

# MINNESOTA DEPARTMENT OF TRANSPORTATION

## ANOKA COUNTY

### CONSTRUCTION PLAN FOR

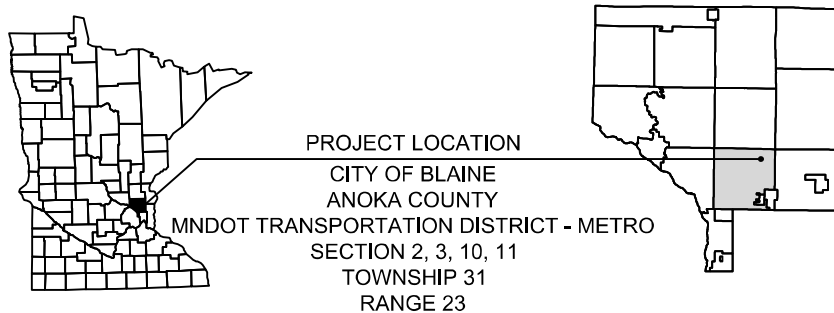
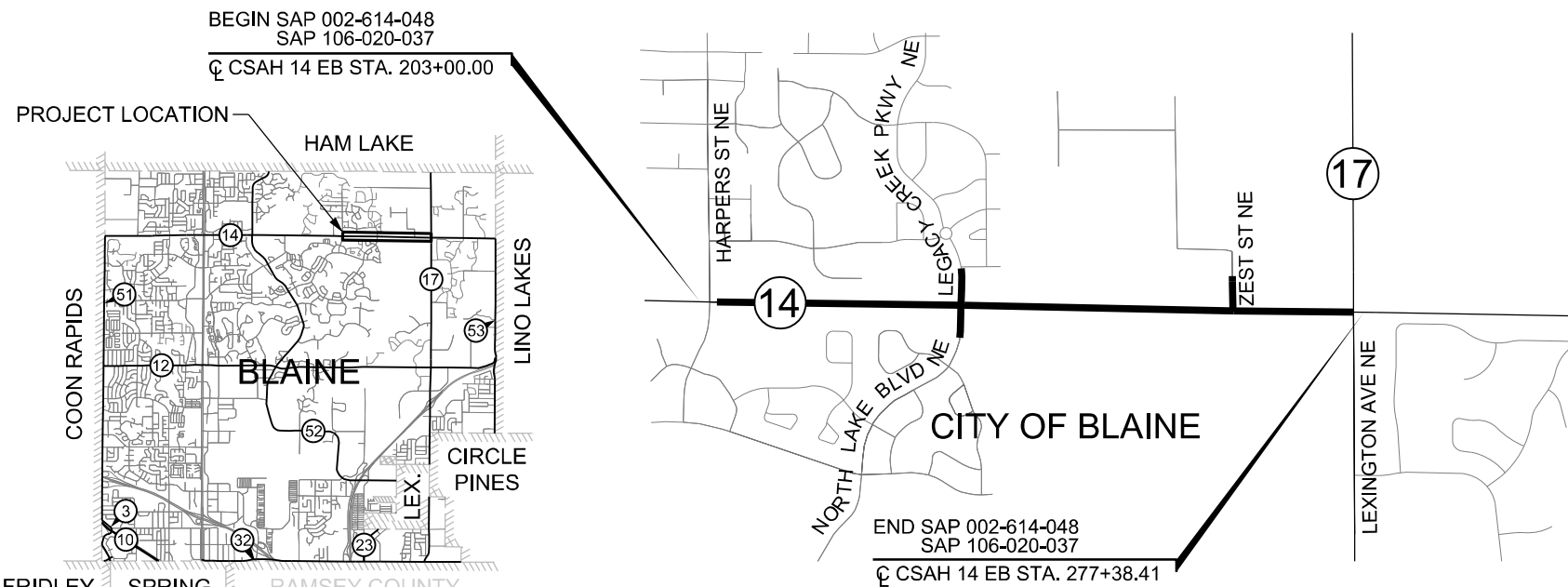
GRADING, AGGREGATE BASE, BITUMINOUS SURFACING,  
CURB AND GUTTER, STORM SEWER, AND SIGNAL SYSTEM

LOCATED ON CSAH 14 BETWEEN HARPERS ST NE AND CSAH 17

STATE AID PROJ. NO. 002-614-048, 106-020-037

CSAH 14

GROSS LENGTH	<u>7438.41</u>	FEET	<u>1.409</u>	MILES
BRIDGES-LENGTH	<u>0.00</u>	FEET	<u>0.000</u>	MILES
EXCEPTIONS-LENGTH	<u>0.00</u>	FEET	<u>0.000</u>	MILES
NET LENGTH	<u>7438.41</u>	FEET	<u>1.409</u>	MILES



### 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.

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THIS PLAN CONTAINS 303 SHEETS

APPROVED Joseph MacPherson Digitally signed by Joseph MacPherson Date: 2022.02.24 13:39:45 -06'00' 2/24/22 DATE  
ANOKA COUNTY ENGINEER

APPROVED Daniel Schluender Digitally signed by Daniel Schluender Date: 2022.02.28 12:15:53 -06'00' \_\_\_\_\_ DATE  
CITY OF BLAINE ENGINEER

Julie Dresel Digitally signed by Julie Dresel Date: 2022.02.28 13:43:47 -06'00' \_\_\_\_\_ DATE

DISTRICT STATE AID ENGINEER: REVIEWED FOR COMPLIANCE WITH STATE AID RULES/POLICY \_\_\_\_\_ DATE

Julie Dresel Digitally signed by Julie Dresel Date: 2022.02.28 13:44:05 -06'00' \_\_\_\_\_ DATE

STATE AID ENGINEER: APPROVED FOR STATE AID FUNDING \_\_\_\_\_ DATE

#### UTILITY QUALITY LEVEL NOTE:

THE SUBSURFACE UTILITY INFORMATION IN THIS PLAN IS UTILITY QUALITY LEVEL D. THIS UTILITY QUALITY LEVEL WAS DETERMINED ACCORDING TO THE GUIDELINES OF CIASCE 38-02, ENTITLED "STANDARD GUIDELINES FOR THE COLLECTION AND DEPICTION OF EXISTING SUBSURFACE UTILITY DATA."

#### DESIGN DESIGNATION (TRAIL)

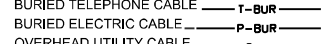
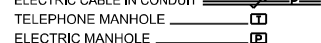
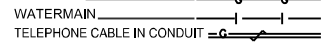
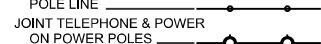
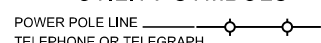
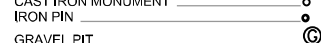
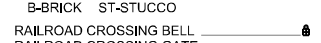
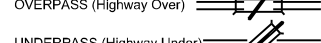
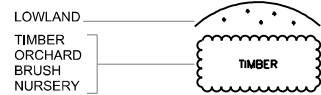
DESIGN SPEED 20 MPH  
BASED ON STOPPING SIGHT DISTANCE:  
HEIGHT OF EYE 3.83' HEIGHT OF OBJECT 0.0'  
DESIGN SPEED NOT ACHIEVED AT:  
STA. \_\_\_\_\_ TO STA. \_\_\_\_\_ MPH \_\_\_\_\_

#### DESIGN DESIGNATION (CSAH 14)

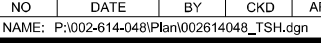
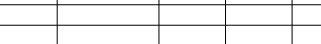
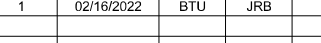
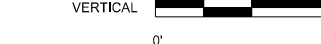
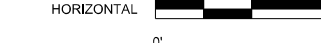
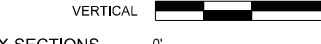
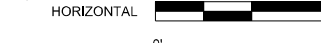
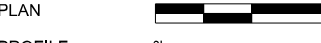
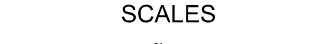
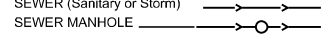
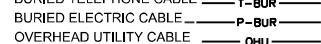
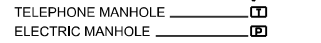
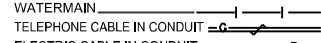
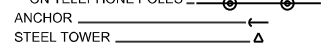
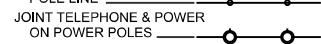
ESAL <sub>20</sub>	2,546,000	FUNCTIONAL CLASSIFICATION	<u>PRINCIPAL ARTERIAL</u>
R VALUE	45	NO. OF TRAFFIC LANES	<u>4</u> NO. OF PARKING LANES <u>0</u>
ADT (2022)	15,560	DESIGN SPEED	<u>55</u> MPH
PROJ. ADT (2042)	25,940	BASED ON STOPPING SIGHT DISTANCE:	
PROJ. HCDT (2042)	721	HEIGHT OF EYE	<u>3.5'</u> HEIGHT OF OBJECT <u>2.0'</u>
SOIL FACTOR	N/A	DESIGN SPEED NOT ACHIEVED AT:	
<u>10</u> TON DESIGN		STA. _____ TO STA. _____ MPH _____	

### PLAN SYMBOLS

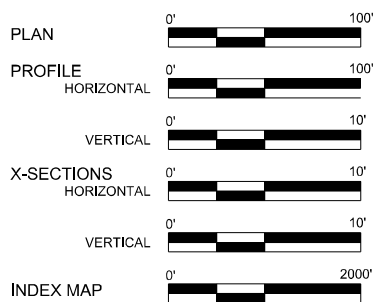
- COUNTY LINE \_\_\_\_\_
- TOWNSHIP OR RANGE LINE \_\_\_\_\_
- SECTION LINE \_\_\_\_\_
- QUARTER LINE \_\_\_\_\_
- SIXTEENTH LINE \_\_\_\_\_
- RIGHT OF WAY LINE \_\_\_\_\_
- SLOPE EASEMENT \_\_\_\_\_
- EXISTING RIGHT OF WAY \_\_\_\_\_
- PROPERTY LINE \_\_\_\_\_
- CORPORATE OR CITY LIMITS \_\_\_\_\_
- 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 \_\_\_\_\_



### UTILITY SYMBOLS



### SCALES



NO.	DATE	BY	CKD	APPR	REVISION
1	02/16/2022	BTU	JRB		UPDATED LEADERS

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: JORGE R. BERNAL DEL GADO

SIGNATURE: \_\_\_\_\_

DATE: 02-23-22 LICENSE NO. 57216

DRAWN BY BTU DATE 02/10/22

DESIGN BY JRB DATE 02/10/22

CHECKED BY NJD DATE 02/10/22

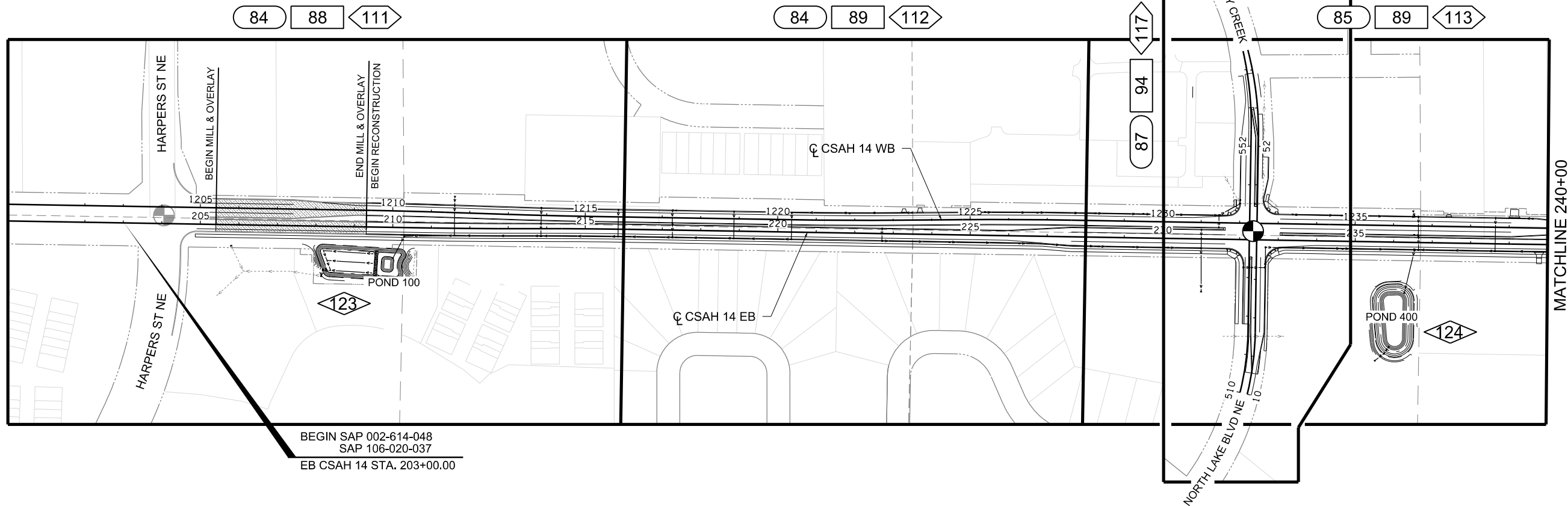


**ANOKA COUNTY  
HIGHWAY DEPT.**

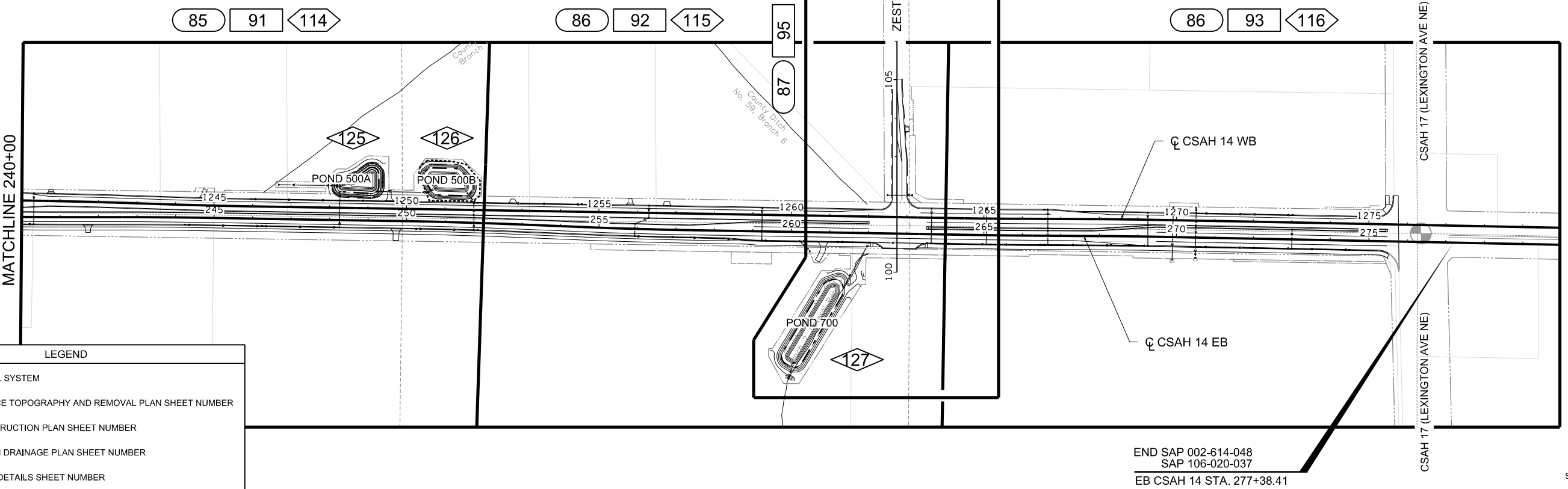
SAP 002-614-048  
SAP 106-020-037

TITLE SHEET

Sheet 1 of 303 Sheets

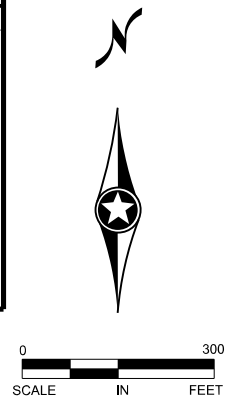


BEGIN SAP 002-614-048  
SAP 106-020-037  
EB CSAH 14 STA. 203+00.00



END SAP 002-614-048  
SAP 106-020-037  
EB CSAH 14 STA. 277+38.41

LEGEND	
	SIGNAL SYSTEM
	INPLACE TOPOGRAPHY AND REMOVAL PLAN SHEET NUMBER
	CONSTRUCTION PLAN SHEET NUMBER
	STORM DRAINAGE PLAN SHEET NUMBER
	POND DETAILS SHEET NUMBER



NO	DATE	BY	CKD	APPR	REVISION
1	02/16/2022	BTU	JRB		UPDATED LEADER

NAME: P:\002-614-048\Plan\002614048\_GL.dgn 02/16/2022 11:14:29 AM

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.  
 PRINT NAME: JORGE R. BERNAL DELGADO  
 SIGNATURE: *[Signature]*  
 DATE: 02-23-22 LICENSE NO. 57216

DRAWN BY: BTU DATE: 02/16/22  
 DESIGN BY: JRB DATE: 02/16/22  
 CHECKED BY: NJD DATE: 02/16/22



**ANOKA COUNTY  
HIGHWAY DEPT.**

SAP 002-614-048  
SAP 106-020-037

**GENERAL LAYOUT**  
 STA 203+00.00 TO 277+38.41  
 Sheet 2 of 303 Sheets

**STATEMENT OF ESTIMATED QUANTITIES**

TAB / NOTE	ITEM NO.	ITEM DESCRIPTION	UNIT	TOTAL PROJECT QUANTITIES ESTIMATED	ANOKA COUNTY SAP 002-614-048 ROADWAY QUANTITIES ESTIMATED	CITY OF BLAINE SAP 106-020-037 ROADWAY QUANTITIES ESTIMATED	SAP 002-614-048 (75%) SAP 106-020-037 (25%) DRAINAGE QUANTITIES ESTIMATED	WIM QUANTITIES ESTIMATED
	2021.501	MOBILIZATION	LUMP SUM	1	0.801	.089	0.110	
	2031.602	FIELD OFFICE	EACH	1	0.801	.089	0.110	
A	2101.502	CLEARING	EACH	148	148			
A	2101.502	GRUBBING	EACH	144	144			
A	2101.505	CLEARING	ACRE	1.24	1.24			
A	2101.505	GRUBBING	ACRE	1.24	1.24			
K / [23]	2102.503	PAVEMENT MARKING REMOVAL	LIN FT	36107	36107			
K / [24]	2102.518	PAVEMENT MARKING REMOVAL	SQ FT	575	575			
B	2104.502	REMOVE DRAINAGE STRUCTURE	EACH	6	6			
I	2104.502	REMOVE SIGN TYPE C	EACH	44	44			
[27]	2104.502	REMOVE CABINET	EACH	1	1			
	2104.502	SALVAGE CONCRETE APRON	EACH	1	1			
I	2104.502	SALVAGE SIGN TYPE C	EACH	3	3			
C, D	2104.503	SAWING CONCRETE PAVEMENT (FULL DEPTH)	LIN FT	100	88	12		
C, D	2104.503	SAWING BITUMINOUS PAVEMENT (FULL DEPTH)	LIN FT	1595	1571	24		
B / [1]	2104.503	REMOVE PIPE CULVERTS	LIN FT	1124	1124			
B	2104.503	REMOVE SEWER PIPE (STORM)	LIN FT	385	385			
L	2104.503	REMOVE FENCE	LIN FT	243	243			
C	2104.503	REMOVE CURB AND GUTTER	LIN FT	2923	2923			
C	2104.504	REMOVE CONCRETE WALK	SQ YD	370	370			
D	2104.504	REMOVE CONCRETE DRIVEWAY PAVEMENT	SQ YD	70	40	30		
D	2104.504	REMOVE BITUMINOUS DRIVEWAY PAVEMENT	SQ YD	998	998			
C	2104.504	REMOVE BITUMINOUS PAVEMENT	SQ YD	44110	43186	924		
C	2104.518	REMOVE CONCRETE MEDIAN	SQ FT	4084	4084			
AB / [19]	2105.607	COMMON BORROW SPECIAL (CV)	CU YD	1218	1218			
AA / [17]	2106.507	EXCAVATION - COMMON (P)	CU YD	48129	48129			
AA	2106.507	EXCAVATION - MUCK	CU YD	43339	43339			
AA	2106.507	EXCAVATION - SUBGRADE (P)	CU YD	16250	16250			
AA / [17]	2106.507	EXCAVATION - CHANNEL AND POND	CU YD	2469	2469			
AA	2106.507	SELECT GRANULAR EMBANKMENT (CV) (P)	CU YD	22511	22511			
AA / [17]	2106.507	COMMON EMBANKMENT (CV) (P)	CU YD	59317	59317			
	2106.601	DEWATERING	LUMP SUM	1	1			
F	2112.603	SHOULDER PREPARATION	LIN FT	474	474			
[2]	2123.510	DOZER	HOUR	10	10			
[26]	2123.610	CRAWLER MOUNTED BACKHOE	HOUR	24	24			
	2123.610	STREET SWEEPER (WITH PICKUP BROOM)	HOUR	42	42			
[3]	2130.523	WATER	M GALLON	60	60			
F / [4]	2211.507	AGGREGATE BASE (CV) CLASS 5 (P)	CU YD	20488	20033	455		
D, E, F / [5]	2211.509	AGGREGATE BASE CLASS 5	TON	2854	1407	1447		
F	2232.504	MILL BITUMINOUS SURFACE (2.0")	SQ YD	3126	3126			
F	2357.506	BITUMINOUS MATERIAL FOR TACK COAT	GALLON	8180	8043	137		
F	2360.509	TYPE SP 9.5 WEARING COURSE MIXTURE (2;B)	TON	1096	1096			
F	2360.509	TYPE SP 12.5 BITUMINOUS MIXTURE FOR PATCHING	TON	195	195			
F	2360.509	TYPE SP 12.5 NON WEARING COURSE MIXTURE (3;B)	TON	12492	12256	236		
F / [18]	2360.509	TYPE SP 12.5 WEARING COURSE MIXTURE (3;F)	TON	12870	12752	118		
D	2360.609	TYPE SP 9.5 WEARING COURSE MIXTURE (2;B) DRIVEWAYS	TON	47	47			
[15]	2451.507	COARSE AGGREGATE BEDDING (CV)	CU YD	172			172	
AB	2451.607	MEDIUM FILTER AGGREGATE (CV)	CU YD	503	503			
O	2501.502	15" RC PIPE APRON	EACH	10			10	
O	2501.502	18" RC PIPE APRON	EACH	4			4	
O	2501.502	21" RC PIPE APRON	EACH	1			1	

- NOTES:**
- [1] INCLUDES ALL PIPE AND APRON TYPES/MATERIALS.
  - [2] SHALL BE USED FOR MISCELLANEOUS GRADING ACTIVITIES AS DIRECTED BY ENGINEER.
  - [3] WATER TO BE USED ONLY FOR DUST CONTROL AS DIRECTED BY ENGINEER IN THE FIELD. WATER USED FOR COMPACTION AND TURF ESTABLISHMENT SHALL BE INCIDENTAL.
  - [4] INCLUDES ALL ROAD QUANTITIES.
  - [5] INCLUDES TRAIL, STAGING AND DRIVEWAY QUANTITIES.
  - [6] MEDIAN PAID FOR AS 4" CONCRETE WALK. CONCRETE NOSE DESIGN SPECIAL PAID FOR AS 6" CONCRETE WALK. 6" CONCRETE WALK INCLUDES DRIVEWAY QUANTITY
  - [7] SEE STAGE 1 AND STAGE 2 SHEETS FOR LOCATION DETAILS.
  - [8] SEE REMOVAL SHEET 84 FOR LOCATION DETAILS.
  - [9] NO SAWCUTTING OF PIPE; REMOVE PIPE TO NEAREST JOINT AND INSTALL APRON.
  - [10] INCLUDES 4" WHITE, 4" YELLOW AND 6" SOLID LINE CROSSWALK.
  - [11] NORTH LAKE BLVD/LEGACY CREEK PKWY SIGNAL SYSTEM. SEE SIGNAL PLANS
  - [12] HARPERS STREET SIGNAL SYSTEM. SEE SIGNAL PLANS
  - [13] CSAH 17 SIGNAL SYSTEM. SEE SIGNAL PLANS
  - [14] ZEST STREET INTERSECTION. SEE SIGNAL PLANS
  - [15] PROVIDE COARSE AGGREGATE BEDDING FOR LAST TWO RUNS OF PIPE GOING TO EACH POND, OR AS DIRECTED BY ENGINEER. PAID FOR AS COARSE AGGREGATE BEDDING (CV) 2451.507.
  - [16] INCLUDES STRUCTURES FOR POND 500b SUBSURFACE DRAINAGE. SEE POND 500b GRADING SHEET 126 FOR LOCATION DETAILS.
  - [17] INCLUDES EARTHWORK AND POND SUMMARIES.
  - [18] INCLUDES MAINLINE AND OVERLAY.
  - [19] CLAY LINER FOR POND 100 AND POND 500b.
  - [20] ATTENUATOR TEST LEVEL 3 SHALL BE THE SAME CROSS SECTION AS CONCRETE BARRIER.
  - [21] CROSSWALK MARKINGS SHALL BE 3' X 6'.
  - [22] SEE DIVISION T.
  - [23] INCLUDES ALL TYPES OF LINES AND WIDTHS
  - [24] INCLUDES REMOVAL OF 3'X6' CROSSWALK AND ARROWS
  - [25] INCLUDES STOPBAR AND CROSSHATCH
  - [26] TO BE USED AS DIRECTED BY ENGINEER FOR TEMPORARY DRAINAGE "FINGER/SEDIMENT TRAP" EXCAVATION AND G IN POND 500a AND 500b
  - [27] EXISTING WIM STATION NEAR 240+50

(P) PLAN QUANTITY.

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-614-048\Plan\002614048\_TAB.dgn 03/03/2022 12:05:49 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: JORGE R. BERNAL DELGADO

SIGNATURE: *[Signature]*

DATE: 03-03-22 LICENSE NO. 57216

DRAWN BY: BTU DATE: 02/16/22

DESIGN BY: JRB DATE: 02/16/22

CHECKED BY: NJD DATE: 02/16/22


**ANOKA COUNTY  
HIGHWAY DEPT.**

SAP 002-614-048  
SAP 106-020-037

**STATEMENT OF ESTIMATED QUANTITIES**

TAB / NOTE	ITEM NO.	ITEM DESCRIPTION	UNIT	TOTAL PROJECT QUANTITIES ESTIMATED	ANOKA COUNTY SAP 002-614-048 ROADWAY QUANTITIES ESTIMATED	CITY OF BLAINE SAP 106-020-037 ROADWAY QUANTITIES ESTIMATED	SAP 002-614-048 (75%) SAP 106-020-037 (25%) DRAINAGE QUANTITIES ESTIMATED	WIM QUANTITIES ESTIMATED
O	2501.502	24" RC PIPE APRON	EACH	1			1	
O	2501.502	27" RC PIPE APRON	EACH	1			1	
O	2501.502	36" RC PIPE APRON	EACH	1			1	
O	2501.502	36" SPAN RC PIPE-ARCH APRON	EACH	1			1	
O	2501.502	44" SPAN RC PIPE-ARCH APRON	EACH	1			1	
P	2501.502	18" RC SAFETY APRON AND GRATE DESIGN 3128	EACH	4	4			
[9]	2501.502	INSTALL CONCRETE APRON	EACH	1	1			
P	2501.503	18" RC PIPE CULVERT	LIN FT	207	207			
N	2502.503	6" TP PIPE DRAIN	LIN FT	20	20			
N	2502.503	6" PERF TP PIPE DRAIN	LIN FT	745	745			
N	2502.602	8" TP PIPE DRAIN CLEAN OUT	EACH	6	6			
O	2503.503	15" RC PIPE SEWER CLASS V	LIN FT	5741			5741	
O	2503.503	18" RC PIPE SEWER CLASS III	LIN FT	1824			1824	
O	2503.503	21" RC PIPE SEWER CLASS III	LIN FT	395			395	
O	2503.503	24" RC PIPE SEWER CLASS III	LIN FT	778			778	
O	2503.503	27" RC PIPE SEWER CLASS III	LIN FT	262			262	
O	2503.503	30" RC PIPE SEWER CLASS III	LIN FT	425			425	
O	2503.503	33" RC PIPE SEWER CLASS III	LIN FT	130			130	
O	2503.503	36" RC PIPE SEWER CLASS III	LIN FT	58			58	
O	2503.503	36" SPAN RC PIPE-ARCH SEWER CLASS IIA	LIN FT	24			24	
O	2503.503	44" SPAN RC PIPE-ARCH SEWER CLASS IIA	LIN FT	288			288	
[8]	2503.602	CONSTRUCT BULKHEAD	EACH	2			2	
O	2503.602	CONNECT TO EXISTING STORM SEWER	EACH	2			2	
V	2504.602	ADJUST GATE VALVE AND BOX	EACH	3		3		
O	2506.502	CONSTRUCT DRAINAGE STRUCTURE DESIGN SPECIAL 1	EACH	5			5	
O	2506.502	CONSTRUCT DRAINAGE STRUCTURE DESIGN SPECIAL 2	EACH	2			2	
O, U	2506.502	CASTING ASSEMBLY	EACH	116		1	115	
U	2506.502	ADJUST FRAME AND RING CASTING	EACH	2		2		
N, O / [16]	2506.503	CONSTRUCT DRAINAGE STRUCTURE DESIGN H	LIN FT	112.1			112.1	
O	2506.503	CONSTRUCT DRAINAGE STRUCTURE DESIGN 48-4020	LIN FT	262.1			262.1	
O	2506.503	CONSTRUCT DRAINAGE STRUCTURE DESIGN 54-4020	LIN FT	14.8			14.8	
O	2506.503	CONSTRUCT DRAINAGE STRUCTURE DESIGN 60-4020	LIN FT	26			26.0	
O	2506.503	CONSTRUCT DRAINAGE STRUCTURE DESIGN 66-4020	LIN FT	8.3			8.3	
O	2506.503	CONSTRUCT DRAINAGE STRUCTURE DESIGN 72-4020	LIN FT	13.6			13.6	
O	2506.503	CONSTRUCT DRAINAGE STRUCTURE DESIGN 108-4020	LIN FT	7.7			7.7	
U	2506.503	RECONSTRUCT DRAINAGE STRUCTURE	LIN FT	2.4		2.4		
O	2511.504	GEOTEXTILE FILTER TYPE 3	SQ YD	240	240			
O, P	2511.507	RANDOM RIPRAP CLASS II	CU YD	88	88			
D, E / [6]	2521.518	4" CONCRETE WALK	SQ FT	45247	45247			
E	2521.602	DRILL AND GROUT REINF BAR (EPOXY COATED)	EACH	120	120			
D, E / [6]	2521.618	6" CONCRETE WALK	SQ FT	3628	3628			
E	2531.503	CONCRETE CURB AND GUTTER DESIGN B424	LIN FT	13188	6594	6594		
E	2531.503	CONCRETE CURB AND GUTTER DESIGN B418 (MOD)	LIN FT	13302	13302			
E	2531.503	CONCRETE CURB AND GUTTER DESIGN B618 (MODIFIED)	LIN FT	339	339			
E	2531.503	CONCRETE CURB AND GUTTER DESIGN B618	LIN FT	708	708			
E	2531.602	CONCRETE MEDIAN NOSE-SPECIAL	EACH	7	7			
E	2531.618	TRUNCATED DOMES	SQ FT	168	168			
H / [7]	2533.503	PORTABLE PRECAST CONCRETE BARRIER DESIGN 8337	LIN FT	3073	3073			
[22]	2540.601	WEIGH-IN-MOTION SYSTEM	LUMP SUM	1				1
D	2540.602	MAIL BOX SUPPORT	EACH	12	12			
D	2540.602	RELOCATE MAIL BOX SUPPORT	EACH	12	12			
[11]	2545.502	SERVICE CABINET	EACH	1	0.25	.75		

**NOTES:**

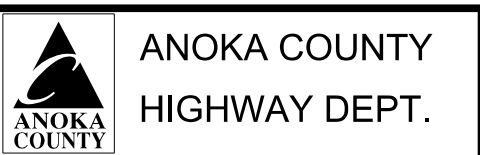
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- [13] CSAH 17 SIGNAL SYSTEM. SEE SIGNAL PLANS
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- [15] PROVIDE COARSE AGGREGATE BEDDING FOR LAST TWO RUNS OF PIPE GOING TO EACH POND, OR AS DIRECTED BY ENGINEER. PAID FOR AS COARSE AGGREGATE BEDDING (CV) 2451.507.
- [16] INCLUDES STRUCTURES FOR POND 500b SUBSURFACE DRAINAGE. SEE POND 500b GRADING SHEET 126 FOR LOCATION DETAILS.
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- [27] EXISTING WIM STATION NEAR 240+50

(P) PLAN QUANTITY.

NO	DATE	BY	CKD	APPR	REVISION
NAME: P:\002-614-048\Plan\002614048_TAB.dgn					
03/02/2022 9:24:01 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: JORGE R. BERNAL DELGADO  
 SIGNATURE: *[Signature]*  
 DATE: 03-02-22 LICENSE NO. 57216

DRAWN BY: BTU DATE: 02/16/22  
 DESIGN BY: JRB DATE: 02/16/22  
 CHECKED BY: NJD DATE: 02/16/22



SAP 002-614-048  
 SAP 106-020-037

**STATEMENT OF ESTIMATED QUANTITIES**

TAB / NOTE	ITEM NO.	ITEM DESCRIPTION	UNIT	TOTAL PROJECT QUANTITIES ESTIMATED	ANOKA COUNTY SAP 002-614-048 ROADWAY QUANTITIES ESTIMATED	CITY OF BLAINE SAP 106-020-037 ROADWAY QUANTITIES ESTIMATED	SAP 002-614-048 (75%) SAP 106-020-037 (25%) DRAINAGE QUANTITIES ESTIMATED	WIM QUANTITIES ESTIMATED
[14]	2545.502	HANDHOLE	EACH	12		12		
L	2557.503	WIRE FENCE DESIGN 48V-9322	LIN FT	100		100		
	2563.601	TRAFFIC CONTROL SUPERVISOR	LUMP SUM	1	0.800	.090	0.110	
	2563.601	TRAFFIC CONTROL	STG1 LUMP SUM	1	0.800	.090	0.110	
	2563.601	TRAFFIC CONTROL	STG2 LUMP SUM	1	0.800	.090	0.110	
	2563.601	TRAFFIC CONTROL	STG3 LUMP SUM	1	0.800	.090	0.110	
	2563.601	TRAFFIC CONTROL	STG4 LUMP SUM	1	0.800	.090	0.110	
K	2563.602	RAISED PAVEMENT MARKER TEMPORARY	EACH	2412	2412			
	2563.602	PORTABLE CHANGEABLE MESSAGE SIGN	EACH	2	2			
K	2563.602	PORTABLE BARRIER DELINEATOR	EACH	243	243			
	2563.610	POLICE OFFICER	HOURLY	20	20			
H / [20]	2563.615	TEMPORARY IMPACT ATTENUATOR	ASSEMBLY	6	6			
M	2564.502	INSTALL SIGN TYPE C	EACH	3	3			
M	2564.518	SIGN PANELS TYPE C	SQ FT	345	345			
[11]	2565.501	EMERGENCY VEHICLE PREEMPTION SYSTEM B	LUMP SUM	1		1		
	2565.501	TRAFFIC CONTROL INTERCONNECT	LUMP SUM	1	1			
[11]	2565.516	TRAFFIC CONTROL SIGNAL SYSTEM B	SYSTEM	1	0.25	0.75		
[14]	2565.602	RIGID PVC LOOP DETECTOR 6'X6'	EACH	20		20		
[14]	2565.603	2" NON-METALLIC CONDUIT	LIN FT	900		900		
[14]	2565.603	3" NON-METALLIC CONDUIT	LIN FT	800		800		
[12]	2565.616	REVISE SIGNAL SYSTEM A	SYSTEM	1	0.50	0.50		
[13]	2565.616	REVISE SIGNAL SYSTEM C	SYSTEM	1	1			
	2573.501	EROSION CONTROL SUPERVISOR	LUMP SUM	1	1			
G	2573.502	STORM DRAIN INLET PROTECTION	EACH	112	112			
G	2573.502	CULVERT END CONTROLS	EACH	11	11			
G / [28]	2573.503	SILT FENCE; TYPE MS	LIN FT	14825	14825			
G	2573.503	FILTER BERM TYPE 3	LIN FT	69	69			
G	2573.503	SEDIMENT CONTROL LOG TYPE WOOD FIBER	LIN FT	375	375			
AB	2574.507	FILTER TOPSOIL BORROW	CU YD	353	353			
G	2574.508	FERTILIZER TYPE 3	POUND	2030	2030			
G	2574.508	FERTILIZER TYPE 4	POUND	133	133			
G	2575.504	ROLLED EROSION PREVENTION CATEGORY 10	SQ YD	893	893			
G	2575.504	ROLLED EROSION PREVENTION CATEGORY 25	SQ YD	5761	5761			
G	2575.505	SEEDING	ACRE	8	7.6			
G	2575.508	SEED MIXTURE 25-121	POUND	325	325			
G	2575.508	SEED MIXTURE 25-131	POUND	110	110			
G	2575.508	SEED MIXTURE 33-261	POUND	6	6			
G	2575.508	SEED MIXTURE 35-241	POUND	25	25			
G	2575.508	HYDRAULIC REINFORCED FIBER MATRIX	POUND	20674	20674			
G	2575.523	RAPID STABILIZATION METHOD 3	M GALLON	46	45.6			
K / [10]	2581.503	REMOVABLE PREFORMED PAVEMENT MARKING TAPE	LIN FT	5044	5044			
K	2581.603	REMOVABLE PREFORMED PLASTIC MASK (BLACK)	LIN FT	330	330			
K	2582.503	4" SOLID LINE PAINT	LIN FT	59439	59439			
K	2582.503	4" DOUBLE SOLID LINE PAINT	LIN FT	13844	13844			
K	2582.503	4" SOLID LINE MULTI-COMPONENT	LIN FT	34560	34560			
K	2582.503	4" BROKEN LINE MULTI-COMPONENT	LIN FT	13470	13470			
K	2582.503	4" DOUBLE SOLID LINE MULTI-COMPONENT	LIN FT	658	658			
K	2582.518	PAVEMENT MESSAGE PREFORM THERMOPLASTIC	SQ FT	371	371			
K / [21]	2582.518	CROSSWALK PREFORM THERMOPLASTIC	SQ FT	1937	1937			
K / [25]	2582.603	24" SOLID LINE PREFORM THERMOPLASTIC	LIN FT	301	301			
K	2582.618	PAVEMENT MARKING SPECIAL	SQ FT	31	31			

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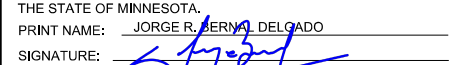
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NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-614-048\Plan\002614048\_TAB.dgn 03/02/2022 9:24:06 AM

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PRINT NAME: JORGE R. BERNAL DELGADO

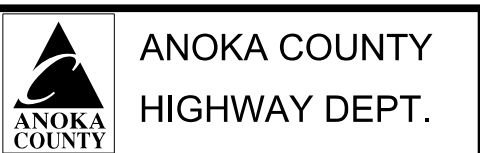
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DATE: 03-02-22 LICENSE NO. 57216

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SAP 002-614-048  
SAP 106-020-037

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

### STANDARD PLATES

PLATE NO.	DESCRIPTION
3000M	REINFORCED CONCRETE PIPE (6 SHEETS)
3006H	GASKET JOINT FOR R.C. PIPE (2 SHEETS)
3007F	SHEAR REINFORCEMENT FOR PRECAST DRAINAGE STRUCTURES
3014K	REINFORCED CONCRETE PIPE ARCH (3 SHEETS)
3022C	PRECAST CONCRETE SAFETY APRON (3 SHEETS)
3100G	CONCRETE APRON FOR REINFORCED CONCRETE PIPE
3110G	CONCRETE APRON FOR REINFORCED CONCRETE PIPE-ARCH
3128H	METAL SAFETY APRON & GRATE (2 SHEETS)
3133D	RIPRAP AT RCP OUTLETS
3145G	CONCRETE PIPE OR PRECAST BOX CULVERT TIES
4006L	MANHOLE OR CATCH BASIN PRECAST - DESIGNS G AND H
4010H	CONCRETE SHORT CONE & ADJUSTING RING (SECTIONAL CONCRETE)
4011E	PRECAST CONCRETE BASE
4018B	MANHOLE OR CATCH BASIN (REDUCER CONE SECTION PRECAST) - DESIGN D
4020J	MANHOLE OR CATCH BASIN (FOR USE WITH OR WITHOUT TRAFFIC LOADS) (2 SHEETS)
4026A	CONCRETE ENCASED CONCRETE ADJUSTING RINGS
4101D	RING CASTING FOR MANHOLE OR CATCH BASIN
4125D	CATCH BASIN FRAME CASTING (FOR SQUARE GRATE) - CASTING NO. 806
4134A	CURB BOX CASTING FOR CATCH BASIN (FOR DESIGN B CURBS)- CASTING NO. 825
4140D	SPECIAL GRATE CASTINGS FOR CATCH BASIN (CONVEX AND CONCAVE) - CASTING NO. 720
4143E	STOOL GRATE & CONCRETE FRAME (MEDIAN DRAINS) - CASTING NO. 731
4154B	CATCH BASIN GRATE CASTING - CASTING NO. 816
4180J	MANHOLE OR CATCH BASIN STEP
7020K	CONCRETE CURB (DESIGN B, DESIGN V, DESIGN S, DESIGN DR AND DESIGN BR) (2 SHEETS)
7038A	DETECTABLE WARNING SURFACE TRUNCATED DOMES
7100H	CONCRETE CURB AND GUTTER (DESIGN B and DESIGN V)
7111J	INSTALLATION OF CATCH BASIN CASTINGS (CONCRETE CURB AND GUTTER)
7113A	CONCRETE APPROACH NOSE DETAIL
8000K	TEMPORARY CHANNELIZERS - TYPE A, B, C (3 SHEETS)
8106D	EQUIPMENT PAD B
8111E	TRAFFIC SIGNAL BRACKETING (PEDESTAL MOUNTED) (3 SHEETS)
8112I	PEDESTAL FOUNDATION (FOR TRAFFIC CONTROL SIGNALS)
8118D	SERVICE EQUIPMENT & POLE-TRAFFIC CONTROL SIGNALS
8119C	GROUND MOUNTED CABINET FOUNDATION
8121H	TRANSFORMER BASE & POLE BASE PLATE (2 SHEETS)
8122F	PEDESTAL AND PEDESTAL BASE (FOR TRAFFIC CONTROL SIGNALS SUPPORT) (2 SHEETS)
8123G	POLE & MAST ARM-LUMINAIRES & TRAFFIC LIGHTS ASSEMBLY (2 SHEETS)
8126L	POLE FOUNDATION ( PA90 & PA100)
8129A	SHIM AND WASHER (TRAFFIC CONTROL SIGNALS AND ROADWAY LIGHTING)
8337D	TEMPORARY PORTABLE PRECAST CONCRETE BARRIER - TYPE F (3 SHEETS)
9000E	APPROACHES AND ENTRANCES - RECOMMENDED STANDARDS
9322K	CHAIN LINK FENCE (2 SHEETS)
9350B	MAILBOX SUPPORT - SWING-AWAY TYPE

### BASIS OF QUANTITIES

SPEC NO.	DESCRIPTION	RATE
2123.610	STREET SWEEPER (WITH PICKUP BROOM)	PROJECT LENGTH / 3 MPH FOR 90 DAYS
2357.502	BITUMINOUS MATERIAL FOR TACK COAT	0.05 GAL / SQ YD / LIFT
2360.501	TYPE SP12.5 WEARING COURSE MIXTURE	115 LBS / SQ YD / IN
2360.502	TYPE SP12.5 NON-WEARING COURSE MIXTURE	115 LBS / SQ YD / IN
2574.509	LIME	3 TONS / ACRE
2575.532	FERTILIZER TYPE 3	350 LBS / ACRE
2575.532	FERTILIZER TYPE 4	150 LBS / ACRE
2575.508	SEED MIXTURE 25-121	61 LBS / ACRE
2575.508	SEED MIXTURE 25-131	220 LBS / ACRE
2575.508	SEED MIXTURE 33-261	35 LBS / ACRE
2575.508	SEED MIXTURE 35-241	36.5 LBS / ACRE
2575.508	HYDRAULIC REINFORCED FIBER MATRIX	3900 LBS / ACRE
2575.523	RAPID STABILIZATION METHOD 3	6 M GALLONS / ACRE

### INDEX OF TABULATION CHARTS

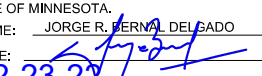
TAB	DESCRIPTION	SHEET NO.
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NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-614-048\Plan\002614048\_TAB.dgn 02/24/2022 1:05:39 PM

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PRINT NAME: JORGE R. FERNANDEZ DELGADO

SIGNATURE: 

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**ANOKA COUNTY  
HIGHWAY DEPT.**

SAP 002-614-048  
SAP 106-020-037

STANDARD PLATES,  
BASIS OF QUANTITIES,  
& TABULATIONS INDEX

EARTHWORK TABULATIONS				AA	
STATION	EXCAVATION TOTALS			EMBANKMENT TOTALS	
	EXCAVATION - COMMON	EXCAVATION - SUBGRADE	EXCAVATION - MUCK	COMMON EMBANKMENT	SELECT GRANULAR EMBANKMENT
	CY	CY	CY	CY	CY
<b>CSAH 14</b>					
205+00.00					
205+19.75	4			7	
205+50.00	8			18	
205+74.26	24			22	
206+00.00	50			26	
206+50.00	124			46	
207+00.00	158			44	
207+50.00	147			43	
208+00.00	108			39	
208+17.38	34			12	
208+50.00	64			22	
209+00.00	94			31	
209+50.00	144	76		54	70
209+90.32	141	118		74	113
210+00.00	30	27		21	27
210+33.15	104	93		93	93
210+50.00	53	47		56	47
210+60.49	34	30		35	29
210+73.07	42	36		42	35
211+00.00	92	75		100	75
211+50.00	178	140		200	140
211+60.59	38	30		41	30
212+00.00	142	110		144	110
212+45.70	162	128		150	128
212+50.00	14	12		12	12
213+00.00	178	134	94	249	145
213+50.00	179	125	183	339	149
214+00.00	172	126	136	282	146
214+50.00	173	126	108	240	144
215+00.00	180	117	220	330	142
215+22.63	86	50	154	194	64
215+50.00	109	58	189	232	77
216+00.00	204	104	330	404	141
216+50.00	224	102	352	411	141
217+00.00	278	104	345	414	141
217+47.18	300	100	296	383	133
217+50.00	19	6	18	24	8
218+00.00	335	107	316	413	141
218+50.00	342	106	315	392	141
219+00.00	342	105	307	346	141
219+50.00	342	105	306	331	141
219+72.68	154	48	133	145	64
<b>SUBTOTAL (A)</b>	<b>5,606</b>	<b>2,545</b>	<b>3,802</b>	<b>6,461</b>	<b>2,968</b>

EARTHWORK TABULATIONS				AA	
STATION	EXCAVATION TOTALS			EMBANKMENT TOTALS	
	EXCAVATION - COMMON	EXCAVATION - SUBGRADE	EXCAVATION - MUCK	COMMON EMBANKMENT	SELECT GRANULAR EMBANKMENT
	CY	CY	CY	CY	CY
<b>CSAH 14 (CONTINUED)</b>					
220+00.00	180	57	157	162	77
220+50.00	337	106	300	297	141
221+00.00	341	106	310	317	141
221+18.47	123	39	122	127	52
221+50.00	204	66	190	188	89
222+00.00	315	105	281	272	142
222+50.00	315	104	312	311	144
223+00.00	308	104	322	330	146
223+27.13	175	66	144	158	80
223+50.00	152	57	112	126	68
223+58.01	53	18	44	48	24
223+68.48	67	27	49	58	31
224+00.00	190	77	166	197	95
224+50.00	262	95	354	400	146
225+00.00	218	86	396	461	140
225+50.00	195	84	415	526	140
225+62.08	45	20	103	138	34
226+00.00	140	63	338	450	106
226+50.00	190	84	467	623	143
227+00.00	196	94	483	646	154
227+50.00	189	101	516	675	166
227+64.71	53	30	161	206	50
228+00.00	119	71	398	505	120
228+50.00	164	100	587	730	170
229+00.00	172	101	550	671	170
229+50.00	180	101	520	646	170
229+83.05	121	69	345	451	112
230+00.00	66	36	173	229	58
230+50.00	212	108	521	676	170
231+00.00	225	115	522	685	170
231+50.00	249	111	498	659	170
231+90.50	283	118	193	263	144
233+00.00	875	349	286	456	392
234+00.00	829	265	506	721	342
234+02.04	19	5	10	14	7
234+50.00	439	128	243	324	163
235+00.00	455	134	259	340	170
235+12.09	110	33	63	78	41
235+50.00	347	102	206	269	129
236+00.00	457	135	277	408	170
236+14.51	131	39	80	123	49
236+50.00	321	96	192	304	121
<b>SUBTOTAL (B)</b>	<b>10,022</b>	<b>3,805</b>	<b>12,171</b>	<b>15,268</b>	<b>5,347</b>

NO	DATE	BY	CKD	APPR	REVISION
NAME: P:\002-614-048\Plan\002614048_TAB.dgn					
02/09/2022 2:56:58 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: JORGE R. BERNAL DELGADO

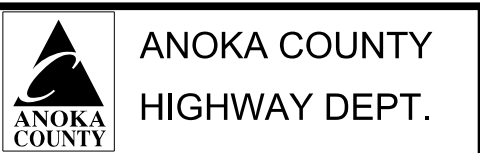
SIGNATURE: *[Signature]*

DATE: 02-14-22 LICENSE NO. 57216

DRAWN BY: BTU DATE: 02/07/22

DESIGN BY: JRB DATE: 02/07/22

CHECKED BY: NJD DATE: 02/07/22



SAP 002-614-048  
SAP 106-020-037

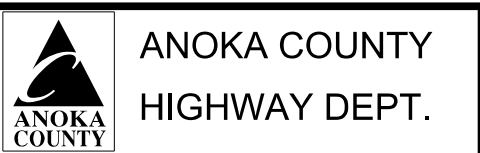
EARTHWORK TABULATIONS				AA	
STATION	EXCAVATION TOTALS			EMBANKMENT TOTALS	
	EXCAVATION - COMMON	EXCAVATION - SUBGRADE	EXCAVATION - MUCK	COMMON EMBANKMENT	SELECT GRANULAR EMBANKMENT
	CY	CY	CY	CY	CY
<b>CSAH 14 (CONTINUED)</b>					
237+00.00	443	132	278	430	170
237+42.21	421	122	183	279	144
237+50.00	80	25	23	36	26
238+00.00	432	136	266	319	170
238+18.41	146	41	139	147	63
238+50.00	246	70	249	262	108
239+00.00	417	136	338	373	170
239+12.71	117	41	66	81	43
239+50.00	304	98	287	312	127
239+78.00	206	61	229	226	94
240+00.00	155	48	157	150	73
240+27.75	162	53	230	229	86
240+50.00	122	38	177	178	64
240+76.45	144	56	150	166	75
241+00.00	117	49	131	149	66
241+50.00	221	84	363	363	140
241+72.77	103	40	155	147	64
242+00.00	119	48	196	197	76
242+41.90	168	78	349	377	122
242+50.00	32	17	65	72	25
243+00.00	190	104	397	465	150
243+50.00	178	100	414	502	147
244+00.00	180	98	399	500	145
244+47.69	182	94	346	448	136
244+50.00	9	5	15	20	7
244+77.14	107	56	156	205	77
245+00.00	95	47	138	192	65
245+50.00	259	100	348	508	141
246+00.00	279	101	351	519	139
246+50.00	301	103	351	515	138
246+60.21	70	21	71	106	28
247+00.00	281	83	276	405	110
247+50.00	347	105	337	498	139
247+95.64	339	97	299	425	127
248+00.00	36	9	28	39	12
248+50.00	425	108	311	425	140
249+00.00	459	109	285	380	140
249+36.82	374	82	174	221	103
249+50.00	149	27	49	53	37
249+54.54	55	11	11	13	13
249+72.81	216	46	30	34	51
249+94.38	231	48	66	68	61
<b>SUBTOTAL (C)</b>	<b>8,917</b>	<b>2,927</b>	<b>8,883</b>	<b>11,034</b>	<b>4,012</b>

EARTHWORK TABULATIONS				AA	
STATION	EXCAVATION TOTALS			EMBANKMENT TOTALS	
	EXCAVATION - COMMON	EXCAVATION - SUBGRADE	EXCAVATION - MUCK	COMMON EMBANKMENT	SELECT GRANULAR EMBANKMENT
	CY	CY	CY	CY	CY
<b>CSAH 14 (CONTINUED)</b>					
250+00.00	56	12	25	25	16
250+50.00	477	111	238	268	141
251+00.00	462	112	244	283	141
251+50.00	465	113	249	276	141
251+72.67	214	51	114	122	64
252+00.00	261	62	137	146	77
252+50.00	487	113	245	260	143
252+74.18	248	61	93	104	71
253+00.00	264	66	103	113	76
253+50.00	483	113	256	258	149
254+00.00	472	112	253	250	151
254+06.29	57	13	31	31	18
254+50.00	379	84	228	225	122
255+00.00	390	93	307	328	140
255+50.00	348	90	341	393	140
255+79.48	221	61	161	206	82
256+00.00	154	42	109	146	57
256+50.00	322	88	316	399	140
256+75.06	159	50	135	180	70
257+00.00	152	50	140	187	70
257+50.00	259	84	385	440	141
258+00.00	235	85	468	510	144
258+19.55	91	37	199	223	60
258+50.00	138	62	322	373	99
259+00.00	244	100	535	682	167
259+50.00	249	99	504	700	170
259+80.07	118	59	296	414	102
259+81.76	6	3	17	23	6
260+00.00	57	35	186	259	62
260+50.00	143	96	529	752	170
260+83.54	102	77	252	396	114
261+00.00	51	39	115	172	56
261+18.55	50	36	191	268	63
261+22.50	10	8	43	65	13
261+50.00	69	52	308	496	94
262+00.00	156	95	601	1067	170
262+50.00	203	105	640	1018	236
262+52.17	10	5	27	35	13
262+72.35	103	62	189	259	116
263+00.00	122	83	256	371	149
263+50.00	155	103	584	884	223
264+00.00	168	97	582	895	180
<b>SUBTOTAL (D)</b>	<b>8,810</b>	<b>2,919</b>	<b>10,954</b>	<b>14,502</b>	<b>4,557</b>

NO	DATE	BY	CKD	APPR	REVISION
NAME: P:\002-614-048\Plan\002614048_TAB.dgn 02/09/2022 2:57:03 PM					

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.  
 PRINT NAME: JORGE R. BERNAL DELGADO  
 SIGNATURE: *[Signature]*  
 DATE: 02-14-22 LICENSE NO. 57216

DRAWN BY: BTU DATE: 02/07/22  
 DESIGN BY: JRB DATE: 02/07/22  
 CHECKED BY: NJD DATE: 02/07/22



SAP 002-614-048  
 SAP 106-020-037



EARTHWORK TABULATIONS					AA
STATION	EXCAVATION TOTALS			EMBANKMENT TOTALS	
	EXCAVATION - COMMON	EXCAVATION - SUBGRADE	EXCAVATION - MUCK	COMMON EMBANKMENT	SELECT GRANULAR EMBANKMENT
	CY	CY	CY	CY	CY
<b>CSAH 14 (CONTINUED)</b>					
264+50.00	194	99	545	784	179
264+53.39	15	7	36	49	12
265+00.00	207	94	479	625	167
265+50.00	253	102	497	594	180
266+00.00	285	104	466	494	180
266+50.00	310	105	454	424	181
266+70.20	130	43	193	174	73
267+00.00	190	63	284	257	107
267+50.00	292	107	451	426	175
268+00.00	258	108	424	433	172
268+50.00	226	110	398	440	172
268+79.81	122	67	235	279	103
269+00.00	80	46	162	203	69
269+50.00	200	117	391	525	172
269+90.81	179	99	318	457	140
270+00.00	42	23	72	108	32
270+50.00	234	129	380	577	172
271+00.00	247	134	338	532	172
271+50.00	251	139	306	485	172
272+00.00	264	148	251	417	172
272+50.00	271	153	183	332	172
272+93.01	221	134	122	233	148
273+00.00	34	22	16	33	24
273+50.00	232	155	116	243	172
273+69.88	86	62	47	101	68
274+00.00	125	94	72	153	104
274+50.00	204	157	120	263	172
275+00.00	203	157	119	277	172
275+45.93	201	171	54	149	177
275+50.00	19	17		3	17
275+55.01	24	22		3	22
<b>SUBTOTAL (E)</b>	<b>5,599</b>	<b>2,988</b>	<b>7,529</b>	<b>10,073</b>	<b>4,050</b>

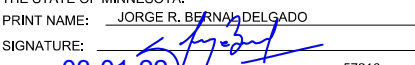

EARTHWORK TABULATIONS					AA
STATION	EXCAVATION TOTALS			EMBANKMENT TOTALS	
	EXCAVATION - COMMON	EXCAVATION - SUBGRADE	EXCAVATION - MUCK	COMMON EMBANKMENT	SELECT GRANULAR EMBANKMENT
	CY	CY	CY	CY	CY
<b>NORTH LAKE BLVD</b>					
11+00.00					
11+50.00	74	58		46	58
12+00.00	100	91		32	91
12+50.00	121	115		22	115
13+00.00	174	115		22	115
13+50.00	219	116		25	116
<b>SUBTOTAL (F)</b>	<b>688</b>	<b>495</b>		<b>147</b>	<b>495</b>
<b>LEGACY CREEK PARKWAY</b>					
50+50.00					
50+60.28	42	26		6	26
51+00.00	167	103		21	103
51+50.00	189	140		27	140
52+00.00	115	106		17	106
52+50.00	71	67		4	67
53+00.00	68	66		4	66
53+50.00	56	63		2	63
<b>SUBTOTAL (G)</b>	<b>708</b>	<b>571</b>		<b>81</b>	<b>571</b>
<b>ZEST STREET</b>					
102+00.00					
102+13.10	12			22	25
102+27.18	14			23	26
102+50.00	23			29	43
102+86.43	38			36	69
103+00.00	16			12	26
103+50.00	67			33	90
103+72.29	32			9	36
104+00.00	41			15	43
104+50.00	87			38	78
104+82.10	52			25	47
105+00.00	29			12	25
105+01.83	3			1	3
<b>SUBTOTAL (H)</b>	<b>414</b>			<b>255</b>	<b>511</b>

POND EARTHWORK SUMMARY						AB
	EXCAVATION - COMMON	EXCAVATION - CHANNEL AND POND	COMMON EMBANKMENT	CLAY LINER [1]	FILTER TOPSOIL [2]	MEDIUM FILTER AGGREGATE [3]
	CY	CY	CY	CY	CY	CY
	POND 100	3001		239	682	288
POND 400	2014		524			
POND 500a	1299		187			
POND 500b	1051		148	536	65	71
POND 700		2469	398			
<b>TOTAL</b>	<b>7365</b>	<b>2469</b>	<b>1496</b>	<b>1218</b>	<b>353</b>	<b>503</b>

EARTHWORK SUMMARY						AA
	EXCAVATION TOTALS				EXCAVATION TOTALS	
	EXCAVATION - COMMON	EXCAVATION - SUBGRADE	EXCAVATION - MUCK	EXCAVATION - CHANNEL AND POND	COMMON EMBANKMENT	SELECT GRANULAR EMBANKMENT
	CY	CY	CY	CY	CY	CY
CSAH 14 SUBTOTAL (A)	5,606	2,545	3,802		6,461	2,968
CSAH 14 SUBTOTAL (B)	10,022	3,805	12,171		15,268	5,347
CSAH 14 SUBTOTAL (C)	8,917	2,927	8,883		11,034	4,012
CSAH 14 SUBTOTAL (D)	8,810	2,919	10,954		14,502	4,557
CSAH 14 SUBTOTAL (E)	5,599	2,988	7,529		10,073	4,050
NORTH LAKE BLVD SUBTOTAL (F)	688	495			147	495

**POND EARTHWORK NOTES**

- [1] PAID FOR AS COMMON BORROW SPECIAL (CV) 2105.607
- [2] PAID FOR AS FILTER TOPSOIL BORROW 2574.507
- [3] PAID FOR AS MEDIUM FILTER AGGREGATE 2451.607

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: JORGE R. BERNAL DELGADO SIGNATURE:  DATE: 03-01-22 LICENSE NO. 57216					DRAWN BY: BTU DATE: 02/16/22 DESIGN BY: JRB DATE: 02/16/22 CHECKED BY: NJD DATE: 02/16/22	 <b>ANOKA COUNTY</b> <b>HIGHWAY DEPT.</b>	SAP 002-614-048 SAP 106-020-037	<b>EARTHWORK SUMMARY</b> Sheet 9 of 303 Sheets
NO: _____ DATE: _____ BY: _____ CKD: _____ APPR: _____ REVISION: _____ NAME: P:\002-614-048\Plan\002614048_TAB.dgn 03/01/2022 1:56:25 PM								





CONCRETE														E	
ALIGNMENT	LOCATION		OFFSET		SPEC. 2531				SPEC. 2521			SPEC. 2531		SPEC. 2211	NOTES
					CONCRETE CURB AND GUTTER DESIGN B424	CONCRETE CURB AND GUTTER DESIGN B418	CONCRETE CURB AND GUTTER DESIGN B618 (MODIFIED)	CONCRETE CURB & GUTTER DESIGN B618	4" CONCRETE WALK	6" CONCRETE WALK	DRILL AND GROUT REINF BAR (EPOXY COATED)	CONCRETE MEDIAN NOSE-SPECIAL	TRUNCATED DOMES	AGGREGATE BASE CLASS 5 (4.0")	
					(LIN FT)	(LIN FT)	(LIN FT)	(LIN FT)	SQ FT	SQ FT	EACH	EACH	SQ FT	(TON)	
<14E_4>	209+31.29	- 216+00.00	20' RT	- 20' RT	669										
<14E_4>	209+31.29	- 216+00.00	14' LT	- 14' LT		669			6464					145	[4]
<14E_4>	216+00.00	- 228+00.00	20' RT	- 25' RT	1200										
<14E_4>	216+00.00	- 228+00.00	14' LT	- 25' LT		1200			7907					178	[4]
<14E_4>	228+00.00	- 232+10.20	21' RT	- 65' RT	433					484	20		24	11	[3]
<14E_4>	228+00.00	- 231+57.50	25' LT	- 25' LT		357			1430	28		1		33	[1] [4]
<14E_4>	232+68.20	- 240+00.00	60' RT	- 20' RT	755					401	20		24	9	[3]
<14E_4>	233+09.71	- 240+00.00	14' LT	- 14' LT		690			4043	28		1		91	[1] [4]
<14E_4>	240+00.00	- 252+00.00	20' RT	- 20' RT	1199										
<14E_4>	240+00.00	- 252+00.00	14' LT	- 14' LT		1200			7454					167	[4]
<14E_4>	252+00.00	- 264+00.00	20' RT	- 25' RT	1201					355	20		72		[2] [3]
<14E_4>	252+00.00	- 261+96.76	14' LT	- 25' LT		997			8806	28		1		198	[1] [4]
<14E_4>	263+56.29	- 264+00.00	14' LT	- 14' LT		146			175	28		1			[1] [4]
<14E_4>	264+00.00	- 275+50.17	22' RT	- 32' RT	1151										
<14E_4>	264+00.00	- 275+43.15	14' LT	- 26' LT		1144			4575	848				122	[4]
<14W_4>	1209+32.00	- 1216+00.70	14' RT	- 14' RT		669									
<14W_4>	1209+32.00	- 1216+00.67	20' LT	- 20' LT	669										
<14W_4>	1216+00.67	- 1228+00.83	20' LT	- 20' LT	1200										
<14W_4>	1216+00.70	- 1228+00.83	14' RT	- 14' RT		1200									
<14W_4>	1228+00.83	- 1231+58.32	14' RT	- 14' RT		357									
<14W_4>	1228+00.83	- 1231+99.86	20' LT	- 51' LT	417										
<14W_4>	1232+62.45	- 1240+00.29	67' LT	- 22' LT	766										
<14W_4>	1233+10.53	- 1240+00.70	25' RT	- 19' RT		690									
<14W_4>	1240+00.29	- 1252+01.71	22' LT	- 20' LT	1202										
<14W_4>	1240+00.70	- 1252+01.14	19' RT	- 14' RT		1201									
<14W_4>	1252+01.71	- 1262+48.45	20' LT	- 56' LT	1008										
<14W_4>	1252+01.12	- 1261+97.46	14' RT	- 14' RT		996									
<14W_4>	1263+57.00	- 1264+00.71	25' RT	- 14' RT		146									
<14W_4>	1263+00.39	- 1264+00.71	59' LT	- 25' LT	120										
<14W_4>	1264+00.71	- 1275+44.00	14' RT	- 14' RT		1143									
<14W_4>	1264+00.71	- 1275+61.20	25' LT	- 75' RT	1198										
<NLAKEN_4>	10+56.11	- 10+64.51	17' RT	- 17' RT											
<NLAKEN_4>	10+56.11	- 13+52.88	0' LT	- 13' LT											
<NLAKEN_4>	10+64.51	- 13+42.91	17' RT	- 24' RT											
<NLAKES_4>	513+23.74	- 513+33.74	15' LT	- 15' LT		180									
<NLAKES_4>	513+23.74	- 513+33.74	2' RT	- 2' RT											
<NLAKES_4>	513+23.74	- 513+48.52	2' RT	- 2' RT											
<LEGACYN_4>	50+48.68	- 52+97.33	2' LT	- 11' LT		249			993	55		2		24	[1] [4]
<LEGACYN_4>	50+67.38	- 50+77.15	17' RT	- 20' RT					116					3	
<LEGACYS_4>	550+48.68	- 552+95.48	13' RT	- 3' RT		248									
<LEGACYS_4>	550+50.50	- 550+60.50	26' LT	- 26' LT					109					2	
<b>PROJECT TOTAL</b>					<b>13188</b>	<b>13302</b>	<b>339</b>	<b>708</b>	<b>45247</b>	<b>3581</b>	<b>120</b>	<b>7</b>	<b>168</b>	<b>1083</b>	

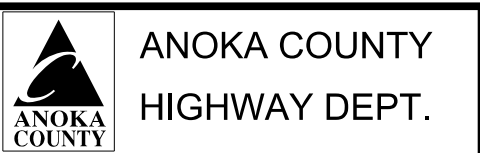
**CONCRETE NOTES:**  
 [1] MEDIAN NOSE PAID FOR AS CONCRETE MEDIAN NOSE-SPECIAL  
 [2] QUANTITY FOR RADIAL TRUNCATED DOME PLATES (35 FT RADIUS)  
 [3] SEE STANDARD PLATE 7038 FOR DETAILS.  
 [4] MEDIAN PAID FOR AS 4" CONCRETE WALK.

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-614-048\Plan\002614048\_TAB.dgn 02/24/2022 1:05:48 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: JORGE R. BERNAL DELGADO  
 SIGNATURE: *[Signature]*  
 DATE: 02-23-22 LICENSE NO. 57216

DRAWN BY: BTU DATE: 02/16/22  
 DESIGN BY: JRB DATE: 02/16/22  
 CHECKED BY: NJD DATE: 02/16/22

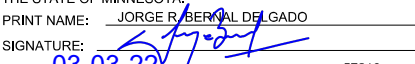



SAP 002-614-048  
 SAP 106-020-037

AGGREGATE AND BITUMINOUS SUMMARY													F
ALIGNMENT	LOCATION	MAINLINE				TRAIL		OVERLAY			STAGING		
		SPEC. 2211	SPEC. 2357	SPEC. 2360		SPEC. 2211	SPEC. 2360	SPEC. 2232	SPEC. 2357	SPEC. 2360	SPEC. 2211	SPEC. 2360	SPEC. 2112
		AGGREGATE BASE (CV) CLASS 5	BITUMINOUS MATERIAL FOR TACK COAT	TYPE SP 12.5 NON WEAR COURSE MIX (3;B)	TYPE SP 12.5 WEARING COURSE MIX (3;F)	AGGREGATE BASE CLASS 5	TYPE SP 9.5 WEARING COURSE MIX (2;B)	MILL BITUMINOUS SURFACE (2.0")	BITUMINOUS MATERIAL FOR TACK COAT	TYPE SP 12.5 WEAR (3;F)	AGGREGATE BASE CLASS 5	TYPE SP 12.5 BIT MIXTURE FOR PATCHING	SHOULDER PREPARATION
STATION TO STATION	(CU YD)	(GALLON)	(TON)	(TON)	(TON)	(TON)	(SQ YD)	(GALLON)	(TON)	(TON)	(TON)	(LIN FT)	
<14E_4>	205+40.50 - 209+31.29					89	68	1323	66	304			
<14E_4>	209+31.29 - 216+00.00	859	453	521	521	135	103				42	36	
<14E_4>	216+00.00 - 228+00.00	1597	847	974	974	243	184				40	34	
<14E_4>	228+00.00 - 240+00.00	1806	973	1119	1119	219	164				21	18	
<14E_4>	240+00.00 - 252+00.00	1541	813	935	935	243	184				14	12	
<14E_4>	252+00.00 - 264+00.00	1903	1030	1185	1185	229	172				20	17	
<14E_4>	264+00.00 - 275+78.45	2073	1135	1305	1305	285	221				91	78	
<14W_4>	1205+41.21 - 1209+32.00							1803	90	415			
<14W_4>	1209+32.00 - 1210+24.73	119	63	72	72								
<14W_4>	1210+24.73 - 1216+00.69	740	293	449	449								
<14W_4>	1216+00.69 - 1228+00.83	1538	406	933	933								
<14W_4>	1228+00.83 - 1240+00.47	2000	544	1252	1252								
<14W_4>	1240+00.47 - 1252+01.37	1549	409	941	941								
<14W_4>	1252+01.37 - 1264+00.71	1633	217	999	999								
<14W_4>	1264+00.71 - 1275+77.20	1813	445	1125	1125								
<NLAKEN_4>	10+56.11 - 13+82.69	383	115	198	99								
<NLAKES_4>	513+77.67 - 513+76.92	46	14	24	12								
<LEGACYN_4>	50+20.95 - 53+91.26	209	63	108	54								
<LEGACYS_4>	550+20.20 - 553+88.41	224	67	116	58								
<ZEST_E>	101+63.53 - 105+01.82	455	137	236	118								
<b>PROJECT TOTAL</b>		<b>20488</b>	<b>8024</b>	<b>12492</b>	<b>12151</b>	<b>1443</b>	<b>1096</b>	<b>3126</b>	<b>156</b>	<b>719</b>	<b>228</b>	<b>195</b>	<b>474</b>

TURF ESTABLISHMENT AND EROSION CONTROL																	G
ALIGNMENT	LOCATION	SPEC. 2573					SPEC. 2574			SPEC. 2575							
		SILT FENCE TYPE MACHINE SLICED	FILTER BERM TYPE 3 (ROCK WEEPER)	SEDIMENT CONTROL LOG TYPE WOOD FIBER	CULVERT END CONTROLS	STORM DRAIN INLET PROTECTION	FERTILIZER		SEEDING	SEED MIXTURE				HYDRAULIC REINFORCED FIBER MATRIX	RAPID STABILIZATION METHOD 3	ROLLED EROSION PREVENTION CATEGORY 10	ROLLED EROSION PREVENTION CATEGORY 25
		(LIN FT)	(LIN FT)	(LIN FT)	(EACH)	(EACH)	TYPE 3 (22-5-10)	TYPE 4 (17-10-7)		(ACRE)	25-121	25-131	33-261				
STATION TO STATION	(LIN FT)	(LIN FT)	(LIN FT)	(EACH)	(EACH)	(POUND)	(POUND)	(ACRE)	(POUND)	(POUND)	(POUND)	(POUND)	(POUND)	(M GALLON)	(SQ YD)	(SQ YD)	
<14W_4>	1209+32.00 - 1216+00.00	1090			1	3	69		0.2	12				770	1.2		
<14W_4>	1216+00.00 - 1228+00.00	183				9	117		0.4	16				1,012	2.4	368	
<14W_4>	1228+00.00 - 1240+00.00	489			1	12	110		0.4	9	36			586	2.4	789	
<14W_4>	1240+00.00 - 1252+00.00	1647			2	7	177	30	0.8	31			7	1,973	4.8	952	
<14W_4>	1252+00.00 - 1264+00.00	882				6	131		0.4	23				1,456	2.4		
<14W_4>	1264+00.00 - 1275+77.20	1582			1	9	125		0.4	22				1,389	2.4		
<b>LWB TOTAL</b>		<b>5873</b>			<b>5</b>	<b>46</b>	<b>729</b>	<b>30</b>	<b>2.6</b>	<b>113</b>	<b>53</b>		<b>7</b>	<b>7186</b>	<b>15.6</b>	<b>2109</b>	
<14E_4>	204+87.32 - 216+00.00	186	69	375	2	8	233	52	1.1	41		6	6	2,601	6.6	893	
<14E_4>	216+00.00 - 228+00.00					9	164		0.5	29				1,826	3.0		
<14E_4>	228+00.00 - 240+00.00	1605			1	10	251	24	0.9	44			6	2,795	5.4	774	
<14E_4>	240+00.00 - 252+00.00	1091				8	157		0.5	27				1,747	3.0		
<14E_4>	252+00.00 - 264+00.00	2528			2	8	218	27	0.8	38			6	2,430	4.8	856	
<14E_4>	264+00.00 - 275+78.45	2130				12	143		0.5	25				1,598	3.0		
<b>LEB TOTAL</b>		<b>7540</b>	<b>69</b>	<b>375</b>	<b>5</b>	<b>55</b>	<b>1,166</b>	<b>103</b>	<b>4.3</b>	<b>204</b>		<b>6</b>	<b>18</b>	<b>12997</b>	<b>25.8</b>	<b>893</b>	<b>2401</b>
<NLAKEN_4>	10+48.83 - 14+03.00	596				3	10		0.1		6				0.6	141	
<NLAKES_4>	511+76.26 - 513+18.68	143				2	20		0.1		13				0.6	277	
<LEGACYN_4>	50+00.00 - 53+93.41					2	6		0.1		4				0.6	77	
<LEGACYS_4>	550+38.17 - 553+79.94					4	13		0.1		8				0.6	183	
<ZEST_E>	101+43.01 - 105+11.82	673			1		86		0.3	8	26			491	1.8	573	
<b>CROSS STREET TOTAL</b>		<b>1412</b>			<b>1</b>	<b>11</b>	<b>135</b>		<b>0.7</b>	<b>8</b>	<b>57</b>			<b>491</b>	<b>4.2</b>	<b>1251</b>	
<b>PROJECT TOTAL</b>		<b>14825</b>	<b>69</b>	<b>375</b>	<b>11</b>	<b>112</b>	<b>2030</b>	<b>133</b>	<b>7.6</b>	<b>325</b>	<b>110</b>	<b>6</b>	<b>25</b>	<b>20674</b>	<b>45.6</b>	<b>893</b>	<b>5761</b>

**GENERAL NOTES:**  
- RAPID STABILIZATION METHOD 3 TO BE APPLIED AS NECESSARY, AS DIRECTED BY ENGINEER.  
- TURF ESTABLISHMENT TO BE COMPLETED AS DIRECTED IN THE SWPPP, SEE SHEET 105.  
- DOUBLE ROW OF SILT FENCE TO BE USED ALONG WETLAND AND AS SHOWN ON PLANS.  
- FOR FILTER BERM TYPE 3 INFORMATION, SEE POND 100 GRADING SHEET 123.

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: JORGE R. BERNAL DELGADO SIGNATURE:  DATE: 03-03-22 LICENSE NO. 57216					DRAWN BY: BTU DATE: 02/16/22 DESIGN BY: JRB DATE: 02/16/22 CHECKED BY: NJD DATE: 02/16/22		 <b>ANOKA COUNTY HIGHWAY DEPT.</b>		SAP 002-614-048 SAP 106-020-037		TABULATIONS Sheet 13 of 303 Sheets	
NO	DATE	BY	CKD	APPR	REVISION	NAME: P:\002-614-048\Plan\002614048_TAB.dgn 03/03/2022 12:04:04 PM						

TEMPORARY BARRIER								H	
PORTABLE PRECAST CONC BARRIER DES 8337								IMPACT ATTENUATOR ASSEMBLY	NOTES
ALIGNMENT	STAGE	BEGIN		END		LENGTH	BARRIER SECTIONS		
<14E_4>	1	STATION	OFFSET	STATION	OFFSET	LIN FT			
		208+00.06	11 RT	222+15.31	3 LT	1416	114	2	
TOTAL STAGE 1						1416	114	2	[1][2][3]
<14E_4>	2	208+31.23	51 LT	211+81.78	35 LT	351	29	2	[1][2][3]
<14E_4>	2	262+56.36	12 LT	275+61.23	47 LT	1306	105	2	[1][2]
TOTAL STAGE 2						1657	134	4	
PROJECT TOTAL						3073	248	6	

**NOTES**

- [1] LENGTH OF BARRIER DOES NOT INCLUDE IMPACT ATTENUATOR.
- [2] TEMPORARY IMPACT ATTENUATOR TEST LEVEL 3. SHALL BE THE SAME CROSS SECTION OF BARRIER.
- [3] USE 15:1 TAPER AT ENDS AS SHOWN IN STAGING PLAN.

FENCING						L
ALIGNMENT	STATION TO STATION	OFFSET		REMOVE FENCE (LIN FT)	WIRE FENCE DESIGN 48V-9322 (LIN FT)	NOTES
		LEFT	RIGHT			
14W_4	1221+20 - 1223+13	32		205		
14W_4	1223+34 - 1223+50	23		38		
14E_4	261+00 - 262+00				100	[1]
TOTAL				243	100	

[1] SEE STANDARD PLATE 9322

UTILITY OWNERS		T
<p><b>ANOKA COUNTY SIGNALS</b> 1440 BUNKER LAKE BLVD NW ANDOVER, MN 55304 CONTACT MARK LEKSON SIGNALS - CONSTRUCTION TEL: 763-324-3139</p> <p><b>ARVIG</b> CONTACT CURTIS OLSON TEL: 320-256-0251</p> <p><b>CENTURYLINK</b> TERRATECH LLC. CONTACT CHARLES DAHER TEL: 612-298-2825</p> <p><b>CENTERPOINT ENERGY</b> 700 WEST LINDEN AVE PO BOX 1165 MINNEAPOLIS, MN 55440-1165 CONTACT NICHOLAS LARSON TEL:</p> <p><b>CITY OF BLAINE</b> 10801 TOWN SQUARE DRIVE NE BLAINE, MN 55449 CONTACT DAN SCHLUENDER CITY ENGINEER TEL: 763-785-6158</p>	<p><b>COMCAST</b> 4255 LEXINGTON AVE STE 100 ARDEN HILLS, MN 55126 CONTACT LUKE BASTIL TEL: 651-493-5405</p> <p><b>CONNEXUS ENERGY</b> 14601 RAMSEY BLVD NW RAMSEY, MN CONTACT GREGORY PLUMEDAHL TEL: 763-286-1225</p> <p><b>GREAT RIVER ENERGY</b> 12300 ELM CREEK BOULEVARD MAPLE GROVE, MN 55369-4718 CONTACT MICHELLE MACMILLAN TEL: 763-445-5984</p> <p><b>MCI-VERIZON</b> MASTEC CONTACT</p>	

SANITARY SEWER - CITY OF BLAINE										U	
ALIGNMENT	LOCATION		OFFSET		INPLACE ITEM	EXISTING RIM ELEVATION	PROPOSED RIM ELEVATION	ADJUST FRAME AND RING CASTING EACH	RECONSTRUCT STRUCTURE LIN FT	CASTING ASSEMBLY [1] EACH	REMARKS
	STATION TO STATION	FROM	TO								
<14E_4>	232+33.78	-	232+35.11	72 LT - 45 RT	12" PVC						LEAVE
<NLAKEN_4>	10+00.00	-	13+57.18	10 LT - 9 LT	12" PVC						LEAVE
<NLAKEN_4>			13+57.18	9 LT	MANHOLE	905.1	903.6		2.4	1	[1]
<LEGACYN_4>			50+29.16	10 LT	MANHOLE	904.1	903.8	1			ADJUST
<LEGACYN_4>	50+29.16	-	52+20.24	10 LT - 15 LT	12" PVC						LEAVE
<LEGACYN_4>			52+20.24	15 LT	MANHOLE	904.8	904.2	1			ADJUST
<LEGACYN_4>	52+20.24	-	54+14.16	15 LT - 14 LT	12" PVC						LEAVE
<LEGACYN_4>			54+14.16	14 LT	MANHOLE						LEAVE
TOTAL								2	2.4	1	

**GENERAL NOTES:**  
PIPE SIZE AND CLASS OBTAINED FROM CITY AS BUILT PLANS WHERE AVAILABLE.  
INFORMATION SHALL BE VERIFIED BY CONTRACTOR.

**NOTES:**  
[1] USE CASTING ASSEMBLY TYPE 'F' FROM CASTING ASSEMBLY SUMMARY.

WATER - CITY OF BLAINE							V
ALIGNMENT	LOCATION		OFFSET		INPLACE ITEM	REMARKS	
	STATION TO STATION	FROM	TO				
<14E_4>	232+25.11	-	232+26.13	63 LT - 40 RT	8" PVC MAIN - 16" STEEL CASING	LEAVE	
<NLAKEN_4>	10+00.00	-	13+62.78	20 LT - 18 LT	8" PVC	LEAVE	
<NLAKEN_4>			13+01.42	40 LT	HYDRANT	LEAVE	
<NLAKEN_4>	13+01.42	-	12+98.79	40 LT - 22 LT	6" DIP	LEAVE	
<NLAKEN_4>			13+01.08	38 LT	GATE VALVE	LEAVE	
<NLAKEN_4>			13+62.78	18 LT	GATE VALVE	ADJUST [1]	
<LEGACYN_4>			50+20.06	19 LT	GATE VALVE	ADJUST [1]	
<LEGACYN_4>	50+20.06	-	54+15.62	19 LT - 24 LT	8" PVC	LEAVE	
<LEGACYN_4>			50+60.28	24 LT	GATE VALVE	ADJUST [1]	
<LEGACYN_4>	50+60.31	-	51+07.78	20 LT - 139 LT	4" DIP IRRIGATION SERVICE	LEAVE	
<LEGACYN_4>			50+69.13	49 LT	GATE VALVE	LEAVE	
<LEGACYN_4>			50+69.53	51 LT	HYDRANT	LEAVE	
<LEGACYN_4>	50+69.53	-	50+70.93	51 LT - 20 LT	6" DIP	LEAVE	
TOTAL						ADJUST [3]	

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-614-048\Plan\002614048\_TAB.dgn 02/24/2022 1:05:52 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: JORGE R. BERNAL DRAGADO

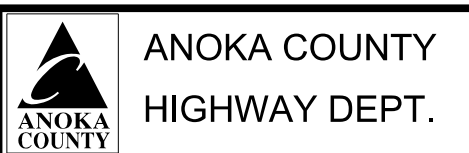
SIGNATURE: *[Signature]*

DATE: 02-23-22 LICENSE NO. 57216

DRAWN BY: BTU DATE: 02/16/22

DESIGN BY: JRB DATE: 02/16/22

CHECKED BY: NJD DATE: 02/16/22



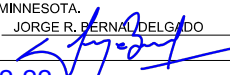
SAP 002-614-048  
SAP 106-020-037

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.
13. 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.
14. 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.
15. 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.
16. 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.
18. 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.
19. 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.
20. 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.
21. 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.
22. 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.
23. 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.
24. INPLACE BITUMINOUS PAVEMENT RANGES FROM 6" TO 10" THICK (AVERAGE 8"). FOR INFORMATION ONLY, NO WARRANTY IS MADE OR IMPLIED WITH THIS INFORMATION. CONTRACTOR MAY VERIFY PAVEMENT DEPTH PRIOR TO PLACING BID.
25. 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."
26. 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."
27. 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
NAME: P:\002-614-048\Plan\002614048_TAB.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: JORGE R. BERNAL DELGADO

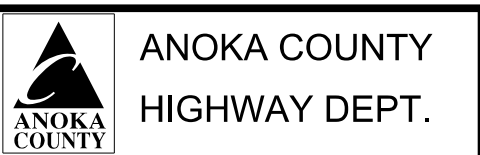
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DATE: 03-02-22 LICENSE NO. 57216

DRAWN BY BTU DATE 02/16/22

DESIGN BY JRB DATE 02/16/22

CHECKED BY NJD DATE 02/16/22



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SAP 106-020-037

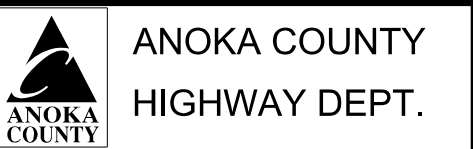
GAS - CENTERPOINT ENERGY						W
ALIGNMENT	LOCATION		OFFSET		SIZE & ITEM	REMARKS
	STATION	TO STATION	FROM	TO		
<14E_4>	204+64.26	- 231+85.43	34 RT	- 40 RT	6" ST	HIGH PRESSURE MAIN
<14E_4>	204+80.50	- 216+04.35	65 LT	- 37 LT	4" PVC	VERIFY CONFLICT / RELOCATE
<14E_4>	204+90.87	- 216+04.35	41 LT	- 37 LT		ABANDONED
<14E_4>	216+04.35	- 231+86.58	37 LT	- 40 LT	4" PVC	VERIFY
<14E_4>	231+76.40	- 232+00.80	40 LT	- 85 LT	2" PVC	VERIFY CONFLICT / RELOCATE
<14E_4>	231+86.58	- 232+02.10	40 LT	- 48 RT	4" PVC	VERIFY
<14E_4>	231+86.58	- 262+93.67	40 LT	- 51 LT	4" PVC	UNDER ROAD
<14E_4>	262+93.67	- 268+44.63	51 LT	- 47 LT	4" PVC	UNDER ROAD
<14E_4>	268+44.63	- 275+34.17	47 LT	- 73 LT	6" ST	VERIFY CONFLICT / RELOCATE
<14E_4>	268+44.63	- 275+98.50	47 LT	- 50 LT		ABANDONED
<14E_4>	275+34.17	- 275+66.29	73 LT	- 76 RT	6" ST	UNDER ROAD
<14E_4>	275+34.17	- 275+68.33	73 LT	- 112 LT	6" ST	VERIFY CONFLICT / RELOCATE
<14E_4>	275+48.41	- 275+68.33	189 LT	- 112 LT	6" ST	VERIFY
<14E_4>	275+65.80	- 275+75.54	87 LT	- 154 LT		ABANDONED
<14E_4>	275+67.25	- 275+68.33	154 LT	- 112 LT		ABANDONED
<14E_4>	275+86.24	- 275+92.21	50 LT	- 85 RT		ABANDONED
<14E_4>	275+93.04	- 275+98.50	160 LT	- 50 LT		ABANDONED
<NLAKEN_4>	10+46.92	- 12+22.75	43 LT	- 43 LT	6" ST	ALONG TRAIL
<NLAKEN_4>	12+22.75	- 12+79.17	43 LT	- 59 LT	6" ST	ALONG TRAIL
<NLAKEN_4>	12+22.75	- 13+55.36	43 LT	- 42 LT	6" ST	ALONG TRAIL
<NLAKEN_4>	12+79.17	- 13+63.41	59 LT	- 59 LT	6" ST	HIGH PRESSURE MAIN
<LEGACYN_4>	50+41.65	- 51+24.16	43 LT	- 133 LT	2" PVC	RELOCATE
<ZEST_E>	101+50.64	- 106+24.67	20 RT	- 17 RT	2" PVC	VERIFY CONFLICT / RELOCATE

INPLACE SIGNAL SYSTEMS - ACHD						X
ALIGNMENT	LOCATION		OFFSET		SIZE & ITEM	REMARKS
	STATION	TO STATION	FROM	TO		
<14E_4>	205+40.50	- 207+43.75	71 LT	- 70 LT	2" CONDUIT 1-12 SM FO CABLE	
<14E_4>		207+43.75	70 LT		HANDHOLE	
<14E_4>	207+43.75	- 209+62.00	70 LT	- 65 LT	2" CONDUIT 1-12 SM FO CABLE	
<14E_4>		209+59.60	46 LT		LOOP DETECTOR	
<14E_4>		209+62.00	65 LT		HANDHOLE	
<14E_4>	209+62.00	- 214+13.16	65 LT	- 57 LT	2" CONDUIT 1-12 SM FO CABLE	
<14E_4>		209+65.59	37 LT		LOOP DETECTOR	
<14E_4>		214+13.16	57 LT		HANDHOLE	
<14E_4>	214+13.16	- 224+22.68	57 LT	- 42 LT	2" CONDUIT 1-12 SM FO CABLE	
<14E_4>		224+22.68	42 LT		HANDHOLE	
<14E_4>	224+22.68	- 263+69.57	42 LT	- 49 LT	2" CONDUIT 1-12 SM FO CABLE	
<14E_4>		263+69.57	49 LT		HANDHOLE	
<14E_4>	263+69.57	- 275+55.98	49 LT	- 106 LT	2" CONDUIT 1-12 SM FO CABLE	
<14E_4>		270+69.46	7 LT		LOOP DETECTOR	
<14E_4>		270+69.54	6 RT		LOOP DETECTOR	
<14E_4>		270+84.51	16 RT		HANDHOLE	
<14E_4>	270+84.51	- 272+85.86	16 RT	- 29 RT	2" CONDUIT 1-12 SM FO CABLE	
<14E_4>		272+85.86	29 RT		HANDHOLE	
<14E_4>	272+85.86	- 274+52.80	29 RT	- 29 RT	2" CONDUIT 1-12 SM FO CABLE	
<14E_4>		274+52.80	29 RT		HANDHOLE	
<14E_4>	274+52.80	- 275+43.44	29 RT	- 32 RT	2" CONDUIT 1-12 SM FO CABLE	
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<14E_4>		275+29.49	5 LT		LOOP DETECTOR	
<14E_4>		275+29.76	6 RT		LOOP DETECTOR	
<14E_4>		275+30.04	18 RT		LOOP DETECTOR	
<14E_4>		275+38.49	6 LT		LOOP DETECTOR	
<14E_4>		275+38.76	6 RT		LOOP DETECTOR	
<14E_4>		275+39.04	18 RT		LOOP DETECTOR	
<14E_4>		275+40.85	28 LT		MEDIAN HANDHOLE	
<14E_4>		275+43.01	19 LT		LOOP DETECTOR	
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<14E_4>	275+43.44	- 275+74.14	32 RT	- 72 RT	2" CONDUIT 1-12 SM FO CABLE	
<14E_4>		275+44.05	82 LT		SIGNAL POLE	
<14E_4>	275+44.05	- 275+55.98	82 LT	- 106 LT	2" CONDUIT 1-12 SM FO CABLE	
<14E_4>	275+55.87	- 275+55.98	226 LT	- 106 LT	2" CONDUIT 1-12 SM FO CABLE	
<14E_4>		275+55.98	106 LT		HANDHOLE	
<14E_4>	275+55.98	- 276+30.34	106 LT	- 118 LT	2" CONDUIT 1-12 SM FO CABLE	
<14E_4>		275+74.14	72 RT		HANDHOLE	
<14E_4>	275+74.14	- 276+18.53	72 RT	- 70 RT	2" CONDUIT 1-12 SM FO CABLE	

NO	DATE	BY	CKD	APPR	REVISION
NAME: P:\002-614-048\Plan\002614048_TAB.dgn 02/09/2022 2:57:47 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: JORGE R. BERNAL DELGADO  
 SIGNATURE: *[Signature]*  
 DATE: 02-14-22 LICENSE NO. 57216

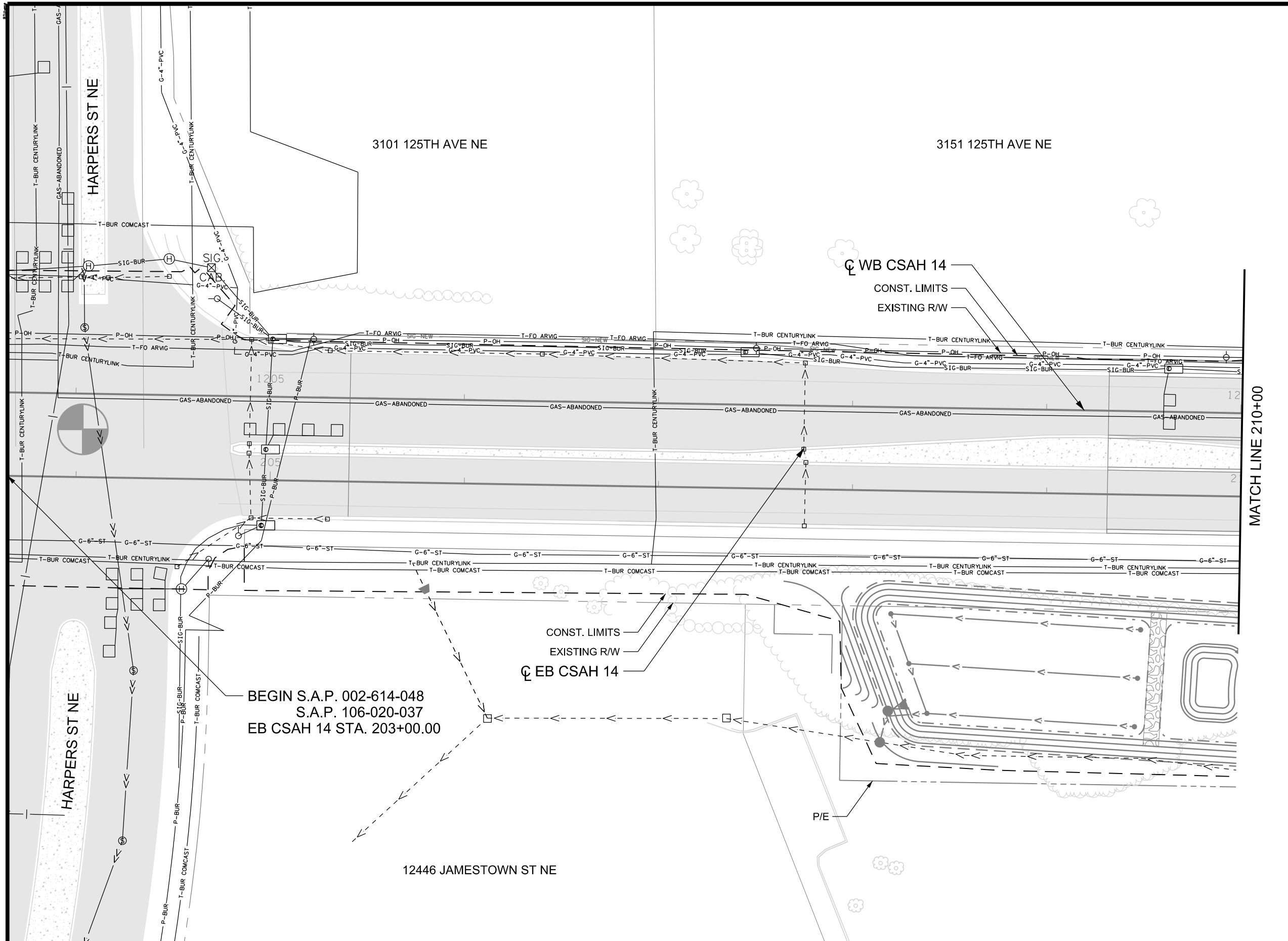
DRAWN BY: BTU DATE: 02/07/22  
 DESIGN BY: JRB DATE: 02/07/22  
 CHECKED BY: NJD DATE: 02/07/22



SAP 002-614-048  
 SAP 106-020-037

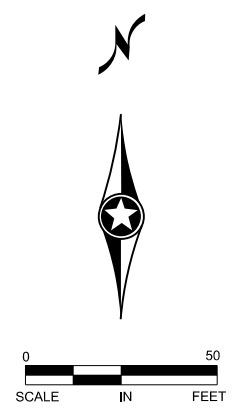






LEGEND	
G-X"-XX	CENTERPOINT ENERGY
GAS-ABANDONED	ARVIG
T-FO ARVIG	CENTURYLINK
T-BUR CENTURYLINK	COMCAST
T-OH CENTURYLINK	MCI-VERIZON
T-BUR COMCAST	CONNEXUS ENERGY
T-OH COMCAST	GREAT RIVER ENERGY
T-FO MCI-VERIZON	MNDOT WEIGH-IN-MOTION
P-BUR	TRAFFIC SIGNAL
P-OH	PROPOSED TRAFFIC SIGNAL
P-OH GREAT RIVER	EXISTING STORM SEWER
MNDOT-WIM	PROPOSED STORM SEWER
SIG-BUR	EXISTING SAN SEWER
SIG-NEW	EXISTING WATER MAIN
	PROPOSED ROADWAY
	EXISTING ROADWAY
	EXISTING MEDIAN

MATCH LINE 210+00



1	02/16/2022	BTU	JRB	UPDATED LEADER
NO	DATE	BY	CKD	APPR
				REVISION
NAME: P:\002-614-048\Plan\002614048_UT_P1.dgn				
02/16/2022 11:20:21 AM				

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

PRINT NAME: JORGE R. BERNAL DELGADO

SIGNATURE: *[Signature]*

DATE: 02-23-22 LICENSE NO. 57216

DRAWN BY: BTU DATE: 02/16/22

DESIGN BY: JRB DATE: 02/16/22

CHECKED BY: NJD DATE: 02/16/22



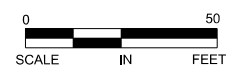
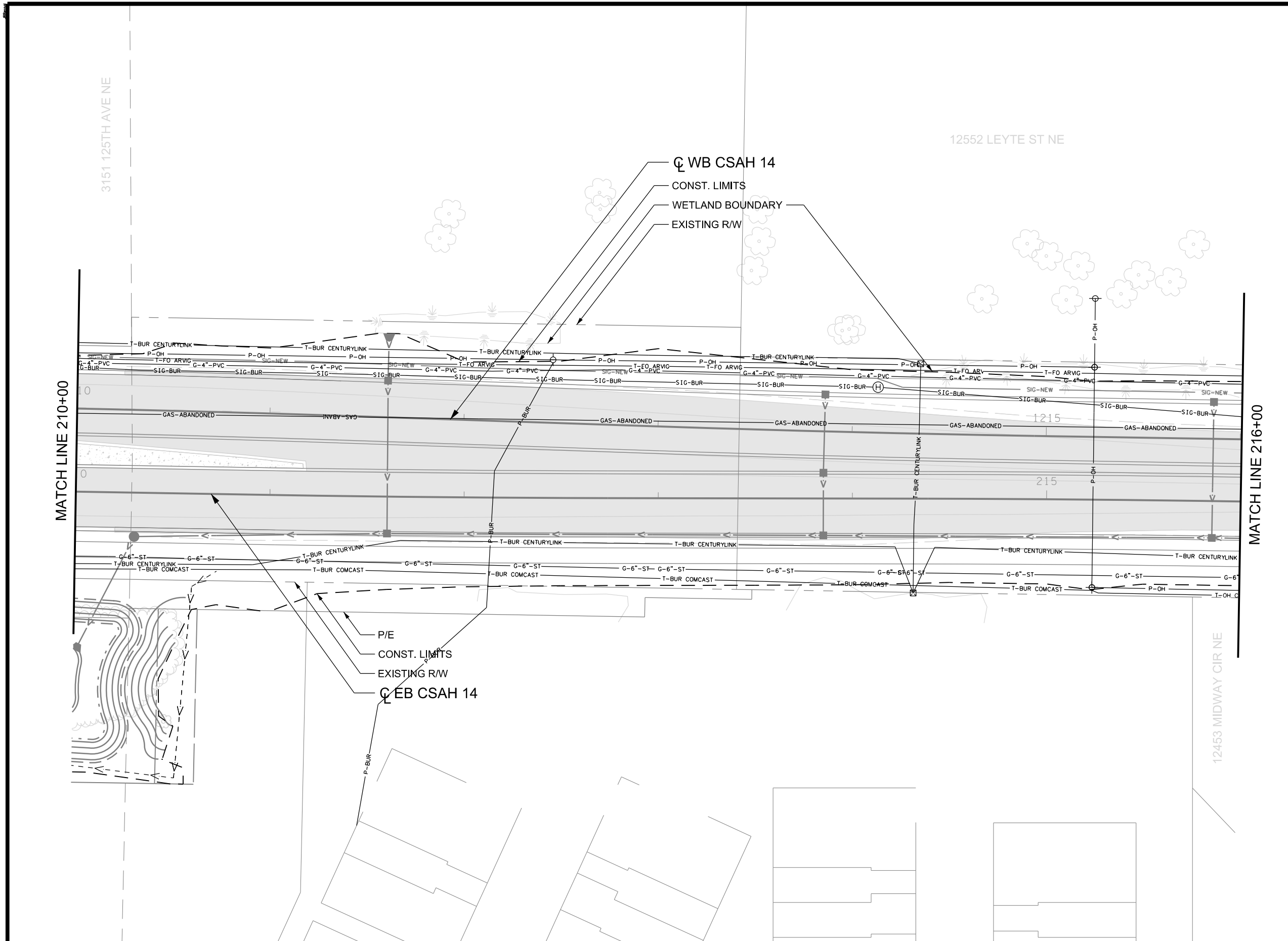
SAP 002-614-048  
SAP 106-020-037

**INPLACE UTILITY PLAN**  
CSAH 14  
STA 203+00.00 TO 210+00

Sheet 18 of 303 Sheets

LEGEND

- G-X" -XX — CENTERPOINT ENERGY
- GAS-ABANDONED — ARVIG
- T-FO ARVIG — CENTURYLINK
- T-BUR CENTURYLINK — COMCAST
- T-OH CENTURYLINK — MCI-VERIZON
- T-BUR COMCAST — CONNEXUS ENERGY
- T-OH COMCAST — GREAT RIVER ENERGY
- P-BUR — MNDOT WEIGH-IN-MOTION
- P-OH — TRAFFIC SIGNAL
- P-OH GREAT RIVER — PROPOSED TRAFFIC SIGNAL
- MNDOT-WIM — EXISTING STORM SEWER
- SIG-BUR — PROPOSED STORM SEWER
- SIG-NEW — EXISTING SAN SEWER
- — EXISTING WATER MAIN
- — PROPOSED ROADWAY
- ▭ EXISTING ROADWAY
- ▭ EXISTING MEDIAN



NO	DATE	BY	CKD	APPR	REVISION
NAME: P:\002-614-048\Plan\002614048_UT_P2.dgn 02/09/2022 2:58:01 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: JORGE R. BERNAL DELGADO  
 SIGNATURE: *[Signature]*  
 DATE: 02-14-22 LICENSE NO. 57216

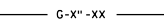

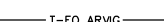


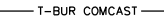
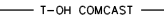
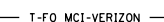
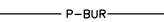
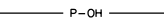

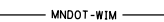
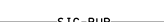








DRAWN BY BTU DATE 02/07/22  
 DESIGN BY JRB DATE 02/07/22  
 CHECKED BY NJD DATE 02/07/22

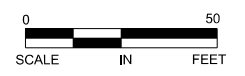
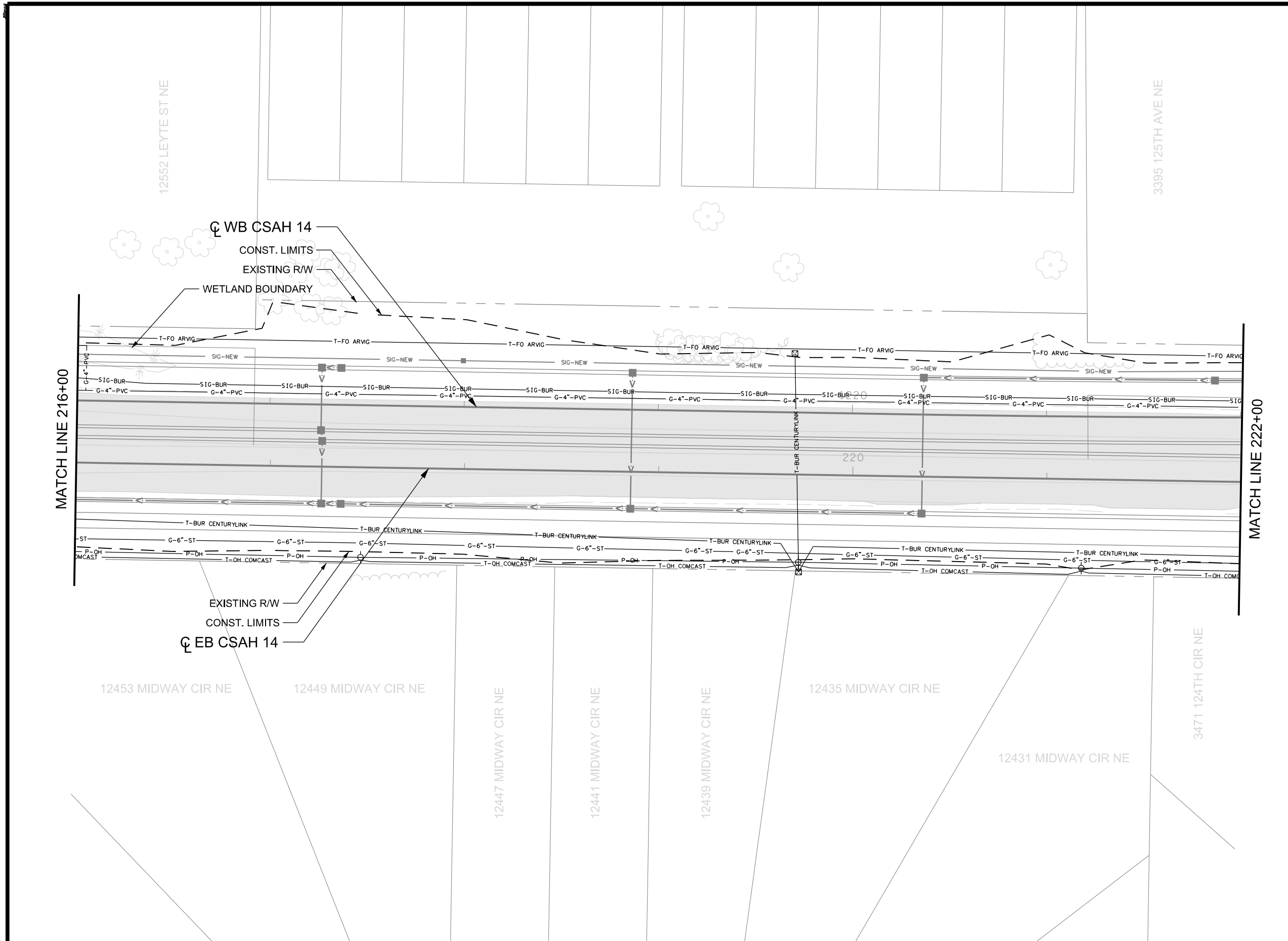


SAP 002-614-048  
 SAP 106-020-037

INPLACE UTILITY PLAN  
 CSAH 14  
 STA 210+00 TO 216+00  
 Sheet 19 of 303 Sheets

LEGEND

-  G-X''-XX CENTERPOINT ENERGY
-  GAS-ABANDONED
-  T-FO ARVIG ARVIG
-  T-BUR CENTURYLINK CENTURYLINK
-  T-OH CENTURYLINK
-  T-BUR COMCAST COMCAST
-  T-OH COMCAST
-  T-FO MCI-VERIZON MCI-VERIZON
-  P-BUR CONNEXUS ENERGY
-  P-OH
-  P-OH GREAT RIVER GREAT RIVER ENERGY
-  MNDOT-WIM MNDOT WEIGH-IN-MOTION
-  SIG-BUR TRAFFIC SIGNAL
-  SIG-NEW PROPOSED TRAFFIC SIGNAL
-  EXISTING STORM SEWER
-  PROPOSED STORM SEWER
-  EXISTING SAN SEWER
-  EXISTING WATER MAIN
-  PROPOSED ROADWAY
-  EXISTING ROADWAY
-  EXISTING MEDIAN



NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-614-048\Plan\002614048\_UT\_P3.dgn 02/09/2022 2:58:03 PM

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

PRINT NAME: JORGE R. BERNAL BELGADO

SIGNATURE: *[Signature]*

DATE: 02-14-22 LICENSE NO. 57216

DRAWN BY: BTU DATE: 02/07/22

DESIGN BY: JRB DATE: 02/07/22

CHECKED BY: NJD DATE: 02/07/22



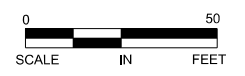
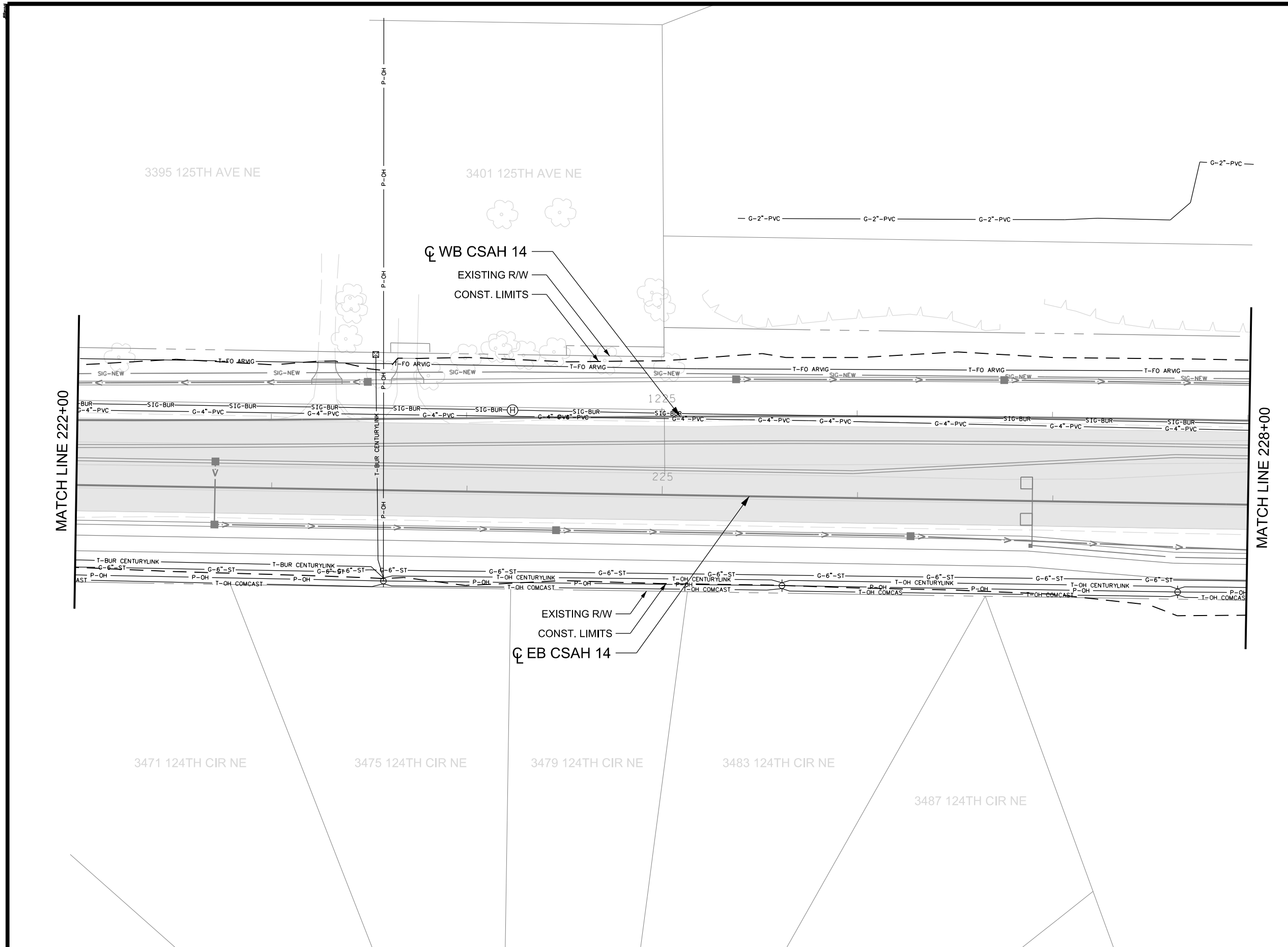
**ANOKA COUNTY**  
**HIGHWAY DEPT.**

SAP 002-614-048  
SAP 106-020-037

**INPLACE UTILITY PLAN**  
CSAH 14  
STA 216+00 TO 222+00  
Sheet 20 of 303 Sheets

LEGEND

- G-X''-XX CENTERPOINT ENERGY
- GAS-ABANDONED
- T-FO ARVIG ARVIG
- T-BUR CENTURYLINK CENTURYLINK
- T-OH CENTURYLINK
- T-BUR COMCAST COMCAST
- T-OH COMCAST
- T-FO MCI-VERIZON MCI-VERIZON
- P-BUR CONNEXUS ENERGY
- P-OH
- P-OH GREAT RIVER GREAT RIVER ENERGY
- MNDOT-WIM MNDOT WEIGH-IN-MOTION
- SIG-BUR TRAFFIC SIGNAL
- SIG-NEW PROPOSED TRAFFIC SIGNAL
- EXISTING STORM SEWER
- PROPOSED STORM SEWER
- EXISTING SAN SEWER
- EXISTING WATER MAIN
- PROPOSED ROADWAY
- EXISTING ROADWAY
- EXISTING MEDIAN



NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-614-048\Plan\002614048\_UT\_P4.dgn 02/09/2022 2:58:04 PM

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

PRINT NAME: JORGE R. BERNAL DELGADO

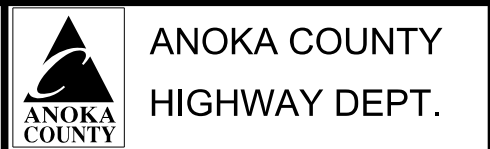
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DATE: 02-14-22 LICENSE NO. 57216

DRAWN BY: BTU DATE: 02/07/22

DESIGN BY: JRB DATE: 02/07/22

CHECKED BY: NJD DATE: 02/07/22

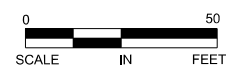
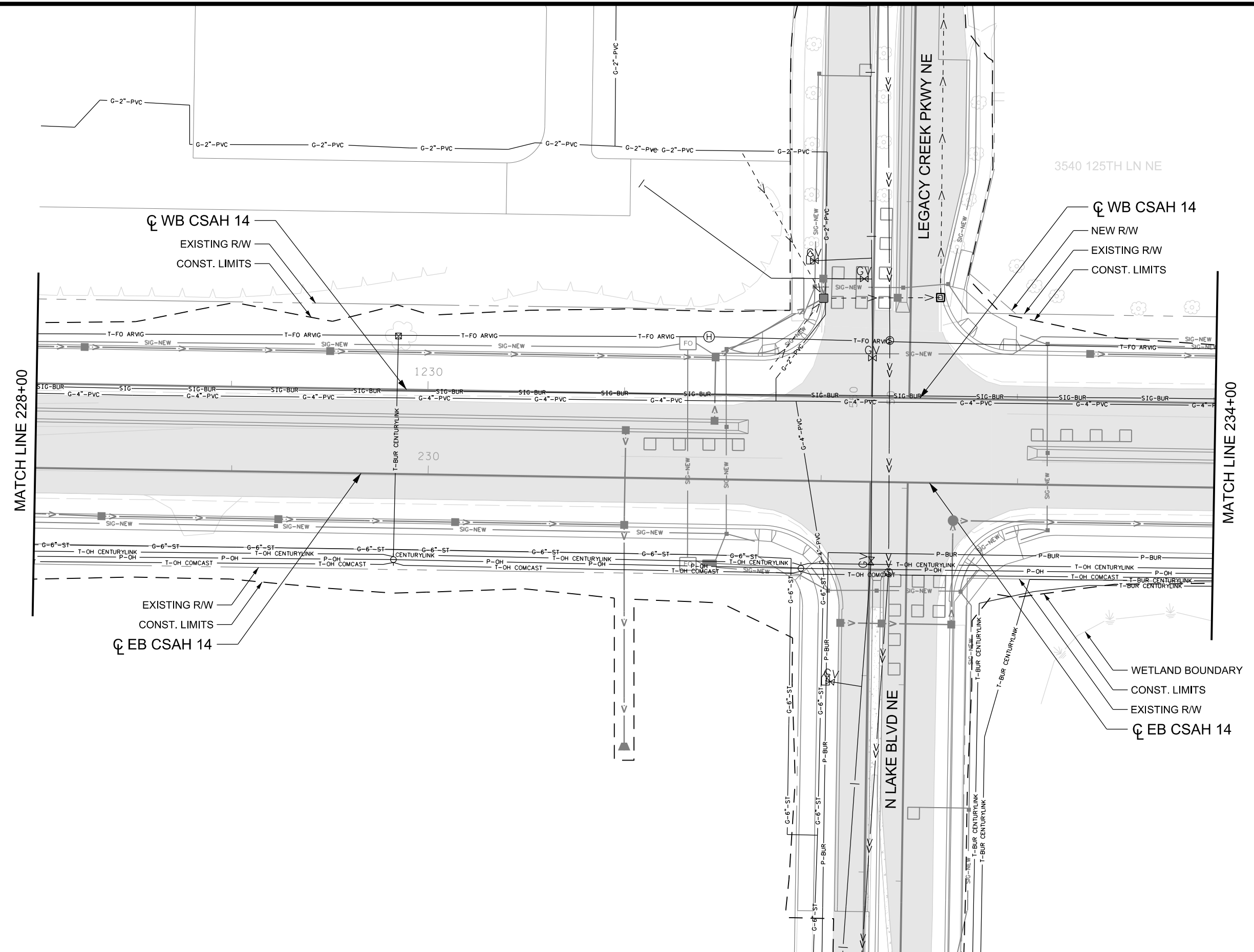


SAP 002-614-048  
SAP 106-020-037

INPLACE UTILITY PLAN  
CSAH 14  
STA 222+00 TO 228+00  
Sheet 21 of 303 Sheets

LEGEND

- G-X" -XX — CENTERPOINT ENERGY
- GAS-ABANDONED — ARVIG
- T-FO ARVIG — ARVIG
- T-BUR CENTURYLINK — CENTURYLINK
- T-OH CENTURYLINK — CENTURYLINK
- T-BUR COMCAST — COMCAST
- T-OH COMCAST — COMCAST
- T-FO MCI-VERIZON — MCI-VERIZON
- P-BUR — CONNEXUS ENERGY
- P-OH — CONNEXUS ENERGY
- P-OH GREAT RIVER — GREAT RIVER ENERGY
- MNDOT-WIM — MNDOT WEIGH-IN-MOTION
- SIG-BUR — TRAFFIC SIGNAL
- SIG-NEW — PROPOSED TRAFFIC SIGNAL
- - - - - EXISTING STORM SEWER
- - - - - PROPOSED STORM SEWER
- - - - - EXISTING SAN SEWER
- - - - - PROPOSED SAN SEWER
- - - - - EXISTING WATER MAIN
- - - - - PROPOSED ROADWAY
- ▭ EXISTING ROADWAY
- ▭ EXISTING MEDIAN



NO	DATE	BY	CKD	APPR	REVISION
NAME: P:\002-614-048\Plan\002614048_UT_P5.dgn 02/09/2022 2:58:06 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: JORGE R. BERNAL DELGADO  
 SIGNATURE: *[Signature]*  
 DATE: 02-14-22 LICENSE NO. 57216

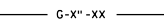

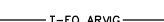


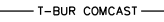
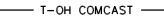
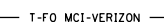
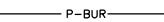
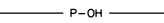

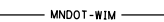
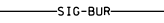








DRAWN BY BTU DATE 02/07/22  
 DESIGN BY JRB DATE 02/07/22  
 CHECKED BY NJD DATE 02/07/22

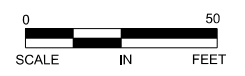
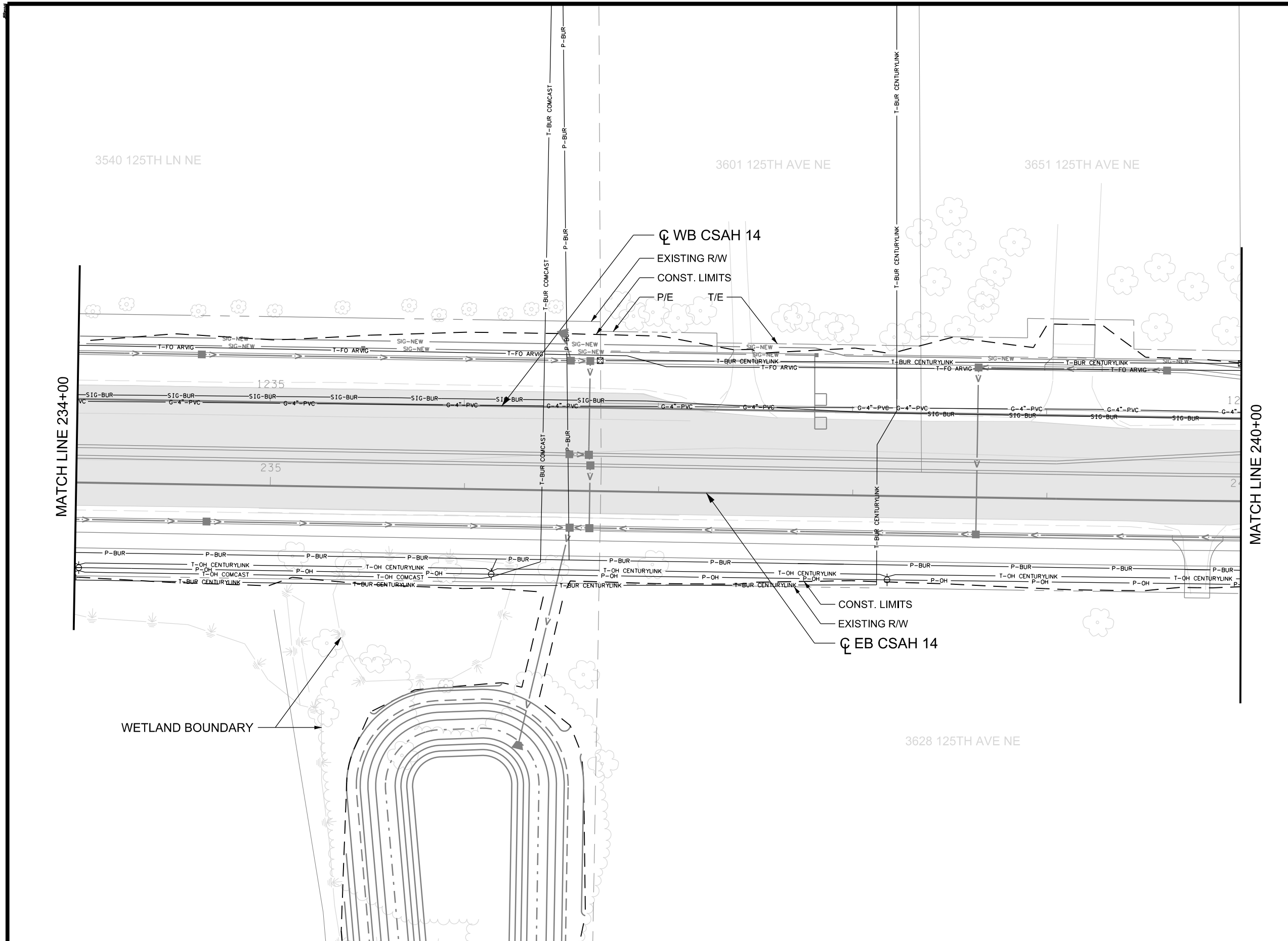
**ANOKA COUNTY**  
**HIGHWAY DEPT.**

SAP 002-614-048  
 SAP 106-020-037

INPLACE UTILITY PLAN  
 CSAH 14  
 STA 228+00 TO 234+00  
 Sheet 22 of 303 Sheets

LEGEND

-  CENTERPOINT ENERGY
-  GAS-ABANDONED
-  ARVIG
-  CENTURYLINK
-  CENTURYLINK
-  COMCAST
-  COMCAST
-  MCI-VERIZON
-  CONNEXUS ENERGY
-  CONNEXUS ENERGY
-  GREAT RIVER ENERGY
-  MNDOT WEIGH-IN-MOTION
-  TRAFFIC SIGNAL
-  PROPOSED TRAFFIC SIGNAL
-  EXISTING STORM SEWER
-  PROPOSED STORM SEWER
-  EXISTING SAN SEWER
-  EXISTING WATER MAIN
-  PROPOSED ROADWAY
-  EXISTING ROADWAY
-  EXISTING MEDIAN



NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-614-048\Plan\002614048\_UT\_P6.dgn 02/09/2022 2:58:07 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: JORGE R. BERNAL DELGADO

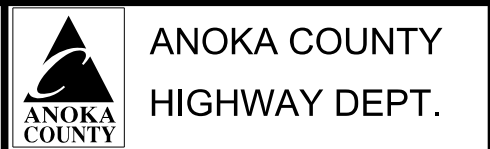
SIGNATURE: *[Signature]*

DATE: 02-14-22 LICENSE NO. 57216

DRAWN BY BTU DATE 02/07/22

DESIGN BY JRB DATE 02/07/22

CHECKED BY NJD DATE 02/07/22

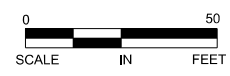
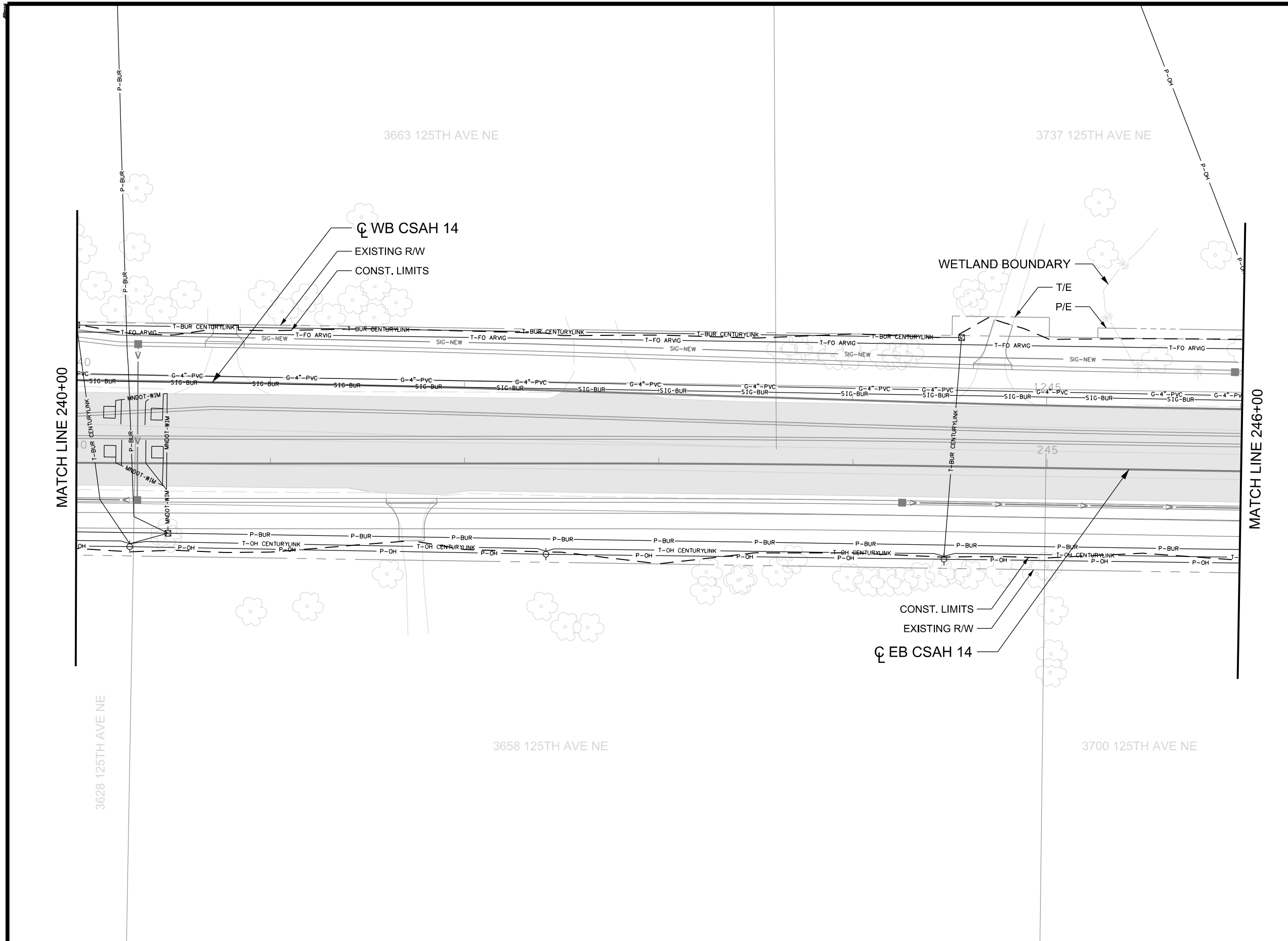


SAP 002-614-048  
SAP 106-020-037

INPLACE UTILITY PLAN  
CSAH 14  
STA 234+00 TO 240+00  
Sheet 23 of 303 Sheets

LEGEND

- G-X" -XX — CENTERPOINT ENERGY
- GAS-ABANDONED —
- T-FO ARVIG — ARVIG
- T-BUR CENTURYLINK — CENTURYLINK
- T-OH CENTURYLINK —
- T-BUR COMCAST — COMCAST
- T-OH COMCAST —
- T-FO MCI-VERIZON — MCI-VERIZON
- P-BUR — CONNEXUS ENERGY
- P-OH —
- P-OH GREAT RIVER — GREAT RIVER ENERGY
- MNDOT-WIM — MNDOT WEIGH-IN-MOTION
- SIG-BUR — TRAFFIC SIGNAL
- SIG-NEW — PROPOSED TRAFFIC SIGNAL
- - - - - EXISTING STORM SEWER
- > - - - - PROPOSED STORM SEWER
- >> - - - - EXISTING SAN SEWER
- | - - - - EXISTING WATER MAIN
- - - - - PROPOSED ROADWAY
- ▭ EXISTING ROADWAY
- ▭ EXISTING MEDIAN



NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-614-048\Plan\002614048\_UT\_P7.dgn 02/09/2022 2:58:09 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: JORGE R. BERNAL DELGADO

SIGNATURE: *[Signature]*

DATE: 02-14-22 LICENSE NO. 57216

DRAWN BY BTU DATE 02/07/22

DESIGN BY JRB DATE 02/07/22

CHECKED BY NJD DATE 02/07/22

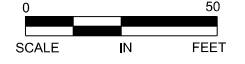
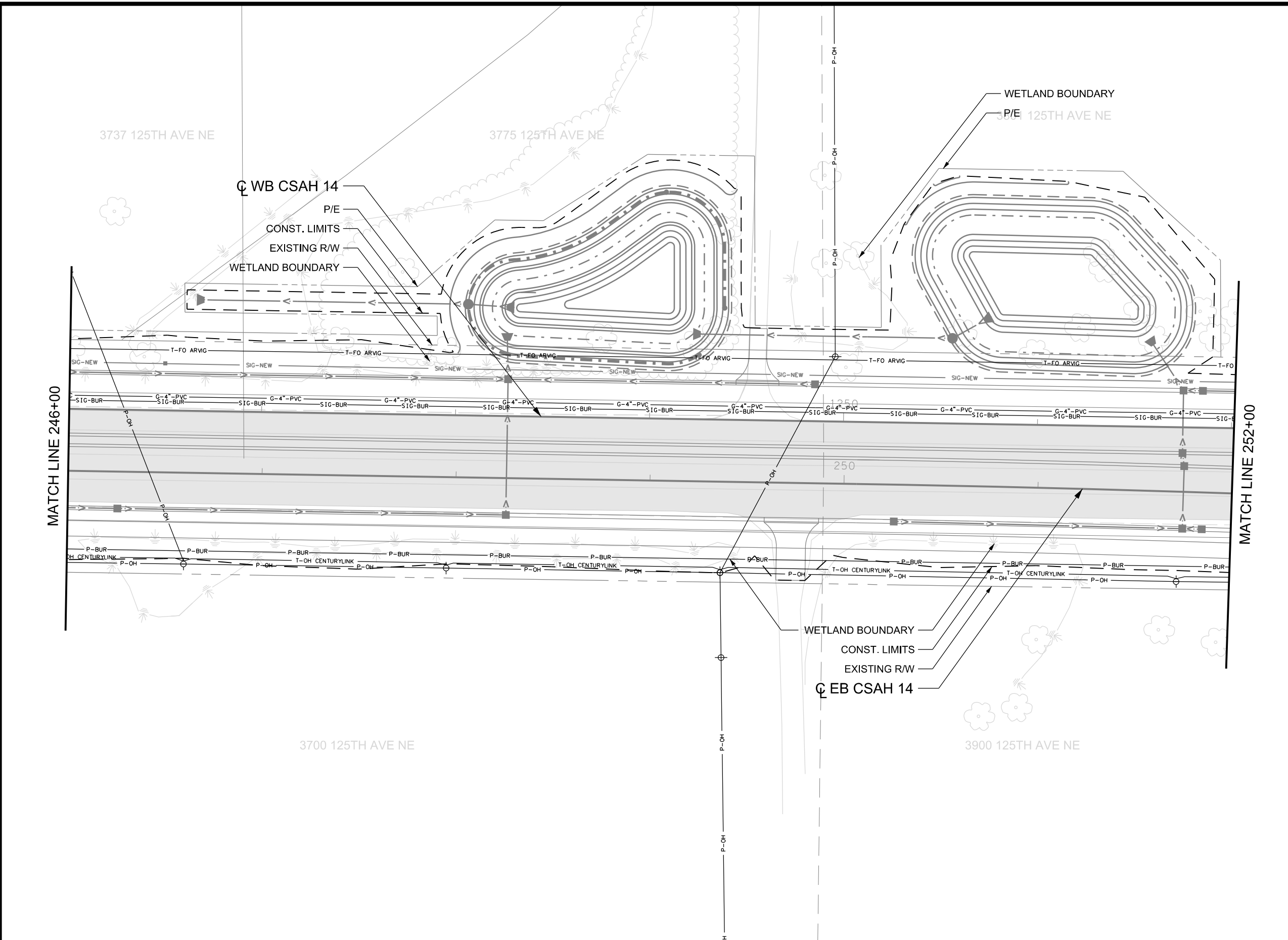


SAP 002-614-048  
SAP 106-020-037

INPLACE UTILITY PLAN  
CSAH 14  
STA 240+00 TO 246+00  
Sheet 24 of 303 Sheets



LEGEND	
	CENTERPOINT ENERGY
	ARVIG
	CENTURYLINK
	COMCAST
	MCI-VERIZON
	CONNEXUS ENERGY
	GREAT RIVER ENERGY
	MNDOT WEIGH-IN-MOTION
	TRAFFIC SIGNAL
	PROPOSED TRAFFIC SIGNAL
	EXISTING STORM SEWER
	PROPOSED STORM SEWER
	EXISTING SAN SEWER
	EXISTING WATER MAIN
	PROPOSED ROADWAY
	EXISTING ROADWAY
	EXISTING MEDIAN



NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-614-048\Plan\002614048\_UT\_P8.dgn 02/09/2022 2:58:11 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: JORGE R. BERNAL DELGADO

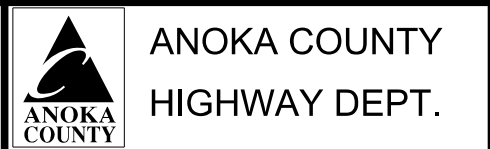
SIGNATURE: *[Signature]*

DATE: 02-14-22 LICENSE NO. 57216

DRAWN BY: BTU DATE: 02/07/22

DESIGN BY: JRB DATE: 02/07/22

CHECKED BY: NJD DATE: 02/07/22

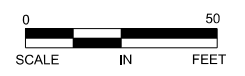
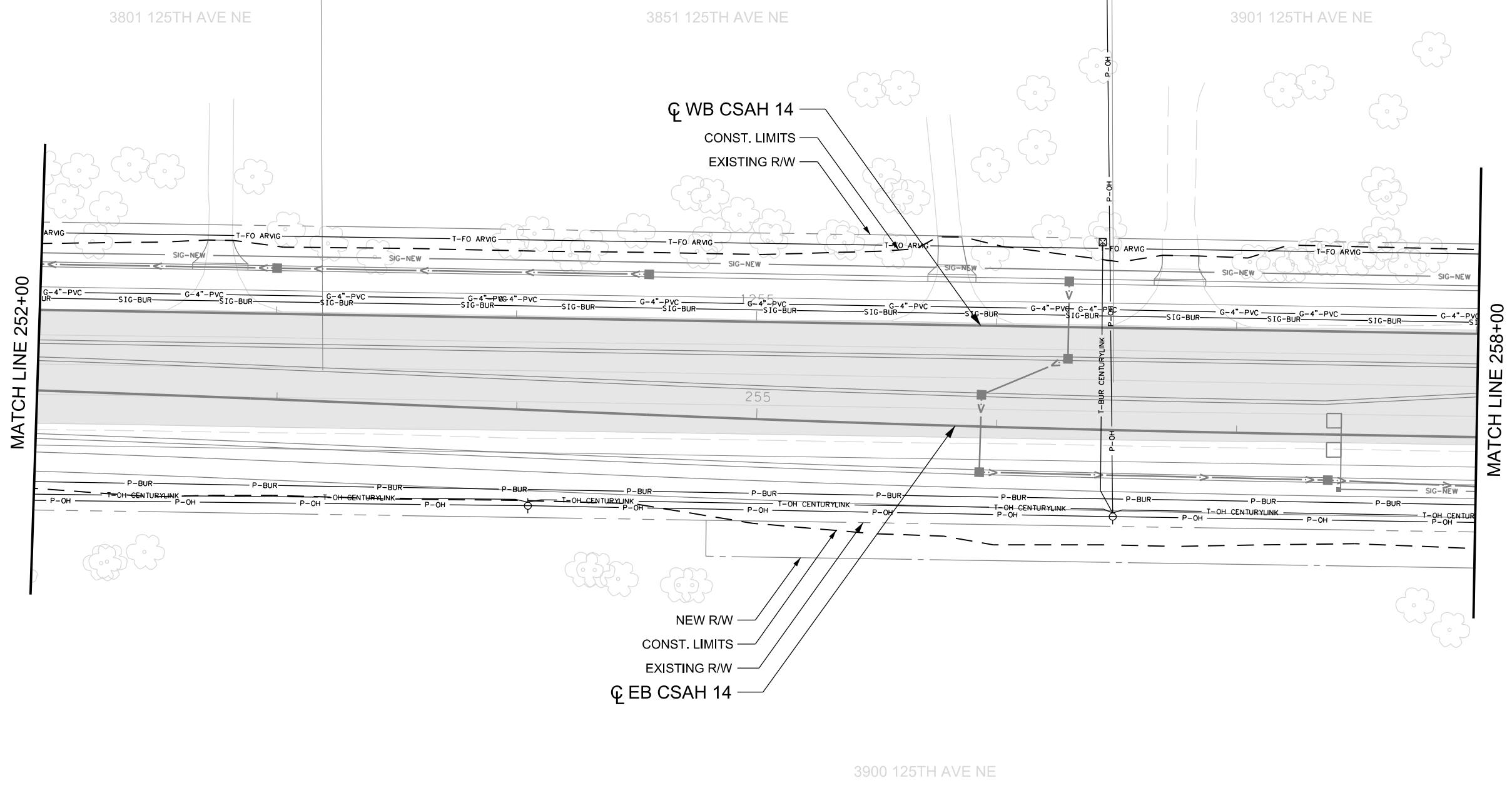


SAP 002-614-048  
SAP 106-020-037

**INPLACE UTILITY PLAN**  
CSAH 14  
STA 246+00 TO 252+00  
Sheet 25 of 303 Sheets

LEGEND

- G-X" -XX — CENTERPOINT ENERGY
- GAS-ABANDONED — ARVIG
- T-FO ARVIG — ARVIG
- T-BUR CENTURYLINK — CENTURYLINK
- T-OH CENTURYLINK — CENTURYLINK
- T-BUR COMCAST — COMCAST
- T-OH COMCAST — COMCAST
- T-FO MCI-VERIZON — MCI-VERIZON
- P-BUR — CONNEXUS ENERGY
- P-OH — CONNEXUS ENERGY
- P-OH GREAT RIVER — GREAT RIVER ENERGY
- MNDOT-WIM — MNDOT WEIGH-IN-MOTION
- SIG-BUR — TRAFFIC SIGNAL
- SIG-NEW — PROPOSED TRAFFIC SIGNAL
- - - - - EXISTING STORM SEWER
- > - > - PROPOSED STORM SEWER
- >> - >> - EXISTING SAN SEWER
- | - | - EXISTING WATER MAIN
- - - - - PROPOSED ROADWAY
- ▭ EXISTING ROADWAY
- ▭ EXISTING MEDIAN



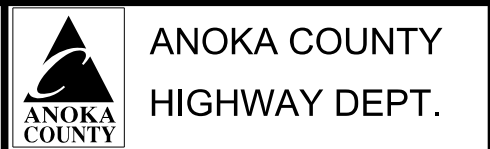
NO	DATE	BY	CKD	APPR	REVISION

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

PRINT NAME: JORGE R. BERNAL DELGADO  
 SIGNATURE: *[Signature]*  
 DATE: 02-14-22 LICENSE NO. 57216

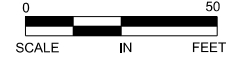
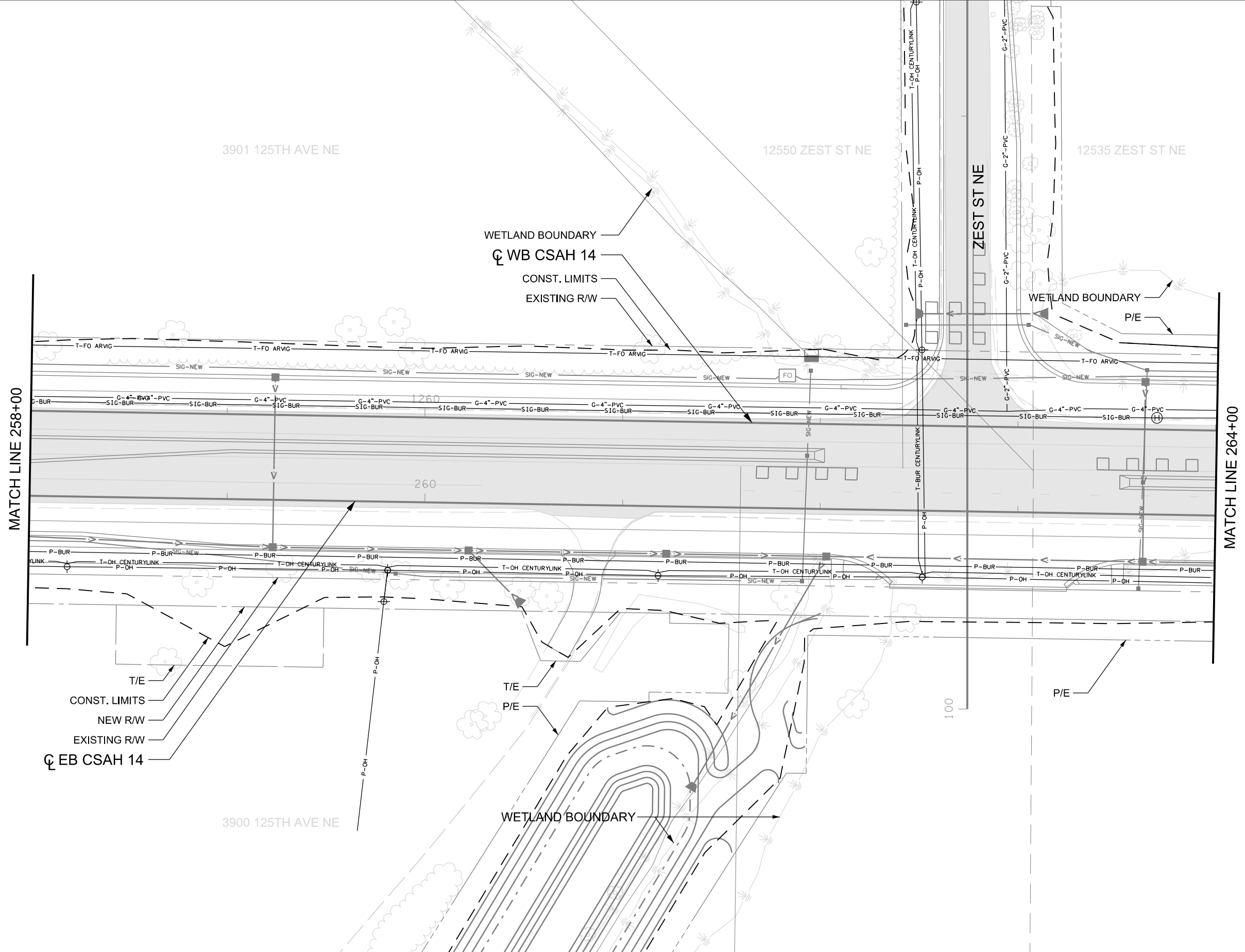
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 DESIGN BY: JRB DATE: 02/07/22  
 CHECKED BY: NJD DATE: 02/07/22



SAP 002-614-048  
 SAP 106-020-037

INPLACE UTILITY PLAN  
 CSAH 14  
 STA 252+00 TO 258+00  
 Sheet 26 of 303 Sheets

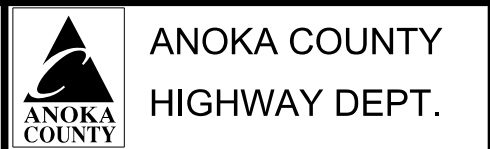
LEGEND	
	CENTERPOINT ENERGY
	ARVIG
	CENTURYLINK
	COMCAST
	MCI-VERIZON
	CONNEXUS ENERGY
	GREAT RIVER ENERGY
	MNDOT WEIGH-IN-MOTION
	TRAFFIC SIGNAL
	PROPOSED TRAFFIC SIGNAL
	EXISTING STORM SEWER
	PROPOSED STORM SEWER
	EXISTING SAN SEWER
	EXISTING WATER MAIN
	PROPOSED ROADWAY
	EXISTING ROADWAY
	EXISTING MEDIAN



NO	DATE	BY	CKD	APPR	REVISION
NAME: P:\002-614-048\Plan\002614048_UT_P10.dgn 02/09/2022 2:58:13 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: JORGE R. FERNAL DELGADO  
 SIGNATURE: *[Signature]*  
 DATE: 02-14-22 LICENSE NO. 57216

DRAWN BY BTU DATE 02/07/22  
 DESIGN BY JRB DATE 02/07/22  
 CHECKED BY NJD DATE 02/07/22

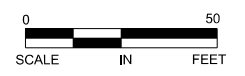
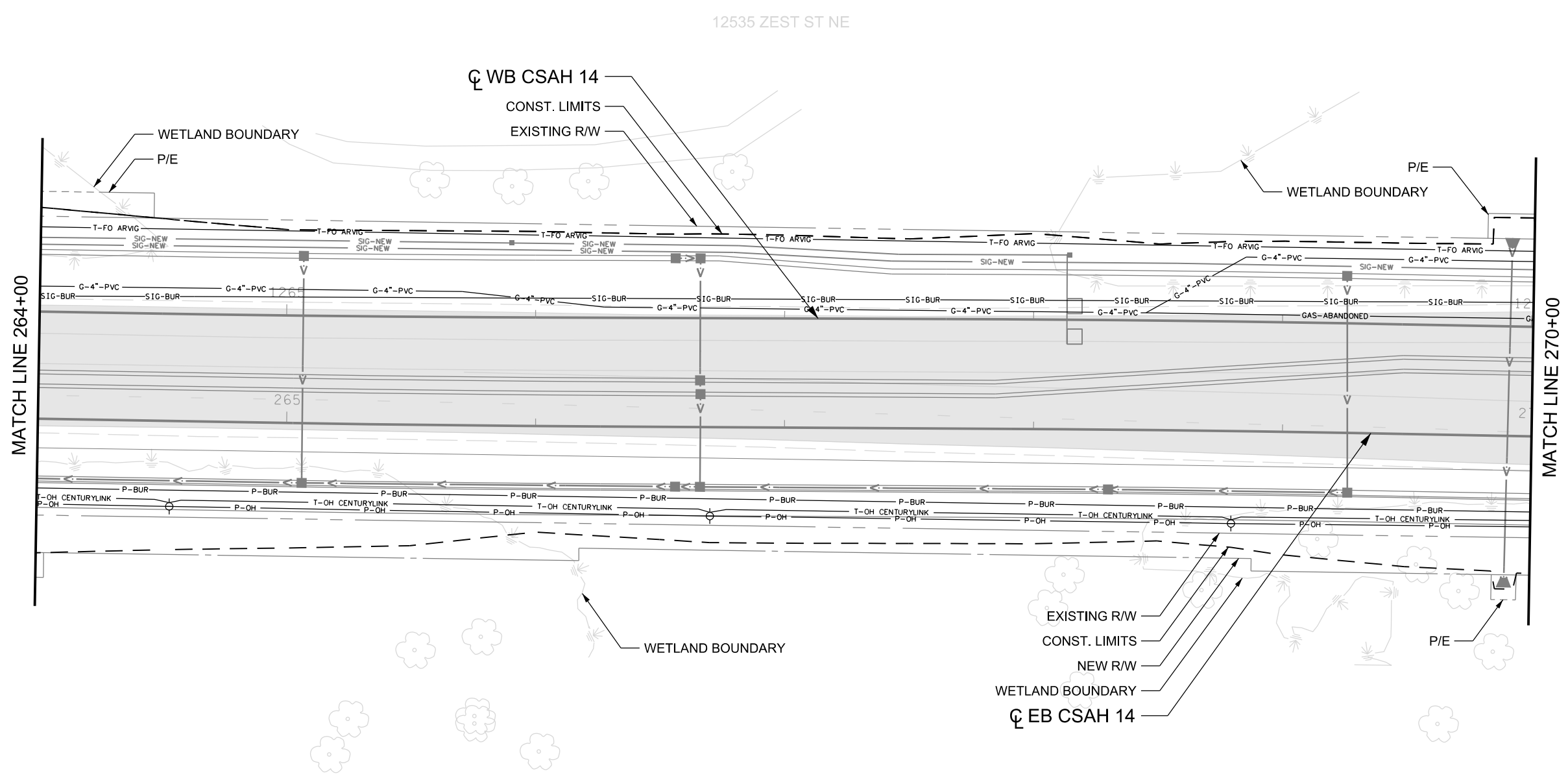


SAP 002-614-048  
 SAP 106-020-037

INPLACE UTILITY PLAN  
 CSAH 14  
 STA 258+00 TO 264+00  
 Sheet 27 of 303 Sheets

LEGEND

- G-X" -XX — CENTERPOINT ENERGY
- GAS-ABANDONED —
- T-FO ARVIG — ARVIG
- T-BUR CENTURYLINK — CENTURYLINK
- T-OH CENTURYLINK —
- T-BUR COMCAST — COMCAST
- T-OH COMCAST —
- T-FO MCI-VERIZON — MCI-VERIZON
- P-BUR — CONNEXUS ENERGY
- P-OH —
- P-OH GREAT RIVER — GREAT RIVER ENERGY
- MNDOT-WIM — MNDOT WEIGH-IN-MOTION
- SIG-BUR — TRAFFIC SIGNAL
- SIG-NEW — PROPOSED TRAFFIC SIGNAL
- - - - - EXISTING STORM SEWER
- > - - - - PROPOSED STORM SEWER
- >> - - - - EXISTING SAN SEWER
- >>> - - - - PROPOSED SAN SEWER
- - - - - EXISTING WATER MAIN
- - - - - PROPOSED ROADWAY
- ▭ EXISTING ROADWAY
- ▭ EXISTING MEDIAN



NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-614-048\Plan\002614048\_UT\_P11.dgn 02/09/2022 2:58:15 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: JORGE R. BERNAL DE GADO

SIGNATURE: *[Signature]*

DATE: 02-14-22 LICENSE NO. 57216

DRAWN BY BTU DATE 02/07/22

DESIGN BY JRB DATE 02/07/22

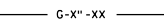



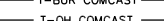
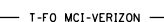
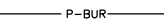


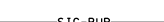






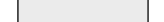


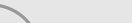
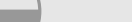
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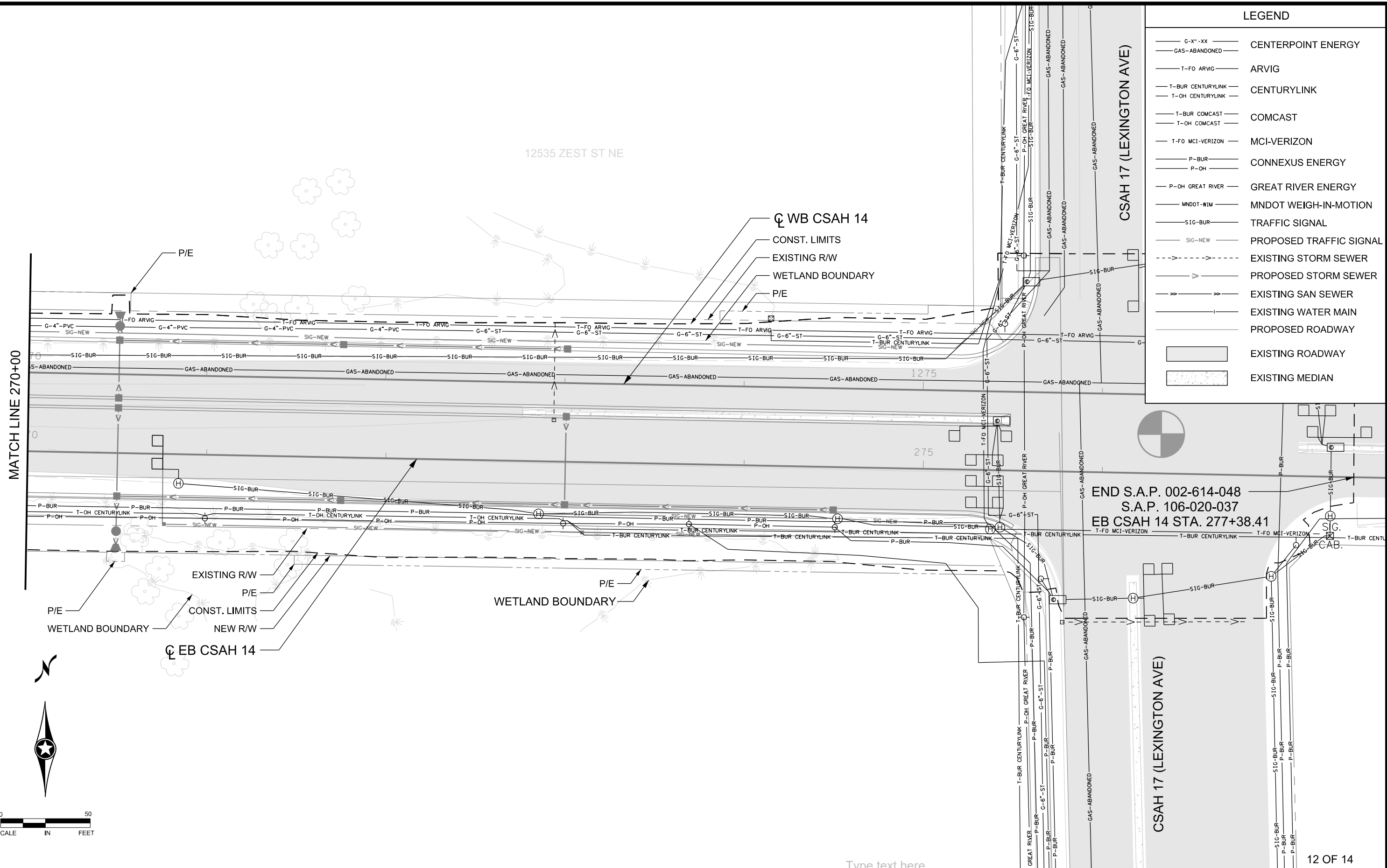


SAP 002-614-048  
SAP 106-020-037

INPLACE UTILITY PLAN  
CSAH 14  
STA 264+00 TO 270+00  
Sheet 28 of 303 Sheets

LEGEND

-  G-XX-XX CENTERPOINT ENERGY
-  GAS-ABANDONED
-  T-FO ARVIC ARVIC
-  T-BUR CENTURYLINK CENTURYLINK
-  T-OH CENTURYLINK CENTURYLINK
-  T-BUR COMCAST COMCAST
-  T-OH COMCAST COMCAST
-  T-FO MCI-VERIZON MCI-VERIZON
-  P-BUR CONNEXUS ENERGY
-  P-OH CONNEXUS ENERGY
-  P-OH GREAT RIVER GREAT RIVER ENERGY
-  MNDOT-WIM MNDOT WEIGH-IN-MOTION
-  SIG-BUR TRAFFIC SIGNAL
-  SIG-NEW PROPOSED TRAFFIC SIGNAL
-  EXISTING STORM SEWER
-  PROPOSED STORM SEWER
-  EXISTING SAN SEWER
-  EXISTING WATER MAIN
-  PROPOSED ROADWAY
-  EXISTING ROADWAY
-  EXISTING MEDIAN



END S.A.P. 002-614-048  
 S.A.P. 106-020-037  
 EB CSAH 14 STA. 277+38.41

1	02/16/2022	BTU	JRB	UPDATED PROJECT LIMITS LABEL
NO	DATE	BY	CKD	APPR
				REVISION
NAME: P:\002-614-048\Plan\002614048_UT_P12.dgn				02/16/2022 10:12:10 AM

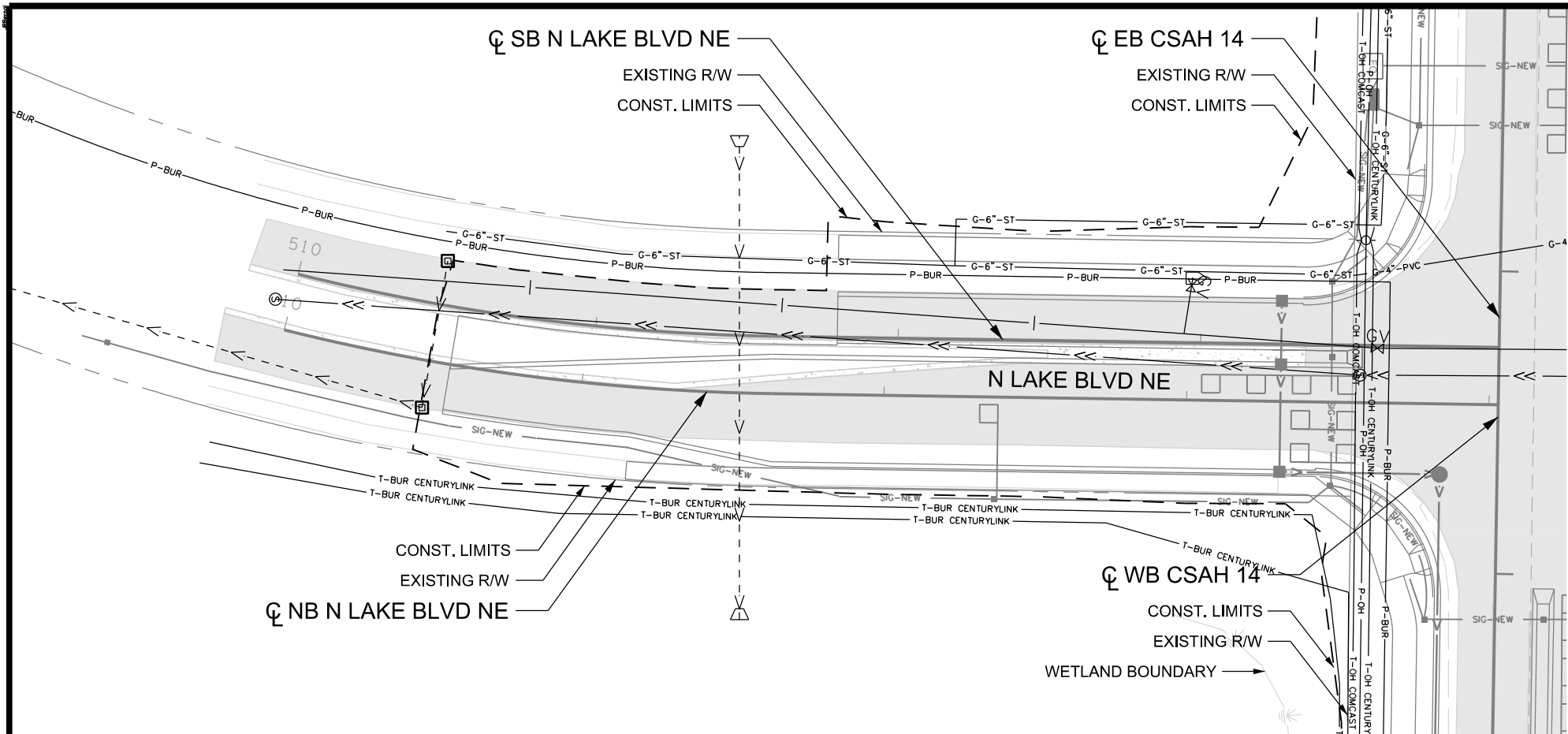
I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.  
 PRINT NAME: JORGE R. BERNAL DELGADO  
 SIGNATURE: *[Signature]*  
 DATE: 02-23-22 LICENSE NO. 57216

DRAWN BY BTU DATE 02/10/22  
 DESIGN BY JRB DATE 02/10/22  
 CHECKED BY NJD DATE 02/10/22

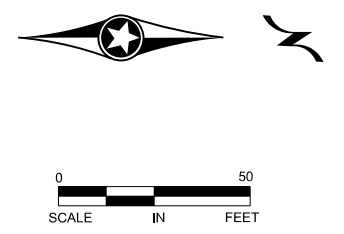
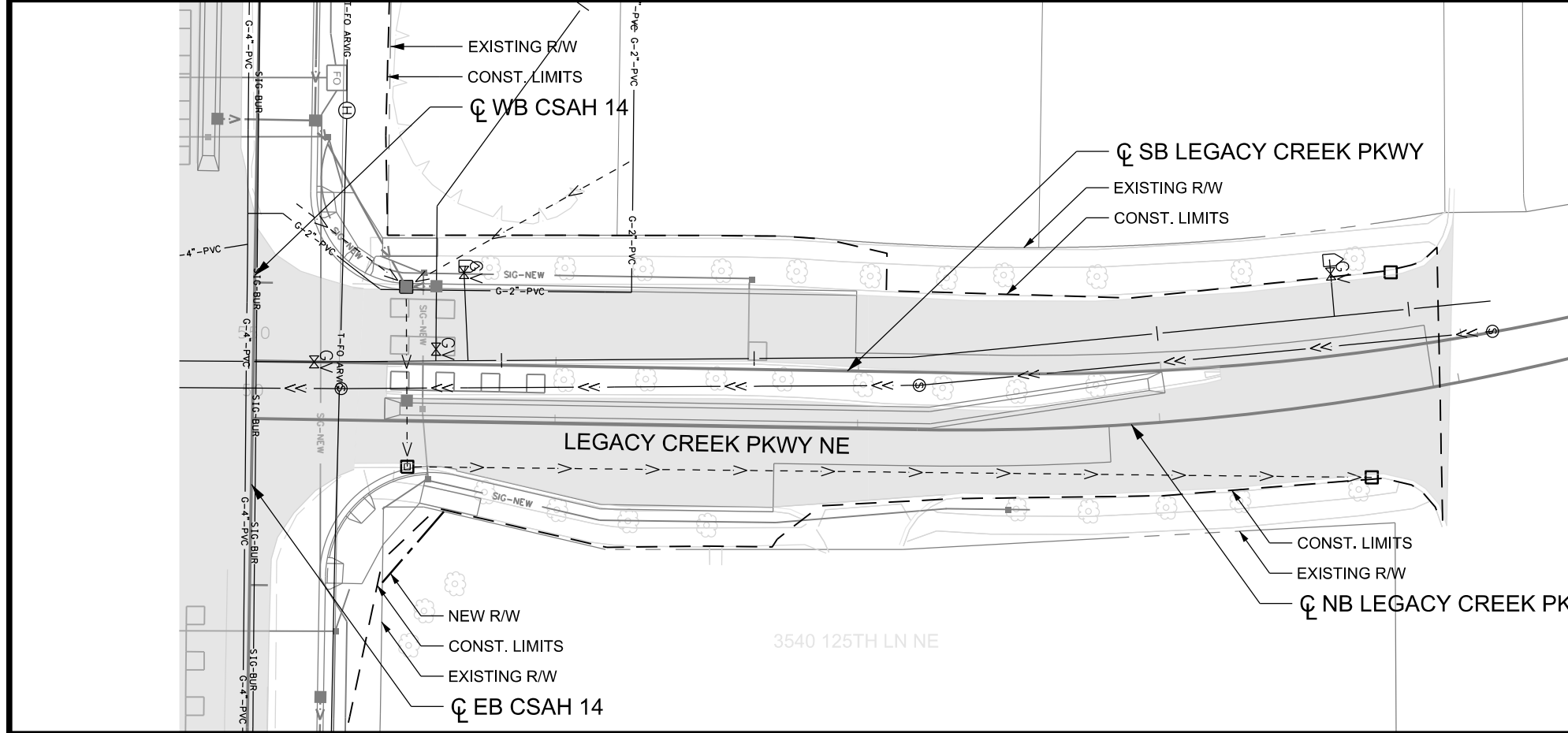


SAP 002-614-048  
 SAP 106-020-037

INPLACE UTILITY PLAN  
 CSAH 14  
 STA 270+00 TO 277+38.41  
 Sheet 29 of 303 Sheets



LEGEND	
	CENTERPOINT ENERGY
	ARVIG
	CENTURYLINK
	COMCAST
	MCI-VERIZON
	CONNEXUS ENERGY
	GREAT RIVER ENERGY
	MNDOT WEIGH-IN-MOTION
	TRAFFIC SIGNAL
	PROPOSED TRAFFIC SIGNAL
	EXISTING STORM SEWER
	PROPOSED STORM SEWER
	EXISTING SAN SEWER
	EXISTING WATER MAIN
	PROPOSED ROADWAY
	EXISTING ROADWAY
	EXISTING MEDIAN



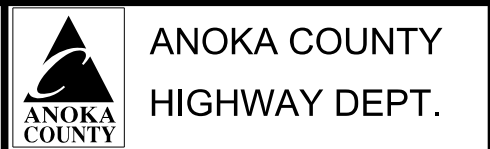
13 OF 14

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-614-048\Plan\002614048\_UT\_P13.dgn 02/09/2022 2:58:18 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: JORGE R. BERNAL DELGADO  
 SIGNATURE: *[Signature]*  
 DATE: 02-14-22 LICENSE NO. 57216

DRAWN BY: BTU DATE: 02/07/22  
 DESIGN BY: JRB DATE: 02/07/22  
 CHECKED BY: NJD DATE: 02/07/22

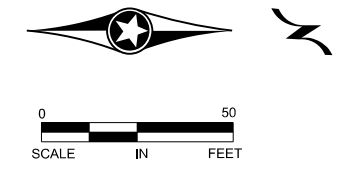
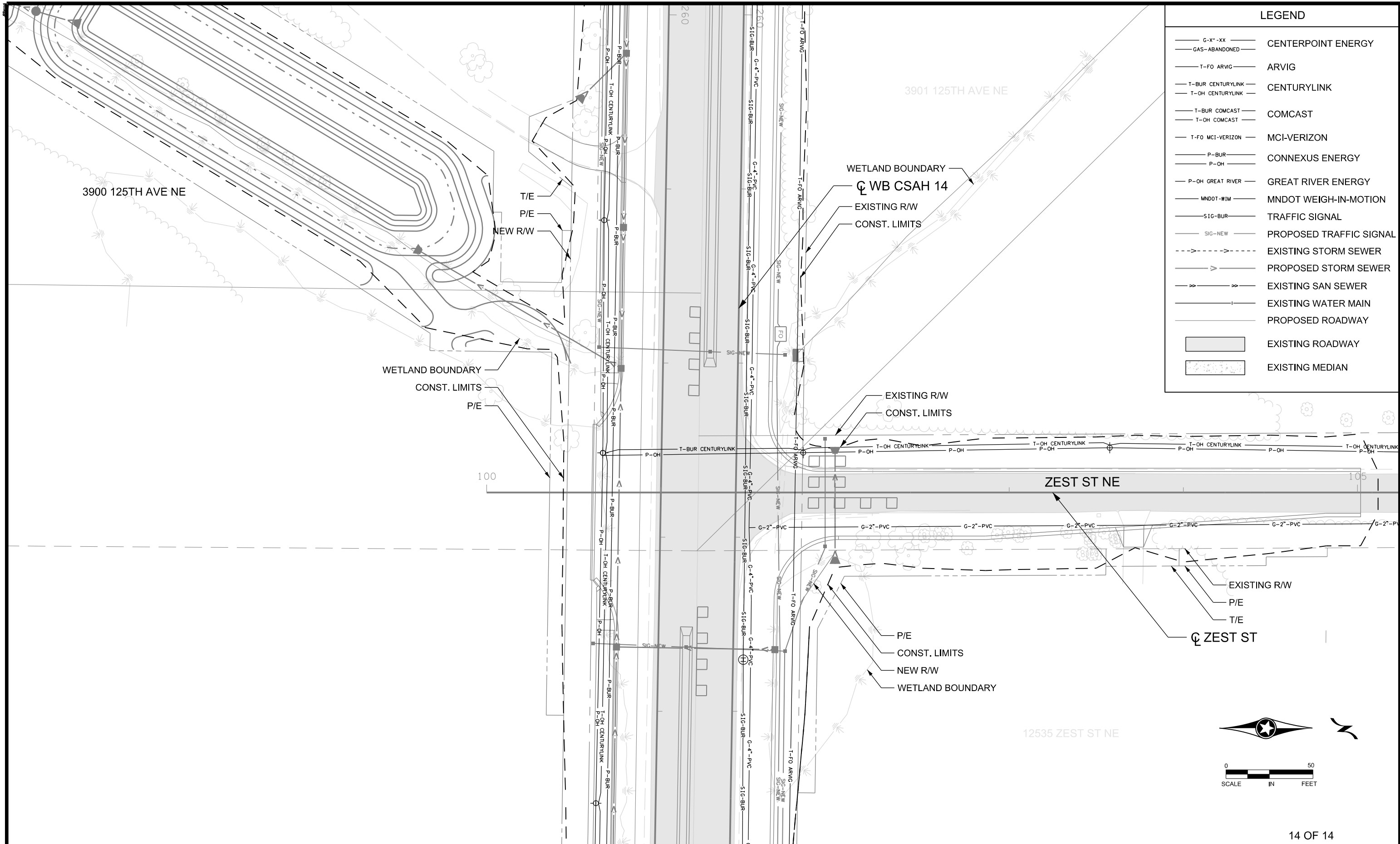


SAP 002-614-048  
 SAP 106-020-037

INPLACE UTILITY PLAN  
 NORTH LAKE BLVD NE  
 & LEGACY CREEK PKWY NE  
 Sheet 30 of 303 Sheets

LEGEND

G-X"-XX	CENTERPOINT ENERGY
GAS-ABANDONED	
T-FO ARVIC	ARVIC
T-BUR CENTURYLINK	CENTURYLINK
T-OH CENTURYLINK	
T-BUR COMCAST	COMCAST
T-OH COMCAST	
T-FO MCI-VERIZON	MCI-VERIZON
P-BUR	CONNEXUS ENERGY
P-OH	
P-OH GREAT RIVER	GREAT RIVER ENERGY
MNDOT-WIM	MNDOT WEIGH-IN-MOTION
SIG-BUR	TRAFFIC SIGNAL
SIG-NEW	PROPOSED TRAFFIC SIGNAL
- - - - -	EXISTING STORM SEWER
- > - > -	PROPOSED STORM SEWER
- >> - >> -	EXISTING SAN SEWER
-   -	EXISTING WATER MAIN
- - - - -	PROPOSED ROADWAY
[Solid Grey Box]	EXISTING ROADWAY
[Dotted Grey Box]	EXISTING MEDIAN



NO	DATE	BY	CKD	APPR	REVISION
NAME: P:\002-614-048\Plan\002614048_UT_P14.dgn 02/09/2022 2:58:20 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: JORGE R. BERNAL DELGADO  
 SIGNATURE: *[Signature]*  
 DATE: 02-14-22 LICENSE NO. 57216

DRAWN BY BTU DATE 02/07/22  
 DESIGN BY JRB DATE 02/07/22  
 CHECKED BY NJD DATE 02/07/22

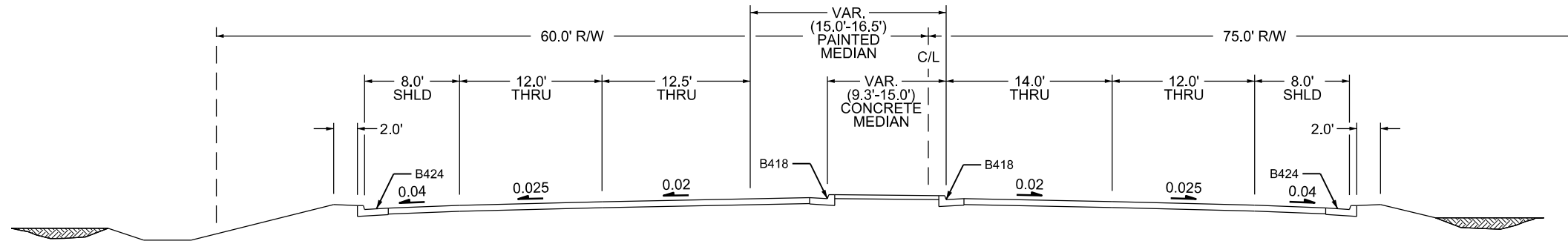
**ANOKA COUNTY**  
**HIGHWAY DEPT.**

SAP 002-614-048  
 SAP 106-020-037

**INPLACE UTILITY PLAN**  
 CSAH 14  
 STA 258+00 TO 264+00  
 Sheet 31 of 303 Sheets

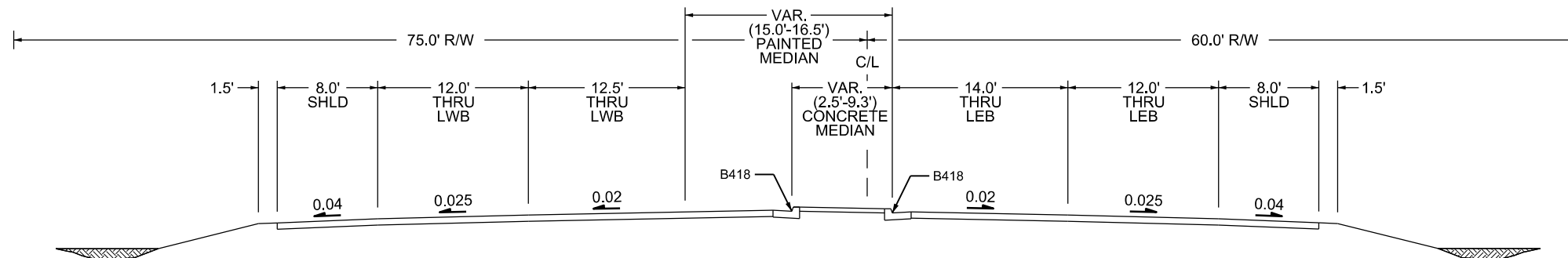
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EB STA. 209+31.36 - 210+24.71



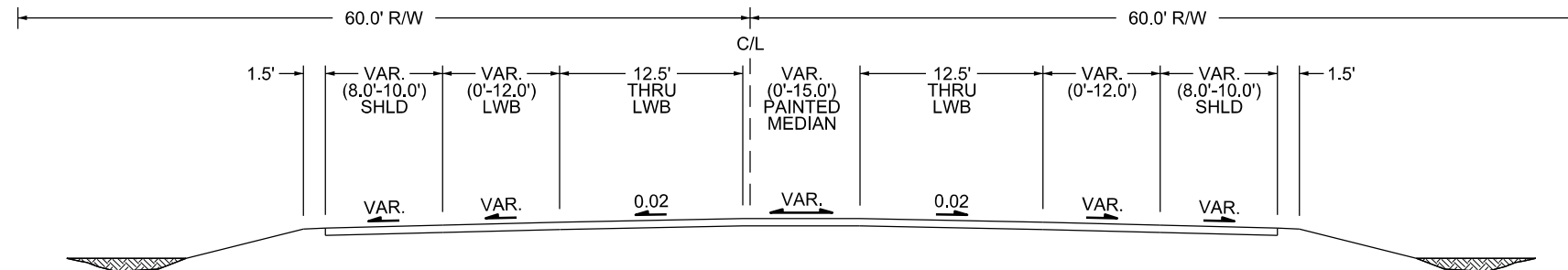
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EB STA. 210+24.71 - 211+17.04



CSAH 14 (125TH AVE NE) EXISTING

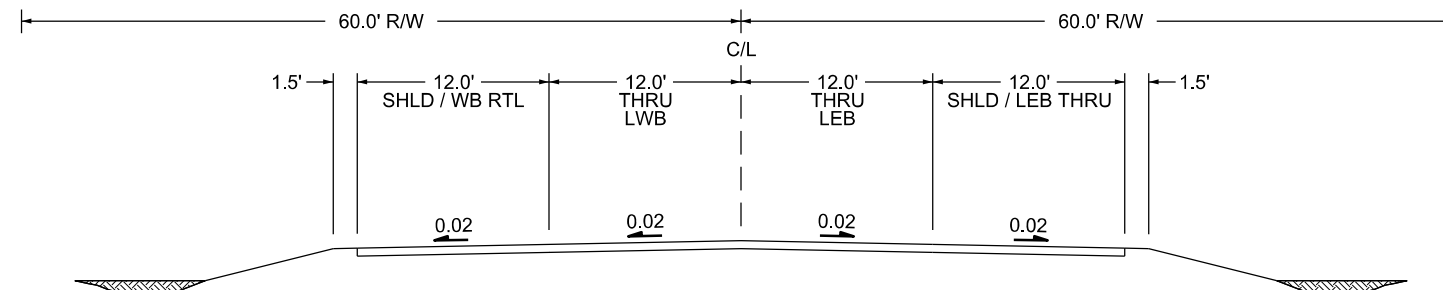
EB STA. 211+17.04 - 217+35.54



CSAH 14 (125TH AVE NE) EXISTING

EB STA. 217+35.54 - 222+92.89

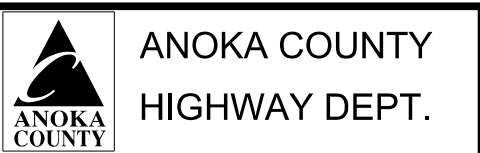
EB STA. 243+34.68 - 266+91.40



NO	DATE	BY	CKD	APPR	REVISION
NAME: P:\002-614-048\Plan\002614048_TYP.dgn					
02/09/2022 2:58:30 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: JORGE R. BERNAL DELGADO  
 SIGNATURE: *[Signature]*  
 DATE: 02-14-22 LICENSE NO. 57216

DRAWN BY: BTU DATE: 02/07/22  
 DESIGN BY: JRB DATE: 02/07/22  
 CHECKED BY: NJD DATE: 02/07/22

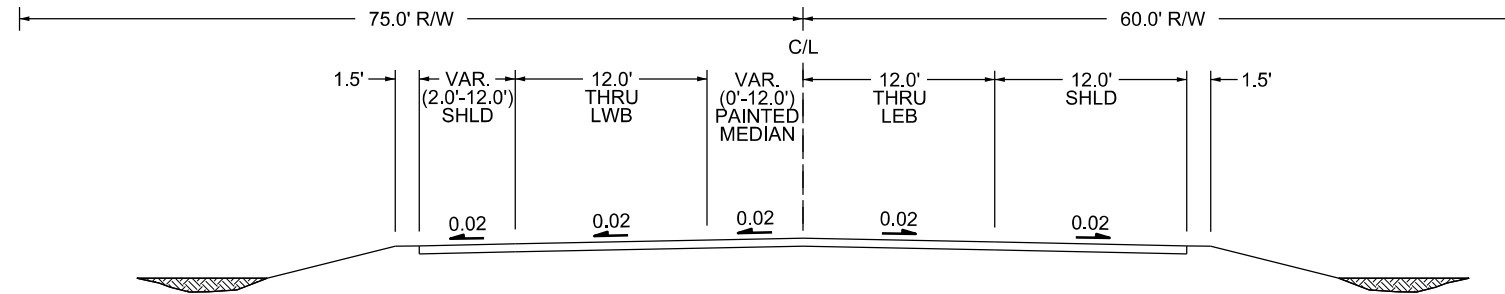


SAP 002-614-048  
 SAP 106-020-037



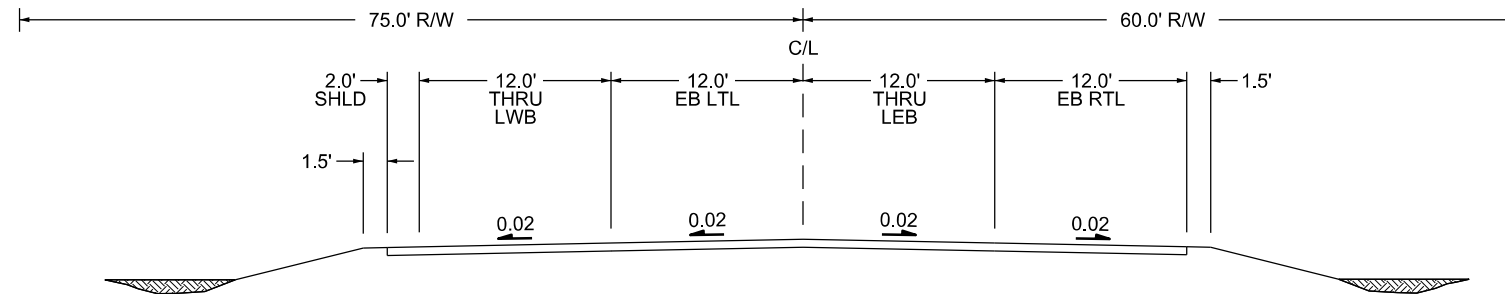
CSAH 14 (125TH AVE NE) EXISTING

EB STA. 222+92.89 - 227+24.24  
 EB STA. 237+36.53 - 243+34.68  
 EB STA. 266+91.40 - 270+89.59



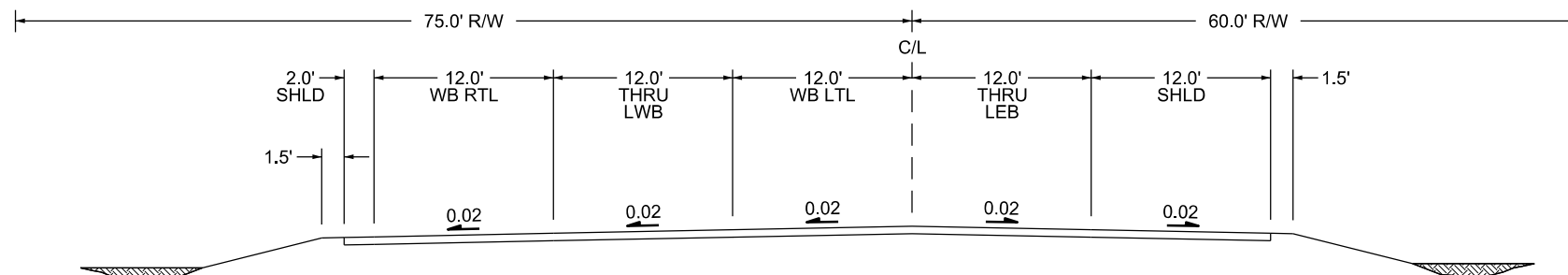
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EB STA. 227+24.24 - 232+29.60



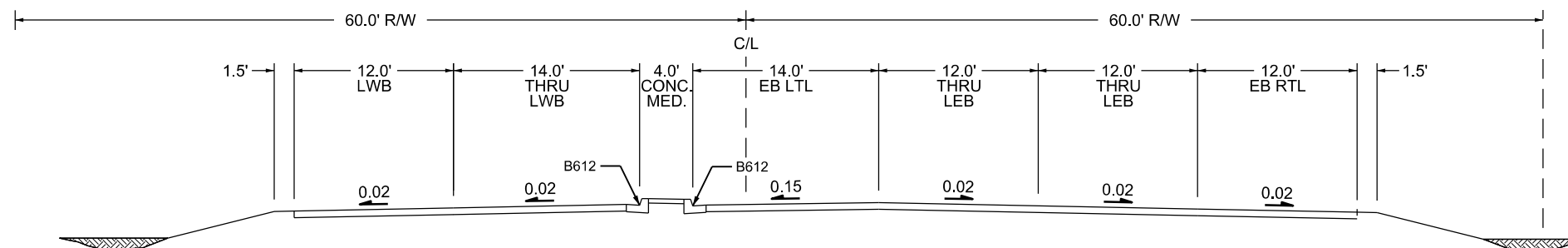
CSAH 14 (125TH AVE NE) EXISTING

EB STA. 232+29.60 - 237+36.53



CSAH 14 (125TH AVE NE) EXISTING

EB STA. 270+89.59 - 275+77.74

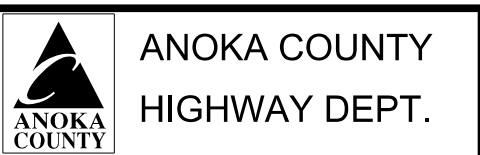


NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-614-048\Plan\002614048\_TYP.dgn 02/09/2022 2:58:30 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: JORGE R. BERNAL DELGADO  
 SIGNATURE: *[Signature]*  
 DATE: 02-14-22 LICENSE NO. 57216

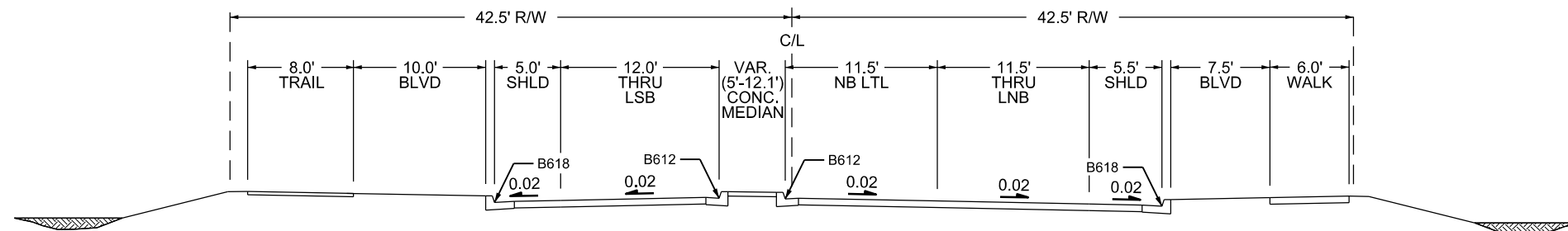
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 CHECKED BY: NJD DATE: 02/07/22



SAP 002-614-048  
 SAP 106-020-037

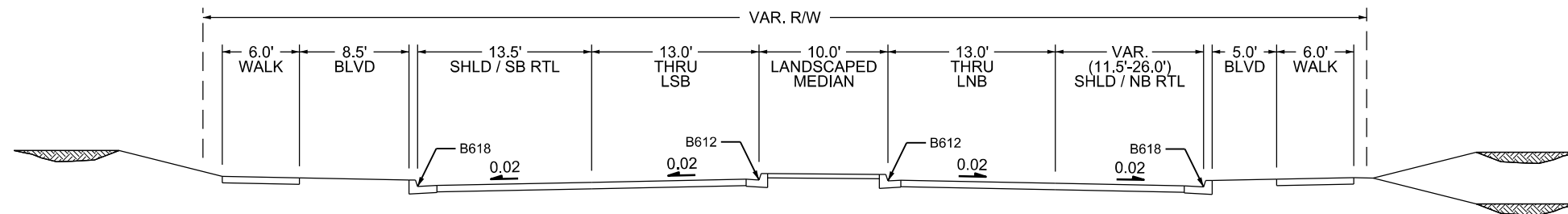
NORTH LAKE BLVD NE EXISTING

NB STA. 11+65.07 - 14+03.01

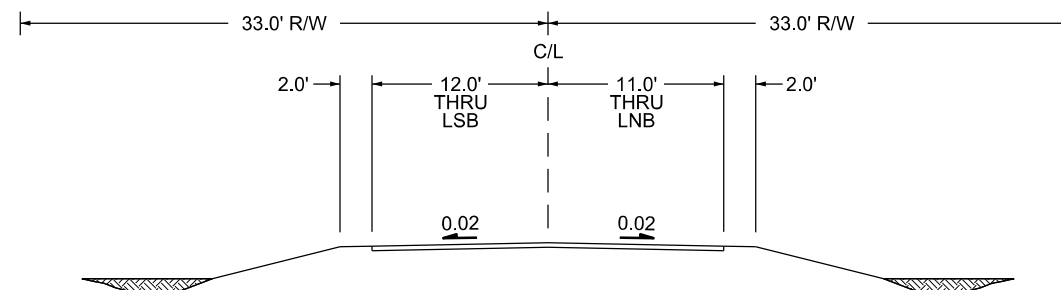


LEGACY CREEK PKWY NE EXISTING

NB STA. 50+00.00 - 53+99.80



ZEST ST NE EXISTING

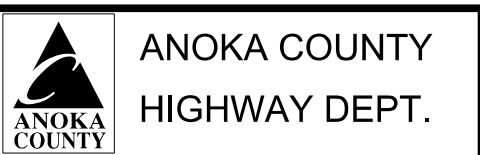


NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-614-048\Plan\002614048\_TYP.dgn 02/09/2022 2:58:30 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: JORGE R. BERNAL DELGADO  
 SIGNATURE: *[Signature]*  
 DATE: 02-14-22 LICENSE NO. 57216

DRAWN BY: BTU DATE: 02/07/22  
 DESIGN BY: JRB DATE: 02/07/22  
 CHECKED BY: NJD DATE: 02/07/22



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 SAP 106-020-037

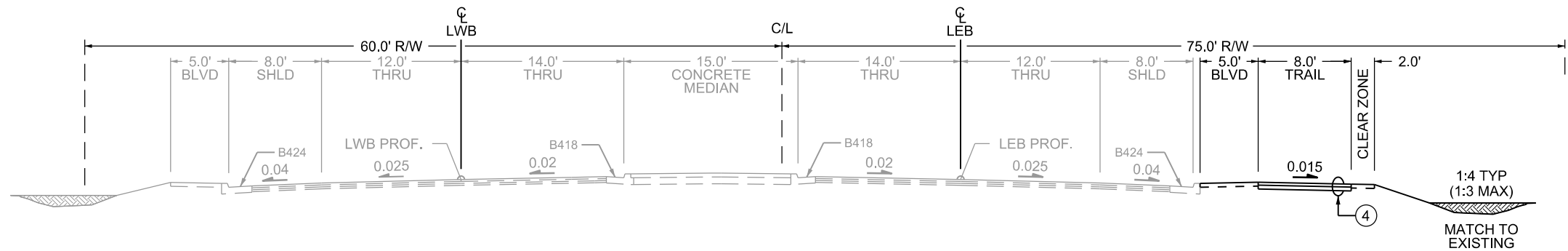
TYPICAL SECTIONS  
 EXISTING  
 NORTH LAKE, LEGACY CREEK & ZEST  
 Sheet 34 of 303 Sheets

**GENERAL NOTES:**

- SEE CONSTRUCTION PLAN SHEETS 88 - 95 FOR TURN LANE LOCATIONS.
- ALL CROSS SLOPES ARE EXPRESSED IN FT/FT.
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- UNLESS OTHERWISE SPECIFIED, CLASS 5 AGGREGATE WILL EXTEND 6" BEYOND THE EDGE OF BITUMINOUS TRAIL.
- 4.0" TOPSOIL & SEED ON ALL DISTURBED AREAS.
- ALL STATIONING BASED ON EB ALIGNMENT OF CSAH 14 <14E\_4> UNLESS OTHERWISE NOTED.
- 1.0' SUBGRADE EXCAVATION SHALL BE THE BLENDING OF THE EXISTING SUBGRADE AS TO UNIFY THE SOILS AT LEAST 1.0' BENEATH THE GRADING GRADE. PAID FOR AS 2105.507 - SUBGRADE EXCAVATION.

