MINNESOTA DEPARTMENT OF TRANSPORTATION

ANOKA COUNTY

CONSTRUCTION PLAN FOR: GRADING, BITUMINOUS SURFACING, ADA IMPROVEMENTS, AND SIGNALS

LOCATED ON CSAH 23 (LAKE DRIVE) FROM 3060' NE OF NAPLES STREET TO VILLAGE PARKWAY

S.A.P. 002-623-017
CSAH 23 (ANOKA COUNTY)

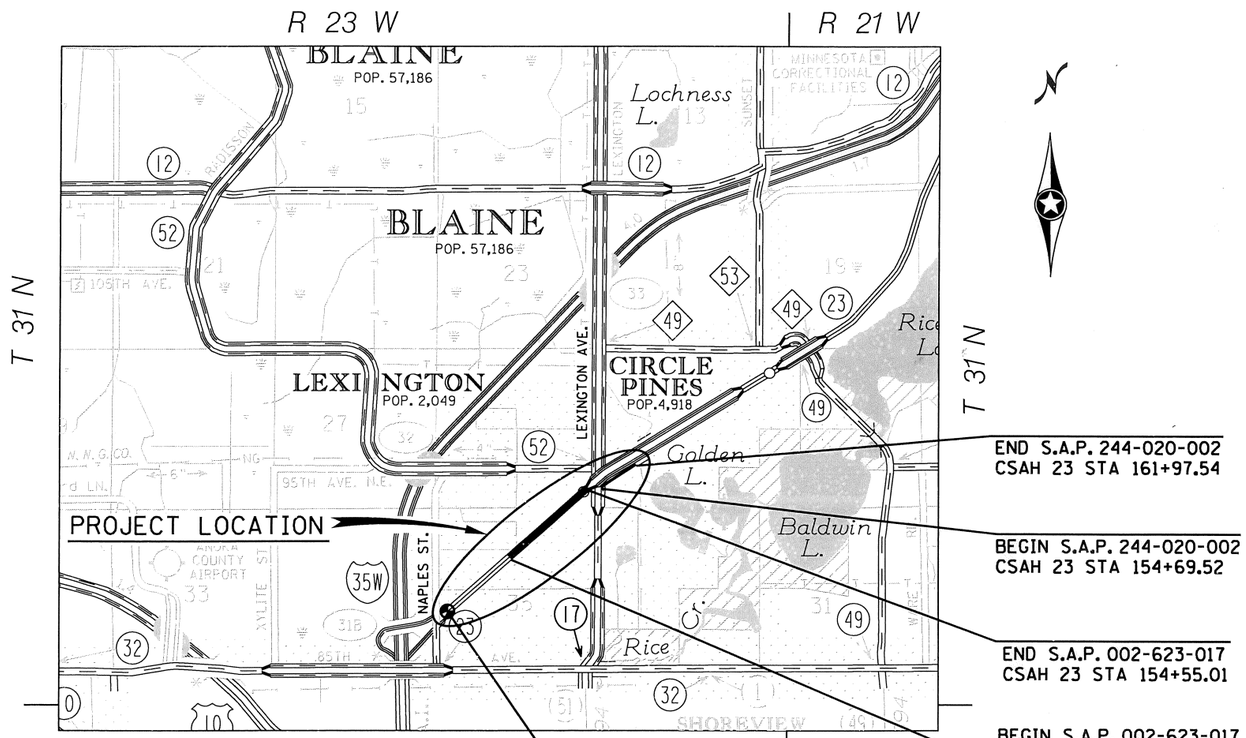
GROSS LENGTH	3899.99	FEET	0.739	MILES
BRIDGES-LENGTH	0	FEET	0	MILES
EXCEPTIONS-LENGTH	0	FEET	0	MILES
NET LENGTH	3899.99	FEET	0.739	MILES

NOTE: LENGTH AND DESCRIPTION BASED ON THE CSAH 23 ALIGNMENT.

S.A.P. 244-020-002
CSAH 23 (ANOKA COUNTY)

GROSS LENGTH	728.02	FEET	0.138	MILES
BRIDGES-LENGTH	0	FEET	0	MILES
EXCEPTIONS-LENGTH	0	FEET	0	MILES
NET LENGTH	728.02	FEET	0.138	MILES

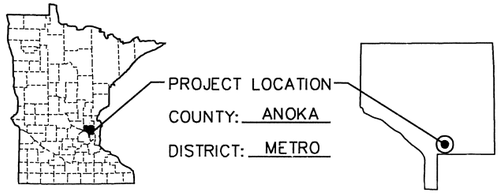
NOTE: LENGTH AND DESCRIPTION BASED ON THE CSAH 23 ALIGNMENT.



CSAH 23 (LAKE DRIVE)

FUNCTIONAL CLASSIFICATION:	MINOR ARTERIAL
NO. OF TRAFFIC LANES:	2
NO. OF PARKING LANES:	0
SHOULDER WIDTH:	12
STRUCTURAL DESIGN:	9 TON
R VALUE:	69
ESALS	1,461,000
ADT (CURRENT YEAR) (2016)	13,700
ADT (FUTURE YEAR) (2036)	16,900
HCADT (FUTURE YEAR) (2036)	320
DESIGN SPEED:	50 MPH
BASED ON:	SSD
HEIGHT OF OBJECT:	2.0 FEET
HEIGHT OF EYE:	3.5 FEET
DESIGN SPEED NOT ACHIEVED:	N/A

PERMIT REQUIRED FOR WORK WITHIN MnDOT RIGHT-OF-WAY



UTILITY SYMBOLS

COMMUNICATIONS
- COMMUNICATION LINE
- OVERHEAD COMMUNICATION LINE — OHU
- COM POLE
- COM PED
- COM MH
- COM HH
- COM TOWER
- COM VAULT
- FIBER OPTIC BURIED — F/O -BUR
- FIBER OPTIC IN COND
- TELEPHONE LINE — T-BUR
- OVERHEAD TELEPHONE LINE — OHU
- TEL POLE
- TV CABLE — TV-BUR

ELECTRICAL
- ELECTRIC LINE — P-BUR
- OVERHEAD ELECTRIC LINE — OHP
- P MH
- P POLE
- P PED
- P-BUR IN COND
- P HH
- P METER
- P TOWER
- P VAULT
- GUY POLE
- ANCHOR
- L POLE
- SIGNAL INTERCONNECT — SIG-INT
- SIG WIRE LINE — SIG-BUR
- TRAFFIC SIG LIGHT

GAS
- GAS LINE — G
- GAS VLV
- GAS METER
- GAS MH
- GAS VENT

SANITARY
- SANITARY LINE
- SAN MH

WATER
- WATERMAIN LINE
- WATER MH
- WATER METER
- WATER VLV
- FIRE HYD

DRAINAGE
- DRAINAGE CULVERT
- STORM SEWER

PLAN SYMBOLS

- BARBED WIRE FENCE
- WOODEN FENCE
- SIGN POST
- TREE-LEAF
- TREE-EVERGREEN
- PROPERTY LINE
- EXISTING R/W
- PROPOSED R/W
- TEMPORARY EASEMENT
- PERMANENT EASEMENT

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

THE EXACT LOCATION OF UNDERGROUND UTILITIES SUCH AS GAS, TELPHONE, FIBER OPTIC, PIPELINES, ELECTRIC, AND CABLE TV ARE UNKNOWN. THE CONTRACTOR SHALL CONTACT GOPHER STATE ONE CALL BEFORE COMMENCING EXCAVATION.

GOPHER STATE ONE CALL.... 1 800-252-1166

SCALES

INDEX MAP	2500'	
GENERAL LAYOUT	400'	
ALIGNMENT PLAN	200'	
PLAN	100'	
PROFILE	50'	HORIZ.
	5'	VERT.
X-SECTION	10'	HORIZ.
	10'	VERT.

PLAN REVISIONS		
DATE	SHEET NO.	APPROVED BY

MINN. PROJ. NO.

GOVERNING SPECIFICATIONS

THE 2016 EDITION OF THE MINNESOTA DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATION FOR CONSTRUCTION", SHALL GOVERN.

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

INDEX

THIS PLAN CONTAINS 133 SHEETS

SHORT ELLIOTT HENDRICKSON INC.
3535 VADNAIS CENTER DRIVE
ST. PAUL, MN. 55110

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

ENGR. SIGNATURE: Jason E. Owens Date 02/13/2018

PRINTED NAME: JASON E. OWENS LIC. No. 43475

RECOMMENDED FOR APPROVAL _____ ANOKA COUNTY ENGINEER 2/14/ 20 18

RECOMMENDED FOR APPROVAL _____ LEXINGTON CITY ENGINEER 2/13 20 18

RECOMMENDED FOR APPROVAL _____ CIRCLE PINES CITY ENGINEER 2/14 20 18

RECOMMENDED FOR APPROVAL _____ DISTRICT STATE AID ENGINEER: REVIEWED FOR COMPLIANCE WITH STATE AID RULES/POLICY 2/15 20 18

APPROVED FOR _____ STATE AID ENGINEER: APPROVED FOR STATE AID FUNDING 2/15 20 18

S.A.P. 002-623-017
S.A.P. 244-020-002

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2/13/2018
(USERNAME)

ANOKA COUNTY

CITY OF LEXINGTON

CITY OF BLAINE

CITY OF LEXINGTON

CITY OF CIRCLE PINES

CITY BOUNDARY

STP5 STP7 STP9 TP1 RM1 CP1 EC1 STP5 STP7 STP9 TP1 RM1 CP2 EC1 STP6 STP8 STP10 TP2 RM2 CP3 EC2 STP6 STP8 STP10

RESTWOOD ROAD

WOODLAND ROAD

GRIGGS AVENUE

DUNLAP AVENUE

ALBERT AVENUE

HAMLINE AVENUE

LEXINGTON AVENUE NE (CSAH 17)

NORTH HIGHWAY DRIVE

SOUTH HIGHWAY DRIVE

PROPOSED INFILTRATION SWALES

PROPOSED FILTRATION BASIN

INSET A

℄ N FRONTAGE 1

℄ RESTWOOD

℄ GRIGGS

℄ N FRONTAGE 2

℄ WOODLAND

℄ DUNLAP

℄ CITY WALK N

℄ RESTWOOD S

℄ S FRONTAGE 2

PROPOSED SIGNAL SYSTEM "A"

℄ HAMLINE

℄ S FRONTAGE

℄ TRAIL

℄ LAKE (CSAH 23)

℄ CITY WALK S

END S.A.P. 002-623-017
CSAH 23 STA 154+55.01

BEGIN S.A.P. 002-623-017
CSAH 23 STA 115+55.02

BEGIN S.A.P. 244-020-002
CSAH 23 STA 154+69.52

END S.A.P. 244-020-002
CSAH 23 STA 161+97.54

CITY OF LEXINGTON

LEGEND

- EXISTING PAVEMENT
- NEW CONSTRUCTION
- TP# INPLACE TOPOGRAPHY AND UTILITY PLAN
- RM# REMOVAL PLAN
- CP# CONSTRUCTION DRAINAGE PLAN AND PROFILES
- EC# TURF ESTABLISHMENT AND EROSION CONTROL PLAN
- STP# SIGNING AND STRIPING PLAN

400

SCALE IN FEET

FILE: S:\AE\A\Anokc\141617\5-final-dsgn\51-drawings\40-TransHwy\Plansheets\CD141617_gl1.dgn
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DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: SAS				
DESIGNER: JEO				
CHECKED BY: HLR				

I hereby certify that this plan was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.
Certified By: Jason E. Owens Lic. No. 43475
Licensed Professional Engineer
Printed Name: JASON E. OWENS Date: 9/19/2017

SEH
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

ANOKA COUNTY, MN
CSAH 23
S.A.P. 002-623-017, S.A.P. 244-020-002

GENERAL LAYOUT

FILE NO. ANOKC141617
GL1 OF GL1
2 / 94

GENERAL, GRADING, BASE, AND SURFACE

UTILITY COMPANIES WILL RELOCATE THEIR FACILITIES IN ADVANCE OF, OR CONCURRENTLY WITH, THE CONSTRUCTION OPERATIONS UNDER THIS CONTRACT. THE CONTRACTOR SHALL SCHEDULE CONSTRUCTION IN COOPERATION WITH UTILITY RELOCATION.

THE TOP OF THE FINAL GRADED SURFACE (GRADING GRADE) IS DEFINED AS THE BOTTOM OF THE AGGREGATE BASE, SEE 2106.2.A.2

SUITABLE GRADING MATERIAL (COMMON EMBANKMENT) SHALL CONSIST OF ALL SOILS ENCOUNTERED WITH THE EXCEPTION OF TOPSOIL, DEBRIS, ORGANIC MATERIAL, AND OTHER UNSTABLE EXCAVATION MATERIAL PER THE ENGINEER. EXISTING AGGREGATE AND TOPSOIL SHOULD BE SALVAGED AND REUSED IN NEW CONSTRUCTION WHERE POSSIBLE. SEE MNDOT 2106. MATERIALS DEFINED AS NON-STRUCTURAL GRADING MATERIALS MAY BE USED AS COMMON EMBANKMENT.

EMBANKMENT WIDENING SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE PROVISIONS OF THE FIRST PARAGRAPH OF MNDOT SPEC 2106. MATERIAL USED TO CONSTRUCT THE EMBANKMENT WIDENING SHOULD SUBSTANTIALLY MATCH THE INPLACE EMBANKMENT MATERIALS RELATIVE TO TEXTURAL CLASSIFICATION, DENSITY, AND MOISTURE CONTENT. PROVIDE 1:20 TAPERS WHERE APPLICABLE FOR CHANGES IN MATERIALS TYPE TO PREVENT AN ABRUPT SOIL DIFFERENTIAL. TAPERS BETWEEN PLASTIC AND GRANULAR SOILS SHOULD BE CONSTRUCTED SO THAT THE GRANULAR SOIL OVERLAYS THE PLASTIC SOIL.

MATERIALS DEFINED AS UNSUITABLE (TOPSOIL, ORGANIC MATERIAL, DEBRIS ETC.) MUST BE REMOVED FROM THE ROADBED EMBANKMENT FOUNDATION. THE UNSUITABLE MATERIALS SHALL BE DISPOSED OF IN ACCORDANCE WITH MNDOT SPEC 2104 AND 2106. MATERIALS SUCH AS PEAT, MARL, MULCH, AND OTHER UNSTABLE MATERIALS NOT TO BE USED IN THE ROADBED EMBANKMENTS SHALL BECOME PROPERTY OF THE CONTRACTOR.

TOPSOIL EXCAVATION IS INCLUDED IN ITEM 2106.607 'EXCAVATION - COMMON'. EXISTING TOPSOIL DEPTH OF 0.5' IS ASSUMED ALONG CSAH 23. EXCAVATED TOPSOIL SHALL BE REUSED AS TOPSOIL EMBANKMENT AS DIRECTED BY THE ENGINEER. PLACING TOPSOIL EMBANKMENT IS INCLUDED IN ITEM 2106.607 'COMMON EMBANKMENT'.

UNLESS SPECIFICALLY NOTED, ANY USE OF BRACING, SHORING, SHEETING, OR OTHER MEANS AND METHODS OF CONSTRUCTION THAT ARE NECESSARY TO COMPLETE CONSTRUCTION WITHIN THE CONSTRUCTION LIMITS OR PROJECT EASEMENTS SHOWN IN THE PLANS WILL BE CONSIDERED INCIDENTAL.

THE EXISTING FILL AND NATIVE SOILS, WHICH INCLUDE SAND WITH SILT, SILTY SAND AND CLAYEY SAND, ARE CONSIDERED SUITABLE FOR REUSE IN ACCORDANCE WITH SPEC 2106.

STRIP SOD AND TOPSOIL FROM AREAS TO BE DISTURBED BY CONSTRUCTION AND REUSE AS SLOPE DRESSING. FOR ESTIMATING PURPOSES, THE DEPTH OF TOPSOIL AVAILABLE IS CONSIDERED TO BE 0.5 FOOT IN ALL AREAS.

PROVIDE FOR THE REMOVAL AND DISPOSAL OF ANY INPLACE SURFACING, GUARDRAIL, OTHER STRUCTURES, OR DEBRIS THAT WOULD INTERFERE WITH CONSTRUCTION. ALL SUCH MATERIALS SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL EITHER BE RECYCLED OR DISPOSED OF OFF THE PROJECT LIMITS IN ACCORDANCE WITH SPEC 2104.3C3.

ALL EXCAVATION SHALL BE PERFORMED IN ACCORDANCE WITH MNDOT SPEC 2106.

OBTAIN COMPACTION ON THE EMBANKMENT GRADING PORTIONS OF THE CONSTRUCTION IN ACCORDANCE WITH THE 'SPECIFIED DENSITY' AND 'PENETRATION INDEX' METHODS AS REQUIRED BY SPEC 2106.3F. OBTAIN COMPACTION OF AGGREGATE BASE IN ACCORDANCE WITH THE 'QUALITY COMPACTION METHOD' AS REQUIRED BY SPEC 2211.

NO EXTRA PAYMENT WILL BE MADE FOR STOCKPILING GRANULAR MATERIAL OR TOPSOIL.

WHERE WIDENING ADJACENT TO EXISTING PAVEMENT, EXCAVATIONS SHALL BE BACKFILLED PROMPTLY TO AVOID UNDERMINING OF THE EXISTING PAVEMENT. CUT VERTICALLY TO THE BOTTOM OF THE EXISTING OR PROPOSED SURFACING, WHICHEVER IS DEEPER, THEN 2V:1H TO THE BOTTOM OF THE RECOMMENDED SUBGRADE TREATMENT. IT IS THE CONTRACTORS RESPONSIBILITY TO ENSURE THAT EXISTING PAVEMENT DESIGNATED TO REMAIN INPLACE IS NOT UNDERMINED BY ADJACENT EXCAVATION OR CONSTRUCTION ACTIVITY. ANY SUCH EXISTING PAVEMENT UNDERMINED OR OTHERWISE DAMAGED BY CONSTRUCTION ACTIVITY SHALL BE REMOVED AND REPLACED TO THE SATISFACTION OF THE ENGINEER, AT NO COST TO THE CITY OR COUNTY.

UNLESS OTHERWISE REQUIRED, WHERE GRANULAR EMBANKMENTS OR BACKFILL JOIN NON- GRANULAR SOIL EMBANKMENTS OR BACKFILL, PROVIDE A 1(V):20(H) TRANSITION TAPER BETWEEN THE CHANGES IN MATERIAL TO PREVENT AN ABRUPT SOILS DIFFERENTIAL. THE 1(V):20(H) TAPER SHALL BE CONSTRUCTED SO THAT THE GRANULAR BACKFILL MATERIAL OVERLAYS THE ADJACENT NON- GRANULAR SOIL BACKFILL.

WHERE MATCHING NEW SURFACING, AT CROSSROADS OR PROJECT TERMINI, TO EXISTING PAVEMENTS, CUT VERTICALLY TO THE BOTTOM OF THE EXISTING OR PROPOSED SURFACING, WHICHEVER IS DEEPER, THEN 1V:20H TO THE BOTTOM OF THE RECOMMENDED SUBGRADE TREATMENT. SAWCUT SHALL BE PROTECTED DURING CONSTRUCTION.

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

PLACE A MINIMUM OF 6 INCHES OF TOPSOIL ON ALL AREAS SCHEDULED FOR PERMANENT TURF ESTABLISHMENT.

USE TACK COAT BETWEEN ALL BITUMINOUS MIXTURES AND PRIOR TO PLACING ANY BITUMINOUS MIXTURES ON THE EXISTING PAVEMENT. THE BITUMINOUS TACK COAT MATERIAL SHALL BE APPLIED AT A UNIFORM RATE OF 0.03 TO 0.05 GAL/SQ YD BETWEEN BITUMINOUS LAYERS. THE APPLICATION RATES ARE FOR UNDILUTED EMULSIONS (AS SUPPLIED FROM THE REFINERY) OR MC AND RC LIQUID ASPHALTS. THE ASPHALT EMULSION MAY BE FURTHER DILUTED IN ACCORDANCE WITH MNDOT SPEC 2357.

EROSION CONTROL

SILT FENCE SHALL BE INSTALLED AS SOON AS POSSIBLE AND MAINTAINED IN GOOD CONDITION AT ALL TIMES AND REMOVED WHEN PROJECT IS COMPLETED. PAYMENT SHALL INCLUDE ALL COSTS FOR FURNISHING, MAINTENANCE, AND REMOVAL.

SEE EROSION CONTROL PLAN FOR LOCATIONS OF EROSION CONTROL DEVICES AND STANDARD EROSION CONTROL PLANS FOR DETAILS. TEMPORARY EROSION CONTROL DEVICES AND THEIR SUGGESTED LOCATIONS HAVE BEEN SHOWN IN THE PLANS ALONG WITH PAY ITEMS FOR THEIR USE. THIS DOES NOT HOWEVER RELIEVE THE CONTRACTOR OF THE RESPONSIBILITY TO CONDUCT CONSTRUCTION IN A MANNER THAT WILL CONTROL EROSION. RESPONSIBILITY FOR CONTROLLING EROSION IS SET FORTH IN MNDOT SPECIFICATIONS 1717, 1803, 2101, 2105, 2573, 2575, AND AMENDED BY THE SPECIAL PROVISIONS.

TRAFFIC CONTROL

ALL TRAFFIC CONTROL SIGNING AND DEVICES SHALL CONFORM TO THE LATEST EDITION OF THE MNMUTCD, INCLUDING THE "TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS FIELD MANUAL".

TRAFFIC CONTROL SHALL BE PAID FOR AS A LUMP SUM ITEM. QUANTITIES SHOWN ARE FOR INFORMATIONAL PURPOSES ONLY AND ARE NOT TO BE USED FOR PAY QUANTITIES. ADDITIONAL TRAFFIC CONTROL SIGNS AND DEVICES MAY BE REQUIRED DEPENDING ON THE CONTRACTOR'S OPERATIONS AND DURATION. SEE THE SPECIAL PROVISIONS FOR COMPLETE TRAFFIC CONTROL REQUIREMENTS.

REMOVALS

"REMOVE PAVEMENT" IS PAID REGARDLESS OF DEPTH AND IS NOT INCLUDED IN THE EARTHWORK QUANTITIES.

WHEN REMOVING PAVEMENTS, FULL DEPTH SAWCUTS SHOULD BE MADE PERPENDICULAR TO THE ROADWAY CENTERLINE AND ALONG EXISTING LANE LINES.

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

MNDOT STANDARD PLATES

PLATE NO.	DESCRIPTION
3000L	REINFORCED CONCRETE PIPE (5 SHEETS)
3006G	GASKET JOINT FOR R.C. PIPE (2 SHEETS)
3040F	CORRUGATED METAL PIPE CULVERT (STANDARD 2-2/3" X 1/2" CORRUGATION)
3100G	CONCRETE APRON FOR REINFORCED CONCRETE PIPE
3122K	METAL APRON FOR C.M. PIPE-ARCH CULVERT
3133D	RIPRAP AT RCP OUTLETS
3145G	CONCRETE PIPE OR PRECAST BOX CULVERT TIES
3148A	SAFETY SLOPE METAL END SECTION FOR CIRCULAR & ARCHED PIPES (2 SHEETS)
3221C	CORRUGATED STEEL PIPE COUPLING BAND (3 SHEETS)
4010H	CONCRETE SHORT CONE & ADJUSTING RING (SECTIONAL CONCRETE)
4024A	48" DIA. PRECAST SHALLOW DEPTH CATCH BASIN - DESIGN SD
4026A	CONCRETE ENCASED CONCRETE ADJUSTING RINGS
4108F	ADJUSTING RINGS FOR CATCH BASINS & MANHOLES
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
8000J	CHANNELIZERS - TYPE A, B, C (3 SHEETS)
9000E	APPROACHES & ENTRANCES - RECOMMENDED STANDARDS
9350A	MAILBOX SUPPORT (SWING-AWAY TYPE)

NOTE:
SEE SHEET 78 FOR ADDITIONAL SIGNAL SYSTEM STANDARD PLATES

TABULATION INDEX

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: SAS	1	JEO	3/1/18	ADDED STANDARD PLATE 9350A
DESIGNER: JEO	1	JEO	3/9/18	ADDED STANDARD PLATE 4108F
CHECKED BY: HLR				

I hereby certify that this plan was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.
Certified By: Jason E. Owens Lic. No. 43475
Licensed Professional Engineer
Printed Name: JASON E. OWENS Date: 9/19/2017

SEH
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

ANOKA COUNTY, MN
CSAH 23
S.A.P. 002-623-017, S.A.P. 244-020-002

STANDARD PLATES, SOIL AND CONSTRUCTION NOTES

FILE NO. ANOKC141617
SCN1 OF SCN1
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TAB	ITEM NO.	ITEM DESCRIPTION	NOTE	UNIT	TOTAL ESTIMATED QUANTITY	FRONTAGE ROAD CONSTRUCTION			STORM SEWER	
						ANOKA COUNTY	CITY OF LEXINGTON	CITY OF CIRCLE PINES	ANOKA COUNTY	CITY OF LEXINGTON
						SAP 002-623-017	(100% CITY FUNDS)	SAP 244-020-002	SAP 002-623-017	
						EST. QUANT.	EST. QUANT.	EST. QUANT.	EST. QUANT.	EST. QUANT.
	2021.501	MOBILIZATION		LUMP SUM	1	0.90	0.06	0.01	0.02	0.01
	2031.501	FIELD OFFICE TYPE D		EACH	1	0.90	0.06	0.01	0.02	0.01
D	2101.502	CLEARING		TREE	14	14				
D	2101.507	GRUBBING		TREE	14	14				
P	2102.501	PAVEMENT MARKING REMOVAL		SQ FT	135	135				
P	2102.502	PAVEMENT MARKING REMOVAL		LIN FT	7700	7700				
C	2104.501	REMOVE PIPE CULVERTS		LIN FT	676	676				
C	2104.501	REMOVE CONCRETE FLUME		LIN FT	15	15				
C	2104.501	REMOVE CURB & GUTTER		LIN FT	1932	1932				
C	2104.503	REMOVE BITUMINOUS WALK		SQ FT	647	647				
C	2104.503	REMOVE CONCRETE WALK		SQ FT	961	961				
C	2104.503	REMOVE CONCRETE DRIVEWAY PAVEMENT		SQ FT	894	894				
C	2104.503	REMOVE BITUMINOUS DRIVEWAY PAVEMENT		SQ FT	23870	23870				
C	2104.505	REMOVE BITUMINOUS PAVEMENT		SQ YD	4863	4863				
C	2104.509	REMOVE BITUMINOUS FLUME		EACH	2	2				
	2104.509	REMOVE MARKER		EACH	4	4				
	2104.509	REMOVE SIGN TYPE C		EACH	69	69				
Q-3	2104.509	REMOVE SIGN TYPE D		EACH	3	3				
	2104.509	REMOVE SIGN TYPE SPECIAL		EACH	7	7				
R	2104.509	REMOVE SIGNAL SYSTEM		EACH	1	1				
Q-6	2104.509	REMOVE SIGN PANEL TYPE D		EACH	1	1				
E	2104.511	SAWING CONCRETE PAVEMENT (FULL DEPTH)		LIN FT	20	20				
E	2104.513	SAWING BITUMINOUS PAVEMENT (FULL DEPTH)		LIN FT	1858	1858				
A	2106.507	EXCAVATION - COMMON	(P)	CU YD	9774	9503	96	175		
A	2106.507	EXCAVATION - SUBGRADE		CU YD	6362	6362				
A	2106.522	SELECT GRANULAR EMBANKMENT (LV)	A	CU YD	~~6661~~	~~6661~~				
A	2106.523	COMMON EMBANKMENT (CV)	(P)	CU YD	3918	3644	81	193		
F	2118.502	AGGREGATE SURFACING (LV), CLASS 1	(P)	CU YD	24	10	1	13		
	2123.509	DOZER	B	HOUR	10	10				
	2130.501	WATER	C	MGAL	50	50				
F	2211.503	AGGREGATE BASE (CV) CLASS 5	(P)	CU YD	2643	2421	96	126		
H	2301.602	DRILL & GROUT REINF BAR (EPOXY COATED)		EACH	66		30	36		
G	2357.502	BITUMINOUS MATERIAL FOR TACK COAT		GALLON	1092	1018	6	68		
G	2360.501	TYPE SP 9.5 WEARING COURSE MIX (2,B) DRIVEWAYS		TON	190	79	7	104		
G	2360.501	TYPE SP 12.5 WEARING COURSE MIX (3,C)		TON	2227	2222		5		
	2360.505	TYPE SP 12.5 BITUMINOUS MIXTURE FOR PATCHING	D	TON	10	10				
M	2451.513	FINE FILTER AGGREGATE (CV)		CU YD	8	8				
I,J,M	2451.515	COARSE AGGREGATE BEDDING (CV)		CU YD	222	184	38			
I	2501.511	15" CS PIPE CULVERT		LIN FT	52				52	
I	2501.511	18" RC PIPE CULVERT CLASS IV		LIN FT	72				72	
J	2501.515	12" RC PIPE APRON		EACH	1					1
I	2501.515	18" RC PIPE APRON		EACH	2				2	
I	2501.521	28" SPAN CS PIPE-ARCH CULVERT		LIN FT	164				164	
I	2501.525	28" SPAN GS PIPE-ARCH APRON		EACH	2				2	
I	2501.567	28" SPAN GS SAFETY APRON AND GRATE DESIGN 3148		EACH	2				2	
I	2501.569	15" CS SAFETY APRON		EACH	2				2	
C	2504.602	ADJUST VALVE BOX - WATER		EACH	2	2				
J	2503.541	12" RC PIPE SEWER DESIGN 3006 CLASS V		LIN FT	126					126
J	2506.501	CONSTRUCT DRAINAGE STRUCTURE DESIGN SD-48		LIN FT	7					7
C	2506.503	RECONSTRUCT DRAINAGE STRUCTURE		LIN FT	8	8				

NOTE
- (P) PLAN QUANTITY
- A NEW BORROW MATERIAL
- B SHALL BE USED FOR MISCELLANEOUS GRADING ACTIVITIES AS DIRECTED BY THE ENGINEER.
- C WATER TO BE USED ONLY FOR DUST CONTROL AS DIRECTED BY THE ENGINEER IN FIELD. WATER USED FOR COMPACTION AND TURB ESTABLISHMENT SHALL BE INCIDENTAL.
- D SHALL BE USED FOR MISCELLANEOUS PATCHING AS DIRECTED BY THE ENGINEER.
- E CSAH 23/CSAH 17

BASIS OF ESTIMATED QUANTITIES		
ITEM NO.	ITEM	BASIS
2360	TYPE SP 9.5 WEARING COURSE MIX (2,B)	113 LBS/SY/INCH
2360	TYPE SP 12.5 WEARING COURSE MIX (3,C)	113 LBS/SY/INCH
2574	FERTILIZER TYPE 1	200 LBS/ACRE
2574	FERTILIZER TYPE 3	200 LBS/ACRE
2574	FERTILIZER TYPE 4	150 LBS/ACRE
2574	LIME	3 TONS/ACRE
2575	SEED MIXTURE 21-111	100 LBS/ACRE
2575	SEED MIXTURE 33-261	35 LBS/ACRE
2575	SEED MIXTURE 35-221	36.5 LBS/ACRE

DESIGN TEAM
DRAWN BY: SAS
DESIGNER: JEO
CHECKED BY: HLR

NO.	BY	DATE	REVISIONS
1	JEO	3/1/18	ADDED ITEM 2104.509 - REMOVE BITUMINOUS FLUME
2	JEO	3/9/18	ADDED ITEM 2506.503 - RECONSTRUCT DRAINAGE STRUCTURE
			UPDATED QUANTITY FOR COMMON EMBANKMENT

I hereby certify that this plan was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.
Certified By: Jason E. Owens Lic. No. 43475
Licensed Professional Engineer
Printed Name: JASON E. OWENS Date: 9/19/2017

SEH
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

ANOKA COUNTY, MN
CSAH 23
S.A.P. 002-623-017, S.A.P. 244-020-002

STATEMENT OF ESTIMATED QUANTITIES

FILE NO. ANOKC141617
EST1 OF EST2

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TAB	ITEM NO.	ITEM DESCRIPTION	NOTE	UNIT	TOTAL ESTIMATED QUANTITY	FRONTAGE ROAD CONSTRUCTION			STORM SEWER	
						ANOKA COUNTY	CITY OF LEXINGTON	CITY OF CIRCLE PINES	ANOKA COUNTY	CITY OF LEXINGTON
						SAP 002-623-017	(100% CITY FUNDS)	SAP 244-020-002	SAP 002-623-017	
						EST. QUANT.	EST. QUANT.	EST. QUANT.	EST. QUANT.	EST. QUANT.
K	2506.516	CASTING ASSEMBLY		EACH	2					2
C	2506.522	ADJUST FRAME AND RING CASTING		EACH	6	6				
I	2511.502	RANDOM RIPRAP CLASS II		CU YD	7	7				
L	2511.502	RANDOM RIPRAP CLASS III		CU YD	20	20				
M	2511.515	GEOTEXTILE FILTER TYPE I		SQ YD	83	83				
I	2511.515	GEOTEXTILE FILTER TYPE III		SQ YD	30	30				
L	2511.515	GEOTEXTILE FILTER TYPE IV		SQ YD	71	71				
H	2521.501	4" CONCRETE WALK		SQ FT	3732	319	3413			
H	2521.501	6" CONCRETE WALK		SQ FT	1834		1432	402		
H	2531.501	CONCRETE CURB & GUTTER DESIGN B618		LIN FT	5972	2936	2936	100		
H	2531.507	6" CONCRETE DRIVEWAY PAVEMENT		SQ YD	184	184				
L	2531.604	CONCRETE DRAINAGE FLUME		SQ YD	30	30				
H	2531.604	6" CONCRETE VALLEY GUTTER		SQ YD	8	4	4			
H	2531.618	TRUNCATED DOMES		SQ FT	228		152	76		
C	2540.602	MAIL BOX SUPPORT		EACH	6	6				
R	2545.541	SERVICE CABINET		EACH	1	1				
I,J	2554.509	GUIDE POST TYPE B		EACH	9				8	1
O	2563.601	TRAFFIC CONTROL		LUMP SUM	1	0.90	0.06	0.01	0.02	0.01
O	2563.602	PORTABLE CHANGEABLE MESSAGE SIGN		EACH	4	4				
O	2563.618	CONSTRUCTION SIGN - SPECIAL		SQ FT	45	45				
Q-5	2564.531	SIGN PANELS TYPE SPECIAL		SQ FT	63		63			
Q-1	2564.531	SIGN PANELS TYPE C		SQ FT	443	443				
Q-2	2564.531	SIGN PANELS TYPE D		SQ FT	36	36				
Q-4	2564.552	OBJECT MARKER TYPE X4-2		EACH	7	7				
Q-4	2564.552	OBJECT MARKER TYPE X4-4		EACH	1	1				
R	2565.511	TRAFFIC CONTROL SIGNAL SYSTEM A		SIGNAL SYSTEM	1	1				
R	2565.513	EMERGENCY VEHICLE PREEMPTION SYSTEM A		LUMP SUM	1		1			
R	2565.514	TRAFFIC CONTROL INTERCONNECT		LUMP SUM	1	1				
R	2565.601	PAINT SIGNAL SYSTEM	E	LUMP SUM	1	1				
R	2565.602	RIGID PVC LOOP DETECTOR 6' X 6'	E	EACH	1	1				
R	2565.616	REVISE SIGNAL SYSTEM B		SYSTEM	1	1				
M	2573.502	SILT FENCE, TYPE MS		LIN FT	1396	712		684		
M	2573.530	STORM DRAIN INLET PROTECTION		EACH	3	3				
M	2573.560	CULVERT END CONTROLS		EACH	5	5				
M	2574.508	FERTILIZER TYPE 1		POUND	814	774	40			
M	2574.508	FERTILIZER TYPE 3		POUND	246	206	40			
M	2574.508	FERTILIZER TYPE 4		POUND	426	426				
M	2574.576	LIME		TON	13	12.4	0.6			
M	2574.578	SOIL BED PREPARATION		ACRE	5	4.8	0.2			
M	2575.501	SEEDING		ACRE	9	8.6	0.4			
M	2575.502	SEED MIXTURE 21-111		POUND	407	387	20			
M	2575.502	SEED MIXTURE 33-261		POUND	99	99				
M	2575.502	SEED MIXTURE 35-221		POUND	45	38	7			
M	2575.523	EROSION CONTROL BLANKETS CATEGORY 3N		SQ YD	19699	18731	968			
M	2575.545	WEED SPRAYING		ACRE	5	4.8	0.2			
M	2575.547	WEED SPRAY MIXTURE		GALLON	12	11	1			
M	2575.570	RAPID STABILIZATION METHOD 2		ACRE	5	4.8	0.2			
P	2582.501	PAVEMENT MESSAGE PREFORM THERMOPLASTIC		SQ FT	288	288				
P	2582.502	4" SOLID LINE EPOXY		LIN FT	6350	6350				
P	2582.502	24" SOLID LINE PREFORM THERMO		LIN FT	1475	1475				
P	2582.502	4" DOUBLE SOLID LINE EPOXY		LIN FT	4290	4290				
P	2582.503	CROSSWALK PREFORM THERMOPLASTIC		SQ FT	1060	1060				

NOTE
(P) PLAN QUANTITY
A NEW BORROW MATERIAL
B SHALL BE USED FOR MISCELLANEOUS GRADING ACTIVITIES AS DIRECTED BY THE ENGINEER.
C WATER TO BE USED ONLY FOR DUST CONTROL AS DIRECTED BY THE ENGINEER IN FIELD.
WATER USED FOR COMPACTION AND TURB ESTABLISHMENT SHALL BE INCIDENTAL.
D SHALL BE USED FOR MISCELLANEOUS PATCHING AS DIRECTED BY THE ENGINEER.
E CSAH 23/CSAH 17

BASIS OF ESTIMATED QUANTITIES		
ITEM NO.	ITEM	BASIS
2360	TYPE SP 9.5 WEARING COURSE MIX (2,B)	113 LBS/SY/INCH
2360	TYPE SP 12.5 WEARING COURSE MIX (3,C)	113 LBS/SY/INCH
2574	FERTILIZER TYPE 1	200 LBS/ACRE
2574	FERTILIZER TYPE 3	200 LBS/ACRE
2574	FERTILIZER TYPE 4	150 LBS/ACRE
2574	LIME	3 TONS/ACRE
2575	SEED MIXTURE 21-111	100 LBS/ACRE
2575	SEED MIXTURE 33-261	35 LBS/ACRE
2575	SEED MIXTURE 35-221	36.5 LBS/ACRE

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: SAS	1	JEO	3/1/18	UPDATED QUANTITIES FOR ADJUST FRAME AND RING CASTING AND SIGN PANEL TYPE SPECIAL. ADDED ITEM 2540.602 - MAIL BOX SUPPORT.
DESIGNER: JEO	1	JEO	3/9/18	UPDATED QUANTITIES FOR ADJUST FRAME AND RING CASTING
CHECKED BY: HLR				

I hereby certify that this plan was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.
Certified By: Jason E. Owens Lic. No. 43475
Licensed Professional Engineer
Printed Name: JASON E. OWENS Date: 9/19/2017

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STATEMENT OF ESTIMATED QUANTITIES

FILE NO. ANOKC141617
EST2 OF EST2
5 / 94

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EARTHWORK SUMMARY — A

	ALIGNMENT	EXCAVATION		EMBANKMENT (LV)	
		EXCAVATION-COMMON	SUBGRADE	EMBANKMENT-COMMON	SELECT GRANULAR
		CU YD	CU YD	CU YD	CU YD
COST PARTICIPATION A	N FRONTAGE 1	647	1049	173	1071
	N FRONTAGE 2	2026	2318	1200	2555
	S FRONTAGE	1201	1136	315	1136
	S FRONTAGE 2	22	57	4	57
	RESTWOOD	375	491	17	493
	RESTWOOD S	223	572	96	572
	HAMLINE	64	216	24	216
	GRIGGS	85	126	33	160
	WOODLAND	128	299	33	303
	DUNLAP	57	98	7	98
	POND	4675		1742	
COST PARTICIPATION B	GRIGGS TRAIL	2		32	
	CITY WALK N	14		7	
	CITY WALK S	80		42	
COST PARTICIPATION C	TRAIL	137		184	
	TRAIL CONNECTION	38		9	
	TOTALS	9774	6362	3918	6661
	COST PARTICIPATION A - ANOKA COUNTY	9503	6362	3644	6661
	COST PARTICIPATION B - CITY OF LEXINGTON	96		81	
	COST PARTICIPATION C - CITY OF CIRCLE PINES	175		193	

EARTHWORK TABULATION — B

			EXCAVATION		EMBANKMENT (CV)	
			EXCAVATION-COMMON	SUBGRADE	EMBANKMENT-COMMON	SELECT GRANULAR
			CU YD	CU YD	CU YD	CU YD
CITYWALK_N						
30+25	TO	30+50	10		2	
30+50	TO	30+75	8		2	
30+75	TO	31+00	6		2	
31+00	TO	31+25	5		2	
31+25	TO	31+50	3		3	
31+50	TO	31+75	4		2	
SUBTOTAL			14		7	
CITYWALK_S						
40+25	TO	40+50	5		2	
40+50	TO	40+75	4		3	
40+75	TO	41+00	5		2	
41+00	TO	41+25	5		2	
41+25	TO	41+50	4		2	
41+50	TO	41+75	4		3	
41+75	TO	42+00	3		3	
42+00	TO	42+25	6		4	
42+25	TO	42+50	9		5	
42+50	TO	42+75	6		3	
42+75	TO	43+00	6		4	
43+00	TO	43+25	7		3	
43+25	TO	43+50	5		2	
43+50	TO	43+75	5		2	
43+75	TO	44+00	6		2	
SUBTOTAL			80		42	

EARTHWORK TABULATION — B

			EXCAVATION		EMBANKMENT (CV)	
			EXCAVATION-COMMON	SUBGRADE	EMBANKMENT-COMMON	SELECT GRANULAR
			CU YD	CU YD	CU YD	CU YD
N FRONTAGE 1						
20+23.00	TO	20+50.00	9	30	5	32
20+50.00	TO	21+00.00	21	82	10	94
21+00.00	TO	21+50.00	37	77	8	84
21+50.00	TO	22+00.00	72	82	8	83
22+00.00	TO	22+50.00	76	85	6	85
22+50.00	TO	23+50.00	128	171	16	171
23+50.00	TO	23+75.00	35	45	6	45
23+75.00	TO	24+00.00	28	45	16	45
24+00.00	TO	24+40.00	52	72	25	72
24+40.00	TO	24+50.00	15	18	22	18
24+50.00	TO	25+00.00	64	90	24	90
25+00.00	TO	25+30.00	36	54	7	54
25+30.00	TO	25+50.00	17	36	5	36
25+50.00	TO	26+00.00	27	90	9	90
26+00.00	TO	26+40.00	30	72	6	72
SUBTOTAL			647	1049	173	1071
N FRONTAGE 2						
50+50.00	TO	51+00.00	73	68	51	90
51+00.00	TO	51+50.00	55	61	63	90
51+50.00	TO	52+00.00	71	72	49	90
52+00.00	TO	52+50.00	66	76	46	90
52+50.00	TO	53+00.00	77	79	39	90
53+00.00	TO	53+50.00	76	89	29	90
53+50.00	TO	54+00.00	61	88	27	90
54+00.00	TO	54+50.00	104	90	26	90
54+50.00	TO	55+00.00	93	87	32	90
55+00.00	TO	55+50.00	49	84	45	90
55+50.00	TO	56+00.00	61	82	67	90
56+00.00	TO	56+50.00	83	83	70	90
56+50.00	TO	57+00.00	108	83	42	84
57+00.00	TO	57+50.00	105	92	45	93
57+50.00	TO	58+00.00	82	97	36	98
58+00.00	TO	58+50.00	72	89	36	90
58+50.00	TO	59+00.00	121	116	30	117
59+00.00	TO	59+50.00	114	113	48	117
59+50.00	TO	60+00.00	50	82	57	90
60+00.00	TO	60+50.00	35	64	77	90
60+50.00	TO	61+00.00	87	97	57	119
61+00.00	TO	61+50.00	91	113	48	119
61+50.00	TO	62+00.00	68	108	30	114
62+00.00	TO	62+20.00	52	76	14	76
62+20.00	TO	62+50.00	59	95	14	99
62+50.00	TO	63+00.00	49	68	46	90
63+00.00	TO	63+44.00	64	66	76	79
SUBTOTAL			2026	2318	1200	2555
S FRONTAGE						
10+50.00	TO	10+75.00	16	41	6	41
10+75.00	TO	11+00.00	16	45	6	45
11+00.00	TO	11+50.00	28	90	17	90
11+50.00	TO	11+70.00	22	36	4	36
11+70.00	TO	12+00.00	41	54	6	54
12+00.00	TO	12+10.00	13	18	14	18
12+10.00	TO	12+20.00	15	18	14	18
12+20.00	TO	12+50.00	49	54	20	54
12+50.00	TO	12+75.00	41	45	15	45
12+75.00	TO	13+00.00	44	48	16	48
13+00.00	TO	13+25.00	44	46	6	46
13+25.00	TO	13+50.00	41	42	12	42
13+50.00	TO	13+75.00	40	45	13	45
13+75.00	TO	14+00.00	51	45	12	45
14+00.00	TO	14+50.00	156	90	14	90
14+50.00	TO	15+00.00	156	90	18	90
15+00.00	TO	15+50.00	126	90	14	90
15+50.00	TO	16+00.00	135	90	33	90
16+00.00	TO	16+50.00	127	90	38	90
16+50.00	TO	16+83.00	40	59	37	59
SUBTOTAL			1201	1136	315	1136

EARTHWORK TABULATION — B

			EXCAVATION		EMBANKMENT (CV)	
			EXCAVATION-COMMON	SUBGRADE	EMBANKMENT-COMMON	SELECT GRANULAR
			CU YD	CU YD	CU YD	CU YD
S FRONTAGE 2						
10+35.00	TO	10+50.00	13	28	2	28
10+50.00	TO	10+68.00	9	29	2	29
SUBTOTAL			22	57	4	57
RESTWOOD						
30+03.00	TO	30+50.00	194	212	5	214
30+50.00	TO	31+00.00	158	172	6	172
31+00.00	TO	31+49.00	23	107	6	107
SUBTOTAL			375	491	17	493
RESTWOOD S						
10+00.50	TO	10+50.00	45	117	8	117
10+50.00	TO	10+70.00	20	47	3	47
10+70.00	TO	11+00.00	37	70	6	70
11+00.00	TO	11+50.00	58	127	32	127
11+50.00	TO	12+00.00	52	165	30	165
12+00.00	TO	12+09.00	11	46	17	46
SUBTOTAL			223	572	96	572
HAMLINE						
10+51.00	TO	11+00.00	22	83	9	83
11+00.00	TO	11+40.00	24	88	11	88
11+40.00	TO	11+55.00	18	45	4	45
SUBTOTAL			64	216	24	216
GRIGGS						
41+75.00	TO	42+00.00	50	75	18	94
42+00.00	TO	42+20.00	35	51	15	66
SUBTOTAL			85	126	33	160
GRIGGS TRAIL						
41+75.00	TO	42+00.00			17	
42+00.00	TO	42+20.00	2		15	
SUBTOTAL			2		32	
WOODLAND						
10+40.00	TO	10+50.00	14	41	3	41
10+50.00	TO	10+65.00	13	48	8	49
10+65.00	TO	11+00.00	41	90	13	93
11+00.00	TO	11+52.00	60	120	9	120
SUBTOTAL			128	299	33	303
DUNLAP						
10+18.00	TO	10+25.00	17	22	1	22
10+25.00	TO	10+40.00	25	40	2	40
10+40.00	TO	10+58.00	15	36	4	36
SUBTOTAL			57	98	7	98
TRAIL						
10+50.00	TO	11+00.00	8		4	
11+00.00	TO	11+50.00	11		22	
11+50.00	TO	12+00.00	10		23	
12+00.00	TO	12+50.00	12		5	
12+50.00	TO	13+00.00	17		6	
13+00.00	TO	13+50.00	13		16	
13+50.00	TO	14+00.00	12		25	
14+00.00	TO	14+50.00	10		26	
14+50.00	TO	15+00.00	7		31	
15+00.00	TO	15+50.00	9		19	
15+50.00	TO	16+00.00	16		4	
16+00.00	TO	16+37.00	12		3	
SUBTOTAL			137		184	
TRAIL CONNECTION						
5+00.00	TO	5+74	38		9	
SUBTOTAL			38		9	
POND						
124+25	TO	141+38	4675		1742	
SUBTOTAL			4675		1742	

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: SAS	1	JEO	3/9/18	UPDATED EMBANKMENT-COMMON QUANTITY
DESIGNER: JEO				
CHECKED BY: HLR				

I hereby certify that this plan was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.
Certified By: Jason E. Owens Lic. No. 43475
Licensed Professional Engineer
Printed Name: JASON E. OWENS Date: 9/19/2017

SEH
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

ANOKA COUNTY, MN
CSAH 23
S.A.P. 002-623-017, S.A.P. 244-020-002

EARTHWORK TABULATIONS AND SUMMARY

FILE NO. ANOKC141617
EW1 OF EW1
6 / 94

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MISCELLANEOUS REMOVALS AND ITEMS — C

	ALIGNMENT & STATION	LOCATION	REMOVE PIPE CULVERTS (1)	REMOVE CONCRETE FLUME	REMOVE CURB & GUTTER	REMOVE BITUMINOUS WALK	REMOVE CONCRETE WALK	REMOVE CONCRETE DRIVEWAY PAVEMENT	REMOVE BITUMINOUS DRIVEWAY PAVEMENT	REMOVE BITUMINOUS PAVEMENT	REMOVE BITUMINOUS FLUME	ADJUST VALVE BOX - WATER	RECONSTRUCT DRAINAGE STRUCTURE	MAIL BOX SUPPORT	ADJUST FRAME AND RING CASTING (4)
			LIN FT	LIN FT	LIN FT	SQ FT	SQ FT	SQ FT	SQ FT	SQ YD	EACH	EACH	LIN FT	EACH	EACH
COST PARTICIPATION A - ANOKA COUNTY	SOUTH FRONTAGE RD														
	20+00 - 26+40	LT&RT	123 (2)		907			117	7803	2474			4	2	1
	NORTH FRONTAGE RD 1														
	20+00 - 26+40	LT&RT	45 (3)		528			308	1197	1507				2	4
	GRIGGS AVE														
	10+47 - 17+18	LT&RT	16 (3)			647				37					
	NORTH FRONTAGE RD 2														
	50+00 - 63+47	LT&RT	492 (3)	15	397		486	469	14870	822	2	2	4	2	1
	TRAIL														
	10+00 - 16+37	LT&RT			100		475			23					
	TOTALS		676	15	1932	647	961	894	23870	4863	2	2	8	6	6

SPECIFIC NOTES:
(1) APRONS ARE INCLUDED IN THE REMOVAL LENGTH
(2) CONCRETE CULVERT
(3) CMP CULVERT
(4) SANITARY SEWER MANHOLE

PAVEMENT SAWING — E

	ALIGNMENT & STATION	LOCATION	SAWING CONCRETE PAVEMENT (FULL DEPTH)	SAWING BIT PAVEMENT (FULL DEPTH)
			LIN FT	LIN FT
COST PARTICIPATION A - ANOKA COUNTY	SOUTH FRONTAGE RD			
	20+00 - 26+40	LT & RT		545
	NORTH FRONTAGE RD 1			
	20+00 - 26+40	LT & RT		252
	NORTH FRONTAGE RD 2			
	50+00 - 63+47	LT & RT	20	829
	GRIGGS AVE			
	10+47 - 17+18	LT & RT		111
	TRAIL			
	10+00 - 16+37	LT & RT		121
	TOTALS		20	1858

CLEARING & GRUBBING — D

	ALIGNMENT & STATION	LOCATION	CLEARING	GRUBBING
			TREE	TREE
COST PARTICIPATION A - ANOKA COUNTY	SOUTH FRONTAGE RD			
	14+03 - 14+32	5'RT-15'RT	7	7
	NORTH FRONTAGE RD 2			
	53+15 - 53+54	24' LT	4	4
	57+47	28' LT	2	2
	62+65	8' LT	1	1
	TOTALS		14	14

AGGREGATE — F

COST PARTICIPATION	ALIGNMENT & STATION	LOCATION	DESCRIPTION	AGGREGATE BASE (CV) CLASS 5	AGGREGATE SURFACING (LV,) CLASS 1
				CU YD	CU YD
A	SOUTH FRONTAGE RD				
	20+00 - 26+40	LT&RT	UNDER ROADWAY	540	
	20+00 - 26+40	LT&RT	UNDER C&G	156	
	20+00 - 26+40	LT&RT	UNDER DRIVEWAYS	28	
	20+00 - 26+40	LT	GRAVEL DRIVEWAYS		10
	NORTH FRONTAGE RD 1				
	20+00 - 26+40	LT&RT	UNDER ROADWAY	408	
	20+00 - 26+40	LT&RT	UNDER C&G, MEDIANS	112	
	20+00 - 26+40	LT&RT	UNDER DRIVEWAYS	28	
	GRIGGS AVE				
	10+47 - 17+18	LT&RT	UNDER ROADWAY	57	
	NORTH FRONTAGE RD 2				
	50+00 - 63+47	LT&RT	UNDER ROADWAY	782	
	50+00 - 63+47	LT&RT	UNDER C&G, MEDIANS	260	
	50+00 - 63+47	LT&RT	UNDER DRIVEWAYS	50	
B	GRIGGS AVE				
	10+47 - 17+18	LT&RT	TRAIL	32	1
	CITYWALK_N				
	30+23 - 31.81	LT&RT	UNDER SIDEWALK	18	
	CITYWALK_S				
	40+23 - 44+31	LT&RT	UNDER SIDEWALK	46	
C	TRAIL				
	10+00 - 16+37	LT&RT	TRAIL	101	12
	16+39	LT&RT	UNDER ROADWAY, C&G	13	
	TRAIL CONNECTION				
	5+00 - 5+74	LT&RT	TRAIL	12	1
	TOTALS			2643	24
	COST PARTICIPATION A - ANOKA COUNTY			2421	10
	COST PARTICIPATION B - CITY OF LEXINGTON			96	1
	COST PARTICIPATION C - CITY OF CIRCLE PINES			126	13

MISC. REMOVALS
CLEARING & GRUBBING
PAVEMENT SAWING
AGGREGATE

NO.	BY	DATE	REVISIONS
1	JEO	3/1/18	ADDED REMOVAL OF BITUMINOUS FLUME AND SALVAGE OF MAILBOXES
			AND INSTALLATION OF NEW MAILBOX SUPPORTS. UPDATED THE QUANTITY
			FOR ADJUST FRAME AND RING CASTING.
1	JEO	3/9/18	ADDED RECONSTRUCT DRAINAGE STRUCTURE. UPDATED QUANTITY
			FOR ADJUST FRAME AND RING CASTING.

DESIGN TEAM
DRAWN BY: SAS
DESIGNER: JEO
CHECKED BY: HLR

I hereby certify that this plan was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.
Certified By: Jason E. Owens (Licensed Professional Engineer) Lic. No. 43475
Printed Name: JASON E. OWENS Date: 9/19/2017

SEH
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

ANOKA COUNTY, MN
CSAH 23
S.A.P. 002-623-017, S.A.P. 244-020-002

QUANTITY TABULATIONS

FILE NO. ANOKC141617
TB1 OF TB5

				BITUMINOUS PAVEMENT		G
COST PARTICIPATION	ALIGNMENT & STATION	LOCATION	DESCRIPTION	BITUMINOUS MATERIAL FOR TACK COAT	TYPE SP 9.5 WEARING COURSE MIX (2,B)	TYPE SP 12.5 WEARING COURSE MIX (3,C)
				GALLON	TON	TON
A	SOUTH FRONTAGE RD					
	20+00 - 26+40	LT & RT	ROADWAY	296		665
	20+00 - 26+40	RT	DRIVEWAYS	12	24	
	NORTH FRONTAGE RD 1					
	20+00 - 26+40	LT & RT	ROADWAY	224		504
	20+00 - 26+40	RT	DRIVEWAYS	8	17	
	GRIGGS AVE					
	10+47 - 17+18	LT & RT	ROADWAY	32		88
	NORTH FRONTAGE RD 2					
	50+00 - 63+47	LT & RT	ROADWAY	428		965
	50+00 - 63+47	LT	DRIVEWAYS	18	38	
B	GRIGGS AVE					
	10+47 - 17+18	LT & RT	TRAIL	6	7	
C	TRAIL					
	10+00 - 16+37	LT & RT	TRAIL	56	93	
	10+00 - 16+39	LT & RT	ROADWAY PATCHING	4		5
	TRAIL CONNECTION					
	5+00 - 5+74	LT & RT	TRAIL	8	11	
	TOTALS			1092	190	2227
	COST PARTICIPATION A -ANOKA COUNTY			1018	79	2222
	COST PARTICIPATION B -CITY OF LEXINGTON			6	7	
	COST PARTICIPATION C- CITY OF CIRCLE PINES			68	104	5

BITUMINOUS PAVEMENT

DESIGN TEAM
DRAWN BY: SAS
DESIGNER: JEO
CHECKED BY: HLR

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.
Certified By: Jason E. Owens Lic. No. 43475
Licensed Professional Engineer
Printed Name: JASON E. OWENS Date: 9/19/2017

SEH
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

ANOKA COUNTY, MN
CSAH 23
S.A.P. 002-623-017, S.A.P. 244-020-002

QUANTITY TABULATIONS

FILE NO. ANOKC141617
TB2 OF TB5

COST PARTICIPATION	ALIGNMENT & STATION	LOCATION	DESCRIPTION	INTERSECTION QUADRANT	6" CONCRETE DRIVEWAY PAVEMENT	DRILL & GROUT REINF BAR (EPOXY COATED) 12" BARS	4" CONCRETE WALK	6" CONCRETE WALK	CONCRETE CURB & GUTTER DESIGN B618	6" CONCRETE VALLEY GUTTER	TRUNCATED DOMES	TRUNCATED DOME RADIUS (INFO ONLY)
					SQ YD	EACH	SQ FT	SQ FT	LIN FT	SQ YD	SQ FT	FT
A	SOUTH FRONTAGE RD											
	20+00 - 26+40	LT & RT	C&G, DRIVEWAYS		40				(1) 1741			
	NORTH FRONTAGE RD 1											
	20+00 - 26+40	LT & RT	C&G, DRIVEWAYS, MEDIAN		45		230		(1) 1248	(1) 8		
	NORTH FRONTAGE RD 2											
	50+00 - 63+47		C&G, DRIVEWAYS, MEDIAN		99		89		(1) 2883			
B	GRIGGS AVE											
	40+95	LT	FAN RAMP	SW CSAH 23 & GRIGGS				260			25	40
	40+95	RT	FAN RAMP	SW CSAH 23 & GRIGGS				249			25	40
	41+75	LT	FAN RAMP	NW CSAH 23 & GRIGGS				335			25	30
	41+75	RT	FAN RAMP	NE CSAH 23 & GRIGGS		6		221			25	30
	42+20	RT	ONE-WAY DIRECTIONAL RAMP	FRONTAGE RD & GRIGGS		6		140			16	
	CITYWALK_N											
	30+23 - 31+81		SIDEWALK				948					
	30+11	CENTER	ONE-WAY DIRECTIONAL RAMP	CSAH 23 & NFRONTAGE 2		6		88			12	
	CITYWALK_S											
	40+23 - 44+31		SIDEWALK				2465					
	44+31	LT	ONE-WAY DIRECTIONAL RAMP	SE CSAH 23 & LEXINGTON		6		53			12	
	40+10	CENTER	ONE-WAY DIRECTIONAL RAMP	S HIGHWAY DRIVE		6		86			12	
C	TRAIL											
	10+00 - 16+39		C&G PATCHING						100			
	16+37		ONE-WAY DIRECTIONAL RAMP	SW VILLAGE PARKWAY		14		157			22	50
	16+37		CUT THRU RAMP	VILLAGE PARKWAY		8		119			32	
	16+37		ONE-WAY DIRECTIONAL RAMP	SE VILLAGE PARKWAY		14		126			22	50
	TOTALS				184	66	3732	1834	5972	8	228	
	COST PARTICIPATION A - ANOKA COUNTY				184		319		2936	4		
	COST PARTICIPATION B - CITY OF LEXINGTON					30	3413	1432	2936	4	152	140
	COST PARTICIPATION C - CITY OF CIRCLE PINES					36		402	100		76	

SPECIFIC NOTES:

(1) CURB & GUTTER COST PARTICPATION SPLIT 50% COST PARTICIPATION A AND 50% COST PARTICIPATION B.

CONCRETE AND ADA ITEMS

CULVERTS — I

STRUCTURE NO. FLOWS FROM	STRUCTURE NO. FLOWS TO	STRUCTURE LOCATION ALIGN.	STATION	OFFSET		DRAINAGE STRUCTURES TYPE	INLET ELEV.	OUTLET ELEV.	15" CS PIPE CULVERT LIN FT	18" RC PIPE CULVERT DESIGN 3006 CLASS IV LIN FT	28" SPAN CS PIPE-ARCH CULVERT LIN FT	18" RC PIPE APRON EACH	28" SPAN GS PIPE-ARCH APRON EACH	28" SPAN CS SAFETY APRON AND GRATE DESIGN 3148 EACH	15" CS SAFETY APRON EACH	COARSE AGGREGATE BEDDING (CV) CU YD	GEOTEXTILE FILTER TYPE III SQ YD	RANDOM RIPRAP CLASS II CU YD	GUIDE POST TYPE B EACH	NOTES
CVRT-6	CVRT-8	LAKE	121+78.28	66.4'	RT	APRON	906.64	906.40		72		1				27			1	③
CVRT-8		LAKE	122+62.25	62.0'	RT	APRON						1							1	
CVRT-15	CVRT-17	LAKE	133+54.58	62.1'	LT	APRON	905.80	905.50			85		1			33			1	①
CVRT-17		LAKE	134+45.30	57.8'	LT	APRON							1						1	
CVRT-25	CVRT-27	LAKE	140+25.53	51.5'	LT	APRON	905.29	905.00			79			1		31			1	①
CVRT-27		LAKE	139+37.12	61.0'	LT	APRON								1					1	
CVRT-35	CVRT-37	LAKE	152+30.22	58.7'	LT	APRON	906.04	905.84	52						1	15			1	①
CVRT-37		LAKE	151+73.07	56.4'	LT	APRON									1				1	
EX CVRT-21	EX CVRT-22	LAKE	135+94.83	58.2'	LT	APRON														
EX CVRT-22		LAKE	135+94.29	46.7'	RT	APRON											30	7		②
TOTALS:									52	72	164	2	2	2	2	106	30	7	8	

DRAINAGE — J

STRUCTURE NO. FLOWS FROM	STRUCTURE NO. FLOWS TO	STRUCTURE LOCATION ALIGN.	STATION	OFFSET		DRAINAGE STRUCTURES TYPE	PAY HEIGHT SD-48 LIN FT	CASTING ASSEMBLY TYPE	STEPS REQ'D	TOP OF CASTING ELEV.	OUTLET ELEV.	INLET ELEV.	12" RC PIPE SEWER DESIGN 3006 CLASS V LIN FT	12" RC PIPE APRON EACH	COARSE AGGREGATE BEDDING (CV) CU YD	GUIDE POST TYPE B EACH	NOTES
CB-1	CB-2	DUNLAP	10+60.15	12.6'	RT			R - 3067V		909.00							
	CB-2	DUNLAP	10+60.16	11.8'	RT	CB	3.5		NO		906.09	906.00	21		6		
CB-2	APR-3	DUNLAP	10+59.34	10.5'	LT			R - 3067V		909.00							
	APR-3	DUNLAP	10+59.36	9.7'	LT	CB	3.5		NO		905.98	905.66	105		32		③
APR-3		N_FRONTAGE	56+61.03	25.1'	RT						905.66			1		1	
TOTALS:							7						126	1	38	1	

CASTING ASSEMBLIES — K

CASTING ASSEMBLY	CITY OF LEXINGTON
EACH	
NEENAH R-3067V OR APPROVED EQUAL	2

GENERAL NOTES:
THE OUTLET ELEVATION IS THE INVERT ELEVATION OF THE PIPE AT THE INSIDE EDGE OF THE FLOWS FROM STRUCTURE.
THE INLET ELEVATION IS THE INVERT ELEVATION OF THE PIPE AT THE INSIDE EDGE OF THE FLOWS TO STRUCTURE.
THE INVERT ELEVATIONS ON THE PROFILES ARE AT THE CENTER OF THE STRUCTURE.

THE CASTING ELEVATION AND LOCATION ARE AT THE CENTER OF THE GRATE/COVER.
FOR OFFSET STRUCTURES, THE STRUCTURE LOCATION IS AT THE CENTER OF THE STRUCTURE.

FOR STORM PIPES & CULVERTS WITH APRONS:
THE LOCATION OF THE APRON IS THE OUTLET, INVERT END OF THE APRON.
THE PROFILE LENGTH OF PIPE IS TO THE OUTLET INVERT END OF THE APRON.
THE PIPE LENGTH IN THE TABUATION DOES NOT INCLUDE THE APRON LENGTH.

PLASTIC PIPE IS NOT AN OPTION FOR STORM OR CULVERT PIPE DUE TO LACK OF COVER.

SPECIFIC NOTES:
① TIE ALL JOINTS (INCIDENTAL).
② EXISTING 24" CULVERT. INSTALL RIPRAP PER STANDARD PLATE 3133.
③ TIE LAST 3 JOINTS AT RC APRON (INCIDENTAL).

CULVERTS
DRAINAGE
CASTING ASSEMBLIES

DESIGN TEAM
DRAWN BY:
DESIGNER: JVO
CHECKED BY: DAC

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.
Certified By: _____ Lic. No. 42687
Licensed Professional Engineer
Printed Name: DAN A. CAZANACLI Date: 9/19/2017

SEH
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

ANOKA COUNTY, MN
CSAH 23
S.A.P. 002-623-017, S.A.P. 244-020-002

QUANTITY TABULATIONS

FILE NO. ANOKC141617
TB4 OF TB5

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				TURF ESTABLISHMENT AND EROSION CONTROL																					M
PROJECT	ALIGNMENT	STATION	OFFSET	SILT FENCE, TYPE MS	STORM DRAIN INLET PROTECTION	CULVERT END CONTROLS	FERTILIZER TYPE 1 (1) (10)	FERTILIZER TYPE 3 (2)	FERTILIZER TYPE 4 (3)	LIME (4)	SOIL BED PREPARATION	SEEDING	SEED MIXTURE 21-111 (10)	SEED MIXTURE 33-261	SEED MIXTURE 35-221	EROSION CONTROL BLANKETS CATEGORY 3N	WEED SPRAYING (5)	WEED SPRAY MIXTURE	RAPID STABILIZATION METHOD 2 (10)	FINE FILTER AGGREGATE (CV) (6)	GEOTEXTILE FILTER TYPE I (6)	COARSE AGGREGATE BEDDING (CV) (6)
				LIN FT	EACH	EACH	POUND	POUND	POUND	TON	ACRE	ACRE		POUND	POUND	SQ YD	ACRE	GALLON	ACRE	CU YD	SQ YD	CU YD
S.A.P. 002 - 623 - 017	S_FRONTAGE	10+47 - 13+21	RT				32	32		0.5	0.2	0.5	16		6	774	0.3	1	0.3			
	S_FRONTAGE	10+47 - 16+96	LT	712		1	30	30		0.5	0.2	0.3	15		5	726	0.2	1	0.2			
	S_FRONTAGE	13+21 - 17+18	RT				20	20		0.4	0.2	0.3	10		4	484	0.2	1	0.2			
	S_FRONTAGE2	10+28 - 10+69	LT & RT				16	16		0.2	0.2	0.3	8		3	387	0.2	1	0.2			
	N_FRONTAGE1	20+30 - 26+41	LT & RT				44	44		0.8	0.3	0.5	22		8	1065	0.3	1	0.3			
	GRIGGS	40+73 - 42+25	LT & RT			2	10	10		0.2	0.1	0.2	5		2	242	0.1	1	0.1			
	LAKE	124+25 - 132+68	RT				58		44	1.0	0.3	0.6	29	10		1404	0.3	1	0.3			
	LAKE	134+14 - 141+73	RT		1		360		270	5.5	2.0	3.6	180	63		8712	2.0	1	2.0	8	83	78
	WOODLAND	10+37 - 11+54	LT & RT				6		5	0.2	0.1	0.2	3	1		145	0.1	1	0.1			
	N_FRONTAGE2	50+14 - 63+47	LT		2		38	38		0.6	0.2	0.5	19		7	920	0.3	1	0.3			
	N_FRONTAGE2	50+30 - 63+47	RT (11)			2	160	16	108	2.5	1.0	1.6	80	25	3	3872	0.8	1	0.8			
	S.A.P. 002 - 623 - 017 SUBTOTALS			712	3	5	774	206	426	12.4	4.8	8.6	387	99	38	18731	4.8	11	4.8	8	83	78
CITY	TRAIL	10+08 - 16+39	LT & RT	684			40	40		0.6	0.2	0.4	20		7	968	0.2	1	0.2			
	CITY OF CIRCLE PINES SUBTOTALS			684			40	40		0.6	0.2	0.4	20		7	968	0.2	1	0.2			
	TOTALS			1396	3	5	814	246	426	13	5	9	407	99	45	19699	5	12	5	8	83	78

(7) CURB-CUT EROSION CONTROL					L
CURB-CUT LOCATION			GEOTEXTILE FILTER TYPE IV	RANDOM RIPRAP CLASS III	CONCRETE DRAINAGE FLUME	NOTES
ALIGNMENT	STATION	OFFSET	SQ YD	CU YD	SQ YD	
N_FRONTAGE2	62+66	RT	9	2	5	(8)
N_FRONTAGE2	57+91	RT	10	3	5	(8)
N_FRONTAGE2	53+90	RT			5	(8)
N_FRONTAGE2	50+50	RT	11	3	5	(8)
WOODLAND	10+87	LT	16	5	5	(8)
S_FRONTAGE	16+78	LT	25	8	5	(8) (9)
TOTALS:			71	20	30	

SPECIFIC NOTES:

(1) COMMERCIAL FERTILIZER ANALYSIS 10-10-20 (QUANTITY ASSUMES 1 APPLICATION AT 200 LB/ACRE WITH 21-111 SEED).
(2) COMMERCIAL FERTILIZER ANALYSIS 22-5-10 (QUANTITY ASSUMES 1 APPLICATION AT 200 LB/ACRE WITH 35-221 SEED).
(3) COMMERCIAL FERTILIZER ANALYSIS 17-10-7 (QUANTITY ASSUMES 1 APPLICATION AT 150 LB/ACRE WITH 33-261 SEED).
(4) QUANTITY ASSUMES 1 APPLICATION AT 3 TONS/ACRE.
(5) QUANTITY ASSUMES APPLICATION FOR HALF OF SEEDING AREA. WEED SPRAYING TO BE DONE THROUGHOUT THE PROJECT TO CONTROL WEEDS. SUBMIT A PESTICIDE APPLICATION RECORD TO THE ENGINEER FOR EACH APPLICATION. WEED SPRAYING WILL BE MEASURED BY THE AREA COVERED OR AREA SPOT SPRAYED BY HERBICIDE AND SUCCESSFULLY APPLIED AS INDICATED BY DEAD WEEDS. WEED SPRAY MIXTURE WILL BE MEASURED BY VOLUME OF HERBICIDE FURNISHED AND USED.
(6) QUANTITY IS FOR THE ROCK BERM LOCATED IN THE FILTRATION BASIN. SEE PLAN SHEET 53 .
(7) SEE SHEET 16 FOR CURB-CUT EROSION CONTROL DETAIL.
(8) STATION LOCATION IS AN ESTIMATE. CONSTRUCT CURB-CUT AT CURB LOW-POINT (INCIDENTAL)
(9) RIPRAP EAST BOUNDARY SHALL EXTEND FROM HIGH SIDE OF CONCRETE DRAINAGE FLUME TO 2' EAST OF CVRT-6 APRON OUTLET
(10) TEMPORARY SEEDING/STABILIZATION AREAS ARE TO BE DETERMINED BY THE ENGINEER. QUANTITY ASSUMES SAME COVERAGE AREA AS PERMANENT SEEDING.
(11) QUANTITY INCLUDES CITY WALK N & S AREAS.

TURF ESTABLISHMENT & EROSION CONTROL
CURB-CUT EROSION CONTROL

DESIGN TEAM
DRAWN BY:
DESIGNER: JVO
CHECKED BY: DAC

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.
Certified By: Dan Cazanacli Lic. No. 42687
Licensed Professional Engineer
Printed Name: DAN A. CAZANACLI Date: 9/19/2017

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ANOKA COUNTY, MN
CSAH 23
S.A.P. 002-623-017, S.A.P. 244-020-002

QUANTITY TABULATIONS

FILE NO. ANOKC141617
TB5 OF TB5

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UTILITIES TABULATION - POWER

STATION TO STATION	OFFSET (FT)	DESCRIPTION	OWNER	ACTION			REMARKS
				ADJUST	RELOCATE	LEAVE AS IS	
LAKE (CSAH 23)							
141+46 - 147+62	724L - 109L	OVERHEAD ELECTRIC LINE	CONNEXUS ENERGY			X	
144+14 - 145+54	299L - 184L	OVERHEAD ELECTRIC LINE	CONNEXUS ENERGY			X	
144+61 - 145+72	584L - 491L	OVERHEAD ELECTRIC LINE	CONNEXUS ENERGY			X	
144+96 - 147+05	399L - 64L	OVERHEAD ELECTRIC LINE	CONNEXUS ENERGY			X	
145+72 - 146+69	491L - 412L	OVERHEAD ELECTRIC LINE	CONNEXUS ENERGY	X			
146+63 - 150+22	465L - 48L	P-BUR	CONNEXUS ENERGY	X			
149+82 - 151+14	298L - 293L	OVERHEAD ELECTRIC LINE	CONNEXUS ENERGY			X	
151+08 - 151+51	377L - 124L	OVERHEAD ELECTRIC LINE	CONNEXUS ENERGY			X	
151+14 - 152+80	293L - 266L	OVERHEAD ELECTRIC LINE	CONNEXUS ENERGY			X	
151+14 - 152+90	495L - 293L	OVERHEAD ELECTRIC LINE	CONNEXUS ENERGY			X	
153+23 - 160+55	33R - 363R	P-BUR	CONNEXUS ENERGY			X	
100+58 - 106+29	937L - 279L	OVERHEAD ELECTRIC LINE	XCEL ENERGY			X	
103+90 - 106+32	469R - 722R	OVERHEAD ELECTRIC LINE	XCEL ENERGY			X	
108+20 - 114+14	334R - 628R	OVERHEAD ELECTRIC LINE	XCEL ENERGY			X	
111+20 - 114+14	339R - 677R	OVERHEAD ELECTRIC LINE	XCEL ENERGY			X	
112+38 - 130+96	697L - 868R	P-BUR	XCEL ENERGY	X			
112+52 - 115+25	733L - 432L	OVERHEAD ELECTRIC LINE	XCEL ENERGY			X	
114+93 - 121+89	63R - 1023R	OVERHEAD ELECTRIC LINE	XCEL ENERGY	X			
115+07 - 118+45	309L - 217L	OVERHEAD ELECTRIC LINE	XCEL ENERGY			X	
117+84 - 128+17	78L - 73L	OVERHEAD ELECTRIC LINE	XCEL ENERGY			X	
123+27 - 125+31	302R - 402R	OVERHEAD ELECTRIC LINE	XCEL ENERGY			X	
124+09 - 126+55	477R - 751R	OVERHEAD ELECTRIC LINE	XCEL ENERGY			X	
124+97 - 129+90	587L - 158L	OVERHEAD ELECTRIC LINE	XCEL ENERGY			X	
126+07 - 132+36	886L - 163L	OVERHEAD ELECTRIC LINE	XCEL ENERGY			X	
127+28 - 128+44	304R - 402R	OVERHEAD ELECTRIC LINE	XCEL ENERGY			X	
127+67 - 128+73	402R - 576R	OVERHEAD ELECTRIC LINE	XCEL ENERGY			X	
128+17 - 133+16	635L - 73L	OVERHEAD ELECTRIC LINE	XCEL ENERGY			X	
128+44 - 129+22	246R - 456R	OVERHEAD ELECTRIC LINE	XCEL ENERGY			X	
129+15 - 131+23	741L - 365L	OVERHEAD ELECTRIC LINE	XCEL ENERGY			X	
130+65 - 138+85	855L - 135L	OVERHEAD ELECTRIC LINE	XCEL ENERGY			X	
131+49 - 134+18	447L - 214L	OVERHEAD ELECTRIC LINE	XCEL ENERGY			X	
131+70 - 140+27	421R - 567R	OVERHEAD ELECTRIC LINE	XCEL ENERGY			X	
132+23 - 134+54	529L - 329L	OVERHEAD ELECTRIC LINE	XCEL ENERGY			X	
137+23 - 144+89	374R - 1249R	OVERHEAD ELECTRIC LINE	XCEL ENERGY			X	
143+24 - 149+46	240R - 682R	OVERHEAD ELECTRIC LINE	XCEL ENERGY			X	
144+38 - 144+53	186R - 333R	OVERHEAD ELECTRIC LINE	XCEL ENERGY			X	
145+54 - 158+87	492L - 1185R	P-BUR	XCEL ENERGY			X	
148+29 - 150+16	315R - 602R	OVERHEAD ELECTRIC LINE	XCEL ENERGY			X	
86+71 - 106+22	146R - 345R	OVERHEAD ELECTRIC LINE	XCEL ENERGY			X	
91+36 - 111+80	820L - 946R	P-BUR	XCEL ENERGY			X	
TRAIL							
6+27 - 10+78	542L - 1486R	P-BUR	XCEL ENERGY			X	
8+06 - 16+14	262L - 85L	P-BUR	CONNEXUS ENERGY			X	
9+16 - 15+23	326L - 155L	P-BUR	CONNEXUS ENERGY			X	
10+26 - 15+97	79L - 267R	P-BUR	CONNEXUS ENERGY			X	

UTILITIES TABULATION - COMMUNICATION

STATION TO STATION	OFFSET (FT)	DESCRIPTION	OWNER	ACTION			REMARKS
				ADJUST	RELOCATE	LEAVE AS IS	
LAKE (CSAH 23)							
100+03 - 120+26	89L - 1684R	COM	CENTURYLINK			X	
104+09 - 107+61	275R - 291R	COM	CENTURYLINK			X	
105+09 - 105+62	477R - 538R	COM	CENTURYLINK			X	
107+71 - 114+97	380R - 593R	COM	CENTURYLINK			X	
109+99 - 128+32	75L - 650R	FIBER OPTIC BURIED	CENTURYLINK			X	
110+20 - 139+36	87L - 74L	COM	CENTURYLINK	X			
112+52 - 118+67	490L - 81L	COM	CENTURYLINK			X	
113+94 - 119+60	622L - 80L	COM	CENTURYLINK			X	
114+06 - 122+29	199R - 1145R	COM	CENTURYLINK			X	
116+41 - 118+13	647L - 497L	COM	CENTURYLINK			X	
116+94 - 119+15	614L - 361L	COM	CENTURYLINK			X	
117+81 - 125+06	90L - 440R	COM	CENTURYLINK			X	
117+95 - 120+69	586L - 273L	COM	CENTURYLINK			X	
118+31 - 121+17	493L - 166L	COM	CENTURYLINK			X	
118+71 - 121+76	80L - 79R	COM	CENTURYLINK			X	
123+70 - 125+06	440R - 616R	COM	CENTURYLINK			X	
124+90 - 125+35	375R - 426R	COM	CENTURYLINK			X	
125+06 - 125+51	389R - 440R	COM	CENTURYLINK			X	
125+35 - 130+51	375R - 823R	COM	CENTURYLINK			X	
125+88 - 129+44	288R - 449R	COM	CENTURYLINK			X	
126+57 - 126+70	401L - 76L	COM	CENTURYLINK			X	
126+70 - 133+08	576L - 201L	COM	CENTURYLINK			X	
129+91 - 132+28	362L - 157L	COM	CENTURYLINK			X	
130+29 - 137+93	818L - 156L	COM	CENTURYLINK			X	
130+44 - 132+74	371L - 171L	COM	CENTURYLINK			X	
131+57 - 134+74	403L - 128L	COM	CENTURYLINK			X	
131+81 - 134+87	430L - 164L	COM	CENTURYLINK			X	
132+55 - 136+77	515L - 147L	COM	CENTURYLINK			X	
134+06 - 154+08	913L - 712R	COM	CENTURYLINK			X	
134+14 - 152+04	555L - 1004R	FIBER OPTIC BURIED	CENTURYLINK	X			
138+74 - 140+75	449L - 218L	COM	CENTURYLINK			X	
139+14 - 154+57	117L - 82L	COM	CENTURYLINK	X			
144+88 - 147+04	171L - 166L	COM	CENTURYLINK			X	
145+46 - 170+01	131L - 79L	FIBER OPTIC BURIED	CENTURYLINK			X	
146+78 - 148+33	319L - 116L	COM	CENTURYLINK			X	
147+04 - 153+81	166L - 123L	COM	CENTURYLINK			X	
148+54 - 151+09	334R - 628R	COM	CENTURYLINK			X	
148+59 - 151+78	153R - 635R	COM	CENTURYLINK			X	
149+06 - 153+43	280R - 730R	FIBER OPTIC BURIED	CENTURYLINK			X	
149+81 - 150+70	191R - 277R	COM	CENTURYLINK			X	
152+33 - 153+28	204R - 287R	COM	CENTURYLINK			X	
80+83 - 113+10	80L - 1125R	COM	CENTURYLINK			X	
9+34 - 14+46	508L - 125L	COM	CENTURYLINK			X	
90+11 - 109+99	86L - 70L	FIBER OPTIC BURIED	CENTURYLINK			X	
90+24 - 100+53	77L - 58L	COM	CENTURYLINK			X	
90+25 - 101+60	93R - 99R	COM	CENTURYLINK			X	
95+21 - 100+03	507L - 89L	COM	CENTURYLINK			X	
99+03 - 109+94	104L - 83L	COM	CENTURYLINK			X	
99+33 - 108+81	556L - 133L	COM	CENTURYLINK			X	
99+67 - 104+92	770L - 164L	COM	CENTURYLINK			X	
10+08 - 18+51	82L - 179R	COM	ZAYO BANDWIDTH			X	
10+77 - 13+39	381L - 904R	COM	ZAYO BANDWIDTH			X	
122+29 - 147+57	40R - 665R	COM	ZAYO BANDWIDTH	X		X	
128+46 - 139+53	1787L - 40R	COM	ZAYO BANDWIDTH			X	
149+11 - 157+84	268L - 747R	COM	ZAYO BANDWIDTH			X	
TRAIL							
-4+08 - 10+77	165R - 1871R	COM	CENTURYLINK			X	
4+50	37R - 1519R	COM	CENTURYLINK			X	
5+87 - 17+03	183L - 897R	FIBER OPTIC BURIED	CENTURYLINK			X	
8+78	423L - 37R	COM	CENTURYLINK			X	
8+78 - 17+73	166L - 37R	COM	CENTURYLINK			X	
10+50 - 10+71	359R - 868R	COM	CENTURYLINK			X	
10+58 - 10+74	285R - 322R	COM	CENTURYLINK			X	
10+71 - 10+78	292R - 896R	FIBER OPTIC BURIED	CENTURYLINK			X	
17+10	220L - 90L	FIBER OPTIC BURIED	CENTURYLINK			X	

UTILITY CONTACTS [N]

THE FOLLOWING UTILITY OWNERS HAVE FACILITIES WITHIN THE LIMITS OF THIS PROJECT

XCEL ENERGY
ZAYO GROUP
CENTER POINT ENERGY
CENTURYLINK
CITY OF BLAINE
METROPOLITAN COUNCIL
CONNEXUS ENERGY
CITY OF CIRCLE PINES

GENERAL NOTES:

1. ALL UTILITY WORK SHOWN ON THESE SHEETS SHALL BE DONE BY OTHERS UNLESS NOTED.
2. ALL RELOCATES AND ADJUSTMENTS SUBJECT TO COUNTY AND CITY RIGHT OF WAY.
3. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO UTILIZE THE GOPHER STATE ONE CALL EXCAVATION NOTICE SYSTEM REQUIRED BY MINNESOTA STATUTE, CHAPTER 216D FOR ALL UNDERGROUND UTILITY LOCATIONS.
4. THE SUBSURFACE UTILITY INFORMATION IN THIS PLAN IS UTILITY QUALITY LEVEL D. THIS UTILITY QUALITY LEVEL WAS DETERMINED ACCORDING TO THE GUIDELINES OF CI/ASCE 38-02, ENTITLED "STANDARD GUIDELINES FOR THE COLLECTION AND DEPICTION OF EXISTING SUBSURFACE UTILITY DATA".
5. THE REMARKS COLUMN IS BASED ON THE BEST INFORMATION AVAILABLE AND MAY NOT REFLECT THE ACTUAL EFFECTS ON THE UTILITIES BY CONSTRUCTION. ACTUAL DETERMINATIONS WILL BE MADE IN THE FIELD DURING CONSTRUCTION.
6. SOME UTILITY RELOCATIONS MAY OCCUR IN ADVANCE OF CONSTRUCTION. IF SO, THE UTILITY LOCATIONS SHOWN IN THESE PLANS MAY NOT REFLECT THE CURRENT LOCATION OF THOSE UTILITIES AT THE TIME OF CONSTRUCTION.

