89*	**889.22**

PED RAMP CONTROL POINTS GUTTER FLOWLINE 149TH LN

POINT	X	Y	ELEVATION
A01	479388.4229	175406.8575	**887.93**
A02	479400.1719	175430.8713	**888.45**
A03	479400.2800	175475.7356	**889.22**
A04	479389.9572	175492.5259	**889.11**

149TH LN (NE QUADRANT)

RAD	ALI	POINT	STA	OFFSET	FLOW LINE	TBC B424
30' F/C	9NB_10	RAD PT	12+41.28	55.00 RT		
THESE LOCATIONS ARE 3' B/C		BEG	12+14.91	55.24 RT	*889.30*	**889.63**
		1/4	12+16.85	45.07 RT	*889.25*	**889.58**
		MID	12+22.55	36.43 RT	*889.20*	**889.53**
		3/4	12+31.13	30.65 RT	*889.14*	**889.47**
		END	12+41.28	28.62 RT	*889.08*	**889.41**



▨	LANDING AREA - 4' X 4' MIN. DIMENSIONS AND MAX 2.0% SLOPE IN ALL DIRECTIONS
■	CATCH BASIN
XXX	CONTROL POINTS AT GUTTER FLOW LINE
▦	TRUNCATED DOMES (STANDARD PLATE 7038)
X"	CURB HEIGHT
➡	DRAINAGE FLOW ARROW
Ⓢ	INDICATES PEDESTRIAN RAMP - SLOPE SHALL BE BETWEEN 5.0% MINIMUM AND 8.3% MAXIMUM IN THE DIRECTION SHOWN AND CROSS SLOPE SHALL NOT EXCEED 2.0%
Ⓕ	INDICATES PEDESTRIAN RAMP - SLOPE SHALL BE GREATER THAN 2.0% AND LESS THAN 5.0% IN THE DIRECTION SHOWN AND CROSS SLOPE SHALL NOT EXCEED 2.0%
Ⓣ	TRANSITION PANEL(S) - TO BE USED FOR TRANSITIONING THE CROSS-SLOPE OF A RAMP TO THE EXISTING WALK CROSS-SLOPE. RATE OF TRANSITION SHOULD BE 0.5% PER 1 LINEAR FOOT OF WALK

150TH LN (SE QUADRANT)

RAD	ALI	POINT	STA	OFFSET	FLOW LINE	TBC B424
30' F/C	9NB_10	RAD PT	16+84.07	55.00 RT		B424
THESE LOCATIONS ARE 3' B/C		BEG	16+84.07	28.62 RT	*891.93*	**892.26**
		1/4	16+92.96	30.17 RT	*892.15*	**892.48**
		MID	17+00.81	34.65 RT	*892.36*	**892.69**
		3/4	17+06.68	41.52 RT	*892.56*	**892.89**
		END	17+09.89	49.98 RT	*892.85*	**893.18**
		MP	17+14.39	73.36 RT	*893.55*	**893.88**

PED RAMP CONTROL POINTS GUTTER FLOWLINE 150TH LN

POINT	X	Y	ELEVATION
B01	479396.7091	175959.8879	**892.30**
B02	479405.5813	175968.1829	**892.50**
B03	479399.2429	176013.0039	**892.84**
B04	479390.3139	176021.8037	**892.61**

150TH LN (NE QUADRANT)

RAD	ALI	POINT	STA	OFFSET	FLOW LINE	TBC B424
30' F/C	9NB_10	RAD PT	17+79.51	50.00 RT		
THESE LOCATIONS ARE 3' B/C		MP	17+51.10	73.41 RT	*893.63*	**893.96**
		BEG	17+53.22	49.08 RT	*893.16*	**893.49**
		1/4	17+55.47	39.27 RT	*892.96*	**893.29**
		MID	17+61.23	31.03 RT	*892.76*	**893.09**
		3/4	17+69.65	25.54 RT	*892.56*	**892.89**
		END	17+79.51	23.62 RT	*892.36*	**892.69**

1 OF 6

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-609-022\Plan\002609022 ID1.dgn 11/17/2023 12:42:37 PM

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

PRINT NAME: NICHOLAS J DOBDA

SIGNATURE: Nick Dobda

DATE: 11/22/23

LICENSE NO. 49046

DRAWN BY JCF DATE 10/27/23

DESIGN BY JCF DATE 10/27/23

CHECKED BY NJD DATE 11/02/23

ANOKA COUNTY

ANOKA COUNTY
HIGHWAY DEPT.

SAP 002-609-022
SAP 198-020-039

INTERSECTION
GRADES,
RADIUS DETAILS

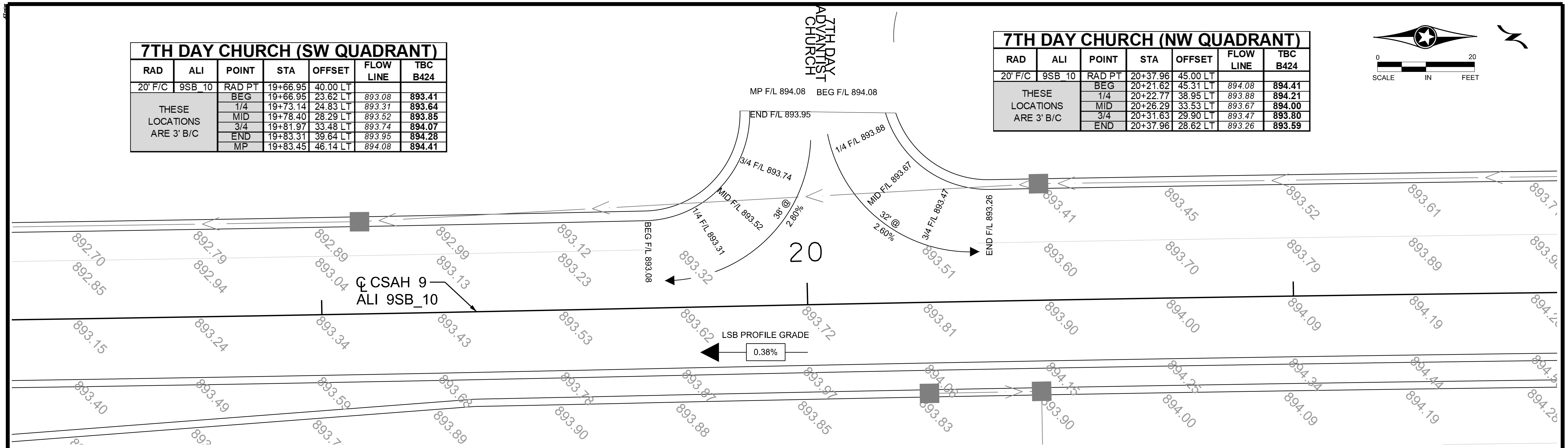
Sheet 70 of 167 Sheets

7TH DAY CHURCH (SW QUADRANT)

RAD	ALI	POINT	STA	OFFSET	FLOW LINE	TBC B424
20' F/C	9SB_10	RAD PT	19+66.95	40.00 LT		
THESE LOCATIONS ARE 3' B/C		BEG	19+66.95	23.62 LT	*893.08*	**893.41**
		1/4	19+73.14	24.83 LT	*893.31*	**893.64**
		MID	19+78.40	28.29 LT	*893.52*	**893.85**
		3/4	19+81.97	33.48 LT	*893.74*	**894.07**
		END	19+83.31	39.64 LT	*893.95*	**894.28**
		MP	19+83.45	46.14 LT	*894.08*	**894.41**

7TH DAY CHURCH (NW QUADRANT)

RAD	ALI	POINT	STA	OFFSET	FLOW LINE	TBC B424
20' F/C	9SB_10	RAD PT	20+37.96	45.00 LT		
THESE LOCATIONS ARE 3' B/C		BEG	20+21.62	45.31 LT	*894.08*	**894.41**
		1/4	20+22.77	38.95 LT	*893.88*	**894.21**
		MID	20+26.29	33.53 LT	*893.67*	**894.00**
		3/4	20+31.63	29.90 LT	*893.47*	**893.80**
		END	20+37.96	28.62 LT	*893.26*	**893.59**

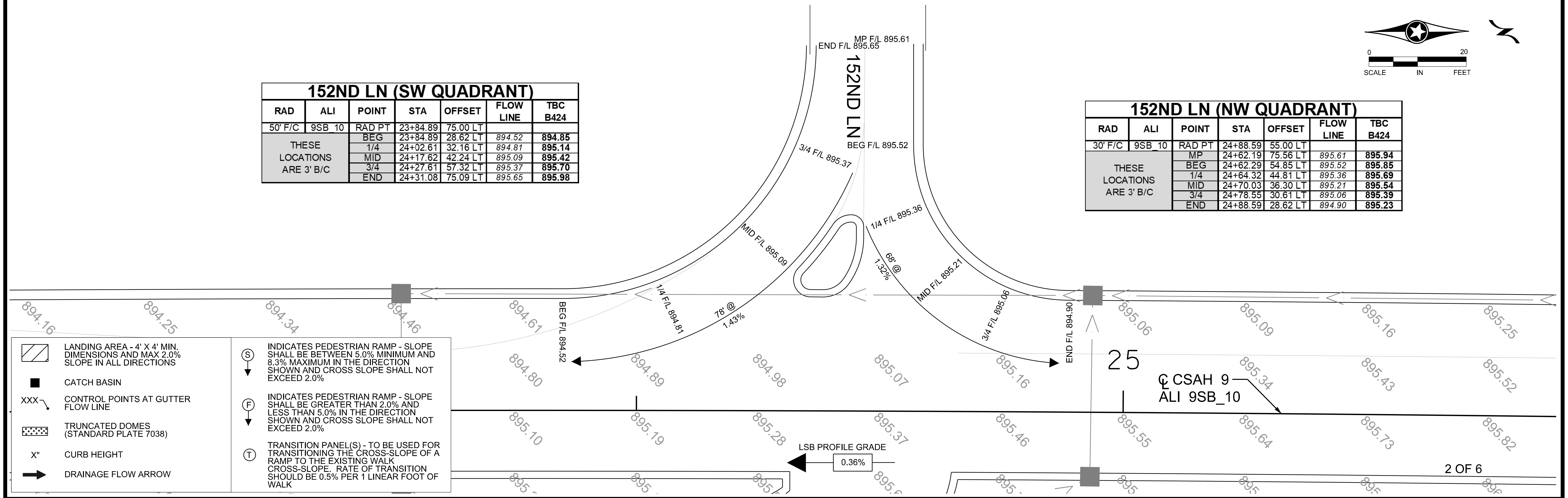


152ND LN (SW QUADRANT)

RAD	ALI	POINT	STA	OFFSET	FLOW LINE	TBC B424
50' F/C	9SB_10	RAD PT	23+84.89	75.00 LT		
THESE LOCATIONS ARE 3' B/C		BEG	23+84.89	28.62 LT	*894.52*	**894.85**
		1/4	24+02.61	32.16 LT	*894.81*	**895.14**
		MID	24+17.62	42.24 LT	*895.09*	**895.42**
		3/4	24+27.61	57.32 LT	*895.37*	**895.70**
		END	24+31.08	75.09 LT	*895.65*	**895.98**

152ND LN (NW QUADRANT)

RAD	ALI	POINT	STA	OFFSET	FLOW LINE	TBC B424
30' F/C	9SB_10	RAD PT	24+88.59	55.00 LT		
THESE LOCATIONS ARE 3' B/C		MP	24+62.19	75.56 LT	*895.61*	**895.94**
		BEG	24+62.29	54.85 LT	*895.52*	**895.85**
		1/4	24+64.32	44.81 LT	*895.36*	**895.69**
		MID	24+70.03	36.30 LT	*895.21*	**895.54**
		3/4	24+78.55	30.61 LT	*895.06*	**895.39**
		END	24+88.59	28.62 LT	*894.90*	**895.23**



▨	LANDING AREA - 4' X 4' MIN. DIMENSIONS AND MAX 2.0% SLOPE IN ALL DIRECTIONS
■	CATCH BASIN
XXX	CONTROL POINTS AT GUTTER FLOW LINE
⠿	TRUNCATED DOMES (STANDARD PLATE 7038)
X"	CURB HEIGHT
➡	DRAINAGE FLOW ARROW
Ⓢ	INDICATES PEDESTRIAN RAMP - SLOPE SHALL BE BETWEEN 5.0% MINIMUM AND 8.3% MAXIMUM IN THE DIRECTION SHOWN AND CROSS SLOPE SHALL NOT EXCEED 2.0%
Ⓕ	INDICATES PEDESTRIAN RAMP - SLOPE SHALL BE GREATER THAN 2.0% AND LESS THAN 5.0% IN THE DIRECTION SHOWN AND CROSS SLOPE SHALL NOT EXCEED 2.0%
Ⓣ	TRANSITION PANEL(S) - TO BE USED FOR TRANSITIONING THE CROSS-SLOPE OF A RAMP TO THE EXISTING WALK CROSS-SLOPE. RATE OF TRANSITION SHOULD BE 0.5% PER 1 LINEAR FOOT OF WALK

2 OF 6

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-609-022\Plan\002609022 ID2.dgn 11/17/2023 12:45:34 PM

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

PRINT NAME: NICHOLAS J DOBDA
SIGNATURE: Nick Dobda
DATE: 11/22/23 LICENSE NO. 49046

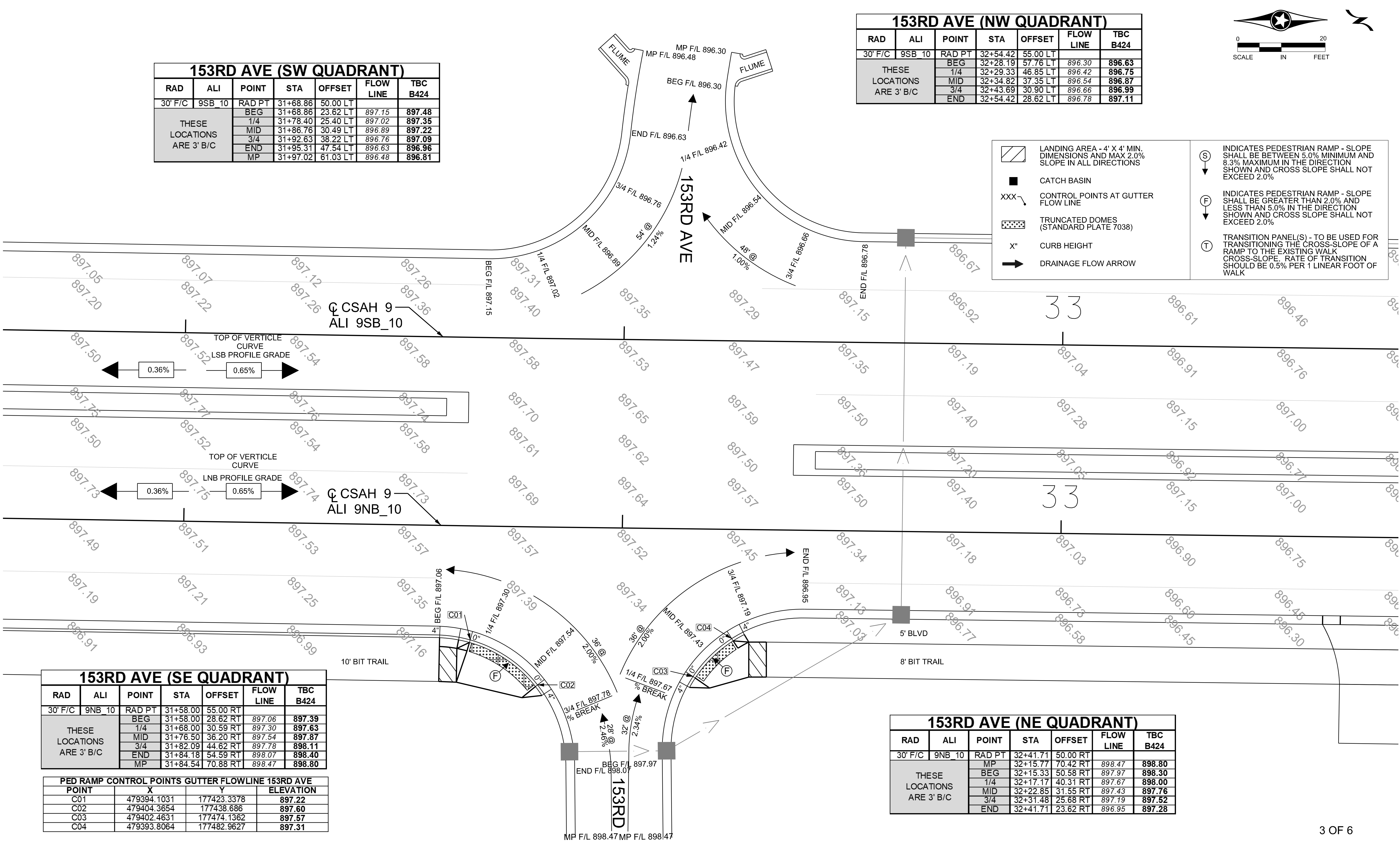
DRAWN BY JCF DATE 10/27/23
DESIGN BY JCF DATE 10/27/23
CHECKED BY NJD DATE 11/02/23

ANOKA COUNTY

ANOKA COUNTY
HIGHWAY DEPT.

SAP 002-609-022
SAP 198-020-039

INTERSECTION
GRADES,
RADIUS DETAILS



153RD AVE (SW QUADRANT)

RAD	ALI	POINT	STA	OFFSET	FLOW LINE	TBC B424
30' F/C	9SB_10	RAD PT	31+68.86	50.00 LT		
THESE LOCATIONS ARE 3' B/C		BEG	31+68.86	23.62 LT	*897.15*	**897.48**
		1/4	31+78.40	25.40 LT	*897.02*	**897.35**
		MID	31+86.76	30.49 LT	*896.89*	**897.22**
		3/4	31+92.63	38.22 LT	*896.76*	**897.09**
		END	31+95.31	47.54 LT	*896.63*	**896.96**
		MP	31+97.02	61.03 LT	*896.48*	**896.81**

153RD AVE (NW QUADRANT)

RAD	ALI	POINT	STA	OFFSET	FLOW LINE	TBC B424
30' F/C	9SB_10	RAD PT	32+54.42	55.00 LT		
THESE LOCATIONS ARE 3' B/C		BEG	32+28.19	57.76 LT	*896.30*	**896.63**
		1/4	32+29.33	46.85 LT	*896.42*	**896.75**
		MID	32+34.82	37.35 LT	*896.54*	**896.87**
		3/4	32+43.69	30.90 LT	*896.66*	**896.99**
		END	32+54.42	28.62 LT	*896.78*	**897.11**

▨	LANDING AREA - 4' X 4' MIN. DIMENSIONS AND MAX 2.0% SLOPE IN ALL DIRECTIONS
■	CATCH BASIN
XXX	CONTROL POINTS AT GUTTER FLOW LINE
⁘	TRUNCATED DOMES (STANDARD PLATE 7038)
X"	CURB HEIGHT
➡	DRAINAGE FLOW ARROW
Ⓢ	INDICATES PEDESTRIAN RAMP - SLOPE SHALL BE BETWEEN 5.0% MINIMUM AND 8.3% MAXIMUM IN THE DIRECTION SHOWN AND CROSS SLOPE SHALL NOT EXCEED 2.0%
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153RD AVE (SE QUADRANT)

RAD	ALI	POINT	STA	OFFSET	FLOW LINE	TBC B424
30' F/C	9NB_10	RAD PT	31+58.00	55.00 RT		
THESE LOCATIONS ARE 3' B/C		BEG	31+58.00	28.62 RT	*897.06*	**897.39**
		1/4	31+68.00	30.59 RT	*897.30*	**897.63**
		MID	31+76.50	36.20 RT	*897.54*	**897.87**
		3/4	31+82.09	44.62 RT	*897.78*	**898.11**
		END	31+84.18	54.59 RT	*898.07*	**898.40**
		MP	31+84.54	70.88 RT	*898.47*	**898.80**

PED RAMP CONTROL POINTS GUTTER FLOWLINE 153RD AVE

POINT	X	Y	ELEVATION
C01	479394.1031	177423.3378	**897.22**
C02	479404.3654	177438.686	**897.60**
C03	479402.4631	177474.1362	**897.57**
C04	479393.8064	177482.9627	**897.31**

153RD AVE (NE QUADRANT)

RAD	ALI	POINT	STA	OFFSET	FLOW LINE	TBC B424
30' F/C	9NB_10	RAD PT	32+41.71	50.00 RT		
THESE LOCATIONS ARE 3' B/C		MP	32+15.77	70.42 RT	*898.47*	**898.80**
		BEG	32+15.33	50.58 RT	*897.97*	**898.30**
		1/4	32+17.17	40.31 RT	*897.67*	**898.00**
		MID	32+22.85	31.55 RT	*897.43*	**897.76**
		3/4	32+31.48	25.68 RT	*897.19*	**897.52**
		END	32+41.71	23.62 RT	*896.95*	**897.28**

3 OF 6

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-609-022\Plan\002609022 ID3.dgn 11/17/2023 12:48:03 PM

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

PRINT NAME: NICHOLAS J DOBDA
SIGNATURE: Nick Dobda
DATE: 11/22/23 LICENSE NO. 49046

DRAWN BY JCF DATE 10/27/23
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CHECKED BY NJD DATE 11/02/23

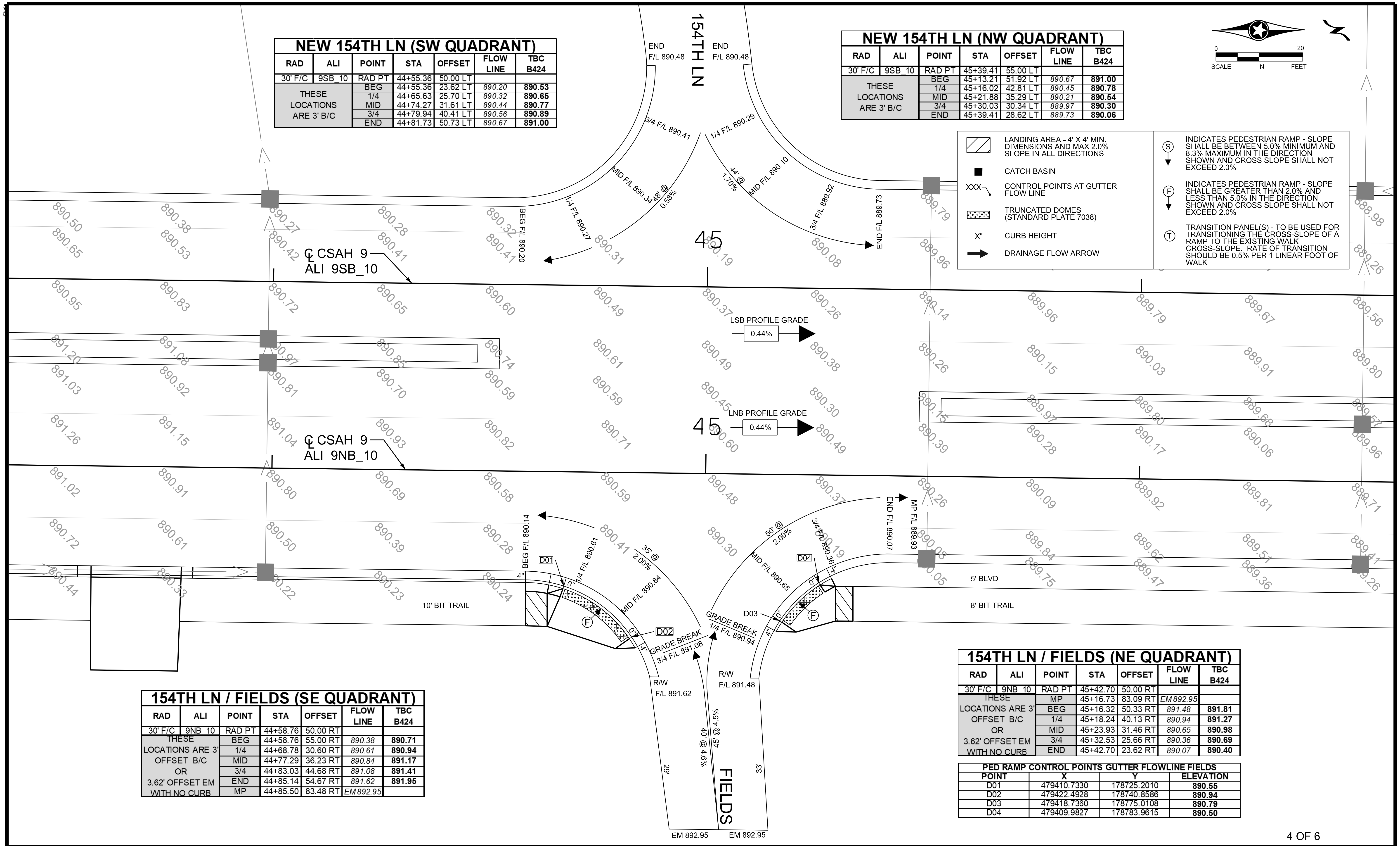
ANOKA COUNTY

ANOKA COUNTY
HIGHWAY DEPT.

SAP 002-609-022
SAP 198-020-039

INTERSECTION
GRADES,
RADIUS DETAILS

Sheet 72 of 167 Sheets



NEW 154TH LN (SW QUADRANT)

RAD	ALI	POINT	STA	OFFSET	FLOW LINE	TBC B424
30' F/C	9SB_10	RAD PT	44+55.36	50.00 LT		
THESE LOCATIONS ARE 3' B/C		BEG	44+55.36	23.62 LT	*890.20*	**890.53**
		1/4	44+65.63	25.70 LT	*890.32*	**890.65**
		MID	44+74.27	31.61 LT	*890.44*	**890.77**
		3/4	44+79.94	40.41 LT	*890.56*	**890.89**
		END	44+81.73	50.73 LT	*890.67*	**891.00**

NEW 154TH LN (NW QUADRANT)

RAD	ALI	POINT	STA	OFFSET	FLOW LINE	TBC B424
30' F/C	9SB_10	RAD PT	45+39.41	55.00 LT		
THESE LOCATIONS ARE 3' B/C		BEG	45+13.21	51.92 LT	*890.67*	**891.00**
		1/4	45+16.02	42.81 LT	*890.45*	**890.78**
		MID	45+21.88	35.29 LT	*890.21*	**890.54**
		3/4	45+30.03	30.34 LT	*889.97*	**890.30**
		END	45+39.41	28.62 LT	*889.73*	**890.06**

▨	LANDING AREA - 4' X 4' MIN. DIMENSIONS AND MAX 2.0% SLOPE IN ALL DIRECTIONS
■	CATCH BASIN
XXX	CONTROL POINTS AT GUTTER FLOW LINE
▒	TRUNCATED DOMES (STANDARD PLATE 7038)
X"	CURB HEIGHT
➡	DRAINAGE FLOW ARROW
Ⓢ ↓	INDICATES PEDESTRIAN RAMP - SLOPE SHALL BE BETWEEN 5.0% MINIMUM AND 8.3% MAXIMUM IN THE DIRECTION SHOWN AND CROSS SLOPE SHALL NOT EXCEED 2.0%
Ⓕ ↓	INDICATES PEDESTRIAN RAMP - SLOPE SHALL BE GREATER THAN 2.0% AND LESS THAN 5.0% IN THE DIRECTION SHOWN AND CROSS SLOPE SHALL NOT EXCEED 2.0%
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154TH LN / FIELDS (SE QUADRANT)

RAD	ALI	POINT	STA	OFFSET	FLOW LINE	TBC B424
30' F/C	9NB 10	RAD PT	44+58.76	50.00 RT		
THESE LOCATIONS ARE 3' OFFSET B/C OR 3.62' OFFSET EM WITH NO CURB		BEG	44+58.76	55.00 RT	*890.38*	**890.71**
		1/4	44+68.78	30.60 RT	*890.61*	**890.94**
		MID	44+77.29	36.23 RT	*890.84*	**891.17**
		3/4	44+83.03	44.68 RT	*891.08*	**891.41**
		END	44+85.14	54.67 RT	*891.62*	**891.95**
		MP	44+85.50	83.48 RT	*EM 892.95*	

154TH LN / FIELDS (NE QUADRANT)

RAD	ALI	POINT	STA	OFFSET	FLOW LINE	TBC B424
30' F/C	9NB 10	RAD PT	45+42.70	50.00 RT		
THESE LOCATIONS ARE 3' OFFSET B/C OR 3.62' OFFSET EM WITH NO CURB		MP	45+16.73	83.09 RT	*EM 892.95*	
		BEG	45+16.32	50.33 RT	*891.48*	**891.81**
		1/4	45+18.24	40.13 RT	*890.94*	**891.27**
		MID	45+23.93	31.46 RT	*890.65*	**890.98**
		3/4	45+32.53	25.66 RT	*890.36*	**890.69**
		END	45+42.70	23.62 RT	*890.07*	**890.40**

PED RAMP CONTROL POINTS GUTTER FLOWLINE FIELDS

POINT	X	Y	ELEVATION
D01	479410.7330	178725.2010	**890.55**
D02	479422.4928	178740.8586	**890.94**
D03	479418.7360	178775.0108	**890.79**
D04	479409.9827	178783.9615	**890.50**

4 OF 6

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-609-022\Plan\002609022 ID4.dgn 11/17/2023 12:50:04 PM

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

PRINT NAME: NICHOLAS J DOBDA
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DRAWN BY JCF DATE 10/27/23
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ANOKA COUNTY

ANOKA COUNTY
HIGHWAY DEPT.

SAP 002-609-022
SAP 198-020-039

INTERSECTION GRADES,
RADIUS DETAILS

Sheet 73 of 167 Sheets

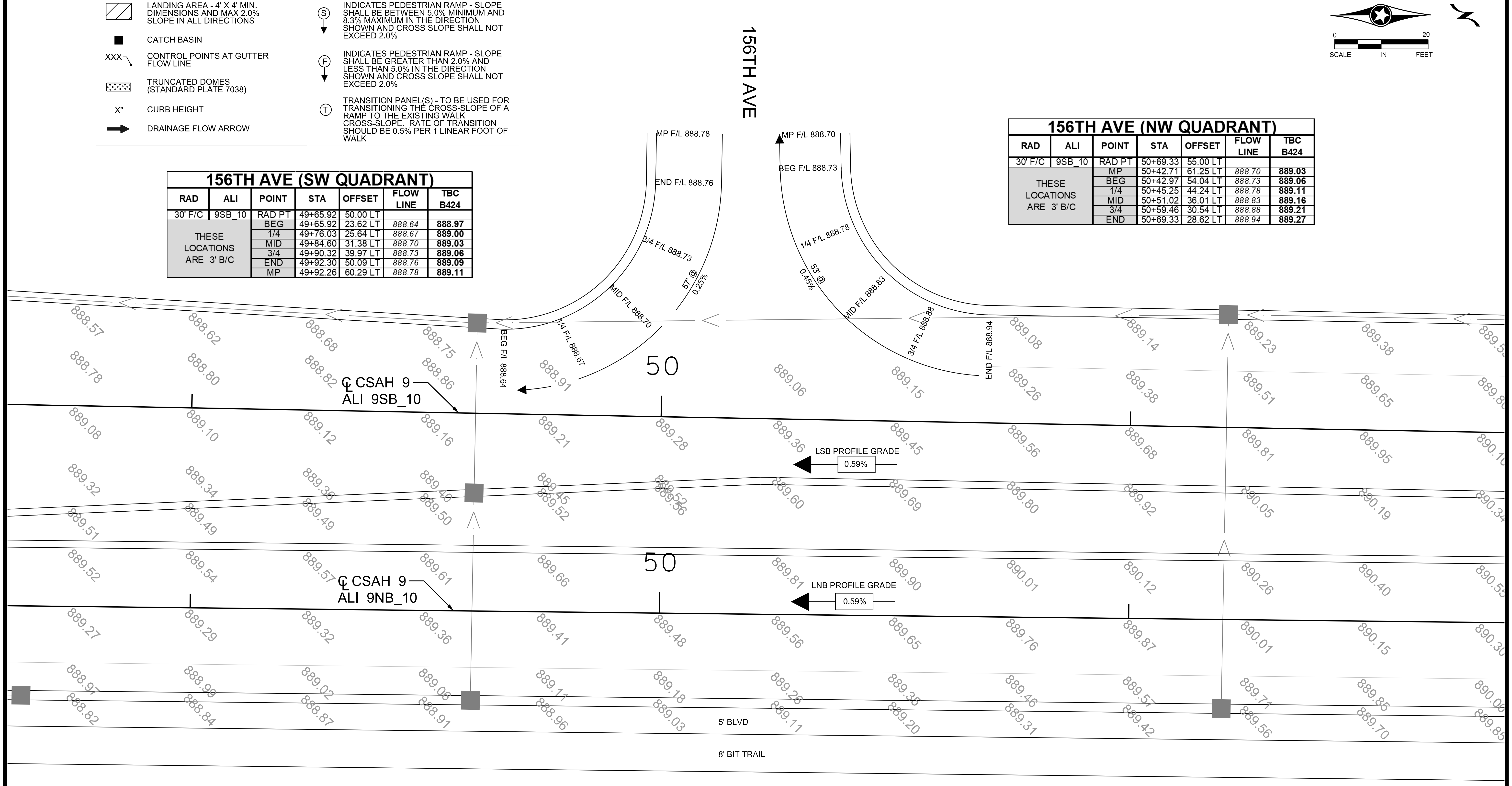
▨	LANDING AREA - 4' X 4' MIN. DIMENSIONS AND MAX 2.0% SLOPE IN ALL DIRECTIONS
■	CATCH BASIN
XXX	CONTROL POINTS AT GUTTER FLOW LINE
▩	TRUNCATED DOMES (STANDARD PLATE 7038)
X"	CURB HEIGHT
➡	DRAINAGE FLOW ARROW
Ⓢ	INDICATES PEDESTRIAN RAMP - SLOPE SHALL BE BETWEEN 5.0% MINIMUM AND 8.3% MAXIMUM IN THE DIRECTION SHOWN AND CROSS SLOPE SHALL NOT EXCEED 2.0%
Ⓕ	INDICATES PEDESTRIAN RAMP - SLOPE SHALL BE GREATER THAN 2.0% AND LESS THAN 5.0% IN THE DIRECTION SHOWN AND CROSS SLOPE SHALL NOT EXCEED 2.0%
Ⓣ	TRANSITION PANEL(S) - TO BE USED FOR TRANSITIONING THE CROSS-SLOPE OF A RAMP TO THE EXISTING WALK CROSS-SLOPE. RATE OF TRANSITION SHOULD BE 0.5% PER 1 LINEAR FOOT OF WALK

156TH AVE (SW QUADRANT)

RAD	ALI	POINT	STA	OFFSET	FLOW LINE	TBC B424
30' F/C	9SB_10	RAD PT	49+65.92	50.00 LT		
THESE LOCATIONS ARE 3' B/C		BEG	49+65.92	23.62 LT	*888.64*	**888.97**
		1/4	49+76.03	25.64 LT	*888.67*	**889.00**
		MID	49+84.60	31.38 LT	*888.70*	**889.03**
		3/4	49+90.32	39.97 LT	*888.73*	**889.06**
		END	49+92.30	50.09 LT	*888.76*	**889.09**
		MP	49+92.26	60.29 LT	*888.78*	**889.11**

156TH AVE (NW QUADRANT)

RAD	ALI	POINT	STA	OFFSET	FLOW LINE	TBC B424
30' F/C	9SB_10	RAD PT	50+69.33	55.00 LT		
THESE LOCATIONS ARE 3' B/C		MP	50+42.71	61.25 LT	*888.70*	**889.03**
		BEG	50+42.97	54.04 LT	*888.73*	**889.06**
		1/4	50+45.25	44.24 LT	*888.78*	**889.11**
		MID	50+51.02	36.01 LT	*888.83*	**889.16**
		3/4	50+59.46	30.54 LT	*888.88*	**889.21**
		END	50+69.33	28.62 LT	*888.94*	**889.27**



5 OF 6

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-609-022\Plan\002609022 ID5.dgn 11/17/2023 12:51:23 PM

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

PRINT NAME: NICHOLAS J DOBDA

SIGNATURE: Nich Dobda

DATE: 11/22/23 LICENSE NO. 49046

DRAWN BY JCF DATE 10/27/23
DESIGN BY JCF DATE 10/27/23
CHECKED BY NJD DATE 11/02/23

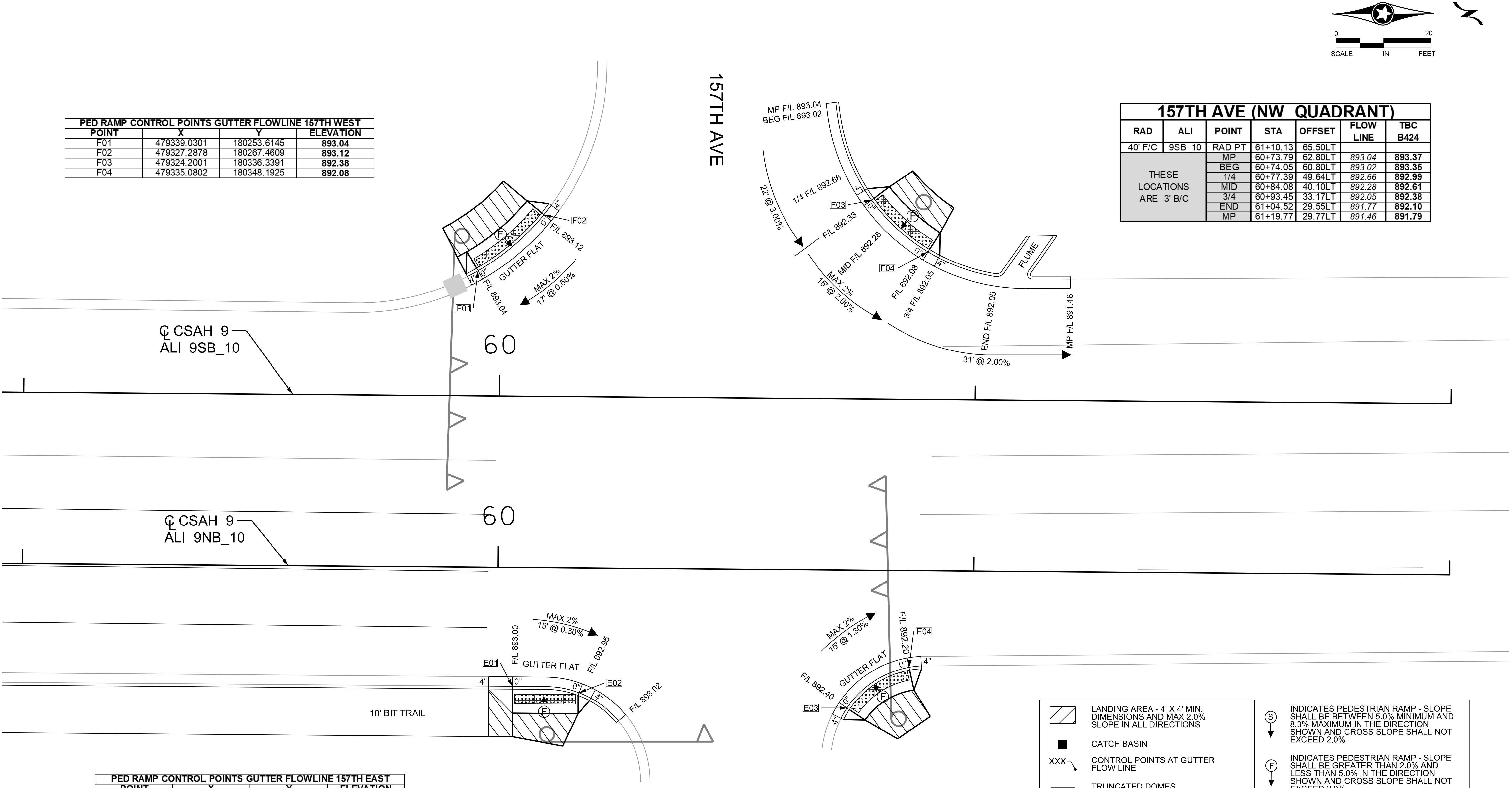
ANOKA COUNTY

ANOKA COUNTY
HIGHWAY DEPT.

SAP 002-609-022
SAP 198-020-039

INTERSECTION
GRADES,
RADIUS DETAILS

Sheet 74 of 167 Sheets



PED RAMP CONTROL POINTS GUTTER FLOWLINE 157TH WEST			
POINT	**X**	**Y**	**ELEVATION**
F01	479339.0301	180253.6145	**893.04**
F02	479327.2878	180267.4609	**893.12**
F03	479324.2001	180336.3391	**892.38**
F04	479335.0802	180348.1925	**892.08**

157TH AVE (NW QUADRANT)						
RAD	**ALI**	**POINT**	**STA**	**OFFSET**	**FLOW LINE**	**TBC B424**
40' F/C	9SB_10	RAD PT	61+10.13	65.50LT		
THESE LOCATIONS ARE 3' B/C		MP	60+73.79	62.80LT	*893.04*	**893.37**
		BEG	60+74.05	60.80LT	*893.02*	**893.35**
		1/4	60+77.39	49.64LT	*892.66*	**892.99**
		MID	60+84.08	40.10LT	*892.28*	**892.61**
		3/4	60+93.45	33.17LT	*892.05*	**892.38**
		END	61+04.52	29.55LT	*891.77*	**892.10**
		MP	61+19.77	29.77LT	*891.46*	**891.79**

PED RAMP CONTROL POINTS GUTTER FLOWLINE 157TH EAST			
POINT	**X**	**Y**	**ELEVATION**
E01	479426.4225	180260.8379	**893.00**
E02	479427.7806	180274.8773	**892.95**
E03	479430.9740	180331.1650	**892.40**
E04	479422.4334	180344.1956	**892.20**

▨	LANDING AREA - 4' X 4' MIN. DIMENSIONS AND MAX 2.0% SLOPE IN ALL DIRECTIONS	Ⓢ↓	INDICATES PEDESTRIAN RAMP - SLOPE SHALL BE BETWEEN 5.0% MINIMUM AND 8.3% MAXIMUM IN THE DIRECTION SHOWN AND CROSS SLOPE SHALL NOT EXCEED 2.0%
■	CATCH BASIN		
XXX↘	CONTROL POINTS AT GUTTER FLOW LINE	Ⓕ↓	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%
⁘	TRUNCATED DOMES (STANDARD PLATE 7038)		
X"	CURB HEIGHT	Ⓣ	TRANSITION PANEL(S) - TO BE USED FOR TRANSITIONING THE CROSS-SLOPE OF A RAMP TO THE EXISTING WALK CROSS-SLOPE. RATE OF TRANSITION SHOULD BE 0.5% PER 1 LINEAR FOOT OF WALK
➡	DRAINAGE FLOW ARROW		

6 OF 6

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-609-022\Plan\002609022 ID6.dgn 11/17/2023 12:53:19 PM

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

PRINT NAME: NICHOLAS J DOBDA
SIGNATURE: Nick Dobda
DATE: 11/22/23 LICENSE NO. 49046

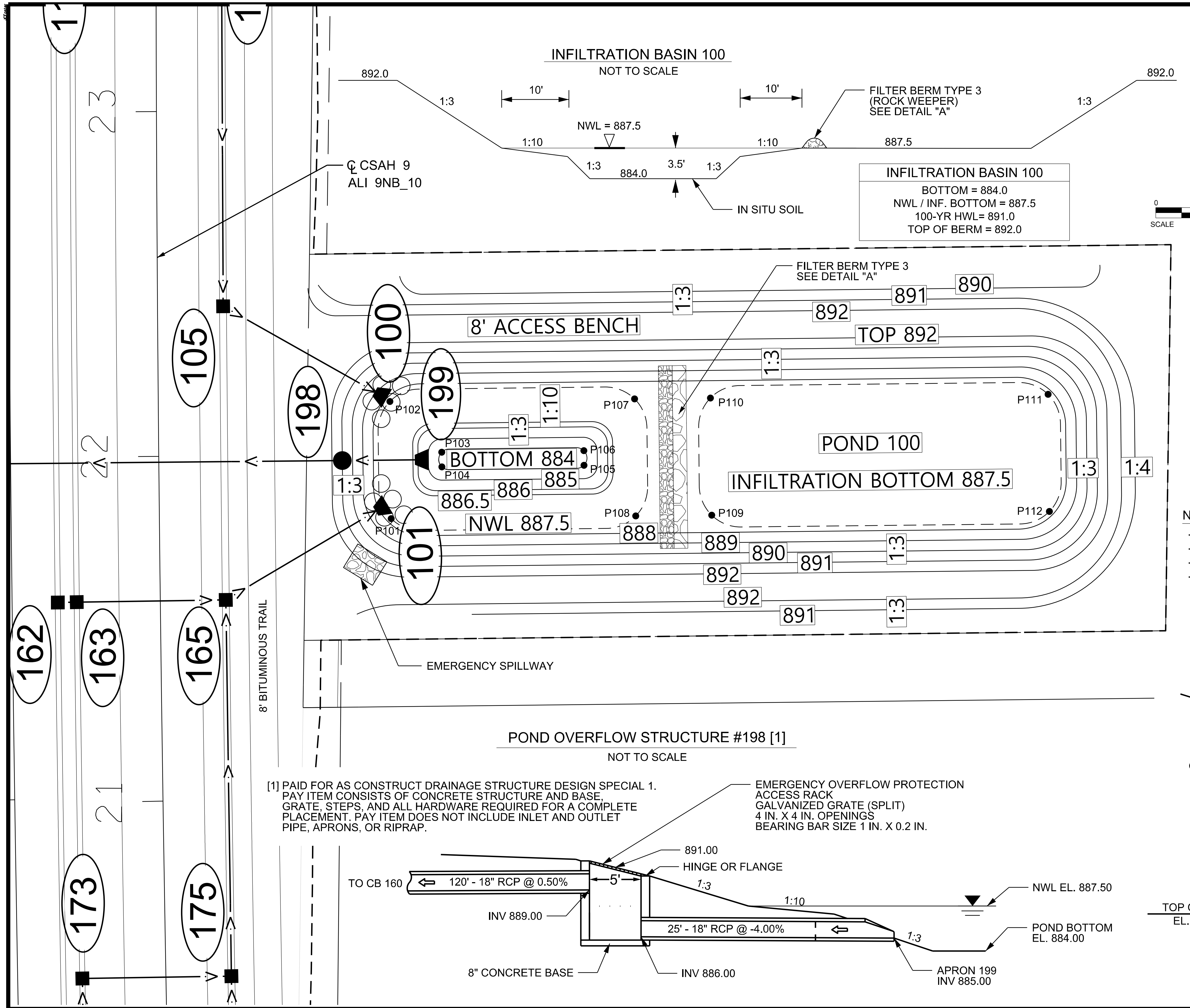
DRAWN BY JCF DATE 10/27/23
DESIGN BY JCF DATE 10/27/23
CHECKED BY NJD DATE 11/02/23

ANOKA COUNTY
HIGHWAY DEPT.

SAP 002-609-022
SAP 198-020-039

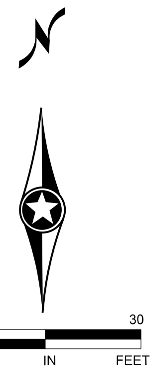
INTERSECTION
GRADES,
RADIUS DETAILS

JCFoster



INFILTRATION BASIN 100
BOTTOM = 884.0
NWL / INF. BOTTOM = 887.5
100-YR HWL= 891.0
TOP OF BERM = 892.0

[1] PAID FOR AS CONSTRUCT DRAINAGE STRUCTURE DESIGN SPECIAL 1. PAY ITEM CONSISTS OF CONCRETE STRUCTURE AND BASE, GRATE, STEPS, AND ALL HARDWARE REQUIRED FOR A COMPLETE PLACEMENT. PAY ITEM DOES NOT INCLUDE INLET AND OUTLET PIPE, APRONS, OR RIPRAP.



INFILTRATION BASIN 100 STAKING POINTS					
POINT	ALIGN <9NB_10>	OFFSET (RT)	X	Y	ELEVATION
	STATION	LIN FT			
P101	21+81.24	67.3	479425.97	176440.07	887.5
P102	22+15.34	67.2	479425.60	176474.04	887.5
P103	22+00.44	82.1	479440.63	176459.33	884.0
P104	21+96.17	82.1	479440.68	176455.09	884.0
P105	21+96.22	123.4	479481.91	176455.54	884.0
P106	22+00.49	123.4	479481.87	176459.78	884.0
P107	22+15.48	138.2	479496.57	176474.80	887.5
P108	21+81.25	138.2	479496.94	176440.84	887.5
P109	21+81.26	160.3	479518.96	176441.07	887.5
P110	22+15.53	160.2	479518.60	176475.04	887.5
P111	22+15.74	258.2	479616.56	176476.10	887.5
P112	21+81.28	258.2	479616.93	176442.14	887.5

MINIMIZE COMPACTION IN THIS AREA.
ONCE POND GRADING IS COMPLETED, CONTRACTOR SHALL INSTALL SILT FENCE AROUND POND AND KEEP ALL EQUIPMENT OUT OF POND.

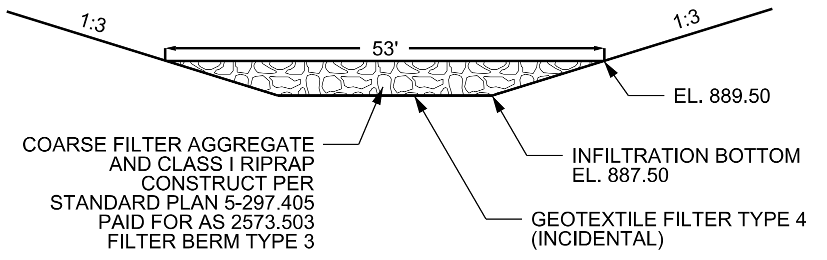
A POST CONSTRUCTION TEST WILL BE CONDUCTED BY FILLING THE BASIN TO A MINIMUM DEPTH OF 6 INCHES WITH WATER AND MONITORING THE TIME NECESSARY TO DRAIN, OR MULTIPLE DOUBLE RING INFILTRATION TESTS TO ASTM STANDARDS. THE COON CREEK WATERSHED DISTRICT SHALL BE NOTIFIED PRIOR TO THE TEST TO WITNESS THE RESULTS.

NOTES:

- CONTOURS ARE SHOWN TO FINISHED GRADE.
- GEOTEXTILE FILTER FOR EMERGENCY SPILLWAY IS INCIDENTAL.
- SEE MnDOT STANDARD PLATE #3133 FOR RIPRAP AT RCP OUTLET DETAILS.
- PIPE LENGTHS SHOWN IN DETAILS INCLUDE APRON LENGTH.

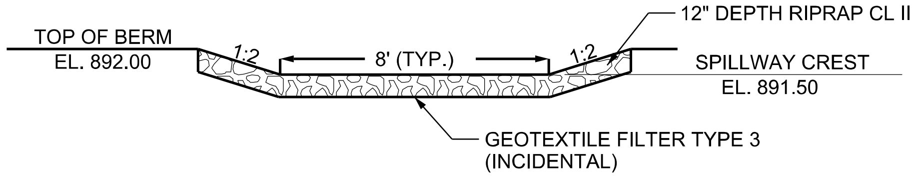
DETAIL "A"
FILTER BERM TYPE 3 (ROCK WEEPER)

NOT TO SCALE



DETAIL "B"
EMERGENCY SPILLWAY DETAIL

NOT TO SCALE



1 OF 2

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-609-022\Plan\002609022 PD100.dgn 11/20/2023 2:07:44 PM

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

PRINT NAME: NICHOLAS J DOBDA
SIGNATURE: Nick Dobda
DATE: 11/22/23 LICENSE NO. 49046

DRAWN BY MP DATE 10/27/23
DESIGN BY MP DATE 10/27/23
CHECKED BY NJD DATE 11/02/23

ANOKA COUNTY
HIGHWAY DEPT.

SAP 002-609-022
SAP 198-020-039

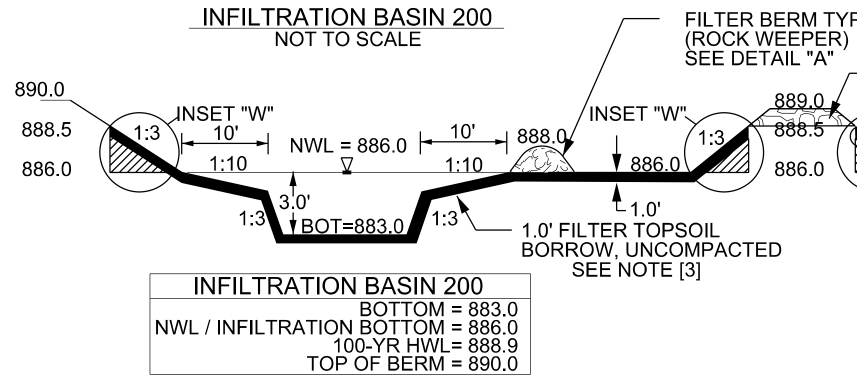
INFILTRATION BASIN 100
GRADING AND DETAILS

Sheet 76 of 167 Sheets

JCFoster

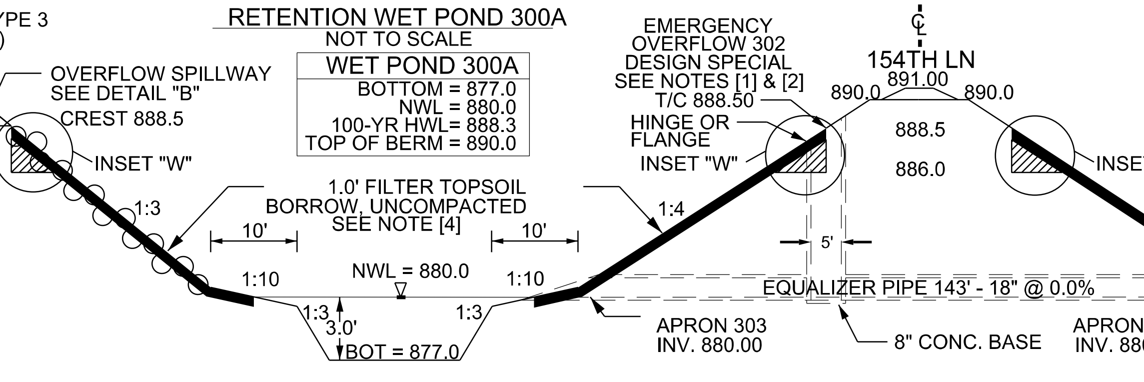
INFILTRATION BASIN 200

NOT TO SCALE



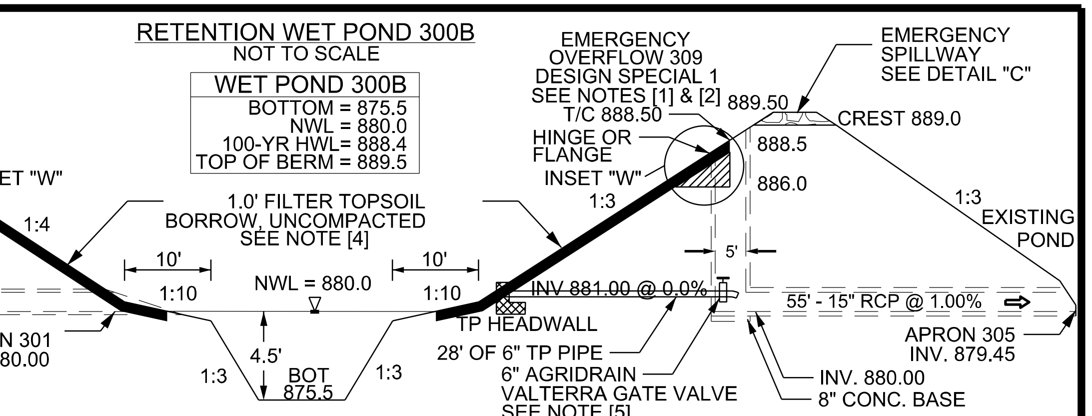
RETENTION WET POND 300A

NOT TO SCALE



RETENTION WET POND 300B

NOT TO SCALE



[1] PAID FOR AS CONSTRUCT DRAINAGE STRUCTURE DESIGN SPECIAL 1. PAY ITEM CONSISTS OF CONCRETE STRUCTURE AND BASE, GRATE, STEPS, AND ALL HARDWARE REQUIRED FOR A COMPLETE PLACEMENT. PAY ITEM DOES NOT INCLUDE INLET AND OUTLET PIPE, APRONS, OR RIPRAP.

[2] EMERGENCY OVERFLOW PROTECTION
ACCESS RACK GALVANIZED GRATE (SPLIT)
4 IN. X 4 IN. OPENINGS, BEARING BAR SIZE 1 IN. X 0.2 IN.

INFILTRATION BASIN 200 STAKING POINTS

POINT	ALIGN <9SB_10> STATION	OFFSET (LT) LIN FT	X	Y	ELEVATION
P201	42+83.45	53.3	479285.78	178542.44	886.0
P202	42+51.07	54.6	479284.12	178510.09	886.0
P203	42+67.05	68.3	479270.62	178526.24	883.0
P204	42+71.23	67.5	479271.42	178530.40	883.0
P205	42+78.49	101.9	479237.19	178538.09	883.0
P206	42+80.07	111.7	479227.38	178539.79	883.0
P207	42+75.97	112.8	479226.22	178535.71	883.0
P208	42+72.64	103.2	479235.80	178532.26	883.0
P209	42+58.24	111.8	479227.02	178517.97	886.0
P210	42+67.31	131.1	479207.81	178527.28	886.0
P211	42+97.46	120.0	479219.34	178557.29	886.0
P212	43+03.53	134.0	479205.38	178563.53	886.0
P213	42+73.74	146.2	479192.78	178533.90	886.0
P214	43+19.00	214.2	479125.35	178580.00	886.0
P215	43+46.62	207.6	479132.36	178607.53	886.0

[3] POND 200, ENTIRE POND OVER-EXCAVATED 1.0' AND REPLACED WITH FILTER TOPSOIL BORROW, UNCOMPACTED

[4] PONDS 300A & 300B, SLOPES OVER-EXCAVATED 1.0' AND REPLACED WITH FILTER TOPSOIL BORROW FROM ELEV. 880.0 TO 888.5, UNCOMPACTED

WET POND 300A STAKING POINTS

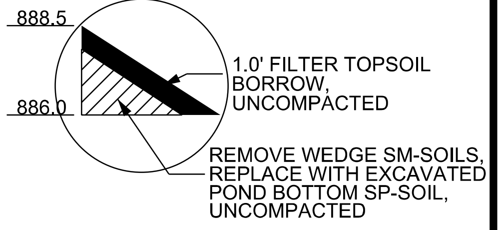
POINT	ALIGN <9SB_10> STATION	OFFSET (LT) LIN FT	X	Y	ELEVATION
P216	43+65.19	141.7	479198.41	178625.29	880.5
P217	43+65.85	115.9	479224.23	178625.62	877.0
P218	43+82.49	91.6	479248.78	178641.96	877.0
P219	43+55.04	91.3	479248.69	178614.51	877.0
P220	43+58.86	104.3	479235.79	178618.49	887.0
P221	43+40.85	106.5	479233.38	178600.51	880.5
P222	43+36.63	76.4	479263.35	178595.91	880.5
P223	44+01.58	81.6	479258.95	178660.92	880.5

[5] HEADWALL, TP PIPE AND GATE VALVE INSTALLED AS EMERGENCY TRICKLE DRAIN 1.0' ABOVE NWL. GATE VALVE TO BE INSTALLED INSIDE OVERFLOW 309. OVERFLOW 309 TO HAVE 6" HOLE PREPARED IN STRUCTURE 180 DEG FROM OUTLET PIPE TO APRON 305, AT ELEV 881.00

WET POND 300B STAKING POINTS

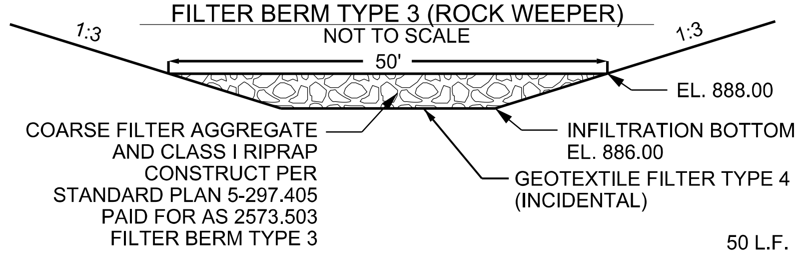
POINT	ALIGN <9SB_10> STATION	OFFSET (LT) LIN FT	X	Y	ELEVATION
P301	45+76.87	76.6	479266.21	178836.14	880.5
P302	45+74.51	118.9	479223.87	178834.31	880.5
P303	45+91.70	104.3	479238.67	178851.31	875.5
P304	45+92.92	95.5	479247.50	178852.42	875.5
P305	46+70.33	95.6	479248.36	178929.83	875.5
P306	46+70.33	104.4	479239.53	178929.94	875.5
P307	46+88.23	122.3	479221.85	178948.06	880.5
P308	46+88.23	77.7	479266.48	178947.50	880.5

INSET "W"



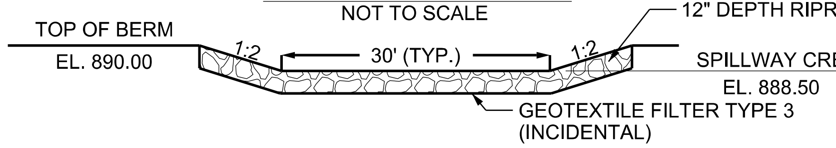
DETAIL "A"
FILTER BERM TYPE 3 (ROCK WEEPER)

NOT TO SCALE



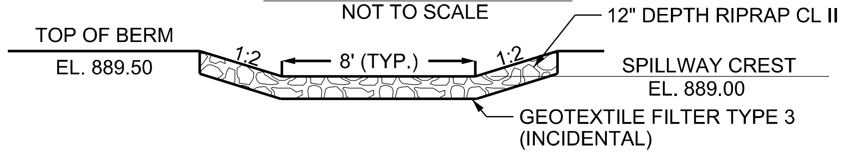
DETAIL "B"
OVERFLOW SPILLWAY

NOT TO SCALE



DETAIL "C"
EMERGENCY SPILLWAY

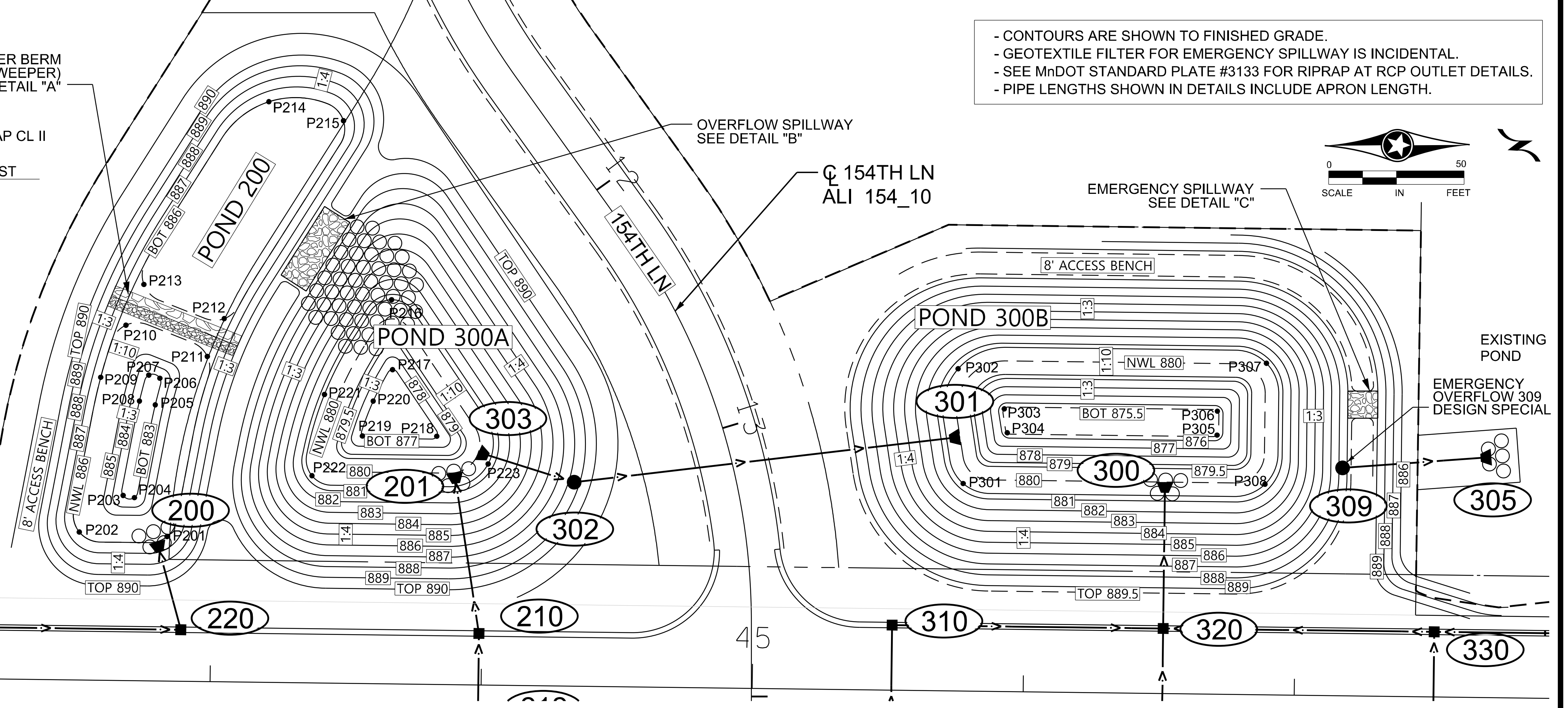
NOT TO SCALE



MINIMIZE COMPACTION IN PONDS.
ONCE POND GRADING IS COMPLETED, CONTRACTOR SHALL INSTALL SILT FENCE AROUND POND AND KEEP ALL EQUIPMENT OUT OF POND.

A POST CONSTRUCTION TEST WILL BE CONDUCTED BY FILLING THE BASIN TO A MINIMUM DEPTH OF 6 INCHES WITH WATER AND MONITORING THE TIME NECESSARY TO DRAIN, OR MULTIPLE DOUBLE RING INFILTRATION TESTS TO ASTM STANDARDS. THE COON CREEK WATERSHED DISTRICT SHALL BE NOTIFIED PRIOR TO THE TEST TO WITNESS THE RESULTS.

- CONTOURS ARE SHOWN TO FINISHED GRADE.
- GEOTEXTILE FILTER FOR EMERGENCY SPILLWAY IS INCIDENTAL.
- SEE MnDOT STANDARD PLATE #3133 FOR RIPRAP AT RCP OUTLET DETAILS.
- PIPE LENGTHS SHOWN IN DETAILS INCLUDE APRON LENGTH.