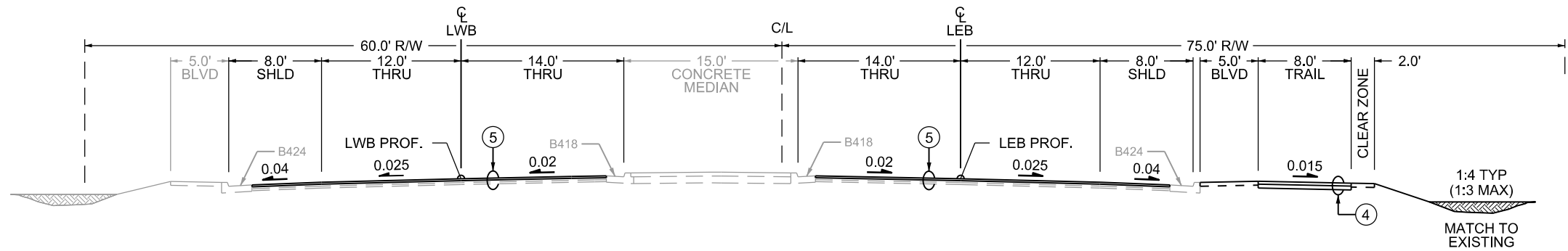
**CSAH 14 (125TH AVE NE) PROPOSED**

EB STA. 204+87.62 - 205+40.50



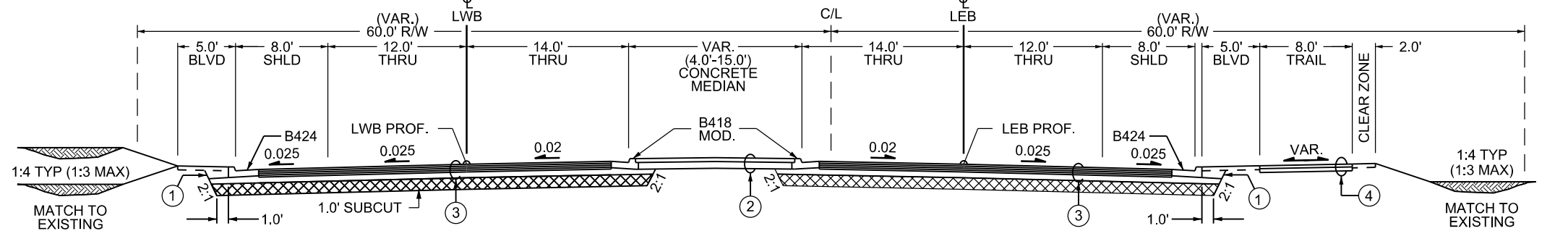
**CSAH 14 (125TH AVE NE) PROPOSED**

EB STA. 205+40.50 - 209+31.29



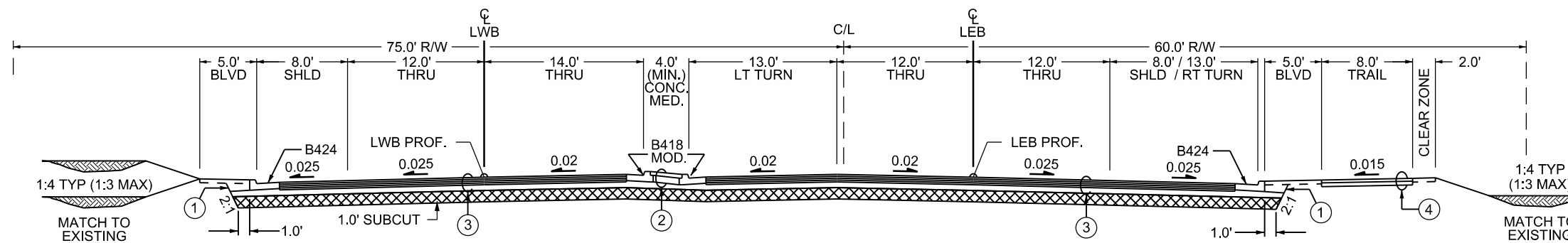
**CSAH 14 (125TH AVE NE) PROPOSED**

EB STA. 209+31.29 - 225+97.51  
EB STA. 239+04.71 - 257+36.77



**CSAH 14 (125TH AVE NE) PROPOSED**

EB STA. 225+97.51 - 232+35.43



**NOTES:**

- ① SUITABLE MATERIAL
- ② SEE DETAILS "A" AND "B" PAGE 42
- ③ SEE INSET "A" PAGE 42
- ④ SEE INSET "B" PAGE 42
- ⑤ SEE INSET "C" PAGE 42

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-614-048\Plan\002614048\_TYP.dgn 02/09/2022 2:58:30 PM

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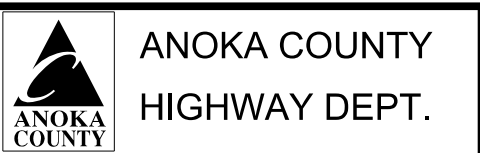
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SAP 106-020-037

TYPICAL SECTIONS  
PROPOSED  
CSAH 14

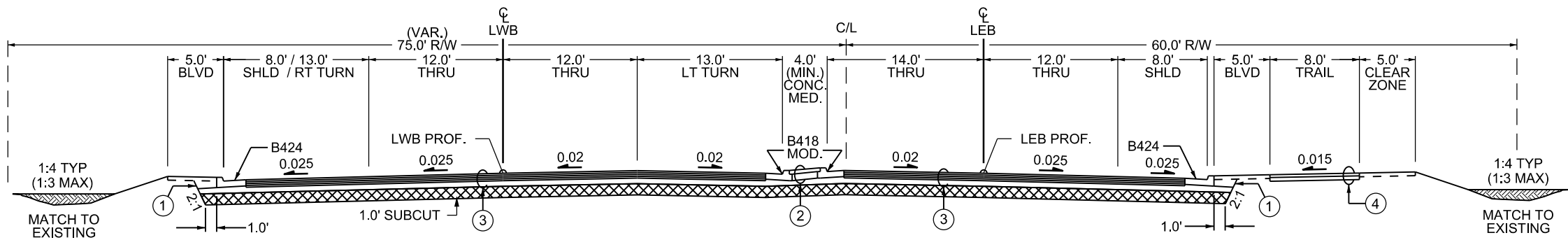
Sheet 35 of 303 Sheets

**GENERAL NOTES:**

- SEE CONSTRUCTION PLAN SHEETS 88 - 95 FOR TURN LANE LOCATIONS.
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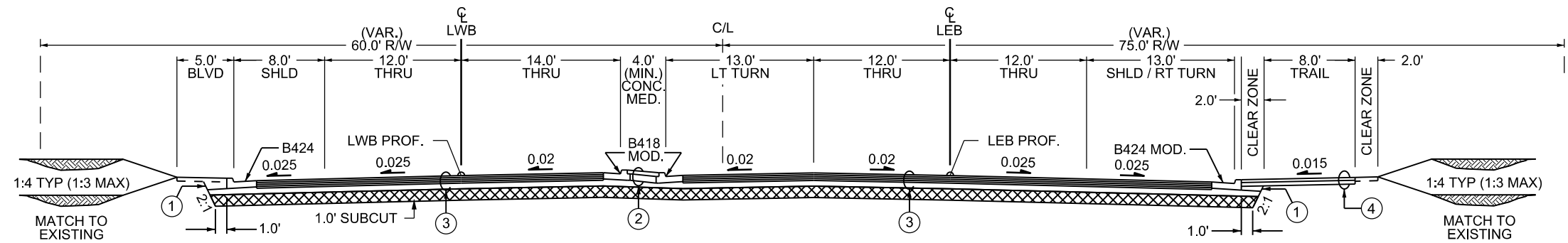
**CSAH 14 (125TH AVE NE) PROPOSED**

EB STA. 232+35.43- 239+04.71



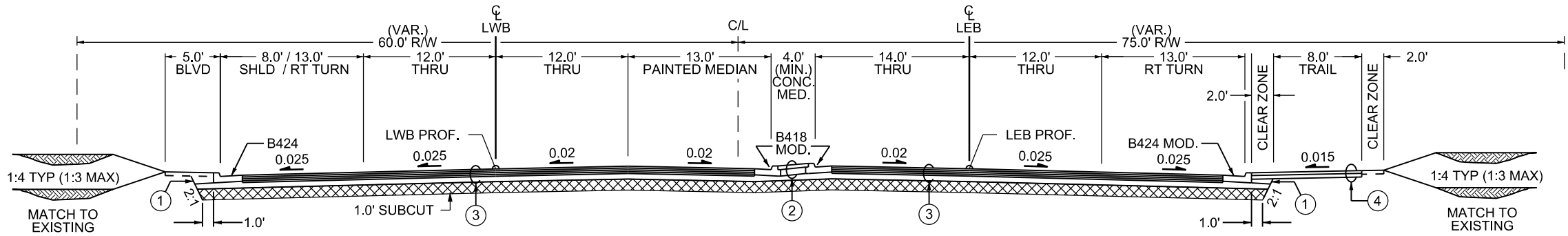
**CSAH 14 (125TH AVE NE) PROPOSED**

EB STA. 257+36.77 - 262+78.27  
EB STA. 267+84.63 - 275+77.74



**CSAH 14 (125TH AVE NE) PROPOSED**

EB STA. 262+78.27 - 267+84.63



**NOTES:**

- ① SUITABLE MATERIAL
- ② SEE DETAILS "A" AND "B" PAGE 42
- ③ SEE INSET "A" PAGE 42
- ④ SEE INSET "B" PAGE 42

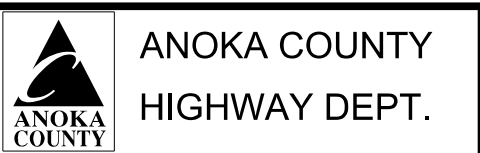
NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-614-048\Plan\002614048\_TYP.dgn 02/09/2022 2:58:31 PM

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SAP 106-020-037

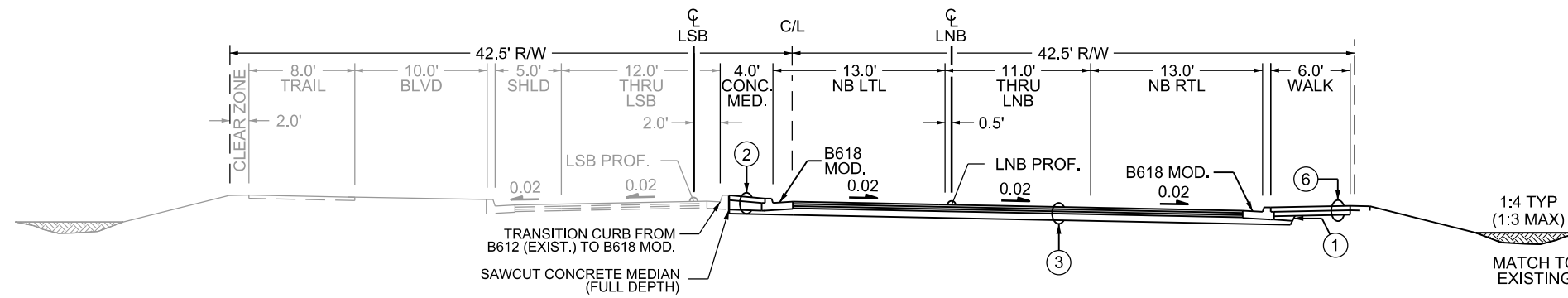
TYPICAL SECTIONS PROPOSED CSAH 14  
Sheet 36 of 303 Sheets

**GENERAL NOTES:**

- SEE CONSTRUCTION PLAN SHEETS 88 - 95 FOR TURN LANE LOCATIONS.
- ALL CROSS SLOPES ARE EXPRESSED IN FT/FT.
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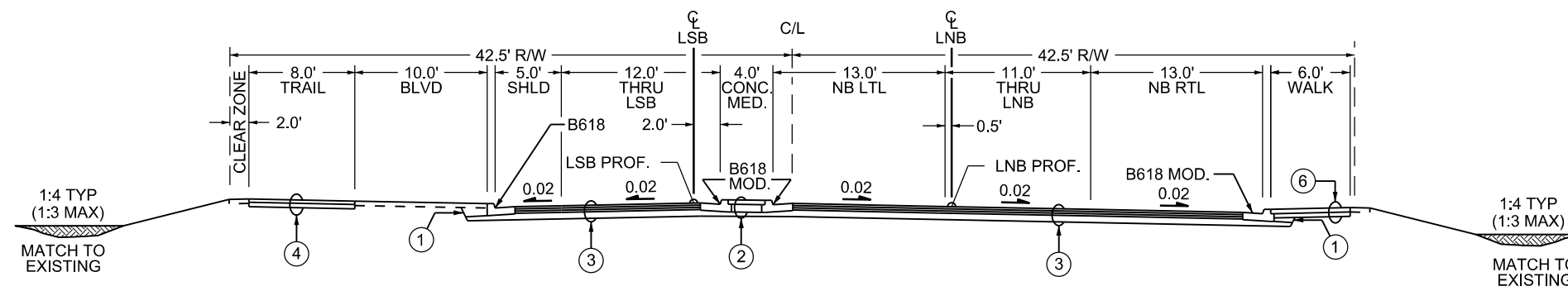
**NORTH LAKE BLVD NE PROPOSED**

NB STA. 10+56.11 - 11+84.21



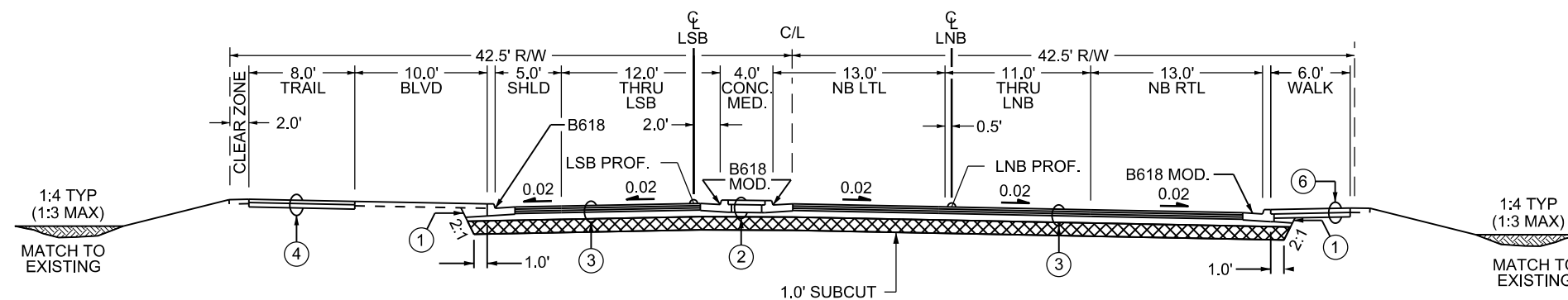
**NORTH LAKE BLVD NE PROPOSED**

NB STA. 11+84.21 - 12+42.57



**NORTH LAKE BLVD NE PROPOSED**

NB STA. 12+42.57 - 14+03.00



**NOTES:**

- ① SUITABLE MATERIAL
- ② SEE DETAILS "A" AND "B" PAGE 42
- ③ SEE INSET "A" PAGE 42
- ④ SEE INSET "B" PAGE 42
- ⑥ SEE INSET "D" PAGE 42

NO	DATE	BY	CKD	APPR	REVISION

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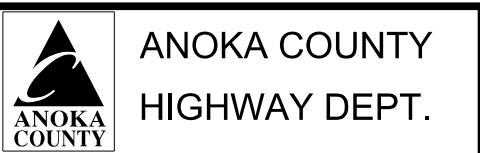
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DATE: 02-14-22 LICENSE NO. 57216

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CHECKED BY: NJD DATE: 02/07/22



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SAP 106-020-037

TYPICAL SECTIONS  
PROPOSED  
NORTH LAKE BLVD NE

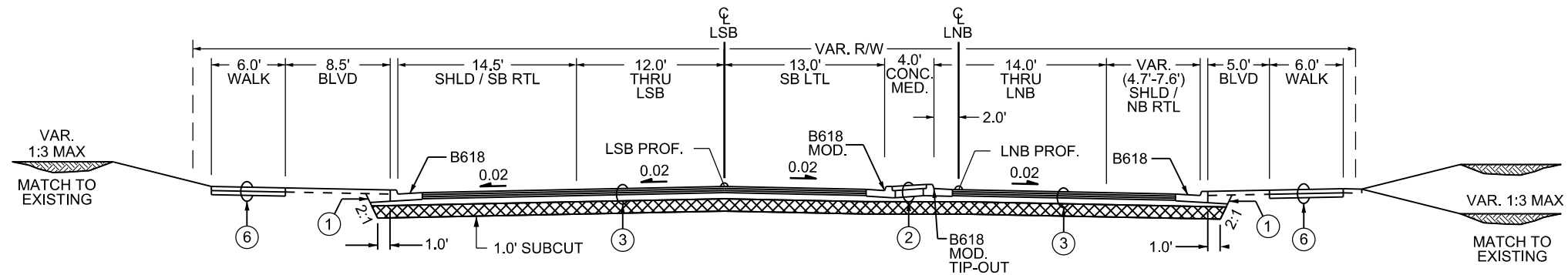
Sheet 37 of 303 Sheets

**GENERAL NOTES:**

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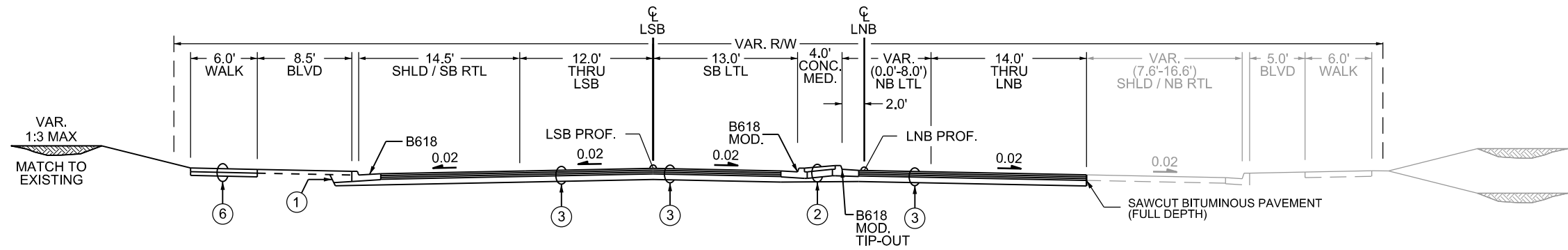
**LEGACY CREEK PKWY NE PROPOSED**

NB STA. 50+00.00 - 51+72.58



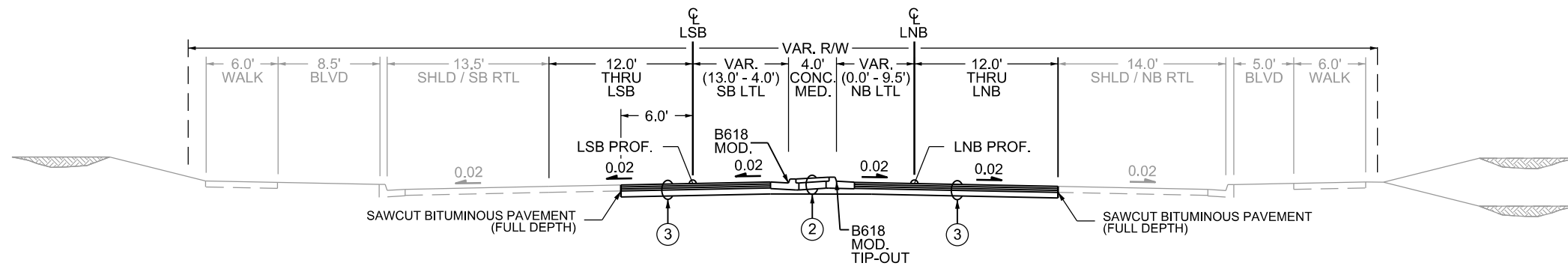
**LEGACY CREEK PKWY NE PROPOSED**

NB STA. 51+72.58 - 51+98.98



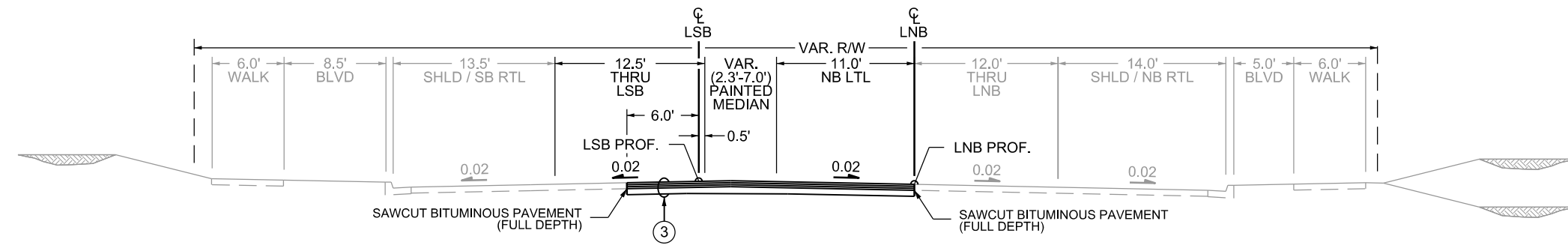
**LEGACY CREEK PKWY NE PROPOSED**

NB STA. 51+98.98 - 52+83.13



**LEGACY CREEK PKWY NE PROPOSED**

NB STA. 52+83.13 - 53+91.26



**NOTES:**

- ① SUITABLE MATERIAL
- ② SEE DETAILS "A" AND "B" PAGE 42
- ③ SEE INSET "A" PAGE 42
- ⑥ SEE INSET "D" PAGE 42

NO	DATE	BY	CKD	APPR	REVISION

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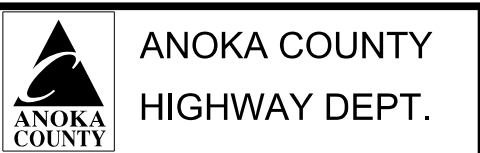
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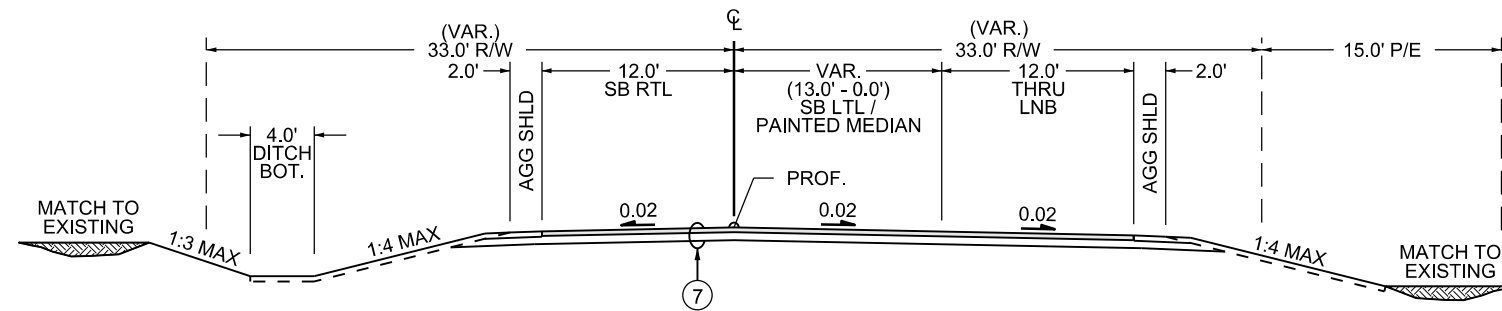
SAP 002-614-048  
SAP 106-020-037

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**ZEST ST NE PROPOSED**

STA. 101+66.98 - 105+01.83



**NOTES:**

⑦ SEE INSET "G" PAGE 42

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-614-048\Plan\002614048\_TYP.dgn 02/09/2022 2:58:32 PM

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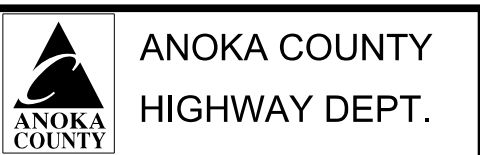
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CHECKED BY NJD DATE 02/07/22



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SAP 106-020-037

TYPICAL SECTIONS  
PROPOSED  
ZEST ST NE

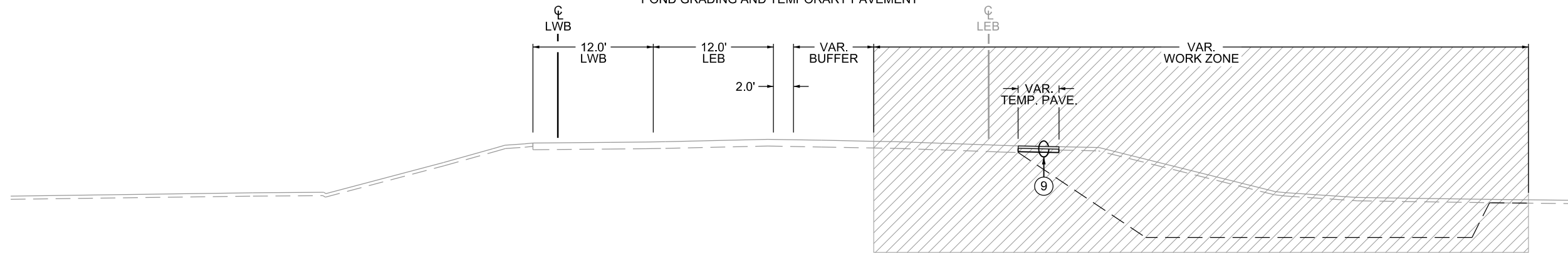
Sheet 39 of 303 Sheets

**GENERAL NOTES:**

- SEE ALIGNMENT PLAN SHEET 80 AND STAGING PLAN SHEETS 64 - 77 FOR LANE CONFIGURATIONS AT EACH STAGE

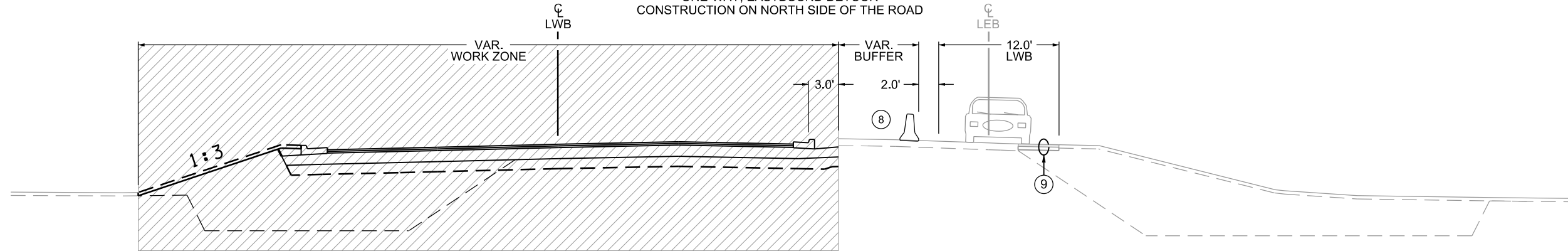
**CSAH 14 (125TH AVE NE) PROPOSED**

STAGE 1  
POND GRADING AND TEMPORARY PAVEMENT



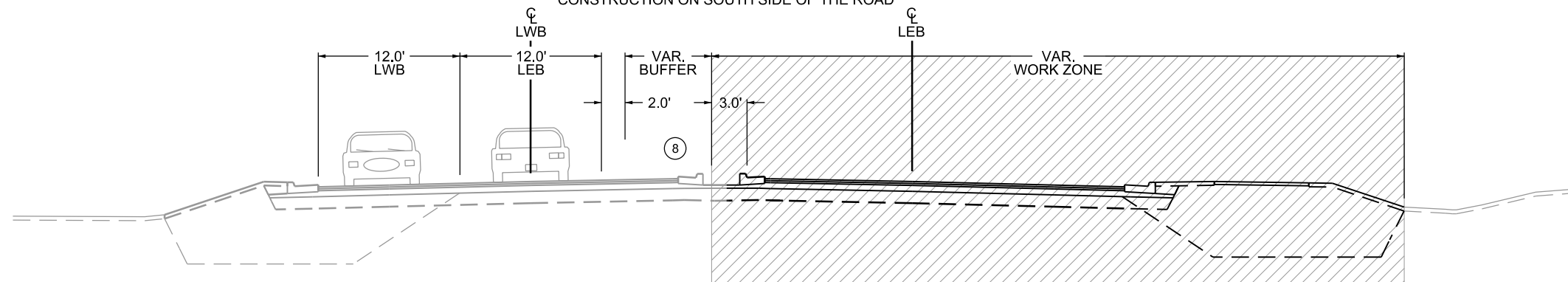
**CSAH 14 (125TH AVE NE) PROPOSED**

STAGE 2  
ONE-WAY, EASTBOUND DETOUR  
CONSTRUCTION ON NORTH SIDE OF THE ROAD



**CSAH 14 (125TH AVE NE) PROPOSED**

STAGE 3  
CONSTRUCTION ON SOUTH SIDE OF THE ROAD



**NOTES:**

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

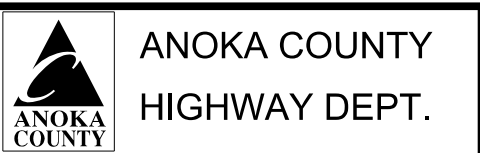
⑨ SEE INSET "H" PAGE 42

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TYPICAL SECTIONS  
 STAGE CONSTRUCTION  
 Sheet 40 of 303 Sheets

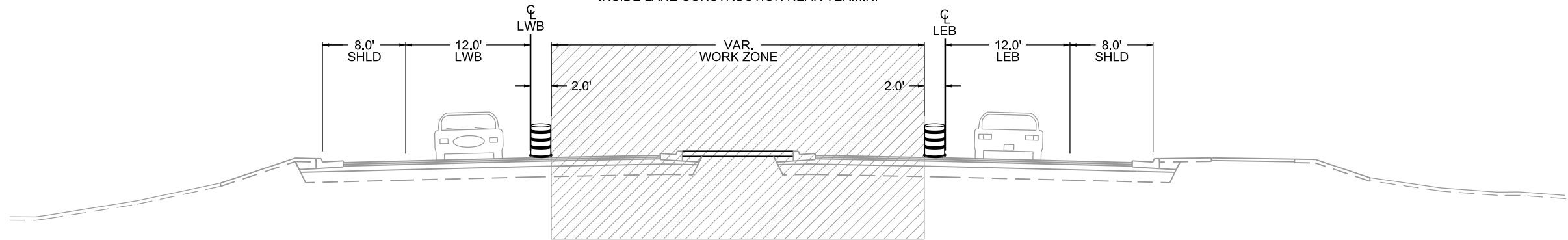


**GENERAL NOTES:**

- SEE ALIGNMENT PLAN SHEET 80 AND STAGING PLAN SHEETS 84 - 77 FOR LANE CONFIGURATIONS AT EACH STAGE

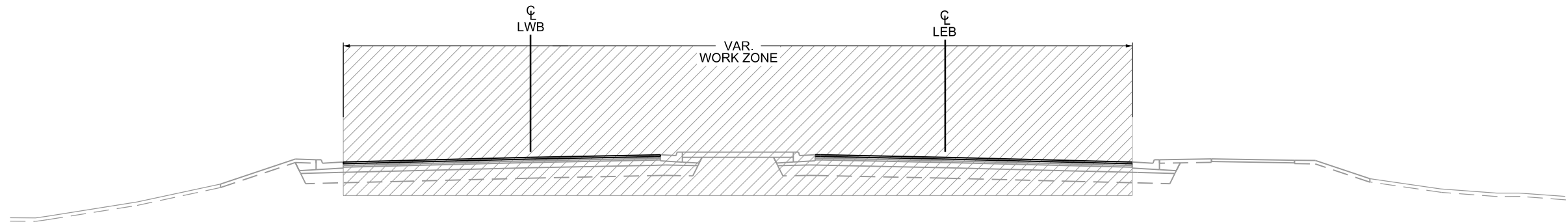
**CSAH 14 (125TH AVE NE) PROPOSED**

STAGE 4  
MEDIAN RESTORATION AND CONCRETE FLATWORK  
INSIDE LANE CONSTRUCTION NEAR TERMINI



**CSAH 12 (125TH AVE NE) PROPOSED**

STAGE 5  
MILL & OVERLAY EAST TERMINUS AND FINAL WEARING COURSE

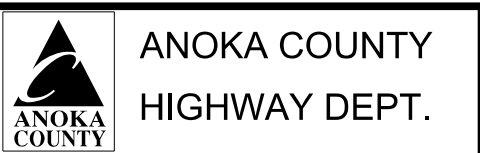


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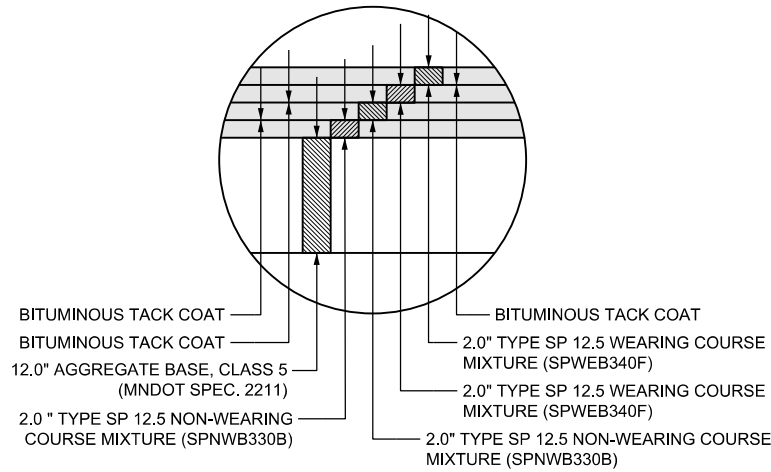
DRAWN BY BTU DATE 02/07/22  
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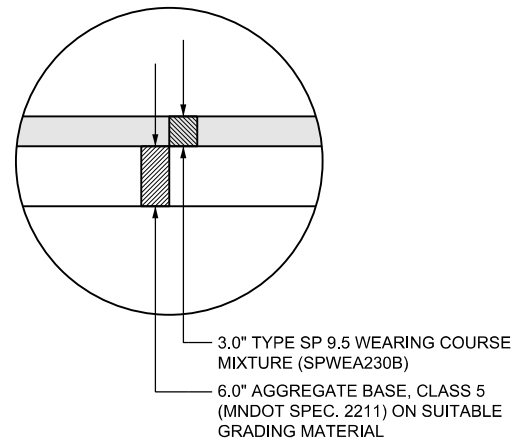
SAP 002-614-048  
 SAP 106-020-037

TYPICAL SECTIONS  
 STAGE CONSTRUCTION  
 Sheet 41 of 303 Sheets

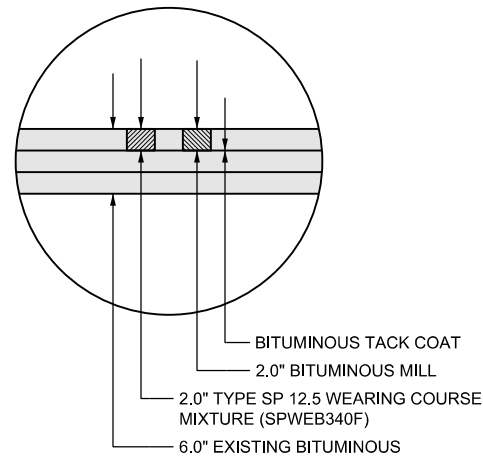
**INSET "A"**  
RECONSTRUCTION  
MAINLINE AND SHOULDERS



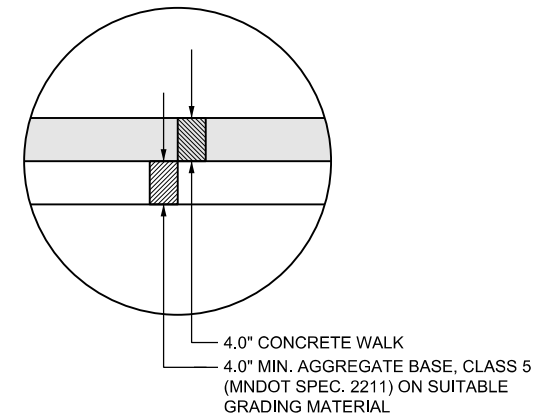
**INSET "B"**  
BITUMINOUS TRAIL AND  
DRIVEWAYS



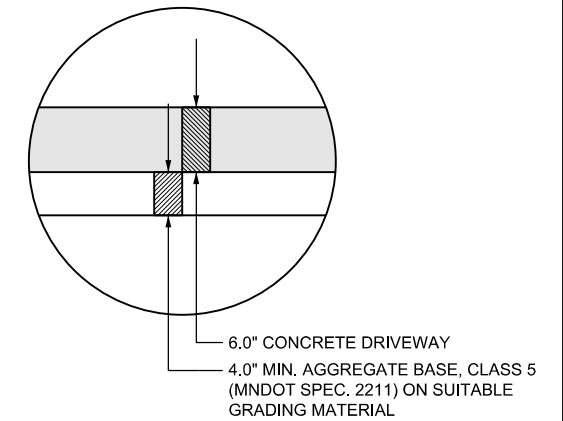
**INSET "C"**  
2.0" MILL & OVERLAY



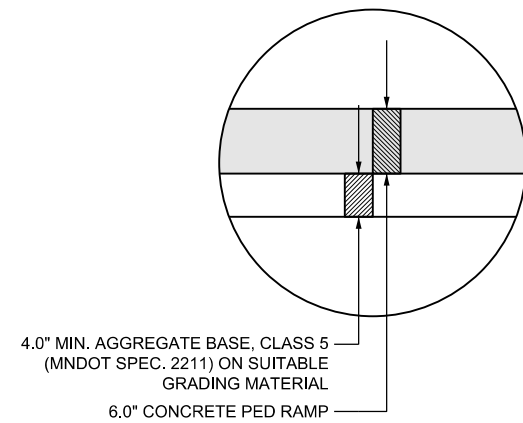
**INSET "D"**  
CONCRETE WALK  
OR MEDIAN



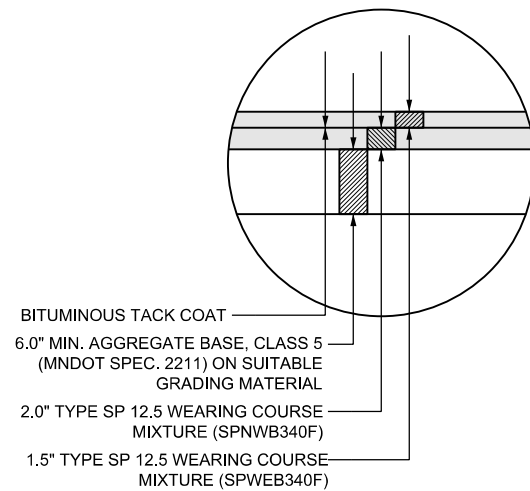
**INSET "E"**  
CONCRETE DRIVEWAY



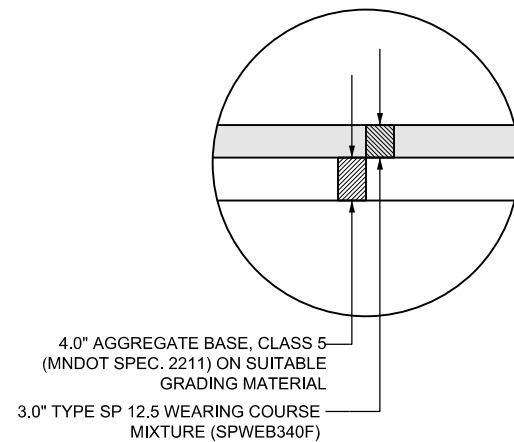
**INSET "F"**  
CONCRETE WALK  
PED RAMP



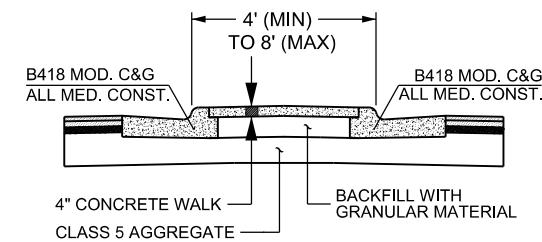
**INSET "G"**  
CITY OF BLAINE  
ROAD SECTION



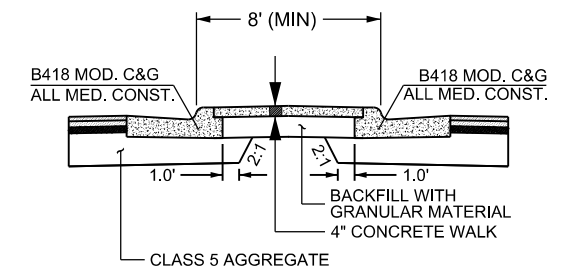
**INSET "H"**  
TEMPORARY PAVEMENT



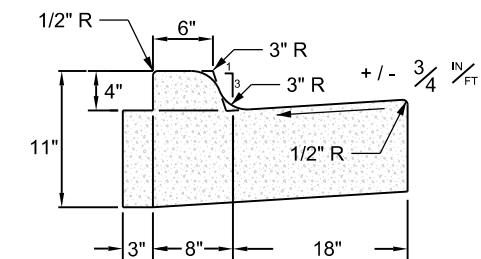
**DETAIL "A"**  
4' TO 8' MEDIAN



**DETAIL "B"**  
8' OR GREATER MEDIAN

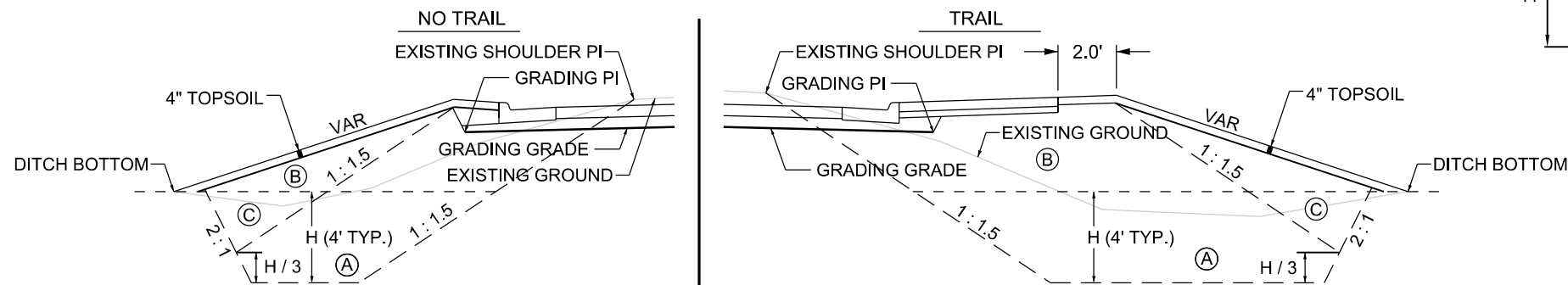


**DETAIL "C"**  
B418 MODIFIED CURB & GUTTER



**MUCK EXCAVATION**

- (A) SEE PROFILES AND CROSS SECTIONS FOR MUCK EXCAVATION LOCATIONS AND DEPTH.
- (B) BACKFILL WITH GRANULAR MATERIAL.
- (C) DISPOSAL AREA FOR UNSUITABLE MATERIAL (EXCEPT FOR DEBRIS) LOCATIONS FOR DISPOSAL SHALL BE DETERMINED IN THE FIELD



NO	DATE	BY	CKD	APPR	REVISION
NAME: P:\002-614-048\Plan\002614048_TYP.dgn 02/09/2022 2:58:33 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: JORGE R. BERNAL DELGADO  
 SIGNATURE: *[Signature]*  
 DATE: 02-14-22 LICENSE NO. 57216

DRAWN BY: BTU DATE: 02/07/22  
 DESIGN BY: JRB DATE: 02/07/22  
 CHECKED BY: NJD DATE: 02/07/22

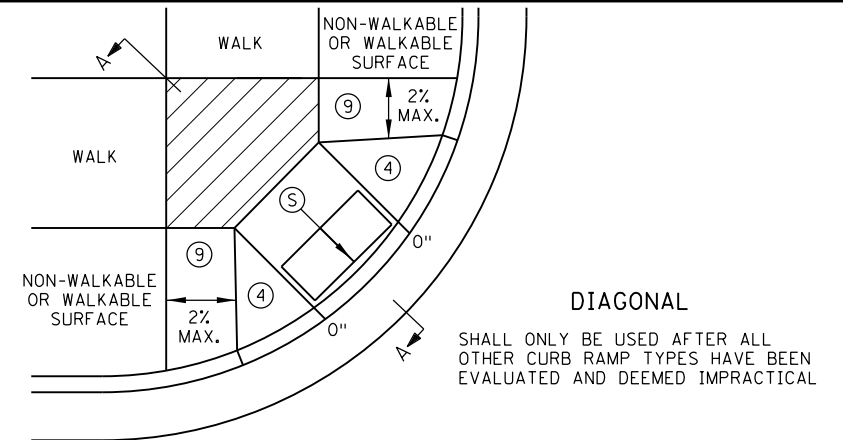
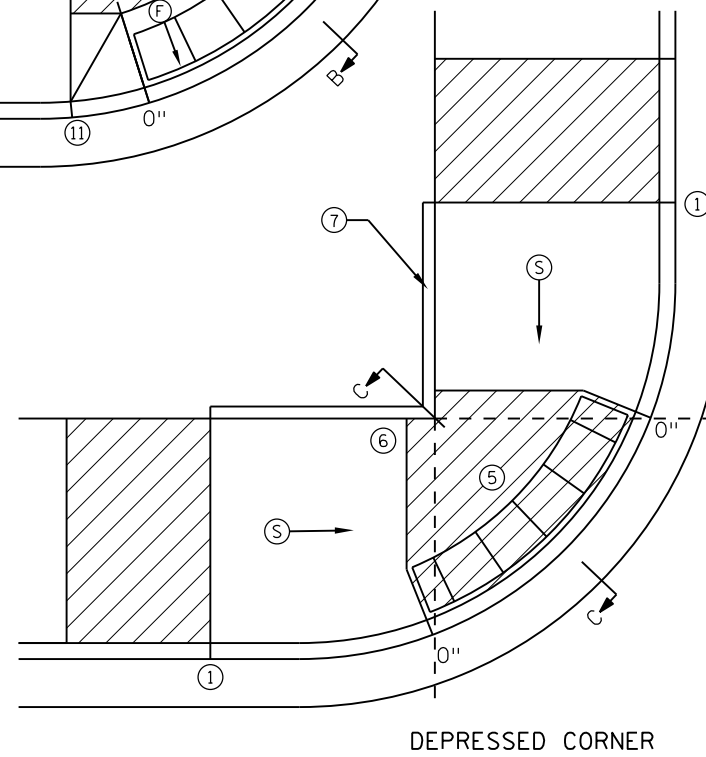
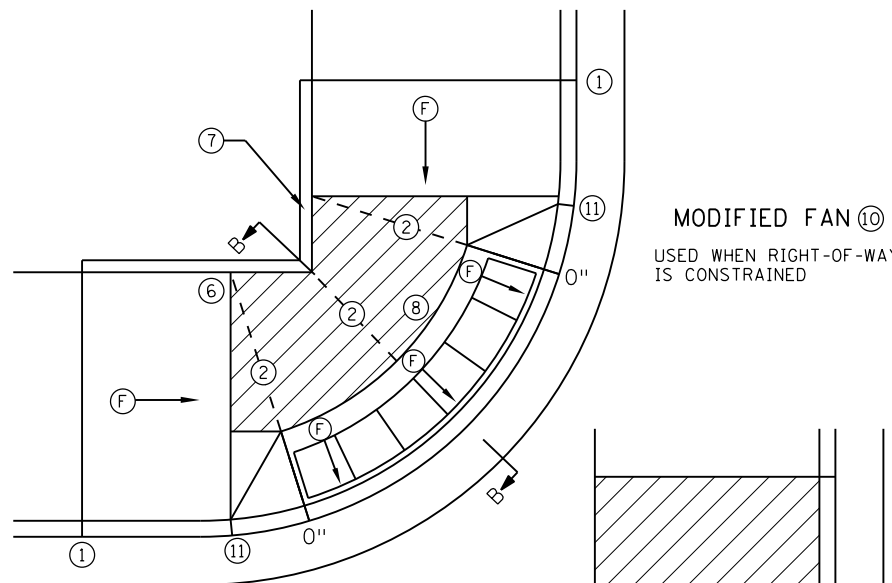
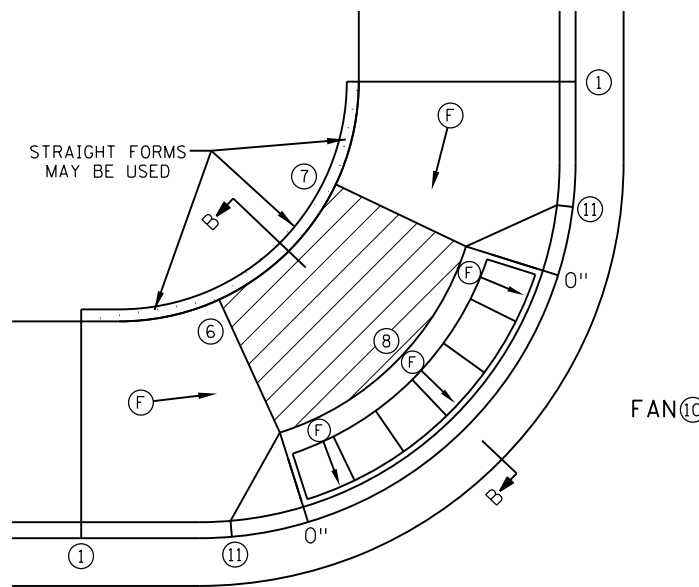
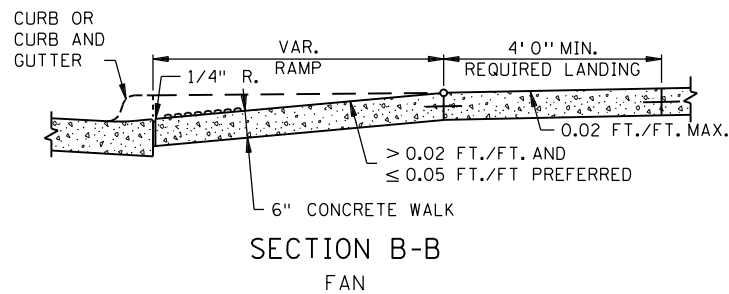
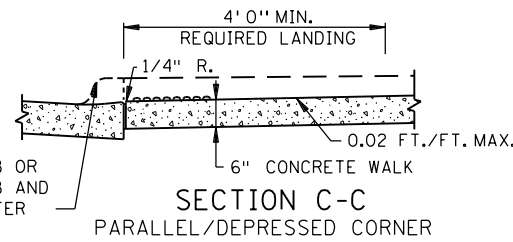
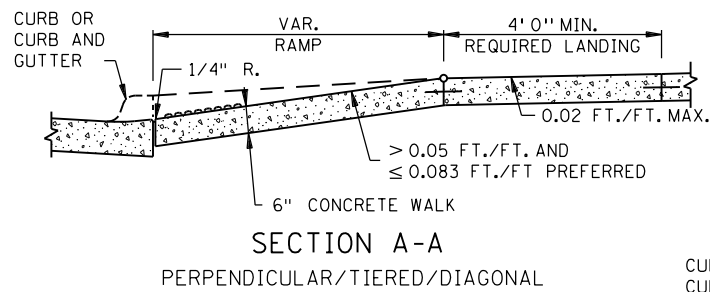
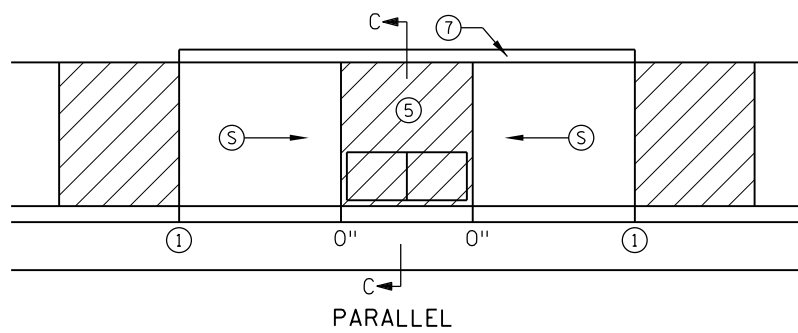
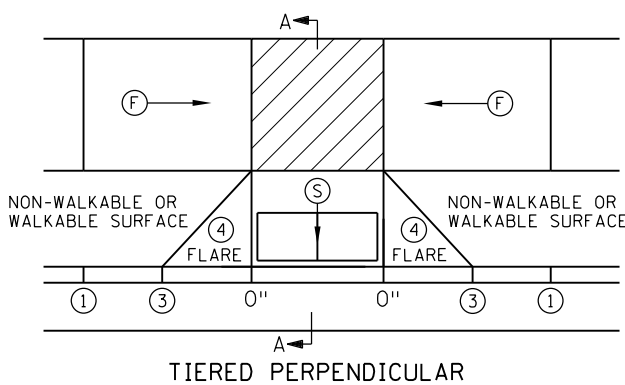
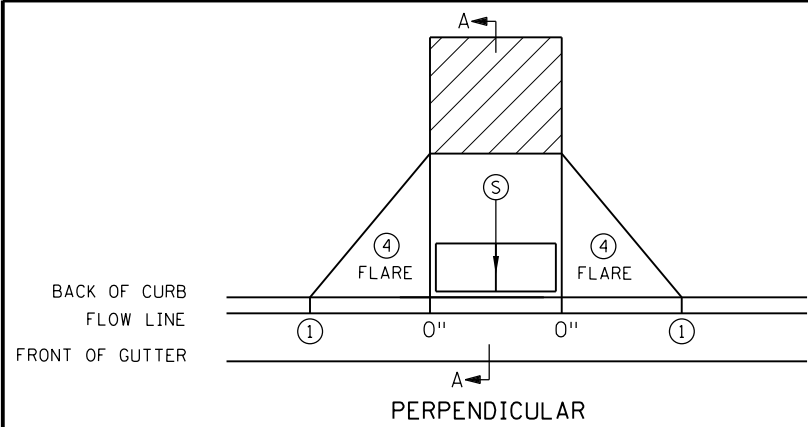
**ANOKA COUNTY**  
**HIGHWAY DEPT.**

SAP 002-614-048  
 SAP 106-020-037

TYPICAL SECTIONS  
 INSETS AND DETAILS  
 Sheet 42 of 303 Sheets

PLOTTED/REVISED: 02/16/2022

DISTRICT #: PLOT NAME: \$\$\$\PLOT\NAME\$\$\$  
 PATH & FILENAME: P:\002-614-048\Plan\002614048 STD.dgn



NOTES:

- LANDINGS SHALL BE LOCATED ANYWHERE THE PEDESTRIAN ACCESS ROUTE (PAR) CHANGES DIRECTION, AT THE TOP OF RAMPS THAT HAVE RUNNING SLOPES GREATER THAN 5.0%, AND IF THE APPROACHING WALK IS INVERSE GRADE GREATER THAN 2%.
- INITIAL CURB RAMP LANDINGS SHALL BE CONSTRUCTED WITHIN 15' FROM THE BACK OF CURB, WITH 6' FROM THE BACK OF CURB BEING THE PREFERRED DISTANCE, ONLY APPLICABLE WHEN THE INITIAL RAMP RUNNING SLOPE IS OVER 5.0%.
- SECONDARY CURB RAMP LANDINGS ARE REQUIRED FOR EVERY 30" OF VERTICAL RISE WHEN THE LONGITUDINAL RUNNING SLOPE IS GREATER THAN 5.0%.
- CONTRACTION JOINTS SHALL BE 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	
(S)	INDICATES PEDESTRIAN RAMP - SLOPE SHALL BE BETWEEN 5.0% MINIMUM AND 8.3% MAXIMUM IN THE DIRECTION SHOWN AND THE CROSS SLOPE SHALL NOT EXCEED 2.0%.
(F)	INDICATES PEDESTRIAN RAMP - SLOPE SHALL BE GREATER THAN 2.0% AND LESS THAN 5.0% IN THE DIRECTION SHOWN AND CROSS SLOPE SHALL NOT EXCEED 2.0%.
[Hatched Box]	LANDING AREA - 4' X 4' MIN. (5' X 5' MIN. PREFERRED) DIMENSIONS AND MAX 2.0% SLOPE IN ALL DIRECTIONS. LANDING SHALL BE FULL WIDTH OF INCOMING PAR.
X"	CURB HEIGHT

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

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

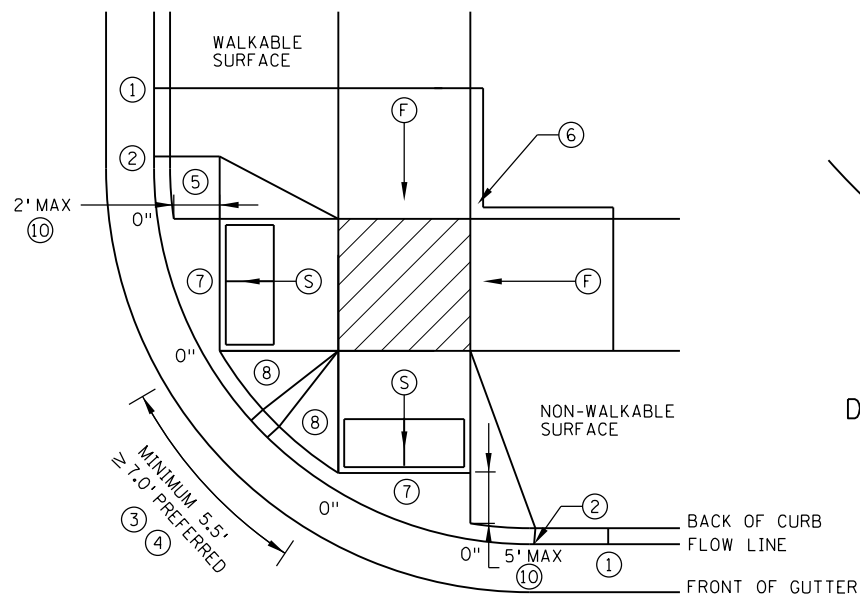
PEDESTRIAN CURB RAMP DETAILS

STATE PROJ. NO. SAP 002-614-048  
 SAP 106-020-037

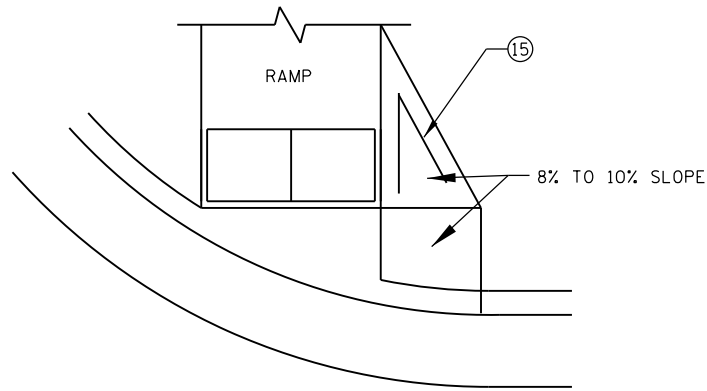
SHEET NO. 43 OF 303 SHEETS

PLOTTED/REVISED: 02/16/2022

DISTRICT #: PLOT NAME: \$\$\$@PLOT\$NAME\$\$\$  
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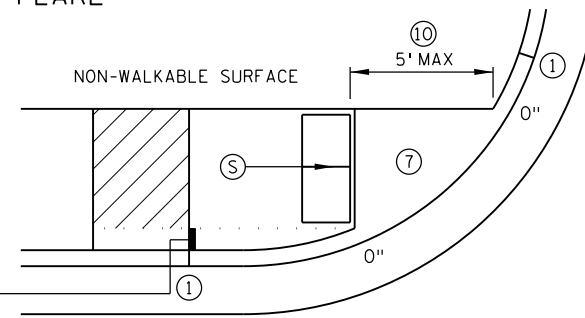


COMBINED DIRECTIONAL

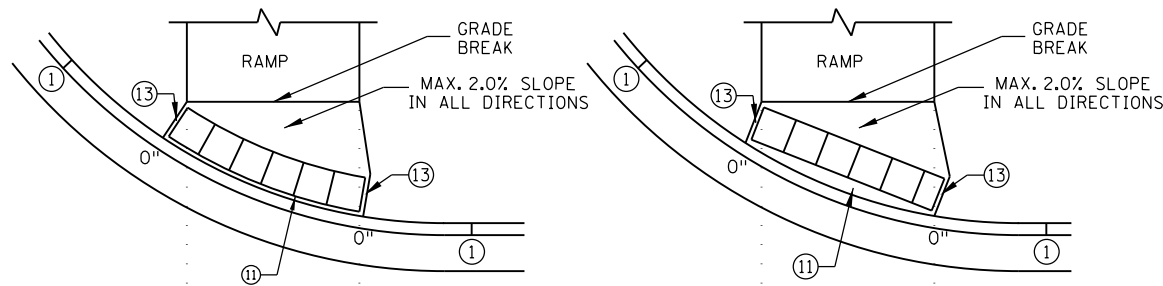


DIRECTIONAL RAMP WALKABLE FLARE

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

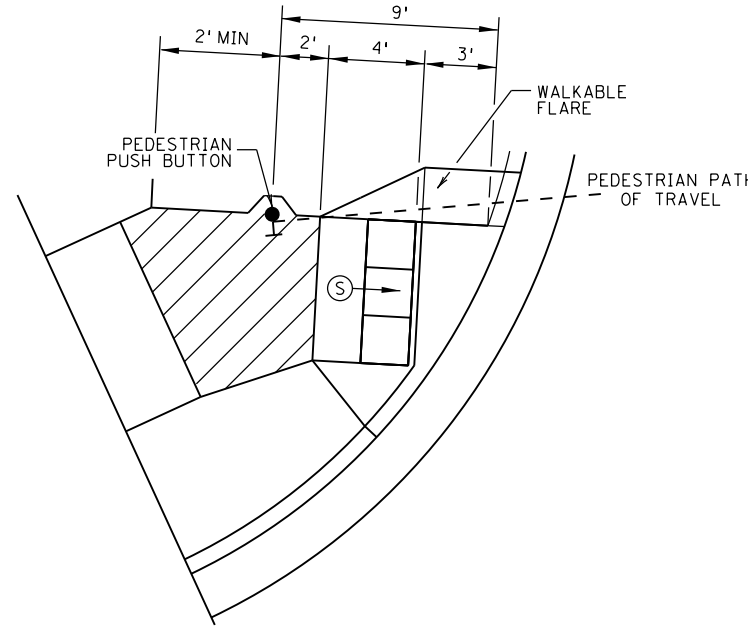


STANDARD ONE-WAY DIRECTIONAL ⑨



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

NOTES:

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

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

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

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

ALL GRADE BREAKS WITHIN THE PAR SHALL BE PERPENDICULAR TO THE PATH OF TRAVEL. 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

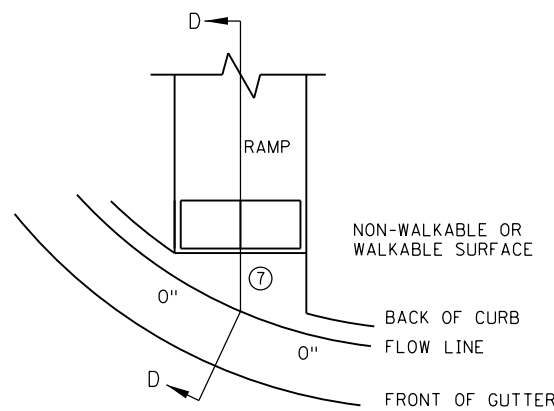
THESE LONGITUDINAL SLOPE RANGES SHALL BE THE STARTING POINT. IF SITE CONDITIONS WARRANT, LONGITUDINAL SLOPES UP TO 8.3% OR FLATTER ARE ALLOWED.

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

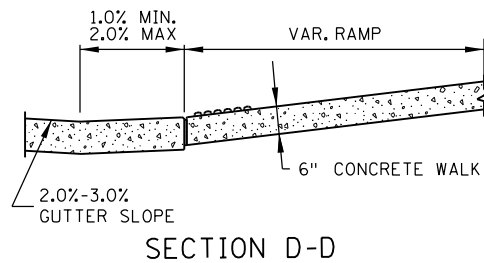
⑥ INDICATES PEDESTRIAN RAMP - SLOPE SHALL BE GREATER THAN 2.0% AND LESS THAN 5.0% IN THE DIRECTION SHOWN AND CROSS SLOPE SHALL NOT EXCEED 2.0%.

⑦ 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



CURB FOR DIRECTIONAL RAMPS ⑭



SECTION D-D

REVISION:  
APPROVED: 11-04-2021  
*Jeff J. Perkins*  
JEFF PERKINS  
OPERATIONS DIVISION

**m**  
MINNESOTA  
DEPARTMENT  
OF  
TRANSPORTATION

STANDARD PLAN 5-297.250

2 OF 6

*Tom Styrbicki*  
THOMAS STYRBICKI  
STATE DESIGN ENGINEER

APPROVED: 11-04-2021  
REVISED:

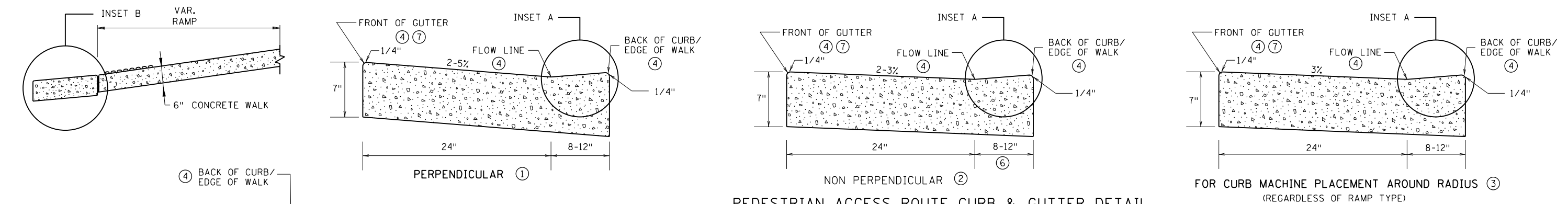
STATE PROJ. NO. SAP 002-614-048  
SAP 106-020-037

PEDESTRIAN CURB RAMP DETAILS

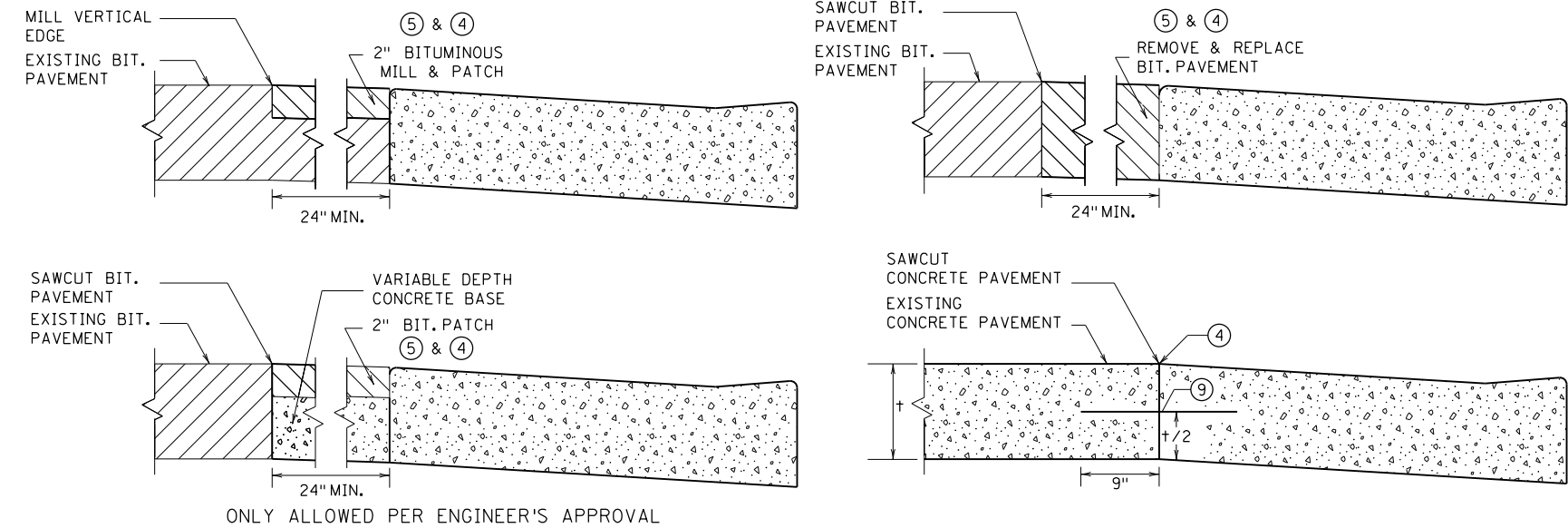
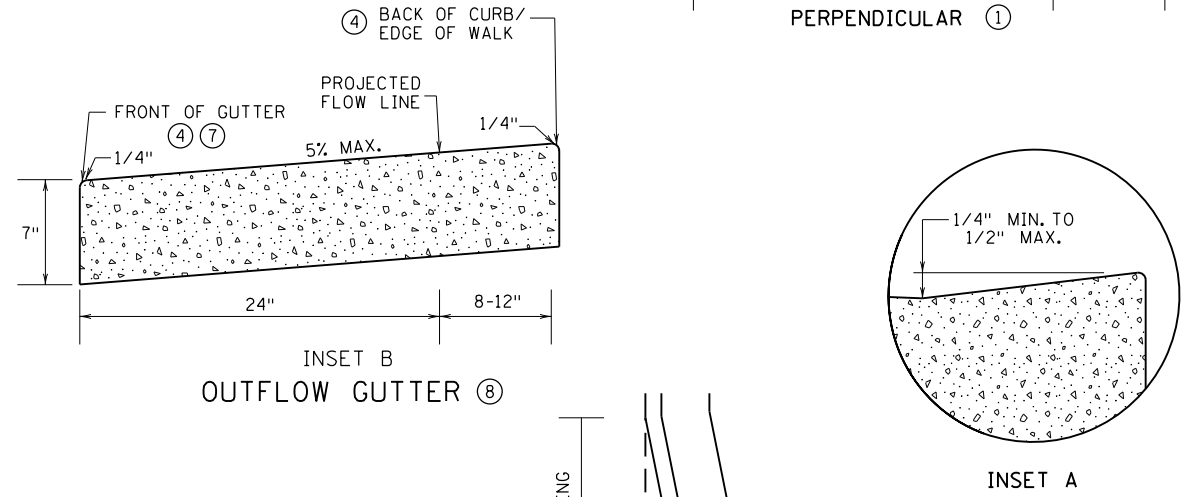
SHEET NO. 44 OF 303 SHEETS

PLOTTED/REVISED: 02/16/2022

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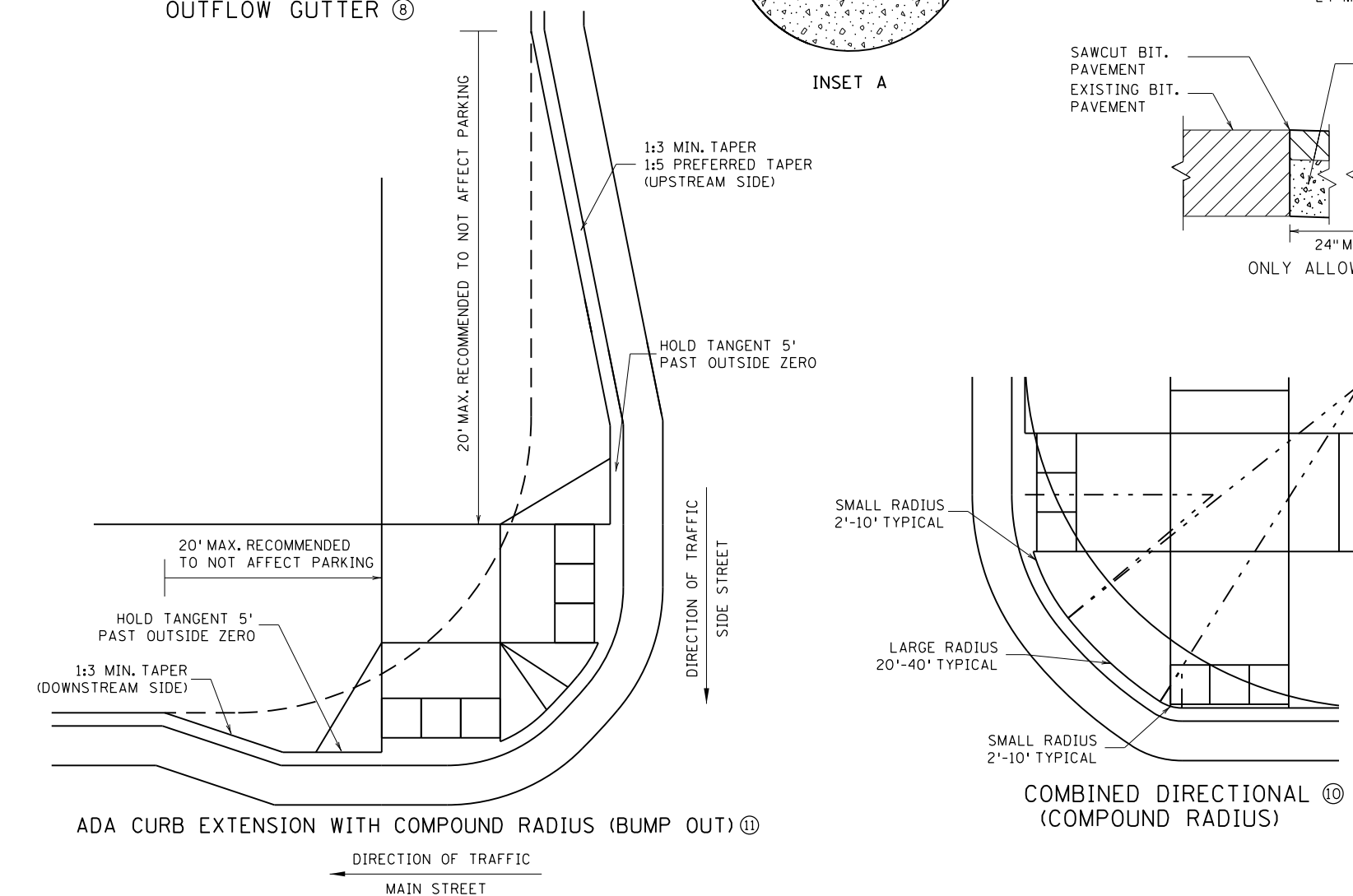


PEDESTRIAN ACCESS ROUTE CURB & GUTTER DETAIL



PAVEMENT TREATMENT OPTIONS IN FRONT OF CURB & GUTTER  
 FOR USE ON CURB RAMP RETROFITS

- NOTES:**
- POSITIVE FLOW LINE DRAINAGE SHALL BE MAINTAINED THROUGH THE PEDESTRIAN ACCESS ROUTE (PAR) AT A 2% MAXIMUM. NO PONDING SHALL BE PRESENT IN THE PAR.
  - ANY VERTICAL LIP THAT OCCURS AT THE FLOW LINE SHALL NOT BE GREATER THAN 1/4 INCH.
  - 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.



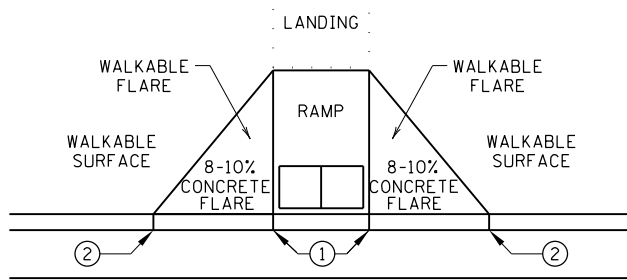
REVISION:   
 APPROVED: 11-04-2021   
 Jeff J. Perkins   
 OPERATIONS DIVISION

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

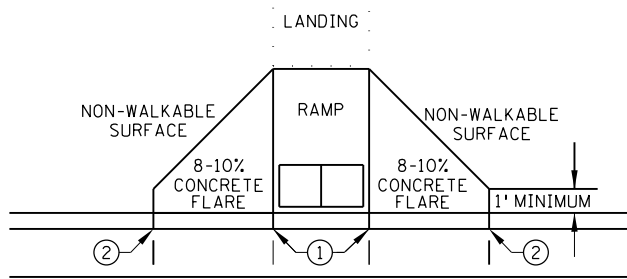
PEDESTRIAN CURB RAMP DETAILS   
 STATE PROJ. NO. SAP 002-614-048   
 SHEET NO. 45 OF 303 SHEETS   
 SAP 106-020-037

PLOTTED/REVISED: 02/16/2022

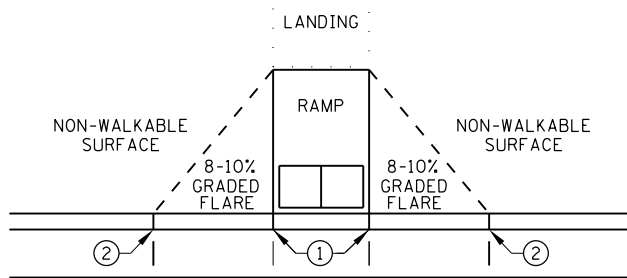
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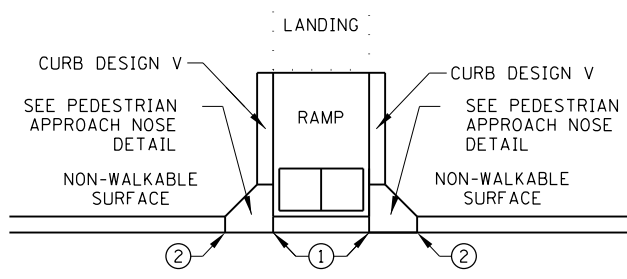
PAVED FLARES ADJACENT TO WALKABLE SURFACE



PAVED FLARES ADJACENT TO NON-WALKABLE SURFACE

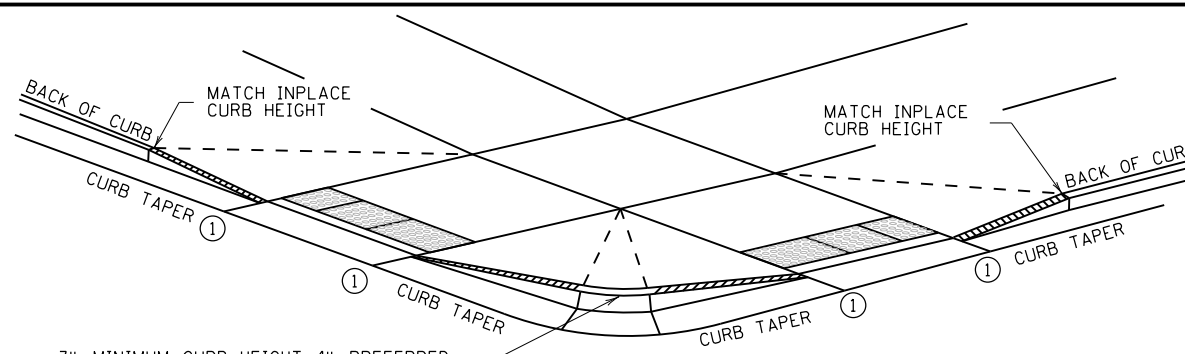


GRADED FLARES



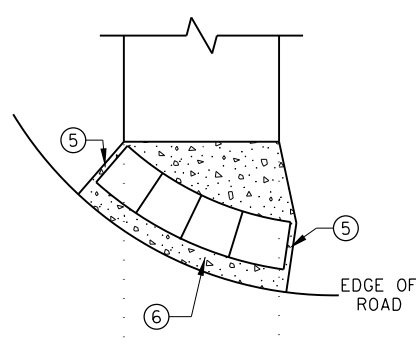
RETURNED CURB ④

TYPICAL SIDE TREATMENT OPTIONS ③ ⑩

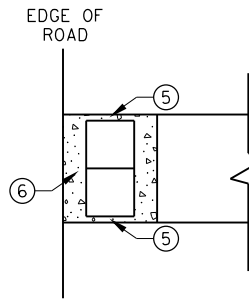


3" MINIMUM CURB HEIGHT, 4" PREFERRED (MEASURED AT FRONT FACE OF CURB) FOR A MIN. 6" LENGTH (MEASURED ALONG FLOW LINE)

DETECTABLE EDGE WITH CURB AND GUTTER ⑦

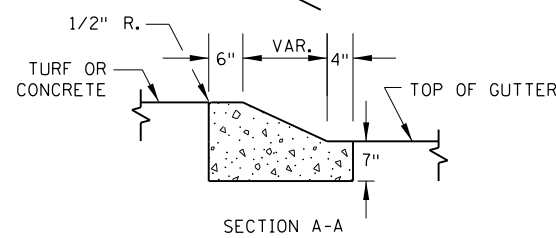
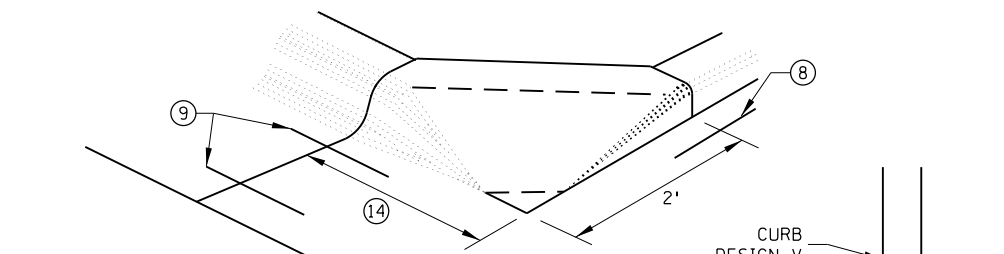


RADIAL DETECTABLE WARNING

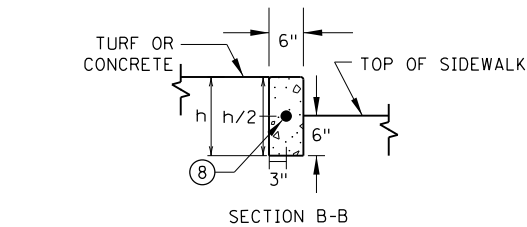


RECTANGULAR DETECTABLE WARNING

DETECTABLE EDGE WITHOUT CURB AND GUTTER

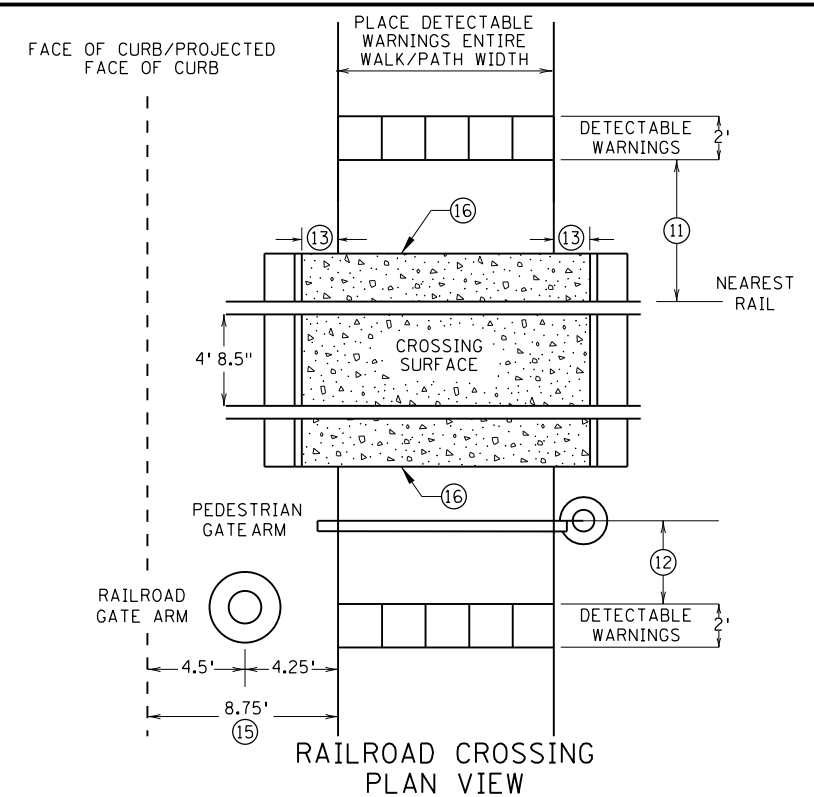


SECTION A-A



SECTION B-B

PEDESTRIAN APPROACH NOSE DETAIL (FOR RETURNED CURB SIDE TREATMENT)



RAILROAD CROSSING PLAN VIEW

NOTES:

- 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 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.

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

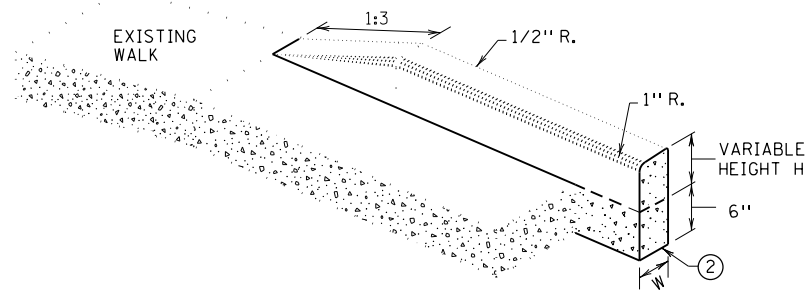
MINNESOTA   
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 OF   
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STANDARD PLAN 5-297.250 4 OF 6   
 APPROVED: 11-04-2021   
 REVISED:   
 STATE PROJ. NO. SAP 002-614-048   
 SAP 106-020-037   
 THOMAS STYRBICKI   
 STATE DESIGN ENGINEER

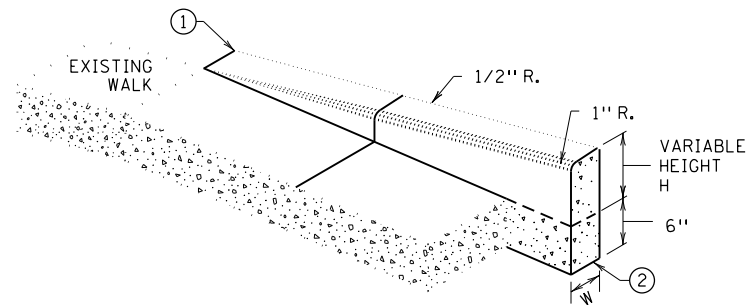
PEDESTRIAN CURB RAMP DETAILS

PLOTTED/REVISED: 02/16/2022

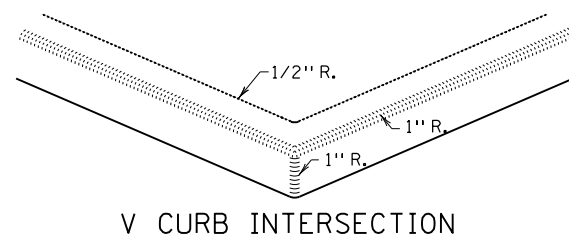
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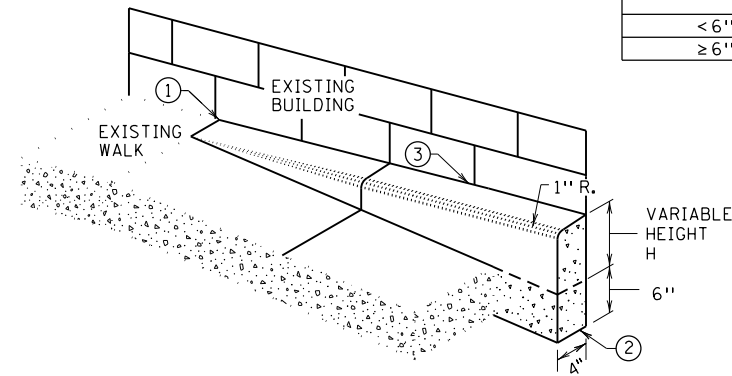
V CURB ADJACENT TO LANDSCAPE  
 CURB WITHIN SIDEWALK LIMITS



V CURB ADJACENT TO LANDSCAPE  
 CURB OUTSIDE SIDEWALK LIMITS

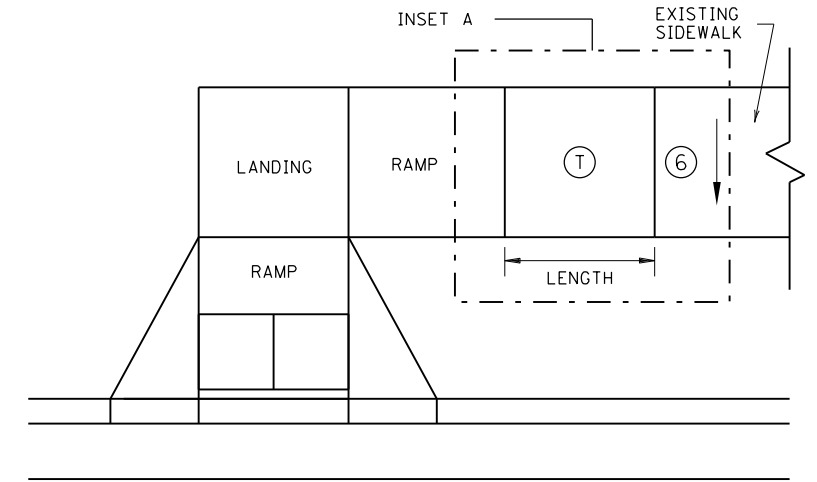


V CURB INTERSECTION

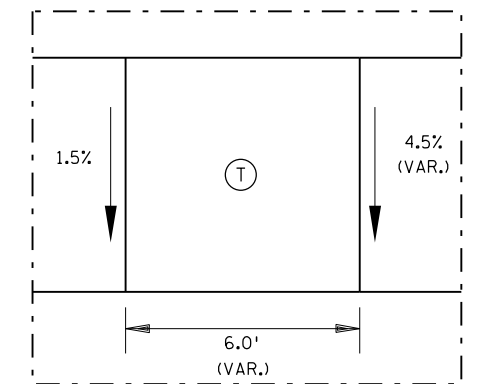


V CURB ADJACENT TO BUILDING  
 OR BARRIER

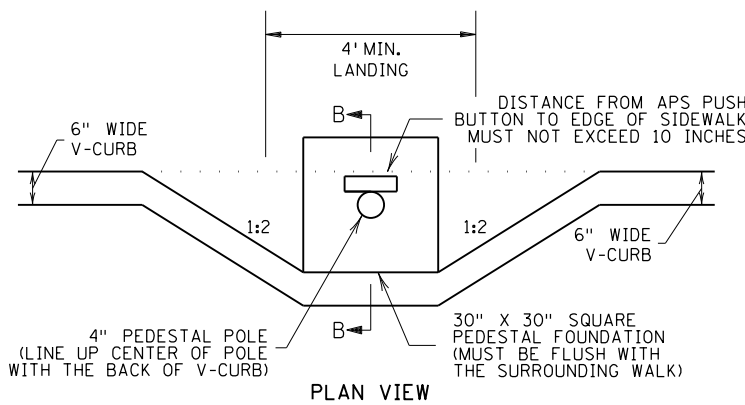
CONCRETE CURB DESIGN V	
CURB HEIGHT H	CURB WIDTH W
< 6"	4"
≥ 6"	6"



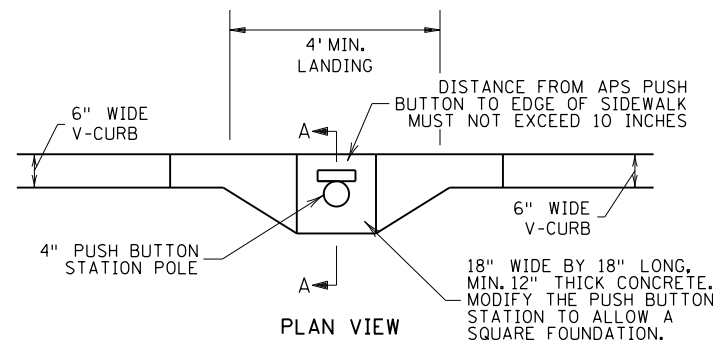
TRANSITION PANEL ④ ⑤



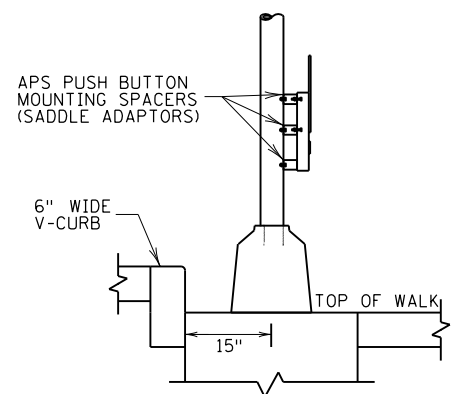
INSET A



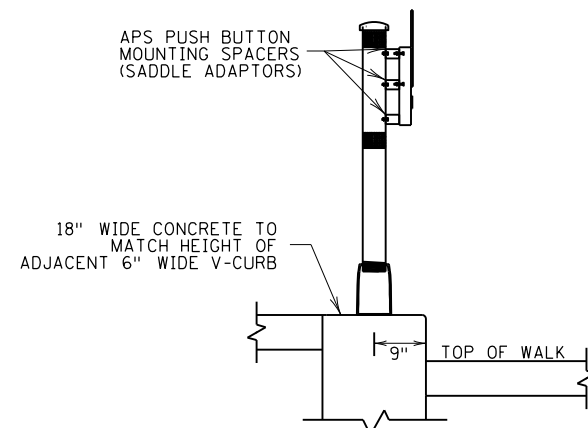
PLAN VIEW



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 1/2" TOP GAP AND SEAL WITH MNDOT APPROVED SILICONE PER MNDOT SPEC 3722.
- ④ THE MAX. RATE OF CROSS SLOPE TRANSITIONING IS 1' LINEAR FOOT OF SIDEWALK PER HALF PERCENT CROSS SLOPE. WHEN PAR WIDTH IS GREATER THAN 6' OR THE RUNNING SLOPE IS GREATER THAN 5%, DOUBLE THE CALCULATED TRANSITION LENGTH.
- ⑤ TRANSITION 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.

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 Jeff J. Perkins  
 OPERATIONS DIVISION



STANDARD PLAN 5-297.250 5 OF 6  
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 REVISION:  
 THOMAS STYRBICKI  
 STATE DESIGN ENGINEER

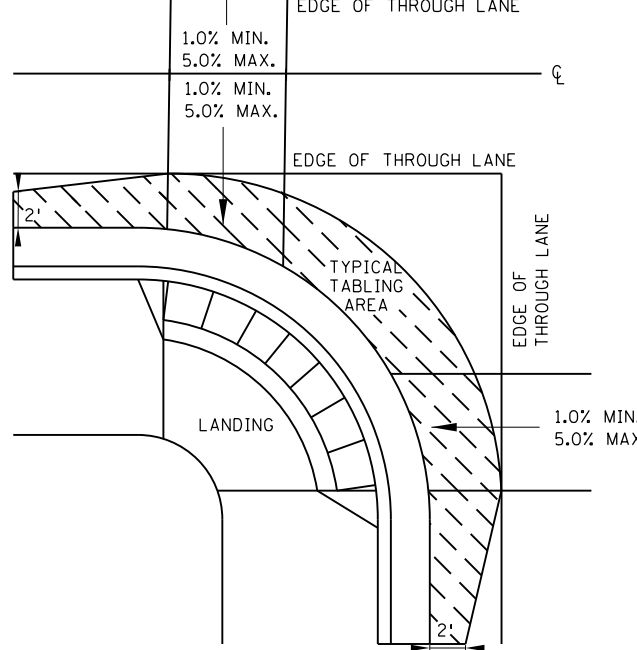
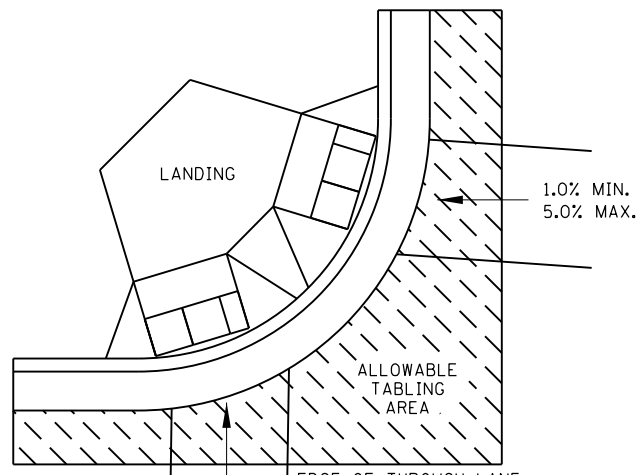
PEDESTRIAN CURB RAMP DETAILS

STATE PROJ. NO. SAP 002-614-048  
 SAP 106-020-037

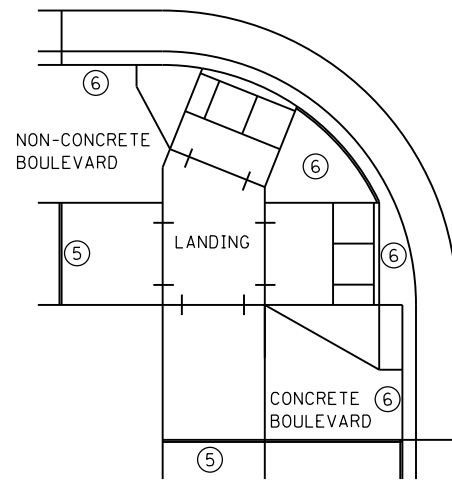
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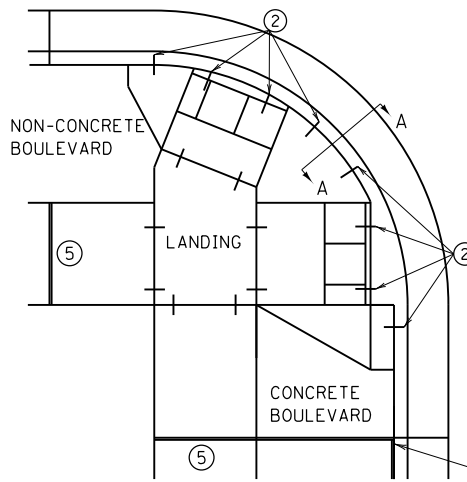
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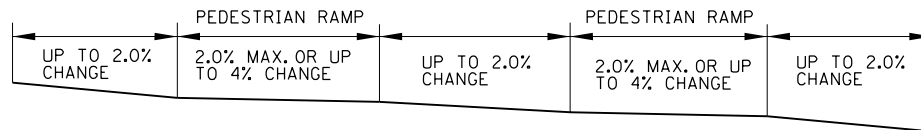
CURB LINE AND ROAD CROSSING ADJUSTMENTS



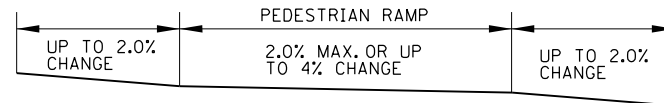
EXPANSION MATERIAL PLACEMENT FOR CONCRETE ROADWAYS



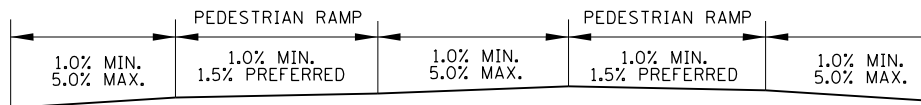
CURB LINE REINFORCEMENT PLACEMENT ON BITUMINOUS ROADWAYS



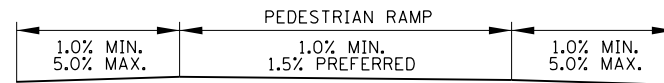
FLOW LINE PROFILE "TABLE" - TWIN PERPENDICULARS



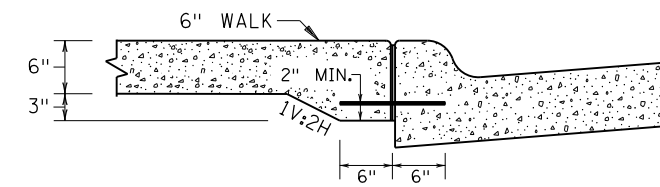
FLOW LINE PROFILE "TABLE" - FAN



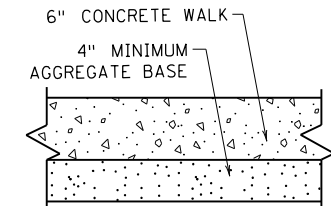
FLOW LINE PROFILE RAISE - TWIN PERPENDICULARS



FLOW LINE PROFILE RAISE - FAN

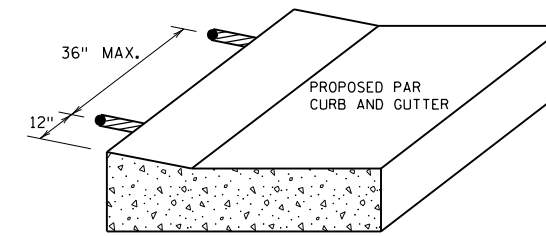


SECTION VIEW A-A THICKENED SECTION THROUGH CURB RAMP FLARES

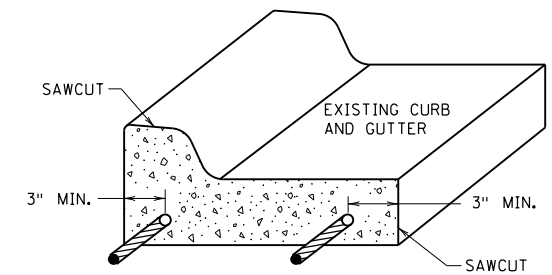


TYPICAL SIDEWALK SECTION WITHIN INTERSECTION CORNER

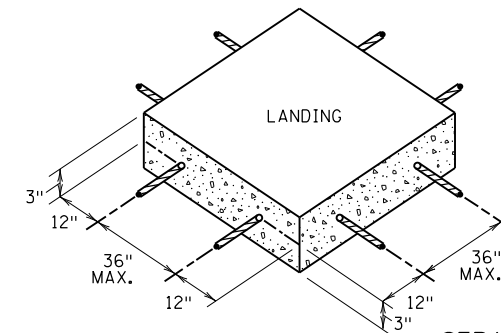
END SILL CURB AT TOP OF CURB RAMP AND DRIVEWAY FLARES.



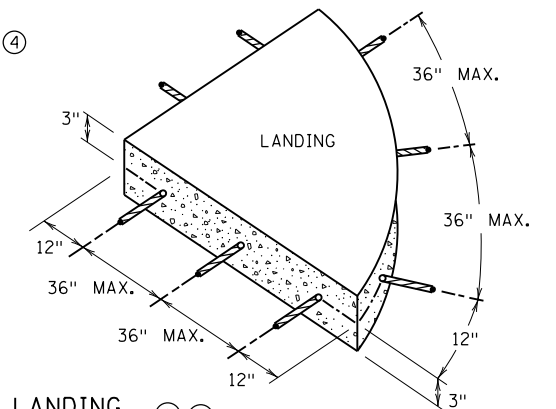
CURB RAMP REINFORCEMENT DETAILS



CURB AND GUTTER REINFORCEMENT



SEPARATE LANDING POUR REINFORCEMENT



GENERAL NOTES:

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

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

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

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

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

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

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

NOTES:

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

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JEFF PERKINS  
OPERATIONS DIVISION

MINNESOTA  
DEPARTMENT OF TRANSPORTATION

STANDARD PLAN 5-297.250 6 OF 6

THOMAS STYRBICKI  
STATE DESIGN ENGINEER

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REVISED:

PEDESTRIAN CURB RAMP DETAILS

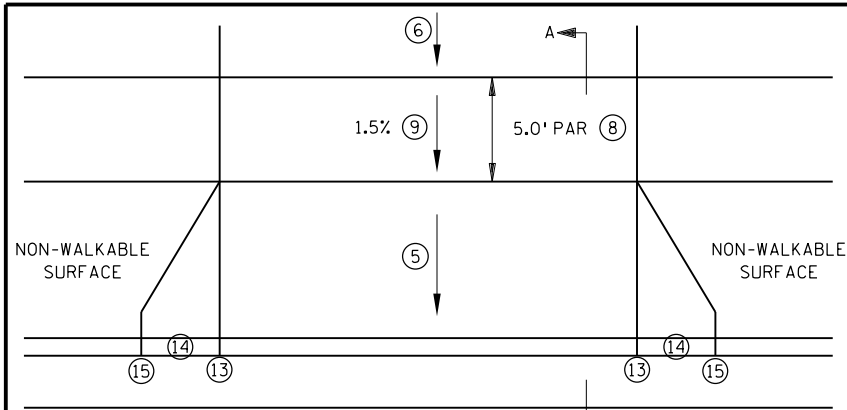
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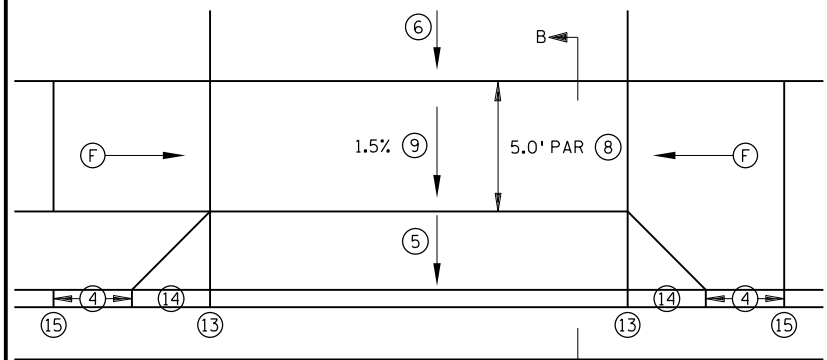


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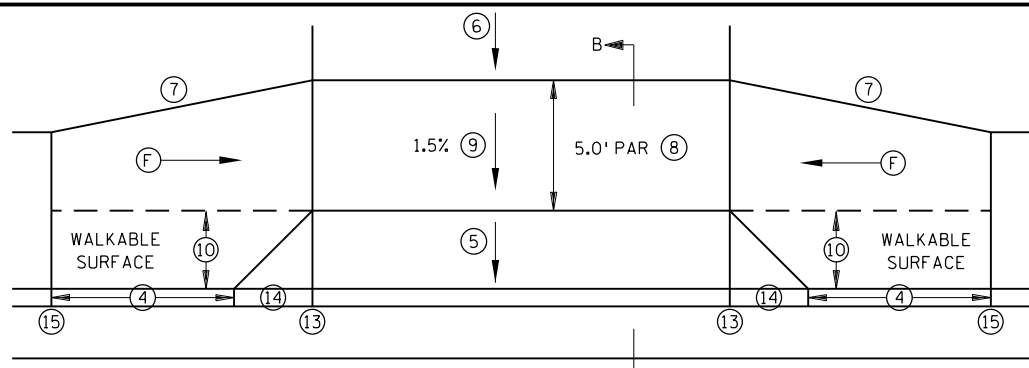
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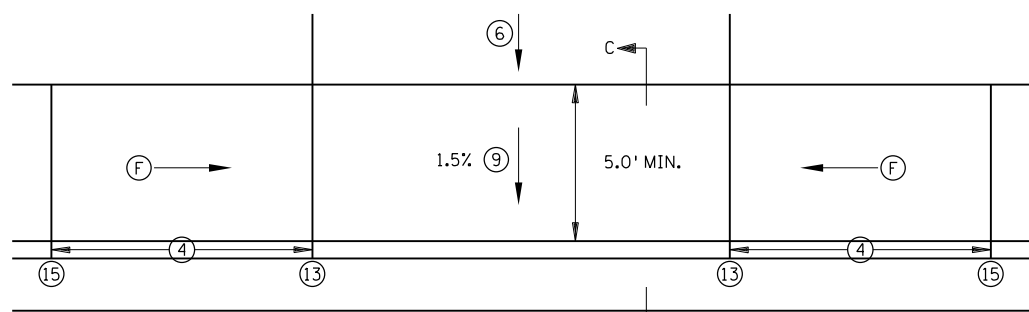
PERPENDICULAR DRIVEWAY ①



TIERED PERPENDICULAR DRIVEWAY ②



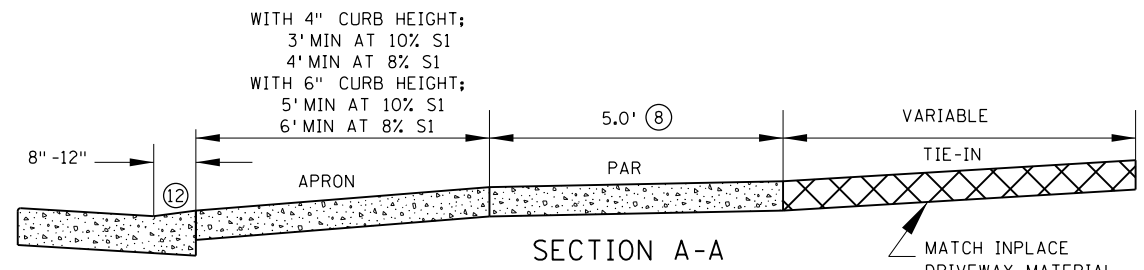
TIERED PERPENDICULAR OFFSET DRIVEWAY ②



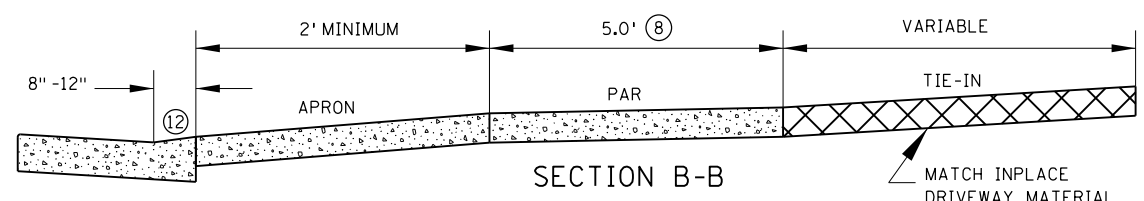
PARALLEL DRIVEWAY ③

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

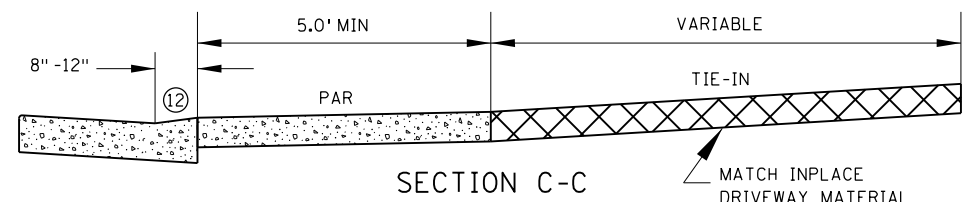
- NOTES:**  
 ALL SIDEWALK AND BOULEVARD WIDTHS SHALL BE MEASURED FROM BACK OF CURB.  
 IN URBAN ROADWAY SECTIONS, 6" CURB HEIGHT SHOULD BE USED WHEN 6' OR GREATER BOULEVARD WIDTH IS PROPOSED. WHEN BOULEVARD IS LESS THAN 6' WIDE, 4" CURB HEIGHT SHOULD BE USED.  
 MAINTAIN EXISTING DRAINAGE PATTERNS FLOWING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



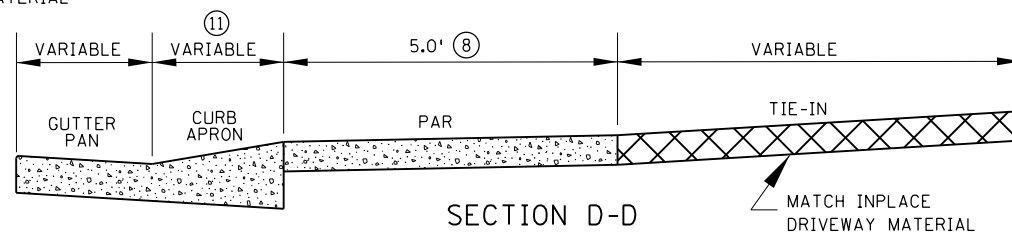
SECTION A-A



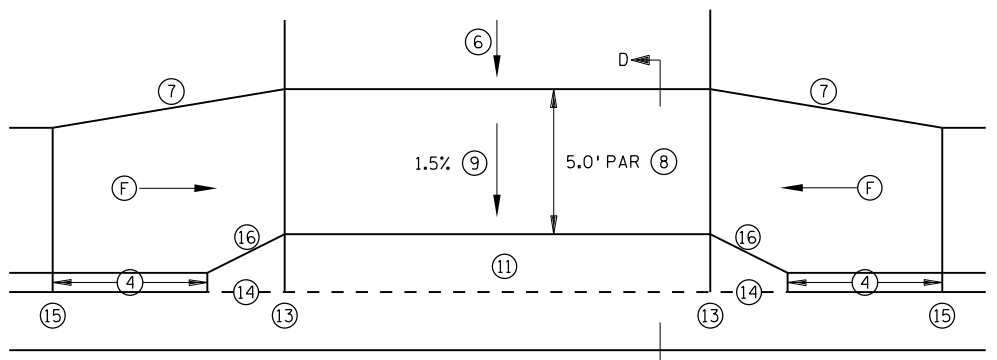
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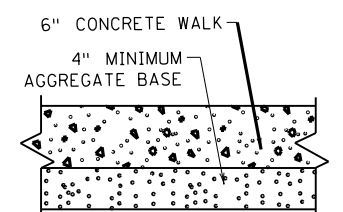
SECTION C-C



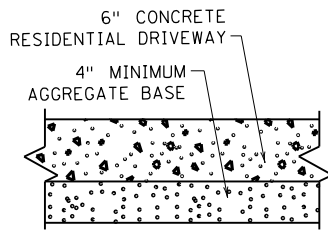
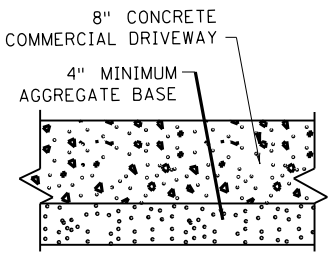
SECTION D-D



INTEGRAL DRIVEWAY APRON



TYPICAL SIDEWALK SECTION ⑰



TYPICAL DRIVEWAY SECTIONS

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

**m** MINNESOTA DEPARTMENT OF TRANSPORTATION  
 STANDARD PLAN 5-297.254 1 OF 4  
 APPROVED: 11-04-2021  
 REVISOR:  
 THOMAS STYRBICKI  
 STATE DESIGN ENGINEER

**DRIVEWAY AND SIDEWALK DETAILS**

PLOTTED/REVISED: 02/16/2022

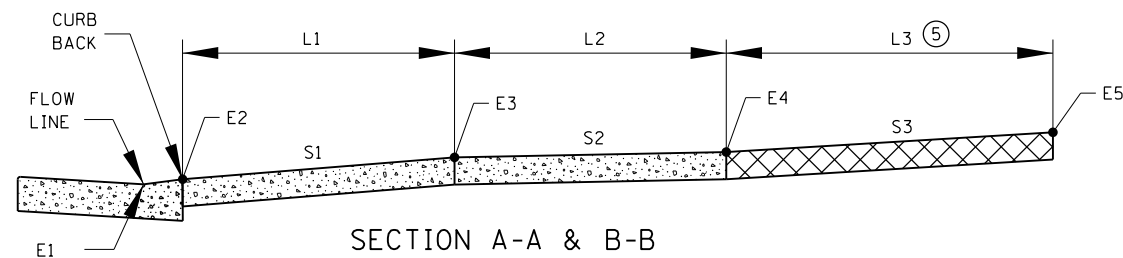
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### DRIVEWAY TABLE ①

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

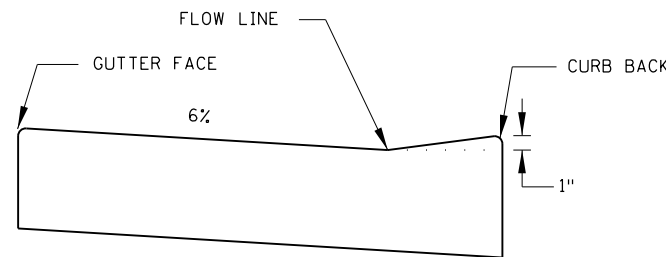
**NOTES:**

- ① ALL SIDEWALK AND BOULEVARD WIDTHS SHALL BE MEASURED FROM BACK OF CURB.
- ② DW CURB TYPE 1 SHALL BE USED WHEN THE DRIVEWAY ACTS AS A PEDESTRIAN RAMP. THE MAX. APRON SLOPE MUST ADHERE TO ADA CRITERIA AS WELL. DW CURB TYPE 1 SHOULD BE USED IF THERE IS ON STREET PARKING.
- ③ WHERE ROADWAY DRAINAGE IS A CONCERN (NEGATIVE SLOPED APRON) DW CURB TYPE 2 CAN BE USED TO HELP KEEP THE WATER ON PUBLIC RIGHT OF WAY.
- ④ S1 8% STANDARD, 10% MAX. COMMERCIAL AND 12% MAX. RESIDENTIAL. IF EXISTING GRADES ARE STEEPER DO NOT MAKE GRADES APPRECIABLY WORSE BY USING BEST PRACTICES SUCH AS DRIVEWAY CURB HEIGHTS, EXTENDING L3 AND/OR STEEPEN S3.
- ⑤ S3 8% MAXIMUM, IF THIS SLOPE IS EXCEEDED OR CONTINUED FOR MORE THAN 5', ANALYZE VEHICLE TEMPLATES FOR VERTICAL CLEARANCE. SEE FACILITY DESIGN GUIDE, CHAPTER 6, FOR GEOMETRIC DESIGNS OF DRIVEWAYS.
- ⑥ EXAMPLE SHOWN TO BE INCLUDED IN PLAN FOR EACH DRIVEWAY THAT HAS PAR THROUGH IT.
- ⑦ REFERS TO THE FOLLOWING TYPES; PERPENDICULAR DRIVEWAY, TIERED PERPENDICULAR OFFSET DRIVEWAY, TIERED PERPENDICULAR DRIVEWAY, PARALLEL DRIVEWAY, AND INTEGRAL DRIVEWAY APRON.
- ⑧ DW CURB TYPE 1 IS THE STANDARD AND SHALL BE THE STARTING POINT FOR ALL PERPENDICULAR AND TIERED DRIVEWAYS. DW CURB TYPE 2 SHALL ONLY BE USED AFTER UTILIZING BEST PRACTICES SUCH AS MAXIMIZING S1, S3, AND L3.
- ⑨ SHOULD BE DESIGNED AT 1.5%.
- ⑩ ACQUIRE ADEQUATE L3 TO ALLOW FOR CONTINUOUS PAR PROFILE (UNIFORM SIDEWALK SECTION) THROUGH THE DRIVEWAY APRON.
- ⑪ PROVIDE INPLACE TIE-IN SLOPE INFORMATION AT BACK OF PROPOSED WALK (S3 AREA).
- ⑫ INFORMATION TO BE INCORPORATED INTO DRIVEWAY TABLE WHEN INTEGRAL DRIVEWAY APRON IS USED. OTHER CURB HEIGHTS & CURB APRON LENGTHS CAN BE USED.
- ⑬ L1 & S1 FOR INTEGRAL DRIVEWAY APRON IS TO FLOWLINE. 12.5% IS MAXIMUM PREFERRED SLOPE.
- ⑭ TIE ADJACENT SECTIONS. CONCRETE DRIVEWAY APRON AND CONCRETE DRIVEWAY SIDEWALK SHALL BE CONSTRUCTED SEPARATELY IN AN INDEPENDENT CONCRETE POUR. DRILL AND GROUT OR CAST IN-PLACE THROUGH HOLES IN THE FORMS NO. 4 X 12" LONG TIE BARS (EPOXY COATED). 36" MAXIMUM SPACING WITH 2" MINIMUM CONCRETE COVER PLACED 1' MINIMUM FROM ADJACENT CONSTRUCTION JOINT.



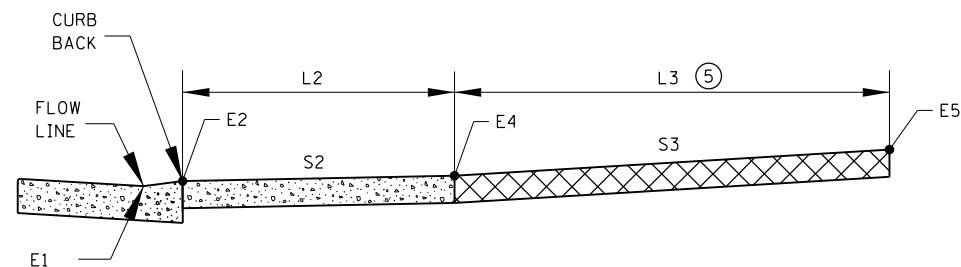
**SECTION A-A & B-B**

(REFER TO PREVIOUS SHEET)



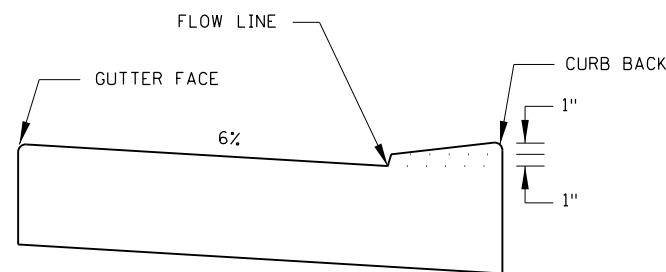
**DW CURB TYPE 1**

STANDARD CURB AT DRIVEWAY



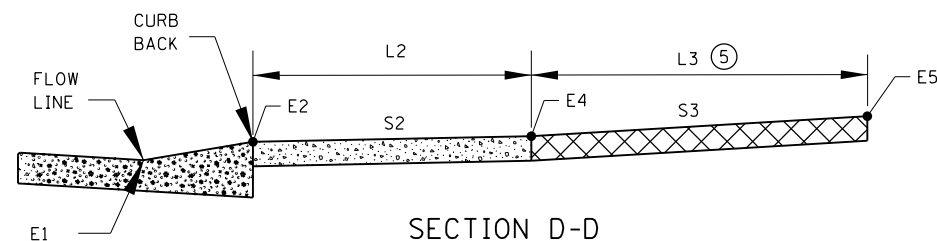
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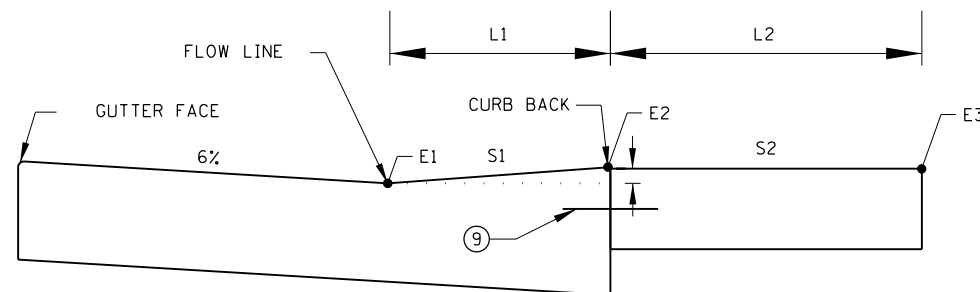
**DW CURB TYPE 2**

VERTICALLY CONSTRAINED



**SECTION D-D**

(REFER TO PREVIOUS SHEET)



**INTEGRAL DRIVEWAY APRON (IDA)**

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

REVISION:

APPROVED: 11-04-2021

*Jeff J. Perkins*  
 JEFF PERKINS  
 OPERATIONS DIVISION

MINNESOTA  
DEPARTMENT OF TRANSPORTATION

**STANDARD PLAN 5-297.254**

2 OF 4

APPROVED: 11-04-2021  
 REVISED:

*Tom Styrbicki*  
 THOMAS STYRBICKI  
 STATE DESIGN ENGINEER

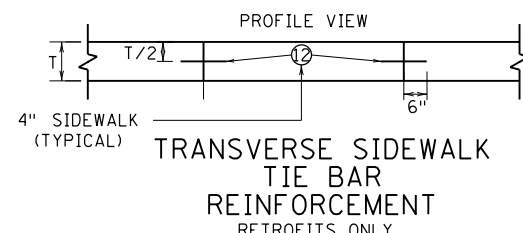
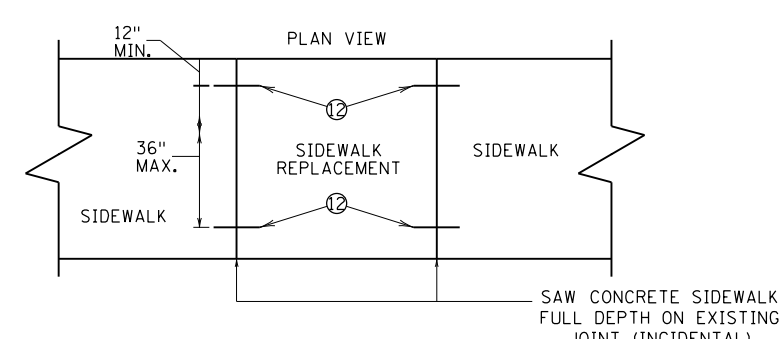
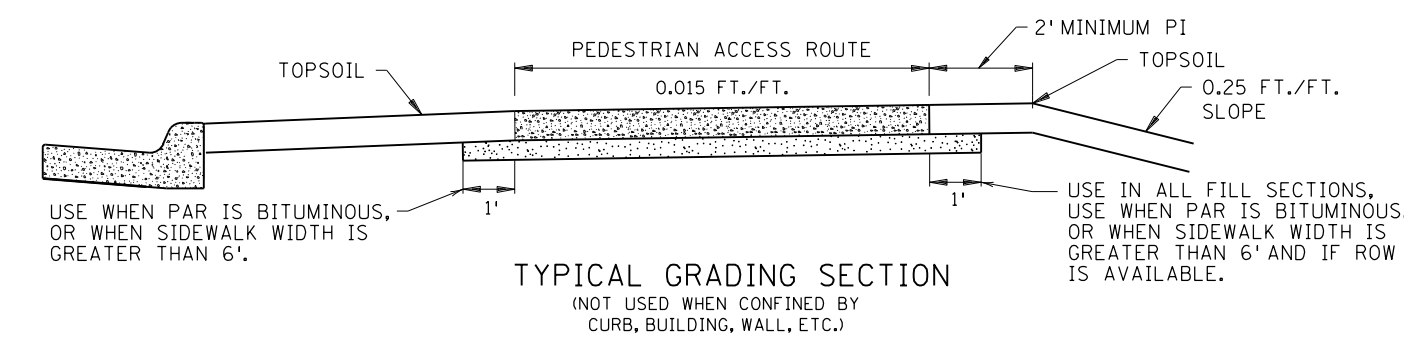
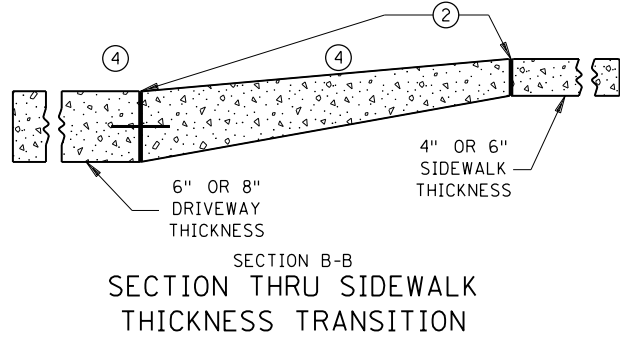
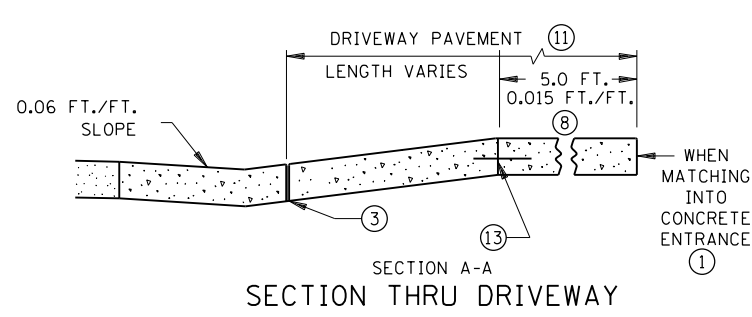
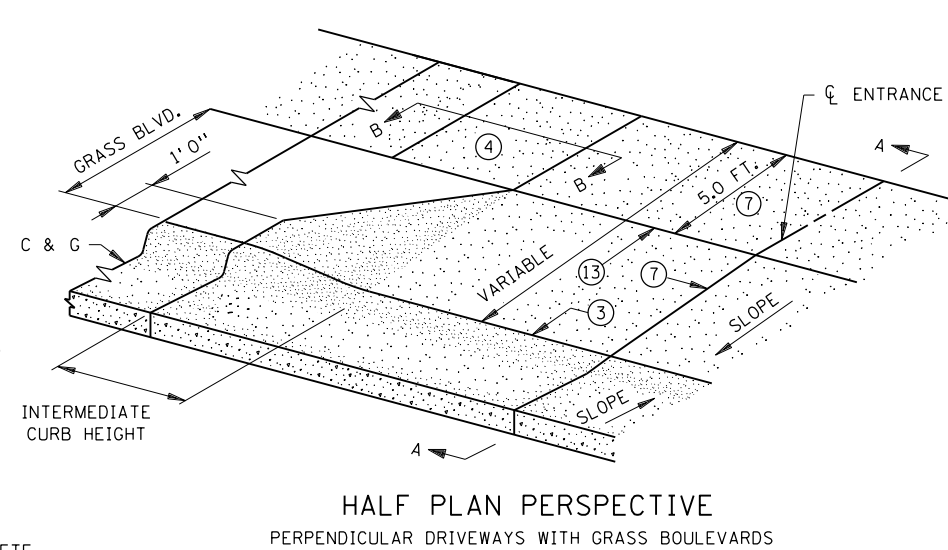
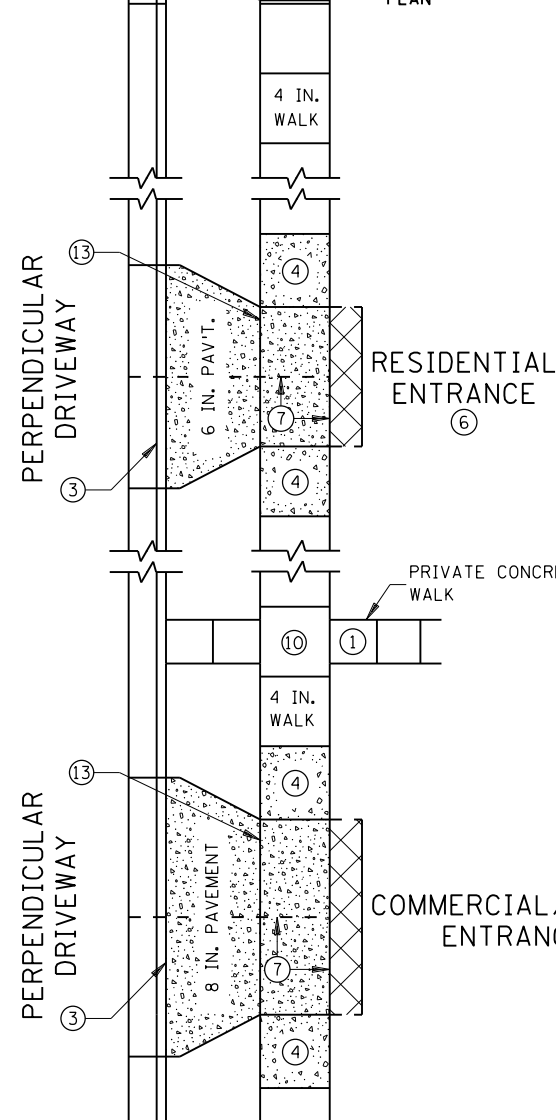
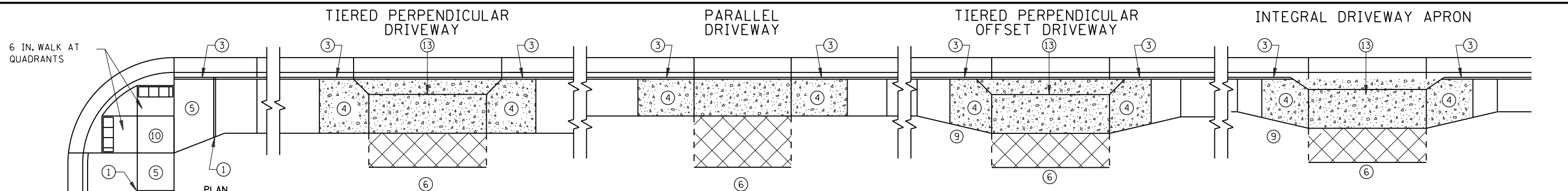
**DRIVEWAY AND SIDEWALK DETAILS**

STATE PROJ. NO. **SAP 002-614-048**  
**SAP 106-020-037**

SHEET NO.50 OF 303 SHEETS

PLOTTED/REVISED: 02/16/2022

DISTRICT #: PLOT NAME: \$\$\$@PLOT\$NAME\$\$\$  
 PATH & FILENAME: P:\002-614-048\Plan\002614048 STD.dgn



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

FOR 4" CONCRETE ONLY: CAST IN PLACE BARS MUST BE SUPPORTED WITH P-STAKES OR REINFORCEMENT BASKETS FOR FULL WIDTH CONCRETE PLACEMENTS.  
 FOR 6" CONCRETE ONLY: DRILL AND GROUT OR CAST IN PLACE THROUGH HOLES IN THE FORMS REQUIRED FOR STAGED ADJACENT CONCRETE PLACEMENTS.

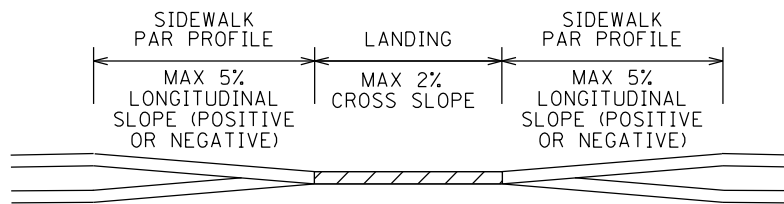
- NOTES:**
- ALL SIDEWALK AND BOULEVARD WIDTHS SHALL BE MEASURED FROM BACK OF CURB.
  - TO MINIMIZE SIDEWALK "ROLLER COASTER" EFFECT IT IS DESIRABLE TO KEEP THE PAR ELEVATION CONTINUOUS OR AT LEAST IN THE UPPER HALF OF CURB HEIGHT. 4" HIGH CURB SHOULD BE USED INSTEAD OF 6" HIGH CURB TO HELP THIS PROBLEM WHEN APPLICABLE.
  - 4" HIGH ADJACENT CURB IS PREFERRED WHEN BOULEVARDS 4' OR LESS ARE PRESENT MEASURED FROM THE BACK OF CURB. WHEN THE DRIVEWAY IS SLOPING DOWN FROM THE ROADWAY (NEGATIVE) 4" HIGH ADJACENT CURB SHOULD ALSO BE USED.
  - SEE FACILITY DESIGN GUIDE, CHAPTER 6, FOR GEOMETRIC DESIGN OF DRIVEWAYS.
  - ① CONSTRUCT WITH EXPANSION MATERIAL PER MNDOT SPECIFICATION 3702 TYPES A-E. EXPANSION MATERIAL SHALL MATCH FULL HEIGHT OF ADJACENT CONCRETE. DRIVEWAY EXPANSION SHALL BE PLACED AT TOP OR BOTTOM OF TRANSITION PANEL.
  - ② CONSTRUCT WITH EXPANSION MATERIAL MNDOT PER SPEC. 3702 TYPES A-E. EXPANSION MATERIAL SHALL MATCH FULL HEIGHT OF ADJACENT CONCRETE. MAXIMUM ONE EXPANSION PER DRIVEWAY PLACED AT EITHER TOP OR BOTTOM OF CONCRETE THICKNESS TRANSITION. IF MULTIPLE DRIVEWAYS EXIST PLACE ONE EXPANSION BETWEEN EACH DRIVEWAY. IF NO DRIVEWAY EXIST PLACE A MAXIMUM OF ONE EXPANSION PER 150' OF SIDEWALK RUN.
  - ③ USE AN APPROVED TYPE F (1/4 INCH THICK) SEPARATION MATERIAL. SEPARATION MATERIAL SHALL MATCH FULL HEIGHT DIMENSION OF ADJACENT CONCRETE.
  - ④ TRANSITION DRIVEWAY THICKNESS TO WALK THICKNESS. IF THERE IS A CONSTRUCTION JOINT AND NO EXPANSION IS USED, INSTALL TIE BARS.
  - ⑤ TRANSITION CURB RAMP THICKNESS TO WALK THICKNESS.
  - ⑥ MATCH INPLACE DRIVEWAY WIDTH, MATERIAL TYPE AND THICKNESS.
  - ⑦ FORM CONTRACTION JOINT AS NEEDED TO PRODUCE APPROXIMATELY SQUARE PANELS. CONCRETE PANEL SIZE SHOULD NOT EXCEED 1 1/2 : 1 LENGTH X WIDTH. 81 SF FOR 6" CONCRETE DRIVEWAY WITH 9'X9' MAXIMUM PANEL SIZE. 144 SF FOR 8" CONCRETE DRIVEWAY WITH 12'X12' MAXIMUM PANEL SIZE. MATCH DRIVEWAY APRON AND SIDEWALK JOINTS.
  - ⑧ THE PEDESTRIAN ACCESS ROUTE CROSS-SLOPE, SHALL NOT EXCEED 0.02 FT./FT. AS CONSTRUCTED.
  - ⑨ 1:10 MIN. SIDEWALK OFFSET TAPER REQUIRED FOR SIDEWALK REPLACEMENT PROJECTS. 1:3 MIN. AND 1:5 MIN. PREFERRED SIDEWALK OFFSET TAPER FOR DRIVEWAY REPLACEMENT.
  - ⑩ LANDING REQUIRED, SEE NEXT SHEET FOR MORE INFORMATION.
  - ⑪ CONCRETE DRIVEWAY APRON AND CONCRETE DRIVEWAY SIDEWALK SECTIONS SHALL BE CONSTRUCTED SEPARATELY IN AN INDEPENDENT CONCRETE POUR. ENGINEER'S APPROVAL REQUIRED FOR MONOLITHIC PLACEMENTS.
  - ⑫ DRILL AND GROUT NO. 4 X 12" LONG TIE BARS (EPOXY COATED), 36" MAXIMUM SPACING BETWEEN BARS COVER PLACED 1' MINIMUM FROM ADJACENT CONSTRUCTION JOINTS. 1' MINIMUM FROM ADJACENT CONCRETE JOINTS. BARS TO BE ADJUSTED TO MATCH SIDEWALK GRADES. TO BE PAID BY EACH.
  - ⑬ DRILL AND GROUT OR CAST IN-PLACE THROUGH HOLES IN THE FORMS NO. 4 X 12" LONG TIE BARS (EPOXY COATED). 36" MAXIMUM SPACING BETWEEN BARS WITH 2" MINIMUM CONCRETE COVER PLACED 1' MINIMUM FROM ADJACENT CONSTRUCTION JOINTS. 1' MINIMUM FROM ADJACENT CONCRETE JOINTS.

REVISION: 12-23-2021  
 APPROVED: 11-04-2021  
 Jeff J. Pel  
 OPERATIONS DIVISION

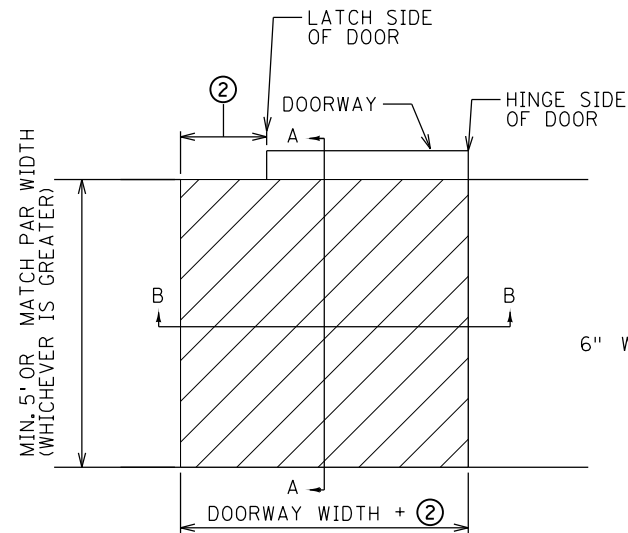
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		APPROVED: 11-04-2021 REVISED: 12-23-2021	
DEPARTMENT OF TRANSPORTATION	THOMAS STYRBICKI STATE DESIGN ENGINEER	SHEET NO. 51 OF 303 SHEETS	

PLOTTED/REVISED: 02/16/2022

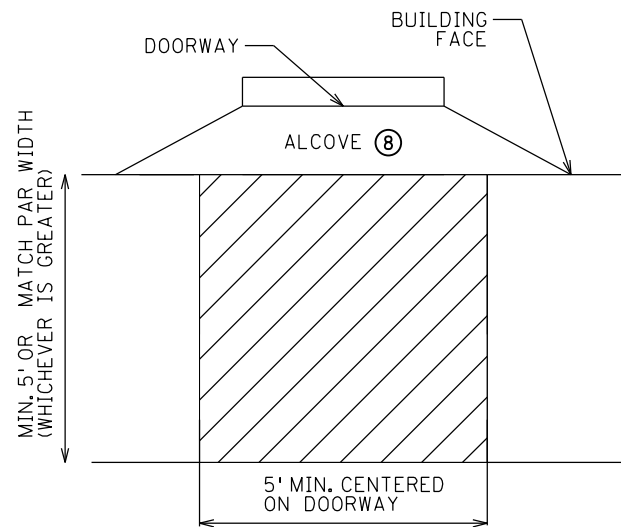
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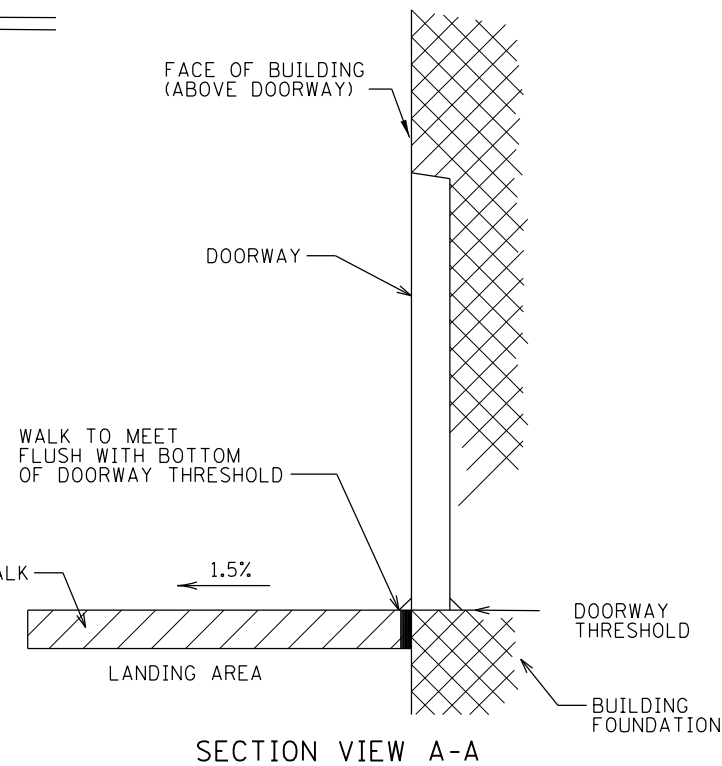
SECTION VIEW B-B



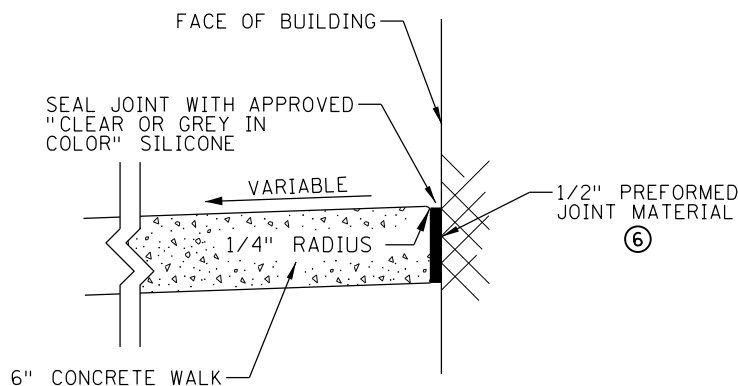
PLAN VIEW DOORWAY



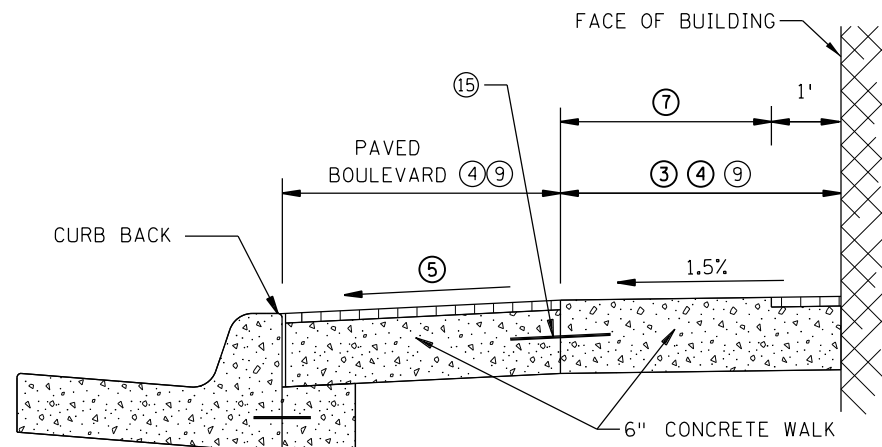
PLAN VIEW DOORWAY WITH ALCOVE  
 SIDEWALK LANDING REQUIREMENTS ①



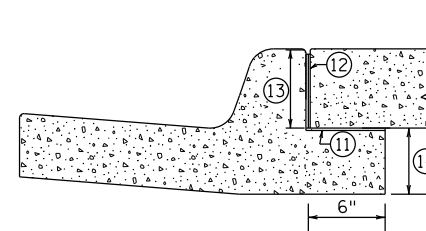
SECTION VIEW A-A



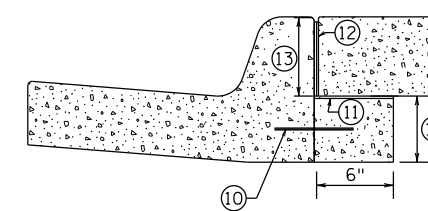
BUILDING JOINT SEAL (INCIDENTAL)



DOWNTOWN SIDEWALK TYPICAL SECTION



SLIP FORM SILL



FIXED FORM SILL

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

NOTES:

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

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

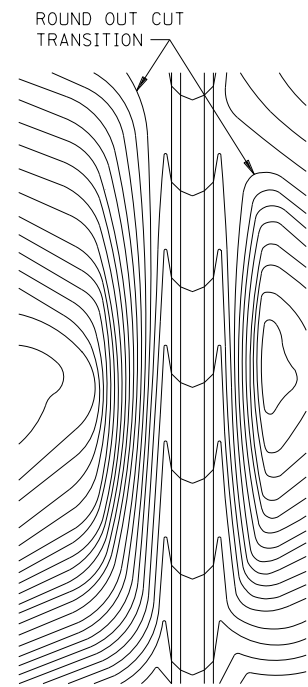
MINNESOTA  
 DEPARTMENT  
 OF  
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STANDARD PLAN 5-297.254 4 OF 4  
  
 THOMAS STYRBICKI  
 STATE DESIGN ENGINEER  
 APPROVED: 11-04-2021  
 REVISED:

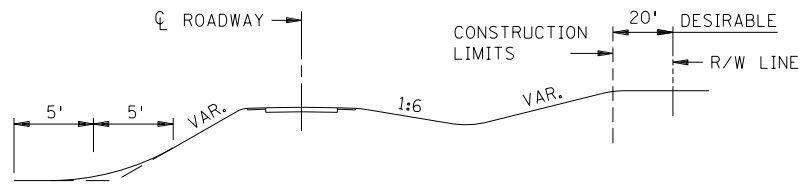
DRIVEWAY AND SIDEWALK DETAILS

STATE PROJ. NO. SAP 002-614-048  
 SAP 106-020-037

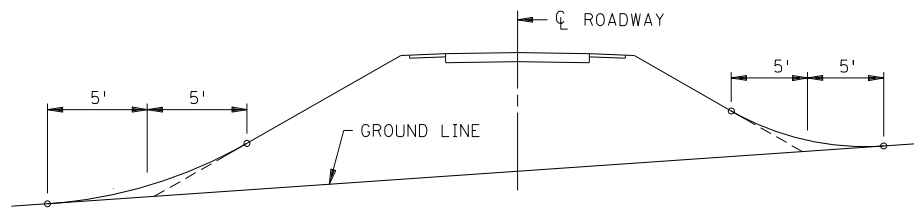
SHEET NO.52 OF 303 SHEETS



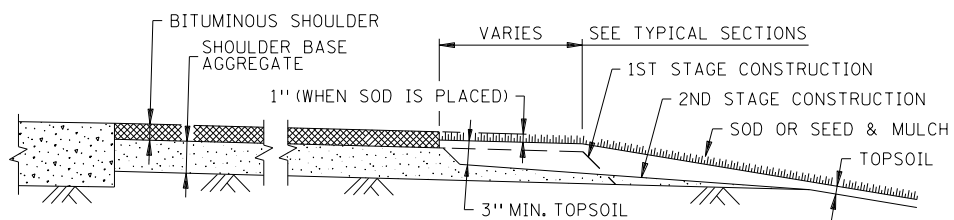
CONTOURING ROAD CUTS



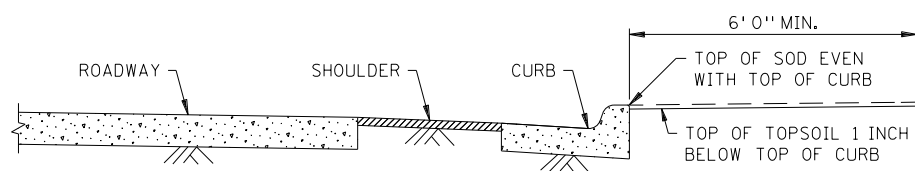
ROUNDING SHOULDERS AND BACKSLOPES



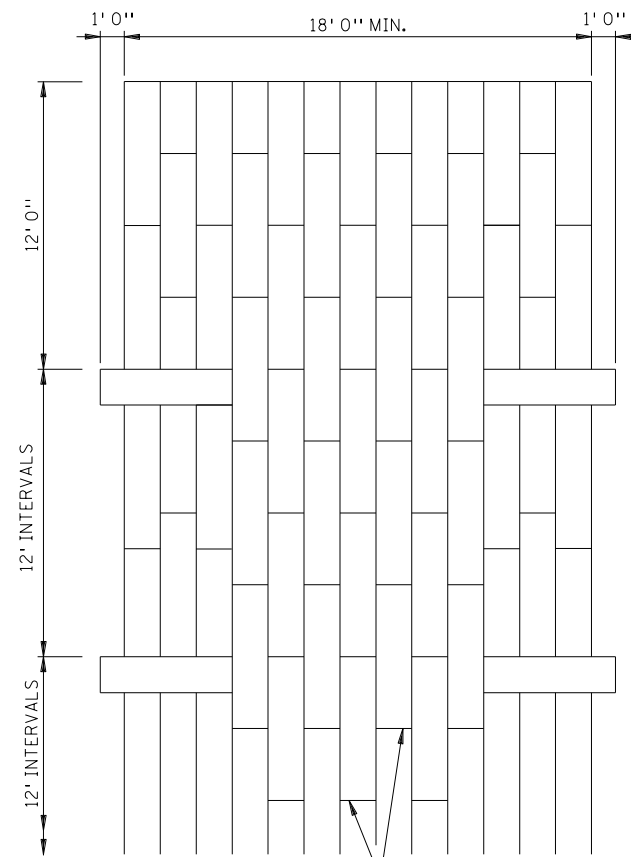
SHAPING FOR DRAINAGE ALONG THE TOE OF FILL SLOPES



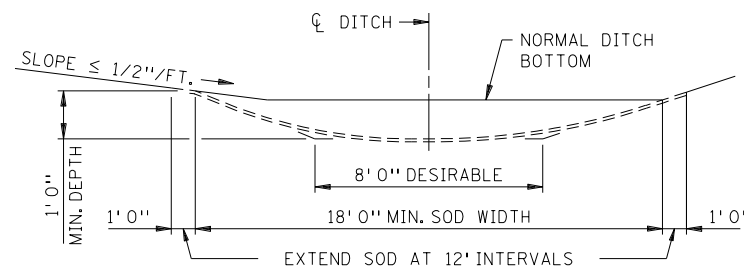
SHAPING AND TOPSOILING INSLOPES



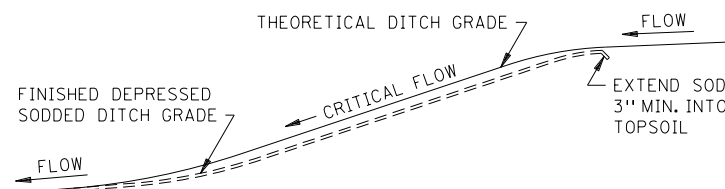
SHAPING ADJACENT TO CURBS WHEN SOD IS PLACED



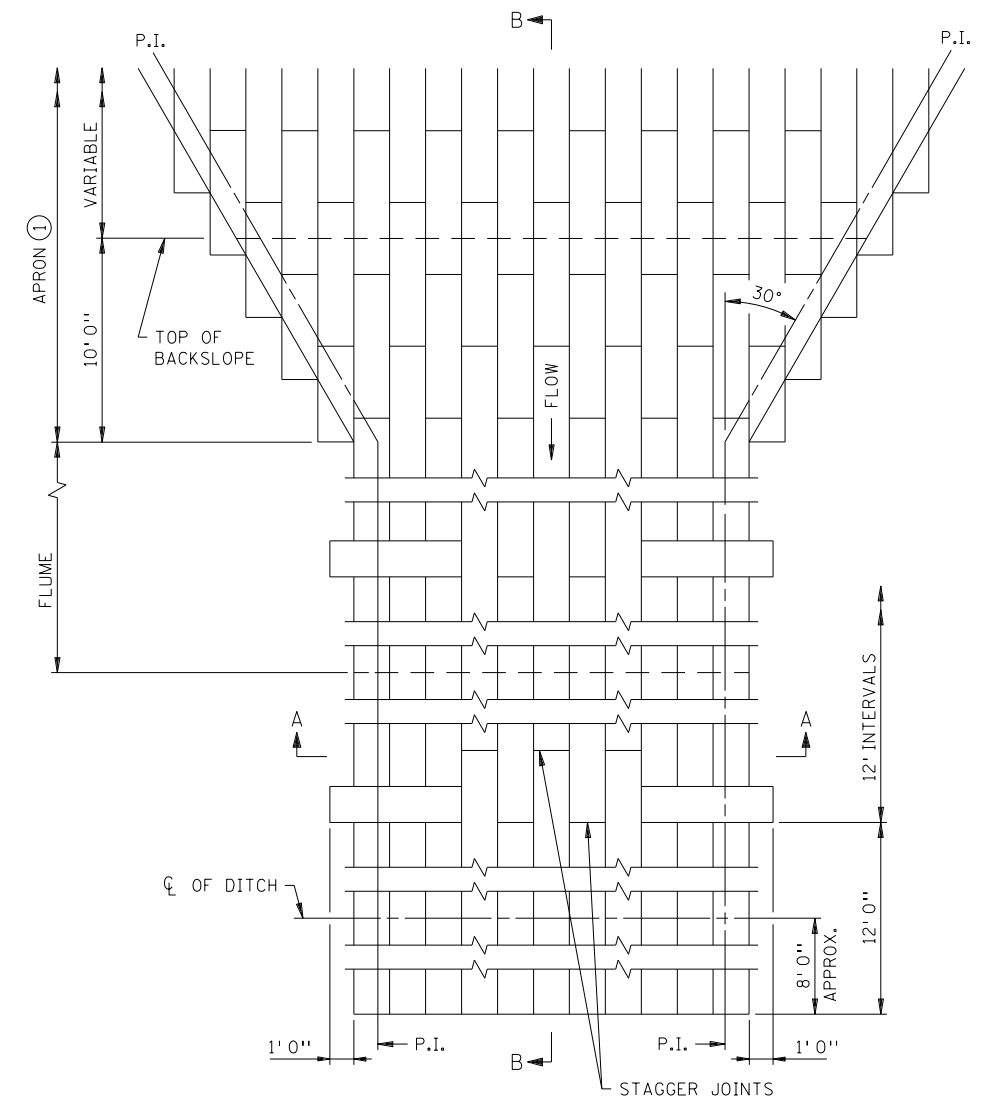
STAGGER JOINTS  
PLAN VIEW



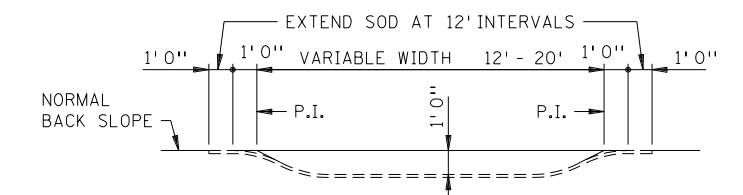
SODDED DITCH CROSS SECTION  
WHERE FRONT OR BACK SLOPE IS FLAT (LESS THAN 1/2"/FT.),  
FIRST NOTCH DITCH AND THEN PROVIDE ROUNDING.



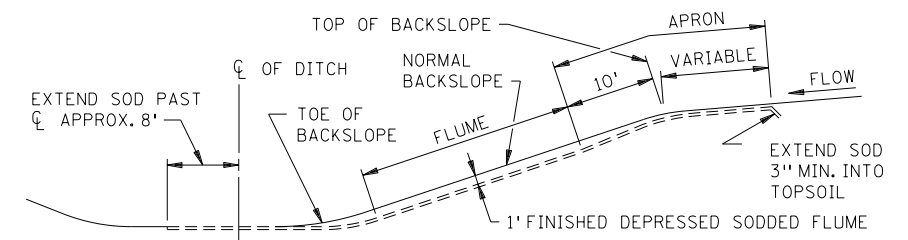
SODDED DITCH DETAILS



PLAN VIEW



SECTION A-A



SECTION B-B

SODDED FLUME DETAILS

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

REVISION:  
APPROVED: 2-28-2017  
*[Signature]*  
CHIEF ENVIRONMENTAL OFFICER

**m**  
MINNESOTA  
DEPARTMENT  
OF  
TRANSPORTATION

STANDARD PLAN 5-297.404

1 OF 3

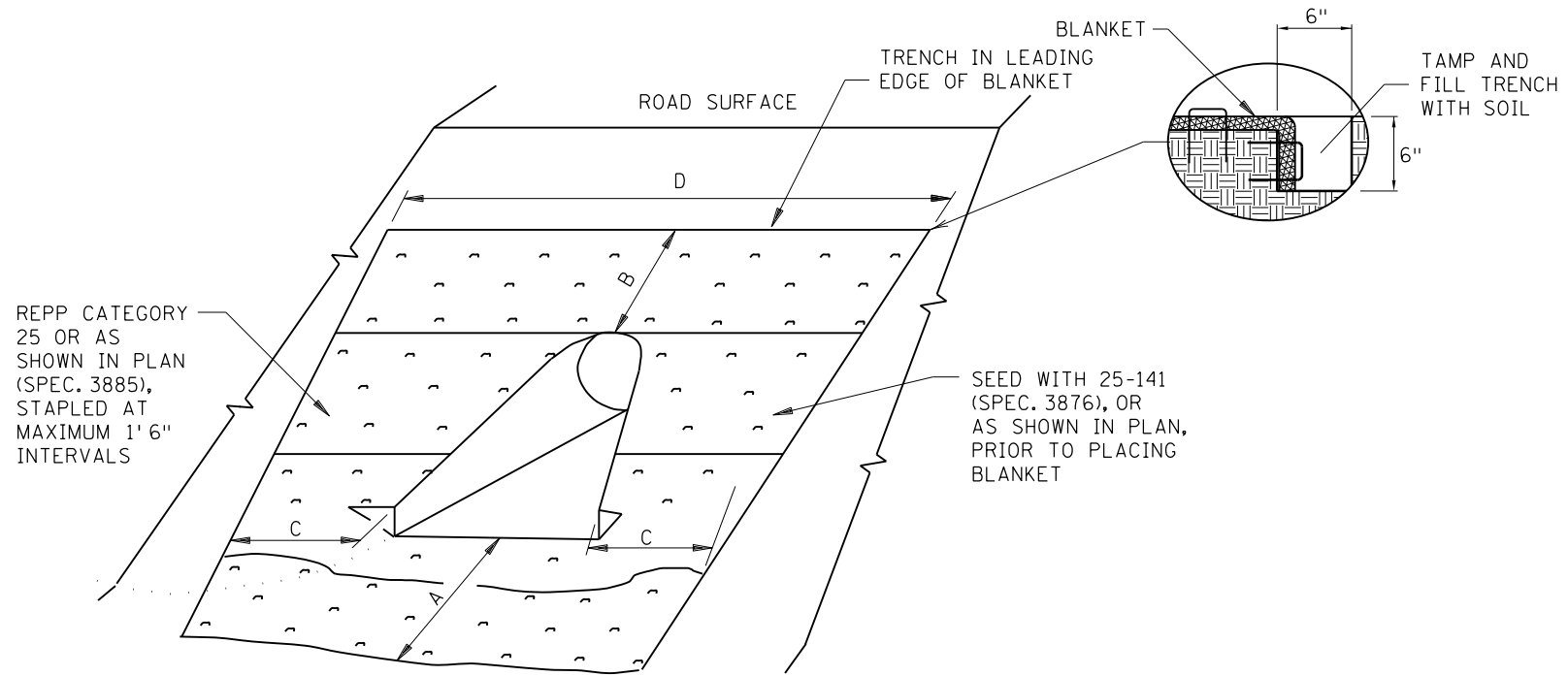
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STATE DESIGN ENGINEER

APPROVED: 2-28-2017  
REVISED:

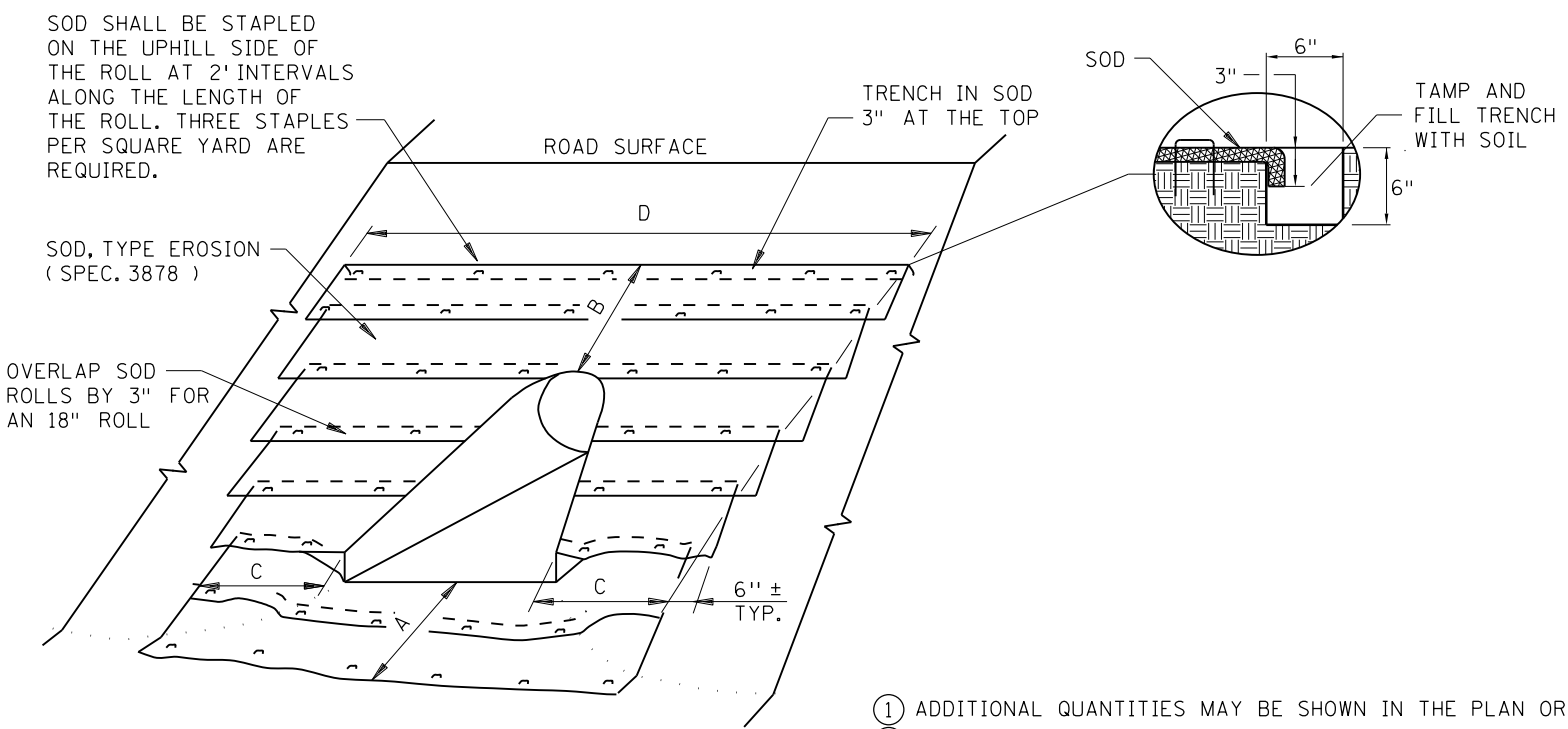
PERMANENT EROSION CONTROL  
ALONG ROADWAYS, DITCHES AND FLUMES

SAP 002-614-048  
SAP 106-020-037

SHEET NO. 53 OF 303 SHEETS



ROLLED EROSION PREVENTION PRODUCT (BLANKET) & SEED DETAIL



SODDING DETAIL

- ① ADDITIONAL QUANTITIES MAY BE SHOWN IN THE PLAN OR REQUIRED BY THE ENGINEER.
- ② FOR ARCH PIPE USE CLOSEST CIRCULAR PIPE DIAMETER AND APRON SLOPE. DIAMETERS LARGER THAN 72" REQUIRE SPECIAL DESIGNS.

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 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.

REVISION:

APPROVED: JANUARY 8, 2020

*Marni Karnowski*  
MARNI KARNOWSKI  
CHIEF ENVIRONMENTAL OFFICER

**m** MINNESOTA  
DEPARTMENT OF TRANSPORTATION

STANDARD PLAN 5-297.404 2 OF 3

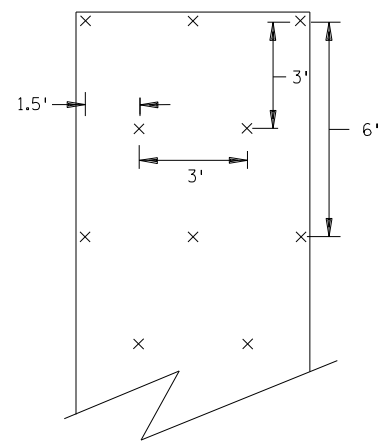
*Tom Styrbicki*  
THOMAS STYRBICKI  
STATE DESIGN ENGINEER

APPROVED: 1-8-2020  
REVISED:

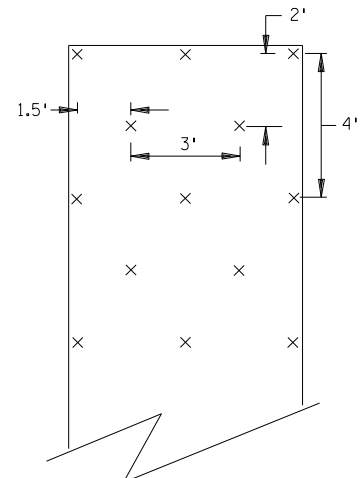
**PERMANENT EROSION CONTROL  
TURF ESTABLISHMENT DETAIL AT CULVERT ENDS**

SAP 002-614-048  
SAP 106-020-037

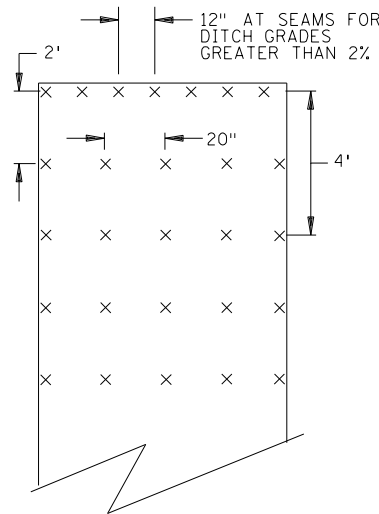
SHEET NO.54 OF 303 SHEETS



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

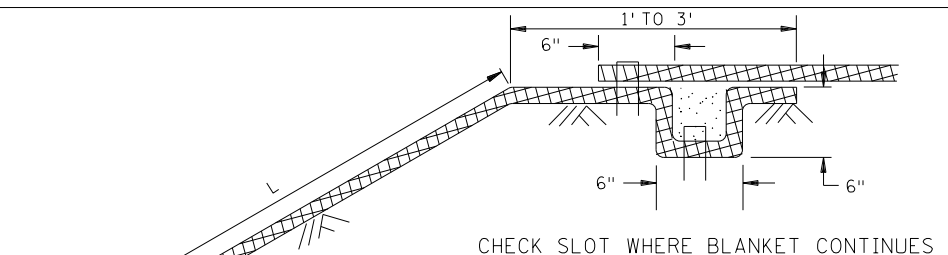


SLOPES 1:2 TO 1:1  
170 STAPLES PER 100 SQ YD

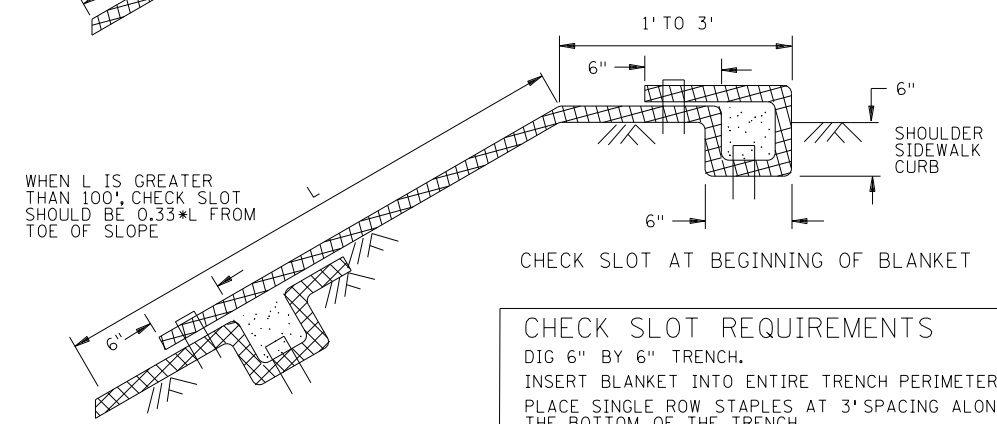


CHANNEL AND DITCH APPLICATIONS  
350 STAPLES PER 100 SQ YD

BLANKET STAPLE PATTERN

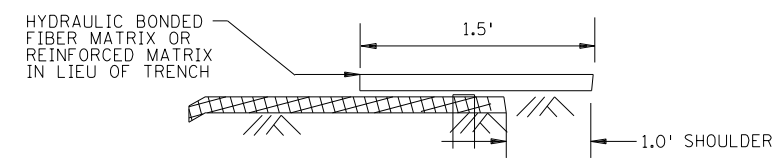


CHECK SLOT WHERE BLANKET CONTINUES



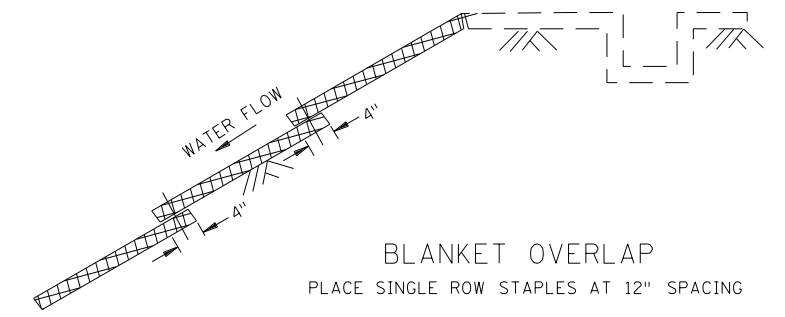
CHECK SLOT AT BEGINNING OF BLANKET

**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.

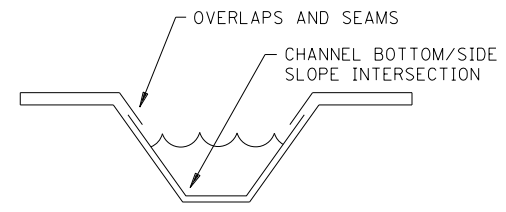


CHECK SLOT ALTERNATIVE  
PLACE SINGLE ROW STAPLES AT 12" SPACING

CHECK SLOT DETAILS



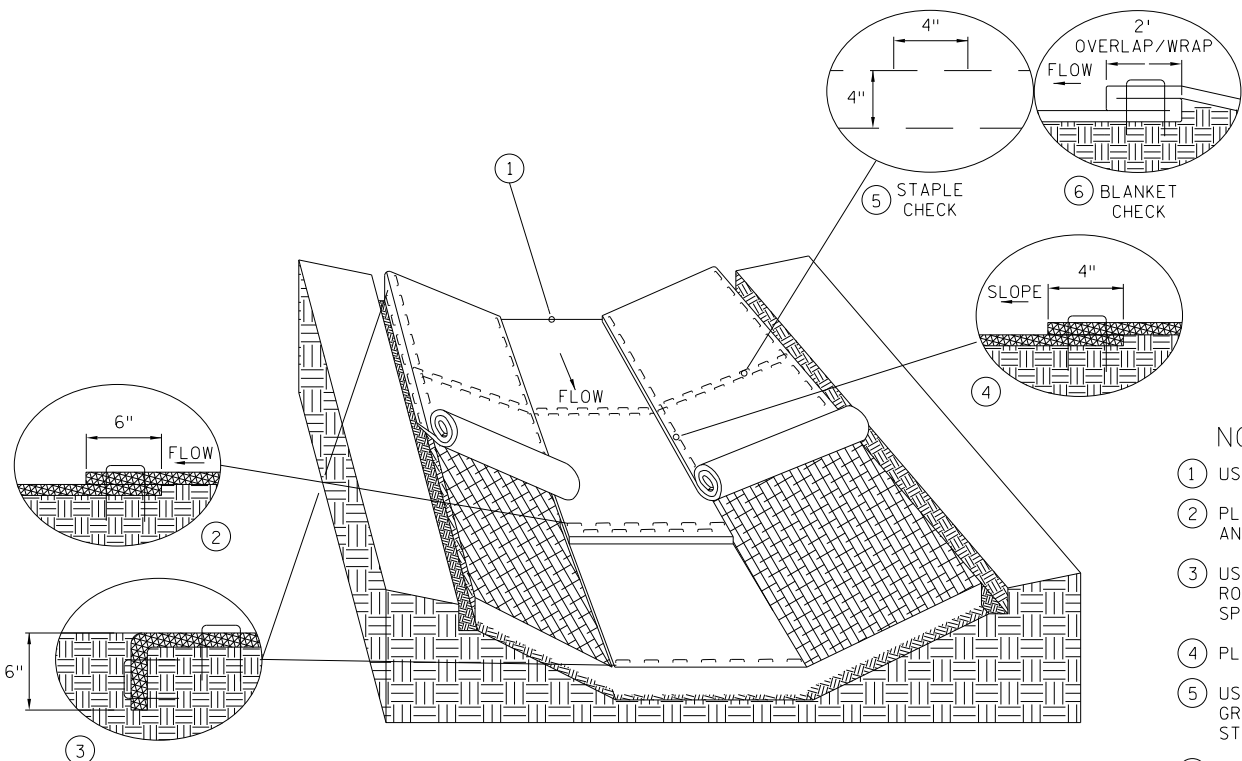
BLANKET OVERLAP  
PLACE SINGLE ROW STAPLES AT 12" SPACING



DITCH BLANKET 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.



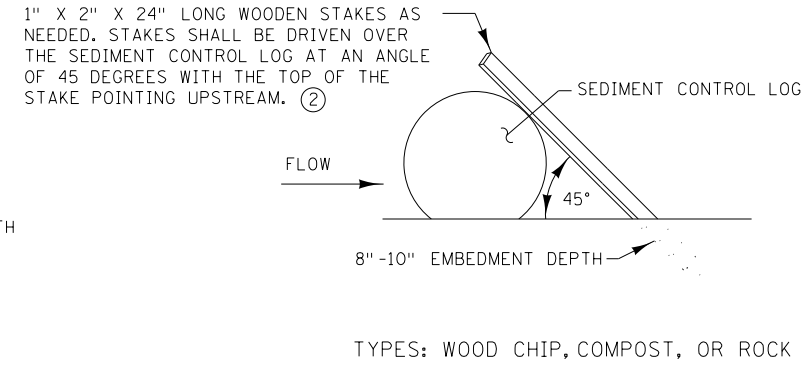
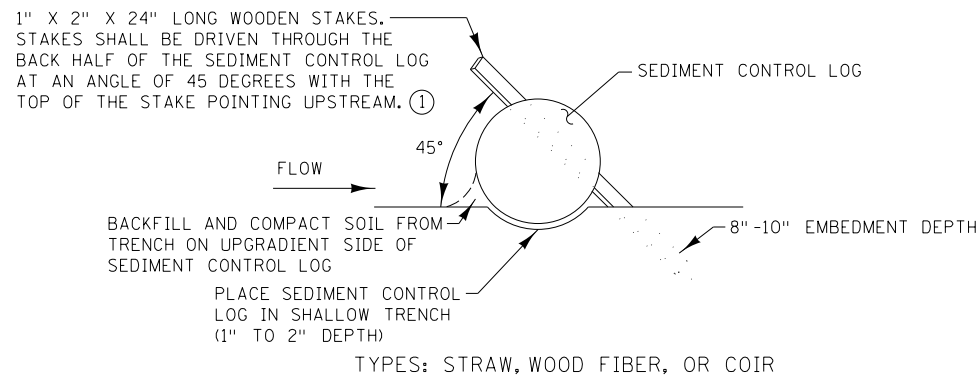
DITCH BLANKET STAPLE DETAIL

**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 1/3 FROM THE BOTTOM OF THE SLOPE.

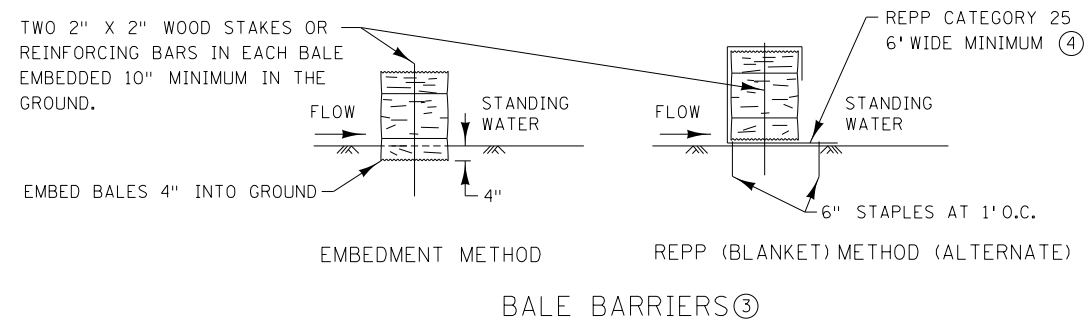
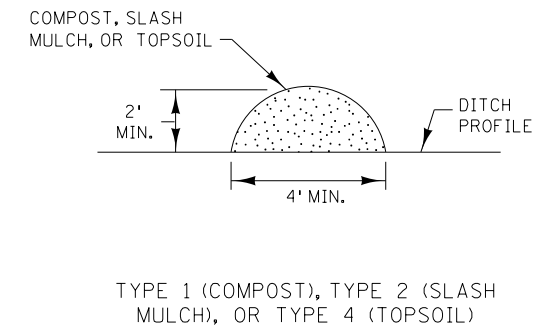
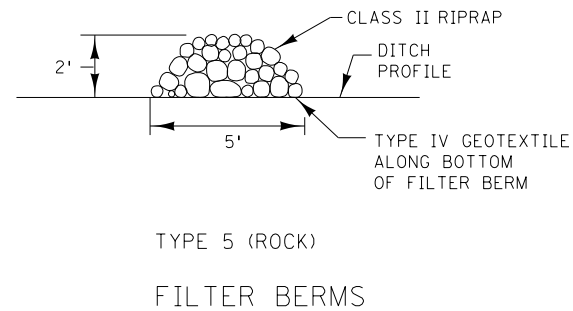
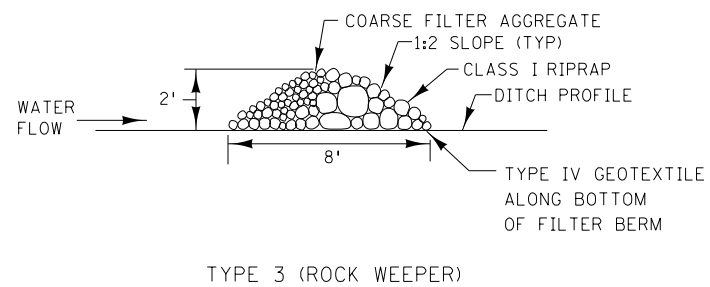
REVISION:  
APPROVED: JANUARY 8, 2020  
*Marni Karnowski*  
MARNI KARNOWSKI  
CHIEF ENVIRONMENTAL OFFICER

**MINNESOTA**  
DEPARTMENT OF TRANSPORTATION  
*Thomas Styrbicki*  
THOMAS STYRBICKI  
STATE DESIGN ENGINEER  
APPROVED: 1-8-2020  
REVISED:

**PERMANENT EROSION CONTROL  
REPP (BLANKET) STAPLE PATTERN FOR SLOPES**  
SAP 002-614-048  
SAP 106-020-037  
SHEET NO. 55 OF 303 SHEETS



SEDIMENT CONTROL LOGS



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.

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*Marni Karnowski*

MARNI KARNOWSKI  
CHIEF ENVIRONMENTAL OFFICER



STANDARD PLAN 5-297.405

2 OF 8

APPROVED: 1-8-2020

REVISED:

*Thomas Styrbicki*

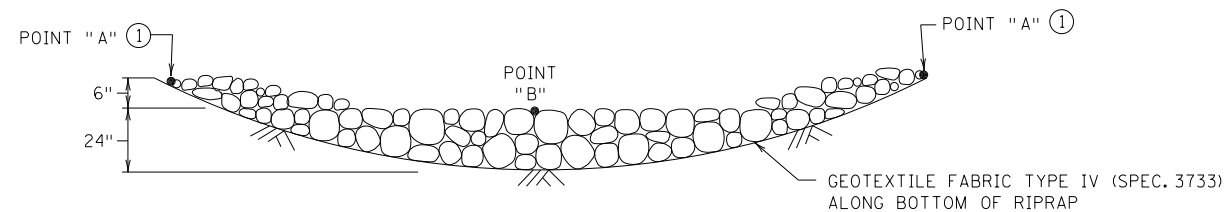
THOMAS STYRBICKI  
STATE DESIGN ENGINEER

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

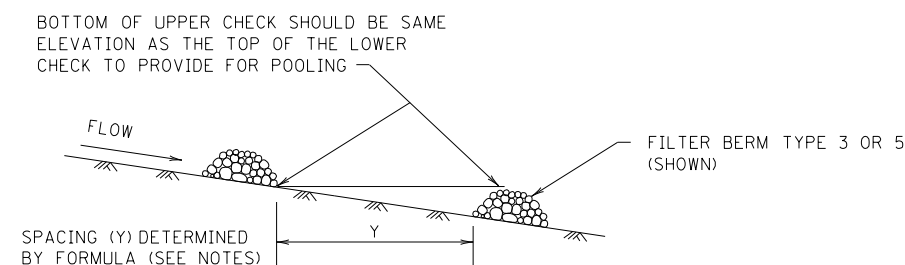
SAP 002-614-048  
SAP 106-020-037

SHEET NO. 56 OF 303 SHEETS

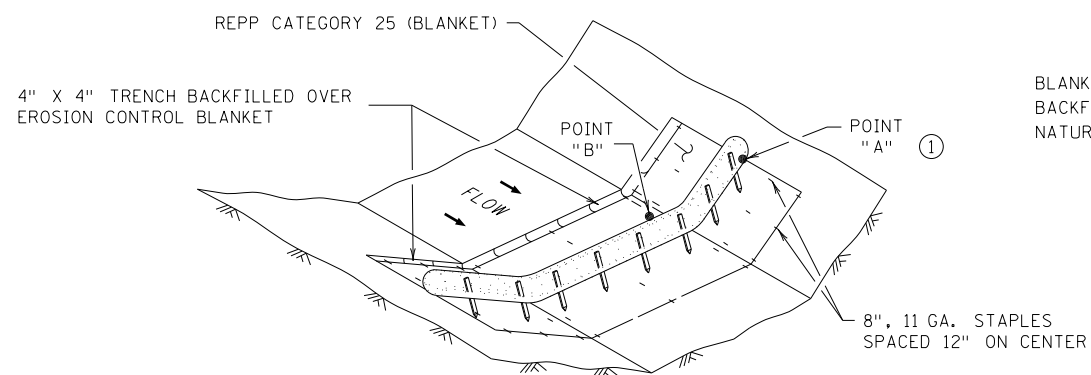




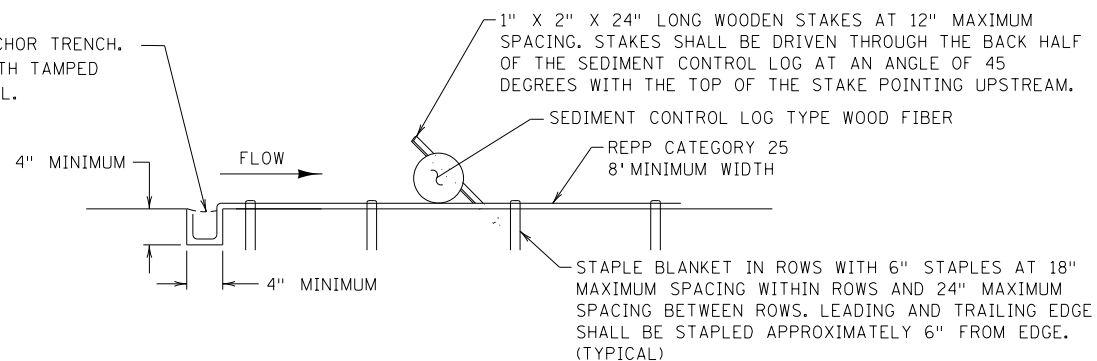
ROCK DITCH CHECKS  
 FILTER BERMS TYPE 3 (ROCK WEEPER) OR FILTER TYPE 5 (ROCK) ③  
 FOR USE ON ROUGH-GRADED AREAS  
 ONLY FOR USE OUTSIDE CLEAR ZONE ②



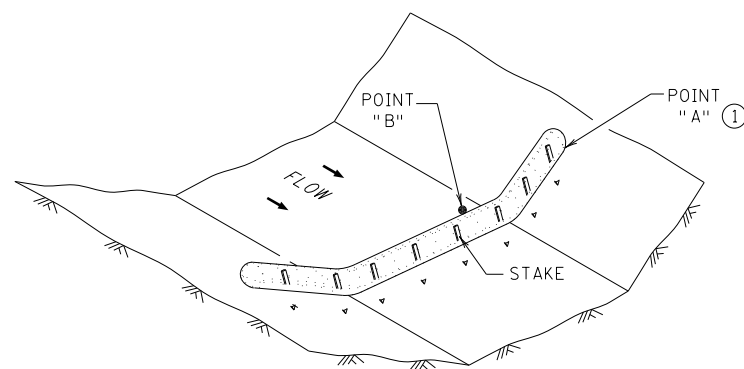
DITCH CHECK SPACING  
 FOR ALL FILTER BERM TYPES



BLANKET ANCHOR TRENCH,  
 BACKFILL WITH TAMPED  
 NATURAL SOIL.



SEDIMENT CONTROL LOG TYPE REPP (BLANKET) SYSTEM ④



SEDIMENT CONTROL LOG TYPE WOOD FIBER, OR TYPE COMPOST ⑤  
 FOR USE ON ROUGH GRADED AREAS

NOTES:

REPP = ROLLED EROSION PREVENTION PRODUCT.

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

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

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

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

- ① POINT "A" MUST BE A MINIMUM OF 6" HIGHER THAN POINT "B" TO ENSURE THAT WATER FLOWS OVER THE DIKE AND NOT AROUND THE ENDS.
- ② ROCK DITCH CHECKS PLACED WITHIN THE CLEAR ZONE ARE TO BE 18" OR LESS IN HEIGHT. A 1:6 APPROACH AND DEPARTURE SLOPE SHALL BE PROVIDED.
- ③ DITCH GRADE 3% - 5%, MAX. FLOW VELOCITY 12 FT./SEC.
- ④ DITCH GRADE 1.5% - 3%, MAX. FLOW VELOCITY 4.5 FT./SEC.
- ⑤ DITCH GRADE 1.5% - 3%, MAX. FLOW VELOCITY 1.5 FT./SEC.

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

**m**  
 MINNESOTA  
 DEPARTMENT  
 OF  
 TRANSPORTATION

STANDARD PLAN 5-297.405

3 OF 8

*Thomas Styrbicki*  
 THOMAS STYRBICKI  
 STATE DESIGN ENGINEER

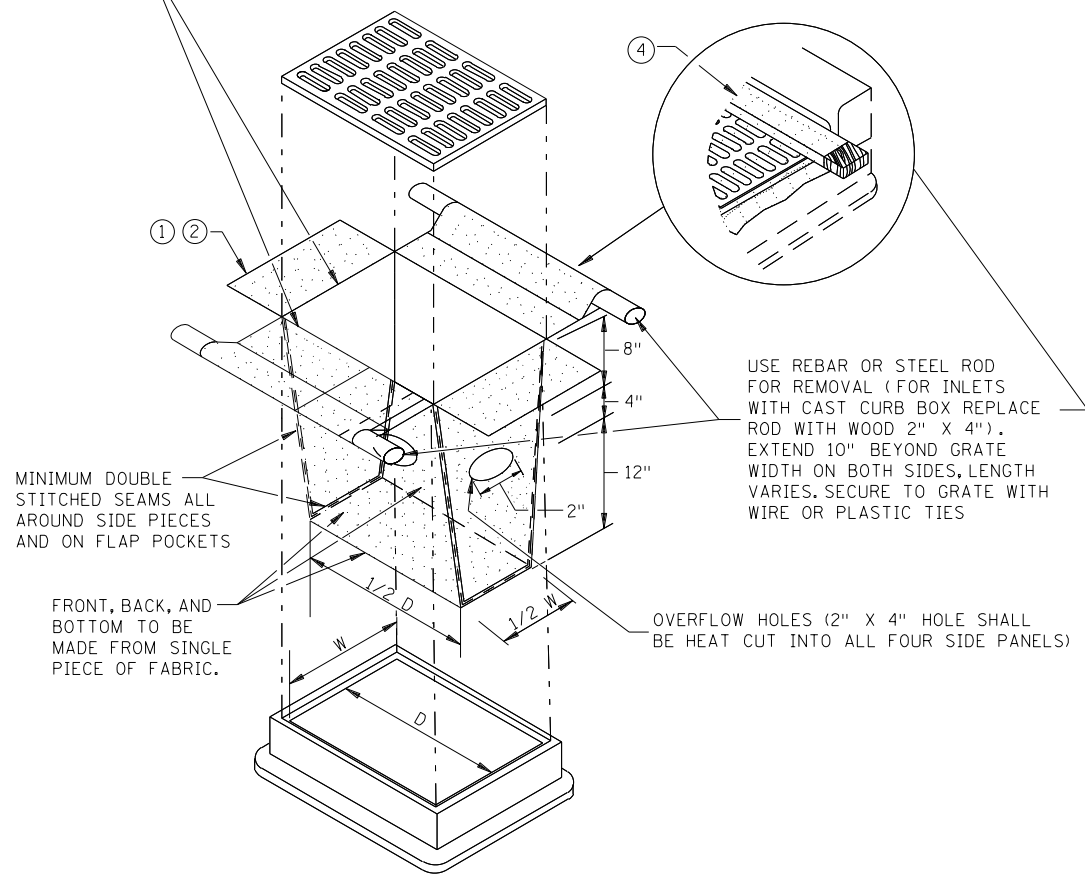
APPROVED: 1-8-2020  
 REVISED:

TEMPORARY EROSION CONTROL  
 DITCH CHECK

SAP 002-614-048  
 SAP 106-020-037

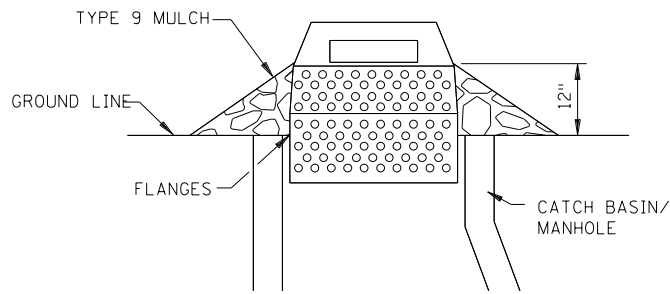
SHEET NO. 57 OF 303 SHEETS

INLET SPECIFICATIONS AS PER THE PLAN  
DIMENSION LENGTH AND WIDTH TO MATCH  
FLAP POCKET



**FILTER BAG INSERT ③**

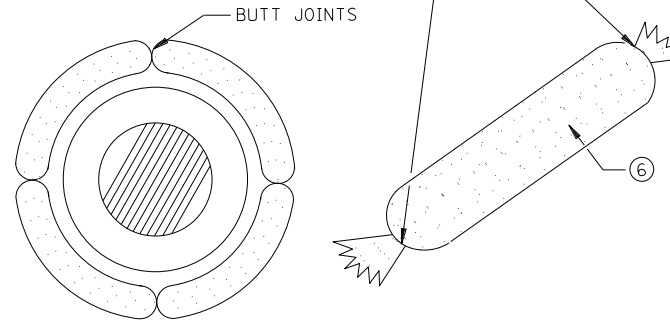
(CAN BE INSTALLED IN ANY INLET TYPE  
WITH OR WITHOUT A CURB BOX)



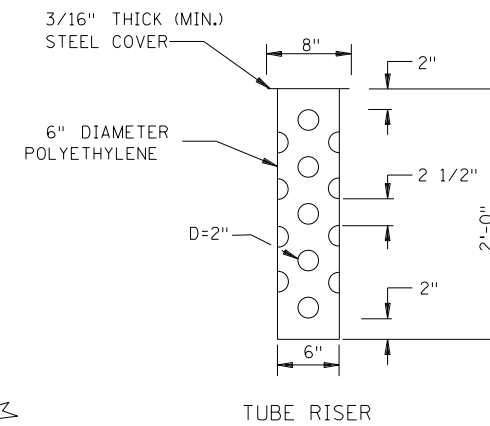
**SEDIMENT CONTROL INLET HAT**

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.

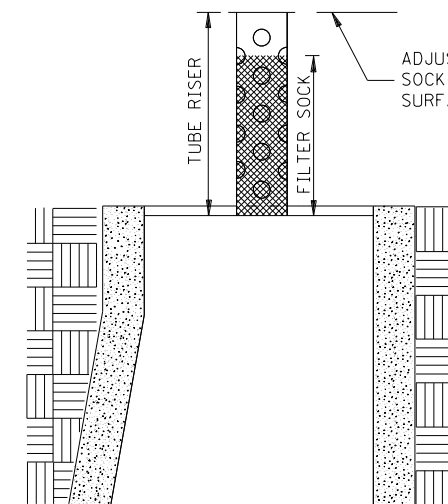
ENDS SECURELY CLOSED TO  
PREVENT LOSS OF OPEN GRADED  
AGGREGATE FILL. SECURED WITH  
50 PSI. ZIP TIE.



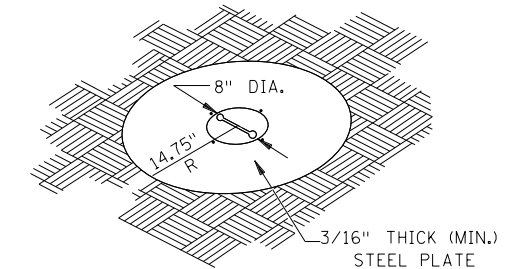
**ROCK LOG/COMPOST LOG**



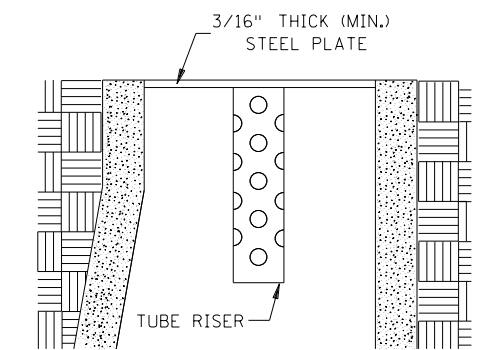
**TUBE RISER**



**SECTION  
(UP POSITION)**

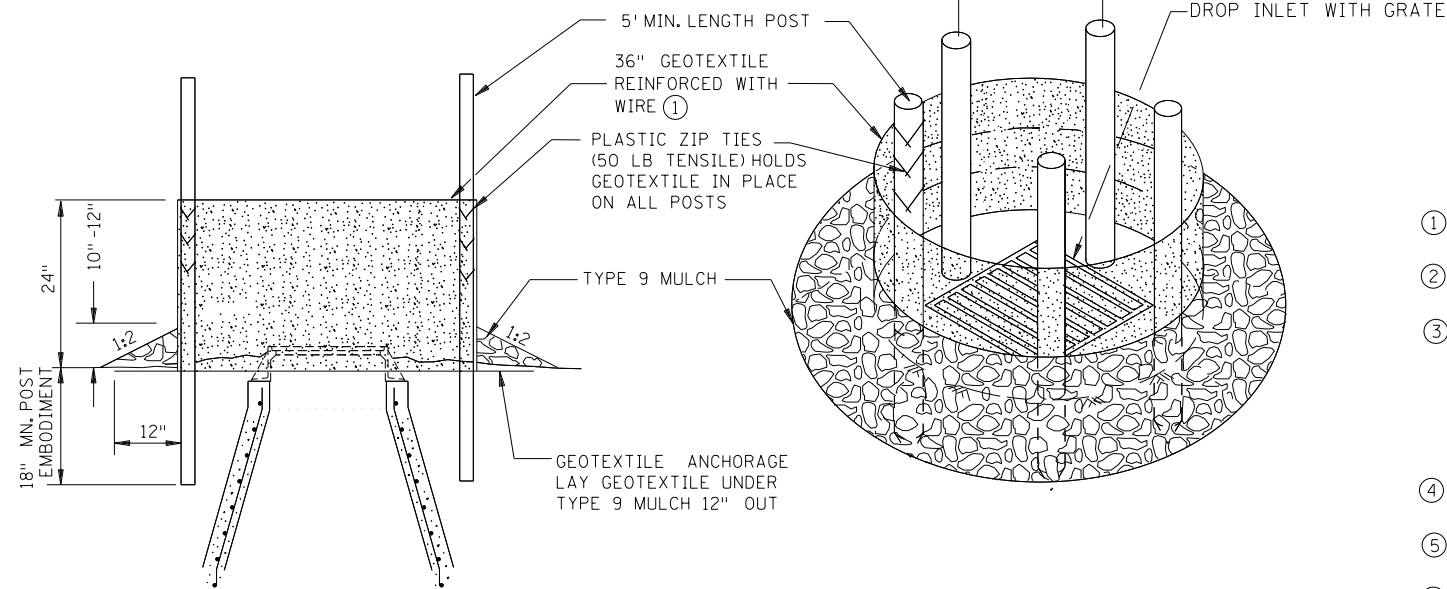


**PERSPECTIVE VIEW**



**SECTION  
(DOWN POSITION)**

**POP-UP HEAD**



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

**NOTES:**

- SEE SPECS. 2573, 3137, & 3886.
- DEVICES MUST BE ADJUSTED ACCORDINGLY AS TO NOT CAUSE FLOODING ON ROADWAY THAT WOULD IMPEED TRAFFIC FLOW.
- ① ALL GEOTEXTILE USED FOR INLET PROTECTION SHALL BE MONOFILAMENT IN BOTH DIRECTIONS, MEETING SPEC. 3886.
- ② FINISHED SIZE, INCLUDING POCKETS WHERE REQUIRED SHALL EXTEND A MINIMUM OF 10 INCHES AROUND THE PERIMETER TO FACILITATE MAINTENANCE OR REMOVAL.
- ③ INSTALLATION NOTES:  
DO NOT PLACE FILTER BAG INSERT IN INLETS SHALLOWER THAN 30 INCHES, MEASURED FROM THE BOTTOM OF THE INLET TO THE TOP OF THE GRATE. THE PLACED BAG SHALL HAVE A MINIMUM SIDE CLEARANCE OF 3 INCHES BETWEEN THE INLET WALLS AND THE BAG, MEASURED AT THE BOTTOM OF THE OVERFLOW HOLES. WHERE NECESSARY THE CONTRACTOR SHALL CLINCH THE BAG, USING PLASTIC ZIP TIES, TO ACHIEVE THE 3 INCH SIDE CLEARANCE.
- ④ FLAP POCKETS SHALL BE LARGE ENOUGH TO ACCEPT WOOD 2 INCH X 4 INCH OR USE A ROCK SOCK OR SAND BAGS IN PLACE OF THE FLAP POCKETS.
- ⑤ SOCK HEIGHT MUST NOT BE SO HIGH AS TO SLOW DOWN WATER FILTRATION TO CAUSE FLOODING OF THE ROADWAY.
- ⑥ GEOTEXTILE SOCK BETWEEN 4-10 FEET LONG AND 4-6 INCH DIAMETER, SEAM TO BE JOINED BY TWO ROWS OF STITCHING WITH A PLASTIC MESH BACKING OR PROVIDE A HEAT BONDED SEAM (OR APPROVED EQUIVALENT). FILL ROCK LOG WITH OPEN GRADED AGGREGATE CONSISTING OF SOUND DURABLE PARTICLES OF COARSE AGGREGATE CONFORMING TO SPEC. 3137 TABLE 3137-1; CA-3 GRADATION.

REVISION:  
APPROVED: 2-28-2017  
*Chief Environmental Officer*  
CHIEF ENVIRONMENTAL OFFICER

**m**  
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TRANSPORTATION

STANDARD PLAN 5-297.405

4 OF 8

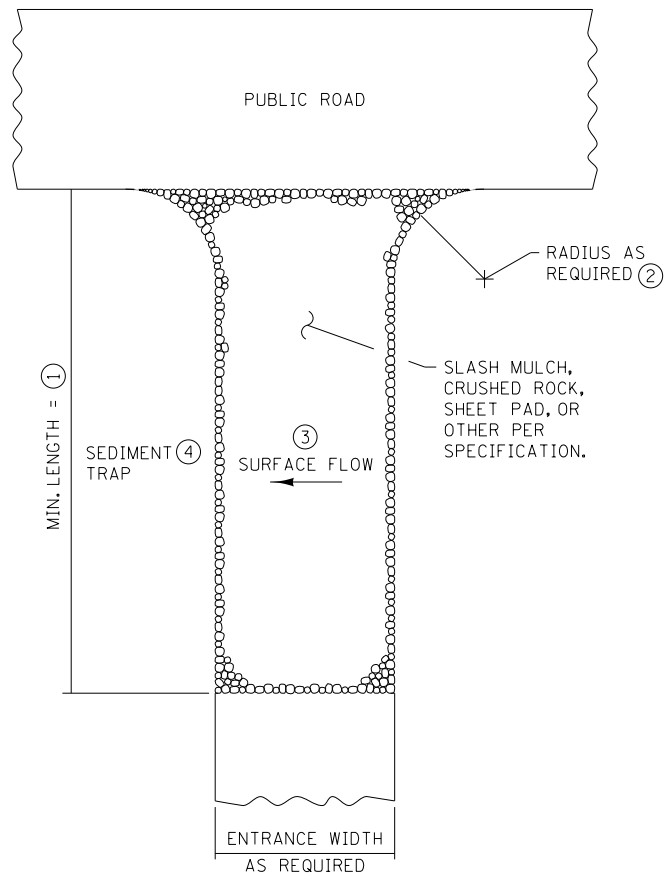
*Rom Sh*  
STATE DESIGN ENGINEER

APPROVED: 2-28-2017  
REVISED:

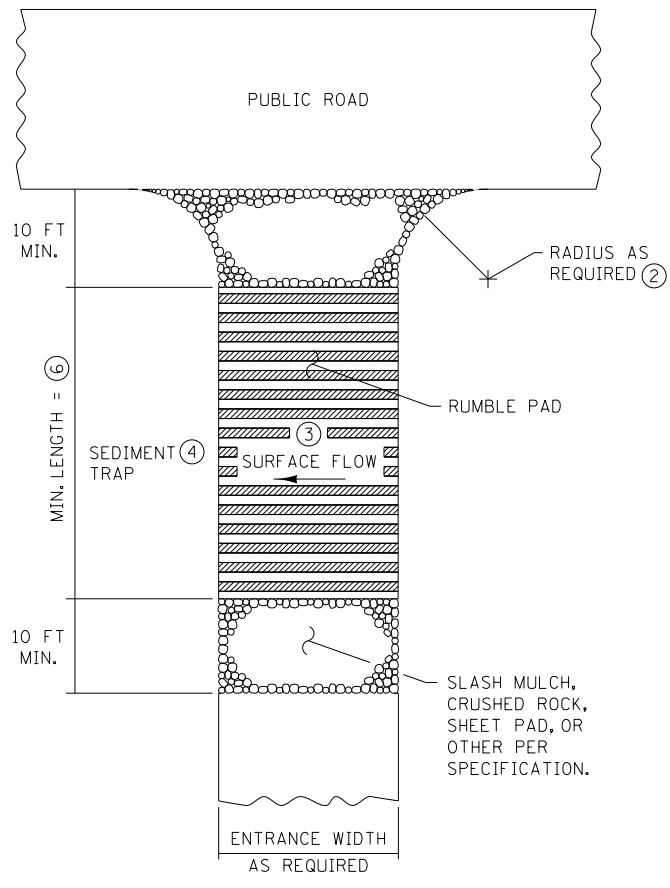
**TEMPORARY EROSION CONTROL  
STORM DRAIN INLET PROTECTION**

SAP 002-614-048  
SAP 106-020-037

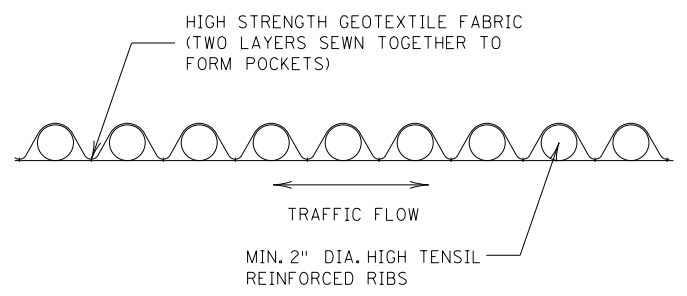
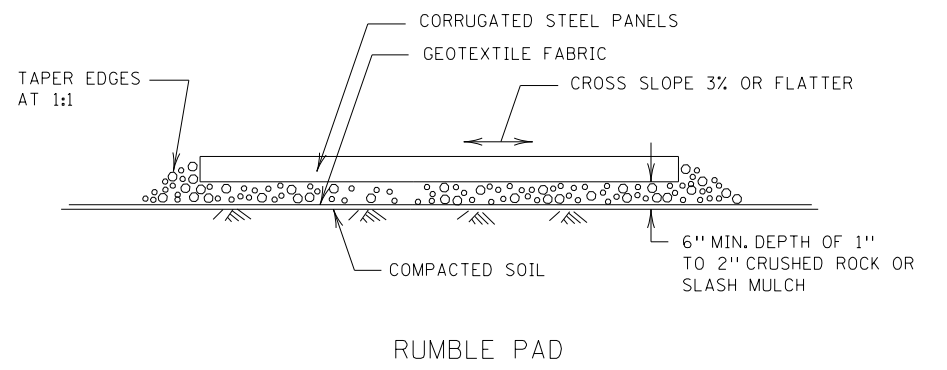
SHEET NO. 58 OF 303 SHEETS



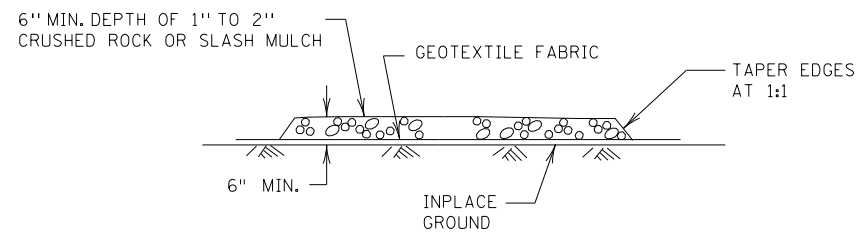
SLASH MULCH, CRUSHED ROCK, OR SHEET PAD CONSTRUCTION EXIT (5)(1)



RUMBLE PAD CONSTRUCTION EXIT (5)(7)



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.

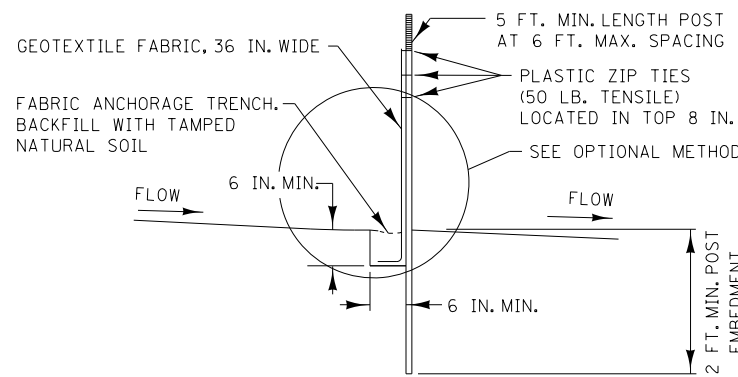
REVISION:  
 APPROVED: 2-28-2017  
  
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 DEPARTMENT OF TRANSPORTATION	STANDARD PLAN 5-297.405	5 OF 8
	APPROVED: 2-28-2017 REVISED:	
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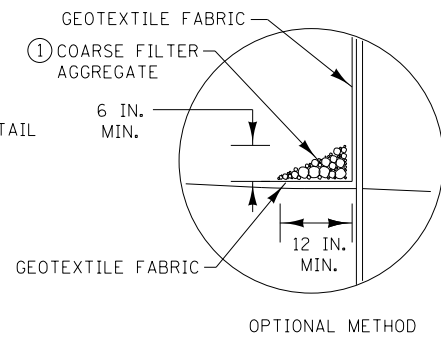
**TEMPORARY EROSION CONTROL STABILIZED CONSTRUCTION EXIT**

SAP 002-614-048  
 SAP 106-020-037

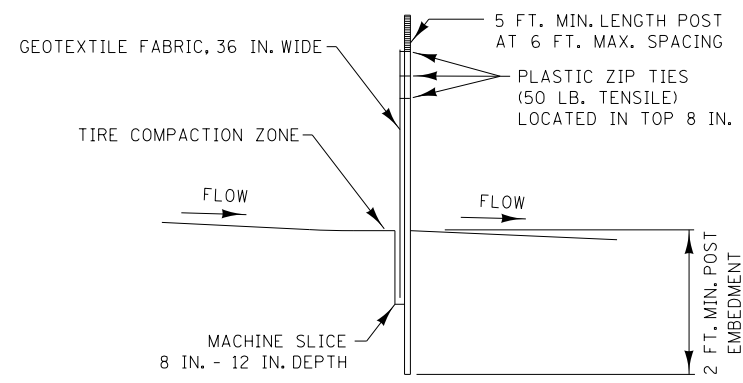
SHEET NO. 59 OF 303 SHEETS



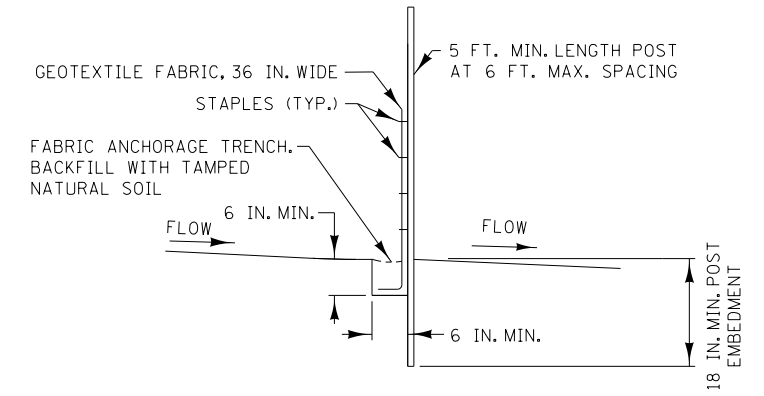
SILT FENCE TYPE HI ②  
(HAND INSTALLED)



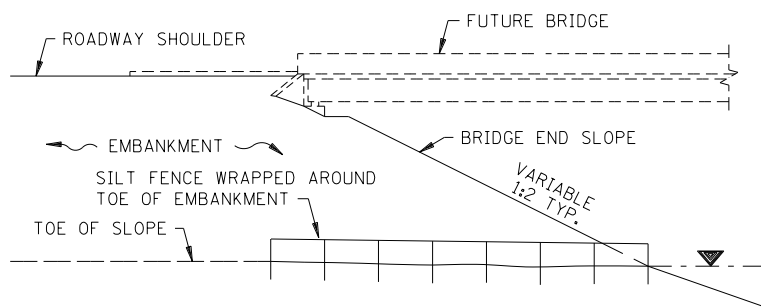
OPTIONAL METHOD



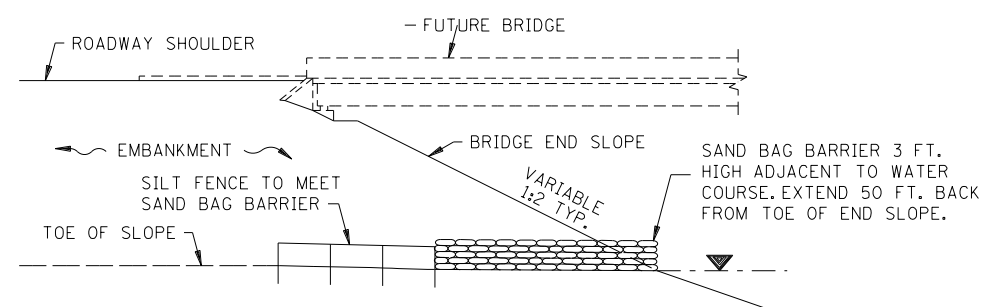
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(MACHINE SLICED)



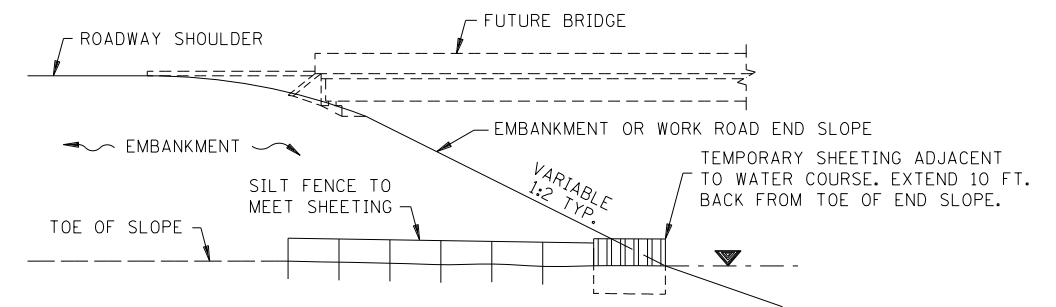
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(PREASSEMBLED)



SILT FENCE ONLY ④

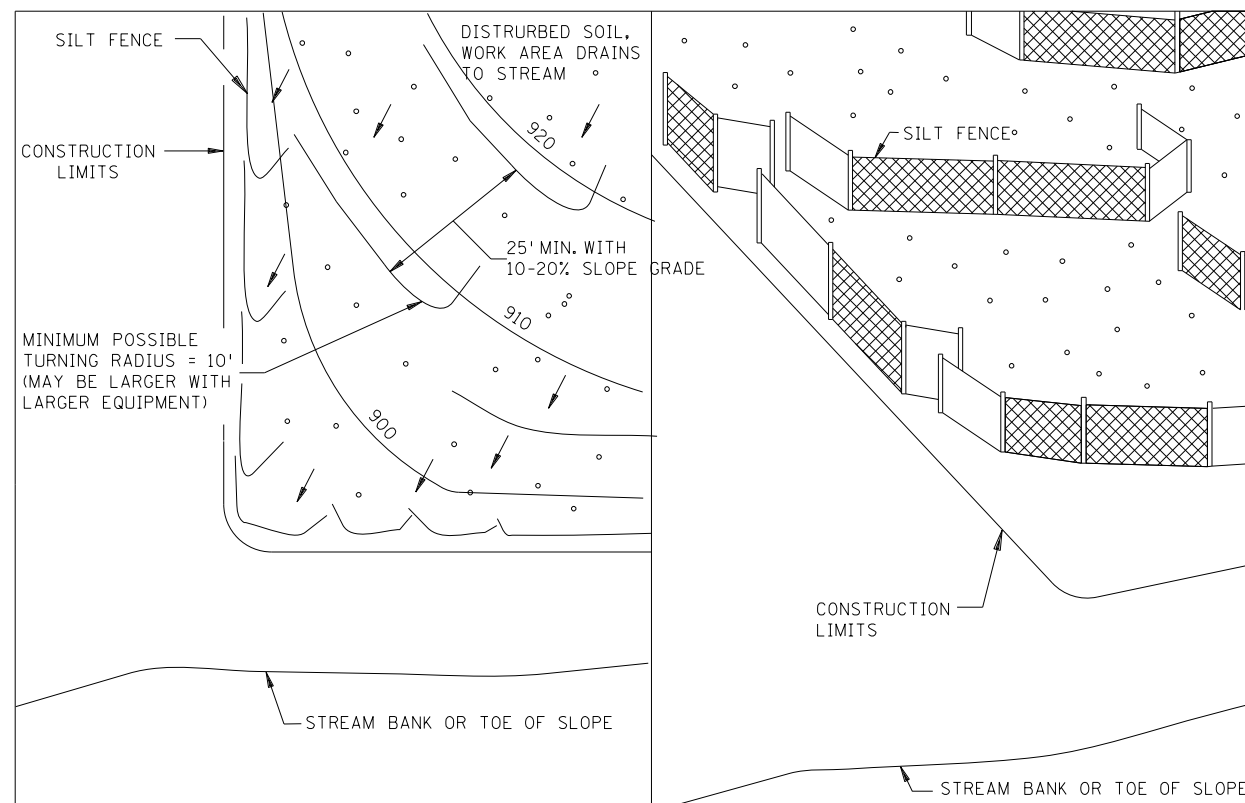


SILT FENCE WITH SAND BAGS ⑤



SILT FENCE WITH SHEETING ⑥

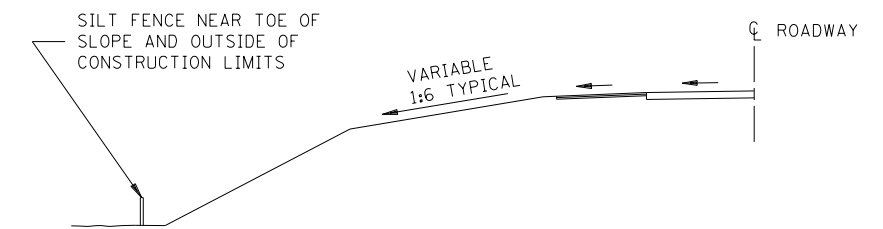
INSTALLATION AT BRIDGE EMBANKMENT ADJACENT TO WATER



PLAN VIEW

PERSPECTIVE VIEW

J-HOOK INSTALLATION



LOCATION AT TOE OF ROADWAY EMBANKMENT

NOTES:

- SEE SPECS. 2573, 3149 & 3886.
- ① COARSE FILTER AGGREGATE (SPEC. 3149) SHALL BE INCIDENTAL.
- ② TO PROTECT AREAS FROM SHEET FLOW. MAXIMUM CONTRIBUTING AREA: 1 ACRE.
- ③ TO PROTECT AREAS FROM SHEET FLOW. MAXIMUM CONTRIBUTING AREA: 0.25 ACRE.
- ④ WATER COURSE FLOW VELOCITY: STANDING. CONTRIBUTING SLOPE AREA: 1/2 ACRE.
- ⑤ WATER COURSE FLOW VELOCITY: 1 TO 7 FT./SEC. CONTRIBUTING SLOPE AREA: 1 ACRE.
- ⑥ WATER COURSE FLOW VELOCITY: 8 TO 15 FT./SEC. CONTRIBUTING SLOPE AREA: 3 ACRES.

REVISION:  
APPROVED: 2-28-2017  
*[Signature]*  
CHIEF ENVIRONMENTAL OFFICER

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TRANSPORTATION

STANDARD PLAN 5-297.405

6 OF 8

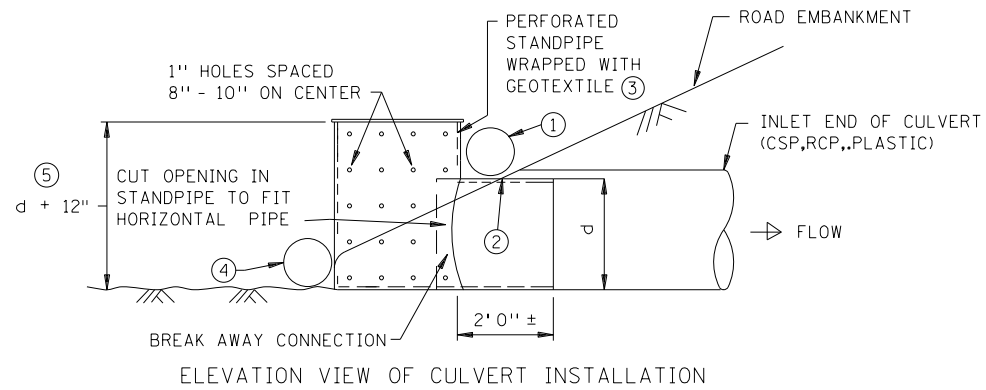
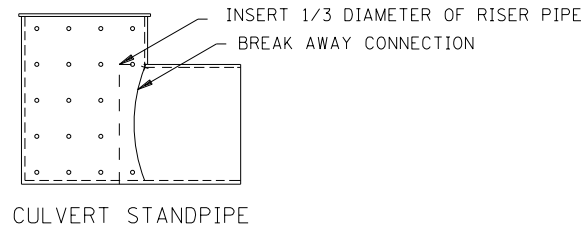
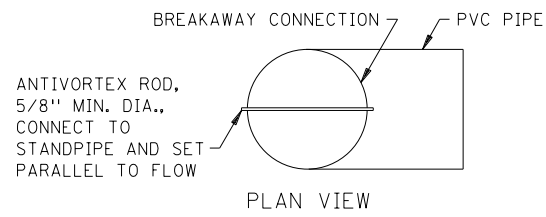
APPROVED: 2-28-2017  
REVISED:

*[Signature]*  
STATE DESIGN ENGINEER

TEMPORARY EROSION CONTROL  
SILT FENCE

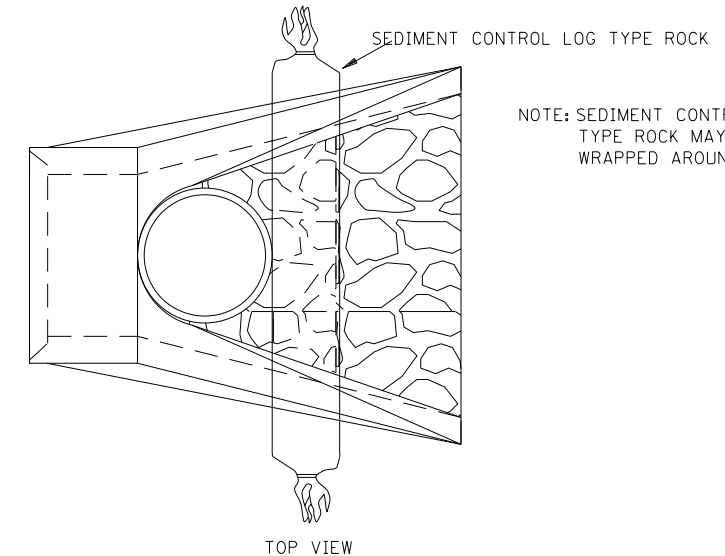
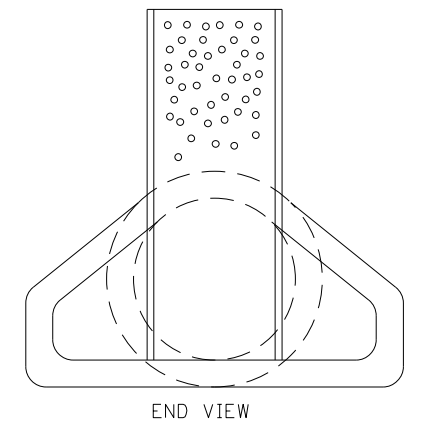
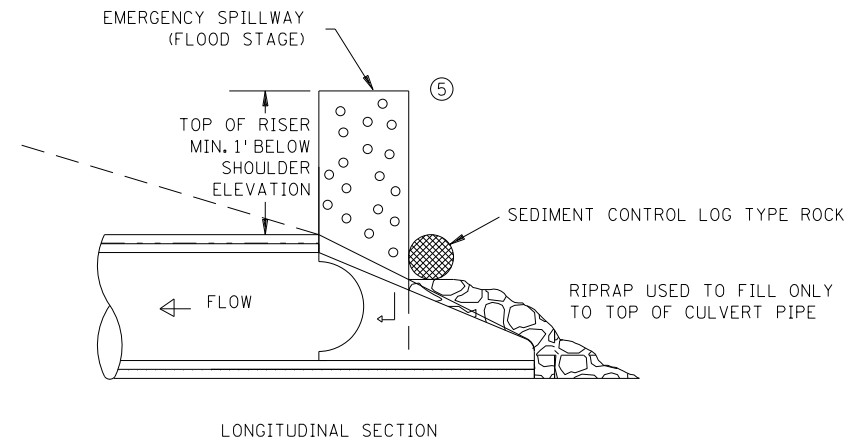
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SAP 106-020-037

SHEET NO. 60 OF 303 SHEETS

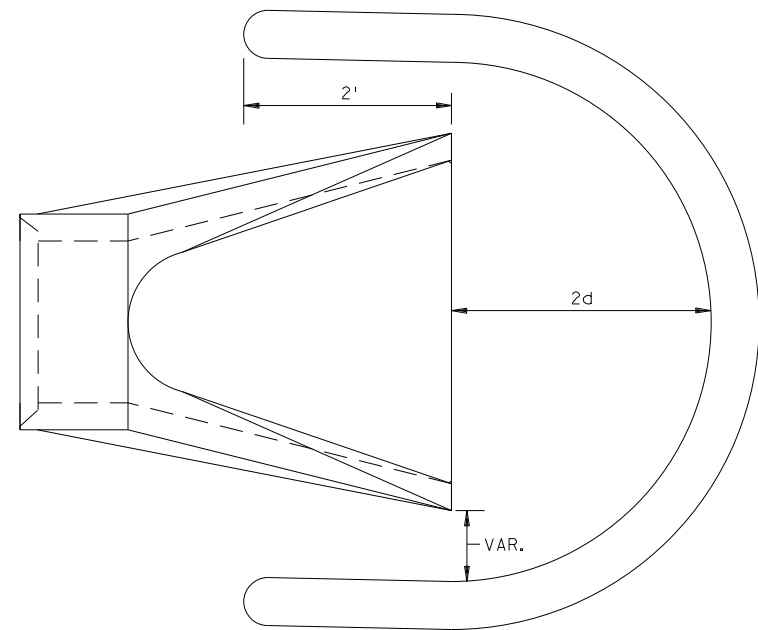


CULVERT STANDPIPE INSERT (D-RISER)

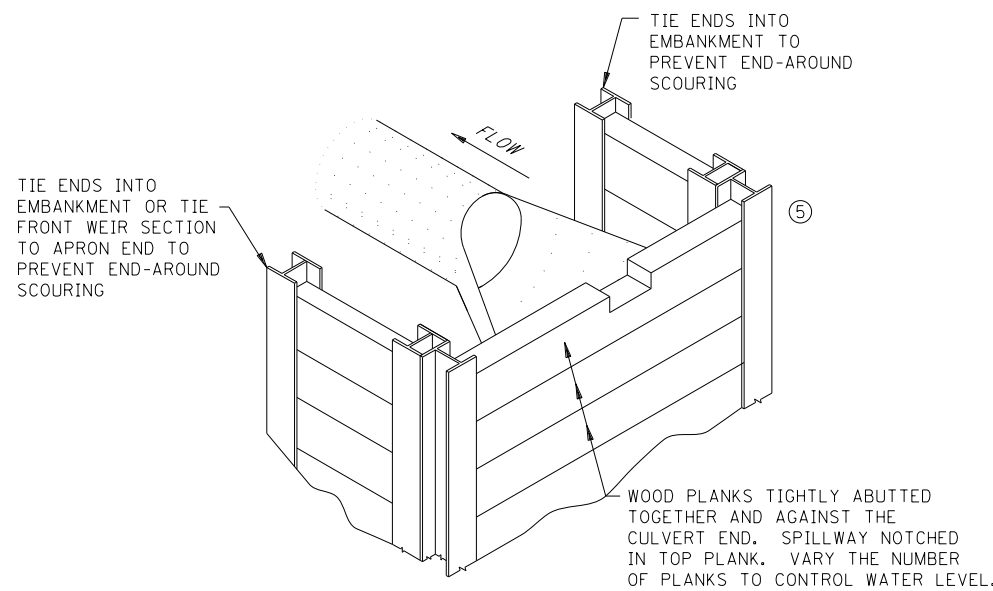
d= CULVERT SIZE: 12" - 36"



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.

REVISION:  
APPROVED: 2-28-2017  
*Chief Environmental Officer*  
CHIEF ENVIRONMENTAL OFFICER



STANDARD PLAN 5-297.405

8 OF 8

*Rom Ska*  
STATE DESIGN ENGINEER

APPROVED: 2-28-2017  
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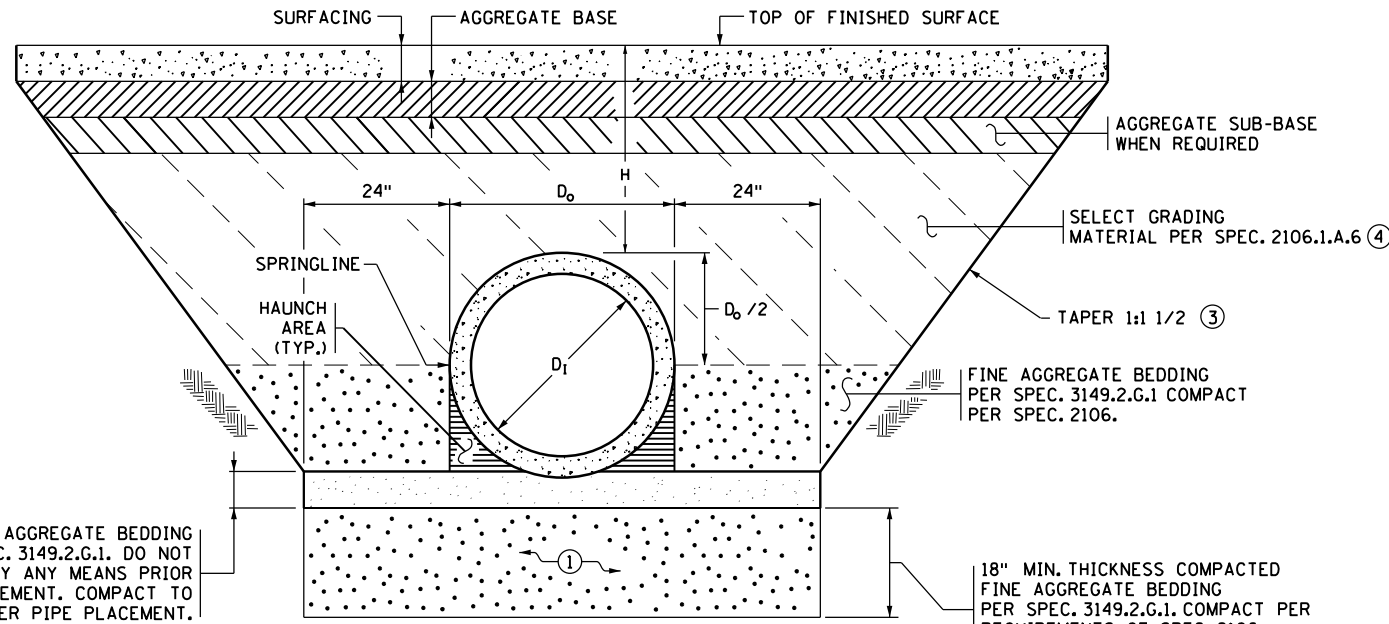
TEMPORARY EROSION CONTROL  
CULVERT END CONTROLS

SAP 002-614-048  
SAP 106-020-037

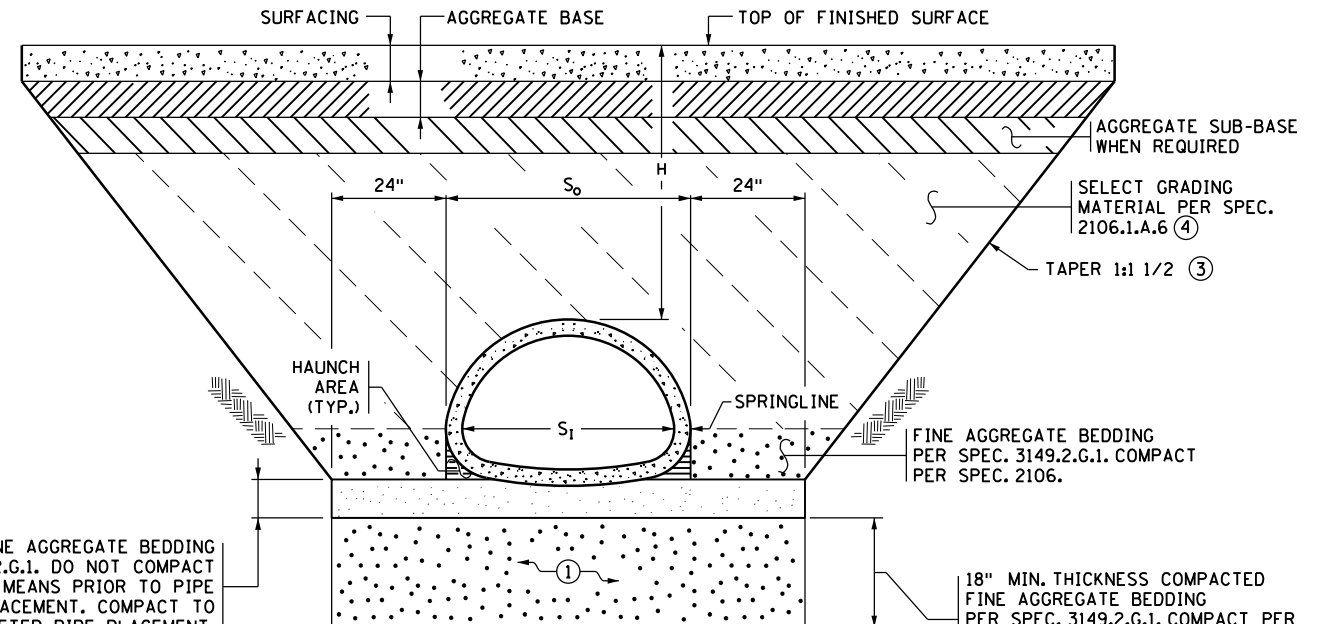
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PLOTTED/REVISED:  
02/09/2022

DISTRICT #: JRBernd  
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**STANDARD RIGID CULVERT PIPE BEDDING**



**STANDARD RIGID PIPE ARCH CULVERT BEDDING**

- LEGEND-**
- D<sub>1</sub> = INSIDE DIAMETER OF ROUND PIPE (INCHES).
  - D<sub>0</sub> = OUTSIDE DIAMETER OF ROUND PIPE (INCHES).
  - S<sub>1</sub> = INSIDE SPAN OF PIPE-ARCH (INCHES).
  - S<sub>0</sub> = OUTSIDE SPAN OF PIPE-ARCH (INCHES).
  - H = FILL COVER HEIGHT OVER PIPE (FEET).
  - [Hatched pattern] = UNDISTURBED SOIL
  - [Dotted pattern] = COMPACTED BEDDING
  - [Dotted pattern with horizontal lines] = LOOSE BEDDING, COMPACTED AFTER PIPE PLACEMENT

- NOTES**
- STANDARD BEDDING FOR RIGID PIPE CULVERTS WITHOUT TREATMENTS.
  - RIGID PIPE INCLUDES CONCRETE.
  - ENTRANCE CULVERTS (FIELD AND DRIVEWAY CULVERTS) DO NOT NEED BEDDING UNLESS SPECIFIED IN THE PLANS OR SPECIAL PROVISIONS.
  - UNLESS OTHERWISE NOTED IN THE PLAN, BEDDING QUANTITIES ARE COMPUTED FOR THE FULL LENGTH OF THE PIPE AND APRON, AND WILL NOT BE ADJUSTED FOR CHANGES TO MEET OSHA REQUIREMENTS.
  - WHEN RIPRAP IS REQUIRED AT THE APRON END, SEE STANDARD PLATE OR PLAN FOR RIPRAP INSTALLATION AND QUANTITIES. FOR APRONS WITHOUT RIPRAP PLACE 6" MIN. FINE AGGREGATE BEDDING UNDER APRONS. USE A TRENCH WIDTH EQUAL TO THE PIPE TRENCH WIDTH.
  - CONTRACT PAY ITEM FOR FINE AGGREGATE BEDDING INCLUDES THE COST OF EXCAVATION, PLACEMENT AND COMPACTION.
  - EXCAVATION AND BACKFILL WITH SELECT GRADING MATERIAL ARE NOT TABULATED SEPARATELY BUT ARE INCLUDED IN THE CONTRACT UNIT PRICE OF THE RELEVANT CULVERT PAY ITEM.
  - EXCAVATE & CONSTRUCT ALL TRENCHES AND SLOPES PER OSHA REQUIREMENTS.
  - ALL SLOPES SHOWN AS (V):(H).
  - PIPE SIZE IS BASED ON THE NOMINAL INSIDE DIAMETER OR SPAN.
  - PROTECT ALL PIPE DURING CONSTRUCTION PER SPEC. 2501.
  - PLACE MULTIPLE PIPE CULVERTS WITH A CLEARANCE OF 24 INCHES OR GREATER BETWEEN STRINGS OF PIPE.
  - ① IF APPROVED BY THE ENGINEER, IN WET CONDITIONS THE CONTRACTOR MAY SUBSTITUTE 18" OF COARSE FILTER AGGREGATE PER SPEC. 3149.2.H COMPACTED TO THE QUALITY COMPACTION REQUIREMENTS OF SPEC. 2106. WRAP WITH GEOTEXTILE FABRIC TYPE IV PER SPEC. 3733. SEAM ALL FABRIC SIDES AND ENDS PER SPEC. TABLE 3733-1 INCLUDING FOOTNOTE (e) OR OVERLAP A MINIMUM OF 3 FT., ALL AT NO ADDITIONAL COST.
  - ② FOR INSTALLATIONS ON INTACT BEDROCK, OMIT THIS LAYER.
  - ③ OVER-EXCAVATION BENEATH TAPERS IS NOT PERMITTED UNLESS REQUIRED BY OSHA. (TYP.)
  - ④ MAXIMUM EMBANKMENT PARTICLE SIZE WITHIN 2 FT. OF RIGID PIPE IS 3".

**CONSTRUCTION SEQUENCE**

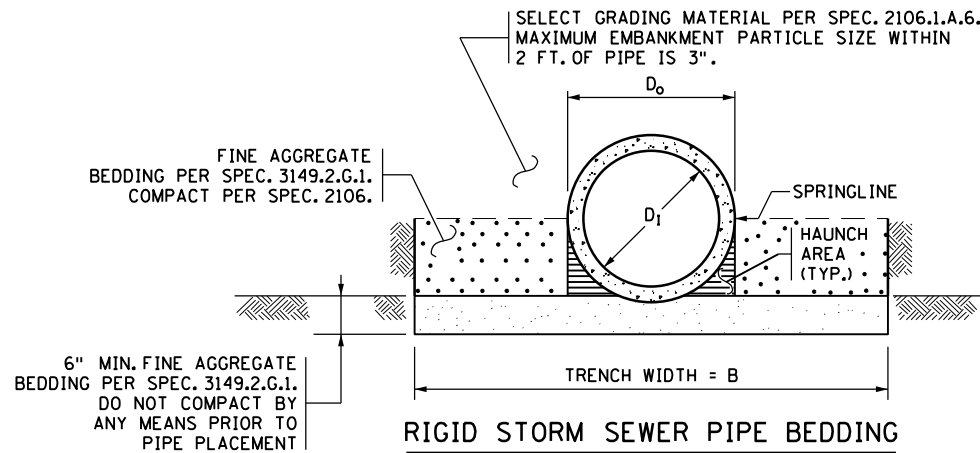
1. PLACE AND COMPACT 18" OF FINE AGGREGATE BEDDING TO THE REQUIREMENTS OF SPEC. 2106.
2. LOOSELY PLACE 6" OF FINE AGGREGATE BEDDING MATERIAL (SPEC. 3149.2.G.1) TO GRADE. DO NOT COMPACT PRIOR TO PIPE PLACEMENT.
3. FOR PIPES WITH BELL, REMOVE MATERIAL IN BELL AREA PRIOR TO PLACEMENT.
4. FURNISH AND INSTALL PIPE TO GRADE.
5. AFTER PLACEMENT OF THE PIPE, PLACE ADDITIONAL BEDDING AND COMPACT THE FULL LENGTH ON BOTH SIDES OF THE PIPE UNDERNEATH THE HAUNCH AREA BY FIRST SHOVEL SLICING (MANUALLY SHOVEL THE BLADE END OF A SHOVEL AT AN ANGLE DOWN THE ENTIRE LENGTH OF THE PIPE IN THE HAUNCH AREA) THEN COMPACT THE HAUNCH AT AN ANGLE USING A POWERED MECHANICAL OR PNEUMATIC DEVICE (I.E. POLE TAMPER, JUMPING JACK, OR SIMILAR).
6. COMPACT THE REMAINING MATERIAL OUTSIDE THE HAUNCH AREA TO THE REQUIREMENTS OF SPEC. 2106 ENSURING THAT THE ENTIRE LENGTH OF PIPE IS SUPPORTED UNIFORMLY BY BEDDING.
7. PLACE AND COMPACT BACKFILL EVENLY AND SIMULTANEOUSLY IN 6" LIFTS ON EACH SIDE OF THE PIPE UP TO THE SPRINGLINE WHEN COMPACTED.
8. COMPLETE REMAINING BACKFILL.

