MINNESOTA DEPARTMENT OF TRANSPORTATION

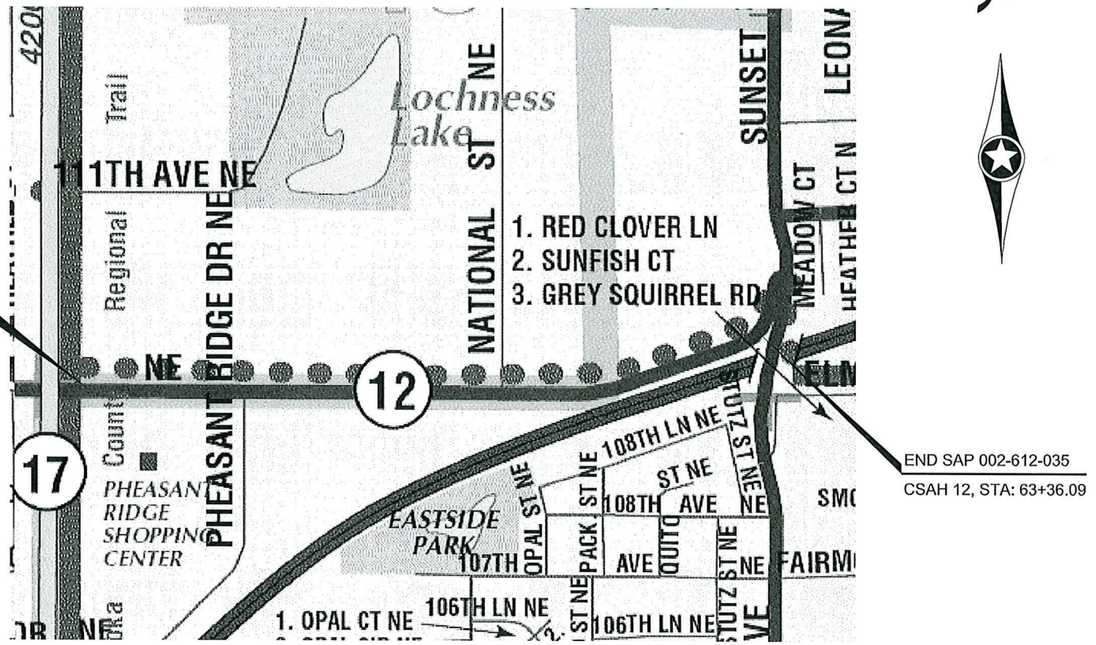
ANOKA COUNTY

CONSTRUCTION PLAN FOR RECONDITIONING, MILL BITUMINOUS, BITUMINOUS RECLAMATION, BITUMINOUS SURFACING

STORM SEWER REPAIRS, SHOULDER / RIGHT TURN LANE & AND BYPASS LANE CONSTRUCTION

LOCATED ON CSAH 12 BETWEEN LEXINGTON AVE NE AND 1000' W. OF SUNSET AVE NE

	CSAH 12		
GROSS LENGTH	4980.09	FEET	0.943 MILES
EXCEPTIONS-LENGTH	0.00	FEET	0.000 MILES
NET LENGTH	4980.09	FEET	0.943 MILES

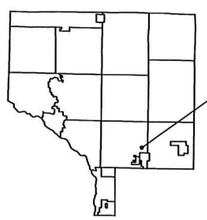


The subsurface utility information in this plan is utility quality level "D". This utility quality level was determined according to the guidelines of CI/ASCE 38-02, entitled "Standard Guidelines for the Collection and depiction of Existing Subsurface Utility Data."

WARNING
HIGH-PRESSURE PIPELINE(S)
Excavation and/or Construction Prohibited
Without compliance with State One-Call, AND
Without Written Permission From
MAGELLAN PIPELINE COMPANY, L.P.

DESIGN DESIGNATION (CSAH 12)

ESAL 20	815,618	FUNCTIONAL CLASSIFICATION	A-MINOR EXPANDER
R VALUE	35	NO. OF TRAFFIC LANES 2	NO. OF PARKING LANES 0
ADT (2025)	6904	DESIGN SPEED 55 MPH	
PROJ. ADT (2045)	6904	STOPPING SIGHT DISTANCE BASED ON:	
TON DESIGN	10	HEIGHT OF EYE 3.5'	HEIGHT OF OBJECT 2.0'
		DESIGN SPEED NOT ACHIEVED AT :	
		STA. 48+50 TO STA. 56+50	MPH 45



PROJECT LOCATION

CITY OF BLAINE
ANOKA COUNTY
MN/DOT TRANSPORTATION DISTRICT - METRO
SECTION 13,24
TOWNSHIP 31 NORTH
RANGE 22,23 WEST

PLAN SYMBOLS

COUNTY LINE
TOWNSHIP OR RANGE LINE
SECTION LINE
QUARTER LINE
SIXTEENTH LINE
RIGHT OF WAY LINE
SLOPE EASEMENT
EXISTING RIGHT OF WAY
PROPERTY LINE
CORPORATE OR CITY LIMITS
RETAINING WALL
RAILROAD
RAILROAD RIGHT OF WAY
RIVER OR CREEK
DRAINAGE DITCH
CULVERT
DROP INLET
GUARD RAIL
BARBED WIRE FENCE
WOVEN WIRE FENCE
CHAIN LINK FENCE
WOOD FENCE
STONE WALL OR FENCE
HEDGE
LOWLAND
TIMBER
ORCHARD
BRUSH
NURSERY
CATTLE GUARD
OVERPASS (Highway Over)
UNDERPASS (Highway Under)
BRIDGE
BUILDING (One Story Frame) 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
WATERMAIN
TELEPHONE CABLE IN CONDUIT
ELECTRIC CABLE IN CONDUIT
TELEPHONE MANHOLE
ELECTRIC MANHOLE
BURIED TELEPHONE CABLE T-BUR
BURIED ELECTRIC CABLE P-BUR
OVERHEAD UTILITY CABLE OHU
SEWER (Sanitary or Storm)
SEWER MANHOLE

SCALES

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

GOVERNING SPECIFICATIONS

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

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

INDEX

THIS PLAN CONTAINS 110 SHEETS

Approved Joseph MacPherson — Digitally signed by Joseph MacPherson Date: 2025.03.28 13:18:57 -05'00' ,20__
ANOKA COUNTY ENGINEER

Approved Daniel Schluender 3.28 ,20 25
CITY OF BLAINE ENGINEER

Dan Erickson — Digitally signed by Dan Erickson Date: 2025.04.03 13:59:42 -05'00' ,20__
DISTRICT STATE AID ENGINEER: REVIEWED FOR COMPLIANCE WITH STATE AID RULES/POLICY

Dan Erickson — Digitally signed by Dan Erickson Date: 2025.04.03 14:00:03 -05'00' ,20__
FOR STATE AID ENGINEER: APPROVED FOR STATE AID FUNDING

NO	DATE	BY	CKD	APPR	REVISION		
1	1/29/2025	JF	ND		REMOVED "SUPPLEMENTAL SPEC" FROM GOVERNING SPECS		
2	1/29/2025	JF	ND		ADDED "FOR " BEFORE STATE AID ENGINEER		
3	1/29/2025	JF	ND		MATCHED INDEX NAMES TO PAGE NAMES		
4	1/29/2025	JF	ND		REMOVED MAP BOARDER		
NO	DATE	BY	CKD	APPR	REVISION	01/30/2025	7:03:55 AM

NAME: P:\002-612-035 17 to 53\Plan\002612035_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: 01/30/2025 LICENSE NO. 49046

DRAWN BY JJF DATE 12/01/24
DESIGN BY JJF DATE 12/01/24
CHECKED BY NJD DATE 01/28/25

ANOKA COUNTY HIGHWAY DEPT.

SAP 002-612-035

TITLE SHEET

Sheet 1 of 110 Sheets

STATEMENT OF ESTIMATED QUANTITIES 002-612-035

TAB	NOTE	ITEM NO.		ITEM DESCRIPTION	UNIT	TOTAL PROJECT QUANTITIES ESTIMATED
		2021.501	00010	MOBILIZATION	LUMP SUM	1
A		2101.505	00020	CLEARING	ACRE	0.185
A		2101.505	00030	GRUBBING	ACRE	0.185
		2104.502	00910	REMOVE DRAINAGE STRUCTURE	EACH	1
M		2104.502	01240	REMOVE SIGN TYP C	EACH	22
M		2104.502	01690	REMOVE SIGN PANEL TYPE C	EACH	3
B,C		2104.503	00195	SAWING CONCRETE PAVEMENT (FULL DEPTH)	LIN FT	165
B,C		2104.503	00205	SAWING BITUMINOUS PAVEMENT (FULL DEPTH)	LIN FT	697
E		2104.503	00255	REMOVE PIPE CULVERTS	LIN FT	90
B,C		2104.503	00315	REMOVE CURB AND GUTTER	LIN FT	223
B,C	10	2104.504	00120	REMOVE BITUMINOUS PAVEMENT	SQ YD	7768
B,C		2104.518	00140	REMOVE CONCRETE WALK	SQ FT	120
C		2104.518	00220	REMOVE CONCRETE MEDIAN	SQ FT	160
AA,CC		2106.507	00010	EXCAVATION-COMMON	CU YD	1055
AA,CC	34	2106.507	00080	SELECT GRANULAR EMBANKMENT (CV)	CU YD	9696
AA,CC		2106.507	00130	COMMON EMBANKMENT (CV)	CU YD	2036
DD	32	2106.507	00050	EXCAVATION CHANNEL AND POND(EV) (FLOODPLAIN MITIGATION)	CU YD	338
	33	2106.601	00015	DEWATERING	LUMP SUM	1
AA,CC	34	2106.607	00030	EXCAVATION SPECIAL	CU YD	8642
	3	2123.510	00020	MOTOR GRADER	HOUR	30
	4	2123.510	00130	DOZER	HOUR	30
	5	2130.523	00010	WATER	M GALLON	20
BB		2211.507	00170	AGGREGATE BASE (CV) CLASS 5	CU YD	1276
F	6	2211.509	00070	AGGREGATE BASE CLASS 5	TON	29
B	7	2215.504	00010	FULL DEPTH RECLAMATION	SQ YD	9511
B	8	2215.507	00010	HAUL FULL DEPTH RECLAMATION (LV)	CU YD	507
BB		2221.507	00160	SHOULDER BASE AGGREGATE (CV) CLASS 5	CU YD	133
B	9,11	2232.504	00060	MILL BITUMINOUS SURFACE (2.0")	SQ YD	8873
G		2301.602	00071	DRILL AND GROUT REINF BAR (EPOXY COATED)	EACH	17
F		2357.506	00010	BITUMINOUS MATERIAL FOR TACK COAT	GALLON	1878
C	12	2360.509	20100	TYPE SP 12.5 BITUMINOUS MIXTURE FOR PATCHING	TON	19
F		2360.509	23205	TYPE SP 12.5 NON-WEARING COURSE MIXTURE (3;B)	TON	832
F		2360.509	23300	TYPE SP 12.5 WEARING COURSE MIXTURE (3;C)	TON	5689
F	13	2360.509	23300	TYPE SP 12.5 WEARING COURSE MIXTURE (3;C)	TON	134
E		2501.502	23018	18" CS SAFETY APR & GRATE DES 3128	EACH	2
		2501.502	44018	18" RC SAFETY APRON	EACH	2
E		2501.503	12018	18" CS PIPE CULVERT	LIN FT	22
		2501.503	13185	18" RC PIPE CULVERT CLASS V	LIN FT	50
		2501.602	57018	SAFETY GRATE FOR 18" RC APRON	EACH	2
C	14,15	2504.602	00033	ADJUST GATE VALVE	EACH	4
C	16	2506.502	06000	CASTING ASSEMBLY	EACH	18
C	17	2506.503	02420	CONSTRUCT DRAINAGE STRUCTURE DESIGN 48-4020	LIN FT	4
C	18	2506.602	06040	GROUT CATCH BASIN OR MANHOLE	EACH	21
E,G,H		2511.509	00012	RANDOM RIPRAP CLASS II	TON	26
G	20	2521.518	00040	4" CONCRETE WALK	SQ FT	60
G		2521.618	00400	CONCRETE CURB RAMP WALK	SQ FT	123
C		2531.503	02061	CONCRETE CURB AND GUTTER DESIGN B412 (MODIFIED)	LIN FT	70
C,G		2531.503	02120	CONCRETE CURB AND GUTTER DESIGN B424	LIN FT	133
G		2531.604	00100	CONCRETE DRAINAGE FLUME	SQ YD	14
G		2531.618	00010	TRUNCATED DOMES	SQ FT	40
J	19	2550.602	10000	LOOP DETECTOR DESIGN NMC	EACH	4
		2563.601	00001	TRAFFIC CONTROL SUPERVISOR	LUMP SUM	1
	1,21,22,23	2563.601	00010	TRAFFIC CONTROL	LUMP SUM	1
K	24	2563.613	01100	PORTABLE CHANGEABLE MESSAGE SIGN	UNIT DAY	20
M	31	2564.502	00113	INSTALL SIGN PANEL TYPE C	EACH	3
M	30	2564.502	00213	INSTALL SIGN TYP C	EACH	23
M		2564.518	00130	SIGN PANELS TYP C	SQ FT	188
M		2564.602	02340	DELINEATOR / MARKER	EACH	5
		2573.501	00030	EROSION CONTROL SUPERVISOR	LUMP SUM	1
C	25	2573.502	00110	STORM DRAIN INLET PROTECTION	EACH	38
E		2573.502	00140	CULVERT END CONTROLS	EACH	2
H		2573.503	00023	SILT FENCE, TYPE MS	LIN FT	6084
H	2, 26	2574.507	00100	COMMON TOPSOIL BORROW	CU YD	905
H		2574.508	00013	FERTILIZER TYPE 3	POUND	594
H		2575.504	00325	ROLLED EROSION PREVENTION CATEGORY 25	SQ YD	9624
H		2575.505	00021	SEEDING	ACRE	1.988
H		2575.508	25121	SEED MIXTURE 25-121	POUND	103.6
H		2575.508	33261	SEED MIXTURE 33-261	POUND	10.1
H	27	2575.508	40003	HYDRAULIC REINFORCED FIBER MATRIX	POUND	7753
H		2575.523	00020	RAPID STABILIZATION METHOD 3	M GALLON	11.9
	28, 35	2581.503	00004	4" REMOVABLE PREFORMED PAVEMENT MARKING TAPE	LIN FT	2428
L	29, 35	2582.503	30104	4" SOLID LINE MULTI-COMP	LIN FT	18521
L	29, 35	2582.503	30204	4" BROKEN LINE MULTI-COMP	LIN FT	700
L	29, 35	2582.503	30308	8" DOTTED LINE MULTI-COMP	LIN FT	36
L	29, 35	2582.503	30404	4" DBLE SOLID LINE MULTI-COMP	LIN FT	4114
L	35	2582.503	76124	24" SOLID LINE PREF THERMO GR IN	LIN FT	103
L	35	2582.518	04000	PAVT MSSG PREF THERMO (ARROWS)	SQ FT	207.36
L	35	2582.518	08000	CROSSWALK PREF THERMO	SQ FT	523

CONSTRUCTION NOTES

1	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 PROFESSIONAL ENGINEER" THAT SHALL INCLUDE LAYOUTS AND QUANTITIES FOR THE COUNTY TO REVIEW AND APPROVE BEFORE ANY WORK SHALL TAKE PLACE. A DETOUR PLAN AND DETOUR QUANTITES HAVE BEEN INCLUDED WITH THIS PLAN, QUANTITIES FOR THE DETOUR SHALL BE INCLUDED AND PAID FOR UNDER ITEM 2563.601 TRAFFIC CONTOL. THE DETOUR MAY NOT BE INSTALLED PRIOR TO JUNE 16TH AND MUST BE OPEN TO TRAFFIC BY SEPT 1ST. THIS DETOUR MAY NOT BE INPLACE FOR MORE THEN 8 WEEKS FROM WHEN IT IS INSTALLED. CONTRACTOR RESPONSIBLE TO CONTACT ANOKA COUNTY, CITY OF BLAINE, CITY OF BLAINE EMERGENCY RESPONSE FIRE AND POLICE AND POSTAL SERVICE A MINIMUM OF 7 DAYS PRIOR TO DETOUR BEING INSTALLED.
2	EXISTING TOPSOIL AND EXCAVATED MATERIALS MUST NOT BE PUSH OUT BEYOND CONSTRUCTION LIMITS AND MUST REMAIN INSIDE THE CONSTRUCTION LIMITS DUE TO WETLAND IMPACTS AND THREATENED AND ENDANGERD BOTANICAL AREAS OF CONCERN.
3	ITEM USED TO MOVE EXCESS RECLAIM MATERIAL AT THE RECLAIM AREA LIMITS TO CREATE A SMOOTH TRANSITION BETWEEN THE PROPOSED AND EXISTING PAVEMENT AND FOR SUPERELEVATION / GRADE CORRECTION.
4	TO BE USED FOR DITCH GRADING AND FOR DRESSING DISTURBED AREAS.
5	WATER TO BE USED FOR DUST CONTROL AS DIRECTED BY THE ENGINEER.
6	ITEM TO BE USED AS BASE FOR CATCH BASIN REPAIRS AND NATIONAL STREET GRAVEL BASE STREET APPROACH.
7	THIS WORK INCLUDES SPREADING, WATERING, COMPACTING, SHAPING, AND MAINTAINING THE BLENDED RECLAIMED MATERIAL TO THE SPECIFIC PROFILE AND CROSS SECTION.
8	ITEM USED TO HAUL EXCESS RECLAIM FROM TIE-IN POINTS AND REUSED ON SITE. USED FOR PROFILE CORRECTION AREAS. ITEM INCLUDES PLACEMENT, SHAPING, COMPACTION, AND MAINTENANCE OF MATERIAL.
9	ITEM INCLUDES 2" DEEP MILL WEST END OF PROJECT STA 13+56 TO 24+25, PAVED ST APPROACHES AND END OF PROJECT STA 63+36; SEE DETAILS FOR DIMENSIONS.
10	BITUMINOUS REMOVAL AREA FROM STA 25+25 TO 32+90 WILL REQUIRE THE MILLED AND OR RECLAIMED BITUMINOUS MATERIAL TO BE REMOVED FULL DEPTH FOR PLACEMENT OF NEW BITUMINOUS. THIS REMOVED MATERIAL IS TO BE USED AS BASE MATERIAL ON THIS PROJECT AND MUST MEET SPECIFICATIONS FOR AGGREGATE BASE SPEC 2211.
11	DETAIL MILLING AROUND MANHOLES, CATCH BASINS, GATE VALVES, AND ALONG CURB LINE IS INCIDENTAL TO THIS ITEM.
12	ITEM INCLUDES BITUMINOUS PATCHING AROUND NEW CURB, STORM STRUCTURE REPAIRS, AND ANY POTHOLES.
13	NATIONAL ST & PHEASANT ST APPRACHES SHALL BE PAVED AFTER MAINLINE, AND BEFORE FINAL STRIPING.
14	GATE VALVES TO BE ADJUSTED ONLY AS NECESSARY AS DETERMINED BY THE ENGINEER.
15	EACH ADJUST GATE VALVE INCLUDES TEMPORARY ADJUSTMENT BELOW RECLAIM / AGGREGATE BASE ELEVATION PRIOR TO OR IN CONJUNCTION WITH RECLAIMING OPERATION, AND FINAL ADJUSTMENT TO FINISH GRADE BETWEEN PAVING BASE AND WEAR LIFTS
16	ITEM INCLUDES FULL REPLACEMENT OF CASTING ADJUSTMENT RINGS. SEE STORM TABULATIONS FOR RING HEIGHTS. CASTINGS IN ROADWAY SHALL BE INSTALLED BETWEEN BASE AND WEAR LIFT PAVING
17	PAY HEIGHT IS MEASURED FROM INVERT OF OUTLET PIPE TO TOP OF PRECAST CONCRETE STRUCTURE PLUS AN ALLOWANCE OF 0.70 FEET FOR THE DEPTH OF THE CONCRETE BASE, REGARDLESS OF ITS ACTUAL THICKNESS. CONCRETE ADJUSTMENT RINGS ARE INCIDENTAL. CONNECTIONS TO EXISTING STORM SEWER ARE INCIDENTAL.
18	ITEM INCLUDES GROUTING OF INVERTS, DOGHOUSES, RINGS, STRUCTURES AND CASTINGS AS DIRECTED BY PLAN AND ENGINEER. SEE DRAINAGE TAB.
19	LOOP REPLACEMENT REQUIRED ONLY IF DAMAGED DURING CONSTRUCTION OPERATIONS BUT NOT EXPECTED. EXISTING SIGNAL PLANS ARE INCLUDED AT THE END OF THIS PLAN FOR EXISTING LOOP LOCATIONS.
20	ITEM ALSO USED FOR CONCRETE MEDIAN.
21	CONTRACTOR SHALL FURNISH, INSTALL, AND MAINTAIN TEMPORARY SIGNAGE WHENEVER EXISTING SIGNAGE IS REMOVED. TEMPORARY SIGNAGE SHALL BE INCIDENTAL TO TRAFFIC CONTROL.
22	ALL TRAFFIC CONTROL DEVICES SHALL CONFORM TO, AND BE INSTALLED IN ACCORDANCE WITH, THE MOST CURRENT REVISION OF THE "MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES". "DO NOT PASS, PASS WITH CARE, NO CENTER STRIPE, AND STOP HERE ON RED SIGNS SHALL BE INPLACE WHENEVER PERMANENT PAVEMENT MARKINGS ARE NOT PRESENT.
23	DO NOT PASS, PASS WITH CARE AND NO CENTER STRIPE SIGNS MUST BE INPLACE DURING MILLING, RECLAIMING OR PAVING OPERATIONS.
24	2 MESSAGE BOARDS, ONE ON THE EACH END OF PROJECT, SHALL BE INSTALLED 10 DAYS PRIOR TO ANY CONSTRUCTION; REFERENCE DETUR PLAN FOR DETAILS.
25	ALL DRAINAGE STRUCTURES AFFECTED BY THIS PROJECT MUST HAVE INLET PROTECTION.
26	ITEM USED FOR INSLOPE SHAPING FROM GRAVEL SHOULDER TO DITCH BOTTOM AS DIRECTED BY THE ENGINEER.
27	TYPE 3 FERTILIZER AND TYPE 25-121 SEED ARE INCIDENTAL TO THIS ITEM. SEE "BASIS OF PLANNED QUANTITIES" FOR APPLICATION RATES.
28	CENTERLINE AND LANE DESIGNATION SKIPS TO BE APPLIED AS SOON AS POSSIBLE ON MILLED SURFACE AND EACH NEW LIFT OF PAVEMENT; SKIPS MUST BE INPLACE BEFORE THE CONTRACTOR LEAVES FOR THE DAY. CONTRACTOR IS TO REMOVE PRIOR TO FINAL STRIPING.
29	FINAL STRIPING SHALL BE INSTALLED WITHIN 72 HOURS OF COMPLETION OF MAINLINE WEAR COURSE PAVING. CANNOT BE INSTALLED SOONER THAN 48 HOURS.
30	ALL EXISTING MEDIAN SIGNS SHALL HAVE THE MEDIAN BASE REPLACED WITH "KLEEN BREAK" CONCRETE MEDIAN BASE MOUNTS. CONTRACTOR TO NOTE PAYMENT FOR THESE KLEEN BREAK MOUNTS AND INSTALLATION SHALL BE INCIDENTALL TO ITEM 2564.502 "INSTALL SIGN TYPE C ". DETAIL FOR KLEEN BREAK MOUNTS CAN BE FOUND IN DETAILS, PLAN SHEET 31 AND PLAN SHEET 71.
31	ALL EXISTING "RIGHT TURN LANE" & "LEFT TURN LANE" SIGNS SHALL BE REPLACED WITH "RIGHT LANE MUST TURN RIGHT" & "LEFT LANE MUST TURN LEFT" SIGNS.
32	EXCAVATION COMMON "FLOOD PLANE" USED TO CREATE FLOOD PLANE ON COUNTY OWNED PROPERTY SEPARATE FROM ROADWAY QUANTITIES. SEE TAB DD. EXCESS MATERIAL EXCAVATED CAN BE USED OUTSIDE OF ROADWAY CONSTRUCTION AT THE DISCRETION OF THE ENGINEER. EXCESS QUANTITIES FOLLOWING THAT SHALL BE PUSHED TO A LOCATION NEARBY THE EXCAVATION, AND DETERMINED BY THE ENGINEER.
33	DEWATERING IS EXPECTED TO BE NEEDED TO ACHIEVE COMPACTION FOR THE WIDENING AREAS EXCAVATED TO ADD SHOULDERS , RTL AND BYPASS LANE. SEE GEOTECH REPORT IN THE SPECIAL PROVISIONS. CONTRACTOR IS RESPONSIBLE TO OBTAIN DEWATERING PERMIT, SEE SWPPP.
34	EXCAVATION SPECIAL SHALL BE THE EXCAVATED AREA BELOW THE COMMON EXCAVATION IN THE SHOULDER/ RTL & BYPASS LANE WIDENING AREAS OF WET OR UNSUITABLE MATERIALS - SEE CROSS SECTIONS & GEOTECH REPORT. THIS AREA SHALL BE REPLACED WITH COMPACTED SELECT GRANULAR BORROW.
35	ALL PAVEMENT MARKINGS WILL BE TESTED POST INSTALLATION BY ANOKA COUNTY. ANY PAVEMENT MARKINGS THAT DO NOT MEET RETRCREFLECTIVITY PER MNDOT SPEC. 2582.3C.3, CONTRACTOR IS RESPONSIBLE FOR REPLACING PAVEMENT MARKINGS AT ENGINEERS REQUEST AT NO COST TO ANOKA COUNTY.

NO	DATE	BY	CKD	APPR	REVISION
1	4/01/25	JF	ND		UPDATED EARTHWORK ITEM NUMBERS AND TAB LETTERS

NAME: P:\002-612-035 17 to 53\Plan\002612035_SEQ_TABS.dgn 04/03/2025 10:40:47 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:

DATE: 04/03/2025 LICENSE NO. 49046

DRAWN BY JJF DATE 12/01/24

DESIGN BY JJF DATE 12/01/24

CHECKED BY NJD DATE 01/28/25

ANOKA COUNTY

ANOKA COUNTY HIGHWAY DEPT.

SAP 002-612-035

STATEMENT OF ESTIMATED QUANTITIES

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

MNDOT STANDARD PLATES

PLATE NO.	DESCRIPTION
3007F	SHEAR REINFORCEMENT FOR PRECAST DRAINAGE STRUCTURES
4011E	PRECAST CONCRETE BASE
4020J	MANHOLE OR CATCH BASIN (FOR USE WITH OR WITHOUT TRAFFIC LOADS) (2 SHEETS)
4024A	48" DIA. PRECAST SHALLOW DEPTH CATCH BASIN - DESIGN SD
4026B	CONCRETE ENCASED CONCRETE ADJUSTING RINGS
4108F	ADJUSTING RINGS FOR CATCH BASINS AND MANHOLES
4110F	COVER CASTING FOR MANHOLE (FOR USE IN ALL TRAFFIC AREAS) – CASTING NO. 715 AND 716
4134A	CURB BOX CASTING FOR CATCH BASIN (FOR DESIGN B CURBS)- CASTING NO. 825
7100H	CONCRETE CURB AND GUTTER (DESIGN B AND DESIGN V)
7111J	INSTALLATION OF CATCH BASIN CASTINGS (CONCRETE CURB AND GUTTER)
8000K	TEMPORARY CHANNELIZERS (3 SHEETS)

BASIS OF PLANNED QUANTITIES

2357	BITUMINOUS MATERIAL FOR TACK COAT	0.05 GAL / SQ YD
2360	ALL BITUMINOUS PAVEMENT	115 LBS / SQ YD / IN
2581	REMOVABLE PREFORM PAVEMENT MARKING TAPE	2' AT 50' INTERVALS
2574	FERTILIZER TYPE 3	350 LBS./ ACRE
2575	SEED MIXTURE 25-121	61 LBS./ ACRE
2575	SEED MIXTURE 33-261	35 LBS./ ACRE
2575	HYDRAULIC REINFORCED FIBER MATRIX	3900 LBS./ ACRE
2575	RAPID STABILIZATION METHOD 3	6 MGAL / ACRE
2580	INTERIM PAVEMENT MARKINGS	PROJECT LENGTH X LANES X LIFTS / 50 X 3'

INDEX OF TABULATION CHARTS

SOILS NOTES

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.

NO	DATE	BY	CKD	APPR	REVISION
1	1/29/25	JF	ND		UPDATED PLATE INFO, REMOVED PLATE 8132B
1	4/01/25	JF	ND		UPDATED INDEX WITH TAB LETTERS AND SHEET NUMBERS

NAME: P:\002-612-035 17 to 53\Plan\002612035_SEQ_TABS.dgn 04/01/2025 2:24:27 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: [signature]

DATE: 04/03/2025 LICENSE NO. 49046

DRAWN BY JJF DATE 12/01/24

DESIGN BY JJF DATE 12/01/24

CHECKED BY NJD DATE 01/28/25

ANOKA COUNTY

ANOKA COUNTY HIGHWAY DEPT.

SAP 002-612-035

STANDARD PLATES, BASIS OF QUANTITIES, INDEX & SOILS NOTES

CLEARING & GRUBBING — A

NOTE	STATION		STATION	OFFSET			CLEARING	GRUBBING
							ACRE	ACRE
	40+80	-	43+00	250 RT	-	100 RT	0.185	0.185
						TOTAL	0.185	0.185

GENERAL NOTES:
TREES IN FLOODPLAIN MITIGATION AREA WERE CLEARED DURING THE WINTER PRIOR TO CONTRACT.
THESE TREES SHALL BE GRUBBED AND REMOVED ALONG WITH THE TREES THAT HAD BEEN CUT DOWN IN THE WINTER AND GRADED TO FLOODPLAIN MITIGATION ELEVATION

REMOVALS — B

ALI	LOCATION	STATION	TO	STATION	MILLING	RECLAIM		SAWING		REMOVE		
					2" MILL	FULL DEPTH RECLAIMATION	HAUL FULL DEPTH RECLAIMATION	CONCRETE FULL DEPTH	BITUMINOUS FULL DEPTH	CONCRETE CURB & GUTTER	CONCRETE WALK	BITUMINOUS PAVEMENT
					SQ YD	SQ YD	CU YD	LIN FT	LIN FT	LIN FT	SQ FT	SQ YD
ALIRD5	MAINLINE EB	13+56		24+25	3815							
	MAINLINE WB	13+78		24+25	5036							
	MAINLINE EB	24+25							47			
	MAINLINE WB	24+25							30			
	MAINLINE	24+25		32+90								7231
	PHEASENT S.	26+13		27+96					72			322
	PHEASENT N.	26+45		27+78					96			153
	S.W. PED RAMP	26+57						12	27	23	60	5
	MAINLINE	32+90		63+37		9511	600					
	NATIONAL ST	45+00		45+73	11				24			
	END PROJECT	63+36			11				41			
				TOTAL	8873	9511	600	12	337	23	60	7711

REMOVALS GENERAL NOTES:
ADDITIONAL REMOVAL ITEMS CAN BE FOUND IN TAB C "STORM SEWER" AND TAB E "CULVERTS".

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-612-035 17 to 53\Plan\002612035_SEQ_TABS.dgn 01/30/2025 7:04:00 AM

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DATE: 01/30/2025 LICENSE NO. 49046

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ANOKA COUNTY
HIGHWAY DEPT.

SAP 002-612-035

TABULATIONS

STORM SEWER

C

NO.	STA.	O/S	TYPE	ACTION	NEW CASTING TYPE	RING HEIGHT (INCIDENTAL)	CASTING ASSEMBLY	STORM DRAIN INLET PROTECTION	SAWING CONCRETE FULL DEPTH	SAWING BITUMINOUS FULL DEPTH	REMOVE DRAINAGE STRUCTURE	REMOVE CURB & GUTTER	REMOVE CONCRETE WALK	REMOVE CONCRETE MEDIAN	REMOVE BITUMINOUS PAVEMENT	CONCRETE CURB & GUTTER DESIGN B412 (MOD)	CONCRETE CURB & GUTTER DESIGN B424	TYPE SP 12.5 BITUMINOUS MIXTURE FOR PATCHING	GROUT CATCH BASIN OR MANHOLE	CONSTRUCT DRAINAGE STRUCTURE DESIGN 48"	CONNECT TO EXISTING STORM SEWER (INCIDENTAL)	ADJUST GATE VALVE	NOTES
						LIN FT	EACH	EACH	LIN FT	LIN FT	EACH	LIN FT	SQ FT	SQ FT	SQ YD	LIN FT	LIN FT	TON	EACH	LIN FT	EACH	EACH	
100	15+87	-67	CB	GROUT				1											1				
101	16+30	-6	CB	RE-RING	A	0.6	1	1	14	14		10		20	3	10		1					GROUT DOGHOUSE
102	16+31	-1	CB	RE-RING	A	0.9	1	1	14	14		10		20	3	10		1					
103	15+88	30	CB	RE-RING	C	0.9	1	1	5	14		10			3		10	1					
104	17+47	-62	CB	RE-RING	C	0.2	1	1	5	14		10			3		10	1					
105	17+33	-6	CB	RE-RING	A	0.5	1	1	14	14		10		20	3	10		1					GROUT DOGHOUSE
106	17+31	-1	CB	GROUT				1											1				GROUT DOGHOUSE
107	17+47	30	CB	RE-RING	C	0.6	1	1	5	14		10			3		10	1					
108	17+87	-6	CB	RE-RING	A	0.4	1	1	14	14		10		20	3	10		1					
109	17+87	-1	CB	GROUT				1											1				
110	18+54	-61	CB	GROUT				1											1				
111	18+71	30	CB	RECON.	C	0.5	1	1	5	14	1	10			3		10	1		4.0	2		24" WEST 4.4 INV., 24" EAST 4.4' INV.
112	20+38	-61	CB	RE-RING	C	0.9	1	1	5	14		10			3		10	1					
113	20+39	-27	CB	GROUT				1											1				
114	20+38	-1	CB	RE-RING	A	0.4	1	1	14	14		10		20	3	10		1					
115	20+38	30	CB	RE-RING	C	0.4	1	1	5	14		10			3		10	1					
116	22+37	-58	CB	GROUT				1											1				
117	22+37	-25	CB	RE-RING	A	0.7	1	1	14	14		10		20	3	10		1					
118	22+37	-3	CB	GROUT				1											1				
119	22+37	31	CB	GROUT				1											1				GROUT DOGHOUSE
120	24+37	-53	CB	GROUT				1											1				
121	24+38	-20	CB	GROUT				1											1				
122	24+38	-11	CB	GROUT				1											1				GROUT DOGHOUSE
123	24+38	37	CB	GROUT				1											1				
124	26+13	37	CB	RE-RING	C	0.2	1	1	5	14		10	60		3		10	1					
125	26+66	-101	CB	GROUT				1											1				
126	27+43	-104	CB	GROUT				1											1				
127	28+11	-57	CB	RE-RING	C	0.8	1	1	5	30		30			6		10	2					
128	29+71	-56	CB	RE-RING	C	0.6	1	1	5	14		10			3		10	1					
129	29+71	-6	CB	RE-RING	A	1.0	1	1	14	14		10		20	3	10		1					
130	29+71	0	CB	GROUT				1											1				
131	29+71	31	CB	RE-RING	C	0.6	1	1	5	14		10			3		10	1					
132	31+86	-43	CB	GROUT				1											1				GROUT DOGHOUSE
133	31+86	-9	CB	GROUT				1											1				
134	31+86	0	CB	GROUT				1											1				
135	31+86	31	CB	RE-RING	C	0.8	1	1	5	14		10		20	3		10	1					CLEAN
136	32+57	-6	CB	GROUT				1											1				GROUT DOGHOUSE / CLEAN
137	32+57	0	CB	GROUT				1											1				GROUT DOGHOUSE / CLEAN
200	17+88	28	MH	GROUT															1				GROUT DOGHOUSE
500	26+58	46	GV	ADJUST																		1	
501	27+00	48	GV	ADJUST																		1	
502	26+99	52	GV	ADJUST																		1	
503	27+84	-53	GSV	ADJUST																		1	ADJUST GAS VALVE SEE NOTE (1)
					TOTAL	11.0	18	38	153	268	1	200	60	160	57	70	110	19	21	4.0	2	4	

NOTE: CATCH BASIN REPAIRS WITHIN THE BITUMINOUS REMOVAL AREA STA 24+25 - STA 32+90 ARE SHOWN AND QUANTIFIED WITH SAWCUTS / BITUMINOUS PATCHING ETC. THESE STRUCTURES MUST BE REPAIRED PRIOR TO FINAL PAVING. IF THE STRUCTURES ARE REPAIRED PRIOR TO EXISTING BITUMINOUS REMOVAL, FOLLOW DETAIL SHEET PAGE 29. *NOTE: IF THE BITUMINOUS IS REMOVED PRIOR TO REPAIRS, ITEMS SHOWN ON THE DETAIL SHEET PAGE 29 THERE WILL BE NO PAYMENT FOR THESE ITEMS AT THESE LOCATIONS.

(1) CONTRACTOR TO CONTACT GAS COMPANY TO ARRANGE GAS COMPANY TO ADJUST VALVE OR GET APPROVAL TO ADJUST FROM GAS COMPANY PRIOR TO ANY MODIFICATION.

NO	DATE	BY	CKD	APPR	REVISION

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ANOKA COUNTY

ANOKA COUNTY HIGHWAY DEPT.

SAP 002-612-035

TABULATIONS

Sheet 5 of 110 Sheets

CASTING ASSEMBLIES SUMMARY — D

ASSEMBLY	RING OR FRAME CASTING	COVER OR GRATE CASTING	CURB BOX	DESCRIPTION	NOTES	QUANTITY
A	NEENAH R-3030	L	YES	NEENAH R-3030-L		7
C	NEENAH R-3250-DVSP	V	YES	NEENAH R-3250-DVSP		11

ALL CASTING HEIGHTS ARE TO BE VERIFIED IN THE FIELD

ALL MANHOLE COVERS SHOULD BE LABELED AS STORM OR SANITARY

NEW MANHOLE CASTINGS TO BE INSTALLED FLUSH WITH THE MILLED ASPHALT SURFACE.

ALL MANHOLES TO BE WRAPPED WITH INFI- SHIELD. THIS WORK IS INCIDENTAL TO THE CASTING ASSEMBLEY.

ADJUSTING RINGS TO BE INSTALLED AND GLUED DURING THE PAVING OPERATION.

ADJUSTING RINGS TO BE RECESSED 1/4" FROM TOP OF FINISHED MAT

CULVERTS — E

ALI	LOCATION	STA	OFFSET	INV	TO	STA	OFFSET	INV	REMOVE PIPE CULVERTS	INSTALL 18" RC SAFETY APRON	INSTALL 18" RC PIPE CULVERT CLASS V	INSTALL 18" SAFETY GRATE FOR RC APRON	INSTALL 18" CS SAFETY APR & GRATE DES 3128	INSTALL 18" CS PIPE CULVERT	INSTALL CULVERT END CONTROLS	INSTALL RANDOM RIPRAP CLASS II
									LIN FT	EACH	LIN FT	EACH	EACH	LIN FT	EACH	TON
ALIRD5	NATIONAL ST	44+95	-42	898.50		45+72	-46	899.00	60	2	50	2			1	7
	FIELD ENT	51+30	-33	901.85		51+60	-33	902.05	30				2	22	1	7
								TOTAL	90	2	50	2	2	22	2	14

BITUMINOUS AND AGGREGATE SUMMARY — F

ALI	LOCATION	STA	TO	STA	BASE CLASS 5	4" PREFORMED REMOVABLE TAPE	BITUMINOUS MATERIAL FOR TACK COAT	TYPE SP 12.5 NON-WEAR (3,B)	TYPE SP 12.5 WEAR (3,C)	TYPE SP 12.5 WEAR ST APPROACH (3,C)
					TON	LIN FT	GALLON	TON	TON	TON
ALIRD5	MAINLINE EB	13+55		24+24		321	191		439	
	MAINLINE WB	13+78		24+24		321	252		579	
	MAINLINE	24+24		32+90		689	723	832	1663	
	PHEASANT S.	26+13		27+96	7		32			74
	PHEASANT N.	26+45		27+78	7		15			35
	MAINLINE	32+90		63+37		1097	654		3008	
	NATIONAL ST	45+00		45+73	15		11			24
				TOTAL	29	2428	1878	832	5689	134

BITUMINOUS AND AGGREGATE NOTES:
ADDITIONAL BITUMINOUS AND AGGREGATE ITEMS CAN BE FOUND IN TAB C "STORM SEWER".

CONCRETE — G

ALI	LOCATION	STA	TO	STA	OFFSET	CONCRETE CURB & GUTTER DESIGN B424	4" CONCRETE WALK	CONCRETE CURB RAMP WALK	TRUNCATED DOMES	DRILL AND GROUT REINF BAR (EPOXY COATED)	CONCRETE DRAINAGE FLUME
						LIN FT	SQ FT	SQ FT	SQ FT	EACH	SQ YD
ALIRD5	S.W. QUAD PHEASANT	26+08		26+18	RT		60				
	S.W. QUAD PHEASANT	26+42		26+52	RT	23		123	40	17	
	FLUME LWB SHOULDER	63+10		63+37	LT						7
	FLUME LEB SHOULDER	63+10		63+37	RT						7
					TOTAL	23	60	123	40	17	14

CONCRETE NOTES:
ADDITIONAL CONCRETE ITEMS CAN BE FOUND IN TAB C "STORM SEWER".

TURF ESTABLISHMENT & EROSION CONTROL — H

ALI	LOCATION	STA	TO	STA	SILT FENCE TYPE MACHINE SLICED	ROLLED EROSION PREVENTION CAT 25	FERTILIZER TYPE 3	COMMON TOPSOIL BORROW	SEEDING	SEED MIXTURE 25-121	SEED MIXTURE 33-261	HYDRAULIC REINFORCED FIBER MATRIX	RAPID STABILIZATION METHOD 3	RANDOM RIPRAP CLASS II
					LIN FT	SQ YD	POUND	CU YD	ACRE	POUND	POUND	POUND	MGAL	TON
ALIRD5	LWB	33+00	-	45+21	1248	2120	153	233	0.438	26.7		1708	2.6	
	LEB	33+00	-	63+35	3052	3961	286	436	0.818	49.9		3190	4.9	
	LWB	45+45	-	63+35	1784	2142	155	236	0.442	27.0		1724	2.7	
	LWB FLUME	63+06												6
	LEB FLUME	63+06												6
	FLOODPLAIN MIT. N&S					1401			0.290		10.1	1131	1.7	
				PROJECT	6084	9624	594	905	1.988	103.6	10.1	7753	11.9	12

TURF ESTABLISHMENT & EROSION CONTROL NOTES:
ADDITIONAL RIPRAP QUANTITIES CAN BE FOUND IN TAB E "CULVERTS".

LOOPS — I

LOOP DETECTOR DESIGN NMC 6'X6'
EACH
4

ITEM SPECIFIC NOTES-
[1] ITEM INCLUDED AND INTENDED TO BE USED FOR REPLACEMENT OF ANY DAMAGED OR DESTROYED SIGNAL LOOPS DUE TO MILLING OR RECLAIMING OPERATIONS. ITEM WILL ONLY BE USED IF DAMAGE OCCURS, BUT IS NOT EXPECTED.

[2] SIGNAL MUST BE MAINTAINED AND IN OPERATION DURING CONSTRUCTION AND ANY LOOP REPLACEMENTS. CONTRACTOR MUST COORDINATE WITH ANOKA COUNTY SIGNAL DEPARTMENT FOR REMOVALS AND INSTALLATION.

UTILITY OWNERS / CONTACTS — J

ANOKA COUNTY SIGNALS MARK LEKSON MARK.LEKSON@ANOKACOUNTYMN.GOV PH 763-324-3139	**MAGELLAN MIDSTREAM PIPELINE** CLAIR MADSEN CLAIR.MADSEN@ONEOK.COM PH 612-750-1806	**CENTER POINT ENERGY** AUSTIN SOWERS AUSTIN.SOWERS@CENTERPOINTENERGY.COM PH 612-321-5421
CITY OF BLAINE DAN SCHLUENDER DSCHLUENDER@BLAINEMN.GOV PH 763-785-6158	**XCEL ENERGY** CRYSTAL CHRISTIANSON CRYSTAL.A.CHRISTIANSON@XCELENERGY.COM	**LUMEN / CENTURYLINK** CHUCK DAHER CDAHER@CONGRUEX.COM PH 612-298-2825
MNDOT FIBER ROBERT MELCHER ROBERT .MELCHER@STATE.MN.US PH 651-366-5750		

NO	DATE	BY	CKD	APPR	REVISION

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ANOKA COUNTY HIGHWAY DEPT.

SAP 002-612-035

TABULATIONS

Sheet 6 of 110 Sheets

STATION	LENGTH (FT)	EXCAVATION END AREAS			EXCAVATION VOLUMES			EXCAVATION TOTALS	
		TOPSOIL	COMMON	EXCAVATION SPECIAL	TOPSOIL	COMMON	EXCAVATION SPECIAL	COMMON [1]	EXCAVATION SPECIAL [2]
		SF	SF	SF	CY	CY	CY	CY	CY
33+00.00		0.56	0.37	0.00					
33+50.00	50.00	0.93	0.33	0.00	1.38	0.65	0.00	2.03	0.00
34+00.00	50.00	5.85	0.12	0.00	6.28	0.42	0.00	6.69	0.00
34+50.00	50.00	5.53	0.24	0.00	10.54	0.33	0.00	10.87	0.00
35+00.00	50.00	8.21	0.02	28.12	12.72	0.24	26.04	12.96	26.04
35+50.00	50.00	8.77	0.03	34.57	15.72	0.05	58.05	15.77	58.05
36+00.00	50.00	7.09	0.03	33.85	14.69	0.06	63.35	14.74	63.35
36+50.00	50.00	6.94	0.01	34.75	12.99	0.04	63.52	13.03	63.52
37+00.00	50.00	6.83	0.01	34.91	12.75	0.02	64.50	12.77	64.50
37+50.00	50.00	4.83	0.05	35.00	10.80	0.06	64.73	10.85	64.73
38+00.00	50.00	5.64	0.06	34.66	9.69	0.10	64.50	9.80	64.50
38+50.00	50.00	5.39	0.05	35.06	10.21	0.10	64.56	10.31	64.56
39+00.00	50.00	5.29	0.05	34.78	9.89	0.09	64.67	9.98	64.67
39+50.00	50.00	8.21	0.04	69.70	12.50	0.08	96.74	12.58	96.74
40+00.00	50.00	9.41	0.03	70.90	16.31	0.06	130.19	16.38	130.19
40+50.00	50.00	10.92	0.03	76.25	18.82	0.06	136.25	18.88	136.25
41+00.00	50.00	11.61	0.03	75.37	20.86	0.06	140.39	20.92	140.39
41+50.00	50.00	11.70	0.04	75.23	21.58	0.06	139.44	21.65	139.44
42+00.00	50.00	11.87	0.02	118.85	21.82	0.06	179.70	21.88	179.70
42+50.00	50.00	21.96	0.02	115.71	31.32	0.04	217.19	31.36	217.19
43+00.00	50.00	20.31	0.03	110.08	39.14	0.05	209.06	39.19	209.06
43+50.00	50.00	11.97	0.02	117.11	29.89	0.05	210.36	29.94	210.36
44+00.00	50.00	11.52	0.04	107.80	21.75	0.06	208.25	21.81	208.25
44+50.00	50.00	10.56	0.02	107.19	20.44	0.06	199.06	20.50	199.06
45+00.00	50.00	14.63	0.09	108.71	23.32	0.10	199.91	23.43	199.91
45+50.00	50.00	19.34	4.83	123.16	31.45	4.56	214.69	36.01	214.69
46+00.00	50.00	15.06	0.02	155.77	31.85	4.49	258.27	36.34	258.27
46+50.00	50.00	11.92	0.18	160.74	24.98	0.19	293.06	25.17	293.06
47+00.00	50.00	12.93	0.18	159.73	23.01	0.33	296.73	23.34	296.73
47+50.00	50.00	13.68	0.01	163.91	24.64	0.18	299.67	24.81	299.67
48+00.00	50.00	11.45	0.01	116.56	23.27	0.02	259.69	23.29	259.69
48+50.00	50.00	11.05	0.01	112.53	20.83	0.02	212.12	20.85	212.12
49+00.00	50.00	10.68	0.02	113.34	20.12	0.03	209.14	20.15	209.14
49+50.00	50.00	9.71	0.00	109.14	18.88	0.02	206.00	18.90	206.00
50+00.00	50.00	10.78	0.01	112.96	18.97	0.01	205.65	18.98	205.65
50+50.00	50.00	8.37	0.02	72.84	17.73	0.03	172.04	17.76	172.04
51+00.00	50.00	8.19	0.02	73.30	15.33	0.04	135.31	15.37	135.31
51+50.00	50.00	7.61	0.01	72.04	14.63	0.03	134.57	14.66	134.57
52+00.00	50.00	7.90	0.01	69.65	14.36	0.02	131.19	14.38	131.19
52+50.00	50.00	7.73	0.02	63.46	14.47	0.03	123.25	14.50	123.25
53+00.00	50.00	8.48	0.04	70.74	15.01	0.06	124.26	15.06	124.26
53+50.00	50.00	8.31	0.04	70.31	15.55	0.07	130.60	15.62	130.60
54+00.00	50.00	8.15	0.05	70.92	15.24	0.08	130.77	15.32	130.77
54+50.00	50.00	8.39	0.04	72.22	15.31	0.08	132.54	15.40	132.54
55+00.00	50.00	8.20	0.04	72.53	15.36	0.07	134.03	15.44	134.03
55+50.00	50.00	8.10	0.01	71.44	15.09	0.05	133.31	15.14	133.31
56+00.00	50.00	8.28	0.02	72.39	15.17	0.03	133.18	15.19	133.18
56+50.00	50.00	8.02	0.01	73.60	15.09	0.03	135.18	15.12	135.18
57+00.00	50.00	8.43	0.01	74.09	15.23	0.02	136.75	15.25	136.75
57+50.00	50.00	9.04	0.01	82.61	16.18	0.02	145.09	16.19	145.09
58+00.00	50.00	8.69	0.01	74.87	16.42	0.02	145.81	16.44	145.81
58+50.00	50.00	8.90	0.03	76.42	16.29	0.04	140.08	16.32	140.08
59+00.00	50.00	8.57	0.02	76.17	16.18	0.05	141.29	16.22	141.29
59+50.00	50.00	8.58	0.02	75.72	15.88	0.04	140.64	15.92	140.64
60+00.00	50.00	8.29	0.02	79.28	15.62	0.04	143.52	15.66	143.52
60+50.00	50.00	8.16	0.03	79.08	15.23	0.05	146.63	15.28	146.63
61+00.00	50.00	8.43	0.30	77.88	15.36	0.31	145.33	15.67	145.33
61+50.00	50.00	8.07	0.03	73.81	15.28	0.31	140.45	15.58	140.45
62+00.00	50.00	7.63	0.03	74.43	14.54	0.06	137.26	14.59	137.26
62+50.00	50.00	7.32	0.04	74.95	13.84	0.06	138.31	13.91	138.31
63+00.00	50.00	6.80	0.02	71.16	13.07	0.06	135.29	13.13	135.29
SUB TOTAL					1040.91	14.36	8642.17	**1055.27**	**8642.17**

EXCAVATION NOTES:
[1] INCLUDES TOPSOIL

[2] ROADCORE EXCAVATION FOR SELECT EMBANKMENT.

NO	DATE	BY	CKD	APPR	REVISION
1	4/01/25	JF	ND		ADDED NOTES

NAME: P:\002-612-035 17 to 53\Plan\002612035_EW.dgn 04/01/2025 2:25:36 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: 04/03/2025 LICENSE NO. 49046

DRAWN BY JJF DATE 12/01/24

DESIGN BY JJF DATE 12/01/24

CHECKED BY NJD DATE 01/28/25

ANOKA COUNTY

ANOKA COUNTY HIGHWAY DEPT.

SAP 002-612-035

EARTHWORK

Sheet 7 of 110 Sheets

STATION	LENGTH (FT)	EMBANKMENT END AREAS					EMBANKMENT VOLUMES				AGGREGATE VOLUMES	
		TOPSOIL	FILL OUTSIDE CORE	SELECT GRANULAR	AGGREGATE SUBBASE	AGGREGATE SHOULDERING	TOPSOIL	FILL OUTSIDE CORE	COMMON [3]	SELECT GRANULAR [4]	AGGREGATE SUBBASE	AGGREGATE SHOULDERING
		SF	SF	SF	SF	SF	CY	CY	CY	CY	CY	CY
33+00.00	50.00	0.81	0.00	0.00	0.00	1.20						
33+50.00	50.00	0.57	0.00	0.00	0.00	1.20	1.28	0.00	1.28	0.00	0.00	2.22
34+00.00	50.00	6.35	4.25	0.00	0.00	1.20	6.41	3.94	10.34	0.00	0.00	2.22
34+50.00	50.00	6.05	2.37	0.00	0.00	1.20	11.48	6.13	17.61	0.00	0.00	2.22
35+00.00	50.00	8.66	7.63	25.71	3.94	1.20	13.62	9.26	22.88	23.81	3.65	2.22
35+50.00	50.00	8.83	12.42	34.10	4.99	1.20	16.19	18.56	34.76	55.38	8.27	2.22
36+00.00	50.00	6.56	10.87	34.33	3.54	1.20	14.25	21.56	35.81	63.36	7.90	2.22
36+50.00	50.00	6.28	9.67	31.89	5.27	1.20	11.89	19.02	30.91	61.31	8.16	2.22
37+00.00	50.00	6.24	7.35	31.13	5.29	1.20	11.59	15.76	27.35	58.35	9.78	2.22
37+50.00	50.00	3.83	4.15	33.50	5.20	1.20	9.32	10.65	19.97	59.84	9.71	2.22
38+00.00	50.00	5.14	5.08	35.40	5.16	1.20	8.31	8.55	16.85	63.80	9.59	2.22
38+50.00	50.00	4.98	5.47	36.70	5.17	1.20	9.37	9.77	19.14	66.76	9.56	2.22
39+00.00	50.00	4.71	4.99	36.42	3.96	1.20	8.97	9.69	18.66	67.70	8.45	2.22
39+50.00	50.00	7.06	9.57	70.26	10.40	1.20	10.90	13.48	24.38	98.78	13.30	2.22
40+00.00	50.00	8.70	13.55	74.39	10.33	1.20	14.59	21.41	36.00	133.94	19.19	2.22
40+50.00	50.00	10.62	19.52	85.91	7.45	1.20	17.89	30.62	48.51	148.43	16.46	2.22
41+00.00	50.00	11.31	21.51	89.56	10.98	1.20	20.31	37.99	58.30	162.47	17.06	2.22
41+50.00	50.00	11.42	22.61	87.36	10.99	1.20	21.05	40.85	61.90	163.81	20.34	2.22
42+00.00	50.00	8.99	19.49	147.88	16.34	1.20	18.90	38.98	57.88	217.81	25.31	2.22
42+50.00	50.00	7.45	16.69	135.70	16.24	1.20	15.22	33.50	48.72	262.57	30.17	2.22
43+00.00	50.00	6.97	12.68	118.19	16.57	1.20	13.35	27.19	40.55	235.08	30.38	2.22
43+50.00	50.00	6.81	15.61	125.03	16.60	1.20	12.76	26.19	38.95	225.20	30.71	2.22
44+00.00	50.00	6.86	12.87	125.65	16.12	1.20	12.66	26.37	39.03	232.11	30.30	2.22
44+50.00	50.00	7.51	15.21	132.35	15.78	1.20	13.31	26.00	39.31	238.89	29.54	2.22
45+00.00	50.00	8.71	14.03	137.09	16.43	1.20	15.02	27.07	42.09	249.48	29.82	2.22
45+50.00	50.00	4.60	17.68	154.78	41.45	0.60	12.32	29.36	41.69	270.25	53.59	1.67
46+00.00	50.00	10.54	29.35	220.87	21.74	1.20	14.02	43.55	57.56	347.82	58.51	1.67
46+50.00	50.00	10.36	28.54	222.53	21.84	1.20	19.35	53.60	72.95	410.56	40.35	2.22
47+00.00	50.00	9.36	24.46	210.19	11.00	1.20	18.26	49.07	67.33	400.67	30.41	2.22
47+50.00	50.00	8.53	23.14	199.50	22.13	1.20	16.56	44.07	60.64	379.34	30.68	2.22
48+00.00	50.00	8.20	16.62	141.16	16.81	1.20	15.49	36.81	52.31	315.43	36.06	2.22
48+50.00	50.00	7.69	13.61	130.30	16.70	1.20	14.71	27.99	42.70	251.35	31.03	2.22
49+00.00	50.00	7.18	12.48	128.45	16.61	1.20	13.77	24.16	37.93	239.58	30.84	2.22
49+50.00	50.00	5.90	9.91	119.11	16.51	1.20	12.11	20.73	32.84	229.22	30.67	2.22
50+00.00	50.00	7.21	12.47	127.95	16.68	1.20	12.14	20.72	32.86	228.76	30.73	2.22
50+50.00	50.00	6.68	8.94	77.23	11.22	1.20	12.86	19.82	32.69	189.98	25.83	2.22
51+00.00	50.00	6.46	9.79	81.53	11.14	1.20	12.17	17.34	29.51	147.00	20.70	2.22
51+50.00	50.00	5.61	9.43	69.97	11.14	1.20	11.18	17.80	28.97	140.28	20.63	2.22
52+00.00	50.00	5.91	8.05	73.75	11.40	1.20	10.67	16.19	26.85	133.07	20.87	2.22
52+50.00	50.00	6.31	8.31	67.84	5.47	1.20	11.31	15.15	26.46	131.10	15.62	2.22
53+00.00	50.00	6.82	10.15	78.67	11.13	1.20	12.16	17.09	29.25	135.66	15.37	2.22
53+50.00	50.00	6.59	8.21	73.80	11.16	1.20	12.42	17.00	29.42	141.18	20.64	2.22
54+00.00	50.00	6.41	8.16	74.80	11.38	1.20	12.04	15.16	27.19	137.59	20.87	2.22
54+50.00	50.00	6.77	9.68	77.41	11.11	1.20	12.20	16.52	28.72	140.94	20.82	2.22
55+00.00	50.00	6.49	8.44	75.69	11.23	1.20	12.28	16.78	29.06	141.76	20.69	2.22
55+50.00	50.00	6.44	8.58	74.45	11.13	1.20	11.97	15.76	27.73	139.02	20.70	2.22
56+00.00	50.00	6.70	8.61	75.16	11.21	1.20	12.17	15.92	28.08	138.53	20.69	2.22
56+50.00	50.00	6.30	7.80	74.10	11.37	1.20	12.04	15.19	27.23	138.20	20.91	2.22
57+00.00	50.00	6.83	8.69	73.75	11.44	1.20	12.16	15.27	27.43	136.90	21.12	2.22
57+50.00	50.00	7.53	12.80	84.56	11.68	1.20	13.30	19.90	33.19	146.58	21.41	2.22
58+00.00	50.00	5.37	11.01	77.03	11.44	1.20	11.94	22.05	33.99	149.62	21.41	2.22
58+50.00	50.00	7.46	10.96	80.89	11.45	1.21	11.88	20.34	32.22	146.22	21.19	2.23
59+00.00	50.00	7.01	9.51	80.33	11.48	1.30	13.40	18.95	32.35	149.28	21.23	2.32
59+50.00	50.00	7.00	8.90	78.55	11.49	1.38	12.97	17.05	30.02	147.11	21.27	2.48
60+00.00	50.00	6.62	9.40	83.46	11.49	1.20	12.61	16.94	29.56	150.01	21.28	2.39
60+50.00	50.00	6.50	9.26	82.88	11.38	1.20	12.15	17.28	29.43	154.02	21.18	2.22
61+00.00	50.00	6.86	9.39	81.95	11.39	1.50	12.37	17.27	29.64	152.62	21.08	2.50
61+50.00	50.00	6.43	7.97	77.04	9.67	1.20	12.31	16.07	28.38	147.21	19.50	2.50
62+00.00	50.00	5.81	6.55	72.88	11.39	1.20	11.33	13.44	24.78	138.81	19.50	2.22
62+50.00	50.00	5.51	6.70	73.00	11.29	1.20	10.48	12.27	22.75	135.07	21.00	2.22
63+00.00	50.00	5.25	5.85	63.27	10.33	1.20	9.96	11.62	21.58	126.18	20.02	2.22
SUB TOTAL							769.69	1266.79	**2036.47**	**9695.82**	**1276.05**	**133.31**

EMBANKMENT NOTES:
[3] INCLUDES TOPSOIL AND FILL OUTSIDE CORE.

[4] SELECT GRANLAR EMBANKMENT IN ROADWAY CORE

NO	DATE	BY	CKD	APPR	REVISION
1	4/01/25	JF	ND		ADDED NOTES

NAME: P:\002-612-035 17 to 53\Plan\002612035_EW.dgn 04/01/2025 2:25:57 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: 04/03/2025 LICENSE NO. 49046

DRAWN BY JJF DATE 12/01/24
DESIGN BY JJF DATE 12/01/24
CHECKED BY NJD DATE 01/28/25

ANOKA COUNTY HIGHWAY DEPT.

SAP 002-612-035

EARTHWORK

Sheet 8 of 110 Sheets

EARTHWORK SUMMARY — AA

STATION	EXCAVATION TOTALS		EMBANKMENT	
	COMMON	EXCAVATION SPECIAL	COMMON	SELECT GRANULAR
	[1]	[2]	[3]	[4]
	CY	CY	CY	CY
33+00.00				
33+50.00	2	0	1	0
34+00.00	7	0	10	0
34+50.00	11	0	18	0
35+00.00	13	26	23	24
35+50.00	16	58	35	55
36+00.00	15	63	36	63
36+50.00	13	64	31	61
37+00.00	13	65	27	58
37+50.00	11	65	20	60
38+00.00	10	65	17	64
38+50.00	10	65	19	67
39+00.00	10	65	19	68
39+50.00	13	97	24	99
40+00.00	16	130	36	134
40+50.00	19	136	49	148
41+00.00	21	140	58	162
41+50.00	22	139	62	164
42+00.00	22	180	58	218
42+50.00	31	217	49	263
43+00.00	39	209	41	235
43+50.00	30	210	39	225
44+00.00	22	208	39	232
44+50.00	21	199	39	239
45+00.00	23	200	42	249
45+50.00	36	215	42	270
46+00.00	36	258	58	348
46+50.00	25	293	73	411
47+00.00	23	297	67	401
47+50.00	25	300	61	379
48+00.00	23	260	52	315
48+50.00	21	212	43	251
49+00.00	20	209	38	240
49+50.00	19	206	33	229
50+00.00	19	206	33	229
50+50.00	18	172	33	190
51+00.00	15	135	30	147
51+50.00	15	135	29	140
52+00.00	14	131	27	133
52+50.00	15	123	26	131
53+00.00	15	124	29	136
53+50.00	16	131	29	141
54+00.00	15	131	27	138
54+50.00	15	133	29	141
55+00.00	15	134	29	142
55+50.00	15	133	28	139
56+00.00	15	133	28	139
56+50.00	15	135	27	138
57+00.00	15	137	27	137
57+50.00	16	145	33	147
58+00.00	16	146	34	150
58+50.00	16	140	32	146
59+00.00	16	141	32	149
59+50.00	16	141	30	147
60+00.00	16	144	30	150
60+50.00	15	147	29	154
61+00.00	16	145	30	153
61+50.00	16	140	28	147
62+00.00	15	137	25	139
62+50.00	14	138	23	135
63+00.00	13	135	22	126
PROJECT TOTAL	**1055**	**8642**	**2036**	**9696**

AGG SUMMARY — BB

STATION	AGGREGATE VOLUMES	
	AGGREGATE SUBBASE	AGGREGATE SHOULDERING
	[5]	[6]
	CY	CY
33+00.00		
33+50.00	0	2
34+00.00	0	2
34+50.00	0	2
35+00.00	4	2
35+50.00	8	2
36+00.00	8	2
36+50.00	8	2
37+00.00	10	2
37+50.00	10	2
38+00.00	10	2
38+50.00	10	2
39+00.00	8	2
39+50.00	13	2
40+00.00	19	2
40+50.00	16	2
41+00.00	17	2
41+50.00	20	2
42+00.00	25	2
42+50.00	30	2
43+00.00	30	2
43+50.00	31	2
44+00.00	30	2
44+50.00	30	2
45+00.00	30	2
45+50.00	54	2
46+00.00	59	2
46+50.00	40	2
47+00.00	30	2
47+50.00	31	2
48+00.00	36	2
48+50.00	31	2
49+00.00	31	2
49+50.00	31	2
50+00.00	31	2
50+50.00	26	2
51+00.00	21	2
51+50.00	21	2
52+00.00	21	2
52+50.00	16	2
53+00.00	15	2
53+50.00	21	2
54+00.00	21	2
54+50.00	21	2
55+00.00	21	2
55+50.00	21	2
56+00.00	21	2
56+50.00	21	2
57+00.00	21	2
57+50.00	21	2
58+00.00	21	2
58+50.00	21	2
59+00.00	21	2
59+50.00	21	2
60+00.00	21	2
60+50.00	21	2
61+00.00	21	3
61+50.00	20	3
62+00.00	20	2
62+50.00	21	2
63+00.00	20	2
PROJECT TOTAL	**1276**	**133**

SUMMARY NOTES:

[1] INCLUDES TOPSOIL

[2] ROADCORE EXCAVATION FOR SELECT EMBANKMENT.

[3] INCLUDES TOPSOIL AND FILL OUTSIDE CORE.

[4] SELECT GRANLAR EMBANKMENT IN ROADWAY CORE

[5] UNDER PAVED SHOULDERS, RIGHT TURN LANE, BYPASS LANE AND NATIONAL STREET APPROACH

[6] 1.0' GRAVEL SHOULDER OUTSIDE PAVED SHOULDER.

NO	DATE	BY	CKD	APPR	REVISION
1	4/01/25	JF	ND		REMOVED EARTHWORK TABULATION TOTAL, ADDED NOTES

NAME: P:\002-612-035 17 to 53\Plan\002612035_EW.dgn 04/01/2025 2:26:24 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: 04/03/2025 LICENSE NO. 49046

DRAWN BY JJF DATE 12/01/24

DESIGN BY JJF DATE 12/01/24

CHECKED BY NJD DATE 01/28/25

ANOKA COUNTY HIGHWAY DEPT.

SAP 002-612-035

EARTHWORK

EARTHWORK TABULATION TOTAL				CC
	EXCAVATION TOTALS		EMBANKMENT VOLUMES	
	COMMON	EXCAVATION SPECIAL	COMMON	SELECT GRANULAR
	CY	CY	CY	CY
PROJECT TOTAL	1,055	8,642	2,036	9,696

FLOODPLAIN MITIGATION	DD
LOCATION	EXCAVATION TOTALS
	EXCAVATION CHANNEL AND POND
	CU YDS
MITIGATION SITE SOUTH	246
MITIGATION SITE NORTH	92
PROJECT TOTAL	338

NO	DATE	BY	CKD	APPR	REVISION
1	4/01/25	JF	ND		REMOVED EARTHWORK BALANCE
1	4/01/25	JF	ND		ADDED EARTHWORK TAB AND FLOODPLAIN TAB

NAME: P:\002-612-035 17 to 53\Plan\002612035_EW.dgn 04/01/2025 2:26:54 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:

DATE: 04/03/2025 LICENSE NO. 49046

DRAWN BY JJF DATE 12/01/24

DESIGN BY JJF DATE 12/01/24

CHECKED BY NJD DATE 01/28/25

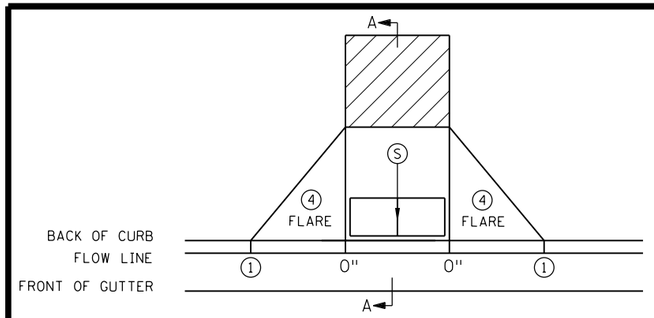
ANOKA COUNTY

ANOKA COUNTY HIGHWAY DEPT.

SAP 002-612-035

EARTHWORK

Sheet 10 of 110 Sheets



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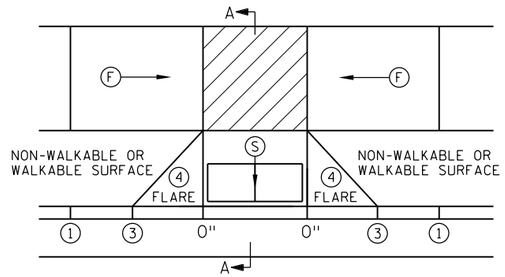

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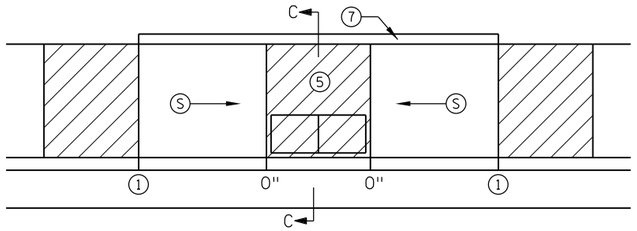
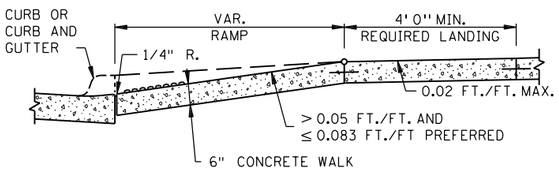
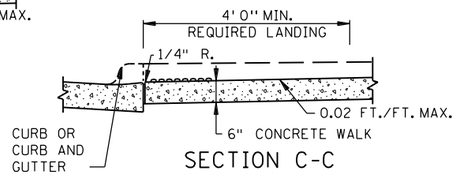


PARALLEL



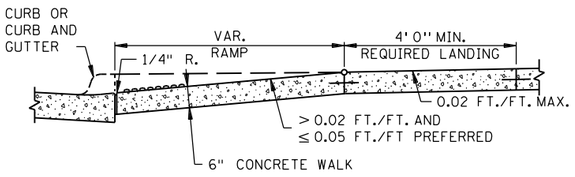
SECTION A-A

PERPENDICULAR/TIERED/DIAGONAL



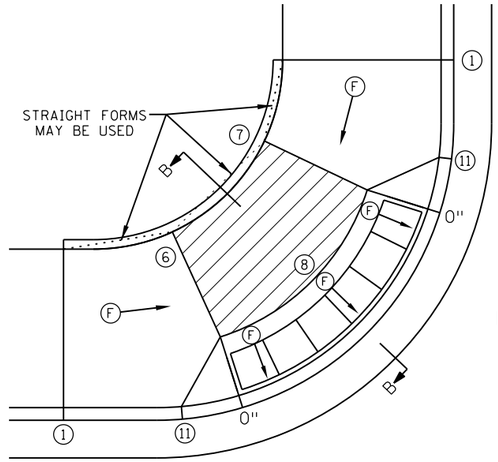
SECTION C-C

PARALLEL/DEPRESSED CORNER

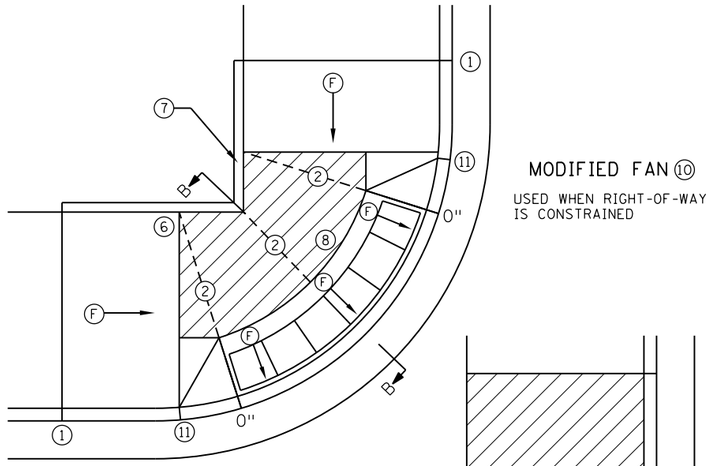


SECTION B-B

FAN

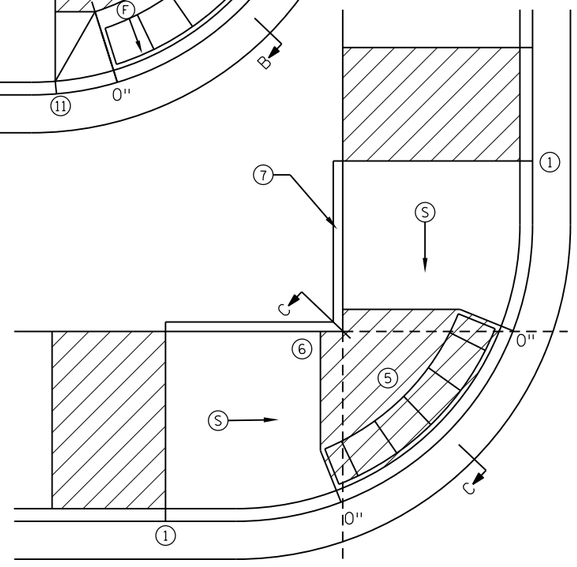


FAN (10)



MODIFIED FAN (10)

USED WHEN RIGHT-OF-WAY IS CONSTRAINED



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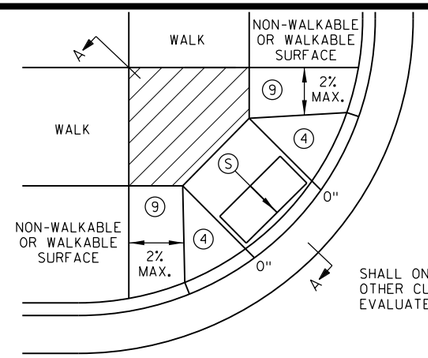


DIAGONAL

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.