2 OF 2

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-609-022\Plan\002609022 PD300.dgn 11/21/2023 11:00:24 AM

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
PRINT NAME: NICHOLAS J DOBDA
SIGNATURE: Nick Dobda
DATE: 11/22/23 LICENSE NO. 49046

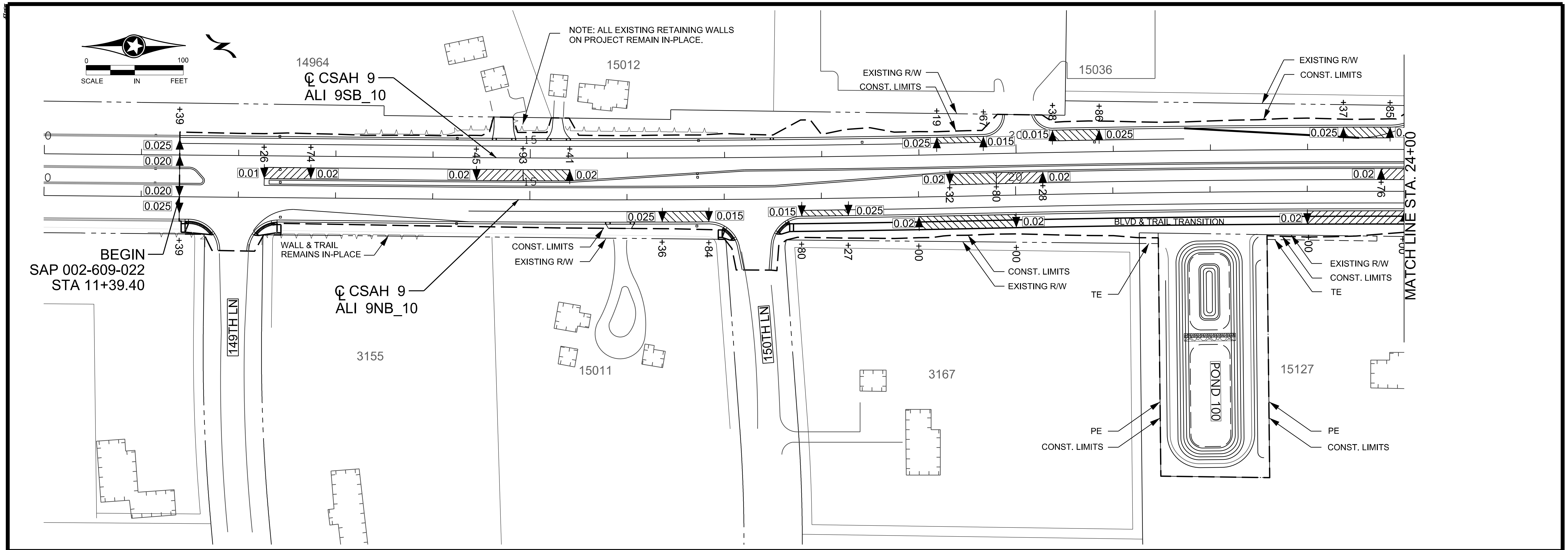
DRAWN BY JCF DATE 10/27/23
DESIGN BY JCF DATE 10/27/23
CHECKED BY NJD DATE 11/02/23

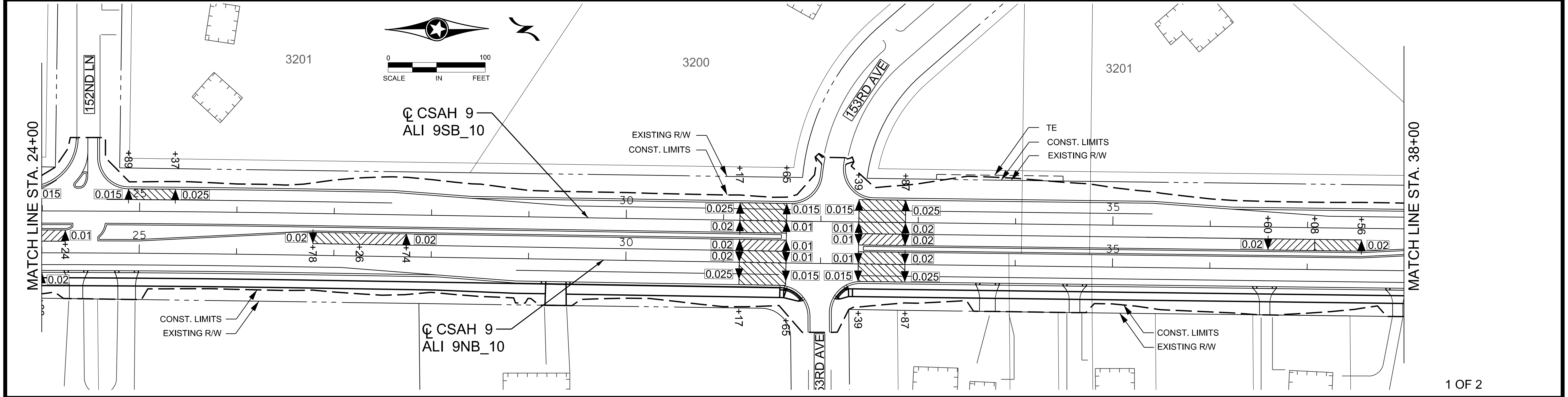
ANOKA COUNTY
ANOKA COUNTY
HIGHWAY DEPT.

SAP 002-609-022
SAP 198-020-039

INFILTRATION BASIN 200,
WET PONDS 300A & 300B
GRADING AND DETAILS

Sheet 77 of 167 Sheets





1 OF 2

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-609-022\Plan\002609022 SE1.dgn 10/25/2023 10:57:04 AM

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

PRINT NAME: NICHOLAS J DOBDA
SIGNATURE:
DATE: 11/22/23 LICENSE NO. 49046

DRAWN BY JCF DATE 10/27/23
DESIGN BY JCF DATE 10/27/23
CHECKED BY NJD DATE 11/02/23

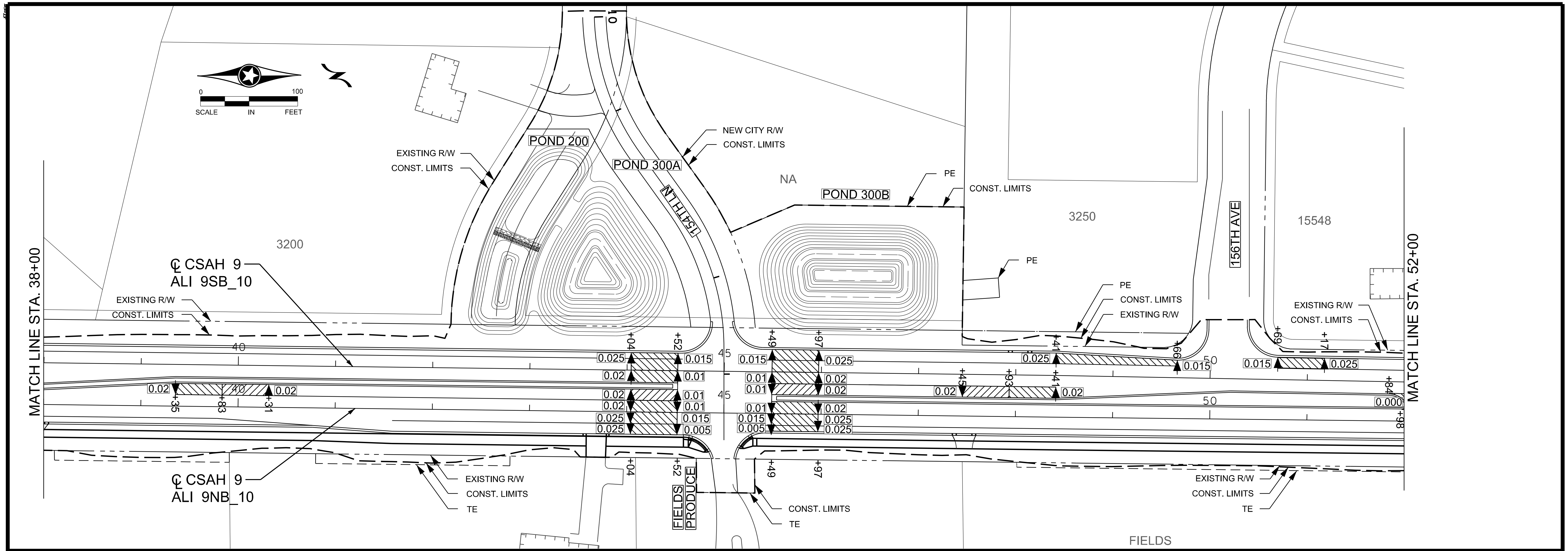
ANOKA COUNTY

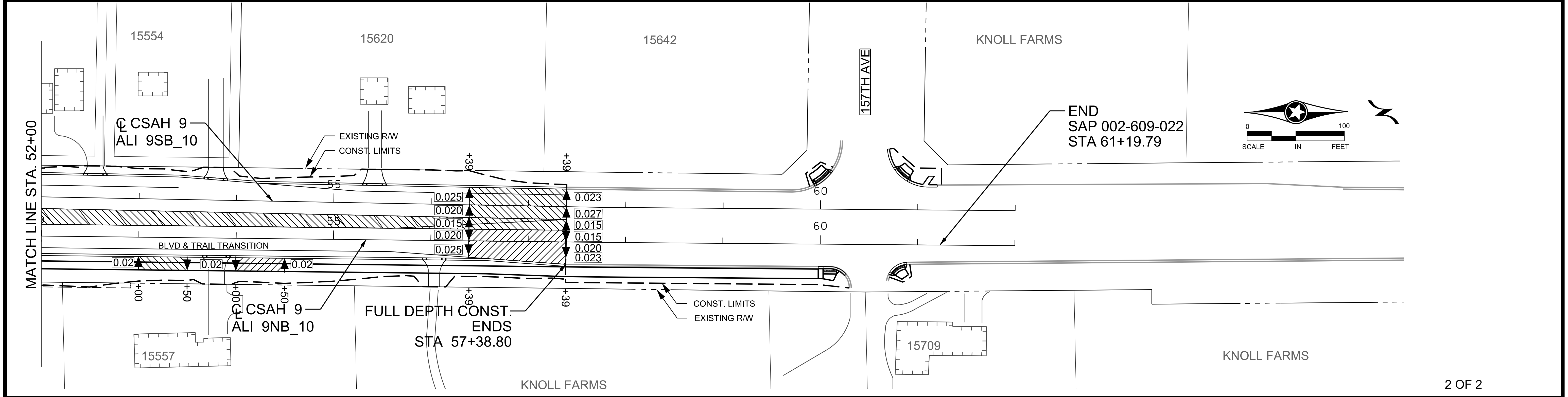
ANOKA COUNTY
HIGHWAY DEPT.

SAP 002-609-022
SAP 198-020-039

SUPER ELEVATION
STA 11+24.07 TO 38+00

Sheet 78 of 167 Sheets





2 OF 2

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-609-022\Plan\002609022 SE2.dgn 10/25/2023 10:57:05 AM

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

PRINT NAME: NICHOLAS J DOBDA
SIGNATURE: Nick Dobda
DATE: 11/22/23 LICENSE NO. 49046

DRAWN BY JCF DATE 10/27/23
DESIGN BY JCF DATE 10/27/23
CHECKED BY NJD DATE 11/02/23

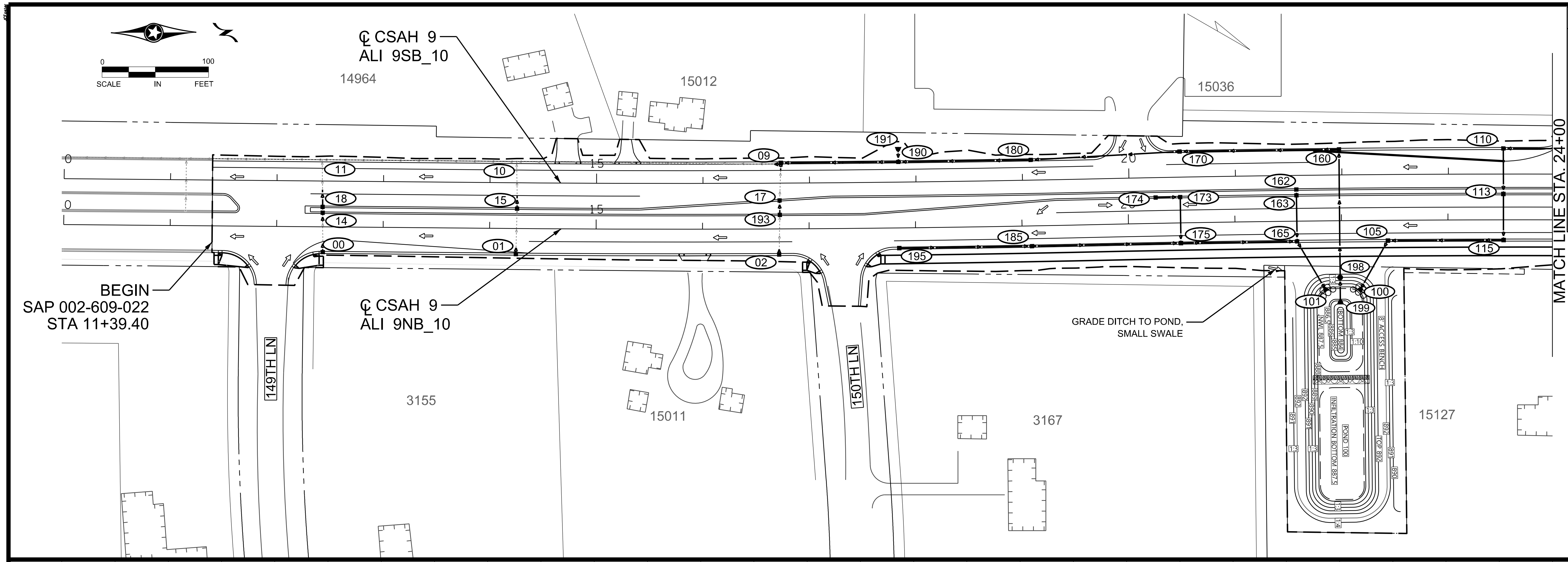
ANOKA COUNTY

ANOKA COUNTY
HIGHWAY DEPT.

SAP 002-609-022
SAP 198-020-039

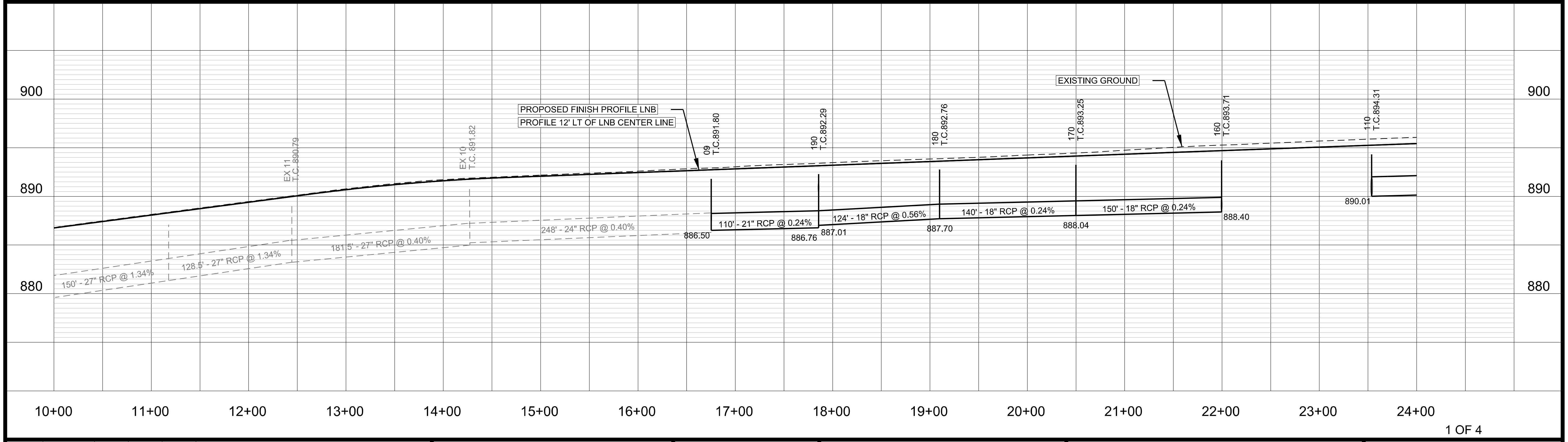
SUPER ELEVATION
STA 38+00 TO 61+19.79

Sheet 79 of 167 Sheets



LEGEND

■	PROPOSED CATCH BASIN
□	INPLACE CATCH BASIN
●	PROPOSED MANHOLE
▼	PROPOSED APRON
▽	INPLACE APRON
—•—▸—	PROPOSED STORM SEWER
- - -▹- -	INPLACE STORM SEWER
⇨	SURFACE FLOW ARROW



1 OF 4

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-609-022\Plan\002609022 DR1.dgn 10/25/2023 10:55:18 AM

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

PRINT NAME: NICHOLAS J DOBDA

SIGNATURE: Nic J Dobda

DATE: 11/22/23 LICENSE NO. 49046

DRAWN BY JCF DATE 10/27/23

DESIGN BY JCF DATE 10/27/23

CHECKED BY NJD DATE 11/02/23

ANOKA COUNTY

ANOKA COUNTY
HIGHWAY DEPT.

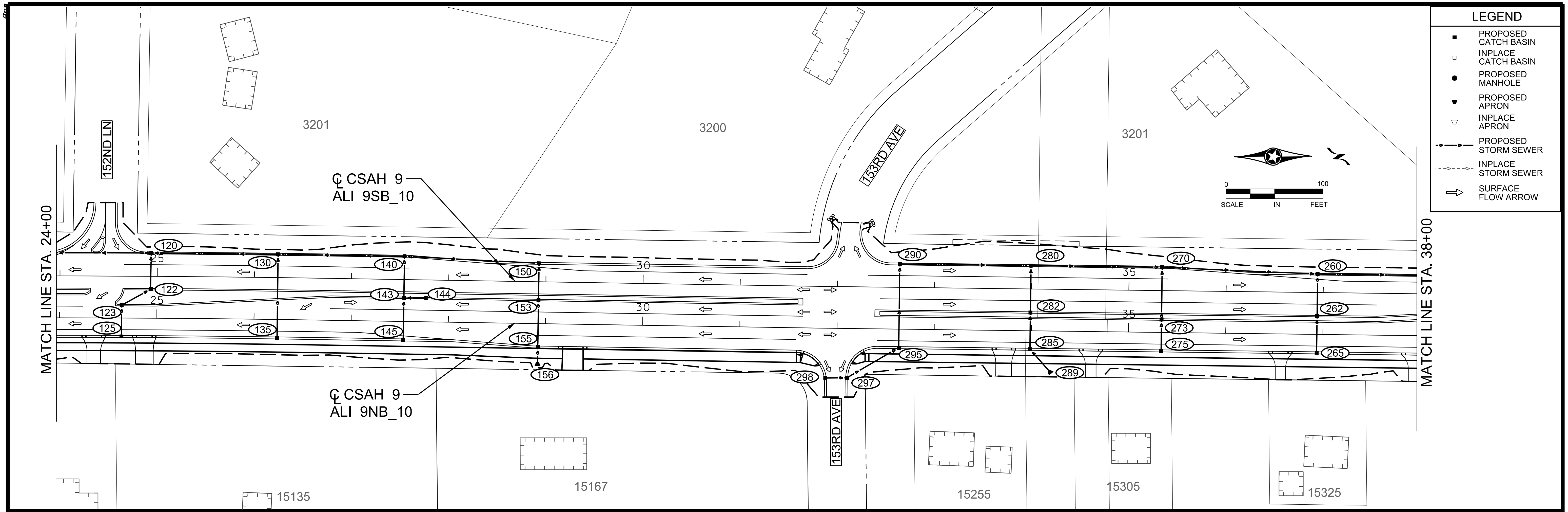
SAP 002-609-022
SAP 198-020-039

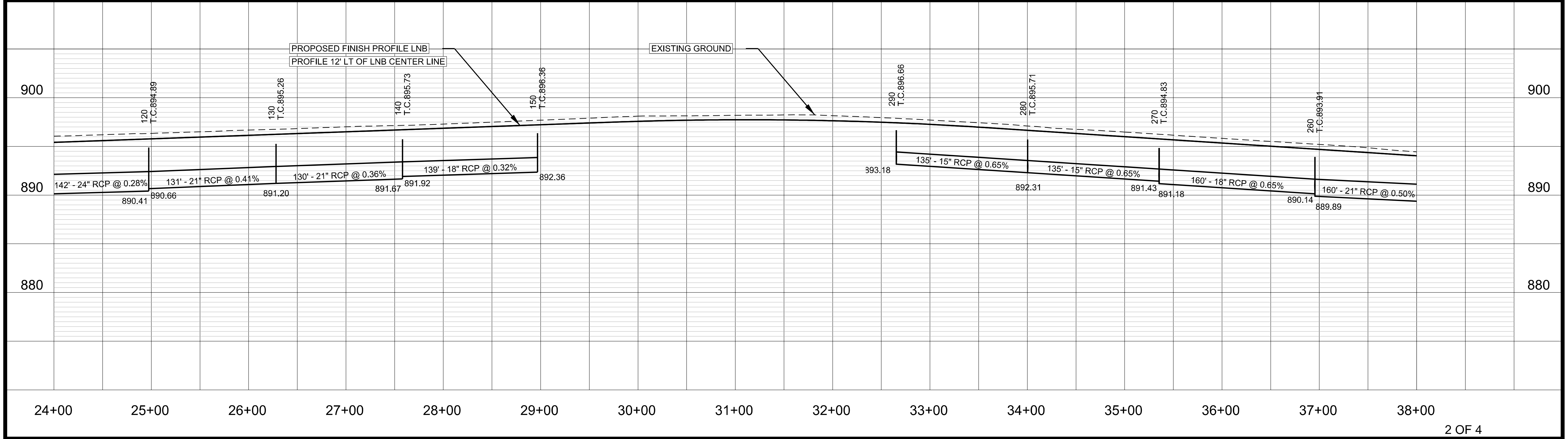
DRAINAGE

STA 11+39.40 TO 24+00

Sheet 80 of 167 Sheets

JCFoster





2 OF 4

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-609-022\Plan\002609022 DR2.dgn 10/25/2023 10:55:21 AM

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

PRINT NAME: NICHOLAS J DOBDA

SIGNATURE:

DATE: 11/22/23 LICENSE NO. 49046

DRAWN BY JCF DATE 10/27/23

DESIGN BY JCF DATE 10/27/23

CHECKED BY NJD DATE 11/02/23

ANOKA COUNTY

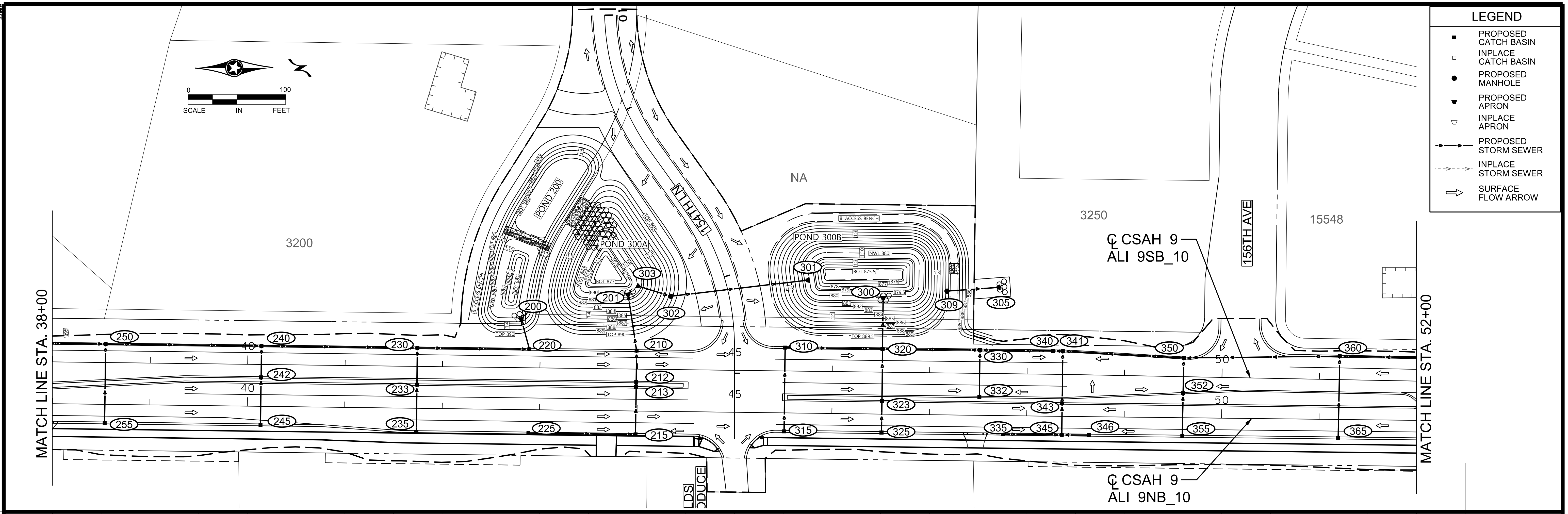
ANOKA COUNTY
HIGHWAY DEPT.

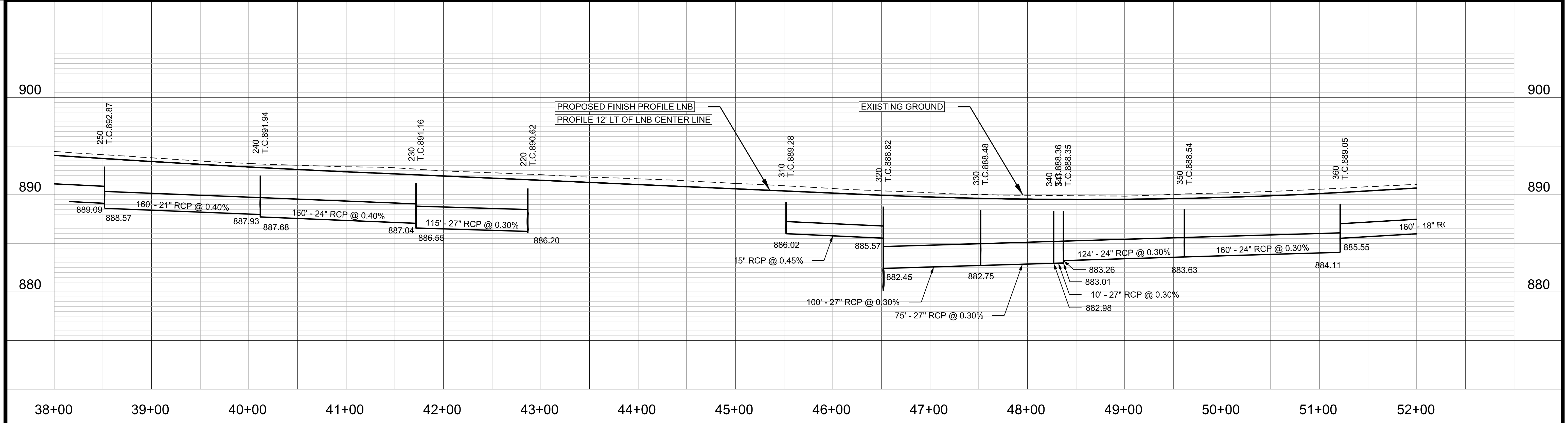
SAP 002-609-022
SAP 198-020-039

DRAINAGE

STA 24+00 TO 38+00

Sheet 81 of 167 Sheets





3 OF 4

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-609-022\Plan\002609022 DR3.dgn 10/25/2023 10:55:25 AM

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

PRINT NAME: NICHOLAS J DOBDA

SIGNATURE: Nic J Dobda

DATE: 11/22/23 LICENSE NO. 49046

DRAWN BY JCF DATE 10/27/23

DESIGN BY JCF DATE 10/27/23

CHECKED BY NJD DATE 11/02/23

ANOKA COUNTY

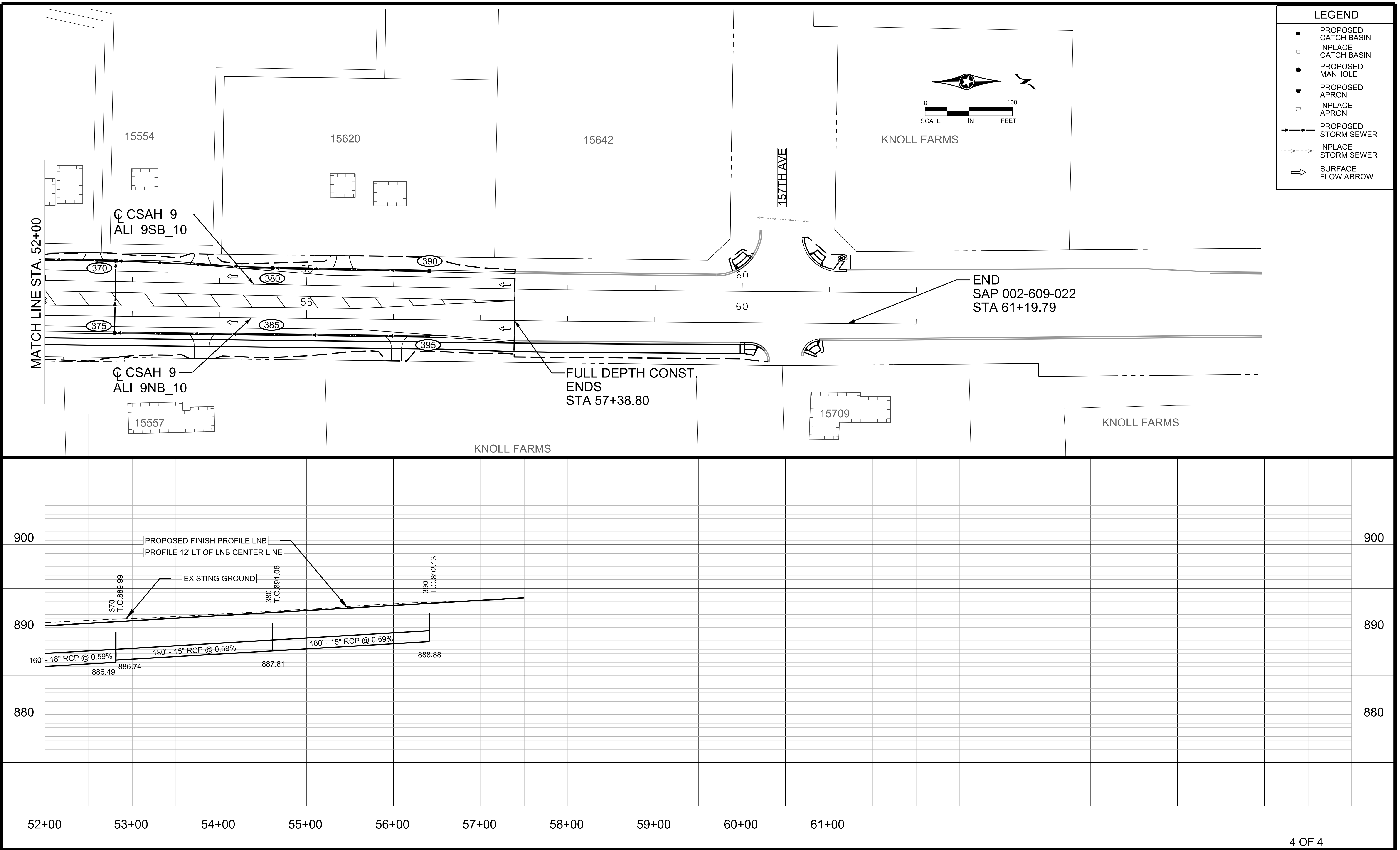
ANOKA COUNTY
HIGHWAY DEPT.

SAP 002-609-022
SAP 198-020-039

DRAINAGE

STA 38+00 TO 52+00

Sheet 82 of 167 Sheets



4 OF 4

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-609-022\Plan\002609022 DR4.dgn 10/25/2023 10:55:29 AM

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

PRINT NAME: NICHOLAS J DOBDA
SIGNATURE:
DATE: 11/22/23 LICENSE NO. 49046

DRAWN BY JCF DATE 10/27/23
DESIGN BY JCF DATE 10/27/23
CHECKED BY NJD DATE 11/02/23

ANOKA COUNTY
HIGHWAY DEPT.

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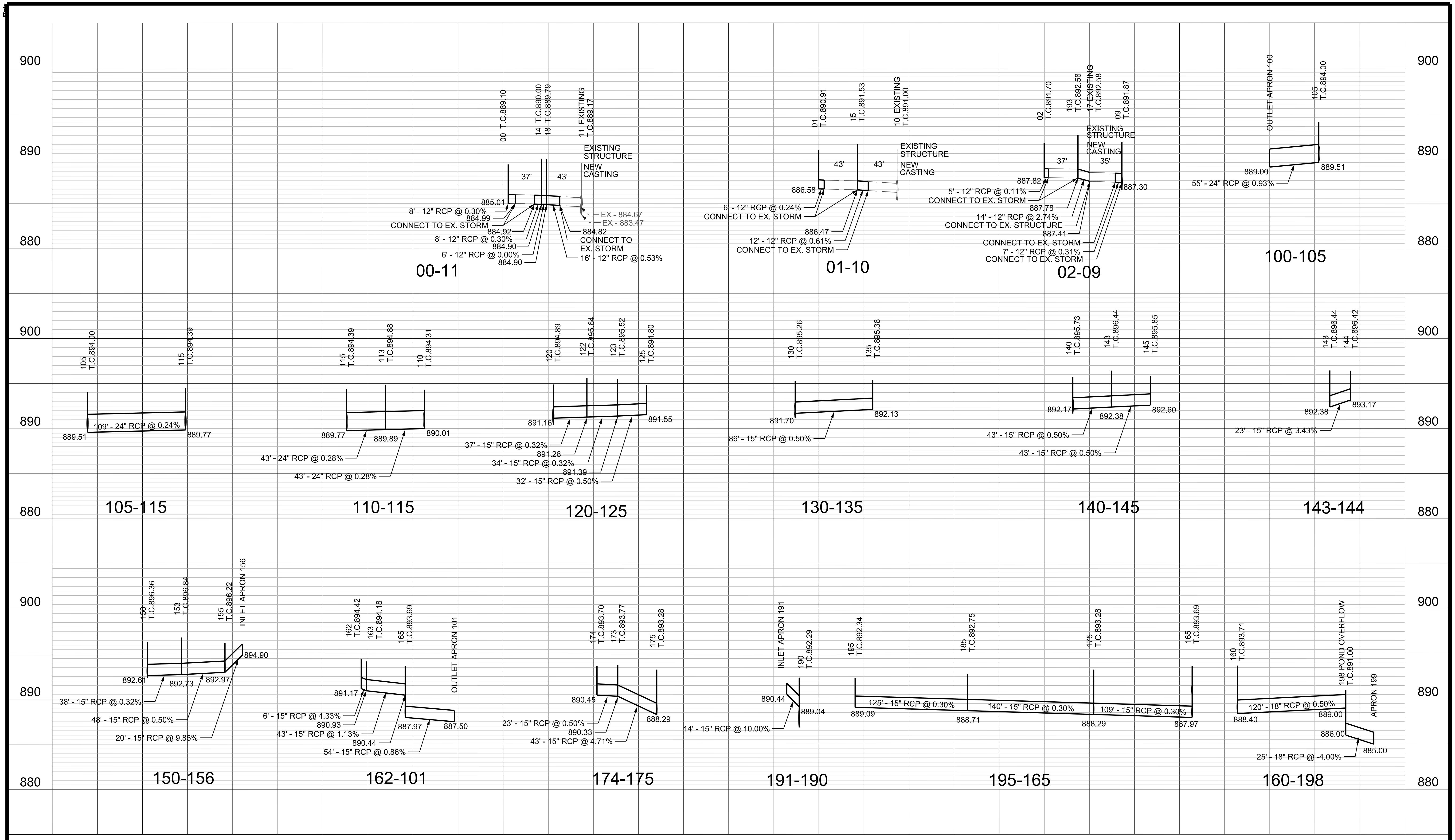
DRAINAGE
STA 52+00 TO 61+19.79



1 OF 2

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-609-022\Plan\002609022 DRL1.dgn 10/25/2023 10:55:30 AM

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

PRINT NAME: NICHOLAS J DOBDA
SIGNATURE: Nick Dobda
DATE: 11/22/23 LICENSE NO. 49046

DRAWN BY JCF DATE 10/27/23
DESIGN BY JCF DATE 10/27/23
CHECKED BY NJD DATE 11/02/23

ANOKA COUNTY

ANOKA COUNTY
HIGHWAY DEPT.

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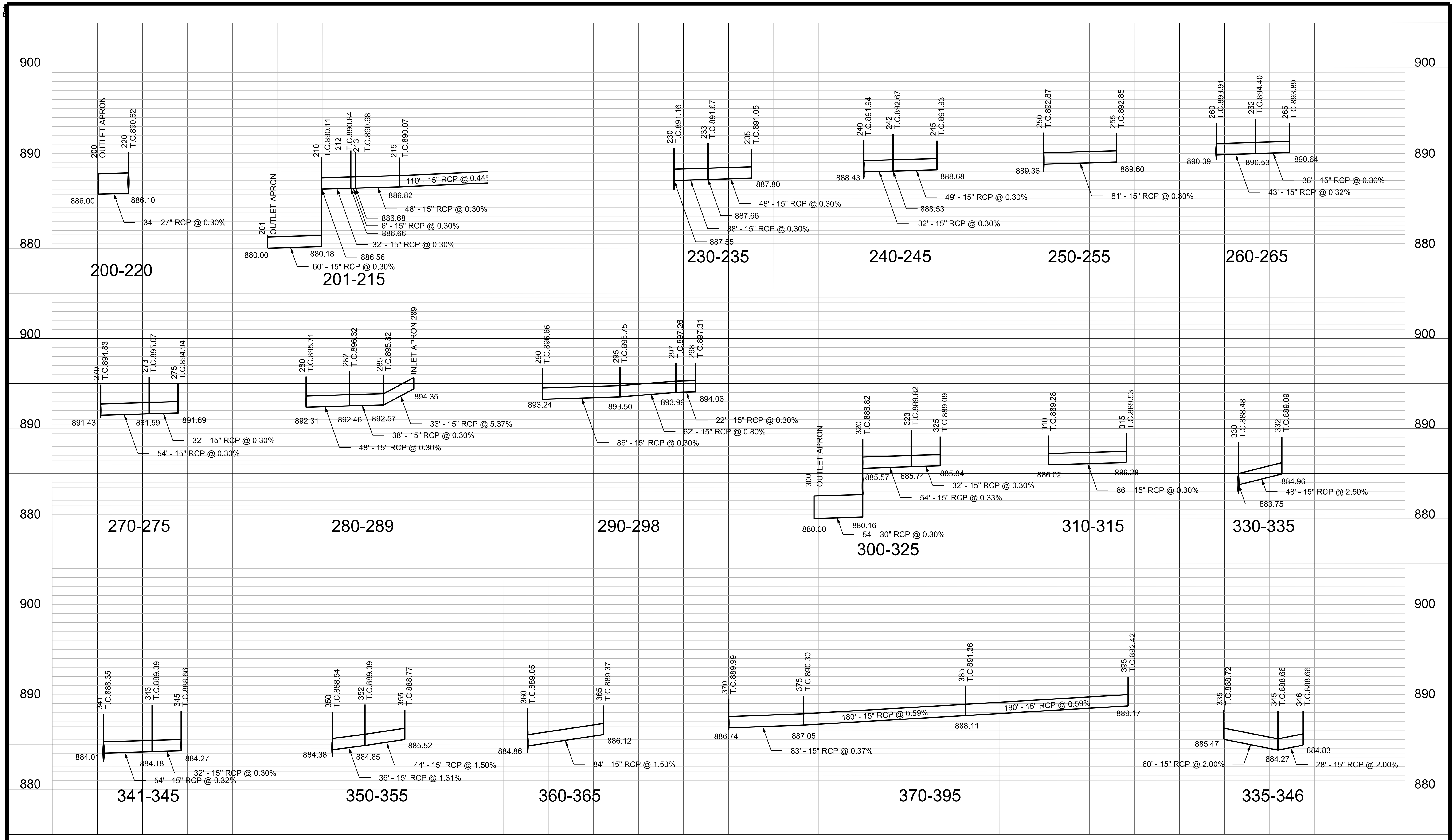
SAP 198-020-039

DRAINAGE LEADS

Sheet 84 of 167 Sheets

JCFoster



2 OF 2

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-609-022\Plan\002609022 DRL2.dgn 10/25/2023 10:55:31 AM

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

PRINT NAME: NICHOLAS J DOBDA

SIGNATURE: Nick Dobda

DATE: 11/22/23 LICENSE NO. 49046

DRAWN BY JCF DATE 10/27/23

DESIGN BY JCF DATE 10/27/23

CHECKED BY NJD DATE 11/02/23

ANOKA COUNTY

ANOKA COUNTY
HIGHWAY DEPT.

SAP 002-609-022
SAP 198-020-039

DRAINAGE LEADS

Sheet 85 of 167 Sheets

DRAINAGE TABULATION SUMMARY

J

	PAY HEIGHT					DESIGN SPECIAL 1	CASTING ASSEMBLY	STORM SEWER												RIPRAP CLASS II	GEOTEXTILE FILTER TYPE 3	CONNECT TO EX STORM	CONNECT TO EX STRUCTURE
	H	48-4020	54-4020	60-4020	72-4020			12" RCP CL V	15" RCP CL V	15" RCP APRON	18" RCP CL III	18" RCP APRON	21" RCP CL III	24" RCP CL III	24" RCP APRON	27" RCP CL III	27" RCP APRON	30"RCP CL III	30"RCP APRON				
	LIN FT	LIN FT	LIN FT	LIN FT	LIN FT	EACH	EACH	LIN FT	EACH	EACH	LIN FT	EACH	LIN FT	LIN FT	EACH	LIN FT	EACH	LIN FT	EACH	CU YD	SQ YD	EACH	EACH
SYSTEM 100 SUBTOTAL (A)	47.1	102.1		9.0		1.0	39	82	943	3	698	1	371	392	1					13	48	10	1
SYSTEM 200 SUBTOTAL (B)	19.2	53.0	4.6		4.5		22		968	1	160		320	160		143	1			30	100		
SYSTEM 300 SUBTOTAL (C)	33.7	66.5	15.9		8.6	2.0	31		1760	2	328	2		284		185		48	1	24	85		
PROJECT TOTAL	**100.0**	**221.6**	**20.5**	**9.0**	**13.1**	**3**	**92**	**82**	**3671**	**6**	**1186**	**3**	**691**	**836**	**1**	**328**	**1**	**48**	**1**	**67**	**233**	**10**	**1**

DRAINAGE GENERAL NOTES:

- PIPE LENGTHS DO NOT INCLUDE APRON LENGTH.
- SLOPES CALCULATED FROM CENTER OF STRUCTURE TO CENTER OF STRUCTURE, OR CENTER OF STRUCTURE TO END OF APRON.
- STATION AND OFFSET FOR EACH STRUCTURE GIVEN AT CENTER OF GRATE/CASTING FOR CATCH BASINS AND MANHOLES, AND AT APRON ENDS FOR APRONS.
- INVERT ELEVATIONS GIVEN AT CENTER OF STRUCTURE OR END OF APRON.
- IF STEPS REQUIRED, STRUCTURE TO INCLUDE MANHOLE STEPS 16" ON CENTER. SEE MnDOT STANDARD PLATE 4180.
- TIE LAST THREE JOINTS AT APRON END. FURNISHING AND INSTALLING PIPE TIES SHALL BE CONSIDERED INCIDENTAL. SEE MnDOT STANDARD PLATE 3145.
- PROVIDE COARSE AGGREGATE BEDDING AS DIRECTED BY ENGINEER. PAID FOR AS COARSE AGGREGATE BEDDING (CV) 2451.507.
- PAY HEIGHT = BOTTOM OF CASTING - LOWEST INVERT + 0.7' FOR BASE.

CASTING ASSEMBLIES SUMMARY

K

ASSEMBLY	DESCRIPTION	RING OR FRAME CASTING	COVER OR GRATE CASTING	STANDARD PLATE PLATE NO.	QUANTITY	NOTES
B	MEDIAN W/O CURB BOX		R-3448-C		25	
C	OUTER W/CURB BOX		R-3250-DVSP		6	
D	OUTER W/O CURB BOX		R-3250-DVSP		56	
F	MANHOLE	700-7	716	4101, 4110	2	
G	SPECIAL				3	[C1]
				TOTAL	92	

CASTING NOTES:

[C1] CASTING ASSEMBLY TYPE G PAID FOR AS PART OF CONSTRUCT DRAINAGE STRUCTURE.

POND 300B EMERGENCY TP DRAIN

S

	CONCRETE HEADWALL	6.0" TP PIPE	6.0" GATE VALVE
FROM 1.0' ABOVE NWL OF POND 300B TO EMERGENCY OVERFLOW 309	[1]	[2]	[3] [4]
	EACH	LIN FT	EACH
TOTAL	1	28	1

NOTES:

[1] CONCRETE HEADWALL CONSTRUCTED WITH 6.0" INLET, INVERT 1.0' ABOVE NWL OF POND 300B. INVERT ELEVATION 881.00

[2] 6.0" TP DRAIN PIPE TO BE NON-PERFERATED.

[3] GATE VALVE SHALL BE OF THE SAME CONSTRUCTION AS A 6.0" AGRIDRAIN VALTERRA PVC GATE VALVE.

[4] GATE VALVE INSTALLED INSIDE OF STRUCTURE 309. SEE POND SHEET 77 FOR DETAILS AND NOTES

1 OF 4

NO	DATE	BY	CKD	APPR	REVISION
1	1/18/2024	JF	ND		DRAINAGE GENERAL NOTES, CORRECTED PAY HT & REMOVED INCIDENTAL RINGS NOTE

NAME: P:\002-609-022\Plan\002609022 DRT.dgn 01/18/2024 8:33:31 AM

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

PRINT NAME: NICHOLAS J DOBDA

SIGNATURE:

DATE: 1/19/24 LICENSE NO. 49046

DRAWN BY JCF DATE 10/27/23

DESIGN BY JCF DATE 10/27/23

CHECKED BY NJD DATE 11/02/23

ANOKA COUNTY

ANOKA COUNTY
HIGHWAY DEPT.

SAP 002-609-022
SAP 198-020-039

DRAINAGE TABULATION SUMMARY

Sheet 86 of 167 Sheets

DRAINAGE TAB - POND 100

STRUCTURE NO.		CENTER OF CASTING				DRAINAGE STRUCTURES								STORM SEWER												RIPRAP CLASS II	GEOTEXTILE FILTER TYPE 3	CONNECT TO EX STORM	CONNECT TO EX STRUCTURE
								PAY HEIGHT			DESIGN SPECIAL 1	CASTING ASSEMBLY TYPE	STEPS REQ'D	TOP OF CASTING ELEVATION	OUTLET ELEVATION	DOWN STREAM INLET	SLOPE	12" RCP CL V	15" RCP CL V	15" RCP APRON	18" RCP CL III	18" RCP APRON	21" RCP CL III	24" RCP CL III	24" RCP APRON				
FLOWS FROM	FLOWS TO	ALIGN	STATION	O/S	L / R	TYPE	DESIGN	H	48-4020	60-4020																			
								LIN FT	LIN FT	LIN FT	EACH						%	LIN FT	LIN FT	EACH	LIN FT	EACH	LIN FT	LIN FT	EACH	CU YD	SQ YD	EACH	EACH
00	14	9NB_10	12+43.42	23.73	R	CB	H	4.0				D		889.10	885.01	884.90	0.30	16										2	
14	18	9NB_10	12+43.09	13.25	L	CB	48-4020		5.2			B	YES	890.00	884.90	884.90	0.00	6											
18	11 (EX)	9SB_10	12+43.02	24.25	R	CB	48-4020		5.0			B	YES	889.79	884.90	884.67	0.53	16										1	
01	15	9NB_10	14+24.79	25.03	R	CB	H	4.3				D		890.91	886.58	886.47	0.24	6										1	
15	10 (EX)	9SB_10	14+25.61	24.25	R	CB	48-4020		5.2			B	YES	891.53	886.47	886.20	0.61	12										2	
EMERGENCY SPILLWAY																										4			
100	POND	9NB_10	22+16.25	66.31	R	OUTLET	APRON								889.00										1	6	30		
101	POND	9NB_10	21+85.42	66.19	R	OUTLET	APRON								887.50					1						3	18		
02	193	9NB_10	16+71.77	24	R	CB	H	3.8				D		891.70	887.82	887.78	0.11	5										2	
09	EX_STM	9SB_10	16+73.24	19	L	CB	48-4020		4.5			D		891.87	887.30									6				1	
17	09	9SB_10	16+71.86	16.24	R	CB	48-4020					B		892.58	887.41	887.30	0.31	7										1	
105	100	9NB_10	22+43.40	19	R	CB	48-4020		4.4			D		894.00	889.51	889.00	0.93							49					
110	113	9SB_10	23+51.70	24	L	CB	60-4020			4.4		D		894.31	890.01	889.89	0.28							43					
113	115	9NB_10	23+52.14	24.25	L	CB	48-4020		5.1			D	YES	894.88	889.89	889.77	0.28							43					
115	105	9NB_10	23+52.14	19	R	CB	60-4020			4.6		D	YES	894.39	889.77	889.51	0.24							109					
120	110	9SB_10	24+93.61	24	L	CB	48-4020		4.6			D	YES	894.89	890.41	890.01	0.28							142					
122	120	9SB_10	24+93.25	13.25	R	CB	48-4020		4.3			B		895.64	891.28	891.16	0.32		37										
123	122	9NB_10	24+63.79	13.25	L	CB	48-4020		4.1			B		895.52	891.39	891.28	0.32		34										
125	123	9NB_10	24+63.68	19	R	CB	H	3.4				D		894.80	891.55	891.39	0.50		32										
130	120	9SB_10	26+24.17	24	L	CB	48-4020		4.2			D		895.26	891.20	890.66	0.41						131						
135	130	9NB_10	26+23.95	19	R	CB	H	3.2				D		895.38	892.13	891.70	0.50		86										
140	130	9SB_10	27+54.11	24	L	CB	48-4020		4.0			D		895.73	891.67	891.20	0.36						130						
143	140	9NB_10	27+53.81	24.25	L	CB	48-4020		4.0			B		896.44	892.38	892.17	0.50		43										
144	143	9NB_10	27+76.82	24.25	L	CB	H	3.2				B		896.42	893.17	892.38	3.43		23										
145	143	9NB_10	27+53.81	19	R	CB	48-4020		3.4			D		895.85	892.60	892.38	0.50		43										
150	140	9SB_10	28+92.70	19	L	CB	H	4.1				D		896.36	892.36	891.92	0.32				139								
153	150	9NB_10	28+92.39	24.25	L	CB	H	4.1				B		896.84	892.73	892.61	0.32		38										
155	153	9NB_10	28+92.39	24	R	CB	48-4020		3.2			D		896.22	892.97	892.73	0.50		48										
156	155	9NB_10	28+92.39	43.55	R	INLET	APRON								894.90	892.97	9.85		14	1									
160	170	9SB_10	21+97.48	24	L	CB	H	5.3				D	YES	893.71	888.40	888.04	0.24				150								
162	163	9SB_10	21+57.08	13.25	R	CB	48-4020		3.2			B		894.42	891.17	890.93	4.33		6										
163	165	9NB_10	21+58.00	24.25	L	CB	H	3.4				B		894.18	890.93	890.44	1.13		43										
165	101	9NB_10	21+58.15	19	R	CB	48-4020		5.9			D	YES	893.69	887.97	887.50	0.86		48										
170	180	9SB_10	20+47.95	24	L	CB	48-4020		5.2			D	YES	893.25	888.04	887.70	0.24				140								
173	175	9NB_10	20+48.99	24.25	L	CB	48-4020		3.4			B		893.77	890.33	888.29	4.71		43										
174	173	9NB_10	20+25.94	24.25	L	CB	48-4020		3.4			B		893.70	890.45	890.33	0.50		23										
175	165	9NB_10	20+48.88	19	R	CB	H	5.1				D	YES	893.28	888.29	887.97	0.30		109										
180	190	9SB_10	19+08.10	19	L	CB	48-4020		5.3			D	YES	892.76	887.70	887.01	0.56				124								
185	175	9NB_10	19+09.02	19	R	CB	48-4020		4.0			D		892.75	888.71	888.29	0.30		140										
190	9	9SB_10	17+83.62	19	L	CB	48-4020		5.5			D	YES	892.29	886.76	886.50	0.24						110						
191	190	9SB_10	17+83.57	33	L	INLET	APRON								890.44	889.04	10.00		8	1									
193	17	9NB_10	16+72.58	13.25	L	CB	48-4020		4.9			B	YES	892.58	887.78	887.41	2.74	14											1
195	185	9NB_10	17+84.51	19	R	CB	H	3.2				D		892.34	889.09	888.71	0.30		125										
198	160	9NB_10	21+98.28	53.24	R	SPECIAL	SPECIAL				1	G		891.00	889.00	888.40	0.50				120								
199	198	9NB_10	21+98.30	78.23	R	APRON									885.00	886.00	-4.00				25	1							
DRAINAGE SUBTOTAL (A)								**47.1**	**102.1**	**9.0**	**1**	**39**						**82**	**943**	**3**	**698**	**1**	**371**	**392**	**1**	**13**	**48**	**10**	**1**

2 OF 4

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-609-022\Plan\002609022 DRT.dgn 10/25/2023 10:55:35 AM

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

PRINT NAME: NICHOLAS J DOBDA
SIGNATURE: Nich J Dobda
DATE: 11/22/23 LICENSE NO. 49046

DRAWN BY JCF DATE 10/27/23
DESIGN BY JCF DATE 10/27/23
CHECKED BY NJD DATE 11/02/23

ANOKA COUNTY
HIGHWAY DEPT.

SAP 002-609-022
SAP 198-020-039

DRAINAGE TABULATION
POND 100

JCFoster

DRAINAGE TAB - POND 200

STRUCTURE NO.		CENTER OF CASTING				DRAINAGE STRUCTURES								STORM SEWER											RIPRAP CLASS II	GEOTEXTILE FILTER TYPE 3
FLOWS FROM	FLOWS TO	ALIGN	STATION	O/S	L / R	TYPE	DESIGN	PAY HEIGHT				CASTING ASSEMBLY TYPE	STEPS REQ'D	TOP OF CASTING ELEVATION	OUTLET ELEVATION	DOWN STREAM INVERT	SLOPE	15" RCP CL V	15" RCP APRON	18" RCP CL III	21" RCP CL III	24" RCP CL III	27" RCP CL III	27" RCP APRON		
								H	48-4020	54-4020	72-4020															
								LIN FT	LIN FT	LIN FT	LIN FT						%	LIN FT	EACH	LIN FT	LIN FT	LIN FT	LIN FT	EACH	CU YD	SQ YD
EMERGENCY SPILLWAY															898.50											69
200	**POND**	9SB_10	42+79.76	51.38	L	OUTLET	APRON								886.00									1	7	31
220	200	9SB_10	42+88.95	19.00	L	CB	72-4020				4.5	D		890.62	886.10	886.00	0.30						28			
230	220	9SB_10	41+73.95	19.00	L	CB	54-4020			4.6		D	YES	891.16	886.55	886.20	0.30						115			
233	230	9NB_10	41+73.80	24.25	L	CB	48-4020		4.1			B		891.67	887.66	887.55	0.30	38								
235	233	9NB_10	41+73.80	24.00	R	CB	H	3.2				D		891.05	887.80	887.66	0.30	48								
240	230	9SB_10	40+13.95	19.00	L	CB	48-4020		4.2			D		891.94	887.68	887.04	0.40					160				
242	240	9SB_10	40+13.95	13.25	R	CB	48-4020		4.3			B		892.67	888.53	888.43	0.30	32								
245	242	9NB_10	40+13.80	19.00	R	CB	H	3.2				D		891.93	888.68	888.53	0.30	49								
250	240	9SB_10	38+53.95	19.00	L	CB	48-4020		4.2			D		892.87	888.57	887.93	0.40				160					
255	250	9NB_10	38+53.80	19.00	R	CB	H	3.2				D		892.85	889.60	889.36	0.30	81								
260	250	9SB_10	36+93.95	19.00	L	CB	48-4020		4.0			D		893.91	889.89	889.09	0.50				160					
262	260	9SB_10	36+93.95	24.25	R	CB	48-4020		4.0			B		894.40	890.53	890.39	0.32	43								
265	262	9NB_10	36+93.80	19.00	R	CB	H	3.2				D		893.89	890.64	890.53	0.30	38								
270	260	9SB_10	35+33.95	24.00	L	CB	48-4020		3.6			D		894.83	891.18	890.14	0.65			160						
273	270	9NB_10	35+33.80	13.25	L	CB	48-4020		4.2			B		895.67	891.59	891.43	0.30	54								
275	273	9NB_10	35+33.80	19.00	R	CB	H	3.2				D		894.94	891.69	891.59	0.30	32								
280	270	9SB_10	33+98.95	24.00	L	CB	48-4020		3.4			D		895.71	892.31	891.43	0.65	135								
282	280	9SB_10	33+98.95	24.25	R	CB	48-4020		4.0			B		896.32	892.46	892.31	0.30	48								
285	282	9NB_10	33+98.80	19.00	R	CB	48-4020		3.2			D		895.82	892.57	892.46	0.30	38								
289	285	9NB_10	34+21.03	43.70	R	INLET	APRON								894.35	892.57	5.37	27	1							
290	280	9SB_10	32+63.95	24.00	L	CB	48-4020		3.4			D		896.66	893.18	892.31	0.65	135								
295	290	9NB_10	32+63.80	19.00	R	CB	48-4020		3.2			D		896.75	893.50	893.24	0.30	86								
297	295	9NB_10	32+10.71	50.68	R	CB	48-4020		3.2			D		897.26	893.99	893.50	0.80	62								
298	297	9NB_10	31+88.57	51.16	R	CB	H	3.2				D		897.31	894.06	893.99	0.30	22								
							DRAINAGE SUBTOTAL (B)	**19.2**	**53.0**	**4.6**	**4.5**	**22**						**968**	**1**	**160**	**320**	**160**	**143**	**1**	**30**	**100**

3 OF 4

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-609-022\Plan\002609022 DRT.dgn 10/25/2023 10:55:41 AM

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

PRINT NAME: NICHOLAS J DOBDA

SIGNATURE: Nick Dobda

DATE: 11/22/23 LICENSE NO. 49046

DRAWN BY JCF DATE 10/27/23

DESIGN BY JCF DATE 10/27/23

CHECKED BY NJD DATE 11/02/23

ANOKA COUNTY
HIGHWAY DEPT.

SAP 002-609-022
SAP 198-020-039

DRAINAGE TABULATION
POND 200

DRAINAGE TAB - PONDS 300A & 300B

STRUCTURE NO.		CENTER OF CASTING				DRAINAGE STRUCTURES									STORM SEWER												RIPRAP CLASS II	GEOTEXTILE FILTER TYPE 3
FLOWS FROM	FLOWS TO	ALIGN	STATION	O/S	L / R	TYPE	DESIGN	PAY HEIGHT				DESIGN SPECIAL 1	CASTING ASSEMBLY TYPE	STEPS REQ'D	TOP OF CASTING ELEVATION	OUTLET ELEVATION	DOWN STREAM INVERT	SLOPE	15" RCP CL V	15" RCP APRON	18" RCP CL III	18" RCP APRON	24" RCP CL III	27" RCP CL III	30"RCP CL III	30" RCP APRON		
								H	48-4020	54-4020	72-4020																	
								LIN FT	LIN FT	LIN FT	LIN FT	EACH						%	LIN FT	EACH	LIN FT	EACH	LIN FT	LIN FT	LIN FT	EACH	CU YD	SQ YD
201	**POND**	9SB_10	43+89.18	78.15	L	OUTLET	APRON									880.00				1							3	18
210	201	9SB_10	43+98.95	19.00	L	CB	48-4020		9.9				C	YES	890.11	880.18	880.00	0.30	54									
212	210	9SB_10	43+98.95	13.25	R	CB	48-4020		4.3				B		890.84	886.66	886.56	0.30	32									
213	212	9NB_10	43+98.80	24.25	L	CB	48-4020		4.1				B		890.68	886.68	886.66	0.30	6									
215	213	9NB_10	43+98.80	24.00	R	CB	48-4020		3.2				C		890.07	886.82	886.68	0.30	48									
225	215	9NB_10	42+88.80	24.00	R	CB	H	3.2					D		890.55	887.30	886.82	0.44	110									
EMERGENCY SPILLWAY																899.00											9	8
305	EX. POND	9SB_8	47+71.58	88.73	L	OUTLET	APRON									879.45				1								
309	305	9SB_9	47+16.78	84.05	L	INLET	SPECIAL					1	G		888.50	888.00	879.45	1.00	49									
301	**POND**	9SB_10	45+75.50	93.72	L	OUTLET	APRON									880.00						1					4	22
302	301	9SB_10	44+33.37	75.24	L	MH	SPECIAL					1	G		888.50	880.00	880.00	0.00			137							
303	302	9SB_10	43+97.03	85.85	L	INLET	APRON									880.00	880.00	0.00			31	1						
300	**POND**	9SB_10	46+51.34	78.00	L	OUTLET	APRON									880.00										1	8	37
310	320	9SB_10	45+51.34	24.00	L	CB	48-4020		3.2				D		889.28	886.02	885.57	0.45	100									
315	310	9NB_10	45+51.19	19.00	R	CB	H	3.2					D		889.53	886.28	886.02	0.30	86									
320	300	9SB_10	46+51.34	24.00	L	CB	72-4020				8.6		D	YES	888.82	880.16	880.00	0.30							48			
323	320	9NB_10	46+51.19	13.25	L	CB	48-4020		4.2				B		889.82	885.74	885.57	0.33	54									
325	323	9NB_10	46+51.19	19.00	R	CB	H	3.2					D		889.09	885.84	885.74	0.30	32									
330	320	9SB_10	47+51.34	24.00	L	CB	54-4020			5.7			D	YES	888.48	882.75	882.45	0.30						100				
332	330	9SB_10	47+51.34	24.25	R	CB	H	4.3					B		889.09	884.96	883.75	2.50	48									
335	345	9NB_10	47+76.19	19.00	R	CB	H	3.2					D		888.72	885.47	884.27	2.00	60									
340	330	9SB_10	48+26.34	24.00	L	CB	48-4020		5.3				C	YES	888.36	882.98	882.75	0.30						75				
341	340	9SB_10	48+36.34	24.00	L	CB	54-4020			5.3			C	YES	888.35	883.01	882.98	0.30						10				
343	341	9NB_10	48+36.19	13.25	L	CB	48-4020		5.3				B	YES	889.39	884.18	884.01	0.32	54									
345	343	9NB_10	48+36.19	19.00	R	CB	48-4020		4.3				C		888.66	884.27	884.18	0.30	32									
346	345	9NB_10	48+64.17	19.00	R	CB	H	3.8					C		888.66	884.83	884.27	2.00	28									
350	341	9SB_10	49+60.44	19.22	L	CB	48-4020		4.9				D	YES	888.54	883.63	883.26	0.30					124					
352	350	9SB_10	49+60.46	16.98	R	CB	48-4020		4.7				B	YES	889.39	884.85	884.38	1.31	36									
355	352	9NB_10	49+59.93	19.00	R	CB	H	3.2					D		888.77	885.52	884.85	1.50	44									
360	350	9SB_10	51+20.48	24.00	L	CB	54-4020			4.9			D	YES	889.05	884.11	883.63	0.30					160					
365	360	9NB_10	51+19.93	19.00	R	CB	H	3.2					D		889.37	886.12	884.86	1.50	84									
370	360	9SB_10	52+80.48	24.00	L	CB	48-4020		3.5				D		889.99	886.49	885.55	0.59			160							
375	370	9NB_10	52+79.93	19.00	R	CB	48-4020		3.2				D		890.30	887.05	886.74	0.37	83									
380	370	9SB_10	54+60.43	19.00	L	CB	48-4020		3.2				D		891.06	887.81	886.74	0.59	180									
385	375	9NB_10	54+59.94	19.00	R	CB	48-4020		3.2				D		891.36	888.11	887.05	0.59	180									
390	380	9SB_10	56+40.45	19.00	L	CB	H	3.2					D		892.13	888.88	887.81	0.59	180									
395	385	9NB_10	56+39.94	19.00	R	CB	H	3.2					D		892.42	889.17	888.11	0.59	180									
DRAINAGE SUBTOTAL (C)								**33.7**	**66.5**	**15.9**	**8.6**	**2**	**31**						**1760**	**2**	**328**	**2**	**284**	**185**	**48**	**1**	**24**	**85**

4 OF 4

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-609-022\Plan\002609022 DRT.dgn 10/25/2023 10:55:44 AM

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SIGNATURE: Nick Dobda
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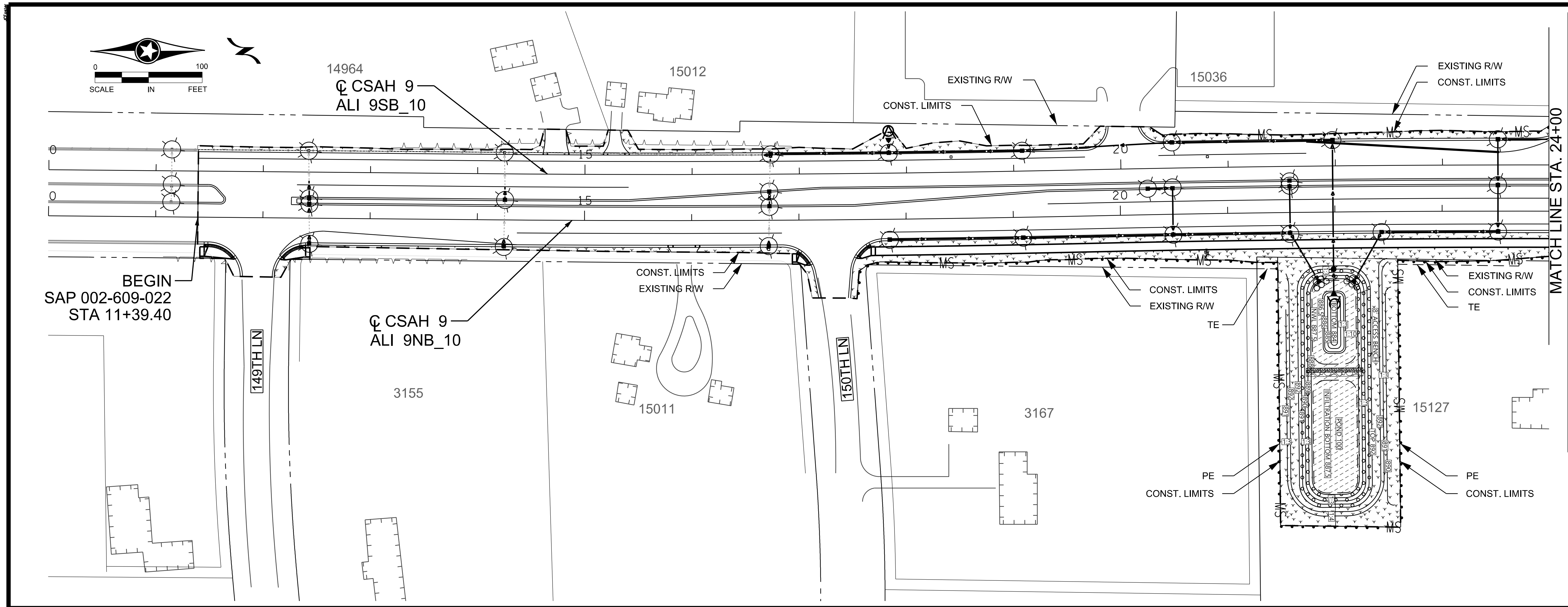
ANOKA COUNTY
HIGHWAY DEPT.

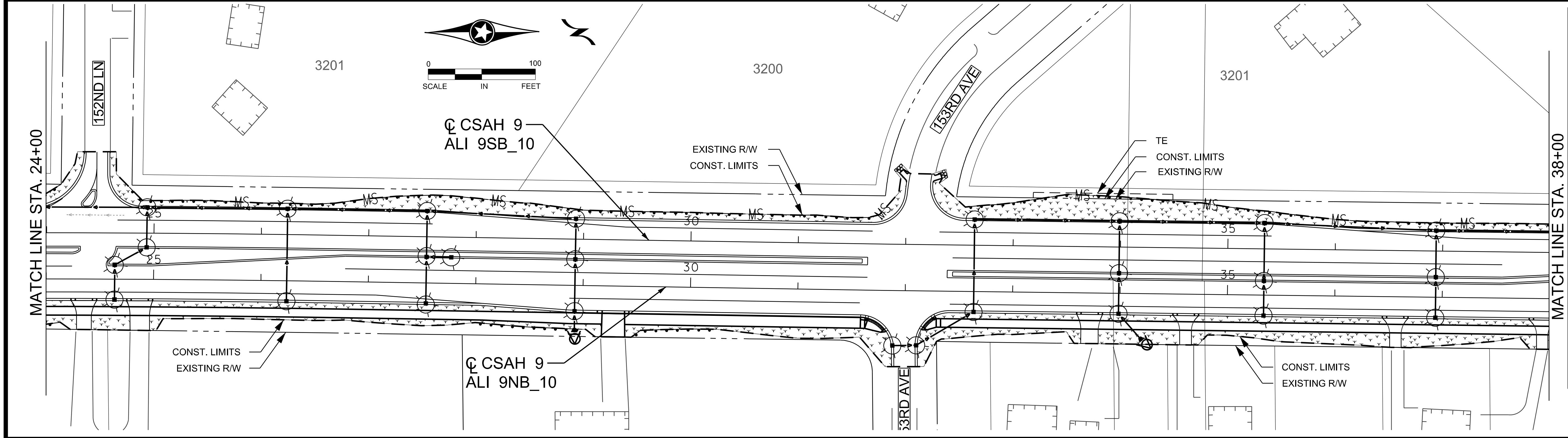
SAP 002-609-022
SAP 198-020-039

DRAINAGE TABULATION
PONDS 300A & 300B



LEGEND

▨	SEED MIXTURE 25-121 FERTILIZER TYPE 3 (22-5-10) HYDRAULIC REINF-FIBER MATRIX
▨	SEED MIXTURE 33-261 FERTILIZER TYPE 4 (17-10-7) ROLLED EROSION PREVENTION CAT 10
▨	SEED MIXTURE 35-241 FERTILIZER TYPE 4 (17-10-7) ROLLED EROSION PREVENTION CAT 25
-MS-	SILT FENCE TYPE MACHINE SLICED
⊠	STORM DRAIN INLET PROTECTION
○○○	RIPRAP CLASS 2
⊘	CULVERT END - CONTROLS (INLET APRONS)
■	PROPOSED CB
□	EXISTING CB
●	PROPOSED MH
▲	PROPOSED APRON
-◂—	PROPOSED STORM
-<<-	EXISTING STORM



EROSION CONTROL NOTES

1. THE CONTRACTOR SHALL CONSTRUCT WASHED GRAVEL ENTRANCES AT POINTS OF EXIT FROM THE WORK AREA ONTO EX-BITUMINOUS PAVEMENT AS DIRECTED BY THE ENGINEER.