REVISION:  
APPROVED: JANUARY 18, 2019  
*Kevin Weston*  
STATE BRIDGE ENGINEER

	STANDARD PLAN 5-297.441	1 OF 1	<b>STANDARD CULVERT BEDDING FOR RIGID PIPE (WITHOUT TREATMENTS)</b>
		APPROVED: 01-18-2019 REVISED:	
DEPARTMENT OF TRANSPORTATION	STATE DESIGN ENGINEER	SHEET NO.62 OF 303 SHEETS	

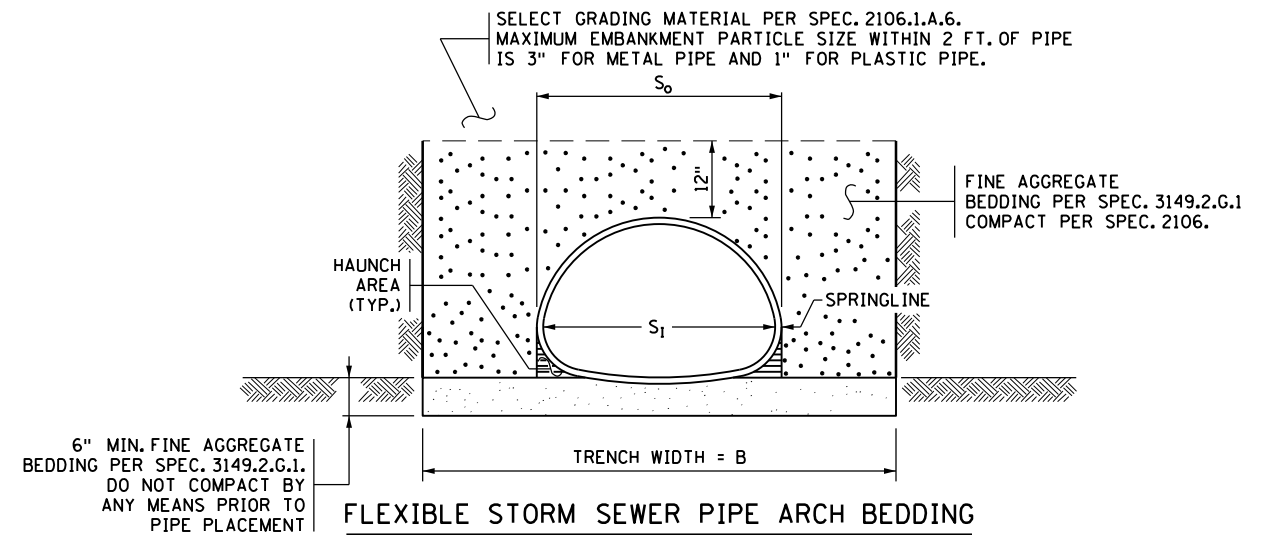
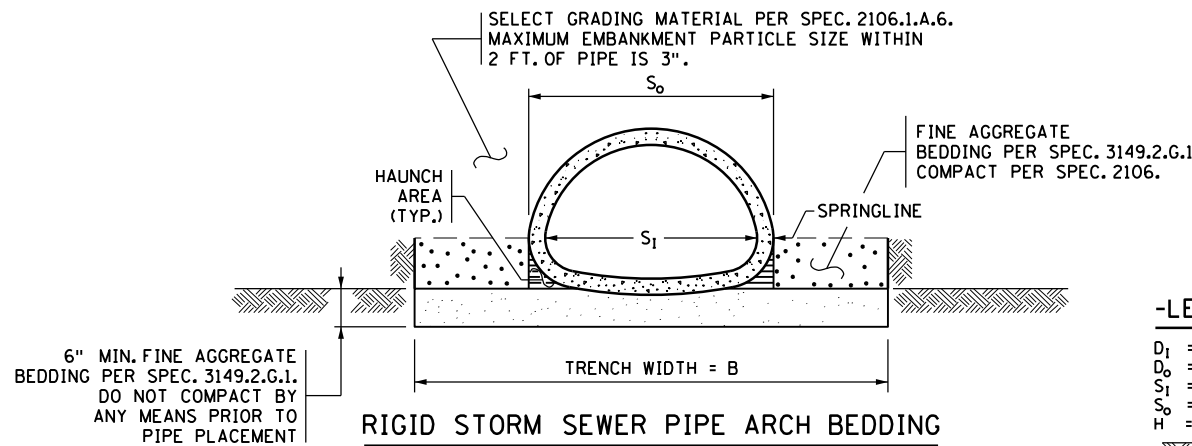
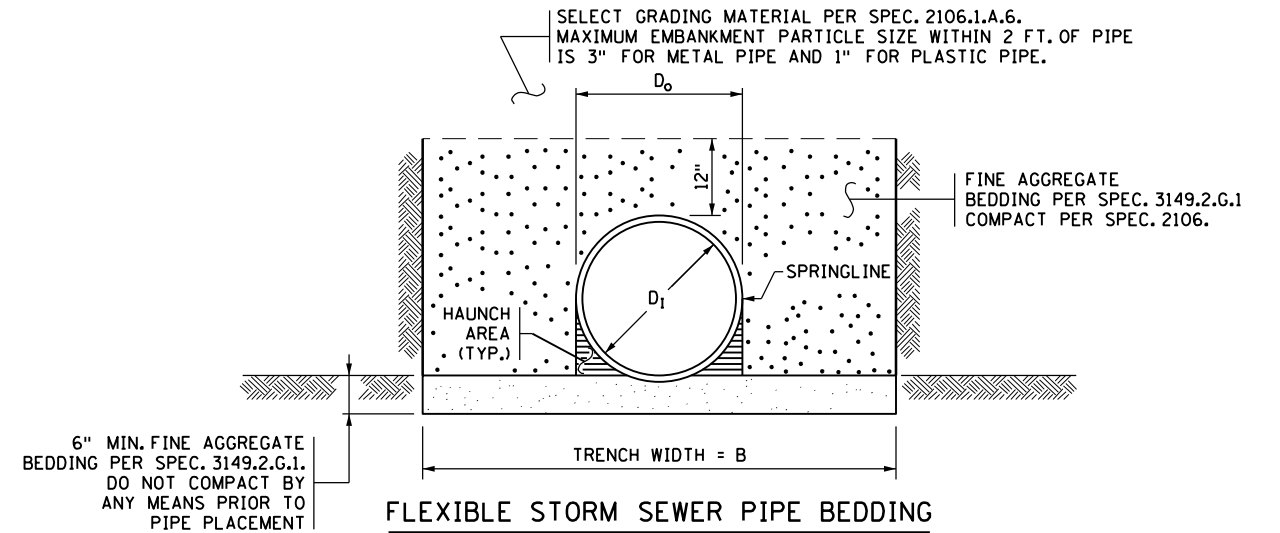
PLOTTED/REVISED: 02/09/2022

DISTRICT #: PLOT NAME: \$\$\$@PLOT\$NAME\$\$\$  
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TRENCH BASE WIDTH ①②	
PIPE DIA. $D_1$ OR $S_1$	TRENCH WIDTH B
< 42"	$D_0 + 24"$
42" TO 54"	$1.5 \times D_0$
> 54"	$D_0 + 36"$

PLASTIC PIPE WITH H > 10 FT. ①②	
PIPE DIA.	TRENCH WIDTH (FEET)
12"	5'-2"
15"	5'-6"
18"	5'-9"
24"	6'-6"
30"	8'-0"
36"	9'-6"
42"	11'-0"
48"	12'-6"



**-LEGEND-**

- $D_1$  = INSIDE DIAMETER OF ROUND PIPE (INCHES).
- $D_0$  = OUTSIDE DIAMETER OF ROUND PIPE (INCHES).
- $S_1$  = INSIDE SPAN OF PIPE-ARCH (INCHES).
- $S_0$  = OUTSIDE SPAN OF PIPE-ARCH (INCHES).
- H = FILL COVER HEIGHT OVER PIPE (FEET).
- = UNDISTURBED SOIL
- = COMPACTED BEDDING
- = LOOSE BEDDING, COMPACTED AFTER PIPE PLACEMENT

**CONSTRUCTION SEQUENCE**

1. LOOSELY PLACE 6" OF FINE AGGREGATE BEDDING MATERIAL TO GRADE. DO NOT COMPACT PRIOR TO PIPE PLACEMENT.
2. FOR PIPES WITH BELL, REMOVE MATERIAL IN BELL AREA PRIOR TO PLACEMENT.
3. FURNISH AND INSTALL PIPE TO GRADE.
4. AFTER PLACEMENT OF THE PIPE, PLACE ADDITIONAL FINE AGGREGATE BEDDING AND COMPACT THE FULL LENGTH ON BOTH SIDES OF THE PIPE UNDERNEATH THE HAUNCH AREA BY FIRST SHOVEL SLICING (MANUALLY SHOVE THE BLADE END OF SHOVEL AT AN ANGLE DOWN THE ENTIRE LENGTH OF HAUNCH UNDER THE PIPE), THEN COMPACT THE HAUNCH AT AN ANGLE USING A POWERED MECHANICAL OR PNEUMATIC DEVICE (I.E. POLE TAMPER, JUMPING JACK, OR SIMILAR).
5. COMPACT THE REMAINING MATERIAL OUTSIDE THE HAUNCH AREA TO THE REQUIREMENTS OF SPEC. 2106 ENSURING THAT THE ENTIRE LENGTH OF PIPE IS SUPPORTED UNIFORMLY BY BEDDING.
6. PLACE AND COMPACT BACKFILL EVENLY AND SIMULTANEOUSLY IN 6" LIFTS ON EACH SIDE OF THE PIPE UP TO THE SPRINGLINE FOR RIGID PIPE AND 12" ABOVE THE TOP OF THE PIPE FOR FLEXIBLE PIPE WHEN COMPACTED.
7. COMPLETE REMAINING BACKFILL.

**NOTES**

- EXCAVATE & CONSTRUCT ALL TRENCHES AND SLOPES PER OSHA REQUIREMENTS.
- PIPE SIZE IS BASED ON THE NOMINAL INSIDE DIAMETER OR SPAN.
- PROTECT ALL PIPE DURING CONSTRUCTION PER SPEC. 2503.
- WHEN RIPRAP IS REQUIRED AT THE APRON END, SEE STANDARD PLATE OR PLAN FOR RIPRAP INSTALLATION AND QUANTITIES. FOR APRONS WITHOUT RIPRAP PLACE 6" MIN. FINE AGGREGATE BEDDING UNDER APRONS. USE A TRENCH WIDTH EQUAL TO THE PIPE TRENCH WIDTH.
- FINE AGGREGATE BEDDING INCLUDING THE COST OF EXCAVATION, PLACEMENT AND COMPACTION IS INCLUDED IN THE CONTRACT UNIT PRICE OF THE RELEVANT STORM SEWER PAY ITEM.
- EXCAVATION AND BACKFILL WITH SELECT GRADING MATERIAL ARE NOT TABULATED SEPARATELY BUT ARE INCLUDED IN THE CONTRACT UNIT PRICE OF THE RELEVANT STORM SEWER PAY ITEM.
- RIGID PIPE INCLUDES CONCRETE, FLEXIBLE PIPE INCLUDES METAL, AND PLASTIC MATERIALS SUCH AS CORRUGATED POLYPROPYLENE (PP), CORRUGATED POLYETHYLENE (CP) AND POLYVINYL CHLORIDE (PVC).
- ① MODIFY TRENCH WIDTH & SLOPE AS NECESSARY TO COMPLY WITH OSHA REQUIREMENTS.
- ② USE PLASTIC PIPE TABLE FOR TRENCH WIDTHS WHEN FILL HEIGHT IS GREATER THAN 10 FT.

REVISION:  
 APPROVED: JANUARY 18, 2019  
*Kevin Westrom*  
 STATE BRIDGE ENGINEER

**m**  
 MINNESOTA  
 DEPARTMENT OF TRANSPORTATION

STANDARD PLAN 5-297.442

1 OF 1

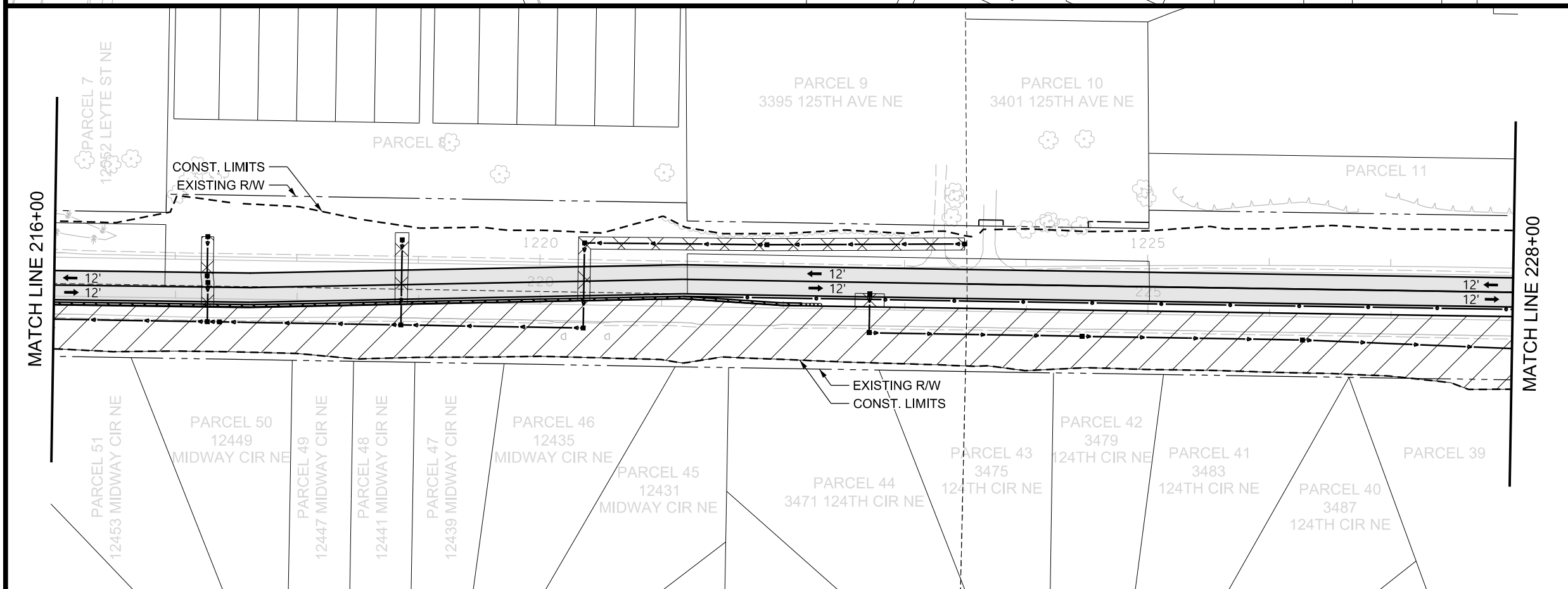
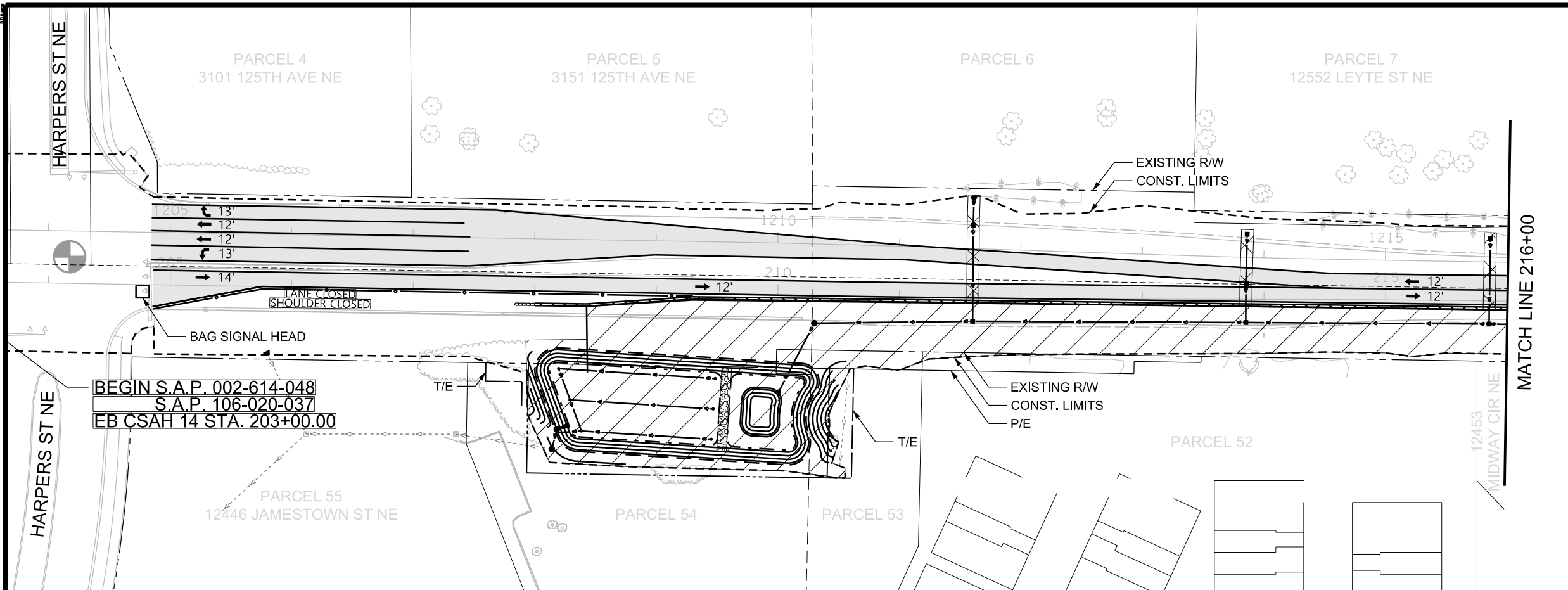
*Rom S...*  
 STATE DESIGN ENGINEER

APPROVED: 01-18-2019  
 REVISED:

STANDARD STORM SEWER BEDDING  
 FOR RIGID AND FLEXIBLE PIPE

SAP 002-614-048  
 SAP 106-020-037

SHEET NO.63 OF 303 SHEETS



**LEGEND**

- STAGE 1 CONSTRUCTION
- WORK AREA UNDER TRAFFIC
- TEMPORARY BITUMINOUS PAVEMENT
- EXISTING SIGNAL SYSTEM
- CURRENT STAGE STORM SEWER WORK
- INPLACE STORM SEWER
- CHANNELIZERS
- GENERAL TRAFFIC FLOW 12' MIN. LANE WIDTH. SEE TRAFFIC CONTROL PLAN FOR DETAILS
- TEMPORARY PORTABLE CONCRETE BARRIER STAGE 1
- IMPACT ATTENUATOR

SEE SHEET ??? FOR BARRIER AND ATTENUATOR LOCATION DETAILS

- STAGE 1 CONSTRUCTION NOTES:**
1. PROVIDE MINIMUM 12' LANES IN BOTH DIRECTIONS.
  2. MUCK EXCAVATION ON SOUTH SIDE.
  3. INSTALL PORTABLE CONCRETE BARRIER AND IMPACT ATTENUATORS AS SHOWN IN PLAN.
  4. IMPACT ATTENUATOR TEST LEVEL 3 SHALL BE THE SAME CROSS SECTION AS BARRIER.
  5. GRADE PONDS AND INSTALL STORM SEWER AS SHOWN IN PLAN.
  6. REMOVE CONCRETE MEDIAN AT EAST END OF PROJECT AS MARKED IN THE FIELD BY ENGINEER.
  7. INSTALL TEMPORARY PAVEMENT ON SOUTH SIDE AND AT BYPASS LOCATIONS AS DIRECTED BY ENGINEER.
  8. CONTRACTOR SHALL MAINTAIN ACCESS TO PROPERTIES ALONG SOUTH SIDE OF PROJECT AND COORDINATE WITH RESIDENTS DURING TEMPORARY ACCESS RESTRICTIONS.

N

0 100  
SCALE IN FEET

1 OF 3

1	02/16/2022	BTU	JRB	UPDATED LEADER
NO	DATE	BY	CKD	APPR
				REVISION
NAME: P:\002-614-048\Plan\002614048_STG-1_P1.dgn				02/16/2022 10:58:40 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: JORGE R. FERNAL DELGADO

SIGNATURE:

DATE: 02-23-22 LICENSE NO. 57216

DRAWN BY: BTU DATE: 02/10/22

DESIGN BY: JRB DATE: 02/10/22

CHECKED BY: NJD DATE: 02/10/22

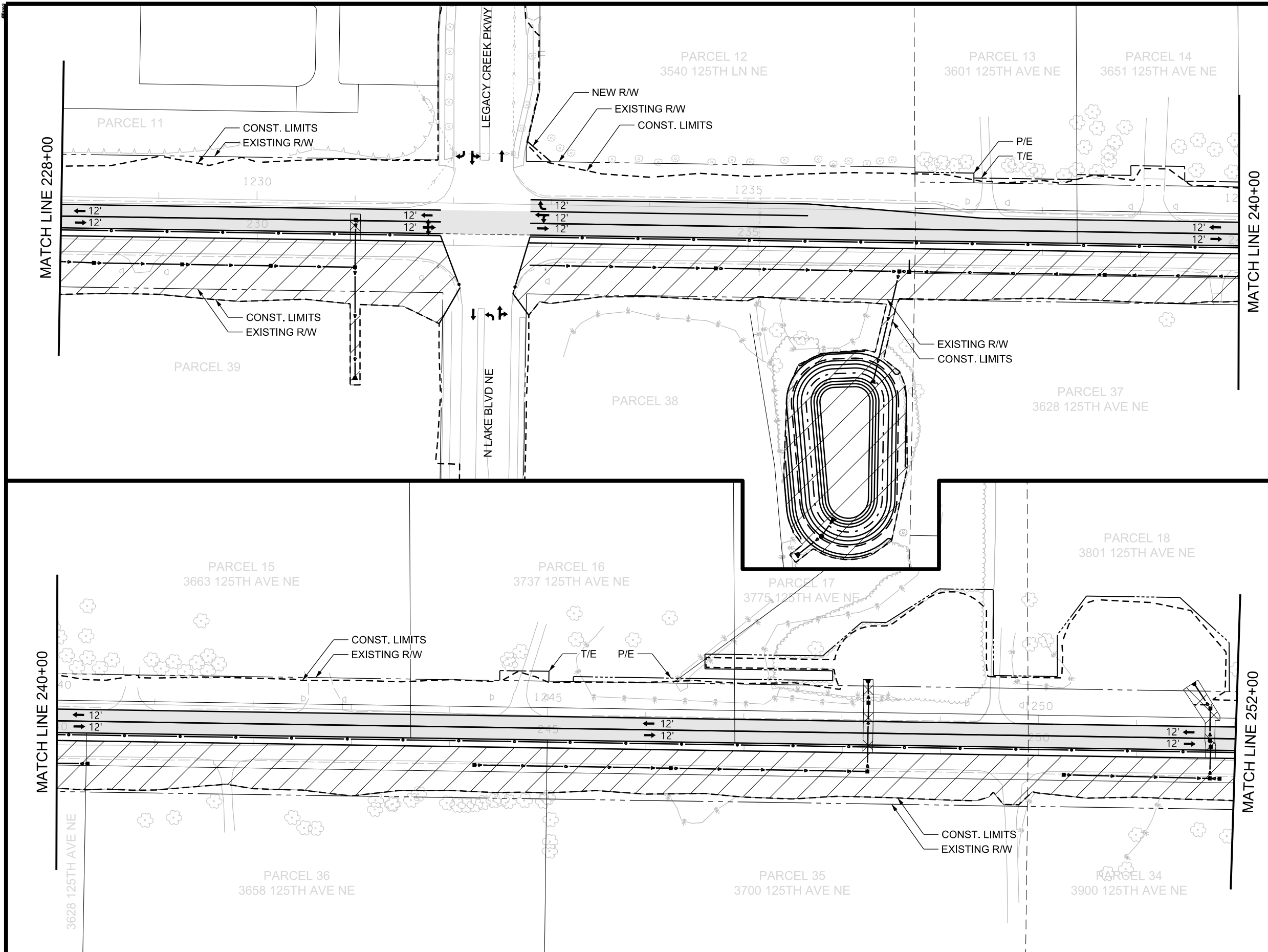
ANOKA COUNTY HIGHWAY DEPT.

SAP 002-614-048  
SAP 106-020-037

STAGING PLAN  
STAGE 1  
STA 203+00.00 TO 228+00

Sheet 64 of 303 Sheets



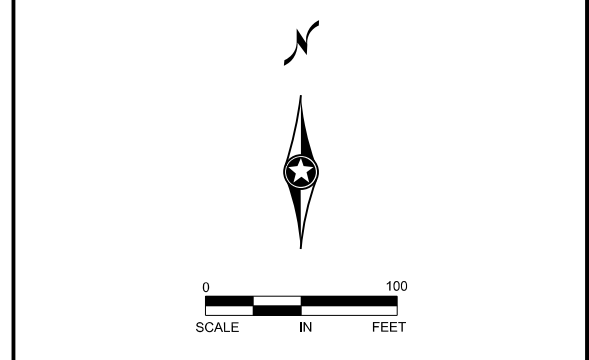


**LEGEND**

- STAGE 1 CONSTRUCTION
- WORK AREA UNDER TRAFFIC
- TEMPORARY BITUMINOUS PAVEMENT
- EXISTING SIGNAL SYSTEM
- CURRENT STAGE STORM SEWER WORK
- INPLACE STORM SEWER
- CHANNELIZERS
- GENERAL TRAFFIC FLOW 12' MIN. LANE WIDTH. SEE TRAFFIC CONTROL PLAN FOR DETAILS
- TEMPORARY PORTABLE CONCRETE BARRIER STAGE 1
- IMPACT ATTENUATOR

SEE SHEET ??? FOR BARRIER AND ATTENUATOR LOCATION DETAILS

- STAGE 1 CONSTRUCTION NOTES:**
1. PROVIDE MINIMUM 12' LANES IN BOTH DIRECTIONS.
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  3. INSTALL PORTABLE CONCRETE BARRIER AND IMPACT ATTENUATORS AS SHOWN IN PLAN.
  4. IMPACT ATTENUATOR TEST LEVEL 3 SHALL BE THE SAME CROSS SECTION AS BARRIER.
  5. GRADE PONDS AND INSTALL STORM SEWER AS SHOWN IN PLAN.
  6. REMOVE CONCRETE MEDIAN AT EAST END OF PROJECT AS MARKED IN THE FIELD BY ENGINEER.
  7. INSTALL TEMPORARY PAVEMENT ON SOUTH SIDE AND AT BYPASS LOCATIONS AS DIRECTED BY ENGINEER.
  8. CONTRACTOR SHALL MAINTAIN ACCESS TO PROPERTIES ALONG SOUTH SIDE OF PROJECT AND COORDINATE WITH RESIDENTS DURING TEMPORARY ACCESS RESTRICTIONS.



NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-614-048\Plan\002614048\_STG-1\_P2.dgn 02/09/2022 3:00:18 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: JORGE R. BERNAL DELGADO

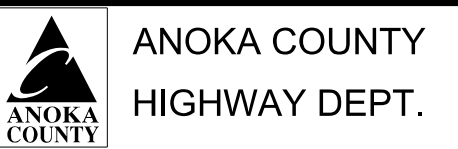
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DATE: 02-14-22 LICENSE NO. 57216

DRAWN BY: BTU DATE: 02/07/22

DESIGN BY: JRB DATE: 02/07/22

CHECKED BY: NJD DATE: 02/07/22

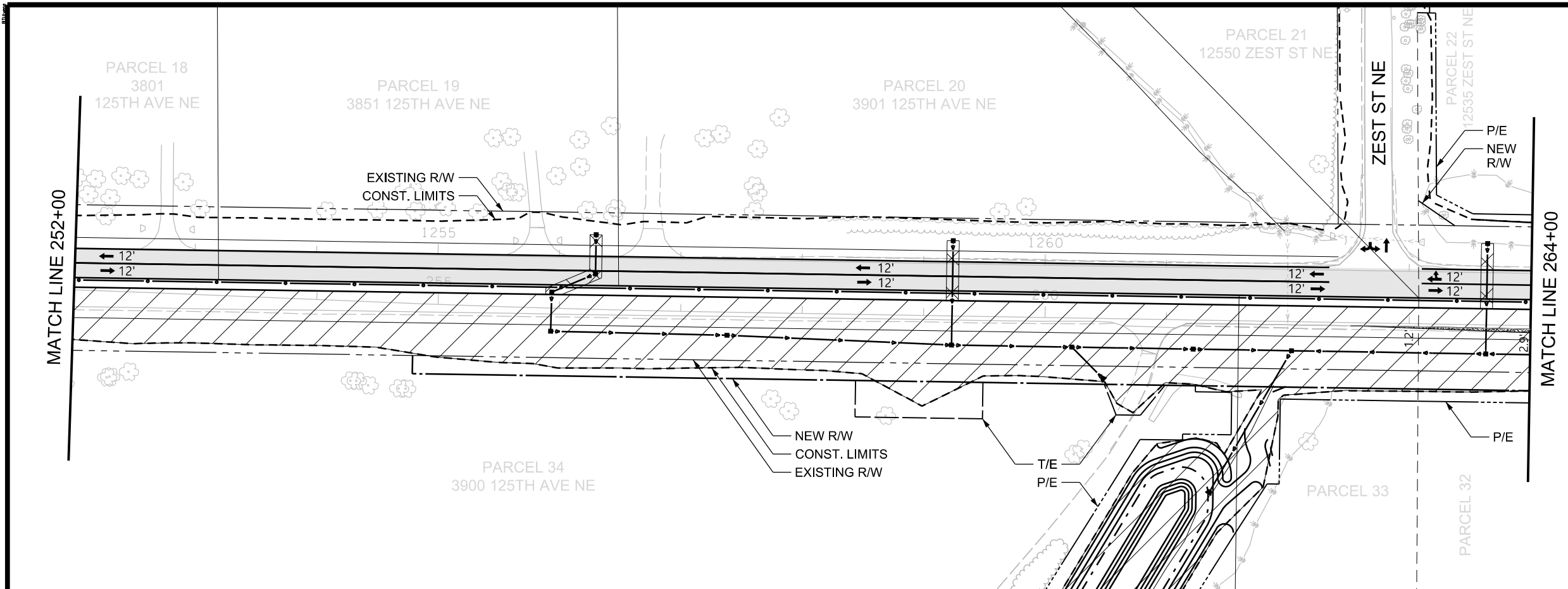


SAP 002-614-048  
SAP 106-020-037

**STAGING PLAN  
STAGE 1**

STA 228+00 TO 252+00

Sheet 65 of 303 Sheets

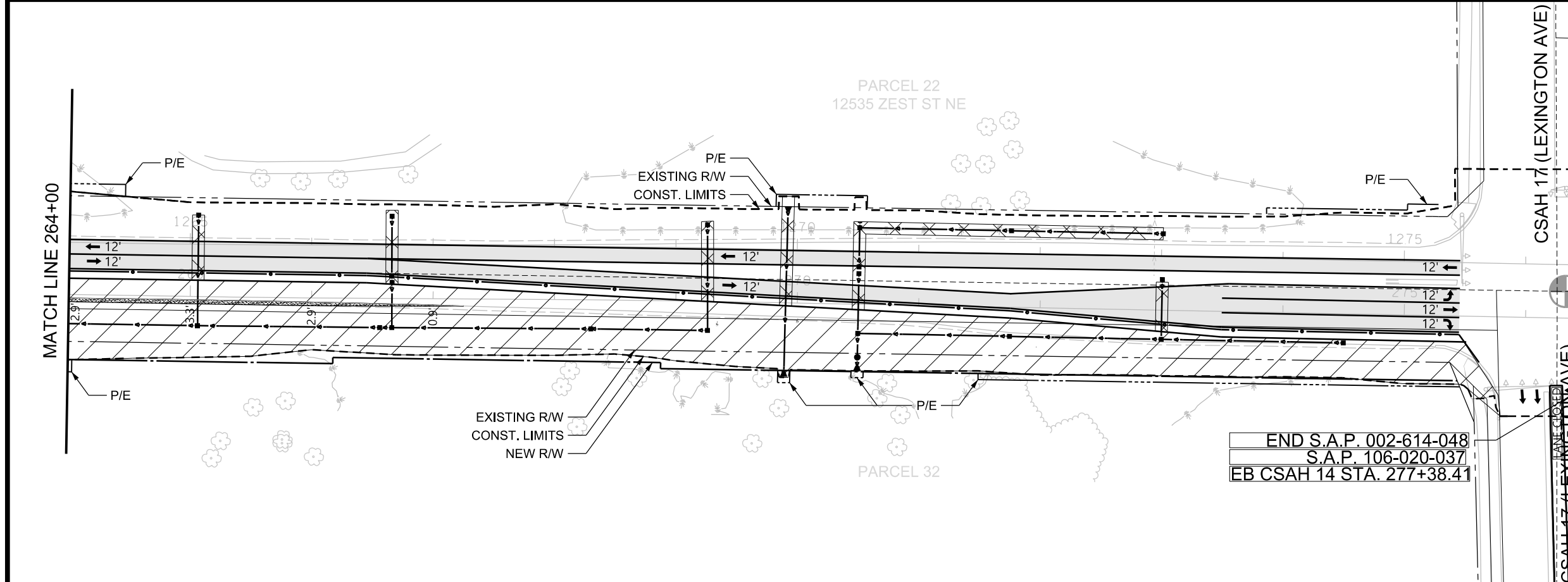


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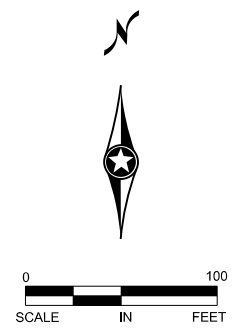
- STAGE 1 CONSTRUCTION
- WORK AREA UNDER TRAFFIC
- TEMPORARY BITUMINOUS PAVEMENT
- EXISTING SIGNAL SYSTEM
- CURRENT STAGE STORM SEWER WORK
- INPLACE STORM SEWER
- CHANNELIZERS
- GENERAL TRAFFIC FLOW 12' MIN. LANE WIDTH. SEE TRAFFIC CONTROL PLAN FOR DETAILS
- TEMPORARY PORTABLE CONCRETE BARRIER STAGE 1
- IMPACT ATTENUATOR

SEE SHEET ??? FOR BARRIER AND ATTENUATOR LOCATION DETAILS

- STAGE 1 CONSTRUCTION NOTES:**
1. PROVIDE MINIMUM 12' LANES IN BOTH DIRECTIONS
  2. MUCK EXCAVATION ON SOUTH SIDE
  3. INSTALL PORTABLE CONCRETE BARRIER AND IMPACT ATTENUATORS AS SHOWN IN PLAN
  4. IMPACT ATTENUATOR TEST LEVEL 3 SHALL BE THE SAME CROSS SECTION AS BARRIER
  5. GRADE PONDS AND INSTALL STORM SEWER AS SHOWN IN PLAN
  6. REMOVE CONCRETE MEDIAN AT EAST END OF PROJECT AS MARKED IN THE FIELD BY ENGINEER
  7. INSTALL TEMPORARY PAVEMENT ON SOUTH SIDE AND AT BYPASS LOCATIONS AS DIRECTED BY ENGINEER
  8. CONTRACTOR SHALL MAINTAIN ACCESS TO PROPERTIES ALONG SOUTH SIDE OF PROJECT AND COORDINATE WITH RESIDENTS DURING TEMPORARY ACCESS RESTRICTIONS



END S.A.P. 002-614-048  
 S.A.P. 106-020-037  
 EB CSAH 14 STA. 277+38.41



1	02/16/2022	BTU	JRB	UPDATED LEADER
NO	DATE	BY	CKD	APPR
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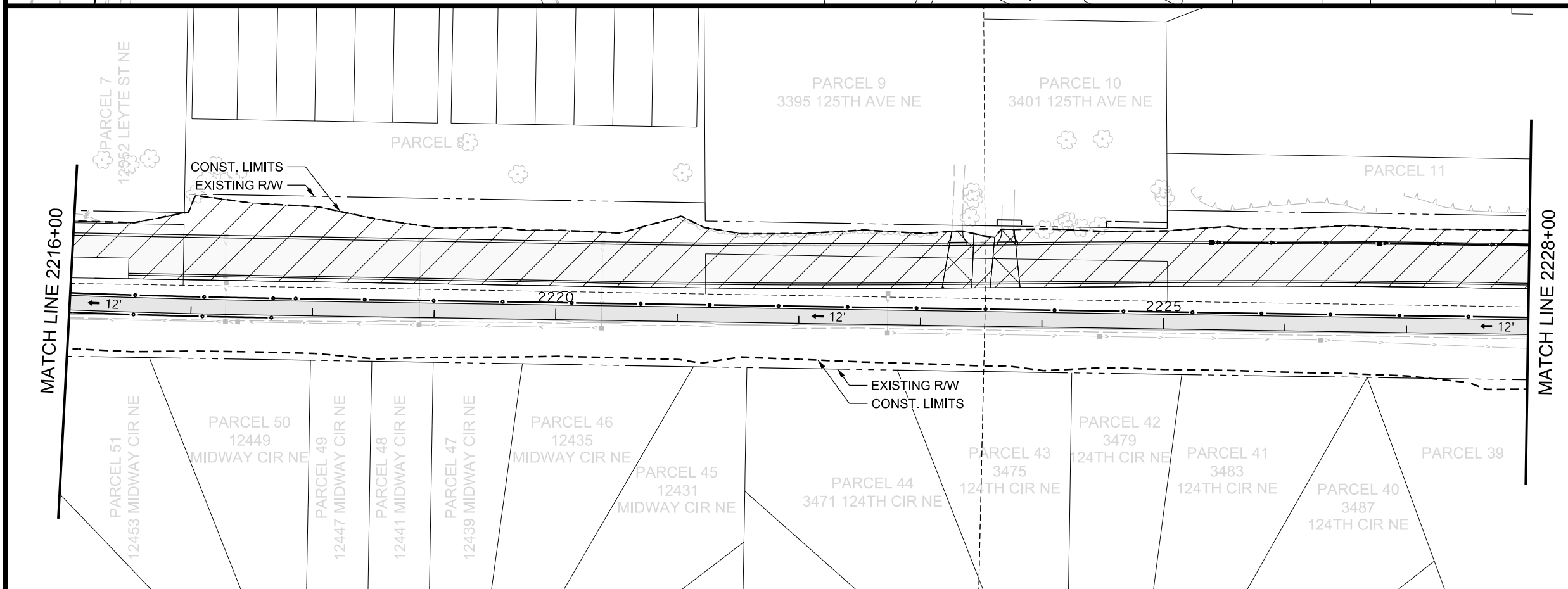
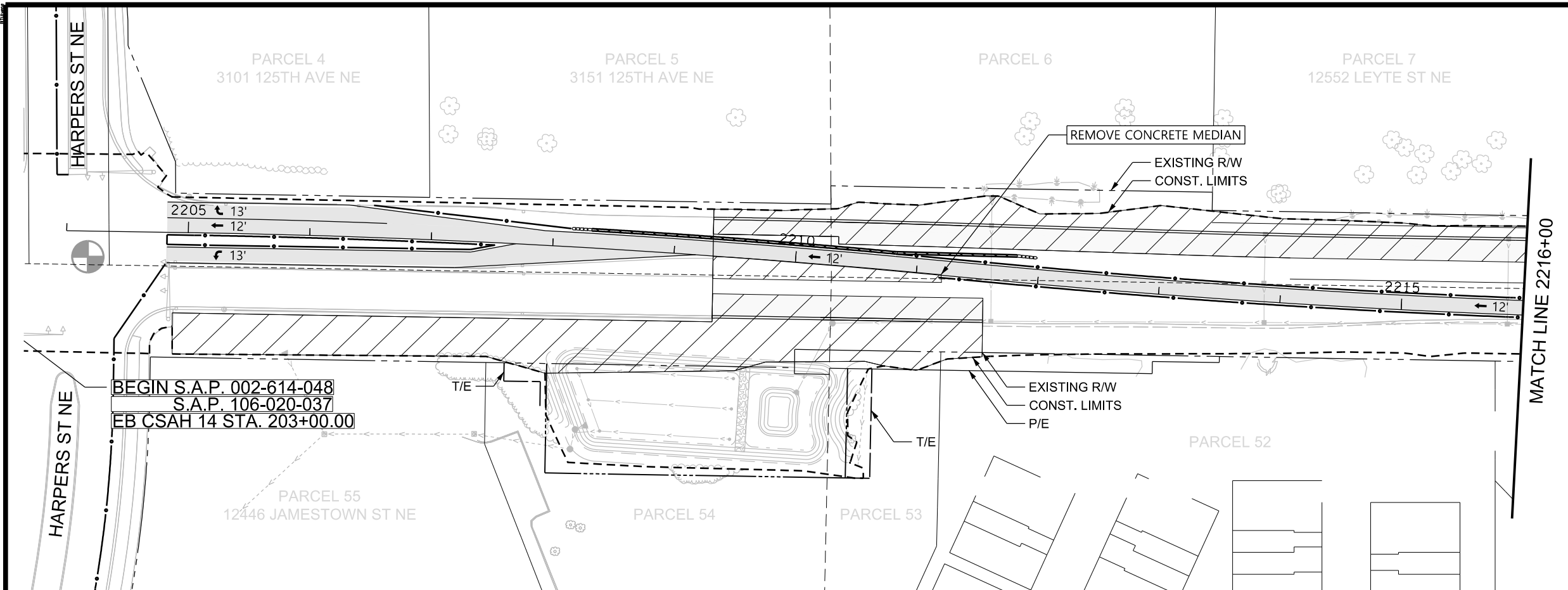
I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.  
 PRINT NAME: JORGE R. BERNAL DELGADO  
 SIGNATURE: *[Signature]*  
 DATE: 02-23-22 LICENSE NO. 57216

DRAWN BY BTU DATE 02/16/22  
 DESIGN BY JRB DATE 02/16/22  
 CHECKED BY NJD DATE 02/16/22

**ANOKA COUNTY**  
**HIGHWAY DEPT.**

SAP 002-614-048  
 SAP 106-020-037

**STAGING PLAN**  
 STAGE 1  
 STA 252+00 TO 277+38.41  
 Sheet 66 of 303 Sheets

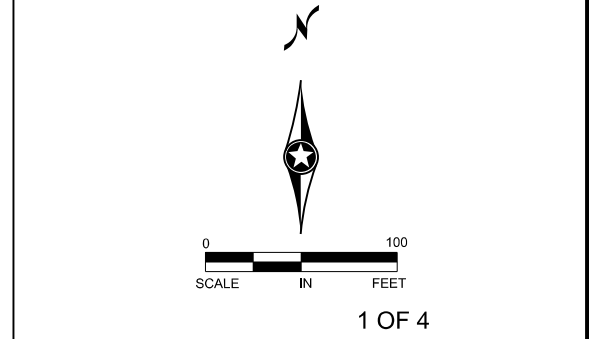


### LEGEND

- STAGE 2 CONSTRUCTION
- WORK AREA UNDER TRAFFIC
- TEMPORARY BITUMINOUS PAVEMENT
- EXISTING SIGNAL SYSTEM
- CURRENT STAGE STORM SEWER WORK
- PREVIOUS STORM SEWER WORK
- INPLACE STORM SEWER
- CHANNELIZERS
- GENERAL TRAFFIC FLOW 12' MIN. LANE WIDTH. SEE TRAFFIC CONTROL PLAN FOR DETAILS
- TEMPORARY PORTABLE CONCRETE BARRIER STAGE 2
- IMPACT ATTENUATOR

SEE SHEET ??? FOR BARRIER AND ATTENUATOR LOCATION DETAILS

- ### STAGE 2 CONSTRUCTION NOTES:
1. PROVIDE MINIMUM 12' LANE IN WESTBOUND DIRECTION. LANE FOLLOWS <14W\_STG2> ALIGNMENT.
  2. REMOVE CONCRETE MEDIAN AS MARKED IN THE FIELD BY ENGINEER BEFORE BEGINNING STAGE 2 CONSTRUCTION.
  3. MUCK EXCAVATION ON NORTH SIDE
  4. BAG SIGNAL HEADS AS INDICATED IN PLAN.
  5. INSTALL PORTABLE CONCRETE BARRIER AND IMPACT ATTENUATORS AS SHOWN IN PLAN.
  6. GRADE PONDS AND INSTALL STORM SEWER AS SHOWN IN PLAN.
  7. LEGACY CREEK PARKWAY NE TO BE FULLY CLOSED
  8. CONTRACTOR SHALL MAINTAIN ACCESS TO PROPERTIES ALONG NORTH SIDE OF PROJECT AND ON ZEST STREET NE AND COORDINATE WITH RESIDENTS DURING TEMPORARY ACCESS RESTRICTIONS.
  9. GRADE AND INSTALL CONCRETE CURB AND GUTTER AND PLACE BASE AND BINDER BITUMINOUS PAVEMENT COURSE ON NORTH SIDE AND WHERE INDICATED ON SOUTH SIDE.
  10. INSTALL INLET PROTECTION.
  11. STABILIZE VEGETATION AND SOIL STOCKPILES WITHIN 7 DAYS OF ROUGH GRADING OR INACTIVITY. ADDITIONAL TEMPORARY AND PERMANENT EROSION CONTRL AS DIRECTED BY ENGINEER.



1	02/16/2022	BTU	JRB	UPDATED LEADER
NO	DATE	BY	CKD	APPR
				REVISION
NAME: P:\002-614-048\Plan\002614048_STG-2_P1.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: JORGE R. BERNAL DELGADO  
 SIGNATURE: *[Signature]*  
 DATE: 02-23-22 LICENSE NO. 57216

DRAWN BY: BTU DATE: 02/16/22  
 DESIGN BY: JRB DATE: 02/16/22  
 CHECKED BY: NJD DATE: 02/16/22

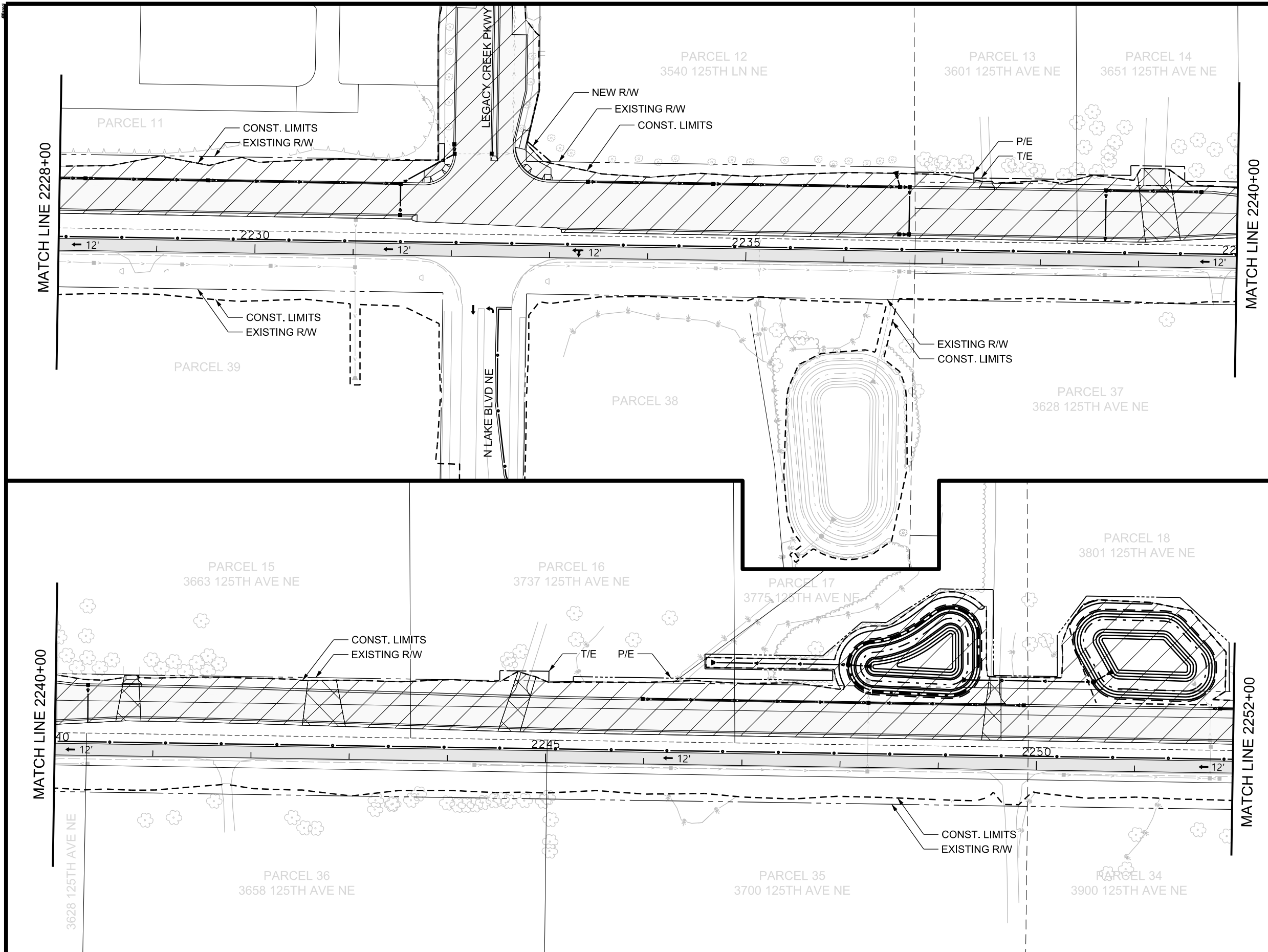
**ANOKA COUNTY  
HIGHWAY DEPT.**

SAP 002-614-048  
 SAP 106-020-037

STAGING PLAN  
STAGE 2

STA 2204+00 TO 2228+00

Sheet 67 of 303 Sheets



### LEGEND

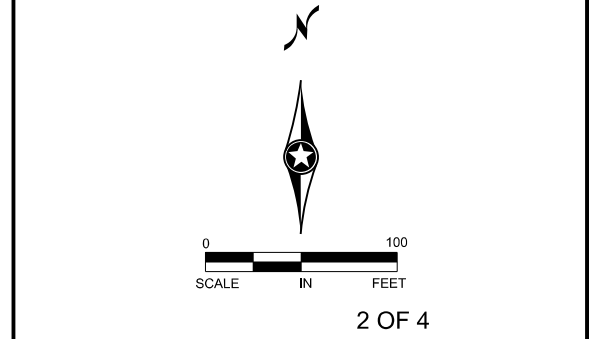
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- WORK AREA UNDER TRAFFIC
- TEMPORARY BITUMINOUS PAVEMENT
- EXISTING SIGNAL SYSTEM
- CURRENT STAGE STORM SEWER WORK
- PREVIOUS STORM SEWER WORK
- INPLACE STORM SEWER
- CHANNELIZERS
- GENERAL TRAFFIC FLOW 12' MIN. LANE WIDTH. SEE TRAFFIC CONTROL PLAN FOR DETAILS

---

- TEMPORARY PORTABLE CONCRETE BARRIER STAGE 2
- IMPACT ATTENUATOR

SEE SHEET ??? FOR BARRIER AND ATTENUATOR LOCATION DETAILS

- ### STAGE 2 CONSTRUCTION NOTES:
1. PROVIDE MINIMUM 12' LANE IN WESTBOUND DIRECTION. LANE FOLLOWS <14W\_STG2> ALIGNMENT.
  2. REMOVE CONCRETE MEDIAN AS MARKED IN THE FIELD BY ENGINEER BEFORE BEGINNING STAGE 2 CONSTRUCTION.
  3. MUCK EXCAVATION ON NORTH SIDE
  4. BAG SIGNAL HEADS AS INDICATED IN PLAN.
  5. INSTALL PORTABLE CONCRETE BARRIER AND IMPACT ATTENUATORS AS SHOWN IN PLAN.
  6. GRADE PONDS AND INSTALL STORM SEWER AS SHOWN IN PLAN.
  7. LEGACY CREEK PARKWAY NE TO BE FULLY CLOSED
  8. CONTRACTOR SHALL MAINTAIN ACCESS TO PROPERTIES ALONG NORTH SIDE OF PROJECT AND ON ZEST STREET NE AND COORDINATE WITH RESIDENTS DURING TEMPORARY ACCESS RESTRICTIONS.
  9. GRADE AND INSTALL CONCRETE CURB AND GUTTER AND PLACE BASE AND BINDER BITUMINOUS PAVEMENT COURSE ON NORTH SIDE AND WHERE INDICATED ON SOUTH SIDE.
  10. INSTALL INLET PROTECTION.
  11. STABILIZE VEGETATION AND SOIL STOCKPILES WITHIN 7 DAYS OF ROUGH GRADING OR INACTIVITY. ADDITIONAL TEMPORARY AND PERMANENT EROSION CONTRL AS DIRECTED BY ENGINEER.



NO	DATE	BY	CKD	APPR	REVISION
NAME: P:\002-614-048\Plan\002614048_STG-2_P2.dgn      02/09/2022      3:00:30 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: JORGE R. BERNAL DELGADO

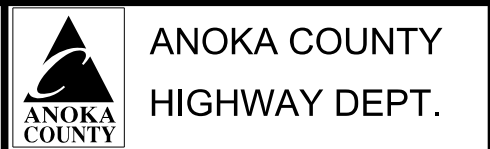
SIGNATURE:

DATE: 02-14-22      LICENSE NO. 57216

DRAWN BY: BTU      DATE: 02/07/22

DESIGN BY: JRB      DATE: 02/07/22

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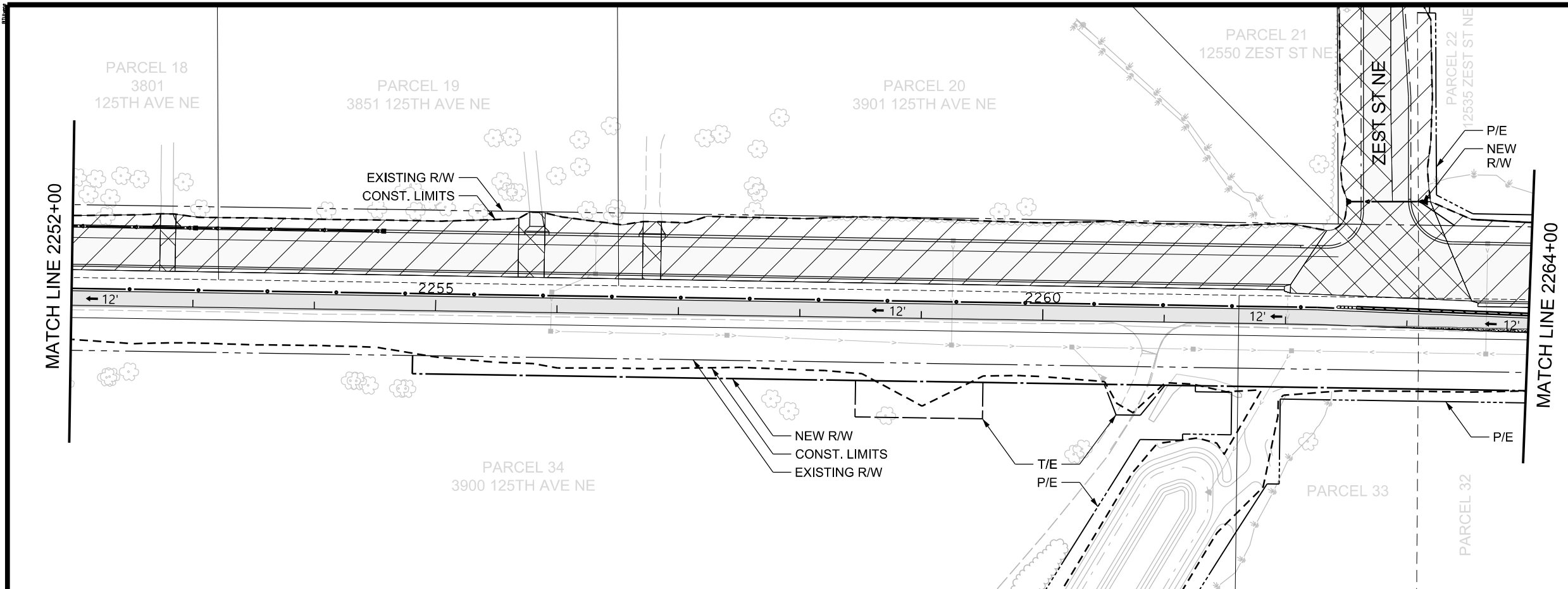


SAP 002-614-048  
SAP 106-020-037

**STAGING PLAN  
STAGE 2**

STA 2228+00 TO 2252+00

Sheet 68 of 303 Sheets

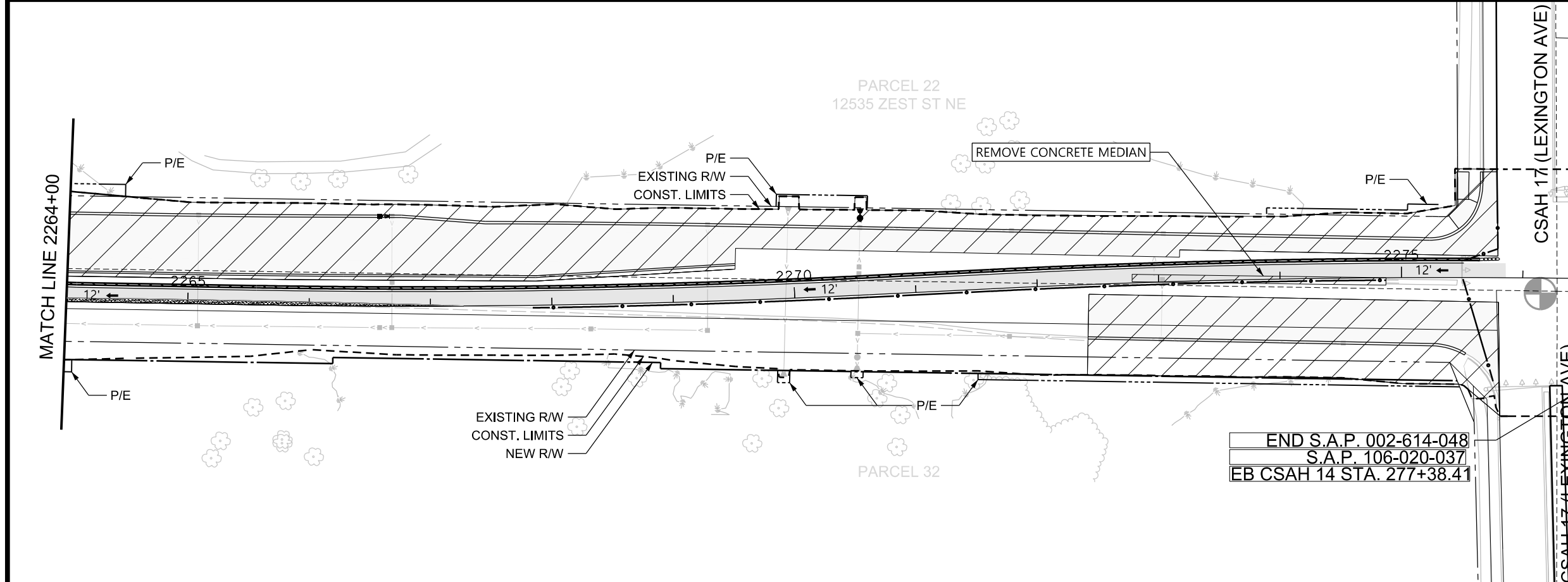


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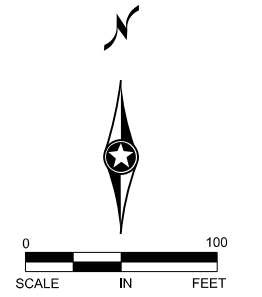
- STAGE 2 CONSTRUCTION
- WORK AREA UNDER TRAFFIC
- TEMPORARY BITUMINOUS PAVEMENT
- EXISTING SIGNAL SYSTEM
- CURRENT STAGE STORM SEWER WORK
- PREVIOUS STORM SEWER WORK
- INPLACE STORM SEWER
- CHANNELIZERS
- GENERAL TRAFFIC FLOW 12' MIN. LANE WIDTH. SEE TRAFFIC CONTROL PLAN FOR DETAILS
- TEMPORARY PORTABLE CONCRETE BARRIER STAGE 2
- IMPACT ATTENUATOR

SEE SHEET ??? FOR BARRIER AND ATTENUATOR LOCATION DETAILS

- STAGE 2 CONSTRUCTION NOTES:**
1. PROVIDE MINIMUM 12' LANE IN WESTBOUND DIRECTION. LANE FOLLOWS <14W\_STG2> ALIGNMENT.
  2. REMOVE CONCRETE MEDIAN AS MARKED IN THE FIELD BY ENGINEER BEFORE BEGINNING STAGE 2 CONSTRUCTION.
  3. MUCK EXCAVATION ON NORTH SIDE
  4. BAG SIGNAL HEADS AS INDICATED IN PLAN.
  5. INSTALL PORTABLE CONCRETE BARRIER AND IMPACT ATTENUATORS AS SHOWN IN PLAN.
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  7. LEGACY CREEK PARKWAY NE TO BE FULLY CLOSED
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  10. INSTALL INLET PROTECTION.
  11. STABILIZE VEGETATION AND SOIL STOCKPILES WITHIN 7 DAYS OF ROUGH GRADING OR INACTIVITY. ADDITIONAL TEMPORARY AND PERMANENT EROSION CONTRL AS DIRECTED BY ENGINEER.



END S.A.P. 002-614-048  
 S.A.P. 106-020-037  
 EB CSAH 14 STA. 277+38.41



1	02/16/2022	BTU	JRB	UPDATED LEADER
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I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

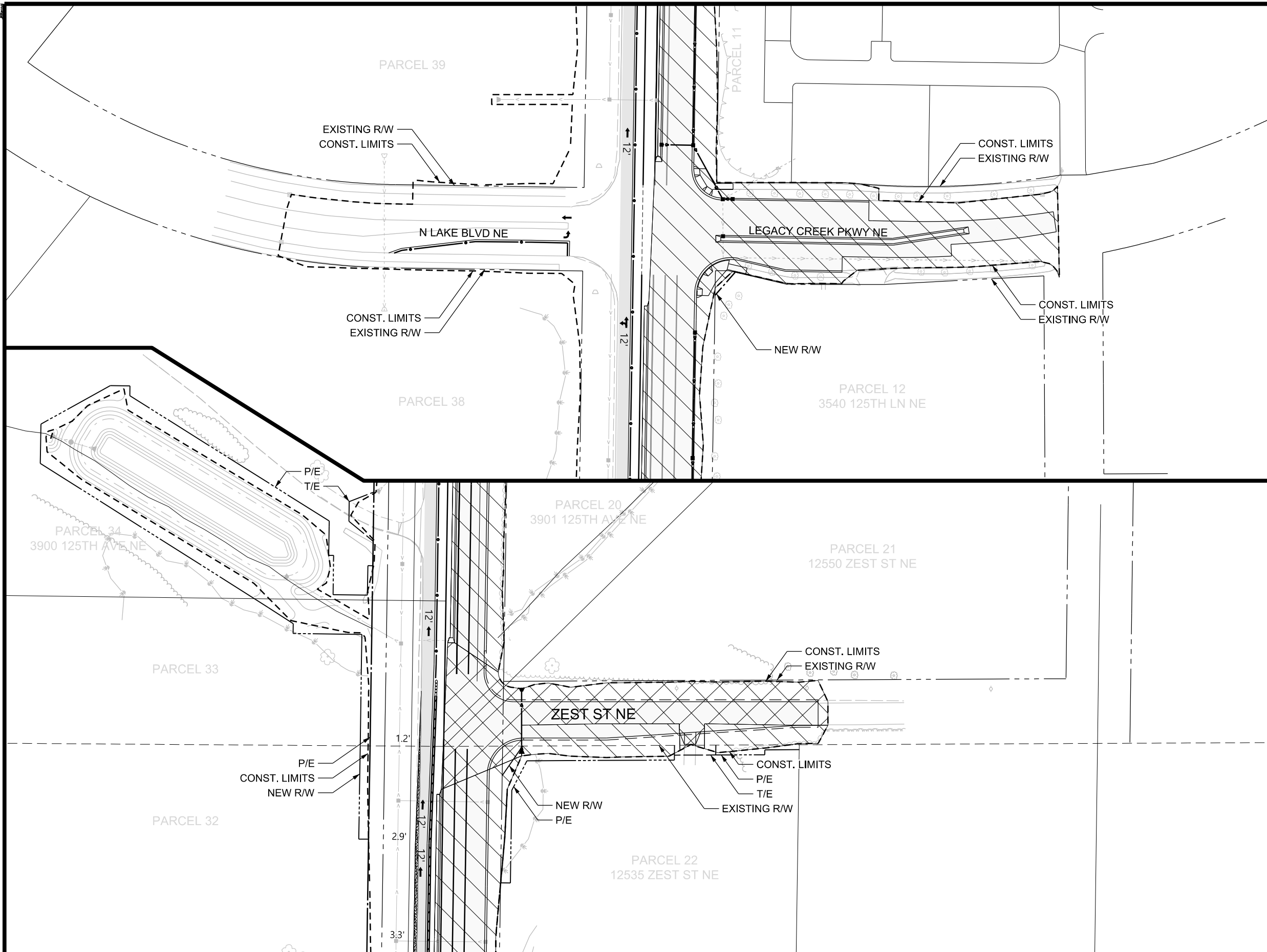
PRINT NAME: JORGE R. BERNAL DELGADO  
 SIGNATURE: *[Signature]*  
 DATE: 02-23-22 LICENSE NO. 57216

DRAWN BY: BTU DATE: 02/16/22  
 DESIGN BY: JRB DATE: 02/16/22  
 CHECKED BY: NJD DATE: 02/16/22



SAP 002-614-048  
 SAP 106-020-037

**STAGING PLAN**  
 STAGE 2  
 STA 2252+00 TO 2276+00  
 Sheet 69 of 303 Sheets



### LEGEND

- STAGE 2 CONSTRUCTION
- WORK AREA UNDER TRAFFIC
- TEMPORARY BITUMINOUS PAVEMENT
- EXISTING SIGNAL SYSTEM
- CURRENT STAGE STORM SEWER WORK
- PREVIOUS STORM SEWER WORK
- INPLACE STORM SEWER
- CHANNELIZERS
- GENERAL TRAFFIC FLOW 12' MIN. LANE WIDTH. SEE TRAFFIC CONTROL PLAN FOR DETAILS

---

- TEMPORARY PORTABLE CONCRETE BARRIER STAGE 2
- IMPACT ATTENUATOR

SEE SHEET ??? FOR BARRIER AND ATTENUATOR LOCATION DETAILS

- ### STAGE 2 CONSTRUCTION NOTES:
1. PROVIDE MINIMUM 12' LANE IN WESTBOUND DIRECTION. LANE FOLLOWS <14W\_STG2> ALIGNMENT.
  2. REMOVE CONCRETE MEDIAN AS MARKED IN THE FIELD BY ENGINEER BEFORE BEGINNING STAGE 2 CONSTRUCTION.
  3. MUCK EXCAVATION ON NORTH SIDE
  4. BAG SIGNAL HEADS AS INDICATED IN PLAN.
  5. INSTALL PORTABLE CONCRETE BARRIER AND IMPACT ATTENUATORS AS SHOWN IN PLAN.
  6. GRADE PONDS AND INSTALL STORM SEWER AS SHOWN IN PLAN.
  7. LEGACY CREEK PARKWAY NE TO BE FULLY CLOSED
  8. CONTRACTOR SHALL MAINTAIN ACCESS TO PROPERTIES ALONG NORTH SIDE OF PROJECT AND ON ZEST STREET NE AND COORDINATE WITH RESIDENTS DURING TEMPORARY ACCESS RESTRICTIONS.
  9. GRADE AND INSTALL CONCRETE CURB AND GUTTER AND PLACE BASE AND BINDER BITUMINOUS PAVEMENT COURSE ON NORTH SIDE AND WHERE INDICATED ON SOUTH SIDE.
  10. INSTALL INLET PROTECTION.
  11. STABILIZE VEGETATION AND SOIL STOCKPILES WITHIN 7 DAYS OF ROUGH GRADING OR INACTIVITY. ADDITIONAL TEMPORARY AND PERMANENT EROSION CONTRL AS DIRECTED BY ENGINEER.

SCALE    IN    FEET

4 OF 4

NO	DATE	BY	CKD	APPR	REVISION
NAME: P:\002-614-048\Plan\002614048_STG-2_P4.dgn      02/09/2022      3:00:42 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: JORGE R. BERNAL DELGADO

SIGNATURE:

DATE: 02-14-22      LICENSE NO. 57216

DRAWN BY BTU      DATE 02/07/22

DESIGN BY JRB      DATE 02/07/22

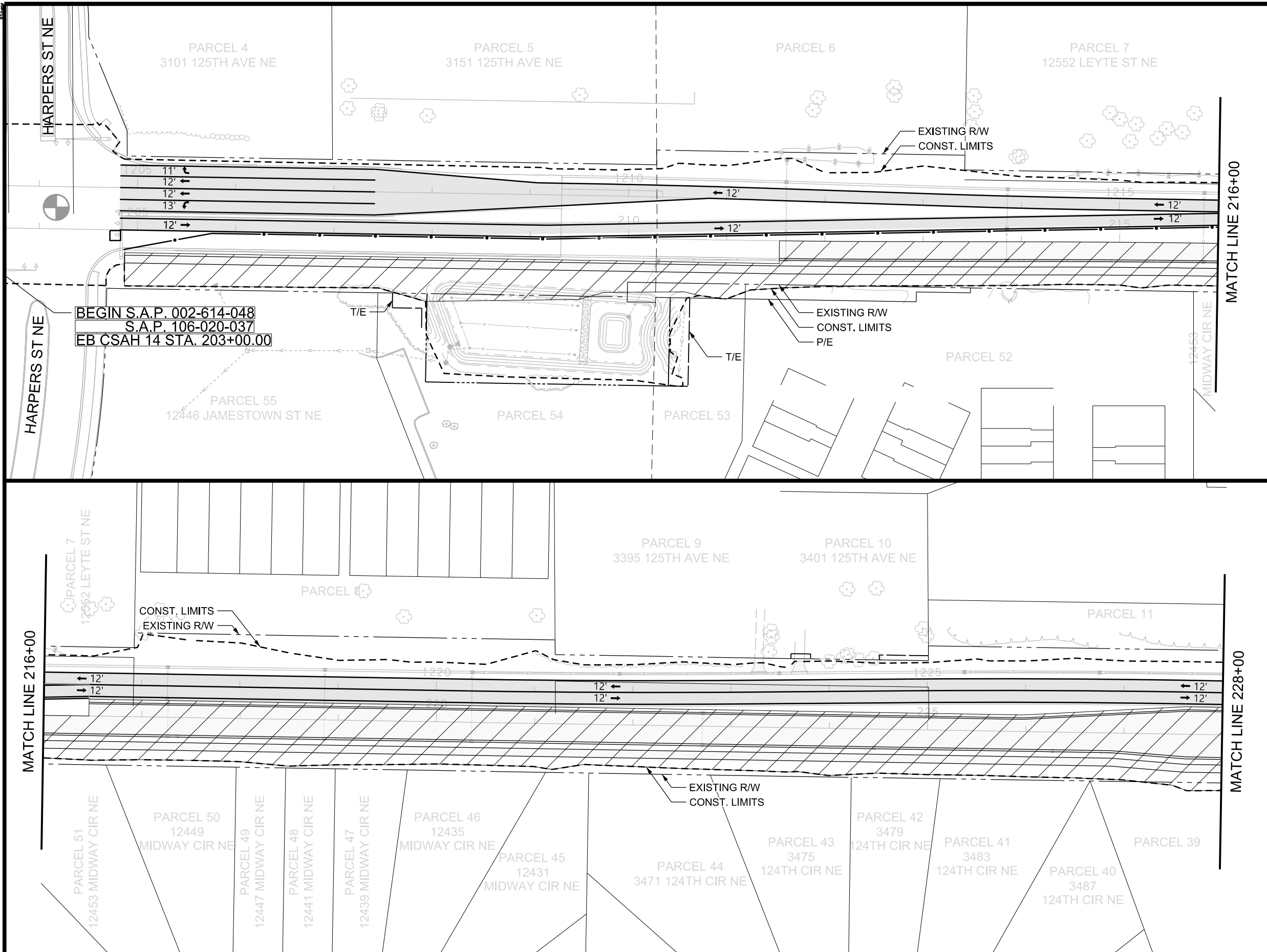
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**ANOKA COUNTY**  
**HIGHWAY DEPT.**

SAP 002-614-048  
SAP 106-020-037

STAGING PLAN  
STAGE 2

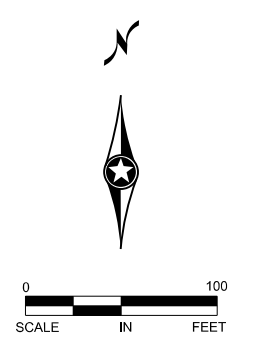
Sheet 70 of 303 Sheets



**LEGEND**

- STAGE 3 CONSTRUCTION
- EXISTING SIGNAL SYSTEM
- CURRENT STAGE STORM SEWER WORK
- PREVIOUS STORM SEWER WORK
- INPLACE STORM SEWER
- CHANNELIZERS
- GENERAL TRAFFIC FLOW 12' MIN. LANE WIDTH. SEE TRAFFIC CONTROL PLAN FOR DETAILS

- STAGE 3 CONSTRUCTION NOTES:**
1. SWITCH TRAFFIC TO FINISHED NORTH SIDE
  2. LANES GENERALLY FOLLOW <14W\_4> ALIGNMENT.
  3. PROVIDE MINIMUM 12' LANES IN BOTH DIRECTIONS.
  4. BAG SIGNAL HEADS AS INDICATED IN PLAN.
  5. CLOSE INTERSECTION OF NORTH LAKE BLVD. DURING CONSTRUCTION (SEE DETOUR ROUTE).
  6. ACCESS TO EMERGENCY VEHICLES SHALL BE MAINTAINED.
  7. MAINTAIN ACCESS TO PROPERTIES ON SOUTH SIDE OF ROAD AT ALL TIMES. PROVIDE TEMPORARY ACCESS ALL THE WAY TO EITHER ZEST STREET OR LEGACY CREEK PARKWAY BASED ON CONSTRUCTION ACTIVITIES. CONTRACTOR TO COORDINATE DIRECTLY WITH RESIDENTS, POST OFFICE, AND OTHER RELATED SERVICES.
  8. GRADE AND INSTALL CONCRETE CURB AND GUTTER AND PLACE BASE AND BINDER BITUMINOUS PAVEMENT COURSE ON SOUTH SIDE. PAVE TRAIL ON SOUTH SIDE.
  9. INSTALL INLET PROTECTION.
  10. STABILIZE VEGETATION AND SOIL STOCKPILES WITHIN 7 DAYS OF ROUGH GRADING OR INACTIVITY. ADDITIONAL TEMPORARY AND PERMANENT EROSION CONTROL AS DIRECTED BY ENGINEER.



1	02/16/2022	BTU	JRB	UPDATED LEADER
NO	DATE	BY	CKD	APPR
				REVISION
NAME: P:\002-614-048\Plan\002614048_STG-3_P1.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: JORGE R. BERNAL DELGADO

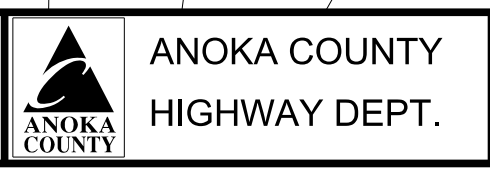
SIGNATURE: *Jorge R. Bernal Delgado*

DATE: 02-23-22 LICENSE NO. 57216

DRAWN BY MP DATE 02/16/22

DESIGN BY JRB DATE 02/16/22

CHECKED BY NJD DATE 02/16/22

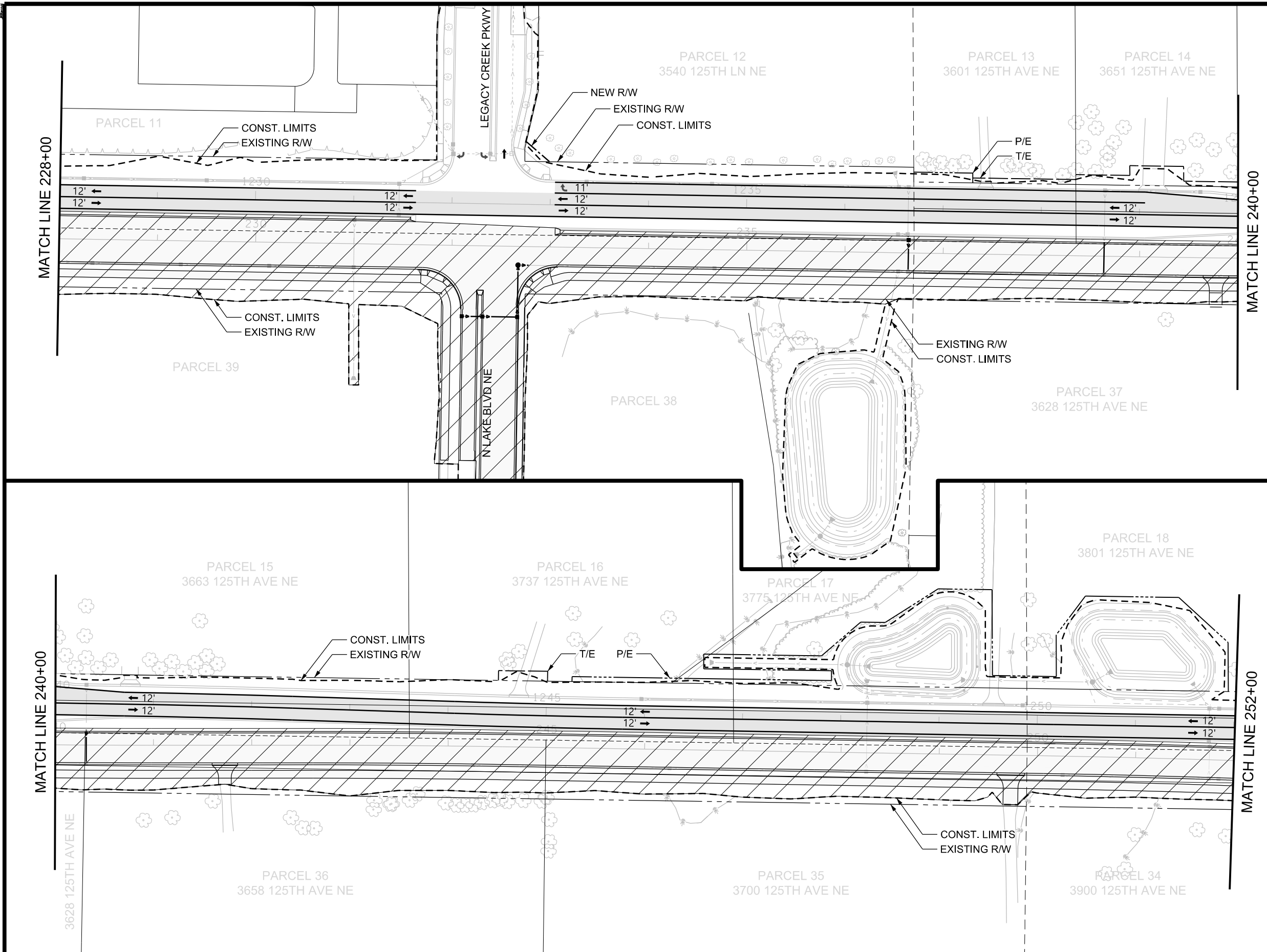


SAP 002-614-048  
SAP 106-020-037

1 OF 4

**STAGING PLAN**  
STAGE 3  
STA 203+00.00 TO 228+00

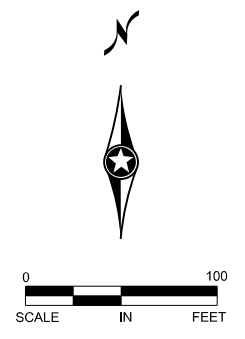
Sheet 71 of 303 Sheets



**LEGEND**

- STAGE 3 CONSTRUCTION
- EXISTING SIGNAL SYSTEM
- CURRENT STAGE STORM SEWER WORK
- PREVIOUS STORM SEWER WORK
- INPLACE STORM SEWER
- CHANNELIZERS
- GENERAL TRAFFIC FLOW 12' MIN. LANE WIDTH. SEE TRAFFIC CONTROL PLAN FOR DETAILS

- STAGE 3 CONSTRUCTION NOTES:**
1. SWITCH TRAFFIC TO FINISHED NORTH SIDE
  2. LANES GENERALLY FOLLOW <14W\_4> ALIGNMENT.
  3. PROVIDE MINIMUM 12' LANES IN BOTH DIRECTIONS.
  4. BAG SIGNAL HEADS AS INDICATED IN PLAN.
  5. INSTALL STORM SEWER ON SOUTH SIDE OF ROAD AT NORTH LAKE BLVD.
  6. CLOSE INTERSECTION OF NORTH LAKE BLVD. DURING CONSTRUCTION (SEE DETOUR ROUTE).
  7. ACCESS TO EMERGENCY VEHICLES SHALL BE MAINTAINED.
  8. MAINTAIN ACCESS TO PROPERTIES ON SOUTH SIDE OF ROAD AT ALL TIMES. PROVIDE TEMPORARY ACCESS ALL THE WAY TO EITHER ZEST STREET OR LEGACY CREEK PARKWAY BASED ON CONSTRUCTION ACTIVITIES. CONTRACTOR TO COORDINATE DIRECTLY WITH RESIDENTS, POST OFFICE, AND OTHER RELATED SERVICES.
  9. GRADE AND INSTALL CONCRETE CURB AND GUTTER AND PLACE BASE AND BINDER BITUMINOUS PAVEMENT COURSE ON SOUTH SIDE. PAVE TRAIL ON SOUTH SIDE.
  10. INSTALL INLET PROTECTION.
  11. STABILIZE VEGETATION AND SOIL STOCKPILES WITHIN 7 DAYS OF ROUGH GRADING OR INACTIVITY. ADDITIONAL TEMPORARY AND PERMANENT EROSION CONTROL AS DIRECTED BY ENGINEER.



NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-614-048\Plan\002614048\_STG-3\_P2.dgn 02/09/2022 3:01:02 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: JORGE R. BERNAL DELGADO

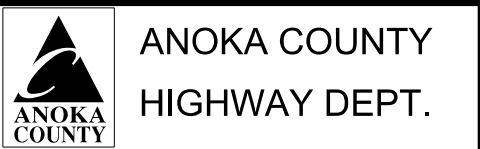
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DATE: 02-14-22 LICENSE NO. 57216

DRAWN BY: MP DATE: 02/07/22

DESIGN BY: JRB DATE: 02/07/22

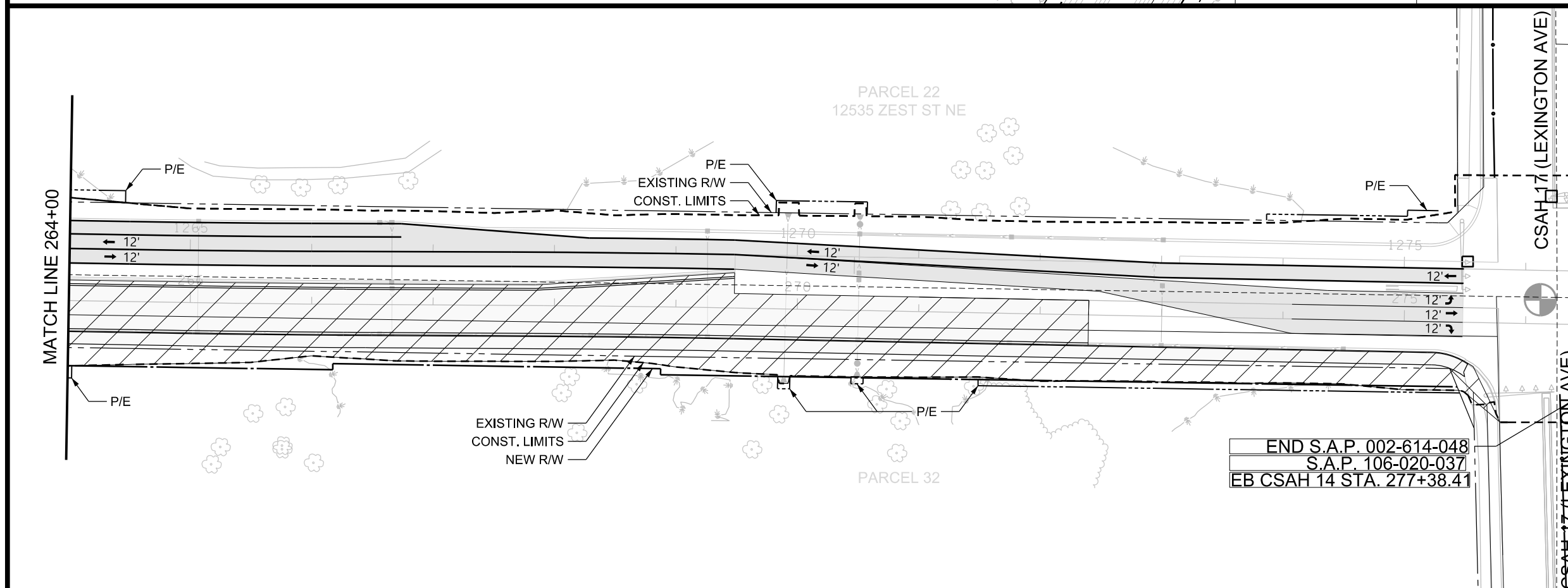
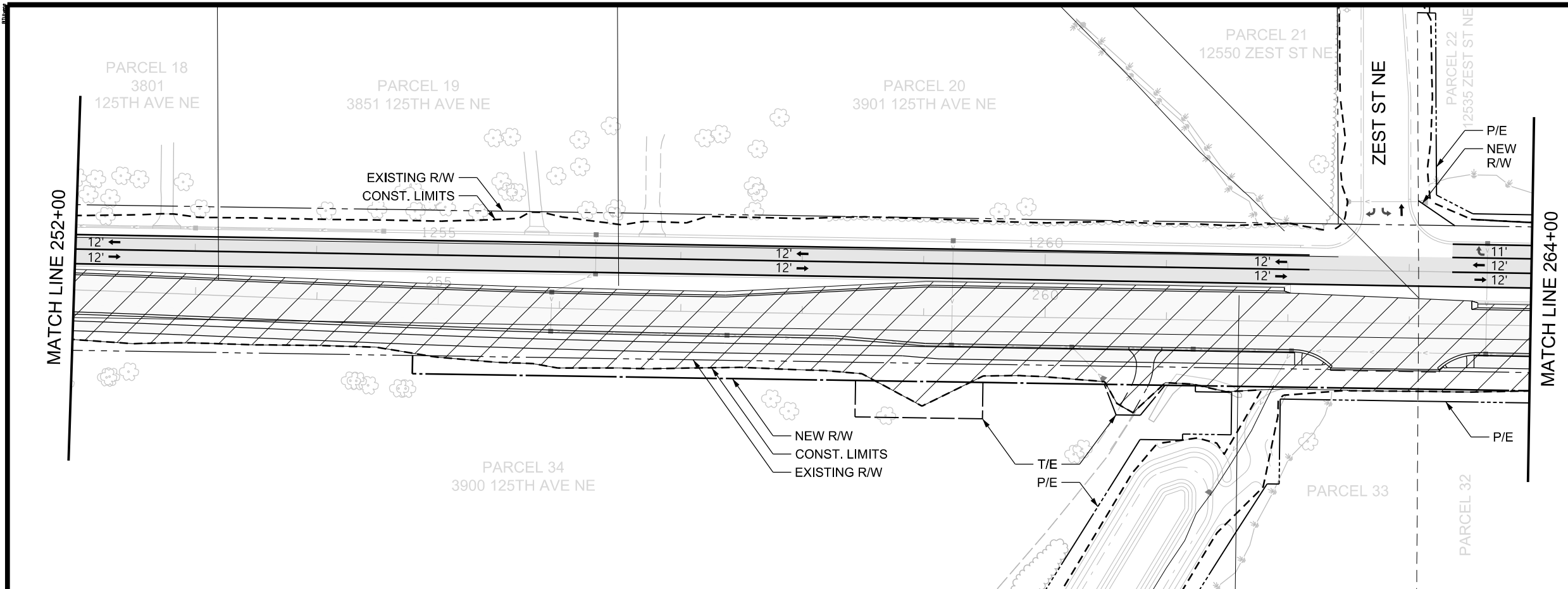
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SAP 002-614-048  
SAP 106-020-037

**STAGING PLAN**  
STAGE 3  
STA 228+00 TO 252+00  
Sheet 72 of 303 Sheets

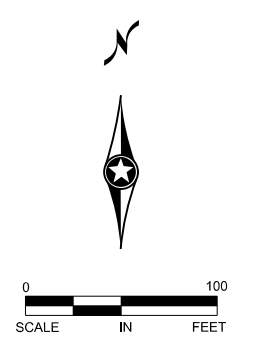




**LEGEND**

- STAGE 3 CONSTRUCTION
- EXISTING SIGNAL SYSTEM
- CURRENT STAGE STORM SEWER WORK
- PREVIOUS STORM SEWER WORK
- INPLACE STORM SEWER
- CHANNELIZERS
- GENERAL TRAFFIC FLOW 12' MIN. LANE WIDTH. SEE TRAFFIC CONTROL PLAN FOR DETAILS

- STAGE 3 CONSTRUCTION NOTES:**
1. SWITCH TRAFFIC TO FINISHED NORTH SIDE
  2. LANES GENERALLY FOLLOW <14W\_4> ALIGNMENT.
  3. PROVIDE MINIMUM 12' LANES IN BOTH DIRECTIONS.
  4. BAG SIGNAL HEADS AS INDICATED IN PLAN.
  5. CLOSE INTERSECTION OF NORTH LAKE BLVD. DURING CONSTRUCTION (SEE DETOUR ROUTE).
  6. ACCESS TO EMERGENCY VEHICLES SHALL BE MAINTAINED.
  7. MAINTAIN ACCESS TO PROPERTIES ON SOUTH SIDE OF ROAD AT ALL TIMES. PROVIDE TEMPORARY ACCESS ALL THE WAY TO EITHER ZEST STREET OR LEGACY CREEK PARKWAY BASED ON CONSTRUCTION ACTIVITIES. CONTRACTOR TO COORDINATE DIRECTLY WITH RESIDENTS, POST OFFICE, AND OTHER RELATED SERVICES.
  8. GRADE AND INSTALL CONCRETE CURB AND GUTTER AND PLACE BASE AND BINDER BITUMINOUS PAVEMENT COURSE ON SOUTH SIDE. PAVE TRAIL ON SOUTH SIDE.
  9. INSTALL INLET PROTECTION.
  10. STABILIZE VEGETATION AND SOIL STOCKPILES WITHIN 7 DAYS OF ROUGH GRADING OR INACTIVITY. ADDITIONAL TEMPORARY AND PERMANENT EROSION CONTROL AS DIRECTED BY ENGINEER.



END S.A.P. 002-614-048  
 S.A.P. 106-020-037  
 EB CSAH 14 STA. 277+38.41

1	02/16/2022	BTU	JRB	UPDATED LEADER
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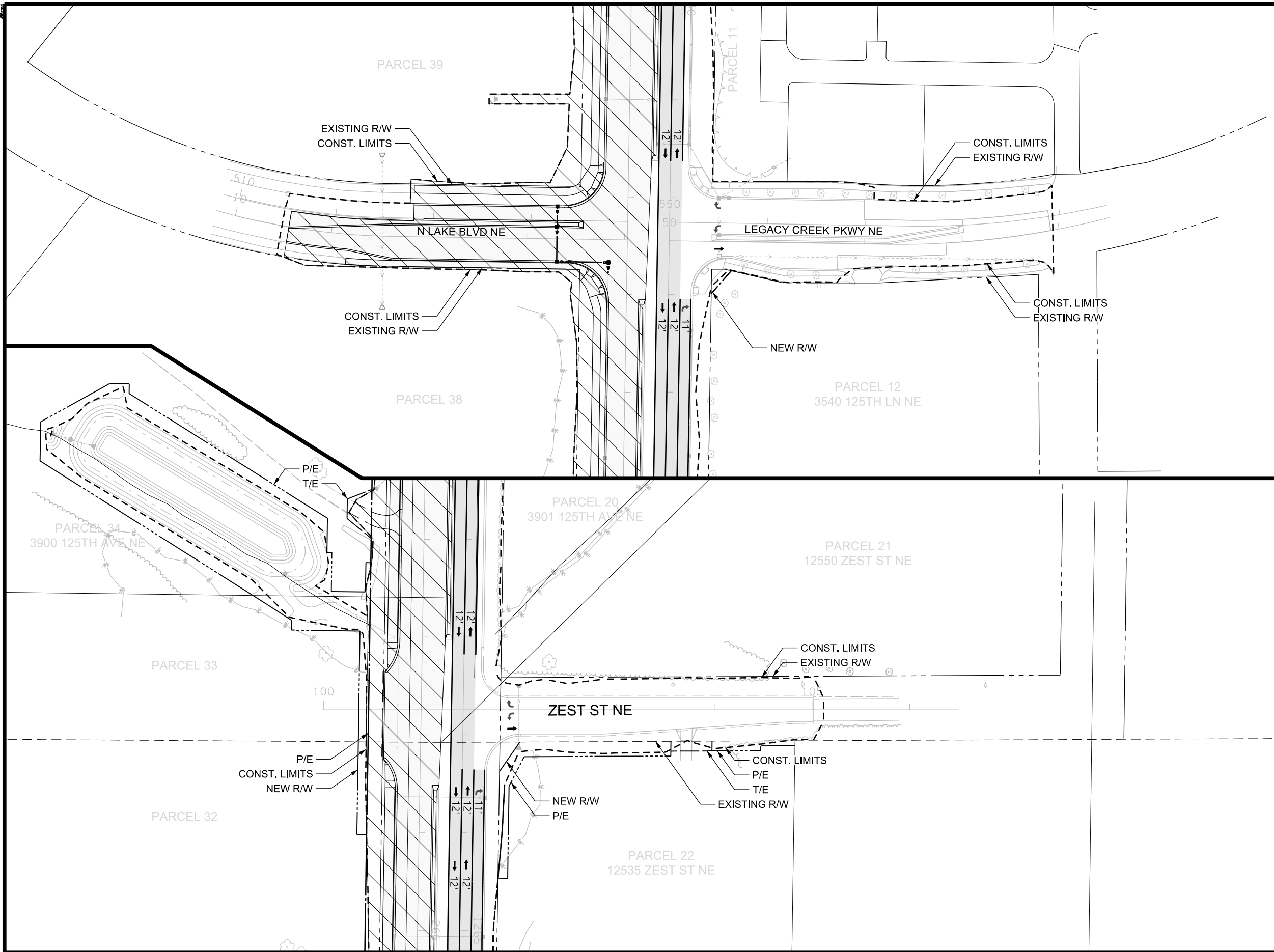
I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.  
 PRINT NAME: JORGE R. BERNAL DELGADO  
 SIGNATURE: *[Signature]*  
 DATE: 02-23-22 LICENSE NO. 57216

DRAWN BY: MP DATE: 02/16/22  
 DESIGN BY: JRB DATE: 02/16/22  
 CHECKED BY: NJD DATE: 02/16/22








**ANOKA COUNTY**  
**HIGHWAY DEPT.**

SAP 002-614-048  
 SAP 106-020-037

**STAGING PLAN**  
 STAGE 3  
 STA 252+00 TO 277+38.41  
 Sheet 73 of 303 Sheets



**LEGEND**

-  STAGE 3 CONSTRUCTION
-  EXISTING SIGNAL SYSTEM
-  CURRENT STAGE STORM SEWER WORK
-  PREVIOUS STORM SEWER WORK
-  INPLACE STORM SEWER
-  CHANNELIZERS
-  GENERAL TRAFFIC FLOW 12' MIN. LANE WIDTH. SEE TRAFFIC CONTROL PLAN FOR DETAILS

- STAGE 3 CONSTRUCTION NOTES:**
1. SWITCH TRAFFIC TO FINISHED NORTH SIDE.
  2. LANES GENERALLY FOLLOW <14W\_4> ALIGNMENT.
  3. PROVIDE MINIMUM 12' LANES IN BOTH DIRECTIONS.
  4. BAG SIGNAL HEADS AS INDICATED IN PLAN.
  5. INSTALL STORM SEWER ON SOUTH SIDE OF ROAD AT NORTH LAKE BLVD.
  6. CLOSE INTERSECTION OF NORTH LAKE BLVD. DURING CONSTRUCTION (SEE DETOUR ROUTE).
  7. ACCESS TO EMERGENCY VEHICLES SHALL BE MAINTAINED.
  8. MAINTAIN ACCESS TO PROPERTIES ON SOUTH SIDE OF ROAD AT ALL TIMES. PROVIDE TEMPORARY ACCESS ALL THE WAY TO EITHER ZEST STREET OR LEGACY CREEK PARKWAY BASED ON CONSTRUCTION ACTIVITIES. CONTRACTOR TO COORDINATE DIRECTLY WITH RESIDENTS, POST OFFICE, AND OTHER RELATED SERVICES.
  9. GRADE AND INSTALL CONCRETE CURB AND GUTTER AND PLACE BASE AND BINDER BITUMINOUS PAVEMENT COURSE ON SOUTH SIDE. PAVE TRAIL ON SOUTH SIDE
  10. INSTALL INLET PROTECTION.
  11. STABILIZE VEGETATION AND SOIL STOCKPILES WITHIN 7 DAYS OF ROUGH GRADING OR INACTIVITY. ADDITIONAL TEMPORARY AND PERMANENT EROSION CONTROL AS DIRECTED BY ENGINEER.

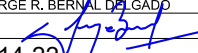


4 OF 4

NO	DATE	BY	CKD	APPR	REVISION
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I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

PRINT NAME: JORGE R. BERNAL DELGADO

SIGNATURE: 

DATE: 02-14-22 LICENSE NO. 57216

DRAWN BY: MP DATE: 02/07/22

DESIGN BY: JRB DATE: 02/07/22

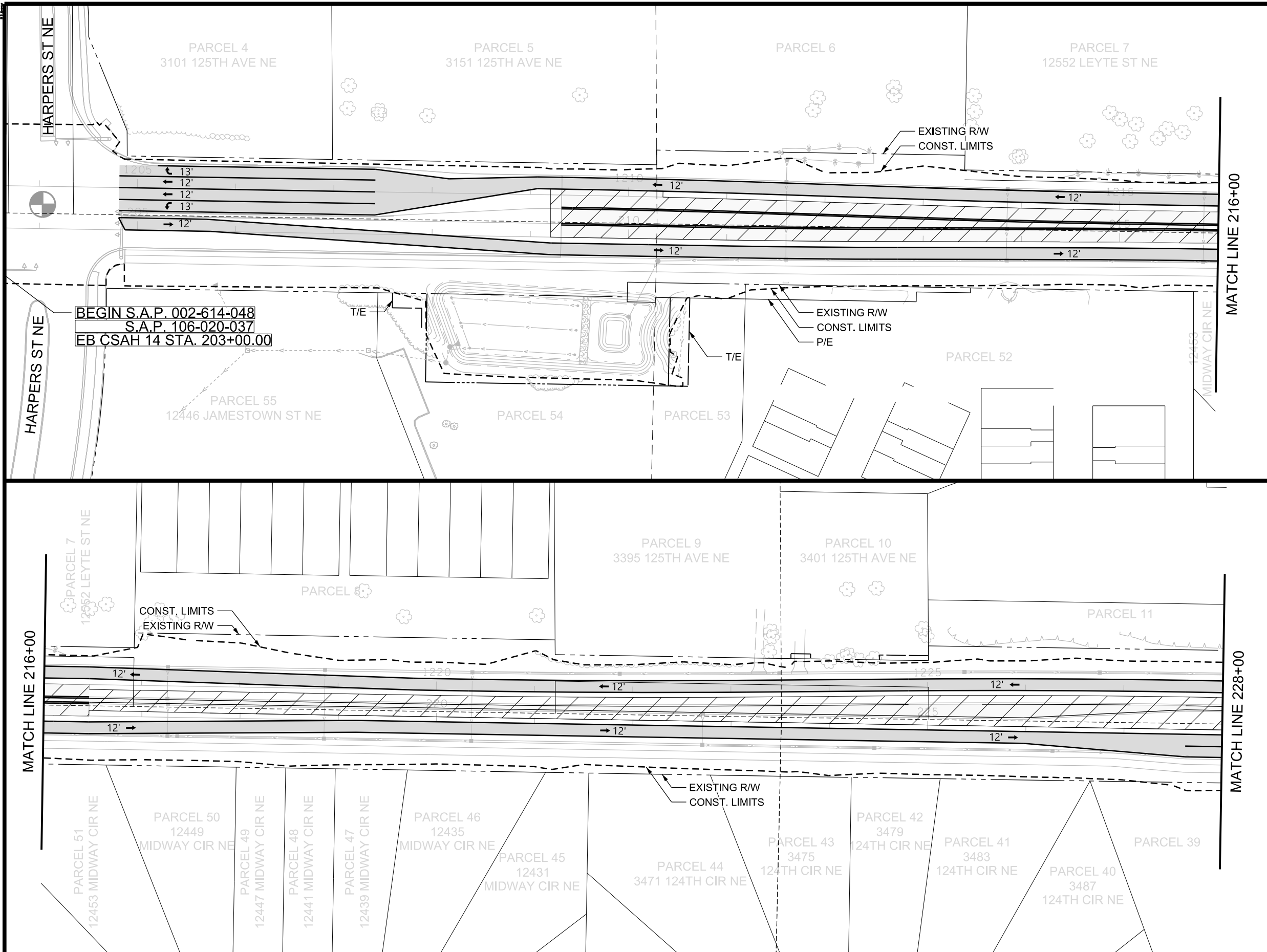
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**ANOKA COUNTY**  
**HIGHWAY DEPT.**

SAP 002-614-048  
SAP 106-020-037

STAGING PLAN  
STAGE 3

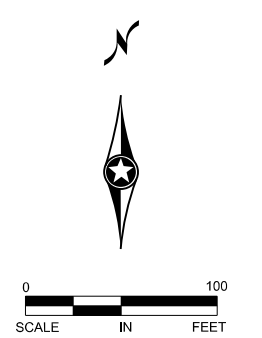
Sheet 74 of 303 Sheets



**LEGEND**

- STAGE 4 CONSTRUCTION
- EXISTING SIGNAL SYSTEM
- CURRENT STAGE STORM SEWER WORK
- PREVIOUS STORM SEWER WORK
- INPLACE STORM SEWER
- CHANNELIZERS
- GENERAL TRAFFIC FLOW 12' MIN. LANE WIDTH. SEE TRAFFIC CONTROL PLAN FOR DETAILS

- STAGE 4 CONSTRUCTION NOTES:**
1. EASTBOUND TRAFFIC ON SOUTH SIDE, WESTBOUND TRAFFIC ON NORTH SIDE OF ROAD.
  2. INSIDE THROUGH LANES CLOSED.
  3. PROVIDE MINIMUM 12' THROUGH LANES IN EACH DIRECTION UNLESS INDICATED IN PLAN OR BY ENGINEER. TEMPORARY TURN LANE CLOSURES AS NECESSARY PER THE MN MUTCD FIELD MANUAL.
  4. GRADE AND INSTALL CURB AND GUTTER AND CONSTRUCT LANES AT STAGING CROSS OVER LOCATIONS.
  5. CONCRETE MEDIAN FLATWORK THROUGHOUT THE PROJECT LENGTH.
  6. STABILIZE VEGETATION AND SOIL STOCKPILES WITHIN 7 DAYS OF ROUGH GRADING OR INACTIVITY. ADDITIONAL TEMPORARY AND PERMANENT EROSION CONTROL AS DIRECTED BY ENGINEER.
  7. PLACE FINAL LIFT OF BITUMINOUS PAVEMENT UPON COMPLETION.



1 OF 3

1	02/16/2022	BTU	JRB	UPDATED LEADER
NO	DATE	BY	CKD	APPR
				REVISION
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I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

PRINT NAME: JORGE R. BERNAL DELGADO

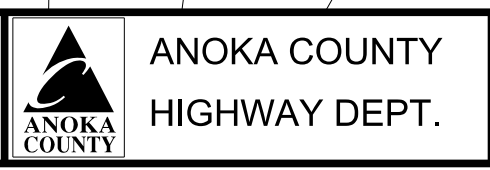
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DATE: 02-23-22 LICENSE NO. 57216

DRAWN BY: BTU DATE: 02/16/22

DESIGN BY: JRB DATE: 02/16/22

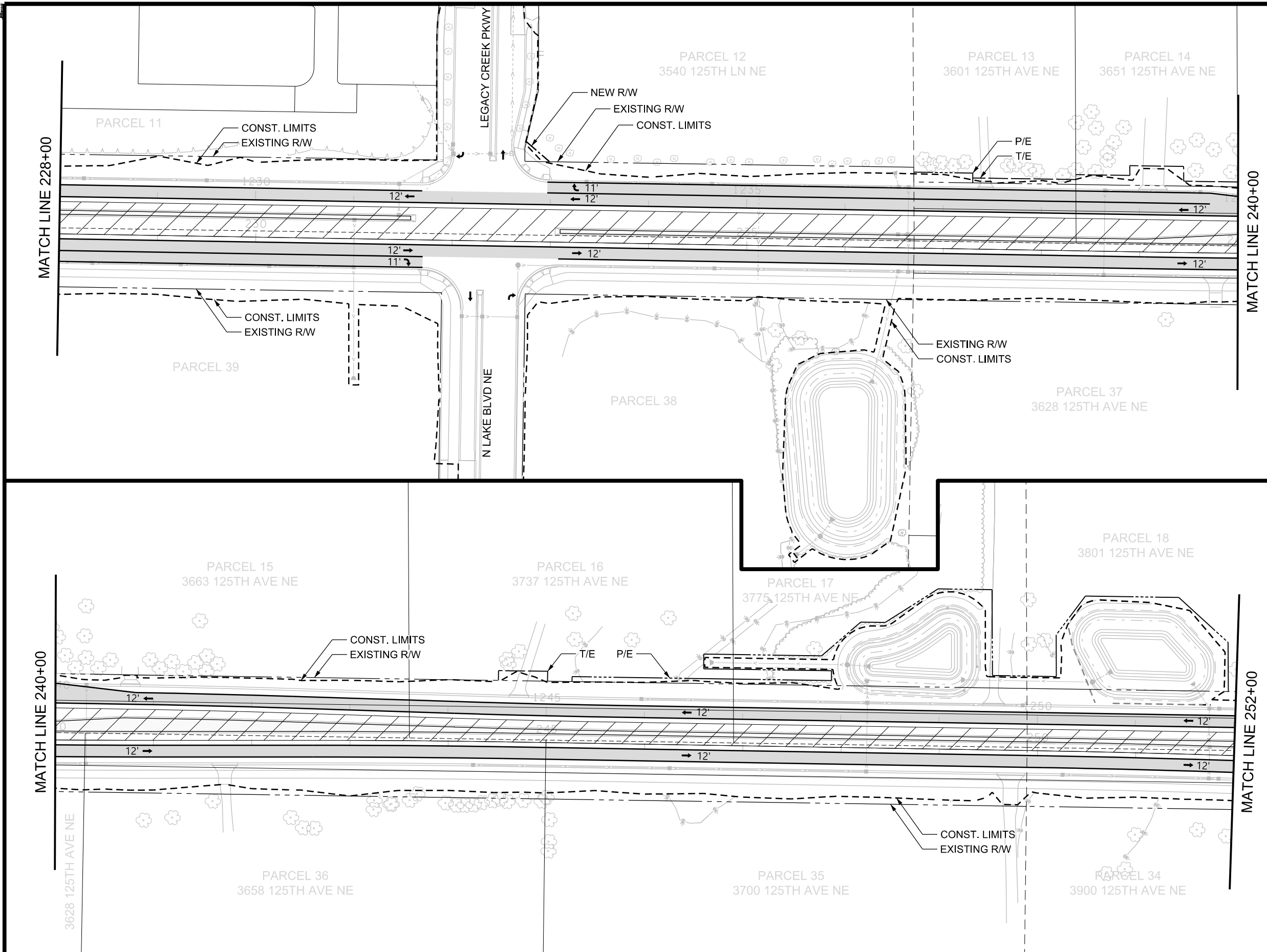
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SAP 002-614-048  
SAP 106-020-037

**STAGING PLAN**  
STAGE 4  
STA 203+00.00 TO 228+00

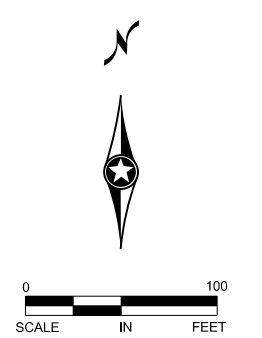
Sheet 75 of 303 Sheets



**LEGEND**

- STAGE 4 CONSTRUCTION
- EXISTING SIGNAL SYSTEM
- CURRENT STAGE STORM SEWER WORK
- PREVIOUS STORM SEWER WORK
- INPLACE STORM SEWER
- CHANNELIZERS
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1. EASTBOUND TRAFFIC ON SOUTH SIDE, WESTBOUND TRAFFIC ON NORTH SIDE OF ROAD.
  2. INSIDE THROUGH LANES CLOSED.
  3. PROVIDE MINIMUM 12' THROUGH LANES IN EACH DIRECTION UNLESS INDICATED IN PLAN OR BY ENGINEER. TEMPORARY TURN LANE CLOSURES AS NECESSARY PER THE MN MUTCD FIELD MANUAL.
  4. GRADE AND INSTALL CURB AND GUTTER AND CONSTRUCT LANES AT STAGING CROSS OVER LOCATIONS.
  5. CONCRETE MEDIAN FLATWORK THROUGHOUT THE PROJECT LENGTH.
  6. STABILIZE VEGETATION AND SOIL STOCKPILES WITHIN 7 DAYS OF ROUGH GRADING OR INACTIVITY. ADDITIONAL TEMPORARY AND PERMANENT EROSION CONTROL AS DIRECTED BY ENGINEER.
  7. PLACE FINAL LIFT OF BITUMINOUS PAVEMENT UPON COMPLETION.



NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-614-048\Plan\002614048\_STG-4\_P2.dgn 02/09/2022 3:01:25 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: JORGE R. BERNAL DELGADO

SIGNATURE:

DATE: 02-14-22 LICENSE NO. 57216

DRAWN BY BTU DATE 02/07/22

DESIGN BY JRB DATE 02/07/22

CHECKED BY NJD DATE 02/07/22

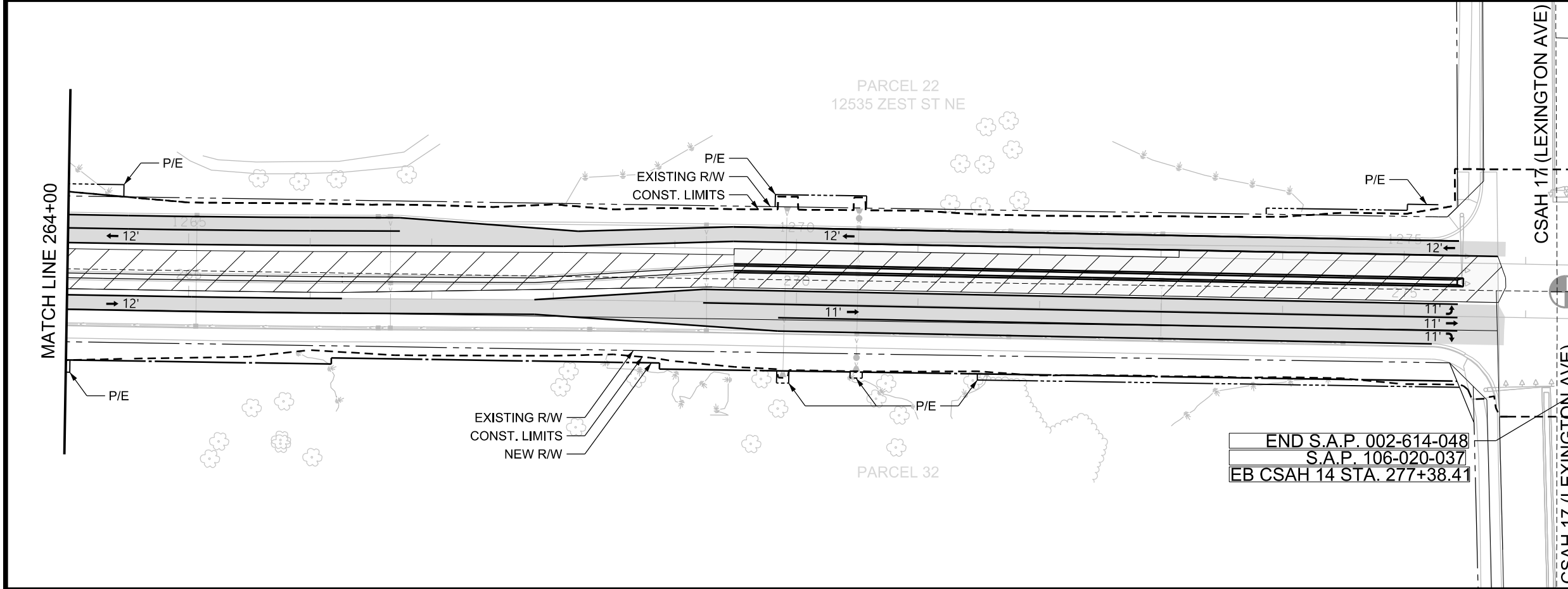
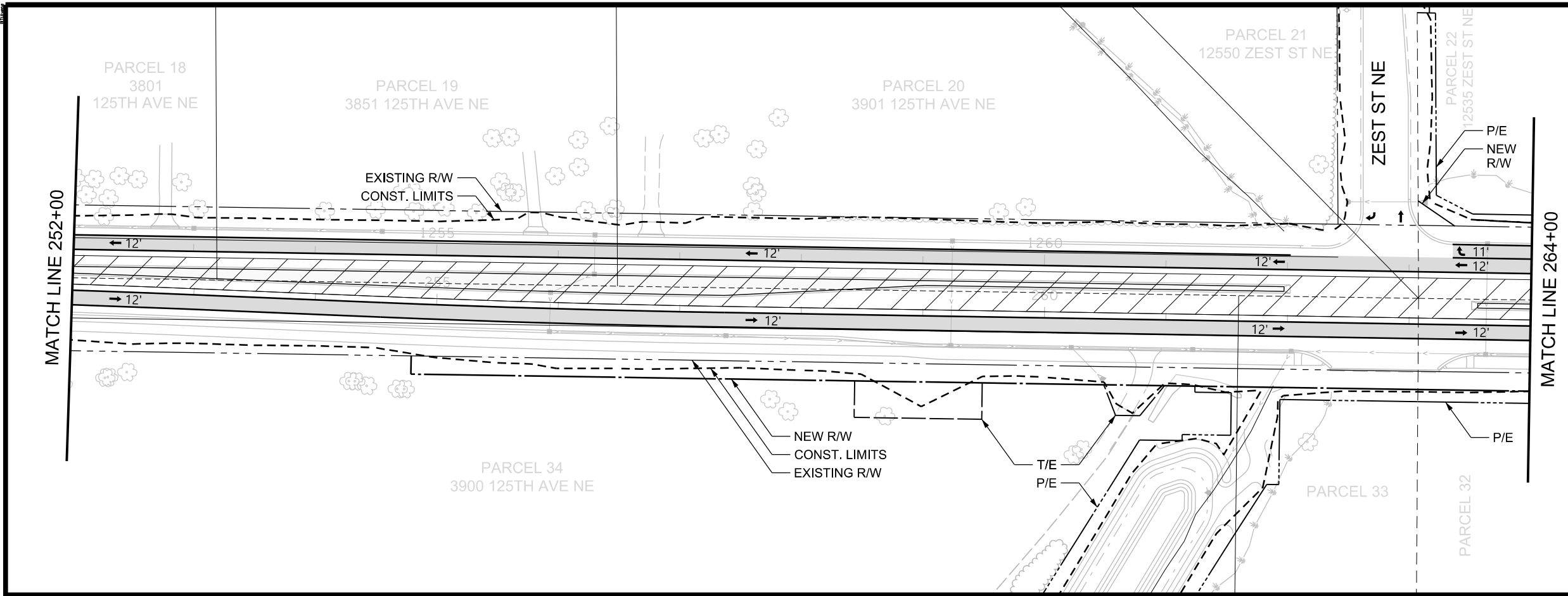
**ANOKA COUNTY  
HIGHWAY DEPT.**

SAP 002-614-048  
SAP 106-020-037

**STAGING PLAN  
STAGE 4**

STA 228+00 TO 252+00

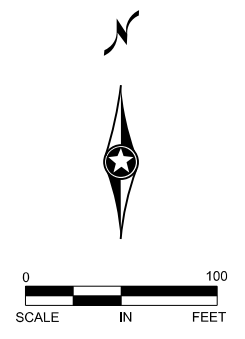
Sheet 76 of 303 Sheets



**LEGEND**

- STAGE 4 CONSTRUCTION
- EXISTING SIGNAL SYSTEM
- CURRENT STAGE STORM SEWER WORK
- PREVIOUS STORM SEWER WORK
- INPLACE STORM SEWER
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- STAGE 4 CONSTRUCTION NOTES:**
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  7. PLACE FINAL LIFT OF BITUMINOUS PAVEMENT UPON COMPLETION.

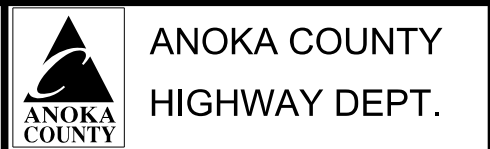


END S.A.P. 002-614-048  
 S.A.P. 106-020-037  
 EB CSAH 14 STA. 277+38.41

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I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.  
 PRINT NAME: JORGE R. BERNAL DELGADO  
 SIGNATURE: *[Signature]*  
 DATE: 02-23-22 LICENSE NO. 57216

DRAWN BY BTU DATE 02/16/22  
 DESIGN BY JRB DATE 02/16/22  
 CHECKED BY NJD DATE 02/16/22

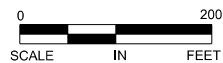
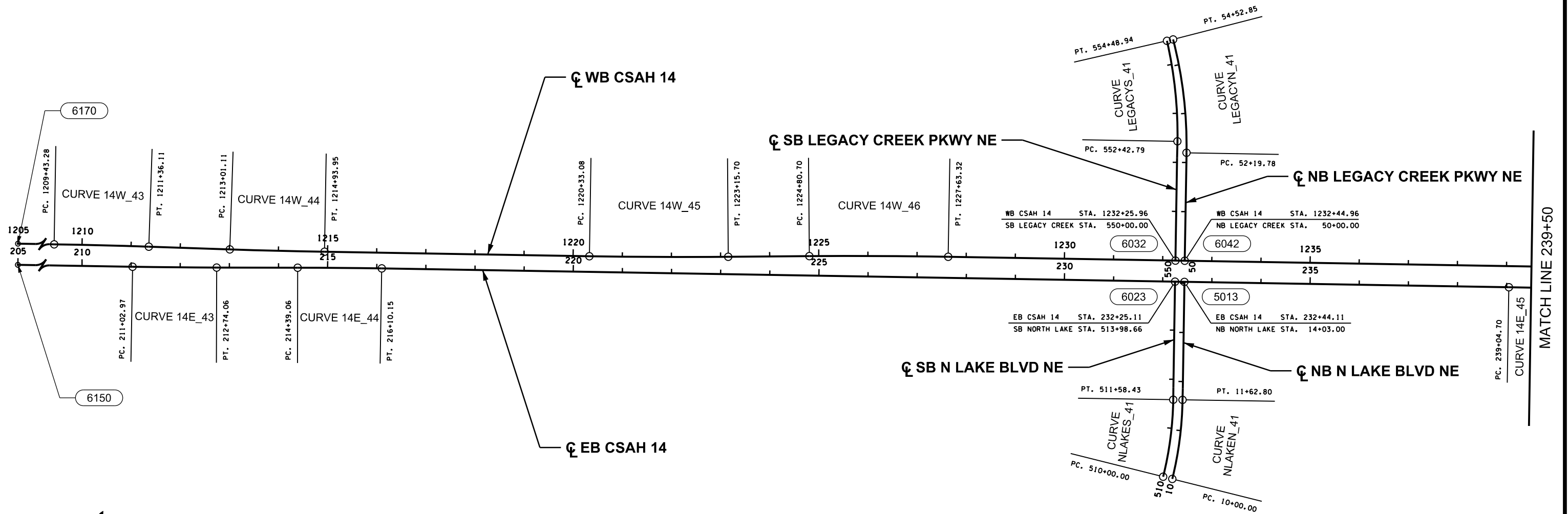


SAP 002-614-048  
 SAP 106-020-037

STAGING PLAN  
 STAGE 4  
 STA 252+00 TO 277+38.41  
 Sheet 77 of 303 Sheets

**ALIGNMENT NOTES:**

1. EASTBOUND AND WESTBOUND ALIGNMENTS ARE NOT PARALLEL.
2. HORIZONTAL CONTROL IS BASED ON ANOKA COUNTY COORDINATE SYSTEM NAD 83 (1996 ADJUSTMENT)



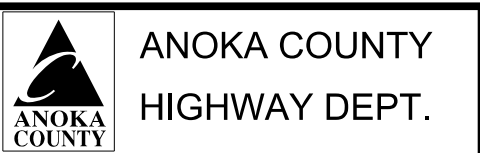
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I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

PRINT NAME: JORGE R. BERNAL DELGADO  
 SIGNATURE: *[Signature]*  
 DATE: 02-14-22 LICENSE NO. 57216

DRAWN BY: BTU DATE: 02/07/22  
 DESIGN BY: JRB DATE: 02/07/22  
 CHECKED BY: NJD DATE: 02/07/22

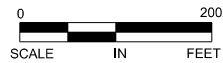
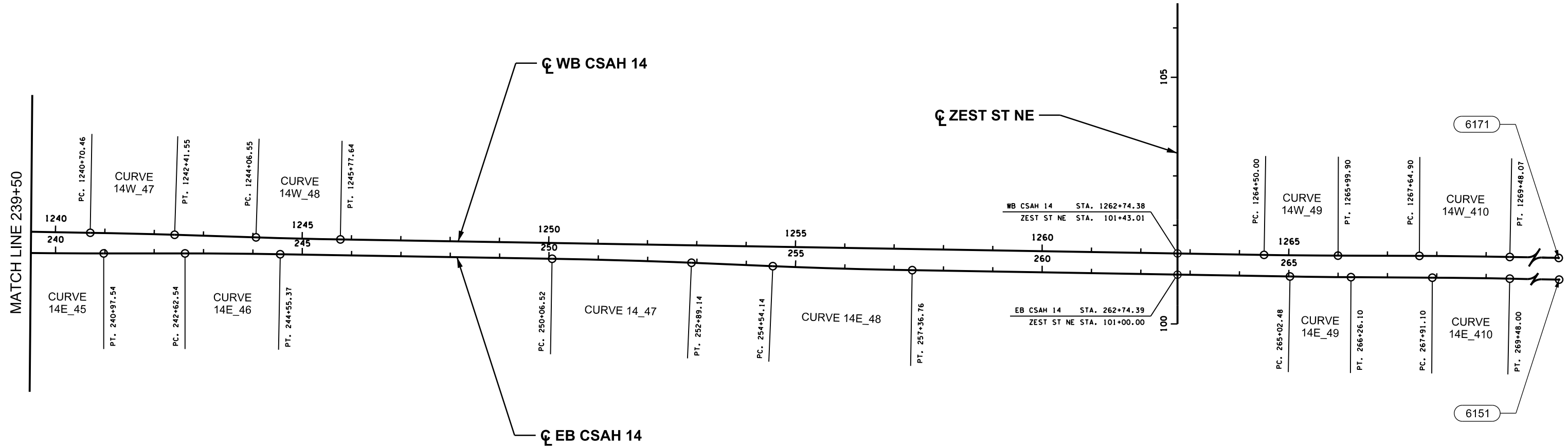


SAP 002-614-048  
 SAP 106-020-037

ALIGNMENT PLAN  
 STA 205+00 TO 239+50  
 Sheet 78 of 303 Sheets

**ALIGNMENT NOTES:**

1. EASTBOUND AND WESTBOUND ALIGNMENTS ARE NOT PARALLEL.
2. HORIZONTAL CONTROL IS BASED ON ANOKA COUNTY COORDINATE SYSTEM NAD 83 (1996 ADJUSTMENT)



NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-614-048\Plan\002614048\_AL4\_P2.dgn 02/09/2022 3:01:34 PM

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

PRINT NAME: JORGE R. BERNAL DELGADO

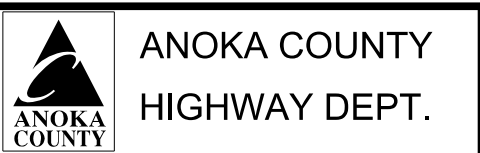
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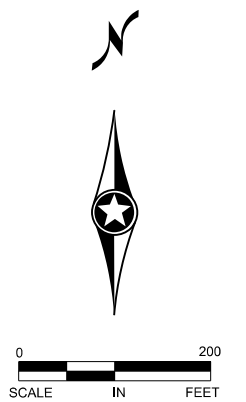
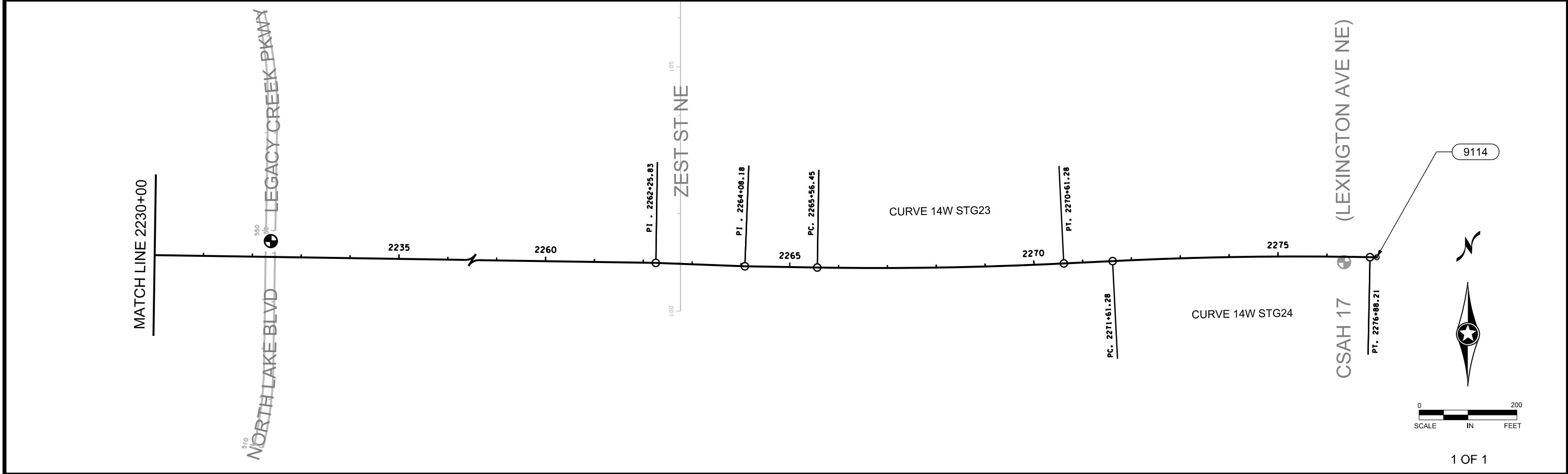
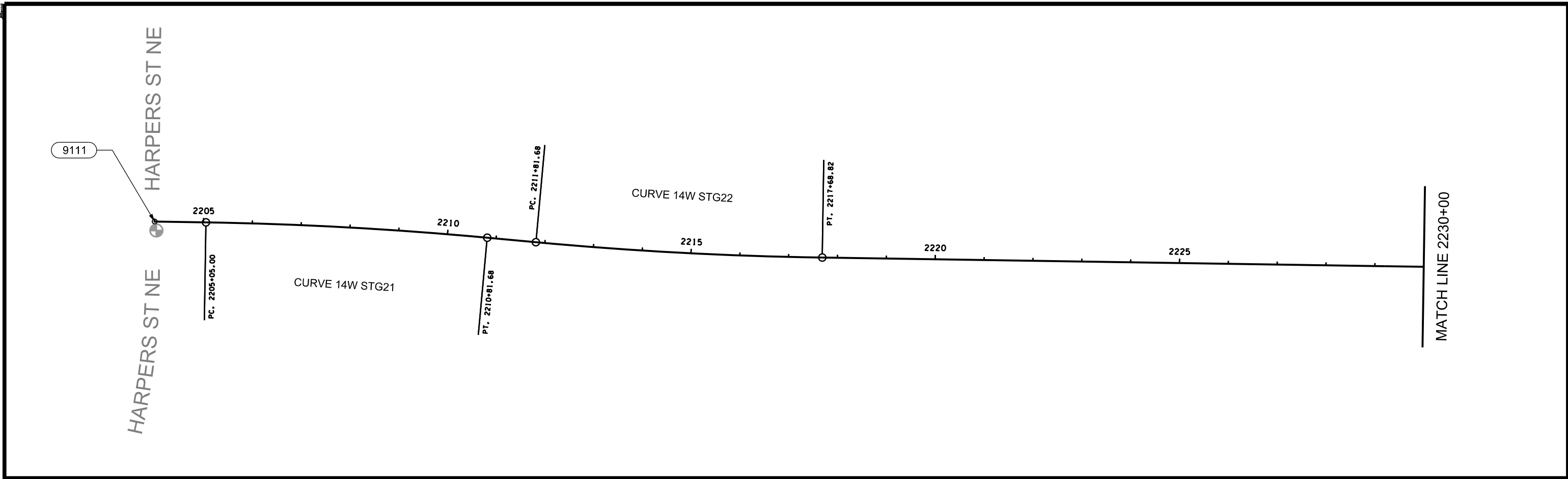
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SAP 002-614-048  
SAP 106-020-037

ALIGNMENT PLAN  
STA 239+50 TO 277+38.41  
Sheet 79 of 303 Sheets



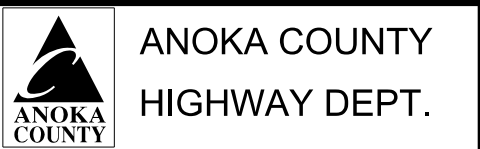
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NO	DATE	BY	CKD	APPR	REVISION

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I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.  
 PRINT NAME: JORGE R. BERNAL DELGADO  
 SIGNATURE: *[Signature]*  
 DATE: 02-14-22 LICENSE NO. 57216

DRAWN BY BTU DATE 02/07/22  
 DESIGN BY JRB DATE 02/07/22  
 CHECKED BY NJD DATE 02/07/22



SAP 002-614-048  
 SAP 106-020-037

ALIGNMENT PLAN  
 STAGE 2  
 Sheet 80 of 303 Sheets








### ALIGNMENT TABULATION

POINT NUMBER	POINT	STATION	CIRCULAR CURVE DATA					COORDINATES		AZIMUTH
			DELTA	DEGREE	RADIUS	TANGENT	LENGTH	E	N	
<b>☉ C.S.A.H. 14 WESTBOUND</b>			<b>&lt;14W_STG2&gt;</b>							
9111	POT	2204+00.000						519,538.1140	158,994.5512	
	PC	2205+05.000						519,643.0994	158,992.7971	
14W_STG21	PI	2207+93.479	4° 19' 31.34" RT	0° 45' 00.15"	7,639.000'	288.479'	576.683'	519,931.5378	158,987.9780	S 89° 02' 34.10" E
	CC							519,515.4866	151,354.8631	PI
	PT	2210+81.683						520,218.7912	158,961.4184	
	PC	2211+81.683						520,318.3665	158,952.2117	S 84° 43' 02.76" E
14W_STG22	PI	2214+75.397	4° 24' 13.66" LT	0° 45' 00.15"	7,639.000'	293.714'	587.139'	520,610.8332	158,925.1701	S 84° 43' 02.76" E
	CC							521,021.6712	166,558.7670	PI
	PT	2217+68.822						520,904.5127	158,920.6654	
9112	POT	2262+25.825						525,360.9916	158,852.3089	S 89° 07' 16.42" E
9113	POT	2264+08.175						525,543.2035	158,845.2128	
	PC	2265+56.450						525,691.4569	158,842.7358	
14W_STG23	PI	2268+08.956	3° 47' 11.17" LT	0° 45' 00.15"	7,639.000'	252.507'	504.829'	525,943.9283	158,838.5175	S 89° 02' 34.10" E
	CC							525,819.0697	166,480.6698	PI
	PT	2270+61.279						526,196.1271	158,850.9811	
	PC	2271+61.279						526,296.0053	158,855.9171	N 87° 10' 14.73" E
14W_STG24	PI	2274+24.847	3° 57' 07.85" RT	0° 45' 00.15"	7,639.000'	263.568'	526.927'	526,559.2522	158,868.9267	N 87° 10' 14.73" E
	CC							526,673.0627	151,226.2285	PI
	PT	2276+88.206						526,822.7697	158,863.7614	
9114	POT	2277+02.146						526,836.7067	158,863.4882	S 88° 52' 37.42" E

NO	DATE	BY	CKD	APPR	REVISION
NAME: P:\002-614-048\Plan\002614048_ALT4.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: JORGE R. BERNAL DELGADO

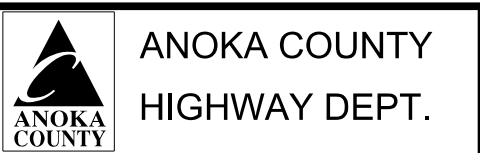
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DATE: 02-14-22 LICENSE NO. 57216

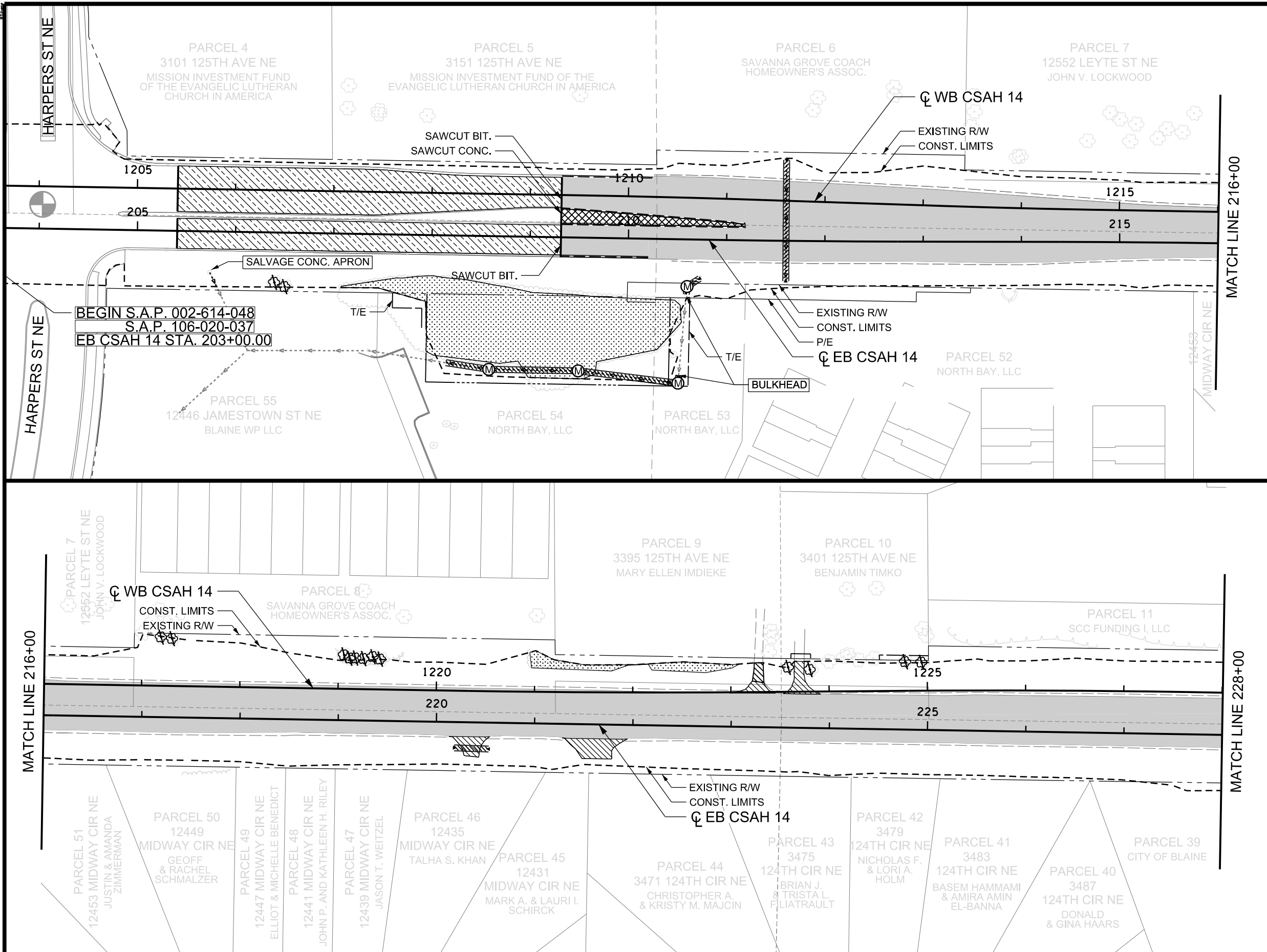
DRAWN BY MP DATE 02/07/22

DESIGN BY JRB DATE 02/07/22

CHECKED BY NJD DATE 02/07/22



SAP 002-614-048  
SAP 106-020-037



**LEGEND**

- REMOVE BITUMINOUS PAVEMENT
- REMOVE CONCRETE MEDIAN
- REMOVE DRIVEWAY
- MILL AND OVERLAY BITUMINOUS PAVEMENT
- CLEAR & GRUB (ACRE)
- REMOVE STORM SEWER / PIPE CULVERTS
- REMOVE DRAINAGE STRUCTURE
- TREE REMOVAL BY EACH
- REMOVE CURB AND GUTTER

**REMOVAL NOTES:**

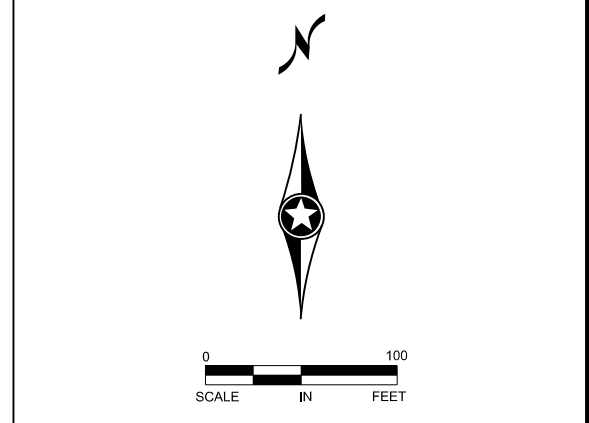
THE CONTRACTOR SHALL PERFORM ALL CLEARING AND GRUBBING AS DIRECTED AND MARKED IN THE FIELD BY THE ENGINEER. THE CONTRACTOR SHALL OTHERWISE PROTECT ALL EXISTING TREES NOT SPECIFICALLY MARKED FOR REMOVAL.

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

ALL PRIVATE UTILITIES TO BE RELOCATED BY OTHERS AS REQUIRED.

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

FOR SALVAGE/INSTALL CONCRETE APRON, REMOVE PIPE TO CLOSEST JOINT.



1	02/16/2022	BTU	JRB	UPDATED LEADER
NO	DATE	BY	CKD	APPR
				REVISION

NAME: P:\002-614-048\Plan\002614048\_RM4\_P1.dgn 02/16/2022 10:51:26 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: JORGE R. BERNAL DELGADO

SIGNATURE:

DATE: 02-23-22 LICENSE NO. 57216

DRAWN BY: BTU DATE: 02/10/22

DESIGN BY: JRB DATE: 02/10/22

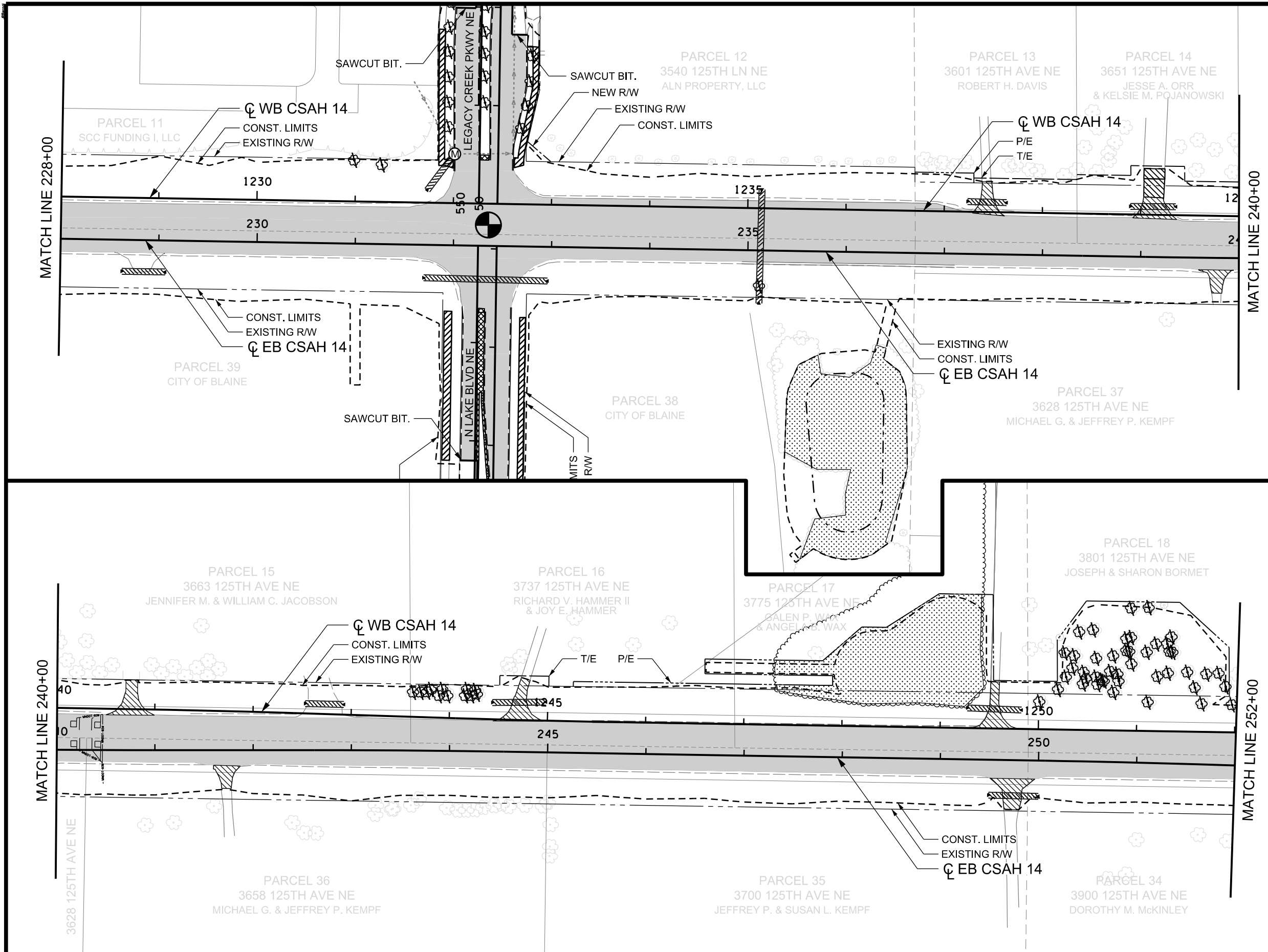
CHECKED BY: NJD DATE: 02/10/22

**ANOKA COUNTY  
HIGHWAY DEPT.**

SAP 002-614-048  
SAP 106-020-037

**INPLACE TOPOGRAPHY  
AND REMOVAL PLAN**  
CSAH 14  
STA 203+00.00 TO 228+00

Sheet 84 of 303 Sheets



LEGEND	
	REMOVE BITUMINOUS PAVEMENT
	REMOVE CONCRETE MEDIAN
	REMOVE DRIVEWAY
	REMOVE WALK / TRAIL
	MILL AND OVERLAY BITUMINOUS PAVEMENT
	CLEAR & GRUB (ACRE)
	REMOVE STORM SEWER / PIPE CULVERTS
	REMOVE DRAINAGE STRUCTURE
	TREE REMOVAL BY EACH
	REMOVE CURB AND GUTTER

**REMOVAL NOTES:**

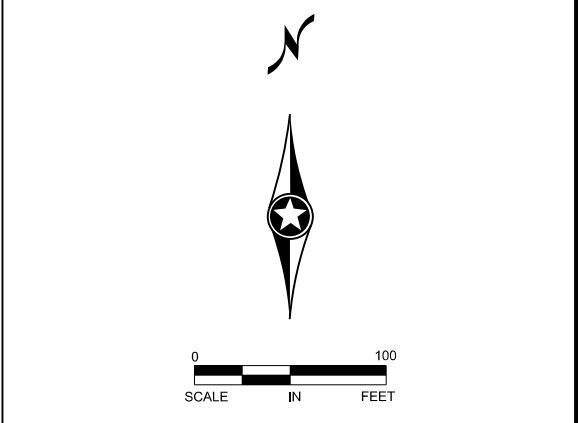
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REMOVE MISC. STRUCTURES INCLUDES BOULDERS, SIGNS AND LANDSCAPING AS DIRECTED BY ENGINEER.

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



NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-614-048\Plan\002614048\_RM4\_P2.dgn 02/09/2022 3:01:52 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: JORGE R. BERNAL DELGADO

SIGNATURE: *[Signature]*

DATE: 02-14-22 LICENSE NO. 57216

DRAWN BY: BTU DATE: 02/07/22

DESIGN BY: JRB DATE: 02/07/22

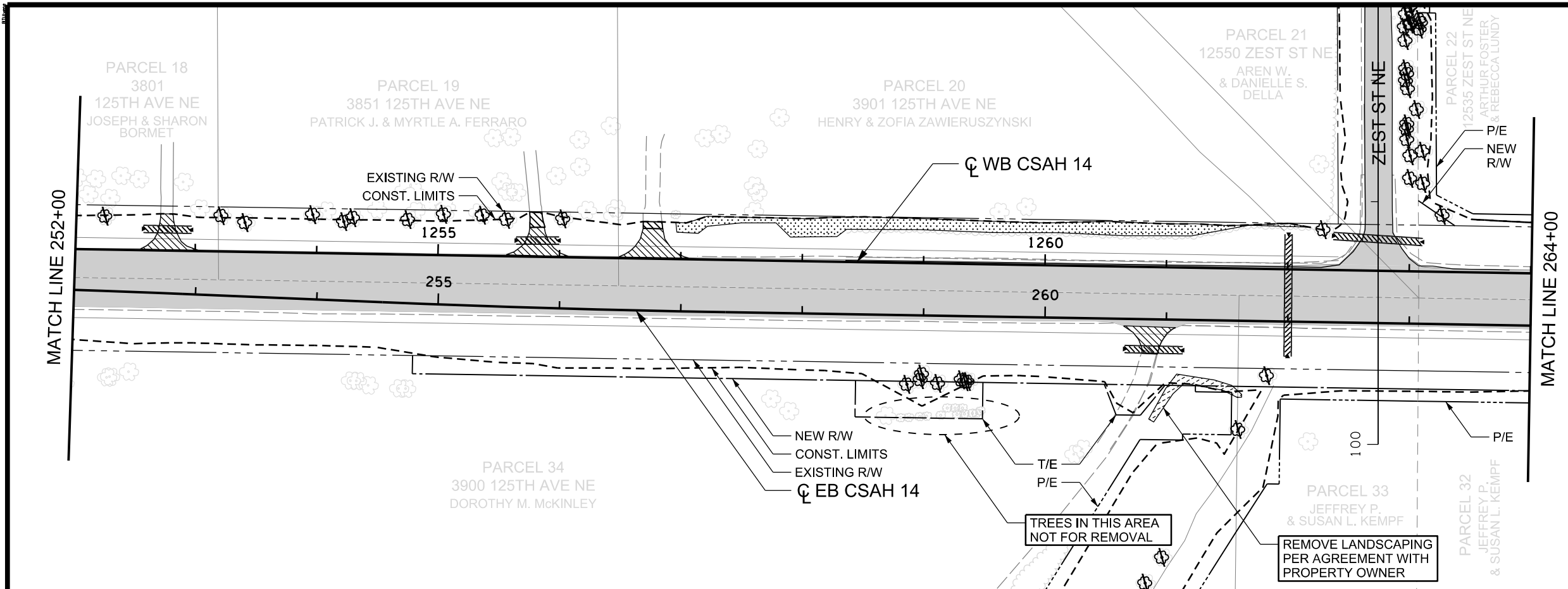
CHECKED BY: NJD DATE: 02/07/22

**ANOKA COUNTY  
HIGHWAY DEPT.**

SAP 002-614-048  
SAP 106-020-037

**INPLACE TOPOGRAPHY  
AND REMOVAL PLAN**  
CSAH 14  
STA 228+00 TO 252+00

Sheet 85 of 303 Sheets



**LEGEND**

- REMOVE BITUMINOUS PAVEMENT
- REMOVE CONCRETE MEDIAN
- REMOVE DRIVEWAY
- REMOVE WALK / TRAIL
- MILL AND OVERLAY BITUMINOUS PAVEMENT
- CLEAR & GRUB (ACRE)
- REMOVE LANDSCAPING
- REMOVE STORM SEWER / PIPE CULVERTS
- REMOVE DRAINAGE STRUCTURE
- TREE REMOVAL BY EACH
- REMOVE CURB AND GUTTER

**REMOVAL NOTES:**

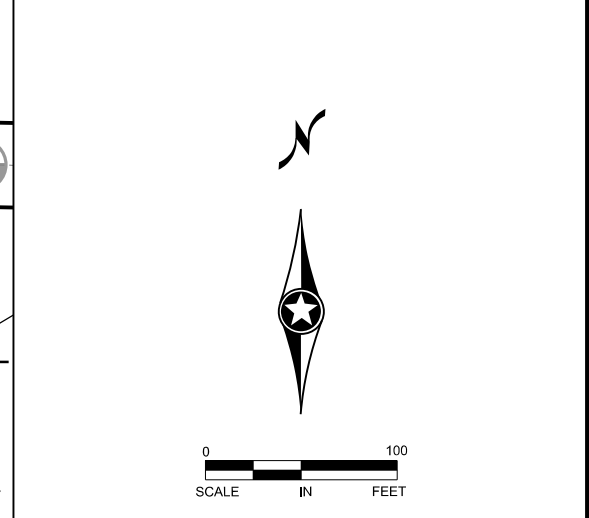
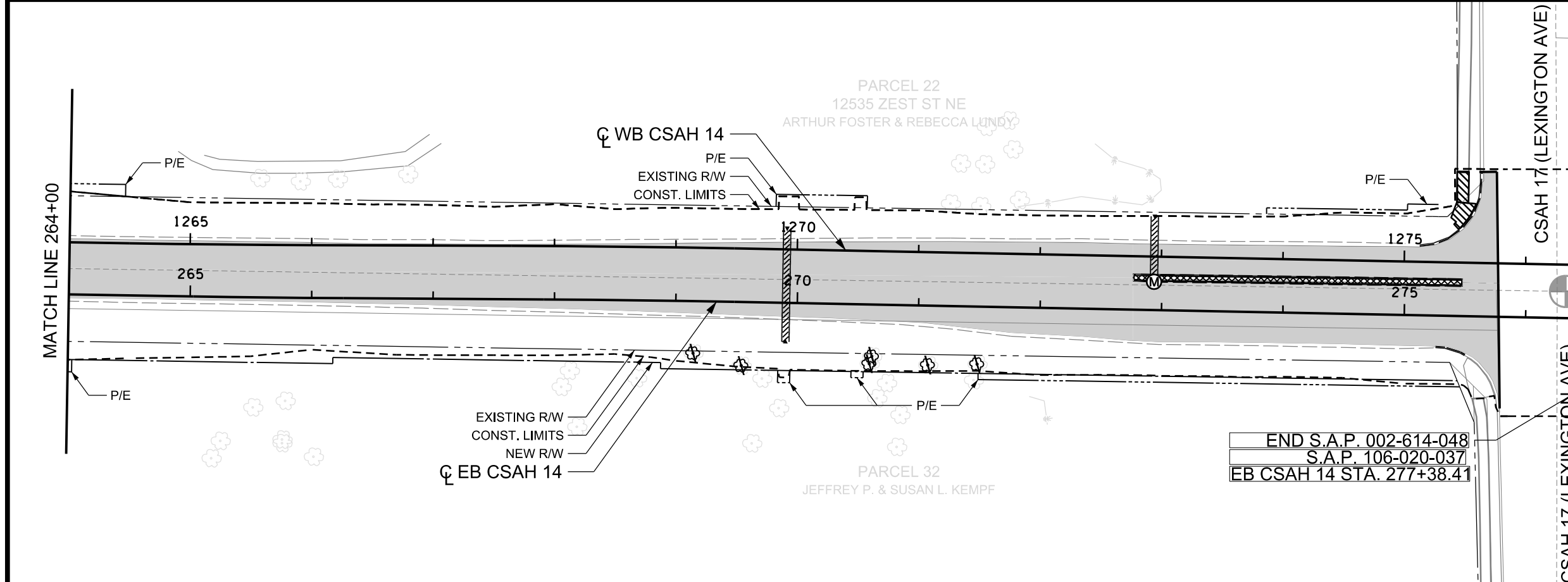
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1	02/16/2022	BTU	JRB	UPDATED LEADER
NO	DATE	BY	CKD	APPR
				REVISION
NAME: P:\002-614-048\Plan\002614048_RM4_P3.dgn 02/16/2022 10:52:43 AM				

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: JORGE R. BERNAL DELGADO

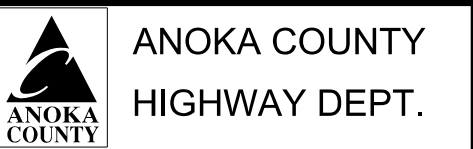
SIGNATURE: *[Signature]*

DATE: 02-23-22 LICENSE NO. 57216

DRAWN BY: BTU DATE: 02/10/22

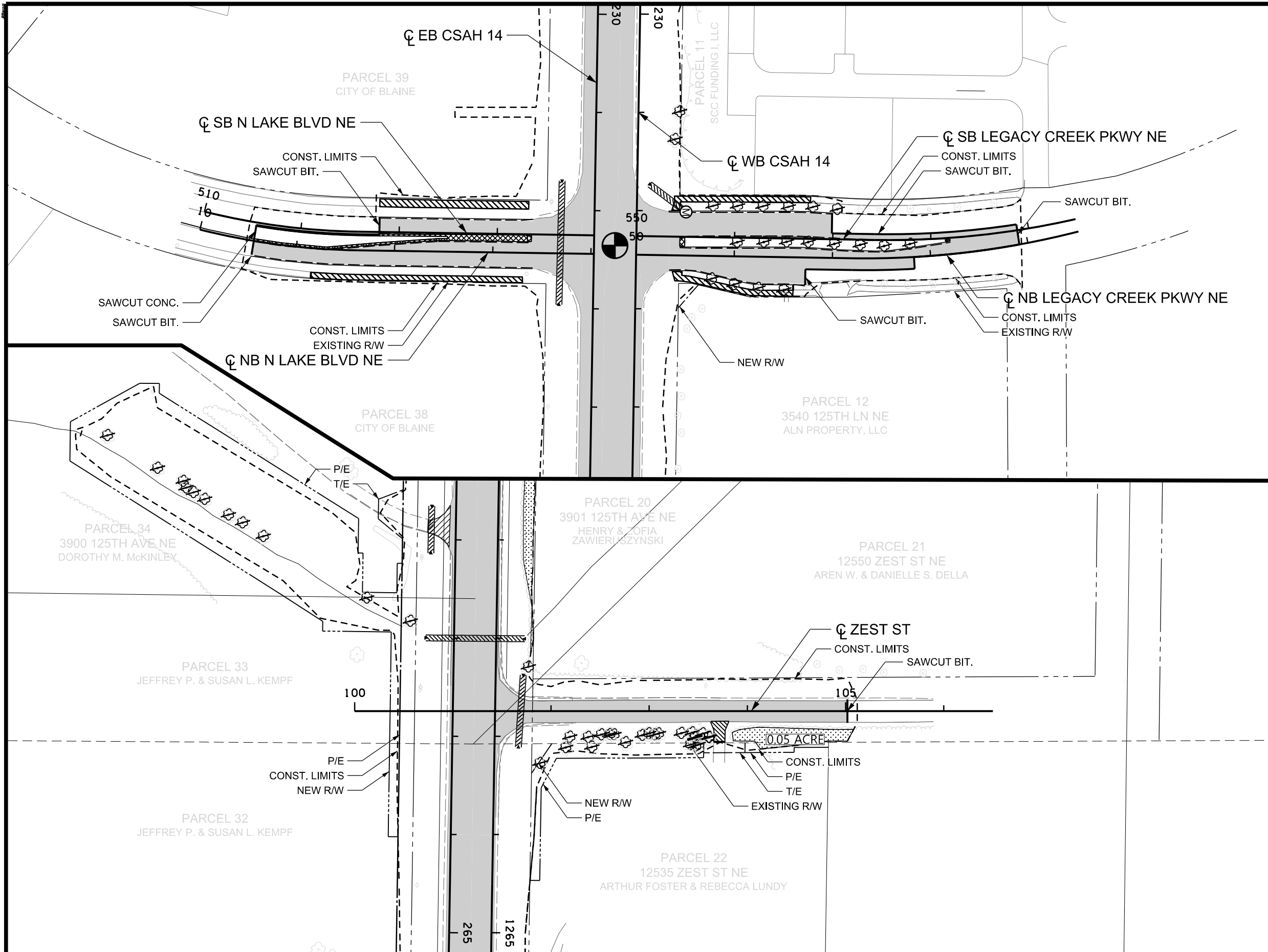
DESIGN BY: JRB DATE: 02/10/22

CHECKED BY: NJD DATE: 02/10/22



SAP 002-614-048  
SAP 106-020-037

INPLACE TOPOGRAPHY AND REMOVAL PLAN  
CSAH 14  
STA 252+00 TO 277+38.41  
Sheet 86 of 303 Sheets



**LEGEND**

	REMOVE BITUMINOUS PAVEMENT
	REMOVE CONCRETE MEDIAN
	REMOVE DRIVEWAY
	REMOVE WALK
	CLEAR & GRUB (ACRE)
	REMOVE STORM SEWER / PIPE CULVERTS
	REMOVE DRAINAGE STRUCTURE
	TREE REMOVAL BY EACH
	REMOVE CURB AND GUTTER

**REMOVAL NOTES:**

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NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-614-048\Plan\002614048\_RM4\_P4.dgn 02/09/2022 3:01:59 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: JORGE R. BERNAL DELGADO

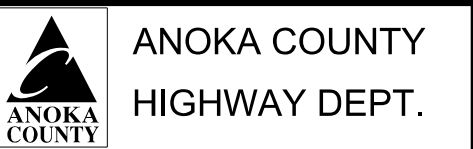
SIGNATURE: *[Signature]*

DATE: 02-14-22 LICENSE NO. 57216

DRAWN BY: BTU DATE: 02/07/22

DESIGN BY: JRB DATE: 02/07/22

CHECKED BY: NJD DATE: 02/07/22






SAP 002-614-048  
SAP 106-020-037

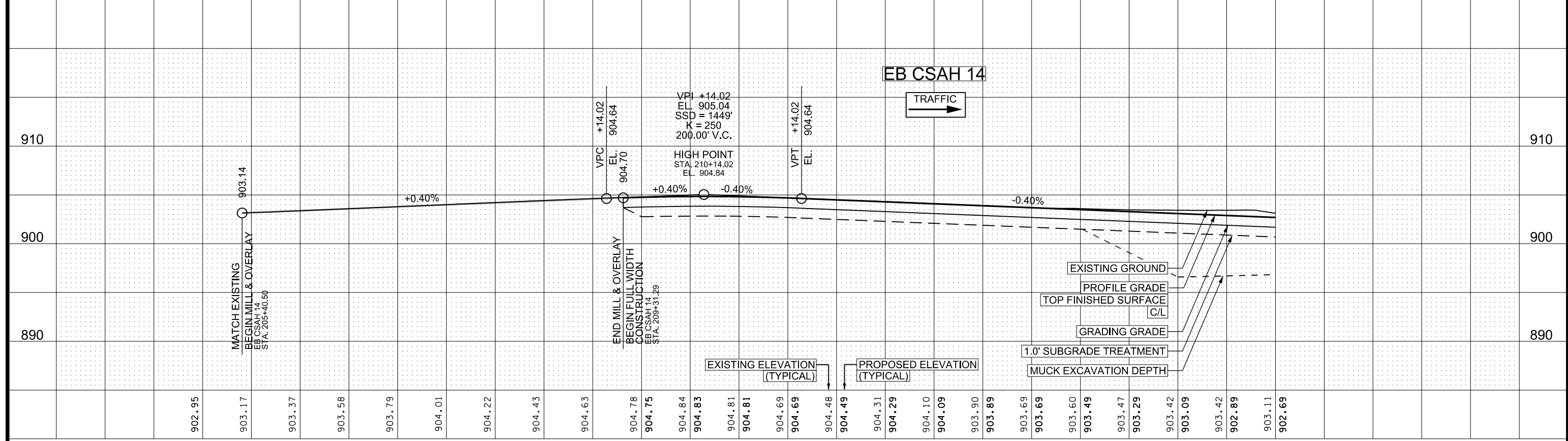
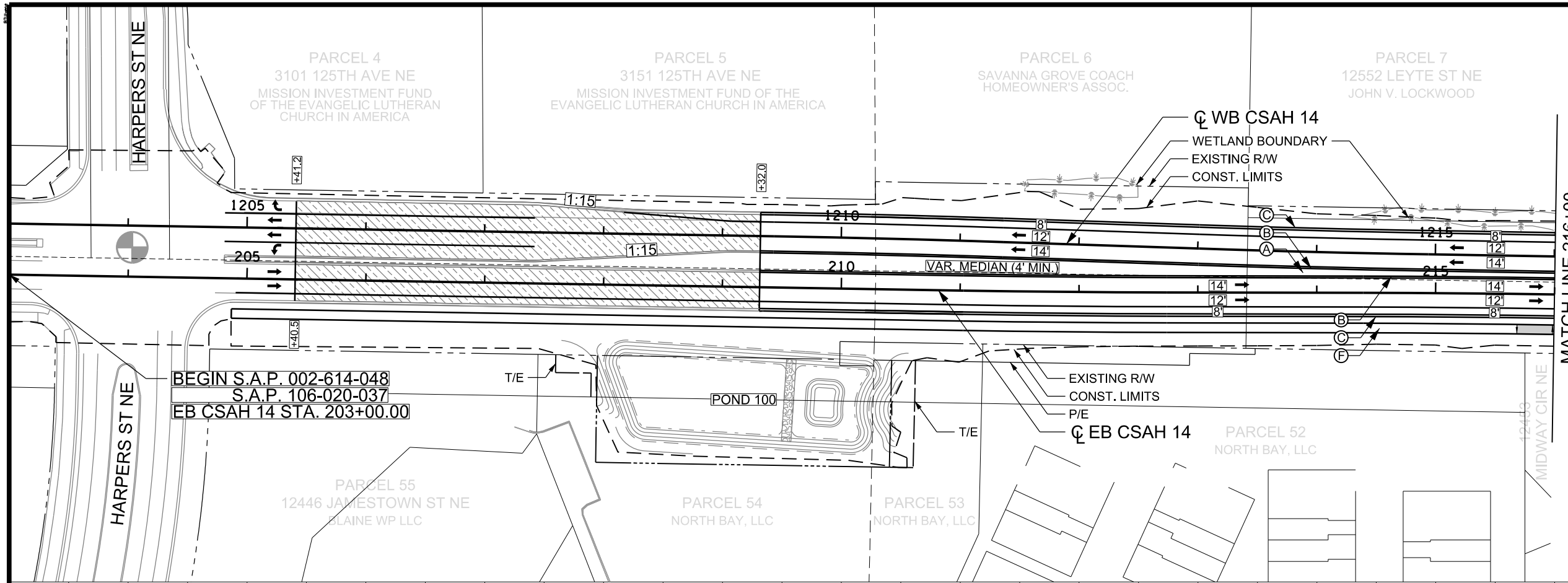
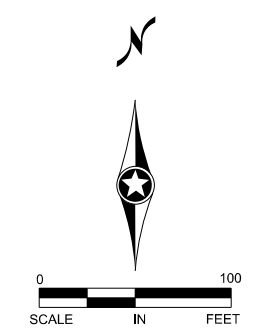
REMOVAL PLAN  
NORTH LAKE BLVD NE,  
LEGACY CREEK PKWY NE  
& ZEST ST NE

Sheet 87 of 303 Sheets

**CONSTRUCTION NOTES**

-  OVERLAY BITUMINOUS PAVEMENT
-  BITUMINOUS TRAIL CROSS SLOPE TRANSITION
-  SIGNAL SYSTEM A SEE SIGNAL PLANS FOR REVISIONS
- (A) CONCRETE MEDIAN
- (B) B418 MOD. CURB & GUTTER
- (C) B424 CURB & GUTTER
- (F) 8' BITUMINOUS TRAIL

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

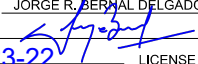


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205+00		206+00		207+00		208+00		209+00		210+00		211+00		212+00		213+00		214+00		215+00		216+00														

1	02/16/2022	BTU	JRB	UPDATED LEADER	
NO	DATE	BY	CKD	APPR	REVISION
NAME: P:\002-614-048\Plan\002614048_PP4_P1.dgn 02/16/2022 10:47:13 AM					

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

PRINT NAME: JORGE R. BERNAL DELGADO

SIGNATURE: 

DATE: 02-23-22 LICENSE NO. 57216

DRAWN BY: BTU DATE: 02/10/22

DESIGN BY: JRB DATE: 02/10/22

CHECKED BY: NJD DATE: 02/10/22



SAP 002-614-048  
SAP 106-020-037

**CONSTRUCTION PLAN**  
CSAH 14  
STA 203+00.00 TO 216+00

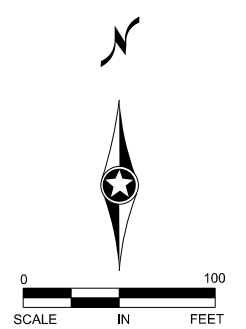
Sheet 88 of 303 Sheets



CONSTRUCTION NOTES

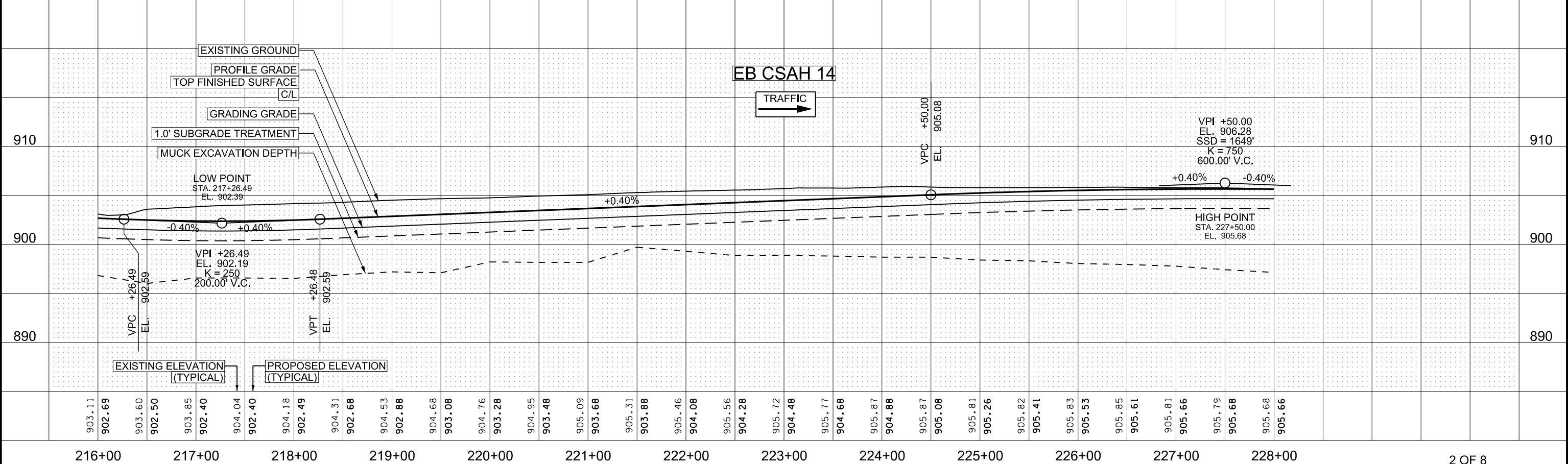
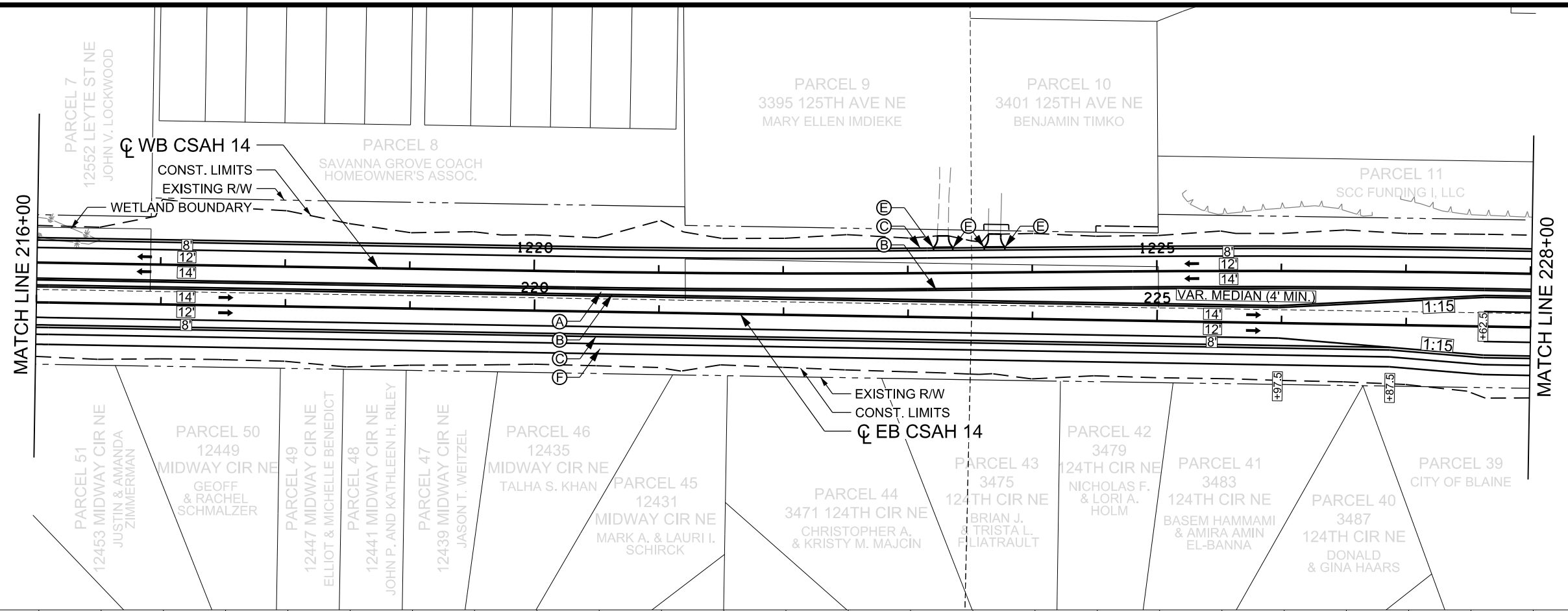
- (A) CONCRETE MEDIAN
- (B) B418 MOD. CURB & GUTTER
- (C) B424 CURB & GUTTER
- (E) CURB DROP
- (F) 8' BITUMINOUS TRAIL

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



MATCH LINE 216+00

MATCH LINE 228+00



NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-614-048\Plan\002614048\_PP4\_P2.dgn 02/09/2022 3:02:09 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: JORGE R. BERNAL DELGADO

SIGNATURE: *[Signature]*

DATE: 02-14-22 LICENSE NO. 57216

DRAWN BY: BTU DATE: 02/07/22

DESIGN BY: JRB DATE: 02/07/22


CHECKED BY: NJD DATE: 02/07/22



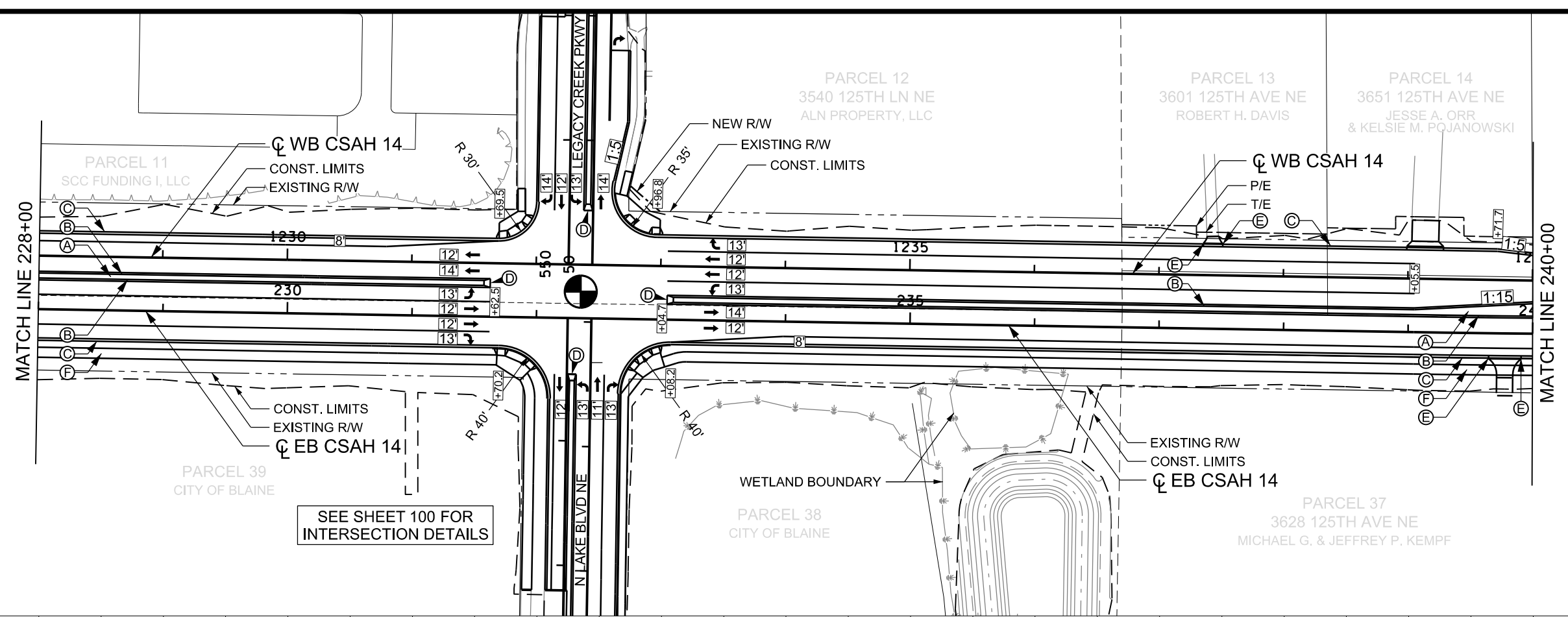
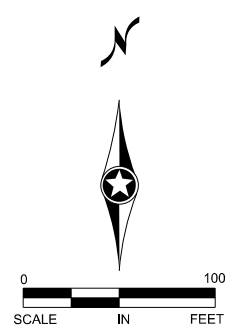
SAP 002-614-048  
SAP 106-020-037

CONSTRUCTION PLAN  
CSAH 14  
STA 216+00 TO 228+00  
Sheet 89 of 303 Sheets

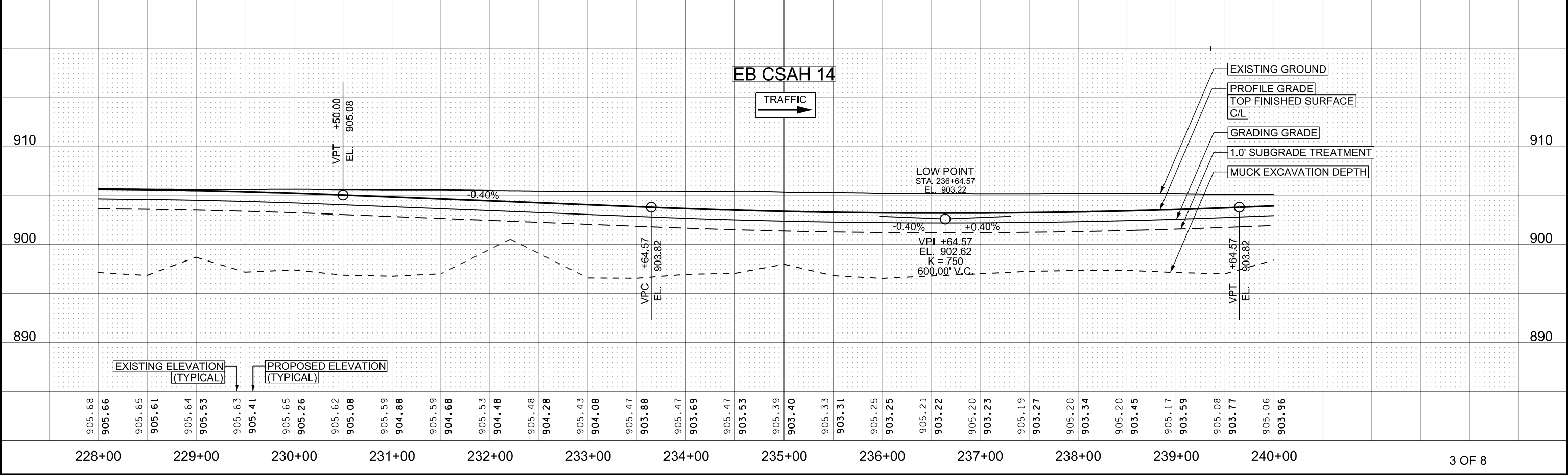
**CONSTRUCTION NOTES**

- (A) CONCRETE MEDIAN
- (B) B418 MOD. CURB & GUTTER
- (C) B424 CURB & GUTTER
- (D) CONCRETE APPROACH NOSE STD. PLATE 7113
- (E) CURB DROP
- (F) 8' BITUMINOUS TRAIL
-  SIGNAL SYSTEM B SEE SIGNAL PLANS

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



SEE SHEET 100 FOR INTERSECTION DETAILS



NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-614-048\Plan\002614048\_PP4\_P3.dgn 02/09/2022 3:02:12 PM

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

PRINT NAME: JORGE R. BERNAL DELGADO

SIGNATURE: *[Signature]*

DATE: 02-14-22 LICENSE NO. 57216

DRAWN BY: BTU DATE: 02/07/22

DESIGN BY: JRB DATE: 02/07/22

CHECKED BY: NJD DATE: 02/07/22



SAP 002-614-048  
SAP 106-020-037

**CONSTRUCTION PLAN**  
CSAH 14  
STA 228+00 TO 240+00  
Sheet 90 of 303 Sheets

CONSTRUCTION NOTES

- (A) CONCRETE MEDIAN
- (B) B418 MOD. CURB & GUTTER
- (C) B424 CURB & GUTTER
- (E) CURB DROP
- (F) 8' BITUMINOUS TRAIL

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



MATCH LINE 240+00

MATCH LINE 252+00

PARCEL 15  
3663 125TH AVE NE  
JENNIFER M. & WILLIAM C. JACOBSON

PARCEL 16  
3737 125TH AVE NE  
RICHARD V. HAMMER II  
& JOY E. HAMMER

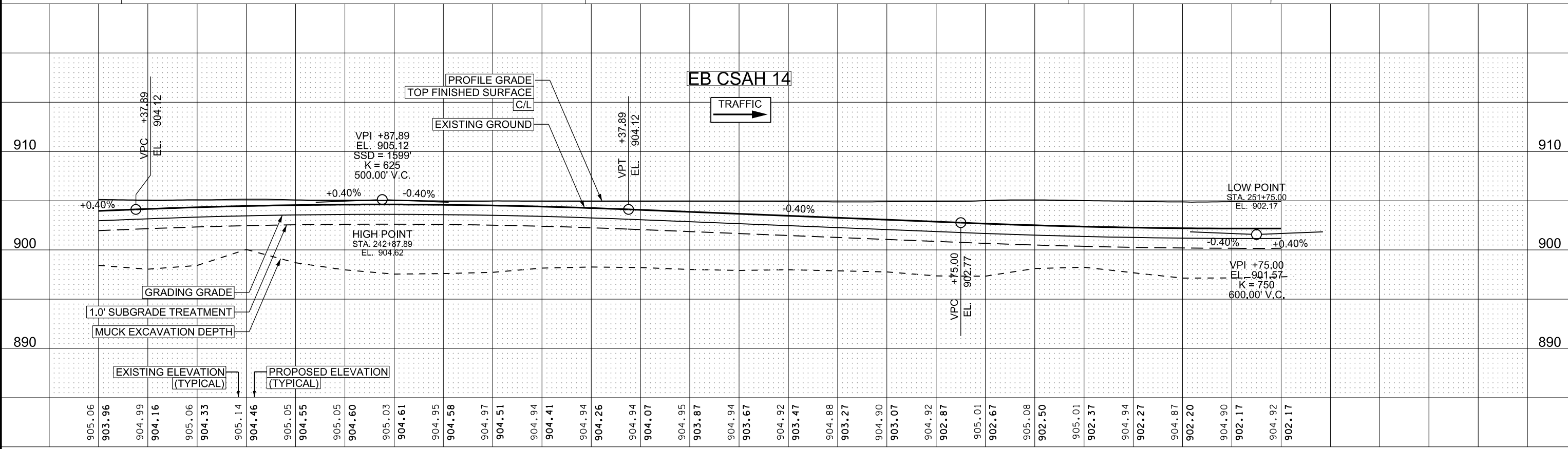
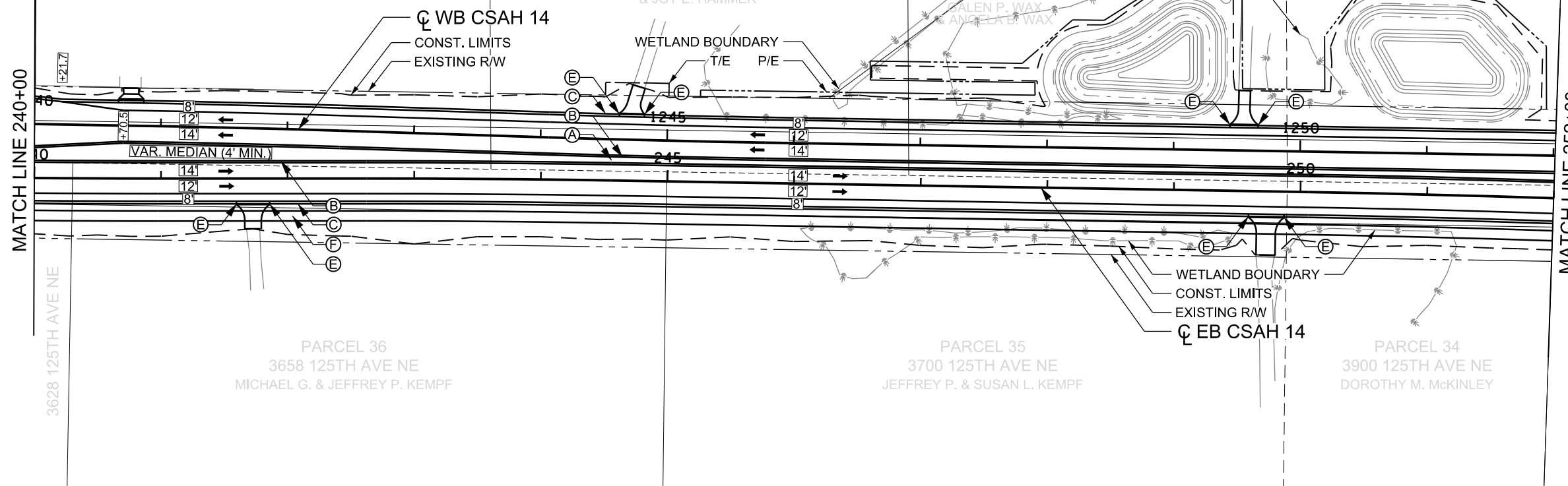
PARCEL 17  
3775 125TH AVE NE  
PALEN P. WAX  
& ANGELA B. WAX

PARCEL 18  
3801 125TH AVE NE  
JOSEPH & SHARON BORMET

PARCEL 36  
3658 125TH AVE NE  
MICHAEL G. & JEFFREY P. KEMPF

PARCEL 35  
3700 125TH AVE NE  
JEFFREY P. & SUSAN L. KEMPF

PARCEL 34  
3900 125TH AVE NE  
DOROTHY M. McKINLEY



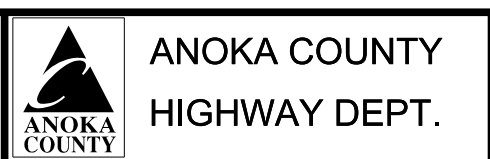
240+00 241+00 242+00 243+00 244+00 245+00 246+00 247+00 248+00 249+00 250+00 251+00 252+00

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-614-048\Plan\002614048\_PP4\_P4.dgn 02/09/2022 3:02:15 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: JORGE R. BERNAL DELGADO  
 SIGNATURE: *[Signature]*  
 DATE: 02-14-22 LICENSE NO. 57216

DRAWN BY: BTU DATE: 02/07/22  
 DESIGN BY: JRB DATE: 02/07/22  
 CHECKED BY: NJD DATE: 02/07/22



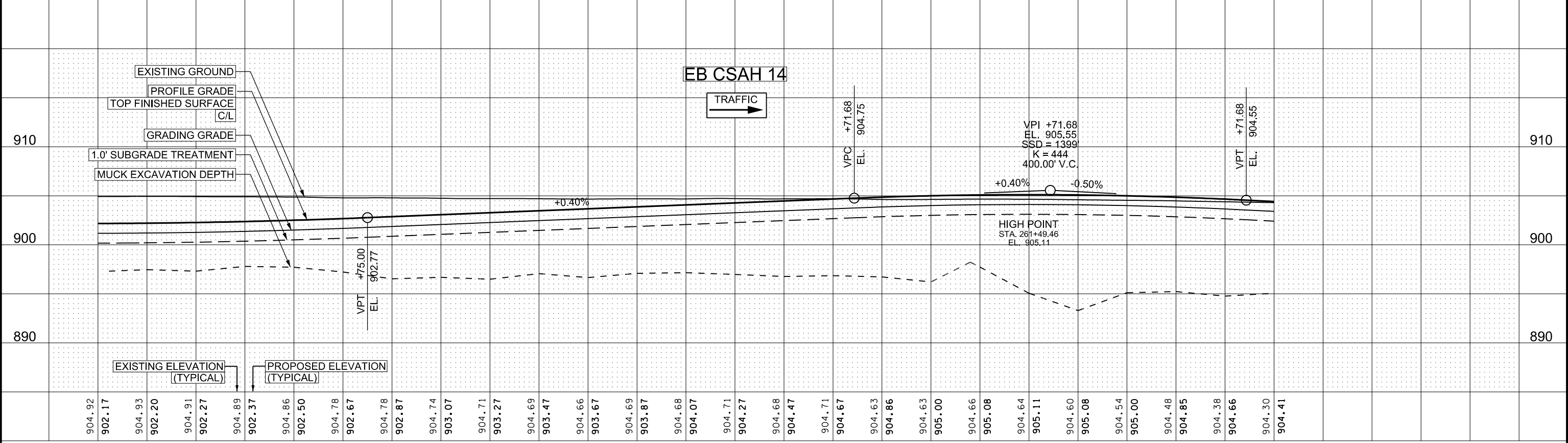
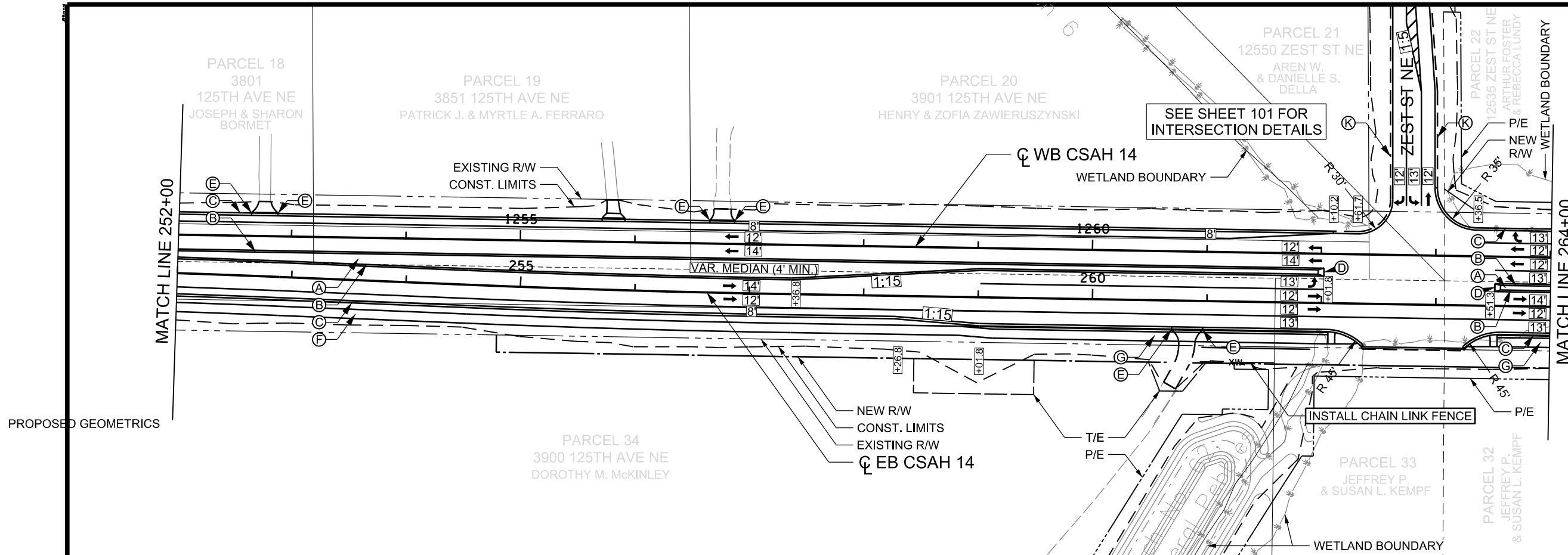
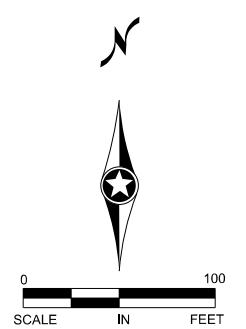
SAP 002-614-048  
 SAP 106-020-037

CONSTRUCTION PLAN  
 CSAH 14  
 STA 240+00 TO 252+00  
 Sheet 91 of 303 Sheets

**CONSTRUCTION NOTES**

- (A) CONCRETE MEDIAN
- (B) B418 MOD. CURB & GUTTER
- (C) B424 CURB & GUTTER
- (D) CONCRETE APPROACH NOSE STD. PLATE 7113
- (E) CURB DROP
- (F) 8' BITUMINOUS TRAIL
- (G) 10' BITUMINOUS TRAIL
- (K) 2' AGGREGATE SHOULDER

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



904.92	904.17	904.93	904.20	904.91	904.27	904.89	904.37	904.86	904.50	904.78	904.67	904.78	904.87	904.74	903.07	904.71	903.27	904.69	903.47	904.66	903.67	904.69	903.87	904.68	904.07	904.71	904.27	904.68	904.47	904.71	904.67	904.63	904.86	904.63	905.00	904.66	905.08	904.64	905.11	904.60	905.08	904.54	905.00	904.48	904.85	904.38	904.66	904.30	904.41
252+00	253+00	253+00	253+00	253+00	253+00	253+00	254+00	254+00	254+00	254+00	254+00	254+00	255+00	255+00	255+00	255+00	256+00	256+00	256+00	256+00	257+00	257+00	257+00	257+00	258+00	258+00	258+00	259+00	259+00	259+00	259+00	260+00	260+00	260+00	260+00	261+00	261+00	261+00	261+00	262+00	262+00	262+00	262+00	263+00	263+00	263+00	264+00	264+00	264+00

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: JORGE R. BEÑAL DELGADO

SIGNATURE: *[Signature]*

DATE: 02-14-22 LICENSE NO. 57216

DRAWN BY: BTU DATE: 02/07/22

DESIGN BY: JRB DATE: 02/07/22

CHECKED BY: NJD DATE: 02/07/22



SAP 002-614-048  
SAP 106-020-037

CONSTRUCTION PLAN  
CSAH 14  
STA 252+00 TO 264+00  
Sheet 92 of 303 Sheets

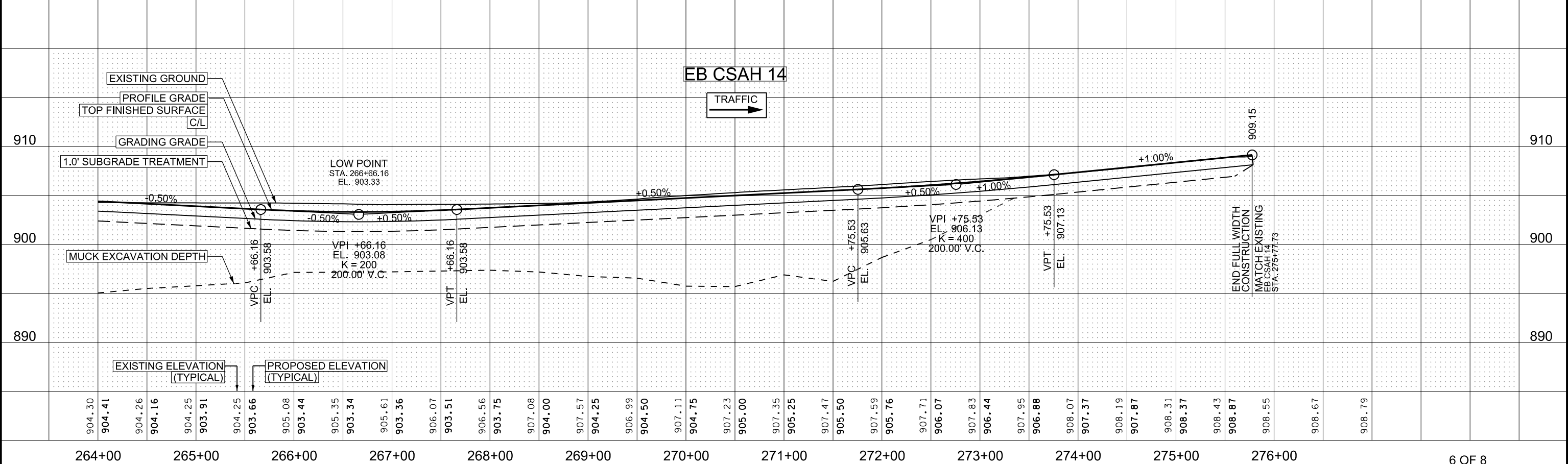
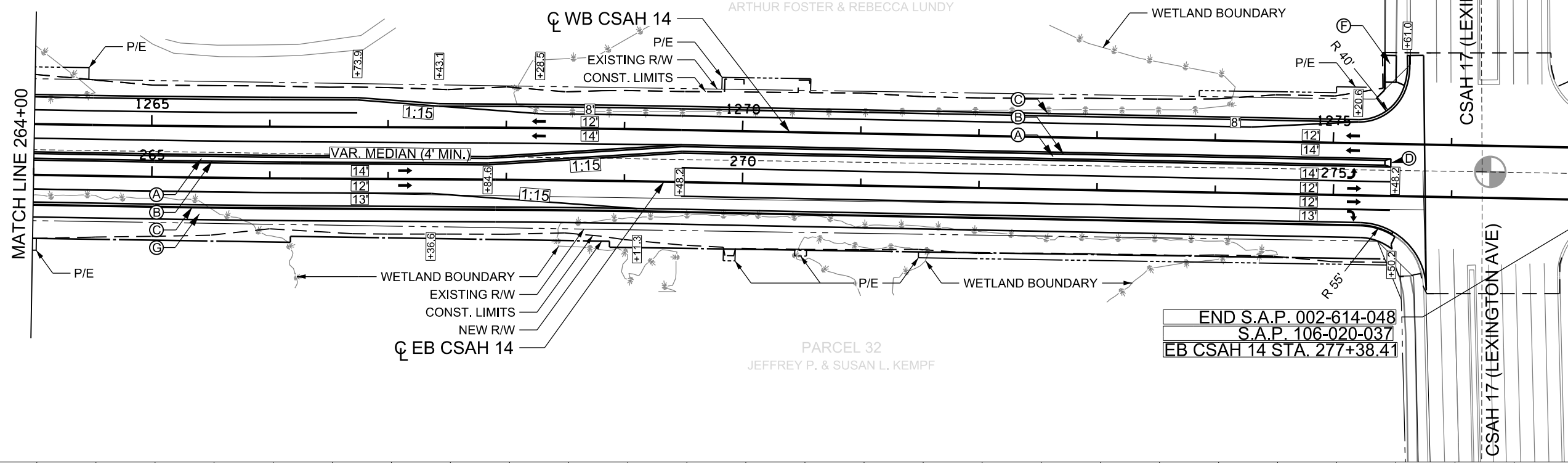
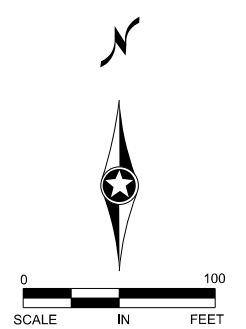
NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-614-048\Plan\002614048\_PP4\_P5.dgn 02/09/2022 3:02:23 PM

**CONSTRUCTION NOTES**

- (A) CONCRETE MEDIAN
- (B) B418 MOD. CURB & GUTTER
- (C) B424 CURB & GUTTER
- (D) CONCRETE APPROACH NOSE STD. PLATE 7113
- (F) 8' BITUMINOUS TRAIL
- (G) 10' BITUMINOUS TRAIL
- (SIGNAL SYSTEM C) SEE SIGNAL PLANS FOR REVISIONS

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



264+00    265+00    266+00    267+00    268+00    269+00    270+00    271+00    272+00    273+00    274+00    275+00    276+00    6 OF 8

1	02/16/2022	BTU	JRB	UPDATED LEADER
NO	DATE	BY	CKD	APPR
NAME: P:\002-614-048\Plan\002614048_PP4_P6.dgn				10:48:49 AM

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.  
 PRINT NAME: JORGE R. BERNAL DELGADO  
 SIGNATURE: *[Signature]*  
 DATE: 02-23-22    LICENSE NO. 57216

DRAWN BY: BTU    DATE: 02/10/22  
 DESIGN BY: JRB    DATE: 02/10/22  
 CHECKED BY: NJD    DATE: 02/10/22



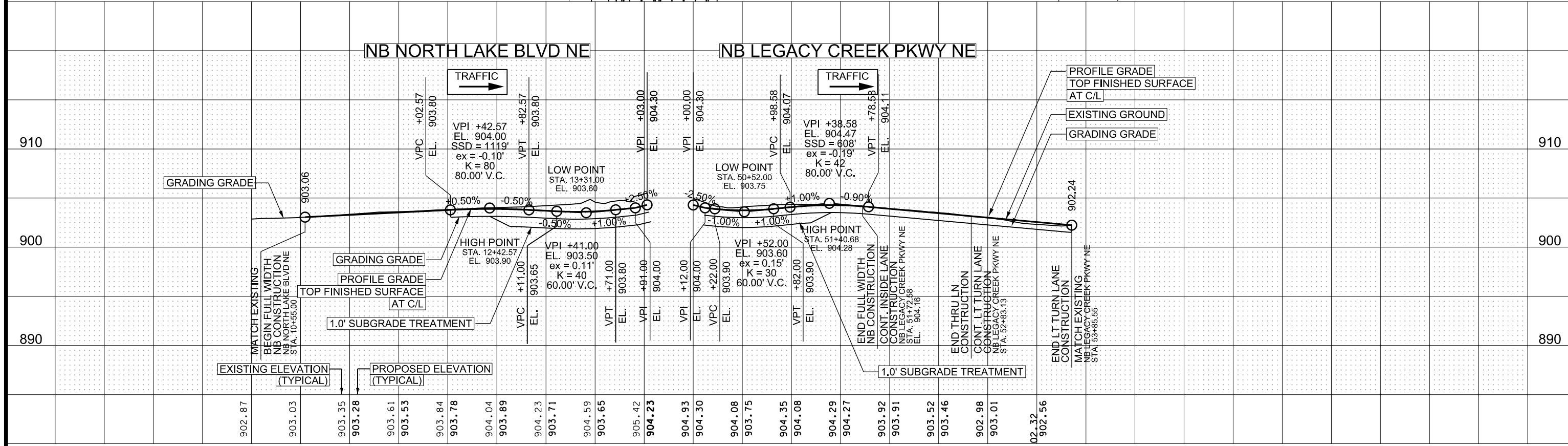
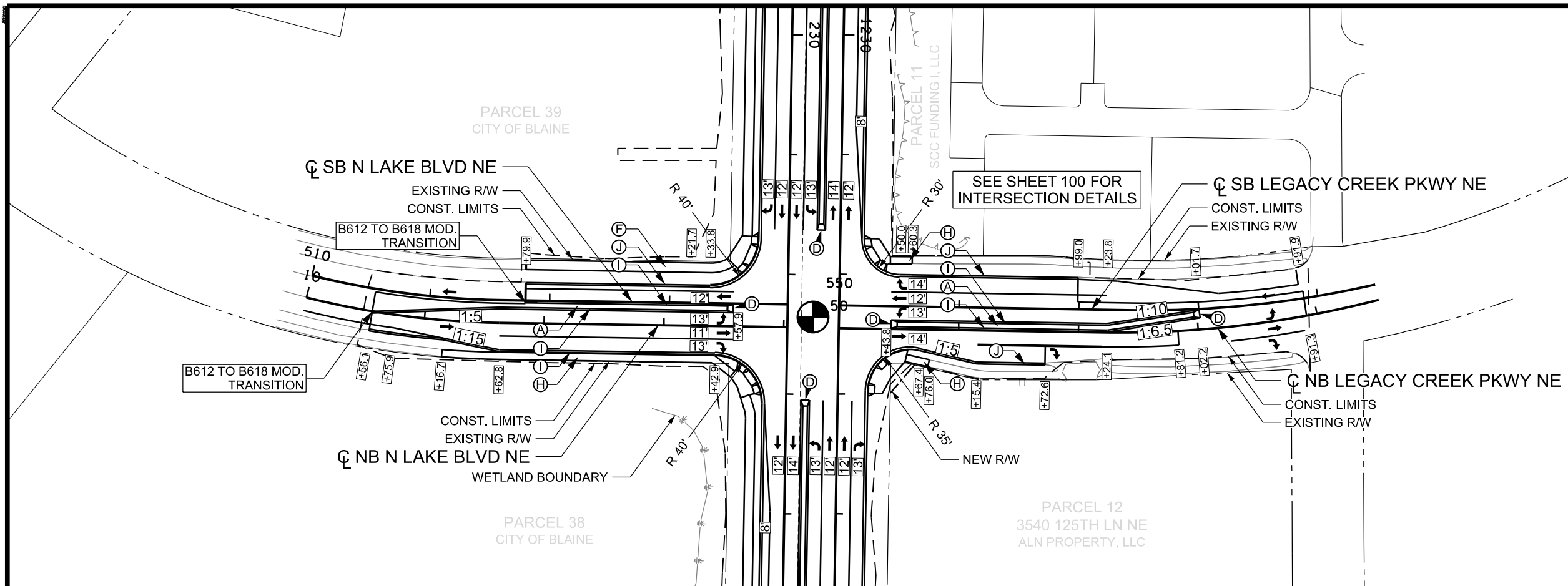
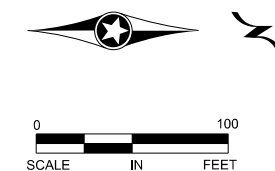
SAP 002-614-048  
 SAP 106-020-037

**CONSTRUCTION PLAN**  
 CSAH 14  
 STA 264+00 TO 277+38.41  
 Sheet 93 of 303 Sheets

CONSTRUCTION NOTES

- (A) CONCRETE MEDIAN
- (D) CONCRETE APPROACH NOSE STD. PLATE 7113
- (F) 8' BITUMINOUS TRAIL
- (H) 6' CONCRETE SIDEWALK
- (I) B618 MOD. CURB & GUTTER
- (J) B618 CURB & GUTTER

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



902.87	903.03	903.35	903.28	903.61	903.53	903.84	903.78	904.04	903.89	904.23	903.71	904.59	903.65	905.42	904.23	904.93	904.30	904.08	903.75	904.35	904.08	904.29	904.27	903.92	903.91	903.52	903.46	902.98	903.01	902.32	902.56
10+00	11+00	12+00	13+00	14+00	50+00	51+00	52+00	53+00	54+00																						

NO	DATE	BY	CKD	APPR	REVISION
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I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.  
 PRINT NAME: JORGE R. BERNAL DELGADO  
 SIGNATURE: *[Signature]*  
 DATE: 02-14-22 LICENSE NO. 57216

DRAWN BY: BTU DATE: 02/10/22  
 DESIGN BY: JRB DATE: 02/10/22  
 CHECKED BY: NJD DATE: 02/10/22



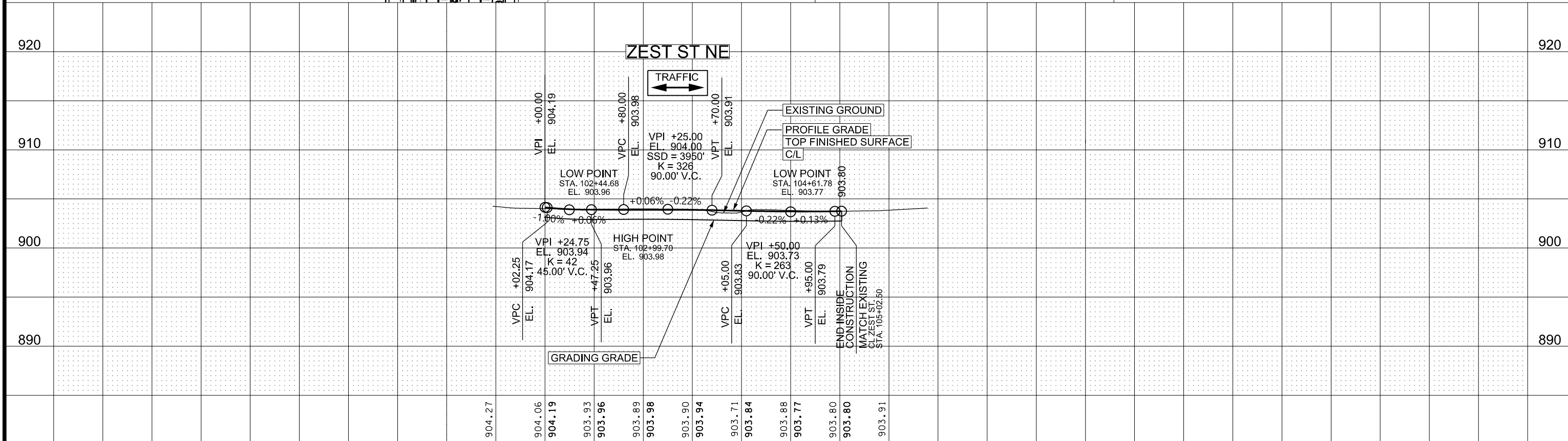
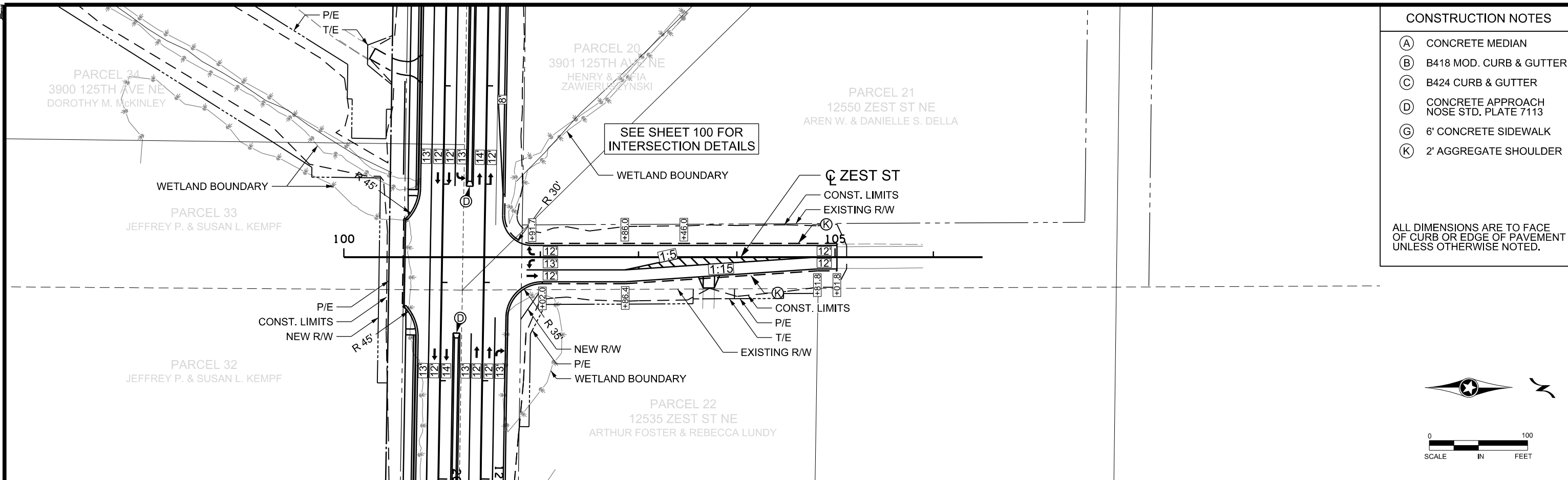
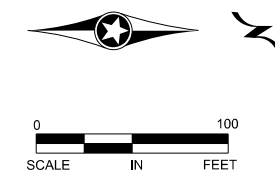
SAP 002-614-048  
 SAP 106-020-037

CONSTRUCTION PLAN  
 NB NORTH LAKE BLVD NE  
 & NB LEGACY CREEK PKWY NE  
 Sheet 94 of 303 Sheets

CONSTRUCTION NOTES

- (A) CONCRETE MEDIAN
- (B) B418 MOD. CURB & GUTTER
- (C) B424 CURB & GUTTER
- (D) CONCRETE APPROACH NOSE STD. PLATE 7113
- (G) 6' CONCRETE SIDEWALK
- (K) 2' AGGREGATE SHOULDER

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



102+00      103+00      104+00      105+00

8 OF 8

NO	DATE	BY	CKD	APPR	REVISION

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

PRINT NAME: JORGE R. BERNAL DELGADO

SIGNATURE: *[Signature]*

DATE: 02-14-22      LICENSE NO. 57216

DRAWN BY: BTU      DATE: 02/07/22

DESIGN BY: JRB      DATE: 02/07/22

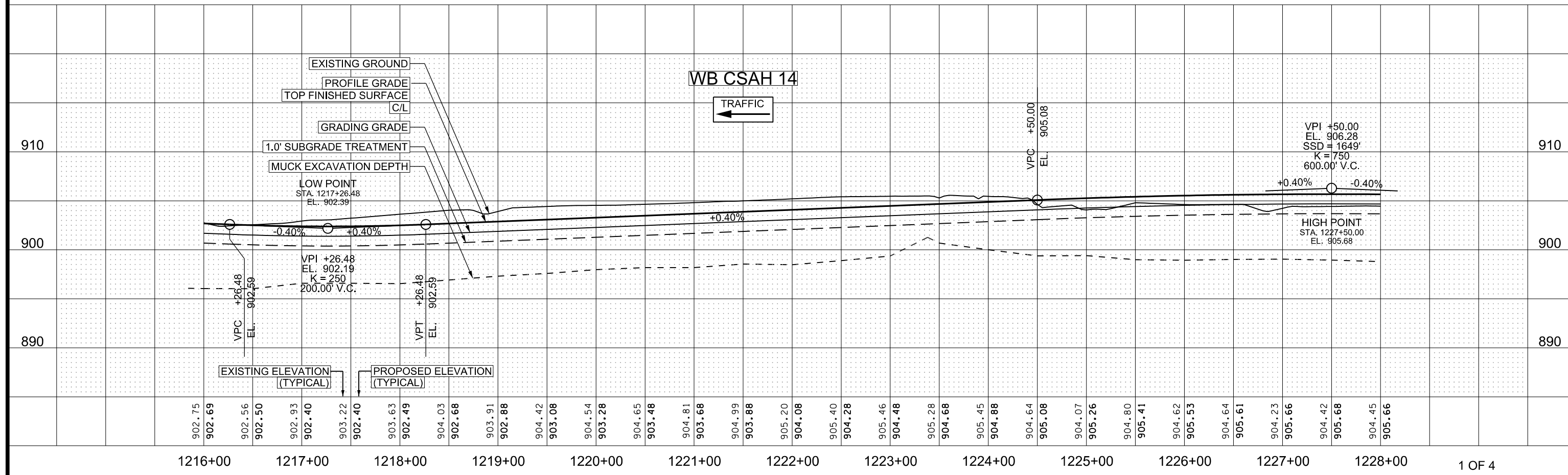
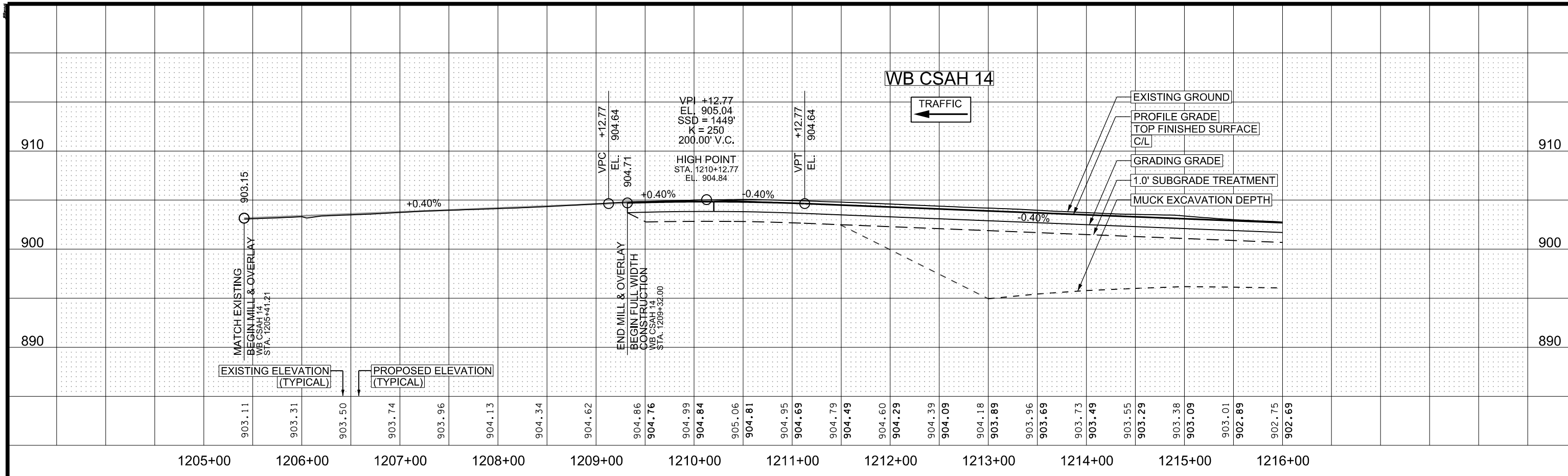
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SAP 002-614-048  
SAP 106-020-037

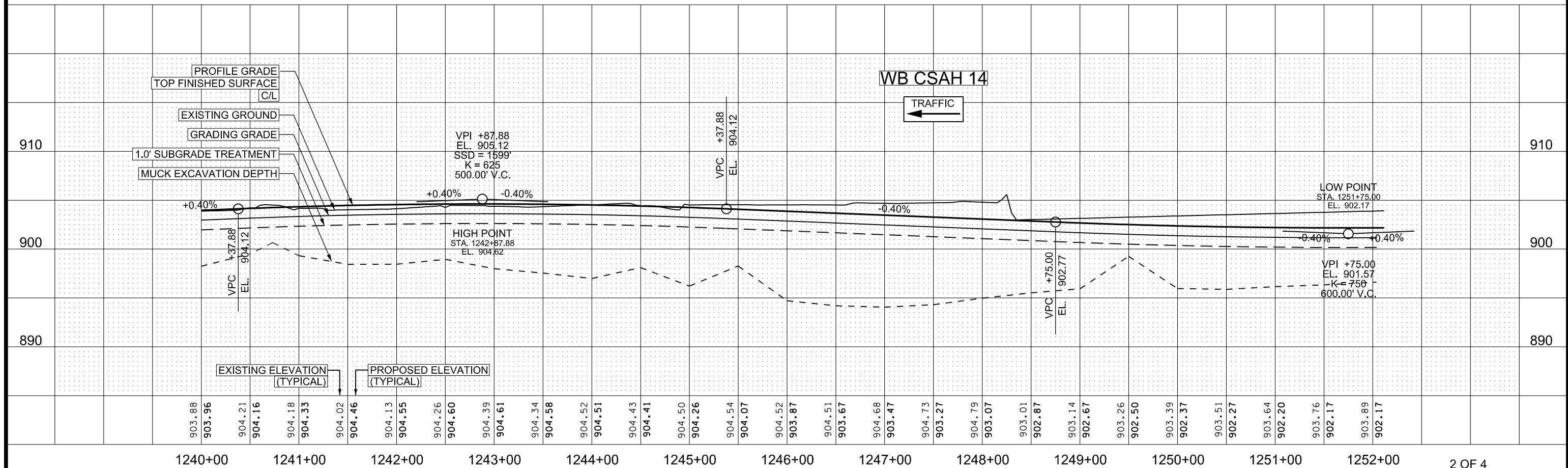
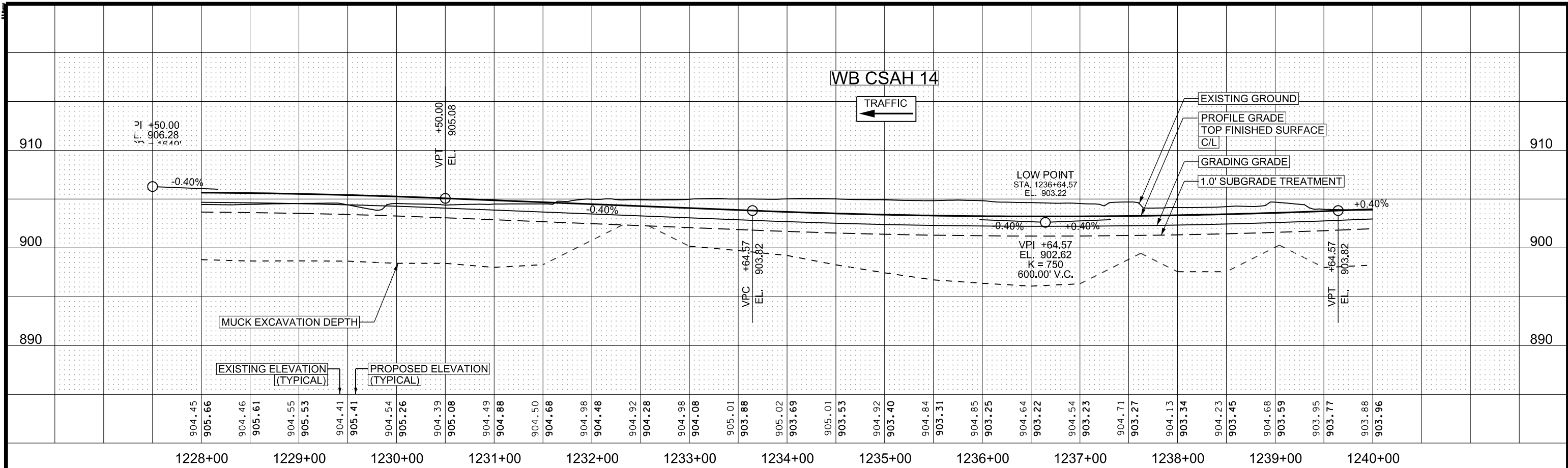
CONSTRUCTION PLAN  
ZEST ST NE

Sheet 95 of 303 Sheets



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NO	DATE	BY	CKD	APPR	REVISION												





1	01/16/2022	BTU	JRB	ADDED PROFILE CURVE INFORMATION	
NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-614-048\Plan\002614048\_PR4\_P2.dgn 02/16/2022 9:53:50 AM

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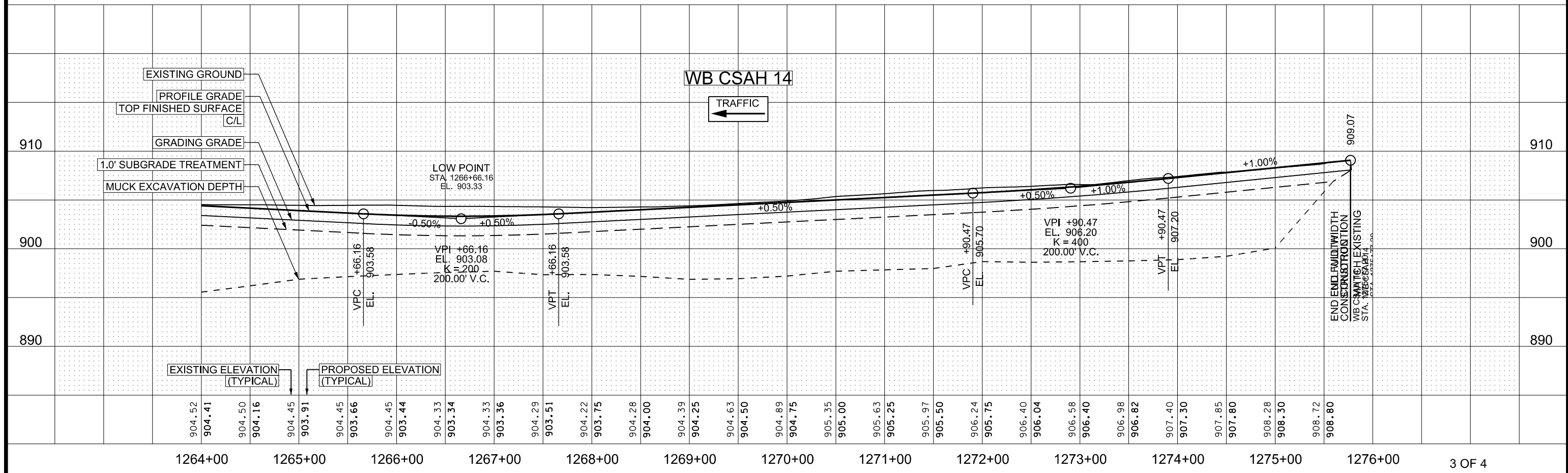
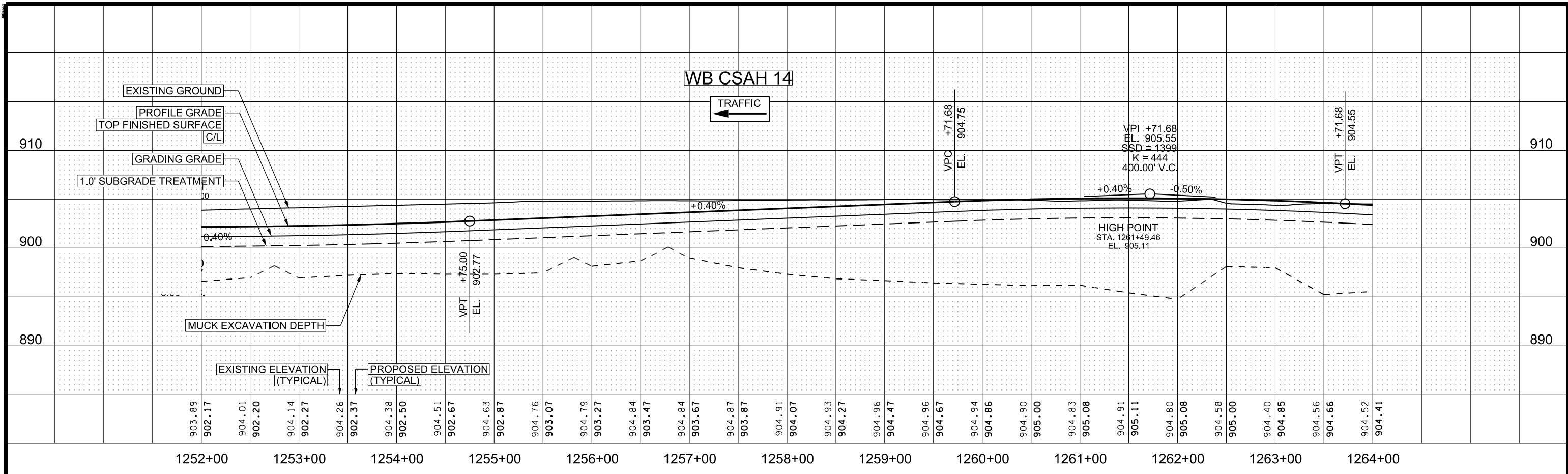
PRINT NAME: JORGE R. BERNAL DELGADO  
SIGNATURE: *[Signature]*  
DATE: 02-23-22 LICENSE NO. 57216

DRAWN BY: BTU DATE: 02/10/22  
DESIGN BY: JRB DATE: 02/10/22  
CHECKED BY: NJD DATE: 02/10/22



SAP 002-614-048  
SAP 106-020-037

PROFILE  
WB CSAH 14  
STA 1228+00 TO 1252+00  
Sheet 97 of 303 Sheets



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NO	DATE	BY	CKD	APPR	REVISION											

SB NORTH LAKE BLVD NE

SB LEGACY CREEK PKWY NE



930

920

910

900

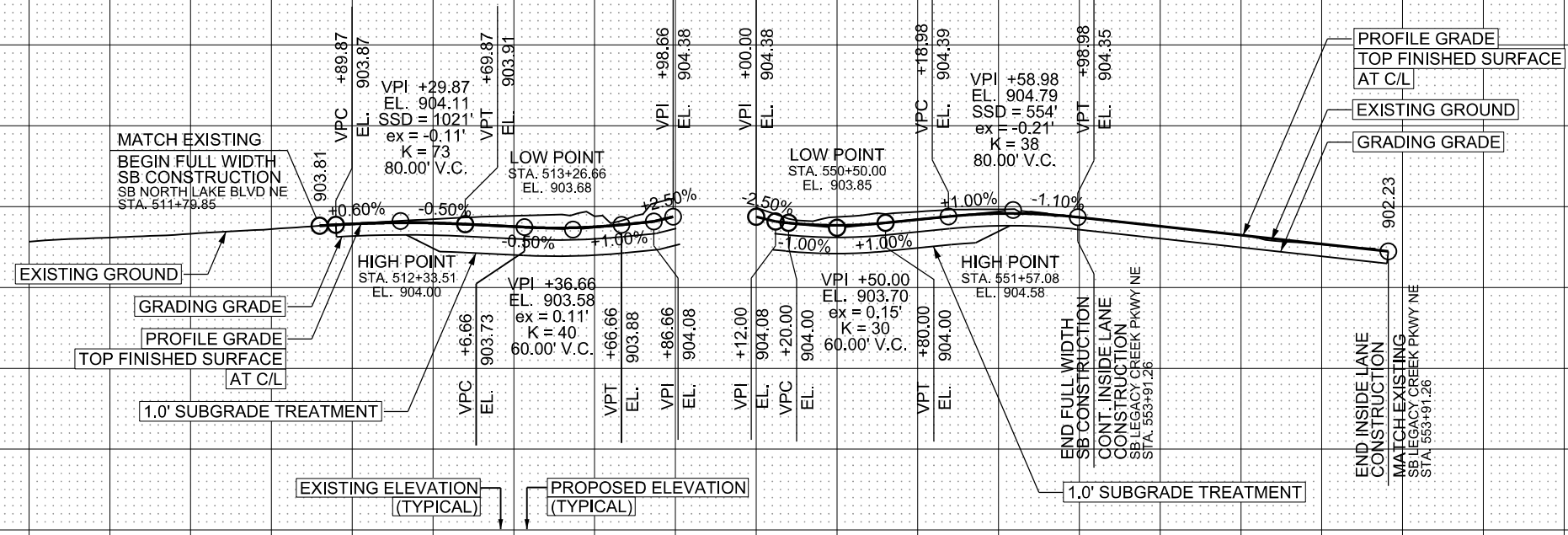
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510+00 511+00 512+00 513+00 514+00 550+00 551+00 552+00 553+00 554+00 555+00



NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-614-048\Plan\002614048\_PR4\_P4.dgn 02/09/2022 3:02:45 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: JORGE R. BERNAL DELGADO

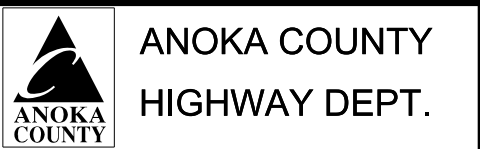
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DATE: 02-14-22 LICENSE NO. 57216

DRAWN BY: BTU DATE: 02/07/22

DESIGN BY: JRB DATE: 02/07/22

CHECKED BY: NJD DATE: 02/07/22



SAP 002-614-048  
SAP 106-020-037

LEGEND

- EXISTING SIGNAL POLE
- PROPOSED SIGNAL POLE
- EXISTING PEDESTAL POLE
- PROPOSED PEDESTAL POLE
- PROPOSED SIGNAL CABINET
- CONTROL PTS AT GUTTER FLOW LINE
- TRUNCATED DOMES (STANDARD PLATE 7038)
- CATCH BASIN
- MANHOLE
- CURB HEIGHT
- SAWCUT
- PROPOSED LANE SLOPE (%)
- EXISTING SPOT ELEVATION
- PROPOSED SPOT ELEVATION
- LANDING AREA - 4' X 4' MIN. DIMENSIONS AND MAX 2.0% SLOPE IN ALL DIRECTIONS
- 4" CONCRETE
- INDICATES PEDESTRIAN RAMP - SLOPE SHALL BE BETWEEN 5.0% MINIMUM AND 8.3% MAXIMUM IN THE DIRECTION SHOWN AND CROSS SLOPE SHALL NOT EXCEED 2.0%
- INDICATES PEDESTRIAN RAMP - SLOPE SHALL BE GREATER THAN 2.0% AND LESS THAN 5.0% IN THE DIRECTION SHOWN AND CROSS SLOPE SHALL NOT EXCEED 2.0%
- DRAINAGE FLOW ARROW
- 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.