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

REVISION:

APPROVED: 11-04-2021

JEFFREY PERKINS
OPERATIONS DIVISION

MINNESOTA DEPARTMENT OF TRANSPORTATION

STANDARD PLAN 5-297.250 | 1 OF 6

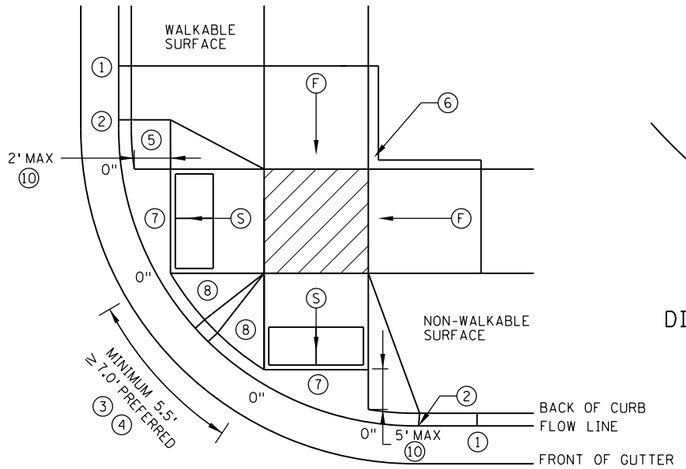
APPROVED: 11-04-2021
REVISED:

THOMAS STYRBICKI
STATE DESIGN ENGINEER

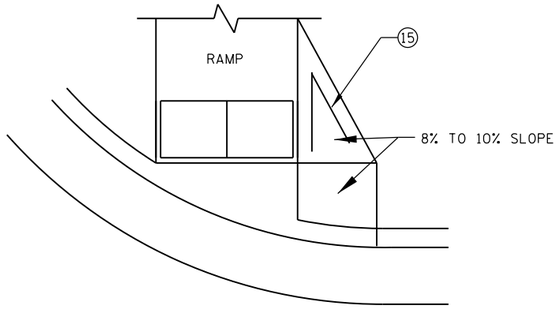
PEDESTRIAN CURB RAMP DETAILS

STATE PROJ. NO. SAP 002-612-035 SHEET NO. 11 OF 110 SHEETS

DISTRICT #:
PLOT NAME: $$IPLOT$NAME@$$
PATH & FILENAME: P:\002-612-035 17 to 53\Plan\002612035_MNDOT SHEETS COMB.dgn
PLOTTED/REVISED: 01/30/2025

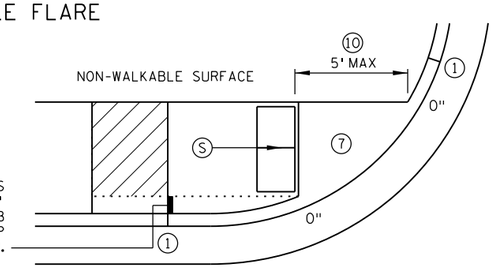


COMBINED DIRECTIONAL

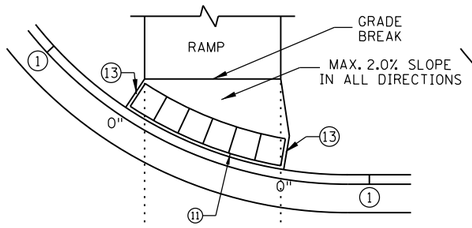


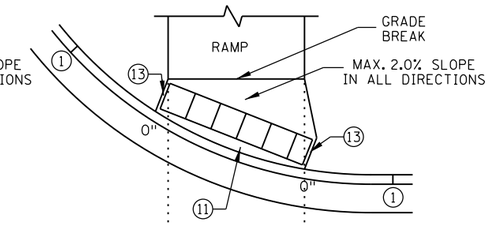
DIRECTIONAL RAMP WALKABLE FLARE

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



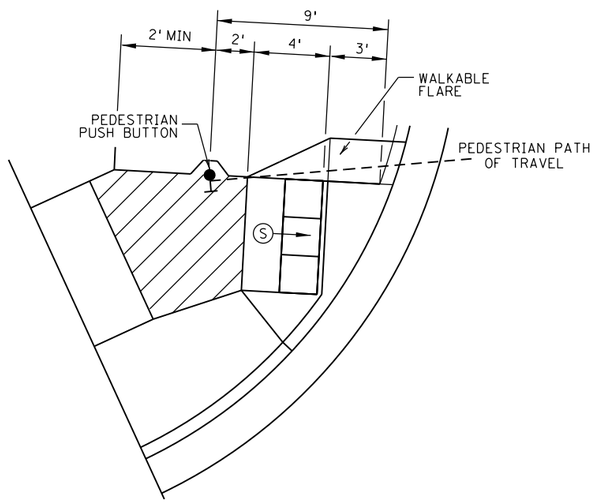
STANDARD ONE-WAY DIRECTIONAL ⑨





DETECTABLE WARNING PLACEMENT WHEN SETBACK CRITERIA IS EXCEEDED ⑫

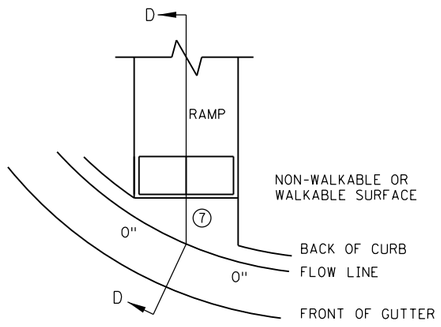
ONE-WAY DIRECTIONAL WITH DETECTABLE WARNING AT BACK OF CURB

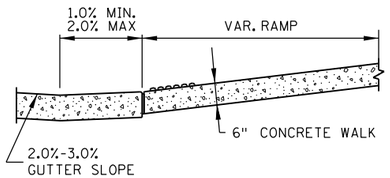


SEMI-DIRECTIONAL RAMP ③④⑨

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)





SECTION D-D

CURB FOR DIRECTIONAL RAMPS ⑭

NOTES:

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

INITIAL CURB RAMP LANDINGS SHALL BE CONSTRUCTED WITHIN 15' FROM THE BACK OF CURB, WITH 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.

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

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

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

X" CURB HEIGHT

REVISION:

APPROVED: 11-04-2021
JEFFREY PERKINS
OPERATIONS DIVISION

MINNESOTA DEPARTMENT OF TRANSPORTATION

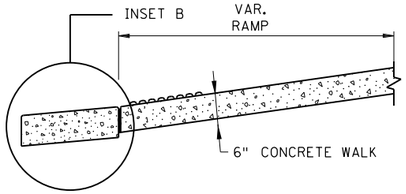
STANDARD PLAN 5-297.250 | 2 OF 6

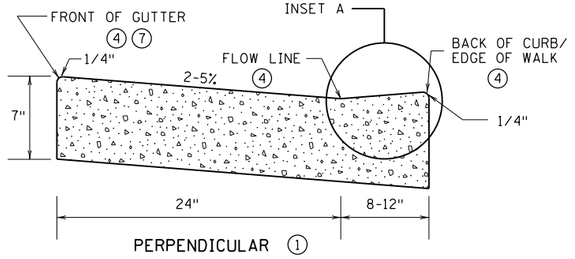
APPROVED: 11-04-2021
REVISED:
THOMAS STYRBICKI
STATE DESIGN ENGINEER

PEDESTRIAN CURB RAMP DETAILS

STATE PROJ. NO. SAP 002-612-035 SHEET NO. 12 OF 110 SHEETS

DISTRICT #:
PLOT NAME: $$@PLOT$NAME@$$
PATH & FILENAME: P:\002-612-035 17 to 53\Plan\002612035_MNDOT SHEETS COMB.dgn
PLOTTED/REVISED: 01/30/2025





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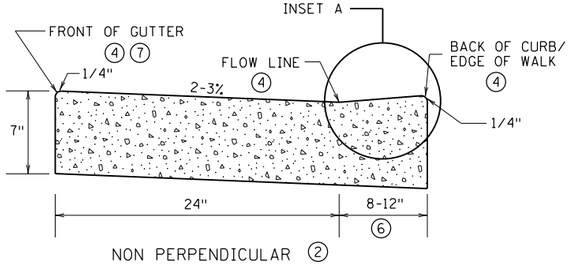
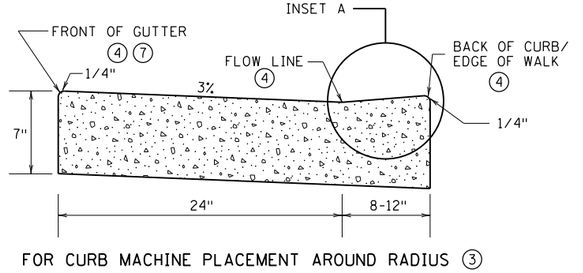
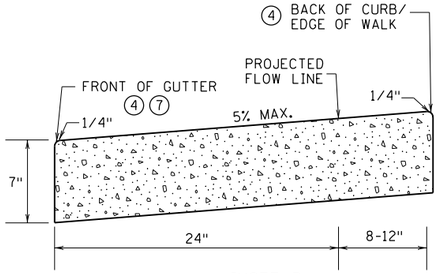


NON PERPENDICULAR (2)

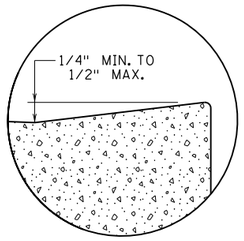


FOR CURB MACHINE PLACEMENT AROUND RADIUS (3)
(REGARDLESS OF RAMP TYPE)

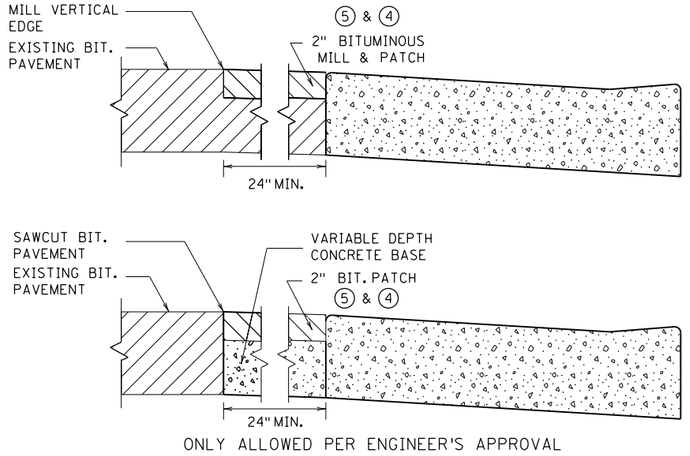
PEDESTRIAN ACCESS ROUTE CURB & GUTTER DETAIL



INSET B
OUTFLOW GUTTER (8)



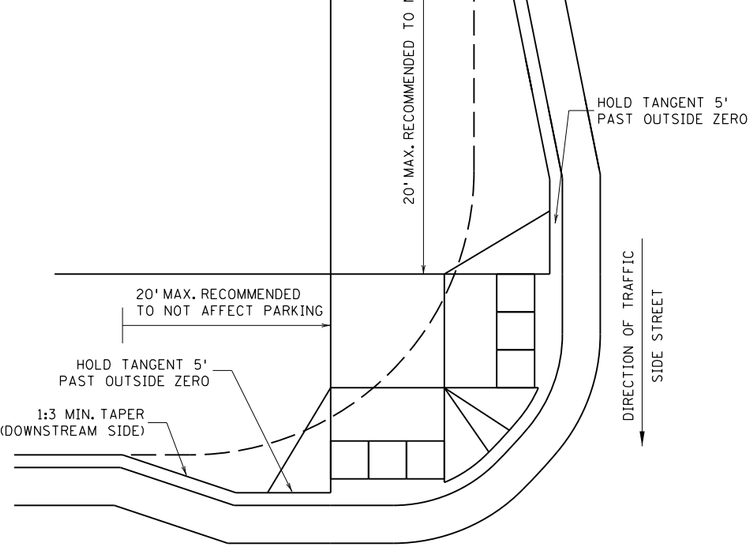
INSET A



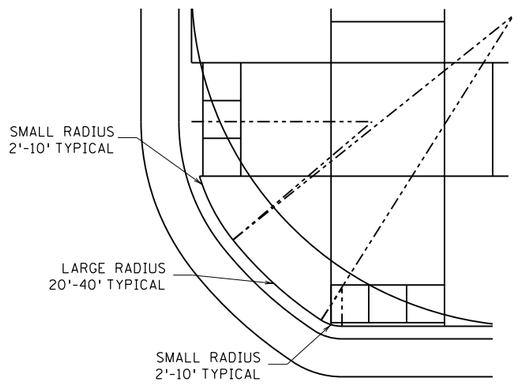
ONLY ALLOWED PER ENGINEER'S APPROVAL

PAVEMENT TREATMENT OPTIONS IN FRONT OF CURB & GUTTER

FOR USE ON CURB RAMP RETROFITS



ADA CURB EXTENSION WITH COMPOUND RADIUS (BUMP OUT) (11)



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 PERKINS
OPERATIONS DIVISION

MINNESOTA
DEPARTMENT OF TRANSPORTATION

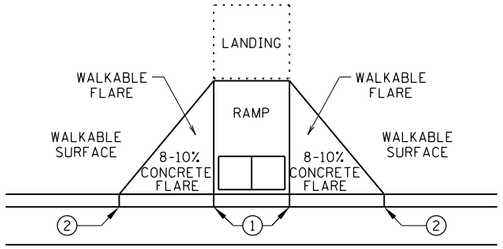
STANDARD PLAN 5-297.250 | 3 OF 6

APPROVED: 11-04-2021
REVISED:
THOMAS STYRBICKI
STATE DESIGN ENGINEER

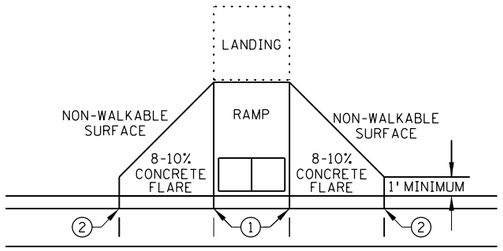
PEDESTRIAN CURB RAMP DETAILS

STATE PROJ. NO. SAP 002-612-035 SHEET NO. 13 OF 110 SHEETS

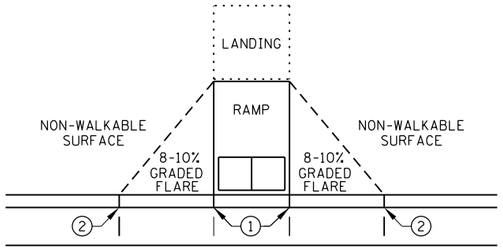
DISTRICT #:
PLOT NAME: $$@IPLOT$NAME@$$
PATH & FILENAME: P:\002-612-035 17 to 53\Plan\002612035_MNDOT SHEETS COMB.dgn
PLOTTED/REVISED: 01/30/2025



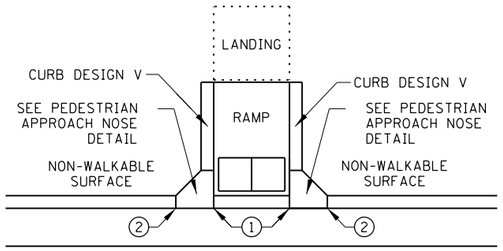
PAVED FLARES
ADJACENT TO WALKABLE SURFACE



PAVED FLARES
ADJACENT TO NON-WALKABLE SURFACE

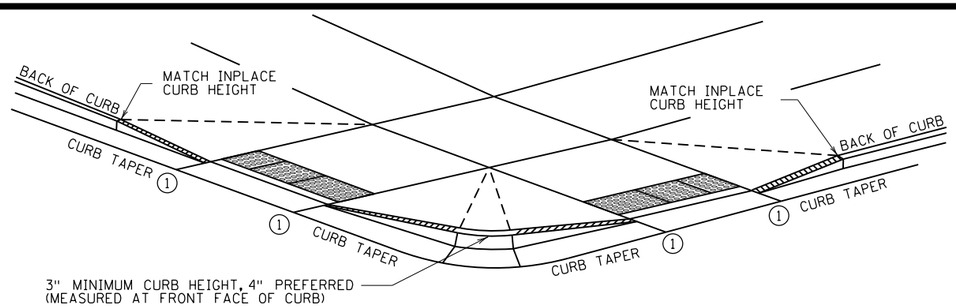


GRADED FLARES

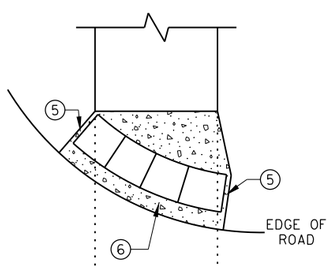


RETURNED CURB ④

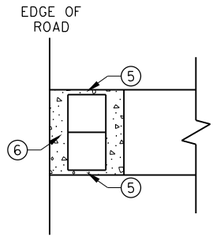
TYPICAL SIDE TREATMENT OPTIONS ③ ⑩



DETECTABLE EDGE WITH ⑦
CURB AND GUTTER

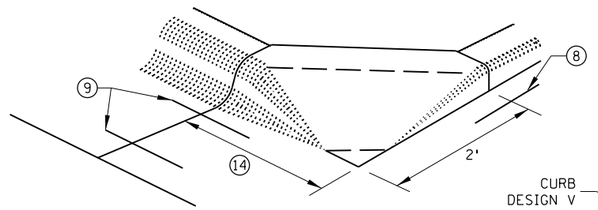


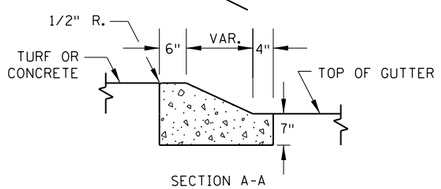
RADIAL DETECTABLE WARNING



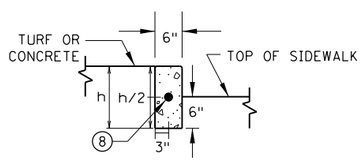
RECTANGULAR DETECTABLE WARNING

DETECTABLE EDGE WITHOUT CURB AND GUTTER

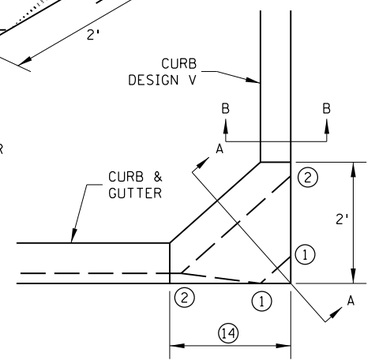




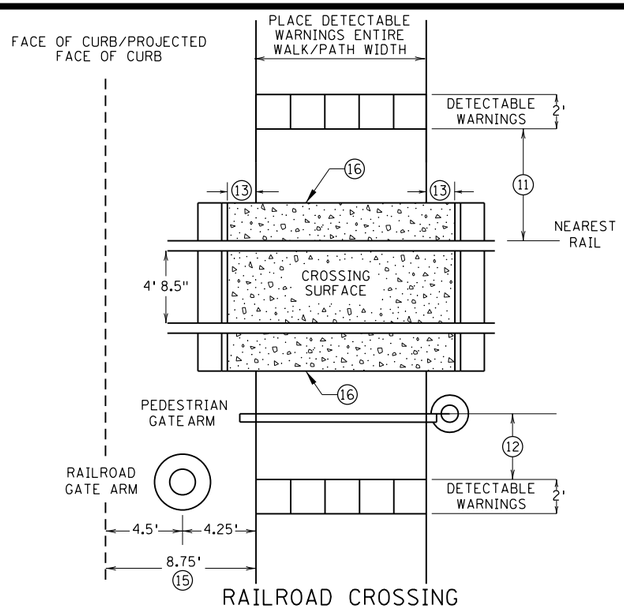
SECTION A-A



SECTION B-B



PEDESTRIAN APPROACH
NOSE DETAIL
(FOR RETURNED CURB
SIDE TREATMENT)



RAILROAD CROSSING
PLAN VIEW

NOTES:

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.

REVISION:

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JEFFREY PERKINS
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 002-612-035 SHEET NO. 14 OF 110 SHEETS

DISTRICT #:
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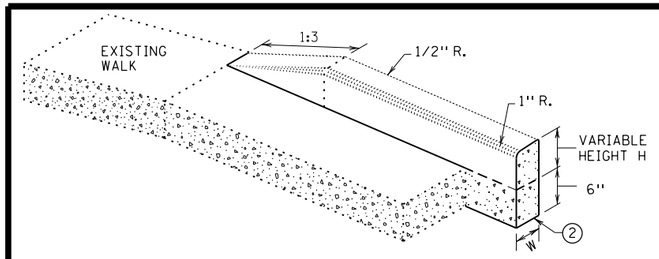
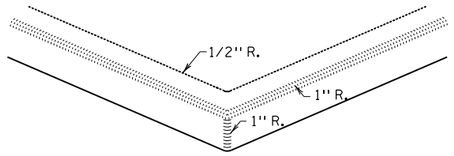
PLOTTED/REVISED: 01/30/2025



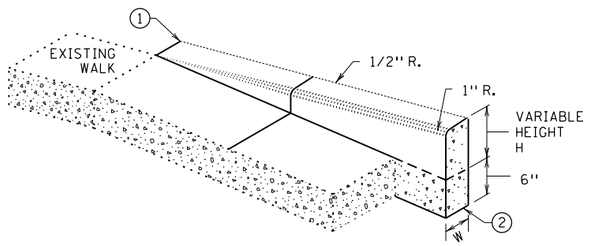
V CURB ADJACENT TO LANDSCAPE

CURB WITHIN SIDEWALK LIMITS



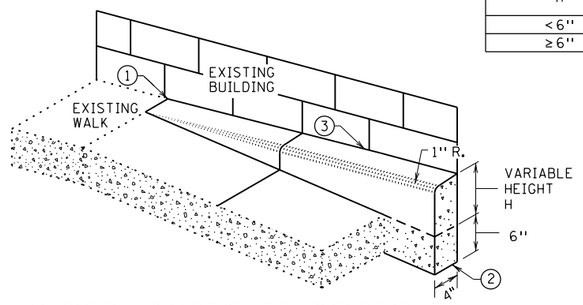
V CURB INTERSECTION

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

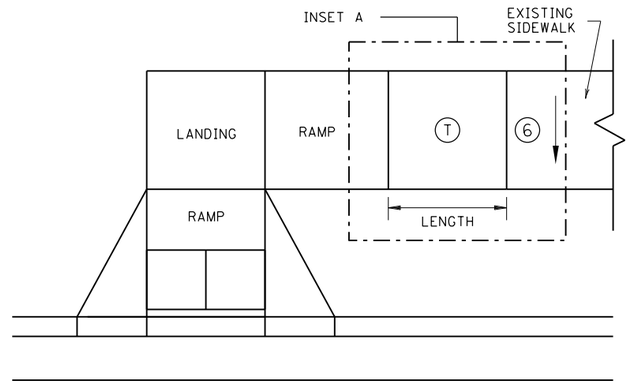


V CURB ADJACENT TO LANDSCAPE

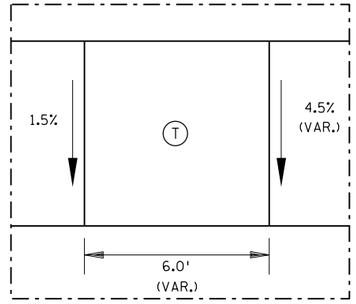
CURB OUTSIDE SIDEWALK LIMITS



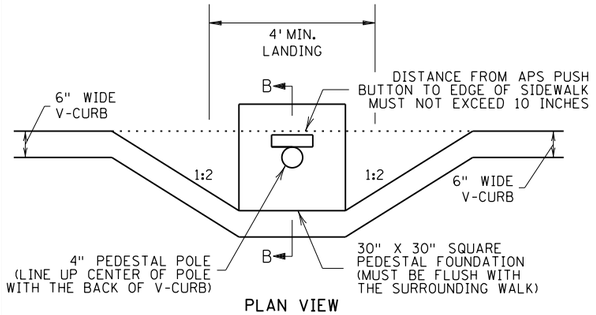
V CURB ADJACENT TO BUILDING OR BARRIER



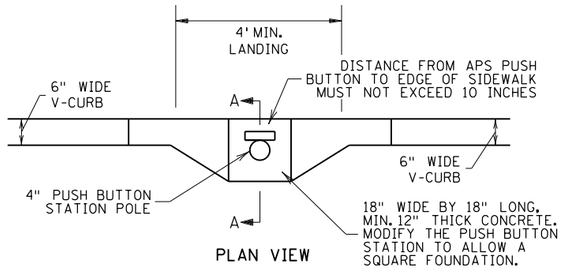
TRANSITION PANEL ④⑤



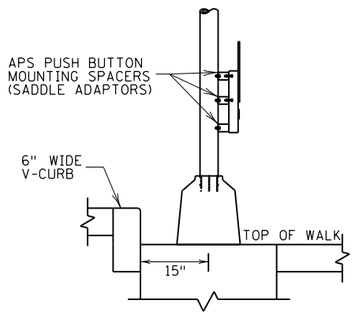
INSET A



PLAN VIEW

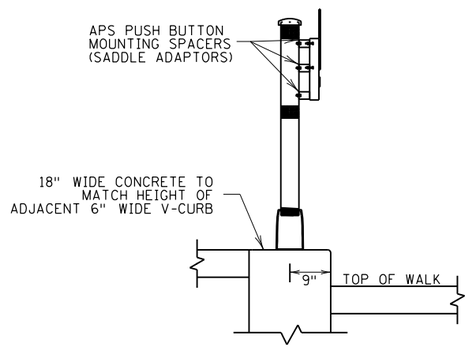


PLAN VIEW



SECTION B-B

SIGNAL PEDESTAL & PUSH BUTTON (V-CURB)



SECTION A-A

PUSH BUTTON STATION (V-CURB)

NOTES:

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

ALL V CURB CONTRACTION JOINTS SHALL MATCH CONCRETE WALK JOINTS.

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

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

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

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

② ALL V CURB SHALL MATCH BOTTOM OF ADJACENT WALK.

③ 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

JEFFREY PERKINS
OPERATIONS DIVISION

MINNESOTA DEPARTMENT OF TRANSPORTATION

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 002-612-035 SHEET NO. 15 OF 110 SHEETS

DISTRICT #:
PLOT NAME: $$@PLOT$NAME@$$
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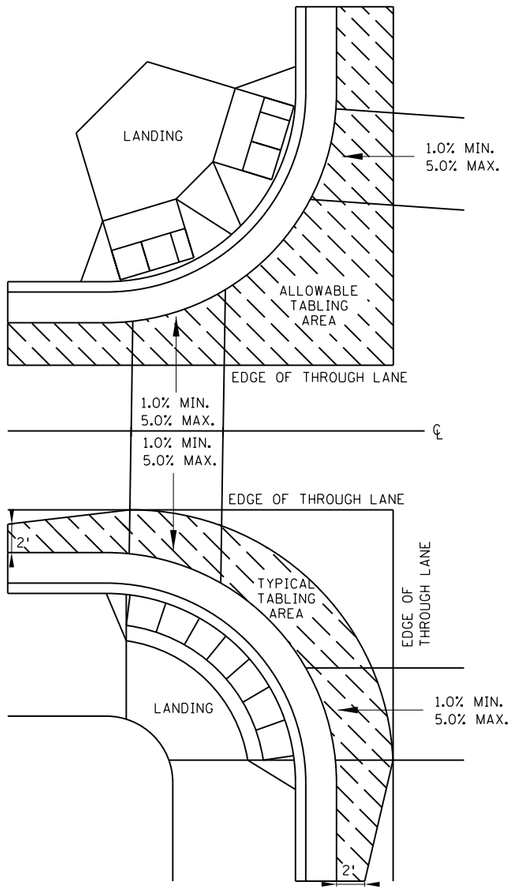
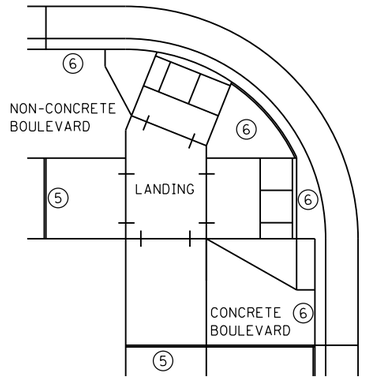
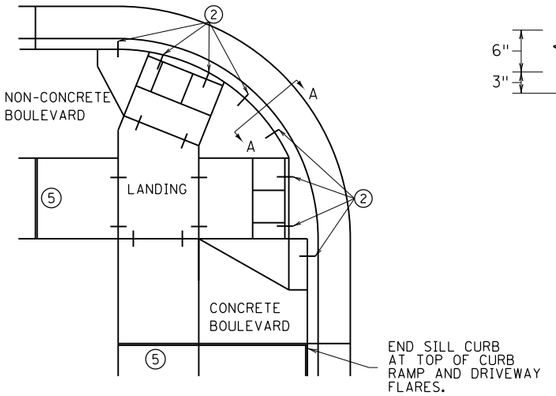
PLOTTED/REVISED: 01/30/2025



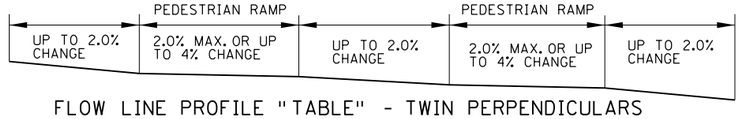
CURB LINE AND ROAD CROSSING ADJUSTMENTS



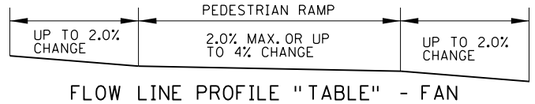
EXPANSION MATERIAL PLACEMENT
FOR CONCRETE ROADWAYS



CURB LINE REINFORCEMENT ④
PLACEMENT ON BITUMINOUS ROADWAYS



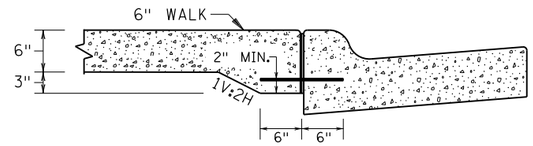
FLOW LINE PROFILE "TABLE" - TWIN PERPENDICULARS



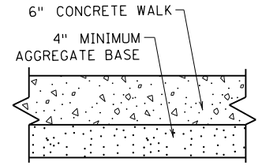
FLOW LINE PROFILE "TABLE" - FAN

FLOW LINE PROFILE RAISE - TWIN PERPENDICULARS

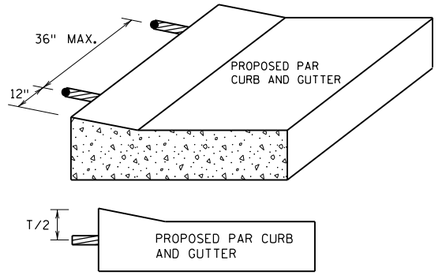
FLOW LINE PROFILE RAISE - FAN

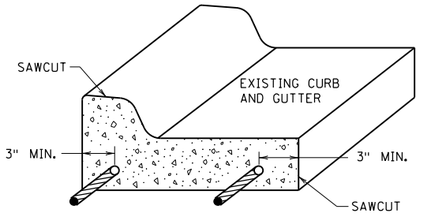


SECTION VIEW A-A
THICKENED SECTION
THROUGH CURB RAMP FLARES



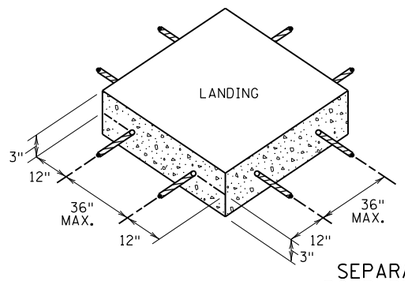
TYPICAL SIDEWALK SECTION
WITHIN INTERSECTION CORNER

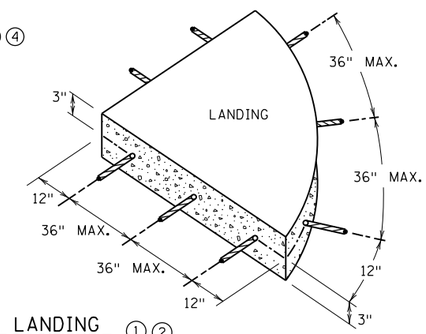




CURB AND GUTTER
REINFORCEMENT ③

CURB RAMP REINFORCEMENT DETAILS ②④





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
JEFFREY PERKINS
OPERATIONS DIVISION

MINNESOTA DEPARTMENT OF TRANSPORTATION

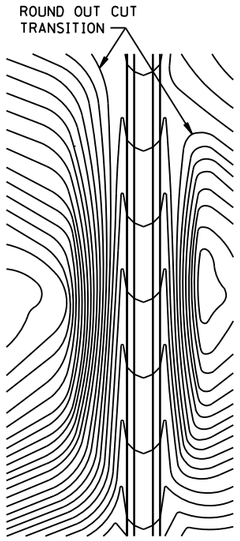
THOMAS STYRBICKI
STATE DESIGN ENGINEER

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

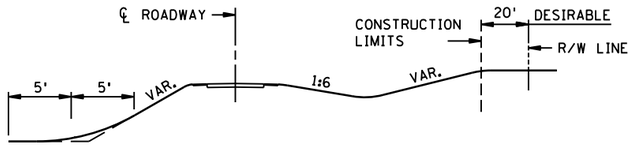
PEDESTRIAN CURB RAMP DETAILS

STATE PROJ. NO.	SAP 002-612-035	SHEET NO. 16 OF 110 SHEETS

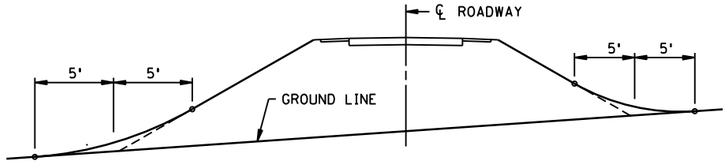
PLOTTED/REVISED: 01/30/2025
DISTRICT #:
PLOT NAME: $$@PLOT$NAME@$$
PATH & FILENAME: P:\002-612-035 17 to 53\Plan\002612035_MNDOT SHEETS COMB.dgn



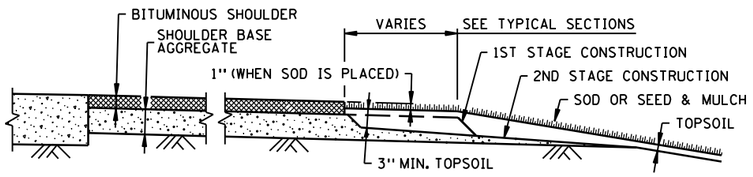
CONTOURING ROAD CUTS



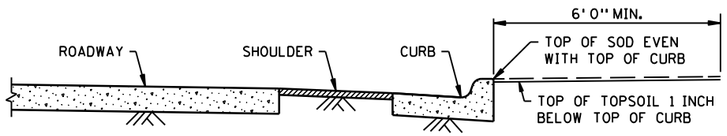
ROUNDING SHOULDERS AND BACKSLOPES



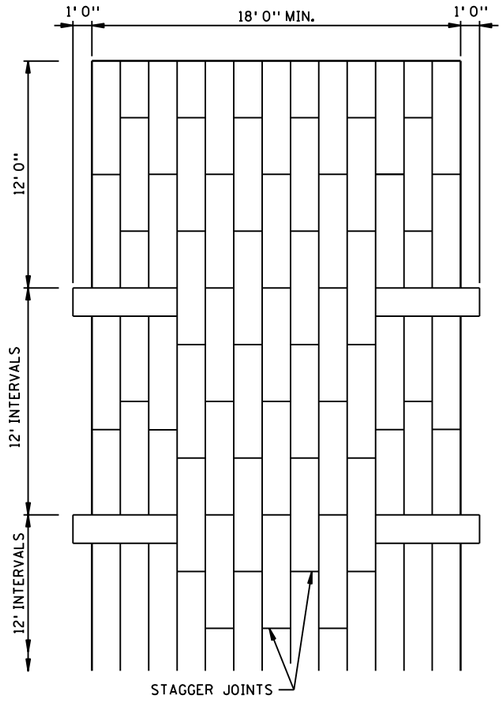
SHAPING FOR DRAINAGE ALONG THE TOE OF FILL SLOPES



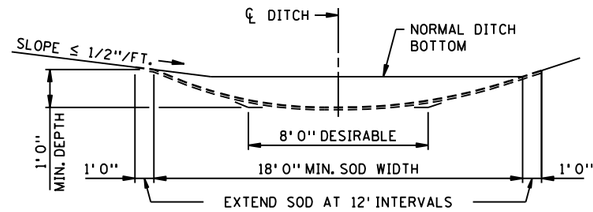
SHAPING AND TOPSOILING INSLOPES



SHAPING ADJACENT TO CURBS WHEN SOD IS PLACED

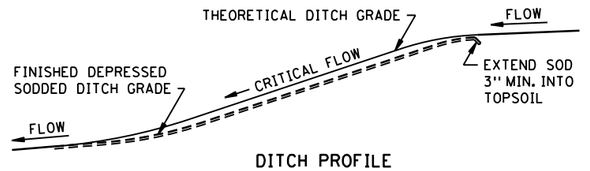


PLAN VIEW



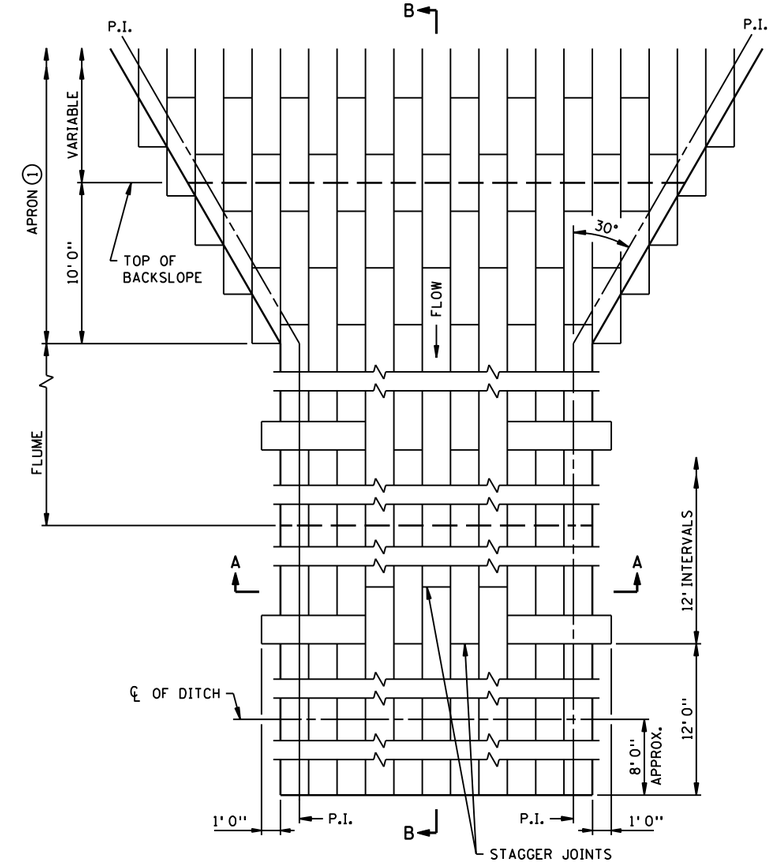
SODDED DITCH CROSS SECTION

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

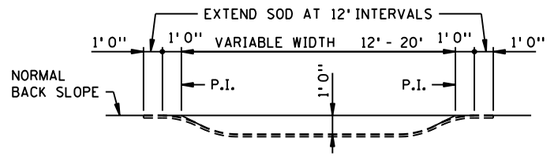


DITCH PROFILE

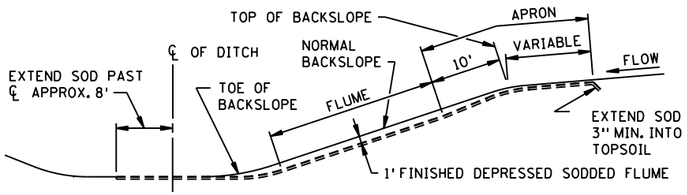
SODDED DITCH DETAILS



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.

REVISED:
APPROVED: 2-28-2017
CHIEF ENGINEERING OFFICER

MINNESOTA DEPARTMENT OF TRANSPORTATION

STANDARD PLAN 5-297.404 | 1 OF 3

APPROVED: 2-28-2017
REVISED:

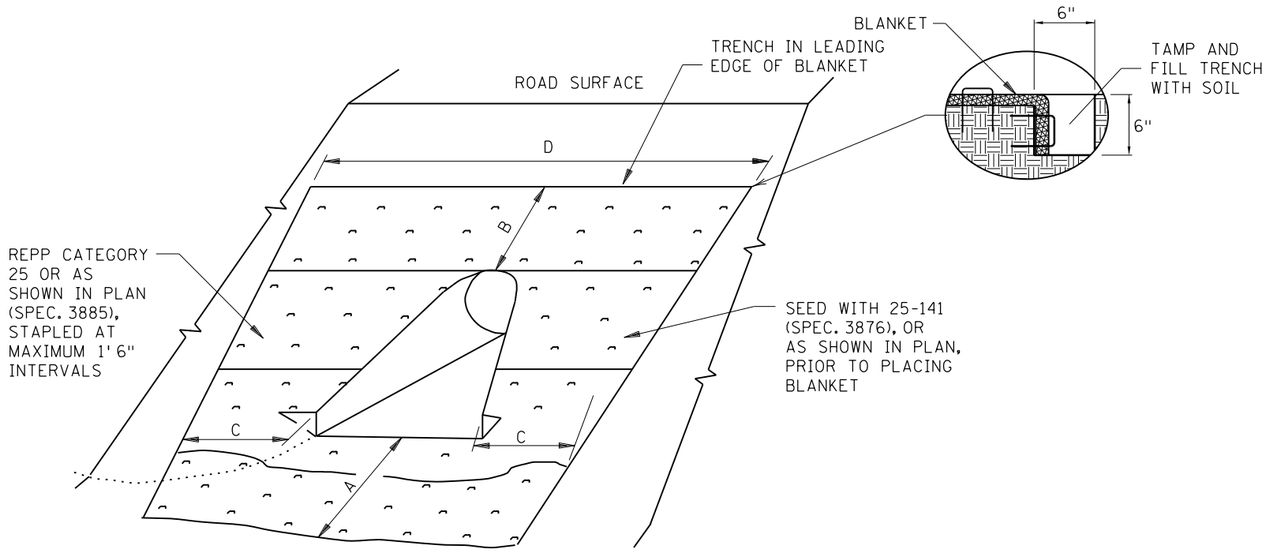
STATE DESIGN ENGINEER

PERMANENT EROSION CONTROL

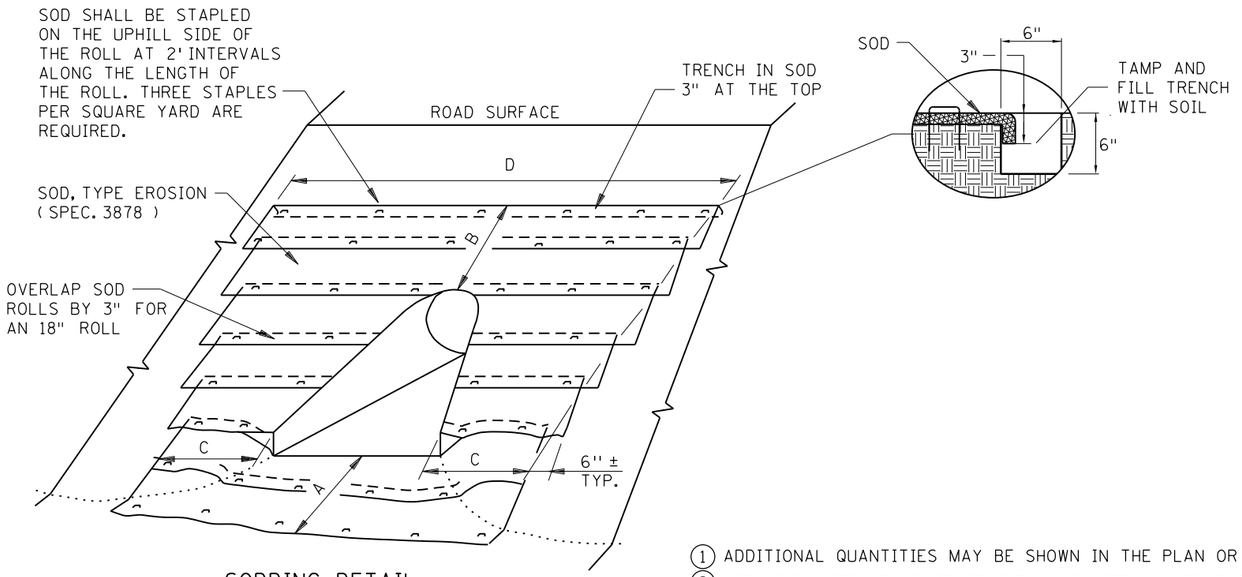
ALONG ROADWAYS, DITCHES AND FLUMES

STATE PROJ. NO. SAP 002-612-035 SHEET NO. 17 OF 110 SHEETS

PLOTTED/REVISED: 01/30/2025
DISTRICT *:
PLOT NAME: $$@PLOT$NAME@$$
PATH & FILENAME: P:\002-612-035 17 to 53\Plan\0026\2035_MNDOT SHEETS COMB.dgn



ROLLED EROSION PREVENTION PRODUCT (BLANKET) & SEED DETAIL



SODDING 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'

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.

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.

PLOTTED/REVISED: 01/30/2025
DISTRICT *:
IPLOT NAME: $$@/PLOT$NAME@$$
PATH & FILENAME: P:\002-612-035 I7 to 53\Plan\0026\2035_MNDOT SHEETS COMB.dgn

REVISION:

APPROVED: JANUARY 8, 2020
MARNI KARNOWSKI
CHIEF ENVIRONMENTAL OFFICER

MINNESOTA DEPARTMENT OF TRANSPORTATION

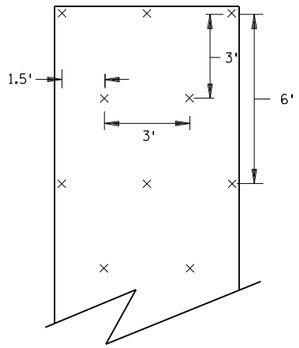
STANDARD PLAN 5-297.404 | 2 OF 3

APPROVED: 1-8-2020
REVISED:
THOMAS STYRBICKI
STATE DESIGN ENGINEER

PERMANENT EROSION CONTROL

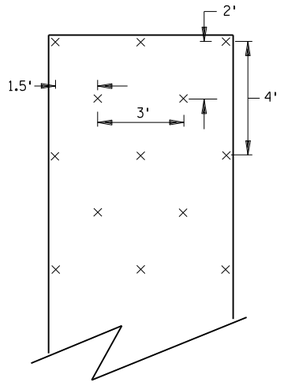
TURF ESTABLISHMENT DETAIL AT CULVERT ENDS

STATE PROJ. NO. SAP 002-612-035 SHEET NO. 18 OF 110 SHEETS



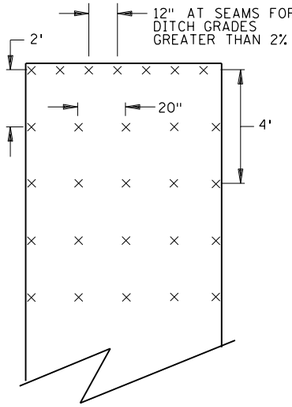
SLOPES FLATTER THAN 1:2

120 STAPLES PER 100 SQ YD



SLOPES 1:2 TO 1:1

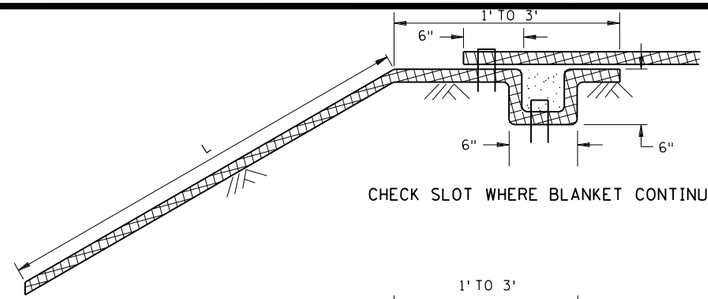
170 STAPLES PER 100 SQ YD



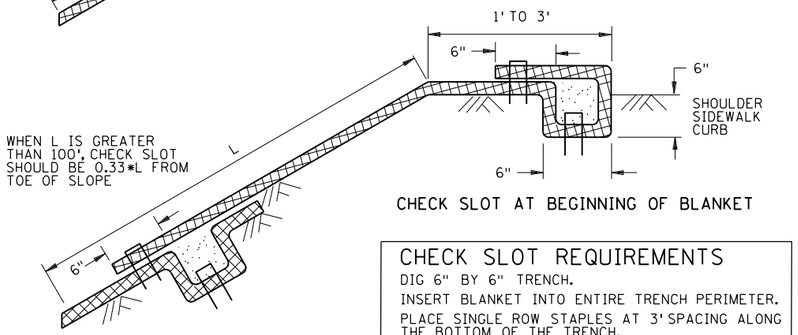
CHANNEL AND DITCH APPLICATIONS

350 STAPLES PER 100 SQ YD

BLANKET STAPLE PATTERN



CHECK SLOT WHERE BLANKET CONTINUES



CHECK SLOT AT BEGINNING OF BLANKET

CHECK SLOT REQUIREMENTS

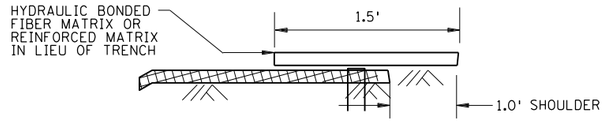
DIG 6" BY 6" TRENCH.

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.

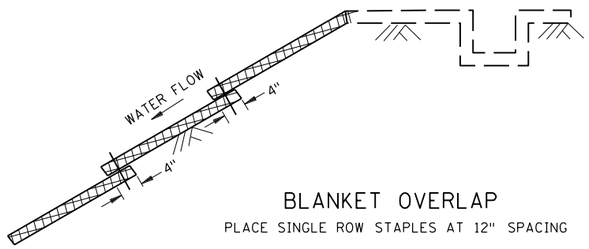
PLACE SINGLE ROW STAPLES AT 3' SPACING ON OVERLAP.



CHECK SLOT ALTERNATIVE

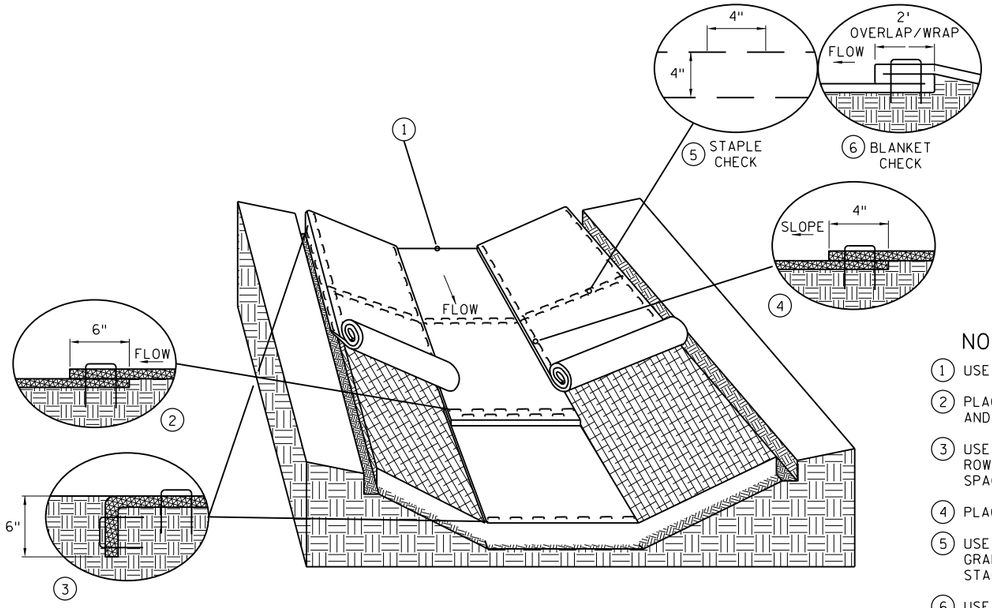
PLACE SINGLE ROW STAPLES AT 12" SPACING

CHECK SLOT DETAILS

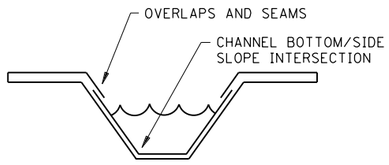


BLANKET OVERLAP

PLACE SINGLE ROW STAPLES AT 12" SPACING



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.

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
CHIEF ENVIRONMENTAL OFFICER

MINNESOTA DEPARTMENT OF TRANSPORTATION

THOMAS STYRBICKI
STATE DESIGN ENGINEER

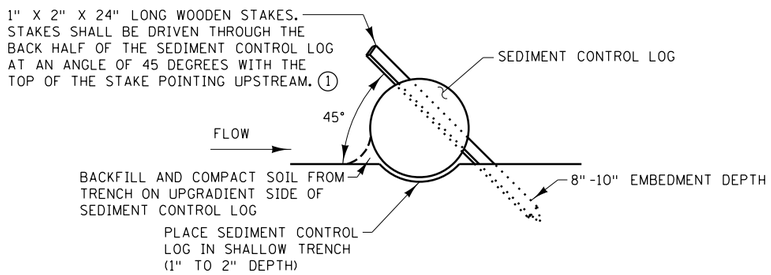
STANDARD PLAN 5-297.404 | 3 OF 3

APPROVED: 1-8-2020
REVISED:

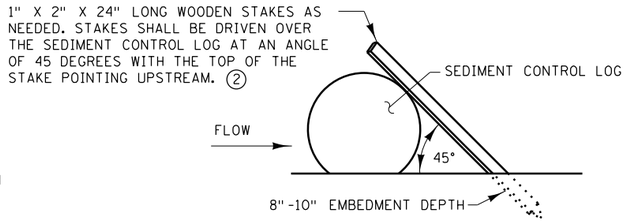
PERMANENT EROSION CONTROL

REPP (BLANKET) STAPLE PATTERN FOR SLOPES

STATE PROJ. NO. SAP 002-612-035 SHEET NO. 19 OF 110 SHEETS

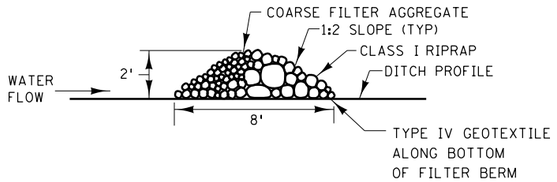


TYPES: STRAW, WOOD FIBER, OR COIR

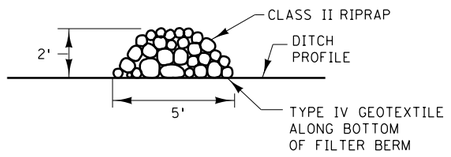


TYPES: WOOD CHIP, COMPOST, OR ROCK

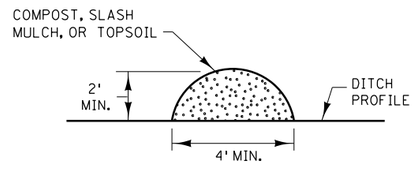
SEDIMENT CONTROL LOGS



TYPE 3 (ROCK WEEPER)

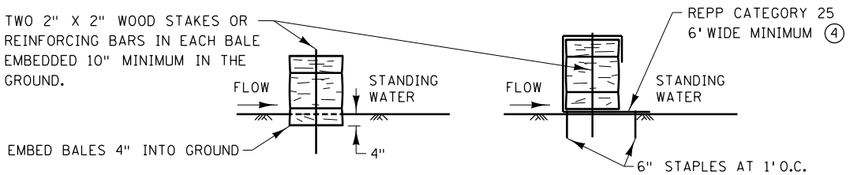


TYPE 5 (ROCK)



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

FILTER BERMS



EMBEDMENT METHOD

REPP (BLANKET) METHOD (ALTERNATE)

BALE BARRIERS (3)

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.

REVISION:

APPROVED: JANUARY 8, 2020

MARNI KARNOWSKI
CHIEF ENVIRONMENTAL OFFICER

MINNESOTA DEPARTMENT OF TRANSPORTATION

STANDARD PLAN 5-297.405 | 2 OF 8

APPROVED: 1-8-2020
REVISED:

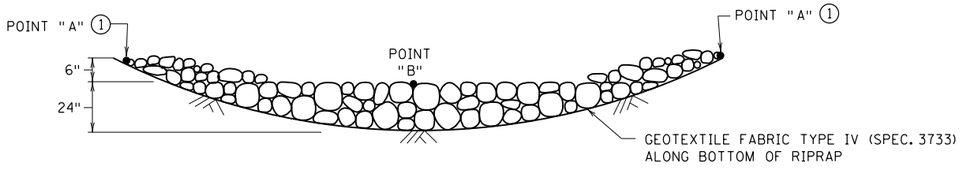
THOMAS STYRBICKI
STATE DESIGN ENGINEER

TEMPORARY SEDIMENT CONTROL

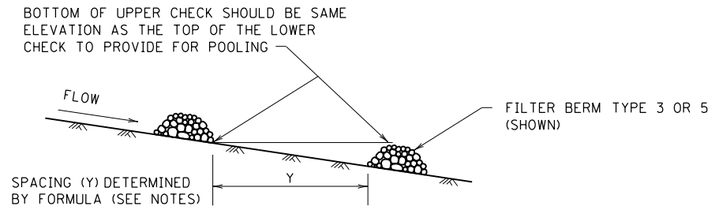
FILTER BERMS, SEDIMENT CONTROL LOGS, AND BALE BARRIERS

STATE PROJ. NO. SAP 002-609-022 SHEET NO. 20 OF 110 SHEETS

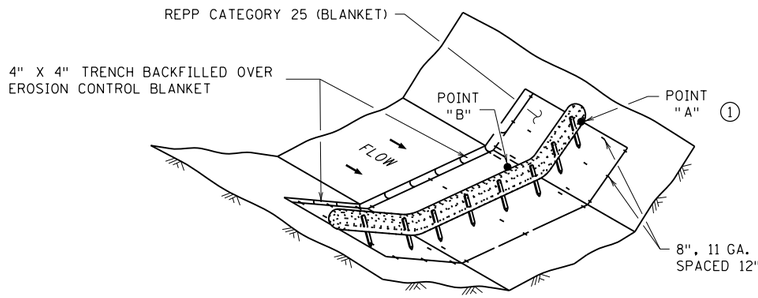
PLOTTED/REVISED: 01/30/2025
DISTRICT *:
IPLOT NAME: $$@IPLOT$NAME@$$
PATH & FILENAME: P:\002-612-035 17 to 53\Plan\0026\2035_MNDOT SHEETS COMB.dgn

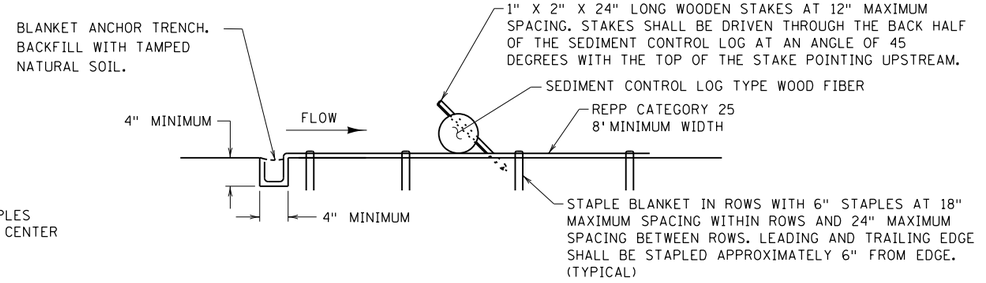


ROCK DITCH CHECKS
FILTER BERMS TYPE 3 (ROCK WEEPER) OR FILTER TYPE 5 (ROCK) ③
FOR USE ON ROUGH-GRADED AREAS
ONLY FOR USE OUTSIDE CLEAR ZONE ②

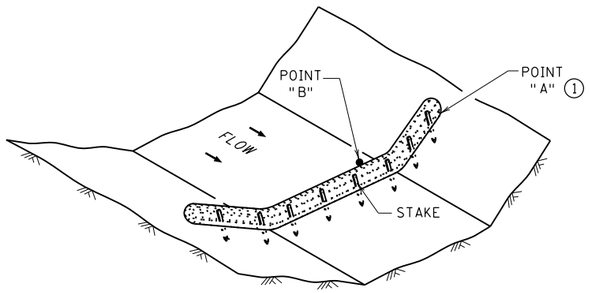


DITCH CHECK SPACING
FOR ALL FILTER BERM TYPES





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
CHIEF ENVIRONMENTAL OFFICER

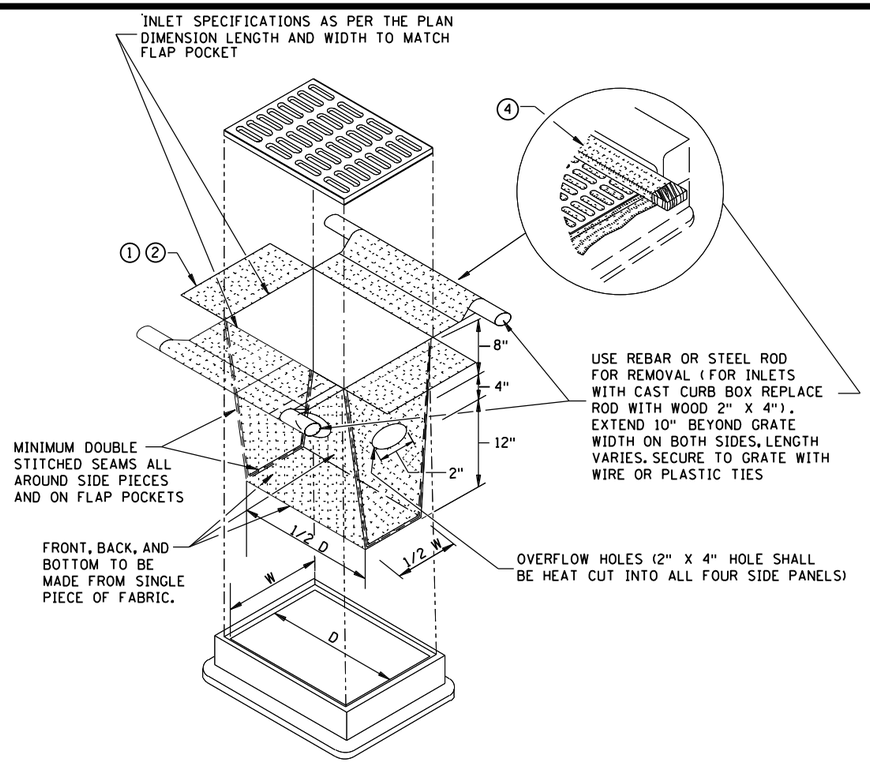
MINNESOTA DEPARTMENT OF TRANSPORTATION

STANDARD PLAN 5-297.405 | 3 OF 8

APPROVED: 1-8-2020
REVISED:
THOMAS STYRBICKI
STATE DESIGN ENGINEER

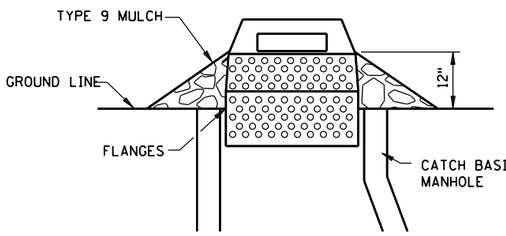
TEMPORARY SEDIMENT CONTROL
DITCH CHECK

STATE PROJ. NO. SAP 002-612-035 | SHEET NO. 21 OF 110 SHEETS



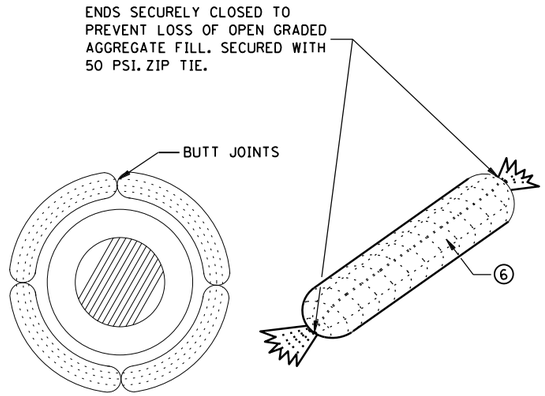
FILTER BAG INSERT ③

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

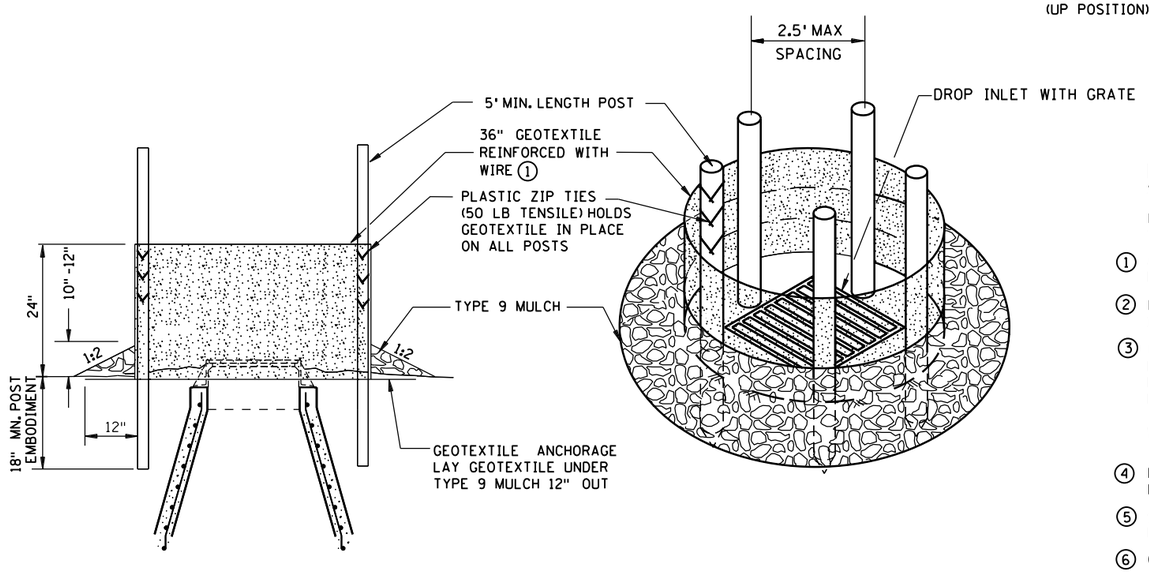


SEDIMENT CONTROL INLET HAT

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

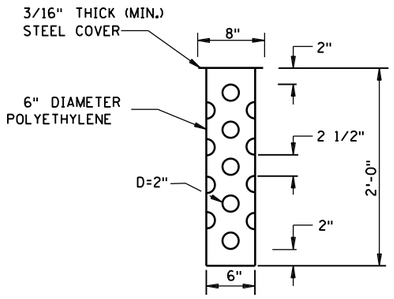


ROCK LOG/COMPOST LOG

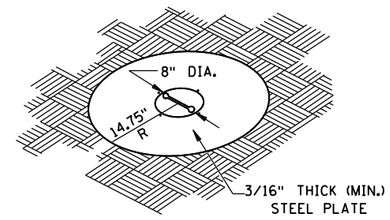


SILT FENCE RING AND ROCK FILTER BERM

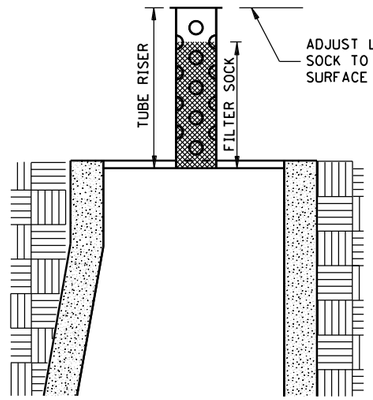
USE WHERE INLET DRAINS IN AN AREA WITH SLOPES AT 1:3 or LESS



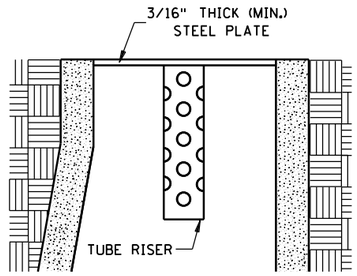
TUBE RISER



PERSPECTIVE VIEW



SECTION
(UP POSITION)



SECTION
(DOWN POSITION)

POP-UP HEAD

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.

DISTRICT *:
PLOT NAME: $$@PLOT$NAME@$$
PATH & FILENAME: P:\002-612-035 17 to 53\Plan\0026\2035_MNDOT SHEETS COMB.dgn
PLOTTED/REVISED: 01/30/2025

REVISION
APPROVED: 2-28-2017
CHIEF ENGINEERING OFFICER

MINNESOTA DEPARTMENT OF TRANSPORTATION

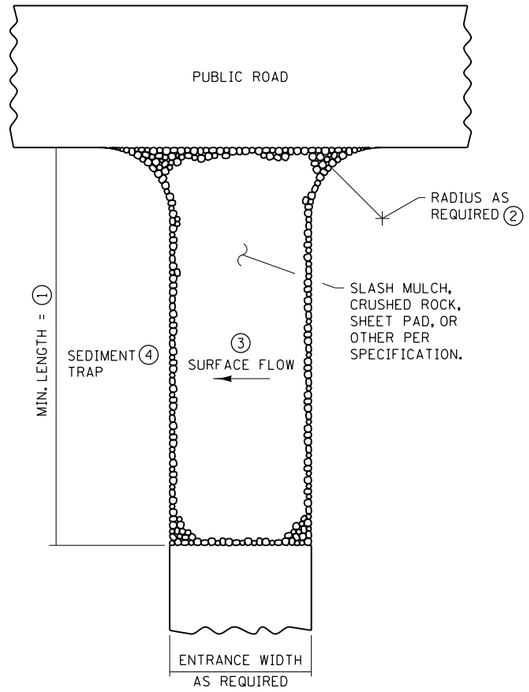
STANDARD PLAN 5-297.405 | 4 OF 8

APPROVED: 2-28-2017
REVISED:

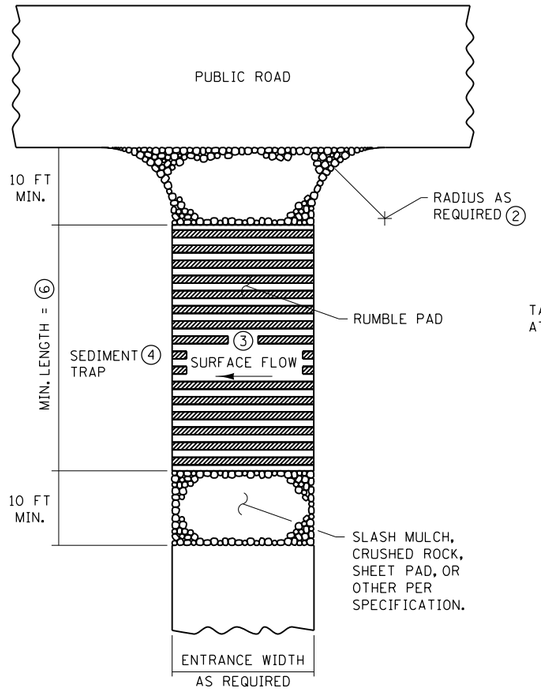
STATE DESIGN ENGINEER

TEMPORARY SEDIMENT CONTROL
STORM DRAIN INLET PROTECTION

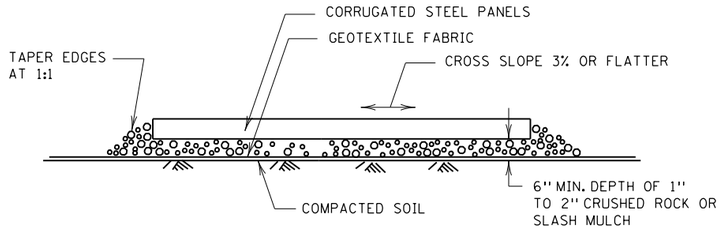
STATE PROJ. NO. SAP 002-612-035 SHEET NO. 22 OF 110 SHEETS



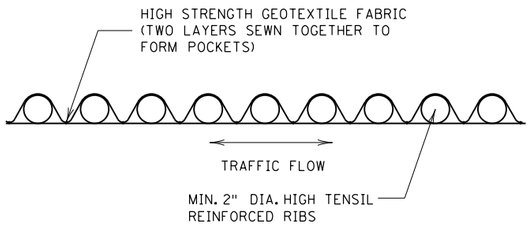
SLASH MULCH, CRUSHED ROCK, OR SHEET PAD CONSTRUCTION EXIT ⑤⑦



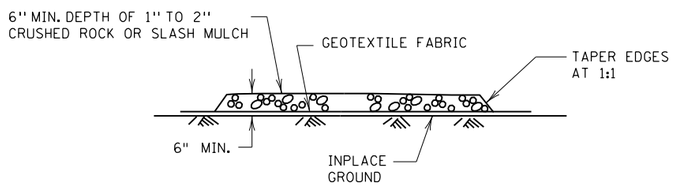
RUMBLE PAD CONSTRUCTION EXIT ⑤⑦



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
CM (CONSULTING ONLY)

MINNESOTA DEPARTMENT OF TRANSPORTATION

STANDARD PLAN 5-297.405 | 5 OF 8

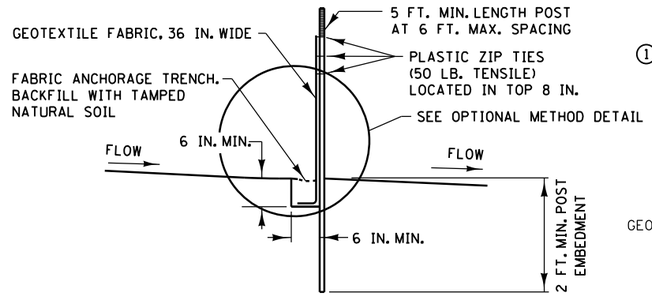
APPROVED: 2-28-2017
REVISED:

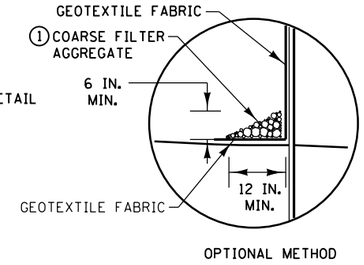
STATE DESIGN ENGINEER

TEMPORARY SEDIMENT CONTROL

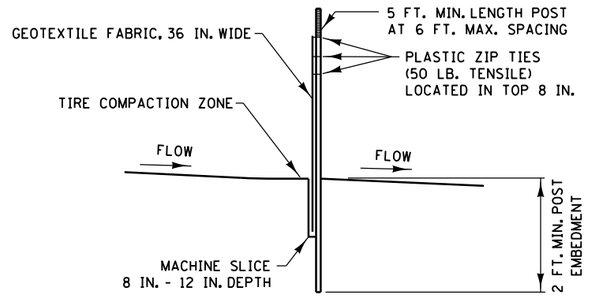
STABILIZED CONSTRUCTION EXIT

STATE PROJ. NO. SAP 002-612-035 SHEET NO. 23 OF 110 SHEETS

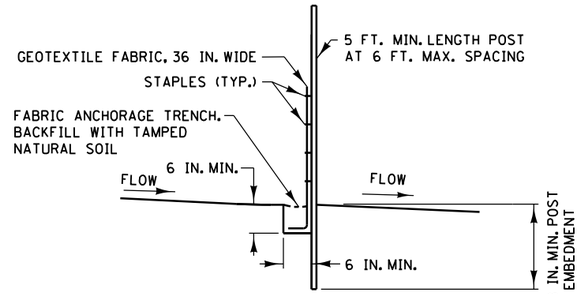




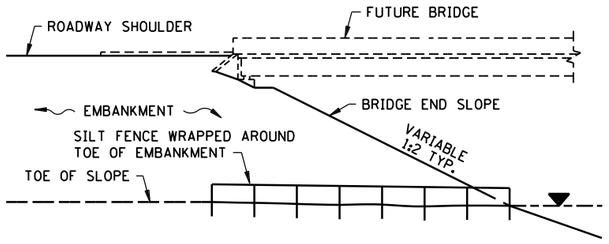
SILT FENCE TYPE HI ②
(HAND INSTALLED)



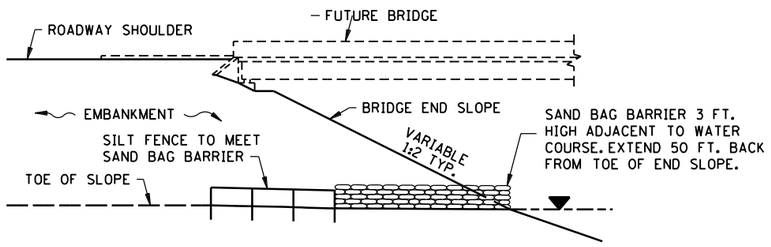
SILT FENCE TYPE MS ②
(MACHINE SLICED)



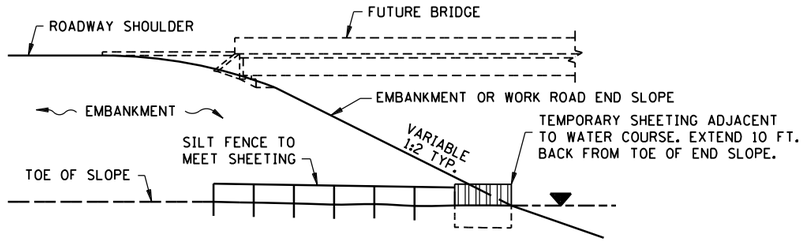
SILT FENCE TYPE PA ③
(PREASSEMBLED)



SILT FENCE ONLY ④

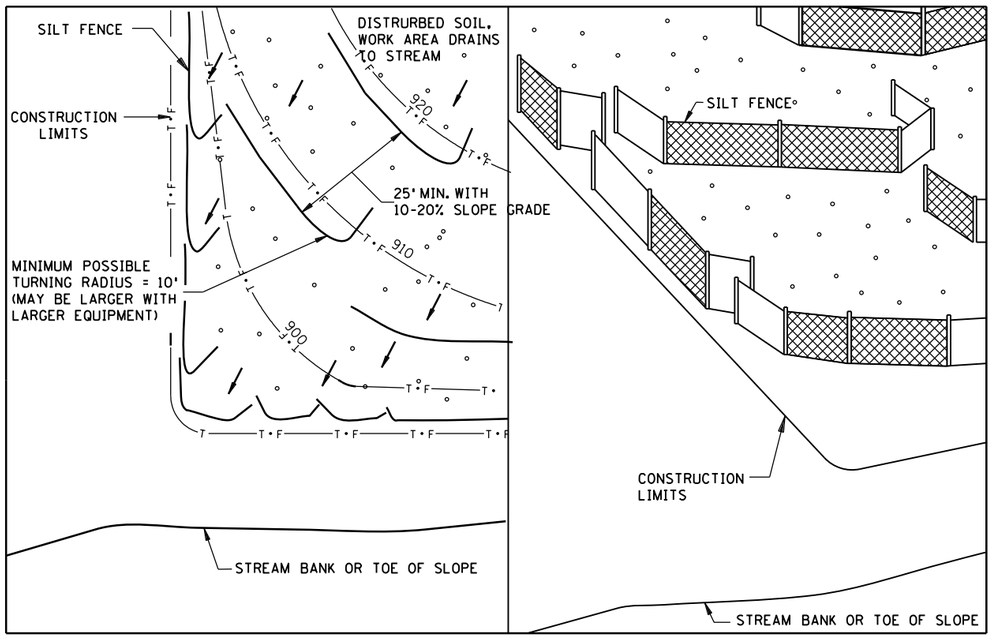


SILT FENCE WITH SAND BAGS ⑤



SILT FENCE WITH SHEETING ⑥

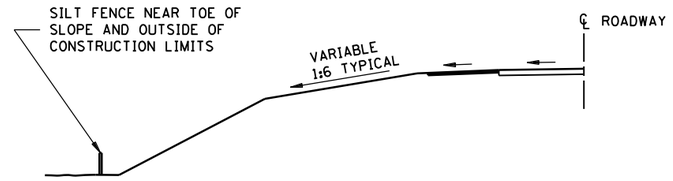
INSTALLATION AT BRIDGE EMBANKMENT ADJACENT TO WATER



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.