2. SILT FENCE SHALL FOLLOW A SINGLE CONTOUR AS CLOSELY AS POSSIBLE.

3. SILT FENCE SHALL BE CLEANED OUT OR REPLACED WHEN SEDIMENT REACHES 8" OR 1/3 OF THE SILT FENCE HEIGHT.

4. WHEN SEDIMENT DEPOSITS IN A WATER OF THE STATE, THE MATERIAL MUST BE REMOVED WITHIN 7 DAYS.

5. IF SILT DEPOSITS IN THE ANOKA COUNTY RIGHT-OF-WAY, THE CONTRACTOR IS RESPONSIBLE FOR ITS REMOVAL.

6. STABILIZE VEGETATION AND SOIL STOCKPILES WITHIN 7 DAYS OF ROUGH GRADING OR INACTIVITY. ADDITIONAL TEMPORARY AND PERMANENT EROSION CONTROL AS DIRECTED BY ENGINEER.

1 OF 2

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-609-022\Plan\002609022 ER1.dgn 11/15/2023 1:31:19 PM

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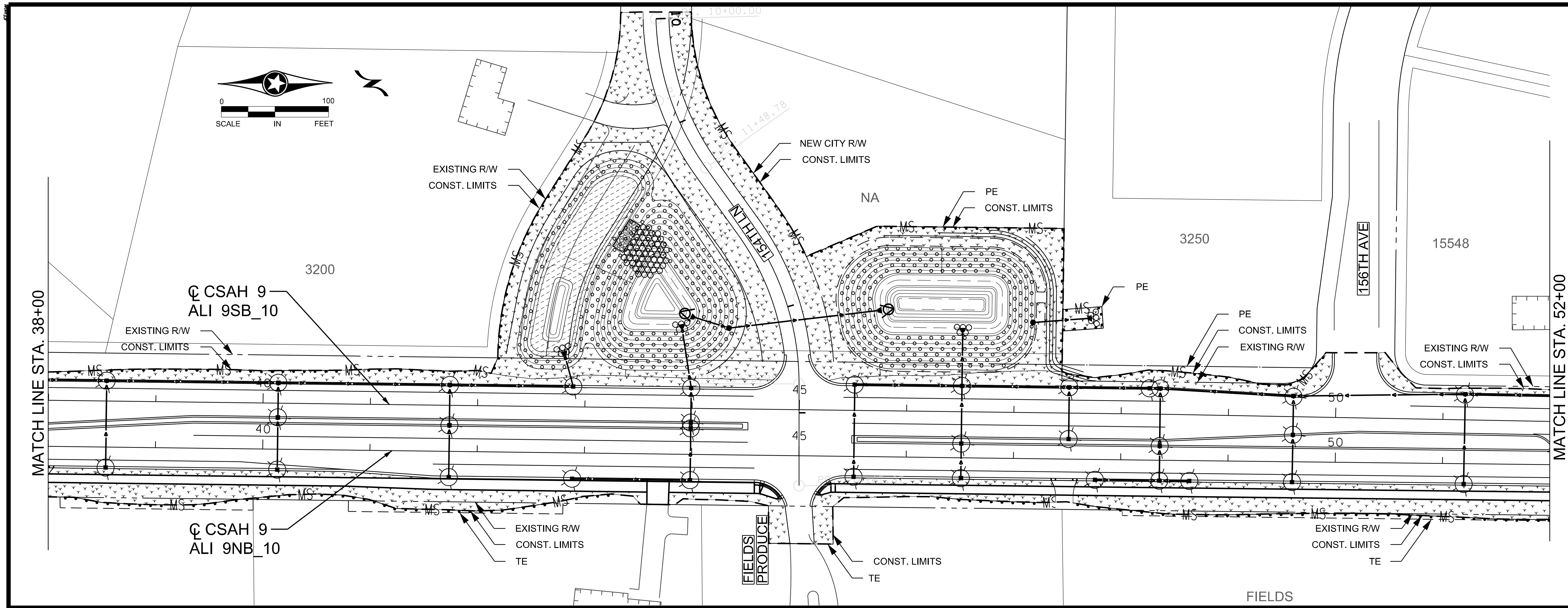
ANOKA COUNTY

ANOKA COUNTY
HIGHWAY DEPT.

SAP 002-609-022
SAP 198-020-039

TURF ESTABLISHMENT
&
EROSION CONTROL
STA 11+39.40 TO 38+00

Sheet 90 of 167 Sheets



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∞	RIPRAP CLASS 2
⊄	CULVERT END - CONTROLS (INLET APRONS)
■	PROPOSED CB
□	EXISTING CB
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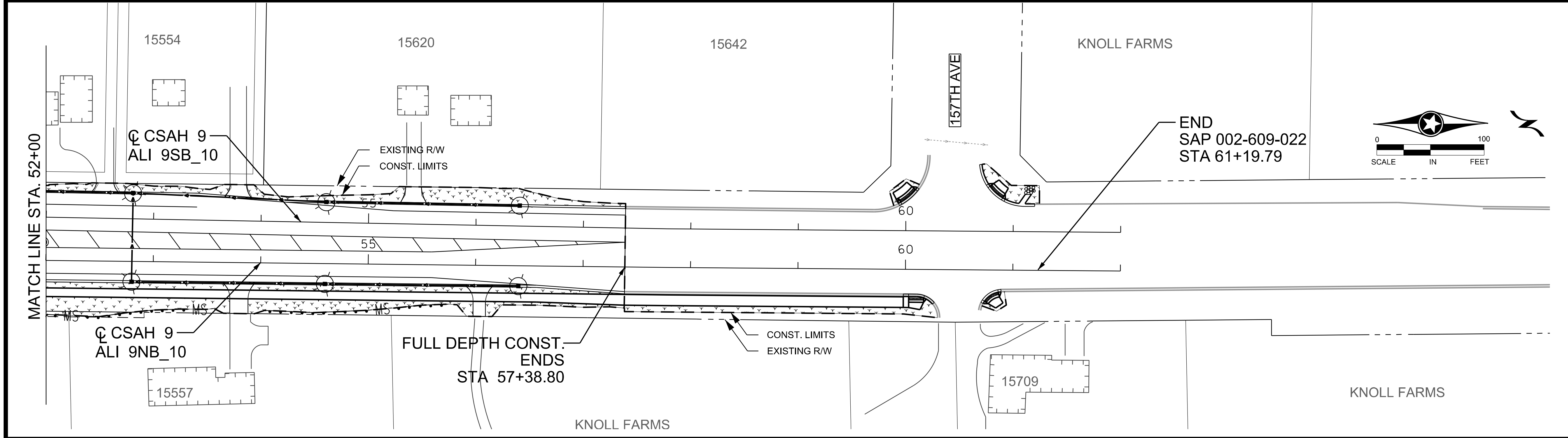
▲	PROPOSED APRON
-◄-	PROPOSED STORM
-<<-	EXISTING STORM



END
SAP 002-609-022
STA 61+19.79

FULL DEPTH CONST.
ENDS
STA 57+38.80

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2 OF 2

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-609-022\Plan\002609022 ER2.dgn 11/15/2023 1:32:15 PM

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ANOKA COUNTY

ANOKA COUNTY
HIGHWAY DEPT.

SAP 002-609-022
SAP 198-020-039

TURF ESTABLISHMENT
&
EROSION CONTROL
STA 38+00 TO 61+19.79

Sheet 91 of 167 Sheets

JCFoster

PROJECT LOCATION AND GENERAL INFORMATION

THIS PROJECT IS LOCATED ON CSAH 9, 149TH LN TO 157TH AVE IN THE CITY OF ANDOVER. THE PROJECT LIES IN BOTH THE COON CREEK AND LRRWMO WATERSHED DISTRICTS.

THIS PROJECT ADDS CURB AND GUTTER, MEDIAN, TRAIL, AND DRAINAGE STRUCTURES TO ROADWAY. THE PROJECT WILL PRIMARILY CONSIST OF GRADING, PLACING AGGREGATE BASE, BITUMINOUS PAVING, CURB AND GUTTER, STORM SEWER CONSTRUCTION & STORM WATER PONDING.

THIS PROJECT WILL DISTURB 15.30 ACRES OF SOILS AND CREATE POTENTIAL FOR SEDIMENT DISCHARGE FROM THE SITE.

TRAINING REQUIREMENTS

THE CONTRACTOR WILL ENSURE COMPLIANCE WITH THE TRAINING REQUIRED IN PART 111.A.2 OF THE GENERAL STORMWATER PERMIT FOR CONSTRUCTION ACTIVITY.

THE INDIVIDUALS RECEIVING TRAINING WILL BE RECORDED IN THE SWPPP BEFORE THE START OF CONSTRUCTION OR AS SOON AS PERSONNEL FOR THE PROJECT HAVE BEEN DETERMINED.

LONG TERM OPERATION AND MAINTENANCE

THE CITY OF ANDOVER STREETS DEPARTMENT IS RESPONSIBLE FOR THE LONG TERM OPERATION AND MAINTENANCE OF THE PERMANENT STORMWATER MANAGEMENT AND SNOW REMOVAL OPERATIONS ALONG THE PROPOSED TRAIL.

DAVE BERKOWITZ
PUBLIC WORKS/CITY ENGINEER
D.Berkowitz@andovermn.gov
CITY OF ANDOVER
1685 Crosstown Blvd. NW
Andover, MN 55304
(763) 767-5133

RECEIVING SURFACE WATERS, DISCHARGE TO IMPAIRED WATERS & SPECIAL WATERS

THE FOLLOWING TABLE IDENTIFIES ALL SURFACE WATERS WITHIN 1 MILE OF THE PROJECT DISTURBED SOIL BOUNDARIES, WHICH WILL RECEIVE STORMWATER RUNOFF FROM THE CONSTRUCTION SITE, DURING OR AFTER CONSTRUCTION.

STORMWATER FROM A DISCHARGE POINT ON THE PROJECT THAT FLOWS TO A SURFACE WATER IDENTIFIED AS IMPAIRED AND/OR SPECIAL MUST INCLUDE THE FOLLOWING ADDITIONAL BMP REQUIREMENTS:

23.9) ALL EXPOSED SOIL AREAS MUST BE STABILIZED AS SOON AS POSSIBLE TO LIMIT SOIL EROSION, BUT IN NO CASE MORE THAN SEVEN (7) DAYS AFTER THE CONSTRUCTION ACTIVITY IN THAT PORTION OF THE SITE HAS TEMPORARILY OR PERMANENTLY CEASED.

23.10) TEMPORARY SEDIMENT BASINS OR PERMANENT PONDS MUST BE USED FOR COMMON DRAINAGE LOCATIONS THAT SERVE AN AREA WITH FIVE (5+) OR MORE ACRES DISTURBED AT ONE TIME.

RECEIVING SURFACE WATERS WITHIN 1 MILE OF PROJECT		
NAME OF WATER BODY	SPECIAL	IMPAIRED
ROUND LAKE	NO	NO
COON CREEK	NO	YES

DISTURBED SOIL AREA

TOTAL DISTURBED SOILS AREA FOR THIS PROJECT IS 15.30 ACRES

IMPERVIOUS SURFACE AREA

EXISTING AREA OF IMPERVIOUS SURFACE IS 7.362 ACRES.

POST CONSTRUCTION AREA OF IMPERVIOUS SURFACE IS 10.633 ACRES.

SOIL TYPES

THE PREDOMINANT SOIL TYPE FOUND ON THIS PROJECT IS ZIMMERMAN FINE SAND.

SEDIMENT CONTROL PRACTICES

TEMPORARY STOCKPILED TOPSOIL BERMS MUST INCLUDE PERIMETER BMPs AS PROVIDED IN THE PLAN AT LOCATIONS WHERE CONSTRUCTION STORMWATER DRAINS FROM THE PROJECT.

IN ORDER TO MAINTAIN SHEET FLOW AND MINIMIZE RILLS AND/OR GULLIES, THERE SHALL BE NO UNBROKEN SLOPE LENGTH GREATER THAN 75 FEET FOR SLOPES WITH A GRADE OF 1:3 OR STEEPER.

ALL STORM DRAIN INLETS MUST BE PROTECTED BY APPROPRIATE BMPs DURING CONSTRUCTION UNTIL ALL SOURCES WITH POTENTIAL DISCHARGE TO THE INLET HAVE BEEN STABILIZED.

VEHICLE TRACKING OF SEDIMENT FROM THE CONSTRUCTION SITE MUST BE MINIMIZED. STREET SWEEPING MUST BE USED IF SEDIMENT IS BEING TRACKED OFF THE CONSTRUCTION SITE.

POLLUTION PREVENTION MEASURES

THE CONTRACTOR WILL IMPLEMENT THE POLLUTION PREVENTION MANAGEMENT MEASURES AS DIRECTED IN THE NPDES PERMIT PART IV.F AS PERTAINING TO SOLID WASTE, HAZARDOUS MATERIALS EXTERNAL TRUCK WASHING, AND CONCRETE WASHOUT ONSITE.

THESE MANAGEMENT MEASURES FOR POLLUTION PREVENTION WILL BE STRICTLY ENFORCED.

CONSTRUCTION PHASING

SILT FENCE AND/OR OTHER SUITABLE PERIMETER BMPs AS PROVIDED IN THE PLANS WILL BE INSTALLED PRIOR TO THE START OF ANY LAND DISTURBING ACTIVITY. CONSTRUCTION WILL BE REQUIRED TO BE PHASED SO THAT ALL DOWN GRADIENT SEDIMENT CONTROL MEASURES ARE INSTALLED PRIOR TO OR IN CONJUNCTION WITH ANY SOIL DISTURBING ACTIVITIES.

WHEN TOPSOIL IS DISTURBED, THE TOPSOIL WILL BE STRIPPED AND STOCKPILED IN SOIL BERMS AT THE TOE OF THE STRIPPED SLOPES ALONG THE PROJECT LIMITS. TEMPORARY VEGETATION WILL BE ESTABLISHED ON THE STOCKPILED TOPSOIL BERMS WITH RAPID STABILIZATION AS PROVIDED IN THE PLAN.
STOCKPILED TOPSOIL BERMS WILL NOT BE PLACED IN ANY STORMWATER CONVEYANCES.

AFTER STRIPPING THE TOPSOIL, THE EXPOSED SOIL INSLOPES WILL BE STABILIZED WITH DISK ANCHORED TYPE 3 MULCH AND SEED WITHIN 7 DAYS OR RAPID STABILIZATION 7 DAYS AFTER THE CONSTRUCTION ACTIVITY IN THAT PORTION OF THE SITE HAS BEEN TEMPORARILY OR PERMANENTLY CEASED.

TEMPORARY SEDIMENT BASINS

THIS ROAD CONSTRUCTION PROJECT AS DESIGNED DOES NOT MEET ANY OF THE TEMPORARY SEDIMENT BASIN DISTURBED AREA THRESHHOLD REQUIREMENTS. IF PERMANENT POND LOCATIONS ARE CONSTRUCTED PRIOR TO DISCHARGE, TEMPORARY SEDIMENT BASINS WILL NOT BE REQUIRED.

PERMANENT STORMWATER MANAGEMENT SYSTEM

ALL STORMWATER MUST BE DISCHARGED IN A MANNER THAT DOES NOT CAUSE NUISANCE CONDITIONS, EROSION IN RECEIVING WATERS OR ON DOWNSLOPE PROPERTIES, OR INUNDATION IN WETLANDS CAUSING A SIGNIFICANT ADVERSE IMPACT TO THE WETLAND.

THIS ROAD CONSTRUCTION PROJECT HAS A GREATER THAN 1 ACRE INCREASE IN IMPERVIOUS AREA.

PROJECT CONTACTS

MPCA	NPDES	LAUREL MEZNER	218-316-3889
MPCA	EMERGENCY	STATE DUTY OFFICER	800-422-0798
DNR	ENDANGERED SPECIES	BRIDGET HENNING-RANDA	651-259-5073
CCWD	WATERSHED	ERIN EDISON	763-392-8875
LRRWMO	WATERSHED	BOB OBERMEYER	952-832-2857
ANOKA COUNTY DESIGN SWPPP PREPARATION	U OF MN DESIGN OF SWPPP EXPIRES 5/24	JEFF FOSTER	763-324-3126
ANOKA COUNTY PROJECT REPRESENTATIVE	U OF MN SITE MANAGEMENT EXPIRES 5/24	CHRIS OSTERHUS	651-233-3168
EROSION CONTROL SUPERVISOR (CONTRACTOR)			

EROSION PREVENTION PRACTICES

ALL EXPOSED SOIL AREAS MUST BE STABILIZED AS SOON AS POSSIBLE TO LIMIT SOIL EROSION, BUT IN NO CASE MORE THAN 7 DAYS AFTER THE CONSTRUCTION ACTIVITY IN THAT PORTION OF THE SITE HAS TEMPORARILY OR PERMANENTLY CEASED.

THE NORMAL WETTED PERIMETER OF ANY TEMPORARY OR PERMANENT DRAINAGE DITCH OR SWALE THAT DRAINS WATER FROM ANY PORTION OF THE CONSTRUCTION SITE, OR DIVERTS WATER AROUND THE SITE, MUST BE STABILIZED WITHIN 200 LINEAL FEET FROM THE POINT OF DISCHARGE INTO ANY SURFACE WATER. STABILIZATION OF THE LAST 200 FEET MUST BE COMPLETED WITHIN 24 HOURS AFTER CONNECTING TO A SURFACE WATER.

PIPE CULVERT OUTLETS MUST BE PROVIDED WITH TEMPORARY OR PERMANENT ENERGY DISSIPATION WITHIN 24 HOURS AFTER CONNECTION TO A SURFACE WATER. THIS WILL INCLUDE DRAINAGE DITCHES THAT DRAIN WATER FROM ANY PORTION OF THE CONSTRUCTION SITE.

STABILIZE SOIL STOCKPILES WITHIN 7 DAYS OF ROUGH GRADING OR INACTIVITY.

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

LOCATION OF SWPPP REQUIREMENTS

REQUIREMENT	PLAN		MN/DOT SPECIFICATION	SPECIAL PROVISION
	TITLE	LOCATION		
NPDES PERMIT COMPLIANCE		SHEET SPEC	1701, 1702, &1717	1717 (AIR, LAND & WATER) 1717 (NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT)
CERTIFIED PERSONNEL IN EROSION AND SEDIMENT CONTROL SITE MANAGEMENT	SWPPP TRAINING	SHEET 92	1506, 1717, & 2573	1717 (AIR, LAND & WATER) 1717 (NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT)
CHAIN OF RESPONSIBILITY	AGENCY CONTACTS	SHEET 92	1506, 1717, & 2573	
PROJECT SCHEDULE / WEEKLY EROSION & SEDIMENT CONTROL SCHEDULE / COMPLETING INSPECTION / MAINTENANCE LOG	AGENCY CONTACTS	SHEET FIELD TRAILER 92 - 93	1717 & 2573	1717 (AIR, LAND & WATER) 1717 (NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT)
SWPPP PREPARATION	AGENCY CONTACTS	SHEET 92		
SITE MAP / RECEIVING WATERS / DIRECTION OF FLOW	EROSION CONTROL PLAN	SHEETS 90 - 91	1717	
PROJECT SPECIFIC CONSTRUCTION STAGING	STAGING PLANS	SHEETS 46 - 62	1717	1717 (AIR, LAND & WATER) 1717 (NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT) 1806 (DETERMINATION AND EXTENSION OF CONTRACT TIME)
TEMPORARY EROSION AND SEDIMENT CONTROL BMP LOCATIONS, INSTALLATION, TIMING OF INSTALLATION AND TYPE OF BMP	EROSION CONTROL PLAN, TABULATION CHARTS	SHEETS 90 - 91	2573 & 2525	2575 (RAPID STABILIZATION SPECIFICATION)
ADDITIONAL TEMPORARY AND/OR PERMANENT EROSION AND SEDIMENT CONTROL BMPs NOT PROVIDED OR SHOWN IN THE PLAN	SWPPP NARRATIVE	SHEET 92 - 93	1717, 2573, & 2575	1717 (AIR, LAND & WATER) 1717 (NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT) 2575 (RAPID STABILIZATION SPECIFICATION)
MAINTENANCE OF EROSION AND SEDIMENT CONTROL DEVICES, REMOVAL OF TRACKED SEDIMENT, REMOVAL OF DEVICES	EROSION CONTROL PLAN	SHEETS 90 - 91	1717 & 2573	1514 (MAINTENANCE DURING CONSTRUCTION) 1717 (LAND AIR & WATER) 1717 (NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT)
DEWATERING		92	2105.3B, & 2451.3C	DEWATERING MAY ALSO REQUIRE DNR PERMIT. NO DEWATERING IS ANTICIPATED FOR THIS PROJECT
FINAL STABILIZATION	TURF ESTABLISHMENT PLAN, TABULATION CHARTS	SHEETS 90 - 91 92	1717, 2573, & 2575	1717 (AIR, LAND & WATER) 1717 (NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT)
TEMPORARY EROSION AND SEDIMENT CONTROL DETAILS	EROSION CONTROL DETAILS	SHEETS 32 - 38	2575	2575 (RAPID STABILIZATION SPECIFICATION)
PERMANENT EROSION CONTROL DETAILS	EROSION CONTROL DETAILS	SHEETS 29 - 31	2575	2575 (CONTROLLING EROSION AND ESTABLISHING VEGETATION)

1 OF 2

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-609-022\Plan\002609022 SW_P1.dgn 10/25/2023 10:57:39 AM

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

PRINT NAME: NICHOLAS J DOBDA
SIGNATURE:
DATE: 11/22/23 LICENSE NO. 49046

DRAWN BY JCF DATE 10/27/23
DESIGN BY JCF DATE 10/27/23
CHECKED BY NJD DATE 11/02/23

ANOKA COUNTY
HIGHWAY DEPT.

SAP 002-609-022
SAP 198-020-039

SWPPP

JCFoster

STORM WATER POLLUTION PREVENTION PLAN (SWPPP)

Training

Individual revising or amending the SWPPP and individuals performing inspections must fill in the following table.

Name of on-site personel trained	
Dates of training	
Name of instructor(s)	
Entity providing training	
Content of training course or workshop	

Amending the SWPPP

The SWPPP must be amended to record changes or modifications to permanent BMP's or other storm water treatment systems and removals of temporary BMP's. Changes to temporary BMP's may be recorded on this sheet. Include a brief description of the problem, location, nature of alteration, and comments. This record is to be retained for three years after project completion.

Date Reported	**Plan Location (sheet)**	**Project Location (station)**	**Problem, solution, and notes**

2 OF 2

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-609-022\Plan\002609022 SW_P2.dgn 10/25/2023 10:57:46 AM

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PRINT NAME: NICHOLAS J DOBDA

SIGNATURE: Nick Dobda

DATE: 11/22/23 LICENSE NO. 49046

DRAWN BY JCF DATE 10/27/23

DESIGN BY JCF DATE 10/27/23

CHECKED BY NJD DATE 11/02/23

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SWPPP

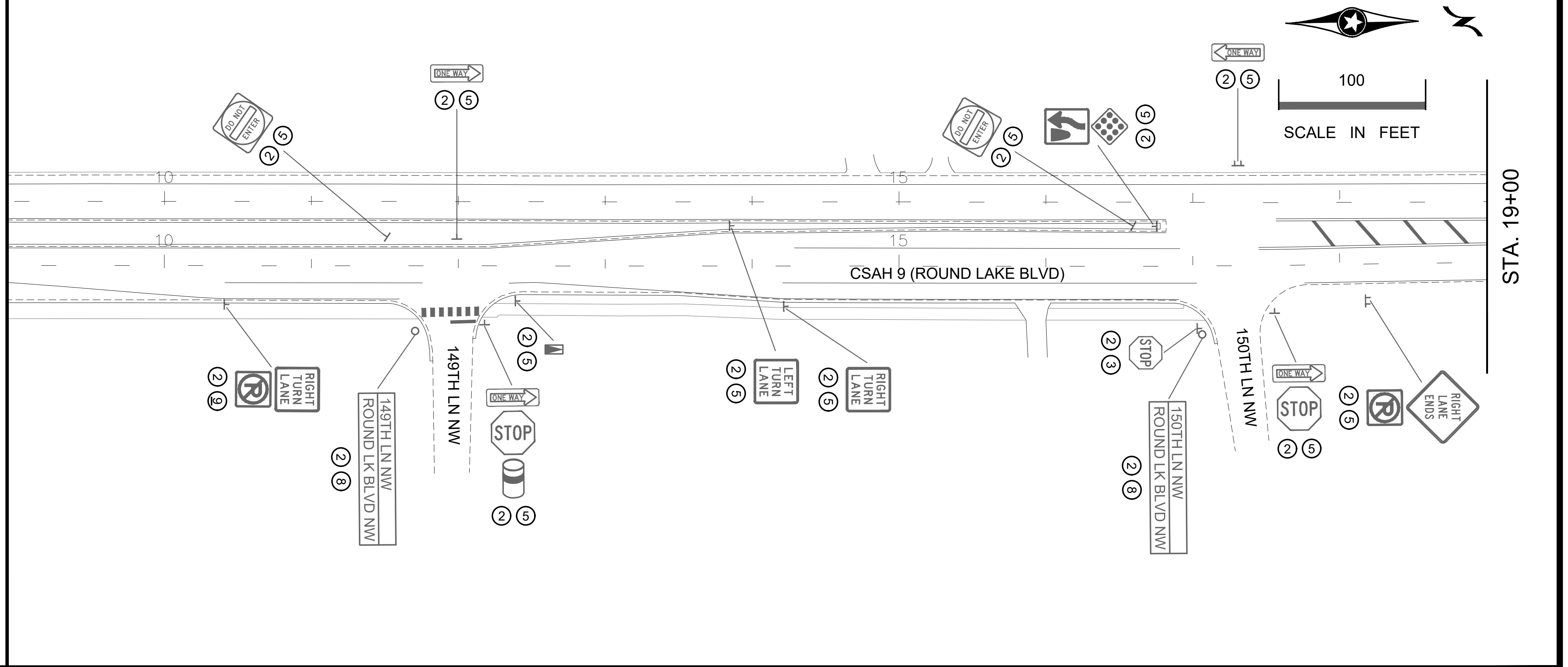
Sheet 93 of 167 Sheets

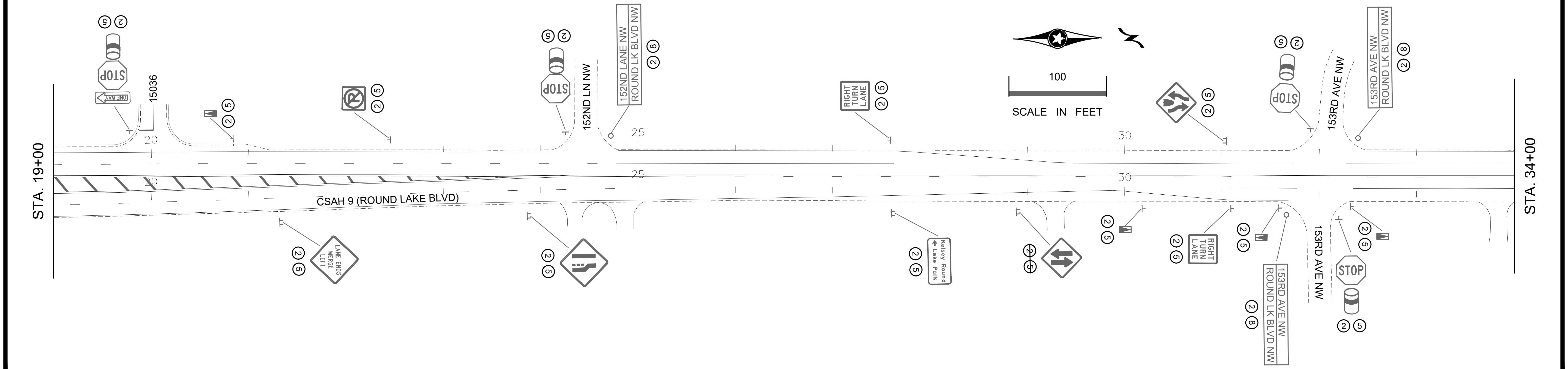
TRAFFIC CONTROL NOTES: (TYP.)

1. SALVAGED SIGNS ARE TO BE KEPT IN PRISTINE CONDITION. ANY DAMAGED SIGN SHALL BE REPLACED IN KIND AT THE EXPENSE OF THE CONTRACTOR.
2. ALL SALVAGED SIGNS SHALL BE INSTALLED USING NEW POSTS AND HARDWARE.

SIGNING NOTES

② INPLACE
③ SALVAGE
⑤ REMOVE
⑧ SALVAGE SIGN TYPE SPECIAL
⑨ RETAIN INPLACE





1 OF 3

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PRINT NAME: SEAN R. THIEL
SIGNATURE: Sean R. Thiel
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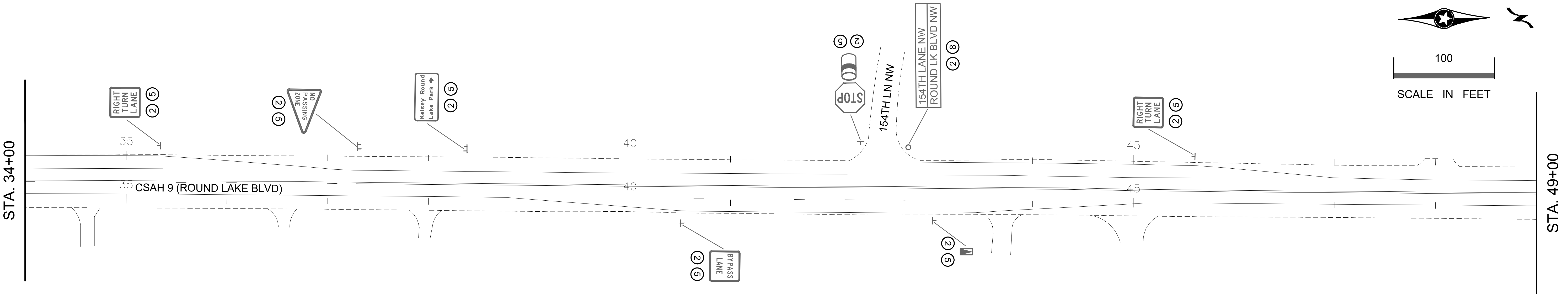
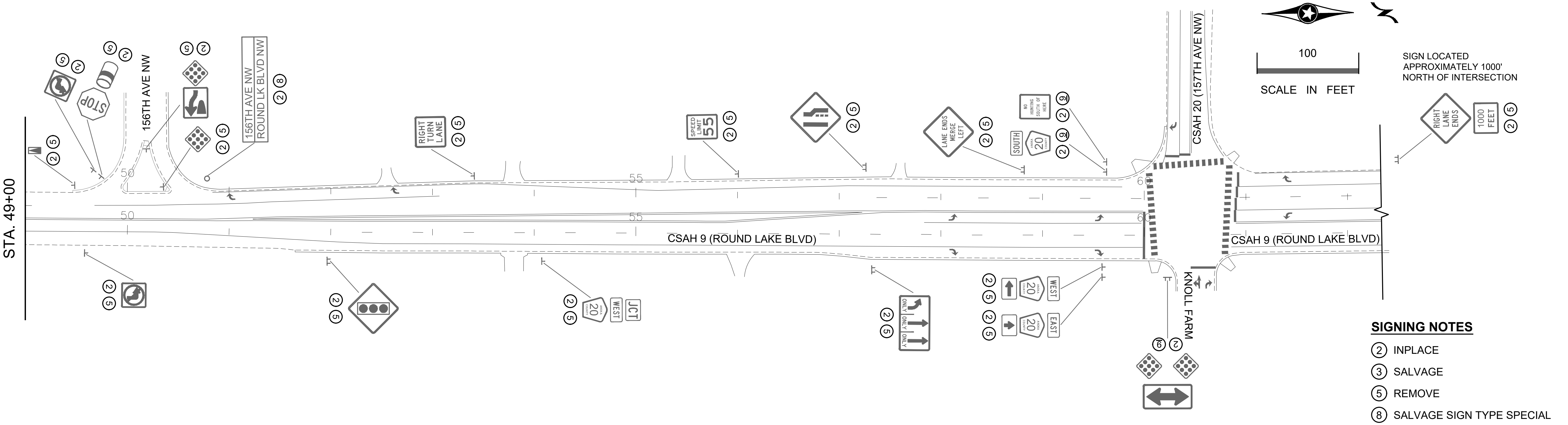
EXISTING
SIGNING & STRIPING

Sheet 94 of 167 Sheets





SIGNING NOTES

② INPLACE
③ SALVAGE
⑤ REMOVE
⑧ SALVAGE SIGN TYPE SPECIAL
⑨ RETAIN INPLACE

2 OF 3

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EXISTING
SIGNING & STRIPING

Sheet 95 of 167 Sheets

EXISTING SIGN TABULATION

L

STATION	NOTES	REMOVE SIGN TYPE C	SALVAGE SIGN TYPE C	REMOVE SIGN TYPE D	SALVAGE SIGN TYPE SPECIAL	INSTALL SALVAGE SIGN TYPE SPECIAL	SIGN CODE	PANEL LEGEND
		EACH	EACH	EACH	EACH	EACH		
11+52	MEDIAN	1					R5-1	DO NOT ENTER
(1) 11+71	ES				1	1		ROUND LAKE BLVD NW
								149TH LN NW
11+99	MEDIAN	1					R6-1R	ONE WAY RIGHT
12+16	ES	1					R6-1R	ONE WAY RIGHT
							R1-1	STOP
							X4-3	CYLINDER STYLE DELINEATOR
12+39	ES	1					X3-5	SNOWPLOW MARKER UP
14+85	MEDIAN	1						LEFT TURN LANE
14+21	ES	1						RIGHT TURN LANE
16+60	MEDIAN	1					R5-1	DO NOT ENTER
16+76	MEDIAN	1					R4-7	KEEP RIGHT
							OM1-1	TYPE 1 OBJECT MARKER
(2) 17+02	ES		1				R1-1	STOP
(1) 17+06	ES				1	1		ROUND LAKE BLVD NW
								150TH LN NW
17+31	WS	1					R6-1L	ONE WAY LEFT
17+55	ES	1					R6-1R	ONE WAY RIGHT
							R1-1	STOP
18+17	ES	1					W9-1R	RIGHT LANE ENDS
							R8-3	NO PARKING
19+78	WS	1					R6-1R	ONE WAY RIGHT
							R1-1	STOP
							X4-3	CYLINDER STYLE DELINEATOR
20+84	WS	1					X3-5	SNOWPLOW MARKER UP
21+31	ES	1					W9-2L	LANE ENDS MERGE LEFT
22+46	WS	1					R8-3	NO PARKING
23+86	ES	1					W4-2R	LANE ENDS
24+26	WS	1					R1-1	STOP
							X4-3	CYLINDER STYLE DELINEATOR
(1) 24+72	WS				1	1		ROUND LAKE BLVD NW
								152ND LANE NW
27+60	WS	1						RIGHT TURN LANE
27+61	ES			1				KELSEY ROUND LAKE PARK LEFT
28+89	ES	1					W6-3	TWO-WAY TRAFFIC
30+18	ES	1					X3-5	SNOWPLOW MARKER UP
31+04	WS	1					W6-1	DIVIDED HIGHWAY
31+09	ES	1						RIGHT TURN LANE
31+59	ES	1					X3-5	SNOWPLOW MARKER DOWN
(1) 31+66	ES				1	1		ROUND LAKE BLVD NW
								153RD AVE NW
31+90	WS	1					R1-1	STOP
							X4-3	CYLINDER STYLE DELINEATOR
32+20	ES	1					R1-1	STOP
							X4-3	CYLINDER STYLE DELINEATOR
32+32	ES	1					X3-5	SNOWPLOW MARKER UP
(1) 32+40	WS				1	1		ROUND LAKE BLVD NW
								153RD AVE NW
35+34	WS	1						RIGHT TURN LANE
37+30	WS	1					W14-3	NO PASSING ZONE
38+38	WS			1				KELSEY ROUND LAKE PARK RIGHT
40+51	ES	1					R4-X8	BYPASS LANE
42+29	WS	1					R1-1	STOP
							X4-3	CYLINDER STYLE DELINEATOR
(1) 42+77	WS				1	1		ROUND LAKE BLVD NW
								154TH LANE NW
43+01	ES	1					X3-5	SNOWPLOW MARKER UP
45+61	WS	1						RIGHT TURN LANE
49+48	WS	1					X3-5	SNOWPLOW MARKER UP
49+58	ES	1					R3-2	NO LEFT TURN
49+64	WS	1					R3-2	NO LEFT TURN
49+72	WS	1					R1-1	STOP
							X4-3	CYLINDER STYLE DELINEATOR
50+18	CITY MEDIAN	1					R4-7	KEEP RIGHT
							OM1-1	TYPE 1 OBJECT MARKER
50+36	CITY MEDIAN	1					OM1-1	TYPE 1 OBJECT MARKER
(1) 50+78	WS				1	1		ROUND LAKE BLVD NW
								156TH AVE NW
51+96	ES	1					W3-3	SIGNAL AHEAD
53+41	WS	1						RIGHT TURN LANE
54+08	ES	1					M2-1a	JCT
							M3-4a	WEST
							M1-6M	ANOKA COUNTY 20
56+01	WS	1					R2-1	SPEED LIMIT 55
57+26	WS	1					W4-2R	LANE ENDS
57+32	ES	1					R3-8ACC	ADV INTERSECTION LN CONTROL
58+82	WS	1					W9-2L	LANE ENDS MERGE LEFT
59+59	ES	1					M3-4a	WEST
							M1-6M	ANOKA COUNTY 20
							M6-1aL	DIRECTIONAL ARROW LEFT
59+59	ES	1					M3-2a	EAST
							M1-6M	ANOKA COUNTY 20
							M6-3a	DIRECTIONAL ARROW UP
	TOTAL =	47	1	2	7	7		

SPECIFIC NOTES:

(1) SIGN TYPE SPECIAL ARE TO BE VISIBLE AT ALL TIMES. SHALL BE PAID BY THE EACH, WHEN RELOCATION IS REQUIRED.

(2) STOP SIGN TO BE BROUGHT TO FIELD TRAILER AND PICKED UP BY CITY OF ANDOVER.

ES = EAST SIDE

WS = WEST SIDE

3 OF 3

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-609-022\Base\Traffic\Existing Signing & Striping.dwg

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ANOKA COUNTY

ANOKA COUNTY
HIGHWAY DEPT.

SAP 002-609-022
SAP 198-020-039

EXISTING
SIGNING & STRIPING

PERMANENT PAVEMENT MARKING PLAN
NOTES & GUIDELINES

GENERAL INFORMATION:

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

PAINT:

1. AT THE TIME OF APPLYING THE MARKING MATERIAL, THE APPLICATION AREA SHALL BE FREE OF CONTAMINATION. THE CONTRACTOR SHALL CLEAN THE ROADWAY SURFACE PRIOR TO THE LINE APPLICATION IN A MATTER AND TO THE EXTENT REQUIRED BY THE ENGINEER.
2. GLASS BEADS SHALL BE APPLIED IMMEDIATELY AFTER APPLICATION OF THE PAINT LINE.
3. EXCEPT WHEN USED AS A TEMPORARY MARKING, PAVEMENT MARKINGS SHALL ONLY BE APPLIED IN SEASONABLE WEATHER WHEN AIR AND PAVEMENT SURFACE TEMPERATURES ARE 50°F OR HIGHER AND SHALL NOT BE APPLIED WHEN THE WIND OR OTHER CONDITIONS CAUSE A FILM OR DUST TO BE DEPOSITED ON THE PAVEMENT SURFACE AFTER CLEANING AND BEFORE THE MARKING MATERIAL CAN BE APPLIED.

MULTI-COMPONENT (MULTI-COMP):

1. THE ROAD SURFACE SHALL BE CLEANED AT THE DIRECTION OF THE ENGINEER JUST PRIOR TO APPLICATION. PAVEMENT CLEANING SHALL CONSIST OF AT LEAST BRUSHING WITH A ROTARY BROOM (NON-METALLIC) OR AS RECOMMENDED BY THE MATERIAL MANUFACTURER AND ACCEPTABLE TO THE ENGINEER. NEW PORTLAND CEMENT CONCRETE SURFACES SHALL BE SANDBLAST CLEANED TO REMOVE ANY SURFACE TREATMENT AND/OR LAITANCE ON LOW SPEED (SPEED LIMIT 35 MPH OR LESS) URBAN PORTLAND CEMENT CONCRETE ROADWAYS. SANDBLAST CLEANING SHALL BE USED FOR ALL MULTI-COMP PAVEMENT MARKINGS.
2. THE MULTI-COMP MARKING APPLICATION SHALL IMMEDIATELY FOLLOW THE PAVEMENT CLEANING. GLASS BEADS SHALL BE APPLIED IMMEDIATELY AFTER APPLICATION OF THE MULTI-COMP LINE TO PROVIDE AN IMMEDIATE NO-TRACK SYSTEM.
3. A MULTI-COMP LINE SHALL BE APPLIED WITH A MINIMUM THICKNESS OF 20 MILS (WET) AND 4" WIDE . GLASS BEADS SHALL BE APPLIED AT A MINIMUM RATE OF 25 LBS POUNDS PER GALLON RATE SUFFICIENT TO ACHIEVE AN ACCEPTABLE NO-TRACK SYSTEM.
4. PAVEMENT MARKINGS SHALL ONLY BE APPLIED IN SEASONABLE WEATHER WHEN AIR AND PAVEMENT SURFACE TEMPERATURES ARE 40° OR HIGHER AND SHALL NOT BE APPLIED WHEN THE WIND OR OTHER CONDITIONS CAUSE A FILM OR DUST TO BE DEPOSITED ON THE PAVEMENT SURFACE AFTER CLEANING AND BEFORE THE MARKING MATERIAL CAN BE APPLIED.

PREFORMED THERMOPLASTIC:

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

PERMANENT PAVEMENT MARKING TABULATION — M

ITEM DESCRIPTION	UNIT	TOTAL		CSAH 9 (ROUND LAKE BLVD)		149TH LN	150TH LN	152ND LN	153RD AVE	154TH LN
		WHITE	YELLOW	WHITE	YELLOW	WHITE	WHITE	YELLOW	WHITE	WHITE
4" SOLID LINE MULIT-COMP	LIN FT	14125	7584	14125	7555			29		
4" DOUBLE SOLID LINE MULIT-COMP	LIN FT		1386		1340			46		
4" BROKEN LINE MULTI-COMP	LIN FT	1900		1900						
24" SOLID LINE PREFORMED THERMOPLASTIC	LIN FT		393		393					
24" SOLID LINE PAINT	LIN FT	60				17	18		12	13
3' X 8' CROSSWALK PAINT	SQ FT	576				168	168		120	120
PAVEMENT MARKING REMOVAL	SQ FT	96								

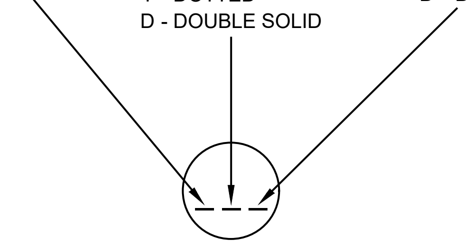
PAVEMENT MARKING SYMBOLS & MATERIALS LEGEND

— —	BROKEN LINE - 50' CYCLE 10' LINE, 40' GAP
- - - -	DOTTED LINE - 15' CYCLE (3' LINE, 12' GAP) UNLESS SHOWN OTHERWISE IN THE PLAN
▮	CROSSWALK BLOCK
↰	PAVEMENT MESSAGE (LEFT ARROW)

STRIPING KEY

○	CIRCLE - MULTI-COMP
△	TRIANGLE - PAINT
□	SQUARE - REMOVABLE PREF TAPE
⯃	OCTAGON - PREF THERMO

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



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

1 OF 1

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ANOKA COUNTY

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PERMANENT PAVEMENT MARKING PLAN AND TABULATIONS

Sheet 97 of 167 Sheets

STRIPING NOTES: (TYP.)

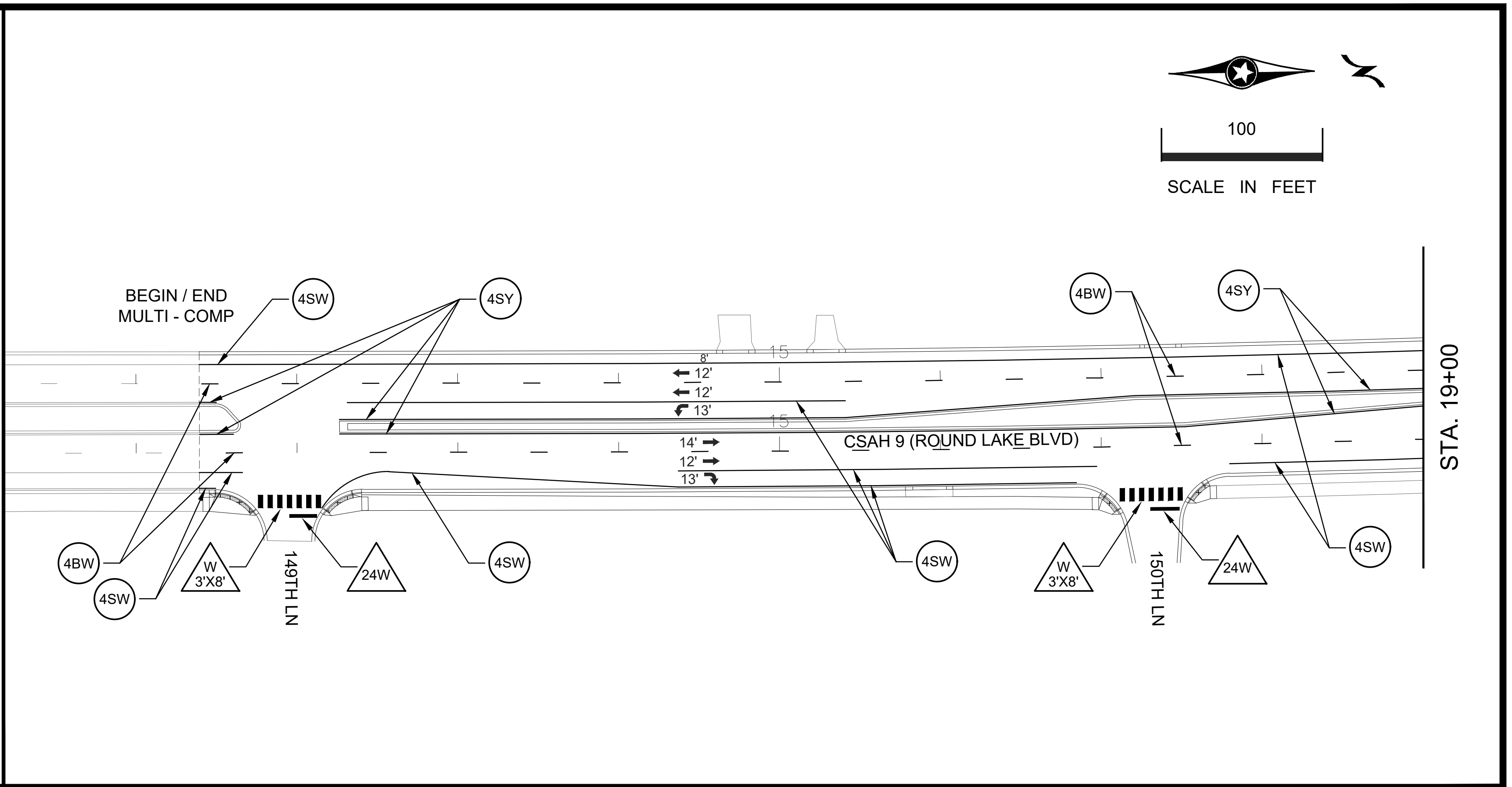
1. LOCATIONS OF ALL PERMANENT STRIPING AND PAVEMENT MARKINGS ARE APPROXIMATE. EXACT LOCATIONS WILL BE DETERMINED IN THE FIELD BY THE ENGINEER.
2. ALL MAINLINE PERMANENT STRIPING AND PAVEMENT MARKINGS SHALL BE PLACED WITHIN 72 HOURS OF MAINLINE PAVING.
3. APPLY ALL PAVEMENT MARKINGS AS RECOMMENDED BY THE MATERIAL MANUFACTURER.
4. PERMANENT PAVEMENT MARKINGS AND STRIPING SHALL NOT BE PLACED OVER TEMPORARY TAPE MARKINGS.
5. MULTI-COMP STRIPE LINES SHALL MATCH INTO EXISTING PAINT STRIPE LINES.
6. LEFT TURN ARROWS ON NORTHBOUND CSAH 9 (ROUND LAKE BLVD) AT CSAH 20 (157TH AVE) WILL NOT NEED TO BE REPLACED UNLESS CONSTRUCTION ACTIVITIES DAMAGE OR ALTER THE ARROWS IN ANY WAY. IF DAMAGED OR ALTERED, THE ARROWS ARE TO BE REMOVED AND REPLACED WITH POLYPREFORM THERMOPLASTIC.
7. REMOVE RIGHT TURN ARROWS ON NORTHBOUND CSAH 9 (ROUND LAKE BLVD) AT STA 58+13 AND 59+56. MAY BE REMOVED DURING A PREVIOUS STAGE.
8. CROSSWALK BLOCKS AND STOP BARS ON CITY STREETS ARE TO BE INSTALLED WITH PAINT.

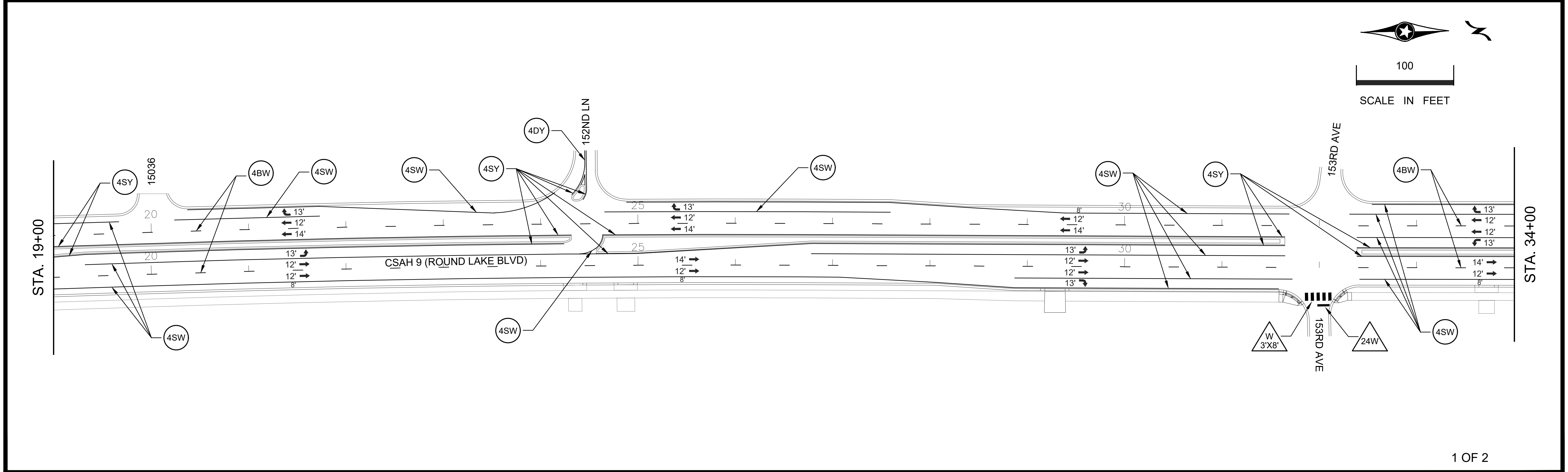
STRIPING KEY

○ CIRCLE - MULTI-COMP

△ TRIANGLE - PAINT

⯃ OCTAGON - PREF THERMO





1 OF 2

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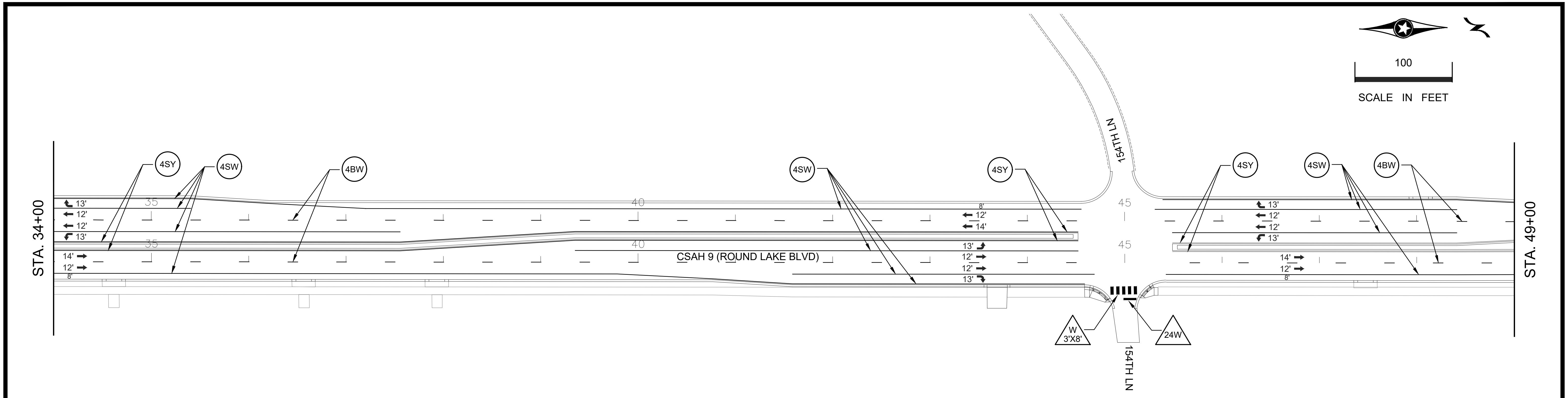
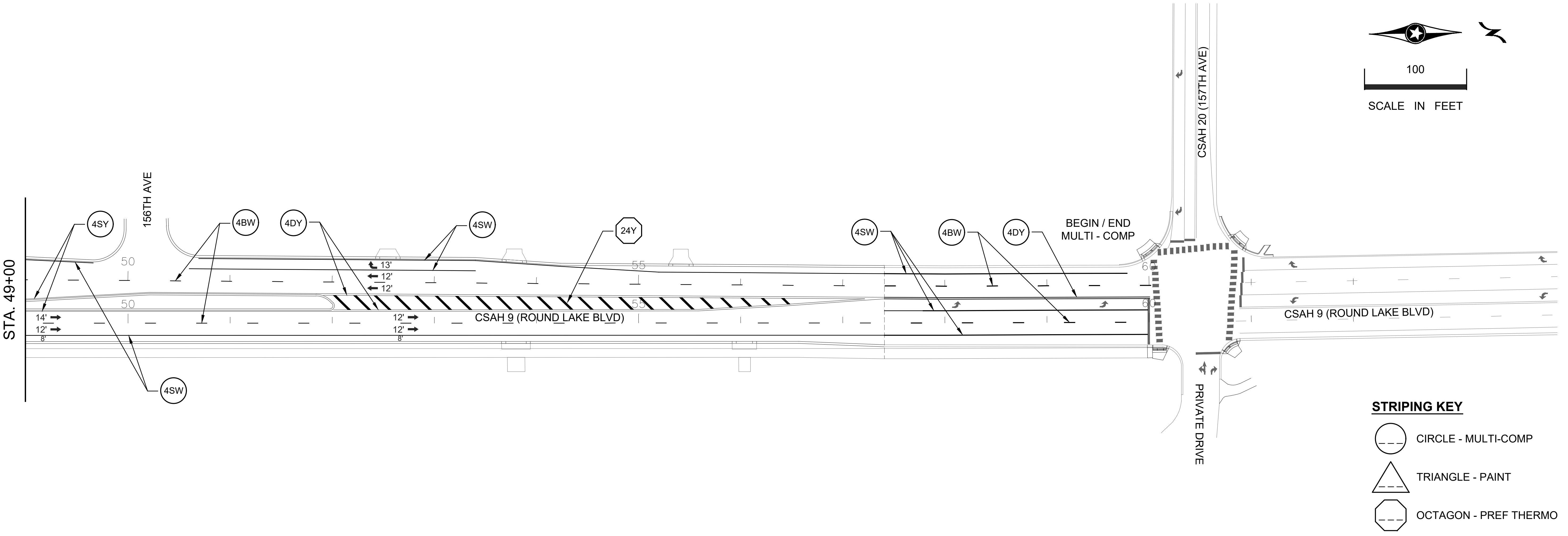
PERMANENT PAVEMENT
MARKING PLAN

Sheet 98 of 167 Sheets





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PERMANENT PAVEMENT
MARKING PLAN

Sheet 99 of 167 Sheets

TRAFFIC CONTROL NOTES: (TYP.)

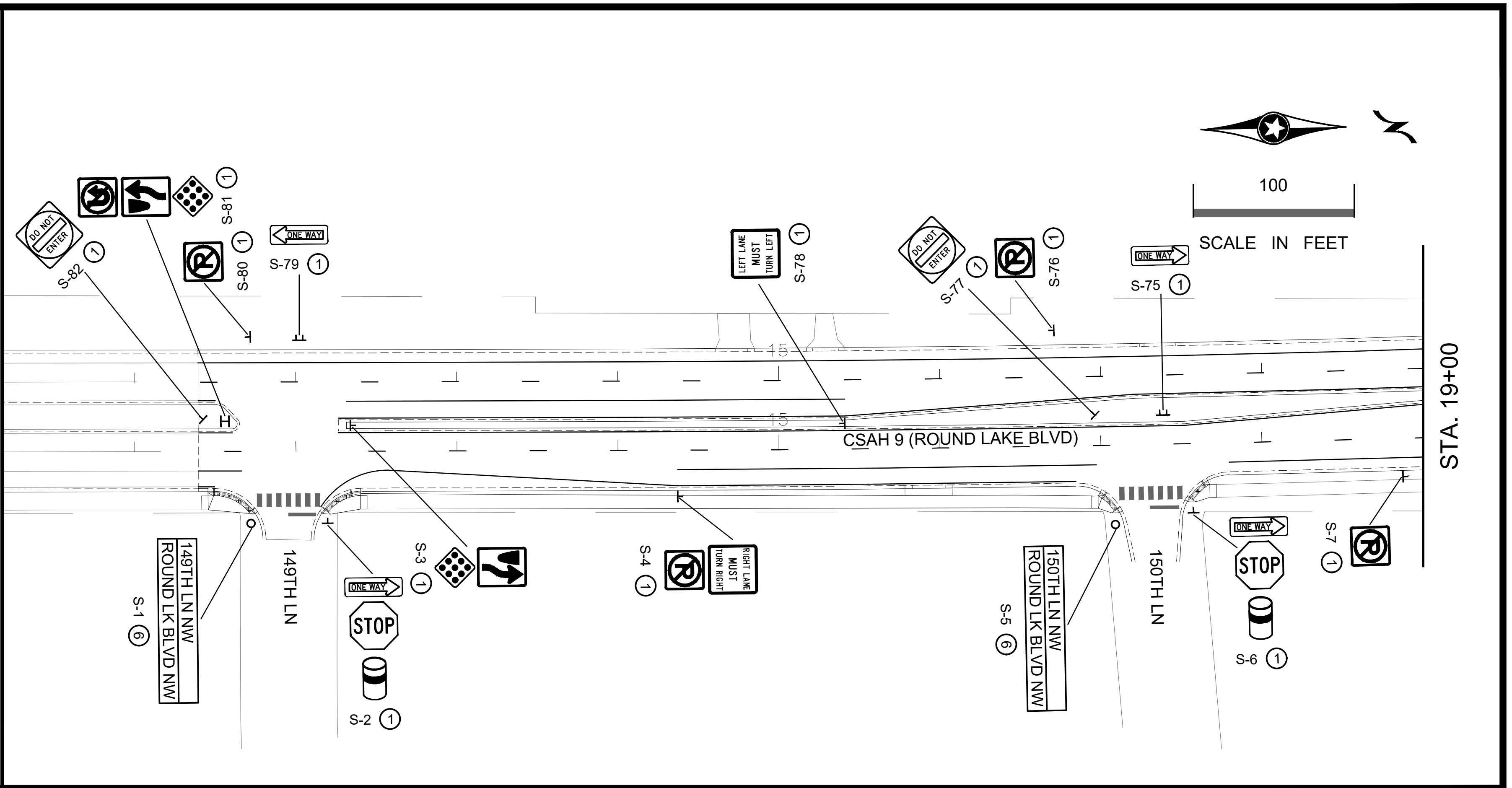
1. ALL TRAFFIC CONTROL DEVICES SHALL CONFORM AND BE PLACED IN ACCORDANCE WITH THE MOST RECENT EDITION OF THE "MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MN MUTCD), INCLUDING PART 6, "FIELD MANUAL", DATED SEPTEMBER 2020.
2. ALL SIGNS SHALL BE FURNISHED AND INSTALLED UNLESS OTHERWISE NOTED.
3. ALL SALVAGED SIGNS SHALL BE INSTALLED ON NEW POSTS AND HARDWARE.
4. SALVAGED SIGNS ARE TO BE KEPT IN PRISTINE CONDITION. ANY DAMAGE OF SALVAGED SIGNS SHALL BE REPLACED IN KIND AT THE EXPENSE OF THE CONTRACTOR.

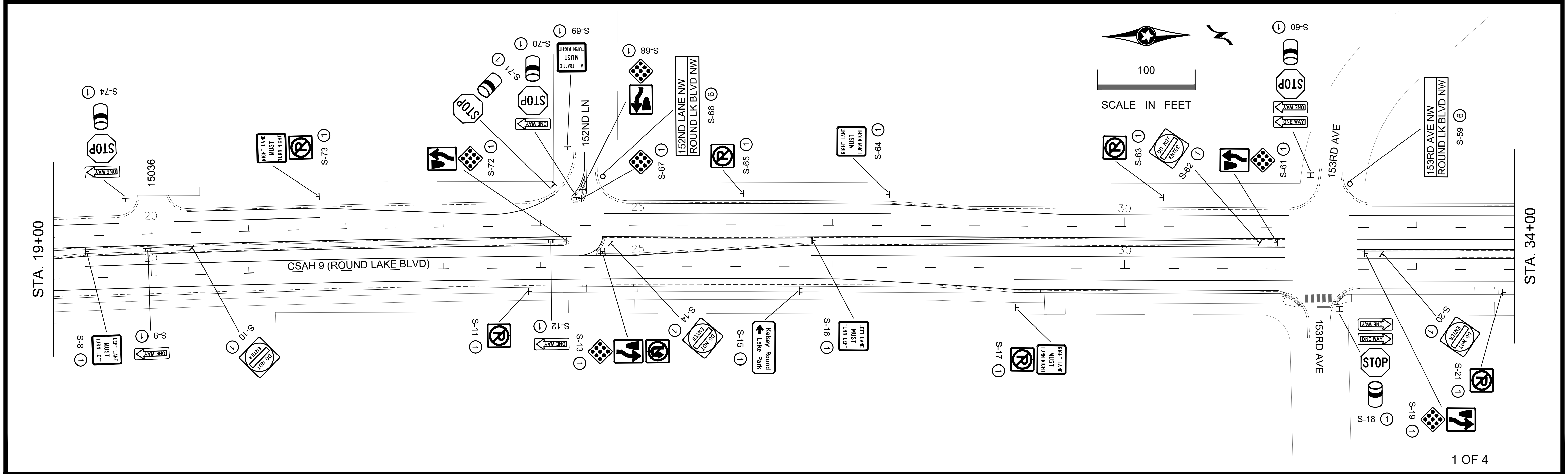
TRAFFIC CONTROL DEVICES & SYMBOLS LEGEND

SYMBOL	DESCRIPTION
⊥	TRAFFIC CONTROL SIGN (SINGLE POST)
H	TRAFFIC CONTROL SIGN (SINGLE POST, BACK TO BACK)
⊥⊥	TRAFFIC CONTROL SIGN (DOUBLE POST)

SIGNING NOTES

①	F. & I.
②	INPLACE
⑥	INSTALL





1 OF 4

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-609-022\Base\Traffic\Permanent Signing.dwg

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

PRINT NAME: SEAN R. THIEL

SIGNATURE: Sean R. Thiel

DATE: 11/02/2023 LICENSE NO. 45129

DRAWN BY FL DATE 08/08/23

DESIGN BY FL DATE 08/08/23

CHECKED BY SRT DATE 10/27/23

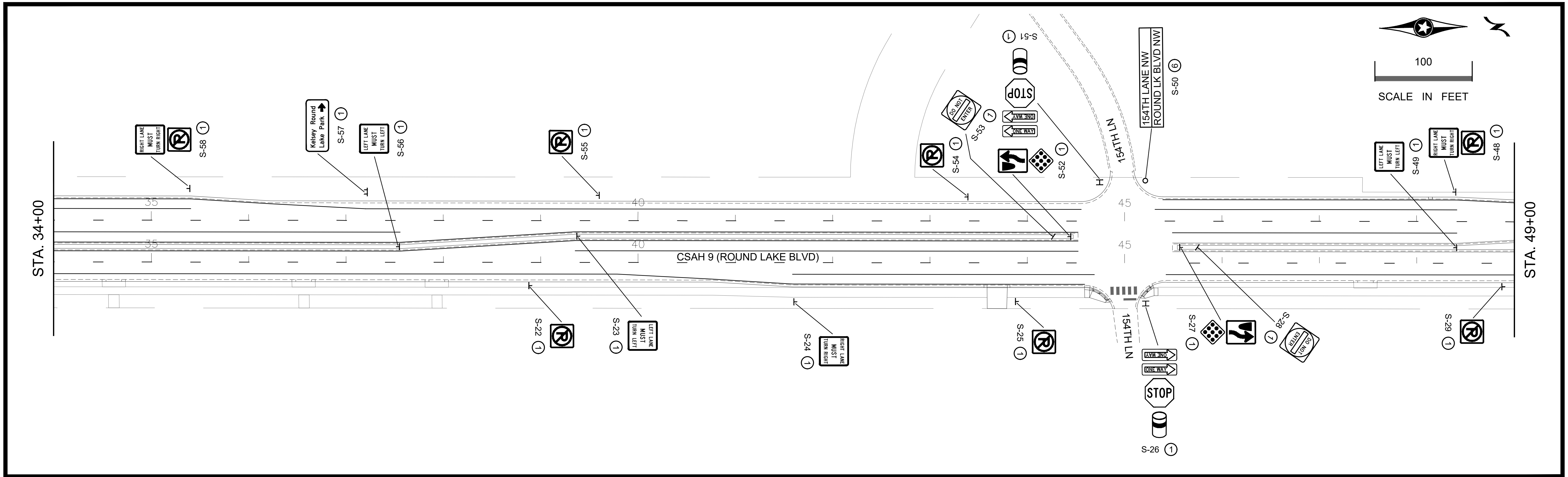
ANOKA COUNTY

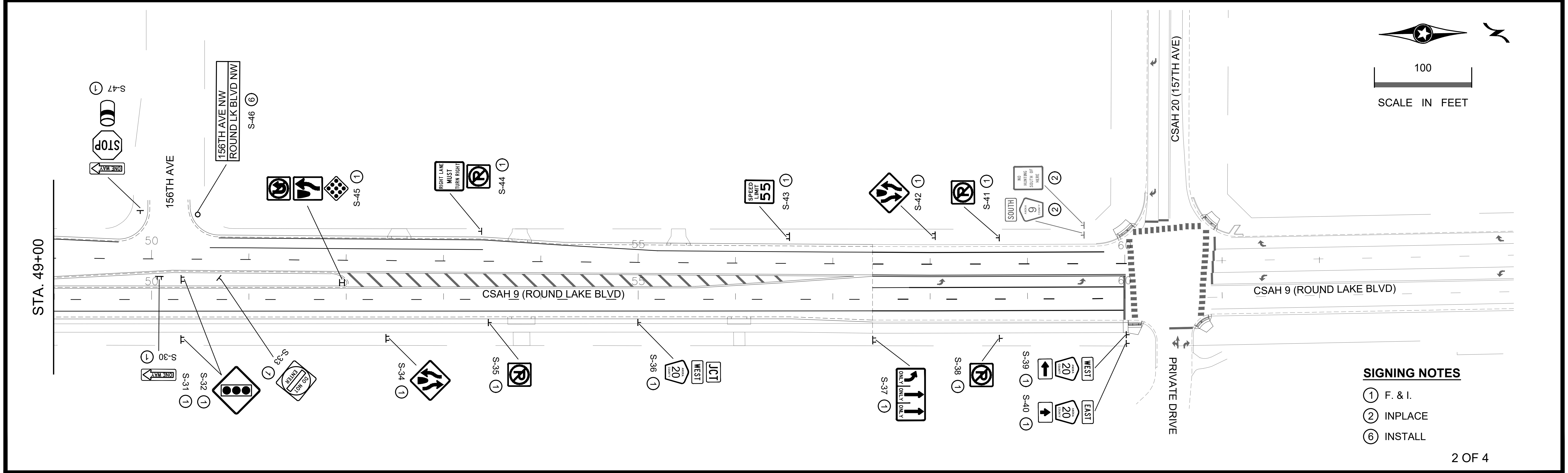
ANOKA COUNTY
HIGHWAY DEPT.