LEGACY CREEK PKWY ( N.E. QUAD )

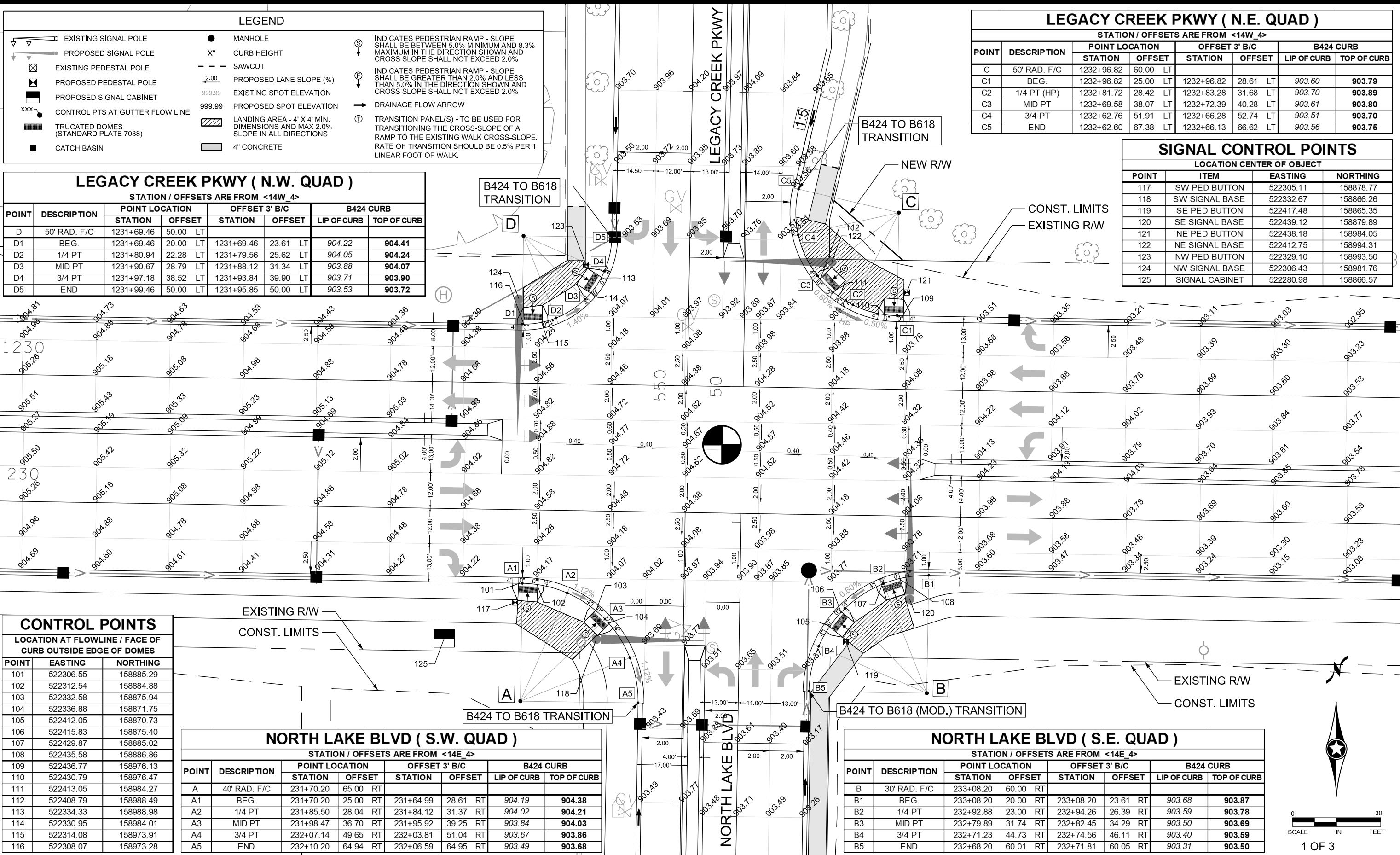
POINT	DESCRIPTION	POINT LOCATION		OFFSET 3' B/C		B424 CURB	
		STATION	OFFSET	STATION	OFFSET	LIP OF CURB	TOP OF CURB
C	50' RAD. F/C	1232+96.82	60.00 LT				
C1	BEG.	1232+96.82	25.00 LT	1232+96.82	28.61 LT	903.60	903.79
C2	1/4 PT (HP)	1232+81.72	28.42 LT	1232+83.28	31.68 LT	903.70	903.89
C3	MID PT	1232+69.58	38.07 LT	1232+72.39	40.28 LT	903.61	903.80
C4	3/4 PT	1232+62.76	51.91 LT	1232+66.28	52.74 LT	903.51	903.70
C5	END	1232+62.60	67.38 LT	1232+66.13	66.62 LT	903.56	903.75

SIGNAL CONTROL POINTS

LOCATION CENTER OF OBJECT			
POINT	ITEM	EASTING	NORTHING
117	SW PED BUTTON	522305.11	158878.77
118	SW SIGNAL BASE	522332.67	158866.26
119	SE PED BUTTON	522417.48	158865.35
120	SE SIGNAL BASE	522439.12	158879.89
121	NE PED BUTTON	522438.18	158984.05
122	NE SIGNAL BASE	522412.75	158994.31
123	NW PED BUTTON	522329.10	158993.50
124	NW SIGNAL BASE	522306.43	158981.76
125	SIGNAL CABINET	522280.98	158866.57

LEGACY CREEK PKWY ( N.W. QUAD )

POINT	DESCRIPTION	POINT LOCATION		OFFSET 3' B/C		B424 CURB	
		STATION	OFFSET	STATION	OFFSET	LIP OF CURB	TOP OF CURB
D	50' RAD. F/C	1231+69.46	50.00 LT				
D1	BEG.	1231+69.46	20.00 LT	1231+69.46	23.61 LT	904.22	904.41
D2	1/4 PT	1231+80.94	22.28 LT	1231+79.56	25.62 LT	904.05	904.24
D3	MID PT	1231+90.67	28.79 LT	1231+88.12	31.34 LT	903.88	904.07
D4	3/4 PT	1231+97.18	38.52 LT	1231+93.84	39.90 LT	903.71	903.90
D5	END	1231+99.46	50.00 LT	1231+95.85	50.00 LT	903.53	903.72



**CONTROL POINTS**  
LOCATION AT FLOWLINE / FACE OF CURB OUTSIDE EDGE OF DOMES

POINT	EASTING	NORTHING
101	522306.55	158885.29
102	522312.54	158884.88
103	522332.58	158875.94
104	522336.88	158871.75
105	522412.05	158870.73
106	522415.83	158875.40
107	522429.87	158885.02
108	522435.58	158886.86
109	522436.77	158976.13
110	522430.79	158976.47
111	522413.05	158984.27
112	522408.79	158988.49
113	522334.33	158988.98
114	522330.95	158984.01
115	522314.08	158973.91
116	522308.07	158973.28

**NORTH LAKE BLVD ( S.W. QUAD )**  
STATION / OFFSETS ARE FROM <14E 4>

POINT	DESCRIPTION	POINT LOCATION		OFFSET 3' B/C		B424 CURB	
		STATION	OFFSET	STATION	OFFSET	LIP OF CURB	TOP OF CURB
A	40' RAD. F/C	231+70.20	65.00 RT				
A1	BEG.	231+70.20	25.00 RT	231+64.99	28.61 RT	904.19	904.38
A2	1/4 PT	231+85.50	28.04 RT	231+84.12	31.37 RT	904.02	904.21
A3	MID PT	231+98.47	36.70 RT	231+95.92	39.25 RT	903.84	904.03
A4	3/4 PT	232+07.14	49.65 RT	232+03.81	51.04 RT	903.67	903.86
A5	END	232+10.20	64.94 RT	232+06.59	64.95 RT	903.49	903.68

**NORTH LAKE BLVD ( S.E. QUAD )**  
STATION / OFFSETS ARE FROM <14E 4>

POINT	DESCRIPTION	POINT LOCATION		OFFSET 3' B/C		B424 CURB	
		STATION	OFFSET	STATION	OFFSET	LIP OF CURB	TOP OF CURB
B	30' RAD. F/C	233+08.20	60.00 RT				
B1	BEG.	233+08.20	20.00 RT	233+08.20	23.61 RT	903.68	903.87
B2	1/4 PT	232+92.88	23.00 RT	232+94.26	26.39 RT	903.59	903.78
B3	MID PT	232+79.89	31.74 RT	232+82.45	34.29 RT	903.50	903.69
B4	3/4 PT	232+71.23	44.73 RT	232+74.56	46.11 RT	903.40	903.59
B5	END	232+68.20	60.01 RT	232+71.81	60.05 RT	903.31	903.50

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: JORGE R. BERNAL DELGADO  
 SIGNATURE: *[Signature]*  
 DATE: 02-14-22 LICENSE NO. 57216

DRAWN BY: BTU DATE: 02/07/22  
 DESIGN BY: JRB DATE: 02/07/22  
 CHECKED BY: NJD DATE: 02/07/22

**ANOKA COUNTY**  
**HIGHWAY DEPT.**

SAP 002-614-048  
 SAP 106-020-037

INTERSECTION DETAILS  
 NORTH LAKE BLVD / LEGACY CREEK PKWY  
 Sheet 100 of 303 Sheets

### LEGEND

	EXISTING SIGNAL POLE		MANHOLE		INDICATES PEDESTRIAN RAMP - SLOPE SHALL BE BETWEEN 5.0% MINIMUM AND 8.3% MAXIMUM IN THE DIRECTION SHOWN AND CROSS SLOPE SHALL NOT EXCEED 2.0%
	PROPOSED SIGNAL POLE		CURB HEIGHT		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%
	EXISTING PEDESTAL POLE		SAWCUT		DRAINAGE FLOW ARROW
	PROPOSED PEDESTAL POLE		PROPOSED LANE SLOPE (%)		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.
	PROPOSED SIGNAL CABINET		EXISTING SPOT ELEVATION		
	CONTROL PTS AT GUTTER FLOW LINE		PROPOSED SPOT ELEVATION		
	TRUNCATED DOMES (STANDARD PLATE 7038)		LANDING AREA - 4' X 4' MIN. DIMENSIONS AND MAX 2.0% SLOPE IN ALL DIRECTIONS		
	CATCH BASIN		4" CONCRETE		

### CONTROL POINTS

LOCATION AT FLOWLINE / FACE OF CURB OUTSIDE EDGE OF DOMES

POINT	EASTING	NORTHING
131	525349.42	158828.70
132	525366.49	158821.32
133	525466.83	158819.01
134	525483.98	158826.24

### ZEST STREET (N.W. QUAD)

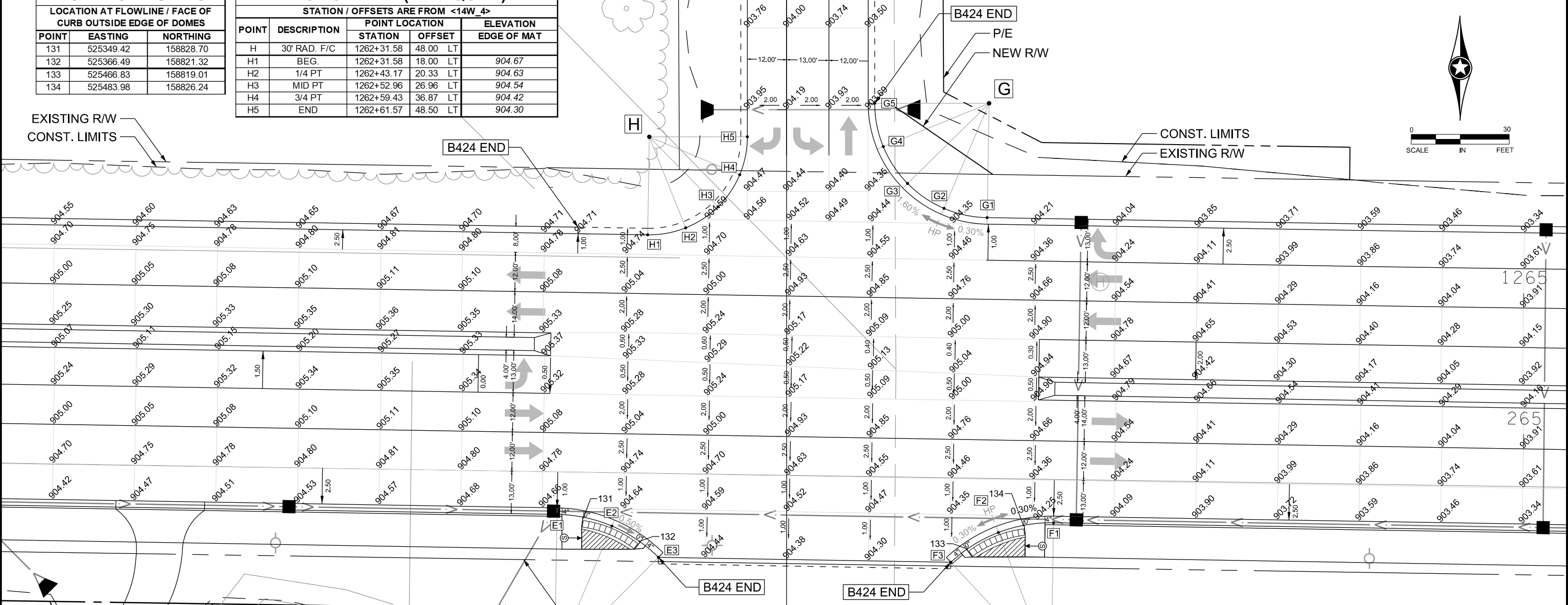
STATION / OFFSETS ARE FROM <14W\_4>

POINT	DESCRIPTION	POINT LOCATION		ELEVATION
		STATION	OFFSET	
H	30' RAD. F/C	1262+31.58	48.00 LT	
H1	BEG.	1262+31.58	18.00 LT	904.67
H2	1/4 PT	1262+43.17	20.33 LT	904.63
H3	MID PT	1262+52.96	26.96 LT	904.54
H4	3/4 PT	1262+59.43	36.87 LT	904.42
H5	END	1262+61.57	48.50 LT	904.30

### ZEST STREET (N.E. QUAD)

STATION / OFFSETS ARE FROM <14W\_4>

POINT	DESCRIPTION	POINT LOCATION		OFFSET 3' B/C		B424 CURB	
		STATION	OFFSET	STATION	OFFSET	LIP OF CURB	TOP OF CURB
G	30' RAD. F/C	1263+35.39	60.00 LT				
G1	BEG.	1263+35.39	25.00 LT	1263+35.39	28.61 LT	904.31	904.50
G2	1/4 PT (HP)	1263+22.13	27.61 LT	1263+23.50	30.94 LT	904.35	904.54
G3	MID PT	1263+10.85	35.05 LT	1263+13.38	37.62 LT	904.12	904.31
G4	3/4 PT	1263+03.22	46.20 LT	1263+06.54	47.63 LT	903.89	904.08
G5	END	1263+00.39	59.42 LT	1263+04.00	59.48 LT	903.67	903.86



### ZEST STREET (S.W. QUAD)

STATION / OFFSETS ARE FROM <14E\_4>

POINT	DESCRIPTION	POINT LOCATION		OFFSET 3' B/C		B424 CURB	
		STATION	OFFSET	STATION	OFFSET	LIP OF CURB	TOP OF CURB
E	45' RAD. F/C	262+04.55	70.00 RT				
E1	BEG.	262+04.55	25.00 RT	262+04.55	28.00 RT	904.66	904.85
E2	MID PT	262+21.40	28.27 RT	262+20.27	31.05 RT	904.57	904.76
E3	END	262+35.79	37.61 RT	262+33.71	39.77 RT	904.48	904.67

### ZEST STREET (S.E. QUAD)

STATION / OFFSETS ARE FROM <14E\_4>

POINT	DESCRIPTION	POINT LOCATION		OFFSET 3' B/C		B424 CURB	
		STATION	OFFSET	STATION	OFFSET	LIP OF CURB	TOP OF CURB
F	45' RAD. F/C	263+56.57	70.00 RT				
F1	BEG.	263+56.57	25.00 RT	263+27.84	40.21 RT	904.22	904.41
F2	MID PT (HP)	263+39.73	28.27 RT	263+41.08	31.62 RT	904.27	904.46
F3	END	263+23.94	36.17 RT	263+56.57	28.61 RT	904.22	904.41

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-614-048\Plan\002614048\_INT4\_P2.dgn      02/09/2022      3:02:53 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: JORGE R. BERNAL DELGADO

SIGNATURE:

DATE: 02-14-22      LICENSE NO. 57216

DRAWN BY: BTU      DATE: 02/07/22

DESIGN BY: JRB      DATE: 02/07/22

CHECKED BY: NJD      DATE: 02/07/22

**ANOKA COUNTY**  
**HIGHWAY DEPT.**

SAP 002-614-048  
SAP 106-020-037

**LEGEND**

	EXISTING SIGNAL POLE		MANHOLE		INDICATES PEDESTRIAN RAMP - SLOPE SHALL BE BETWEEN 5.0% MINIMUM AND 8.3% MAXIMUM IN THE DIRECTION SHOWN AND CROSS SLOPE SHALL NOT EXCEED 2.0%
	PROPOSED SIGNAL POLE		X" CURB HEIGHT		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%
	EXISTING PEDESTAL POLE		SAWCUT		DRAINAGE FLOW ARROW
	PROPOSED PEDESTAL POLE		2.00 PROPOSED LANE SLOPE (%)		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.
	PROPOSED SIGNAL CABINET		999.99 EXISTING SPOT ELEVATION		
	CONTROL PTS AT GUTTER FLOW LINE		999.99 PROPOSED SPOT ELEVATION		
	TRUNCATED DOMES (STANDARD PLATE 7038)		LANDING AREA - 4' X 4' MIN. DIMENSIONS AND MAX 2.0% SLOPE IN ALL DIRECTIONS		
	CATCH BASIN		4" CONCRETE		

**LEXINGTON AVE (CSAH 17) (N.W. QUAD)**

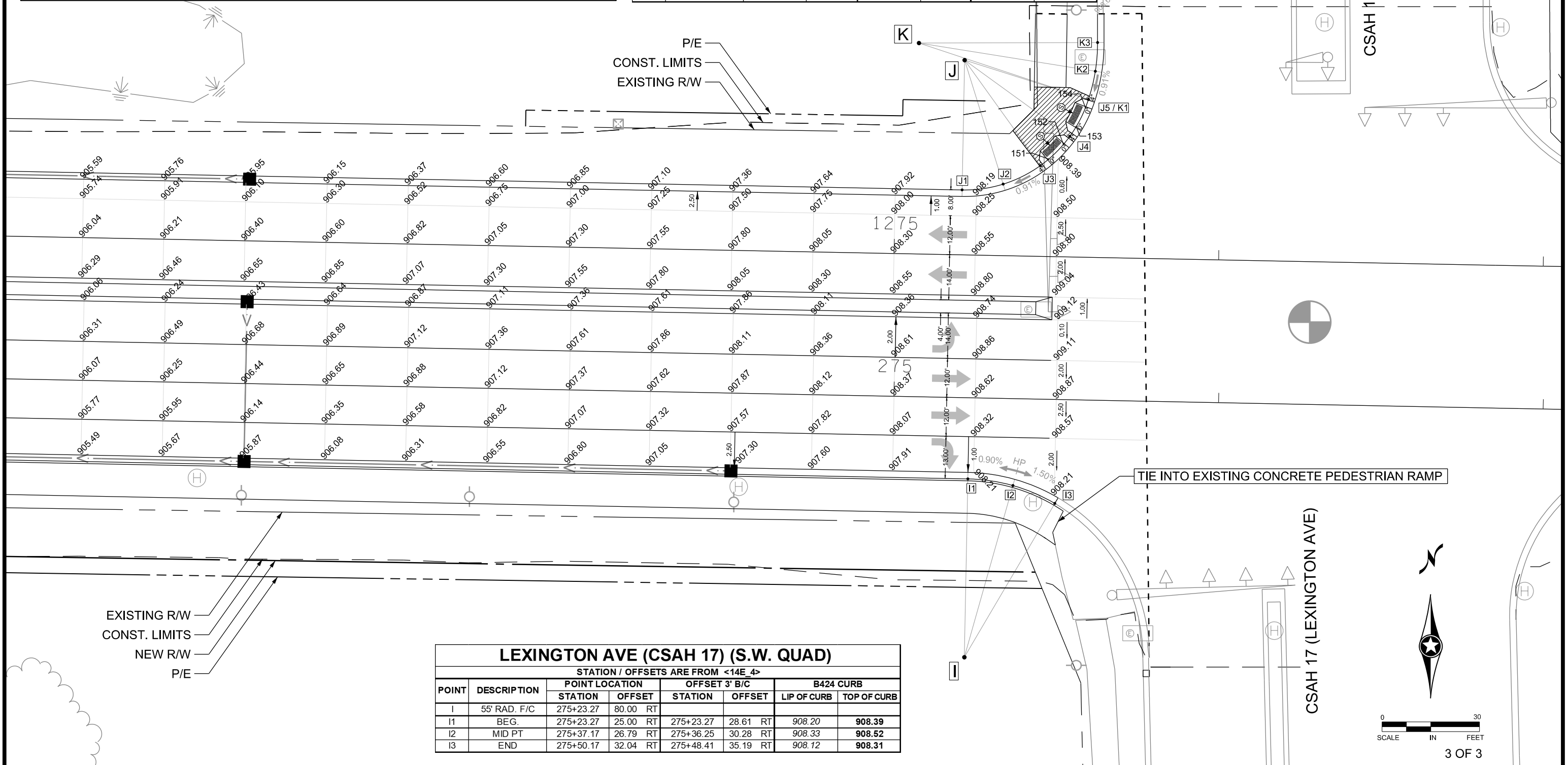
STATION / OFFSETS ARE FROM <14W\_4>

POINT	DESCRIPTION	POINT LOCATION		OFFSET 3' B/C		B424 CURB	
		STATION	OFFSET	STATION	OFFSET	LIP OF CURB	TOP OF CURB
J	40' RAD. F/C	1275+20.58	60.00 LT				
K	55' RAD. F/C	1275+06.42	64.98 LT				
J1	BEG.	1275+20.58	20.00 LT	1275+20.58	23.61 LT	908.12	908.31
J2	1/4 PT	1275+33.21	22.04 LT	1275+32.07	25.47 LT	908.24	908.43
J3	MID PT	1275+44.53	27.96 LT	1275+42.37	30.85 LT	908.35	908.54
J4	3/4 PT	1275+53.42	37.15 LT	1275+50.45	39.21 LT	908.47	908.66
J5 / K1	END / BEG.	1275+58.95	48.67 LT	1275+55.50	49.74 LT	908.59	908.78
K2	MID PT	1275+60.89	57.36 LT	1275+57.32	57.86 LT	908.67	908.86
K3	END	1275+61.41	66.25 LT	1275+57.80	66.17 LT	908.75	908.94

**CONTROL POINTS**

LOCATION AT FLOWLINE / FACE OF CURB OUTSIDE EDGE OF DOMES

POINT	EASTING	NORTHING
151	526684.57	158907.47
152	526689.15	158912.04
153	526693.07	158917.52
154	526695.92	158923.32



**LEXINGTON AVE (CSAH 17) (S.W. QUAD)**

STATION / OFFSETS ARE FROM <14E\_4>

POINT	DESCRIPTION	POINT LOCATION		OFFSET 3' B/C		B424 CURB	
		STATION	OFFSET	STATION	OFFSET	LIP OF CURB	TOP OF CURB
I	55' RAD. F/C	275+23.27	80.00 RT				
I1	BEG.	275+23.27	25.00 RT	275+23.27	28.61 RT	908.20	908.39
I2	MID PT	275+37.17	26.79 RT	275+36.25	30.28 RT	908.33	908.52
I3	END	275+50.17	32.04 RT	275+48.41	35.19 RT	908.12	908.31

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-614-048\Plan\002614048\_INT4\_P3.dgn 02/09/2022 3:02:56 PM

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

PRINT NAME: JORGE R. BERNAL DELGADO

SIGNATURE:

DATE: 02-14-22 LICENSE NO. 57216

DRAWN BY: BTU DATE: 02/07/22

DESIGN BY: JRB DATE: 02/07/22

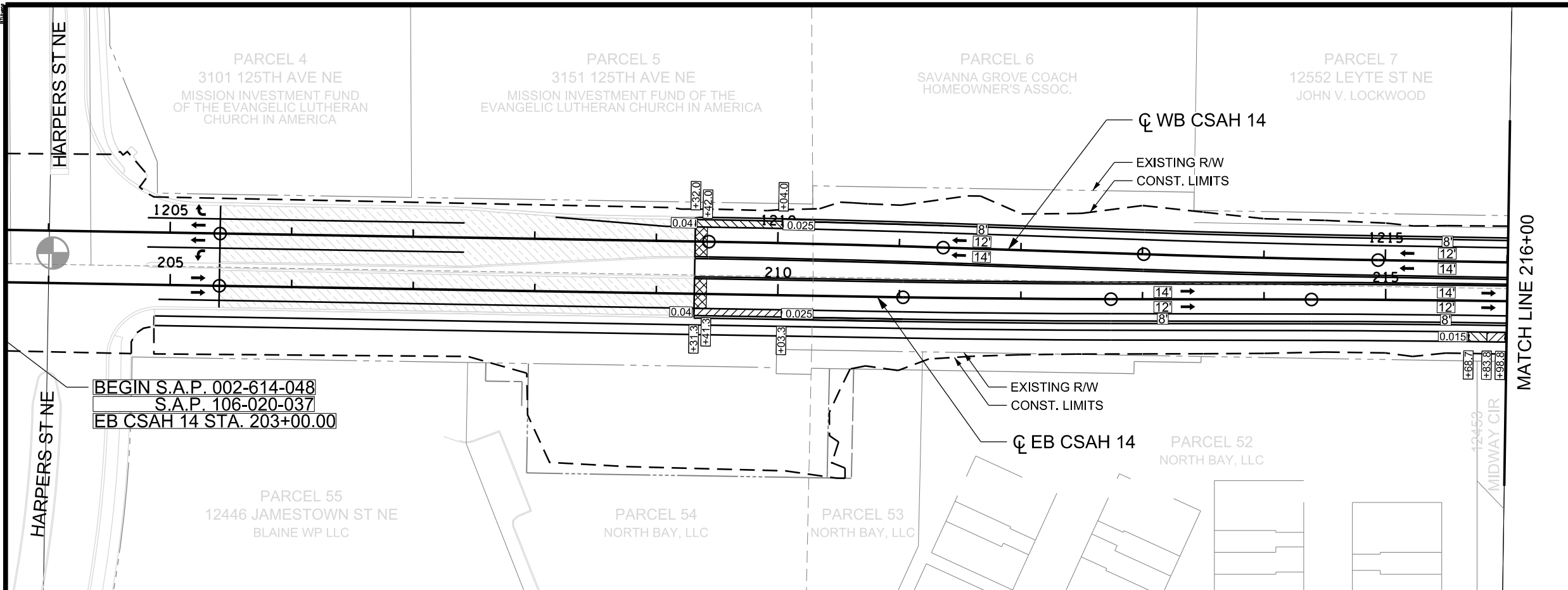
CHECKED BY: NJD DATE: 02/07/22



SAP 002-614-048  
SAP 106-020-037

**INTERSECTION DETAILS**  
CSAH 17 (LEXINGTON AVE)

Sheet 102 of 303 Sheets

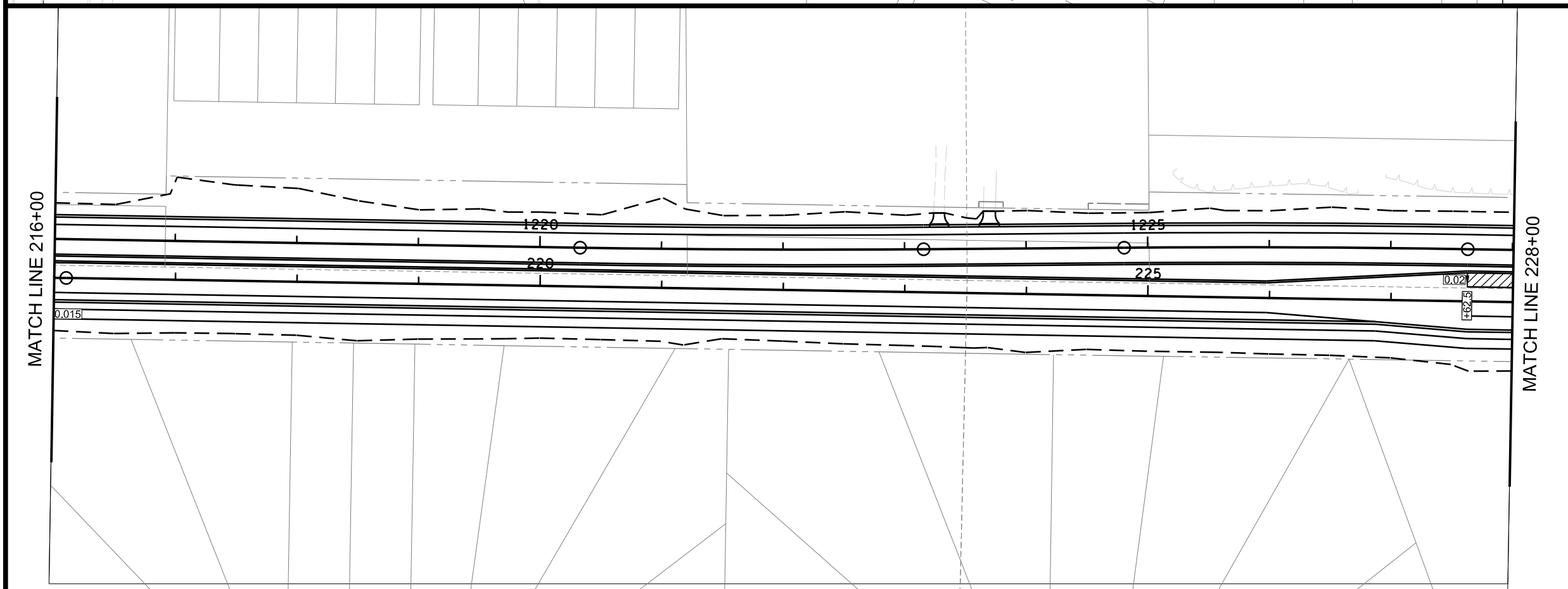


**LEGEND**

SUPERELEVATION TRANSITION  
 MATCH TO EXISTING

**SUPERELEVATION NOTES:**

1. ALL CROSS SLOPES ARE IN FEET PER FEET.
2. STATIONING FOR EASTBOUND CSAH 14 BASED ON EASTBOUND ALIGNMENT.
3. STATIONING FOR WESTBOUND CSAH 14 BASED ON WESTBOUND ALIGNMENT.
4. SEE INTERSECTION DETAIL PLANS FOR MORE INFORMATION.



1 OF 4

1	02/16/2022	BTU	JRB	UPDATED LEADER
NO	DATE	BY	CKD	APPR
				REVISION
NAME: P:\002-614-048\Plan\002614048_SE4_P1.dgn 02/16/2022 10:54:20 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: JORGE R. BERNAL DELGADO

SIGNATURE:

DATE: 02-23-22 LICENSE NO. 57216

DRAWN BY BTU DATE 02/10/22

DESIGN BY JRB DATE 02/10/22

CHECKED BY NJD DATE 02/10/22

**ANOKA COUNTY HIGHWAY DEPT.**

SAP 002-614-048  
SAP 106-020-037

**SUPERELEVATION PLAN**  
CSAH 14  
STA 203+00.00 TO 228+00  
Sheet 103 of 303 Sheets

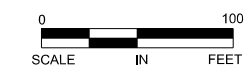
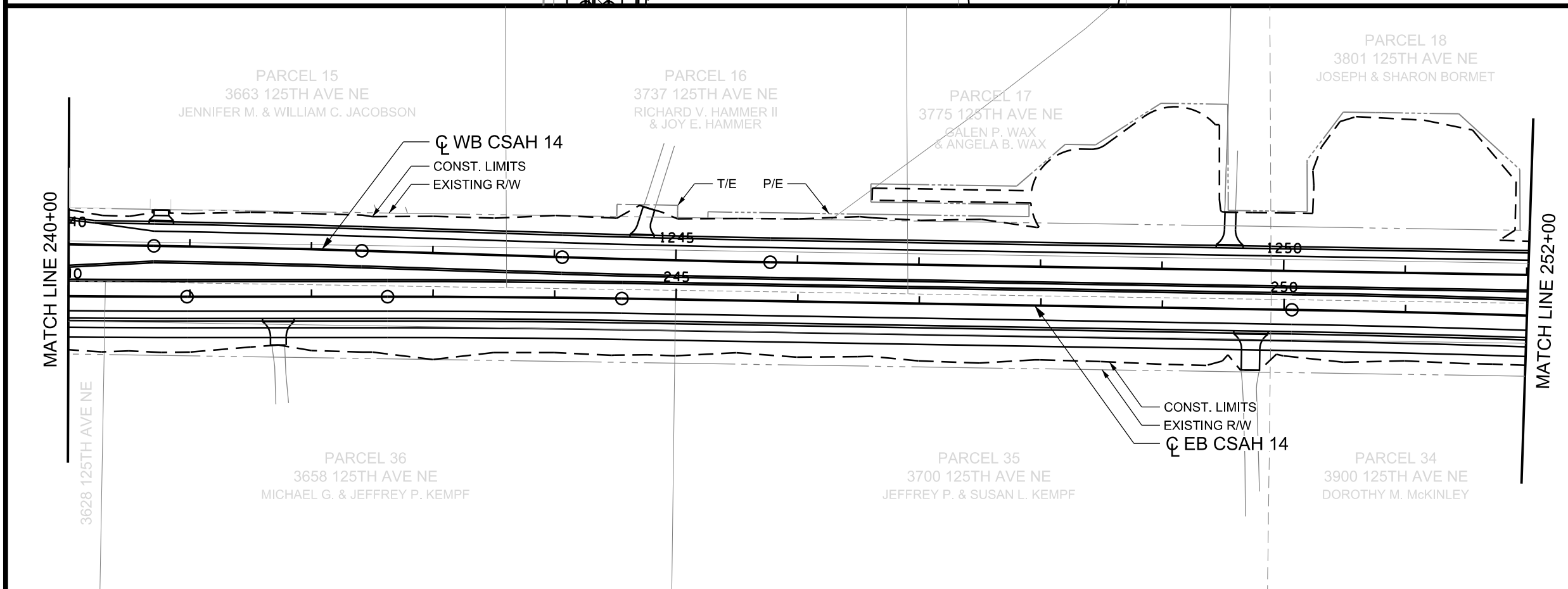
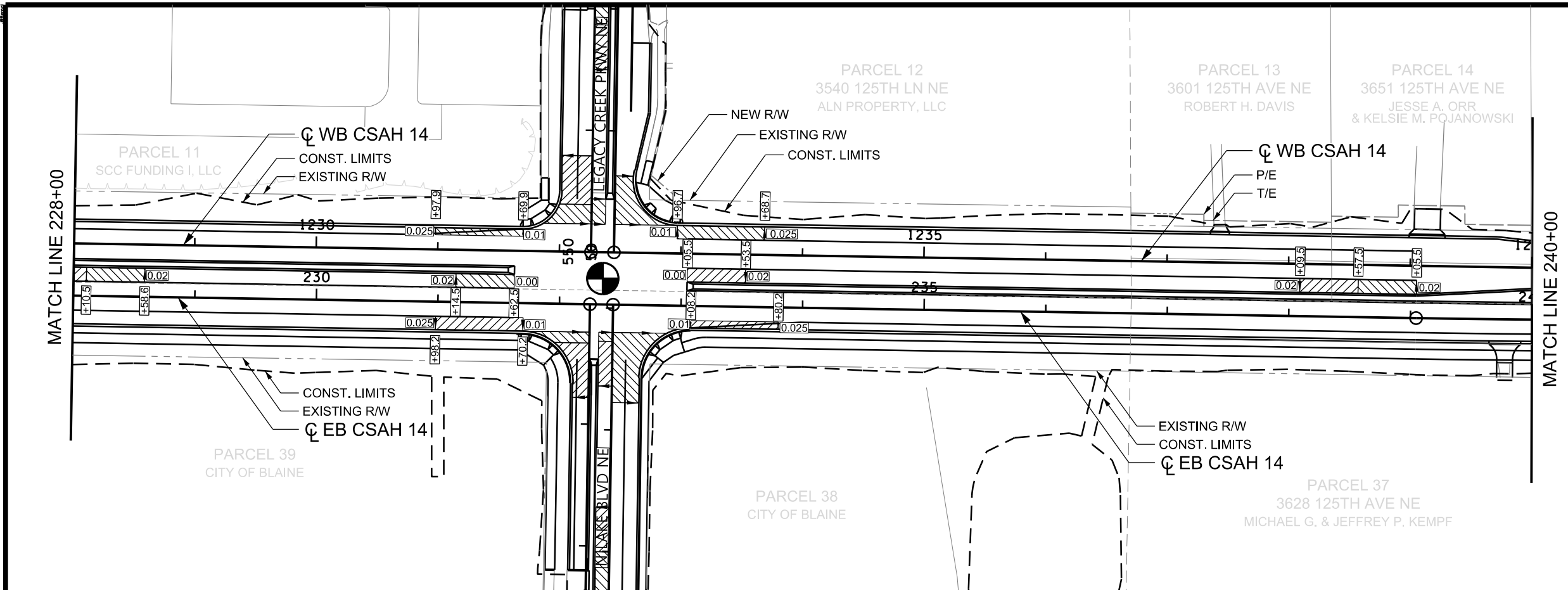
LEGEND

 SUPERELEVATION TRANSITION

 MATCH TO EXISTING

SUPERELEVATION NOTES:

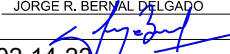
1. ALL CROSS SLOPES ARE IN FEET PER FEET.
2. STATIONING FOR EASTBOUND CSAH 14 BASED ON EASTBOUND ALIGNMENT.
3. STATIONING FOR WESTBOUND CSAH 14 BASED ON WESTBOUND ALIGNMENT.
4. SEE INTERSECTION DETAIL PLANS FOR MORE INFORMATION.



NO	DATE	BY	CKD	APPR	REVISION
NAME: P:\002-614-048\Plan\002614048_SE4_P2.dgn					
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I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

PRINT NAME: JORGE R. BERNAL DELGADO

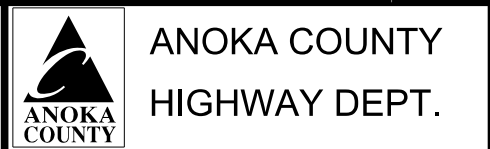
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DATE: 02-14-22 LICENSE NO. 57216

DRAWN BY: BTU DATE: 02/07/22

DESIGN BY: JRB DATE: 02/07/22

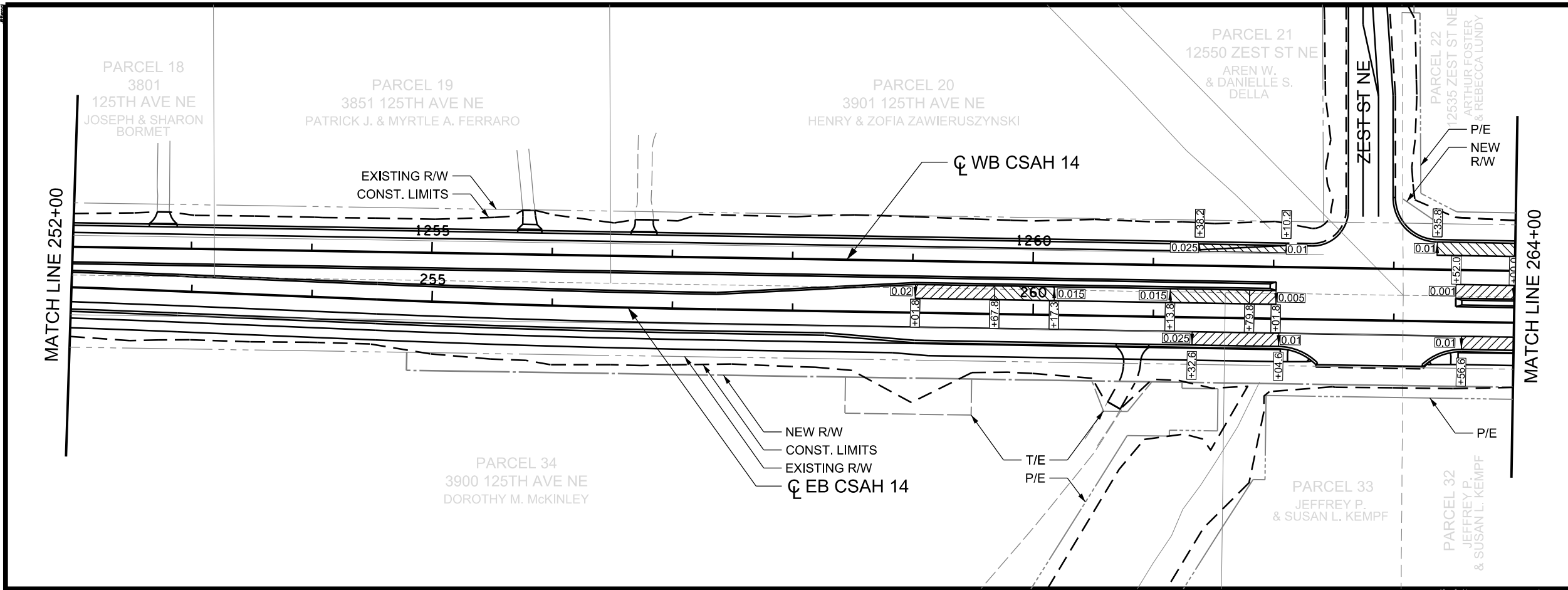
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SAP 002-614-048  
SAP 106-020-037

SUPERELEVATION PLAN  
CSAH 14  
STA 228+00 TO 252+00  
Sheet 104 of 303 Sheets

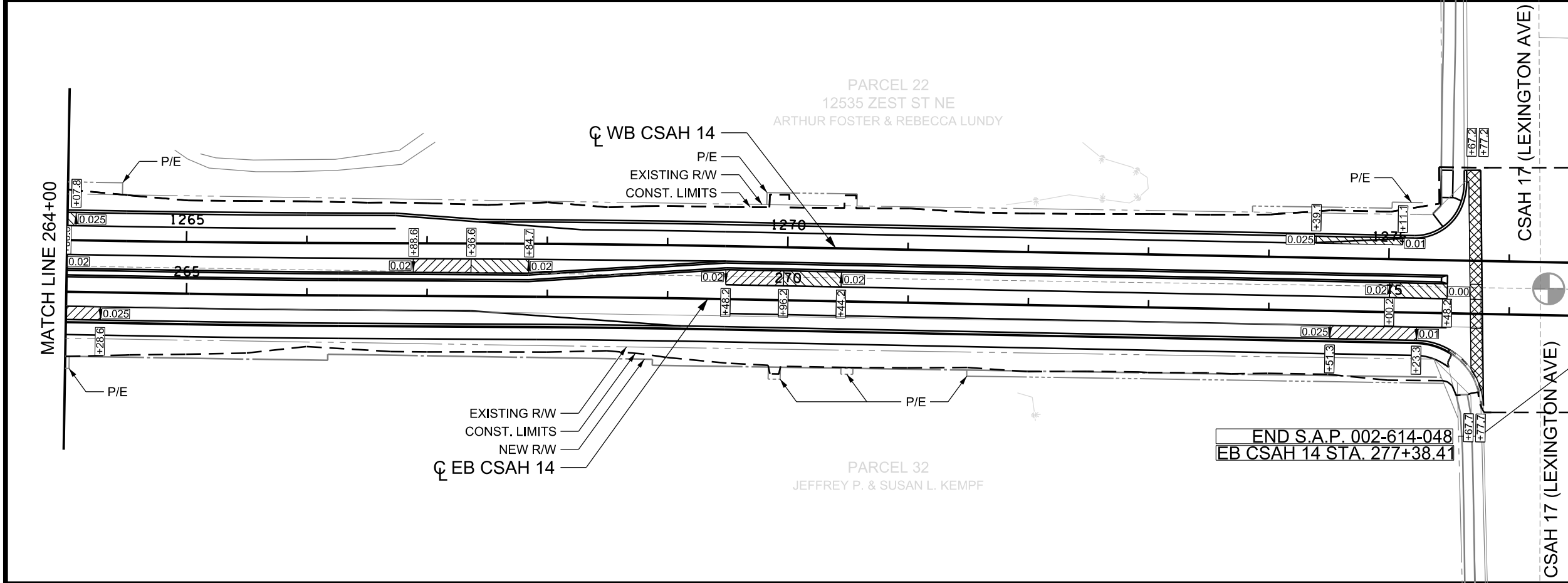




**LEGEND**

	SUPERELEVATION TRANSITION
	MATCH TO EXISTING

- SUPERELEVATION NOTES:**
1. ALL CROSS SLOPES ARE IN FEET PER FEET.
  2. STATIONING FOR EASTBOUND CSAH 14 BASED ON EASTBOUND ALIGNMENT.
  3. STATIONING FOR WESTBOUND CSAH 14 BASED ON WESTBOUND ALIGNMENT.
  4. SEE INTERSECTION DETAIL PLANS FOR MORE INFORMATION.



CSAH 17 (LEXINGTON AVE)

CSAH 17 (LEXINGTON AVE)

END S.A.P. 002-614-048  
EB CSAH 14 STA. 277+38.41

SCALE IN FEET

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-614-048\Plan\002614048\_SE4\_P3.dgn 02/09/2022 3:03:05 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: JORGE R. BERNAL DELGADO

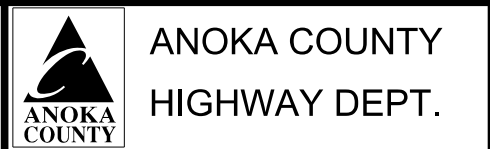
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DATE: 02-14-22 LICENSE NO. 57216

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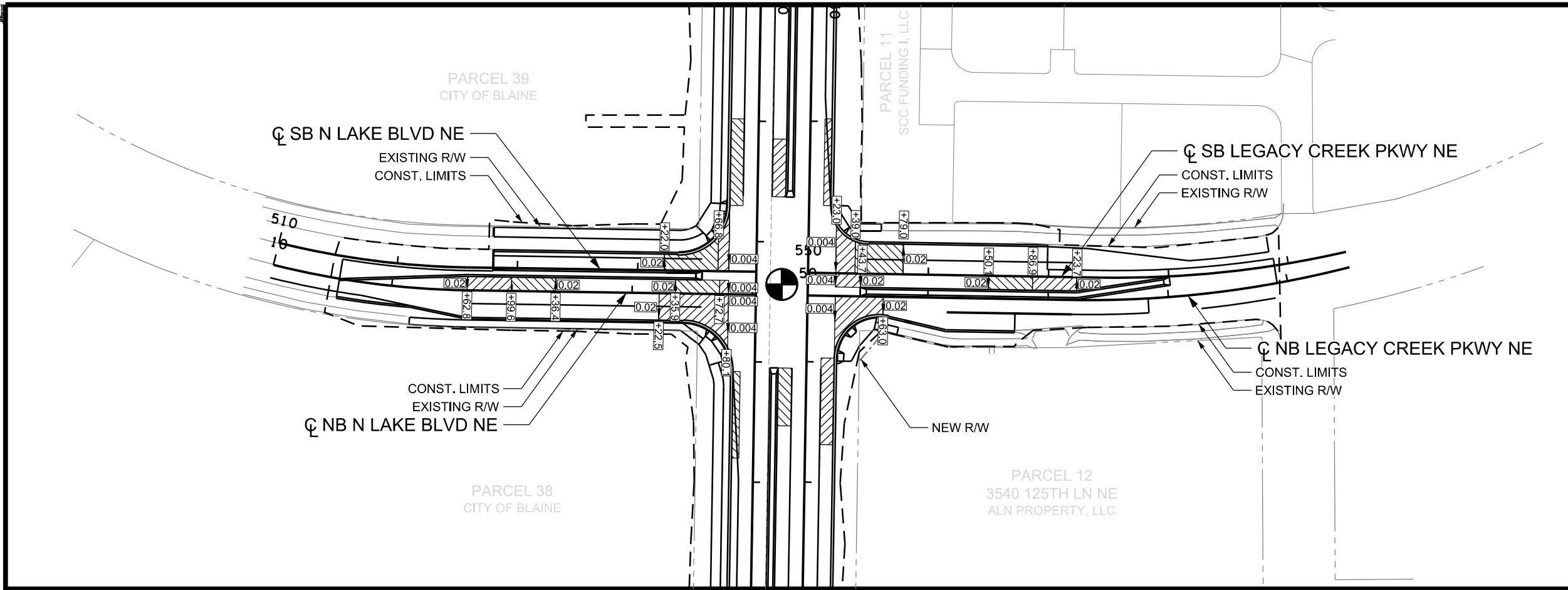
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CHECKED BY: NJD DATE: 02/07/22



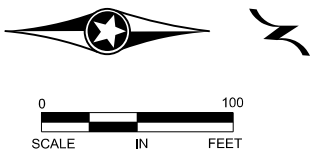
SAP 002-614-048  
SAP 106-020-037

**SUPERELEVATION PLAN**  
CSAH 14  
STA 252+00 TO 277+38.41  
Sheet 105 of 303 Sheets



LEGEND	
	SUPERELEVATION TRANSITION
	MATCH TO EXISTING

- SUPERELEVATION NOTES:**
1. ALL CROSS SLOPES ARE IN FEET PER FEET.
  2. STATIONING FOR EASTBOUND CSAH 14 BASED ON EASTBOUND ALIGNMENT.
  3. STATIONING FOR WESTBOUND CSAH 14 BASED ON WESTBOUND ALIGNMENT.
  4. SEE INTERSECTION DETAIL PLANS FOR MORE INFORMATION.



NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-614-048\Plan\002614048\_SE4\_P4.dgn 02/09/2022 3:03:07 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: JORGE R. BERNAL DELGADO

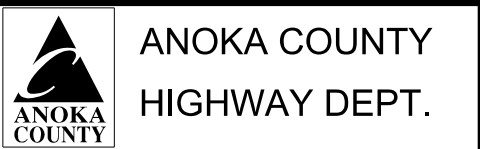
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DATE: 02-14-22 LICENSE NO. 57216

DRAWN BY BTU DATE 02/07/22

DESIGN BY JRB DATE 02/07/22

CHECKED BY NJD DATE 02/07/22



SAP 002-614-048  
SAP 106-020-037

**SUPERELEVATION PLAN**  
NB NORTH LAKE BLVD NE  
& NB LEGACY CREEK PKWY NE

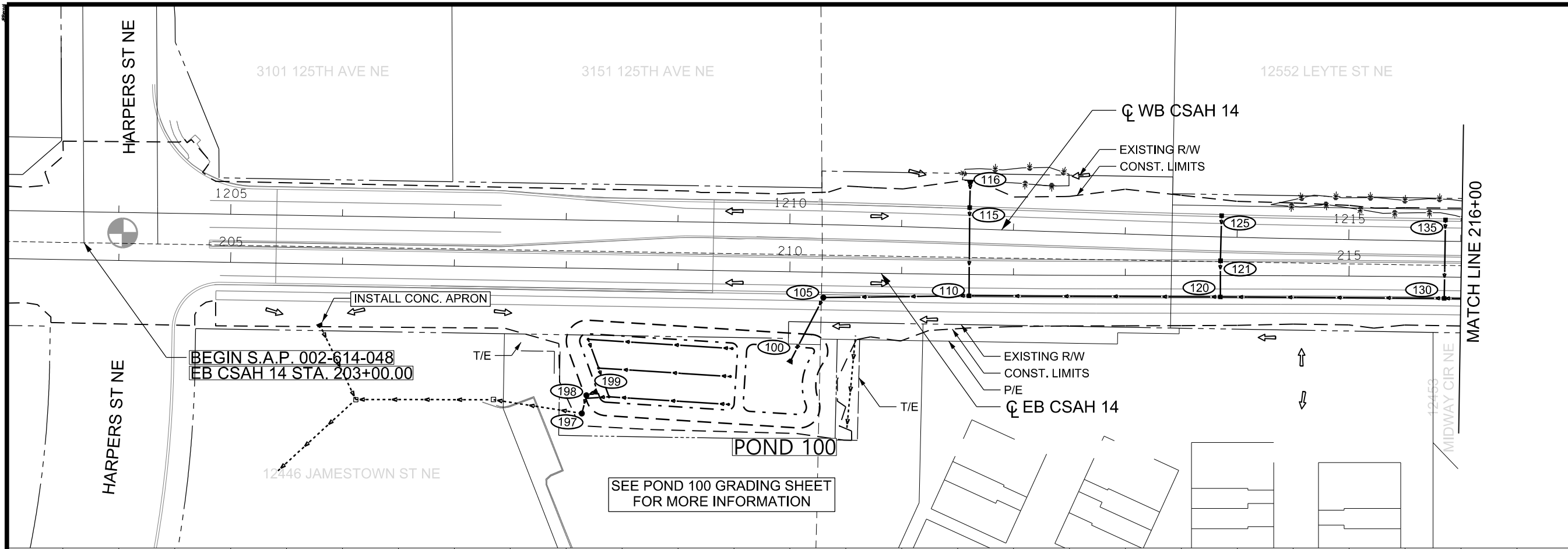
Sheet 106 of 303 Sheets





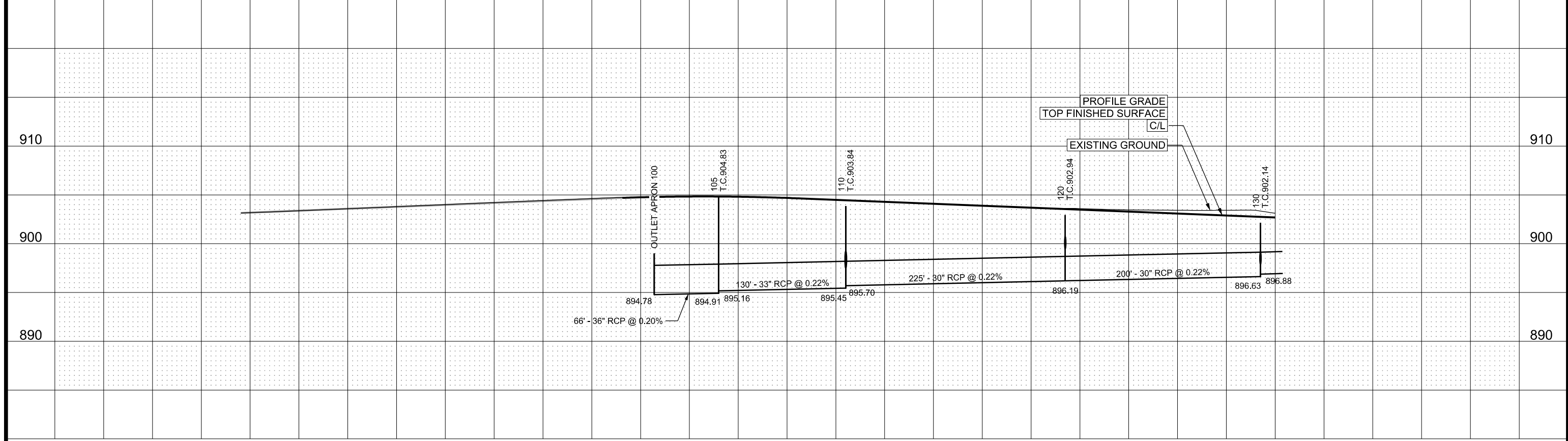
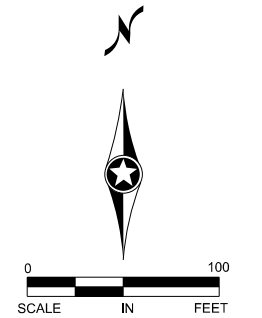






**LEGEND**

- PROPOSED CATCH BASIN
- INPLACE CATCH BASIN
- PROPOSED MANHOLE
- INPLACE MANHOLE
- ▼ PROPOSED APRON
- ▽ INPLACE APRON
- PROPOSED STORM SEWER
- - - INPLACE STORM SEWER
- WETLAND BOUNDARIES
- SURFACE FLOW ARROW



205+00    206+00    207+00    208+00    209+00    210+00    211+00    212+00    213+00    214+00    215+00    216+00    1 OF 6

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-614-048\Plan\002614048\_DR4\_P1.dgn    02/09/2022    3:03:34 PM

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

PRINT NAME: JORGE R. BERNAL DELGADO

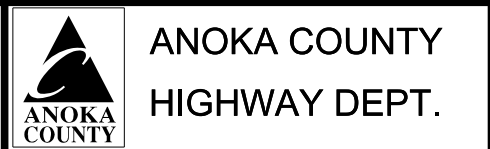
SIGNATURE: *[Signature]*

DATE: 02-14-22    LICENSE NO. 57216

DRAWN BY: MP    DATE: 02/07/22

DESIGN BY: JRB    DATE: 02/07/22

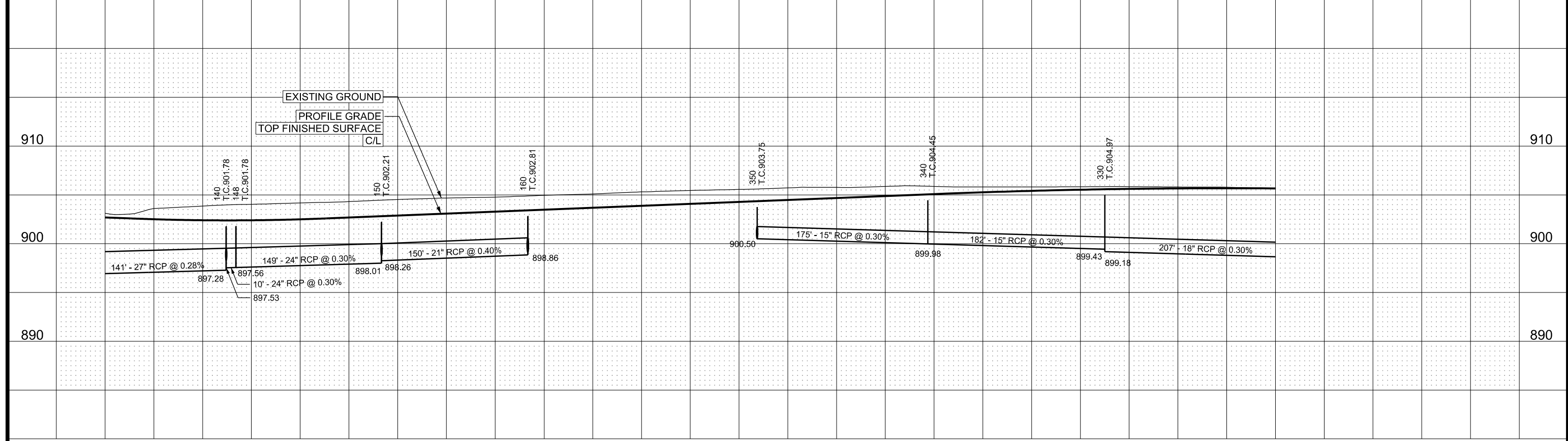
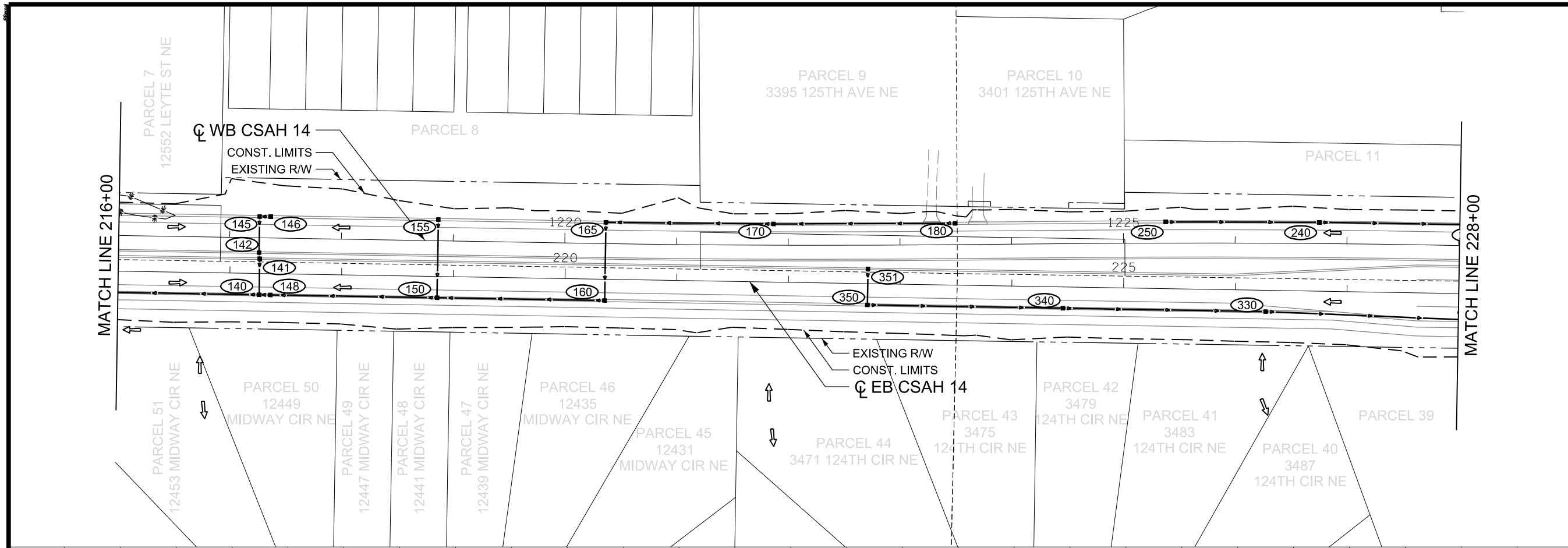
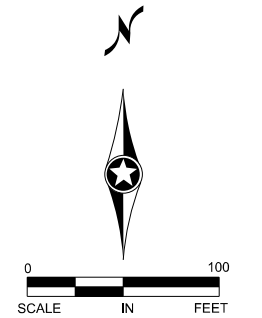
CHECKED BY: NJD    DATE: 02/07/22



SAP 002-614-048  
SAP 106-020-037

**DRAINAGE PLAN**  
CSAH 14  
STA 203+00.00 TO 216+00  
Sheet 111 of 303 Sheets

- LEGEND**
- PROPOSED CATCH BASIN
  - INPLACE CATCH BASIN
  - PROPOSED MANHOLE
  - INPLACE MANHOLE
  - ▼ PROPOSED APRON
  - ▽ INPLACE APRON
  - PROPOSED STORM SEWER
  - - - INPLACE STORM SEWER
  - WETLAND BOUNDARIES
  - SURFACE FLOW ARROW



216+00    217+00    218+00    219+00    220+00    221+00    222+00    223+00    224+00    225+00    226+00    227+00    228+00    2 OF 6

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-614-048\Plan\002614048\_DR4\_P2.dgn      02/09/2022      3:03:36 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: JORGE R. BERNAL DELGADO

SIGNATURE: *[Signature]*

DATE: 02-14-22      LICENSE NO. 57216

DRAWN BY: MP      DATE: 02/07/22

DESIGN BY: JRB      DATE: 02/07/22

CHECKED BY: NJD      DATE: 02/07/22

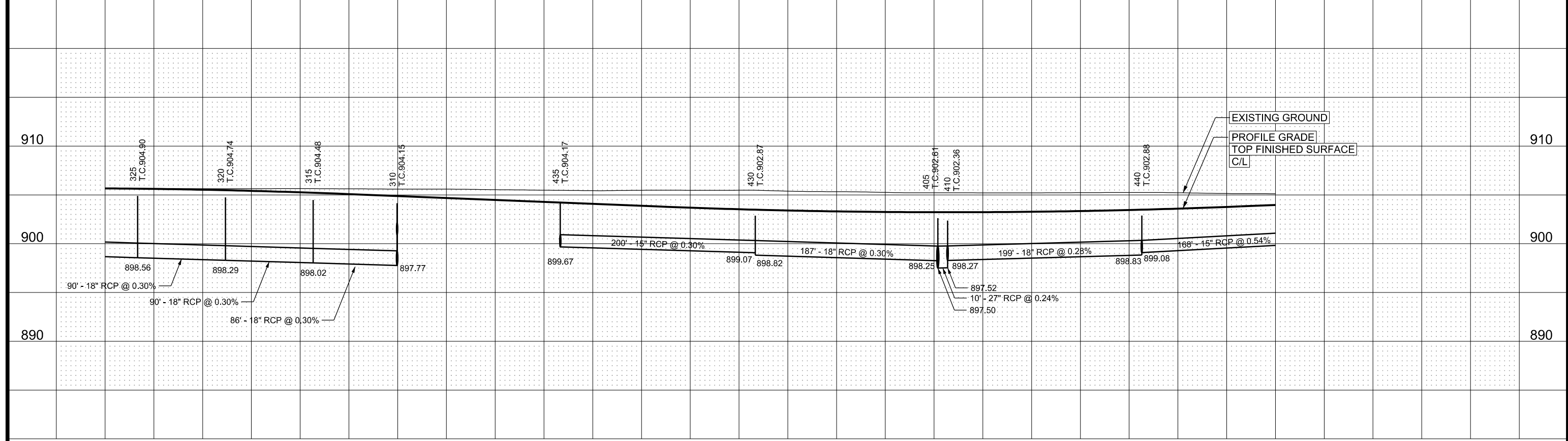
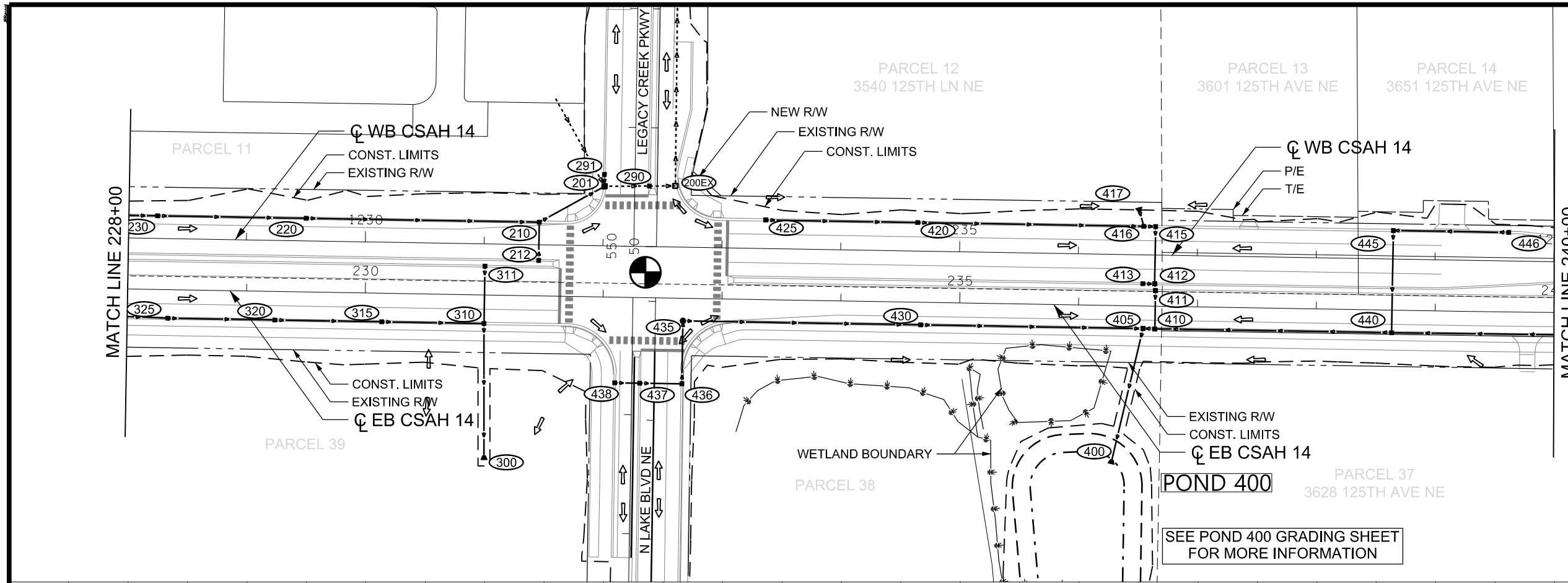
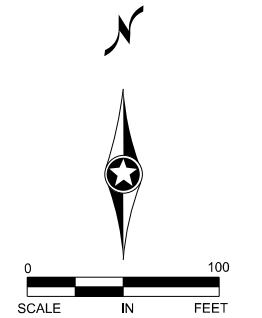


SAP 002-614-048  
SAP 106-020-037

**DRAINAGE PLAN**  
CSAH 14  
STA 216+00 TO 228+00  
Sheet 112 of 303 Sheets



LEGEND	
■	PROPOSED CATCH BASIN
□	INPLACE CATCH BASIN
●	PROPOSED MANHOLE
○	INPLACE MANHOLE
▼	PROPOSED APRON
▽	INPLACE APRON
—	PROPOSED STORM SEWER
- - -	INPLACE STORM SEWER
⊥	WETLAND BOUNDARIES
→	SURFACE FLOW ARROW



228+00    229+00    230+00    231+00    232+00    233+00    234+00    235+00    236+00    237+00    238+00    239+00    240+00    3 OF 6

NO	DATE	BY	CKD	APPR	REVISION

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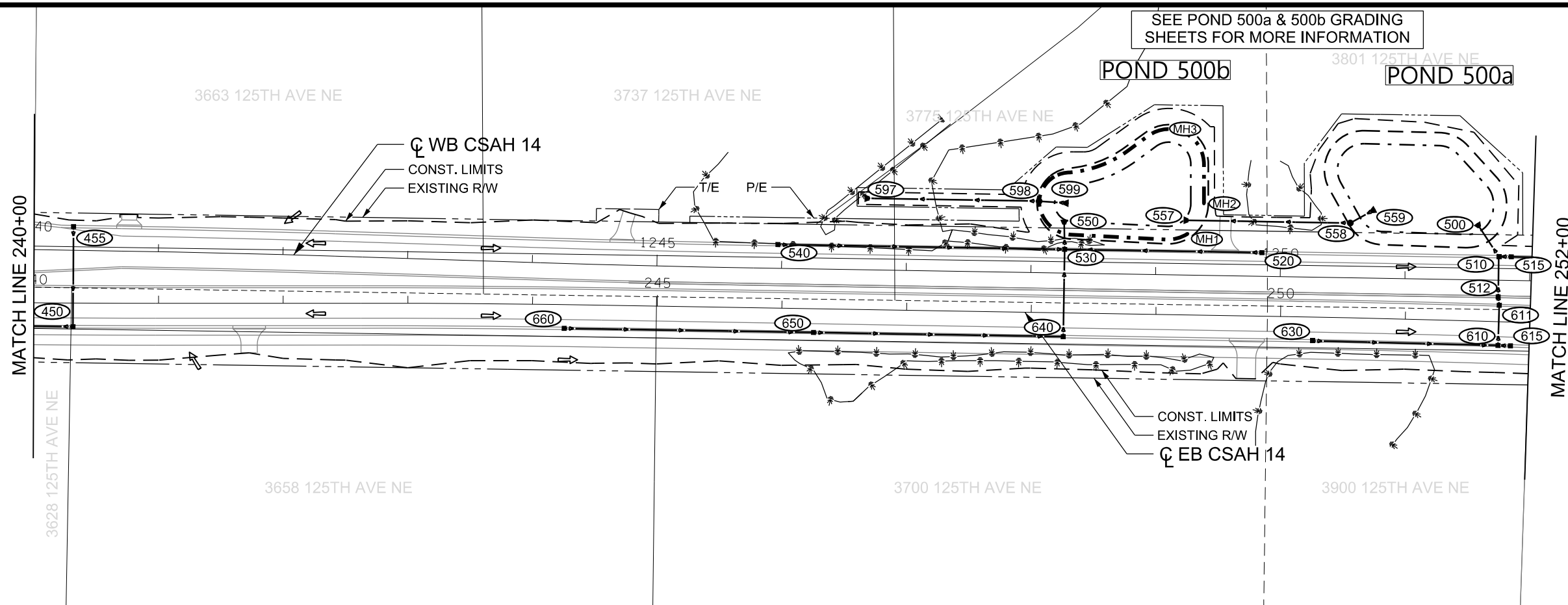
I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.  
 PRINT NAME: JORGE R. BERNAL BELGADO  
 SIGNATURE: *[Signature]*  
 DATE: 02-14-22      LICENSE NO. 57216

DRAWN BY: MP      DATE: 02/07/22  
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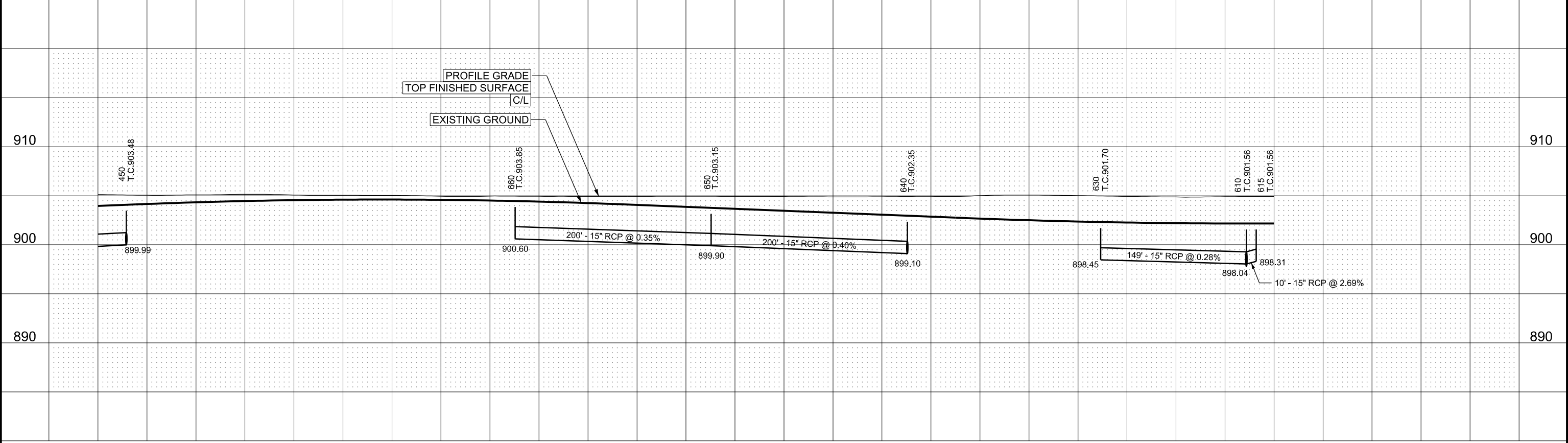
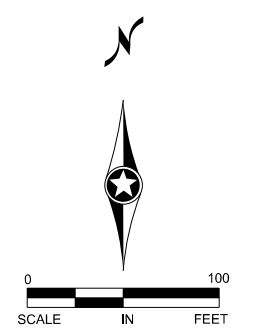
SAP 002-614-048  
 SAP 106-020-037

DRAINAGE PLAN  
 CSAH 14  
 STA 228+00 TO 240+00  
 Sheet 113 of 303 Sheets



**LEGEND**

- PROPOSED CATCH BASIN
- INPLACE CATCH BASIN
- PROPOSED MANHOLE
- INPLACE MANHOLE
- ▼ PROPOSED APRON
- ▽ INPLACE APRON
- PROPOSED STORM SEWER
- - - INPLACE STORM SEWER
- WETLAND BOUNDARIES
- SURFACE FLOW ARROW



240+00    241+00    242+00    243+00    244+00    245+00    246+00    247+00    248+00    249+00    250+00    251+00    252+00    4 OF 6

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-614-048\Plan\002614048\_DR4\_P4.dgn      02/09/2022      3:03:40 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: JORGE R. BERNAL DELGADO

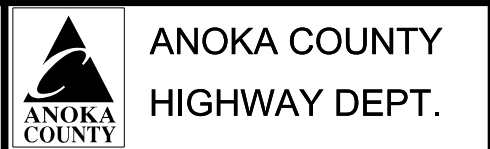
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DATE: 02-14-22      LICENSE NO. 57216

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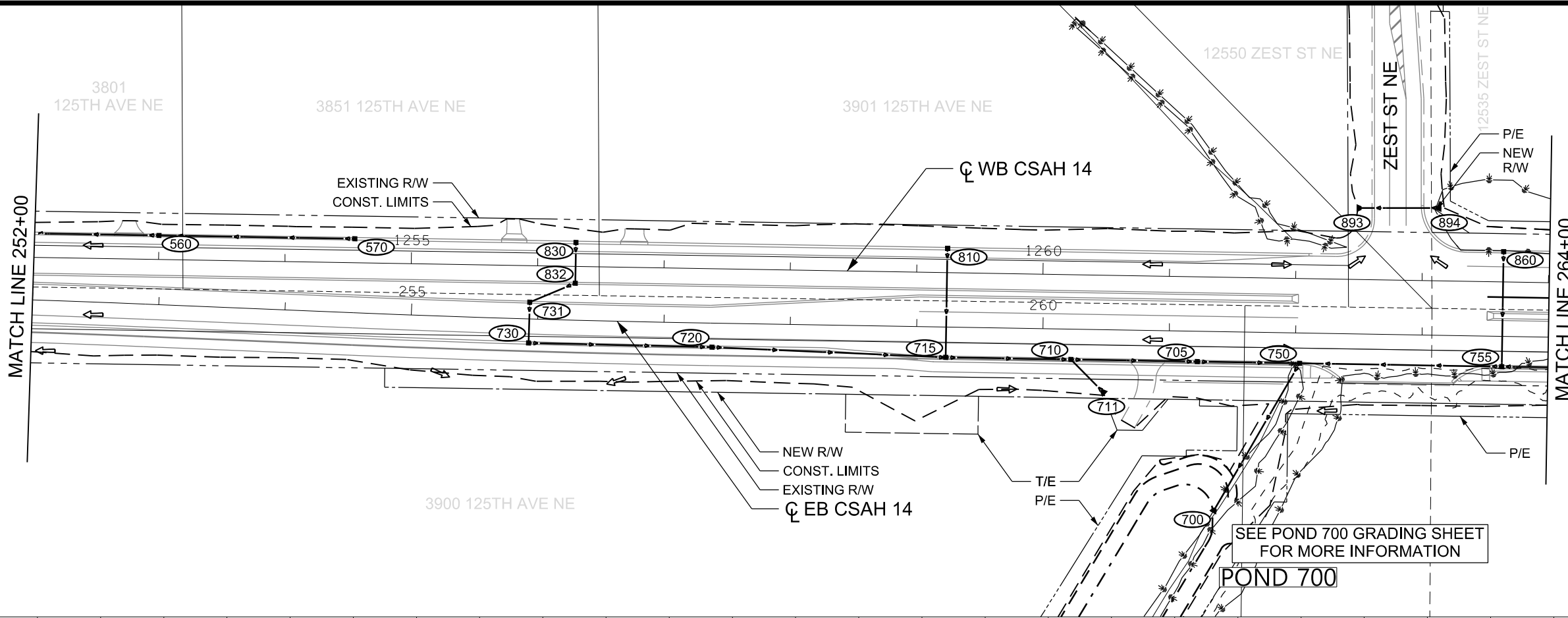
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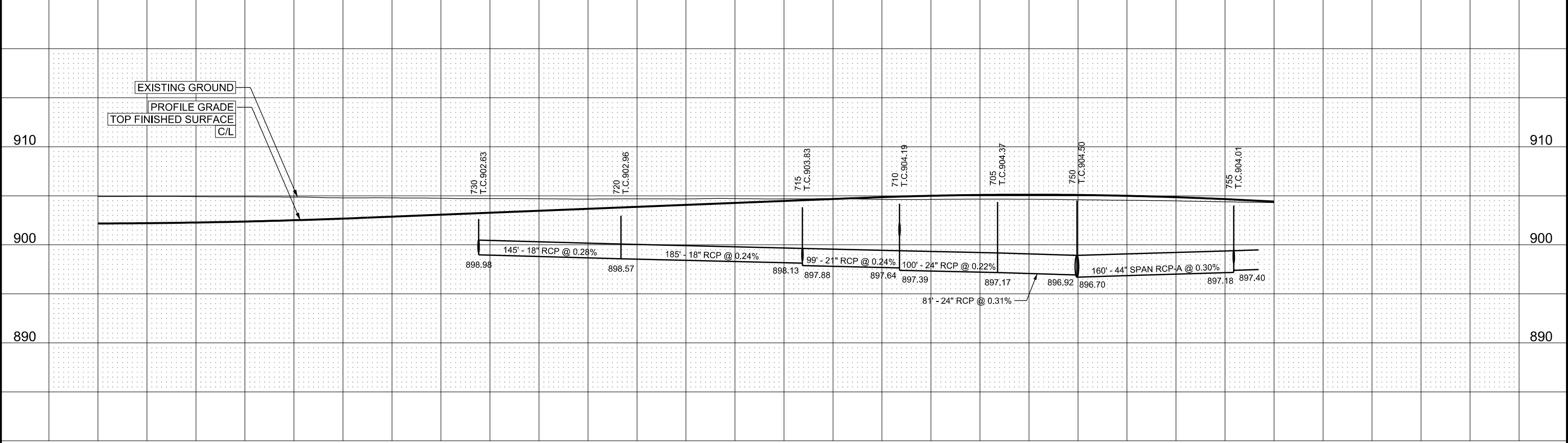
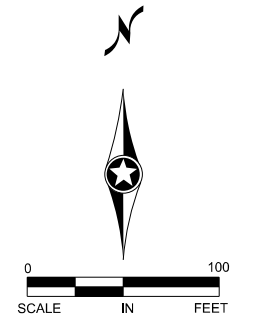
SAP 002-614-048  
SAP 106-020-037

**DRAINAGE PLAN**  
CSAH 14  
STA 240+00 TO 252+00  
Sheet 114 of 303 Sheets



**LEGEND**

- PROPOSED CATCH BASIN
- INPLACE CATCH BASIN
- PROPOSED MANHOLE
- INPLACE MANHOLE
- ▼ PROPOSED APRON
- ▽ INPLACE APRON
- PROPOSED STORM SEWER
- - - INPLACE STORM SEWER
- WETLAND BOUNDARIES
- SURFACE FLOW ARROW



252+00    253+00    254+00    255+00    256+00    257+00    258+00    259+00    260+00    261+00    262+00    263+00    264+00    5 OF 6

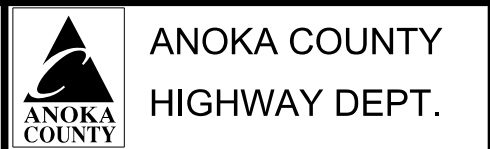
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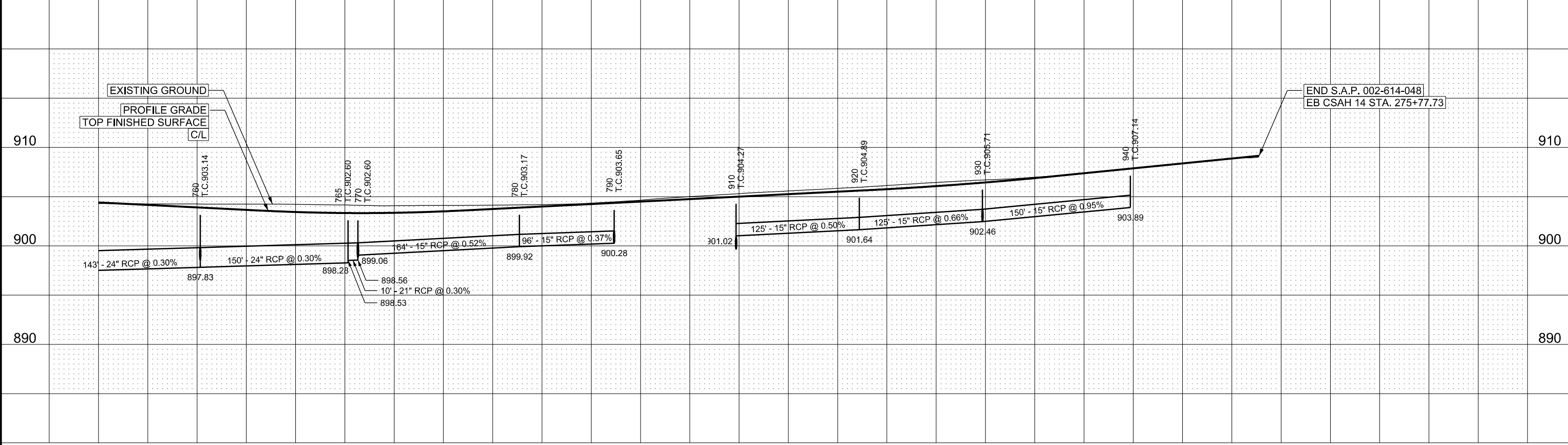
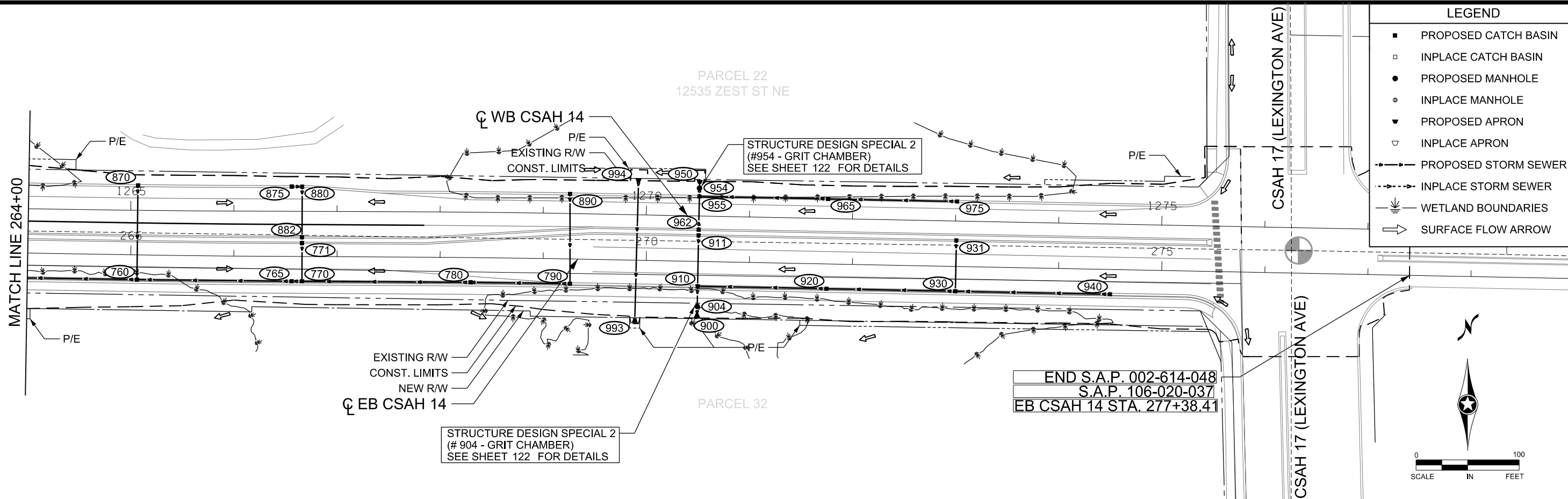
PRINT NAME: JORGE R. BERNAL DELGADO  
 SIGNATURE: *[Signature]*  
 DATE: 02-14-22    LICENSE NO. 57216

DRAWN BY: MP    DATE: 02/07/22  
 DESIGN BY: JRB    DATE: 02/07/22  
 CHECKED BY: NJD    DATE: 02/07/22



SAP 002-614-048  
 SAP 106-020-037

**DRAINAGE PLAN**  
 CSAH 14  
 STA 252+00 TO 264+00  
 Sheet 115 of 303 Sheets

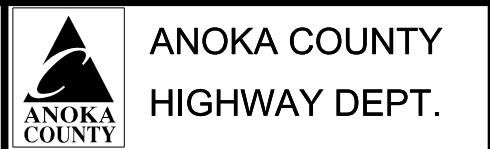


264+00    265+00    266+00    267+00    268+00    269+00    270+00    271+00    272+00    273+00    274+00    275+00    276+00    6 OF 6

1	02/16/2022	BTU	JRB	UPDATED LEADER
NO	DATE	BY	CKD	APPR
				REVISION
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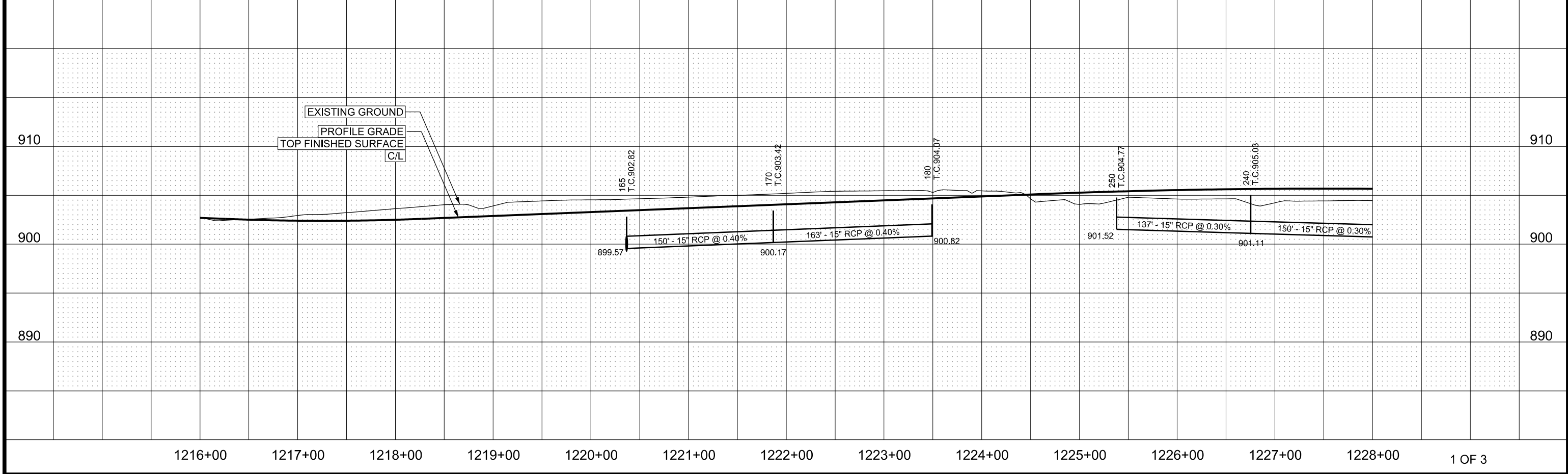
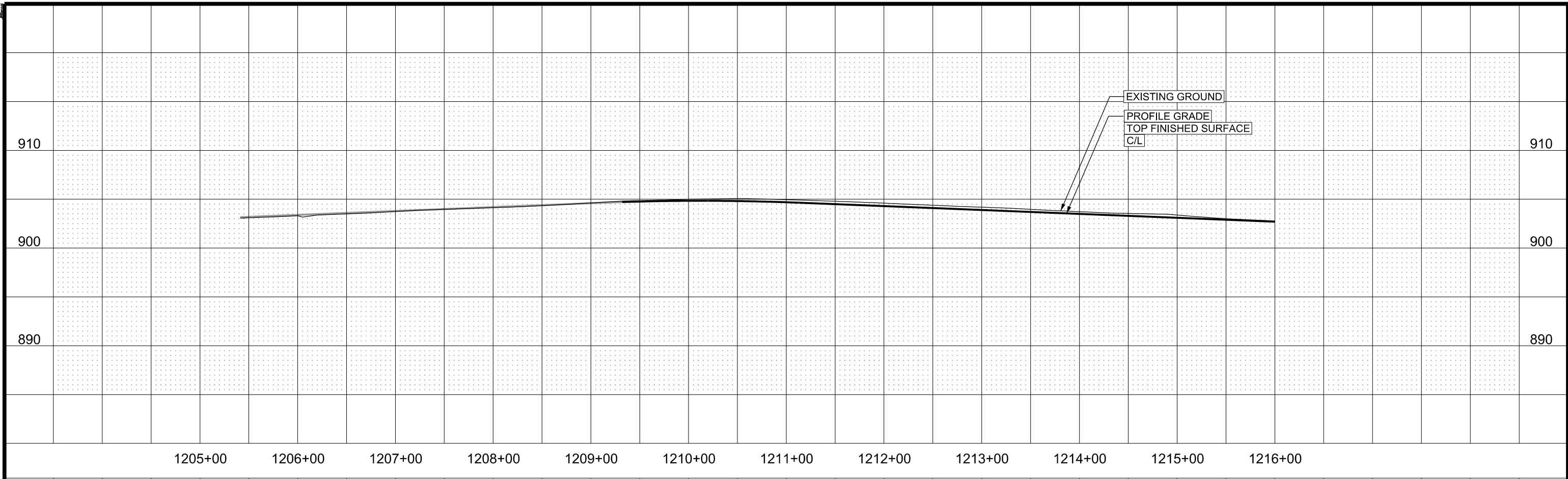
I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.  
 PRINT NAME: JORGE R. BERNAL DELGADO  
 SIGNATURE: *[Signature]*  
 DATE: 02-23-22 LICENSE NO. 57216

DRAWN BY: MP DATE: 02/16/22  
 DESIGN BY: JRB DATE: 02/16/22  
 CHECKED BY: NJD DATE: 02/16/22



SAP 002-614-048  
 SAP 106-020-037

DRAINAGE PLAN  
 CSAH 14  
 STA 264+00 TO 277+38.41  
 Sheet 116 of 303 Sheets



NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-614-048\Plan\002614048\_DR4\_P7.dgn 02/09/2022 3:03:46 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: JORGE R. BERNAL DELGADO

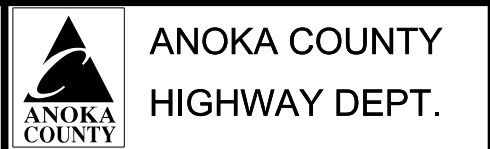
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DATE: 02-14-22 LICENSE NO. 57216

DRAWN BY BTU DATE 02/07/22

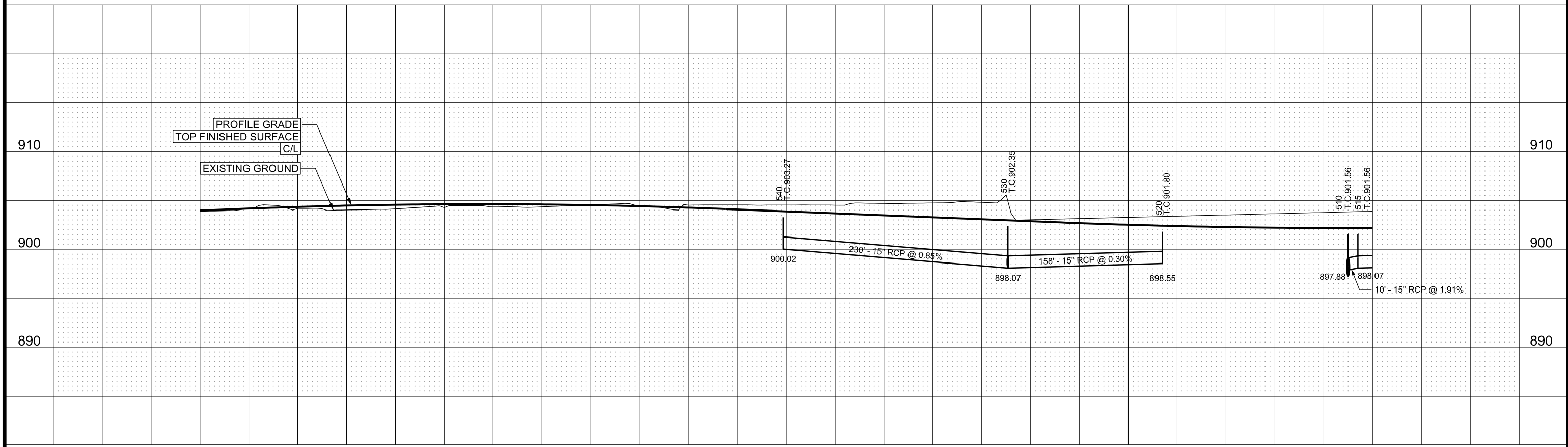
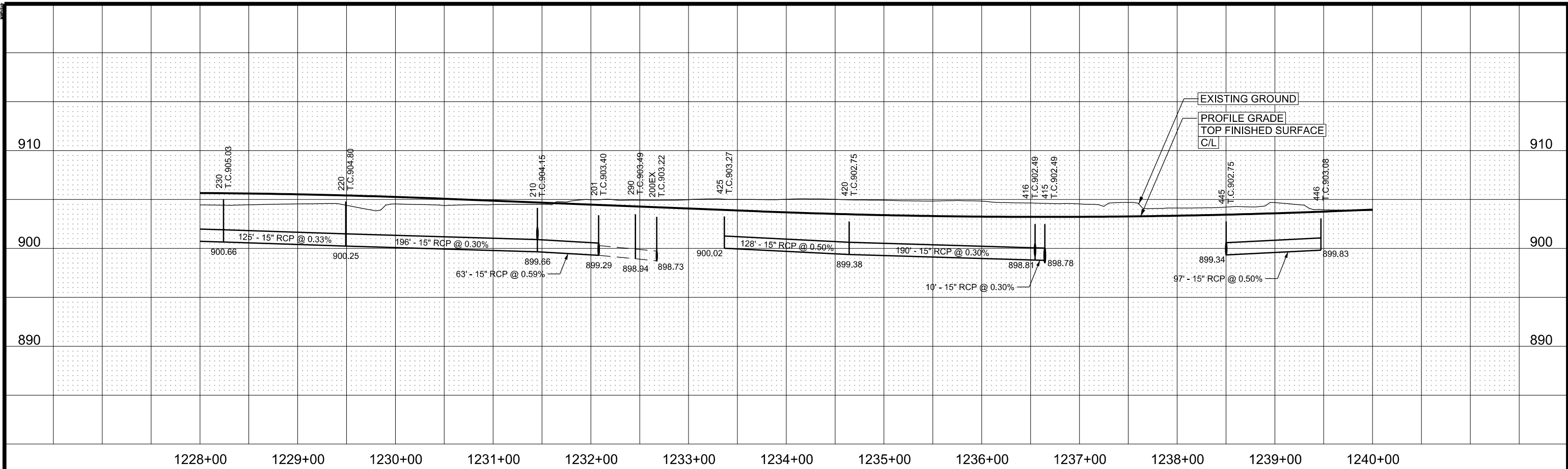
DESIGN BY JRB DATE 02/07/22

CHECKED BY NJD DATE 02/07/22



SAP 002-614-048  
SAP 106-020-037

**DRAINAGE**  
WB CSAH 14  
STA 1204+00 TO 1228+00  
Sheet 117 of 303 Sheets



1228+00 1229+00 1230+00 1231+00 1232+00 1233+00 1234+00 1235+00 1236+00 1237+00 1238+00 1239+00 1240+00

1240+00 1241+00 1242+00 1243+00 1244+00 1245+00 1246+00 1247+00 1248+00 1249+00 1250+00 1251+00 1252+00 2 OF 3

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-614-048\Plan\002614048\_DR4\_P8.dgn 02/23/2022 4:24:54 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: JORGE R. BERNAL DELGADO

SIGNATURE: *Jorge Bernal Delgado*

DATE: 02-23-22 LICENSE NO. 57216

DRAWN BY: BTU DATE: 02/16/22

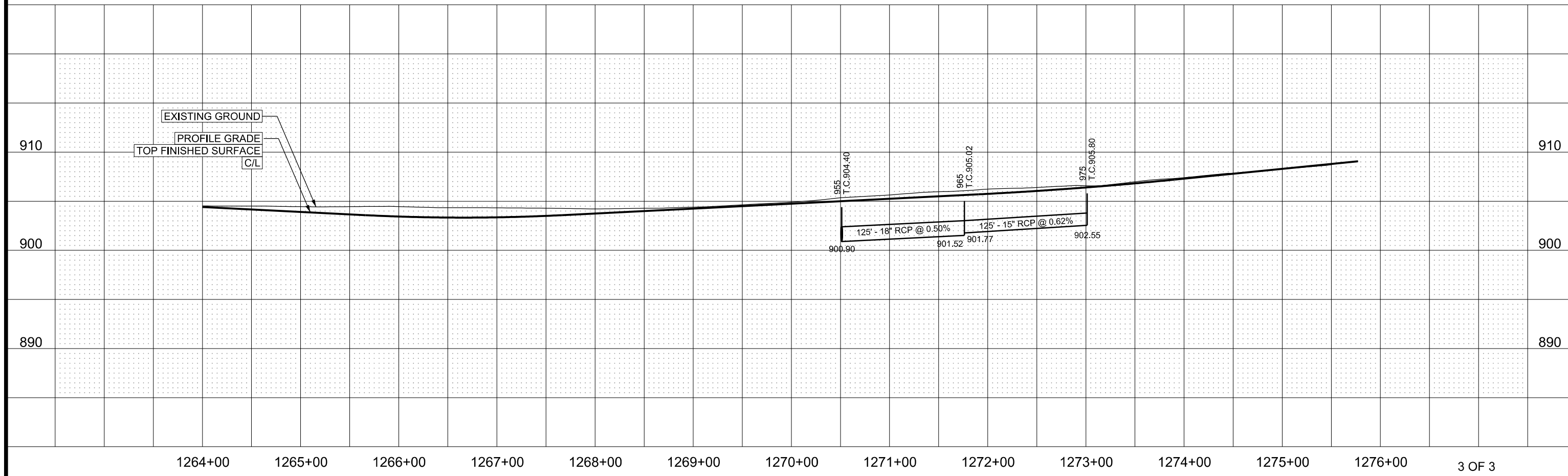
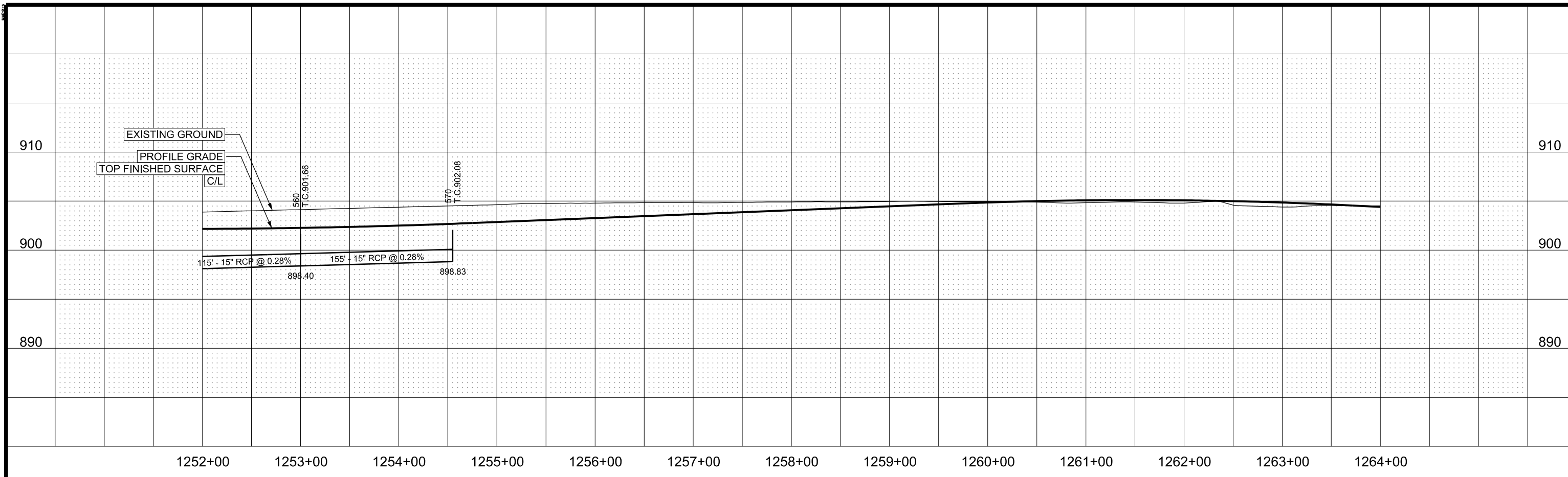
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CHECKED BY: NJD DATE: 02/16/22



SAP 002-614-048  
SAP 106-020-037

DRAINAGE  
WB CSAH 14  
STA 1228+00 TO 1252+00  
Sheet 118 of 303 Sheets



NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-614-048\Plan\002614048\_DR4\_P9.dgn      02/23/2022      4:24:55 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: JORGE R. BERNAL DE GADO

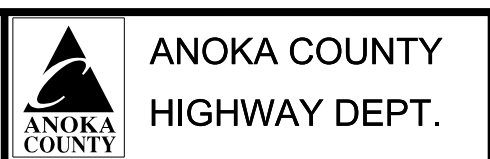
SIGNATURE: *[Signature]*

DATE: 02-23-22      LICENSE NO. 57216

DRAWN BY BTU      DATE 02/16/22

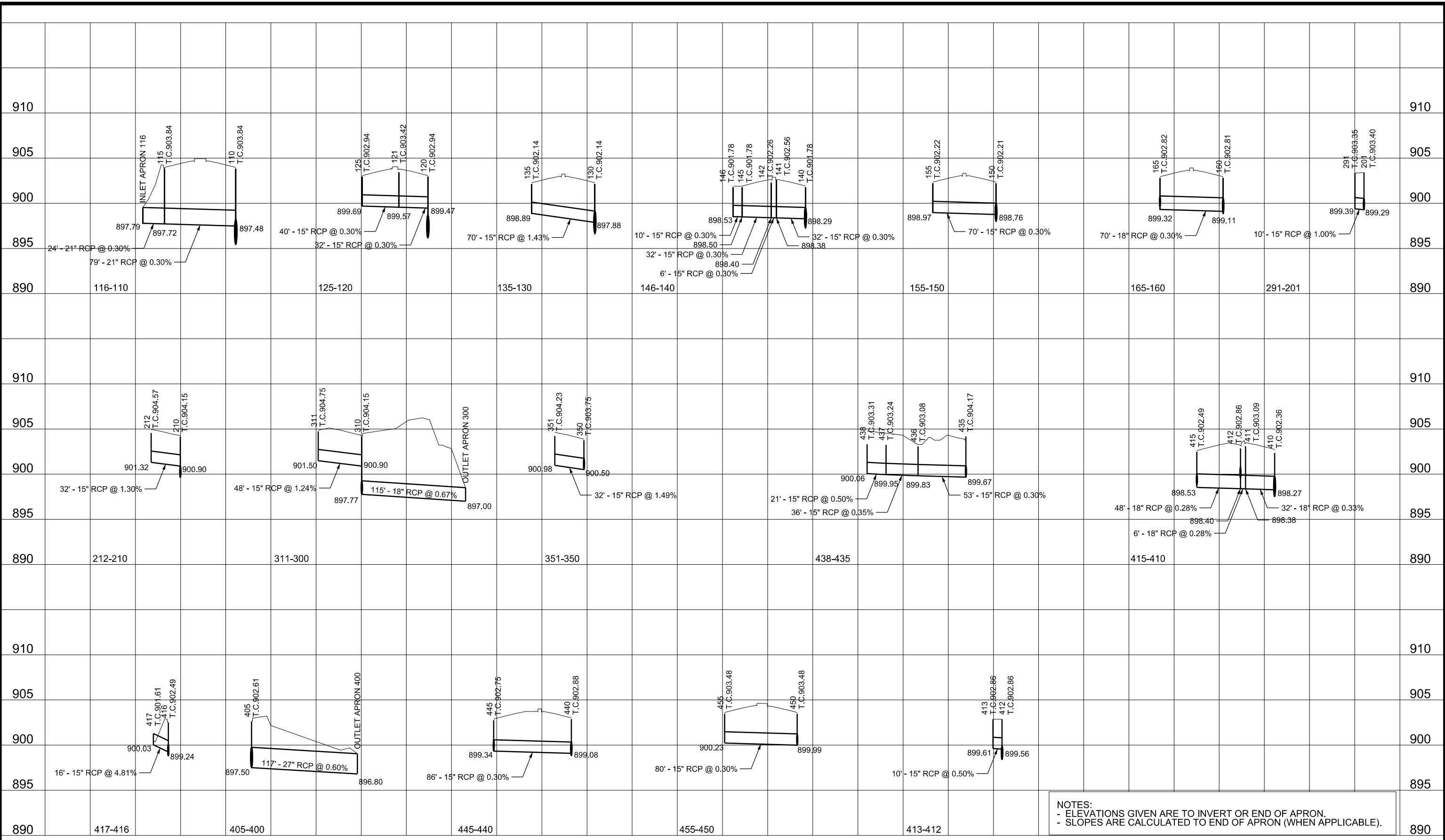
DESIGN BY JRB      DATE 02/16/22

CHECKED BY NJD      DATE 02/16/22



SAP 002-614-048  
SAP 106-020-037

DRAINAGE  
WB CSAH 14  
STA 1252+00 TO 1275+77.20  
Sheet 119 of 303 Sheets



NOTES:  
 - ELEVATIONS GIVEN ARE TO INVERT OR END OF APRON.  
 - SLOPES ARE CALCULATED TO END OF APRON (WHEN APPLICABLE).

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-614-048\Plan\002614048\_DRL4.dgn 02/09/2022 3:03:51 PM

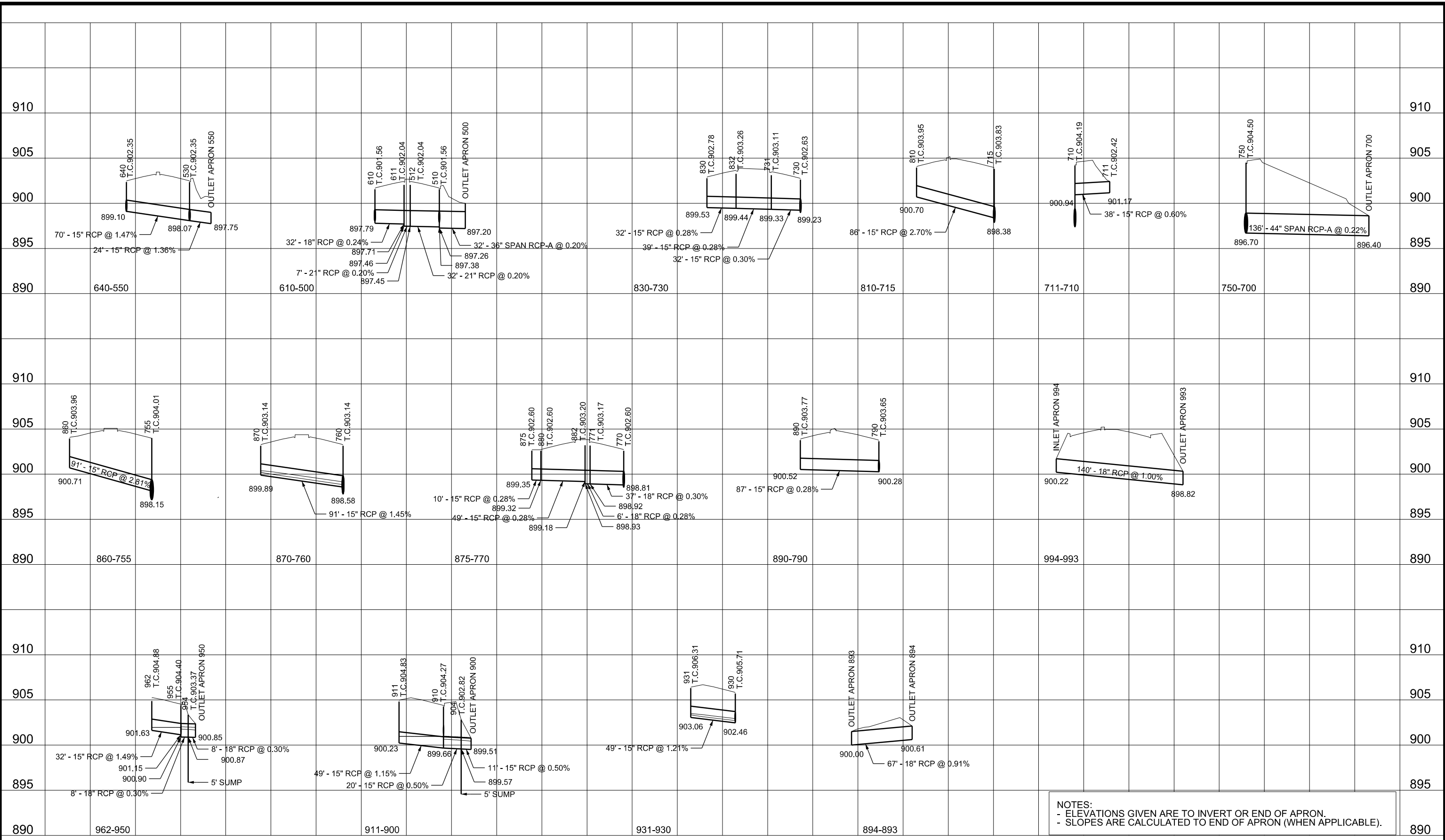
I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.  
 PRINT NAME: JORGE R. BERNAL DELGADO  
 SIGNATURE: [Signature]  
 DATE: 02-14-22 LICENSE NO. 57216

DRAWN BY BTU DATE 02/07/22  
 DESIGN BY JRB DATE 02/07/22  
 CHECKED BY NJD DATE 02/07/22



SAP 002-614-048  
 SAP 106-020-037





NOTES:  
 - ELEVATIONS GIVEN ARE TO INVERT OR END OF APRON.  
 - SLOPES ARE CALCULATED TO END OF APRON (WHEN APPLICABLE).

NO	DATE	BY	CKD	APPR	REVISION

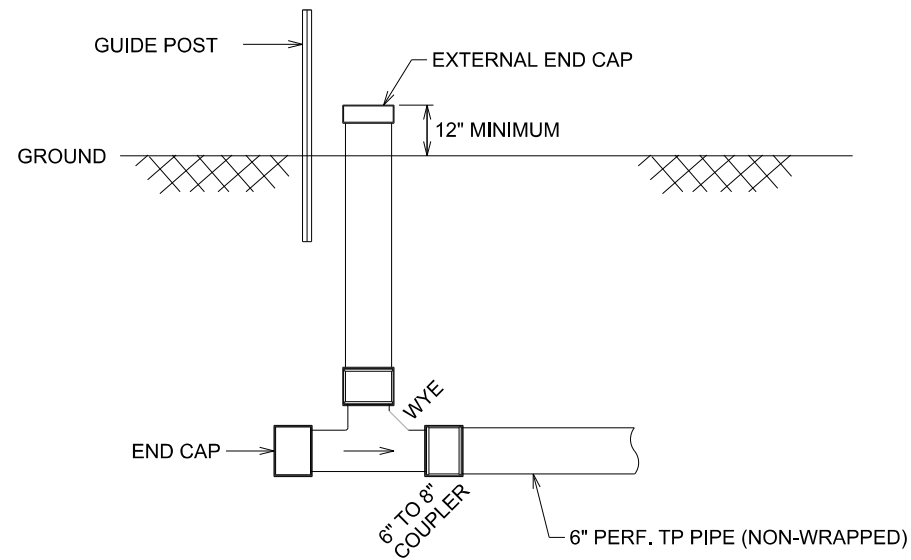
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I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.  
 PRINT NAME: JORGE R. BERNAL DEL SADO  
 SIGNATURE: *[Signature]*  
 DATE: 02-14-22 LICENSE NO. 57216

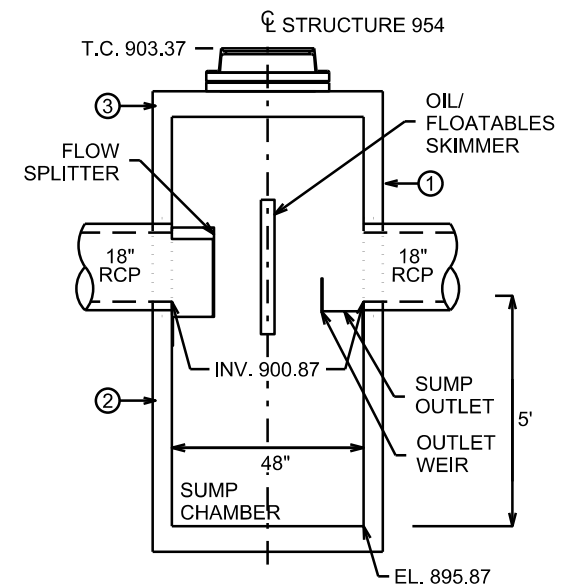
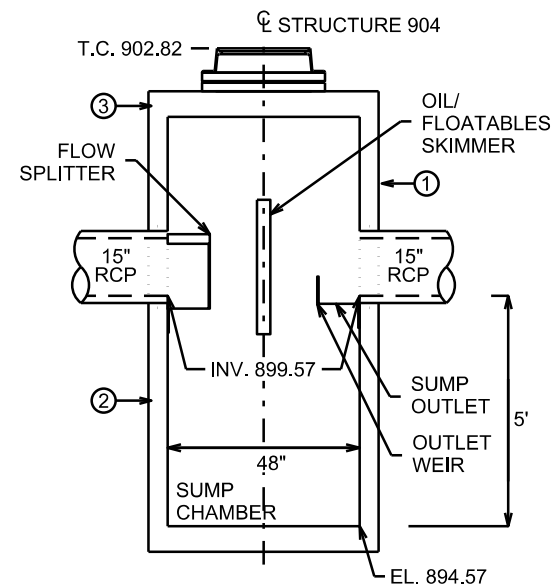
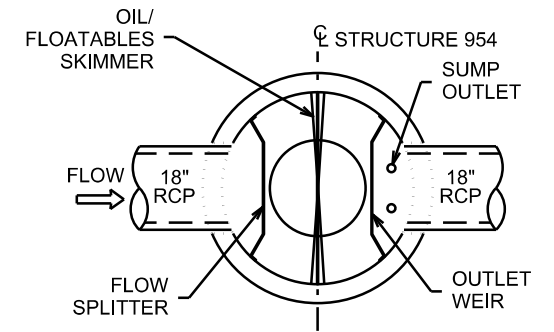
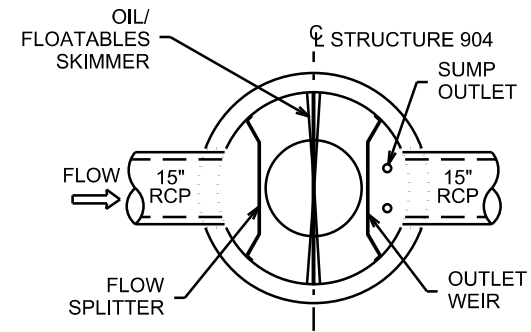
DRAWN BY: BTU DATE: 02/07/22  
 DESIGN BY: JRB DATE: 02/07/22  
 CHECKED BY: NJD DATE: 02/07/22



SAP 002-614-048  
 SAP 106-020-037



**8" TP PIPE DRAIN CLEANOUT**  
NOT TO SCALE



**DRAINAGE STRUCTURE DESIGN SPECIAL 2 ④⑤**  
**PRE-TREATMENT GRIT CHAMBER**

NOT TO SCALE

**GENERAL NOTES:**

- PRE-TREATMENT DEVICE MUST BE ABLE TO TRAP SEDIMENTS, CAPTURE AND RETAIN DEBRIS AND FLOATABLES, PREVENT SCOUR AND RESUSPENSION OF SEDIMENTS, AND HAVE NO MOVING PARTS.
- THE TOTAL SUSPENDED SOLIDS (TSS) AVERAGE ANNUAL REMOVAL RATE USING SEDIMENT WITH A MEDIAN PARTICLE SIZE DISTRIBUTION EQUIVALENT TO MNDOT ROAD SAND SHALL BE AT LEAST 80% USING SHAZAM SOFTWARE.

STRUCTURE	CONTRIBUTING DRAINAGE AREA	CONTRIBUTING IMPERVIOUS AREA	10-YEAR FLOW RATE
904	0.82 AC	0.80 AC	4.9 CFS
954	0.73 AC	0.66 AC	4.3 CFS

**SPECIFIC NOTES:**

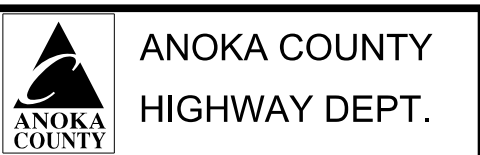
- ① PRECAST MANHOLE STRUCTURE TYPE 4020 PER STANDARD PLATE 4020.
- ② CONCRETE BASE PER STANDARD PLATE 4011.
- ③ COVER PER STANDARD PLATE 4020.
- ④ SCICLONE HYDRODYNAMIC SEPARATOR OR APPROVED EQUAL.
- ⑤ CONSTRUCT DRAINAGE STRUCTURE DESIGN SPECIAL 2 PAY ITEM CONSISTS OF CONCRETE STRUCTURE AND BASE, FLOW SPLITTER, SKIMMER, OUTLET WEIR, AND ALL REQUIRED HARDWARE FOR A COMPLETE PLACEMENT. PAY ITEM DOES NOT INCLUDE INLET AND OUTLET PIPES.

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-614-048\Plan\002614048\_DRD.dgn 02/09/2022 3:03:52 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: JORGE R. BERNAL DRUGADC  
 SIGNATURE: *[Signature]*  
 DATE: 02-14-22 LICENSE NO. 57216

DRAWN BY MP DATE 02/07/22  
 DESIGN BY MP DATE 02/07/22  
 CHECKED BY NJD DATE 02/07/22



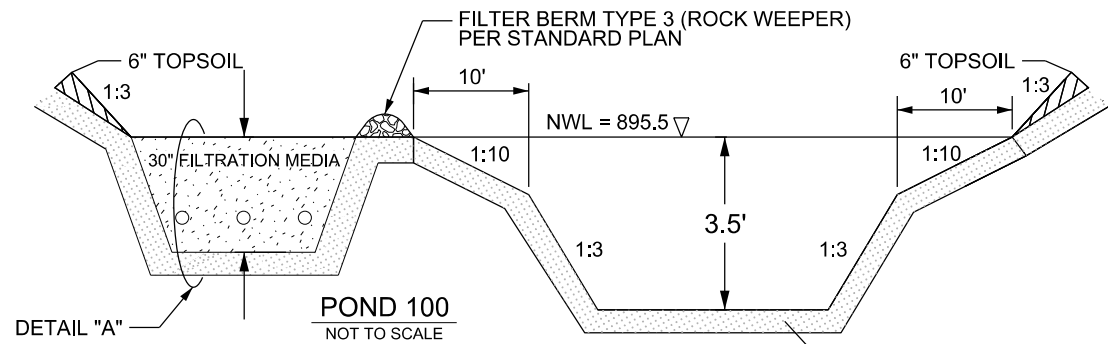
SAP 002-614-048  
 SAP 106-020-037

# POND 100 CALCULATIONS

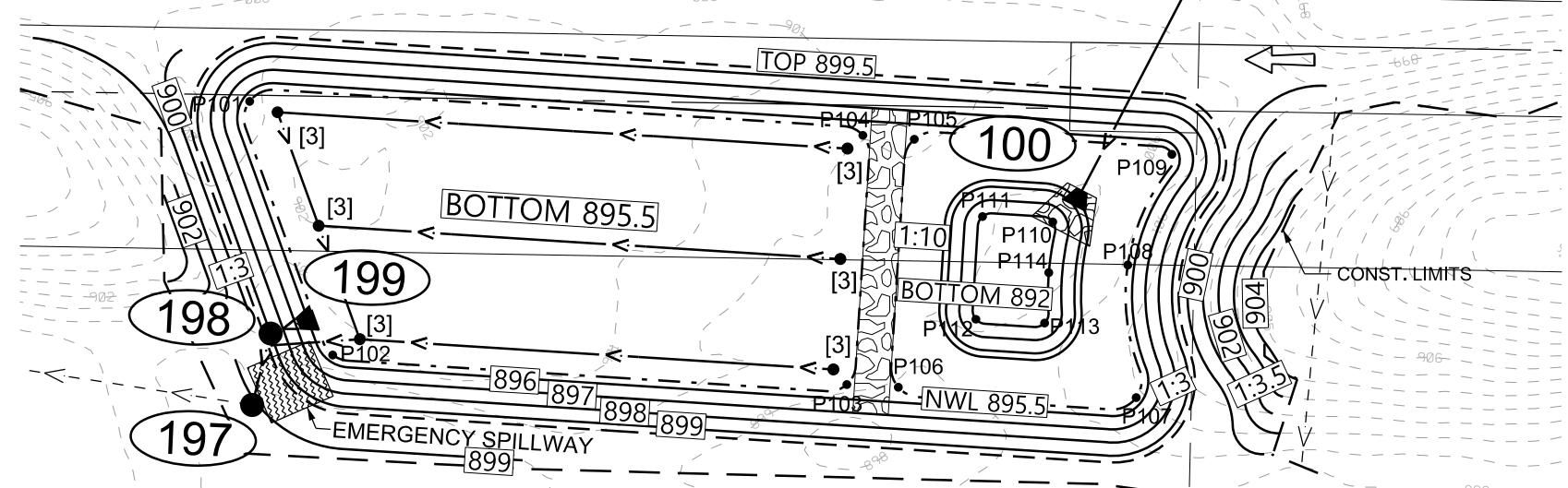
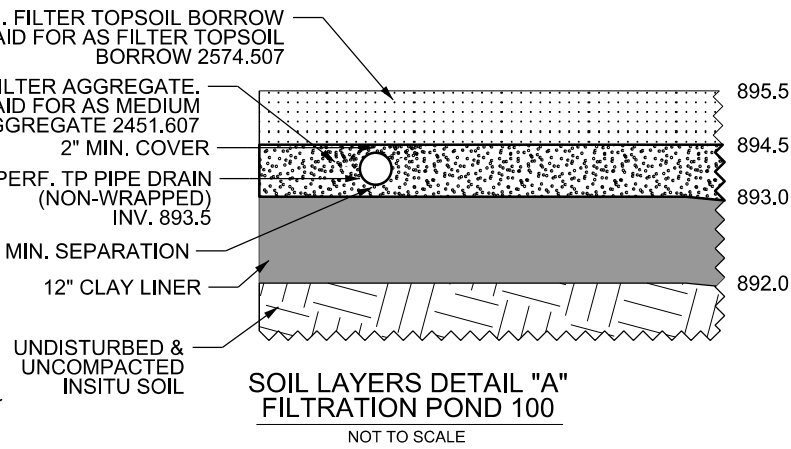
BOTTOM = 892.00  
 NWL = 895.50  
 HWL = 898.55  
 TOP OF BERM = 899.50  
 FOREBAY DESIGN = 0.5" RAINFALL  
 CONTRIBUTING AREA = 8.82 AC.

POND 100 FOREBAY DEAD POOL REQUIRED = 0.076 AC.-FT.

POND 100 FOREBAY CUMULATIVE VOLUME AT NWL = 0.096 AC.-FT.

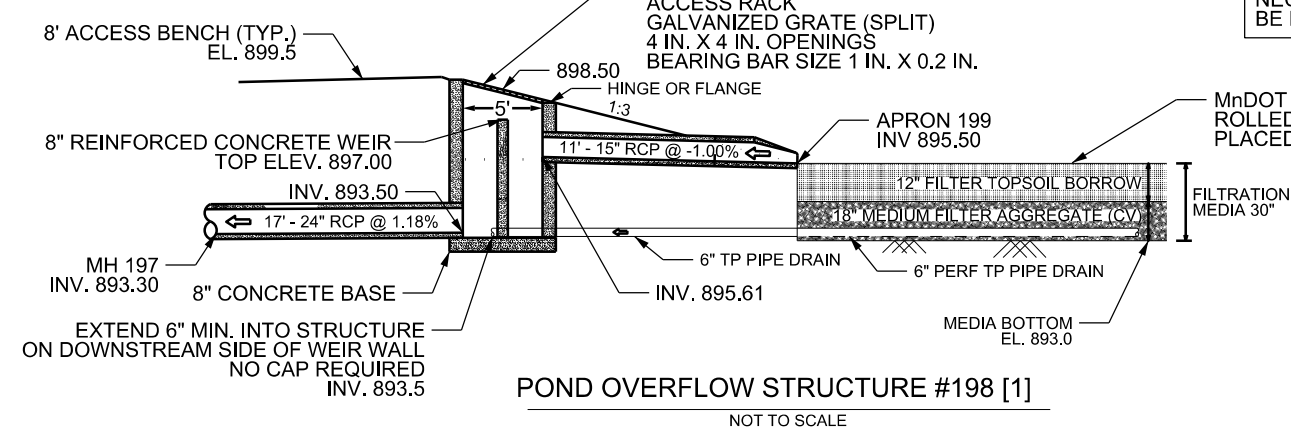
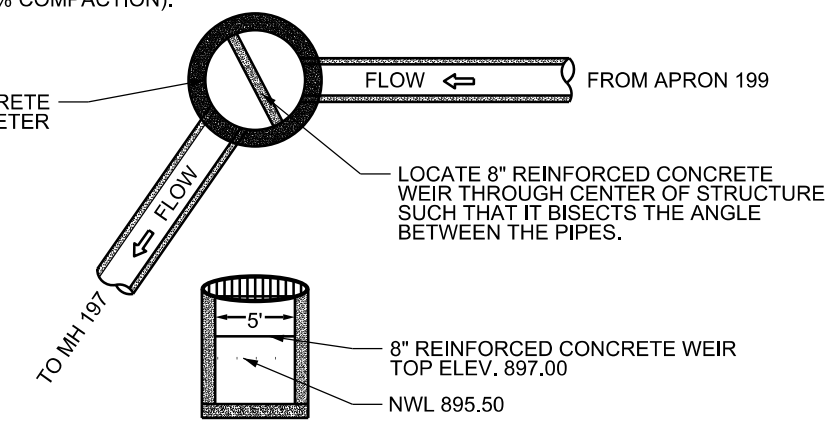


[2] COMMON BORROW SPECIAL (CV) - SOILS USED WITHIN THIS AREA SHALL BE AT LEAST 30% CLAY PARTICLES AS DEFINED IN THE MNDOT GEOTECHNICAL AND PAVEMENT MANUAL. COMPACTION SHALL BE MEASURED BY THE SPECIFIED DENSITY METHOD (100% COMPACTION).

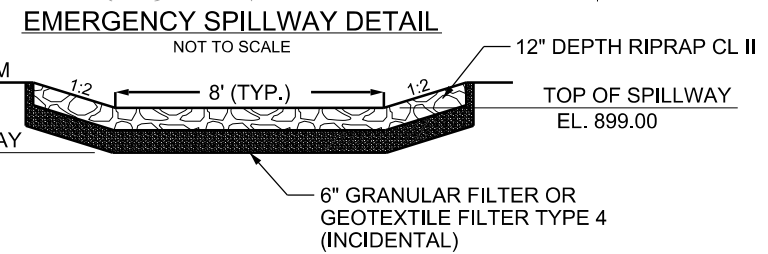


**POND 100**  
 HWL 898.55

MINIMIZE COMPACTION IN THIS AREA. ONCE POND GRADING IS COMPLETED, CONTRACTOR SHALL INSTALL SILT FENCE AROUND POND AND KEEP ALL EQUIPMENT OUT OF POND.  
 A POST CONSTRUCTION TEST OF THE FILTRATION BASIN WILL BE CONDUCTED BY FILLING THE BASIN TO A MINIMUM DEPTH OF 6 INCHES ABOVE NORMAL WATER LEVEL WITH WATER AND MONITOR THE TIME NECESSARY TO DRAIN. THE COON CREEK WATERSHED DISTRICT SHALL BE NOTIFIED PRIOR TO THE TEST TO WITNESS THE RESULTS.



[1] PAID FOR AS CONSTRUCT DRAINAGE STRUCTURE DESIGN SPECIAL 1. PAY ITEM CONSISTS OF CONCRETE STRUCTURE AND BASE, WEIR, GRATE, STEPS, AND ALL HARDWARE REQUIRED FOR A COMPLETE PLACEMENT. PAY ITEM DOES NOT INCLUDE INLET AND OUTLET PIPE, APRONS, OR RIPRAP.



STAKING POINTS					
POINT	ALIGN <14E_4> STATION	OFFSET (RT) LIN FT	X	Y	ELEVATION
<b>POND 100</b>					
P101	208+14.50	61.1	519951.53	158883.56	895.5
P102	208+34.21	118.1	519970.28	158826.24	895.5
P103	209+50.34	122.8	520086.31	158819.53	895.5
P104	209+53.00	66.4	520089.92	158875.88	895.5
P105	209+64.64	67.1	520101.55	158874.99	895.5
P106	209+61.99	123.3	520097.96	158818.92	895.5
P107	210+15.71	124.7	520151.64	158816.60	895.5
P108	210+13.30	94.7	520149.74	158846.57	895.5
P109	210+22.85	69.6	520159.71	158871.58	895.5
P110	209+96.20	85.3	520132.79	158856.31	892.0
P111	209+80.32	84.4	520116.94	158857.50	892.0
P112	209+79.22	107.6	520115.45	158834.31	892.0
P113	209+94.75	108.2	520130.97	158833.45	892.0
P114	209+95.53	96.8	520131.93	158844.86	892.0

**NOTES:**  
 - CONTOURS ARE SHOWN TO FINISHED GRADE.  
 - GRANULAR CUSHION LAYER/GEOTEXTILE FILTER FOR EMERGENCY SPILLWAY IS INCIDENTAL.  
 - SEE MNDOT STANDARD PLATE #3133 FOR RIPRAP AT RCP OUTLET DETAILS.  
 - PIPE LENGTHS SHOWN IN DETAILS INCLUDE APRON LENGTH.  
 - EMERGENCY SPILLWAY RIPRAP SHALL EXTEND TO TOE OF SLOPE.  
 - PLACE TP PERFORATED PIPE WITH PERFORATIONS DOWN.  
 - TP PIPE DRAIN WITHIN 4 FEET OF CONNECTION TO A MH OR OUTLET STRUCTURE SHALL BE NON-PERFORATED. DETAILS OF CONNECTION AND COUPLING TO PIPE SHALL BE APPROVED BY THE PROJECT ENGINEER. SEE SHEET 107 FOR TABULATION.  
 [3] SEE DRAINAGE DETAILS SHEET 122 FOR 8" TP PIPE DRAIN CLEANOUT DETAIL.

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-614-048\Plan\002614048\_POND100.dgn      02/09/2022      3:04:05 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: JORGE R. BERNAL DELGADO  
 SIGNATURE: *[Signature]*  
 DATE: 02-14-22      LICENSE NO. 57216

DRAWN BY: MP      DATE: 02/07/22  
 DESIGN BY: MP      DATE: 02/07/22  
 CHECKED BY: JRB      DATE: 02/07/22

**ANOKA COUNTY**  
**HIGHWAY DEPT.**

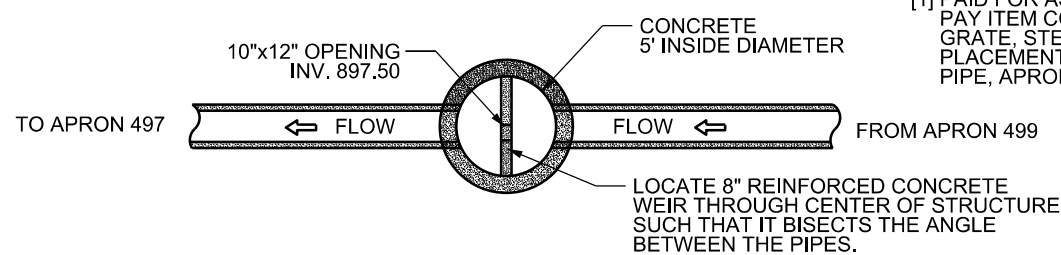
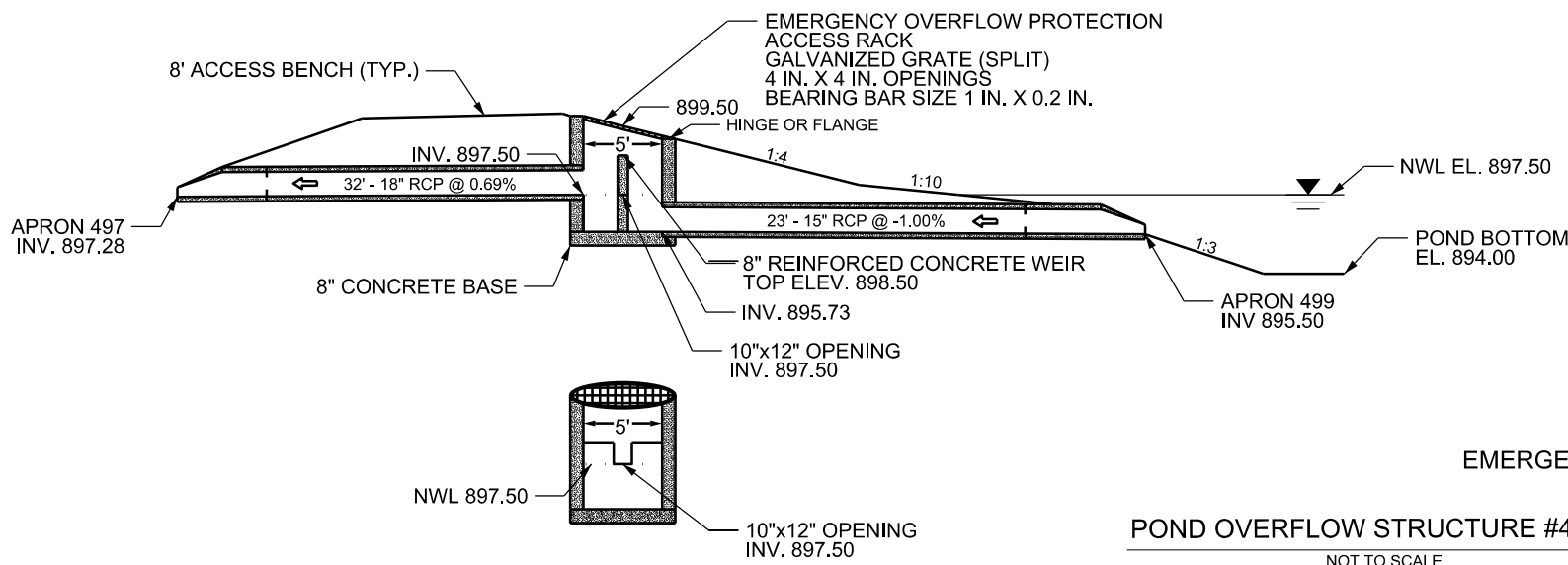
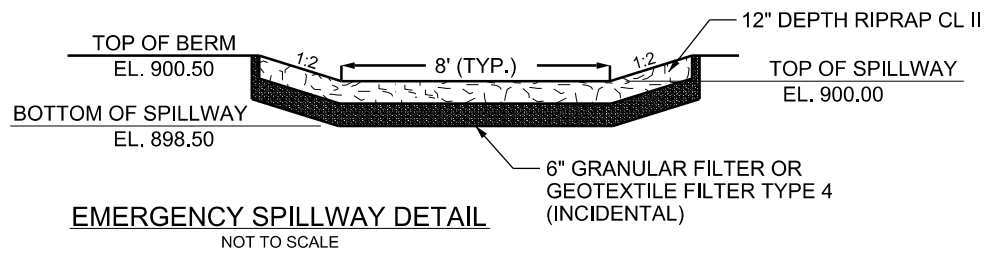
SAP 002-614-048  
 SAP 106-020-037

**POND 100**  
**GRADING AND DETAILS**  
 Sheet 123 of 303 Sheets

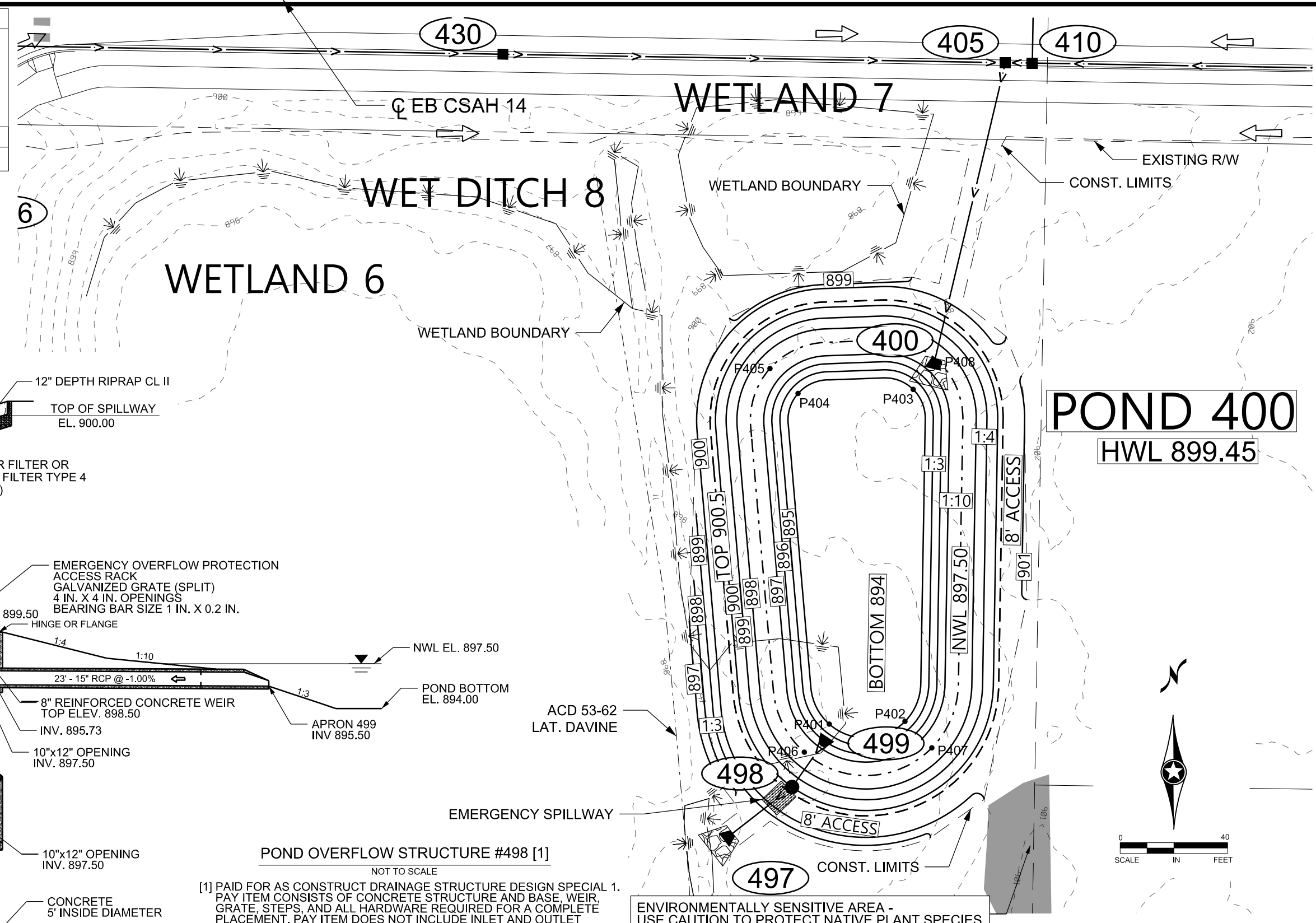
**POND 400 CALCULATIONS**

BOTTOM = 894.00  
 NWL = 897.50  
 HWL = 899.45  
 TOP OF BERM = 900.50  
 DEAD POOL DESIGN = 2.5" RAINFALL  
 CONTRIBUTING DRAINAGE AREA = 4.01 AC.  
 POND 400 TOTAL DEAD POOL REQUIRED = 0.52 AC.-FT.  
 POND 400 CUMULATIVE VOLUME AT NWL = 0.63 AC.-FT.

STAKING POINTS					
POINT	ALIGN <14E_4>	OFFSET (RT)	X	Y	ELEVATION
POND 400					
P401	235+93.09	266.3	522726.36	158636.99	894.0
P402	236+21.29	264.8	522754.58	158637.97	894.0
P403	236+22.26	141.2	522757.61	158761.56	894.0
P404	235+79.46	143.4	522714.78	158760.05	894.0
P405	235+68.82	134.3	522704.29	158769.33	897.5
P406	235+83.98	276.9	522717.07	158626.51	897.5
P407	236+31.44	274.4	522764.57	158628.16	897.5
P408	236+31.89	131.0	522767.41	158771.56	897.5



[1] PAID FOR AS CONSTRUCT DRAINAGE STRUCTURE DESIGN SPECIAL 1. PAY ITEM CONSISTS OF CONCRETE STRUCTURE AND BASE, WEIR, GRATE, STEPS, AND ALL HARDWARE REQUIRED FOR A COMPLETE PLACEMENT. PAY ITEM DOES NOT INCLUDE INLET AND OUTLET PIPE, APRONS, OR RIPRAP.



ENVIRONMENTALLY SENSITIVE AREA - USE CAUTION TO PROTECT NATIVE PLANT SPECIES

- NOTES:**
- CONTOURS ARE SHOWN TO FINISHED GRADE.
  - GRANULAR CUSHION LAYER/GEOTEXTILE FILTER FOR EMERGENCY SPILLWAY IS INCIDENTAL.
  - SEE MNDOT STANDARD PLATE #3133 FOR RIPRAP AT RCP OUTLET DETAILS.
  - PIPE LENGTHS SHOWN IN DETAILS INCLUDE APRON LENGTH.
  - EMERGENCY SPILLWAY RIPRAP SHALL EXTEND TO TOE OF SLOPE.

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-614-048\Plan\002614048\_POND400.dgn 02/09/2022 3:04:15 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: JORGE R. BERNAL DELGADO  
 SIGNATURE: *[Signature]*  
 DATE: 02-14-22 LICENSE NO. 57216

DRAWN BY: MP DATE: 02/07/22  
 DESIGN BY: MP DATE: 02/07/22  
 CHECKED BY: JRB DATE: 02/07/22

**ANOKA COUNTY**  
**HIGHWAY DEPT.**

SAP 002-614-048  
 SAP 106-020-037

POND 400  
 GRADING AND DETAILS  
 Sheet 124 of 303 Sheets

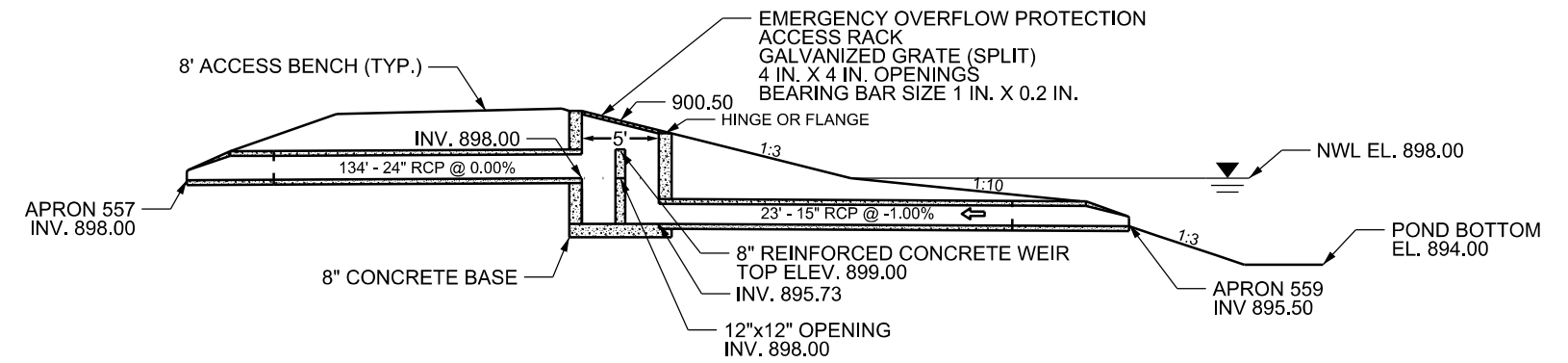
# POND 500a CALCULATIONS

BOTTOM = 894.00  
 NWL = 898.00  
 HWL = 900.47  
 TOP OF BERM = 901.50  
 DEAD POOL DESIGN = 2.5" RAINFALL  
 CONTRIBUTING DRAINAGE AREA = 2.24 AC.

POND 500a TOTAL DEAD POOL REQUIRED = 0.32 AC.-FT.

POND 500a CUMULATIVE VOLUME AT NWL = 0.36 AC.-FT.

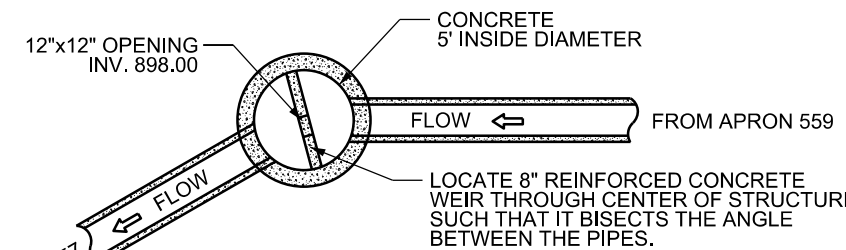
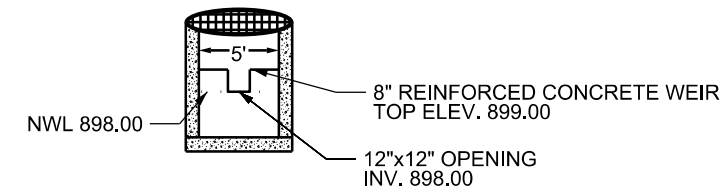
STAKING POINTS					
POINT	ALIGN <14W_4> STATION	OFFSET (LT) LIN FT	X	Y	ELEVATION
<b>POND 500a</b>					
P509	1250+80.69	56.8	524218.92	153973.11	894.0
P510	1251+50.29	55.8	524288.50	153971.03	894.0
P511	1251+50.84	62.0	524289.15	153977.18	894.0
P512	1251+26.32	88.0	524265.06	153903.58	894.0
P513	1250+63.75	87.7	524202.50	153904.34	894.0
P514	1250+47.35	97.3	524186.26	153914.20	898.0
P515	1250+71.02	40.4	524208.98	153956.92	898.0
P516	1251+63.48	42.2	524301.46	153957.13	898.0
P517	1251+68.56	68.9	524306.98	153983.73	898.0
P518	1251+33.92	105.4	524272.96	153920.87	898.0



## POND OVERFLOW STRUCTURE #558 [1]

NOT TO SCALE

[1] PAID FOR AS CONSTRUCT DRAINAGE STRUCTURE DESIGN SPECIAL 1. PAY ITEM CONSISTS OF CONCRETE STRUCTURE AND BASE, WEIR, GRATE, STEPS, AND ALL HARDWARE REQUIRED FOR A COMPLETE PLACEMENT. PAY ITEM DOES NOT INCLUDE INLET AND OUTLET PIPE, APRONS, OR RIPRAP.



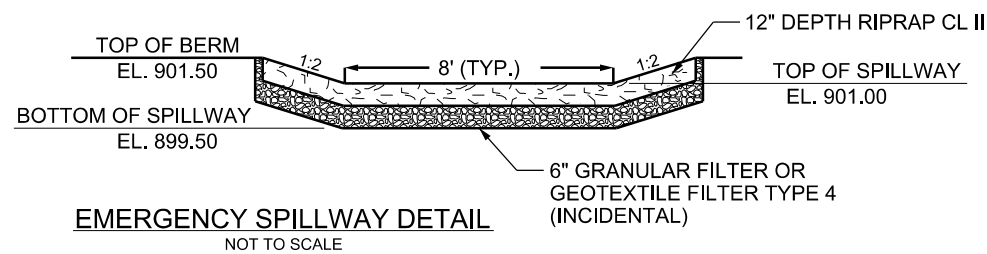
ENVIRONMENTALLY SENSITIVE AREA - USE CAUTION TO PROTECT NATIVE PLANT SPECIES. SEE SPECIAL PROVISIONS FOR CONSTRUCTION REQUIREMENTS IN THIS AREA.

# POND 500b

SEE POND 500b GRADING SHEET FOR MORE INFORMATION

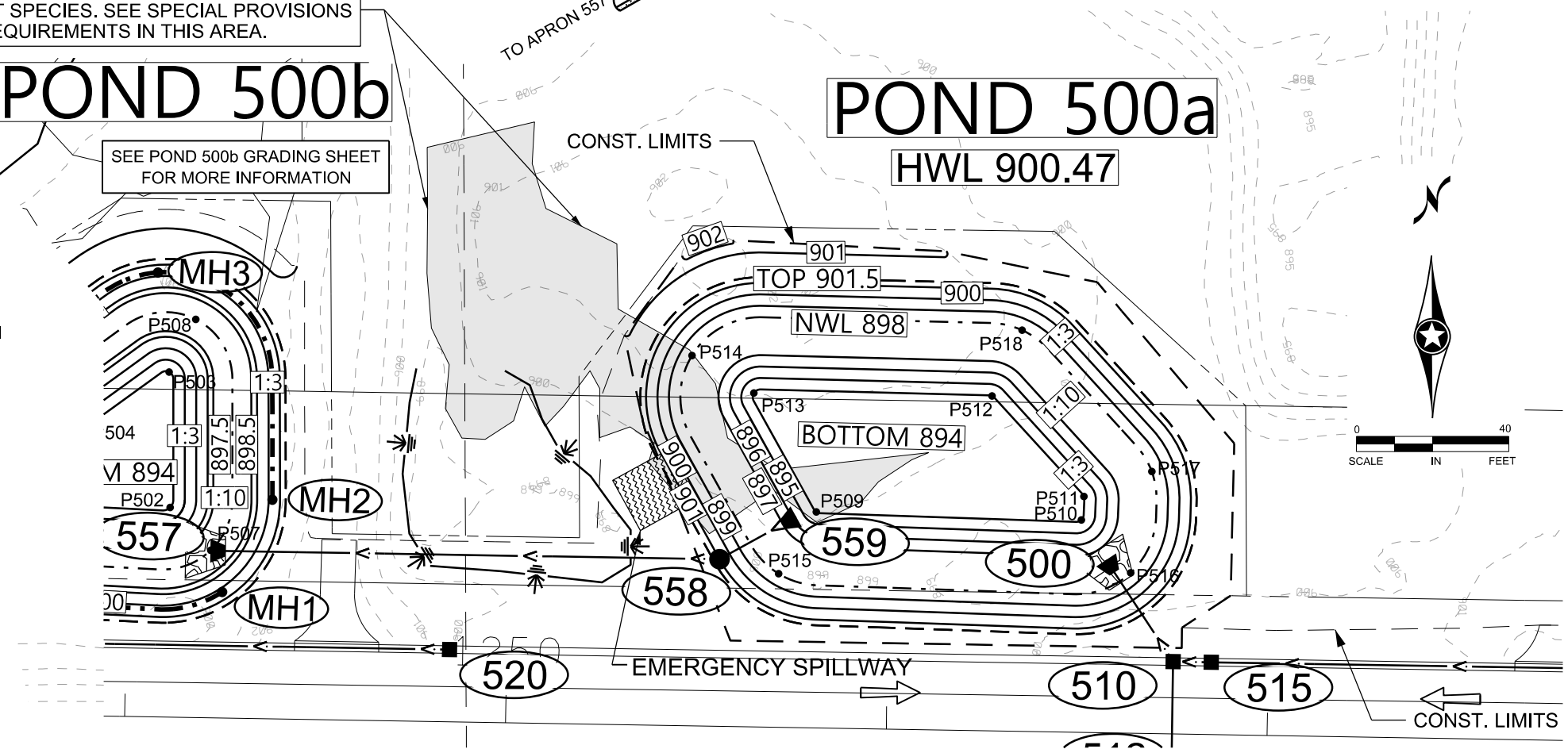
# POND 500a

HWL 900.47



### NOTES:

- CONTOURS ARE SHOWN TO FINISHED GRADE.
- GRANULAR CUSHION LAYER/GEOTEXTILE FILTER FOR EMERGENCY SPILLWAY IS INCIDENTAL.
- SEE MNDOT STANDARD PLATE #3133 FOR RIPRAP AT RCP OUTLET DETAILS.
- PIPE LENGTHS SHOWN IN DETAILS INCLUDE APRON LENGTH.
- EMERGENCY SPILLWAY RIPRAP SHALL EXTEND TO TOE OF SLOPE.



NO	DATE	BY	CKD	APPR	REVISION
1	03/02/2022	MP	JRB	JRB	REVISED ENVIRONMENTALLY SENSITIVE AREAS LINWORK

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: JORGE R. BERNAL DELGADO  
 SIGNATURE: *[Signature]*  
 DATE: 03-01-22 LICENSE NO. 57216

DRAWN BY: MP DATE: 02/16/22  
 DESIGN BY: MP DATE: 02/16/22  
 CHECKED BY: JRB DATE: 02/16/22



ANOKA COUNTY  
 HIGHWAY DEPT.

SAP 002-614-048  
 SAP 106-020-037

POND 500a  
 GRADING AND DETAILS

**POND 500b CALCULATIONS**

BOTTOM = 894.00  
 NWL = 898.00  
 HWL = 900.32  
 TOP OF BERM = 901.50  
 DEADPOOL DESIGN = 2.5" RAINFALL  
 CONTRIBUTING DRAINAGE AREA = 1.44 AC.

POND 500b TOTAL DEAD POOL REQUIRED = 0.22 AC.-FT.

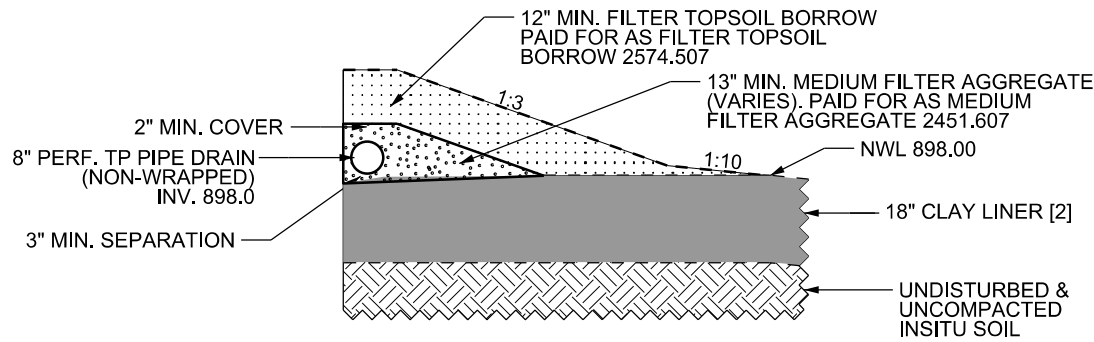
POND 500b CUMULATIVE VOLUME AT NWL = 0.22 AC.-FT.

**POND 500b NOTES:**

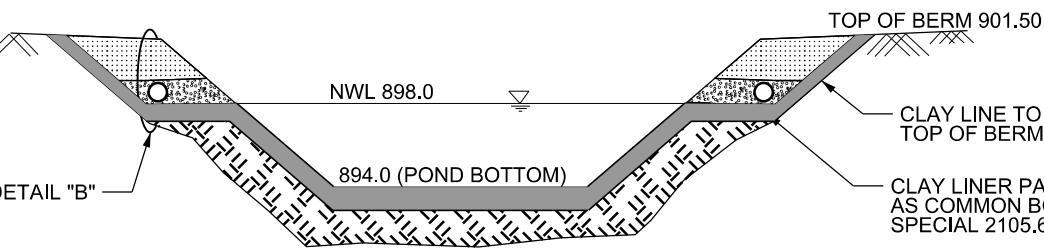
[2] COMMON BORROW SPECIAL (CV) - SOILS USED WITHIN THIS AREA SHALL BE AT LEAST 30% CLAY PARTICLES AS DEFINED IN THE MNDOT GEOTECHNICAL AND PAVEMENT MANUAL. COMPACTION SHALL BE MEASURED BY THE SPECIFIED DENSITY METHOD (100% COMPACTION).

A POST CONSTRUCTION TEST ON THE FILTRATION BENCH WILL BE CONDUCTED BY FILLING THE BASIN TO A MINIMUM DEPTH OF 6 INCHES ABOVE NORMAL WATER LEVEL WITH WATER AND MONITOR THE TIME NECESSARY TO DRAIN. THE COON CREEK WATERSHED DISTRICT SHALL BE NOTIFIED PRIOR TO THE TEST TO WITNESS THE RESULTS.

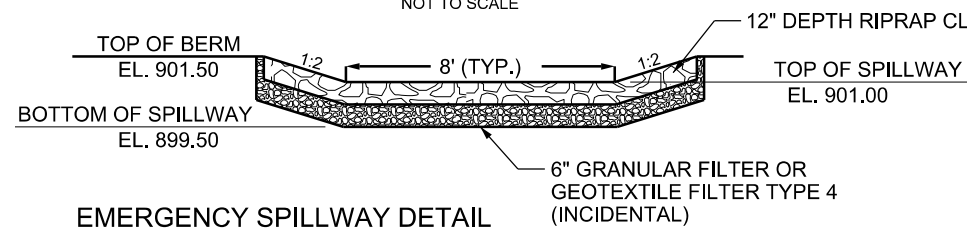
STAKING POINTS					
POINT	ALIGN <14W_4> STATION	OFFSET (LT) LIN FT	X	Y	ELEVATION
<b>POND 500b</b>					
P501	1248+55.33	57.8	523993.61	158977.88	894.0
P502	1249+10.99	55.1	524049.22	158974.27	894.0
P503	1249+10.14	90.7	524048.96	159009.90	894.0
P504	1248+91.54	78.0	524030.15	158997.55	894.0
P505	1248+58.03	76.9	523996.62	158996.94	898.0
P506	1248+18.12	55.4	523956.36	158976.11	898.0
P507	1249+21.86	44.0	524059.90	158963.04	898.0
P508	1249+16.93	104.6	524055.99	159023.71	898.0



**PERFORATED PIPE TRENCH DETAIL "B" FILTRATION POND 500b**  
NOT TO SCALE



**CLAY LINED FILTRATION POND 500b**  
NOT TO SCALE

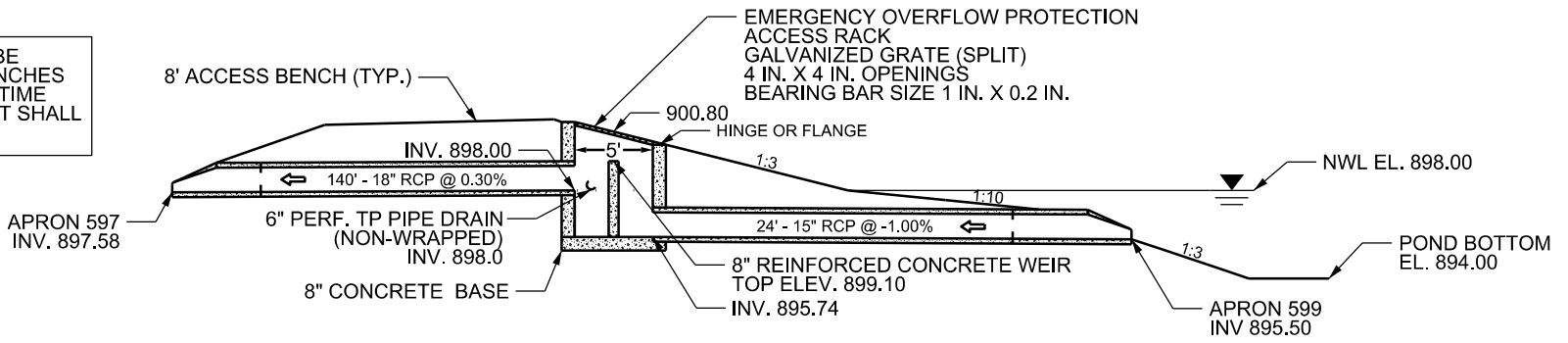
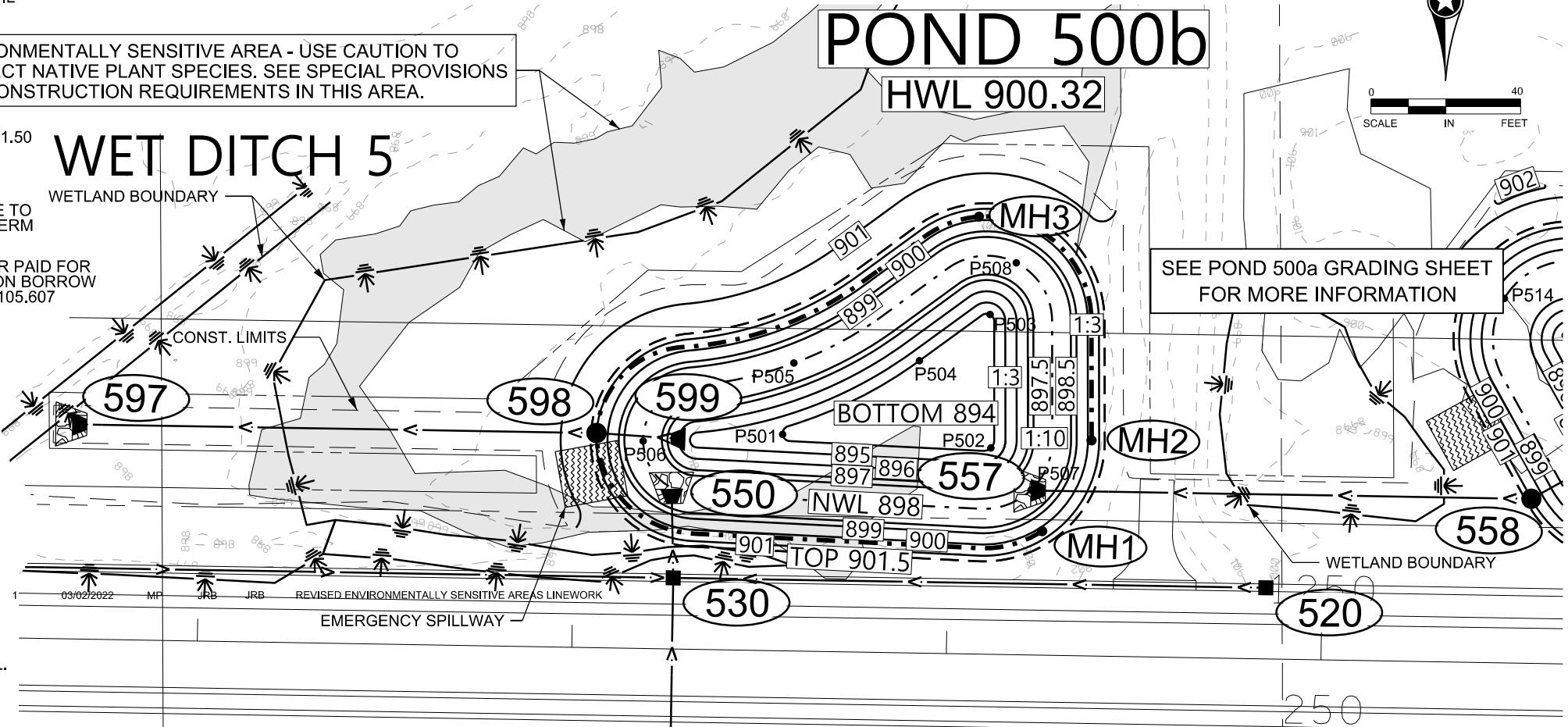


**EMERGENCY SPILLWAY DETAIL**  
NOT TO SCALE

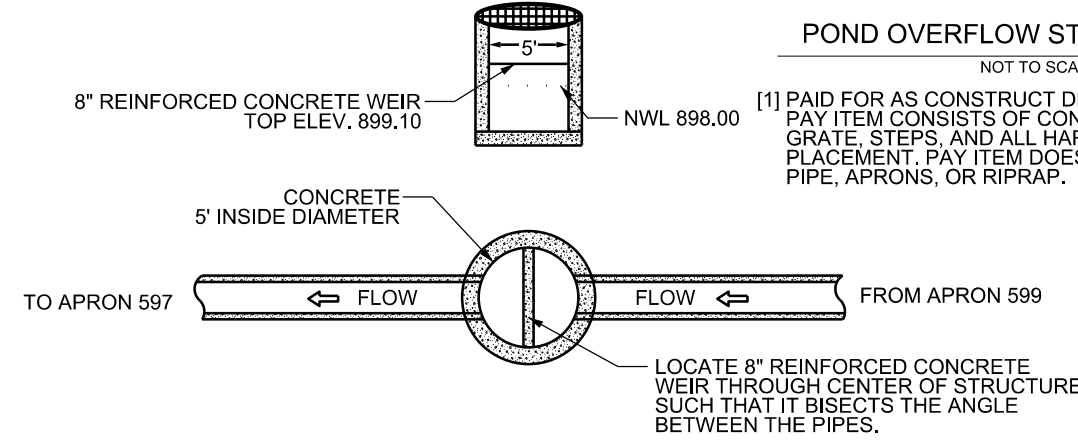
- NOTES:**
- CONTOURS ARE SHOWN TO FINISHED GRADE.
  - GRANULAR CUSHION LAYER/GEOTEXTILE FILTER FOR EMERGENCY SPILLWAY IS INCIDENTAL.
  - SEE MNDOT STANDARD PLATE #3133 FOR RIPRAP AT RCP OUTLET DETAILS.
  - PIPE LENGTHS SHOWN IN DETAILS INCLUDE APRON LENGTH.
  - EMERGENCY SPILLWAY RIPRAP SHALL EXTEND TO TOE OF SLOPE.
  - PLACE TP PERFORATED PIPE WITH PERFORATIONS DOWN.

ENVIRONMENTALLY SENSITIVE AREA - USE CAUTION TO PROTECT NATIVE PLANT SPECIES. SEE SPECIAL PROVISIONS FOR CONSTRUCTION REQUIREMENTS IN THIS AREA.

**WET DITCH 5**



**POND OVERFLOW STRUCTURE #598 [1]**  
NOT TO SCALE



[1] PAID FOR AS CONSTRUCT DRAINAGE STRUCTURE DESIGN SPECIAL 1. PAY ITEM CONSISTS OF CONCRETE STRUCTURE AND BASE, WEIR, GRATE, STEPS, AND ALL HARDWARE REQUIRED FOR A COMPLETE PLACEMENT. PAY ITEM DOES NOT INCLUDE INLET AND OUTLET PIPE, APRONS, OR RIPRAP.

NO	DATE	BY	CKD	APPR	REVISION
1	03/02/2022	MP	JRB	JRB	REVISED ENVIRONMENTALLY SENSITIVE AREAS LINWORK

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: JORGE R. BERNAL DELGADO  
 SIGNATURE: *[Signature]*  
 DATE: 03-01-22 LICENSE NO. 57216

DRAWN BY: MP DATE: 02/16/22  
 DESIGN BY: MP DATE: 02/16/22  
 CHECKED BY: JRB DATE: 02/16/22



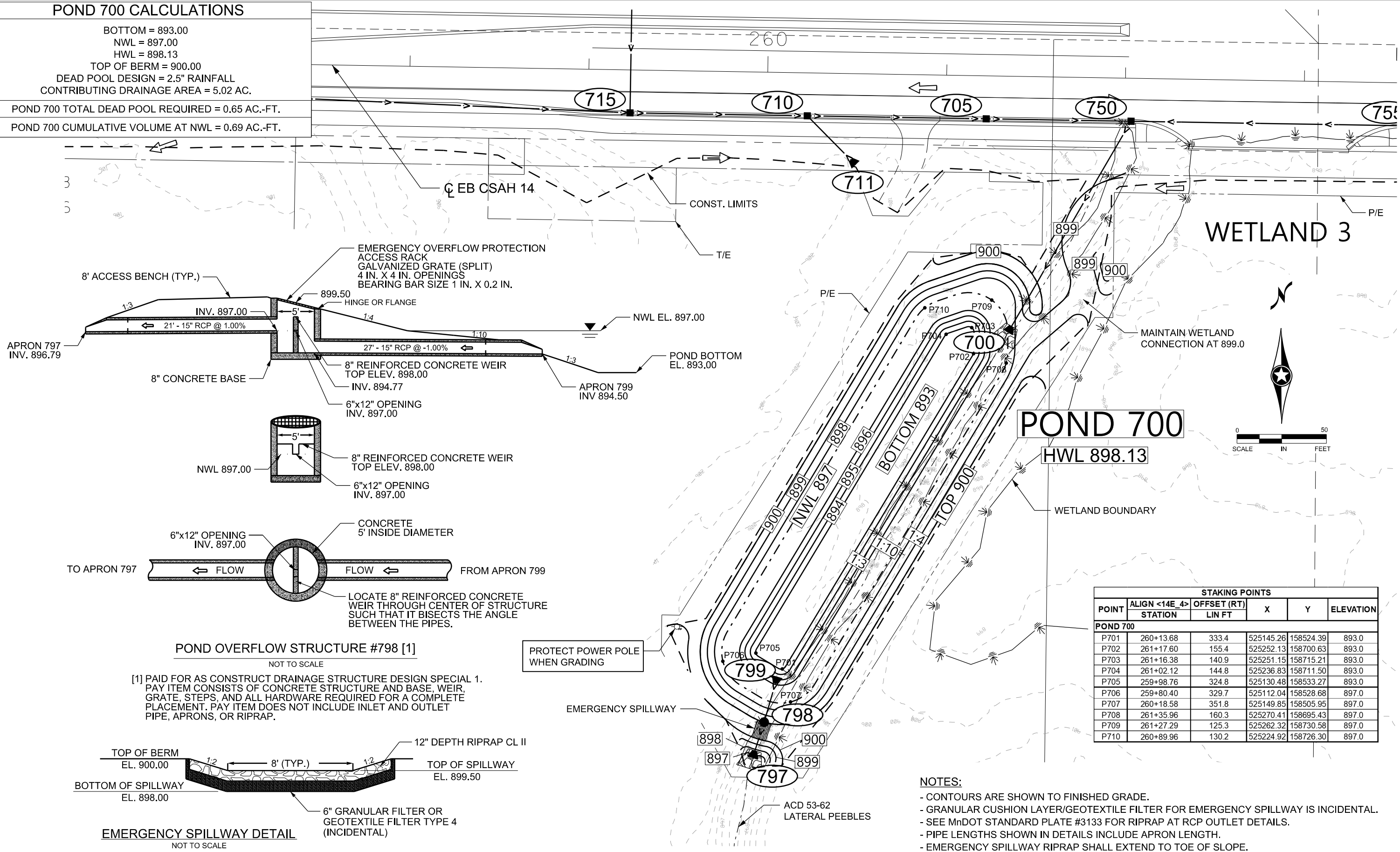
**ANOKA COUNTY  
HIGHWAY DEPT.**

SAP 002-614-048  
 SAP 106-020-037

**POND 500b  
GRADING AND DETAILS**

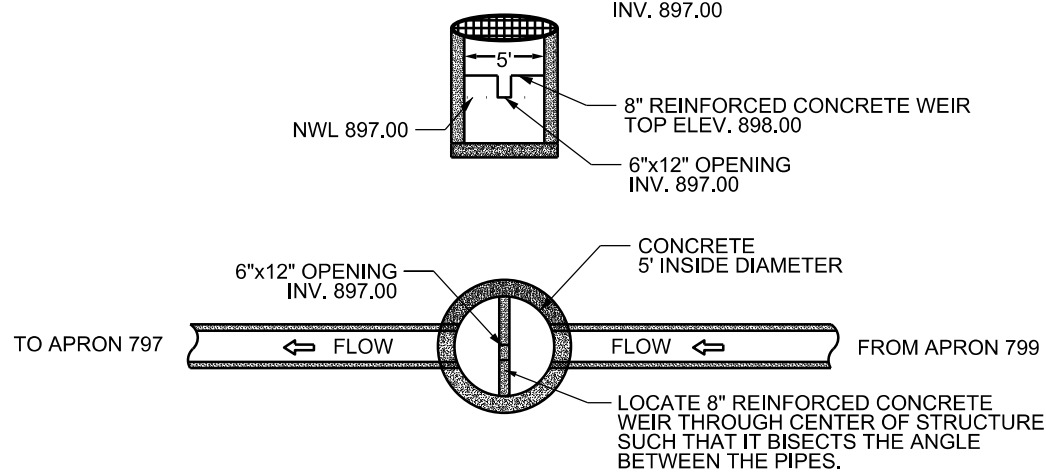
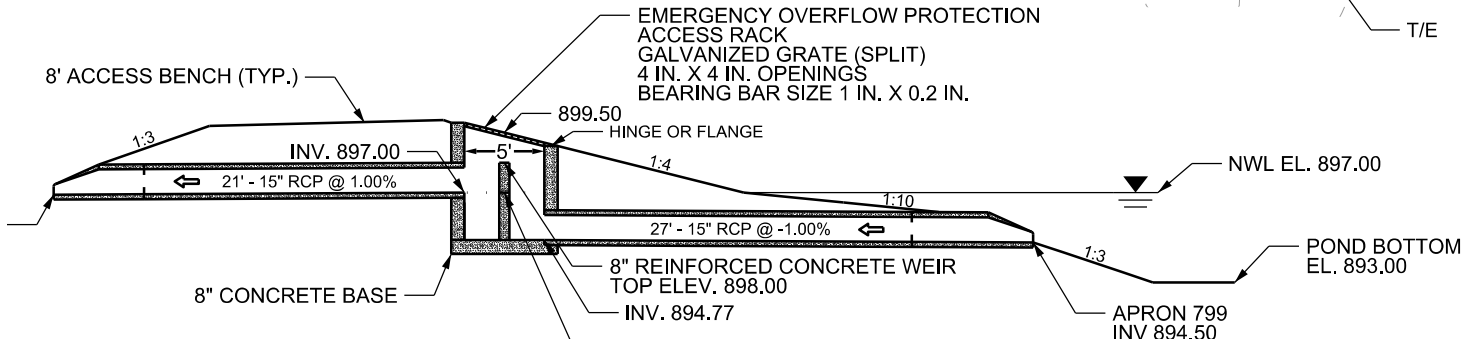
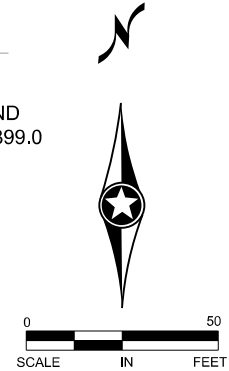
**POND 700 CALCULATIONS**

BOTTOM = 893.00  
 NWL = 897.00  
 HWL = 898.13  
 TOP OF BERM = 900.00  
 DEAD POOL DESIGN = 2.5" RAINFALL  
 CONTRIBUTING DRAINAGE AREA = 5.02 AC.  
 POND 700 TOTAL DEAD POOL REQUIRED = 0.65 AC.-FT.  
 POND 700 CUMULATIVE VOLUME AT NWL = 0.69 AC.-FT.



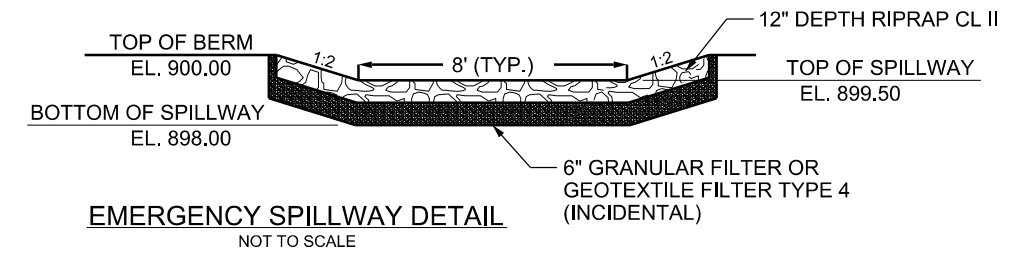
**WETLAND 3**

**POND 700**  
 HWL 898.13



**POND OVERFLOW STRUCTURE #798 [1]**  
 NOT TO SCALE

[1] PAID FOR AS CONSTRUCT DRAINAGE STRUCTURE DESIGN SPECIAL 1. PAY ITEM CONSISTS OF CONCRETE STRUCTURE AND BASE, WEIR, GRATE, STEPS, AND ALL HARDWARE REQUIRED FOR A COMPLETE PLACEMENT. PAY ITEM DOES NOT INCLUDE INLET AND OUTLET PIPE, APRONS, OR RIPRAP.



**EMERGENCY SPILLWAY DETAIL**  
 NOT TO SCALE

STAKING POINTS					
POINT	ALIGN <14E_4> STATION	OFFSET (RT) LIN FT	X	Y	ELEVATION
<b>POND 700</b>					
P701	260+13.68	333.4	525145.26	158524.39	893.0
P702	261+17.60	155.4	525252.13	158700.63	893.0
P703	261+16.38	140.9	525251.15	158715.21	893.0
P704	261+02.12	144.8	525236.83	158711.50	893.0
P705	259+98.76	324.8	525130.48	158533.27	893.0
P706	259+80.40	329.7	525112.04	158528.68	897.0
P707	260+18.58	351.8	525149.85	158505.95	897.0
P708	261+35.96	160.3	525270.41	158695.43	897.0
P709	261+27.29	125.3	525262.32	158730.58	897.0
P710	260+89.96	130.2	525224.92	158726.30	897.0

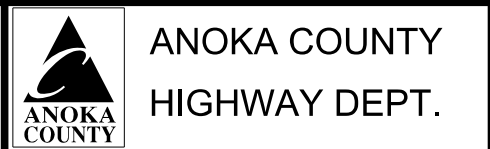
- NOTES:**
- CONTOURS ARE SHOWN TO FINISHED GRADE.
  - GRANULAR CUSHION LAYER/GEOTEXTILE FILTER FOR EMERGENCY SPILLWAY IS INCIDENTAL.
  - SEE MnDOT STANDARD PLATE #3133 FOR RIPRAP AT RCP OUTLET DETAILS.
  - PIPE LENGTHS SHOWN IN DETAILS INCLUDE APRON LENGTH.
  - EMERGENCY SPILLWAY RIPRAP SHALL EXTEND TO TOE OF SLOPE.

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-614-048\Plan\002614048\_POND700.dgn      02/09/2022      3:04:31 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: JORGE R. BERNAL DELGADO  
 SIGNATURE: *[Signature]*  
 DATE: 02-14-22      LICENSE NO. 57216

DRAWN BY: MP      DATE: 02/07/22  
 DESIGN BY: MP      DATE: 02/07/22  
 CHECKED BY: JRB      DATE: 02/07/22



SAP 002-614-048  
 SAP 106-020-037





# STORM WATER POLLUTION PREVENTION PLAN (SWPPP)

### Training

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

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

### 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

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-614-048\Plan\002614048\_SWP.dgn      02/09/2022      3:04:43 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: JORGE R. BERNAL DELGADO

SIGNATURE:

DATE: 02-14-22      LICENSE NO. 57216

DRAWN BY: MP      DATE: 02/07/22

DESIGN BY: JRB      DATE: 02/07/22

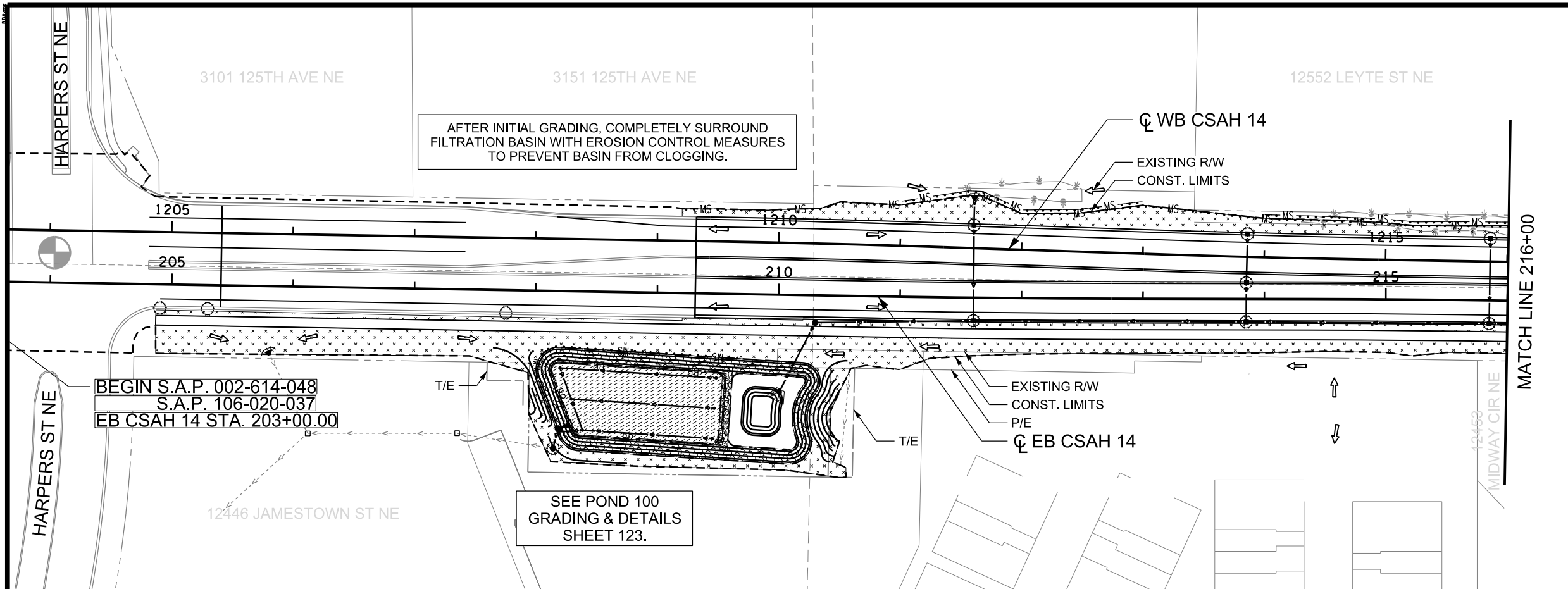
CHECKED BY: NJD      DATE: 02/07/22

ANOKA COUNTY

HIGHWAY DEPT.

SAP 002-614-048

SAP 106-020-037



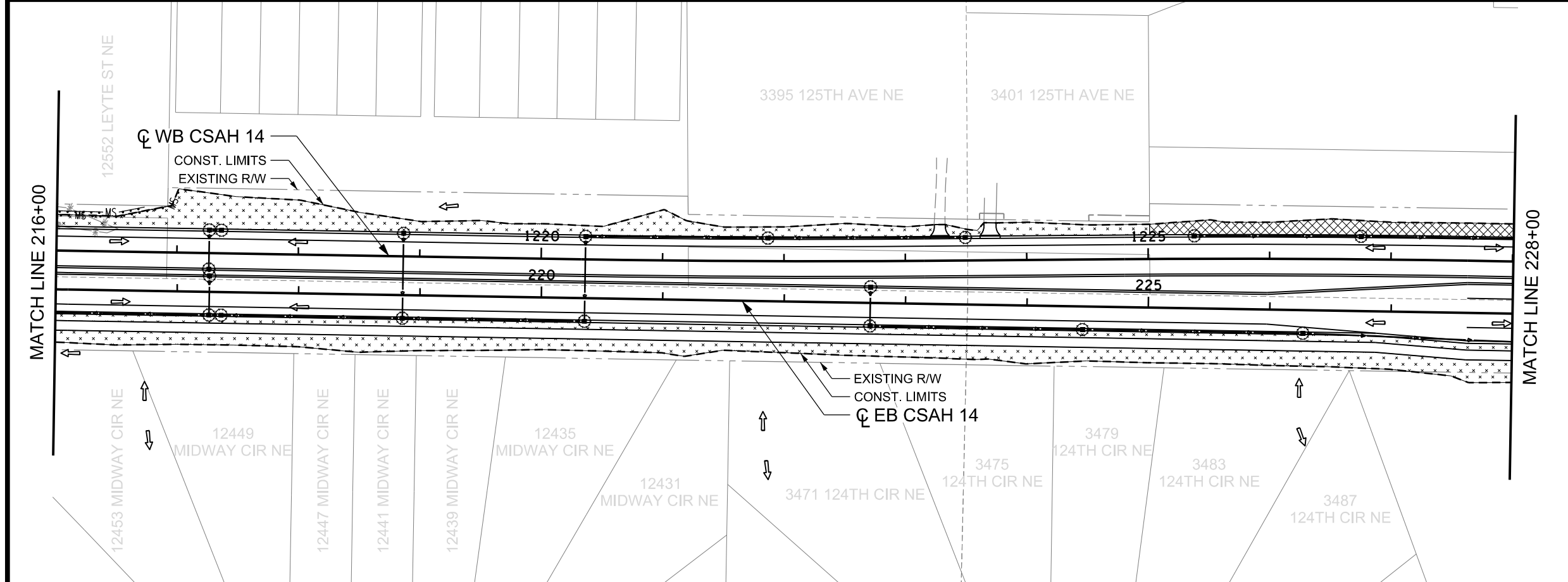
### LEGEND

- PROPOSED CATCH BASIN
- INPLACE CATCH BASIN
- PROPOSED MANHOLE
- INPLACE MANHOLE
- ▼ PROPOSED APRON
- ▽ INPLACE APRON
- PROPOSED STORM SEWER
- - - INPLACE STORM SEWER
- - - INPLACE CULVERT
- MS → SILT FENCE, TYPE MACHINE SLICED
- BR → SEDIMENT CONTROL LOG, TYPE WOOD FIBER
- WETLAND BOUNDARIES
- ▲ RIPRAP (CLASS II UNLESS OTHERWISE NOTED)
- ⊙ SOD APRON INLET OR OUTLET
- ⌒ CULVERT END TREATMENT
- STORM DRAIN INLET PROTECTION
- SURFACE FLOW ARROW
- SEEDING MIX 25-121  
FERT. TYPE 3 (22-5-10)  
HYDRAULIC REINFORCED FIBER MATRIX
- SEEDING MIX 25-131  
FERT. TYPE 3 (22-5-10)  
EROSION CONTROL BLANKET CAT. 25
- SEEDING MIX 33-261  
FERT. TYPE 4 (17-10-7)  
EROSION CONTROL BLANKET CAT. 10
- SEEDING MIX 35-241  
FERT. TYPE 4 (17-10-7)  
EROSION CONTROL BLANKET CAT. 25

### EROSION CONTROL NOTES:

1. THE CONTRACTOR SHALL CONSTRUCT WASHED GRAVEL ENTRANCES AT POINTS OF EXIT FROM THE WORK AREA ONTO EXISTING BITUMINOUS PAVEMENT AS DIRECTED BY THE ENGINEER.
2. SILT FENCE SHALL FOLLOW A SINGLE CONTOUR AS CLOSELY AS POSSIBLE.
3. SILT FENCE SHALL BE CLEANED OUT OR REPLACED WHEN SEDIMENT REACHES 8" OR 1/3 OF SILT FENCE HEIGHT.
4. WHEN SEDIMENT DEPOSITS IN A WATER OF THE STATE, THE MATERIAL MUST BE REMOVED WITHIN 7 DAYS.
5. IF SILT DEPOSITS IN THE ANOKA COUNTY RIGHT-OF-WAY, THE CONTRACTOR IS RESPONSIBLE FOR ITS REMOVAL.
6. STABILIZE VEGETATION AND SOIL STOCKPILES WITHIN 7 DAYS OF ROUGH GRADING OR INACTIVITY. ADDITIONAL TEMPORARY AND PERMANENT EROSION CONTROL AS DIRECTED BY ENGINEER.

SCALE IN FEET



1	02/16/2022	BTU	JRB	UPDATED LEADER
NO	DATE	BY	CKD	APPR
				REVISION
NAME: P:\002-614-048\Plan\002614048_EC4_P1.dgn 02/16/2022 10:44:13 AM				

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

PRINT NAME: JORGE R. BERNAL DELGADO

SIGNATURE: *Jorge R. Bernal Delgado*

DATE: 02-23-22 LICENSE NO. 57216

DRAWN BY: MP DATE: 02/10/22

DESIGN BY: JRB DATE: 02/10/22

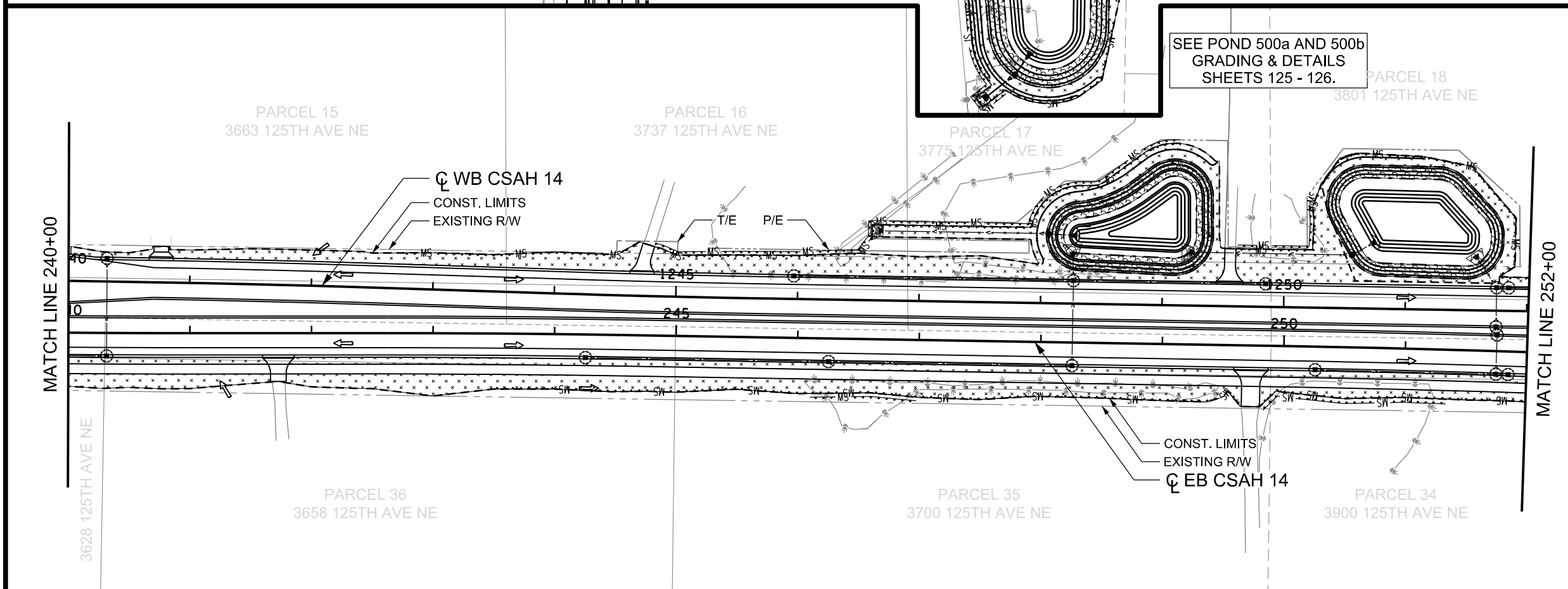
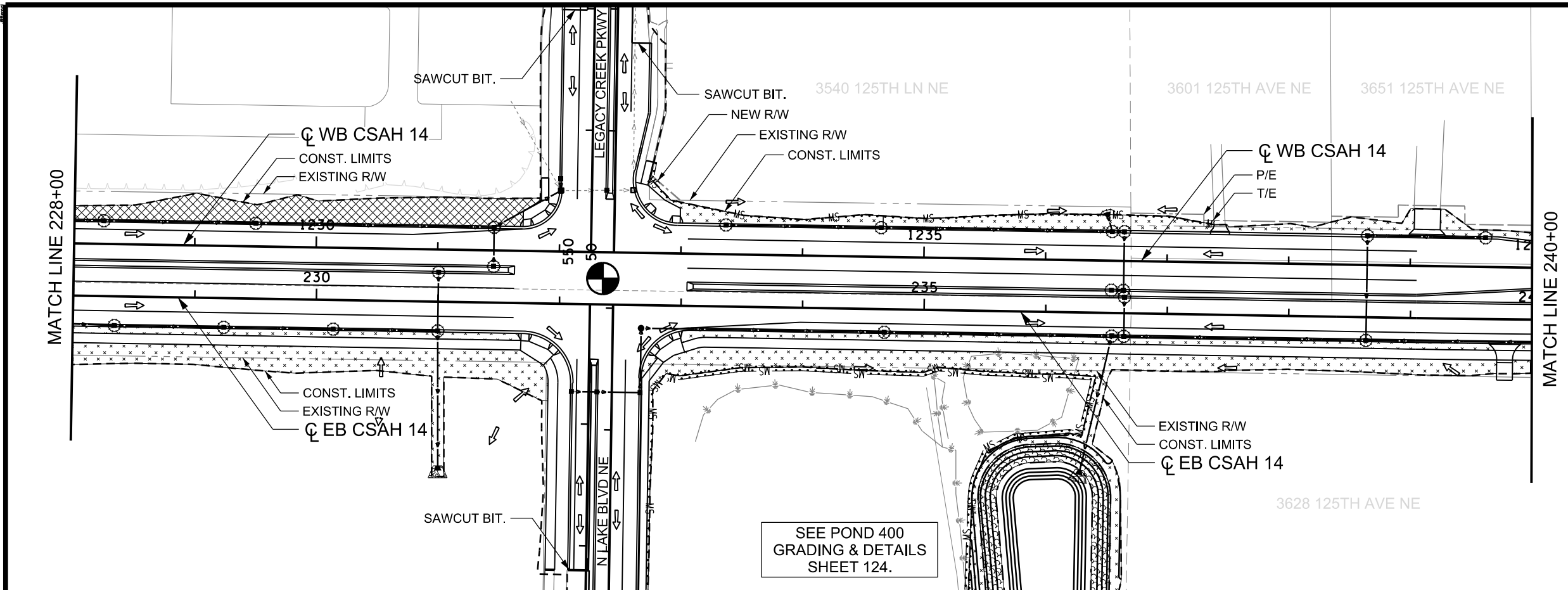
CHECKED BY: NJD DATE: 02/10/22

**ANOKA COUNTY  
HIGHWAY DEPT.**

SAP 002-614-048  
SAP 106-020-037

**EROSION CONTROL PLAN**  
CSAH 14  
STA 203+00.00 TO 228+00

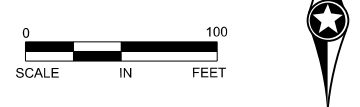
Sheet 130 of 303 Sheets



### LEGEND

- PROPOSED CATCH BASIN
- INPLACE CATCH BASIN
- PROPOSED MANHOLE
- INPLACE MANHOLE
- ▼ PROPOSED APRON
- ▽ INPLACE APRON
- PROPOSED STORM SEWER
- - - INPLACE STORM SEWER
- - - INPLACE CULVERT
- MS--- SILT FENCE, TYPE MACHINE SLICED
- WETLAND BOUNDARIES
- ▲ RIPRAP (CLASS II UNLESS OTHERWISE NOTED)
- ⊙ SOD APRON INLET OR OUTLET
- ⌒ CULVERT END TREATMENT
- STORM DRAIN INLET PROTECTION
- SURFACE FLOW ARROW
- SEEDING MIX 25-121  
FERT. TYPE 3 (22-5-10)  
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FERT. TYPE 4 (17-10-7)  
EROSION CONTROL BLANKET CAT. 10
- SEEDING MIX 35-241  
FERT. TYPE 4 (17-10-7)  
EROSION CONTROL BLANKET CAT. 25

- ### EROSION CONTROL NOTES:
1. THE CONTRACTOR SHALL CONSTRUCT WASHED GRAVEL ENTRANCES AT POINTS OF EXIT FROM THE WORK AREA ONTO EXISTING BITUMINOUS PAVEMENT AS DIRECTED BY THE ENGINEER.
  2. SILT FENCE SHALL FOLLOW A SINGLE CONTOUR AS CLOSELY AS POSSIBLE.
  3. SILT FENCE SHALL BE CLEANED OUT OR REPLACED WHEN SEDIMENT REACHES 8" OR 1/3 OF SILT FENCE HEIGHT.
  4. WHEN SEDIMENT DEPOSITS IN A WATER OF THE STATE, THE MATERIAL MUST BE REMOVED WITHIN 7 DAYS.
  5. IF SILT DEPOSITS IN THE ANOKA COUNTY RIGHT-OF-WAY, THE CONTRACTOR IS RESPONSIBLE FOR ITS REMOVAL.
  6. STABILIZE VEGETATION AND SOIL STOCKPILES WITHIN 7 DAYS OF ROUGH GRADING OR INACTIVITY. ADDITIONAL TEMPORARY AND PERMANENT EROSION CONTROL AS DIRECTED BY ENGINEER.



2 OF 4

NO	DATE	BY	CKD	APPR	REVISION
NAME: P:\002-614-048\Plan\002614048_EC4_P2.dgn 02/09/2022 3:04:57 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.

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DATE: 02-14-22 LICENSE NO. 57216

DRAWN BY MP DATE 02/07/22

DESIGN BY JRB DATE 02/07/22

CHECKED BY NJD DATE 02/07/22

**ANOKA COUNTY**

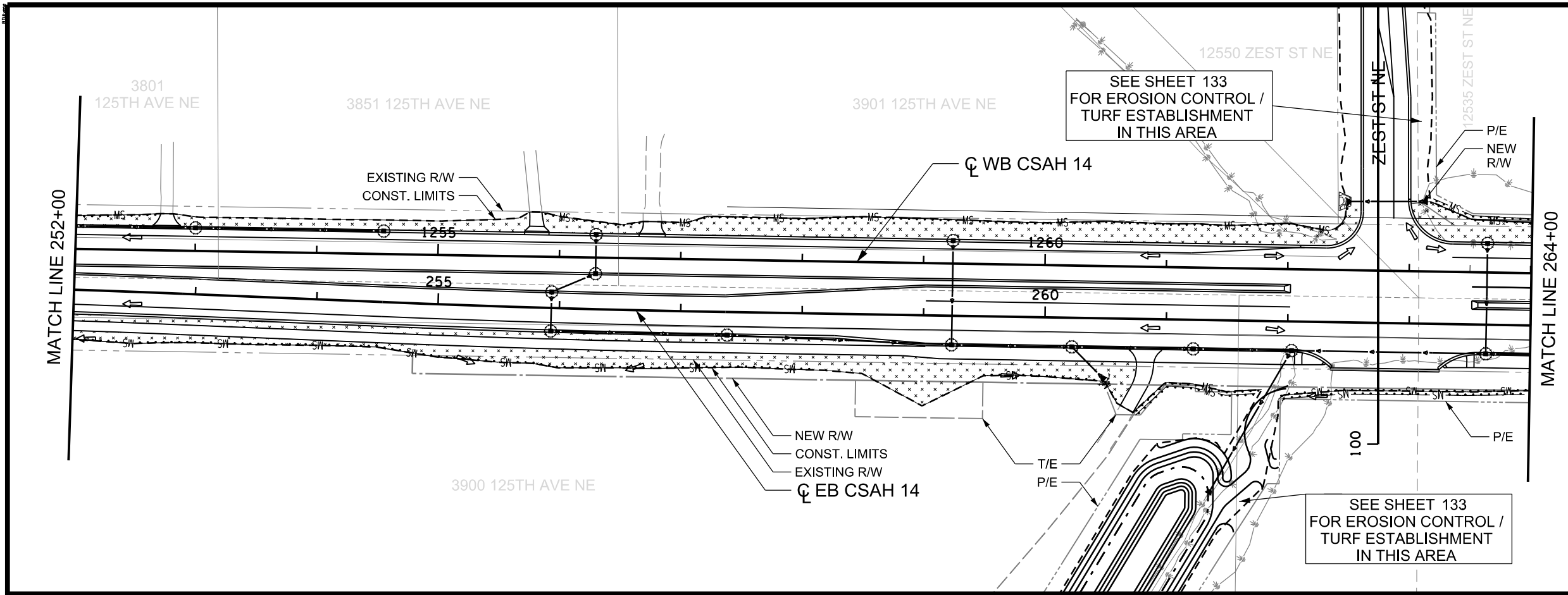
**HIGHWAY DEPT.**

SAP 002-614-048  
SAP 106-020-037

**EROSION CONTROL PLAN**  
CSAH 14

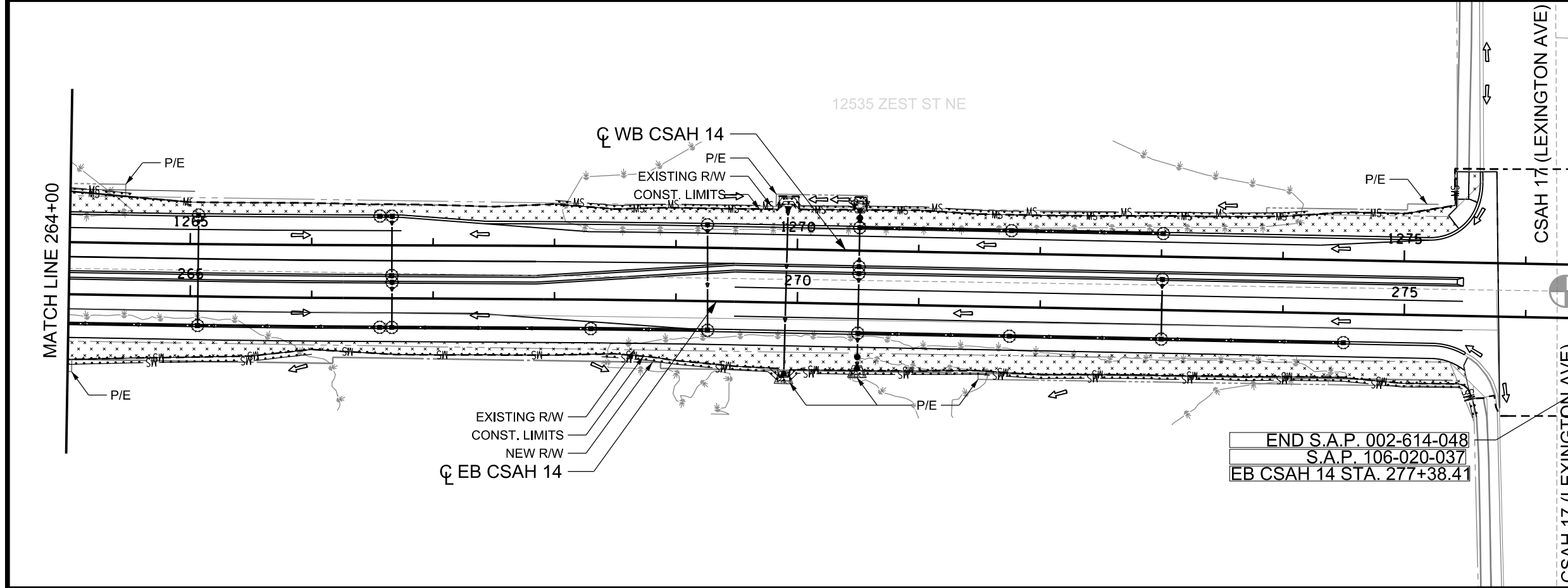
STA 228+00 TO 252+00

Sheet 131 of 303 Sheets



### LEGEND

- PROPOSED CATCH BASIN
- INPLACE CATCH BASIN
- PROPOSED MANHOLE
- INPLACE MANHOLE
- ▼ PROPOSED APRON
- ▽ INPLACE APRON
- PROPOSED STORM SEWER
- - - INPLACE STORM SEWER
- - - INPLACE CULVERT
- MS--- SILT FENCE, TYPE MACHINE SLICED
- WETLAND BOUNDARIES
- ▲ RIPRAP (CLASS II UNLESS OTHERWISE NOTED)
- ⊙ SOD APRON INLET OR OUTLET
- ⌒ CULVERT END TREATMENT
- STORM DRAIN INLET PROTECTION
- ➔ SURFACE FLOW ARROW
- SEEDING MIX 25-121  
FERT. TYPE 3 (22-5-10)  
HYDRAULIC REINFORCED FIBER MATRIX
- SEEDING MIX 25-131  
FERT. TYPE 3 (22-5-10)  
EROSION CONTROL BLANKET CAT. 25
- SEEDING MIX 33-261  
FERT. TYPE 4 (17-10-7)  
EROSION CONTROL BLANKET CAT. 10
- SEEDING MIX 35-241  
FERT. TYPE 4 (17-10-7)  
EROSION CONTROL BLANKET CAT. 25



### EROSION CONTROL NOTES:

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6. STABILIZE VEGETATION AND SOIL STOCKPILES WITHIN 7 DAYS OF ROUGH GRADING OR INACTIVITY. ADDITIONAL TEMPORARY AND PERMANENT EROSION CONTROL AS DIRECTED BY ENGINEER.