POWER
COMMUNICATION

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(USERNAME) 2/13/2018 8:00:20 PM

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: SAS				
DESIGNER: JEO				
CHECKED BY: HLR				

I hereby certify that this plan was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.
Certified By: Jason E. Owens Lic. No. 43475
Licensed Professional Engineer
Printed Name: JASON E. OWENS Date: 9/19/2017

SEH
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

ANOKA COUNTY, MN
CSAH 23
S.A.P. 002-623-017, S.A.P. 244-020-002

INPLACE UTILITY TABULATIONS

FILE NO. ANOKC141617
UT1 OF UT2
12/94

UTILITIES TABULATION - GAS

STATION TO STATION	OFFSET (FT)	DESCRIPTION	OWNER	ACTION			REMARKS
				ADJUST	RELOCATE	LEAVE AS IS	
LAKE (CSAH 23)							
89+26 - 104+60	375R - 407R	GAS	CENTER POINT ENERGY			X	
98+62 - 101+42	453L - 110L	GAS	CENTER POINT ENERGY			X	
103+10 - 105+59	402L - 115L	GAS	CENTER POINT ENERGY			X	
103+10 - 119+08	116L - 115L	GAS	CENTER POINT ENERGY			X	
103+38 - 118+05	159R - 160R	GAS	CENTER POINT ENERGY			X	
104+60 - 105+18	400R - 438R	GAS	CENTER POINT ENERGY			X	
105+18 - 106+87	438R - 584R	GAS	CENTER POINT ENERGY			X	
106+68 - 108+68	495R - 669R	GAS	CENTER POINT ENERGY			X	
106+68 - 109+59	159R - 495R	GAS	CENTER POINT ENERGY			X	
111+40 - 112+80	278L - 116L	GAS	CENTER POINT ENERGY			X	
111+91 - 118+05	159R - 867R	GAS	CENTER POINT ENERGY	X			
115+62 - 117+69	545L - 365L	GAS	CENTER POINT ENERGY	X			
116+43 - 118+60	659L - 469L	GAS	CENTER POINT ENERGY			X	
117+45 - 119+71	337L - 141L	GAS	CENTER POINT ENERGY			X	
117+45 - 120+05	636L - 337L	GAS	CENTER POINT ENERGY			X	
118+05 - 122+48	127R - 188R	GAS	CENTER POINT ENERGY			X	
119+08 - 129+98	134L - 787R	GAS	CENTER POINT ENERGY			X	
119+49 - 119+71	141L - 116L	GAS	CENTER POINT ENERGY			X	
119+70 - 129+74	105L - 101L	GAS	CENTER POINT ENERGY			X	
122+81 - 130+44	160R - 161R	GAS	CENTER POINT ENERGY			X	
123+07 - 124+96	349R - 566R	GAS	CENTER POINT ENERGY			X	
124+48 - 126+37	472R - 697R	GAS	CENTER POINT ENERGY			X	
126+70 - 130+48	699L - 369L	GAS	CENTER POINT ENERGY			X	
126+76 - 131+35	535L - 136L	GAS	CENTER POINT ENERGY			X	
128+20 - 135+75	818L - 161L	GAS	CENTER POINT ENERGY			X	
129+70 - 130+81	407L - 279L	GAS	CENTER POINT ENERGY			X	
129+98 - 132+87	455R - 787R	GAS	CENTER POINT ENERGY			X	
130+81 - 133+65	407L - 160L	GAS	CENTER POINT ENERGY			X	
132+06 - 132+76	562L - 482L	GAS	CENTER POINT ENERGY			X	
132+47 - 138+29	699L - 194L	GAS	CENTER POINT ENERGY			X	
132+76 - 137+35	562L - 162L	GAS	CENTER POINT ENERGY			X	
134+07 - 138+75	621L - 215L	GAS	CENTER POINT ENERGY			X	
138+75 - 141+55	538L - 215L	GAS	CENTER POINT ENERGY			X	
141+57 - 143+78	218R - 467R	GAS	CENTER POINT ENERGY			X	
142+33 - 146+37	108L - 99L	GAS	CENTER POINT ENERGY			X	
143+78 - 148+71	218R - 638R	GAS	CENTER POINT ENERGY			X	
144+12 - 145+16	119R - 246R	GAS	CENTER POINT ENERGY			X	
144+92 - 146+43	435R - 620R	GAS	CENTER POINT ENERGY			X	
145+16 - 146+39	115R - 119R	GAS	CENTER POINT ENERGY			X	
146+37 - 146+39	114L - 115R	GAS	CENTER POINT ENERGY			X	
146+37 - 152+12	714L - 114L	GAS	CENTER POINT ENERGY			X	
146+80 - 147+14	142L - 115L	GAS	CENTER POINT ENERGY			X	
147+14 - 150+96	119L - 115L	GAS	CENTER POINT ENERGY			X	
148+60 - 150+67	395R - 628R	GAS	CENTER POINT ENERGY			X	
152+04 - 154+22	531L - 282L	GAS	CENTER POINT ENERGY			X	

UTILITIES TABULATION - SANITARY

STATION TO STATION	OFFSET (FT)	DESCRIPTION	OWNER	ACTION			REMARKS
				ADJUST	RELOCATE	LEAVE AS IS	
LAKE (CSAH 23)							
103+25 R 1 - 104+60 R 1	375R - 407R	SAN	CITY OF BLAINE			X	
93+55 R 1 - 103+25 R 1	375R - 377R	SAN	CITY OF BLAINE			X	
146+72	85 L	SAN MH	CITY OF BLAINE	X			
TRAIL							
10+95 R 1 - 26+58 R 1	83R - 1016R	SANITARY REINFORCED PIPE	METROPOLITAN COUNCIL			X	
11+36 R 1 - 16+19 R 1	77R - 703R	SAN	CITY OF CIRCLE PINES			X	
16+19 R 1 - 16+53 R 1	31R - 77R	SAN	CITY OF CIRCLE PINES			X	

UTILITIES TABULATION - WATER

STATION TO STATION	OFFSET (FT)	DESCRIPTION	OWNER	ACTION			REMARKS
				ADJUST	RELOCATE	LEAVE AS IS	
LAKE (CSAH 23)							
89+88 - 103+98	87R - 367R	WATER	CITY OF BLAINE			X	
99+25 - 101+38	105R	WATER	CITY OF BLAINE			X	
101+38 - 110+38	105R - 892R	WATER	CITY OF BLAINE			X	
102+56 - 106+41	150R - 208R	WATER	CITY OF BLAINE			X	
102+71	221R	WATER VLV	CITY OF BLAINE			X	
103+18	151R	WATER VLV	CITY OF BLAINE			X	
103+23	171R	FIRE HYD	CITY OF BLAINE			X	
103+23 - 103+24	151R - 171R	WATER	CITY OF BLAINE			X	
103+94	344R	FIRE HYD	CITY OF BLAINE			X	
103+94 - 104+07	344R - 355R	WATER	CITY OF BLAINE			X	
103+98 - 104+14	346R - 365R	WATER	CITY OF BLAINE			X	
146+80	110 L	WATER VLV	CITY OF BLAINE	X			
147+44	95 L	WATER VLV	CITY OF BLAINE	X			
150+40 - 170+54	42R - 519R	WATER	CITY OF CIRCLE PINES			X	
TRAIL							
10+04 - 23+71	65R - 655R	WATER	CITY OF CIRCLE PINES			X	

GAS
SANITARY
WATER

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: SAS				
DESIGNER: JEO				
CHECKED BY: HLR				

I hereby certify that this plan was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.
Certified By: Jason E. Owens Lic. No. 43475
Licensed Professional Engineer
Printed Name: JASON E. OWENS Date: 9/19/2017

SEH
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

ANOKA COUNTY, MN
CSAH 23
S.A.P. 002-623-017, S.A.P. 244-020-002

INPLACE UTILITY TABULATIONS

FILE NO. ANOKC141617
UT2 OF UT2
13 / 94

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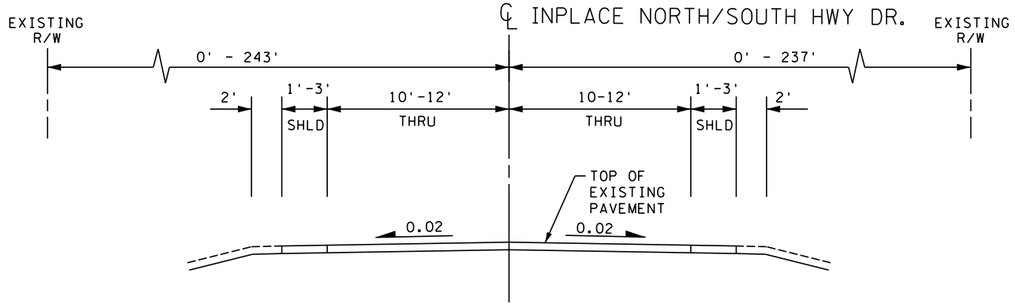
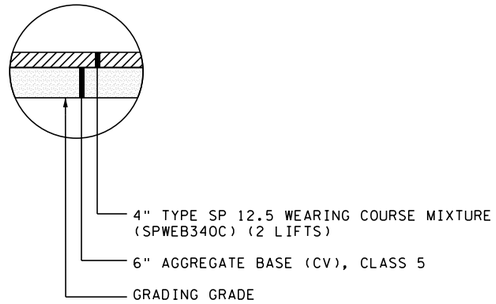
INPLACE
TYPICAL SECTION - NORTH/SOUTH HIGHWAY DRIVE

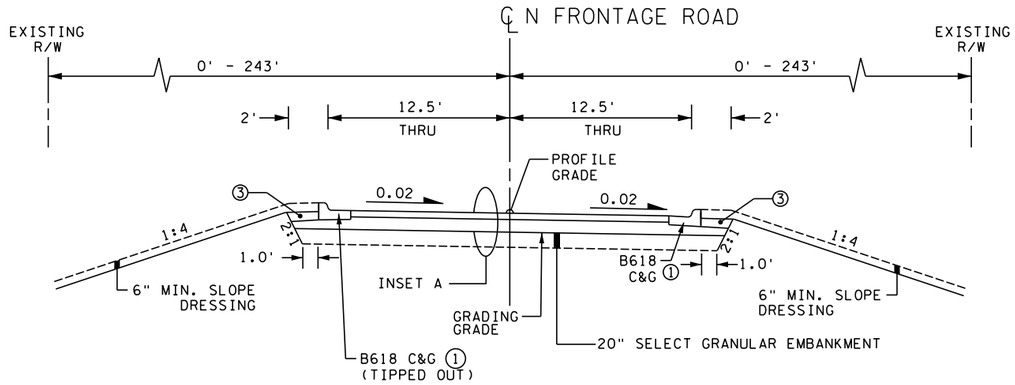


INSET A



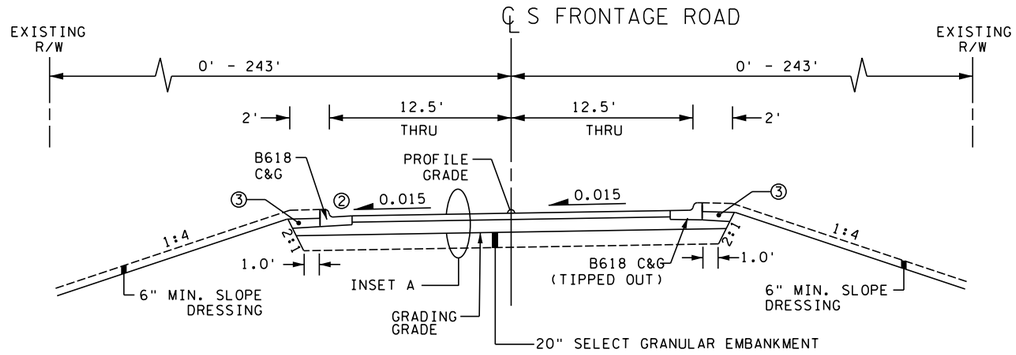
TYPICAL SECTION 1
N FRONTAGE 1, N FRONTAGE 2

N FRONTAGE 1 STA. 20+29.94 - 26+39.43
N FRONTAGE 2 STA. 50+00.00 - 63+46.58



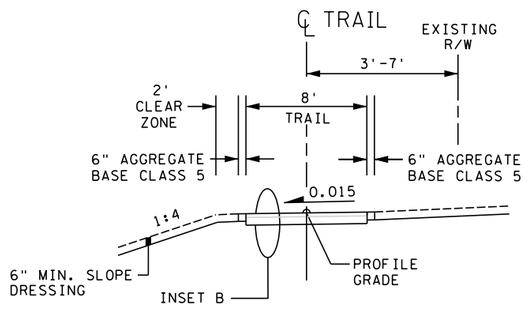
TYPICAL SECTION 2
S FRONTAGE, S FRONTAGE 2

S FRONTAGE STA. 10+47.00 - 17+17.52
S FRONTAGE 2 STA. 10+00.00 - 10+68.75

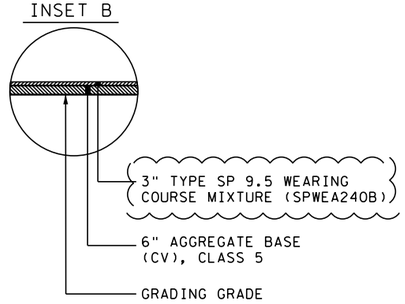


TYPICAL SECTION 3
TRAIL, TRAIL CONN.

TRAIL STA. 10+09.86 - 16+33.16
TRAIL CONN. STA. 5+01.30 - 5+75.05



INSET B



SPECIFIC NOTES:

① CURB IS ON SOUTH SIDE ONLY OF FRONTAGE 1 BETWEEN STATION 20+29 - 22+30.

② EDGE OF THRU LANE TIES INTO EXISTING PAVEMENT AT S FRONTAGE 2 STATION 10+45.

③ BACKFILL WITH SUITABLE GRADING MATERIAL.

GENERAL NOTES:

ALL CROSS SLOPES ARE IN FOOT PER FOOT.

MAXIMUM ROLLOVER 0.07 PER FOOT.

UNLESS OTHERWISE SPECIFIED, CLASS 5 AGGREGATE WILL EXTEND 1.0' MIN. BEYOND BACK OF CURB OR EDGE OF BITUMINOUS BASE COURSE.

BITUMINOUS DRIVEWAYS ARE 4" BITUMINOUS (2 LIFTS) ON 6" AGGREGATE BASE.

CONCRETE DRIVEWAYS ARE 6" CONCRETE ON 6" AGGREGATE BASE.

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: SAS	1	JEO	3/8/18	ADDED A NOTE TO CLARIFY THE DRIVEWAY SECTIONS
DESIGNER: JEO				REMOVED THE REQUIRED TWO LIFTS ON INSET B
CHECKED BY: HLR				

I hereby certify that this plan was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.
Certified By: Jason E. Owens Lic. No. 43475
Licensed Professional Engineer
Printed Name: JASON E. OWENS Date: 9/19/2017

SEH
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ST. PAUL, MN 55110

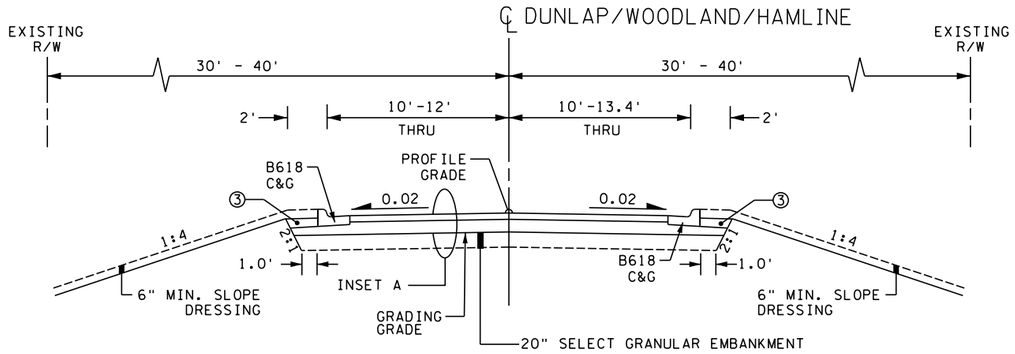
ANOKA COUNTY, MN
CSAH 23
S.A.P. 002-623-017, S.A.P. 244-020-002

TYPICAL SECTIONS
INPLACE SERVICE ROAD, N FRONTAGE 1, N FRONTAGE 2, S FRONTAGE, S FRONTAGE 2, AND TRAIL

FILE NO. ANOKC141617
TS1 OF TS2
14 / 94

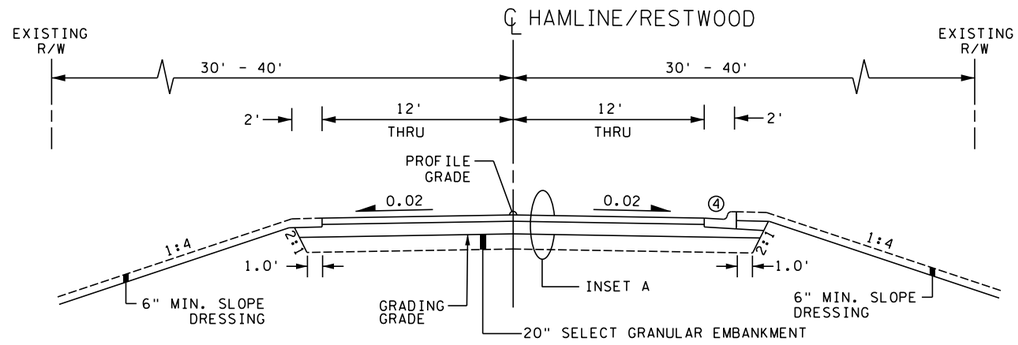
TYPICAL SECTION 4
DUNLAP, WOODLAND, HAMLINE

DUNLAP STA. 10+00.00 - 10+65.20
WOODLAND STA. 10+38.25 - 11+53.11
HAMLINE STA. 10+84.79 - 11+77.41



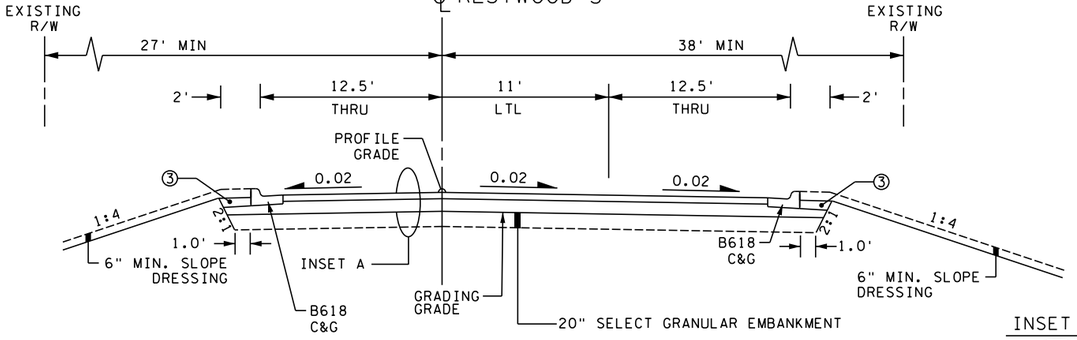
TYPICAL SECTION 5
RESTWOOD, HAMLINE

HAMLINE STA. 10+50.00 - 10+84.79
RESTWOOD STA. 30+00.00 - 31+45.64



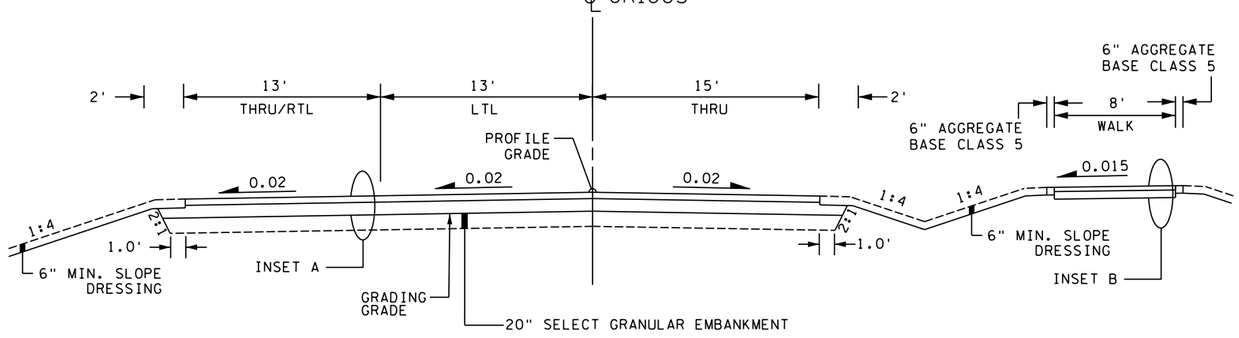
TYPICAL SECTION 6
RESTWOOD S

RESTWOOD S STA 10+00.00 - 12+09.20



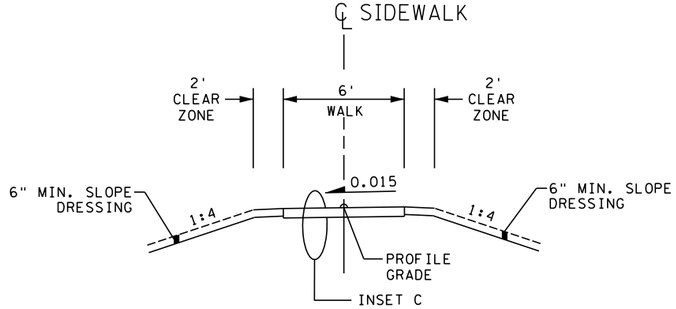
TYPICAL SECTION 7
GRIGGS

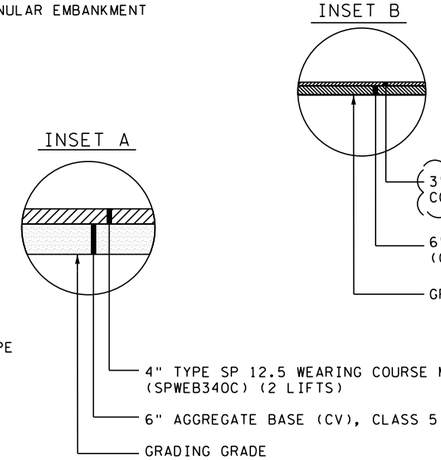
GRIGGS STA. 41+71.70 - 42+24.84

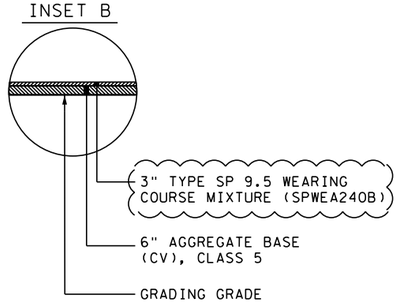


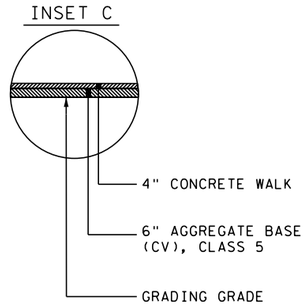
TYPICAL SECTION 8
CITYWALK N AND CITYWALK S

CITYWALK N STA. 30+10.00 - 31+80.87
CITYWALK S STA. 40+07.58 - 44+31.62









SPECIFIC NOTES:

③ BACKFILL WITH SUITABLE GRADING MATERIAL.

④ B618 C&G STARTS AT STA. 30+79.00 ON RESTWOOD.

GENERAL NOTES:

ALL CROSS SLOPES ARE IN FOOT PER FOOT.

MAXIMUM ROLLOVER 0.07 PER FOOT.

UNLESS OTHERWISE SPECIFIED, CLASS 5 AGGREGATE WILL EXTEND 1.0' MIN. BEYOND BACK OF CURB OR EDGE OF BITUMINOUS BASE COURSE.

BITUMINOUS DRIVEWAYS ARE 4" BITUMINOUS (2 LIFTS) ON 6" AGGREGATE BASE.

CONCRETE DRIVEWAYS ARE 6" CONCRETE ON 6" AGGREGATE BASE.

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: SAS	1	JEO	3/8/18	ADDED A NOTE TO CLARIFY THE DRIVEWAY SECTIONS
DESIGNER: JEO				REMOVED THE REQUIRED TWO LIFTS ON INSET B
CHECKED BY: HLR				

I hereby certify that this plan was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.
Certified By: Jason E. Owens Lic. No. 43475
Licensed Professional Engineer
Printed Name: JASON E. OWENS Date: 9/19/2017

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ANOKA COUNTY, MN
CSAH 23
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TYPICAL SECTIONS
DUNLAP, WOODLAND, RESTWOOD, HAMLINE, GRIGGS, RESTWOOD S

FILE NO. ANOKC141617
TS2 OF TS2
15 / 94

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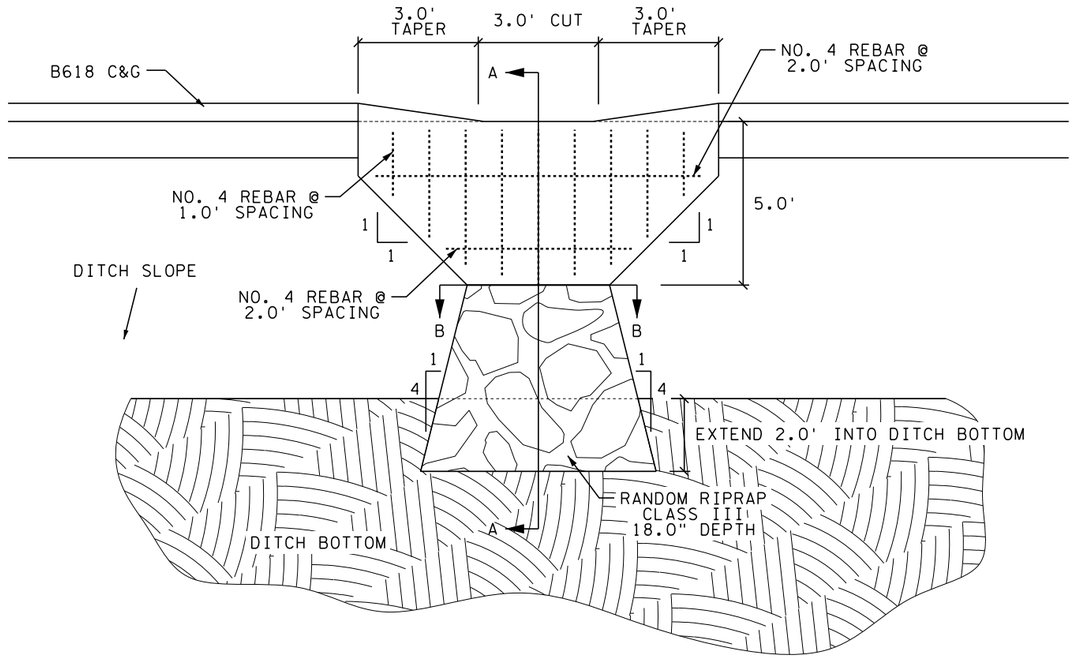
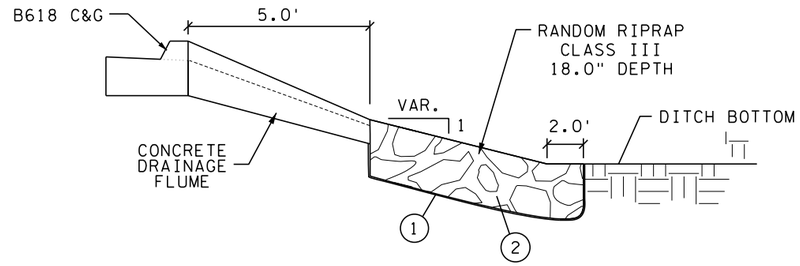
11:33:57 AM 3/9/2018 (USERNAME)

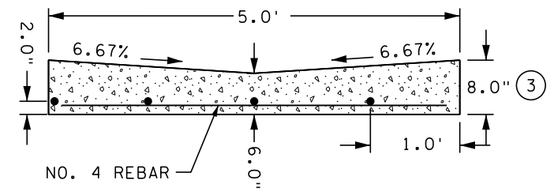
CURB-CUT CONCRETE DRAINAGE FLUME & RIPRAP DETAIL (4)



SECTION A - A



SECTION B - B



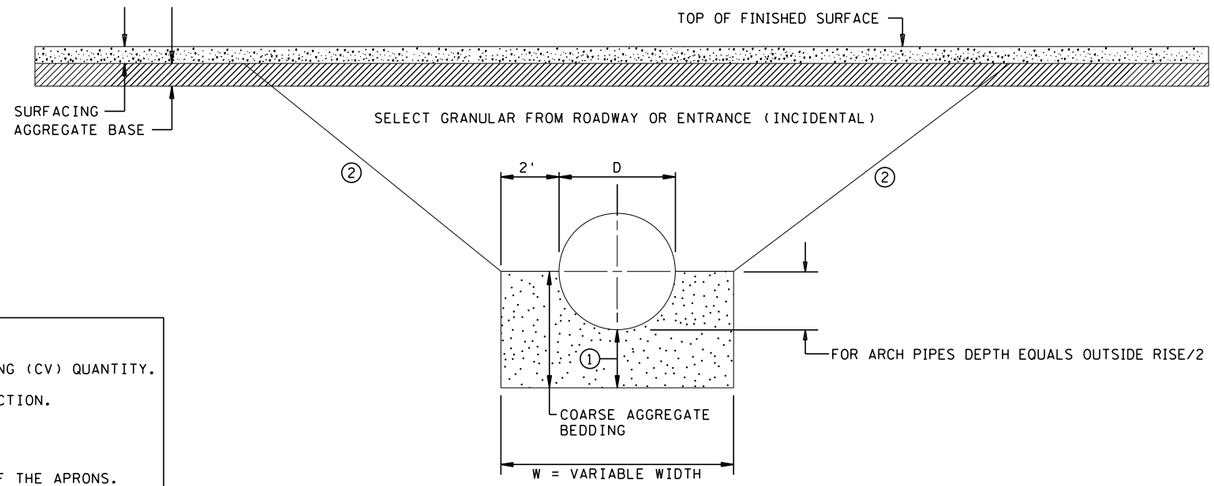
NOTES:

(1) GEOTEXTILE FILTER, SPEC 3733, SHALL COVER THE BOTTOM AND SIDES OF THE AREA EXCAVATED FOR THE RIPRAP, GRANULAR FILTER MATERIALS.

(2) GRANULAR FILTER, SPEC 3601, MAY BE USED AS A CUSHION LAYER. PLACE FILTER PER SPEC 2511. FILTER LAYER IS INCIDENTAL.

(3) PROVIDE A MINIMUM OF 8" CONCRETE ON WING TAPER SECTION. CONCRETE THICKNESS WILL BE MORE THAN 8" AT TOP OF CURB TAPER IN ORDER TO PROVIDE DEPTH FOR CONNECTING REINFORCEMENT TO GO INTO THE GUTTER SECTION.

(4) CURB-CUT & TAPERS ARE INCIDENTAL. FLUME PAID FOR AS CONCRETE DRAINAGE FLUME. SEE CURB-CUT EROSION CONTROL TAB.



LEGEND:

D = OUTSIDE DIAMETER OF ROUND PIPE OR OUTSIDE SPAN OF ARCH PIPE

SPECIFIC NOTES:

(1) DEPTH SHALL BE 1.0' UNLESS MODIFIED BY THE SOILS ENGINEER

(2) TAPER SHALL BE MIN. 1:2 UNLESS MODIFIED BY SOILS ENGINEER

GENERAL NOTES:

EXCAVATION IS INCIDENTAL TO THE COARSE AGGREGATE BEDDING (CV) QUANTITY.

SPEC. 2451 SHALL APPLY TO BEDDING AND BACKFILL CONSTRUCTION.

SELECT GRANULAR ON TOP HALF OF PIPE DIAMETER AND ABOVE IS INCIDENTAL TO THE ROADWAY QUANTITIES.

COARSE AGGREGATE BEDDING SHALL BE PLACED TO THE END OF THE APRONS.

GRANULAR TREATMENT SHALL BE PLACED TO THE END OF THE BARREL AND TAPER TO THE GRADING GRADE P.I. WITHIN THE LIMITS OF THE AGGREGATE BEDDING.

TREATMENT OF CULVERT & STORM PIPES

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: SAS				
DESIGNER: JVO				
CHECKED BY: DAC				

I hereby certify that this plan was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.
Certified By: Dan Cazanacli Lic. No. 42687
Licensed Professional Engineer
Printed Name: DAN A. CAZANACLI Date: 9/19/2017

SEH
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

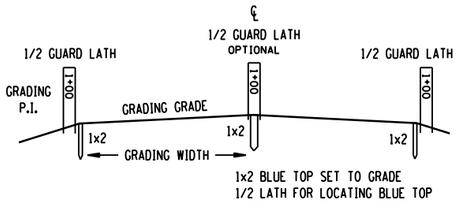
ANOKA COUNTY, MN
CSAH 23
S.A.P. 002-623-017, S.A.P. 244-020-002

MISCELLANEOUS DETAILS

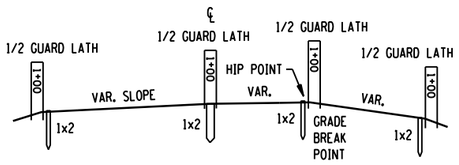
FILE NO. ANOKC141617
DD1 OF DD1
16/94

BLUE TOPS

NORMAL SECTION

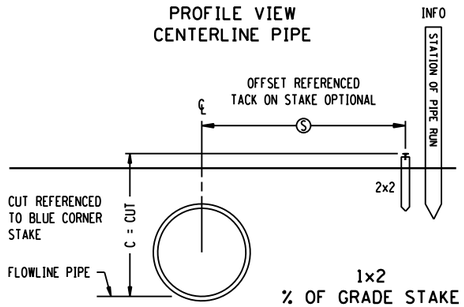


TRANSITION SECTION

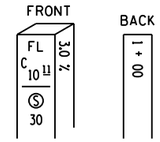


PIPE STAKING

PROFILE VIEW CENTERLINE PIPE

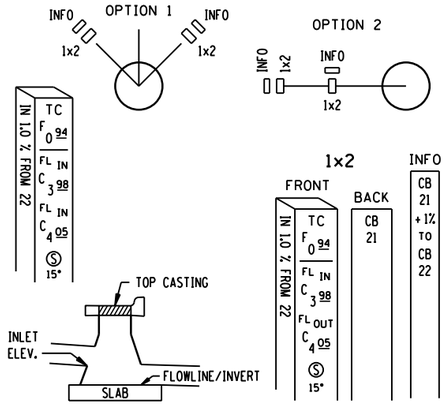


1x2 % OF GRADE STAKE



CATCH BASIN OR MANHOLE (CB/MH)

TOP VIEWS

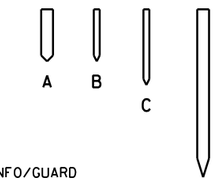


FLOWLINE/INVERT + 0.7'

STANDARD STAKES

TYPES:

REFERENCE (REF)
INFORMATIONAL (INFO)
VISIBILITY (VIS)
GUARD (GUARD)



SIZES:

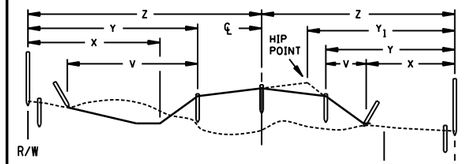
A = 2" X 2" X VAR. REF/INFO/GUARD
B = 1" X 2" X VAR. REF/INFO/GUARD
C = 1" X 2" X VAR. REF
D = LATH INFO/VIS/GUARD
1x2 OR LATH = INFO STAKES

ABBREVIATIONS

BBL = BARREL (PIPE)
B.C. = BACK CURB
C & G = CURB & GUTTER
C = CUT
CAP = CORR. ALUM. PIPE
CB = CATCH BASIN
℄ = CENTERLINE
CL & GR = CLEAR & GRUB
CMP = CORR. METAL PIPE
COR = CORNER
CR = CROWN
CSP = CORR. STEEL PIPE
℄ = DITCH CUT
D.E. = DRAINAGE EASEMENT
DI = DROP INLET
EB = EASTBOUND
E.M. = EDGE BITUMINOUS MAT
E.S. = EDGE CONCRETE SLAB
F = FILL
FF = FRONT FACE
FL = FLOW LINE
FL IN = FLOWLINE INLET
FL OUT = FLOWLINE OUTLET
GR = GRADE
GW = GRADING WIDTH
HH = HANDHOLE
HP = HIP POINT
LT = LEFT
MH = MANHOLE
NB = NORTHBOUND
Ⓢ = OFFSET
PAR = PARCEL
% = PERCENT GRADE
P.E. = PERM. EASEMENT
RAD = RADIUS POINT
RCP = REINF. CONC. PIPE
RP = REFERENCE POINT
RSC = REINF. SECT. CONC.
RT = RIGHT
R/W = RIGHT OF WAY
SB = SOUTHBOUND
SCP = SECT. CONC. PIPE
SH = SHOULDER
TC = TOP CASTING OR TOP CURB
T.E. = TEMP. EASEMENT
3 :1 = SLOPE (EXAMPLE)
WB = WESTBOUND
WP = WORKING POINTS

SLOPE STAKES

SINGLE ROADWAY - EXAMPLE 'A'



STAKE 'A'

FULL LATH AND HUB-STATION
DIST. TO ℄ WITH CUT/FILL TO ℄ (Z)
DIST. TO SHLD. WITH CUT/FILL TO SHLD. (Y) (Y1)
DIST. TO TOE OF SLOPE, CUT/FILL FROM HUB (X)
OFFSET TO SAFTY SLOPE
OFFSET TO HIP POINT

STAKE 'B'

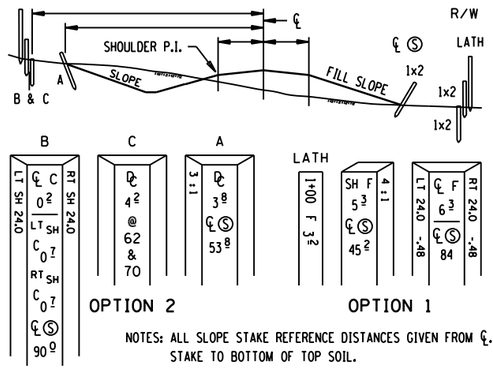
FULL LATH
DITCH CUT/SHLD. FILL
SLOPE RATED
DISTANCE TO INSLOPE TOE (V1) OR SHOULDER (AS APPLIES) (V)

NOTE:

BLUE TOPS REQUIRED ON ℄ AND BOTH SHOULDERS AT MINIMUM
ALL CULVERTS TO BE STAKED
MINIMUM DATA TO BE PROVIDED
STAKE TO BOTTOM OF TOPSOIL

SLOPE STAKES

SINGLE ROADWAY - EXAMPLE 'B'

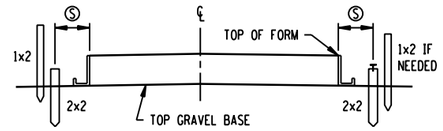


OPTION 2 OPTION 1

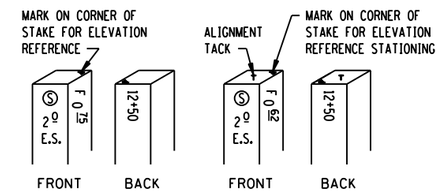
NOTES: ALL SLOPE STAKE REFERENCE DISTANCES GIVEN FROM ℄. STAKE TO BOTTOM OF TOP SOIL.

KEY STAKES: BLUE TOP SET AT R/W BOUNDARY LT. & RT. MAY BE EXCEPTIONS TO SETTING STAKE ON R/W.

CONCRETE PAVING STATIONARY FORM



OFFSET TO CONTRACTOR'S OPTION



NOTE INFORMATION ON STAKE IF NECESSARY

RECOMMENDED STAKING INTERVALS

FIGURE A

	SLOPE STAKES	SUB GRADE B.T.	CLASS MATERIAL B.T.	CONC PAVT	C & G	CL & GR LIMITS	MUCK EXC.	R/W	TEMP. EASE.
TANGENT	100	100	100	50	50	ALL CORNERS	100	ALL CORNERS	ALL CORNERS
HORIZ. CURVE									
0 - 3°	100	100	100	50	50	ALL CORNERS	100	ALL CORNERS	ALL CORNERS
OVER 3° -	100	50	50	25	25	ALL CORNERS	100	ALL CORNERS	ALL CORNERS
VERT. CURVE									
'M' 100' CHORD 0 - .25	100	100	100	50	50				
'M' OVER .25	100	50	50	25	25				
TRAN.		50	50						

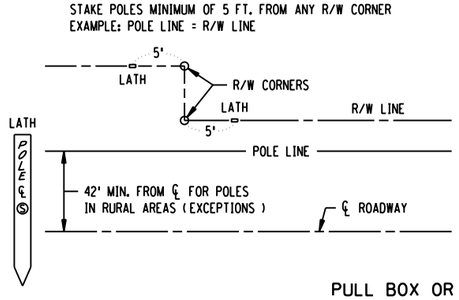
STAKING TOLERANCES (FEET)

	HORIZONTAL	VERTICAL
CONSTRUCTION LIMITS	± 1.5	
CLEARING & GRUBBING	2.0	
SLOPES STAKES	2.0	± 0.2
KEY STAKES	0.2	0.03
DRAINAGE STAKES	0.05	0.05
CURB & GUTTER	0.07	0.03
PAVING	0.05	0.03
ALIGNMENT	0.07	
UTILITY	0.10	0.05
STRUCTURAL	0.02	0.02
GUARD RAIL	0.5	
BUILDINGS	0.04	
O.H. SIGNS	0.05	0.05
MUCK EXCAVATION LIMITS	2.0	
R/W B-POINTS	0.10	
NOISE WALLS	1.0	0.5

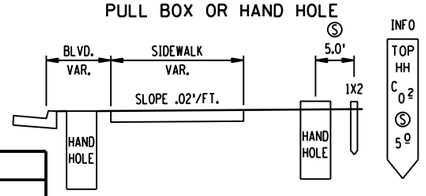
THE TOLERANCES ARE RELATIVE TO PROJECT DATUM

UTILITY (UTIL)

STAKE POLES MINIMUM OF 5 FT. FROM ANY R/W CORNER
EXAMPLE: POLE LINE = R/W LINE



PULL BOX OR HAND HOLE



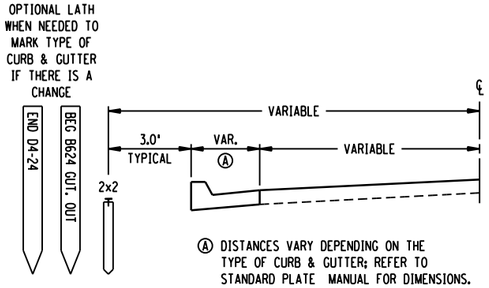
REVISION:

APPROVED: 8-6-2014

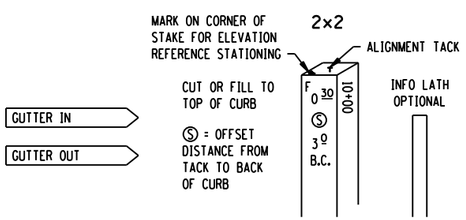
DIRECTOR, OFFICE OF LAND MANAGEMENT

CURB & GUTTER (CURB)

OPTIONAL LATH WHEN NEEDED TO MARK TYPE OF CURB & GUTTER IF THERE IS A CHANGE

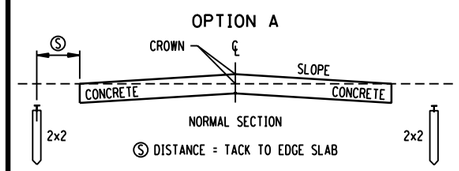


Ⓐ DISTANCES VARY DEPENDING ON THE TYPE OF CURB & GUTTER; REFER TO STANDARD PLATE MANUAL FOR DIMENSIONS.

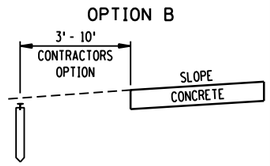


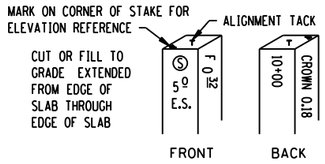
CONCRETE PAVING - SLIP FORM

OPTION A



OPTION B





DISCLAIMER

THESE STAKING INFORMATION SHEETS ARE FOR INFORMATION PURPOSES ONLY. STAKING PROCEDURES VARY AND MAY BE SUBJECT TO CHANGE DURING CONSTRUCTION BY CIRCUMSTANCES AND/OR AGREEMENTS BETWEEN SURVEY CREW AND CONTRACTOR.

SPN1
OF SPN14

REVISED:

APPROVED: 8-6-2014

STATE DESIGN ENGINEER

STAKING INFORMATION SHEET

STANDARD PLAN 5-297.115 | 1 OF 2

S.A.P. NO. 002-623-017
S.A.P. NO. 244-020-002

SHEET NO. 17 OF 94 SHEETS

8:00:37 PM 2/13/2018 (USERNAME)

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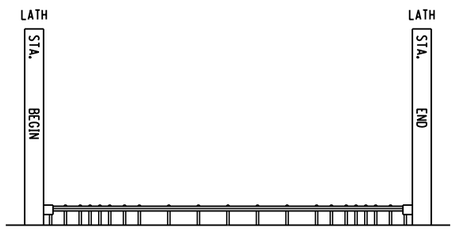
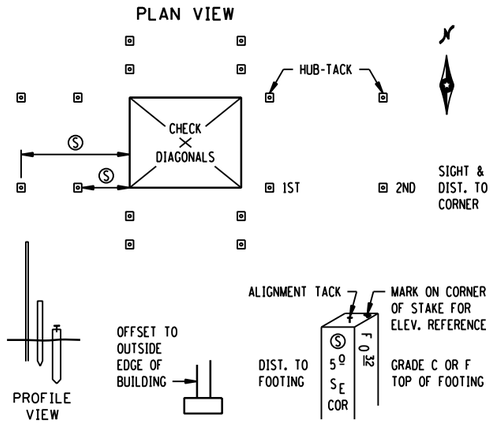
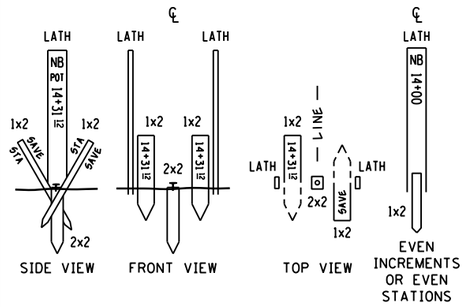
GUARDRAIL (GUARD)



BUILDING (BUILD) FOUNDATION / FOOTING



ALIGNMENT POINTS (ALIGN)



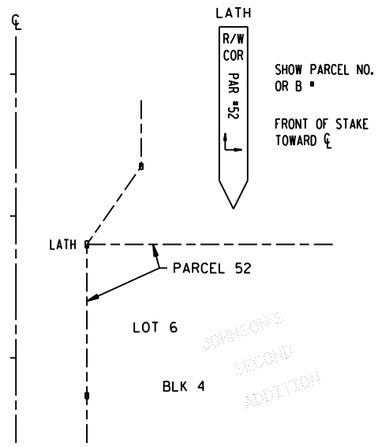
STAKE C = 2" X 2" HUB (LENGTH MAY VARY) SET AS TEMPORARY STAKE. MAY BE REPLACED BY MnDOT MARKER AFTER CONSTRUCTION IS COMPLETED.

SET AT GROUND LEVEL (TEMPORARY CONSTRUCTION STAKE).

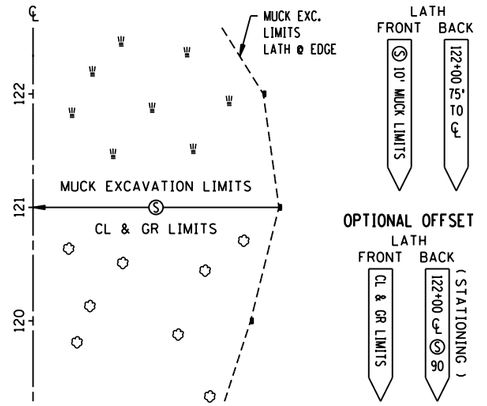
TACK SET AT ALIGNMENT POINTS.

STAKE A = GUARD STAKES SET AT ANGLE IN GROUND 6" EACH SIDE OF STAKE D, WITH STATIONING READ WHEN LOOKING UP STATION.

R/W & TEMP. EASEMENT (R/W)

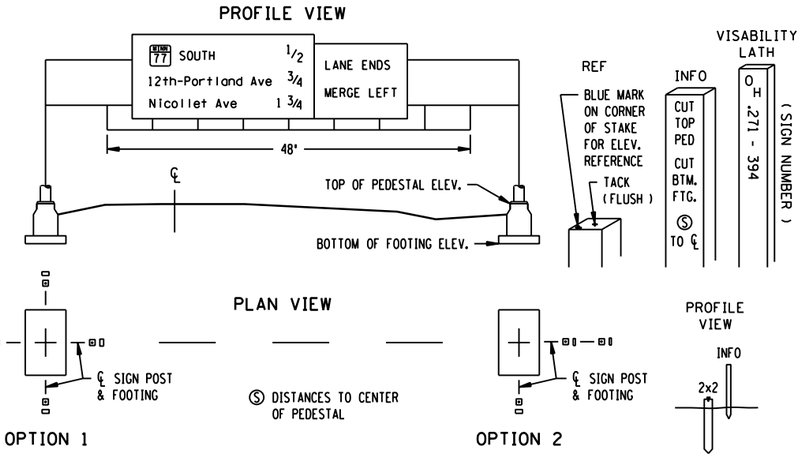


CLEAR & GRUBBING LIMITS (CLEAR) OR MUCK EXCAVATION LIMITS (MUCK)

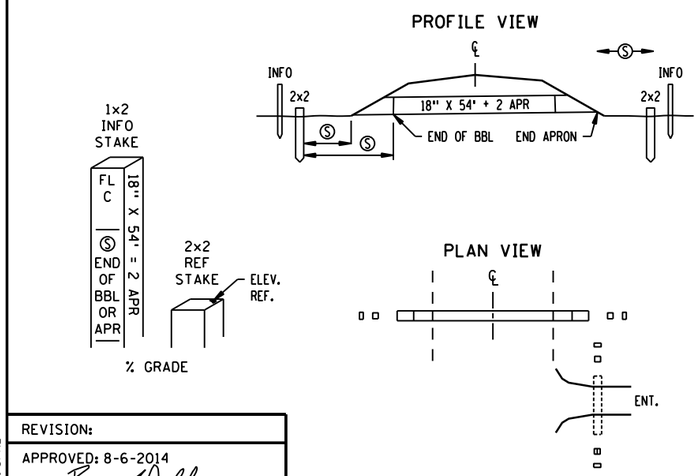


NOTE: FRONT OF LATH GOES TOWARD ℄

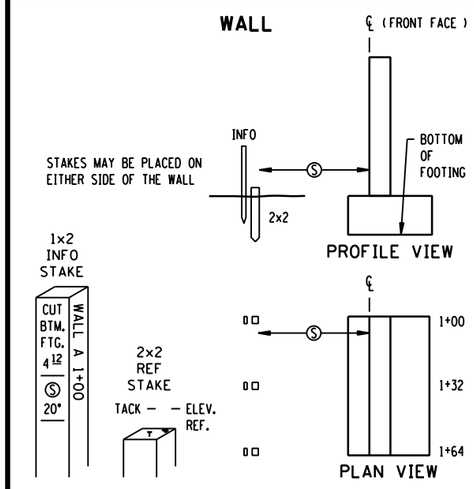
OVERHEAD SIGNS (SIGN)



CULVERT

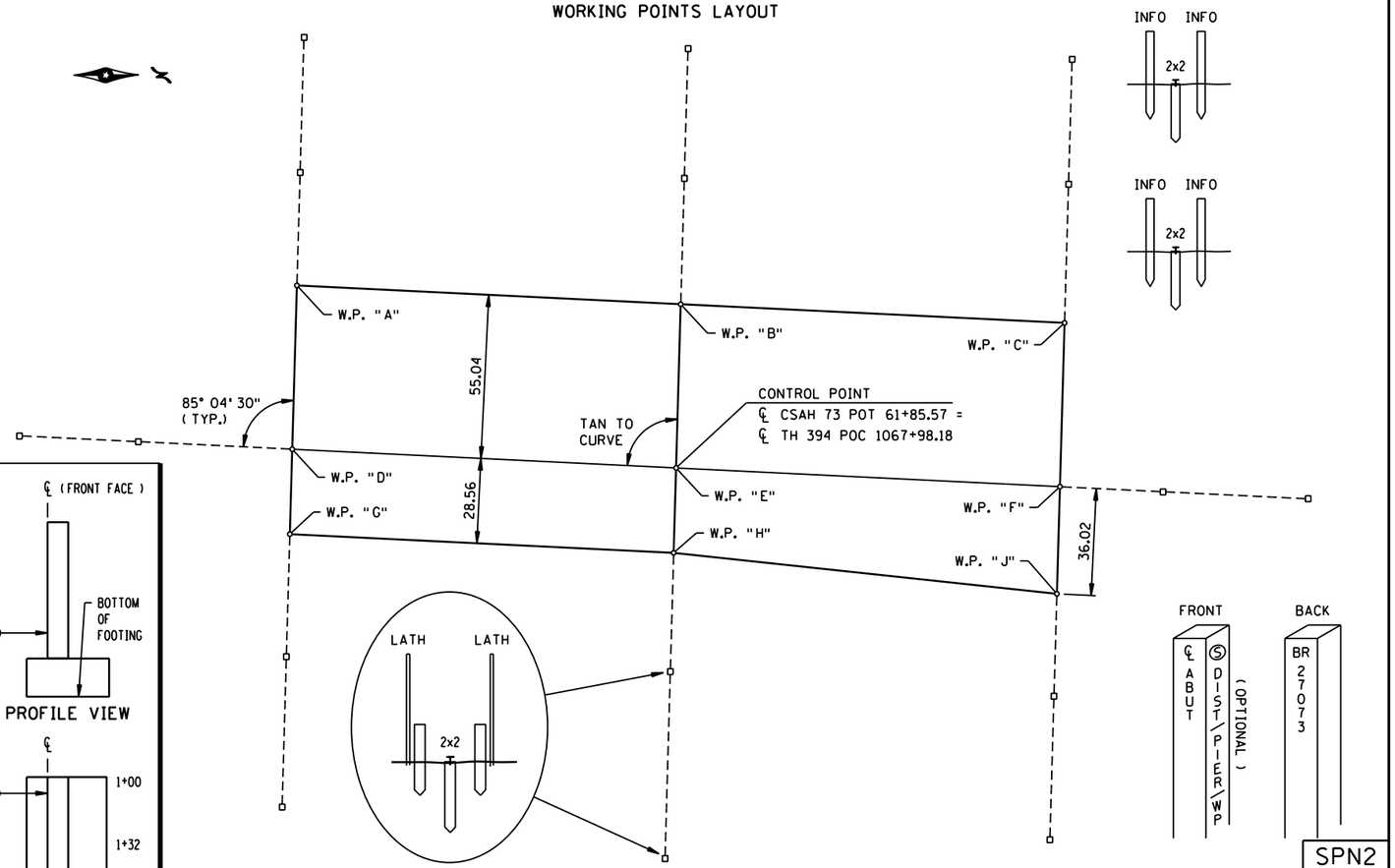


WALL



BRIDGESTAKING (BRIDGE)

WORKING POINTS LAYOUT



REVISION:

APPROVED: 8-6-2014

DIRECTOR, OFFICE OF LAND MANAGEMENT

REVISED:

APPROVED: 8-6-2014

STATE DESIGN ENGINEER

STAKING INFORMATION SHEET

STANDARD PLAN 5-297.115	2 OF 2
S.A.P. NO. 002-623-017 S.A.P. NO. 244-020-002	SHEET NO. 18 OF 94 SHEETS

SPN2
OF SPN14

8:00:38 PM
2/13/2018
(USERNAME)

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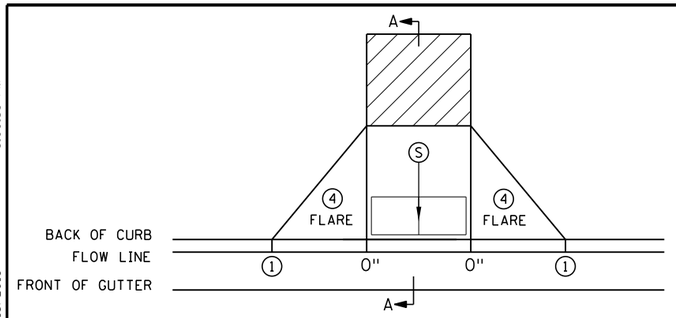
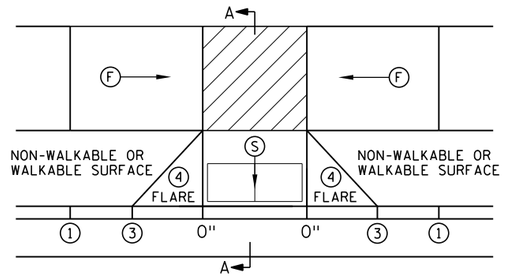
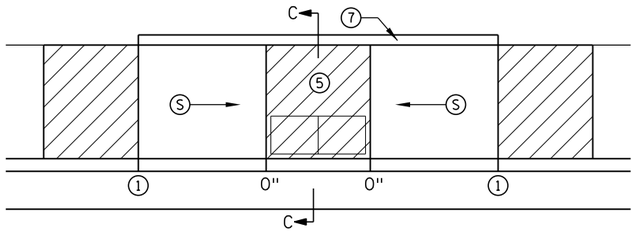


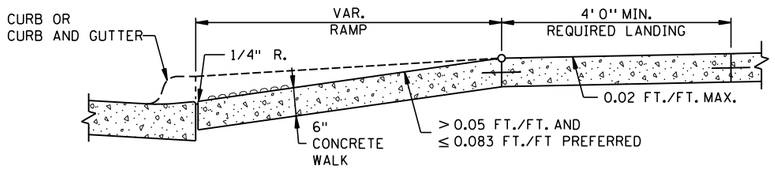
PERPENDICULAR



TIERED PERPENDICULAR

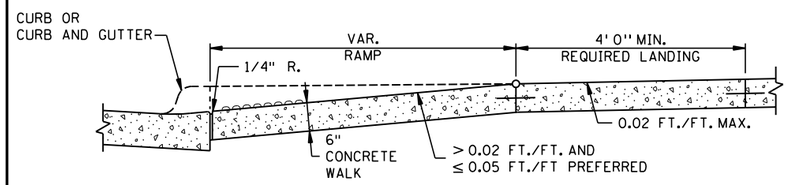


PARALLEL



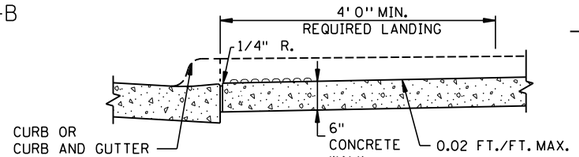
SECTION A-A

PERPENDICULAR/TIERED/DIAGONAL



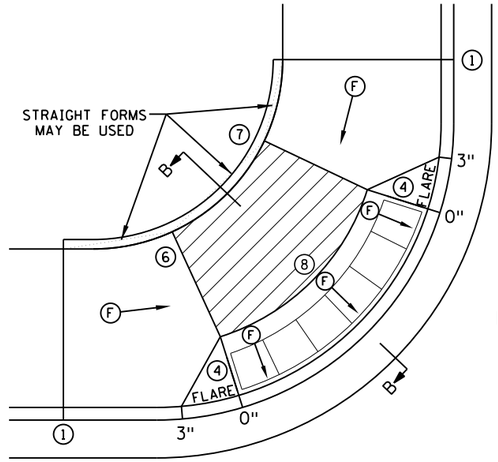
SECTION B-B

FAN

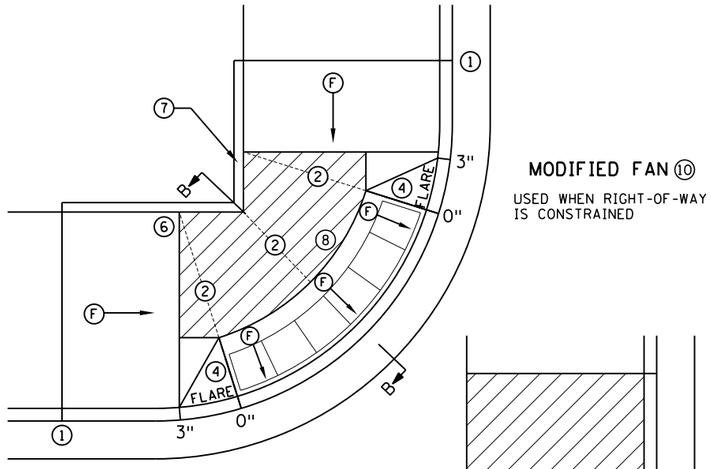


SECTION C-C

PARALLEL/DEPRESSED CORNER

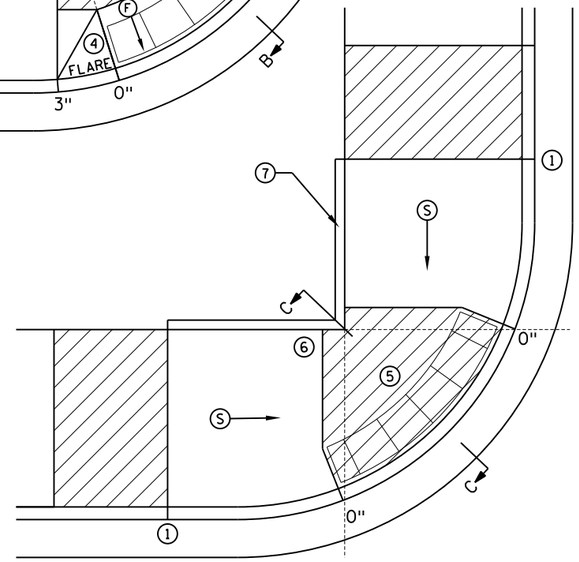


FAN (10)

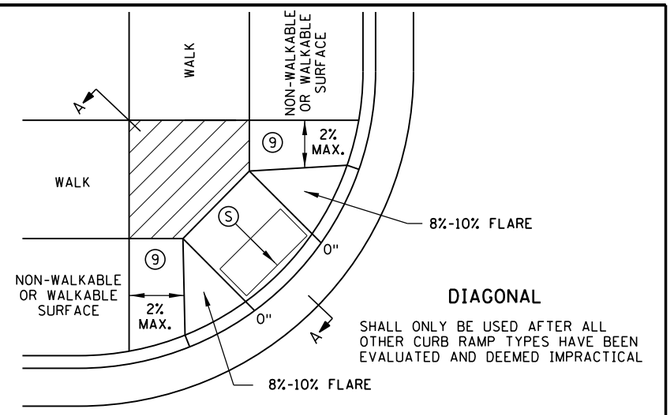


MODIFIED FAN (10)

USED WHEN RIGHT-OF-WAY IS CONSTRAINED



DEPRESSED CORNER



DIAGONAL

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

NOTES:

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

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

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

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

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

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

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 ENTIRE WIDTH OF SHARED-USE PATHS AND THE ENTIRE PAR WIDTH OF THE WALK. DETECTABLE WARNING SHOULD BE 6" LESS THAN THE PAR/TRAIL WIDTH. ARC LENGTH OF 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, WHEN INITIAL LANDING IS AT FULL CURB HEIGHT.
(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 SHOULD BE USED OVER V CURB TO REDUCE TRIPPING HAZARDS AND FACILITATE SNOW & ICE REMOVAL.
(8) A 7' MIN TOP RADIUS GRADE BREAK 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.

LEGEND

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

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

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

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

X" CURB HEIGHT

SPN3
OF SPN14

REVISION:

APPROVED: JANUARY 23, 2017

OPERATIONS ENGINEER

REVISED:

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1-23-2017

STATE DESIGN ENGINEER

PEDESTRIAN CURB RAMP DETAILS

STANDARD PLAN 5-297.250 | 1 OF 6

S.A.P. NO. 002-623-017
S.A.P. NO. 244-020-002

SHEET NO. 19 OF 94 SHEETS

8:00:39 PM
2/13/2018
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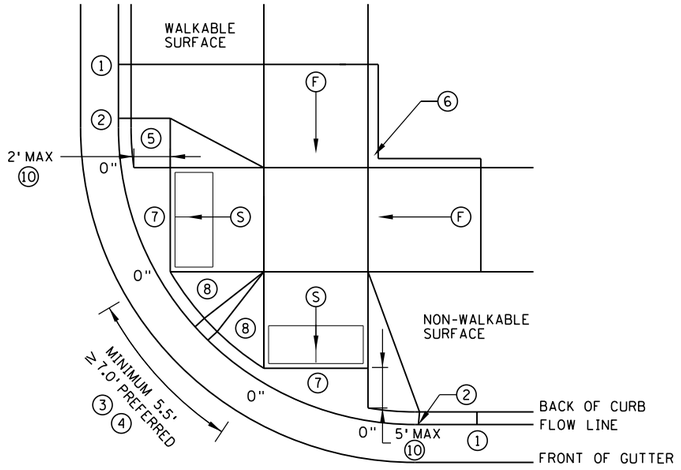
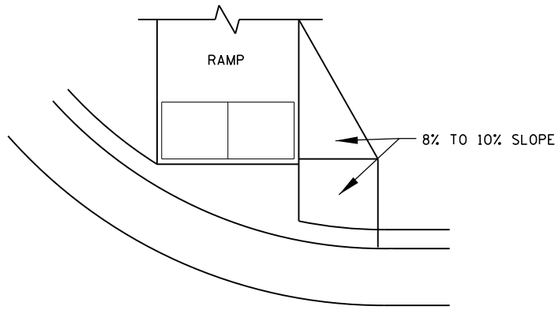


COMBINED DIRECTIONAL ⑨



DIRECTIONAL RAMP WALKABLE FLARE

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 ENTIRE WIDTH OF SHARED-USE PATH AND THE ENTIRE PAR WIDTH OF THE WALK. DETECTABLE WARNING SHOULD BE 6" LESS THAN THE PAR/PATH WIDTH. ARC LENGTH OF 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 SHOULD 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.

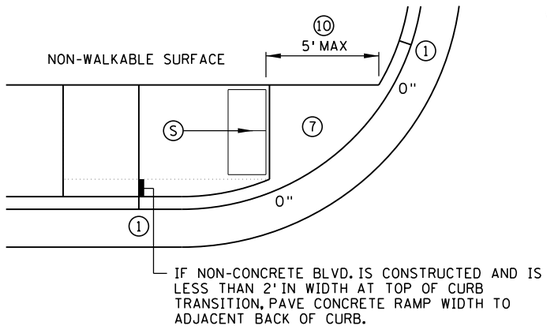
⑩ FRONT EDGE OF DETECTABLE WARNING SHALL BE SET BACK 2' MAXIMUM WHEN ADJACENT TO WALKABLE SURFACE, AND 5' MAXIMUM WHEN ADJACENT TO NON-WALKABLE SURFACE WITH ONE CORNER SET 3" FROM BACK OF CURB. A WALKABLE SURFACE IS DEFINED AS A PAVED SURFACE ADJACENT TO A CURB RAMP WITHOUT RAISED OBSTACLES THAT COULD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

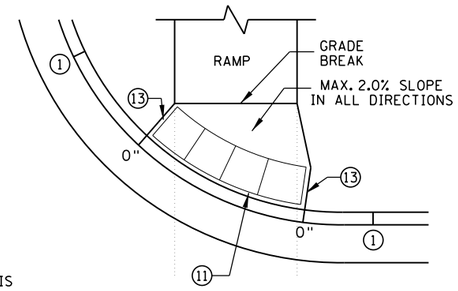
⑫ FOR DIRECTIONAL RAMPS WITH THE DETECTABLE WARNINGS PLACED AT THE BACK OF CURB, THE DETECTABLE WARNINGS SHALL COVER THE ENTIRE WIDTH OF THE WALK/PATH. THIS ENSURES A DETECTABLE EDGE AND HELPS ELIMINATE THE CURB TAPER OBSTRUCTING THE PATH OF PEDESTRIAN TRAVEL.

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.

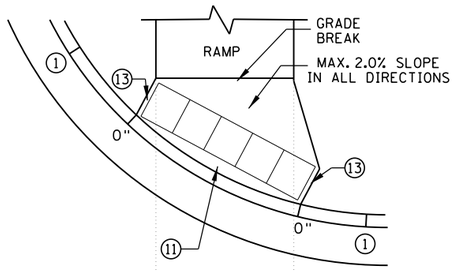


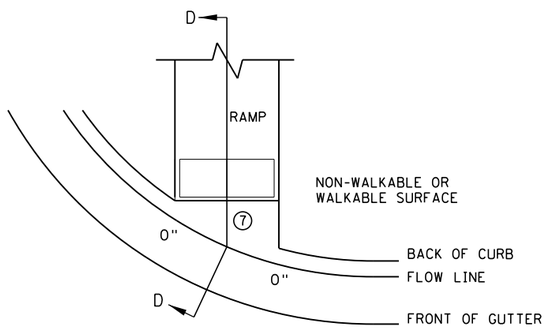
STANDARD ONE-WAY DIRECTIONAL ⑨



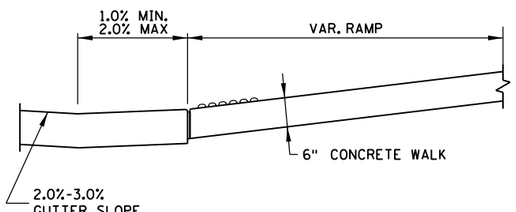
DETECTABLE WARNING PLACEMENT WHEN SETBACK CRITERIA IS EXCEEDED ⑫

ONE-WAY DIRECTIONAL WITH DETECTABLE WARNING AT BACK OF CURB

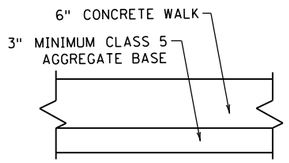




CURB FOR DIRECTIONAL RAMPS ⑭



SECTION D-D



TYPICAL SIDEWALK SECTION WITHIN INTERSECTION CORNER

LEGEND	
THESE LONGITUDINAL SLOPE RANGES SHALL BE THE STARTING POINT. IF SITE CONDITIONS WARRANT, LONGITUDINAL SLOPES UP TO 8.3% OR FLATTER ARE ALLOWED.	
(S)	INDICATES PEDESTRIAN RAMP - SLOPE SHALL BE BETWEEN 5.0% MINIMUM AND 8.3% MAXIMUM IN THE DIRECTION SHOWN AND THE CROSS SLOPE SHALL NOT EXCEED 2.0%.
(F)	INDICATES PEDESTRIAN RAMP - SLOPE SHALL BE GREATER THAN 2.0% AND LESS THAN 5.0% IN THE DIRECTION SHOWN AND CROSS SLOPE SHALL NOT EXCEED 2.0%.
▭	LANDING AREA - 4' X 4' MIN. (5' X 5' MIN. PREFERRED) DIMENSIONS AND MAX 2.0% SLOPE IN ALL DIRECTIONS. LANDING SHALL BE FULL WIDTH OF INCOMING PARS.
X"	CURB HEIGHT

SPN4
OF SPN14

REVISION:
APPROVED: JANUARY 23, 2017
OPERATIONS ENGINEER

REVISED:
APPROVED: 1-23-2017
STATE DESIGN ENGINEER

PEDESTRIAN CURB RAMP DETAILS

STANDARD PLAN 5-297.250 | 2 OF 6

S.A.P. NO. 002-623-017
S.A.P. NO. 244-020-002

SHEET NO. 20 OF 94 SHEETS

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2/13/2018
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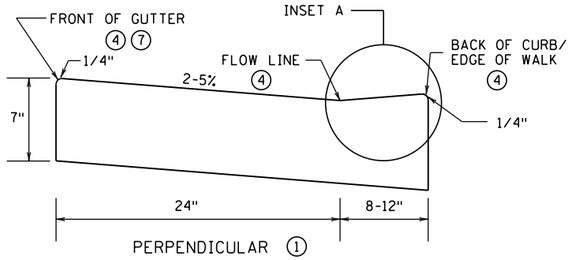
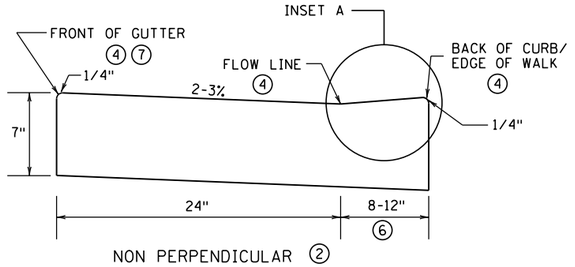
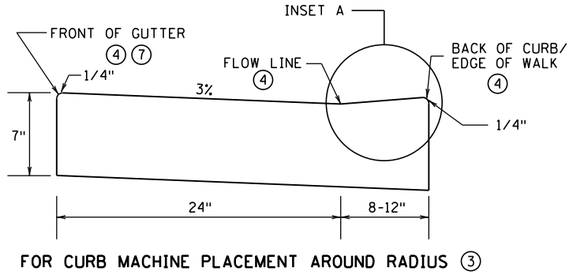


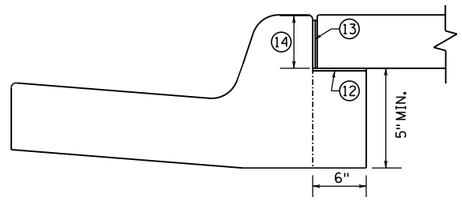
PERPENDICULAR (1)



NON PERPENDICULAR (2)



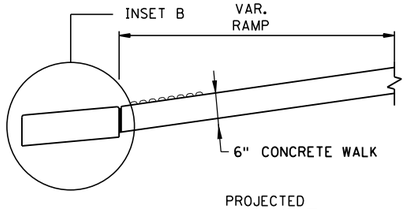
FOR CURB MACHINE PLACEMENT AROUND RADIUS (3)
(REGARDLESS OF RAMP TYPE)

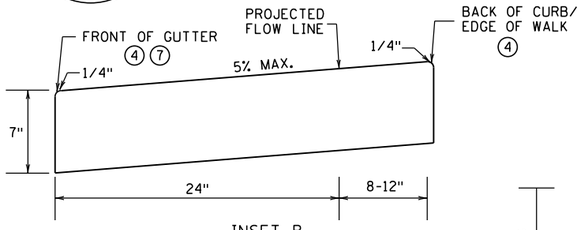


OPTIONAL SILL CURB WHEN SIDEWALK IS AT BACK OF CURB

CONCRETE SILL TO BE USED ONLY WHEN SPECIFIED IN THE PLAN.