SAP 002-609-022
SAP 198-020-039

PERMANENT SIGNING

Sheet 100 of 167 Sheets





SIGNING NOTES

① F. & I.

② INPLACE

⑥ INSTALL

2 OF 4

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SAP 002-609-022
SAP 198-020-039

PERMANENT SIGNING

Sheet 101 of 167 Sheets

Sean R. Thiel

PERMANENT SIGN AND DELINEATOR / MARKER

N

	SIGN NUMBER	PANEL				SUPPORT		SIGN TYPE C	SIGN TYPE D	SIGN TYPE C	SIGN TYPE D	DELINEATOR / MARKER PANEL
		CODE	LEGEND	SIZE (W X H)	MOUNTING HEIGHT	TYPE (1)	NUMBER OF POSTS					
				INCHES	FEET			EACH	EACH	SQ FT	SQ FT	EACH
(2)	S-1		ROUND LAKE BLVD		7	U-SOIL	1					
			149TH LN NW									
	S-2	R6-1R	ONE WAY RIGHT	36 X 12	7	U-SOIL	1	1		3		
		R1-1	STOP	30 X 30						6.25		
		X4-3	CYLINDER STYLE DELINEATOR	6 X 9								1
	S-3	R4-7	KEEP RIGHT	24 X 30	7	U-CONC	1	1		5		
		OM1-1	TYPE 1 OBJECT MARKER	18 X 18								1
	S-4	R3-7R	RIGHT LANE MUST TURN RIGHT	30 X 30	7	U-SOIL	1	1		6.25		
		R8-3	NO PARKING	24 X 24						4		
(2)	S-5		ROUND LAKE BLVD		7	U-SOIL	1					
			150TH LN NW									
	S-6	R6-1R	ONE WAY RIGHT	36 X 12	7	U-SOIL	1	1		3		
		R1-1	STOP	30 X 30						6.25		
		X4-3	CYLINDER STYLE DELINEATOR	6 X 9								1
	S-7	R8-3	NO PARKING	24 X 24	7	U-SOIL	1	1		4		
	S-8	R3-7L	LEFT LANE MUST TURN LEFT	30 X 30	7	U-CONC	1	1		6.25		
	S-9	R6-1R	ONE WAY RIGHT	54 X 18	7	U-CONC	2	1		6.75		
	S-10	R5-1	DO NOT ENTER	30 X 30	7	U-CONC	1	1		6.25		
	S-11	R8-3	NO PARKING	24 X 24	7	U-SOIL	1	1		4		
	S-12	R6-1R	ONE WAY RIGHT	54 X 18	7	U-CONC	2	1		6.75		
	S-13	R3-4	NO U-TURN	24 X 24	7	U-CONC	1	1		4		
		R4-7	KEEP RIGHT	24 X 30						5		
		OM1-1	TYPE 1 OBJECT MARKER	18 X 18								1
	S-14	R5-1	DO NOT ENTER	30 X 30	7	U-CONC	1	1		6.25		
	S-15		KELSEY ROUND LAKE PARK LEFT	54 X 24	7	U-SOIL	2		1		9	
	S-16	R3-7L	LEFT LANE MUST TURN LEFT	30 X 30	7	U-CONC	1	1		6.25		
	S-17	R3-7R	RIGHT LANE MUST TURN RIGHT	30 X 30	7	U-SOIL	1	1		6.25		
		R8-3	NO PARKING	24 X 24						4		
	S-18	R6-1L	ONE WAY LEFT	36 X 12	7	U-SOIL	1	1		3		
		R6-1R	ONE WAY RIGHT	36 X 12						3		
		R1-1	STOP	30 X 30						6.25		
		X4-3	CYLINDER STYLE DELINEATOR	6 X 9								1
	S-19	R4-7	KEEP RIGHT	24 X 30	7	U-CONC	1	1		5		
		OM1-1	TYPE 1 OBJECT MARKER	18 X 18								1
	S-20	R5-1	DO NOT ENTER	30 X 30	7	U-CONC	1	1		6.25		
	S-21	R8-3	NO PARKING	24 X 24	7	U-SOIL	1	1		4		
	S-22	R8-3	NO PARKING	24 X 24	7	U-SOIL	1	1		4		
	S-23	R3-7L	LEFT LANE MUST TURN LEFT	30 X 30	7	U-CONC	1	1		6.25		
	S-24	R3-7R	RIGHT LANE MUST TURN RIGHT	30 X 30	7	U-SOIL	1	1		6.25		
	S-25	R8-3	NO PARKING	24 X 24	7	U-SOIL	1	1		4		
	S-26	R6-1L	ONE WAY LEFT	36 X 12	7	U-SOIL	1	1		3		
		R6-1R	ONE WAY RIGHT	36 X 12						3		
		R1-1	STOP	30 X 30						6.25		
		X4-3	CYLINDER STYLE DELINEATOR	6 X 9								1
	S-27	R4-7	KEEP RIGHT	24 X 30	7	U-CONC	1	1		5		
		OM1-1	TYPE 1 OBJECT MARKER	18 X 18								1
	S-28	R5-1	DO NOT ENTER	30 X 30	7	U-CONC	1	1		6.25		
	S-29	R8-3	NO PARKING	24 X 24	7	U-SOIL	1	1		4		
	S-30	R6-1R	ONE WAY RIGHT	54 X 18	7	U-CONC	2	1		6.75		
	S-31	W3-3	SIGNAL AHEAD	36 X 36	7	U-SOIL	2	1		9		
	S-32	W3-3	SIGNAL AHEAD	36 X 36	7	U-CONC	2	1		9		
	S-33	R5-1	DO NOT ENTER	30 X 30	7	U-CONC	1	1		6.25		
	S-34	W6-2	DIVIDED HIGHWAY ENDS	36 X 36	7	U-SOIL	2	1		9		
	S-35	R8-3	NO PARKING	24 X 24	7	U-SOIL	1	1		4		
	S-36	M2-1a	JCT	21 X 15	7	U-SOIL	1	1		2.19		
		M3-4a	WEST	24 X 12						2		
		M1-6M	ANOKA COUNTY 20	24 X 24						4		
	S-37	R3-8ACC	ADVANCE INTERSECTION LANE CONTROL	54 X 30	7	U-SOIL	2	1		11.25		
	S-38	R8-3	NO PARKING	24 X 24	7	U-SOIL	1	1		4		
	S-39	M3-4a	WEST	24 X 12	7	U-SOIL	1	1		2		
		M1-6M	ANOKA COUNTY 20	24 X 24						4		
		M6-1aL	DIRECTIONAL ARROW LEFT	21 X 15						2.19		
	S-40	M3-2a	EAST	24 X 12	7	U-SOIL	1	1				
		M1-6M	ANOKA COUNTY 20	24 X 24						4		
		M6-3a	DIRECTIONAL. ARROW UP	21 X 15						2.19		
	S-41	R8-3	NO PARKING	24 X 24	7	U-SOIL	1	1		4		
	S-42	W6-1	DIVIDED HIGHWAY	36 X 36	7	U-SOIL	2	1		9		
	S-43	R2-1	SPEED LIMIT 55	30 X 36	7	U-SOIL	2	1		7.5		
	S-44	R3-7R	RIGHT LANE MUST TURN RIGHT	30 X 30	7	U-SOIL	1	1		6.25		
		R8-3	NO PARKING	24 X 24						4		
	S-45	R3-4	NO U-TURN	24 X 24	7	U-CONC	1	1		4		
		R4-7	KEEP RIGHT	24 X 30						5		
		OM1-1	TYPE 1 OBJECT MARKER	18 X 18								1
(2)	S-46		ROUND LAKE BLVD		7	U-SOIL	1					
			156TH AVE NW									
	S-47	R6-1R	ONE WAY RIGHT	36 X 12	7	U-SOIL	1	1		3		
		R1-1	STOP	30 X 30						6.25		
		X4-3	CYLINDER STYLE DELINEATOR	6 X 9								1
	S-48	R3-7R	RIGHT LANE MUST TURN RIGHT	30 X 30	7	U-SOIL	1	1		6.25		
		R8-3	NO PARKING	24 X 24						4		
	S-49	R3-7L	LEFT LANE MUST TURN LEFT	30 X 30	7	U-CONC	1	1		6.25		
(2)	S-50		ROUND LAKE BLVD		7	U-SOIL	1					
			154TH LANE NW									
	S-51	R6-1L	ONE WAY LEFT	36 X 12	7	U-SOIL	1	1		3		
		R6-1R	ONE WAY RIGHT	36 X 12						3		
		R1-1	STOP	30 X 30						6.25		
		X4-3	CYLINDER STYLE DELINEATOR	6 X 9								1
	S-52	R4-7	KEEP RIGHT	24 X 30	7	U-CONC	1	1		5		
		OM1-1	TYPE 1 OBJECT MARKER	18 X 18								1
	S-53	R5-1	DO NOT ENTER	30 X 30	7	U-CONC	1	1		6.25		
	S-54	R8-3	NO PARKING	24 X 24	7	U-SOIL	1	1		4		
	S-55	R8-3	NO PARKING	24 X 24	7	U-SOIL	1	1		4		
	S-56	R3-7L	LEFT LANE MUST TURN LEFT	30 X 30	7	U-CONC	1	1		6.25		
	S-57		KELSEY ROUND LAKE PARK RIGHT	54 X 24	7	U-SOIL	2	1	1		9	
	S-58	R3-7R	RIGHT LANE MUST TURN RIGHT	30 X 30	7	U-SOIL	1	1		6.25		
		R8-3	NO PARKING	24 X 24						4		

SPECIFIC NOTES:

(1) U-CHANNEL 3 LBS PER FOOT BLACK POST

(2) REFERENCE EXISTING SIGNING & STRIPING TABULATION, SHEET 96.

3 OF 4

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-609-022\Base\Traffic\Permanent Signing.dwg

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

PRINT NAME: SEAN R. THIEL

SIGNATURE: Sean R. Thiel

DATE: 12/21/2023 LICENSE NO. 45129

DRAWN BY FL DATE 08/08/23

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CHECKED BY SRT DATE

ANOKA COUNTY

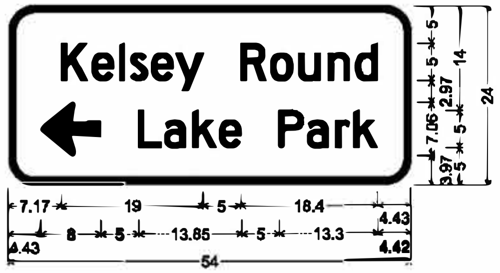
ANOKA COUNTY
HIGHWAY DEPT.

SAP 002-609-022
SAP 198-020-039

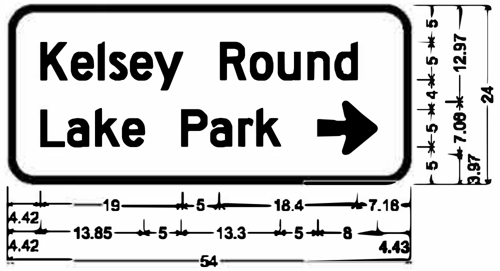
PERMANENT SIGNING
TABULATION

	PERMANENT SIGN AND DELINEATOR / MARKER											N
	SIGN NUMBER	PANEL				SUPPORT		SIGN TYPE C	SIGN TYPE D	SIGN TYPE C	SIGN TYPE D	DELINEATOR / MARKER PANEL
		CODE	LEGEND	SIZE (W X H)	MOUNTING HEIGHT	TYPE (1)	NUMBER OF POSTS					
				INCHES	FEET			EACH	EACH	SQ FT	SQ FT	EACH
(2)	S-59		ROUND LAKE BLVD		7	U-SOIL	1					
			153RD AVE NW									
	S-60	R6-1L	ONE WAY LEFT	36 X 12	7	U-SOIL	1	1		3		
		R6-1R	ONE WAY RIGHT	36 X 12						3		
		R1-1	STOP	30 X 30						6.25		
		X4-3	CYLINDER STYLE DELINEATOR	6 X 9								1
	S-61	R4-7	KEEP RIGHT	24 X 30	7	U-CONC	1	1		5		
		OM1-1	TYPE 1 OBJECT MARKER	18 X 18								1
	S-62	R5-1	DO NOT ENTER	30 X 30	7	U-CONC	1	1		6.25		
	S-63	R8-3	NO PARKING	24 X 24	7	U-SOIL	1	1		4		
	S-64	R3-7R	RIGHT LANE MUST TURN RIGHT	30 X 30	7	U-SOIL	1	1		6.25		
	S-65	R8-3	NO PARKING	24 X 24	7	U-SOIL	1	1		4		
(2)	S-66		ROUND LAKE BLVD		7	U-SOIL	1					
			152ND LANE NW									
	S-67	OM1-1	TYPE 1 OBJECT MARKER	18 X 18	4	U-CONC						1
	S-68	R4-7	KEEP RIGHT	24 X 30	7	U-CONC	1	1		5		
		OM1-1	TYPE 1 OBJECT MARKER	18 X 18								1
	S-69	R3-7MR	ALL TRAFFIC MUST TURN RIGHT	30 X 30	7	U-SOIL	1	1		6.25		
	S-70	R6-1R	ONE WAY RIGHT	36 X 12	7	U-CONC	1	1		3		
		R1-1	STOP	30 X 30						6.25		
		X4-3	CYLINDER STYLE DELINEATOR	6 X 9								1
	S-71	R1-1	STOP	30 X 30	7	U-SOIL	1	1		6.25		
		X4-3	CYLINDER STYLE DELINEATOR	6 X 9								1
	S-72	R4-7	KEEP RIGHT	24 X 30	7	U-CONC	1	1		5		
		OM1-1	TYPE 1 OBJECT MARKER	18 X 18								1
	S-73	R3-7R	RIGHT LANE MUST TURN RIGHT	30 X 30	7	U-SOIL	1	1		6.25		
		R8-3	NO PARKING	24 X 24						4		
	S-74	R6-1R	ONE WAY RIGHT	36 X 12	7	U-SOIL	1	1		3		
		R1-1	STOP	30 X 30						6.25		
		X4-3	CYLINDER STYLE DELINEATOR	6 X 9								1
	S-75	R6-1R	ONE WAY RIGHT	54 X 18	7	U-CONC	2	1		6.75		
	S-76	R8-3	NO PARKING	24 X 24	7	U-SOIL	1	1		4		
	S-77	R5-1	DO NOT ENTER	30 X 30	7	U-CONC	1	1		6.25		
	S-78	R3-7L	LEFT LANE MUST TURN LEFT	30 X 30	7	U-CONC	1	1		6.25		
	S-79	R6-1L	ONE WAY LEFT	54 X 18	7	U-SOIL	2	1		6.75		
	S-80	R8-3	NO PARKING	24 X 24	7	U-SOIL	1	1		4		
	S-81	R3-4	NO U-TURN	24 X 24	7	U-CONC	1	1		4		
		R4-7	KEEP RIGHT	24 X 30						5		
		OM1-1	TYPE 1 OBJECT MARKER	18 X 18								1
	S-82	R5-1	DO NOT ENTER	30 X 30	7	U-CONC	1	1		6.25		
							TOTAL =	74	2	508.57	18	21

SIGN TYPE D DESIGN



3.00" Radius, 1.00" Border, White on, Brown;
"Kelsey Round", D 2K; Arrow 2 - 8.00" 180';
"Lake Park", D 2K;



3.00" Radius, 1.00" Border, White on, Brown;
"Kelsey Round", D 2K; "Lake Park", D 2K;
Arrow 2 - 8.00" 0';

SPECIFIC NOTES:

(1) U-CHANNEL 3 LBS PER FOOT BLACK POST
(2) REFERENCE EXISTING SIGNING & STRIPING TABULATION, SHEET 96.

4 OF 4

NO	DATE	BY	CKD	APPR	REVISION

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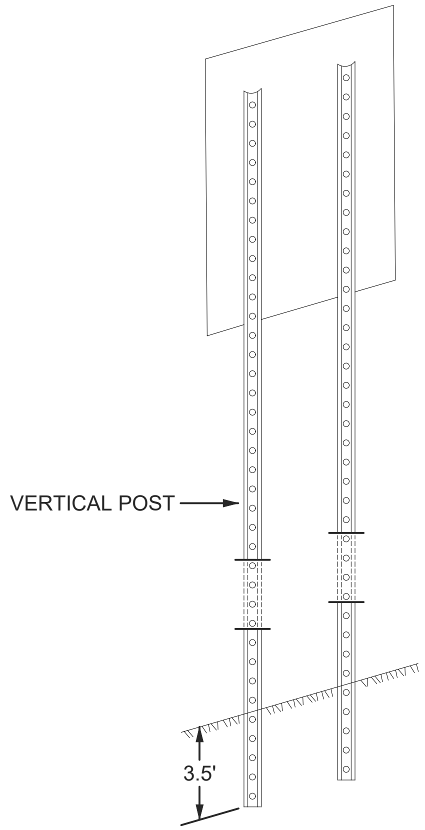
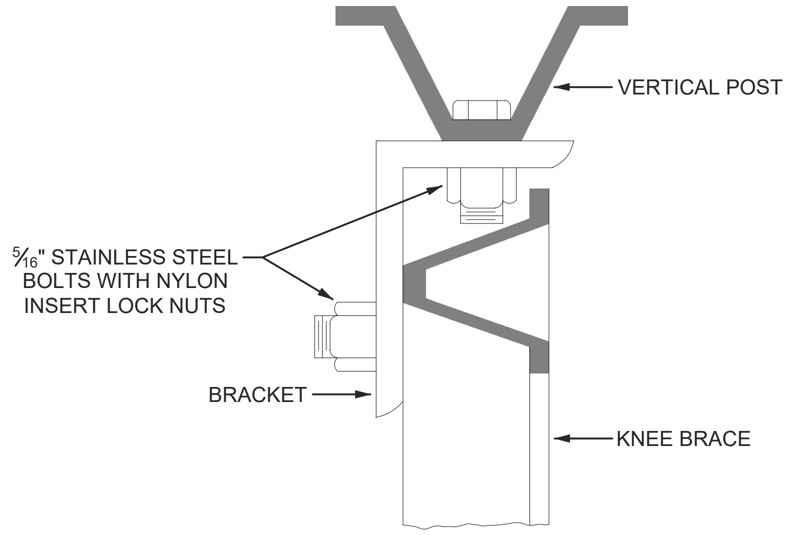
PERMANENT SIGNING
TABULATION

TYPE C & D SIGN STRUCTURAL DETAILS

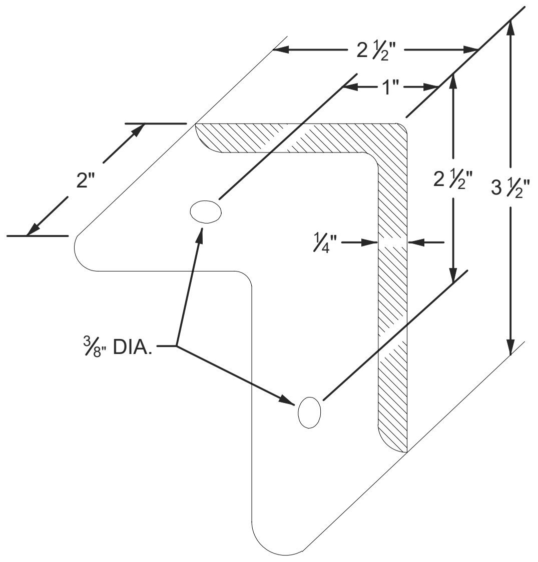
TYPICAL INSTALLATION 36" AND LARGER TYPE "C" SIGNS



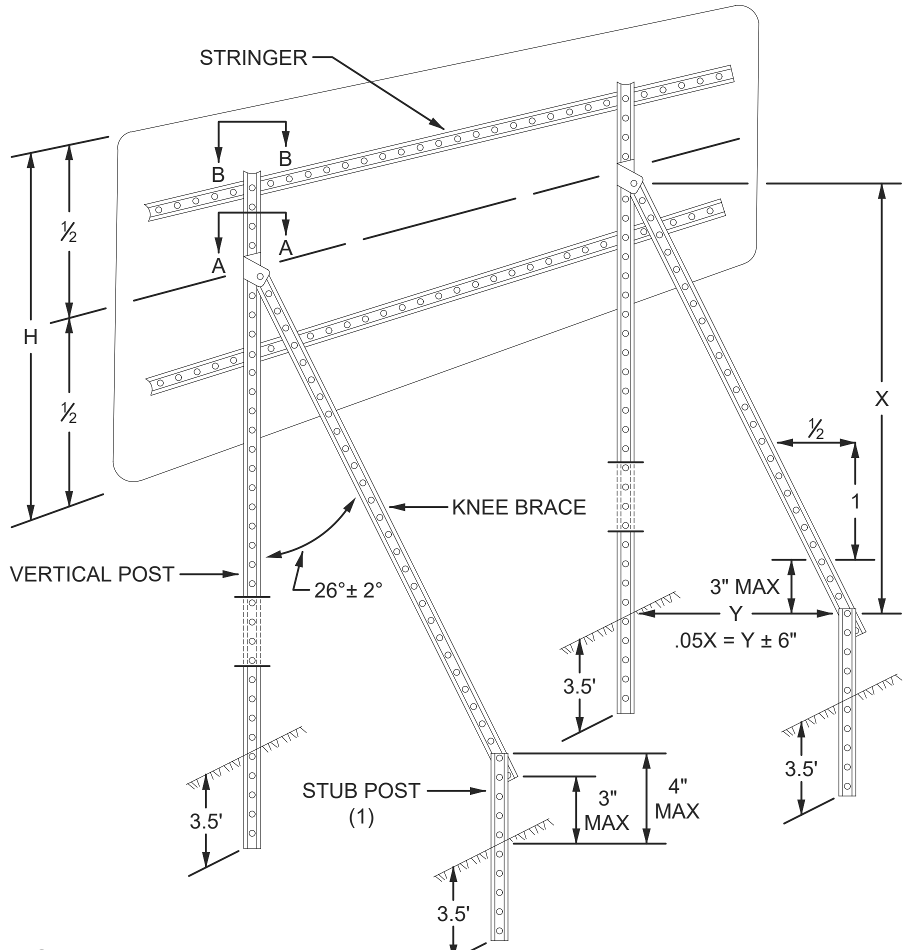
SECTION A-A



A-FRAME BRACKET (STEEL MN/DOT 3306 GALVANIZED PER MN/3394)

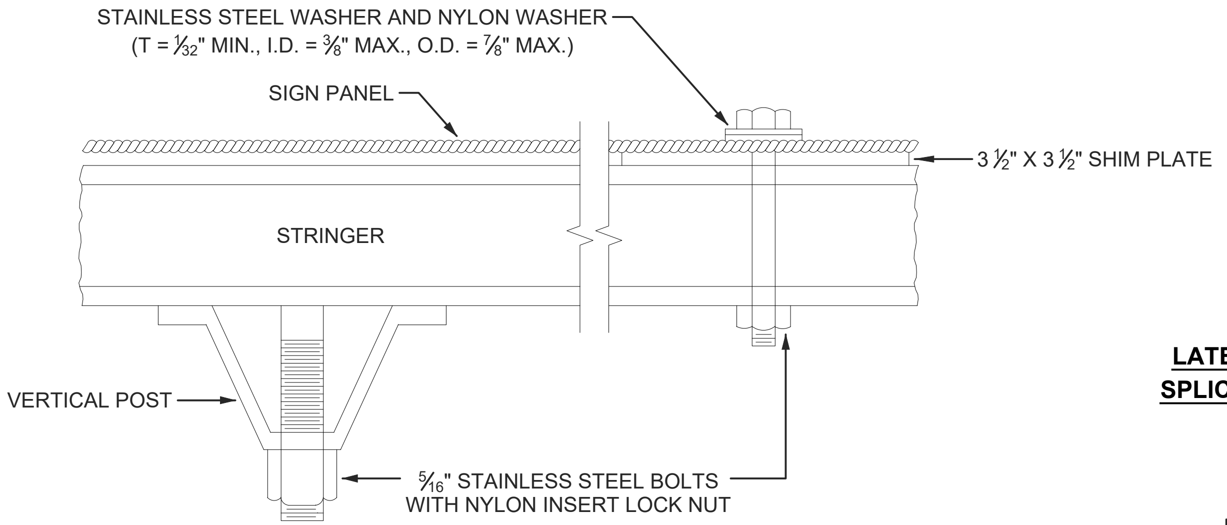


TYPICAL "A-FRAME" INSTALLATION TYPE "D" SIGNS

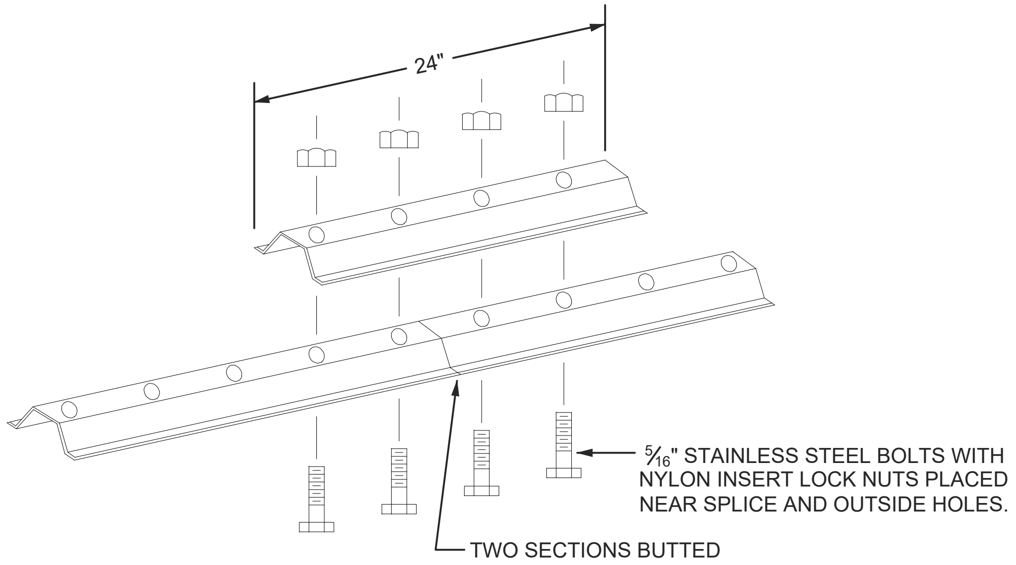


(1) OFFSET STUB POST 1' TOWARD ROADWAY RELATIVE TO VERTICAL POST.

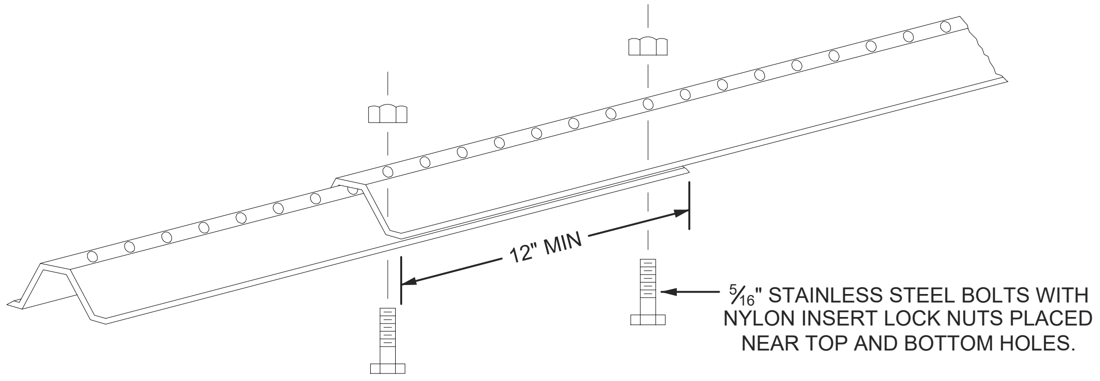
SECTION B-B



LATERAL BRACE OR STRINGER SPLICE DETAIL (EXPLODED VIEW)



KNEE BRACE SPLICE



1 OF 4

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-609-022\Base\Traffic\Signing & Striping Details.dwg

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SIGNATURE: Sean R. Thiel

DATE: 11/02/2023 LICENSE NO. 45129

DRAWN BY FL DATE 01/17/23

DESIGN BY FL DATE 01/17/23

CHECKED BY SRT DATE 10/27/23

ANOKA COUNTY

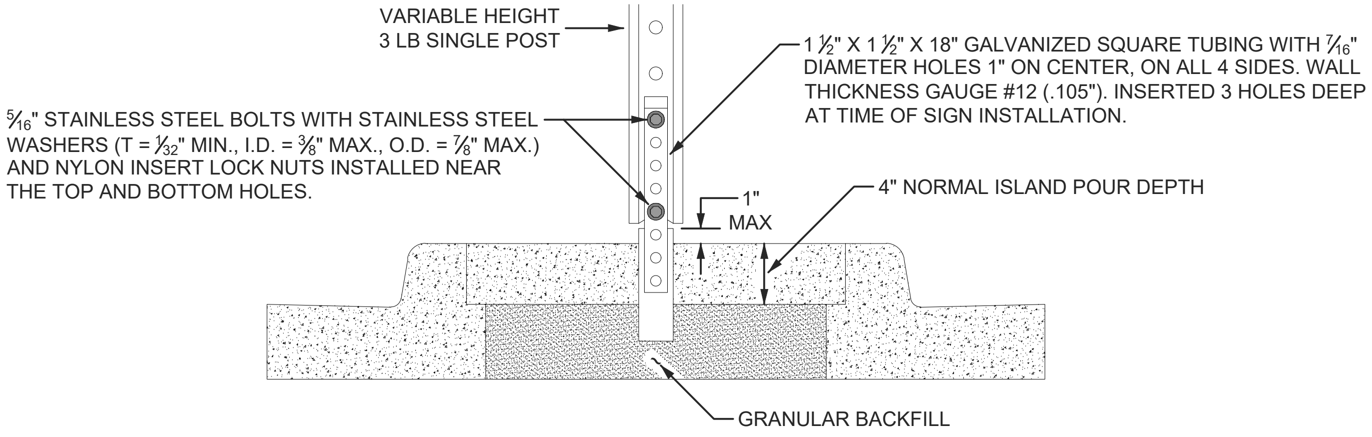
ANOKA COUNTY
HIGHWAY DEPT.

SAP 002-609-022
SAP 198-020-039

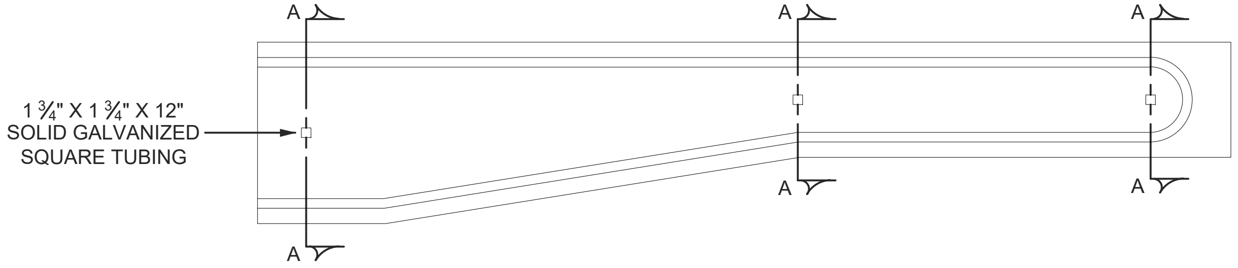
SIGNING & STRIPING DETAILS

Sheet 104 of 167 Sheets

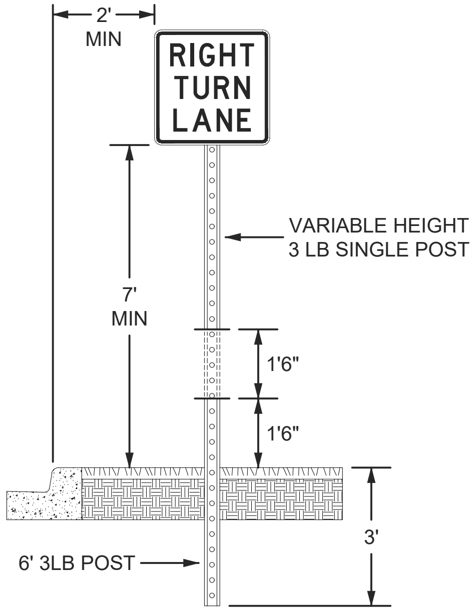
SIGN INSTALLATION TYPICALS



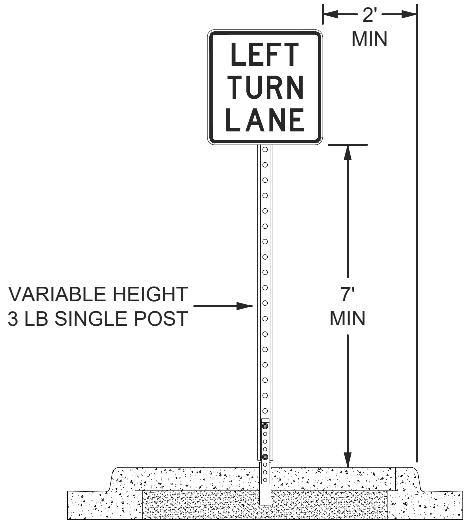
SECTION A-A



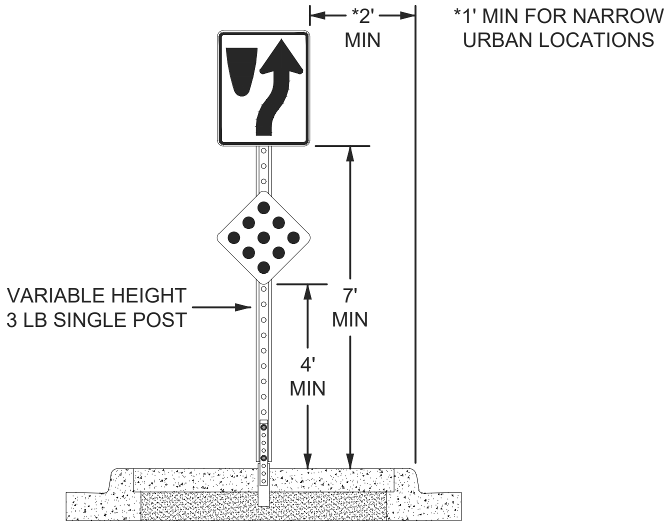
GROUND POST MOUNT



ISLAND MOUNT, BREAK-AWAY



ISLAND MOUNT, BREAK-AWAY
KEEP RIGHT/CLUSTER



SIGN NOTES:

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

INSTALLATION NEAR SHARED-USE PATHWAY (MN MUTCD):

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

2 OF 4

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-609-022\Base\Traffic\Signing & Striping Details.dwg

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

PRINT NAME: SEAN R. THIEL
SIGNATURE: Sean R. Thiel
DATE: 11/02/2023 LICENSE NO. 45129

DRAWN BY FL DATE 01/17/23
DESIGN BY FL DATE 01/17/23
CHECKED BY SRT DATE 10/2723

ANOKA COUNTY

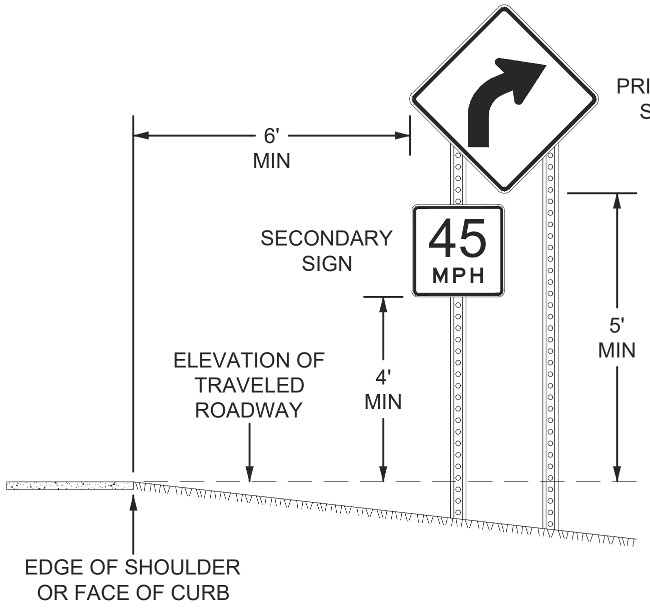
ANOKA COUNTY
HIGHWAY DEPT.

SAP 002-609-022
SAP 198-020-039

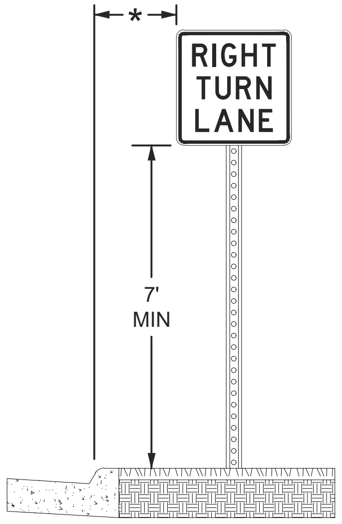
SIGNING & STRIPING
DETAILS

SIGN PLACEMENT TYPICALS

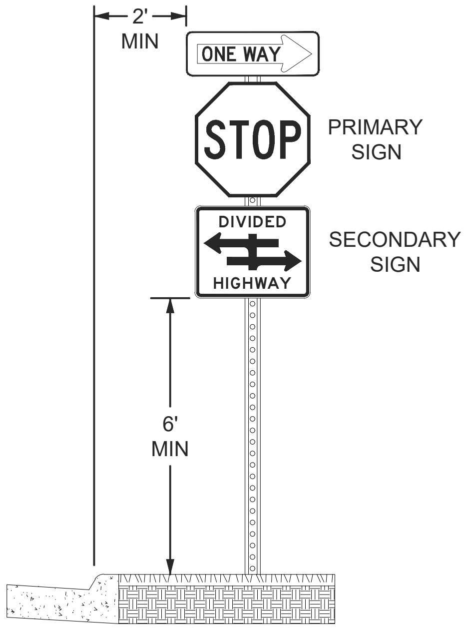
RURAL

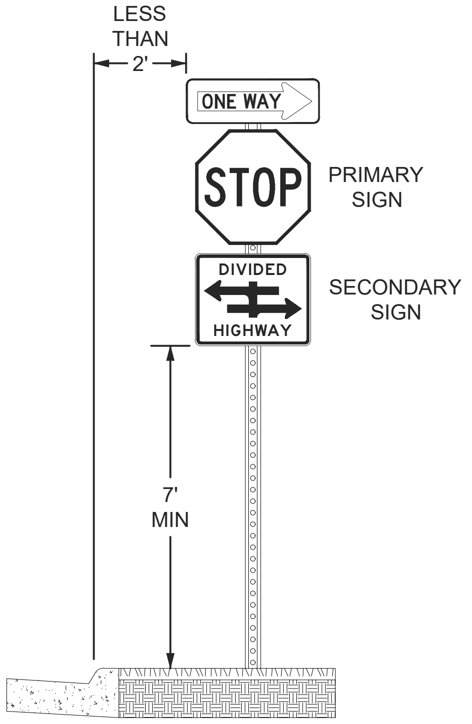


URBAN

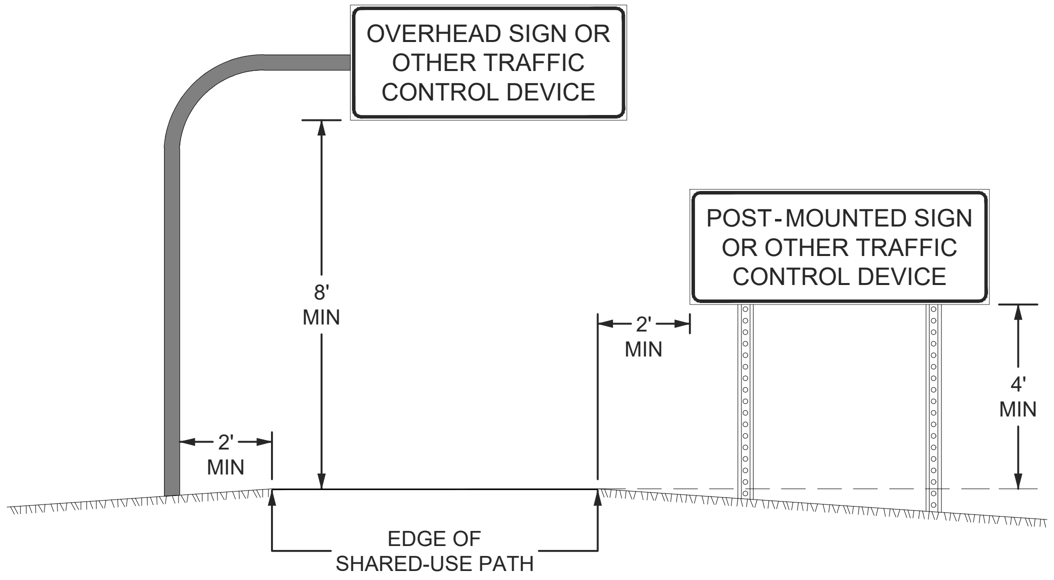


* 2' - NARROW BOULEVARD (≤ 8' WIDE)
6' - WIDE BOULEVARD





SHARED-USE PATH



NOTES:
- ALL DIMENSIONS ARE MINIMUMS.
- MAINTAIN A DISTANCE OF 2' BETWEEN TRAFFIC CONTROL DEVICE AND SHARED-USE PATH.
- 7' SIGN CLEARANCE IF 2' DISTANCE BETWEEN SIGN AND SHARED-USE PATH CANNOT BE MAINTAINED.

3 OF 4

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-609-022\Base\Traffic\Signing & Striping Details.dwg

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ANOKA COUNTY

ANOKA COUNTY
HIGHWAY DEPT.

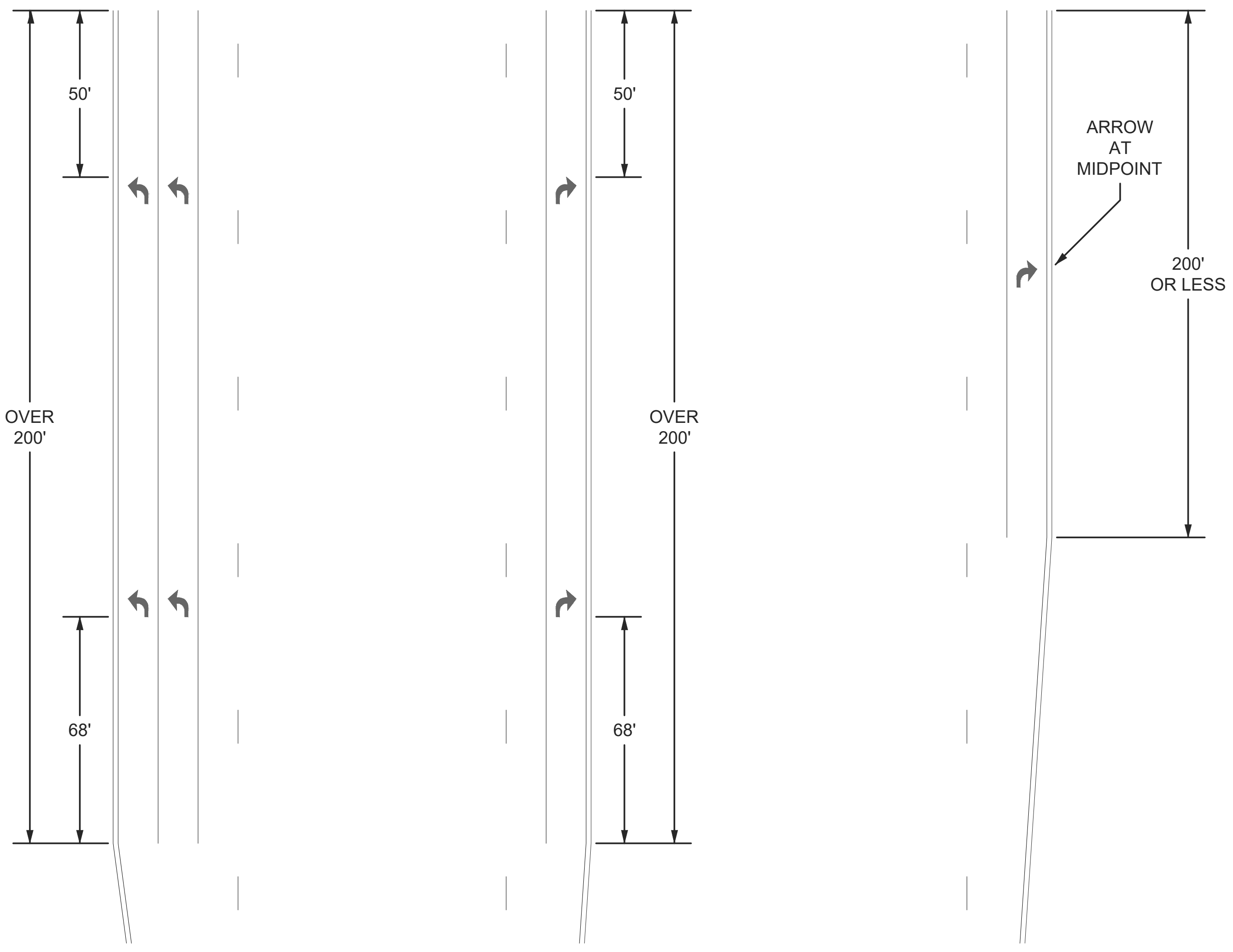
SAP 002-609-022
SAP 198-020-039

SIGNING & STRIPING
DETAILS

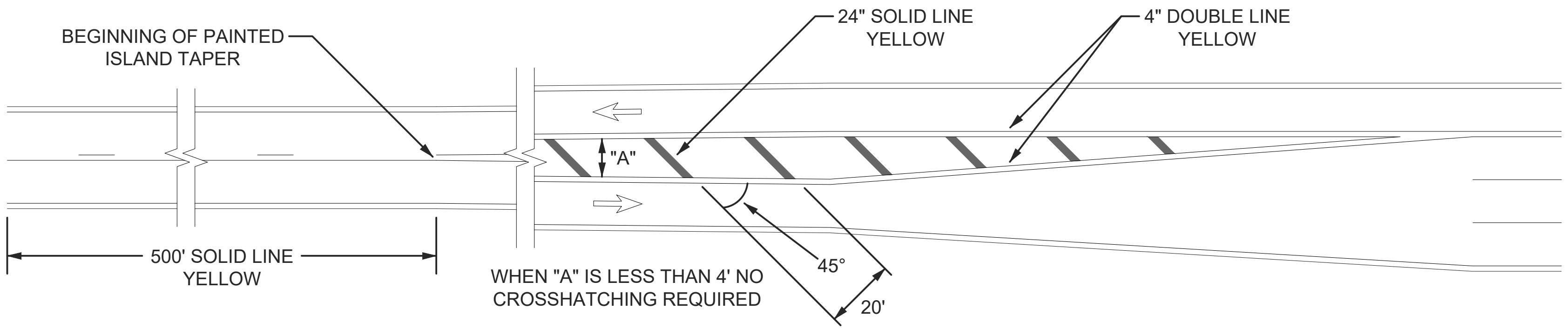
Sheet 106 of 167 Sheets

PAVEMENT MARKING TYPICALS

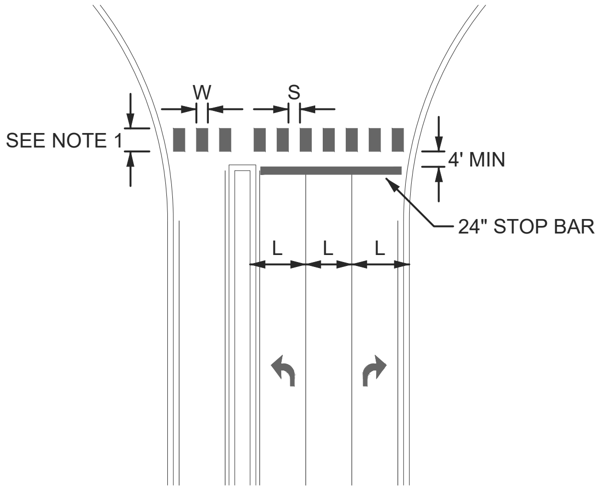
TURN LANE ARROW PLACEMENT



LEFT TURN ISLAND MARKINGS



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'

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.

4 OF 4

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-609-022\Base\Traffic\Signing & Striping Details.dwg

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SIGNATURE: Sean R. Thiel
DATE: 11/02/2023 LICENSE NO. 45129

DRAWN BY FL DATE 01/17/23
DESIGN BY FL DATE 01/17/23
CHECKED BY SRT DATE 10/27/23

ANOKA COUNTY

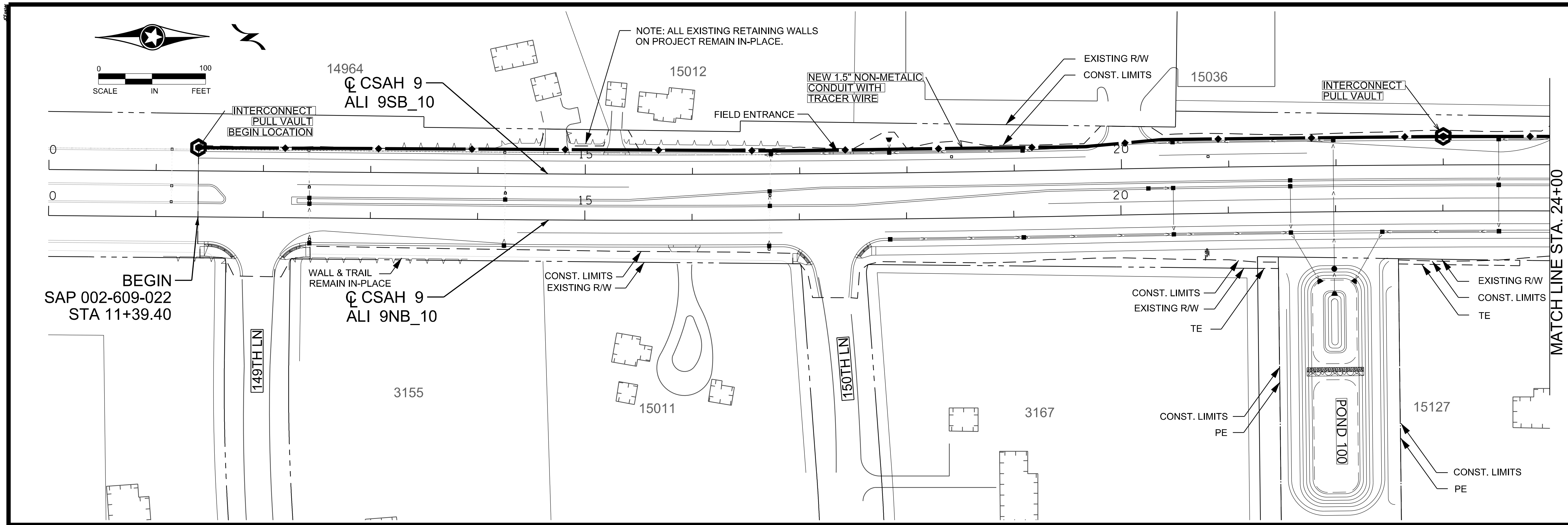
ANOKA COUNTY
HIGHWAY DEPT.

SAP 002-609-022
SAP 198-020-039

SIGNING & STRIPING DETAILS

Sheet 107 of 167 Sheets

JCFoster



LEGEND

LSB

1.5" NON-METALLIC CONDUIT WITH TRACER WIRE SEALED NO BREAKS IN VAULT

INTERCONNECT

PULL VAULT

LNB

ADVANCE SIGNAL LOOPS REPLACEMENT & CONDUIT / RELOCATIONS

NEW LOOPS CONDUIT / WIRING

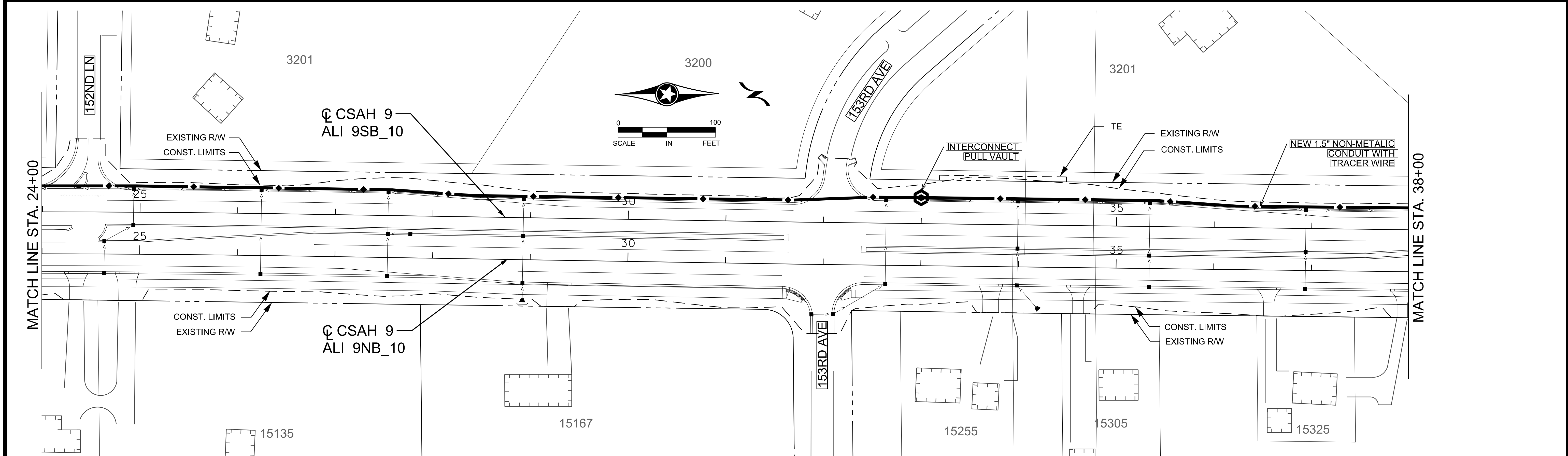
EXISTING LOOPS CONDUIT / WIRING

NEW SIGNAL HAND HOLE

EXISTING SIGNAL HAND HOLE

R/W

CONSTRUCTION LIMITS



1 OF 2

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-609-022\Plan\002609022 INC1.dgn 10/16/2023 12:58:14 PM

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

PRINT NAME: NICHOLAS J DOBDA

SIGNATURE: Nick Dobda

DATE: 11/22/23 LICENSE NO. 49046

DRAWN BY JCF DATE 10/13/23

DESIGN BY JCF DATE 10/13/23

CHECKED BY NJD DATE 10/31/23

ANOKA COUNTY

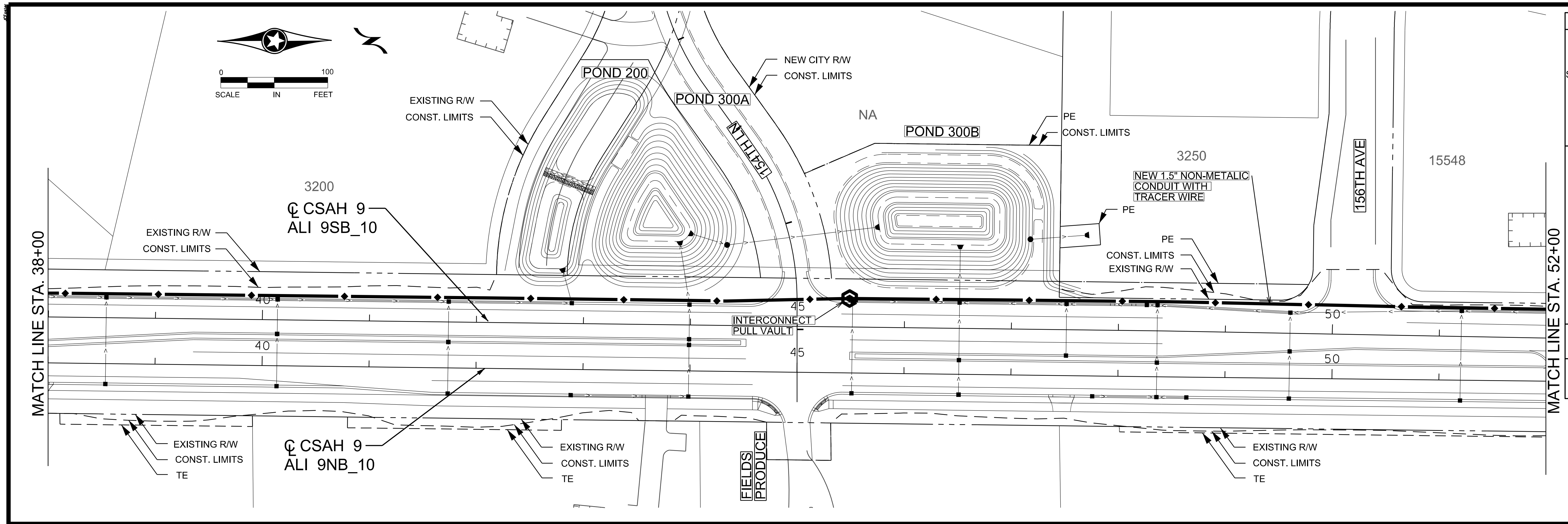
ANOKA COUNTY
HIGHWAY DEPT.

SAP 002-609-022
SAP 198-020-039

INTERCONNECT (FUTURE)
SIGNAL SYSTEM REVISIONS
STA 11+39.40 TO 38+00

Sheet 108 of 167 Sheets

JCFoster



LEGEND

LSB

1.5" NON-METALLIC CONDUIT WITH TRACER WIRE SEALED NO BREAKS IN VAULT

INTERCONNECT

PULL VAULT

LNB

ADVANCE SIGNAL LOOPS REPLACEMENT & CONDUIT / RELOCATIONS

NEW LOOPS CONDUIT / WIRING

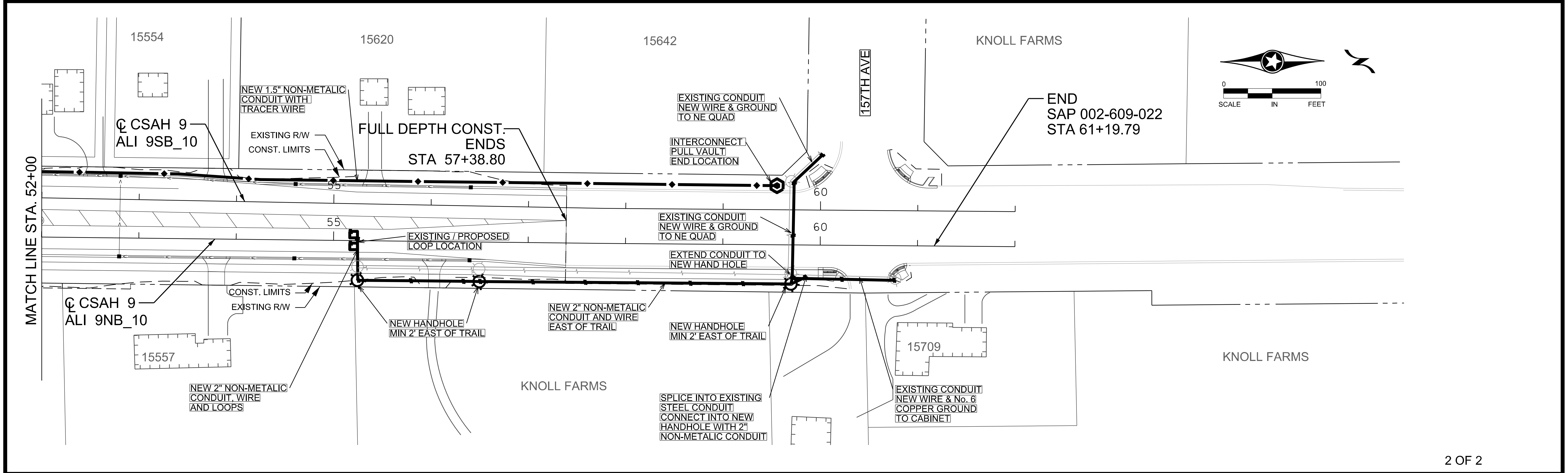
EXISTING LOOPS CONDUIT / WIRING

NEW SIGNAL HAND HOLE

EXISTING SIGNAL HAND HOLE

R/W

CONSTRUCTION LIMITS



2 OF 2

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-609-022\Plan\002609022 INC2.dgn 10/16/2023 12:59:10 PM

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

PRINT NAME: NICHOLAS J DOBDA

SIGNATURE:

DATE: 11/22/23 LICENSE NO. 49046

DRAWN BY JCF DATE 10/13/23

DESIGN BY JCF DATE 10/13/23

CHECKED BY NJD DATE 10/31/23

ANOKA COUNTY

ANOKA COUNTY
HIGHWAY DEPT.

SAP 002-609-022
SAP 198-020-039

INTERCONNECT (FUTURE)
SIGNAL SYSTEM REVISIONS
STA 38+00 TO 61+19.79

Sheet 109 of 167 Sheets

7089

NMC LOOP DETECTORS

NUMBER	SIZE (FEET)	FUNCTION	LOCATION
01-1	2-6x6	1	20', 50'
01-2	2-6x6	1	5', 35'
02-1	1-6x6	1	475'
02-2	1-6x6	1	475'
03-1	2-6x6	7	AS SHOWN
03-2	2-6x6	7	AS SHOWN
04-1	6x6	3,8	475'
04-2	2-6x6	7	5', 35'
04-3	2-6x6	7	6', 35'
05-1	2-6x6	1	20', 50'
05-2	2-6x12	1	5' & 35'
06-1	1-6x6	1	475'
06-2	1-6x6	1	475'

LOCATION IS FROM STOP BAR
• FROM RIGHT TURN LANE EDGE

LOOP DETECTORS SETTINGS

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 - IMMEDIAT EXTEND
8). CARRY OVER (STRETCH)
9). ADVISORY DETECTOR
10). SAMPLING DETECTOR
11). SPECIAL DETECTOR

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 ¾" N.M.C. SEE SPECIAL PROVISIONS

4. HANDHOLES SHALL BE PVC HANDHOLES WITH METAL FRAMES AND COVERS, PER Mn/DOT STANDARD PLATE NO. 8114A.

5. EACH SIGNAL FACE SHALL HAVE BACKGROUND SHIELD.

6. EACH PEDESTRIAN INDICATION SHALL BE ONE SECTION HAND/ WALKING PERSON INDICATION. SEE SPECIAL PROVISIONS.

7. SEE SPECIAL PROVISIONS AND DETAILS REGARDING SIGN PANELS, CONCRETE WALK AND PED CURB RAMPS TO BE FURNISHED AND INSTALLED BY CONTRACTOR (INCIDENTAL TO ITEM NO. 2565.511).

8. CONTRACTOR SHALL PROVIDE EXTENDED BRACKETS FOR EACH POLE MOUNTED VEHICLE AND PEDESTRIAN SIGNAL FACE.

9. A ¾" HALF COUPLING, ¾" PIPE NIPPLE AND CONDUIT OUTLET BODY SHALL BE FURNISHED AND INSTALLED 6 FEET FROM THE END OF EACH MAST ARM (FOR EVP).

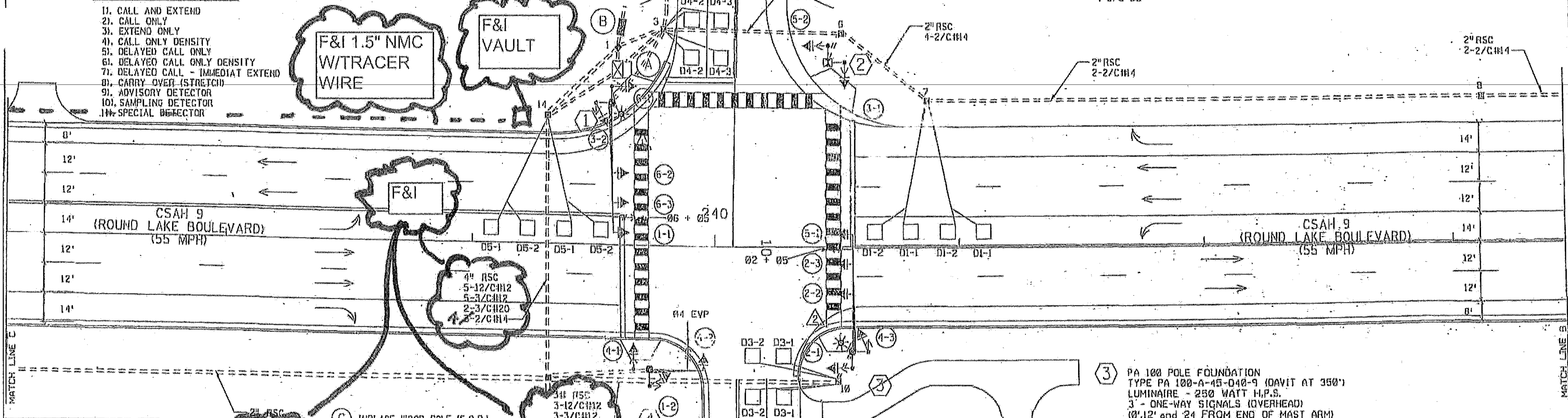
⟨1⟩ PA 100 POLE FOUNDATION
TYPE PA 100-A-50-040-9 (DAVIT AT 350')
LUMINAIRE - 250 WATT H.P.S.
3 - ONE-WAY SIGNALS (OVERHEAD)
(0',12' and 24 FROM END OF MAST ARM)
2 - TYPE 108 POLE MOUNTED AT 90' AND 180'
1 - ONE-WAY EVP DETECTOR AND CONFIRMATION LIGHT
(6' FROM END OF MAST ARM)
2 PEDESTRIAN PUSH BUTTONS
EXTEND INTO HH3:
3" RSC
3-12/C#12
3-3/C#12
1-3/C#20

⟨2⟩ PEDESTAL FOUNDATION
TYPE 2C
10 FT SIGNAL PEDESTAL
2 SIGNAL FACES MOUNTED AT 0' AND 90'
WITH 2 PED FACES
2 PEDESTRIAN PUSH BUTTONS
EXTEND INTO HH6:
3" RSC
1-12/C#12
2-3/C#12
1-3/C#20

40
SCALE IN FEET

LED SIGNAL FACES

SIGNAL FACE	ALL SIGNAL INDICATIONS SHALL BE 12"			
	R	Y	G	G
1-1, 1-2	←	←	←	
2-1, 2-2, 2-3	●	●	●	
3-1, 4-1	●	●	●	
4-2	●	●	●	←
3-2, 4-3	●	←	←	
5-1, 5-2	←	←	←	
6-1, 6-2, 6-3	●	●	●	



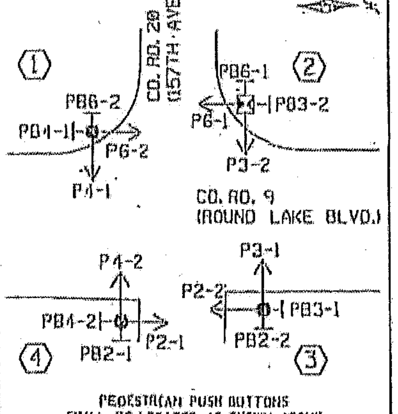
⟨3⟩ PA 100 POLE FOUNDATION
TYPE PA 100-A-45-040-9 (DAVIT AT 350')
LUMINAIRE - 250 WATT H.P.S.
3 - ONE-WAY SIGNALS (OVERHEAD)
(0',12' and 24 FROM END OF MAST ARM)
2 - TYPE 108 POLE MOUNTED AT 90' AND 180'
1 - ONE-WAY EVP DETECTOR AND CONFIRMATION LIGHT (6' FROM END OF MAST ARM)
2 PEDESTRIAN PUSH BUTTONS
EXTEND INTO HH10:
3" RSC
3-12/C#12
3-3/C#12
1-3/C#20

Ⓐ INSTALL CONTROLLER & CABINET (FURNISHED BY COUNTY)
CABINET FOUNDATION
EXTEND TO HH1:
METERED SIGNAL SERVICE
2" RSC
3-1/C#6
EXTEND TO HH3:
4" RSC
4-12/C#12
6-3/C#12
1-3/C#20
6-2/C#14
EXTEND TO HH4:
4" RSC
5-12/C#12
5-3/C#12
2-3/C#20
7-2/C#14
STUB OUT 2-3" RSC FROM CABINET TO SOUTH
(THREAD AND CAP BOTH ENDS - FOR FUTURE USE)

⟨4⟩ PA 85 POLE FOUNDATION
TYPE PA 85-A-20-040-9 (DAVIT AT 350')
1 - ONE-WAY SIGNALS (OVERHEAD)
(0' FROM END OF MAST ARM)
2 - TYPE 108 POLE MOUNTED AT 90' AND 180'
1 - ONE-WAY EVP DETECTOR AND CONFIRMATION LIGHT (6' FROM END OF MAST ARM)
2 PEDESTRIAN PUSH BUTTONS
EXTEND INTO HH10:
3" RSC
2-12/C#12
2-3/C#12
1-3/C#20

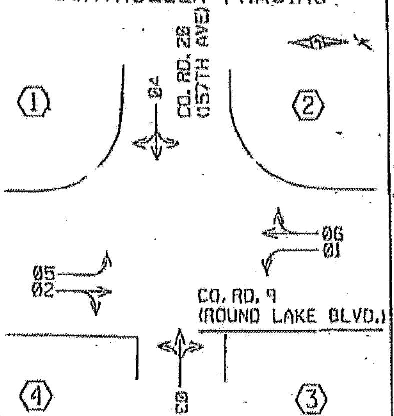
Ⓑ SIGNAL SERVICE CABINET WITH BUILT-IN PED & CHECK SWITCH
CABINET FOUNDATION
EXTEND INTO H.H. 1:
2" R.S.C.
UNMETERED STREET LIGHT SERVICE
3-1/C#6
METERED SIGNAL SERVICE
2-3/C#12 (LUM)
STUB OUT 2" R.S.C. (FOR SERVICE BY CONNEXUS)

PEDESTRIAN INDICATIONS AND PUSH BUTTONS



PEDESTRIAN PUSH BUTTONS SHALL BE LOCATED AS SHOWN ABOVE

CONTROLLER PHASING



SIGNAL SYSTEM OPERATION

- THE SIGNAL SYSTEM FLASH MODE SHALL BE ALL RED.
- NORMAL OPERATION SHALL BE 6 PHASE, WITH PHASES 1 AND 5 BEING PROTECTED LEFT TURN PHASES, AND WITH PHASES 3 & 4 BEING SPLIT PHASES.
- THE SIGNAL SYSTEM FLASH MODE SHALL BE ALL RED. VEHICLE SIGNAL PHASES 2 AND 6 SHALL OPERATE ON RECALL.