1	02/16/2022	BTU	JRB	UPDATED LEADER
NO	DATE	BY	CKD	APPR
REVISION				
NAME: P:\002-614-048\Plan\002614048_EC4_P3.dgn				

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PRINT NAME: JORGE R. FERNAL DELGADO

SIGNATURE: *[Signature]*

DATE: 02-23-22 LICENSE NO. 57216

DRAWN BY: MP DATE: 02/10/22

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CHECKED BY: NJD DATE: 02/10/22

**ANOKA COUNTY  
HIGHWAY DEPT.**

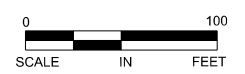
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SAP 106-020-037

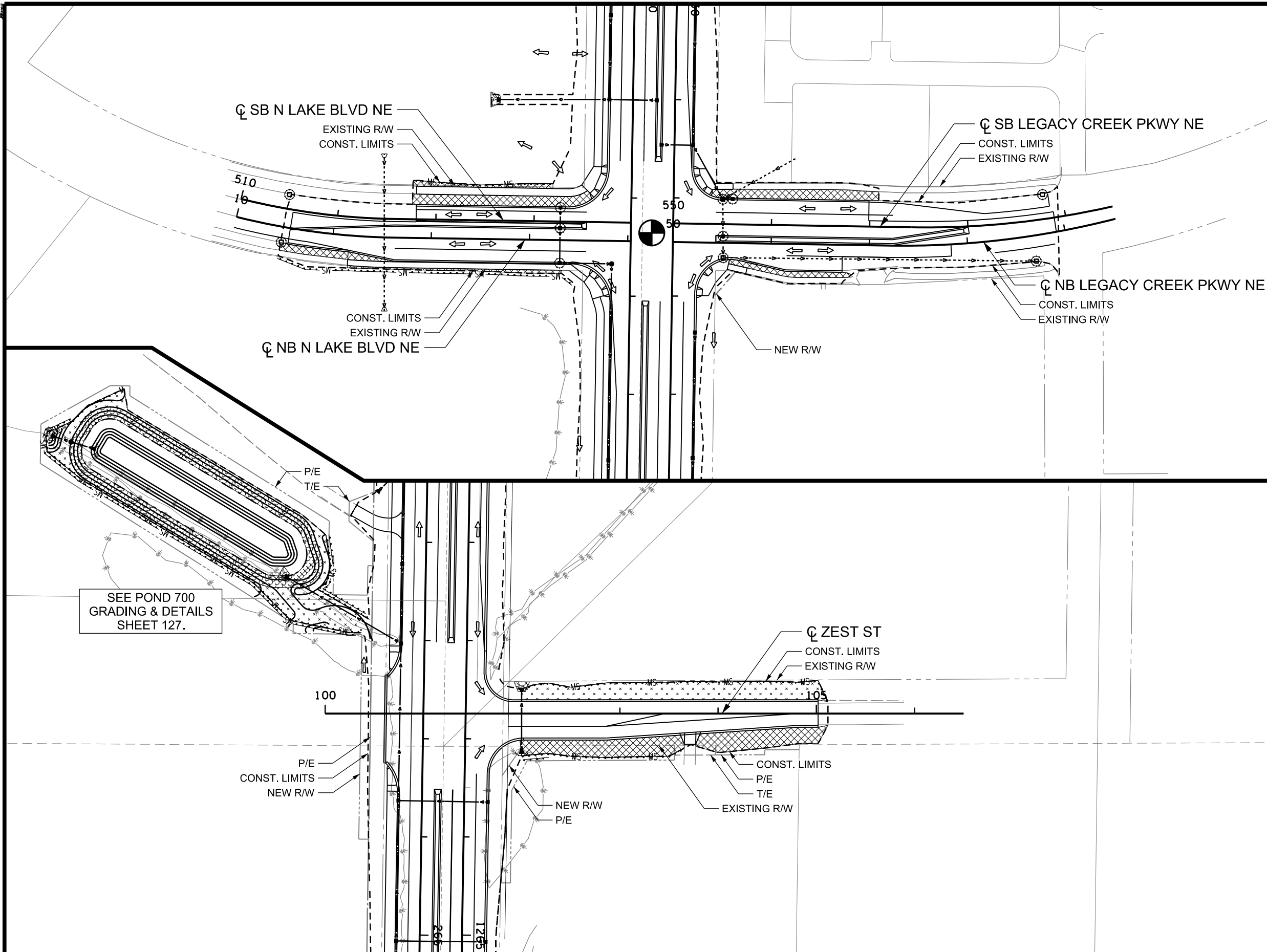
**EROSION CONTROL PLAN**  
CSAH 14

STA 252+00 TO 277+38.41

Sheet 132 of 303 Sheets

END S.A.P. 002-614-048  
S.A.P. 106-020-037  
EB CSAH 14 STA. 277+38.41



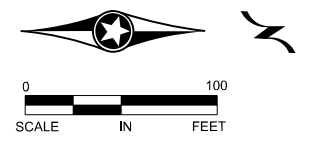


**LEGEND**

- PROPOSED CATCH BASIN
- INPLACE CATCH BASIN
- PROPOSED MANHOLE
- INPLACE MANHOLE
- ▼ PROPOSED APRON
- ▽ INPLACE APRON
- PROPOSED STORM SEWER
- - - INPLACE STORM SEWER
- - - INPLACE CULVERT
- MS--- SILT FENCE, TYPE MACHINE SLICED
- WETLAND BOUNDARIES
- ▲ RIPRAP (CLASS II UNLESS OTHERWISE NOTED)
- ⊙ SOD APRON INLET OR OUTLET
- ⌒ CULVERT END TREATMENT
- STORM DRAIN INLET PROTECTION
- SURFACE FLOW ARROW
- SEEDING MIX 25-121  
FERT. TYPE 3 (22-5-10)  
HYDRAULIC REINFORCED FIBER MATRIX
- SEEDING MIX 25-131  
FERT. TYPE 3 (22-5-10)  
EROSION CONTROL BLANKET CAT. 25
- SEEDING MIX 33-261  
FERT. TYPE 4 (17-10-7)  
EROSION CONTROL BLANKET CAT. 10
- SEEDING MIX 35-241  
FERT. TYPE 4 (17-10-7)  
EROSION CONTROL BLANKET CAT. 25

**EROSION CONTROL NOTES:**

1. THE CONTRACTOR SHALL CONSTRUCT WASHED GRAVEL ENTRANCES AT POINTS OF EXIT FROM THE WORK AREA ONTO EXISTING BITUMINOUS PAVEMENT AS DIRECTED BY THE ENGINEER.
2. SILT FENCE SHALL FOLLOW A SINGLE CONTOUR AS CLOSELY AS POSSIBLE .
3. SILT FENCE SHALL BE CLEANED OUT OR REPLACED WHEN SEDIMENT REACHES 8" OR 1/3 OF SILT FENCE HEIGHT.
4. WHEN SEDIMENT DEPOSITS IN A WATER OF THE STATE, THE MATERIAL MUST BE REMOVED WITHIN 7 DAYS.
5. IF SILT DEPOSITS IN THE ANOKA COUNTY RIGHT-OF-WAY, THE CONTRACTOR IS RESPONSIBLE FOR ITS REMOVAL.
6. STABILIZE VEGETATION AND SOIL STOCKPILES WITHIN 7 DAYS OF ROUGH GRADING OR INACTIVITY. ADDITIONAL TEMPORARY AND PERMANENT EROSION CONTROL AS DIRECTED BY ENGINEER.

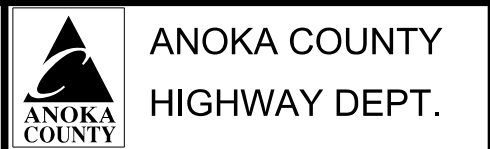


NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-614-048\Plan\002614048\_EC4\_P4.dgn 02/09/2022 3:05:02 PM

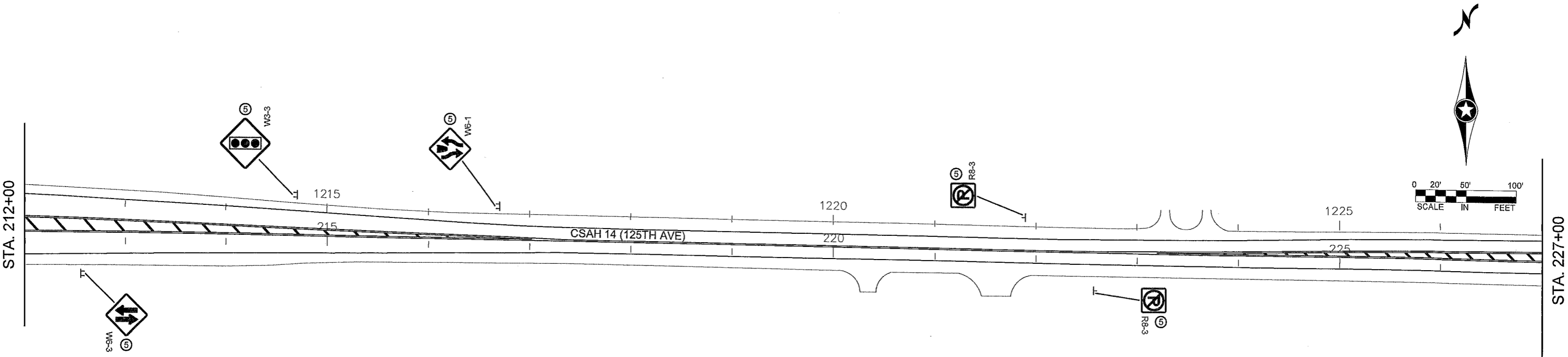
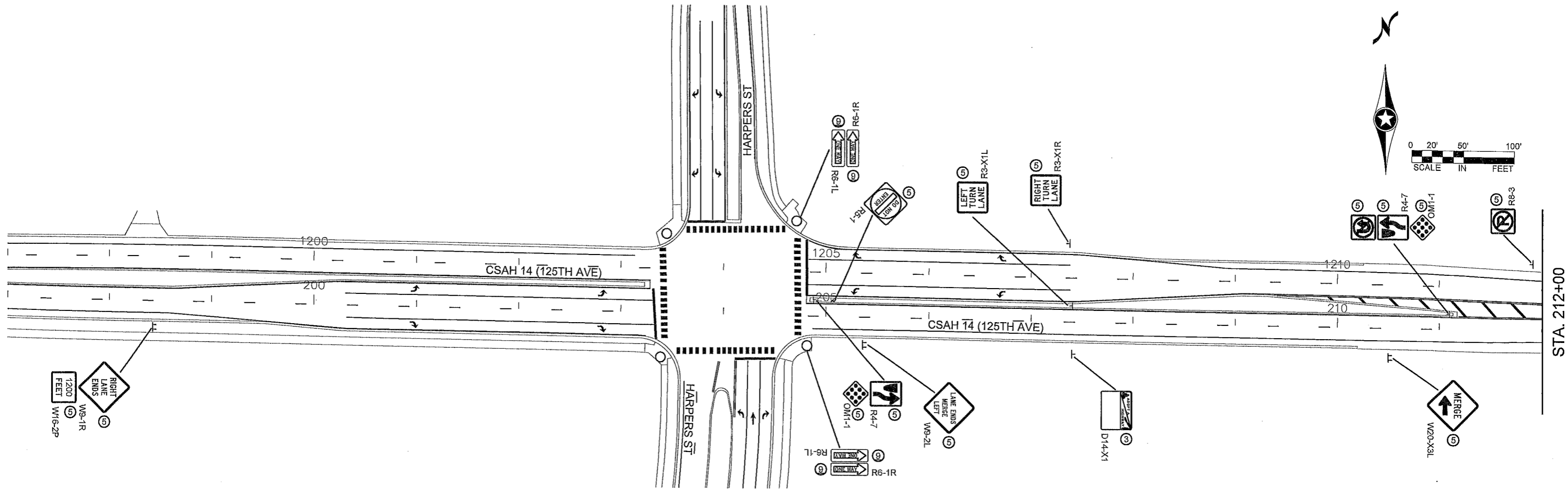
I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.  
 PRINT NAME: JORGE R. BERNAL DELGADO  
 SIGNATURE: *[Signature]*  
 DATE: 02-14-22 LICENSE NO. 57216

DRAWN BY MP DATE 02/07/22  
 DESIGN BY JRB DATE 02/07/22  
 CHECKED BY NJD DATE 02/07/22



SAP 002-614-048  
 SAP 106-020-037

**EROSION CONTROL PLAN**  
 NORTH LAKE BLVD NE,  
 LEGACY CREEK PKWY NE  
 & ZEST ST NE  
 Sheet 133 of 303 Sheets



**SIGNING NOTES: (TYP.)**

1. SIGN TYPE SPECIAL ARE TO REMAIN VISIBLE AT ALL TIMES. SHALL BE PAID BY EACH WHEN RELOCATION IS REQUIRED.

**SIGNING KEY:**

- ③ SALVAGE FOR REINSTALLATION ON THIS PROJECT
- ⑤ REMOVE
- ⑨ RETAIN INPLACE

NO	DATE	BY	CKD	APPR	REVISION

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

PRINT NAME: SEAN R. THIEL      DATE: 2/22/22  
SIGNATURE: *Sean R. Thiel*      LICENSE NO. 45129

DRAWN BY: EL      DATE: 10/28/21  
DESIGN BY: EL      DATE: 10/28/21  
CHECKED BY:      DATE:     

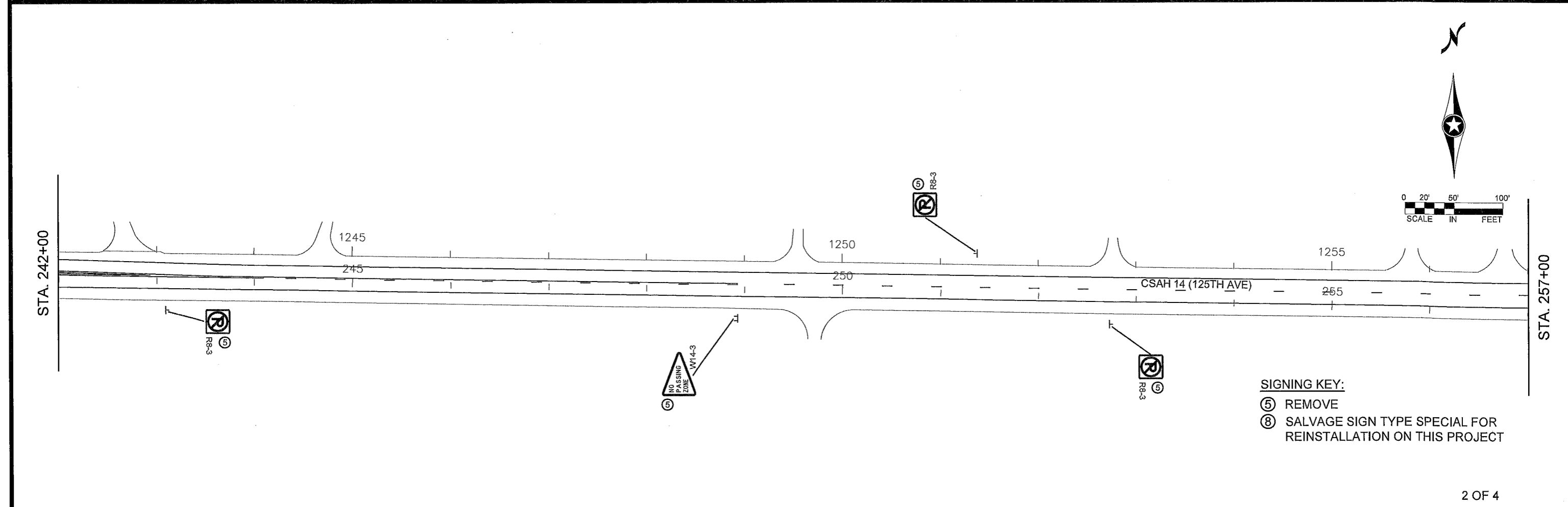
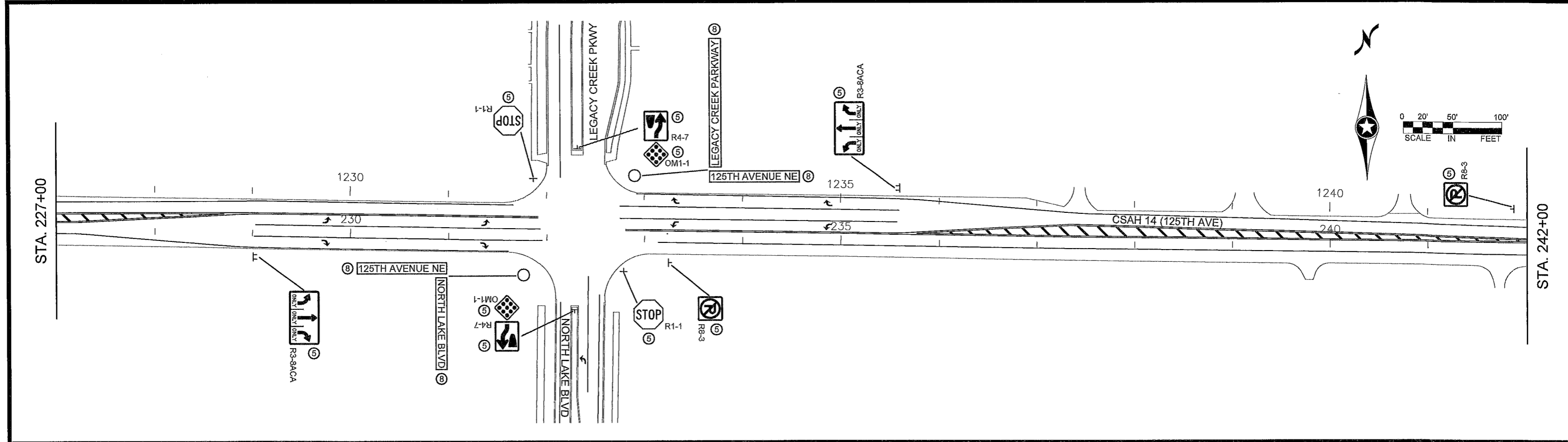


**ANOKA COUNTY  
HIGHWAY DEPT.**

SAP 002-614-048  
SAP 106-020-037

EXISTING  
SIGNING & STRIPING

SHEET 134 OF 303 SHEETS



NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-614-048\Base\Traffic\Existing Signing and Striping.dwg

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 DESIGN BY: FL      DATE: 10/28/21  
 CHECKED BY:      DATE:     



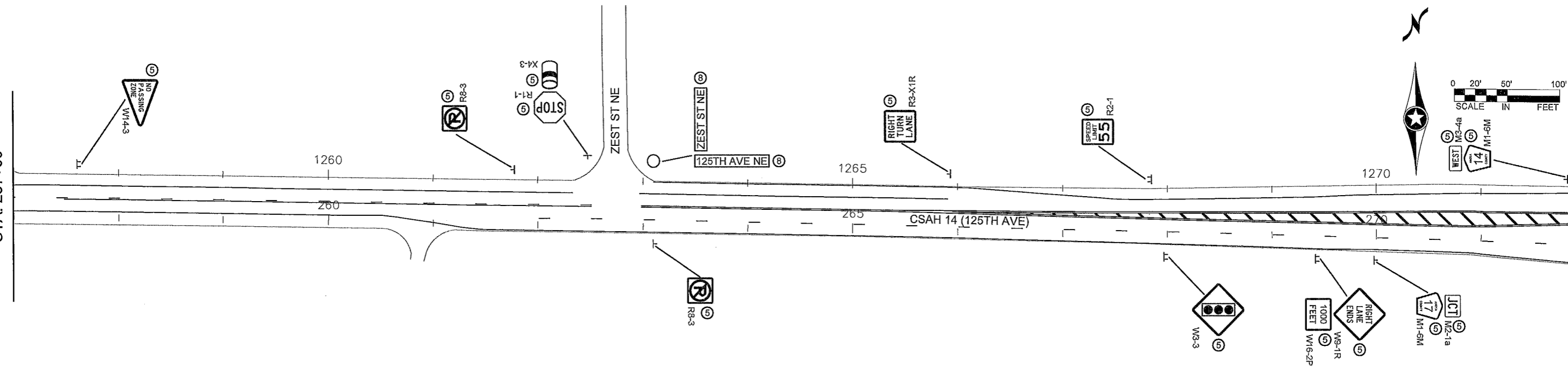
**ANOKA COUNTY  
 HIGHWAY DEPT.**

SAP 002-614-048  
 SAP 106-020-037

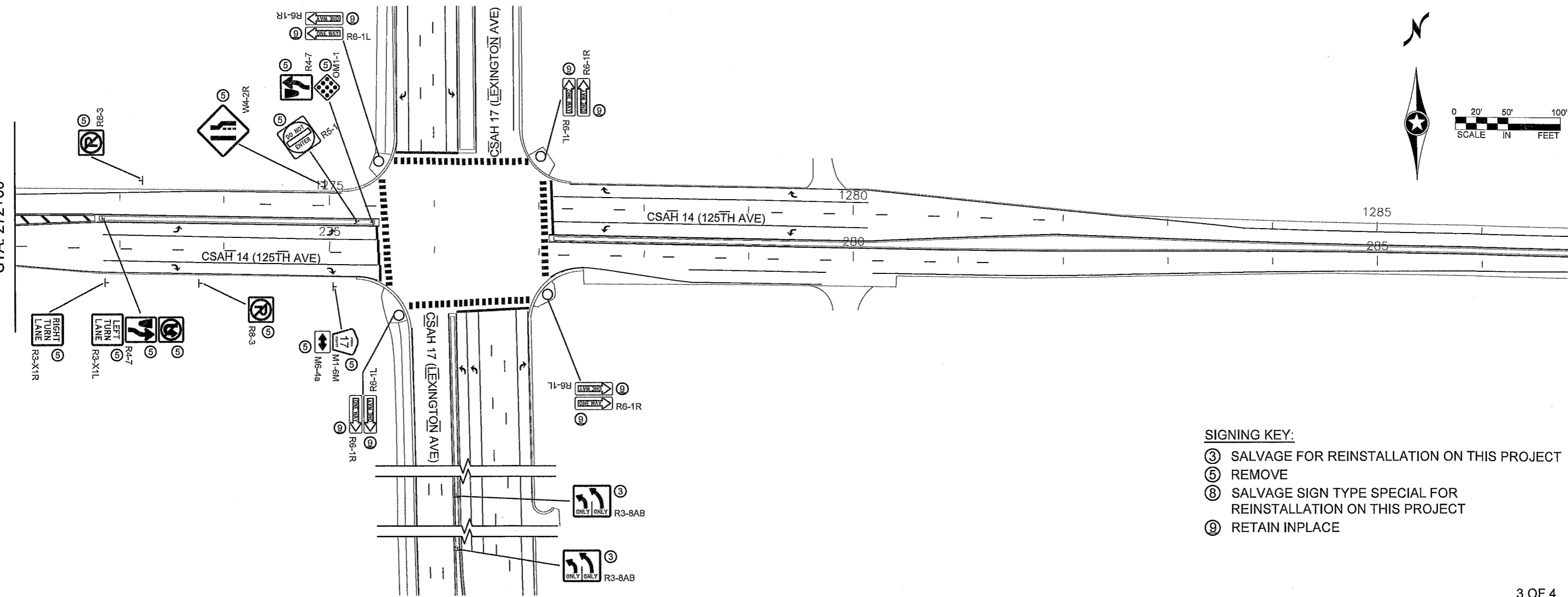
EXISTING  
 SIGNING & STRIPING  
 SHEET 135 OF 303 SHEETS

STA. 257+00

STA. 272+00



STA. 272+00



- SIGNING KEY:**
- ③ SALVAGE FOR REINSTALLATION ON THIS PROJECT
  - ⑤ REMOVE
  - ⑧ SALVAGE SIGN TYPE SPECIAL FOR REINSTALLATION ON THIS PROJECT
  - ⑨ RETAIN INPLACE

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-614-048\Base\Traffic\Existing Signing and Striping.dwg

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DESIGN BY \_\_\_ FL \_\_\_ DATE 10/28/21

CHECKED BY \_\_\_ DATE \_\_\_



**ANOKA COUNTY  
HIGHWAY DEPT.**

SAP 002-614-048  
SAP 106-020-037

EXISTING  
SIGNING & STRIPING

SHEET 136 OF 303 SHEETS



EXISTING SIGN TABULATION								1
STATION	ADDRESS/ DESCRIPTION (NOTES)	REMOVE SIGN TYPE C	SALVAGE SIGN TYPE C	SALVAGE SIGN TYPE SPECIAL (1)	INSTALL SIGN TYPE C	INSTALL SIGN TYPE SPECIAL (1)	SIGN CODE	SIGN LEGEND
		EACH	EACH	EACH	EACH	EACH		
198+42	EB	1					W9-1R	RIGHT LANE ENDS
							W16-2P	1200 FEET
204+88	MEDIAN	1					R4-7	KEEP RIGHT
							OM1-1	TYPE 1 OBJECT MKR
205+08	MEDIAN	1					R5-1	DO NOT ENTER
205+35	EB	1					W9-2R	LN ENDS MERGE RIGHT
207+40	MEDIAN	1					R3-X1L	LEFT TURN LANE
207+40	EB		1		1		D14-X1	ADOPT A HIGHWAY
1207+40	WB	1					R3-X1R	RIGHT TURN LANE
210+50	EB	1					W20-X3L	MERGE
							R4-7	KEEP RIGHT
211+10	MEDIAN	1					R3-4	NO U-TURN
							OM1-1	TYPE 1 OBJECT MKR
1211+91	WB	1					R8-3	NO PARKING
212+55	EB	1					W6-3	TWO-WAY TRAFFIC
1214+70	WB	1					W3-3	SIGNAL AHEAD
1216+70	WB	1					W6-1	DIVIDED HIGHWAY
1221+90	WB	1					R8-3	NO PARKING
222+57	EB	1					R8-3	NO PARKING
229	EB	1					R3-8ACA	LANE DESIGNATION
231+77	EB			1				125TH AVENUE NE NORTH LAKE BLVD
1231+87	SB	1					R1-1	30" STOP
232+78	NB	1					R1-1	30" STOP
								125TH AVENUE NE LEGACY CREEK PARKWAY
1232+90	WB			1				
233+24	EB	1					R8-3	NO PARKING
1235+60	WB	1					R3-8ACA	LANE DESIGNATION
1241+87	WB	1					R8-3	NO PARKING
243+09	EB	1					R8-3	NO PARKING
248+92	WB	1					W14-3	NO PASSING ZONE
1251+38	WB	1					R8-3	NO PARKING
252+72	EB	1					R8-3	NO PARKING
1257+60	EB	1					W14-3	NO PASSING ZONE
1261+77	WB	1					R8-3	NO PARKING
1262+48	SB	1					R1-1	30" STOP
							X4-3	DELINEATOR
263+10	EB	1					R8-3	NO PARKING
1263+10	WB			1		1		125TH AVE NE ZEST ST NE
1265+93	WB	1					R3-X1R	RIGHT TURN LANE
1267+84	WB	1					R2-1	SPEED LIMIT 55
267+97	EB	1					W3-3	SIGNAL AHEAD
269+42	EB	1					W9-1R	RIGHT LANE ENDS
							W16-2P	1000 FEET

EXISTING SIGN TABULATION								1
STATION	ADDRESS/ DESCRIPTION (NOTES)	REMOVE SIGN TYPE C	SALVAGE SIGN TYPE C	SALVAGE SIGN TYPE SPECIAL (1)	INSTALL SIGN TYPE C	INSTALL SIGN TYPE SPECIAL (1)	SIGN CODE	SIGN LEGEND
		EACH	EACH	EACH	EACH	EACH		
269+98	EB	1					M2-1a	JCT
							M1-6M	ROUTE MARKER 17
1271+82	WB	1					M3-4a	WEST
							M1-6M	ROUTE MARKER 14
272+83	MEDIAN	1					R4-7	KEEP RIGHT
							R3-4	NO U-TURN
							R3-X1L	LEFT TURN LANE
272+86	EB	1					R3-X1R	RIGHT TURN LANE
1273+22	WB	1					R8-3	NO PARKING
273+76	EB	1					R8-3	NO PARKING
275	EB	1					M1-6M	ROUTE MARKER 17
							M6-4a	DOUBLE ARROW
1274+96	WB	1					W4-2R	LANE ENDS
1275+25	MEDIAN	1					R5-1	DO NOT ENTER
1275+41	MEDIAN	1					R4-7	KEEP RIGHT
							OM1-1	TYPE 1 OBJECT MKR
CSAH 17 S OF CSAH 14	MEDIAN		1		1		R3-8AB	LT ONLY OR LT ONLY
CSAH 17 S OF CSAH 14	MEDIAN		1		1		R3-8AB	LT ONLY OR LT ONLY
LEGACY CREEK PKWY	MEDIAN	1					R4-7	KEEP RIGHT
							OM1-1	TYPE 1 OBJECT MKR
NORTH LAKES DR	MEDIAN	1					R4-7	KEEP RIGHT
							OM1-1	TYPE 1 OBJECT MKR
TOTAL		44	3	3	3	1		

**TRAFFIC CONTROL NOTES:**

- SIGN TYPE SPECIAL ARE TO REMAIN VISIBLE AT ALL TIMES. SHALL BE PAID BY THE EACH, WHEN RELOCATION IS REQUIRED.

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-614-048\Base\Traffic\Existing Signing and Striping.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 DATE: 2/22/21  
SIGNATURE: *Sean R. Thiel* LICENSE NO. 45129

DRAWN BY \_\_\_ FL \_\_\_ DATE 10/28/21  
DESIGN BY \_\_\_ FL \_\_\_ DATE 10/28/21  
CHECKED BY \_\_\_ DATE \_\_\_



**ANOKA COUNTY  
HIGHWAY DEPT.**

SAP 002-614-048  
SAP 106-020-037

EXISTING  
SIGNING & STRIPING  
SHEET 137 OF 303 SHEETS

# PERMANENT PAVEMENT MARKING PLAN

## NOTES & GUIDELINES

### GENERAL INFORMATION:

- 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.
- EDGE LINES AND LANE LINES ARE TO BE BROKEN ONLY AT INTERSECTIONS WITH PUBLIC ROADS AND AT PRIVATE ENTRANCES IF THEY ARE CONTROLLED BY A YIELD SIGN, STOP SIGN OR TRAFFIC SIGNAL. THE BREAK POINT IS TO BE AT THE START OF THE RADIUS FOR THE INTERSECTION OR AT MARKED STOP LINES OR CROSSWALKS.
- A TOLERANCE OF 1/4 INCH UNDER OR 1/4 INCH OVER THE SPECIFIED WIDTH WILL BE ALLOWED FOR STRIPING PROVIDED THE VARIATION IS GRADUAL AND DOES NOT DETRACT FROM THE GENERAL APPEARANCE. BROKEN LINE SEGMENTS MAY VARY UP TO ONE-HALF FOOT FROM THE SPECIFIED LENGTHS PROVIDED THE OVER AND UNDER VARIATIONS ARE REASONABLY COMPENSATORY. ALIGNMENT DEVIATIONS FROM THE CONTROL GUIDE SHALL NOT EXCEED 1 INCH. MATERIAL SHALL NOT BE APPLIED OVER LONGITUDINAL JOINTS. ESTABLISHMENT OF APPLICATION TOLERANCES SHALL NOT RELIEVE THE CONTRACTOR OF THEIR RESPONSIBILITY TO COMPLY AS CLOSELY AS PRACTICABLE WITH THE PLANNED DIMENSIONS.
- PERMANENT PAVEMENT MARKINGS SHALL NOT BE PLACED OVER TEMPORARY TAPE MARKINGS.
- 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:

- 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 MANNER AND TO THE EXTENT REQUIRED BY THE ENGINEER.
- GLASS BEADS SHALL BE APPLIED IMMEDIATELY AFTER APPLICATION OF THE PAINT LINE.
- EXCEPT WHEN USED AS A TEMPORARY MARKING, PAVEMENT MARKINGS SHALL ONLY BE APPLIED IN SEASONABLE WEATHER WHEN AIR TEMPERATURE IS 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):

- 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.
- 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.
- A MULTI COMP LINE SHALL BE APPLIED WITH A MINIMUM THICKNESS OF 2 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.
- OPERATIONS SHALL BE CONDUCTED ONLY WHEN THE ROAD PAVEMENT SURFACE TEMPERATURES ARE 40°F OR GREATER.

### PREFORMED THERMOPLASTIC:

- 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.

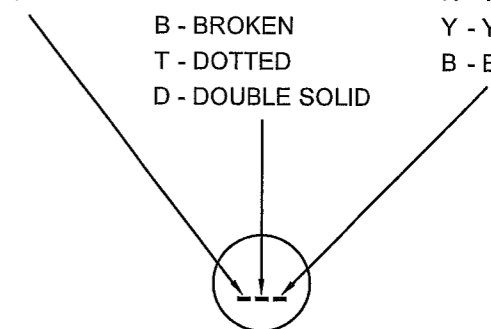
### SYMBOLS & MATERIALS LEGEND

- CROSSWALK BLOCK
- ↩ PAVEMENT MESSAGE (LEFT ARROW)

### STRIPING KEY

- CIRCLE - MULTI COMP
- △ TRIANGLE - PAINT
- ⬡ OCTAGON - PREF THERMO
- SQUARE - REMOVABLE PREF TAPE

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



EXAMPLE: (4SW) = SOLID LINE WHITE - MULTI COMP

### LINE TYPE

- — BROKEN LINE - 50' CYCLE (10' LINE, 40' GAP)
- - - - DOTTED LINE - 15' CYCLE (3' LINE, 12' GAP)  
UNLESS SHOWN OTHERWISE IN THE PLAN

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

PRINT NAME: SEAN R. THIEL DATE: 2/22/22  
SIGNATURE: *Sean R. Thiel* LICENSE NO. 45129

DRAWN BY: FL DATE: 10/28/21

DESIGN BY: FL DATE: 10/28/21

CHECKED BY: DATE:



**ANOKA COUNTY  
HIGHWAY DEPT.**

SAP 002-614-048  
SAP 106-020-037

PERMANENT PAVEMENT  
MARKING PLAN  
NOTES & GUIDELINES

SHEET 138 OF 303 SHEETS

NO	DATE	BY	REVISION
NAME: P:\002-614-048\Bases\Traffic\Permanent Pavement Marking Plan Notes & Guidelines.dwg			

PAVEMENT MARKING TABULATION															K
TEMPORARY															
ITEM DESCRIPTION	UNIT	TOTAL		CSAH 14								N CSAH 17		LEGACY CREEK PKWY	
				STAGE 1		STAGE 2		STAGE 3		STAGE 4		STAGE 3		STAGE 3	
		WHITE	YELLOW	WHITE	YELLOW	WHITE	YELLOW	WHITE	YELLOW	WHITE	YELLOW	WHITE	YELLOW	WHITE	YELLOW
PAVEMENT MARKING REMOVAL 4" SOLID LINE PAINT	LIN FT	16798	4163	6144	1389	6815	991	1596	1087	2243	696				
PAVEMENT MARKING REMOVAL 4" SOLID DOUBLE LINE PAINT	LIN FT		13587		5663		2895				5029				
PAVEMENT MARKING REMOVAL 4" BROKEN LINE PAINT	LIN FT	180	370	110	370		70								
PAVEMENT MARKING REMOVAL 24" SOLID LINE	LIN FT		1009		1009										
PAVEMENT MARKING REMOVAL 3' X 6' CROSSWALK SOLID	SQ FT	18								18					
PAVEMENT MARKING REMOVAL ARROWS SOLID	SQ FT	557.08		288		144				125.08					
4" REMOVABLE PREFORMED PAVEMENT MARKING TAPE	LIN FT	5007		2733		149		1601		119		25		380	
6" REMOVABLE PREFORMED PAVEMENT MARKING TAPE	LIN FT	37										37			
REMOVABLE PAVEMENT MARKING TAPE (BLACK)	LIN FT	330		170				160							
TEMPORARY RAISED PAVEMENT MARKER (TRPM) *SPACED EVERY 10 FEET*	EACH	1251	1161	285	208	239	239	369	392	338	322			20	
PORTABLE CONCRETE BARRIER DELINEATOR **SPACED EVERY 12'6"***	EACH	243		112		131									
4" SOLID LINE PAINT	LIN FT	43198	16241	11557		6912	6849	14662	294	10067	9098				
4" SOLID DOUBLE LINE PAINT	LIN FT		13844		6779				7065						
ARROWS PAINT	SQ FT	188.67		84.58				42.29		61.8					
PERMANENT															
ITEM DESCRIPTION	UNIT	TOTAL		CSAH 14		N CSAH 17		S CSAH 17		LEGACY CREEK PKWY		NORTH LAKE BLVD		ZEST ST	
		WHITE	YELLOW	WHITE	YELLOW	WHITE	YELLOW	WHITE	YELLOW	WHITE	YELLOW	WHITE	YELLOW	WHITE	YELLOW
4" SOLID LINE MULT-COMP	LIN FT	20025	14535	18403	13543	39				649	517	834	475	100	
4" SOLID DOUBLE LINE MULT-COMP	LIN FT		650								163				487
4" BROKEN LINE MULTI-COMP	LIN FT	13470		13470											
24" SOLID LINE PREFORMED THERMOPLASTIC	LIN FT	230	71	145		13				36	43	36			28
3' X 6' PREFORMED THERMOPLASTIC	SQ FT	1566		1098		54		18		198		198			
ARROWS PREFORMED THERMOPLASTIC	SQ FT	370.80		309						30.90		30.90			

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-614-048\BaselTraffic\ Pavement Marking Tabulation.dwg

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**ANOKA COUNTY  
HIGHWAY DEPT.**

SAP 002-614-048  
SAP 106-020-037

PAVEMENT MARKING  
TABULATION

SHEET 139 OF 303 SHEETS

PERMANENT SIGNING TABULATION										M
SIGN NUMBER	SIGNS QTY EACH	CODE NUMBER	PANEL LEGEND	TYPE	PANEL			POSTS / MOUNTING		
					SIZE (W X H)	AREA	TOTAL AREA	MTG HT	NUMBER OF POSTS	SURFACE TYPE
					INCH	SQ FT	SQ FT	FEET		
(1) S-1	15	R8-3	NO PARKING	C	24 X 24	4.00	60.00	7.0	1	SOIL
(1) S-2	1	D14-X1	ADOPT A HIGHWAY	C	36 X 30			7.0	1	SOIL
S-3	8	R3-X1R	RIGHT TURN LANE	C	30 X 30	6.25	50.00	7.0	1	SOIL
S-4	8	R3-X1L	LEFT TURN LANE	C	30 X 30	6.25	50.00	7.0	1	CONCRETE
S-5	7	R5-1	DO NOT ENTER	C	30 X 30	6.25	43.75	7.0	1	CONCRETE
S-6	8	R4-7	KEEP RIGHT	C	24 X 30	5.00	40.00	7.0	1	CONCRETE
	8	OM1-1	TYPE 1 OBJECT MARKER	C	18 X 18	2.25	18.00			
	1	R3-X5	U TURN ONLY	C	24 X 30	5.00	5.00			
S-7	1	R6-1L	ONE WAY LEFT	C	36 X 12	3.00	3.00	7.0	2	SOIL
	1	R6-1R	ONE WAY RIGHT	C	36 X 12	3.00	3.00			
	1	R1-1	STOP	C	36 X 36	9.00	9.00			
	1	X4-3	DELINEATOR	C	6 X 9	1.25	1.25			
S-8	1	R3-8AA	LT ONLY OR RT ONLY	C	36 X 30	7.50	7.50	7.0	2	SOIL
S-9	1	R6-1L	ONE WAY LEFT	C	54 X 18	6.75	6.75	7.0	2	SOIL
(8) S-10	1		125TH AVE NE	D				7.0	1	SOIL
	1		ZEST ST NE	D						
S-11	1	M2-1a	JCT	C	21 X 15	2.19	2.19	7.0	1	SOIL
	1	M1-6M	ANOKA COUNTY 52	C	24 X 24	4.00	4.00			
S-12	1	W9-1R	RIGHT LANE ENDS	C	48 X 48	16.00	16.00	7.0	2	SOIL
	1	W16-2P	1000 FEET	C	30 X 24	5.00	5.00			
S-13	1	R2-1	SPEED LIMIT 55	C	30 X 36	7.50	7.50	7.0	2	SOIL
S-14	1	M3-2a	EAST	C	24 X 12	2.00	2.00	7.0	1	SOIL
	1	M1-6M	ANOKA COUNTY 14	C	24 X 24	4.00	4.00			
S-15	1	M1-6M	ANOKA COUNTY 52	C	24 X 24	4.00	4.00	7.0	1	SOIL
	1	M6-4a	DOUBLE ARROW	C	21 X 15	2.19	2.19			
(1) S-16	2	R3-8AB	LT ONLY OR LT ONLY	C	36 X 30			7.0	1	CONCRETE
TOTAL AREA = 344.13										

**SPECIFIC NOTES:**

- (1) SALVAGED SIGN
- (8) SIGN TYPE SPECIAL

**GENERAL NOTES:**

- SIGN INSTALLATION SHALL CONFORM AND BE PLACED IN ACCORDANCE WITH THE MOST RECENT EDITION OF THE MN MUTCD.

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-614-048\Base\Traffic\Permanent Signing Tabulation.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 DATE: 2/22/22

SIGNATURE: *Sean R. Thiel* LICENSE NO. 45129

DRAWN BY \_\_\_ FL \_\_\_ DATE 10/28/21

DESIGN BY \_\_\_ FL \_\_\_ DATE 10/28/21

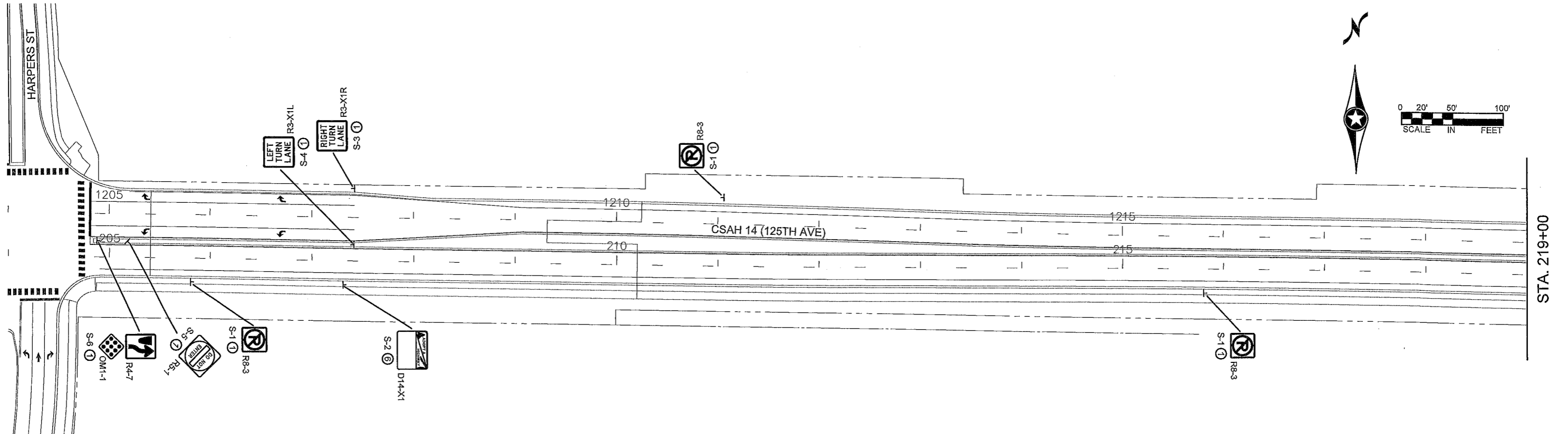
CHECKED BY \_\_\_ DATE \_\_\_



**ANOKA COUNTY  
HIGHWAY DEPT.**

SAP 002-614-048  
SAP 106-020-037

PERMANENT SIGNING  
TABULATION



**SIGNING 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.
- SEE PERMANENT SIGN TABULATIONS FOR ADDITIONAL INFORMATION.
- ALL SIGNS SHALL BE FURNISHED AND INSTALLED UNLESS OTHERWISE NOTED.
- SIGNS ATTACHED TO SIGNAL SYSTEM EQUIPMENT INCLUDED IN THE SIGNAL DESIGN WORK.

**SIGNING KEY:**

- ① FURNISH AND INSTALL
- ⑥ INSTALL SALVAGED SIGN

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-614-048\Base\Traffic\Permanent Signing.dwg

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CHECKED BY      DATE



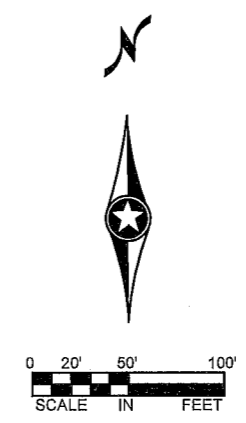
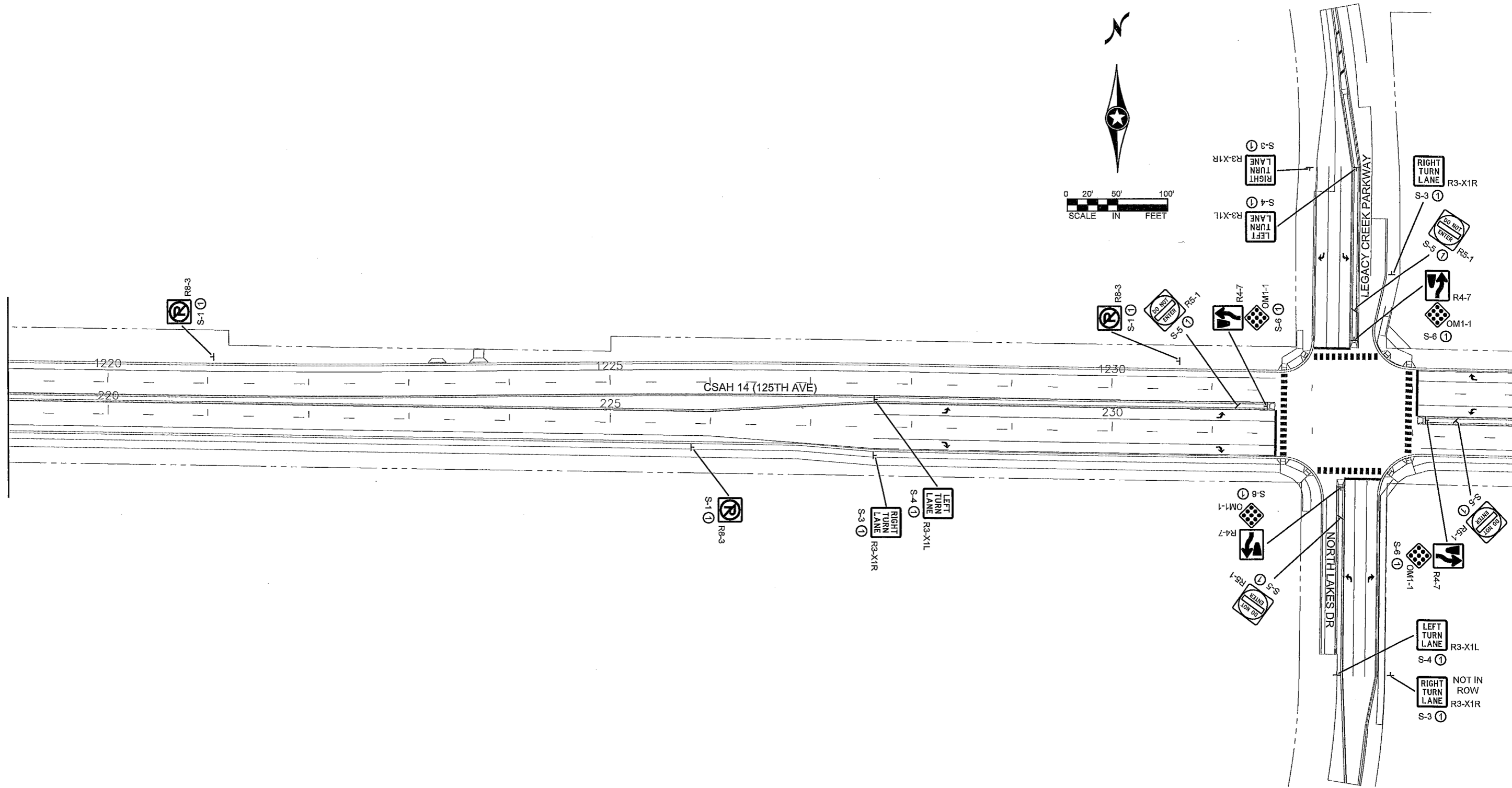
**ANOKA COUNTY  
HIGHWAY DEPT.**

SAP 002-614-048  
SAP 106-020-037

PERMANENT SIGNING

SHEET 141 OF 303 SHEETS

STA. 219+00



STA. 234+00

**SIGNING KEY:**  
 ① FURNISH AND INSTALL

NO	DATE	BY	CKD	APPR	REVISION

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DRAWN BY: FL      DATE: 10/28/21  
 DESIGN BY: FL      DATE: 10/28/21  
 CHECKED BY:      DATE:     

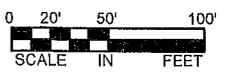
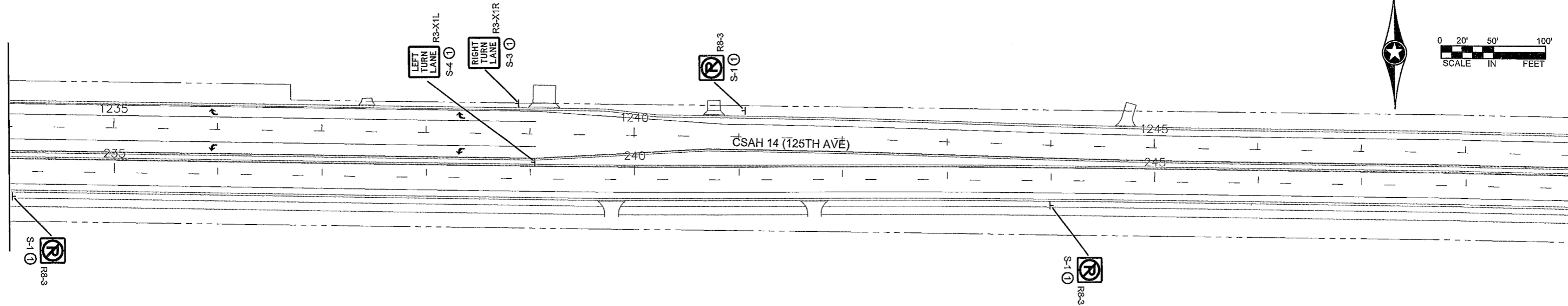


**ANOKA COUNTY  
 HIGHWAY DEPT.**

SAP 002-614-048  
 SAP 106-020-037

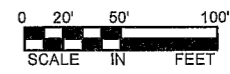
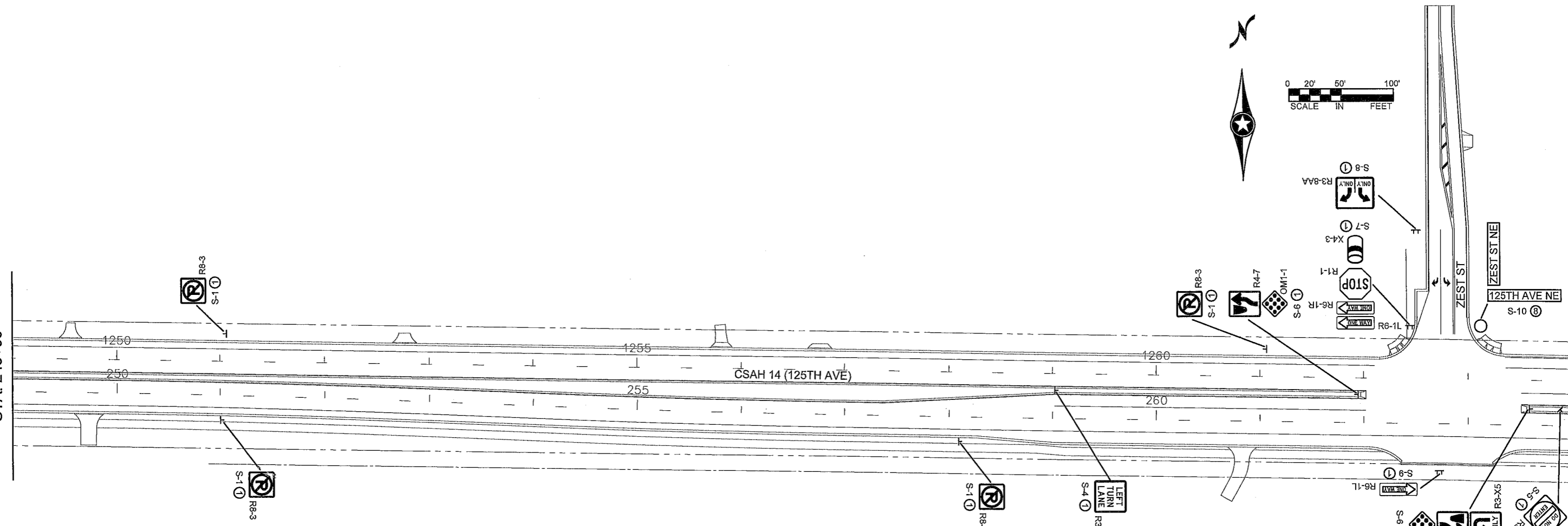
PERMANENT SIGNING  
 SHEET 142 OF 303 SHEETS

STA. 234+00



STA. 249+00

STA. 249+00



**SIGNING KEY:**  
 ① FURNISH AND INSTALL  
 ⑧ INSTALL SIGN TYPE SPECIAL

STA. 264+00

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-614-048\BaselTraffic\Permanent Signing.dwg

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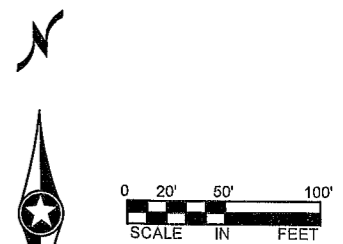
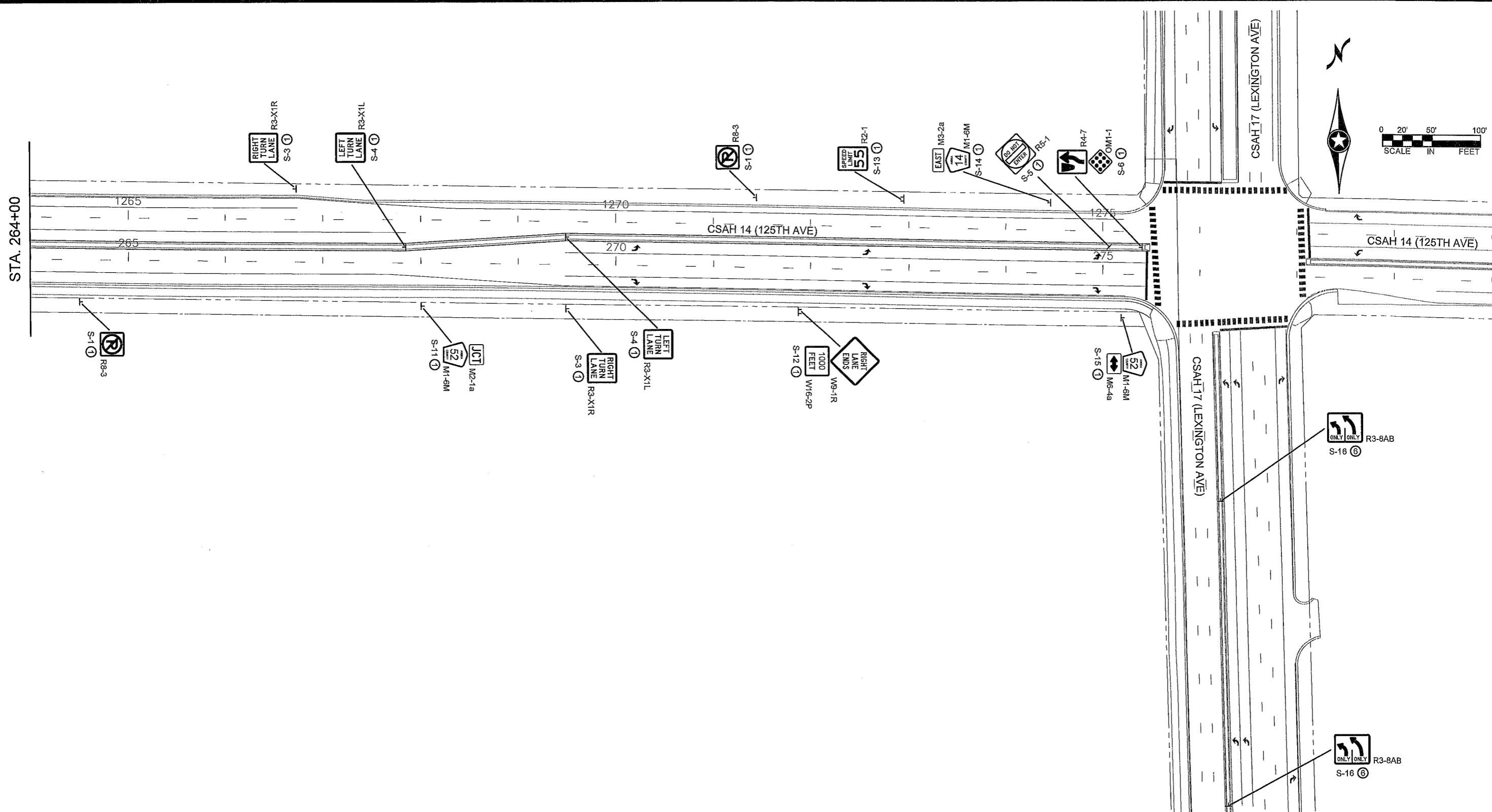
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 DESIGN BY: FL      DATE: 10/28/21  
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**ANOKA COUNTY  
 HIGHWAY DEPT.**

SAP 002-614-048  
 SAP 106-020-037

PERMANENT SIGNING  
 SHEET 143 OF 303 SHEETS



**SIGNING KEY:**  
 ① FURNISH AND INSTALL  
 ⑥ INSTALL SALVAGED SIGN

NO	DATE	BY	CKD	APPR	REVISION
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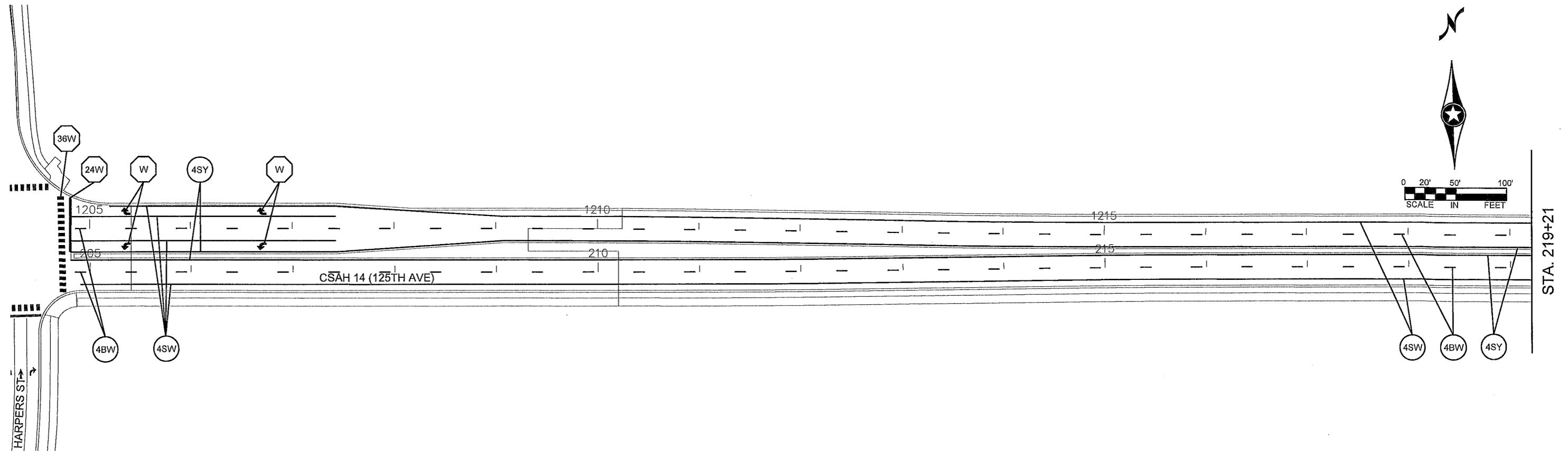
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 CHECKED BY: DATE:

**ANOKA COUNTY**  
**HIGHWAY DEPT.**

SAP 002-614-048  
 SAP 106-020-037

PERMANENT SIGNING  
 SHEET 144 OF 303 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. ALL SEGMENT STRIPE LINES SHALL BE MULTI COMP.
4. PERMANENT MARKINGS AND ARROWS SHALL BE PREFORMED THERMOPLASTIC.
5. APPLY ALL PAVEMENT MARKINGS AS RECOMMENDED BY THE MATERIAL MANUFACTURER.
6. PERMANENT PAVEMENT MARKINGS AND STRIPING SHALL NOT BE PLACED OVER TEMPORARY TAPE MARKINGS.

**STRIPING KEY:**

-  CIRCLE - MULTI COMP
-  OCTAGON - PREF THERMO

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-614-048\BaselTraffic\Permanent Striping Plan.dwg

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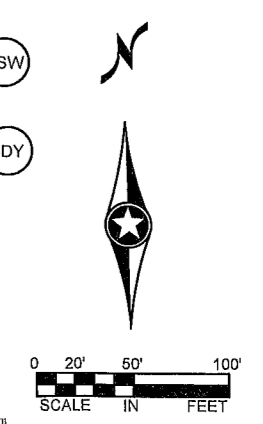
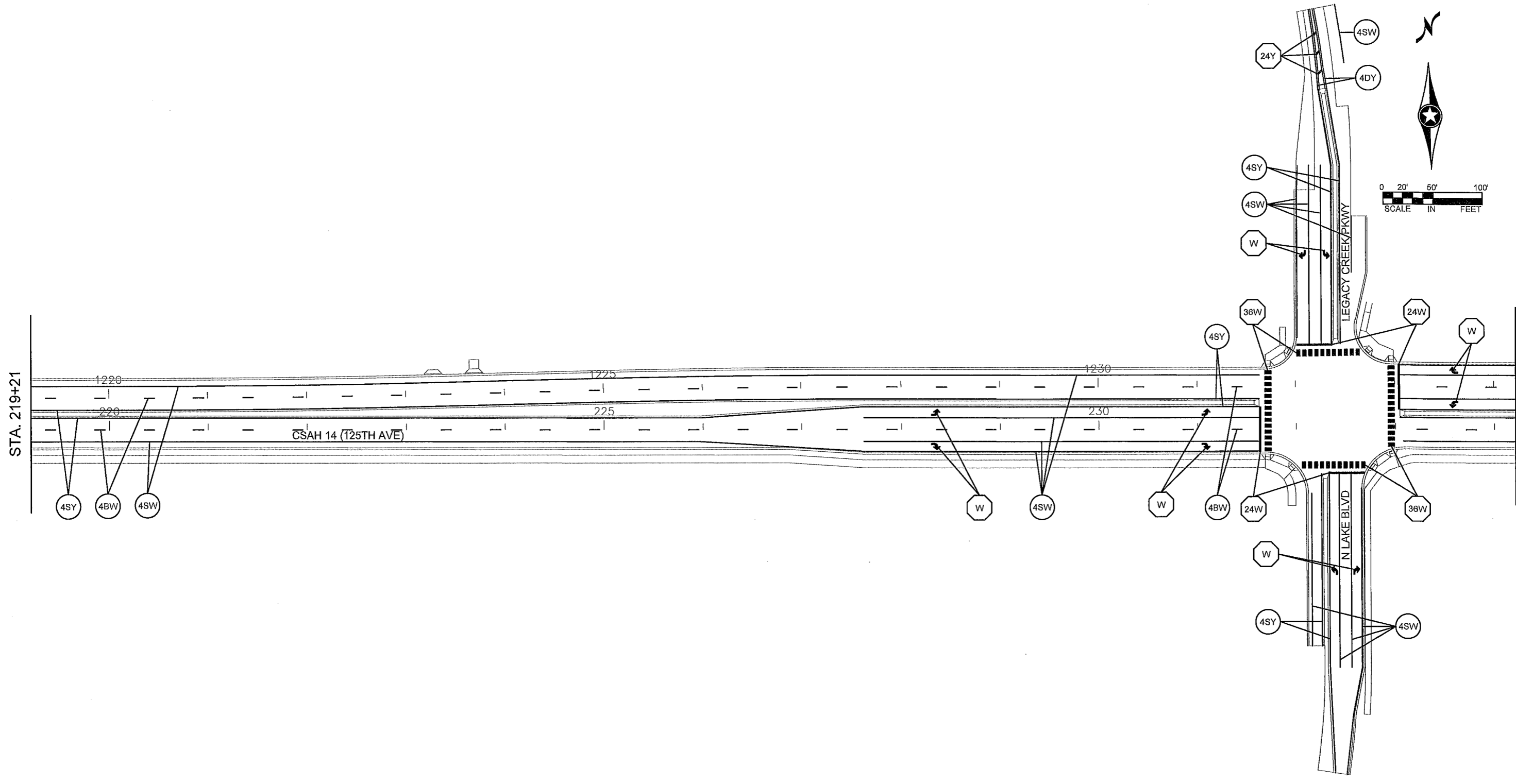




**ANOKA COUNTY  
HIGHWAY DEPT.**

SAP 002-614-048  
SAP 106-020-037

PERMANENT STRIPING PLAN

SHEET 145 OF 303 SHEETS



- STRIPING KEY:**
-  CIRCLE - MULTI COMP
  -  OCTAGON - PREF THERMO

NO	DATE	BY	CKD	APPR	REVISION
NAME: P:\002-614-048\Base\Traffic\Permanent Striping 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.

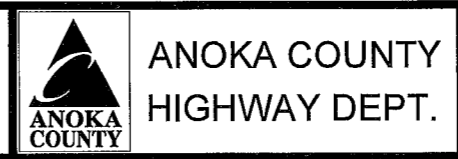
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DRAWN BY: FL      DATE: 10/28/21

DESIGN BY: FL      DATE: 10/28/21

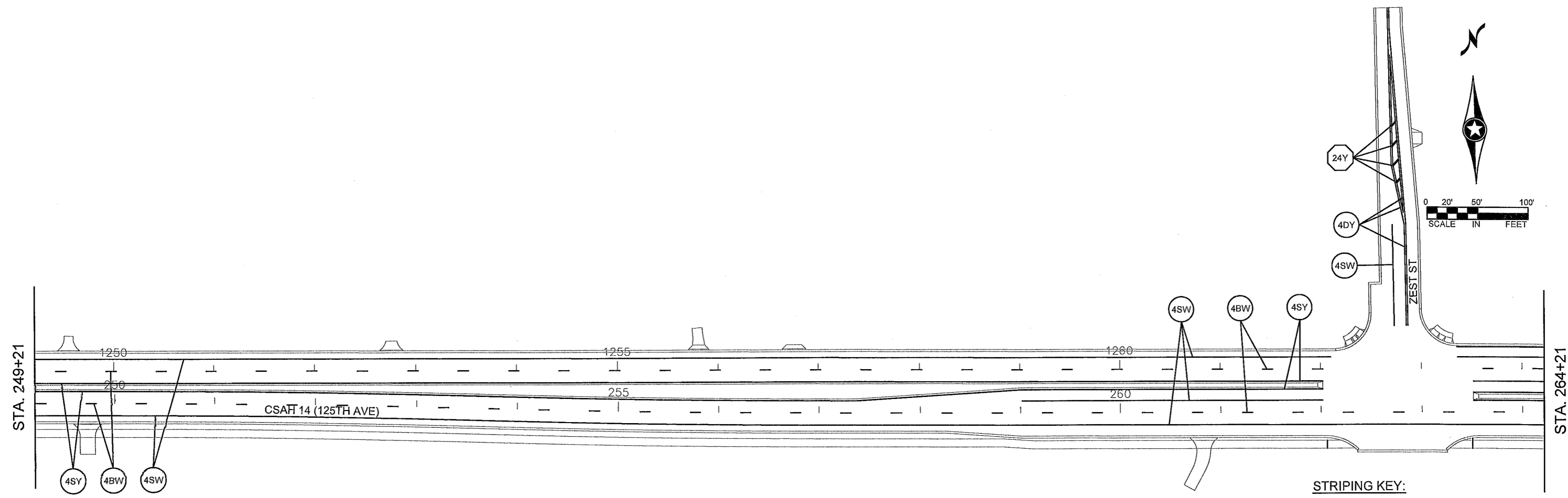
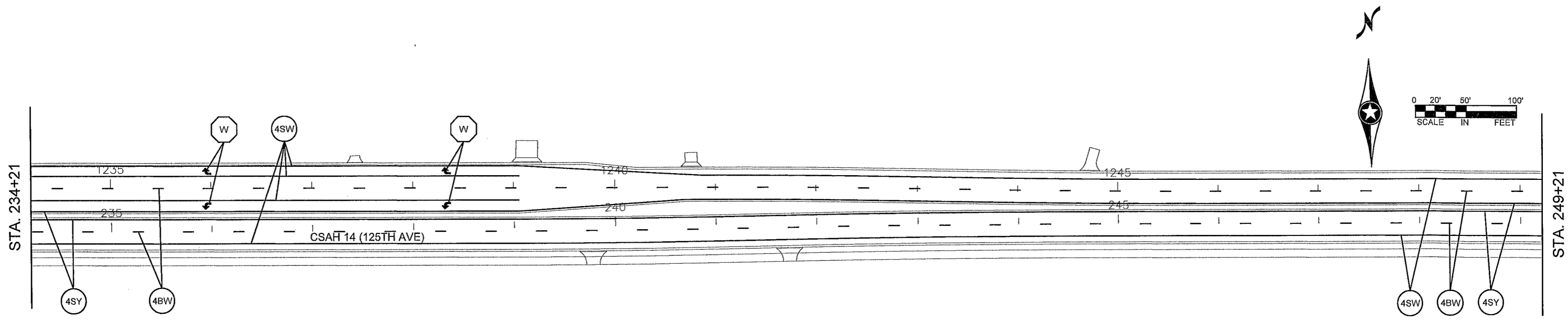
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SAP 002-614-048  
SAP 106-020-037

PERMANENT STRIPING PLAN

SHEET 146 OF 303 SHEETS



**STRIPING KEY:**  
 ○ --- CIRCLE - MULTI COMP  
 ○ --- OCTAGON - PREF THERMO

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-614-048\Base\Traffic\Permanent Striping Plan.dwg

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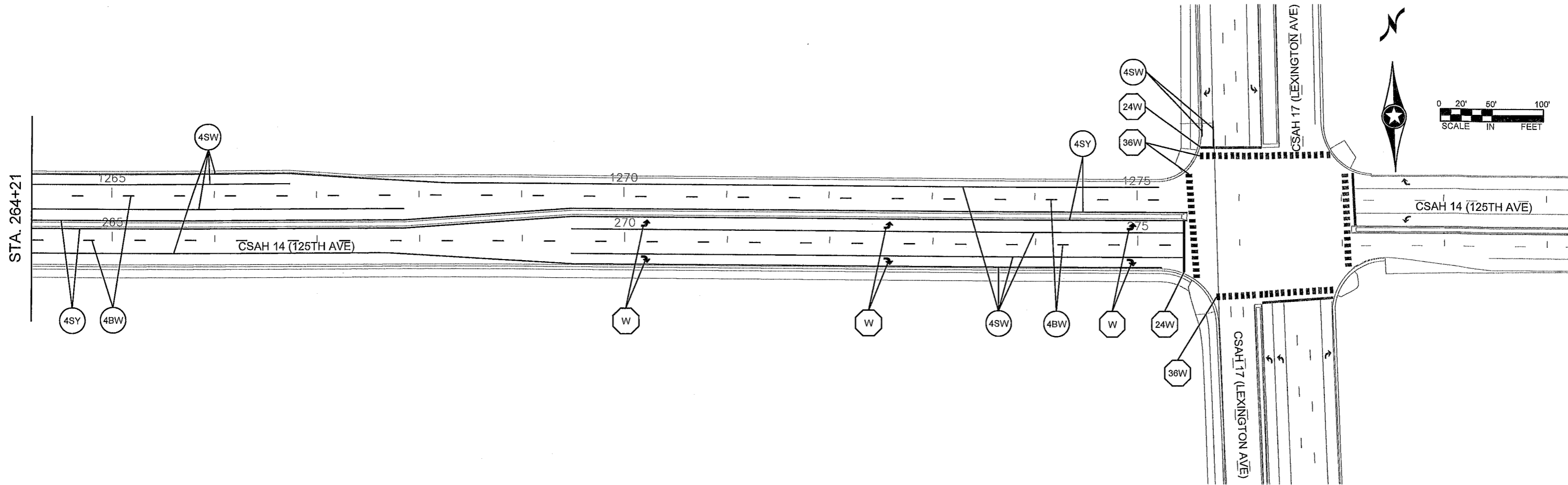
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 CHECKED BY DATE



**ANOKA COUNTY  
 HIGHWAY DEPT.**

SAP 002-614-048  
 SAP 106-020-037

PERMANENT STRIPING PLAN  
 SHEET 147 OF 303 SHEETS



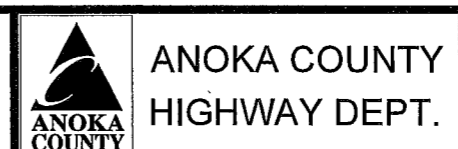
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 ⬡ OCTAGON - PREF THERMO

NO	DATE	BY	CKD	APPR	REVISION

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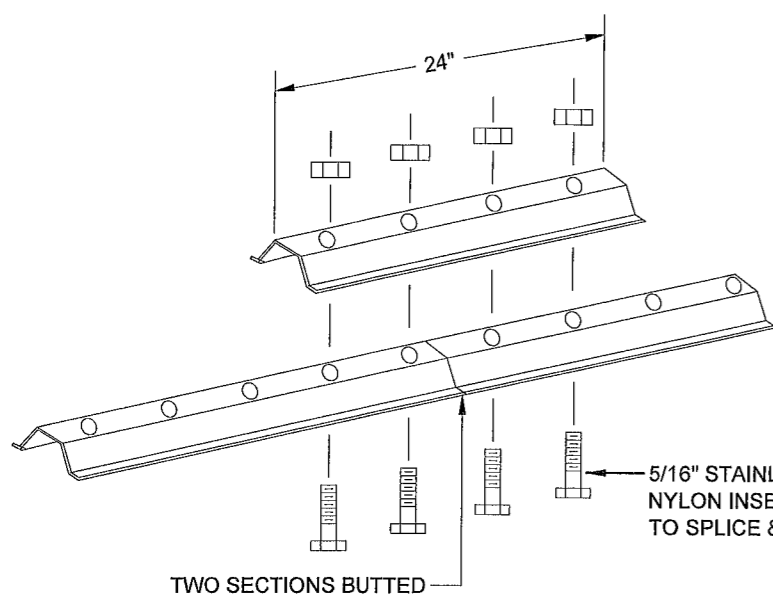
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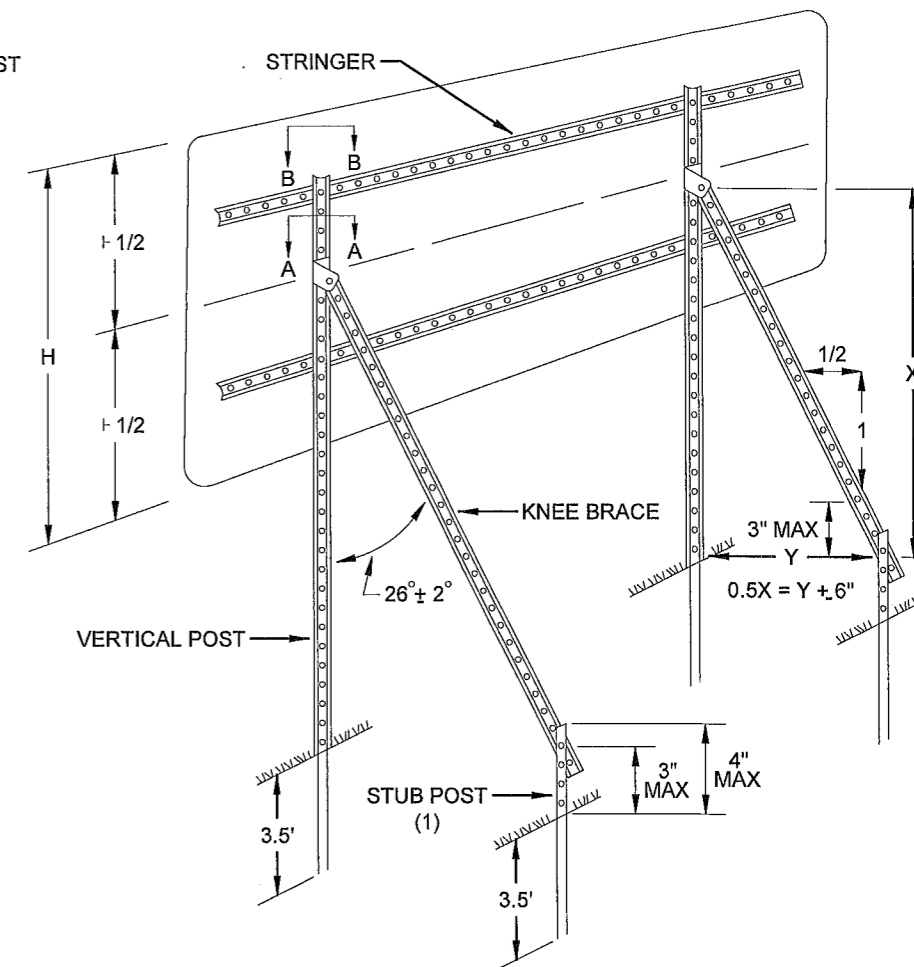
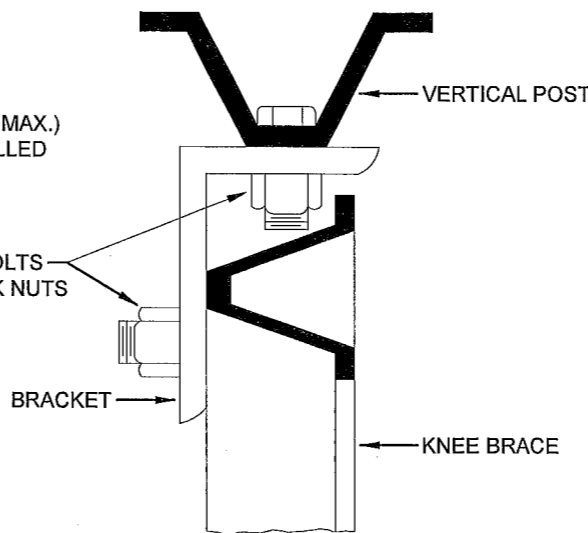
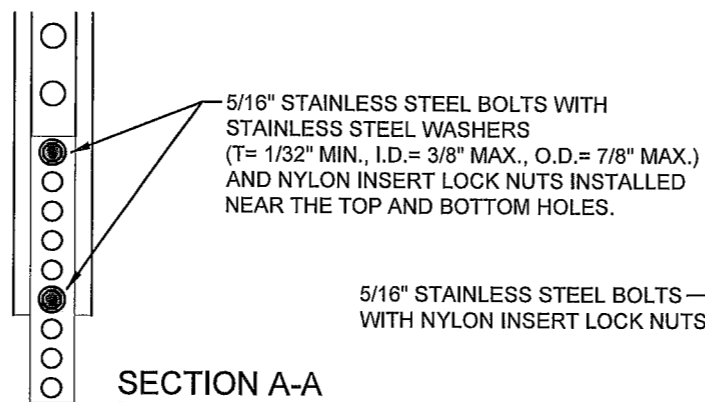
SAP 002-614-048  
 SAP 106-020-037

PERMANENT STRIPING PLAN  
 SHEET 148 OF 303 SHEETS

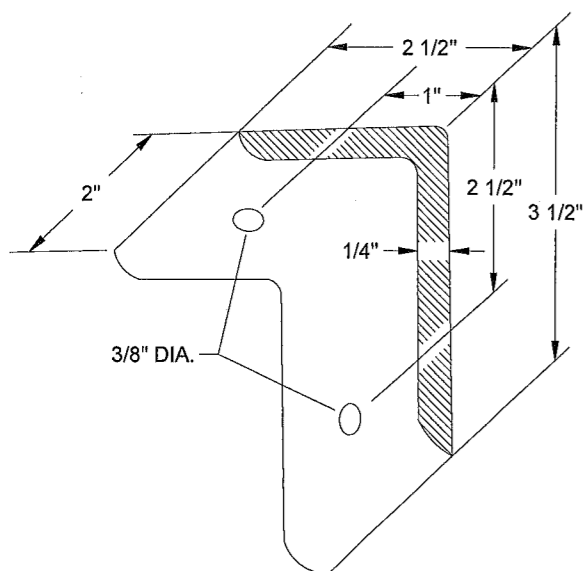
TYPE C & D SIGN STRUCTURAL DETAILS



LATERAL BRACE OR STRINGER SPLICE DETAIL (EXPLODED VIEW)

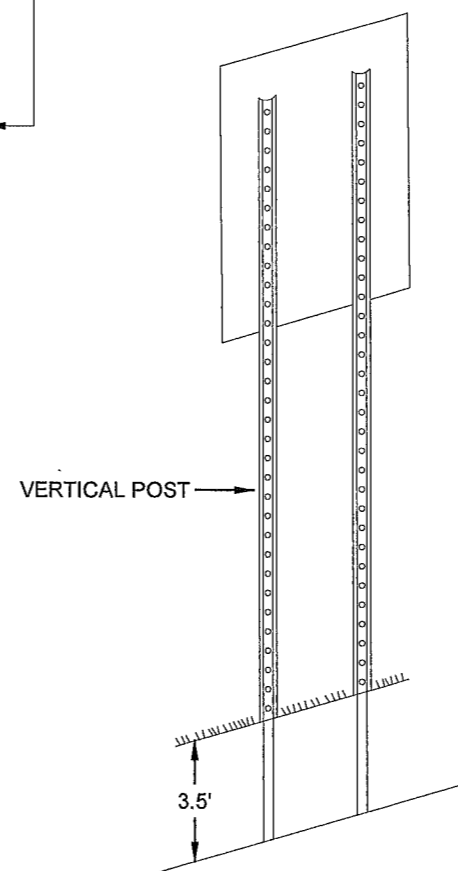
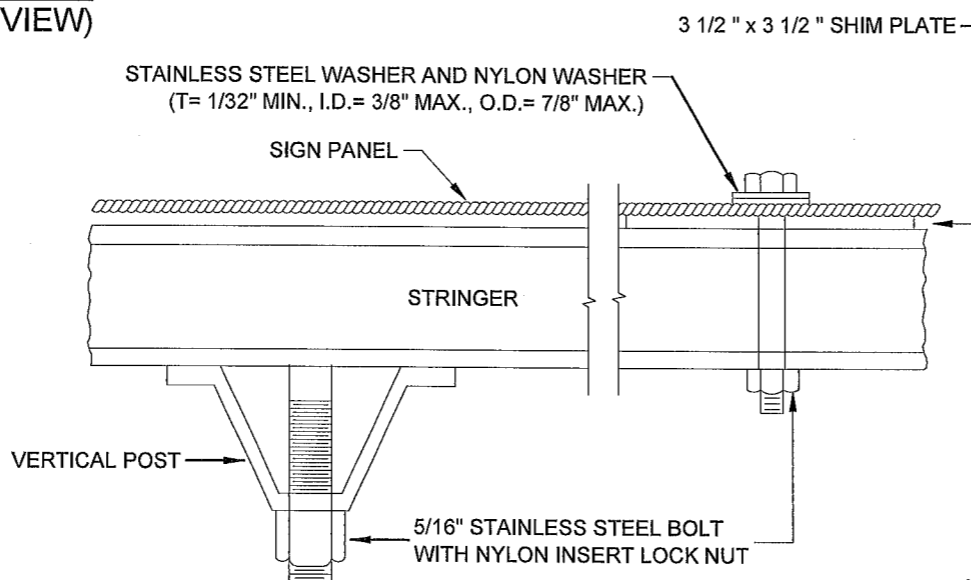


TYPICAL "A-FRAME" INSTALLATION TYPE "D" SIGNS

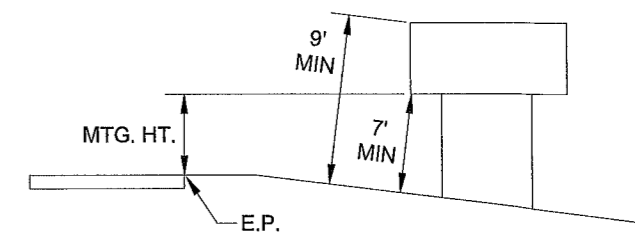
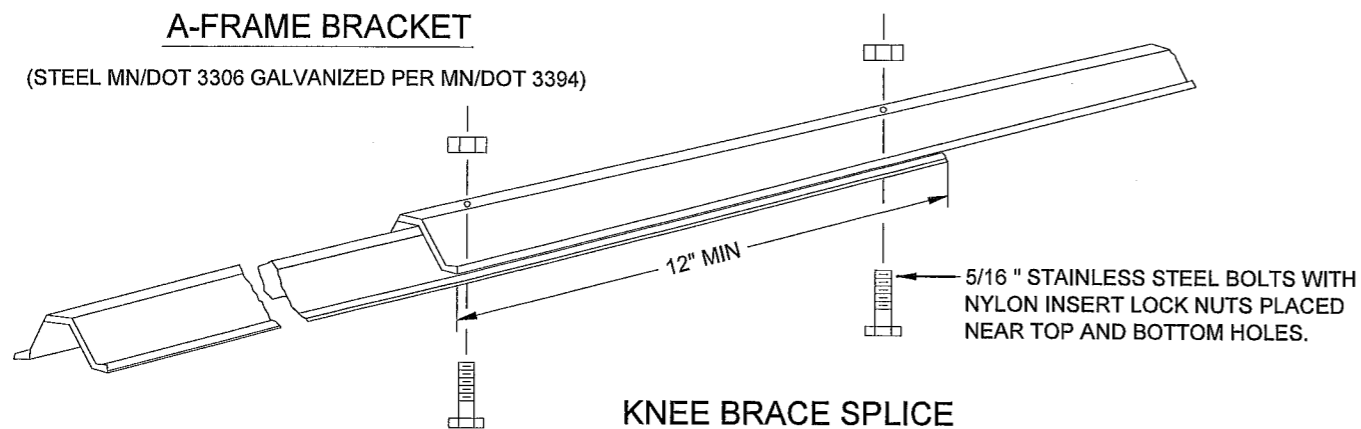


A-FRAME BRACKET

(STEEL MN/DOT 3306 GALVANIZED PER MN/DOT 3394)



TYPICAL INSTALLATION 36" AND LARGER TYPE "C" SIGNS



TYPICAL MOUNTING

(1) OFFSET STUB POST 1' TOWARD ROADWAY RELATIVE TO VERTICAL POST.

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-614-048\Base\Traffic\Signing & Striping Details.dwg

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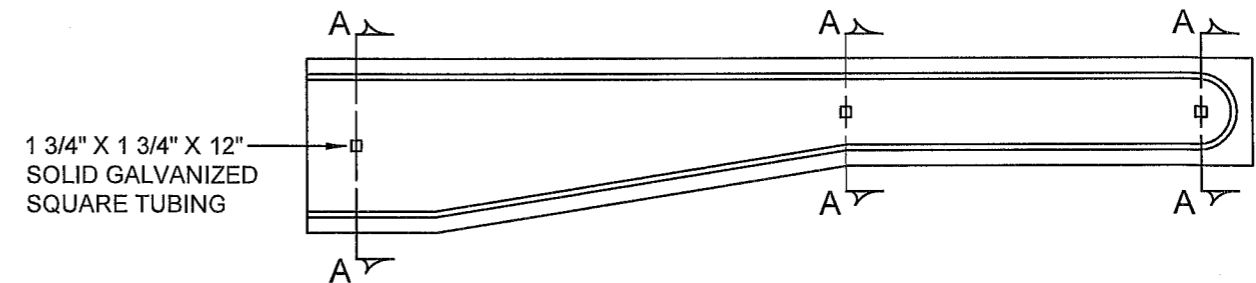
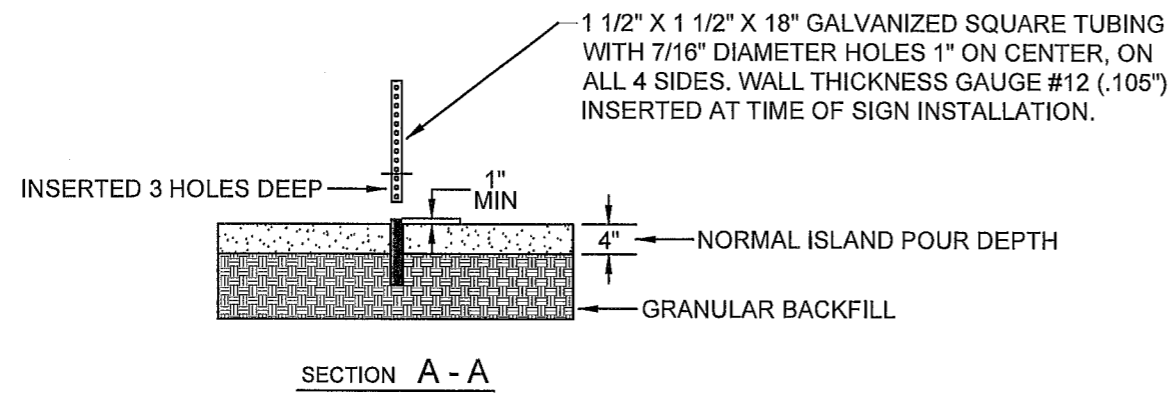


ANOKA COUNTY HIGHWAY DEPT.

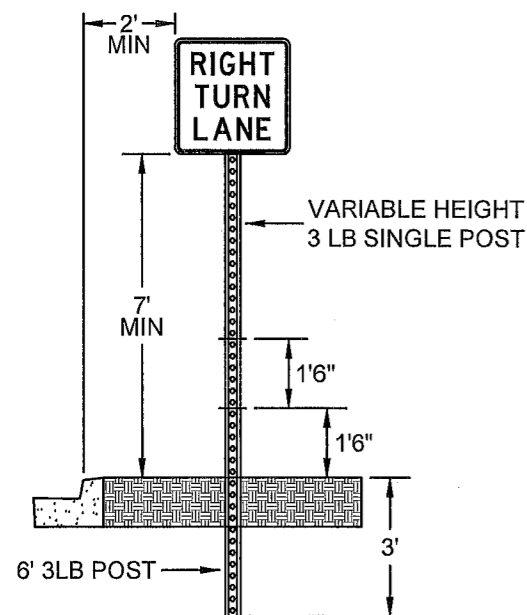
SAP 002-614-048  
SAP 106-020-037

SIGNING & STRIPING DETAILS

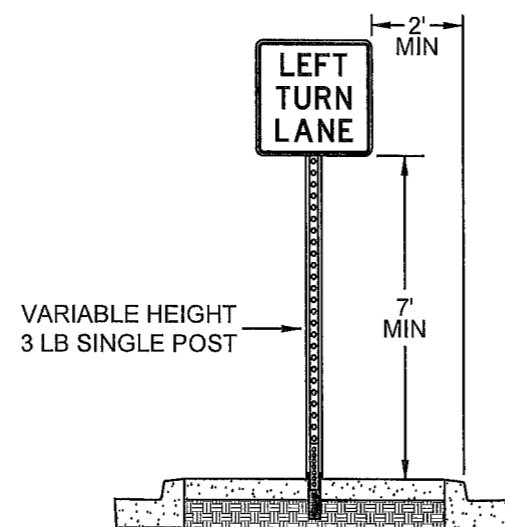
# SIGN INSTALLATION TYPICALS



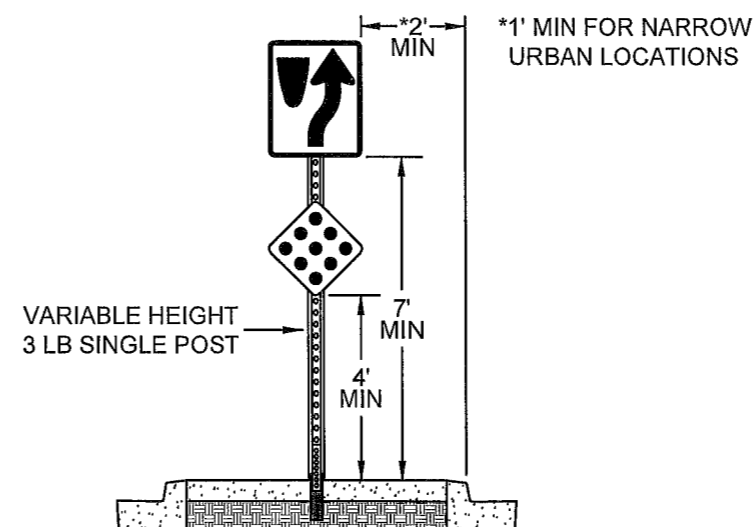
GROUND POST MOUNT SIGN  
INSTALLATION TYPICAL



ISLAND MOUNT BREAK-AWAY SIGN  
INSTALLATION TYPICAL



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



**NOTES:**

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

**INSTALLATION NEAR SHARED-USE PATHWAY (MN MUTCD):**

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

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**ANOKA COUNTY  
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SIGNING & STRIPING  
DETAILS

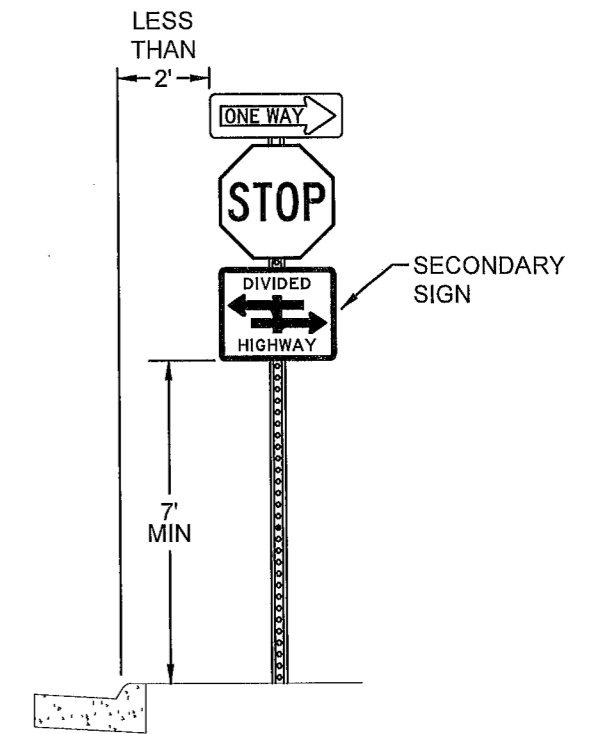
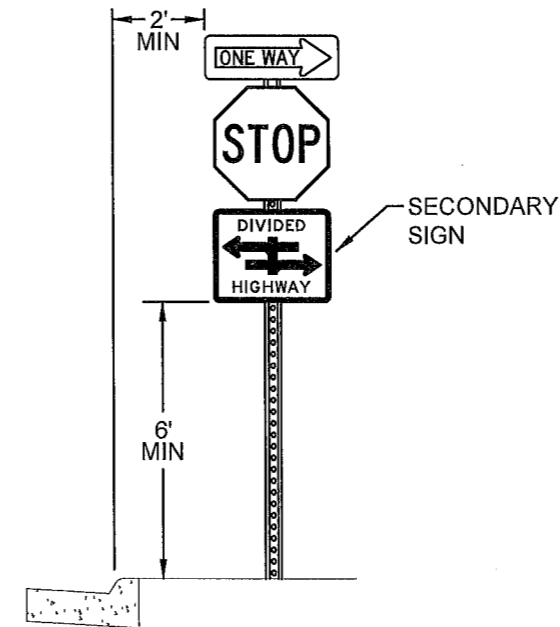
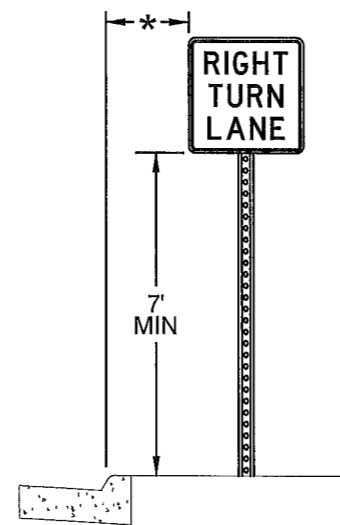
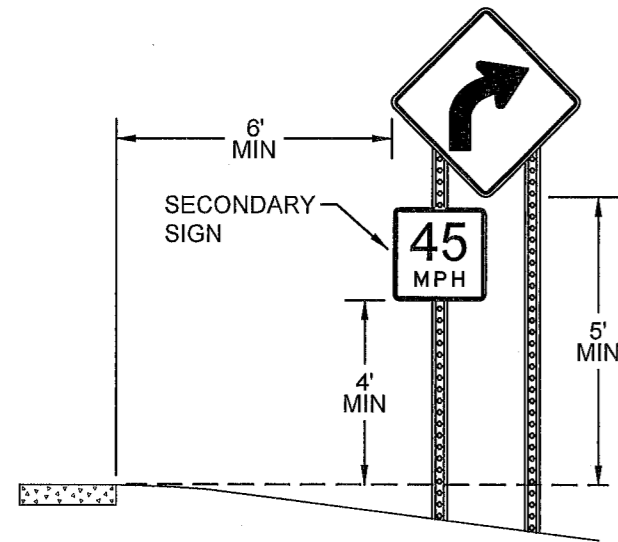
SHEET 150 OF 303 SHEETS

NO	DATE	BY	CKD	APPR	REVISION
NAME: P:\002-614-048\Base\Traffic\Signing & Striping Details.dwg					

SIGN PLACEMENT TYPICALS

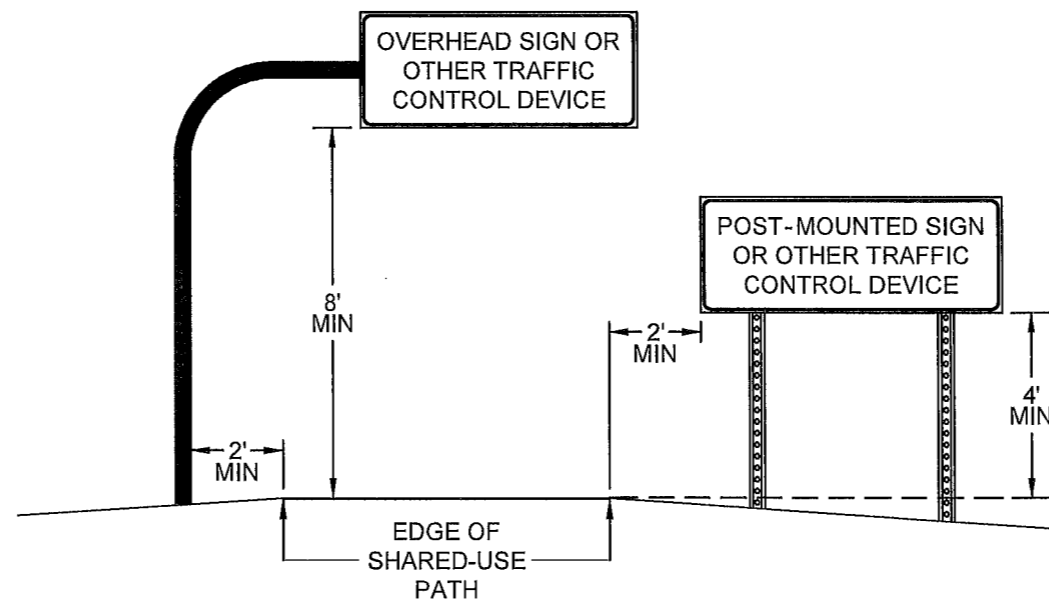
RURAL

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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HIGHWAY DEPT.

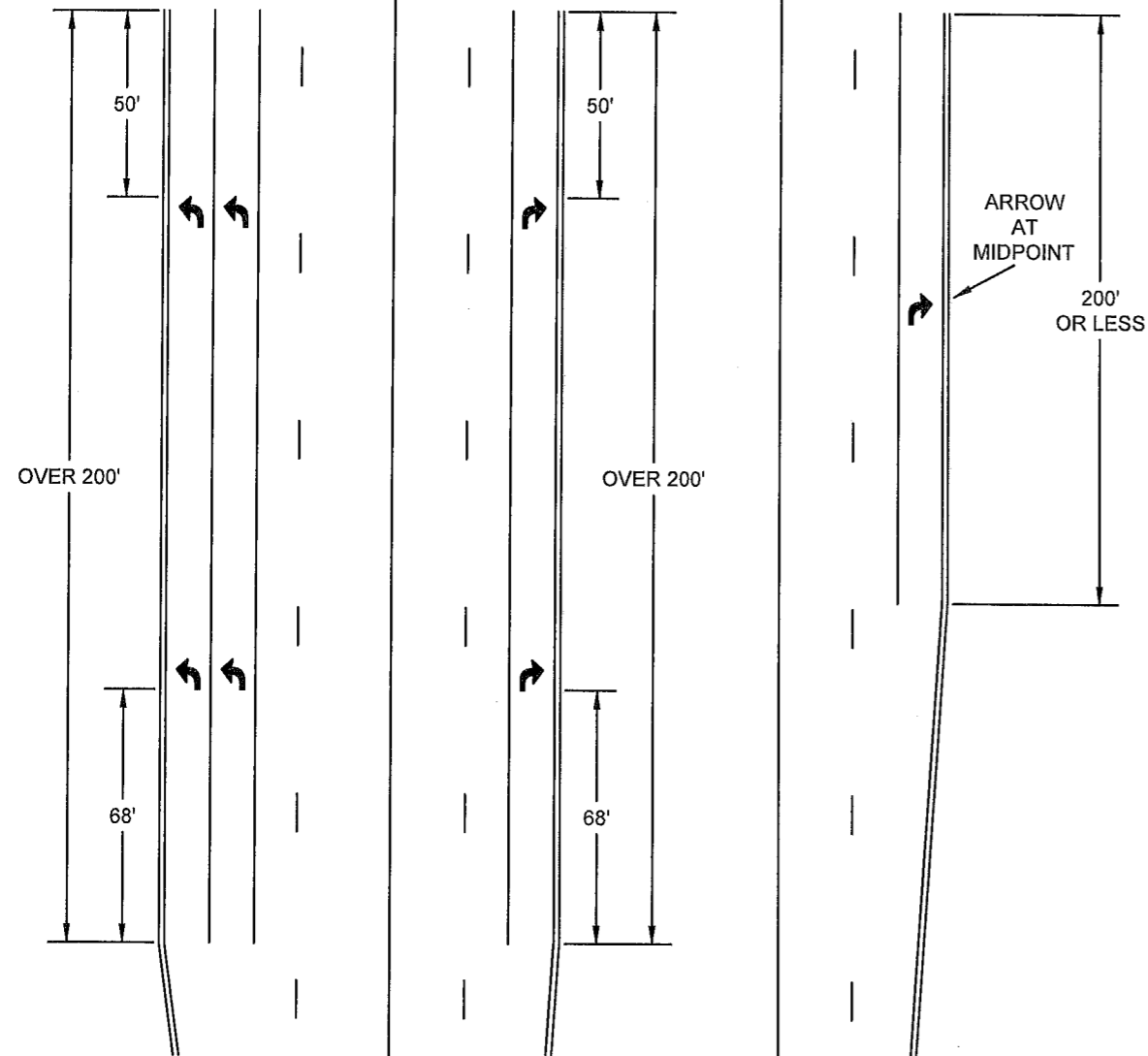
SAP 002-614-048  
SAP 106-020-037

SIGNING & STRIPING  
DETAILS

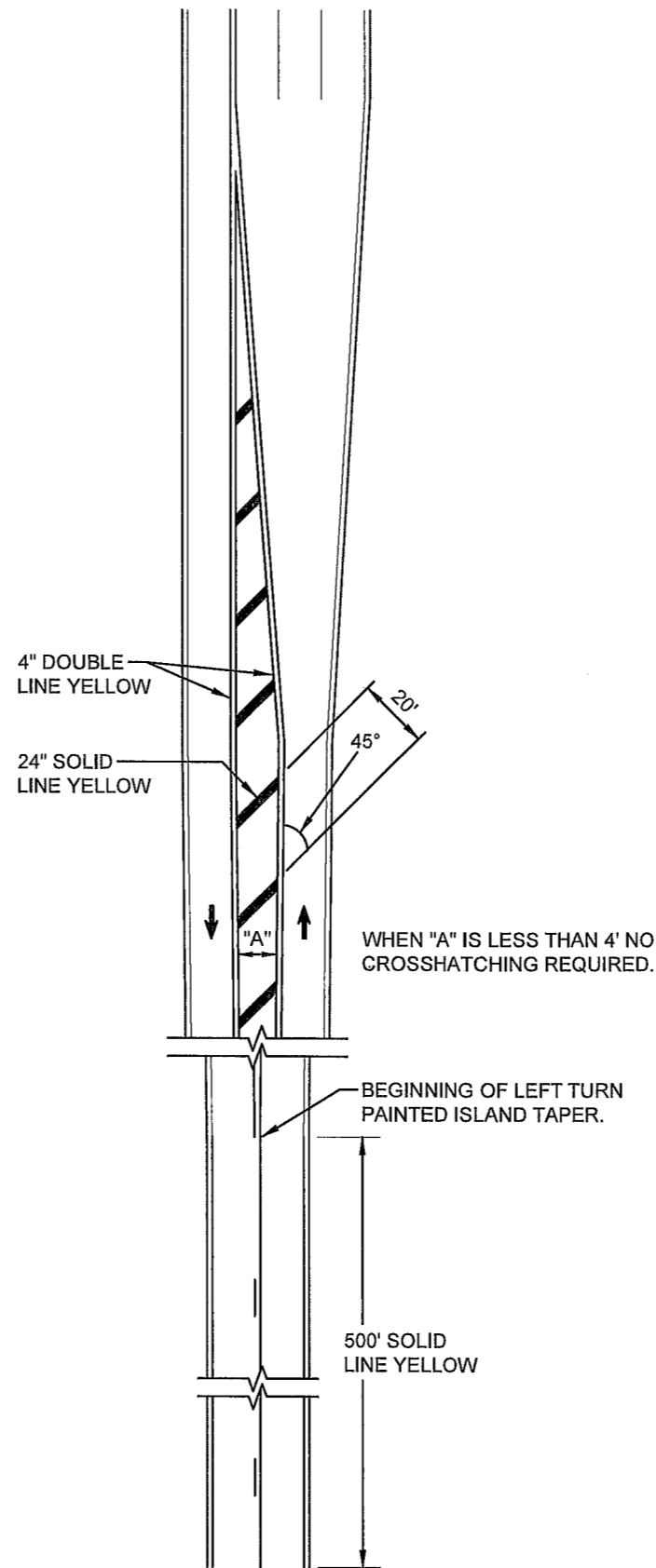
NO	DATE	BY	CKD	APPR	REVISION

PAVEMENT MARKING TYPICALS

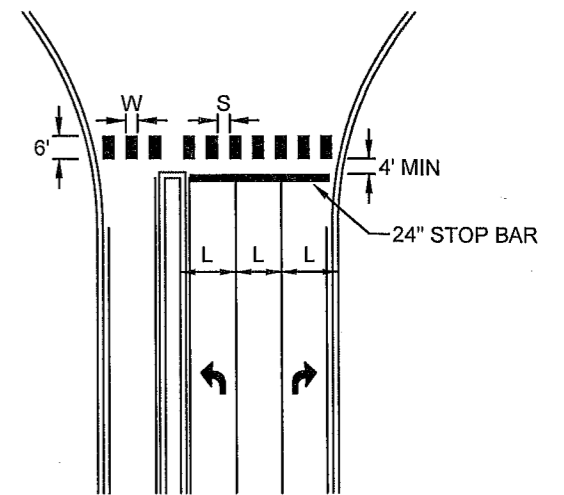
TURN LANE ARROW PLACEMENT



LEFT TURN ISLAND MARKINGS



PEDESTRIAN CROSSWALK



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

CROSSWALK NOTES:

- BLOCKS TO BE CENTERED ON CENTERLINE AND LANE LINES.
- 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.
- ON TWO LANE TWO WAY STREETS, USE SPACING SHOWN FOR AN 11' INSIDE LANE.
- 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.
- AT SKEWED CROSSWALKS, THE BLOCKS ARE TO REMAIN PARALLEL TO THE LANE LINES.
- THE BLOCKS SHALL BE PLACED SO THAT THEY ARE NOT LOCATED IN THE WHEEL PATH OF THE VEHICLES.
- LOCATION OF CROSSWALK BLOCKS AND STOP BARS, SIGNAL LOOPS AND PEDESTRIAN RAMPS ARE APPROXIMATE. FINAL LOCATIONS TO BE DETERMINED AND FIELD VERIFIED DURING CONSTRUCTION BY THE FIELD ENGINEER.

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 SIGNATURE: *Sean R. Thiel* LICENSE NO. 45129

DRAWN BY: FL DATE: 10/28/21  
 DESIGN BY: FL DATE: 10/28/21  
 CHECKED BY: DATE:



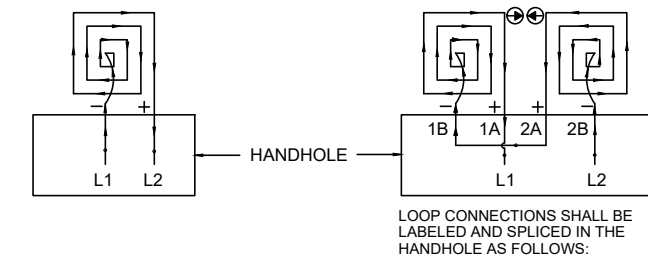
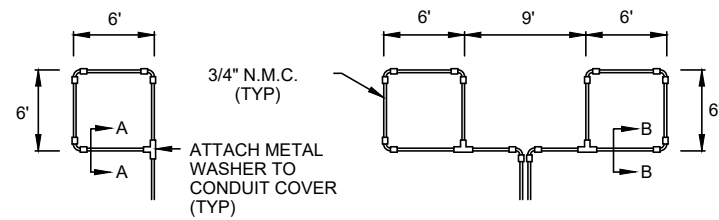
ANOKA COUNTY  
 HIGHWAY DEPT.

SAP 002-614-048  
 SAP 106-020-037

SIGNING & STRIPING  
 DETAILS

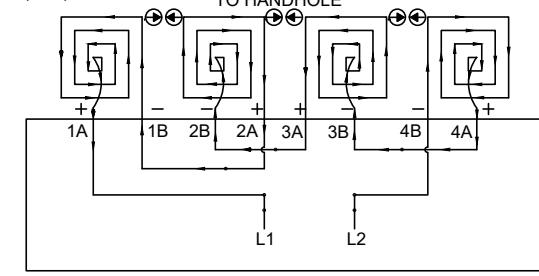
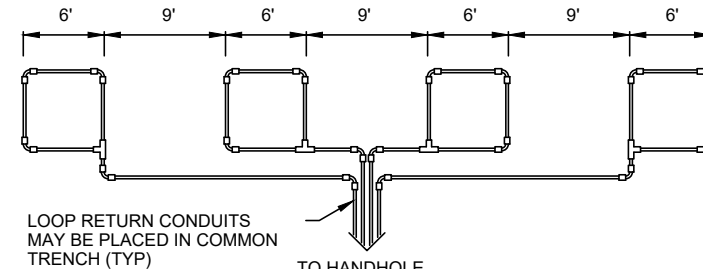
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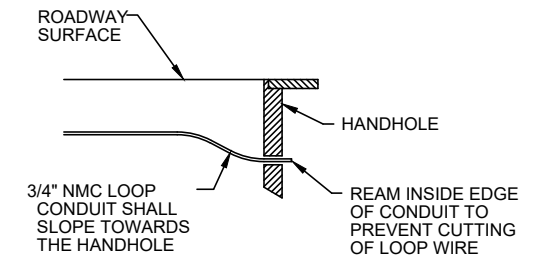
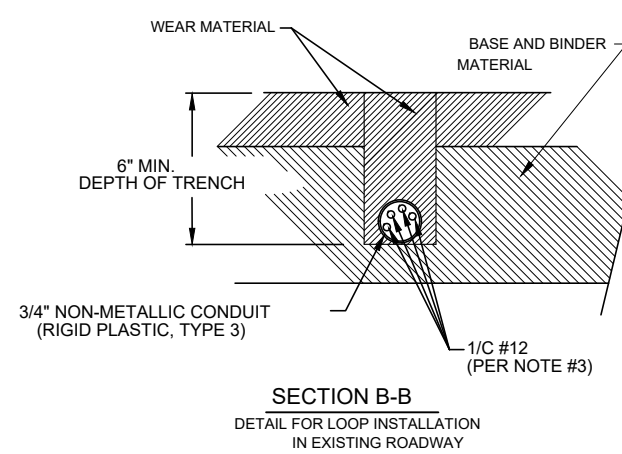
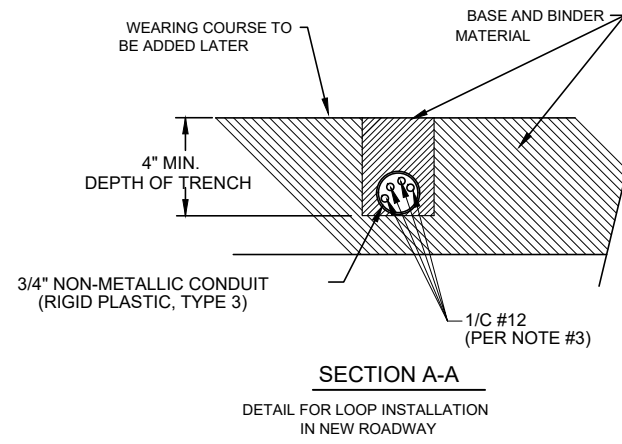
**LOOP DETECTOR  
DETAIL 'A'**  
(LOOP PHASING FOR  
SINGLE CONNECTION)

LOOP CONNECTIONS SHALL BE  
LABELED AND SPLICED IN THE  
HANDHOLE AS FOLLOWS:  
  
L1 TO 1A  
1B TO 2A  
2B TO L2  
  
**LOOP DETECTOR  
DETAIL 'B'**  
(LOOP PHASING FOR  
SERIES CONNECTION)



LOOP CONNECTIONS SHALL BE LABELED AND SPLICED  
IN THE HANDHOLE AS FOLLOWS:  
  
L1 TO 1A      3B TO 4A  
1B TO 2A      4B TO L2  
2B TO 3A  
  
SPLICE CONTROL CABLE TO L1 & L2 IN HANDHOLE.  
ALL CONDUCTORS SHALL BE TAGGED IN HANDHOLE  
(1A, 1B, ECT)

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



**DRAINAGE DETAIL**

**LOOP DETECTOR WIRING**

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

**LEGEND OF SYMBOLS**

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

**ABBREVIATIONS**

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

**CONDUCTOR COLOR CODE**

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

**TABULATION OF SIGNAL QUANTITIES**

ITEM NO	ITEM	UNIT	TOTAL ESTIMATED QUANTITY	PARTICIPATION	
				SAP 002-614-048	SAP 106-020-037
2545	SERVICE CABINET	EACH	1	0.25	0.75
2565	EMERGENCY VEHICLE PREEMPTION SYSTEM B	LS	1		1
2565	TRAFFIC CONTROL INTERCONNECT	LS	1	1	
2565	TRAFFIC CONTROL SIGNAL SYSTEM B	SYSTEM	1	0.25	0.75
2565	HANDHOLE	EACH	12	12	
2565	RIGID PVC LOOP DETECTOR 6' X 6'	EACH	20	20	
2565	2" NON-METALLIC CONDUIT	LF	900	900	
2565	3" NON-METALLIC CONDUIT	LF	800	800	
2565	REVISE SIGNAL SYSTEM A	SYSTEM	1	1	
2565	REVISE SIGNAL SYSTEM C	SYSTEM	1	1	

**TRAFFIC SIGNAL STANDARD PLATES**

THESE TRAFFIC SIGNAL STANDARD PLATES AS APPROVED BY FHWA SHALL APPLY.

PLATE NO.	DESCRIPTION
8000 K	CHANNELIZERS, TYPE A, B, C (3 SHEETS)
8111 E	TRAFFIC SIGNAL BRACKETING (PEDESTAL MOUNTED) (3 SHEETS)
8112 I	PEDESTAL FOUNDATION (FOR TRAFFIC CONTROL SIGNALS)
8118 D	SERVICE EQUIPMENT & POLE-TRAFFIC CONTROL SIGNALS
8119 C	GROUND MOUNTED CABINET FOUNDATION
8121 H	TRANSFORMER BASE & POLE BASE PLATE (2 SHEETS)
8122 F	PEDESTAL AND PEDESTAL BASE (FOR TRAFFIC CONTROL SIGNALS SUPPORT) (2 SHEETS)
8123 G	POLE & MAST ARM-LUMINAIRES & TRAFFIC LIGHTS ASSEMBLY (2 SHEETS)
8126 L	POLE FOUNDATION (PA90 & PA100)
8129 A	SHIM AND WASHER (TRAFFIC CONTROL SIGNALS AND ROADWAY LIGHTING)

S.A.P. 002-614-048  
S.A.P. 106-020-037

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DESIGNER: MRB				
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.

*John M. Gray*  
Name: John M. Gray, P.E.  
Date: February 7, 2022 Lic. No. 22457

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

**ANOKA COUNTY,  
MINNESOTA  
CITY OF BLAINE**

**TRAFFIC SIGNAL SYSTEMS "A-C"  
DETAILS AND STANDARD PLATES  
CSAH 14 (125TH AVE NE)  
SIGNAL SYSTEMS**

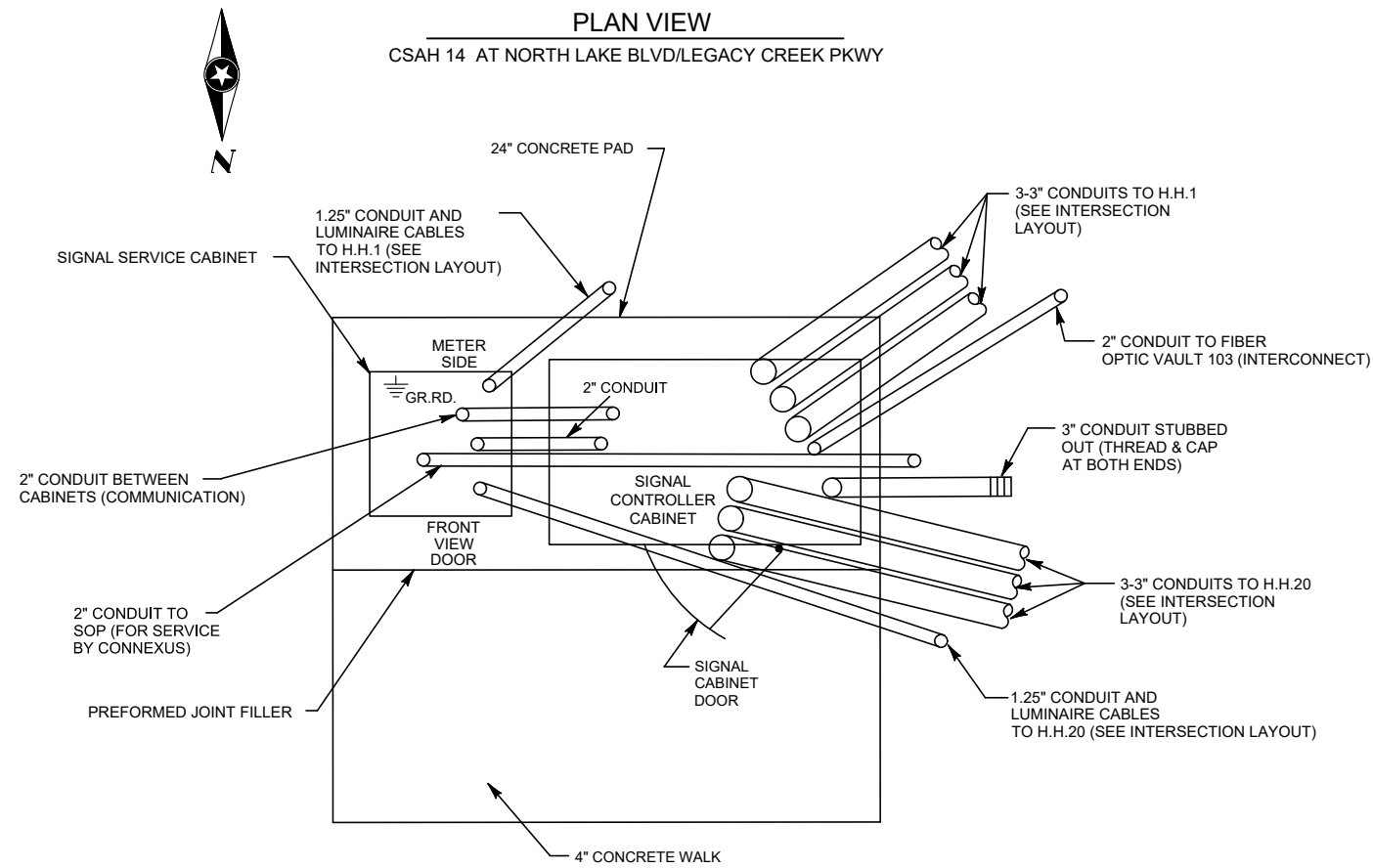
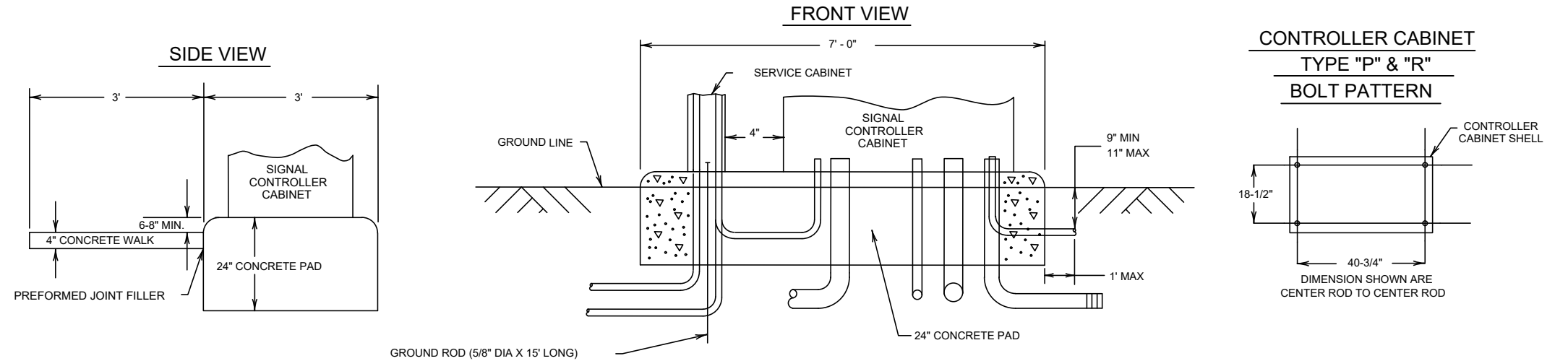
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SIGNAL SHEET SGL1 OF SGL34	303

# TYPICAL PAD WITH CONTROLLER CABINET AND SERVICE CABINET

SEE INTERSECTION LAYOUT FOR CABLE INFORMATION (NOT TO SCALE)

## NOTES:

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



S.A.P. 002-614-048  
S.A.P. 106-020-037

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DESIGNER: MRB  
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DESIGN TEAM

NO.	BY	DATE	REVISIONS

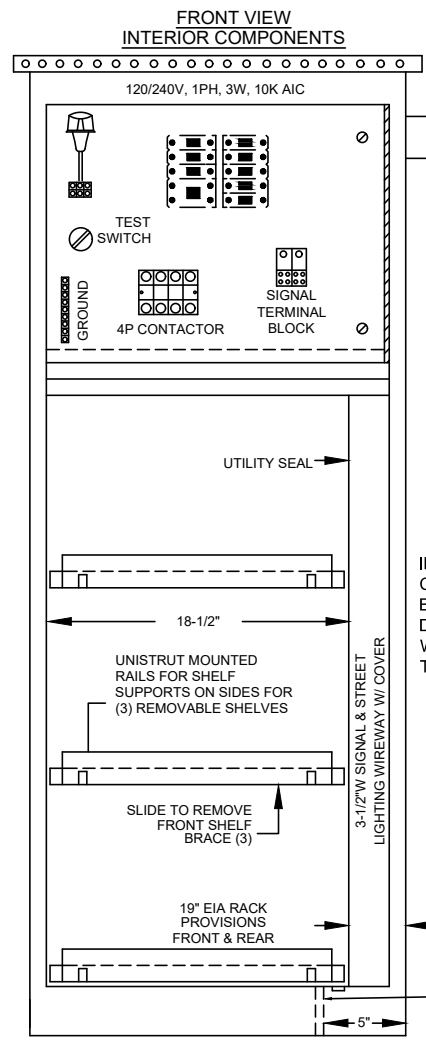
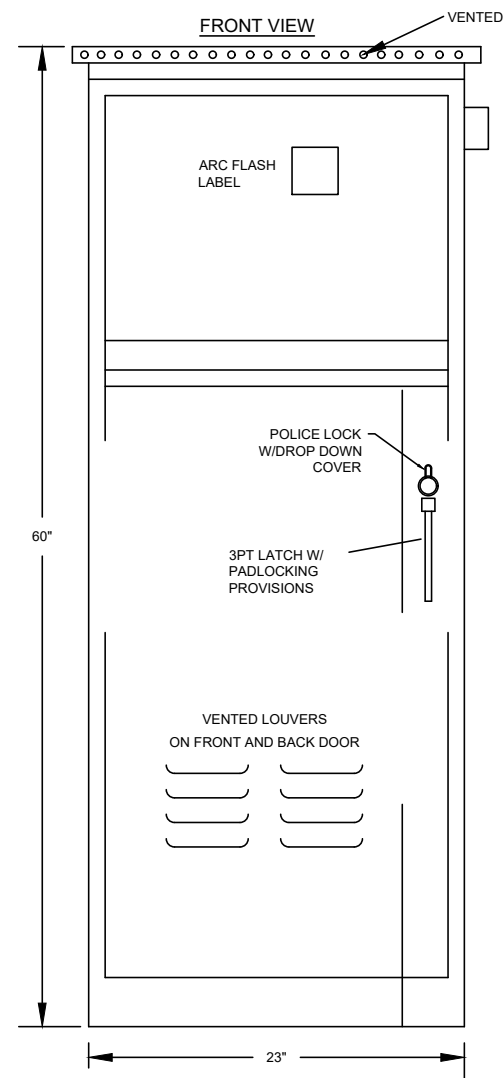
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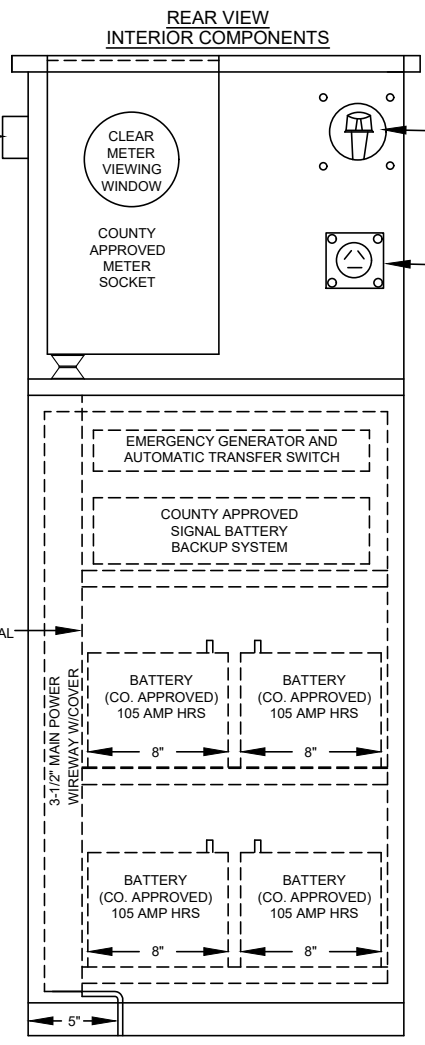
ANOKA COUNTY,  
MINNESOTA  
CITY OF BLAINE

TRAFFIC SIGNAL SYSTEM "B"  
EQUIPMENT PAD DETAILS  
CSAH 14 (125TH AVE NE) AT NORTH  
LAKE BLVD/LEGACY CREEK PKWY

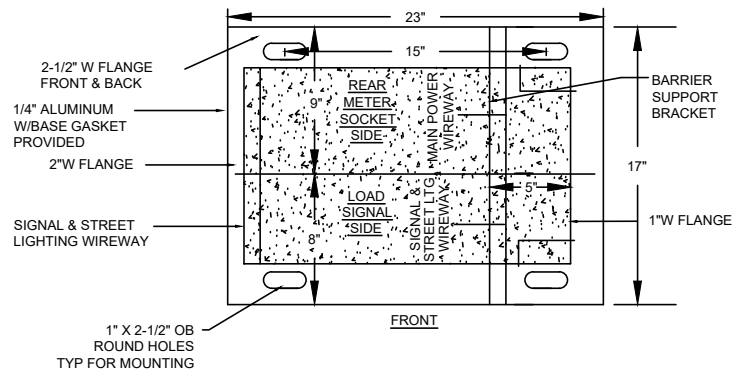
FILE NO. ANOKC157553  
SIGNAL SHEET SGL 2 OF SGL34  
154  
303



- 4 LED LIGHT HEAD 24V DC BLUE LIGHT
- LOAD CENTER CIRCUIT BREAKERS ITE "Q" TYPE
  - 1-100A/2P SERVICE DISCONNECT
  - 1-15/1P PHOTOCELL
  - 4-15A/1P LUMINAIRES
  - 4-15A/1P SIGNS
  - 1-30A/1P SIGNAL SVC
  - 1 SPARE



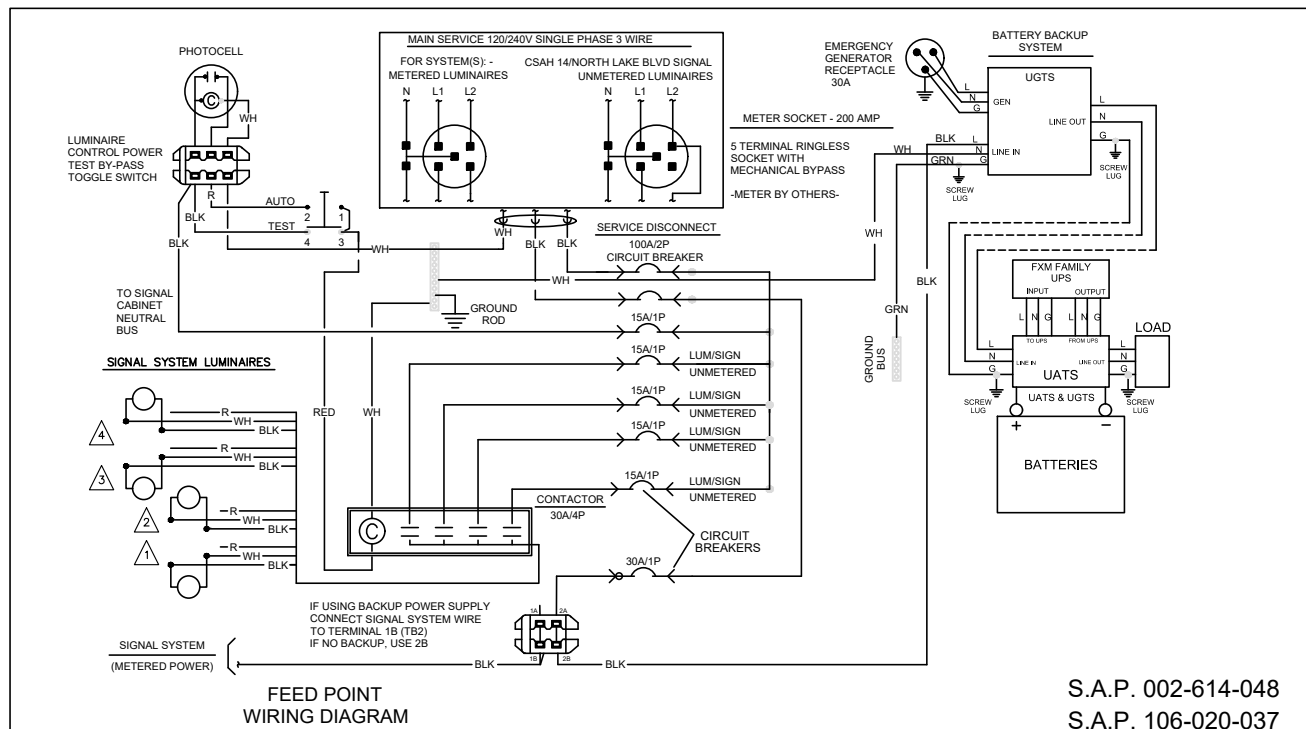
INTERIOR COMPONENTS BEHIND HINGED DEAD FRONT W/ (2)-1/4 TURN LATCHES



**CABINET CONSTRUCTION**

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

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



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

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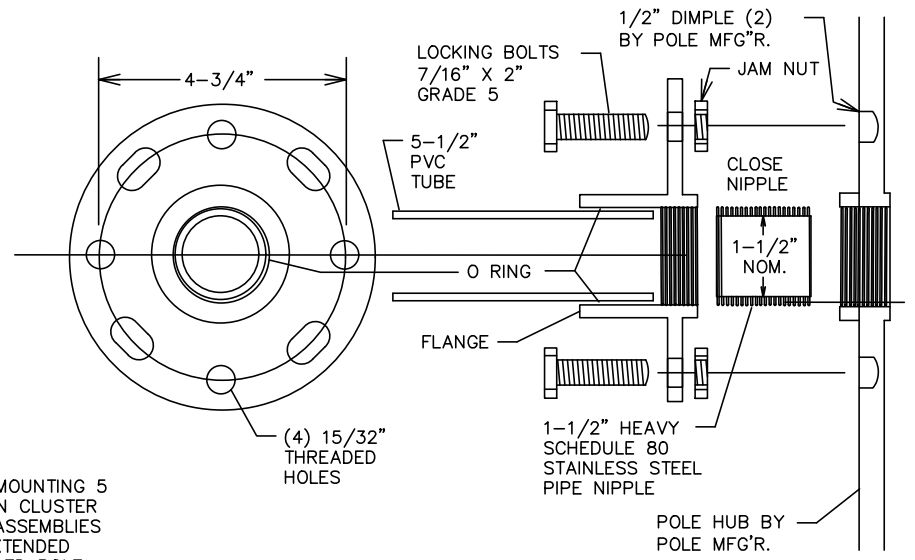
**ANOKA COUNTY, MINNESOTA**  
CITY OF BLAINE

TRAFFIC SIGNAL SYSTEM "B"  
SIGNAL SERVICE CABINET DETAILS  
CSAH 14 (125TH AVE NE) AT NORTH LAKE BLVD/LEGACY CREEK PKWY

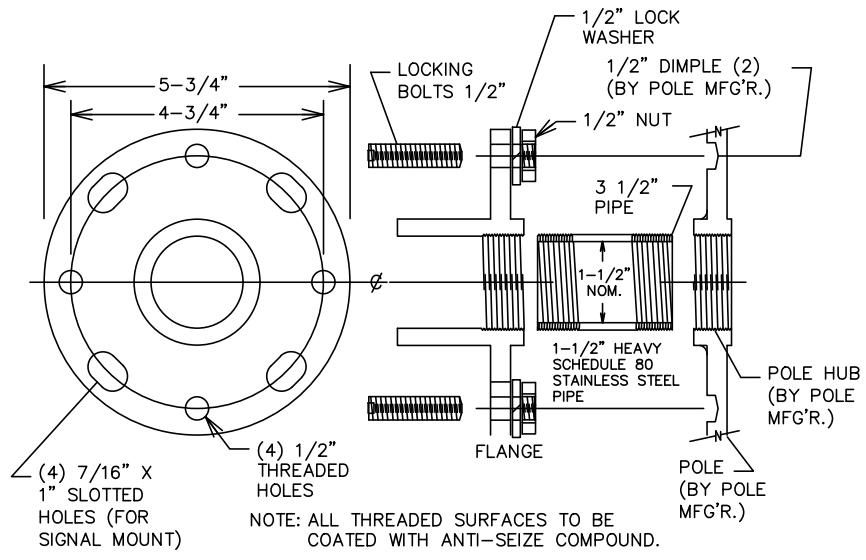
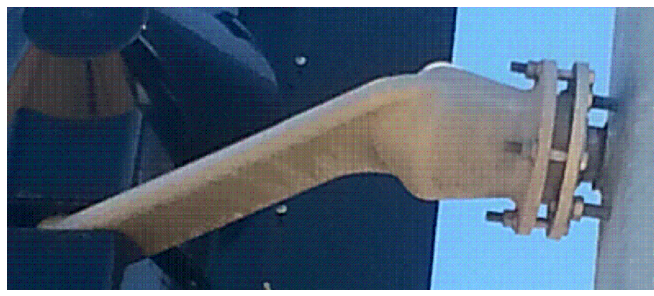
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S.A.P. 106-020-037

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SIGNAL SHEET SGL 3 OF SGL34

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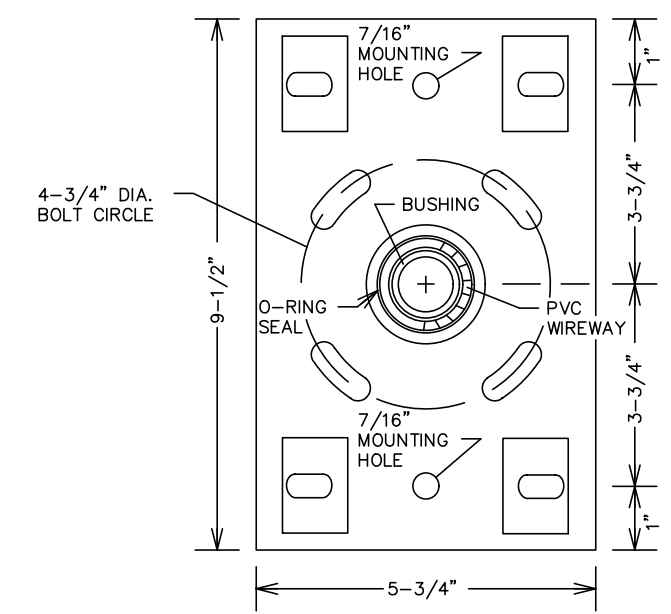


THREADED HUB AND FLANGE POLE ADAPTOR

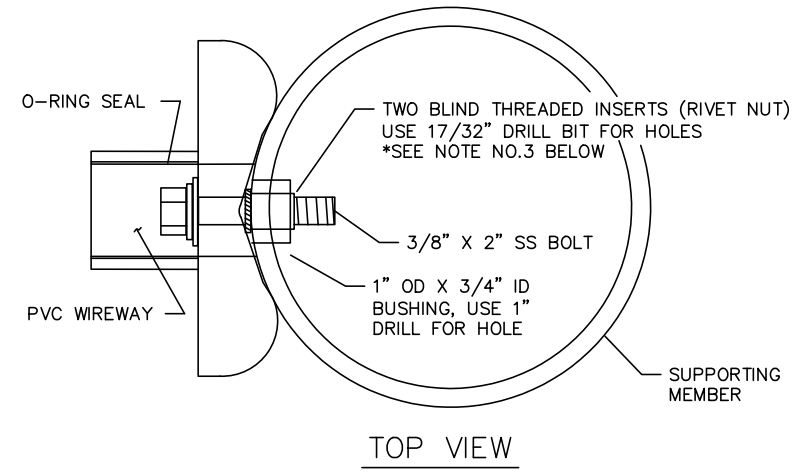


EXTENDED THREADED POLE ADAPTER

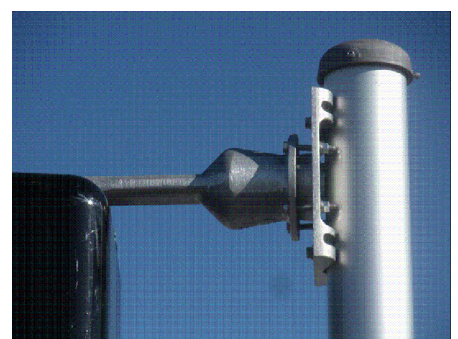
- NOTES:
1. ALL THREADED SURFACES TO BE COATED WITH ANTI-SEIZE COMPOUND.
  2. USE SIGNAL HEAD MOUNTED SPACERS FOR 4 SECTION POLY HEADS.
  3. SEE STANDARD PLATE NUMBER 8123 FOR ADDITIONAL SIGNAL POLE DETAILS.
  4. EXTENDED THREADED POLE ADAPTOR ONLY USED WITH 5 SECTION CLUSTER HEADS.



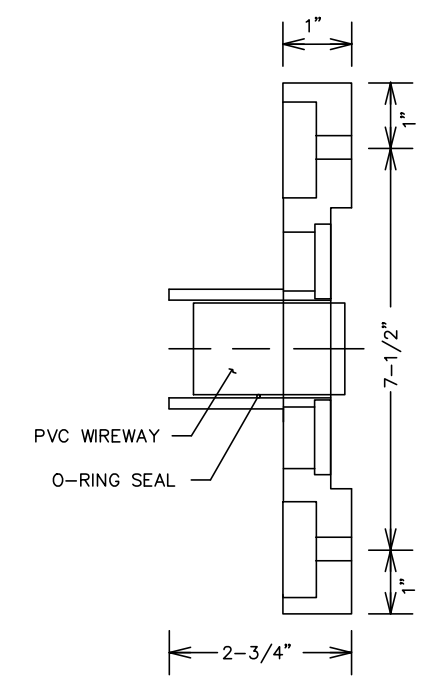
BOLT ON HUB & FLANGE



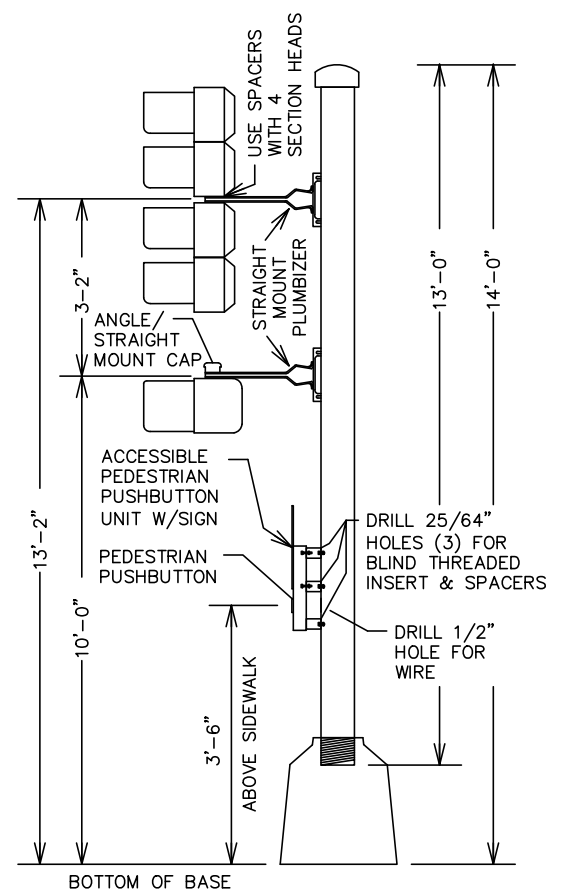
TOP VIEW



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

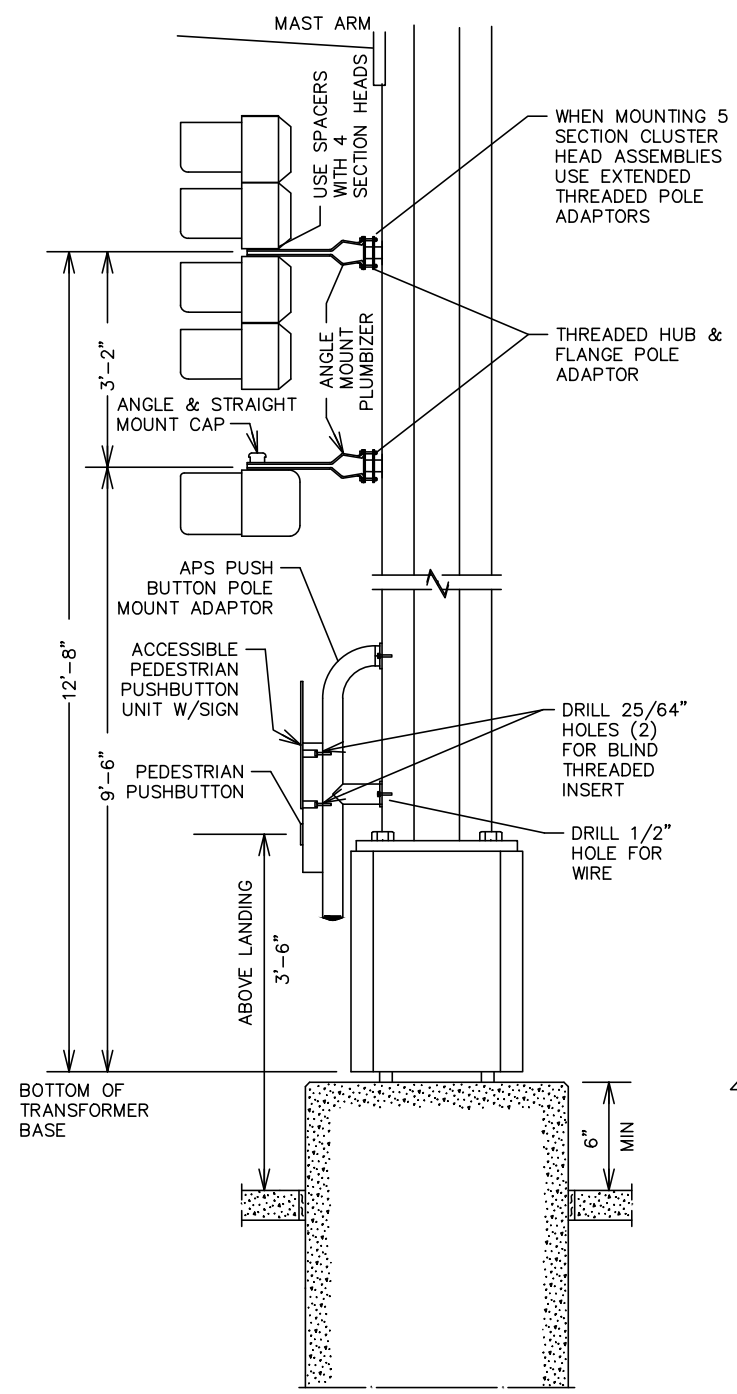


SIDE VIEW



TYPICAL PEDESTAL MOUNTING

NOT TO SCALE



TYPICAL SIGNAL POLE MOUNTING

NOT TO SCALE

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

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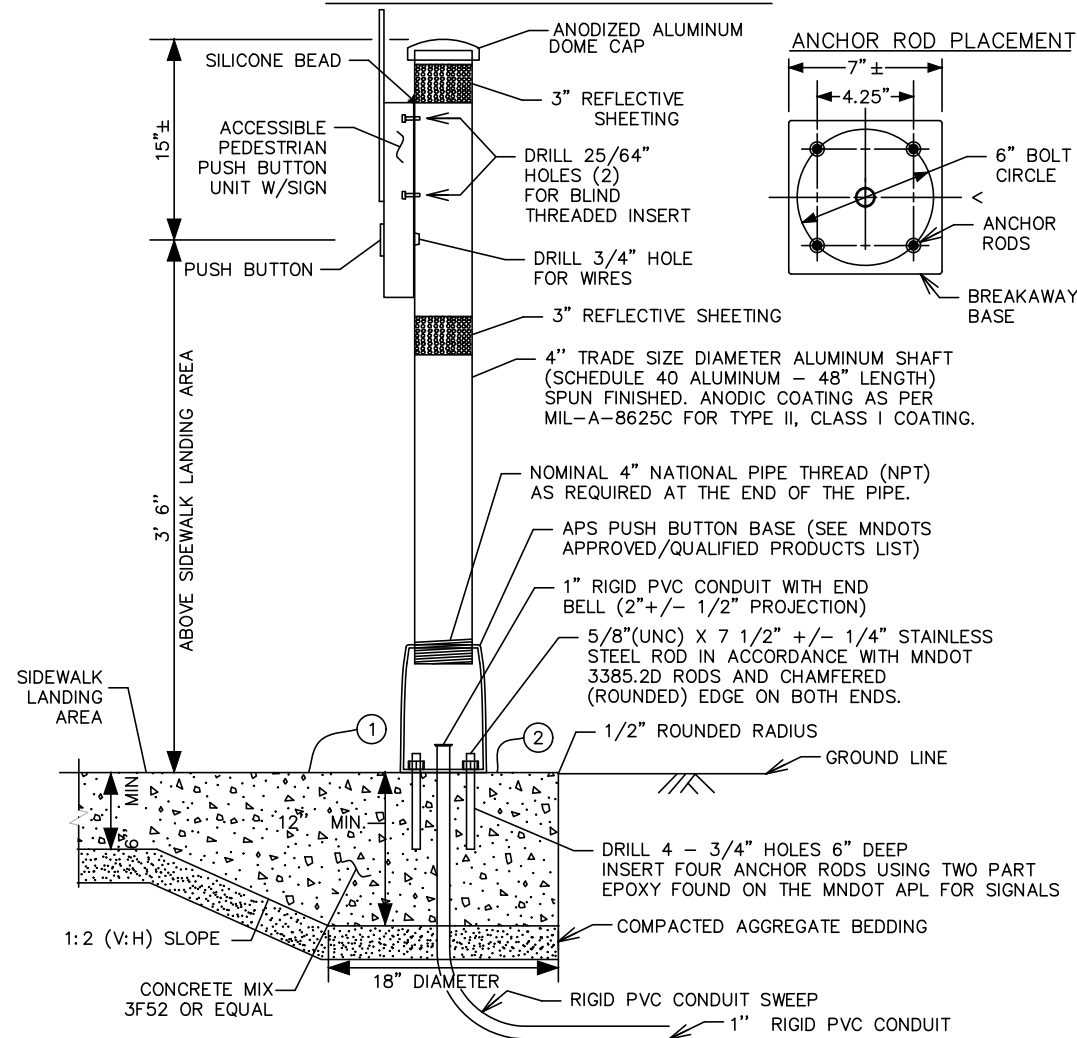
**ANOKA COUNTY, MINNESOTA**  
CITY OF BLAINE

TRAFFIC SIGNAL SYSTEM "B"  
ONE WAY POLE MOUNT DETAILS  
CSAH 14 (125TH AVE NE) AT NORTH LAKE BLVD/LEGACY CREEK PKWY

FILE NO. ANOKC157553  
SIGNAL SHEET SGL 4 OF SGL34  
156  
303

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**APS PUSH BUTTON STATION**



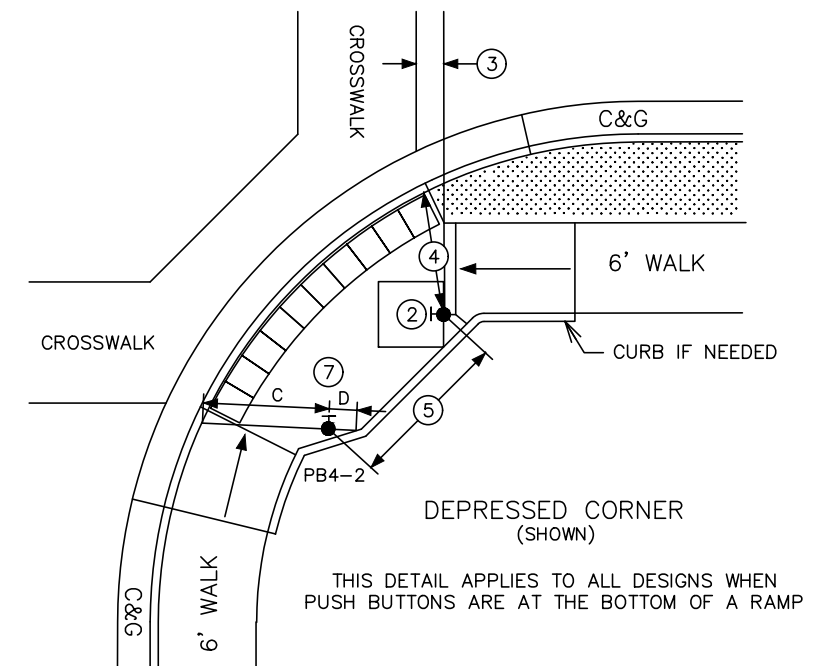
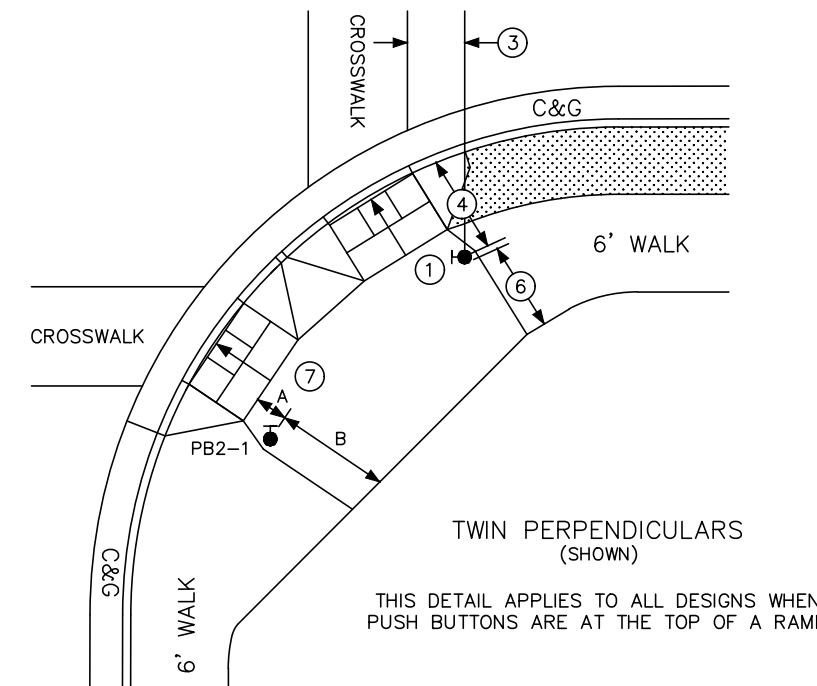
- NOTES:**
- PLACEMENT AND ORIENTATION OF THE PUSH BUTTON STATION IS CRITICAL. MOUNT THE BUTTON SO THAT THE FACE IS PARALLEL WITH THE ASSOCIATED CROSSWALK. SCREW IN SHAFT TO A TIGHTENED POSITION BEFORE MOUNTING ACCESSIBLE PEDESTRIAN PUSH BUTTON UNIT TO THE SHAFT.
  - ORIENT ACCESS OPENING ON THE BREAKAWAY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

**TYPICAL APS PEDESTRIAN PUSH BUTTON LOCATION**

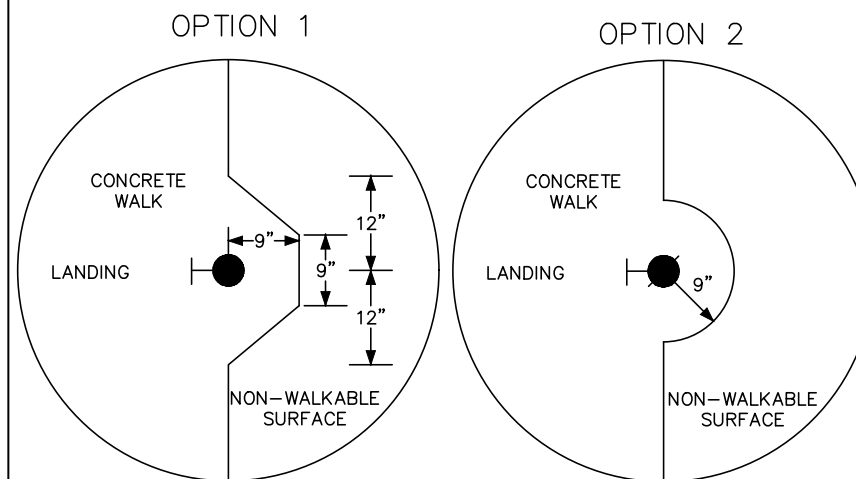
THIS IS A GENERAL DETAIL INTENDED TO SHOW THE REQUIREMENTS OF APS PUSH BUTTON LOCATION. FOR PROJECT SPECIFIC INFORMATION REGARDING PEDESTRIAN RAMP LAYOUT AND PUSH BUTTON LOCATIONS, SEE THE PLAN.

**SUPPLEMENTAL GUIDANCE FOR CONSTRUCTING COMPLIANT APS PUSH BUTTONS:**

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



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



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

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

DRAWN BY: MRB					
DESIGNER: MRB					
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.

*John M. Gray*  
Name: John M. Gray, P.E.  
Date: February 7, 2022  
Lic. No. 22457

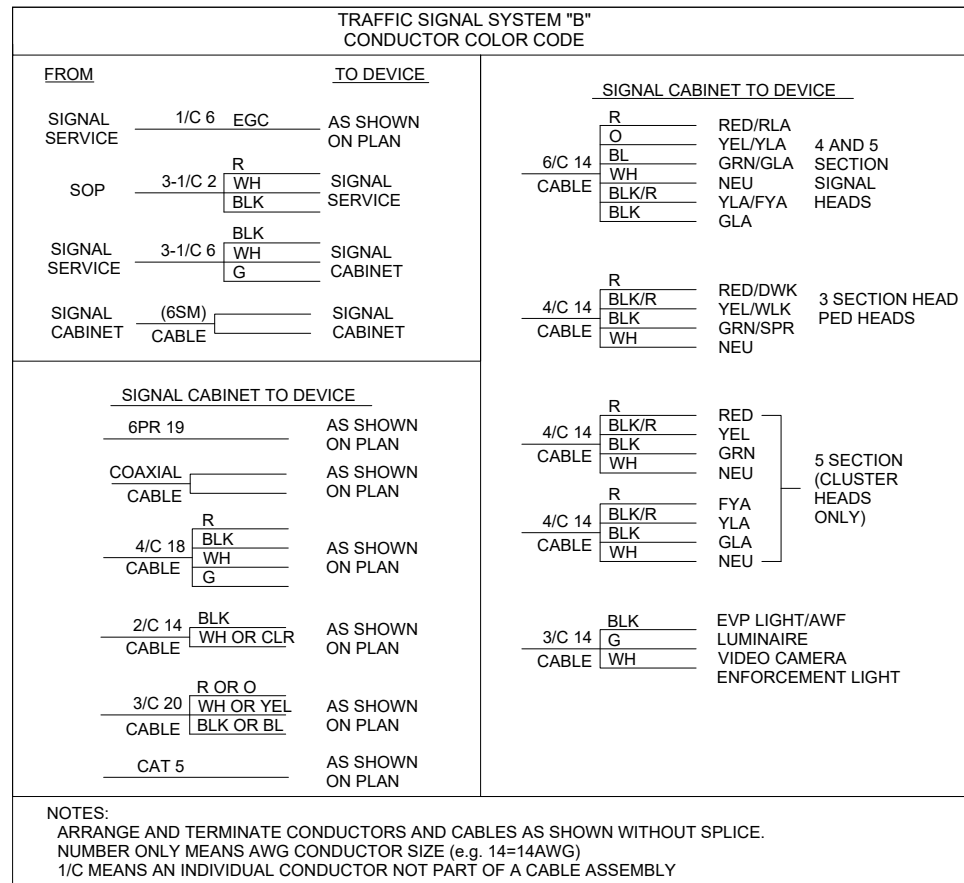
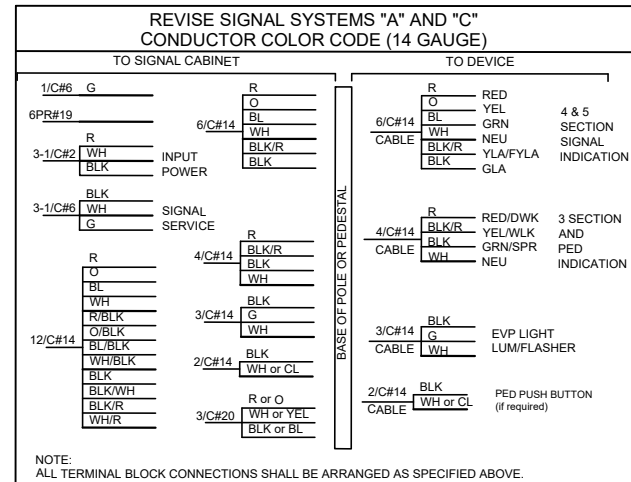
**SEH**  
PHONE: (651) 490-2000  
3535 VADNAIS CENTER DR.  
ST. PAUL, MN 55110

**ANOKA COUNTY, MINNESOTA**  
CITY OF BLAINE

TRAFFIC SIGNAL SYSTEMS "A-C"  
APS PUSH BUTTON STATION DETAILS  
CSAH 14 (125TH AVE NE)  
SIGNAL SYSTEMS

FILE NO. ANOKC157553  
SIGNAL SHEET SGL 5 OF SGL 34  
157  
303

S.A.P. 002-614-048  
S.A.P. 106-020-037



**CABLE LABELING ABBREVIATIONS**

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

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

**WIRE COLOR CODE KEY**

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

**CONDUCTOR AND CABLE SPECIFICATION CHART**

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

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

NO.	BY	DATE	REVISIONS

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*John M. Gray*  
Name: John M. Gray, P.E.  
Date: February 7, 2022 Lic. No. 22457



**ANOKA COUNTY,  
MINNESOTA  
CITY OF BLAINE**

**TRAFFIC SIGNAL SYSTEMS "A-C"  
MISCELLANEOUS DETAILS  
CSAH 14 (125TH AVE NE)  
SIGNAL SYSTEMS**

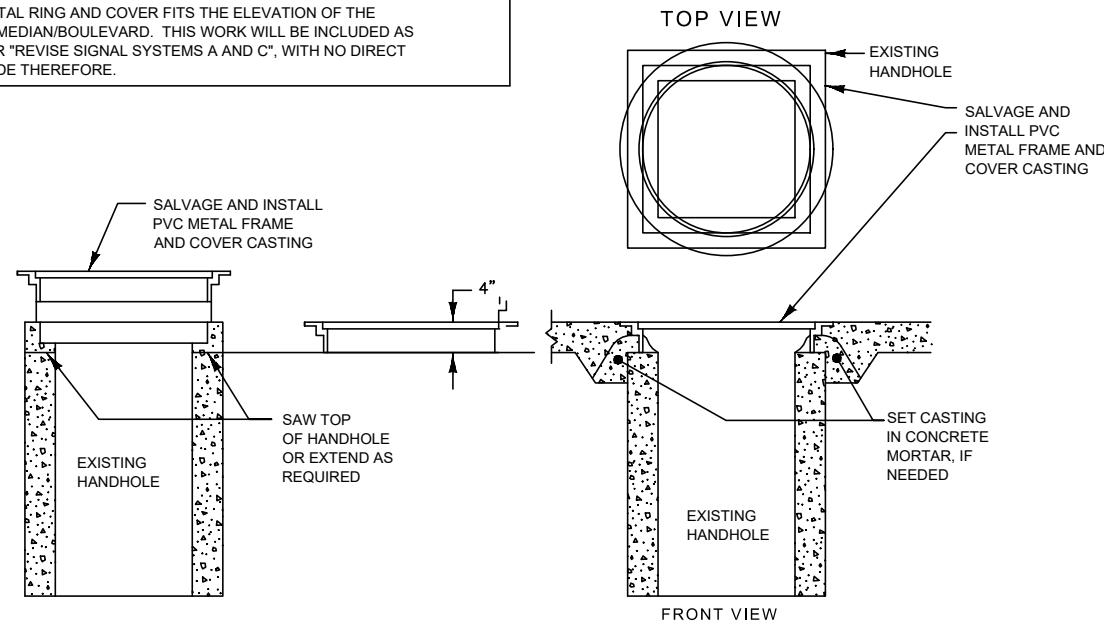
FILE NO.  
ANOKC157553  
SIGNAL SHEET  
SGL 6 OF SGL34

158  
303

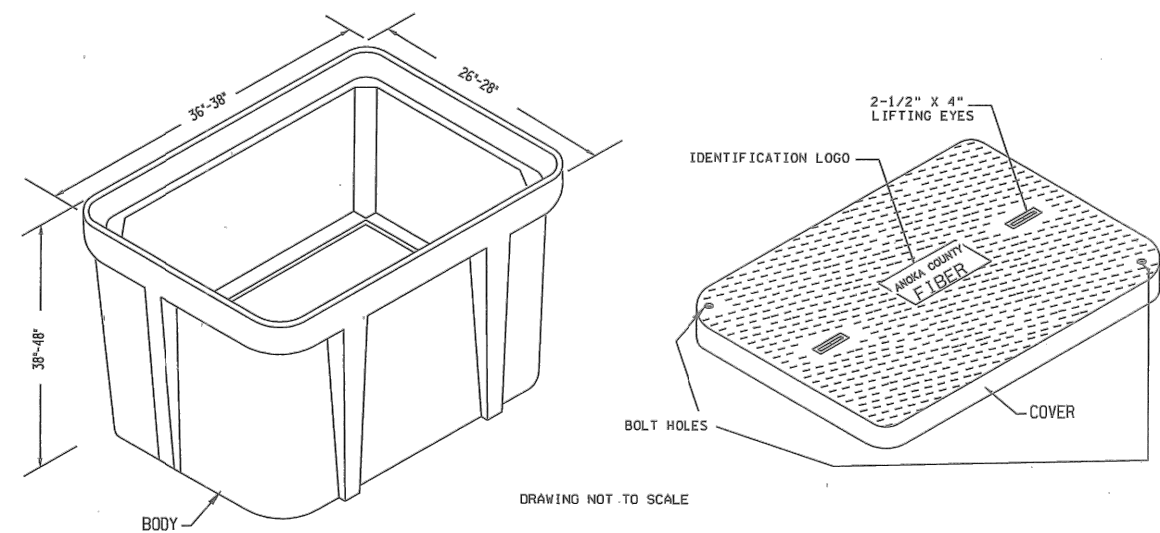
S.A.P. 002-614-048  
S.A.P. 106-020-037

WHERE EXISTING PVC HANDHOLES WITH METAL RINGS AND COVERS ARE REQUIRED TO BE ADJUSTED TO MATCH FINISHED SURROUNDING SIDEWALK, MEDIAN OR BOULEVARD GRADE, CONTRACTOR SHALL REUSE THE EXISTING METAL RING & COVER. ADJUSTMENT WORK WILL REQUIRE EITHER THE CUTTING THE TOP OF THE HANDHOLE OR EXTENDING THE PVC HANDHOLE CYLINDER SO THAT THE TOP OF THE SALVAGED AND REINSTALLED PVC METAL RING AND COVER FITS THE ELEVATION OF THE SURROUNDING SIDEWALK/MEDIAN/BOULEVARD. THIS WORK WILL BE INCLUDED AS PART OF THE PAY ITEM FOR "REVISE SIGNAL SYSTEMS A AND C", WITH NO DIRECT COMPENSATION BEING MADE THEREFORE.

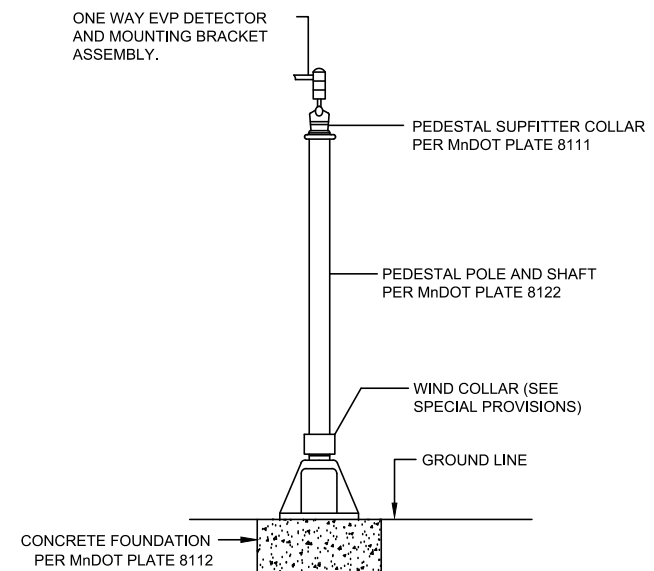
ADJUST SIGNAL HANDHOLE



FIBER-OPTIC PULLING VAULT DETAIL



PEDESTAL POLE MOUNTED EVP DETECTOR DETAIL



S.A.P. 002-614-048  
S.A.P. 106-020-037

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

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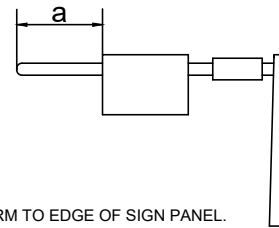
**ANOKA COUNTY,  
MINNESOTA  
CITY OF BLAINE**

TRAFFIC SIGNAL SYSTEMS "A-C"  
MISCELLANEOUS DETAILS  
CSAH 14 (125TH AVE NE)  
SIGNAL SYSTEMS

FILE NO. ANOKC157553	159
SIGNAL SHEET SGL 7 OF SGL34	303

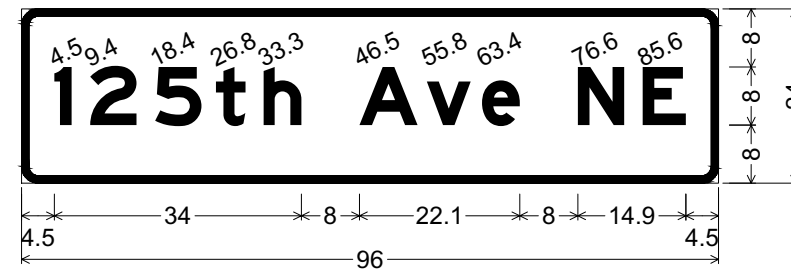
SIGNS FOR TRAFFIC SIGNAL SYSTEM						
SIGN PANELS TYPE D (SIGNALS) (FURNISH & INSTALL) (SYSTEM "B")						
POLE NO.	SIGN PANEL	a (FT)	SIZE (IN)	UNIT AREA (SQ FT)	NO. REQ.	PANEL LEGEND
1	D-1	18'	96 X 24	16.00	1	125TH AVE NE
3	D-2	28'	156 X 36	39.00	1	NORTH LAKE BLVD / LEGACY CREEK PKWY
5	D-3	18'	96 X 24	16.00	1	125TH AVE NE
7	D-4	28'	156 X 36	39.00	1	LEGACY CREEK PKWY / NORTH LAKE BLVD
TOTAL QUANTITIES				110.00	4	

SIGNS FOR TRAFFIC SIGNAL SYSTEM						
SIGN PANELS TYPE D (SIGNALS) (FURNISH & INSTALL) (SYSTEM "B")						
SIGNAL SYSTEM	SIGN PANEL	a (FT)	SIZE (IN)	UNIT AREA (SQ FT)	NO. REQ.	PANEL LEGEND
1,3,5,7	R10-X12	1'	36 X 42	10.50	4	LEFT TURN YIELD ON FLASHING YELLOW ARROW
TOTAL QUANTITIES				42.00	4	



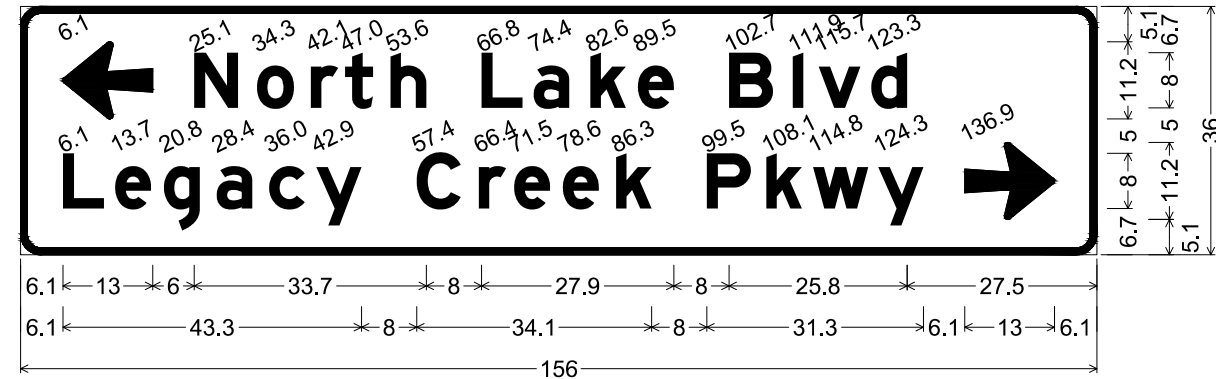
NOTE: "a" DISTANCE = DISTANCE FROM END OF MAST ARM TO EDGE OF SIGN PANEL.

D-1, D-3



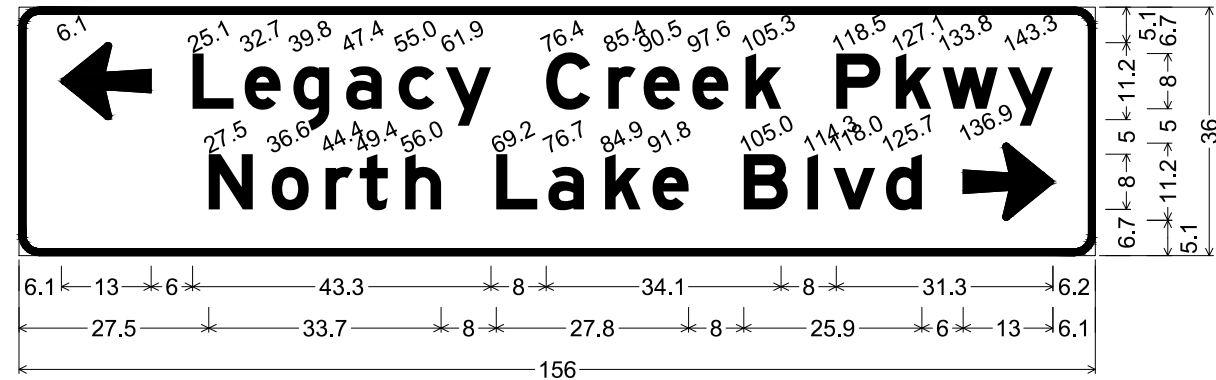
2.3" Radius, 1.0" Border, White on, Green;  
"125th Ave NE", E Mod;

D-2



3.0" Radius, 1.0" Border, White on, Green;  
Arrow 5 - 13.0" 180"; "North Lake Blvd", E Mod; "Legacy Creek Pkwy", E Mod;  
Arrow 5 - 13.0" 0°;

D-4



3.0" Radius, 1.0" Border, White on, Green;  
Arrow 5 - 13.0" 180"; "Legacy Creek Pkwy", E Mod; "North Lake Blvd", E Mod;  
Arrow 5 - 13.0" 0°;

GENERAL SIGNING NOTES:

- COLOR FOR ALL TYPE D SIGNS SHALL BE WHITE LEGEND AND BORDER ON GREEN BACKGROUND, FULLY REFLECTORIZED.
- FURNISHING AND INSTALLING NEW TYPE C AND TYPE D SIGNS SHALL BE INCLUDED AS PART OF BID ITEM FOR "TRAFFIC CONTROL SIGNAL SYSTEM B." SEE SPECIAL PROVISIONS.
- SEE CURRENT MnDOT STANDARD SIGNS AND MARKINGS MANUAL FOR STANDARD SIGN DESIGNS AND SPLICE PLATE DETAILS.
- FOR NON-STANDARD SIGN DESIGNS, LAYOUTS ARE INCLUDED.
- SEE STANDARD PLAN 5.297.731 FOR SIGN MOUNTING TO MAST ARM.

NOTE: SIGN DIMENSIONS ARE IN INCHES.

S.A.P. 002-614-048  
S.A.P. 106-020-037

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

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*John M. Gray*  
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Date: February 7, 2022 Lic. No. 22457

**SEH**  
PHONE: (651) 490-2000  
3535 VADNAIS CENTER DR.  
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**ANOKA COUNTY, MINNESOTA**  
CITY OF BLAINE

TRAFFIC SIGNAL SYSTEM "B"  
SIGNAL SIGNING DETAILS & TABULATION  
CSAH 14 (125TH AVE NE) AT NORTH LAKE BLVD/LEGACY CREEK PKWY

FILE NO. ANOKC157553  
SIGNAL SHEET SGL 8 OF SGL34

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303



INSTALL VIDEO DETECTOR (FURNISHED BY COUNTY)				
CAMERA NO.	INTERSECTION APPROACH FACING	SIGNAL POLE (CAMERA) LOCATION	CAMERA MOUNTED AT	MOUNTING HEIGHT
V-1 (ø6, 1)	WB CSAH 14	MAST ARM 5	MAST ARM (18' FROM LEFT END)	25'

NOTE: MOUNTING HEIGHT = APPROXIMATE HEIGHT ABOVE ADJACENT GROUND LINE.  
 TURN OFF INPLACE IMPACTED LOOP DETECTORS IN CONTROLLER CABINET DURING OPERATION OF VIDEO DETECTION (DURING CONSTRUCTION ONLY)  
 SALVAGE CAMERA BACK TO COUNTY AFTER ALL PERMANENT LOOP DETECTORS ARE ABLE TO BE MADE OPERATIONAL.

SEE SHEET SGL10 FOR REVISE SIGNAL SYSTEM A NOTES, INCLUDING NEW APS PUSH BUTTON AND SIDEWALK REPLACEMENT NOTES.

H.H.13 TO H.H.15:  
 2-4" CONDUITS  
 6-12/c#14  
 2-3/c#14  
 11-2/c#14  
 2-3/c#20  
 2-3/c#14 (LUM)  
 2-1/c#6 (GRD)  
 2" CONDUIT  
 1-12 SM FIBER-OPTIC CABLE

H.H.12 TO H.H.13:  
 4" R.S.C.  
 3-12/c#14  
 1-3/c#14  
 6-2/c#14  
 1-3/c#20  
 1-3/c#14 (LUM)  
 1-1/c#6 (GRD)  
 2" CONDUIT  
 1-12 SM FIBER-OPTIC CABLE

H.H.12 TO H.H.52:  
 2" CONDUIT  
 1-12 SM FIBER-OPTIC CABLE  
 1-1/c#14 (TRACER)

F & I - (\*\*\*) FO VAULT 100  
 EXTEND INTO HH 1:  
 F & I - (\*\*\*) 1.5' CONDUIT  
 F & I - (\*\*\*) 1-12 SM FO CABLE

LOOP DETECTORS FUNCTIONS:

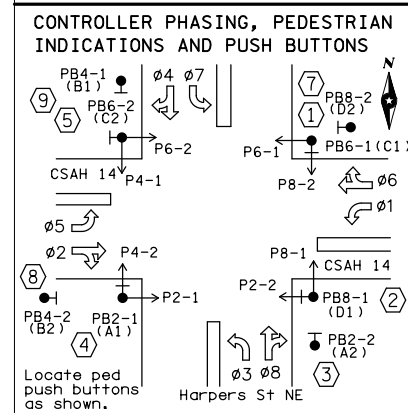
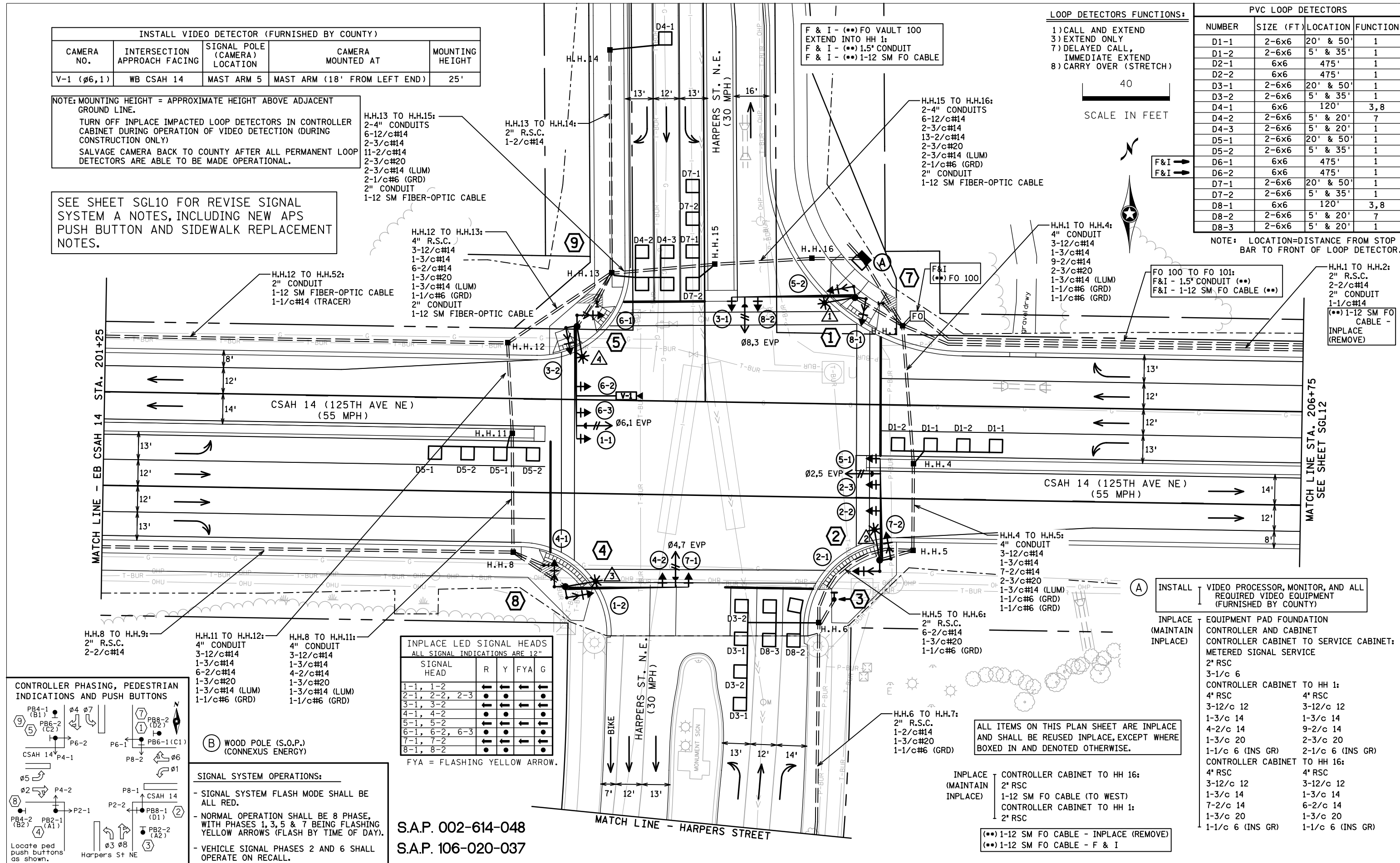
- 1) CALL AND EXTEND
- 3) EXTEND ONLY
- 7) DELAYED CALL, IMMEDIATE EXTEND
- 8) CARRY OVER (STRETCH)

SCALE IN FEET

PVC LOOP DETECTORS			
NUMBER	SIZE (FT)	LOCATION	FUNCTION
D1-1	2-6x6	20' & 50'	1
D1-2	2-6x6	5' & 35'	1
D2-1	6x6	475'	1
D2-2	6x6	475'	1
D3-1	2-6x6	20' & 50'	1
D3-2	2-6x6	5' & 35'	1
D4-1	6x6	120'	3, 8
D4-2	2-6x6	5' & 20'	7
D4-3	2-6x6	5' & 20'	1
D5-1	2-6x6	20' & 50'	1
D5-2	2-6x6	5' & 35'	1
D6-1	6x6	475'	1
D6-2	6x6	475'	1
D7-1	2-6x6	20' & 50'	1
D7-2	2-6x6	5' & 35'	1
D8-1	6x6	120'	3, 8
D8-2	2-6x6	5' & 20'	7
D8-3	2-6x6	5' & 20'	1

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

H.H.1 TO H.H.2:  
 2" R.S.C.  
 2-2/c#14  
 2" CONDUIT  
 1-1/c#14  
 (\*\*\*) 1-12 SM FO CABLE - INPLACE (REMOVE)



(B) WOOD POLE (S.O.P.) (CONNEXUS ENERGY)

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

INPLACE LED SIGNAL HEADS				
ALL SIGNAL INDICATIONS ARE 12"				
SIGNAL HEAD	R	Y	FYA	G
1-1, 1-2	•	•	•	•
2-1, 2-2, 2-3	•	•	•	•
3-1, 3-2	•	•	•	•
4-1, 4-2	•	•	•	•
5-1, 5-2	•	•	•	•
6-1, 6-2, 6-3	•	•	•	•
7-1, 7-2	•	•	•	•
8-1, 8-2	•	•	•	•

FYA = FLASHING YELLOW ARROW.

S.A.P. 002-614-048  
 S.A.P. 106-020-037

ALL ITEMS ON THIS PLAN SHEET ARE INPLACE AND SHALL BE REUSED INPLACE, EXCEPT WHERE BOXED IN AND DENOTED OTHERWISE.

INPLACE (MAINTAIN INPLACE) CONTROLLER CABINET TO HH 16:  
 2" RSC  
 1-12 SM FO CABLE (TO WEST)  
 CONTROLLER CABINET TO HH 1:  
 2" RSC

(\*\*\*) 1-12 SM FO CABLE - INPLACE (REMOVE)  
 (\*\*\*) 1-12 SM FO CABLE - F & I

(A) INSTALL VIDEO PROCESSOR, MONITOR, AND ALL REQUIRED VIDEO EQUIPMENT (FURNISHED BY COUNTY)

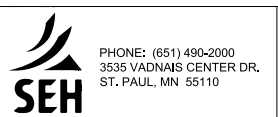
INPLACE (MAINTAIN INPLACE) EQUIPMENT PAD FOUNDATION  
 CONTROLLER AND CABINET  
 CONTROLLER CABINET TO SERVICE CABINET:  
 METERED SIGNAL SERVICE

2" RSC  
 3-1/c 6  
 CONTROLLER CABINET TO HH 1:  
 4" RSC  
 4" RSC  
 3-12/c 12  
 3-12/c 12  
 1-3/c 14  
 1-3/c 14  
 4-2/c 14  
 9-2/c 14  
 1-3/c 20  
 2-3/c 20  
 1-1/c 6 (INS GR)  
 2-1/c 6 (INS GR)  
 CONTROLLER CABINET TO HH 16:  
 4" RSC  
 4" RSC  
 3-12/c 12  
 3-12/c 12  
 1-3/c 14  
 1-3/c 14  
 7-2/c 14  
 6-2/c 14  
 1-3/c 20  
 1-3/c 20  
 1-1/c 6 (INS GR)  
 1-1/c 6 (INS GR)

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

REVISIONS			
NO.	BY	DATE	

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.  
 Name: John M. Gray, P.E.  
 Date: February 7, 2022  
 Lic. No. 22457



ANOKA COUNTY, MINNESOTA  
 CITY OF BLAINE

REVISE SIGNAL SYSTEM "A"/ INTERCONNECT  
 INTERSECTION LAYOUT  
 CSAH 14 (125TH AVE NE) AT HARPERS ST NE

FILE NO. ANOKC157553  
 SIGNAL SHEET SGL9 OF SGL34  
 161  
 303

**SYSTEM "A" NOTES:**

- ALL ITEMS OF THIS SIGNAL SYSTEM ARE INPLACE AND SHALL BE REUSED AND MAINTAINED INPLACE, UNLESS OTHERWISE NOTED ON PLANS.
- LOCATION OF NEW FO VAULT, VPUSH BUTTON STATIONS, AND LOOP DETECTORS SHALL BE DETERMINED IN THE FIELD BY ENGINEER.
- AS PART OF THE "REVISE SIGNAL SYSTEM A" PAY ITEM, THE CONTRACTOR SHALL COMPLETE THE FOLLOWING WORK:
  - PROTECT AND MAINTAIN ALL HANDHOLES IN THE VICINITY OF CONSTRUCTION, AND ADJUST HANDHOLE 3 (PVC HANDHOLE WITH METAL FRAME AND COVER) TO FINISHED SURROUNDING GRADE (SEE DETAILS & SPECIAL PROVISIONS FOR FURTHER INFORMATION).
  - FURNISH AND INSTALL NEW LOOP DETECTORS D6-1 AND D6-2 IN PVC PER DETAILS INCLUDED ELSEWHERE IN THESE PLANS, AND SPLICE NEW ROADWAY WIRES TO IN-PLACE LEAD-IN CABLES IN ADJACENT HANDHOLE (USING NEW LOOP DETECTOR SPLICE ENCAPSULATION KITS). NEW LOOP DETECTOR WIRES SHALL BE CROSS-LINKED POLYETHYLENE (XLP) #12 AWG IN 3/4" NMC (SEE SPECIAL PROVISIONS).
  - INSTALL, AIM, AND MAKE OPERATIONAL THE COUNTY FURNISHED VIDEO DETECTOR CAMERA AND MAST ARM EXTENSION ON MAST ARM 5 (FOR WESTBOUND VEHICULAR DETECTION DURING CONSTRUCTION AND WHEN PERMANENT WESTBOUND LOOP DETECTORS ARE NOT ABLE TO BE USED WITH THE EXISTING SIGNAL SYSTEM). CONTRACTOR SHALL FURNISH & INSTALL 3/C 14 CABLE FROM POLE BASE 5 TO THE MAST ARM MOUNTED VIDEO CAMERA (SPLICE TO INPLACE CABLE 36 IN POLE BASE 5) IN ACCORDANCE WITH VIDEO SYSTEM MANUFACTURERS SPECIFICATIONS. CONTRACTOR IS RESPONSIBLE FOR REAIMING VIDEO CAMERA AS NEEDED DURING CONSTRUCTION. AFTER PERMANENT LOOP DETECTORS ARE MADE OPERATIONAL, CONTRACTOR SHALL SALVAGE CAMERA AND MAST ARM EXTENSION TO COUNTY, SHALL REMOVE VIDEO CABLE, AND SHALL MAKE ALL PERMANENT LOOP DETECTORS OPERATIONAL.
  - BAG (COVER) & MAKE INOPERATIONAL ANY VEHICLE SIGNAL HEADS THAT CONFLICT WITH TRAFFIC PATTERNS DURING ALL STAGED ROAD CONSTRUCTION. AFTER IMPACTED APPROACH IS RETURNED TO NORMAL TRAFFIC PATTERNS, UNBAG AND MAKE THESE IMPACTED VEHICLE SIGNAL HEADS OPERATIONAL.
  - FURNISH AND INSTALL APS PUSH BUTTON STATIONS, APS PUSH BUTTONS, APS MAST ARM POLE ADAPTORS, AND 1-INCH CONDUIT TO PUSH BUTTON STATIONS; REMOVE AND REPLACE CONCRETE SIDEWALK TO ACCOMMODATE NEW PUSH BUTTON STATIONS; SALVAGE AND REINSTALL 2/C 14 CABLES TO NEW PUSH BUTTON STATIONS; SALVAGE EXISTING PEDESTRIAN PUSH BUTTONS AND SIGNS FROM EACH MAST ARM POLE; CAP HOLES ON MAST ARM POLES WHERE PUSH BUTTONS USED TO BE; AND COMPLETE ALL OTHER WORK NEEDED TO MAKE APS PUSH BUTTONS OPERATIONAL.
- ANY DAMAGE TO INPLACE TRAFFIC SIGNAL FACILITIES (CONDUIT, CABLES, HANDHOLES, SIGNAL POLES, ETC.), EITHER DUE TO TRAFFIC SIGNAL REVISION WORK OR ROAD CONSTRUCTION WORK, SHALL BE REPAIRED BY THE CONTRACTOR TO THE SATISFACTION OF THE ENGINEER, AT NO EXPENSE TO THE COUNTY.
- CONTRACTOR SHALL MAINTAIN OPERATION OF THE SIGNAL SYSTEM AT ALL TIMES, EXCEPT AS OTHERWISE APPROVED BY ENGINEER.
- F & I = NEW, FURNISH AND INSTALL.
- ALL CONDUIT, CABLES AND CONDUCTORS, HANDHOLES, AND LOOP DETECTORS ARE INPLACE AND SHALL BE REUSED AND MAINTAINED INPLACE, EXCEPT WHERE BOXED IN AND DENOTED OTHERWISE.
- (\*\*) DENOTES ITEMS TO BE FURNISHED AND INSTALLED (OR REMOVED AND DISPOSED OF BY THE CONTRACTOR UNDER ITEM NO. 2565 (TRAFFIC CONTROL INTERCONNECT). SEE STATEMENT OF ESTIMATED QUANTITIES AND SPECIAL PROVISIONS.
- SEE DETAILS AND SPECIAL PROVISIONS REGARDING FIBER OPTIC VAULTS TO BE FURNISHED AND INSTALLED BY CONTRACTOR.

① INPLACE (MAINTAIN INPLACE) PA100 POLE FOUNDATION  
 TYPE PA100-A-55-D30-9 (DAVIT AT 350 DEG)  
 LUMINAIRE-LED COBRAHEAD  
 1-ANGLE MOUNT SIGNAL-OVERHEAD AT 0'  
 1-STRAIGHT MOUNT SIGNAL-OVERHEAD AT 11'  
 2-ANGLE MOUNT SIGNALS-POLE MOUNTED 90/180 DEG  
 2-ANGLE MOUNT C.D. PED INDICATIONS-POLE MOUNTED 90/180 DEG  
 2-R6-1 SIGN PANELS-POLE MOUNTED 0/180 DEG  
 R10-X12 SIGN PANEL-ADJACENT TO 3-1  
 TYPE D SIGN PANEL-OVERHEAD  
 ONE WAY EVP DETECTOR AND LED CONFIRMATION LIGHT (#8,3)  
 EXTENDED INTO HH 1:  
 3" RSC  
 3-12/c 14  
 1-3/c 14  
 1-2/c 14  
 1-3/c 20  
 1-3/c 14 (LUM)  
 1-1/c 6 (INS.GR.)

INPLACE (SALVAGE) 2-PEDESTRIAN PUSH BUTTONS AND R10-3e METAL SIGNS-POLE MOUNTED 180/270 DEG  
 INPLACE (S & I) 1-2/c 14 (CABLE 11) - SALVAGE BACK TO HH 1 AND EXTEND TO NEW PUSH BUTTON STATION (FOR PB8-2)  
 F & I 1-APS PUSH BUTTON, SIGN (LT ARROW), AND APS MAST ARM POLE ADAPTOR AT 270 DEG (PB6-1) PLUG HOLES ON MAST ARM POLE WHERE PUSH BUTTONS USED TO BE (AT 180/270 DEG)

③ INPLACE (MAINTAIN INPLACE) APS PEDESTRIAN PUSH BUTTON STATION  
 EXTENDED INTO HH 6:  
 2" RSC  
 1-2/c 14

INPLACE (SALVAGE) 1-PEDESTRIAN PUSH BUTTON AND R10-3e METAL SIGN-POLE MOUNTED (NORTH SIDE OF POLE)  
 F & I 1-APS PUSH BUTTON, SIGN (RT ARROW) - NORTH SIDE OF POLE (PB2-2) PLUG HOLES ON PUSH BUTTON STATION WHERE PUSH BUTTON USED TO BE (NORTH SIDE OF POLE)

⑤ INPLACE (MAINTAIN INPLACE) PA100 POLE FOUNDATION  
 TYPE PA100-A-50-D30-9 (DAVIT AT 350 DEG)  
 LUMINAIRE-LED COBRAHEAD  
 1-ANGLE MOUNT SIGNAL-OVERHEAD AT 0'  
 2-STRAIGHT MOUNT SIGNALS-OVERHEAD AT 11' & 23'  
 2-ANGLE MOUNT SIGNALS-POLE MOUNTED 90/180 DEG  
 2-ANGLE MOUNT C.D. PED INDICATIONS-POLE MOUNTED 90/180 DEG  
 2-R6-1 SIGN PANELS-POLE MOUNTED 0/180 DEG  
 R10-X12 SIGN PANEL-ADJACENT TO 1-1  
 TYPE D SIGN PANEL-OVERHEAD  
 ONE WAY EVP DETECTOR AND LED CONFIRMATION LIGHT (#6,1)  
 EXTENDED INTO HH 13:  
 3" RSC  
 3-12/c 14  
 1-3/c 14  
 1-2/c 14  
 1-3/c 20  
 1-3/c 14 (LUM)  
 1-1/c 6 (INS.GR.)

INPLACE (SALVAGE) 2-PEDESTRIAN PUSH BUTTONS AND R10-3e METAL SIGNS-POLE MOUNTED 90/180 DEG  
 INPLACE (S & I) 1-2/c 14 (CABLE 40) - SALVAGE BACK TO HH 13 AND EXTEND TO NEW PUSH BUTTON STATION (FOR PB6-2)  
 F & I 1-APS PUSH BUTTON, SIGN (RT ARROW), AND APS MAST ARM POLE ADAPTOR AT 90 DEG (PB4-1) PLUG HOLES ON MAST ARM POLE WHERE PUSH BUTTONS USED TO BE (AT 90/180 DEG)

INSTALL (FURNISHED BY COUNTY) VIDEO DETECTOR CAMERA AND MAST ARM EXTENSION AT APPROX. 18' FROM END OF MAST ARM (V-1)  
 F & I 1-3/c 14 (SPLICE TO INPLACE CABLE 36 AND EXTEND FROM POLE BASE TO VIDEO DETECTOR CAMERA) 3/4" MAST ARM HUB AT 18' (FOR VIDEO CAMERA)

② INPLACE (MAINTAIN INPLACE) PA100 POLE FOUNDATION  
 TYPE PA100-A-45-D30-9 (DAVIT AT 350 DEG)  
 LUMINAIRE-LED COBRAHEAD  
 1-ANGLE MOUNT SIGNAL-OVERHEAD AT 0'  
 2-STRAIGHT MOUNT SIGNALS-OVERHEAD AT 11' & 23'  
 2-ANGLE MOUNT SIGNALS-POLE MOUNTED 90/180 DEG  
 2-ANGLE MOUNT C.D. PED INDICATIONS-POLE MOUNTED 90/180 DEG  
 2-R6-1 SIGN PANELS-POLE MOUNTED 0/180 DEG  
 R10-X12 SIGN PANEL-ADJACENT TO 5-1  
 TYPE D SIGN PANEL-OVERHEAD  
 ONE WAY EVP DETECTOR AND LED CONFIRMATION LIGHT (#2,5)  
 EXTENDED INTO HH 5:  
 3" RSC  
 3-12/c 14  
 1-3/c 14  
 1-2/c 14  
 1-3/c 20  
 1-3/c 14 (LUM)  
 1-1/c 6 (INS.GR.)

INPLACE (SALVAGE) 1-PEDESTRIAN PUSH BUTTON AND R10-3e METAL SIGN-POLE MOUNTED 270 DEG  
 F & I 1-APS PUSH BUTTON, SIGN (LT ARROW), AND APS MAST ARM POLE ADAPTOR AT 270 DEG (PB8-1) PLUG HOLES ON MAST ARM POLE WHERE PUSH BUTTON USED TO BE (AT 270 DEG)

④ INPLACE (MAINTAIN INPLACE) PA100 POLE FOUNDATION  
 TYPE PA100-A-55-D30-9 (DAVIT AT 350 DEG)  
 LUMINAIRE-LED COBRAHEAD  
 1-ANGLE MOUNT SIGNAL-OVERHEAD AT 0'  
 1-STRAIGHT MOUNT SIGNAL-OVERHEAD AT 11'  
 2-ANGLE MOUNT SIGNALS-POLE MOUNTED 90/180 DEG  
 2-ANGLE MOUNT C.D. PED INDICATIONS-POLE MOUNTED 90/180 DEG  
 2-R6-1 SIGN PANELS-POLE MOUNTED 0/180 DEG  
 R10-X12 SIGN PANEL-ADJACENT TO 7-1  
 TYPE D SIGN PANEL-OVERHEAD  
 ONE WAY EVP DETECTOR AND LED CONFIRMATION LIGHT (#4,7)  
 EXTENDED INTO HH 8:  
 3" RSC  
 3-12/c 14  
 1-3/c 14  
 1-2/c 14  
 1-3/c 20  
 1-3/c 14 (LUM)  
 1-1/c 6 (INS.GR.)

INPLACE (SALVAGE) 2-PEDESTRIAN PUSH BUTTONS AND R10-3e METAL SIGNS-POLE MOUNTED 0/270 DEG  
 INPLACE (S & I) 1-2/c 14 (CABLE 53) - SALVAGE BACK TO HH 8 AND EXTEND TO NEW PUSH BUTTON STATION (FOR PB4-2)  
 F & I 1-APS PUSH BUTTON, SIGN (LT ARROW), AND APS MAST ARM POLE ADAPTOR AT 270 DEG (PB2-1) PLUG HOLES ON MAST ARM POLE WHERE PUSH BUTTONS USED TO BE (AT 0/270 DEG)

⑥ INPLACE (MAINTAIN INPLACE) PEDESTAL FOUNDATION  
 10' PEDESTAL POLE (INCLUDES BASE, WIND COLLAR)  
 ONE WAY EVP DETECTOR, ATOP SLIPFITTER COLLAR (#8,3)  
 EXTENDED INTO HH 7:  
 2" RSC  
 1-3/c 20  
 1-1/c 6 (INS.GR.)

⑦ F & I APS PUSH BUTTON STATION (SEE DETAILS)  
 1-APS PB & SIGN (RT ARROW) (PB8-2)  
 EXTEND INTO HH 1:  
 1" CONDUIT  
 1-1/c 6 INS. GR.  
 INPLACE (S & I) 1-2/c 14 (SALVAGE BACK FROM POLE 1 TO HH 1, INSTALL TO NEW PB STATION)

NE QUADRANT:  
 REMOVE & REPLACE 1-CONCRETE SIDEWALK PANEL (APPROX. SIZE 5' x 5') FOR PUSH BUTTON STATION AND CONDUIT INSTALLATIONS (6" CONCRETE WALK)

⑧ F & I APS PUSH BUTTON STATION (SEE DETAILS)  
 1-APS PB & SIGN (RT ARROW) (PB4-2)  
 EXTEND INTO HH 8:  
 1" CONDUIT  
 1-1/c 6 INS. GR.  
 INPLACE (S & I) 1-2/c 14 (SALVAGE BACK FROM POLE 4 TO HH 8, INSTALL TO NEW PB STATION)

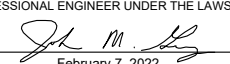
SW QUADRANT:  
 REMOVE & REPLACE 1-CONCRETE SIDEWALK PANEL (APPROX. SIZE 6' x 9') FOR PUSH BUTTON STATION AND CONDUIT INSTALLATIONS (6" CONCRETE WALK)

⑨ F & I APS PUSH BUTTON STATION (SEE DETAILS)  
 1-APS PB & SIGN (RT ARROW) (PB6-2)  
 EXTEND INTO HH 13:  
 1" CONDUIT  
 1-1/c 6 INS. GR.  
 INPLACE (S & I) 1-2/c 14 (SALVAGE BACK FROM POLE 5 TO HH 13, INSTALL TO NEW PB STATION)

NW QUADRANT:  
 REMOVE & REPLACE 1-CONCRETE SIDEWALK PANEL (APPROX. SIZE 5' x 6') FOR PUSH BUTTON STATION AND CONDUIT INSTALLATIONS (6" CONCRETE WALK)

S.A.P. 002-614-048  
 S.A.P. 106-020-037

DRAWN BY: MRB				
DESIGNER: MRB				
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.  
  
 Name: John M. Gray, P.E.  
 Date: February 7, 2022  
 Lic. No.: 22457

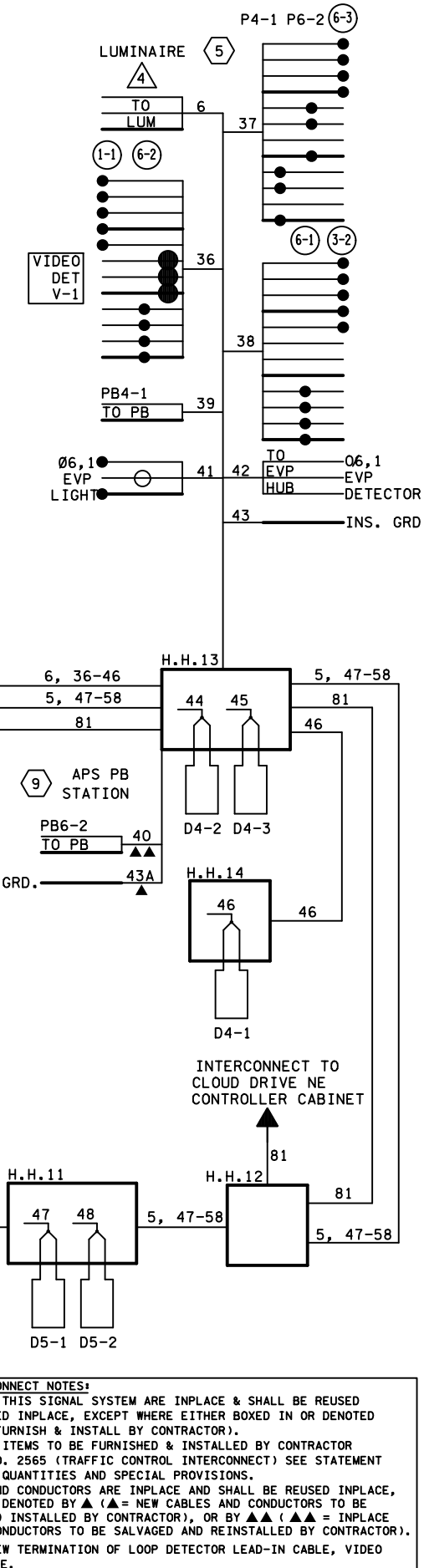
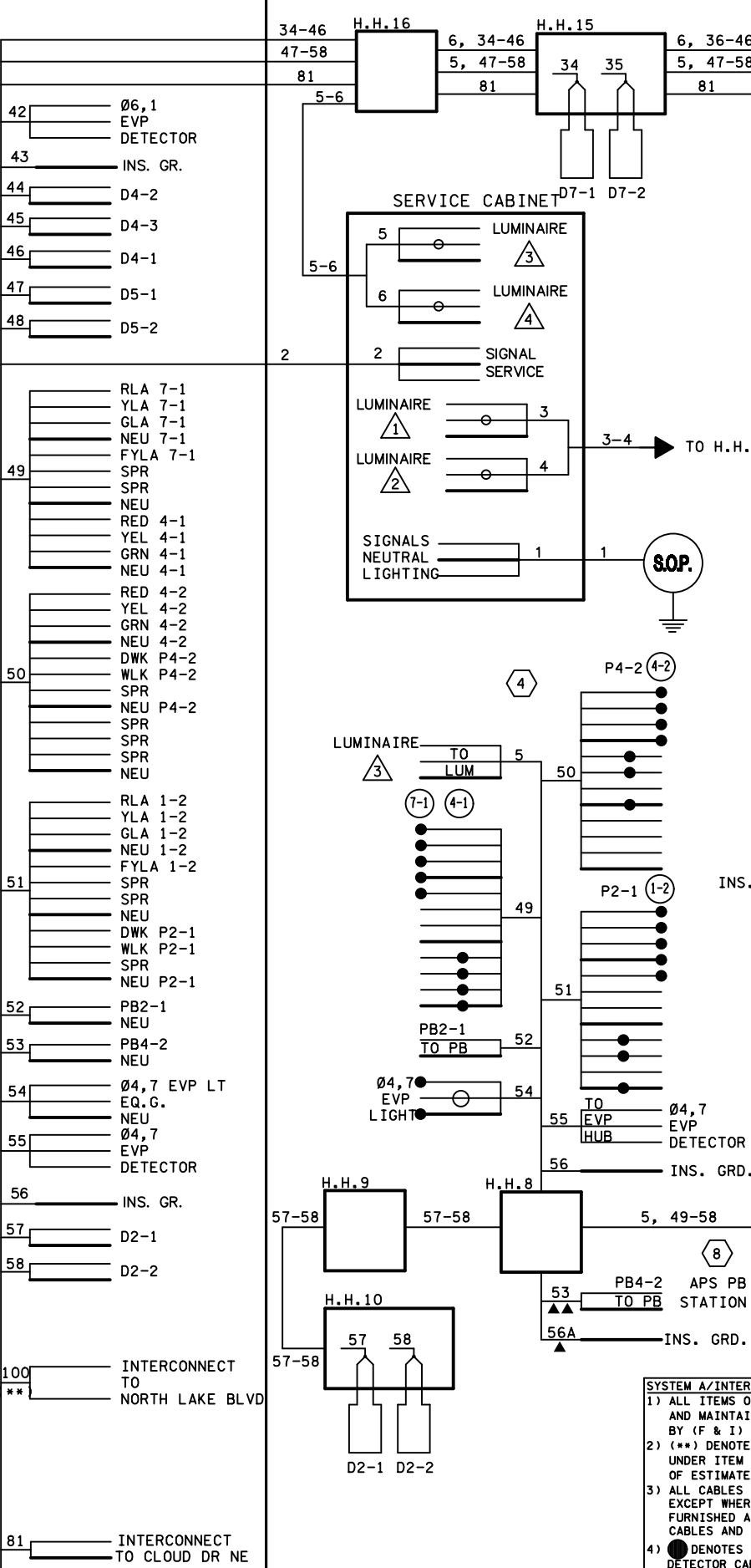
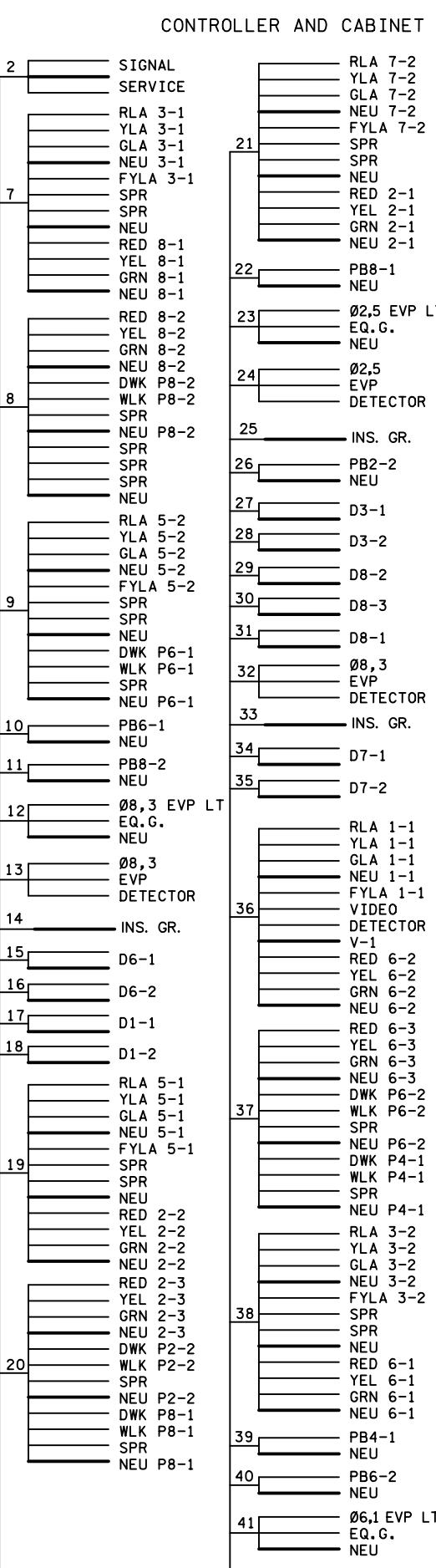
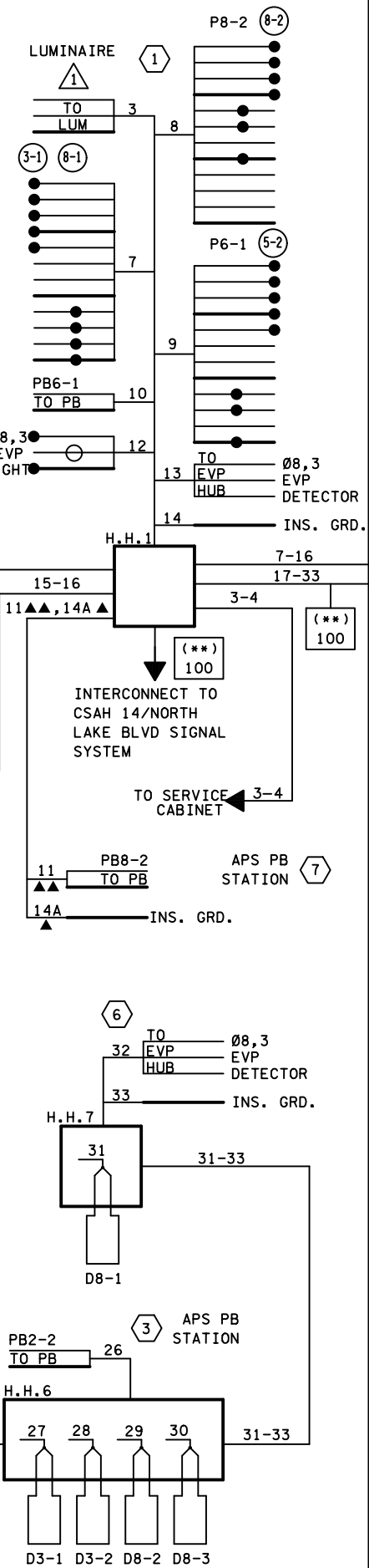
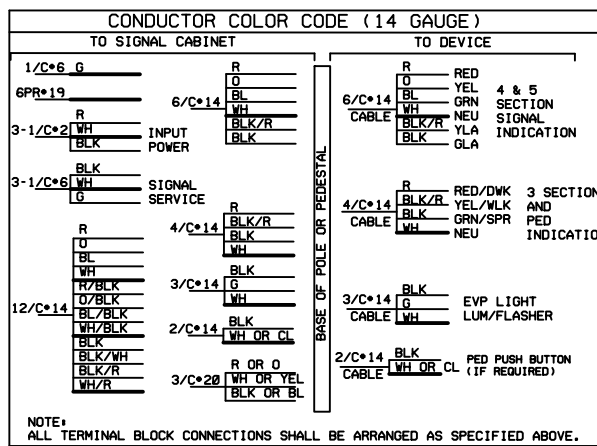
 PHONE: (651) 490-2000  
 3535 VADNAIS CENTER DR.  
 ST. PAUL, MN 55110

**ANOKA COUNTY,  
 MINNESOTA  
 CITY OF BLAINE**

REVISE SIGNAL SYSTEM "A"/  
 INTERCONNECT  
 POLE AND PUSH BUTTON NOTES  
 CSAH 14 (125TH AVE NE) AT HARPERS STREET NE

FILE NO.  
 ANOKC157553  
 SIGNAL SHEET  
 SGL 10 OF SGL 34

162  
 303



**SYSTEM A/INTERCONNECT NOTES:**

- 1) ALL ITEMS OF THIS SIGNAL SYSTEM ARE INPLACE & SHALL BE REUSED AND MAINTAINED INPLACE, EXCEPT WHERE EITHER BOXED IN OR DENOTED BY (F & I) (FURNISH & INSTALL BY CONTRACTOR).
- 2) (\*\*\*) DENOTES ITEMS TO BE FURNISHED & INSTALLED BY CONTRACTOR UNDER ITEM NO. 2565 (TRAFFIC CONTROL INTERCONNECT) SEE STATEMENT OF ESTIMATED QUANTITIES AND SPECIAL PROVISIONS.
- 3) ALL CABLES AND CONDUCTORS ARE INPLACE AND SHALL BE REUSED INPLACE, EXCEPT WHERE DENOTED BY ▲ (▲ = NEW CABLES AND CONDUCTORS TO BE FURNISHED AND INSTALLED BY CONTRACTOR), OR BY ▲▲ (▲▲ = INPLACE CABLES AND CONDUCTORS TO BE SALVAGED AND REINSTALLED BY CONTRACTOR).
- 4) ● DENOTES NEW TERMINATION OF LOOP DETECTOR LEAD-IN CABLE, VIDEO DETECTOR CABLE.

S.A.P. 002-614-048  
S.A.P. 106-020-037

DRAWN BY: MRB	NO.	BY	DATE	REVISIONS
DESIGNER: MRB				
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.

Name: John M. Gray, P.E.  
Lic. No. 22457

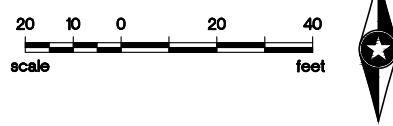
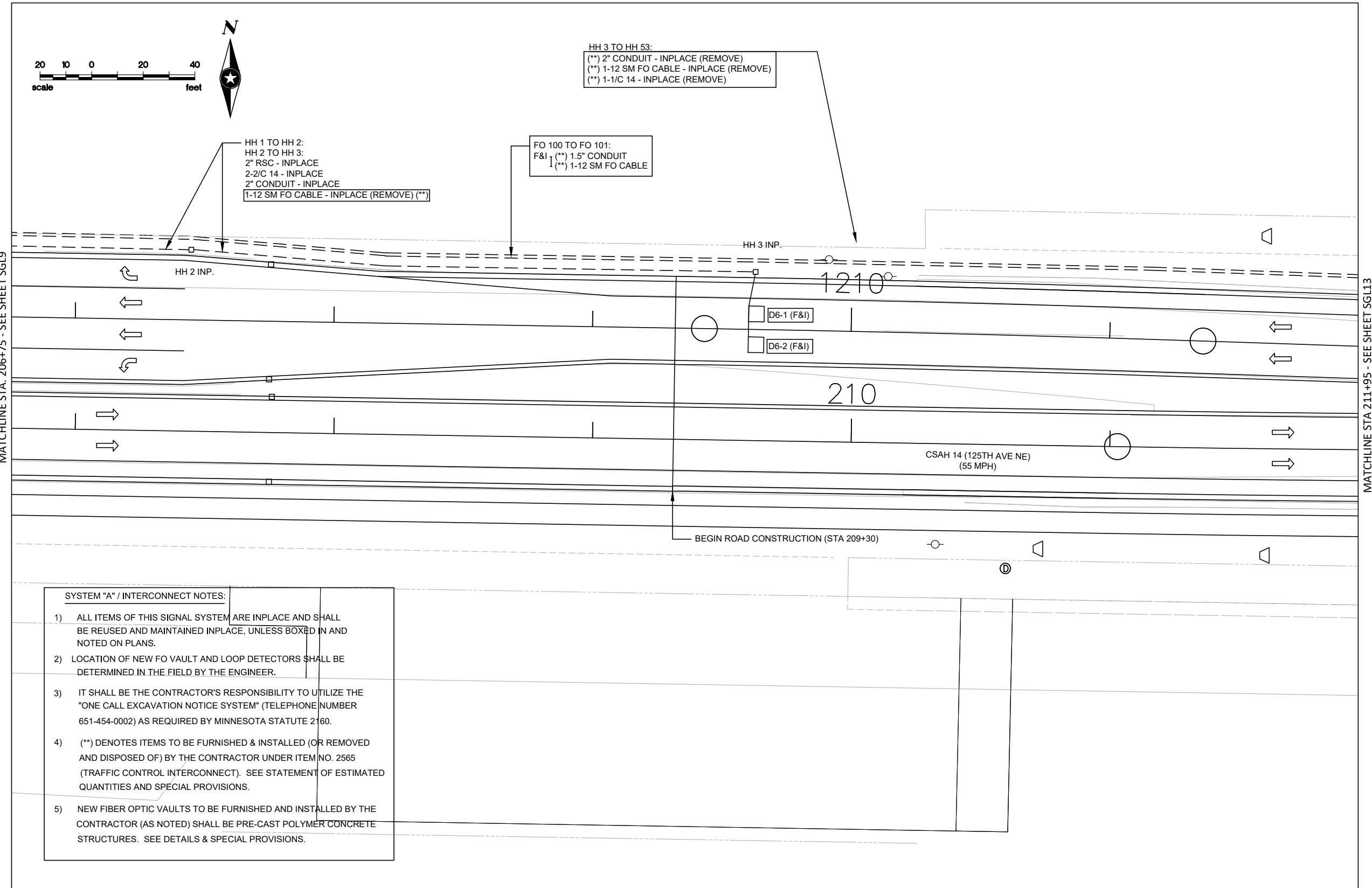
Date: February 7, 2022

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

**ANOKA COUNTY, MINNESOTA CITY OF BLAINE**

REVISE SIGNAL SYSTEM "A"/ INTERCONNECT  
FIELD WIRING DIAGRAM  
CSAH 14 (125TH AVE NE) AT HARPERS ST NE

FILE NO. ANOKC157553  
SIGNAL SHEET SGL11 OF SGL34  
163  
303



HH 3 TO HH 53:  
 (\*\*) 2" CONDUIT - INPLACE (REMOVE)  
 (\*\*) 1-12 SM FO CABLE - INPLACE (REMOVE)  
 (\*\*) 1-1/2 14 - INPLACE (REMOVE)

HH 1 TO HH 2:  
 HH 2 TO HH 3:  
 2" RSC - INPLACE  
 2-2/C 14 - INPLACE  
 2" CONDUIT - INPLACE  
 1-12 SM FO CABLE - INPLACE (REMOVE) (\*\*)

FO 100 TO FO 101:  
 F&I 1 (\*\*) 1.5" CONDUIT  
 1 (\*\*) 1-12 SM FO CABLE

- SYSTEM "A" / INTERCONNECT NOTES:
- 1) ALL ITEMS OF THIS SIGNAL SYSTEM ARE INPLACE AND SHALL BE REUSED AND MAINTAINED INPLACE, UNLESS BOXED IN AND NOTED ON PLANS.
  - 2) LOCATION OF NEW FO VAULT AND LOOP DETECTORS SHALL BE DETERMINED IN THE FIELD BY THE ENGINEER.
  - 3) IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO UTILIZE THE "ONE CALL EXCAVATION NOTICE SYSTEM" (TELEPHONE NUMBER 651-454-0002) AS REQUIRED BY MINNESOTA STATUTE 2160.
  - 4) (\*\*) DENOTES ITEMS TO BE FURNISHED & INSTALLED (OR REMOVED AND DISPOSED OF) BY THE CONTRACTOR UNDER ITEM NO. 2565 (TRAFFIC CONTROL INTERCONNECT). SEE STATEMENT OF ESTIMATED QUANTITIES AND SPECIAL PROVISIONS.
  - 5) NEW FIBER OPTIC VAULTS TO BE FURNISHED AND INSTALLED BY THE CONTRACTOR (AS NOTED) SHALL BE PRE-CAST POLYMER CONCRETE STRUCTURES. SEE DETAILS & SPECIAL PROVISIONS.