PLOTTED/REVISED: 01/30/2025

DISTRICT *:
IPLOT NAME: $$@IPLOT$NAME@$$
PATH & FILENAME: P:\002-612-035 I7 to 53\Plan\002612035_MNDOT SHEETS COMB.dgn

Revisions
Approved: 2-28-2017
D-M Coordinating Group

MINNESOTA DEPARTMENT OF TRANSPORTATION

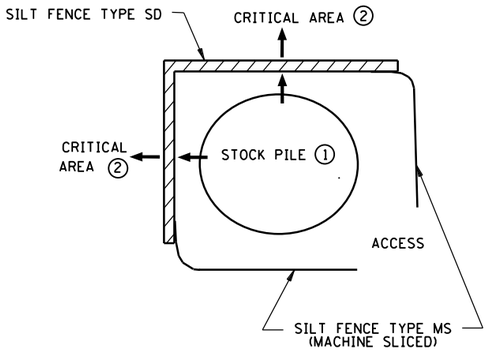
STANDARD PLAN 5-297.405 | 6 OF 8

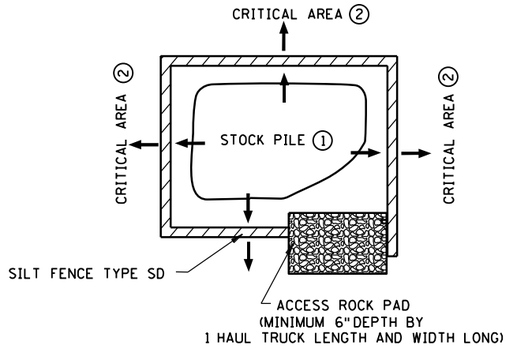
APPROVED: 2-28-2017
REVISED:

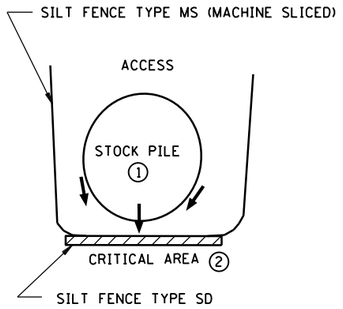
STATE DESIGN ENGINEER

TEMPORARY SEDIMENT CONTROL
SILT FENCE

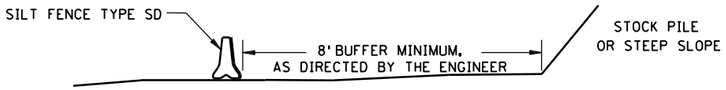
STATE PROJ. NO. SAP 002-612-035 SHEET NO. 24 OF 110 SHEETS



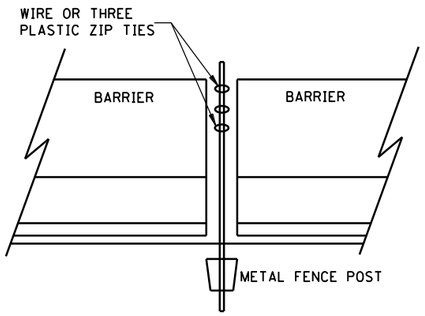




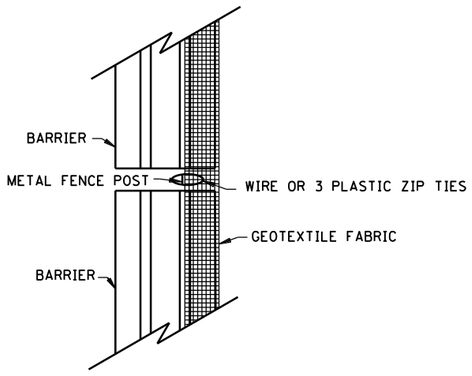
STOCK PILE CONTAINMENT



STOCKPILE SEDIMENT CONTROL

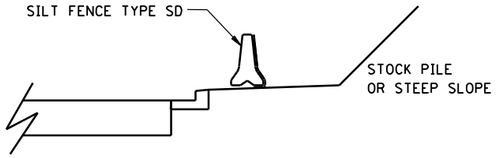


PROFILE VIEW

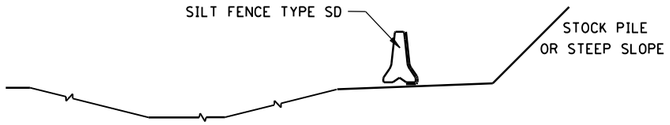


TOP VIEW

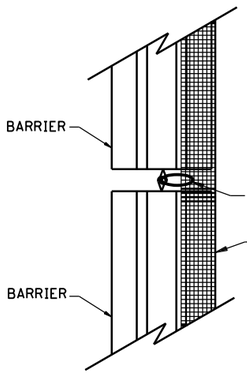
SILT FENCE TYPE SD (SUPER DUTY) BARRIER WITHOUT LOOP BARS



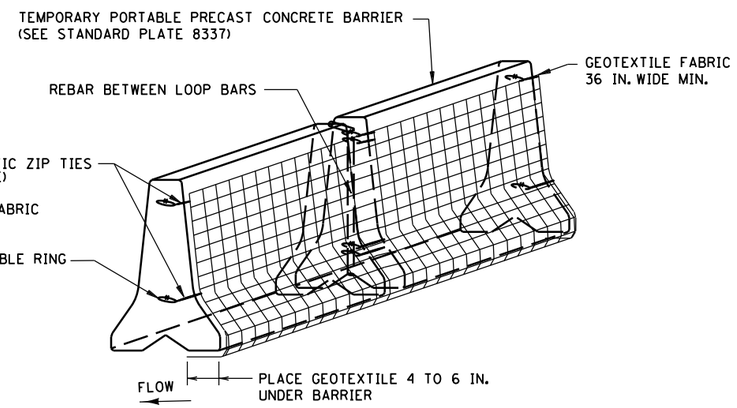
CURB AND GUTTER PROTECTION SYSTEM



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.

REVISED:

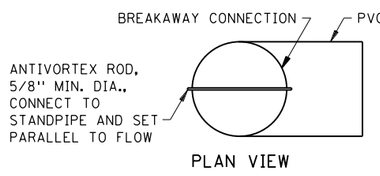
APPROVED: 2-28-2017

STATE DESIGN ENGINEER

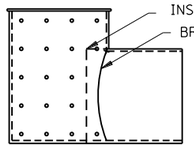
MINNESOTA DEPARTMENT OF TRANSPORTATION

STANDARD PLAN 5-297.405	7 OF 8
APPROVED: 2-28-2017 REVISED:	TEMPORARY SEDIMENT CONTROL
	SUPER DUTY SILT FENCE
STATE PROJ. NO. SAP 002-612-035	SHEET NO. 25 OF 110 SHEETS

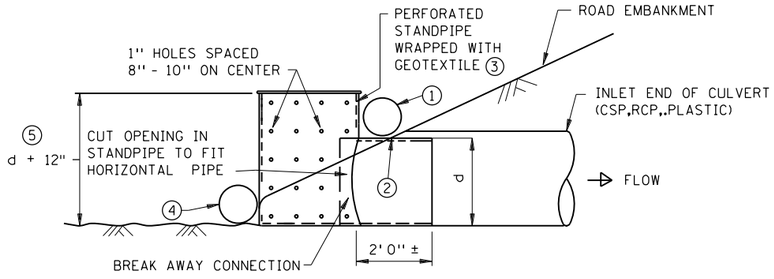
DISTRICT *:
IPLOT NAME: $$@IPLOT$NAME@$$
PATH & FILENAME: P:\002-612-035 I7 to 53\Plan\0026\2035_MNDOT SHEETS COMB.dgn
PLOTTED/REVISED: 01/30/2025



PLAN VIEW



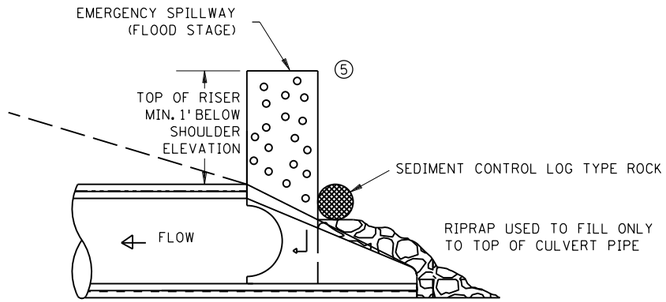
CULVERT STANDPIPE



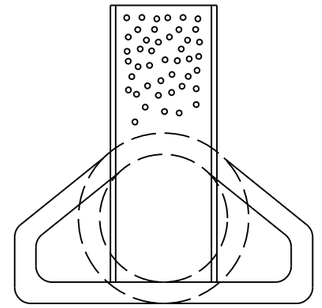
ELEVATION VIEW OF CULVERT INSTALLATION

CULVERT STANDPIPE INSERT (D-RISER)

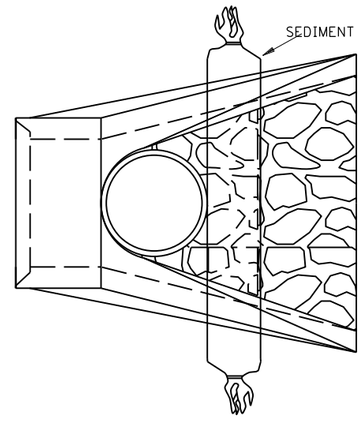
d= CULVERT SIZE: 12" - 36"



LONGITUDINAL SECTION



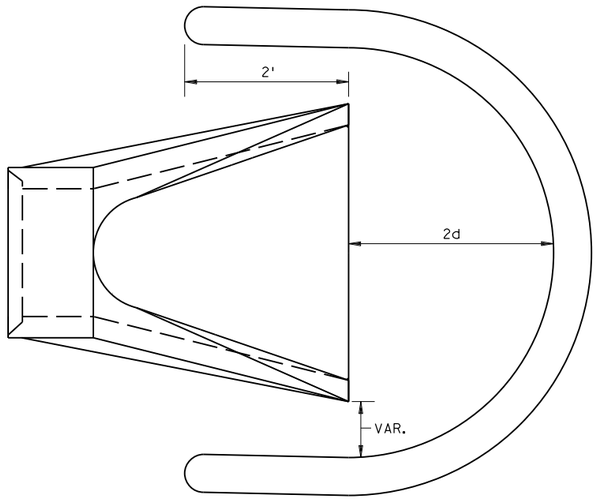
END VIEW



TOP VIEW

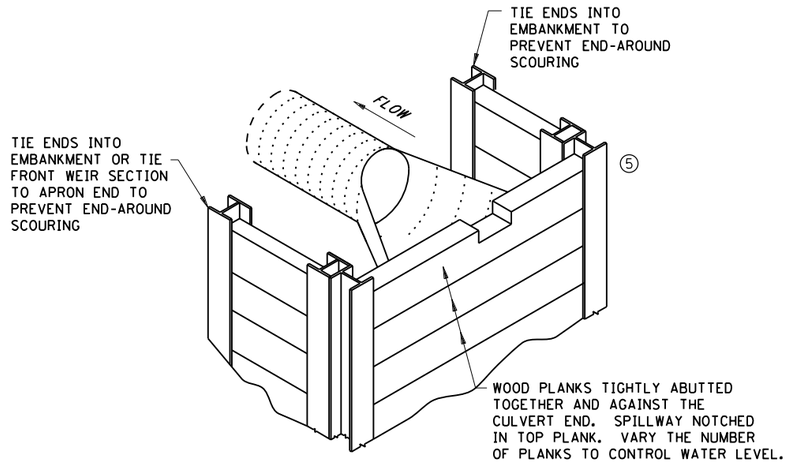
NOTE: SEDIMENT CONTROL LOG TYPE ROCK MAY BE WRAPPED AROUND RISER

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.

REVISED:

APPROVED: 2-28-2017

Chief Engineering Officer

MINNESOTA DEPARTMENT OF TRANSPORTATION

STANDARD PLAN 5-297.405 | 8 OF 8

APPROVED: 2-28-2017
REVISED:

STATE DESIGN ENGINEER

TEMPORARY SEDIMENT CONTROL

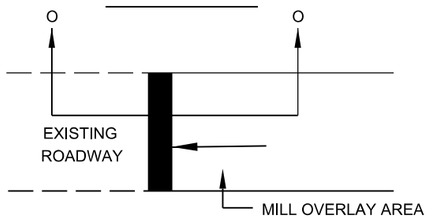
CULVERT END CONTROLS

STATE PROJ. NO. SAP 002-612-035 SHEET NO. 26 OF 110 SHEETS

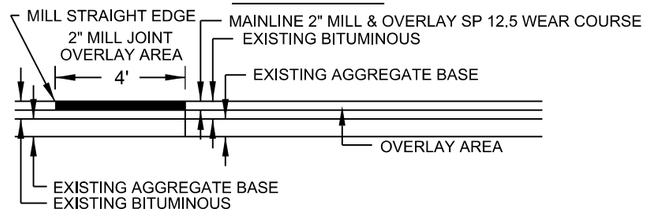
jcfoster

MAINLINE (MILL / OVERLAY) STA 13+56

PLAN VIEW

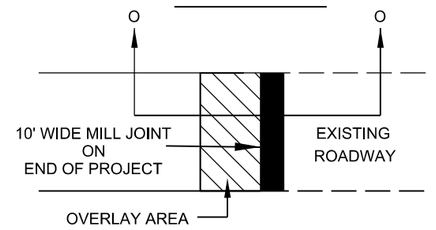


SECTION O - O



MAINLINE JOINT DETAIL (RECLAIM) STA 63+36

PLAN VIEW



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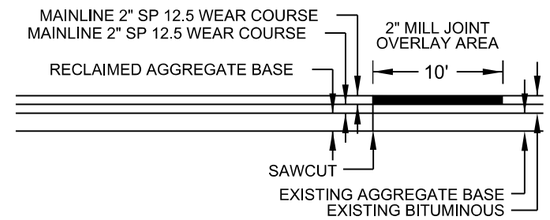
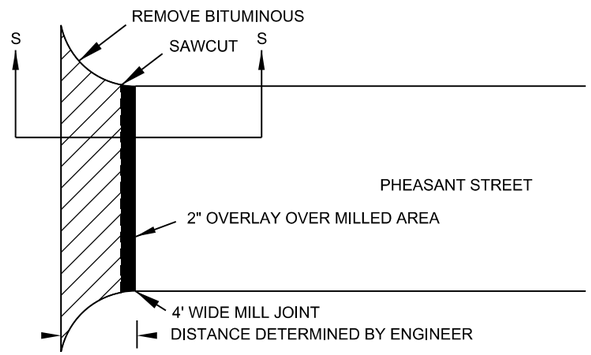
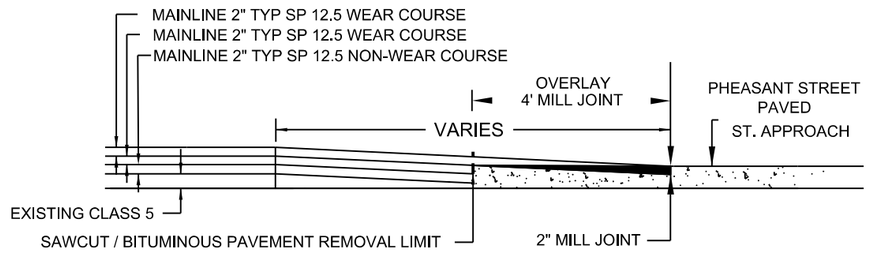


STREET APPROACH DETAIL, PHEASANT STREET

PLAN VIEW

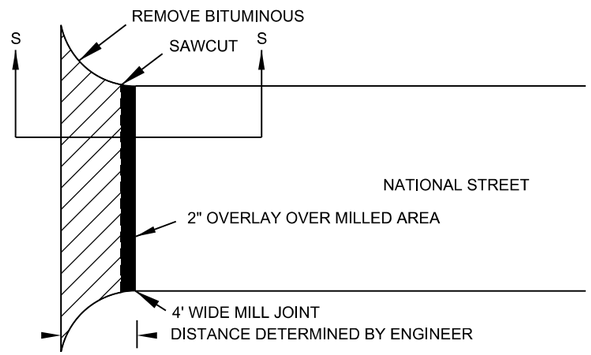


SECTION S - S

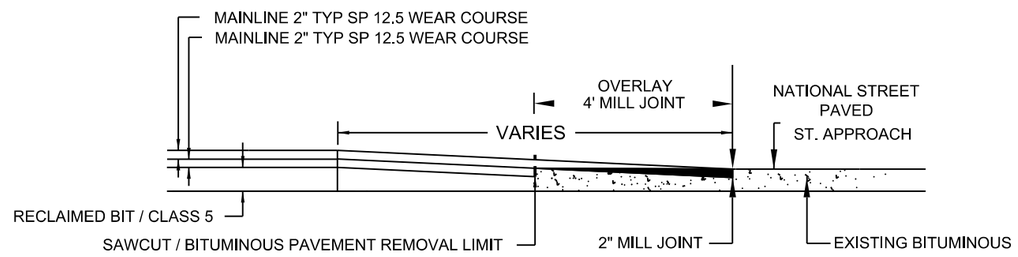


STREET APPROACH DETAIL, NATIONAL STREET

PLAN VIEW



SECTION S - S



NO	DATE	BY	CKD	APPR	REVISION		
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NAME: P:\002-612-035 17 to 53\Plan\002612035_DET.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: 01/30/2025 LICENSE NO. 49046

DRAWN BY JJF DATE 12/01/24

DESIGN BY JJF DATE 12/01/24

CHECKED BY NJD DATE 01/28/25

ANOKA COUNTY

ANOKA COUNTY HIGHWAY DEPT.

SAP 002-612-035

DETAILS

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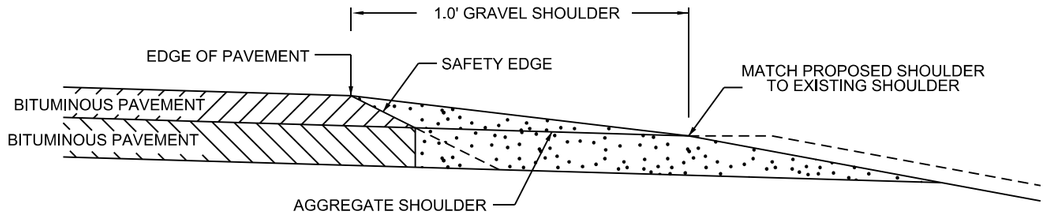
SHOULDER DETAIL

BITUMINOUS SAFETY EDGE
GRAVEL SHOULDER

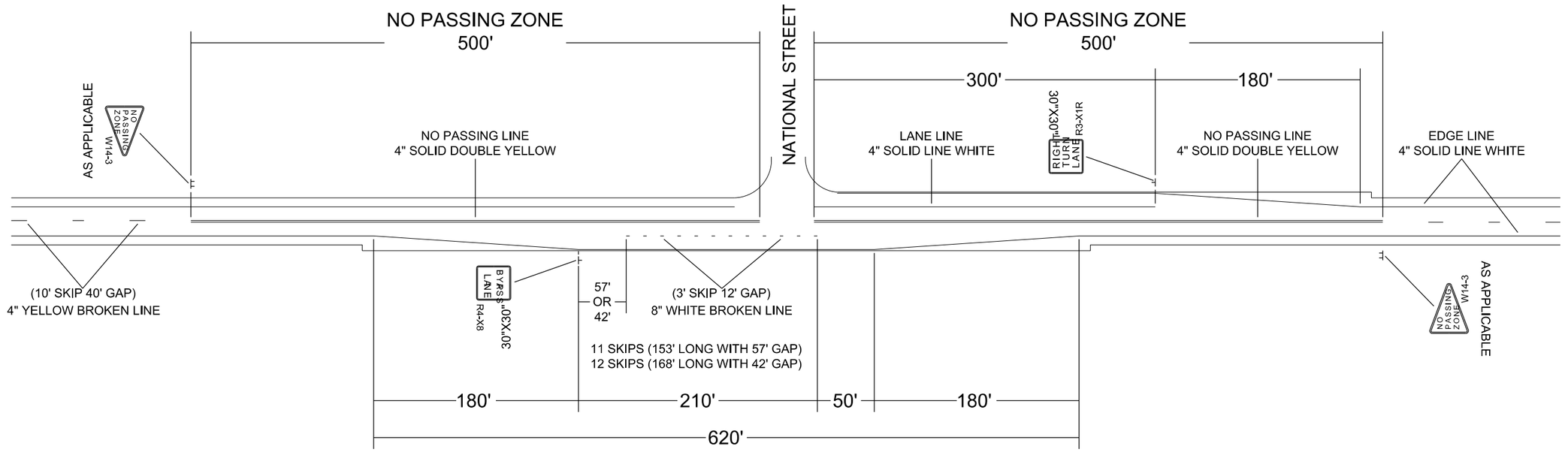


SAFETY EDGE TO BE USED IN ALL NON-CURB AREAS ON SHOULDER.

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

RIGHT TURN AND BYPASS LANE

GENERAL LAYOUT
PLAN VIEW



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ANOKA COUNTY

ANOKA COUNTY
HIGHWAY DEPT.

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DETAILS

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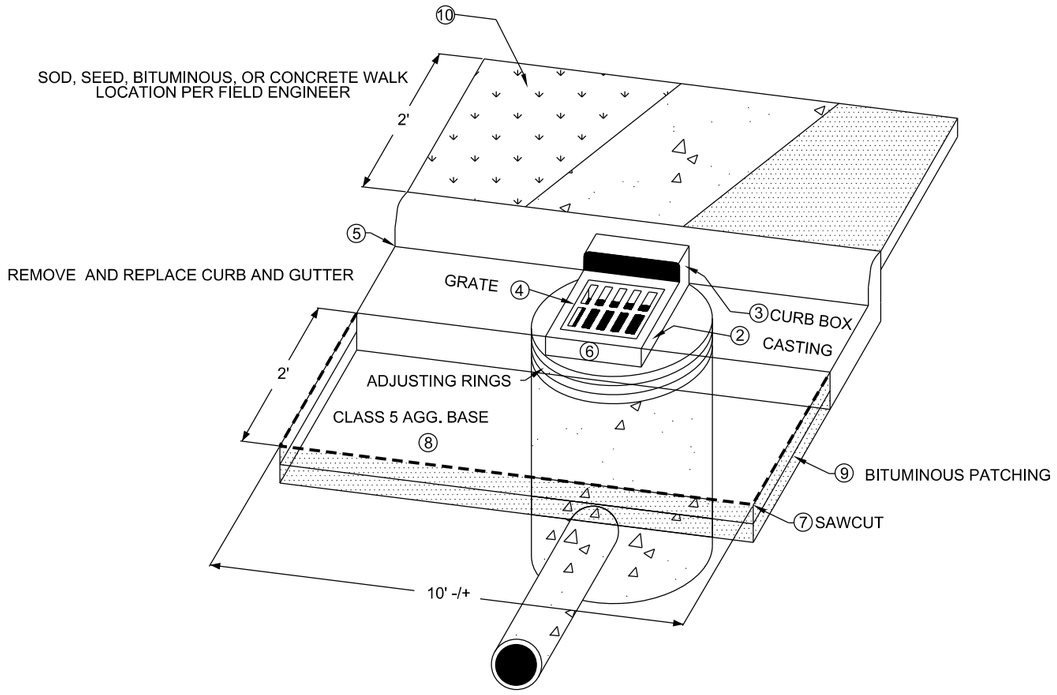
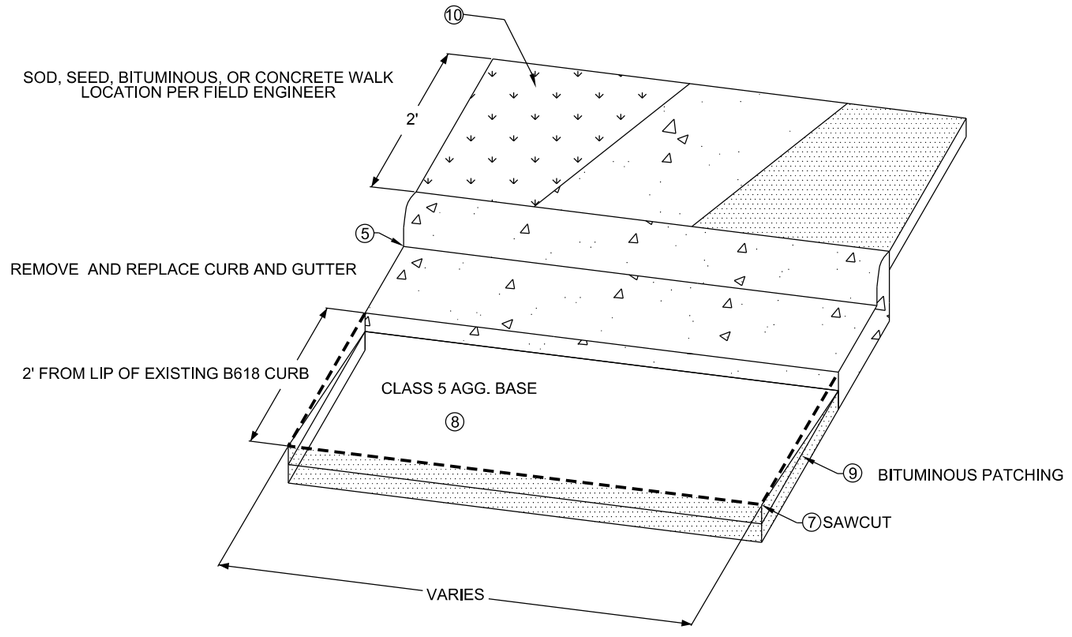
CATCH BASIN DETAIL

SEE STRUCTURE TAB FOR LOCATION
(PAGE 4)



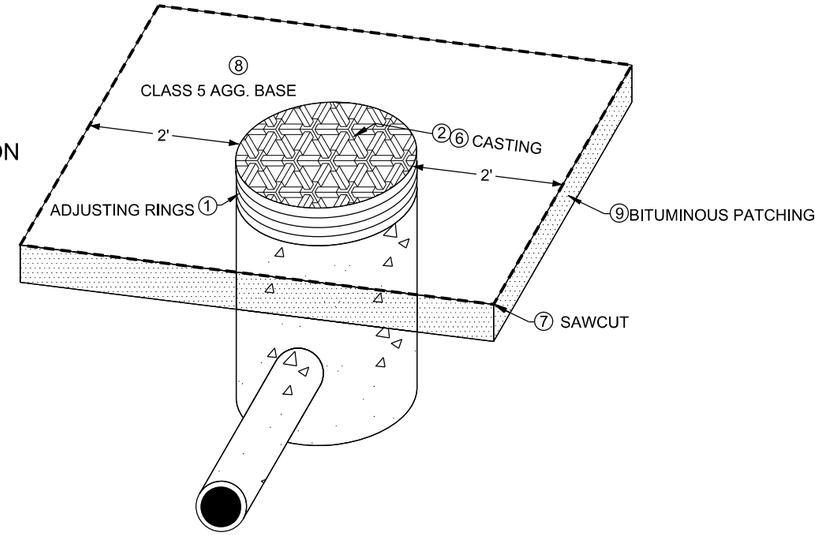
NEW CURB DETAIL

SEE PLAN FOR LOCATION



MANHOLE DETAIL

SEE STRUCTURE TAB FOR LOCATION



NOTES

FOR TRAFFIC CONTROL AT CATCH BASIN AND MANHOLE REPAIRS REFER TO THE MINNESOTA MANUAL ON TEMPORARY TRAFFIC CONTROL LAYOUTS FIELD MANUAL.

1. CONCRETE ENCASED CONCRETE ADJUSTING RINGS STANDARD PLATE 4026A
2. RING AND FRAME CASTING; REFERENCE CASTING ASSEMBLIES SUMMARY CHART FOR CASTING TYPE
3. CURB BOX MATCHES CASTING REFERENCE CHART FOR CASTING TYPE
4. GRATE CASTING; REFERENCE CASTING ASSEMBLIES SUMMARY CHART FOR CASTING TYPE
5. CONCRETE CURB AND GUTTER DESIGN B STANDARD PLATE 7100H, FORM CURB TO FIT CASTING
6. INSTALLATION OF CATCH BASIN OR MANHOLE CASTINGS; REFERENCE STANDARD PLATE PER TYPE OF CASTING
7. SAWCUT BITUMINOUS PAVEMENT / CONCRETE CURB FULL DEPTH.
8. ADD AND COMPACT AGGREGATE BASE CLASS 5 AROUND REPAIRED STRUCTURE. ITEM INCIDENTAL TO ENTIRE STRUCTURE REPAIR
9. REMOVE VARIABLE DEPTH BITUMINOUS, PATCH WITH 2, 3" LIFTS OF BITUMINOUS, TOP LIFT SHOULD TAPER TO BOTTOM LIFT AT CURB.
10. REPLACE DISTURED AREA BEHIND CATCH BASIN WITH EITHER SOD (RESIDENTAL AREAS), EROSION CONTROL BLANKET, BITUMINOUS ,OR CONCRETE

NO	DATE	BY	CKD	APPR	REVISION	
						01/30/2025 7:04:15 AM

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PRINT NAME: NICHOLAS J DOBDA

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ANOKA COUNTY

ANOKA COUNTY HIGHWAY DEPT.

SAP 002-612-035

DETAILS

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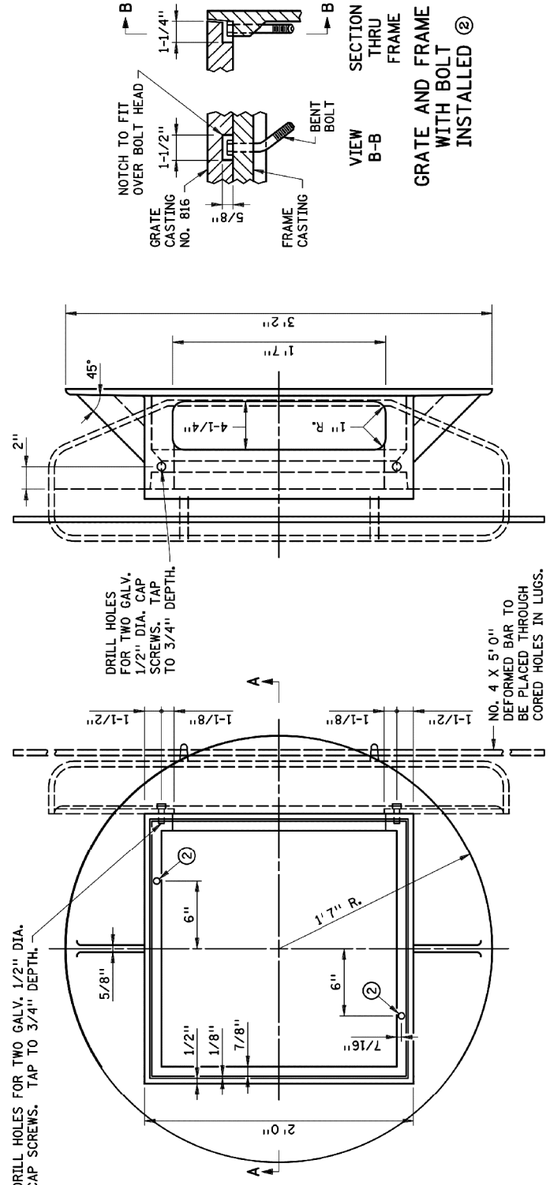


TOP VIEW

END VIEW

SECTION THRU FRAME

VIEW B-B

GRATE AND FRAME WITH BOLT INSTALLED ②

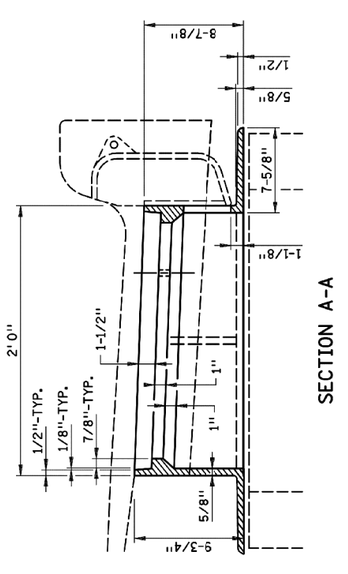
CASTINGS USED FOR ASSEMBLY

GRATE NO. 816 (MNDOT STD PLATE 4154B)

CURB BOX ① NO. 823A (MNDOT STD PLATE 4160) OR

NOTES:

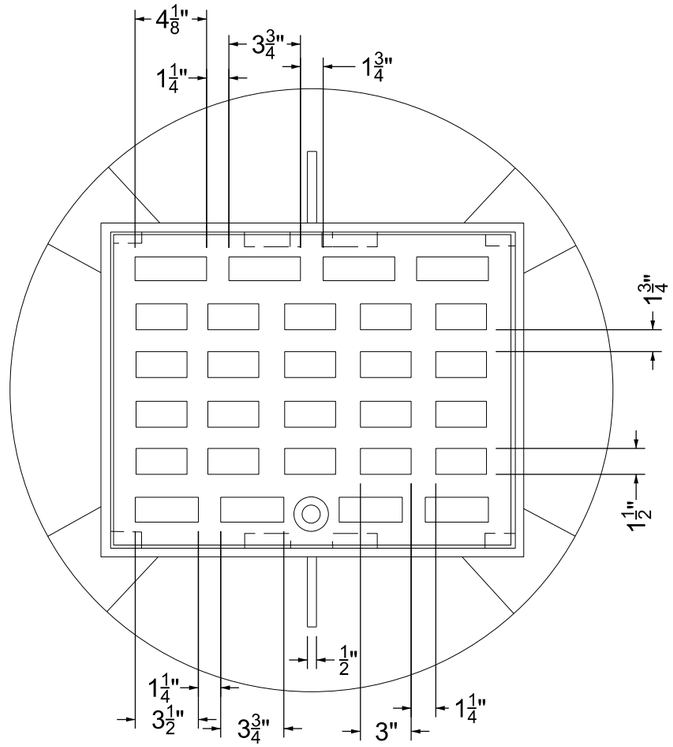
USE 1/4" FILLETS IN ALL CORNERS.
SEE MNDOT STANDARD PLATE 7111 FOR INSTALLATION REQUIREMENTS.
① APPLIES TO DESIGN B OR V CURB AND CURB AND GUTTER.
② AT LOCATIONS INDICATED IN TOP VIEW, PROVIDE 9/16" DIA. HOLES WHEN GRATE NO 816 (MNDOT STD PLATE 4154) IS USED WITH THIS FRAME. FIELD PLACE 1/2" DIA X 4" LONG GALV BOLT IN UP STREAM SIDE AND BENT UNDERSIDE TO PREVENT REMOVAL. THIS WILL PREVENT GRATE NO. 816 (MNDOT STD PLATE 4154) FROM BEING PLACED IN WRONG AND NOT BEING BICYCLE SAFE

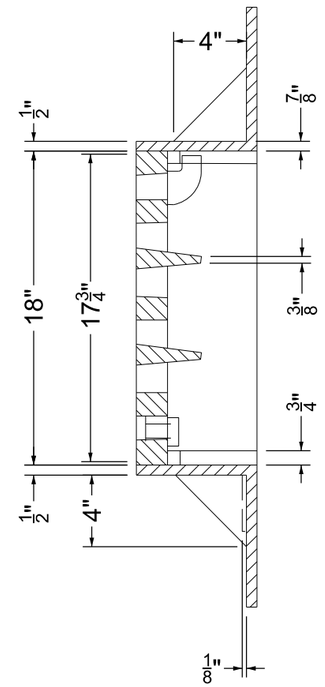


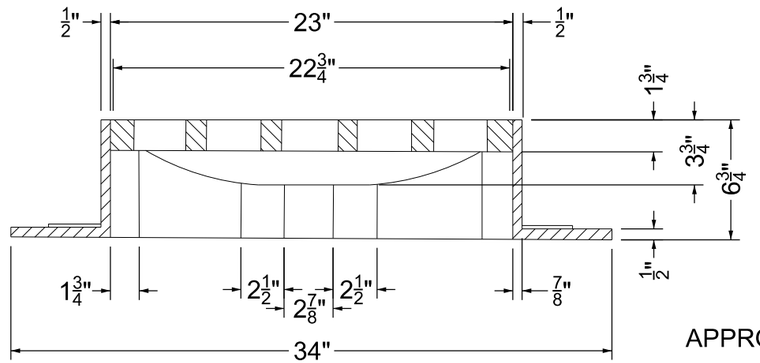
SECTION A-A

GRATE FRAME CASTING TYPE C & D

FRAME RING AND CASTING TYPE A







APPROX. WEIGHT = 300 LBS.

4 OF 5

NO	DATE	BY	CKD	APPR	REVISION		
						01/30/2025	7:04:15 AM

NAME: P:\002-612-035 17 to 53\Plan\002612035_DET.dgn

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ANOKA COUNTY HIGHWAY DEPT.

SAP 002-612-035

DETAILS

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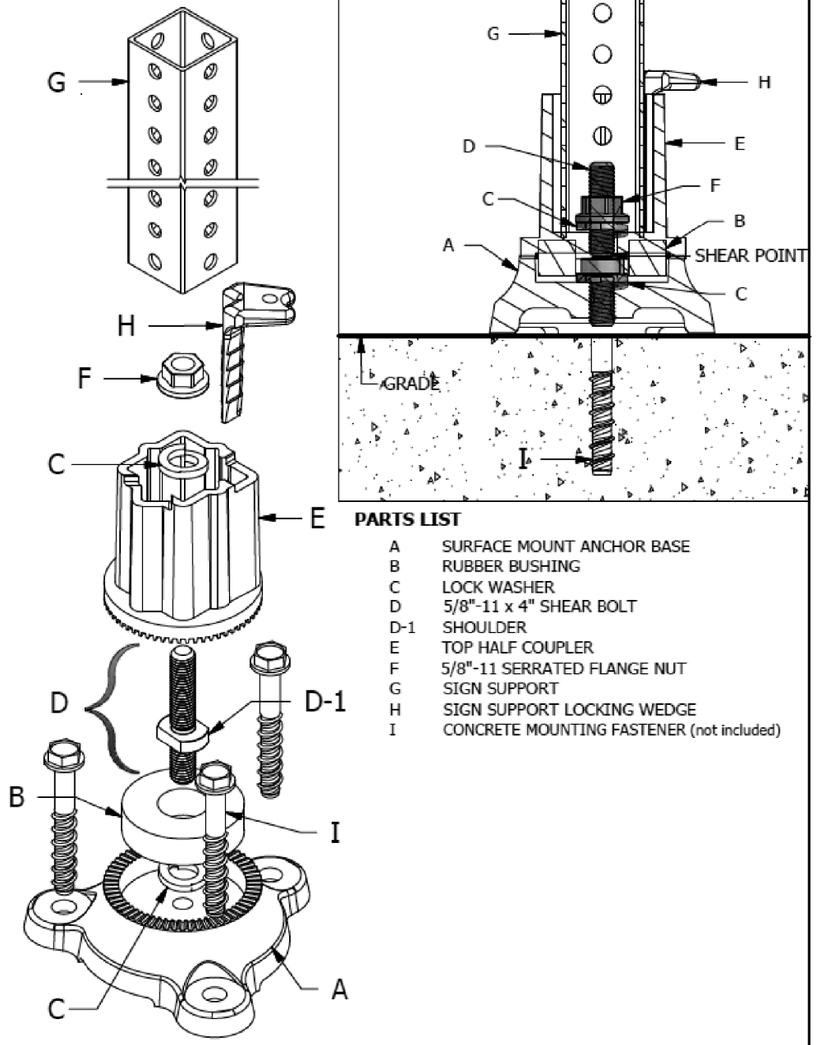
MEDIAN SIGN INSTALLATION ONLY

DATE:	
8-13-21	

INSTALLED CROSS SECTION VIEW



PARTS LIST

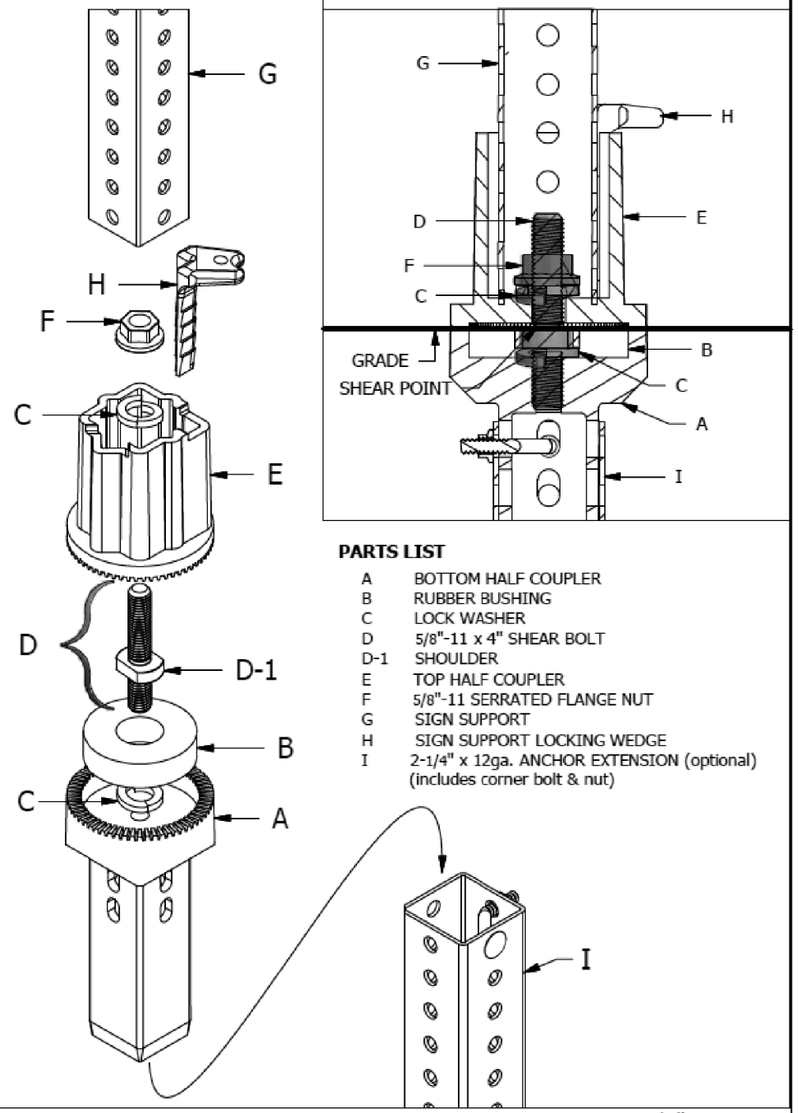
A	SURFACE MOUNT ANCHOR BASE
B	RUBBER BUSHING
C	LOCK WASHER
D	5/8"-11 x 4" SHEAR BOLT
D-1	SHOULDER
E	TOP HALF COUPLER
F	5/8"-11 SERRATED FLANGE NUT
G	SIGN SUPPORT
H	SIGN SUPPORT LOCKING WEDGE
I	CONCRETE MOUNTING FASTENER (not included)

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

MEDIAN SIGN INSTALLATION ONLY

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

INSTALLED CROSS SECTION VIEW



PARTS LIST

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

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

NOTE: SHOULDER SIGNS AND OR SIGNS IN NON-BITUMINOUS OR CONCRETE AREA WILL BE INSTALLED WITH 3 POUND "U" CHANNEL POSTS

NO	DATE	BY	CKD	APPR	REVISION		
						01/30/2025	7:04:17 AM

NAME: P:\002-612-035 17 to 53\Plan\002612035_DET.dgn

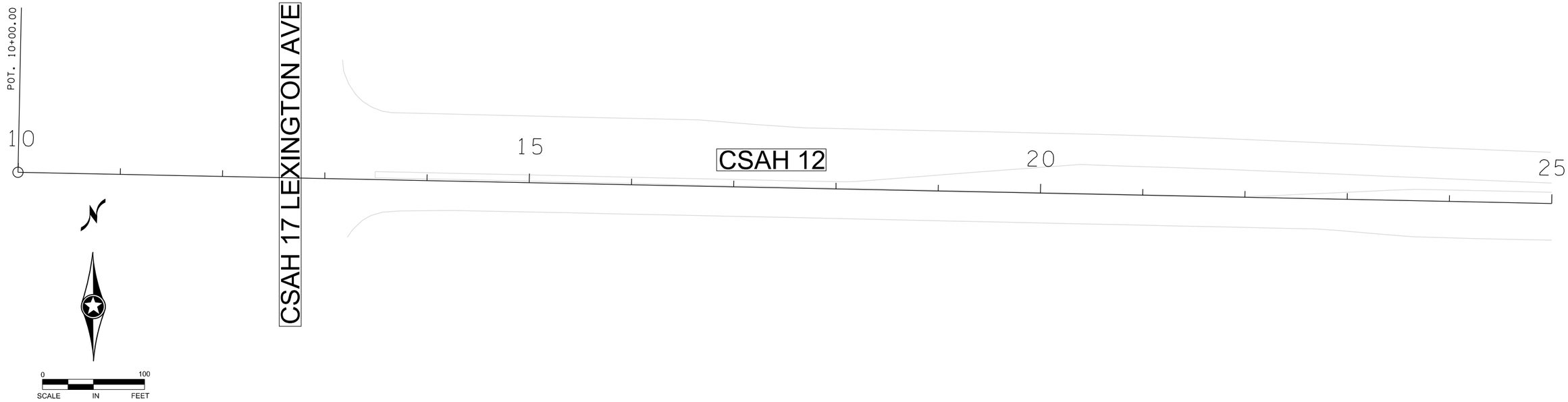
I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
PRINT NAME: NICHOLAS J DOBDA
SIGNATURE:
DATE: 01/30/2025 LICENSE NO. 49046

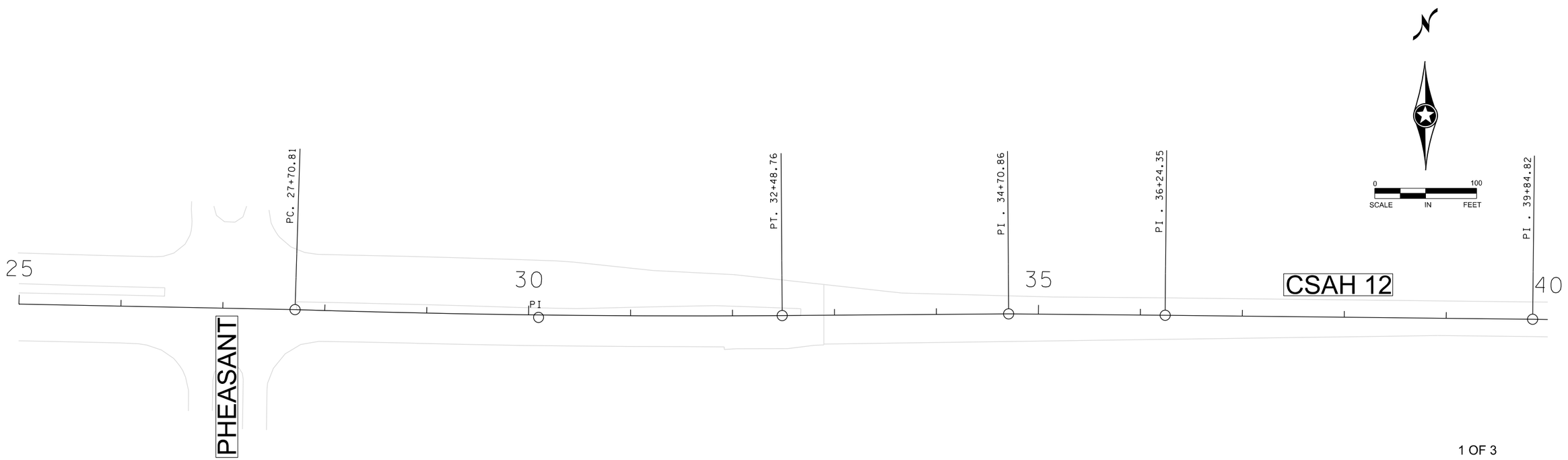
DRAWN BY JJF DATE 12/01/24
DESIGN BY JJF DATE 12/01/24
CHECKED BY NJD DATE 01/28/25

ANOKA COUNTY
HIGHWAY DEPT.

SAP 002-612-035

DETAILS





NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-612-035 17 to 53\Plan\002612035_AL1.dgn 01/30/2025 7:04:21 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.

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SIGNATURE:

DATE: 01/30/2025 LICENSE NO. 49046

DRAWN BY JJF DATE 12/01/24

DESIGN BY JJF DATE 12/01/24

CHECKED BY NJD DATE 01/28/25

ANOKA COUNTY

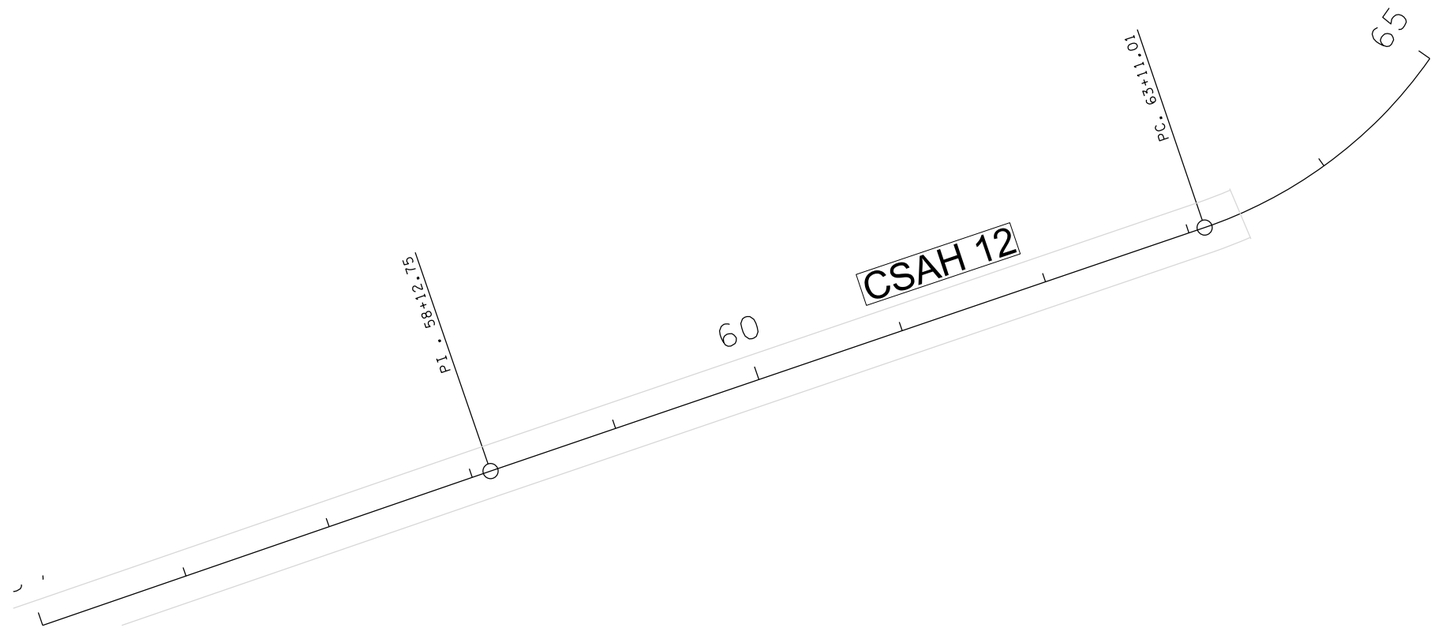
ANOKA COUNTY HIGHWAY DEPT.

SAP 002-612-035

ALIGNMENT

STA 10+00.00 TO 40+00.00

Sheet 32 of 110 Sheets



NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-612-035 17 to 53\Plan\002612035_AL2.dgn 01/30/2025 7:04:28 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: 01/30/2025 LICENSE NO. 49046

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CHECKED BY NJD DATE 01/28/25

ANOKA COUNTY

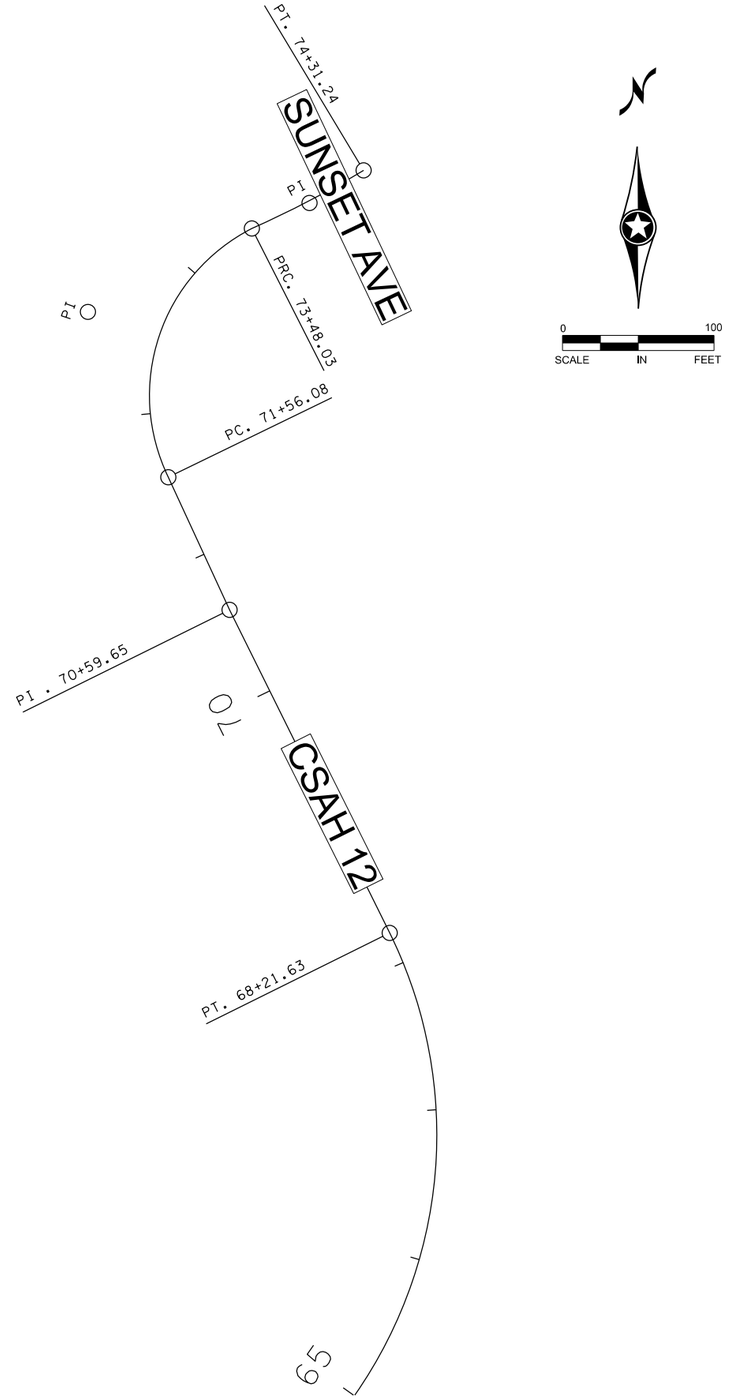
ANOKA COUNTY HIGHWAY DEPT.

SAP 002-612-035

ALIGNMENT

STA 40+00.00 TO 65+00.00

Sheet 33 of 110 Sheets



ALIGNMENT TABULATION

POINT NUMBER	POINT	STATION	CIRCULAR CURVE DATA					COORDINATES		AZIMUTH
			DELTA	DEGREE	RADIUS	TANGENT	LENGTH	E	N	
℄ C.S.A.H. 12 <ALIRD5>										
500	POT	10+00.000						526,448.0554	148,287.2242	
	PC	27+70.809						528,218.4984	148,251.2326	S 88° 11' 28.61" E
ALIRD5 1	PI	30+09.817	2° 13' 38.97" LT	0° 27' 57.76"	12,294.030'	239.008'	477.956'	528,457.3873	148,243.6888	PI
	CC							528,606.5331	160,539.1374	
	PT	32+48.765						528,696.3889	148,245.4357	N 89° 34' 52.42" E
501	POT	34+70.863						528,918.4810	148,247.0590	
502	POT	36+24.354						529,071.9670	148,245.7740	
503	POT	39+84.823						529,432.4140	148,241.8070	
504	POT	45+11.383						529,958.9200	148,234.2310	
	PC	51+17.467						530,564.9712	148,227.9225	S 89° 24' 13.02" E
ALIRD5 2	PI	52+47.140	19° 37' 06.64" LT	7° 38' 21.97"	750.000'	129.672'	256.806'	530,694.6365	148,226.5728	PI
	CC							530,572.7777	148,977.8819	
	PT	53+74.273						530,817.2277	148,268.8373	N 70° 58' 40.34" E
505	POT	58+12.751						531,231.7620	148,411.7520	
	PC	63+11.012						531,703.3589	148,572.5617	N 71° 10' 16.15" E
ALIRD5 3	PI	66+53.216	97° 31' 11.84" LT	19° 05' 54.94"	300.000'	342.205'	510.613'	532,027.2511	148,683.0056	PI
	CC							531,606.5362	148,856.5078	
	PT	68+21.625						531,875.3688	148,989.6581	N 26° 20' 55.69" W
506	POT	70+59.653						531,769.7237	149,202.9572	
	PC	71+56.081						531,729.2476	149,290.4781	N 25° 56' 10.67" W
ALIRD5 4	PI	72+77.487	88° 57' 47.54" RT	46° 20' 48.89"	123.624'	121.407'	191.951'	531,676.1477	149,399.6568	PI
	CC							531,840.4200	149,344.5476	
	PRC	73+48.031						531,784.3478	149,454.7235	N 63° 01' 36.87" E
	PRC	73+48.031						531,784.3478	149,454.7235	N 66° 02' 54.92" E
ALIRD5 5	PI	73+89.686	7° 01' 03.31" LT	8° 26' 02.63"	679.338'	41.655'	83.205'	531,822.4156	149,471.6337	PI
	CC							531,508.5626	150,075.5636	
	PT	74+31.236						531,858.1323	149,493.0682	N 59° 01' 51.62" E

AREA OUTSIDE PROJECT LIMITS

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-612-035 17 to 53\Plan\002612035_AL3.dgn 01/30/2025 7:04:29 AM

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PRINT NAME: NICHOLAS J DOBDA

SIGNATURE:

DATE: 01/30/2025 LICENSE NO. 49046

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DESIGN BY JJF DATE 12/01/24

CHECKED BY NJD DATE 01/28/25

ANOKA COUNTY

ANOKA COUNTY HIGHWAY DEPT.

SAP 002-612-035

ALIGNMENT

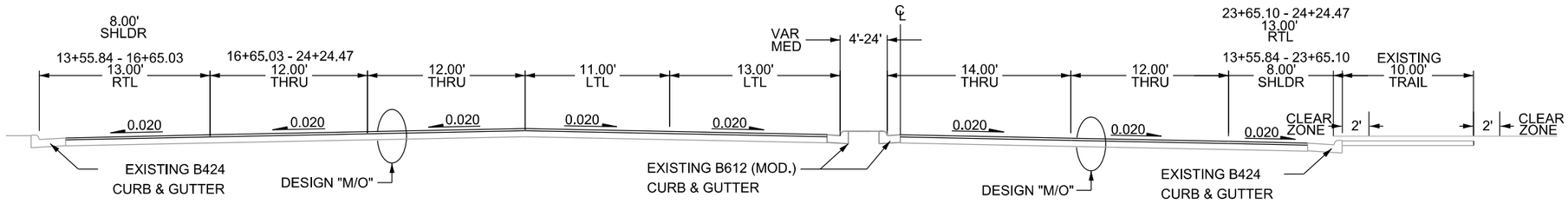
STA 65+00.00 TO 74+31.24

Sheet 34 of 110 Sheets

jcfoster

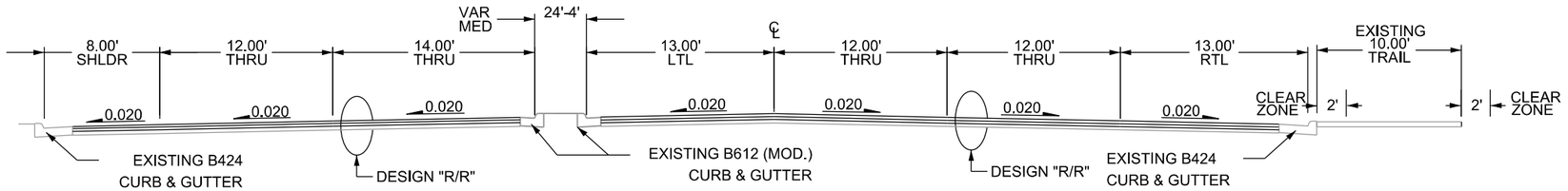
109TH AVE NE (CSAH12)

EXISTING/PROPOSED
13+56.00 TO 24+24.00



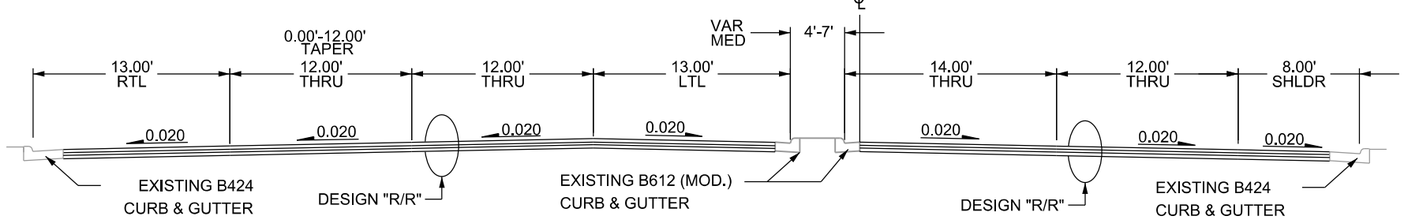
109TH AVE NE (CSAH12)

EXISTING/PROPOSED
24+24.00 - 26+40.00



109TH AVE NE (CSAH12)

EXISTING/PROPOSED
26+40.00 - 32+90.00



NO	DATE	BY	CKD	APPR	REVISION		
1	1/29/25	JF	ND		ADDED 2' CLEAR ZONE TO IN-PLACE TRAIL TYPICALS		
						01/30/2025	7:04:30 AM

NAME: P:\002-612-035 17 to 53\Plan\002612035_TYP.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.

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CHECKED BY NJD DATE 01/28/25

ANOKA COUNTY

ANOKA COUNTY
HIGHWAY DEPT.

SAP 002-612-035

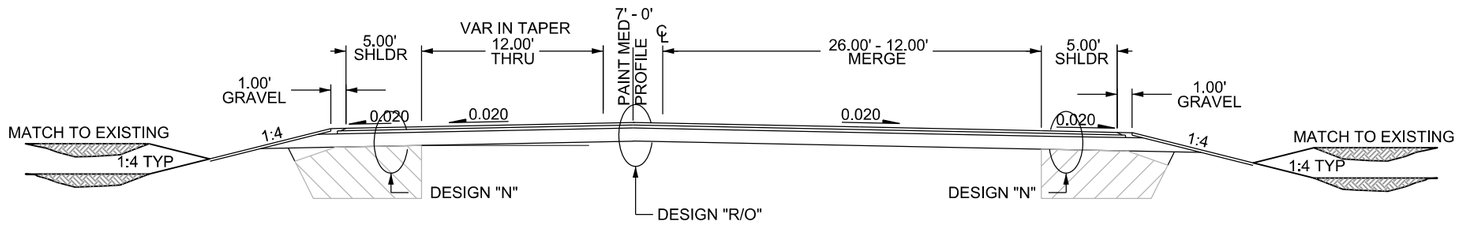
TYPICAL SECTIONS

Sheet 35 of 110 Sheets

jcfoster

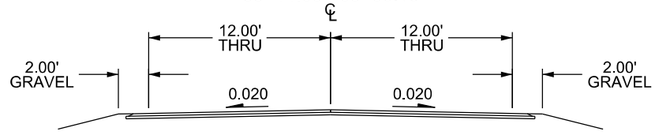
109TH AVE NE (CSAH12)

EXISTING / PROPOSED
32+90.00 - 35+14.00



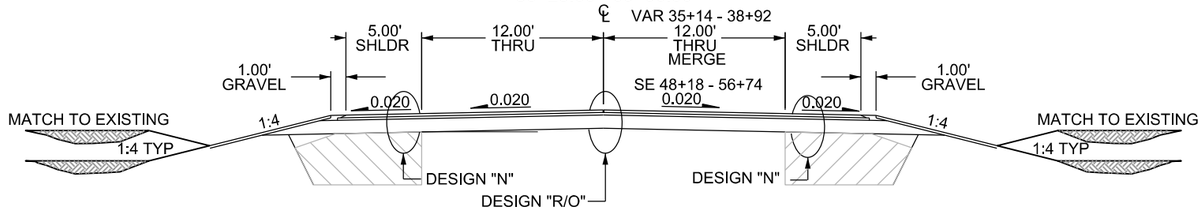
109TH AVE NE (CSAH12)

EXISTING
35+14.00 - 63+36.18



109TH AVE NE (CSAH12)

PROPOSED
35+14.00 - 41+56.00
50+25.00 - 63+36.00



2 OF 3

NO	DATE	BY	CKD	APPR	REVISION		
						01/30/2025	7:04:30 AM

NAME: P:\002-612-035 17 to 53\Plan\002612035_TYP.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: [signature]

DATE: 01/30/2025 LICENSE NO. 49046

DRAWN BY JJF DATE 12/01/24

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CHECKED BY NJD DATE 01/28/25

ANOKA COUNTY HIGHWAY DEPT.