DESIGNED BY: W K DRAWN BY: WCK
APPROVED BY: SJM JOB NUMBER 018750J
CAD DATE: 11/9/2005 11:43:23 AM
CAD FILE: * FILE *

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

DATE 02-11-2005 REG. NO. 22428

NO.	DATE	BY	REVISION DESCRIPTION

2550 UNIVERSITY AVENUE W
SUITE 400N
ST. PAUL, MINNESOTA 55114
(651) 644-4389

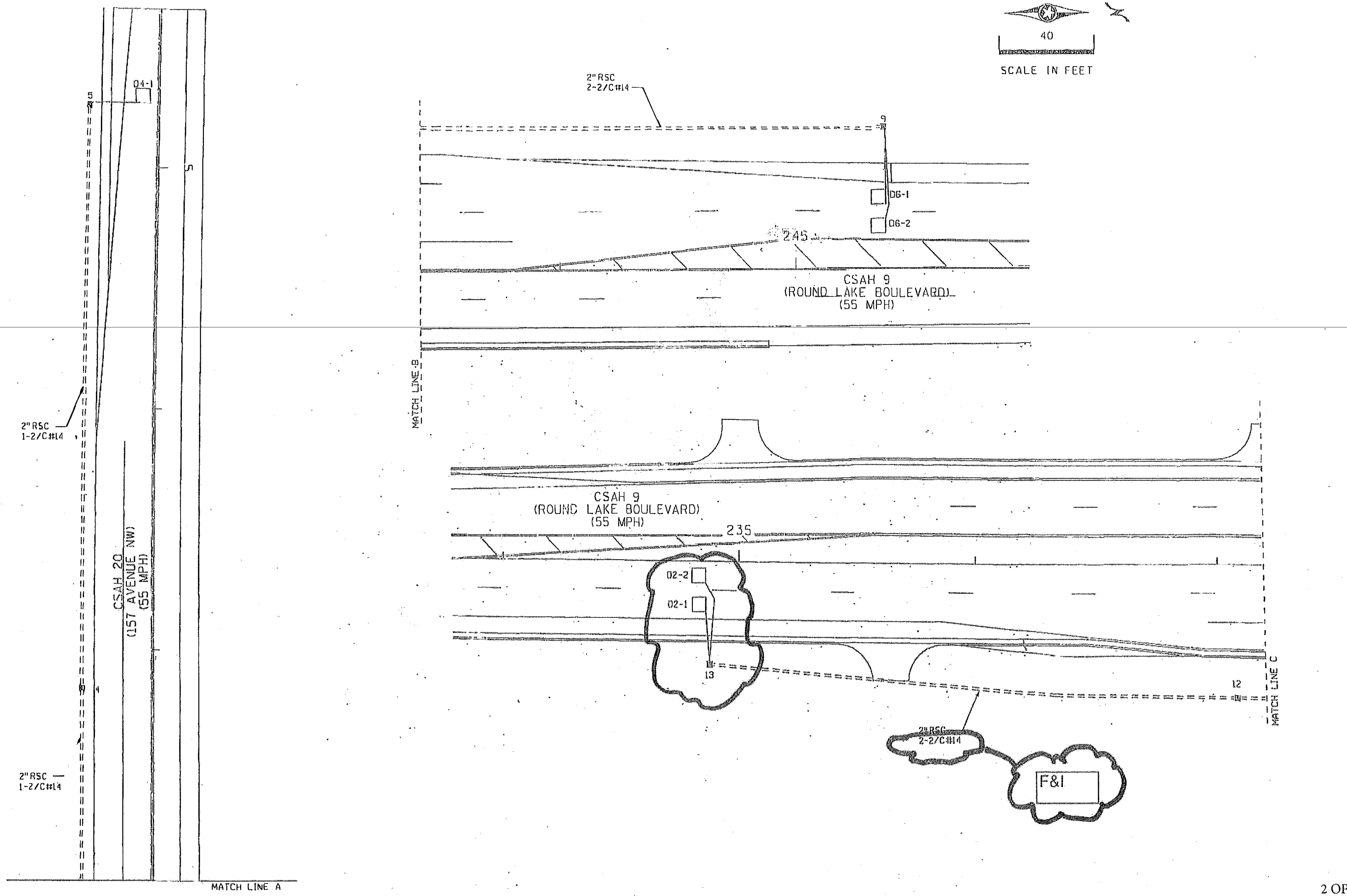
Howard R. Green Company

ANOKA COUNTY
CSAH 9 AND CSAH 20
SP 02-609-13 (COUNTY)
SP 198-020-19 (CITY)

TRAFFIC SIGNAL SYSTEM
INTERSECTION LAYOUT

SHEET NO.
110

7087



2 OF 5

DESIGNED BY: WCK DRAWN BY: WCK
APPROVED BY: SJM JOB NUMBER 010750J
CAD DATE: 11/9/2005 11:41:50 AM
CAD FILE: $FILE$

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DATE 02-11-2005 REG. NO. 22420

NO.	DATE	BY	REVISION DESCRIPTION

2550 UNIVERSITY AVENUE W
SUITE 400N
ST. PAUL, MINNESOTA 55114
(651) 644-4389

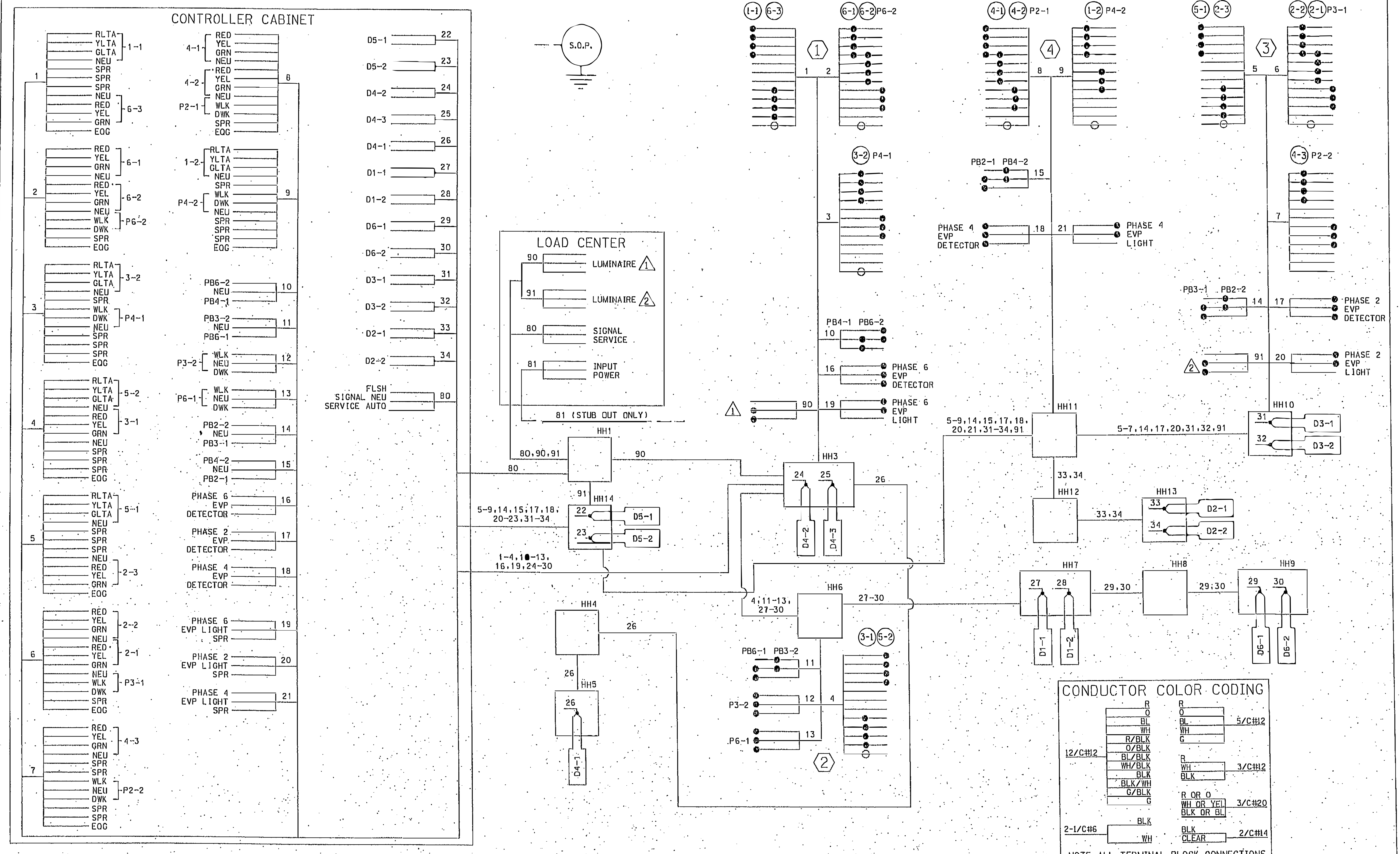
Howard R. Green Company

ANOKA COUNTY
CSAH 9 AND CSAH 20
SP 02-609-13 (COUNTY)
SP 198-020-19 (CITY)

TRAFFIC SIGNAL SYSTEM
CONDUIT LAYOUT

SHEET NO.
111

7089



NOTE: ALL TERMINAL BLOCK CONNECTIONS SHALL BE ARRANGED AS SPECIFIED ABOVE

DESIGNED BY: WCK DRAWN BY: WCK
APPROVED BY: SJM JOB NUMBER 818750J
CAD DATE: 11/9/2005 11:44:31 AM
CAD FILE: $FILE$

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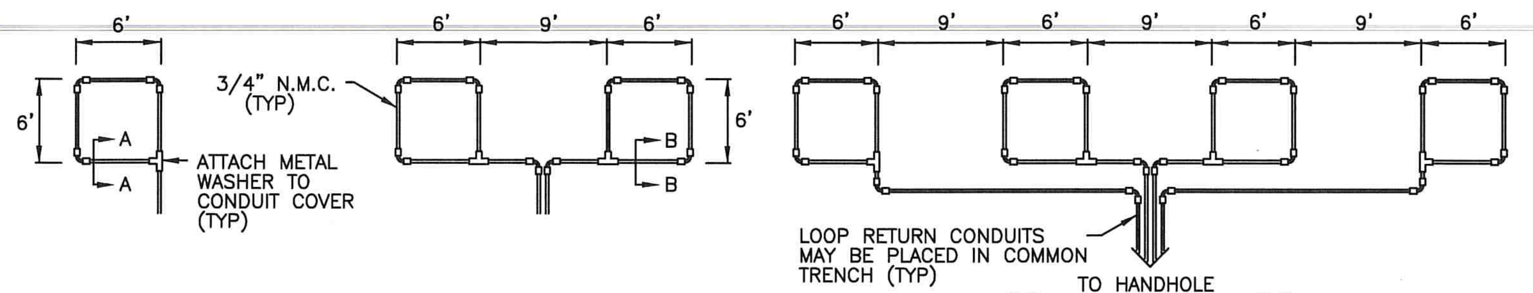
ST. PAUL, MINNESOTA 55114
(651) 644-4389

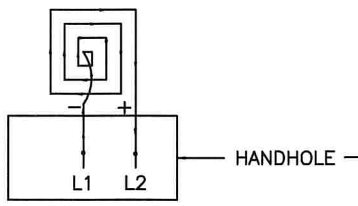
Howard R. Green Company

ANOKA COUNTY
CSAH 9 AND CSAH 20
SP 02-609-13 (COUNTY)
SP 198-020-19 (CITY)

TRAFFIC SIGNAL SYSTEM WIRING DIAGRAM

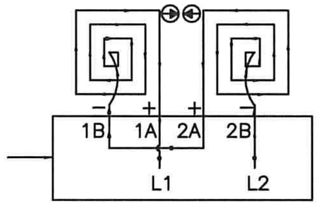
SHEET NO.
112B





LOOP DETECTOR DETAIL 'A'

(LOOP PHASING FOR SINGLE CONNECTION)

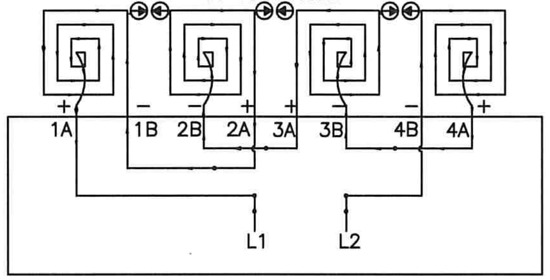


LOOP CONNECTIONS SHALL BE LABELED AND SPLICED IN THE HANDHOLE AS FOLLOWS:

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

LOOP DETECTOR DETAIL 'B'

(LOOP PHASING FOR SERIES CONNECTION)



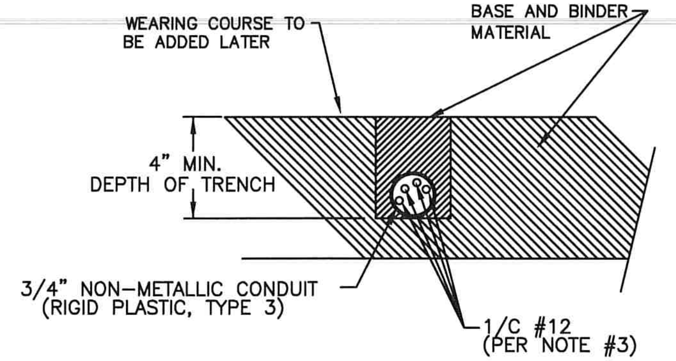
LOOP CONNECTIONS SHALL BE LABELED AND SPLICED IN THE HANDHOLE AS FOLLOWS:

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)

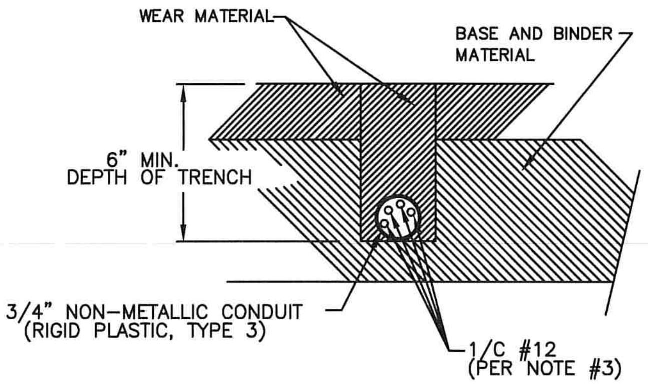
LOOP DETECTOR DETAIL 'C'

(LOOP PHASING FOR SERIES CONNECTION)



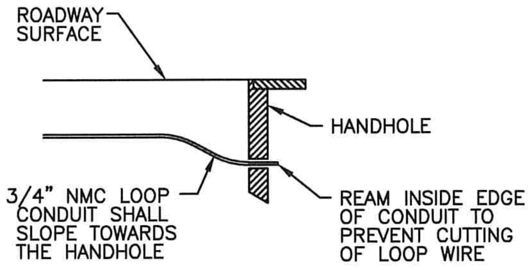
SECTION A–A

DETAIL FOR LOOP INSTALLATION IN NEW ROADWAY



SECTION B–B

DETAIL FOR LOOP INSTALLATION IN EXISTING ROADWAY



DRAINAGE DETAIL

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.

LEGEND OF SYMBOLS

CONTROLLER AND SERVICE EQUIP. NO's	Ⓐ
SIGNAL BASE NO.	①
SIGNAL FACE NO.	(1-1)
LUMINAIRE NO.	△1
CONTROLLER AND CABINET	■
CONTROLLER AND CABINET – IN PLACE	▭
HANDHOLE	▪
HANDHOLE – IN PLACE	▫
RIGID STEEL CONDUIT (RSC)	======
RIGID STEEL CONDUIT (RSC) – IN PLACE	- - - - -
SIGNAL FACE WITH BACKGROUND SHIELD	——▶
SIGNAL FACE W/O BACKGROUND SHIELD	——▶
SIGNAL FACE – IN PLACE	——▶
PEDESTRIAN INDICATORS	→
PEDESTRIAN INDICATORS – IN PLACE	—<
PEDESTRIAN PUSH BUTTONS ON PEDESTAL OR POLE	○⊣ ⊢⊠
PEDESTRIAN PUSH BUTTON STATION	●⊣
TRAFFIC SIGNAL PEDESTAL	⧗
TRAFFIC SIGNAL PEDESTAL – INPLACE	⊠
TRAFFIC SIGNAL POLE AND MAST ARM	●——
TRAFFIC SIGNAL POLE AND MAST ARM – IN PLACE	○——
STREET LIGHT POLE AND LUMINAIRE	●——✹
STREET LIGHT POLE AND LUMINAIRE – IN PLACE	○–☼
MAST ARM AND LUMINAIRE	——✹
MAST ARM AND LUMINAIRE – INPLACE	——☼
WOOD POLE	●
WOOD POLE – IN PLACE	○
SOURCE OF POWER	–○–
RAILROAD SIGNAL – IN PLACE	⊞○
RIGHT OF WAY LINE	— - —
CENTERLINE	3
EDGE OF ROADWAY	——
SHOULDERLINE	——
CURB LINE	– – – –
STOP BAR	━━
EMERGENCY VEHICLE PREEMPTION DETECTOR	↔

ABBREVIATIONS

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

CONDUCTOR COLOR CODE

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

N TABULATION OF SIGNAL QUANTITIES

ITEM NO	ITEM	UNIT	TOTAL ESTIMATED QUANTITY	PARTICIPATION	
				SAP 002–XXX–XXX	LOCAL FUNDS
2545	SERVICE CABINET	EACH	1		
2565	EMERGENCY VEHICLE PREEMPTION SYSTEM	LS	1		
2565	TRAFFIC CONTROL SIGNAL SYSTEM	SYSTEM	1		

TRAFFIC SIGNAL STANDARD PLATES

THESE TRAFFIC SIGNAL STANDARD PLATES AS APPROVED BY FHWA SHALL APPLY:

PLATE NO.	DESCRIPTION
8000 J	CHANNELIZERS, TYPE A, B, C (3 SHEETS)
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
8119 C	GROUND MOUNTED CABINET FOUNDATION
8121 H	TRANSFORMER BASE & POLE BASE PLATE (2 SHEETS)
8122 F	PEDESTAL AND PEDESTAL BASE (FOR TRAFFIC CONTROL SIGNALS SUPPORT) (2 SHEETS)
8123 G	POLE & MAST ARM–LUMINAIRES & TRAFFIC LIGHTS ASSEMBLY (2 SHEETS)
8126 L	POLE FOUNDATION (PA90 & PA100)
8129 A	SHIM AND WASHER (TRAFFIC CONTROL SIGNALS AND ROADWAY LIGHTING)

4 OF 5

NO	DATE	BY	CKD	APPR	REVISION

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

PRINT NAME: SEAN R. THIEL DATE: 11/17/23
SIGNATURE: Sean R. Thiel LICENSE NO. 45129

DRAWN BY ST DATE 10/16/23
DESIGN BY ST DATE 10/5/23
CHECKED BY BL DATE 10/18/23

ANOKA COUNTY
HIGHWAY DEPT.

SAP 002-609-022
SAP 198-020-039

TRAFFIC SIGNAL
DETAILS AND
STANDARD PLATES

SIGNAL RELATED ITEMS

I

ALI	LOCATION	STATION	TO	STATION	REMOVE				FURNISH & INSTALL										
					RIGID STEEL CONDUIT [1] LIN FT	UNDERGROUND WIRE [1] LIN FT	RIGID PVC LOOP DETECTOR 6'X6' [1],[3],[4] EACH	HANDHOLE [1],[2] EACH	WIRE 12/C#14 [1] LIN FT	WIRE 3/C#20 [1] LIN FT	WIRE 3/C#14 [1] LIN FT	WIRE 2/C#14 [1] LIN FT	WIRE 1/C#6 [1] LIN FT	3/4" NON-METALLIC CONDUIT [1] LIN FT	2" NON-METALLIC CONDUIT [1] LIN FT	RIGID PVC LOOP DETECTOR 6'X6' [1] EACH	HANDHOLE [1] EACH	PULL VAULT [5] EACH	1.5" NON-METALLIC CONDUIT [5] LIN FT
LNB	***154TH AVE***																		
	SHLDR	55+36					2	1				30		30		2	1		
	SHLDR	55+36	-	59+80	444										444				
	OUTSIDE TRAIL	57+75						1									1		
	OUTSIDE TRAIL	59+80						1									1		
	157TH AVE																		
LSB	1' B/C	11+39																1	
	1' B/C	11+39	-	23+00															1161
	1' B/C	23+00																1	
	1' B/C	23+00	-	33+00															1000
	152ND LN																		
	153RD AVE																		
	1' B/C	33+00																1	
	1' B/C	33+00	-	43+00															1000
	154TH LN																		
	1' B/C	43+00																1	
	1' B/C	43+00	-	59+81															1681
	156TH AVE																		
		59+81																1	
	157TH AVE																		
CONTROLLER CABINET - TO - POLE #3						1860			780	300	520		260						
CONTROLLER CABINET - TO - POLE #4						1120			360	220	360		180						
SERVICE CABINET - TO - POLE #3						260					260								
CABINET - TO - HAND HOLE #10						480						480							
CABINET - TO - HAND HOLE #13						1260						1260							
PROJECT TOTAL					**444**	**4980**	**2**	**3**	**1140**	**520**	**1140**	**1770**	**440**	**30**	**444**	**2**	**3**	**5**	**4842**

SIGNAL RELATED GENERAL NOTES:

CONDUIT BEHIND CURB SHALL BE SCHEDULE 40, ALL CONDUIT UNDER ROADWAY SHALL BE SCHEDULE 80.

DISCRIPTION OF REVISE SIGNAL SYSTEM WORK : REMOVE AND REPLACE 2 LNB ADVANCE LOOPS, ASSOCIATED HAND HOLES, CONDUIT AND WIRING - RELOCATING THEM OUTSIDE OF THE PROPOSED LNB TRAIL. SEE EXISTING 157TH SIGNAL PLANS FOR F&I NOTES.
F & I QUANTITIES HAVE BEEN BROKE OUT BELOW FOR WIRE QUANTITIES.

DISCRIPTION OF INTERCONNECT WORK : INSTALL FUTURE SIGNAL INTERCONNECT LSB, 1.0' BACK OF CURB AND 2.0' IN DEPTH AFTER LSB CURB PLACEMENT.

ITEM SPECIFIC NOTES-

[1] **THESE ITEMS ARE INCLUDED IN THE ITEM "REVISE SIGNAL SYSTEM", UNIT SYS. QUANTITIES ARE SHOWN FOR CONTRACTOR BIDDING PURPOSES. NO OTHER PAYMENT WILL BE MADE FOR THESE ITEMS ON AN INDIVIDUAL BASIS.**

[2] LNB ADVANCE LOOP HANDHOLES TO BE REMOVED AND NEW HANDHOLES & NON-METALLIC CONDUIT INSTALLED OUTSIDE (EAST) OF PROPOSED BITUMINOUS TRAIL.

[3] SIGNAL MUST BE MAINTAINED AND IN OPERATION DURING CONSTRUCTION AND LOOP REPLACEMENT. CONTRACTOR MUST COORDINATE WITH ANOKA COUNTY SIGNAL DEPARTMENT FOR REMOVALS AND INSTALLATION.
SIGNAL CAN BE SHUT DOWN AND A 4 WAY STOP INSTALLED FOR UP TO 2 DAYS TO MAKE THE CONNECTION FROM THE SE HANDHOLE TO THE NE HANDHOLE.

[4] THE REMOVAL OF 2 EXISTING LNB ADVANCE LOOP DETECTORS AT STA 56+36 IS INCIDENTAL TO THE BITUMINOUS REMOVAL ITEM. NO ADDITONAL PAYMENT WILL BE MADE FOR REMOVAL.

[5] INSTALL 1.5" NON-METALLIC CONDUIT 1.0' BACK OF CURB, 2.0' IN DEPTH LSB FROM SOUTH OF 149TH LN TO 157TH AVE. (NO INTERCONNECT WIRE) INSTALLED WITH TRACER WIRE & RIBBON ABOVE PIPE.
INCDENTAL TO NON-METALLIC CONDUIT. CONDUIT TO CONTINUE THROUGH VAULT, NOT TO BE CUT AS TO REMAIN WATER TIGHT FOR FUTURE INTERCONNECT.

WIRE QTY BREAKOUT

CONTROLLER CABINET TO POLE #3

QTY	ITEM	LENGTH	TOTAL LIN FT
3	12/C #14	260	780
2	3/C #14	260	520
1	3/C #20	300	300
1	1/C #6	260	260

CONTROLLER CABINET TO POLE #4

QTY	ITEM	LENGTH	TOTAL LIN FT
2	12/C #14	180	360
2	3/C #14	180	360
1	3/C #20	220	220
1	1/C #6	180	180

SERVICE CABINET TO POLE #3

QTY	ITEM	LENGTH	TOTAL LIN FT
1	3/C #14	260	260

CABINET TO HAND HOLE #10

QTY	ITEM	LENGTH	TOTAL LIN FT
2	2/C #14	240	480

CABINET TO HAND HOLE #13

QTY	ITEM	LENGTH	TOTAL LIN FT
2	2/C #14	630	1260

5 OF 5

NO	DATE	BY	CKD	APPR	REVISION
1	1/12/2024	BY	ND		ADDED GENERAL NOTE : SCHEDULE 40 & SCHEDULE 80

NAME: P:\002-609-022\Plan\3_EX SIGNAL_DRAINAGE SHEETS FOR FOR PLAN\SIGNAL PARTS\LOOP DETAIL TAB.dgn 8:40:36 AM

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

PRINT NAME: NICHOLAS J DOBDA

SIGNATURE: NJD

DATE: 1/17/24 LICENSE NO. 49046

DRAWN BY JCF DATE 10/27/23

DESIGN BY JCF DATE 10/27/23

CHECKED BY NJD DATE 11/02/23

ANOKA COUNTY
HIGHWAY DEPT.

SAP 002-609-022
SAP 198-020-039

EXISTING 157TH SIGNAL PLANS
WIRING MODIFICATIONS
& TABULATION

PLAN SYMBOLS

COUNTY LINE
TOWNSHIP OR RANGE LINE
SECTION LINE
QUARTER LINE
SIXTEENTH LINE
RIGHT OF WAY LINE
SLOPE EASEMENT
EXISTING RIGHT OF WAY
PROPERTY LINE
CORPORATE OR CITY LIMITS
RETAINING WALL
RAILROAD
RAILROAD RIGHT OF WAY
RIVER OR CREEK
DRAINAGE DITCH
CULVERT
DROP INLET
GUARD RAIL
BARBED WIRE FENCE
WOVEN WIRE FENCE
CHAIN LINK FENCE
WOOD FENCE
STONE WALL OR FENCE
HEDGE
LOWLAND
TIMBER / ORCHARD / BRUSH / NURSERY — TIMBER
CATTLE GUARD — ROAD
OVERPASS (Highway Over)
UNDERPASS (Highway Under)
BRIDGE
BUILDING (One Story Frame) — 1-S-F
F-FRAME C-CONCRETE
S-STONE T-TILE
B-BRICK ST-STUCCO
RAILROAD CROSSING BELL
RAILROAD CROSSING GATE
MANHOLE — M.H.
CATCH BASIN — C.B.
FIRE HYDRANT
CAST IRON MONUMENT
IRON PIN
GRAVEL PIT — Ⓖ
SAND PIT — Ⓢ
BORROW PIT — Ⓑ
ROCK QUARRY — Ⓠ

UTILITY SYMBOLS

POWER POLE LINE
TELEPHONE OR TELEGRAPH POLE LINE
JOINT TELEPHONE & POWER
ON POWER POLES
ON TELEPHONE POLES
ANCHOR
STEEL TOWER — △
STREET LIGHT
PEDESTAL (Cable Terminal) — ⊠
GAS MAIN — G
WATERMAIN
TELEPHONE CABLE IN CONDUIT — G
ELECTRIC CABLE IN CONDUIT — P
TELEPHONE MANHOLE — T
ELECTRIC MANHOLE — E
BURIED TELEPHONE CABLE — T-BUR
BURIED ELECTRIC CABLE — P-BUR
AERIAL TELEPHONE CABLE — T-AE
SEWER (Sanitary or Storm)
SEWER MANHOLE

SCALES

PLAN	0	20'	50'	100'
PROFILE HORIZONTAL	0	20'	50'	100'
VERTICAL	0	2'	5'	10'
X-SECTIONS HORIZONTAL	0	4'	15'	25'
VERTICAL	0	2'	5'	10'
INDEX MAP	0		0.5mi	1mi

MINNESOTA DEPARTMENT OF TRANSPORTATION

ANOKA COUNTY

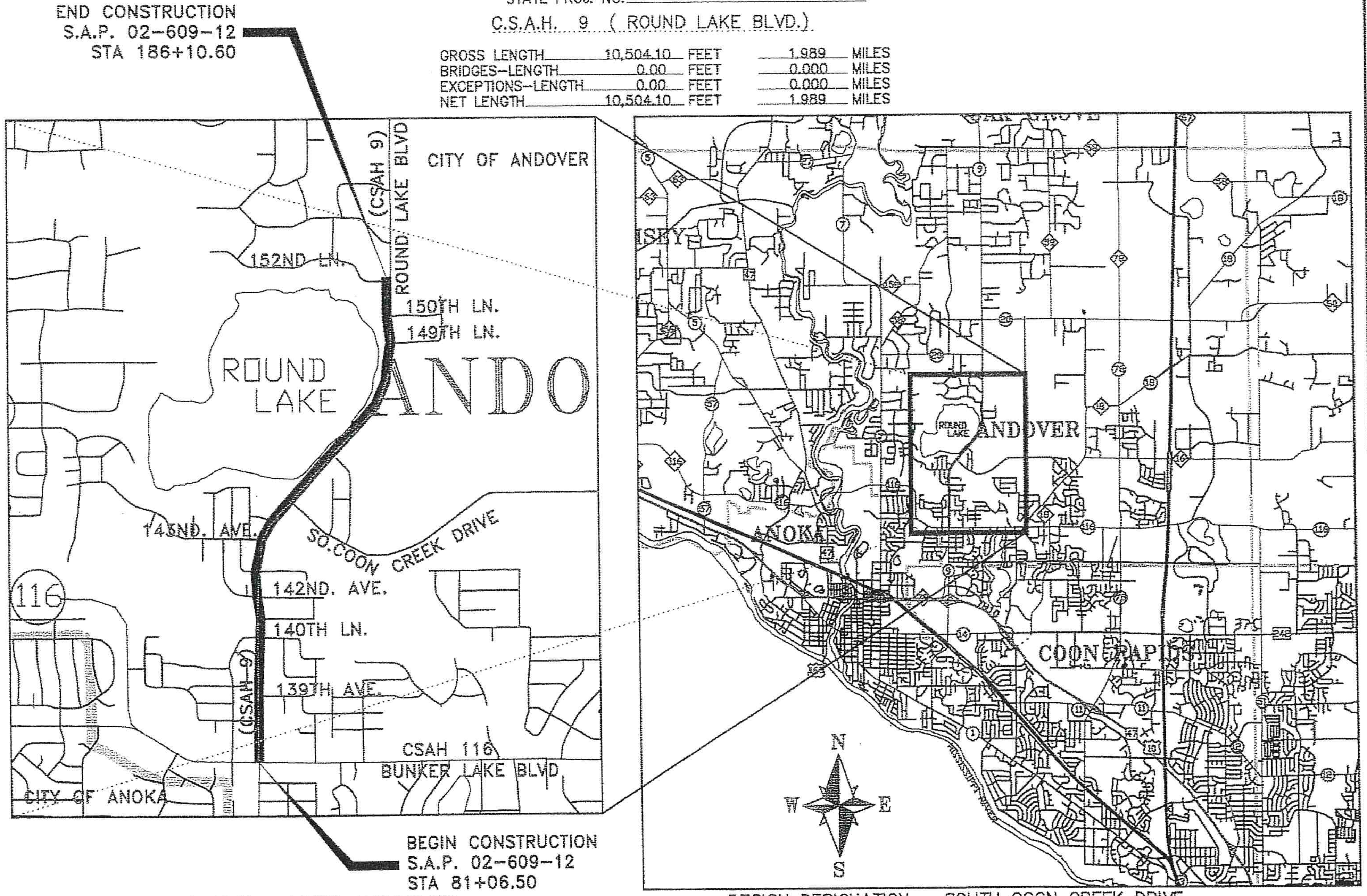
CONSTRUCTION PLAN FOR GRADING, AGG.BASE, BITUMINOUS SURFACING, DRAINAGE, CURB & GUTTER , SIGNAL SYSTEM, CONCRETE WALK AND BITUMINOUS PATH.

LOCATED ON ROUND LAKE BLVD. C.S.A.H. 9 BETWEEN BUNKER LAKE BLVD. C.S.A.H. 116 AND 130 FT. NORTH OF 152ND. LANE N.W. (Geographic Description)

STATE PROJ. NO. 02-609-12

C.S.A.H. 9 (ROUND LAKE BLVD.)

GROSS LENGTH	10,504.10	FEET	1.989	MILES
BRIDGES-LENGTH	0.00	FEET	0.000	MILES
EXCEPTIONS-LENGTH	0.00	FEET	0.000	MILES
NET LENGTH	10,504.10	FEET	1.989	MILES



DESIGN DESIGNATION – 143RD AVENUE NW

ESAL$_{20}$ 265,626
R VALUE 70
ADT (2000)= 1,950
Proj. ADT (2020)= 3,100
Proj. HCADT (2020)=
Soil Factor NA
9 TON DESIGN

Functional Classification COLLECTOR
No. of Traffic Lanes 2
No. of Parking Lanes 0
Design Speed 30 MPH
Based on Stopping Sight Distance
Height of eye 3.50'
Height of object 0.50'
Design Speed not achieved at: NA

DESIGN DESIGNATION – SOUTH COON CREEK DRIVE

ESAL$_{20}$ 256,890
R VALUE 70
ADT (2000)= 1,250
Proj. ADT (2020)= 3,100
Proj. HCADT (2020)=
Soil Factor NA
9 TON DESIGN

Functional Classification COLLECTOR
No. of Traffic Lanes 2
No. of Parking Lanes 0
Design Speed 30 MPH
Based on Stopping Sight Distance
Height of eye 3.50'
Height of object 0.50'
Design Speed not achieved at: NA

MINN. PROJ. NO.
MINN. PROJ. NO.

GOVERNING SPECIFICATIONS

THE 2000 EDITION OF THE MINNESOTA DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR CONSTRUCTION" SHALL GOVERN. ALL TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE MMUTCD, INCLUDING "FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS.

INDEX

DESIGN DESIGNATION – CSAH 9

ESAL$_{20}$ 2,246,180
R VALUE 70
ADT (2003)= 17,933
Proj. ADT (2023)= 25,106
Proj. HCADT (2023)= 1,481
Soil Factor NA
10 TON DESIGN
Functional Classification HIGH DENSITY ARTERIAL
No. of Traffic Lanes 4 No. of Parking Lanes 0
Design Speed 55 MPH
Based on Stopping Sight Distance
Height of eye 3.50' Height of object 0.50'
Design Speed not achieved at: NA

Approved 8/22, 2003
ANOKA COUNTY ENGINEER

Approved 8/22, 2003 David D. Berkowitz
CITY OF ANDOVER

~~Recommended for~~ Approval Don E Eriksen 9/5, 2003
METRO-ASSISTANT DIVISION ENGINEER–STATE AID
For Rules

Approved for State Aid Division Don E Eriksen 9/5, 2003
STATE AID ENGINEER
For Funding

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\0236013\PLAN\01-Title.dwg 08/22/2003 02:11:37 PM CDT MN. (05-01-01)

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
PRINT NAME: PETER M. LEMKE
SIGNATURE: Peter M Lemke
DATE: 8/22/2003 LICENSE NO. 40118

DRAWN BY MN DATE 3/27/03
DESIGN BY MN DATE 3/27/03
CHECKED BY PML DATE 8/22/03

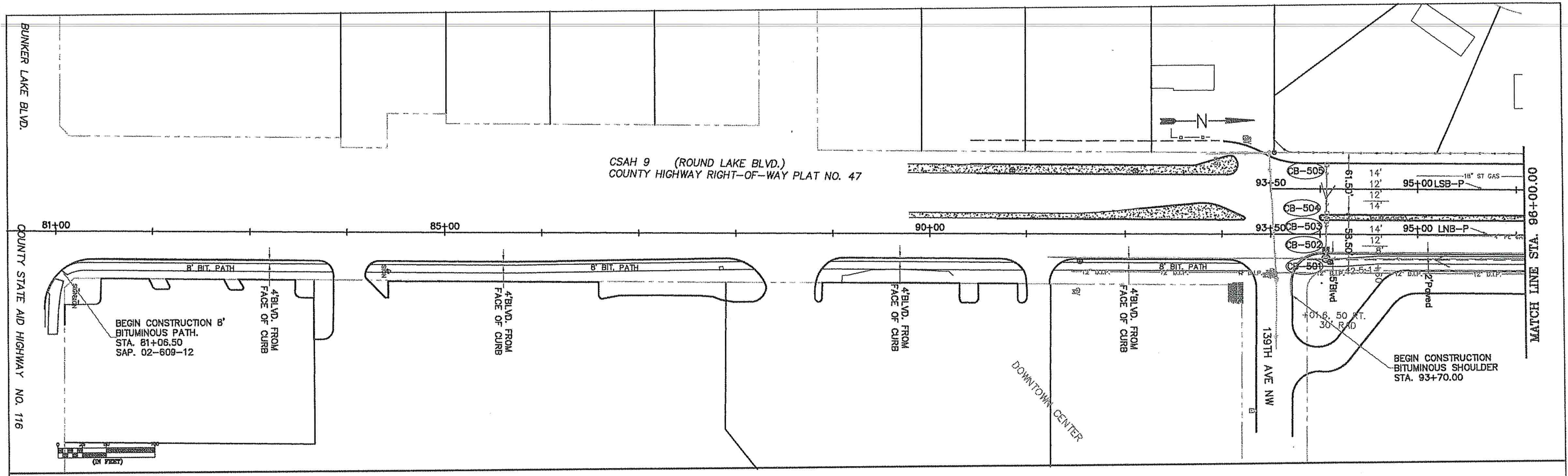
ANOKA COUNTY

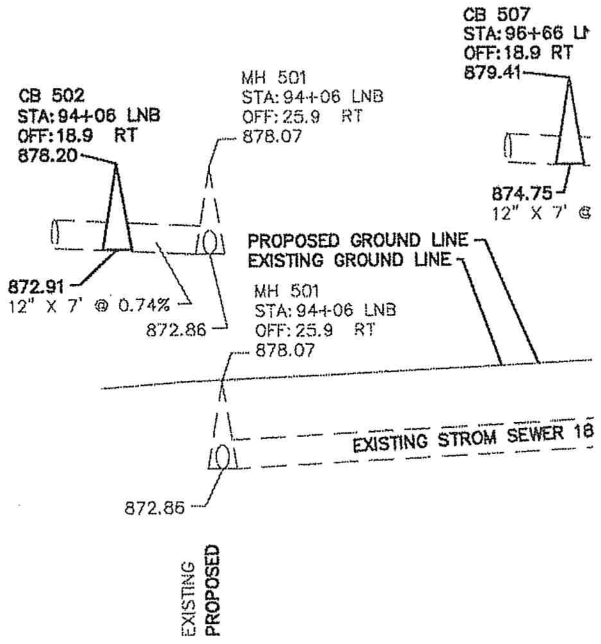
ANOKA COUNTY
HIGHWAY DEPT.

STATE PROJECT NO.
STATE AID PROJECT NO. 02-609-12
CITY PROJECT NO. 198-020-17
COUNTY PROJECT NO.

TITLE SHEET

Sheet 115 of 167 Sheets





INFO ONLY

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PRINT NAME: PETER M. LEMKE
SIGNATURE: Peter M Lemke
DATE: 8/22/2003 LICENSE NO. 40118

DRAWN BY MN DATE 04/01/03
DESIGN BY PML DATE 4/01/03
CHECKED BY PML DATE 4/01/03

ANOKA COUNTY

ANOKA COUNTY
HIGHWAY DEPT.

STATE PROJECT NO.
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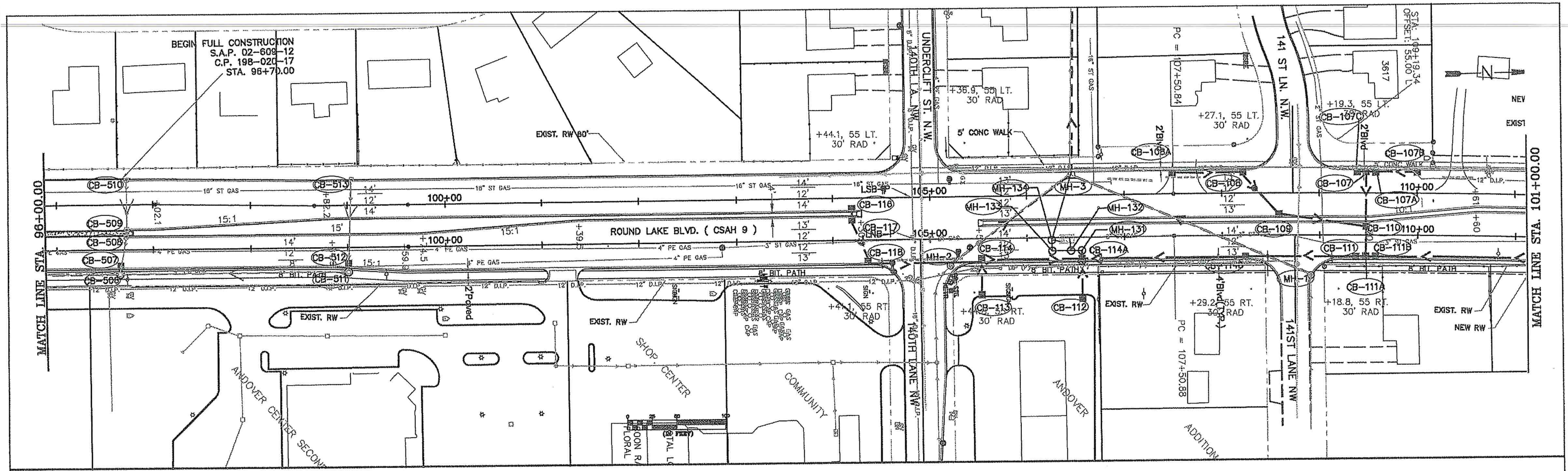
CITY PROJECT NO. 198-020-17
COUNTY PROJECT NO.

STORM DRAINAGE
PLAN & PROFILE
STA. 81+06.5 TO 96+00

Sheet 116 of 167 Sheets



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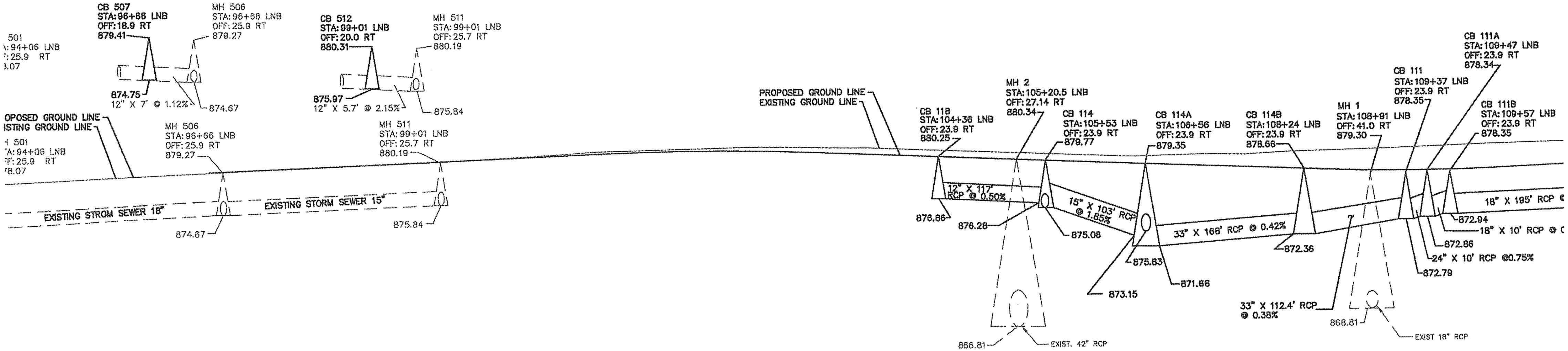

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PRINT NAME: PETER M. LEMKE
SIGNATURE: Peter M Lemke
DATE: 8/22/2003 LICENSE NO. 40118

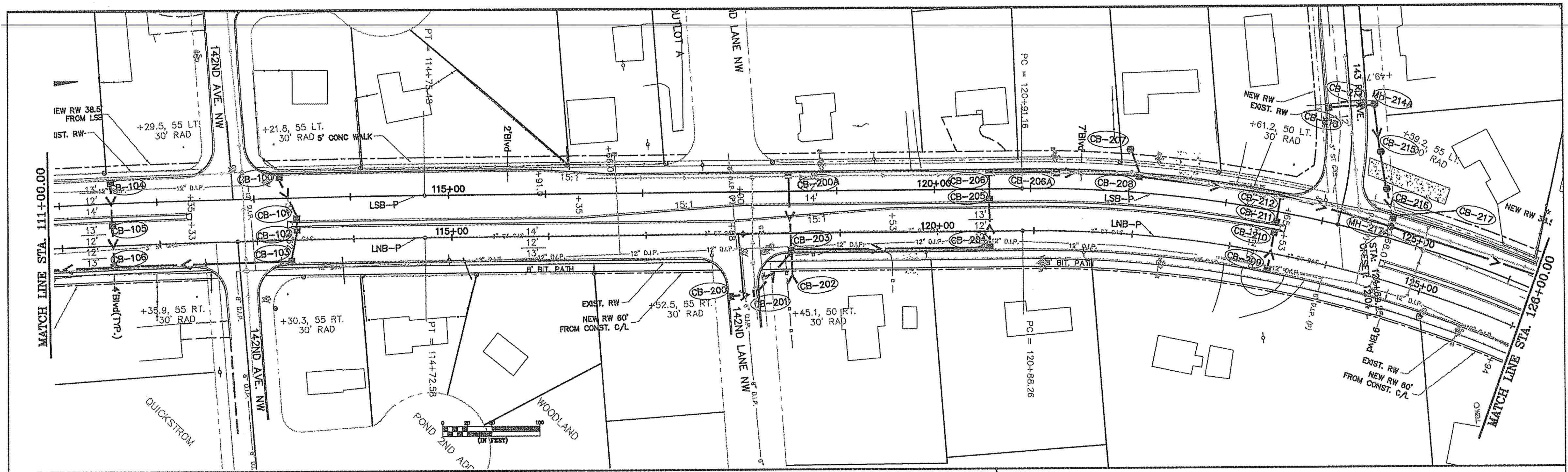
DRAWN BY MN DATE 04/01/03
DESIGN BY PML DATE 4/01/03
CHECKED BY MTH DATE 4/10/03

ANOKA COUNTY
HIGHWAY DEPT.

STATE PROJECT NO.
STATE AID PROJECT NO. 02-609-12
CITY PROJECT NO. 198-020-17
COUNTY PROJECT NO.

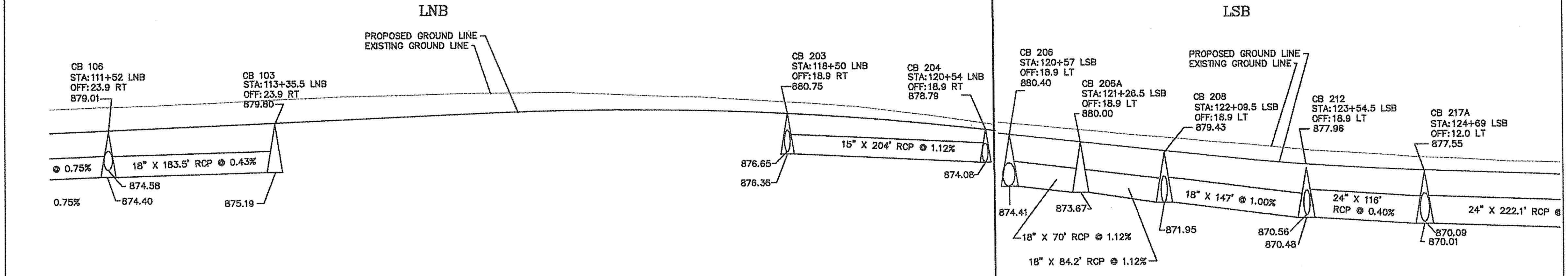
STORM DRAINAGE
PLAN & PROFILE
STA. 96+00 TO 111+00

Sheet 117 of 167 Sheets



LNB

LSB



INFO ONLY

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SIGNATURE: Peter M Lemke
DATE: 8/22/2003 LICENSE NO. 40118

DRAWN BY MN DATE 04/01/03
DESIGN BY MTH DATE 4/01/03
CHECKED BY PML DATE 4/10/03

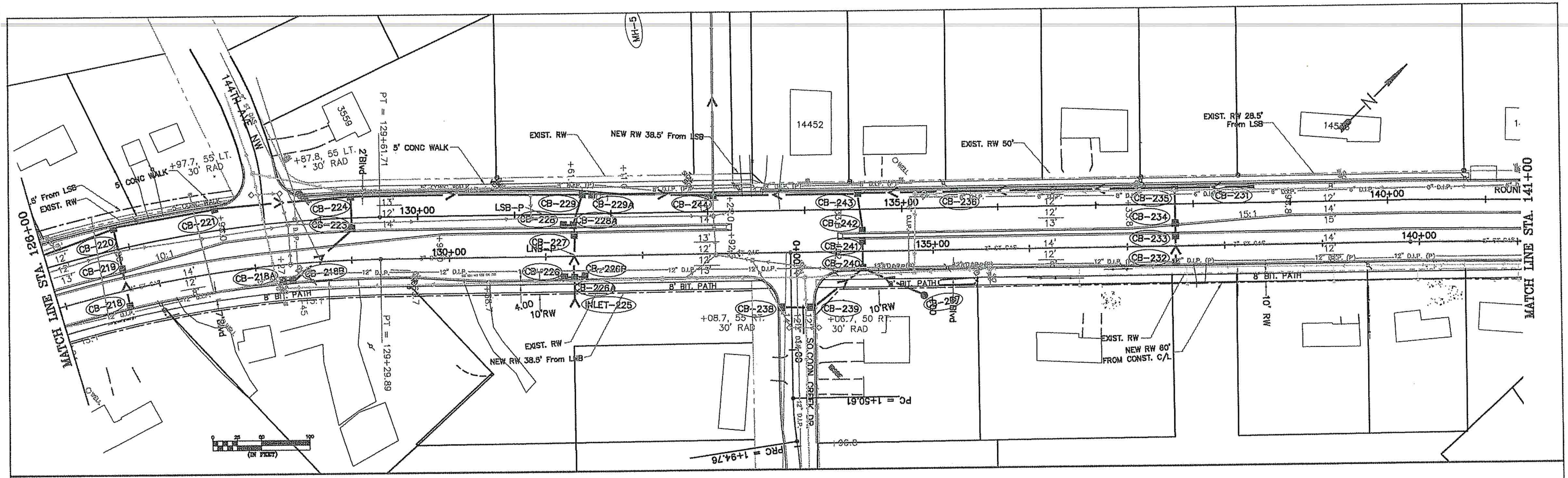
ANOKA COUNTY

ANOKA COUNTY
HIGHWAY DEPT.

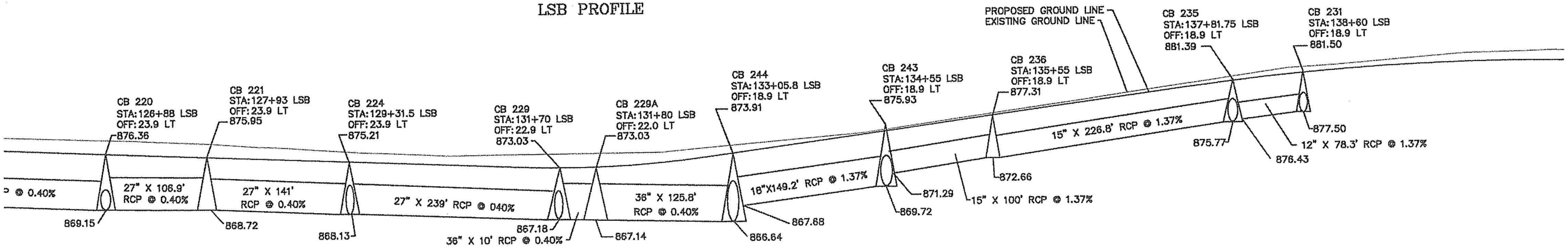
STATE PROJECT NO.
STATE AID PROJECT NO. 02-609-12
CITY PROJECT NO. 198-020-17
COUNTY PROJECT NO.

STORM DRAINAGE
PLAN & PROFILE
STA. 111+00 TO 126+00

Sheet 118 of 167 Sheets



LSB PROFILE



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DESIGN BY MTH DATE 4/01/03

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ANOKA COUNTY

ANOKA COUNTY
HIGHWAY DEPT.

STATE PROJECT NO.

STATE AID PROJECT NO. 02-609-12

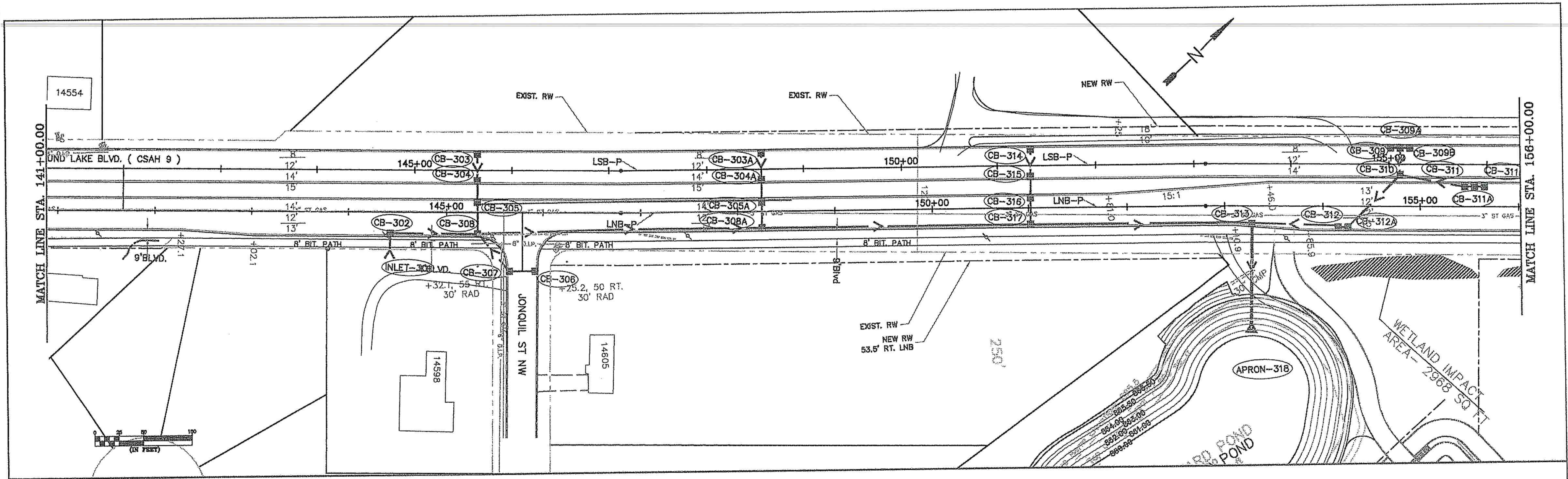
CITY PROJECT NO. 198-020-17

COUNTY PROJECT NO.

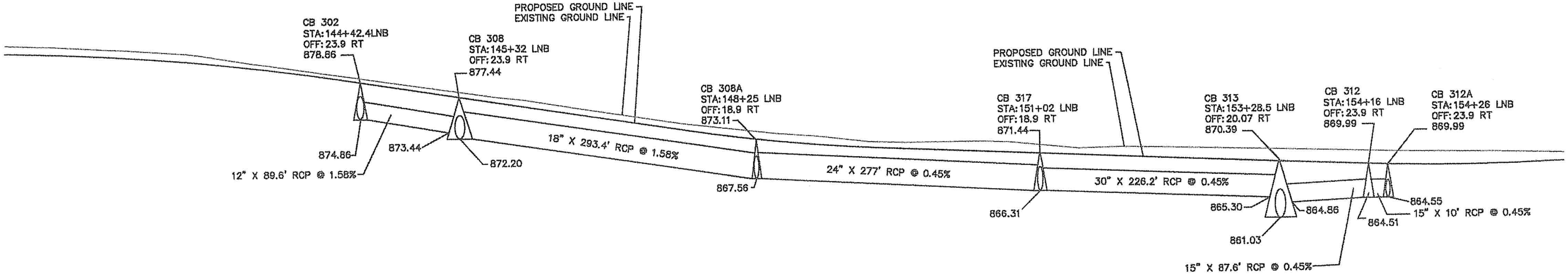
STORM DRAINAGE
PLAN & PROFILE
STA. 126+00 TO 141+00

Sheet 119 of 167 Sheets

lan R. Dahl



LNB-PROFILE



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SIGNATURE: Peter M Lemke

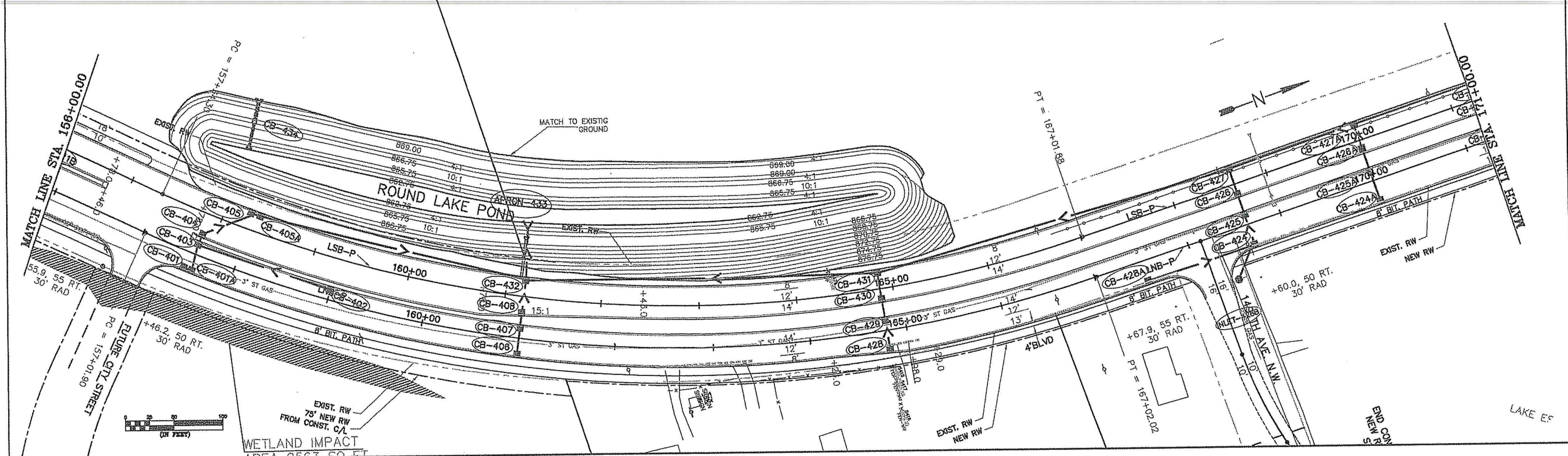
DRAWN BY MN DATE 04/01/03
DESIGN BY MTH DATE 4/01/03
CHECKED BY PML DATE 4/10/03

ANOKA COUNTY
HIGHWAY DEPT.

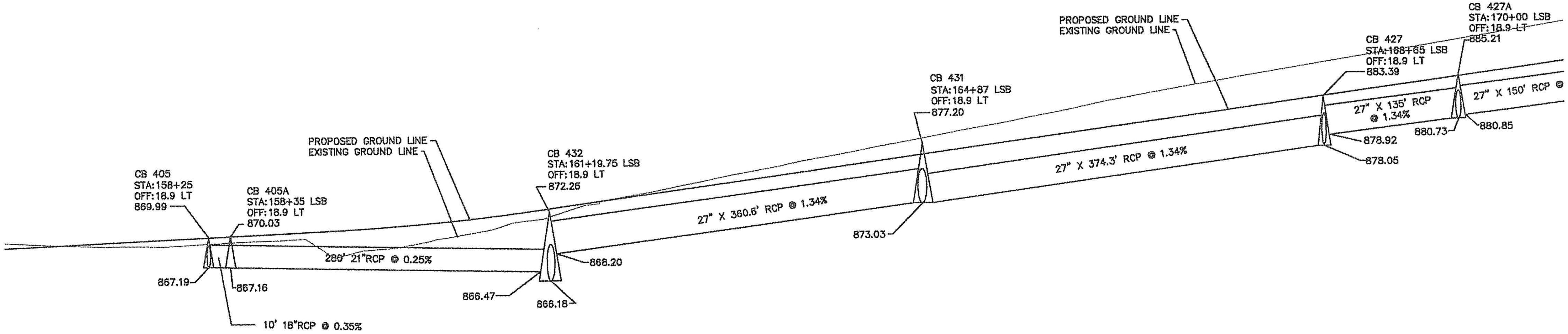
STATE PROJECT NO.
STATE AID PROJECT NO. 02-609-12
CITY PROJECT NO. 198-020-17
COUNTY PROJECT NO.

STORM DRAINAGE
PLAN & PROFILE
STA. 141+00 TO 156+00

Sheet 120 of 167 Sheets



LSB PROFILE



INFO ONLY

NO.	DATE	BY	CKD	APPR	REVISION

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

PRINT NAME: PETER M. LEMKE

SIGNATURE: Peter M Lemke

DATE: 8/22/2003 LICENSE NO. 40118

DRAWN BY MN DATE 04/01/03

DESIGN BY MTH DATE 4/01/03

CHECKED BY PMI DATE 4/10/03

ANOKA COUNTY

ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO.

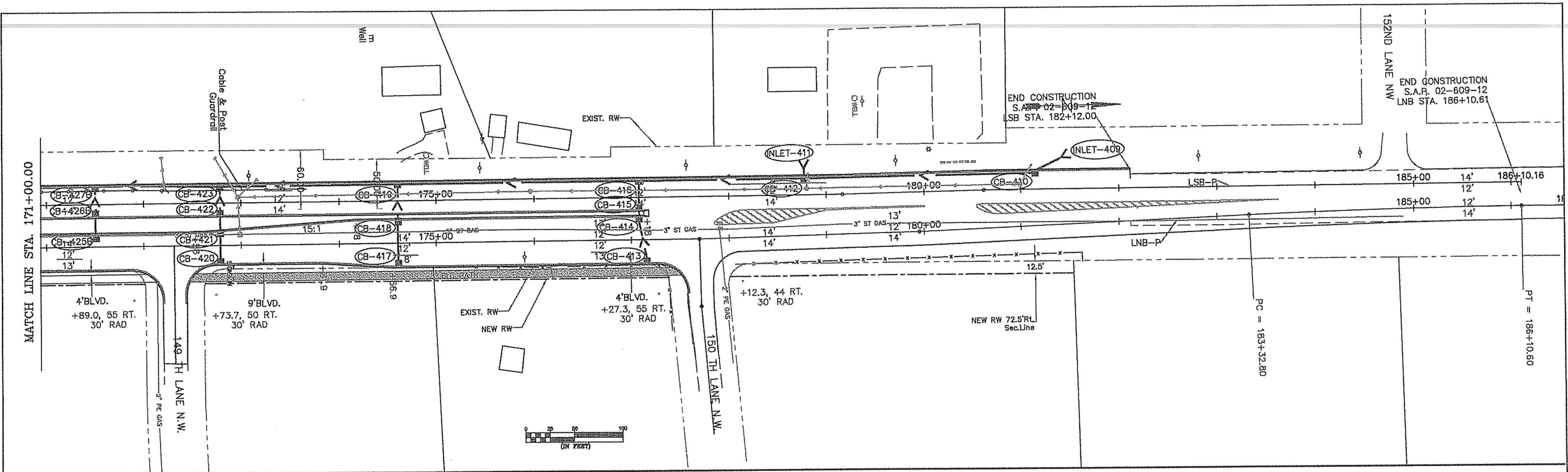
STATE AID PROJECT NO. 02-609-12

CITY PROJECT NO. 198-020-17

COUNTY PROJECT NO.

STORM DRAINAGE PLAN & PROFILE
STA. 156+00 TO 171+00

Sheet 121 of 167 Sheets



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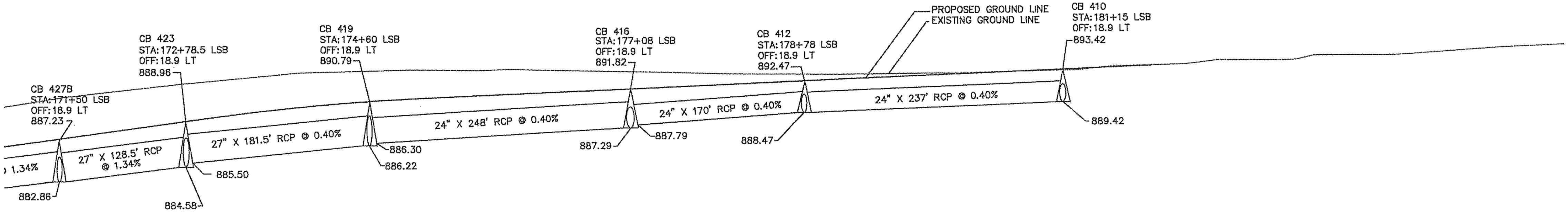

INFO ONLY

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PRINT NAME: PETER M. LEMKE
SIGNATURE: Peter M Lemke
DATE: 8/22/2003 LICENSE NO. 40118

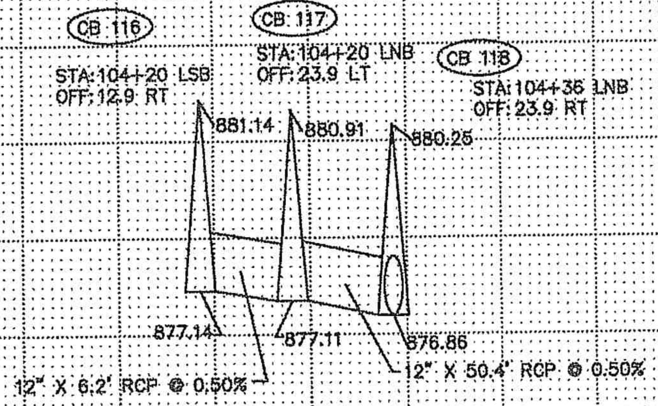
DRAWN BY MN DATE 04/01/03
DESIGN BY MTH DATE 4/01/03
CHECKED BY PML DATE 4/10/03

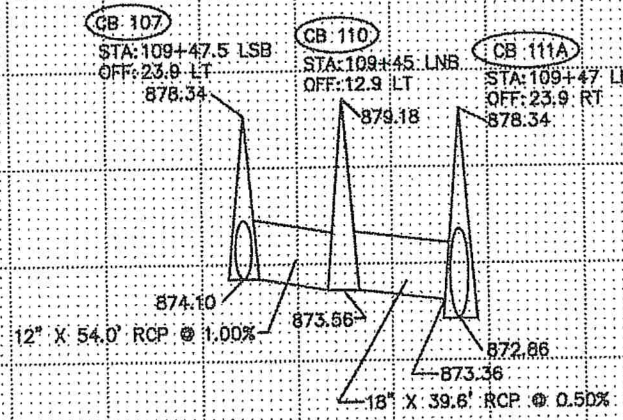
ANOKA COUNTY
HIGHWAY DEPT.