S.A.P. 002-614-048  
 S.A.P. 106-020-037

DRAWN BY: MRB				
DESIGNER: MRB				
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.

*John M. Gray*  
 Name: John M. Gray, P.E.  
 Date: February 7, 2022  
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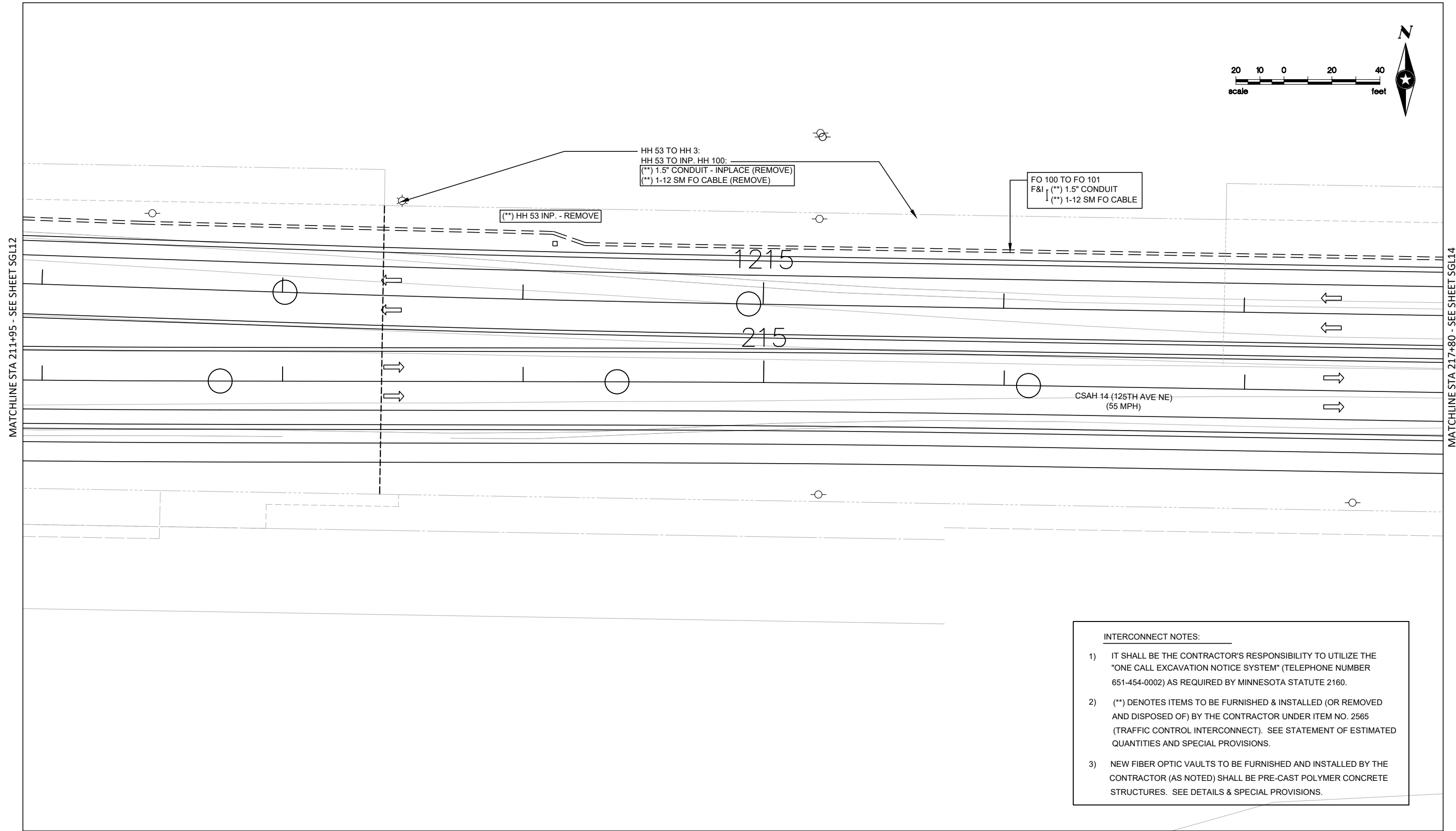
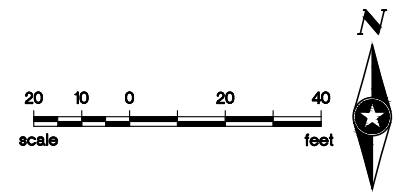
**SEH**  
 PHONE: (651) 490-2000  
 3535 VADNAIS CENTER DR.  
 ST. PAUL, MN 55110

**ANOKA COUNTY,  
 MINNESOTA  
 CITY OF BLAINE**

REVISE SIGNAL SYSTEM "A" / INTERCONNECT  
 INTERSECTION LAYOUT  
 CSAH 14 (125TH AVE NE)  
 AT HARPERS ST NE

FILE NO.  
 ANOKC157553  
 SIGNAL SHEET  
 SGL 12 OF SGL34

**164**  
**303**



**INTERCONNECT NOTES:**

- 1) IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO UTILIZE THE "ONE CALL EXCAVATION NOTICE SYSTEM" (TELEPHONE NUMBER 651-454-0002) AS REQUIRED BY MINNESOTA STATUTE 2160.
- 2) (\*\*\*) DENOTES ITEMS TO BE FURNISHED & INSTALLED (OR REMOVED AND DISPOSED OF) BY THE CONTRACTOR UNDER ITEM NO. 2565 (TRAFFIC CONTROL INTERCONNECT). SEE STATEMENT OF ESTIMATED QUANTITIES AND SPECIAL PROVISIONS.
- 3) NEW FIBER OPTIC VAULTS TO BE FURNISHED AND INSTALLED BY THE CONTRACTOR (AS NOTED) SHALL BE PRE-CAST POLYMER CONCRETE STRUCTURES. SEE DETAILS & SPECIAL PROVISIONS.

MATCHLINE STA 211+95 - SEE SHEET SGL12

MATCHLINE STA 217+80 - SEE SHEET SGL14

S.A.P. 002-614-048  
S.A.P. 106-020-037

DRAWN BY: MRB				
DESIGNER: MRB				
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.

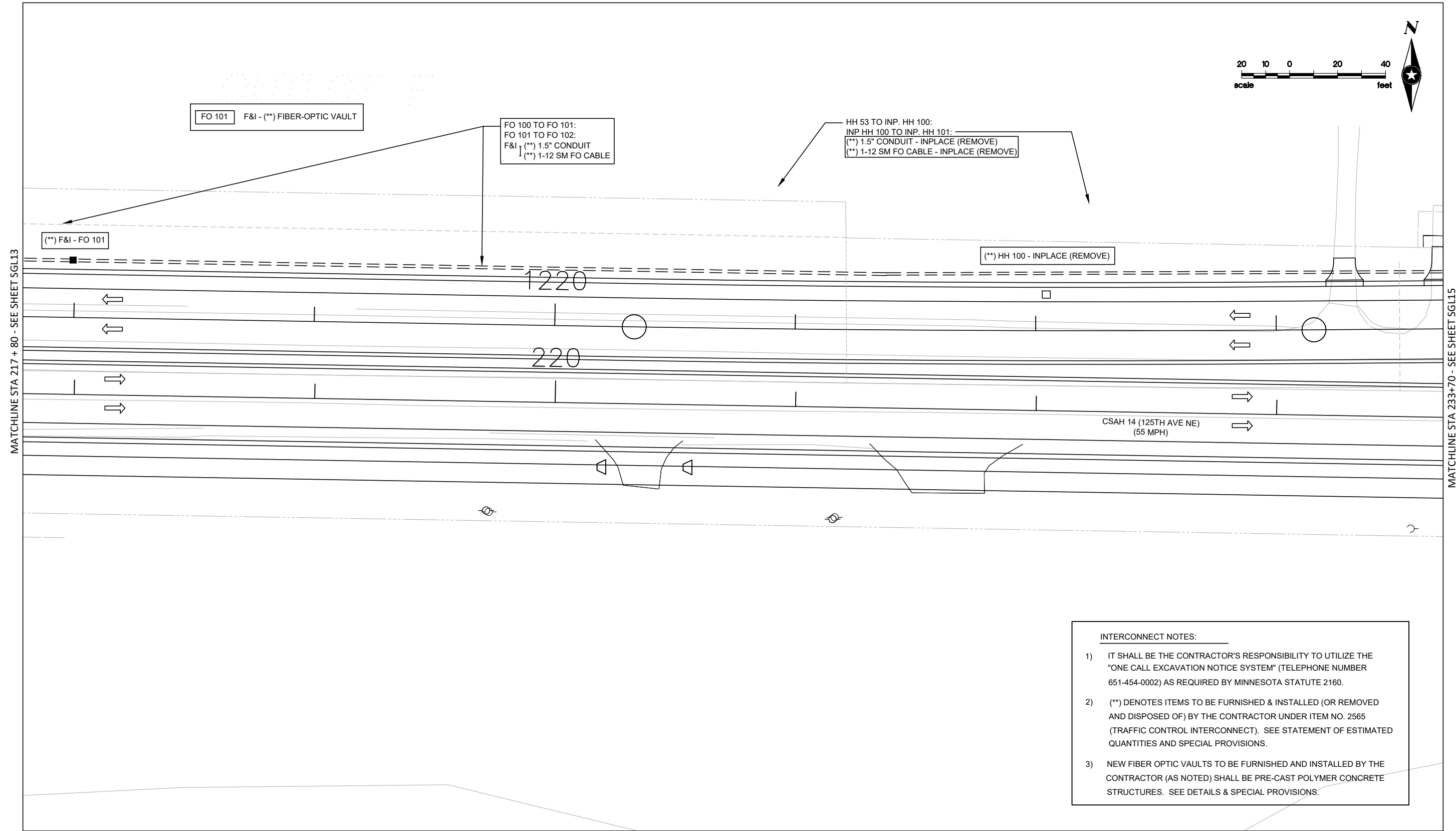
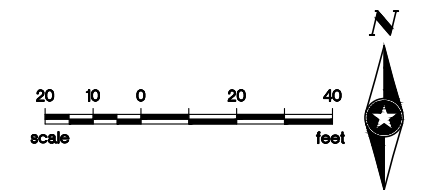
*John M. Gray*  
Name: John M. Gray, P.E.  
Date: February 7, 2022  
Lic. No. 22457



**ANOKA COUNTY,  
MINNESOTA  
CITY OF BLAINE**

**TRAFFIC CONTROL INTERCONNECT  
INTERSECTION LAYOUT  
CSAH14 (HARPERS STREET TO  
NORTH LAKE BLVD)**

FILE NO. ANOKC157553  
SIGNAL SHEET SGL 13 OF SGL 34  
**165**  
**303**



**INTERCONNECT NOTES:**

- 1) IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO UTILIZE THE "ONE CALL EXCAVATION NOTICE SYSTEM" (TELEPHONE NUMBER 651-454-0002) AS REQUIRED BY MINNESOTA STATUTE 2160.
- 2) (\*\*) DENOTES ITEMS TO BE FURNISHED & INSTALLED (OR REMOVED AND DISPOSED OF) BY THE CONTRACTOR UNDER ITEM NO. 2565 (TRAFFIC CONTROL INTERCONNECT). SEE STATEMENT OF ESTIMATED QUANTITIES AND SPECIAL PROVISIONS.
- 3) NEW FIBER OPTIC VAULTS TO BE FURNISHED AND INSTALLED BY THE CONTRACTOR (AS NOTED) SHALL BE PRE-CAST POLYMER CONCRETE STRUCTURES. SEE DETAILS & SPECIAL PROVISIONS.

S.A.P. 002-614-048  
S.A.P. 106-020-037

DRAWN BY: MRB				
DESIGNER: MRB				
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.

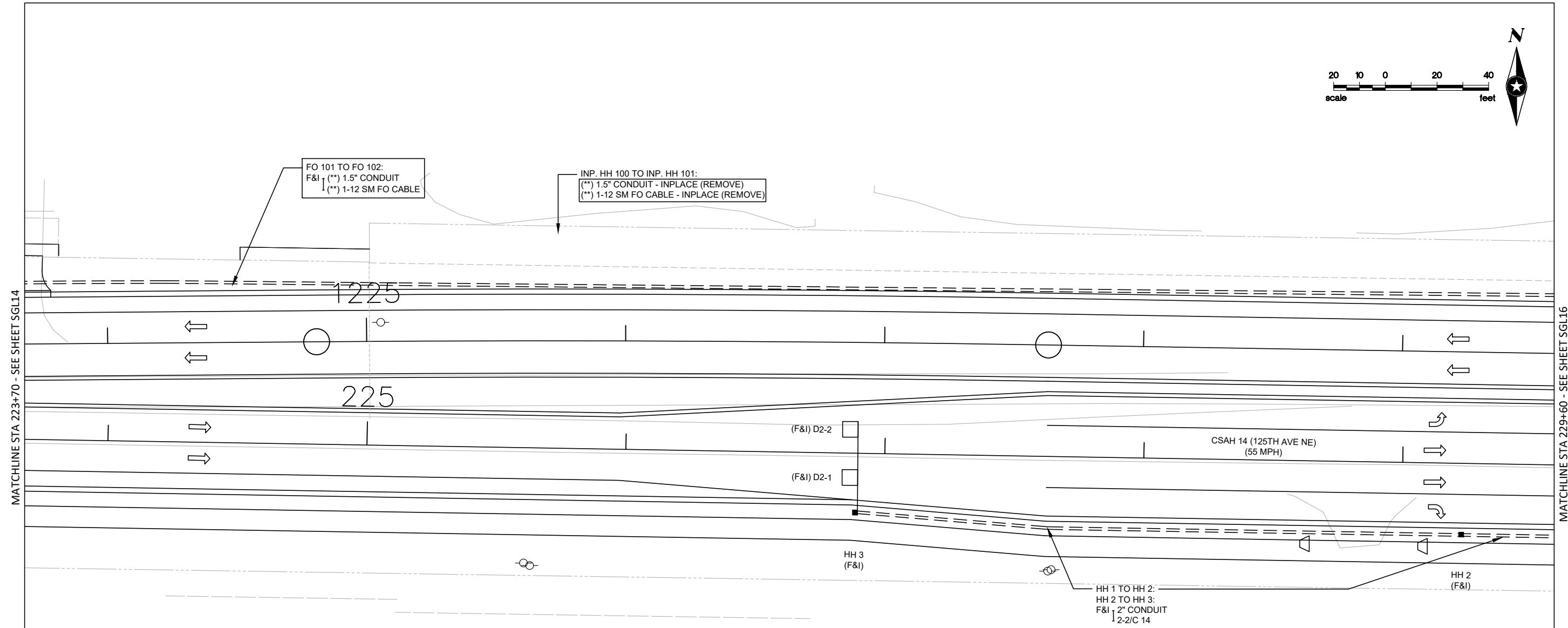
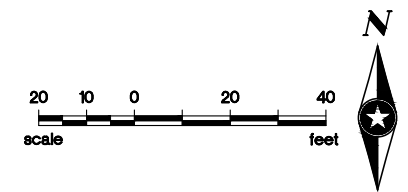
*John M. Gray*  
Name: John M. Gray, P.E.  
Date: February 7, 2022 Lic. No. 22457

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

**ANOKA COUNTY,  
MINNESOTA  
CITY OF BLAINE**

**TRAFFIC CONTROL INTERCONNECT  
INTERSECTION LAYOUT  
CSAH14 (HARPERS STREET TO  
NORTH LAKE BLVD)**

FILE NO. ANOKC157553  
SIGNAL SHEET SGL14 OF SGL34  
**166**  
**303**



- INTERCONNECT NOTES:**
- 1) IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO UTILIZE THE "ONE CALL EXCAVATION NOTICE SYSTEM" (TELEPHONE NUMBER 651-454-0002) AS REQUIRED BY MINNESOTA STATUTE 2160.
  - 2) (\*\*) DENOTES ITEMS TO BE FURNISHED & INSTALLED (OR REMOVED AND DISPOSED OF) BY THE CONTRACTOR UNDER ITEM NO. 2565 (TRAFFIC CONTROL INTERCONNECT). SEE STATEMENT OF ESTIMATED QUANTITIES AND SPECIAL PROVISIONS.
  - 3) HANDHOLES 2 AND 3, CONDUIT BETWEEN HANDHOLE 2 AND HANDHOLE 3, LOOP DETECTORS D2-1 AND D2-2, AND LOOP DETECTOR LEAD-IN CABLE ARE INCLUDED AS PART OF "TRAFFIC CONTROL SIGNAL SYSTEM B".
  - 4) NEW FIBER OPTIC VAULTS TO BE FURNISHED AND INSTALLED BY THE CONTRACTOR (AS NOTED) SHALL BE PRE-CAST POLYMER CONCRETE STRUCTURES. SEE DETAILS & SPECIAL PROVISIONS.

S.A.P. 002-614-048  
S.A.P. 106-020-037

DRAWN BY: MRB				
DESIGNER: MRB				
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.

*John M. Gray*  
Name: John M. Gray, P.E.  
Date: February 7, 2022  
Lic. No. 22457



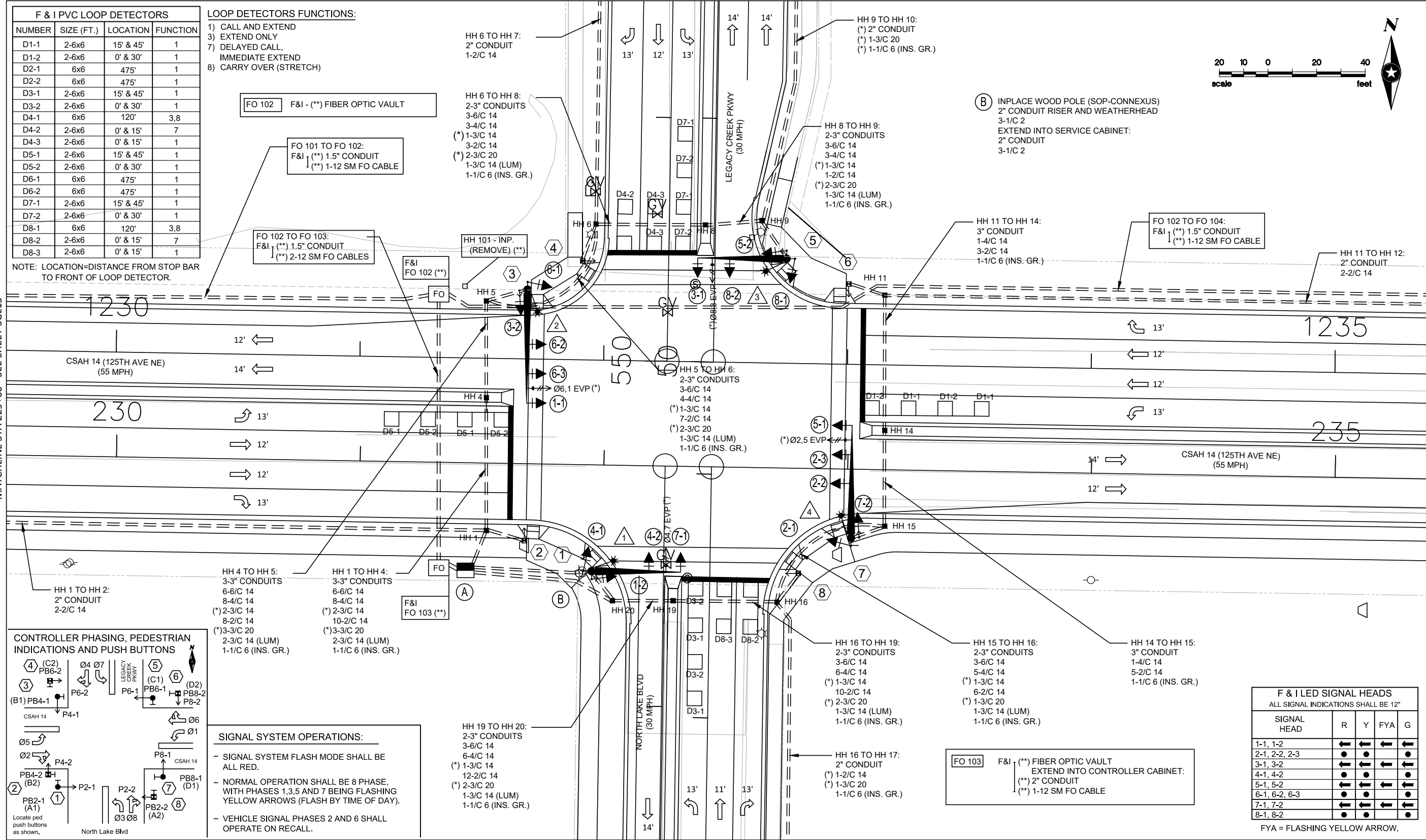
**ANOKA COUNTY,  
MINNESOTA  
CITY OF BLAINE**

TRAFFIC SIGNAL SYSTEM "B" / INTERCONNECT  
INTERSECTION LAYOUT  
CSAH14 (125TH AVE NE) AT NORTH  
LAKE BLVD/LEGACY CREEK PKWY

FILE NO. ANOKC157553	<b>167</b>
SIGNAL SHEET SGL 15 OF SGL34	

**303**

MATCH LINE "A" - SEE SHEET SGL18



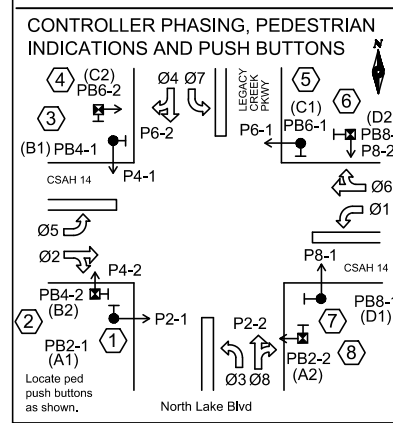
F & I PVC LOOP DETECTORS			
NUMBER	SIZE (FT.)	LOCATION	FUNCTION
D1-1	2-6x6	15' & 45'	1
D1-2	2-6x6	0' & 30'	1
D2-1	6x6	475'	1
D2-2	6x6	475'	1
D3-1	2-6x6	15' & 45'	1
D3-2	2-6x6	0' & 30'	1
D4-1	6x6	120'	3,8
D4-2	2-6x6	0' & 15'	7
D4-3	2-6x6	0' & 15'	1
D5-1	2-6x6	15' & 45'	1
D5-2	2-6x6	0' & 30'	1
D6-1	6x6	475'	1
D6-2	6x6	475'	1
D7-1	2-6x6	15' & 45'	1
D7-2	2-6x6	0' & 30'	1
D8-1	6x6	120'	3,8
D8-2	2-6x6	0' & 15'	7
D8-3	2-6x6	0' & 15'	1

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

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

MATCHLINE STA 229+60 - SEE SHEET SGL15

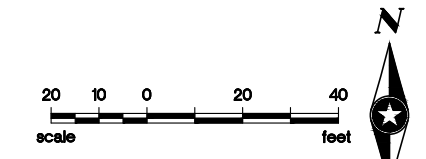
MATCHLINE STA 235+40 - SEE SHEET SGL21



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

F & I LED SIGNAL HEADS				
ALL SIGNAL INDICATIONS SHALL BE 12"				
SIGNAL HEAD	R	Y	FYA	G
1-1, 1-2	←	←	←	←
2-1, 2-2, 2-3	•	•	•	•
3-1, 3-2	←	←	←	←
4-1, 4-2	•	•	•	•
5-1, 5-2	←	←	←	←
6-1, 6-2, 6-3	•	•	•	•
7-1, 7-2	←	←	←	←
8-1, 8-2	•	•	•	•

FYA = FLASHING YELLOW ARROW.



MATCHLINE "B" - SEE SHEET SGL18

DRAWN BY: MRB	DESIGNER: MRB	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.

*John M. Gray* Name: John M. Gray, P.E.  
Date: February 7, 2022 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 "B"  
INTERSECTION LAYOUT  
CSAH14 (125TH AVE NE) AT NORTH LAKE BLVD/LEGACY CREEK PKWY

FILE NO. ANOKC157553  
SIGNAL SHEET SGL16 OF SGL34  
168  
303

S.A.P. 002-614-048  
S.A.P. 106-020-037



**NOTES:**

- 1) LOCATION OF FOUNDATIONS, LOOP DETECTORS, VAULTS, AND HANDHOLES SHALL BE DETERMINED IN THE FIELD BY THE ENGINEER.
- 2) SEE SPECIAL PROVISIONS FOR COUNTY FURNISHED MATERIALS.
- 3) NEW HANDHOLES SHALL BE PVC HANDHOLES WITH METAL FRAMES & COVERS (SEE SPECIAL PROVISIONS).
- 4) A 3/4" HALF COUPLING, 3/4" PIPE NIPPLE & CONDUIT OUTLET BODY SHALL BE FURNISHED AND INSTALLED 6 FEET FROM END OF EACH MAST ARM (FOR EVP).
- 5) THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING THE POWER COMPANY TO ARRANGE FOR THE POWER CONNECTION (CONNEXUS). SEE SPECIAL PROVISIONS.
- 6) SEE SPECIAL PROVISIONS AND DETAILS REGARDING SIGNS TO BE FURNISHED AND INSTALLED BY CONTRACTOR (INCLUDED AS PART OF TRAFFIC SIGNAL SYSTEM "B" PAY ITEM).
- 7) EACH PEDESTRIAN INDICATION SHALL BE ONE SECTION LED FILLED COUNTDOWN TIMER "HAND/WALKING PERSON" INDICATION.
- 8) EACH SIGNAL FACE SHALL HAVE A BACKGROUND SHIELD.
- 9) SEE DETAILS, SPECIAL PROVISIONS & STATEMENT OF ESTIMATED QUANTITIES REGARDING BATTERY BACK-UP SIGNAL SERVICE CABINET TO BE FURNISHED AND INSTALLED BY CONTRACTOR (SEPARATE FROM ITEM NO. 2565 FOR THIS SIGNAL SYSTEM).
- 10) LOOP DETECTOR WIRES SHALL BE CROSS-LINKED POLYETHYLENE (XLP) #12 AWG IN 3/4" N.M.C. SEE SPECIAL PROVISIONS.
- 11) (\*) DENOTES ITEMS TO BE INCLUDED AS PART OF THE PAY ITEM FOR ITEM NO. 2565 (EMERGENCY VEHICLE PREEMPTION SYSTEM B). SEE STATEMENT OF ESTIMATED QUANTITIES AND SPECIAL PROVISIONS.
- 12) (\*\*) DENOTES ITEMS TO BE INCLUDED AS PART OF THE PAY ITEM FOR ITEM NO. 2565 (TRAFFIC CONTROL INTERCONNECT). SEE STATEMENT OF ESTIMATED QUANTITIES AND SPECIAL PROVISIONS.
- 13) ALL CABLES AND CONDUCTORS SHALL BE NEW (FURNISHED AND INSTALLED BY THE CONTRACTOR). NO SPLICING IS ALLOWED ON ANY CABLE OR CONDUCTOR BETWEEN THE CONTROLLER/SERVICE CABINETS AND EACH POLE OR MAST ARM MOUNTED COMPONENT (EXCEPT THAT LOOP DETECTOR SPLICES ARE ALLOWED IN ADJACENT HANDHOLES ONLY).

① PA100 POLE FOUNDATION  
 TYPE PA100-A-35-D30-9 (DAVIT AT 350 DEG)  
 LUMINAIRE-LED  
 1-ANGLE MOUNT SIGNAL-OVERHEAD AT 0'  
 1-STRAIGHT MOUNT SIGNAL-OVERHEAD AT 12'  
 2-ANGLE MOUNT SIGNALS-POLE MOUNTED 90 DEG AND 180 DEG  
 1-ANGLE MOUNT C.D. PED INDICATION-POLE MOUNTED 90 DEG  
 1-APS PB, SIGN (LT ARROW), AND APS MAST ARM POLE ADAPTOR (PB2-1)  
 R10-X12 SIGN PANEL-ADJACENT TO 7-1  
 TYPE D SIGN PANEL-OVERHEAD (D-1)  
 (\*) ONE WAY EVP DETECTOR & LED CONFIRMATION LIGHT (Ø4,7) AT 6'  
 EXTEND INTO HH 20:  
 3" CONDUIT  
 3-6/c 14 (1 SPARE)  
 3-4/c 14  
 (\*) 1-3/c 14  
 1-2/c 14  
 (\*) 1-3/c 20  
 1-3/c 14 (LUM)  
 2-1/c 6 (GRD)

② PEDESTAL FOUNDATION  
 12' PEDESTAL POLE, BASE, WIND COLLAR  
 1-STRAIGHT MOUNT C.D. PED INDICATION  
 1-APS PB, SIGN (RT ARROW), AND APS PEDESTAL SPACERS (PB4-2)  
 EXTEND INTO HH 1:  
 3" CONDUIT  
 1-4/c 14  
 1-2/c 14  
 2-1/c 6 (GRD)

③ PA100 POLE FOUNDATION  
 TYPE PA100-A-45-D30-9 (DAVIT AT 350 DEG)  
 LUMINAIRE-LED  
 1-ANGLE MOUNT SIGNAL-OVERHEAD AT 0'  
 2-STRAIGHT MOUNT SIGNALS-OVERHEAD AT 11' AND 23'  
 2-ANGLE MOUNT SIGNALS-POLE MOUNTED 90 DEG AND 180 DEG  
 1-ANGLE MOUNT C.D. PED INDICATIONS-POLE MOUNTED 90 DEG  
 1-APS PB, SIGN (LT ARROW), AND APS MAST ARM POLE ADAPTOR (PB4-1)  
 R10-X12 SIGN PANEL-ADJACENT TO 1-1  
 TYPE D SIGN PANEL-OVERHEAD (D-2)  
 (\*) ONE WAY EVP DETECTOR & LED CONFIRMATION LIGHT (Ø6,1)  
 EXTEND INTO HH 5:  
 3" CONDUIT  
 3-6/c 14 (1 SPARE)  
 4-4/c 14  
 (\*) 1-3/c 14  
 1-2/c 14  
 (\*) 1-3/c 20  
 1-3/c 14 (LUM)  
 2-1/c 6 (GRD)

④ PEDESTAL FOUNDATION  
 12' PEDESTAL POLE, BASE, WIND COLLAR  
 1-STRAIGHT MOUNT C.D. PED INDICATION  
 1-APS PB, SIGN (RT ARROW), AND APS PEDESTAL SPACERS (PB8-2)  
 EXTEND INTO HH 6:  
 3" CONDUIT  
 1-4/c 14  
 1-2/c 14  
 2-1/c 6 (GRD)

⑤ PA100 POLE FOUNDATION  
 TYPE PA100-A-35-D30-9 (DAVIT AT 350 DEG)  
 LUMINAIRE-LED  
 1-ANGLE MOUNT SIGNAL-OVERHEAD AT 0'  
 1-STRAIGHT MOUNT SIGNAL-OVERHEAD AT 12'  
 2-ANGLE MOUNT SIGNALS-POLE MOUNTED 90 DEG AND 180 DEG  
 1-ANGLE MOUNT C.D. PED INDICATIONS-POLE MOUNTED 90 DEG  
 1-APS PB, SIGN (LT ARROW), AND APS MAST ARM POLE ADAPTOR (PB6-1)  
 R10-X12 SIGN PANEL-ADJACENT TO 3-1  
 TYPE D SIGN PANEL-OVERHEAD (D-3)  
 (\*) ONE WAY EVP DETECTOR & LED CONFIRMATION LIGHT (Ø8,3)  
 EXTEND INTO HH 9:  
 3" CONDUIT  
 3-6/c 14 (1 SPARE)  
 3-4/c 14  
 (\*) 1-3/c 14  
 1-2/c 14  
 (\*) 1-3/c 20  
 1-3/c 14 (LUM)  
 2-1/c 6 (GRD)

⑥ PEDESTAL FOUNDATION  
 12' PEDESTAL POLE, BASE, WIND COLLAR  
 1-STRAIGHT MOUNT C.D. PED INDICATION  
 1-APS PB, SIGN (RT ARROW), AND APS PEDESTAL SPACERS (PB8-2)  
 EXTEND INTO HH 11:  
 3" CONDUIT  
 1-4/c 14  
 1-2/c 14  
 1-1/c 6 (GRD)

⑦ PA100 POLE FOUNDATION  
 TYPE PA100-A-45-D30-9 (DAVIT AT 350 DEG)  
 LUMINAIRE-LED  
 1-ANGLE MOUNT SIGNAL-OVERHEAD AT 0'  
 2-STRAIGHT MOUNT SIGNALS-OVERHEAD AT 11' AND 23'  
 2-ANGLE MOUNT SIGNALS-POLE MOUNTED 90 DEG AND 180 DEG  
 1-ANGLE MOUNT C.D. PED INDICATIONS-POLE MOUNTED 90 DEG  
 1-APS PB, SIGN (LT ARROW), AND APS MAST ARM POLE ADAPTOR (PB8-1)  
 R10-X12 SIGN PANEL-ADJACENT TO 5-1  
 TYPE D SIGN PANEL-OVERHEAD (D-4)  
 (\*) ONE WAY EVP DETECTOR & LED CONFIRMATION LIGHT (Ø2,5)  
 EXTEND INTO HH 15:  
 3" CONDUIT  
 3-6/c 14 (1 SPARE)  
 4-4/c 14  
 (\*) 1-3/c 14  
 1-2/c 14  
 (\*) 1-3/c 20  
 1-3/c 14 (LUM)  
 2-1/c 6 (GRD)

⑧ PEDESTAL FOUNDATION  
 12' PEDESTAL POLE, BASE, WIND COLLAR  
 1-STRAIGHT MOUNT C.D. PED INDICATION  
 1-APS PB, SIGN (RT ARROW), AND APS PEDESTAL SPACERS (PB2-2)  
 EXTEND INTO HH 16:  
 3" CONDUIT  
 1-4/c 14  
 1-2/c 14  
 2-1/c 6 (GRD)

Ⓐ EQUIPMENT PAD FOUNDATION  
 INSTALL CONTROLLER AND CABINET (FURNISHED BY COUNTY)  
 BBU SIGNAL SERVICE CABINET  
 BETWEEN CONTROLLER CABINET AND SERVICE CABINET:  
 METERED SIGNAL SERVICE  
 2" CONDUIT  
 3-1/c 6  
 CONTROLLER CABINET TO HH 1:  
 2-3" CONDUITS 3" CONDUIT  
 3-6/c 14 3-6/c 14  
 5-4/c 14 4-4/c 14  
 (\*) 1-3/c 14 (\*) 1-3/c 14  
 6-2/c 14 7-2/c 14  
 (\*) 1-3/c 20 (\*) 2-3/c 20  
 1-1/c 6 (INS. GR.)  
 CONTROLLER CABINET TO HH 20:  
 3" CONDUIT 2-3" CONDUITS  
 3-6/c 14 3-6/c 14  
 3-4/c 14 6-4/c 14  
 (\*) 1-3/c 14 (\*) 1-3/c 14  
 1-2/c 14 12-2/c 14  
 (\*) 1-3/c 20 (\*) 2-3/c 20  
 1-1/c 6 (GRD)

SERVICE CABINET TO HH 1:  
 1.25" CONDUIT  
 UNMETERED STREET LIGHT SERVICE  
 2-3/c 14 (LUM)  
 SERVICE CABINET TO HH 20:  
 1.25" CONDUIT  
 UNMETERED STREET LIGHT SERVICE  
 2-3/c 14 (LUM)  
 SERVICE CABINET TO SOP:  
 2" CONDUIT  
 3-1/c 2  
 STUB OUT 3" CONDUIT FROM CONTROLLER CABINET TO EAST (THREAD AND CAP-FOR FUTURE USE)  
 SERVICE CABINET TO CONTROLLER CABINET:  
 2" CONDUIT (COMMUNICATION)  
 CONTROLLER CABINET TO FO VAULT 103:  
 (\*\*) 2" CONDUIT  
 (\*\*) 2-12 SM FIBER-OPTIC CABLES

S.A.P. 002-614-048  
 S.A.P. 106-020-037

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

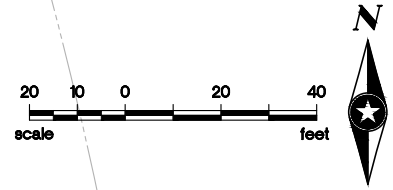
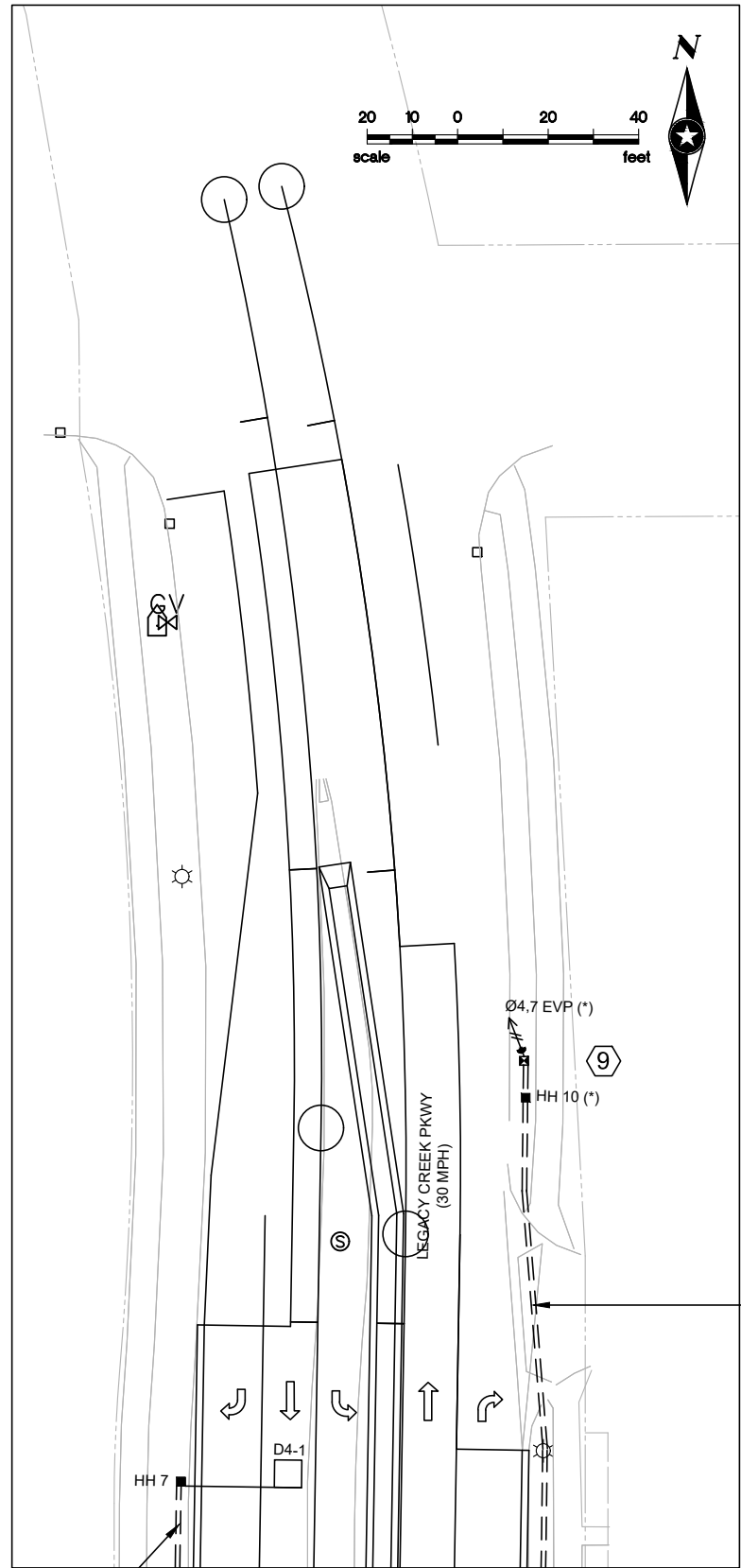
I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.  
 Date: February 7, 2022 Name: John M. Gray, P.E. Lic. No. 22457



**ANOKA COUNTY, MINNESOTA**  
 CITY OF BLAINE

TRAFFIC SIGNAL SYSTEM "B"  
 INTERSECTION LAYOUT  
 CSAH14 (125TH AVE NE) AT NORTH LAKE BLVD/LEGACY CREEK PKWY

FILE NO. ANOKC157553	169
SIGNAL SHEET SGL17 OF SGL34	303



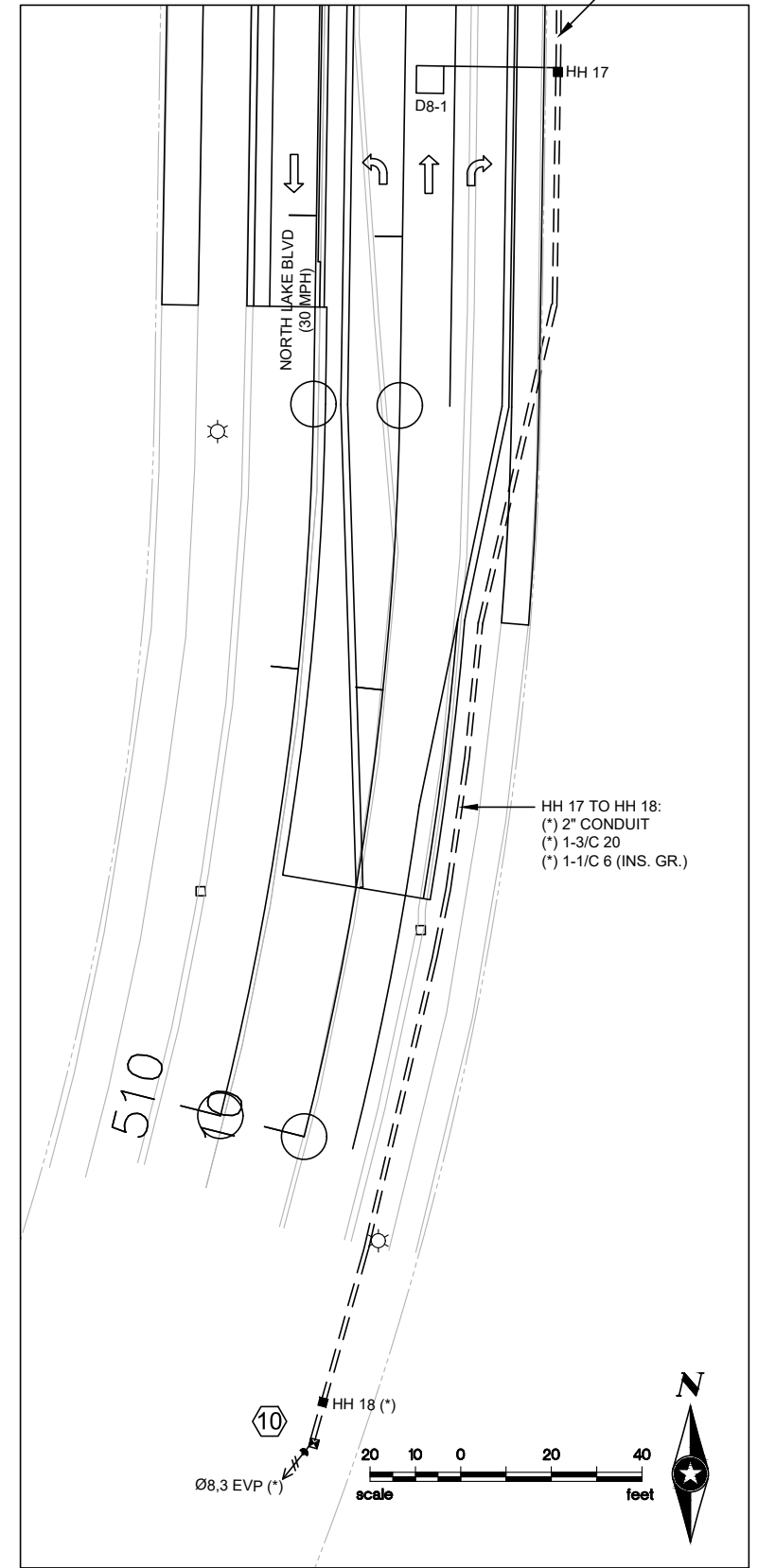
- 9 (\*) PEDESTAL FOUNDATION
- (\*) 10' PEDESTAL POLE, BASE, WIND COLLAR
- (\*) ONE WAY EVP DETECTOR-MOUNT ATOP SLIPFITTER COLLAR (Ø4,7)
- EXTEND INTO HH 10:
- (\*) 2" CONDUIT
- (\*) 1-3/C 20
- (\*) 1-1/C 6 (INS. GR.)

- 10 (\*) PEDESTAL FOUNDATION
- (\*) 10' PEDESTAL POLE, BASE, WIND COLLAR
- (\*) ONE WAY EVP DETECTOR-MOUNT ATOP SLIPFITTER COLLAR (Ø8,3)
- EXTEND INTO HH 18:
- (\*) 2" CONDUIT
- (\*) 1-3/C 20
- (\*) 1-1/C 6 (INS. GR.)

HH 9 TO HH 10:  
 (\*) 2" CONDUIT  
 (\*) 1-3/C 20  
 (\*) 1-1/C 6 (INS. GR.)

HH 6 TO HH 7:  
 2" CONDUIT  
 1-2/C 14

MATCHLINE "A" - SEE SHEET SGL16



HH 16 TO HH 17:  
 2" CONDUIT  
 (\*) 1-2/C 14  
 (\*) 1-3/C 20  
 1-1/C 6 (INS. GR.)

HH 17 TO HH 18:  
 (\*) 2" CONDUIT  
 (\*) 1-3/C 20  
 (\*) 1-1/C 6 (INS. GR.)

MATCHLINE B - SEE SHEET SGL16

S.A.P. 002-614-048  
 S.A.P. 106-020-037

DRAWN BY: MRB				
DESIGNER: MRB				
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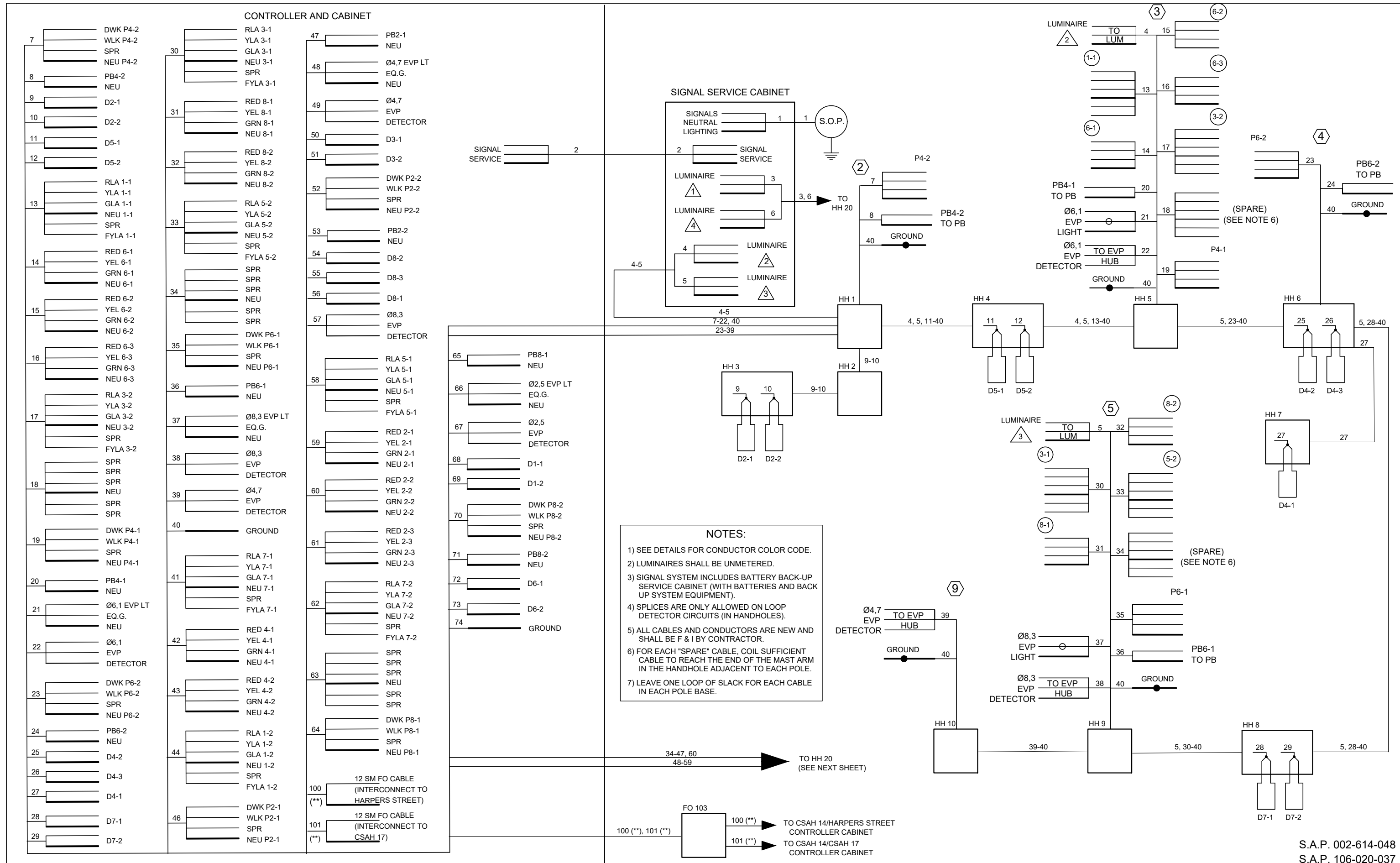
*John M. Gray* Name: John M. Gray, P.E.  
 Date: February 7, 2022 Lic. No. 22457

**SEH**  
 PHONE: (651) 490-2000  
 3535 VADNAIS CENTER DR.  
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**ANOKA COUNTY, MINNESOTA**  
**CITY OF BLAINE**

TRAFFIC SIGNAL SYSTEM "B"  
 INTERSECTION LAYOUT  
 CSAH14 (125TH AVE NE) AT NORTH LAKE BLVD/LEGACY CREEK PKWY

FILE NO. ANOKC157553  
 SIGNAL SHEET SGL18 OF SGL34  
**170**  
**303**



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 DESIGNER: MRB  
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NO.	BY	DATE	REVISIONS

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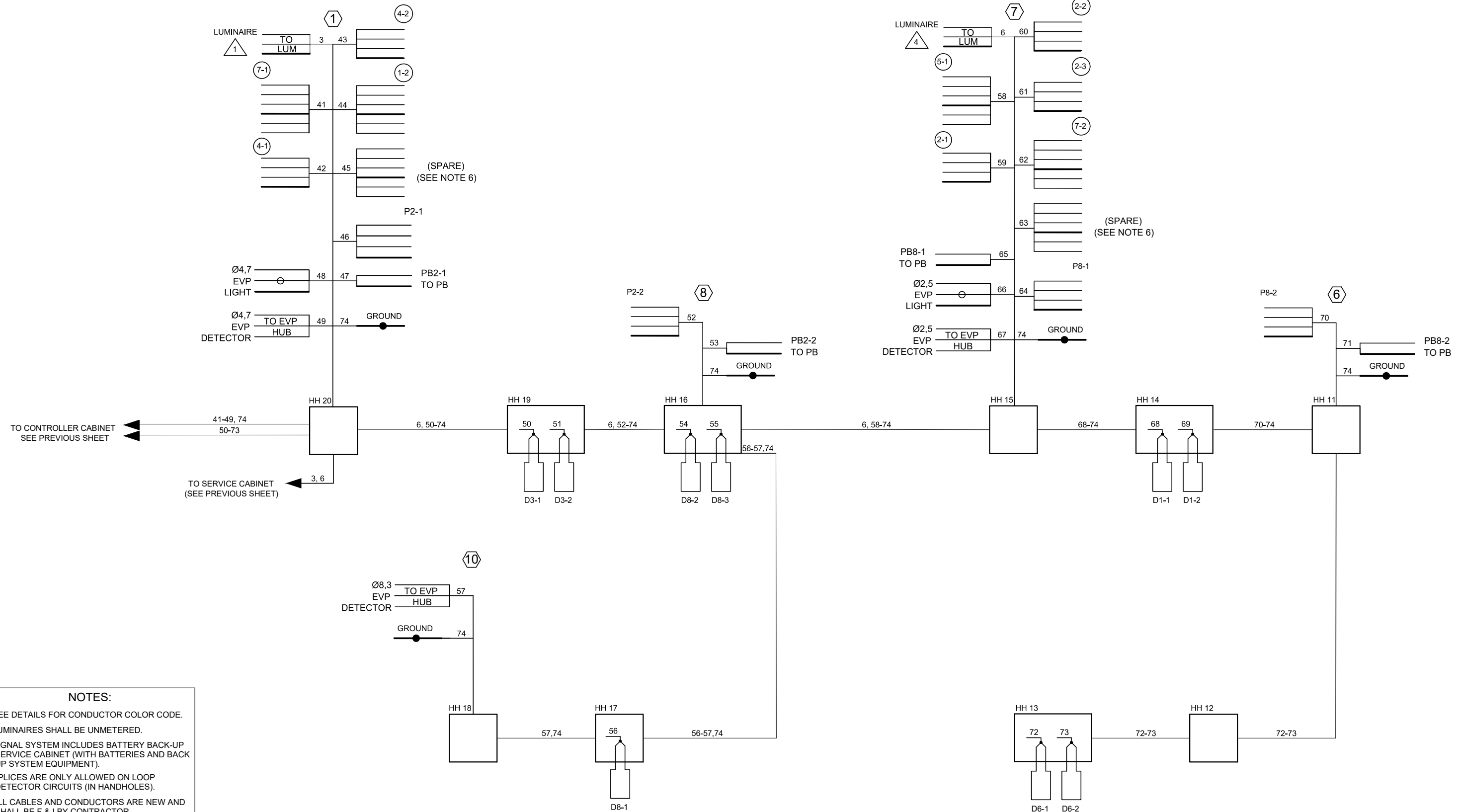
**ANOKA COUNTY,  
 MINNESOTA  
 CITY OF BLAINE**

TRAFFIC SIGNAL SYSTEM "B"  
 FIELD WIRING DIAGRAM  
 CSAH14 (125TH AVE NE) AT NORTH  
 LAKE BLVD/LEGACY CREEK PKWY

FILE NO.  
 ANOKC157553  
 SIGNAL SHEET  
 SGL19 OF SGL34

171  
 303

S.A.P. 002-614-048  
 S.A.P. 106-020-037



**NOTES:**

- 1) SEE DETAILS FOR CONDUCTOR COLOR CODE.
- 2) LUMINAIRES SHALL BE UNMETERED.
- 3) SIGNAL SYSTEM INCLUDES BATTERY BACK-UP SERVICE CABINET (WITH BATTERIES AND BACK UP SYSTEM EQUIPMENT).
- 4) SPLICES ARE ONLY ALLOWED ON LOOP DETECTOR CIRCUITS (IN HANDHOLES).
- 5) ALL CABLES AND CONDUCTORS ARE NEW AND SHALL BE F & I BY CONTRACTOR.
- 6) FOR EACH "SPARE" CABLE, COIL SUFFICIENT CABLE TO REACH THE END OF THE MAST ARM IN THE HANDHOLE ADJACENT TO EACH POLE.
- 7) LEAVE ONE LOOP OF SLACK FOR EACH CABLE IN EACH POLE BASE.

S.A.P. 002-614-048  
S.A.P. 106-020-037

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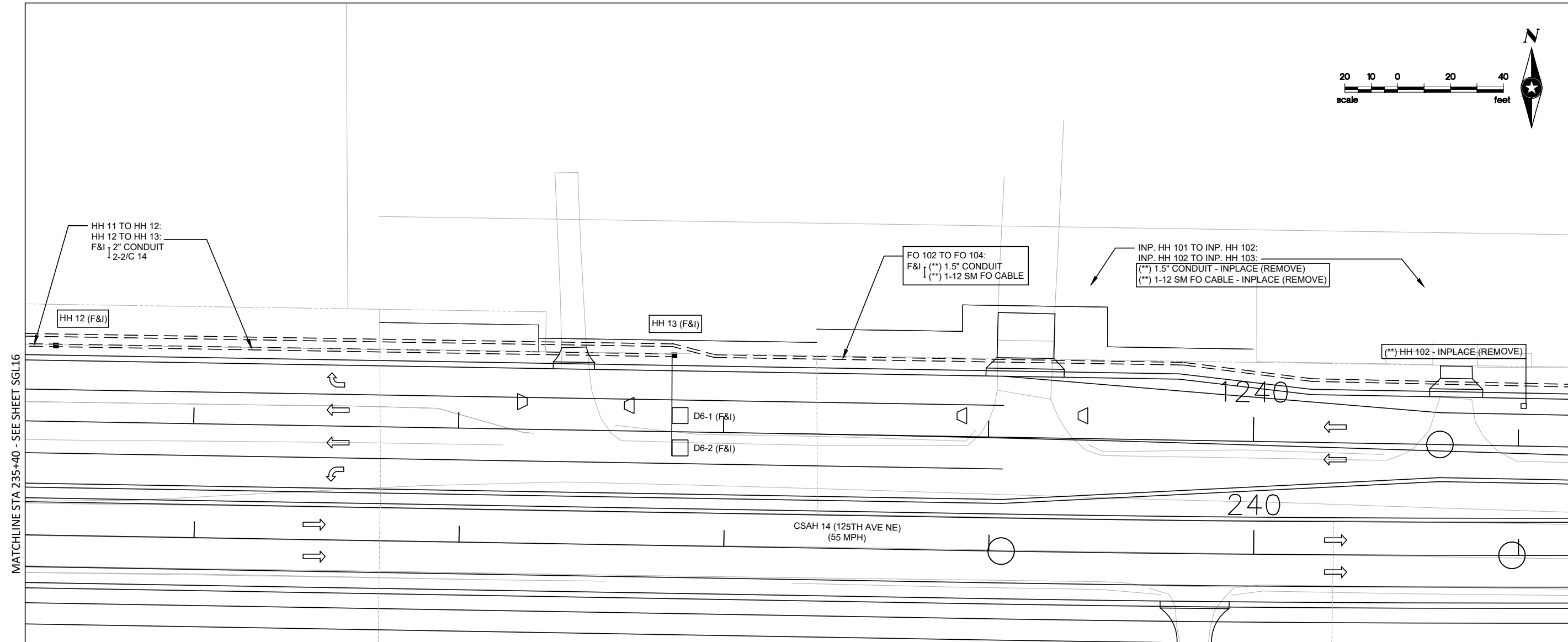
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**ANOKA COUNTY,  
MINNESOTA  
CITY OF BLAINE**

TRAFFIC SIGNAL SYSTEM "B"  
FIELD WIRING DIAGRAM  
CSAH14 (125TH AVE NE) AT NORTH  
LAKE BLVD/LEGACY CREEK PKWY

FILE NO.  
ANOKC157553  
SIGNAL SHEET  
SGL 20 OF SGL34

172  
303



MATCHLINE STA 235+40 - SEE SHEET SGL16

MATCHLINE STA 241+20 - SEE SHEET SGL22

- INTERCONNECT NOTES:**
- 1) IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO UTILIZE THE "ONE CALL EXCAVATION NOTICE SYSTEM" (TELEPHONE NUMBER 651-454-0002) AS REQUIRED BY MINNESOTA STATUTE 2160.
  - 2) (\*\*) DENOTES ITEMS TO BE FURNISHED & INSTALLED (OR REMOVED AND DISPOSED OF) BY THE CONTRACTOR UNDER ITEM NO. 2565 (TRAFFIC CONTROL INTERCONNECT). SEE STATEMENT OF ESTIMATED QUANTITIES AND SPECIAL PROVISIONS.
  - 3) HANDHOLES 12 AND 13, CONDUIT BETWEEN HANDHOLE 12 AND HANDHOLE 13, LOOP DETECTORS D6-1 AND D6-2, AND LOOP DETECTOR LEAD-IN CABLE ARE INCLUDED AS PART OF "TRAFFIC CONTROL SIGNAL SYSTEM B".
  - 4) NEW FIBER OPTIC VAULTS TO BE FURNISHED AND INSTALLED BY THE CONTRACTOR (AS NOTED) SHALL BE PRE-CAST POLYMER CONCRETE STRUCTURES. SEE DETAILS & SPECIAL PROVISIONS.

S.A.P. 002-614-048  
S.A.P. 106-020-037

DRAWN BY: MRB  
DESIGNER: MRB  
CHECKED BY: JMG  
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**ANOKA COUNTY,  
MINNESOTA  
CITY OF BLAINE**

TRAFFIC SIGNAL SYSTEM "B" / INTERCONNECT  
INTERSECTION LAYOUT  
CSAH14 (125TH AVE NE) AT NORTH  
LAKE BLVD/LEGACY CREEK PKWY

FILE NO.  
ANOKC157553  
SIGNAL SHEET  
SGL 21 OF SGL34

173  
303



INP. HH 102 TO INP. HH 103:  
 (\*\*) 1.5" CONDUIT - INPLACE (REMOVE)  
 (\*\*) 1-12 SM FO CABLE - INPLACE (REMOVE)

FO 102 TO FO 104:  
 FO 104 TO FO 105:  
 F&I (\*\*) 1.5" CONDUIT  
 I (\*\*) 1-12 SM FO CABLE

F&I - FO HH 104 (\*\*)

1245

245

CSAH 14 (125TH AVE NE)  
 (55 MPH)

FO 104 F&I - (\*\*) FIBER OPTIC VAULT

**INTERCONNECT NOTES:**

- 1) IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO UTILIZE THE "ONE CALL EXCAVATION NOTICE SYSTEM" (TELEPHONE NUMBER 651-454-0002) AS REQUIRED BY MINNESOTA STATUTE 2160.
- 2) (\*\*) DENOTES ITEMS TO BE FURNISHED & INSTALLED (OR REMOVED AND DISPOSED OF) BY THE CONTRACTOR UNDER ITEM NO. 2565 (TRAFFIC CONTROL INTERCONNECT). SEE STATEMENT OF ESTIMATED QUANTITIES AND SPECIAL PROVISIONS.
- 3) NEW FIBER OPTIC VAULTS TO BE FURNISHED AND INSTALLED BY THE CONTRACTOR (AS NOTED) SHALL BE PRE-CAST POLYMER CONCRETE STRUCTURES. SEE DETAILS & SPECIAL PROVISIONS.

MATCHLINE STA 241+20 - SEE SHEET SGL21

MATCHLINE STA 247+40 - SEE SHEET SGL23

S.A.P. 002-614-048  
 S.A.P. 106-020-037

DRAWN BY: MRB  
 DESIGNER: MRB  
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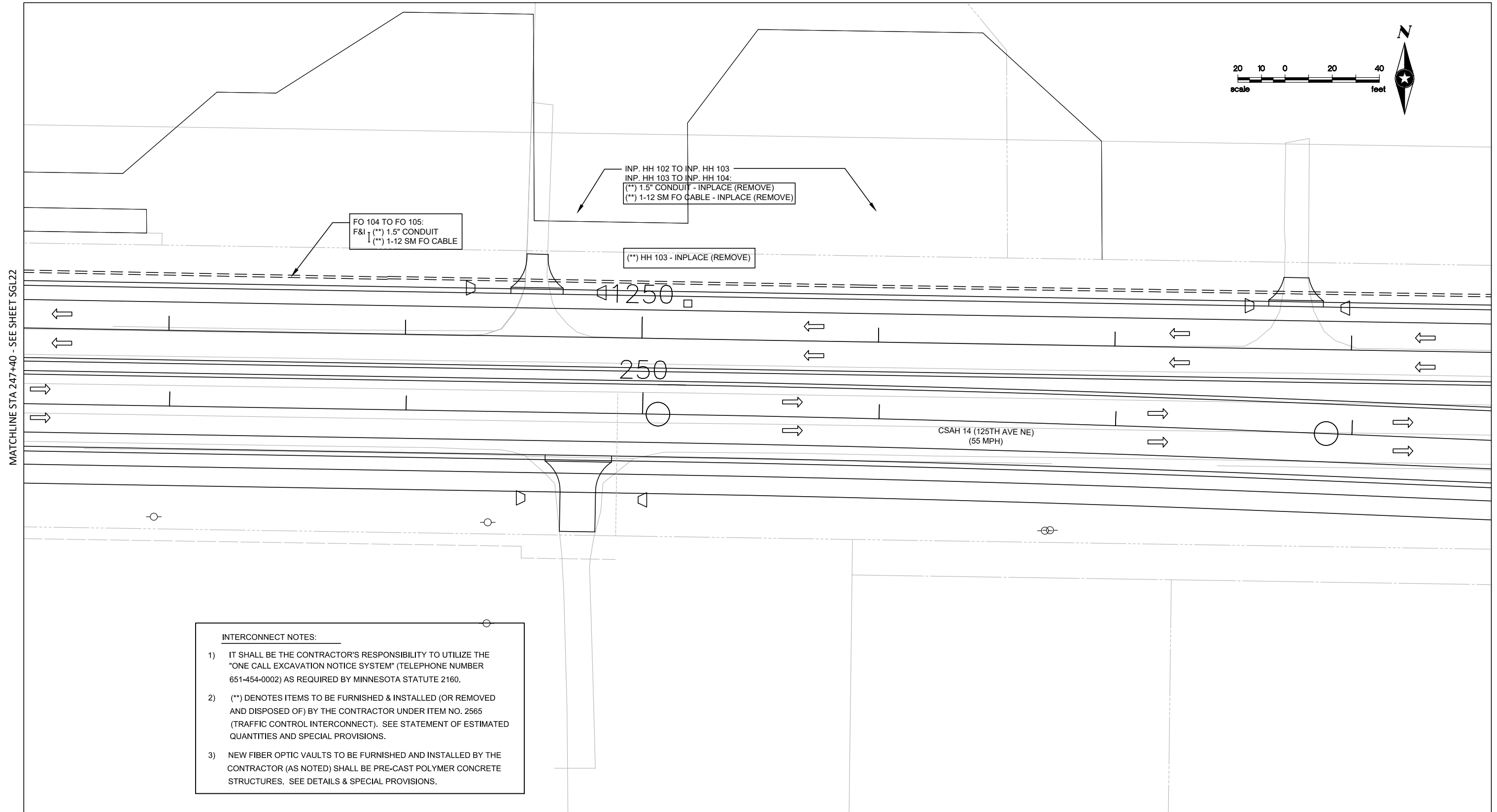
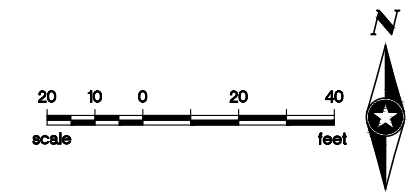
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**ANOKA COUNTY,  
 MINNESOTA  
 CITY OF BLAINE**

**TRAFFIC CONTROL INTERCONNECT  
 INTERSECTION LAYOUT  
 CSAH14 (NORTH LAKE BLVD TO  
 CSAH 17)**

FILE NO. ANOKC157553  
 SIGNAL SHEET SGL 22 OF SGL34  
**174**  
**303**



MATCHLINE STA 247+40 - SEE SHEET SGL22

MATCHLINE STA 253+59 - SEE SHEET SGL24

**INTERCONNECT NOTES:**

- 1) IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO UTILIZE THE "ONE CALL EXCAVATION NOTICE SYSTEM" (TELEPHONE NUMBER 651-454-0002) AS REQUIRED BY MINNESOTA STATUTE 2160.
- 2) (\*\*) DENOTES ITEMS TO BE FURNISHED & INSTALLED (OR REMOVED AND DISPOSED OF) BY THE CONTRACTOR UNDER ITEM NO. 2565 (TRAFFIC CONTROL INTERCONNECT). SEE STATEMENT OF ESTIMATED QUANTITIES AND SPECIAL PROVISIONS.
- 3) NEW FIBER OPTIC VAULTS TO BE FURNISHED AND INSTALLED BY THE CONTRACTOR (AS NOTED) SHALL BE PRE-CAST POLYMER CONCRETE STRUCTURES. SEE DETAILS & SPECIAL PROVISIONS.

S.A.P. 002-614-048  
S.A.P. 106-020-037

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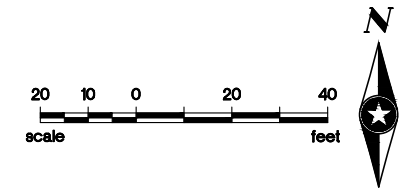
*John M. Gray*  
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Date: February 7, 2022 Lic. No. 22457



**ANOKA COUNTY,  
MINNESOTA  
CITY OF BLAINE**

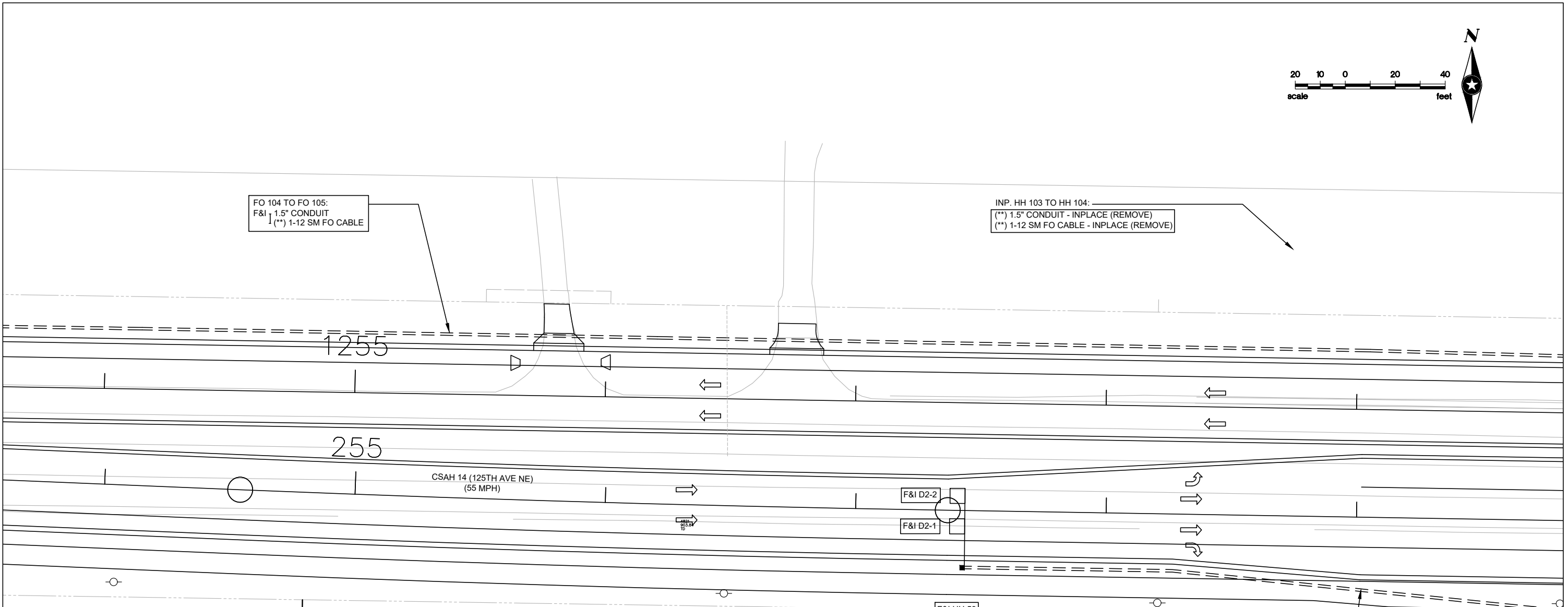
**TRAFFIC CONTROL INTERCONNECT  
INTERSECTION LAYOUT  
CSAH14 (NORTH LAKE BLVD TO  
CSAH 17)**

FILE NO. ANOKC157553	<b>175</b>
SIGNAL SHEET SGL 23 OF SGL34	<b>303</b>



MATCHLINE STA 253+59 - SEE SHEET SGL23

MATCHLINE STA 259+80 - SEE SHEET SGL25



FO 104 TO FO 105:  
F&I 1.5" CONDUIT  
(\*\*) 1-12 SM FO CABLE

INP. HH 103 TO HH 104:  
(\*\*) 1.5" CONDUIT - INPLACE (REMOVE)  
(\*\*) 1-12 SM FO CABLE - INPLACE (REMOVE)

**INTERCONNECT NOTES:**

- 1) IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO UTILIZE THE "ONE CALL EXCAVATION NOTICE SYSTEM" (TELEPHONE NUMBER 651-454-0002) AS REQUIRED BY MINNESOTA STATUTE 2160.
- 2) (\*\*) DENOTES ITEMS TO BE FURNISHED & INSTALLED (OR REMOVED AND DISPOSED OF) BY THE CONTRACTOR UNDER ITEM NO. 2565 (TRAFFIC CONTROL INTERCONNECT). SEE STATEMENT OF ESTIMATED QUANTITIES AND SPECIAL PROVISIONS.
- 3) HANDHOLE 59, CONDUIT BETWEEN HANDHOLES 58-59, AND LOOP DETECTORS D2-1 AND D2-2 WILL BE MEASURED AND PAID FOR SEPARATELY (AS PART OF FUTURE ZEST STREET SIGNAL PROVISIONS).
- 4) NEW FIBER OPTIC VAULTS TO BE FURNISHED AND INSTALLED BY THE CONTRACTOR (AS NOTED) SHALL BE PRE-CAST POLYMER CONCRETE STRUCTURES. SEE DETAILS & SPECIAL PROVISIONS.

HH 58 TO HH 59:  
F&I 2" CONDUIT  
1-1/C 12 (TRACER)  
1-PULL ROPE

S.A.P. 002-614-048  
S.A.P. 106-020-037

DRAWN BY: MRB  
DESIGNER: MRB  
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.

*John M. Gray*  
Name: John M. Gray, P.E.  
Date: February 7, 2022 Lic. No. 22457

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

**ANOKA COUNTY,  
MINNESOTA  
CITY OF BLAINE**

FUTURE SIGNAL SYSTEM / INTERCONNECT  
INTERSECTION LAYOUT  
CSAH14 (125TH AVENUE NE)  
AT ZEST STREET NE

FILE NO.  
ANOKC157553  
SIGNAL SHEET  
SGL 24 OF SGL34

**176**  
**303**



**FUTURE SIGNAL PROVISIONS (CSAH 14-ZEST STREET NE):**

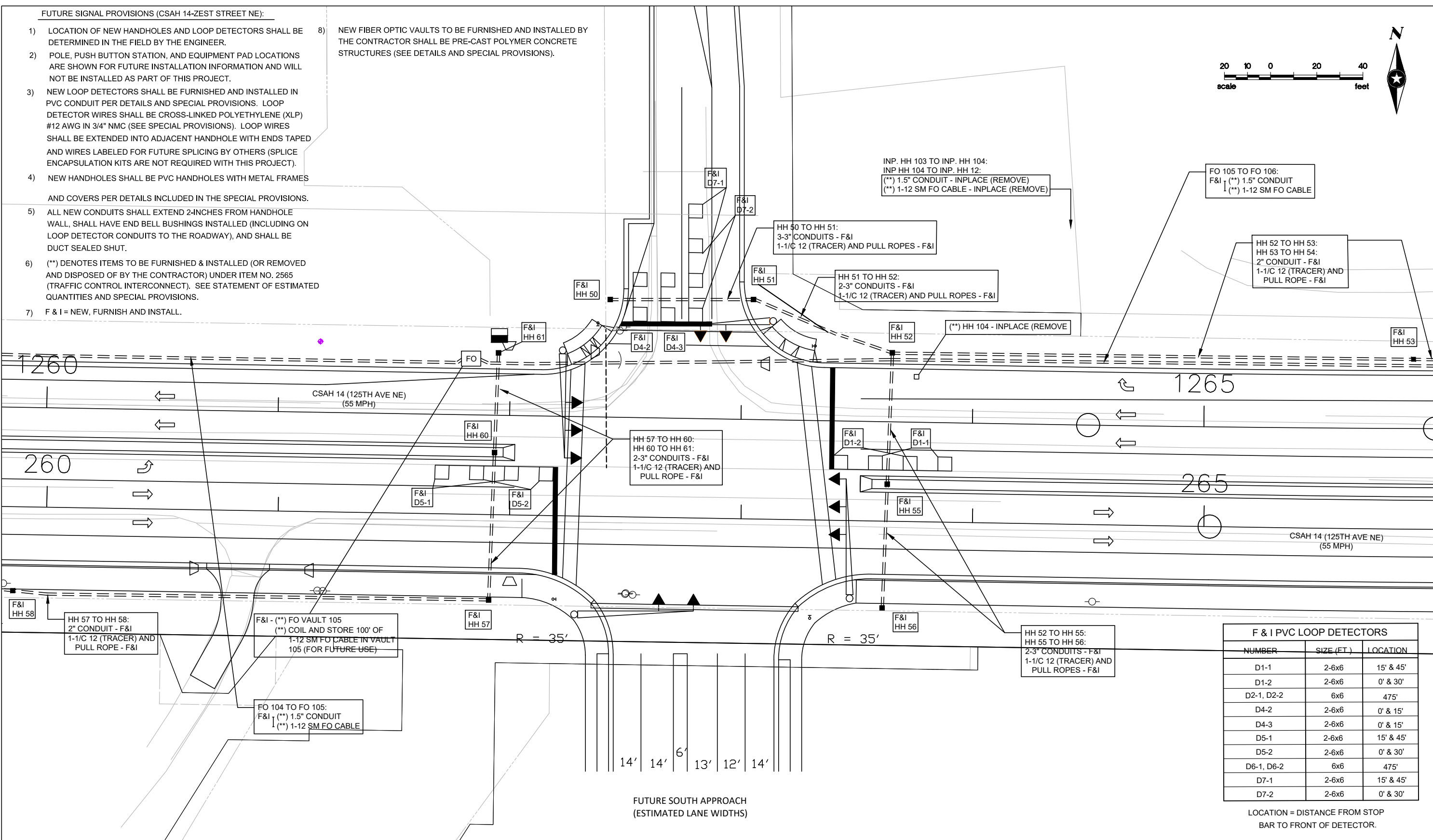
- 1) LOCATION OF NEW HANDHOLES AND LOOP DETECTORS SHALL BE DETERMINED IN THE FIELD BY THE ENGINEER.
- 2) POLE, PUSH BUTTON STATION, AND EQUIPMENT PAD LOCATIONS ARE SHOWN FOR FUTURE INSTALLATION INFORMATION AND WILL NOT BE INSTALLED AS PART OF THIS PROJECT.
- 3) NEW LOOP DETECTORS SHALL BE FURNISHED AND INSTALLED IN PVC CONDUIT PER DETAILS AND SPECIAL PROVISIONS. LOOP DETECTOR WIRES SHALL BE CROSS-LINKED POLYETHYLENE (XLP) #12 AWG IN 3/4" NMC (SEE SPECIAL PROVISIONS). LOOP WIRES SHALL BE EXTENDED INTO ADJACENT HANDHOLE WITH ENDS TAPED AND WIRES LABELED FOR FUTURE SPLICING BY OTHERS (SPlice ENCAPSULATION KITS ARE NOT REQUIRED WITH THIS PROJECT).
- 4) NEW HANDHOLES SHALL BE PVC HANDHOLES WITH METAL FRAMES AND COVERS PER DETAILS INCLUDED IN THE SPECIAL PROVISIONS.
- 5) ALL NEW CONDUITS SHALL EXTEND 2-INCHES FROM HANDHOLE WALL, SHALL HAVE END BELL BUSHINGS INSTALLED (INCLUDING ON LOOP DETECTOR CONDUITS TO THE ROADWAY), AND SHALL BE DUCT SEALED SHUT.
- 6) (\*\*) DENOTES ITEMS TO BE FURNISHED & INSTALLED (OR REMOVED AND DISPOSED OF BY THE CONTRACTOR) UNDER ITEM NO. 2565 (TRAFFIC CONTROL INTERCONNECT). SEE STATEMENT OF ESTIMATED QUANTITIES AND SPECIAL PROVISIONS.
- 7) F & I = NEW, FURNISH AND INSTALL.

8) NEW FIBER OPTIC VAULTS TO BE FURNISHED AND INSTALLED BY THE CONTRACTOR SHALL BE PRE-CAST POLYMER CONCRETE STRUCTURES (SEE DETAILS AND SPECIAL PROVISIONS).



MATCHLINE STA 259+80 - SEE SHEET SGL24

MATCHLINE STA 266 + 00 - SEE SHEET SGL26



F & I PVC LOOP DETECTORS		
NUMBER	SIZE (FT.)	LOCATION
D1-1	2-6x6	15' & 45'
D1-2	2-6x6	0' & 30'
D2-1, D2-2	6x6	475'
D4-2	2-6x6	0' & 15'
D4-3	2-6x6	0' & 15'
D5-1	2-6x6	15' & 45'
D5-2	2-6x6	0' & 30'
D6-1, D6-2	6x6	475'
D7-1	2-6x6	15' & 45'
D7-2	2-6x6	0' & 30'

LOCATION = DISTANCE FROM STOP BAR TO FRONT OF DETECTOR.

DRAWN BY: MRB  
 DESIGNER: MRB  
 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.  
  
 Name: John M. Gray, P.E.  
 Lic. No. 22457  
 Date: February 7, 2022

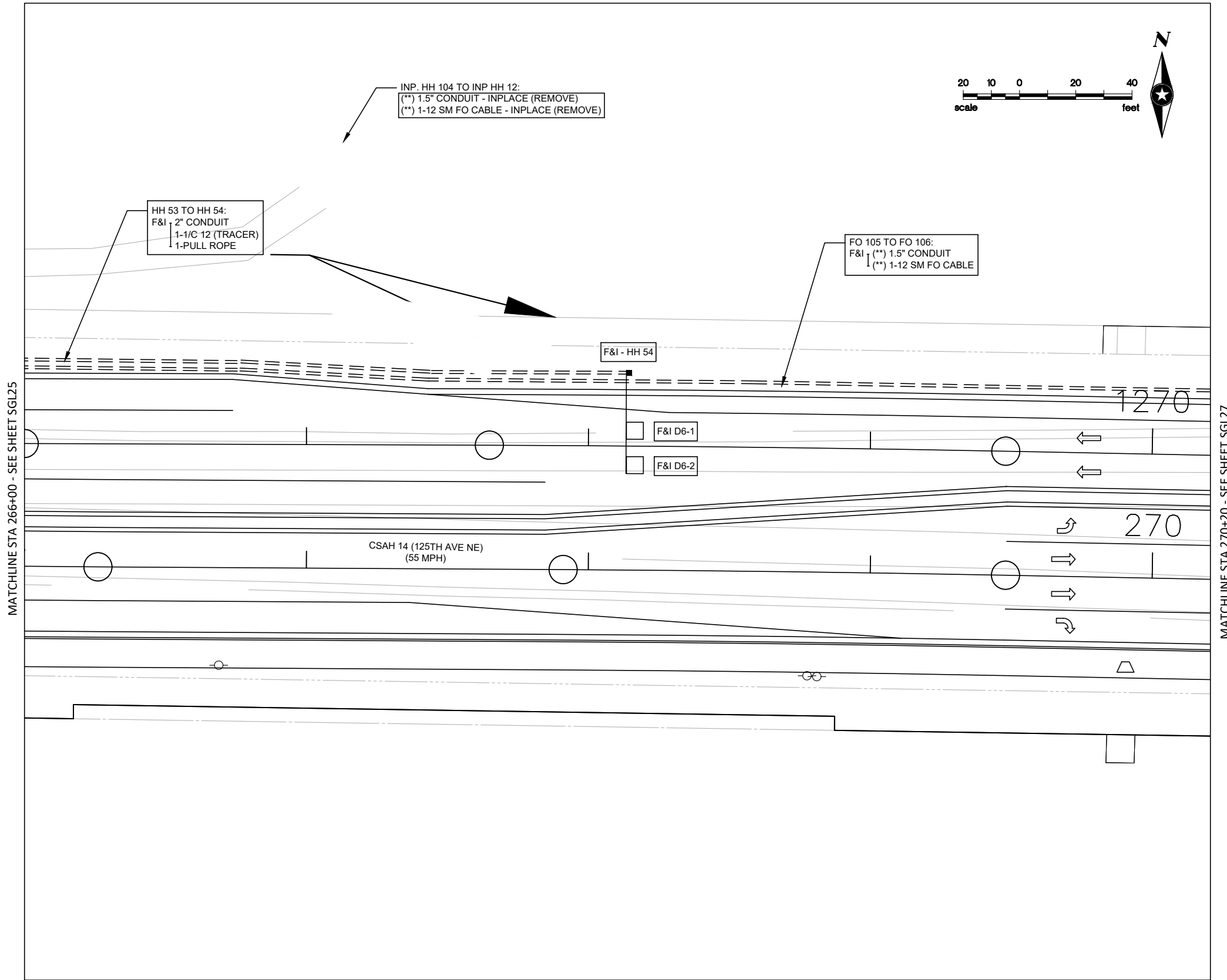
PHONE: (651) 490-2000  
 3535 VADNAIS CENTER DR.  
 ST. PAUL, MN 55110

**ANOKA COUNTY,  
 MINNESOTA  
 CITY OF BLAINE**

**FUTURE SIGNAL SYSTEM  
 INTERSECTION LAYOUT  
 CSAH14 (125TH AVENUE NE)  
 AT ZEST STREET NE**

FILE NO.  
 ANOKC157553  
 SIGNAL SHEET  
 SGL 25 OF SGL34  
**177**  
**303**

S.A.P. 002-614-048  
 S.A.P. 106-020-037



- INTERCONNECT NOTES:**
- 1) IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO UTILIZE THE "ONE CALL EXCAVATION NOTICE SYSTEM" (TELEPHONE NUMBER 651-454-0002) AS REQUIRED BY MINNESOTA STATUTE 2160.
  - 2) (\*\*) DENOTES ITEMS TO BE FURNISHED & INSTALLED (OR REMOVED AND DISPOSED OF) BY THE CONTRACTOR UNDER ITEM NO. 2565 (TRAFFIC CONTROL INTERCONNECT). SEE STATEMENT OF ESTIMATED QUANTITIES AND SPECIAL PROVISIONS.
  - 3) HANDHOLES 53 AND 54, CONDUIT BETWEEN HANDHOLES 52-54, AND LOOP DETECTORS D6-1 AND D6-2 WILL BE MEASURED AND PAID FOR SEPARATELY (AS PART OF FUTURE ZEST STREET SIGNAL PROVISIONS).
  - 4) NEW FIBER OPTIC VAULTS TO BE FURNISHED AND INSTALLED BY THE CONTRACTOR (AS NOTED) SHALL BE PRE-CAST POLYMER CONCRETE STRUCTURES. SEE DETAILS & SPECIAL PROVISIONS.

S.A.P. 002-614-048  
S.A.P. 106-020-037

DRAWN BY: MRB  
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CHECKED BY: JMG

NO.	BY	DATE	REVISIONS

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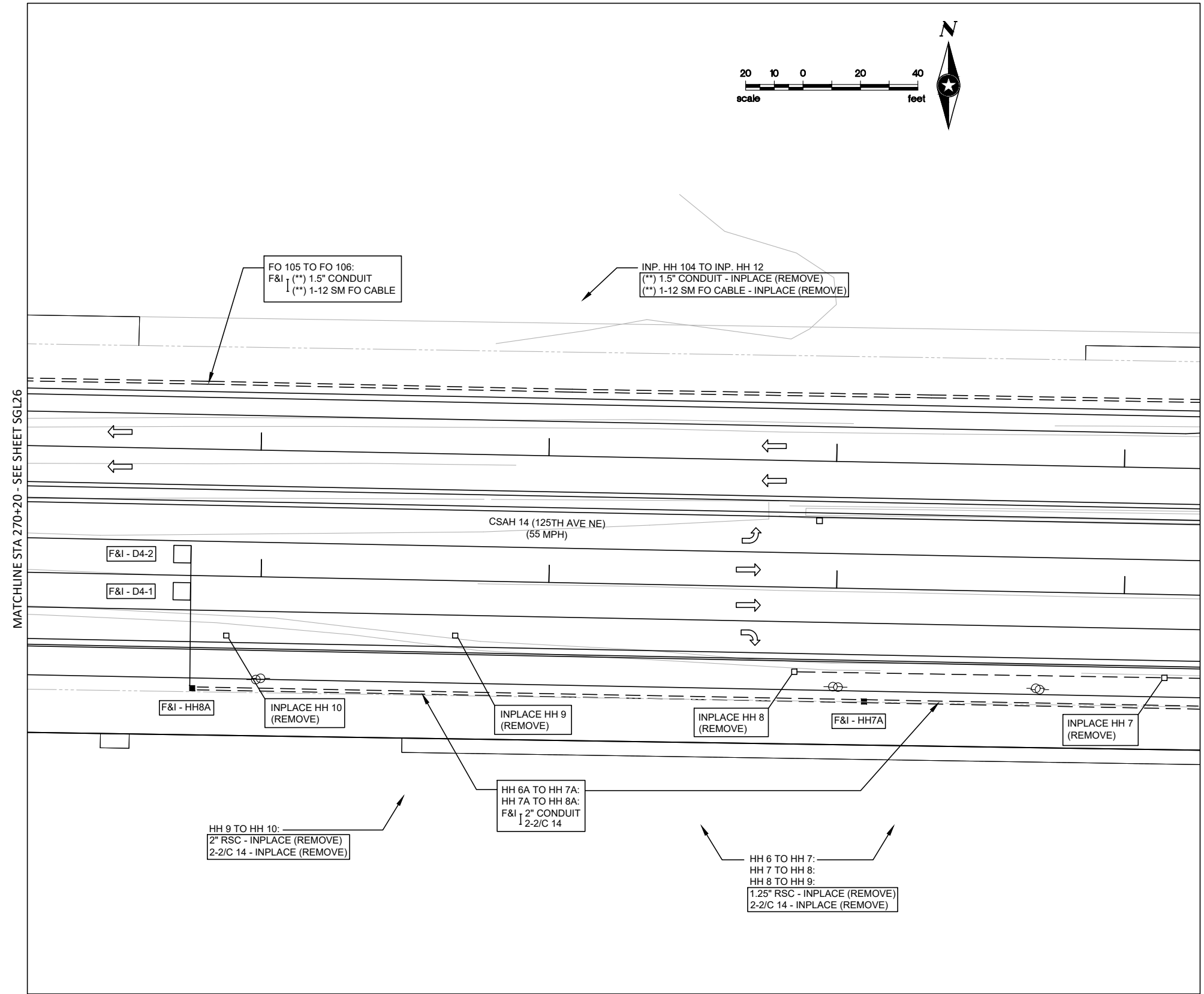
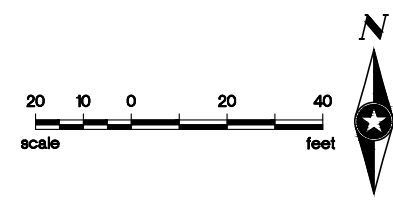
**ANOKA COUNTY,  
MINNESOTA  
CITY OF BLAINE**

FUTURE SIGNAL PROVISIONS / INTERCONNECT  
INTERSECTION LAYOUT  
CSAH14 (125TH AVENUE NE)  
AT ZEST STREET NE

FILE NO.  
ANOKC157553  
SIGNAL SHEET  
SGL 26 OF SGL34

**178**  
**303**

- INTERCONNECT NOTES:
- 1) IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO UTILIZE THE "ONE CALL EXCAVATION NOTICE SYSTEM" (TELEPHONE NUMBER 651-454-0002) AS REQUIRED BY MINNESOTA STATUTE 2160.
  - 2) (\*\*) DENOTES ITEMS TO BE FURNISHED & INSTALLED (OR REMOVED AND DISPOSED OF) BY THE CONTRACTOR UNDER ITEM NO. 2565 (TRAFFIC CONTROL INTERCONNECT). SEE STATEMENT OF ESTIMATED QUANTITIES AND SPECIAL PROVISIONS.
  - 3) ALL ITEMS OF REVISE SIGNAL SYSTEM "C" ARE INPLACE AND SHALL BE REUSED, PROTECTED AND MAINTAINED INPLACE, EXCEPT WHERE BOXED IN AND DENOTED OTHERWISE.
  - 4) NEW FIBER OPTIC VAULTS TO BE FURNISHED AND INSTALLED BY THE CONTRACTOR (AS NOTED) SHALL BE PRE-CAST POLYMER CONCRETE STRUCTURES. SEE DETAILS & SPECIAL PROVISIONS.



MATCHLINE STA 270+20 - SEE SHEET SGL26

MATCHLINE STA 274+25 - SEE SHEET SGL28

S.A.P. 002-614-048  
S.A.P. 106-020-037

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

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Date: February 7, 2022 Lic. No. 22457

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

**ANOKA COUNTY,  
MINNESOTA  
CITY OF BLAINE**

REVISE SIGNAL SYSTEM "C" / INTERCONNECT  
INTERSECTION LAYOUT  
CSAH14 (125TH AVENUE NE) AT  
CSAH 17 (LEXINGTON AVE)

FILE NO. ANOKC157553	179
SIGNAL SHEET SGL 27 OF SGL34	303

PVC LOOP DETECTORS				
NUMBER	SIZE (FT.)	LOCATION	FUNCTION	STATUS
D1-1	2-6x6	10' & 40'	1	INPLACE
D1-2	2-6x6	-5' & 25'	1	INPLACE
D2-1	6x6	475'	1	INPLACE
D2-2	6x6	475'	1	INPLACE
D2-3	6x6	475'	1	INPLACE
D3-1	2-6x6	10' & 40'	1	INPLACE
D3-2	2-6x6	-5' & 25'	1	INPLACE
D4-1	6x6	475'	3.8	F & I
D4-2	6x6	475'	3.8	F & I
D4-3	2-6x6	0' & 15'	7	F & I
D4-4	2-6x6	0' & 15'	1	F & I
D4-5	2-6x6	0' & 15'	1	F & I
D5-1	2-6x6	10' & 40'	1	INPLACE
D5-2	2-6x6	10' & 40'	1	INPLACE
D5-3	2-6x6	-5' & 25'	1	INPLACE
D5-4	2-6x6	-5' & 25'	1	INPLACE
D6-1	6x6	475'	1	INPLACE
D6-2	6x6	475'	1	INPLACE
D6-3	6x6	475'	1	INPLACE
D7-1	2-6x6	15' & 45'	1	F & I
D7-2	2-6x6	0' & 30'	1	F & I
D8-1	6x6	475'	3.8	INPLACE
D8-2	2-6x6	5' & 20'	7	INPLACE
D8-3	2-6x6	5' & 20'	1	INPLACE
D8-4	2-6x6	5' & 20'	1	INPLACE

**LOOP DETECTORS FUNCTIONS:**

- CALL AND EXTEND
- EXTEND ONLY
- DELAYED CALL, IMMEDIATE EXTEND
- CARRY OVER (STRETCH)

SW QUADRANT:  
REMOVE & REPLACE 1-CONCRETE SIDEWALK PANEL (APPROX. SIZE 5' x 5') FOR PUSH BUTTON STATION AND CONDUIT INSTALLATIONS (6" CONCRETE WALK)

F & I - APS PUSH BUTTON STATION (SEE DETAILS)  
1-APS PB & SIGN (RT ARROW) (PB6-2)  
EXTEND INTO HH 6A:  
1" CONDUIT  
1-1/8" 6 INS. GR.  
INPLACE 1-2/c 14 (UNCOIL IN HH 6A AND (S & I) EXTEND TO NEW PB STATION)

HH 6 TO HH 7:  
1.25" RSC-INPLACE (REMOVE)  
2-2/c 14-INPLACE (REMOVE)  
HH 6A TO HH 7A  
2" CONDUIT - F & I  
2-2/c 14 - F & I

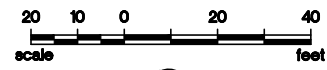
HH 6 TO HH 11:  
3" RSC-INPLACE (REMOVE)  
3-2/c 14-INPLACE (REMOVE)  
HH 6A TO HH 9A  
3" CONDUIT - F & I  
3-2/c 14 - F & I

HH 5 TO HH 6:  
2" RSC-INPLACE (CUT AND EXTEND INTO NEW HH 6A)  
7-2/c 14-INPLACE (REMOVE)  
1-2/c 14-INPLACE (S & I)  
7-2/c 14 - F & I

HH 4 TO HH 5:  
4" NMC  
3-12/c 14  
1-3/c 14  
1-3/c 20  
3-2/c 14  
1-3/c 14 (LUM)  
1-1/c 6 (GRD)

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

MATCH LINE STA 274+25 - SEE SHEET SGL27



(A) INSTALL VIDEO PROCESSOR, MONITOR, AND ALL REQUIRED VIDEO EQUIPMENT (FURNISHED BY COUNTY)

INPLACE (MAINTAIN) EQUIPMENT PAD FOUNDATION CONTROLLER AND CABINET  
BATTERY BACK-UP SIGNAL SERVICE CABINET BETWEEN CONTROLLER CABINET AND SERVICE CABINET:

- CONTROLLER CABINET TO HH 23:  
4" RSC  
3-12/c 14  
1-3/c 14  
1-3/c 20  
8-2/c 14
- CONTROLLER CABINET TO HH 1:  
4" RSC  
3-12/c 14  
1-3/c 14  
1-3/c 20  
5-2/c 14
- CONTROLLER CABINET TO HH 1:  
2" RSC  
1-6/c FIBER OPTIC CABLE
- 3" RSC STUBBED OUT FROM CONTROLLER CABINET TO NORTH (BOTH ENDS THREADED AND CAPPED-FOR FUTURE USE)
- F & I - (\*\*) 3" RSC STUB OUT FROM CABINET-INPLACE (EXTEND INTO FO VAULT 108)  
F & I - (\*\*) 1-12 SM FO CABLE

7-2/c 14-INPLACE (REMOVE)  
7-2/c 14 - F & I

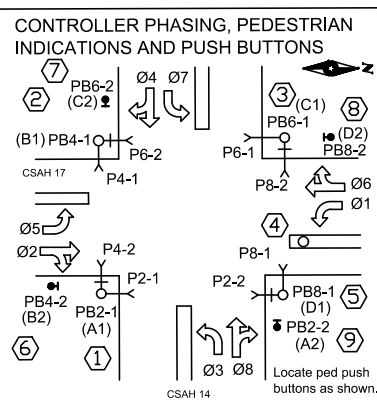
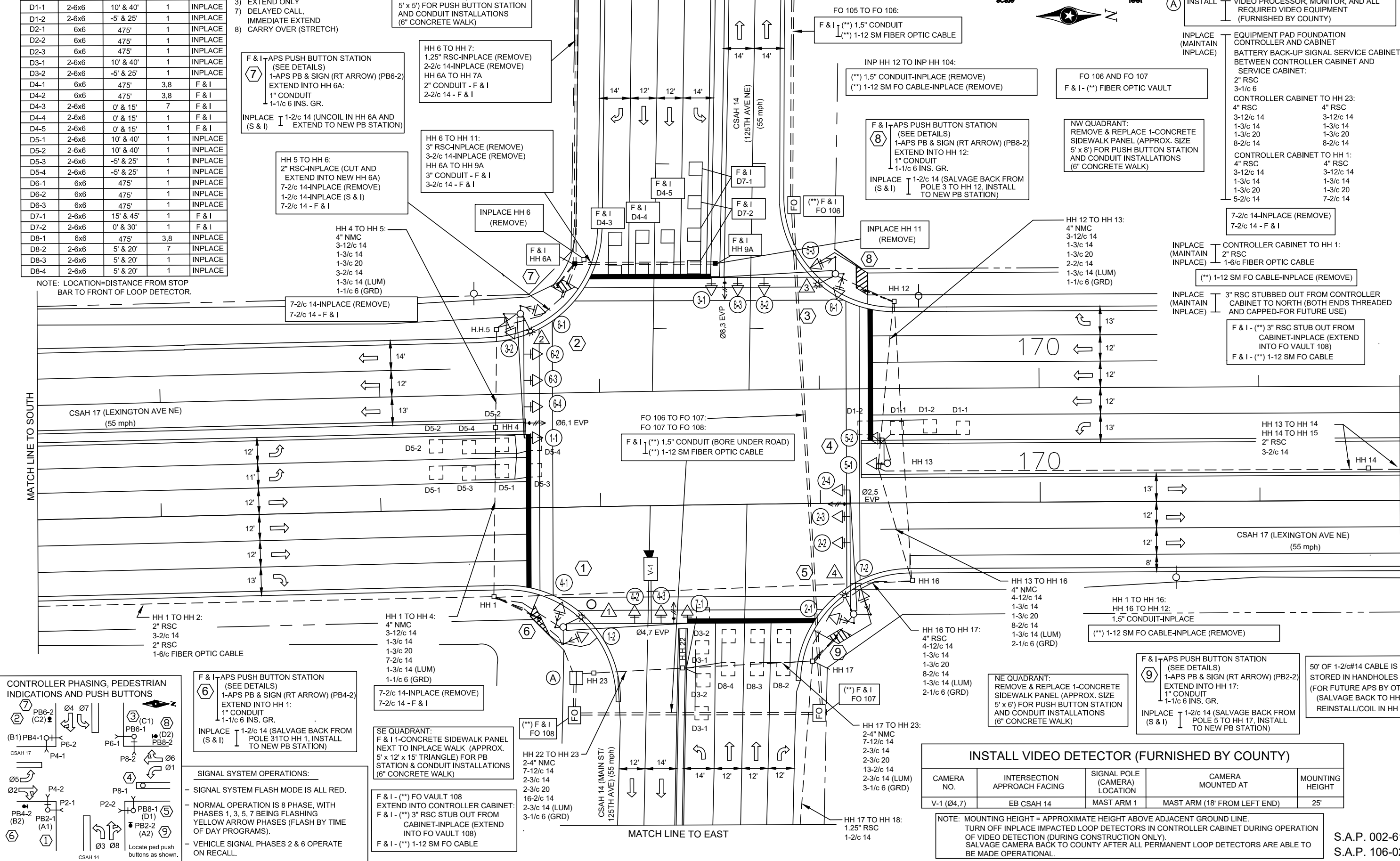
INPLACE (MAINTAIN) CONTROLLER CABINET TO HH 1:  
2" RSC  
1-6/c FIBER OPTIC CABLE

INPLACE (MAINTAIN) 3" RSC STUBBED OUT FROM CONTROLLER CABINET TO NORTH (BOTH ENDS THREADED AND CAPPED-FOR FUTURE USE)

F & I - (\*\*) 3" RSC STUB OUT FROM CABINET-INPLACE (EXTEND INTO FO VAULT 108)  
F & I - (\*\*) 1-12 SM FO CABLE

MATCH LINE TO SOUTH

MATCH LINE TO NORTH



F & I - APS PUSH BUTTON STATION (SEE DETAILS)  
1-APS PB & SIGN (RT ARROW) (PB4-2)  
EXTEND INTO HH 1:  
1" CONDUIT  
1-1/8" 6 INS. GR.  
INPLACE 1-2/c 14 (SALVAGE BACK FROM POLE 31 TO HH 1, INSTALL TO NEW PB STATION)

**SIGNAL SYSTEM OPERATIONS:**

- SIGNAL SYSTEM FLASH MODE IS ALL RED.
- NORMAL OPERATION IS 8 PHASE, WITH PHASES 1, 3, 5, 7 BEING FLASHING YELLOW ARROW PHASES (FLASH BY TIME OF DAY PROGRAMS).
- VEHICLE SIGNAL PHASES 2 & 6 OPERATE ON RECALL.

7-2/c 14-INPLACE (REMOVE)  
7-2/c 14 - F & I

SE QUADRANT:  
F & I 1-CONCRETE SIDEWALK PANEL NEXT TO INPLACE WALK (APPROX. 5' x 12' x 15' TRIANGLE) FOR PB STATION & CONDUIT INSTALLATIONS (6" CONCRETE WALK)

F & I - (\*\*) FO VAULT 108  
EXTEND INTO CONTROLLER CABINET:  
F & I - (\*\*) 3" RSC STUB OUT FROM CABINET-INPLACE (EXTEND INTO FO VAULT 108)  
F & I - (\*\*) 1-12 SM FO CABLE

**INSTALL VIDEO DETECTOR (FURNISHED BY COUNTY)**

CAMERA NO.	INTERSECTION APPROACH FACING	SIGNAL POLE (CAMERA) LOCATION	CAMERA MOUNTED AT	MOUNTING HEIGHT
V-1 (Ø4.7)	EB CSAH 14	MAST ARM 1	MAST ARM (18' FROM LEFT END)	25'

NOTE: MOUNTING HEIGHT = APPROXIMATE HEIGHT ABOVE ADJACENT GROUND LINE.  
TURN OFF INPLACE IMPACTED LOOP DETECTORS IN CONTROLLER CABINET DURING OPERATION OF VIDEO DETECTION (DURING CONSTRUCTION ONLY).  
SALVAGE CAMERA BACK TO COUNTY AFTER ALL PERMANENT LOOP DETECTORS ARE ABLE TO BE MADE OPERATIONAL.

S.A.P. 002-614-048  
S.A.P. 106-020-037

DRAWN BY: MRB  
DESIGNER: MRB  
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.  
Name: John M. Gray, P.E.  
Date: February 7, 2022  
Lic. No. 22457



**ANOKA COUNTY, MINNESOTA CITY OF BLAINE**

REVISE SIGNAL SYSTEM "C" / INTERCONNECT INTERSECTION LAYOUT  
CSAH14 (125TH AVENUE NE) AT  
CSAH 17 (LEXINGTON AVE)

FILE NO. ANOKC157553  
SIGNAL SHEET SGL 28 OF SGL 34  
**180**  
**303**

**SYSTEM "C" NOTES:**

- ALL ITEMS OF THIS SIGNAL SYSTEM ARE INPLACE AND SHALL BE REUSED AND MAINTAINED INPLACE, UNLESS OTHERWISE NOTED ON PLANS.
- LOCATION OF NEW FO VAULTS, HANDHOLES, PUSH BUTTON STATIONS, AND LOOP DETECTORS SHALL BE DETERMINED IN THE FIELD BY ENGINEER.
- AS PART OF THE "REVISE SIGNAL SYSTEM C" PAY ITEM, THE CONTRACTOR SHALL COMPLETE THE FOLLOWING WORK:
  - REMOVE AND DISPOSE OF INPLACE HANDHOLES 6, 7, 8, 9, 10, AND 11; FURNISH AND INSTALL NEW HANDHOLES 6A, 7A, 8A, AND 9A (PVC HANDHOLES WITH METAL FRAMES AND COVERS - SEE DETAILS & SPECIAL PROVISIONS FOR FURTHER INFORMATION).
  - REMOVE AND DISPOSE OF INPLACE CONDUITS BETWEEN HH 6-10 AND BETWEEN HH 6-11; FURNISH AND INSTALL NEW CONDUITS AS SHOWN BETWEEN HH 6A-8A AND BETWEEN HH 6A-9A; AND CUT AND EXTEND INPLACE 2" RSC BACK FROM HH 6 AND INSTALL INTO NEW HH 6A.
  - REMOVE AND DISPOSE OF INPLACE 2/C 14 CABLES AS SHOWN, AND FURNISH AND INSTALL NEW 2/C 14 CABLES TO NEW LOOP DETECTORS.
  - FURNISH AND INSTALL NEW LOOP DETECTORS D4-1, D4-2, D4-3, D4-4, D4-5, D7-1, AND D7-2 IN PVC PER DETAILS INCLUDED ELSEWHERE IN THESE PLANS, AND SPLICE NEW ROADWAY WIRES TO NEW LEAD-IN CABLES IN ADJACENT HANDHOLES (USING NEW LOOP DETECTOR SPLICE ENCAPSULATION KITS). NEW LOOP DETECTOR WIRES SHALL BE CROSS-LINKED POLYETHYLENE (XLP) #12 AWG IN 3/4" NMC (SEE SPECIAL PROVISIONS).
  - INSTALL, AIM, AND MAKE OPERATIONAL THE COUNTY FURNISHED VIDEO DETECTOR CAMERA AND MAST ARM EXTENSION ON MAST ARM 1 (FOR EASTBOUND VEHICULAR DETECTION DURING CONSTRUCTION AND WHEN PERMANENT EASTBOUND LOOP DETECTORS ARE NOT ABLE TO BE USED WITH THE EXISTING SIGNAL SYSTEM). CONTRACTOR SHALL FURNISH & INSTALL 3/C 14 CABLE FROM POLE BASE 1 TO THE MAST ARM MOUNTED VIDEO CAMERA (SPLICE TO INPLACE CABLE 7 IN POLE BASE 1) IN ACCORDANCE WITH VIDEO SYSTEM MANUFACTURERS SPECIFICATIONS. CONTRACTOR IS RESPONSIBLE FOR REAIMING VIDEO CAMERA AS NEEDED DURING CONSTRUCTION. AFTER PERMANENT LOOP DETECTORS ARE MADE OPERATIONAL, CONTRACTOR SHALL SALVAGE CAMERA AND MAST ARM EXTENSION TO COUNTY, SHALL REMOVE VIDEO CABLE, AND SHALL MAKE ALL PERMANENT LOOP DETECTORS OPERATIONAL.
  - BAG (COVER) & MAKE INOPERATIONAL ANY VEHICLE SIGNAL HEADS THAT CONFLICT WITH TRAFFIC PATTERNS DURING ALL STAGED ROAD CONSTRUCTION. AFTER IMPACTED APPROACH IS RETURNED TO NORMAL TRAFFIC PATTERNS, UNBAG AND MAKE THESE IMPACTED VEHICLE SIGNAL HEADS OPERATIONAL.
  - FURNISH AND INSTALL APS PUSH BUTTON STATIONS, APS PUSH BUTTONS, APS MAST ARM POLE ADAPTORS, AND 1-INCH CONDUIT TO PUSH BUTTON STATIONS; REMOVE AND REPLACE CONCRETE SIDEWALK TO ACCOMMODATE NEW PUSH BUTTON STATIONS; SALVAGE AND REINSTALL 2/C 14 CABLES TO NEW PUSH BUTTON STATIONS; SALVAGE EXISTING PEDESTRIAN PUSH BUTTONS AND SIGNS FROM EACH MAST ARM POLE; CAP HOLES ON MAST ARM POLES WHERE PUSH BUTTONS USED TO BE; AND COMPLETE ALL OTHER WORK NEEDED TO MAKE APS PUSH BUTTONS OPERATIONAL.
- ANY DAMAGE TO INPLACE TRAFFIC SIGNAL FACILITIES (CONDUIT, CABLES, HANDHOLES, SIGNAL POLES, ETC.), EITHER DUE TO TRAFFIC SIGNAL REVISION WORK OR ROAD CONSTRUCTION WORK, SHALL BE REPAIRED BY THE CONTRACTOR TO THE SATISFACTION OF THE ENGINEER, AT NO EXPENSE TO THE COUNTY.
- CONTRACTOR SHALL MAINTAIN OPERATION OF THE SIGNAL SYSTEM AT ALL TIMES, EXCEPT AS OTHERWISE APPROVED BY ENGINEER.
- F & I = NEW, FURNISH AND INSTALL.
- ALL CONDUIT, CABLES AND CONDUCTORS, HANDHOLES, AND LOOP DETECTORS ARE INPLACE AND SHALL BE REUSED AND MAINTAINED INPLACE, EXCEPT WHERE BOXED IN AND DENOTED OTHERWISE.
- (\*\*) DENOTES ITEMS TO BE FURNISHED AND INSTALLED (OR REMOVED AND DISPOSED OF BY THE CONTRACTOR UNDER ITEM NO. 2565 (TRAFFIC CONTROL INTERCONNECT). SEE STATEMENT OF ESTIMATED QUANTITIES AND SPECIAL PROVISIONS.
- SEE DETAILS AND SPECIAL PROVISIONS REGARDING FIBER OPTIC VAULTS TO BE FURNISHED AND INSTALLED BY CONTRACTOR.

**1** INPLACE (MAINTAIN INPLACE) PA100 POLE FOUNDATION  
 TYPE PA100-A-55-D40-9 (DAVIT AT 350 DEG)  
 LUMINAIRE-COBRAHEAD LED  
 3-ONE WAY SIGNALS-OVERHEAD (0, 11' AND 23' FROM END OF MAST ARM)  
 2-TYPE 10B-POLE MOUNTED 90/180 DEG  
 2-R6-1 SIGN PANELS-POLE MOUNTED 0/180 DEG  
 R10-X12 SIGN-ADJACENT TO 7-1  
 TYPE D SIGN PANEL-OVERHEAD AT 30'  
 ONE WAY EVP DETECTOR AND LIGHT AT 6' (Ø4.7)  
 EXTENDED INTO HH 1:  
 3" RSC  
 3-12/c 14  
 1-3/c 14  
 1-3/c 20  
 1-2/c 14  
 1-3/c 14 (LUM)  
 1-1/c 6 (GRD)

INSTALL (FURNISHED BY COUNTY) VIDEO DETECTOR CAMERA AND MAST ARM EXTENSION AT APPROX. 18' FROM END OF MAST ARM (V-1)  
 F & I 1-3/c 14 (SPLICE TO INPLACE CABLE 7 AND EXTEND FROM POLE BASE TO VIDEO DETECTOR CAMERA)  
 3/4" MAST ARM HUB AT 18' (FOR VIDEO CAMERA)

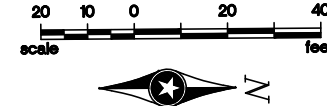
INPLACE (SALVAGE) 2-PEDESTRIAN PUSH BUTTONS - POLE MOUNTED 0/270 DEG  
 INPLACE (S & I) 1-2/c 14 (CABLE 11) - SALVAGE BACK TO HH 1 AND EXTEND TO NEW PUSH BUTTON STATION (FOR PB4-2)  
 INPLACE (REMOVE) 2-PEDESTRIAN INSTRUCTION "STICKER" SIGNS  
 F & I 1-APS PUSH BUTTON, SIGN (LT ARROW), AND APS MAST ARM POLE ADAPTOR AT 270 DEG (PB2-1)  
 PLUG HOLES ON MAST ARM POLE WHERE PUSH BUTTONS USED TO BE (AT 0/270 DEG)

**2** INPLACE (MAINTAIN INPLACE) PA100 POLE FOUNDATION  
 TYPE PA100-A-55-D40-9 (DAVIT AT 350 DEG)  
 LUMINAIRE-COBRAHEAD LED  
 4-ONE WAY SIGNALS-OVERHEAD (0', 14, 26, AND 38' FROM END OF MAST ARM)  
 3-WELDED MID MAST ARM MOUNTS (LOCATED AT 14', 26' AND 38' FROM END OF MAST ARM)  
 OPEN MID-MOUNTS CAPPED AT 17', 29', AND 41' FROM END OF MAST ARM  
 2-TYPE 10B-POLE MOUNTED 90/180 DEG  
 2-R6-1 SIGN PANELS-POLE MOUNTED 0/180 DEG  
 R10-X12 SIGN-ADJACENT TO 1-1  
 TYPE D SIGN PANEL-OVERHEAD AT 45'  
 ONE WAY EVP DETECTOR AND LIGHT AT 6' (Ø6.1)  
 EXTENDED INTO HH 5:  
 3" RSC  
 3-12/c 14  
 1-3/c 14  
 1-3/c 20  
 2-2/c 14  
 1-3/c 14 (LUM)  
 1-1/c 6 (GRD)

INPLACE (SALVAGE) 2-PEDESTRIAN PUSH BUTTONS - POLE MOUNTED AT 180/270 DEG  
 INPLACE (REMOVE) 2-PEDESTRIAN INSTRUCTION "STICKER" SIGNS  
 F & I 1-APS PUSH BUTTON, SIGN (LT ARROW), AND APS MAST ARM POLE ADAPTOR AT 270 DEG (PB4-1)  
 PLUG HOLES ON MAST ARM POLE WHERE PUSH BUTTONS USED TO BE (AT 180/270 DEG)

**3** INPLACE (MAINTAIN INPLACE) PA100 POLE FOUNDATION  
 TYPE PA100-A-55-D40-9 (DAVIT AT 350 DEG)  
 LUMINAIRE-COBRAHEAD LED  
 3-ONE WAY SIGNALS-OVERHEAD (0', 11' AND 23' FROM END OF MAST ARM)  
 2-TYPE 10B-POLE MOUNTED 90/180 DEG  
 2-R6-1 SIGN PANELS-POLE MOUNTED 0/180 DEG  
 R10-X12 SIGN-ADJACENT TO 3-1  
 TYPE D SIGN PANEL-OVERHEAD AT 30'  
 ONE WAY EVP DETECTOR AND LIGHT AT 6' (Ø8.3)  
 EXTENDED INTO HH 12:  
 3" RSC  
 3-12/c 14  
 1-3/c 14  
 1-3/c 20  
 1-2/c 14  
 1-3/c 14 (LUM)  
 1-1/c 6 (GRD)

INPLACE (SALVAGE) 2-PEDESTRIAN PUSH BUTTONS - POLE MOUNTED AT 180/270 DEG  
 INPLACE (S & I) 1-2/c 14 (CABLE 62) - SALVAGE BACK TO HH 12 AND EXTEND TO NEW PUSH BUTTON STATION (FOR PB8-2)  
 INPLACE (REMOVE) 2-PEDESTRIAN INSTRUCTION "STICKER" SIGNS  
 F & I 1-APS PUSH BUTTON, SIGN (LT ARROW), AND APS MAST ARM POLE ADAPTOR AT 270 DEG (PB6-1)  
 PLUG HOLES ON MAST ARM POLE WHERE PUSH BUTTONS USED TO BE (AT 180/270 DEG)



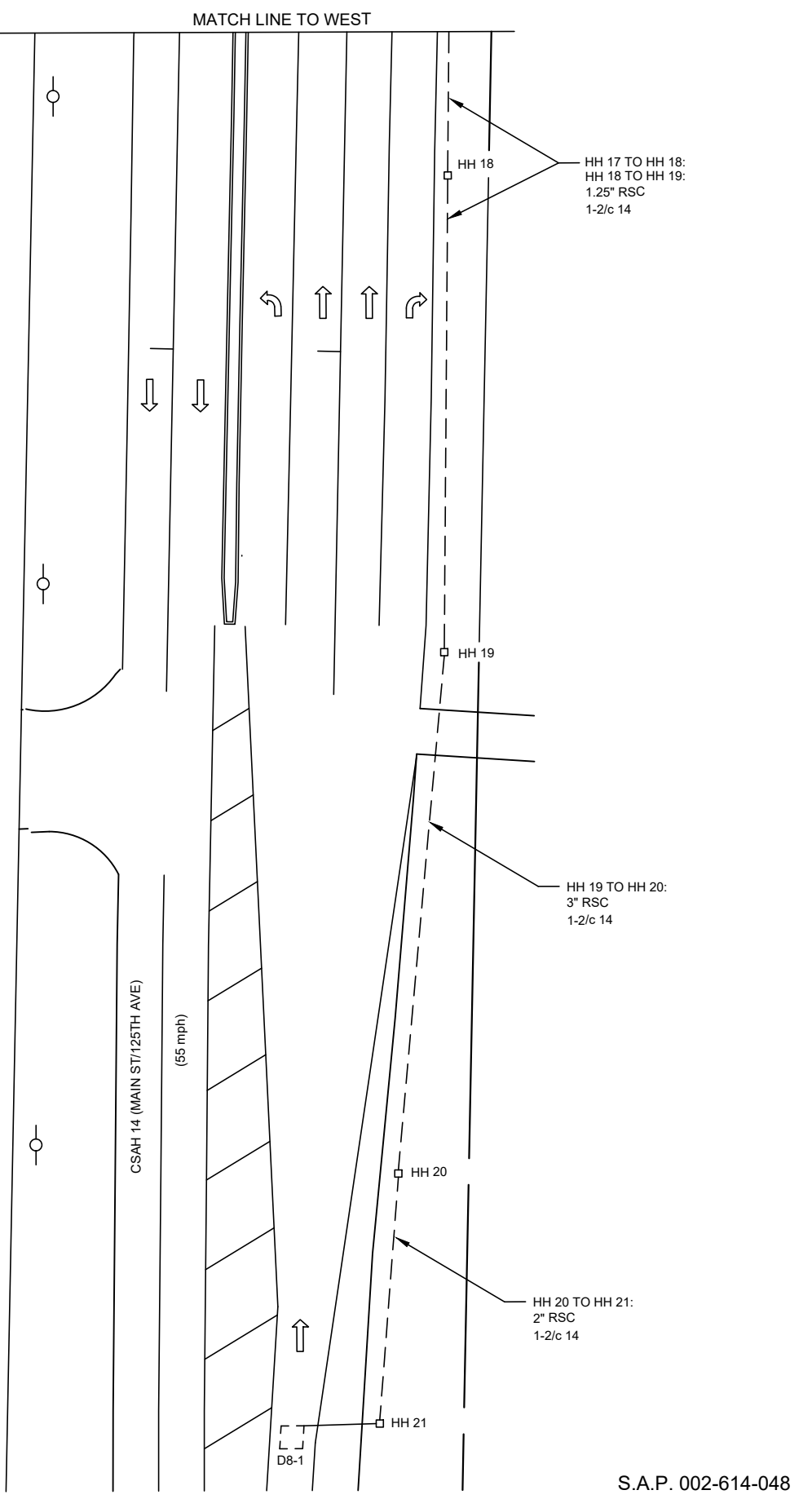
**4** INPLACE (MAINTAIN INPLACE) PA85 POLE FOUNDATION  
 TYPE PA85-A-10  
 1-ONE WAY SIGNAL-OVERHEAD AT 0'  
 1-ONE WAY SIGNAL-POLE MOUNTED 270 DEG  
 R10-X12 SIGN-ADJACENT TO 5-2  
 EXTENDED INTO HH 13:  
 3" RSC  
 1-12/c 14  
 1-2/c 14  
 1-1/c 6 (GRD)

**5** INPLACE (MAINTAIN INPLACE) PA100 POLE FOUNDATION  
 TYPE PA100-A-55-D40-9 (DAVIT AT 350 DEG)  
 LUMINAIRE-COBRAHEAD LED  
 3-ONE WAY SIGNALS-OVERHEAD (0', 11, AND 23' FROM END OF MAST ARM)  
 2-WELDED MID MAST ARM MOUNTS (LOCATED AT 11' AND 23' FROM END OF MAST ARM)  
 OPEN MID-MOUNTS CAPPED AT 17', 29', AND 41' FROM END OF MAST ARM  
 2-TYPE 10B-POLE MOUNTED 90/180 DEG  
 2-R6-1 SIGN PANELS-POLE MOUNTED 0/180 DEG  
 TYPE D SIGN PANEL-OVERHEAD AT 45'  
 ONE WAY EVP DETECTOR AND LIGHT AT 6' (Ø2.5)  
 EXTENDED INTO HH 17:  
 3" RSC  
 3-12/c 14  
 1-3/c 14  
 1-3/c 20  
 1-2/c 14  
 1-3/c 14 (LUM)  
 1-1/c 6 (GRD)

INPLACE (SALVAGE) 2-PEDESTRIAN PUSH BUTTONS - POLE MOUNTED 0/270 DEG  
 INPLACE (S & I) 1-2/c 14 (CABLE 44) - SALVAGE BACK TO HH 17 AND EXTEND TO NEW PUSH BUTTON STATION (FOR PB2-2)  
 INPLACE (REMOVE) 2-PEDESTRIAN INSTRUCTION "STICKER" SIGNS  
 F & I 1-APS PUSH BUTTON, SIGN (LT ARROW), AND APS MAST ARM POLE ADAPTOR AT 270 DEG (PB8-1)  
 PLUG HOLES ON MAST ARM POLE WHERE PUSH BUTTONS USED TO BE (AT 0/270 DEG)

FYA = FLASHING YELLOW ARROW

SIGNAL HEAD #	ALL 12" INDICATIONS			
	R	Y	FYA	G
1-1, 5-2	←	←	←	←
1-2, 5-3	←	←	←	←
2-1, 2-2	○	○	○	○
2-3, 2-4	○	○	○	○
3-1, 7-1	←	←	←	←
3-2, 7-2	←	←	←	←
4-1, 4-2, 4-3	○	○	○	○
5-1	←	←	←	←
6-1, 6-2	○	○	○	○
6-3, 6-4	○	○	○	○
8-1, 8-2, 8-3	○	○	○	○



DRAWN BY: MRB	NO.	BY	DATE
DESIGNER: MRB			
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.  
 Name: John M. Gray, P.E.  
 Lic. No. 22457  
 Date: February 7, 2022



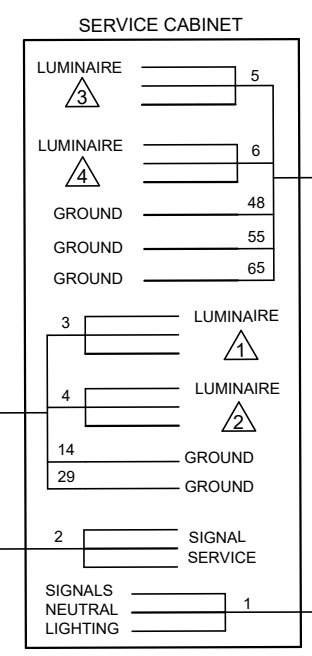
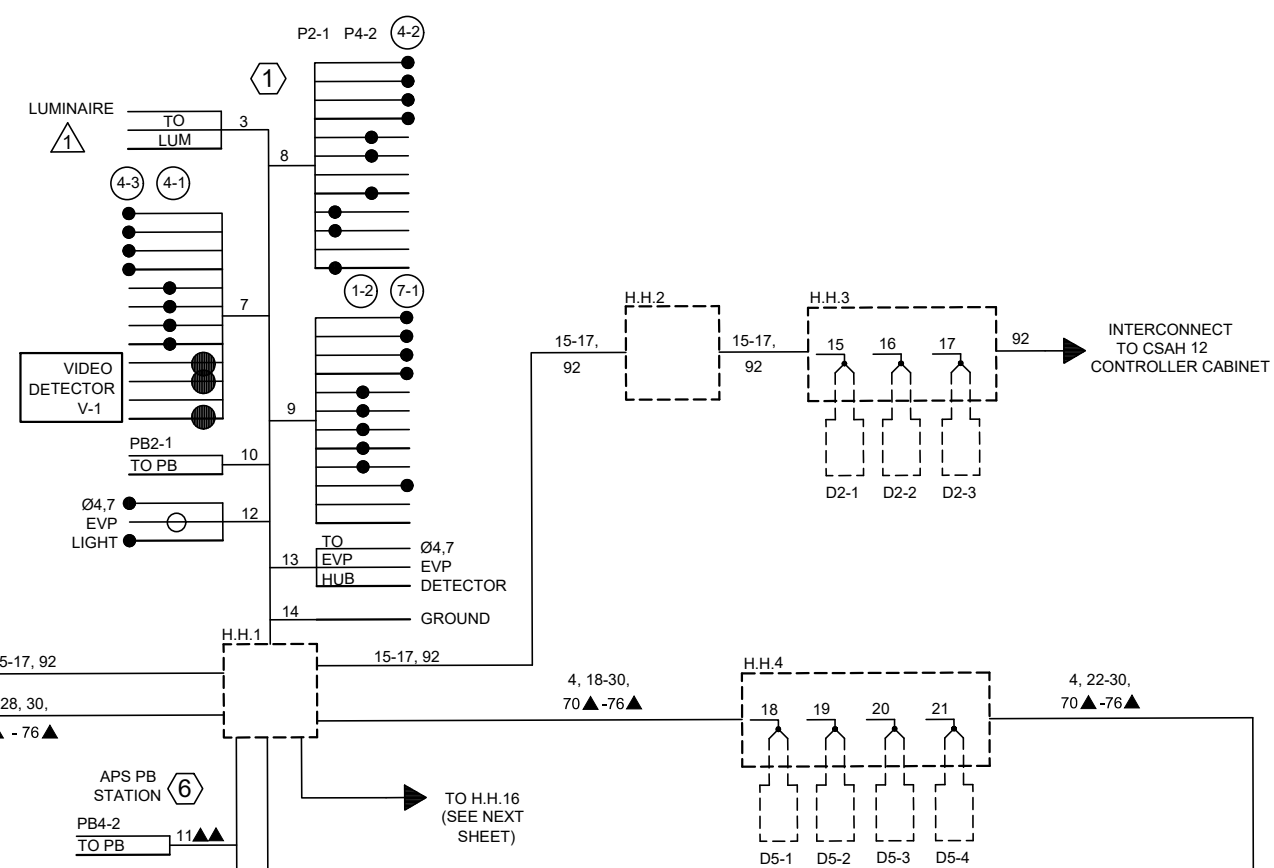
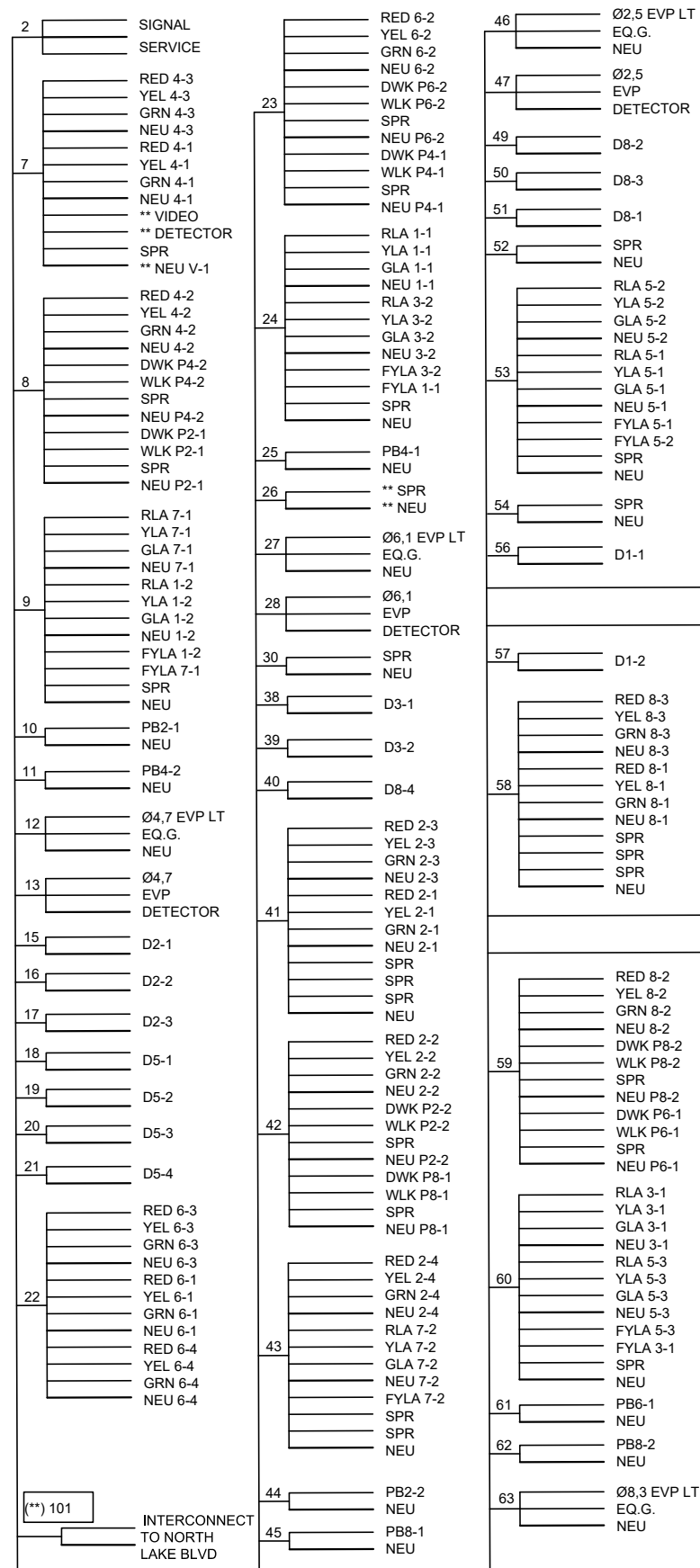
**ANOKA COUNTY, MINNESOTA CITY OF BLAINE**

REVISE SIGNAL SYSTEM "C" / INTERCONNECT  
 MATCHLINE AND NOTES  
 CSAH14 (125TH AVENUE NE) AT  
 CSAH 17 (LEXINGTON AVE)

FILE NO. ANOKC157553	181
SIGNAL SHEET SGL 29 OF SGL34	303

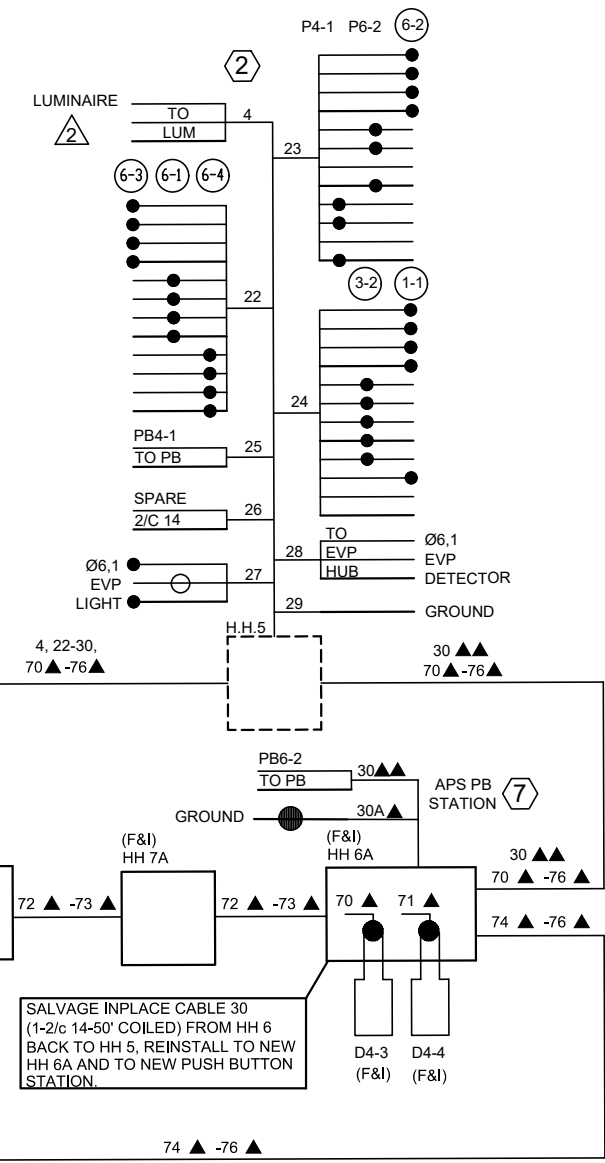
S.A.P. 002-614-048  
 S.A.P. 106-020-037

CONTROLLER AND CABINET



**SYSTEM C/INTERCONNECT NOTES:**

- 1) ALL ITEMS OF THIS SIGNAL SYSTEM ARE INPLACE AND SHALL BE REUSED AND MAINTAINED INPLACE, EXCEPT WHERE EITHER BOXED IN OR DENOTED BY (F & I) (FURNISH AND INSTALL BY CONTRACTOR).
- 2) ALL CABLES AND CONDUCTORS ARE INPLACE AND SHALL BE REUSED INPLACE, EXCEPT WHERE DENOTED BY ▲ (▲ = NEW CABLES AND CONDUCTORS TO BE FURNISHED AND INSTALLED BY CONTRACTOR) OR BY ▲▲ (▲▲ = INPLACE CABLES AND CONDUCTORS TO BE SALVAGED AND REINSTALLED BY THE CONTRACTOR).
- 3) REMOVE AND DISPOSE OF INPLACE CABLES 31-37 AND 100 FROM CSAH 17 CABINET TO EACH HANDHOLE AS REQUIRED.
- 4) ● DENOTES NEW TERMINATION OF LOOP DETECTOR LEAD-IN CABLE OR FOR VIDEO CAMERA OPERATION.
- 5) (\*\*) DENOTES ITEMS TO BE FURNISHED & INSTALLED BY THE CONTRACTOR UNDER ITEM NO 2565 (TRAFFIC CONTROL INTERCONNECT). SEE STATEMENT OF ESTIMATED QUANTITIES AND SPECIAL PROVISIONS.



SALVAGE INPLACE CABLE 30 (1-2/c 14-50' COILED) FROM HH 6 BACK TO HH 5, REINSTALL TO NEW HH 6A AND TO NEW PUSH BUTTON STATION.

DRAWN BY: MRB  
 DESIGNER: MRB  
 CHECKED BY: JMG

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.

*John M. Gray*  
 Name: John M. Gray, P.E.  
 Date: February 7, 2022  
 Lic. No. 22457

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

ANOKA COUNTY,  
 MINNESOTA  
 CITY OF BLAINE

REVISE SIGNAL SYSTEM "C" / INTERCONNECT  
 FIELD WIRING DIAGRAM  
 CSAH14 (125TH AVENUE NE) AT  
 CSAH 17 (LEXINGTON AVE)

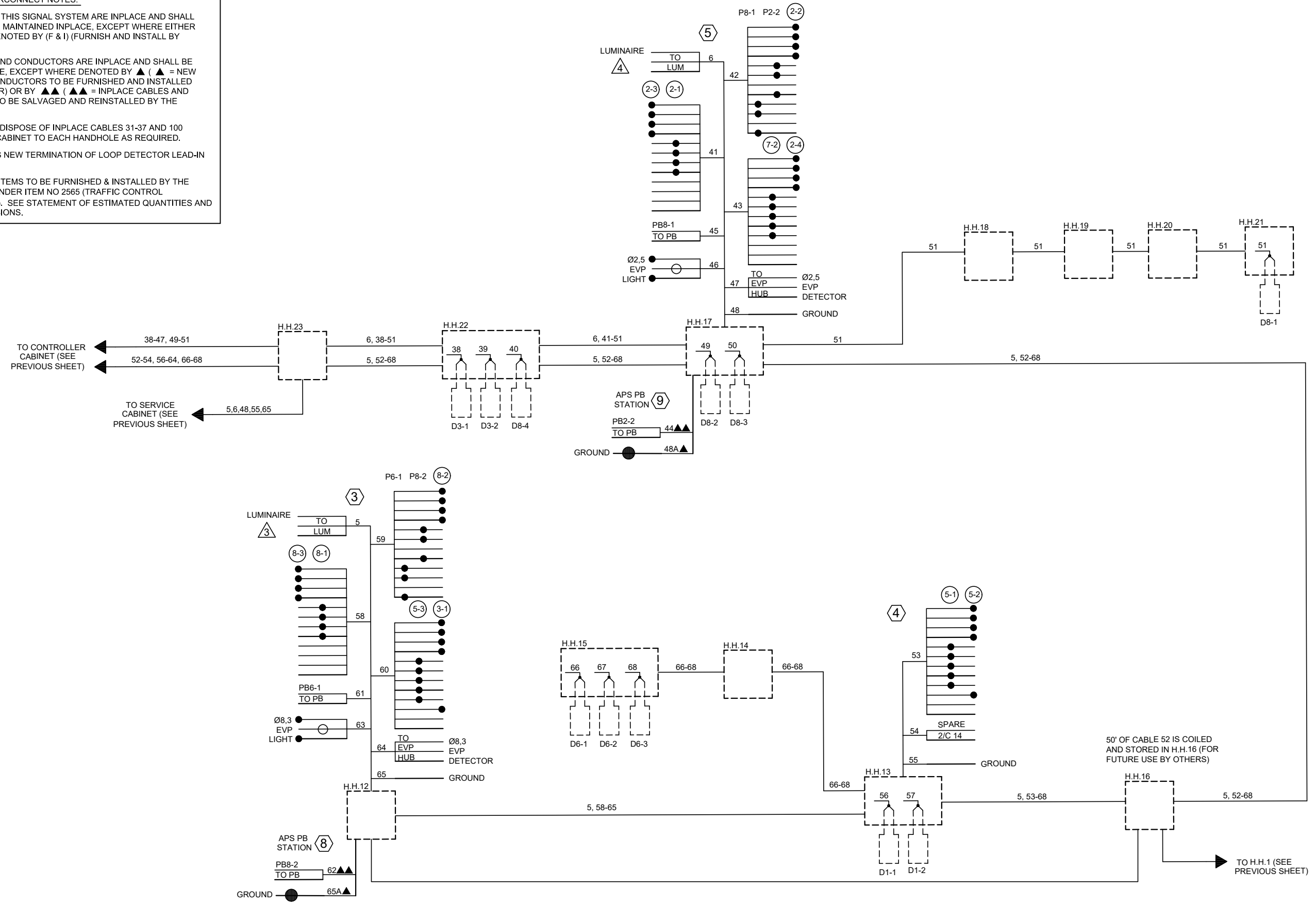
FILE NO.  
 ANOKC157553  
 SIGNAL SHEET  
 SGL 30 OF SGL 34

182  
 303

S.A.P. 002-614-048  
 S.A.P. 106-020-037

**SYSTEM C/INTERCONNECT NOTES:**

- 1) ALL ITEMS OF THIS SIGNAL SYSTEM ARE INPLACE AND SHALL BE REUSED AND MAINTAINED INPLACE, EXCEPT WHERE EITHER BOXED IN OR DENOTED BY (F & I) (FURNISH AND INSTALL BY CONTRACTOR).
- 2) ALL CABLES AND CONDUCTORS ARE INPLACE AND SHALL BE REUSED INPLACE, EXCEPT WHERE DENOTED BY ▲ (▲ = NEW CABLES AND CONDUCTORS TO BE FURNISHED AND INSTALLED BY CONTRACTOR) OR BY ▲▲ (▲▲ = INPLACE CABLES AND CONDUCTORS TO BE SALVAGED AND REINSTALLED BY THE CONTRACTOR).
- 3) REMOVE AND DISPOSE OF INPLACE CABLES 31-37 AND 100 FROM CSAH 17 CABINET TO EACH HANDHOLE AS REQUIRED.
- 4) ● DENOTES NEW TERMINATION OF LOOP DETECTOR LEAD-IN CABLE.
- 5) (\*\*) DENOTES ITEMS TO BE FURNISHED & INSTALLED BY THE CONTRACTOR UNDER ITEM NO 2565 (TRAFFIC CONTROL INTERCONNECT). SEE STATEMENT OF ESTIMATED QUANTITIES AND SPECIAL PROVISIONS.



S.A.P. 002-614-048  
S.A.P. 106-020-037

DRAWN BY: MRB				
DESIGNER: MRB				
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.

*John M. Gray*  
Name: John M. Gray, P.E.  
Date: February 7, 2022  
Lic. No. 22457

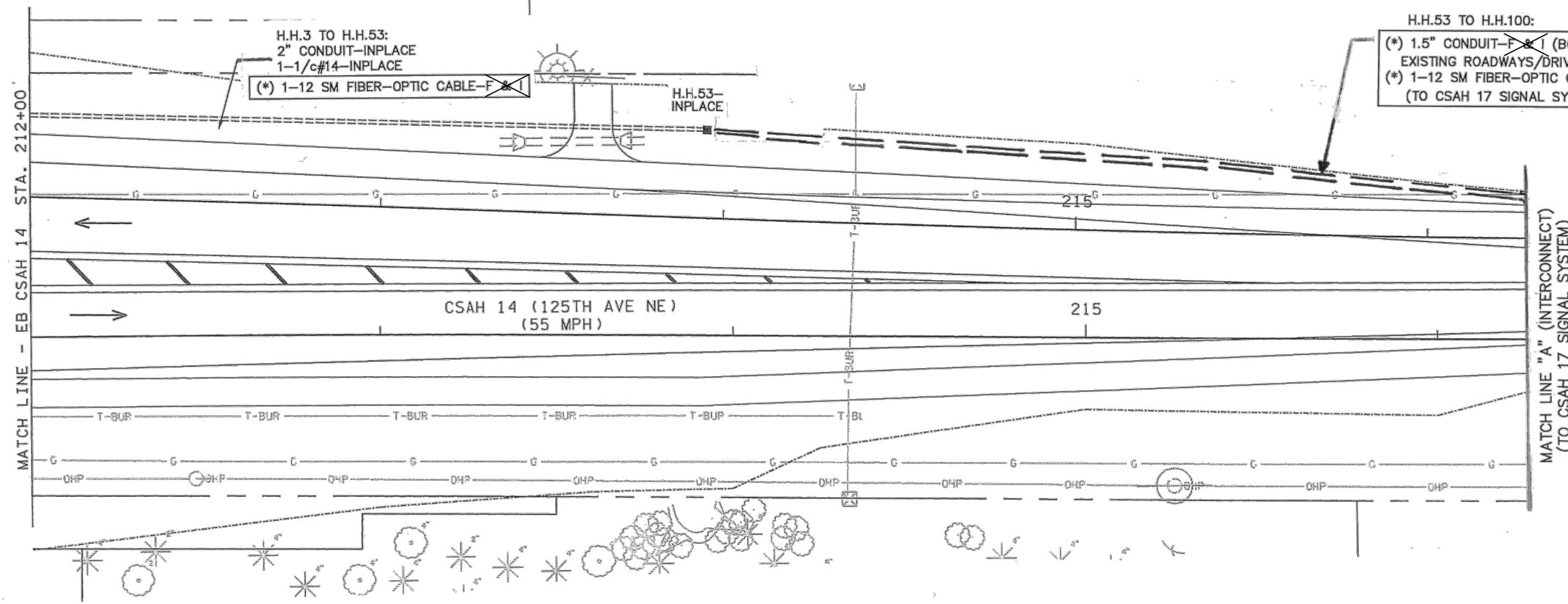
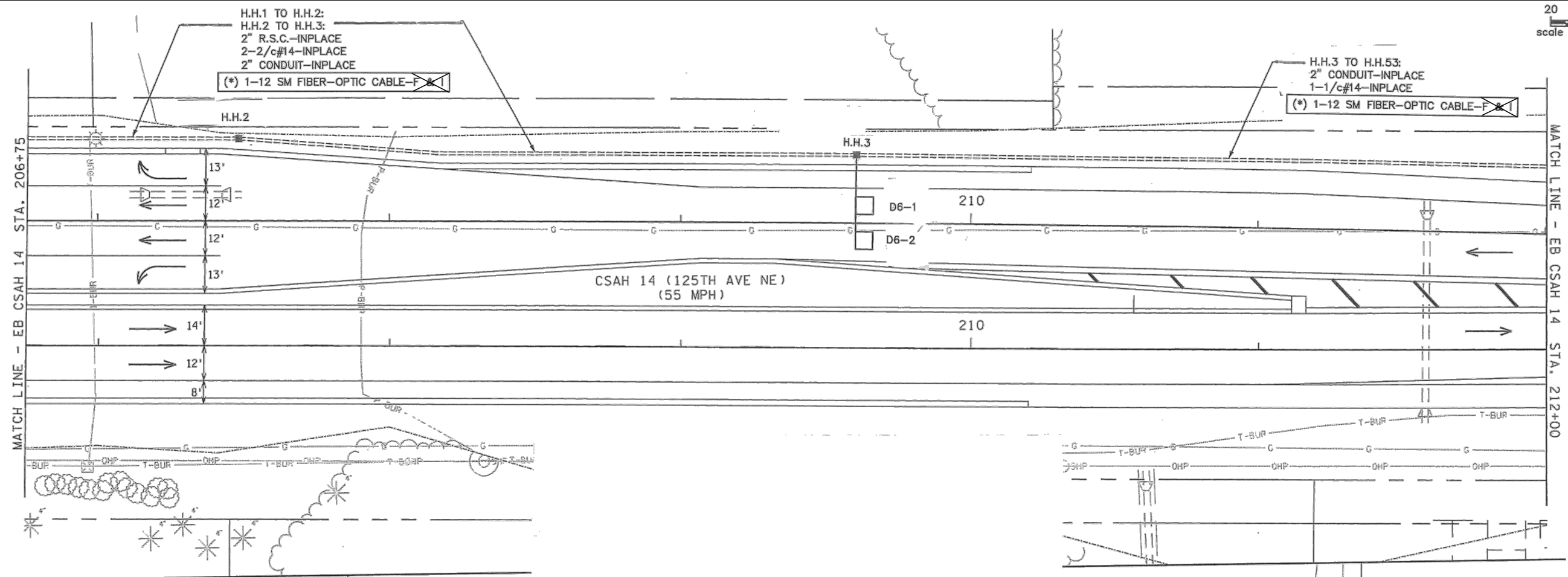
**SEH**  
PHONE: (651) 490-2000  
3535 VADNAIS CENTER DR.  
ST. PAUL, MN 55110

**ANOKA COUNTY,  
MINNESOTA  
CITY OF BLAINE**

REVISE SIGNAL SYSTEM "C" / INTERCONNECT  
FIELD WIRING DIAGRAM  
CSAH14 (125TH AVENUE NE) AT  
CSAH 17 (LEXINGTON AVE)

FILE NO. ANOKC157553	<b>183</b>
SIGNAL SHEET SGL31 OF SGL34	

**303**



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

S.A.P. 002-614-048  
S.A.P. 106-020-037

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

NO.	BY	DATE	REVISIONS

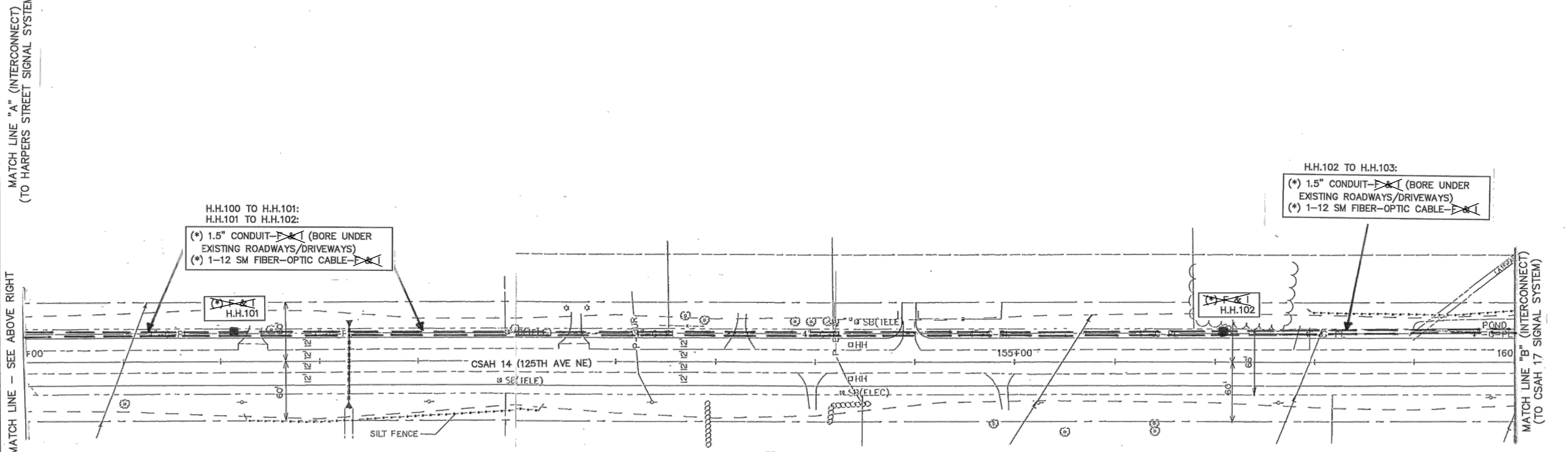
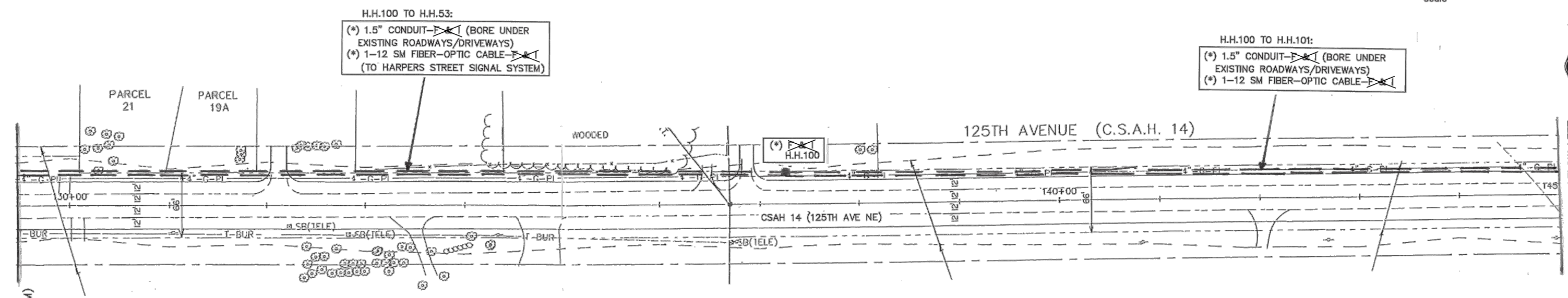
**SEH**  
PHONE: (651) 490-2000  
3535 VADNAIS CENTER DR.  
ST. PAUL, MN 55110

**ANOKA COUNTY,  
MINNESOTA  
CITY OF BLAINE**

INPLACE INTERCONNECT  
"FOR INFORMATION ONLY"  
CSAH 14 (HARPERS STREET TO CSAH 17)

FILE NO.  
ANOKC157553  
SIGNAL SHEET  
SGL 32 OF SGL 34  
**184**  
**303**





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

S.A.P. 002-614-048  
S.A.P. 106-020-037

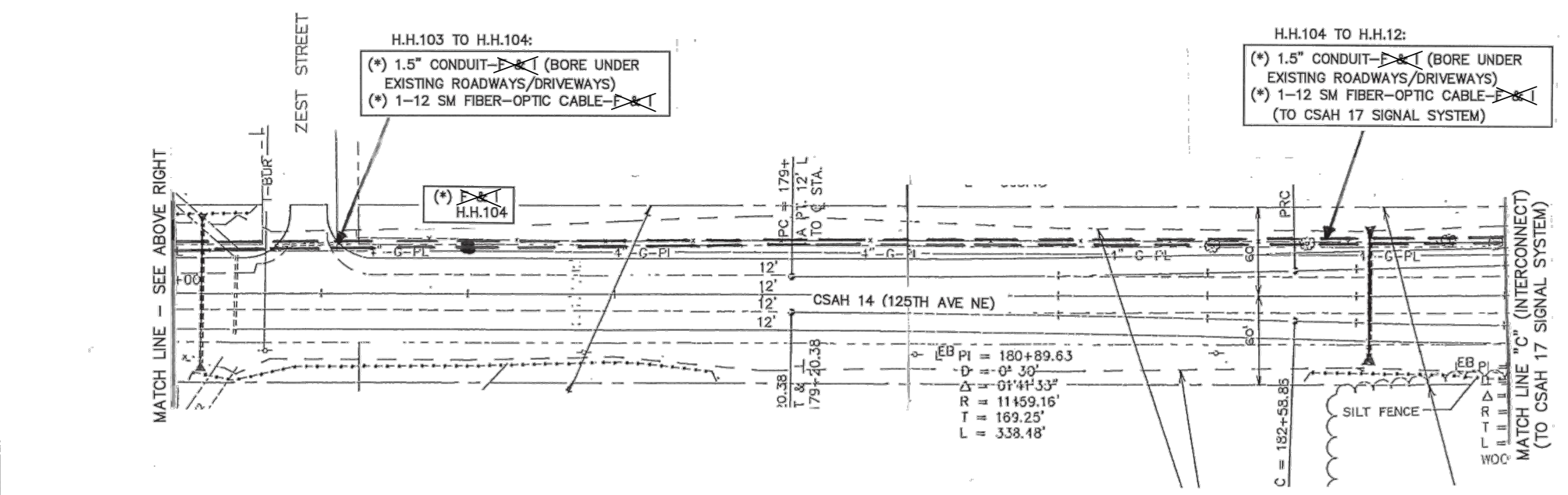
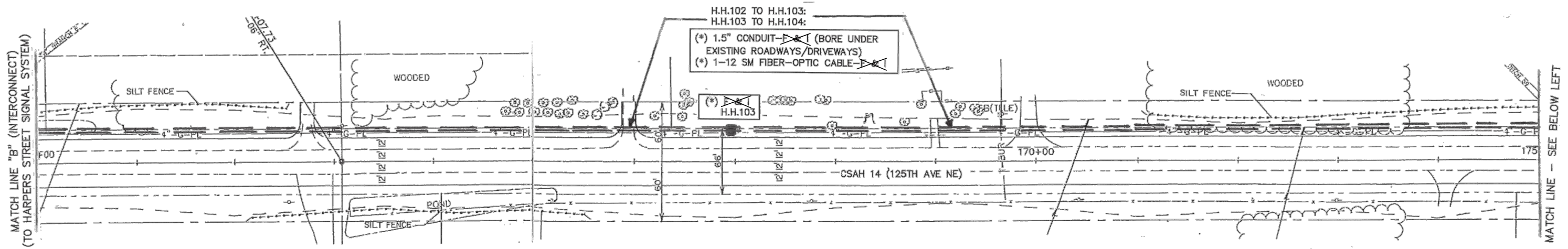
DRAWN BY: MRB				
DESIGNER: MRB				
CHECKED BY: JMG				
DESIGN TEAM	NO.	BY	DATE	REVISIONS



**ANOKA COUNTY,  
MINNESOTA  
CITY OF BLAINE**

INPLACE INTERCONNECT  
"FOR INFORMATION ONLY"  
CSAH 14 (HARPERS STREET TO CSAH 17)

FILE NO. ANOKC157553	<b>185</b>
SIGNAL SHEET SGL 33 OF SGL 34	<b>303</b>



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

S.A.P. 002-614-048  
S.A.P. 106-020-037

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

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

**ANOKA COUNTY,  
MINNESOTA  
CITY OF BLAINE**

INPLACE INTERCONNECT  
"FOR INFORMATION ONLY"  
CSAH 14 (HARPERS STREET TO CSAH 17)

FILE NO. ANOKC157553	186
SIGNAL SHEET SGL 34 OF SGL 34	303

TEMPORARY TRAFFIC CONTROL SIGN QUANTITIES

J

"R" SERIES									
SIGN	MUTCD CODE	COLOR	SIZE	STAGE / QUANTITY					
				1	2	3	4	5	
	R1-1	WHITE ON RED	48"X48"	3	2	3	3		
	R2-1	BLACK ON WHITE	24"X30"	1	1	1	1		
	R3-1	BLACK AND RED ON WHITE	24"X24"		1	1			
	R3-2	BLACK AND RED ON WHITE	24"X24"		2	1	6		
	R3-5L	BLACK ON WHITE	30"X36"		1				
	R3-5R	BLACK ON WHITE	30"X36"		1		1		
	R3-8ACD	BLACK ON WHITE	48"X30"	2		2			
	R3-X1R	BLACK ON WHITE	30"X30"	2	1	3	5		
	R3-X1L	BLACK ON WHITE	30"X30"	1	1	1	2		
	R4-7	BLACK ON WHITE	24"X30"	6	3	5	4		
	R5-1	RED ON WHITE	30"X30"	2	4	3	5		
	R6-1R	BLACK ON WHITE	54"X18"	3	1	2	3		
	R6-1L	BLACK ON WHITE	54"X18"	1		2			
	R10-6L	BLACK ON WHITE	24"X36"			1	1		
	R10-6R	BLACK ON WHITE	24"X36"			2	2		

"W" SERIES									
SIGN	MUTCD CODE	COLOR	SIZE	STAGE / QUANTITY					
				1	2	3	4	5	
	W1-4R	BLACK ON ORANGE	48"X48"	2	2	5	4		
	W1-4L	BLACK ON ORANGE	48"X48"	2	2	1	4		
	W3-3	BLACK, RED AND GREEN ON YELLOW	48"X48"	2	1	2	2		
	W4-2R	BLACK ON ORANGE	48"X48"	2		2	2		
	W6-3	BLACK ON ORANGE	48"X48"	5		5			
	W8-1	BLACK ON ORANGE	36"X36"	AS NEEDED			1		
	W8-1	BLACK ON ORANGE	48"X48"	AS NEEDED			15		
	W8-1M	BLACK ON ORANGE	48"X48"	AS NEEDED			11		
	W9-1R	BLACK ON YELLOW	48"X48"	1	1	1	1		
	W13-1P	BLACK ON ORANGE	24"X24"	14	6	17	14		
	W16-2P	BLACK ON YELLOW	30"X24"	1	1	1	1		
	W16-2P	BLACK ON ORANGE	30"X24"		2				
	W16-2P	BLACK ON ORANGE	30"X24"		2				

"W" SERIES									
SIGN	MUTCD CODE	COLOR	SIZE	STAGE / QUANTITY					
				1	2	3	4	5	
	W20-1	BLACK ON ORANGE	36"X36"		1				
	W20-1	BLACK ON ORANGE	48"X48"	13	22	18	13		
	W20-2	BLACK ON ORANGE	36"X36"		3				
	W20-2	BLACK ON ORANGE	48"X48"		7	3			
	W20-3	BLACK ON ORANGE	36"X36"		2				
	W20-3	BLACK ON ORANGE	48"X48"		6	2			
	W20-X5R	BLACK ON ORANGE	36"X36"	1	1	1			
	W20-X5R	BLACK ON ORANGE	48"X48"	3	1	3	2		
	W20-X5L	BLACK ON ORANGE	36"X36"					1	
	W20-X5L	BLACK ON ORANGE	48"X48"					1	
	W21-X3L	BLACK ON ORANGE	18"X18"	AS NEEDED			13		
	W21-X3R	BLACK ON ORANGE	18"X18"	AS NEEDED			3		

NOTES: TYP.

- 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 M.U.T.C.D.
- STAGE 5 QUANTITIES IN ACCORDANCE WITH THE MOST RECENT VERSION OF THE MINNESOTA TEMPORARY TRAFFIC CONTROL FIELD MANUAL.

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.  
 PRINT NAME: SEAN R. THIEL DATE: 2/22/22  
 SIGNATURE: *Sean R. Thiel* LICENSE NO. 45129

DRAWN BY: FL DATE: 10/28/21  
 DESIGN BY: FL DATE: 10/28/21  
 CHECKED BY: DATE:



ANOKA COUNTY  
 HIGHWAY DEPT.

SAP 002-614-048  
 SAP 106-020-037

TEMPORARY TRAFFIC  
 CONTROL SIGN QUANTITIES

SHEET 187 OF 303 SHEETS

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-614-048\Base\Traffic\Temporary Traffic Control Sign Quantities.dwg

TEMPORARY TRAFFIC CONTROL SIGN QUANTITIES

J

"M" SERIES									
SIGN	MUTCD CODE	COLOR	SIZE	STAGE / QUANTITY					
				1	2	3	4	5	
	M4-8	BLACK ON ORANGE	24"X12"		21				
	M4-8A	BLACK ON ORANGE	30"X24"		1				
	M2-1a	WHITE ON BLUE	21"X15"	1		1	1		
	M3-2a	WHITE ON BLUE	24"X12"		31				
	M3-4a	WHITE ON BLUE	24"X12"	1	1	1	1		
	M1-6M	WHITE AND YELLOW ON BLUE	24"X24"	1	32	1	1		
	M1-6M	WHITE AND YELLOW ON BLUE	24"X24"	2		2	2		
	M5-1aL	WHITE ON BLUE	21"X15"		6				
	M5-1aR	WHITE ON BLUE	21"X15"		4				
	M6-1aL	WHITE ON BLUE	21"X15"		3				
	M6-1aR	WHITE ON BLUE	21"X15"		2				
	M6-3a	WHITE ON BLUE	21"X15"		5				
	M6-4a	WHITE ON BLUE	21"X15"	1		1	1		

"M" SERIES									
SIGN	MUTCD CODE	COLOR	SIZE	STAGE / QUANTITY					
				1	2	3	4	5	
	M4-9M	BLACK ON ORANGE	30"X24"		8	6			
	M4-9MATL90	BLACK ON ORANGE	30"X24"		1	2			
	M4-9ML	BLACK ON ORANGE	30"X24"		1	2			
	M4-9ML45	BLACK ON ORANGE	30"X24"		2	2			
	M4-9MATR45	BLACK ON ORANGE	30"X24"		2	2			
	M4-9MATR90	BLACK ON ORANGE	30"X24"		2	1			
	M4-9MR	BLACK ON ORANGE	30"X24"		2	1			
	M4-9MR45	BLACK ON ORANGE	30"X24"		3	3			

"D" SERIES									
SIGN	MUTCD CODE	COLOR	SIZE	STAGE / QUANTITY					
				1	2	3	4	5	
		WHITE ON GREEN	30"X36"		21				
		WHITE ON GREEN	24"X36"			19			

"G" SERIES									
SIGN	MUTCD CODE	COLOR	SIZE	STAGE / QUANTITY					
				1	2	3	4	5	
	G20-2	BLACK ON ORANGE	48"X24"	2	2	2	2	2	
	G20-X1	BLACK ON ORANGE	54"X48"		3	2			
	G20-X9L	BLACK ON ORANGE	30"X36"		1	1	1		
	G20-X9R	BLACK ON ORANGE	30"X36"	2	2	3	1		
	G20-X2	BLACK ON ORANGE	96"X84"		4				
		BLACK ON ORANGE			4				

PLATE SHALL COVER FOLLOW DETOUR BEFORE WORK BEGINS AND REMOVED WHEN WORK BEGINS.

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-614-048\BaselTraffic\Temporary Traffic Control Sign 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 DATE: 2/22/22  
 SIGNATURE: *Sean R. Thiel* LICENSE NO. 45129

DRAWN BY: FL DATE: 10/28/21  
 DESIGN BY: FL DATE: 10/28/21  
 CHECKED BY: DATE: \_\_\_\_\_



ANOKA COUNTY  
HIGHWAY DEPT.

SAP 002-614-048  
SAP 106-020-037

TEMPORARY TRAFFIC CONTROL SIGN QUANTITIES

SHEET 188 OF 303 SHEETS

TEMPORARY TRAFFIC CONTROL SIGN QUANTITIES

J

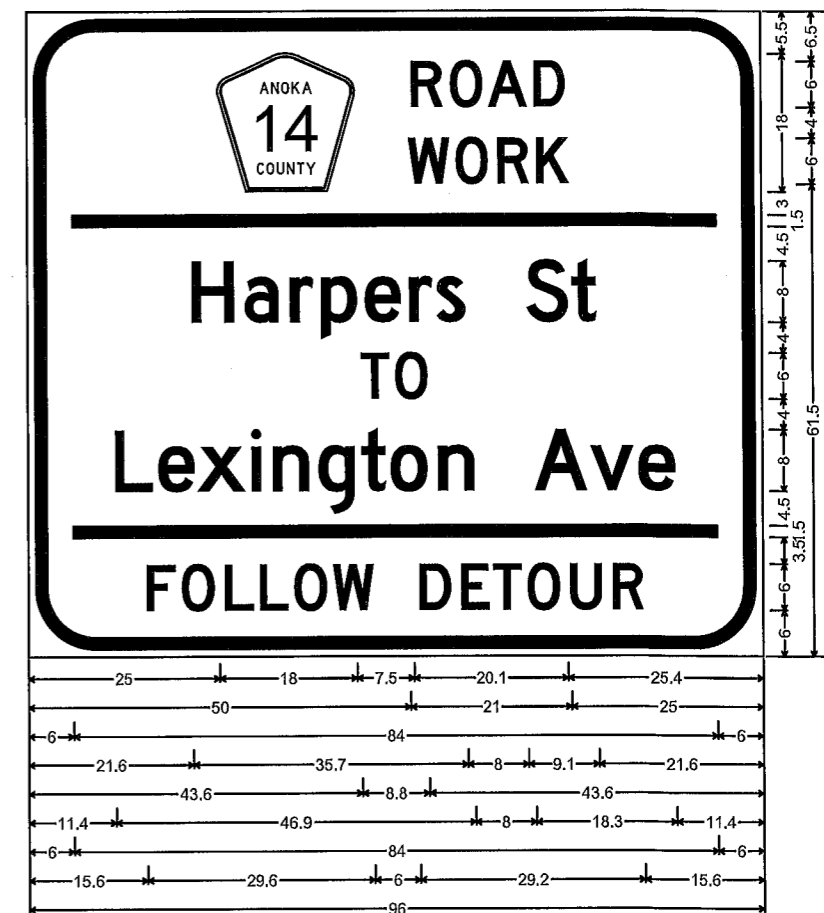
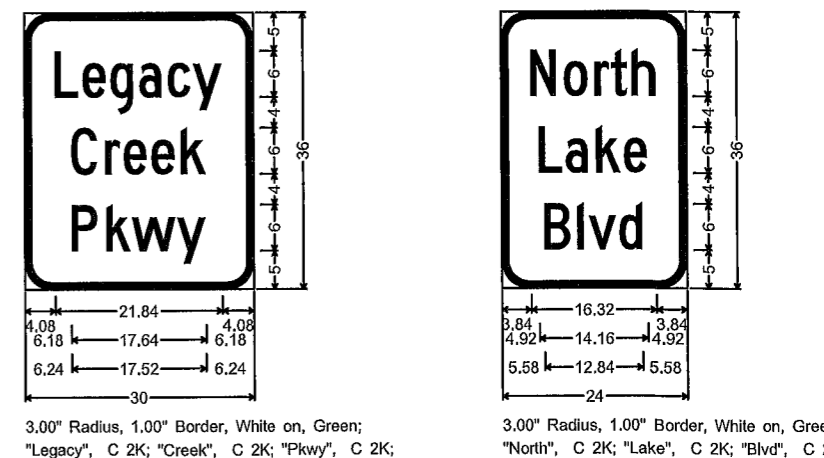
DEVICES								
SIGN	MUTCD CODE	COLOR	SIZE	STAGE / QUANTITY				
				1	2	3	4	5
	DRUM			303	404	368	479	
	TUBULAR MARKER			81		98		
	TRAIL CLOSED TYPE III		8 FOOT	2	4	3	1	
	TRAIL CLOSED TYPE III		8 FOOT	1	7	2	1	
	TYPE III		8 FOOT	2	42	18	46	
	TYPE III		8 FOOT	9	44	19	3	
	TYPE III		8 FOOT				1	
	TYPE A				20	5		
FLASHING ARROWBOARD	TYPE C		96"X48"	1		1	1	
PORTABLE CHANGEABLE MESSAGE SIGN	TYPE C			2 (10 DAYS)				

PCMS SIGNS TO BE INSTALLED A MINIMUM OF 10 DAYS PRIOR TO ACTUAL COMMENCEMENT OF ROAD WORK. SIGNS TO BE REMOVED WHEN ROAD WORK BEGINS.

TUBULAR MARKER MOUNTED								
SIGN	MUTCD CODE	COLOR	SIZE	STAGE / QUANTITY				
				1	2	3	4	5
	R4-7	BLACK ON WHITE	12"X18"	4		5		

BARRICADE MOUNTED								
SIGN	MUTCD CODE	COLOR	SIZE	STAGE / QUANTITY				
				1	2	3	4	5
	R3-1	BLACK AND RED ON WHITE	24"X24"		2			
	R3-2	BLACK AND RED ON WHITE	24"X24"		2			
	R5-1	RED ON WHITE	30"X30"		10			
	R6-1R	BLACK ON WHITE	54"X18"				3	
	R3-5L	BLACK ON WHITE	30"X36"	2	4	2	2	
	R3-5R	BLACK ON WHITE	30"X36"		1		4	
	R3-6R	BLACK ON WHITE	30"X36"		2			
	R9-9	BLACK ON WHITE	30"X18"		7	1		
	R9-9	BLACK ON WHITE	24"X18"	3	4	4	2	
	M4-10R	BLACK ON ORANGE	48"X18"		1	1		
	M4-10L	BLACK ON ORANGE	48"X18"		1	1		
	R11-2M	BLACK ON WHITE	48"X30"	4	4	5	5	
	R11-2M	BLACK ON WHITE	48"X30"		6	2		
	R11-3a	BLACK ON WHITE	60"X30"				1	
	R11-4	BLACK ON WHITE	60"X30"		1			
	W1-6R	BLACK ON ORANGE	48"X24"		1		1	
	W1-6L	BLACK ON ORANGE	48"X24"	2				

SIGN TYPE "G" & "D" DESIGN



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

PRINT NAME: SEAN R. THIEL DATE: 2/22/22  
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DRAWN BY: FL DATE: 10/28/21  
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 CHECKED BY: DATE:

ANOKA COUNTY HIGHWAY DEPT.

SAP 002-614-048  
 SAP 106-020-037

TEMPORARY TRAFFIC CONTROL SIGN QUANTITIES  
 SHEET 189 OF 303 SHEETS

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-614-048\Base\Traffic\Temporary Traffic Control Sign Quantities.dwg

SHEET INTENTIONALLY LEFT BLANK  
SHEET 190 OF 303

**STAGE 1 CONSTRUCTION NOTES: (TYP.)**

1. PROVIDE MINIMUM 12' LANES IN BOTH DIRECTIONS.
2. MUCK EXCAVATION ON SOUTH SIDE.
3. INSTALL PORTABLE CONCRETE BARRIER AND IMPACT ATTENUATORS AS SHOWN IN PLAN.
4. IMPACT ATTENUATOR TEST LEVEL 3 SHALL BE THE SAME CROSS SECTION AS BARRIER.
5. GRADE PONDS AND INSTALL STORM SEWER AS SHOWN IN PLAN.
6. REMOVE CONCRETE MEDIAN AT EAST END OF PROJECT AS MARKED IN THE FIELD BY ENGINEER.
7. INSTALL TEMPORARY PAVEMENT ON SOUTH SIDE AT BYPASS LOCATIONS AS DIRECTED BY ENGINEER.
8. CONTRACTOR SHALL MAINTAIN ACCESS TO PROPERTIES ALONG SOUTH SIDE OF PROJECT AND COORDINATE WITH RESIDENTS DURING TEMPORARY ACCESS RESTRICTIONS.

**STAGE 1 TRAFFIC CONTROL NOTES: (TYP.)**

1. THE CONTRACTOR SHALL SUPPLY AND INSTALL THE PORTABLE CHANGEABLE MESSAGE SIGNS (PCMS) A MINIMUM OF 10 DAYS PRIOR TO ACTUAL COMMENCEMENT OF ROAD WORK TO A LOCATION AS SPECIFIED BY THE ENGINEER. PCMS SIGNS TO BE REMOVED WHEN ROAD WORK BEGINS. PAYMENT SHALL BE MADE AS PER ITEM 2563.613 PORTABLE CHANGEABLE MESSAGE SIGN BY THE UNIT/DAY.
2. SIGNAL SYSTEM TO REMAIN IN FULL OPERATION ON CSAH 14 AT HARPERS ST AND CSAH 14 AT CSAH 17.
3. TEMPORARY TRAFFIC BARRIER SHALL BE PLACED. ATTENUATORS ON EACH LEADING END AND UPSTREAM END OF BARRIER. WHITE TRPM'S SHALL BE PLACED ON THE BARRIER SPACED EVERY 12"6". JERSEY BARRIER SHALL BE PLACED IN ACCORDANCE WITH THE MOST RECENT EDITION OF THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.
4. IF A 2' MINIMUM SPACE BETWEEN BARRIER AND EDGELINE CANNOT BE MET, BARRIER MUST BE ANCHORED 6" MINIMUM.
5. REMOVE ALL CONFLICTING PAVEMENT MARKINGS WITHIN THE CONSTRUCTION LIMITS. BLACK REMOVABLE PREFORMED PLASTIC MARKING TAPE SHALL BE USED ON ALL CONFLICTING PAVEMENT MARKINGS OUTSIDE OF THE CONSTRUCTION LIMITS AND AS INDICATED ON THE PLAN SHEETS.
6. ADD TRPM'S SPACED EVERY 10 FEET IN TAPER/TRANSITION AREAS.
7. SIGN COVERING SHALL BE A RIGID PANEL. NO PLASTIC, BURLAP, ROPE, ETC.
8. ALL SIGNS SHALL BE MAINTAINED THROUGHOUT CONSTRUCTION.
9. ACCESS SHALL BE MAINTAINED TO ALL STREETS AND DRIVEWAY ACCESS LOCATIONS IN THE CONSTRUCTION AREA WITH THE EXCEPTION OF STREET CLOSURES.
10. FOR RELOCATING TRAFFIC SIGNS DURING CONSTRUCTION, AS DIRECTED BY THE ENGINEER, RELOCATION INCIDENTAL TO TRAFFIC CONTROL.
11. ALL TEMPORARY TRAFFIC CONTROL SETUPS SHALL BE IN ACCORDANCE WITH THE MOST RECENT EDITION OF THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES AND TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS - FIELD MANUAL OF THE SAME MANUAL.

**CONSTRUCTION KEY:**



STAGE 1 WORK ZONE



- STAGE 1 CONSTRUCTION UNDER TRAFFIC.
- USE FLAGGING OPERATION PER THE FIELD MANUAL BETWEEN 9AM AND 3PM.

**STRIPING KEY:**



TRIANGLE - PAINT



SQUARE - REMOVABLE PREF TAPE

**TRAFFIC CONTROL KEY:**

○ TUBULAR MARKER

● DRUM

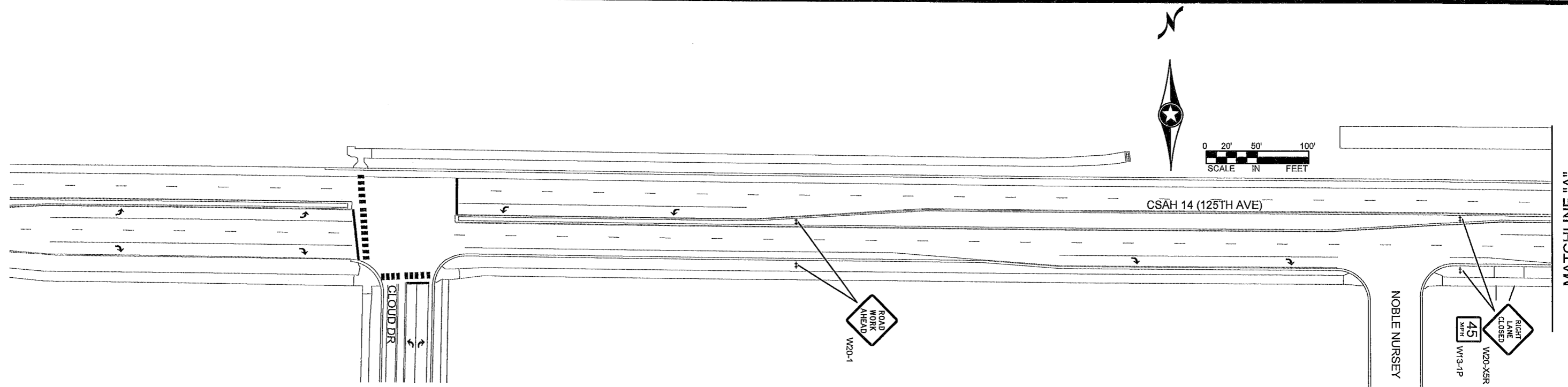
++ TEMPORARY SIGN

└ BARRICADE

**TEMPORARY TRAFFIC CONTROL DISTANCE CHART**

POSTED SPEED LIMIT PRIOR TO WORK STARTING (MPH)	ADVANCE WARNING SIGN SPACING (A) FEET	DECISION SIGHT DISTANCE (D) FEET	TAPER LENGTH (12 FT LANE) (L) FEET	SHIFTING TAPER (12 FT LANE) (L/2) FEET	TYPICAL SHOULDER TAPER (L/3) FEET	BUFFER SPACE (B) FEET
0-30	100	550	200	100	75	200
35-40	325	700	325	175	125	305
45-50	600	900	600	300	200	425
55	750	1200	700	350	250	500
60-65	1000	1400	800	400	275	650
70-75	1200	1600	900	450	300	820

MINNESOTA TEMPORARY TRAFFIC CONTROL FIELD MANUAL 2018



1 OF 7

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-614-048\Bases\Traffic\Traffic Control Stage 1.dwg

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DRAWN BY: FL DATE: 10/28/21

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CHECKED BY: DATE:



**ANOKA COUNTY  
HIGHWAY DEPT.**

SAP 002-614-048  
SAP 106-020-037

TRAFFIC CONTROL  
STAGE 1

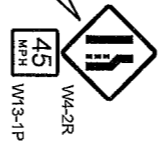
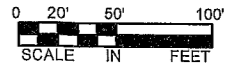
SHEET 191 OF 303 SHEETS

MATCHLINE "A"

XYLITE DR

CSAH 14 (125TH AVE)

MATCHLINE "B"

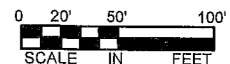


MATCHLINE "B"

FLANDERS ST

CSAH 14 (125TH AVE)

STATION 198+50



B

B

1185

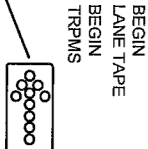
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1195

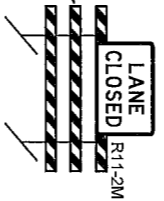
185

190

195



4SW



4SW

B

STRIPING KEY:

SQUARE - REMOVABLE PREF TAPE

2 OF 7

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ANOKA COUNTY  
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SAP 002-614-048  
SAP 106-020-037

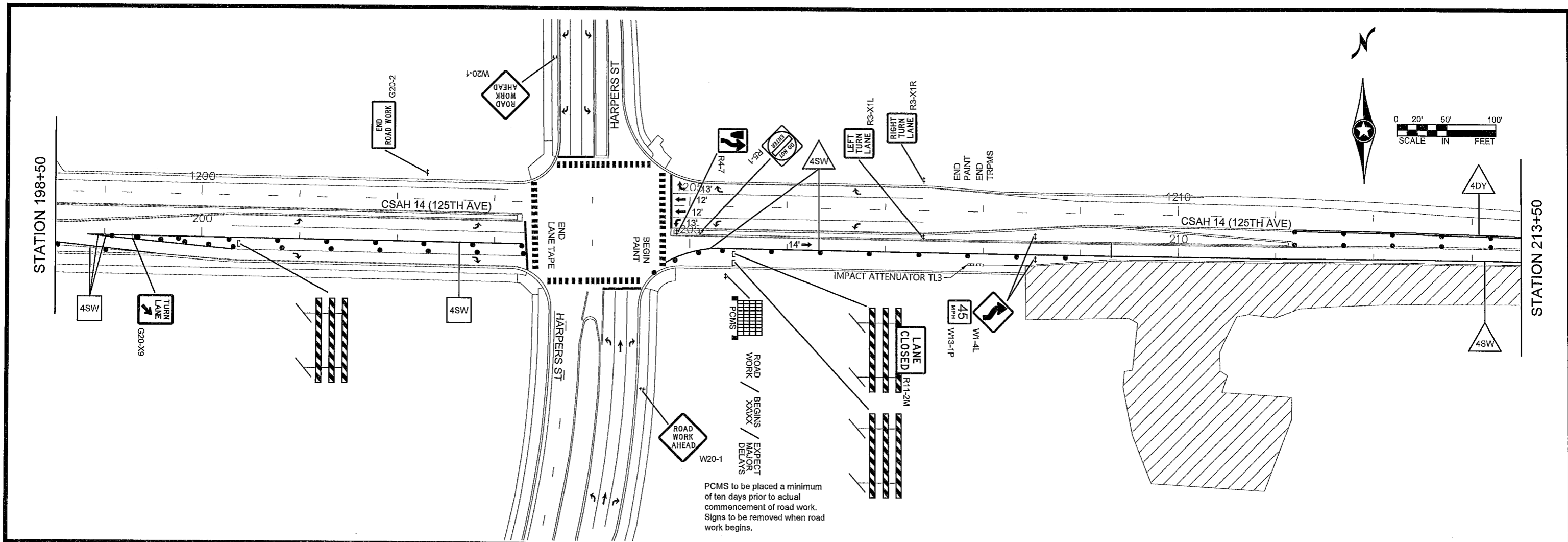
TRAFFIC CONTROL  
STAGE 1

SHEET 192 OF 303 SHEETS

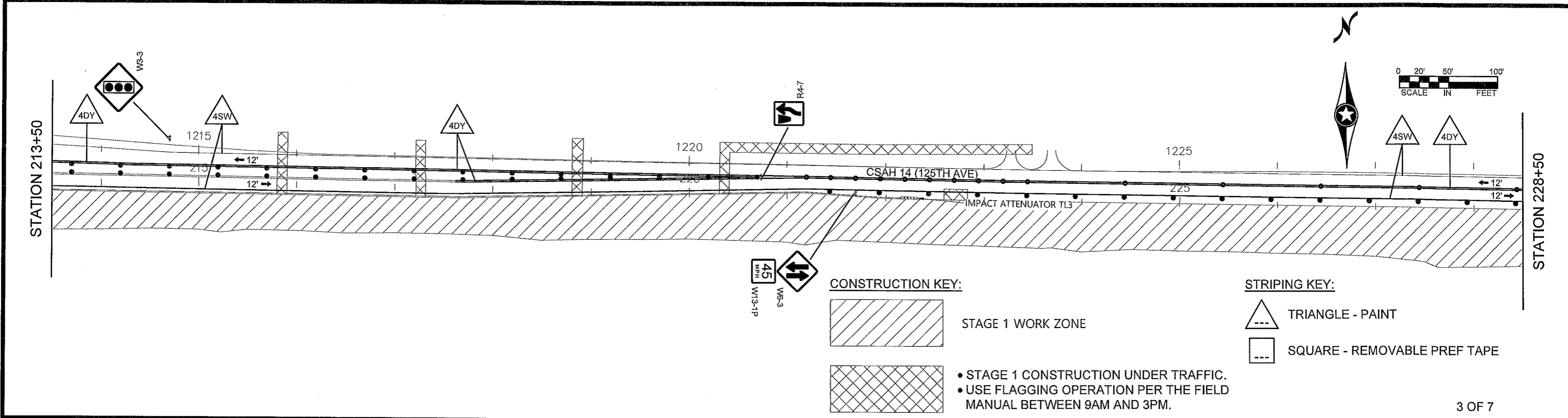
NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-614-048\Base\Traffic\Traffic Control Stage 1.dwg





PCMS to be placed a minimum of ten days prior to actual commencement of road work. Signs to be removed when road work begins.

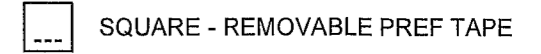


**CONSTRUCTION KEY:**



- STAGE 1 CONSTRUCTION UNDER TRAFFIC.
- USE FLAGGING OPERATION PER THE FIELD MANUAL BETWEEN 9AM AND 3PM.

**STRIPING KEY:**



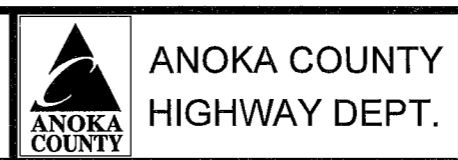
NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-614-048\BaselTraffic\Traffic Control Stage 1.dwg

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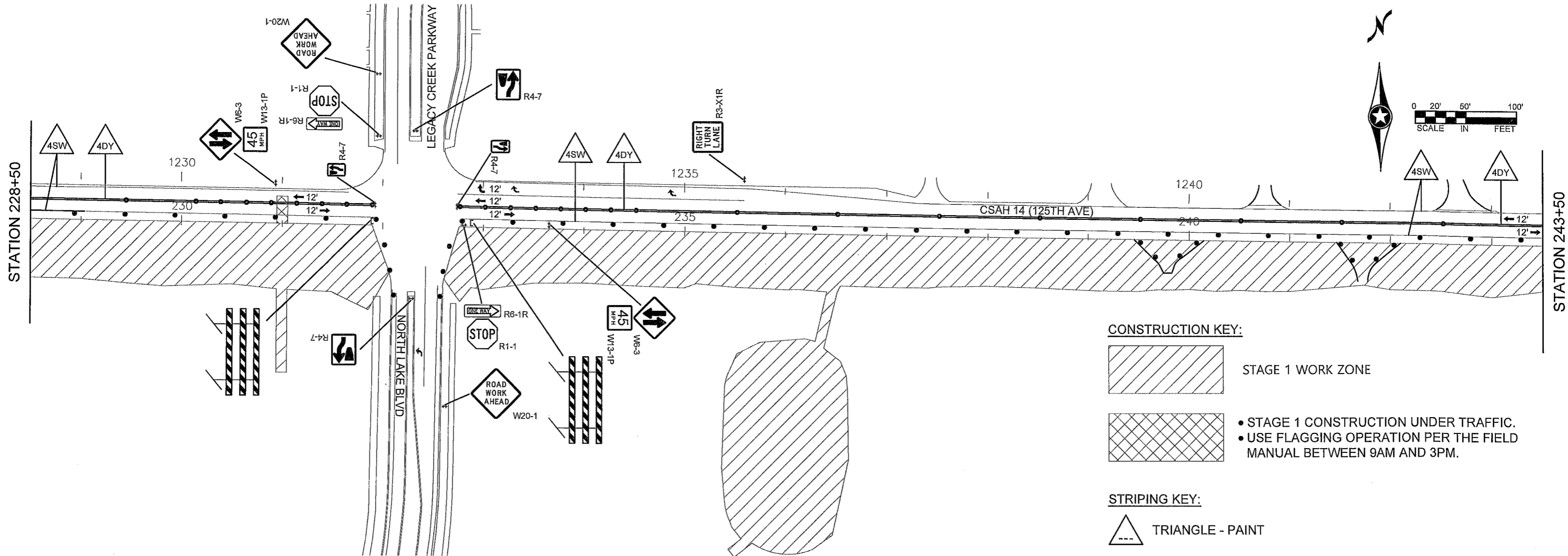
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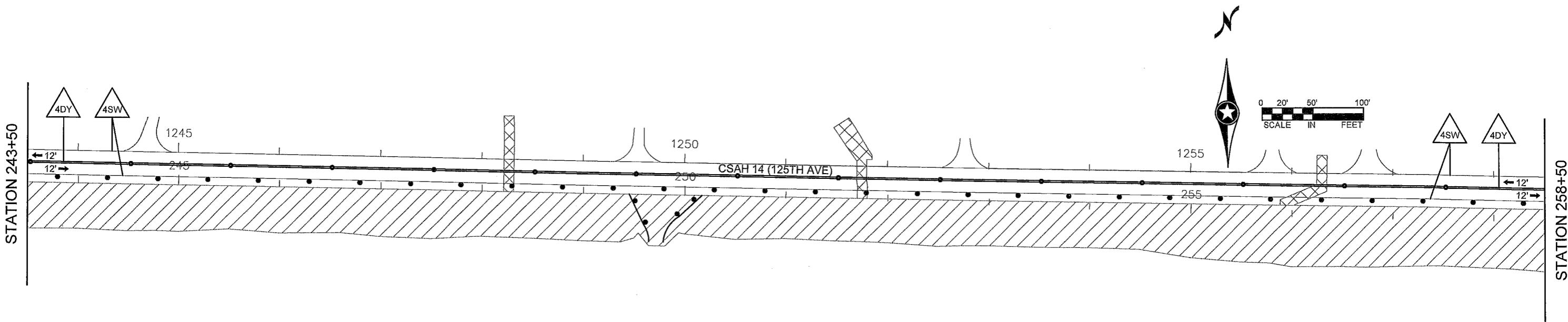


SAP 002-614-048  
 SAP 106-020-037

TRAFFIC CONTROL  
 STAGE 1  
 SHEET 193 OF 303 SHEETS



- CONSTRUCTION KEY:**
- STAGE 1 WORK ZONE
  - STAGE 1 CONSTRUCTION UNDER TRAFFIC.
  - USE FLAGGING OPERATION PER THE FIELD MANUAL BETWEEN 9AM AND 3PM.
- STRIPING KEY:**
- TRIANGLE - PAINT



NO	DATE	BY	CKD	APPR	REVISION
NAME: P:\002-614-048\Base\Traffic\Traffic Control Stage 1.dwg					

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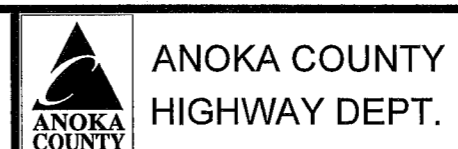
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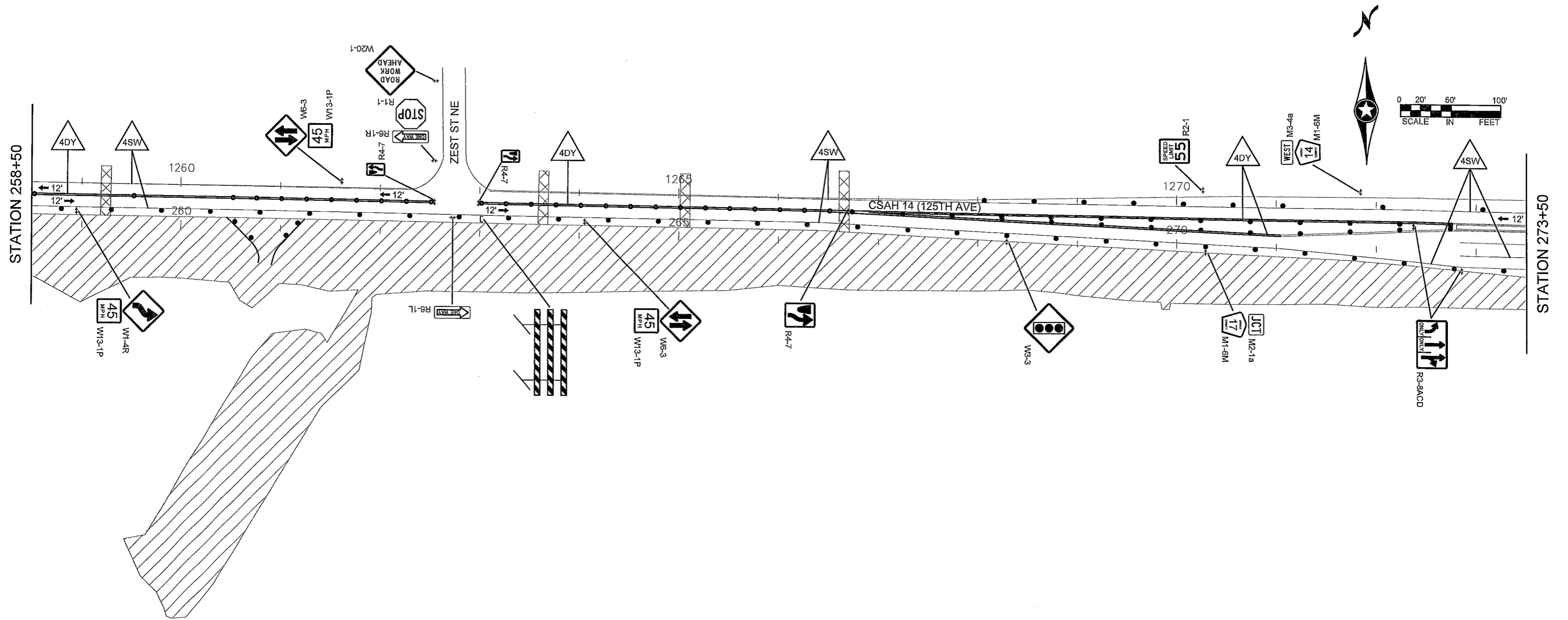
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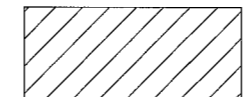
SAP 002-614-048  
SAP 106-020-037

TRAFFIC CONTROL  
STAGE 1

SHEET 194 OF 303 SHEETS



**CONSTRUCTION KEY:**



STAGE 1 WORK ZONE



- STAGE 1 CONSTRUCTION UNDER TRAFFIC.
- USE FLAGGING OPERATION PER THE FIELD MANUAL BETWEEN 9AM AND 3PM.

**STRIPING KEY:**



TRIANGLE - PAINT

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**ANOKA COUNTY  
 HIGHWAY DEPT.**

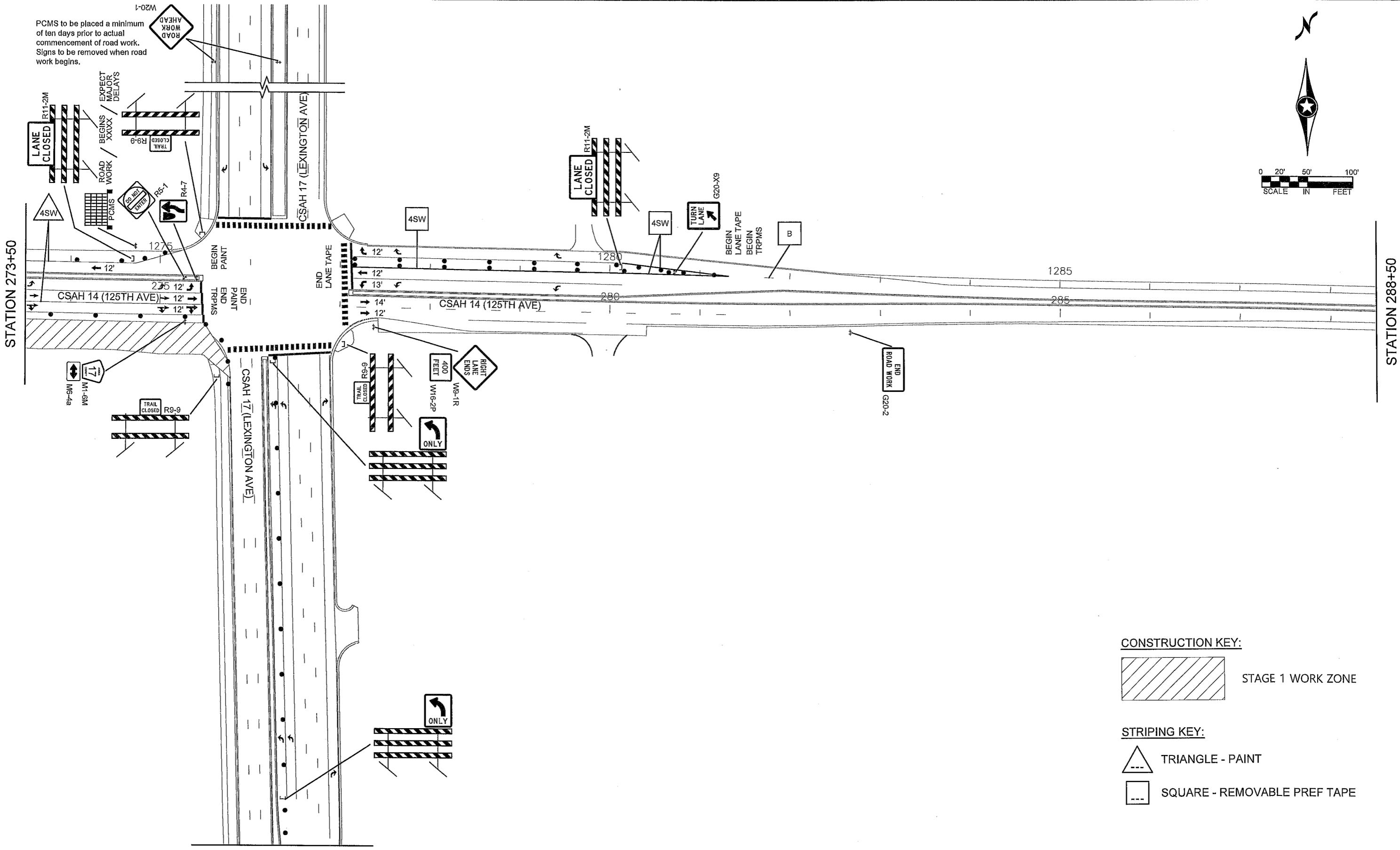
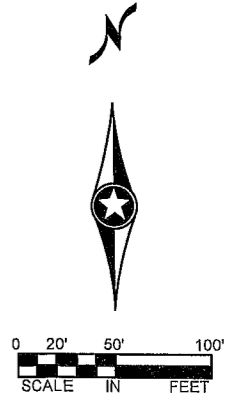
SAP 002-614-048  
 SAP 106-020-037

TRAFFIC CONTROL  
 STAGE 1  
 SHEET 195 OF 303 SHEETS

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-614-048\Base\Traffic\Traffic Control Stage 1.dwg

PCMS to be placed a minimum of ten days prior to actual commencement of road work. Signs to be removed when road work begins.



- CONSTRUCTION KEY:**
- STAGE 1 WORK ZONE
- STRIPING KEY:**
- TRIANGLE - PAINT
  - SQUARE - REMOVABLE PREF TAPE

MATCHLINE "C"

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-614-048\Base\Traffic\Traffic Control Stage 1.dwg

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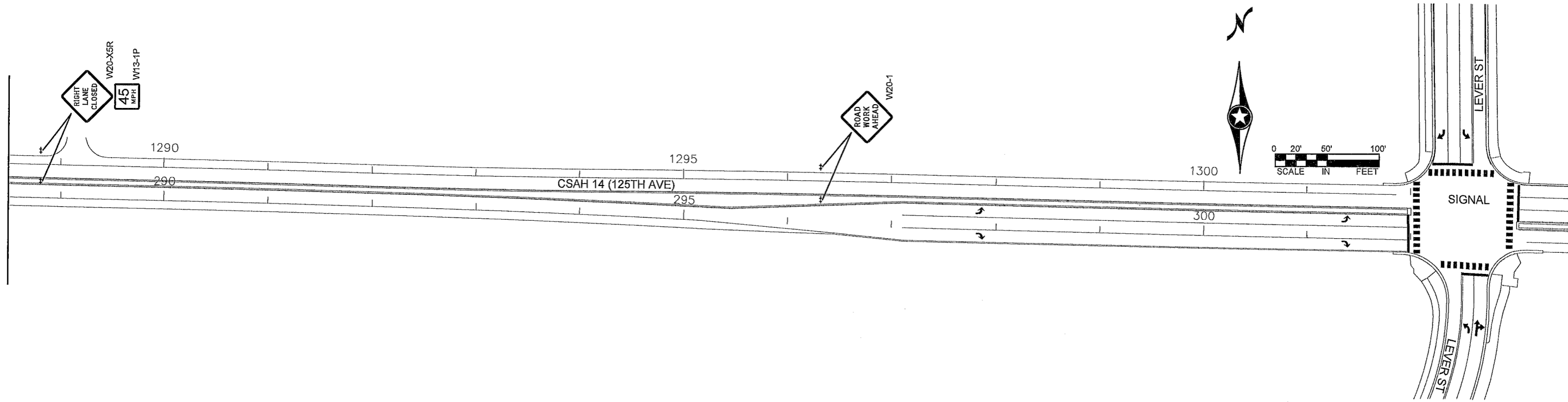
**ANOKA COUNTY  
HIGHWAY DEPT.**

SAP 002-614-048  
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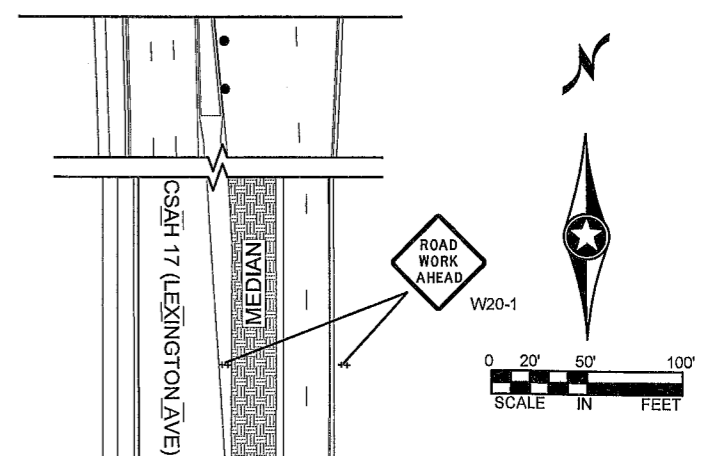
TRAFFIC CONTROL  
STAGE 1

SHEET 196 OF 303 SHEETS

STATION 288+50



MATCHLINE "C"



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ANOKA COUNTY  
 HIGHWAY DEPT.

SAP 002-614-048  
 SAP 106-020-037

TRAFFIC CONTROL  
 STAGE 1

SHEET 197 OF 303 SHEETS

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-614-048\Bases\Traffic\Traffic Control Stage 1.dwg

**STAGE 2 CONSTRUCTION NOTES:**

- EASTBOUND CSAH 14 (125TH AVE) CLOSED BETWEEN HARPERS ST AND CSAH 17 (LEXINGTON AVE). EASTBOUND TRAFFIC TO BE DETOURED ONTO CSAH 52, CSAH 12 AND CSAH 17.
- PROVIDE MINIMUM 12' LANES IN WESTBOUND DIRECTION.
- MUCK EXCAVATION ON NORTH SIDE.
- INSTALL PORTABLE CONCRETE BARRIER AND IMPACT ATTENUATORS AS SHOWN IN PLAN.
- IMPACT ATTENUATOR TEST LEVEL 3 SHALL BE THE SAME CROSS SECTION AS BARRIER.
- GRADE PONDS AND INSTALL STORM SEWER AS SHOWN IN PLAN.
- REMOVE CONCRETE MEDIAN AS MARKED IN THE FIELD BY ENGINEER BEFORE BEGINNING STAGE 2 CONSTRUCTION.
- LEGACY CREEK PARKWAY IS TO BE FULLY CLOSED DURING THIS STAGE OF CONSTRUCTION.
- INSTALL TEMPORARY PAVEMENT ON NORTH SIDE OF ROAD AT THE LOCATION AS DIRECTED BY ENGINEER.
- CONTRACTOR SHALL MAINTAIN ACCESS TO PROPERTIES ALONG NORTH SIDE OF PROJECT AND ON ZEST STREET AND COORDINATE WITH RESIDENTS DURING TEMPORARY ACCESS RESTRICTIONS.

**STAGE 2 TRAFFIC CONTROL NOTES: (TYP.)**

- 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. G20-X1 SIGNS TO BE REMOVED WHEN ROAD CLOSURE COMMENCES.
- SIGNAL SYSTEM TO REMAIN IN FULL OPERATION ON CSAH 14 AT HARPERS ST AND CSAH 14 AT CSAH 17.
- TEMPORARY TRAFFIC BARRIER SHALL BE PLACED. ATTENUATORS ON EACH LEADING END AND UPSTREAM END OF BARRIER. WHITE TRPM'S SHALL BE PLACED ON THE BARRIER SPACED EVERY 12'6". JERSEY BARRIER SHALL BE PLACED IN ACCORDANCE WITH THE MOST RECENT EDITION OF THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.
- IF A 2' MINIMUM SPACE BETWEEN BARRIER AND EDGELINE CANNOT BE MET, BARRIER MUST BE ANCHORED 6" MINIMUM.
- REMOVE ALL CONFLICTING PAVEMENT MARKINGS WITHIN THE CONSTRUCTION LIMITS. BLACK REMOVABLE PREFORMED PLASTIC MARKING TAPE SHALL BE USED ON ALL CONFLICTING PAVEMENT MARKINGS OUTSIDE OF THE CONSTRUCTION LIMITS AND AS INDICATED ON THE PLAN SHEETS.
- ADD TRPM'S SPACED EVERY 10 FEET IN TAPER/TRANSITION AREAS.
- SIGN COVERING SHALL BE A RIGID PANEL. NO PLASTIC, BURLAP, ROPE, ETC.
- ALL SIGNS SHALL BE MAINTAINED THROUGHOUT CONSTRUCTION.
- ACCESS SHALL BE MAINTAINED TO ALL STREETS AND DRIVEWAY ACCESS LOCATIONS IN THE CONSTRUCTION AREA WITH THE EXCEPTION OF STREET CLOSURES.
- FOR RELOCATING TRAFFIC SIGNS DURING CONSTRUCTION, AS DIRECTED BY THE ENGINEER, RELOCATION INCIDENTAL TO TRAFFIC CONTROL.
- ALL TEMPORARY TRAFFIC CONTROL SETUPS SHALL BE IN ACCORDANCE WITH THE MOST RECENT EDITION OF THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES AND TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS - FIELD MANUAL OF THE SAME MANUAL.

**CONSTRUCTION KEY:**



STAGE 2 WORK ZONE



- STAGE 2 CONSTRUCTION UNDER TRAFFIC.
- USE FLAGGING OPERATION PER THE FIELD MANUAL BETWEEN 9AM AND 3PM.

**STRIPING KEY:**



TRIANGLE - PAINT



SQUARE - REMOVABLE PREF TAPE

**TRAFFIC CONTROL KEY:**

- DRUM
- ++ TEMPORARY SIGN
- ⊥ BARRICADE

**TEMPORARY TRAFFIC CONTROL DISTANCE CHART**

POSTED SPEED LIMIT PRIOR TO WORK STARTING (MPH)	ADVANCE WARNING SIGN SPACING (A) FEET	DECISION SIGHT DISTANCE (D) FEET	TAPER LENGTH (12 FT LANE) (L) FEET	SHIFTING TAPER (12 FT LANE) (L/2) FEET	TYPICAL SHOULDER TAPER (L/3) FEET	BUFFER SPACE (B) FEET
0-30	G=25 FT.	100	200	100	75	200
35-40		325	325	175	125	305
45-50	G=50 FT.	600	600	300	200	425
55		900	700	350	250	500
60-65		1200	800	400	275	650
70-75		1600	900	450	300	820

MINNESOTA TEMPORARY TRAFFIC CONTROL FIELD MANUAL 2018

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-614-048\Base\Traffic\Traffic Control Stage 2.dwg

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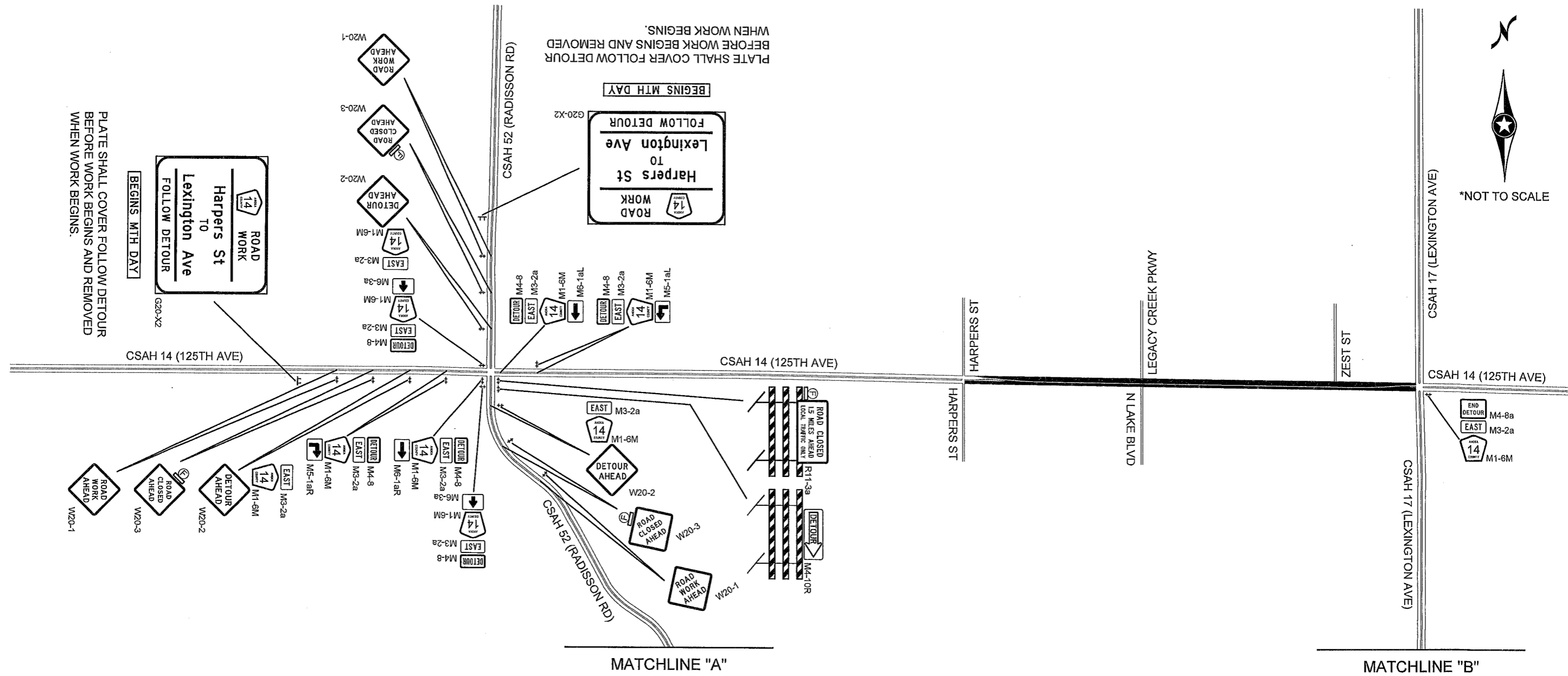
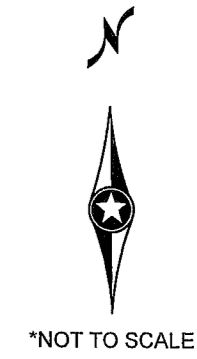


**ANOKA COUNTY  
HIGHWAY DEPT.**

SAP 002-614-048  
SAP 106-020-037

TRAFFIC CONTROL  
STAGE 2

SHEET 198 OF 303 SHEETS



NO	DATE	BY	CKD	APPR	REVISION
NAME: P:\002-614-048\BaselTraffic\Traffic Control Stage 2.dwg					

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**ANOKA COUNTY**  
HIGHWAY DEPT.

SAP 002-614-048  
SAP 106-020-037

TRAFFIC CONTROL  
STAGE 2

SHEET 199 OF 303 SHEETS

MATCHLINE "A"

MATCHLINE "B"

PLATE SHALL COVER FOLLOW DETOUR BEFORE WORK BEGINS AND REMOVED WHEN WORK BEGINS.

ROAD WORK  
Harpers St  
TO  
Lexington Ave  
FOLLOW DETOUR

BEGINS MTH DAY

CSAH 12 (109TH AVE)

G20-X2

ROAD WORK  
Harpers St  
TO  
Lexington Ave  
FOLLOW DETOUR

BEGINS MTH DAY

PLATE SHALL COVER FOLLOW DETOUR BEFORE WORK BEGINS AND REMOVED WHEN WORK BEGINS.