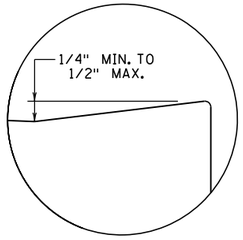
PEDESTRIAN ACCESS ROUTE CURB & GUTTER DETAIL



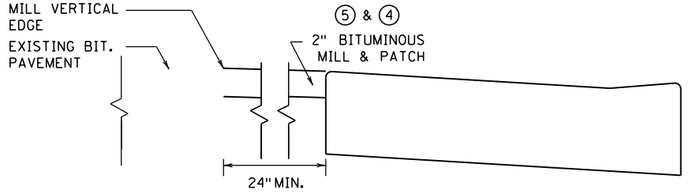


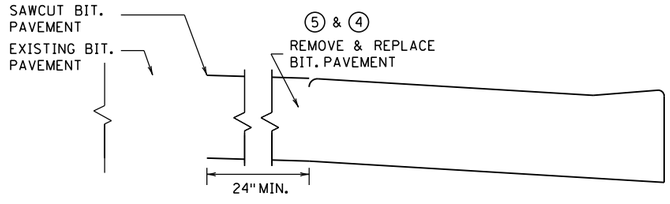
INSET B

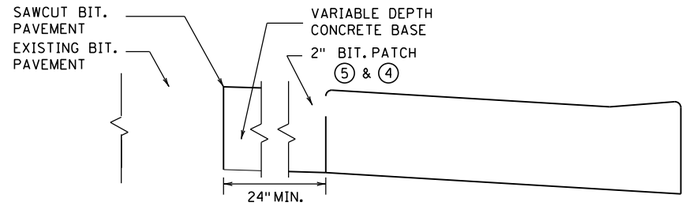
OUTFLOW GUTTER (8)

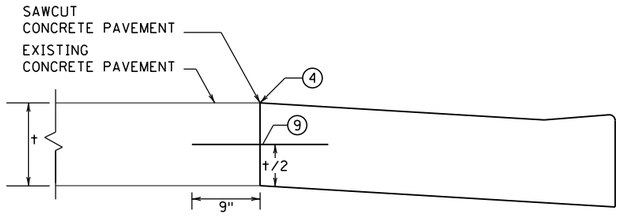


INSET A





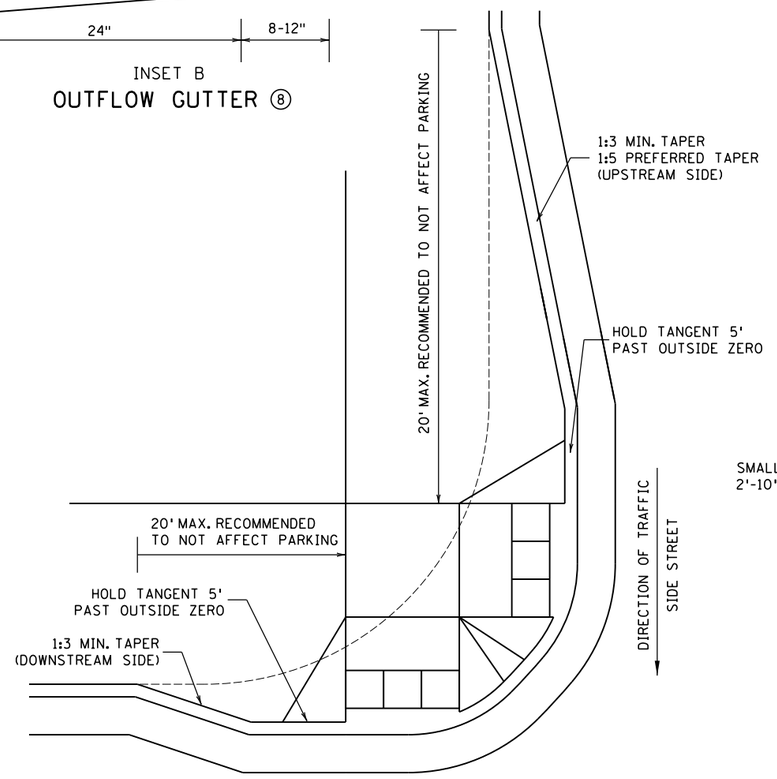




ONLY ALLOWED PER ENGINEER'S APPROVAL

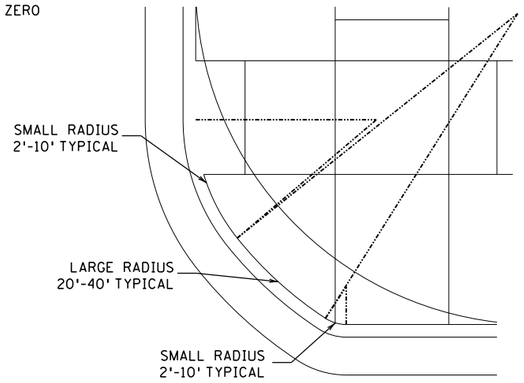
PAVEMENT TREATMENT OPTIONS IN FRONT OF CURB & GUTTER

FOR USE ON CURB RAMP RETROFITS



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

DIRECTION OF TRAFFIC
MAIN STREET



COMBINED DIRECTIONAL (10)
(COMPOUND RADIUS)

NOTES:

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

NO PONDING SHALL BE PRESENT IN THE PAR.

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

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

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

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

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

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

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

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

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

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

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

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

(12) PLACE BOND BREAKER BETWEEN WALK AND TOP OF SILL.

(13) 1/2" PREFORMED JOINT FILLER PER MNDOT SPEC. 3702.

(14) DIMENSION TO BE SAME AS SIDEWALK THICKNESS, 4" MIN.

SPN5
OF SPN14

REVISION:

APPROVED: JANUARY 23, 2017
OPERATIONS ENGINEER

REVISED:

APPROVED: 1-23-2017
STATE DESIGN ENGINEER

PEDESTRIAN CURB RAMP DETAILS

STANDARD PLAN 5-297.250 | 3 OF 6

S.A.P. NO. 002-623-017
S.A.P. NO. 244-020-002

SHEET NO. 21 OF 94 SHEETS

8:00:40 PM 2/13/2018 (USERNAME)

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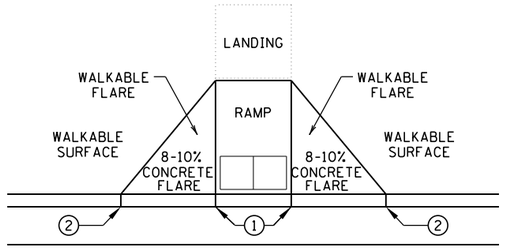
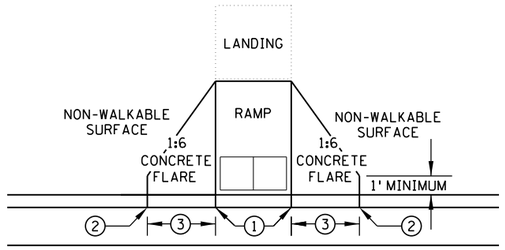
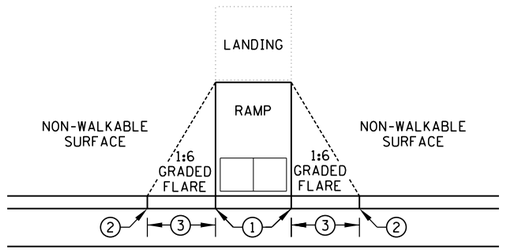


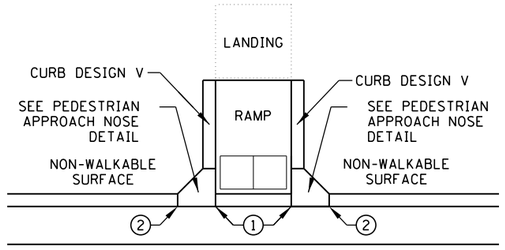
PAVED FLARES
ADJACENT TO WALKABLE SURFACE



PAVED FLARES
ADJACENT TO NON-WALKABLE SURFACE

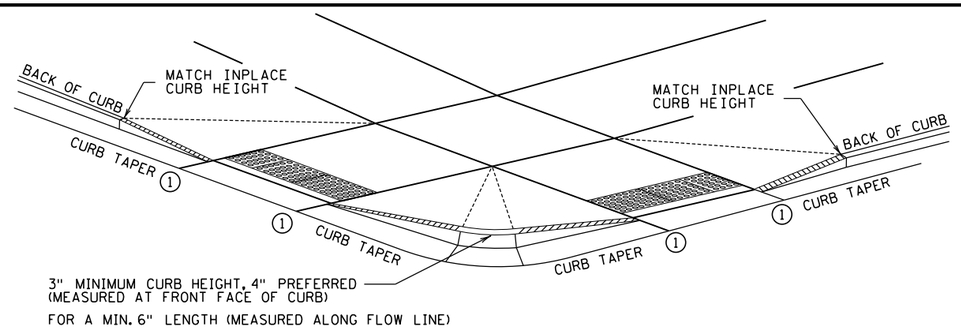


GRADED FLARES

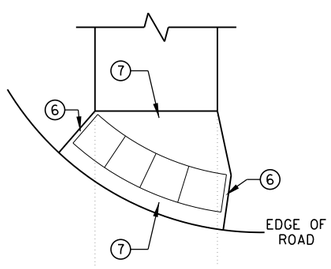


RETURNED CURB ⑤

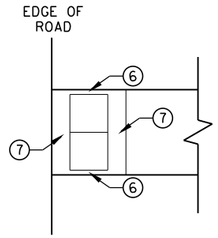
TYPICAL SIDE TREATMENT OPTIONS ④ ⑪



DETECTABLE EDGE WITH ⑧ CURB AND GUTTER

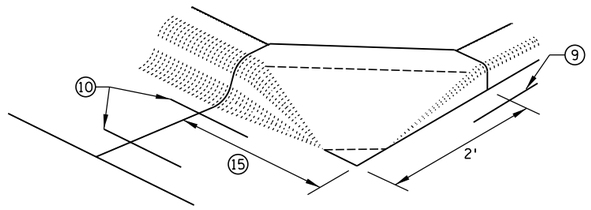


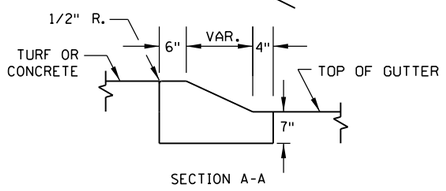
RADIAL DETECTABLE WARNING



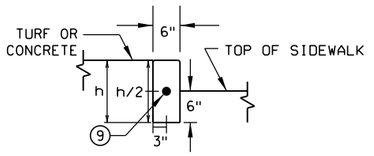
RECTANGULAR DETECTABLE WARNING

DETECTABLE EDGE WITHOUT CURB AND GUTTER

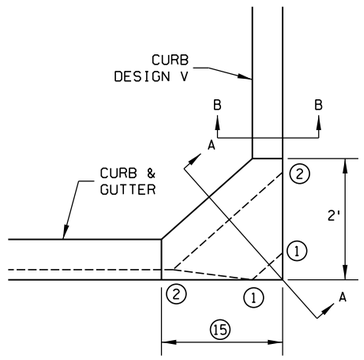




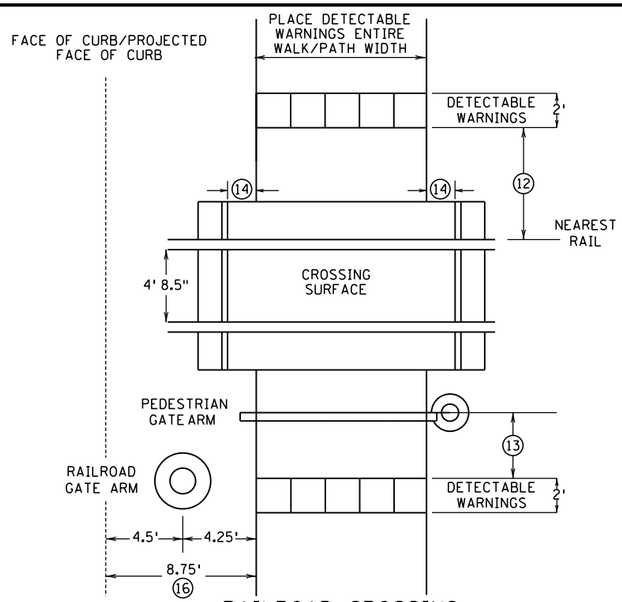
SECTION A-A



SECTION B-B



PEDESTRIAN APPROACH NOSE DETAIL
(FOR RETURNED CURB SIDE TREATMENT)



RAILROAD CROSSING PLAN VIEW

NOTES:

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.

② FULL CURB HEIGHT.

③ 2' FOR 4" HIGH CURB AND 3' FOR 6" HIGH CURB.

④ 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.

⑤ TYPICALLY USED FOR MEDIANS AND ISLANDS.

⑥ 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.

⑦ 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.

⑧ 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.

⑨ 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.

⑩ 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.

⑪ SIDE TREATMENT EXAMPLES SHOWN ARE WHEN THE INITIAL LANDING IS APPROXIMATELY LEVEL WITH THE FULL HEIGHT CURB (I.E. 6' LONG RAMP FOR 6" HIGH CURB). WHEN THE INITIAL LANDING IS MORE THAN 1" BELOW FULL HEIGHT CURB REFER TO SHEETS 1 & 2 TO MODIFY THE CURB HEIGHT TAPERS AND MAINTAIN POSITIVE BOULEVARD DRAINAGE.

⑫ 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.

⑬ 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 ⑫.

⑭ CROSSING SURFACE SHALL EXTEND 2' MINIMUM PAST THE OUTSIDE EDGE OF WALK OR SHARED-USE PATH.

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

⑯ 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.

SPN6
OF SPN14

REVISION:

APPROVED: JANUARY 23, 2017

OPERATIONS ENGINEER

REVISED:

APPROVED:
1-23-2017

STATE DESIGN ENGINEER

PEDESTRIAN CURB RAMP DETAILS

STANDARD PLAN 5-297.250 | 4 OF 6

S.A.P. NO. 002-623-017
S.A.P. NO. 244-020-002

SHEET NO. 22 OF 94 SHEETS

8:00:41 PM
2/13/2018
(USERNAME)

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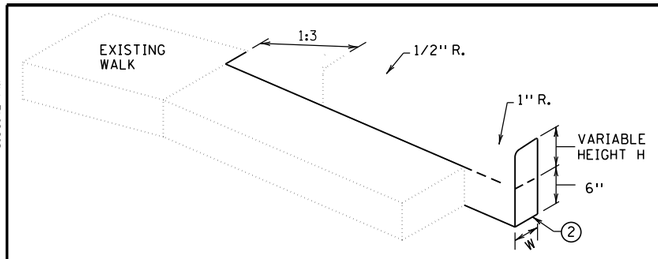
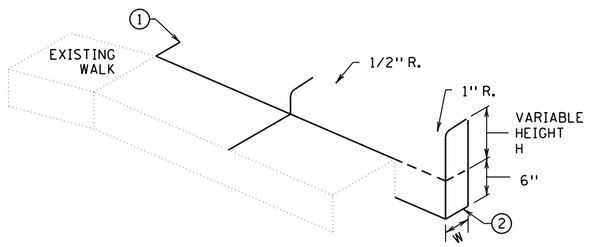


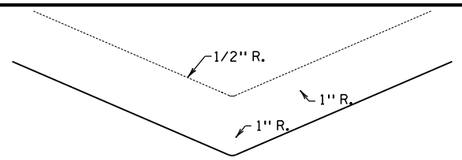
V CURB ADJACENT TO LANDSCAPE

CURB WITHIN SIDEWALK LIMITS

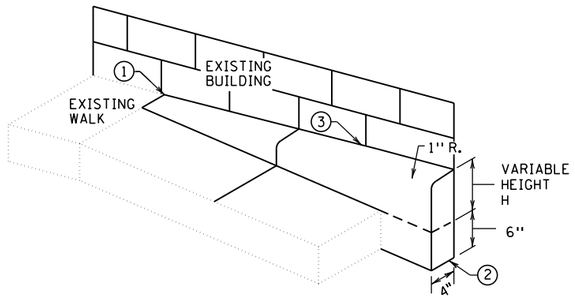


V CURB ADJACENT TO LANDSCAPE

CURB OUTSIDE SIDEWALK LIMITS

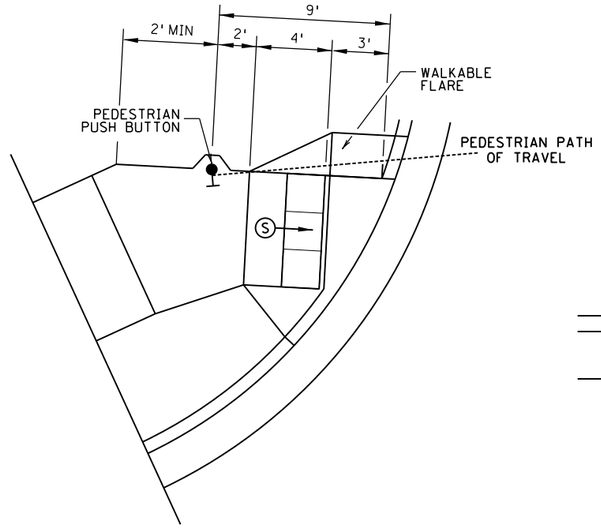


V CURB INTERSECTION



V CURB ADJACENT TO BUILDING OR BARRIER

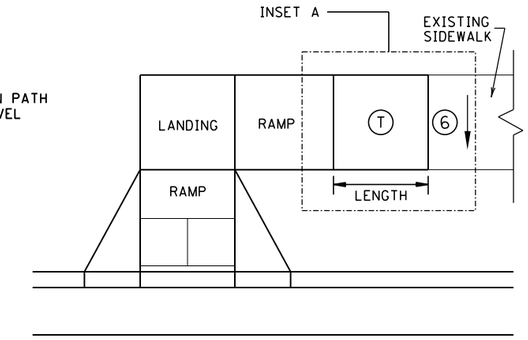
CONCRETE CURB DESIGN V	
CURB HEIGHT H	CURB WIDTH W
< 6"	4"
≥ 6"	6"

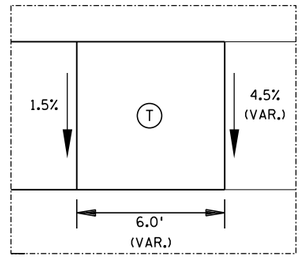


SEMI-DIRECTIONAL RAMP (3,4,9)

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

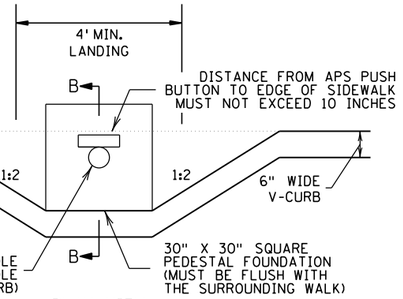
PRIMARILY USED FOR APS APPLICATIONS WHERE THE PAR DOES NOT CONTINUE PAST THE PUSH BUTTON (DEAD-END SIDEWALK)



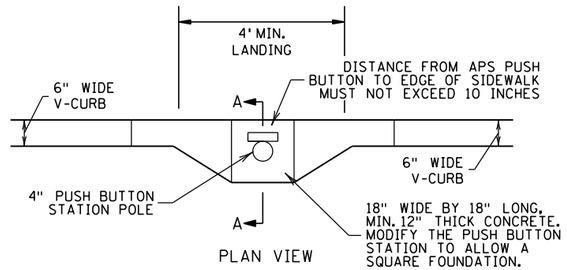


INSET A

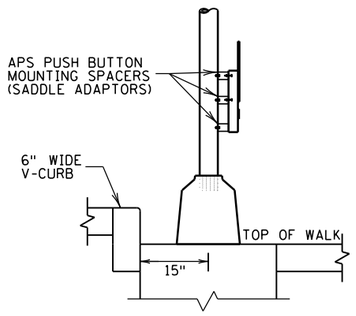
TRANSITION PANEL ④⑤



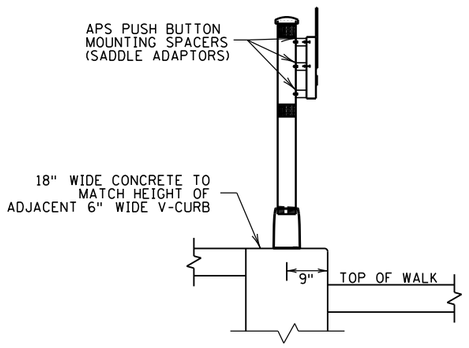
PLAN VIEW



PLAN VIEW



SECTION B-B



SECTION A-A

SIGNAL PEDESTAL & PUSH BUTTON (V-CURB)

PUSH BUTTON STATION (V-CURB)

NOTES:

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

ALL V CURB CONTRACTION JOINTS SHALL MATCH CONCRETE WALK JOINTS.

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

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

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

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

② ALL V CURB SHALL MATCH BOTTOM OF ADJACENT WALK.

③ EDGE BETWEEN NEW V CURB AND INPLACE STRUCTURE SHALL BE SEALED AND BOND BREAKER SHALL BE USED BETWEEN EXISTING STRUCTURE AND PLACED V-CURB.

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.

SPN7
OF SPN14

REVISION:

APPROVED: JANUARY 23, 2017

OPERATIONS ENGINEER

REVISED:

APPROVED:
1-23-2017

STATE DESIGN ENGINEER

PEDESTRIAN CURB RAMP DETAILS

STANDARD PLAN 5-297.250 | 5 OF 6

S.A.P. NO. 002-623-017
S.A.P. NO. 244-020-002

SHEET NO. 23 OF 94 SHEETS

8:00:42 PM
2/13/2018
(USERNAME)

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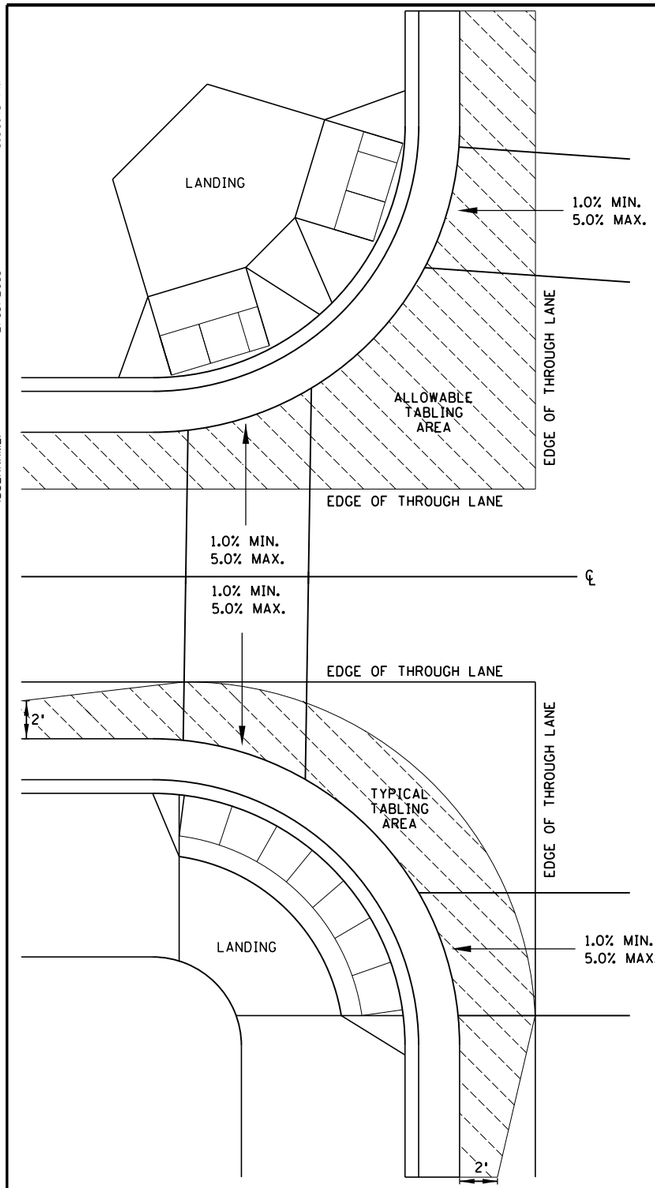
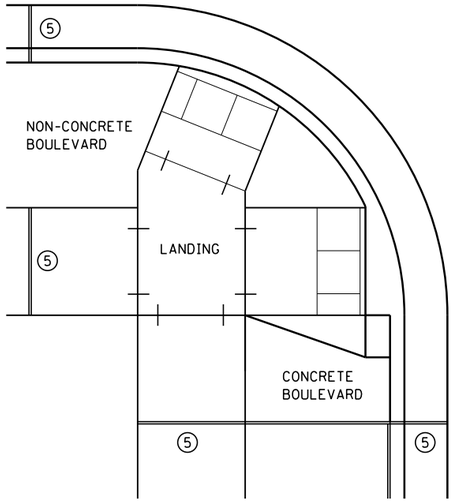
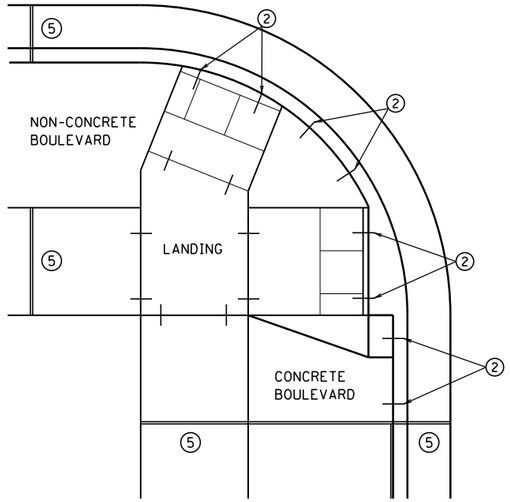


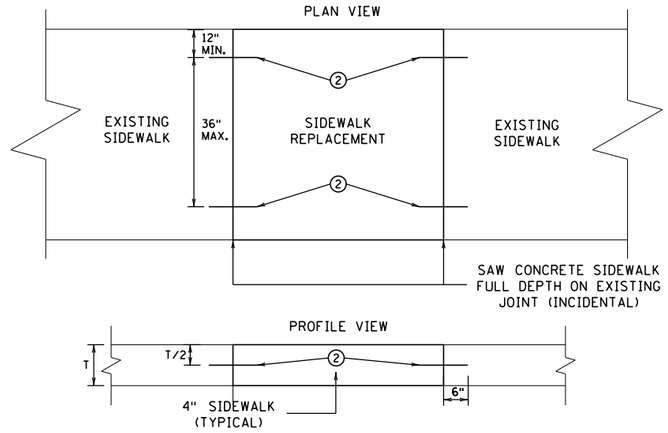
CURB LINE AND ROAD CROSSING ADJUSTMENTS



EXPANSION MATERIAL PLACEMENT FOR CONCRETE AND BITUMINOUS ROADWAYS

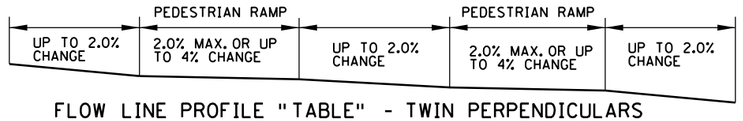


OPTIONAL CURB LINE REINFORCEMENT PLACEMENT ON BITUMINOUS ROADWAYS ④

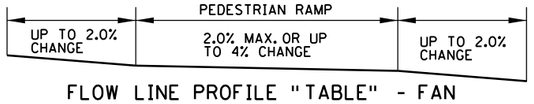


OPTIONAL SIDEWALK REINFORCEMENT

SIDEWALK REINFORCEMENT TO BE USED ONLY WHEN SPECIFIED IN THE PLAN.



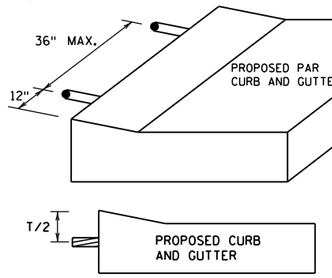
FLOW LINE PROFILE "TABLE" - TWIN PERPENDICULARS

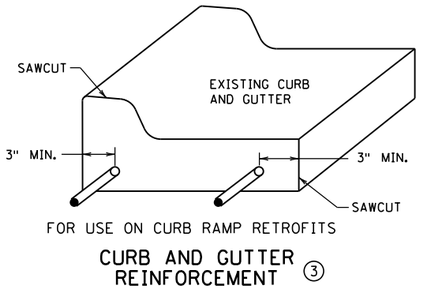


FLOW LINE PROFILE "TABLE" - FAN

FLOW LINE PROFILE RAISE - TWIN PERPENDICULARS

FLOW LINE PROFILE RAISE - FAN

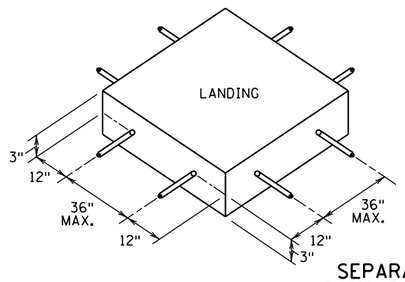


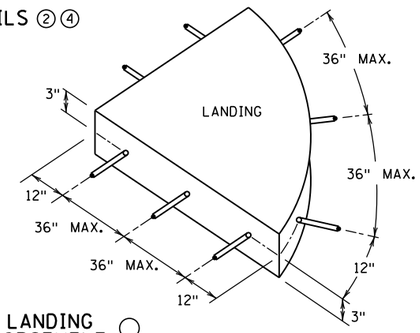


FOR USE ON CURB RAMP RETROFITS

CURB AND GUTTER REINFORCEMENT ③

OPTIONAL CURB LINE REINFORCEMENT DETAILS ②④





SEPARATE LANDING POUR REINFORCEMENT ○

"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 AT 36" MAXIMUM CENTER TO CENTER (EPOXY COATED). BARS TO BE ADJUSTED TO MATCH RAMP GRADE.
3. DRILL AND GROUT 2 - NO. 4 X 12" LONG REINFORCEMENT BARS (EPOXY COATED). REINFORCEMENT REQUIRED FOR ALL CONSTRUCTION JOINTS WITHIN RADIUS.
4. THIS OPTIONAL CURB LINE REINFORCEMENT DETAIL SHOULD ONLY BE USED ON BITUMINOUS ROADWAYS WHEN SPECIFIED IN THE PLAN.
5. 1/2 IN. PREFORMED JOINT FILLER MATERIAL PER MNDOT SPEC. 3702.

REVISION:

APPROVED: JANUARY 23, 2017

OPERATIONS ENGINEER

REVISED:

APPROVED: 1-23-2017

STATE DESIGN ENGINEER

SPN8
OF SPN14

PEDESTRIAN CURB RAMP DETAILS

STANDARD PLAN 5-297.250 | 6 OF 6

S.A.P. NO. 002-623-017
S.A.P. NO. 244-020-002

SHEET NO. 24 OF 94 SHEETS

8:00:43 PM 2/13/2018 (USERNAME)

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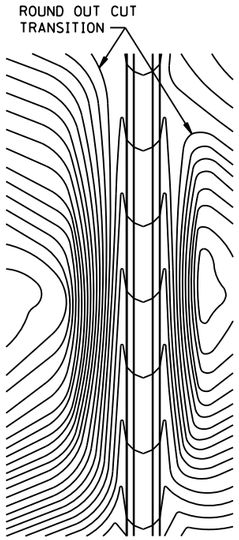
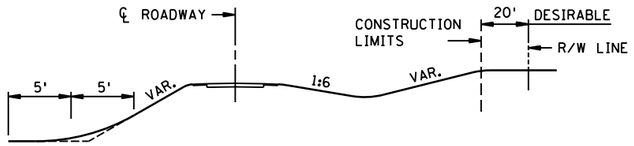
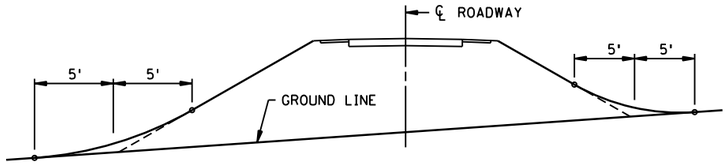


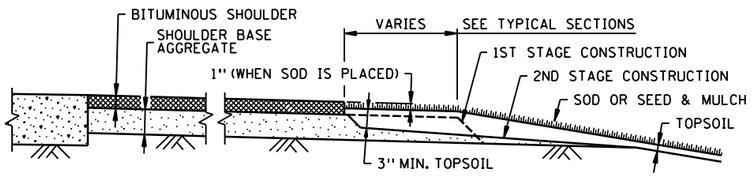
CONTOURING ROAD CUTS



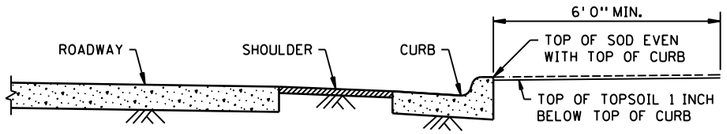
ROUNDING SHOULDERS AND BACKSLOPES



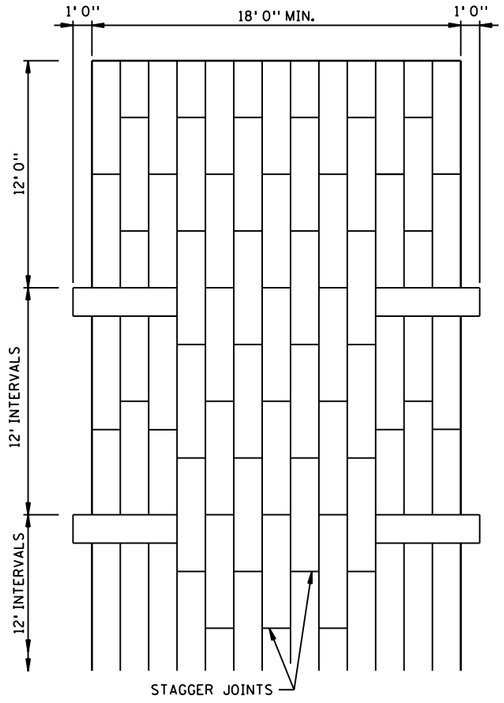
SHAPING FOR DRAINAGE ALONG THE TOE OF FILL SLOPES



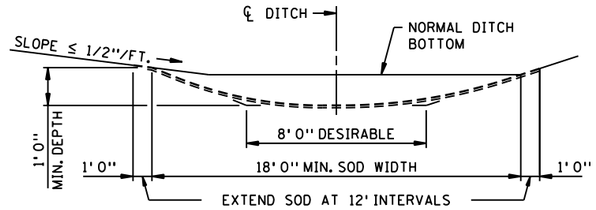
SHAPING AND TOPSOILING INSLOPES



SHAPING ADJACENT TO CURBS WHEN SOD IS PLACED

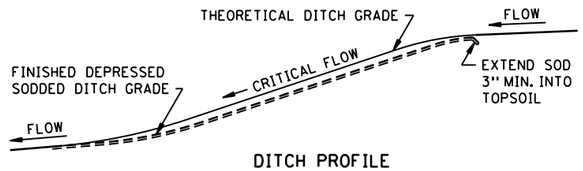


PLAN VIEW



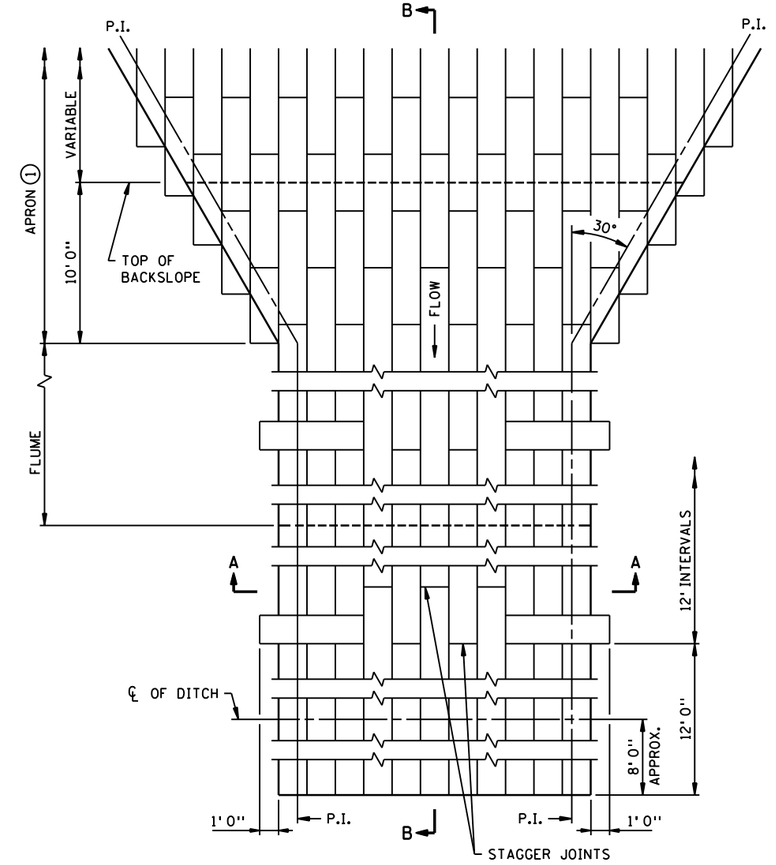
SODDED DITCH CROSS SECTION

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

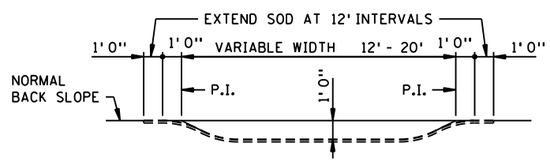


DITCH PROFILE

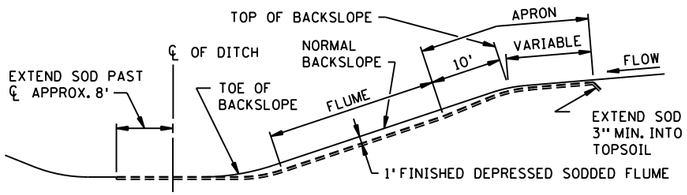
SODDED DITCH DETAILS



PLAN VIEW



SECTION A-A



SECTION B-B

SODDED FLUME DETAILS

NOTES:

SEE SPEC. 2575.3 FOR ADDITIONAL INFORMATION.

① CONSTRUCT TAPER AS DIRECTED BY THE ENGINEER.

REVISION:

APPROVED: 2-28-2017

CHIEF ENVIRONMENTAL OFFICER

MINNESOTA DEPARTMENT OF TRANSPORTATION

STATE DESIGN ENGINEER

REVISED:

APPROVED: 2-28-2017

PERMANENT EROSION CONTROL

ALONG ROADWAYS, DITCHES AND FLUMES

STANDARD PLAN 5-297.404 | 1 OF 3

S.A.P. NO. 002-623-017
S.A.P. NO. 244-020-002

SHEET NO. 25 OF 94 SHEETS

SPN9
OF SPN14

8:00:44 PM
2/13/2018
(USERNAME)

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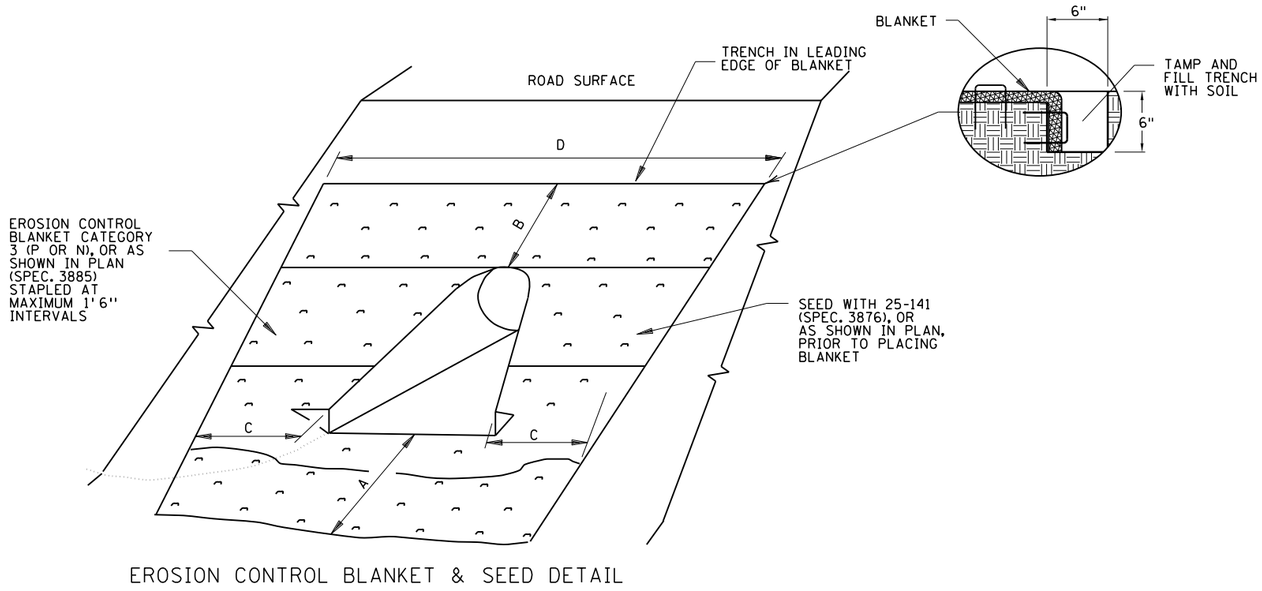
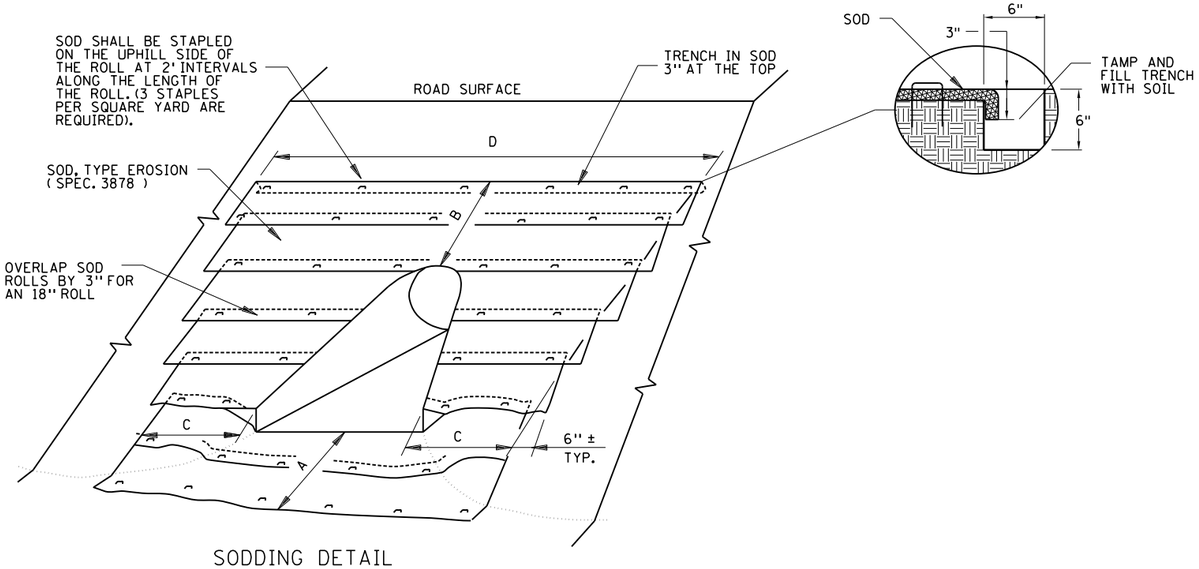


EROSION CONTROL BLANKET & SEED DETAIL



SODDING DETAIL

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

CULVERT OUTLET APRON ①										
CULVERT DIAMETER ②	SOD OR EROSION CONTROL BLANKET (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:

AREA SHOWN IN SQUARE YARDS IS FOR ONE CULVERT END.

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

FOR PIPE ARCHES USE EQUIVALENT PIPE DIAMETER TO APPROXIMATE AREA.

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

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

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

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

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

SPN10
OF SPN14

REVISION:

APPROVED: 2-28-2017
CHIEF ENVIRONMENTAL OFFICER

MINNESOTA
DEPARTMENT OF TRANSPORTATION

STATE DESIGN ENGINEER

REVISED:

APPROVED:
2-28-2017

PERMANENT EROSION CONTROL
TURF ESTABLISHMENT DETAIL AT CULVERT ENDS

STANDARD PLAN 5-297.404 | 2 OF 3

S.A.P. NO. 002-623-017
S.A.P. NO. 244-020-002

SHEET NO. 26 OF 94 SHEETS

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2/13/2018
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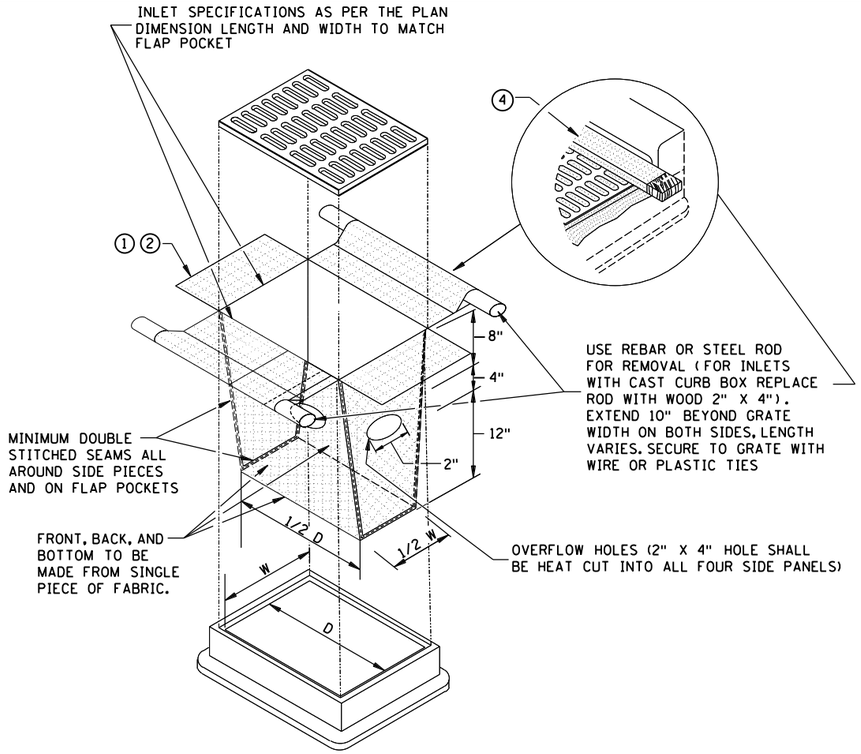
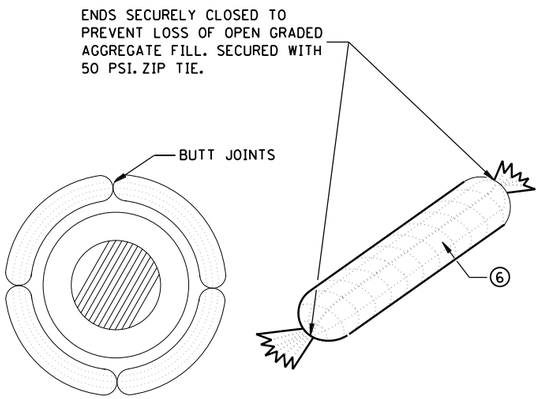
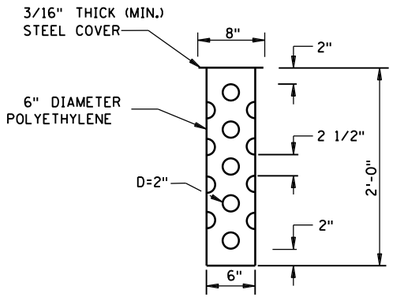


FILTER BAG INSERT ③

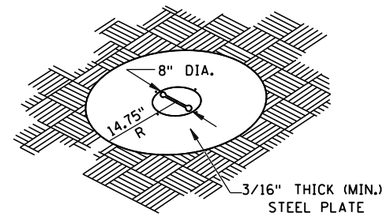
(CAN BE INSTALLED IN ANY INLET TYPE
WITH OR WITHOUT A CURB BOX)



ROCK LOG/COMPOST LOG



TUBE RISER



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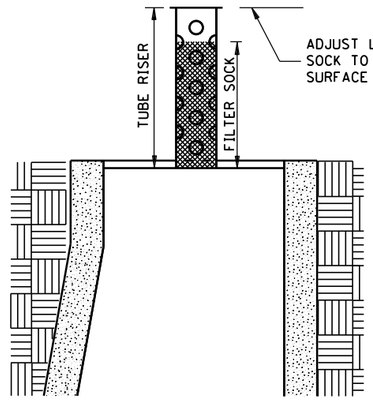

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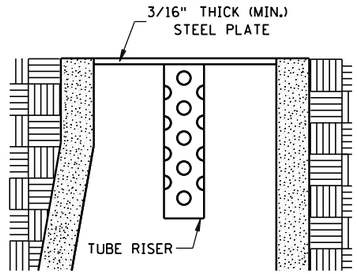

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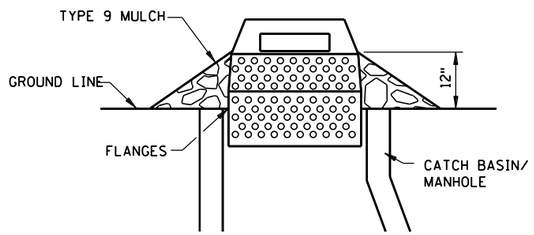
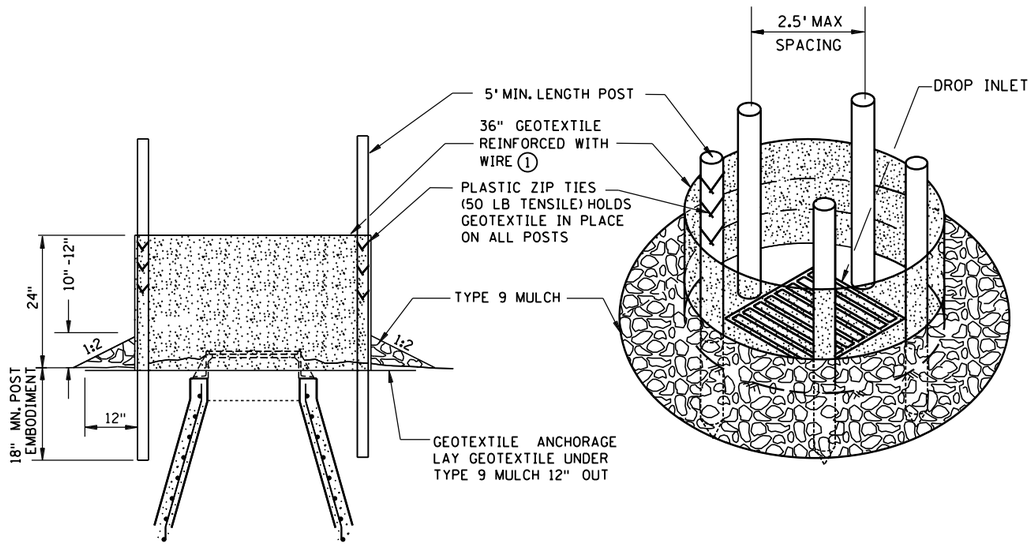
(DOWN POSITION)



SEDIMENT CONTROL INLET HAT

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



SILT FENCE RING AND ROCK FILTER BERM

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

POP-UP HEAD

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

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

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

SPN11
OF SPN14

REVISION:

APPROVED: 2-28-2017
CHIEF ENVIRONMENTAL OFFICER

MINNESOTA DEPARTMENT OF TRANSPORTATION

REVISED:

APPROVED: 2-28-2017
STATE DESIGN ENGINEER

TEMPORARY SEDIMENT CONTROL
STORM DRAIN INLET PROTECTION

STANDARD PLAN 5-297.405 | 4 OF 8

S.A.P. NO. 002-623-017
S.A.P. NO. 244-020-002

SHEET NO. 27 OF 94 SHEETS

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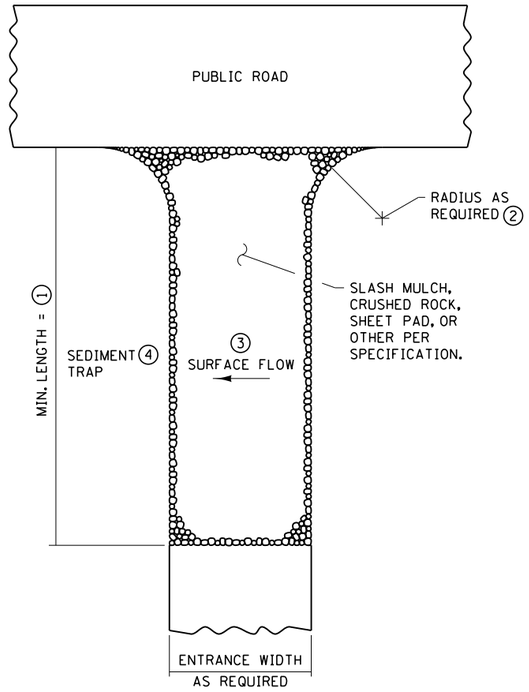
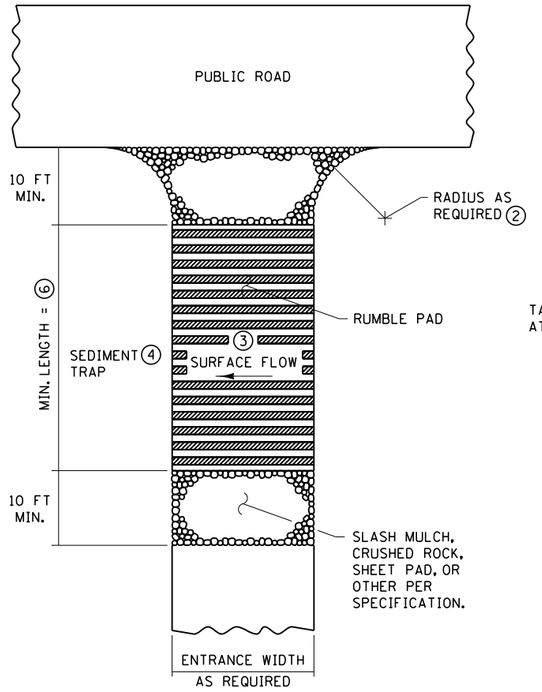
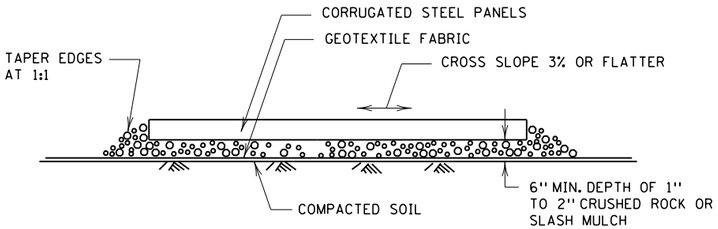


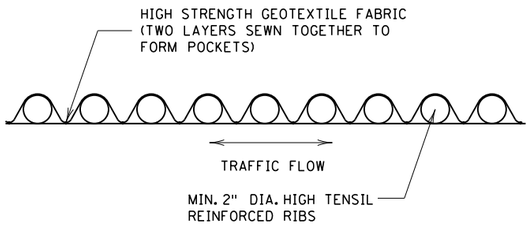
SLASH MULCH, CRUSHED ROCK, OR SHEET PAD CONSTRUCTION EXIT ⑤⑦



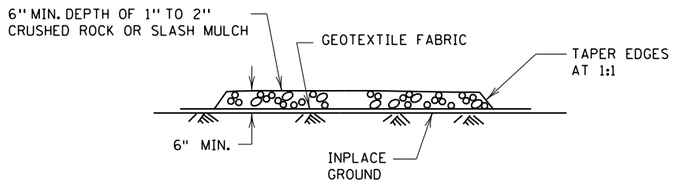
RUMBLE PAD CONSTRUCTION EXIT ⑤⑦



RUMBLE PAD



SHEET PAD



SLASH MULCH OR CRUSHED ROCK

NOTES:

SEE SPECS. 2573 & 3882.

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

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

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

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

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

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

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

SPN12
OF SPN14

REVISION:

APPROVED: 2-28-2017

CHIEF ENVIRONMENTAL OFFICER

MINNESOTA DEPARTMENT OF TRANSPORTATION

STATE DESIGN ENGINEER

REVISED:

APPROVED: 2-28-2017

TEMPORARY SEDIMENT CONTROL

STORM DRAIN INLET PROTECTION

STANDARD PLAN 5-297.405 | 5 OF 8

S.A.P. NO. 002-623-017
S.A.P. NO. 244-020-002

SHEET NO. 28 OF 94 SHEETS

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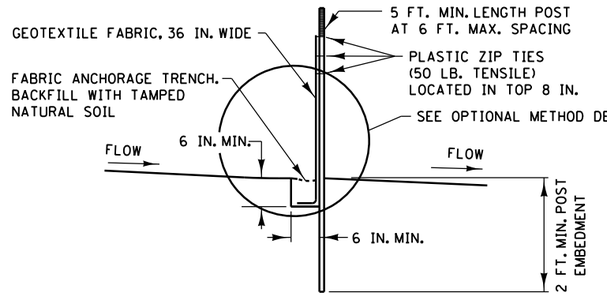

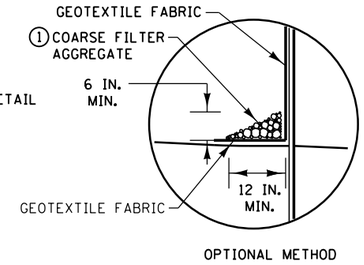

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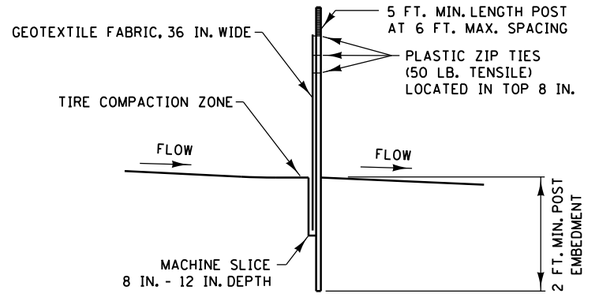

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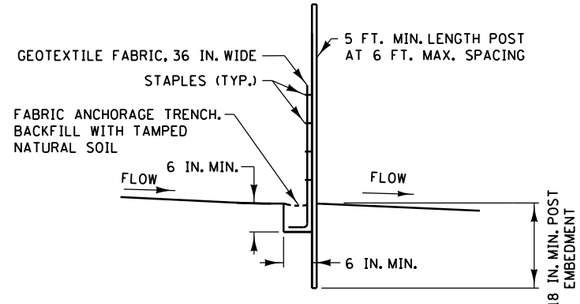

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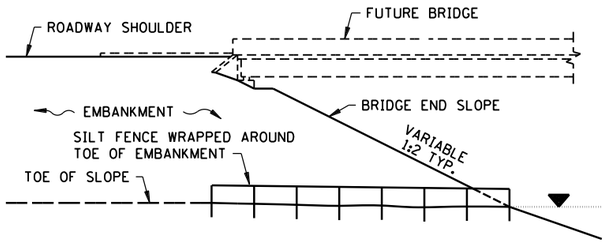
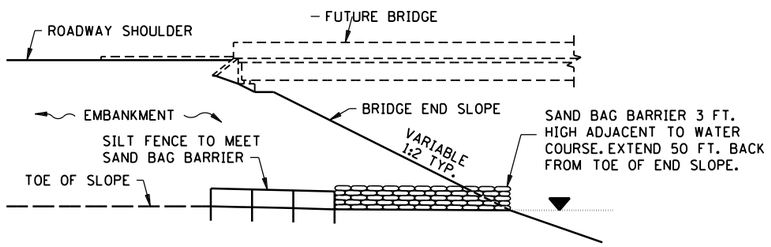
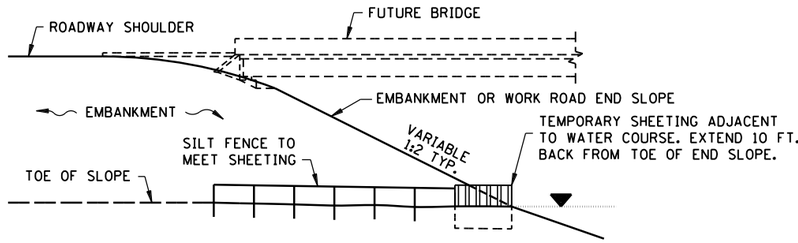


SILT FENCE ONLY ④

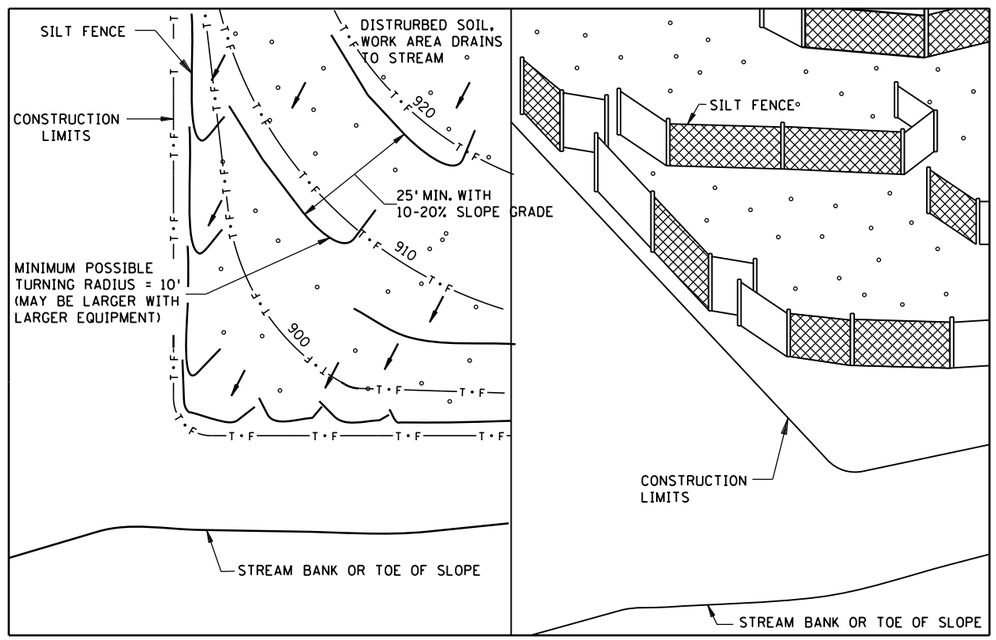


SILT FENCE WITH SAND BAGS ⑤



SILT FENCE WITH SHEETING ⑥

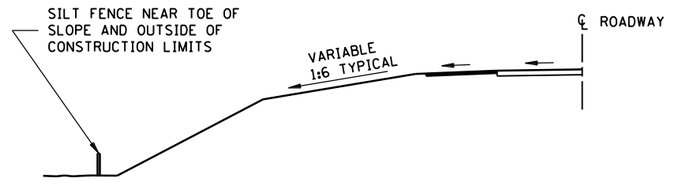
INSTALLATION AT BRIDGE EMBANKMENT ADJACENT TO WATER



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.

SPN13
OF SPN14

REVISION:

APPROVED: 2-28-2017
CHIEF ENVIRONMENTAL OFFICER

MINNESOTA DEPARTMENT OF TRANSPORTATION

STATE DESIGN ENGINEER

REVISED:

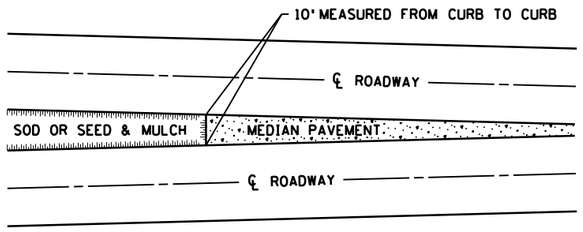
APPROVED: 2-28-2017

TEMPORARY SEDIMENT CONTROL
SILT FENCE

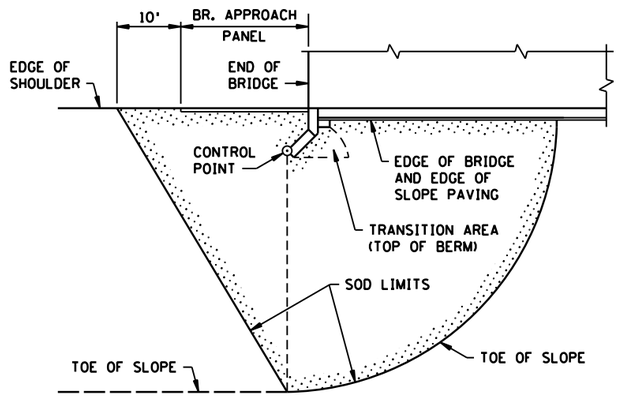
STANDARD PLAN 5-297.405 | 6 OF 8

S.A.P. NO. 002-623-017
S.A.P. NO. 244-020-002

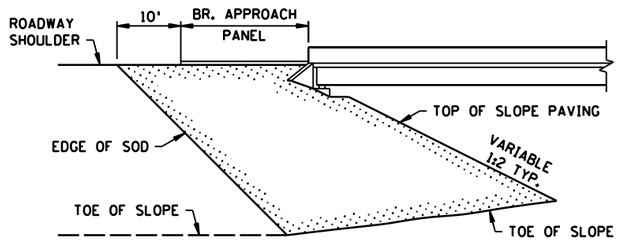
SHEET NO. 29 OF 94 SHEETS



SODDING LIMITS AT GORE AREA

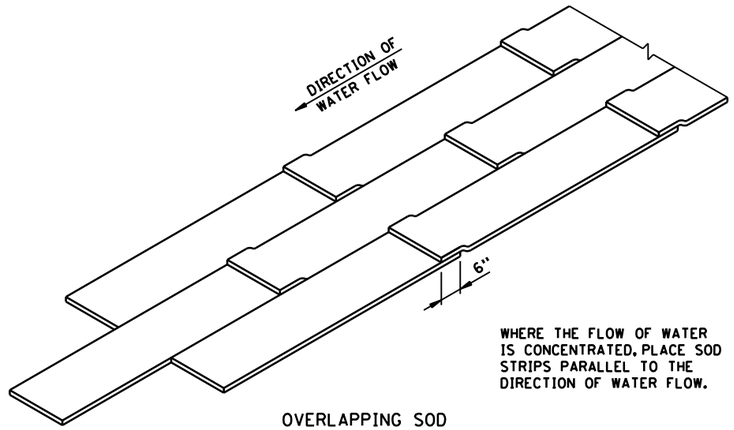


PLAN

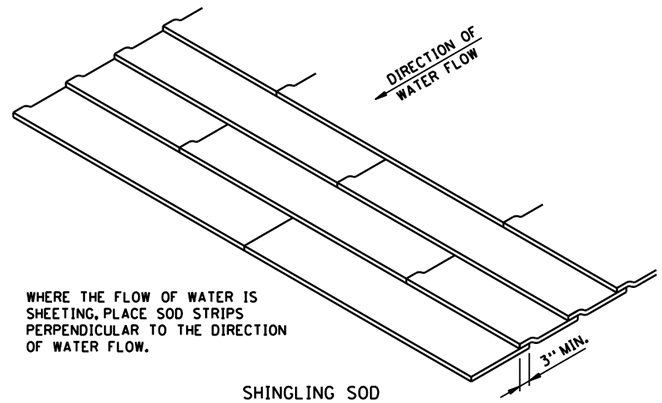


ELEVATION

SODDING LIMITS AT BRIDGE APPROACH FILLS

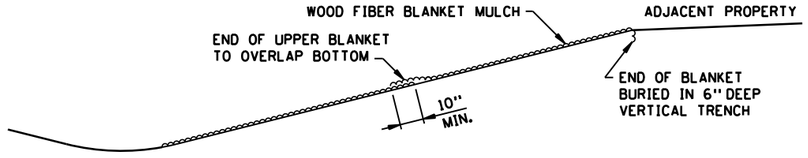


OVERLAPPING SOD

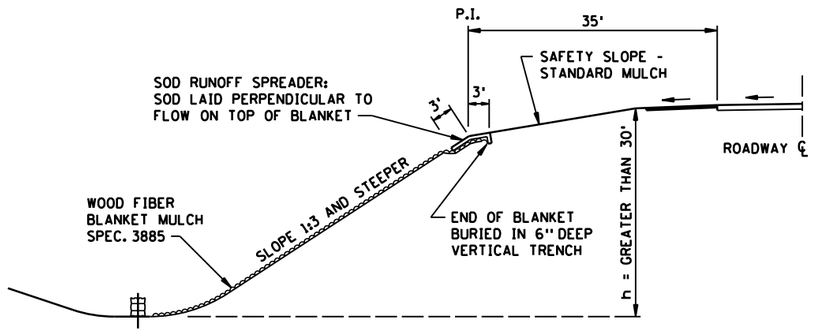


SHINGLING SOD

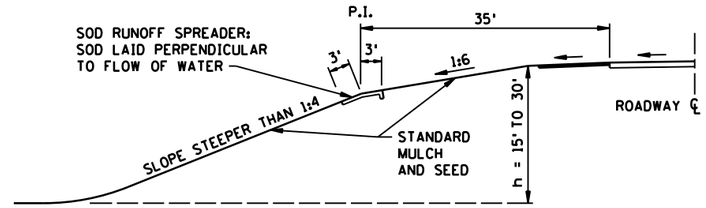
SPECIAL SOD PLACEMENT TECHNIQUES



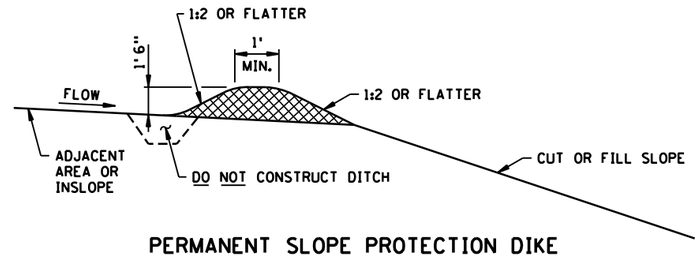
WOOD FIBER BLANKET INSTALLATION ON A CUT SLOPE



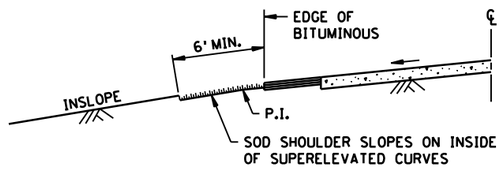
WOOD FIBER BLANKET INSTALLATION ON AN INSLOPE
(WHEN REQUIRED)



BROKEN-BACK SAFETY FILL SLOPE



PERMANENT SLOPE PROTECTION DIKE



SODDING INSLOPES OF SUPERELEVATED CURVES

REVISION:

APPROVED: 8-6-2014
CHIEF ENVIRONMENTAL OFFICER

REVISED:

APPROVED: 8-6-2014
STATE DESIGN ENGINEER

SPN14
OF SPN14

PERMANENT SEDIMENT CONTROL
ALONG ROADWAYS AND AT GORE AREAS & BRIDGE APPROACH FILLS

STANDARD PLAN 5-297.406 | 1 OF 1

S.A.P. NO. 002-623-017
S.A.P. NO. 244-020-002

SHEET NO. 30 OF 94 SHEETS

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2/13/2018
(USERNAME)

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MODEL: SPN14

NOTES & GUIDELINES

GENERAL INFORMATION:

1. THE CONTRACTOR SHALL FURNISH, INSTALL AND MAINTAIN THE DEVICES IN THIS TRAFFIC CONTROL PLAN UNLESS OTHERWISE NOTED.
2. FIELD CONDITIONS MAY REQUIRE MODIFICATIONS OF THIS LAYOUT AS DEEMED NECESSARY BY THE ENGINEER.
3. ALL DISTANCES ARE APPROXIMATE.
4. THE CONTRACTOR IS RESPONSIBLE FOR PROTECTING ANY WORK AREAS NEAR TRAFFIC IN ACCORDANCE WITH THE MNMUTCD.
5. IF THE CONTRACTOR DECIDES TO PERFORM THE CONSTRUCTION WORK IN A SEQUENCE OTHER THAN SHOWN IN THIS TRAFFIC CONTROL PLAN THE CONTRACTOR SHALL PROVIDE COMPLETE REVISED TRAFFIC CONTROL PLANS TO BE APPROVED BY THE ENGINEER.

SIGNING:

1. ALL TRAFFIC CONTROL DEVICES, INCLUDING OVERHEAD SIGNS ON ROADS OPEN TO TRAFFIC THAT ARE NOT CONSISTENT WITH TRAFFIC OPERATION SHALL BE COVERED, REMOVED OR REVISED AS DIRECTED BY THE ENGINEER.
2. WHEN SIGNS ARE INSTALLED, THEY SHALL BE MOUNTED ON POSTS DRIVEN INTO THE GROUND AT THE PROPER HEIGHT AND LATERAL OFFSET AS DETAILED IN THE MNMUTCD. IF THIS IS NOT POSSIBLE THEY WILL BE MOUNTED ON PORTABLE SUPPORTS AS APPROVED BY THE ENGINEER. WHEN THE SIGNS ARE REMOVED THE SIGN POSTS SHALL ALSO BE REMOVED AS SOON AS POSSIBLE.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY EXTRA SIGNING NEEDED TO FACILITATE TRAFFIC SWITCHES OR FOR TRANSITIONING TRAFFIC FROM ONE STAGE TO ANOTHER.
4. ALL ORANGE WARNING AND ORANGE GUIDE SIGNS SHALL BE FABRICATED WITH SIGN SHEETING MATERIAL AS LISTED ON THE MN/DOT APPROVED PRODUCT LIST FOR "SHEETING FOR RIGID TEMPORARY WORK ZONE SIGNS".

   BARRICADES SHALL BE FABRICATED WITH SIGN SHEETING MATERIAL AS LISTED ON THE MN/DOT APPROVED PRODUCT LIST FOR BARRICADE SHEETING. NOTE THAT ASTM TYPE VII SHEETING IS NOT ALLOWED ON BARRICADES AFTER JANUARY 1, 2010.
5. LONGITUDINAL DROPOFFS SHALL BE SIGNED AS SHOWN IN THE "TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS" FIELD MANUAL UNLESS OTHERWISE SPECIFIED IN THESE PLANS.
6. THE CONTRACTOR SHALL COORDINATE THE INSTALLATION OF THE FINAL SIGNS TO ASSURE THAT THE FINAL SIGNS ARE PLACED AS NEEDED, OR PROVIDE TEMPORARY SIGNING AT THEIR EXPENSE UNTIL THE FINAL SIGNING IS PLACED.

PAVEMENT MARKING:

1. OBLITERATE ANY CONFLICTING PAVEMENT MARKINGS AS DIRECTED BY THE ENGINEER.
2. PAINT, POLYMER LANE TAPE AND/OR TRPM'S ARE ACCEPTABLE TEMPORARY STRIPING ALTERNATIVES ACCORDING TO ACTUAL CONDITIONS ENCOUNTERED AS DIRECTED BY THE ENGINEER. GENERALLY, ONLY PAINT WILL BE USED BEFORE MAY 1ST OR WHEN THE OTHER MANUFACTURERS' SPECIFICATIONS CAN NOT BE MET.
3. TRPM'S (TEMPORARY RAISED PAVEMENT MARKERS) SHOULD BE USED TO SUPPLEMENT THE LONG TERM (MORE THAN 3 DAYS) EDGELINES ON ALL TRANSITION AREAS WHEN THE CONDITIONS ARE WITHIN THE MANUFACTURERS' SPECIFICATIONS.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE LOCATION AND INSTALLATION OF TEMPORARY AND FINAL STRIPING. ANOKA COUNTY TRAFFIC PERSONNEL WILL ASSIST IN THE SPOTTING OF TRANSITION AREAS, GORES AND TAPERS.

CONSTRUCTION INFORMATION SIGNING:

1. THE CONTRACTOR SHALL USE CONSTRUCTION INFORMATION SIGNING AS SHOWN IN THE PLAN AND WHICH ARE TO BE USED AS FOLLOWS:

   G20-X1 CLOSURE NOTICE SIGNS PAIRED WITH G20-X3 WORK ENDS SIGNS TO DISPLAY THE CORRECT START DATE AND AN ESTIMATED FINISH DATE AS APPROVED BY THE PROJECT ENGINEER.

   G20-X2 WORK ZONE ADVANCE NOTICE SIGNS WITH THE CORRECT STARTING DATE DISPLAYED BEFORE WORK BEGINS. ONCE WORK BEGINS, THE START DATE LEGEND SHALL BE COVERED BY THE SUGGESTED PLAQUE CONTAINED IN THIS PLAN. IF NO ALTERNATE MESSAGE IS SUGGESTED OR IF DIRECTED BY THE PROJECT ENGINEER, THE CORRECT ESTIMATED FINISH DATE, MONTH, OR SEASON SHALL BE DISPLAYED.

   CONSTRUCTION INFORMATION SIGNING NOT VISIBLE TO THE MOTORING PUBLIC ONCE WORK BEGINS WILL BE MOVED BY THE CONTRACTOR TO A SITE IN ADVANCE OF THE WORK ZONE OR CLOSURE AS DIRECTED BY THE PLAN OR PROJECT ENGINEER.

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

TRAFFIC CONTROL DEVICES & SYMBOLS LEGEND

SYMBOL	DESCRIPTION
▭	WORK AREA / AREA CLOSED TO TRAFFIC
⊢	TRAFFIC CONTROL SIGN
⌴	TYPE III BARRICADE =
●	DRUM-LIKE CHANNELIZER = (50' SPACING UNLESS OTHERWISE NOTED).
ⓐ	TYPE A FLASHING WARNING LIGHT
○	TUBE DELINEATOR = (50' SPACING UNLESS OTHERWISE NOTED)

INDEX

TRAFFIC CONTROL - QUANTITIES SUMMARY (PAY ITEMS)					0	
			PHASE 1 QUANTITY	PHASE 2 QUANTITY	TOTAL QUANTITY	
2564	TRAFFIC CONTROL	LUMP SUM			1	
2564	PORTABLE CHANGEABLE MESSAGE SIGN	EACH	4	4	4	(1)
2564	CONSTRUCTION SIGN-SPECIAL	SQ FT		45	45	

SPECIFIC NOTES:
(1) FOUR PCMS TO BE USED AT THE DISCRETION OF THE ENGINEER IN THE FIELD IN EACH PHASE.

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: SAS				
DESIGNER: CMJ				
CHECKED BY: MAW				

I hereby certify that this plan was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.
Certified By: Mark Wagner Lic. No. 51660
Licensed Professional Engineer
Printed Name: MARK A. WAGNER Date: 9/19/2017

SEH
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

ANOKA COUNTY, MN
CSAH 23
S.A.P. 002-623-017, S.A.P. 244-020-002

TRAFFIC CONTROL PLAN
TITLE SHEET AND PAY ITEM TABULATION

FILE NO. ANOKC141617
TC1 OF TC9
31/94

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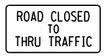
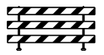
TRAFFIC CONTROL TABULATION SHEET

"R" SERIES			
SIGN	SIGN NO.	COLOR	SIZE
	R3-2	RED ON WHITE	24" X 24"
	R3-1	RED ON WHITE	24" X 24"
	R4-7c	BLACK ON WHITE	12" X 18"
	R11-2	BLACK ON WHITE	48" X 30"
	R11-4	BLACK ON WHITE	60" X 30"
	R9-9A	BLACK ON WHITE	24" X 18"

"W" SERIES			
SIGN	SIGN NO.	COLOR	SIZE
	W20-1	BLACK ON ORANGE	36" x 36"
	W21-5	BLACK ON ORANGE	36" x 36"
	W20-2	BLACK ON ORANGE	36" x 36"
	W1-6L	BLACK ON ORANGE	48" x 24"
	W1-6R	BLACK ON ORANGE	48" x 24"
	W8-23	BLACK ON ORANGE	36" x 36"
	W20-3	BLACK ON ORANGE	36" x 36"

DEVICES			
ITEM	SIGN NO.	COLOR	SIZE
	DLC		
	TYPE III		

"M" SERIES			
	M4-8A	BLACK ON ORANGE	24" X 18"
	M4-9MT	BLACK ON ORANGE	30" X 24"
	M4-9ML	BLACK ON ORANGE	30" X 24"
	M4-9MR	BLACK ON ORANGE	30" X 24"
	M4-9MATL	BLACK ON ORANGE	30" X 24"
	M4-9MATR	BLACK ON ORANGE	30" X 24"

"G" SERIES			
SIGN	SIGN NO.	COLOR	SIZE
	G20-X1	BLACK ON ORANGE	54" X 48"
	G20-X6R	BLACK ON ORANGE	36" X 24"
	G20-X6L	BLACK ON ORANGE	36" X 24"
	G20-X6T	BLACK ON ORANGE	36" X 24"

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2/13/2018
(USERNAME)

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DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: SAS				
DESIGNER: CMJ				
CHECKED BY: MAW				

I hereby certify that this plan was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.
Certified By: Mark Wagner Lic. No. 51660
Licensed Professional Engineer
Printed Name: MARK A. WAGNER Date: 9/19/2017

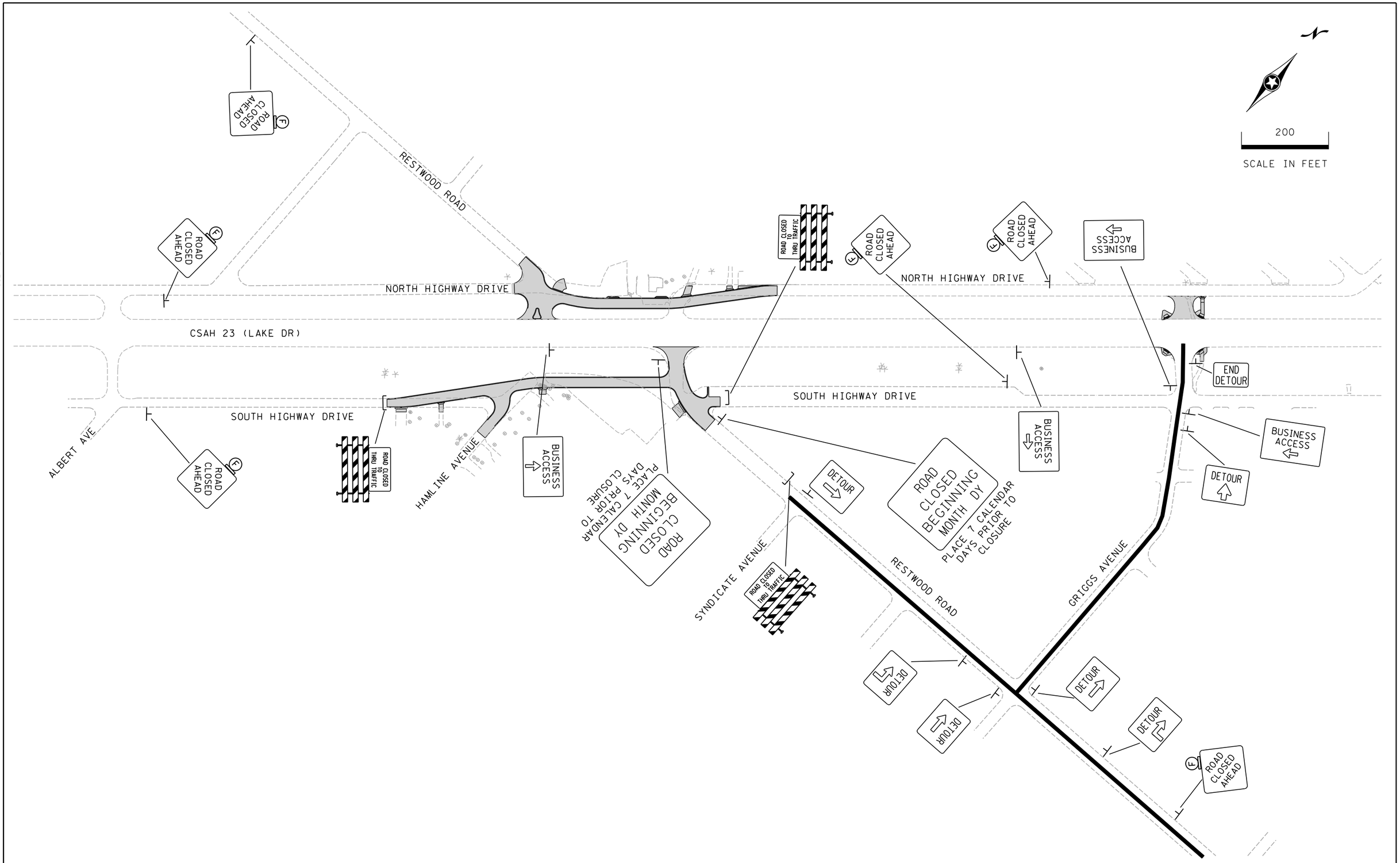
SEH
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

ANOKA COUNTY, MN
CSAH 23
S.A.P. 002-623-017, S.A.P. 244-020-002

TRAFFIC CONTROL PLAN
SIGN TABULATION

FILE NO. ANOKC141617
TC2 OF TC9

32/94



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DRAWN BY: SAS				
DESIGNER: CMJ				
CHECKED BY: MAW				

I hereby certify that this plan was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.
Certified By: Mark Wag — Lic. No. 51660
Licensed Professional Engineer
Printed Name: MARK A. WAGNER Date: 9/19/2017

SEH
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

ANOKA COUNTY, MN
CSAH 23
S.A.P. 002-623-017, S.A.P. 244-020-002

TRAFFIC CONTROL PLAN
PHASE 1 DETOUR

FILE NO. ANOKC141617
TC3 OF TC9

100

SCALE IN FEET

NOTE: CONTRACTOR SHALL MAINTAIN ACCESS TO ALL COMMERCIAL AND RESIDENTIAL DIRVEWAYS AT ALL TIMES UNLESS OTHERWISE SHOWN IN THESE PLANS.