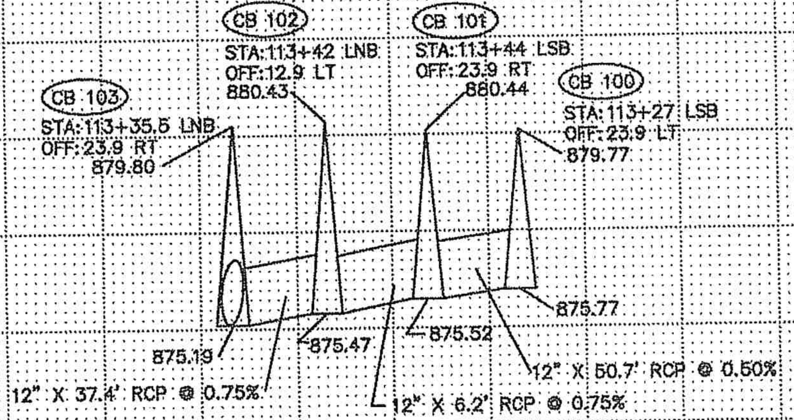
STATE PROJECT NO.
STATE AID PROJECT NO. 02-609-12
CITY PROJECT NO. 198-020-17
COUNTY PROJECT NO.

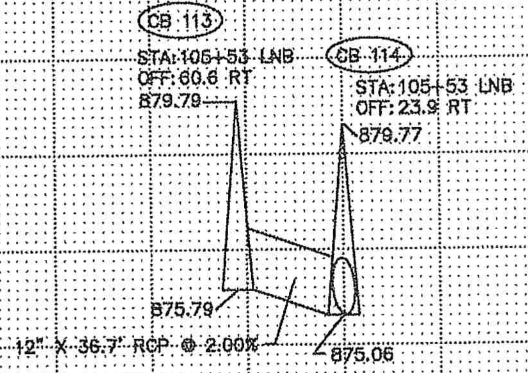
STORM DRAINAGE
PLAN & PROFILE
STA. 171+00 TO 186+10

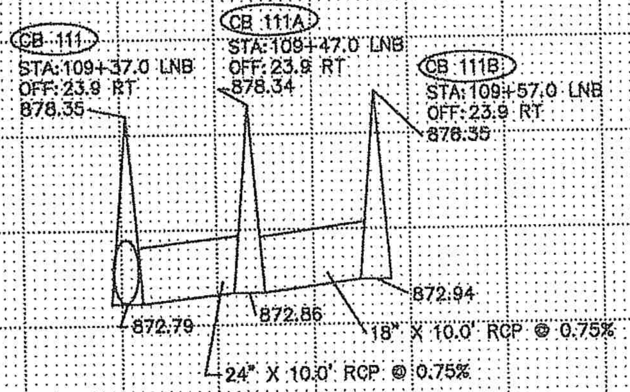
Sheet 122 of 167 Sheets

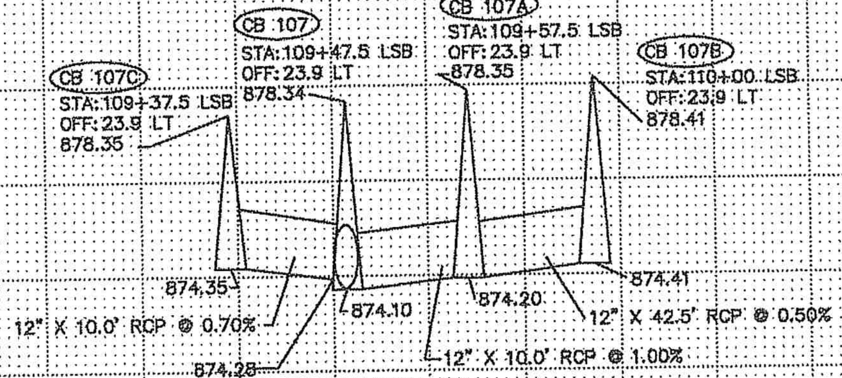


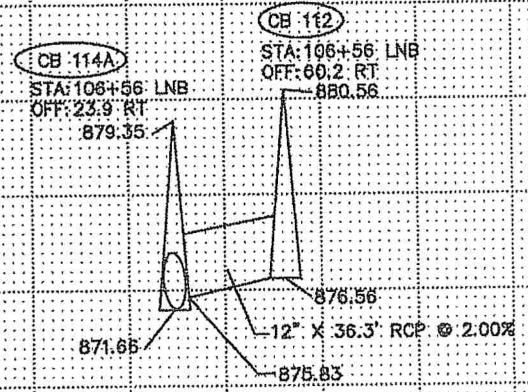


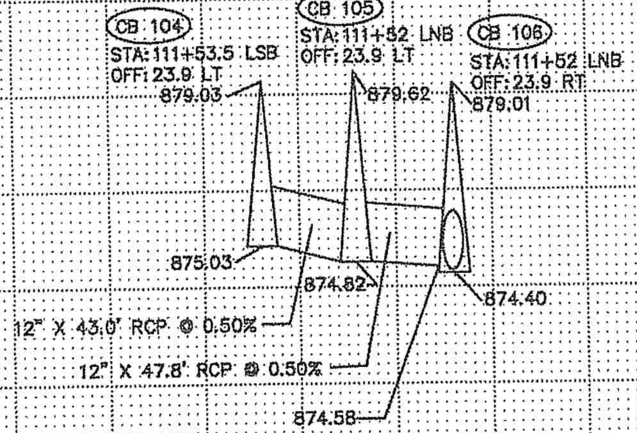


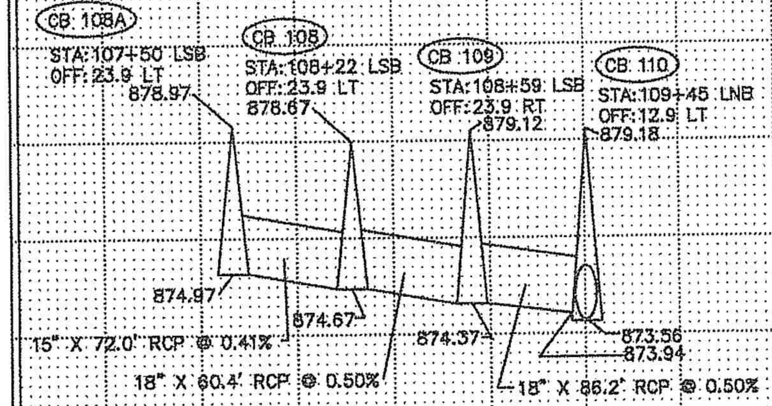












I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

PRINT NAME: PETER M. LEMKE
SIGNATURE: Peter M Lemke
40118

DRAWN BY CSO DATE 4-08-03
DESIGN BY CSO DATE 4-08-03
CHECKED BY MTH DATE 4-08-03

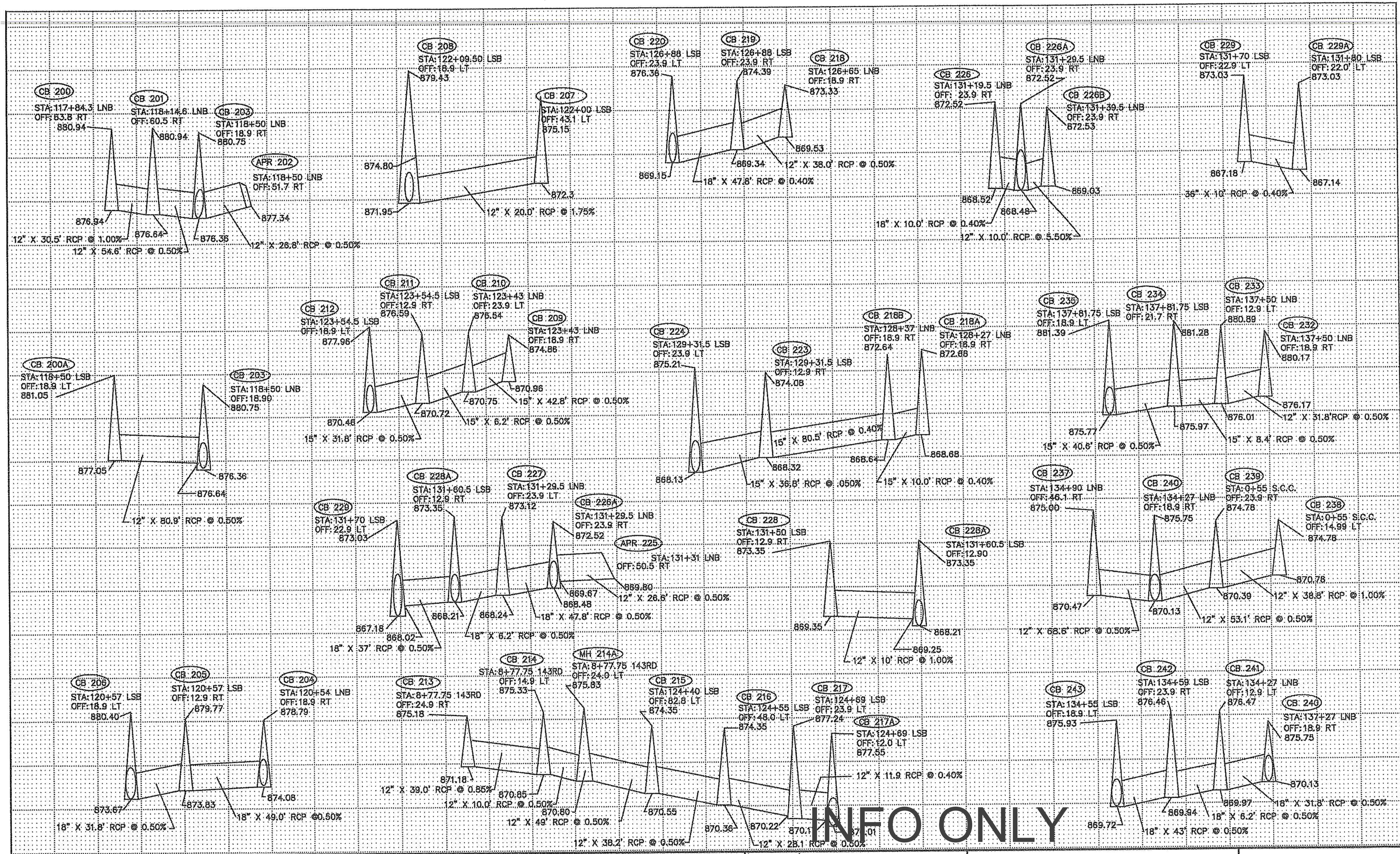
ANOKA COUNTY
HIGHWAY DEPT.

STATE PROJECT NO.
STATE AID PROJECT NO. 02-609-12
CITY PROJECT NO. 198-020-17
COUNTY PROJECT NO.

STORM LEADS
SYSTEM 100

Sheet 123 of 167 Sheets

REVISION



INFO ONLY

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SIGNATURE: Peter M Lemke
DATE: 8-22-2003 LICENSE NO. 40118

DRAWN BY CSO DATE 4-08-03
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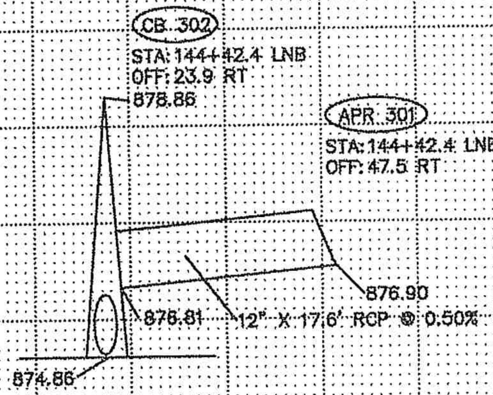
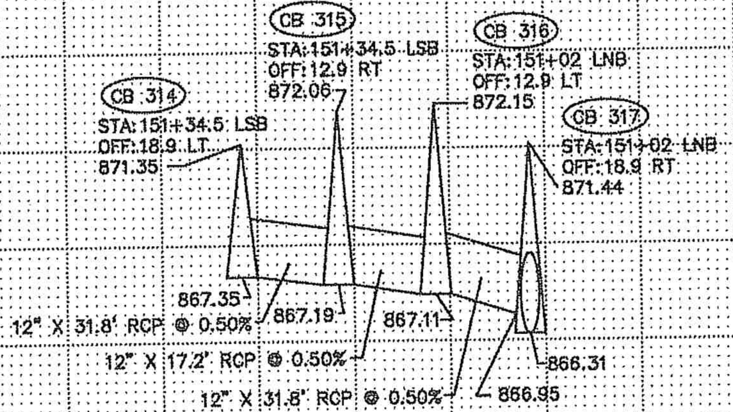
ANOKA COUNTY
HIGHWAY DEPT.

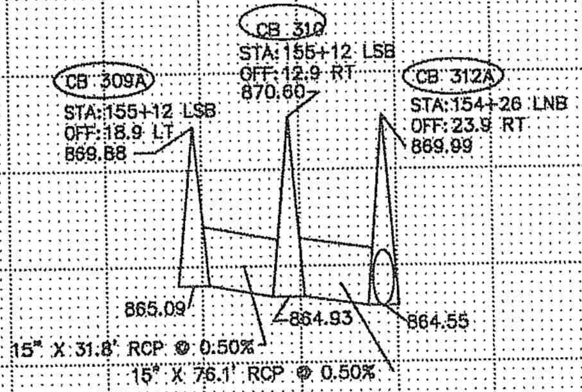
STATE PROJECT NO.
STATE AID PROJECT NO. 02-609-12
CITY PROJECT NO. 198-020-17
COUNTY PROJECT NO.

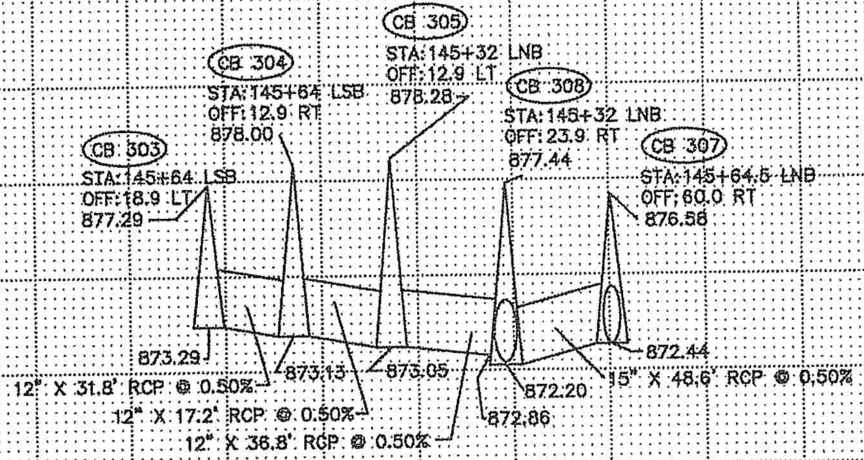
STORM LEADS
SYSTEM 200

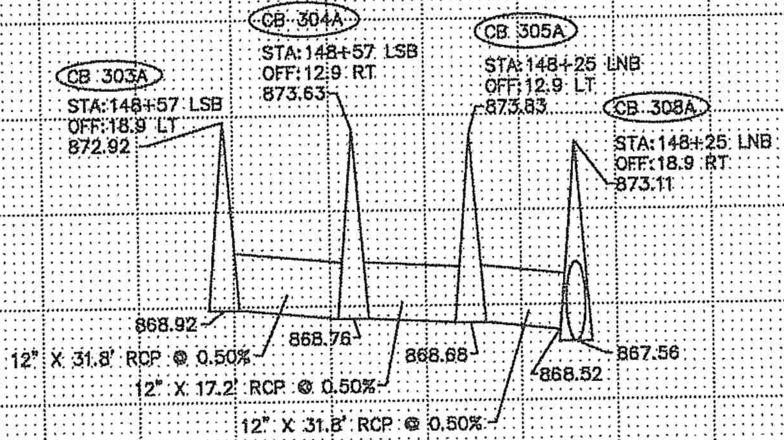
Sheet 124 of 167 Sheets

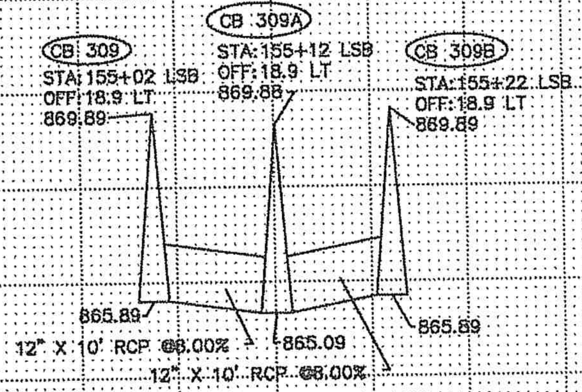


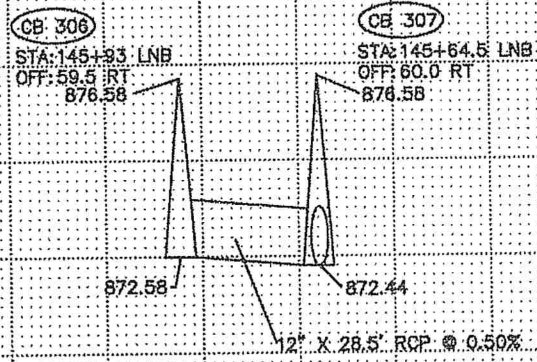


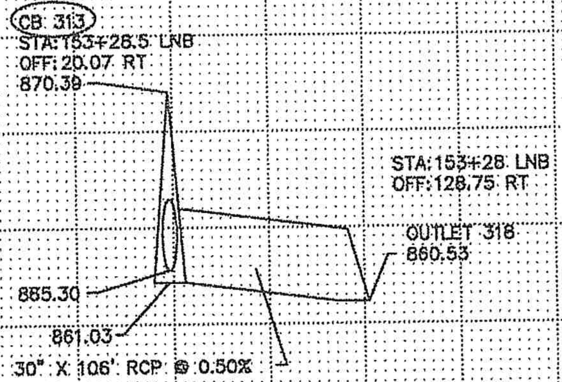


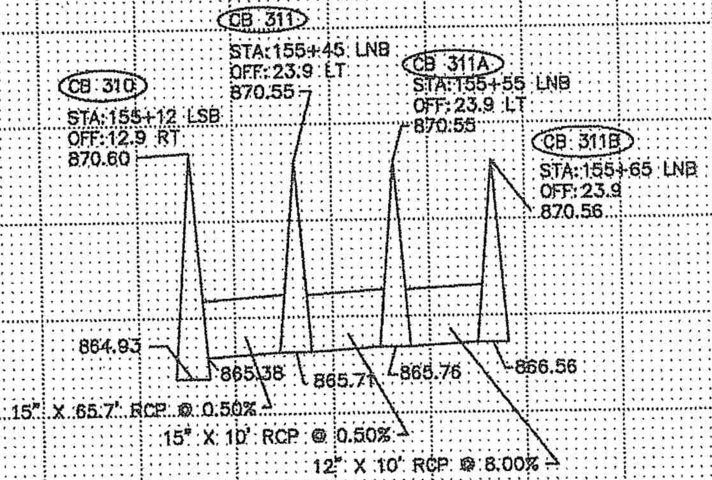












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PRINT NAME: PETER M. LEMKE
SIGNATURE: Peter M Lemke

DRAWN BY CSO DATE 4-08-03
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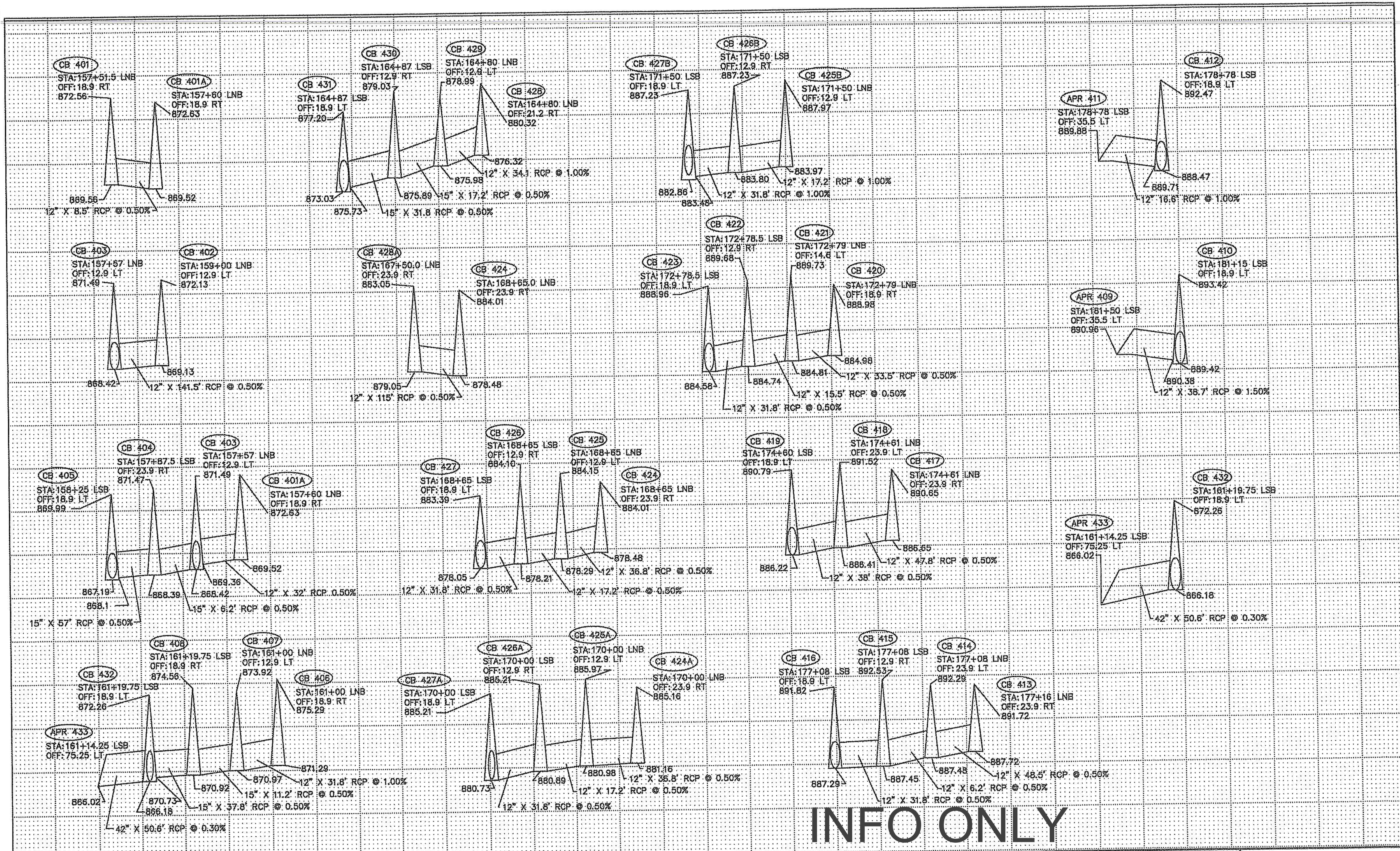
ANOKA COUNTY
HIGHWAY DEPT.

STATE PROJECT NO.
STATE AID PROJECT NO. 02-609-12
CITY PROJECT NO. 198-020-17
COUNTY PROJECT NO.

STORM LEADS
SYSTEM 300

Sheet 125 of 167 Sheets



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PRINT NAME: PETER M. LEMKE
SIGNATURE: Peter M Lemke
DATE 8-22-2003 LICENSE NO. 40118

DRAWN BY CSO DATE 4-08-03
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ANOKA COUNTY
HIGHWAY DEPT.

STATE PROJECT NO.
STATE AID PROJECT NO. 02-609-12
CITY PROJECT NO. 198-020-17
COUNTY PROJECT NO.

STORM LEADS

SYSTEM 400

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FLOWS FROM								FLOWS TO:	NEW STRUCTURE CONSTRUCTION					EXISTING STRUCTURE			DRAINAGE PIPE - RCP (DESIGN 3006)						FLOWS FROM	
STR. OR APRON INLET	ALIGNMENT	STATION	OFFSET	L/R	TOP OF CASTING ELEVATION	INVERT ELEVATION	PIPE SLOPE	STR. OR APRON OUTLET	DESIGN	PAY HT	CASTING ASSEMBLY	CONNECT INTO EXISTING DRAINAGE STRUCTURE	CONE	RE-CONSTRUCT DRAINAGE STRUCTURE	CONNECT TO EXISTING STORM SEWER	ADJUST FRAME & RING CASTING (STORM)	12 in CL II	15 in CL II	18 in CL II	21 in CL II	24 in CL II	33 in CL II	STR. OR APRON INLET	FOOT NOTES
					FT	FT	%			FT	TYPE	EACH	TYPE	LIN FT	EACH	EACH	FT	FT	FT	FT	FT	FT		
501	LNB	94+06	24.9	RT	878.07	872.86		EXISTING		4.99	AD-7					1							501	H
502	LNB	94+06	18.5	RT	878.20	872.91	0.74	501	G	5.07	B-1				2								502	F,G
503	LNB	94+06	13.4	LT	878.74	873.14	0.74	502		5.38													503	
504	LSB	94+06	25.4	RT	878.54	873.32	2.54	503		5.00													504	
505	LSB	94+06	25.9	LT	877.95	874.49	2.29	504		3.24													505	
506	LNB	96+65	25.0	RT	879.27	874.67	0.70	501		4.38	AD-7					1							506	H
507	LNB	96+67	17.8	RT	879.41	874.75	1.20	506	G	4.44	B-1				2								507	F,G
508	LNB	96+72	12.6	LT	880.02	875.13	1.20	507		4.67													508	
509	LSB	96+73	24.0	RT	879.85	875.34	2.33	508		4.29													509	
510	LSB	96+73	23.7	LT	879.21	875.88	1.10	509		3.11													510	
511	LNB	99+00	24.7	RT	880.19	875.84	0.50	506		4.13	AD-7					1							511	H
512	LNB	99+01	17.9	RT	880.31	875.97	2.20	511	G	4.12	B-1				2								512	F,G
513	LSB	99+04	24.3	LT	879.57	877.88	2.20	512		1.47													513	
100	LSB	113+27.00	23.90	LT	879.77	875.77	0.50	101	G	3.78	B-1						50.7						100	
101	LSB	113+44.00	23.90	RT	880.44	875.52	0.75	102	G	4.70	B-1						6.2						101	
102	LNB	113+42.00	12.90	LT	880.43	875.47	0.75	103	G	4.74	B-1						37.4						102	
103	LNB	113+35.50	23.90	RT	879.80	875.19	0.43	106	48-4020	4.39	B-1								183.5				103	
104	LSB	111+53.50	23.90	LT	879.03	875.03	0.50	105	G	3.78	B-1						43.0						104	
105	LNB	111+52.00	23.90	LT	879.62	874.82	0.50	106	G	4.59	B-1						47.8						105	
106	LNB	111+52.00	23.90	RT	879.01	874.40	0.75	111B	48-4020	4.39	B-1								195.0				106	
107	LSB	109+47.50	23.90	LT	878.34	874.10	1.00	110	48-4020	4.02	B-1 (LP)						54.0						107	E
107A	LSB	109+57.50	23.90	LT	878.35	874.20	1.00	107	G	3.93	B-1 (LP)						10.0						107A	E
107B	LSB	110+00.00	23.90	LT	878.41	874.41	0.50	107A	G	3.78	B-1						42.5						107B	
107C	LSB	109+37.50	23.90	LT	878.35	874.35	0.70	107	G	3.78	B-1 (LP)						10.0						107C	E
108	LSB	108+22.00	23.90	LT	878.67	874.67	0.50	109	48-4020	3.78	B-1								60.4				108	
108A	LSB	107+50.00	23.90	LT	878.97	874.97	0.41	108	G	3.78	B-1							72.0					108A	
109	LSB	108+59.00	23.90	RT	879.12	874.37	0.50	110	48-4020	4.53	B-1								86.2				109	
110	LNB	109+45.00	12.90	LT	879.18	873.56	0.50	111A	54-4020	5.40	B-1									39.6			110	E
111	LNB	109+37.00	23.90	RT	878.35	872.79	0.38	114B	54-4020	5.34	B-1 (LP)											112.4	111	E
111A	LNB	109+47.00	23.90	RT	878.34	872.86	0.75	111	60-4020	5.26	B-1 (LP)										10.0		111A	E
111B	LNB	109+57.00	23.90	RT	878.35	872.94	0.75	111A	48-4020	5.19	B-1 (LP)								10.0				111B	E
112	LNB	106+56.50	60.20	RT	880.56	876.56	2.00	114A	G	3.78	B-1						36.3						112	
113	LNB	105+53.00	60.60	RT	879.79	875.79	2.00	114	G	3.78	B-1						36.7						113	
114	LNB	105+53.00	23.90	RT	879.77	875.06	1.85	114A	54-4020	4.49	B-1							103.0					114	
114A	LNB	106+56.00	23.90	RT	879.35	871.66	0.50	131	78-4020	7.48	B-1											10.5	114A	
114B	LNB	108+24.00	23.90	RT	878.66	872.36	0.42	114A	54-4020	6.08	B-1											168.0	114B	
116	LSB	104+20.00	12.90	RT	881.14	877.14	0.50	117	G	3.78	B-1						6.2						116	
117	LNB	104+20.00	23.90	LT	880.91	877.11	0.50	118	G	3.58	B-1						50.4						117	
118	LNB	104+36.00	23.90	RT	880.25	876.86	0.50	114	H	3.17	B-1						117.0						118	
131	LNB	106+56.00	13.40	RT	879.79	871.60	0.50	132	78-4020	7.97	AD-7											10.5	131	K
132	LNB	106+45.00	13.40	RT	879.83	871.55	0.50	133	72-4020	8.06	AD-7										10.5		132	K
	LNB	-		RT	879.83	871.50	0.50	VT-1	-	8.11											10.5			
VT-1	LNB	106+48.00	5.90	RT		871.45	0.50	134													10.5		VT-1	K
	LNB	106+33.00	5.90	RT																				
	LNB	106+48.00	3.10	LT																				
	LNB	106+33.00	3.10	LT																				
133	LNB	106+25.00	13.40	RT	879.91	871.50	0.50	134	72-4020	8.19	AD-7										11.2		133	K
134	LNB	106+25.00	2.30	RT	880.19	871.39	0.50	MH-3	78-4020	8.58	AD-7	1										72.3	134	I,K
MH-1	LNB	108+91.00	41.00	RT	879.30	868.81	0.90	MH-3			AD-7 (S)			4.3									MH-1	J
MH-2	LNB	105+20.50	27.14	RT	880.34	866.81	0.29	MH-3			AD-7 (S)					1							MH-2	H
MH-3	LSB	106+46.50	23.90	LT	879.49	866.37	0.50	POND			AD-7 (S)					1							MH-3	H
TOTAL												1		4.3	6	2	548.2	175.0	535.1	39.6	52.7	373.7		

(A) STATIONS, OFFSETS, AND TOP OF CASTING ELEVATIONS ARE GIVEN TO CENTER OF CASTING. CENTER OF CATCH BASIN CASTING IS 1.10 FT FROM FACE OF CURB. DESIGN 4020
(B) TIE LAST THREE JOINTS AT APRON END. FURNISHING AND INSTALLING PIPE TIES CONSIDERED INCIDENTAL.
(C) ALL POTENTIAL CONFLICTS WITH PUBLIC AND PRIVATE UTILITIES SHALL BE FIELD VERIFIED PRIOR TO INSTALLATION OF STORM SEWER.
(D) FURNISHING AND INSTALLING STEPS CONSIDERED INCIDENTAL.
(E) SEDIMENT BARRIERS SHALL BE USED ON ALL LOW POINT CATCH BASINS PRIOR TO PAVEMENT PLACEMENT.
(F) CONSTRUCT OVER EXISTING PIPE. VERIFY EXISTING PIPE ELEVATION IN THE FIELD.
(G) CONNECT TO EXISTING PIPE AND MATCH ELEVATIONS. VERIFY EXISTING PIPE ELEVATIONS IN THE FIELD.
(H) ADJUST DRAINAGE STRUCTURE. VERIFY PROPOSED TOP OF CASTING ELEVATION WTIH ENGINEER IN THE FIELD.
(I) CONNECT TO EXISTING DRAINAGE STRUCTURE. VERIFY EXISTING INVERT ELEVATION IN THE FIELD.
(J) RECONSTRUCT DRAINAGE STRUCTURE. VERIFY PROPOSED TOP OF CASTING ELEVATION WITH ENGINEER IN THE FIELD.
SEE STANDARD EROSION CONTROL PLAN SHEETS. CONSIDERED INDICENTAL TO STORM SEWER STRUCTURE.
(K) THE STORM WATER TREATMENT SYSTEM IS LOCATED AT STATION 106+40, 1 FT RT LNB. IT IS SHOWN ON THE PLANS WITH THE ENGINEER'S ANTICIPATED CONFIGURATION WITH PIPE AND MANHOLE SIZING. THE FINAL CONFIGURATION, PIPE AND MANHOLE SIZES WILL BE DETERMINED UPON RECEIPT OF RECOMMENDATIONS FROM THE STORM WATER TREATMENT SYSTEM MANUFACTURER. CONTRACT PAY ITEMS WILL BE USED FOR THE STORM SEWER PIPE AND DRAINAGE STRUCTURES, NO ADDITIONAL COMPENSATION WILL BE MADE. A CONCRETE WEIR SHALL BE CONSTRUCTED IN THE BYPASS MANHOLE FOR THE STORM WATER TREATMENT SYSTEM PER THE MANUFACTURER'S RECOMMENDATIONS (SEE THE VORTECH DETAILS IN THE ATTACHMENTS). THE CONSTRUCTION OF THE CONCRETE WEIR SHALL BE CONSIDERED INCIDENTAL TO THE STORM WATER TREATMENT SYSTEM, NO ADDITIONAL COMPENSATION SHALL BE MADE. THE CONTRACTOR SHALL NOT ORDER THE MANHOLES AND STORM SEWER PIPE FOR THE STORM WATER TREATMENT SSYTEM UNTIL THE ENGINEER APPROVIES THE MANUFACTURER'S SHOP DRAWINGS AND DETAILS.

NO	DATE	BY	CKD	APPR	REVISION
1	9/03/03	MFG	PML	PML	ADD NOTE (K) TO STRUCTURES 131-134, VT-1

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
PRINT NAME: PETER M. LEMKE
SIGNATURE: Peter M Lemke
DATE: ~~8/22/2003~~ 9/03/2003 LICENSE NO. 40118

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CHECKED BY PML DATE 04/08/08

ANOKA COUNTY
HIGHWAY DEPT.

STATE PROJECT NO.
STATE AID PROJECT NO. 02-609-12
CITY PROJECT NO. 198-020-17
COUNTY PROJECT NO.

STORM SEWER TABULATION CHARTS
SYSTEM 100

FLOWS FROM STR. OR APRON INLET	ALIGNMENT	STATION	OFFSET	L/R	TOP OF CASTING ELEVATION	INVERT ELEVATION	PIPE SLOPE	FLOWS TO: STR. OR APRON OUTLET	NEW STRUCTURE CONSTRUCTION			DRAINAGE PIPE - RCP (DESIGN 3006)									RIPRAP AT RCP OUTLETS		FLOWS FROM STR. OR APRON INLET	FOOT NOTES
									DESIGN	PAY HT	CASTING ASSEMBLY	12 in CL II	12 in CL II APRON	15 in CL II	18 in CL II	21 in CL II	24 in CL II	30 in CL II	36 in CL II	36 in CL II APRON	CL III 18" DEPTH RIPRAP	GEOTEXTILE FILTER TYPE IV		
					FT	FT	%			FT	TYPE	FT	EACH	FT	FT	FT	FT	FT	FT	EACH	CU YD	SQ YD		
200	LNB	117+84.30	63.80	RT	880.94	876.94	1.00	201	G	3.78	B-1	30.5											200	
200A	LSB	118+50.00	18.90	LT	881.05	877.05	0.50	203	G	3.78	B-1	80.9											200A	
201	LNB	118+14.60	60.50	RT	880.94	876.64	0.50	203	G	4.09	B-1	54.6											201	
202	LNB	118+50.00	51.70	RT	877.34	877.34	0.50	203				26.8	1										202	B, APRON
203	LNB	118+50.00	18.90	RT	880.75	876.36	1.12	204	72-4020	4.17	B-1			204.0									203	
204	LNB	120+54.00	18.90	RT	878.79	874.08	0.50	205	54-4020	4.49	B-1				49.0								204	
205	LSB	120+57.00	12.90	RT	879.77	873.83	0.50	206	F	5.72	B-1				31.8								205	
206	LSB	120+57.00	18.90	LT	880.40	873.67	1.12	206A	54-4020	6.51	B-1				70.0								206	
206A	LSB	121+26.50	18.90	LT	880.00	872.89	1.12	208	F	6.89	B-1				84.2								206A	
207	LSB	122+00.00	43.10	LT	879.15	879.15	1.75	208	G	-0.22	B-1	20.0											207	
208	LSB	122+09.50	18.90	LT	879.43	871.95	1.00	212	60-4020	7.26	B-1				147.0								208	
209	LNB	123+43.00	18.90	RT	874.86	870.96	0.50	210	H	3.68	B-1			42.8									209	
210	LNB	123+43.00	23.90	LT	876.54	870.75	0.50	211	G	5.57	B-1			6.2									210	
211	LSB	123+54.50	12.90	RT	876.59	870.72	0.50	212	G	5.66	B-1			31.8									211	
212	LSB	123+54.50	18.90	LT	877.96	870.48	0.40	217A	60-4020	7.26	B-1						116.0						212	
213	143RD	08+77.75	24.90	RT	875.18	871.18	0.85	214	G	3.78	B-1	39.0											213	
214	143RD	08+77.75	14.90	LT	875.33	870.85	0.50	214A	G	4.26	B-1	10.0											214	
214A	143RD	08+77.75	24.00	LT	875.83	870.80	0.50	215	G	4.81	AD-7	49.0											214A	
215	LSB	124+40.00	82.80	LT	874.35	870.55	0.50	216	G	3.58	B-1	38.2											215	
216	LSB	124+55.00	48.00	LT	874.35	870.36	0.50	217	G	3.77	B-1	28.1											216	
217	LSB	124+69.00	23.90	LT	877.24	870.22	0.40	217A	F	6.80	B-1	11.9											217	
217A	LSB	124+69.00	12.00	LT	877.55	870.01	0.40	220	54-4020	7.32	AD-7						222.1						217A	
218	LNB	126+65.00	18.90	RT	873.33	869.53	0.50	219	H	3.58	B-1	38.0											218	
218A	LNB	128+27.00	18.90	RT	872.68	868.68	0.40	218B	G	3.78	B-1			10.0									218A	
218B	LNB	128+37.00	18.90	RT	872.64	868.64	0.40	223	G	3.78	B-1			80.5									218B	
219	LSB	126+88.00	23.90	RT	874.39	869.34	0.40	220	G	4.83	B-1				47.8								219	
220	LSB	126+88.00	23.90	LT	876.36	869.15	0.40	221	60-4020	6.99	B-1							106.9					220	
221	LSB	127+93.00	23.90	LT	875.95	868.72	0.40	224	F	7.01	B-1							141.0					221	
223	LSB	129+31.50	12.90	RT	874.06	868.32	0.50	224	G	5.54	B-1			36.8									223	
224	LSB	129+31.50	23.90	LT	875.21	868.13	0.40	229	60-4020	6.86	B-1							239.0					224	
225	LNB	131+31.00	50.50	RT	869.80	869.80	0.50	226A				26.6	1										225	B, APRON
226	LNB	131+19.50	23.90	RT	872.52	868.52	0.40	226A	G	3.78	B-1 (LP)			10.0									226	E
226A	LNB	131+29.50	23.90	RT	872.52	868.48	0.50	227	54-4020	3.82	B-1 (LP)				47.8								226A	E
226B	LNB	131+39.50	23.90	RT	872.53	869.03	5.50	226A	H	3.28	B-1 (LP)	10.0											226B	E
227	LNB	131+29.50	23.90	LT	873.12	868.24	0.50	228A	G	4.66	B-1 (LP)				6.2								227	E
228	LSB	131+50.50	12.90	RT	873.35	869.35	1.00	228A	G	3.78	B-1 (LP)	10.0											228	E
228A	LSB	131+60.50	12.90	RT	873.35	868.21	0.50	229	54-4020	4.92	B-1 (LP)				37.0								228A	E
229	LSB	131+70.00	22.90	LT	873.03	867.18	0.40	229A	78-4020	5.63	B-1 (LP)								10.0				229	E
229A	LSB	131+80.00	22.00	LT	873.03	867.14	0.40	244	60-4020	5.67	B-1 (LP)								125.8				229A	E
231	LSB	138+60.00	18.90	LT	881.50	877.50	1.37	235	G	3.78	B-1	78.3											231	
232	LNB	137+50.00	18.90	RT	880.17	876.17	0.50	233	G	3.78	B-1	31.8											232	
233	LNB	137+50.00	12.90	LT	880.89	876.01	0.50	234	G	4.66	B-1			8.4									233	
234	LSB	137+81.75	23.90	RT	881.28	875.97	0.50	235	G	5.09	B-1			40.6									234	
235	LSB	137+81.75	18.90	LT	881.39	875.77	1.37	236	48-4020	5.40	B-1			226.8									235	
236	LSB	135+55.00	18.90	LT	877.31	872.66	1.37	243	G	4.43	B-1			100.0									236	
237	LNB	134+90.00	46.10	RT	875.00	870.47	0.50	240	G	4.31	B-1	68.6											237	
238	S.C.C.	0+55.00	14.90	LT	874.78	870.78	1.00	239	G	3.78	B-1	38.8											238	
239	S.C.C.	0+55.00	23.90	RT	874.78	870.39	0.50	240	G	4.17	B-1			53.1									239	
240	LNB	134+27.00	18.90	RT	875.75	870.13	0.50	241	48-4020	5.40	B-1				31.8								240	
241	LNB	134+27.00	12.90	LT	876.47	869.97	0.50	242	F	6.28	B-1				6.2								241	
242	LSB	134+59.00	23.90	RT	876.46	869.94	0.50	243	F	6.30	B-1				43.0								242	
243	LSB	134+55.00	18.90	LT	875.93	869.72	1.37	244	54-4020	5.99	B-1					149.2							243	
244	LSB	133+05.80	18.90	LT	873.91	866.64	0.50	MH-4	72-4020	7.05	B-1								189.6				244	
MH-4	LSB	133+07.00	208.50	LT	872.16	865.69	0.50	MH-5	84-4020	6.25	AD-7 (S)								69.5				MH-4	
MH-5	LSB	132+37.50	210.50	LT	871.70	865.34	0.50	APRON	66-4020	6.14	AD-7 (S)								134.2	1			MH-5	B, APRON
APRON	LSB	130+66.00	368	LT		864.67		POND													13.8	27.6		
TOTAL												691.1	2	851.0	601.6	149.2	338.1	486.9	529.1	1	13.8	27.6		

(A) STATIONS, OFFSETS, AND TOP OF CASTING ELEVATIONS ARE GIVEN TO CENTER OF CASTING. CENTER OF CATCH BASIN CASTING IS 1.10 FT FROM FACE OF CURB. DESIGN 4020
(B) TIE LAST THREE JOINTS AT APRON END. FURNISHING AND INSTALLING PIPE TIES CONSIDERED INCIDENTAL.
(C) ALL POTENTIAL CONFLICTS WITH PUBLIC AND PRIVATE UTILITIES SHALL BE FIELD VERIFIED PRIOR TO INSTALLATION OF STORM SEWER.
(D) FURNISHING AND INSTALLING STEPS CONSIDERED INCIDENTAL.
(E) SEDIMENT BARRIERS SHALL BE USED ON ALL LOW POINT CATCH BASINS PRIOR TO PAVEMENT PLACEMENT.
SEE STANDARD EROSION CONTROL PLAN SHEETS. CONSIDERED INDICENTAL TO STORM SEWER STRUCTURE.

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\0260912\PLAN\86-89-StormTabulation.dwg 08/26/03 01:39:24 PM CDT

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

PRINT NAME: PETER M. LEMKE
SIGNATURE: Peter M Lemke
DATE: 8/22/2003 LICENSE NO. 40118

DRAWN BY MTH DATE 04/08/03
DESIGN BY MTH DATE 04/08/03
CHECKED BY PML DATE 04/08/08

ANOKA COUNTY
HIGHWAY DEPT.

STATE PROJECT NO.
STATE AID PROJECT NO. 02-609-12
CITY PROJECT NO. 198-020-17
COUNTY PROJECT NO.

STORM SEWER TABULATION CHARTS
SYSTEM 200

FLOWS FROM STR. OR APRON INLET	ALIGNMENT	STATION	OFFSET	L/R	TOP OF CASTING ELEVATION	INVERT ELEVATION	PIPE SLOPE	FLOWS TO: STR. OR APRON OUTLET	NEW STRUCTURE CONSTRUCTION			DRAINAGE PIPE - RCP (DESIGN 3006)								RIPRAP AT RCP OUTLETS		FLOWS FROM STR. OR APRON INLET	FOOT NOTES
									DESIGN	PAY HT	CASTING ASSEMBLY	12 in CL II	12 in CL II APRON	15 in CL II	18 in CL II	21 in CL II	24 in CL II	30 in CL II	30 in CL II APRON	CL III 18" DEPTH RIPRAP	GEOTEXTILE FILTER TYPE IV		
					FT	FT	%			FT	TYPE	FT	EACH	FT	FT	FT	FT	FT	EACH	CU YD	SQ YD		
301	LNB	144+42.40	47.50	RT	876.90	876.90	0.50	302	APRON			17.6	1									301	B, APRON
302	LNB	144+42.40	23.90	RT	878.86	874.86	1.58	308	G	3.78	B-1	89.6										302	
303	LSB	145+64.00	18.90	LT	877.29	873.29	0.50	304	G	3.78	B-1	31.8										303	
303A	LSB	148+57.00	18.90	LT	872.92	868.92	0.50	304A	G	3.78	B-1	31.8										303A	
304	LSB	145+64.00	12.90	RT	878.00	873.13	0.50	305	G	4.65	B-1	17.2										304	
304A	LSB	148+57.00	12.90	RT	873.63	868.76	0.50	305A	G	4.65	B-1	17.2										304A	
305	LNB	145+32.00	12.90	LT	878.28	873.05	0.50	308	G	5.02	B-1	36.8										305	
305A	LNB	148+25.00	12.90	LT	873.83	868.68	0.50	308A	G	4.94	B-1	31.8										305A	
306	LNB	145+93.00	59.50	RT	876.58	872.58	0.50	307	G	3.78	B-1	28.5										306	
307	LNB	145+64.50	60.00	RT	876.58	872.44	0.50	308	G	3.92	B-1			48.6								307	
308	LNB	145+32.00	23.90	RT	877.44	872.20	1.58	308A	84-4020	5.03	B-1				293.4							308	
308A	LNB	148+25.00	18.90	RT	873.11	867.56	0.45	317	54-4020	5.33	B-1						277.0					308A	
309	LSB	155+02.00	18.90	LT	869.89	865.89	8.00	309A	G	3.78	B-1 (LP)	10.0										309	E
309A	LSB	155+12.00	18.90	LT	869.88	865.09	0.50	310	48-4020	4.57	B-1 (LP)			31.8								309A	E
309B	LSB	155+22.00	18.90	LT	869.89	865.89	8.00	309A	G	3.78	B-1 (LP)	10.0										309B	E
310	LSB	155+12.00	12.90	RT	870.60	864.93	0.50	312A	48-4020	5.45	B-1				76.1							310	
311	LNB	155+45.00	23.90	LT	870.55	865.71	0.50	310	G	4.62	B-1 (LP)			65.7								311	E
311A	LNB	155+55.00	23.90	LT	870.55	865.76	0.50	311	G	4.57	B-1 (LP)			10.0								311A	E
311B	LNB	155+65.00	23.90	LT	870.56	866.56	8.00	311A	G	3.78	B-1 (LP)	10.0										311B	E
312	LNB	154+16.00	23.90	RT	869.99	864.51	0.45	313	48-4020	5.26	B-1 (LP)					87.6						312	E
312A	LNB	154+26.00	23.90	RT	869.99	864.55	0.45	312	48-4020	5.22	B-1 (LP)					10.0						312A	E
313	LNB	153+28.50	20.07	RT	870.39	861.03	0.50	318	72-4020	9.14	B-1							102.7				313	
314	LSB	151+34.50	18.90	LT	871.35	867.35	0.50	315	G	3.78	B-1	31.8										314	
315	LSB	151+34.50	12.90	RT	872.06	867.19	0.50	316	G	4.65	B-1	17.2										315	
316	LNB	151+02.00	12.90	LT	872.15	867.11	0.50	317	G	4.82	B-1	31.8										316	
317	LNB	151+02.00	18.90	RT	871.44	866.31	0.45	313	60-4020	4.91	B-1						226.2					317	
318	LNB	153+28.00	128.75	RT	860.50	860.50	0.50	POND											1	10.9	22.0	318	B, APRON
TOTAL												413.1	1	156.1	369.5	97.6	503.2	102.7	1	10.9	22.0		

(A) STATIONS, OFFSETS, AND TOP OF CASTING ELEVATIONS ARE GIVEN TO CENTER OF CASTING. CENTER OF CATCH BASIN CASTING IS 1.10 FT FROM FACE OF CURB. DESIGN 4020
(B) TIE LAST THREE JOINTS AT APRON END. FURNISHING AND INSTALLING PIPE TIES CONSIDERED INCIDENTAL.
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(D) FURNISHING AND INSTALLING STEPS CONSIDERED INCIDENTAL.
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SEE STANDARD EROSION CONTROL PLAN SHEETS. CONSIDERED INDICENTAL TO STORM SEWER STRUCTURE.

INFO ONLY

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\0260912\PLAN\86-89-StormTabulation.dwg 08/26/03 01:39:24 PM CDT

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
PRINT NAME: PETER M LEMKE
SIGNATURE: Peter M Lemke
DATE: 8/22/2003 LICENSE NO. 40118

DRAWN BY MTH DATE 04/08/03
DESIGN BY MTH DATE 04/08/03
CHECKED BY PML DATE 04/08/08

ANOKA COUNTY

ANOKA COUNTY
HIGHWAY DEPT.

STATE PROJECT NO.
STATE AID PROJECT NO. 02-609-12
CITY PROJECT NO. 198-020-17
COUNTY PROJECT NO.

STORM SEWER
TABULATION CHARTS
SYSTEM 300

Sheet 129 of 167 Sheets

FLOWS FROM								FLOWS TO:	NEW STRUCTURE CONSTRUCTION			DRAINAGE PIPE - RCP (DESIGN 3006)									RIPRAP AT RCP OUTLETS		FLOWS FROM	
STR. OR APRON INLET	ALIGNMENT	STATION	OFFSET	L/R	TOP OF CASTING ELEVATION	INVERT ELEVATION	PIPE SLOPE	STR. OR APRON OUTLET	DESIGN	PAY HT	CASTING ASSEMBLY	12 in CL II	12 in CL II APRON	15 in CL II	18 in CL II	18 in CL II APR	24 in CL II	27 in CL II	42 in CL II	42 in CL II APRON	CL III 18" DEPTH RIPRAP	GEOTEXTILE FILTER TYPE IV	STR. OR APRON INLET	FOOT NOTES
					FT	FT	%			FT	TYPE	FT	EACH	FT	FT		FT	FT	FT	FT	CU YD	SQ YD		
401	LNB	157+51.50	18.90	RT	872.56	869.56	0.50	401A	H	2.78	B-1	8.5											401	
401A	LNB	157+60.00	18.90	RT	872.63	869.52	0.50	403	G	2.89	B-1	32.0											401A	
402	LNB	159+00.00	12.90	LT	872.13	869.13	0.50	403	H	2.78	B-1			141.5									402	
403	LNB	157+57.00	12.90	LT	871.49	868.42	0.50	404	G	2.85	B-1			6.2									403	
404	LSB	157+87.50	23.90	RT	871.47	868.39	0.50	405	G	2.86	B-1			57.0									404	
405	LSB	158+25.00	18.90	LT	869.99	867.19	0.35	405A	G	2.58	B-1				10.0								405	
405A	LSB	158+35.00	18.90	LT	870.03	867.16	0.35	432	G	2.65	B-1				280.0								405A	
406	LNB	161+00.00	18.90	RT	875.29	871.29	1.00	407	G	3.78	B-1	31.8											406	
407	LNB	161+00.00	12.90	LT	873.92	870.97	0.50	408	G	2.73	B-1			11.2									407	
408	LSB	161+19.75	18.90	RT	874.56	870.92	0.50	432	G	3.42	B-1			37.8									408	
409	LSB	181+50.00	35.50	LT	890.96	890.96	1.50	410				38.7	1										409	B, APRON
410	LSB	181+15.00	18.90	LT	893.42	889.42	0.40	412	48-4020	3.78	B-1						237.0						410	
411	LSB	178+78.00	35.50	LT	889.88	889.88	1.00	412				16.6	1										411	B, APRON
412	LSB	178+78.00	18.90	LT	892.47	888.47	0.40	416	54-4020	3.78	B-1						170.0						412	
413	LNB	177+16.00	23.90	RT	891.72	887.72	0.50	414	G	3.78	B-1	48.5											413	
414	LNB	177+08.00	23.90	LT	892.29	887.48	0.50	415	G	4.59	B-1	6.2											414	
415	LSB	177+08.00	12.90	RT	892.53	887.45	0.50	416	G	4.86	B-1	31.8											415	
416	LSB	177+08.00	18.90	LT	891.82	887.29	0.40	419	60-4020	4.31	B-1						248.0						416	
417	LNB	174+61.00	23.90	RT	890.65	886.65	0.50	418	G	3.78	B-1	47.8											417	
418	LNB	174+61.00	23.90	LT	891.52	886.41	0.50	419	G	4.89	B-1	38.0											418	
419	LSB	174+60.00	18.90	LT	890.79	886.22	0.40	423	60-4020	4.35	B-1							181.5					419	
420	LNB	172+79.00	18.90	RT	888.98	884.98	0.50	421	G	3.78	B-1	33.5											420	
421	LNB	172+79.00	14.60	LT	889.73	884.81	0.50	422	G	4.70	B-1	15.5											421	
422	LSB	172+78.50	12.90	RT	889.68	884.74	0.50	423	G	4.72	B-1	31.8											422	
423	LSB	172+78.50	18.90	LT	888.96	884.58	1.34	427B	60-4020	4.16	B-1							128.5					423	
424	LNB	168+65.00	23.90	RT	884.01	878.48	0.50	425	G	5.31	B-1	36.8											424	
424A	LNB	170+00.00	23.90	RT	885.16	881.16	0.50	425A	G	3.78	B-1	36.8											424A	
425	LNB	168+65.00	12.90	LT	884.15	878.29	0.50	426	G	5.64	B-1	17.2											425	B, APRON
425A	LNB	170+00.00	12.90	LT	885.97	880.98	0.50	426A	G	4.77	B-1	17.2											425A	
425B	LNB	171+50.00	12.90	LT	887.97	883.97	1.00	426B	G	3.78	B-1	17.2											425B	
426	LSB	168+65.00	12.90	RT	884.10	878.21	0.50	427	G	5.67	B-1	31.8											426	
426A	LSB	170+00.00	12.90	RT	885.21	880.89	0.50	427A	G	4.10	B-1	31.8											426A	
426B	LSB	171+50.00	12.90	RT	887.23	883.80	1.00	427B	G	3.21	B-1	31.8											426B	
427	LSB	168+65.00	18.90	LT	883.39	878.05	1.34	431	60-4020	5.12	B-1							374.3					427	
427A	LSB	170+00.00	18.90	LT	885.21	880.73	1.34	427	60-4020	4.26	B-1							135.0					427A	
427B	LSB	171+50.00	18.90	LT	887.23	882.86	1.34	427A	60-4020	4.15	B-1							150.0					427B	
428	LNB	164+80.00	21.20	RT	880.32	876.32	1.00	429	G	3.78	B-1	34.1											428	
428A	LNB	167+50.00	23.90	RT	883.05	879.05	0.50	424	G	3.78	B-1	115.0											428A	
428B	LNB	168+35.00	50.00	RT	882.50	878.85	1.00	424	H	3.43	B-1	37.0											428B	BEEHIVE
429	LNB	164+80.00	12.90	LT	878.99	875.98	0.50	430	G	2.79	B-1			17.2									429	
430	LSB	164+87.00	12.90	RT	879.03	875.89	0.50	431	G	2.92	B-1			31.8									430	
431	LSB	164+87.00	18.90	LT	877.20	873.03	1.34	432	60-4020	3.95	B-1							360.6					431	
432	LSB	161+19.75	18.90	LT	872.26	866.18	0.30	433	90-4020	5.87	B-1								50.6				432	
433	LSB	161+14.25	75.25	LT		866.02	0.30	POND OUTLET												1	16.3	32.8	433	B
POND OUTLET	LSB					866.75	0.01	434				25.4	1								4.1	8.4	POND OUTLET	B
434	LSB			LT		866.40	0.01	ROUND LAKE		-866.62					21.4	1					5.9	12.0	434	B
TOTAL												812.8	3	302.7	311.4	1	655.0	1329.9	50.6	1	26.3	53.2		

(A) STATIONS, OFFSETS, AND TOP OF CASTING ELEVATIONS ARE GIVEN TO CENTER OF CASTING. CENTER OF CATCH BASIN CASTING IS 1.10 FT FROM FACE OF CURB. DESIGN 4020
(B) TIE LAST THREE JOINTS AT APRON END. FURNISHING AND INSTALLING PIPE TIES CONSIDERED INCIDENTAL.
(C) ALL POTENTIAL CONFLICTS WITH PUBLIC AND PRIVATE UTILITIES SHALL BE FIELD VERIFIED PRIOR TO INSTALLATION OF STORM SEWER.
(D) FURNISHING AND INSTALLING STEPS CONSIDERED INCIDENTAL.
(E) SEDIMENT BARRIERS SHALL BE USED ON ALL LOW POINT CATCH BASINS PRIOR TO PAVEMENT PLACEMENT.
SEE STANDARD EROSION CONTROL PLAN SHEETS. CONSIDERED INDICENTAL TO STORM SEWER STRUCTURE.

INFO ONLY

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\0260912\PLAN\86-89-StormTabulation.dwg 08/26/03 01:39:24 PM CDT

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
PRINT NAME: PETER M. LEMKE
SIGNATURE: Peter M Lemke
DATE: 8/22/2003 LICENSE NO. 40118

DRAWN BY MTH DATE 04/08/03
DESIGN BY MTH DATE 04/08/03
CHECKED BY PML DATE 04/08/08

ANOKA COUNTY

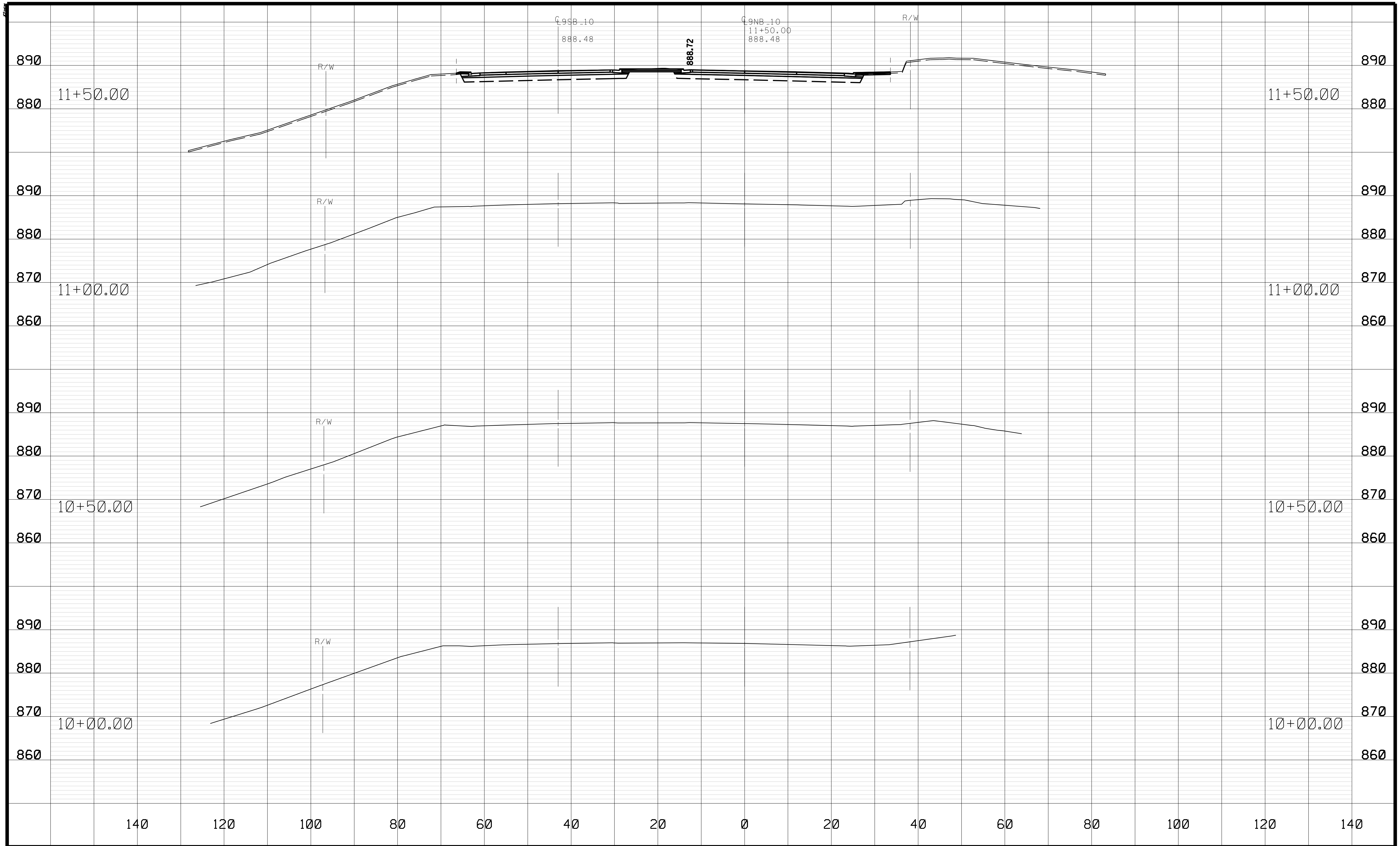
ANOKA COUNTY
HIGHWAY DEPT.

STATE PROJECT NO.
STATE AID PROJECT NO. 02-609-12
CITY PROJECT NO. 198-020-17
COUNTY PROJECT NO.

STORM SEWER
TABULATION CHARTS
SYSTEM 400

Sheet 130 of 167 Sheets

JCFosler



NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-609-022\Plan\002609022 XS.dgn 10/25/2023 10:58:12 AM

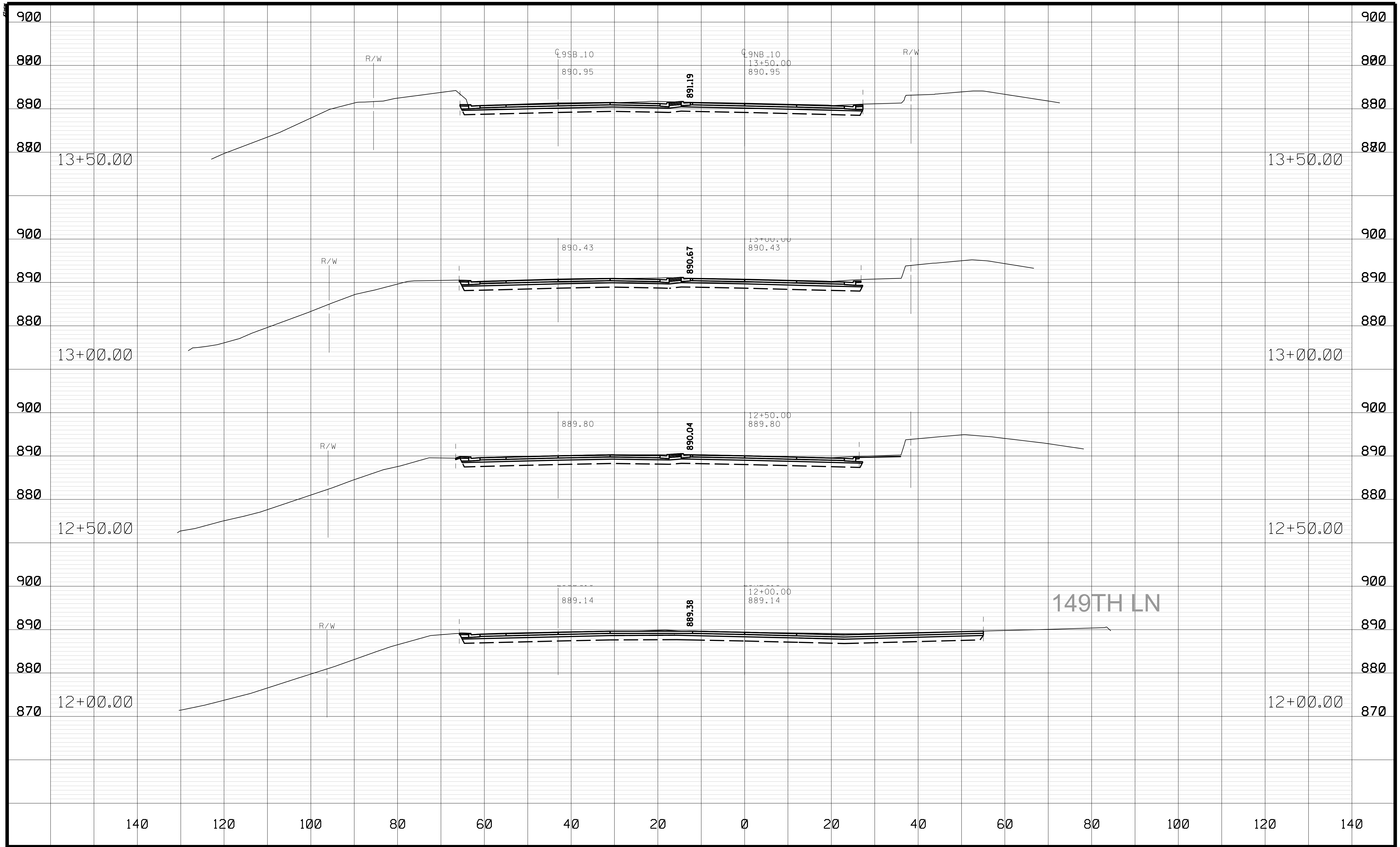
DRAWN BY JCF DATE 10/27/23
DESIGN BY JCF DATE 10/27/23
CHECKED BY NJD DATE 11/02/23

ANOKA COUNTY
HIGHWAY DEPT.