G20-X2

CSAH 52 (RADISSON RD)

CSAH 52 (RADISSON RD)

CSAH 12 (109TH AVE)

CSAH 17 (LEXINGTON AVE)

CSAH 12 (109TH AVE)

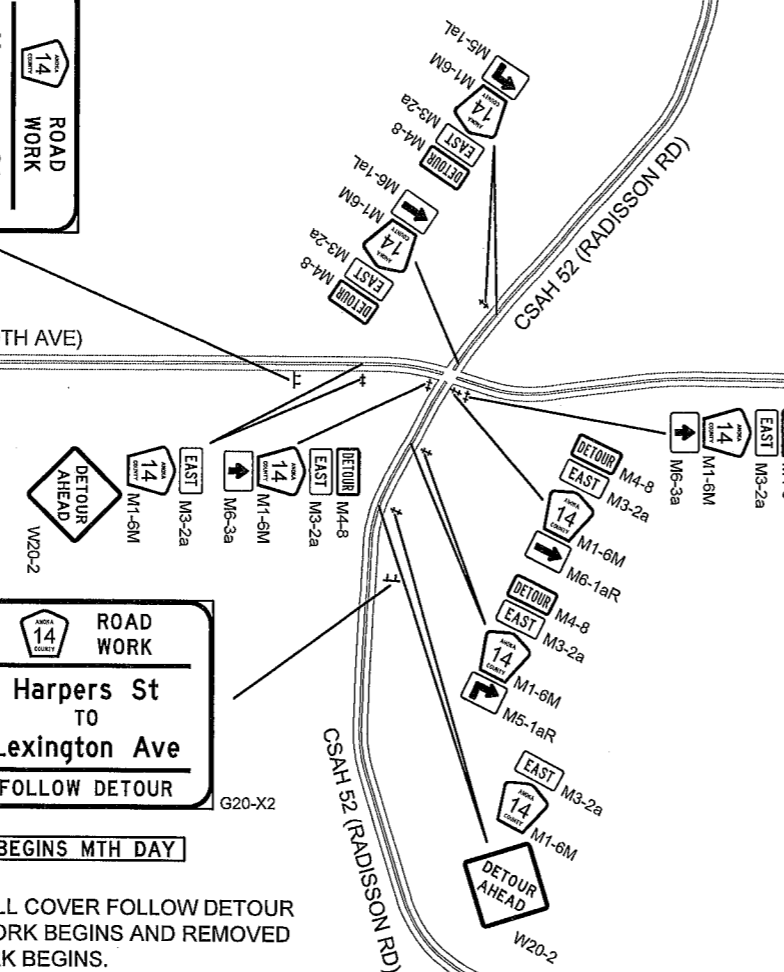
CSAH 17 (LEXINGTON AVE)



\*NOT TO SCALE

DETOUR M4-8  
EAST M3-2a  
ROAD WORK 14  
M1-6M  
M6-3a

DETOUR M4-8  
EAST M3-2a  
ROAD WORK 14  
M1-6M  
M6-1aL  
M5-1aL



I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.  
PRINT NAME: SEAN R. THIEL DATE: 2/22/22  
SIGNATURE: *Sean R. Thiel* LICENSE NO. 45129

DRAWN BY FL DATE 10/28/21  
DESIGN BY FL DATE 10/28/21  
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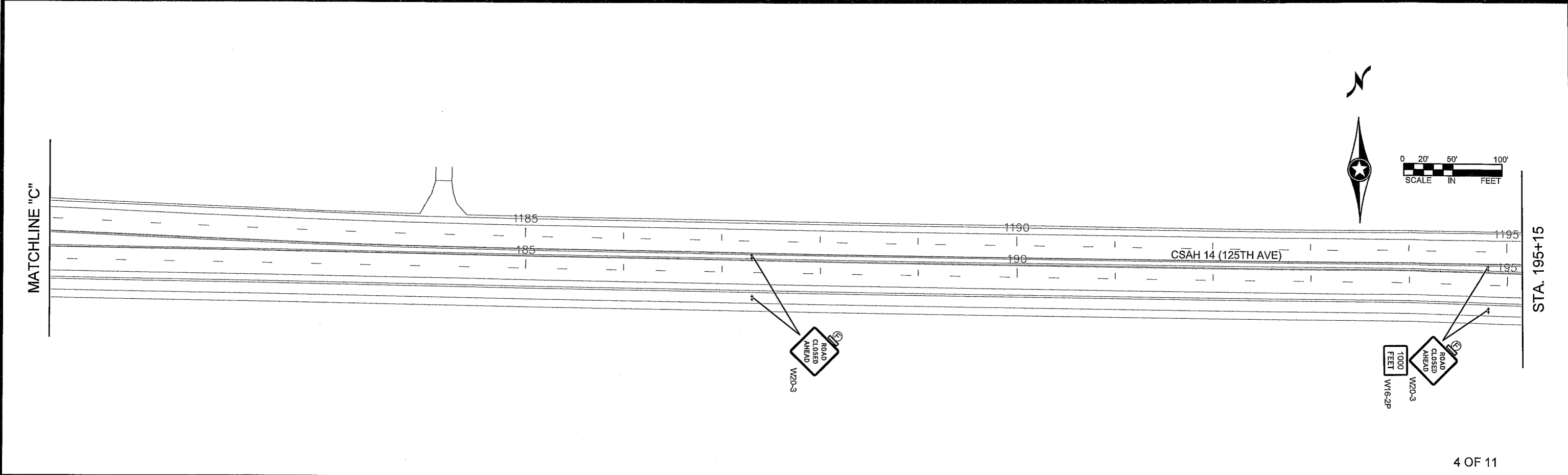
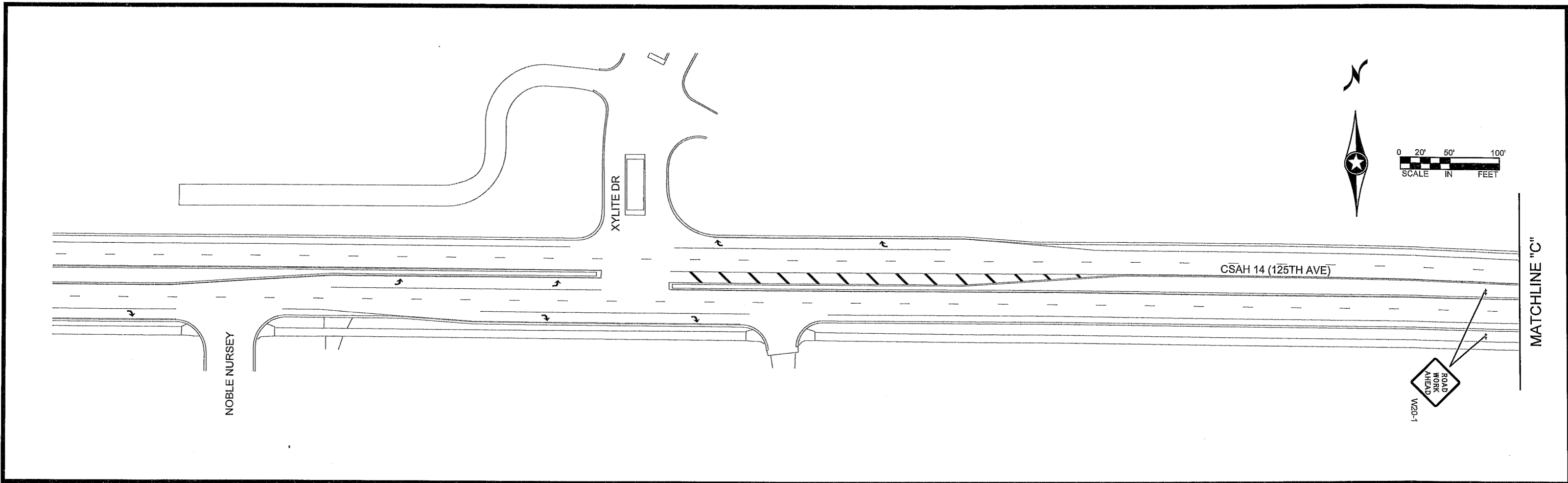
SAP 002-614-048  
SAP 106-020-037

TRAFFIC CONTROL  
STAGE 2  
SHEET 200 OF 303 SHEETS

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-614-048\Base\Traffic\Traffic Control Stage 2.dwg





NO	DATE	BY	CKD	APPR	REVISION
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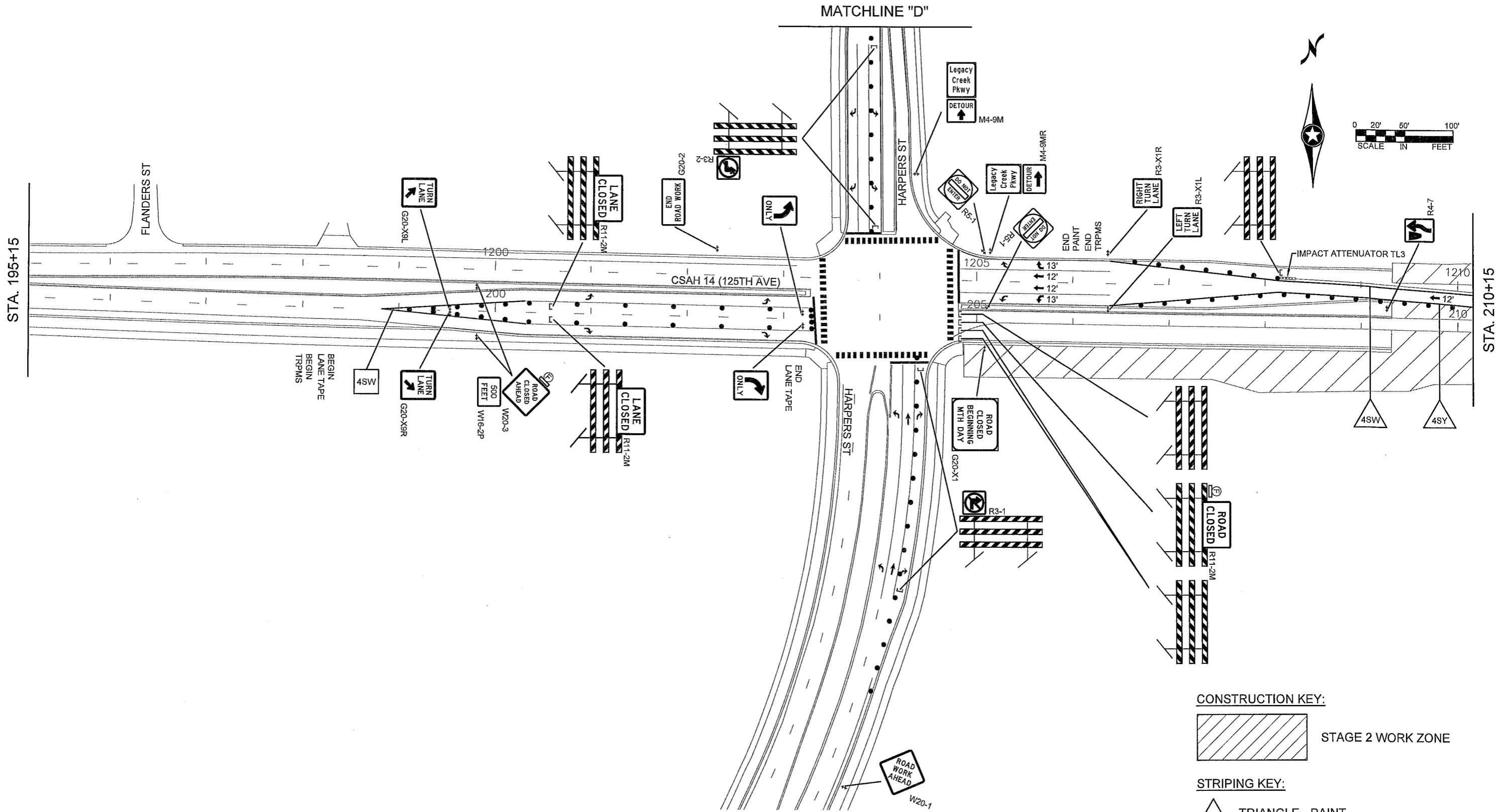


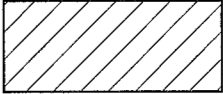


**ANOKA COUNTY  
HIGHWAY DEPT.**

SAP 002-614-048  
SAP 106-020-037

TRAFFIC CONTROL  
STAGE 2

SHEET 201 OF 303 SHEETS



- CONSTRUCTION KEY:**
-  STAGE 2 WORK ZONE
- STRIPING KEY:**
-  TRIANGLE - PAINT
  -  SQUARE - REMOVABLE PREF TAPE

NO	DATE	BY	CKD	APPR	REVISION
NAME: P:\002-614-048\Bases\Traffic\Traffic Control Stage 2.dwg					

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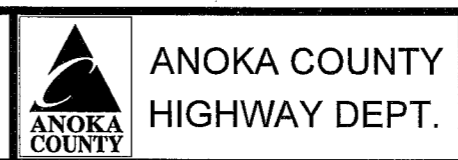
PRINT NAME: SEAN R. THIEL      DATE: 2/22/22

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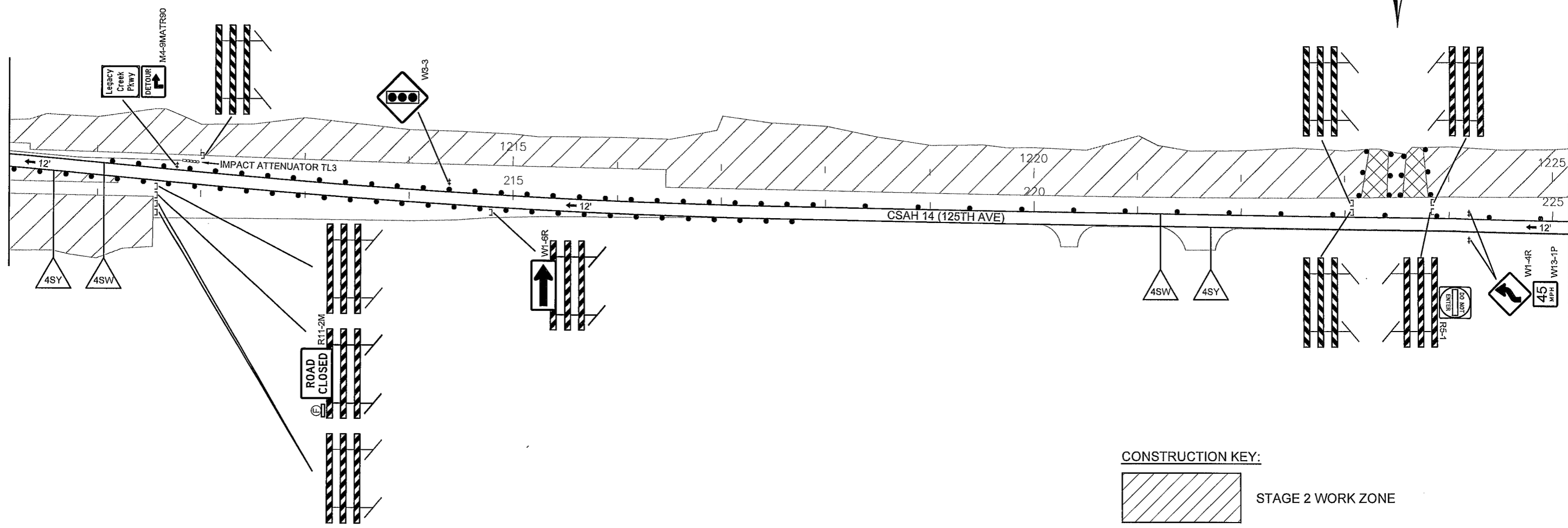
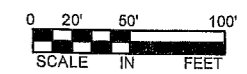
SAP 002-614-048  
SAP 106-020-037

TRAFFIC CONTROL  
STAGE 2

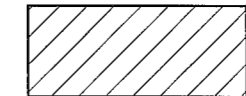
SHEET 202 OF 303 SHEETS

STA. 210+15

STA. 225+15



CONSTRUCTION KEY:



STAGE 2 WORK ZONE



- STAGE 2 CONSTRUCTION UNDER TRAFFIC.
- USE FLAGGING OPERATION PER THE FIELD MANUAL BETWEEN 9AM AND 3PM.

STRIPING KEY:



TRIANGLE - PAINT

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-614-048\BaselTraffic\Traffic Control Stage 2.dwg

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CHECKED BY \_\_\_\_\_ DATE \_\_\_\_\_

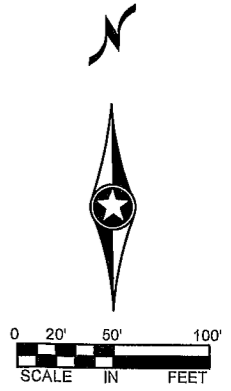
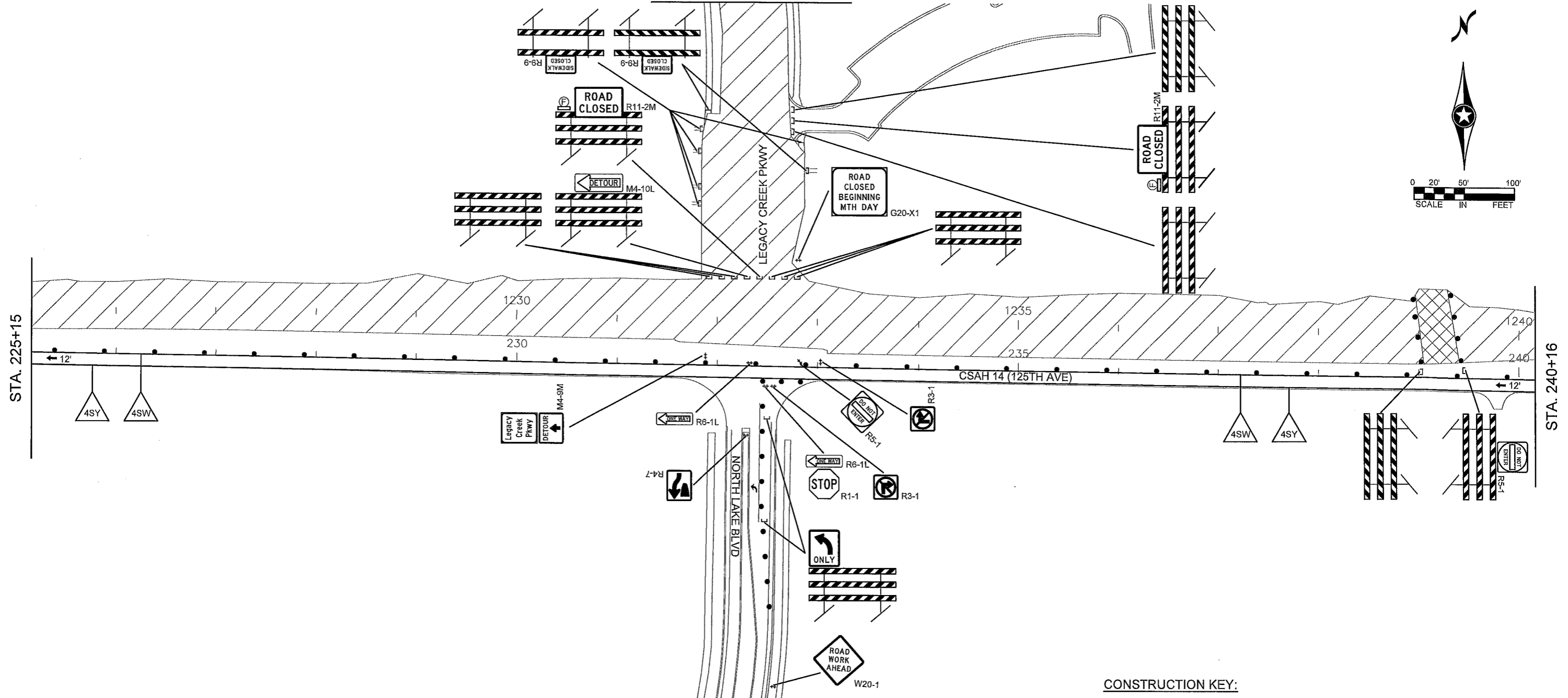


ANOKA COUNTY HIGHWAY DEPT.

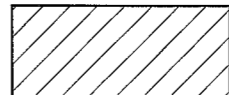

SAP 002-614-048  
SAP 106-020-037

TRAFFIC CONTROL STAGE 2  
SHEET 203 OF 303 SHEETS

MATCHLINE "E"



CONSTRUCTION KEY:

-  STAGE 2 WORK ZONE
- 
  - STAGE 2 CONSTRUCTION UNDER TRAFFIC.
  - USE FLAGGING OPERATION PER THE FIELD MANUAL BETWEEN 9AM AND 3PM.

STRIPING KEY:

-  TRIANGLE - PAINT

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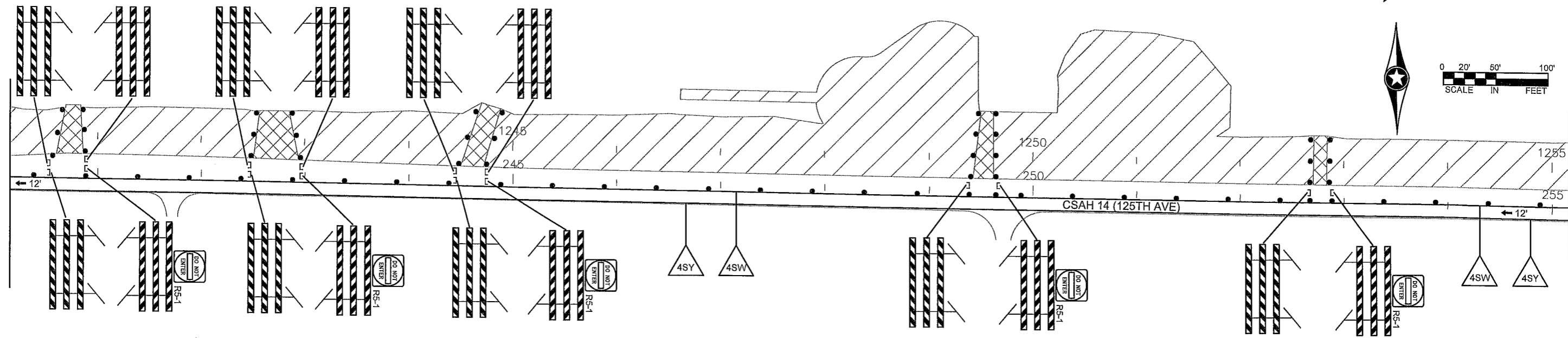
TRAFFIC CONTROL  
STAGE 2

SHEET 204 OF 303 SHEETS

NO	DATE	BY	CKD	APPR	REVISION
NAME: P:\002-614-048\Base\Traffic\Traffic Control Stage 2.dwg					

STA. 240+16

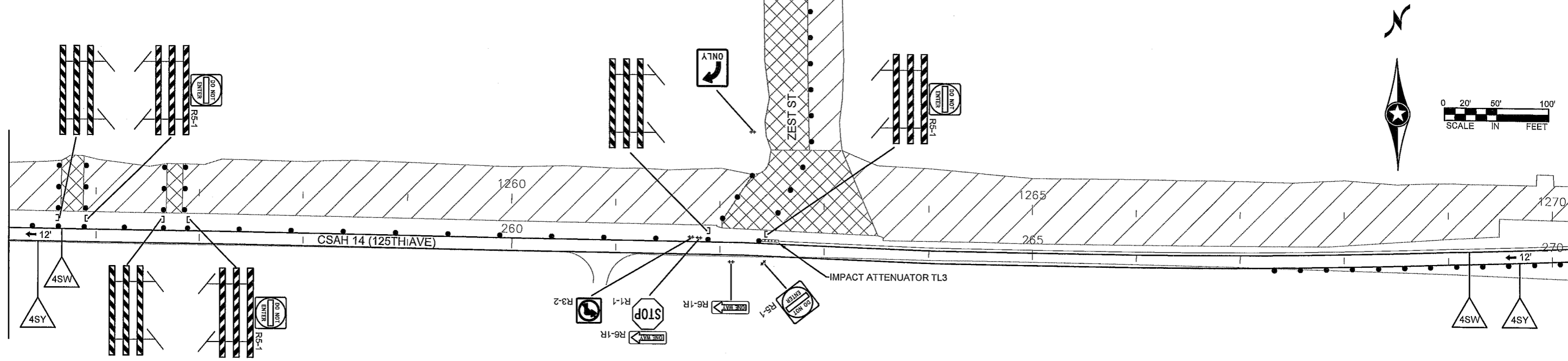
STA. 255+16



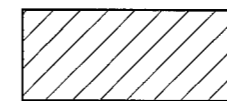
MATCHLINE "F"

STA. 255+16

STA. 270+16



CONSTRUCTION KEY:



STAGE 2 WORK ZONE



- STAGE 2 CONSTRUCTION UNDER TRAFFIC.
- USE FLAGGING OPERATION PER THE FIELD MANUAL BETWEEN 9AM AND 3PM.

STRIPING KEY:



TRIANGLE - PAINT

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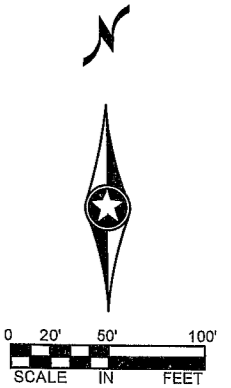
ANOKA COUNTY HIGHWAY DEPT.

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SAP 106-020-037

TRAFFIC CONTROL STAGE 2

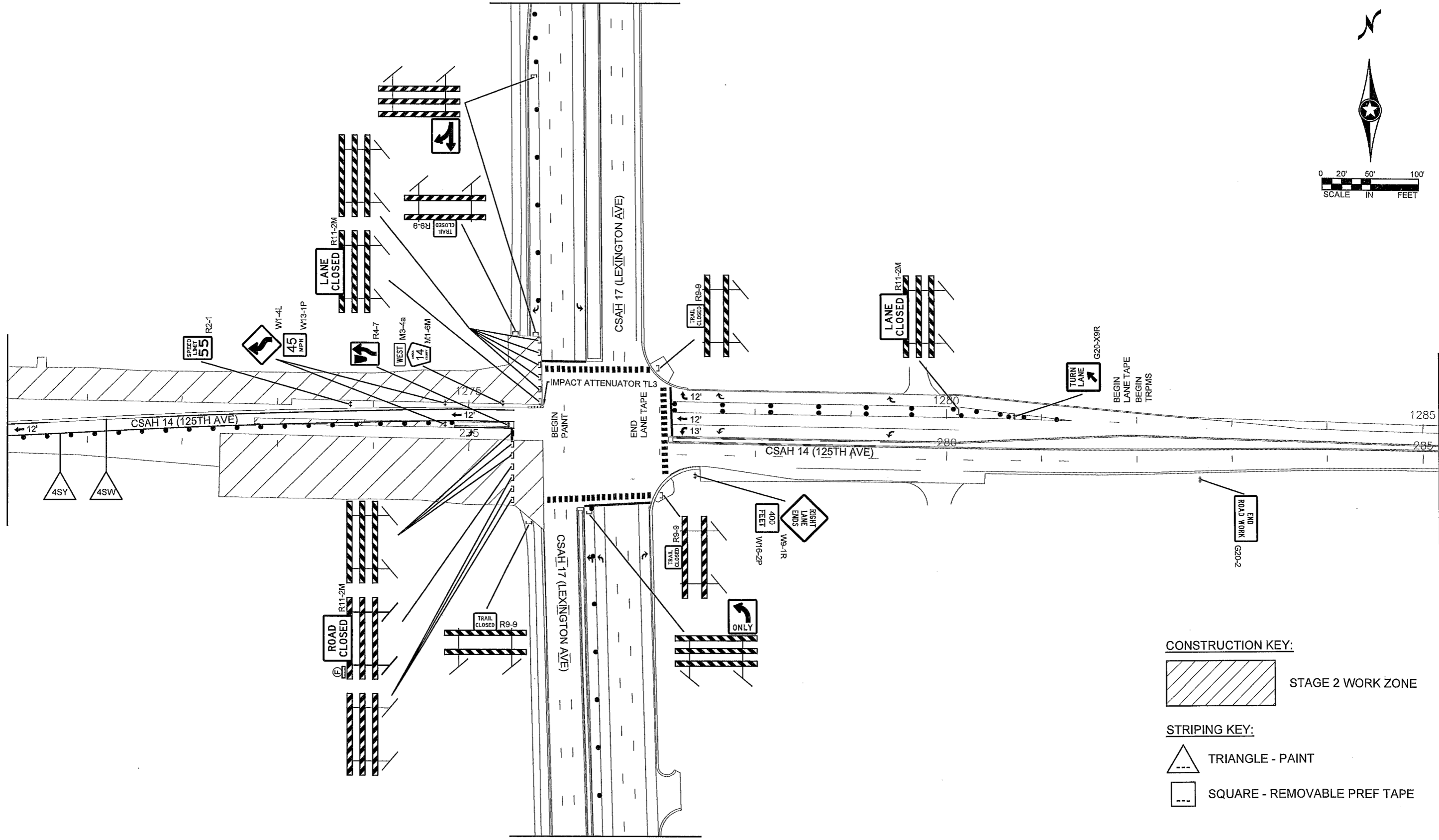
NO	DATE	BY	CKD	APPR	REVISION
NAME: P:\002-614-048\Base\Traffic\Traffic Control Stage 2.dwg					

MATCHLINE "G"




STA. 270+16

STA. 285+16





MATCHLINE "H"

**CONSTRUCTION KEY:**

 STAGE 2 WORK ZONE

**STRIPING KEY:**

 TRIANGLE - PAINT

 SQUARE - REMOVABLE PREF TAPE

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-614-048\Base\Traffic\Traffic Control Stage 2.dwg

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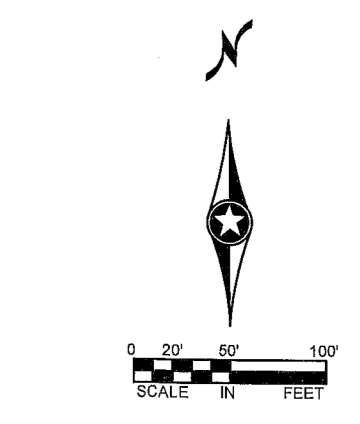
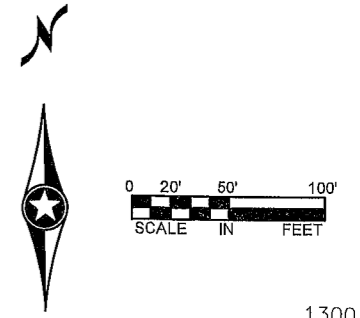
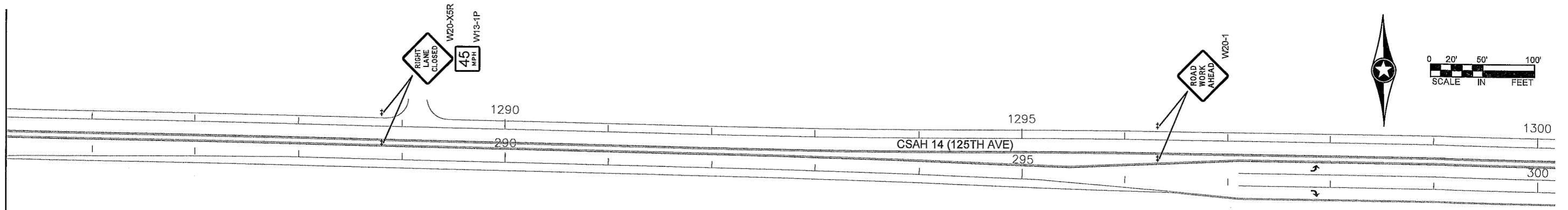
**ANOKA COUNTY  
HIGHWAY DEPT.**

SAP 002-614-048  
SAP 106-020-037

TRAFFIC CONTROL  
STAGE 2

SHEET 206 OF 303 SHEETS

STA. 285+16



MATCHLINE "D"

MATCHLINE "E"

10 OF 11

NO	DATE	BY	CKD	APPR	REVISION
NAME: P:\002-614-048\Base\Traffic\Traffic Control Stage 2.dwg					

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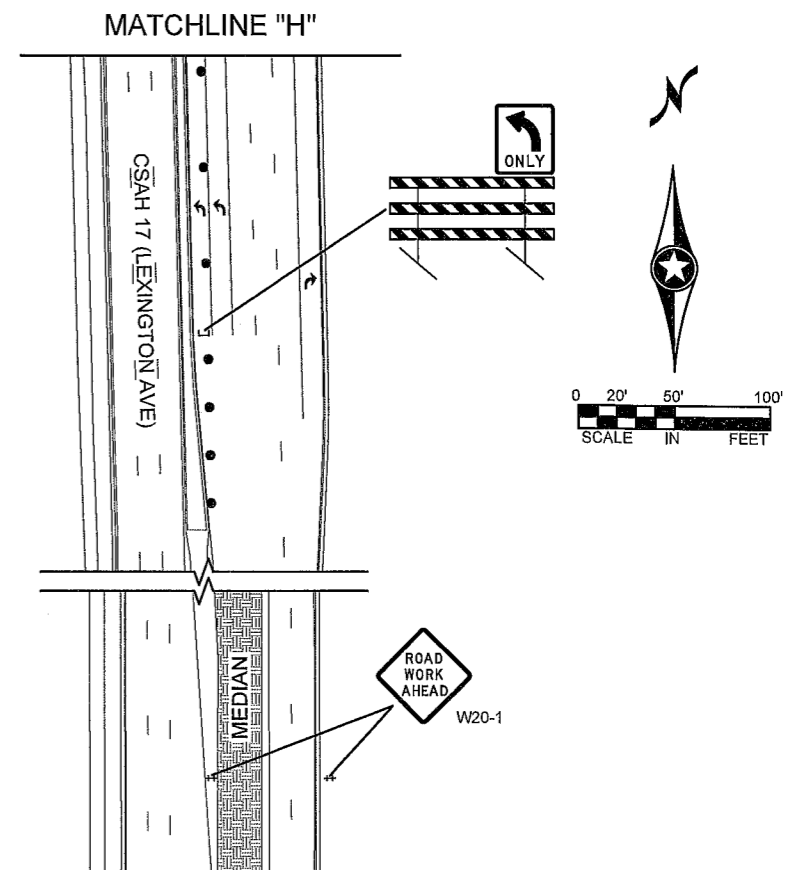
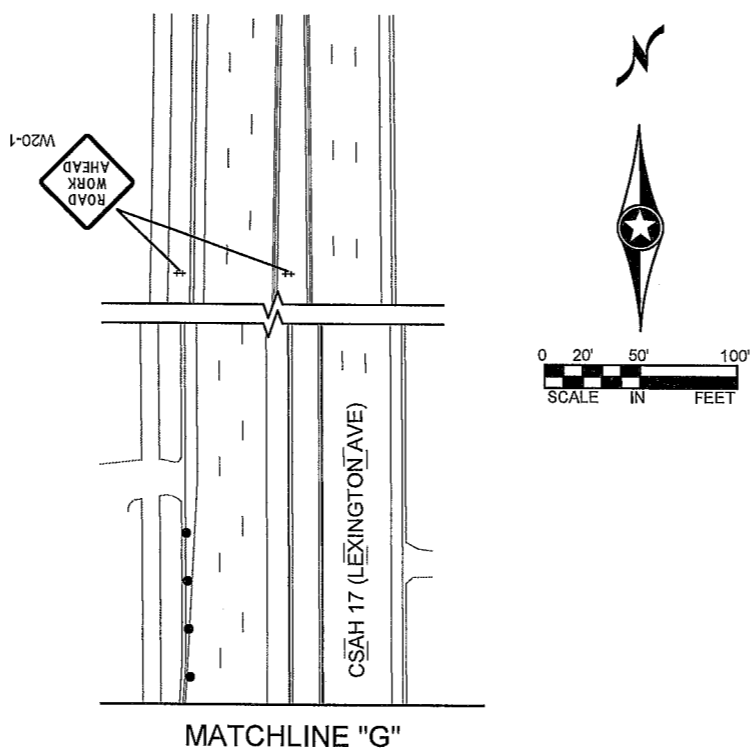
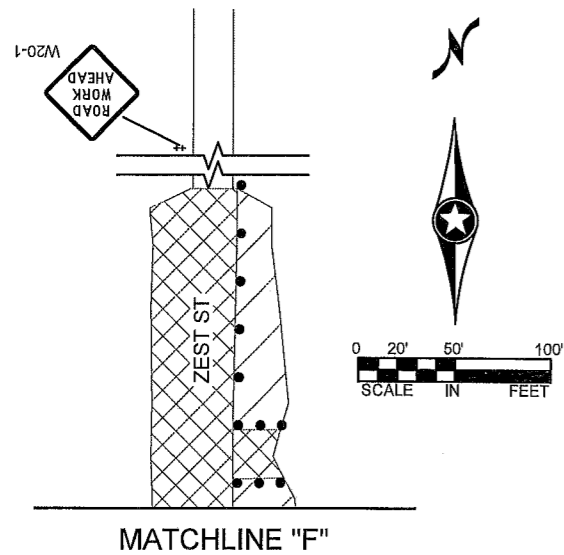


**ANOKA COUNTY**  
HIGHWAY DEPT.

SAP 002-614-048  
SAP 106-020-037

TRAFFIC CONTROL  
STAGE 2

SHEET 207 OF 303 SHEETS



**CONSTRUCTION KEY:**



STAGE 2 WORK ZONE



- STAGE 2 CONSTRUCTION UNDER TRAFFIC.
- USE FLAGGING OPERATION PER THE FIELD MANUAL BETWEEN 9AM AND 3PM.

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**ANOKA COUNTY  
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SAP 002-614-048  
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TRAFFIC CONTROL  
 STAGE 2

NO	DATE	BY	CKD	APPR	REVISION
NAME: P:\002-614-048\Base\Traffic\Traffic Control Stage 2.dwg					



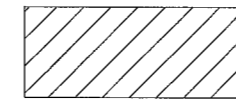
**STAGE 3 CONSTRUCTION NOTES:**

1. SWITCH TRAFFIC TO FINISHED NORTH SIDE.
2. LANES GENERALLY FOLLOW <14\_WB> ALIGNMENT.
3. PROVIDE MINIMUM 12' LANES IN BOTH DIRECTIONS.
4. GRADE PONDS AND INSTALL STORM SEWER ON SOUTH SIDE OF ROAD.
5. CLOSE INTERSECTION OF NORTH LAKE BLVD TIGHT DURING CONSTRUCTION (SEE DETOUR ROUTE).
6. ACCESS TO EMERGENCY VEHICLES SHALL BE MAINTAINED.
7. MAINTAIN ACCESS TO PROPERTIES ON SOUTH SIDE OF ROAD AT ALL TIMES. PROVIDE TEMPORARY ACCESS ALL THE WAY TO EITHER ZEST ST OR LEGACY CREEK PKWY BASED ON CONSTRUCTION ACTIVITIES. CONTRACTOR TO COORDINATE DIRECTLY WITH RESIDENTS, POST OFFICE AND OTHER RELATED SERVICES.
8. GRADE AND INSTALL CONCRETE CURB AND GUTTER AND PLACE BASE AND BINDER BITUMINOUS PAVEMENT COURSE ON SOUTH SIDE.
9. INSTALL INLET PROTECTION.
10. STABILIZE VEGETATION AND SOIL STOCKPILES WITHIN 7 DAYS OF ROUGH GRADING OR INACTIVITY. ADDITIONAL TEMPORARY AND PERMANENT EROSION CONTROL AS DIRECTED BY ENGINEER.

**STAGE 3 TRAFFIC CONTROL NOTES: (TYP.)**

1. 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. G20-X1 SIGNS TO BE REMOVED WHEN ROAD CLOSURE COMMENCES.
2. SIGNAL SYSTEM TO REMAIN IN FULL OPERATION ON CSAH 14 AT HARPERS ST AND CSAH 14 AT CSAH 17.
3. REMOVE ALL CONFLICTING PAVEMENT MARKINGS WITHIN THE CONSTRUCTION LIMITS. BLACK REMOVABLE PREFORMED PLASTIC MARKING TAPE SHALL BE USED ON ALL CONFLICTING PAVEMENT MARKINGS OUTSIDE OF THE CONSTRUCTION LIMITS AND AS INDICATED ON THE PLAN SHEETS.
4. ADD TRPM'S SPACED EVERY 10 FEET IN TAPER/TRANSITION AREAS.
5. SIGN COVERING SHALL BE A RIGID PANEL. NO PLASTIC, BURLAP, ROPE, ETC.
6. ALL SIGNS SHALL BE MAINTAINED THROUGHOUT CONSTRUCTION.
7. ACCESS SHALL BE MAINTAINED TO ALL STREETS AND DRIVEWAY ACCESS LOCATIONS IN THE CONSTRUCTION AREA WITH THE EXCEPTION OF STREET CLOSURES.
8. FOR RELOCATING TRAFFIC SIGNS DURING CONSTRUCTION, AS DIRECTED BY THE ENGINEER, RELOCATION INCIDENTAL TO TRAFFIC CONTROL.
9. ALL TEMPORARY TRAFFIC CONTROL SETUPS SHALL BE IN ACCORDANCE WITH THE MOST RECENT EDITION OF THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES AND TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS - FIELD MANUAL OF THE SAME MANUAL.

**CONSTRUCTION KEY:**



STAGE 3 WORK ZONE

**STRIPING KEY:**



TRIANGLE - PAINT



SQUARE - REMOVABLE PREF TAPE

**TRAFFIC CONTROL KEY:**

⊙ TUBULAR MARKER

● DRUM

++ TEMPORARY SIGN

⊏ BARRICADE

**TEMPORARY TRAFFIC CONTROL DISTANCE CHART**

POSTED SPEED LIMIT PRIOR TO WORK STARTING (MPH)	ADVANCE WARNING SIGN SPACING (A) FEET	DECISION SIGHT DISTANCE (D) FEET	TAPER LENGTH (12 FT LANE) (L) FEET	SHIFTING TAPER (12 FT LANE) (L/2) FEET	TYPICAL SHOULDER TAPER (L/3) FEET	BUFFER SPACE (B) FEET
0-30	G=25 FT.	100	200	100	75	200
35-40		325	325	175	125	305
45-50	G=50 FT.	600	600	300	200	425
55		750	700	350	250	500
60-65		1000	800	400	275	650
70-75		1200	900	450	300	820

MINNESOTA TEMPORARY TRAFFIC CONTROL FIELD MANUAL 2018

NO	DATE	BY	CKD	APPR	REVISION

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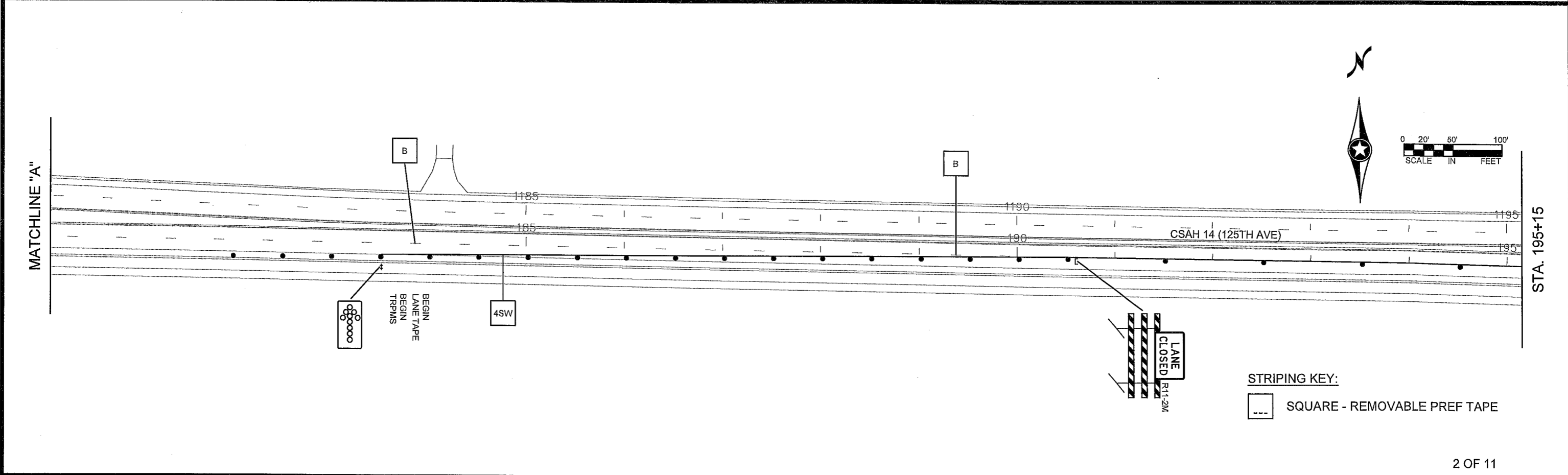
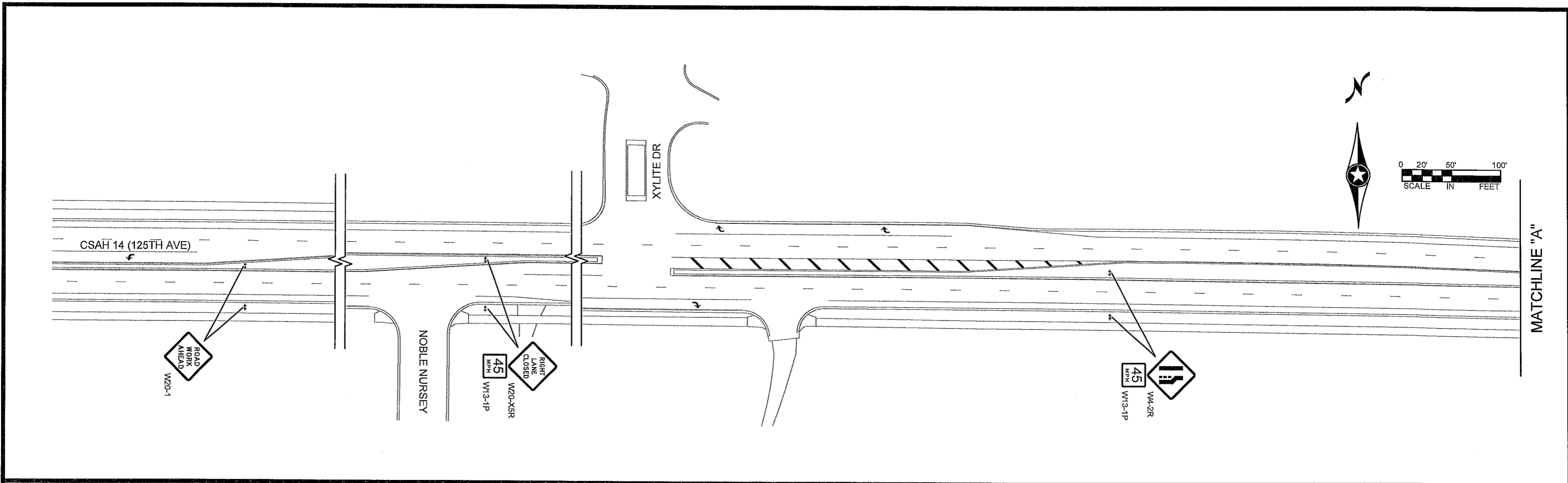


**ANOKA COUNTY  
HIGHWAY DEPT.**

SAP 002-614-048  
SAP 106-020-037

TRAFFIC CONTROL  
STAGE 3

SHEET 209 OF 303 SHEETS



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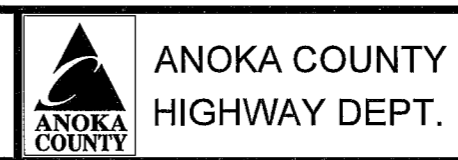
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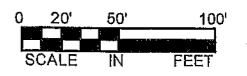
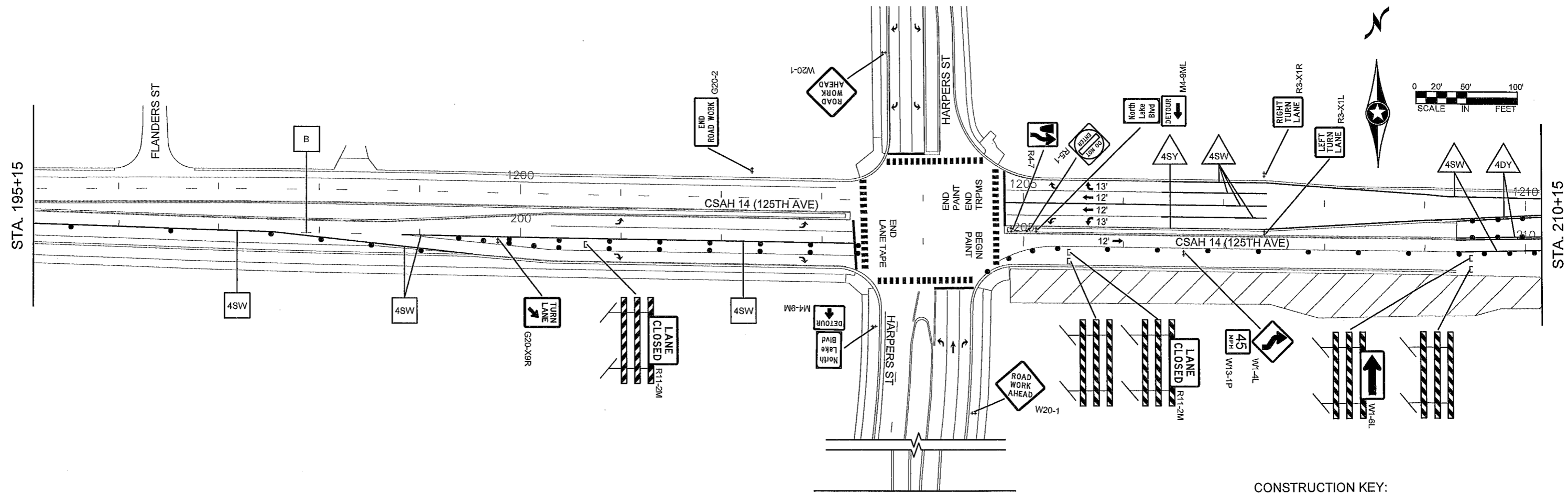
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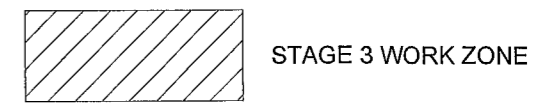
SAP 002-614-048  
SAP 106-020-037

TRAFFIC CONTROL  
STAGE 3

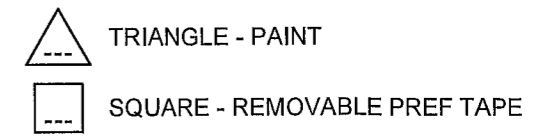
SHEET 210 OF 303 SHEETS



**CONSTRUCTION KEY:**



**STRIPING KEY:**



NO	DATE	BY	CKD	APPR	REVISION

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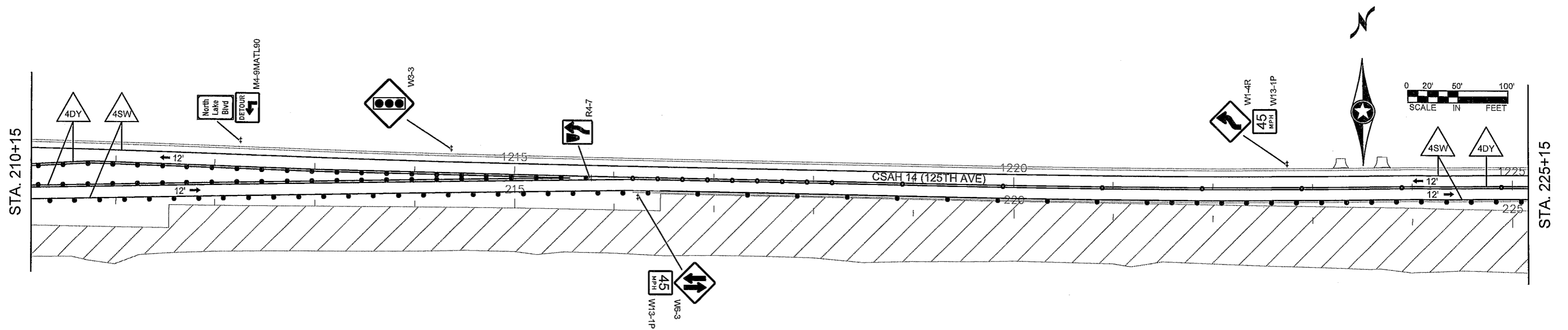


**ANOKA COUNTY  
HIGHWAY DEPT.**

SAP 002-614-048  
SAP 106-020-037

**TRAFFIC CONTROL  
STAGE 3**

SHEET 211 OF 303 SHEETS



**CONSTRUCTION KEY:**



**STRIPING KEY:**



NO	DATE	BY	CKD	APPR	REVISION
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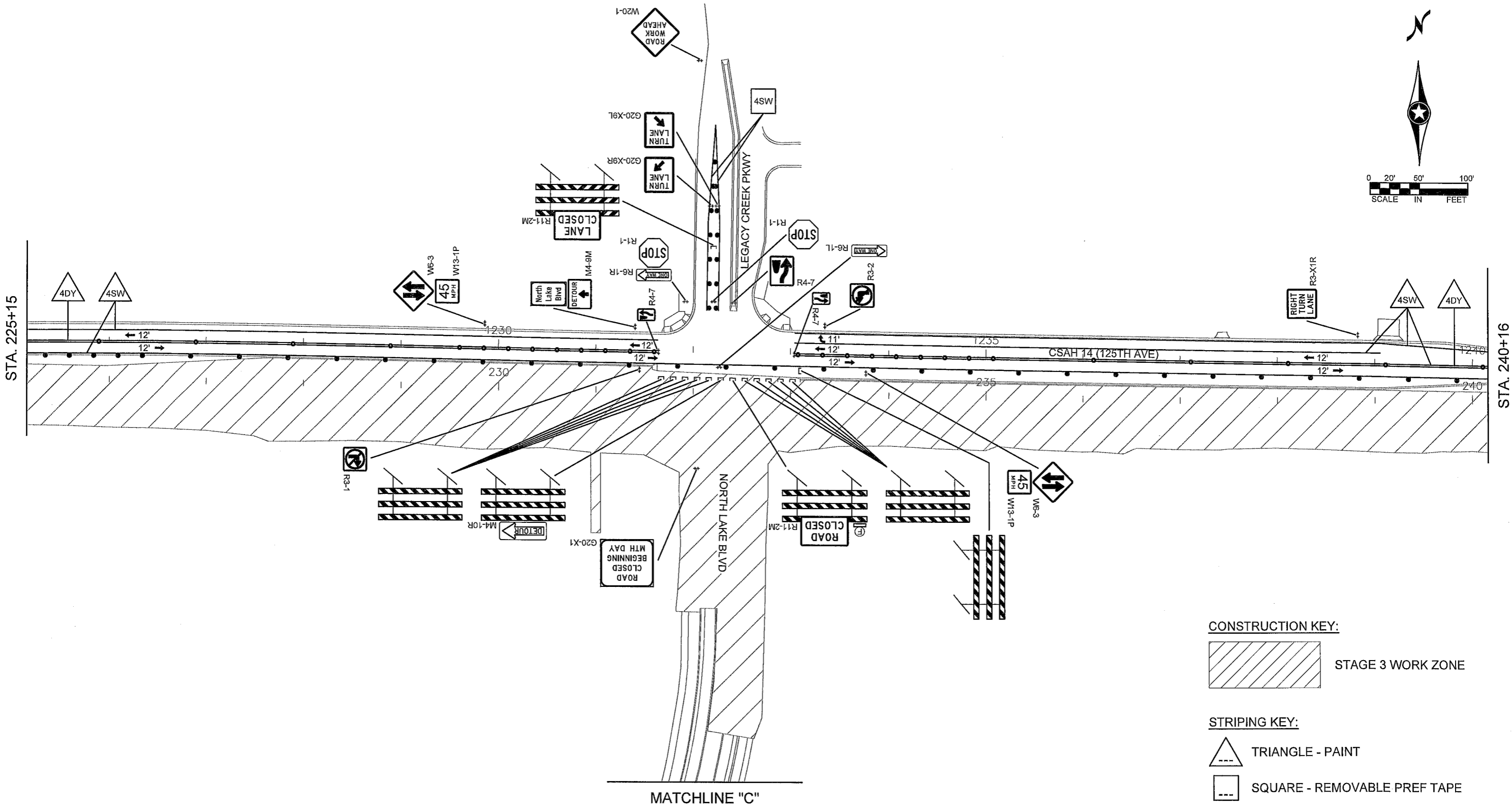
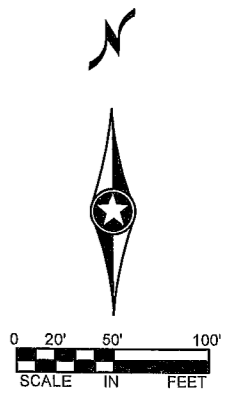
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**ANOKA COUNTY  
 HIGHWAY DEPT.**

SAP 002-614-048  
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**TRAFFIC CONTROL  
 STAGE 3**



- CONSTRUCTION KEY:**
- STAGE 3 WORK ZONE
- STRIPING KEY:**
- TRIANGLE - PAINT
  - SQUARE - REMOVABLE PREF TAPE

NO	DATE	BY	CKD	APPR	REVISION

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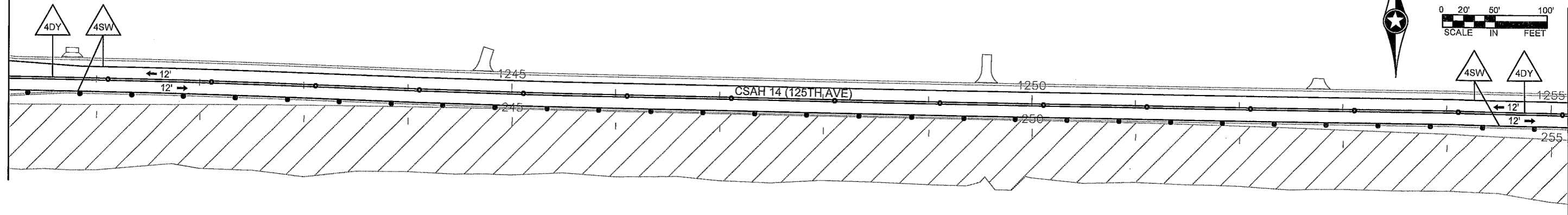
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TRAFFIC CONTROL  
STAGE 3

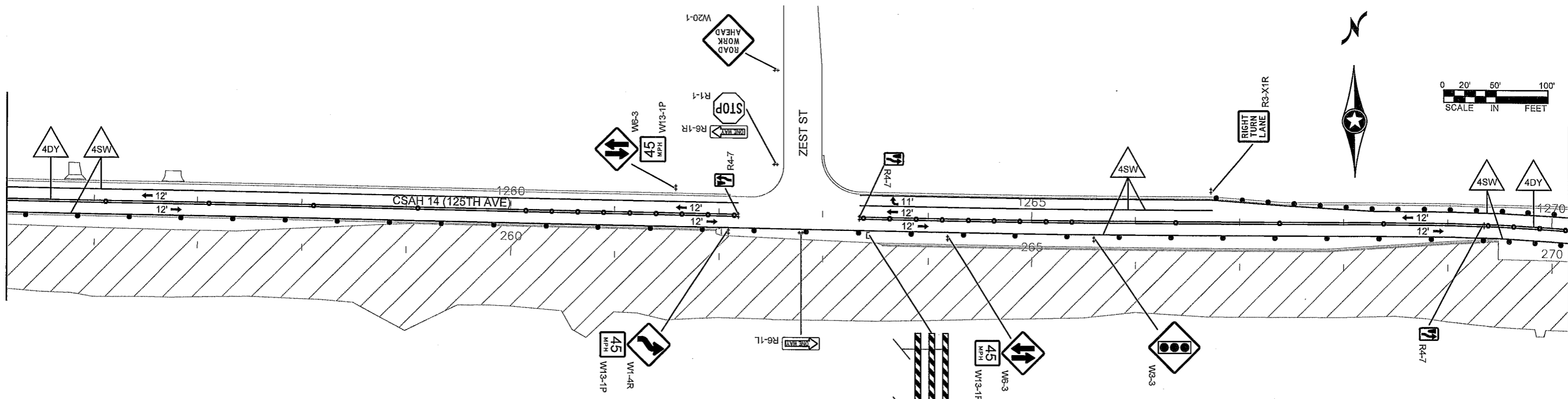
SHEET 213 OF 303 SHEETS

STA. 240+16



STA. 255+16

STA. 255+16



STA. 270+16

CONSTRUCTION KEY:



STRIPING KEY:



NO	DATE	BY	CKD	APPR	REVISION
NAME: P:\002-614-048\Base\Traffic\Traffic Control Stage 3.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 DATE: 2/22/22

SIGNATURE: *Sean R. Thiel* LICENSE NO. 45129

DRAWN BY: FL DATE: 10/28/21

DESIGN BY: FL DATE: 10/28/21

CHECKED BY: DATE:

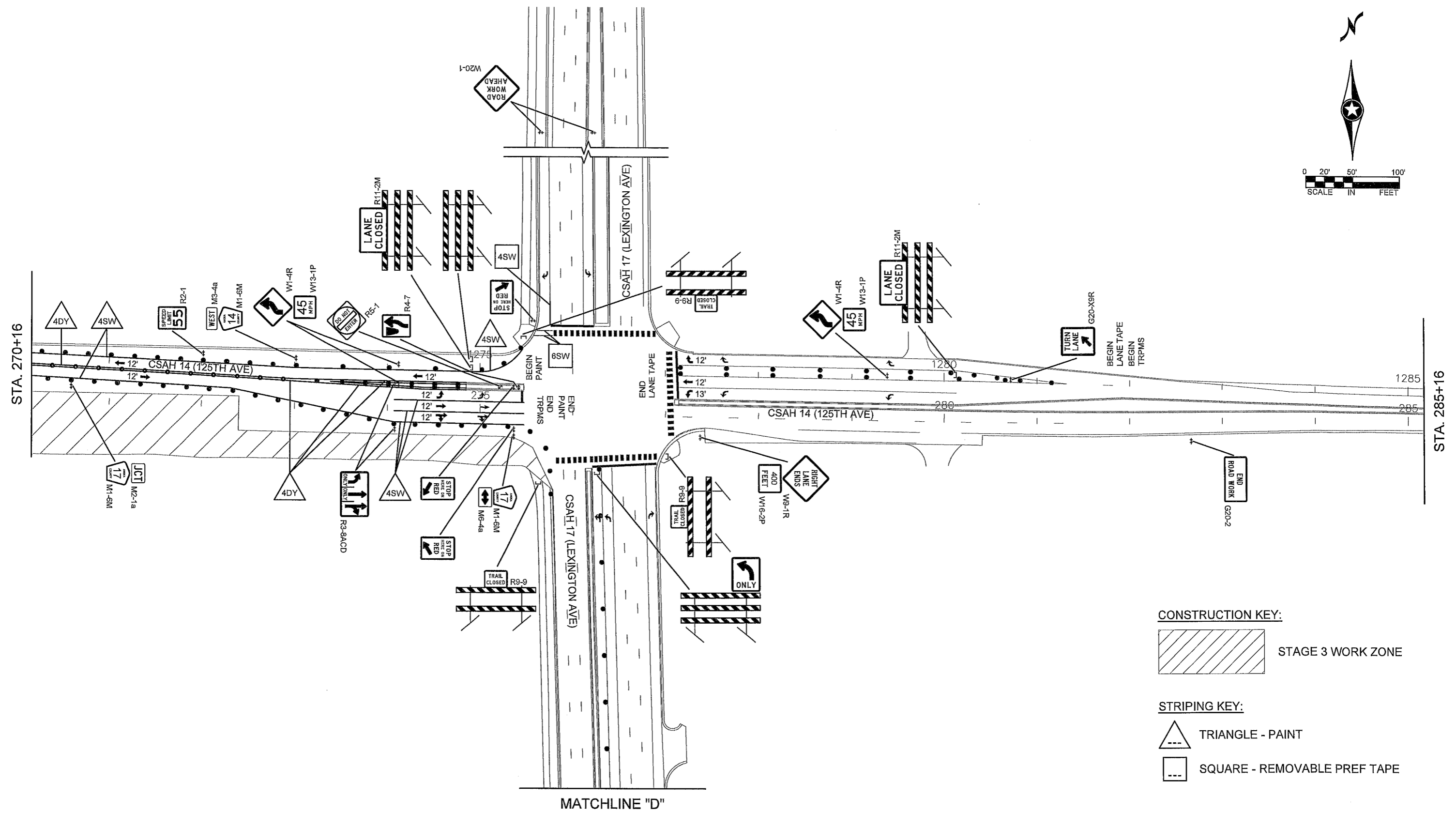
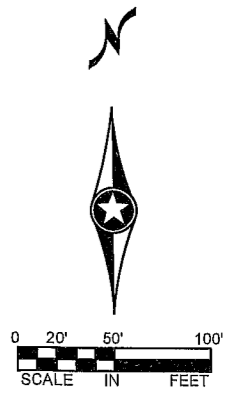


ANOKA COUNTY  
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SAP 002-614-048  
SAP 106-020-037

TRAFFIC CONTROL  
STAGE 3

SHEET 214 OF 303 SHEETS



- CONSTRUCTION KEY:**
- STAGE 3 WORK ZONE
- STRIPING KEY:**
- TRIANGLE - PAINT
  - SQUARE - REMOVABLE PREF TAPE

NO	DATE	BY	CKD	APPR	REVISION
NAME: P:\1002-614-048\Base\Traffic\Traffic Control Stage 3.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.

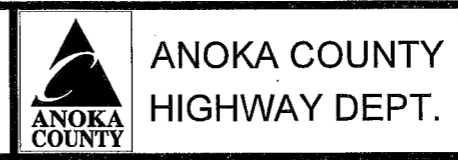
PRINT NAME: SEAN R. THIEL      DATE: 2/22/22

SIGNATURE: *Sean R. Thiel*      LICENSE NO. 45129

DRAWN BY: FL      DATE: 10/28/21

DESIGN BY: FL      DATE: 10/28/21

CHECKED BY:      DATE:     

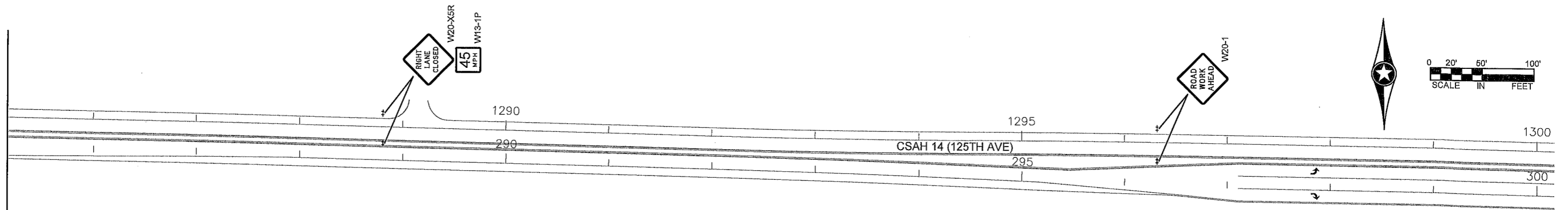


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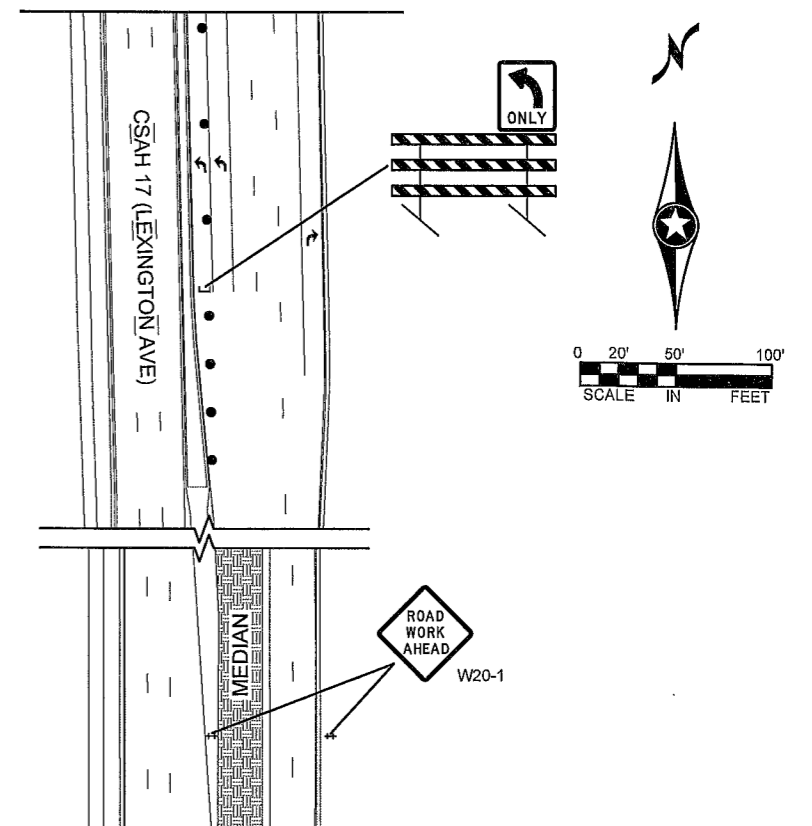
TRAFFIC CONTROL  
STAGE 3

SHEET 215 OF 303 SHEETS

STA. 285+16



MATCHLINE "D"



8 OF 11

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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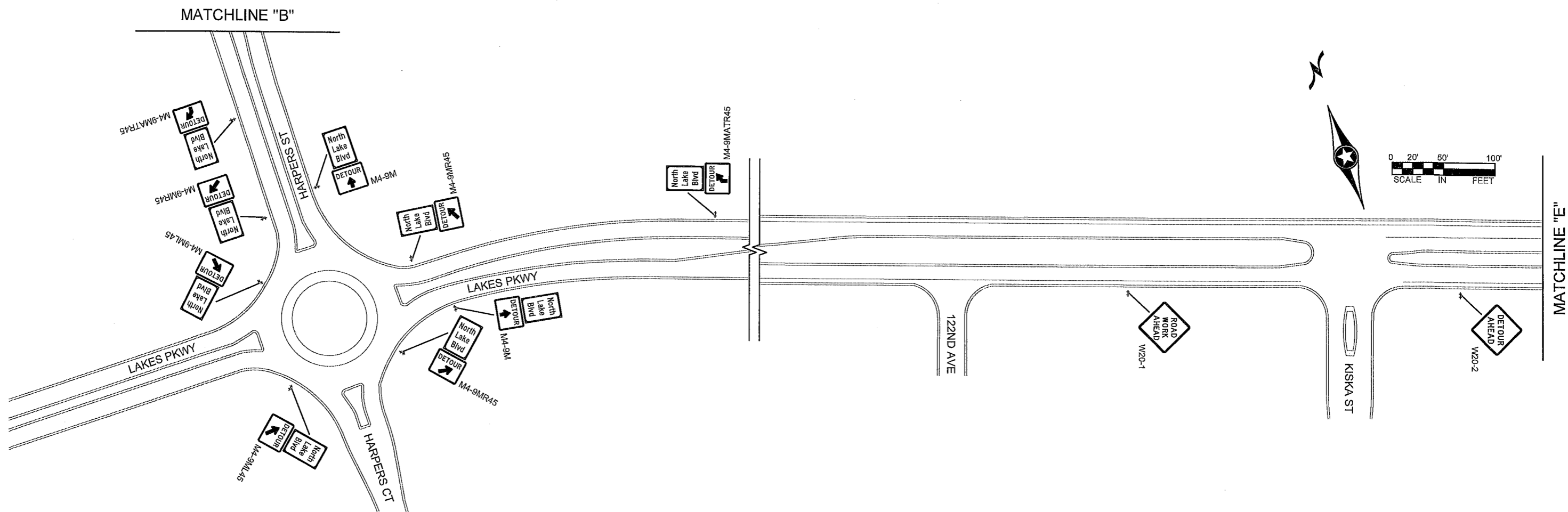
TRAFFIC CONTROL  
 STAGE 3

SHEET 216 OF 303 SHEETS

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-614-048\Base\Traffic\Traffic Control Stage 3.dwg





NO	DATE	BY	CKD	APPR	REVISION

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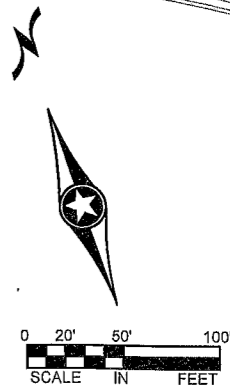
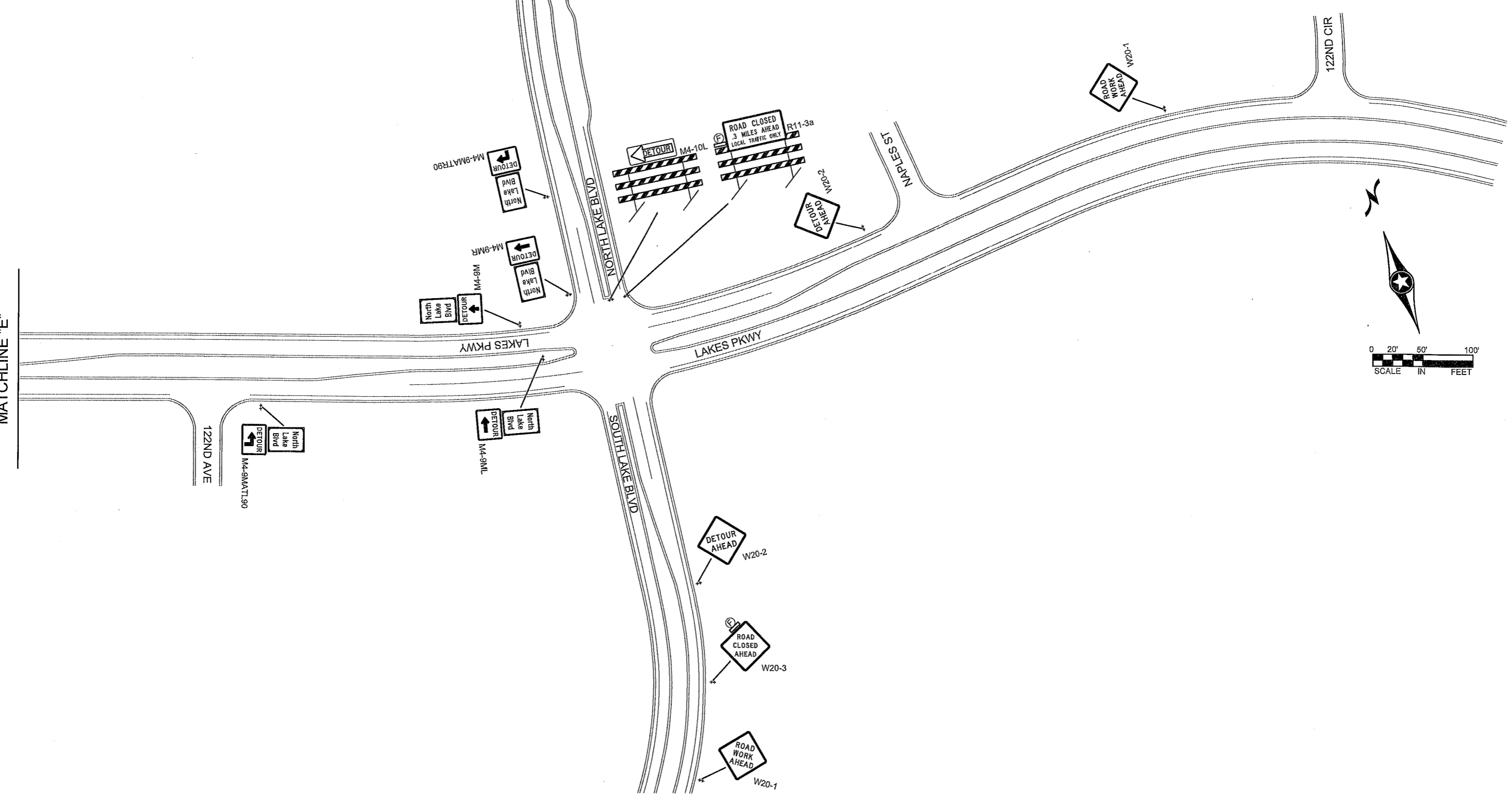
SAP 002-614-048  
SAP 106-020-037

TRAFFIC CONTROL  
STAGE 3

SHEET 217 OF 303 SHEETS

MATCHLINE "F"

MATCHLINE "E"



I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.  
 PRINT NAME: SEAN R. THIEL DATE: 2/22/22  
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DRAWN BY \_\_\_ FL \_\_\_ DATE 10/28/21  
 DESIGN BY \_\_\_ FL \_\_\_ DATE 10/28/21  
 CHECKED BY \_\_\_ DATE \_\_\_



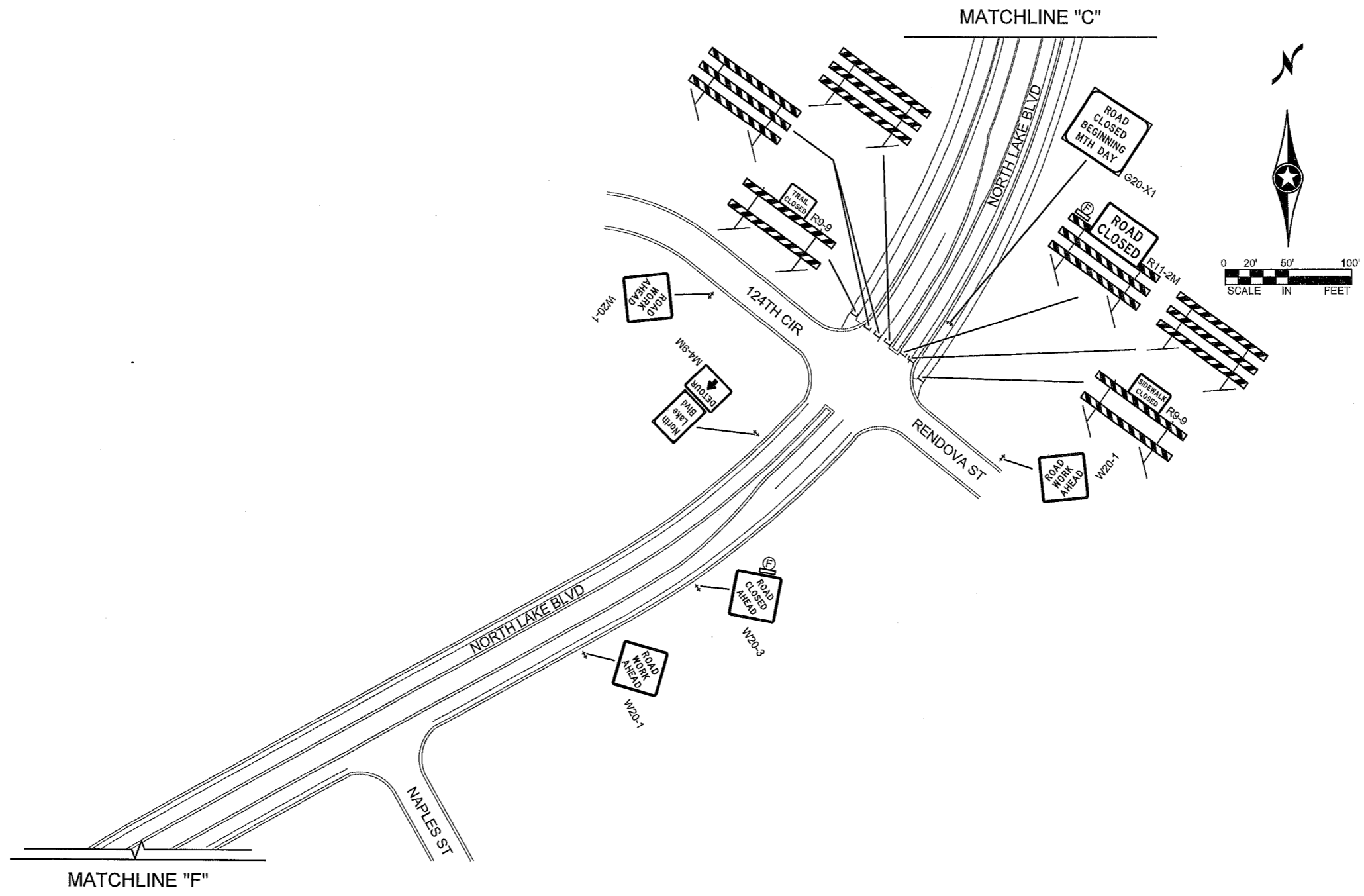
**ANOKA COUNTY  
 HIGHWAY DEPT.**

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 SAP 106-020-037

TRAFFIC CONTROL  
 STAGE 3

SHEET 218 OF 303 SHEETS

NO	DATE	BY	CKD	APPR	REVISION
NAME: P:\002-614-048\Traffic\Traffic Control Stage 3.dwg					



NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-614-048\BaselTrafficTraffic Control Stage 3.dwg

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**ANOKA COUNTY**  
HIGHWAY DEPT.

SAP 002-614-048  
SAP 106-020-037

TRAFFIC CONTROL  
STAGE 3

SHEET 219 OF 303 SHEETS

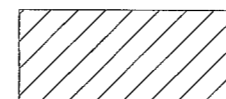
**STAGE 4 CONSTRUCTION NOTES:**

1. EASTBOUND TRAFFIC ON SOUTH SIDE, WESTBOUND TRAFFIC ON NORTH SIDE OF ROAD.
2. INSIDE THROUGH LANES CLOSED.
3. PROVIDE MINIMUM 12' THROUGH LANES IN EACH DIRECTION. TEMPORARY TURN LANE CLOSURES AS NECESSARY PER THE MOST RECENT VERSION OF THE MN MUTCD FIELD MANUAL.
4. GRADE AND INSTALL CURB AND GUTTER AND CONSTRUCT LANES AT STAGING CROSS OVER LOCATIONS.
5. CONCRETE MEDIAN FLATWORK THROUGHOUT THE PROJECT LENGTH.
6. STABILIZE VEGETATION AND SOIL STOCKPILES WITHIN 7 DAYS OF ROUGH GRADING OR INACTIVITY. ADDITIONAL TEMPORARY AND PERMANENT EROSION CONTROL AS DIRECTED BY ENGINEER.

**STAGE 4 TRAFFIC CONTROL NOTES: (TYP.)**

1. SIGNAL SYSTEM TO REMAIN IN FULL OPERATION ON CSAH 14 AT HARPERS ST AND CSAH 14 AT CSAH 17.
2. REMOVE ALL CONFLICTING PAVEMENT MARKINGS WITHIN THE CONSTRUCTION LIMITS. BLACK REMOVABLE PREFORMED PLASTIC MARKING TAPE SHALL BE USED ON ALL CONFLICTING PAVEMENT MARKINGS OUTSIDE OF THE CONSTRUCTION LIMITS AND AS INDICATED ON THE PLAN SHEETS.
3. ADD TRPM'S SPACED EVERY 10 FEET IN TAPER/TRANSITION AREAS.
4. SIGN COVERING SHALL BE A RIGID PANEL. NO PLASTIC, BURLAP, ROPE, ETC.
5. ALL SIGNS SHALL BE MAINTAINED THROUGHOUT CONSTRUCTION.
6. ACCESS SHALL BE MAINTAINED TO ALL STREETS AND DRIVEWAY ACCESS LOCATIONS IN THE CONSTRUCTION AREA WITH THE EXCEPTION OF STREET CLOSURES.
7. FOR RELOCATING TRAFFIC SIGNS DURING CONSTRUCTION, AS DIRECTED BY THE ENGINEER, RELOCATION INCIDENTAL TO TRAFFIC CONTROL.
8. ALL TEMPORARY TRAFFIC CONTROL SETUPS SHALL BE IN ACCORDANCE WITH THE MOST RECENT EDITION OF THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES AND TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS - FIELD MANUAL OF THE SAME MANUAL.

**CONSTRUCTION KEY:**



STAGE 2 WORK ZONE

**TRAFFIC CONTROL KEY:**

- DRUM
- ++ TEMPORARY SIGN
- ⌊ BARRICADE

**STRIPING KEY:**

- △ TRIANGLE - PAINT
- SQUARE - REMOVABLE PREF TAPE

**TEMPORARY TRAFFIC CONTROL DISTANCE CHART**

POSTED SPEED LIMIT PRIOR TO WORK STARTING  (MPH)	ADVANCE WARNING SIGN SPACING (A) FEET	DECISION SIGHT DISTANCE (D) FEET	TAPER LENGTH (12 FT LANE) (L) FEET	SHIFTING TAPER (12 FT LANE) (L/2) FEET	TYPICAL SHOULDER TAPER (L/3) FEET	BUFFER SPACE (B) FEET
0-30	100	550	200	100	75	200
35-40	325	700	325	175	125	305
45-50	600	900	600	300	200	425
55	750	1200	700	350	250	500
60-65	1000	1400	800	400	275	650
70-75	1200	1600	900	450	300	820

MINNESOTA TEMPORARY TRAFFIC CONTROL FIELD MANUAL 2018

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-614-048\Bases\Traffic\Traffic Control Stage 4.dwg

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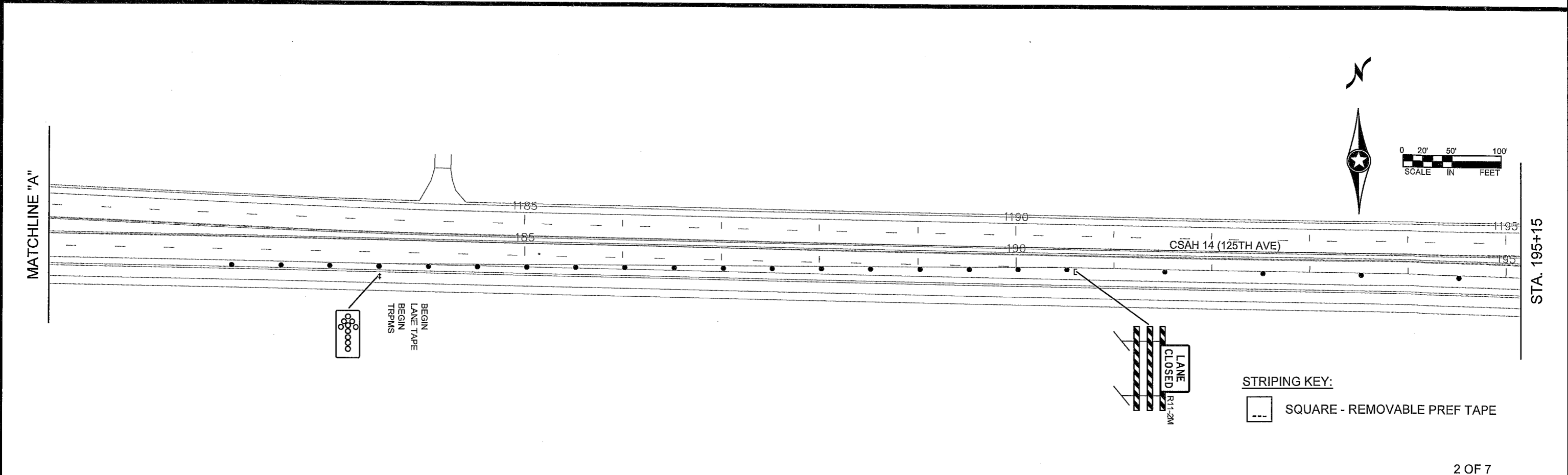
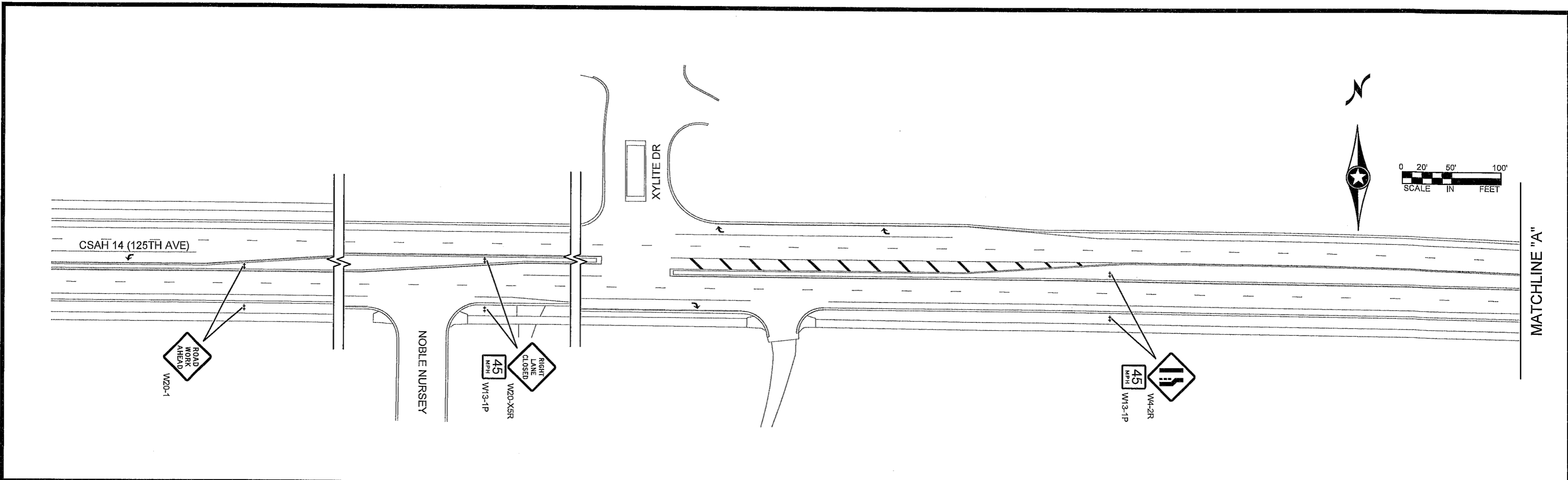
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DESIGN BY: EL DATE: 10/28/21  
CHECKED BY: DATE:



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HIGHWAY DEPT.**

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SAP 106-020-037

TRAFFIC CONTROL  
STAGE 4



STRIPING KEY:

□ SQUARE - REMOVABLE PREF TAPE

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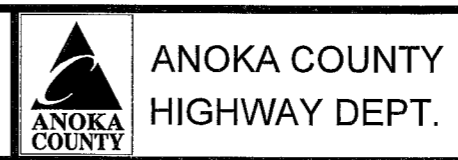
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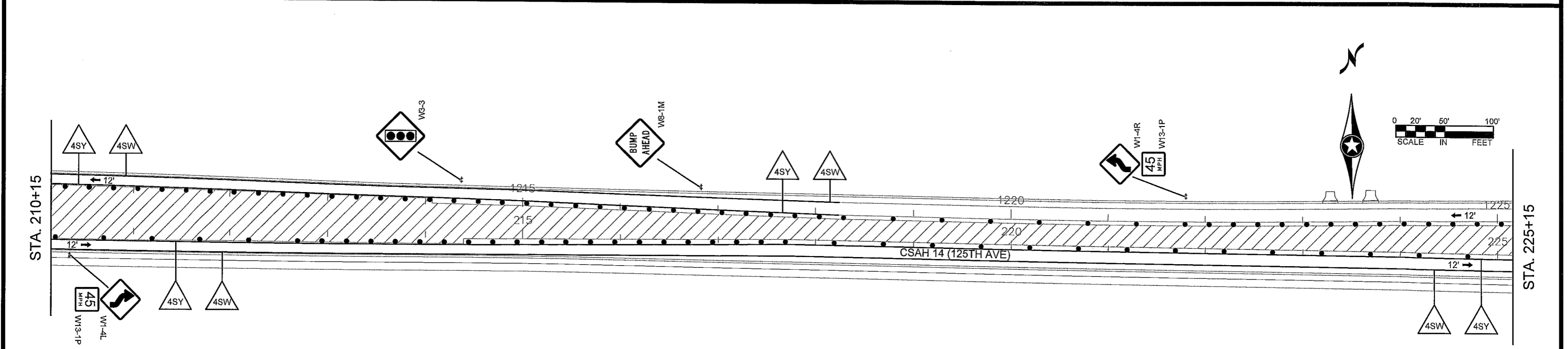
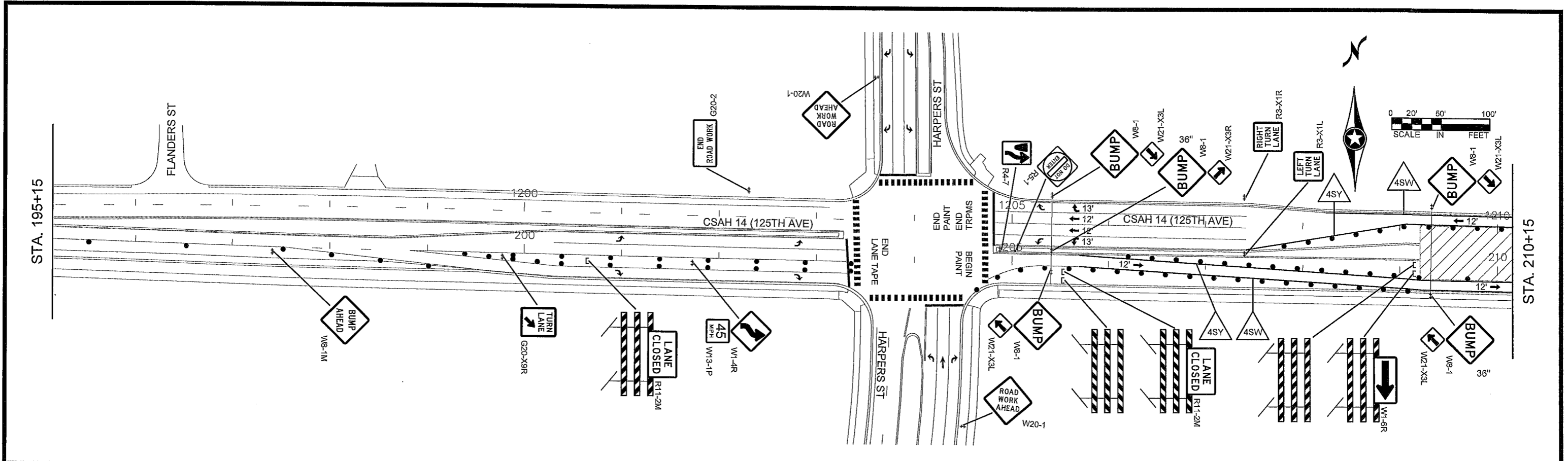
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SAP 002-614-048  
SAP 106-020-037

TRAFFIC CONTROL STAGE 4

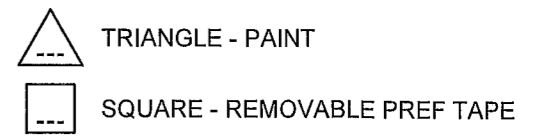
SHEET 221 OF 303 SHEETS



CONSTRUCTION KEY:



STRIPING KEY:



NO	DATE	BY	CKD	APPR	REVISION

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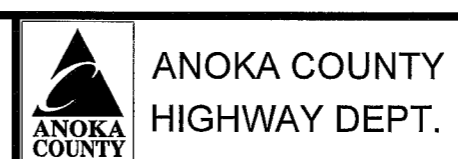
PRINT NAME: SEAN R. THIE DATE: 2/22/22

SIGNATURE: *Sean R. Thie* LICENSE NO. 45129

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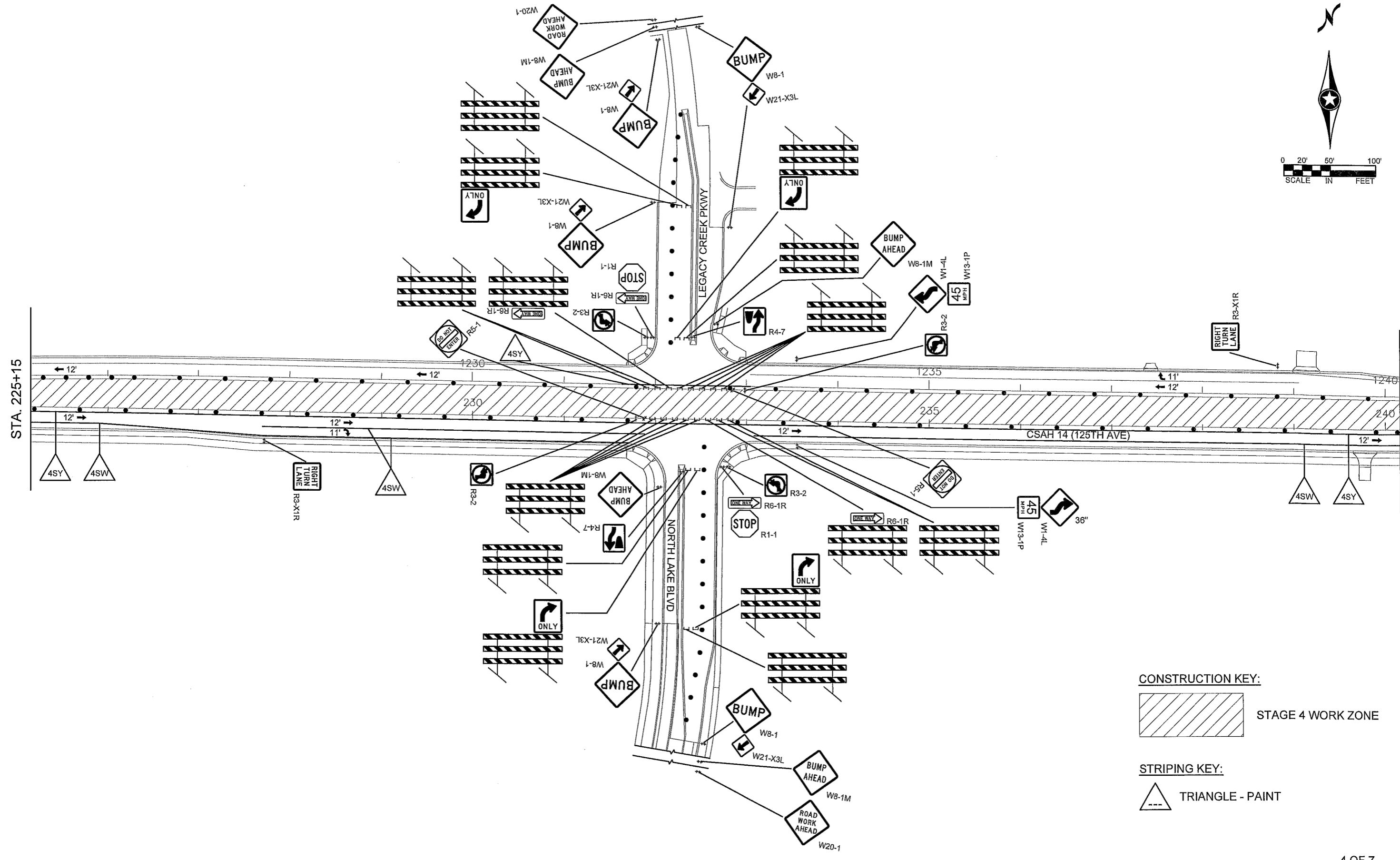
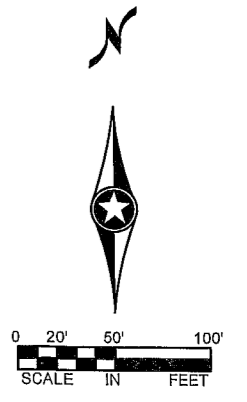
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SAP 002-614-048  
SAP 106-020-037

TRAFFIC CONTROL  
STAGE 4

SHEET 222 OF 303 SHEETS



**CONSTRUCTION KEY:**  
 STAGE 4 WORK ZONE

**STRIPING KEY:**  
 TRIANGLE - PAINT

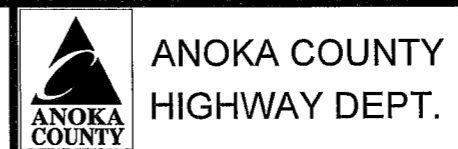
NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-614-048\Base\Traffic\Traffic Control Stage 4.dwg

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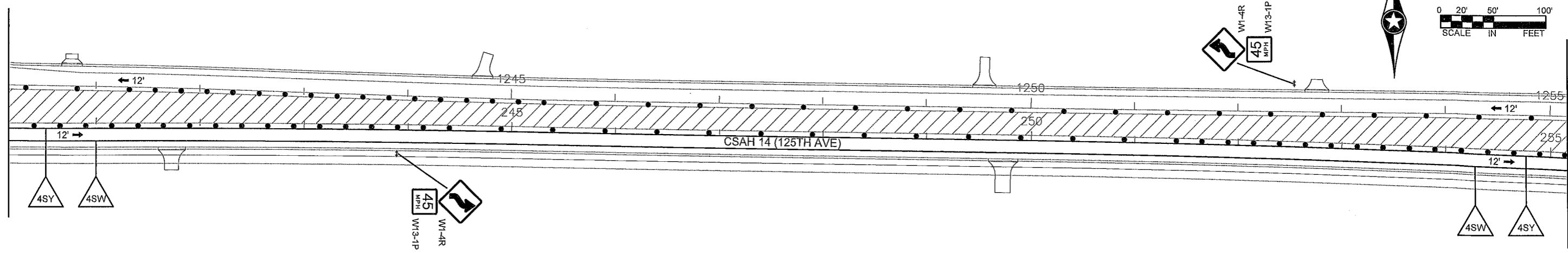


SAP 002-614-048  
 SAP 106-020-037

TRAFFIC CONTROL  
 STAGE 4  
 SHEET 223 OF 303 SHEETS

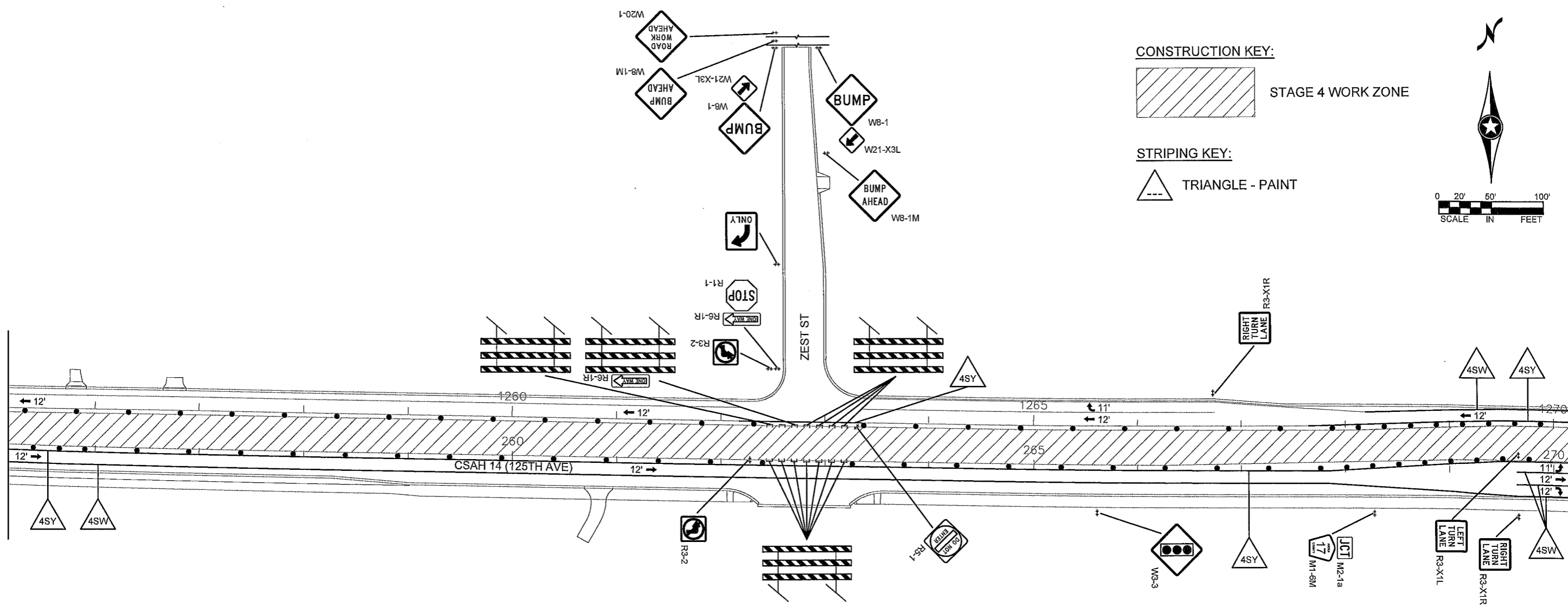
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STA. 255+16



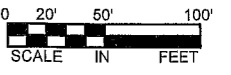
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STA. 270+16



**CONSTRUCTION KEY:**  
 STAGE 4 WORK ZONE

**STRIPING KEY:**  
 TRIANGLE - PAINT



5 OF 7

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-614-048\Base\Traffic\Traffic Control Stage 4.dwg

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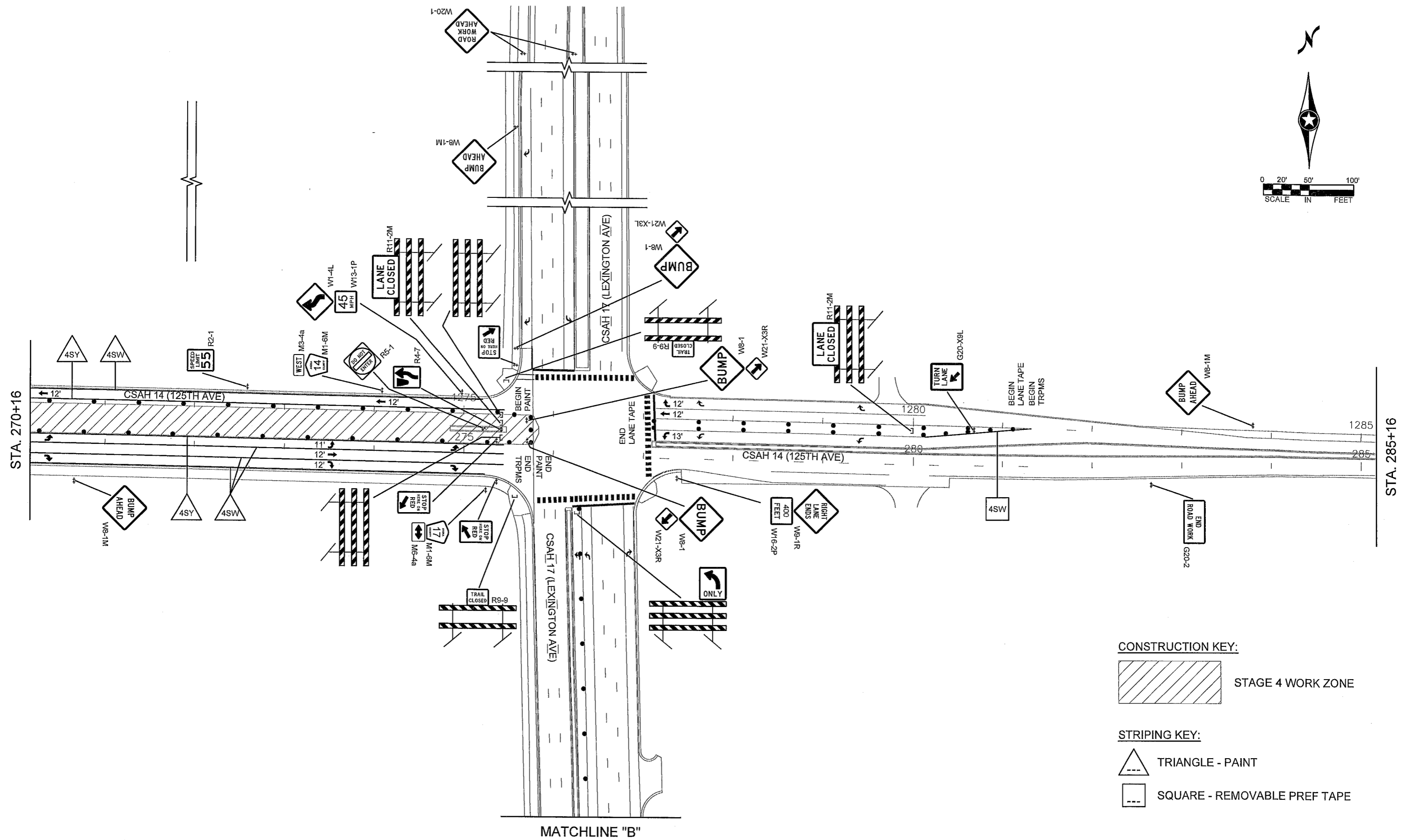
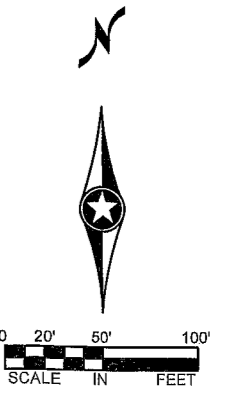


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TRAFFIC CONTROL  
 STAGE 4  
 SHEET 224 OF 303 SHEETS





- CONSTRUCTION KEY:**
- STAGE 4 WORK ZONE
- STRIPING KEY:**
- TRIANGLE - PAINT
  - SQUARE - REMOVABLE PREF TAPE

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-614-048\Base\Traffic\Traffic Control Stage 4.dwg

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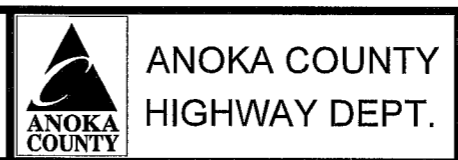
PRINT NAME: SEAN R. THIEL      DATE: 2/22/22

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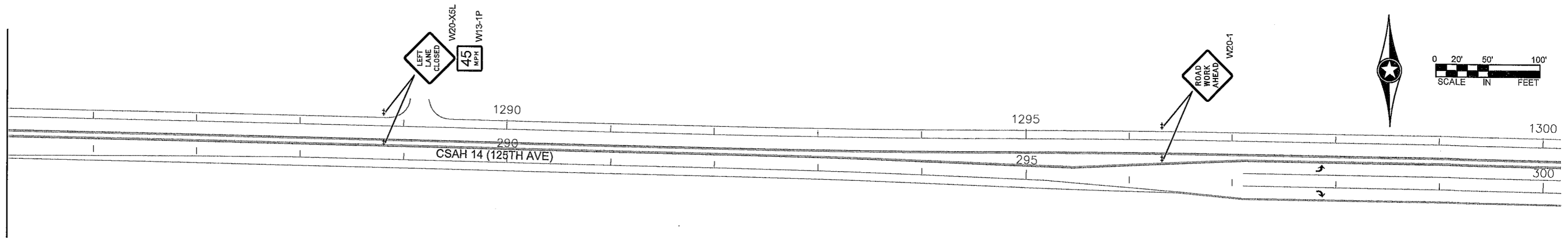


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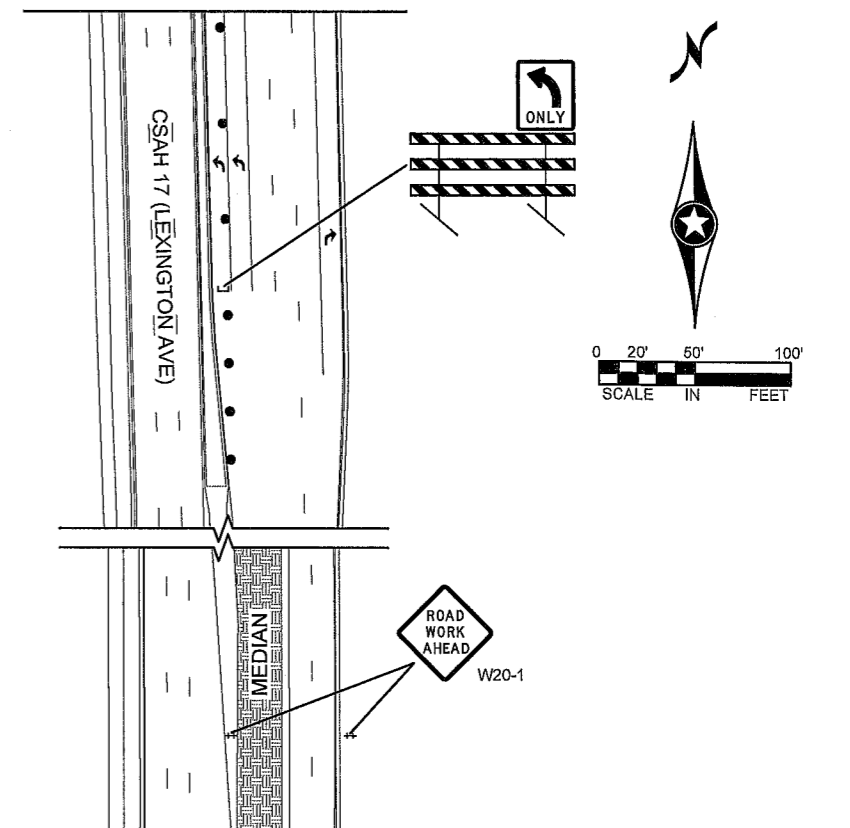
TRAFFIC CONTROL  
STAGE 4

SHEET 225 OF 303 SHEETS

STA. 285+16



MATCHLINE "B"



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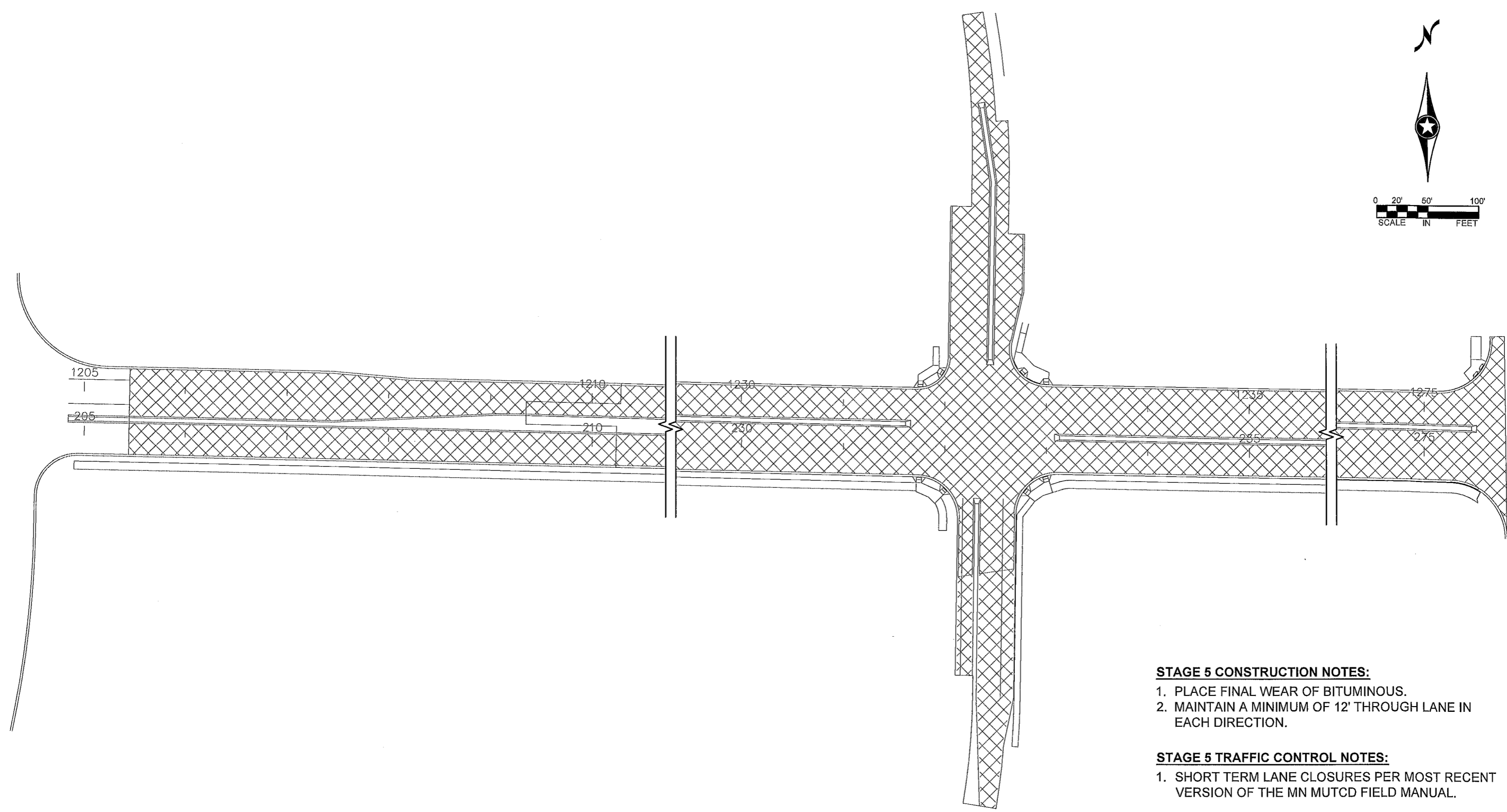
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TRAFFIC CONTROL  
 STAGE 4

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-614-048\Base\Traffic\Traffic Control Stage 4.dwg



**STAGE 5 CONSTRUCTION NOTES:**

1. PLACE FINAL WEAR OF BITUMINOUS.
2. MAINTAIN A MINIMUM OF 12' THROUGH LANE IN EACH DIRECTION.

**STAGE 5 TRAFFIC CONTROL NOTES:**

1. SHORT TERM LANE CLOSURES PER MOST RECENT VERSION OF THE MN MUTCD FIELD MANUAL.

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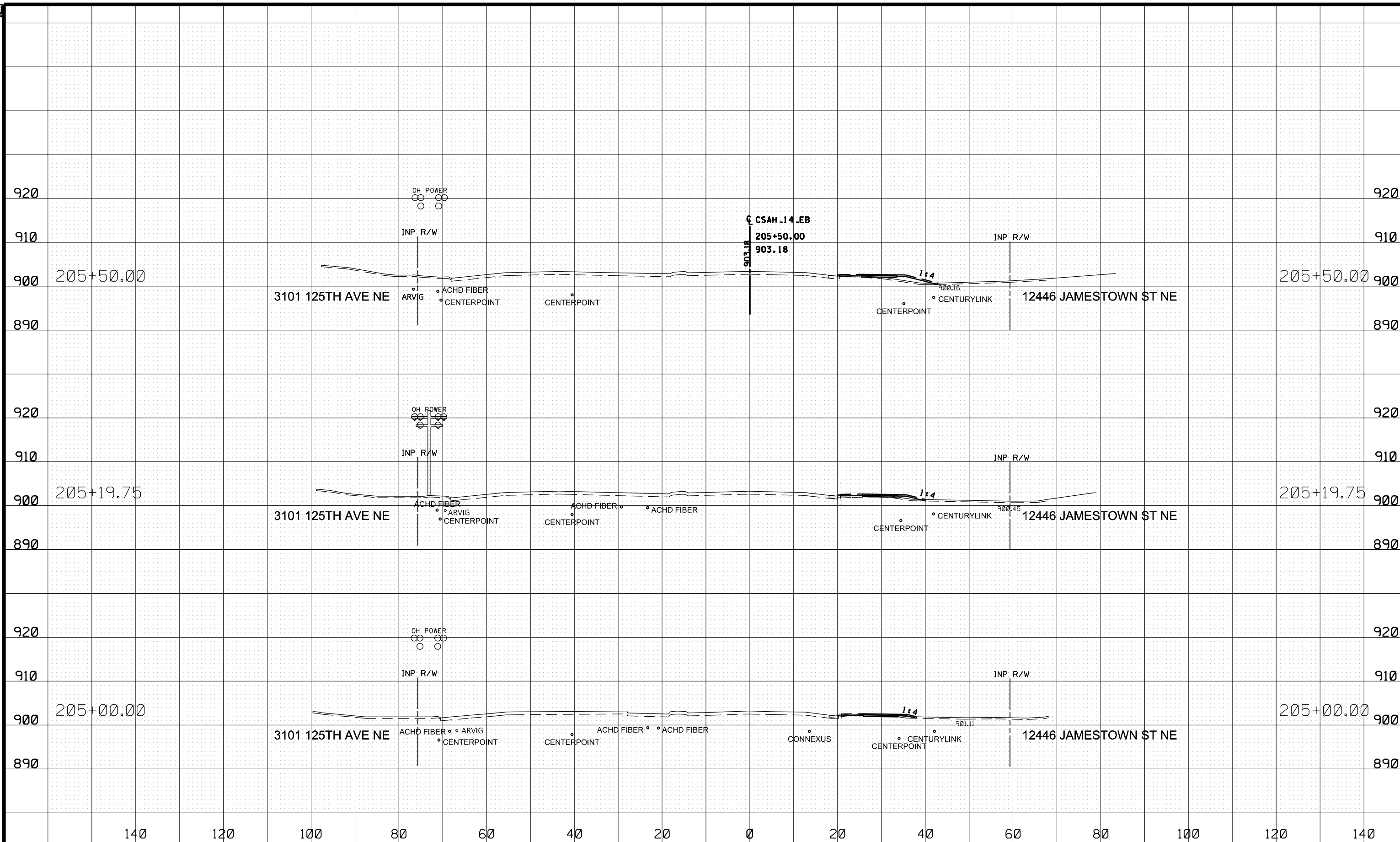


**ANOKA COUNTY  
HIGHWAY DEPT.**

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SAP 106-020-037

TRAFFIC CONTROL  
STAGE 5

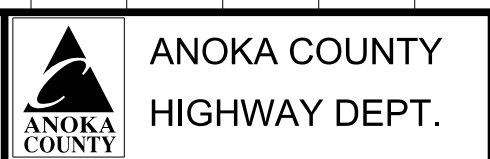
SHEET 227 OF 303 SHEETS



NO	DATE	BY	CKD	APPR	REVISION

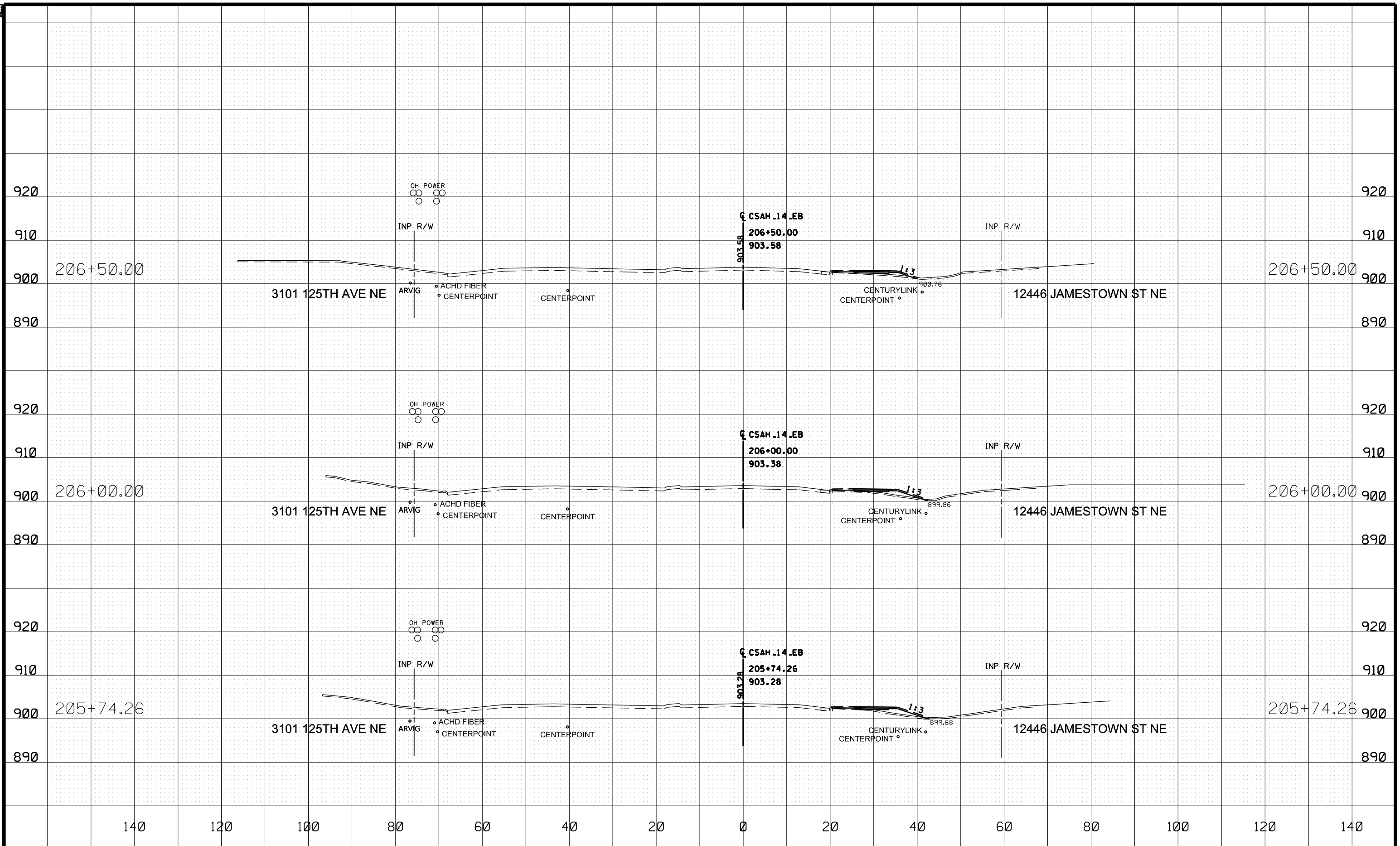
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 DESIGN BY JRB DATE 02/07/22  
 CHECKED BY NJD DATE 02/07/22



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 SAP 106-020-037

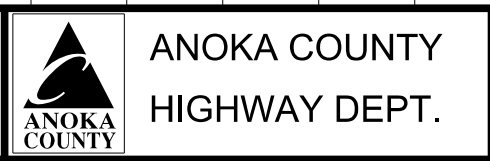
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 CSAH 14 (125TH AVE NE)  
 STA 205+00.00 TO 205+50.00  
 Sheet 228 of 303 Sheets



NO	DATE	BY	CKD	APPR	REVISION

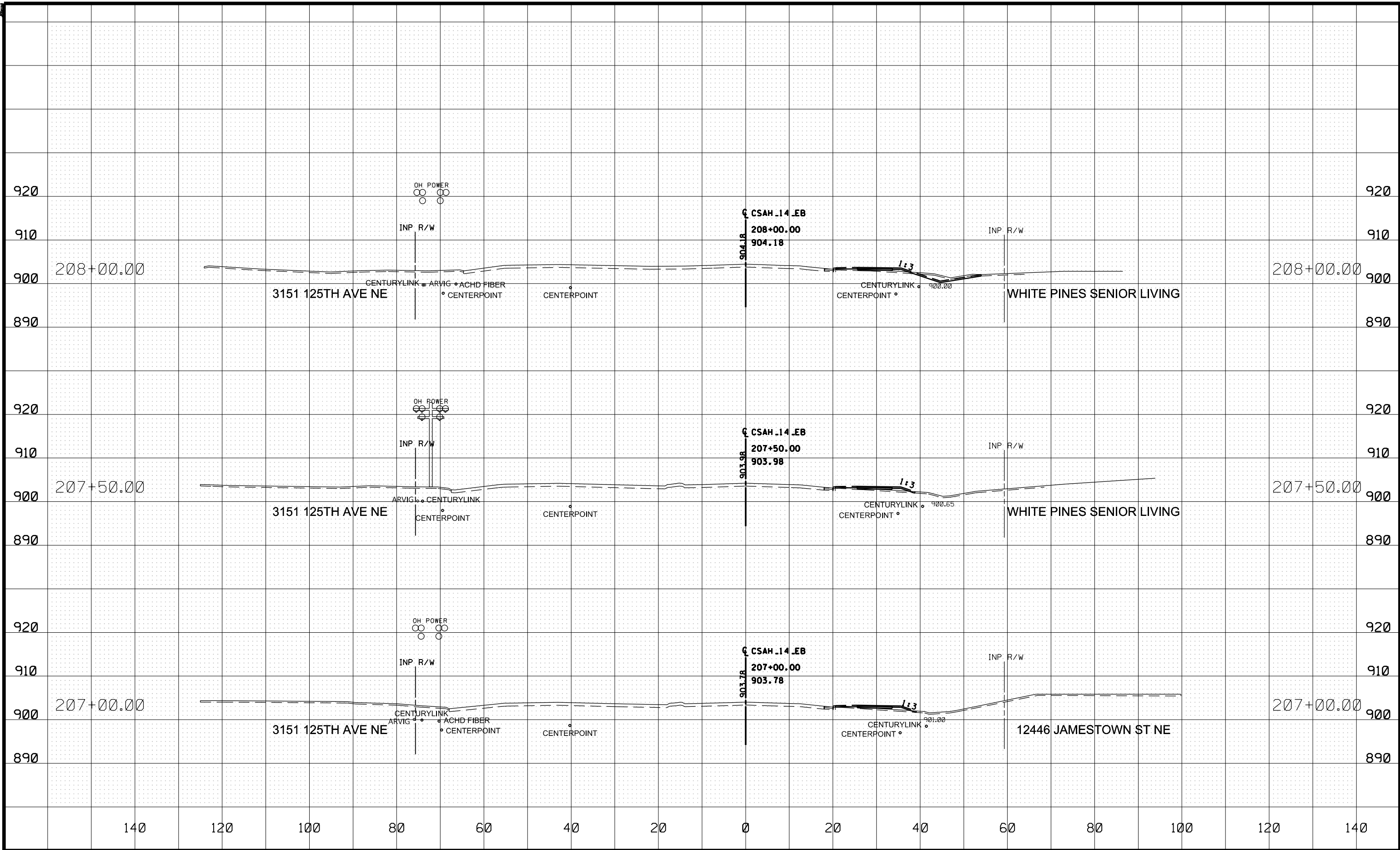
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 CHECKED BY NJD DATE 02/07/22



SAP 002-614-048  
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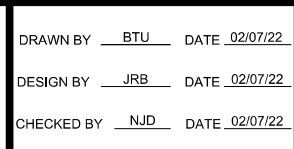
CROSS SECTIONS  
CSAH 14 (125TH AVE NE)  
STA 205+74.26 TO 206+50.00  
Sheet 229 of 303 Sheets



NO	DATE	BY	CKD	APPR	REVISION

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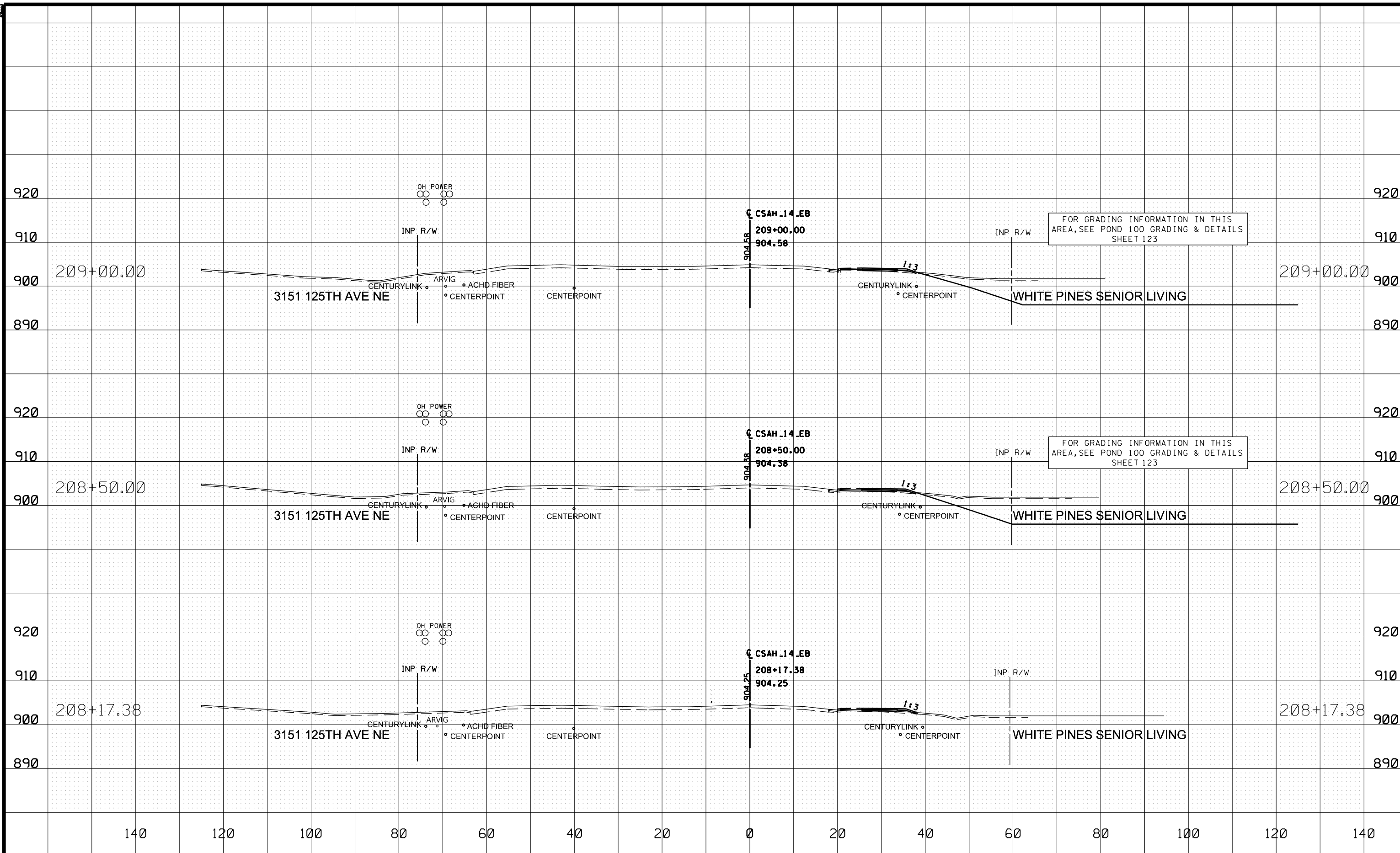
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**ANOKA COUNTY  
HIGHWAY DEPT.**

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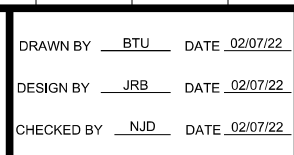
**CROSS SECTIONS**  
 CSAH 14 (125TH AVE NE)  
 STA 207+00.00 TO 208+00.00  
 Sheet 230 of 303 Sheets



NO	DATE	BY	CKD	APPR	REVISION

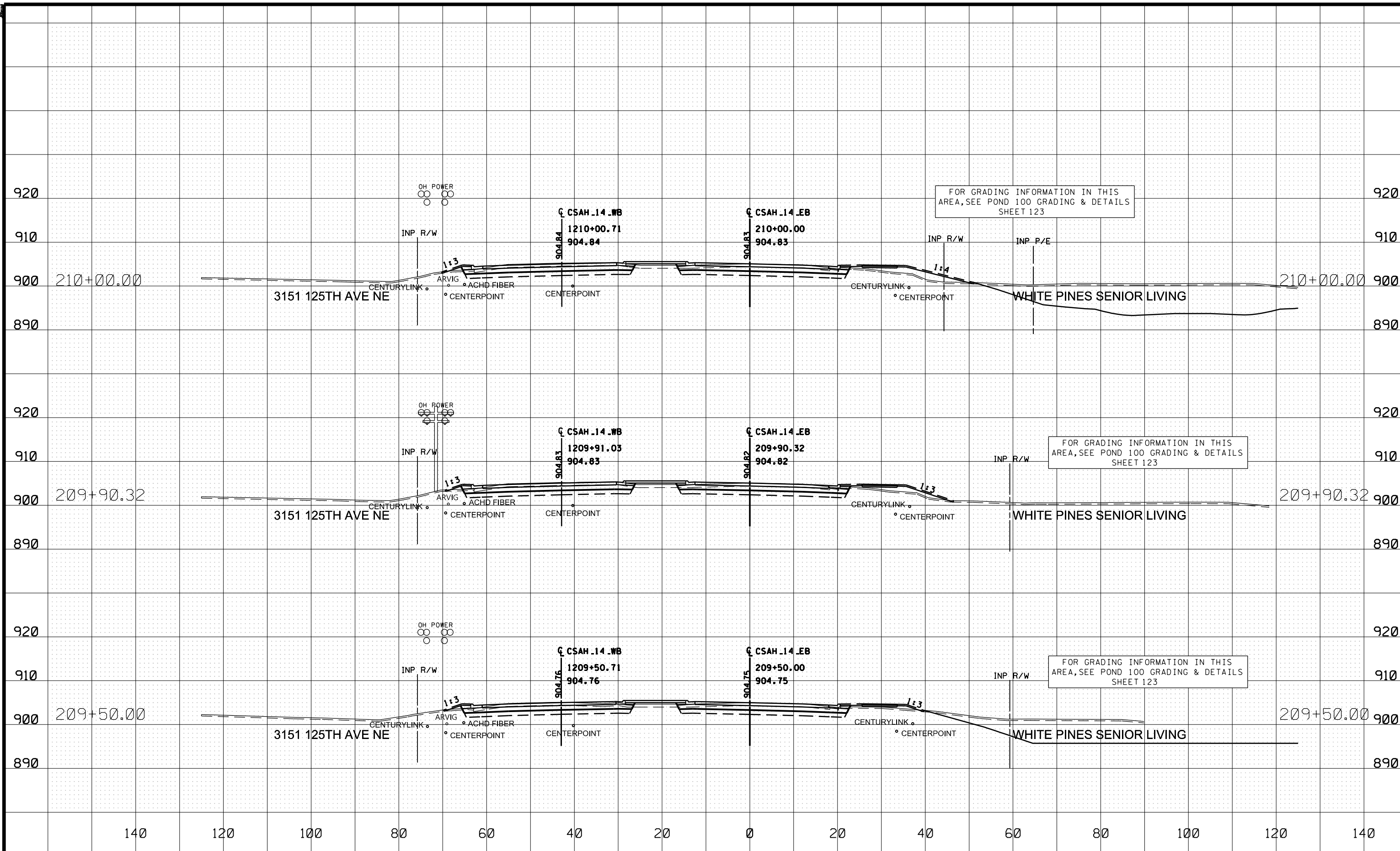
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DRAWN BY BTU DATE 02/07/22  
 DESIGN BY JRB DATE 02/07/22  
 CHECKED BY NJD DATE 02/07/22



SAP 002-614-048  
SAP 106-020-037

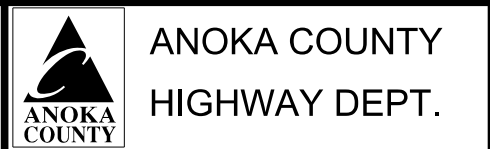
CROSS SECTIONS  
CSAH 14 (125TH AVE NE)  
STA 208+17.38 TO 209+00.00



NO	DATE	BY	CKD	APPR	REVISION

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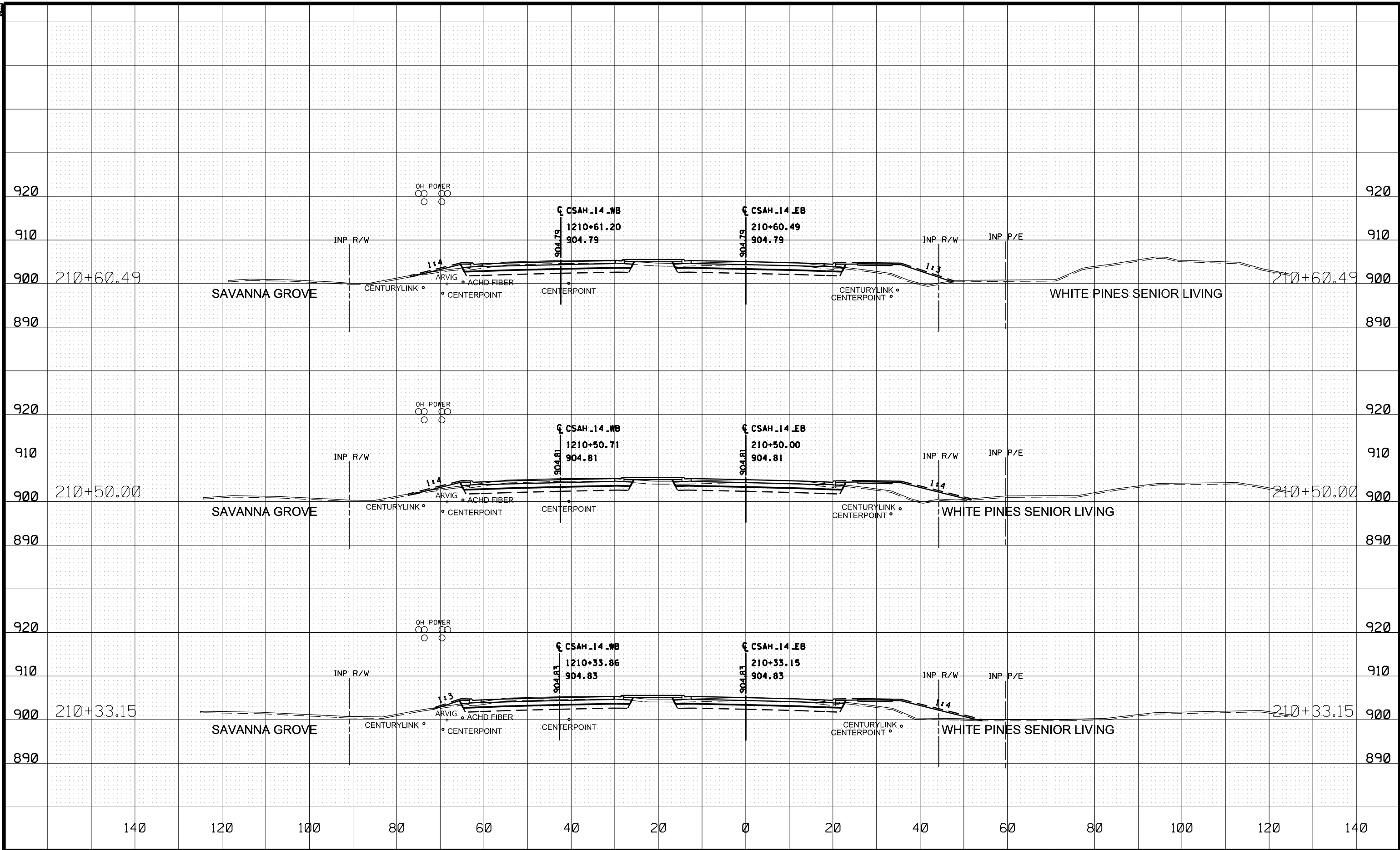

DRAWN BY BTU DATE 02/07/22  
 DESIGN BY JRB DATE 02/07/22  
 CHECKED BY NJD DATE 02/07/22



SAP 002-614-048  
 SAP 106-020-037

CROSS SECTIONS  
 CSAH 14 (125TH AVE NE)  
 STA 209+50.00 TO 210+00.00  
 Sheet 232 of 303 Sheets

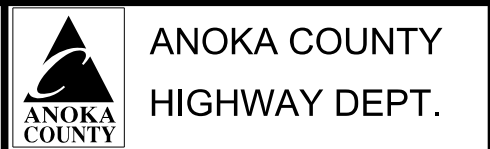




NO	DATE	BY	CKD	APPR	REVISION

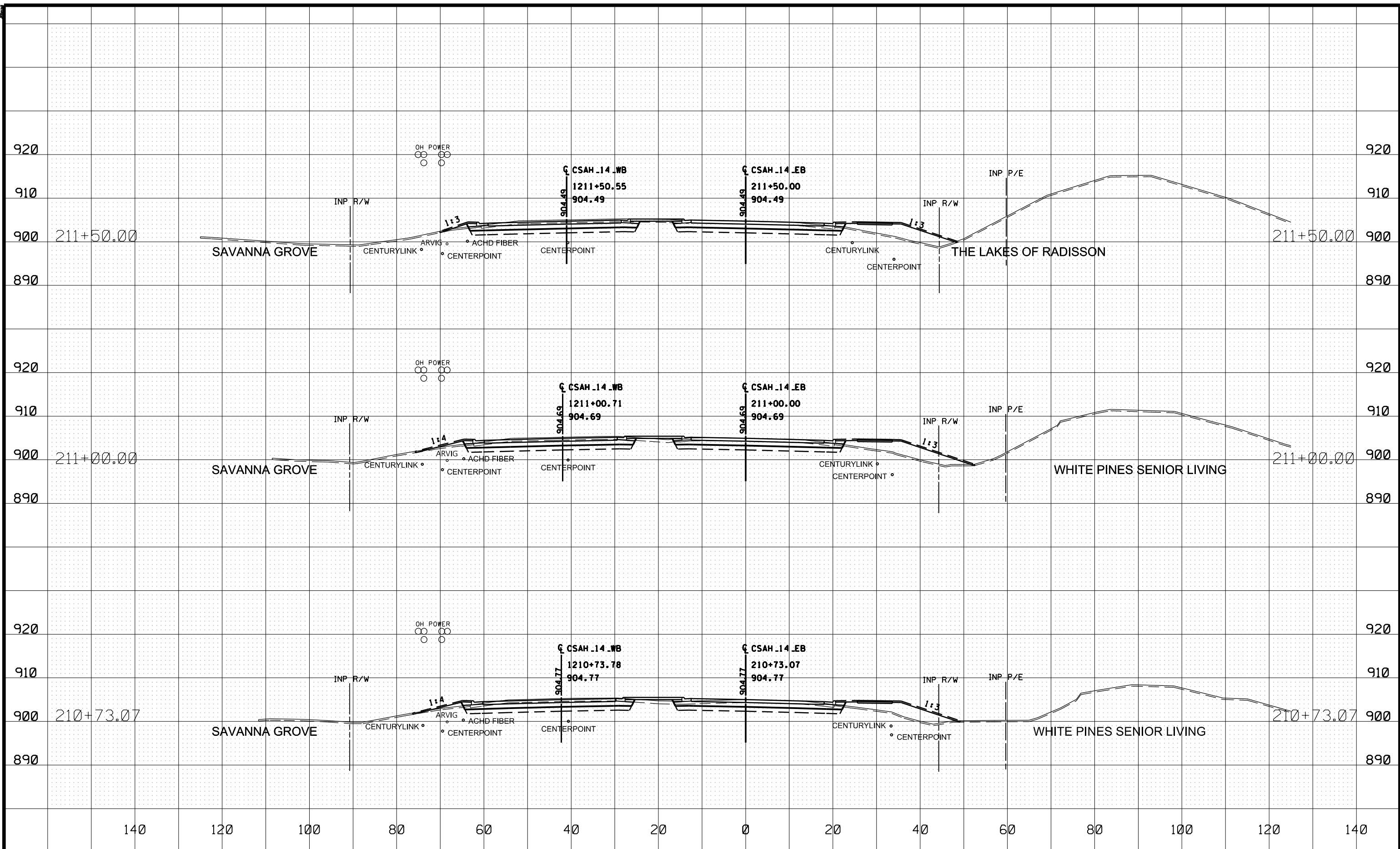
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 CHECKED BY NJD DATE 02/07/22



SAP 002-614-048  
 SAP 106-020-037

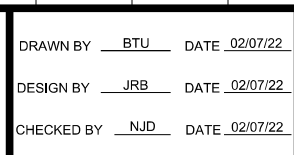
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 Sheet 233 of 303 Sheets



NO	DATE	BY	CKD	APPR	REVISION

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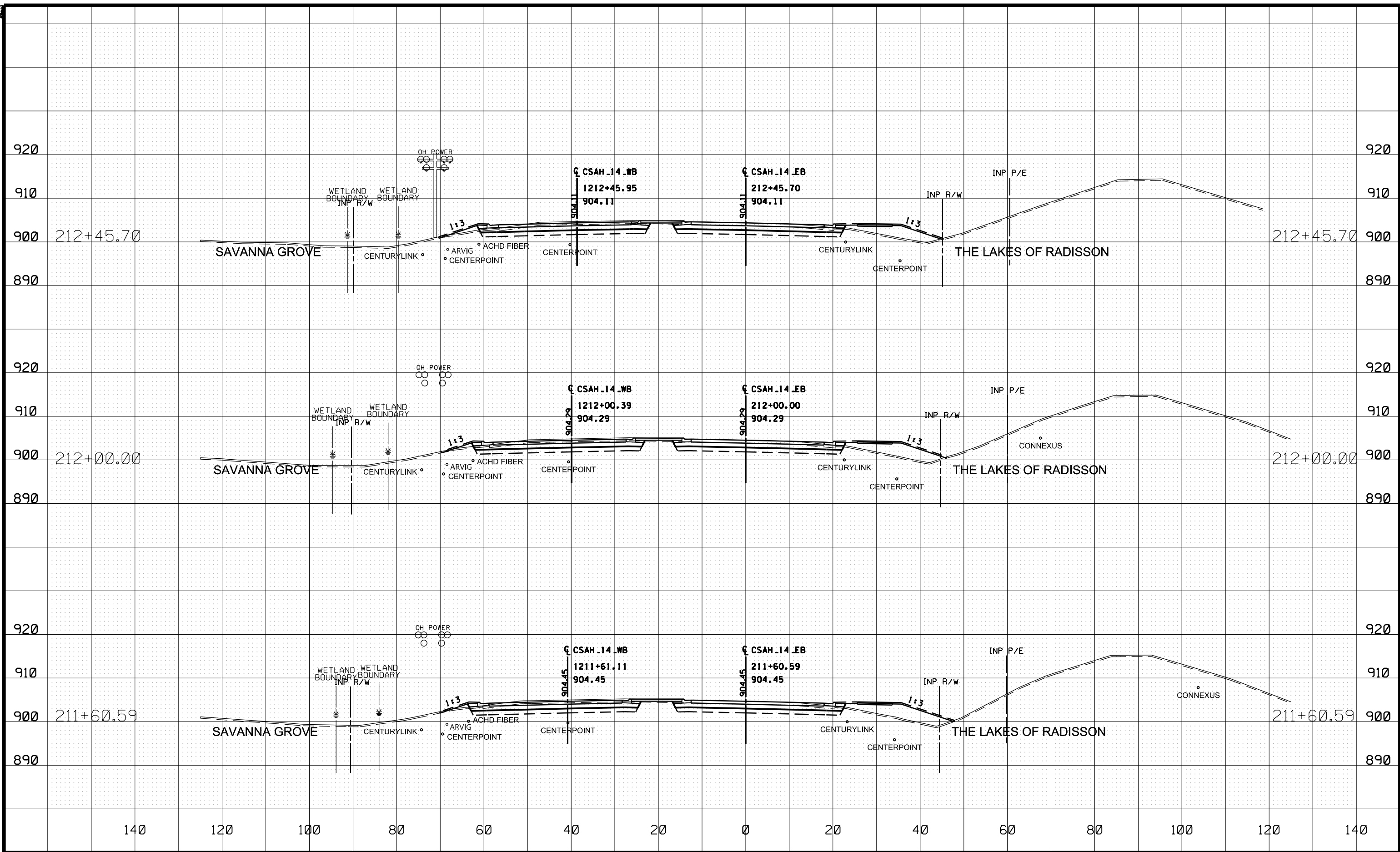
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DESIGN BY	JRB	DATE	02/07/22
CHECKED BY	NJD	DATE	02/07/22



SAP 002-614-048  
SAP 106-020-037

CROSS SECTIONS  
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STA 210+73.07 TO 211+50.00

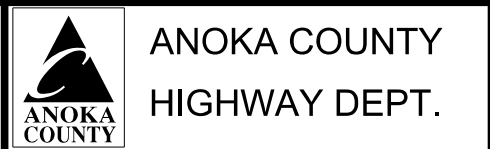
Sheet 234 of 303 Sheets



NO	DATE	BY	CKD	APPR	REVISION

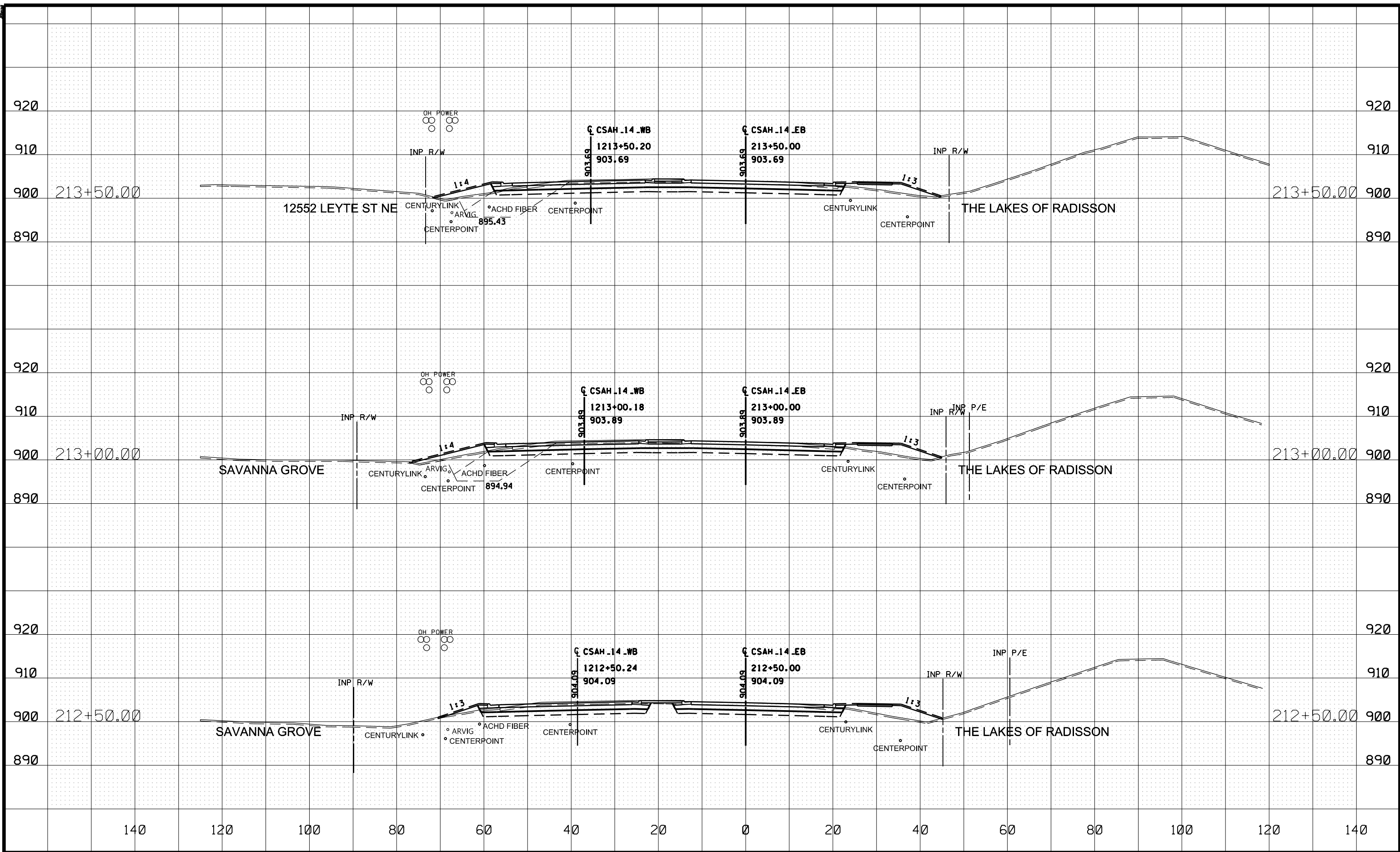
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 DESIGN BY JRB DATE 02/07/22  
 CHECKED BY NJD DATE 02/07/22



SAP 002-614-048  
 SAP 106-020-037

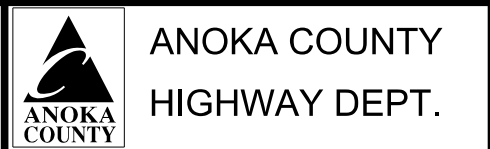
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 Sheet 235 of 303 Sheets



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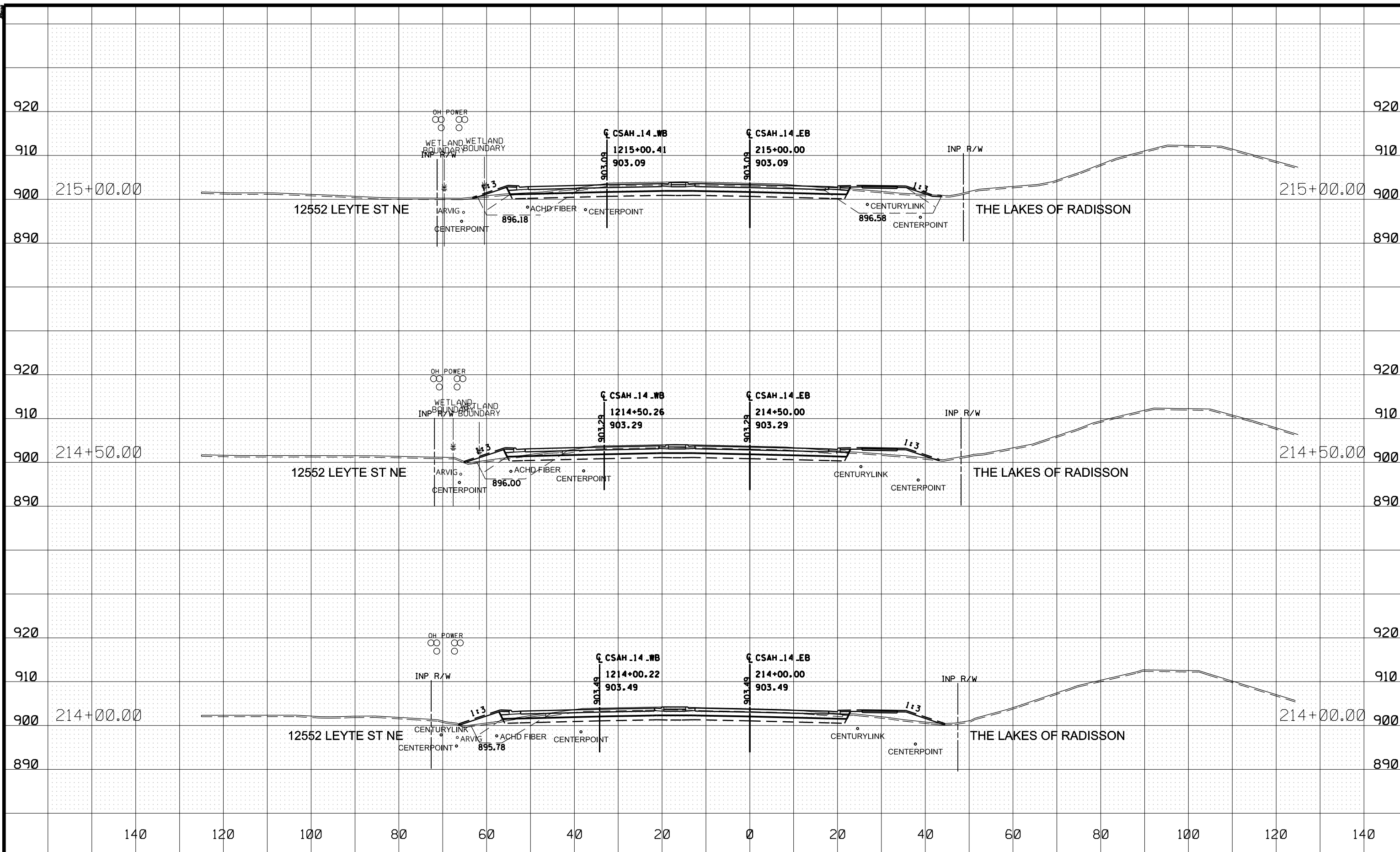
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 CHECKED BY NJD DATE 02/07/22



SAP 002-614-048  
 SAP 106-020-037

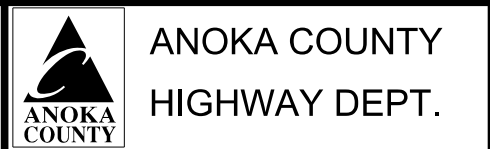
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 Sheet 236 of 303 Sheets



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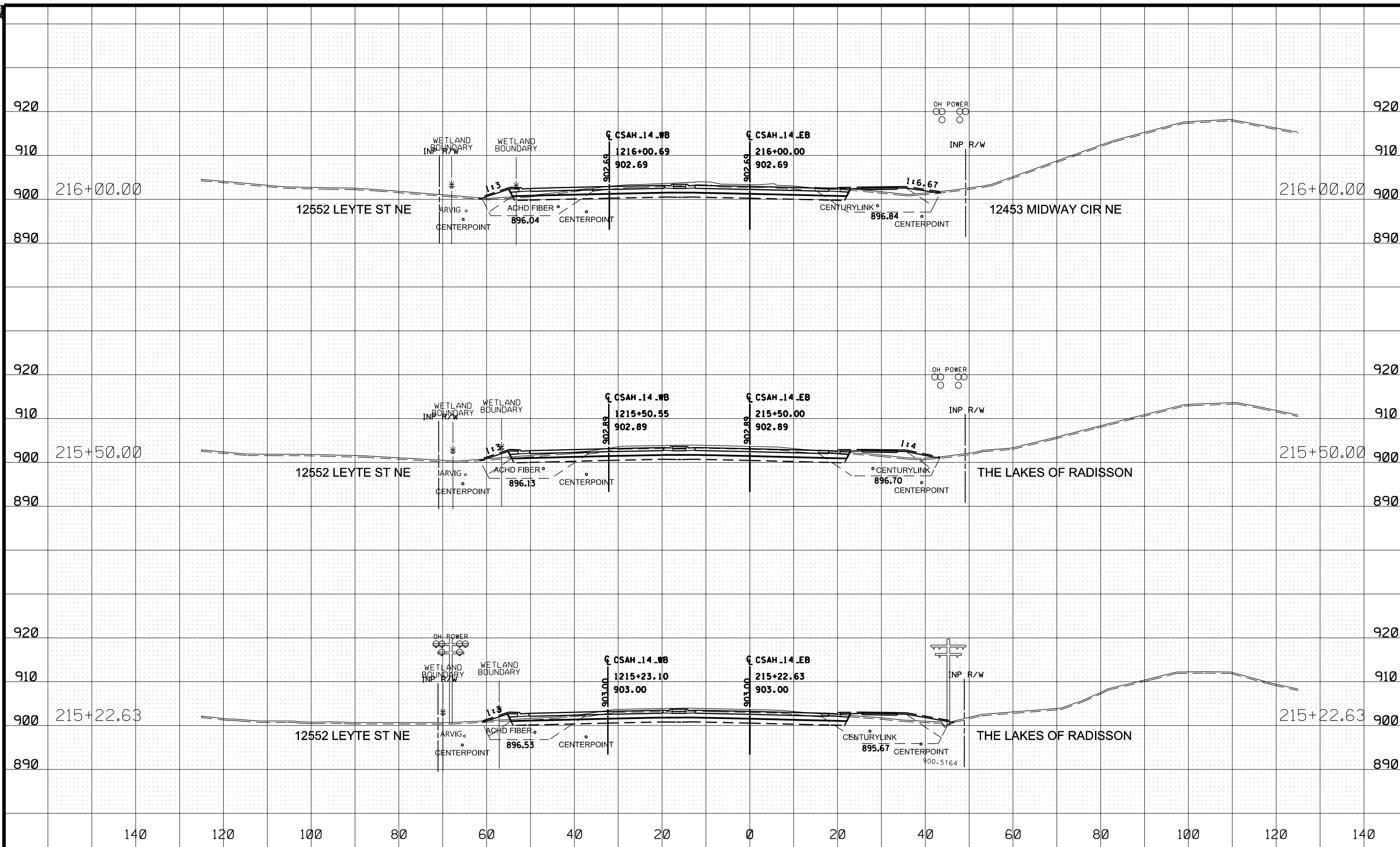
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 CHECKED BY NJD DATE 02/07/22



SAP 002-614-048  
 SAP 106-020-037

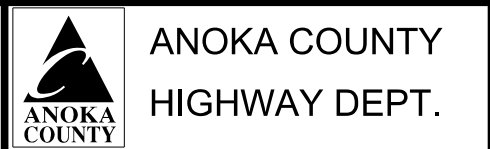
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 Sheet 237 of 303 Sheets



NO	DATE	BY	CKD	APPR	REVISION

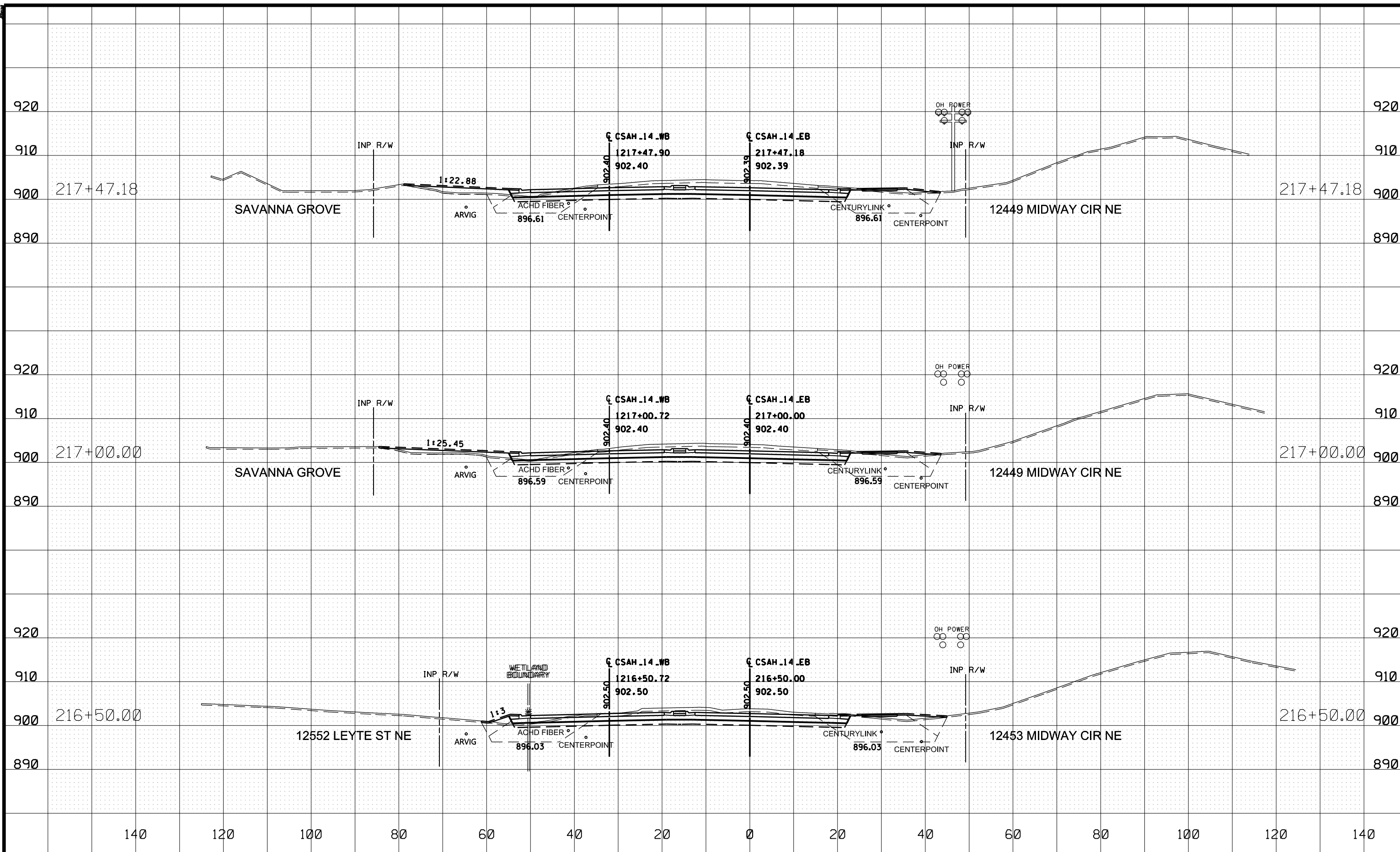
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 DESIGN BY JRB DATE 02/07/22  
 CHECKED BY NJD DATE 02/07/22



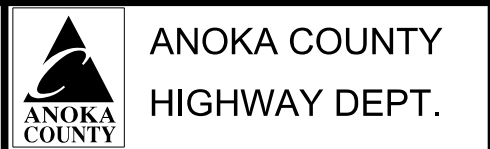
SAP 002-614-048  
SAP 106-020-037

CROSS SECTIONS  
CSAH 14 (125TH AVE NE)  
STA 215+22.63 TO 216+00.00  
Sheet 238 of 303 Sheets



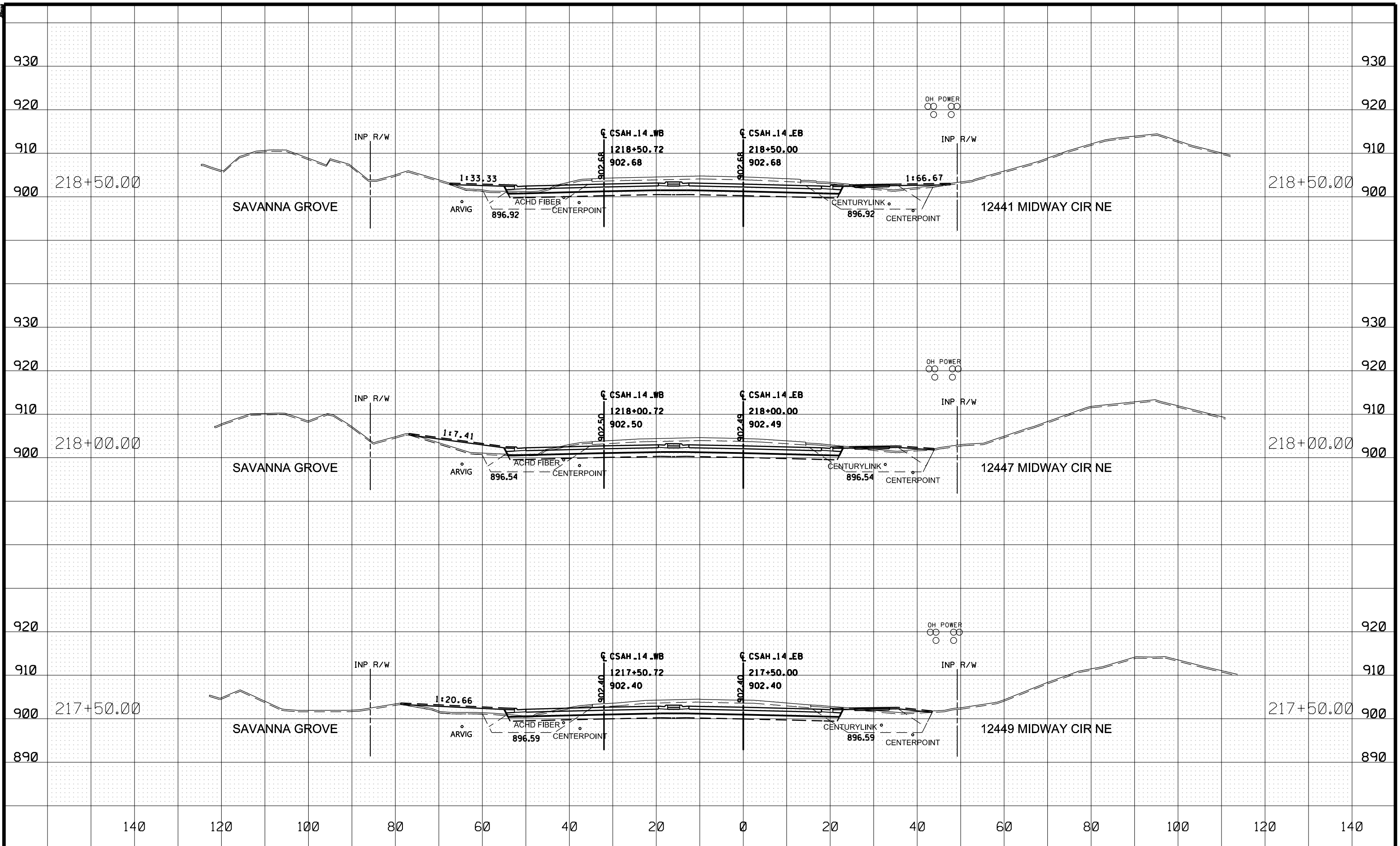
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 DESIGN BY JRB DATE 02/07/22  
 CHECKED BY NJD DATE 02/07/22



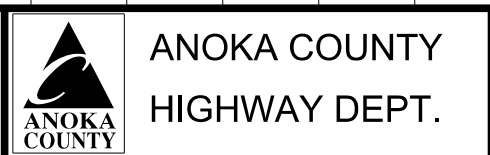
SAP 002-614-048  
 SAP 106-020-037

**CROSS SECTIONS**  
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 Sheet 239 of 303 Sheets



NO	DATE	BY	CKD	APPR	REVISION
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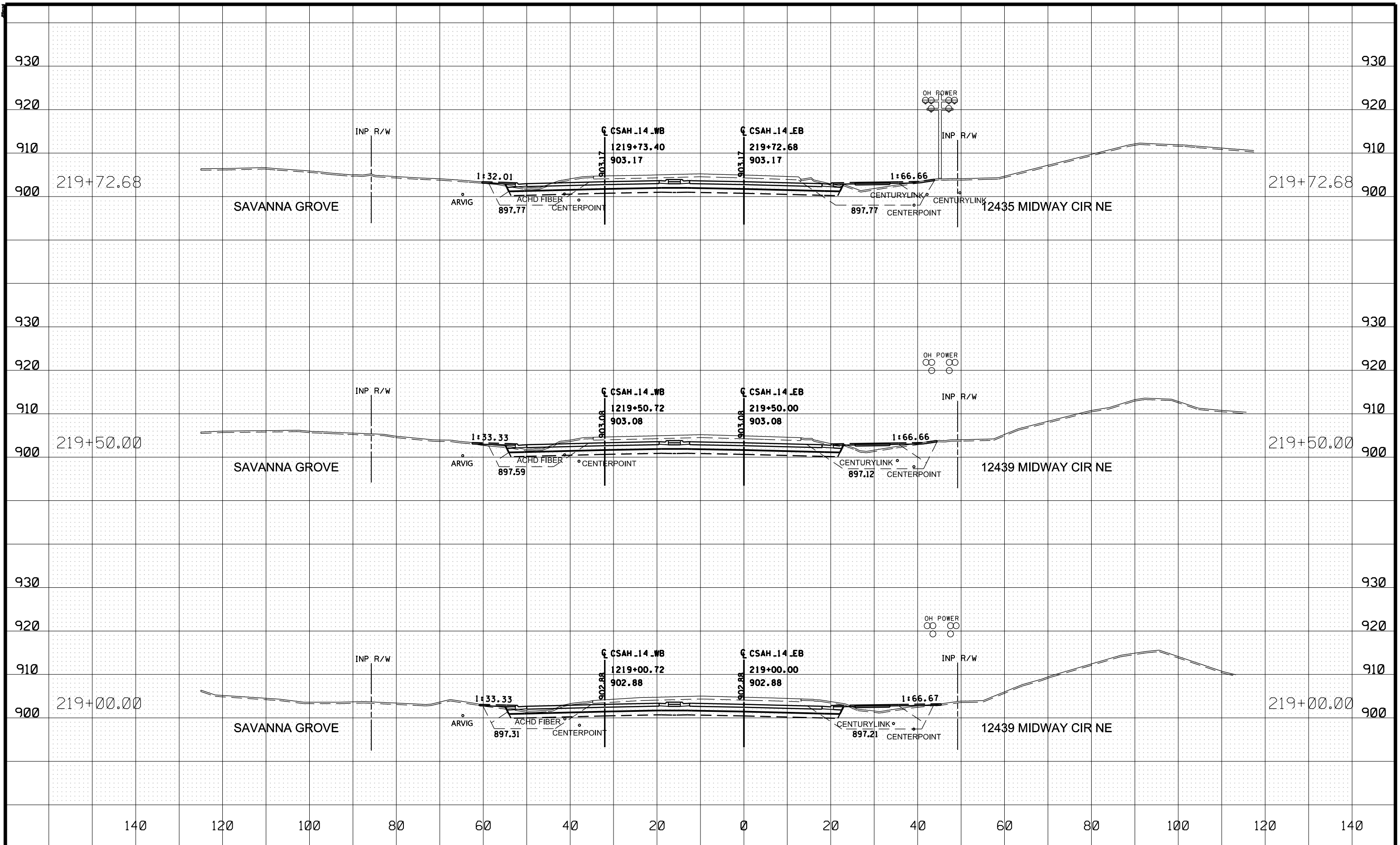

DRAWN BY BTU DATE 02/07/22  
 DESIGN BY JRB DATE 02/07/22  
 CHECKED BY NJD DATE 02/07/22



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 SAP 106-020-037

CROSS SECTIONS  
 CSAH 14 (125TH AVE NE)  
 STA 217+50.00 TO 218+50.00  
 Sheet 240 of 303 Sheets

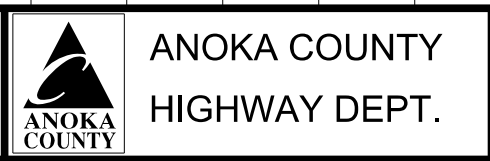




NO	DATE	BY	CKD	APPR	REVISION

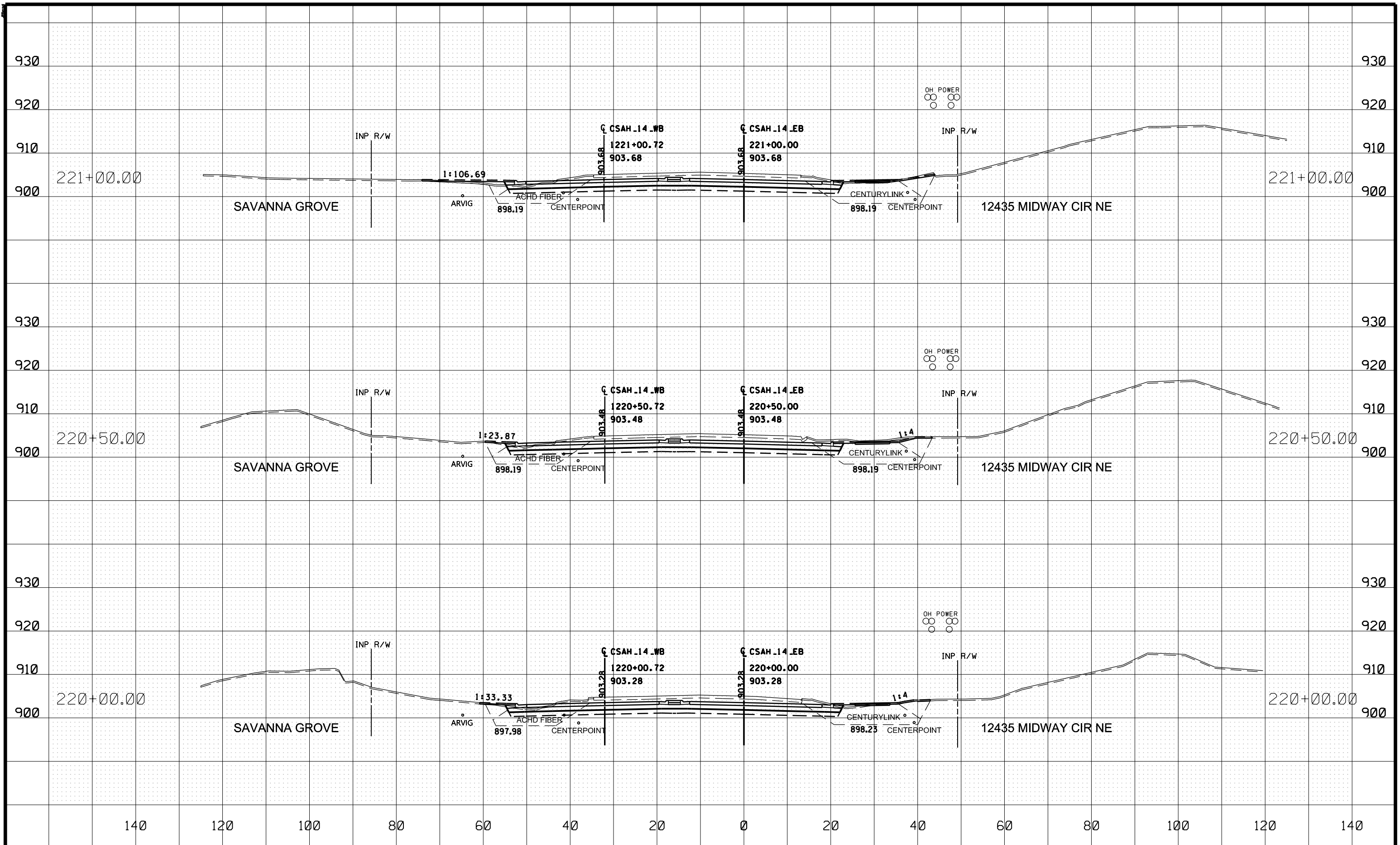
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DRAWN BY BTU DATE 02/07/22  
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SAP 002-614-048  
SAP 106-020-037

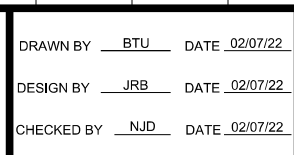
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STA 219+00.00 TO 219+72.68  
Sheet 241 of 303 Sheets



NO	DATE	BY	CKD	APPR	REVISION

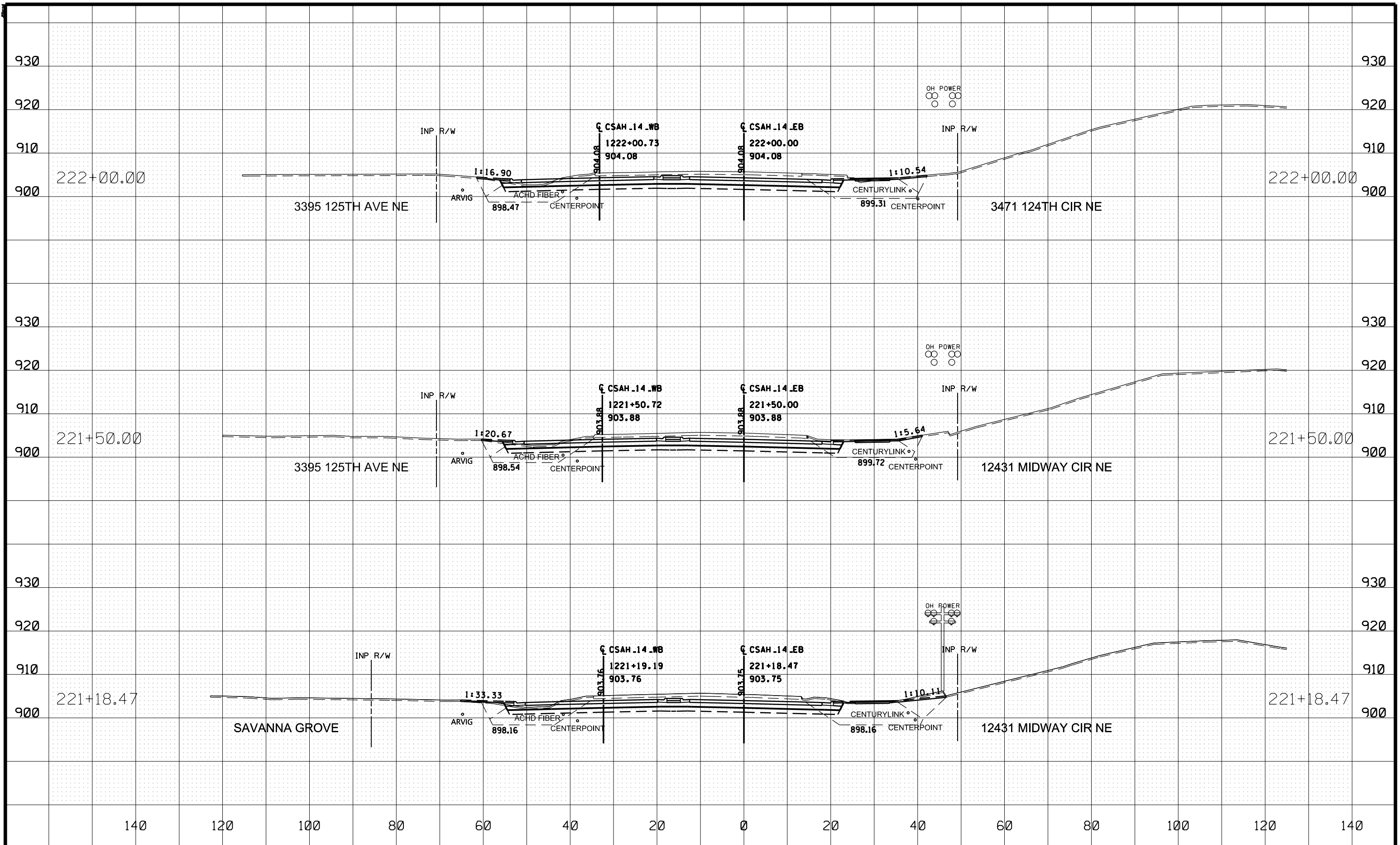
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 DESIGN BY JRB DATE 02/07/22  
 CHECKED BY NJD DATE 02/07/22



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SAP 106-020-037

**CROSS SECTIONS**  
CSAH 14 (125TH AVE NE)  
STA 220+00.00 TO 221+00.00  
Sheet 242 of 303 Sheets

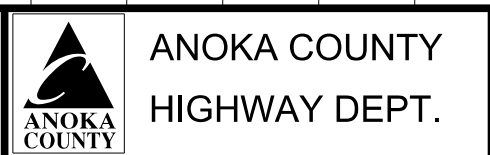


NO	DATE	BY	CKD	APPR	REVISION

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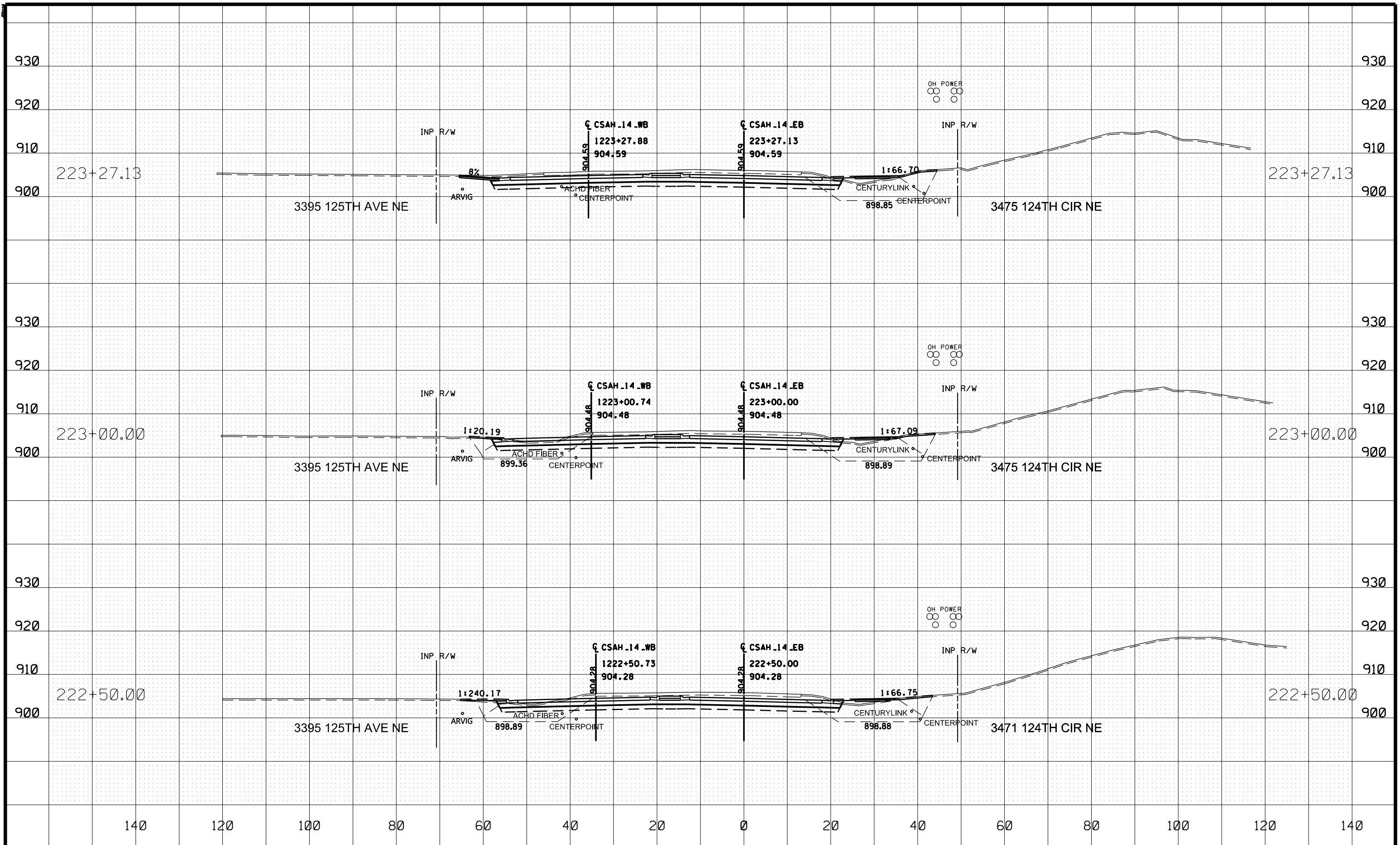
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DRAWN BY BTU    DATE 02/07/22  
 DESIGN BY JRB    DATE 02/07/22  
 CHECKED BY NJD    DATE 02/07/22



SAP 002-614-048  
SAP 106-020-037

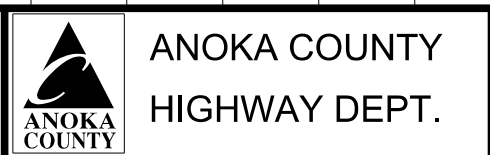
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STA 221+18.47 TO 222+00.00  
Sheet 243 of 303 Sheets



NO	DATE	BY	CKD	APPR	REVISION

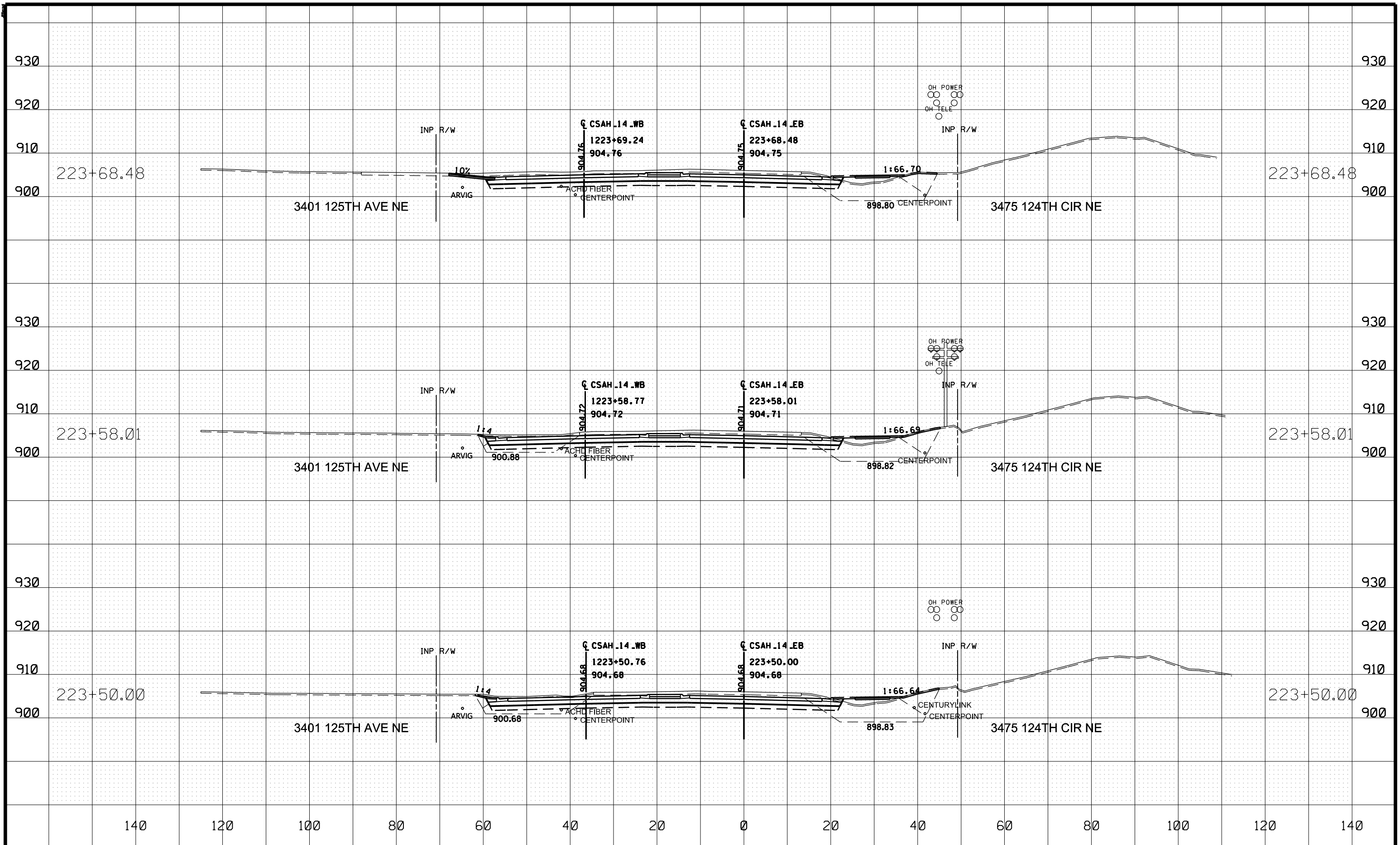
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 DESIGN BY JRB DATE 02/07/22  
 CHECKED BY NJD DATE 02/07/22



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SAP 106-020-037

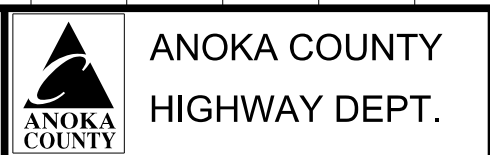
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STA 222+50.00 TO 223+27.13  
Sheet 244 of 303 Sheets



NO	DATE	BY	CKD	APPR	REVISION

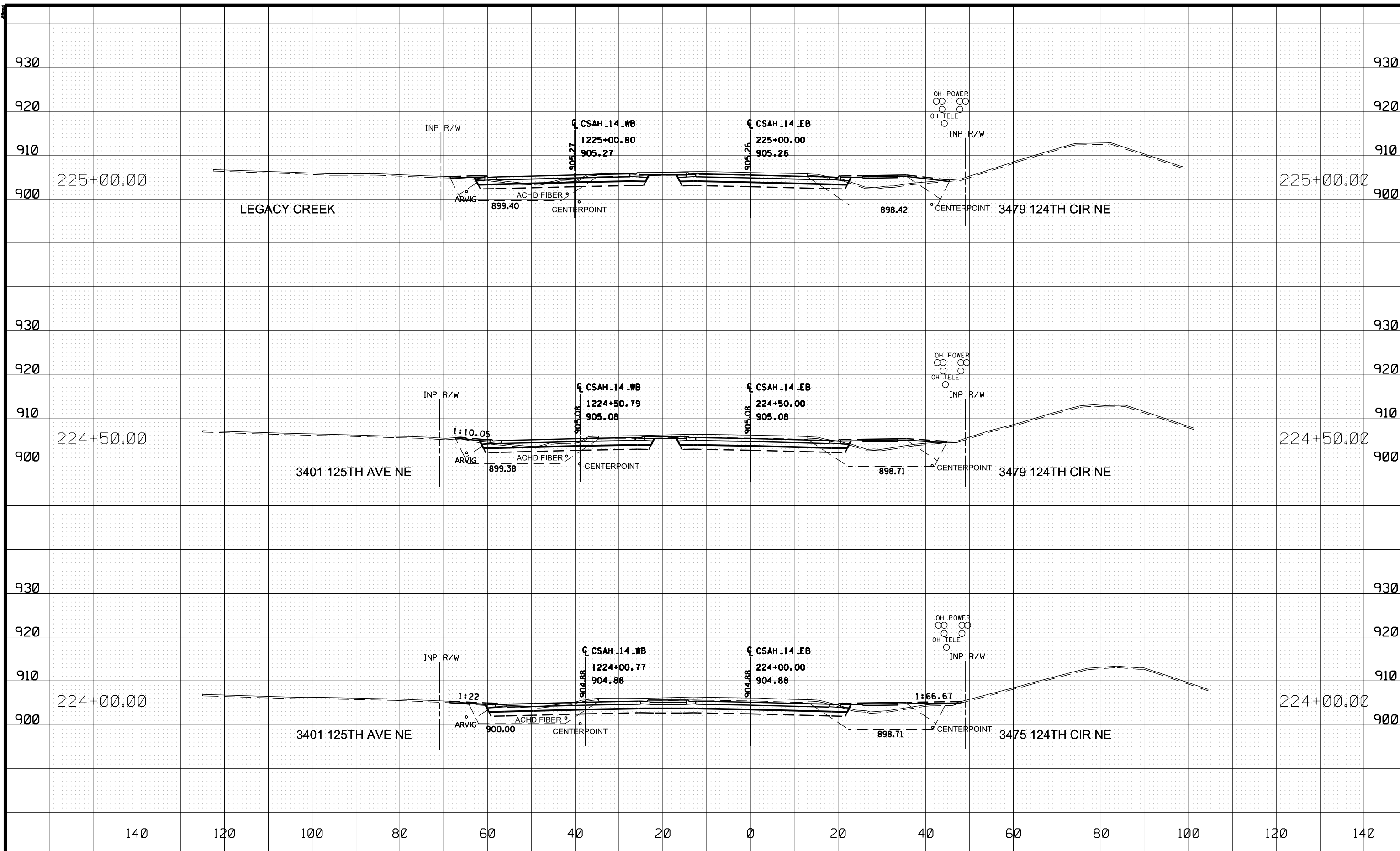
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 DESIGN BY JRB DATE 02/07/22  
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SAP 002-614-048  
 SAP 106-020-037

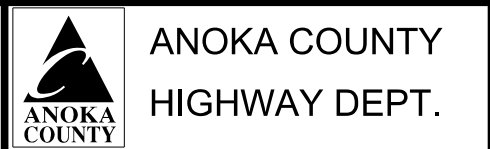
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 STA 223+50.00 TO 223+68.48  
 Sheet 245 of 303 Sheets



NO	DATE	BY	CKD	APPR	REVISION

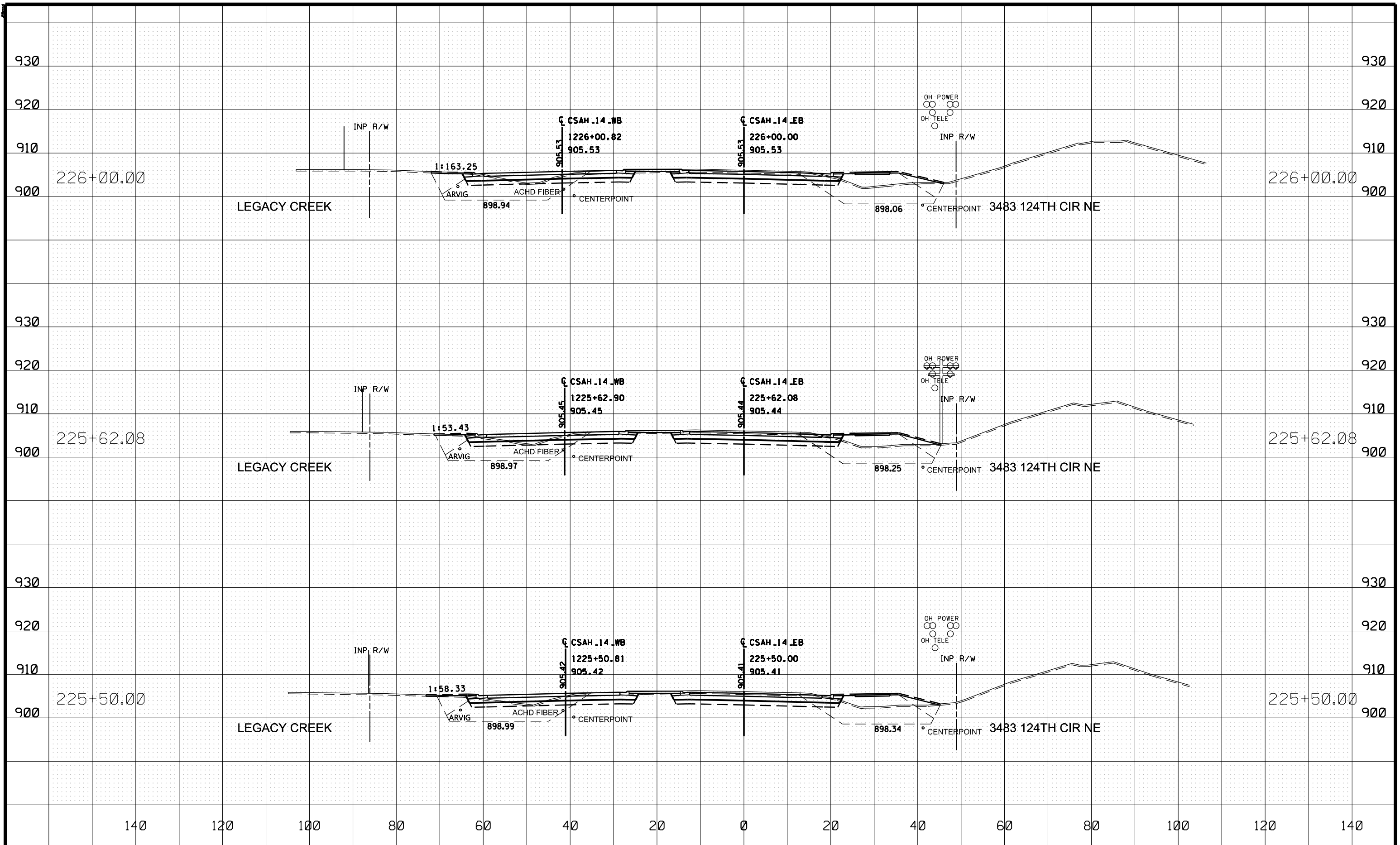
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SAP 002-614-048  
SAP 106-020-037

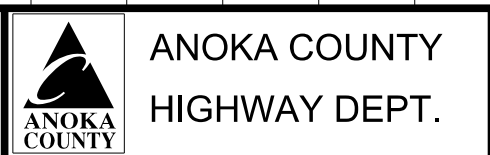
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STA 224+00.00 TO 225+00.00  
Sheet 246 of 303 Sheets



NO	DATE	BY	CKD	APPR	REVISION

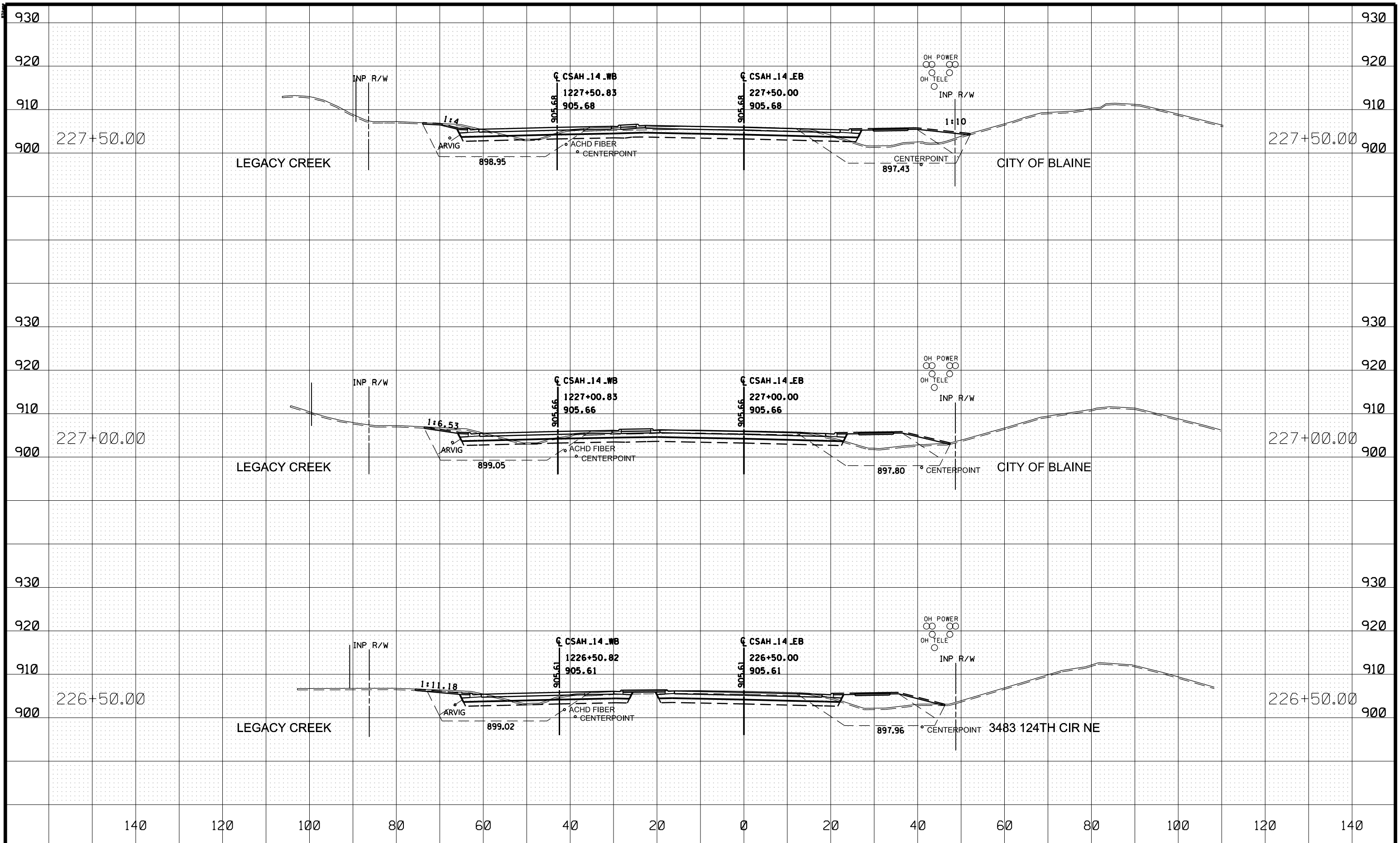
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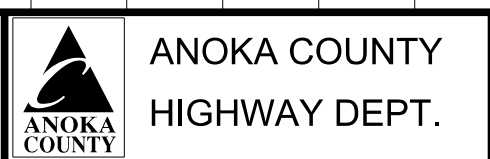
SAP 002-614-048  
SAP 106-020-037

CROSS SECTIONS  
CSAH 14 (125TH AVE NE)  
STA 225+50.00 TO 226+00.00  
Sheet 247 of 303 Sheets



1	02/16/2022	BTU	JRB	UPDATED PROPERTY LABEL FOR 227+50.00 TO 'CITY OF BLAINE'
NO	DATE	BY	CKD	APPR
				REVISION
NAME: P:\002-614-048\Plan\002614048_XP4.dgn				02/16/2022 9:42:56 AM

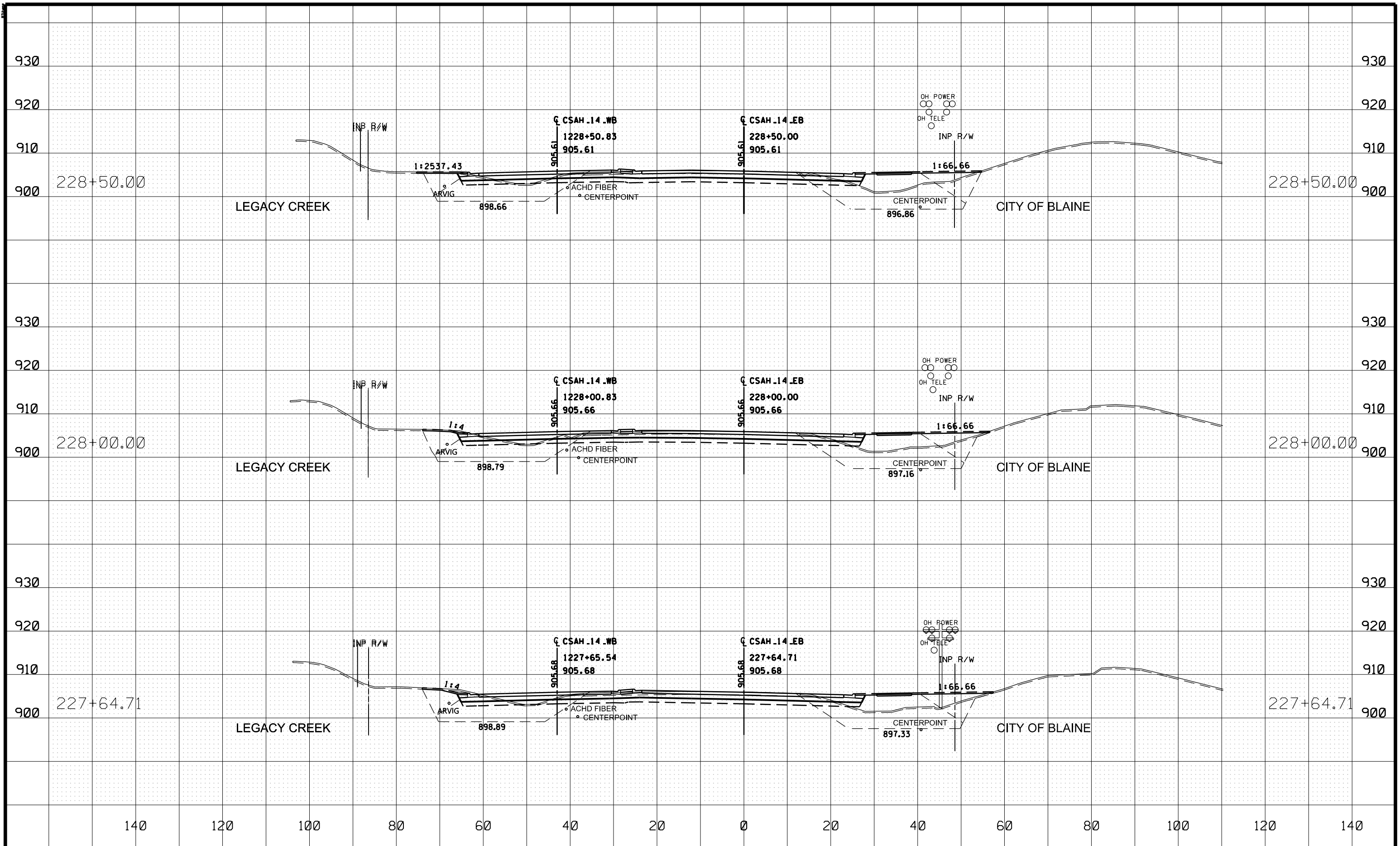
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 DESIGN BY JRB DATE 02/10/22  
 CHECKED BY NJD DATE 02/10/22



SAP 002-614-048  
 SAP 106-020-037

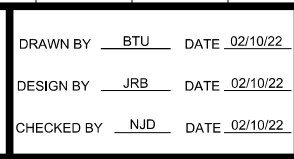
**CROSS SECTIONS**  
 CSAH 14 (125TH AVE NE)  
 STA 226+50.00 TO 227+50.00  
 Sheet 248 of 303 Sheets





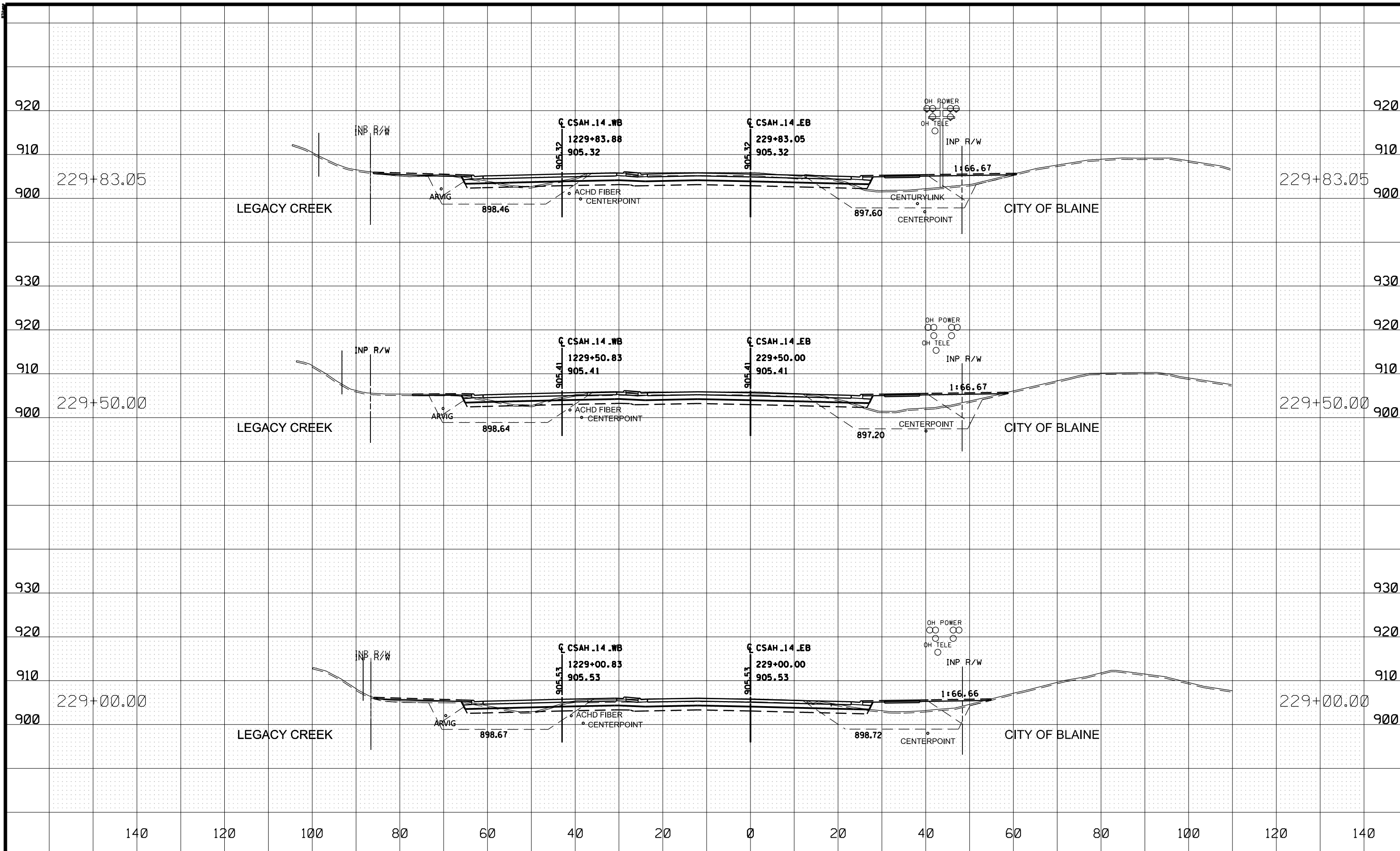
1	02/16/2022	BTU	JRB	UPDATED PROPERTY LABELS TO 'CITY OF BLAINE'
NO	DATE	BY	CKD	APPR
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DRAWN BY	BTU	DATE	02/10/22
DESIGN BY	JRB	DATE	02/10/22
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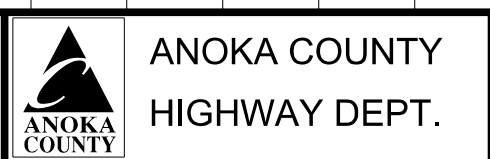
SAP 002-614-048  
SAP 106-020-037

CROSS SECTIONS  
CSAH 14 (125TH AVE NE)  
STA 227+64.71 TO 228+50.00  
Sheet 249 of 303 Sheets



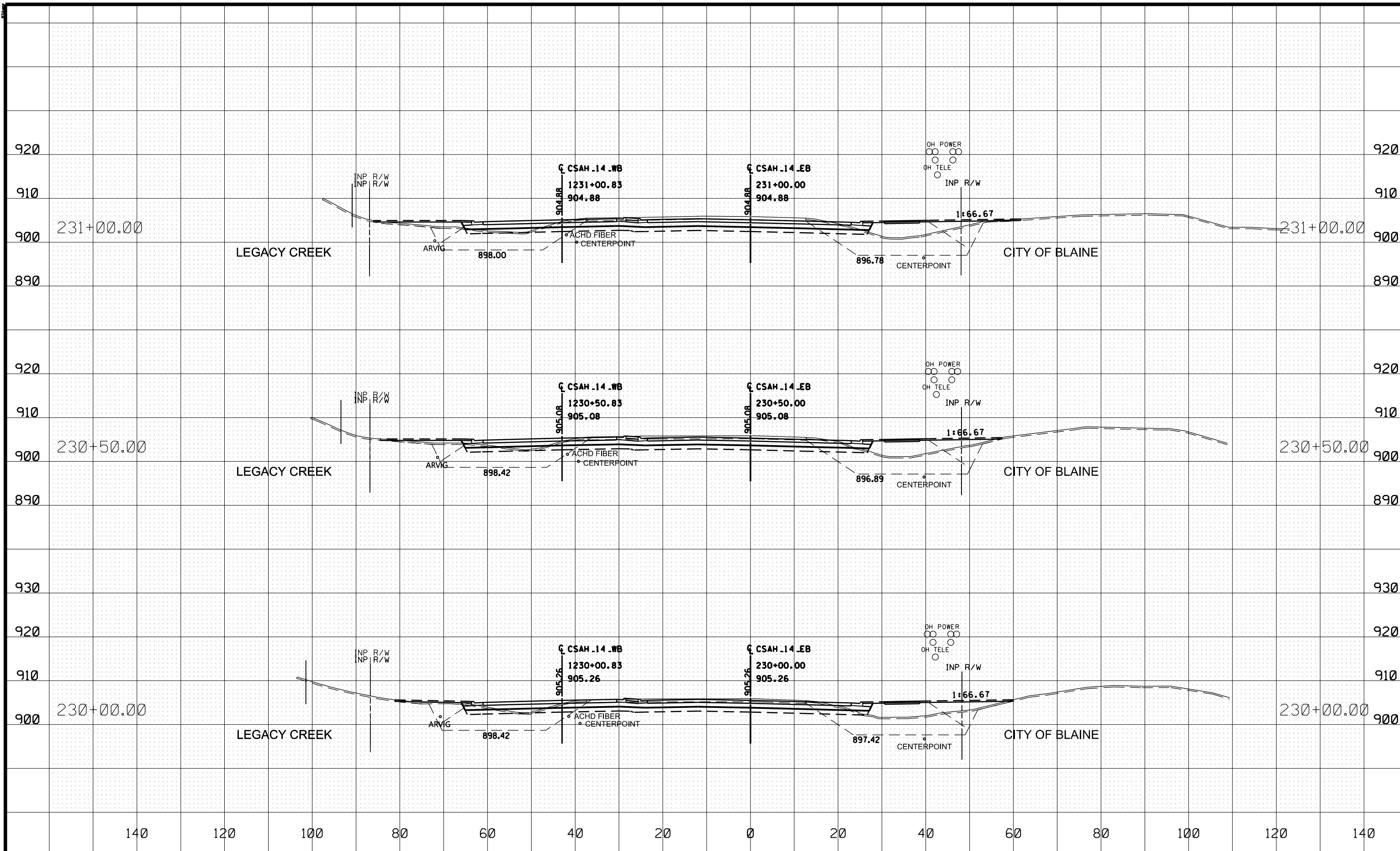
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NO	DATE	BY	CKD	APPR
				REVISION
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 CHECKED BY NJD DATE 02/10/22



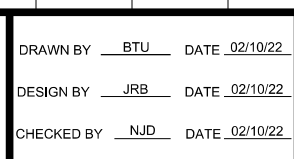
SAP 002-614-048  
SAP 106-020-037

CROSS SECTIONS  
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STA 229+00.00 TO 229+83.05  
Sheet 250 of 303 Sheets



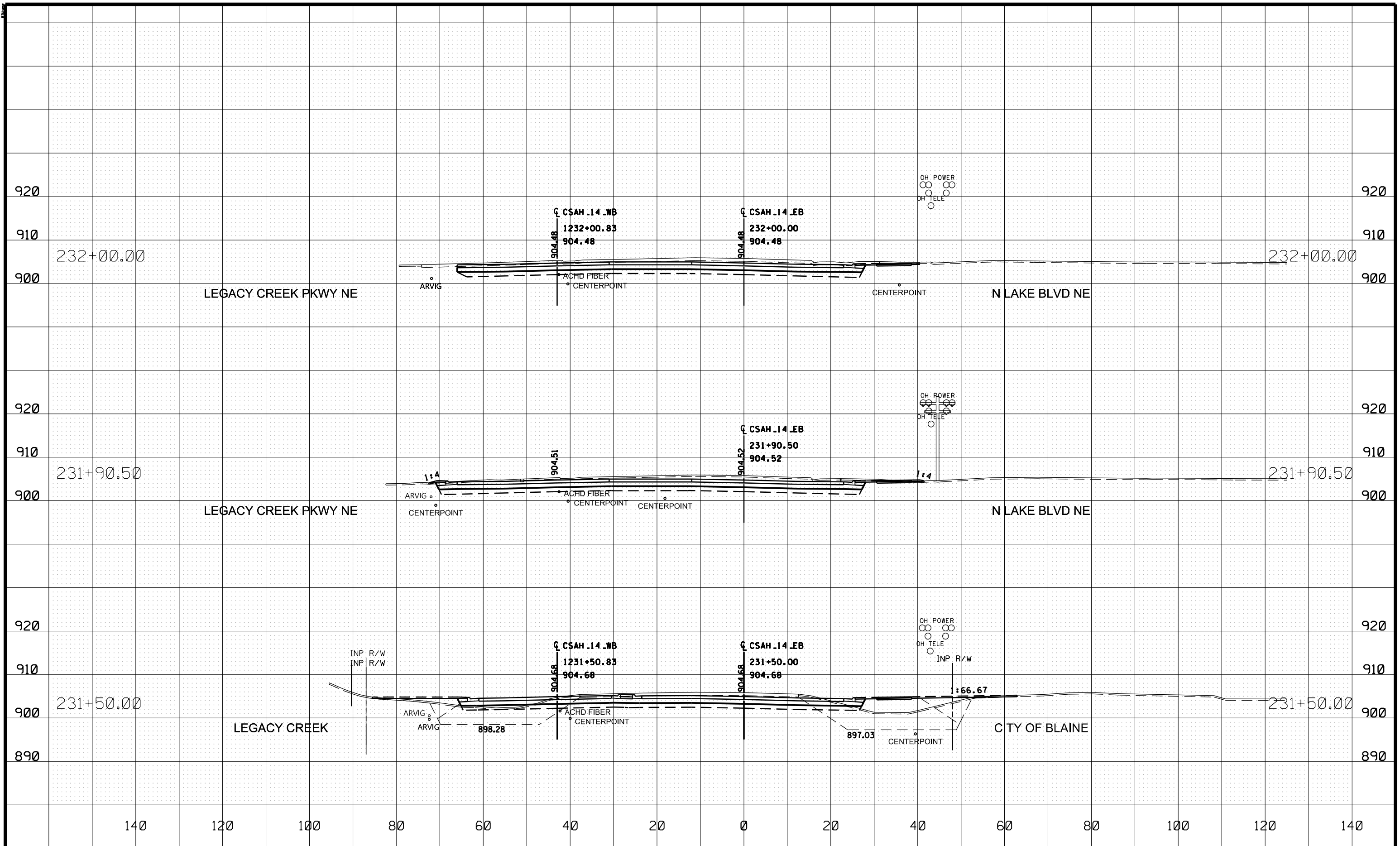
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NO	DATE	BY	CKD	APPR
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DRAWN BY	BTU	DATE	02/10/22
DESIGN BY	JRB	DATE	02/10/22
CHECKED BY	NJD	DATE	02/10/22