SAP 002-612-035

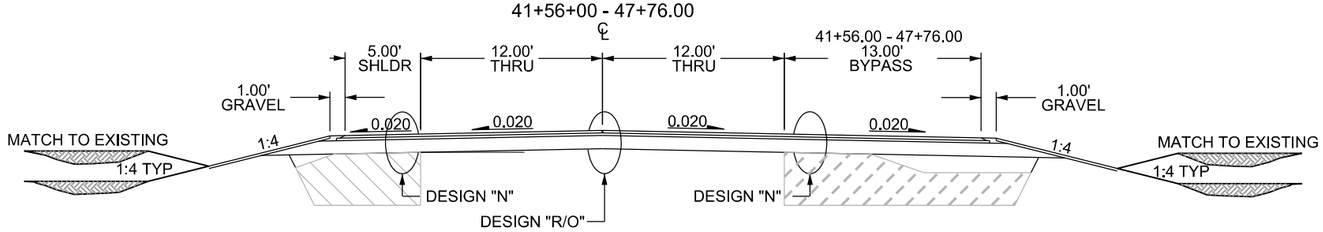
TYPICAL SECTIONS

Sheet 36 of 110 Sheets

jcfoster

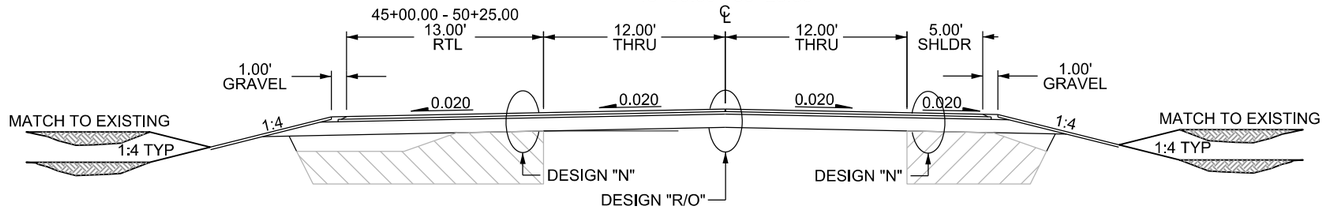
109TH AVE NE (CSAH12)

PROPOSED
LEB BYPASSS AT NATIONAL ST
41+56+00 - 47+76.00

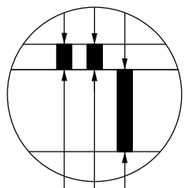


109TH AVE NE (CSAH12)

PROPOSED
LWB RTL AT NATIONAL ST
45+00.00 - 50+25.00

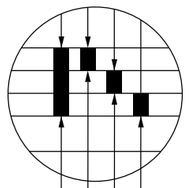


DESIGN M/O
MILL / OVERLAY



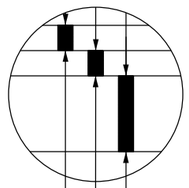
2.0" MILL BITUMINOUS
2.0" BITUMINOUS WEAR(SPWEB340C)
REMAINING BITUMINOUS

DESIGN R/R
REMOVE / REPLACE



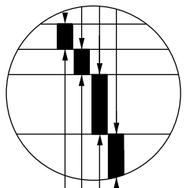
REMOVE EXISTING BITUMINOUS
2.0" BITUMINOUS WEAR(SPWEB340C)
2.0" BITUMINOUS WEAR(SPWEB340C)
2.0" BITUMINOUS NON-WEAR(SPNWB330B)

DESIGN R/O
RECLAIM / OVERLAY



2.0" BITUMINOUS WEAR(SPWEB340C)
2.0" BITUMINOUS WEAR(SPWEB340C)
INPLACE RECLAIMED BITUMINOUS

DESIGN N
NEW SHLDR / RTL / BYPASS



2.0" BITUMINOUS WEAR(SPWEB340C)
2.0" BITUMINOUS WEAR(SPWEB340C)
6.0" CLASS 5 BASE
SELECT GRANULAR EMBANKMENT

NO	DATE	BY	CKD	APPR	REVISION		
						01/30/2025	7:04:30 AM

NAME: P:\002-612-035 17 to 53\Plan\002612035_TYP.dgn

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SIGNATURE:
DATE: 01/30/2025 LICENSE NO. 49046

DRAWN BY JJF DATE 12/01/24
DESIGN BY JJF DATE 12/01/24
CHECKED BY NJD DATE 01/28/25

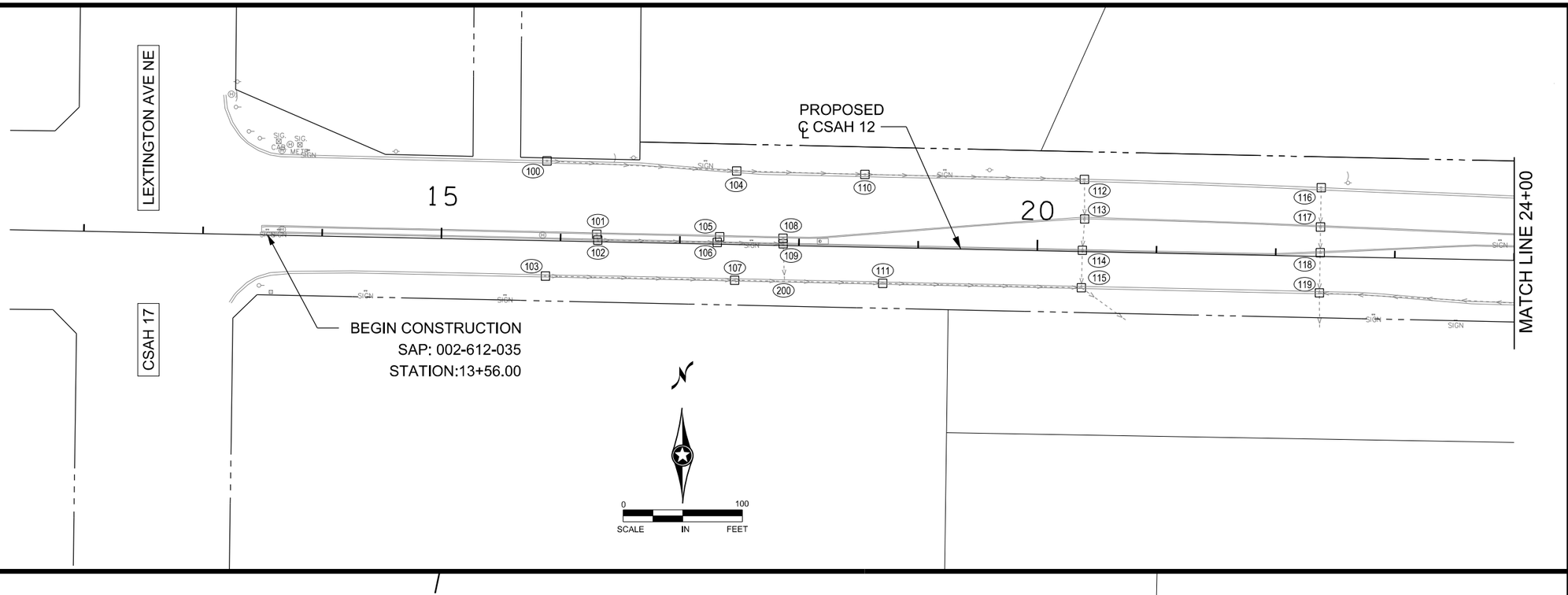
ANOKA COUNTY
HIGHWAY DEPT.

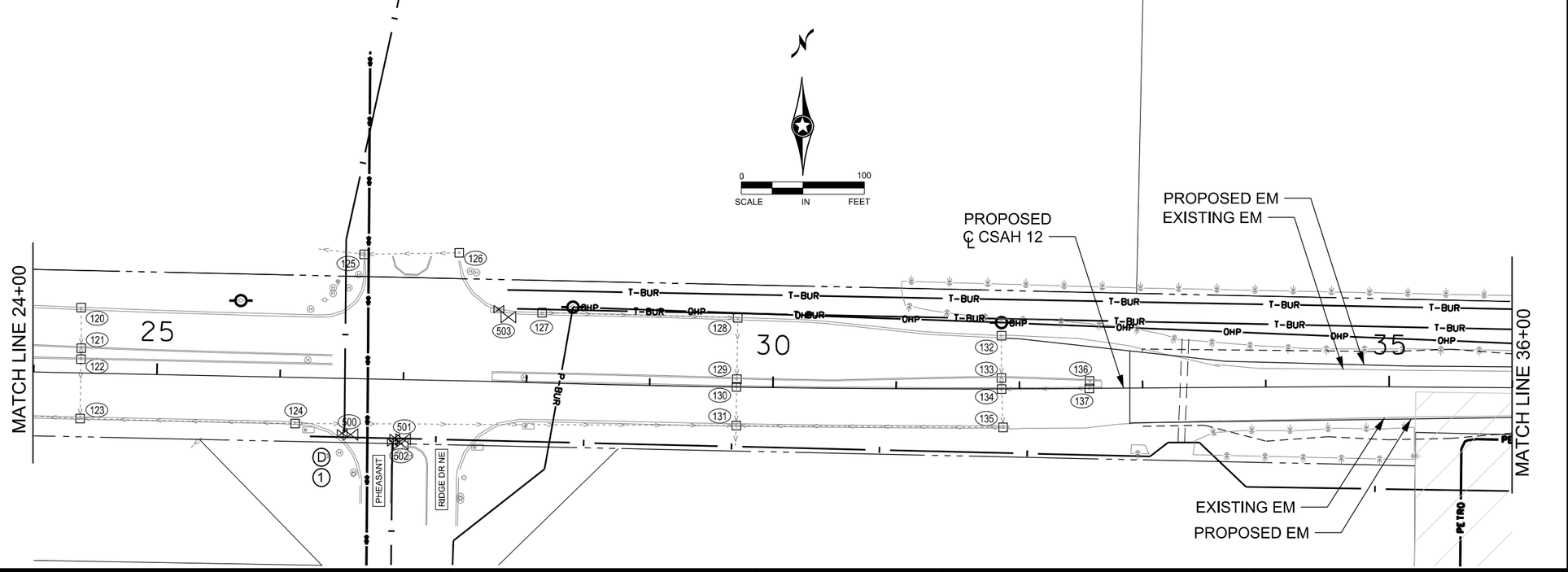
SAP 002-612-035

TYPICAL SECTIONS

Sheet 37 of 110 Sheets

jcfoster





UTILITY LEGEND

- PE TRO — MAGELLAN MIDSTREAM-PIPELINE
- MAGELLAN EASEMENT
- G-3"PVC — CENTERPOINT-GAS
- OHP — XCEL ENERGY-OH-POWER
- P-BUR — XCEL ENERGY-BUR-POWER
- T-BUR — LUMEN CENTURYLINK-TELE COMM
- TV — COMCAST-TV COMM
- SANITARY SEWER - BLAINE
- WATERMAIN - BLAINE
- EXISTING STORM
- POWER POLE
- HAND HOLE
- GATE VALVE
- GAS VALVE
- WETLANDS
- ENVIORNMENTAL AREA OF CONCERN "RUBUS"
- CONSTRUCTION LIMIT
- EXISTING R / W

WARNING
HIGH-PRESSURE PIPELINE(S)
Excavation and/or Construction Prohibited
Without compliance with State One-Call, AND
Without Written Permission From
MAGELLAN PIPELINE COMPANY, L.P.

NO	DATE	BY	CKD	APPR	REVISION	
1	1/29/25	JF	ND		LABELED MNDOT R/W, ALL SHEETS	
NO	DATE	BY	CKD	APPR	REVISION	01/30/2025 7:04:32 AM

NAME: P:\002-612-035 17 to 53\Plan\002612035_UT1.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.

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ANOKA COUNTY

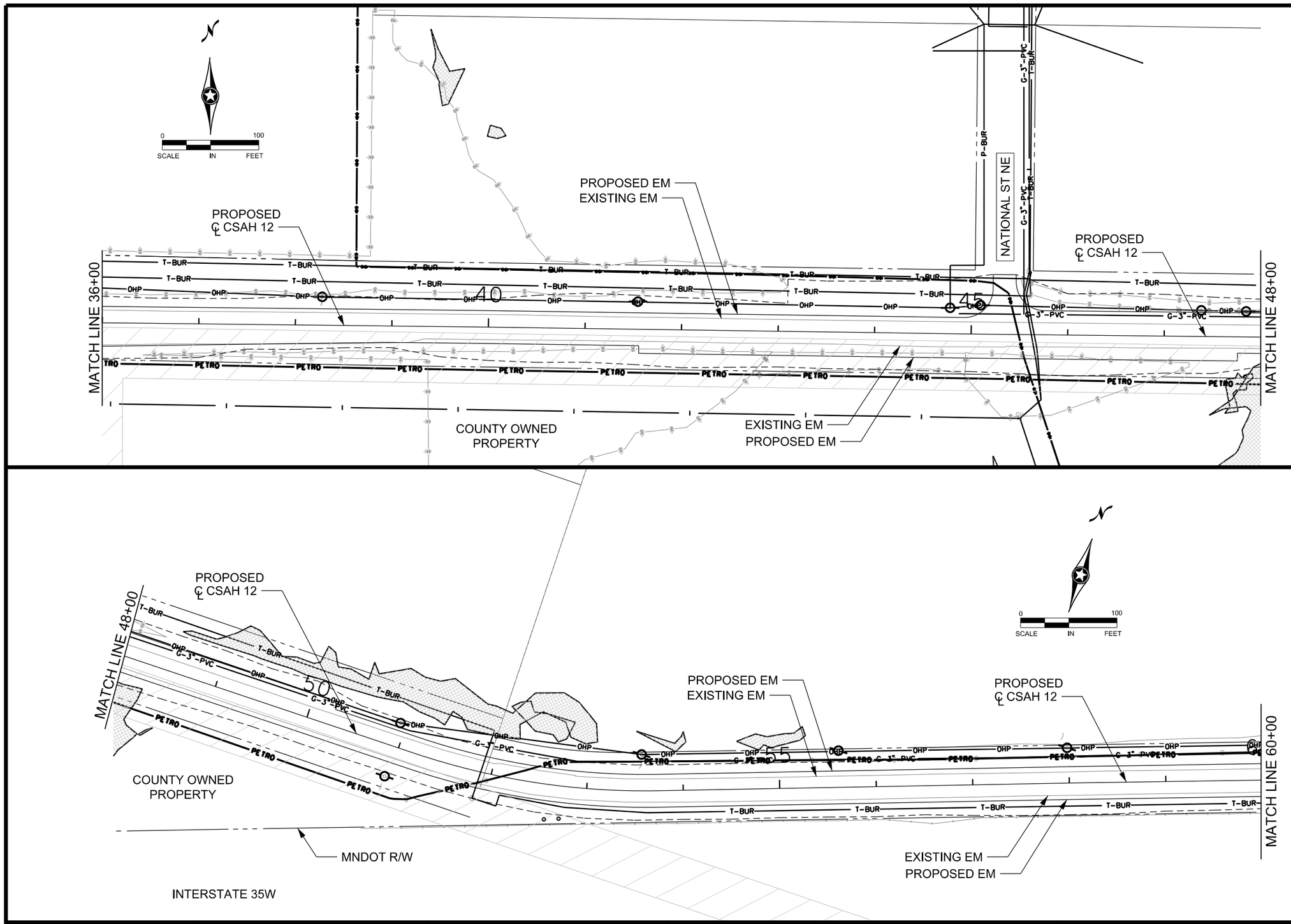
ANOKA COUNTY HIGHWAY DEPT.

SAP 002-612-035

EXISTING UTILITIES

STA 13+56.00 TO 36+00.00

jcfoster



UTILITY LEGEND

- PETRO — MAGELLAN MIDSTREAM-PIPELINE
- MAGELLAN EASEMENT
- G-3"PVC — CENTERPOINT-GAS
- OHP — XCEL ENERGY-OH-POWER
- P-BUR — XCEL ENERGY-BUR-POWER
- T-BUR — LUMEN CENTURYLINK-TELE COMM
- TV — COMCAST-TV COMM
- SANITARY SEWER - BLAINE
- WATERMAIN - BLAINE
- EXISTING STORM
- POWER POLE
- HAND HOLE
- GATE VALVE
- GAS VALVE
- WETLANDS
- ENVIORNMENTAL AREA OF CONCERN "RUBUS"
- CONSTRUCTION LIMIT
- EXISTING R / W

WARNING
HIGH-PRESSURE PIPELINE(S)
Excavation and/or Construction Prohibited
Without compliance with State One-Call, AND
Without Written Permission From
MAGELLAN PIPELINE COMPANY, L.P.

NO	DATE	BY	CKD	APPR	REVISION		
1	1/29/25	JF	ND		LABELED MNDOT R/W, ALL SHEETS		
NAME: P:\002-612-035 17 to 53\Plan\002612035_UT2.dgn						01/30/2025	7:04:34 AM

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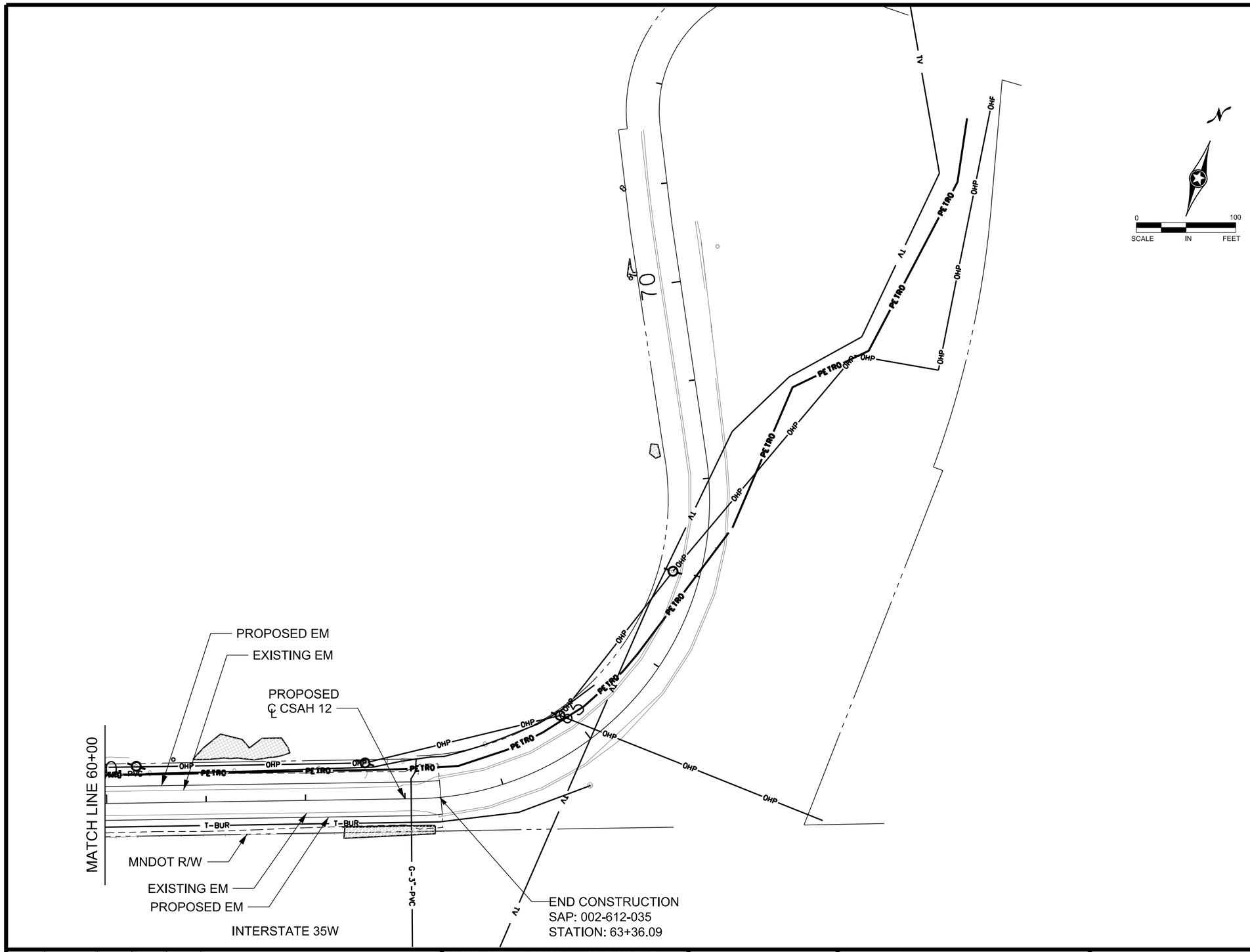
ANOKA COUNTY HIGHWAY DEPT.

SAP 002-612-035

EXISTING UTILITIES
STA 36+00.00 TO 60+00.00

jcfoster



UTILITY LEGEND

- MAGELLAN MIDSTREAM-PIPELINE
- MAGELLAN EASEMENT
- CENTERPOINT-GAS
- XCEL ENERGY-OH-POWER
- XCEL ENERGY-BUR-POWER
- LUMEN CENTURYLINK-TELE COMM
- COMCAST-TV COMM
- SANITARY SEWER - BLAINE
- WATERMAIN - BLAINE
- EXISTING STORM
- POWER POLE
- HAND HOLE
- GATE VALVE
- GAS VALVE
- WETLANDS
- ENVIORNMENTAL AREA OF CONCERN "RUBUS"
- CONSTRUCTION LIMIT
- EXISTING R / W

WARNING
HIGH-PRESSURE PIPELINE(S)
Excavation and/or Construction Prohibited
Without compliance with State One-Call, AND
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MAGELLAN PIPELINE COMPANY, L.P.

3 OF 3

NO	DATE	BY	CKD	APPR	REVISION		
1	1/29/25	JF	ND		LABELED MNDOT R/W, ALL SHEETS		
NAME: P:\002-612-035 17 to 53\Plan\002612035_UT3.dgn						01/30/2025	7:04:35 AM

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ANOKA COUNTY HIGHWAY DEPT.

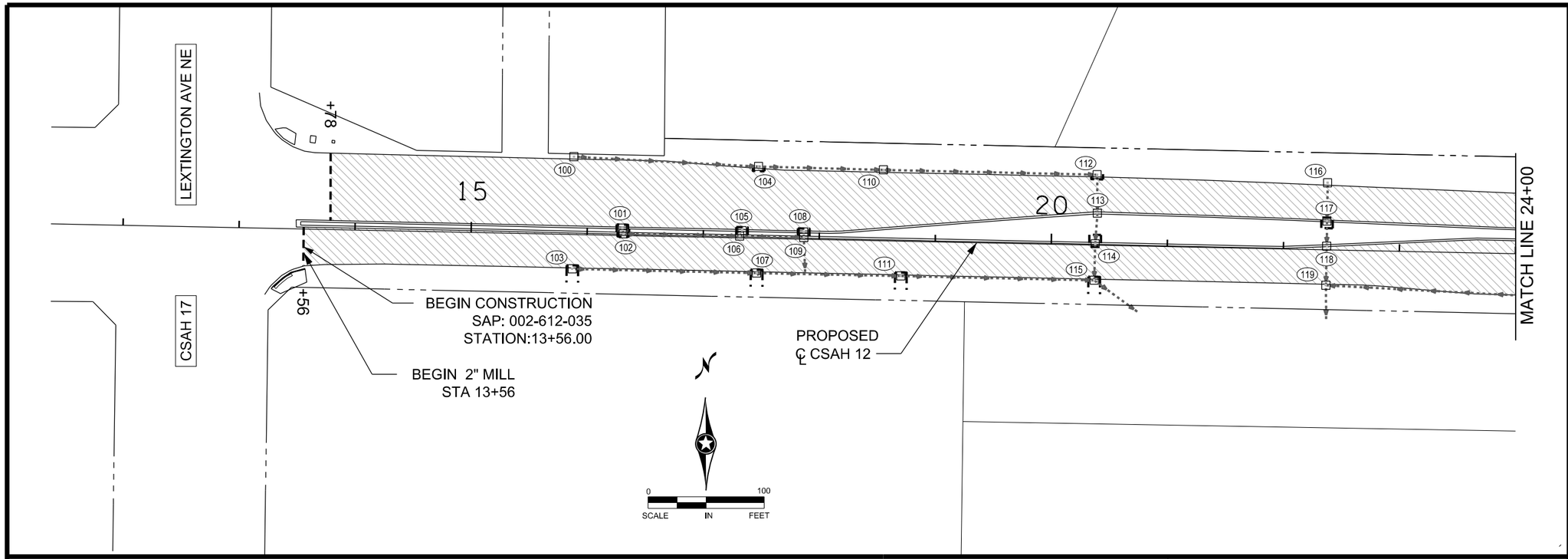
SAP 002-612-035

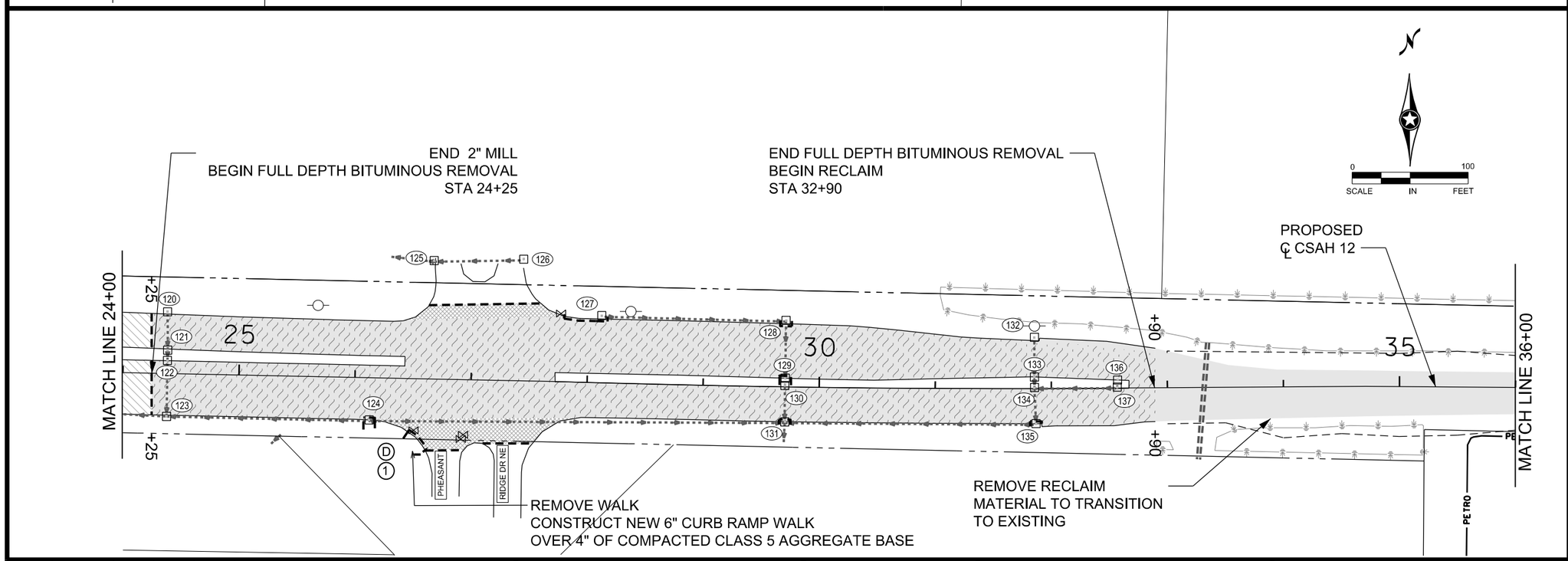
EXISTING UTILITIES

STA 60+00.00 TO 63+36.09

Sheet 40 of 110 Sheets

jcfoster





REMOVALS LEGEND

- 2" MILL AREA
- REMOVE BITUMINOUS FULL DEPTH
- RECLAIM BITUMINOUS FULL DEPTH
- REMOVE & REPLACE PHEASANT ST APPROACH

NOTE: SEE FLOODPLAIN MITIGATION SHEET FOR GRUBBING REMOVALS

- (XXX) □ CATCH BASIN REPAIRS
- ⋈ ADJUST GATE VALVE
- (D) TRUNCATED DOMES
- (1) REMOVE 6" CONCRETE REPLACE CONCRETE CURB RAMP
- SAWCUT
- REMOVE / REPLACE CULVERT
- EXISTING CULVERT
- EXISTING STORM SEWER
- PETRO MAGELLAN PIPELINE
- WETLANDS
- ENVIORNMENTAL AREA OF CONCERN "RUBUS"
- CONSTRUCTION LIMIT
- R / W
- POWER POLE
- (H) HAND HOLE

WARNING
HIGH-PRESSURE PIPELINE(S)
Excavation and/or Construction Prohibited
Without compliance with State One-Call, AND
Without Written Permission From
MAGELLAN PIPELINE COMPANY, L.P.

1 OF 3

NO	DATE	BY	CKD	APPR	REVISION		
1	1/29/25	JF	ND		LABELED MNDOT R/W, ALL SHEETS		
NO	DATE	BY	CKD	APPR	REVISION	01/30/2025	7:04:36 AM

NAME: P:\002-612-035 17 to 53\Plan\002612035_REM1.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: 01/30/2025 LICENSE NO. 49046

DRAWN BY JJF DATE 12/01/24

DESIGN BY JJF DATE 12/01/24

CHECKED BY NJD DATE 01/28/25

ANOKA COUNTY
HIGHWAY DEPT.

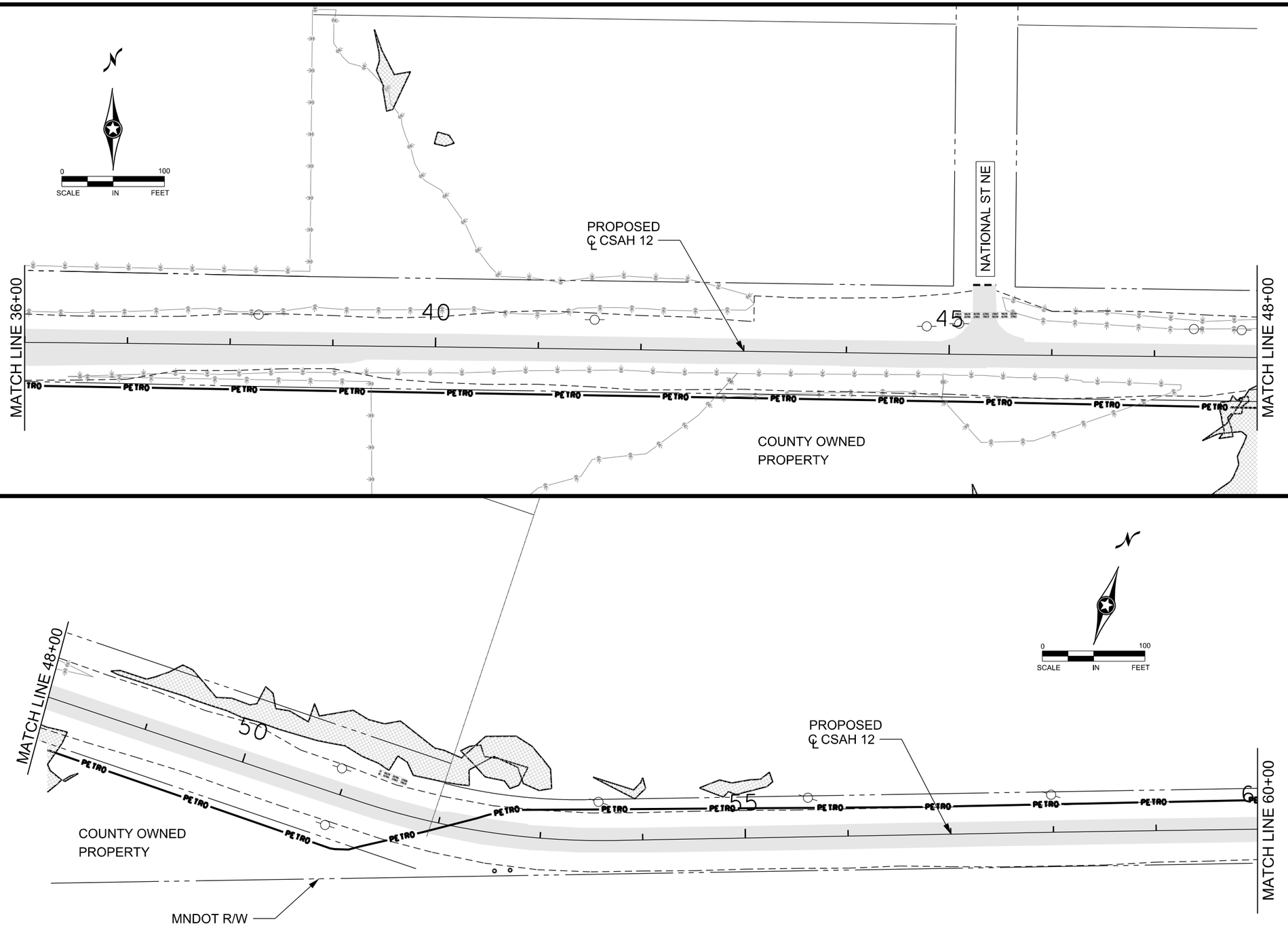
SAP 002-612-035

REMOVAL PLAN

STA 13+56.00 TO 36+00.00

Sheet 41 of 110 Sheets

jcfoster



REMOVALS LEGEND

- 2" MILL AREA
- REMOVE BITUMINOUS FULL DEPTH
- RECLAIM BITUMINOUS FULL DEPTH
- REMOVE & REPLACE PHEASANT ST APPROACH

NOTE: SEE FLOODPLAIN MITIGATION SHEET FOR GRUBBING REMOVALS

- (XXX) □ CATCH BASIN REPAIRS
- ⋈ ADJUST GATE VALVE
- (D) TRUNCATED DOMES
- (1) REMOVE 6" CONCRETE REPLACE CONCRETE CURB RAMP
- SAWCUT
- REMOVE / REPLACE CULVERT
- EXISTING CULVERT
- EXISTING STORM SEWER
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- WETLANDS
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NO	DATE	BY	CKD	APPR	REVISION		
1	1/29/25	JF	ND		LABELED MNDOT R/W, ALL SHEETS		
NAME: P:\002-612-035 17 to 53\Plan\002612035_REM2.dgn						01/30/2025	7:04:37 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: 01/30/2025 LICENSE NO. 49046

DRAWN BY JJF DATE 12/01/24

DESIGN BY JJF DATE 12/01/24

CHECKED BY NJD DATE 01/28/25

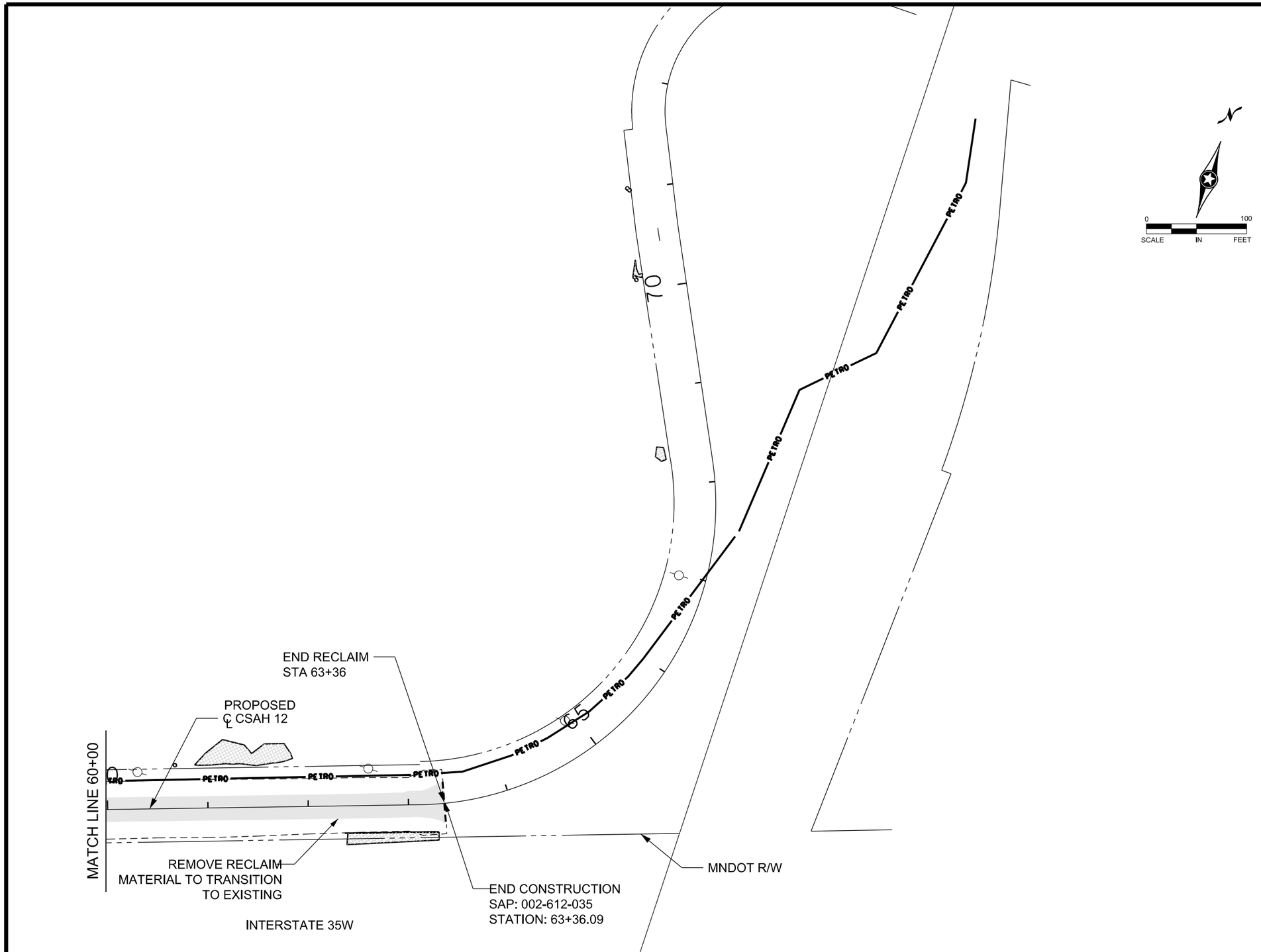
ANOKA COUNTY HIGHWAY DEPT.

SAP 002-612-035

REMOVAL PLAN

STA 36+00.00 TO 60+00.00

jcfoster



REMOVALS LEGEND

- 2" MILL AREA
- REMOVE BITUMINOUS FULL DEPTH
- RECLAIM BITUMINOUS FULL DEPTH
- REMOVE & REPLACE PHEASANT ST APPROACH

NOTE: SEE FLOODPLAIN MITIGATION SHEET FOR GRUBBING REMOVALS

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WARNING
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3 OF 3

NO	DATE	BY	CKD	APPR	REVISION		
1	1/29/25	JF	ND		LABELED MNDOT R/W, ALL SHEETS		
NAME: P:\002-612-035 17 to 53\Plan\002612035_REM3.dgn						01/30/2025	7:04:37 AM

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ANOKA COUNTY

ANOKA COUNTY HIGHWAY DEPT.

SAP 002-612-035

REMOVAL PLAN

STA 60+00.00 TO 63+36.09

Sheet 43 of 110 Sheets

" FOR REFERENCE "

NUMBER	MH/CB?	CURB BOX?	CASTING TYPE	STRUCTURE TYPE	CASTING HT (IN)	RING HT	PIPES (PIPE SIZE, DIRECTION, INVERT)	GROUT?	RE-RING?	RECON?	OTHER
103	CB	Y	2x2	H	.7	.9	E, 12", 3.76		X		
107	CB	Y	2x2	484020	.7	.6	E, 15"?, 3.41, W, 12", 3.46		X		
200	MH	N	R	48-4020	.7	0	E, 24", 4.10, W, 15"?, 4.10, N, 12", 4.16	X			Grout DH
111	CB	Y	2x2	484020	.7	.5	W, 24", 4.4, E, 24", 4.4		X	X	
115	CB	Y	2x2	60	.7	.4	SE, 30", 5.75, W, 24", 5.75, N, 15"?, 5.75	X	X		
119	CB	Y	2x2	484020	.7	.4	S, 15", 4.70, E, 15", 4.70, N, 12", 4.4	X			Grout DH
123	CB	Y	2x2	484020	.7	1.2	W, 15", 4.65, N, 12", 4.65, E, 12", 4.65	X			
124	CB	Y	2x2	484020	.7	.2	W, 12", 5.5, E, 12", 5.5		X		
131	CB	Y	2x2	484020	.7	.6	S, 24", 5.5, N, -, E, 15", 5.4, W, 12", 15"		X		
135	CB	Y	2x2	484020	.7	.8	W, 15", 3.9 N, 15", 3.9		X		clean
132	CB	Y	2x2	H	.7	1.2	S, 12", 3.20	X			Grout DH clean
128	CB	Y	2x2	484020	.7	.6	W, 12", 4.1, S, 12", 4.3		X		
127	CB	Y	2x2	H	.7	.8	E, 12, 3.6	X	X		
126	CB	Y	18x36	2x3	.7	.6	W, 12", 3.7	X			
125	CB	Y	18x36	484020	.4	.7	E, 12", 4.2, W, 12", 4.2,	X			
120	CB	Y	2x2	H	.7	1.0	S, 12", 3.7	X			
116	CB	Y	2x2	H	.7	.8	S, 12", 3.45	X			
112	CB	Y	2x2	484020	.7	.9	S, 15" 5.9, W, 15", 5.9		X		
110	CB	Y	2x2	484020	.7	1.2	W, 15", 5.6, E, 15", 5.6	X			
104	CB	Y	2x2	484020	.7	0.2	E, 15", 3.6, S, W, 15", 3.6		X		
100	CB	Y	2x2	H	.7	0.3	E, 15", 3.2	X			
102	CB	Y	2x2	484020	.7	.9	E, 12", 4.10 N, 12", 4.1		X		
106	CB	Y	2x2	484020	.7	1.0	W, 12", 4.0, N, 12", 3.3, E, 12", 4.1	X			Grout DH
109	CB	Y	2x2	484020	.7	.7	S, 12", 4.4, E, 12", 4.4, N, 12", 4.4	X			
114	CB	Y	2x2	484020	.7	.4	N, 15", 6.0, S, 15", 6.2		X		
118	CB	Y	2x2	484020	.7	.3	N, 12", 4.1, S, 12", 4.35	X			
122	CB	Y	2x2	484020	.7	1.4	N, 12", 4.9, S, 12", 4.9	X			Grout DH
130	CB	Y	2x2	484020	.7	.7	N, 15", 5.2, S, 15", 5.2	X			
134	CB	Y	2x2	484020	.7	.8	N, 15", 4.0, E 12", 4.10, S, 15", 4.2	X			
137	CB	Y	2x2	484020	.7	.8	N, 12", 3.6, W, 12", 3.6	X			Grout DH clean
136	CB	Y	2x2	H	.7	1.3	N, 12", 2.45	X			clean
133	CB	Y	2x2	4840 20	.7	0.6	S, 15", 4.1, N, 12", 4.10	X			
129	CB	Y	2x2	484020	.7	1.0	S, 15", 5.05, N, 12", 5.05		X		
121	CB	Y	2x2	484020	.7	1.5	N, 12" 5.10, S, 12", 5.10	X			
117	CB	Y	2x2	484020	.7	.7	N, 12", 4.2 S, 12", 4.2		X		
113	CB	Y	2x2	484020	.7	.7	S, 15", 6.3, N, 15", 6.3	X			
105	CB	Y	2x2	H	.7	.5	S, 12", 2.5		X		Grout DH
108	CB	Y	2x2	H	.7	.4	S, 12", 3.7		X		
101	CB	Y	2x2	H	.7	.6	S, 12", 3.45		X		Grout DH

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-612-035 17 to 53\Plan\002612035_SN.dgn 01/30/2025 7:04:38 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: Nicholas Dobda

DATE: 01/30/2025 LICENSE NO. 49046

DRAWN BY JJF DATE 12/01/24

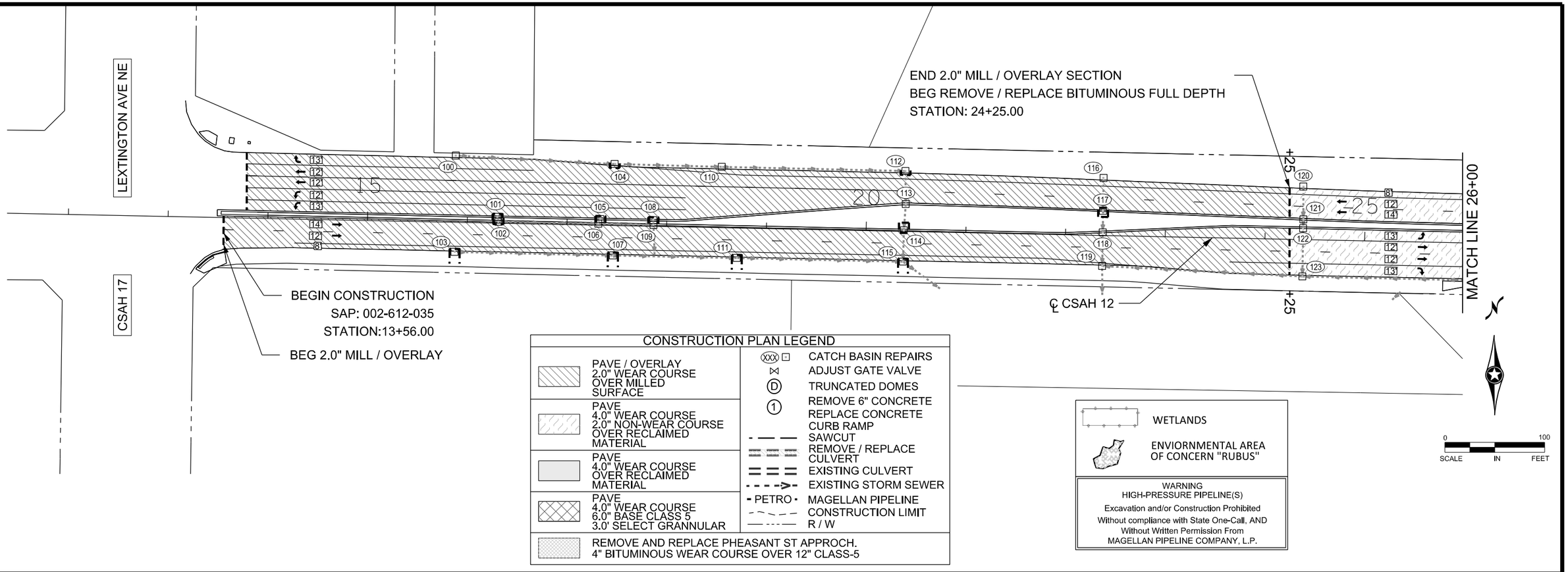
DESIGN BY JJF DATE 12/01/24

CHECKED BY NJD DATE 01/28/25

ANOKA COUNTY HIGHWAY DEPT.

SAP 002-612-035

STORM SEWER SURVEY NOTES " FOR REFERENCE "



CONSTRUCTION PLAN LEGEND

- PAVE / OVERLAY — 2.0" WEAR COURSE OVER MILLED SURFACE
- PAVE — 4.0" WEAR COURSE, 2.0" NON-WEAR COURSE OVER RECLAIMED MATERIAL
- PAVE — 4.0" WEAR COURSE OVER RECLAIMED MATERIAL
- PAVE — 4.0" WEAR COURSE, 6.0" BASE CLASS 5, 3.0' SELECT GRANNULAR
- REMOVE AND REPLACE PHEASANT ST APPROCH. 4" BITUMINOUS WEAR COURSE OVER 12" CLASS-5

- (XXX) □ CATCH BASIN REPAIRS
- ⋈ ADJUST GATE VALVE
- (D) TRUNCATED DOMES
- (1) REMOVE 6" CONCRETE REPLACE CONCRETE CURB RAMP
- SAWCUT
- REMOVE / REPLACE CULVERT
- EXISTING CULVERT
- EXISTING STORM SEWER
- PETRO MAGELLAN PIPELINE
- CONSTRUCTION LIMIT
- R / W

- WETLANDS
- ENVIORNMENTAL AREA OF CONCERN "RUBUS"

WARNING
HIGH-PRESSURE PIPELINE(S)
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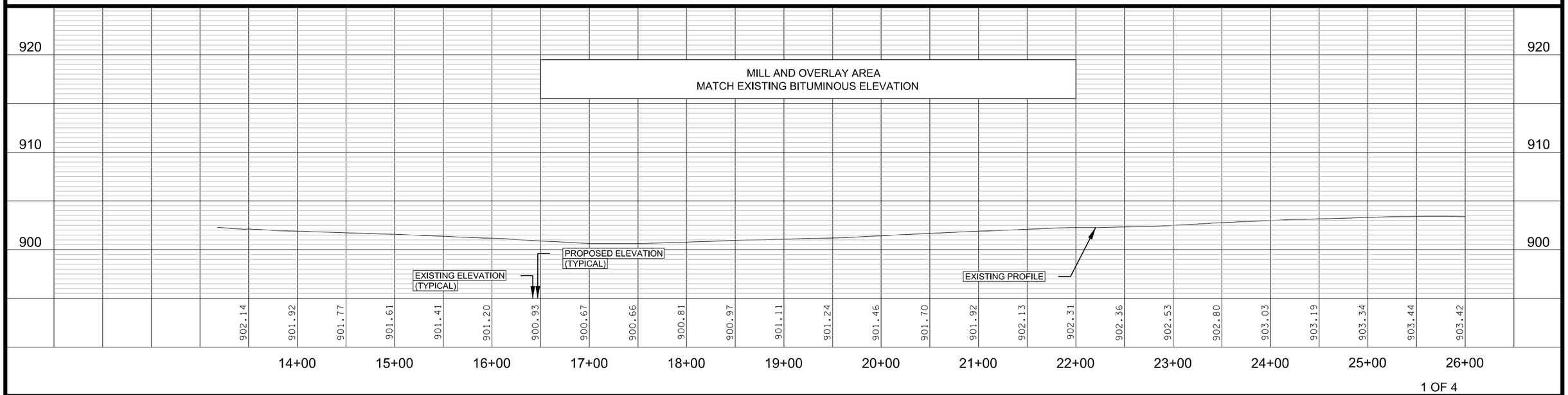
Without Written Permission From
MAGELLAN PIPELINE COMPANY, L.P.

SCALE 0 100 IN FEET



NO	DATE	BY	CKD	APPR	REVISION
1	1/29/25	JF	ND		LABELED MNDOT R/W, ALL SHEETS

NAME: P:\002-612-035 17 to 53\Plan\002612035_PP1.dgn 01/30/2025 7:04:42 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: NJDobda
DATE: 01/30/2025 LICENSE NO. 49046

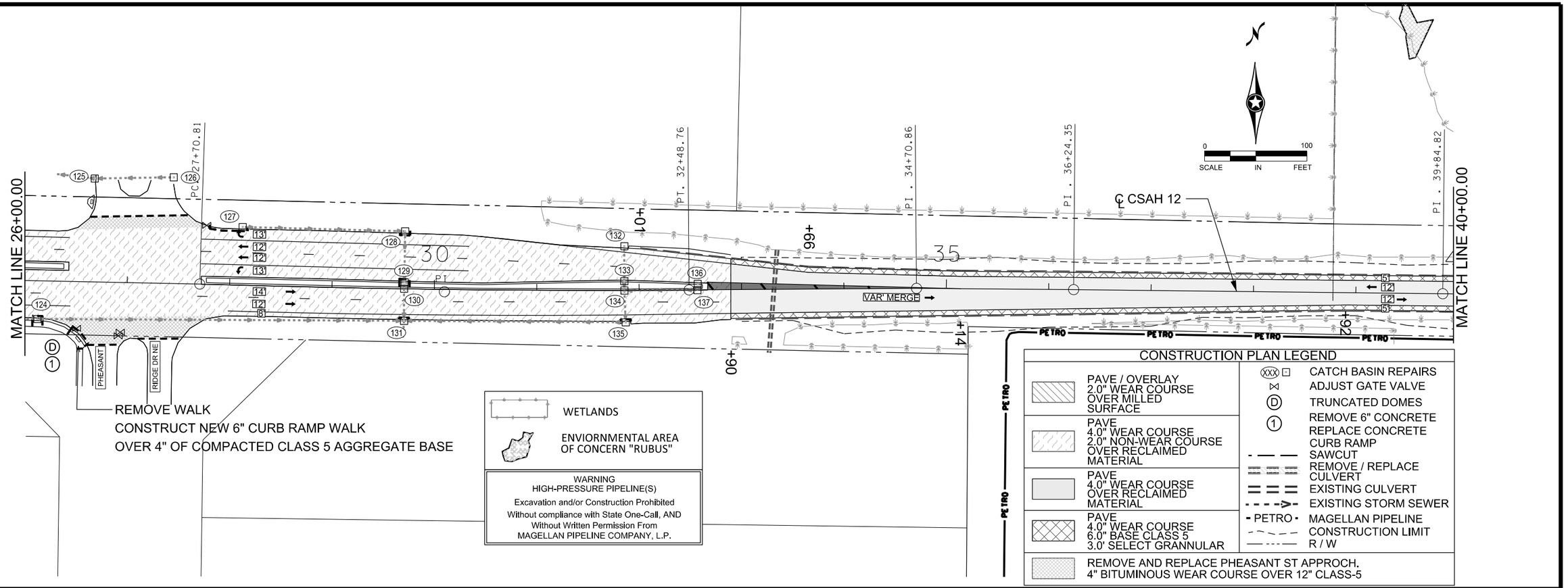
DRAWN BY JJF DATE 12/01/24
DESIGN BY JJF DATE 12/01/24
CHECKED BY NJD DATE 01/28/25

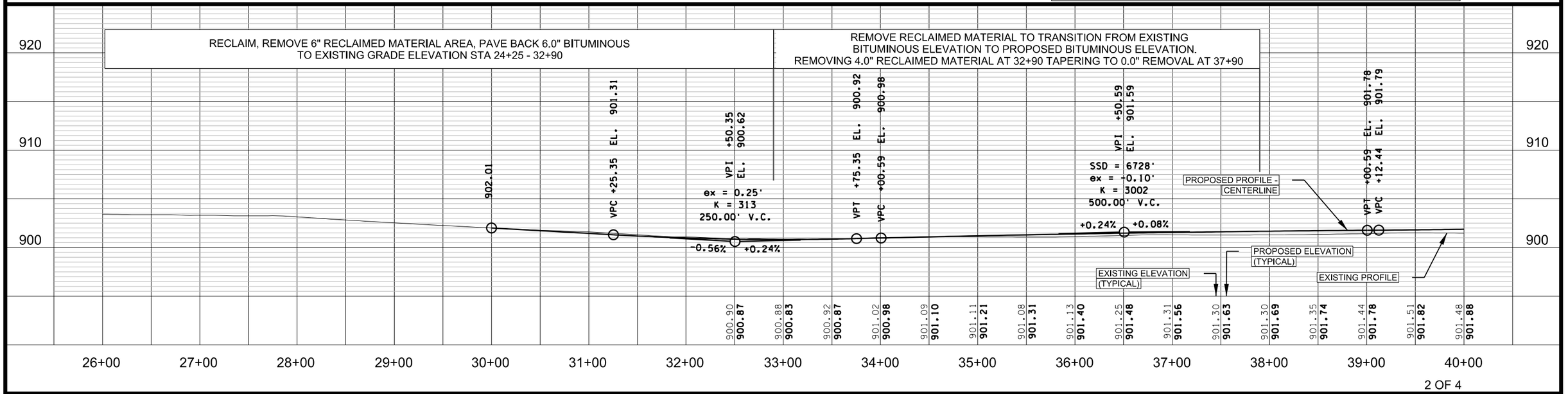
ANOKA COUNTY
HIGHWAY DEPT.

SAP 002-612-035

CONSTRUCTION PLAN & PROFILE
STA 13+56.00 TO 26+00.00

Sheet 45 of 110 Sheets





NO	DATE	BY	CKD	APPR	REVISION
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NAME: P:\002-612-035 17 to 53\Plan\002612035_PP2.dgn 01/30/2025 7:04:43 AM

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ANOKA COUNTY HIGHWAY DEPT.

SAP 002-612-035

CONSTRUCTION PLAN & PROFILE

STA 26+00.00 TO 40+00.00

Sheet 46 of 110 Sheets

WETLANDS

ENVIORNMENTAL AREA OF CONCERN "RUBUS"

WARNING
HIGH-PRESSURE PIPELINE(S)
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Without compliance with State One-Call, AND
Without Written Permission From
MAGELLAN PIPELINE COMPANY, L.P.

NATIONAL ST

℄ CSAH 12

PI . 45+11.38

30' RAD EM
44+92.08
-47.00

30' RAD EM
45+76.08
-55.00

MATCH LINE 40+00.00

MATCH LINE 54+00.00

SEE FINISHED BIT GRADES FOR CURVE SUPER INFORMATION

STATIC ROLL SECTION
STA 51+00 - 53+00

PC . 51+17.47

PT . 53+14.21

+45

+25

+56

+36

+96

+76

PETRO

SEE FLOODPLAIN MITIGATION SHEET FOR GRADING NARRATIVE

MNDOT R/W

INTERSTATE 35W

0 100
SCALE IN FEET

CONSTRUCTION PLAN LEGEND

- PAVE / OVERLAY 2.0" WEAR COURSE OVER MILLED SURFACE
- PAVE 4.0" WEAR COURSE 2.0" NON-WEAR COURSE OVER RECLAIMED MATERIAL
- PAVE 4.0" WEAR COURSE OVER RECLAIMED MATERIAL
- PAVE 4.0" WEAR COURSE 6.0" BASE CLASS 5 3.0' SELECT GRANNULAR
- REMOVE AND REPLACE PHEASANT ST APPROCH. 4" BITUMINOUS WEAR COURSE OVER 12" CLASS-5
- CATCH BASIN REPAIRS
- ADJUST GATE VALVE
- TRUNCATED DOMES
- REMOVE 6" CONCRETE REPLACE CONCRETE CURB RAMP
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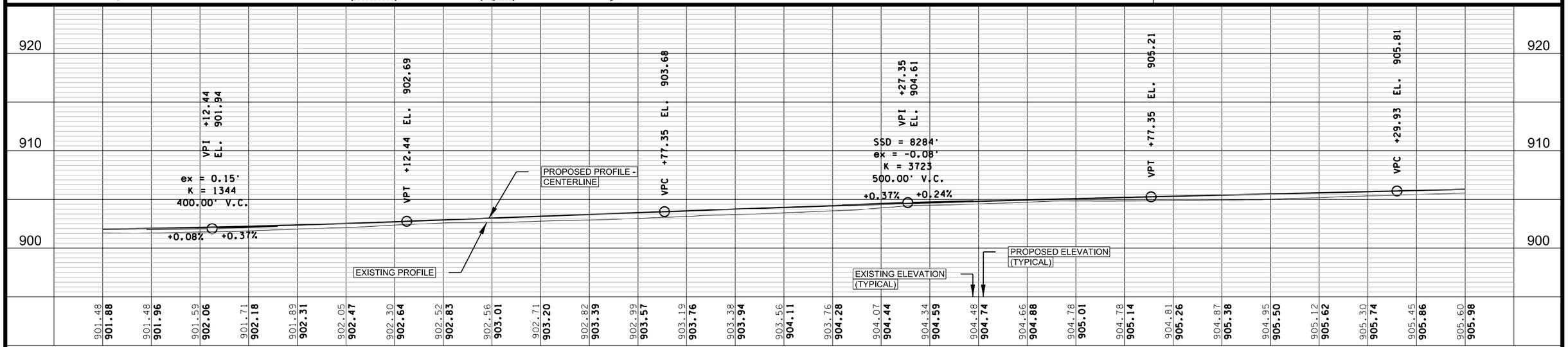
- CONSTRUCTION LIMIT
- R / W



NO	DATE	BY	CKD	APPR	REVISION
1	1/29/25	JF	ND		LABELED MNDOT R/W, ALL SHEETS

NAME: P:\002-612-035 17 to 53\Plan\002612035_PP3.dgn 01/30/2025 7:04:44 AM

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CHECKED BY NJD DATE 01/28/25

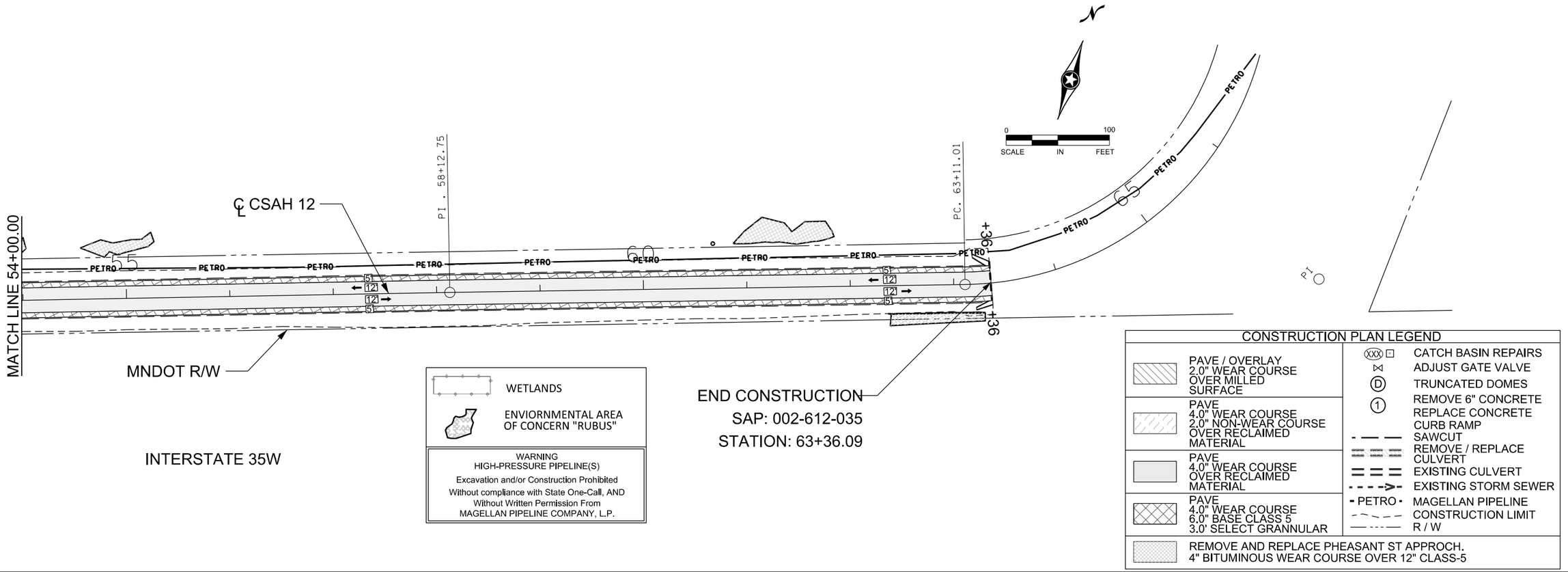
ANOKA COUNTY HIGHWAY DEPT.

SAP 002-612-035

CONSTRUCTION PLAN & PROFILE

STA 40+00.00 TO 54+00.00

Sheet 47 of 110 Sheets



4 OF 4

NO	DATE	BY	CKD	APPR	REVISION
1	1/29/25	JF	ND		LABELED MNDOT R/W, ALL SHEETS

NAME: P:\002-612-035 17 to 53\Plan\002612035_PP4.dgn 01/30/2025 7:04:45 AM

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ANOKA COUNTY

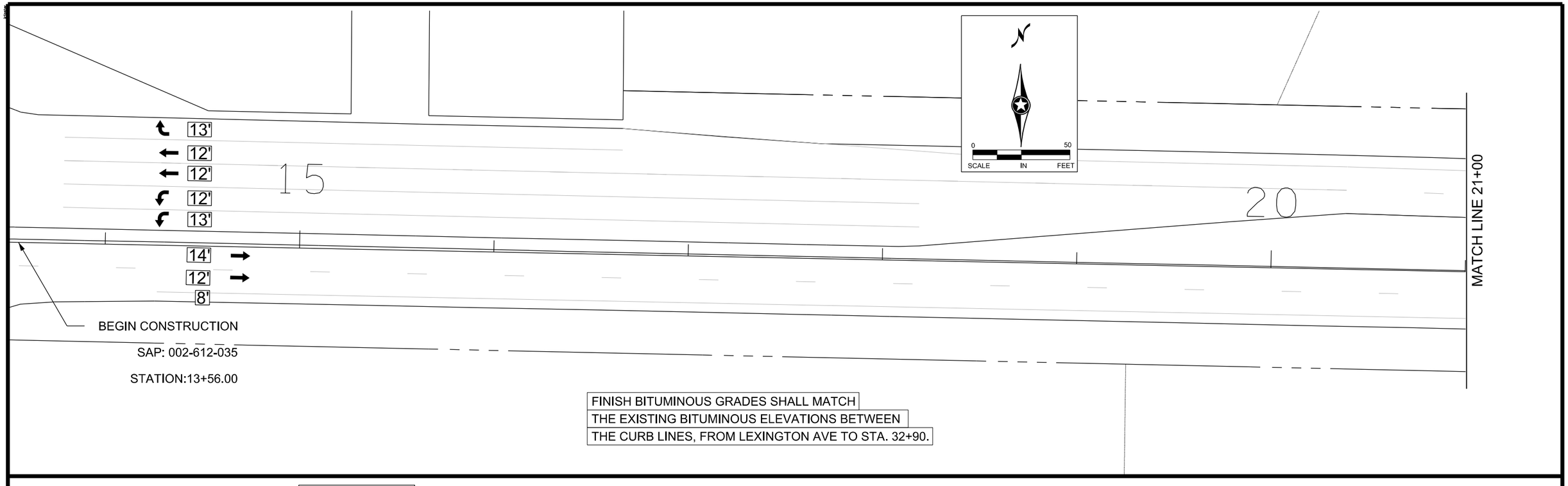
HIGHWAY DEPT.

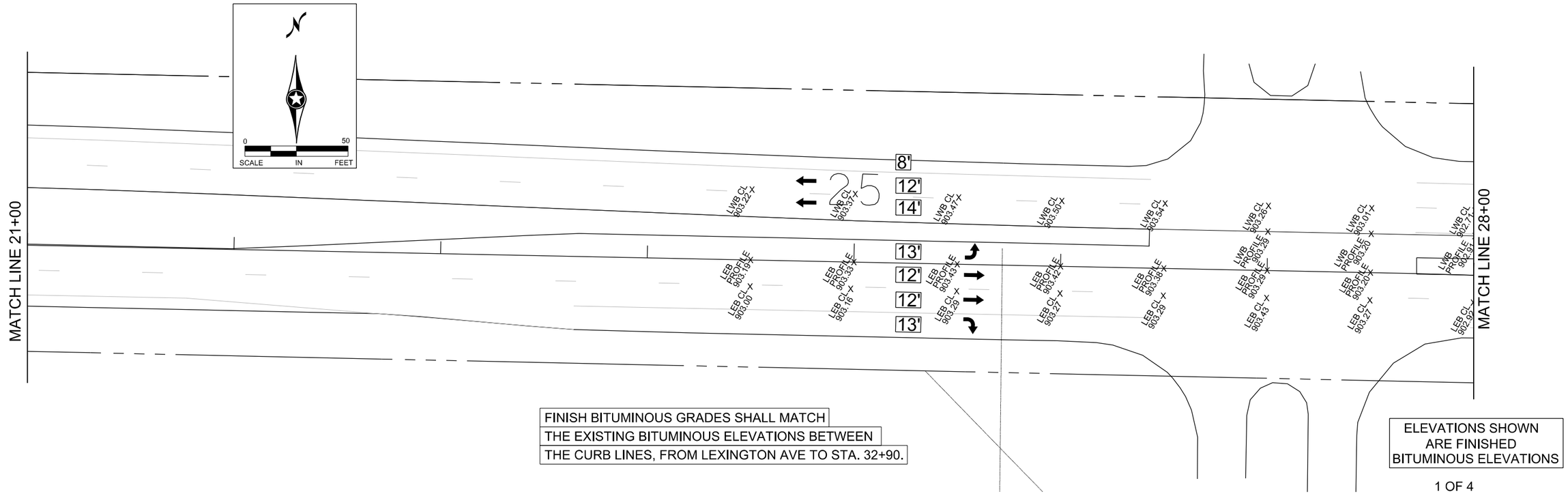
SAP 002-612-035

CONSTRUCTION PLAN & PROFILE

STA 54+00.00 TO 63+36.09

Sheet 48 of 110 Sheets





1 OF 4

NO	DATE	BY	CKD	APPR	REVISION
1	1/29/25	JF	ND		LABELED MNDOT R/W, ALL SHEETS

NAME: P:\002-612-035 17 to 53\Plan\002612035_SE1_NEW.dgn 01/30/2025 7:04:47 AM

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ANOKA COUNTY

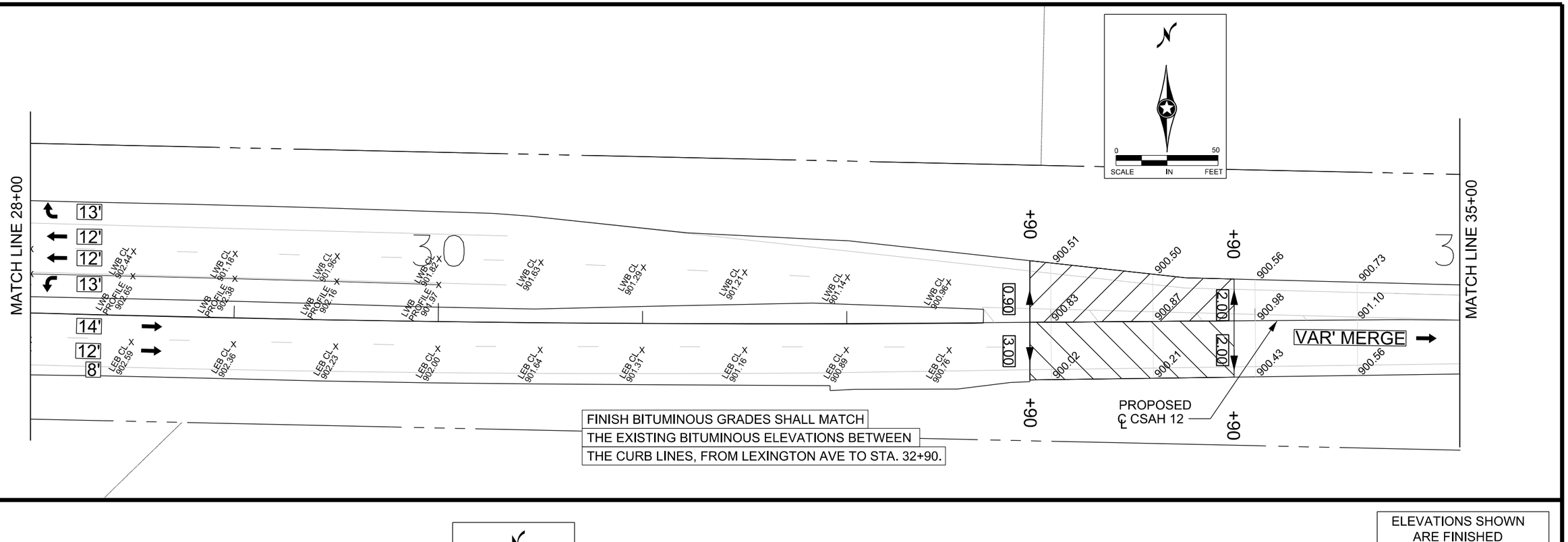
ANOKA COUNTY HIGHWAY DEPT.

SAP 002-612-035

FINISH BITUMINOUS GRADES & ELEVATION TRANSITIONS

STA 13+50 TO 28+00

Sheet 49 of 110 Sheets



NO	DATE	BY	CKD	APPR	REVISION
1	1/29/25	JF	ND		LABELED MNDOT R/W, ALL SHEETS

NAME: P:\002-612-035 17 to 53\Plan\002612035_SE2_NEW.dgn 01/30/2025 7:04:48 AM

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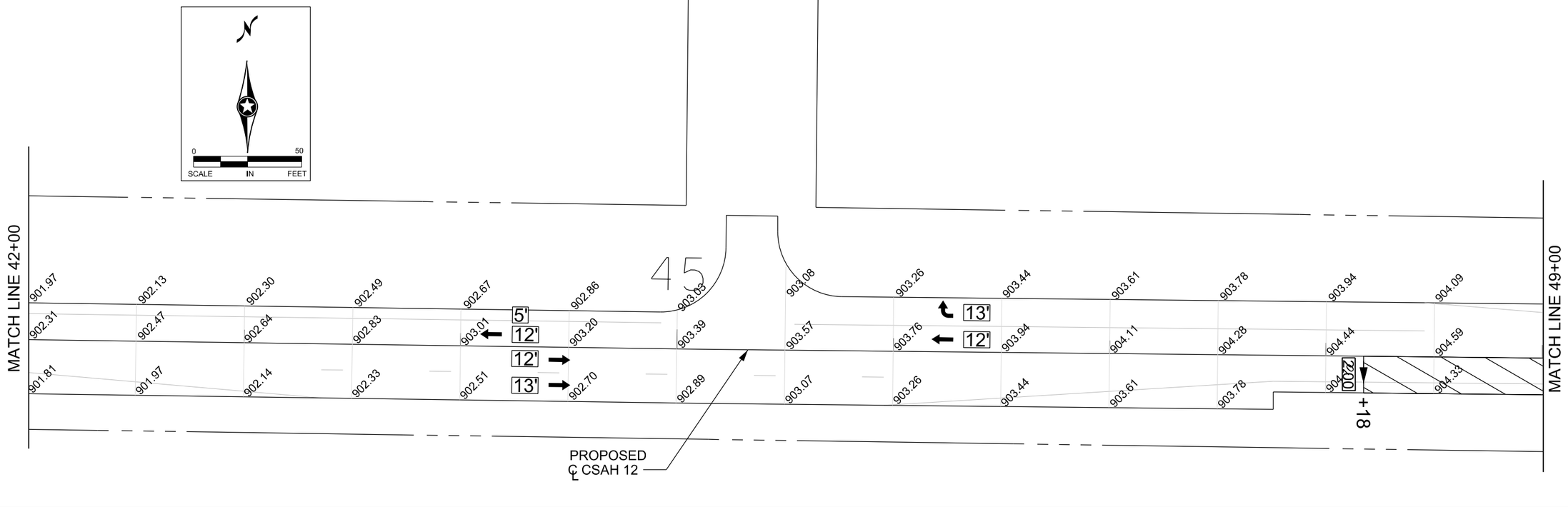
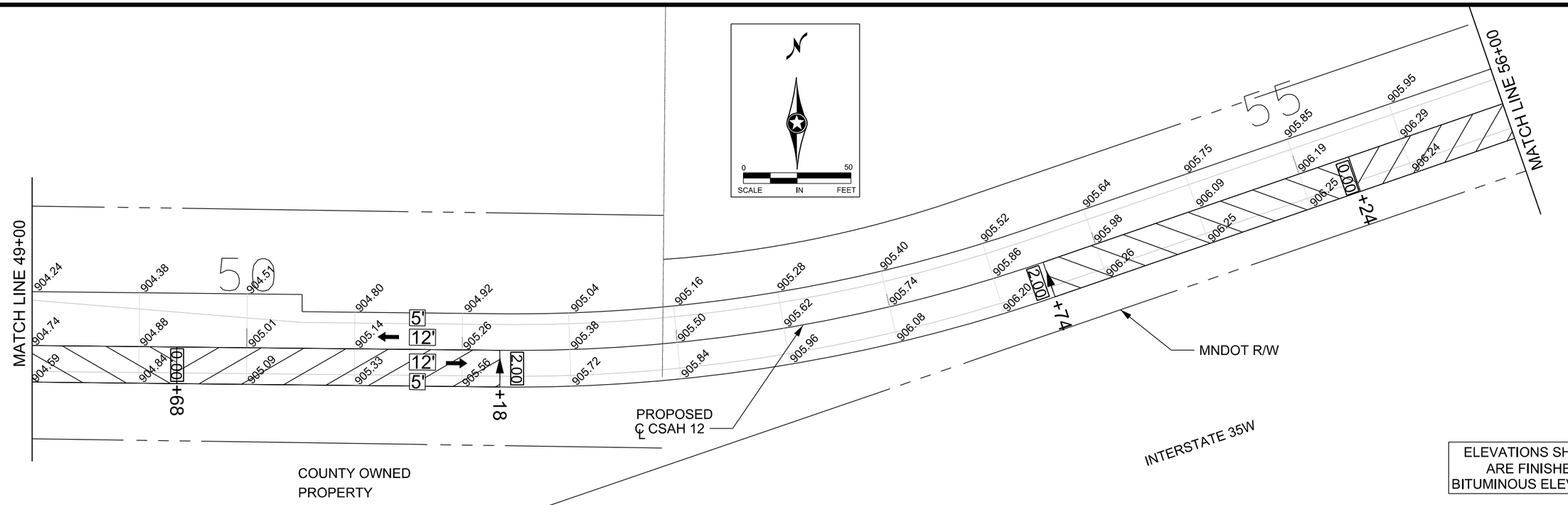
ANOKA COUNTY HIGHWAY DEPT.

SAP 002-612-035

FINISH BITUMINOUS GRADES & ELEVATION TRANSITIONS

STA 28+00 TO 42+00





ELEVATIONS SHOWN ARE FINISHED BITUMINOUS ELEVATIONS

3 OF 4

NO	DATE	BY	CKD	APPR	REVISION
1	1/29/25	JF	ND		LABELED MNDOT R/W, ALL SHEETS

NAME: P:\002-612-035 17 to 53\Plan\002612035_SE3_NEW.dgn 01/30/2025 7:04:50 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: 01/30/2025 LICENSE NO. 49046

DRAWN BY JJF DATE 12/01/24

DESIGN BY JJF DATE 12/01/24

CHECKED BY NJD DATE 01/28/25

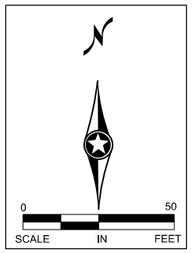
ANOKA COUNTY HIGHWAY DEPT.