SAP 002-609-022
SAP 198-020-039

CROSS SECTIONS
STA 10+00.00 TO 11+50.00

Sheet 131 of 167 Sheets



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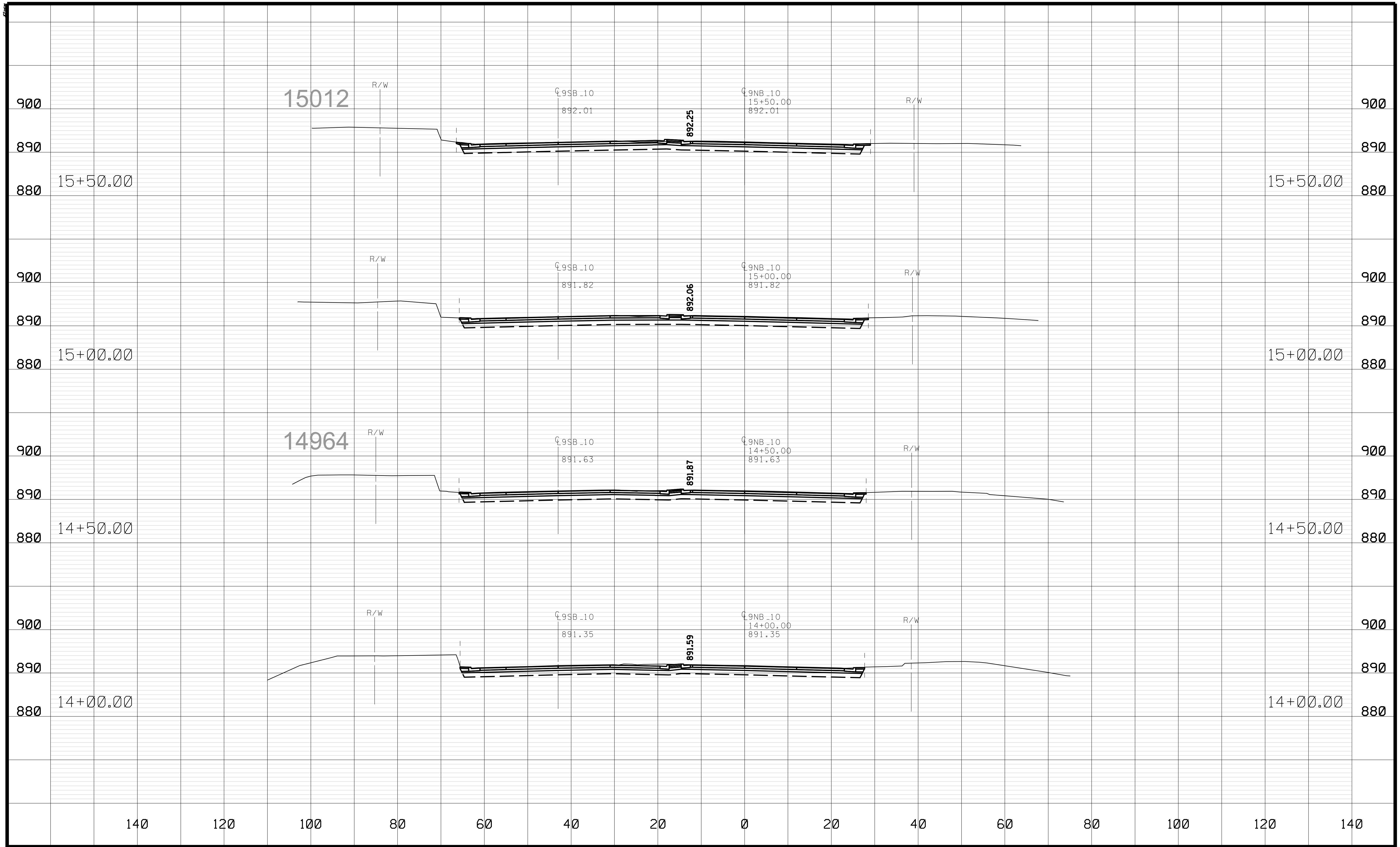
ANOKA COUNTY
HIGHWAY DEPT.

SAP 002-609-022
SAP 198-020-039

CROSS SECTIONS
STA 12+00.00 TO 13+50.00

Sheet 132 of 167 Sheets



NO	DATE	BY	CKD	APPR	REVISION

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DESIGN BY JCF DATE 10/27/23
CHECKED BY NJD DATE 11/02/23

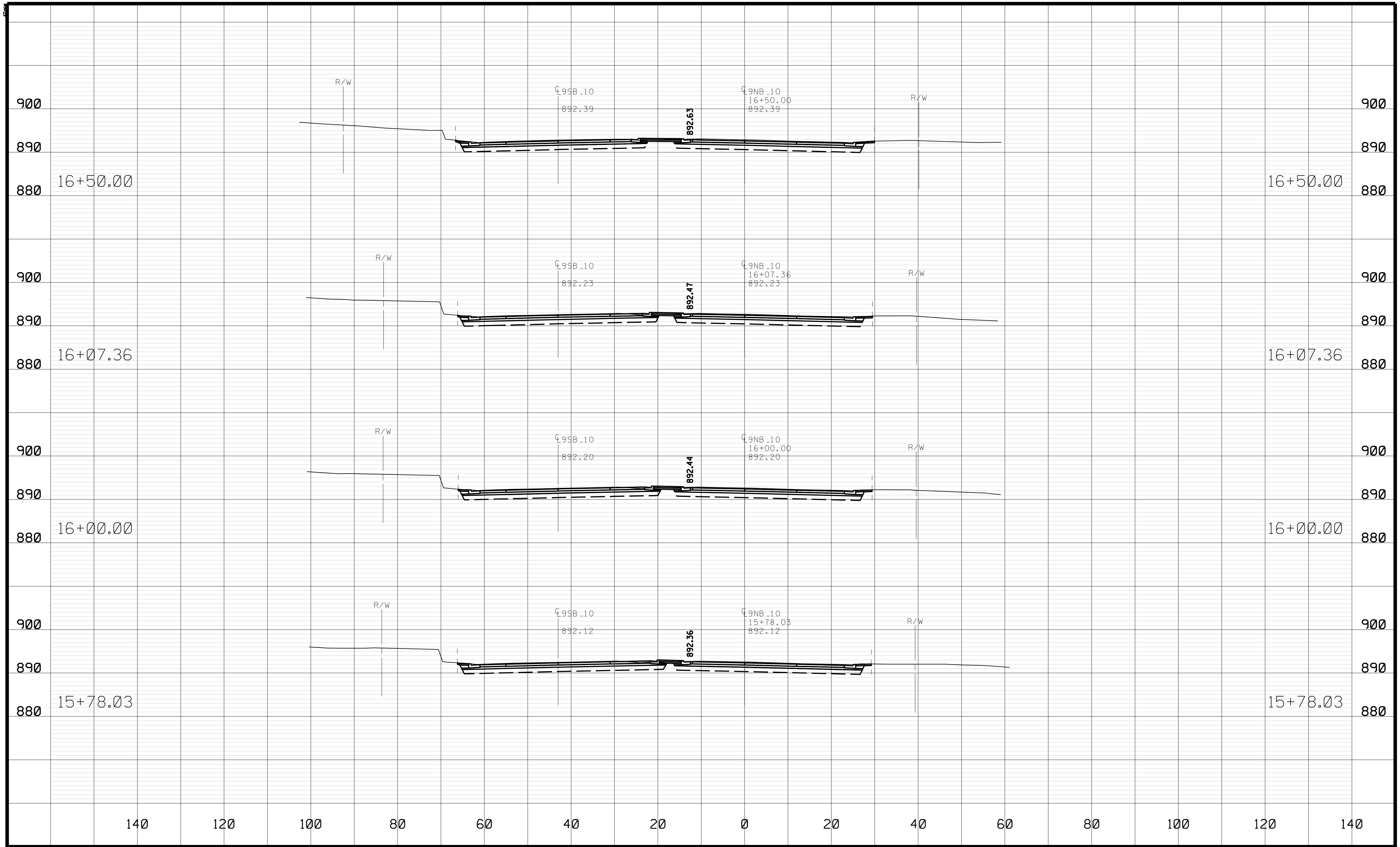
ANOKA COUNTY
HIGHWAY DEPT.

SAP 002-609-022
SAP 198-020-039

CROSS SECTIONS
STA 14+00.00 TO 15+50.00

Sheet 133 of 167 Sheets

JCFosler



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DESIGN BY JCF DATE 10/27/23
CHECKED BY NJD DATE 11/02/23

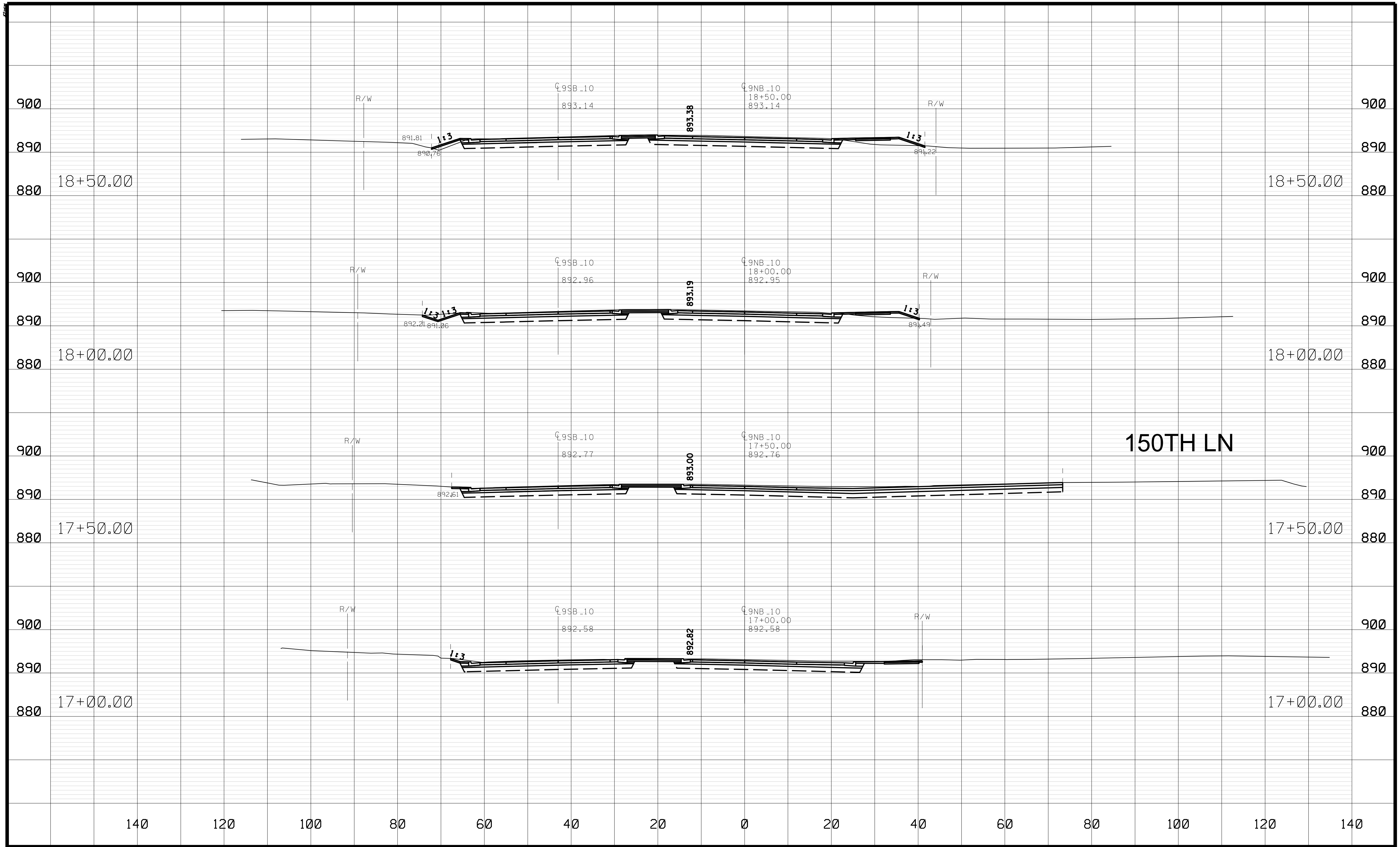
ANOKA COUNTY
HIGHWAY DEPT.

SAP 002-609-022
SAP 198-020-039

CROSS SECTIONS
STA 15+78.03 TO 16+50.00

Sheet 134 of 167 Sheets

JCFosler



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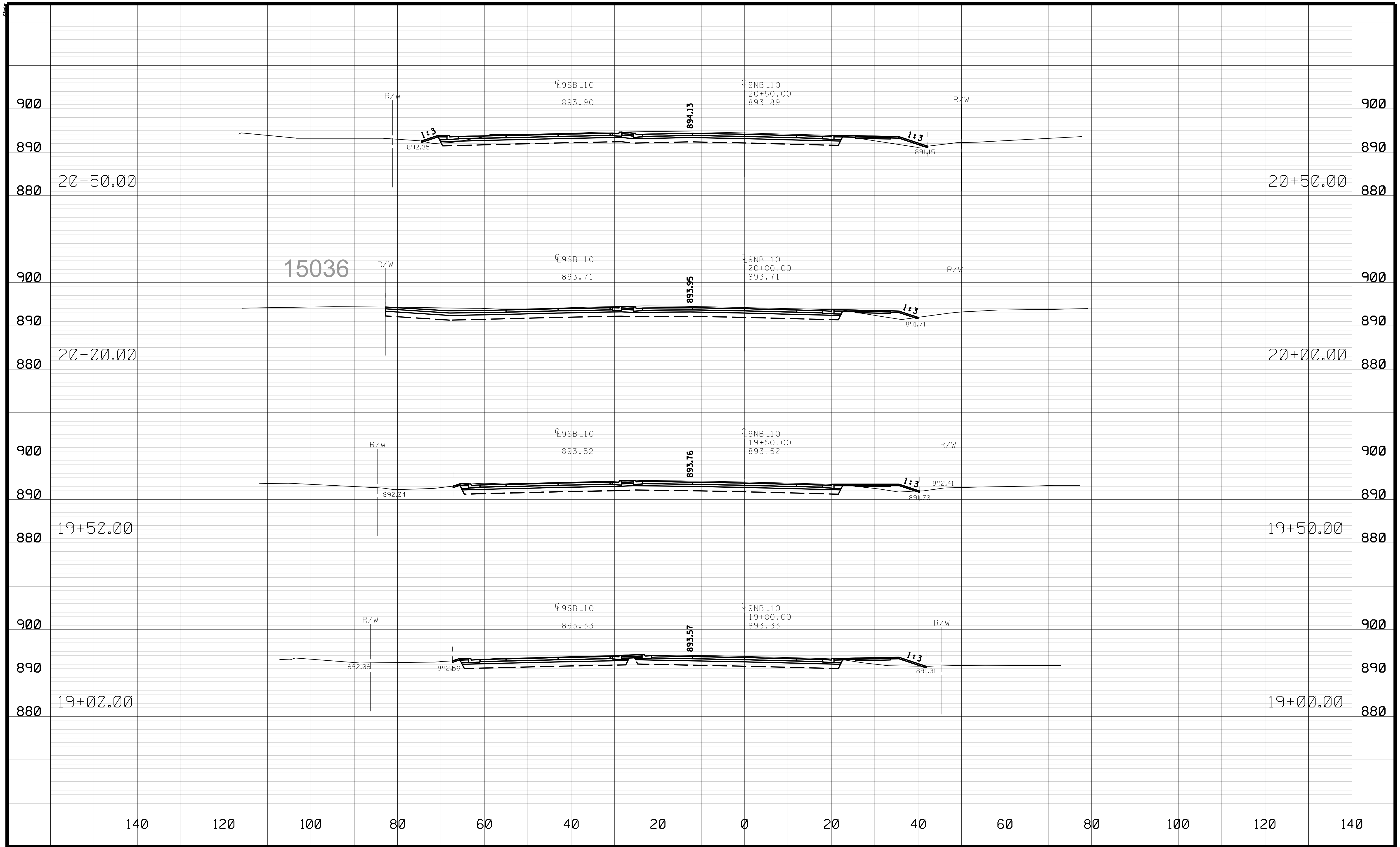
CHECKED BY NJD DATE 11/02/23

ANOKA COUNTY
HIGHWAY DEPT.

SAP 002-609-022
SAP 198-020-039

CROSS SECTIONS
STA 17+00.00 TO 18+50.00

Sheet 135 of 167 Sheets



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DESIGN BY JCF DATE 10/27/23
CHECKED BY NJD DATE 11/02/23

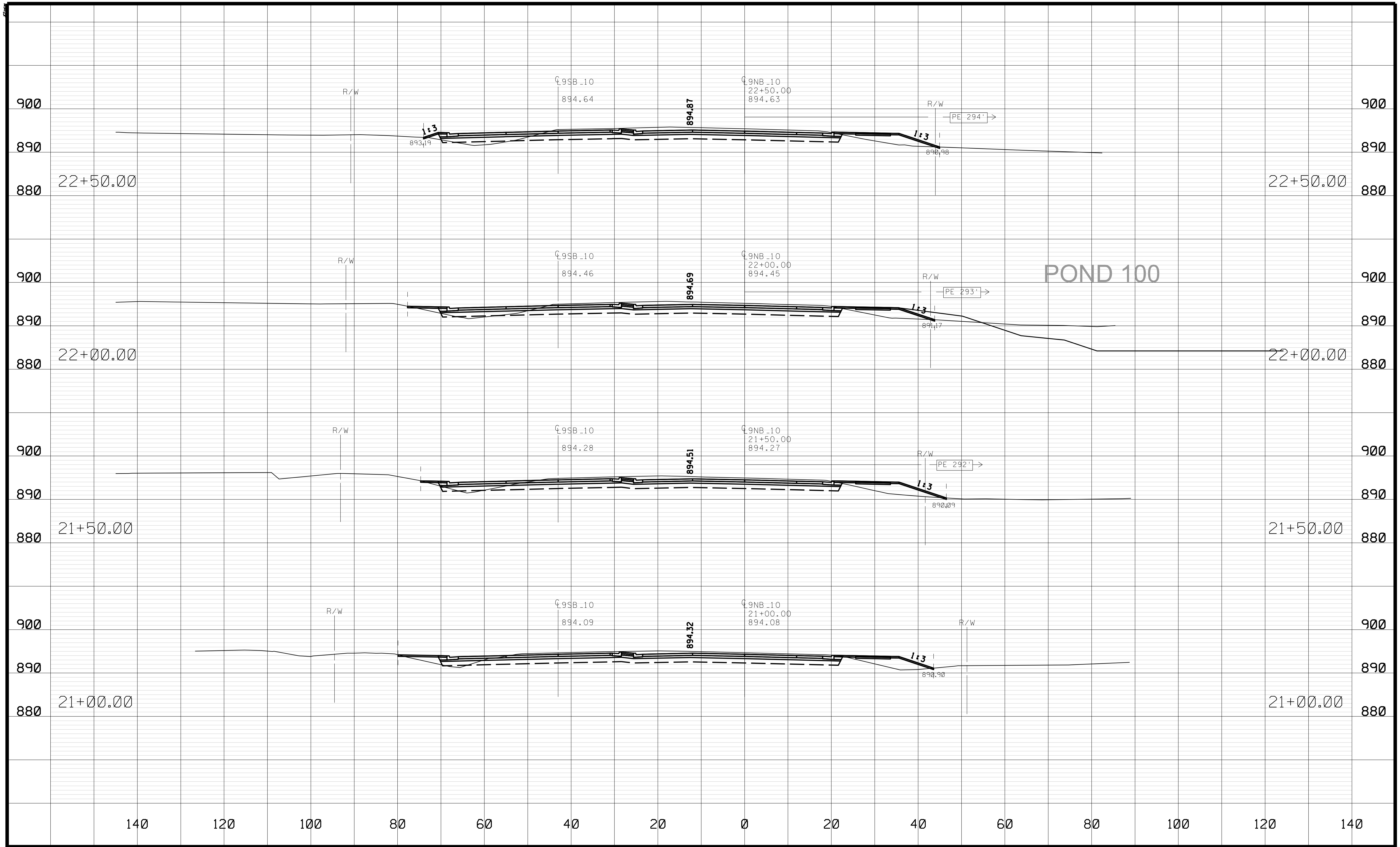
ANOKA COUNTY

ANOKA COUNTY
HIGHWAY DEPT.

SAP 002-609-022
SAP 198-020-039

CROSS SECTIONS
STA 19+00.00 TO 20+50.00

Sheet 136 of 167 Sheets



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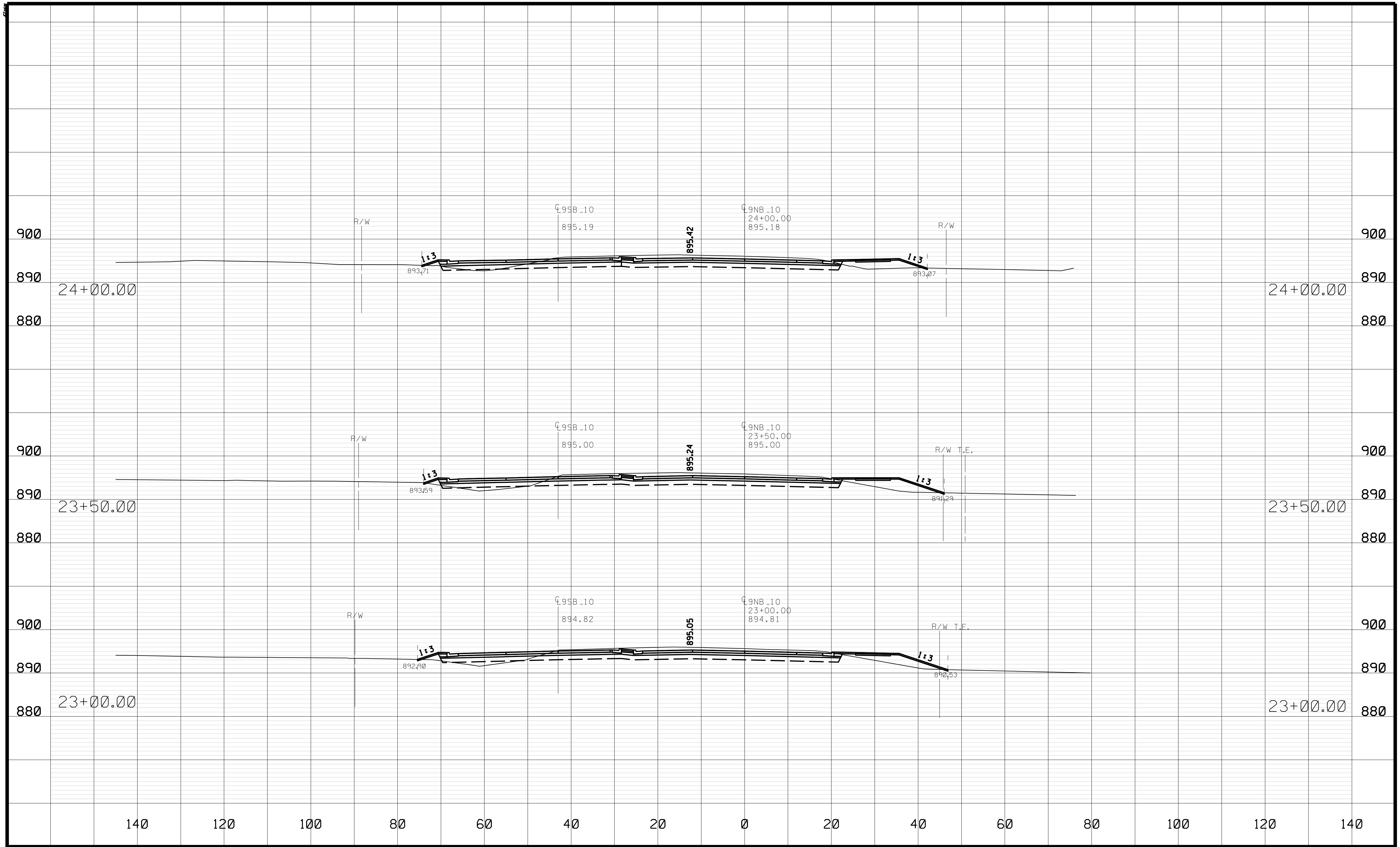
DESIGN BY JCF DATE 10/27/23
CHECKED BY NJD DATE 11/02/23

ANOKA COUNTY
HIGHWAY DEPT.

SAP 002-609-022
SAP 198-020-039

CROSS SECTIONS
STA 21+00.00 TO 22+50.00
Sheet 137 of 167 Sheets



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ANOKA COUNTY

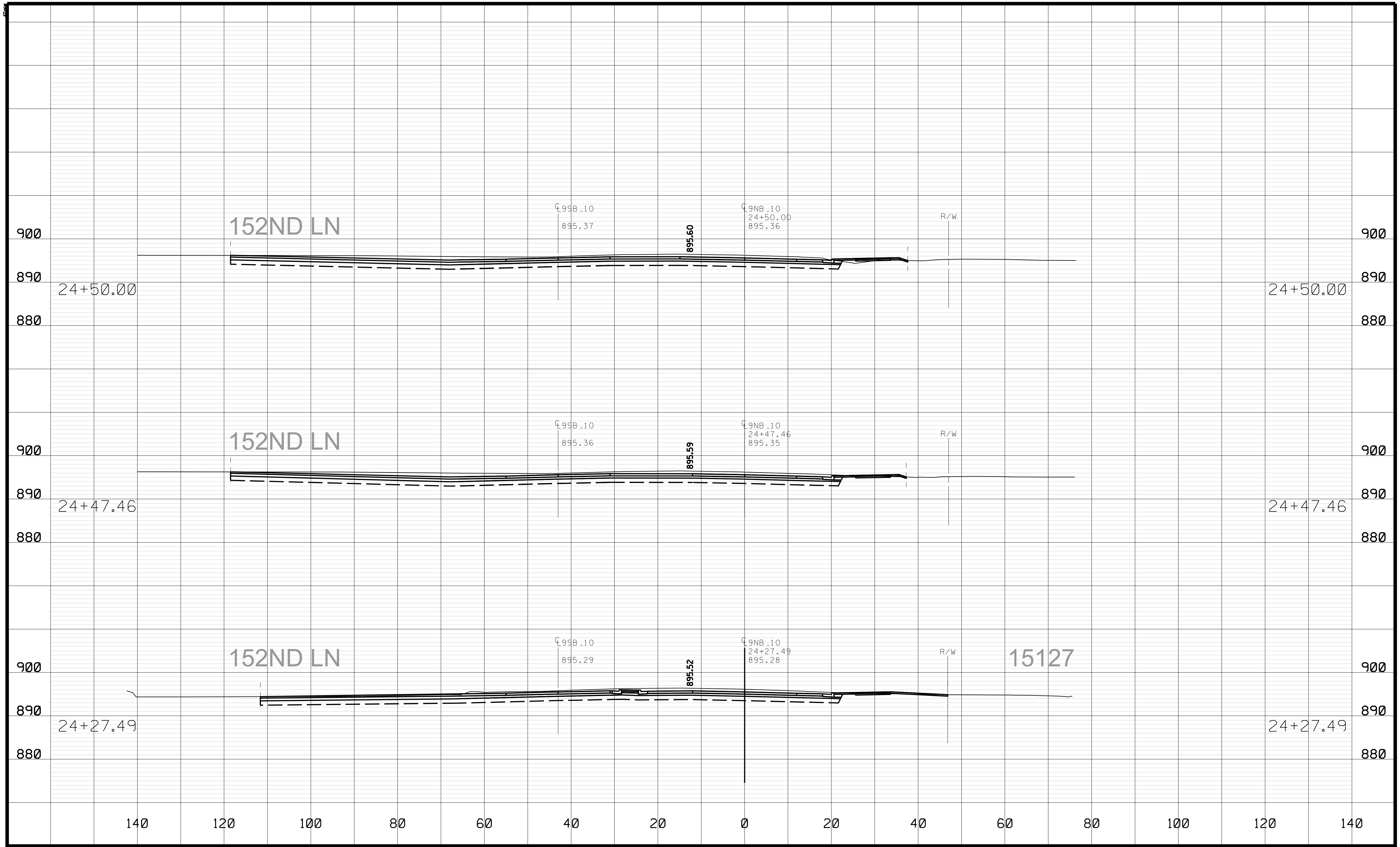
ANOKA COUNTY
HIGHWAY DEPT.

SAP 002-609-022
SAP 198-020-039

CROSS SECTIONS
STA 23+00.00 TO 24+00.00

Sheet 138 of 167 Sheets

JCFosler



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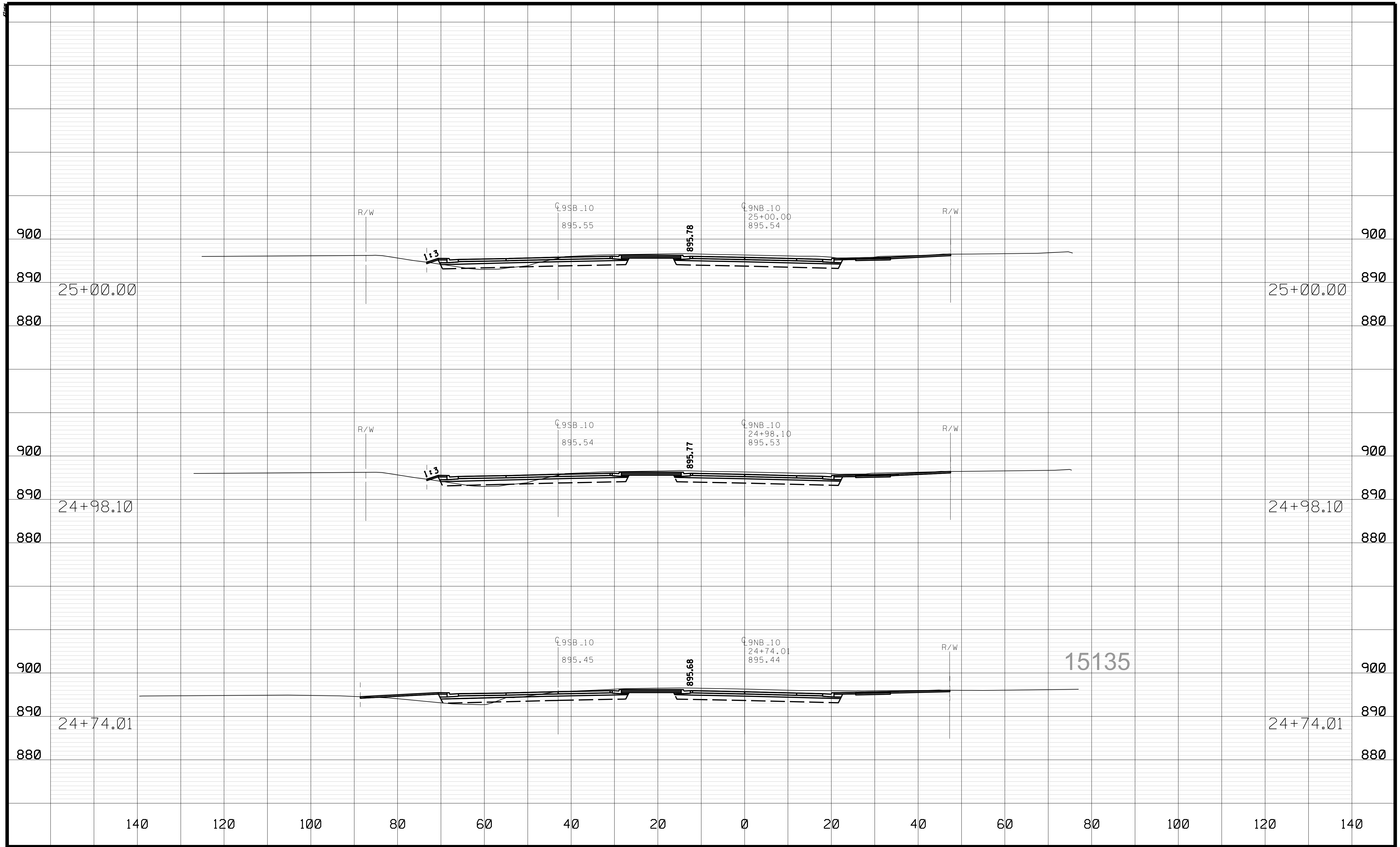
ANOKA COUNTY

ANOKA COUNTY
HIGHWAY DEPT.

SAP 002-609-022
SAP 198-020-039

CROSS SECTIONS
STA 24+27.49 TO 24+50.00

Sheet 139 of 167 Sheets



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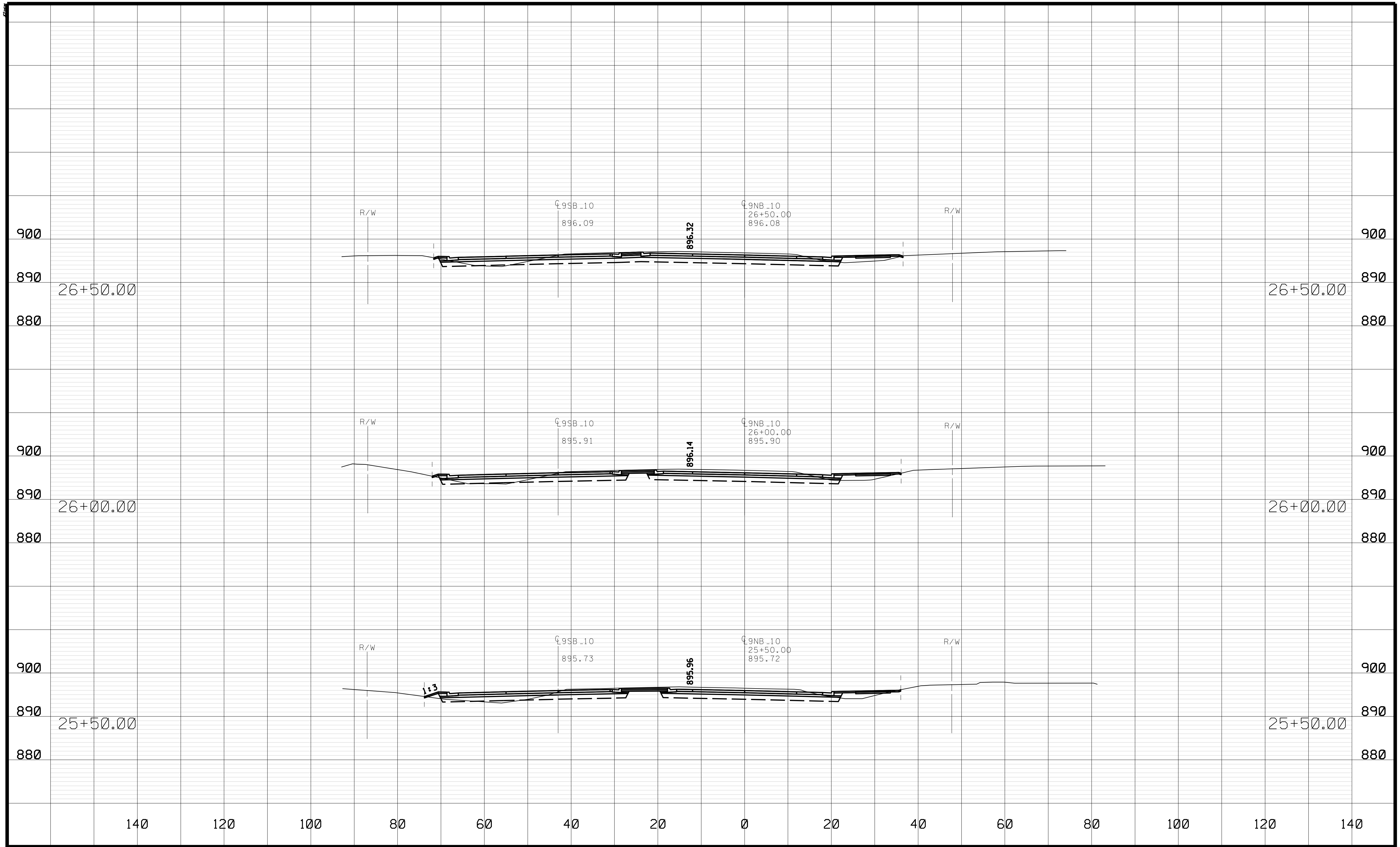
CHECKED BY NJD DATE 11/02/23

ANOKA COUNTY
HIGHWAY DEPT.

SAP 002-609-022
SAP 198-020-039

CROSS SECTIONS
STA 24+74.01 TO 25+00.00



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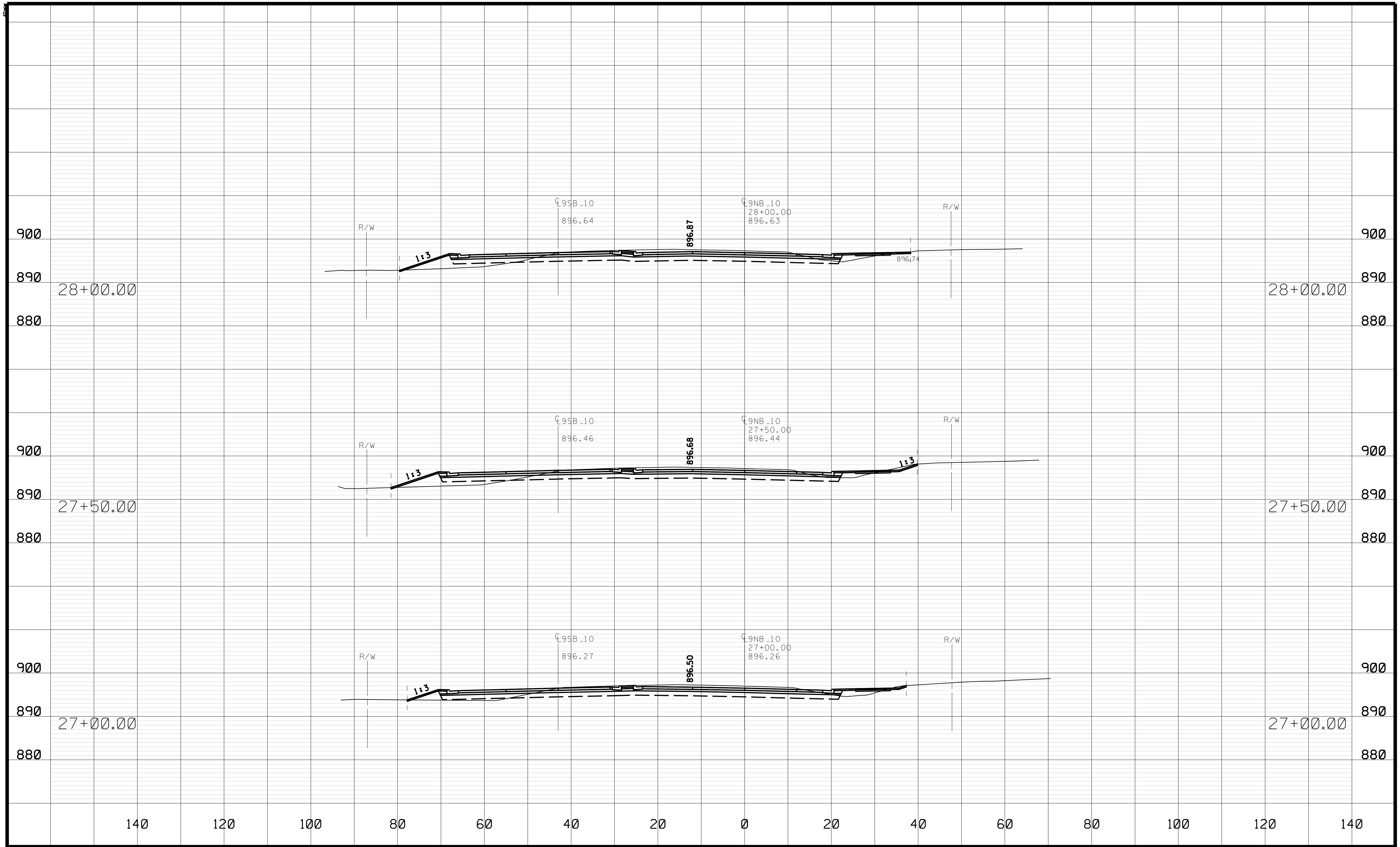
ANOKA COUNTY

ANOKA COUNTY
HIGHWAY DEPT.

SAP 002-609-022
SAP 198-020-039

CROSS SECTIONS
STA 25+50.00 TO 26+50.00

Sheet 141 of 167 Sheets



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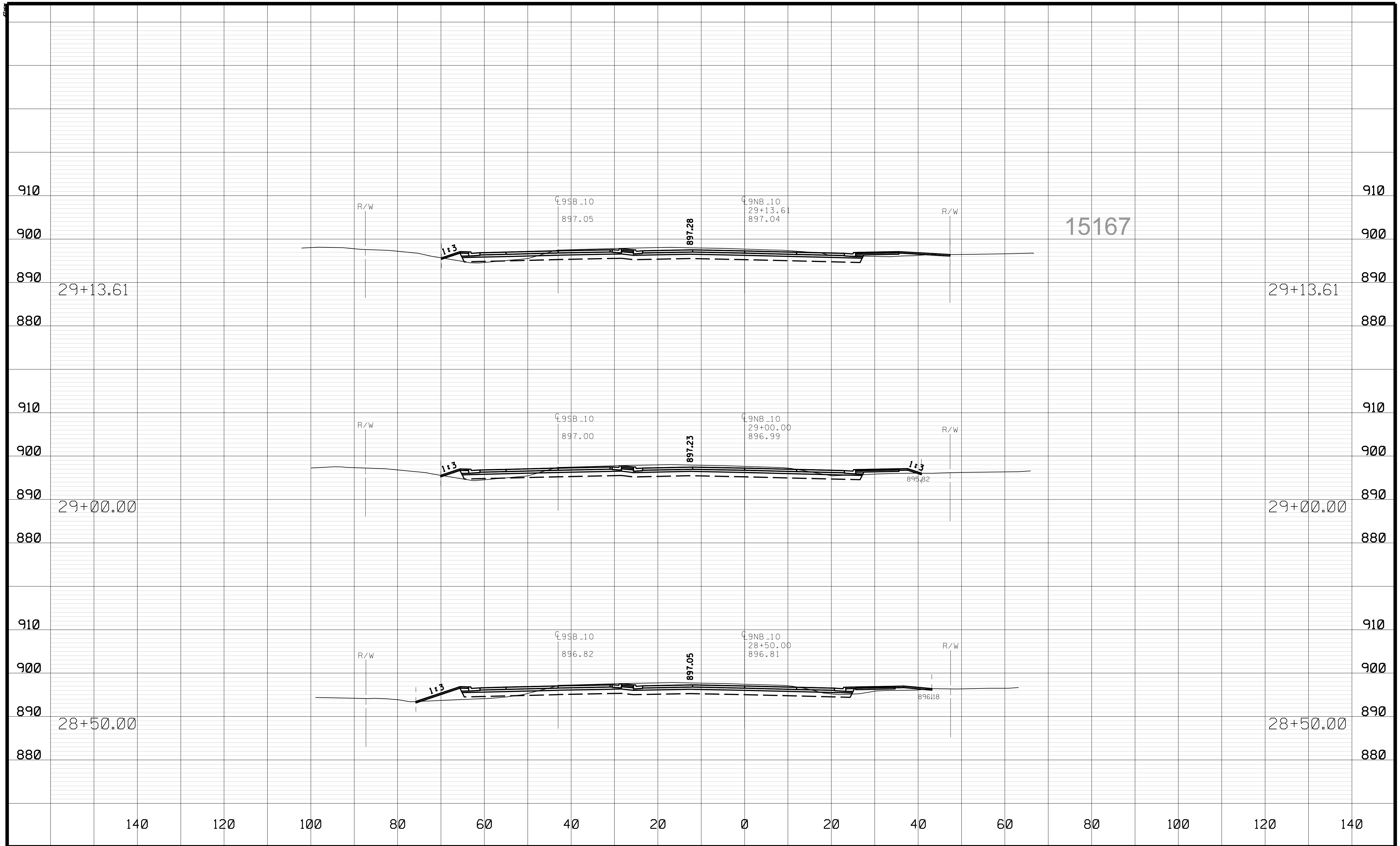
ANOKA COUNTY

ANOKA COUNTY
HIGHWAY DEPT.

SAP 002-609-022
SAP 198-020-039

CROSS SECTIONS
STA 27+00.00 TO 28+00.00

Sheet 142 of 167 Sheets



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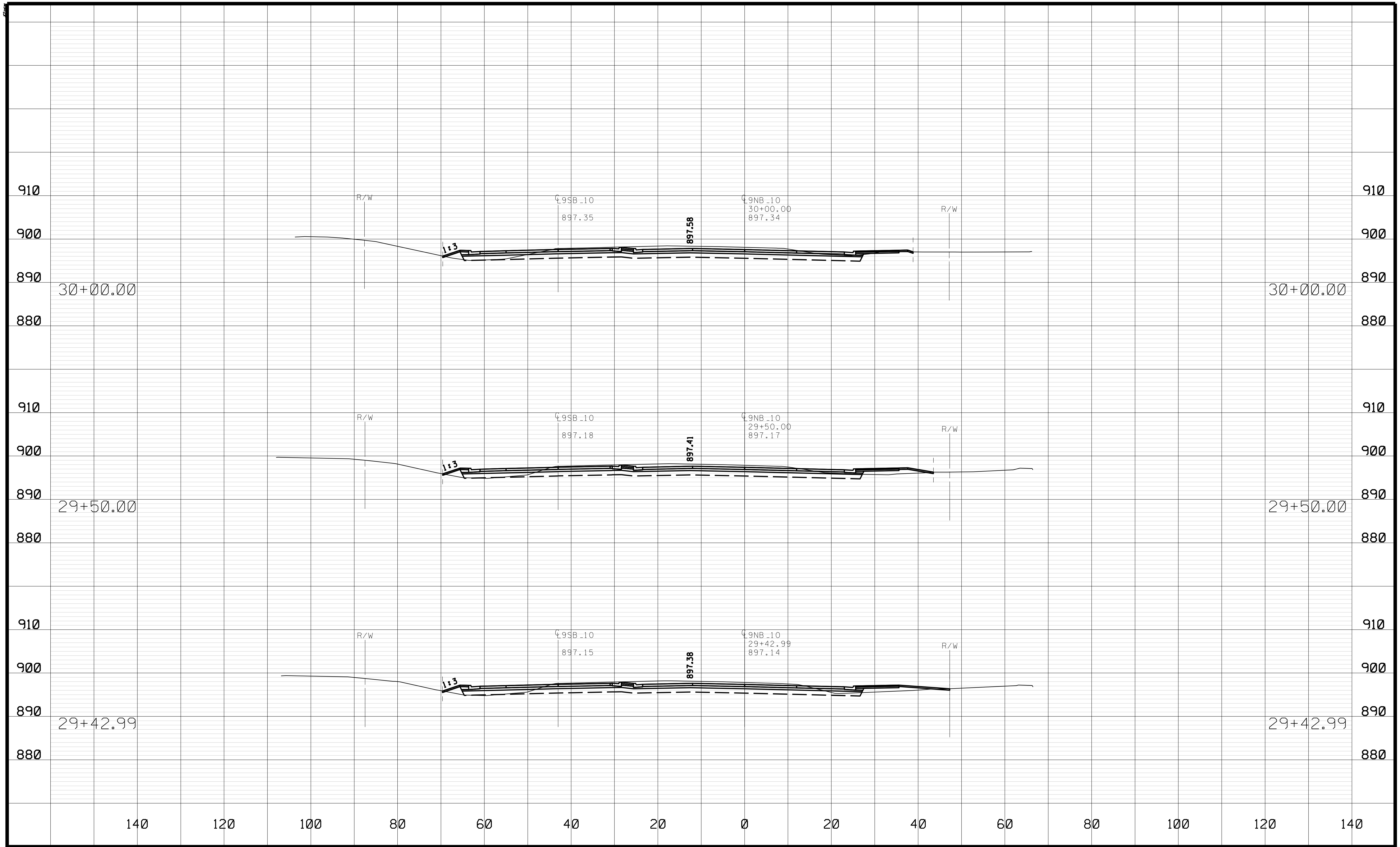
DESIGN BY JCF DATE 10/27/23
CHECKED BY NJD DATE 11/02/23

ANOKA COUNTY
HIGHWAY DEPT.

SAP 002-609-022
SAP 198-020-039

CROSS SECTIONS
STA 28+50.00 TO 29+13.61
Sheet 143 of 167 Sheets



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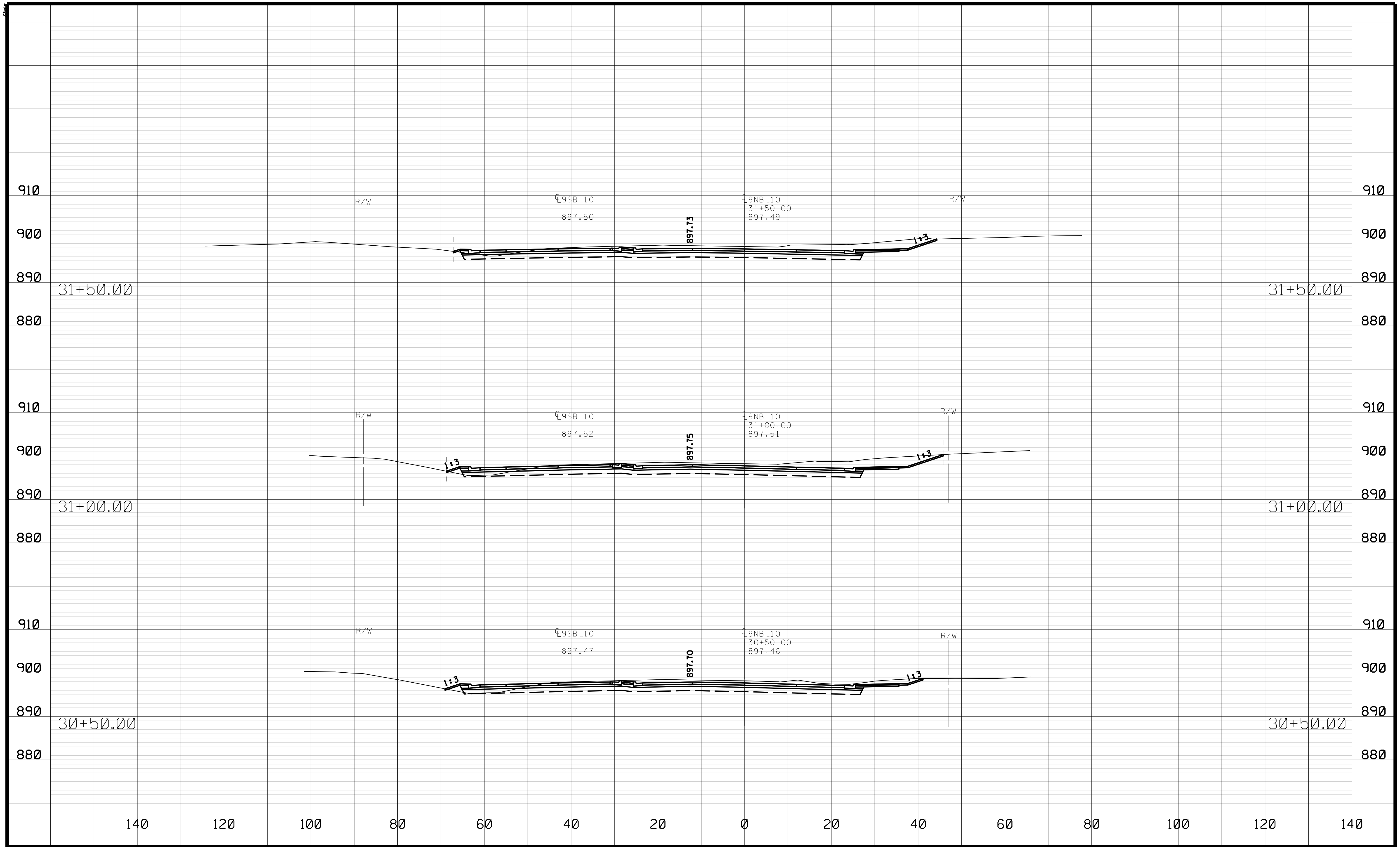
CHECKED BY NJD DATE 11/02/23

ANOKA COUNTY
HIGHWAY DEPT.

SAP 002-609-022
SAP 198-020-039

CROSS SECTIONS
STA 29+42.99 TO 30+00.00



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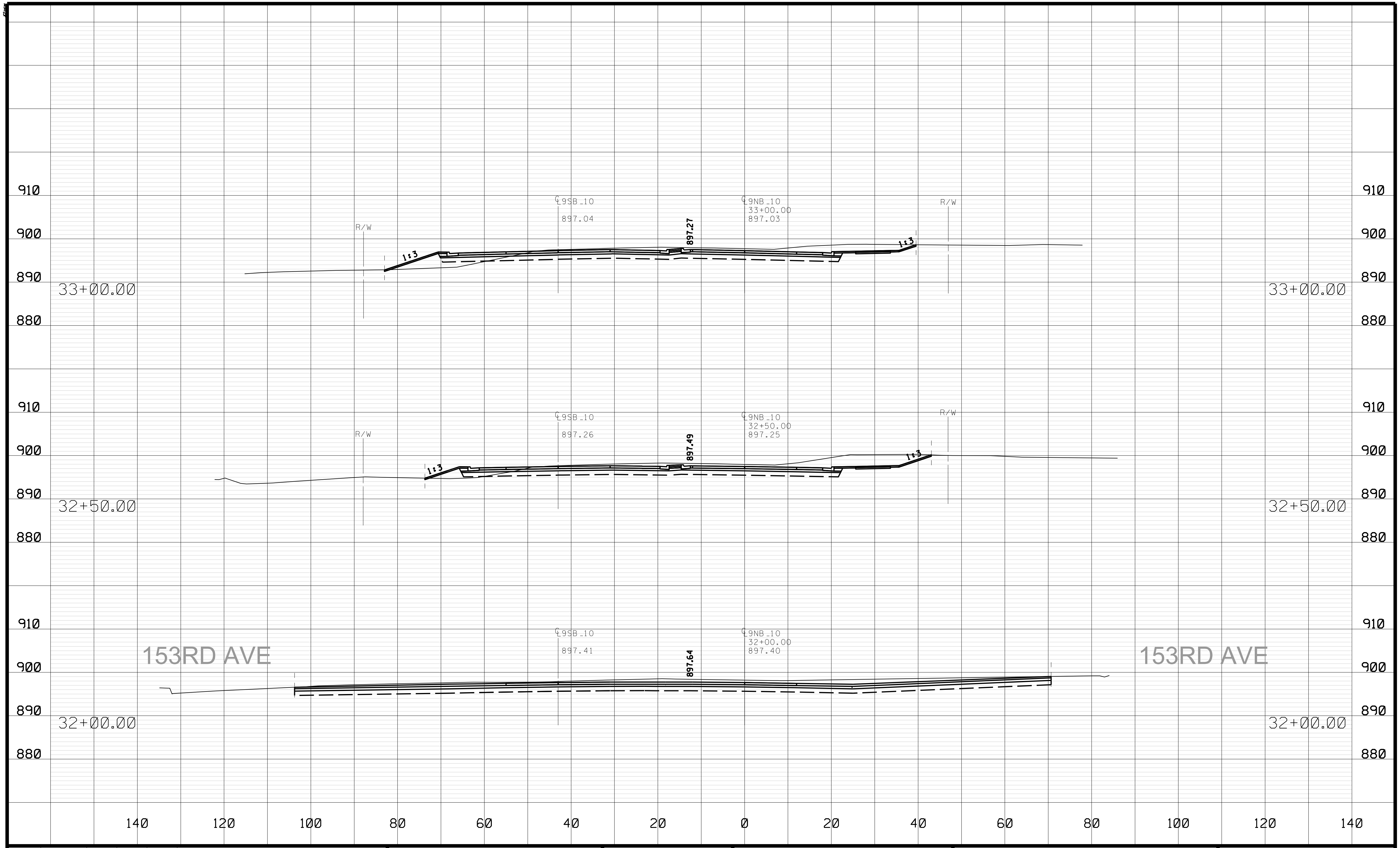
CHECKED BY NJD DATE 11/02/23

ANOKA COUNTY
HIGHWAY DEPT.

SAP 002-609-022
SAP 198-020-039

CROSS SECTIONS
STA 30+50.00 TO 31+50.00

Sheet 145 of 167 Sheets



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CHECKED BY NJD DATE 11/02/23

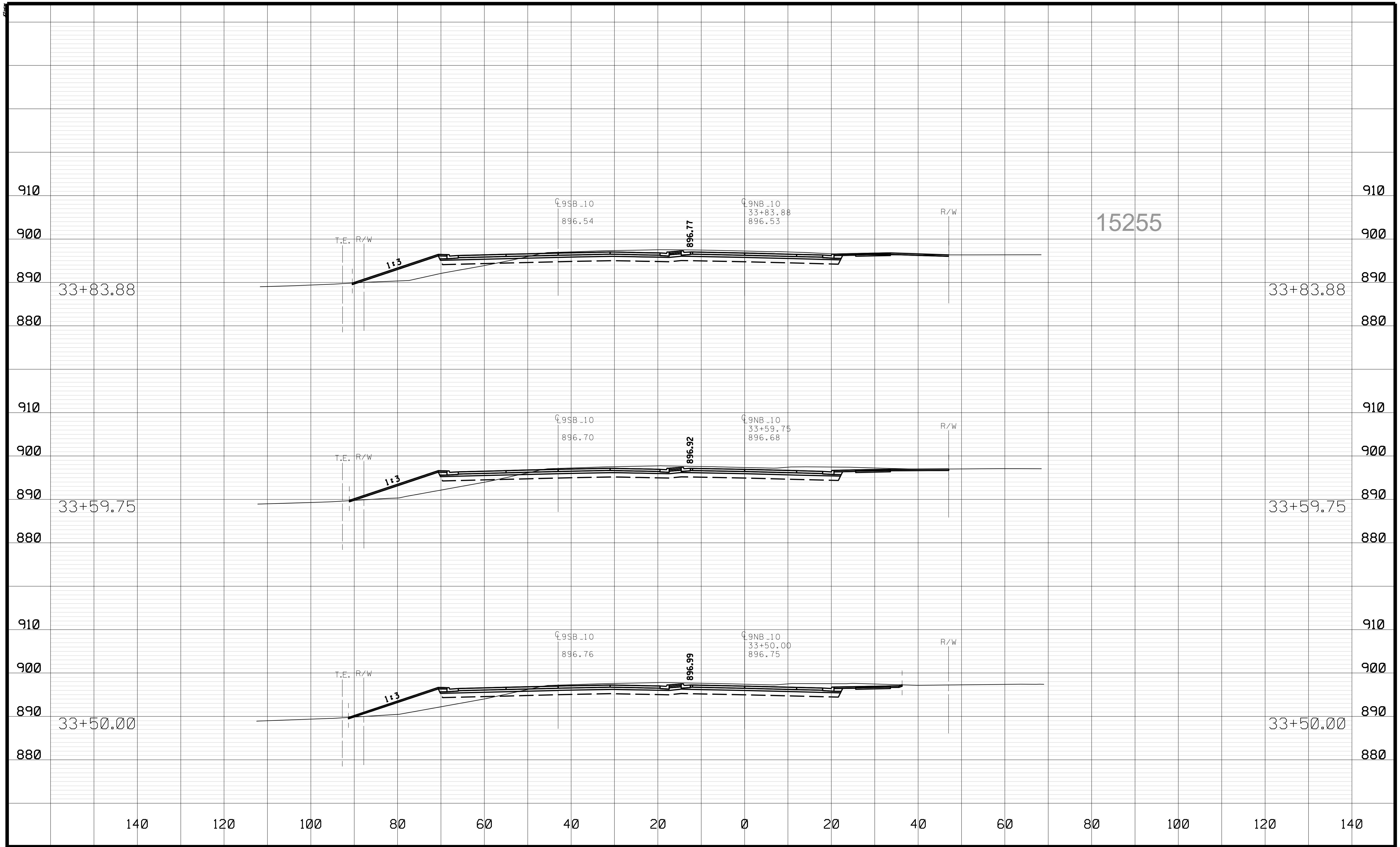
ANOKA COUNTY

ANOKA COUNTY
HIGHWAY DEPT.

SAP 002-609-022
SAP 198-020-039

CROSS SECTIONS
STA 32+00.00 TO 33+00.00

Sheet 146 of 167 Sheets



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CHECKED BY NJD DATE 11/02/23

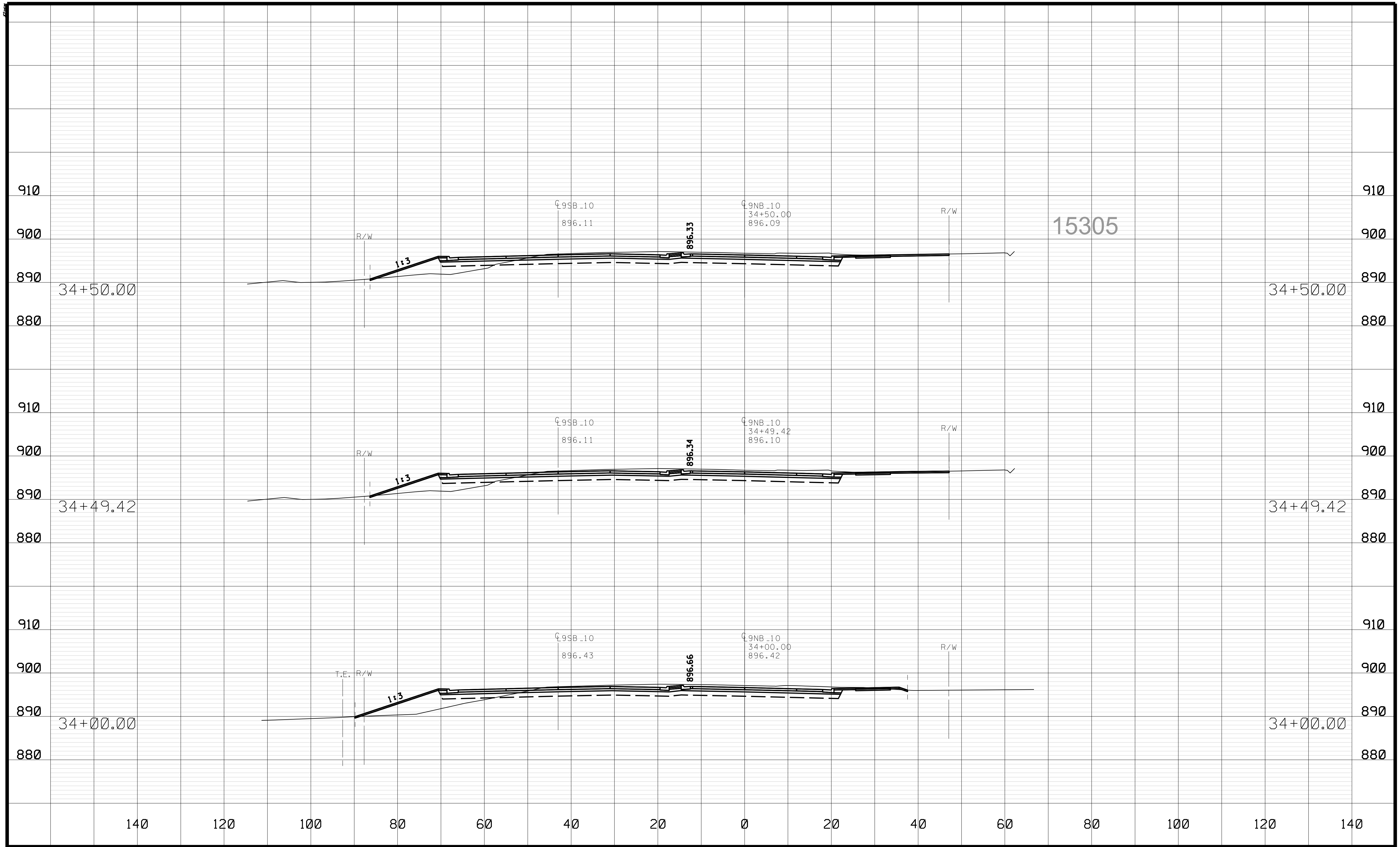
ANOKA COUNTY

ANOKA COUNTY
HIGHWAY DEPT.

SAP 002-609-022
SAP 198-020-039

CROSS SECTIONS
STA 33+50.00 TO 33+83.88

Sheet 147 of 167 Sheets



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CHECKED BY NJD DATE 11/02/23

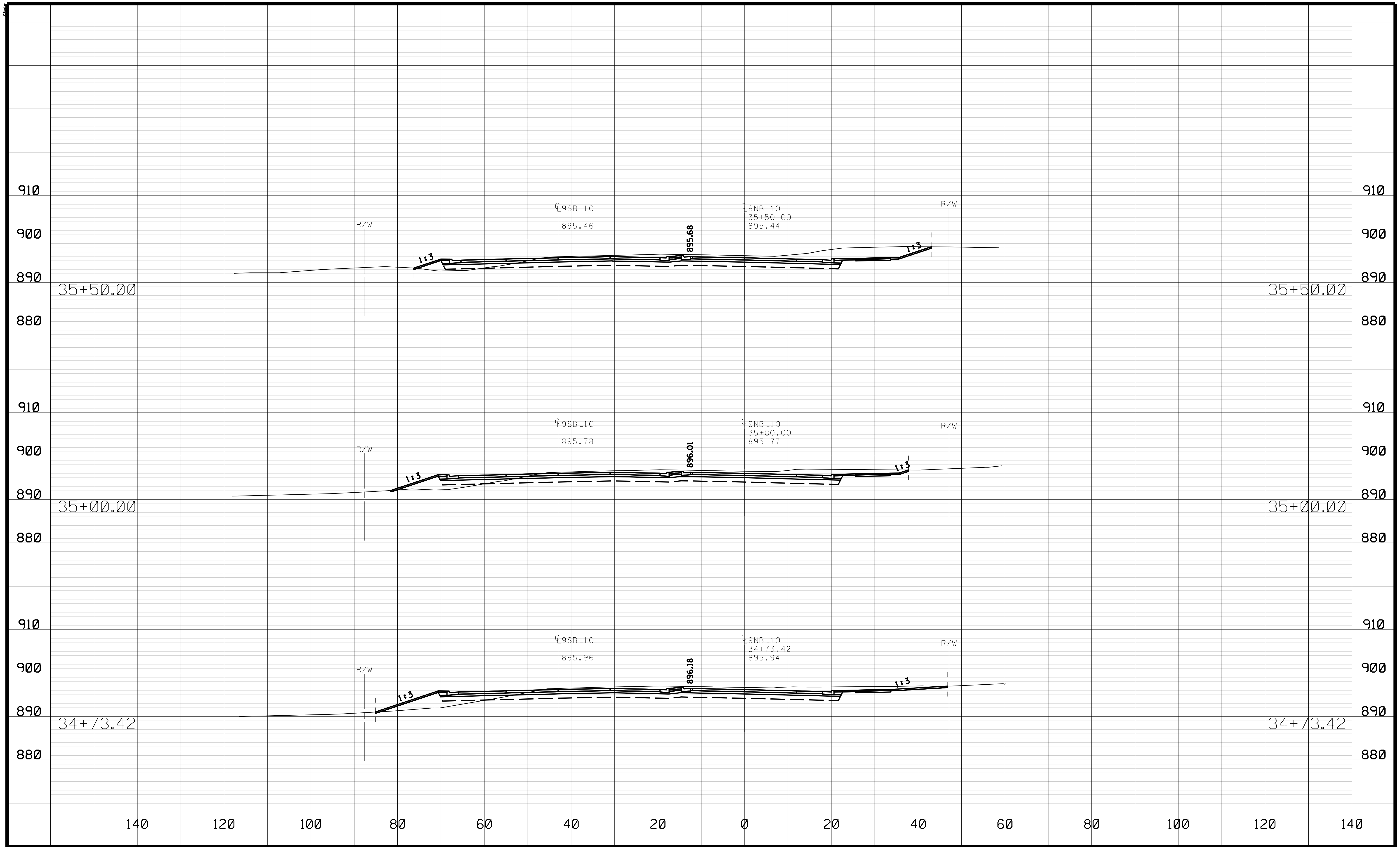
ANOKA COUNTY

ANOKA COUNTY
HIGHWAY DEPT.