SAP 002-614-048  
SAP 106-020-037

CROSS SECTIONS  
CSAH 14 (125TH AVE NE)  
STA 230+00.00 TO 231+00.00



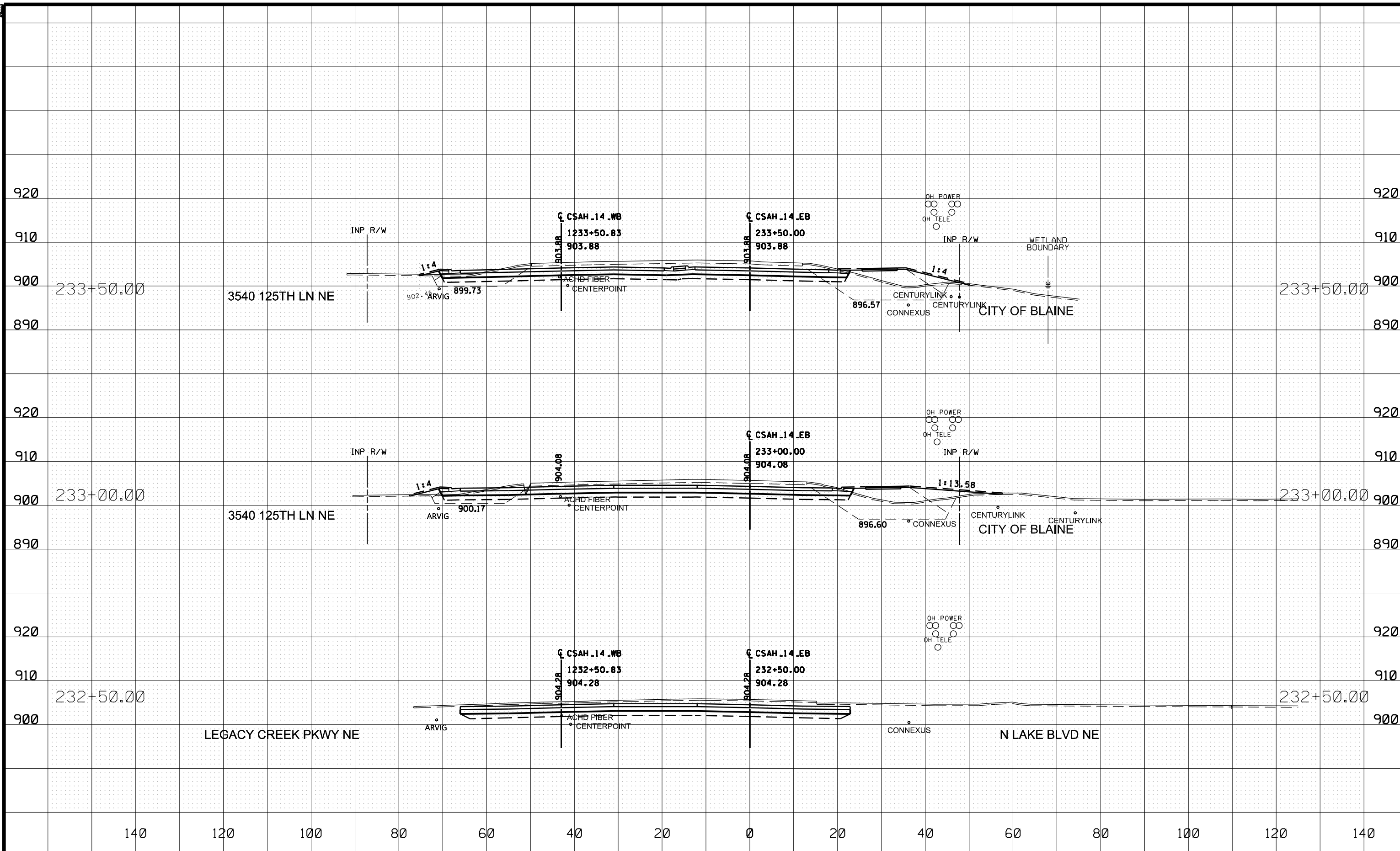
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NO	DATE	BY	CKD	APPR
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DRAWN BY	BTU	DATE	02/10/22
DESIGN BY	JRB	DATE	02/10/22
CHECKED BY	NJD	DATE	02/10/22

**ANOKA COUNTY**  
**HIGHWAY DEPT.**

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 SAP 106-020-037

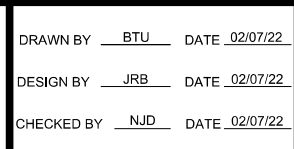
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 STA 231+50.00 TO 232+00.00  
 Sheet 252 of 303 Sheets



NO	DATE	BY	CKD	APPR	REVISION

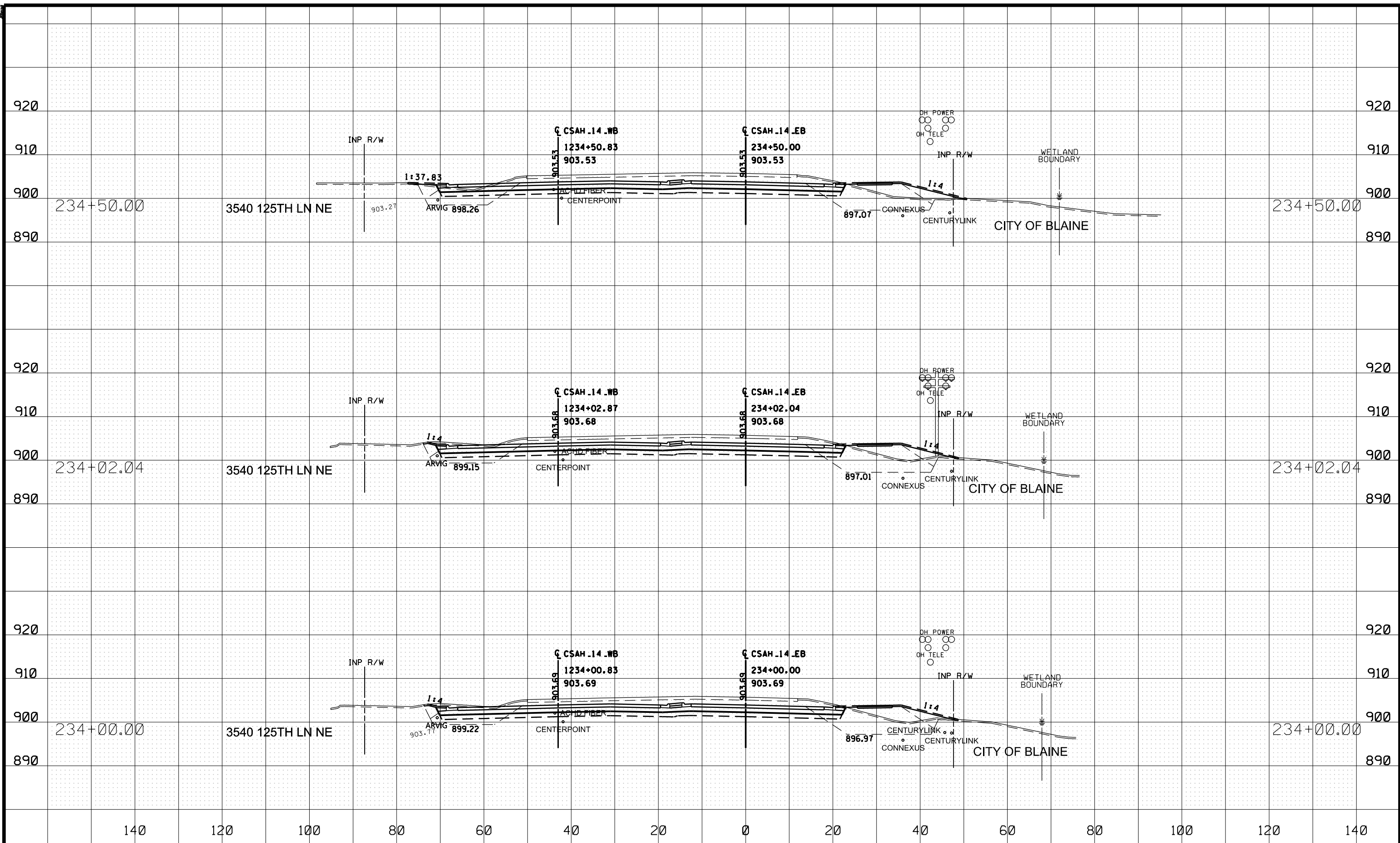
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 CHECKED BY NJD DATE 02/07/22



SAP 002-614-048  
SAP 106-020-037

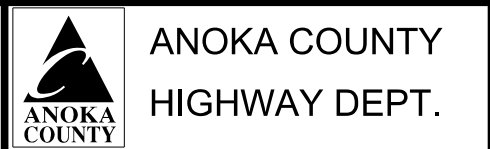
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Sheet 253 of 303 Sheets



NO	DATE	BY	CKD	APPR	REVISION

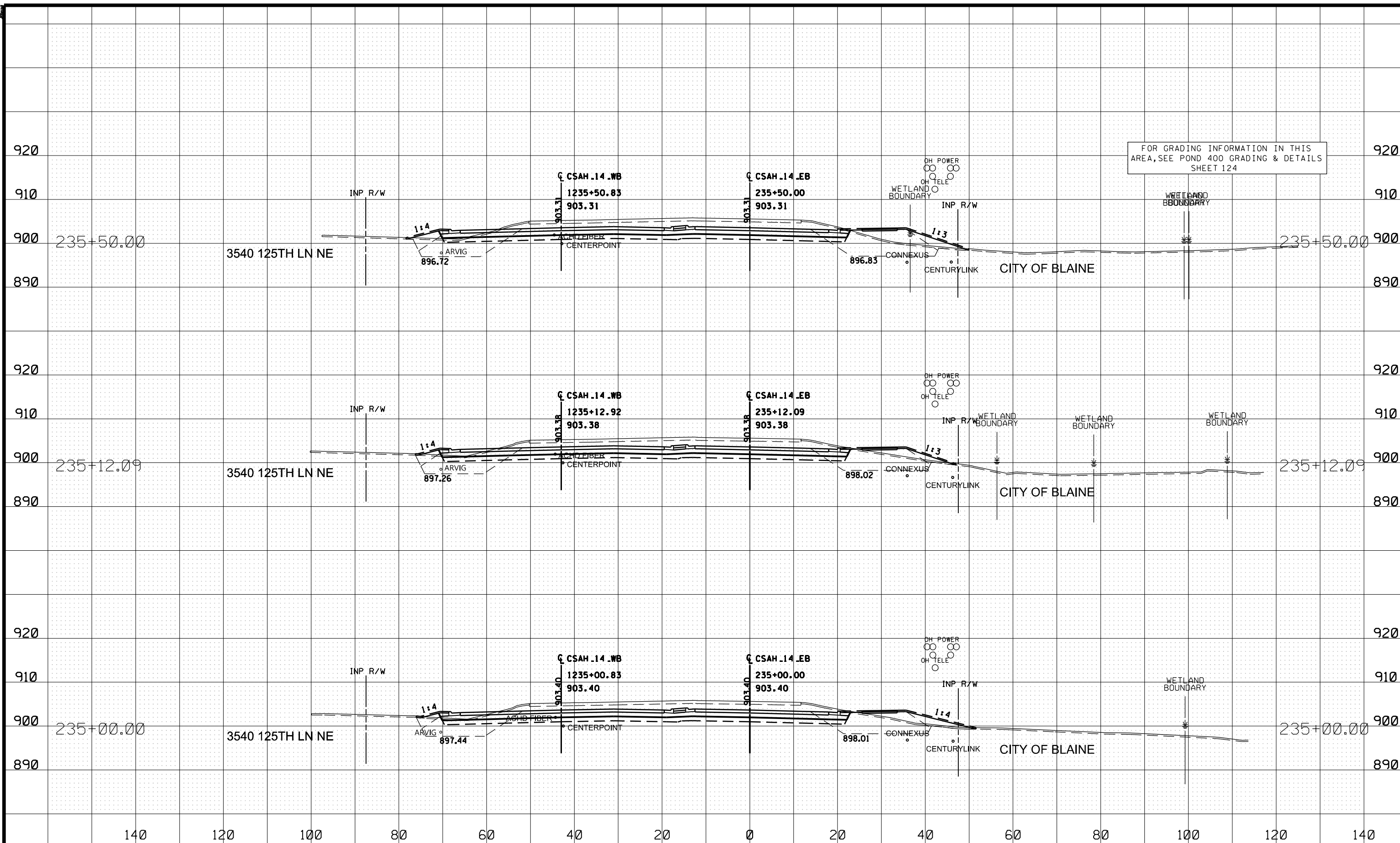
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 DESIGN BY JRB DATE 02/07/22  
 CHECKED BY NJD DATE 02/07/22



SAP 002-614-048  
SAP 106-020-037

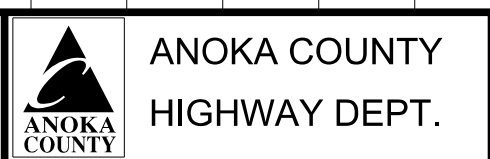
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Sheet 254 of 303 Sheets



NO	DATE	BY	CKD	APPR	REVISION

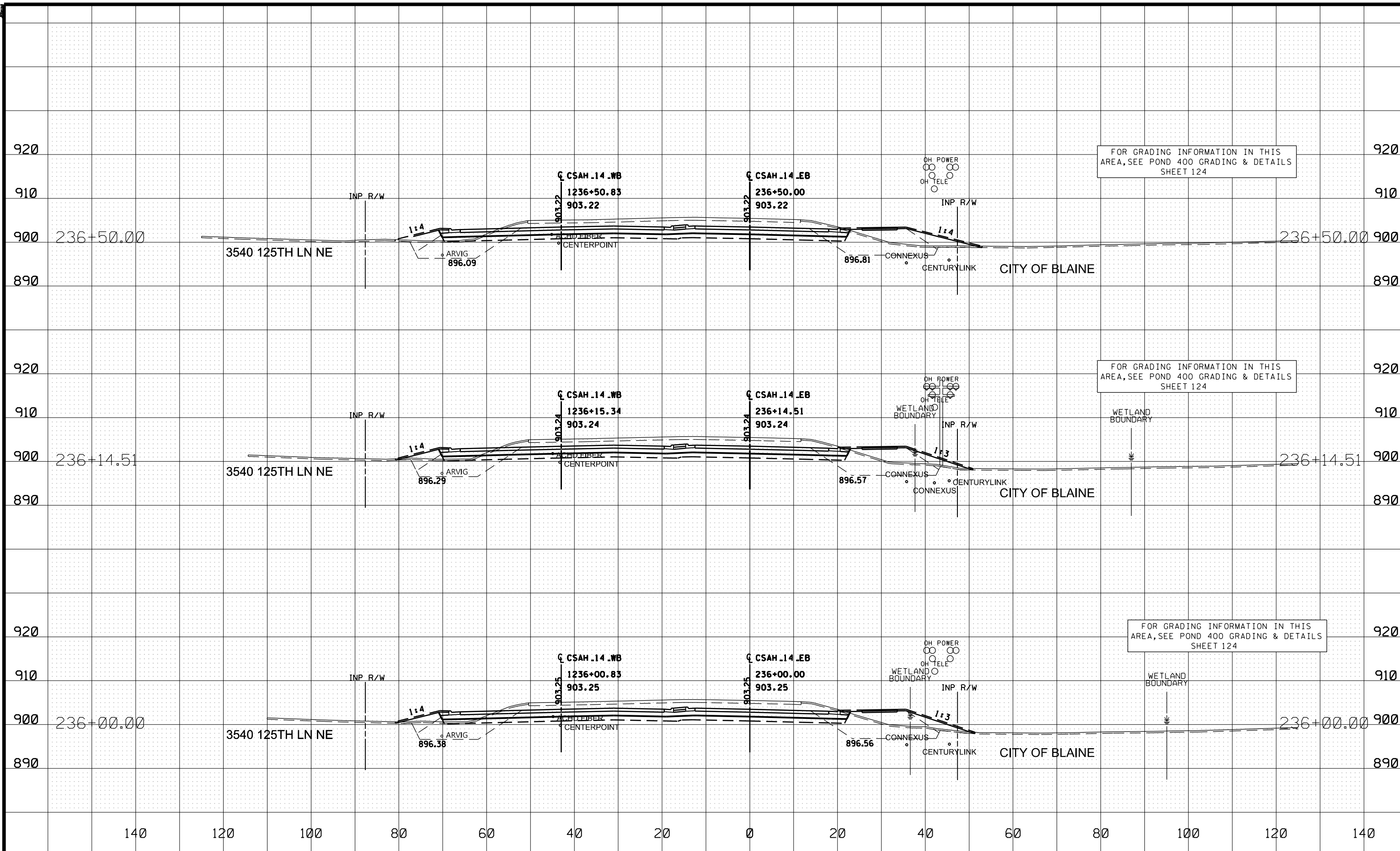
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 DESIGN BY JRB DATE 02/07/22  
 CHECKED BY NJD DATE 02/07/22



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SAP 106-020-037

CROSS SECTIONS  
CSAH 14 (125TH AVE NE)  
STA 235+00.00 TO 235+50.00  
Sheet 255 of 303 Sheets



FOR GRADING INFORMATION IN THIS AREA, SEE POND 400 GRADING & DETAILS SHEET 124

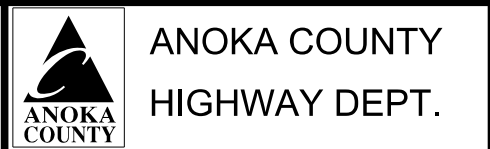
FOR GRADING INFORMATION IN THIS AREA, SEE POND 400 GRADING & DETAILS SHEET 124

FOR GRADING INFORMATION IN THIS AREA, SEE POND 400 GRADING & DETAILS SHEET 124

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-614-048\Plan\002614048\_XP4.dgn 02/09/2022 3:06:30 PM

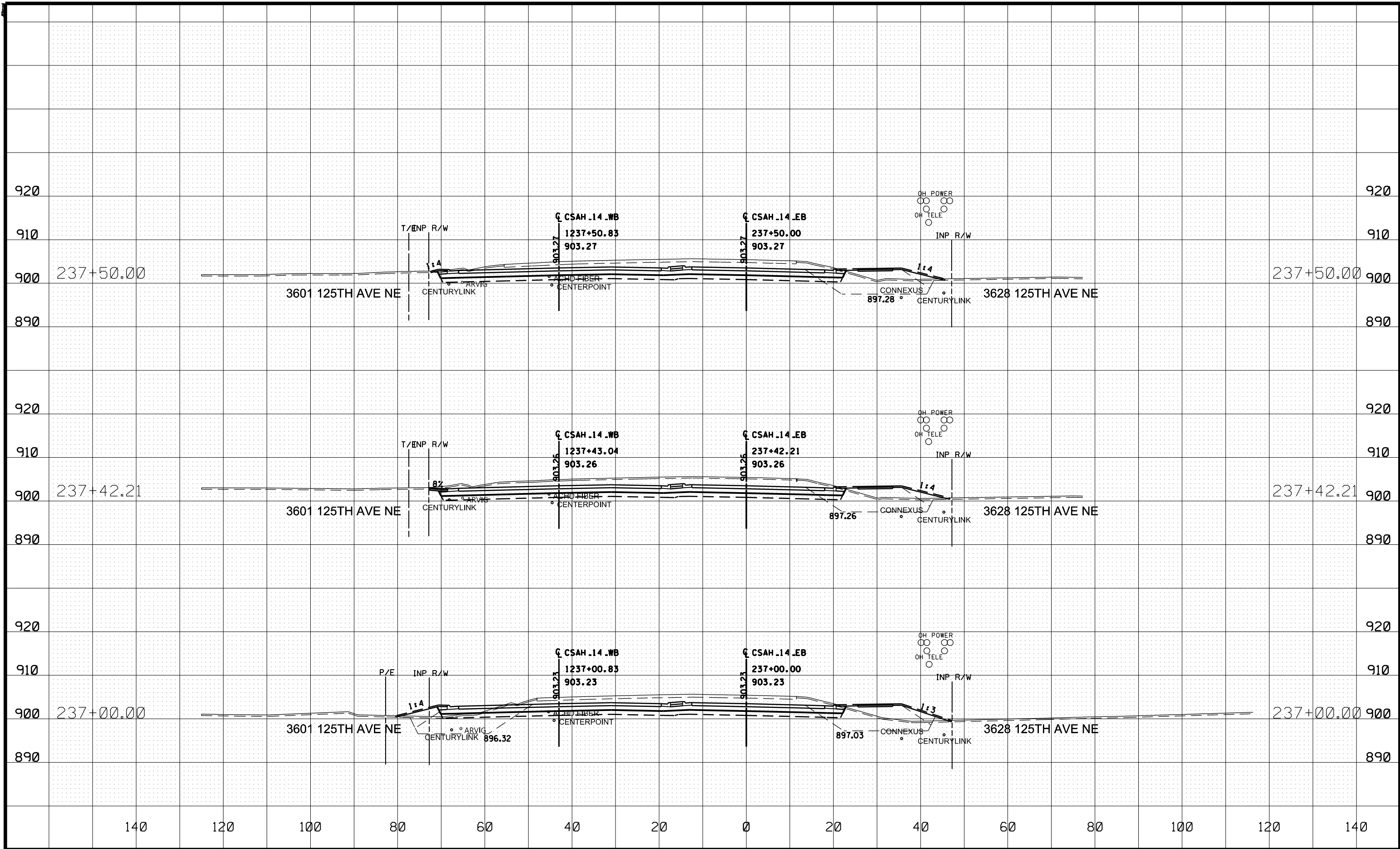

DRAWN BY BTU DATE 02/07/22  
 DESIGN BY JRB DATE 02/07/22  
 CHECKED BY NJD DATE 02/07/22



SAP 002-614-048  
 SAP 106-020-037

CROSS SECTIONS  
 CSAH 14 (125TH AVE NE)  
 STA 236+00.00 TO 236+50.00  
 Sheet 256 of 303 Sheets

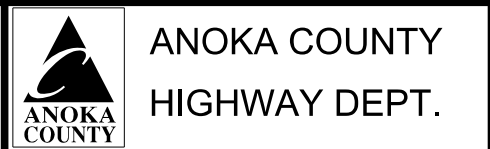




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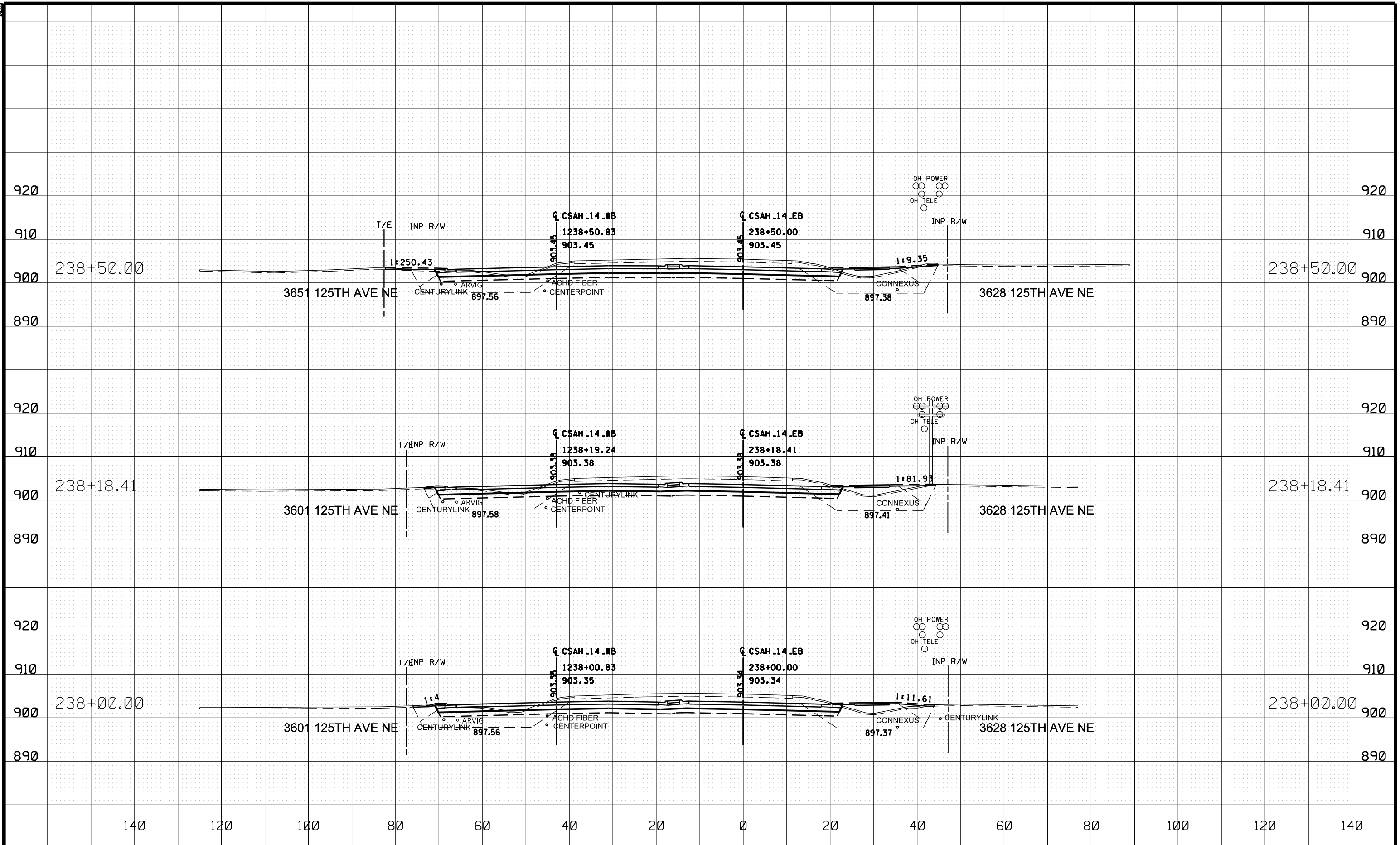
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 DESIGN BY JRB DATE 02/07/22  
 CHECKED BY NJD DATE 02/07/22



SAP 002-614-048  
 SAP 106-020-037

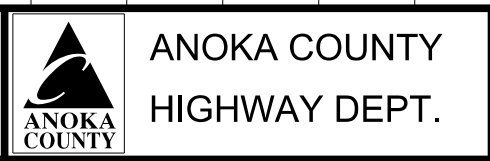
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 Sheet 257 of 303 Sheets



NO	DATE	BY	CKD	APPR	REVISION

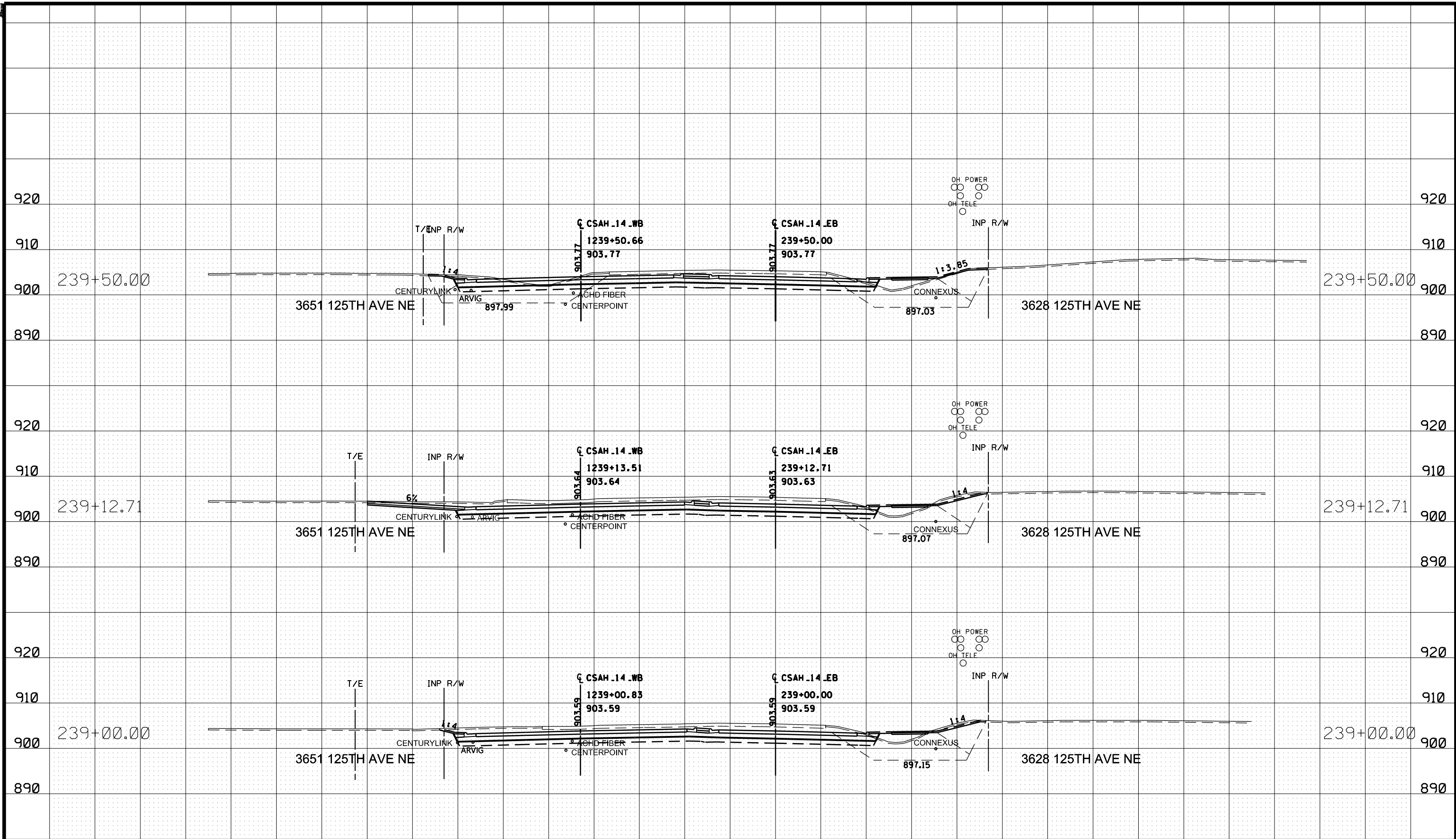
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 CHECKED BY NJD DATE 02/07/22



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SAP 106-020-037

CROSS SECTIONS  
CSAH 14 (125TH AVE NE)  
STA 238+00.00 TO 238+50.00  
Sheet 258 of 303 Sheets

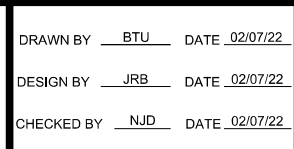


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NO	DATE	BY	CKD	APPR	REVISION

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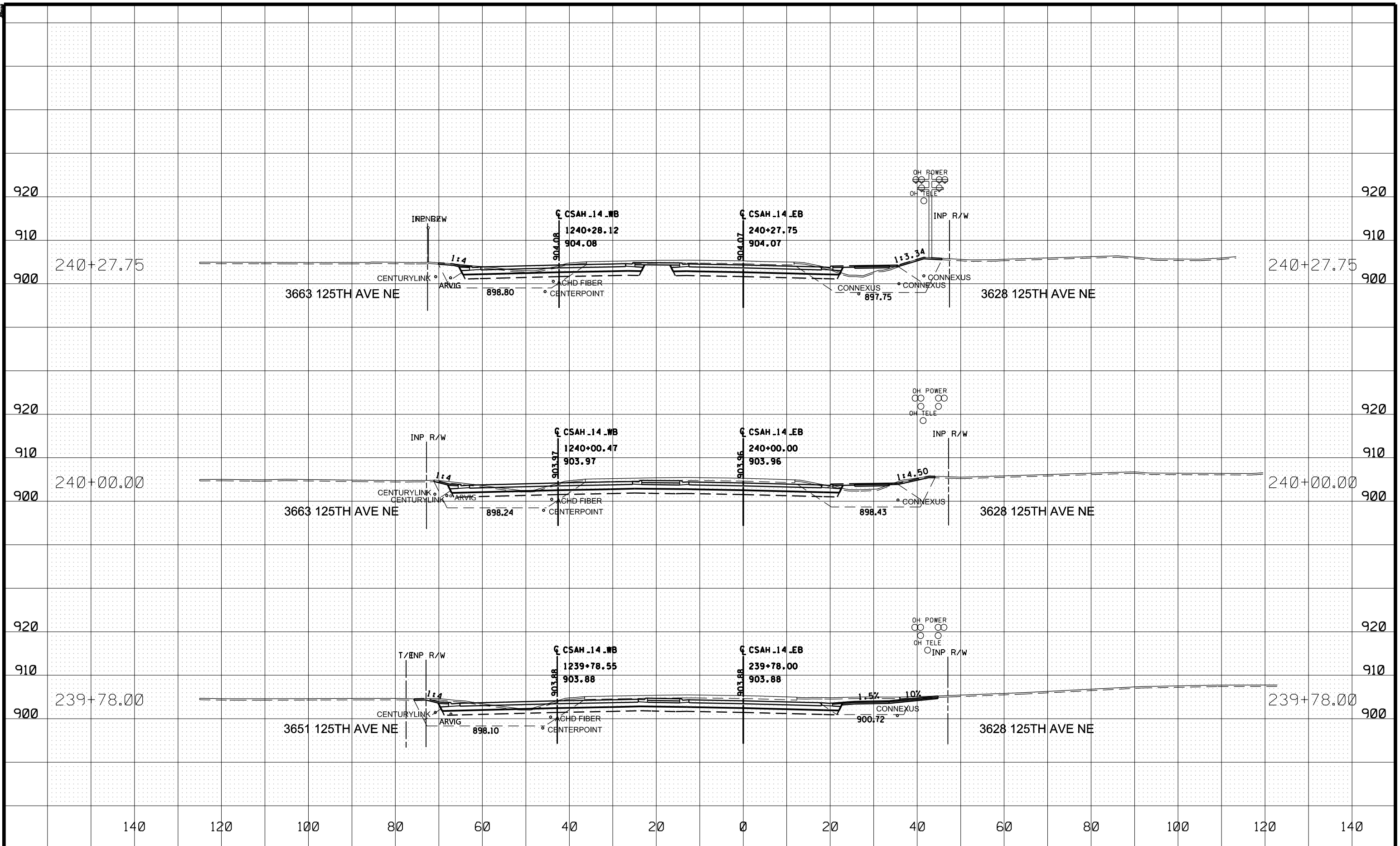
DRAWN BY BTU DATE 02/07/22  
 DESIGN BY JRB DATE 02/07/22  
 CHECKED BY NJD DATE 02/07/22



ANOKA COUNTY  
HIGHWAY DEPT.

SAP 002-614-048  
SAP 106-020-037

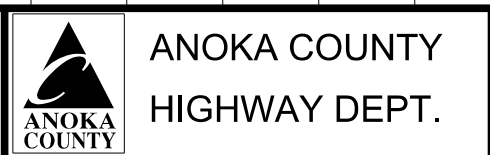
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Sheet 259 of 303 Sheets



NO	DATE	BY	CKD	APPR	REVISION

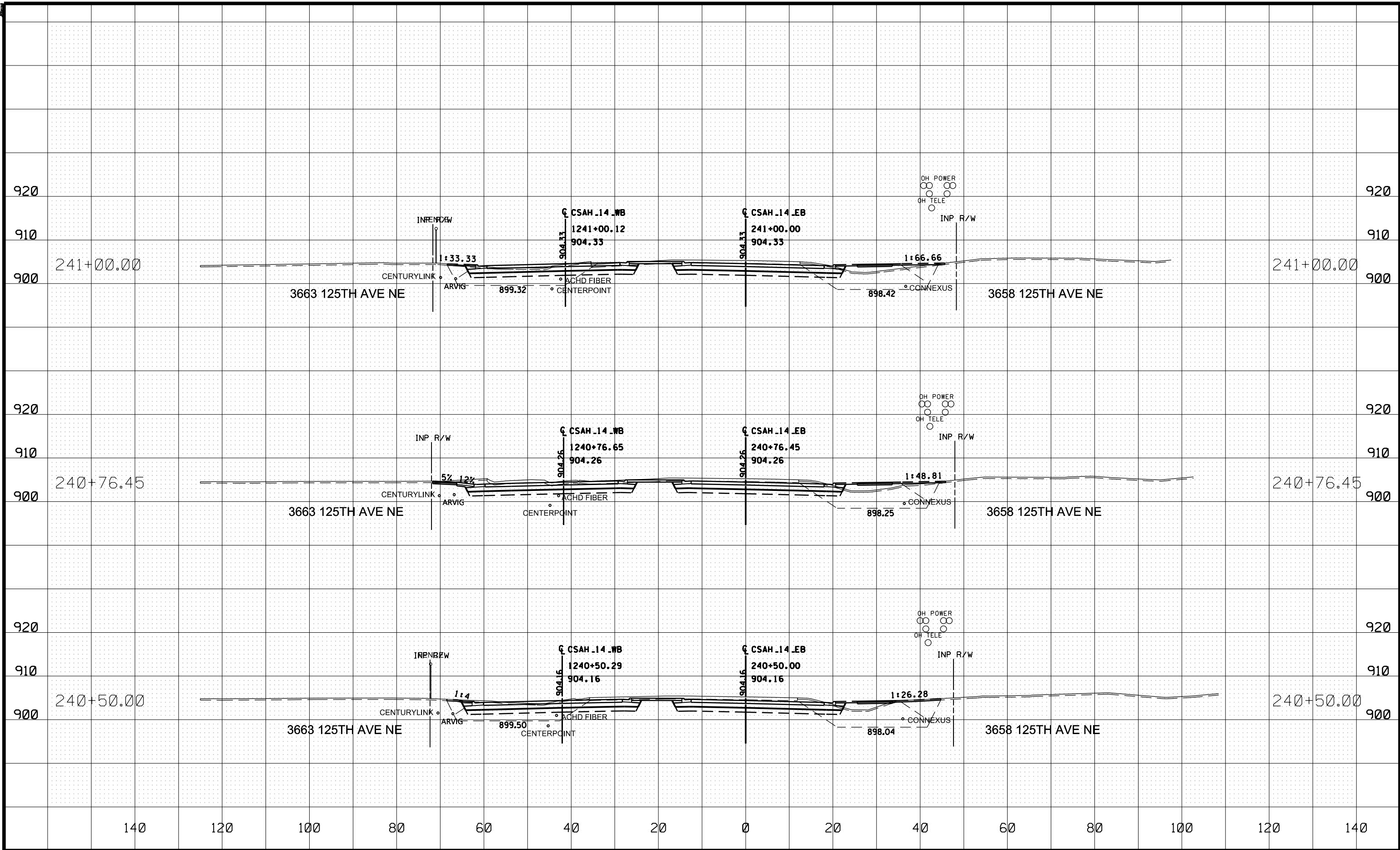
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 DESIGN BY JRB DATE 02/07/22  
 CHECKED BY NJD DATE 02/07/22



SAP 002-614-048  
SAP 106-020-037

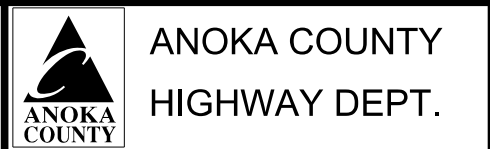
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Sheet 260 of 303 Sheets



NO	DATE	BY	CKD	APPR	REVISION

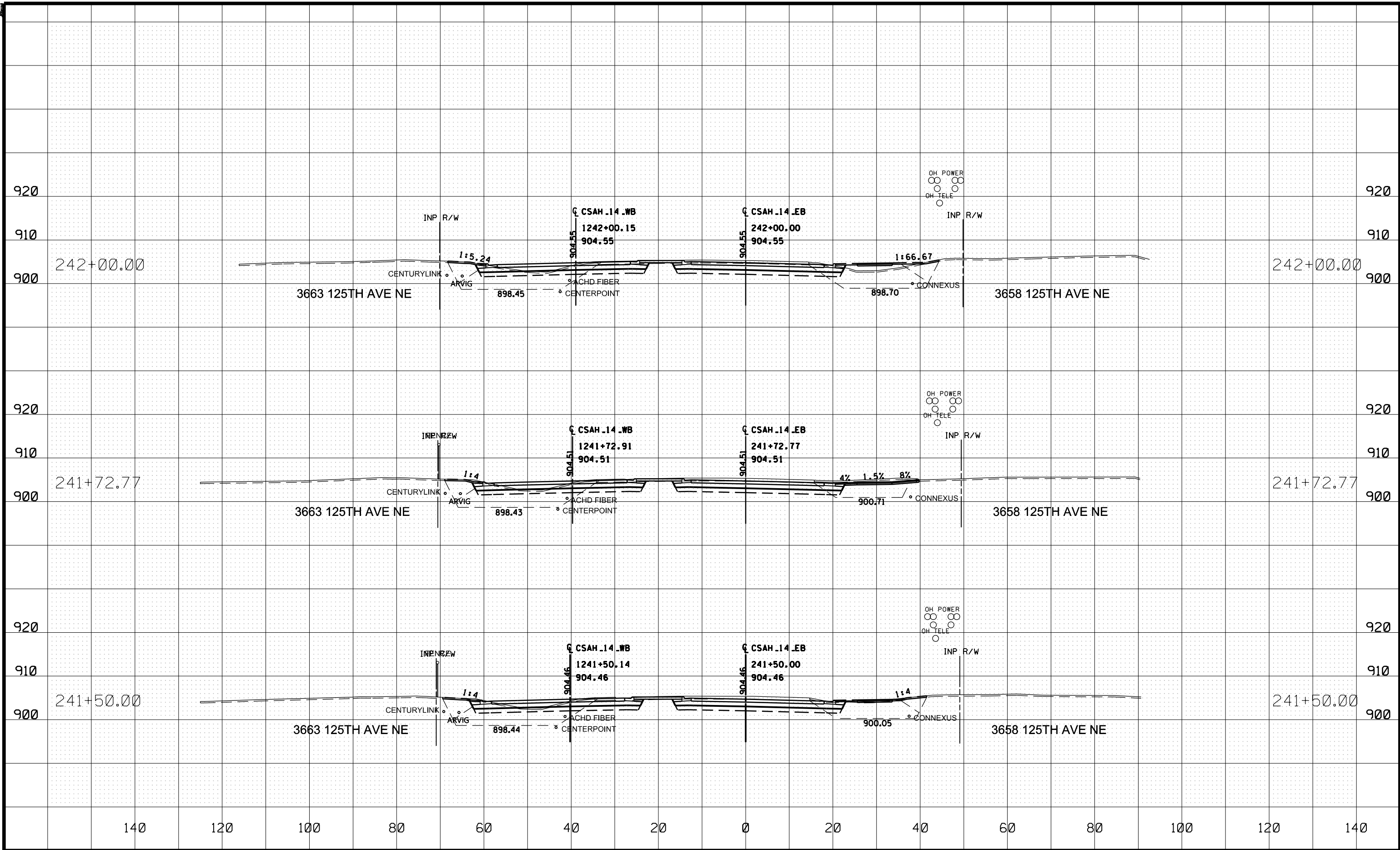
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 CHECKED BY NJD DATE 02/07/22



SAP 002-614-048  
SAP 106-020-037

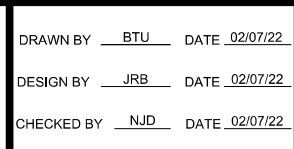
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STA 240+50.00 TO 241+00.00  
Sheet 261 of 303 Sheets



NO	DATE	BY	CKD	APPR	REVISION

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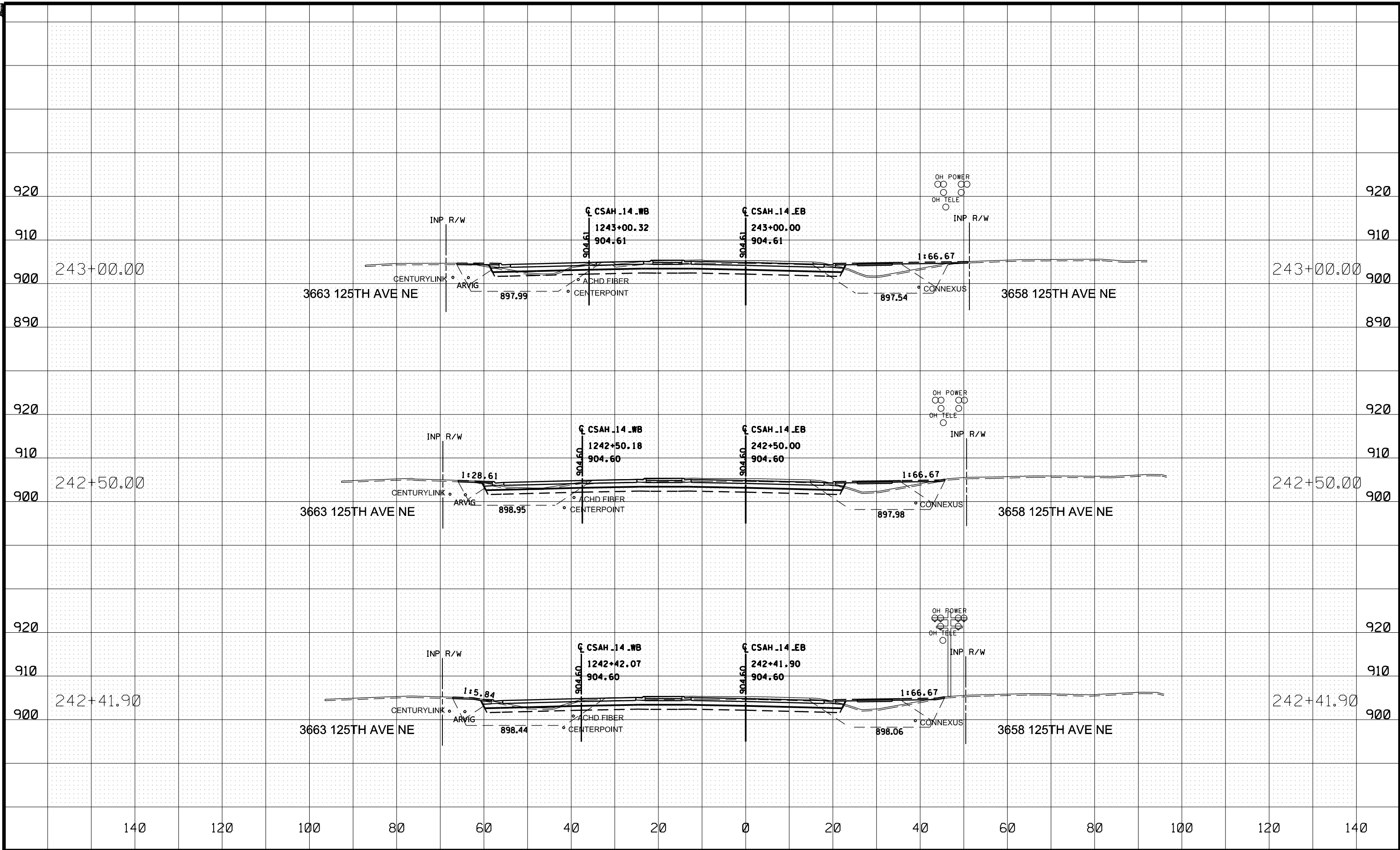
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DESIGN BY	JRB	DATE	02/07/22
CHECKED BY	NJD	DATE	02/07/22



ANOKA COUNTY  
HIGHWAY DEPT.

SAP 002-614-048  
SAP 106-020-037

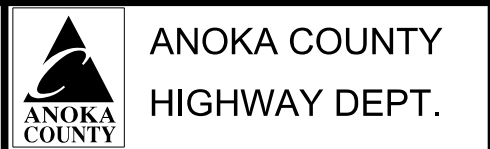
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STA 241+50.00 TO 242+00.00  
Sheet 262 of 303 Sheets



NO	DATE	BY	CKD	APPR	REVISION

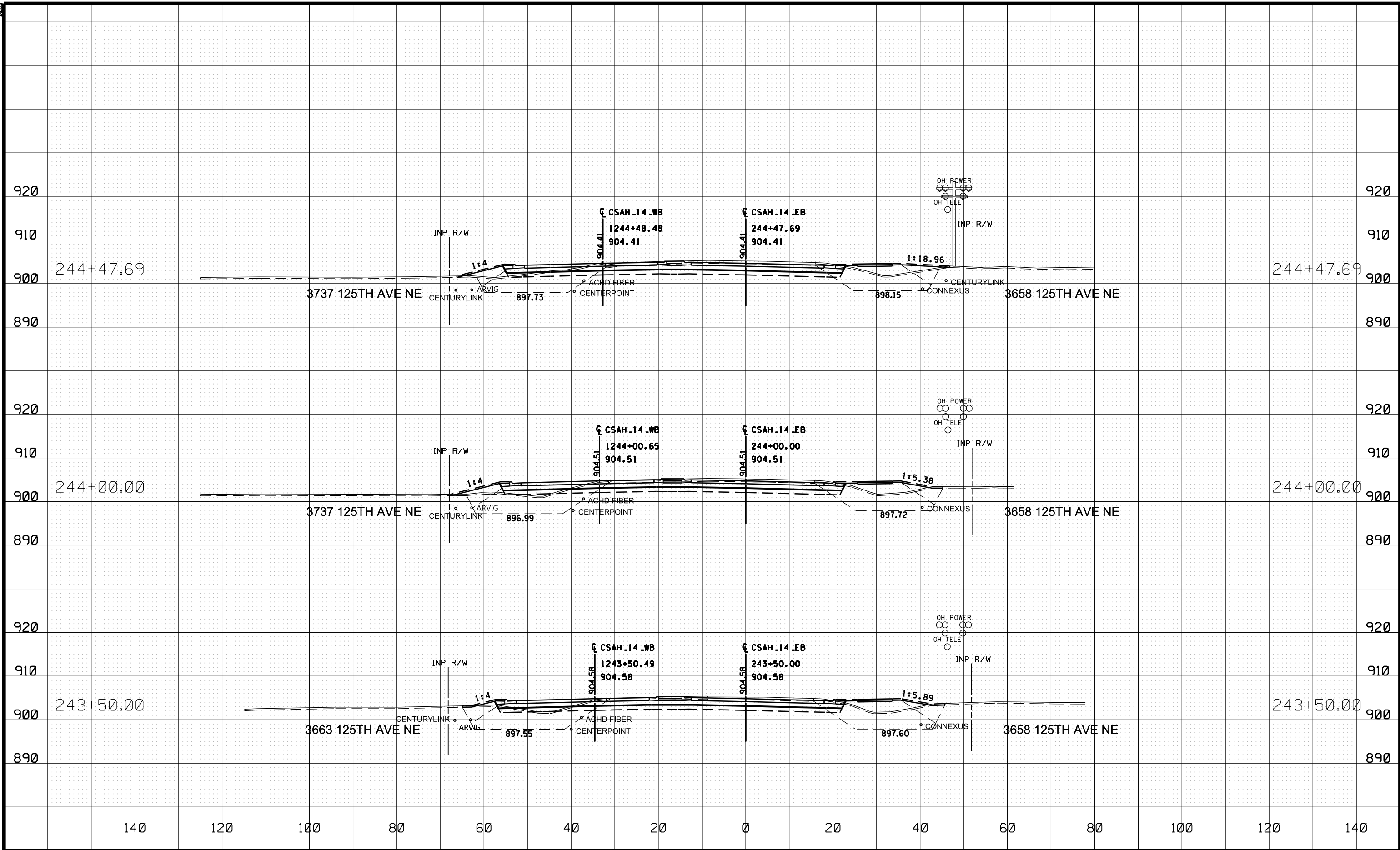
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 CHECKED BY NJD DATE 02/07/22



SAP 002-614-048  
SAP 106-020-037

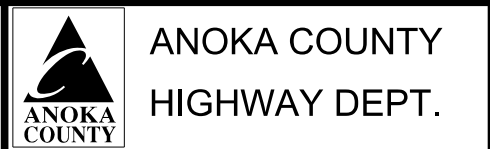
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STA 242+41.90 TO 243+00.00  
Sheet 263 of 303 Sheets



NO	DATE	BY	CKD	APPR	REVISION

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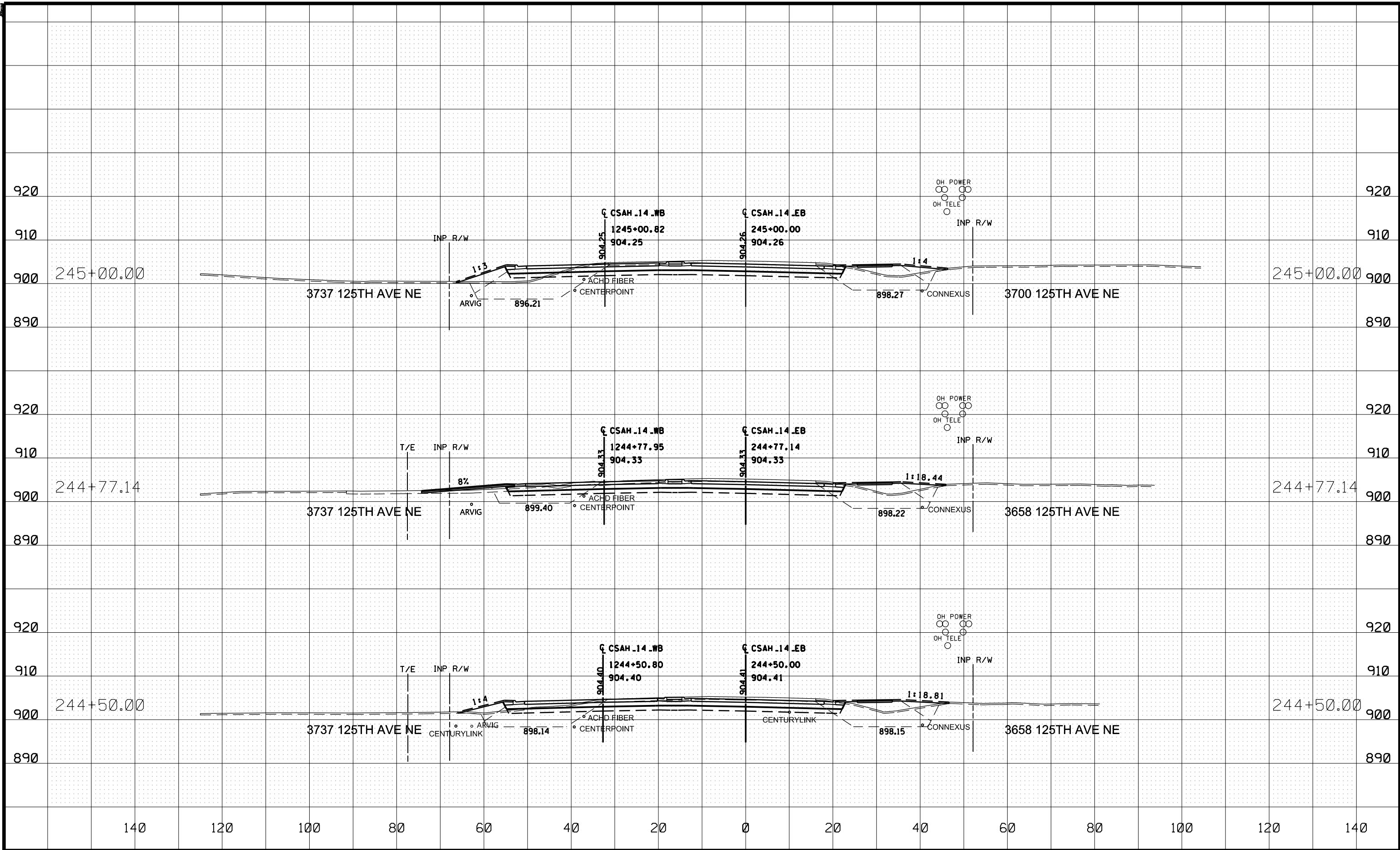

DRAWN BY BTU DATE 02/07/22  
 DESIGN BY JRB DATE 02/07/22  
 CHECKED BY NJD DATE 02/07/22



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 SAP 106-020-037

CROSS SECTIONS  
 CSAH 14 (125TH AVE NE)  
 STA 243+50.00 TO 244+47.69  
 Sheet 264 of 303 Sheets

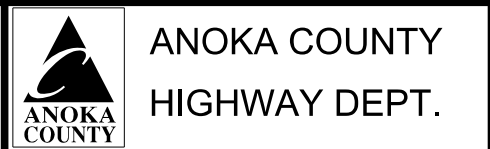




NO	DATE	BY	CKD	APPR	REVISION

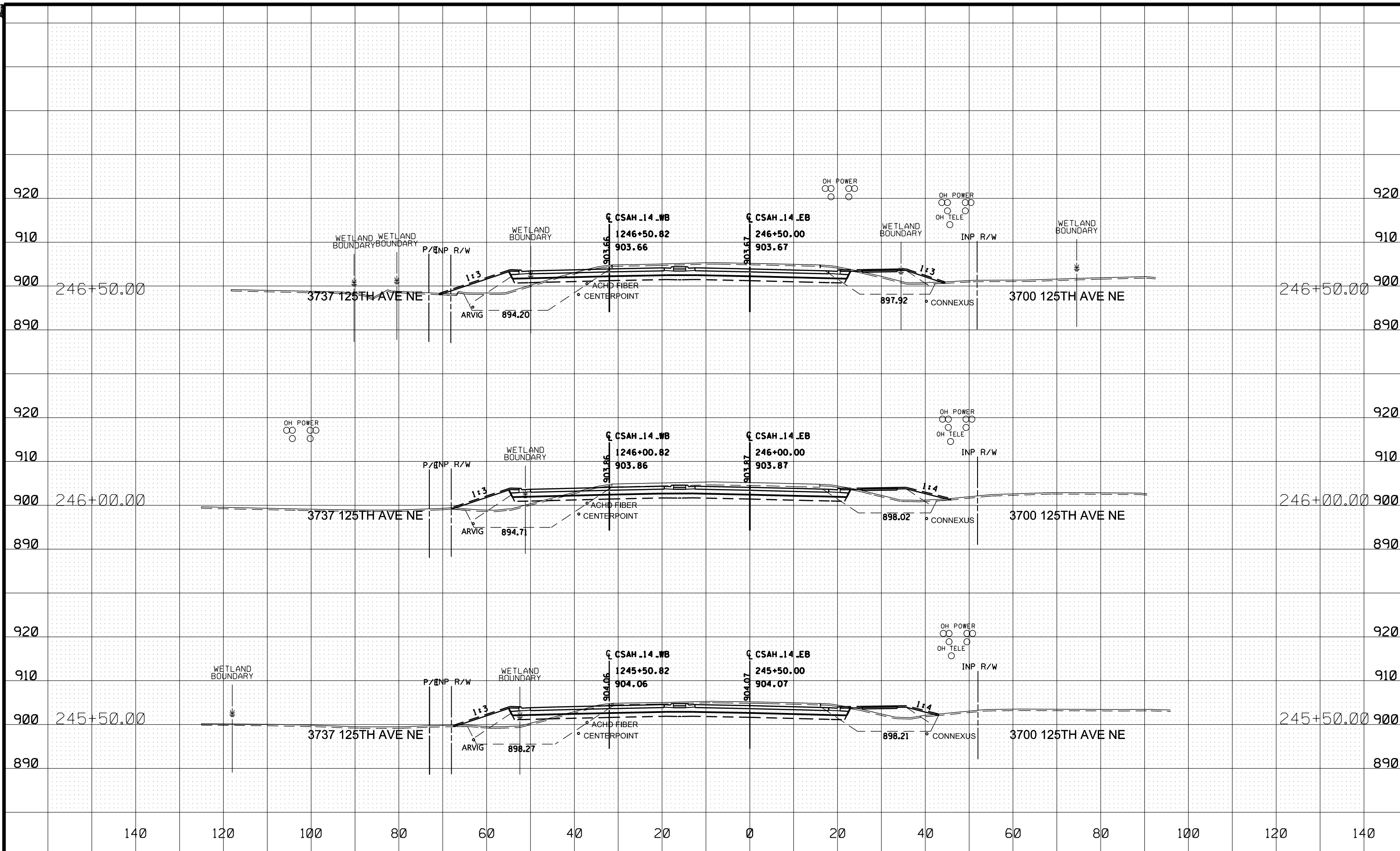
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 CHECKED BY NJD DATE 02/07/22



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 SAP 106-020-037

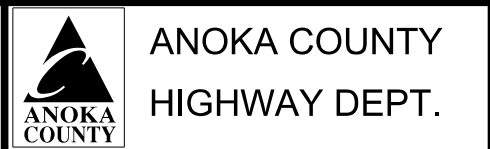
CROSS SECTIONS  
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 Sheet 265 of 303 Sheets



NO	DATE	BY	CKD	APPR	REVISION

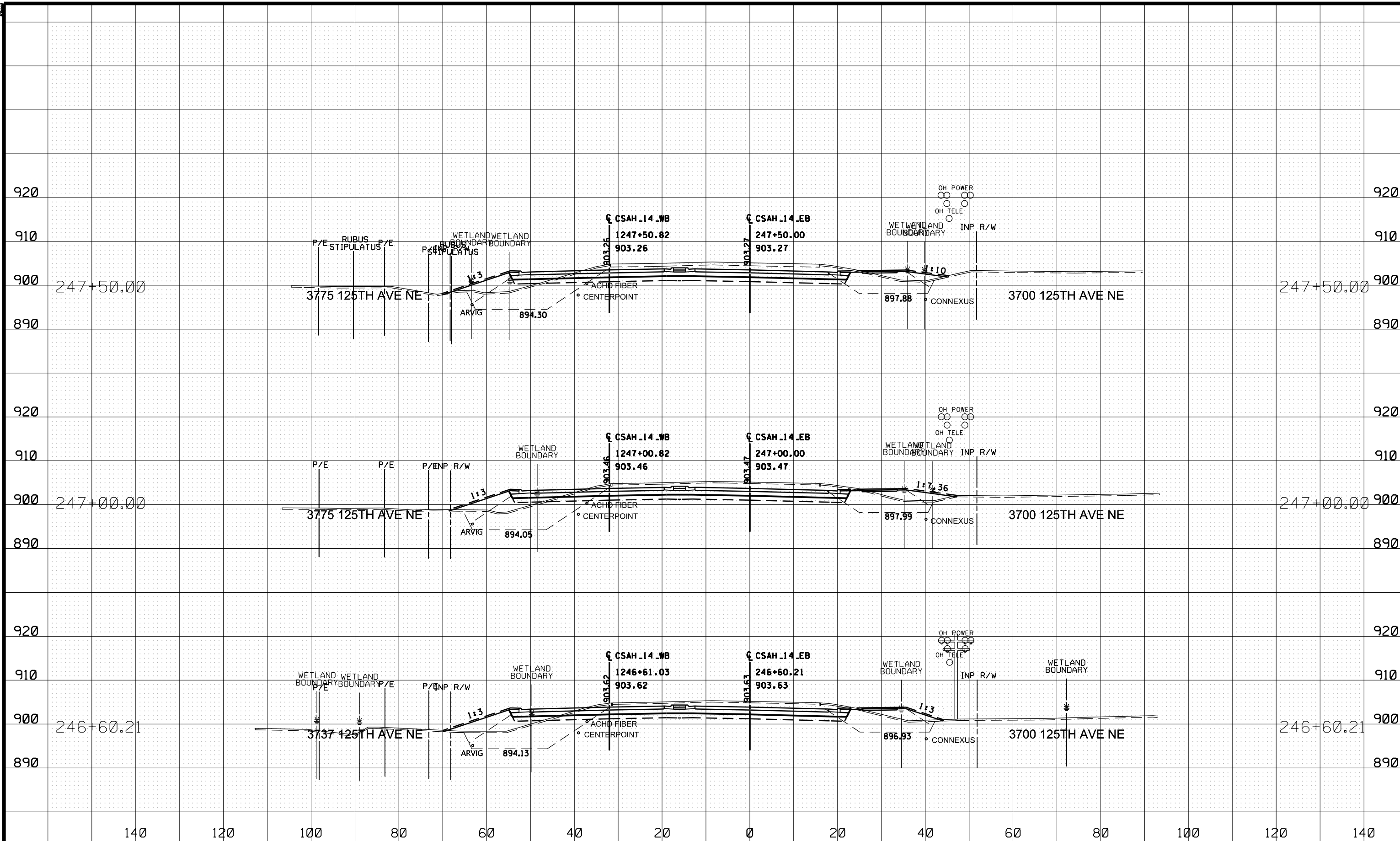
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 CHECKED BY NJD DATE 02/07/22



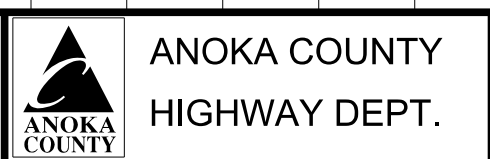
SAP 002-614-048  
SAP 106-020-037

CROSS SECTIONS  
CSAH 14 (125TH AVE NE)  
STA 245+50.00 TO 246+50.00  
Sheet 266 of 303 Sheets



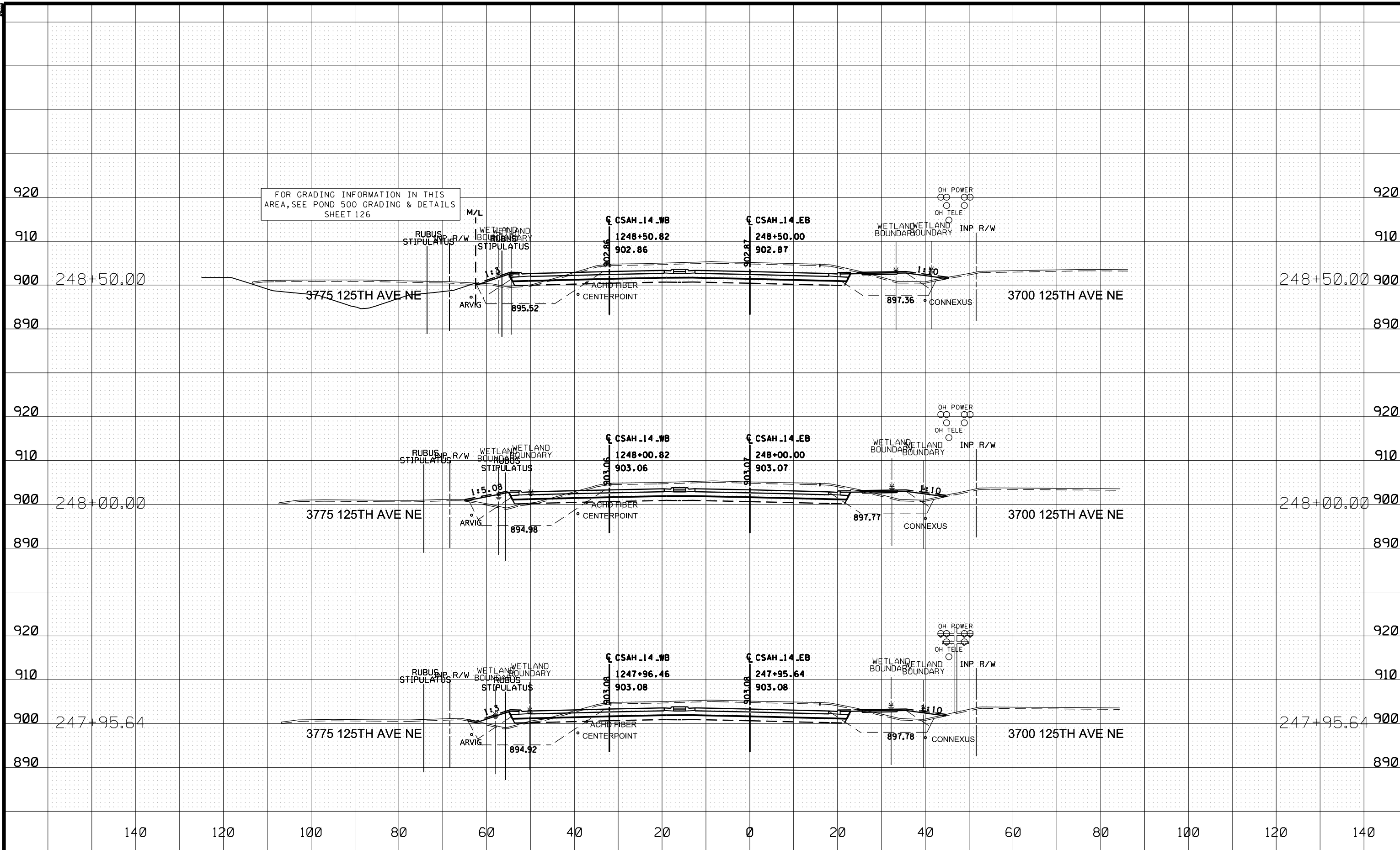
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DRAWN BY BTU DATE 02/07/22  
 DESIGN BY JRB DATE 02/07/22  
 CHECKED BY NJD DATE 02/07/22



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 SAP 106-020-037

CROSS SECTIONS  
 CSAH 14 (125TH AVE NE)  
 STA 246+60.21 TO 247+50.00  
 Sheet 267 of 303 Sheets

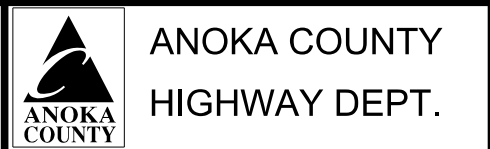


FOR GRADING INFORMATION IN THIS AREA, SEE POND 500 GRADING & DETAILS SHEET 126

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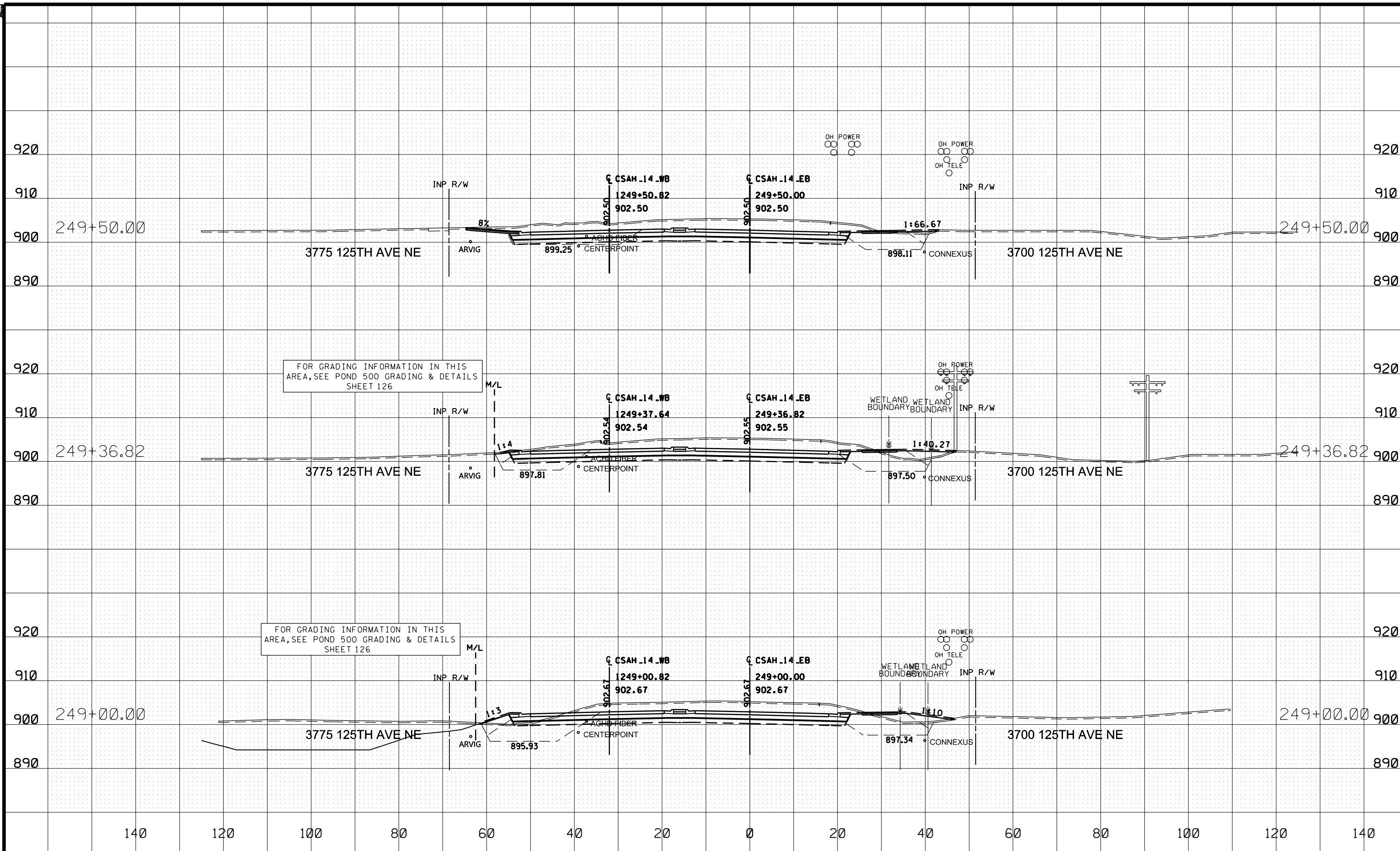
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 CHECKED BY NJD DATE 02/07/22



SAP 002-614-048  
 SAP 106-020-037

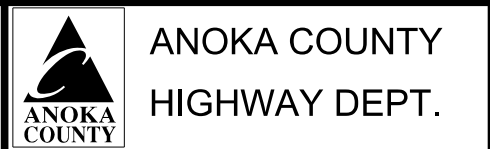
CROSS SECTIONS  
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 STA 247+95.64 TO 248+50.00  
 Sheet 268 of 303 Sheets



NO	DATE	BY	CKD	APPR	REVISION

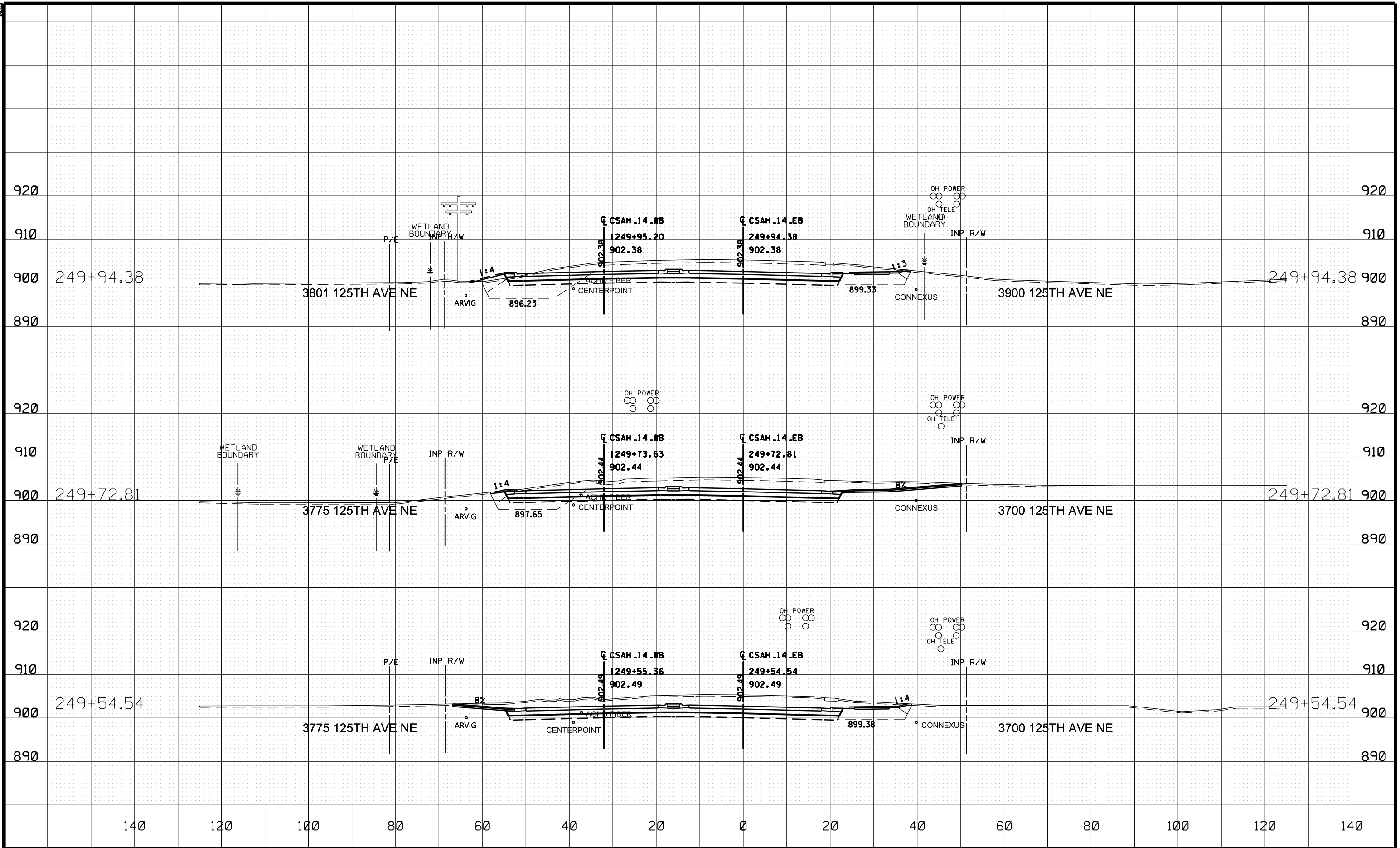
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 DESIGN BY JRB DATE 02/07/22  
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SAP 002-614-048  
 SAP 106-020-037

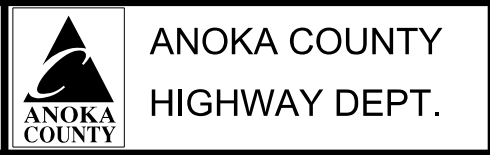
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 STA 249+00.00 TO 249+50.00  
 Sheet 269 of 303 Sheets



NO	DATE	BY	CKD	APPR	REVISION

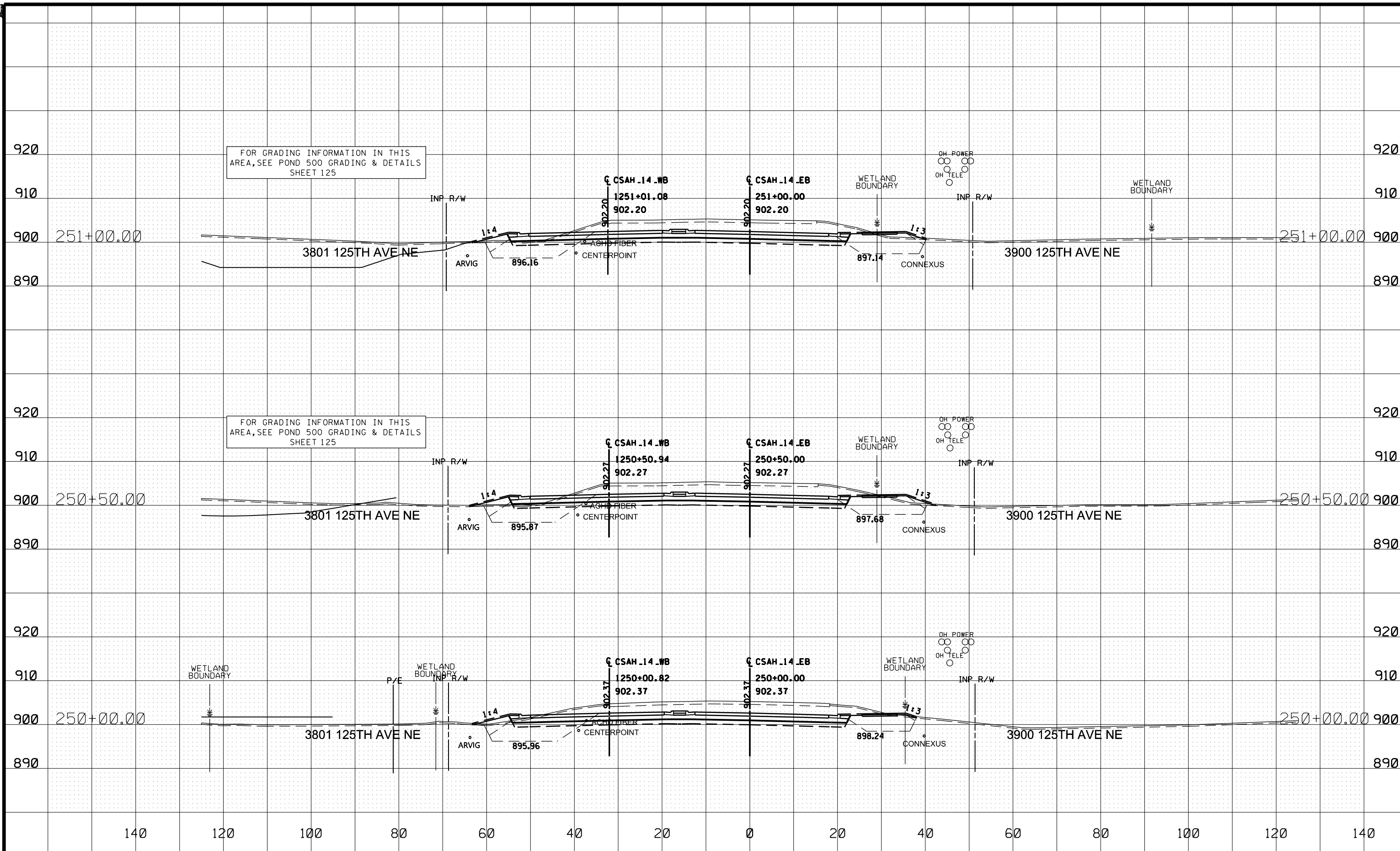
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SAP 002-614-048  
 SAP 106-020-037

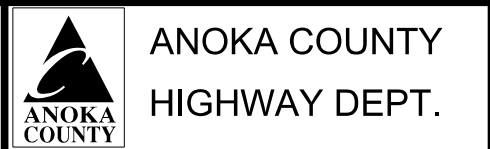
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 Sheet 270 of 303 Sheets



NO	DATE	BY	CKD	APPR	REVISION

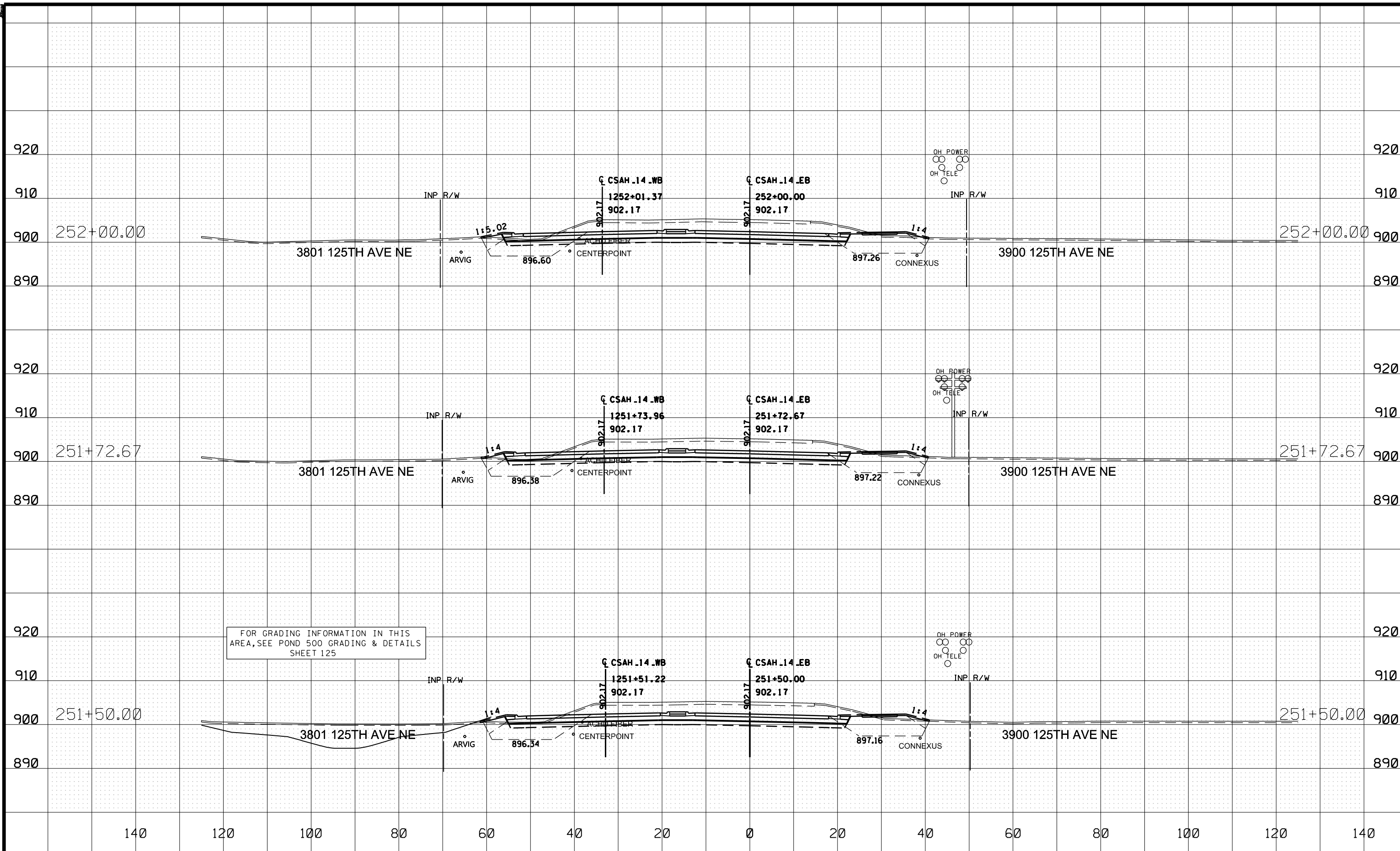
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 CHECKED BY NJD DATE 02/07/22



SAP 002-614-048  
 SAP 106-020-037

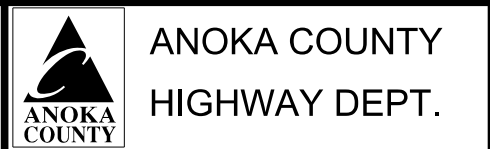
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 STA 250+00.00 TO 251+00.00  
 Sheet 271 of 303 Sheets



NO	DATE	BY	CKD	APPR	REVISION

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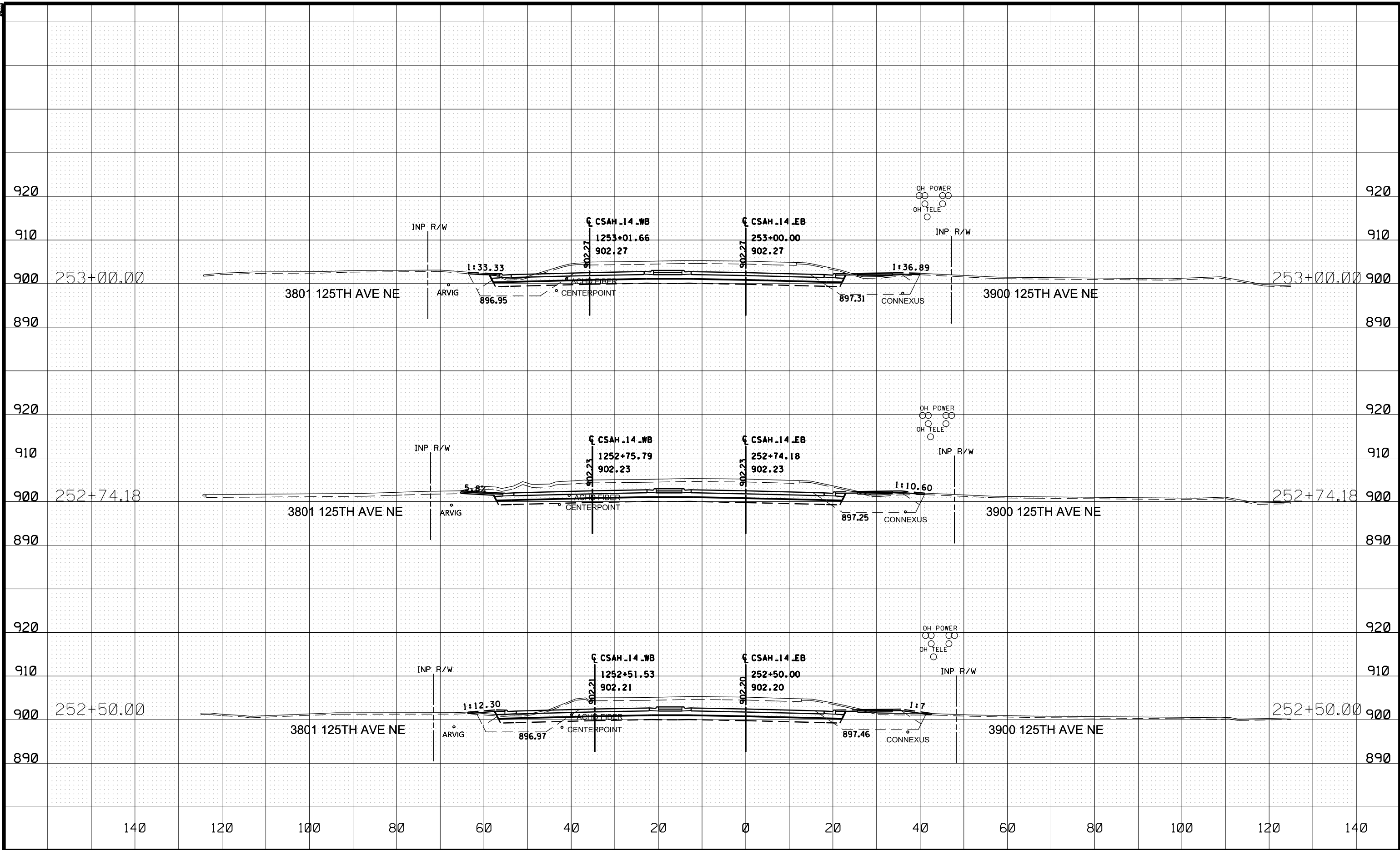

DRAWN BY BTU DATE 02/07/22  
 DESIGN BY JRB DATE 02/07/22  
 CHECKED BY NJD DATE 02/07/22



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 SAP 106-020-037

CROSS SECTIONS  
 CSAH 14 (125TH AVE NE)  
 STA 251+50.00 TO 252+00.00  
 Sheet 272 of 303 Sheets

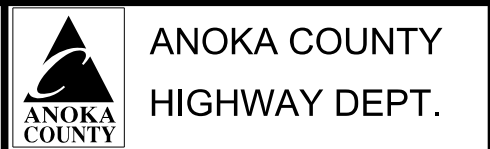




NO	DATE	BY	CKD	APPR	REVISION

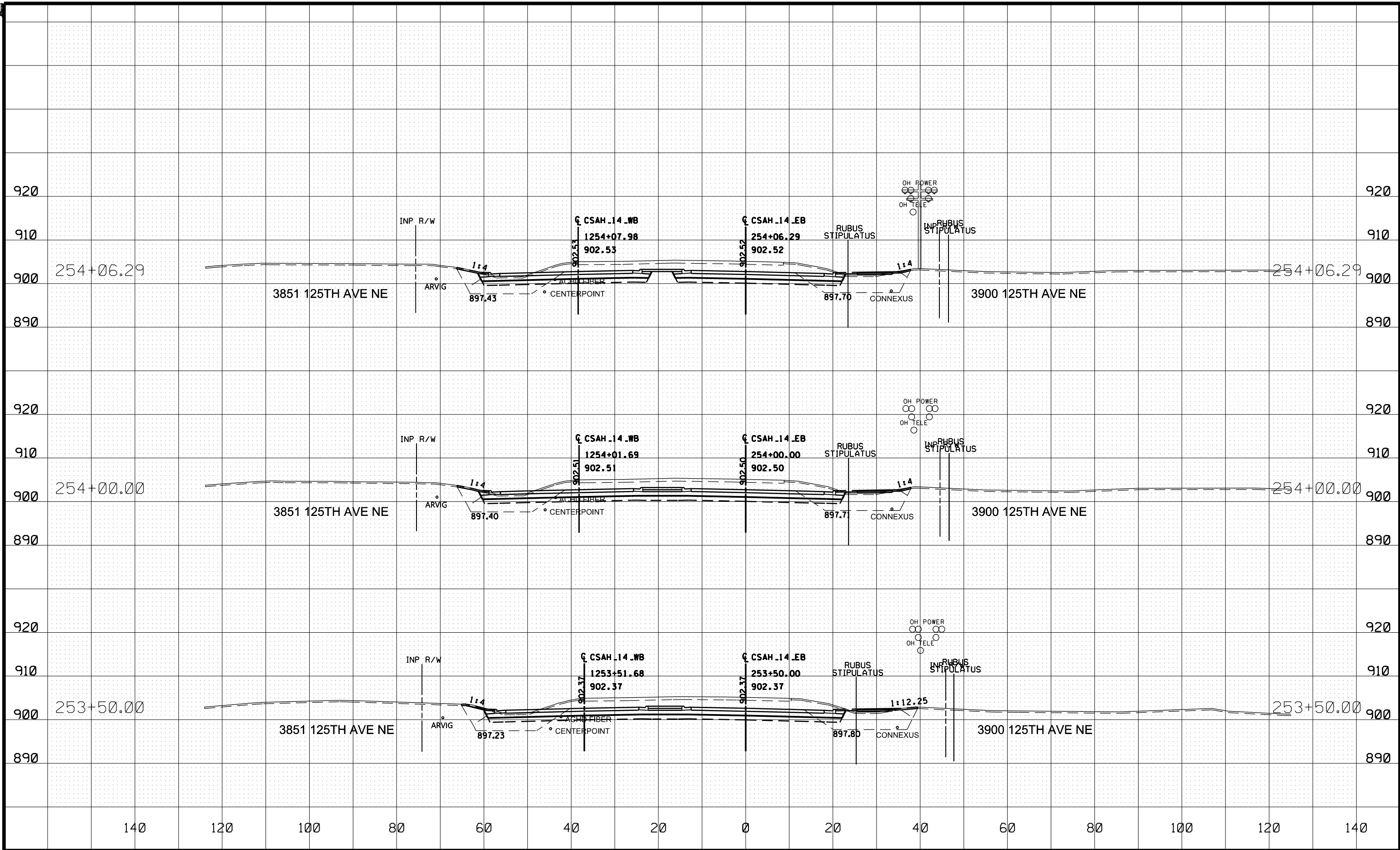
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SAP 002-614-048  
 SAP 106-020-037

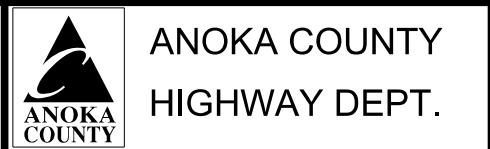
CROSS SECTIONS  
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 STA 252+50.00 TO 253+00.00  
 Sheet 273 of 303 Sheets



NO	DATE	BY	CKD	APPR	REVISION

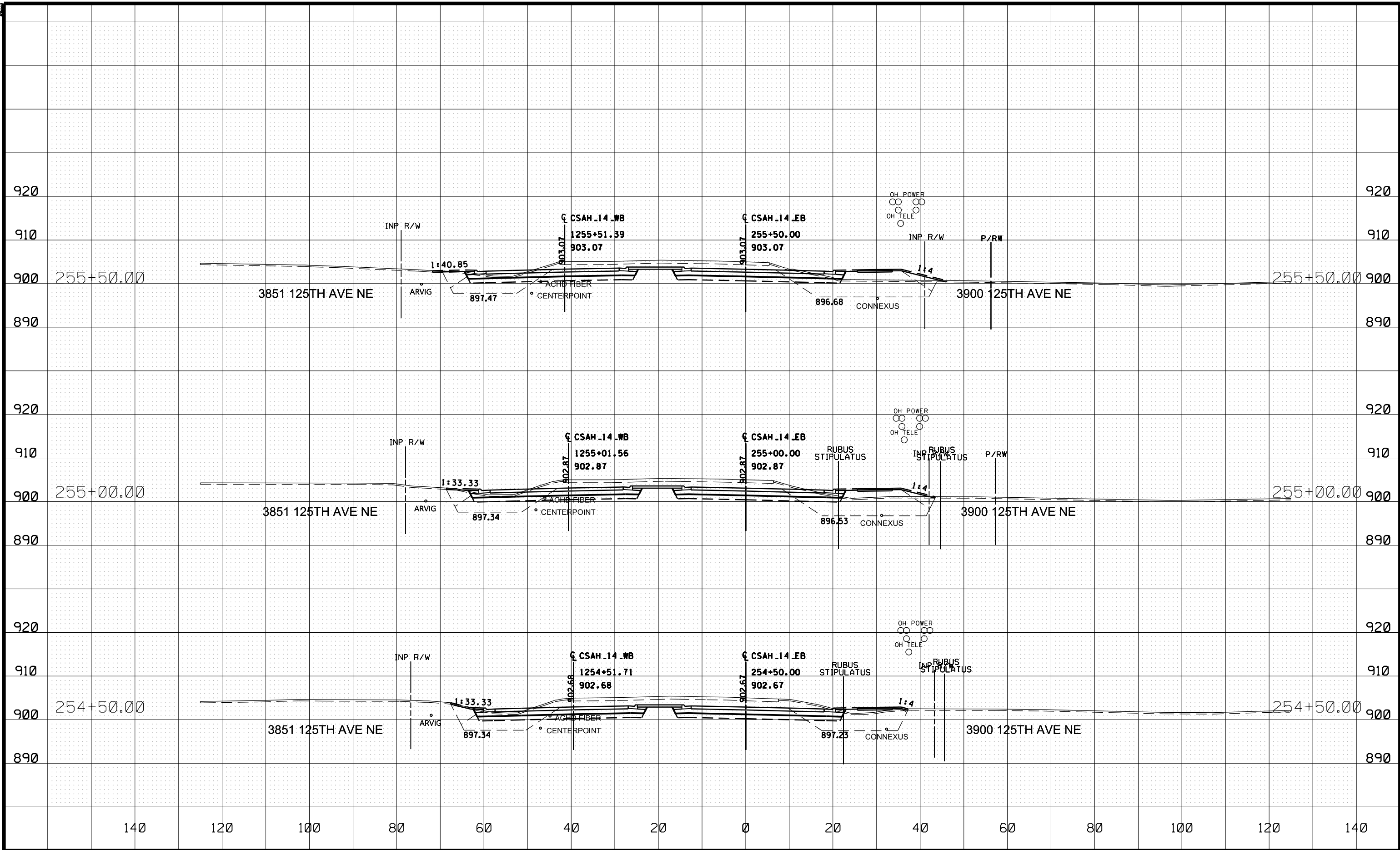
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SAP 106-020-037

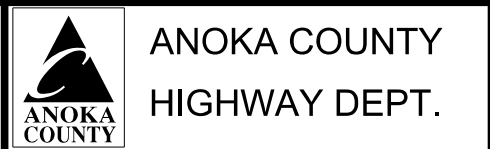
CROSS SECTIONS  
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STA 253+50.00 TO 254+06.29  
Sheet 274 of 303 Sheets



NO	DATE	BY	CKD	APPR	REVISION

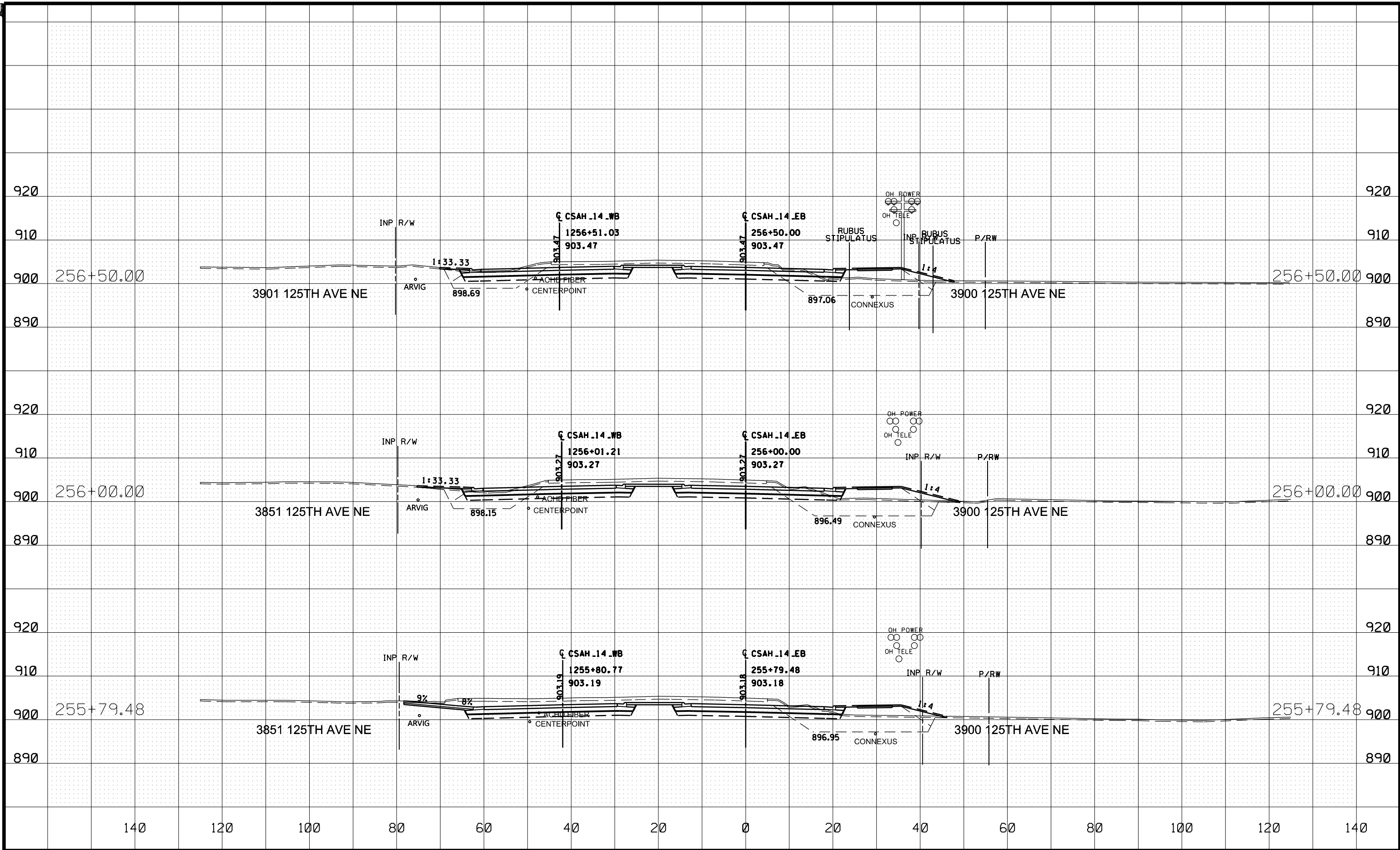
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 CHECKED BY NJD DATE 02/07/22



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 SAP 106-020-037

CROSS SECTIONS  
 CSAH 14 (125TH AVE NE)  
 STA 254+50.00 TO 255+50.00  
 Sheet 275 of 303 Sheets



NO	DATE	BY	CKD	APPR	REVISION

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INP R/W

ARVIG

ACH FIBER

CENTERPOINT

CONNEXUS

RUBUS STIPULATUS

OH POWER

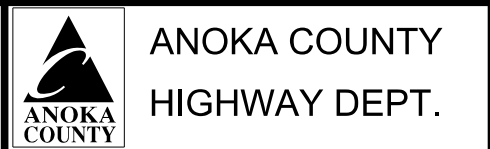
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P/RW

DRAWN BY BTU DATE 02/07/22

DESIGN BY JRB DATE 02/07/22

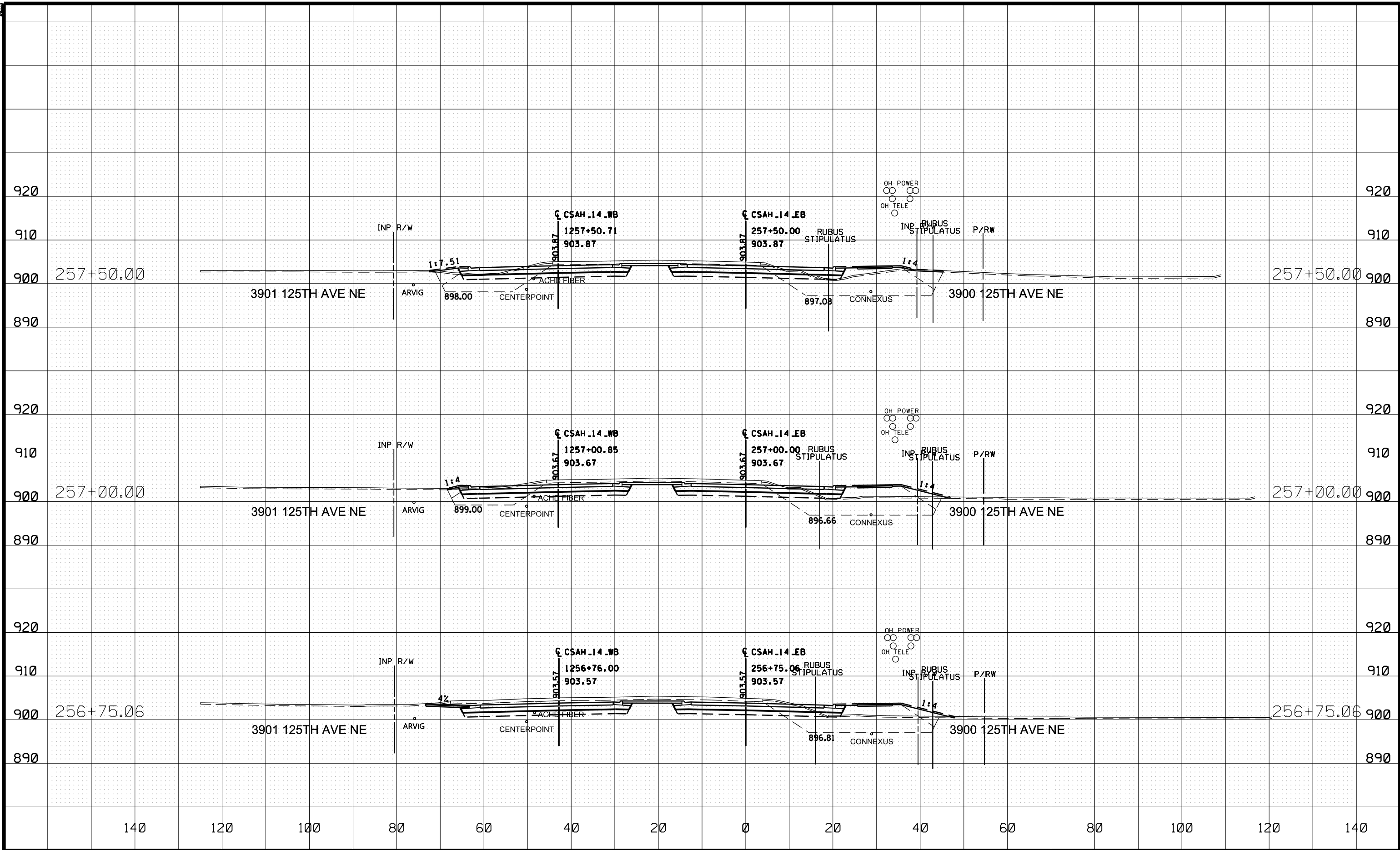
CHECKED BY NJD DATE 02/07/22



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SAP 106-020-037

**CROSS SECTIONS**  
CSAH 14 (125TH AVE NE)  
STA 255+79.48 TO 256+50.00

Sheet 276 of 303 Sheets

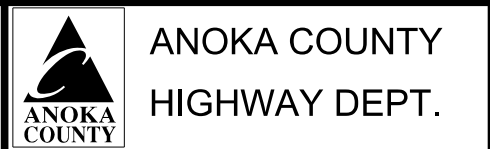


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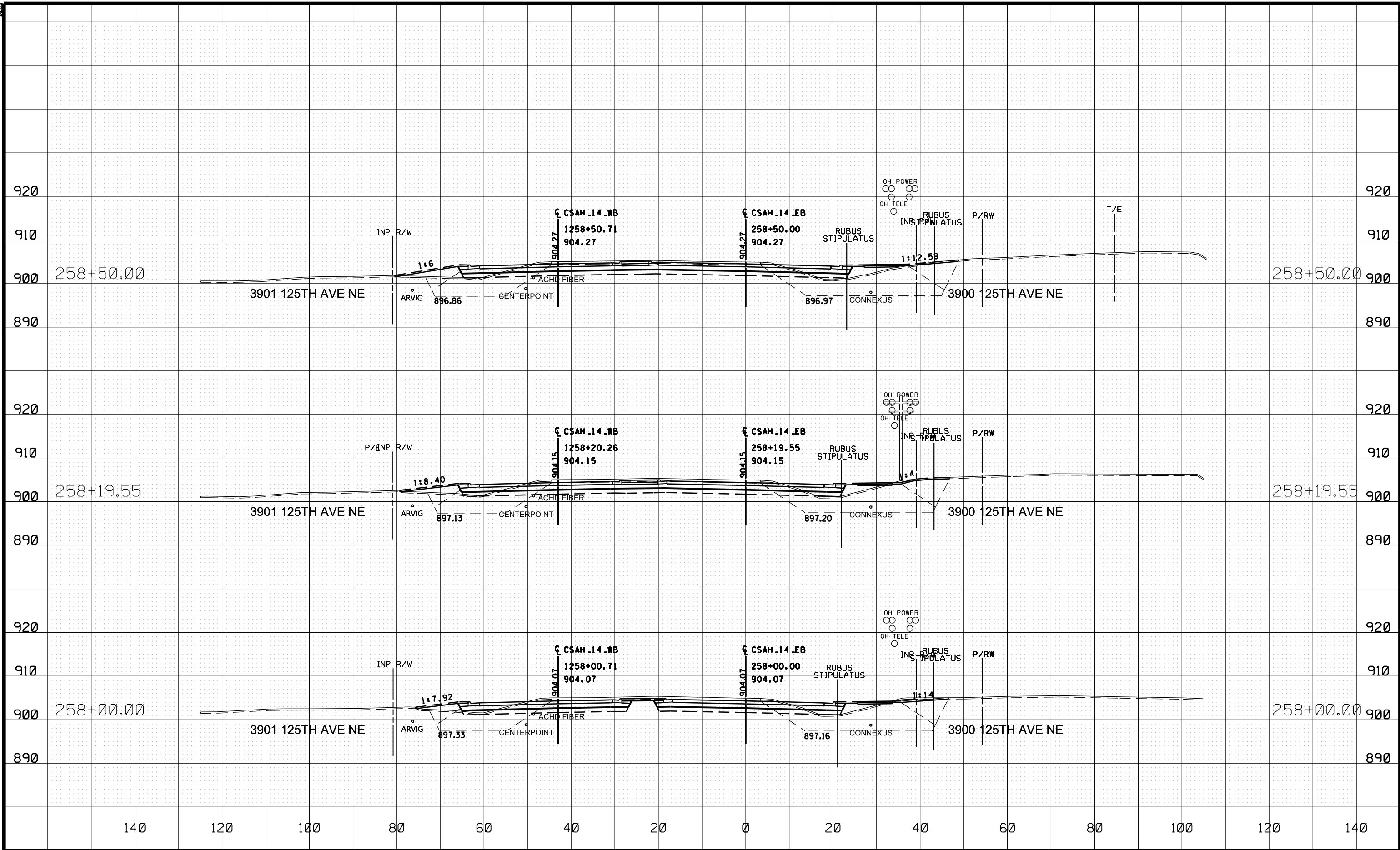
INP R/W  
ARVIG  
CENTERPOINT  
ACHD FIBER

DRAWN BY BTU DATE 02/07/22  
DESIGN BY JRB DATE 02/07/22  
CHECKED BY NJD DATE 02/07/22



SAP 002-614-048  
SAP 106-020-037

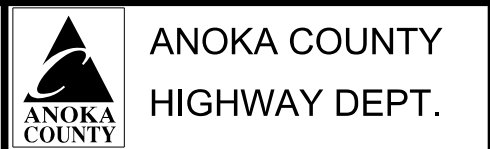
CROSS SECTIONS  
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STA 256+75.06 TO 257+50.00  
Sheet 277 of 303 Sheets



NO	DATE	BY	CKD	APPR	REVISION

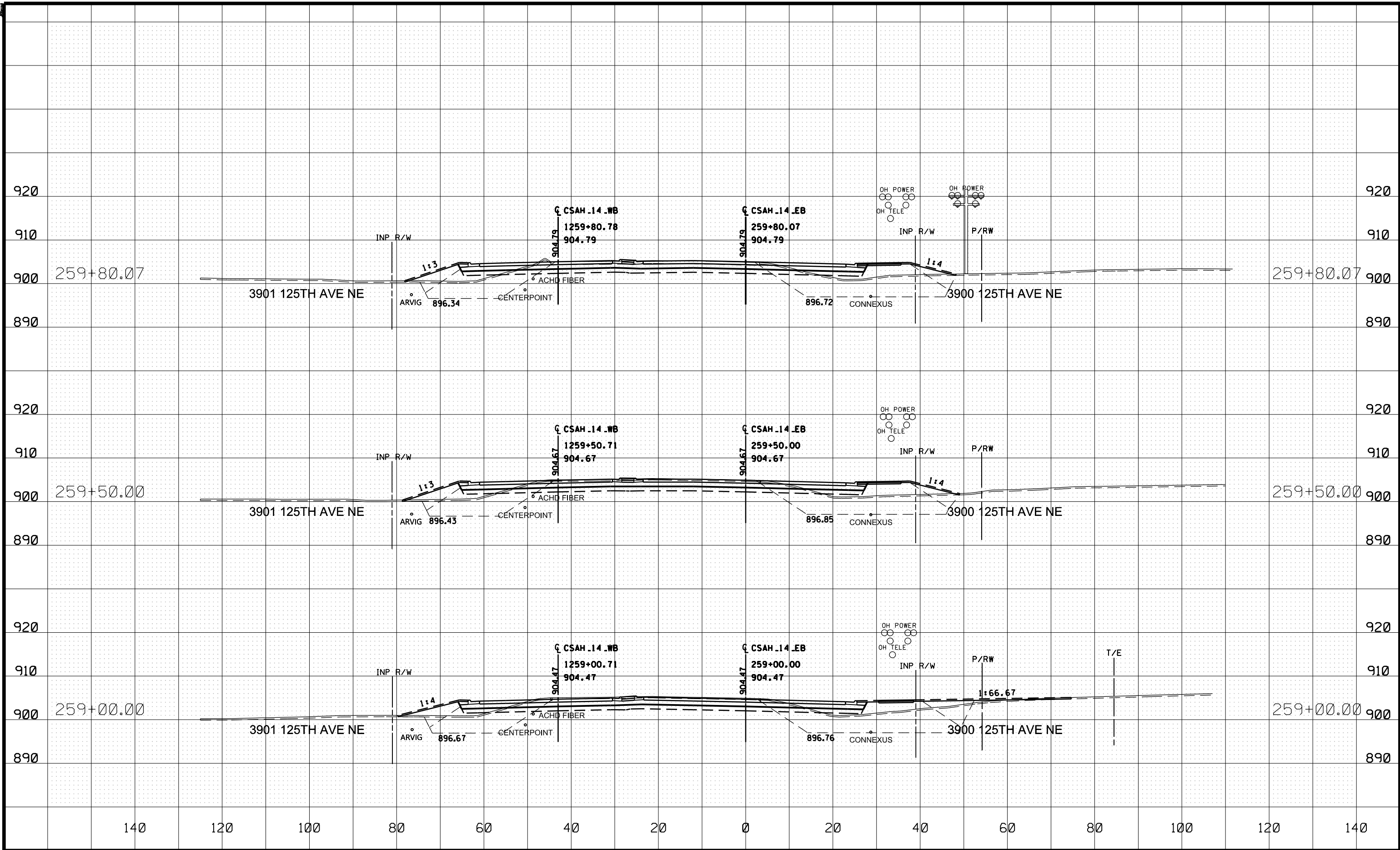
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DRAWN BY BTU DATE 02/07/22  
 DESIGN BY JRB DATE 02/07/22  
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 SAP 106-020-037

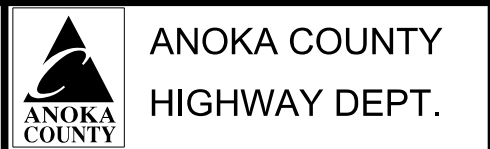
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 STA 258+00.00 TO 258+50.00  
 Sheet 278 of 303 Sheets



NO	DATE	BY	CKD	APPR	REVISION

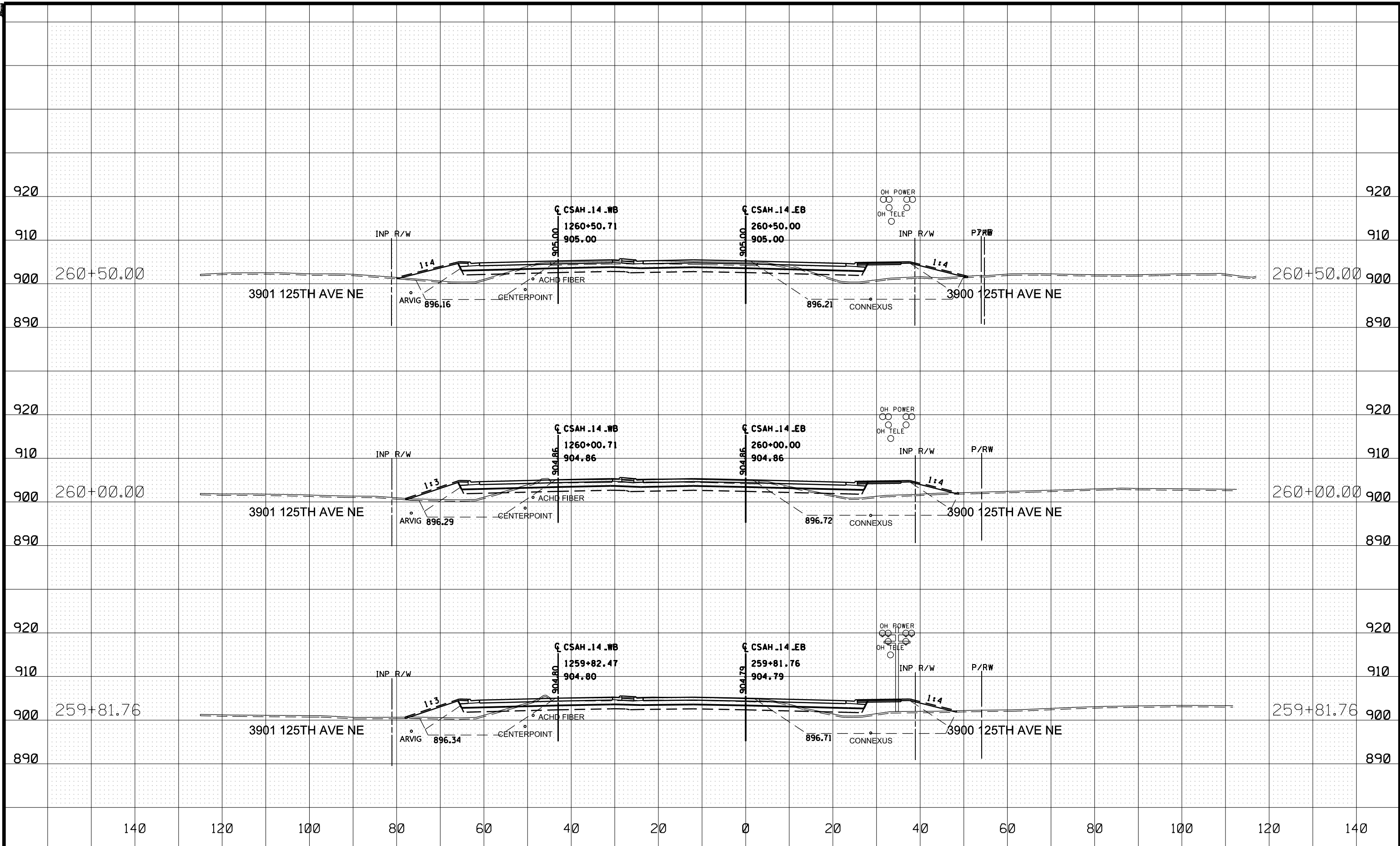
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SAP 106-020-037

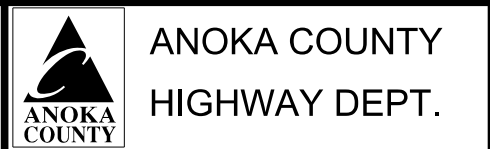
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Sheet 279 of 303 Sheets



NO	DATE	BY	CKD	APPR	REVISION

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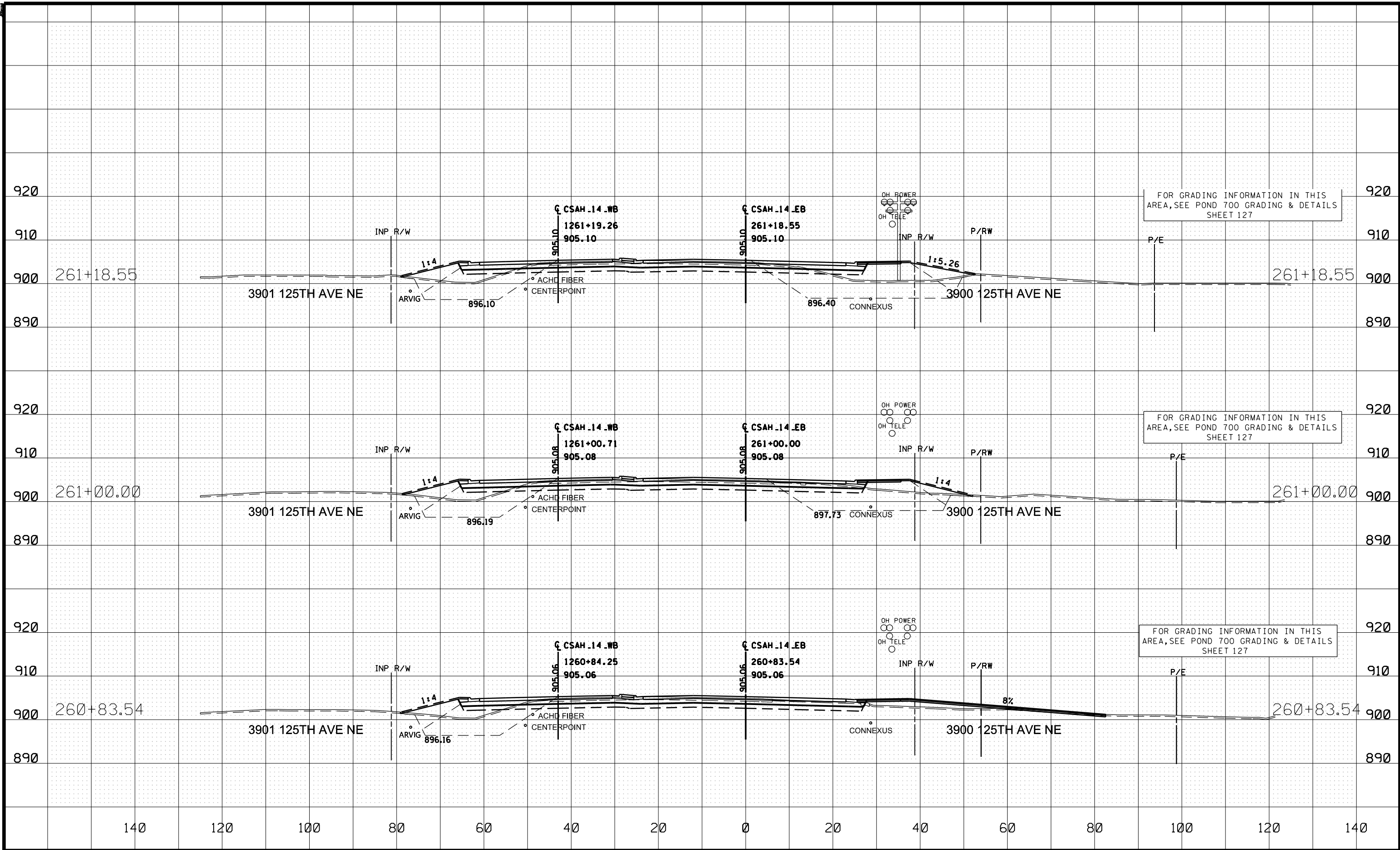

DRAWN BY BTU DATE 02/07/22  
 DESIGN BY JRB DATE 02/07/22  
 CHECKED BY NJD DATE 02/07/22



SAP 002-614-048  
SAP 106-020-037

CROSS SECTIONS  
CSAH 14 (125TH AVE NE)  
STA 259+81.76 TO 260+50.00  
Sheet 280 of 303 Sheets





FOR GRADING INFORMATION IN THIS AREA, SEE POND 700 GRADING & DETAILS SHEET 127

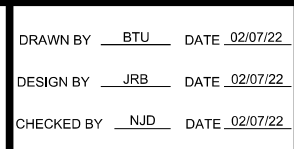
FOR GRADING INFORMATION IN THIS AREA, SEE POND 700 GRADING & DETAILS SHEET 127

FOR GRADING INFORMATION IN THIS AREA, SEE POND 700 GRADING & DETAILS SHEET 127

NO	DATE	BY	CKD	APPR	REVISION

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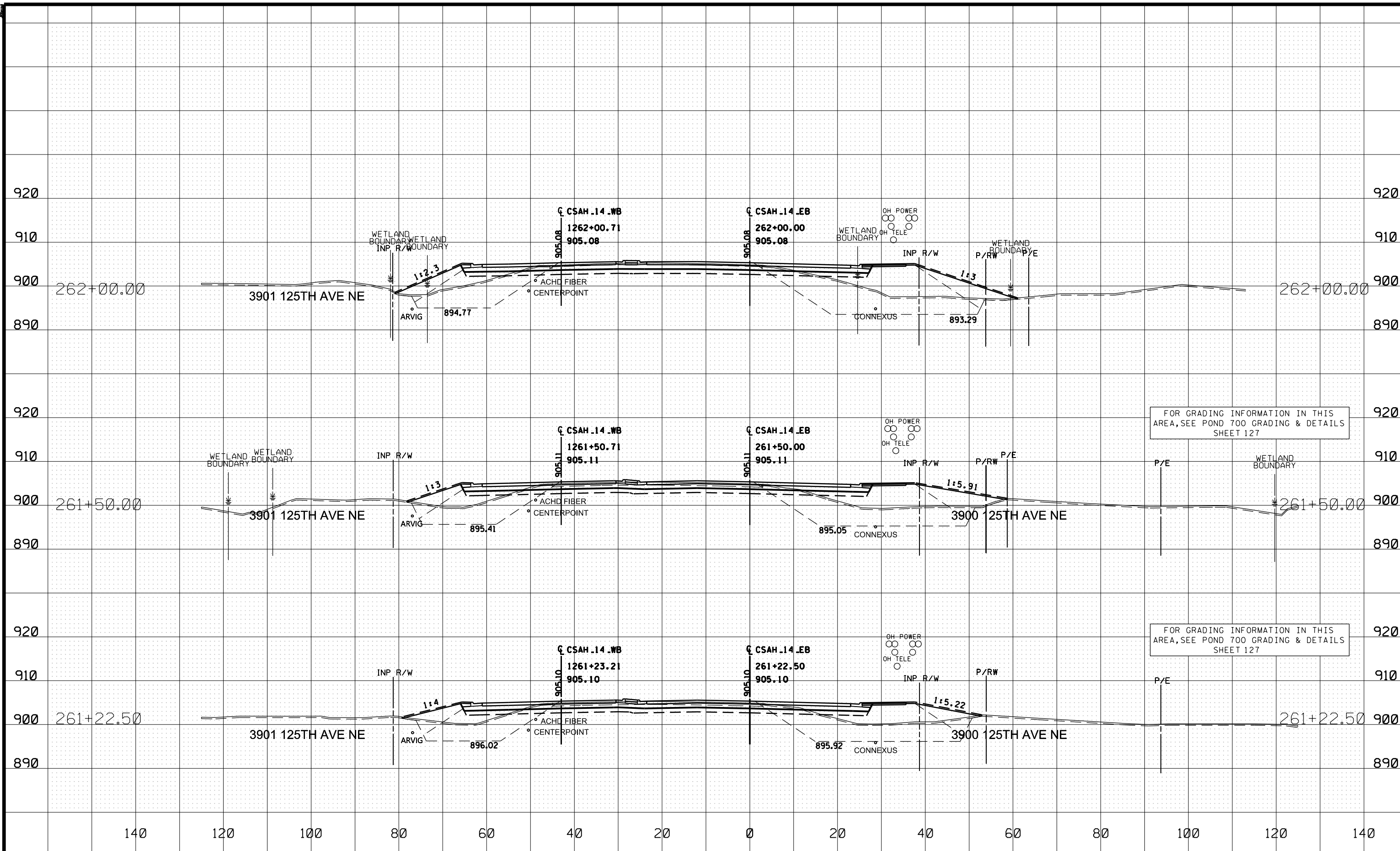
DRAWN BY	BTU	DATE	02/07/22
DESIGN BY	JRB	DATE	02/07/22
CHECKED BY	NJD	DATE	02/07/22



**ANOKA COUNTY  
HIGHWAY DEPT.**

SAP 002-614-048  
SAP 106-020-037

**CROSS SECTIONS**  
CSAH 14 (125TH AVE NE)  
STA 260+83.54 TO 261+18.55  
Sheet 281 of 303 Sheets



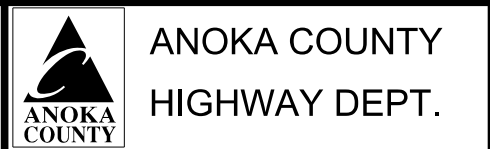
FOR GRADING INFORMATION IN THIS AREA, SEE POND 700 GRADING & DETAILS SHEET 127

FOR GRADING INFORMATION IN THIS AREA, SEE POND 700 GRADING & DETAILS SHEET 127

NO	DATE	BY	CKD	APPR	REVISION

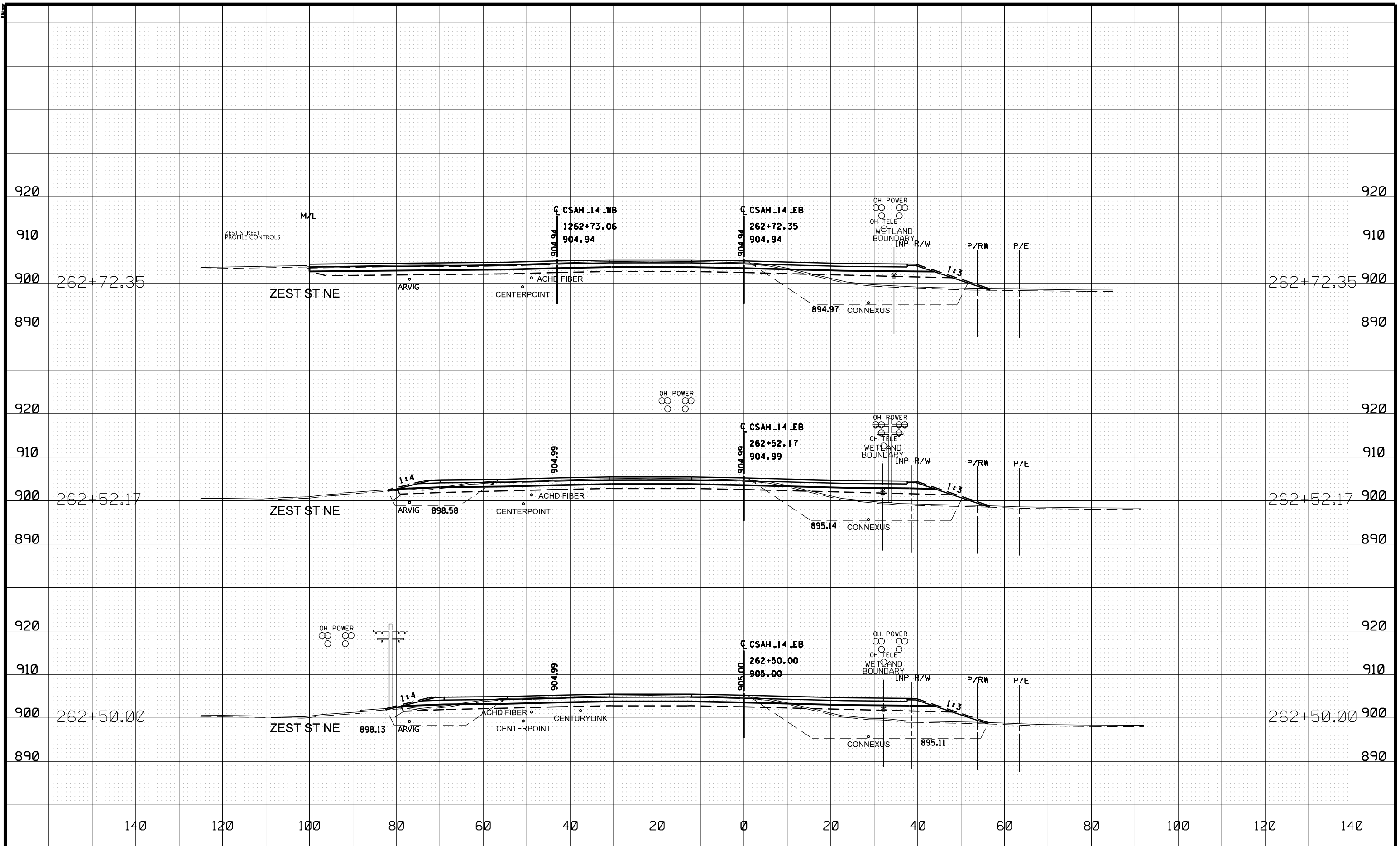
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DRAWN BY BTU DATE 02/07/22  
 DESIGN BY JRB DATE 02/07/22  
 CHECKED BY NJD DATE 02/07/22



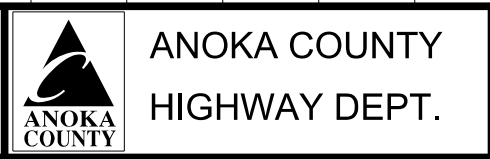
SAP 002-614-048  
 SAP 106-020-037

CROSS SECTIONS  
 CSAH 14 (125TH AVE NE)  
 STA 261+22.50 TO 262+00.00  
 Sheet 282 of 303 Sheets



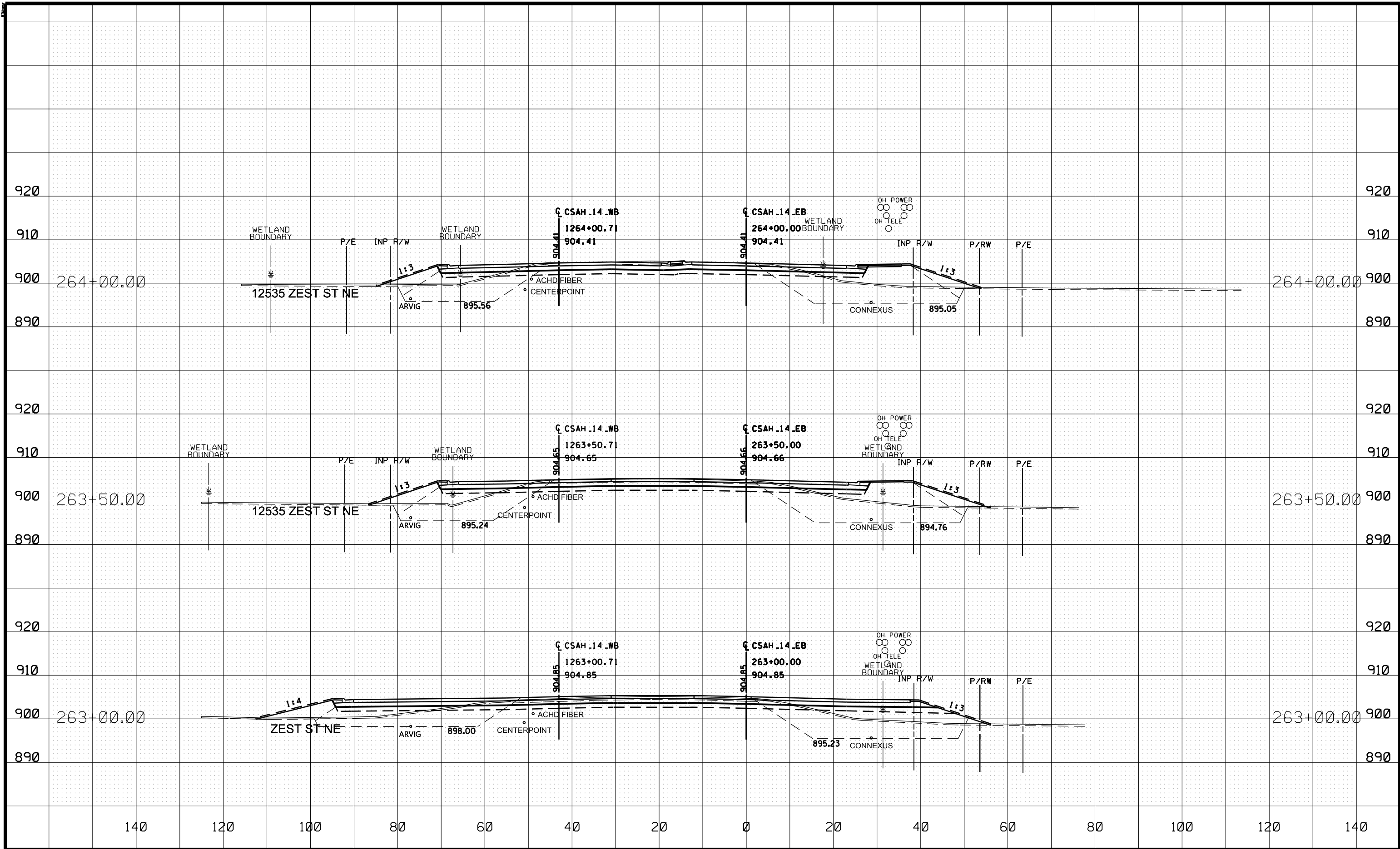
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NO	DATE	BY	CKD	APPR
				REVISION
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DRAWN BY BTU DATE 02/10/22  
 DESIGN BY JRB DATE 02/10/22  
 CHECKED BY NJD DATE 02/10/22



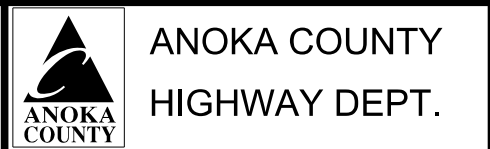
SAP 002-614-048  
 SAP 106-020-037

CROSS SECTIONS  
 CSAH 14 (125TH AVE NE)  
 STA 262+50.00 TO 262+72.35  
 Sheet 283 of 303 Sheets



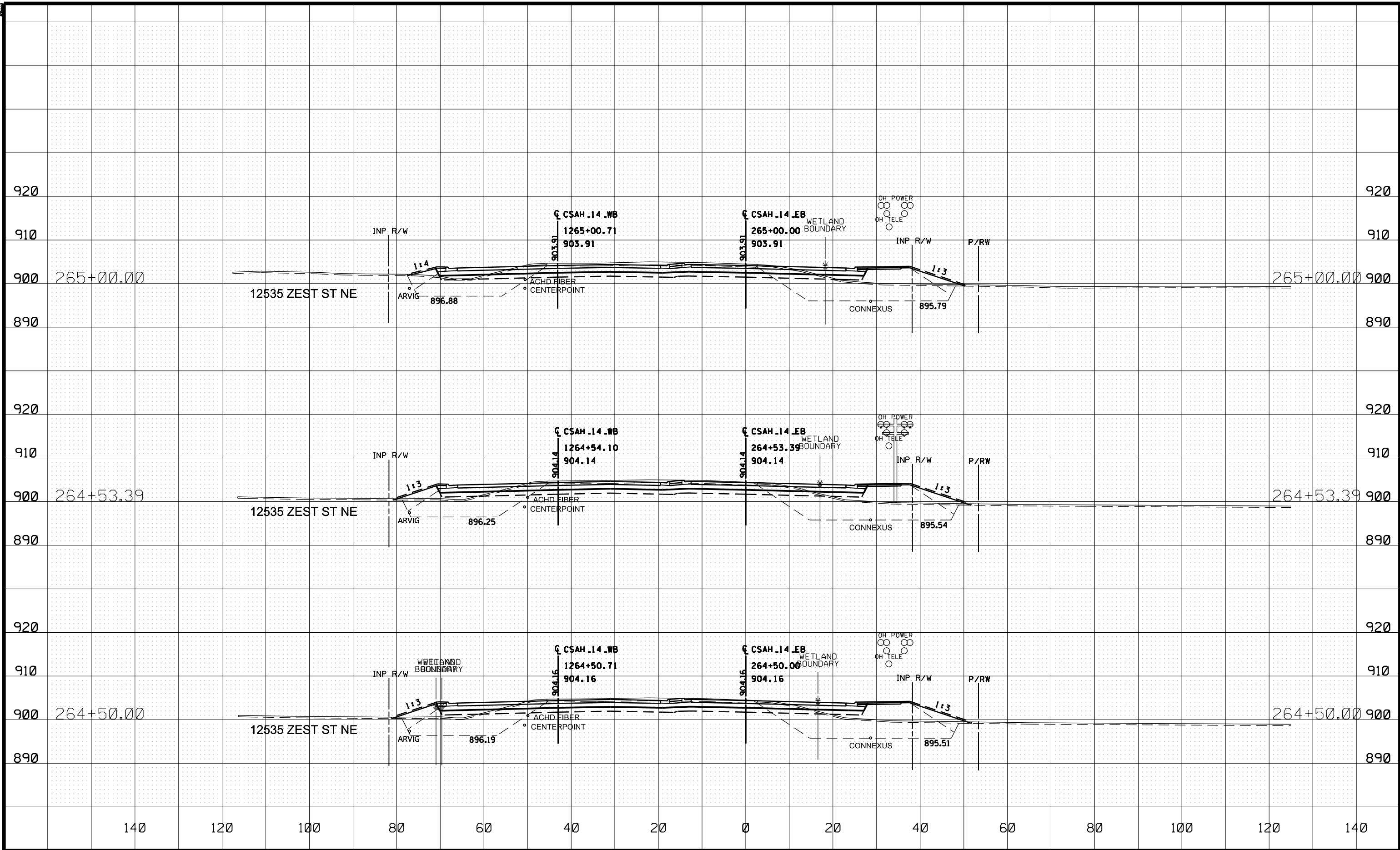
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DESIGN BY	JRB	DATE	02/10/22
CHECKED BY	NJD	DATE	02/10/22



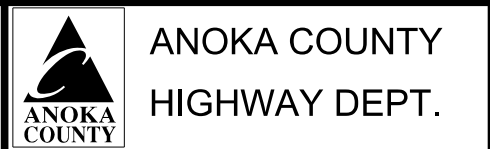
SAP 002-614-048  
SAP 106-020-037

**CROSS SECTIONS**  
CSAH 14 (125TH AVE NE)  
STA 263+00.00 TO 264+00.00  
Sheet 284 of 303 Sheets



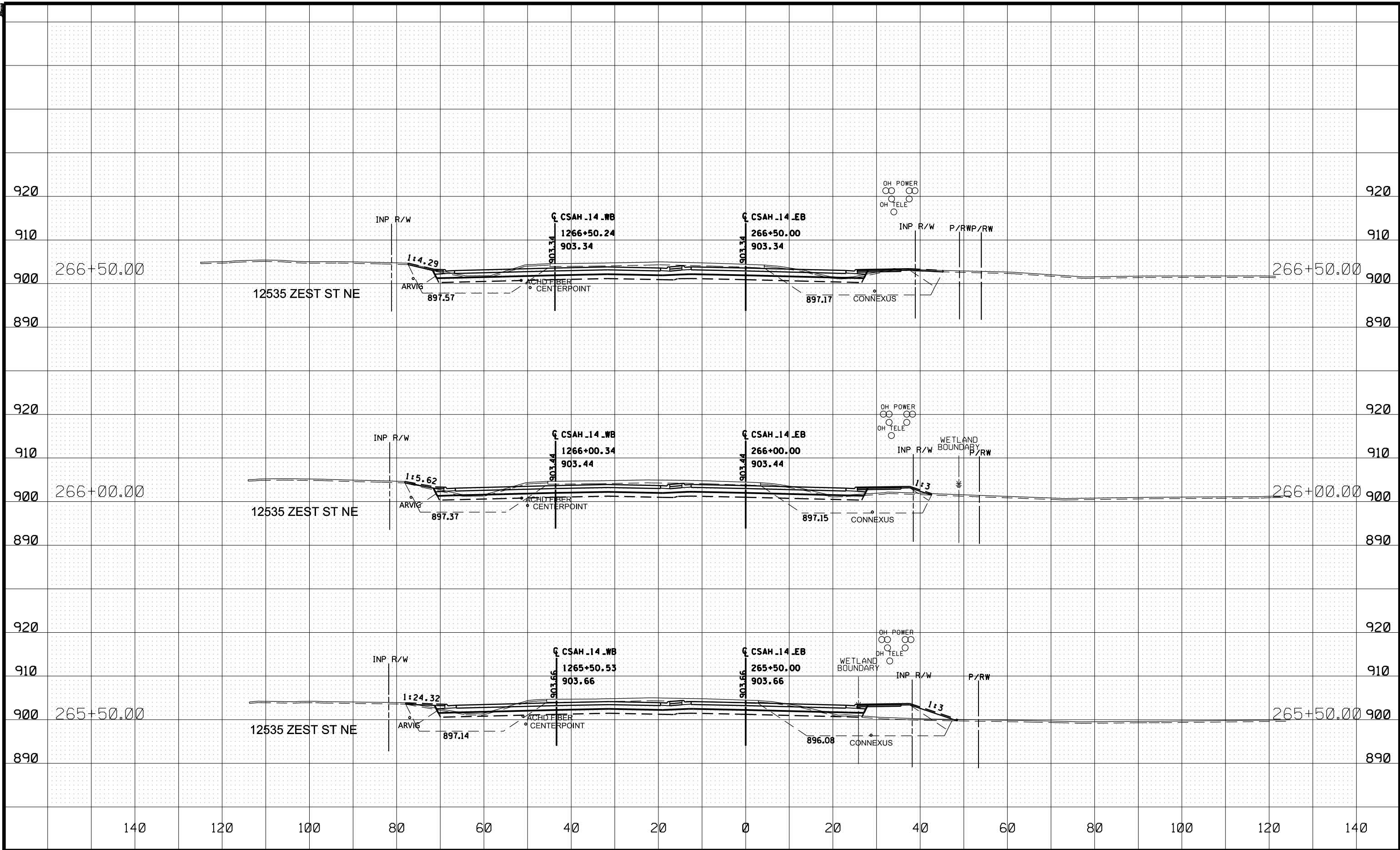
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 DESIGN BY JRB DATE 02/07/22  
 CHECKED BY NJD DATE 02/07/22



SAP 002-614-048  
 SAP 106-020-037

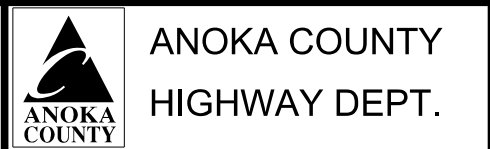
CROSS SECTIONS  
 CSAH 14 (125TH AVE NE)  
 STA 264+50.00 TO 265+00.00  
 Sheet 285 of 303 Sheets



NO	DATE	BY	CKD	APPR	REVISION

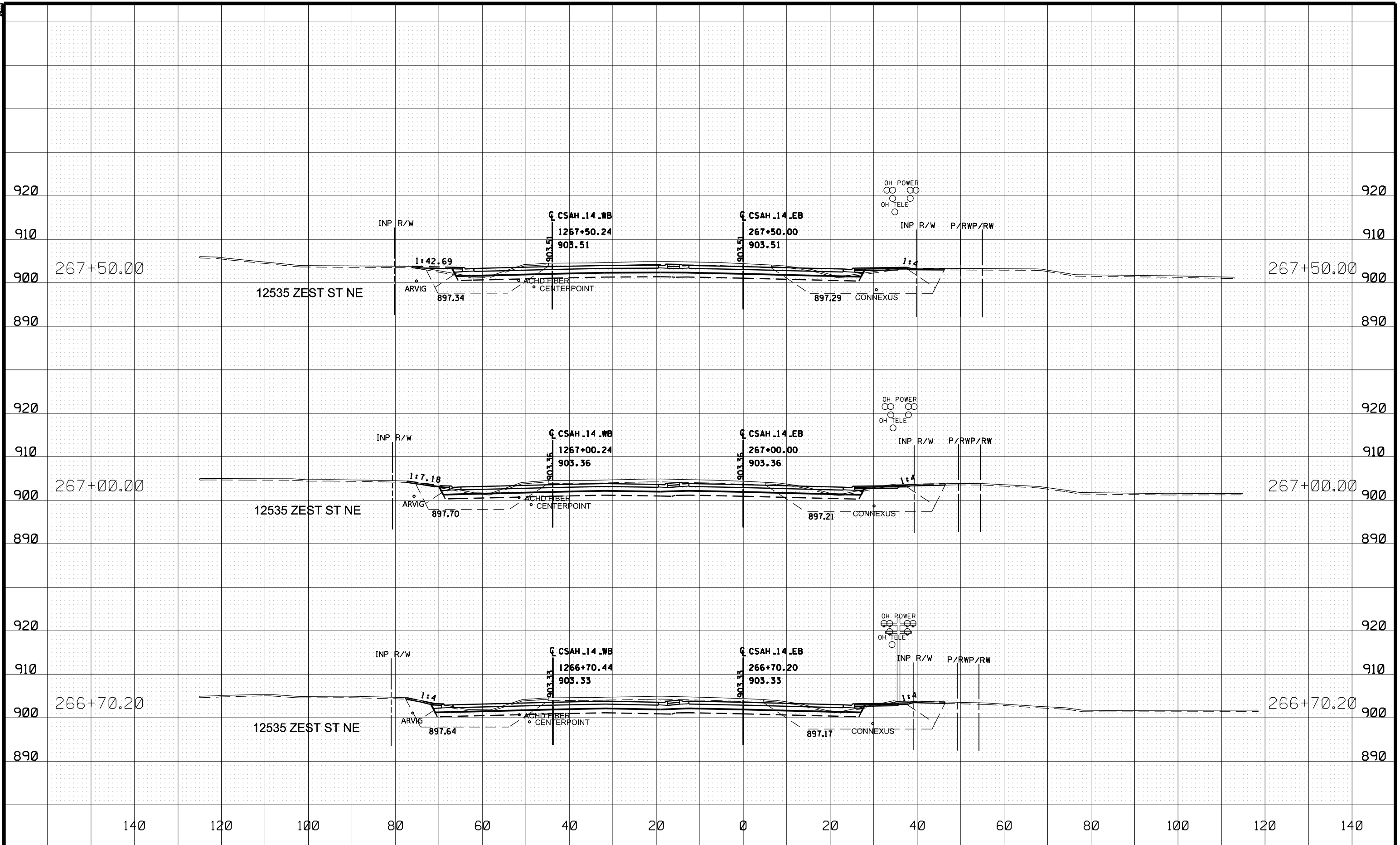
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 DESIGN BY JRB DATE 02/07/22  
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SAP 002-614-048  
SAP 106-020-037

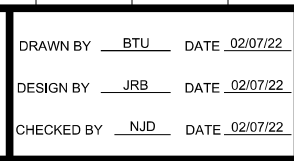
CROSS SECTIONS  
CSAH 14 (125TH AVE NE)  
STA 265+50.00 TO 266+50.00  
Sheet 286 of 303 Sheets



NO	DATE	BY	CKD	APPR	REVISION

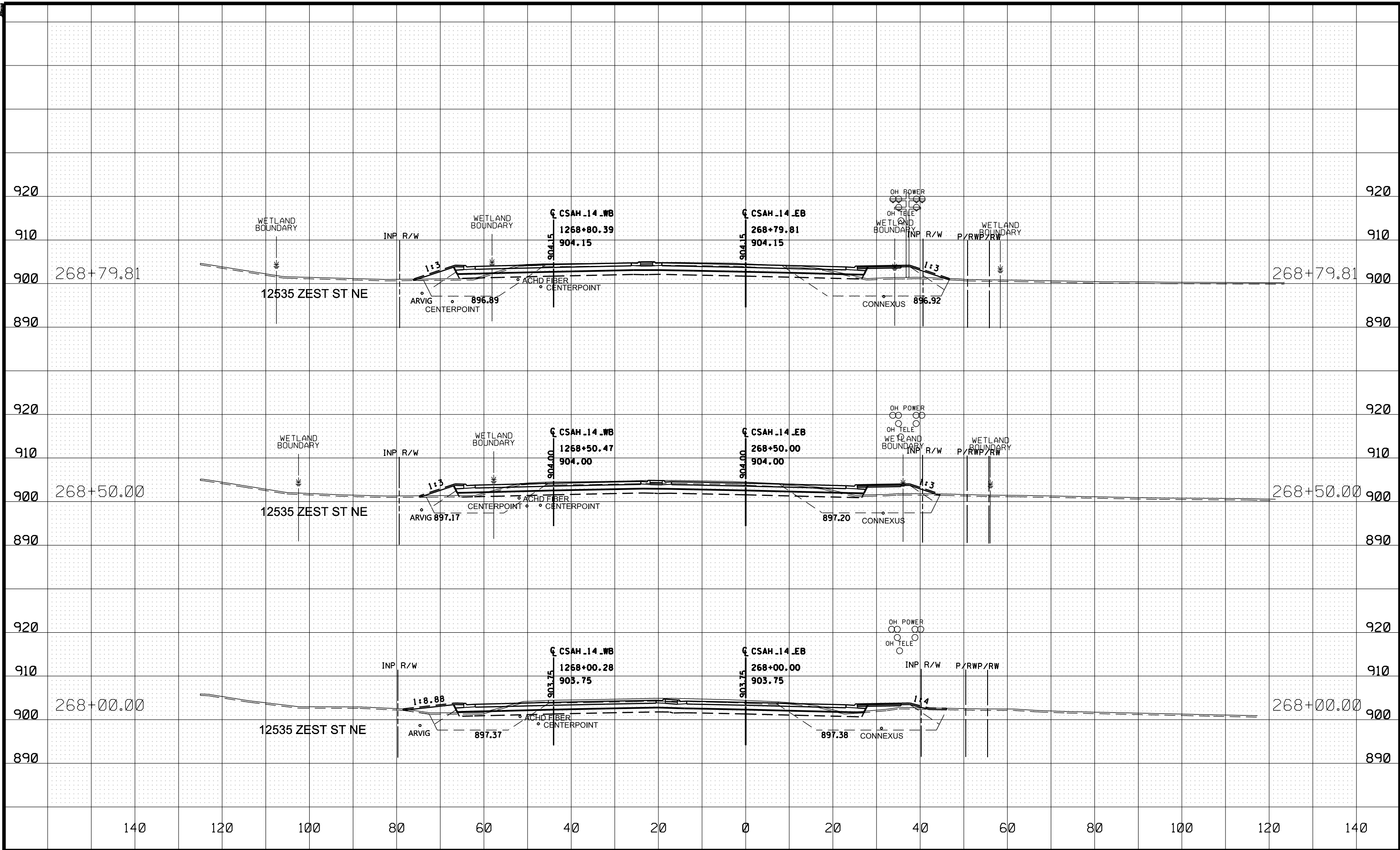
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 DESIGN BY JRB DATE 02/07/22  
 CHECKED BY NJD DATE 02/07/22



SAP 002-614-048  
SAP 106-020-037

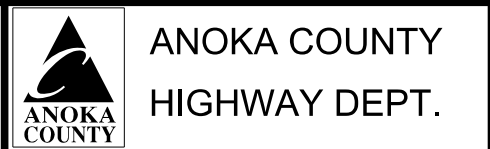
CROSS SECTIONS  
CSAH 14 (125TH AVE NE)  
STA 266+70.20 TO 267+50.00  
Sheet 287 of 303 Sheets



NO	DATE	BY	CKD	APPR	REVISION

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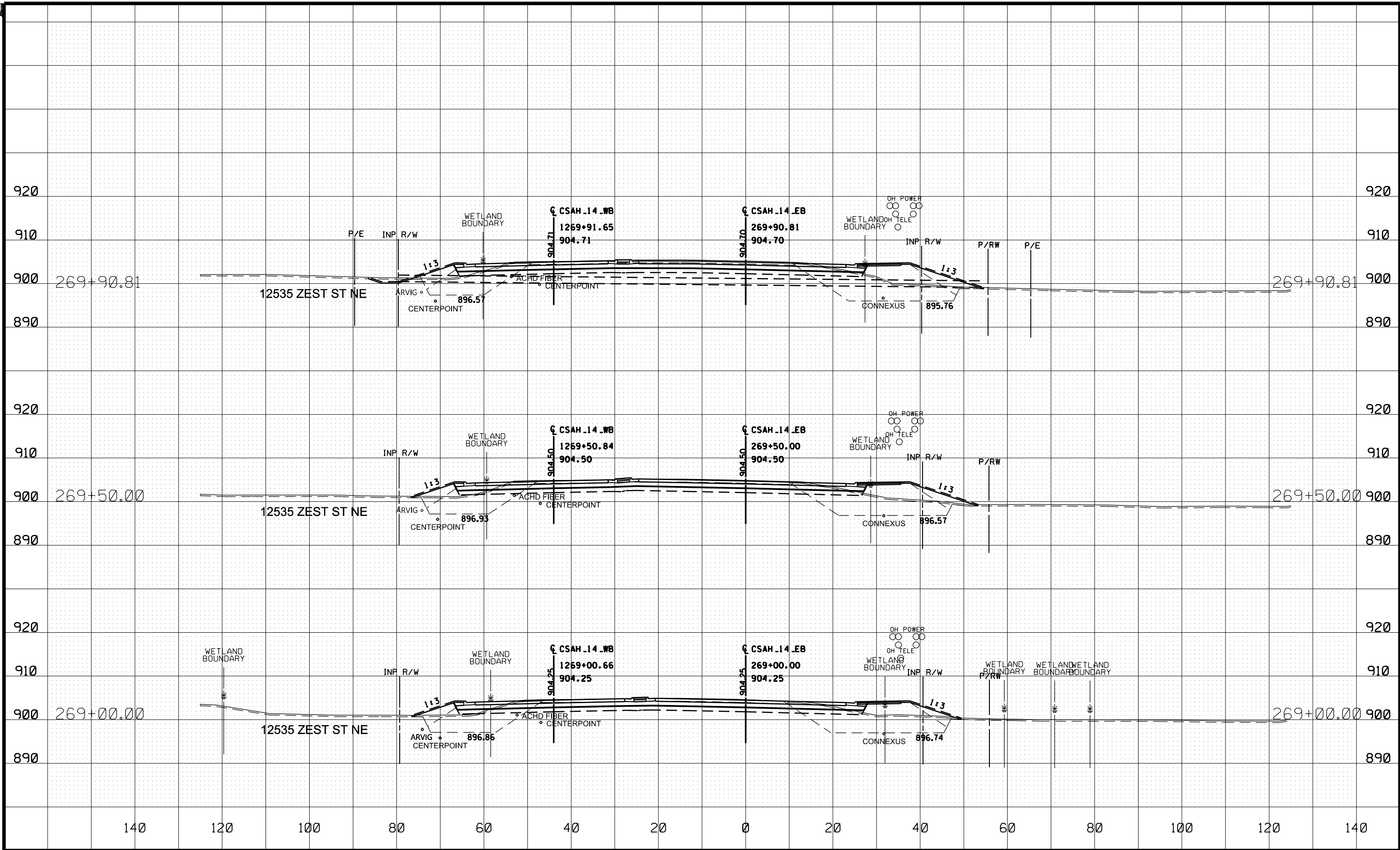
DRAWN BY BTU DATE 02/07/22  
 DESIGN BY JRB DATE 02/07/22  
 CHECKED BY NJD DATE 02/07/22



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SAP 106-020-037

CROSS SECTIONS  
CSAH 14 (125TH AVE NE)  
STA 268+00.00 TO 268+79.81  
Sheet 288 of 303 Sheets

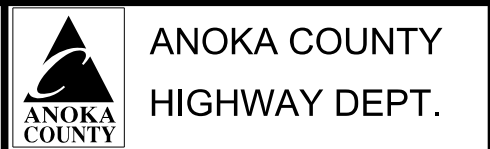




NO	DATE	BY	CKD	APPR	REVISION

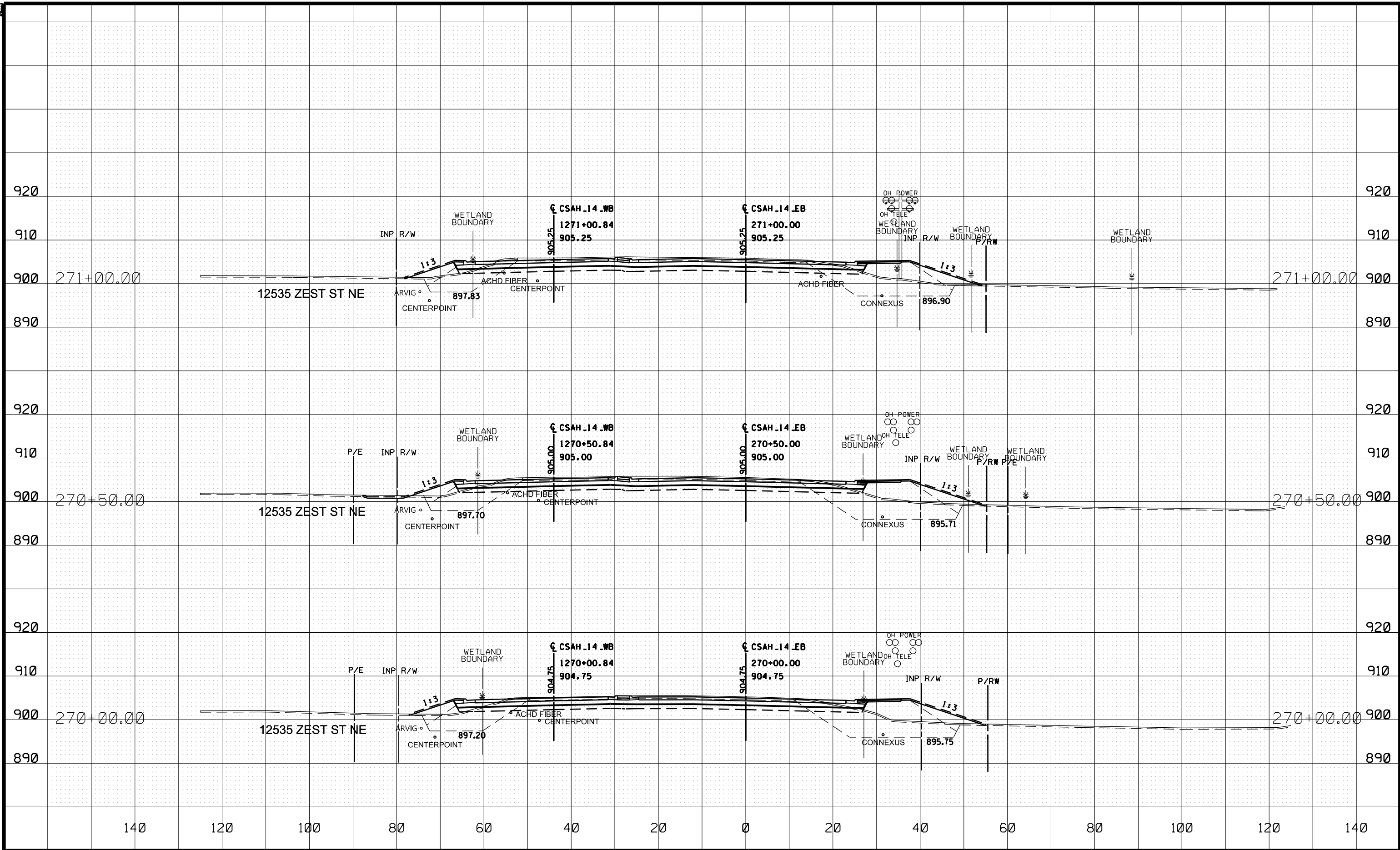
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 DESIGN BY JRB DATE 02/07/22  
 CHECKED BY NJD DATE 02/07/22



SAP 002-614-048  
SAP 106-020-037

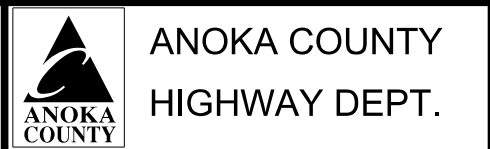
CROSS SECTIONS  
CSAH 14 (125TH AVE NE)  
STA 269+00.00 TO 269+90.81  
Sheet 289 of 303 Sheets



NO	DATE	BY	CKD	APPR	REVISION

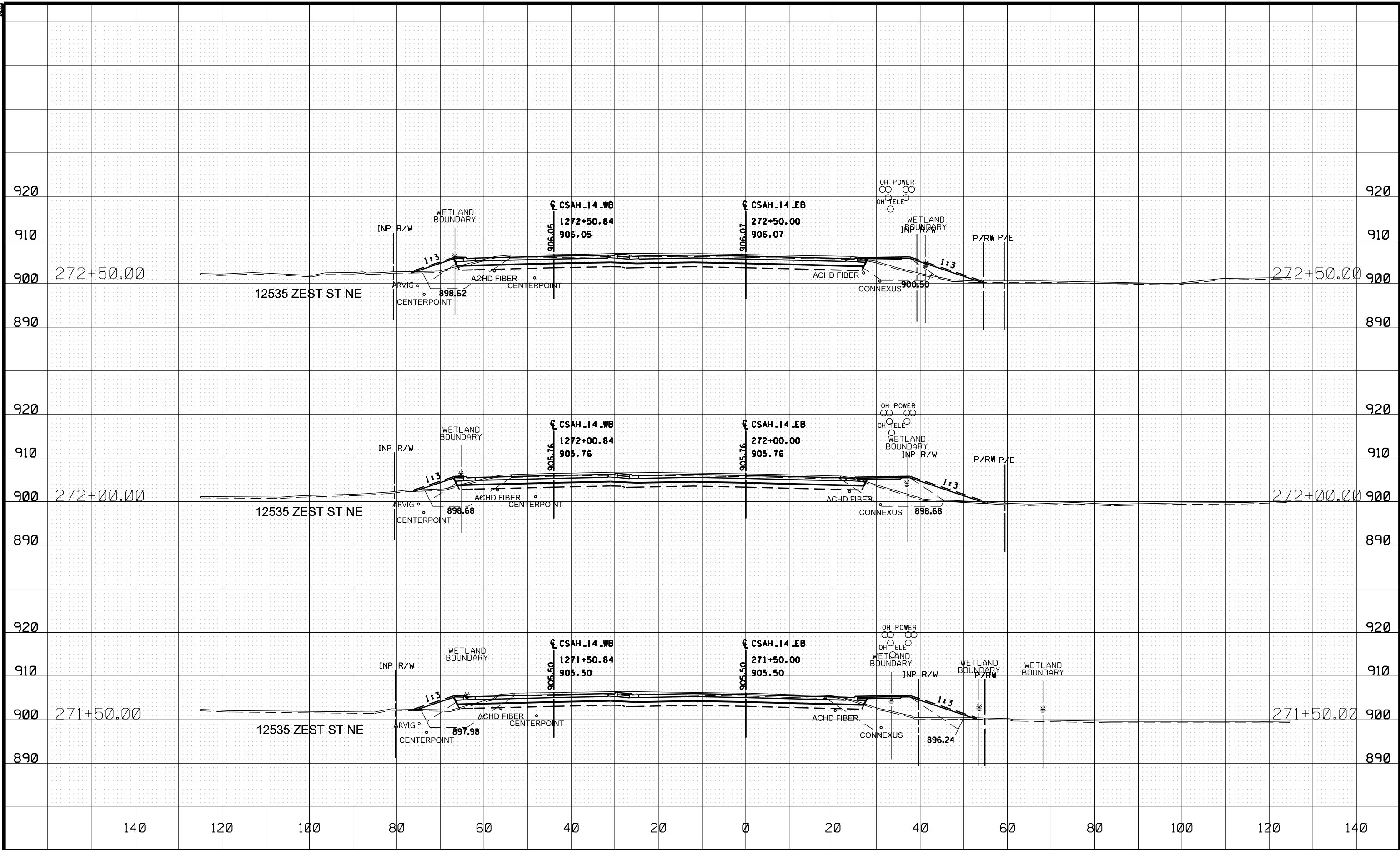
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SAP 002-614-048  
SAP 106-020-037

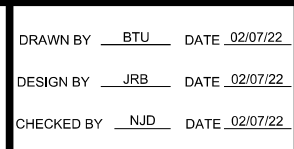
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 CSAH 14 (125TH AVE NE)  
 STA 270+00.00 TO 271+00.00  
 Sheet 290 of 303 Sheets



NO	DATE	BY	CKD	APPR	REVISION

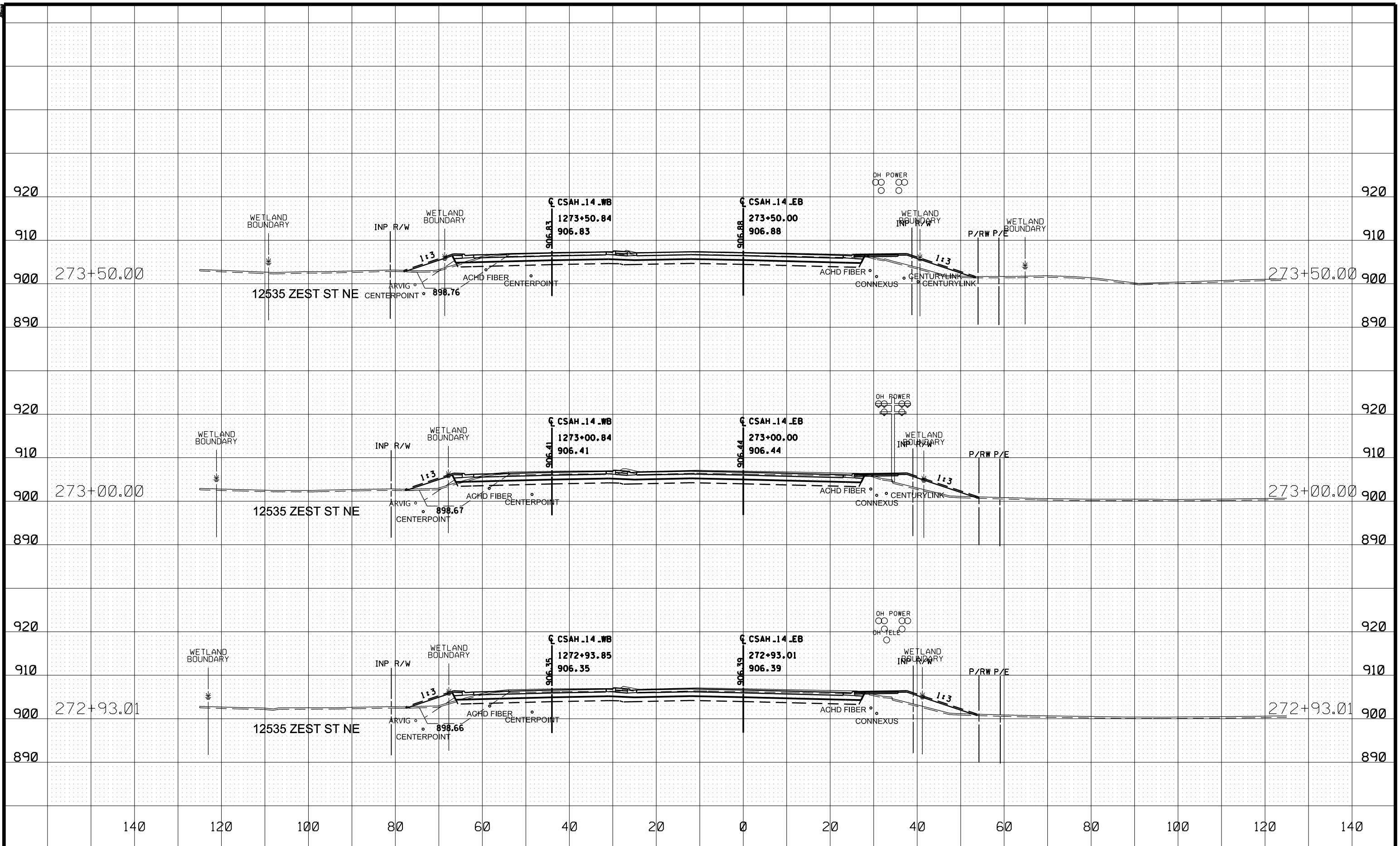
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 CHECKED BY NJD DATE 02/07/22



SAP 002-614-048  
 SAP 106-020-037

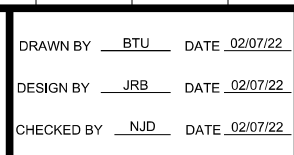
CROSS SECTIONS  
 CSAH 14 (125TH AVE NE)  
 STA 271+50.00 TO 272+50.00  
 Sheet 291 of 303 Sheets



NO	DATE	BY	CKD	APPR	REVISION

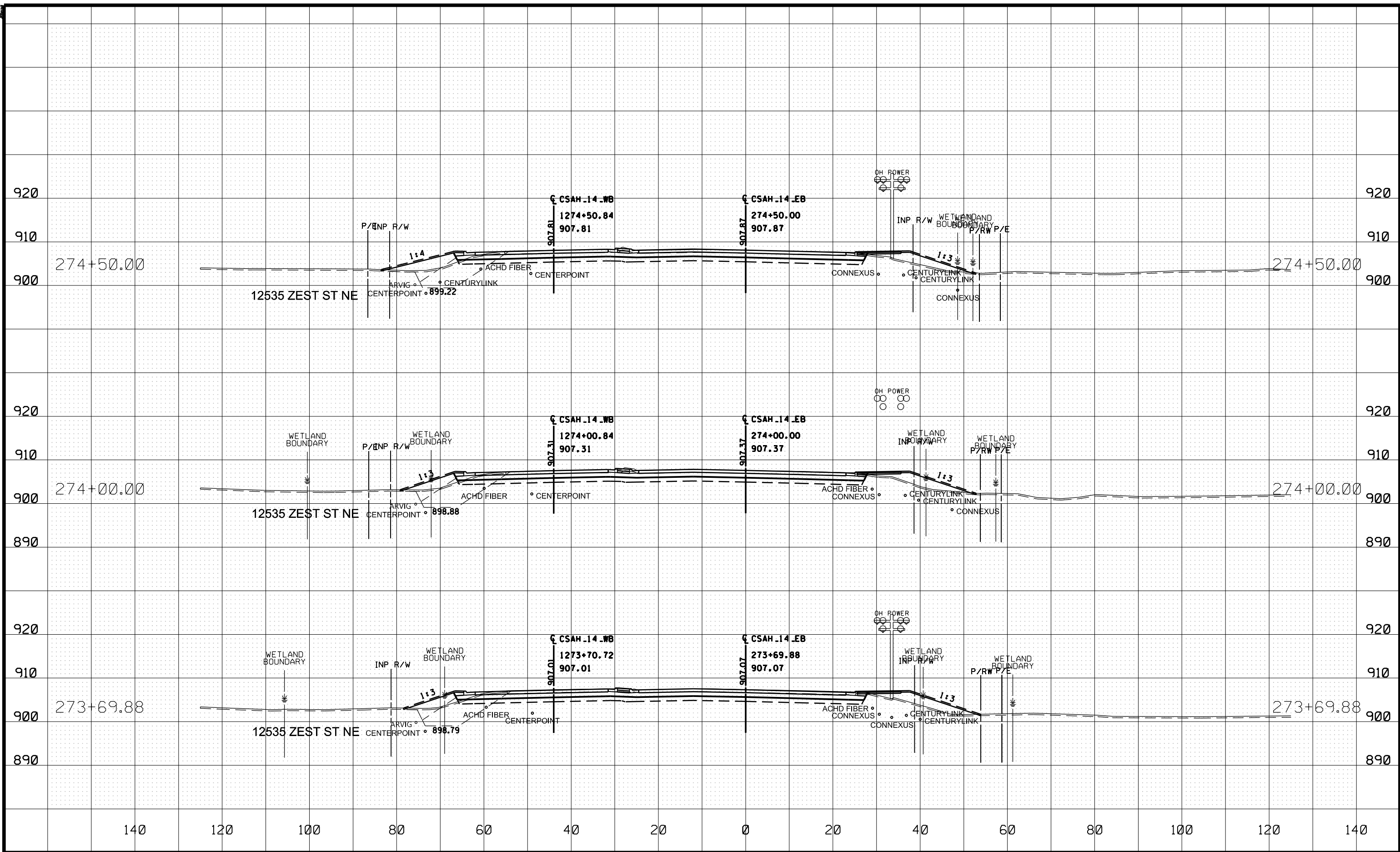
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 DESIGN BY JRB DATE 02/07/22  
 CHECKED BY NJD DATE 02/07/22



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SAP 106-020-037

CROSS SECTIONS  
CSAH 14 (125TH AVE NE)  
STA 272+93.01 TO 273+50.00  
Sheet 292 of 303 Sheets



NO	DATE	BY	CKD	APPR	REVISION

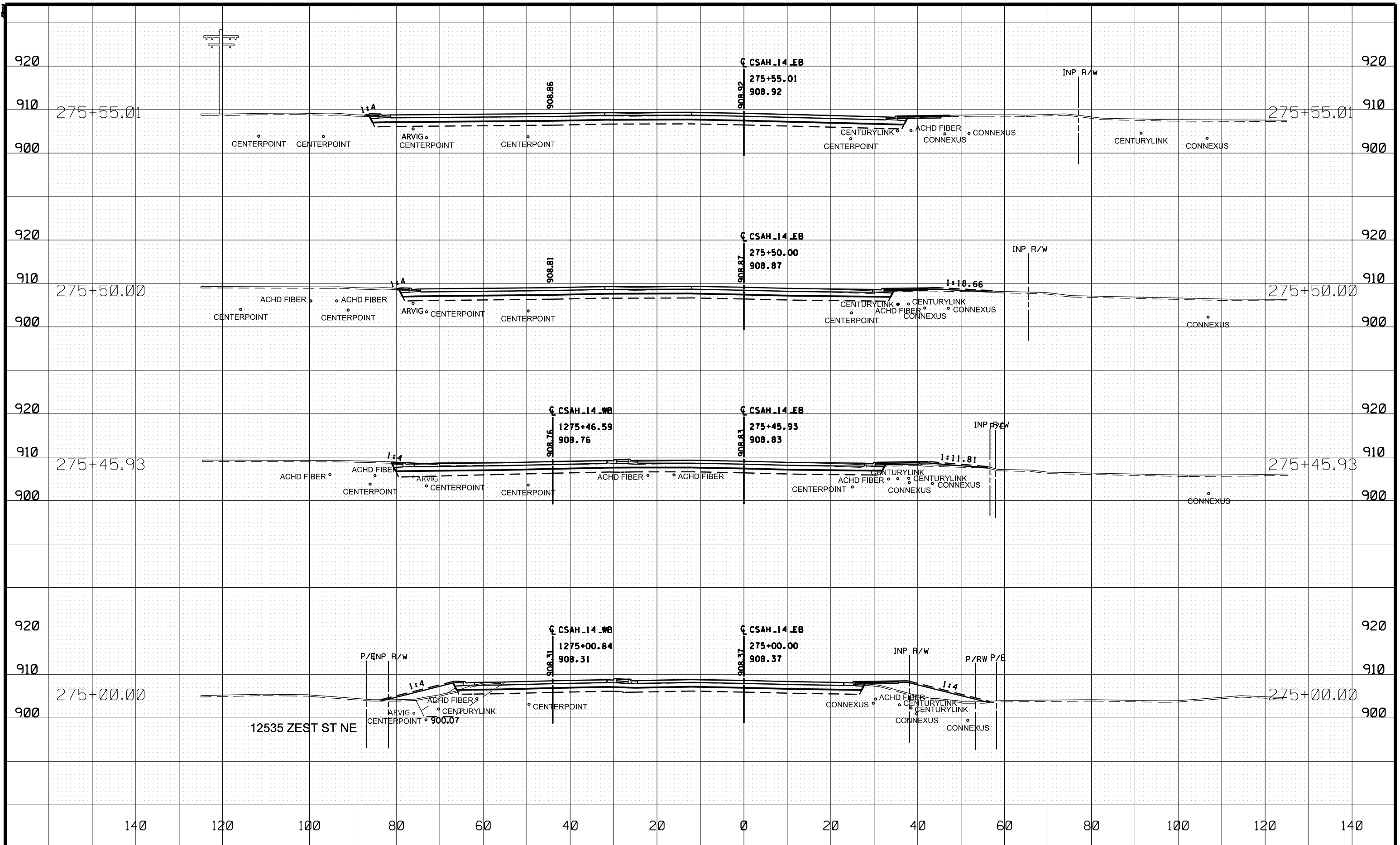
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SAP 002-614-048  
 SAP 106-020-037

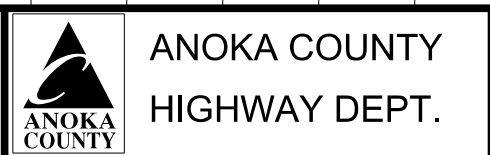
CROSS SECTIONS  
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 STA 273+69.88 TO 274+50.00  
 Sheet 293 of 303 Sheets



NO	DATE	BY	CKD	APPR	REVISION

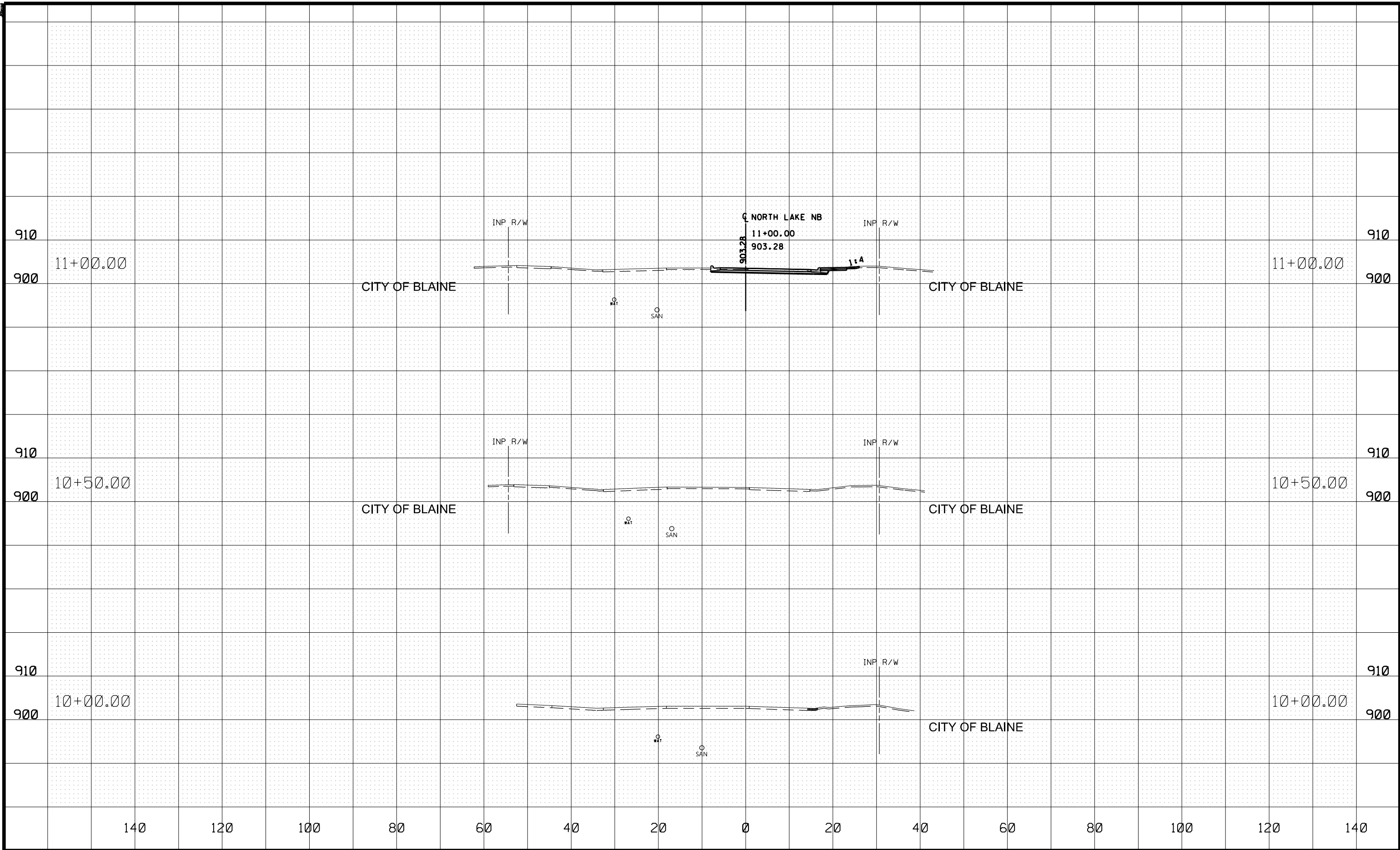
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 CHECKED BY NJD DATE 02/07/22



SAP 002-614-048  
 SAP 106-020-037

CROSS SECTIONS  
 CSAH 14 (125TH AVE NE)  
 STA 275+00.00 TO 275+55.01  
 Sheet 294 of 303 Sheets

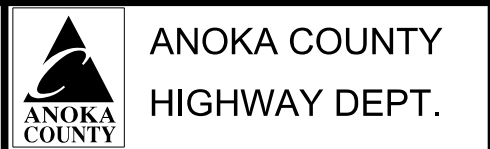


NO	DATE	BY	CKD	APPR	REVISION

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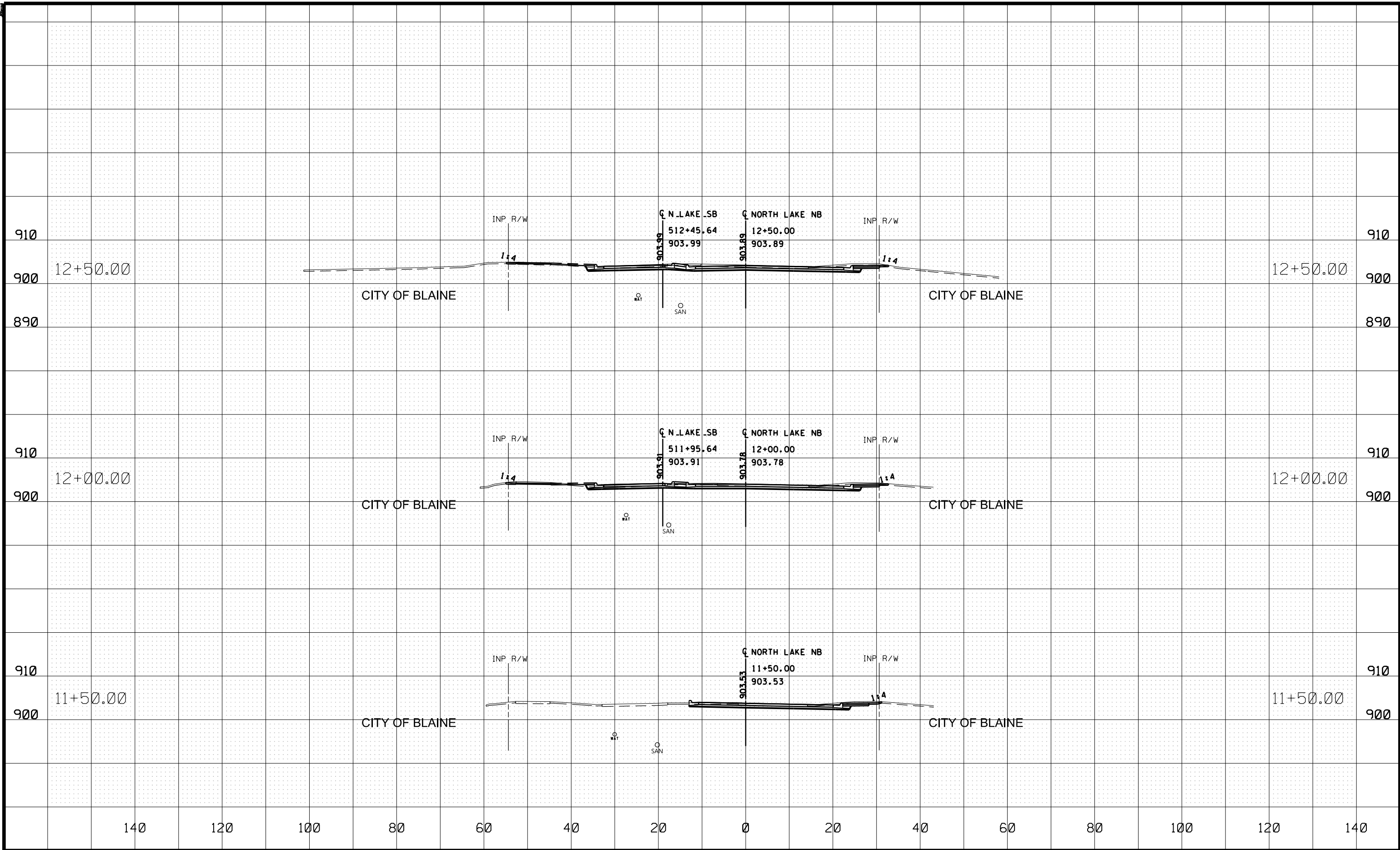
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DRAWN BY BTU DATE 02/07/22  
 DESIGN BY JRB DATE 02/07/22  
 CHECKED BY NJD DATE 02/07/22



SAP 002-614-048  
 SAP 106-020-037

CROSS SECTIONS  
 NORTH LAKE BLVD NE  
 STA 10+00.00 TO 11+00.00  
 Sheet 295 of 303 Sheets

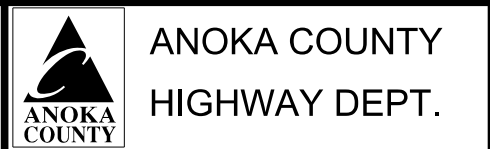


NO	DATE	BY	CKD	APPR	REVISION

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CITY OF BLAINE

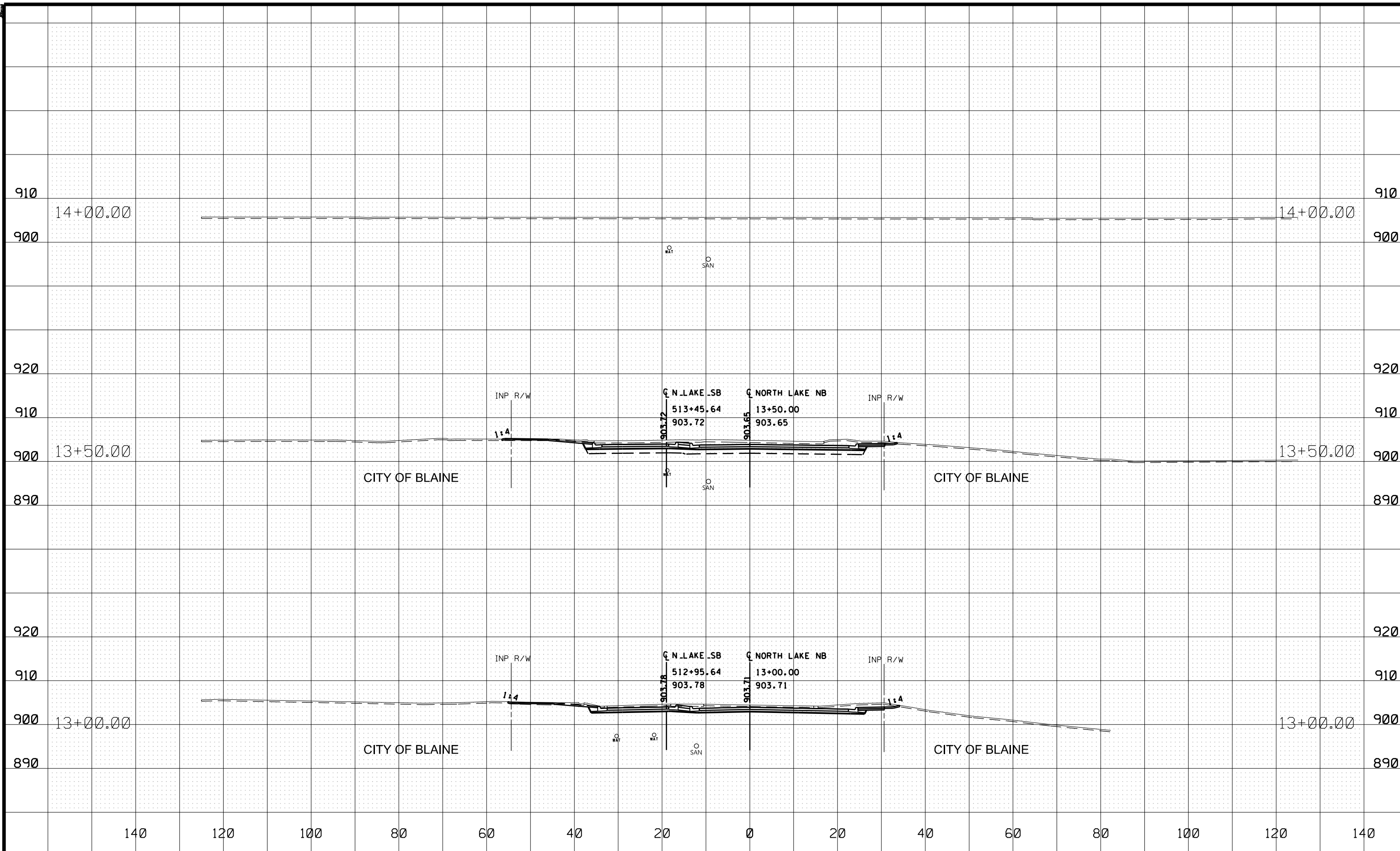
DRAWN BY BTU DATE 02/07/22  
 DESIGN BY JRB DATE 02/07/22  
 CHECKED BY NJD DATE 02/07/22



SAP 002-614-048  
 SAP 106-020-037

CROSS SECTIONS  
 NORTH LAKE BLVD NE  
 STA 11+50.00 TO 12+50.00  
 Sheet 296 of 303 Sheets



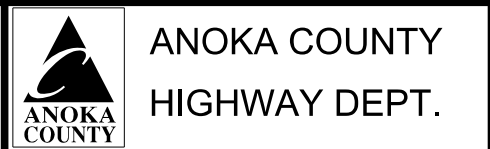


NO	DATE	BY	CKD	APPR	REVISION

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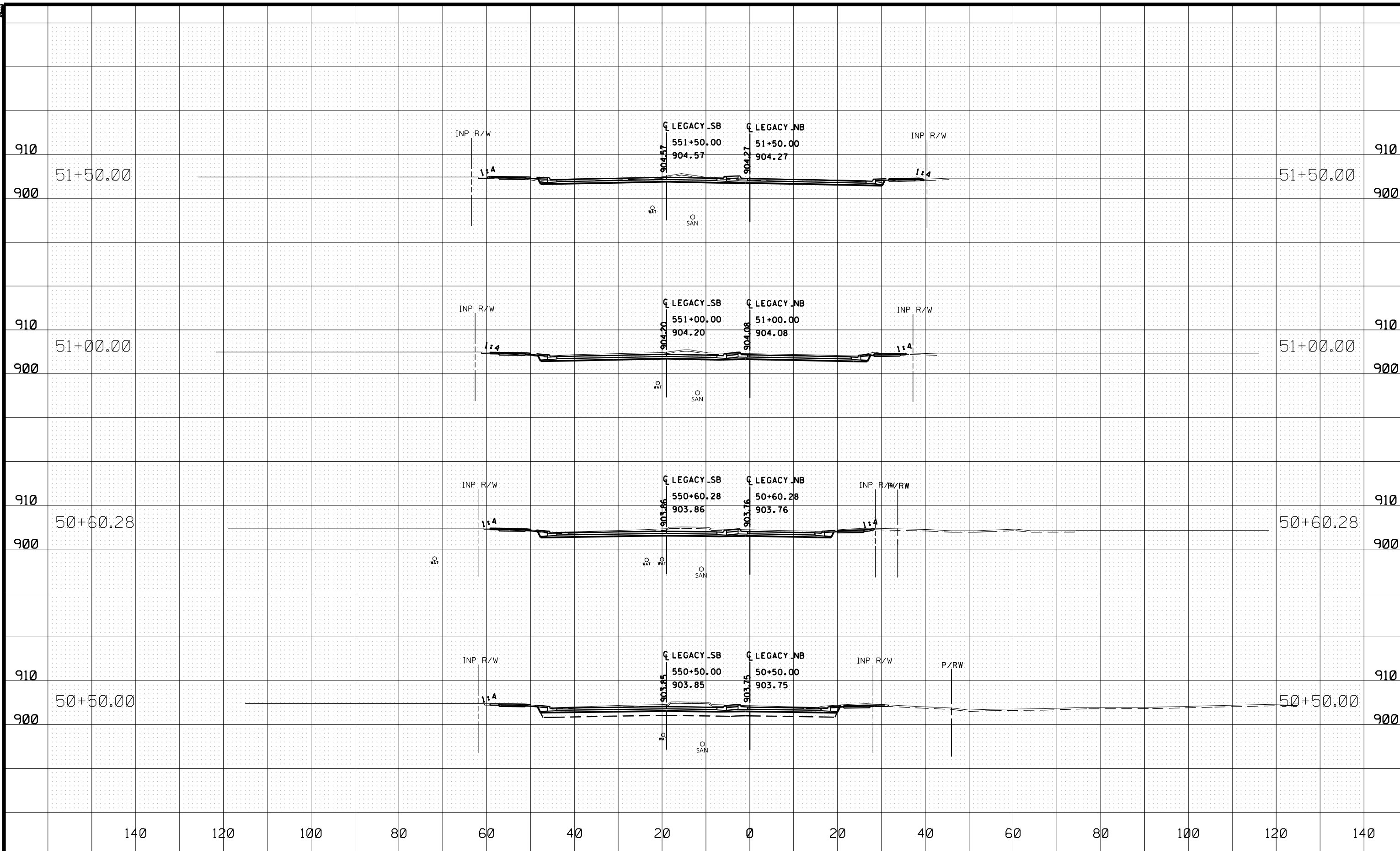
CITY OF BLAINE

DRAWN BY BTU DATE 02/07/22  
 DESIGN BY JRB DATE 02/07/22  
 CHECKED BY NJD DATE 02/07/22



SAP 002-614-048  
 SAP 106-020-037

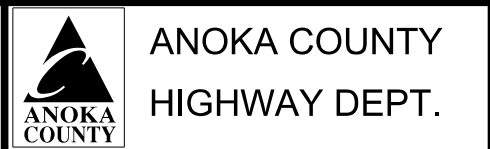
CROSS SECTIONS  
 NORTH LAKE BLVD NE  
 STA 13+00.00 TO 14+00.00  
 Sheet 297 of 303 Sheets



NO	DATE	BY	CKD	APPR	REVISION

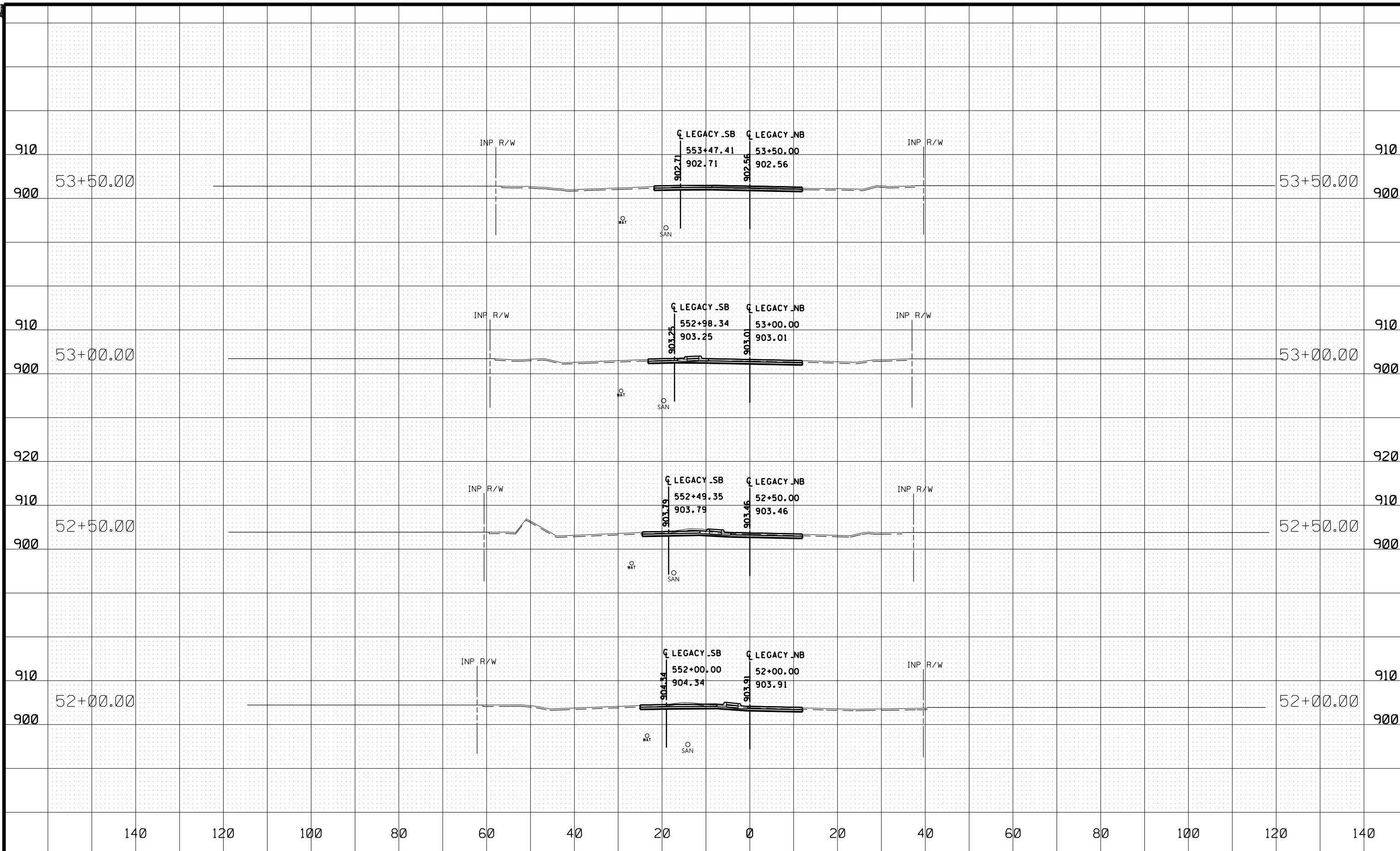
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DRAWN BY BTU DATE 02/07/22  
 DESIGN BY JRB DATE 02/07/22  
 CHECKED BY NJD DATE 02/07/22



SAP 002-614-048  
 SAP 106-020-037

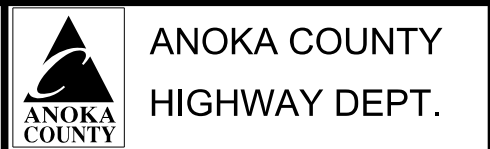
**CROSS SECTIONS**  
 LEGACY CREEK PKWY NE  
 STA 50+50.00 TO 51+50.00  
 Sheet 298 of 303 Sheets



NO	DATE	BY	CKD	APPR	REVISION

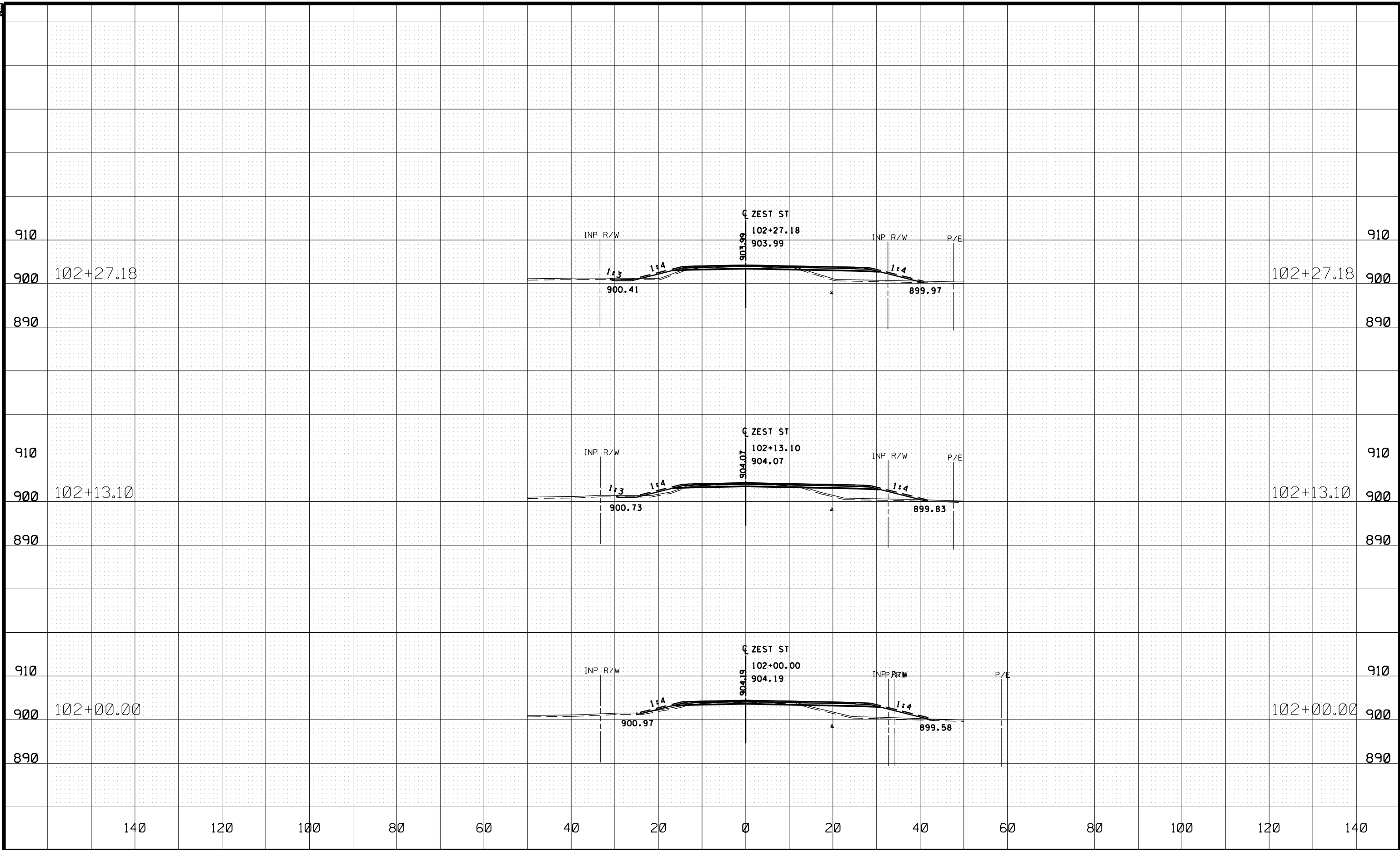
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 DESIGN BY JRB DATE 02/07/22  
 CHECKED BY NJD DATE 02/07/22



SAP 002-614-048  
 SAP 106-020-037

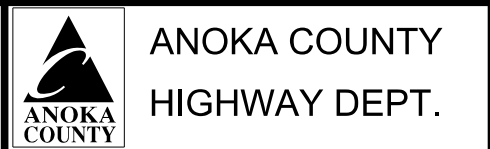
**CROSS SECTIONS**  
 LEGACY CREEK PKWY NE  
 STA 52+00.00 TO 53+50.00  
 Sheet 299 of 303 Sheets



NO	DATE	BY	CKD	APPR	REVISION

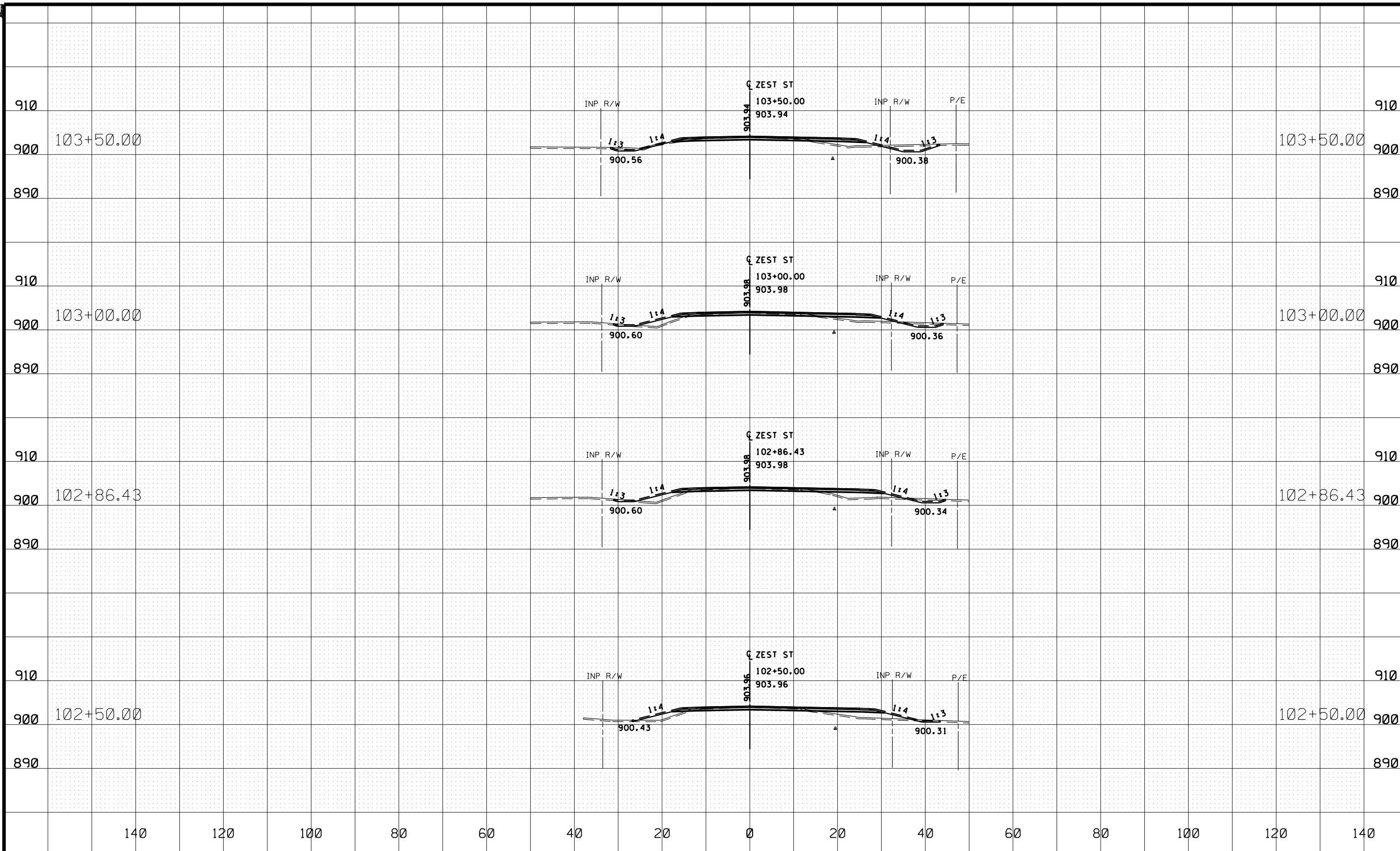
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SAP 002-614-048  
 SAP 106-020-037

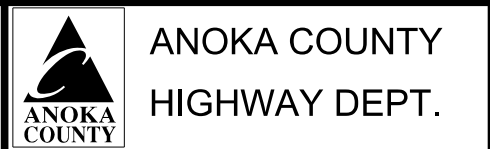
CROSS SECTIONS  
 ZEST ST NE  
 STA 102+00.00 TO 102+27.18  
 Sheet 300 of 303 Sheets



NO	DATE	BY	CKD	APPR	REVISION

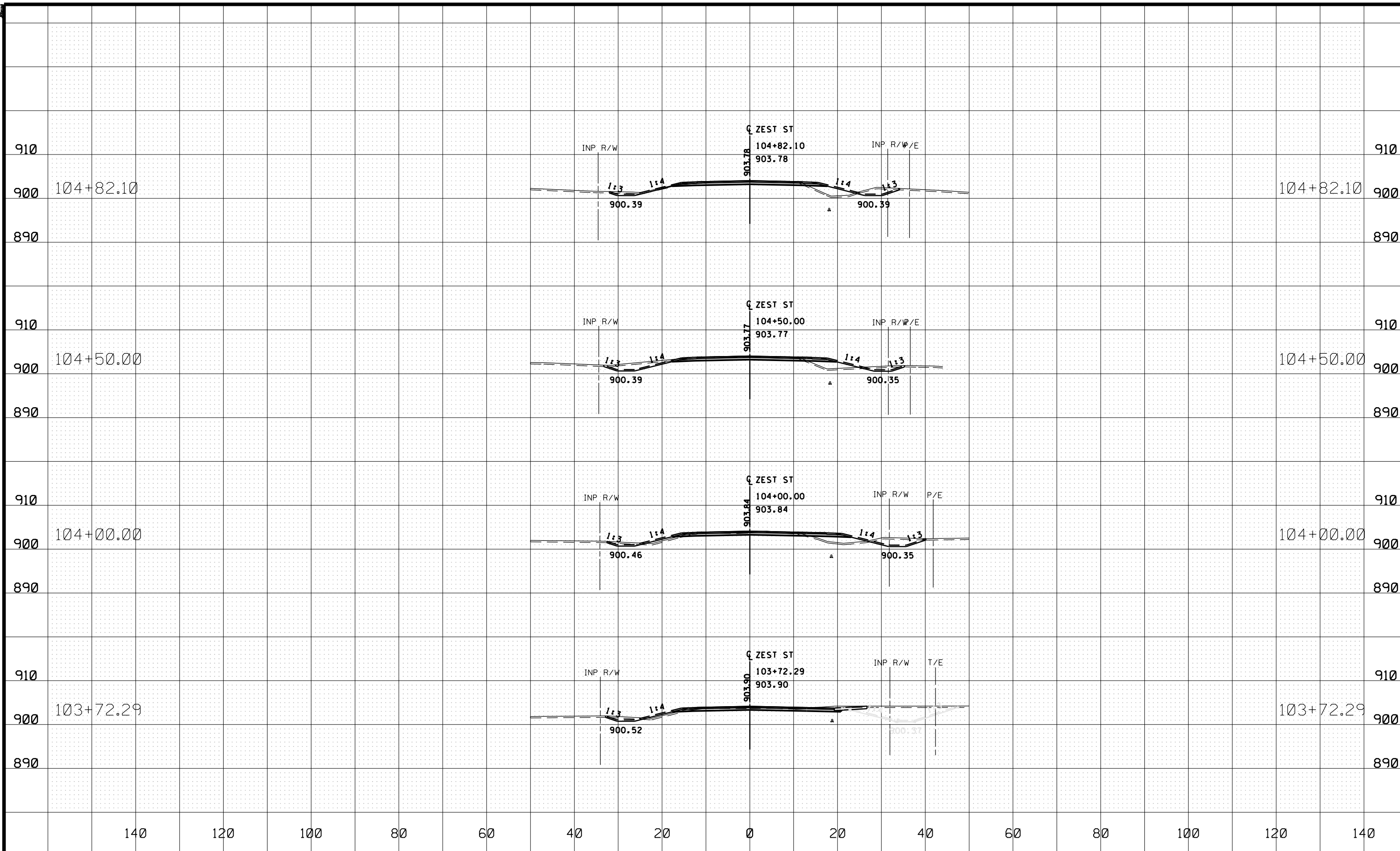
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SAP 002-614-048  
 SAP 106-020-037

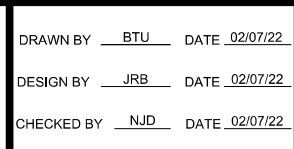
CROSS SECTIONS  
 ZEST ST NE  
 STA 102+50.00 TO 103+50.00  
 Sheet 301 of 303 Sheets



NO	DATE	BY	CKD	APPR	REVISION

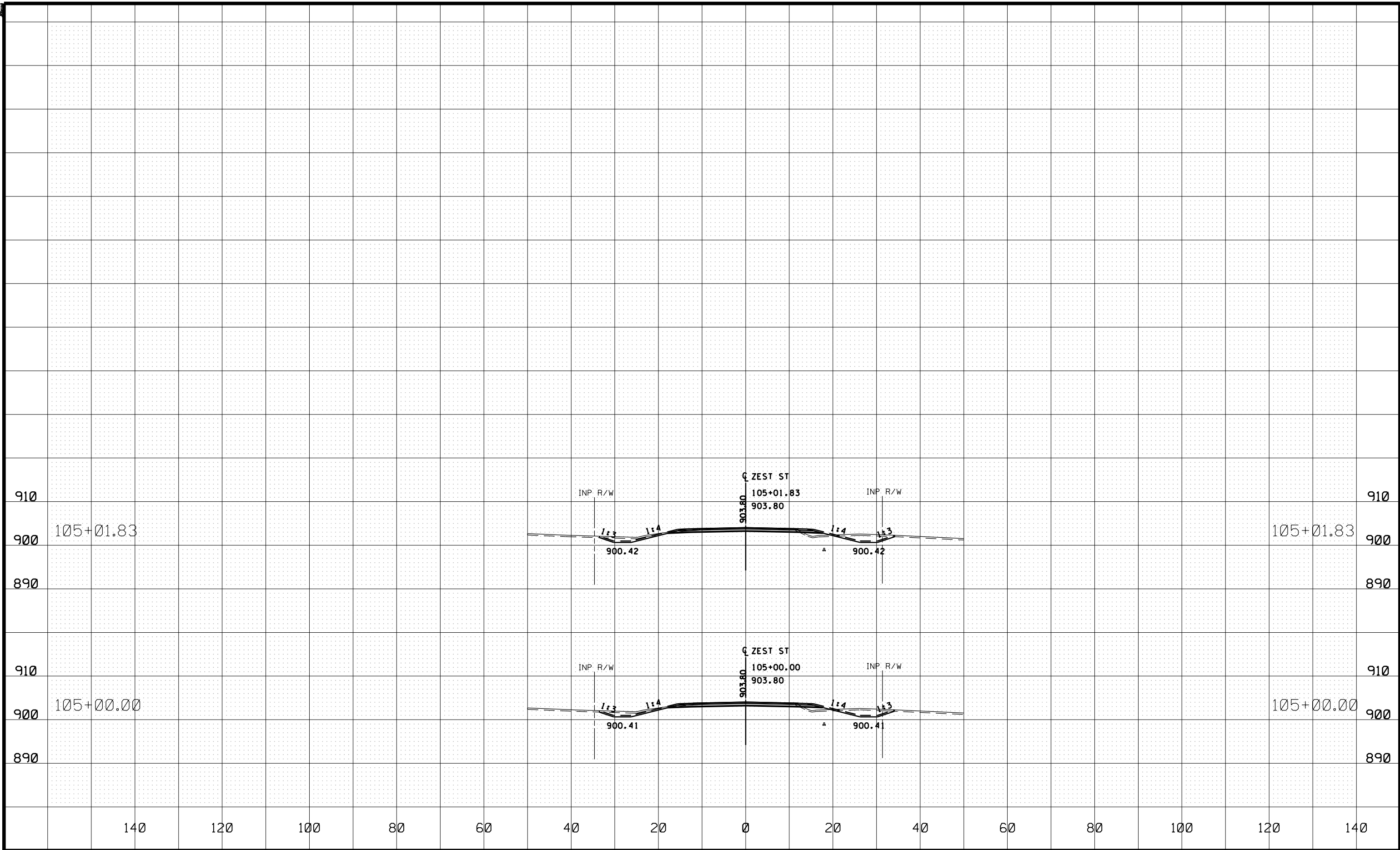
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 DESIGN BY JRB DATE 02/07/22  
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SAP 002-614-048  
SAP 106-020-037

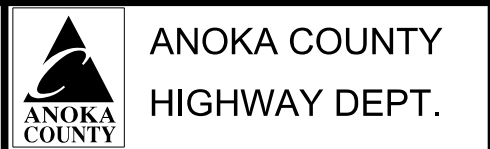
CROSS SECTIONS  
ZEST ST NE  
STA 103+72.29 TO 104+82.10  
Sheet 302 of 303 Sheets



NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-614-048\Plan\002614048\_XP4.dgn 02/09/2022 3:08:20 PM

DRAWN BY BTU DATE 02/07/22  
 DESIGN BY JRB DATE 02/07/22  
 CHECKED BY NJD DATE 02/07/22



SAP 002-614-048  
 SAP 106-020-037

CROSS SECTIONS  
 ZEST ST NE  
 STA 105+00.00 TO 105+01.83  
 Sheet 303 of 303 Sheets