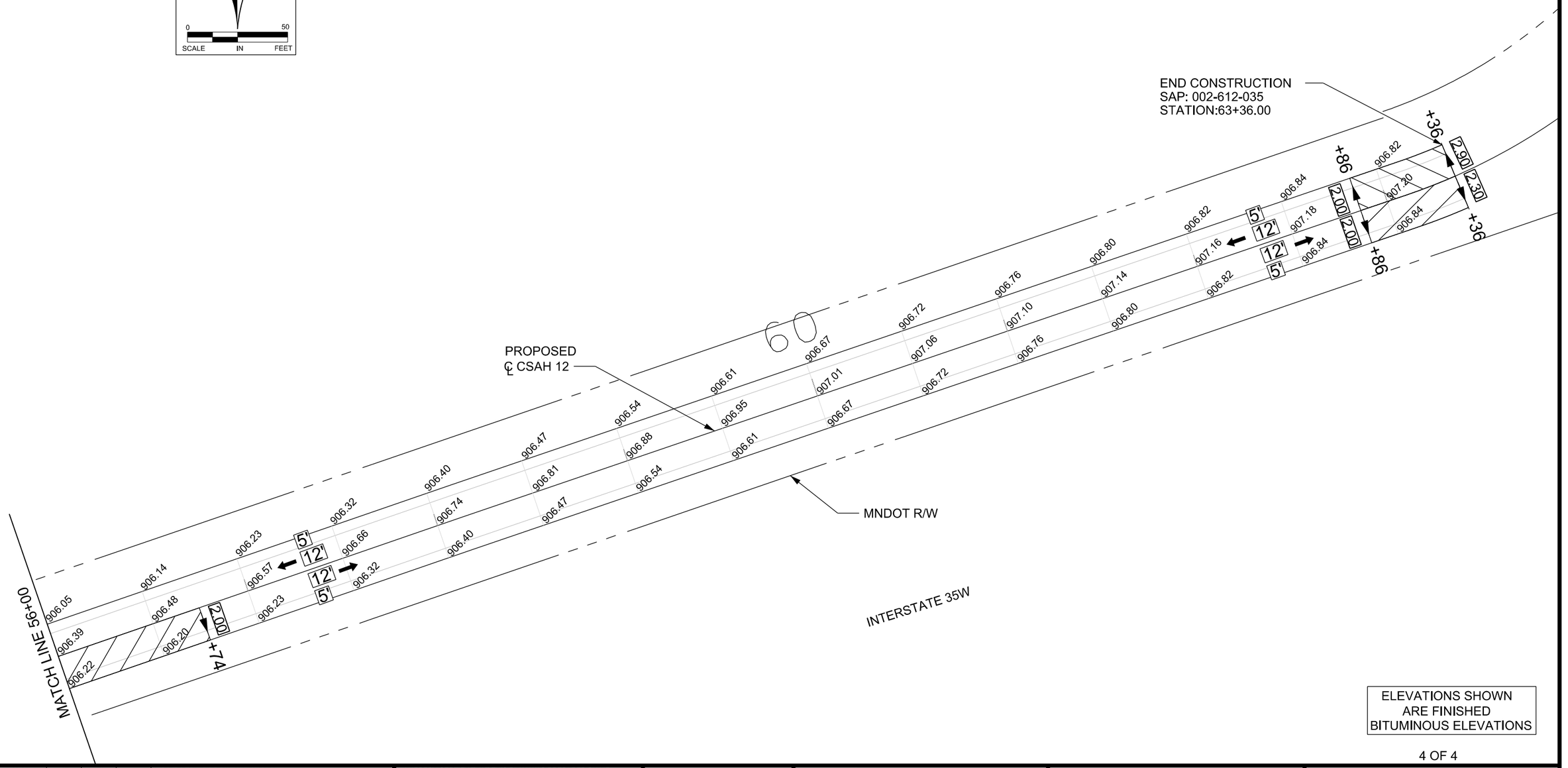
SAP 002-612-035

FINISH BITUMINOUS GRADES & ELEVATION TRANSITIONS

STA 42+00 TO 56+00

Sheet 51 of 110 Sheets





ELEVATIONS SHOWN
ARE FINISHED
BITUMINOUS ELEVATIONS

NO	DATE	BY	CKD	APPR	REVISION
1	1/29/25	JF	ND		LABELED MNDOT R/W, ALL SHEETS

NAME: P:\002-612-035 17 to 53\Plan\002612035_SE4_NEW.dgn 01/30/2025 7:04:51 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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CHECKED BY NJD DATE 01/28/25

ANOKA COUNTY

ANOKA COUNTY
HIGHWAY DEPT.

SAP 002-612-035

FINISH BITUMINOUS GRADES
&
ELEVATION TRANSITIONS
STA 56+00 TO 63+36

Sheet 52 of 110 Sheets

NORTH FLOODPLAIN MITIGATION SITE

CSAH 12

NATIONAL ST

VIEW B-B

EXISTING GROUND

FP MITIGATION LIMIT

25'

ROAD CONSTRUCTION LIMIT

FLOODPLAIN ELEV 899.36

1.36' CUT - BOTTOM ELEV 898.00

REQUIRED VOLUME TO BE REMOVED

1:4

7' - 13'

1:4

ROADWAY SHOULDER

1'

VIEW B-B

BOTTOM ELEV 898.00
(SEE X-SECTIONS, 91.43 CU YDS)

25'

VIEW B-B

40

45

N

0 50
SCALE IN FEET

PETRO PETRO PETRO PETRO PETRO PETRO PETRO

CONTRACTOR MUST CONTACT MAGELLAN PIPELINE - FOR WATCHDOG PRIOR TO CROSSING PIPELINE - WITH EQUIPMENT.

PIPELINE MUST BE "BLISTERED OVER" TO - CREATE REQUIRED COVER TO CROSS.

CONTRACTOR TO MINIMISE CROSSING PIPELINE.

529598.8863
148122.1120

529668.8791
148121.1048

40

529613.6689
148106.8977

529653.6648
148106.3222

MATCH EXISTING ELEV

TREE CLEARING LINE

VIEW A-A

VIEW A-A

BOTTOM ELEV 898.00
(1.66' BELOW FLOODPLAIN)

100

TREE CLEARING LINE

MATCH EXISTING ELEV

529612.2302
148006.9081

529652.2260
148006.3325

15

15

529597.0159
147992.1254

529667.0087
147991.1183

MATCH EXISTING ELEV

TREE CLEARING LINE

VIEW A-A

EXISTING GROUND ELEV
900.00 - 901.50

15'

40'

15'

FLOODPLAIN ELEV 899.66

1.66' CUT - BOTTOM ELEV 898.00

REQUIRED VOLUME TO BE REMOVED

1.66'

COUNTY OWNED PROPERTY

SOUTH FLOODPLAIN MITIGATION SITE

(1.66' D X 100' L X 40' W = 6640 CU FT)
245.92 CU YDS

- PETRO - MAGELLAN PIPELINE

WETLANDS

ENVIORNMENTAL AREA OF CONCERN "RUBUS"

CONSTRUCTION LIMIT

R / W

WARNING
HIGH-PRESSURE PIPELINE(S)
Excavation and/or Construction Prohibited
Without compliance with State One-Call, AND
Without Written Permission From
MAGELLAN PIPELINE COMPANY, L.P.

MNDOT R/W

INTERSTATE 35W

1 OF 1

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-612-035 17 to 53\Plan\002612035_FM.dgn 01/30/2025 7:04:53 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.

PRINT NAME: NICHOLAS J DOBDA

SIGNATURE:

DATE: 01/30/2025 LICENSE NO. 49046

DRAWN BY JJF DATE 12/01/24

DESIGN BY JJF DATE 12/01/24

CHECKED BY NJD DATE 01/28/25

ANOKA COUNTY

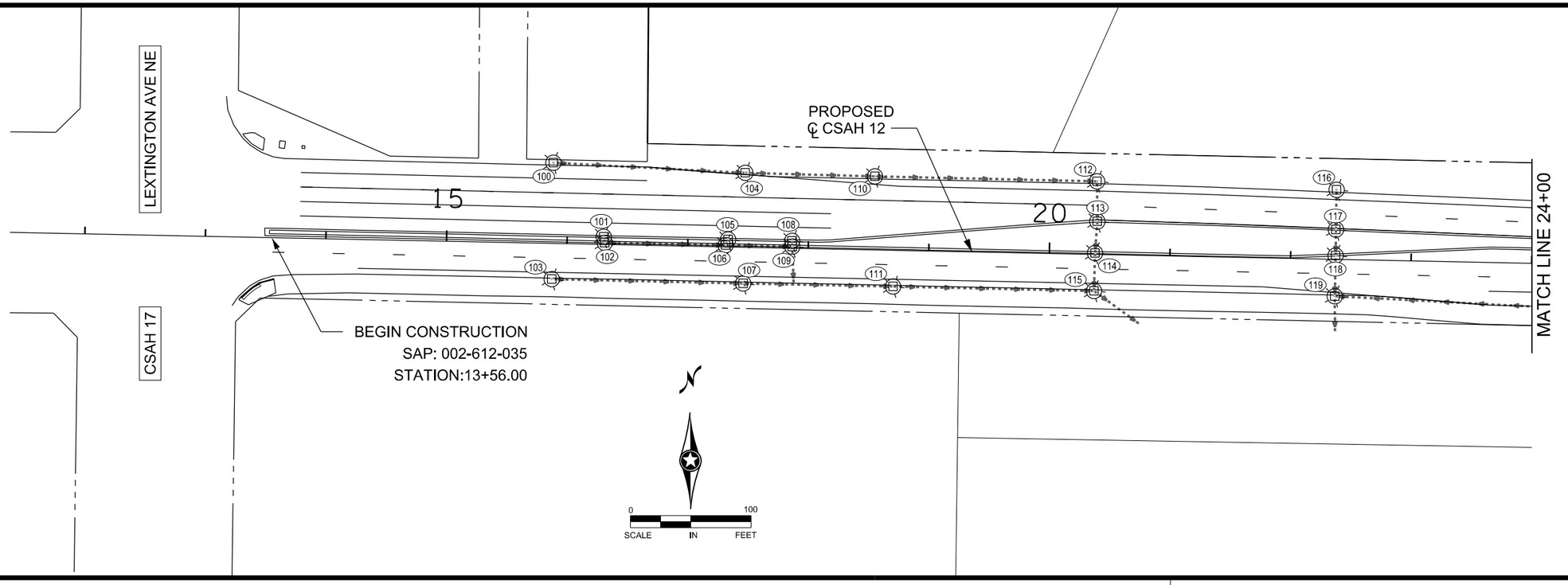
ANOKA COUNTY HIGHWAY DEPT.

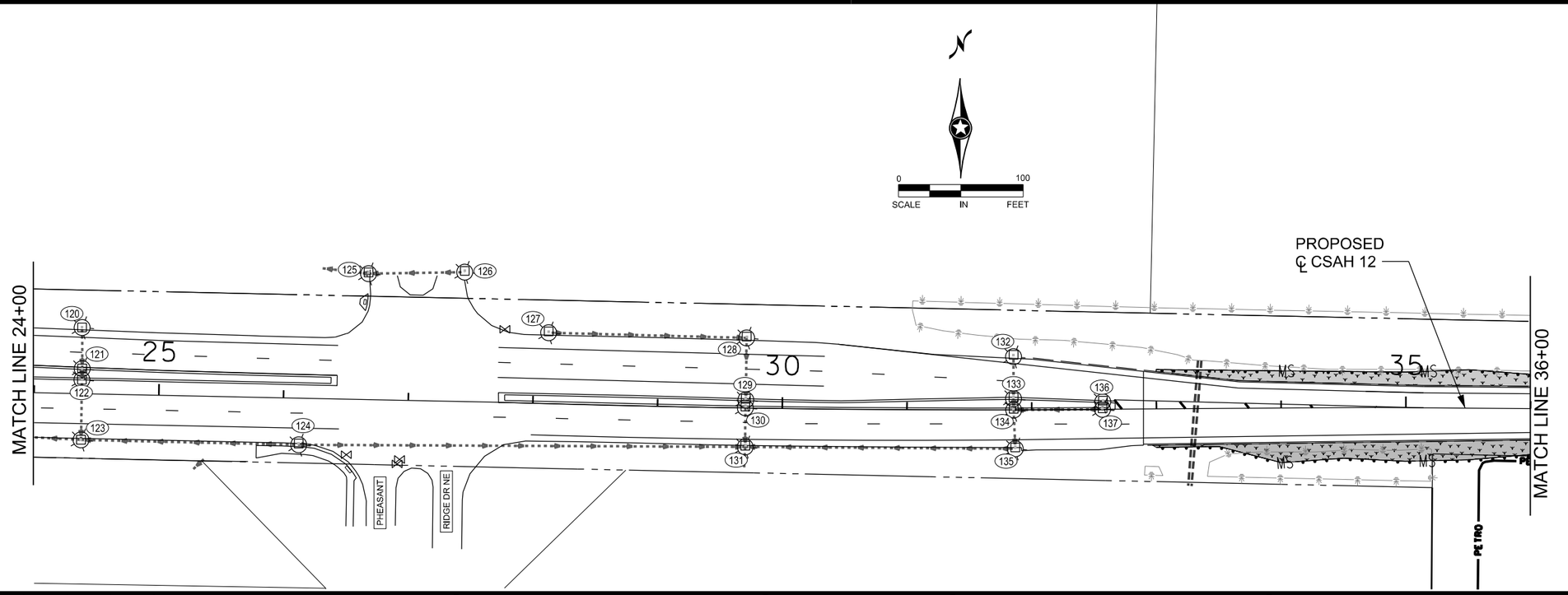
SAP 002-612-035

FLOODPLAIN MITIGATION GRADING

Sheet 53 of 110 Sheets

jcfoster





EROSION LEGEND

- SEED MIXTURE 25-121
  FERTILIZER TYPE 3 (22-5-10)
  ROLLED EROSION PREVENTION CAT 25
  HYDRAULIC REINF-FIBER MATRIX
- SEED MIXTURE 33-261
  FERTILIZER TYPE 3 (22-5-10)
  ROLLED EROSION PREVENTION CAT 25
  HYDRAULIC REINF-FIBER MATRIX
- MS — SILT FENCE TYPE MACHINE SLICED
- STORM DRAIN INLET PROTECTION
- RIPRAP CLASS 2
- CULVERT END - CONTROLS (INLET APRONS)
- CATCH BASIN
- EXISTING CULVERT
- EXISTING STORM SEWER
- PETRO — MAGELLAN PIPELINE
- WETLANDS
- ENVIORNMENTAL AREA OF CONCERN "RUBUS"
- CONSTRUCTION LIMIT
- R / W

WARNING
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1 OF 3

NO	DATE	BY	CKD	APPR	REVISION		
1	1/29/25	JF	ND		LABELED MNDOT R/W, ALL SHEETS		
NAME: P:\002-612-035 17 to 53\Plan\002612035_ERO1.dgn						01/30/2025	7:04:58 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.

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ANOKA COUNTY

ANOKA COUNTY HIGHWAY DEPT.

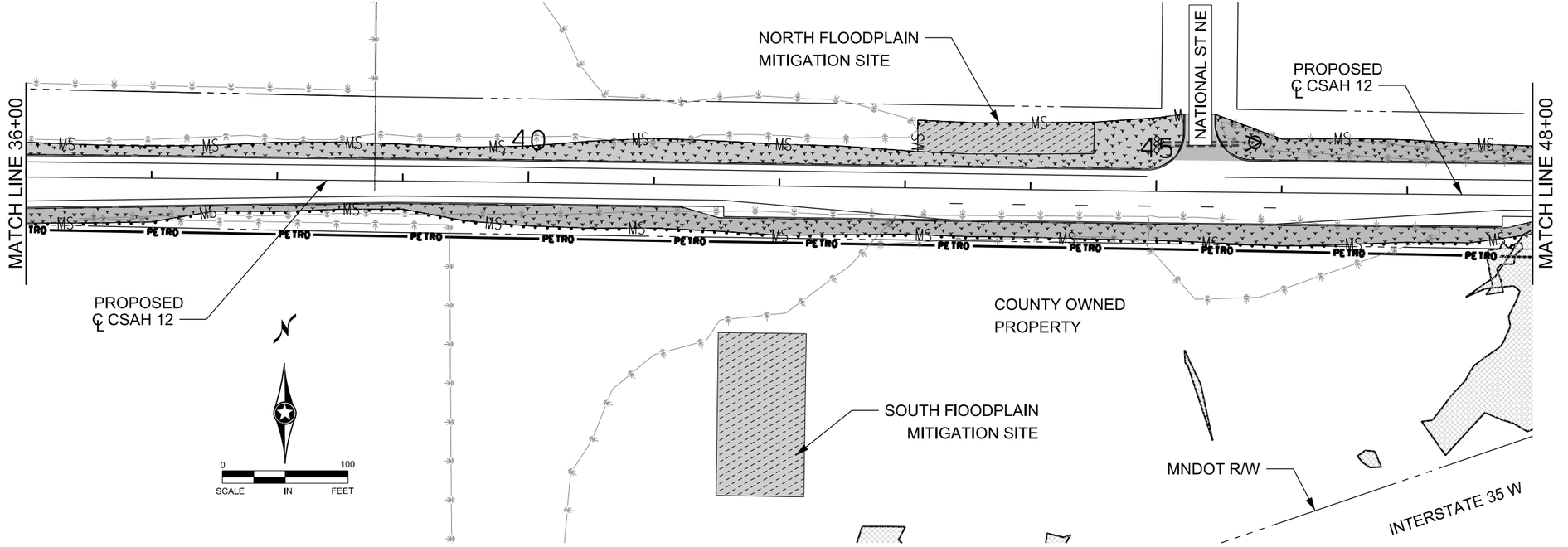
SAP 002-612-035

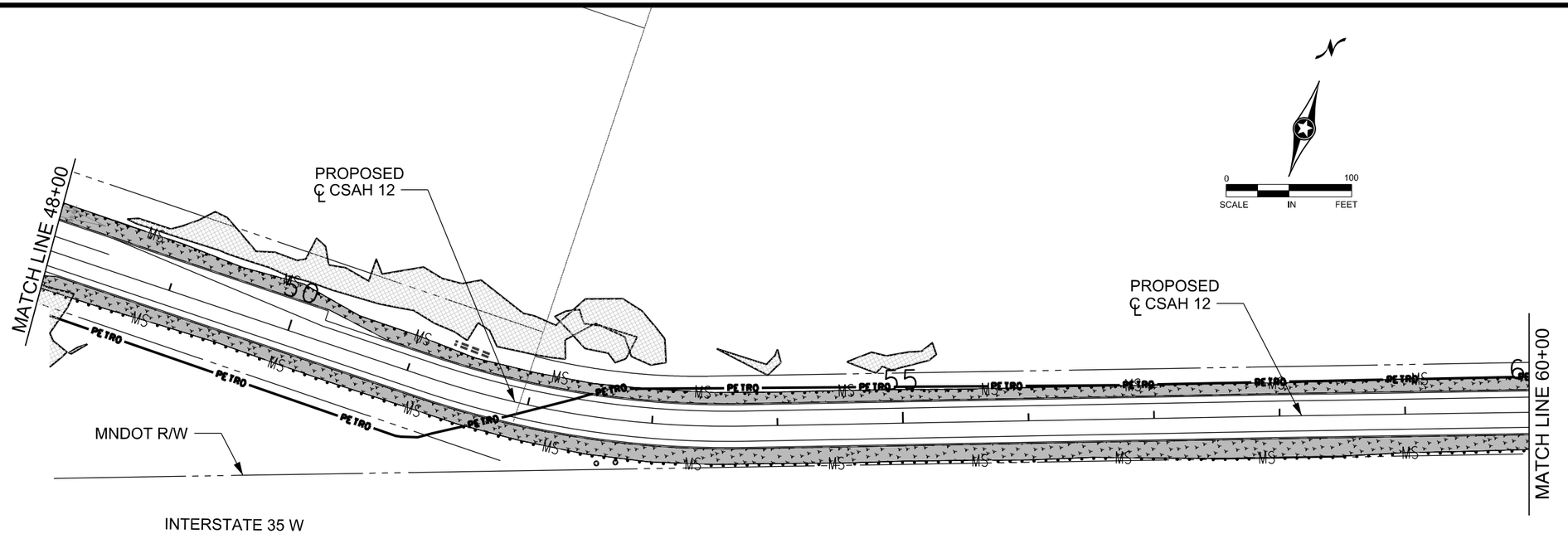
EROSION CONTROL & TURF ESTABLISHMENT

STA 13+56.00 TO 36+00.00

Sheet 54 of 110 Sheets

jcfoster





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- CATCH BASIN
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- PETRO - MAGELLAN PIPELINE
- WETLANDS
- ENVIORNMENTAL AREA OF CONCERN "RUBUS"
- CONSTRUCTION LIMIT
- R / W

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NO	DATE	BY	CKD	APPR	REVISION		
1	1/29/25	JF	ND		LABELED MNDOT R/W, ALL SHEETS		
NO	DATE	BY	CKD	APPR	REVISION	01/30/2025	7:05:00 AM

NAME: P:\002-612-035 17 to 53\Plan\002612035_ERO2.dgn

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ANOKA COUNTY HIGHWAY DEPT.

SAP 002-612-035

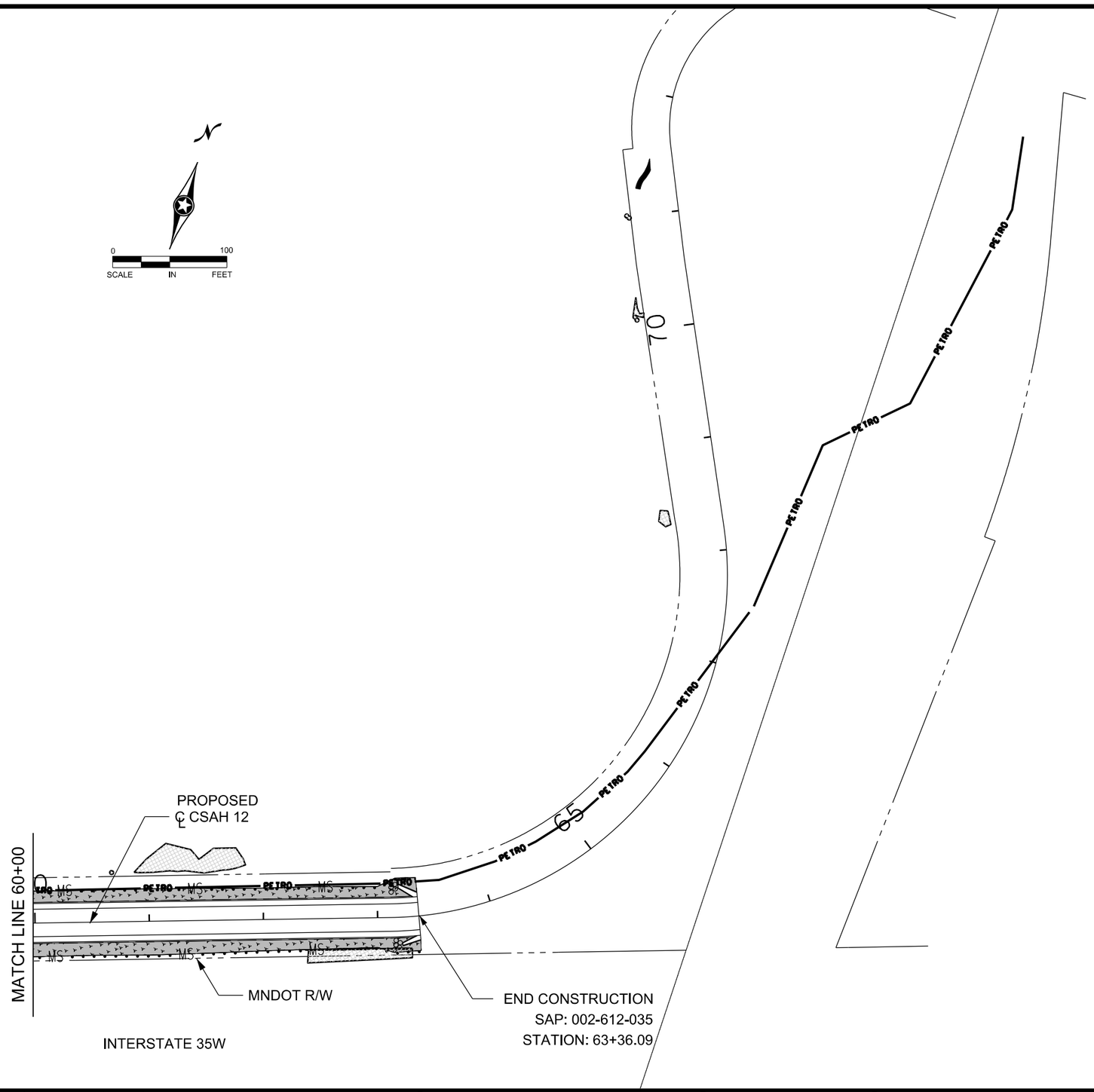
2 OF 3

EROSION CONTROL & TURF ESTABLISHMENT

STA 36+00.00 TO 60+00.00

Sheet 55 of 110 Sheets

jcfoster



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  FERTILIZER TYPE 3 (22-5-10)
  ROLLED EROSION PREVENTION CAT 25
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- CATCH BASIN
- EXISTING CULVERT
- EXISTING STORM SEWER
- PETRO — MAGELLAN PIPELINE
- WETLANDS
- ENVIORNMENTAL AREA OF CONCERN "RUBUS"
- CONSTRUCTION LIMIT
- R / W

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Without Written Permission From
MAGELLAN PIPELINE COMPANY, L.P.

3 OF 3

NO	DATE	BY	CKD	APPR	REVISION		
1	1/29/25	JF	ND		LABELED MNDOT R/W, ALL SHEETS		
NAME: P:\002-612-035 17 to 53\Plan\002612035_ERO3.dgn						01/30/2025	7:05:03 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: 01/30/2025 LICENSE NO. 49046

DRAWN BY JJF DATE 12/01/24
DESIGN BY JJF DATE 12/01/24
CHECKED BY NJD DATE 01/28/25

ANOKA COUNTY
ANOKA COUNTY HIGHWAY DEPT.

SAP 002-612-035

EROSION CONTROL
&
TURF ESTABLISHMENT
STA 60+00.00 TO 63+36.09

Sheet 56 of 110 Sheets

STORM WATER POLLUTION PREVENTION PLAN (SWPPP) NARRATIVE

PROJECT DESCRIPTION/LOCATION

SAP 002-612-035 IS LOCATED ON CSAH 12 FROM CSAH 17 TO CR 53 IN THE CITY OF BLAINE IN ANOKA COUNTY. THE PLANNED SCOPE OF THE PROJECT INCLUDES: RECONDITIONING, BITUMINOUS MILLING AND RECLAMATION, BITUMINOUS SURFACING, STORM SEWER REPAIRS, SHOULDER / RTL & BYPASS LANE CONSTRUCTION.

THE SWPPP MUST BE AMENDED TO DOCUMENT ANY CHANGES TO EROSION AND SEDIMENT CONTROLS, METHODS OR PRACTICES. THESE AMENDMENTS MUST BE TIMELY TO KEEP THE SWPPP UPDATED AND NEED TO BE KEPT ON SITE.

RESPONSIBILITIES

PROVIDE A CERTIFIED EROSION CONTROL SUPERVISOR PER MNDOT SPECIFICATION 2573.3.A.1. EROSION CONTROL SUPERVISOR WILL WORK WITH PROJECT ENGINEER TO OVERSEE IMPLEMENTATION OF SWPPP AND INSTALLATION, INSPECTION, AND MAINTENANCE OF THE EROSION PREVENTION AND SEDIMENT CONTROL BMPS BEFORE, DURING AND AFTER CONSTRUCTION UNTIL PERMIT TERMINATION CONDITIONS HAVE BEEN MET.

PROVIDE AT LEAST ONE CERTIFIED INSTALLER PER MNDOT SPECIFICATION 2573.3.A.2. FOR EACH CONTRACTOR OR SUBCONTRACTOR THAT PLACES THE PRODUCTS LISTED IN MNDOT SPECIFICATION SECTION 2573.3.A.2.

- CONTRACTOR RESPONSIBLE TO OBTAIN DEWATERING PERMIT FROM DNR AND COSTS TO SECURE PERMIT.

CHAIN OF RESPONSIBILITY

ANOKA COUNTY AND THE CONTRACTOR ARE CO-PERMITEES FOR THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) CONSTRUCTION PERMIT. THE CONTRACTOR IS RESPONSIBLE TO COMPLY WITH ALL ASPECTS OF THE NPDES CONSTRUCTION PERMIT AT ALL TIMES UNTIL THE NOTICE OF TERMINATION (NOT) HAS BEEN FILED WITH THE MPCA. ANOKA COUNTY CONSTRUCTION PROJECT ENGINEER WILL ENSURE THAT THE CONTRACTOR'S EROSION AND SEDIMENT CONTROL SUPERVISOR FULFILLS THEIR DUTIES.

LAND FEATURE CHANGES

TOTAL DISTURBED AREA	7.999 ACRES
WITHIN THE DISTURBED AREA: TOTAL EXISTING IMPERVIOUS SURFACE AREA	5.384 ACRES
WITHIN THE DISTRUBED AREA: TOTAL PROPOSED IMPERVIOUS SURFACE AREA	6.142 ACRES
TOTAL PROPOSED NET CHANGE IN IMPERVIOUS SURFACE AREA	0.758 ACRES

SWPPP SHEET DESCRIPTIONS	LOCATION
TEMPORARY EROSION CONTROL MEASURES	SHEETS NO. 54 - 56
PERMANENT EROSION CONTROL MEASURES	SHEETS NO. 54 - 56
DIRECTION OF FLOW	SHEETS NO. 54 - 56
FINAL STABILIZATION	SHEETS NO. 54 - 56
SOILS AND CONSTRUCTION NOTES	SHEETS NO. 3
EROSION AND SEDIMENT CONTROL DETAILS	SHEETS NO. 57 - 59
EROSION CONTROL TABULATION	SHEETS NO. 6
TURF ESTABLISHMENT TABULATION	SHEETS NO. 6
SITE MAP	SHEETS NO. 57

SOIL TYPES

SOIL TYPES TYPICALLY FOUND ON THIS PROJECT ARE VERY FINE TO MEDIUM GRAINED SAND.

ENVIRONMENTAL REVIEW

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

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

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

THIS PROJECT IS NOT LOCATED IN A KARST AREA.

THIS PROJECT IS NOT LOCATED IN AN EMERGENCY RESPONSE AREA (ERA) PER DEPARTMENT OF HEALTH.

INSPECTION TIMEFRAMES

INSPECT THE ENTIRE CONSTRUCTION SITE A MINIMUM OF ONCE EVERY SEVEN DAYS DURING ACTIVE CONSTRUCTION AND WITHIN 24 HOURS AFTER A RAINFALL EVENT GREATER THAN 0.5 INCHES IN 24 HOURS. INSPECT ALL TEMPORARY AND PERMANENT WATER QUALITY MANAGEMENT, EROSION PREVENTION AND SEDIMENT CONTROL BMPS, SURFACE WATERS AND CONSTRUCTION SITE EXITS UNTIL ALL CONSTRUCTION IS COMPLETE AND THE SITE HAS UNDERGONE FINAL STABILIZATION. RECORD ALL INSPECTIONS AND MAINTENANCE ACTIVITIES IN WRITING WITHIN 24 HOURS. SUBMIT INSPECTION REPORTS IN A FORMAT THAT IS ACCEPTABLE TO THE PROJECT ENGINEER.

WATER RELATED PERMITS

AGENCY	TYPE OF PERMIT
MINNESOTA POLLUTION CONTROL AGENCY (MPCA)	CONST. STORMWATER PERMIT
RICE CREEK WATERSHED DISTRICT	RCWD
DEPARTMENT OF NATURAL RESOURCES (DNR)	THREATEND AND ENDANGERED

* VERTICAL DATUM NAVD 88 ADJUSTMENT

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

IF IT BECOMES NECESSARY TO DISTURB AREAS OUTSIDE OF THE CONSTRUCTION LIMITS, OPERATIONS SHOULD CEASE AND DETERMINATION MADE IF ADDITIONAL PERMITS ARE NEEDED OR EXISTING PERMITS NEED TO BE MODIFIED.

TEMPORARY DEWATERING ACTIVITIES MAY BE REQUIRED FOR ROADWAY CONSTRUCTION AND UTILITY WORK. CONTRACTOR IS RESPONSIBLE FOR OBTAINING THE PERMIT. SUBMIT A SITE MANAGEMENT PLAN TO THE ENGINEER FOR APPROVAL PRIOR TO COMMENCING WORK.

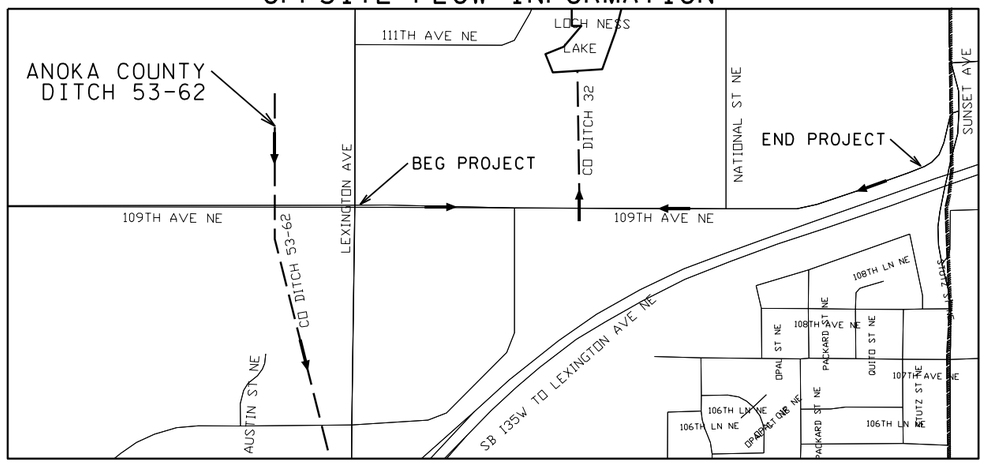
WATERBODY	NO WORK DURING
LAKES	APRIL 1 - JUNE 30
NON-TROUT STREAMS	MARCH 15 - JUNE 15
TROUT STREAMS	SEPTEMBER 1 - APRIL 1

SEE DNR PERMIT FOR MORE INFORMATION

SPECIAL AND IMPAIRED WATERS THAT ARE LOCATED WITHIN ONE MILE (AERIAL RADIUS) OF THE PROJECT LIMITS AND RECEIVE RUNOFF FROM THE PROJECT SITE.

WATERBODY NAME	IMPAIRMENT(S) OR SPECIAL STATUS
UNNAMED DITCH AC 53-62	BENTHIC MACROINVERTEBRATE BIOASSESSMENT AND DISSOLVED OXYGEN.

OFFSITE FLOW INFORMATION



AREAS OF ENVIRONMENTAL SENSITIVITY (AES)

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

PROJECT ORGANIZATION CONTACTS	NAME	PHONE
CONTRACTOR'S EROSION AND SEDIMENT CONTROL SUPERVISOR		
CONTRACTOR'S EROSION AND SEDIMENT CONTROL INSTALLER		
MNDOT METRO WRE (EROSION CONTROL/MS4)	RYAN RUPP	651-775-4081
	SARAH THOMSON	651-775-0921
ANOKA COUNTY CONSTRUCTION SUPERVISOR	CHRIS OSTERHUS	651-233-3168
RICE CREEK WATERSHED DISTRICT	PATRICK HUGHES	763-398-3080
MINNESOTA DEPARTMENT OF NATURAL RESOURCES	PATTY FOWLER	612-708-7732
ARMY CORP OF ENGINEERS		
MPCA DUTY OFFICER 24 HR EMERGENCY NOTIFICATION	651-649-5451 OR 1(800)-422-0798	

NO	DATE	BY	CKD	APPR	REVISION
1	4/8/25	JF	ND		ADDED VERTICAL DATUM NOTE, TOP RT CORNER

NAME: P:\002-612-035 17 to 53\Plan\002612035_SW.dgn 04/08/2025 9:30:27 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: 04/08/2025 LICENSE NO. 49046

DRAWN BY JJF DATE 12/01/24
DESIGN BY JJF DATE 12/01/24
CHECKED BY NJD DATE 01/28/25

ANOKA COUNTY HIGHWAY DEPT.

SAP 002-612-035

STORM WATER POLLUTION PREVENTION PLAN

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

EROSION AND SEDIMENT CONTROL MEASURES

AREA	TIME FRAME
ESTABLISH SEDIMENT CONTROL DEVICES ON ALL DOWN GRADIENT PERIMETERS AND UPGRADIENT OF ANY BUFFER ZONES	BEFORE ANY UP GRADIENT LAND DISTURBING ACTIVITIES BEGIN
REPAIR, REPLACE OR SUPPLEMENT PERIMETER CONTROL BMPS	WHEN BMP BECOMES NONFUNCTIONAL OR SEDIMENT REACHES 1/2 THE HEIGHT OF THE BMP BY THE END OF THE NEXT BUSINESS DAY AFTER DISCOVERY.
REPLACE, REPAIR OR SUPPLEMENT ALL NONFUNCTIONAL BMPS	BY THE END OF THE NEXT BUSINESS DAY AFTER DISCOVERY.
REPAIR, REPLACE, OR SUPPLEMENT INLET PROTECTION BMPS	WHEN THEY BECOME NONFUNCTIONAL OR SEDIMENT REACHES 1/2 THE HEIGHT AND/OR DEPTH OF THE BMP BY THE END OF THE NEXT BUSINESS DAY AFTER DISCOVERY.
REMOVE TRACKED SEDIMENT FROM PAVED SURFACES BOTH ON AND OFF SITE (LIGHTLY WET PRIOR TO SWEEPING)	WITHIN 24 HOURS OF DISCOVERY
REMOVE ALL DELTAS AND SEDIMENT DEPOSITED IN SURFACE WATERS AND RESTABILIZE	WITHIN 7 DAYS OF DISCOVERY

1. PROVIDE PERIMETER CONTROL AROUND ALL STOCKPILES AND DO NOT PLACE THEM IN NATURAL BUFFER AREAS, SURFACE WATERS OR STORMWATER CONVEYANCES. TOPSOIL BERMS MUST BE STABILIZED IN ORDER TO BE CONSIDERED PERIMETER CONTROL BMPS.
2. PROTECT STORM SEWER INLETS AT ALL TIMES WITH THE APPROPRIATE INLET PROTECTION BMP AND PROVIDE EMERGENCY OVERFLOW CAPABILITIES. SILT FENCE PLACED IN THE INLET GRATE IS NOT AN ACCEPTABLE INLET PROTECTION BMP FOR GRADING OPERATIONS.
3. PLACE AND MAINTAIN CONSTRUCTION EXITS OF SUFFICIENT SIZE TO PREVENT TRACKING OF SEDIMENT ONTO PAVED SURFACES BOTH ON AND OFF THE PROJECT SITE. REGULAR STREET SWEEPING IS NOT AN ACCEPTABLE ALTERNATIVE TO PROPER CONSTRUCTION EXIT INSTALLATION AND MAINTENANCE.
4. PROVIDE SCOUR PROTECTION AT OUTFALL OF DEWATERING ACTIVITIES. PROVIDE STABILIZATION IN TRENCHES CUT FOR DEWATERING OR SITE DRAINING PURPOSES.
5. PREPARE AND SUBMIT A SITE MANAGEMENT PLAN AND CONTACT ALL APPROPRIATE AUTHORITIES PRIOR TO WORKING IN SURFACE WATERS.
6. MAINTAIN ALL BMPS UNTIL WORK HAS BEEN COMPLETED, SITE HAS GONE UNDER FINAL STABILIZATION FOR PERMIT TERMINATION, AND THE NOTICE OF TERMINATION (NOT) HAS BEEN SUBMITTED TO THE MPCA.

STABILIZATION

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

1A. TEMPORARY SOIL STOCKPILES WITHOUT SIGNIFICANT CLAY OR SILT AND STOCKPILED AND CONSTRUCTED ROAD BASE ARE EXEMPT FROM THE STABILIZATION REQUIREMENT.

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

3A. APPLICATION OF MULCH, HYDROMULCH (SLOPE>2%), DISK-ANCHORED MULCH (SLOPE>2%), TACKIFIER AND POLYACRYLAMIDE ARE NOT ACCEPTABLE STABILIZATION METHODS IN DITCHES AND SWALES.

MATERIAL STORAGE, WASTE MANAGEMENT, FUELING AND DUST CONTROL

1. PROVIDE A SPILL KIT AT EACH WORK LOCATION ON THE SITE. ENSURE ALL SPILLS ARE CLEANED UP IMMEDIATELY.
2. STORE ALL LIQUID CHEMICALS UNDER COVER WITH SECONDARY CONTAINMENT. CREATE AND FOLLOW A WRITTEN DISPOSAL PLAN FOR ALL WASTE MATERIALS. STORE, COLLECT AND DISPOSE OF ALL SOLID WASTE.
3. FUEL AND MAINTAIN VEHICLES IN A DESIGNATED CONTAINED AREA WHENEVER FEASIBLE. USE DRIP PANS OR ABSORBENT MATERIALS TO PREVENT SPILLS OR LEAKED CHEMICALS FROM DISCHARGING TO SURFACE WATER OR STORMWATER CONVEYANCES.
4. PROVIDE EFFECTIVE CONTAINMENT FOR ALL LIQUID AND SOLID WASTES GENERATED BY WASHOUT OF CONCRETE, STUCCO, PAINT, FORM RELEASE OILS, CURING COMPOUNDS AND OTHER CONSTRUCTION MATERIALS. LIQUID AND SOLID WASHOUT WASTES MUST NOT CONTACT THE GROUND. DESIGN THE CONTAINMENT SO THAT IT DOES NOT RESULT IN RUNOFF FROM THE WASHOUT OPERATIONS OR CONTAINMENT AREA.
5. USE METHODS AND OPERATIONAL PROCEDURES THAT PREVENT DISCHARGE OR PLACEMENT OF BITUMINOUS GRINDINGS, CUTTINGS, MILLINGS, AND OTHER BITUMINOUS WASTES FROM AREAS OF EXISTING OR FUTURE VEGETATED SOILS AND FROM ALL WATER CONVEYANCE SYSTEMS, INCLUDING INLETS, DITCHES AND CURB FLOW LINES.
6. USE METHODS AND OPERATIONAL PROCEDURES THAT PREVENT CONCRETE DUST, STREET SWEEPING DUST, SAWCUT SLURRY, PLANING WASTE, CONCRETE WASH OUT, AND OTHER CONCRETE WASTES FROM LEAVING ANOKA COUNTY RIGHT OF WAY, DEPOSITING IN EXISTING OR FUTURE VEGETATED AREAS, AND FROM ENTERING STORMWATER CONVEYANCE SYSTEMS, INCLUDING INLETS, DITCHES AND CURB FLOW LINES.
7. PORTABLE TOILETS MUST BE POSITIONED SO THAT THEY ARE SECURE AND WILL NOT BE TIPPED OR KNOCKED OVER. SANITARY WASTE MUST BE DISPOSED OF PROPERLY IN ACCORDANCE WITH MINN. R. CHAPTER 7041.

IMPORTANT SWPPP NOTES FOR CONSTRUCTION ACTIVITY

1. PREPARE AND SUBMIT A SITE MANAGEMENT PLAN FOR THE ENGINEER'S ACCEPTANCE FOR CONCRETE MANAGEMENT, CONCRETE SLURRY APPLICATION AREAS, WORK IN AND NEAR AREAS OF ENVIRONMENTAL SENSITIVITY, AREAS IDENTIFIED IN THE PLANS AS "SITE MANAGEMENT PLAN AREA", ANY WORK THAT WILL REQUIRE DEWATERING, AND AS REQUESTED BY THE ENGINEER. SUBMIT ALL SITE MANAGEMENT PLANS TO THE ENGINEER IN WRITING. ALLOW A MINIMUM OF 7 DAYS FOR ANOKA COUNTY TO REVIEW AND ACCEPT SITE MANAGEMENT PLAN SUBMITTALS. WORK WILL NOT BE ALLOWED TO COMMENCE IF A SITE MANAGEMENT PLAN IS REQUIRED UNTIL ACCEPTANCE HAS BEEN GRANTED BY THE ENGINEER. THERE WILL BE NO EXTRA TIME ADDED TO THE CONTRACT DUE TO THE UNTIMELY SUBMITTAL.
2. DO NOT BUILD INFILTRATION AREAS OR PLACE FINAL FILTRATION MEDIA UNTIL THE PROJECT IS NEARLY COMPLETE. PROTECT THESE AREAS FROM COMPACTION AND FROM CONSTRUCTION STORMWATER RUNOFF.
3. ROUTE STORMWATER AROUND UNSTABILIZED AREAS OF THE SITE WHENEVER FEASIBLE.
4. CONSTRUCTION PROJECT SHOULD BE PHASED TO MINIMIZE THE DURATION OF EXPOSED SOILS.
5. MINIMIZE COMPACTION OF SOILS AND PRESERVE TOPSOIL IN AREAS WHERE VEGETATION WILL BE ESTABLISHED.
6. DIRECT DISCHARGES FROM BMPS TO VEGETATED AREAS WHENEVER FEASIBLE. PROVIDE VELOCITY DISSIPATION DEVICES AS NEEDED TO PREVENT EROSION.
7. FLOATING SILT CURTAIN IS ALLOWED AS PERIMETER CONTROL FOR IN WATER WORK ONLY. PLACE THE FLOATING SILT CURTAIN AS CLOSE TO SHORE AS POSSIBLE. PLACE PERIMETER CONTROL BMP ON LAND IMMEDIATELY AFTER THE IN WATER WORK IS COMPLETED.
8. DISCHARGE TURBID OR SEDIMENT LADEN WATER TO TEMPORARY SEDIMENT BASINS WHENEVER FEASIBLE (REQUIRED IF DRAINAGE AREA IS 10 ACRES OR LARGER OR 5 ACRES OR LARGER AND WITHIN 1 MILE OF IMPAIRED WATER). IN THE EVENT THAT IT IS NOT FEASIBLE TO DISCHARGE THE SEDIMENT LADEN WATER TO A TEMPORARY SEDIMENT BASIN, THE WATER MUST BE TREATED SO THAT IT DOES NOT CAUSE A NUISANCE CONDITION IN THE RECEIVING WATERS OR TO DOWNSTREAM LANDOWNERS. MUST DOCUMENT WHY SEDIMENT BASIN IS NOT FEASIBLE.
9. PROVIDE STABILIZATION IN ANY TRENCHES CUT FOR DEWATERING OR SITE DRAINING PURPOSES.
10. PROVIDE A 50 FOOT NATURAL BUFFER OR, IF BUFFER IS INFEASIBLE, PROVIDE A DOUBLE ROW OF SEDIMENT CONTROLS SPACED AT LEAST 5' APART WHEN A SURFACE WATER IS LOCATED WITHIN 50 FEET OF LAND DISTURBANCE AND STORMWATER FLOWS TO THE SURFACE WATER.
11. PROVIDE A 100 FOOT NATURAL BUFFER OR, IF BUFFER IS INFEASIBLE, PROVIDE A DOUBLE ROW OF SEDIMENT CONTROLS SPACED AT LEAST 5' APART WHEN A SPECIAL WATER IS LOCATED WITHIN 100 FEET OF THE LAND DISTURBANCE AND STORMWATER FLOWS TO THE SPECIAL WATER.
12. SUBSOIL ALL DISTURBED GREEN SPACES EXCEPT AS LISTED IN 2574.3A.5.

PIPE AND STRUCTURE NOTES

1. SIZE AND ELEVATION OF CULVERTS, STORM SEWER PIPES, CATCH BASINS, PONDS, INFILTRATION/FILTRATION BASINS, PERMEABLE DITCH BLOCKS AND OVERFLOW DEVICES HAVE BEEN SPECIFICALLY DESIGNED TO CONFORM TO MNDOT DESIGN STANDARDS AND PERMIT REQUIREMENTS. THE DESIGN COMPUTATIONS ARE ON FILE WITH ANOKA COUNTY. CHANGING THESE ITEMS OR THE DIRECTION OF FLOW FROM WHAT IS SHOWN ON THE PLANS MAY CAUSE PROBLEMS OFF THE PROJECT AND COULD MEAN THE PROJECT IS OUT OF COMPLIANCE WITH APPROVED DRAINAGE PERMITS. ANY CHANGES OF THE DRAINAGE SYSTEM MUST BE APPROVED BY ANOKA COUNTY.
2. PERFORM POST INSTALLATION MANDREL TESTING OF ALL PLASTIC PIPE.
3. SUBSURFACE DRAINAGE TILES DAMAGED DURING CONSTRUCTION SHALL BE REPAIRED, REPLACED OR REROUTED, AND CONNECTED TO THE EXISTING TILE OR DRAINAGE SYSTEM TO ENSURE THAT EXISTING UPLAND DRAINAGE IS PERPETUATED. THIS SHALL BE DONE TO THE APPROVAL AND SATISFACTION OF THE ENGINEER.

NPDES PERMIT TERMINATION CONDITIONS

1. CONTRACTOR MUST COMPLETE ALL CONSTRUCTION ACTIVITY AND MUST INSTALL PERMANENT COVER OVER ALL AREAS PRIOR TO SUBMITTING NOT. VEGETATIVE COVER MUST CONSIST OF A UNIFORM PERENNIAL VEGETATION WITH A DENSITY OF 70% OF ITS EXPECTED FINAL GROWTH.
2. CONTRACTOR MUST REMOVE ANY ACCUMULATED SEDIMENT AND STABILIZE THE PERMANENT STORMWATER TREATMENT SYSTEM(S) AND MUST ENSURE THE SYSTEM(S) ARE OPERATING AS DESIGNED.
3. CONTRACTOR MUST REMOVE ALL SEDIMENT FROM CONVEYANCE SYSTEMS PRIOR TO SUBMITTING THE NOT.
4. CONTRACTOR MUST REMOVE ALL TEMPORARY SYNTHETIC EROSION PREVENTION AND SEDIMENT CONTROL BMPS PRIOR TO SUBMITTING THE NOT. CONTRACTOR MAY LEAVE BMPS DESIGNED TO DECOMPOSE ON-SITE IN PLACE.
5. FOR CONSTRUCTION PROJECTS ON AGRICULTURAL LAND, CONTRACTOR MUST RETURN THE DISTURBED LAND TO ITS PRECONSTRUCTION AGRICULTURAL USE PRIOR TO SUBMITTING THE NOT.

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-612-035 17 to 53\Plan\002612035_SW.dgn 01/30/2025 7:05:10 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: 01/30/2025 LICENSE NO. 49046

DRAWN BY JJF DATE 12/01/24

DESIGN BY JJF DATE 12/01/24

CHECKED BY NJD DATE 01/28/25

ANOKA COUNTY HIGHWAY DEPT.

SAP 002-612-035

STORM WATER POLLUTION PREVENTION PLAN

Sheet 58 of 110 Sheets

STORM WATER POLLUTION PREVENTION PLAN (SWPPP)

Training

Individual revising or amending the SWPPP and individuals performing inspections must fill in the following table.

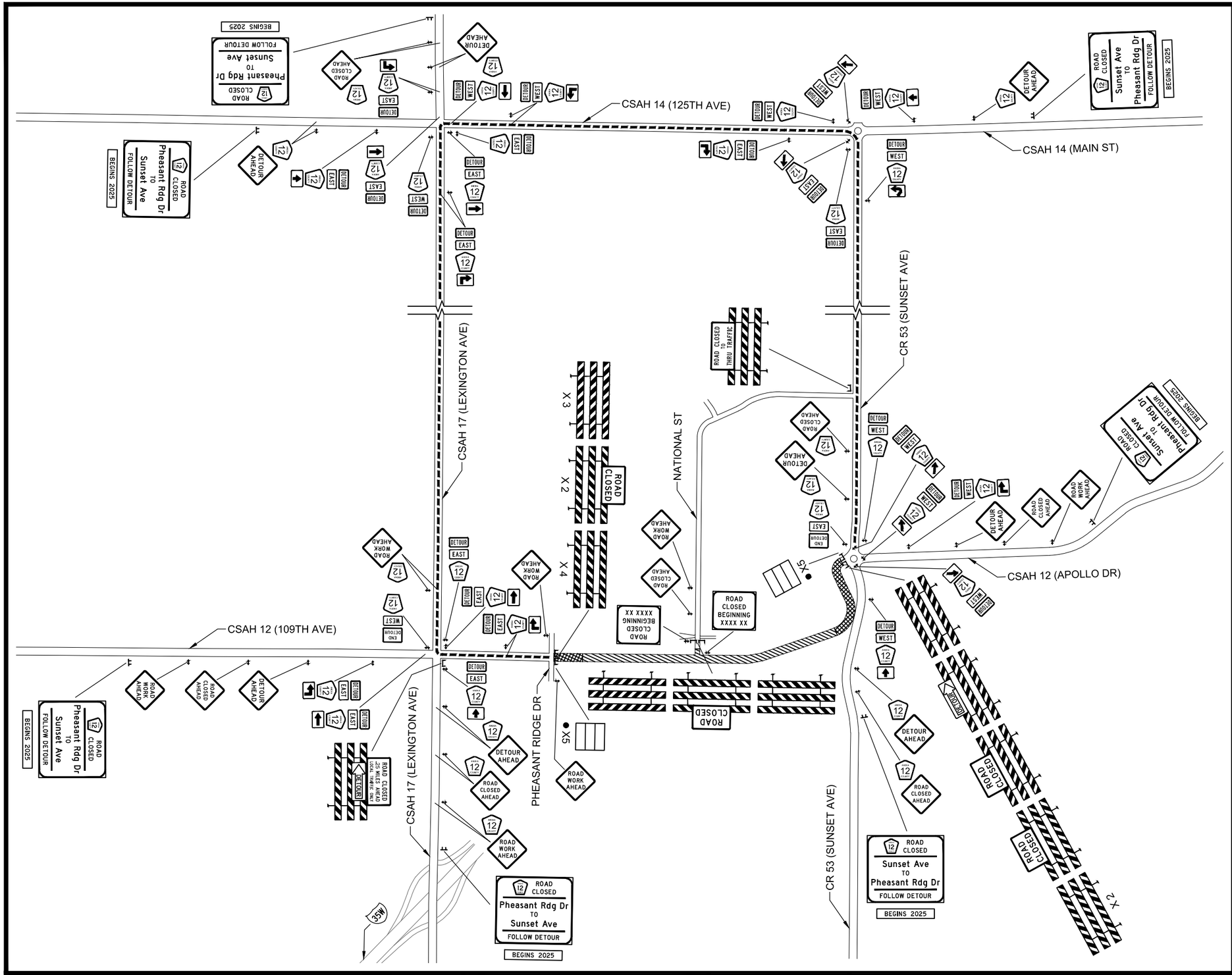
Name of on-site personnel trained	
Dates of training	
Name of instructor(s)	
Entity providing training	
Content of training course or workshop	

Amending the SWPPP

The SWPPP must be amended to record changes or modifications to permanent BMPs or other storm water treatment systems and removals of temporary BMPs. Changes to temporary BMPs 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

3 OF 3



NOT TO SCALE

TRAFFIC CONTROL DEVICES & SYMBOLS LEGEND

SYMBOL	DESCRIPTION
	WORK AREA
	AREA CLOSED TO TRAFFIC
	DETOUR ROUTE
	TRAFFIC CONTROL SIGN (DOUBLE POST)
	TRAFFIC CONTROL SIGN (TEMPORARY)
	TYPE III BARRICADE =
	DRUM-LIKE CHANNELIZER TYPE B =
	PORTABLE CHANGEABLE MESSAGE SIGN (PCMS)

PCMS - MESSAGE SEQUENCE LAYOUT

		R	O	A	D			
		W	O	R	K			
	B	E	G	I	N	S		

	<	D	A	T	E	>	
	E	X	P	E	C	T	
	D	E	L	A	Y	S	

CONSTRUCTION NOTES:

1. NATIONAL STREET CLOSED AT CSAH 12 (109TH AVE).
2. CSAH 12 (109TH AVE) TO BE FULLY CLOSED BETWEEN PHEASANT RIDGE DR AND CR 53 (SUNSET AVE).
3. CSAH 12 (109TH AVE) DETOURED ONTO CSAH 17 (LEXINGTON AVE), CSAH 14 (125TH AVE) AND CR 53 (SUNSET AVE).

TRAFFIC CONTROL NOTES:

1. PCMS AND G20-X1 SIGNS SHALL BE INSTALLED A MINIMUM OF 10 DAYS PRIOR TO ACTUAL COMMENCEMENT OF ROAD CLOSURE AT A LOCATION AS SPECIFIED ON PLAN. PCMS AND G20-X1 SIGNS TO BE REMOVED WHEN ROAD CLOSURE COMMENCES.
2. G20-X2 ADVANCE CLOSURE NOTICE SIGNS SHALL BE INSTALLED 10 DAYS PRIOR TO THE WORK STARTING DATE. ONCE WORK BEGINS, REMOVE BEGINS DATE PLAQUE AS SHOWN IN PLAN.
3. ALL SIGNS SHALL BE MAINTAINED THROUGHOUT CONSTRUCTION.

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-612-035\Base\Traffic\Detour Plan.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: 1/28/2025 LICENSE NO. 45129

DRAWN BY FL DATE 11/13/24

DESIGN BY FL DATE 11/13/24

CHECKED BY SRT DATE

ANOKA COUNTY HIGHWAY DEPT.

SAP 002-612-035

DETOUR PLAN

Sheet 60 of 110 Sheets

DETOUR PLAN QUANTITIES

K

"M" SERIES

SIGN	MUTCD CODE	COLOR	SIZE INCHES	QUANTITY
DETOUR	M4-8	BLACK ON ORANGE	24 X 12	32
END DETOUR	M4-8a	BLACK ON ORANGE	30 X 24	2
EAST	M3-2a	WHITE ON BLUE	24 X 12	19
WEST	M3-4a	WHITE ON BLUE	24 X 12	15
ANOKA 12 COUNTY	M1-6M	WHITE AND YELLOW ON BLUE	24 X 24	51
	M5-1aL	WHITE ON BLUE	21 X 15	5
	M5-1aR	WHITE ON BLUE	21 X 15	6
	M5-3	WHITE ON BLUE	21 X 15	1
	M6-1aL	WHITE ON BLUE	21 X 15	3
	M6-1aR	WHITE ON BLUE	21 X 15	2
	M6-2L	WHITE ON BLUE	21 X 15	2
	M6-2R	WHITE ON BLUE	21 X 15	3
	M6-3a	WHITE ON BLUE	21 X 15	4

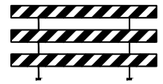
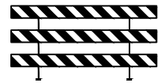
"W" SERIES

SIGN	MUTCD CODE	COLOR	SIZE INCHES	QUANTITY
ROAD WORK AHEAD	W20-1	BLACK ON ORANGE	36 X 36	2
			48 X 48	7
DETOUR AHEAD	W20-2	BLACK ON ORANGE	36 X 36	3
			48 X 48	8
ROAD CLOSED AHEAD	W20-3	BLACK ON ORANGE	36 X 36	2
			48 X 48	7

BARRICADE MOUNTED

SIGN	MUTCD CODE	COLOR	SIZE INCHES	QUANTITY
DETOUR	M4-10L	BLACK ON ORANGE	48 X 18	1
DETOUR	M4-10R	BLACK ON ORANGE	48 X 18	1
ROAD CLOSED	R11-2M	BLACK ON WHITE	48 X 30	5
ROAD CLOSED .25 MILES AHEAD LOCAL TRAFFIC ONLY	R11-3a	BLACK ON WHITE	60 X 30	1
ROAD CLOSED TO THRU TRAFFIC	R11-4	BLACK ON WHITE	60 X 30	1

DEVICES

DEVICE	MUTCD CODE	COLOR	SIZE	QUANTITY
	DRUM			10
	TYPE III LEFT		8 FOOT	12
	TYPE III RIGHT		8 FOOT	8
(2) 	PCMS TYPE C			2 (10 DAYS)

"G" SERIES

SIGN	MUTCD CODE	COLOR	SIZE INCHES	QUANTITY
ROAD CLOSED BEGINNING MTH DAY	G20-X1	BLACK ON ORANGE	54 X 48	2
ROAD CLOSED Pheasant Rdg Dr TO Sunset Ave FOLLOW DETOUR	G20-X2	BLACK ON ORANGE	96 X 84	4
ROAD CLOSED Sunset Ave TO Pheasant Rdg Dr FOLLOW DETOUR	G20-X2	BLACK ON ORANGE	96 X 84	3
(1) BEGINS MTH DAY			72 X 12	7

SPECIFIC NOTES:

1. BEGINS DATE PLAQUE SHALL COVER FOLLOW DETOUR BEFORE WORK BEGINS AND BE REMOVED WHEN WHEN WORK BEGINS.
2. PCMS TO BE INSTALLED A MINIMUM OF 10 DAYS PRIOR TO COMMENCEMENT OF ROAD WORK AND REMOVED WHEN ROAD WORK BEGINS.

NOTES:

- ALL TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE LATEST EDITION OF THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, INCLUDING THE LATEST FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS.
- ALL TYPE III BARRICADES SHALL BE REFLECTORIZED ON BOTH SIDES. BARRICADE MARKINGS SHALL BE SLANTED IN ACCORDANCE WITH THE MUTCD.

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-612-035\Base\Traffic\Detour Plan Quantities.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: 1/28/2025 LICENSE NO. 45129

DRAWN BY FL DATE 11/08/24

DESIGN BY FL DATE 11/08/24

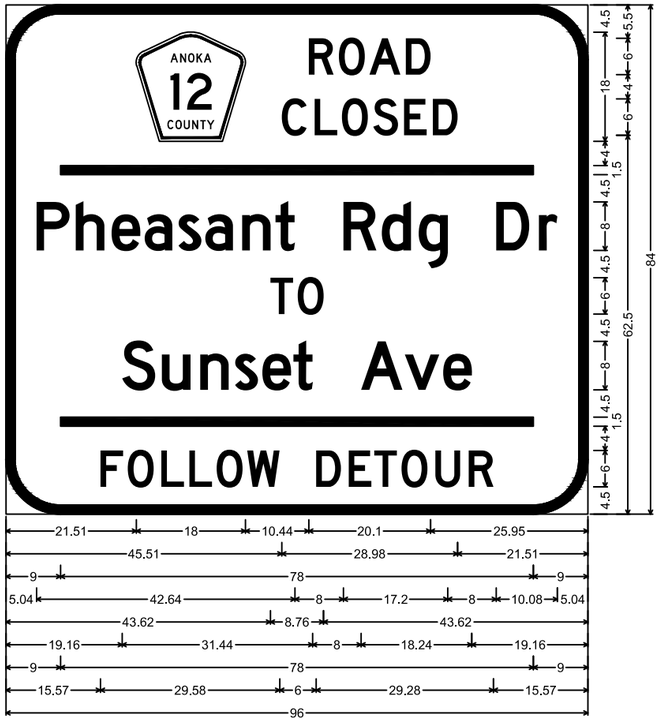
CHECKED BY SRT DATE

ANOKA COUNTY HIGHWAY DEPT.

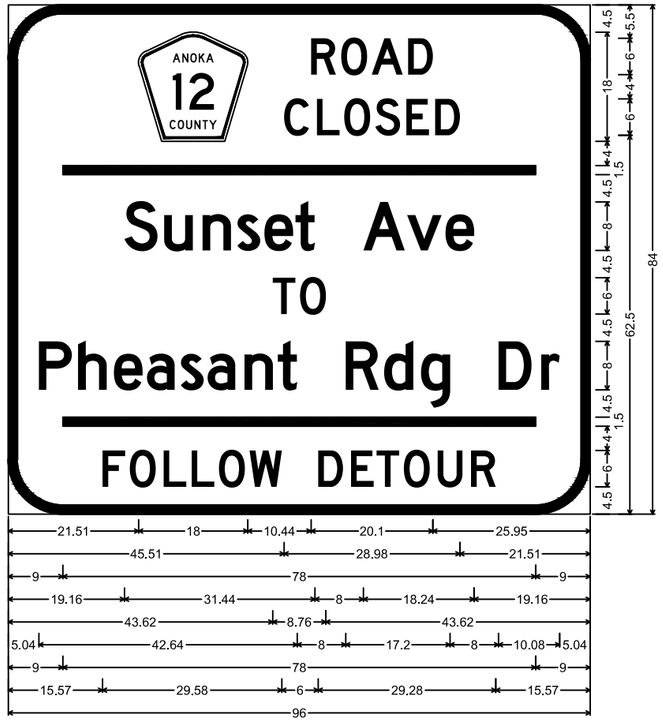
SAP 002-612-035

DETOUR PLAN QUANTITIES

"G" SERIES SIGN DESIGN



9.00" Radius, 1.50" Border, Black on, None;
Pentagonal County 12 M1-6a; "ROAD", D 2K; "CLOSED", D 2K;
"Pheasant Rdg Dr", D 2K; "TO", D 2K; "Sunset Ave", D 2K; "FOLLOW DETOUR", D 2K;



9.00" Radius, 1.50" Border, Black on, None;
Pentagonal County 12 M1-6a; "ROAD", D 2K; "CLOSED", D 2K; "Sunset Ave", D 2K;
"TO", D 2K; "Pheasant Rdg Dr", D 2K; "FOLLOW DETOUR", D 2K;

No border, Black on, Orange;
"BEGINS", D 2K

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-612-035\Base\Traffic\Detour Plan Quantities.dwg

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ANOKA COUNTY HIGHWAY DEPT.

SAP 002-612-035

DETOUR PLAN QUANTITIES

Sheet 62 of 110 Sheets

PERMANENT PAVEMENT MARKING PLAN
NOTES & GUIDELINES

GENERAL INFORMATION:

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

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 — L

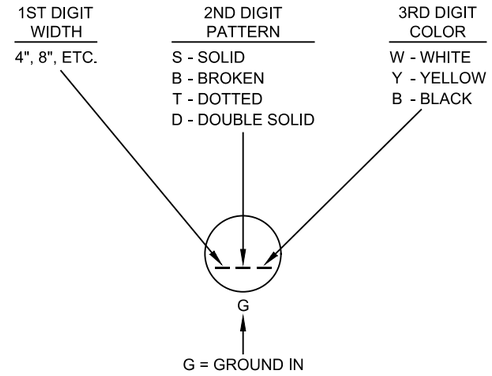
ITEM DESCRIPTION	UNIT	TOTAL QUANTITY		CSAH 12 (109TH AVE)		PHEASANT RIDGE DR	
		WHITE	YELLOW	WHITE	YELLOW	WHITE	YELLOW
4" SOLID LINE MULTI-COMPONENT	LIN FT	14234	4287	14234	4287		
4" DOUBLE SOLID LINE MULTI-COMPONENT	LIN FT		4114		4114		
4" BROKEN LINE MULTI-COMPONENT	LIN FT	700		700			
8" DOTTED LINE MULTI-COMPONENT	LIN FT	36		36			
24" SOLID LINE PREFORM THERMO GROUND IN	LIN FT	86	17	60	17	26	
CROSSWALK PREFORM THERMOPLASTIC GROUND IN	SQ FT	523		325		198	
PAVEMENT MESSAGE PREFORM THERMOPLASTIC	SQ FT	207.36		207.36			

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)
- LANE TRANSITION ARROW

STRIPING KEY

- CIRCLE - MULTI-COMP
- TRIANGLE - PAINT
- OCTAGON - PREF THERMO



EXAMPLE: (4SW G) = 4" SOLID LINE WHITE MULTI-COMP GROUND IN

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-612-035\Base\Traffic\Permanent Pavement Marking Plan Notes & Tabulations.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: 1/28/2025 LICENSE NO. 45129

DRAWN BY FL DATE 10/24/24
DESIGN BY FL DATE 10/24/24
CHECKED BY SRT DATE

ANOKA COUNTY HIGHWAY DEPT.

SAP 002-612-035

PERMANENT PAVEMENT MARKING PLAN NOTES & TABULATIONS

Sheet 63 of 110 Sheets

STRIPING NOTES: (TYP.)

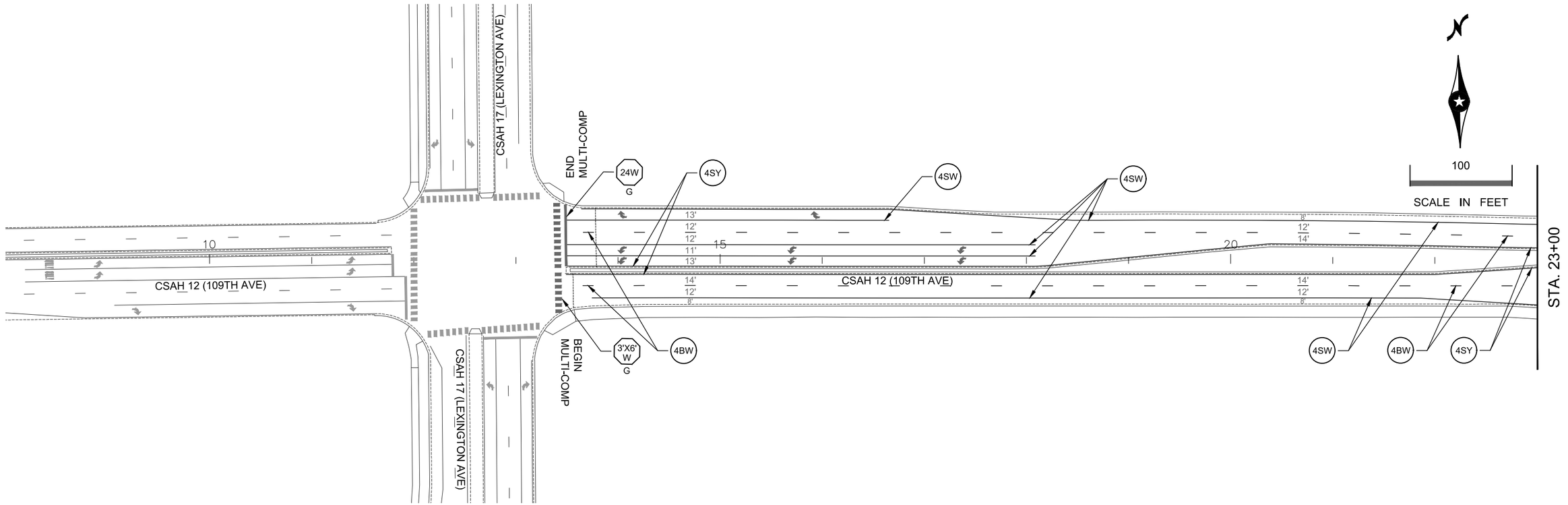
1. LOCATIONS OF ALL PERMANENT STRIPING AND PAVEMENT MARKINGS ARE APPROXIMATE. EXACT LOCATIONS WILL BE DETERMINED IN THE FIELD BY THE ENGINEER.
2. ALL MAINLINE PERMANENT STRIPING AND PAVEMENT MARKINGS SHALL BE PLACED WITHIN 72 HOURS OF MAINLINE PAVING.
3. APPLY ALL PAVEMENT MARKINGS AS RECOMMENDED BY THE MATERIAL MANUFACTURER.
4. PERMANENT PAVEMENT MARKINGS AND STRIPING SHALL NOT BE PLACED OVER TEMPORARY TAPE MARKINGS.
5. MAINLINE MULTI-COMP MARKINGS SHALL MATCH INTO EXISTING PAINT.
6. PAVEMENT MARKINGS OUTSIDE OF WORK AREA AFFECTED BY CONSTRUCTION ACTIVITIES SHALL BE REMARKED WITH ORIGINAL MATERIAL OR AS SPECIFIED ON PLAN.