CSAH 23 (LAKE DRIVE)

110 115 120

600'

ROAD WORK AHEAD

TURN LANE CLOSED

ALBERT AVE

10

SOUTH HIGHWAY DRIVE

10

ROAD CLOSED

HAMLINE AVE N

15

NORTH HIGHWAY DRIVE

30

20

RESTWOOD ROAD

ROAD CLOSED

ROAD CLOSED

25

ROAD CLOSED

ROAD CLOSED

SOUTH HIGHWAY DRIVE

10

RESTWOOD ROAD

MATCHLINE LAKE (CSAH 23) STA 124+70
SEE BELOW

MATCHLINE LAKE (CSAH 23) STA 124+70
SEE ABOVE

NORTH HIGHWAY DRIVE

ROAD WORK AHEAD

PATRIOT LANE

TURN LANE CLOSED

10'
10'

GRIGGS AVENUE

WOODLAND ROAD

50

125 130 135 140

10

CSAH 23 (LAKE DRIVE)

ROAD CLOSED

40

SOUTH HIGHWAY DRIVE

GRIGGS AVENUE

100

SCALE IN FEET

NOTE: CONTRACTOR SHALL MAINTAIN ACCESS TO ALL COMMERCIAL AND RESIDENTIAL DIRVEWAYS AT ALL TIMES UNLESS OTHERWISE SHOWN IN THESE PLANS.

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: SAS				
DESIGNER: CMJ				
CHECKED BY: MAW				

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Certified By: Mark Wag — Lic. No. 51660
Licensed Professional Engineer
Printed Name: MARK A. WAGNER Date: 9/19/2017

SEH
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

ANOKA COUNTY, MN
CSAH 23
S.A.P. 002-623-017, S.A.P. 244-020-002

TRAFFIC CONTROL PLAN
PHASE 1

FILE NO. ANOKC141617
TC4 OF TC9

34/94

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MODEL: TC4

100
SCALE IN FEET

BUSINESS ACCESS

LOVELL ROAD

BUSINESS ACCESS

LEXINGTON AVENUE NE (CSAH 17)

NO SHOULDER

BUSINESS ACCESS

ROAD WORK AHEAD

ROAD CLOSED

ROAD CLOSED

30
60
150
40

160
161
155
CSAH 23 (LAKE DRIVE)
10
5
TRAIL CLOSED
TRAIL CLOSED
15

LEXINGTON AVENUE NE (CSAH 17)

VILLAGE PARKWAY

NOTE: CONTRACTOR SHALL MAINTAIN ACCESS TO ALL COMMERCIAL AND RESIDENTIAL DIRVEWAYS AT ALL TIMES UNLESS OTHERWISE SHOWN IN THESE PLANS.

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: SAS				
DESIGNER: CMJ				
CHECKED BY: MAW				

I hereby certify that this plan was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.
Certified By: _____ Lic. No. 51660
Licensed Professional Engineer
Printed Name: MARK A. WAGNER Date: 9/19/2017

SEH
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

ANOKA COUNTY, MN
CSAH 23
S.A.P. 002-623-017, S.A.P. 244-020-002

TRAFFIC CONTROL PLAN
PHASE 1

FILE NO. ANOKC141617
TC5 OF TC9
35/94

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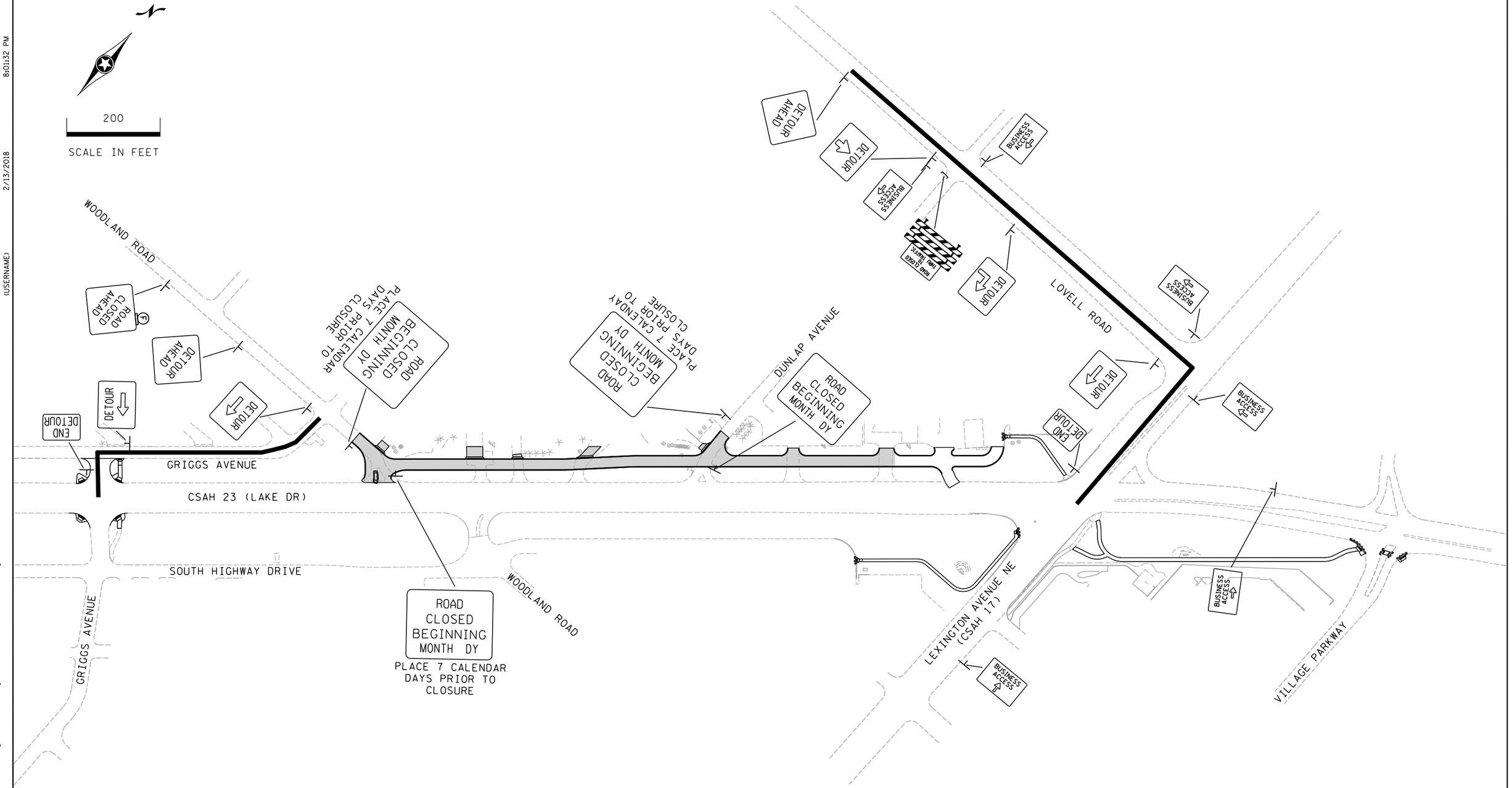

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DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: SAS				
DESIGNER: CMJ				
CHECKED BY: MAW				

I hereby certify that this plan was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.
Certified By: Mark Wag — Licensed Professional Engineer — Lic. No. 51660
Printed Name: MARK A. WAGNER — Date: 9/19/2017

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ST. PAUL, MN 55110

ANOKA COUNTY, MN
CSAH 23
S.A.P. 002-623-017, S.A.P. 244-020-002

TRAFFIC CONTROL PLAN
PHASE 2 DETOUR

FILE NO. ANOKC141617
TC6 OF TC9
36/94

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WOODLAND ROAD
GRIGGS AVENUE
ROAD CLOSED
ROAD CLOSED
TURN LANE CLOSED
ROAD CLOSED
DUNLAP AVENUE
ROAD CLOSED
ROAD CLOSED
ROAD CLOSED
TURN LANE CLOSED
50
55
60
10
10
140
145
150
40
CSAH 23 (LAKE DRIVE)
SOUTH HIGHWAY DRIVE
WOODLAND ROAD
MATCHLINE LAKE (CSAH 23) STA 152+30
SEE BELOW
100
SCALE IN FEET

NOTE: CONTRACTOR SHALL MAINTAIN ACCESS TO ALL COMMERCIAL AND RESIDENTIAL DIRVEWAYS AT ALL TIMES UNLESS OTHERWISE SHOWN IN THESE PLANS.

NOTE: CONTRACTOR SHALL MAINTAIN ACCESS TO ALL COMMERCIAL AND RESIDENTIAL DIRVEWAYS AT ALL TIMES UNLESS OTHERWISE SHOWN IN THESE PLANS.

100
SCALE IN FEET

MATCHLINE LAKE (CSAH 23) STA 152+30
SEE ABOVE
30
LEXINGTON AVENUE NE (CSAH 17)
NO SHOULDER
ROAD WORK AHEAD
155
160
161
10
5
15
CSAH 23 (LAKE DRIVE)
LEXINGTON AVENUE NE (CSAH 17)
VILLAGE PARKWAY

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DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: SAS				
DESIGNER: CMJ				
CHECKED BY: MAW				

I hereby certify that this plan was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.
Certified By: Mark Wag — Lic. No. 51660
Licensed Professional Engineer
Printed Name: MARK A. WAGNER — Date: 9/19/2017

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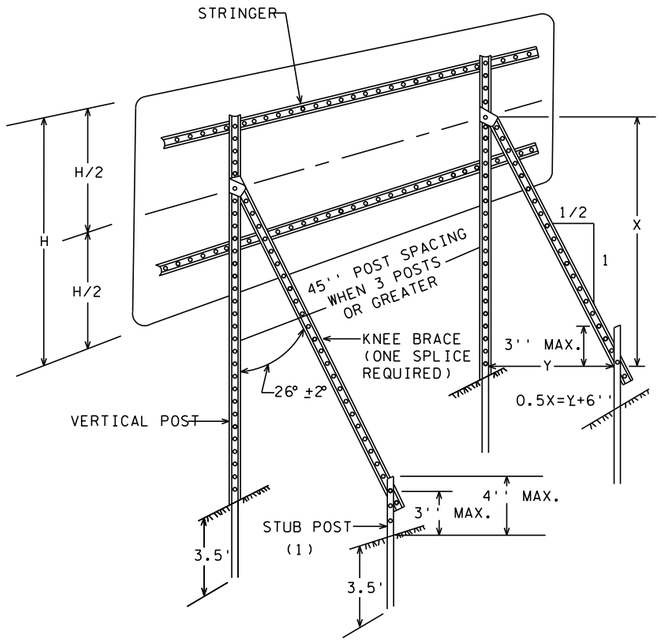
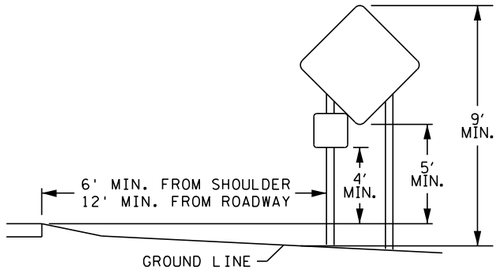
TRAFFIC CONTROL PLAN
PHASE 2

FILE NO. ANOKC141617
TC7 OF TC9

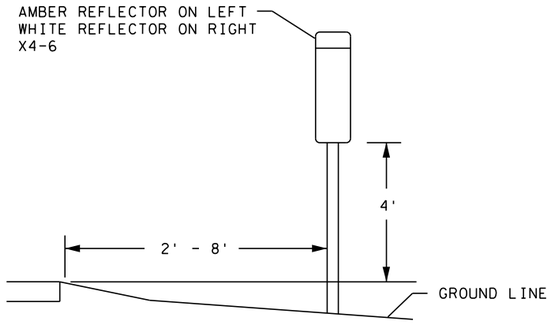
37/94



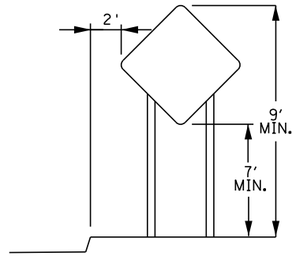
TYPICAL "A-FRAME" INSTALLATION
TYPE "D" SIGNS



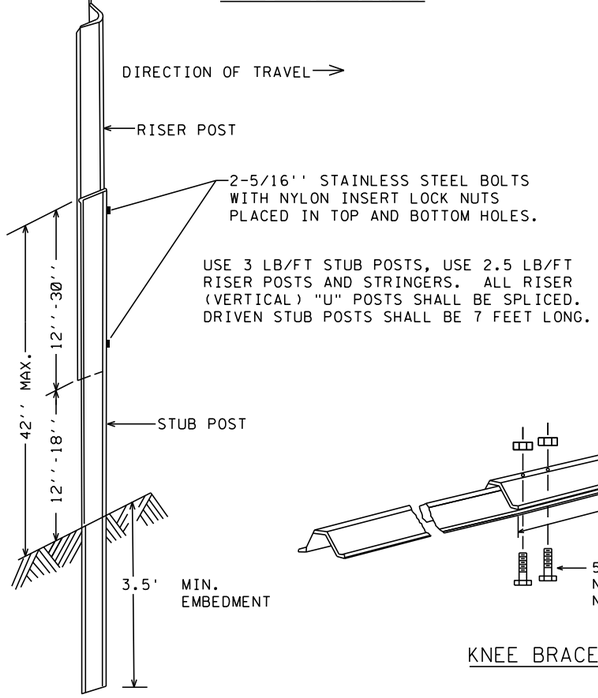
TYPICAL RURAL DESIGN



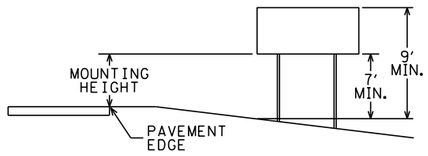
DELINEATION MOUNTING



TYPICAL URBAN DESIGN



"U" POST BREAKAWAY SPLICE



TYPICAL MOUNTING

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

KNEE BRACE STRUCTURAL SPLICE

SIGN DATA

SIGNS TO BE PLACED ON DRIVEN U-POSTS SHALL BE PLACED IN ACCORDANCE WITH TABLE 1 OR 2 BELOW. IF THE TTC PLAN PLACES POST MOUNTED TEMPORARY SIGNS ADJACENT TO EXISTING STRUCTURES THERE SHALL BE NO MORE THAN TWO U-POST WITHIN 84 INCHES OF EACH OTHER ALIGNED IN THE SAME PLANE SO AS NOT TO COMPROMISE THAT STRUCTURE'S AND THE NEW DEVICE'S CRASHWORTHINESS. IF IT IS NOT POSSIBLE TO MAINTAIN THIS SPACING THEN THE POST MOUNTED TEMPORARY SIGNS SHALL BE PLACED A MIN OF 4' BEYOND THE IN PLACE STRUCTURES. SIGN PANELS SHALL BE PLACED ON SIGN STRUCTURES TO MEET THE 5' MIN DEPICTED ON THE TYPICAL RURAL DESIGN DETAIL, THE 7' MIN DEPICTED ON THE TYPICAL URBAN DESIGN DETAIL, AND THE 9' MIN DEPICTED ON THE TYPICAL MOUNTING DETAIL ON THIS SHEET.

STANDARD CONSTRUCTION SIGNS IN MnDOT STANDARD SIGNS AND MARKINGS MANUAL

TABLE 1

PANEL SIZE (IN.)	POSTS			
	NO. & TYPE	SPACING (IN.)	KNEE BRACES QUANT.	LENGTH (FT.)
24 x 24	2-U	18		13
30 x 24	2-U	18		13
36 x 30	2-U	24		13
36 x 36	2-U	18		14
42 x 36	2-U	30		14
48 x 48	2-U	30		15
60 x 60	2-U	42	1	16
66 X 60	2-U	42	2	16
72 x 72	2-U	42	2	17
96 x 54	2-U	54	2	19
96 X 84	2-U	54	2	19
132 X 108	3-U	45	3	22
168 x 132	4-U	48	4	25

GENERAL NOTES:
1. POST LENGTHS ARE APPROXIMATE AND INCLUDE EMBEDMENT, BUT DO NOT INCLUDE ADDITIONAL LENGTH REQUIRED FOR SPLICE.
2. SEE MnDOT STANDARD SIGNS AND MARKINGS MANUAL FOR PUNCHING HOLES.
3. MINIMUM OF 45" SPACING BETWEEN POSTS MUST BE MAINTAINED WHEN USING MORE THAN TWO POSTS.

TABLE 2

SPECIAL DESIGN CONSTRUCTION SIGNS

PANEL SIZE		POSTS			
LENGTH (IN.)	HEIGHT (IN.)	NO. & TYPE	SPACING (IN.)	KNEE BRACES QUANT.	LENGTH (FT.)
54 - 96	78	2-U	42	2	20
102 - 138	78	3-U	45	3	20
144 - 180	78	4-U	45	4	20

DESIGNER NOTE: INCLUDE SPECIAL SIGN DETAILS IN THE TRAFFIC CONTROL PLAN IN TABLE TWO.

NOTES: FOR TEMPORARY CONSTRUCTION SIGN FRAMING, THE CONTRACTOR MAY USE GRADE 5 ZINC PLATED BOLTS FOR ALL BOLTED CONNECTIONS, EXCEPT FOR THE KNEE BRACE CONNECTION TO THE REAR STUB POST, WHICH SHALL UTILIZE A 5/16 INCH STAINLESS STEEL BOLT AND NYLON INSERT LOCK NUT. ADDITIONAL SIGN FRAMING DETAILS CAN BE FOUND IN THE TRAFFIC ENGINEERING MANUAL PART 6.

IF THE CONTRACTOR ELECTS TO USE SOME OTHER TYPE OF SIGN SUPPORT (OTHER THAN U-CHANNEL SIGN POSTS) FOR MOUNTING CONSTRUCTION SIGNS, DETAILS OF THE PROPOSED SIGN STRUCTURE SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PRIOR TO ORDERING THE SIGN STRUCTURE COMPONENTS. ANY SIGN STRUCTURE TO BE SUBMITTED TO THE ENGINEER SHALL BE AN FHWA ACCEPTED BREAKAWAY SIGN SUPPORT. SIGN STRUCTURE SHALL ALSO BE APPROVED FOR 90 MPH WIND LOAD.

DESIGN TEAM	NO.	BY	DATE	REVISIONS
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DESIGNER: CMJ				
CHECKED BY: MAW				

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CSAH 23
S.A.P. 002-623-017, S.A.P. 244-020-002

TRAFFIC CONTROL PLAN
TYPICAL TEMPORARY SIGN FRAMING AND INSTALLATION DETAILS

FILE NO. ANOKC141617
TC8 OF TC9

38 / 94

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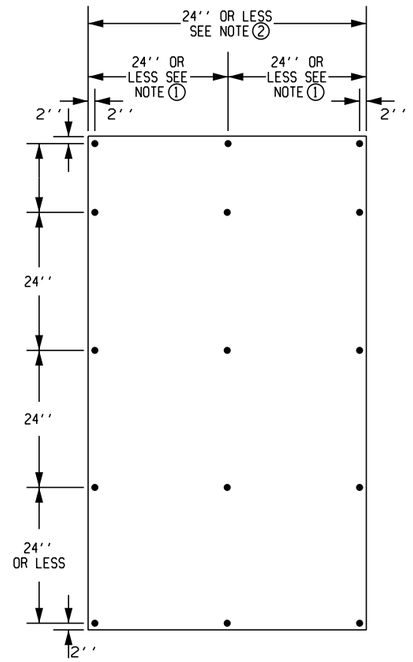
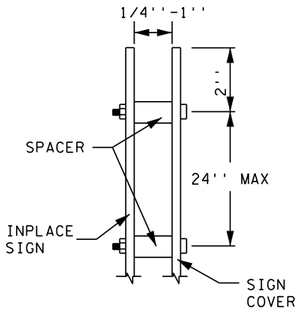
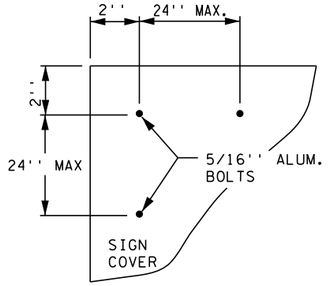
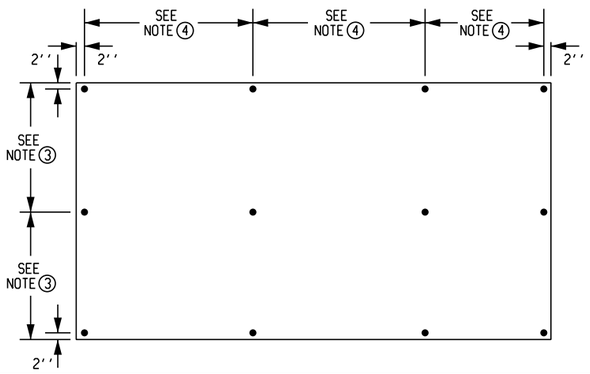








OVERLAY ASSEMBLY STEPS FOR COVERING COMPLETE OR PORTION OF EXTRUDED SIGN PANEL:

1) DRILL 1/4'' HOLES ON THE SHEET ALUMINUM OVERLAYS IN ACCORDANCE WITH THE HOLE SPACING ON THE DIAGRAM. OUTSIDE HOLES SHALL NOT BE SPACED MORE THAN 24'' APART.
2) ATTACH PLASTIC SPACER(S) (1/4'' MIN THICKNESS, 3/8'' I.D. AND 7/8'' O.D.) WITH DOUBLE FACED TAPE, CENTERED BEHIND EACH DRILLED HOLE.
3) POSITION THE FIRST OVERLAY PANEL'S BOTTOM EDGE FLUSH WITH THE BOTTOM OF THE INPLACE EXTRUDED SIGN PANEL AND THE OVERLAY PANEL'S LOWER LEFT EDGE FLUSH WITH THE LOWER LEFT EDGE OF THE BOTTOM INPLACE EXTRUDED PANEL SECTION.
4) DRILL ALL OF THE OUTSIDE HOLES THROUGH THE INPLACE EXTRUDED SIGN PANEL AND ATTACH THE OVERLAY PANEL WITH SHEET METAL SCREWS.
5) DRILL THE INNER HOLES THROUGH THE INPLACE EXTRUDED SIGN PANEL AND ATTACH WITH SHEET METAL SCREWS AS SPECIFIED IN STEP 4 ABOVE.
6) ABUT THE NEXT OVERLAY PANEL TO THE FIRST ATTACHED OVERLAY PANEL AND PERFORM THE SAME WORK AS SPECIFIED IN STEPS 4 AND 5 ABOVE.
7) PLACE EACH ADDITIONAL OVERLAY PANEL AS SPECIFIED IN STEP 6 ABOVE.

NOTES FOR COVERING COMPLETE OR PORTION OF EXTRUDED SIGN PANEL:

① THE CENTER SHEET METAL SCREWS SHALL BE SPACED AT 1/2 OF THE PANELS WIDTH.

② IF THE SHEET ALUMINUM PANEL IS GREATER THAN 48'' WIDE, THE SHEET METAL SCREWS SPACING SHALL BE NO GREATER THAN 24''. IF THE SHEET ALUMINUM PANEL IS LESS THAN 24'' WIDE, THERE SHALL BE NO INNER HOLES.

③ VERTICAL SPACING FOR THE MOUNTING HOLES IS 50% OF THE PANEL HEIGHT. IF THE PANEL IS LESS THAN 24'' HIGH, THERE SHALL BE NO INNER HOLES.

④ HORIZONTAL SPACING FOR MOUNTING HOLES SHALL NOT BE LESS THAN 15'' NOR MORE THAN 24''.

GENERAL NOTES:

SIGN PANEL OVERLAYS SHALL BE MADE OF A RIGID MATERIAL. (SHEET ALUMINUM, PLYWOOD, CORRUGATED PLASTIC, OR OTHER MATERIAL AS APPROVED BY THE ENGINEER). THE INSTALLATION SHALL ALLOW ADEQUATE AIR FLOW BETWEEN THE OVERLAY PANEL AND THE INPLACE SIGN PANEL BY PROVIDING A MINIMUM SPACING OF 1/4'' (1'' MAXIMUM).

IF SHEET METAL SCREWS ARE USED WITH CORRUGATED PLASTIC, FENDER WASHERS SHALL BE PLACED BETWEEN SCREWS AND PANEL OVERLAY.

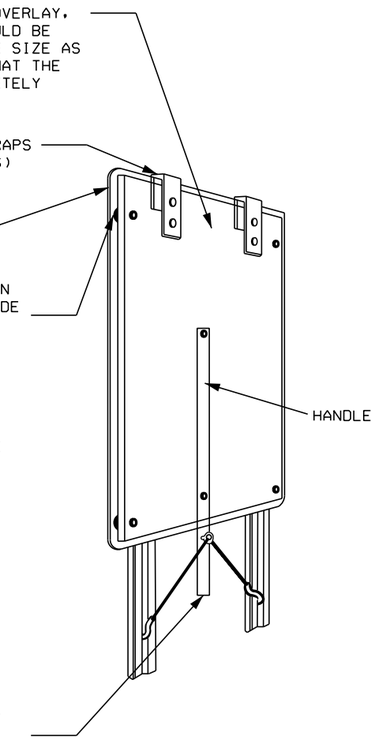
SPACERS SHALL BE A MATERIAL THAT WILL NOT HARM THE SIGN SHEETING FACE (SUCH AS PLASTIC OR RUBBER).

ALL COVERING MATERIAL, MOUNTING HARDWARE AND FASTENERS SHALL BE REMOVED WHEN PANEL OVERLAY IS REMOVED.

SIGN PANEL OVERLAYS USED TO COVER ALL OR PART OF A SIGN SHALL BE THE SAME COLOR AS THE BACKGROUND COLOR OF THE SIGN TO BE COVERED AND SHALL COVER ALL OF THE SIGN OR MESSAGE TO BE COVERED UNLESS SHOWN OTHERWISE IN THE PLAN.

TAPE SHALL NOT BE APPLIED TO THE SIGN SHEETING SURFACE. PRE-MASK OR APPLICATION TAPE SHALL BE REMOVED PRIOR TO EXPOSURE TO SUNLIGHT.

OVERLAY ASSEMBLY COVERING TYPE C OR D SIGN PANEL:



DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: SAS				
DESIGNER: CMJ				
CHECKED BY: MAW				

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ANOKA COUNTY, MN

CSAH 23

S.A.P. 002-623-017, S.A.P. 244-020-002

TRAFFIC CONTROL PLAN

TYPICAL TEMPORARY SIGN COVERING DETAILS

FILE NO. ANOKC141617 | TC9 OF TC9 | 39/94

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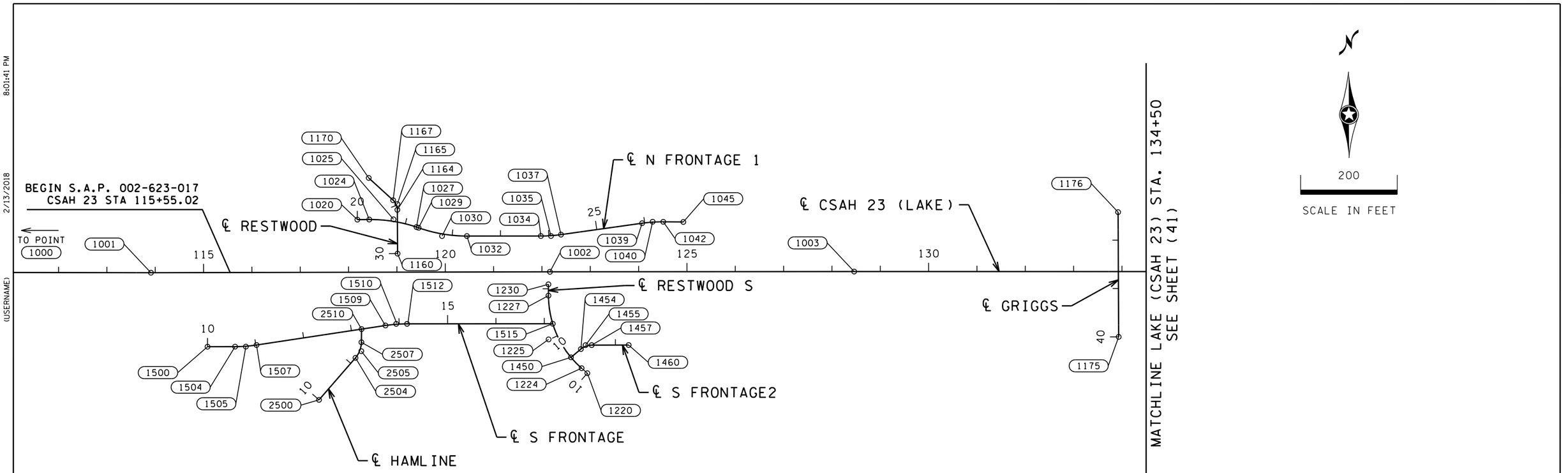

ALIGNMENT TABULATION

POINT NUMBER	POINT	STATION	DELTA	DEGREE	RADIUS	TANGENT	LENGTH	COORDINATES X	COORDINATES Y	AZIMUTH
CSAH 23 (LAKE) (CHAIN: LAKE)										
1000	POT	100+00.000						522,446.9603	135,097.9462	
1001	POT	113+91.096						523,498.6388	136,008.5069	
1002	POT	122+16.563						524,120.5784	136,551.2656	
1003	POT	128+45.930						524,595.3347	136,964.4348	
1004	POT	137+16.547						525,252.6812	137,535.2853	
1009	PC	152+15.121						526,383.6581	138,518.4503	48° 59' 57.74"
1010	PI	152+65.117	0° 29' 59.87" RT	0° 30' 00.02"	11,459.000'	49.996'	99.992'	526,421.3903	138,551.2512	PI
1011	CC							533,901.5334	129,870.3157	
1012	PT	153+15.112						526,459.4073	138,583.7215	49° 29' 57.61"
1014	PC	156+28.483						526,697.6940	138,787.2424	49° 29' 57.61"
1015	PI	157+52.753	9° 17' 56.83" RT	3° 44' 59.01"	1,528.000'	124.270'	247.995'	526,792.1889	138,867.9506	PI
1016	CC							527,690.0641	137,625.3536	
1017	PT	158+76.478						526,898.4836	138,932.3288	58° 47' 54.44"
1018	POT	162+42.997						527,211.9861	139,122.2042	
S FRONTAGE (CHAIN: S_FRONTAGE)										
1500	POT	10+00.000						523,687.4246	135,969.8220	
1504	PC	10+56.934						523,730.3363	136,007.2399	48° 54' 44.71"
1505	PI	10+79.233	8° 30' 06.13" LT	19° 05' 54.94"	300.000'	22.298'	44.515'	523,747.1427	136,021.8946	PI
1506	CC							523,533.1728	136,233.3516	
1507	PT	11+01.449						523,761.5979	136,038.8729	40° 24' 38.58"
1509	PC	13+71.289						523,936.5250	136,244.3338	40° 24' 38.58"

ALIGNMENT TABULATION

POINT NUMBER	POINT	STATION	DELTA	DEGREE	RADIUS	TANGENT	LENGTH	COORDINATES X	COORDINATES Y	AZIMUTH
S FRONTAGE (CHAIN: S_FRONTAGE) (CONT.)										
1510	PI	13+93.742	8° 33' 37.80" RT	19° 05' 54.94"	300.000'	22.453'	44.823'	523,951.0805	136,261.4299	PI
1511	CC							524,164.9502	136,049.8551	
1512	PT	14+16.112						523,968.0187	136,276.1690	48° 58' 16.38"
1515	POT	17+17.517						524,195.3930	136,474.0231	
S FRONTAGE 2 (CHAIN: S_FRONTAGE2)										
1450	POT	10+00.000						524,269.4967	136,446.2966	
1454	PC	10+26.675						524,273.7179	136,472.6353	9° 06' 18.89"
1455	PI	10+39.339	39° 47' 02.28" RT	163° 42' 08.02"	35.000'	12.664'	24.303'	524,275.7220	136,485.1400	PI
1456	CC							524,308.2769	136,467.0966	
1457	PT	10+50.977						524,285.2638	136,493.4670	48° 53' 21.17"
1460	POT	11+27.426						524,342.8634	136,543.7334	
HAMLINE (CHAIN: HAMLINE)										
2500	POT	10+00.000						523,933.5849	136,038.1131	
2504	PC	11+14.984						523,933.5849	136,153.0974	0° 00' 00.00"
2505	PI	11+33.356	40° 21' 03.46" LT	114° 35' 29.61"	50.000'	18.372'	35.213'	523,933.5849	136,171.4695	PI
2506	CC							523,883.5849	136,153.0974	
2507	PT	11+50.197						523,921.6896	136,185.4708	319° 38' 56.54"
2510	POT	11+77.413						523,904.0683	136,206.2117	

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: SAS				
DESIGNER: JEO				
CHECKED BY: HLR				

I hereby certify that this plan was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.
Certified By: Jason E. Owens Lic. No. 43475
Licensed Professional Engineer
Printed Name: JASON E. OWENS Date: 9/19/2017

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CSAH 23
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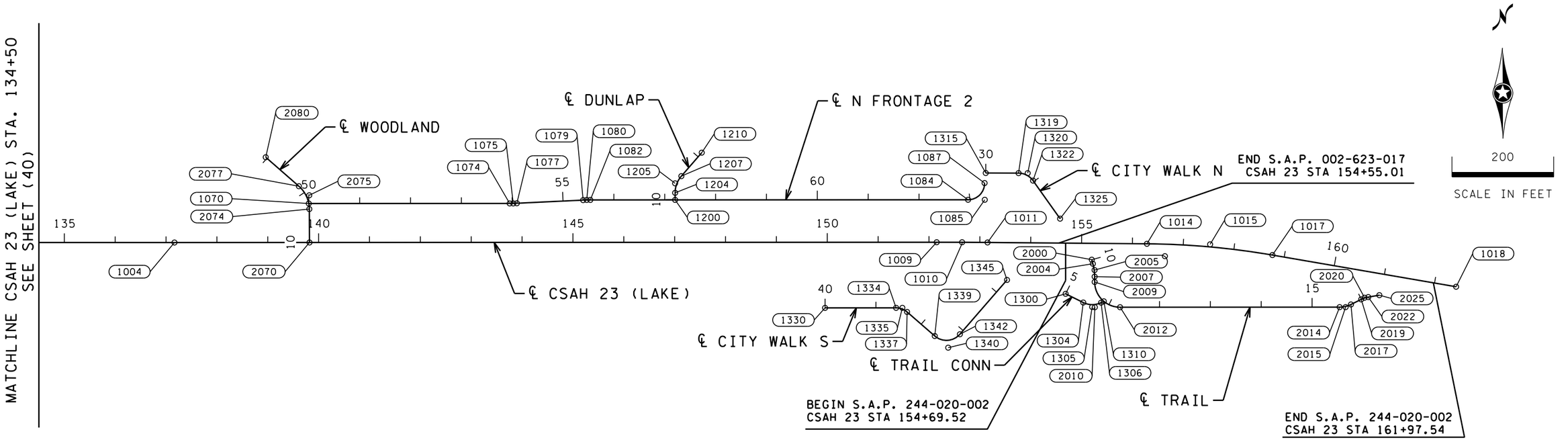
ALIGNMENT PLAN AND TABULATION
LAKE AND S FRONTAGE

FILE NO. ANOKC141617
AL 1 OF AL3

40 / 94



ALIGNMENT TABULATION

POINT NUMBER	POINT	STATION	DELTA	DEGREE	RADIUS	TANGENT	LENGTH	COORDINATES X	COORDINATES Y	AZIMUTH
N FRONTAGE 1 (CHAIN: N_FRONTAGE_1)										
1020	POT	20+00.000						523,749.0310	136,371.4900	
1024	PC	20+24.608						523,767.4845	136,387.7696	48° 34' 52.80"
1025	PI	20+74.789	18° 59' 30.57" RT	19° 05' 54.94"	300.000'	50.181'	99.441'	523,805.1148	136,420.9670	PI
1026	CC							523,965.9514	136,162.8010	
1027	PT	21+24.049						523,851.5003	136,440.1112	67° 34' 23.38"
1029	PC	21+28.653						523,855.7696	136,441.8350	68° 27' 09.00"
1030	PI	21+80.077	19° 27' 11.61" LT	19° 05' 54.94"	300.000'	51.423'	101.857'	523,903.5992	136,460.7214	PI
1031	CC							523,745.5879	136,720.8690	
1032	PT	22+30.510						523,942.4085	136,494.4586	48° 59' 57.39"
1034	PC	23+83.522						524,057.8865	136,594.8447	48° 59' 57.39"
1035	PI	24+04.421	7° 58' 12.59" LT	19° 05' 54.94"	300.000'	20.900'	41.732'	524,073.6594	136,608.5563	PI
1036	CC							523,861.0660	136,821.2551	
1037	PT	24+25.253						524,087.3788	136,624.3224	41° 01' 44.80"
1039	PC	25+94.758						524,198.6488	136,752.1926	41° 01' 44.80"
1040	PI	26+16.748	8° 23' 04.00" RT	19° 05' 54.94"	300.000'	21.990'	43.901'	524,213.0837	136,768.7811	PI
1041	CC							524,424.9616	136,555.2598	
1044	PT	26+38.659						524,229.7832	136,783.0874	49° 24' 48.80"
1045	POT	26+80.198						524,261.3293	136,810.1127	
N FRONTAGE 2 (CHAIN: N_FRONTAGE_2)										
1070	POT	50+00.000						525,401.7627	137,766.3572	
1074	PC	53+94.942						525,699.8116	138,025.4833	48° 59' 45.74"
1075	PI	54+01.998	2° 41' 40.55" LT	19° 05' 54.94"	300.000'	7.056'	14.109'	525,705.1363	138,030.1127	PI
1076	CC							525,502.9782	138,251.8826	

ALIGNMENT TABULATION

POINT NUMBER	POINT	STATION	DELTA	DEGREE	RADIUS	TANGENT	LENGTH	COORDINATES X	COORDINATES Y	AZIMUTH
N FRONTAGE 2 (CHAIN: N_FRONTAGE_2) (CONT.)										
1077	PT	54+09.051						525,710.2375	138,034.9872	46° 18' 05.19"
1079	PC	55+39.573						525,804.6024	138,125.1597	46° 18' 05.19"
1080	PI	55+46.628	2° 41' 40.49" RT	19° 05' 54.94"	300.000'	7.056'	14.109'	525,809.7036	138,130.0343	PI
1081	CC							526,011.8617	137,908.2644	
1082	PT	55+53.681						525,815.0282	138,134.6636	48° 59' 45.68"
1084	PC	62+96.367						526,375.5067	138,621.9484	48° 59' 45.68"
1085	PI	63+29.215	90° 36' 42.25" LT	176° 18' 04.38"	32.499'	32.848'	51.396'	526,400.2956	138,643.5001	PI
1086	CC							526,354.1839	138,646.4741	
1087	PT	63+47.763						526,378.4805	138,668.0576	318° 23' 03.43"
RESTWOOD (CHAIN: RESTWOOD)										
1160	POT	30+00.000						523,857.9210	136,372.9424	
1164	PC	30+90.588						523,798.2073	136,441.0633	318° 45' 45.69"
1165	PI	31+02.428	47° 21' 23.51" LT	212° 12' 23.73"	27.000'	11.840'	22.316'	523,790.4026	136,449.9668	PI
1166	CC							523,777.9036	136,423.2655	
1167	PT	31+12.904						523,778.5662	136,450.2574	271° 24' 22.18"
1170	POT	31+81.174						523,710.3172	136,451.9327	
RESTWOOD S (CHAIN: RESTWOOD_S)										
1220	POT	10+00.000						524,316.5421	136,443.7477	
1224	PC	10+15.765						524,300.7767	136,443.7768	270° 06' 21.23"
1225	PI	11+06.368	48° 44' 32.84" RT	28° 38' 52.40"	200.000'	90.603'	170.143'	524,210.1739	136,443.9443	PI
1226	CC							524,301.1464	136,643.7765	
1227	PT	11+85.909						524,150.5523	136,512.1657	318° 50' 54.07"
1230	POT	12+09.202						524,135.2243	136,529.7045	

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: SAS				
DESIGNER: JEO				
CHECKED BY: HLR				

I hereby certify that this plan was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.
Certified By: Jason E. Owens Lic. No. 43475
Licensed Professional Engineer
Printed Name: JASON E. OWENS Date: 9/19/2017

SEH
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

ANOKA COUNTY, MN
CSAH 23
S.A.P. 002-623-017, S.A.P. 244-020-002

ALIGNMENT PLAN AND TABULATION
N FRONTAGE 1 AND N FRONTAGE 2

FILE NO. ANOKC141617
AL2 OF AL3
41 / 94

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ALIGNMENT TABULATION

POINT NUMBER	POINT	STATION	DELTA	DEGREE	RADIUS	TANGENT	LENGTH	COORDINATES X	COORDINATES Y	AZIMUTH
GRIGGS (CHAIN: GRIGGS)										
1175	POT	40+00.000						525,097.0991	137,221.3108	
1176	POT	42+58.002						524,926.9958	137,415.2955	
WOODLAND (CHAIN: WOODLAND)										
2070	POT	10+00.000						525,453.0115	137,709.4337	
2074	PC	10+65.666						525,409.7171	137,758.8064	318° 45' 10.10"
2075	PI	10+92.751	48° 35' 21.22" LT	95° 29' 34.68"	60.000'	27.084'	50.883'	525,391.8602	137,779.1703	PI
2076	CC							525,364.6048	137,719.2479	
2077	PT	11+16.549						525,364.7761	137,779.2476	270° 09' 48.88"
2080	POT	12+03.105						525,278.2199	137,779.4948	
DUNLAP (CHAIN: DUNLAP)										
1200	POT	10+00.000						525,940.8611	138,244.0637	
1204	PC	10+13.892						525,931.7465	138,254.5474	318° 59' 45.68"
1205	PI	10+32.588	41° 00' 14.32" RT	114° 35' 29.61"	50.000'	18.696'	35.783'	525,919.4797	138,268.6568	PI
1206	CC							525,969.4797	138,287.3530	
1207	PT	10+49.675						525,919.4797	138,287.3530	0° 00' 00.00"
1210	POT	11+10.773						525,919.4797	138,348.4510	
TRAIL (CHAIN: TRAIL)										
2000	POT	10+00.000						526,636.3042	138,692.5715	
2004	PC	10+08.282						526,643.1776	138,687.9506	123° 54' 44.35"
2005	PI	10+21.154	14° 40' 08.46" RT	57° 17' 44.81"	100.000'	12.872'	25.602'	526,653.8596	138,680.7692	PI
2006	CC							526,587.3853	138,604.9613	
2007	PT	10+33.885						526,662.3748	138,671.1169	138° 34' 52.80"
2009	PC	10+44.405						526,669.3348	138,663.2276	138° 34' 52.80"
2010	PI	10+94.042	89° 34' 56.73" LT	114° 35' 29.61"	50.000'	49.637'	78.175'	526,702.1724	138,626.0051	PI
2011	CC							526,706.8296	138,696.3054	
2012	PT	11+22.581						526,739.6333	138,658.5705	48° 59' 56.07"
2014	PC	15+54.209						527,065.3817	138,941.7502	48° 59' 56.07"
2015	PI	15+65.950	26° 25' 45.36" LT	114° 35' 29.61"	50.000'	11.741'	23.064'	527,074.2425	138,949.4531	PI
2016	CC							527,032.5781	138,979.4851	
2017	PT	15+77.273						527,078.7487	138,960.2948	22° 34' 10.71"
2019	PC	15+99.781						527,087.3876	138,981.0794	22° 34' 10.71"
2020	PI	16+07.140	16° 44' 41.81" RT	114° 35' 29.61"	50.000'	7.359'	14.613'	527,090.2120	138,987.8747	PI
2021	CC							527,133.5583	138,961.8891	
2022	PT	16+14.394						527,094.8744	138,993.5680	39° 18' 52.52"
2025	POT	16+36.559						527,108.9175	139,010.7164	
TRAIL CONN (CHAIN: TRAIL CONN)										
1300	POT	5+00.000						526,641.5149	138,608.2549	
1304	PC	5+38.662						526,678.9221	138,618.0251	75° 21' 44.26"
1305	PI	5+58.155	51° 57' 44.09" LT	143° 14' 22.02"	40.000'	19.493'	36.276'	526,697.7824	138,622.9511	PI
1306	CC							526,668.8139	138,656.7268	
1307	PT	5+74.939						526,705.5240	138,640.8408	23° 24' 00.18"
1310	POT	5+80.905						526,707.8936	138,646.3167	

ALIGNMENT TABULATION

POINT NUMBER	POINT	STATION	DELTA	DEGREE	RADIUS	TANGENT	LENGTH	COORDINATES X	COORDINATES Y	AZIMUTH
CITY WALK S (CHAIN: CITYWALK_S)										
1330	POT	40+00.000						526,302.5589	138,277.1527	
1334	PC	41+39.669						526,407.9555	138,368.7981	48° 59' 31.51"
1335	PI	41+52.009	41° 00' 28.49" RT	173° 37' 24.87"	33.000'	12.341'	23.619'	526,417.2681	138,376.8957	PI
1336	CC							526,429.6089	138,343.8957	
1337	PT	41+63.288						526,429.6089	138,376.8957	90° 00' 00.00"
1339	PC	42+35.315						526,501.6361	138,376.8957	90° 00' 00.00"
1340	PI	42+70.314	89° 59' 57.49" LT	163° 42' 08.02"	35.000'	35.000'	54.977'	526,536.6357	138,376.8957	PI
1341	CC							526,501.6361	138,411.8957	
1342	PT	42+90.292						526,536.6361	138,411.8953	0° 00' 02.51"
1345	POT	44+31.621						526,536.6379	138,553.2240	
CITY WALK N (CHAIN: CITYWALK_N)										
1315	POT	30+00.000						526,367.2345	138,684.4654	
1319	PC	30+64.521						526,416.0849	138,726.6154	49° 12' 39.90"
1320	PI	30+82.501	54° 22' 47.27" RT	163° 42' 08.02"	35.000'	17.980'	33.219'	526,429.6977	138,738.3611	PI
1321	CC							526,438.9495	138,700.1162	
1322	PT	30+97.740						526,447.1740	138,734.1361	103° 35' 27.16"
1325	POT	31+89.565						526,536.4277	138,712.5584	

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(USERNAME)

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DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: SAS				
DESIGNER: JEO				
CHECKED BY: HLR				

I hereby certify that this plan was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.
Certified By: Jason E. Owens Lic. No. 43475
Licensed Professional Engineer
Printed Name: JASON E. OWENS Date: 9/19/2017

SEH
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

ANOKA COUNTY, MN
CSAH 23
S.A.P. 002-623-017, S.A.P. 244-020-002

ALIGNMENT TABULATION
GRIGGS, HAMLINE, MINUTEMAN, RESTWOOD, WOODLAND, AND TRAIL

FILE NO. ANOKC141617
AL3 OF AL3

CITY OF LEXINGTON

℄ RESTWOOD

℄ N FRONTAGE 1

CITY OF LEXINGTON

ANOKA COUNTY

NORTH HIGHWAY DRIVE

NORTH HIGHWAY DRIVE

100

SCALE IN FEET

℄ CSAH 23 (LAKE)

125

130

INFILTRATION SWALE 1

INFILTRATION SWALE 2

INFILTRATION SWALE 3

BEGIN S.A.P. 002-623-017
CSAH 23 STA 115+55.02

℄ RESTWOOD S

SOUTH HIGHWAY DRIVE

SOUTH HIGHWAY DRIVE

℄ S FRONTAGE

℄ S FRONTAGE 2

℄ HAMLINE

ANOKA COUNTY

CITY OF LEXINGTON

RESTWOOD ROAD

MATCHLINE LAKE (CSAH 23) STA 130+54
SEE BELOW

LEGEND

- EXISTING ROADWAY
- NEW CONSTRUCTION
- EXISTING RIGHT-OF-WAY
- PROPERTY LINE
- CONSTRUCTION LIMITS

PATRIOT LANE

℄ WOODLAND

GRIGGS AVENUE

℄ N FRONTAGE 2

NORTH HIGHWAY DRIVE

MATCHLINE LAKE (CSAH 23) STA 130+54
SEE ABOVE

℄ CSAH 23 (LAKE)

135

140

145

INFILTRATION SWALE 3

℄ GRIGGS

SOUTH HIGHWAY DRIVE

SOUTH HIGHWAY DRIVE

GRIGGS AVENUE

ANOKA COUNTY

CITY OF LEXINGTON

FILTRATION BASIN

WOODLAND ROAD

MATCHLINE LAKE (CSAH 23) STA 145+54
SEE SHEET (44)

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: SAS				
DESIGNER: JEO				
CHECKED BY: HLR				

I hereby certify that this plan was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.
Certified By: Jason E. Owens Lic. No. 43475
Licensed Professional Engineer
Printed Name: JASON E. OWENS Date: 9/19/2017

SEH
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

ANOKA COUNTY, MN
CSAH 23
S.A.P. 002-623-017, S.A.P. 244-020-002

INPLACE TOPOGRAPHY AND UTILITY PLAN
LAKE STA 115+54 TO LAKE STA 130+54

FILE NO. ANOKC141617
TP1 OF TP2

43
94

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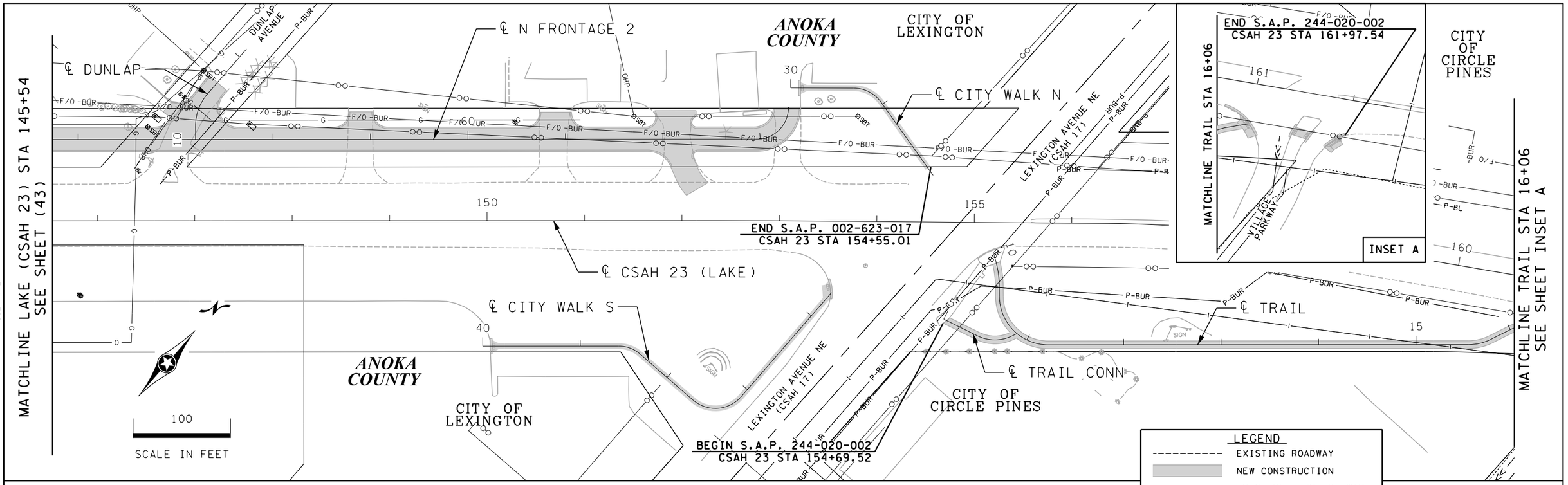

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DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: SAS				
DESIGNER: JEO				
CHECKED BY: HLR				

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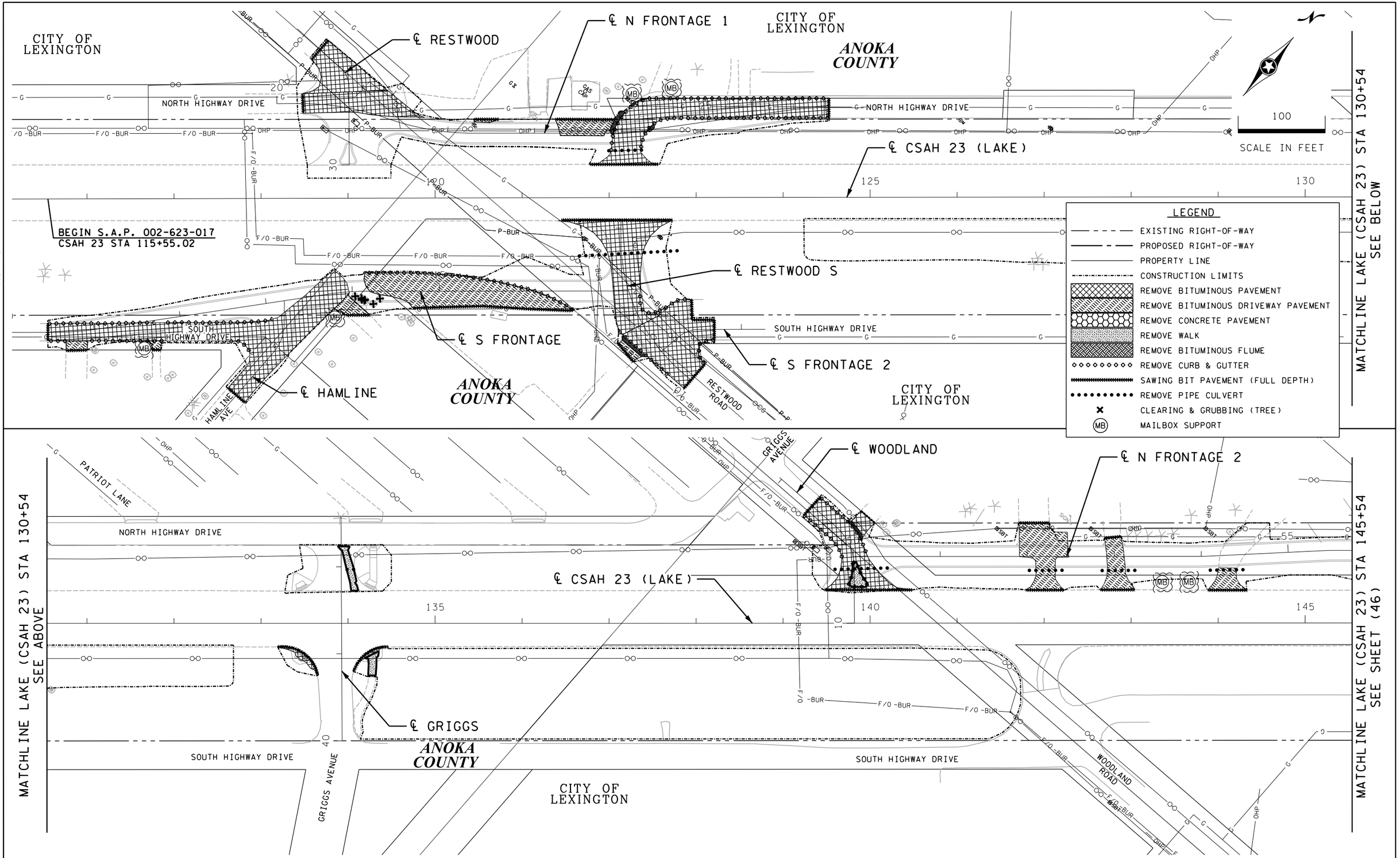
Certified By: Jason E. Owens Lic. No. 43475
Licensed Professional Engineer
Printed Name: JASON E. OWENS Date: 9/19/2017

SEH
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

ANOKA COUNTY, MN
CSAH 23
S.A.P. 002-623-017, S.A.P. 244-020-002

INPLACE TOPOGRAPHY AND UTILITY PLAN
LAKE STA 130+54 TO TRAIL STA 16+21.46

FILE NO. ANOKC141617
TP2 OF TP2
44 / 94



DESIGN TEAM				
DRAWN BY: SAS	1	JEO	3/1/18	ADDED LOCATIONS OF MAILBOX SUPPORT REMOVAL
DESIGNER: JEO				
CHECKED BY: HLR				
	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.
Certified By: Jason E. Owens Lic. No. 43475
Licensed Professional Engineer
Printed Name: JASON E. OWENS Date: 9/19/2017

SEH
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

ANOKA COUNTY, MN
CSAH 23
S.A.P. 002-623-017, S.A.P. 244-020-002

REMOVAL PLAN
LAKE STA 115+54 TO LAKE STA 130+54

FILE NO. ANOKC141617
RM1 OF RM2

45 / 94

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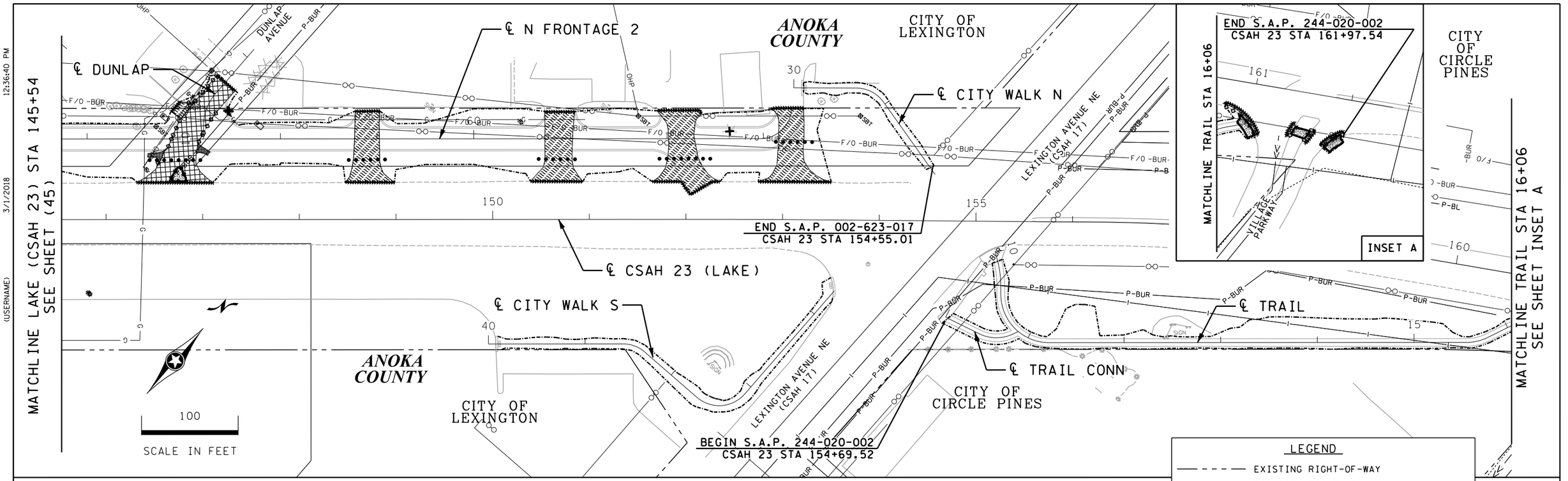

LEGEND

- EXISTING RIGHT-OF-WAY
- PROPOSED RIGHT-OF-WAY
- PROPERTY LINE
- CONSTRUCTION LIMITS
- REMOVE BITUMINOUS PAVEMENT
- REMOVE BITUMINOUS DRIVEWAY PAVEMENT
- REMOVE CONCRETE PAVEMENT
- REMOVE WALK
- REMOVE BITUMINOUS FLUME
- REMOVE CURB & GUTTER
- SAWING BIT PAVEMENT (FULL DEPTH)
- REMOVE PIPE CULVERT
- CLEARING & GRUBBING (TREE)
- MB MAILBOX SUPPORT

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: SAS	1	JEO	3/1/18	ADDED BITUMINOUS FLUME REMOVAL AT DUNLAP AVE.
DESIGNER: JEO				
CHECKED BY: HLR				

I hereby certify that this plan was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.
Certified By: Jason E. Owens Lic. No. 43475
(Licensed Professional Engineer)
Printed Name: JASON E. OWENS Date: 9/19/2017

SEH
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

ANOKA COUNTY, MN
CSAH 23
S.A.P. 002-623-017, S.A.P. 244-020-002

REMOVAL PLAN
LAKE STA 130+54 TO TRAIL STA 16+21.46

FILE NO. ANOKC141617
RM2 OF RM2
46 / 94

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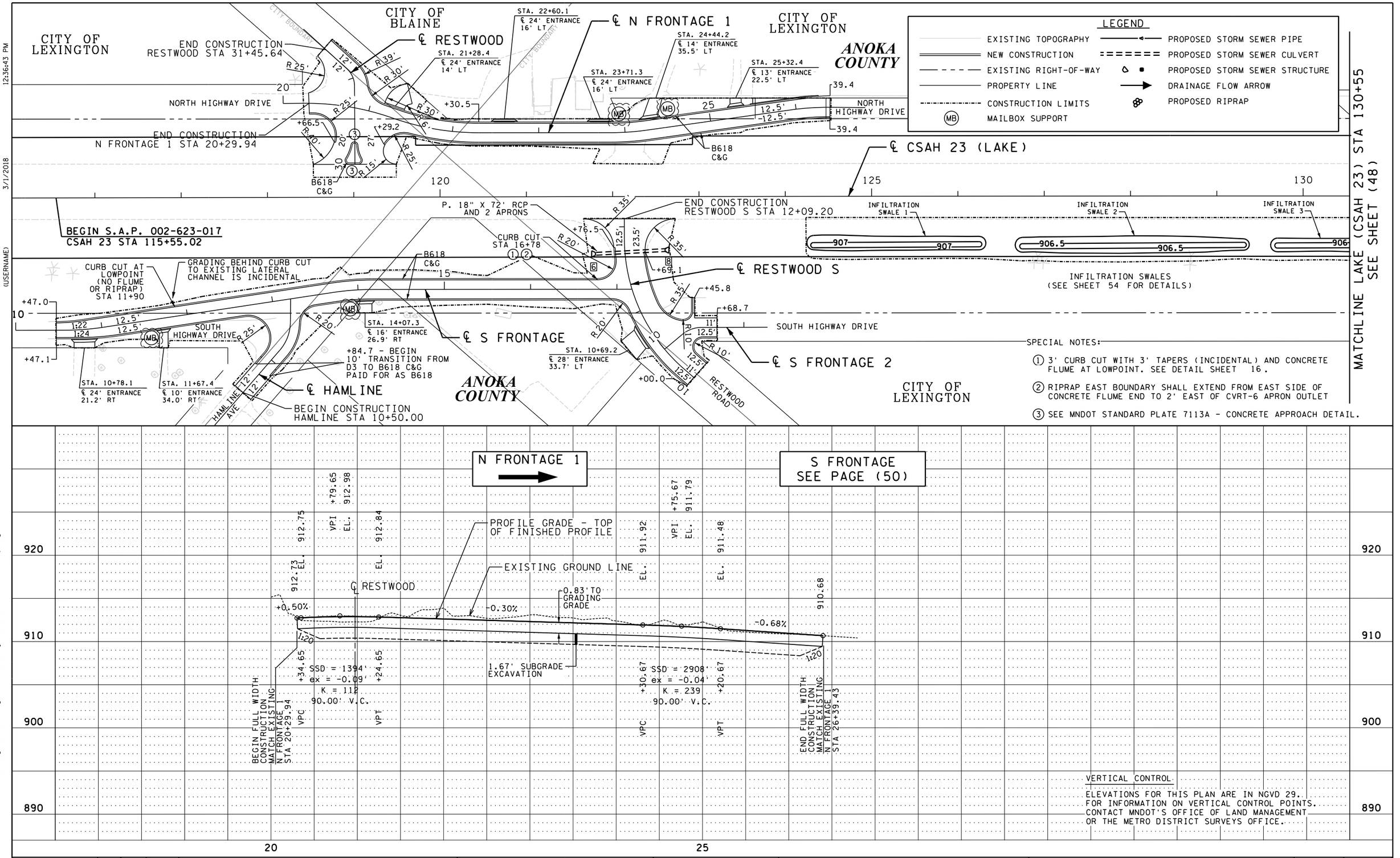

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: SAS	1	JEO	3/1/18	ADDED LOCATIONS OF NEW MAILBOX SUPPORTS
DESIGNER: JEO				
CHECKED BY: HLR				

I hereby certify that this plan was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.
Certified By: Jason E. Owens Lic. No. 43475
Licensed Professional Engineer
Printed Name: JASON E. OWENS Date: 9/19/2017

SEH
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

ANOKA COUNTY, MN
CSAH 23
S.A.P. 002-623-017, S.A.P. 244-020-002

CONSTRUCTION DRAINAGE PLAN AND PROFILE
N FRONTAGE 1 STA 20+29.93 TO STA 26+40.24

FILE NO. ANOKC141617
CP1 OF CP5
47/94

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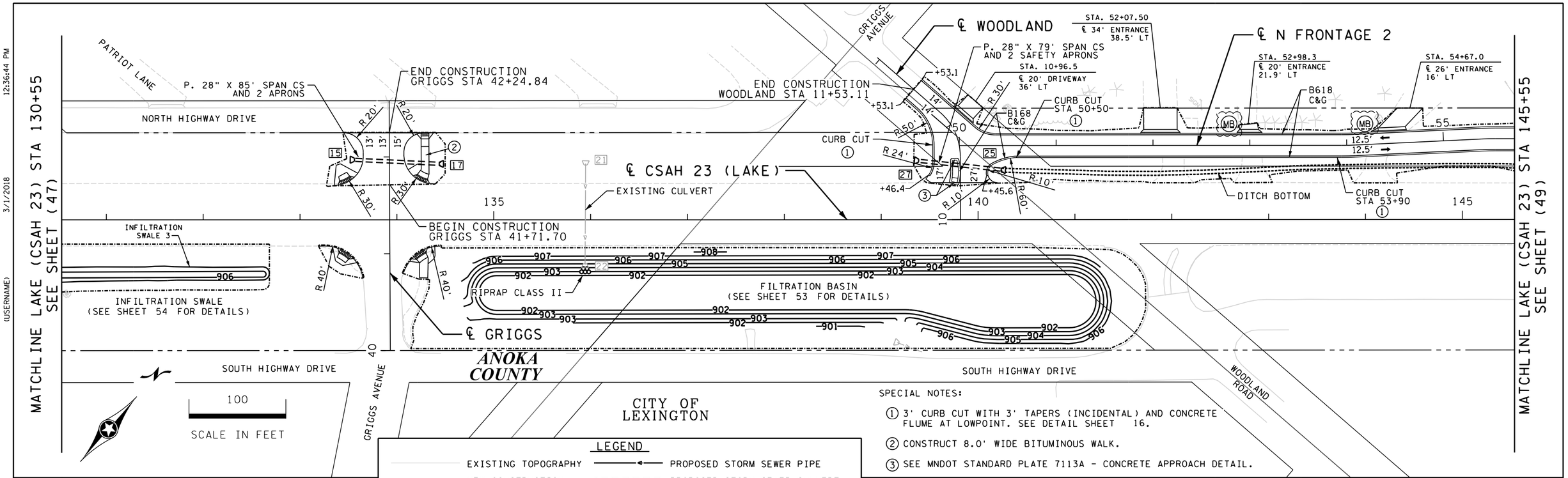

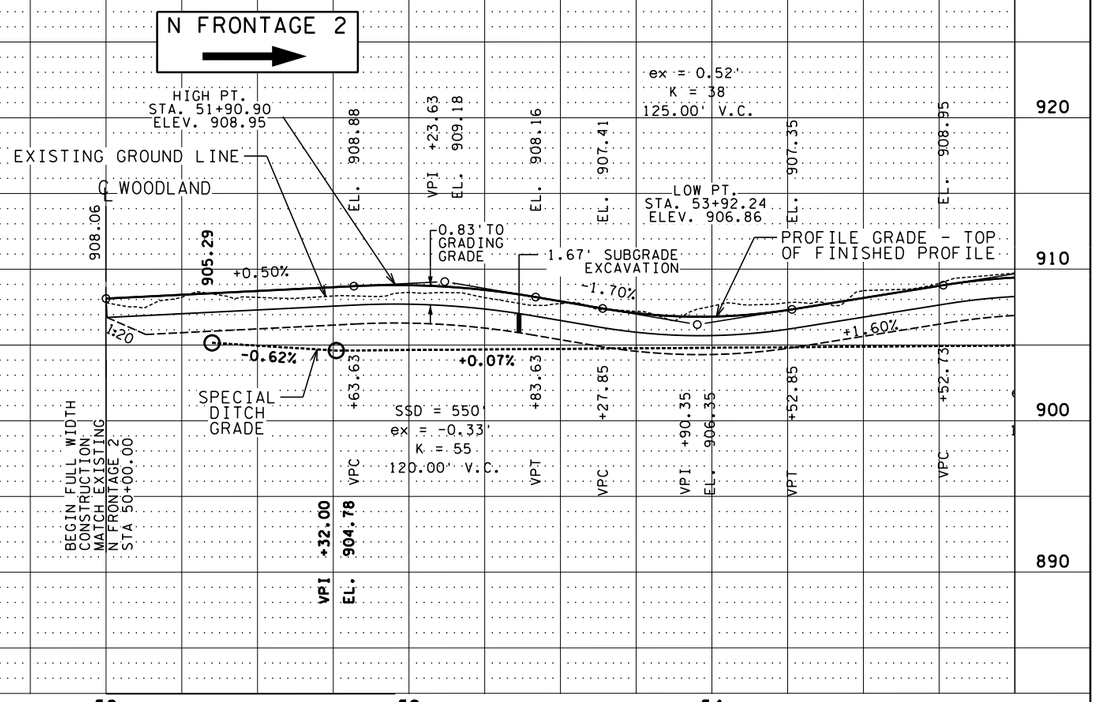

DESIGN TEAM					
DRAWN BY: SAS	1	JEO	3/1/18	ADDED LOCATIONS OF NEW MAILBOX SUPPORTS	
DESIGNER: JEO					
CHECKED BY: HLR	NO.	BY	DATE	REVISIONS	

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.
Certified By: Jason E. Owens Lic. No. 43475
Licensed Professional Engineer
Printed Name: JASON E. OWENS Date: 9/19/2017

SEH
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

ANOKA COUNTY, MN
CSAH 23
S.A.P. 002-623-017, S.A.P. 244-020-002

CONSTRUCTION DRAINAGE PLAN AND PROFILE
N FRONTAGE 2 STA 50+50.00 TO 60+88.15

FILE NO. ANOKC141617
CP2 OF CP5
48 / 94

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MATCHLINE CSAH 23 (LAKE) STA 145+55
SEE SHEET (48)

END CONSTRUCTION
DUNLAP STA 10+65.20

℄ DUNLAP
STA. 10+07.5
℄ 38' LT
12' DRIVEWAY

DUNLAP AVENUE

P. 12" X 21' RCP

STA. 147+44.0
95' LT - ADJUST
GATE VALVE

STA. 58+90.0
℄ 22' ENTRANCE
28.3' LT

℄ N FRONTAGE 2

TIRES PLUS

MUFFLER DOCTOR
AUTO CLINIC

EDWARD
JONES

STA. 60+89.8
℄ 30' ENTRANCE
27.8' LT

STA. 62+12.9
℄ 42' ENTRANCE
29.3' LT

ANOKA
COUNTY

CITY OF
LEXINGTON

END CONSTRUCTION
N FRONTAGE 2 STA 63+46.58

℄ CITY WALK N

CITY BOUNDARY

LEXINGTON AVENUE NE
(CSAH 17)

B618
C&G

STA. 146+80.0
110' LT - ADJUST
GATE VALVE

CURB CUT
STA 57+91
①

DITCH BOTTOM

B618
C&G

STA. 146+72.0
85' LT - ADJUST
SAN. MANHOLE

P. 12" X 105' RCP
AND APRON

P. 15" X 52' CS
AND 2 SAFETY APRONS

CURB CUT
STA 62+66
①

STA. 62+35.3
℄ 26' ENTRANCE
51' LT

END S.A.P. 002-623-017
CSAH 23 STA 154+55.01

℄ CSAH 23 (LAKE)

END S.A.P. 244-020-002
CSAH 23 STA 161+97.54

MATCHLINE TRAIL STA 16+06

VILLAGE
PARKWAY

INSET A

CITY
OF
CIRCLE
PINES

MATCHLINE TRAIL STA 16+06
SEE SHEET INSET A

PROTECT EXISTING
MONUMENT SIGN

℄ TRAIL

℄ CITY WALK S

℄ TRAIL CONN

CITY OF
CIRCLE PINES

LEXINGTON AVENUE NE
(CSAH 17)

CITY BOUNDARY

BEGIN S.A.P. 244-020-002
CSAH 23 STA 154+69.52

SPECIAL NOTES:
① 3' CURB CUT WITH 3' TAPERS (INCIDENTAL) AND CONCRETE FLUME AT LOWPOINT. SEE DETAIL SHEET 16.

100
SCALE IN FEET

LEGEND

EXISTING TOPOGRAPHY	PROPOSED STORM SEWER PIPE
NEW CONSTRUCTION	PROPOSED STORM SEWER CULVERT
EXISTING RIGHT-OF-WAY	PROPOSED STORM SEWER STRUCTURE
PROPERTY LINE	DRAINAGE FLOW ARROW
CONSTRUCTION LIMITS	PROPOSED RIPRAP

N FRONTAGE 2

PROFILE GRADE - TOP OF FINISHED PROFILE
EXISTING GROUND LINE
SPECIAL DITCH GRADE

℄ DUNLAP
HIGH PT.
STA. 56+23.85
ELEV. 909.52
LOW PT.
STA. 57+91.44
ELEV. 907.80
-2.00%
+0.40%
SSD = 380'
ex = -0.72'
K = 44
90.00' V.C.

HIGH PT.
STA. 60+79.61
ELEV. 908.82
-0.30%
906.00
0.83' TO GRADING GRADE
+1.50%
1.67' SUBGRADE EXCAVATION
SSD = 1586'
ex = -0.08'
K = 129
90.00' V.C.

ex = 0.27'
K = 38
90.00' V.C.

ex = 0.20'
K = 50
90.00' V.C.

LOW PT.
STA. 62+66.42
ELEV. 908.34

END FULL WIDTH CONSTRUCTION MATCH EXISTING N FRONTAGE 2 STA 63+46.58

TRAIL

BEGIN FULL WIDTH CONSTRUCTION MATCH EXISTING TRAIL STA 10+09.86

-1.40%
SSD = 330'
ex = -0.27'
K = 17

ex = 0.41'
K = 17
75.00' V.C.
-5.00%

0.75' TO GRADING GRADE
-0.60%
ex = 0.09'
K = 50
60.00' V.C.
+0.60%
-1.49%
+0.98%
ex = 0.14'
K = 18
45.00' V.C.

LOW PT.
STA. 14+60.35
ELEV. 902.07

SSD = 539'
ex = -0.12'
K = 22
45.00' V.C.

HIGH PT.
STA. 15+25.09
ELEV. 902.46

LOW PT.
STA. 15+84.85
ELEV. 901.98

END FULL WIDTH CONSTRUCTION MATCH EXISTING TRAIL
STA 16+33.16

TRAIL CONN
910
909.64
-1.06%
908.86

57 60 63 10 15

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: SAS				
DESIGNER: JEO				
CHECKED BY: HLR				

I hereby certify that this plan was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.
Certified By: Jason E. Owens Lic. No. 43475
Licensed Professional Engineer
Printed Name: JASON E. OWENS Date: 9/19/2017

SEH
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

ANOKA COUNTY, MN
CSAH 23
S.A.P. 002-623-017, S.A.P. 244-020-002

CONSTRUCTION DRAINAGE PLAN AND PROFILE
N FRONTAGE 2 STA 60+88.15 TO 68+61.99

FILE NO. ANOKC141617
CP3 OF CP5
49 / 94

FILE: S:\AE\A\Anokc\141617\5-final-dsgn\51-drawings\40-Transhwy\Plansheets\CD141617-cp1.dgn
MODEL: CP3
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2/13/2018
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S FRONTAGE

LOW PT.
STA. 11+90.68
ELEV. 908.21

HIGH PT.
STA. 15+63.94
ELEV. 912.79

PROFILE GRADE - TOP OF FINISHED PROFILE

EXISTING GROUND LINE

ex = 0.23'
K = 44
90.00' V.C.

ex = 0.16'
K = 64
90.00' V.C.

ex = 0.17'
K = 58
90.00' V.C.

SSD = 1916'
ex = -0.06'
K = 156
90.00' V.C.

SSD = 2742'
ex = -0.05'
K = 225
90.00' V.C.

SSD = 275'
ex = -0.56'
K = 20
95.00' V.C.