SAP 002-609-022
SAP 198-020-039

CROSS SECTIONS
STA 34+00.00 TO 34+50.00

Sheet 148 of 167 Sheets



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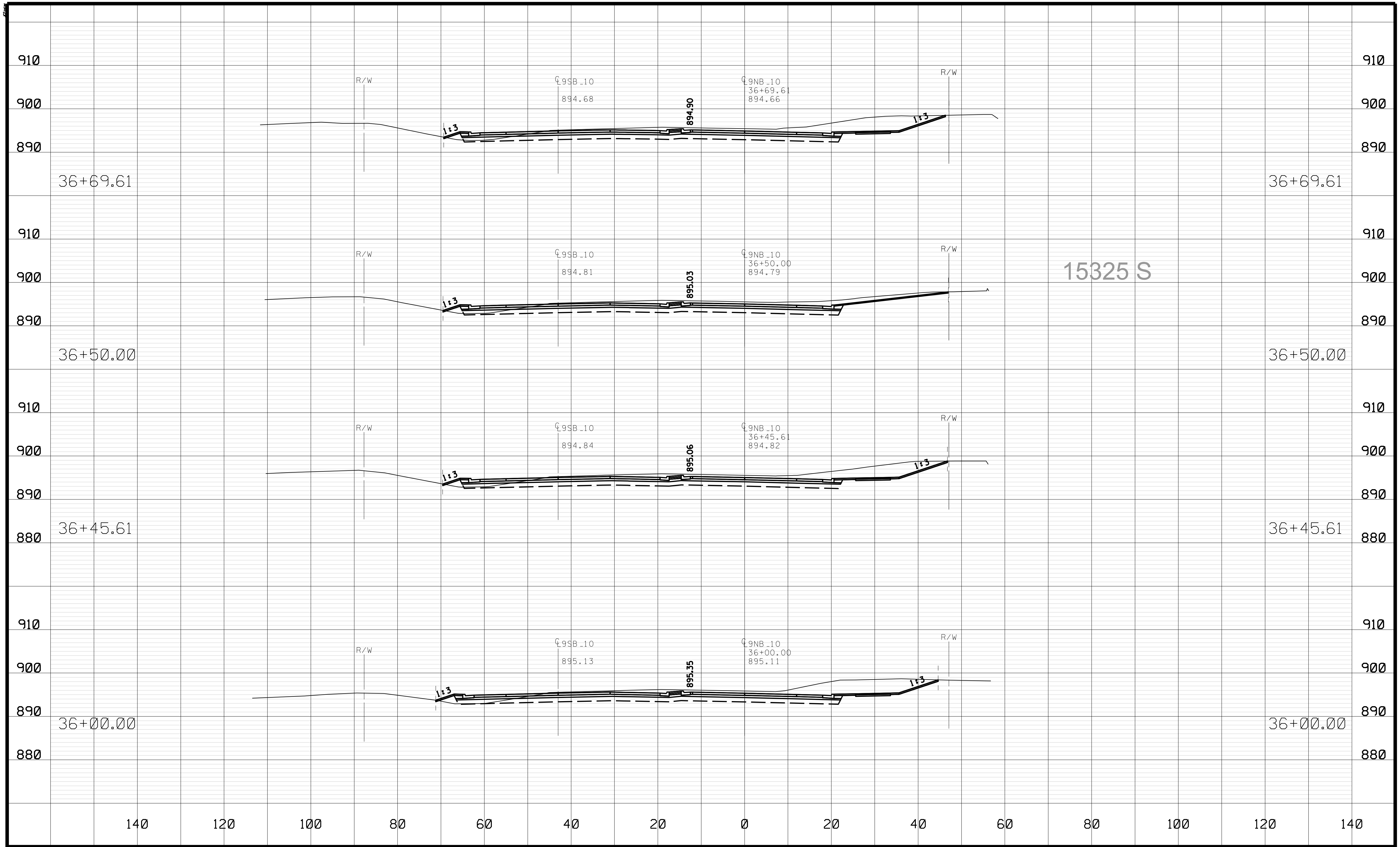
ANOKA COUNTY
HIGHWAY DEPT.

SAP 002-609-022
SAP 198-020-039

CROSS SECTIONS
STA 34+73.42 TO 35+50.00

Sheet 149 of 167 Sheets

JCFoster



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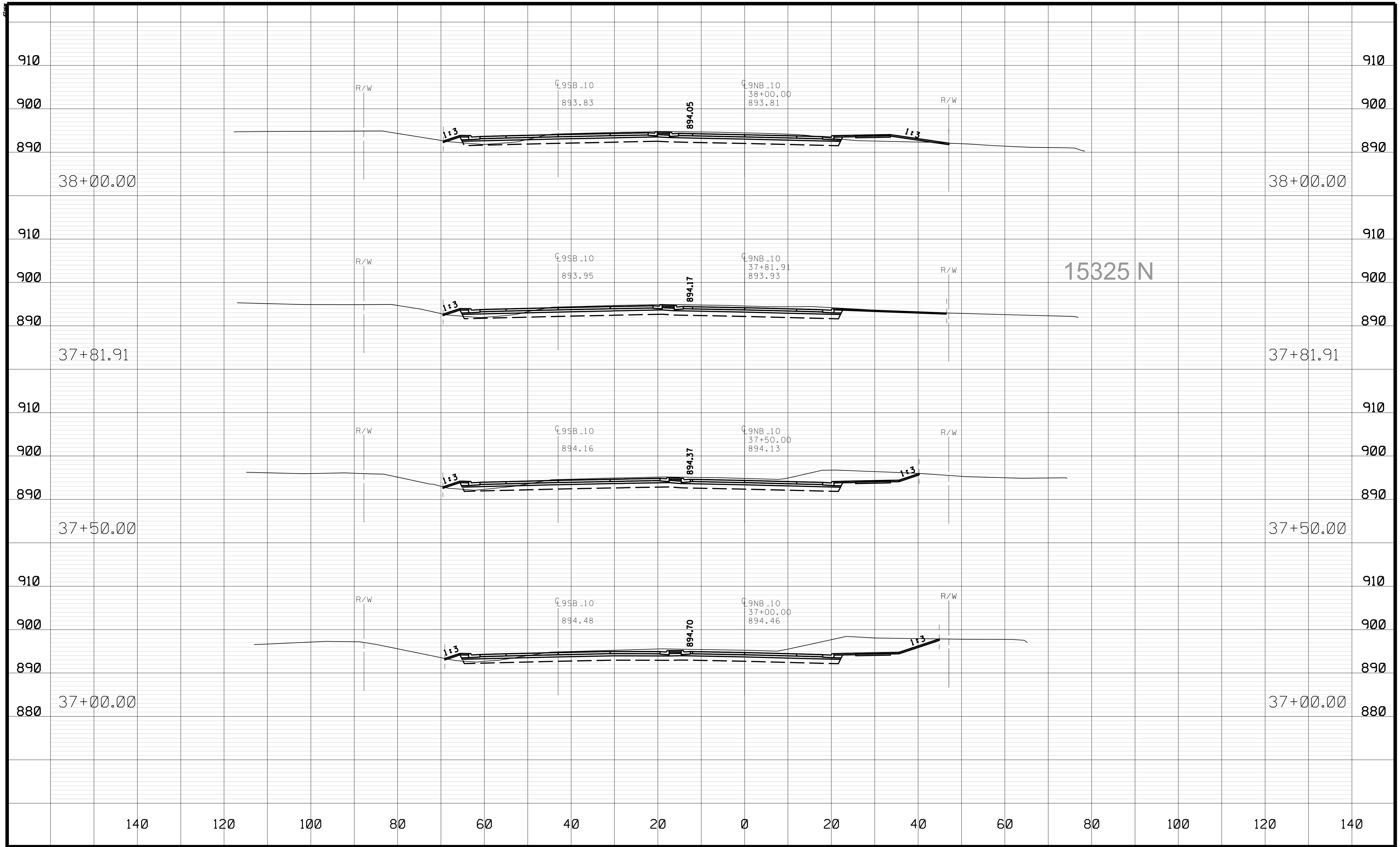
ANOKA COUNTY

ANOKA COUNTY
HIGHWAY DEPT.

SAP 002-609-022
SAP 198-020-039

CROSS SECTIONS
STA 36+00.00 TO 36+69.61

Sheet 150 of 167 Sheets



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CHECKED BY NJD DATE 11/02/23

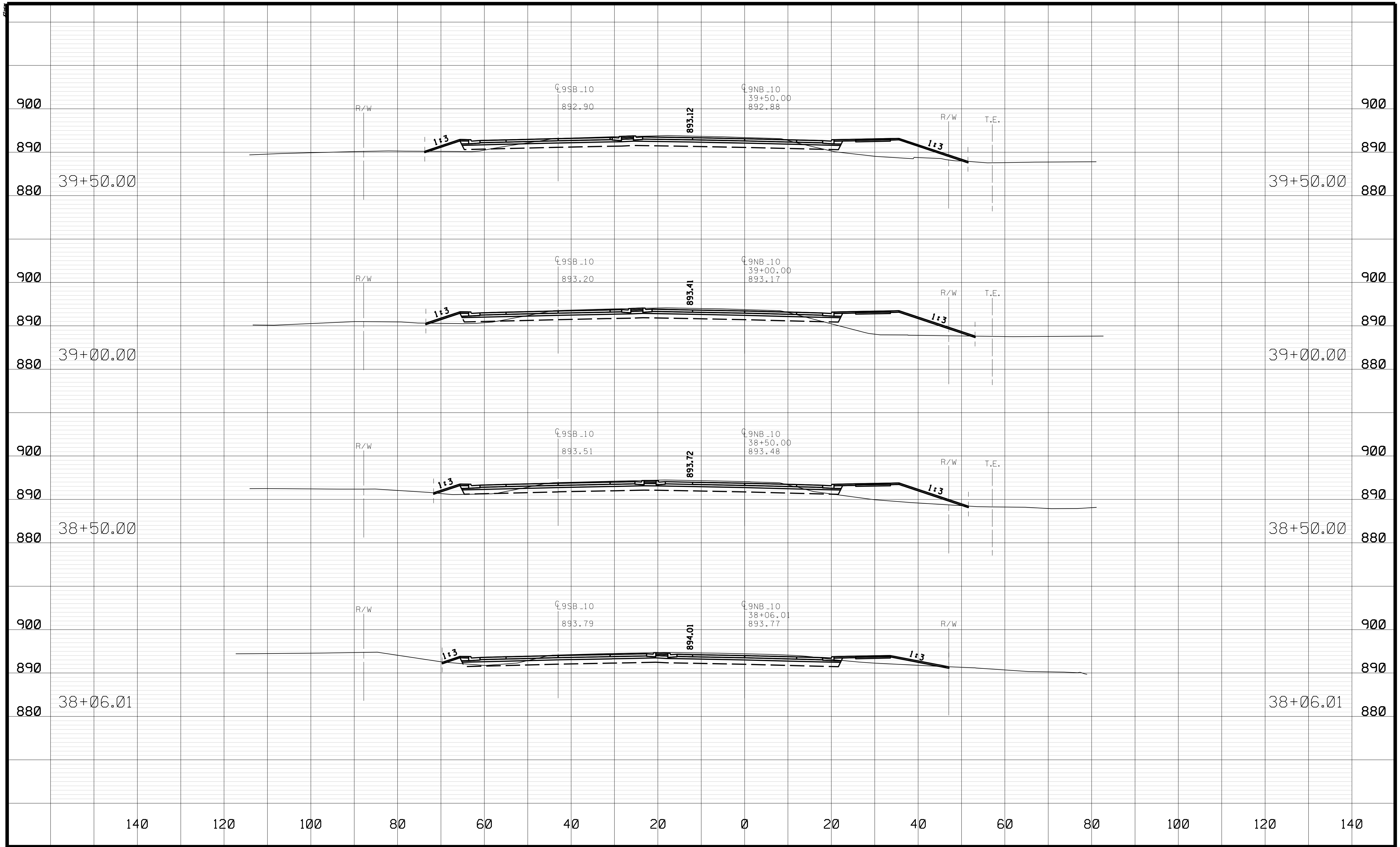
ANOKA COUNTY

ANOKA COUNTY
HIGHWAY DEPT.

SAP 002-609-022
SAP 198-020-039

CROSS SECTIONS
STA 37+00.00 TO 38+00.00

Sheet 151 of 167 Sheets



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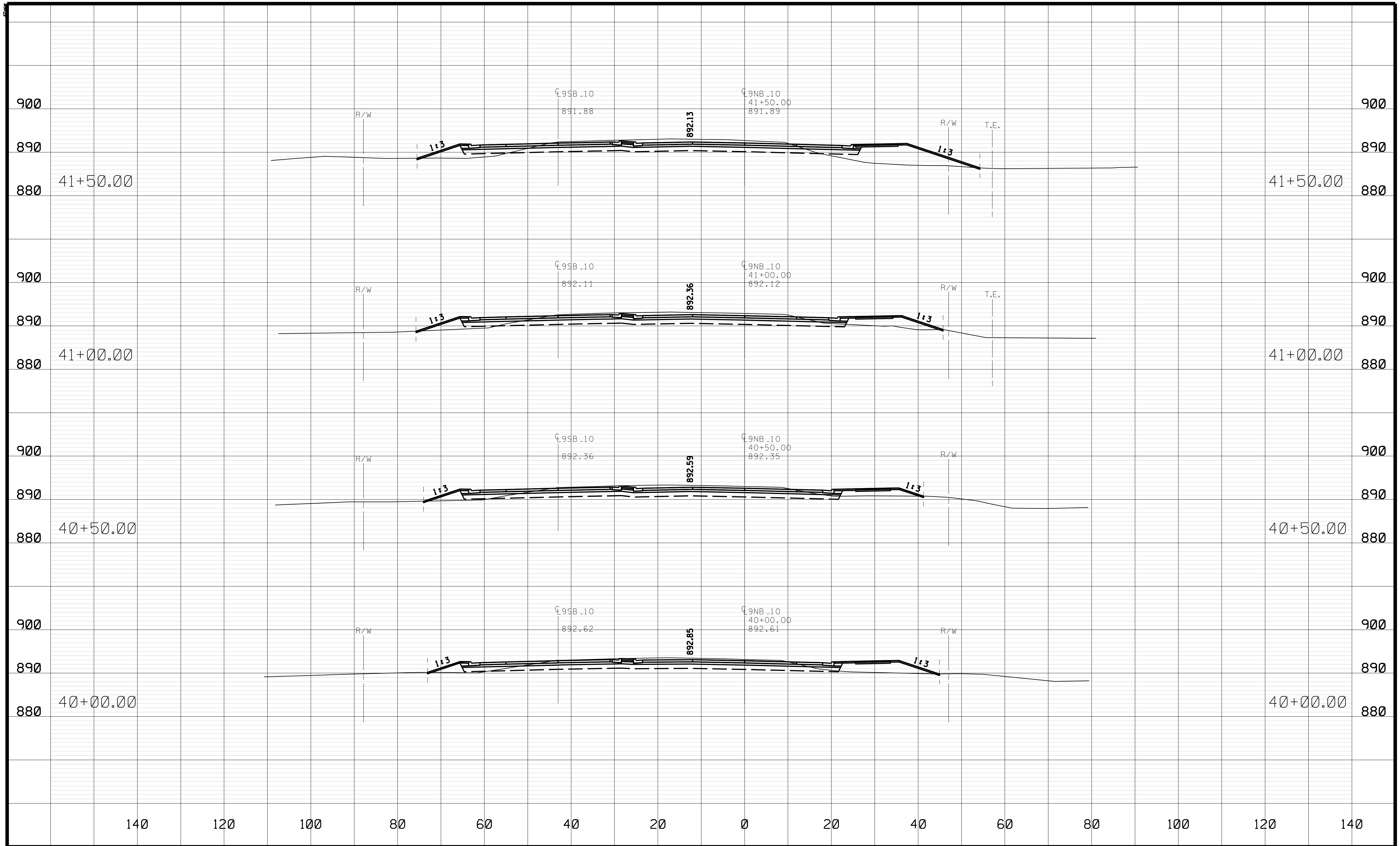
ANOKA COUNTY
HIGHWAY DEPT.

SAP 002-609-022
SAP 198-020-039

CROSS SECTIONS
STA 38+06.01 TO 39+50.00

Sheet 152 of 167 Sheets



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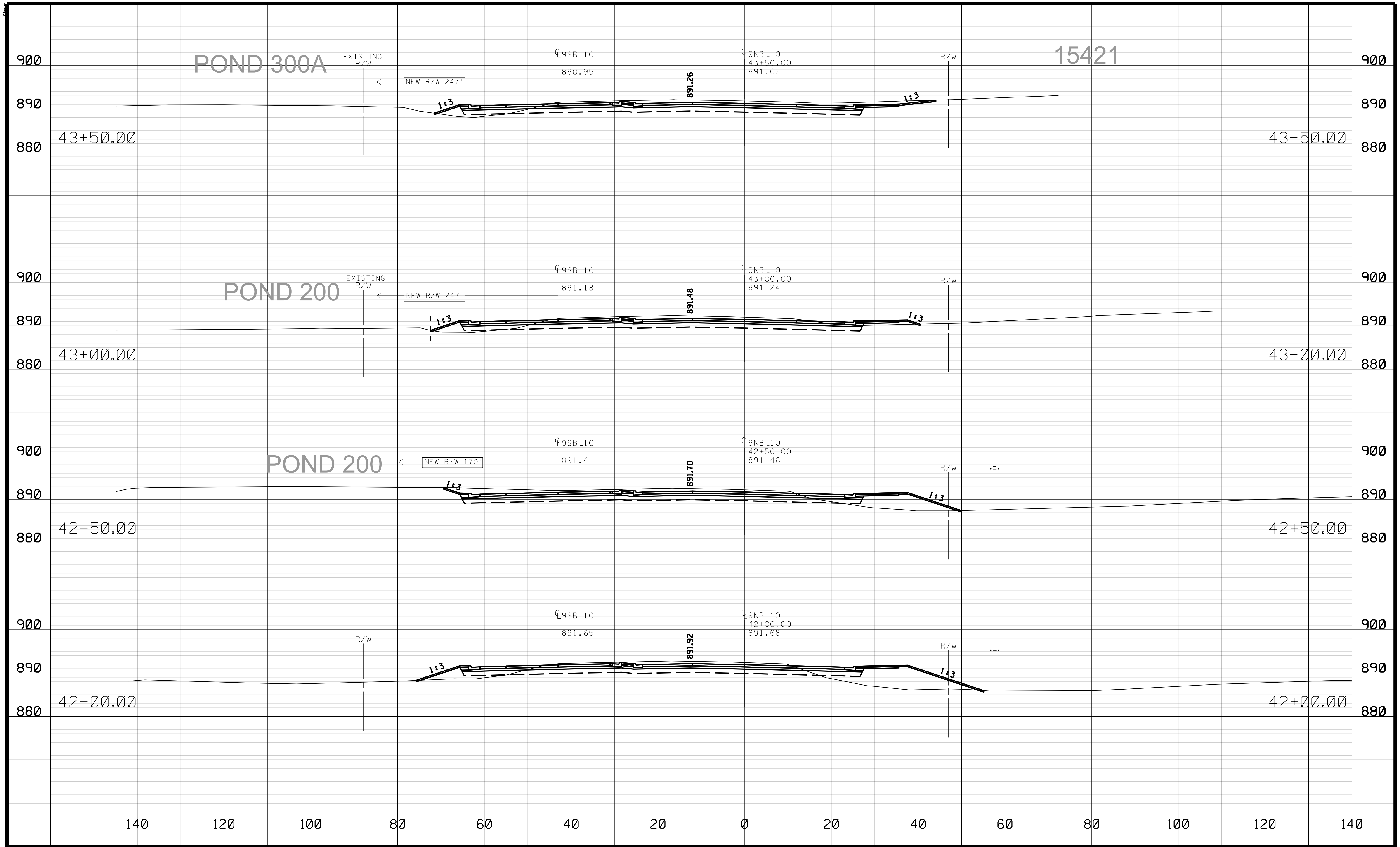
CHECKED BY NJD DATE 11/02/23

ANOKA COUNTY
ANOKA COUNTY
HIGHWAY DEPT.

SAP 002-609-022
SAP 198-020-039

CROSS SECTIONS
STA 40+00.00 TO 41+50.00

Sheet 153 of 167 Sheets



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CHECKED BY NJD DATE 11/02/23

ANOKA COUNTY

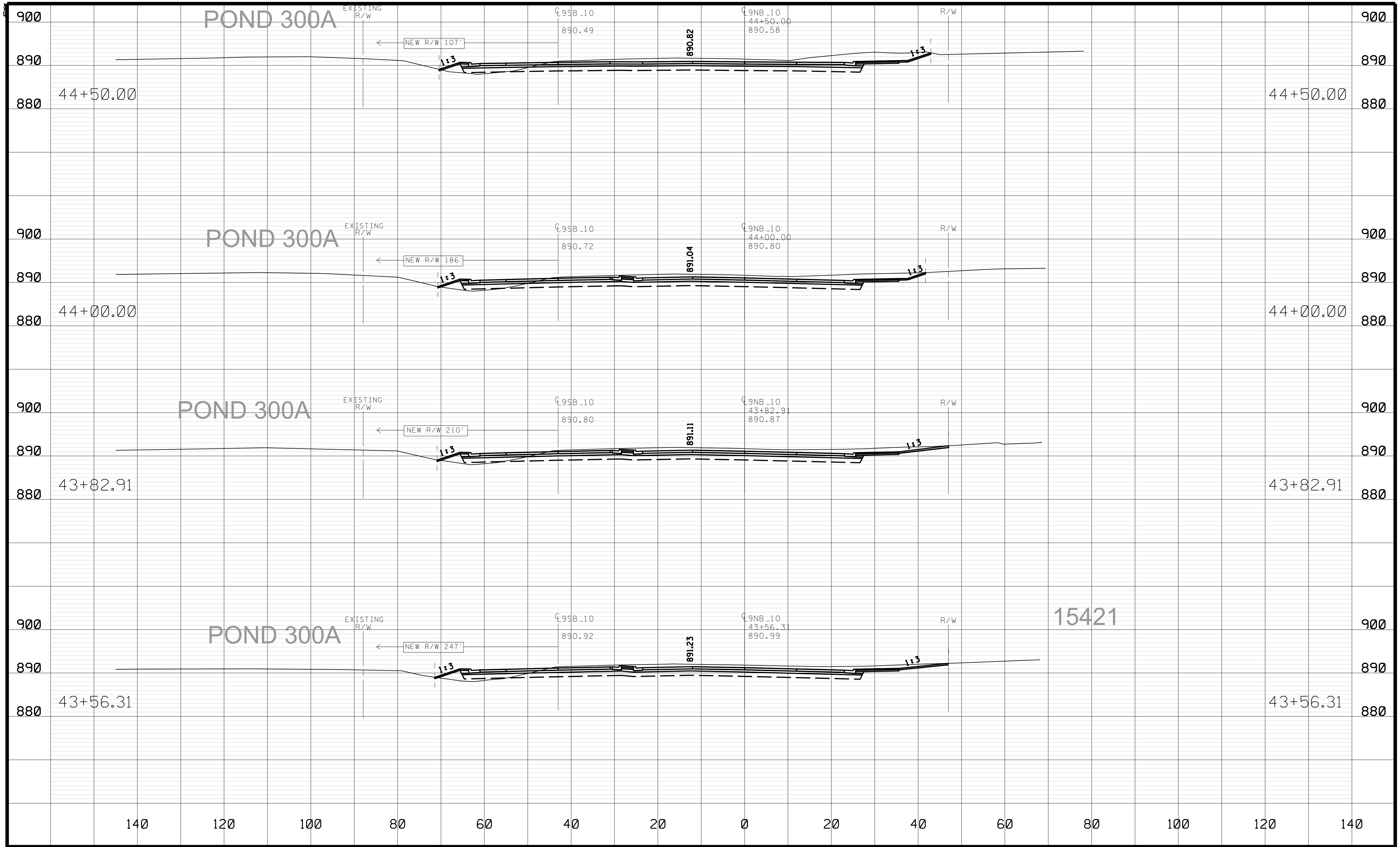
ANOKA COUNTY
HIGHWAY DEPT.

SAP 002-609-022
SAP 198-020-039

CROSS SECTIONS
STA 42+00.00 TO 43+50.00

Sheet 154 of 167 Sheets

JCFoster



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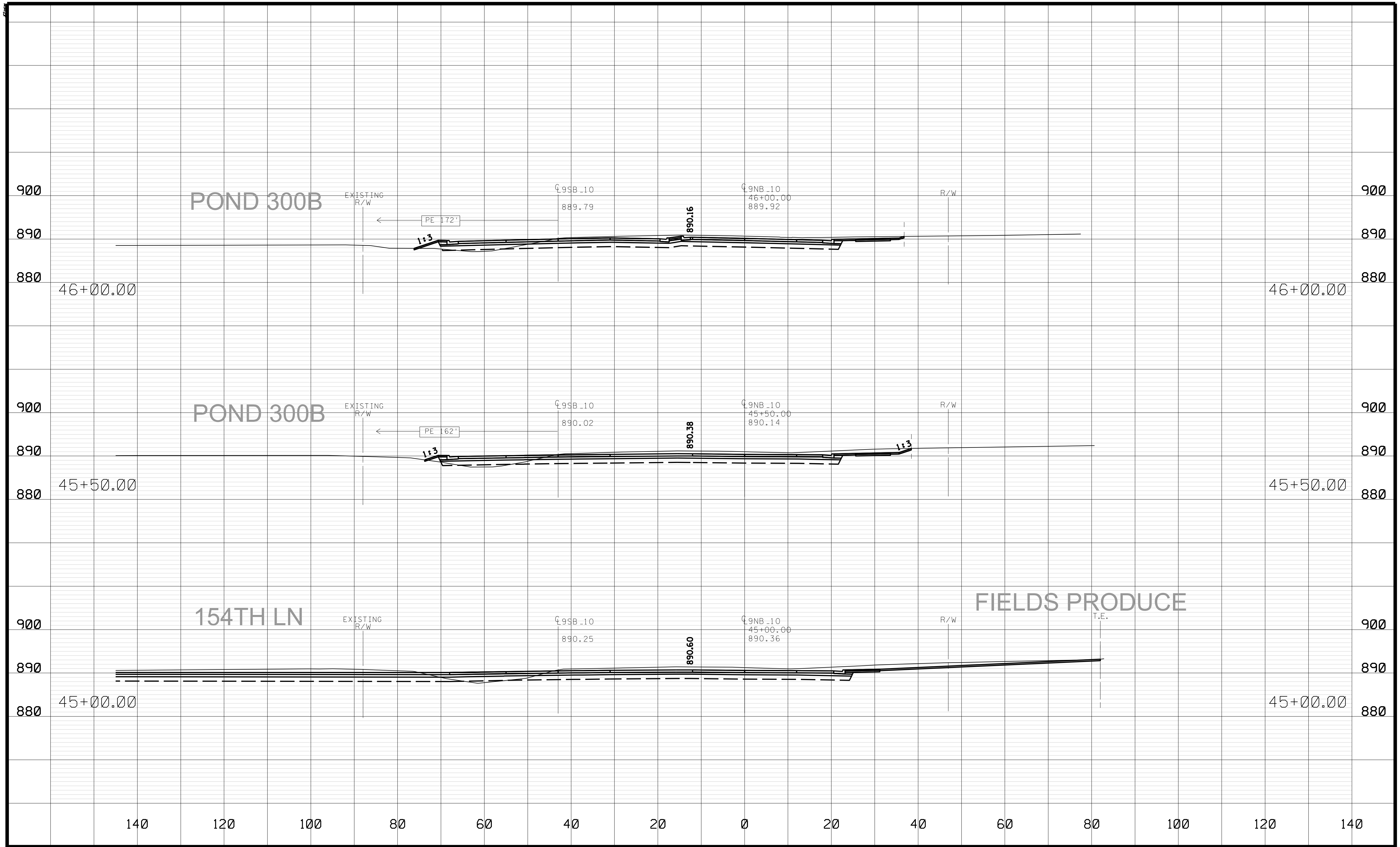
CHECKED BY NJD DATE 11/02/23

ANOKA COUNTY
ANOKA COUNTY
HIGHWAY DEPT.

SAP 002-609-022
SAP 198-020-039

CROSS SECTIONS
STA 43+56.31 TO 44+50.00

Sheet 155 of 167 Sheets



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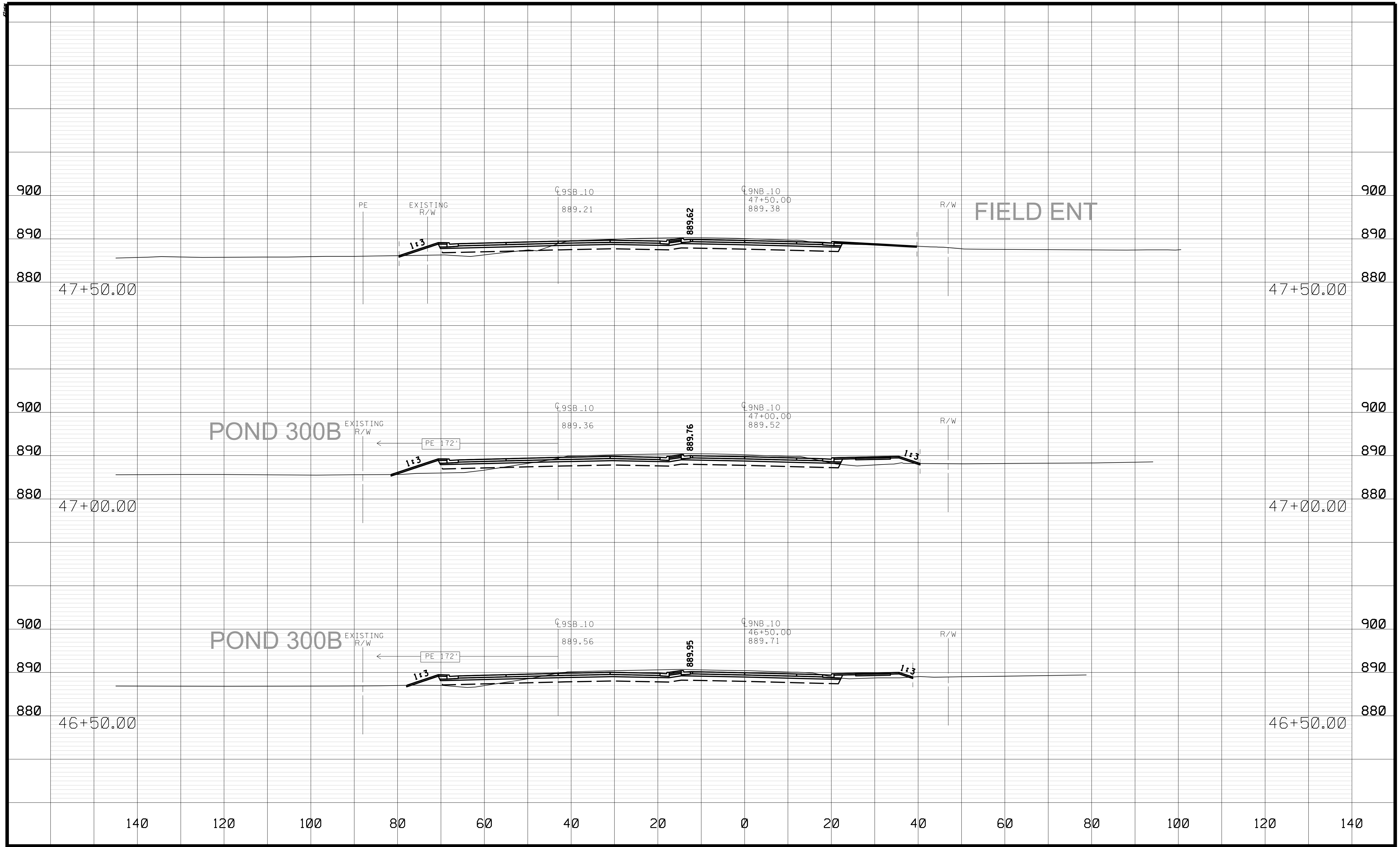
CHECKED BY NJD DATE 11/02/23

ANOKA COUNTY
HIGHWAY DEPT.

SAP 002-609-022
SAP 198-020-039

CROSS SECTIONS
STA 45+00.00 TO 46+00.00

Sheet 156 of 167 Sheets



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ANOKA COUNTY
HIGHWAY DEPT.

SAP 002-609-022
SAP 198-020-039

CROSS SECTIONS
STA 46+50.00 TO 47+50.00

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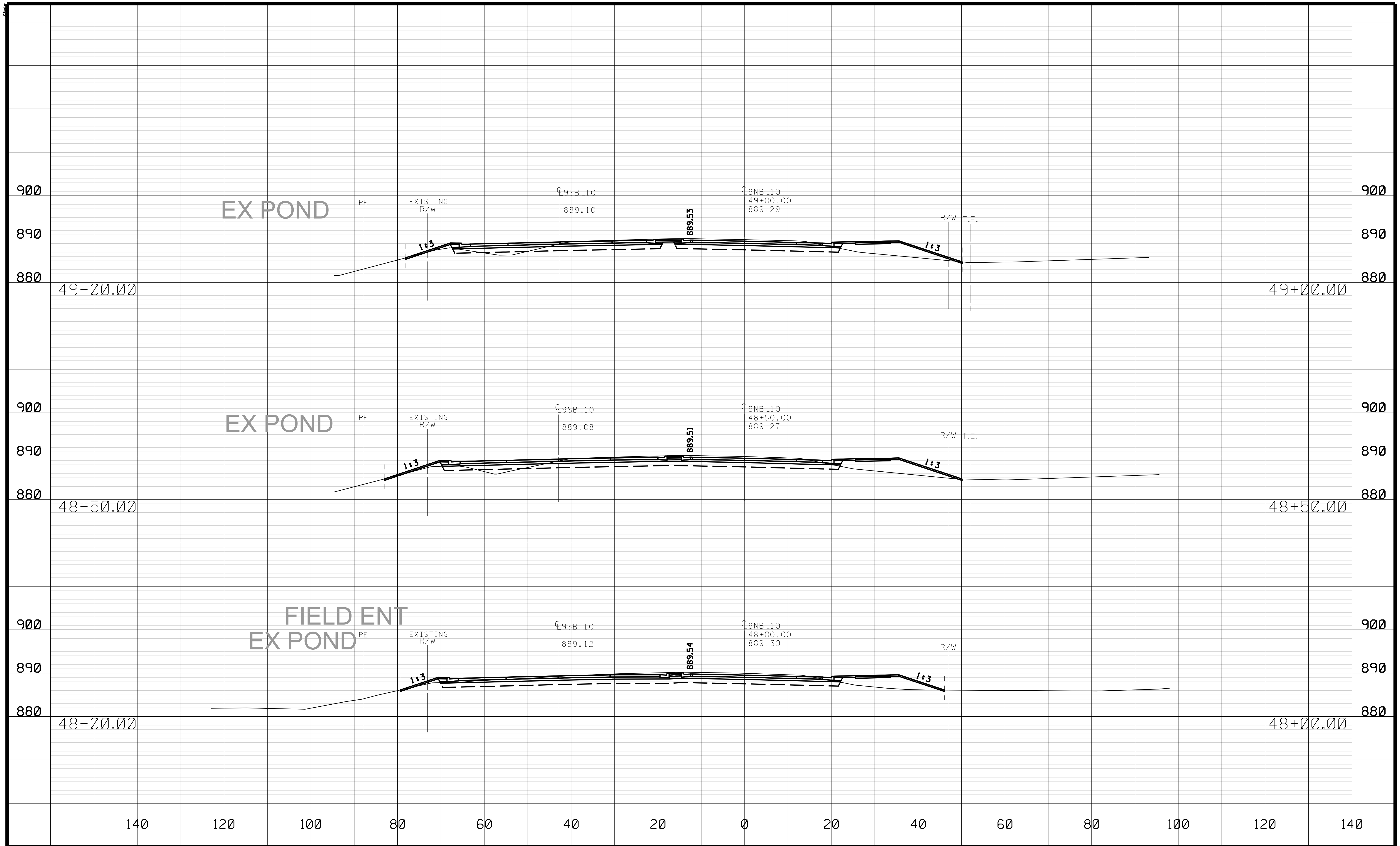

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DRAWN BY JCF DATE 10/27/23
DESIGN BY JCF DATE 10/27/23
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ANOKA COUNTY
HIGHWAY DEPT.

SAP 002-609-022
SAP 198-020-039

CROSS SECTIONS
STA 48+00.00 TO 49+00.00

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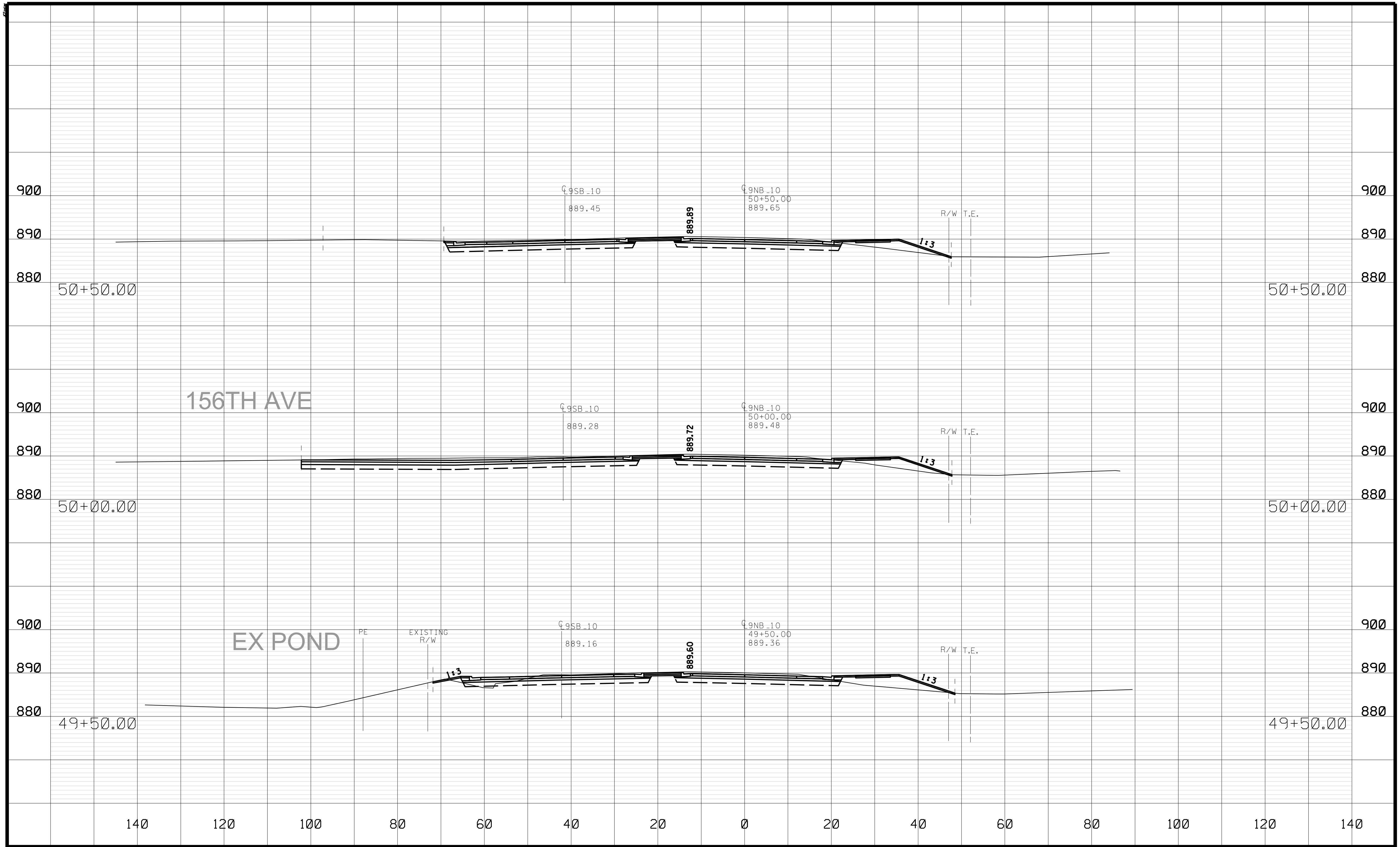

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CROSS SECTIONS
STA 49+50.00 TO 50+50.00

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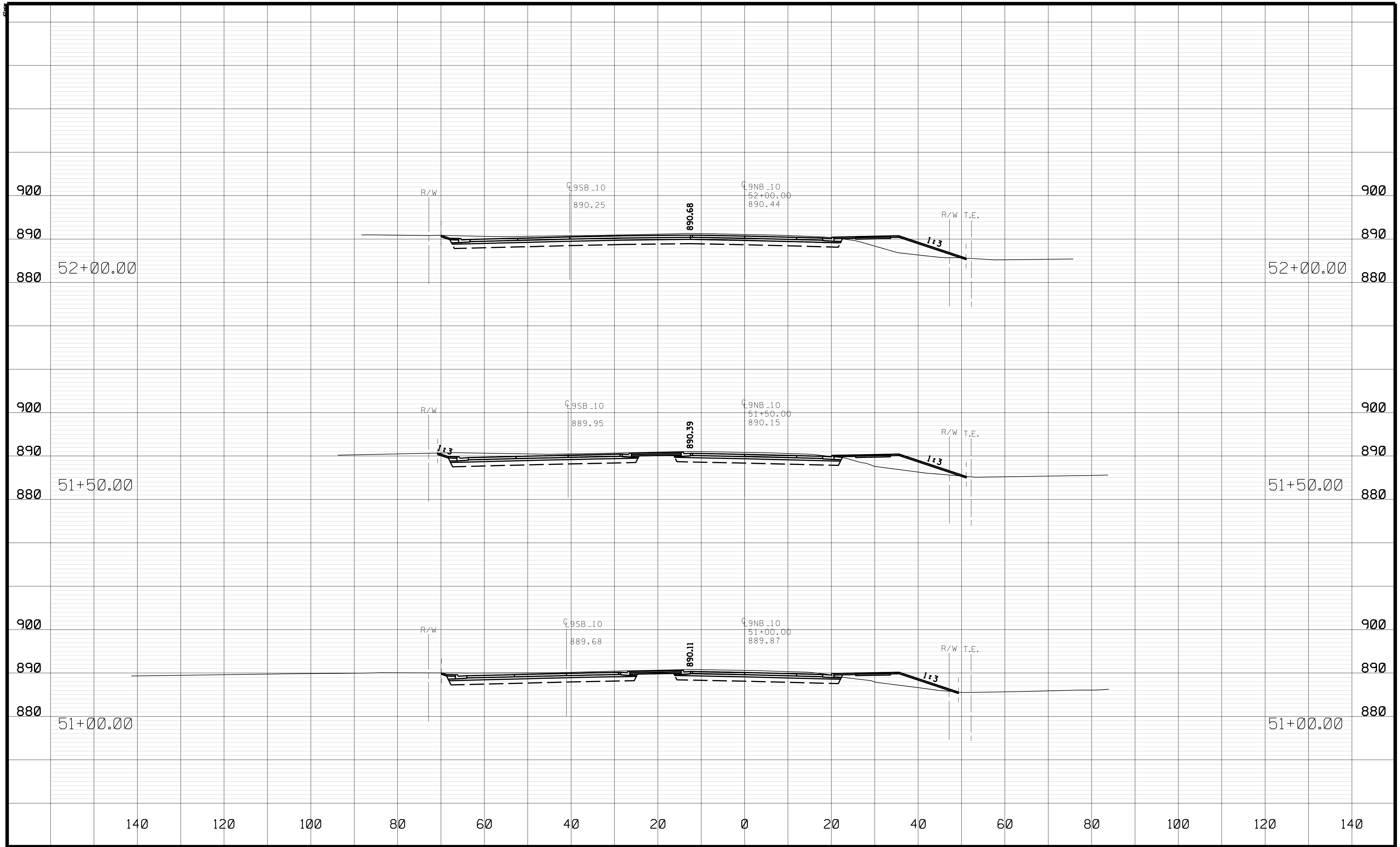

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CROSS SECTIONS
STA 51+00.00 TO 52+00.00

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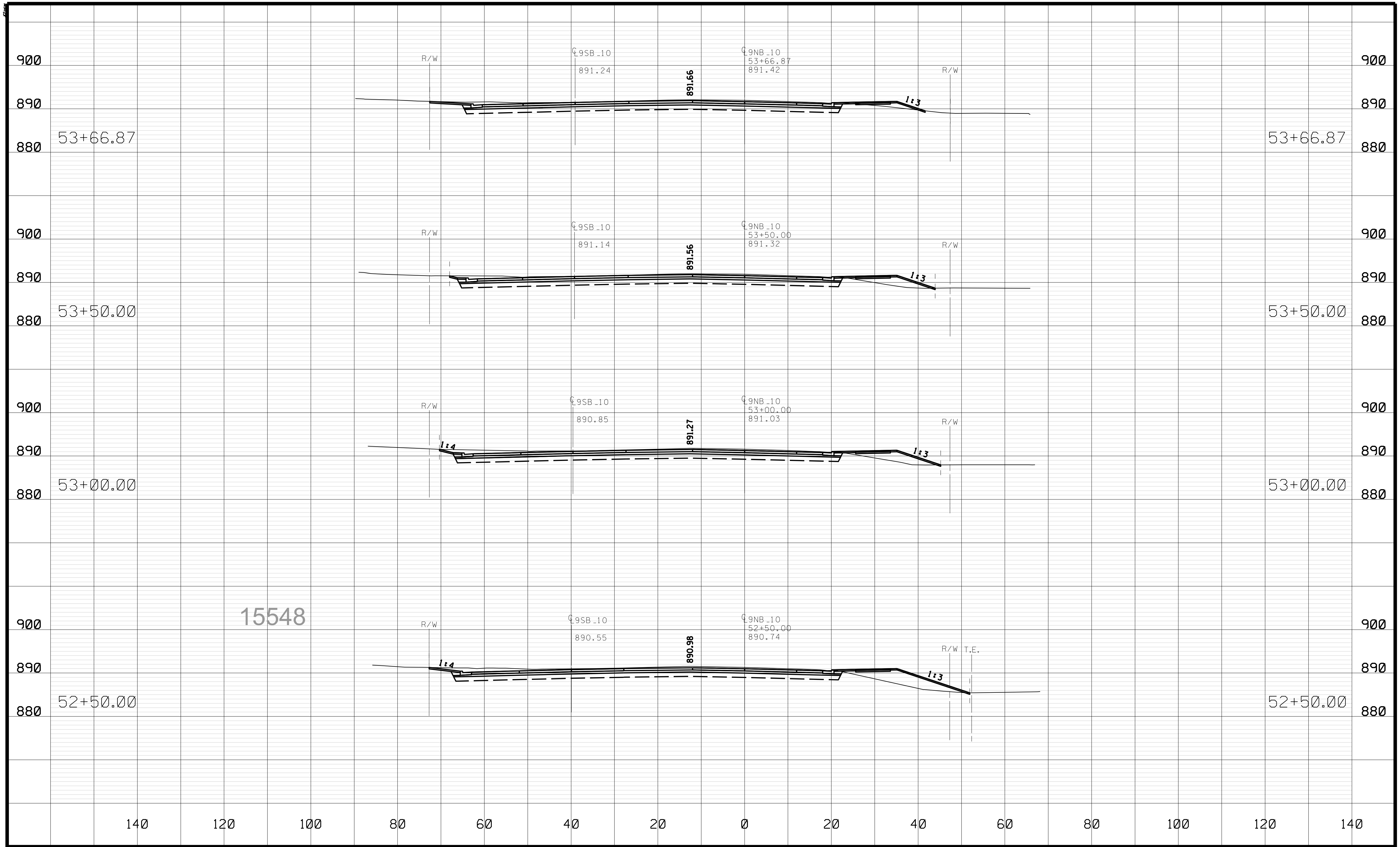

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CROSS SECTIONS
STA 52+50.00 TO 53+66.87

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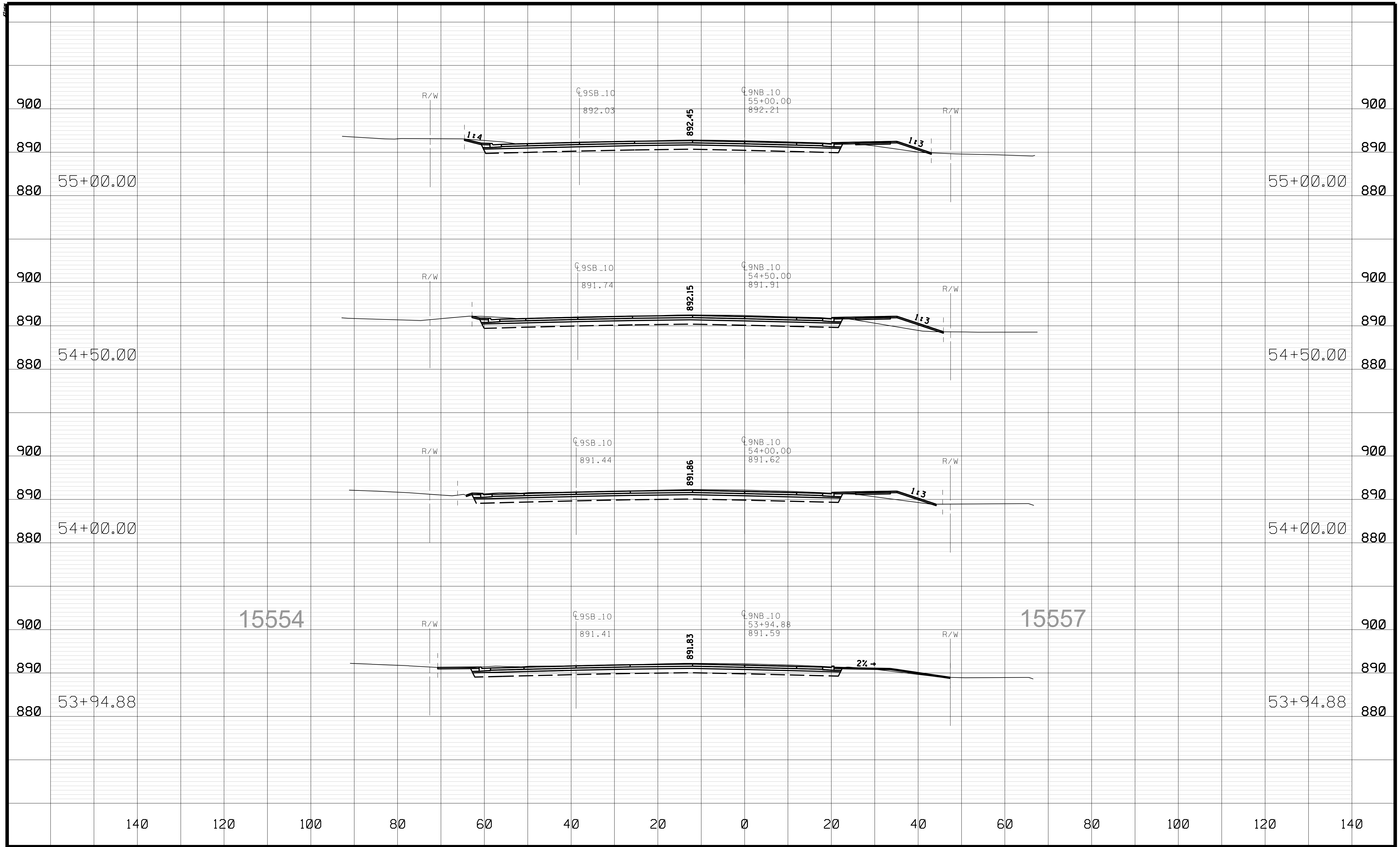

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CROSS SECTIONS
STA 53+94.88 TO 55+00.00

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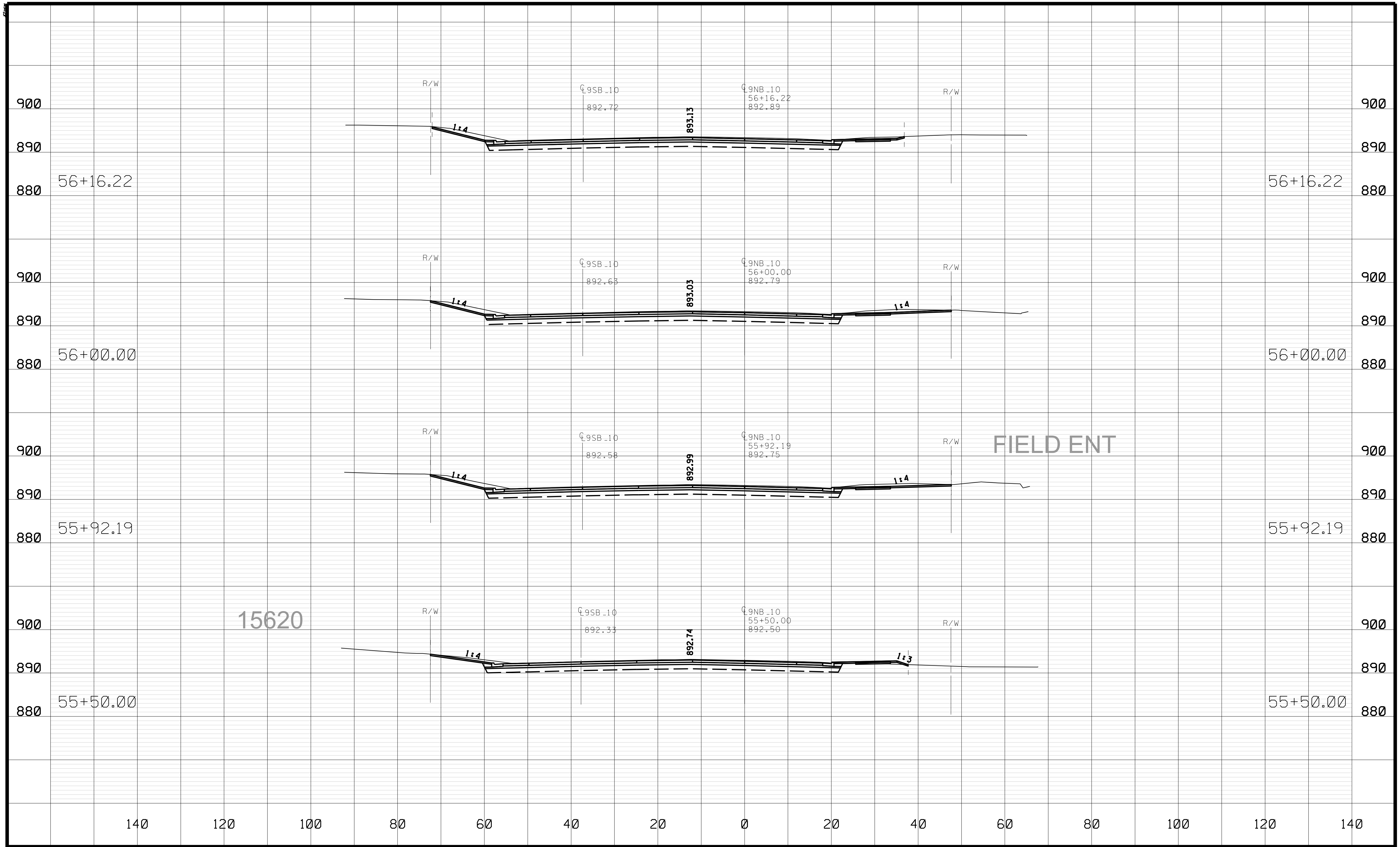

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CROSS SECTIONS
STA 55+50.00 TO 56+16.22

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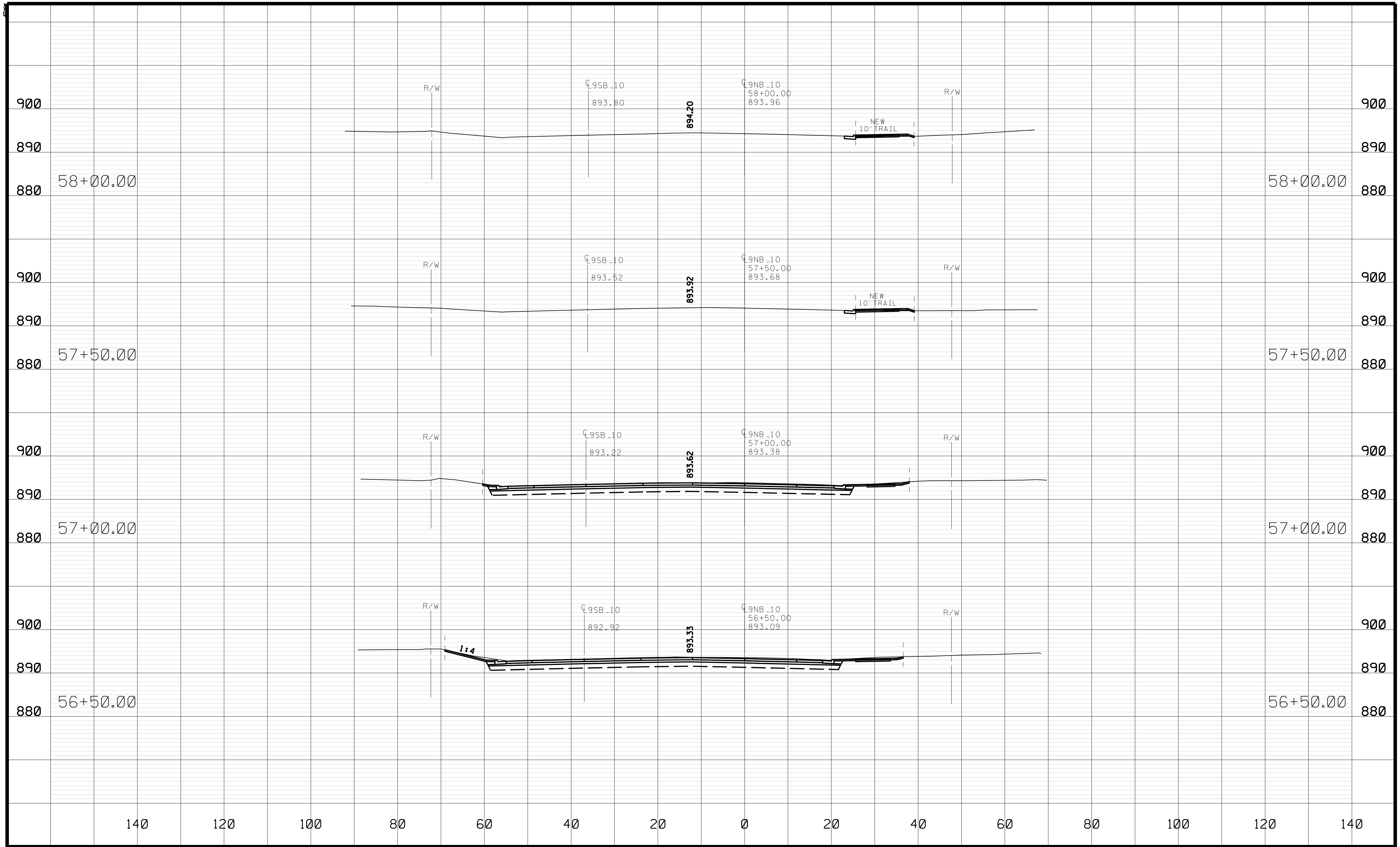

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CROSS SECTIONS
STA 56+50.00 TO 58+00.00

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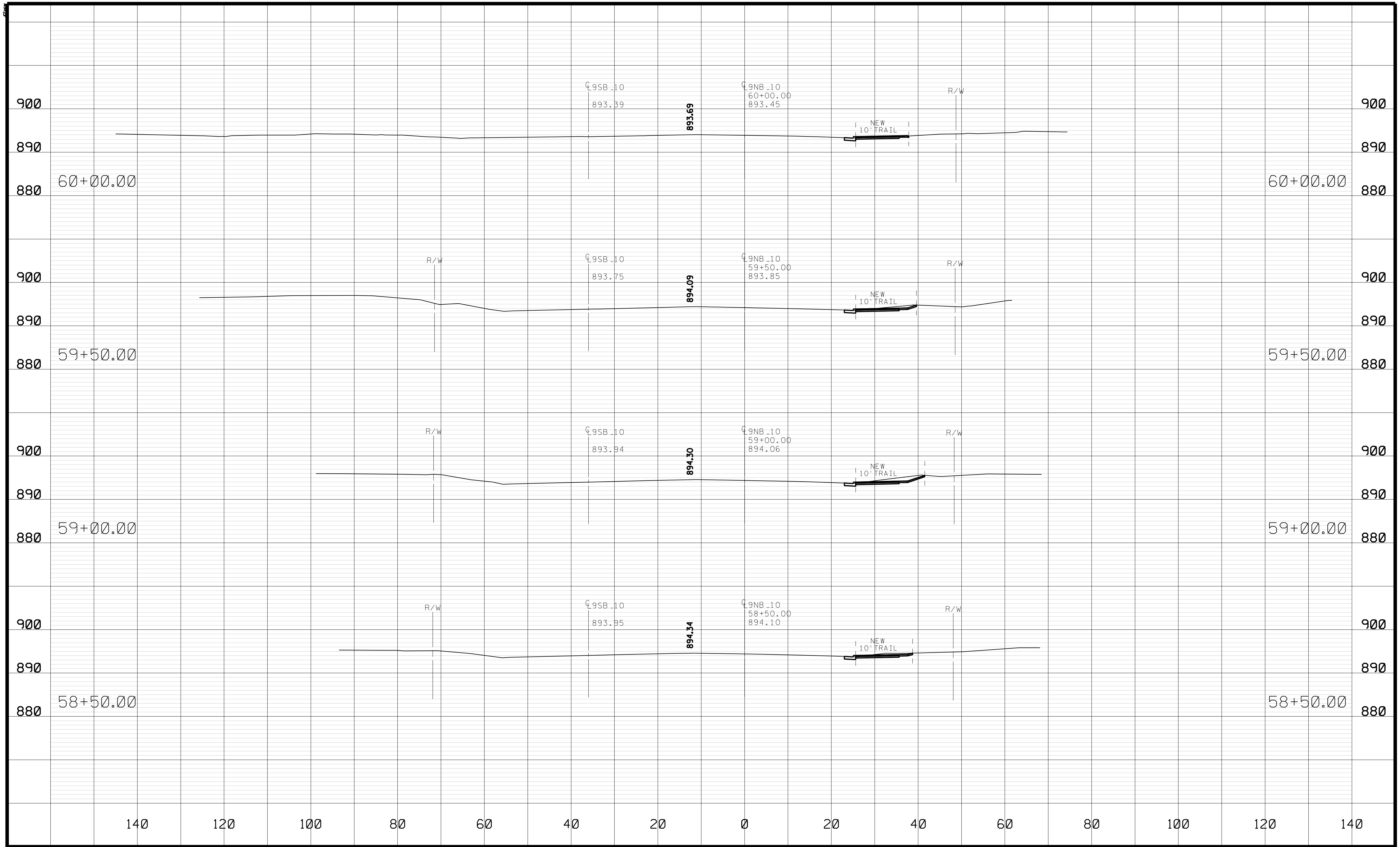

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CROSS SECTIONS
STA 58+50.00 TO 60+00.00

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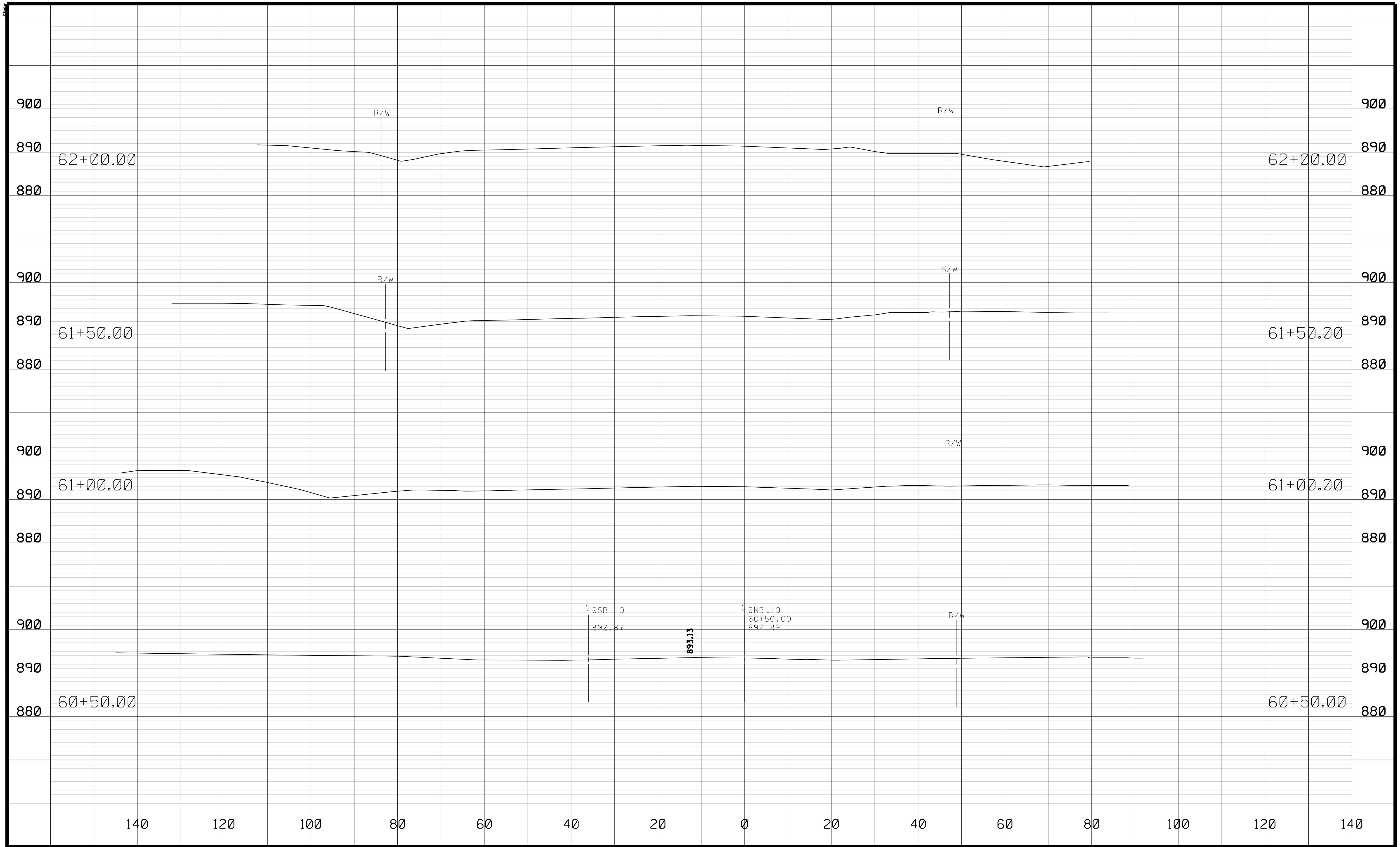

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ANOKA COUNTY

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CROSS SECTIONS
STA 60+50.00 TO 62+00.00

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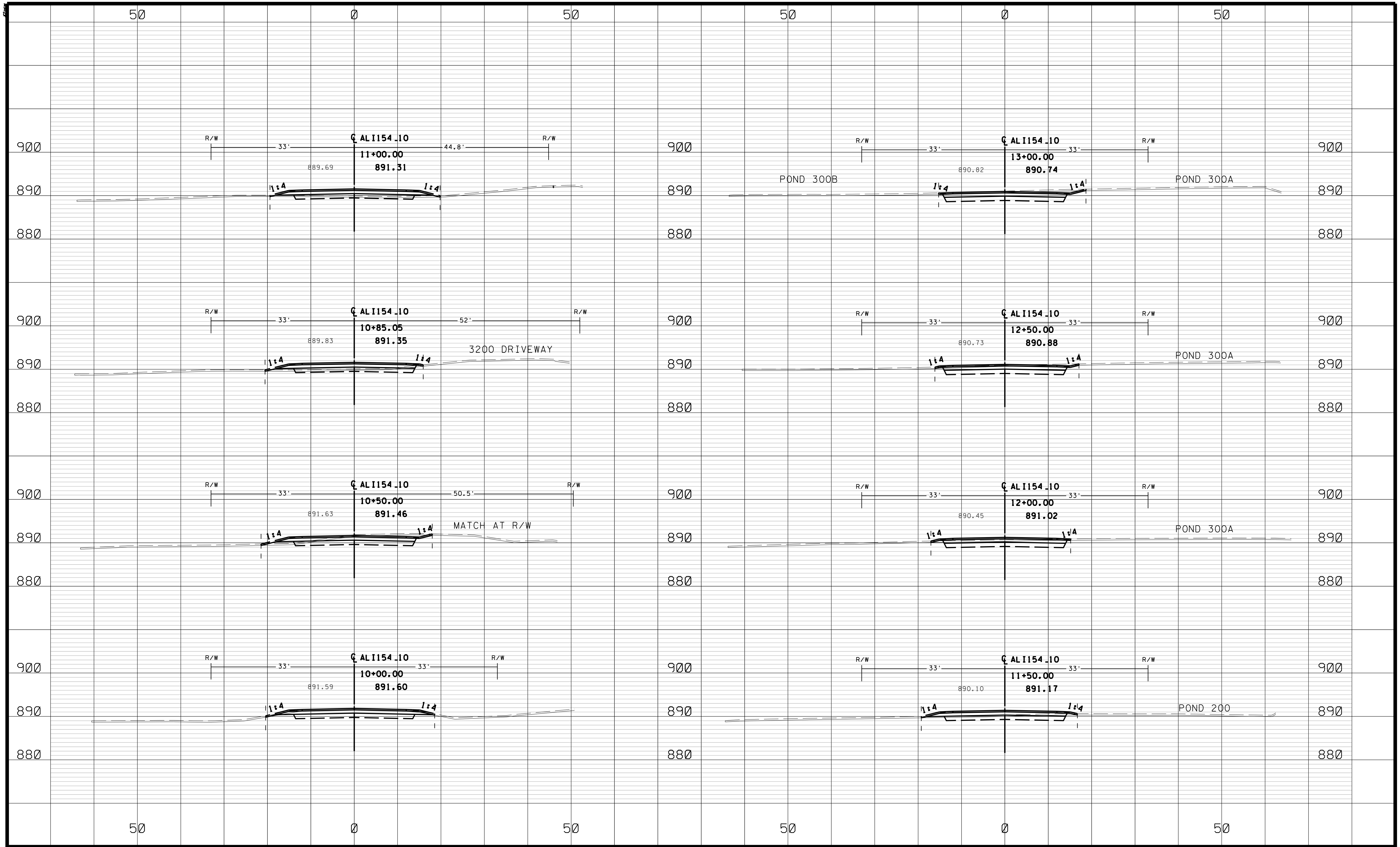

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CROSS SECTIONS
154TH LN
STA 10+00.00 TO 13+00.00

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