STRIPING KEY

CIRCLE - MULTI-COMP

TRIANGLE - PAINT

OCTAGON - PREF THERMO



NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-612-035\Base\Traffic\Permanent Pavement Marking Plan.dwg

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PRINT NAME: SEAN R. THIEL

SIGNATURE: Sean R. Thiel

DATE: 1/28/2025 LICENSE NO. 45129

DRAWN BY FL DATE 10/24/24

DESIGN BY FL DATE 10/24/24

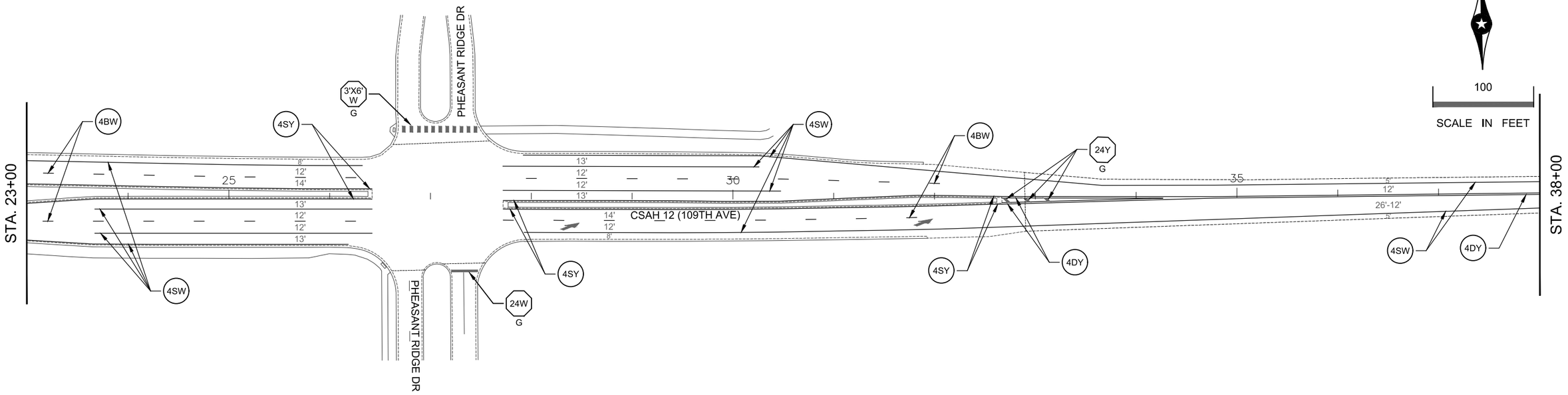
CHECKED BY SRT DATE

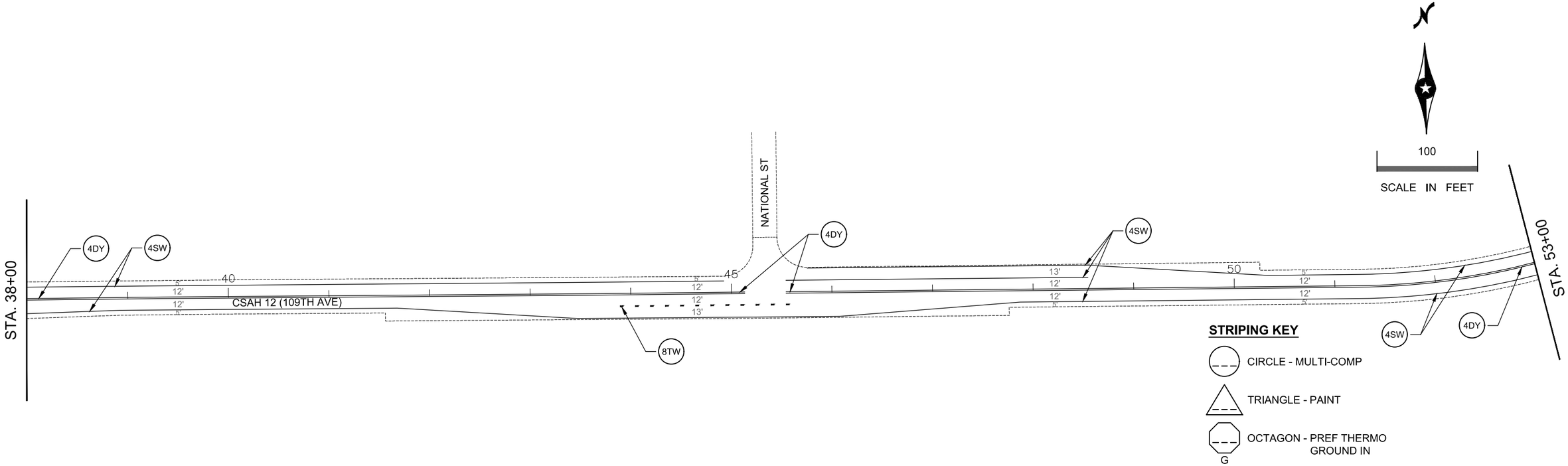
ANOKA COUNTY HIGHWAY DEPT.

SAP 002-612-035

PERMANENT PAVEMENT MARKING PLAN

Sheet 64 of 110 Sheets





100

SCALE IN FEET

STRIPING KEY

CIRCLE - MULTI-COMP

TRIANGLE - PAINT

OCTAGON - PREF THERMO GROUND IN G

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SAP 002-612-035

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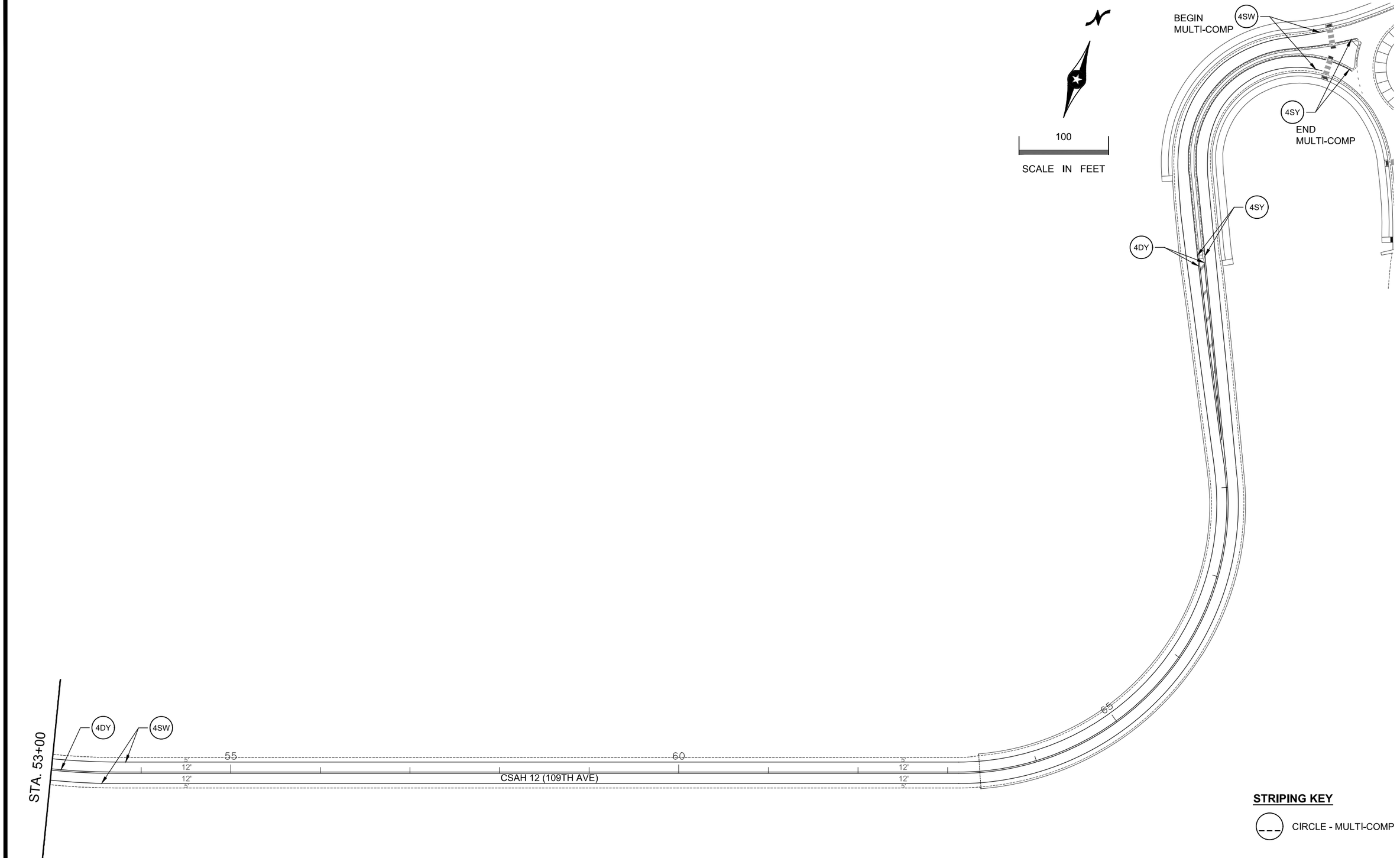
Sheet 65 of 110 Sheets



STRIPING KEY

CIRCLE - MULTI-COMP

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PERMANENT PAVEMENT MARKING PLAN

Sheet 66 of 110 Sheets

TRAFFIC CONTROL NOTES: (TYP.)

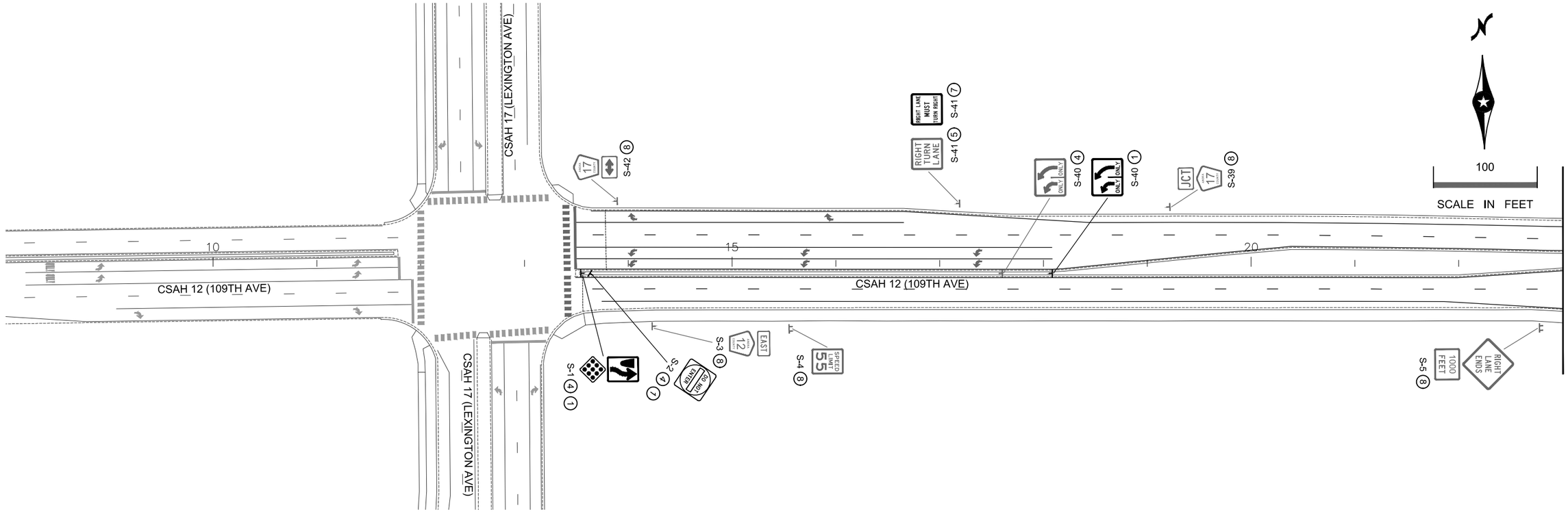
- ALL TRAFFIC CONTROL DEVICES SHALL CONFORM AND BE PLACED IN ACCORDANCE WITH THE MOST RECENT EDITION OF THE "MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MN MUTCD), INCLUDING PART 6, "FIELD MANUAL", DATED SEPTEMBER 2020.
- ALL SIGNS SHALL BE FURNISHED AND INSTALLED UNLESS OTHERWISE NOTED.
- ALL CENTER MEDIAN SIGNS ON CSAH 12 (109TH AVE), BETWEEN STA. 13+50 AND STA. 33+00, SHALL BE REMOVED, FABRICATED AND INSTALLED UTILIZING THE SQUARE TUBE SHEAR BOLT BASE IN ACCORDANCE TO MnDOT SPEC. 3402 AND THE ANOKA COUNTY SIGNING DETAILS.

TRAFFIC CONTROL DEVICES & SYMBOLS LEGEND

SYMBOL	DESCRIPTION
⊢	TRAFFIC CONTROL SIGN (SINGLE POST)
⊢⊣	TRAFFIC CONTROL SIGN (SINGLE POST, BACK TO BACK)
⊢⊢	TRAFFIC CONTROL SIGN (DOUBLE POST)

SIGNING NOTES

1. F. & I.
4. REMOVE
5. REMOVE SIGN PANEL
6. INSTALL
7. F. & I. SIGN PANEL
8. RETAIN INPLACE



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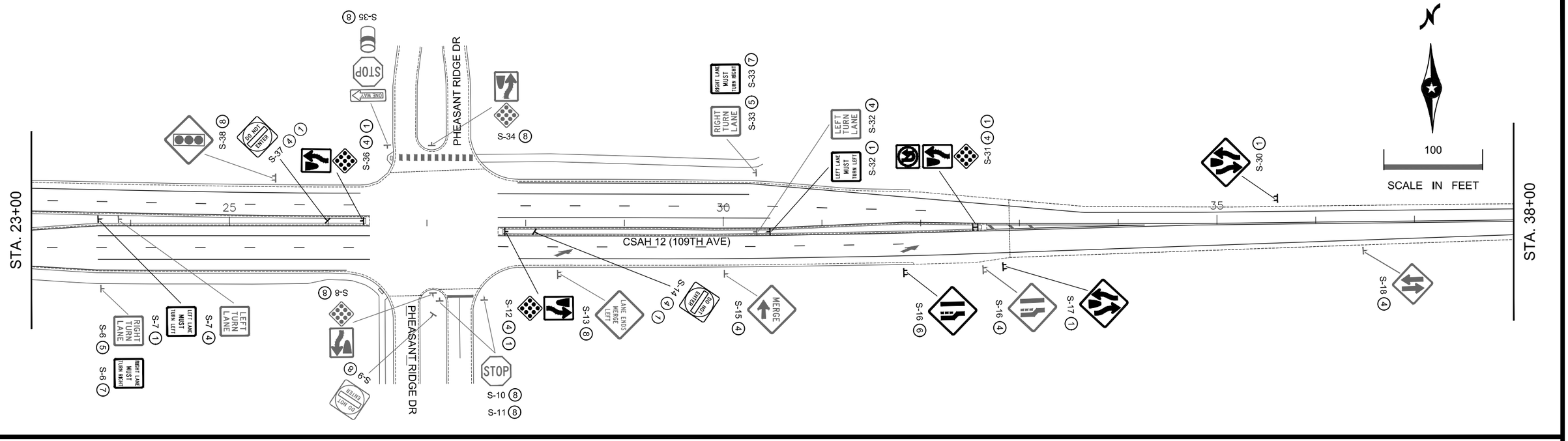
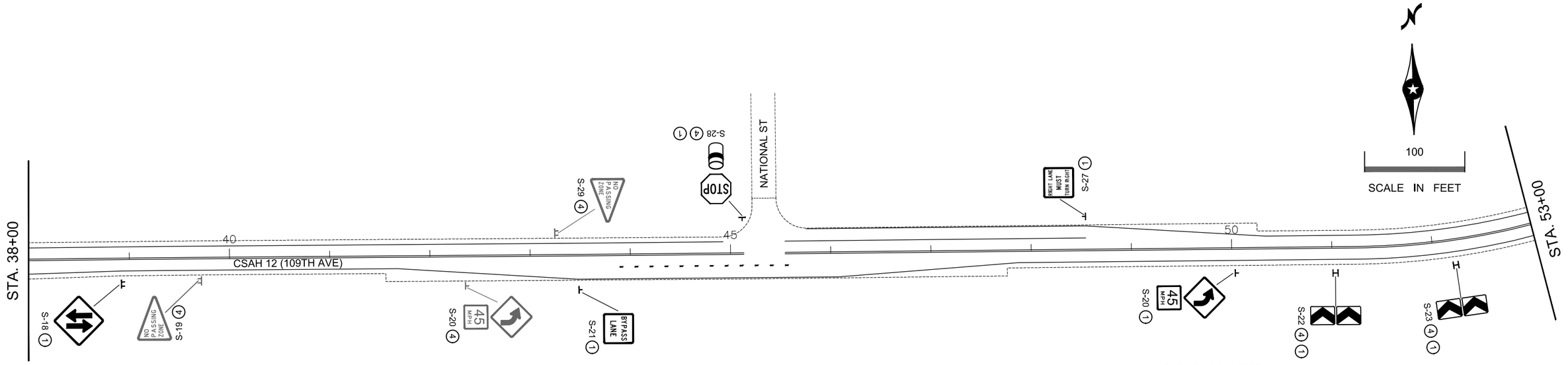
ANOKA COUNTY HIGHWAY DEPT.

SAP 002-612-035

SIGNING AND TABULATIONS

Sheet 67 of 110 Sheets





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(4) REMOVE
(5) REMOVE SIGN PANEL
(6) INSTALL
(7) F. & I. SIGN PANEL
(8) RETAIN INPLACE

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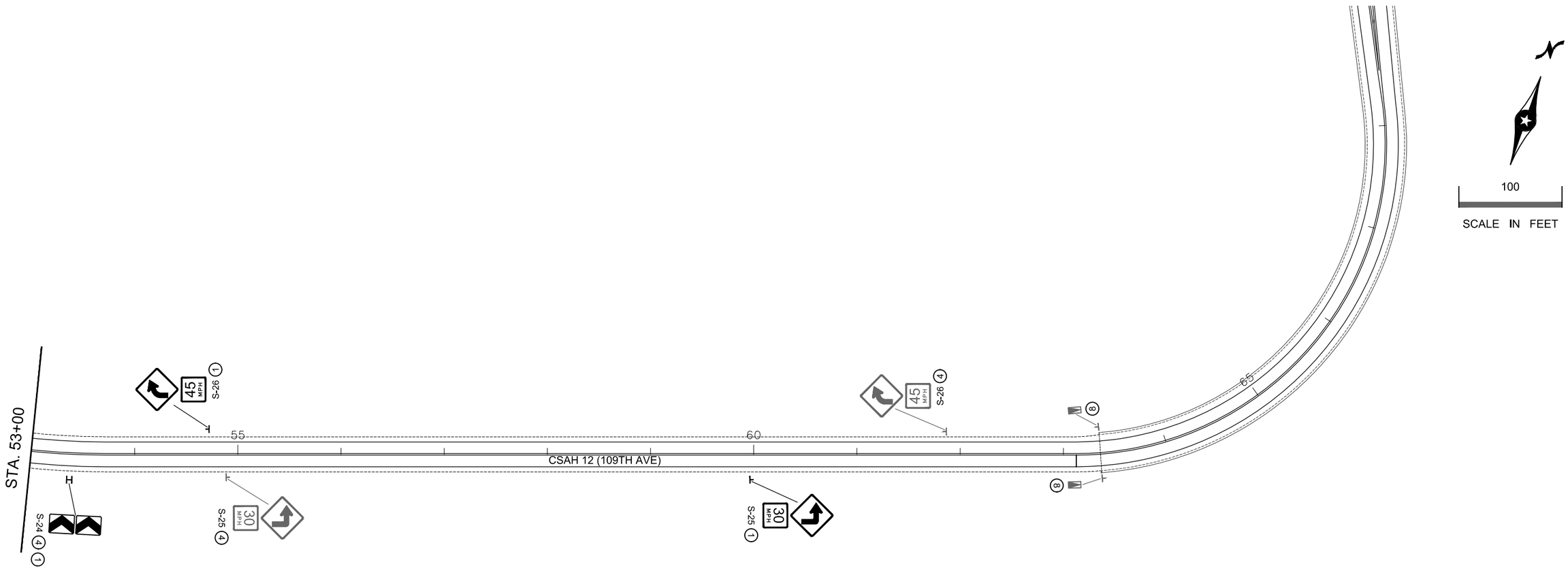
Sheet 68 of 110 Sheets



SIGNING NOTES

1. F. & I.
4. REMOVE

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SIGNING AND TABULATIONS

Sheet 69 of 110 Sheets

SIGN AND DELINEATOR / MARKER

M

	SIGN NUMBER	PANEL CODE	LEGEND	SIZE (W x H)	MOUNTING HEIGHT	SUPPORT TYPE (1)	SUPPORT NUMBER OF POSTS	REMOVE SIGN TYPE C	REMOVE SIGN TYPE C PANEL	SIGN	INSTALL SIGN TYPE C	INSTALL SIGN TYPE C PANEL	DELINEATOR / MARKER
				INCHES	FEET			EACH	EACH	SQ FEET	EACH	EACH	EACH
	S-1	R4-7	KEEP RIGHT	24 x 30	7	S-CONC	1	1		5.00	1		
		OM1-1	TYPE 1 OBJECT MARKER	18 x 18	4								1
	S-2	R5-1	DO NOT ENTER	30 x 30	7	S-CONC	1	1		6.25	1		
	S-3	M3-2	EAST	24 x 12		U-SOIL							
		M1-6M	ANOKA COUNTY 12	24 x 24									
	S-4	R2-1	SPEED LIMIT 55	36 x 48		U-SOIL							
	S-5	W9-1R	RIGHT LANE ENDS	36 x 36		U-SOIL							
		W16-2P	1000 FEET	24 x 18									
	S-6	R3-X1R	RIGHT TURN LANE	30 x 30	7	U-SOIL			1				
		R3-7R	RIGHT LANE MUST TURN RIGHT	30 x 30		U-SOIL				6.25		1	
	S-7	R3-X1L	LEFT TURN LANE	30 x 30	7	U-CONC	1	1					
		R3-7L	LEFT LANE MUST TURN LEFT	30 x 30		S-CONC				6.25	1		
	S-8	R4-7	KEEP RIGHT	24 x 30		U-SOIL							
		OM1-1	TYPE 1 OBJECT MARKER	18 x 18									
	S-9	R5-1	DO NOT ENTER	30 x 30		U-SOIL							
	S-10	R1-1	STOP	30 x 30		U-SOIL							
	S-11	R1-1	STOP	30 x 30		U-SOIL							
	S-12	R4-7	KEEP RIGHT	24 x 30	7	S-CONC	1	1		5.00	1		
		OM1-1	TYPE 1 OBJECT MARKER	18 x 18	4								1
	S-13	W9-2L	LANE ENDS MERGE LEFT	36 x 36		U-SOIL							
	S-14	R5-1	DO NOT ENTER	30 x 30	7	S-CONC	1	1		6.25	1		
	S-15	W20-X3L	MERGE	30 x 30		U-SOIL		1					
	S-16	W4-2R	LANE TRANSITION RIGHT	36 x 36	7	U-SOIL	2	1		9.00	1		
	S-17	W6-2	DIVIDED HIGHWAY ENDS	36 x 36	7	U-SOIL	2			9.00	1		
	S-18	W6-3	TWO WAY TRAFFIC	30 x 30	7	U-SOIL	1	1		6.25	1		
	S-19	W14-3	NO PASSING ZONE	x		U-SOIL		1					
	S-20	W1-2L	LEFT CURVE	36 x 36	7	U-SOIL	1	1		9.00	1		
		W13-1P	ADVISORY SPEED 45	24 x 24						4.00			
	S-21	R4-X8	BYPASS LANE	30 x 30	7	U-SOIL	1			6.25	1		
(2)	S-22	W1-8	CHEVRON	18 x 24	5	U-SOIL	1	1		3.00	1		
		W1-8	CHEVRON	18 x 24						3.00			
(2)	S-23	W1-8	CHEVRON	18 x 24	5	U-SOIL	1	1		3.00	1		
		W1-8	CHEVRON	18 x 24						3.00			
(2)	S-24	W1-8	CHEVRON	18 x 24	5	U-SOIL	1	1		3.00	1		
		W1-8	CHEVRON	18 x 24						3.00			
	S-25	W1-1L	LEFT TURN	36 x 36	7	U-SOIL	1	1		9.00	1		
		W13-1P	ADVISORY SPEED 30	24 x 24						4.00			
	S-26	W1-2R	RIGHT CURVE	30 x 30	7	U-SOIL	1	1		6.25	1		
		W13-1P	ADVISORY SPEED 45	24 x 24						4.00			
	S-27	R3-7R	RIGHT LANE MUST TURN RIGHT	30 x 30	7	U-SOIL	1			6.25	1		
	S-28	R1-1	STOP	30 x 30	7	U-SOIL	1	1		6.25	1		
		X4-3	CIRCULAR DELINEATOR	4 x 15									1
	S-29	W14-3	NO PASSING ZONE	x		U-SOIL		1					
	S-30	W6-1	DIVIDED HIGHWAY BEGINS	36 x 36	7	U-SOIL	2			9.00	1		
(2)	S-31	R3-4	NO U-TURN	24 x 24	7	U-CONC	1	1		4.00	1		
		R4-7	KEEP RIGHT	24 x 30						5.00			
		OM1-1	TYPE 1 OBJECT MARKER	18 x 18	4								1
	S-32	R3-X1L	LEFT TURN LANE	30 x 30	7	S-CONC	1	1					
		R3-7L	LEFT LANE MUST TURN LEFT	30 x 30						6.25	1		
	S-33	R3-X1R	RIGHT TURN LANE	30 x 30	7	U-SOIL			1				
		R3-7R	RIGHT LANE MUST TURN RIGHT	30 x 30						6.25		1	
	S-34	R4-7	KEEP RIGHT	24 x 30		U-SOIL							
		OM1-1	TYPE 1 OBJECT MARKER	18 x 18									
	S-35	R6-1R	ONE WAY RIGHT	36 x 12		U-SOIL	1						
		R1-1	STOP	30 x 30									
		X4-3	CIRCULAR DELINEATOR	4 x 15									
	S-36	R4-7	KEEP RIGHT	24 x 30	7	S-CONC	1	1		5.00	1		
		OM1-1	TYPE 1 OBJECT MARKER	18 x 18	4								1
	S-37	R5-1	DO NOT ENTER	30 x 30	7	S-CONC	1	1		6.25	1		
	S-38	W3-3	SIGNAL AHEAD	48 x 48		U-SOIL							
	S-39	M2-1	JCT	21 x 15		U-SOIL							
		M1-6M	ANOKA COUNTY 17	24 x 24									
	S-40	R3-8AB	LANE USE CONTROL DOUBLE LEFT	36 x 30	7	S-CONC	1	1		7.50	1		
	S-41	R3-X1R	RIGHT TURN LANE	30 x 30	7	U-SOIL			1				
		R3-7R	RIGHT LANE MUST TURN RIGHT	30 x 30						6.25		1	
	S-42	M1-6M	ANOKA COUNTY 17	24 x 24		U-SOIL							
		M6-4	DOUBLE ARROW	21 x 15									
						TOTAL		22	3	188	23	3	5

SPECIFIC NOTES:

(1) S-CONC: 2" POST
U-CHANNEL: 3 LBS PER FOOT BLACK POST

(2) BACK TO BACK

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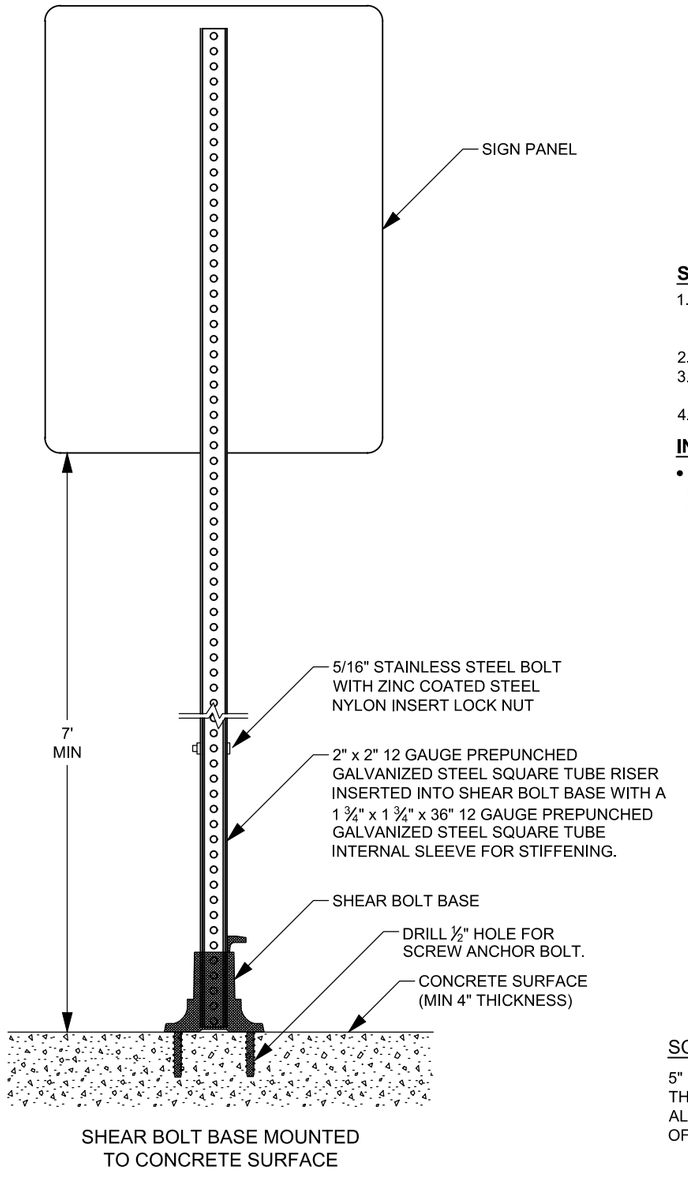
SIGNING AND TABULATIONS

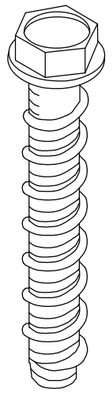
Sheet 70 of 110 Sheets

SIGN INSTALLATION TYPICALS

ISLAND MOUNT
SQUARE TUBE SHEAR BOLT BASE
SIGN INSTALLATION TYPICAL



SHEAR BOLT BASE MOUNTED
TO CONCRETE SURFACE



SCREW ANCHOR BOLT

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

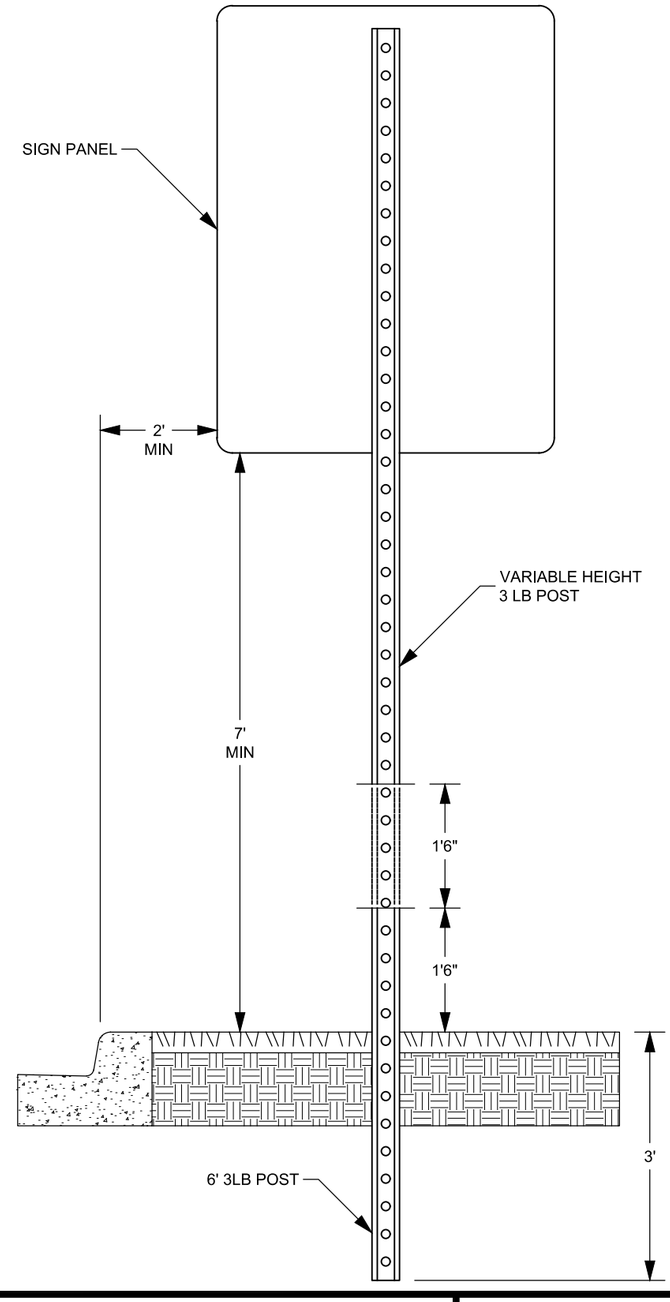
SIGN NOTES:

1. TO MEET CRASHWORTHY REQUIREMENTS THE DISTANCE BETWEEN THE BOTTOM OF THE SIGN PANEL AND THE GROUND SURFACE BELOW ANY PORTION OF THE PRIMARY SIGN PANEL MUST BE A MINIMUM OF 7 FEET. SEE TABULATIONS FOR MOUNTING HEIGHT.
2. INSTALLATION OF SHEAR BOLT BASE MUST BE NO EARLIER THAN 3 DAYS AFTER CONCRETE IS PLACED.
3. FOR SHEAR BOLT BASE USE APPROVED PRODUCT FROM MnDOT APPROVED PRODUCTS LIST. PRODUCT MUST BE MODIFIED AS SHOWN.
4. USE ANTI SEIZE ON THE SHEAR BOLT CONNECTIONS.

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.

GROUND POST MOUNT
SIGN INSTALLATION TYPICAL



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SIGNING & STRIPING DETAILS

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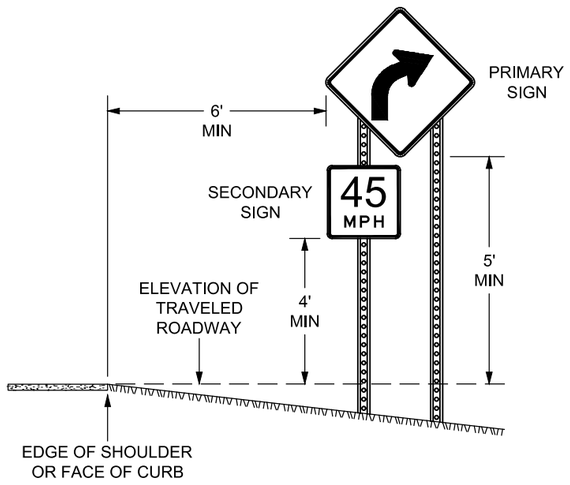
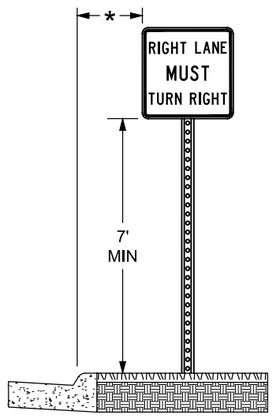
SIGN PLACEMENT TYPICALS

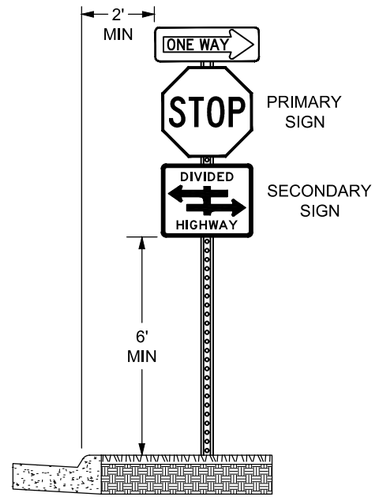
RURAL

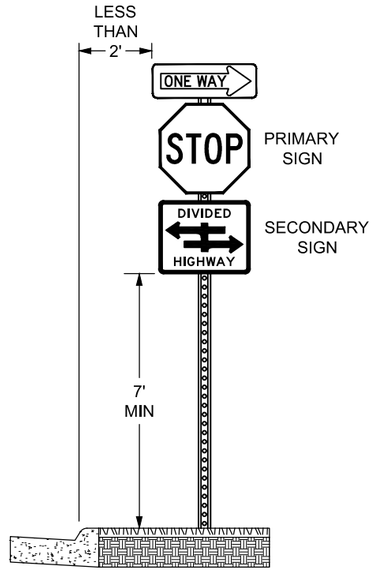


URBAN

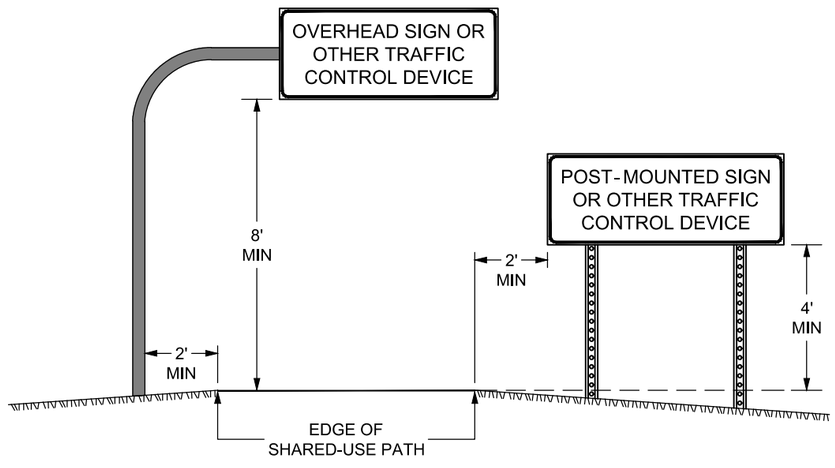


* 2' - NARROW BOULEVARD (≤ 8' WIDE)
  6' - WIDE BOULEVARD





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.

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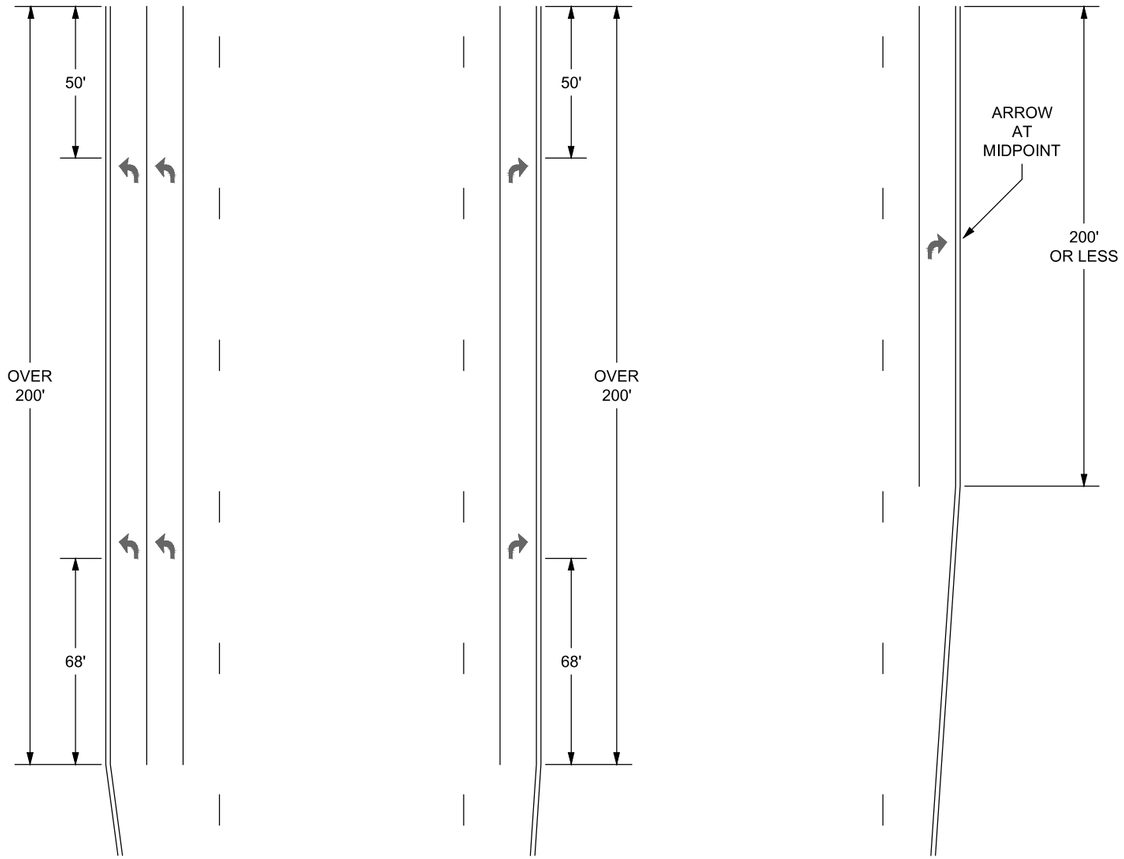
SIGNING & STRIPING DETAILS

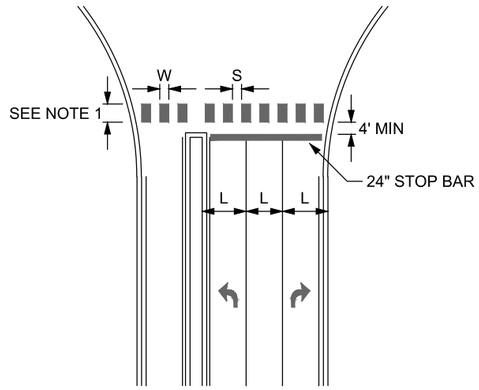
Sheet 72 of 110 Sheets

PAVEMENT MARKING TYPICALS

TURN LANE ARROW PLACEMENT

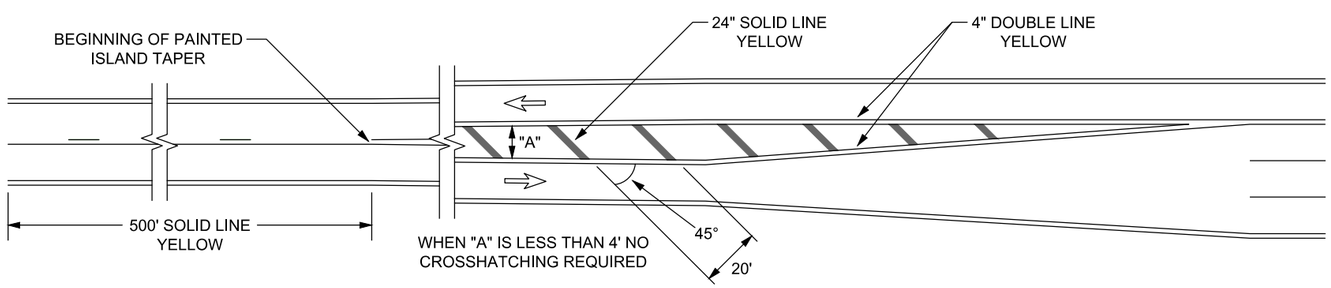


PEDESTRIAN CROSSWALK



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

LEFT TURN ISLAND MARKINGS



CROSSWALK NOTES:

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

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-612-035\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: 1/28/2025 LICENSE NO. 45129

DRAWN BY FL DATE 11/07/24

DESIGN BY FL DATE 11/07/24

CHECKED BY SRT DATE

ANOKA COUNTY

ANOKA COUNTY HIGHWAY DEPT.

SAP 002-612-035

SIGNING & STRIPING DETAILS

Sheet 73 of 110 Sheets

STATUS:

1 = MAINTAIN 3-SECTION HEAD AT CURRENT LOCATION (AT 29') & REVISE SIGNAL HEAD NUMBER/LABELING (FROM 2-3 TO 2-2, AND FROM 6-3 TO 6-2).

2 = MAINTAIN 3-SECTION HEAD AT CURRENT LOCATION, (AT 17'), SWAP RLA-YLA-GLA LENSES WITH RYG LENSES IN RELOCATED SIGNAL HEAD AT 6', AND REVISE SIGNAL HEAD NUMBER/LABELING (FROM 5-1 TO 2-3, AND FROM 1-1 TO 6-3).

3 = SALVAGE INPLACE 3-SECTION HEAD FROM MOUNT AT 41' (OLD 2-2, 6-2) (CAP MOUNT), INSTALL ON NEW STRAP-ON MID-MAST ARM MOUNT AT 6', SWAP RYG LENSES WITH RLA-YLA-GLA LENSES IN INPLACE SIGNAL HEAD AT 17', AND REVISE SIGNAL HEAD NUMBER/LABELING (FROM 2-2 TO 5-1, AND FROM 6-2 TO 1-1).

4 = REVISE FROM TYPE 10A BRACKETING TO TYPE 10B BRACKETING (TO INCORPORATE NEW ONE SECTION PEDESTRIAN INDICATION INSTALLATION).
(&&)

○⇦ = INPLACE LED (REUSE INPLACE).
FYA = FLASHING YELLOW ARROW

LED SIGNAL HEADS

SIGNAL HEAD #	ALL 12" INDICATIONS R	Y	FYA	G	STATUS
1-1	⇦	⇦		⇦	3
1-2	⇦	⇦		⇦	INPLACE
2-1	○	○		○	INPLACE
2-2	○	○		○	1
2-3	○	○		○	2
3-1	⇦	⇦		⇦	INPLACE
3-2 (&&)	⇦	⇦		⇦	4
4-1 (&&)	○	○		○	4
4-2, 4-3	○	○		○	INPLACE
5-1	⇦	⇦		⇦	3
5-2	⇦	⇦		⇦	INPLACE
6-1	○	○		○	INPLACE
6-2	○	○		○	1
6-3	○	○		○	2
7-1, 7-2	⇦	⇦		⇦	INPLACE
8-1, 8-2, 8-3	○	○		○	INPLACE

LOOP DETECTORS FUNCTIONS:

1) CALL AND EXTEND
3) EXTEND ONLY
7) DELAYED CALL- IMMEDIATE EXTEND
8) CARRY OVER (STRETCH)

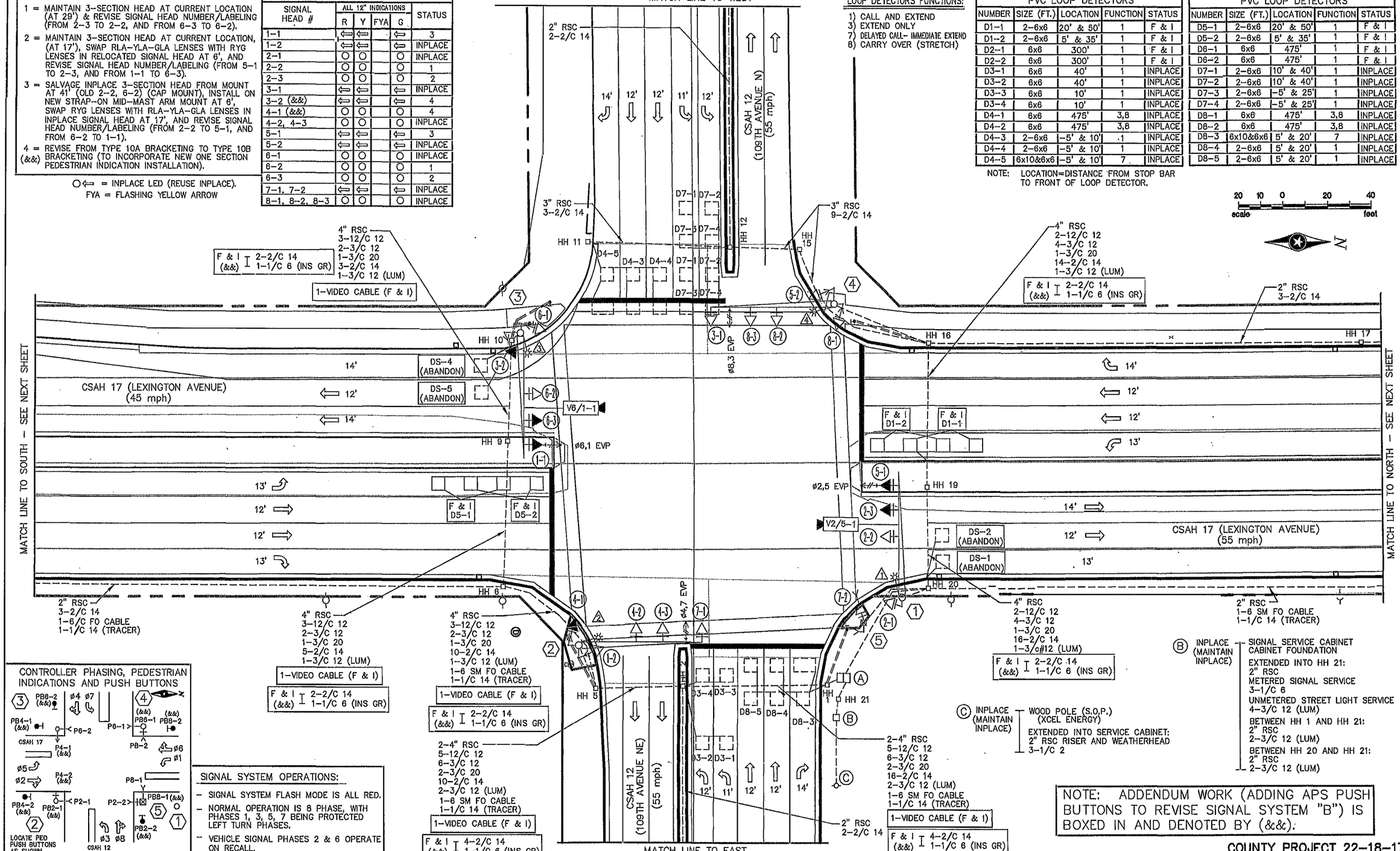
PVC LOOP DETECTORS

NUMBER	SIZE (FT.)	LOCATION	FUNCTION	STATUS
D1-1	2-6x6	20' & 50'	1	F & I
D1-2	2-6x6	5' & 35'	1	F & I
D2-1	6x6	300'	1	F & I
D2-2	6x6	300'	1	F & I
D3-1	6x6	40'	1	INPLACE
D3-2	6x6	40'	1	INPLACE
D3-3	6x6	10'	1	INPLACE
D3-4	6x6	10'	1	INPLACE
D4-1	6x6	475'	3,8	INPLACE
D4-2	6x6	475'	3,8	INPLACE
D4-3	2-6x6	-5' & 10'	1	INPLACE
D4-4	2-6x6	-5' & 10'	1	INPLACE
D4-5	6x10&6x6	-5' & 10'	7	INPLACE

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

PVC LOOP DETECTORS

NUMBER	SIZE (FT.)	LOCATION	FUNCTION	STATUS
D5-1	2-6x6	20' & 50'	1	F & I
D5-2	2-6x6	5' & 35'	1	F & I
D6-1	6x6	475'	1	F & I
D6-2	6x6	475'	1	F & I
D7-1	2-6x6	10' & 40'	1	INPLACE
D7-2	2-6x6	10' & 40'	1	INPLACE
D7-3	2-6x6	-5' & 25'	1	INPLACE
D7-4	2-6x6	-5' & 25'	1	INPLACE
D8-1	6x6	475'	3,8	INPLACE
D8-2	6x6	475'	3,8	INPLACE
D8-3	6x10&6x6	5' & 20'	7	INPLACE
D8-4	2-6x6	5' & 20'	1	INPLACE
D8-5	2-6x6	5' & 20'	1	INPLACE



CONTROLLER PHASING, PEDESTRIAN INDICATIONS AND PUSH BUTTONS

SIGNAL SYSTEM OPERATIONS:

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

(A) INPLACE (MAINTAIN INPLACE) — SIGNAL SERVICE CABINET
CABINET FOUNDATION
EXTENDED INTO HH 21:
2" RSC
METERED SIGNAL SERVICE
3-1/C 6
UNMETERED STREET LIGHT SERVICE
4-3/C 12 (LUM)
BETWEEN HH 1 AND HH 21:
2" RSC
2-3/C 12 (LUM)
BETWEEN HH 20 AND HH 21:
2" RSC
2-3/C 12 (LUM)

(B) INPLACE (MAINTAIN INPLACE) — WOOD POLE (S,O,P.) (XCEL ENERGY)
EXTENDED INTO SERVICE CABINET:
2" RSC RISER AND WEATHERHEAD
3-1/C 2

NOTE: ADDENDUM WORK (ADDING APS PUSH BUTTONS TO REVISE SIGNAL SYSTEM "B") IS BOXED IN AND DENOTED BY (&&).

COUNTY PROJECT 22-18-17

DRAWN BY: JMG
DESIGNER: JMG
CHECKED BY: JMG
DESIGN TEAM

NO.	BY	DATE	REVISIONS

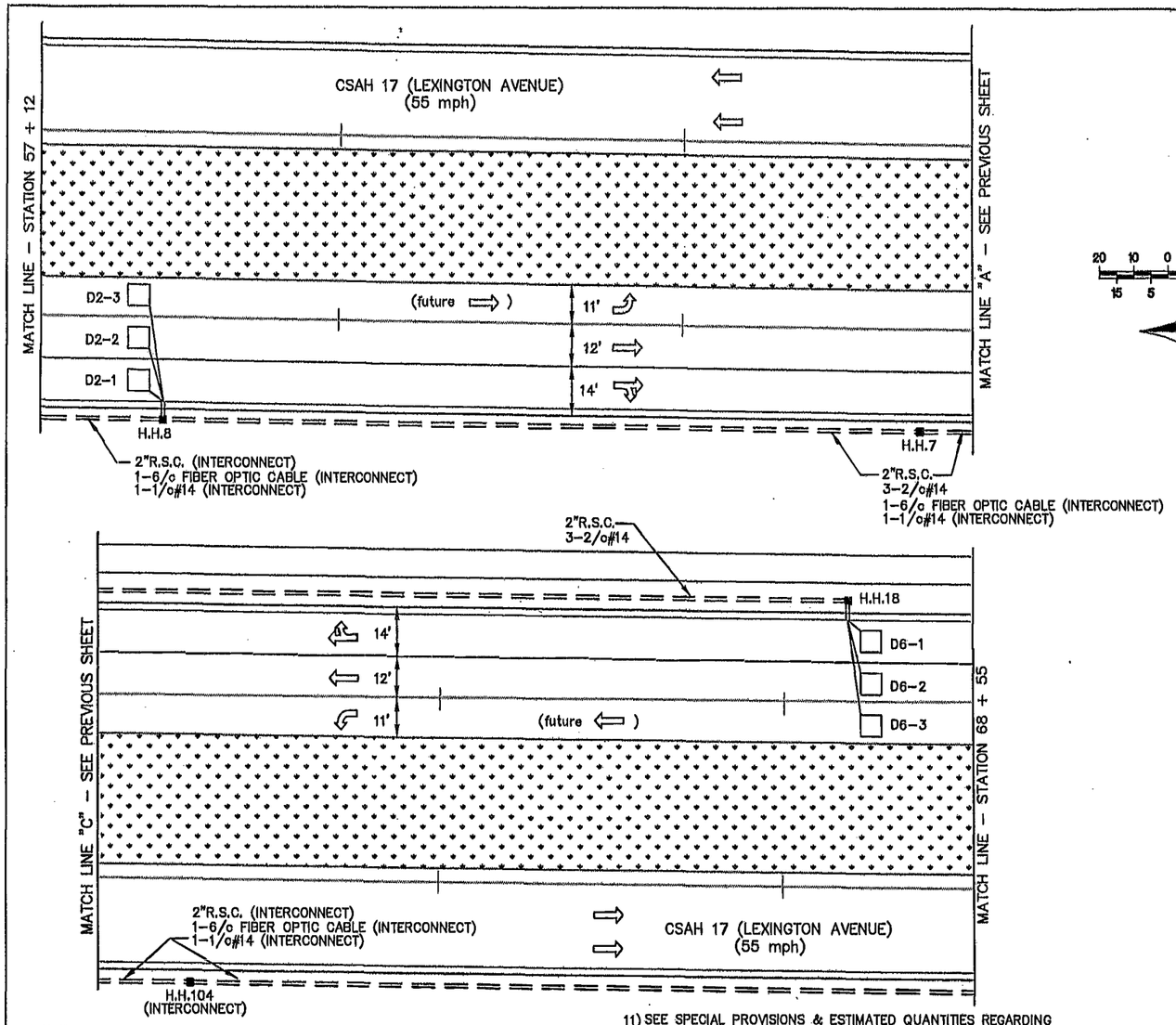
I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
Date: May 9, 2022
Name: John M Gray, PE
Lic. No. 22457

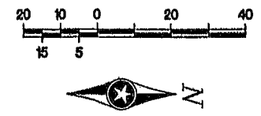
SEH
PHONE: (651) 490-2000
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

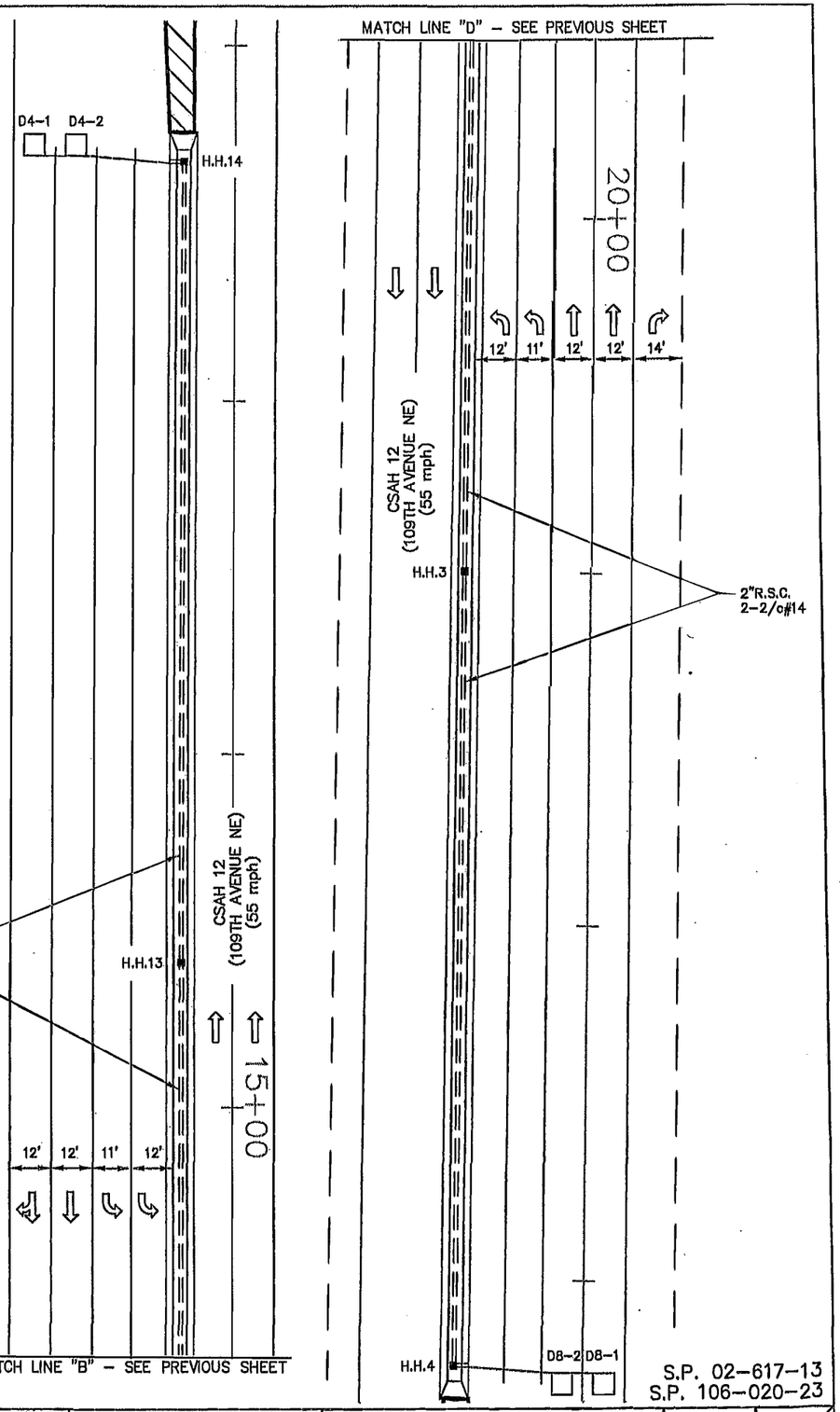
ANOKA COUNTY
CITY OF BLAINE

REVISE SIGNAL SYSTEM 'B'
INTERSECTION LAYOUT
CSAH 17 (LEXINGTON AVENUE NE)
AT CSAH 12 (109TH AVENUE NE)

FILE NO. ANOKC 122928
SIGNAL SHEET 6 OF 35
74/110







NOTES:

1) LOCATION OF POLES, CONTROLLER CABINET, SERVICE CABINET, LOOP DETECTORS AND HANDHOLES SHALL BE DETERMINED IN THE FIELD BY THE ENGINEER.
2) SEE SPECIAL PROVISIONS FOR COUNTY FURNISHED MATERIALS.
3) LOOP DETECTOR WIRES SHALL BE CROSS-LINKED POLYETHYLENE (XLP) IN 3/4" N.M.C. SEE SPECIAL PROVISIONS.
4) NEW HANDHOLES SHALL BE PVC HANDHOLES WITH METAL FRAMES AND COVERS.
5) EACH SIGNAL FACE SHALL HAVE BACKGROUND SHIELD.
6) EACH PEDESTRIAN INDICATION SHALL BE ONE SECTION HAND/WALKING PERSON INDICATION.
7) ALL VEHICLE SIGNAL INDICATIONS, AND ALL PEDESTRIAN SIGNAL INDICATIONS SHALL BE LED.
8) SEE SPECIAL PROVISIONS AND DETAILS REGARDING SIGNS TO BE FURNISHED & INSTALLED BY CONTRACTOR (INCIDENTAL TO ITEM NO. 2565.511 FOR THIS SIGNAL SYSTEM).
9) CONTRACTOR SHALL PROVIDE EXTENDED BRACKETS FOR EACH POLE MOUNTED VEHICLE AND PEDESTRIAN SIGNAL FACE.
10) A 3/4" HALF COUPLING, 3/4" PIPE NIPPLE AND CONDUIT OUTLET BODY SHALL BE FURNISHED AND INSTALLED 6 FEET FROM THE END OF EACH MAST ARM (FOR EVP).
11) SEE SPECIAL PROVISIONS & ESTIMATED QUANTITIES REGARDING INPLACE SIGNAL SYSTEM TO BE REMOVED AND SALVAGED BY CONTRACTOR (SEPARATE FROM ITEM NO. 2565.511).
12) CONTRACTOR SHALL MAINTAIN OPERATION OF INPLACE SIGNAL SYSTEM AT ALL TIMES, UNTIL APPROVED BY ENGINEER FOR SIGNAL SYSTEM TO BE TURNED OFF.
13) CONTRACTOR SHALL COORDINATE ALL TRAFFIC SIGNAL INSTALLATION WORK WITH ROAD CONSTRUCTION TO BE COMPLETED BY OTHERS AS PART OF ENTIRE PROJECT.
14) (INTERCONNECT) DENOTES ITEMS TO BE FURNISHED & INSTALLED BY CONTRACTOR UNDER ITEM NO. 2565.601 (TRAFFIC CONTROL INTERCONNECTION). SEE ESTIMATED QUANTITIES & SPECIAL PROVISIONS.
15) CONTRACTOR SHALL COIL AND STORE AN ADDITIONAL 10' OF 1-2/c#14 CABLE IN HANDHOLES 10 AND 20 (FOR FUTURE LOOP DETECTOR INSTALLATIONS BY OTHERS).
16) CONTRACTOR SHALL COIL AND STORE AN ADDITIONAL 10' OF 2-2/c#14 CABLE IN HANDHOLE 19 (FOR FUTURE LOOP DETECTOR INSTALLATIONS BY OTHERS).
17) CONTRACTOR SHALL COIL AND STORE AN ADDITIONAL 10' OF 2-2/c#14 CABLE IN HANDHOLE 9 (FOR FUTURE LOOP DETECTOR INSTALLATIONS BY OTHERS).
18) CONTRACTOR SHALL COIL AND STORE AN ADDITIONAL 75' OF 2-2/c#14 CABLE IN HANDHOLE 6 (FOR FUTURE EXTENSION OF CABLES FOR LOOP DETECTORS D5-1 AND D5-2 FROM HANDHOLE 6 TO HANDHOLE 9 BY OTHERS).

DRAWN BY: JMG
DESIGNER: JMG
CHECKED BY: JMG
DESIGN TEAM

No.	BY	DATE	REVISIONS
1	JMG	06/23	REVISED TO ACCOMMODATE NEW EAST GEOMETRICS

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.
Date: June 30, 2004
Name: John M. Gray, P.E.
Lic. No. 22457

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

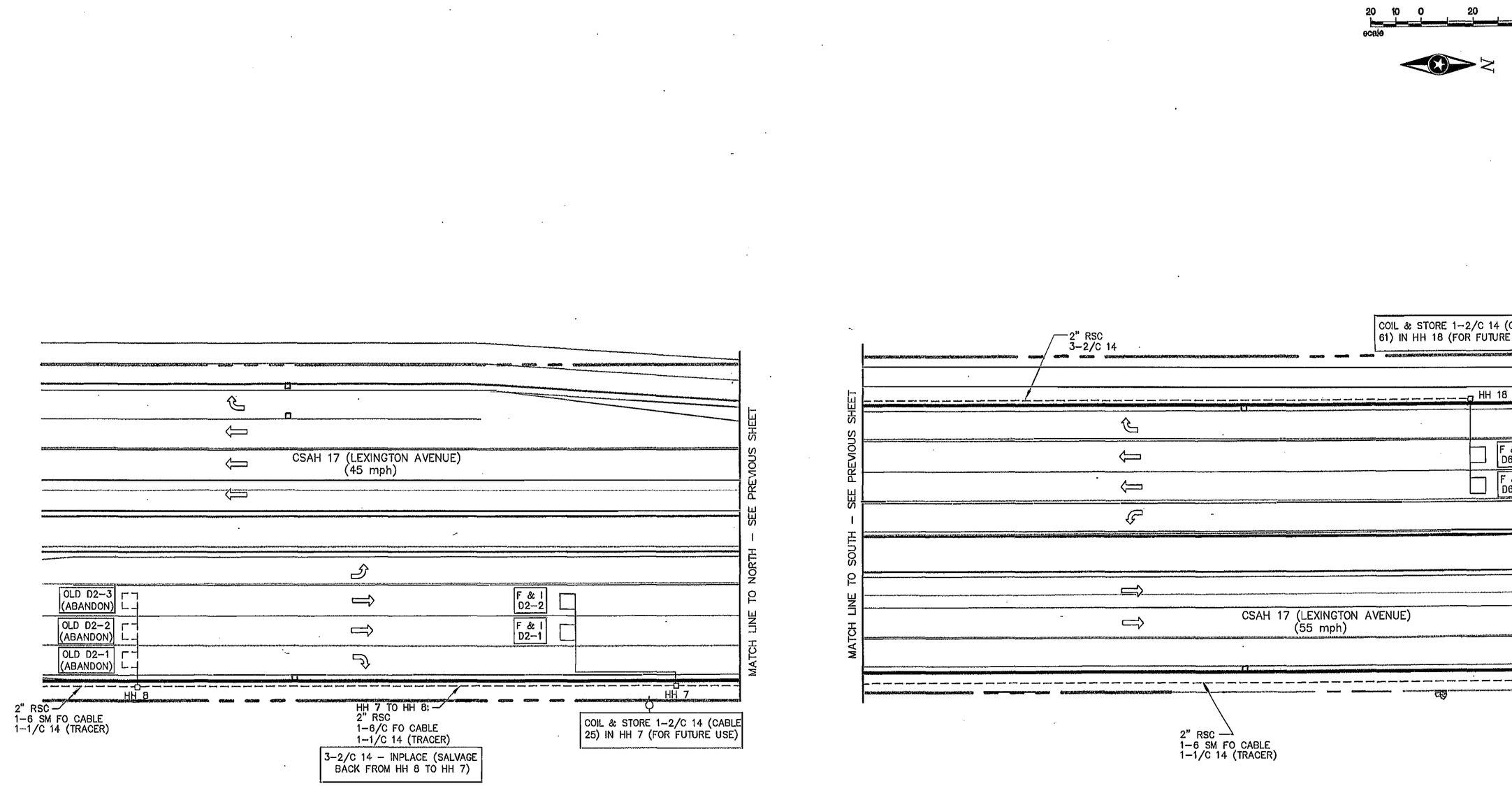
ANOKA COUNTY, MINNESOTA
CITY OF BLAINE

TRAFFIC SIGNAL SYSTEM "A"
INTERSECTION LAYOUT
CSAH 17 (LEXINGTON AVENUE) AT CSAH 12 (109TH AVENUE NE)

FILE NO. AANOKC0305.00
SIGNAL SHEET 9A OF 28
75/110

S.P. 02-617-13
S.P. 106-020-23

W:\AE\ANOKC\C0305\7\TRAFFIC.DWG



COUNTY PROJECT 22-18-17

DRAWN BY: JMG
DESIGNER: JMG
CHECKED BY: JMG
DESIGN TEAM

NO.	BY	DATE	REVISIONS

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.

Date: March 28, 2022

Name: John M Gray, PE
Lic. No. 22457

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

ANOKA COUNTY
CITY OF BLAINE

REVISE SIGNAL SYSTEM "B"
MATCH LINES
CSAH 17 (LEXINGTON AVENUE NE)
AT CSAH 12 (109TH AVENUE NE)

FILE NO.
ANOKC 122928

SIGNAL SHEET
7 OF 35

76/110

REVISE SIGNAL SYSTEM B NOTES:

1) ALL ITEMS OF THIS SIGNAL SYSTEM ARE INPLACE AND SHALL BE REUSED AND MAINTAINED INPLACE, UNLESS BOXED IN AND NOTED OTHERWISE ON PLANS.
2) ALL HANDHOLES (PVC WITH METAL FRAMES AND COVERS) ARE INPLACE AND SHALL BE REUSED AND MAINTAINED INPLACE, EXCEPT AS FOLLOWS:
   - ADJUST HANDHOLES 6, 7, 8, 9, 10, 11, 15, 16, 17, 18, 19, AND 20 TO FINISHED SURROUNDING GRADE AFTER ALL WORK IS COMPLETED (INCIDENTAL).
3) LOCATION OF NEW LOOP DETECTORS SHALL BE DETERMINED IN THE FIELD BY THE ENGINEER.
4) ALL CABLES AND CONDUCTORS, CONDUIT, HANDHOLES, AND LOOP DETECTORS ARE INPLACE AND SHALL BE REUSED AND MAINTAINED INPLACE, EXCEPT WHERE BOXED IN AND DENOTED OTHERWISE.
5) LOOP DETECTOR WIRES SHALL BE CROSS-LINKED POLYETHYLENE (XLP) 12 AWG IN 3/4" NMC. NEW LOOP DETECTORS D1-1, D1-2, D2-1, D2-2, D5-1, D5-2, D6-1, AND D6-2 SHALL BE FURNISHED, INSTALLED & MADE OPERATIONAL BY CONTRACTOR TO THE SATISFACTION OF ENGINEER. SEE DETAILS & SPECIAL PROVISIONS.
6) CONTRACTOR SHALL REMOVE AND DISPOSE OF ALL EXISTING LOOP DETECTOR SPLICE KITS (FOR LOOP DETECTORS D1-1, D1-2, D2-1, D2-2, D5-1, D5-2, D6-1, D6-2) AND SHALL FURNISH AND INSTALL NEW LOOP DETECTOR SPLICE KITS IN THE ADJACENT HANDHOLE FOR THESE LOOP DETECTORS AS CALLED FOR IN THE SPECIAL PROVISIONS.
7) A SEPARATE PAY ITEM HAS BEEN ADDED (2565 - RIGID PVC LOOP DETECTOR 6' x 6') FOR POTENTIAL REPLACEMENT OF LOOP DETECTORS, SHOULD THESE LOOP DETECTORS BE REQUIRED TO BE REPLACED BY THE CONTRACTOR EITHER DUE TO MILL/OVERLAY WORK OR CURB RAMP/CURB AND GUTTER WORK THAT CAUSES THE EXISTING LOOP DETECTOR TO BE DAMAGED. THE CONTRACTOR SHALL MAKE EVERY EFFORT TO PROTECT AND MAINTAIN THE EXISTING LOOP DETECTORS (INCLUDING LEAD-IN CONDUITS FROM HANDHOLE TO IN-PAVEMENT LOOP DETECTOR CONDUIT) AND SHALL NOTIFY THE ENGINEER IF THEY ANTICIPATE THAT A LOOP DETECTOR WILL BE DAMAGED DUE TO THEIR WORK. COUNTY WILL PROVIDE INITIAL LOCATION OF THESE LOOP DETECTORS FOR CONTRACTOR TO BE ABLE TO PLAN FOR WORKING AROUND THESE LOOP DETECTORS, SEE SPECIAL PROVISIONS.
8) CONTRACTOR SHALL MAINTAIN A SIGNAL SYSTEM IN OPERATION AT THIS INTERSECTION AT ALL TIMES, UNLESS OTHERWISE APPROVED BY THE ENGINEER FOR THE SIGNAL SYSTEM TO BE PLACED INTO ALL-RED FLASH DURING NON-PEAK TRAFFIC PERIODS (FOR WORK THAT REQUIRES THE SIGNAL SYSTEM TO BE OUT OF OPERATION OR TO ACCOMMODATE ROAD WORK AT THE INTERSECTION).
9) ANY DAMAGE TO INPLACE TRAFFIC SIGNAL FACILITIES (CONDUIT, CABLES, HANDHOLES, SIGNAL POLES, ETC.), DUE TO TRAFFIC SIGNAL OR ROAD WORK, SHALL BE REPAIRED BY CONTRACTOR TO SATISFACTION OF THE ENGINEER, AT NO EXPENSE TO THE COUNTY.
10) F & I = NEW, FURNISH AND INSTALL.
    S & I = INPLACE, SALVAGE AND INSTALL.
11) SEE SPECIAL PROVISIONS REGARDING VIDEO DETECTION SYSTEM TO BE FURNISHED BY THE COUNTY, INSTALLED & MADE OPERATIONAL BY THE CONTRACTOR DURING CONSTRUCTION, AND SALVAGED BY THE CONTRACTOR AFTER PERMANENT Ø1, 2, 6 LOOP DETECTORS ARE MADE OPERATIONAL (INCIDENTAL TO REVISE SIGNAL SYSTEM B PAY ITEM).
12) VIDEO DETECTOR CABLES TO BE FURNISHED & INSTALLED BY THE CONTRACTOR FOR USE DURING CONSTRUCTION SHALL BE FULLY COMPATIBLE WITH VIDEO CAMERA AND CABINET EQUIPMENT.
13) MOVEMENT/REAIMING OF VIDEO CAMERAS AND ALL LABOR AND MATERIALS NEEDED TO REVISE THIS SIGNAL SYSTEM DURING CONSTRUCTION ARE INCIDENTAL.
14) (&&) CONTRACTOR SHALL FURNISH AND INSTALL TWO (2) NEW ONE-SECTION COUNTDOWN TIMER "HAND/WALKING PERSON" PEDESTRIAN SIGNALS (HOUSINGS, VISORS, LENSES, BRACKETING), ONE EACH ON POLES 2 AND 3 (TO ADD PEDESTRIAN CROSSING TO SOUTH SIDE OF SIGNAL SYSTEM) (INCLUDED AS PART OF THE REVISE SIGNAL SYSTEM B PAY ITEM - ADDENDUM).

NOTE: ADDENDUM WORK (ADDING APS PUSH BUTTONS TO REVISE SIGNAL SYSTEM "B") IS BOXED IN AND DENOTED BY (&&).