0.83' TO GRADING GRADE

1.67' SUBGRADE EXCAVATION

-0.27% -0.85% +1.20% +0.80% +2.20% -2.55% -1.00% +2.00%

1:20

BEGIN FULL WIDTH CONSTRUCTION MATCH EXISTING S FRONTAGE STA 10+47.00

END FULL WIDTH CONSTRUCTION MATCH EXISTING S FRONTAGE STA 17+17.52

S FRONTAGE 2

PROFILE GRADE - TOP OF FINISHED PROFILE

EXISTING GROUND LINE

0.83' TO GRADING GRADE -2.00%

+0.50% -0.37%

1.67' SUBGRADE EXCAVATION

1:20

BEGIN FULL WIDTH CONSTRUCTION MATCH EXISTING S FRONTAGE 2 STA 10+00.00

END FULL WIDTH CONSTRUCTION MATCH EXISTING S FRONTAGE 2 STA 10+68.75

HAMLINE

PROFILE GRADE - TOP OF FINISHED PROFILE

EXISTING GROUND LINE

0.83' TO GRADING GRADE

+1.05% -2.00%

1.67' SUBGRADE EXCAVATION

SSD = 384'
ex = -0.23'
K = 20
60.00' V.C.

1:20

BEGIN FULL WIDTH CONSTRUCTION MATCH EXISTING HAMLINE STA 10+50.00

END FULL WIDTH CONSTRUCTION MATCH EXISTING HAMLINE STA 11+77.41

RESTWOOD

PROFILE GRADE - TOP OF FINISHED PROFILE

ex = 0.11'
K = 28
50.00' V.C.

0.83' TO GRADING GRADE

EXISTING GROUND LINE

1.67' SUBGRADE EXCAVATION

-0.80% -2.00% -2.50% -0.73%

1:20

BEGIN FULL WIDTH CONSTRUCTION MATCH EXISTING RESTWOOD STA 30+00.00

END FULL WIDTH CONSTRUCTION MATCH EXISTING RESTWOOD STA 31+45.64

RESTWOOD S

PROFILE GRADE - TOP OF FINISHED PROFILE

ex = 0.16'
K = 64
90.00' V.C.

0.83' TO GRADING GRADE

EXISTING GROUND LINE

1.67' SUBGRADE EXCAVATION

SSD = 1471'
ex = -0.09'
K = 119
90.00' V.C.

+1.31% +0.55% +1.96%

1:20

BEGIN FULL WIDTH CONSTRUCTION MATCH EXISTING RESTWOOD S STA 10+00.00

END FULL WIDTH CONSTRUCTION MATCH EXISTING RESTWOOD S STA 12+09.20

GRIGGS

PROFILE GRADE - TOP OF FINISHED PROFILE

EXISTING GROUND LINE

0.83' TO GRADING GRADE

-1.79%

1.67' SUBGRADE EXCAVATION

1:20

BEGIN FULL WIDTH CONSTRUCTION MATCH EXISTING GRIGGS STA 41+71.70

END FULL WIDTH CONSTRUCTION MATCH EXISTING GRIGGS STA 42.24.84

WOODLAND

EXISTING GROUND LINE

PROFILE GRADE - TOP OF FINISHED PROFILE

ex = 0.31'
K = 40
100.00' V.C.

0.83' TO GRADING GRADE

-1.75% +0.74%

1.67' SUBGRADE EXCAVATION

1:20

BEGIN FULL WIDTH CONSTRUCTION MATCH EXISTING WOODLAND STA 10+38.25

END FULL WIDTH CONSTRUCTION MATCH EXISTING WOODLAND STA 11+53.11

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: SAS				
DESIGNER: JEO				
CHECKED BY: HLR				

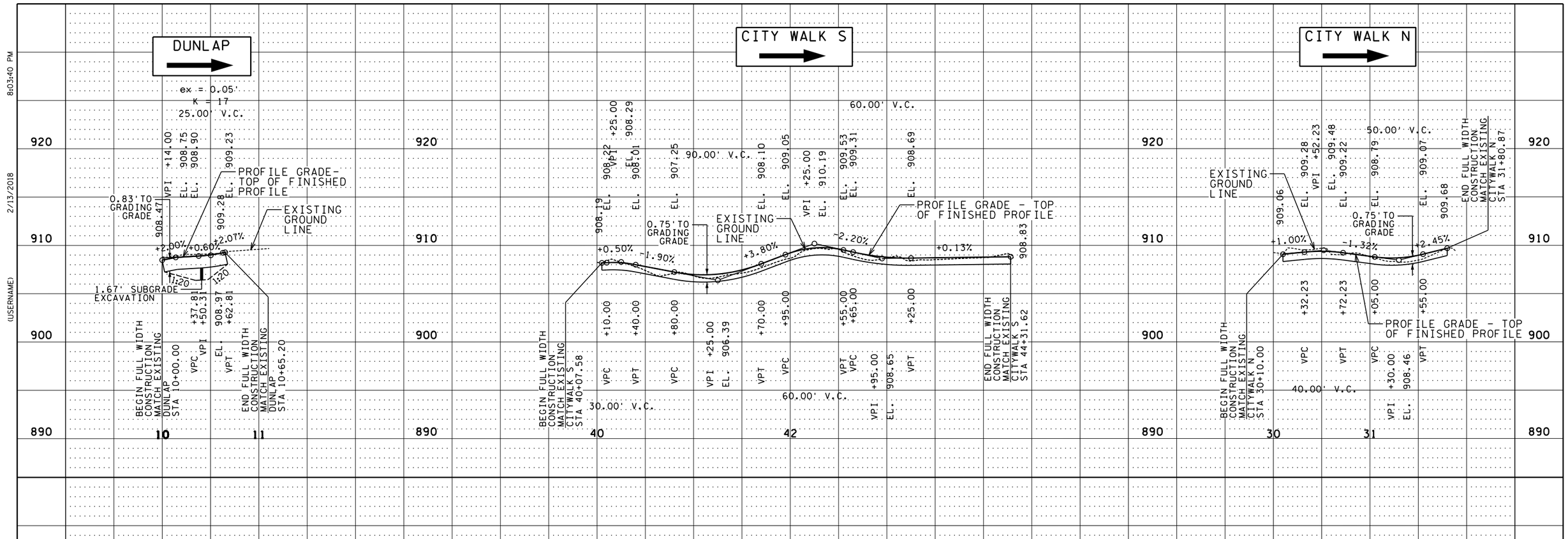
I hereby certify that this plan was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.
Certified By: Jason E. Owens Lic. No. 43475
Licensed Professional Engineer
Printed Name: JASON E. OWENS Date: 9/19/2017

SEH
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

ANOKA COUNTY, MN
CSAH 23
S.A.P. 002-623-017, S.A.P. 244-020-002

PROFILES
S FRONTAGE, S FRONTAGE 2, HAMLINE, RESTWOOD, RESTWOOD S, GRIGGS, WOODLAND

FILE NO. ANOKC141617
CP4 OF CP5
50/94



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DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: SAS				
DESIGNER: JEO				
CHECKED BY: HLR				

I hereby certify that this plan was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.
Certified By: Jason E. Owens (Licensed Professional Engineer) Lic. No. 43475
Printed Name: JASON E. OWENS Date: 9/19/2017

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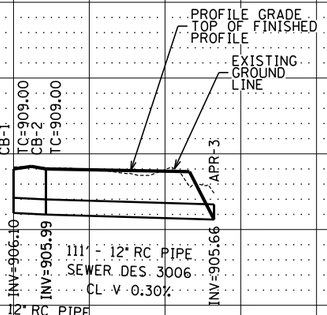
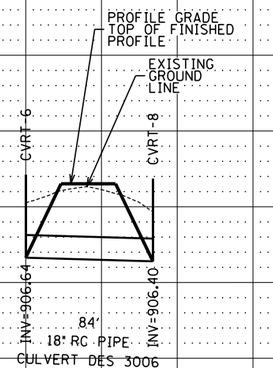
ST. PAUL, MN 55110

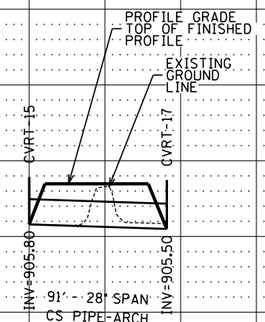
ANOKA COUNTY, MN
CSAH 23
S.A.P. 002-623-017, S.A.P. 244-020-002

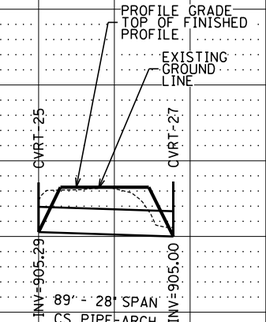
PROFILES
DUNLAP, CITY WALK S, CITY WALK N

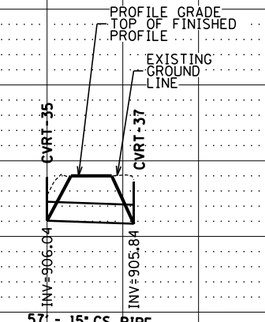
FILE NO. ANOKC141617
CP5 OF CP5
51/94











DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY:				
DESIGNER: JVO				
CHECKED BY: DAC				

I hereby certify that this plan was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.
Certified By: Dan Cazanacli Lic. No. 42687
Licensed Professional Engineer
Printed Name: DAN A. CAZANACLI Date: 9/19/2017

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ST. PAUL, MN 55110

ANOKA COUNTY, MN
CSAH 23
S.A.P. 002-623-017, S.A.P. 244-020-002

DRAINAGE PROFILES
CB1 TO APR3, APR6 TO APR8, APR15 TO APR17, APR25 TO APR27, AND APR35 TO APR37

FILE NO. ANOKC141617
DR1 OF DR1
52 / 94

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2/13/2018
(USERNAME)

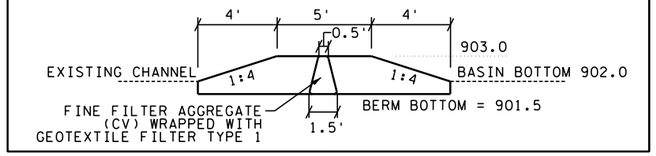
SCALE 60'

℄ WOODLAND
GRIGGS AVENUE
℄ GRIGGS
℄ LAKE (CSAH 23)
135
140
10
40
15
17
21
22
25
27
50
SIGN

PROTECT EXISTING CULVERT OUTLET (INCIDENTAL)
CONSTRUCTION LIMITS
HWL = 906.00
150' FILTRATION ROCK BERM (1)
PROTECT EXISTING STORM OUTLET (INCIDENTAL)
GRIGGS AVENUE

5000 5001 5002 5003 5004 5005 5006 5007 5008 5009 5010 5011 5012 5013 5014 5015 5016 5017 5018 5019 5020 5021 5022 5023
902 903 904 905 906 907 908 901
1:4

FILTRATION ROCK BERM CROSS SECTION A-A



SPECIFIC NOTES:
(1) FILTRATION ROCK BERM PAID FOR AS COARSE AGGREGATE BEDDING (CV).
SEE TURF ESTABLISHMENT AND EROSION CONTROL TAB FOR BERM QUANTITIES.

CONTOUR POINTS

POINT	X	Y	ELEV.
5000	525129.09	137351.57	902.00
5001	525127.56	137325.93	902.00
5002	525152.74	137324.44	902.00
5003	525470.22	137601.24	902.00
5004	525487.15	137612.56	902.00
5005	525538.66	137638.26	902.00
5006	525553.06	137648.26	902.00
5007	525610.99	137698.77	902.00
5008	525613.49	137737.75	902.00
5009	525574.85	137740.23	902.00
5010	525349.56	137543.80	902.00
5011	525155.37	137321.42	903.00
5012	525451.24	137572.75	903.00
5013	525376.36	137502.16	902.00
5014	525440.20	137552.51	901.00
5015	525396.70	137531.84	903.00
5016	525121.48	137360.86	905.00
5017	525115.94	137366.65	907.00
5018	525318.23	137532.40	905.00
5019	525566.96	137749.27	905.00
5020	525561.70	137755.30	907.00
5021	525622.47	137745.71	905.00
5022	525621.71	137692.28	905.00
5023	525562.58	137640.64	905.00

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY:				
DESIGNER: JVO				
CHECKED BY: DAC				

I hereby certify that this plan was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.
Certified By: Dan Cazanacli Lic. No. 42687
Licensed Professional Engineer
Printed Name: DAN A. CAZANACLI Date: 9/19/2017

SEH
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

ANOKA COUNTY, MN
CSAH 23
S.A.P. 002-623-017, S.A.P. 244-020-002

GRADING PLAN
FILTRATION BASIN

FILE NO. ANOKC141617
CN1 OF CN2
53 / 94

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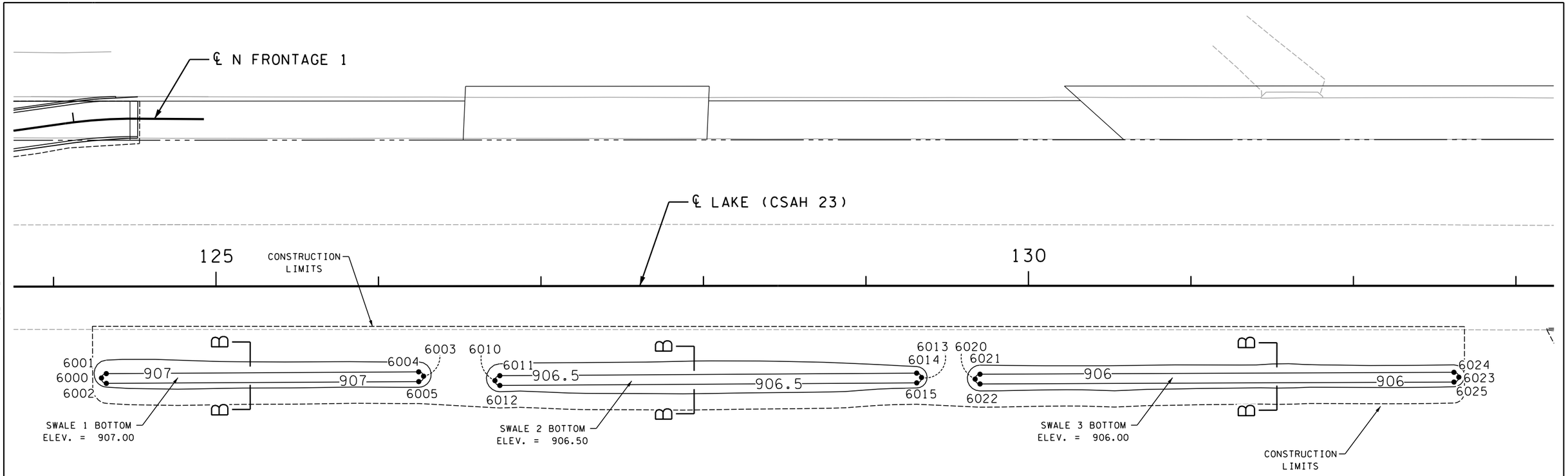
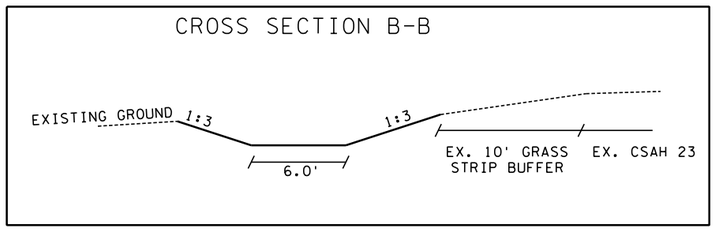


CONTOUR POINTS			
POINT	Y	X	ELEV.
6000	136648.58	524318.10	907.00
6001	136652.56	524318.57	907.00
6002	136648.06	524322.53	907.00
6003	136779.39	524467.05	907.00
6004	136779.45	524463.02	907.00
6005	136774.95	524466.98	907.00
6010	136806.15	524501.98	906.50
6011	136810.39	524502.26	906.50
6012	136805.87	524506.21	906.50
6013	136979.73	524698.95	906.50
6014	136979.79	524694.93	906.50
6015	136975.29	524698.89	906.50
6020	137000.61	524724.51	906.00
6021	137004.85	524724.79	906.00
6022	137000.33	524728.74	906.00
6023	137196.71	524948.48	906.00
6024	137196.99	524944.25	906.00
6025	137192.48	524948.20	906.00



SCALE 60'

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

I hereby certify that this plan was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.
Certified By: Dan Cazanacli Lic. No. 42687
Licensed Professional Engineer
Printed Name: DAN A. CAZANACLI Date: 9/19/2017

SEH
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

ANOKA COUNTY, MN
CSAH 23
S.A.P. 002-623-017, S.A.P. 244-020-002

GRADING PLAN
INFILTRATION SWALES

FILE NO. ANOKC141617
CN2 OF CN2
54 / 94

JVO
DAC

FILE: S:\AE\A\Anokc\141617\5-final-dsgn\51-drawings\40-Transhwy\Plansheets\CD141617_cn1.dgn
MODEL: CN2

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2/13/2018
(USERNAME)

STORM WATER POLLUTION PREVENTION PLAN (SWPPP)

SWPPP SUMMARY/OVERVIEW:
THIS STORM WATER POLLUTION PREVENTION PLAN (SWPPP) HAS BEEN DEVELOPED TO ADDRESS THE REQUIREMENTS OF NPDES PERMIT MN R100001, PART III, SUBPART A. THIS SWPPP INCLUDES A COMBINATION OF NARRATIVE AND PLAN SHEETS THAT DESCRIBE THE TEMPORARY AND PERMANENT STORM WATER MANAGEMENT PLAN FOR THE PROJECT.

PROJECT INFORMATION:

LOCATION:	ANOKA COUNTY – CITY OF LEXINGTON
LATITUDE/LONGITUDE::	-93.1752 45.1342
PROJECT DESCRIPTION:	CSAH 23 (LAKE DRIVE) RECONSTRUCTION
SOIL DISTURBING ACTIVITIES:	STORM SEWER, GRADING, BITUMINOUS PAVING

CONTACTS:

OWNER:	ANOKA COUNTY
CONTACT:	DANIEL FREY – ANOKA COUNTY HIGHWAY DEPT.
ADDRESS:	1440 BUNKER LAKE BLVD ANDOVER, MN 55304
PHONE:	763.324.3123
EMAIL:	DANIEL.FREY@CO.ANOKA.MN.US

ENGINEER:	SHORT ELLIOT HENDRICKSON INC. (SEH)
CONTACT:	JASON OWENS
PHONE:	651.490.2153
EMAIL:	JOWENS@SEHINC.COM
PROJECT NO.:	ANOKC 141617

KNOWLEDGEABLE PERSON/CHAIN OF RESPONSIBILITY
THE CONTRACTOR SHALL IDENTIFY A PERSON KNOWLEDGEABLE AND EXPERIENCED IN THE APPLICATION OF EROSION PREVENTION AND SEDIMENT CONTROL BMPS WHO WILL OVERSEE THE IMPLEMENTATION OF THE SWPPP, INCLUDING: INSTALLATION, INSPECTION AND MAINTENANCE OF THE EROSION PREVENTION AND SEDIMENT CONTROL BMPS. THE GENERAL CONTRACTOR SHALL ATTACH CONTACT INFORMATION TO THE SWPPP PRIOR TO THE START OF ANY CONSTRUCTION ACTIVITY.

THE CONTRACTOR SHALL ESTABLISH A CHAIN OF RESPONSIBILITY FOR ALL CONTRACTORS AND SUB-CONTRACTORS ON SITE TO ENSURE THE SWPPP IS BEING PROPERLY IMPLEMENTED AND MAINTAINED. THE CONTRACTOR SHALL PROVIDE THE CHAIN OF RESPONSIBILITY TO THE OWNER AND ATTACH TO THE SWPPP PRIOR TO ANY CONSTRUCTION ACTIVITY.

CONTRACTOR:
CONTACT:
PHONE:
EMAIL:

GENERAL SWPPP RESPONSIBILITIES:
THE CONTRACTOR SHALL KEEP THE SWPPP, INCLUDING ALL AMENDMENTS AND INSPECTION AND MAINTENANCE RECORDS ON SITE DURING CONSTRUCTION.

THE SWPPP WILL BE AMENDED AS NEEDED AND/OR AS REQUIRED BY PROVISIONS OF THE PERMIT. AMENDMENTS WILL BE APPROVED BY BOTH THE OWNER AND CONTRACTOR AND WILL BE ATTACHED OR OTHERWISE INCLUDED WITH THE SWPPP DOCUMENTS. THE SWPPP AMENDMENTS SHALL BE INITIATED, FACILITATED, AND PROCESSED BY THE CONTRACTOR. THE SWPPP AND AMENDMENTS SHALL BE KEPT ON SITE BY THE CONTRACTOR WHENEVER CONSTRUCTION ACTIVITY IS IN PROGRESS.

THE CONTRACTOR SHALL DOCUMENT AMENDMENTS TO THE SWPPP AS A RESULT OF INSPECTION(S) WITHIN 7 DAYS.

BOTH THE OWNER AND CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROPER TERMINATION AND/OR TRANSFER OF THE PERMIT.

CONTRACTOR SHALL PREPARE A WRITTEN WEEKLY SCHEDULE OF PROPOSED EROSION CONTROL ACTIVITIES FOR THE PROJECT ENGINEER'S APPROVAL AS PER MNDOT SPEC. 1717.2C.

CONTRACTOR SHALL PREPARE A DISPOSAL PLAN FOR THE PRE-CONSTRUCTION MEETING IN ACCORDANCE WITH THE SPECIAL PROVISIONS THAT INCLUDES HANDLING OF WASTES AND EXCESS MATERIAL.

THE CONSTRUCTION STAGING AND TRAFFIC CONTROL PLAN AND SPECIFICATIONS OUTLINE CONSTRUCTION STAGING TIMELINE AND SHALL BE UTILIZED TO COORDINATE EFFORTS TO MINIMIZE PERIODS OF EXPOSED SOILS.

LONG TERM OPERATION AND MAINTENANCE
THE OWNERS WILL BE RESPONSIBLE OR WILL OTHERWISE IDENTIFY WHO WILL BE RESPONSIBLE FOR THE LONG TERM OPERATION AND MAINTENANCE OF THE PERMANENT STORMWATER MANAGEMENT SYSTEM(S).

THE OWNER WILL PREPARE AND IMPLEMENT A PERMANENT STORMWATER TREATMENT SYSTEM(S) MAINTENANCE PLAN.

TRAINING DOCUMENTATION:

PREPARER/DESIGNER OF SWPPP:	JORDAN VAN OORT
EMPLOYER:	SEH
TRAINING AND DATE OBTAINED:	U OF M DESIGN OF SWPPP, SEP. 12-13, 2017
NAME OF INSTRUCTOR(S):	JOHN CHAPMAN

THE CONTRACTOR (OPERATOR) SHALL ADD TO THE SWPPP TRAINING RECORDS FOR THE FOLLOWING PERSONNEL:

-INDIVIDUALS OVERSEEING THE IMPLEMENTATION OF, REVISING, AND AMENDING THE SWPPP
-INDIVIDUALS PERFORMING INSPECTIONS
-INDIVIDUALS PERFORMING OR SUPERVISING THE INSTALLATION, MAINTENANCE AND REPAIR OF BMPS

TRAINING MUST RELATE TO THE INDIVIDUAL'S JOB DUTIES AND RESPONSIBILITIES AND SHALL INCLUDE:

1) DATES OF TRAINING
2) NAME OF INSTRUCTORS
3) CONTENT AND HOURS OF TRAINING

THE CONTRACTOR SHALL ENSURE THAT THE INDIVIDUALS ARE TRAINED BY LOCAL, STATE, FEDERAL AGENCIES, PROFESSIONAL ORGANIZATIONS, OR OTHER ENTITIES WITH EXPERTISE IN EROSION PREVENTION, SEDIMENT CONTROL, PERIMETER CONTROL, PERMANENT STORMWATER MANAGEMENT AND THE MINNESOTA NPDES/SDS CONSTRUCTION STORMWATER PERMIT.

PROJECT SUMMARY:

TOTAL PROJECT AREA:	6.1 AC
TOTAL DISTURBED AREA:	6.1 AC
PRE-CONSTRUCTION IMPERVIOUS AREA:	1.7
POST-CONSTRUCTION IMPERVIOUS AREA:	2.4
IMPERVIOUS AREA ADDED:	0.7 AC

RECEIVING WATER(S) WITHIN ONE MILE FROM PROJECT BOUNDARIES:
GOLDEN LAKE, BALDWIN LAKE, RICE LAKE, RICE CREEK

SPECIAL CONSIDERATIONS:

DOES THE PROJECT DISCHARGE TO A CALCAREOUS FEN:	NO
IS THE PROJECT LOCATED IN A KARST AREA:	NO
SITE IS NOT LOCATED WITHIN A DRINKING WATER SUPPLY MANAGEMENT AREA.	

SITE SOIL INFORMATION: (http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx)
(SOIL INFORMATION PROVIDED IS FOR NPDES PERMIT INFORMATION ONLY. SOIL INFORMATION WAS OBTAINED FROM THE USGS WEBSITE. THE CONTRACTOR SHALL NOT RELY ON THIS SOIL INFORMATION FOR CONSTRUCTION PURPOSES.)

SOIL NAME:	HYDROLOGIC CLASSIFICATION:
SODERVILLE FINE SANDS	A
ZIMMERMAN FINE SANDS	A

BMPS TIMING:

1.	INSTALL PERIMETER CONTROL AND STABILIZE DOWN GRADIENT BOUNDARIES
2.	COMPLETE SITE GRADING
3.	INSTALL UTILITIES, STORM SEWER, INLET PROTECTION, CURB & GUTTER, PAVING
4.	COMPLETE FINAL GRADING AND STABILIZE DISTURBED AREAS
5.	AFTER CONSTRUCTION IS COMPLETE AND THE SITE IS STABILIZED, REMOVE ACCUMULATED SEDIMENT, REMOVE BMPS, AND RE-STABILIZE ANY AREAS DISTURBED BY THEIR REMOVAL.

THE FOLLOWING DOCUMENTS ARE CONSIDERED PART OF THE SWPPP:
PLAN AND PROFILE PLAN SHEETS:
EROSION AND SEDIMENT CONTROL PLAN SHEETS:
TURF ESTABLISHMENT PLAN SHEETS:
STORM SEWER PLAN & PROFILE PLAN SHEETS:
GRADING PLAN SHEETS:
DETAIL PLAN SHEETS:
SWPPP NOTE AND DETAIL SHEETS:
PROJECT SPECIFICATIONS:
PROJECT BID FORM:

TEMPORARY SEDIMENT BASINS:
THE CONTRACTOR SHALL INSTALL TEMPORARY SEDIMENT BASIN(S) INDICATED ON PLANS AND REQUIRED BY THE NPDES CONSTRUCTION PERMIT.

TEMPORARY SEDIMENT BASIN OUTLETS SHALL BE CONSTRUCTED TO PREVENT SHORT-CIRCUITING AND PREVENT THE DISCHARGE OF FLOATING DEBRIS.

BASINS MUST HAVE THE ABILITY TO ALLOW COMPLETE DRAWDOWN, INCLUDE A STABILIZED EMERGENCY OVERFLOW, WITHDRAW WATER FROM THE SURFACE, AND PROVIDE ENERGY DISSIPATION AT THE OUTLET.

TEMPORARY SEDIMENT BASINS SHALL BE PROVIDED WITH ENERGY DISSIPATION AT ANY BASIN OUTLET TO PREVENT SOIL EROSION.

SEDIMENT BASINS MUST BE SITUATED OUTSIDE OF SURFACE WATERS AND ANY BUFFER ZONES, AND MUST BE DESIGNED TO AVOID THE DRAINING WATER FROM WETLANDS.

TEMPORARY SEDIMENT BASINS SHALL BE CONSTRUCTED AND MADE OPERATIONAL CONCURRENT OR PRIOR TO SOIL DISTURBANCE THAT IS UPGRADIENT AND CONTRIBUTES RUNOFF TO THE BASIN.

PERMANENT STORMWATER MANAGEMENT SYSTEM
PERMANENT STORMWATER MANAGEMENT SYSTEM IS DESIGNED TO MEET THE REQUIREMENTS OF NPDES GENERAL STORMWATER PERMIT FOR CONSTRUCTION ACTIVITY.

NEW (ADDED) IMPERVIOUS:	0.7 AC	
WATER QUALITY VOLUME (WQV):	0.044 AF	
TOTAL AREA DIVERTED TO FILTRATION BASIN	57.6 AC	OF WHICH 10.3 AC IMPREVIOUS
FILTRATION BASIN PERM. VOLUME	0.64 AF	
FILTRATION BASIN LIVE VOLUME	N/A	

NOTES:

* BMP DESIGN INFORMATION AND RAINFALL DATA UTILIZED IS AVAILABLE BY REQUEST THROUGH THE ENGINEER.

CONTRACTOR SHALL ENSURE INFILTRATION/FILTRATION SYSTEMS ARE NOT BE EXCAVATED TO FINAL GRADE UNTIL THE CONTRIBUTING DRAINAGE AREA HAS BEEN CONSTRUCTED AND FULLY STABILIZED.

CONTRACTOR SHALL IMPLEMENT RIGOROUS EROSION PREVENTION AND SEDIMENT CONTROLS BMPS SHALL BE USED TO KEEP SEDIMENT AND RUNOFF COMPLETELY AWAY FROM THE INFILTRATION/FILTRATION AREA(S).

CONTRACTOR SHALL STAKE OFF AND MARK INFILTRATION/FILTRATION AREA(S) TO AVOID SOIL COMPACTION.

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MODEL: Default

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY:				
DESIGNER: JVO				
CHECKED BY: DAC				

I hereby certify that this plan was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.
Certified By: Dan Cazanacli Lic. No. 42687
Licensed Professional Engineer
Printed Name: DAN A. CAZANACLI Date: 9/19/2017

SEH
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

ANOKA COUNTY, MN
CSAH 23
S.A.P. 002-623-017, S.A.P. 244-020-002

STORM WATER POLLUTION PREVENTION PLAN

FILE NO. ANOKC141617
SWP1 OF SWP2

55/94

EROSION PREVENTION MEASURES AND TIMING:
THE CONTRACTOR IS RESPONSIBLE FOR ALL EROSION PREVENTION MEASURES FOR THE PROJECT.

EROSION PREVENTION MEASURES SHOWN ON PLANS ARE THE ABSOLUTE MINIMUM REQUIREMENTS. THE CONTRACTOR SHALL IMPLEMENT ADDITIONAL EROSION PREVENTION MEASURES AS NECESSARY TO PROPERLY MANAGE THE PROJECT AREA.

THE CONTRACTOR SHALL PLAN AND IMPLEMENT APPROPRIATE CONSTRUCTION PRACTICES AND CONSTRUCTION PHASING TO MINIMIZE EROSION AND RETAIN VEGETATION WHENEVER POSSIBLE.

THE CONTRACTOR SHALL DELINEATE AREAS NOT TO BE DISTURBED AND/OR TO BE PROTECTED WITH FLAGS, STAKES, SIGNS, SILT FENCE, OR OTHER MEANS NECESSARY TO PROTECT THESE AREAS BEFORE CONSTRUCTION BEGINS ON THE SITE.

THE CONTRACTOR SHALL STABILIZE ALL EXPOSED SOILS IMMEDIATELY TO LIMIT SOIL EROSION. IN NO CASE SHALL ANY EXPOSED AREAS, INCLUDING STOCK PILES, HAVE EXPOSED SOILS FOR MORE THAN 14 DAYS WITHOUT PROVIDING TEMPORARY OR PERMANENT STABILIZATION.

DRAINAGE PATHS, DITCHES, AND/OR SWALES SHALL HAVE TEMPORARY OR PERMANENT STABILIZATION WITHIN 24 HOURS OF CONNECTING TO A SURFACE WATER OR 24 HOURS AFTER CONSTRUCTION ACTIVITY IN THE DITCH/SWALE HAS TEMPORARILY OR PERMANENTLY CEASED.

THE CONTRACTOR SHALL COMPLETE THE STABILIZATION OF ALL EXPOSED SOILS WITHIN 24 HOURS THAT LIE WITHIN 200 FEET OF PUBLIC WATERS PROMULGATED "WORK IN WATER RESTRICTIONS" BY THE MN DNR DURING SPECIFIED FISH SPAWNING TIMES.

THE CONTRACTOR SHALL IMPLEMENT STORMWATER CONVEYANCE CHANNELS WHEN APPROPRIATE TO ROUTE WATER AROUND UNSTABILIZED AREAS ON SITE TO REDUCE EROSION.

THE CONTRACTOR SHALL IMPLEMENT EROSION CONTROL BMPS AND VELOCITY DISSIPATION DEVICES ALONG CONSTRUCTED STORMWATER CONVEYANCE CHANNELS AND OUTLETS.

THE CONTRACTOR SHALL STABILIZE TEMPORARY AND/OR PERMANENT DRAINAGE DITCHES OR SWALES WITHIN 200 LINEAL FEET FROM PROPERTY EDGE, OR DISCHARGE POINT(S) WITHIN 24 HOURS AFTER CONNECTING TO A SURFACE WATER OR PROPERTY EDGE.

TEMPORARY OR PERMANENT DITCHES OR SWALES USED AS A SEDIMENT CONTAINMENT SYSTEM DURING CONSTRUCTION MUST BE STABILIZED WITHIN 24 HOURS AFTER NO LONGER BEING USED AS A SEDIMENT CONTAINMENT SYSTEM.

THE CONTRACTOR SHALL NOT UTILIZE HYDROMULCH, TACKIFIER, POLYACRYLAMIDE OR SIMILIAR EROSION PREVENTION PRACTICES AS A FORM OF STABILIZATION FOR TEMPORARY OR PERMANENT DRAINAGE DITCHES OR SWALES.

THE CONTRACTOR SHALL ENSURE PIPE OUTLETS HAVE TEMPORARY OR PERMANENT ENERGY DISSIPATION WITHIN 24 HOURS OF CONNECTION TO A SURFACE WATER.

THE CONTRACTOR SHALL DIRECT DISCHARGES FROM BMPS TO VEGETATED AREAS TO INCREASE SEDIMENT REMOVAL AND MAXIMIZE STORMWATER INFILTRATION. VELOCITY DISSIPATION DEVICES MUST BE USED TO PREVENT EROSION WHEN DIRECTING STORMWATER TO VEGETATED AREAS.

SEDIMENT CONTROL MEASURES AND TIMING:
THE CONTRACTOR IS RESPONSIBLE FOR ALL SEDIMENT CONTROL MEASURES FOR THE PROJECT.

SEDIMENT CONTROL MEASURES SHOWN ON PLANS ARE THE ABSOLUTE MINIMUM REQUIREMENTS. THE CONTRACTOR SHALL IMPLEMENT ADDITIONAL SEDIMENT CONTROL MEASURES AS NECESSARY TO PROPERLY MANAGE THE PROJECT AREA.

THE CONTRACTOR SHALL ENSURE SEDIMENT CONTROL MEASURES ARE ESTABLISHED ON ALL DOWN GRADIENT PERIMETERS BEFORE ANY UPGRADIENT LAND DISTURBING ACTIVITIES BEGIN. THESE MEASURES SHALL REMAIN IN PLACE UNTIL FINAL STABILIZATION HAS BEEN ESTABLISHED.

THE CONTRACTOR SHALL ENSURE THERE ARE NO UNBROKEN SLOPE LENGTH GREATER THAN 75 FEET ON SLOPES 3:1 OR STEEPER.

THE CONTRACTOR SHALL ENSURE SEDIMENT CONTROL PRACTICES REMOVED OR ADJUSTED FOR SHORT-TERM ACTIVITIES BE RE-INSTALLED IMMEDIATELY AFTER THE SHORT-TERM ACTIVITY HAS BEEN COMPLETED. SEDIMENT CONTROL PRACTICES MUST BE REINSTALLED BEFORE THE NEXT PRECIPITATION EVENT EVEN IF THE SHORT-TERM ACTIVITY IS NOT COMPLETE.

THE CONTRACTOR SHALL ENSURE STORM DRAIN INLETS AND CULVERT INLETS ARE PROTECTED BY APPROPRIATE BMPS DURING CONSTRUCTION UNTIL ALL SOURCES WITH POTENTIAL FOR DISCHARGING TO THE INLET HAS BEEN STABILIZED. INLET AND CULVERT PROTECTION SHALL CONFORM TO THE 2016 MNDOT SPECIFICATIONS 2573.

THE CONTRACTOR SHALL ENSURE STOCK PILES ARE PROVIDED WITH AN EFFECTIVE SEDIMENT PERIMETER CONTROL AND STOCK PILES SHALL NOT BE PLACED IN ANY TYPE OF SURFACE WATER OR NATURAL BUFFER.

THE CONTRACTOR SHALL INSTALL PERIMETER CONTROL AROUND ALL STAGING AREAS, BORROW PITS, AND AREAS CONSIDERED ENVIRONMENTALLY SENSITIVE.

THE CONTRACTOR SHALL ENSURE VEHICLE TRACKING BE MINIMIZED WITH EFFECTIVE BMPS. WHERE THE BMPS FAIL TO PREVENT SEDIMENT FROM TRACKING ONTO STREETS THE CONTRACTOR SHALL CONDUCT STREET SWEEPING TO REMOVE ALL TRACKED SEDIMENT.

THE CONTRACTOR SHALL IMPLEMENT CONSTRUCTION PRACTICES TO MINIMIZE SOIL COMPACTION.

THE CONTRACTOR SHALL ENSURE ALL CONSTRUCTION ACTIVITY REMAIN WITHIN PROJECT LIMITS AND THAT ALL IDENTIFIED RECEIVING WATER BUFFERS ARE MAINTAINED.

THE CONTRACTOR SHALL NOT UTILIZE SEDIMENT CONTROL CHEMICALS ON SITE.

EROSION PREVENTION BMP SUMMARY:
SEE EROSION AND SEDIMENT CONTROL PLAN SHEET AND BID FORM FOR TYPE, LOCATION, AND QUANTITY OF EROSION PREVENTION BMPS.

SEDIMENT CONTROL BMP SUMMARY:
SEE EROSION AND SEDIMENT CONTROL PLAN SHEETS AND BID FORM FOR TYPE, LOCATION, AND QUANTITY OF SEDIMENT CONTROL BMPS.

DEWATERING AND BASIN DRAINING ACTIVITIES:
THE CONTRACTOR IS RESPONSIBLE FOR ADHERING TO ALL DEWATERING AND SURFACE DRAINAGE REGULATIONS.

WATER FROM DEWATERING ACTIVITIES SHALL DISCHARGE TO A TEMPORARY AND/OR PERMANENT SEDIMENT BASIN.

IF WATER CANNOT BE DISCHARGED TO A SEDIMENTATION BASIN, IT SHALL BE TREATED WITH OTHER APPROPRIATE BMPS, TO EFFECTIVELY REMOVE SEDIMENT.

DISCHARGE THAT CONTAINS OIL OR GREASE MUST BE TREATED WITH AN OIL-WATER SEPARATOR OR SUITABLE FILTRATION DEVICE PRIOR TO DISCHARGE.

DISCHARGE POINTS SHALL BE PROTECTED FROM EROSION AND SCOUR.

DISCHARGE WATER SHALL BE DISPERSED OVER AN ACCEPTED ENERGY DISSIPATION MEASURE.

WATER FROM DEWATERING SHALL BE DISCHARGED IN A MANNER THAN DOES NOT CAUSE NUISANCE CONDITIONS, EROSION, OR INUNDATION OF WETLANDS.

BACKWASH WATER USED FOR FILTERING SHALL BE HAULED AWAY FOR DISPOSAL, RETURNED TO THE BEGINNING OF TREATMENT PROCESS, OR INCORPORATED INTO THE SITE IN A MANNER THAT DOES NOT CAUSE EROSION. THE CONTRACTOR SHALL REPLACE AND CLEAN FILTER MEDIAS USED IN DEWATERING DEVICES WHEN REQUIRED TO MAINTAIN ADEQUATE FUNCTION.

INSPECTION AND MAINTENANCE:
ALL INSPECTIONS, MAINTENANCE, REPAIRS, REPLACEMENTS, AND REMOVAL OF BMPS IS TO BE CONSIDERED INCIDENTAL TO THE BMP BID ITEMS.

THE CONTRACTOR IS RESPONSIBLE FOR COMPLETING SITE INSPECTIONS, AND BMP MAINTENANCE TO ENSURE COMPLIANCE WITH THE PERMIT REQUIREMENTS.

THE CONTRACTOR SHALL INSPECT THE CONSTRUCTION SITE ONCE EVERY 7 DAYS DURING ACTIVE CONSTRUCTION AND WITHIN 24 HOURS AFTER A RAINFALL EVENT GREATER THAN 0.5 INCHES IN 24 HOURS.

THE CONTRACTOR SHALL DOCUMENT A WRITTEN SUMMARY OF ALL INSPECTIONS AND MAINTENANCE ACTIVITIES CONDUCTED WITHIN 24 HOURS OF OCCURRENCE. RECORDS OF EACH ACTIVITY SHALL INCLUDE THE FOLLOWING:

- DATE AND TIME OF INSPECTIONS;
- NAME OF PERSON(S) CONDUCTING INSPECTION;
- FINDINGS AND RECOMMENDATIONS FOR CORRECTIVE ACTIONS IF NECESSARY;
- CORRECTIVE ACTIONS TAKEN;
- DATE AND AMOUNT OF RAINFALL EVENTS;
- POINTS OF DISCHARGE OBSERVED DURING INSPECTION AND DESCRIPTION OF THE DISCHARGE
- AMENDMENTS MADE TO THE SWPPP.

THE CONTRACTOR SHALL SUBMIT A COPY OF THE WRITTEN INSPECTIONS TO THE ENGINEER AND OWNER ON A MONTHLY BASIS. IF MONTHLY INSPECTION REPORTS ARE NOT SUBMITTED, MONTHLY PAYMENTS MAY BE HELD.

THE CONTRACTOR SHALL KEEP THE SWPPP, ALL INSPECTION REPORTS, AND AMENDMENTS ONSITE. THE CONTRACTOR SHALL DESIGNATE A SPECIFIC ONSITE LOCATION TO KEEP THE RECORDS.

THE CONTRACTOR IS RESPONSIBLE FOR THE OPERATION AND MAINTENANCE OF TEMPORARY AND PERMANENT WATER QUALITY BMP'S, AS WELL AS EROSION AND SEDIMENT CONTROL BMP'S.

THE CONTRACTOR SHALL INSPECT EROSION PREVENTION AND SEDIMENTATION CONTROL BMPS TO ENSURE INTEGRITY AND EFFECTIVENESS. ALL NONFUNCTIONAL BMPS SHALL BE REPAIRED, REPLACED, OR SUPPLEMENTED WITH FUNCTIONAL BMPS WITHIN 24 HOURS OF FINDING. THE CONTRACTOR SHALL INVESTIGATE AND COMPLY WITH THE FOLLOWING INSPECTION AND MAINTENANCE REQUIREMENTS:

PERIMETER CONTROL DEVICES, INCLUDING SILT FENCE SHALL BE REPAIRED, OR REPLACED, WHEN THEY BECOME NONFUNCTIONAL OR THE SEDIMENT REACHES 1/2 OF THE DEVICE HEIGHT. THESE REPAIRS SHALL BE MADE WITHIN 24 HOURS OF DISCOVERY.

TEMPORARY AND PERMANENT SEDIMENT BASINS SHALL BE DRAINED AND THE SEDIMENT REMOVED WHEN THE DEPTH OF SEDIMENT COLLECTED IN THE BASIN REACHES 1/2 THE STORAGE VOLUME. DRAINAGE AND REMOVAL MUST BE COMPLETED WITHIN 72 HOURS OF DISCOVERY.

SURFACE WATERS, INCLUDING DRAINAGE DITCHES AND CONVEYANCE SYSTEMS, MUST BE INSPECTED FOR EVIDENCE OF EROSION AND SEDIMENT DEPOSITION. THE CONTRACTOR SHALL REMOVE ALL DELTAS AND SEDIMENT DEPOSITED IN SURFACE WATERS, INCLUDING DRAINAGE WAYS, CATCH BASINS, AND OTHER DRAINAGE SYSTEMS. THE CONTRACTOR SHALL RE-STABLIZE THE AREAS WHERE SEDIMENT REMOVAL RESULTS IN EXPOSED SOIL. REMOVAL AND STABILIZATION MUST TAKE PLACE WITHIN 7 DAYS OF DISCOVERY, UNLESS PRECLUDED BY LEGAL, REGULATORY, OR PHYSICAL CONSTRAINTS. THE CONTRACTOR IS RESPONSIBLE FOR CONTACTING ALL LOCAL, REGIONAL, STATE AND FEDERAL AUTHORITIES AND OBTAIN ANY APPLICABLE PERMITS, PRIOR TO CONDUCTING ANY WORK IN SURFACE WATERS.

CONSTRUCTION SITE VEHICLE EXIT LOCATIONS SHALL BE INSPECTED DAILY FOR EVIDENCE OF SEDIMENT TRACKING ONTO PAVED SURFACES. TRACKED SEDIMENT MUST BE REMOVED FROM ALL PAVED SURFACES WITHIN 24 HOURS OF DISCOVERY.

IF SEDIMENT ESCAPES THE CONSTRUCTION SITE, OFF-SITE ACCUMULATIONS OF SEDIMENT MUST BE REMOVED IN A MANNER AND AT A FREQUENCY SUFFICIENT TO MINIMIZE OFF-SITE IMPACTS.

POLLUTION PREVENTION MANAGEMENT MEASURES:
THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL POLLUTION PREVENTION MANAGEMENT MEASURES.

ALL POLLUTION PREVENTION MEASURES ARE CONSIDERED INCIDENTAL TO THE MOBILIZATION BID ITEM, UNLESS OTHERWISE NOTED.

THE CONTRACTOR IS RESPONSIBLE FOR INFORMING ALL VISITORS AND/OR PERSONNEL ON-SITE OF THE POLLUTION PREVENTION MANAGEMENT MEASURES. POLLUTION PREVENTION MANAGEMENT MEASURES INCLUDE BUT ARE NOT LIMITED TO THE FOLLOWING:

THE CONTRACTOR IS RESPONSIBLE FOR THE PROPER DISPOSAL, IN COMPLIANCE WITH MPCA DISPOSAL REQUIREMENTS, OF ALL HAZARDOUS MATERIALS, SOLID WASTE, AND PRODUCTS ON-SITE.

THE CONTRACTOR SHALL ENSURE BUILDING PRODUCTS THAT HAVE THE POTENTIAL TO LEACH POLLUTANTS ARE KEPT UNDER COVER TO PREVENT THE DISCHARGE OF POLLUTANTS.

THE CONTRACTOR SHALL ENSURE PESTICIDES, HERBICIDES, INSECTICIDES, FERTILIZERS, TREATMENT CHEMICALS, AND LANDSCAPE MATERIALS ARE COVERED TO PREVENT THE DISCHARGE OF POLLUTANTS.

THE CONTRACTOR SHALL ENSURE HAZARDOUS MATERIALS AND TOXIC WASTE IS PROPERLY STORED IN SEALED CONTAINERS TO PREVENT SPILLS, LEAKS, OR OTHER DISCHARGE. STORAGE AND DISPOSAL OF HAZARDOUS WASTE OR HAZARDOUS MATERIALS MUST BE IN COMPLIANCE WITH MINN. R. CH. 7045 INCLUDING SECONDARY CONTAINMENT AS APPLICABLE.

THE CONTRACTOR SHALL ENSURE ASPHALT SUBSTANCES USED ON-SITE SHALL ARE APPLIED IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS.

THE CONTRACTOR SHALL ENSURE PAINT CONTAINERS AND CURING COMPOUNDS SHALL BE TIGHTLY SEALED AND STORED WHEN NOT REQUIRED FOR USE. EXCESS PAINT AND/OR CURING COMPOUNDS SHALL NOT BE DISCHARGED INTO THE STORM SEWER SYSTEM AND SHALL BE PROPERLY DISPOSED OF ACCORDING TO MANUFACTURER'S INSTRUCTION.

THE CONTRACTOR SHALL ENSURE SOLID WASTE BE STORED, COLLECTED AND DISPOSED OF PROPERLY IN COMPLIANCE WITH MINN. R. CH. 7035.

THE CONTRACTOR SHALL ENSURE POTABLE TOILETS ARE POSITIONED SO THAT THEY ARE SECURE AND WILL NOT BE TIPPED OR KNOCKED OVER. SANITARY WASTE MUST BE DISPOSED OF PROPERLY IN ACCORDANCE WITH MINN. R, CH. 7041.

THE CONTRACTOR SHALL MONITOR ALL VEHICLES ON-SITE FOR LEAKS AND RECEIVE REGULAR PREVENTION MAINTENANCE TO REDUCE THE CHANCE OF LEEKAGE.

EXTERNAL WASHING OF TRUCKS AND OTHER CONSTRUCTION VEHICLES AND ENGINE DEGREASING ARE PROHIBITED AT THE CONSTRUCTION SITE.

THE CONTRACTOR SHALL ENSURE WASHOUT WASTE MUST NOT CONTACT THE GROUND AND SHALL BE PROPERLY DISPOSED OF IN COMPLIANCE WITH MPCA RULES.

THE CONTRACTOR SHALL INCLUDE SPILL KITS WITH ALL FUELING SOURCES AND MAINTENANCE ACTIVITIES. SECONDARY CONTAINMENT MEASURES SHALL BE INSTALLED AND MAINTAINED BY THE CONTRACTOR.

THE CONTRACTOR SHALL ENSURE SPILLS ARE CONTAINED AND CLEANED UP IMMEDIATELY UPON DISCOVERY. SPILLS LARGE ENOUGH TO REACH THE STORM WATER CONVEYANCE SYSTEM SHALL BE REPORTED TO THE MINNESOTA DUTY OFFICER AT 1.800.422.0798.

FINAL STABILIZATION:
THE CONTRACTOR IS RESPONSIBLE FOR ENSURING FINAL STABILIZATION OF THE ENTIRE SITE. FINAL STABILIZATION INCLUDES BUT IS NOT LIMITED TO THE FOLLOWING:

ALL SOIL DISTURBING ACTIVITIES HAVE BEEN COMPLETED.

ALL EXPOSED SOILS HAVE BEEN UNIFORMLY STABILIZED WITH AT LEAST 70% VEGETATION COVERAGE.

PERMANENT STORM WATER MANAGEMENT SYSTEM(S) ARE CONSTRUCTED AND ARE OPERATING AS DESIGNED.

ALL DRAINAGE DITCHES, PONDS, AND ALL STORM WATER CONVEYANCE SYSTEMS HAVE BEEN CLEARED OF SEDIMENT AND STABILIZED WITH PERMANENT COVER TO PRECLUDE EROSION.

ALL TEMPORARY BMPS HAVE BEEN REMOVED AND PROPERLY DISPOSED OF.

FINAL STABILIZATION SHALL BE PREFORMED IN ACCORDANCE WITH MNDOT 2016 SPECIFICATION 2575.3.

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY:				
DESIGNER: JVO				
CHECKED BY: DAC				

I hereby certify that this plan was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.
Certified By: Dan Cazanacli Lic. No. 42687
Licensed Professional Engineer
Printed Name: DAN A. CAZANACLI Date: 9/19/2017

SEH
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

ANOKA COUNTY, MN
CSAH 23
S.A.P. 002-623-017, S.A.P. 244-020-002

STORM WATER POLLUTION PREVENTION PLAN

FILE NO. ANOKC141617
SWP2 OF SWP2

56
94

CITY OF LEXINGTON

℄ RESTWOOD

℄ N FRONTAGE 1

CITY OF LEXINGTON

ANOKA COUNTY

NORTH HIGHWAY DRIVE

NORTH HIGHWAY DRIVE

SCALE IN FEET

℄ CSAH 23 (LAKE)

INFILTRATION SWALE 1

INFILTRATION SWALE 2

INFILTRATION SWALE 3

BEGIN S.A.P. 002-623-017
CSAH 23 STA 115+55.02

RIPRAP CLASS III

℄ RESTWOOD S

SOUTH HIGHWAY DRIVE

SOUTH HIGHWAY DRIVE

℄ S FRONTAGE

℄ S FRONTAGE 2

℄ HAMLINE

ANOKA COUNTY

RESTWOOD ROAD

MATCHLINE LAKE (CSAH 23) STA 130+54
SEE BELOW

LEGEND

- SEED MIX 21-111 FERTILIZER TYPE 1 RAPID STABILIZATION METHOD 2
- SEED MIX 33-261 FERTILIZER TYPE 4 EROSION CONTROL BLANKET CATEGORY 3N
- SEED MIX 35-221 FERTILIZER TYPE 3 EROSION CONTROL BLANKET CATEGORY 3N
- CONSTRUCTION LIMITS
- PROPOSED STORM SEWER
- DRAINAGE FLOW DIRECTION
- CULVERT END CONTROL
- STORM DRAIN INLET PROTECTION
- RANDOM RIPRAP, CLASS II & III
- SILT FENCE, TYPE MS

PATRIOT LANE

GRIGGS AVENUE

℄ WOODLAND

℄ N FRONTAGE 2

RIPRAP CLASS III

RIPRAP CLASS III

NORTH HIGHWAY DRIVE

℄ CSAH 23 (LAKE)

MATCHLINE LAKE (CSAH 23) STA 130+54
SEE ABOVE

INFILTRATION SWALE 3

SEE SHEET 54 FOR INFILTRATION SWALES GRADING PLAN.

RIPRAP CLASS II

℄ GRIGGS

SOUTH HIGHWAY DRIVE

SOUTH HIGHWAY DRIVE

ANOKA COUNTY

CITY OF LEXINGTON

GRIGGS AVENUE

WOODLAND ROAD

SEE SHEET 53 FOR FILTRATION BASIN GRADING PLAN.

MATCHLINE LAKE (CSAH 23) STA 145+54
SEE SHEET (44)

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY:				
DESIGNER: JVO				
CHECKED BY: DAC				

I hereby certify that this plan was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.
Certified By: Dan Cazanacli Lic. No. 42687
Licensed Professional Engineer
Printed Name: DAN A. CAZANACLI Date: 9/19/2017

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ANOKA COUNTY, MN
CSAH 23
S.A.P. 002-623-017, S.A.P. 244-020-002

EROSION CONTROL AND TURF ESTABLISHMENT PLAN
LAKE STA 115+54 TO LAKE STA 130+54

FILE NO. ANOKC141617
EC1 OF EC2

57 / 94

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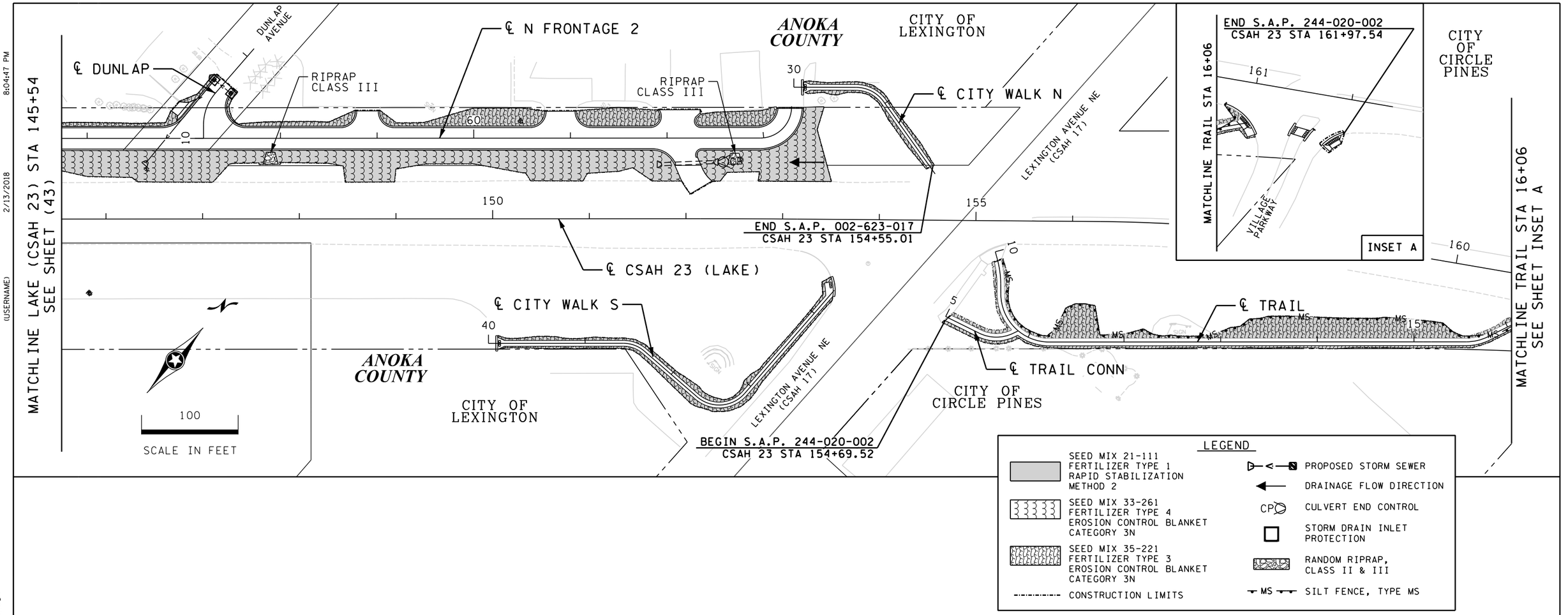

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DESIGN TEAM	NO.	BY	DATE	REVISIONS
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DESIGNER: JVO				
CHECKED BY: DAC				

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CSAH 23
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EROSION CONTROL AND TURF ESTABLISHMENT PLAN
LAKE STA 130+54 TO TRAIL STA 16+21.46

FILE NO. ANOKC141617
EC2
OF EC2

C&G RADIUS POINTS			
POINT	POINT COORDINATES X	POINT COORDINATES Y	RADIUS
4000	524926.51	137344.57	20'
4001	524921.75	137334.83	30'
4002	525001.52	137228.33	40'
4003	525091.60	137306.51	40'
4004	524997.60	137403.04	30'
4005	524988.51	137398.23	20'

DETAIL POINTS			
POINT	POINT COORDINATES X	POINT COORDINATES Y	ELEV.
3000	524945.03	137317.54	909.13
3001	524950.19	137329.18	908.88
3002	524947.26	137329.81	909.00
3003	524990.10	137265.62	908.29
3004	525002.77	137267.31	908.04
3005	525002.67	137264.31	908.16
3006	525052.80	137310.44	907.94
3007	525056.16	137322.77	908.18
3008	525055.79	137310.14	907.78
3009	524998.99	137374.07	908.59
3010	525011.26	137377.46	908.84
3011	524998.84	137377.07	908.71
3012	524974.44	137411.00	907.92
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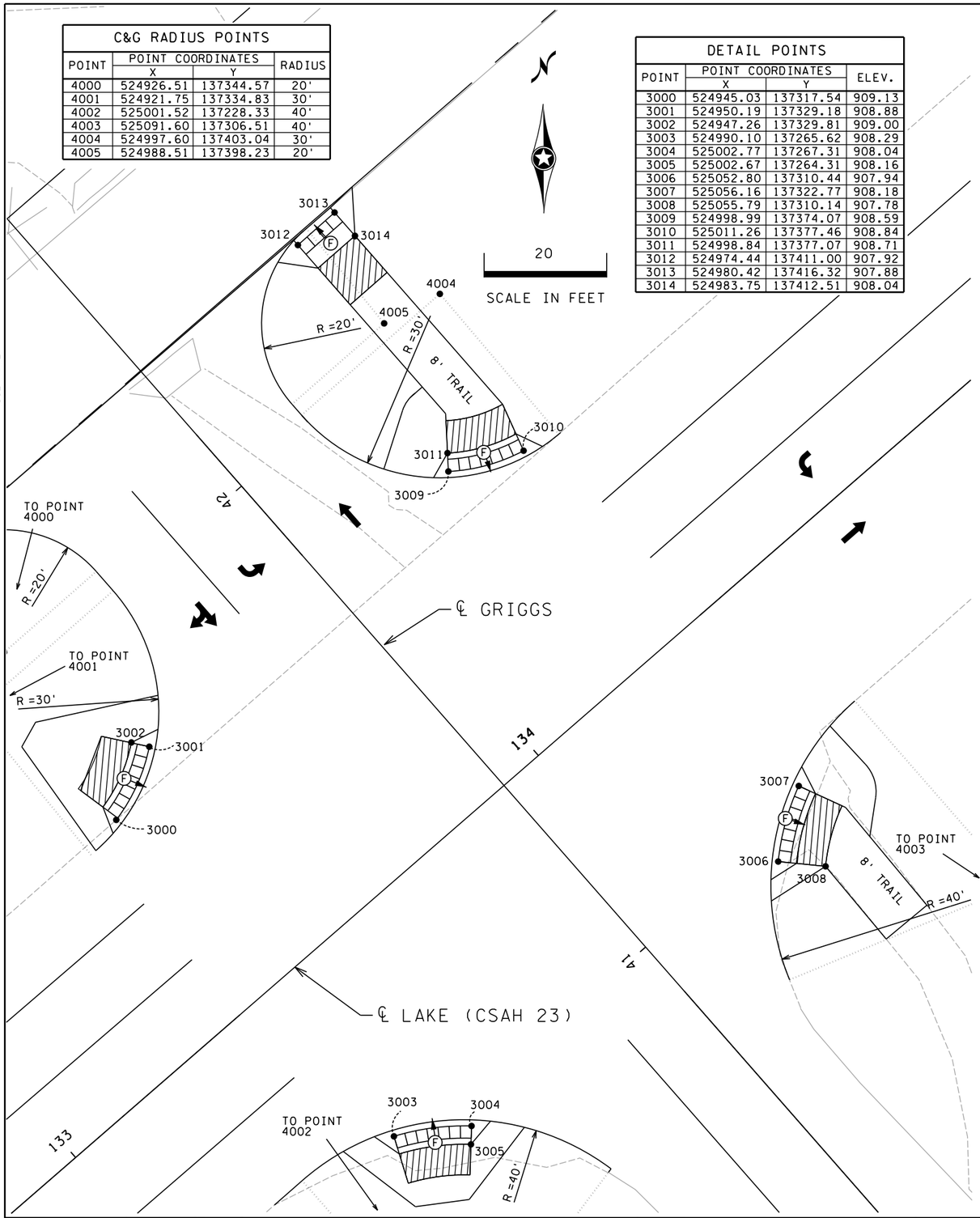
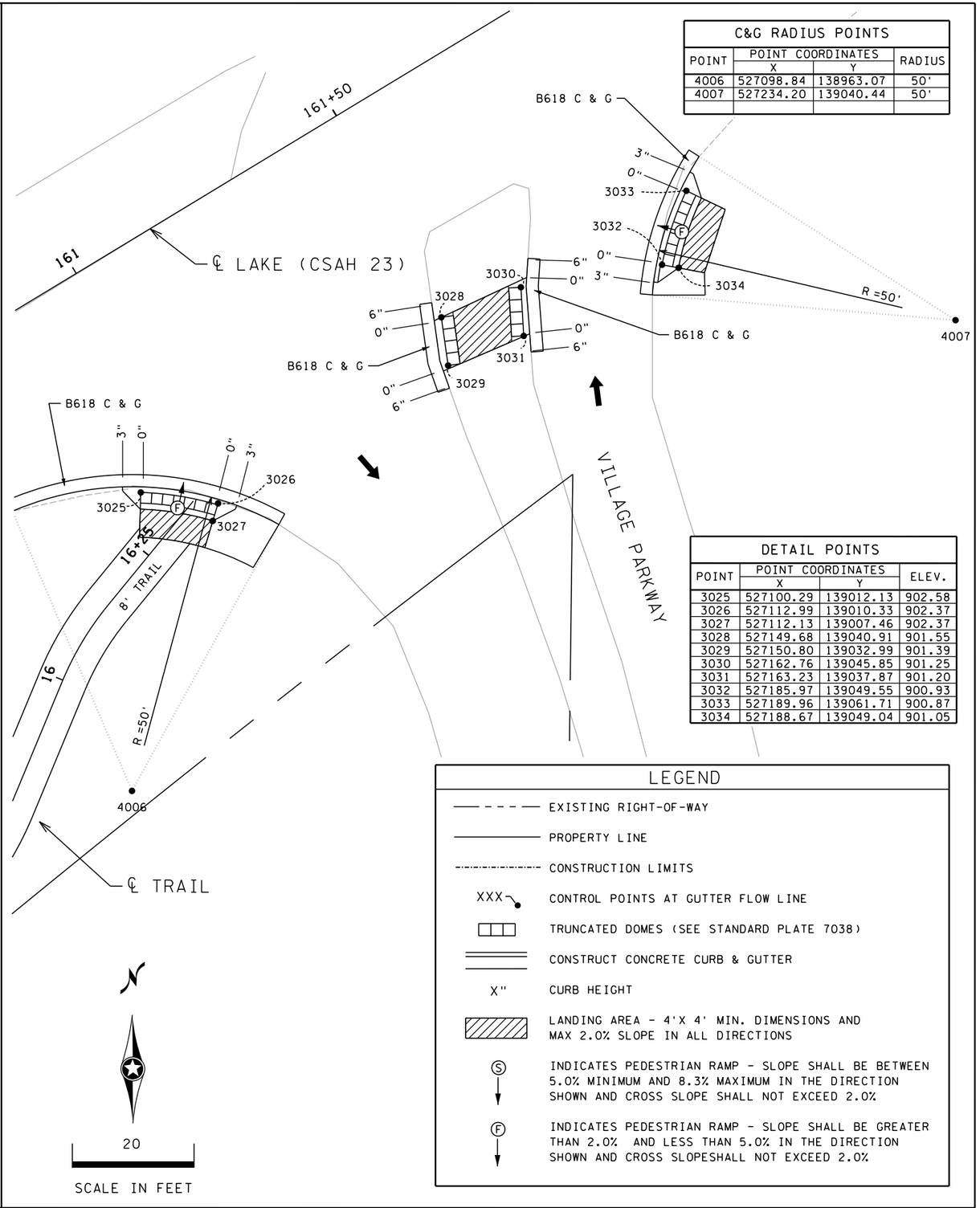


C&G RADIUS POINTS			
POINT	POINT COORDINATES X	POINT COORDINATES Y	RADIUS
4006	527098.84	138963.07	50'
4007	527234.20	139040.44	50'

DETAIL POINTS			
POINT	POINT COORDINATES X	POINT COORDINATES Y	ELEV.
3025	527100.29	139012.13	902.58
3026	527112.99	139010.33	902.37
3027	527112.13	139007.46	902.37
3028	527149.68	139040.91	901.55
3029	527150.80	139032.99	901.39
3030	527162.76	139045.85	901.25
3031	527163.23	139037.87	901.20
3032	527185.97	139049.55	900.93
3033	527189.96	139061.71	900.87
3034	527188.67	139049.04	901.05



LEGEND

- EXISTING RIGHT-OF-WAY
- PROPERTY LINE
- CONSTRUCTION LIMITS
- XXX — CONTROL POINTS AT GUTTER FLOW LINE
- TRUNCATED DOMES (SEE STANDARD PLATE 7038)
- CONSTRUCT CONCRETE CURB & GUTTER
- X" — CURB HEIGHT
- LANDING AREA - 4'X 4' MIN. DIMENSIONS AND MAX 2.0% SLOPE IN ALL DIRECTIONS
- (S) — 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%
- (F) — INDICATES PEDESTRIAN RAMP - SLOPE SHALL BE GREATER THAN 2.0% AND LESS THAN 5.0% IN THE DIRECTION SHOWN AND CROSS SLOPESHALL NOT EXCEED 2.0%

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: SAS				
DESIGNER: JEO				
CHECKED BY: HLR				

I hereby certify that this plan was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.
Certified By: Jason E. Owens Lic. No. 43475
Licensed Professional Engineer
Printed Name: JASON E. OWENS Date: 9/19/2017

SEH
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

ANOKA COUNTY, MN
CSAH 23
S.A.P. 002-623-017, S.A.P. 244-020-002

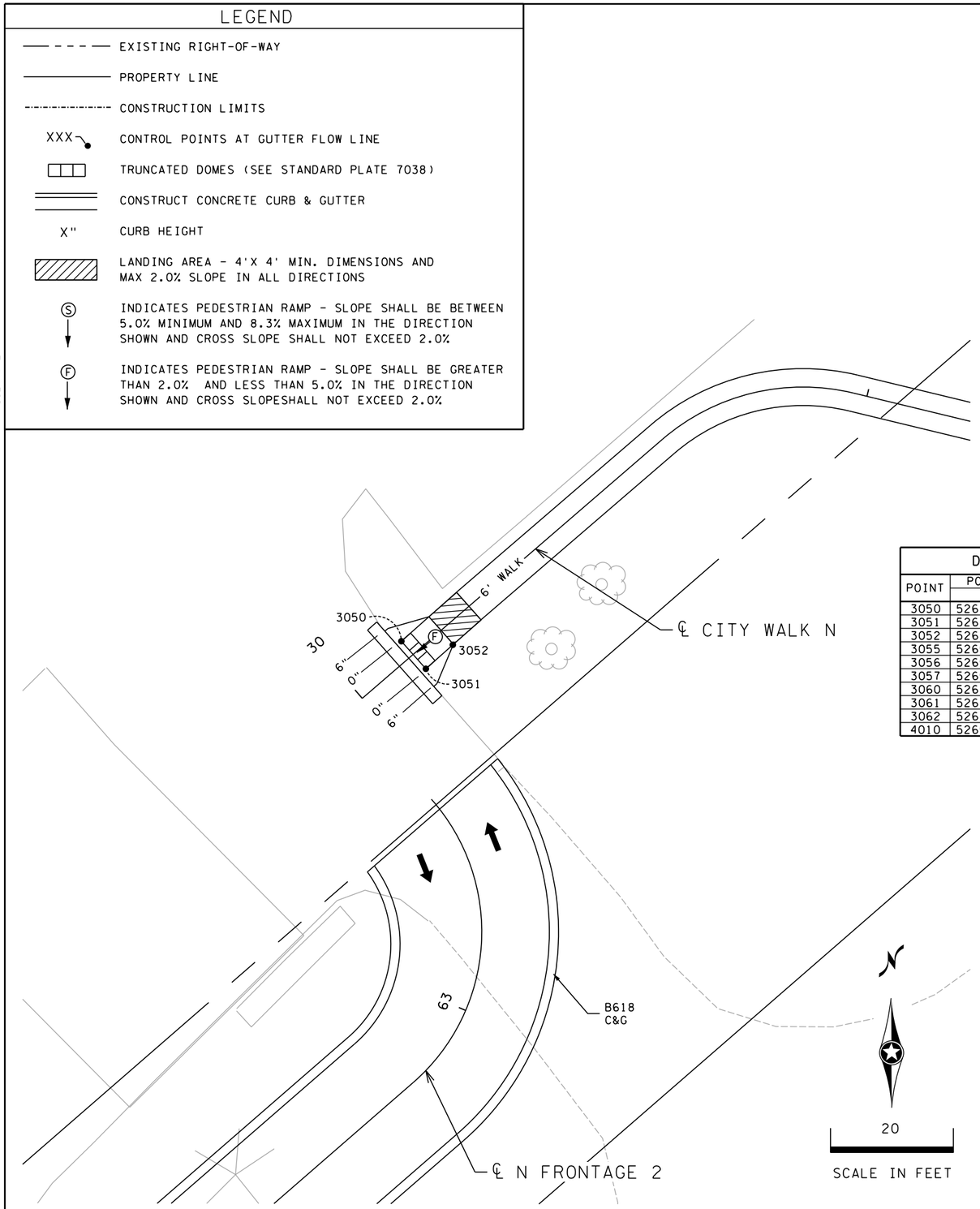
PEDESTRIAN RAMP AND INTERSECTION DETAILS

FILE NO. ANOKC141617
IN1 OF IN2
59/94

8:05:13 PM 2/13/2018 (USERNAME)
FILE: S:\AE\A\Anokc\141617\5-final-dsgn\51-drawings\40-Transhwy\Plansheets\CD141617_in1.dgn
MODEL: IN1

LEGEND

- EXISTING RIGHT-OF-WAY
- PROPERTY LINE
- CONSTRUCTION LIMITS
- XXX — CONTROL POINTS AT GUTTER FLOW LINE
- TRUNCATED DOMES (SEE STANDARD PLATE 7038)
- CONSTRUCT CONCRETE CURB & GUTTER
- X" — CURB HEIGHT
- LANDING AREA - 4'X 4' MIN. DIMENSIONS AND MAX 2.0% SLOPE IN ALL DIRECTIONS
- (S) 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%
- (F) INDICATES PEDESTRIAN RAMP - SLOPE SHALL BE GREATER THAN 2.0% AND LESS THAN 5.0% IN THE DIRECTION SHOWN AND CROSS SLOPESHALL NOT EXCEED 2.0%



DETAIL POINTS

POINT	POINT COORDINATES X	POINT COORDINATES Y	ELEV.
3050	526373.60	138693.76	909.14
3051	526377.58	138689.27	909.02
3052	526382.07	138693.26	909.19
3055	526528.48	138557.55	909.20
3056	526533.13	138553.72	909.08
3057	526531.17	138551.45	909.29
3060	526308.51	138286.31	908.38
3061	526312.45	138281.78	908.26
3062	526316.97	138285.72	908.29
4010	526504.37	138524.72	RAD

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: SAS				
DESIGNER: JEO				
CHECKED BY: HLR				

I hereby certify that this plan was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.
Certified By: Jason E. Owens Lic. No. 43475
Licensed Professional Engineer
Printed Name: JASON E. OWENS Date: 9/19/2017

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ST. PAUL, MN 55110

ANOKA COUNTY, MN
CSAH 23
S.A.P. 002-623-017, S.A.P. 244-020-002

PEDESTRIAN RAMP AND INTERSECTION DETAILS

FILE NO. ANOKC141617
IN2 OF IN2
60 / 94

8:05:16 PM
2/13/2018
(USERNAME)
FILE: S:\AE\A\Anoka\141617\5-final-dsgn\51-drawings\40-TransHwy\Plansheets\CD141617_ini.dgn
MODEL: IN2

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. THE CONTRACTOR WILL PLACE NECESSARY "SPOTTING" AT APPROPRIATE POINTS TO PROVIDE HORIZONTAL CONTROL FOR STRIPING AND TO DETERMINE NECESSARY STARTING AND CUTOFF POINTS. LONGITUDINAL JOINTS, PAVEMENT EDGES AND EXISTING MARKINGS MAY SERVE AS HORIZONTAL CONTROL WHEN SO DIRECTED.

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 AGENCY PLACED 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 3 INCHES 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.

JUST PRIOR TO THE PLACEMENT OF PAVEMENT MARKINGS THE ROAD SURFACE SHALL BE CLEANED AND FREE OF CONTAMINATION AS RECOMMENDED BY THE MATERIAL MANUFACTURER AND ACCEPTABLE TO THE ENGINEER. PORTLAND CEMENT CONCRETE SURFACES SHALL BE SANDBLAST CLEANED TO REMOVE ANY SURFACE TREATMENTS AND/OR LAITANCE.

APPLY ALL PAVEMENT MARKINGS AS RECOMMENDED BY THE MATERIAL MANUFACTURER.

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.

REFER TO SPECIAL PROVISIONS OR SPEC BOOK FOR GROUND IN/RECESSED PAVEMENT MARKING APPLICATION REQUIREMENTS.

EPOXY:

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 TREATMENTS AND/OR LAITANCE.

THE EPOXY MARKING APPLICATION SHALL IMMEDIATELY FOLLOW THE PAVEMENT CLEANING. GLASS BEADS SHALL BE APPLIED IMMEDIATELY AFTER APPLICATION OF THE EPOXY RESIN LINE.

APPLY EPOXY MARKINGS WITH A MINIMUM THICKNESS OF 20 MILS, GLASS BEADS SHALL BE APPLIED AT A RATE OF AT LEAST 25 LB/GAL. THE "NO-TRACKING" CONDITION SHALL BE DETERMINED ON AN APPLICATION OF SPECIFIED THICKNESS TO THE PAVEMENT AND COVERED WITH GLASS BEADS AT THE RATE OF AT LEAST 25 LB/GAL.

PAVEMENT MARKINGS SHALL ONLY BE APPLIED IN SEASONABLE WEATHER WHEN AIR AND PAVEMENT SURFACE TEMPERATURES ARE 40°F OR HIGHER AND SHALL NOT BE APPLIED WHEN THE WIND OR OTHER CONDITIONS CAUSE A FILM OF DUST TO BE DEPOSITED ON THE PAVEMENT SURFACE AFTER CLEANING AND BEFORE THE MARKING MATERIAL CAN BE APPLIED.

PREFORMED MARKINGS:

MANUFACTURER CERTIFICATIONS ARE REQUIRED FOR INSTALLERS, AND WRITTEN CERTIFICATION SHALL BE PRESENTED AT ANYTIME UPON REQUEST OF ENGINEER OR OTHER STATE PERSONAL.

DO NOT USE LINE MATERIAL TO PIECE TOGETHER INDIVIDUAL LETTERS, SYMBOLS, OR CROSSWALKS BLOCKS. UTILIZE PRECUT KITS PROVIDED BY THE MANUFACTURER. TWO STRIPS OF 18" LINE MATERIAL MAY BE USED TO FORM CROSSWALK BLOCKS OF 36" WIDTH.

DO NOT USE NARROWER LINE MATERIAL TO PIECE TOGETHER WIDER LINES.

IF THERE IS A CRACK OR JOINT IN ROAD SURFACE. (FOR TAPE LAY OVER CRACK OR JOINT THEN CUT TAPE 1" ON EACH SIDE OF CRACK OR JOINT). (FOR THERMO MAKE A DEEP SCORE IN THE MATERIAL ONCE IT HAS SET UP BUT NOT ENTIRELY COOLED DOWN).

PERMANENT PAVEMENT MARKING PLAN INDEX

SYMBOLS & MATERIALS LEGEND

— — — BROKEN LINE-50' CYCLE (10' LINE, 40' GAP)

CROSSWALK BLOCK - PREFORM THERMOPLASTIC

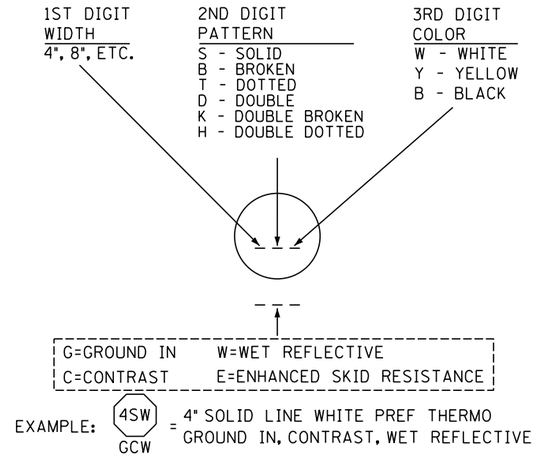
PAVEMENT MESSAGE (LEFT ARROW) - PREFORM THERMOPLASTIC

PAVEMENT MESSAGE (RIGHT ARROW) - PREFORM THERMOPLASTIC

STRIPING KEY

CIRCLE-EPOXY

OCTAGON-PREF THERMO



PAVEMENT MARKING TABULATION				P
ITEM	UNIT	S.A.P. 002-623-017 QUANTITY		TOTAL QUANTITY
		WHITE	YELLOW	
PAVEMENT MARKING REMOVAL	SQ FT			135
PAVEMENT MARKING REMOVAL	LIN FT			7700
PAVT MSSG - PREFORM THERMOPLASTIC	SQ FT	288		288 (1)
24" SOLID LINE - PREFORM THERMOPLASTIC	LIN FT	500	975	1475
4" DOUBLE SOLID LINE - EPOXY	LIN FT		4290	4290
4" SOLID LINE - EPOXY	LIN FT	6200	150	6350
CROSSWALK PREFORM THERMOPLASTIC	SQ FT		1060	1060

SPECIFIC NOTES:

(1) PAVEMENT MESSAGE QUANTITY BREAKDOWN

7 LEFT ARROW (112 SQ FT)

11 RIGHT ARROW (176 SQ FT)

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: SAS				
DESIGNER: CMJ				
CHECKED BY: MAW				

I hereby certify that this plan was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.
Certified By: _____ Lic. No. 51660
Licensed Professional Engineer
Printed Name: MARK A. WAGNER Date: 9/19/2017

SEH
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

ANOKA COUNTY, MN

CSAH 23

S.A.P. 002-623-017, S.A.P. 244-020-002

SIGNING AND STRIPING PLAN

TITLE SHEET AND TABULATION

FILE NO. ANOKC141617

STP1 OF STP15

61 / 94

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MODEL: STP1

SIGN PANELS TYPE C

Q-1

	SIGN NO	S.A.P. 002-623-017 QTY	POSTS NO & TYPE	POSTS KNEE BRACES QTY	POSTS LENGTH FEET	MTG HT (1) FEET	PANEL SIZE INCH	PANEL S.A.P. 002-623-017 Qty. SQ FT	PANEL TOTAL AREA SQ FT	CODE NO	PANEL LEGEND	
	C-1	2	1-U		15	7	30 x 30	12.50	12.50	W11-8	FIRE STATION	
	C-2	4	2-U		15	7	54 x 30	45.00	45.00	R3-8ACA	L-T-R	
	C-3	1	1-U		18	7	24 x 30	5.00	5.00	R2-1	SPEED LIMIT 30	
							24 x 30	5.00	5.00	R12-2	AXLE WEIGHT LIMIT 3 TONS	
	C-4	1	1-U		15	7	24 x 30	5.00	5.00	R2-1	SPEED LIMIT 50 MPH	
(3)	C-5	4	1-ST		15	7	30 x 30	25.00	25.00	R5-1	DO NOT ENTER	
	C-6	2	1-U		17	7	30 x 30	12.50	12.50	R1-1	STOP	
							30 x 15	6.25	6.25	W4-4aPR	TRAFFIC FROM RIGHT DOES NOT STOP	
	C-7	2	1-U		17	7	30 x 30	12.50	12.50	R1-1	STOP	
							30 x 15	6.25	6.25	W4-4BP	ONCOMING TRAFFIC DOES NOT STOP	
(3)	C-8	5	1-ST		15	7	24 x 30	25.00	25.00	R4-7	KEEP RIGHT	
	C-9	2	1-U		13	4.5	30 x 30	12.50	12.50	R3-7R	RIGHT TURN LANE	
	C-10	1	1-U		15	7	36 x 30	7.50	7.50	R3-8ACA	L-T	
	C-11	5	1-U		15	7	24 x 24	20.00	20.00	R3-2	NO LEFT TURN	
	C-12	1	1-U		16	7	36 x 36	9.00	9.00	R1-1	STOP	
	C-13	NUMBER NO LONGER USED.										
	C-14	4	1-U		15	7	24 x 30	20.00	20.00	R2-1	SPEED LIMIT 45 MPH	
	C-15	1	1-U		15	7	30 x 30	6.25	6.25	W3-3	SIGNAL AHEAD	
	C-16	1	1-U		17	7	30 x 30	6.25	6.25	W11-2	PEDESTRIAN CROSSING	
							24 x 18	3.00	3.00	W16-7MPL	DOWN ARROW PLAQUE LEFT	(2)
							30 x 30	6.25	6.25	W11-2	PEDESTRIAN CROSSING	
							24 x 18	3.00	3.00	W16-7MPR	DOWN ARROW PLAQUE RIGHT	(2)
	C-17	3	1-U		17	7	36 x 12	9.00	9.00	R6-1R	ONE WAY RIGHT	
							36 x 36	27.00	27.00	R1-1	STOP	
	C-18	1	1-U		15	7	24 x 30	5.00	5.00	R12-2	AXLE WEIGHT LIMIT 3 TONS	
	C-19	1	2-U		15	7	54 x 30	11.25	11.25	R3-8ACA	L-T-R	
	C-20	1	2-U		15	7	54 x 30	11.25	11.25	R3-8ACA	L-T-R	
	C-21	1	1-U		17	7	24 x 30	5.00	5.00	R2-1	SPEED LIMIT 30	
							24 x 24	4.00	4.00	R5-2	NO TRUCKS	
	C-22	2	2-U		15	7	30 x 30	12.50	12.50	R5-1	DO NOT ENTER	
	C-23	1	1-U		18	7	24 x 12	2.00	2.00	M3-4A	WEST (BLUE)	
							24 x 24	4.00	4.00	M1-6	ANOKA COUNTY 23	
							24 x 24	4.00	4.00	R8-3	NO PARKING	
	C-24	1	1-U		17	7	24 x 24	4.00	4.00	R3-4	NO U-TURN	(2)
							24 x 30	5.00	5.00	R4-7	KEEP RIGHT	(2)
	C-25	1	1-U		18	7	21 x 15	2.19	2.19	M2-1A	JCT (BLUE)	
							24 x 24	4.00	4.00	M1-6	ANOKA COUNTY 17	
							24 x 24	4.00	4.00	R8-3	NO PARKING	
	C-26	1	1-U		17	7	24 x 24	4.00	4.00	R1-1	STOP	
							24 x 30	5.00	5.00	W4-4aPL	TRAFFIC FROM LEFT DOES NOT STOP	
	C-27	10	1-U		15	7	30 x 30	62.50	62.50	R1-1	STOP	
	C-28	1	1-U		15	7	24 x 24	4.00	4.00	R3-1	NO RIGHT TURN	
	TOTAL							443.44	443.44			

GENERAL NOTES:

1. POST LENGTHS ARE APPROXIMATE AND INCLUDE EMBEDMENT, BUT DO NOT INCLUDE ADDITIONAL LENGTH REQUIRED FOR SPLICE.
2. SEE MNDOT STANDARD SIGNS MANUAL FOR PUNCHING CODE AND DETAILED DRAWINGS OF TYPE C SIGNS.
3. SEE SHEETS STP13 TO STP14 FOR STRUCTURAL DETAILS.

SPECIFIC NOTES:

(1) MOUNTING HEIGHT IS MINIMUM (WITH A +6 INCH TOLERANCE) SEE SHEET NO. STP14 FOR TYPICAL MOUNTING.

(2) MOUNT BACK TO BACK.

(3) MOUNT IN CONCRETE. SEE SHEET STP15 TO STP17.

SIGN PANELS TYPE D — Q-2

SIGN NO	S.A.P. 002-623-017 QTY	POSTS NO & TYPE	POSTS KNEE BRACES QTY	POSTS LENGTH FEET	POSTS SPACING INCH	MTG HT (1) FEET	PANEL SIZE INCH	PANEL S.A.P. 002-623-017 SQ FT	TOTAL AREA SQ FT	PANEL LEGEND
D-1	1	1-U		15		7	30 x 24	5.00	5.00	LEXINGTON MEMORIAL PARK ⇨
D-2	1			14		7	18 x 24	3.00	3.00	CITY HALL ⇦ (2)
D-3	3			14		7	18 x 24	3.00	9.00	CITY HALL ⇨ (3)
D-4	1	2-U	2	14	54	7	84 x 24	14.00	14.00	Lexington POP 2114
D-5	1	1-U		14		7	30 x 24	5.00	5.00	LEXINGTON MEMORIAL PARK ⇦
								TOTAL	36.00	

GENERAL NOTES:
1. FURNISH SIGN PANEL, POSTS, BASES, AND MOUNTING HARDWARE.
2. POST LENGTHS ARE APPROXIMATE AND INCLUDE EMBEDMENT, BUT DO NOT INCLUDE ADDITIONAL LENGTH REQUIRED FOR SPLICE.
3. SEE MNDOT STANDARD SIGNS MANUAL FOR PUNCHING CODE AND DETAILED DRAWINGS OF TYPE C SIGNS.
4. SEE SHEETS STP13 TO STP14 FOR STRUCTURAL DETAILS.
5. SEE SHEET STP4 FOR SIGN PANELS.

SPECIFIC NOTES:
(1) MOUNTING HEIGHT IS MINIMUM (WITH A +6 INCH TOLERANCE) SEE SHEET NO. STP14 FOR TYPICAL MOUNTING.
(2) MOUNT BELOW SIGN C-19.
(3) MOUNT BELOW SIGN C-20.

REMOVE SIGN TYPE D — Q-3

SIGN NO	S.A.P. 002-623-017 QUANTITY	POSTS NO & TYPE	POSTS KNEE BRACES QTY	PANEL SIZE (1) INCH	PANEL LEGEND
D-101	1	2-U	-	84 x 24	Lexington POP 2114
D-102	1	1-U	-	18 x 24	CITY HALL ⇨ (2)
				18 x 24	CITY HALL ⇦
D-103	1	1-U	-	30 x 24	LEXINGTON MEMORIAL PARK ⇨
TOTAL	3				

SPECIFIC NOTE:
(1) SIZES ARE APPROXIMATE.
(2) MOUNTED BACK TO BACK.

DELINEATORS & MARKERS — Q-4

CODE NO	S.A.P. 002-623-017 QTY	LOCATION
X4-4 L	1	MOUNT ON ISLAND AT STATION 149+35 (1)
X4-2 (OM1-2)	5	MOUNT BELOW SIGN C-8
X4-2 (OM1-1)	1	MOUNT AT CURB NOSE AT STATION 119+00
X4-2 (OM1-2)	1	MOUNT BELOW SIGN C-24
TOTAL	8	

GENERAL NOTES:
1. FOR DELINEATOR AND MARKER PLACEMENT, SEE SHEET NO. STP12.
2. SEE STANDARD SIGNS MANUAL FOR DELINEATOR AND MARKER SIGN DESIGN.

SPECIFIC NOTES:
(1) SIZE SHALL BE 12 INCH BY 36 INCH.

SIGN PANELS TYPE SPECIAL (SNS) (100% CITY OF LEXINGTON FUNDS) — Q-5

SIGN NO.	CITY NON-PART. Qty.	POSTS NO. & TYPE	POSTS LEN. (FT.)	SIGN PANEL SIZE (IN.) (2)	SIGN PANEL AREA (SQ FT)	CITY NON-PART. Qty.	TOTAL AREA (SQ FT)	PANEL LEGEND
S-1	2	1-0	12	36 x 9	2.25	4.50	4.50	N HWY DR (1)
				36 x 9	2.25	4.50	4.50	RESTWOOD RD (1)
S-2	2	1-0	12	36 x 9	2.25	4.50	4.50	S HWY DR (1)
				36 x 9	2.25	4.50	4.50	RESTWOOD RD (1)
S-3	2	1-0	12	36 x 9	2.25	4.50	4.50	S HWY DR (1)
				36 x 9	2.25	4.50	4.50	HAMLINE AVE (1)
S-4	2	1-0	12	36 x 9	2.25	4.50	4.50	N HWY DR (1)
				36 x 9	2.25	4.50	4.50	LIBERTY LN (1)
S-5	2	1-0	12	36 x 9	2.25	4.50	4.50	N HWY DR (1)
				36 x 9	2.25	4.50	4.50	WOODLAND RD (1)
S-6	2	1-0	12	36 x 9	2.25	4.50	4.50	S HWY DR (1)
				36 x 9	2.25	4.50	4.50	WOODLAND RD (1)
S-7	2	1-0	12	36 x 9	2.25	4.50	4.50	N HWY DR (1)
				36 x 9	2.25	4.50	4.50	DUNLAP AVE (1)
TOTAL	14					63.00	63.00	

GENERAL NOTES:
1. CITY OF LEXINGTON TO FURNISH STREET NAME SIGNS.

SPECIFIC NOTES:
(1) MOUNT BACK TO BACK.
(2) SIZES ARE APPROXIMATE.

REMOVE SIGN PANEL TYPE D — Q-6

SIGN NO.	S.A.P. 002-623-017 QUANT.	PANEL SIZE (1) INCHES	PANEL LEGEND
(2) D-104	1	30x24	LEXINGTON MEMORIAL PARK ⇦
TOTAL	1		

SPECIFIC NOTE:
(1) SIZES ARE APPROXIMATE
(2) MOUNTED ABOVE LANE DESIGNATION C-SIGN AT STATION 117+00

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: SAS	1	CMJ	2/28/17	UPDATED QUANTITY & TABLE FOR SIGN PANELS TYPE SPECIAL
DESIGNER: CMJ				
CHECKED BY: MAW				

I hereby certify that this plan was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.
Certified By: _____ Licensed Professional Engineer Lic. No. 51660
Printed Name: MARK A. WAGNER Date: 9/19/2017

SEH 3535 VADNAIS CENTER DR. ST. PAUL, MN 55110

ANOKA COUNTY, MN
CSAH 23
S.A.P. 002-623-017, S.A.P. 244-020-002

SIGNING AND STRIPING PLAN
TABULATIONS

FILE NO. ANOKC141617
STP3 OF STP15
63 / 94

FILE: S:\AE\A\Anokc\141617\5-final-dsgn\51-drawings\40-TransHwy\Plansheets\CD141617_sgnt.dgn
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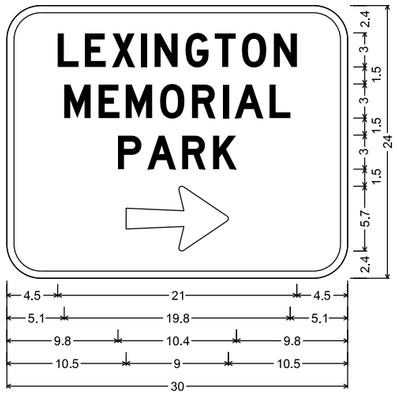
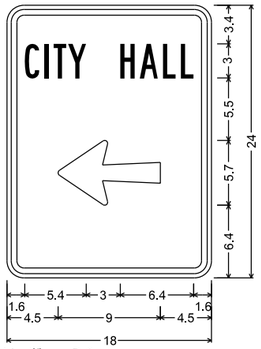


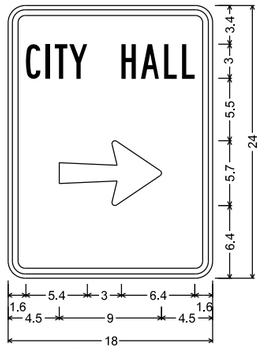
Identifier : D-1;
3.0" Radius, 0.6" Border, White on Green;
[LEXINGTON] D; [MEMORIAL] D; [PARK] D;
Arrow 11 - 9.0" 0°;
Table of letter and object lefts.

L 4.5	E 6.9	X 9.3	I 11.8	N 13.0	G 15.7	T 18.3	O 20.7	N 23.5
M 5.1	E 8.1	M 10.5	O 13.5	R 16.3	I 19.0	A 20.1	L 23.1	
P 9.8	A 12.4	R 15.4	K 18.2					
⇨ 10.5								



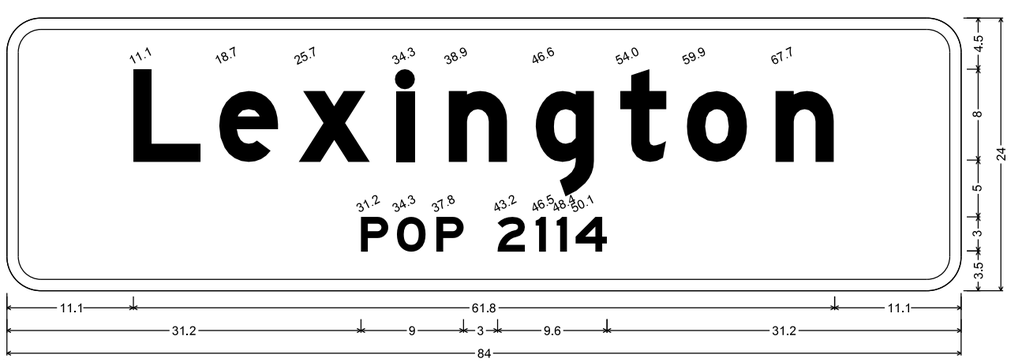
Identifier : D-2;
1.5" Radius, 0.5" Border, 0.4" Indent, White on Blue;
[CITY HALL] B;
Arrow 11 - 9.0" 180°;
Table of letter and object lefts.

C 1.6	I 3.3	T 4.1	Y 5.4					
H 10.0	A 11.7	L 13.7	L 15.3					
⇦ 4.5								



Identifier : D-3;
1.5" Radius, 0.5" Border, 0.4" Indent, White on Blue;
[CITY HALL] B;
Arrow 11 - 9.0" 0°;
Table of letter and object lefts.

C 1.6	I 3.3	T 4.1	Y 5.4					
H 10.0	A 11.7	L 13.7	L 15.3					
⇨ 4.5								



Identifier : D-4;
3.0" Radius, 1.0" Border, White on Green;
[Lexington] E Mod; [POP] E Mod; [2114] E Mod;

Identifier : D-5;
3.0" Radius, 0.6" Border, White on Green;
[LEXINGTON] D; [MEMORIAL] D; [PARK] D;
Arrow 11 - 9.0" 180°;
Table of letter and object lefts.

L 4.5	E 6.9	X 9.3	I 11.8	N 13.0	G 15.7	T 18.3	O 20.7	N 23.5
M 5.1	E 8.1	M 10.5	O 13.5	R 16.3	I 19.0	A 20.1	L 23.1	
P 9.8	A 12.4	R 15.4	K 18.2					
⇦ 10.5								

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CSAH 23
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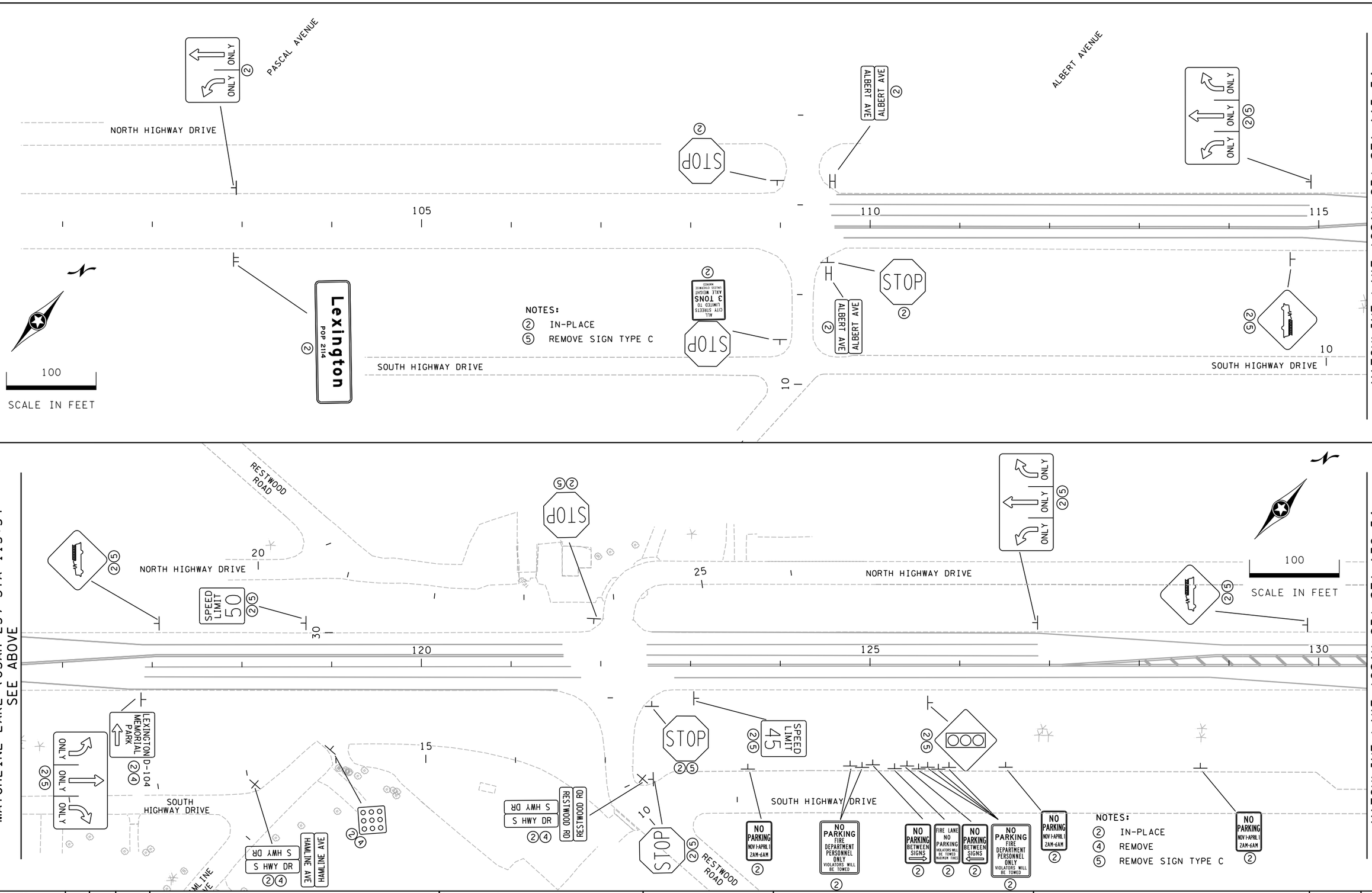
SIGNING AND STRIPING PLAN
SIGN PANELS TYPE D

FILE NO. ANOKC141617
STP4 OF STP15
64 / 94



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MODEL: STP5

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: SAS				
DESIGNER: CMJ				
CHECKED BY: MAW				

I hereby certify that this plan was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.
Certified By: Mark Wag — Lic. No. 51660
Licensed Professional Engineer
Printed Name: MARK A. WAGNER — Date: 9/19/2017

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ST. PAUL, MN 55110

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CSAH 23
S.A.P. 002-623-017, S.A.P. 244-020-002

SIGNING AND STRIPING PLAN
EXISTING SIGNING

FILE NO. ANOKC141617
STP5 OF STP15
65 / 94

MATCHLINE LAKE (CSAH 23) STA 130+54
SEE SHEET 65

MATCHLINE LAKE (CSAH 23) STA 145+54
SEE BELOW

PATRIOT LANE
NORTH HIGHWAY DRIVE
SOUTH HIGHWAY DRIVE
GRIGGS AVENUE
WOODLAND ROAD
LIBERTY LN
NO PARKING ANY TIME
3-WAY
HINDENBURG LANE
MINUTEMAN LANE
DO NOT ENTER
ALL CITY STREETS LIMITED TO 3 TONS A.X.E. WEIGHT
WOODLAND RD
LEXINGTON MEMORIAL PARK
D-103
RIGHT TURN LANE
ONLY
NO PARKING 8 AM TO 5 PM
SPEED LIMIT 45
STOP
ONEWAY
CITY HALL
D-102
S HWY DR
LAKE DR
DUNLAP AVE
SPEED LIMIT 30
Lexington
POP 2114
D-101
CITY OF LEXINGTON
WEST
ANOKA COUNTY
23
LEXINGTON AVENUE NE (CSAH 17)
LEFT TURN LANE
JCT
1 MILE FROM COUNTY

SCALE IN FEET

NOTES:
(2) IN-PLACE
(4) REMOVE
(5) REMOVE SIGN TYPE C

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: SAS				
DESIGNER: CMJ				
CHECKED BY: MAW				

I hereby certify that this plan was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.
Certified By: _____ Lic. No. 51660
Licensed Professional Engineer
Printed Name: MARK A. WAGNER Date: 9/19/2017

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3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

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SIGNING AND STRIPING PLAN
EXISTING SIGNING

FILE NO. ANOKC141617
STP6 OF STP15
66 / 94

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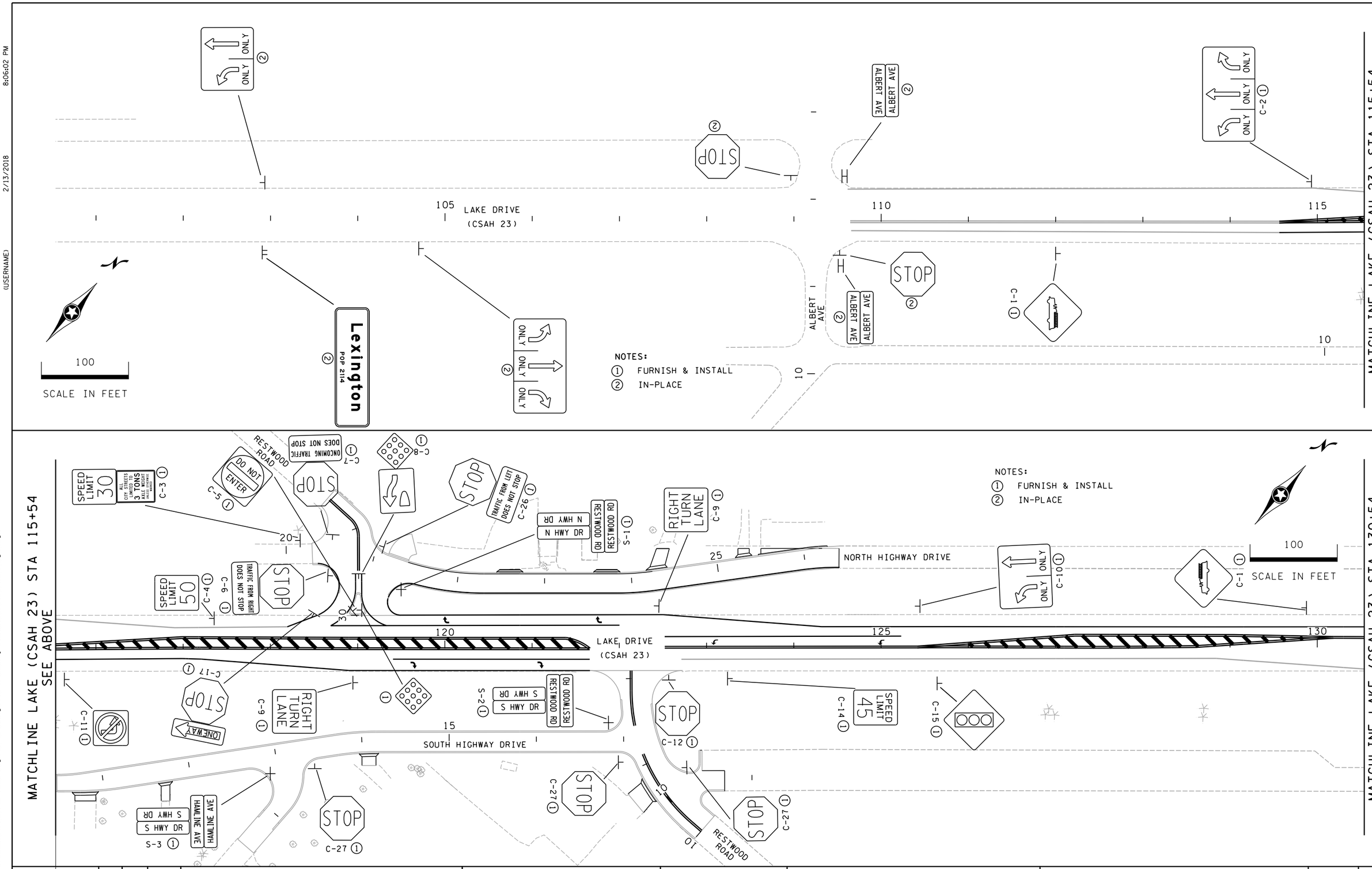

DESIGN TEAM						
DRAWN BY:	SAS					
DESIGNER:	CMJ					
CHECKED BY:	MAW	NO.	BY	DATE	REVISIONS	

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Licensed Professional Engineer
Printed Name: MARK A. WAGNER Date: 9/19/2017

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ST. PAUL, MN 55110

ANOKA COUNTY, MN
CSAH 23
S.A.P. 002-623-017, S.A.P. 244-020-002

SIGNING AND STRIPING PLAN
PROPOSED SIGNING

FILE NO. ANOKC141617
STP7 OF STP15

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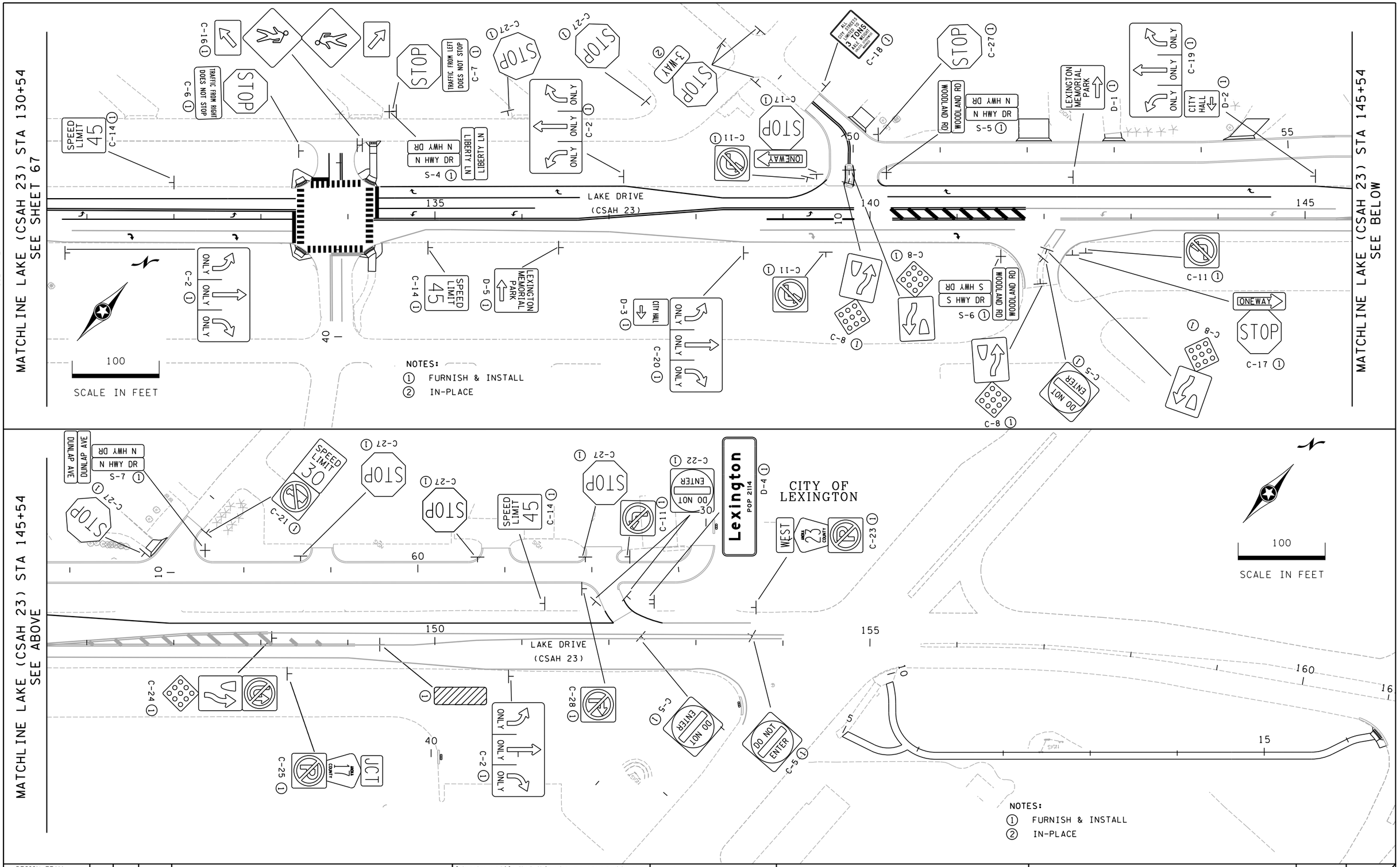

DESIGN TEAM				
DRAWN BY: SAS				
DESIGNER: CMJ				
CHECKED BY: MAW	NO.	BY	DATE	REVISIONS

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.
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Printed Name: MARK A. WAGNER Date: 9/19/2017

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CSAH 23
S.A.P. 002-623-017, S.A.P. 244-020-002

SIGNING AND STRIPING PLAN
PROPOSED SIGNING

FILE NO. ANOKC141617
STP8 OF STP15
68 / 94

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NOTES:
⑦ 20' SPACING

105

LAKE DRIVE
(CSAH 23)

110

115

4DY

MATCH EXISTING

24SY
⑦

MATCHLINE LAKE (CSAH 23) STA 115+54
SEE BELOW

10

10

100

SCALE IN FEET

RESTWOOD ROAD

NOTES:
⑦ 20' SPACING

4DY
4SY
4SW

20

25

NORTH HIGHWAY DRIVE

30

120

LAKE DRIVE
(CSAH 23)

125

130

4SW
24SY
⑦

15

SOUTH HIGHWAY DRIVE

10

RESTWOOD ROAD

100

SCALE IN FEET

MATCHLINE LAKE (CSAH 23) STA 115+54
SEE ABOVE

MATCHLINE LAKE (CSAH 23) STA 130+54
SEE SHEET 70

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: SAS				
DESIGNER: CMJ				
CHECKED BY: MAW				

I hereby certify that this plan was prepared 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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Licensed Professional Engineer
Printed Name: MARK A. WAGNER — Date: 9/19/2017

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CSAH 23
S.A.P. 002-623-017, S.A.P. 244-020-002

SIGNING AND STRIPING PLAN
PROPOSED STRIPING

FILE NO. ANOKC141617
STP9 OF STP15
69 / 94

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8:06:08 PM
2/13/2018
(USERNAME)

MATCHLINE LAKE (CSAH 23) STA 130+54
SEE SHEET 69

NOTES:
⑦ 20' SPACING

4SW
4DY
24SW ⑦
4SY
24SY ⑦
MATCH EXISTING

WOODLAND ROAD

NORTH HIGHWAY DRIVE

LAKE DRIVE
(CSAH 23)

SOUTH HIGHWAY DRIVE

GRIGGS AVENUE

135 140 145 50 55 10 40

100
SCALE IN FEET

MATCHLINE LAKE (CSAH 23) STA 145+54
SEE BELOW

DUNLAP AVENUE

CITY OF LEXINGTON

60 30 10

150 155 160 40 15 5

100
SCALE IN FEET

MATCHLINE LAKE (CSAH 23) STA 145+54
SEE ABOVE

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: SAS				
DESIGNER: CMJ				
CHECKED BY: MAW				

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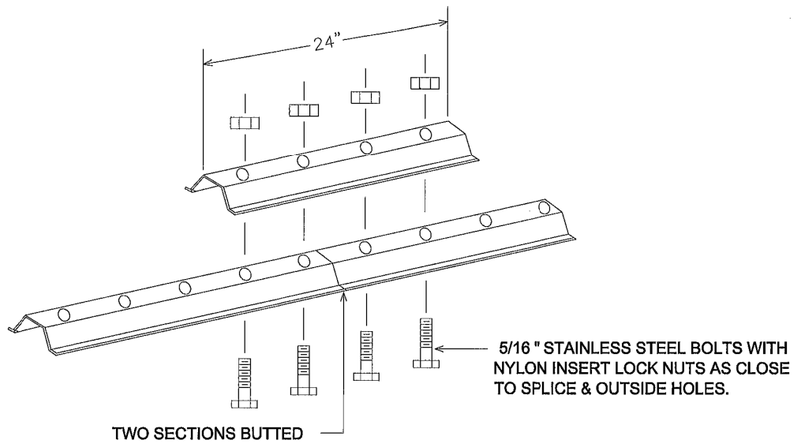
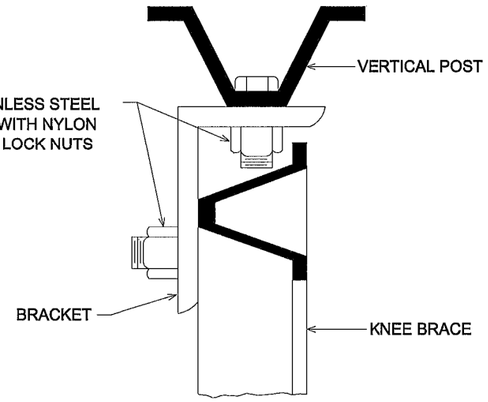
SIGNING AND STRIPING PLAN
PROPOSED STRIPING

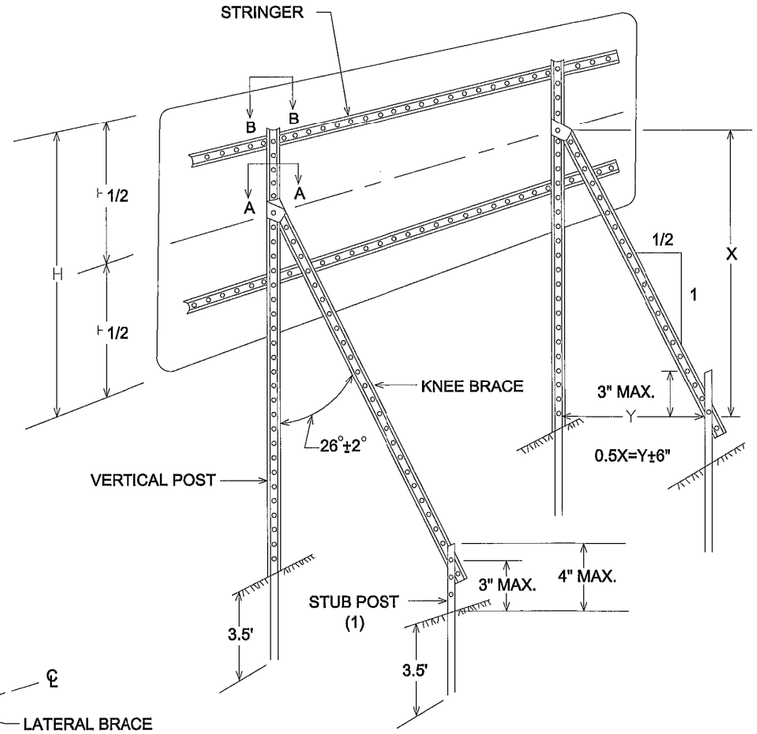
FILE NO. ANOKC141617
STP10 OF STP15
70 / 94



LATERAL BRACE OR STRINGER SPLICE DETAIL (EXPLODED VIEW)



SECTION A-A



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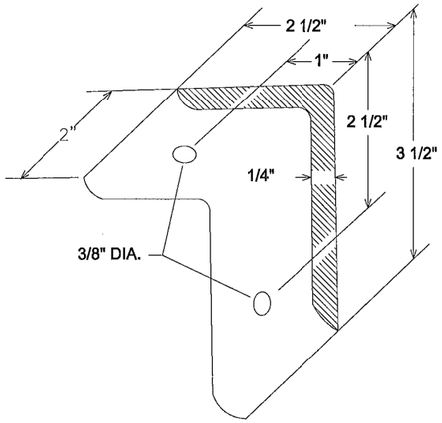
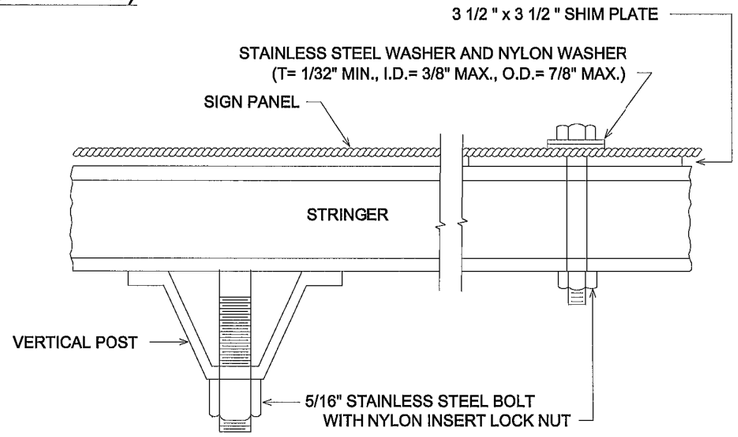


A-FRAME BRACKET

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



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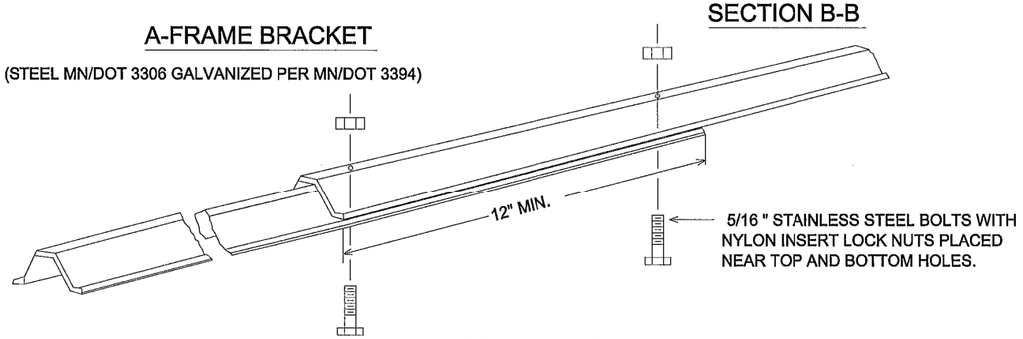
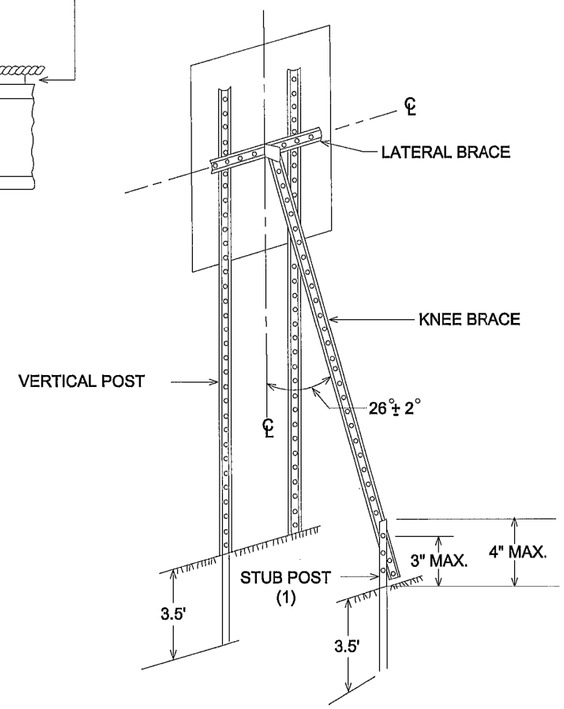
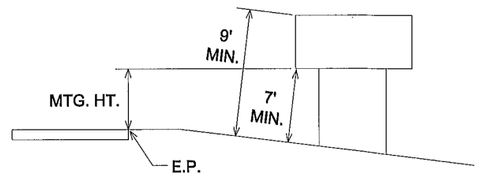


KNEE BRACE SPLICE



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



TYPICAL MOUNTING

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

TYPE C & D SIGN STRUCTURAL DETAILS

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: SAS				
DESIGNER: CMJ				
CHECKED BY: MAW				

SEH 3535 VADNAIS CENTER DR. ST. PAUL, MN 55110

ANOKA COUNTY, MN
CSAH 23
S.A.P. 002-623-017, S.A.P. 244-020-002

SIGNING AND STRIPING PLAN
ANOKA COUNTY SIGNING DETAILS

FILE NO. ANOKC141617
STP11 OF STP15

71 / 94

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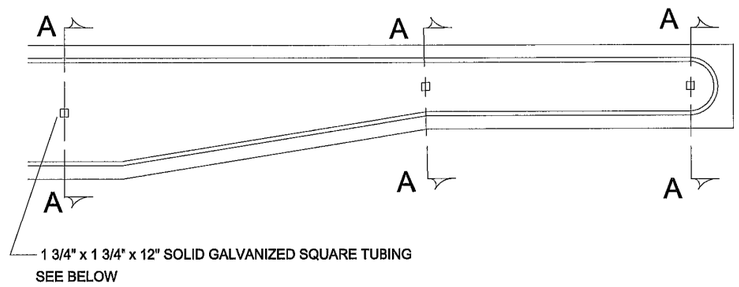
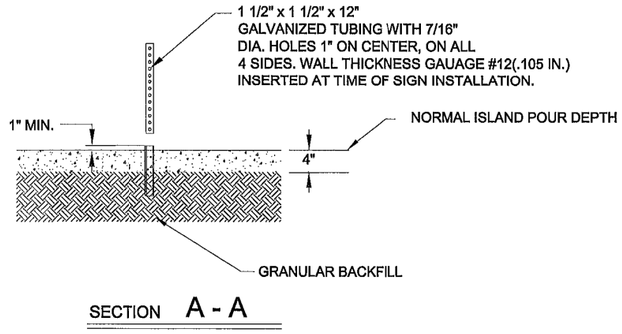
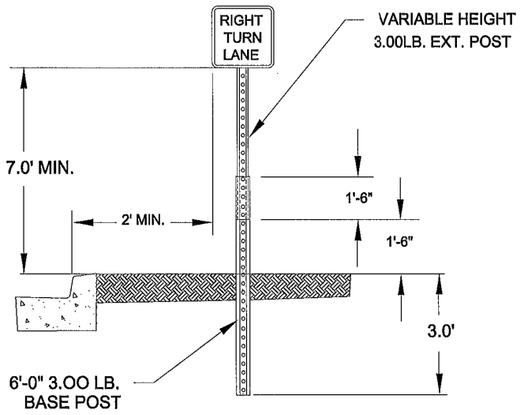


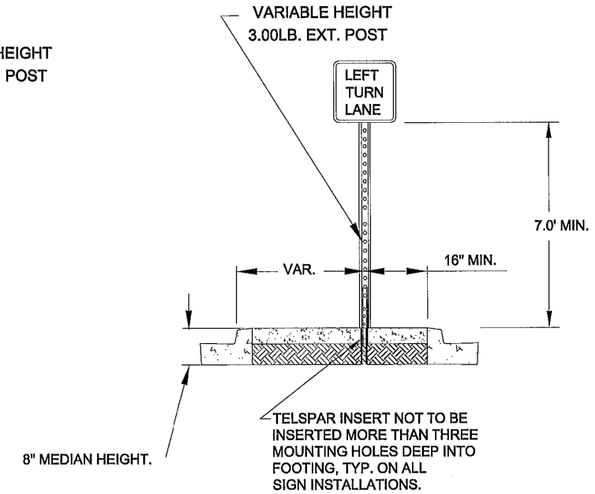
GROUND POST MOUNT SIGN
INSTALLATION TYPICAL



SECTION A - A

ISLAND MOUNT BREAK-AWAY SIGN
INSTALLATION TYPICAL





DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: SAS				
DESIGNER: CMJ				
CHECKED BY: MAW				

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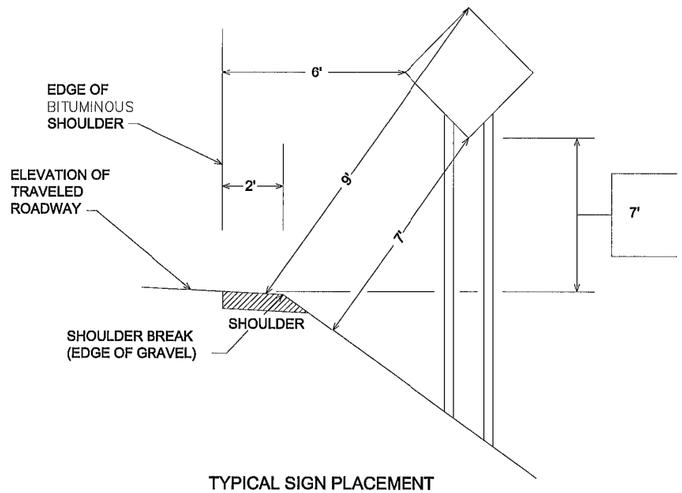
SIGNING AND STRIPING PLAN
ANOKA COUNTY SIGNING DETAILS

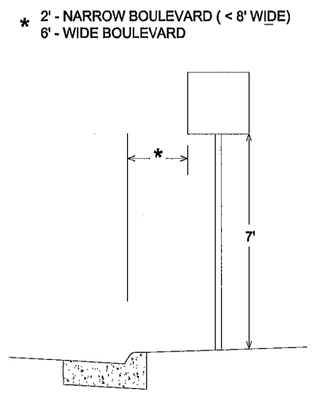
FILE NO. ANOKC141617
STP12 OF STP15

RURAL

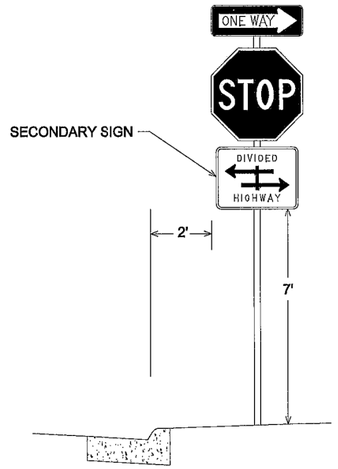


TYPICAL SIGN PLACEMENT

URBAN



TYPICAL SIGN PLACEMENT



NOTE:

- ALL DIMENSIONS ARE MINIMUMS
- MAINTAIN 2' CLEAR FROM SIGNS TO BITUMINOUS TRAIL

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: SAS				
DESIGNER: CMJ				
CHECKED BY: MAW				

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SIGNING AND STRIPING PLAN
ANOKA COUNTY SIGNING DETAILS

FILE NO. ANOKC141617
STP13 OF STP15
73 / 94

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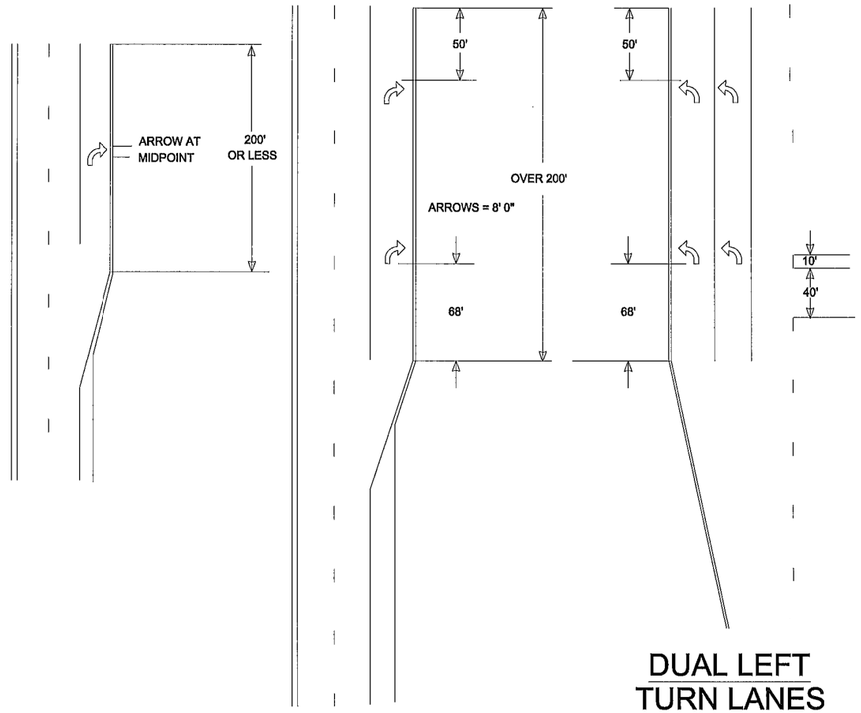
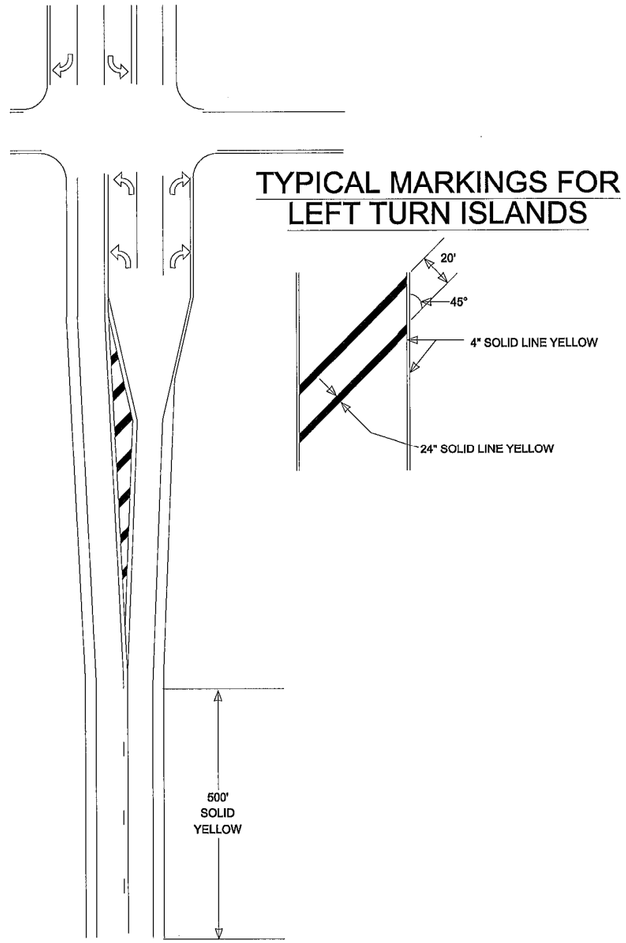
TYPICAL MESSAGE PLACEMENT FOR TURN LANES



DUAL LEFT TURN LANES

TYPICAL MARKINGS FOR LEFT TURN ISLANDS



DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: SAS				
DESIGNER: CMJ				
CHECKED BY: MAW				

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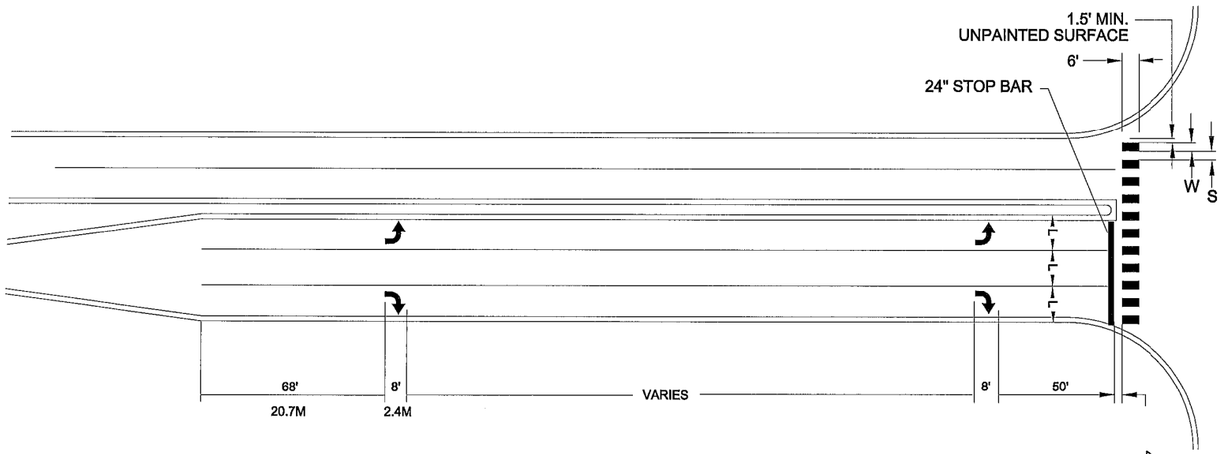
SIGNING AND STRIPING PLAN
ANOKA COUNTY SIGNING DETAILS

FILE NO. ANOKC141617
STP14 OF STP15

MARKINGS FOR PEDESTRIAN CROSSWALKS



(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'

NOTES: CROSSWALKS:

1.) PAINTED AREAS ARE TO BE CENTERED ON CENTER AND LANE LINES, EVEN IF INTERSECTION IS NOT ALIGNED.

2.) LOCATION OF ZEBRA CROSSWALKS AND STOP BARS, SIGNAL LOOPS AND PED RAMPS ARE APPROXIMATE. FINAL LOCATIONS ARE TO BE DETERMINED AND FIELD VERFIED DURING CONSTRUCTION BY THE FIELD ENGR.

3.) ZEBRA CROSSWALKS ARE TO BE PARALLEL TO THE DRIVING LANE OR LANES. EVEN IF THE STREET IS ON AN ANGLE TO THE INTERSECTION.

4.) A MIN. OF 1.5' (450mm) CLEAR DISTANCE MUST BE LEFT ADJACENT TO THE CURB. IF LAST PAINTED AREA FALLS INTO THIS AREA, IT MUST BE OMITTED.

5.) ON TWO LANE STREETS, USE SPACING SHOWN FOR AN 11' (3.3mm) INSIDE LANE.

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: SAS				
DESIGNER: CMJ				
CHECKED BY: MAW				

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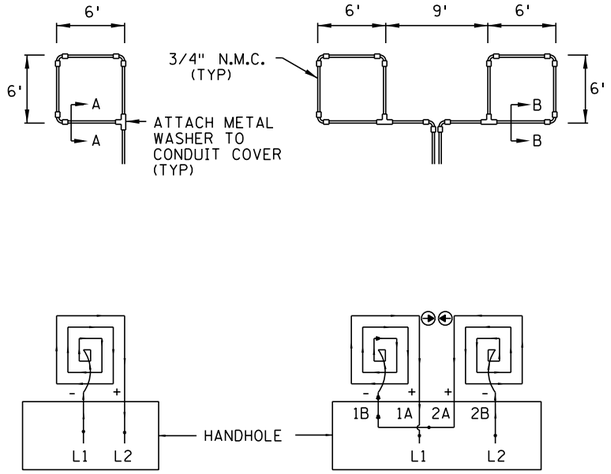
S.A.P. 002-623-017, S.A.P. 244-020-002

SIGNING AND STRIPING PLAN
ANOKA COUNTY SIGNING DETAILS

FILE NO. ANOKC141617
STP15 OF STP15



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

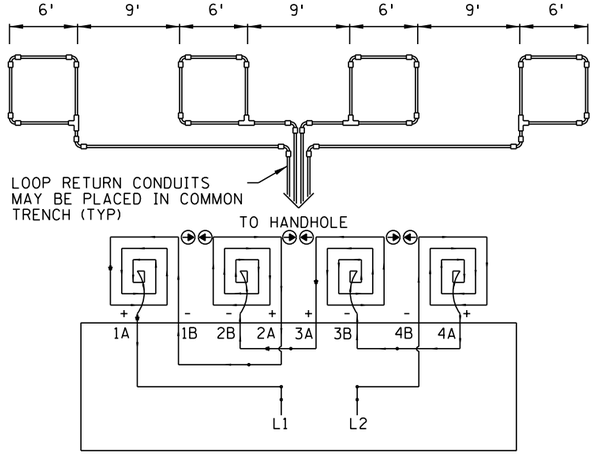
L1 TO 1A
1B TO 2A
2B TO L2

LOOP DETECTOR DETAIL 'A'

(LOOP PHASING FOR SINGLE CONNECTION)

LOOP DETECTOR DETAIL 'B'

(LOOP PHASING FOR SERIES CONNECTION)



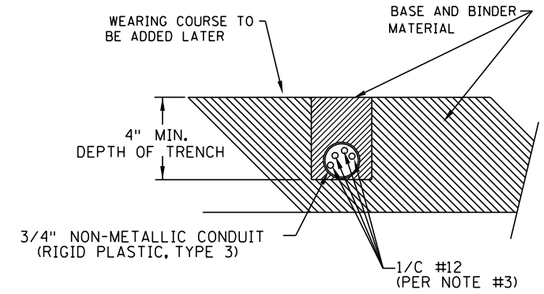
LOOP CONNECTIONS SHALL BE LABELED AND SPLICED IN THE HANDHOLE AS FOLLOWS:

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)

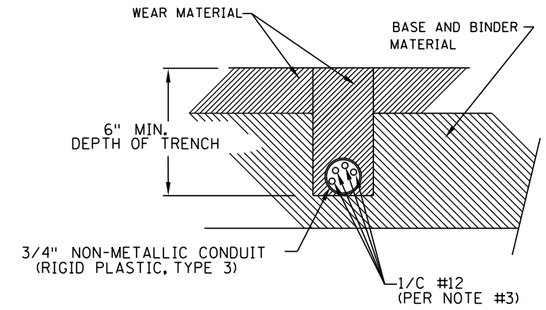
LOOP DETECTOR DETAIL 'C'

(LOOP PHASING FOR SERIES CONNECTION)



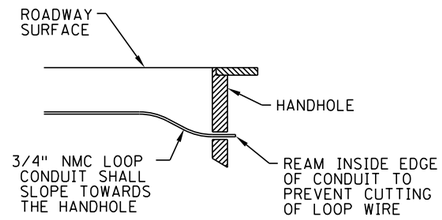
SECTION A-A

DETAIL FOR LOOP INSTALLATION IN NEW ROADWAY



SECTION B-B

DETAIL FOR LOOP INSTALLATION IN EXISTING ROADWAY



DRAINAGE DETAIL

LOOP DETECTOR WIRING

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

LEGEND OF SYMBOLS

- CONTROLLER AND SERVICE EQUIP. NO's
- SIGNAL BASE NO.
- SIGNAL FACE NO.
- LUMINAIRE NO.
- CONTROLLER AND CABINET
- CONTROLLER AND CABINET - IN PLACE
- HANDHOLE
- HANDHOLE - IN PLACE
- RIGID STEEL CONDUIT (RSC)
- RIGID STEEL CONDUIT (RSC) - IN PLACE
- SIGNAL FACE WITH BACKGROUND SHIELD
- SIGNAL FACE W/O BACKGROUND SHIELD
- SIGNAL FACE - IN PLACE
- PEDESTRIAN INDICATORS
- PEDESTRIAN INDICATORS - IN PLACE
- PEDESTRIAN PUSH BUTTONS ON PEDESTAL OR POLE
- PEDESTRIAN PUSH BUTTON STATION
- TRAFFIC SIGNAL PEDESTAL
- TRAFFIC SIGNAL PEDESTAL - INPLACE
- TRAFFIC SIGNAL POLE AND MAST ARM
- TRAFFIC SIGNAL POLE AND MAST ARM - IN PLACE
- STREET LIGHT POLE AND LUMINAIRE
- STREET LIGHT POLE AND LUMINAIRE - IN PLACE
- MAST ARM AND LUMINAIRE
- MAST ARM AND LUMINAIRE - INPLACE
- WOOD POLE
- WOOD POLE - IN PLACE
- SOURCE OF POWER
- RAILROAD SIGNAL - IN PLACE
- RIGHT OF WAY LINE
- CENTERLINE
- EDGE OF ROADWAY
- SHOULDERLINE
- CURB LINE
- STOP BAR
- EMERGENCY VEHICLE PREEMPTION DETECTOR

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
EOG	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

R

ITEM NO	ITEM	UNIT	TOTAL ESTIMATED QUANTITY	PARTICIPATION	
				SAP 002-623-017	CITY OF LEXINGTON
2104	REMOVE SIGNAL SYSTEM	EACH	1	1	
2545	SERVICE CABINET	EACH	1	1	
2565	TRAFFIC CONTROL SIGNAL SYSTEM "A"	SIG. SYS.	1	1	
2565	EMERGENCY VEHICLE PREEMPTION SYSTEM "A"	LS	1		1
2565	TRAFFIC CONTROL INTERCONNECT	LS	1	1	
2565	PAINT SIGNAL SYSTEM (CSAH 23/CSAH 17)	LS	1	1	
2565	RIGID PVC LOOP DETECTOR 6'X6' (CSAH 23/CSAH 17)	EACH	1	1	
2565	REVISE SIGNAL SYSTEM "B"	SYSTEM	1	1	

TRAFFIC SIGNAL STANDARD PLATES

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

PLATE NO.	DESCRIPTION
• 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)

• - APPLIES TO THIS PROJECT

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

I hereby certify that this plan was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.
Certified By: _____ Licensed Professional Engineer Lic. No. 22457
Printed Name: JOHN M. GRAY, PE Date: 9/19/2017

SEH
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

ANOKA COUNTY, MN
CSAH 23
S.A.P. 002-623-017, S.A.P. 244-020-002

TRAFFIC SIGNAL SYSTEMS "A-B" DETAILS AND STANDARD PLATES CSAH 23 (LAKE DRIVE) SIGNALS

FILE NO. ANOKC141617
SGL1 OF SGL19

76 / 94

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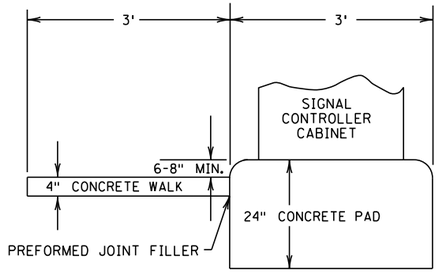
TYPICAL PAD WITH CONTROLLER CABINET AND SERVICE CABINET

SEE INTERSECTION LAYOUT FOR CABLE INFORMATION (NOT TO SCALE)

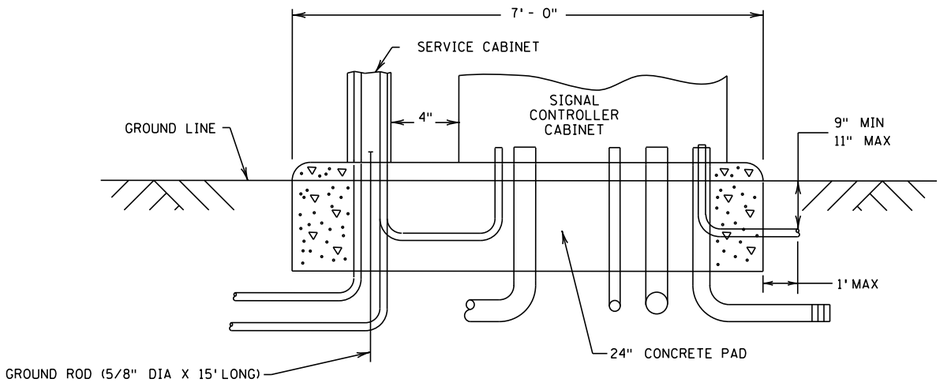
NOTES:

1. THE ANCHOR RODS, NUTS AND WASHERS FOR THE COUNTY FURNISHED 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.

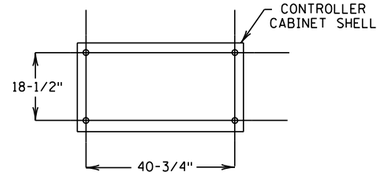
SIDE VIEW



FRONT VIEW

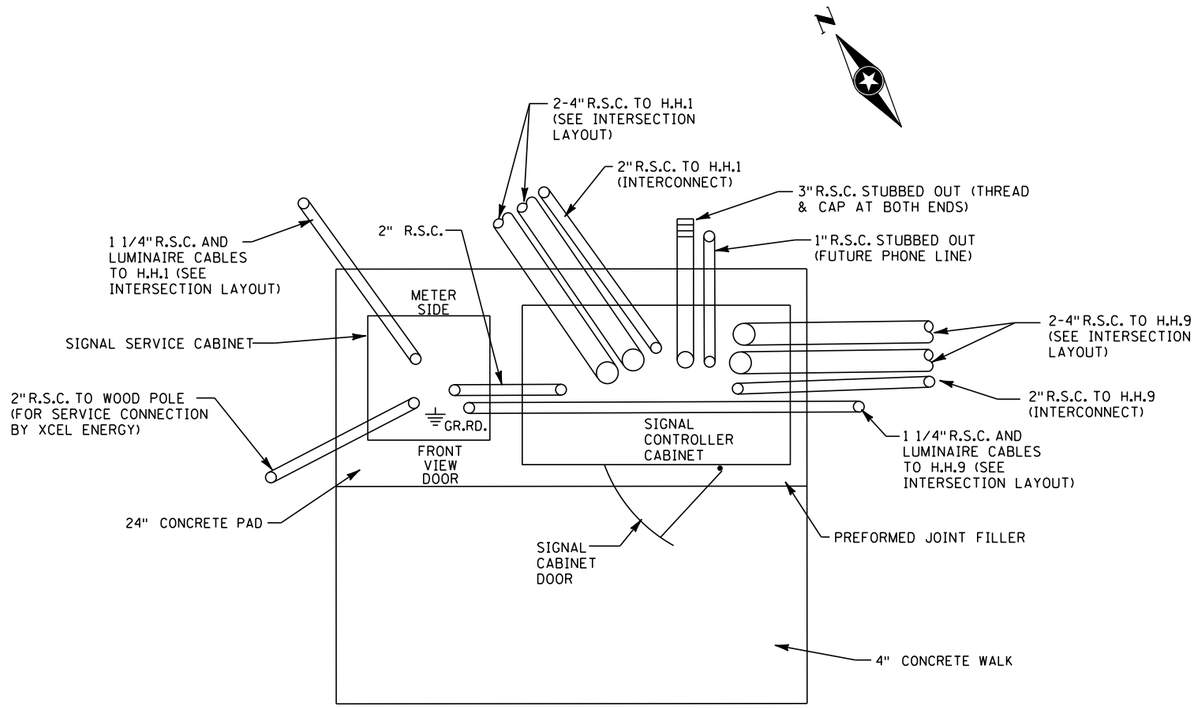


CONTROLLER CABINET TYPE "P" & "R" BOLT PATTERN



PLAN VIEW

CSAH 23 (LAKE DRIVE) AT GRIGGS AVENUE



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

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Certified By: _____ Licensed Professional Engineer Lic. No. 22457
Printed Name: JOHN M. GRAY, PE Date: 9/19/2017

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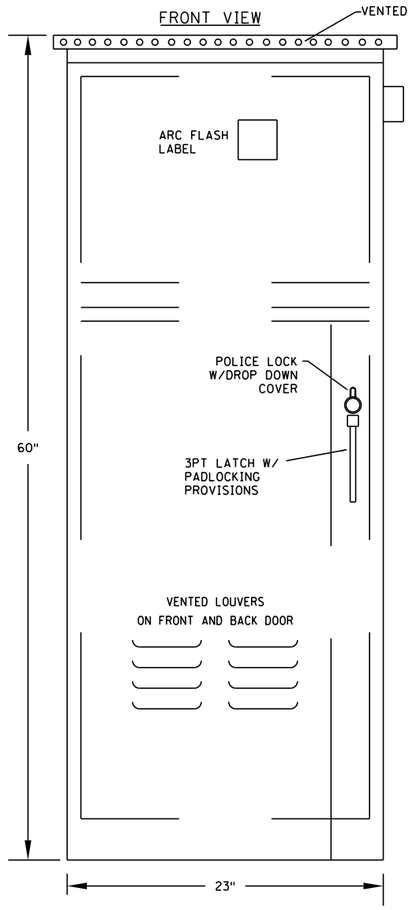
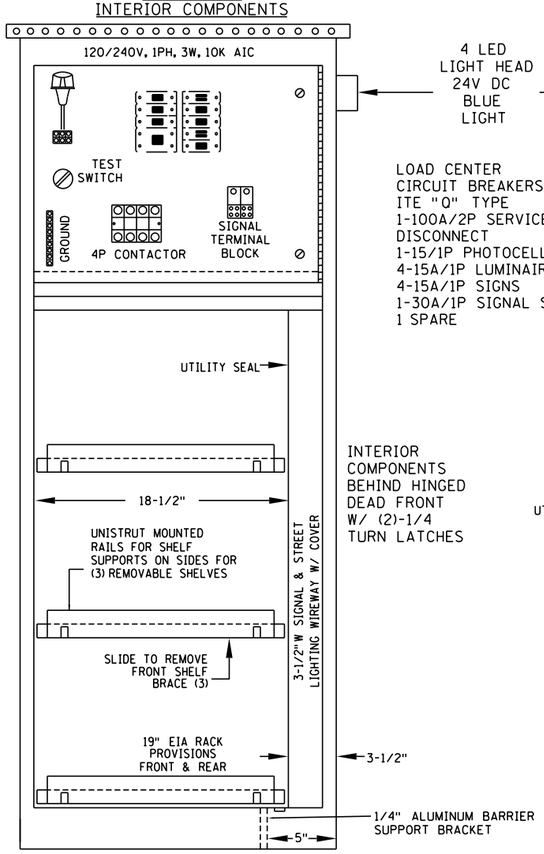
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

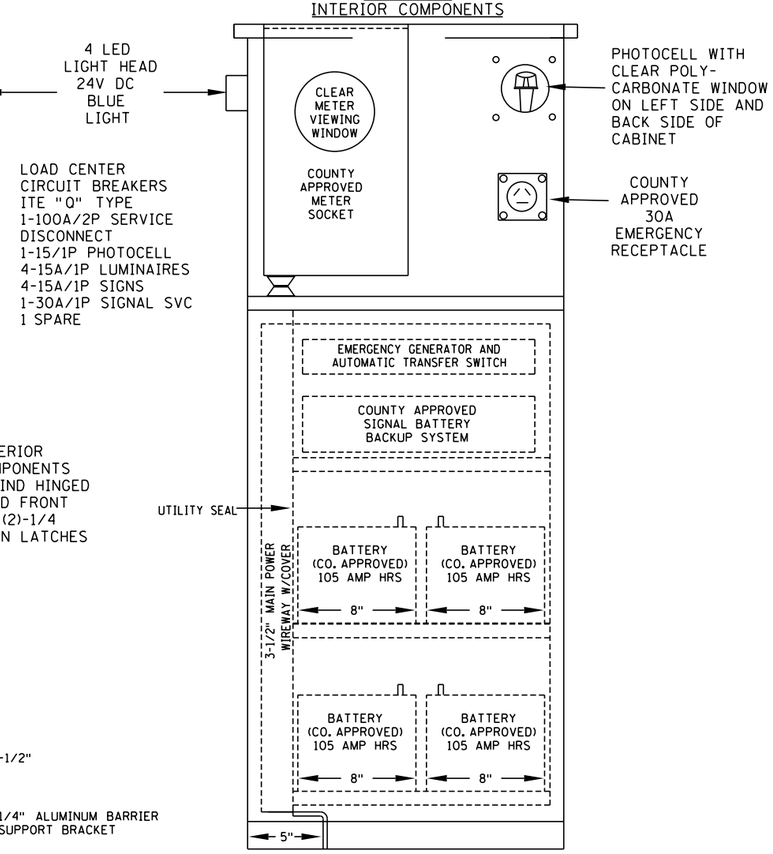
ANOKA COUNTY, MN
CSAH 23
S.A.P. 002-623-017, S.A.P. 244-020-002

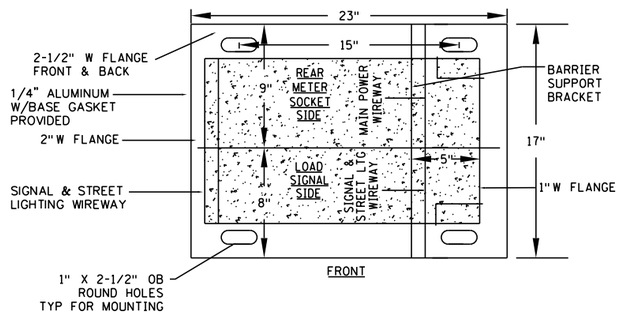
TRAFFIC SIGNAL SYSTEM "A"
EQUIPMENT PAD DETAILS
CSAH 23 (LAKE DRIVE) AT GRIGGS AVENUE

FILE NO. ANOKC141617
SGL2 OF SGL19
77 / 94





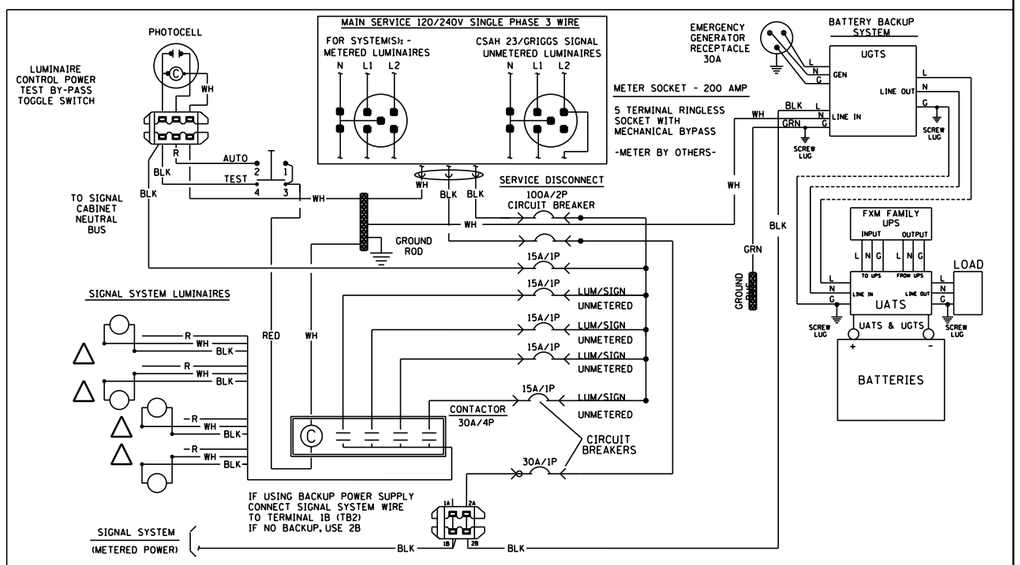




CABINET CONSTRUCTION

-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.



FEED POINT WIRING DIAGRAM

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

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ANOKA COUNTY, MN
CSAH 23
S.A.P. 002-623-017, S.A.P. 244-020-002

TRAFFIC SIGNAL SYSTEM "A"
SIGNAL SERVICE CABINET DETAILS
CSAH 23 (LAKE DRIVE) AT GRIGGS AVENUE

FILE NO. ANOKC141617
SGL3 OF SGL19
78 / 94

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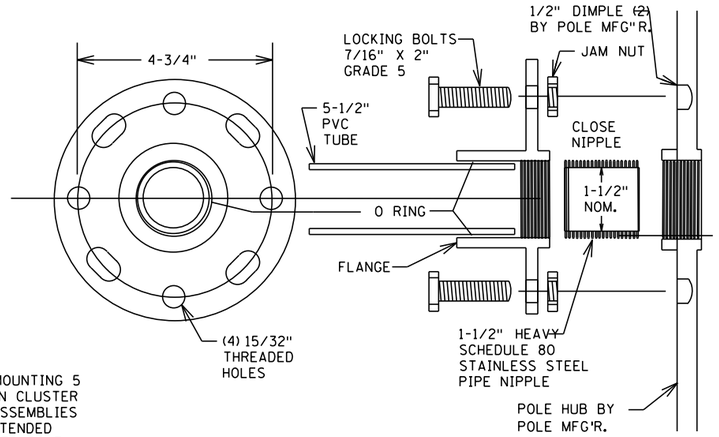
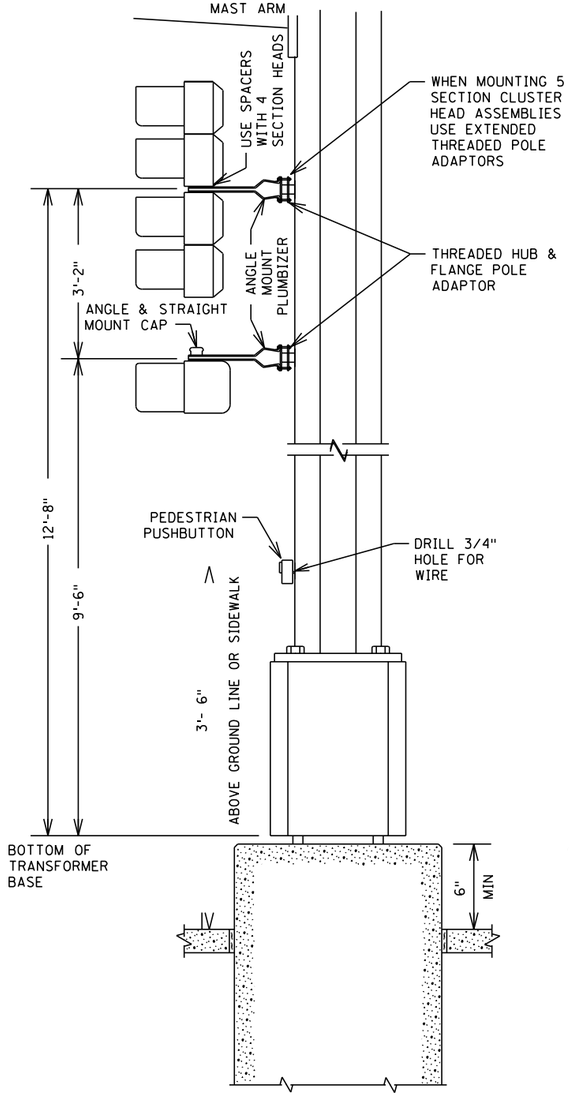
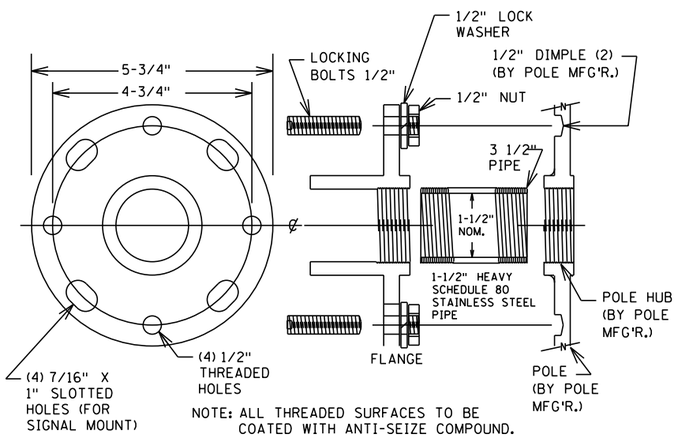


THREADED HUB AND FLANGE POLE ADAPTOR



TYPICAL SIGNAL POLE MOUNTING

NOT TO SCALE

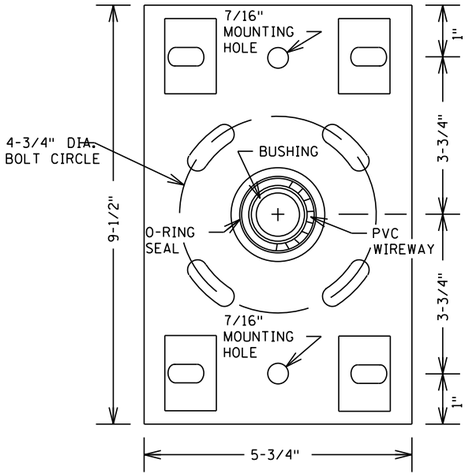


NOTE: ALL THREADED SURFACES TO BE COATED WITH ANTI-SEIZE COMPOUND.