① INPLACE (MAINTAIN INPLACE)
- PA100 POLE FOUNDATION
- TYPE PA100-A-55-D40-9 (DAVIT AT 350 DEG)
- LUMINAIRE-250 W HPS
- END MOUNT CAPPED (FOR FUTURE USE)
- 2-ONE WAY SIGNALS-OVERHEAD (17' & 29' FROM END OF MAST ARM) (2-3, 2-2)
- TYPE 10A-POLE MOUNTED 180 DEG
- TYPE D SIGN PANEL-OVERHEAD
- 2-R6-1 SIGN PANELS-POLE MOUNTED 0/180 DEG
- EXTENDED INTO HH 20:
- 3" RSC
- 2-12/C 12
- 1-3/C 12
- 1-3/C 20
- 1-3/C 12 (LUM)

INPLACE (S & I)
- ONE WAY SIGNAL (HOUSING, VISORS, BACKGROUND SHIELD) - OVERHEAD AT 41' (RELOCATE TO 6')
- RLA-YLA-GLA LED LENSES - RELOCATE FROM SIGNAL HEAD AT 17' TO SIGNAL HEAD AT 6' (FOR 5-1)
- RYG LED LENSES - RELOCATE FROM SIGNAL HEAD AT 41' TO SIGNAL HEAD AT 17' (FOR 2-3)
- ONE WAY EVP DETECTOR & LIGHT AT 6' (Ø2,5)

INSTALL (FURNISHED BY COUNTY)
- VIDEO CAMERA-MAST ARM MOUNTED (FACING NB TRAFFIC) (V2/5-1)

F & I
- STRAP-ON MID MAST ARM MOUNT AT 6' (FOR 5-1)
- CAP MID-MAST ARM MOUNT AT 41'
- 3/4" RSC EXTENSION AT 6' (FOR EVP EXTENSION OVER HEAD 5-1)
- 5-FOOT EXTENSION, MOUNTING HARDWARE, AND KBR HUB AT 24' FOR VIDEO CAMERA (FOR MOUNTING ON MAST ARM)
- 1-VIDEO CABLE

④ INPLACE (MAINTAIN INPLACE)
- PA100 POLE FOUNDATION
- TYPE PA100-A-55-D40-9 (DAVIT AT 350 DEG)
- LUMINAIRE-250 W HPS
- 3-ONE WAY SIGNALS-OVERHEAD (0', 17' AND 29' FROM END OF MAST ARM)
- 2-TYPE 10B-POLE MOUNTED 90/180 DEG
- TYPE D SIGN PANEL-OVERHEAD
- ONE WAY EVP DETECTOR AND LIGHT (Ø8,3)
- 2-R6-1 SIGN PANELS-POLE MOUNTED 0/180 DEG
- EXTENDED INTO HH 16:
- 3" RSC
- 2-12/C 12
- 4-3/C 12
- 1-3/C 20
- 1-3/C 12 (LUM)

INPLACE (SALVAGE)
- 2-PEDESTRIAN PUSH BUTTONS AT 0/270 DEG
- 2-R10-3e METAL SIGNS AT 0/270 DEG

(&&) F & I
- 1-APS PB, SIGN (LT ARROW) AND APS MAST ARM POLE ADAPTOR (PB6-1)
- PLUG HOLES ON MAST ARM POLE WHERE PUSH BUTTONS USED TO BE (AT 0/270 DEG)
- 1-2/C 14

⑤ INPLACE (MAINTAIN INPLACE)
- PEDESTAL FOUNDATION
- 14' PEDESTAL POLE (INCLUDES BASE)
- WIND COLLAR FOR PEDESTAL POLE
- TYPE 5D
- EXTENDED INTO HH 20:
- 3" RSC
- 1-12/C 12
- 1-3/C 12

INPLACE (SALVAGE)
- 2-PEDESTRIAN PUSH BUTTONS (WEST/SOUTH SIDES)
- 2-R10-3e METAL SIGNS AT WEST/SOUTH SIDES

(&&) F & I
- 1-APS PB, SIGN (LT ARROW) AND APS PEDESTAL POLE SPACERS (PB8-1)
- PLUG HOLES ON PEDESTAL POLE WHERE PUSH BUTTONS USED TO BE (WEST/SOUTH SIDES))
- 1-2/C 14

② INPLACE (MAINTAIN INPLACE)
- PA100 POLE FOUNDATION
- TYPE PA100-A-55-D40-9 (DAVIT AT 350 DEG)
- LUMINAIRE-250 W HPS
- 3-ONE WAY SIGNALS-OVERHEAD (0', 18' AND 30' FROM END OF MAST ARM)
- TYPE 10B-POLE MOUNTED 90 DEG
- TYPE D SIGN PANEL-OVERHEAD
- ONE WAY EVP DETECTOR AND LIGHT (Ø4,7)
- 2-R6-1 SIGN PANELS-POLE MOUNTED 0/180 DEG
- EXTENDED INTO HH 5:
- 3" RSC
- 2-12/C 12
- 4-3/C 12
- 1-3/C 20
- 1-3/C 12 (LUM)

INPLACE (SALVAGE)
- 1-PEDESTRIAN PUSH BUTTON AT 270 DEG
- 1-R10-3e METAL SIGN AT 270 DEG

INPLACE (REVISE)
- REVISE TYPE 10A BRACKETING AT 180 DEG TO BECOME TYPE 10B (INPLACE 4-1, NEW P4-2)

INPLACE (REMOVE)
- R9-3 SIGN PANEL-FACING POLE 3

(&&) F & I
- 1-SET CD PED SIGNAL (HOUSING, VISOR, LED CDT LENS) AT 180 DEG (NEW P4-2)
- REVISE TYPE 10A TO TYPE 10B AT 180 DEG
- 1-APS PB, SIGN (LT ARROW) AND APS MAST ARM POLE ADAPTOR (PB2-1)
- PLUG HOLES ON MAST ARM POLE WHERE PUSH BUTTON USED TO BE (AT 270 DEG)
- 1-2/C 14

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

(&&) F & I
- APS PUSH BUTTON STATION (SEE DETAILS)
- 1-APS PB & SIGN (RT ARROW) (PB4-2)
- EXTEND INTO HH 5:
- 1" CONDUIT
- 1-2/C 14
- 1-1/C 6 (INS GR)

(&&) F & I
- APS PUSH BUTTON STATION (SEE DETAILS)
- 1-APS PB & SIGN (LT ARROW) (PB4-1)
- EXTEND INTO HH 10:
- 1" CONDUIT
- 1-2/C 14
- 1-1/C 6 (INS GR)

(&&) F & I
- APS PUSH BUTTON STATION (SEE DETAILS)
- 1-APS PB & SIGN (RT ARROW) (PB6-2)
- EXTEND INTO HH 10:
- 1" CONDUIT
- 1-2/C 14
- 1-1/C 6 (INS GR)

(&&) F & I
- APS PUSH BUTTON STATION (SEE DETAILS)
- 1-APS PB & SIGN (RT ARROW) (PB8-2)
- EXTEND INTO HH 16:
- 1" CONDUIT
- 1-2/C 14
- 1-1/C 6 (INS GR)

③ INPLACE (MAINTAIN INPLACE)
- PA100 POLE FOUNDATION
- TYPE PA100-A-55-D40-9 (DAVIT AT 350 DEG)
- LUMINAIRE-250 W HPS
- END MOUNT CAPPED (FOR FUTURE USE)
- 2-ONE WAY SIGNALS-OVERHEAD (17' & 29' FROM END OF MAST ARM) (6-3, 6-2)
- TYPE 10B-POLE MOUNTED 180 DEG
- TYPE D SIGN PANEL-OVERHEAD
- 2-R6-1 SIGN PANELS-POLE MOUNTED 0/180 DEG
- EXTENDED INTO HH 10:
- 3" RSC
- 3-12/C 12
- 2-3/C 12
- 1-3/C 20
- 1-3/C 12 (LUM)

INPLACE (S & I)
- ONE WAY SIGNAL (HOUSING, VISORS, BACKGROUND SHIELD) - OVERHEAD AT 41' (RELOCATE TO 6')
- RLA-YLA-GLA LED LENSES - RELOCATE FROM SIGNAL HEAD AT 17' TO SIGNAL HEAD AT 6' (FOR 1-1)
- RYG LED LENSES - RELOCATE FROM SIGNAL HEAD AT 41' TO SIGNAL HEAD AT 17' (FOR 6-3)
- ONE WAY EVP DETECTOR & LIGHT AT 6' (Ø6,1)

INSTALL (FURNISHED BY COUNTY)
- VIDEO CAMERA-MAST ARM MOUNTED (FACING SB TRAFFIC) (V6/1-1)

F & I
- STRAP-ON MID MAST ARM MOUNT AT 6' (FOR 1-1)
- CAP MID-MAST ARM MOUNT AT 41'
- 3/4" RSC EXTENSION AT 6' (FOR EVP EXTENSION OVER HEAD 1-1)
- 5-FOOT EXTENSION, MOUNTING HARDWARE, AND KBR HUB AT 24' FOR VIDEO CAMERA (FOR MOUNTING ON MAST ARM)
- 1-VIDEO CABLE

INPLACE (SALVAGE)
- 1-PEDESTRIAN PUSH BUTTON AT 180 DEG
- 1-R10-3e METAL SIGN AT 180 DEG

INPLACE (REVISE)
- REVISE TYPE 10A BRACKETING AT 90 DEG TO BECOME TYPE 10B (INPLACE 3-2, NEW P4-1)

INPLACE (REMOVE)
- R9-3 SIGN PANEL-FACING POLE 2

(&&) F & I
- 1-SET CD PED SIGNAL (HOUSING, VISOR, LED CDT LENS) AT 90 DEG (NEW P4-1)
- REVISE TYPE 10A TO TYPE 10B AT 90 DEG
- PLUG HOLES ON MAST ARM POLE WHERE PUSH BUTTON USED TO BE (AT 180 DEG)

INSTALL
- VIDEO PROCESSOR AND INTERNAL VIDEO EQUIPMENT (FURNISHED BY COUNTY)

Ⓐ INPLACE (MAINTAIN INPLACE)
- CONTROLLER AND CABINET
- CABINET FOUNDATION
- EXTENDED INTO HH 21:
- METERED SIGNAL SERVICE
- 2" RSC
- 3-1/C 6
- EXTENDED INTO HH 1:
- 2-4" RSC
- 5-12/C 12
- 6-3/C 12
- 2-3/C 20
- 19-2/C 14
- 1-6 SM FO CABLE
- 1-1/C 14 (TRACER)

1-VIDEO CABLE (F & I)

F & I (&&) 5-2/C 14 + 1-1/C 6 (INS GR)

- EXTENDED INTO HH 20:
- 2-4" RSC
- 5-12/C 12
- 6-3/C 12
- 2-3/C 20
- 19-2/C 14
- 1-6 SM FO CABLE
- 1-1/C 14 (TRACER)

1-VIDEO CABLE (F & I)

F & I (&&) 3-2/C 14 + 1-1/C 6 (INS GR)

- 2-3" RSC STUBBED OUT FROM CABINET TO SOUTH (BOTH ENDS THREADED & CAPPED)

COUNTY PROJECT 22-18-17

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

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.
Date: May 9, 2022 Name: John M Gray, PE Lic. No. 22457

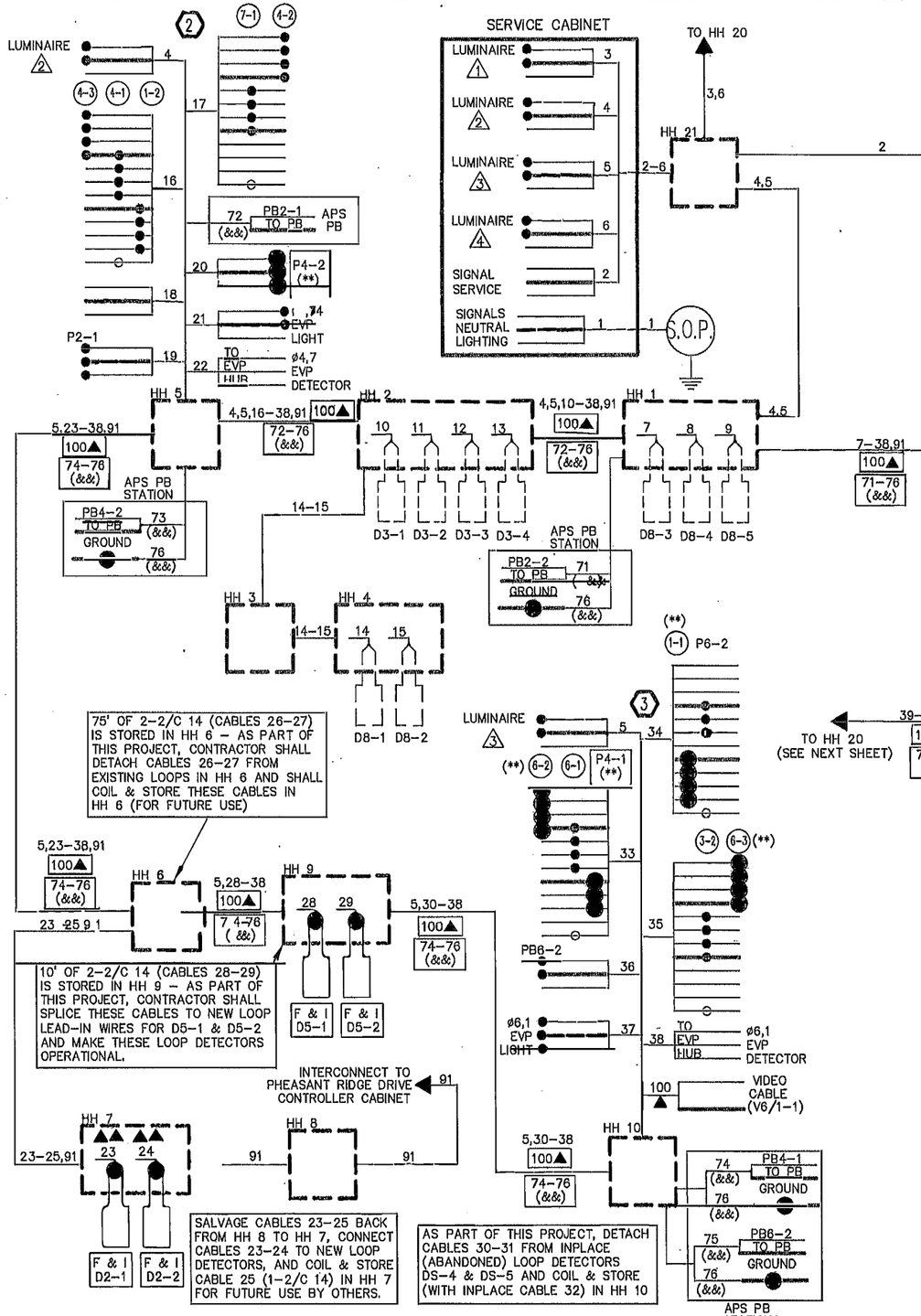
SEH
PHONE: (651) 490-2000
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

ANOKA COUNTY
CITY OF BLAINE

REVISE SIGNAL SYSTEM "B"
NOTES
CSAH 17 (LEXINGTON AVENUE NE)
AT CSAH 12 (109TH AVENUE NE)

FILE NO. ANOKC 122928
SIGNAL SHEET 8 OF 35

NOTE: ADDENDUM WORK (ADDING APS PUSH BUTTONS TO REVISE SIGNAL SYSTEM "B") IS BOXED IN AND DENOTED BY (&&).



75' OF 2-2/C 14 (CABLES 26-27) IS STORED IN HH 6 – AS PART OF THIS PROJECT, CONTRACTOR SHALL DETACH CABLES 26-27 FROM EXISTING LOOPS IN HH 6 AND SHALL COIL & STORE THESE CABLES IN HH 6 (FOR FUTURE USE)

10' OF 2-2/C 14 (CABLES 28-29) IS STORED IN HH 9 – AS PART OF THIS PROJECT, CONTRACTOR SHALL SPLICE THESE CABLES TO NEW LOOP LEAD-IN WIRES FOR D5-1 & D5-2 AND MAKE THESE LOOP DETECTORS OPERATIONAL.

SALVAGE CABLES 23-25 BACK FROM HH 8 TO HH 7, CONNECT CABLES 23-24 TO NEW LOOP DETECTORS, AND COIL & STORE CABLE 25 (1-2/C 14) IN HH 7 FOR FUTURE USE BY OTHERS.

AS PART OF THIS PROJECT, DETACH CABLES 30-31 FROM INPLACE (ABANDONED) LOOP DETECTORS DS-4 & DS-5 AND COIL & STORE (WITH INPLACE CABLE 32) IN HH 10

CONTROLLER AND CABINET

2	SIGNAL SERVICE	33	** RED 6-2 ** YEL 6-2 ** GRN 6-2 ** NEU 6-2,6-1 RED 6-1 YEL 6-1 GRN 6-1 ** NEU P4-1 ** WLK P4-1 ** DWK P4-1 SPR EQG	43	ø2,5 EVP LT NEU SPR	91	INTERCONNECT TO PHEASANT RIDGE DRIVE
7	D8-3			44	ø2,5 EVP DETECTOR	92	INTERCONNECT TO CSAH 14
8	D8-4			45	** SPR	71 (&&)	PB2-2 NEU
9	D8-5			46	** SPR	72 (&&)	PB2-1 NEU
10	D3-1			47	FUTURE	73 (&&)	PB4-2 NEU
11	D3-2			48	** SPR	74 (&&)	PB4-1 NEU
12	D3-3			49	** SPR	75 (&&)	PB6-2 NEU
13	D3-4			50	** D1-1	76 (&&)	GROUND
14	D8-1			51	** D1-2	77 (&&)	PB8-1 NEU
15	D8-2			52	RED 8-3 YEL 8-3 GRN 8-3 NEU 8-3, 8-1 RED 8-1 YEL 8-1 GRN 8-1 NEU 5-2 RLA 5-2 YLA 5-2 GLA 5-2 EQG	78 (&&)	PB6-1 NEU
16	RED 4-3 YEL 4-3 GRN 4-3 NEU 4-3, 4-1 RED 4-1 YEL 4-1 GRN 4-1 NEU 1-2 RLA 1-2 YLA 1-2 GLA 1-2 EQG	34	** SPR ** SPR ** SPR ** NEU P6-2 WLK P6-2 DWK P6-2 SPR ** NEU 1-1 ** RLA 1-1 ** YLA 1-1 ** GLA 1-1 EQG			79 (&&)	PB8-2 NEU
						80 (&&)	GROUND
17	RED 4-2 YEL 4-2 GRN 4-2 NEU 4-2 RLA 7-1 YLA 7-1 GLA 7-1 NEU 7-1 SPR SPR SPR EQG	35	** RED 6-3 ** YEL 6-3 ** GRN 6-3 ** NEU 6-3 RLA 3-2 YLA 3-2 GLA 3-2 NEU 3-2 SPR SPR SPR EQG	53	RED 8-2 YEL 8-2 GRN 8-2 NEU 8-2 RLA 3-1 YLA 3-1 GLA 3-1 NEU 3-1 SPR SPR SPR EQG	100 ▲	VIDEO CABLE (V6/1-1)
18	** SPR ** NEU (&&) ** SPR	36	PB6-2 NEU SPR	54	** SPR ** NEU (&&) ** SPR	101 ▲	VIDEO CABLE (V2/5-1)
19	WLK P2-1 NEU P2-1 DWK P2-1	37	ø6,1 EVP LT NEU SPR	55	WLK P6-1 NEU P6-1 DWK P6-1		
20	(&&) ** WLK P4-2 ** NEU P4-2 ** DWK P4-2	38	ø6,1 EVP DETECTOR	56	WLK P8-2 NEU P8-2 DWK P8-2		
21	ø4,7 EVP LT NEU SPR	39	RLA 7-2 YLA 7-2 GLA 7-2 NEU 7-2 SPR WLK P2-2 DWK P2-2 NEU P2-2,P8-1 WLK P8-1 DWK P8-1 SPR EQG	57	ø8,3 EVP LT NEU SPR		
22	ø4,7 EVP DETECTOR			58	ø8,3 EVP DETECTOR		
23	D2-1	40	** SPR ** NEU (&&) ** SPR	59	D6-1		
24	D2-2			60	D6-2		
25	** SPR		** RED 2-2 ** YEL 2-2 ** GRN 2-2 ** NEU 2-2, 2-1 RED 2-1 YEL 2-1 GRN 2-1 NEU SPR SPR SPR EQG	61	** SPR		
26	** SPR			62	D7-1		
27	** SPR			63	D7-2		
28	** D5-1			64	D7-3		
29	** D5-2			65	D7-4		
30	** SPR	42	** RED 2-3 ** YEL 2-3 ** GRN 2-3 ** NEU 2-3 ** RLA 5-1 ** YLA 5-1 ** GLA 5-1 ** NEU 5-1 SPR SPR SPR EQG	66	D4-3		
31	** SPR			67	D4-4		
32	FUTURE			68	D4-1		
				69	D4-2		
				70	D4-5		

REVISE SIGNAL SYSTEM B NOTES:

1) ALL ITEMS OF SIGNAL SYSTEM ARE INPLACE & SHALL BE REUSED & MAINTAINED INPLACE UNLESS OTHERWISE NOTED ON PLANS.
2) CONTRACTOR SHALL REUSE AND MAKE OPERATIONAL ALL EXISTING LOOP DETECTOR LEAD-IN CABLES IN ORDER TO MAKE ALL NEW LOOP DETECTORS OPERATIONAL.
3) (F & I) DENOTES NEW LOOP DETECTORS TO BE FURNISHED & INSTALLED BY CONTRACTOR.
4) ● = NEW TERMINATION ON EXISTING CABLE.
5) ▲ = VIDEO CAMERA CABLE TO BE FURNISHED INSTALLED, MADE OPERATIONAL, AND REMOVED BY CONTRACTOR.
6) ▲▲ = INPLACE CABLES AND CONDUCTORS TO BE SALVAGED, REINSTALLED, AND MADE OPERATIONAL BY CONTRACTOR AS PART OF THE PROJECT.
7) (**) DENOTES NEW LABELING/TERMINATION ON INPLACE CABLES/CONDUCTORS IN POLE BASE, AT SIGNAL HEAD, AND IN CABINET.
8) (&&) DENOTES NEW APS PB CABLES TO BE FURNISHED AND INSTALLED BY CONTRACTOR (ADDENDUM).

COUNTY PROJECT 22-18-17

DRAWN BY: JMG
DESIGNER: JMG
CHECKED BY: JMG
DESIGN TEAM

NO.	BY	DATE	REVISIONS

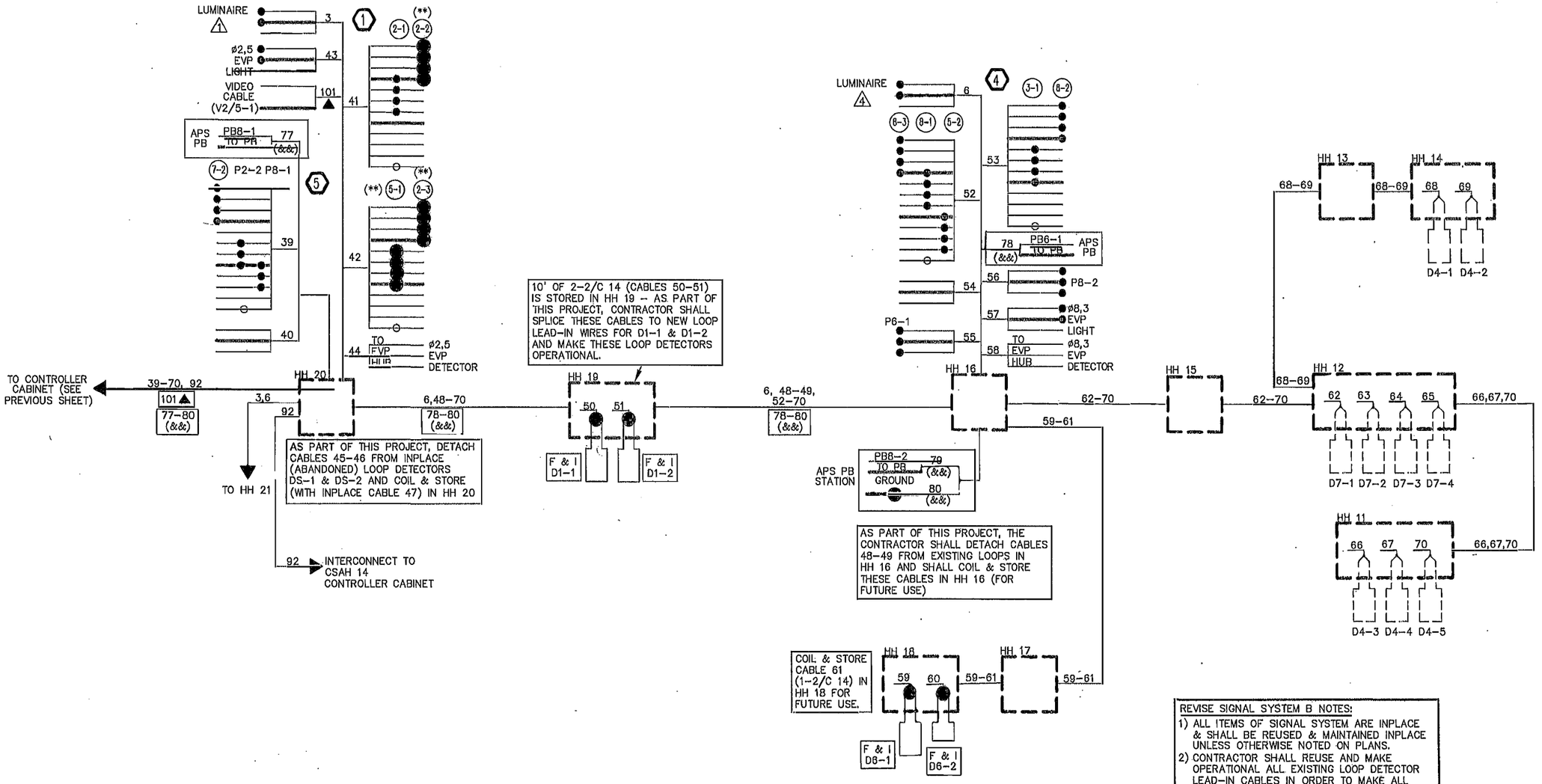
I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
Date: May 9, 2022
Name: John M Gray, PE
Lic. No. 22457

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

ANOKA COUNTY
CITY OF BLAINE

REVISE SIGNAL SYSTEM "B"
FIELD WIRING DIAGRAM
CSAH 17 (LEXINGTON AVENUE NE)
AT CSAH 12 (109TH AVENUE NE)

FILE NO. ANOKC 122928
SIGNAL SHEET 9 OF 35
78/110



NOTE: ADDENDUM WORK (ADDING APS PUSH BUTTONS TO REVISE SIGNAL SYSTEM "B") IS BOXED IN AND DENOTED BY (&&).

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COUNTY PROJECT 22-18-17

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CHECKED BY: JMG
DESIGN TEAM

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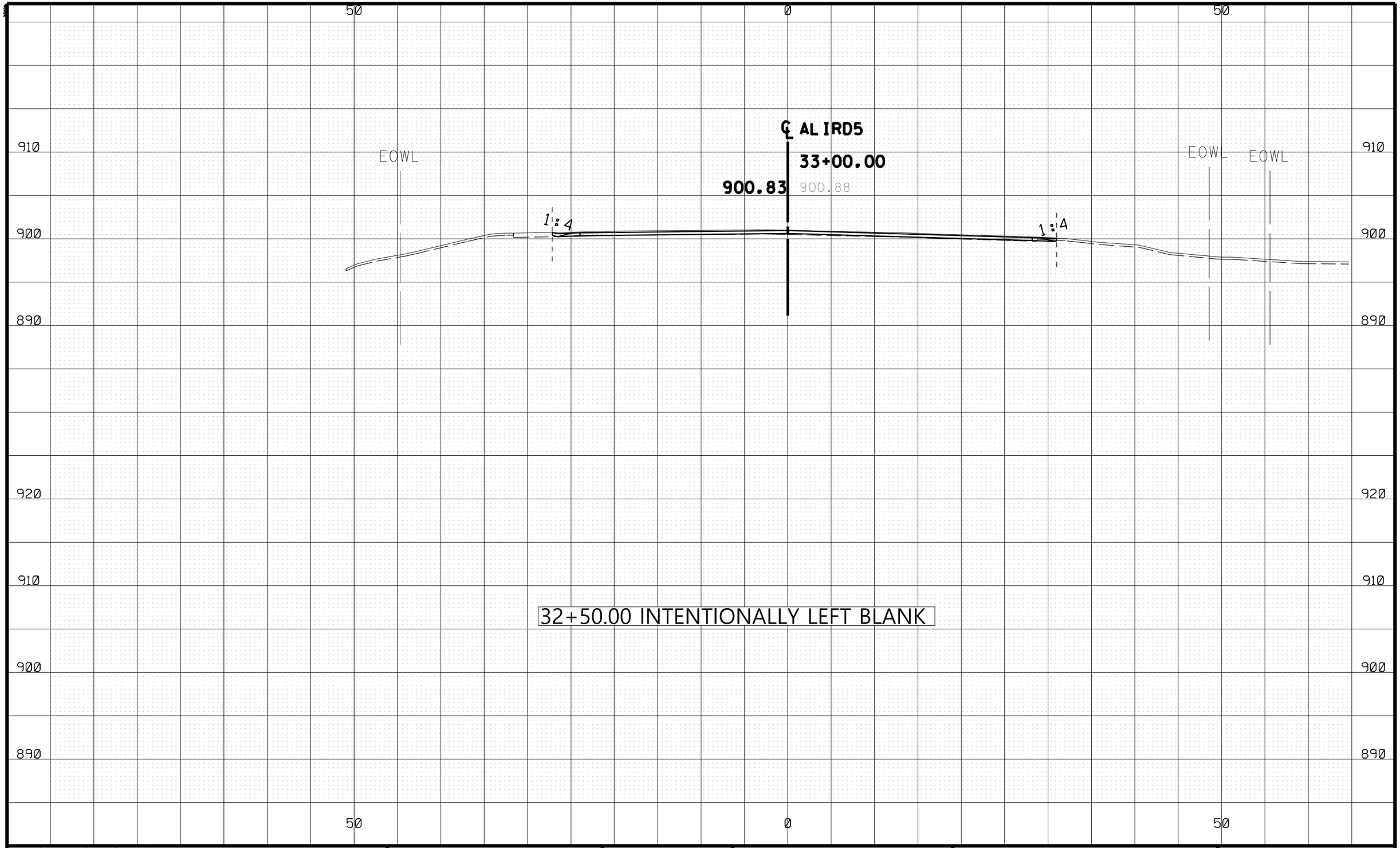
Date: May 9, 2022
Name: John M Gray, PE
Lic. No. 22467

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

ANOKA COUNTY
CITY OF BLAINE

REVISE SIGNAL SYSTEM 'B'
FIELD WIRING DIAGRAM
CSAH 17 (LEXINGTON AVENUE NE)
AT CSAH 12 (109TH AVENUE NE)

FILE NO. ANOKC 122928
SIGNAL SHEET 10 OF 35
79/110



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ANOKA COUNTY

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CROSS SECTIONS

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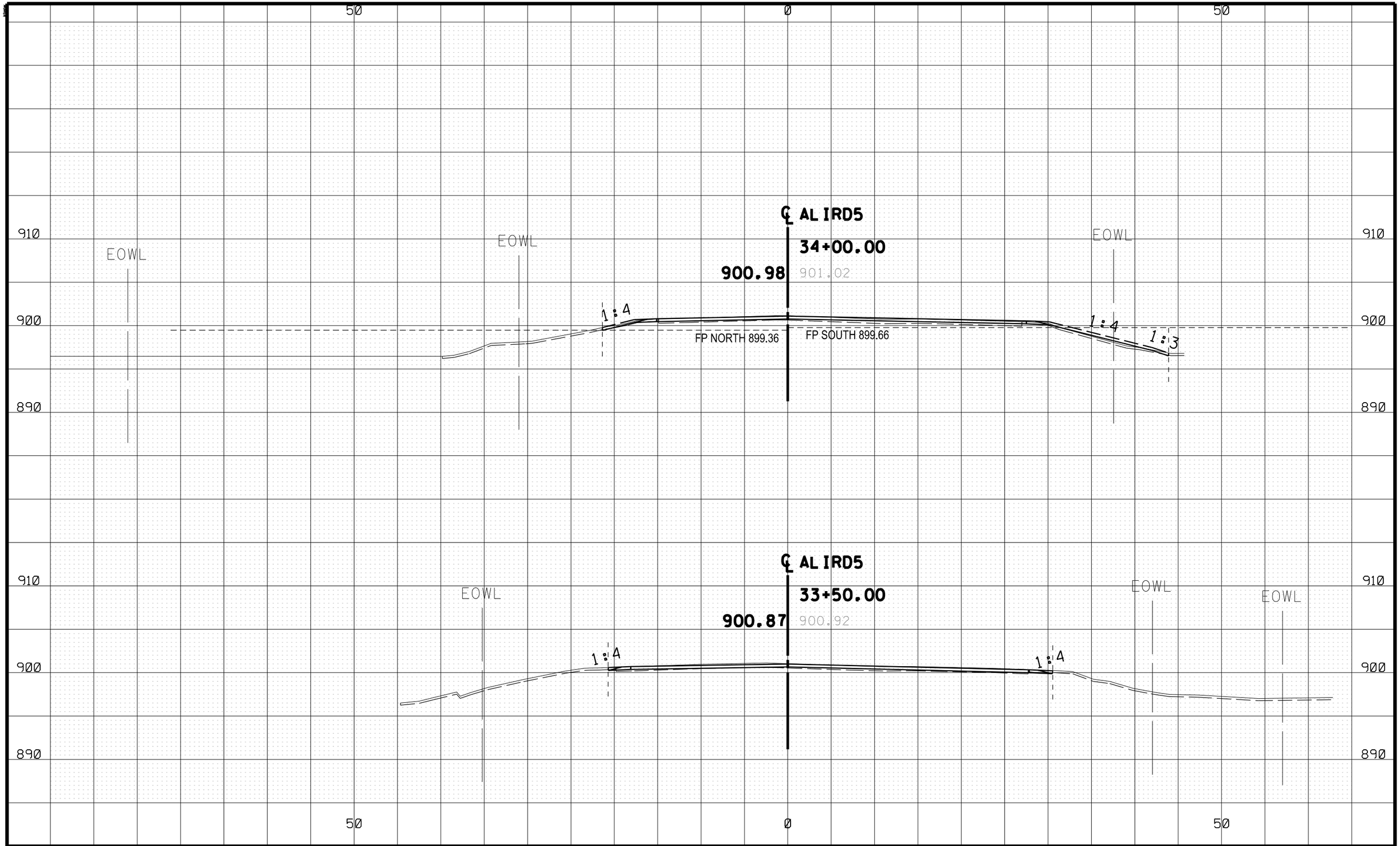

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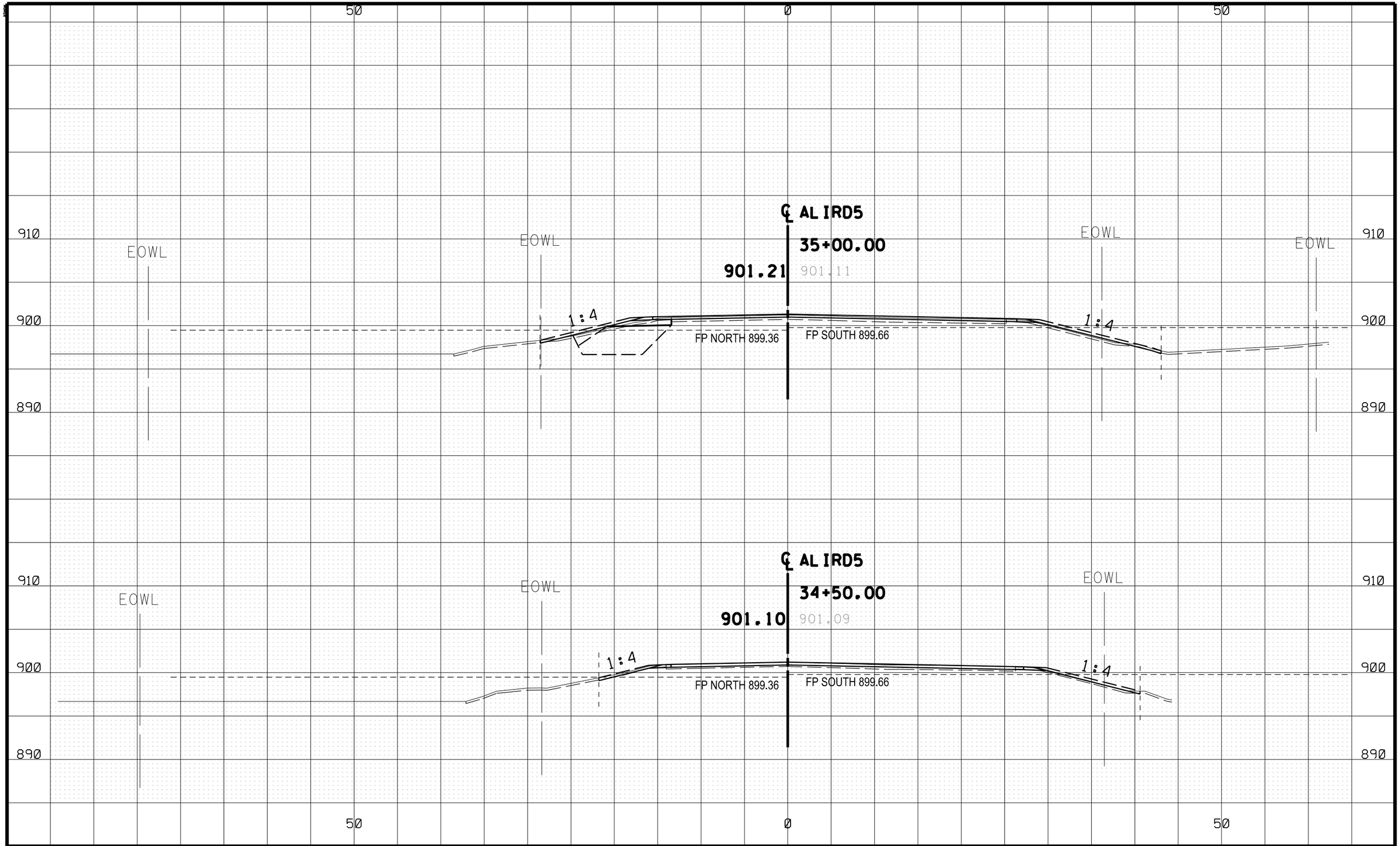
Sheet 81 of 110 Sheets



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Sheet 82 of 110 Sheets

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Excavation and/or Construction Prohibited
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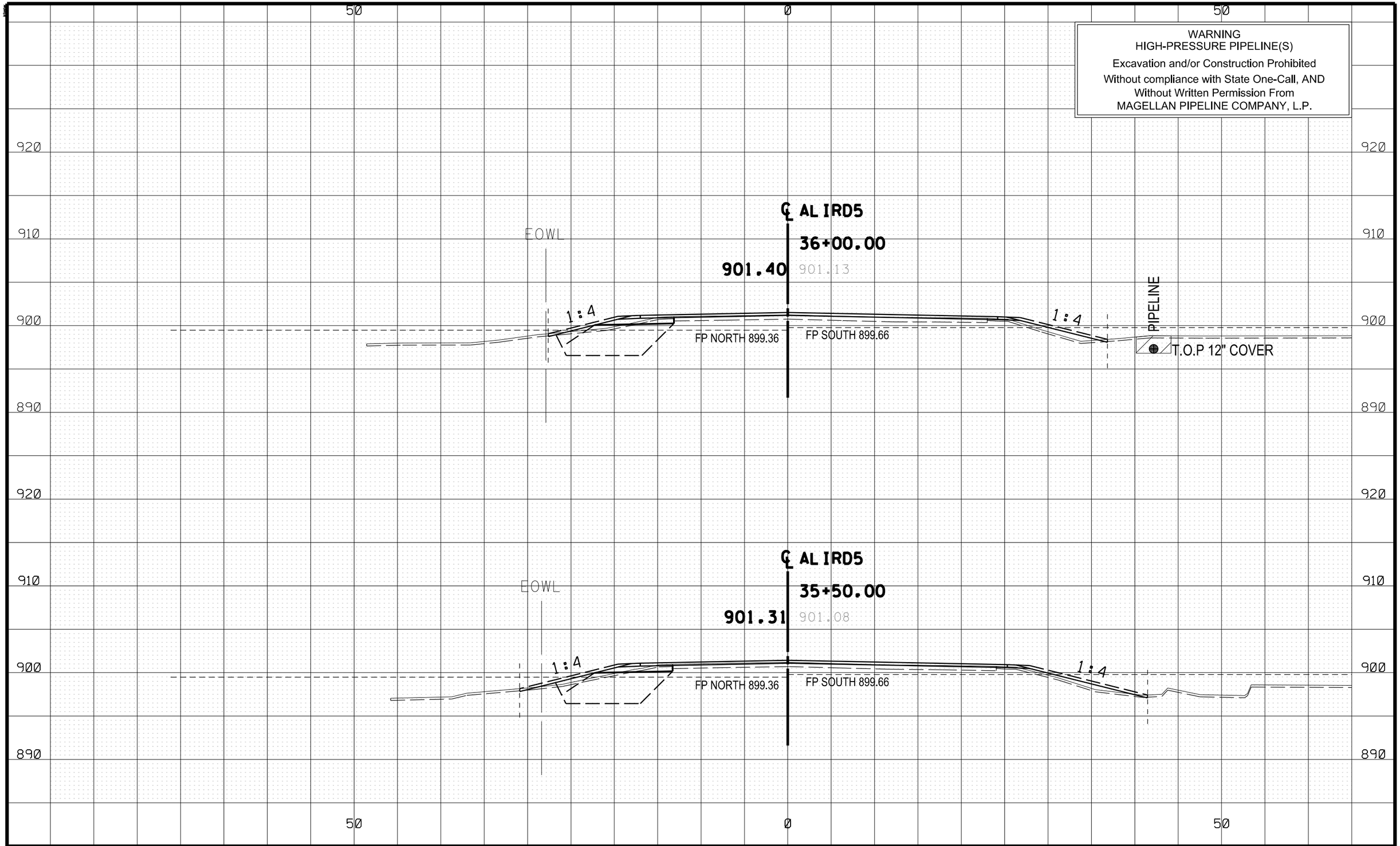

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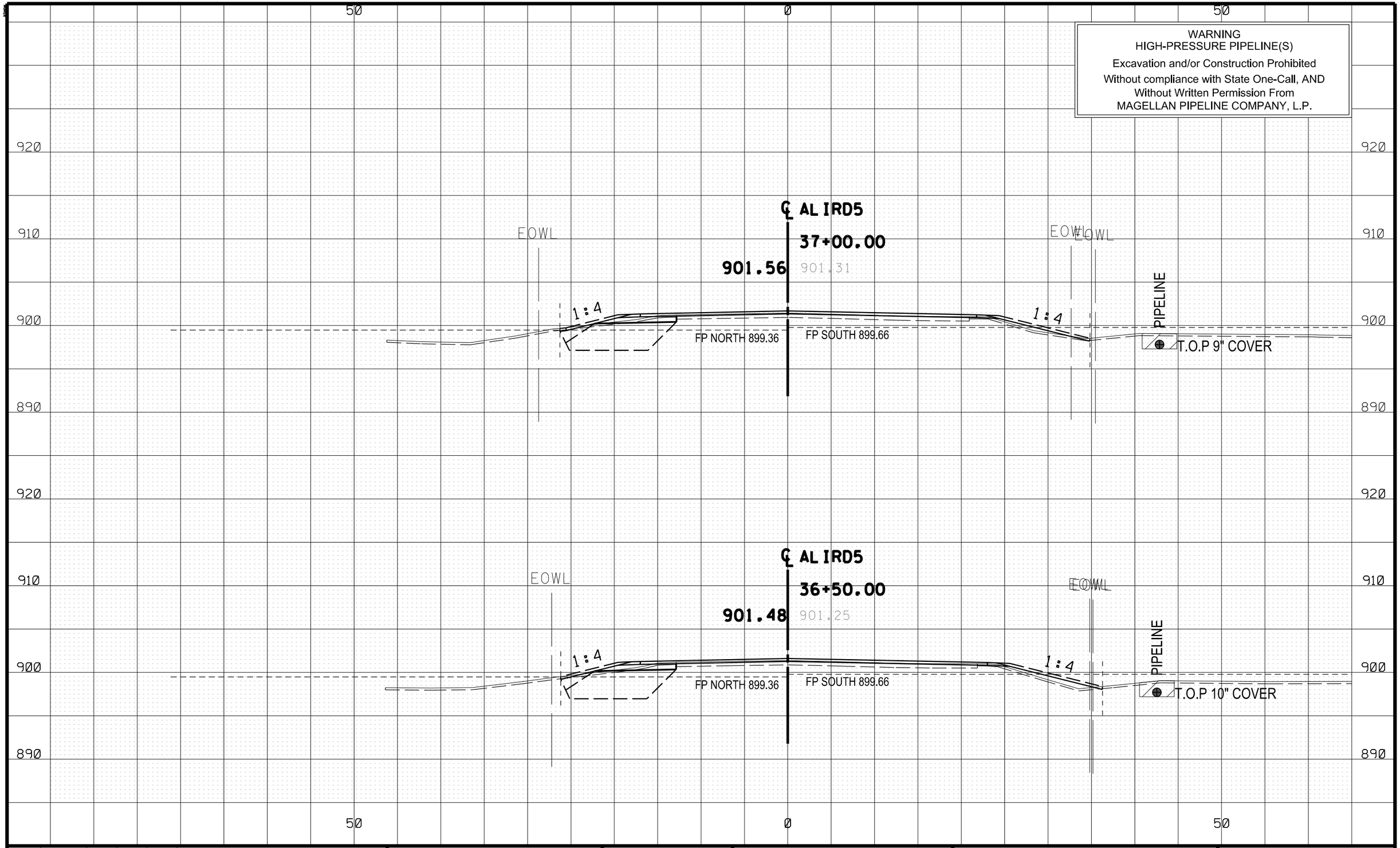

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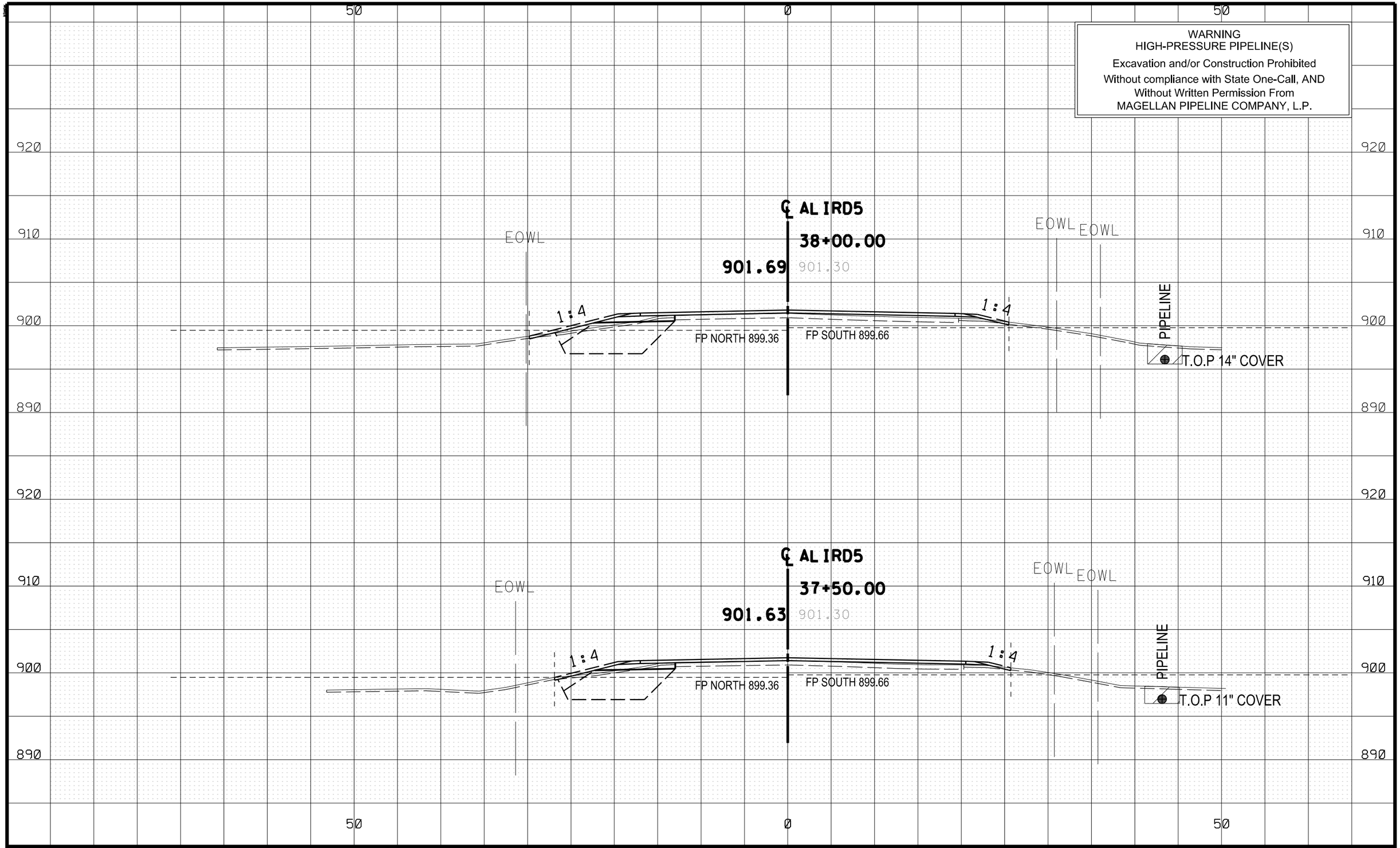

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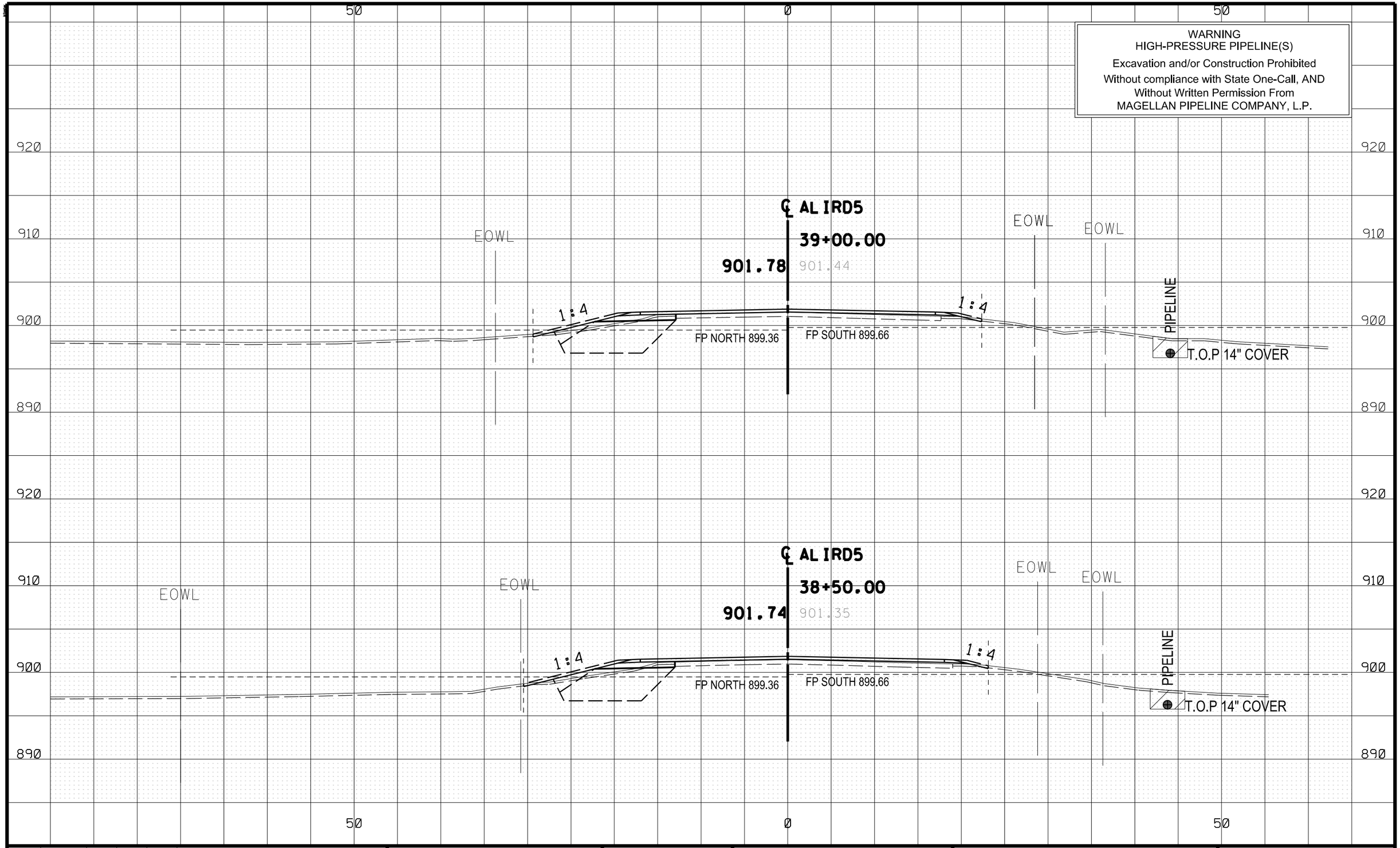

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ANOKA COUNTY
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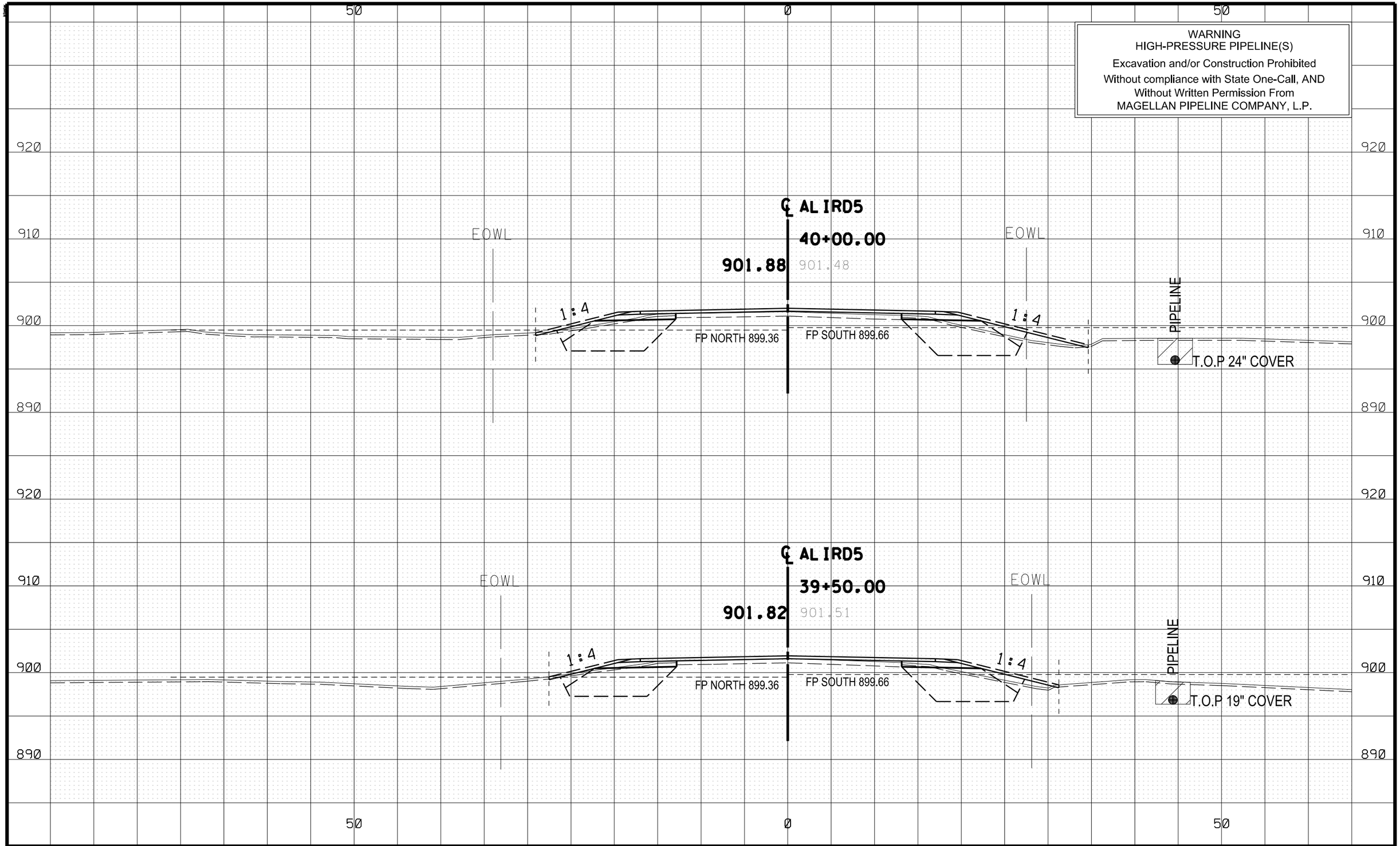

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ANOKA COUNTY
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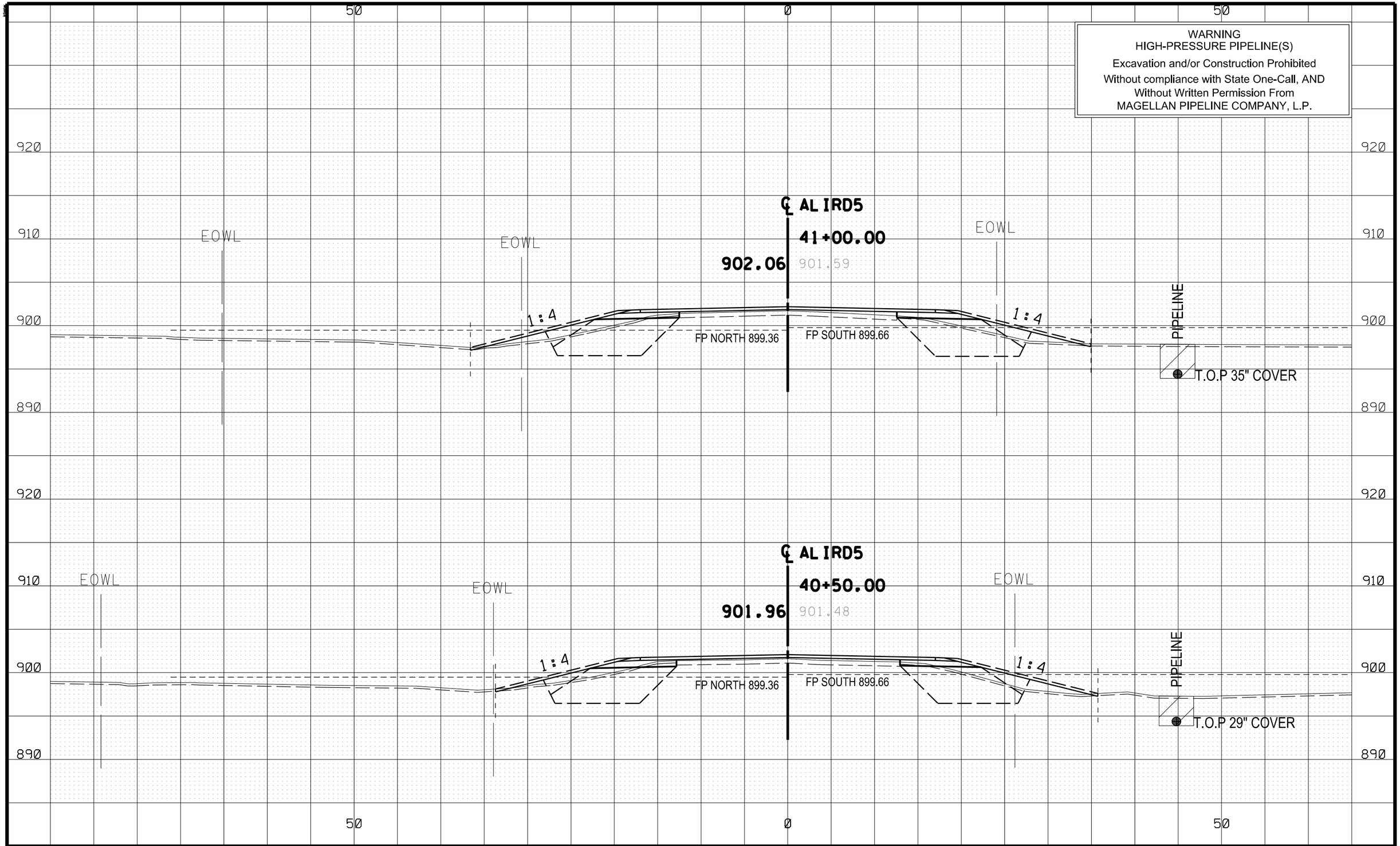

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ANOKA COUNTY
HIGHWAY DEPT.

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Sheet 88 of 110 Sheets

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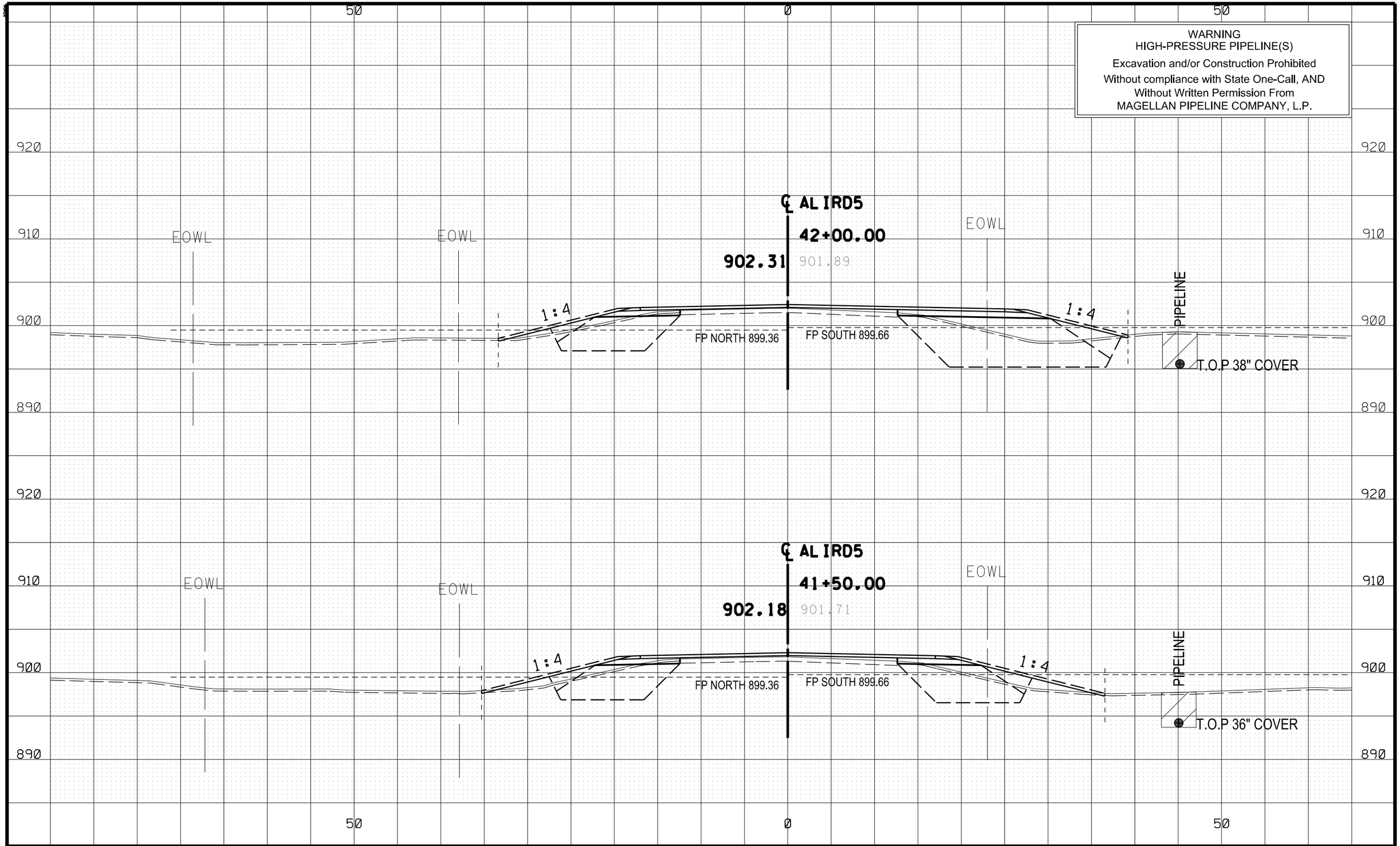

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ANOKA COUNTY
HIGHWAY DEPT.

SAP 002-612-035

CROSS SECTIONS
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Sheet 89 of 110 Sheets

WARNING
HIGH-PRESSURE PIPELINE(S)
Excavation and/or Construction Prohibited
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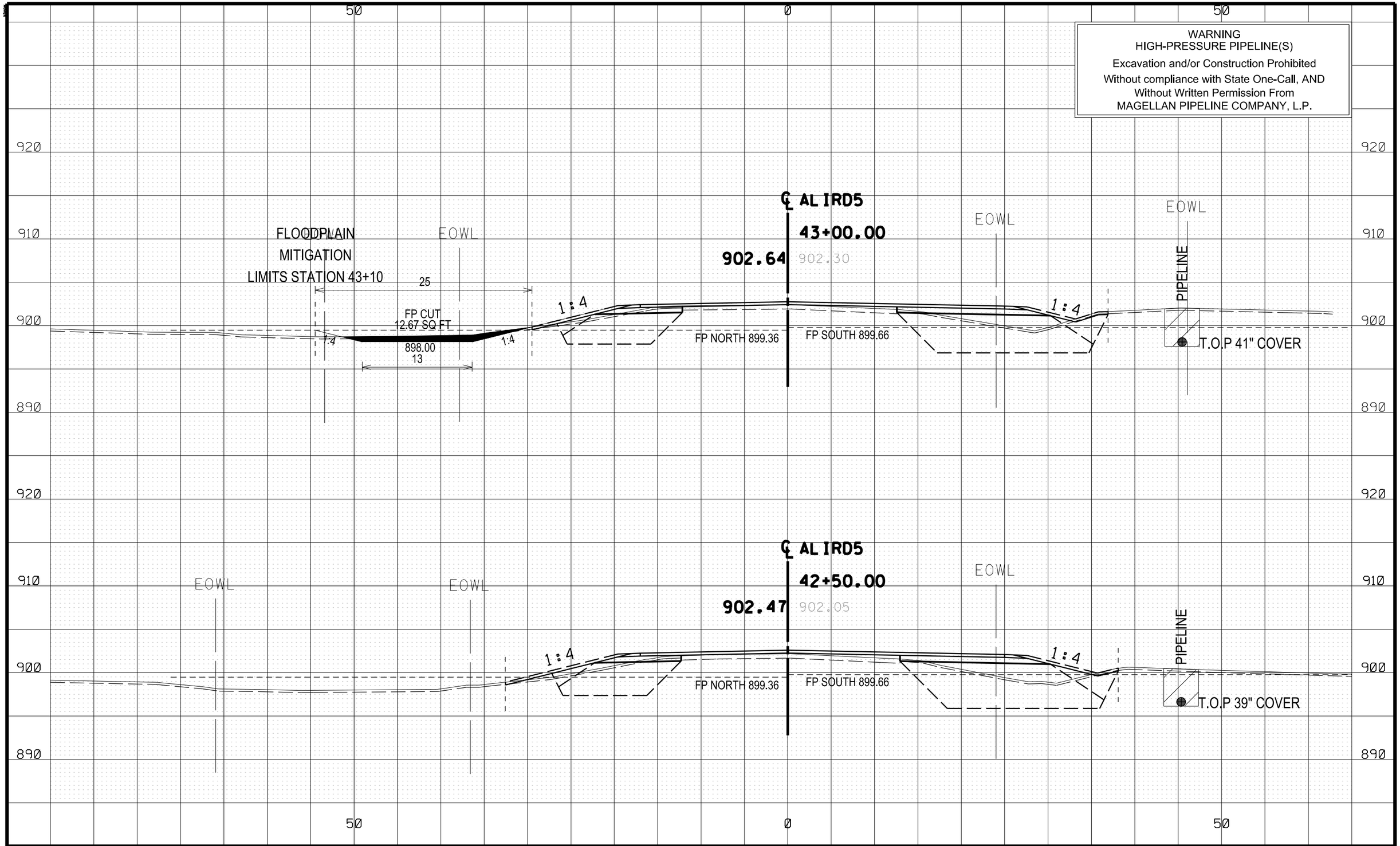
MAGELLAN PIPELINE COMPANY, L.P.



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ANOKA COUNTY
HIGHWAY DEPT.

SAP 002-612-035

CROSS SECTIONS
STA 42+50.00 TO 43+00.00

WARNING
HIGH-PRESSURE PIPELINE(S)
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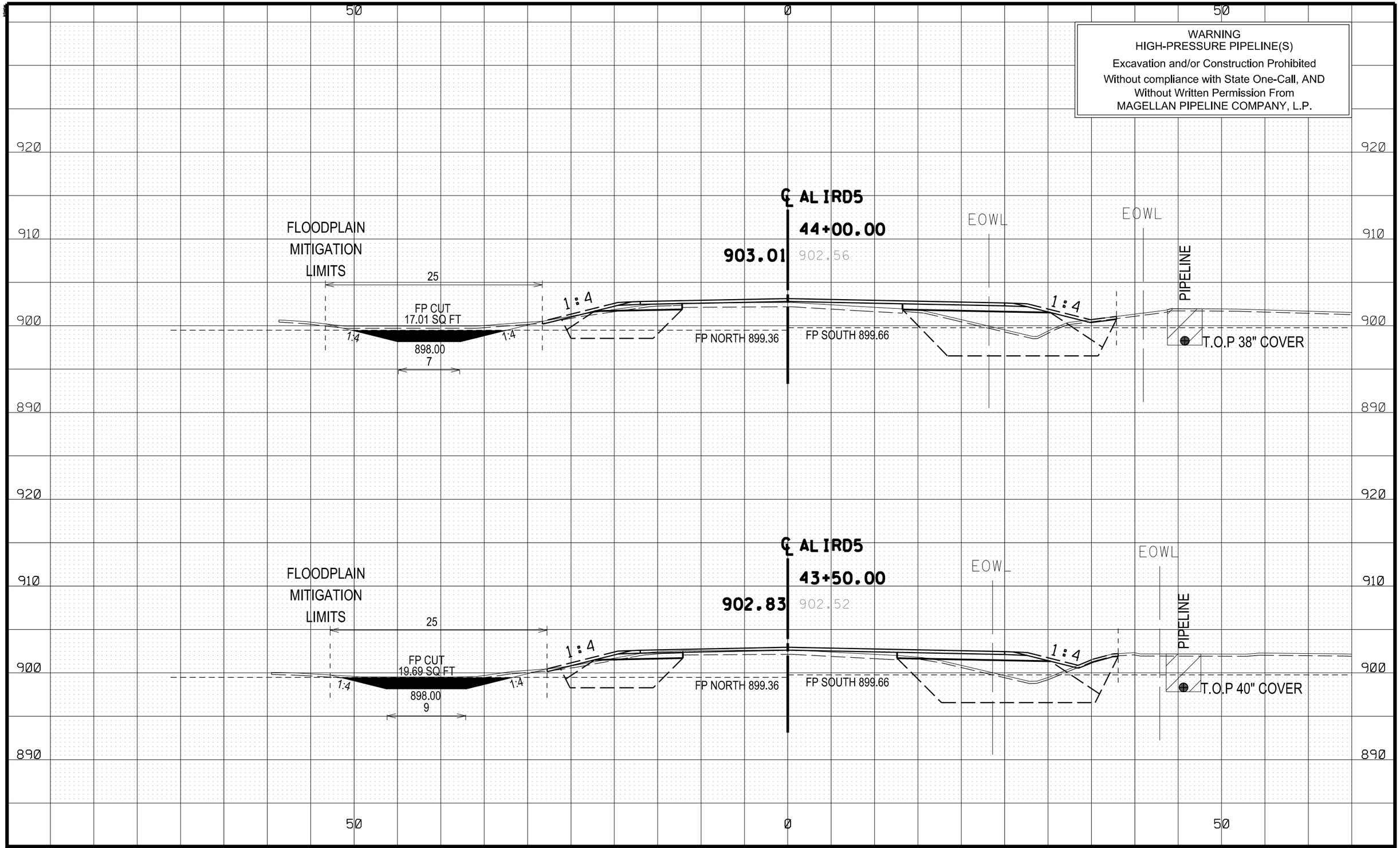
MAGELLAN PIPELINE COMPANY, L.P.



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ANOKA COUNTY
HIGHWAY DEPT.

SAP 002-612-035

CROSS SECTIONS
STA 43+50.00 TO 44+00.00

Sheet 91 of 110 Sheets

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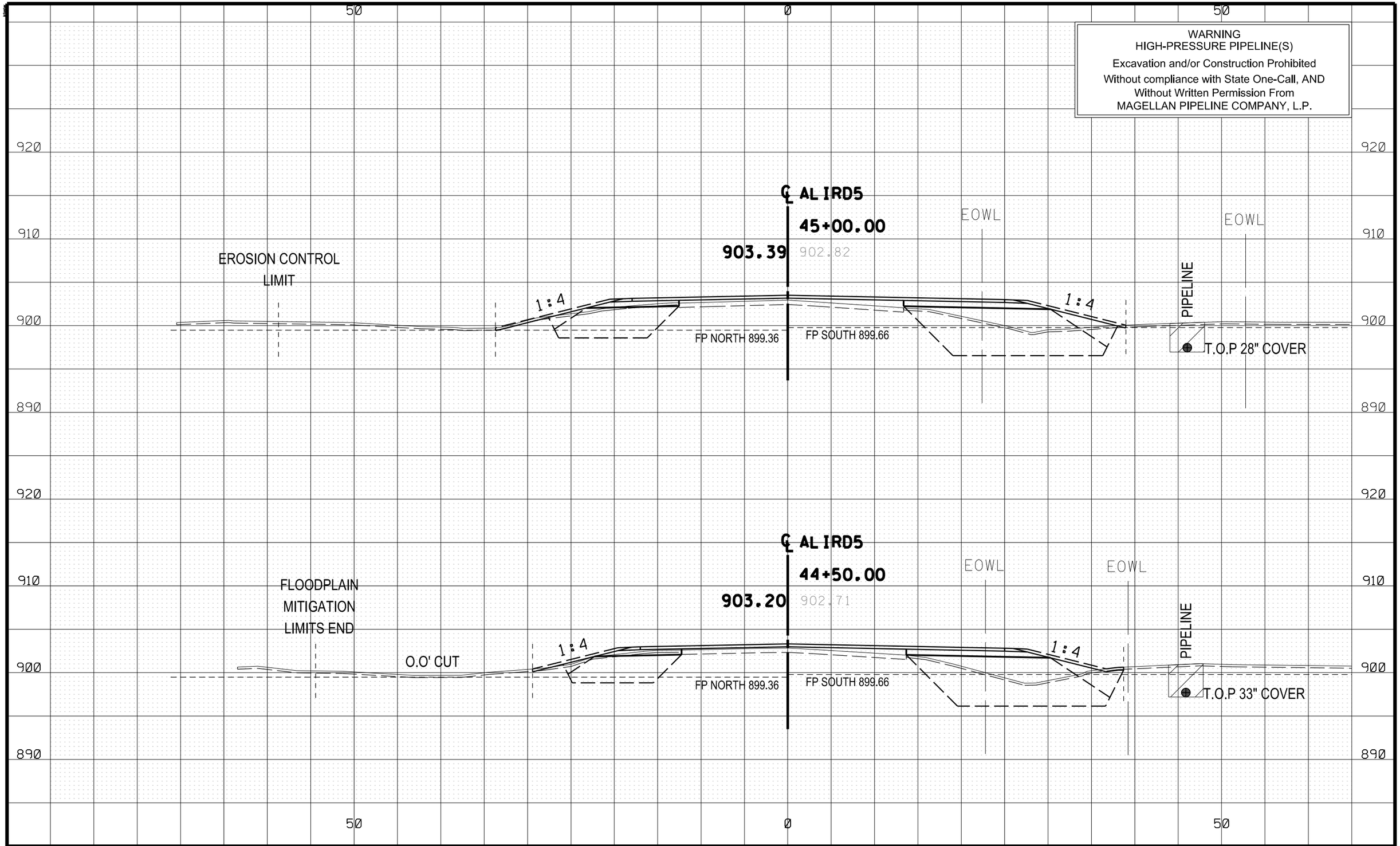
Without compliance with State One-Call, AND
Without Written Permission From
MAGELLAN PIPELINE COMPANY, L.P.



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ANOKA COUNTY
HIGHWAY DEPT.

SAP 002-612-035

CROSS SECTIONS
STA 44+50.00 TO 45+00.00

WARNING
HIGH-PRESSURE PIPELINE(S)
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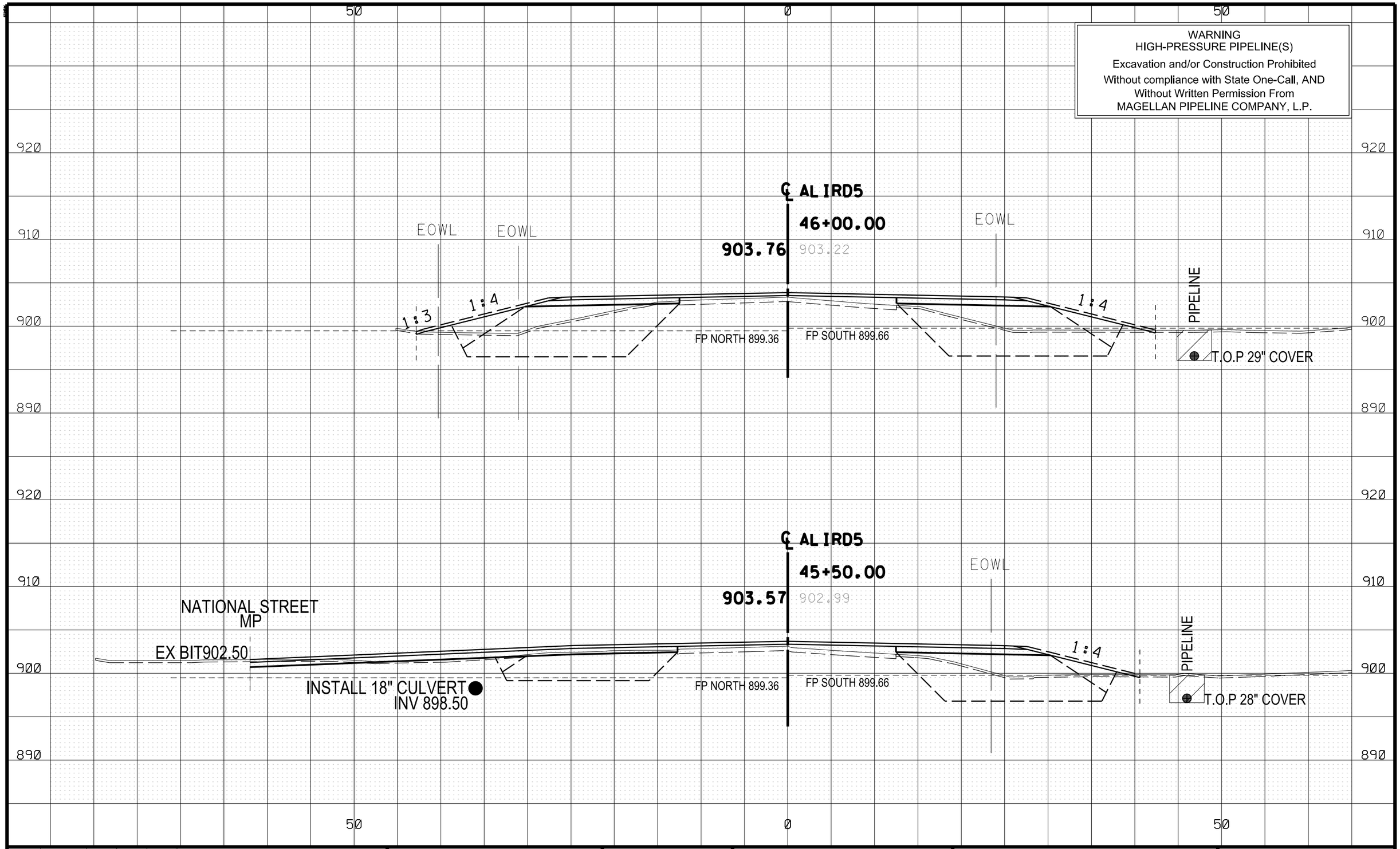
Without compliance with State One-Call, AND
Without Written Permission From
MAGELLAN PIPELINE COMPANY, L.P.



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ANOKA COUNTY
HIGHWAY DEPT.

SAP 002-612-035

CROSS SECTIONS
STA 45+50.00 TO 46+00.00

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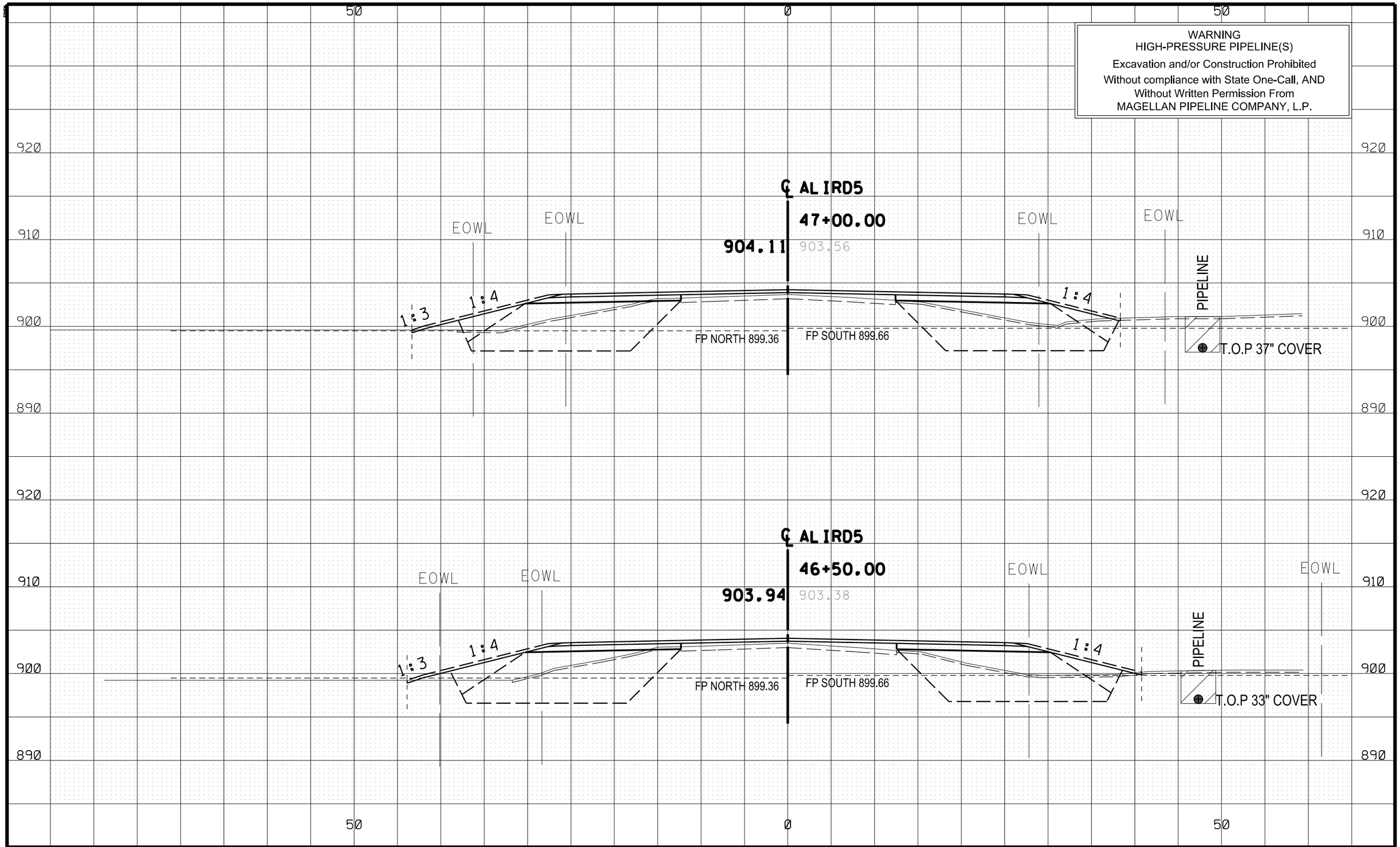
WARNING
HIGH-PRESSURE PIPELINE(S)
Excavation and/or Construction Prohibited
Without compliance with State One-Call, AND
Without Written Permission From
MAGELLAN PIPELINE COMPANY, L.P.



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ANOKA COUNTY
HIGHWAY DEPT.

SAP 002-612-035

CROSS SECTIONS
STA 46+50.00 TO 47+00.00

WARNING
HIGH-PRESSURE PIPELINE(S)
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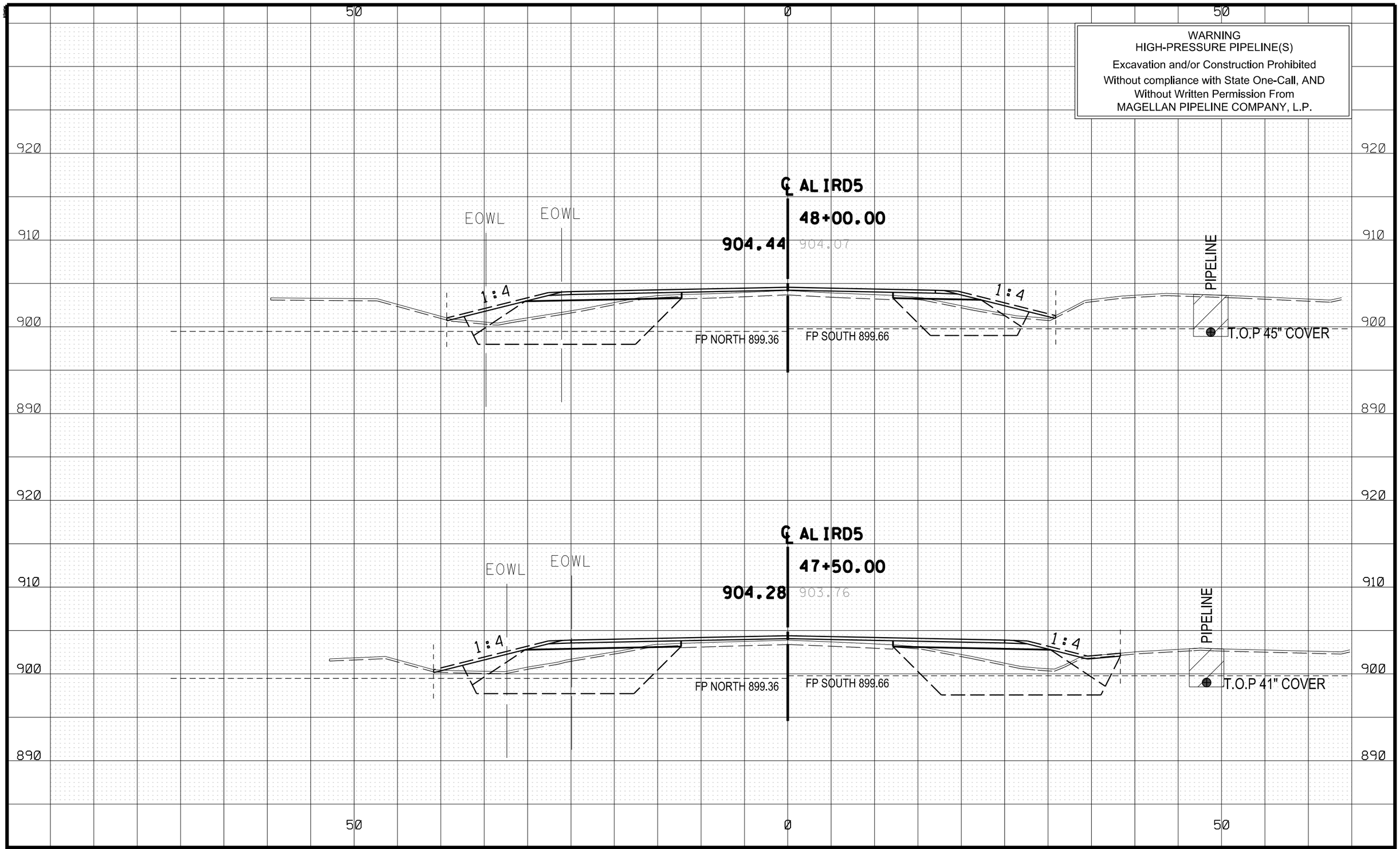
Without Written Permission From
MAGELLAN PIPELINE COMPANY, L.P.



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ANOKA COUNTY
HIGHWAY DEPT.

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CROSS SECTIONS
STA 47+50.00 TO 48+00.00

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WARNING
HIGH-PRESSURE PIPELINE(S)
Excavation and/or Construction Prohibited
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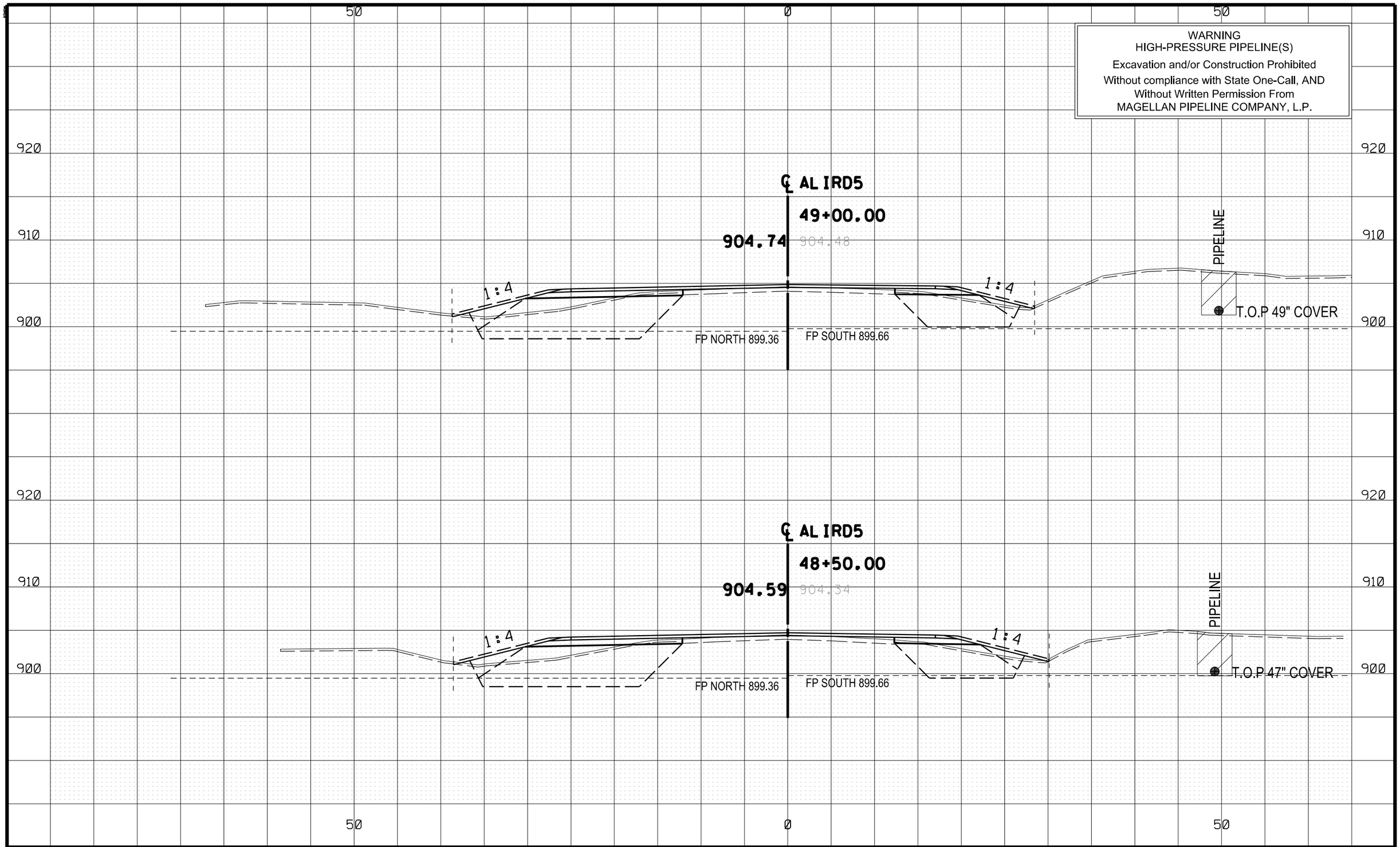
MAGELLAN PIPELINE COMPANY, L.P.



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ANOKA COUNTY
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SAP 002-612-035

CROSS SECTIONS
STA 48+50.00 TO 49+00.00
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WARNING
HIGH-PRESSURE PIPELINE(S)
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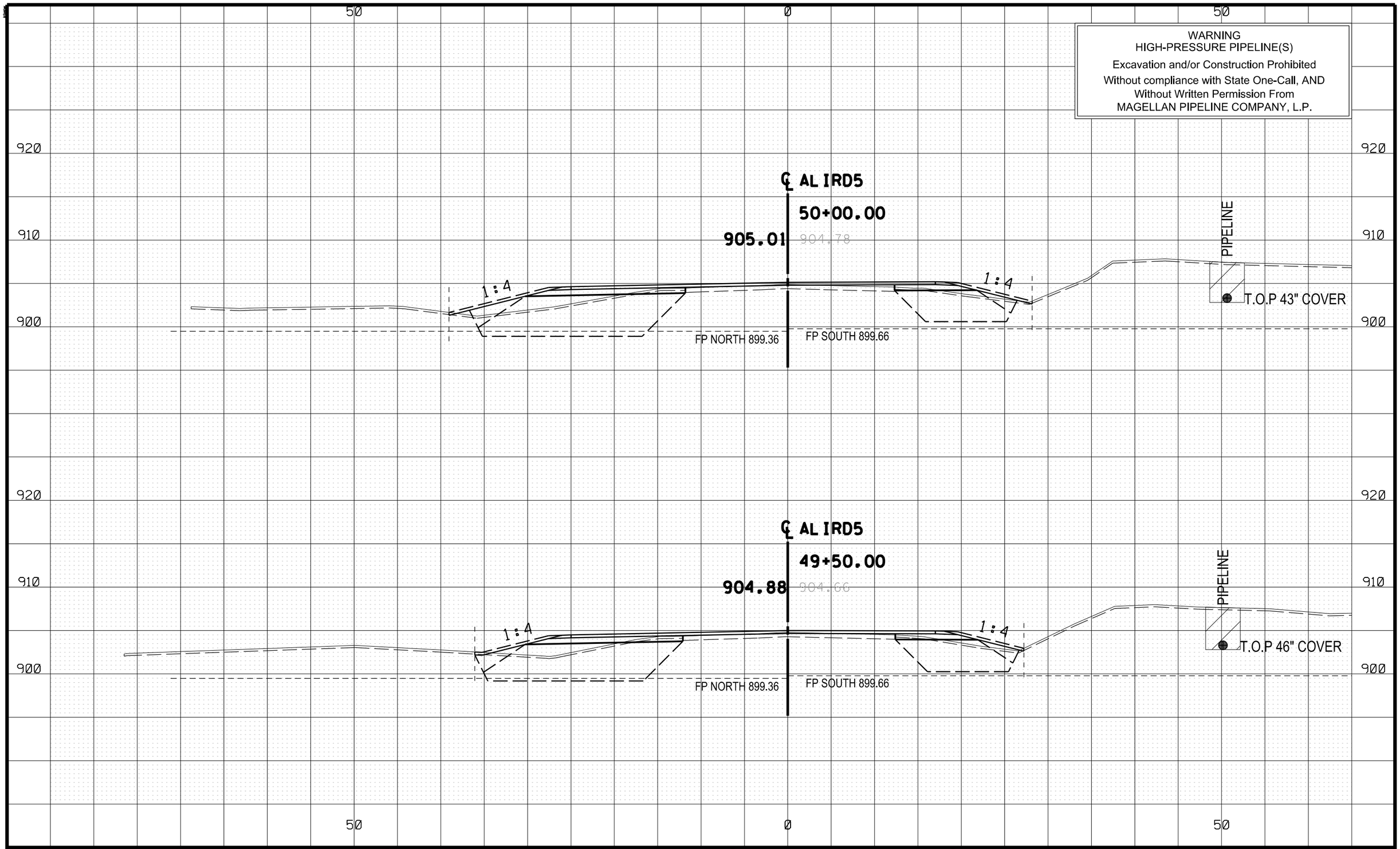

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ANOKA COUNTY
HIGHWAY DEPT.

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CROSS SECTIONS
STA 49+50.00 TO 50+00.00

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WARNING
HIGH-PRESSURE PIPELINE(S)
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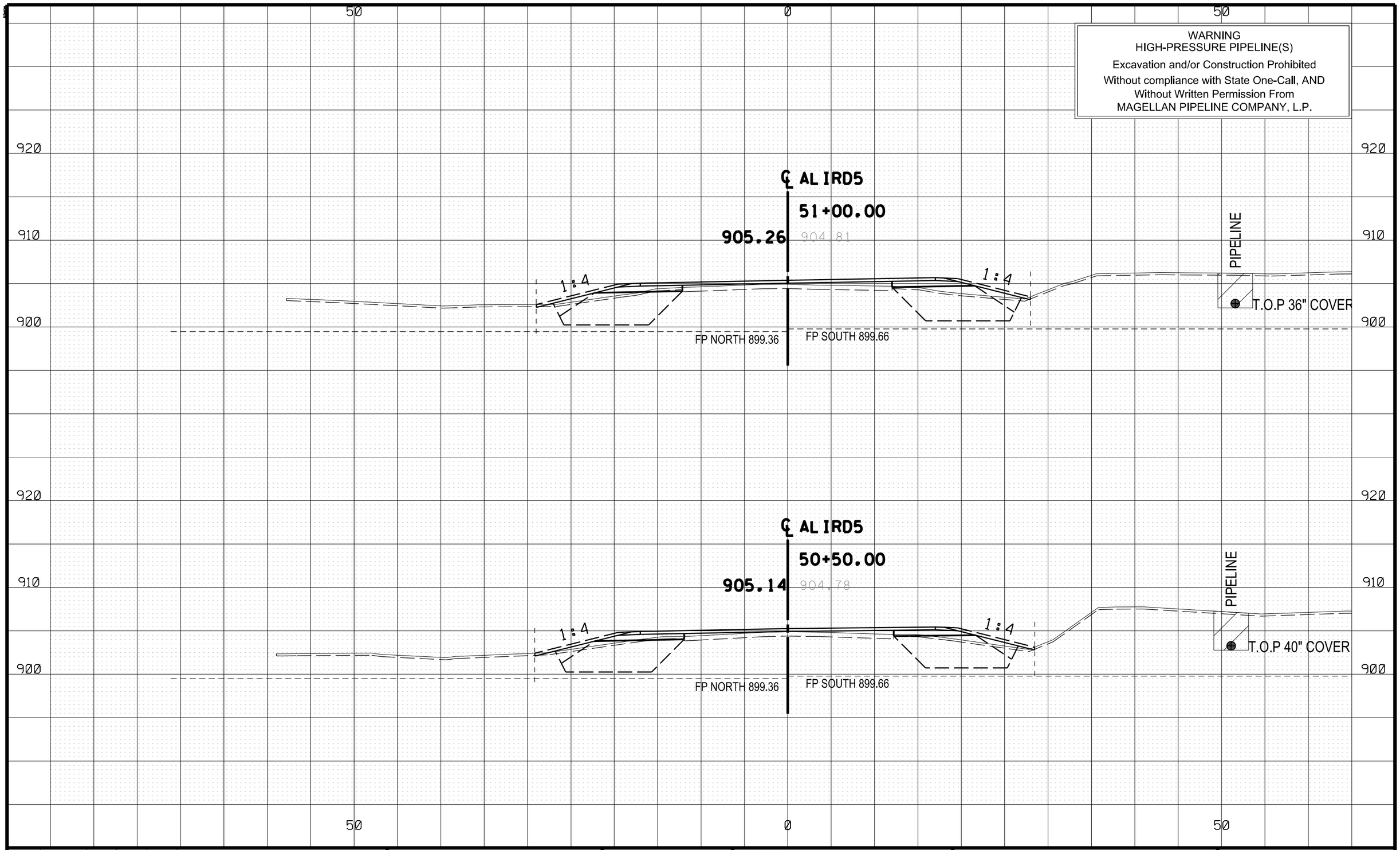

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ANOKA COUNTY
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SAP 002-612-035

CROSS SECTIONS
STA 50+50.00 TO 51+00.00
Sheet 98 of 110 Sheets

WARNING
HIGH-PRESSURE PIPELINE(S)
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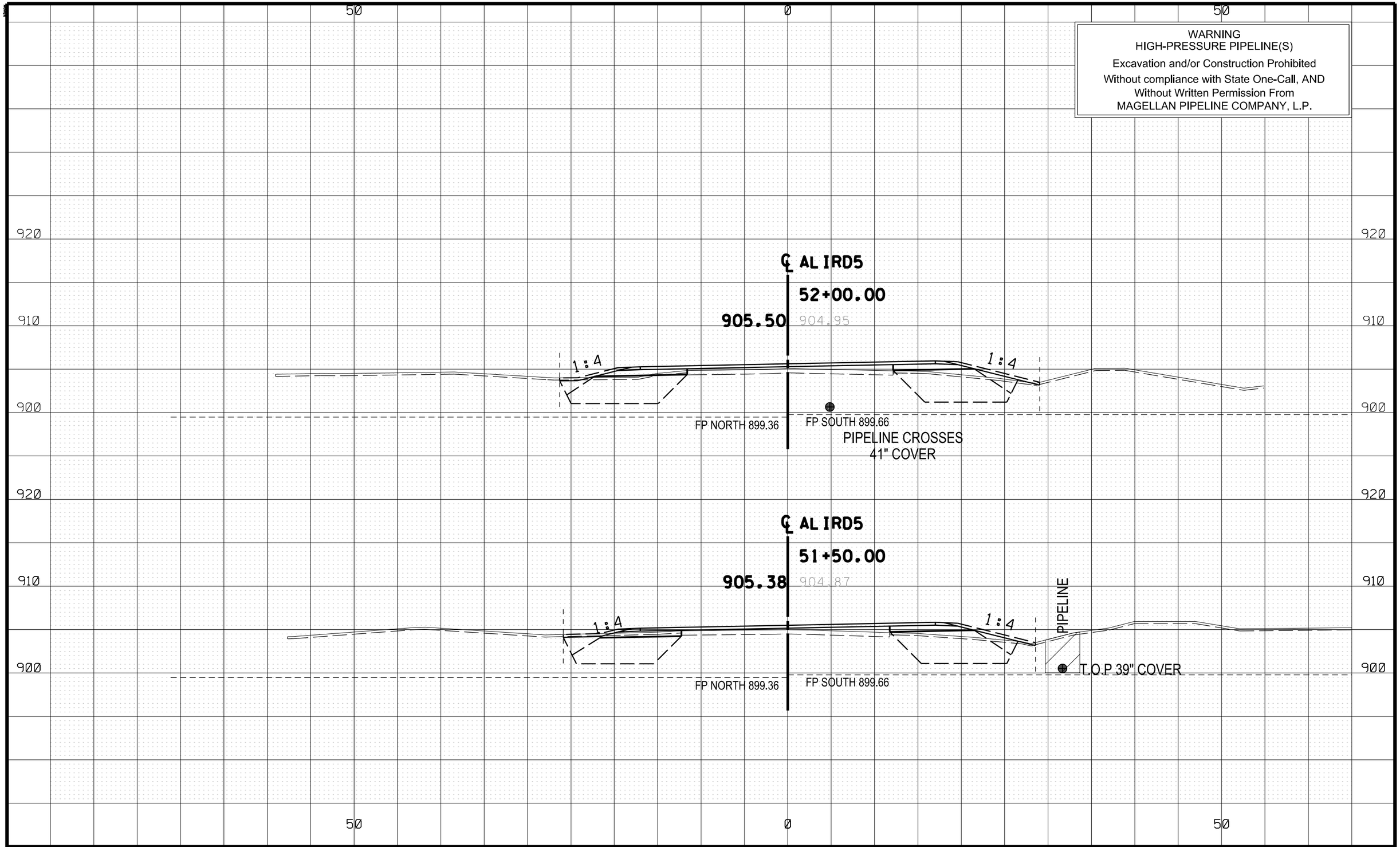

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ANOKA COUNTY
HIGHWAY DEPT.

SAP 002-612-035

CROSS SECTIONS
STA 51+50.00 TO 52+00.00

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WARNING
HIGH-PRESSURE PIPELINE(S)
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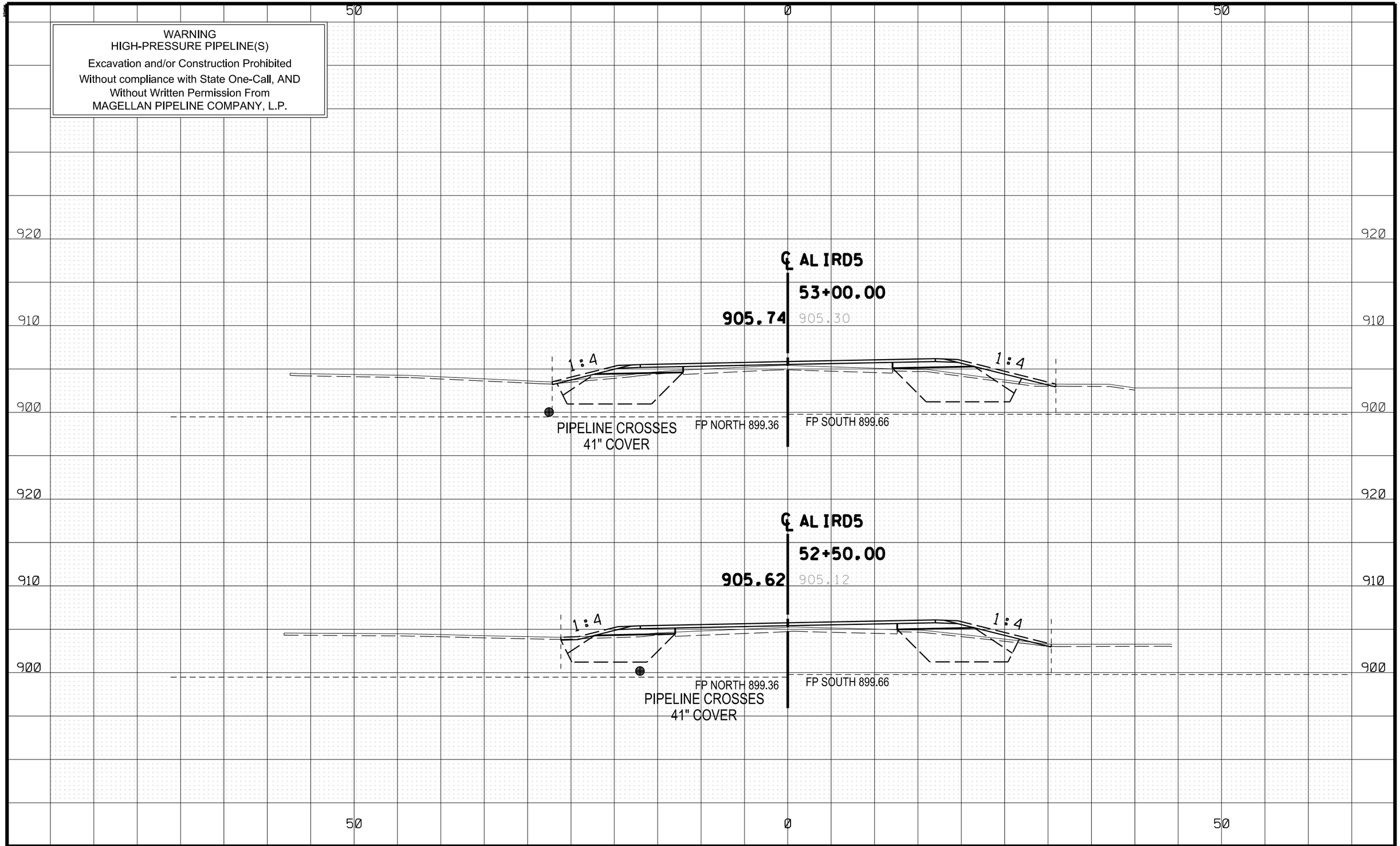
MAGELLAN PIPELINE COMPANY, L.P.



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ANOKA COUNTY
HIGHWAY DEPT.

SAP 002-612-035

CROSS SECTIONS
STA 52+50.00 TO 53+00.00

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WARNING
HIGH-PRESSURE PIPELINE(S)
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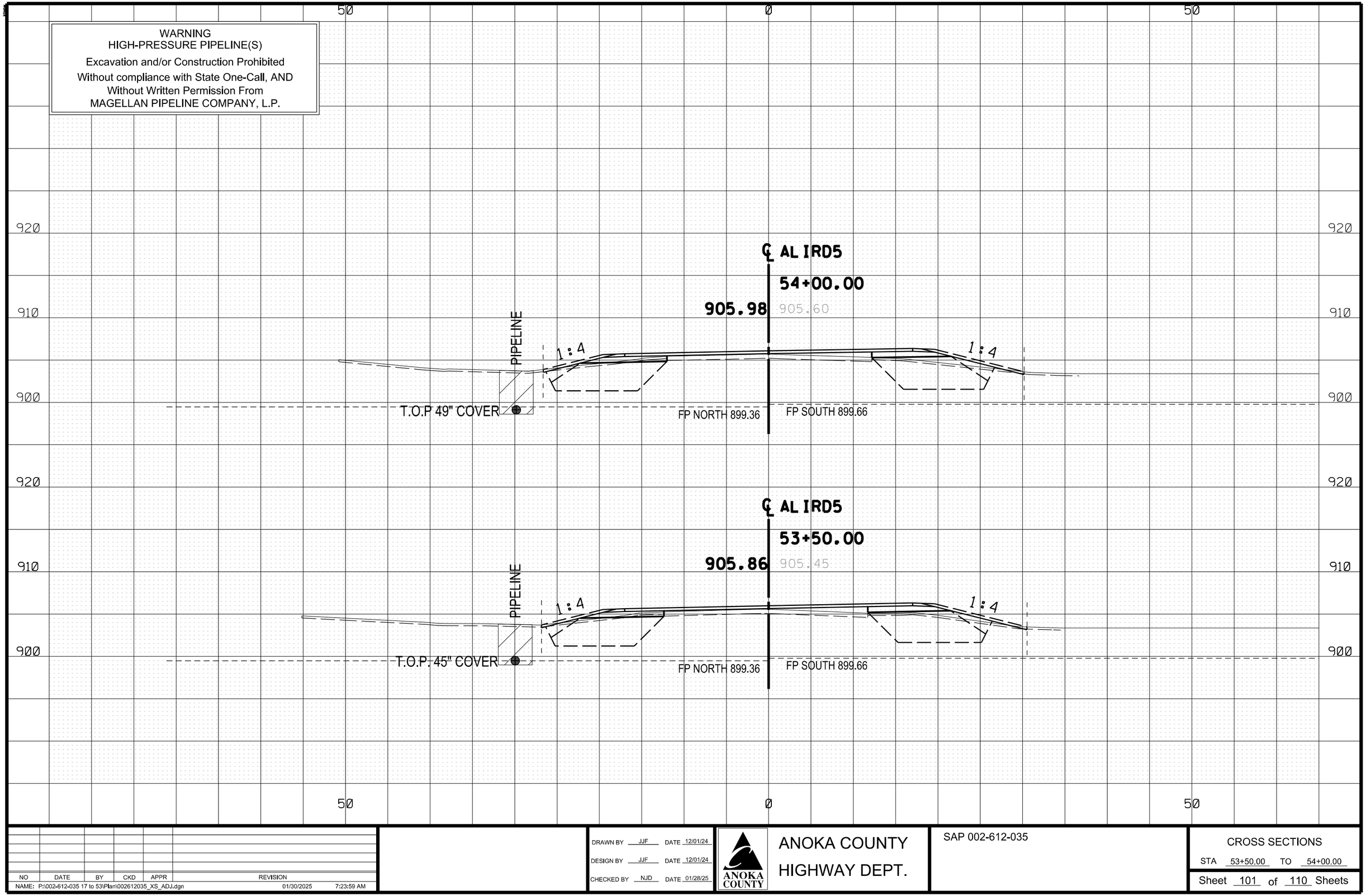

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ANOKA COUNTY
HIGHWAY DEPT.

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CROSS SECTIONS
STA 53+50.00 TO 54+00.00

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WARNING
HIGH-PRESSURE PIPELINE(S)
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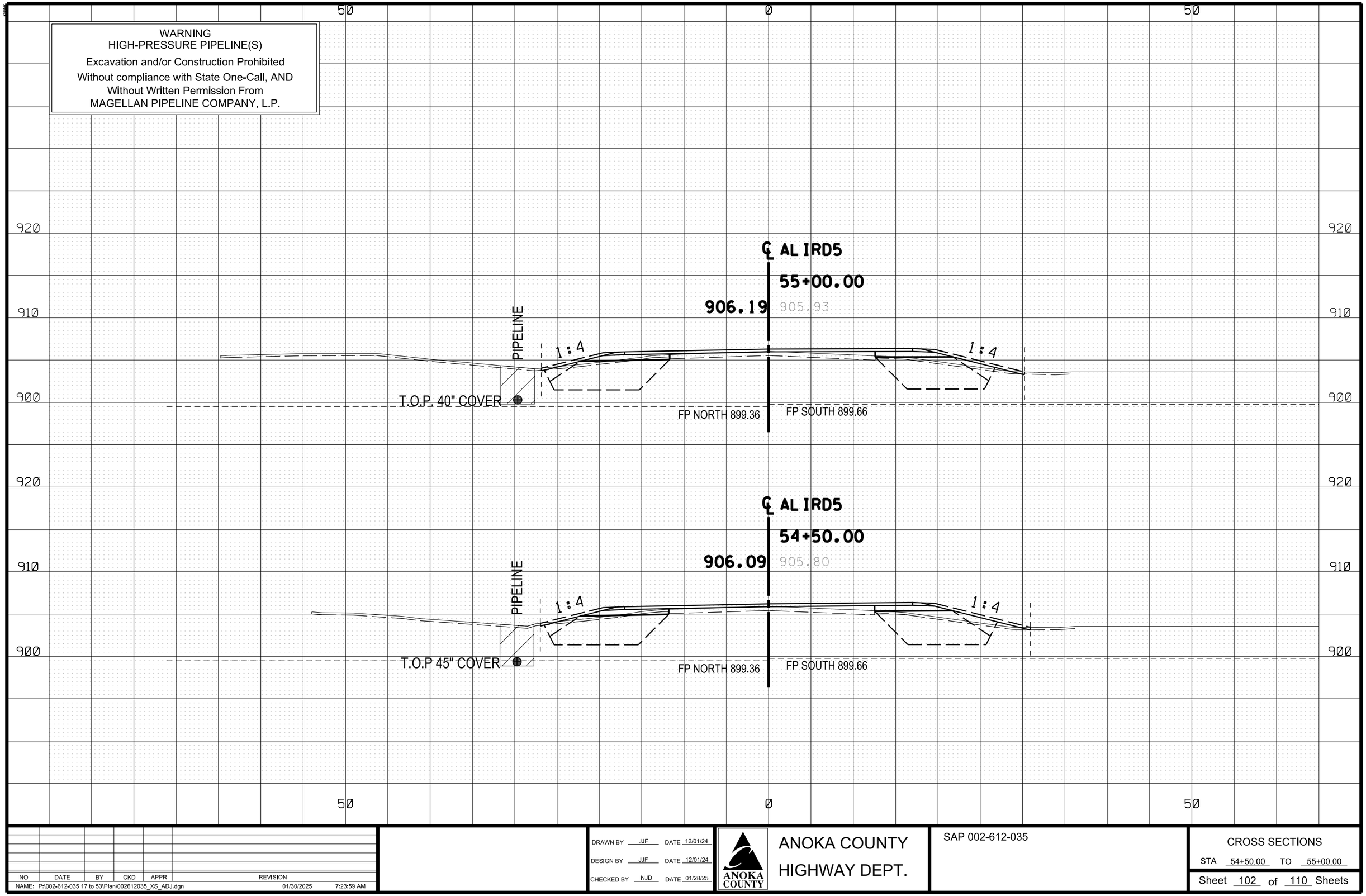

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ANOKA COUNTY
HIGHWAY DEPT.

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CROSS SECTIONS
STA 54+50.00 TO 55+00.00

Sheet 102 of 110 Sheets

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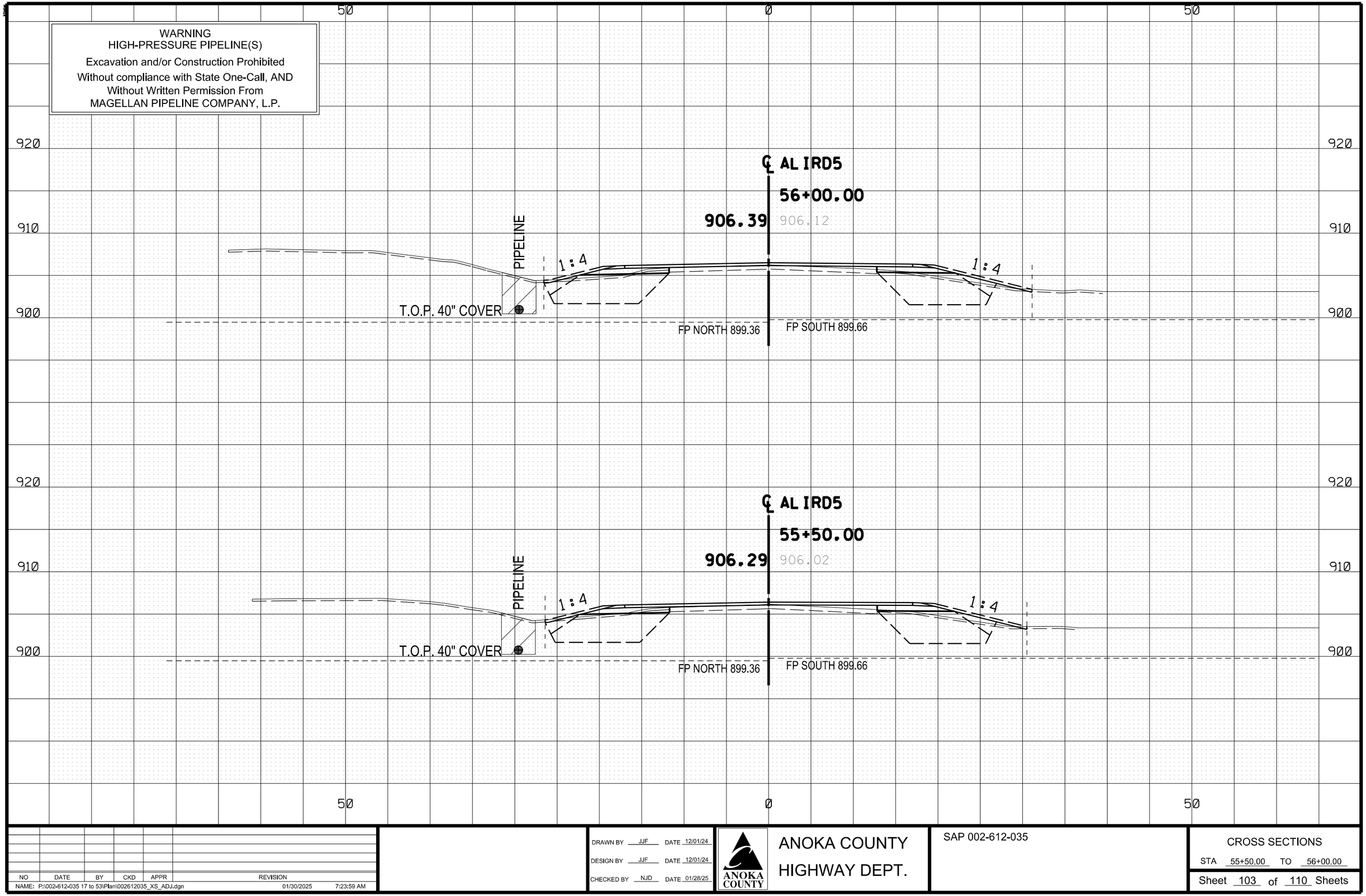

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ANOKA COUNTY
HIGHWAY DEPT.

SAP 002-612-035

CROSS SECTIONS
STA 55+50.00 TO 56+00.00
Sheet 103 of 110 Sheets

WARNING
HIGH-PRESSURE PIPELINE(S)
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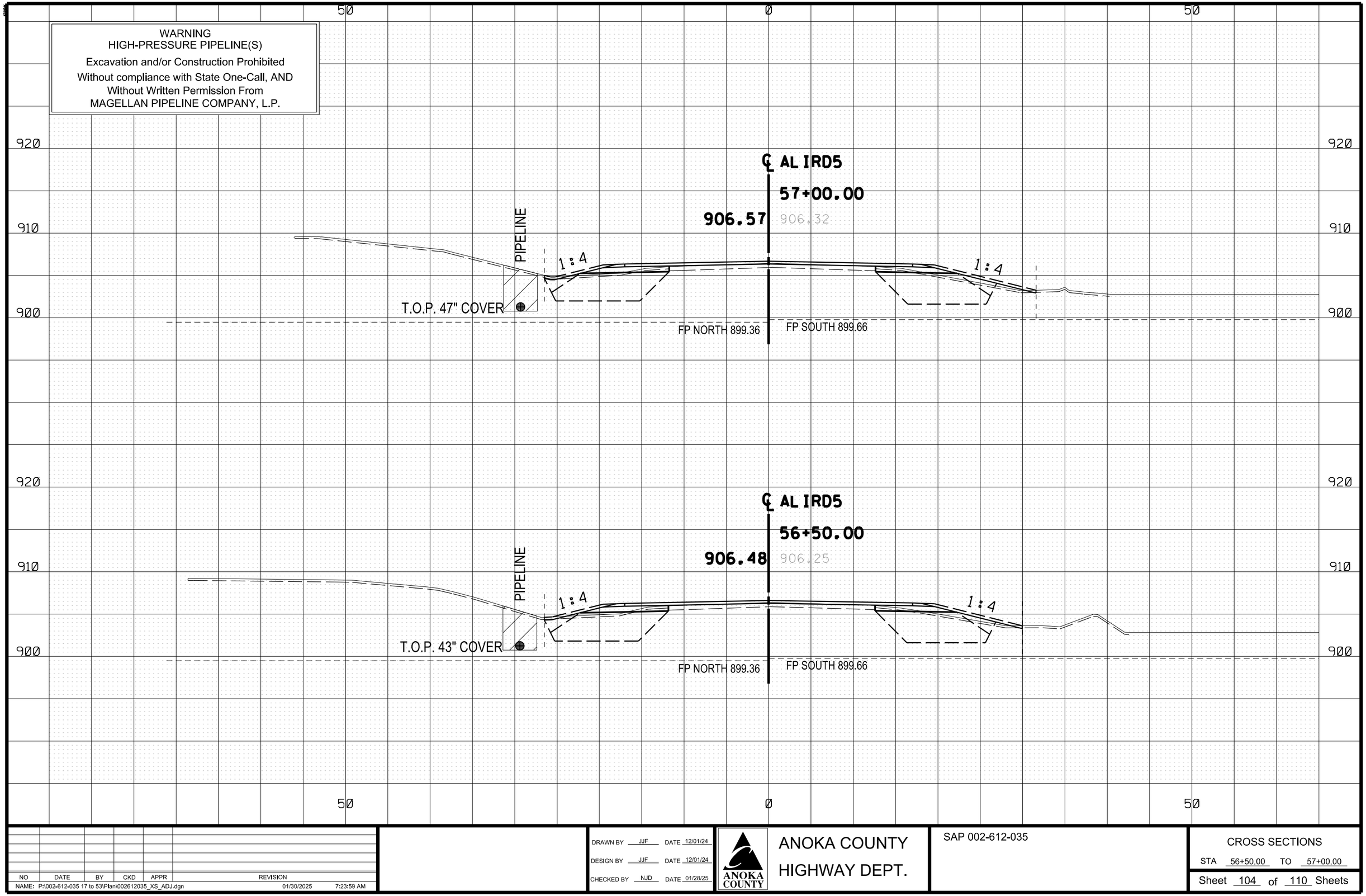

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ANOKA COUNTY
HIGHWAY DEPT.

SAP 002-612-035

CROSS SECTIONS
STA 56+50.00 TO 57+00.00

Sheet 104 of 110 Sheets

WARNING
HIGH-PRESSURE PIPELINE(S)
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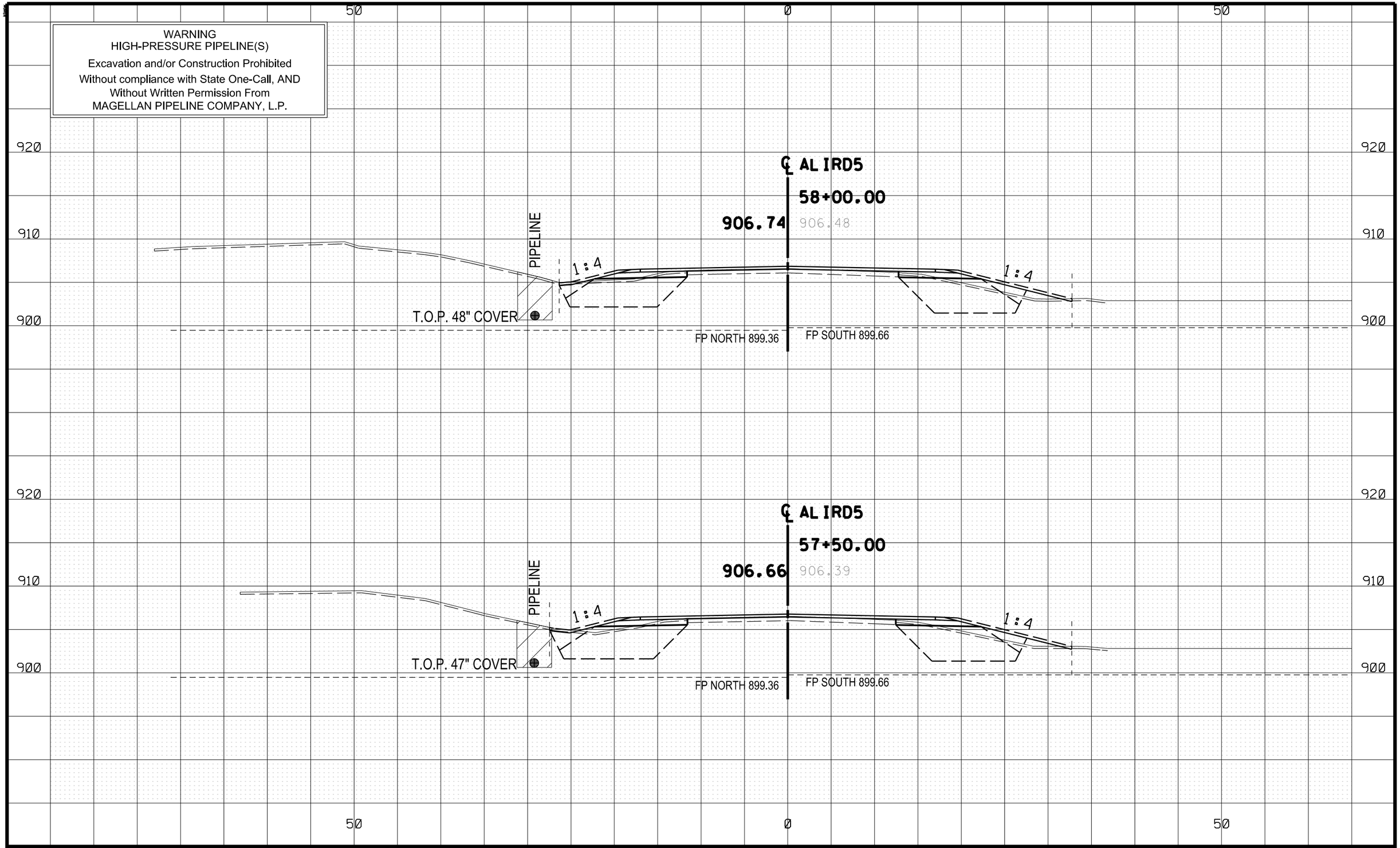
MAGELLAN PIPELINE COMPANY, L.P.



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ANOKA COUNTY
HIGHWAY DEPT.

SAP 002-612-035

CROSS SECTIONS
STA 57+50.00 TO 58+00.00
Sheet 105 of 110 Sheets

WARNING
HIGH-PRESSURE PIPELINE(S)
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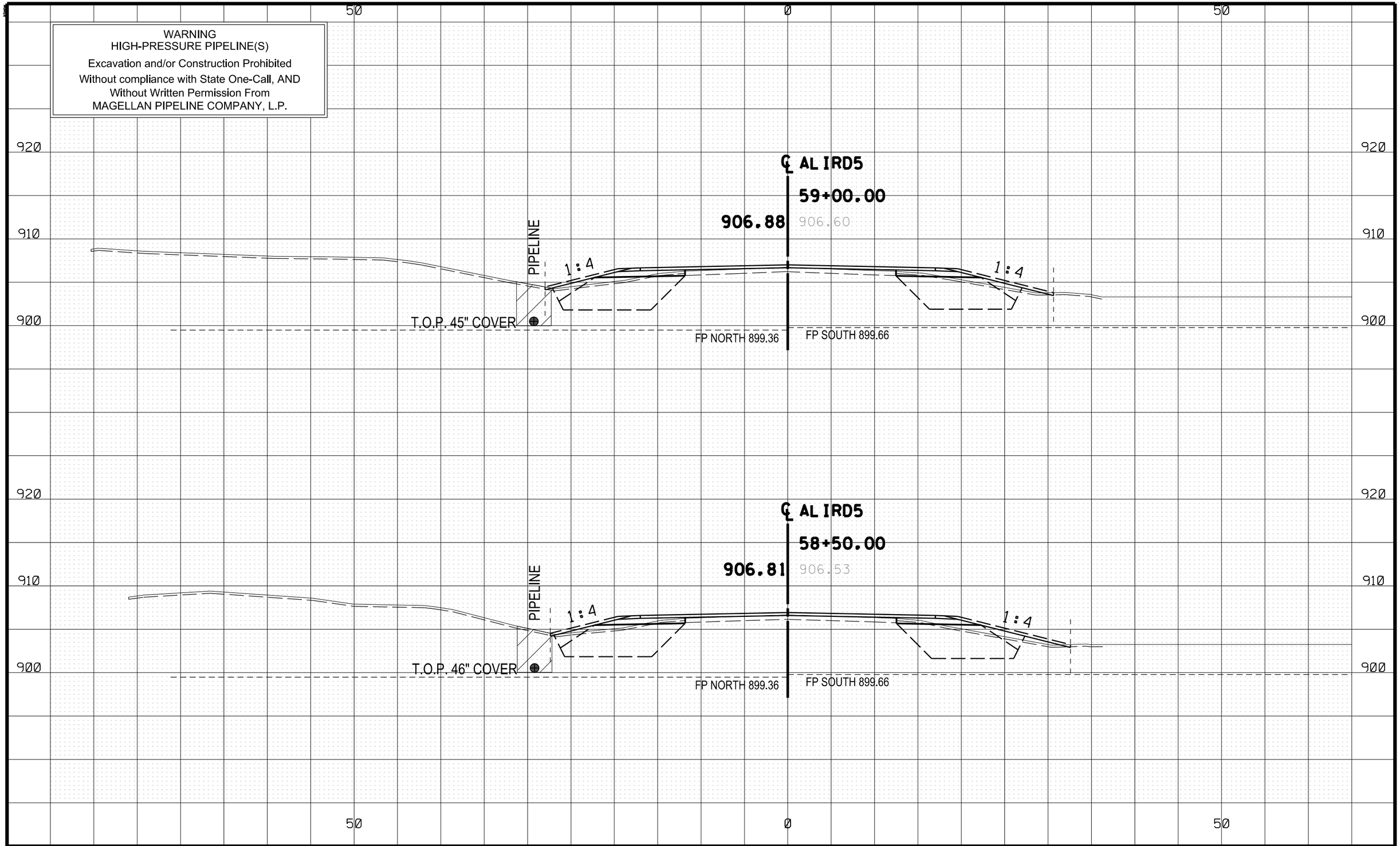

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ANOKA COUNTY
HIGHWAY DEPT.

SAP 002-612-035

CROSS SECTIONS
STA 58+50.00 TO 59+00.00

Sheet 106 of 110 Sheets

WARNING
HIGH-PRESSURE PIPELINE(S)
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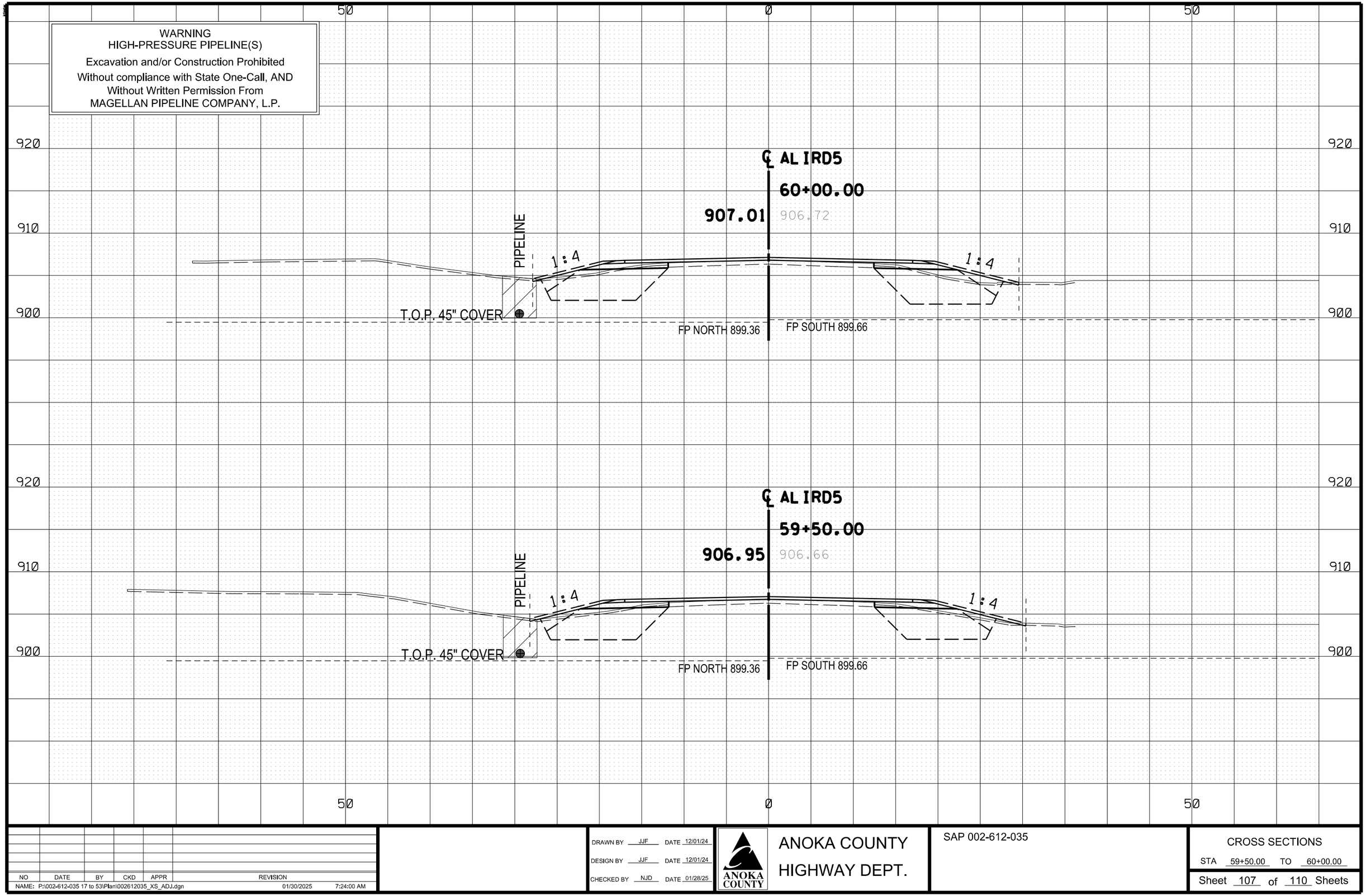
MAGELLAN PIPELINE COMPANY, L.P.



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ANOKA COUNTY
HIGHWAY DEPT.

SAP 002-612-035

CROSS SECTIONS
STA 59+50.00 TO 60+00.00

Sheet 107 of 110 Sheets

WARNING
HIGH-PRESSURE PIPELINE(S)
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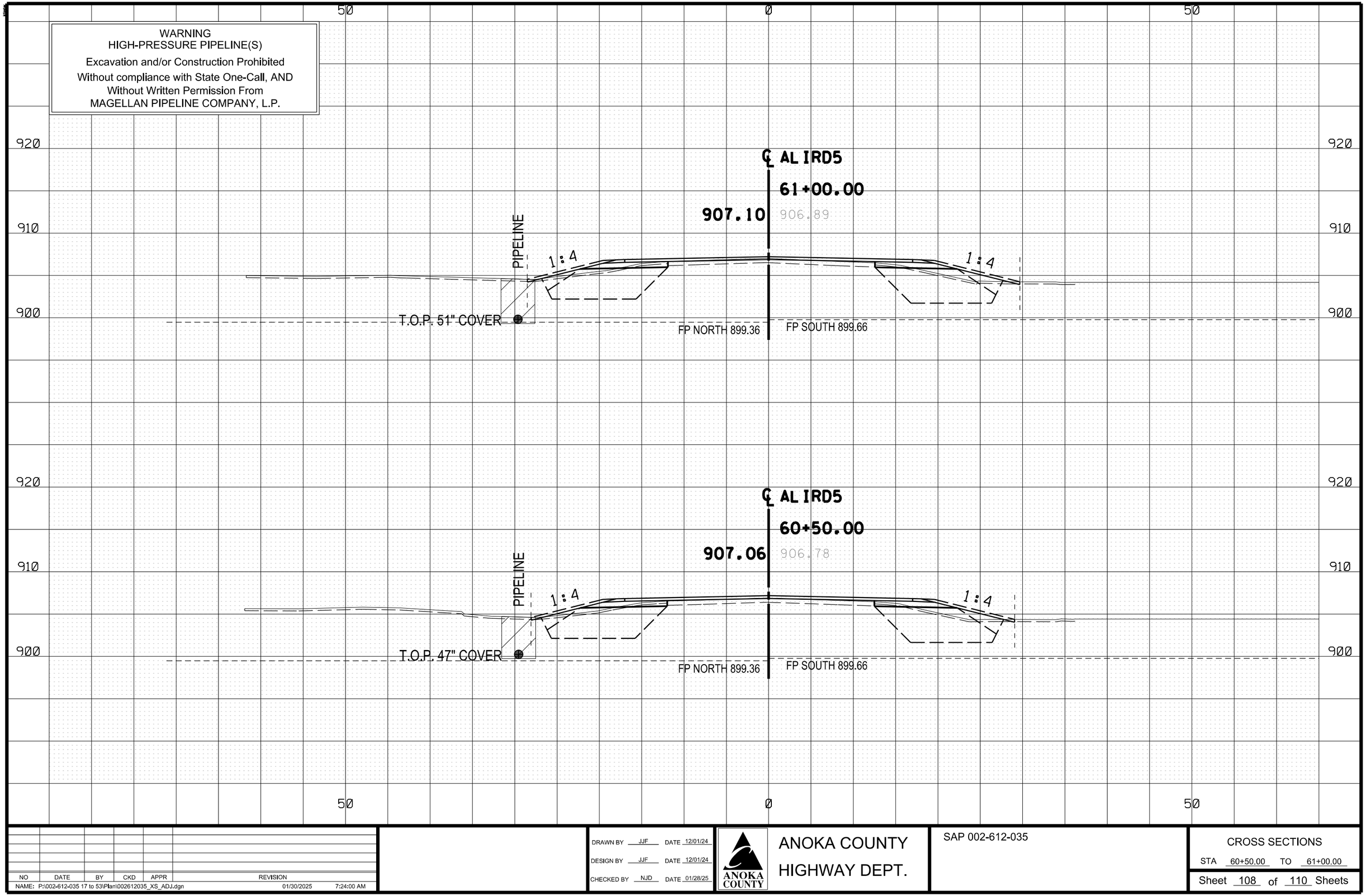

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ANOKA COUNTY
HIGHWAY DEPT.

SAP 002-612-035

CROSS SECTIONS
STA 60+50.00 TO 61+00.00

Sheet 108 of 110 Sheets

WARNING
HIGH-PRESSURE PIPELINE(S)
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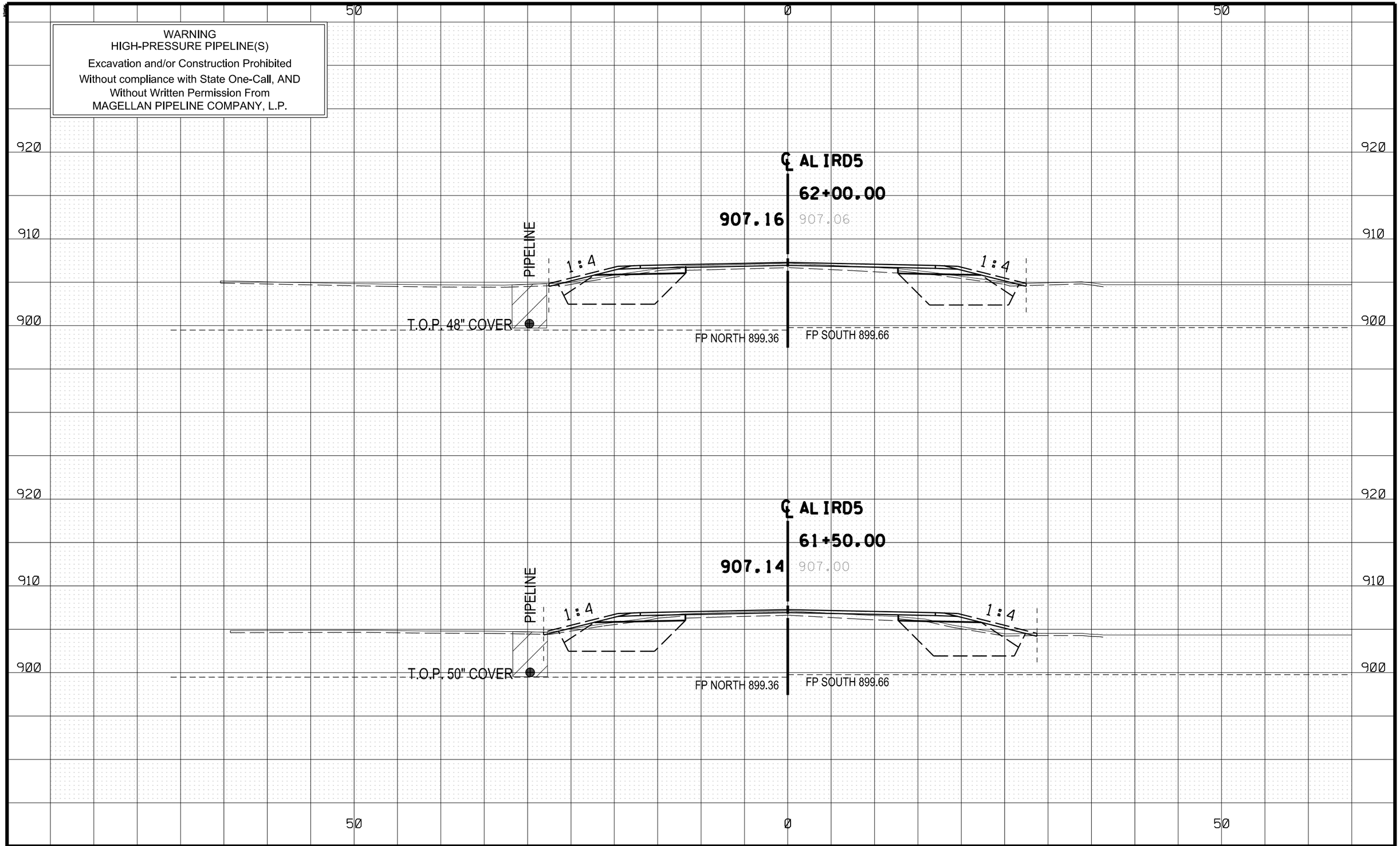
MAGELLAN PIPELINE COMPANY, L.P.



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ANOKA COUNTY
HIGHWAY DEPT.

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CROSS SECTIONS
STA 61+50.00 TO 62+00.00

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WARNING
HIGH-PRESSURE PIPELINE(S)
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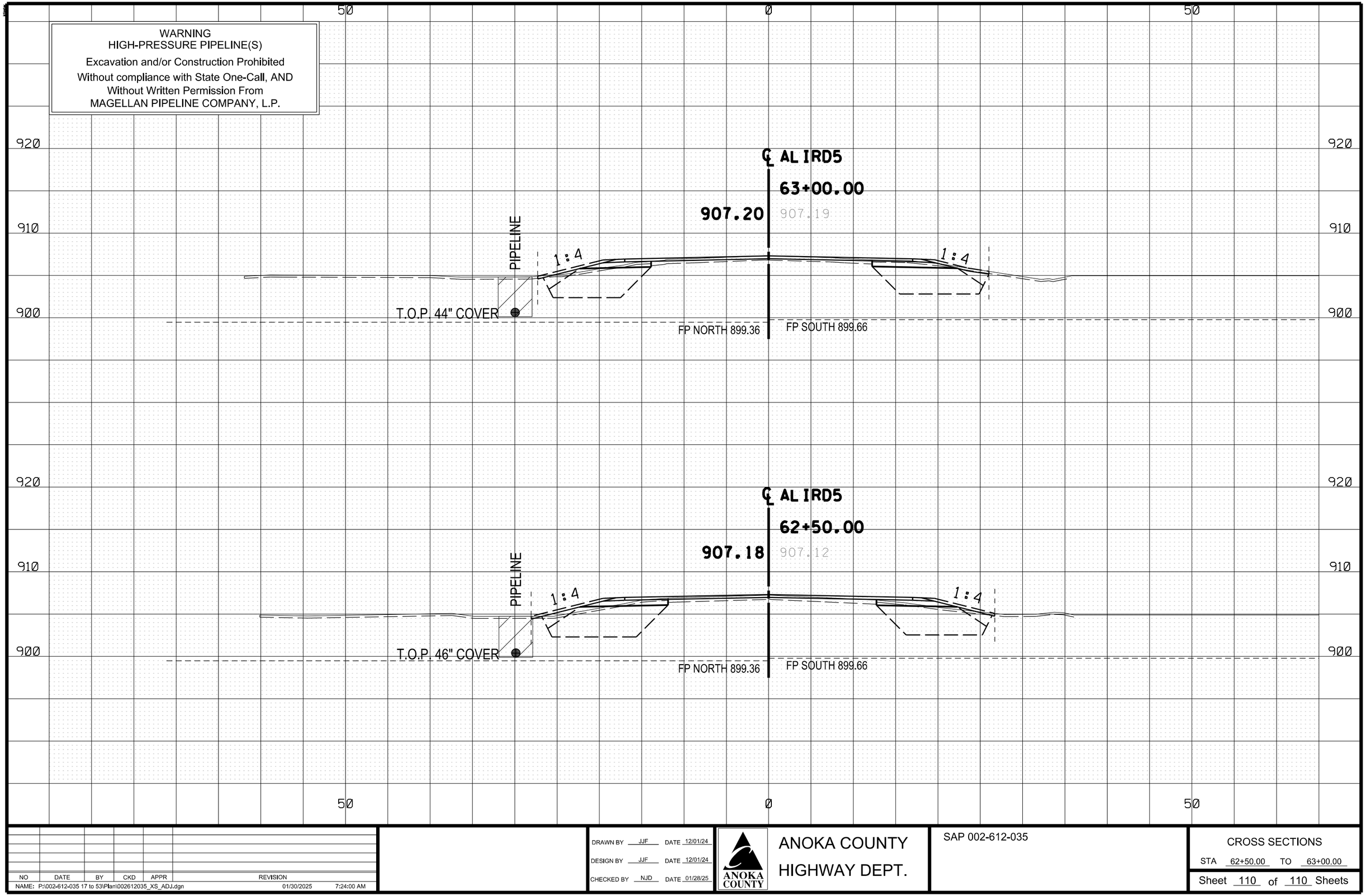

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CROSS SECTIONS
STA 62+50.00 TO 63+00.00
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