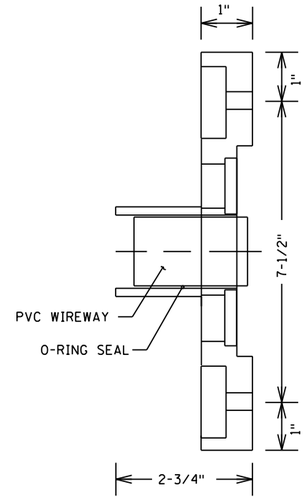
EXTENDED THREADED POLE ADAPTER

NOTES:

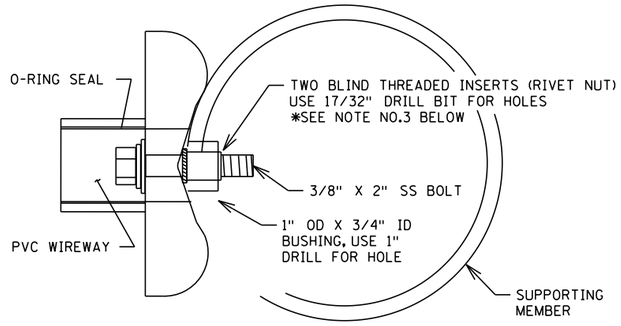
1. ALL THREADED SURFACES TO BE COATED WITH ANTI-SEIZE COMPOUND.
2. USE SIGNAL HEAD MOUNTED SPACERS FOR 4 SECTION POLY HEADS.
3. SEE STANDARD PLATE NUMBER 8123 FOR ADDITIONAL SIGNAL POLE DETAILS.
4. EXTENDED THREADED POLE ADAPTOR ONLY USED WITH 5 SECTION CLUSTER HEADS.



BOLT ON HUB & FLANGE



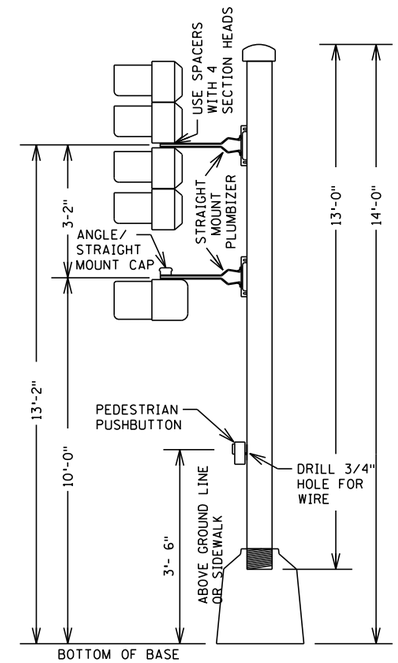
SIDE VIEW



TOP VIEW

NOTES:

1. ALL THREADED SURFACES TO BE COATED WITH ANTI-SEIZE COMPOUND.
2. USE SIGNAL HEAD MOUNTED SPACERS FOR 4 SECTION POLY HEADS.
3. BLIND THREADED INSERTS (RIVET NUT) MUST BE INSERTED USING MANUFACTURERS SPECIFIC INSERTION TOOL. NO OTHER METHOD IS ACCEPTABLE.
4. SEE STANDARD PLATE NUMBER 8122 FOR ADDITIONAL PEDESTAL POLE DETAILS.



TYPICAL PEDESTAL MOUNTING

NOT TO SCALE

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

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ST. PAUL, MN 55110

ANOKA COUNTY, MN
CSAH 23
S.A.P. 002-623-017, S.A.P. 244-020-002

TRAFFIC SIGNAL SYSTEM "A"
ONE-WAY POLE MOUNT DETAILS
CSAH 23 (LAKE DRIVE) AT GRIGGS AVENUE

FILE NO. ANOKC141617
SGL4 OF SGL19
79 / 94

FILE: S:\AE\A\Anoka\141617\5-final-dsgn\51-drawings\40-TransHwy\Plansheets\CD141617_sgl1.dgn
MODEL: SGL4

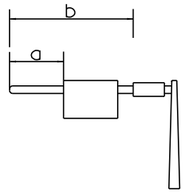
SIGNS FOR TRAFFIC SIGNAL SYSTEM										
SIGN PANELS TYPE C (SIGNALS) (FURNISH & INSTALL)										
SIGNAL SYSTEM	SIGN PANEL	POLE NO.	a (FT)	b (FT)	SIZE (IN)	MOUNTING BRACKET		UNIT AREA (SQ FT)	NO. REQ.	PANEL LEGEND
						QUANTITY	SPACING (1)			
A	R10-X12	1,2,3,4	1'	-	42 x 48	2	---	14.00	4	Left Turn Yield on Flashing Yellow Arrow
B	R10-X12	1,3,4,6	1'	-	42 x 48	2	---	14.00	4	Left Turn Yield on Flashing Yellow Arrow
TOTAL QUANTITIES								112.00	8	

SIGNS FOR TRAFFIC SIGNAL SYSTEM										
SIGN PANELS TYPE D (SIGNALS) (FURNISH & INSTALL)										
SIGNAL SYSTEM	SIGN PANEL	POLE NO.	a (FT)	b (FT)	SIZE (IN)	MOUNTING BRACKET		UNIT AREA (SQ FT)	NO. REQ.	PANEL LEGEND
						QUANTITY	SPACING (1)			
A	D-1	1	-	18'	84 x 24	3	---	14.00	1	Lake Drive
A	D-2	2	-	18'	84 x 24	3	---	14.00	1	Griggs Ave
A	D-3	3	-	18'	84 x 24	3	---	14.00	1	Lake Drive
A	D-4	4	-	18'	84 x 24	3	---	14.00	1	Griggs Ave
TOTAL QUANTITIES								56.00	4	

(1) = SPACING BETWEEN STIFFENERS SHALL NOT EXCEED 36 INCHES AND SHALL BE UNIFORMLY SPACED. SEE STANDARD SIGNS MANUAL, PAGE 105A (REVISION DATE 7/06/2007) FOR BRACKET SPACING REQUIREMENTS.

GENERAL SIGNING NOTES:

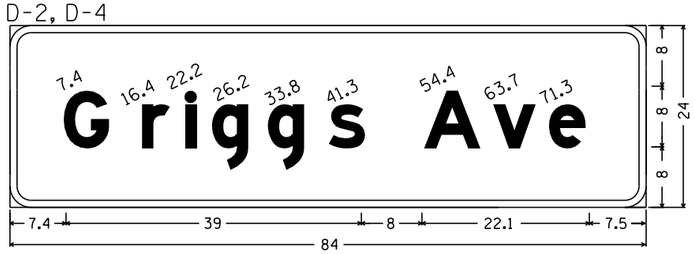
1) COLOR FOR ALL TYPE D SIGNS SHALL BE WHITE LEGEND AND BORDER ON GREEN BACKGROUND, FULLY REFLECTORIZED.
2) CORNERS EXTENDING BEYOND THE BORDER SHALL NOT BE TRIMMED. CORNERS OF STANDARD SIGN PANELS WITH MARGINS SHALL BE TRIMMED.
3) FOR STRUCTURAL DETAILS OF MAST ARM MOUNTED SIGNS, SEE STANDARD SIGNS MANUAL, PAGE 105A (REVISION DATE: 7/06/07), AND SPECIAL PROVISIONS.
4) SEE STANDARD SIGNS MANUAL FOR DETAILED DRAWINGS OF TYPE C SIGN PANELS AND ARROW DETAILS.
5) FURNISHING AND INSTALLING NEW TYPE C AND TYPE D SIGNS SHALL BE INCLUDED AS PART OF BID ITEM FOR "TRAFFIC CONTROL SIGNAL SYSTEM A" AND "REVISE SIGNAL SYSTEM B". SEE SPECIAL PROVISIONS.



D-1, D-3

3.0" Radius, 1.0" Border, White on Green;
[Lake Drive] E Mod;

D-2, D-4



3.0" Radius, 1.0" Border, White on Green;
[Griggs Ave] E Mod;

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

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ANOKA COUNTY, MN
CSAH 23
S.A.P. 002-623-017, S.A.P. 244-020-002

TRAFFIC SIGNAL SYSTEMS "A-B"
SIGNAL SIGNING DETAILS
CSAH 23 (LAKE DRIVE) SIGNALS

FILE NO. ANOKC141617
SGL5 OF SGL19
80 / 94

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NOTES:

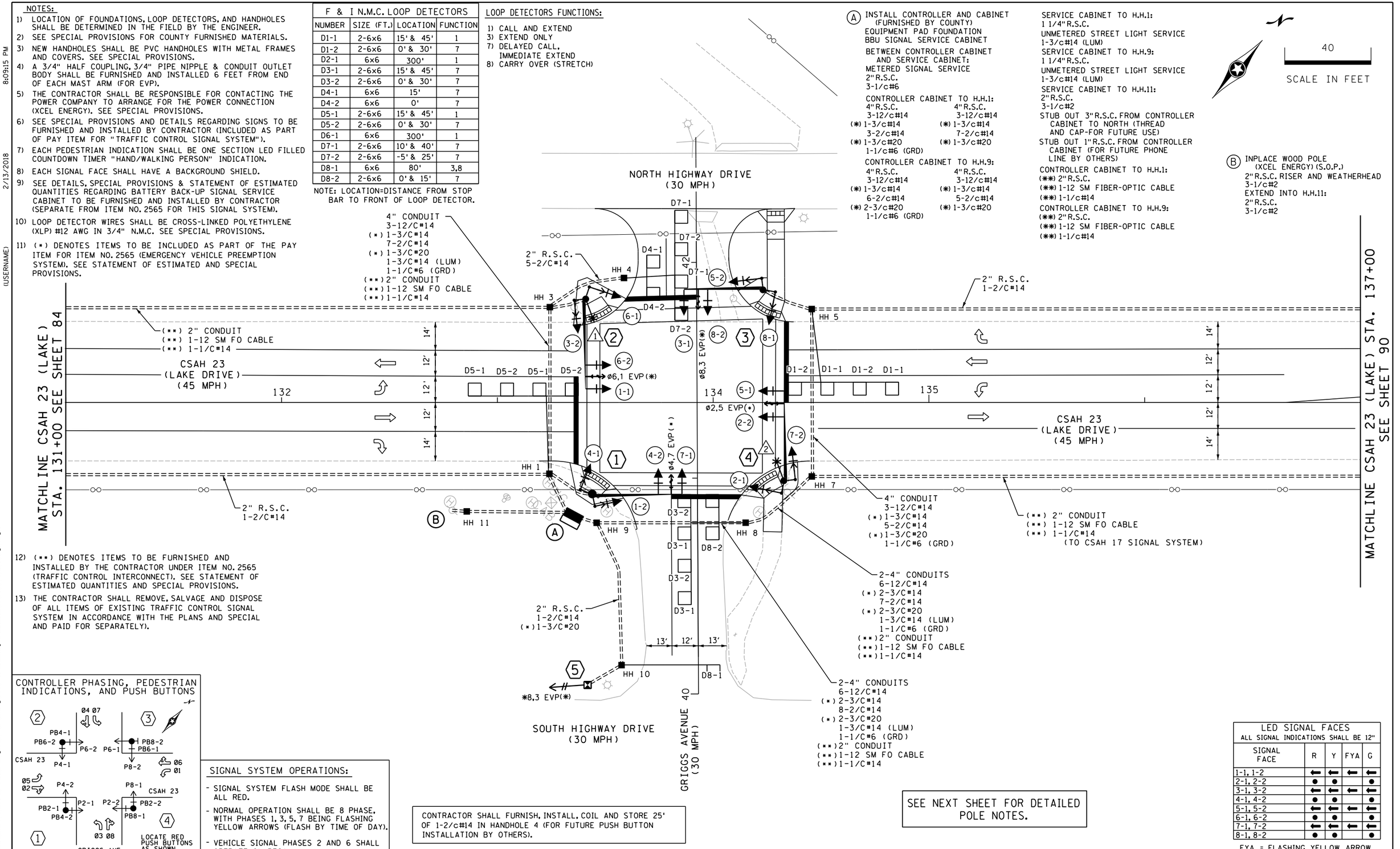
1) LOCATION OF FOUNDATIONS, LOOP DETECTORS, AND HANDHOLES SHALL BE DETERMINED IN THE FIELD BY THE ENGINEER.
2) SEE SPECIAL PROVISIONS FOR COUNTY FURNISHED MATERIALS.
3) NEW HANDHOLES SHALL BE PVC HANDHOLES WITH METAL FRAMES AND COVERS. SEE SPECIAL PROVISIONS.
4) A 3/4" HALF COUPLING, 3/4" PIPE NIPPLE & 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 (XCEL ENERGY). SEE SPECIAL PROVISIONS.
6) SEE SPECIAL PROVISIONS AND DETAILS REGARDING SIGNS TO BE FURNISHED AND INSTALLED BY CONTRACTOR (INCLUDED AS PART OF PAY ITEM FOR "TRAFFIC CONTROL SIGNAL SYSTEM").
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). SEE STATEMENT OF ESTIMATED AND SPECIAL PROVISIONS.

F & I N.M.C. LOOP DETECTORS			
NUMBER	SIZE (FT.)	LOCATION	FUNCTION
D1-1	2-6x6	15' & 45'	1
D1-2	2-6x6	0' & 30'	7
D2-1	6x6	300'	1
D3-1	2-6x6	15' & 45'	7
D3-2	2-6x6	0' & 30'	7
D4-1	6x6	15'	7
D4-2	6x6	0'	7
D5-1	2-6x6	15' & 45'	1
D5-2	2-6x6	0' & 30'	7
D6-1	6x6	300'	1
D7-1	2-6x6	10' & 40'	7
D7-2	2-6x6	-5' & 25'	7
D8-1	6x6	80'	3,8
D8-2	2-6x6	0' & 15'	7

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

LOOP DETECTORS FUNCTIONS:

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



Ⓐ INSTALL CONTROLLER AND CABINET (FURNISHED BY COUNTY) EQUIPMENT PAD FOUNDATION BBU SIGNAL SERVICE CABINET

BETWEEN CONTROLLER CABINET AND SERVICE CABINET:
METERED SIGNAL SERVICE
2"R.S.C.
3-1/C#6

CONTROLLER CABINET TO H.H.1:

4"R.S.C.	4"R.S.C.
3-12/C#14	3-12/C#14
(*) 1-3/C#14	(*) 1-3/C#14
3-2/C#14	7-2/C#14
(*) 1-3/C#20	(*) 1-3/C#20
1-1/C#6 (GRD)	

CONTROLLER CABINET TO H.H.9:

4"R.S.C.	4"R.S.C.
3-12/C#14	3-12/C#14
(*) 1-3/C#14	(*) 1-3/C#14
6-2/C#14	5-2/C#14
(*) 2-3/C#20	(*) 1-3/C#20
1-1/C#6 (GRD)	

SERVICE CABINET TO H.H.1:
1 1/4"R.S.C.
UNMETERED STREET LIGHT SERVICE
1-3/C#14 (LUM)
SERVICE CABINET TO H.H.9:
1 1/4"R.S.C.
UNMETERED STREET LIGHT SERVICE
1-3/C#14 (LUM)
SERVICE CABINET TO H.H.11:
2"R.S.C.
3-1/C#2
STUB OUT 3"R.S.C. FROM CONTROLLER CABINET TO NORTH (THREAD AND CAP-FOR FUTURE USE)
STUB OUT 1"R.S.C. FROM CONTROLLER CABINET (FOR FUTURE PHONE LINE BY OTHERS)
CONTROLLER CABINET TO H.H.1:
(**) 2"R.S.C.
(**) 1-12 SM FIBER-OPTIC CABLE
(**) 1-1/C#14
CONTROLLER CABINET TO H.H.9:
(**) 2"R.S.C.
(**) 1-12 SM FIBER-OPTIC CABLE
(**) 1-1/C#14

Ⓑ INPLACE WOOD POLE (XCEL ENERGY) (S.O.P.)
2"R.S.C. RISER AND WEATHERHEAD
3-1/C#2
EXTEND INTO H.H.11:
2"R.S.C.
3-1/C#2

40
SCALE IN FEET

12) (**) DENOTES ITEMS TO BE FURNISHED AND INSTALLED BY THE CONTRACTOR UNDER ITEM NO. 2565 (TRAFFIC CONTROL INTERCONNECT). SEE STATEMENT OF ESTIMATED QUANTITIES AND SPECIAL PROVISIONS.
13) THE CONTRACTOR SHALL REMOVE, SALVAGE AND DISPOSE OF ALL ITEMS OF EXISTING TRAFFIC CONTROL SIGNAL SYSTEM IN ACCORDANCE WITH THE PLANS AND SPECIAL AND PAID FOR SEPARATELY).

CONTROLLER PHASING, PEDESTRIAN INDICATIONS, AND PUSH BUTTONS

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.

CONTRACTOR SHALL FURNISH, INSTALL, COIL AND STORE 25' OF 1-2/c#14 IN HANDHOLE 4 (FOR FUTURE PUSH BUTTON INSTALLATION BY OTHERS).

SEE NEXT SHEET FOR DETAILED POLE NOTES.

LED SIGNAL FACES
ALL SIGNAL INDICATIONS SHALL BE 12"

SIGNAL FACE	R	Y	FYA	G
1-1, 1-2	⬅	⬅	⬅	⬅
2-1, 2-2	●	●		●
3-1, 3-2	⬅	⬅	⬅	⬅
4-1, 4-2	●	●		●
5-1, 5-2	⬅	⬅	⬅	⬅
6-1, 6-2	●	●		●
7-1, 7-2	⬅	⬅	⬅	⬅
8-1, 8-2	●	●		●

FYA = FLASHING YELLOW ARROW.

DESIGN TEAM				
DRAWN BY: SAS				
DESIGNER: JMG				
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.
Certified By: _____ Licensed Professional Engineer Lic. No. 22457
Printed Name: JOHN M. GRAY, PE Date: 9/19/2017

SEH
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

ANOKA COUNTY, MN
CSAH 23
S.A.P. 002-623-017, S.A.P. 244-020-002

TRAFFIC SIGNAL SYSTEM "A" INTERSECTION LAYOUT
CSAH 23 (LAKE DRIVE) AT GRIGGS AVENUE

FILE NO. ANOKC141617
SGL6 OF SGL19
81 / 94

8:09:15 PM
2/13/2018
(USERNAME)
FILE: S:\AE\A\Anokc\141617\5-final-dsgn\51-drawings\40-TransHwy\Plansheets\CD141617_sgl.dgn
MODEL: SGL6

(2) PA100 POLE FOUNDATION
TYPE PA100-A-40-D30-9 (DAVIT AT 350 DEG)
LUMINAIRE-LED
1-ANGLE MOUNT SIGNAL-OVERHEAD AT 0'
1-STRAIGHT MOUNT SIGNAL-OVERHEAD AT 11'
2-ANGLE MOUNT SIGNALS-POLE MOUNTED 90 DEG AND 180 DEG
2-ANGLE MOUNT C.D. PED INDICATIONS-POLE MOUNTED 90 DEG AND 180 DEG
2-PEDESTRIAN PUSH BUTTONS & SIGNS (R10-3e)
R10-X12 SIGN PANEL-ADJACENT TO 1-1
TYPE D SIGN PANEL-OVERHEAD (D-2)
(*) INSTALL ONE WAY EVP DETECTOR & LED CONFIRMATION LIGHT (FURNISHED BY COUNTY (ø6,1)
(*) ONE WAY EVP MOUNTING HARDWARE (FOR COUNTY FURNISHED DETECTOR AND CONFIRMATION LIGHT)
EXTEND INTO H.H.3:
3"R.S.C.
3-12/c#14
(*) 1-3/c#14
2-2/c#14
(*) 1-3/c#20
1-3/c#14 (LUM)
1-1/c#6 (GRD)

(3) PA90 POLE FOUNDATION
TYPE PA90-A-35
1-ANGLE MOUNT SIGNAL-OVERHEAD AT 0'
1-STRAIGHT MOUNT SIGNAL-OVERHEAD AT 11'
2-ANGLE MOUNT SIGNALS-POLE MOUNTED 90 DEG AND 180 DEG
2-ANGLE MOUNT C.D. PED INDICATIONS-POLE MOUNTED 90 DEG AND 180 DEG
2-PEDESTRIAN PUSH BUTTONS & SIGNS (R10-3e)
R10-X12 SIGN PANEL-ADJACENT TO 3-1
TYPE D SIGN PANEL-OVERHEAD (D-3)
(*) INSTALL ONE WAY EVP DETECTOR & LED CONFIRMATION LIGHT (FURNISHED BY COUNTY (ø8,3)
(*) ONE WAY EVP MOUNTING HARDWARE (FOR COUNTY FURNISHED DETECTOR AND CONFIRMATION LIGHT)
EXTEND INTO H.H.5:
3"R.S.C.
3-12/c#14
(*) 1-3/c#14
2-2/c#14
(*) 1-3/c#20
1-1/c#6 (GRD)

(1) PA100 POLE FOUNDATION
TYPE PA100-A-40
1-ANGLE MOUNT SIGNAL-OVERHEAD AT 0'
1-STRAIGHT MOUNT SIGNAL-OVERHEAD AT 11'
2-ANGLE MOUNT SIGNALS-POLE MOUNTED 90 DEG AND 180 DEG
2-ANGLE MOUNT C.D. PED INDICATIONS-POLE MOUNTED 90 DEG AND 180 DEG
2-PEDESTRIAN PUSH BUTTONS & SIGNS (R10-3e)
R10-X12 SIGN PANEL-ADJACENT TO 7-1
TYPE D SIGN PANEL-OVERHEAD (D-1)
(*) INSTALL ONE WAY EVP DETECTOR & LED CONFIRMATION LIGHT (FURNISHED BY COUNTY (ø4,7)
(*) ONE WAY EVP MOUNTING HARDWARE (FOR COUNTY FURNISHED DETECTOR AND CONFIRMATION LIGHT)
EXTEND INTO H.H.1:
3"R.S.C.
3-12/c#14
(*) 1-3/c#14
2-2/c#14
(*) 1-3/c#20
2-1/c#6 (GRD)

(4) PA100 POLE FOUNDATION
TYPE PA100-A-40-D30-9 (DAVIT AT 350 DEG)
LUMINAIRE-LED
1-ANGLE MOUNT SIGNAL-OVERHEAD AT 0'
1-STRAIGHT MOUNT SIGNAL-OVERHEAD AT 11'
2-ANGLE MOUNT SIGNALS-POLE MOUNTED 90 DEG AND 180 DEG
2-ANGLE MOUNT C.D. PED INDICATIONS-POLE MOUNTED 90 DEG AND 180 DEG
2-PEDESTRIAN PUSH BUTTONS & SIGNS (R10-3e)
R10-X12 SIGN PANEL-ADJACENT TO 5-1
TYPE D SIGN PANEL-OVERHEAD (D-4)
(*) INSTALL ONE WAY EVP DETECTOR & LED CONFIRMATION LIGHT (FURNISHED BY COUNTY (ø2,5)
(*) ONE WAY EVP MOUNTING HARDWARE (FOR COUNTY FURNISHED DETECTOR AND CONFIRMATION LIGHT)
EXTEND INTO H.H.7:
3"R.S.C.
3-12/c#14
(*) 1-3/c#14
2-2/c#14
(*) 1-3/c#20
1-3/c#14 (LUM)
2-1/c#6 (GRD)

(5) (*) PEDESTAL FOUNDATION
(*) 10' PEDESTAL POLE, BASE, WIND COLLAR
(*) INSTALL ONE WAY EVP DETECTOR (FURNISHED BY COUNTY (ø8,3) ATOP PEDESTAL POLE
(*) ONE WAY EVP MOUNTING HARDWARE (INCLUDING SLIP-FITTER COLLAR) (FOR COUNTY FURNISHED DETECTOR)
EXTEND INTO H.H.10:
(*) 2"R.S.C.
(*) 1-3/c#20

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

I hereby certify that this plan was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.
Certified By: _____ Lic. No. 22457
Licensed Professional Engineer
Printed Name: JOHN M. GRAY, PE Date: 9/19/2017

SEH
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

ANOKA COUNTY, MN
CSAH 23
S.A.P. 002-623-017, S.A.P. 244-020-002

TRAFFIC SIGNAL SYSTEM "A"
INTERSECTION LAYOUT
CSAH 23 (LAKE DRIVE) AT GRIGGS AVENUE

FILE NO. ANOKC141617
SGL 7 OF SGL19
82 / 94

LUMINAIRE 1

TO LUM 3

P4-1 P6-2 (6-2)

(1-1) (6-1)

18

17

(3-2)

PB4-1 TO PB 20

PB6-2 TO PB 21

19

ø6,1 EVP LIGHT 22

ø6,1 EVP DETECTOR TO EVP HUB 23

29 GROUND

H.H.3

80

24-28

3, 17-29

80

H.H.1

14 15

16

7-16, 29

17-28

82

3

D5-1 D5-2

COIL AND STORE 25' OF 1-2/C#14 (CABLE 24) IN H.H.4 (FOR FUTURE USE)

H.H.4

24-28

25 26 27 28

D4-1 D4-2 D7-1 D7-2

H.H.2

16 16

D2-1

80 INTERCONNECT TO NAPLES STREET SIGNAL SYSTEM

LUMINAIRE 1

(7-1) (4-1)

P2-1 P4-2 (4-2)

8

7

(1-2)

PB2-1 TO PB 10

PB4-2 TO PB 11

9

ø4,7 EVP LIGHT 12

ø4,7 EVP DETECTOR TO EVP HUB 13

29 GROUND

TO H.H.9 4

SIGNAL SERVICE CABINET

LUMINAIRE 1 — 3 — 3

LUMINAIRE 2 — 4

NOT USED — 5 — LUMINAIRE 3

NOT USED — 6 — LUMINAIRE 4

SIGNAL SERVICE — 2 — 2

SIGNALS NEUTRAL LIGHTING

1 1

H.H.11

1 1

S.O.P.

CONDUCTOR COLOR CODE (14 GAUGE)

TO SIGNAL CABINET			TO DEVICE		
1/C#6 G					
6PR#19					
3-1/C#2 R WH BLK	INPUT POWER	6/C#14 R O BL WH BLK/R BLK	6/C#14 CABLE R O BL WH BLK/R BLK	RED YEL GRN NEU YLA/FYLA GLA	4 & 5 SECTION SIGNAL INDICATION
3-1/C#5 BLK WH G	SIGNAL SERVICE				
R O BL WH R/BLK BL/BLK WH/BLK BLK BLK/WH BLK/R WH/R		4/C#14 R BLK/R BLK WH	4/C#14 CABLE BLK/R BLK WH	RED/DWK YEL/WLK GRN/SPR NEU	3 SECTION AND PED INDICATION
12/C#14		3/C#14 BLK C WH	3/C#14 CABLE BLK C WH	EVP LIGHT LUM/FLASHER	
		2/C#14 BLK WH or CL	2/C#14 CABLE BLK WH or CL	PED PUSH BUTTON (if required)	
		3/C#20 R or O WH or YEL BLK or BL			

BASE OF POLE OR PEDESTAL

NOTE:
ALL TERMINAL BLOCK CONNECTIONS SHALL BE ARRANGED AS SPECIFIED ABOVE.

CONTROLLER AND CABINET

2 SIGNAL SERVICE	19 RLA 3-2	38 PB2-2 NEU	35 RLA 5-1
	YLA 3-2	39 PB8-1 NEU	YLA 5-1
7 RLA 7-1	GLA 3-2	40 ø2,5 EVP LT EQG NEU	GLA 5-1
YLA 7-1	NEU 3-2	41 ø2,5 EVP DETECTOR	NEU 5-1
GLA 7-1	SPR		SPR
NEU 7-1	FYLA 3-2	42 RLA 3-1	36 FYLA 5-1
SPR	SPR	YLA 3-1	SPR
FYLA 7-1	NEU	GLA 3-1	NEU
SPR	SPR	NEU 3-1	RED 2-1
NEU	SPR	SPR	YEL 2-1
RED 4-1	SPR	FYLA 3-1	GRN 2-1
YEL 4-1	NEU	SPR	NEU 2-1
GRN 4-1	20 PB4-1 NEU	NEU	
NEU 4-1	21 PB6-2 NEU	RED 8-1	RED 2-2
	22 ø6,1 EVP LT EOG NEU	YEL 8-1	YEL 2-2
RED 4-2	23 ø6,1 EVP DETECTOR	GRN 8-1	GRN 2-2
YEL 4-2	24 SPR NEU	NEU 8-1	NEU 2-2
GRN 4-2	25 D4-1	43 RED 8-2	DWK P2-2
NEU 4-2	26 D4-2	YEL 8-2	WLK P2-2
DWK P4-2	27 D7-1	GRN 8-2	SPR
WLK P4-2	28 D7-2	NEU 8-2	NEU P2-2
SPR	29 GROUND	DWK P8-2	DWK P8-1
NEU P4-2	30 ø8,3 EVP DETECTOR	WLK P8-2	WLK P8-1
DWK P2-1	31 D8-1	SPR	SPR
WLK P2-1	32 D3-1	NEU P8-2	NEU P8-1
SPR	33 D3-2	DWK P6-1	
NEU P2-1	34 D8-2	WLK P6-1	RLA 7-2
		SPR	YLA 7-2
RLA 1-2	RLA 5-1	NEU P6-1	GLA 7-2
YLA 1-2	YLA 5-1		NEU 7-2
GLA 1-2	GLA 5-1	RLA 5-2	SPR
NEU 1-2	NEU 5-1	YLA 5-2	37 FYLA 7-2
SPR	SPR	GLA 5-2	SPR
9 FYLA 1-2	FYLA 5-1	NEU 5-2	NEU
SPR	SPR	SPR	SPR
NEU	NEU	44 FYLA 5-2	SPR
SPR	RED 2-1	SPR	SPR
SPR	YEL 2-1	NEU	NEU
SPR	GRN 2-1	SPR	
NEU	NEU 2-1	SPR	
		SPR	
10 PB2-1 NEU	RED 2-2	NEU	
	YEL 2-2		
11 PB4-2 NEU	GRN 2-2	45 PB6-1 NEU	
	NEU 2-2		
12 ø4,7 EVP LT EOG NEU	DWK P2-2	46 PB8-2 NEU	
	WLK P2-2		
13 ø4,7 EVP DETECTOR	SPR	47 ø8,3 EVP LT EOG NEU	
	36 NEU P2-2		
14 D5-1	DWK P8-1	48 ø8,3 EVP DETECTOR	
	WLK P8-1		
15 D5-2	SPR	49 D1-1	
	NEU P8-1		
16 D2-1		50 D1-2	
17 RLA 1-1		51 D6-1	
YLA 1-1			
GLA 1-1		52 GROUND	
NEU 1-1			
SPR		80 INTERCONNECT TO NAPLES STREET	
FYLA 1-1			
SPR		81 INTERCONNECT TO CSAH 17 (LEXINGTON AVE)	
NEU			
RED 6-1			
YEL 6-1			
GRN 6-1			
NEU 6-1			
RED 6-2			
YEL 6-2			
GRN 6-2			
NEU 6-2			
DWK P6-2			
WLK P6-2			
SPR			
NEU P6-2			
DWK P4-1			
WLK P4-1			
SPR			
NEU P4-1			

NOTES:

1) SIGNAL SYSTEM INCLUDES BATTERY BACK-UP SERVICE CABINET (WITH BATTERIES AND BACK UP SYSTEM EQUIPMENT).

2) LUMINAIRES ARE UNMETERED.

(5)

TO EVP HUB ø8,3 EVP DETECTOR 30

H.H.10

30-31 31

D8-1

LUMINAIRE 2 (4)

TO LUM 4

P8-1 P2-2 (2-2)

(5-1) (2-1)

36

35

(7-2)

PB2-2 TO PB 38

PB8-1 TO PB 39

37

ø2,5 EVP LIGHT 40

ø2,5 EVP DETECTOR TO EVP HUB 41

52 GROUND

30-31 H.H.9 4, 32-41, 52

30-41, 52 42-51 81

42-51 81

H.H.8

32 33 34

4, 35-41, 52 42-51 81

H.H.7 42-52

D3-1 D3-2 D8-2

81 INTERCONNECT TO CSAH 17 (LEXINGTON AVENUE) SIGNAL SYSTEM

TO SERVICE CABINET 4

(3)

P6-1 P8-2 (8-2)

(3-1) (8-1)

43

42

(5-2)

PB6-1 TO PB 45

PB8-2 TO PB 46

44

ø8,3 EVP LIGHT 47

ø8,3 EVP DETECTOR TO EVP HUB 48

52 GROUND

H.H.6

51 51

H.H.5

49 50 42-52

D6-1

D1-1 D1-2

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

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

Certified By: _____ Lic. No. 22457
Licensed Professional Engineer

Printed Name: JOHN M. GRAY, PE Date: 9/19/2017

SEH
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

ANOKA COUNTY, MN

CSAH 23

S.A.P. 002-623-017, S.A.P. 244-020-002

TRAFFIC SIGNAL SYSTEM "A" FIELD WIRING DIAGRAM

CSAH 23 (LAKE DRIVE) AT GRIGGS AVENUE

FILE NO. ANOKC141617

SGL8 OF SGL19

83 / 94

MATCHLINE CSAH 23 (LAKE) STA. 116+00
SEE SHEET 85

NORTH HIGHWAY DRIVE

20

25

GAS CAP

SBT

(●●) F & I
HH-101

(●●) 2" CONDUIT - F & I
(●●) 1-12 SM FO CALBE - F & I
(●●) 1-1/C#14 - F & I

(●●) 2" CONDUIT - F & I
(●●) 1-12 SM FO CALBE - F & I
(●●) 1-1/C#14 - F & I

118

120

CSAH 23
(LAKE DRIVE)
(45 MPH)

REDWOOD S

50

SCALE IN FEET

MATCHLINE CSAH 23 (LAKE) STA. 123+50
SEE BELOW

INTERCONNECT NOTES:

1) IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO UTILIZE THE "ONE CALL EXCAVATION NOTICE SYSTEM" (TELEPHONE NUMBER 651-454-0002) AS REQUIRED BY MINNESOTA STATUTE 216D.
2) DISTANCE OFF SHOULDER OR CURB FOR INTERCONNECT CONDUIT SHALL BE 1-2 FEET.
3) (✱✱) DENOTES ITEMS TO BE FURNISHED AND INSTALLED BY THE CONTRACTOR UNDER ITEM NO. 2565 (TRAFFIC CONTROL INTERCONNECT). SEE STATEMENT OF ESTIMATED QUANTITIES AND SPECIAL PROVISIONS.
4) NEW HANDHOLES 100 AND 101 TO BE FURNISHED AND INSTALLED BY CONTRACTOR SHALL BE PRECAST POLYMER CONCRETE STRUCTURES. SEE SPECIAL PROVISIONS.
5) (F & I) DENOTES ITEMS TO BE FURNISHED AND INSTALLED BY CONTRACTOR AS PART OF THIS PROJECT.
6) HANDHOLE 2, LOOP DETECTOR D2-1, AND CONDUIT/CABLES NEAR STATION 130+00 SHALL BE FURNISHED & INSTALLED BY CONTRACTOR AS PART OF "TRAFFIC CONTROL SIGNAL SYSTEM" PAY ITEM.

MATCHLINE CSAH 23 (LAKE) STA. 123+50
SEE ABOVE

26

NORTH HIGHWAY DRIVE

(●●) 2" CONDUIT - F & I
(●●) 1-12 SM FO CALBE - F & I
(●●) 1-1/C#14 - F & I

(●●) F & I
HH-100

(●●) 2" CONDUIT - F & I
(●●) 1-12 SM FO CALBE - F & I
(●●) 1-1/C#14 - F & I

125

130

CSAH 23
(LAKE DRIVE)
(45 MPH)

D2-1

HH 2

2" R.S.C.
1-2/C#14

50

SCALE IN FEET

MATCHLINE CSAH 23 (LAKE) STA. 131+00
SEE SHEET 81

DESIGN TEAM				
DRAWN BY: SAS				
DESIGNER: JMG				
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.
Certified By: _____ Licensed Professional Engineer Lic. No. 22457
Printed Name: JOHN M. GRAY, PE Date: 9/19/2017

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ST. PAUL, MN 55110

ANOKA COUNTY, MN
CSAH 23
S.A.P. 002-623-017, S.A.P. 244-020-002

TRAFFIC CONTROL INTERCONNECT
INTERSECTION LAYOUT
CSAH 23 (LAKE) FROM STA 116+00 TO 131+00

FILE NO. ANOKC141617
SGL9 OF SGL19
84 / 94

FILE: S:\AE\A\Anokc\141617\5-final-dsgn\51-drawings\40-TransHwy\Plansheets\CD141617_sgl1.dgn
MODEL: SGL9

(USERNAME) 2/13/2018 8:09:26 PM

MATCHLINE CSAH 23 (LAKE) STA. 101+00
SEE SHEET 86

F/O -BUR

(••) F & I
HH-103

(••) 2" CONDUIT - F & I
(••) 1-12 SM FO CALBE - F & I
(••) 1-1/C#14 - F & I

CSAH 23
(LAKE DRIVE)
(45 MPH)

105

107

P-BUR

INTERCONNECT NOTES:

1) IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO UTILIZE THE "ONE CALL EXCAVATION NOTICE SYSTEM" (TELEPHONE NUMBER 651-454-0002) AS REQUIRED BY MINNESOTA STATUTE 216D.
2) DISTANCE OFF SHOULDER OR CURB FOR INTERCONNECT CONDUIT SHALL BE 1-2 FEET.
3) (**) DENOTES ITEMS TO BE FURNISHED AND INSTALLED BY THE CONTRACTOR UNDER ITEM NO. 2565 (TRAFFIC CONTROL INTERCONNECT). SEE STATEMENT OF ESTIMATED QUANTITIES AND SPECIAL PROVISIONS.
4) NEW HANDHOLES 102 AND 103 TO BE FURNISHED AND INSTALLED BY CONTRACTOR SHALL BE PRECAST POLYMER CONCRETE STRUCTURES. SEE SPECIAL PROVISIONS.
5) (F & I) DENOTES ITEMS TO BE FURNISHED AND INSTALLED BY CONTRACTOR AS PART OF THIS PROJECT.

50
SCALE IN FEET

MATCHLINE CSAH 23 (LAKE) STA. 108+50
SEE BELOW

ALBERT AVE

F/O -BUR

(••) F & I
HH-102

(••) 2" CONDUIT - F & I
(••) 1-12 SM FO CALBE - F & I
(••) 1-1/C#14 - F & I

12

CSAH 23
(LAKE DRIVE)
(45 MPH)

110

115

11

ALBERT AVE

MATCHLINE CSAH 23 (LAKE) STA. 108+50
SEE ABOVE

MATCHLINE CSAH 23 (LAKE) STA. 116+00
SEE SHEET 84

50
SCALE IN FEET

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

I hereby certify that this plan was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.
Certified By: _____ Lic. No. 22457
Licensed Professional Engineer
Printed Name: JOHN M. GRAY, PE Date: 9/19/2017

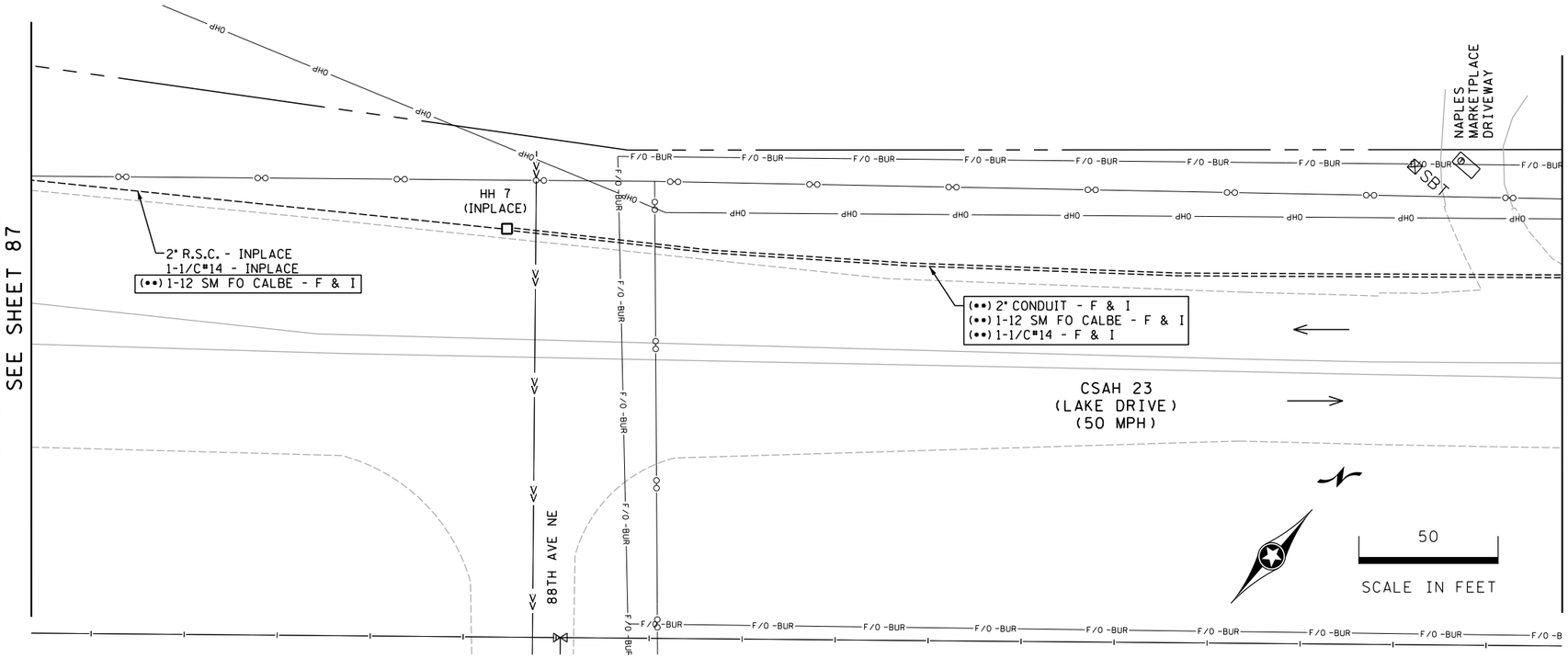
SEH
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

ANOKA COUNTY, MN
CSAH 23
S.A.P. 002-623-017, S.A.P. 244-020-002

TRAFFIC CONTROL INTERCONNECT INTERSECTION LAYOUT
CSAH 23 (LAKE) FROM STA 101+00 TO 116+00

FILE NO. ANOKC141617
SGL10 OF SGL19

MATCH LINE "B" - SEE CSAH 23/NAPLE STREET INTERSECTION LAYOUT SEE SHEET 87

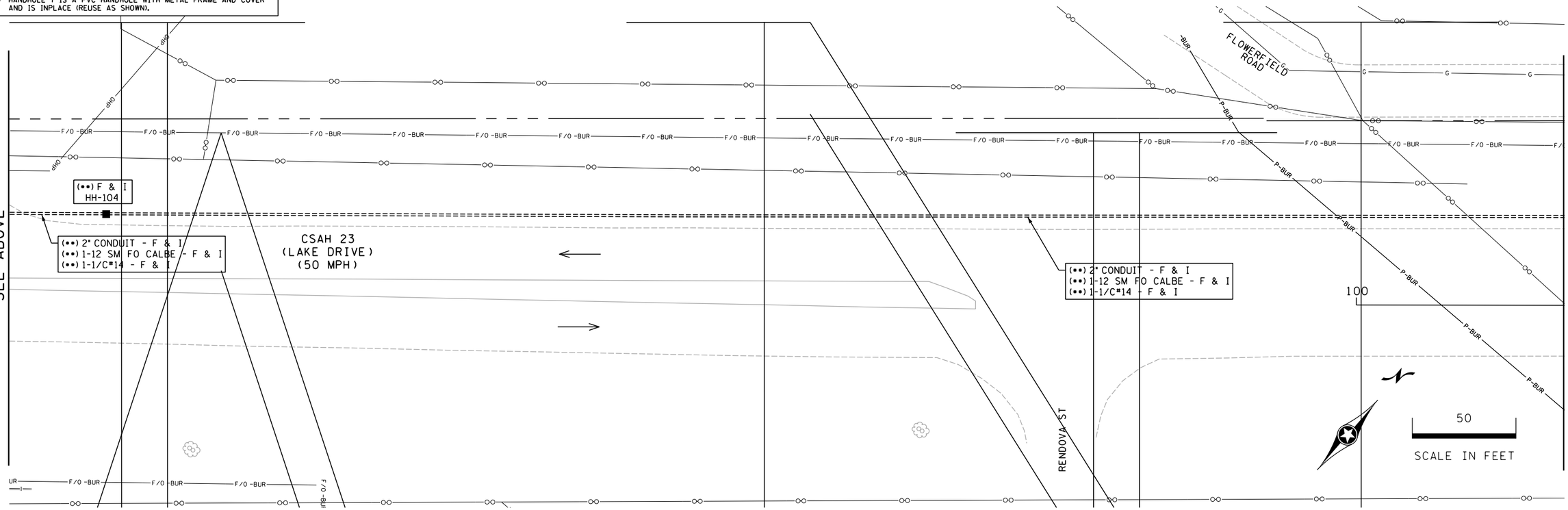


MATCHLINE CSAH 23 (LAKE) SEE BELOW

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 216O.
2) DISTANCE OFF SHOULDER OR CURB FOR INTERCONNECT CONDUIT SHALL BE 1-2 FEET.
3) (**) DENOTES ITEMS TO BE FURNISHED AND INSTALLED BY THE CONTRACTOR UNDER ITEM NO. 2565 (TRAFFIC CONTROL INTERCONNECT). SEE STATEMENT OF ESTIMATED QUANTITIES AND SPECIAL PROVISIONS.
4) NEW HANDHOLE 104 TO BE FURNISHED AND INSTALLED BY THE CONTRACTOR SHALL BE A PRECAST POLYMER CONCRETE STRUCTURE. SEE SPECIAL PROVISIONS.
5) (F & I) DENOTES ITEMS TO BE FURNISHED AND INSTALLED BY CONTRACTOR AS PART OF THIS PROJECT.
6) HANDHOLE 7 IS A PVC HANDHOLE WITH METAL FRAME AND COVER AND IS INPLACE (REUSE AS SHOWN).

MATCHLINE CSAH 23 (LAKE) SEE ABOVE



MATCHLINE CSAH 23 (LAKE) STA. 101+00 SEE SHEET 85

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

I hereby certify that this plan was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.
Certified By: _____ Lic. No. 22457
Licensed Professional Engineer
Printed Name: JOHN M. GRAY, PE Date: 9/19/2017

SEH
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

ANOKA COUNTY, MN
CSAH 23
S.A.P. 002-623-017, S.A.P. 244-020-002

TRAFFIC CONTROL INTERCONNECT INTERSECTION LAYOUT
CSAH 23 (LAKE) FROM NAPLES STREET TO STA 101+00

FILE NO. ANOKC141617
SGL11 OF SGL19
86/94

FILE: S:\AE\A\Anokc\141617\5-final-dsgn\51-drawings\40-Transhwy\Planshеets\CD141617_sgl1.dgn
MODEL: SGL11

LOOP DETECTOR STATUS:

1 = DETACH EXISTING FRONT (10') LOOP DETECTOR FROM EXISTING LEAD-IN CABLE AND SPLICE TO EXISTING BACK (40') LOOP DETECTOR AND BACK LEAD-IN CABLE (F & I NEW SPLICE KIT). PROTECT EXISTING 10'/40' LOOP DETECTORS IN ROADWAY.

2 = FURNISH & INSTALL NEW PVC LOOP DETECTORS AT -5' AND 25' FROM STOP BAR. SPLICE THESE NEW LOOP DETECTORS TO EXISTING FRONT LEAD-IN CABLE (F & I NEW SPLICE KIT).

NOTE: WHEN INSTALLING NEW LOOP DETECTORS D1-2 AND D5-2, ENSURE THAT ALL EXISTING LOOP DETECTOR ROADWAY CONDUITS (TO D1-1 AND D5-1) ARE EXACTLY LOCATED AND PROTECTED DURING NEW LOOP INSTALLATION. ANY DAMAGE TO THESE EXISTING LOOP DETECTORS (ALL CONDUITS, WIRING, SPLICE KITS) DUE TO CONTRACTOR LOOP DETECTOR INSTALLATION WORK WILL REQUIRE THE CONTRACTOR TO FULLY REPLACE THE DAMAGED PVC LOOP DETECTORS ALL AT NO EXPENSE TO THE COUNTY.

N.M.C. LOOP DETECTORS

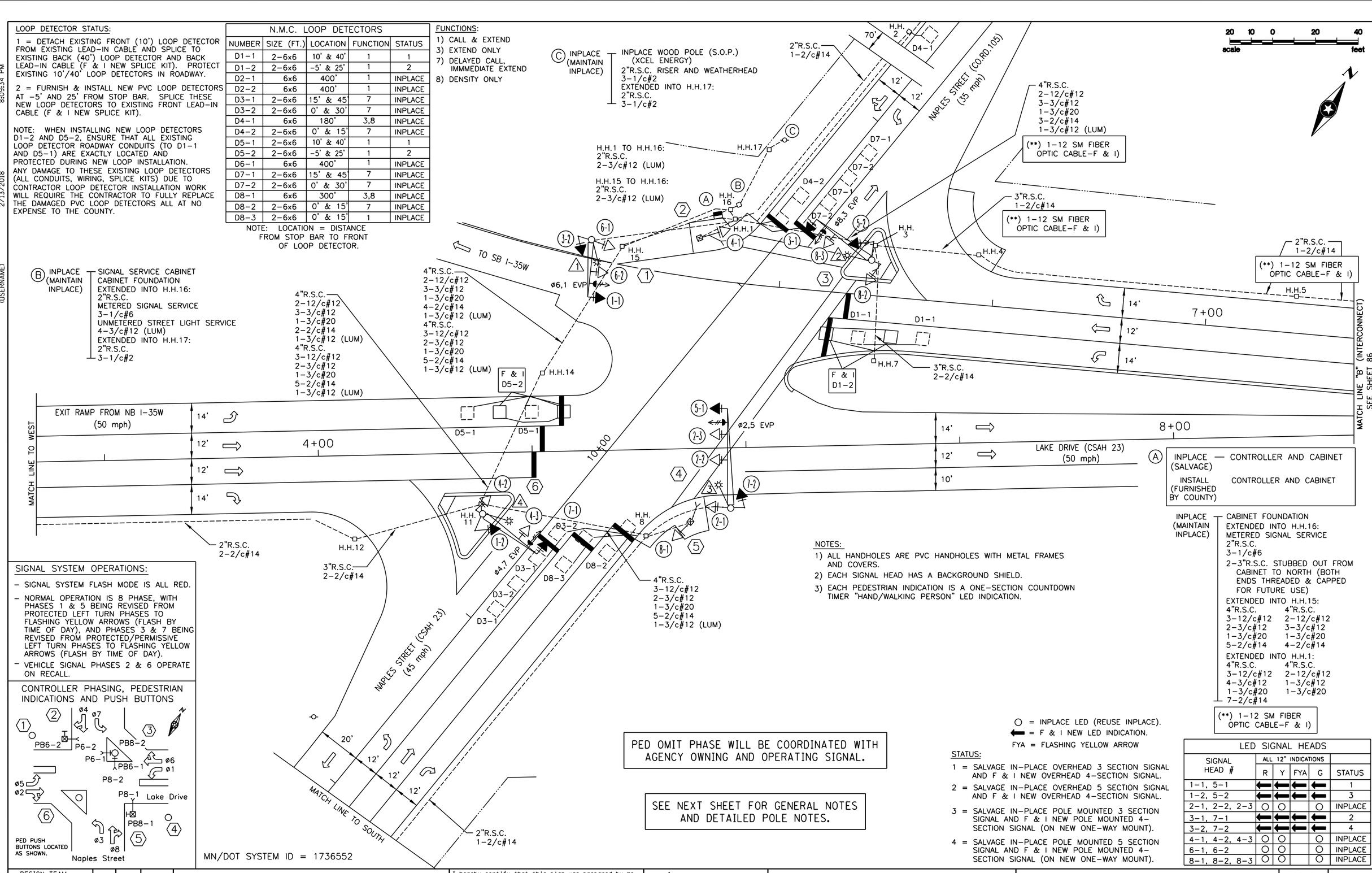
NUMBER	SIZE (FT.)	LOCATION	FUNCTION	STATUS
D1-1	2-6x6	10' & 40'	1	1
D1-2	2-6x6	-5' & 25'	1	2
D2-1	6x6	400'	1	INPLACE
D2-2	6x6	400'	1	INPLACE
D3-1	2-6x6	15' & 45'	7	INPLACE
D3-2	2-6x6	0' & 30'	7	INPLACE
D4-1	6x6	180'	3,8	INPLACE
D4-2	2-6x6	0' & 15'	7	INPLACE
D5-1	2-6x6	10' & 40'	1	1
D5-2	2-6x6	-5' & 25'	1	2
D6-1	6x6	400'	1	INPLACE
D7-1	2-6x6	15' & 45'	7	INPLACE
D7-2	2-6x6	0' & 30'	7	INPLACE
D8-1	6x6	300'	3,8	INPLACE
D8-2	2-6x6	0' & 15'	7	INPLACE
D8-3	2-6x6	0' & 15'	1	INPLACE

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

FUNCTIONS:
1) CALL & EXTEND
3) EXTEND ONLY
7) DELAYED CALL, IMMMEDIATE EXTEND
8) DENSITY ONLY

(C) INPLACE (MAINTAIN INPLACE)
- INPLACE WOOD POLE (S.O.P.) (XCEL ENERGY)
- 2"R.S.C. RISER AND WEATHERHEAD
- 3-1/c#2
- EXTENDED INTO H.H.17:
- 2"R.S.C.
- 3-1/c#2

(B) INPLACE (MAINTAIN INPLACE)
- SIGNAL SERVICE CABINET
- CABINET FOUNDATION
- EXTENDED INTO H.H.16:
- 2"R.S.C.
- METERED SIGNAL SERVICE
- 3-1/c#6
- UNMETERED STREET LIGHT SERVICE
- 4-3/c#12 (LUM)
- EXTENDED INTO H.H.17:
- 2"R.S.C.
- 3-1/c#2



(A) INPLACE — CONTROLLER AND CABINET (SALVAGE)
INSTALL CONTROLLER AND CABINET (FURNISHED BY COUNTY)

INPLACE (MAINTAIN INPLACE)
- CABINET FOUNDATION
- EXTENDED INTO H.H.16:
- METERED SIGNAL SERVICE
- 2"R.S.C.
- 3-1/c#6
- 2-3"R.S.C. STUBBED OUT FROM CABINET TO NORTH (BOTH ENDS THREADED & CAPPED FOR FUTURE USE)
- EXTENDED INTO H.H.15:

4"R.S.C.	4"R.S.C.
3-12/c#12	2-12/c#12
2-3/c#12	3-3/c#12
1-3/c#20	1-3/c#20
5-2/c#14	4-2/c#14

- EXTENDED INTO H.H.1:

4"R.S.C.	4"R.S.C.
3-12/c#12	2-12/c#12
4-3/c#12	1-3/c#12
1-3/c#20	1-3/c#20
7-2/c#14	

(**) 1-12 SM FIBER OPTIC CABLE-F & I)

NOTES:
1) ALL HANDHOLES ARE PVC HANDHOLES WITH METAL FRAMES AND COVERS.
2) EACH SIGNAL HEAD HAS A BACKGROUND SHIELD.
3) EACH PEDESTRIAN INDICATION IS A ONE-SECTION COUNTDOWN TIMER "HAND/WALKING PERSON" LED INDICATION.

SIGNAL SYSTEM OPERATIONS:
- SIGNAL SYSTEM FLASH MODE IS ALL RED.
- NORMAL OPERATION IS 8 PHASE, WITH PHASES 1 & 5 BEING REVISED FROM PROTECTED LEFT TURN PHASES TO FLASHING YELLOW ARROWS (FLASH BY TIME OF DAY), AND PHASES 3 & 7 BEING REVISED FROM PROTECTED/PERMISSIVE LEFT TURN PHASES TO FLASHING YELLOW ARROWS (FLASH BY TIME OF DAY).
- VEHICLE SIGNAL PHASES 2 & 6 OPERATE ON RECALL.

CONTROLLER PHASING, PEDESTRIAN INDICATIONS AND PUSH BUTTONS

MN/DOT SYSTEM ID = 1736552

PED OMIT PHASE WILL BE COORDINATED WITH AGENCY OWNING AND OPERATING SIGNAL.

SEE NEXT SHEET FOR GENERAL NOTES AND DETAILED POLE NOTES.

○ = INPLACE LED (REUSE INPLACE).
⬅ = F & I NEW LED INDICATION.
FYA = FLASHING YELLOW ARROW

STATUS:
1 = SALVAGE IN-PLACE OVERHEAD 3 SECTION SIGNAL AND F & I NEW OVERHEAD 4-SECTION SIGNAL.
2 = SALVAGE IN-PLACE OVERHEAD 5 SECTION SIGNAL AND F & I NEW OVERHEAD 4-SECTION SIGNAL.
3 = SALVAGE IN-PLACE POLE MOUNTED 3 SECTION SIGNAL AND F & I NEW POLE MOUNTED 4-SECTION SIGNAL (ON NEW ONE-WAY MOUNT).
4 = SALVAGE IN-PLACE POLE MOUNTED 5 SECTION SIGNAL AND F & I NEW POLE MOUNTED 4-SECTION SIGNAL (ON NEW ONE-WAY MOUNT).

LED SIGNAL HEADS

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

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

I hereby certify that this plan was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.
Certified By: _____ Licensed Professional Engineer Lic. No. 22457
Printed Name: JOHN M. GRAY, PE Date: 9/19/2017

SEH
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

ANOKA COUNTY, MN
CSAH 23
S.A.P. 002-623-017, S.A.P. 244-020-002

REVISE SIGNAL SYSTEM "B" INTERSECTION LAYOUT
CSAH 23 (LAKE DRIVE) AT NAPLES ST

FILE NO. ANOKC141617
SGL12 OF SGL19
87 / 94

8:09:34 PM
2/13/2018
(USERNAME)
FILE: S:\AE\A Anokc\141617\5-final-dsgn\51-drawings\40-TransHwy\Plansheets\CD141617_sgl1.dgn
MODEL: SGL12

NOTES:

1) ALL ITEMS OF THIS SIGNAL SYSTEM ARE INPLACE AND SHALL BE REUSED AND MAINTAINED INPLACE, UNLESS OTHERWISE NOTED ON PLANS.
2) ALL HANDHOLES ARE PVC HANDHOLES WITH METAL FRAMES AND COVERS AND ARE INPLACE (REUSE AND MAINTAIN INPLACE).
3) ALL LOOP DETECTORS ARE INPLACE AND SHALL BE REUSED AND MAINTAINED INPLACE AND OPERATIONAL, EXCEPT AS FOLLOWS: CONTRACTOR SHALL FURNISH AND INSTALL NEW LOOP DETECTORS FOR D1-2 AND D5-2 IN PVC PER DETAILS INCLUDED ELSEWHERE IN THESE PLANS. LOOP DETECTOR WIRES FOR NEW LOOP DETECTORS SHALL BE CROSS-LINKED POLY-ETHYLENE (XLP) #12 AWG IN 3/4" NMC. SEE SPECIAL PROVISIONS.
4) ANY DAMAGE TO INPLACE TRAFFIC SIGNAL FACILITIES (CONDUIT, CABLES, HANDHOLES, SIGNAL POLES, ETC.), DUE TO TRAFFIC SIGNAL REVISION WORK, SHALL BE REPAIRED BY CONTRACTOR TO SATISFACTION OF THE ENGINEER, AT NO EXPENSE TO THE COUNTY.
5) CONTRACTOR SHALL MAINTAIN OPERATION OF THE SIGNAL SYSTEM AT ALL TIMES, EXCEPT AS OTHERWISE APPROVED BY ENGINEER.
6) ALL NEW VEHICULAR SIGNAL HEADS SHALL HAVE BACKGROUND SHIELDS FURNISHED & INSTALLED BY CONTRACTOR. ALL INPLACE VEHICULAR SIGNAL HEADS BEING REUSED AS PART OF REVISE SIGNAL SYSTEM "B" HAVE BACKGROUND SHIELDS (REUSE AND MAINTAIN INPLACE).
7) F & I = NEW, FURNISH AND INSTALL.
   S & I = INPLACE, SALVAGE AND INSTALL.
8) ALL NEW VEHICULAR SIGNAL HOUSINGS, BACKGROUND SHIELDS AND VISORS SHALL BE FABRICATED USING BLACK POLYCARBONATE MATERIALS. SEE SPECIAL PROVISIONS.
9) SEE SPECIAL PROVISIONS REGARDING NEW TYPE C SIGN PANELS TO BE FURNISHED AND INSTALLED BY CONTRACTOR (INCLUDED AS PART OF PAY ITEM FOR "REVISE SIGNAL SYSTEM B").
10) SEE SPECIAL PROVISIONS FOR COUNTY FURNISHED MATERIALS TO BE INSTALLED AND MADE OPERATIONAL BY CONTRACTOR.
11) CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLING AND MAKING OPERATIONAL A NEW COUNTY FURNISHED CONTROLLER CABINET COMPLETE WITH NEW CONTROL EQUIPMENT ON THE INPLACE CABINET FOUNDATION & FOR SALVAGING THE EXISTING CONTROLLER AND CABINET TO THE COUNTY. SEE SPECIAL PROVISIONS (INCIDENTAL).
12) (**) DENOTES ITEMS TO BE FURNISHED AND INSTALLED BY THE CONTRACTOR UNDER ITEM NO. 2565 (TRAFFIC CONTROL INTERCONNECT). SEE STATEMENT OF ESTIMATED QUANTITIES AND SPECIAL PROVISIONS.
13) CONTRACTOR SHALL PAINT ENTIRE SIGNAL SYSTEM. SEE SPECIAL PROVISIONS (INCIDENTAL).

(1) INPLACE (MAINTAIN INPLACE)
- PA85 POLE FOUNDATION
- TYPE PA85-A-25-D40-9 (DAVIT AT 350 DEG)
- LUMINAIRE-250 W HPS
- 1-ONE WAY SIGNAL-OVERHEAD (11' FROM END OF MAST ARM) (6-2)
- 1-ONE WAY SIGNAL-POLE MOUNTED AT 225 DEG (6-1)
- R6-1L SIGN PANEL-POLE MOUNTED O DEG
- 2-TYPE D SIGN PANELS-OVERHEAD
- ONE WAY EVP DETECTOR AND LIGHT (ø6,1)
- EXTENDED INTO H.H.1:
- 3" R.S.C.
- 2-12/C#12
- 1-3/C#12
- 1-3/C#20
- 1-3/C#12 (LUM)

INPLACE (SALVAGE)
- 1-ONE WAY SIGNAL AND MOUNT-OVERHEAD AT O' (OLD 1-1)
- 1-ONE WAY SIGNAL AND MOUNT-POLE MOUNTED 45 DEG (OLD 8-5)

F & I
- 1-ONE WAY SIGNAL AND ANGLE MOUNT-OVERHEAD AT O' (NEW 1-1)
- 1-ONE WAY SIGNAL AND ANGLE MOUNT-POLE MOUNTED AT 45 DEG (NEW 3-2)
- R10-X12 SIGN-ADJACENT TO 1-1

(2) INPLACE (MAINTAIN INPLACE)
- PEDESTAL FOUNDATION
- 14' PEDESTAL POLE (INCLUDES BASE)
- WIND COLLAR FOR PEDESTAL POLE
- 1-ONE WAY SIGNAL-POLE MOUNTED (ONE-WAY MOUNT)
- 1-SET PEDESTRIAN INDICATIONS-POLE MOUNTED (ONE-WAY MOUNT)
- 1-PEDESTRIAN PUSH BUTTON
- R9-3a SIGN PANEL-FACING POLE 6
- EXTENDED INTO H.H.1:
- 2" R.S.C.
- 1-12/C#12
- 1-3/C#12

(3) INPLACE (MAINTAIN INPLACE)
- PA90 POLE FOUNDATION
- TYPE PA90-A-30-D40-9 (DAVIT AT 350 DEG)
- LUMINAIRE-250 W HPS
- 1-ONE WAY SIGNAL-OVERHEAD (11' FROM END OF MAST ARM) (8-3)
- 1-ONE WAY SIGNAL-POLE MOUNTED AT 225 DEG (8-2)
- 2-SETS PEDESTRIAN INDICATIONS-POLE MOUNTED AT 45/225 DEG
- 2-PEDESTRIAN PUSH BUTTONS & SIGNS
- 2-TYPE D SIGN PANELS-OVERHEAD
- ONE WAY EVP DETECTOR AND LIGHT (ø8)
- EXTENDED INTO H.H.3:
- 3" R.S.C.
- 2-12/C#12
- 3-3/C#12
- 1-3/C#20
- 1-3/C#12 (LUM)

INPLACE (SALVAGE)
- 1-ONE WAY SIGNAL AND MOUNT-OVERHEAD AT O' (OLD 8-4)
- 1-ONE WAY SIGNAL AND MOUNT-POLE MOUNTED 45 DEG (OLD 5-2)
- R10-12 SIGN PANEL-OVERHEAD (ADJACENT TO OLD 8-4)

F & I
- 1-ONE WAY SIGNAL AND ANGLE MOUNT-OVERHEAD AT O' (NEW 3-1)
- 1-ONE WAY SIGNAL AND ANGLE MOUNT-POLE MOUNTED AT 45 DEG (NEW 5-2)
- R10-X12 SIGN-ADJACENT TO 3-1

(4) INPLACE (MAINTAIN INPLACE)
- PA100 POLE FOUNDATION
- TYPE PA100-A-45-D40-9 (DAVIT AT 350 DEG)
- LUMINAIRE-250 W HPS
- 2-ONE WAY SIGNALS-OVERHEAD (11' AND 23' FROM END OF MAST ARM) (2-3, 2-2)
- 1-ONE WAY SIGNAL-POLE MOUNTED AT 225 DEG (2-1)
- R6-1L SIGN PANEL-POLE MOUNTED O DEG
- 2-TYPE D SIGN PANELS-OVERHEAD
- ONE WAY EVP DETECTOR AND LIGHT (ø2,5)
- EXTENDED INTO H.H.8:
- 3" R.S.C.
- 2-12/C#12
- 1-3/C#12
- 1-3/C#20
- 1-3/C#12 (LUM)

INPLACE (SALVAGE)
- 1-ONE WAY SIGNAL AND MOUNT-OVERHEAD AT O' (OLD 5-1)
- 1-ONE WAY SIGNAL AND MOUNT-POLE MOUNTED 45 DEG (OLD 4-5)

F & I
- 1-ONE WAY SIGNAL AND ANGLE MOUNT-OVERHEAD AT O' (NEW 5-1)
- 1-ONE WAY SIGNAL AND ANGLE MOUNT-POLE MOUNTED AT 45 DEG (NEW 7-2)
- R10-X12 SIGN-ADJACENT TO 5-1

(5) INPLACE (MAINTAIN INPLACE)
- PEDESTAL FOUNDATION
- 14' PEDESTAL POLE (INCLUDES BASE)
- WIND COLLAR FOR PEDESTAL POLE
- 1-ONE WAY SIGNAL-POLE MOUNTED (ONE-WAY MOUNT)
- 1-SET PEDESTRIAN INDICATIONS-POLE MOUNTED (ONE-WAY MOUNTS)
- 1-PEDESTRIAN PUSH BUTTON
- 1-R9-3a SIGN PANEL-FACING POLE 6
- EXTENDED INTO H.H.8:
- 3" R.S.C.
- 1-12/C#12
- 1-3/C#12

(6) INPLACE (MAINTAIN INPLACE)
- PA90 POLE FOUNDATION
- TYPE PA90-A-30-D40-9 (DAVIT AT 350 DEG)
- LUMINAIRE-250 W HPS
- 1-ONE WAY SIGNAL-OVERHEAD (11' FROM END OF MAST ARM) (4-3)
- 1-ONE WAY SIGNAL-POLE MOUNTED AT 225 DEG (4-2)
- 2-R9-3a SIGN PANELS-FACING POLES 2 AND 5
- 2-TYPE D SIGN PANELS-OVERHEAD
- ONE WAY EVP DETECTOR AND LIGHT (ø4)
- EXTENDED INTO H.H.11:
- 3" R.S.C.
- 2-12/C#12
- 3-3/C#12
- 1-3/C#20
- 1-3/C#12 (LUM)

INPLACE (SALVAGE)
- 1-ONE WAY SIGNAL AND MOUNT-OVERHEAD AT O' (OLD 4-4)
- 1-ONE WAY SIGNAL AND MOUNT-POLE MOUNTED 45 DEG (OLD 1-2)
- R10-12 SIGN PANEL-OVERHEAD (ADJACENT TO OLD 4-4)

F & I
- 1-ONE WAY SIGNAL AND ANGLE MOUNT-OVERHEAD AT O' (NEW 7-1)
- 1-ONE WAY SIGNAL AND ANGLE MOUNT-POLE MOUNTED AT 45 DEG (NEW 1-2)
- R10-X12 SIGN-ADJACENT TO 7-1

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

I hereby certify that this plan was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.
Certified By: _____ Lic. No. 22457
Licensed Professional Engineer
Printed Name: JOHN M. GRAY, PE Date: 9/19/2017

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3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

ANOKA COUNTY, MN
CSAH 23
S.A.P. 002-623-017, S.A.P. 244-020-002

REVISE SIGNAL SYSTEM "B"
INTERSECTION LAYOUT
CSAH 23 (LAKE DRIVE) AT NAPLES ST

FILE NO. ANOKC141617
SGL13 OF SGL19
88/94

8:09:35 PM 2/13/2018 (USERNAME)
FILE: S:\AE\A\Anoka\141617\5-final-dsgn\51-drawings\40-Transhwy\Plansheets\CD141617_sgl1.dgn
MODEL: SGL13

CONTROLLER CABINET

H.H.2
16
D4-1
16
2
4-1 P6-2
11
PB6-2
12
LUMINAIRE 1
3
6-2 3-2 **
7
ø6,1 EVP LIGHT
9
** 1-1 6-1
8
10 TO EVP HUB
ø6,1 EVP DETECTOR
H.H.1
13 14 15
D4-2 D7-1 D7-2
16
4, 17-25
80
7-10
11-25
3,4
80
TO H.H.16
3,4

NOTES:

1) ALL CABLES AND CONDUCTORS ARE INPLACE & SHALL BE REUSED AS SHOWN.

2) ● DENOTES NEW OR REVISED TERMINATIONS ON INPLACE CABLES.

3) •• DENOTES REVISED TERMINATIONS/LABELING ON INPLACE CABLES & CONDUCTORS IN POLE BASES, HANDHOLES, AND IN CONTROLLER CABINET.

4) ▲ DENOTES NEW INTERCONNECT CABLE TO BE FURNISHED, INSTALLED, TERMINATED, AND TESTED BY CONTRACTOR AS PART OF "TRAFFIC CONTROL INTERCONNECT" PAY ITEM.

3
** 5-2 P8-2 8-3
LUMINAIRE 2
4
** 3-1 8-2
18
17
20 P6-1
21 ø8 EVP LIGHT
PB6-1 PB8-2
19
22 TO EVP HUB
ø8 EVP DETECTOR
H.H.3
4, 17-25
80
24-25
23
80
H.H.4
H.H.5
23
80
H.H.6
23
D6-1
H.H.7
24 25
D1-1 D1-2 (F & I)
24-25
INTERCONNECT TO GRIGGS AVENUE SIGNAL SYSTEM
80

MN/DOT SYSTEM ID = 38478

2 SIGNAL SERVICE

7
RED 6-2
YEL 6-2
GRN 6-2
NEU 6-2
•• RLA 3-2
•• YLA 3-2
•• GLA 3-2
•• NEU 3-2
•• FYLA 3-2
•• SPR
SPR
EOG

8
RED 6-1
YEL 6-1
GRN 6-1
NEU 6-1
•• RLA 1-1
•• YLA 1-1
•• GLA 1-1
•• NEU 1-1
•• FYLA 1-1
•• SPR
•• SPR
EOG

9 ø6,1 EVP LT NEU SPR

10 ø6,1 EVP DETECTOR

11
RED 4-1
YEL 4-1
GRN 4-1
NEU 4-1
SPR
SPR
SPR
NEU P6-2
WLK P6-2
DWK P6-2
SPR
EOG

12 PB6-2 NEU SPR

13 D4-2

14 D7-1

15 D7-2

16 D4-1

17
•• RLA 3-1
•• YLA 3-1
•• GLA 3-1
•• NEU 3-1
•• FYLA 3-1
•• SPR
SPR
NEU 8-2
RED 8-2
YEL 8-2
GRN 8-2
EOG

18
RED 8-3
YEL 8-3
GRN 8-3
NEU 8-3, P8-2
WLK P8-2
DWK P8-2
•• FYLA 5-2
•• NEU 5-2
•• RLA 5-2
•• YLA 5-2
•• GLA 5-2
EOG

19 PB6-1 NEU PB8-2

20 WLK P6-1 NEU P6-1 DWK P6-1

21 ø8 EVP LT NEU SPR

22 ø8 EVP DETECTOR

23 D6-1

24 D1-1

25 D1-2

26 D5-1

27 D5-2

28
•• RLA 7-1
•• YLA 7-1
•• GLA 7-1
•• NEU 7-1
•• NEU 7-1
•• SPR
SPR
NEU 4-2
RED 4-2
YEL 4-2
GRN 4-2
EOG

29
RED 4-3
YEL 4-3
GRN 4-3
NEU 4-3
SPR
SPR
SPR
•• FYLA 1-2
•• NEU 1-2
•• RLA 1-2
•• YLA 1-2
•• GLA 1-2
EOG

30 SPR NEU SPR

31 SPR NEU SPR

32 ø4 EVP LT NEU SPR

33 ø4 EVP DETECTOR

34 D2-1

35 D2-2

36
RED 8-1
YEL 8-1
GRN 8-1
NEU 8-1, P8-1
WLK P8-1
DWK P8-1
SPR
NEU
SPR
SPR
SPR
EOG

37 SPR NEU PB8-1

38
RED 2-2
YEL 2-2
GRN 2-2
NEU 2-2
•• RLA 7-2
•• YLA 7-2
•• GLA 7-2
•• NEU 7-2
•• FYLA 7-2
•• SPR
•• FYLA 5-1
EOG

39
RED 2-3
YEL 2-3
GRN 2-3
NEU 2-3, 2-1
RED 2-1
YEL 2-1
GRN 2-1
•• NEU 5-1
•• RLA 5-1
•• YLA 5-1
•• GLA 5-1
EOG

40 ø2,5 EVP LT NEU SPR

41 ø2,5 EVP DETECTOR

42 D3-1

43 D3-2

44 D8-2

45 D8-3

46 D8-1

80
INTERCONNECT TO GRIGGS AVENUE

26-35
36-46
5-6
H.H.15
6, 26-35
5, 36-46
H.H.14
26 27
D5-1 D5-2 (F & I)
6, 28-35
5, 36-46

6
** 1-2 4-3
LUMINAIRE 4
6
** 7-1 4-2
29
28
31 FOR FUTURE USE
32 ø4 EVP LIGHT
FOR FUTURE USE
30
33 TO EVP HUB
ø4 EVP DETECTOR

5
8-1 P8-1
36
PB8-1
37

H.H.13
34 35
D2-1 D2-2
34-35
H.H.12
34-35
H.H.11
6, 28-35
5, 36-46
5, 36-46

H.H.8
42 43 44 45
D3-1 D3-2 D8-2 D8-3
46

LUMINAIRE 3
5
** 5-1 ** 7-2 2-2
4
38
** 5-1 2-1 2-3
39
40 ø2,5 EVP LIGHT
41 TO EVP HUB
ø2,5 EVP DETECTOR

TO H.H.1
3-4
H.H.16
5-6
2
2-6

SERVICE CABINET
LUMINAIRE 4
6
LUMINAIRE 3
5
LUMINAIRE 2
4
LUMINAIRE 1
3
SIGNAL SERVICE
2
SIGNALS NEUTRAL LIGHTING
1
1
H.H.17
1
S.O.P.

H.H.10
46
H.H.9
46 46
D8-1

CONDUCTOR COLOR CODE

TO SIGNAL CABINET		TO DEVICE		
1/C#2 BLK WH RED		7/C#14 CABLE	R RED, O YEL, BL GRN, WH NEU, Y YLTA, BLK GLTA, BRN SPR	5-SECTION SIGNAL INDICATION
3/C#20 R OR O WH OR YEL BLK OR BL		12/C#12	R, O, BL, WH, R/BLK, O/BLK, BL/BLK, WH/BLK, BLK, BLK/WH, G/BLK, G	
2/C#14 BLK CLR		5/C#12	R, O, BL, WH, G	
2-1/C BLK WH		4/C#14 CABLE	R DWK, BL WLK, WH NEU, BLK SPR	PEDESTRIAN INDICATION
6PR#19		3/C#12	R, WH, BLK	
		5/C#14 CABLE	R RED, O YEL, BL GRN, WH NEU, BLK GLTA	3 & 4-SECTION SIGNAL INDICATION
		2/C#14 CABLE	BLK EVP/PB/FLASHER, WH NEU	

BASE OF POLE OR PEDESTAL

NOTE:
TERMINAL BLOCK CONNECTIONS SHALL BE ARRANGED AS SPECIFIED ABOVE.

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

I hereby certify that this plan was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.
Certified By: _____ Lic. No. 22457
Licensed Professional Engineer
Printed Name: JOHN M. GRAY, PE Date: 9/19/2017

SEH
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

ANOKA COUNTY, MN
CSAH 23
S.A.P. 002-623-017, S.A.P. 244-020-002

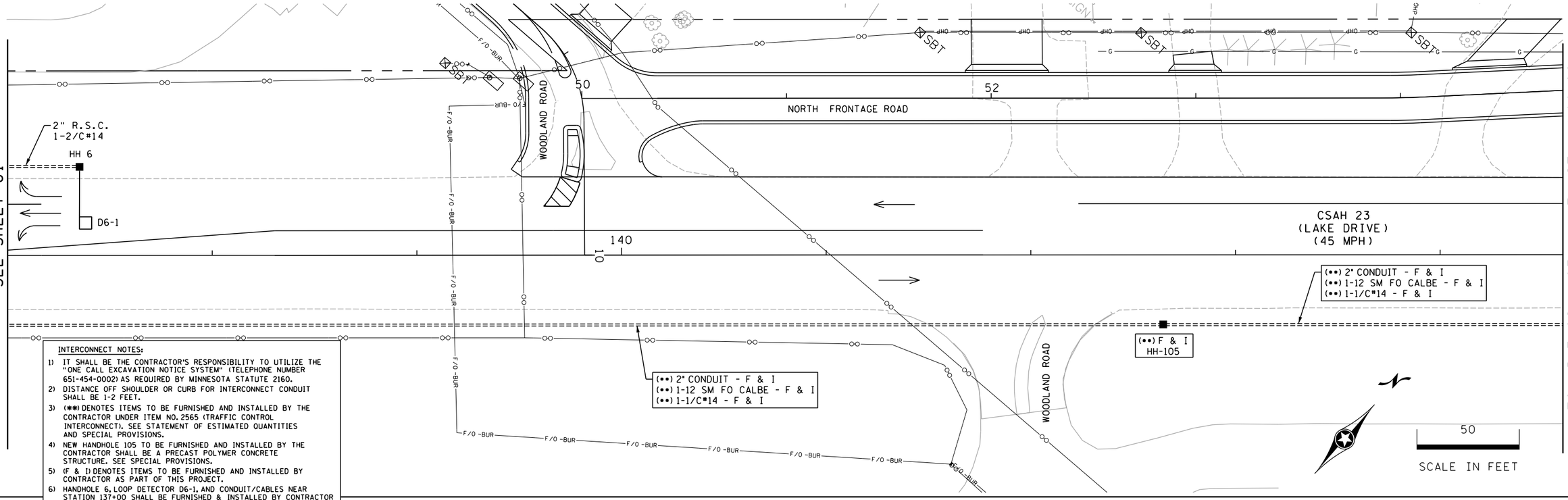
REVISE SIGNAL SYSTEM "B" FIELD WIRING DIAGRAM
CSAH 23 (LAKE DRIVE) AT NAPLES ST

FILE NO. ANOKC141617
SGL14 OF SGL20
89 / 94

FILE: S:\AE\A\Anokc\141617\5-final-dsgn\51-drawings\40-Tronshwy\Plansheets\CD141617_sgl1.dgn
MODEL: SGL14

8:09:40 PM
2/13/2018
(USERNAME)

MATCHLINE CSAH 23 (LAKE) STA 137+00
SEE SHEET 81

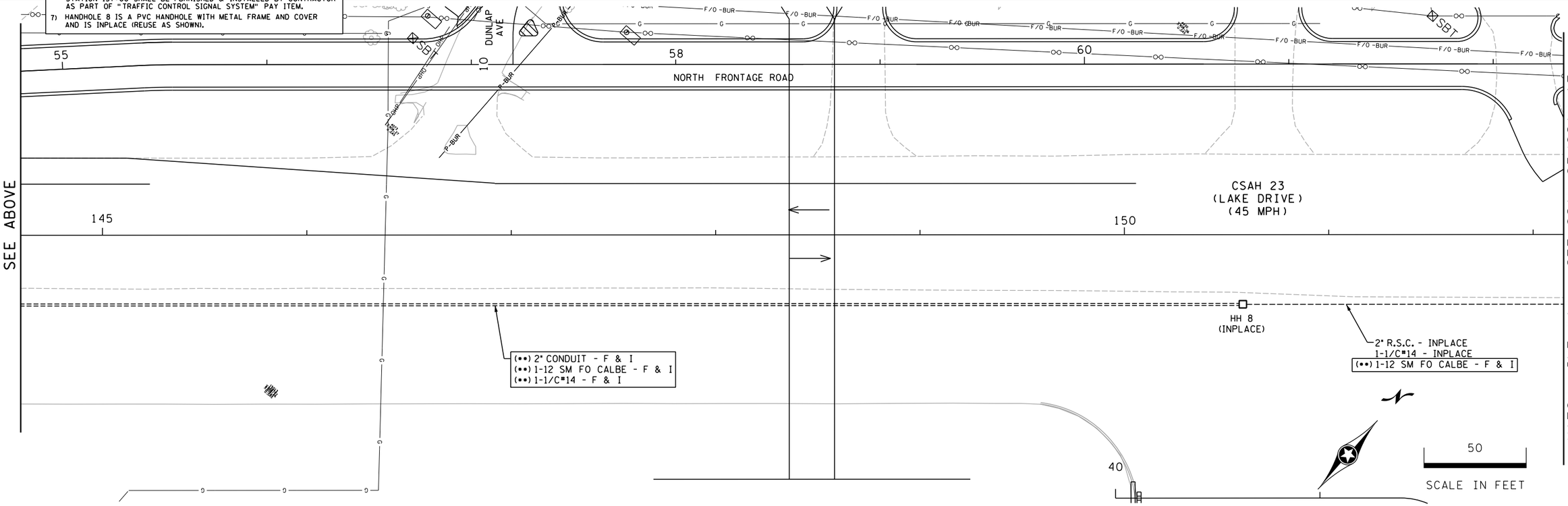


INTERCONNECT NOTES:

1) IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO UTILIZE THE "ONE CALL EXCAVATION NOTICE SYSTEM" (TELEPHONE NUMBER 651-454-0002) AS REQUIRED BY MINNESOTA STATUTE 2160.
2) DISTANCE OFF SHOULDER OR CURB FOR INTERCONNECT CONDUIT SHALL BE 1-2 FEET.
3) (**) DENOTES ITEMS TO BE FURNISHED AND INSTALLED BY THE CONTRACTOR UNDER ITEM NO. 2565 (TRAFFIC CONTROL INTERCONNECT). SEE STATEMENT OF ESTIMATED QUANTITIES AND SPECIAL PROVISIONS.
4) NEW HANDHOLE 105 TO BE FURNISHED AND INSTALLED BY THE CONTRACTOR SHALL BE A PRECAST POLYMER CONCRETE STRUCTURE. SEE SPECIAL PROVISIONS.
5) (F & I) DENOTES ITEMS TO BE FURNISHED AND INSTALLED BY CONTRACTOR AS PART OF THIS PROJECT.
6) HANDHOLE 6, LOOP DETECTOR D6-1, AND CONDUIT/CABLES NEAR STATION 137+00 SHALL BE FURNISHED & INSTALLED BY CONTRACTOR AS PART OF "TRAFFIC CONTROL SIGNAL SYSTEM" PAY ITEM.
7) HANDHOLE 8 IS A PVC HANDHOLE WITH METAL FRAME AND COVER AND IS INPLACE (REUSE AS SHOWN).

MATCHLINE CSAH 23 (LAKE) STA. 144+60
SEE BELOW

MATCHLINE CSAH 23 (LAKE) STA 144+60
SEE ABOVE



MATCH LINE "A" - SEE CSAH 23/CSAH 17
INTERSECTION LAYOUT SEE SHEET 91

FILE: S:\AE\A\Anoka\141617\5-final-dsgn\51-drawings\40-TransHwy\Plansheets\CD141617_sgll.dgn
MODEL: SGL15

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

I hereby certify that this plan was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.
Certified By: _____ Licensed Professional Engineer Lic. No. 22457
Printed Name: JOHN M. GRAY, PE Date: 9/19/2017

SEH
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

ANOKA COUNTY, MN
CSAH 23
S.A.P. 002-623-017, S.A.P. 244-020-002

TRAFFIC CONTROL INTERCONNECT INTERSECTION LAYOUT
CSAH 23 (LAKE) FROM STA 137+00 TO STA 151+90

FILE NO. ANOKC141617
SGL15 OF SGL19

90 / 94

SIGNAL INDICATION CHART

ALL SIGNAL INDICATIONS SHALL BE 300 mm
ALL CIRCULAR & ARROW INDICATIONS SHALL BE LED

SIGNAL FACE	R	Y	G	RLTA	YLTA	GLTA
1-1,1-2				←	←	←
2-1,2-2,2-3	●	●	●			
4-1,4-2,4-3	●	●	●			
4-4,4-5	●	●	●		←	←
5-1,5-2				←	←	←
6-1,6-2,6-3	●	●	●			
8-1,8-2,8-3	●	●	●			
8-4,8-5	●	●	●		←	←

SIGNAL HEAD PHASING

FACE	PHASE
4-4, 4-5	Ø4 & Ø8
8-4, 8-5	Ø3 & Ø7

(4) PA100 FOUNDATION
TYPE PA100-A-10.7 m-D12 m-3 m (DAVIT AT 350°)
2 - ONE WAY SIGNALS (OVERHEAD)
(0 m AND 3.4 m FROM END OF MAST ARM)
TYPE 10B POLE MOUNTED AT 90°
TYPE 20B POLE MOUNTED AT 180°
LUMINAIRE - 200 WATT H.P.S. WITH P.E.C. AND TEST SWITCH
ONE WAY EVP DETECTOR AND LIGHT
(1.8 m FROM END OF MAST ARM), 19 mm HUB
2 - PEDESTRIAN PUSHBUTTONS
1 - R10-12 (24"x30") SIGN
EXTEND 78 mm RSC INTO HH-13 WITH:
3 - 12/C #12, 2 - 3/C #12
1 - 3/C #12 (LUM.) AND 1 - 3/C #20

(2) PA100 FOUNDATION
TYPE PA100-A-10.7 m-D12 m-3 m (DAVIT AT 350°)
2 - ONE WAY SIGNALS (OVERHEAD)
(0 m AND 3.6 m FROM END OF MAST ARM)
TYPE 10B POLE MOUNTED AT 90°
TYPE 20B POLE MOUNTED AT 180°
LUMINAIRE - 200 WATT H.P.S. WITH P.E.C. AND TEST SWITCH
ONE WAY EVP DETECTOR AND LIGHT
(1.8 m FROM END OF MAST ARM), 19 mm HUB
2 - PEDESTRIAN PUSHBUTTONS
1 - R10-12 (24"x30") SIGN
EXTEND 78 mm RSC INTO HH-5 WITH:
3 - 12/C #12, 2 - 3/C #12
1 - 3/C #12 (LUM.) AND 1 - 3/C #20

(3) PA100 FOUNDATION
TYPE PA100-A-12.2 m-D12 m-3 m (DAVIT AT 350°)
2 - ONE WAY SIGNALS (OVERHEAD)
(0.2 m AND 4.0 m FROM END OF MAST ARM)
TYPE 10B POLE MOUNTED AT 90°
TYPE 20B POLE MOUNTED AT 180°
LUMINAIRE - 200 WATT H.P.S. WITH P.E.C. AND TEST SWITCH
ONE WAY EVP DETECTOR AND LIGHT
(1.8 m FROM END OF MAST ARM), 19 mm HUB
2 - PEDESTRIAN PUSHBUTTONS
EXTEND 78 mm RSC INTO HH-10 WITH:
3 - 12/C #12, 2 - 3/C #12
1 - 3/C #12 (LUM.) AND 1 - 3/C #20

SIGNAL OPERATION NOTES

- NORMAL OPERATION IS 8 PHASE
- FLASH MODE SHALL BE ALL RED
- Ø1 & Ø5 SHALL BE PROTECTED LEFT TURNS
  LEFT TURNS
- Ø3 & Ø7 SHALL BE PROTECTED/PERMISSIVE LEFT TURNS
- Ø2 & Ø6 SHALL BE ON VEHICLE RECALL

FUNCTIONS:
(1) CALL AND EXTEND
(3) EXTEND ONLY
(7) DELAY CALL, IMMEDIATE EXTEND

LOOP DETECTOR CHART

DESIGNATION	SIZE	FUNCTION	DISTANCE FROM STOP LINE
D1-1	2-1.7m x 1.7m	(1)	3.4, 12.2 m
D1-2	2-1.7m x 1.7m	(1)	-1, 7.8 m
D2-1	1-1.7m x 1.7m	(1)	107 m
D3-1	2-1.7m x 1.7m	(1)	3.4, 12.2 m
D3-2	2-1.7m x 1.7m	(1)	-1, 7.8 m
D4-1,D4-2	1-1.7m x 1.7m	(3)	73 m
D4-3,D4-4	2-1.7m x 1.7m	(1)	-1, 3.4 m
D4-5 10.0 sq. meters	4-1.7m x 1.7m	(7)	SEE NOTE 4
D5-1	2-1.7m x 1.7m	(1)	3.4, 12.2 m
D5-2	2-1.7m x 1.7m	(1)	-1, 7.8 m
D6-1	1-1.7m x 1.7m	(1)	107 m
D7-1	2-1.7m x 1.7m	(1)	3.4, 12.2 m
D7-2	2-1.7m x 1.7m	(1)	-1, 7.8 m
D8-1,D8-2	1-1.7m x 1.7m	(3)	73 m
D8-3 10.0 sq. meters	3-1.7m x 1.7m	(1)	-7.8,-3.4, 1 m
D8-4	2-1.7m x 1.7m	(1)	-1, 3.4 m

20 10 0 20 40
scale feet

PLAN HAS METRIC UNITS, BUT SCALE OF THIS PLAN IS IN FEET.

NOTE: THIS PLAN SHEET IS BEING PROVIDED FOR INFORMATIONAL PURPOSES ONLY.

LAKE DR. (CSAH 23)
70 km/h (45 MPH)

LEXINGTON AVE. (CSAH 17)
55 km/h (35 MPH)

MATCH LINE "A" (INTERCONNECT) SEE SHEET 90

MATCH LINE TO NORTH

MATCH LINE TO EAST

MATCH LINE TO SOUTH

NEW CURB

53 mm RSC
2 - 2/C #14

F & I 6'X6' PVC LOOP DETECTOR (SEE NOTES)

103 mm RSC
3 - 12/C #12
2 - 3/C #12
1 - 3/C #12 (LUM.)
5 - 2/C #14
1 - 3/C #20

103 mm RSC
3 - 12/C #12
2 - 3/C #12
1 - 3/C #12 (LUM.)
7 - 2/C #14
1 - 3/C #20

78 mm RSC
1 - 2/C #14

103 mm RSC
6 - 12/C #12
4 - 3/C #12
2 - 3/C #12 (LUM.)
8 - 2/C #14
2 - 3/C #20

53 mm RSC
1 - 2/C #14

78 mm RSC
1 - 2/C #14

103 mm RSC
6 - 12/C #12
4 - 3/C #12
2 - 3/C #12 (LUM.)
10 - 2/C #14
2 - 3/C #20

53 mm RSC
2 - 3/C #12 (LUM.)

103 mm RSC
3 - 12/C #12
2 - 3/C #12
1 - 3/C #12 (LUM.)
3 - 2/C #14
1 - 3/C #20

103 mm RSC
3 - 12/C #12
2 - 3/C #12
1 - 3/C #12 (LUM.)
5 - 2/C #14
1 - 3/C #20

53 mm RSC
2 - 2/C #14

Ø4+Ø8 EVP
Ø1+Ø6 EVP
Ø2+Ø5 EVP
8+300

(**) 1-12 SM FIBER OPTIC CABLE-F & I)

(A) CONTROLLER FOUNDATION
CONTROLLER & CABINET
EXTEND 103 mm RSC INTO HH-1 WITH:
6 - 12/C #12, 4 - 3/C #12,
9 - 2/C #14 AND 2 - 3/C #20

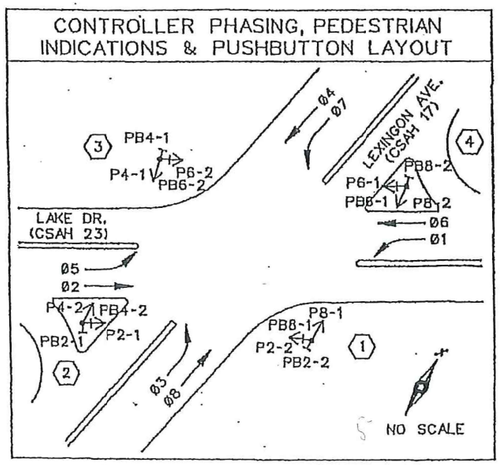
EXTEND 103 mm RSC INTO HH-18 WITH:
6 - 12/C #12, 4 - 3/C #12,
10 - 2/C #14 AND 2 - 3/C #20
EXTEND 53 mm RSC INTO HH-19 WITH:
3 - 1/C #6
1 - 78 mm RSC STUB OUT OF CABINET (THREAD AND CAP BOTH ENDS)

(B) SERVICE CABINET FOUNDATION
SIGNAL SERVICE CABINET
EXTEND 53 mm RSC INTO HH-19 WITH: 3 - 1/C #6
EXTEND 53 mm RSC INTO HH-1 WITH: 4 - 3/C #12 (LUM.)
EXTEND 53 mm RSC INTO HH-20 WITH: 3 - 1/C #2

(C) SOURCE OF POWER
INPLACE WOOD POLE
53 mm RSC RISER AND WEATHERHEAD WITH:
3 - 1/C #2

(1) PA100 FOUNDATION
TYPE PA100-A-12.2 m-D12 m-3 m (DAVIT AT 350°)
2 - ONE WAY SIGNALS (OVERHEAD)
(0.2 m AND 4.0 m FROM END OF MAST ARM)
TYPE 10B POLE MOUNTED AT 90°
TYPE 20B POLE MOUNTED AT 180°
LUMINAIRE - 200 WATT H.P.S. WITH P.E.C. AND TEST SWITCH
ONE WAY EVP DETECTOR AND LIGHT
(1.8 m FROM END OF MAST ARM), 19 mm HUB
2 - PEDESTRIAN PUSHBUTTONS
EXTEND 78 mm RSC INTO HH-1 WITH:
3 - 12/C #12, 2 - 3/C #12
1 - 3/C #12 (LUM.) AND 1 - 3/C #20

CONTROLLER PHASING, PEDESTRIAN INDICATIONS & PUSHBUTTON LAYOUT



INTERCONNECT AND MISCELLANEOUS SIGNAL WORK NOTES:

1) ALL ITEMS OF THIS SIGNAL SYSTEM ARE INPLACE AND SHALL BE REUSED AND MAINTAINED INPLACE AND IN OPERATION, EXCEPT WHERE BOXED IN AND DENOTED BY (**) (ITEMS TO BE FURNISHED AND INSTALLED BY CONTRACTOR UNDER ITEM NO. 2565 "TRAFFIC CONTROL INTERCONNECT"), AND ALSO BY F & I (ITEMS TO BE FURNISHED AND INSTALLED BY CONTRACTOR FOR BOTH INTERCONNECT AND FOR MISCELLANEOUS SIGNAL WORK).
2) ALL HANDHOLES ARE PVC HANDHOLES WITH METAL FRAMES AND COVERS AND ARE INPLACE.
3) CONTRACTOR SHALL REPAINT ENTIRE SIGNAL SYSTEM (TO BE MEASURED AND PAID FOR SEPARATELY UNDER ITEM NO. 2565 "PAINT SIGNAL SYSTEM (CSAH 23/CSAH 17)". SEE SPECIAL PROVISIONS & STATEMENT OF ESTIMATED QUANTITIES.
4) CONTRACTOR SHALL REVISE INPLACE LOOP DETECTOR D4-5 SO THAT A NEW 6' x 6' PVC LOOP DETECTOR IS FURNISHED AND INSTALLED 9 FEET BACK OF EXISTING LOOP DETECTOR (PROVIDE NEW CONDUIT FROM NEW DETECTOR TO ADJACENT HANDHOLE 10), INPLACE SPLICE KIT IS REMOVED FOR ENTIRE D4-5 DETECTOR, AND NEW SPLICE KIT IS F & I TO CONNECT ALL 4 LOOP DETECTORS TO ONE SPLICE KIT (ALL TO BE MEASURED & PAID FOR SEPARATELY-SEE SPECIAL PROVISIONS).

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

I hereby certify that this plan was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.
Certified By: _____ (Licensed Professional Engineer) Lic. No. 22457
Printed Name: JOHN M. GRAY, PE Date: 9/19/2017

SEH
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

ANOKA COUNTY, MN
CSAH 23
S.A.P. 002-623-017, S.A.P. 244-020-002

INTERCONNECT/MISCELLANEOUS SIGNAL WORK INTERSECTION LAYOUT
CSAH 23 (LAKE DRIVE) AT CSAH 17

FILE NO. ANOKC141617
SGL16 OF SGL19
91 / 94

FILE: S:\AE\A\Anoka\141617\5-final-dsgn\51-drawings\40-TransHwy\Plansheets\CD141617_sgll.dgn
MODEL: SGL16
(USERNAME) 2/13/2018 8:09:42 PM

(1) TYPE P100-A-40-D40-9 (DAVIT AT 350°)
P100 POLE FOUNDATION
FILL AS REQUIRED TO RAISE FOUNDATION ABOVE STREET GRADE
TWO ONE WAY SIGNALS-OVERHEAD
TYPE 10B POLE MOUNTED AT 90°
TYPE 10A POLE MOUNTED AT 270°
LUMINAIRE-200 WATT H.P.S.
PEDESTRIAN PUSHBUTTON AND SIGN
PEDESTRIAN WALK (SEE DETAIL "A")
EXTEND 3" R.S.C. INTO H.H. 5 WITH:
3-12/C #12
1-3/C #12
2-1/C #10

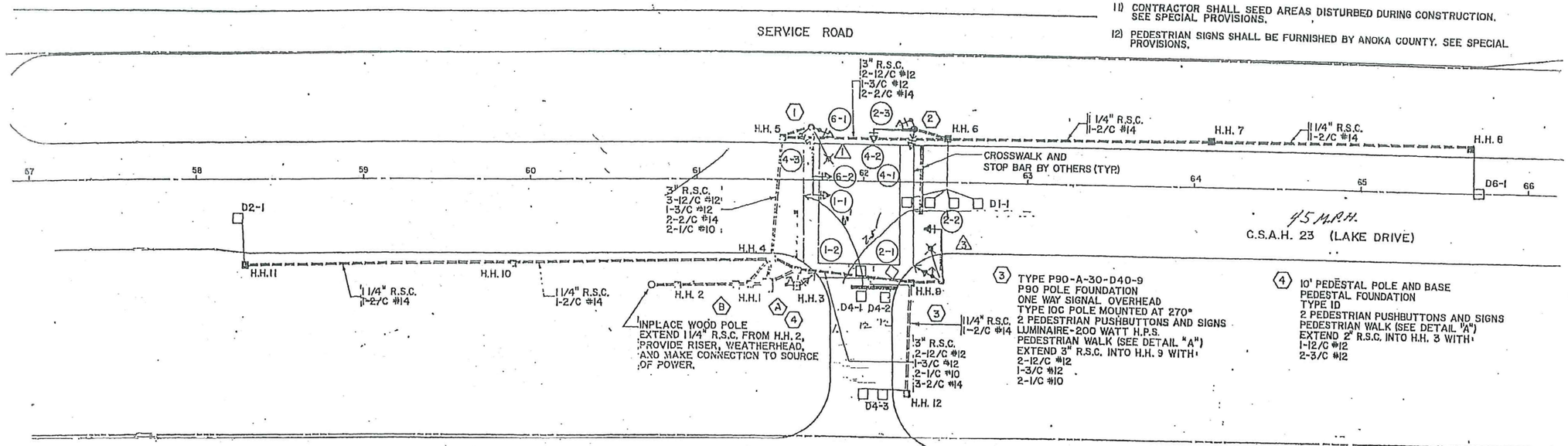
(2) TYPE P90-A-25
P90 POLE FOUNDATION
FILL AS REQUIRED TO RAISE FOUNDATION ABOVE STREET GRADE
ONE WAY SIGNAL-OVERHEAD
TYPE 10A POLE MOUNTED AT 90°
TYPE 10B POLE MOUNTED AT 270°
PEDESTRIAN PUSHBUTTON AND SIGN
PEDESTRIAN WALK (SEE DETAIL "A")
EXTEND 3" R.S.C. INTO H.H. 6 WITH:
2-12/C #12
1-3/C #12

(A) CONTROLLER AND CABINET
CABINET FOUNDATION
EXTEND INTO H.H. 1:
1 1/4" R.S.C.
3-1/C #6
EXTEND INTO H.H. 4:
3" R.S.C.
3-12/C #12
1-3/C #12
3-2/C #14
EXTEND INTO H.H. 3
3" R.S.C.
3-12/C #12
1-3/C #12
3-2/C #14

(B) SERVICE CABINET
CABINET FOUNDATION
EXTEND INTO H.H. 1:
METERED SIGNAL SERVICE
1 1/4" R.S.C.
3-1/C #6
UNMETERED LIGHTING SERVICE
1 1/4" R.S.C.
4-1/C #10
EXTEND INTO H.H. 2:
2" R.S.C.
3-1/C #6
1-1/C #BR. GR.

NOTES:
1) SEE SPECIAL PROVISIONS FOR CONTRACTOR'S RESPONSIBILITY FOR LOCATION OF UTILITIES.
2) ALL SIGNAL FACES SHALL HAVE BACKGROUND SHEILDS.
3) LUMINAIRE AT LOCATIONS 1 AND 3 SHALL INCLUDE P.E.C. AND CHECK SWITCH.
4) SEE SPECIAL PROVISIONS FOR ANOKA COUNTY SERVICE CABINET DETAILS.
5) DIRECTIONAL SIGNS TO BE FURNISHED AND INSTALLED ON MAST ARMS 1, 2, AND 3, SEE SHEET 7.
6) HANDHOLES SHALL BE CONCRETE WITH CONCRETE COVERS.
7) LOOP DETECTOR WIRES SHALL BE CROSS LINKED POLYETHYLENE (XLP) IN 1" N.M.C. . SEE SPECIAL PROVISIONS.
8) ALL PEDESTRIAN INDICATORS SHALL BE 12"x12"
9) CONTRACTOR SHALL INSTALL COUNTY FURNISHED CONTROLLER AND CABINET. SEE SPECIAL PROVISIONS.
10) MID MASTARM SIGNAL HEAD TO BE LOCATED 12 FEET FROM END OF MAST AT LOCATION 1.
11) CONTRACTOR SHALL SEED AREAS DISTURBED DURING CONSTRUCTION. SEE SPECIAL PROVISIONS.
12) PEDESTRIAN SIGNS SHALL BE FURNISHED BY ANOKA COUNTY. SEE SPECIAL PROVISIONS.

SCALE 30



(3) TYPE P90-A-30-D40-9
P90 POLE FOUNDATION
ONE WAY SIGNAL OVERHEAD
TYPE 10C POLE MOUNTED AT 270°
2 PEDESTRIAN PUSHBUTTONS AND SIGNS
LUMINAIRE-200 WATT H.P.S.
PEDESTRIAN WALK (SEE DETAIL "A")
EXTEND 3" R.S.C. INTO H.H. 9 WITH:
2-12/C #12
1-3/C #12
2-1/C #10
2-2/C #14

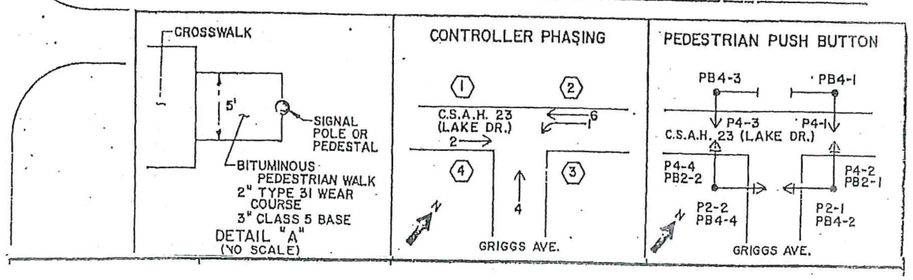
(4) 10' PEDESTAL POLE AND BASE
PEDESTAL FOUNDATION
TYPE 1D
2 PEDESTRIAN PUSHBUTTONS AND SIGNS
PEDESTRIAN WALK (SEE DETAIL "A")
EXTEND 2" R.S.C. INTO H.H. 3 WITH:
1-12/C #12
2-3/C #12

SIGNAL INDICATIONS					
FACE	PHASE	FLASH	R	Y	G
1-1	1	R	12"	12"	12"
1-2	1	R	12"	12"	12"
2-1	2	R	12"	12"	12"
2-2	2	R	12"	12"	12"
2-3	2	R	12"	12"	12"
4-1	4	R	12"	12"	12"
4-2	4	R	12"	12"	12"
4-3	4	R	12"	12"	12"
6-1	6	R	12"	12"	12"
6-2	6	R	12"	12"	12"

LOOP DETECTORS			
NUMBER	SIZE	LOCATION	FUNCTION
D1-1	4 - 6'x6'	—	1
D2-1	6'x6'	330'	1
D4-1	2 - 6'x6'	—	1
D4-2	2 - 6'x6'	—	7
D6-1	6'x6'	330'	1
D4-3	2-6'x6'	60'	3

* DISTANCE TO STOP BAR

LOOP DETECTOR FUNCTIONS
1. CALL AND EXTEND
2. CALL ONLY
3. EXTEND ONLY
4. CALL ONLY DENSITY
5. DELAYED CALL ONLY
6. DELAYED CALL ONLY DENSITY
7. DELAYED CALL - IMMEDIATE EXTEND
8. CARRY OVER (STRETCH)
9. ADVISORY DETECTOR
10. SAMPLING DETECTOR
11. SPECIAL DETECTOR



NOTE: THIS PLAN SHEET IS BEING PROVIDED FOR INFORMATIONAL PURPOSES ONLY.

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

I hereby certify that this plan was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.
Certified By: _____ Licensed Professional Engineer Lic. No. 22457
Printed Name: JOHN M. GRAY, PE Date: 9/19/2017

SEH
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

ANOKA COUNTY, MN
CSAH 23
S.A.P. 002-623-017, S.A.P. 244-020-002

INPLACE SIGNAL SYSTEM "A"
FOR INFORMATION ONLY

FILE NO. ANOKC141617
SGL17 OF SGL19
92/94

NOTES:

1) ALL HANDHOLES ARE PVC HANDHOLES WITH METAL FRAMES AND COVERS.
2) EACH SIGNAL HEAD HAS A BACKGROUND SHIELD.
3) EACH PEDESTRIAN INDICATION IS A ONE-SECTION COUNTDOWN TIMER "HAND/WALKING PERSON" LED INDICATION.

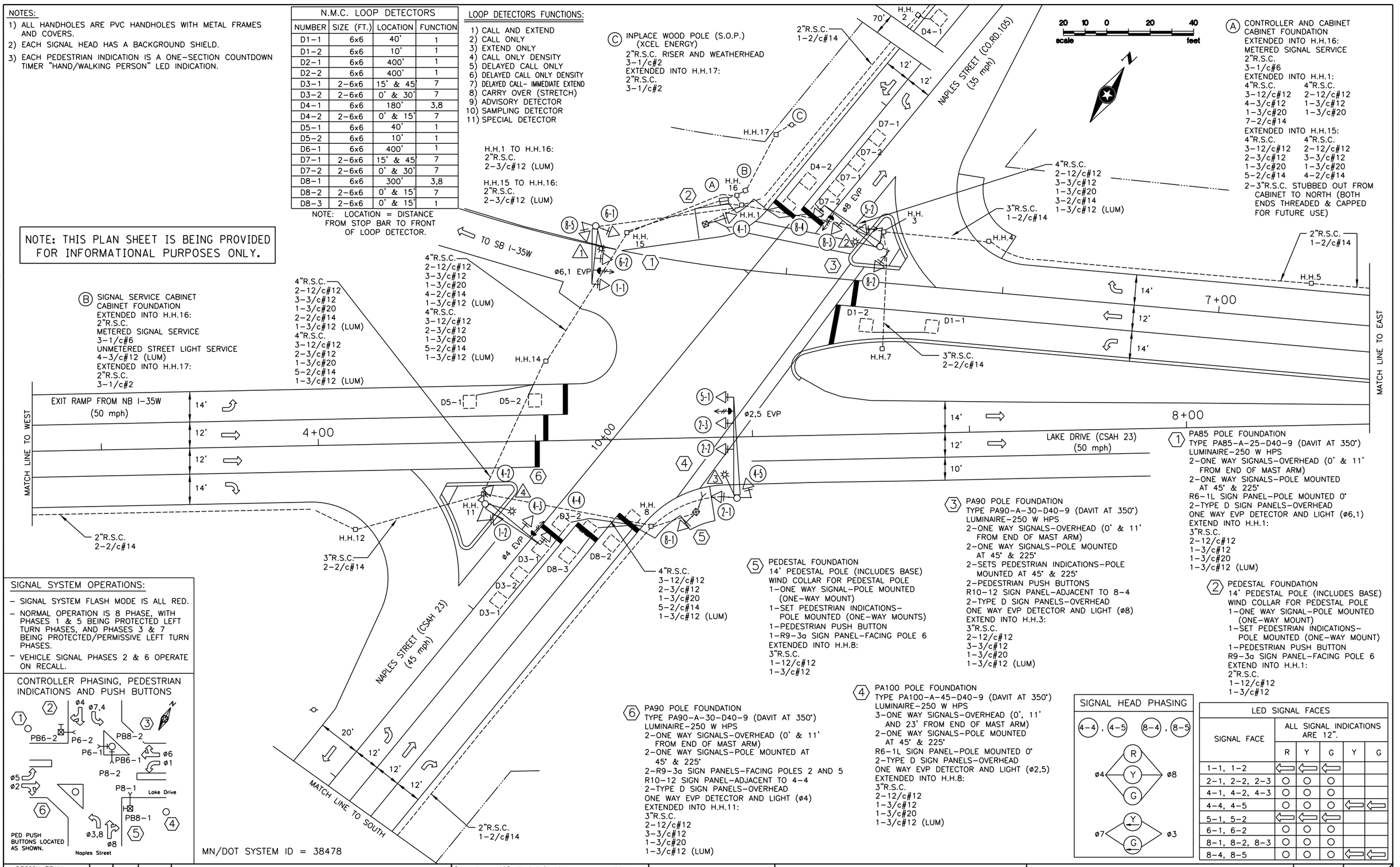
N.M.C. LOOP DETECTORS			
NUMBER	SIZE (FT.)	LOCATION	FUNCTION
D1-1	6x6	40'	1
D1-2	6x6	10'	1
D2-1	6x6	400'	1
D2-2	6x6	400'	1
D3-1	2-6x6	15' & 45'	7
D3-2	2-6x6	0' & 30'	7
D4-1	6x6	180'	3,8
D4-2	2-6x6	0' & 15'	7
D5-1	6x6	40'	1
D5-2	6x6	10'	1
D6-1	6x6	400'	1
D7-1	2-6x6	15' & 45'	7
D7-2	2-6x6	0' & 30'	7
D8-1	6x6	300'	3,8
D8-2	2-6x6	0' & 15'	7
D8-3	2-6x6	0' & 15'	1

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

LOOP DETECTORS FUNCTIONS:

1) CALL AND EXTEND
2) CALL ONLY
3) EXTEND ONLY
4) CALL ONLY DENSITY
5) DELAYED CALL ONLY
6) DELAYED CALL ONLY DENSITY
7) DELAYED CALL- IMMEDIATE EXTEND
8) CARRY OVER (STRETCH)
9) ADVISORY DETECTOR
10) SAMPLING DETECTOR
11) SPECIAL DETECTOR

NOTE: THIS PLAN SHEET IS BEING PROVIDED FOR INFORMATIONAL PURPOSES ONLY.



Ⓐ CONTROLLER AND CABINET CABINET FOUNDATION
EXTENDED INTO H.H.16:
METERED SIGNAL SERVICE
2"R.S.C.
3-1/c#6
EXTENDED INTO H.H.1:
4"R.S.C. 4"R.S.C.
3-12/c#12 2-12/c#12
4-3/c#12 1-3/c#12
1-3/c#20 1-3/c#20
7-2/c#14
EXTENDED INTO H.H.15:
4"R.S.C. 4"R.S.C.
3-12/c#12 2-12/c#12
2-3/c#12 3-3/c#12
1-3/c#20 1-3/c#20
5-2/c#14 4-2/c#14
2-3"R.S.C. STUBBED OUT FROM CABINET TO NORTH (BOTH ENDS THREADED & CAPPED FOR FUTURE USE)

Ⓑ SIGNAL SERVICE CABINET
CABINET FOUNDATION
EXTENDED INTO H.H.16:
2"R.S.C.
METERED SIGNAL SERVICE
3-1/c#6
UNMETERED STREET LIGHT SERVICE
4-3/c#12 (LUM)
EXTENDED INTO H.H.17:
2"R.S.C.
3-1/c#2

Ⓒ INPLACE WOOD POLE (S.O.P.) (XCEL ENERGY)
2"R.S.C. RISER AND WEATHERHEAD
3-1/c#2
EXTENDED INTO H.H.17:
2"R.S.C.
3-1/c#2

① PA85 POLE FOUNDATION
TYPE PA85-A-25-D40-9 (DAVIT AT 350°)
LUMINAIRE-250 W HPS
2-ONE WAY SIGNALS-OVERHEAD (0' & 11' FROM END OF MAST ARM)
2-ONE WAY SIGNALS-POLE MOUNTED AT 45° & 225°
R6-1L SIGN PANEL-POLE MOUNTED 0°
2-TYPE D SIGN PANELS-OVERHEAD
ONE WAY EVP DETECTOR AND LIGHT (ø6,1)
EXTEND INTO H.H.1:
3"R.S.C.
2-12/c#12
1-3/c#12
1-3/c#20
1-3/c#12 (LUM)

② PEDESTAL FOUNDATION
14' PEDESTAL POLE (INCLUDES BASE)
WIND COLLAR FOR PEDESTAL POLE
1-ONE WAY SIGNAL-POLE MOUNTED (ONE-WAY MOUNT)
1-SET PEDESTRIAN INDICATIONS-POLE MOUNTED (ONE-WAY MOUNT)
1-PEDESTRIAN PUSH BUTTON
R9-3a SIGN PANEL-FACING POLE 6
EXTEND INTO H.H.1:
2"R.S.C.
1-12/c#12
1-3/c#12

③ PA90 POLE FOUNDATION
TYPE PA90-A-30-D40-9 (DAVIT AT 350°)
LUMINAIRE-250 W HPS
2-ONE WAY SIGNALS-OVERHEAD (0' & 11' FROM END OF MAST ARM)
2-ONE WAY SIGNALS-POLE MOUNTED AT 45° & 225°
2-SETS PEDESTRIAN INDICATIONS-POLE MOUNTED AT 45° & 225°
2-PEDESTRIAN PUSH BUTTONS
R10-12 SIGN PANEL-ADJACENT TO 8-4
2-TYPE D SIGN PANELS-OVERHEAD
ONE WAY EVP DETECTOR AND LIGHT (ø8)
EXTEND INTO H.H.3:
3"R.S.C.
2-12/c#12
3-3/c#12
1-3/c#20
1-3/c#12 (LUM)

④ PA100 POLE FOUNDATION
TYPE PA100-A-45-D40-9 (DAVIT AT 350°)
LUMINAIRE-250 W HPS
3-ONE WAY SIGNALS-OVERHEAD (0', 11' AND 23' FROM END OF MAST ARM)
2-ONE WAY SIGNALS-POLE MOUNTED AT 45° & 225°
R6-1L SIGN PANEL-POLE MOUNTED 0°
2-TYPE D SIGN PANELS-OVERHEAD
ONE WAY EVP DETECTOR AND LIGHT (ø2,5)
EXTENDED INTO H.H.8:
3"R.S.C.
2-12/c#12
1-3/c#12
1-3/c#20
1-3/c#12 (LUM)

⑤ PEDESTAL FOUNDATION
14' PEDESTAL POLE (INCLUDES BASE)
WIND COLLAR FOR PEDESTAL POLE
1-ONE WAY SIGNAL-POLE MOUNTED (ONE-WAY MOUNT)
1-SET PEDESTRIAN INDICATIONS-POLE MOUNTED (ONE-WAY MOUNTS)
1-PEDESTRIAN PUSH BUTTON
1-R9-3a SIGN PANEL-FACING POLE 6
EXTENDED INTO H.H.8:
3"R.S.C.
1-12/c#12
1-3/c#12

⑥ PA90 POLE FOUNDATION
TYPE PA90-A-30-D40-9 (DAVIT AT 350°)
LUMINAIRE-250 W HPS
2-ONE WAY SIGNALS-OVERHEAD (0' & 11' FROM END OF MAST ARM)
2-ONE WAY SIGNALS-POLE MOUNTED AT 45° & 225°
2-R9-3a SIGN PANELS-FACING POLES 2 AND 5
R10-12 SIGN PANEL-ADJACENT TO 4-4
2-TYPE D SIGN PANELS-OVERHEAD
ONE WAY EVP DETECTOR AND LIGHT (ø4)
EXTENDED INTO H.H.11:
3"R.S.C.
2-12/c#12
3-3/c#12
1-3/c#20
1-3/c#12 (LUM)

SIGNAL SYSTEM OPERATIONS:

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

CONTROLLER PHASING, PEDESTRIAN INDICATIONS AND PUSH BUTTONS

SIGNAL HEAD PHASING

LED SIGNAL FACES						
SIGNAL FACE	ALL SIGNAL INDICATIONS ARE 12".					
	R	Y	G	Y	G	
1-1, 1-2	⇦	⇦	⇦			
2-1, 2-2, 2-3	○	○	○			
4-1, 4-2, 4-3	○	○	○			
4-4, 4-5	○	○	○	⇦	⇦	
5-1, 5-2	⇦	⇦	⇦			
6-1, 6-2	○	○	○			
8-1, 8-2, 8-3	○	○	○			
8-4, 8-5	○	○	○	⇦	⇦	

MN/DOT SYSTEM ID = 38478

DESIGN TEAM				
DRAWN BY: SAS				
DESIGNER: JMG				
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.
Certified By: _____ Lic. No. 22457
Licensed Professional Engineer
Printed Name: JOHN M. GRAY, PE Date: 9/19/2017

SEH
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

ANOKA COUNTY, MN
CSAH 23
S.A.P. 002-623-017, S.A.P. 244-020-002

INPLACE SIGNAL SYSTEM "B" FOR INFORMATION ONLY
CSAH 23 (LAKE DRIVE) AT NAPLES ST

FILE NO. ANOKC141617
SGL18 OF SGL19
93 / 94

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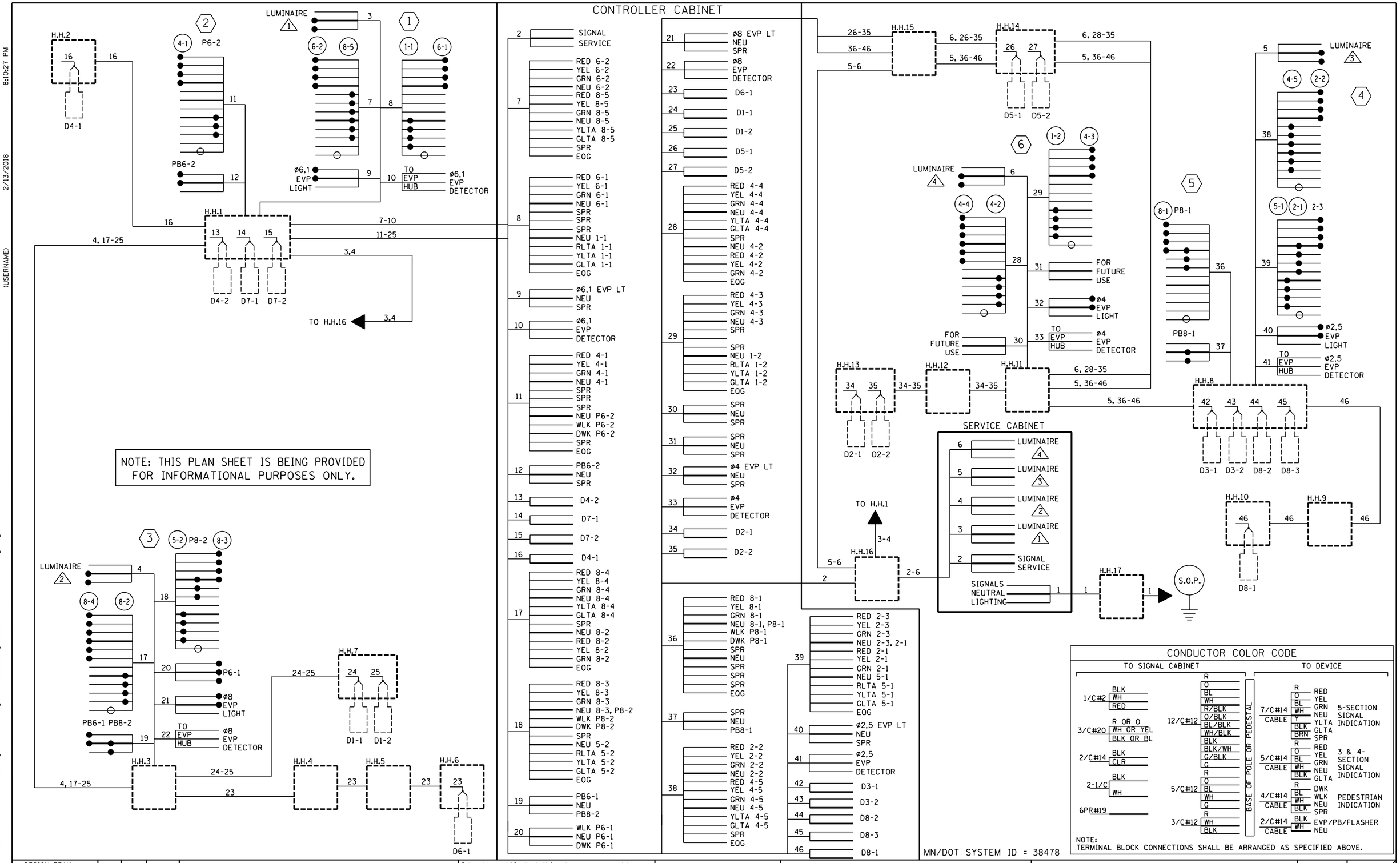

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DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: SAS				
DESIGNER: JMG				
CHECKED BY: JMG				

I hereby certify that this plan was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.
Certified By: _____ (Licensed Professional Engineer) Lic. No. 22457
Printed Name: JOHN M. GRAY, PE Date: 9/19/2017

SEH
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

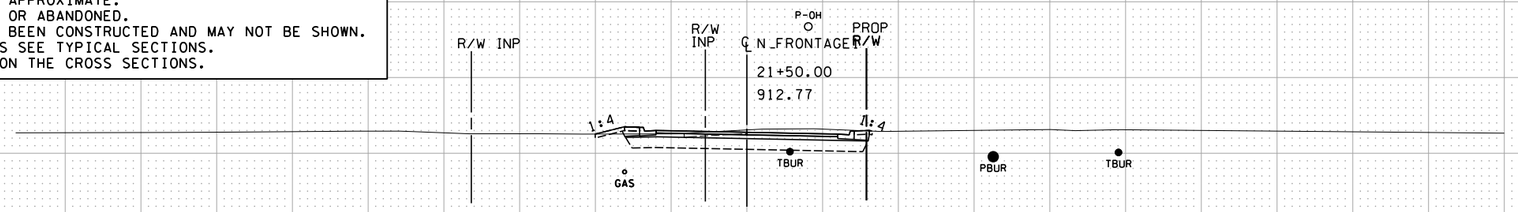
ANOKA COUNTY, MN
CSAH 23
S.A.P. 002-623-017, S.A.P. 244-020-002

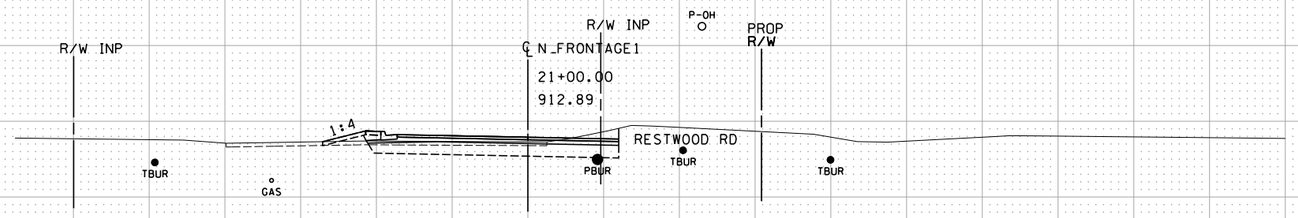
INPLACE SIGNAL SYSTEM "B"
FOR INFORMATION ONLY
CSAH 23 (LAKE DRIVE) AT NAPLES ST

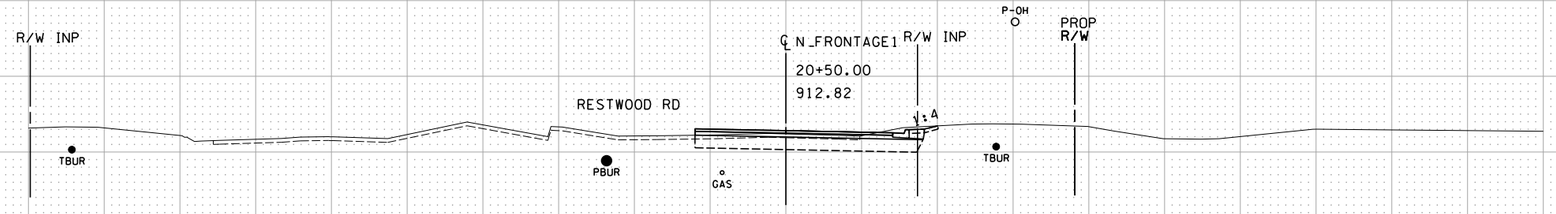
FILE NO. ANOKC141617
SGL19 OF SGL19
94 / 94

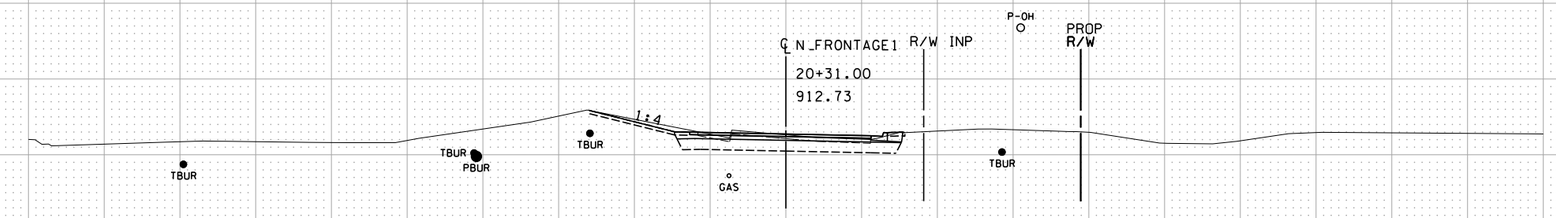
GENERAL CROSS SECTION NOTES

DITCH GRADES ARE TO BOTTOM OF TOPSOIL.
ALL UTILITIES SHOWN ON THE CROSS SECTIONS ARE INPLACE.
UTILITY ELEVATIONS AND LOCATIONS ARE APPROXIMATE.
SOME UTILITIES MAY HAVE BEEN REMOVED OR ABANDONED.
SOME NEW UTILITIES MAY HAVE RECENTLY BEEN CONSTRUCTED AND MAY NOT BE SHOWN.
FOR ADDITIONAL SLOPE OR DITCH DETAILS SEE TYPICAL SECTIONS.
SPECIAL DITCH GRADES ARE IDENTIFIED ON THE CROSS SECTIONS.









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S.A.P. 002-623-017
S.A.P. 244-020-002

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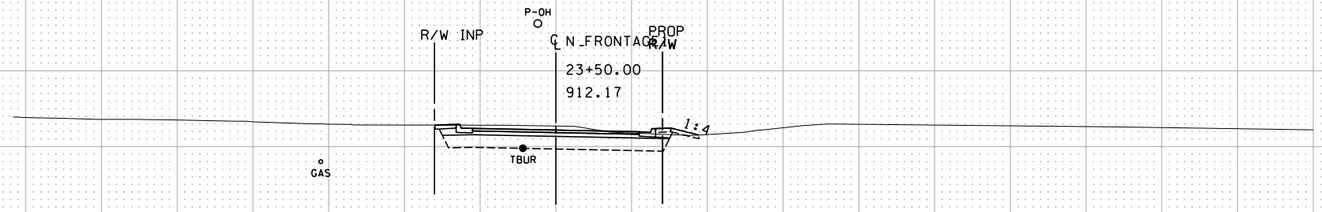

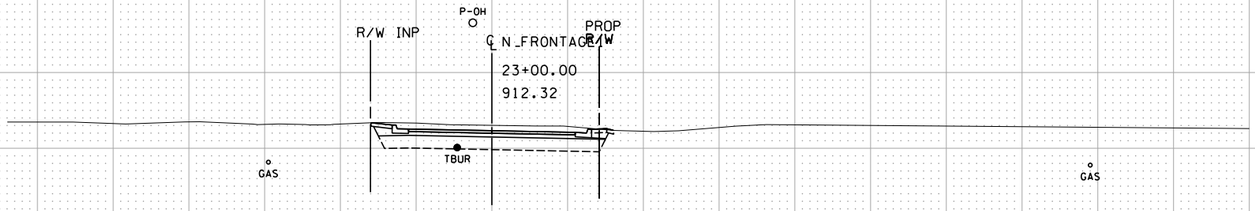

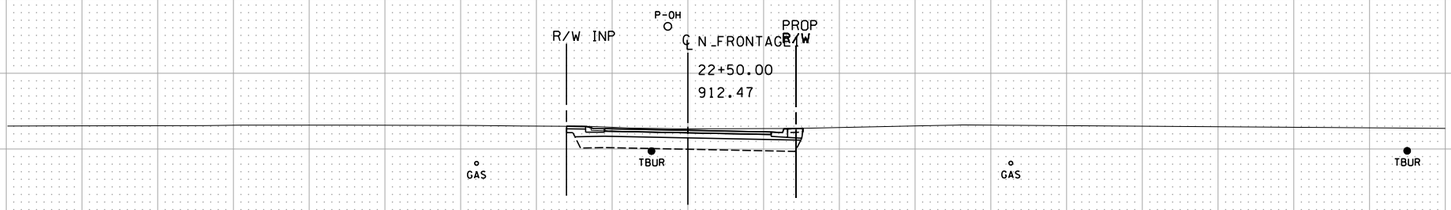

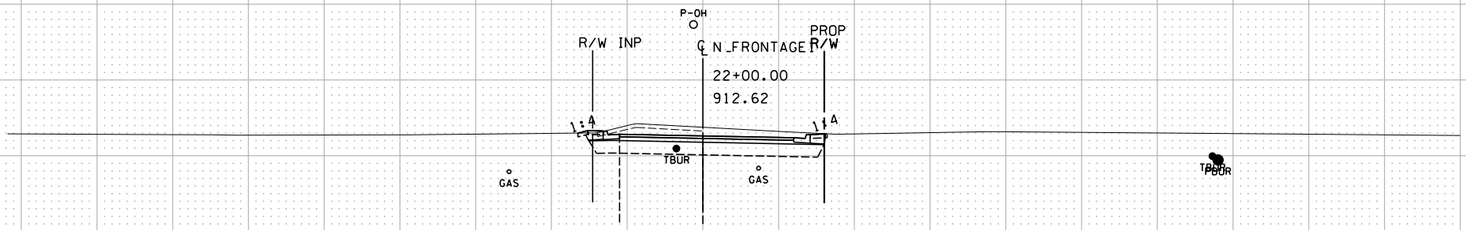

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23+00.00

22+50.00

22+00.00

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S.A.P. 002-623-017
S.A.P. 244-020-002

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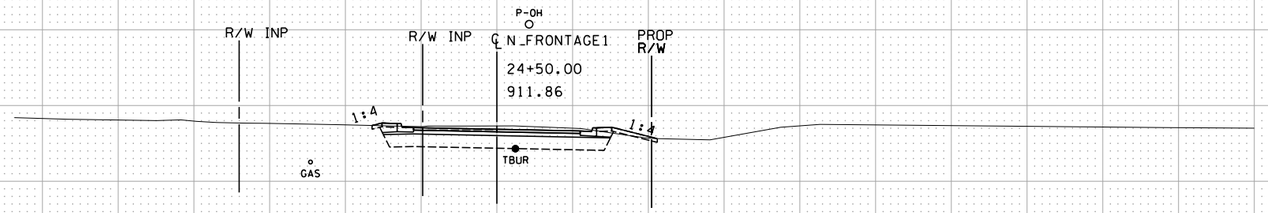

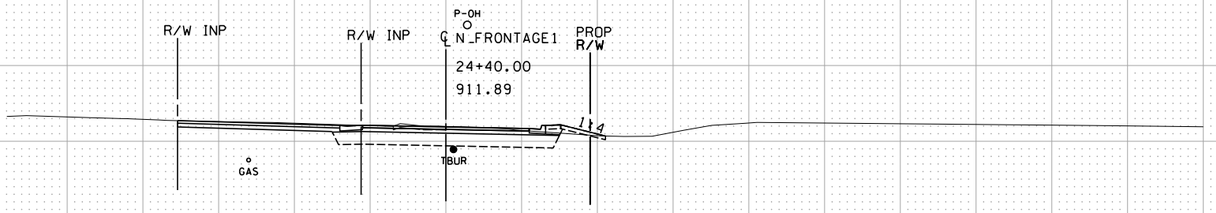

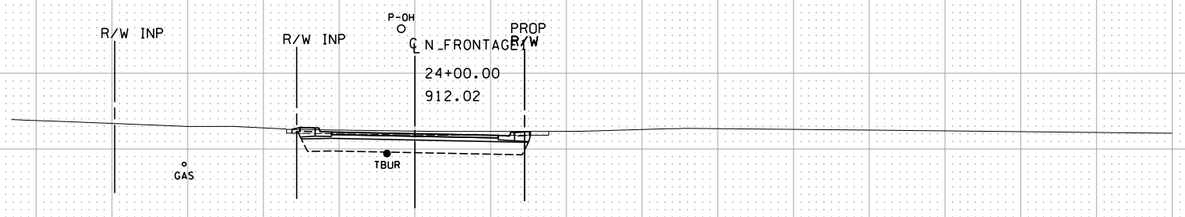

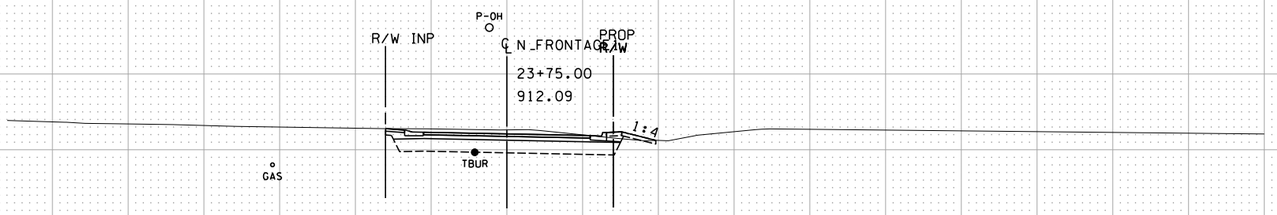

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S.A.P. 002-623-017
S.A.P. 244-020-002

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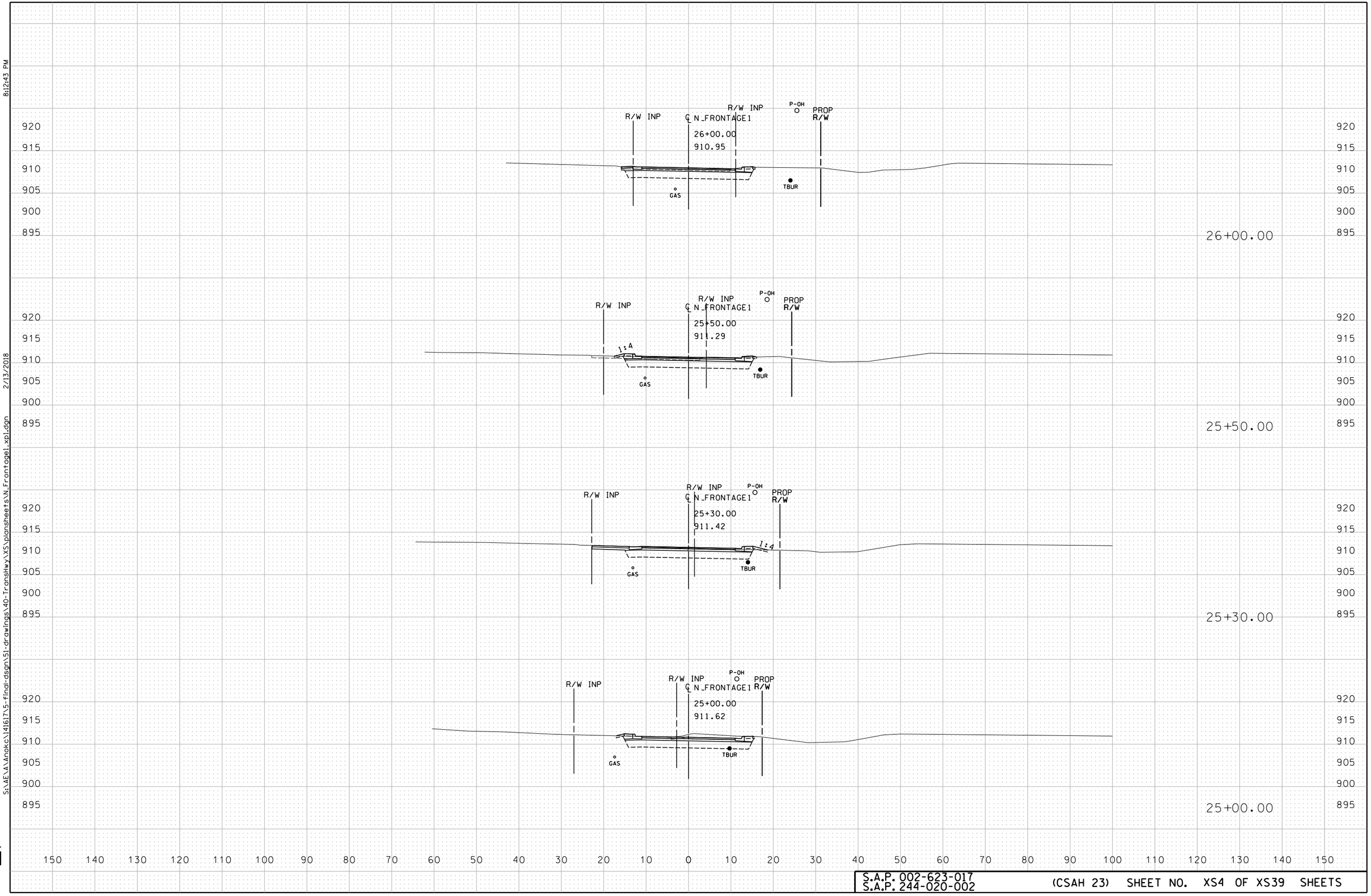

SEH

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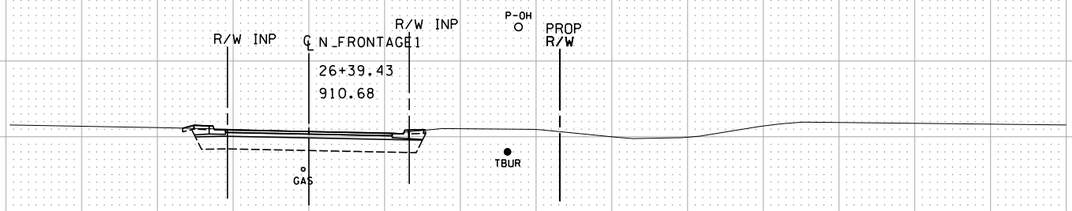

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S.A.P. 244-020-002

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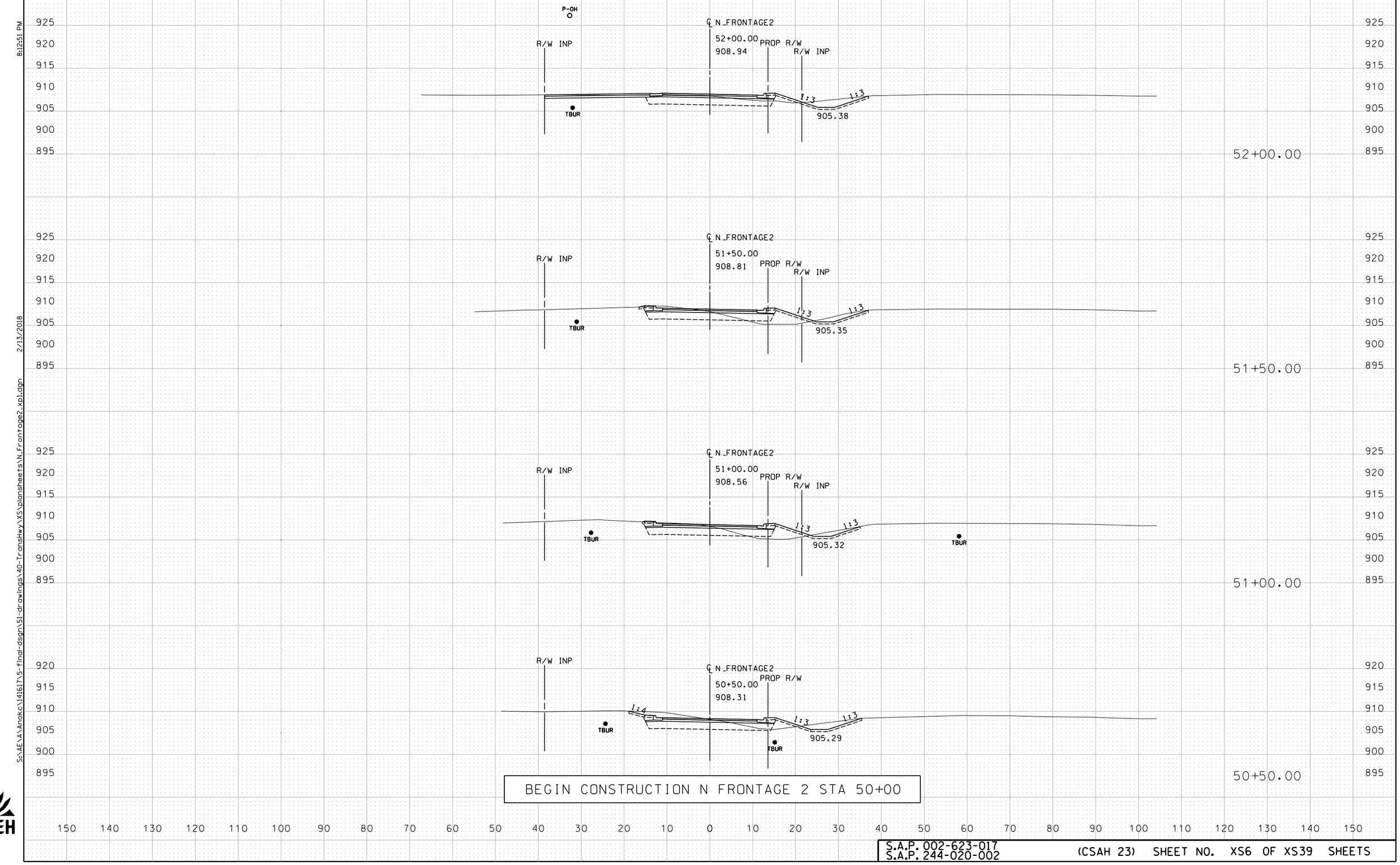

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S.A.P. 002-623-017
S.A.P. 244-020-002

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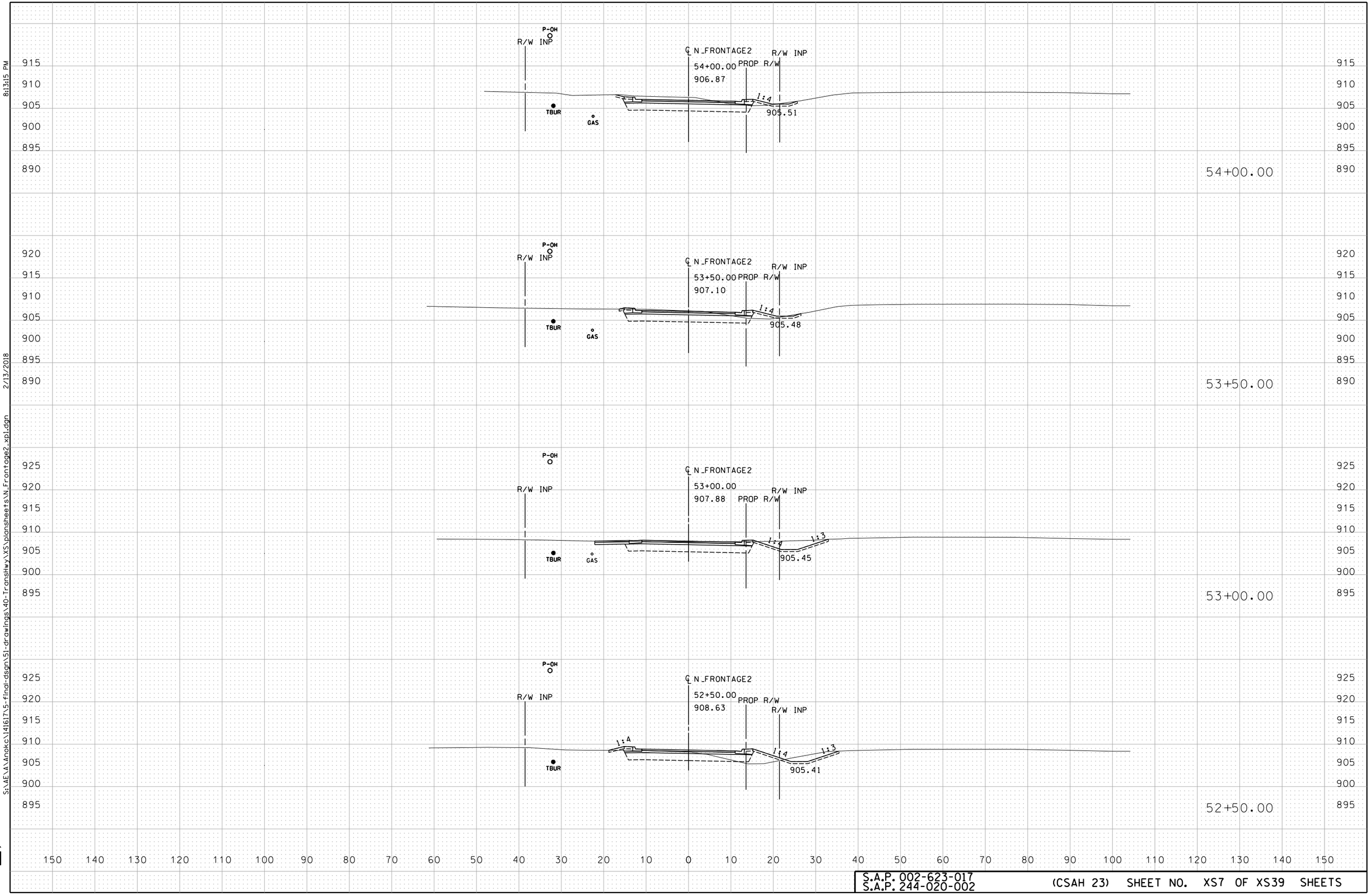

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S.A.P. 002-623-017
S.A.P. 244-020-002

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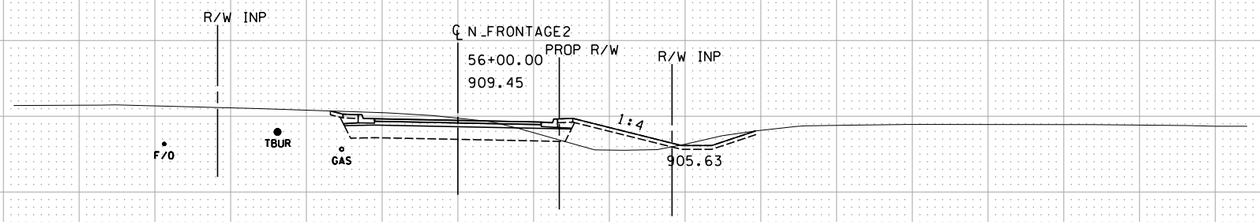

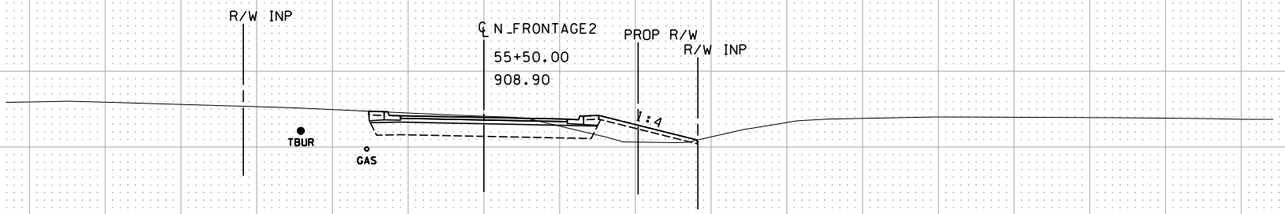

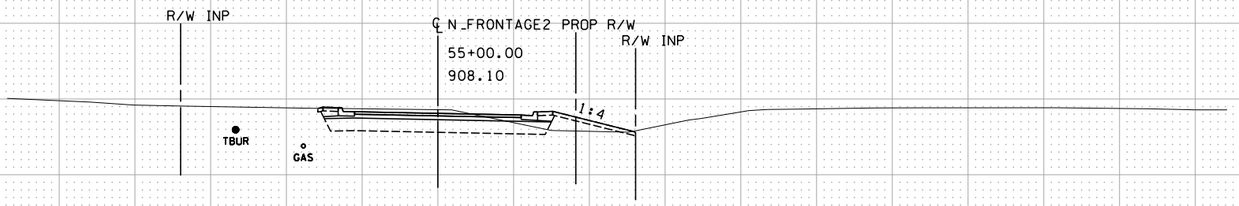

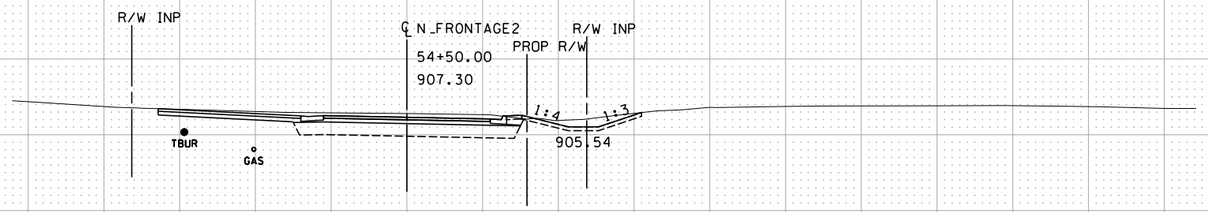

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S.A.P. 002-623-017
S.A.P. 244-020-002

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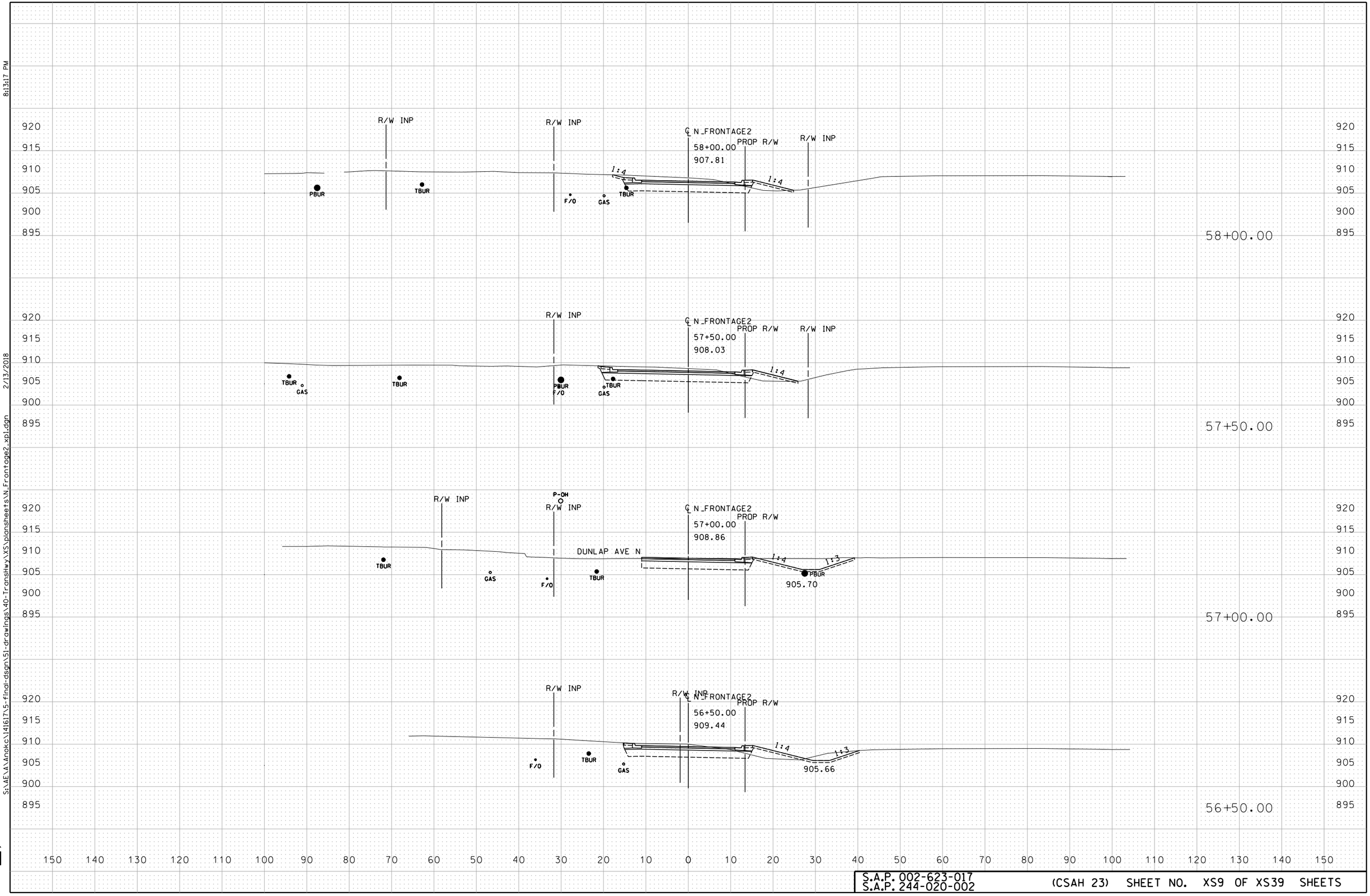
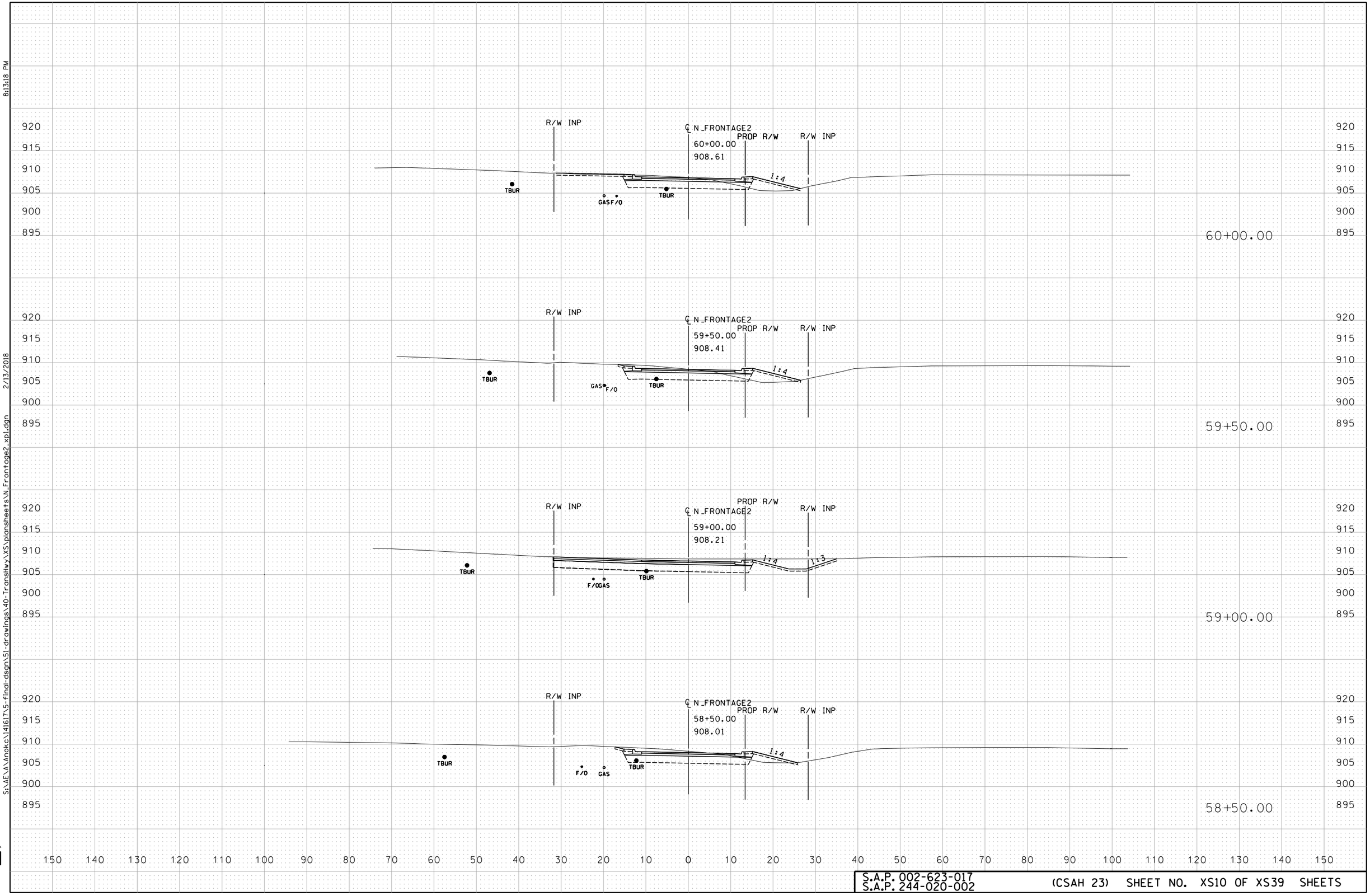


SEH

S.A.P. 002-623-017
S.A.P. 244-020-002

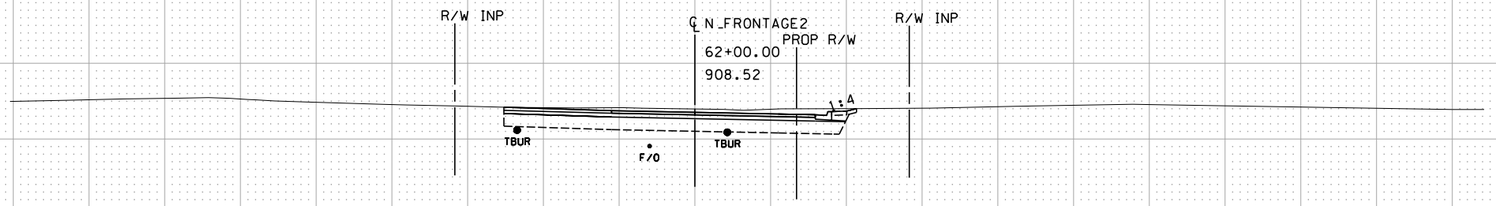
(CSAH 23) SHEET NO. XS9 OF XS39 SHEETS

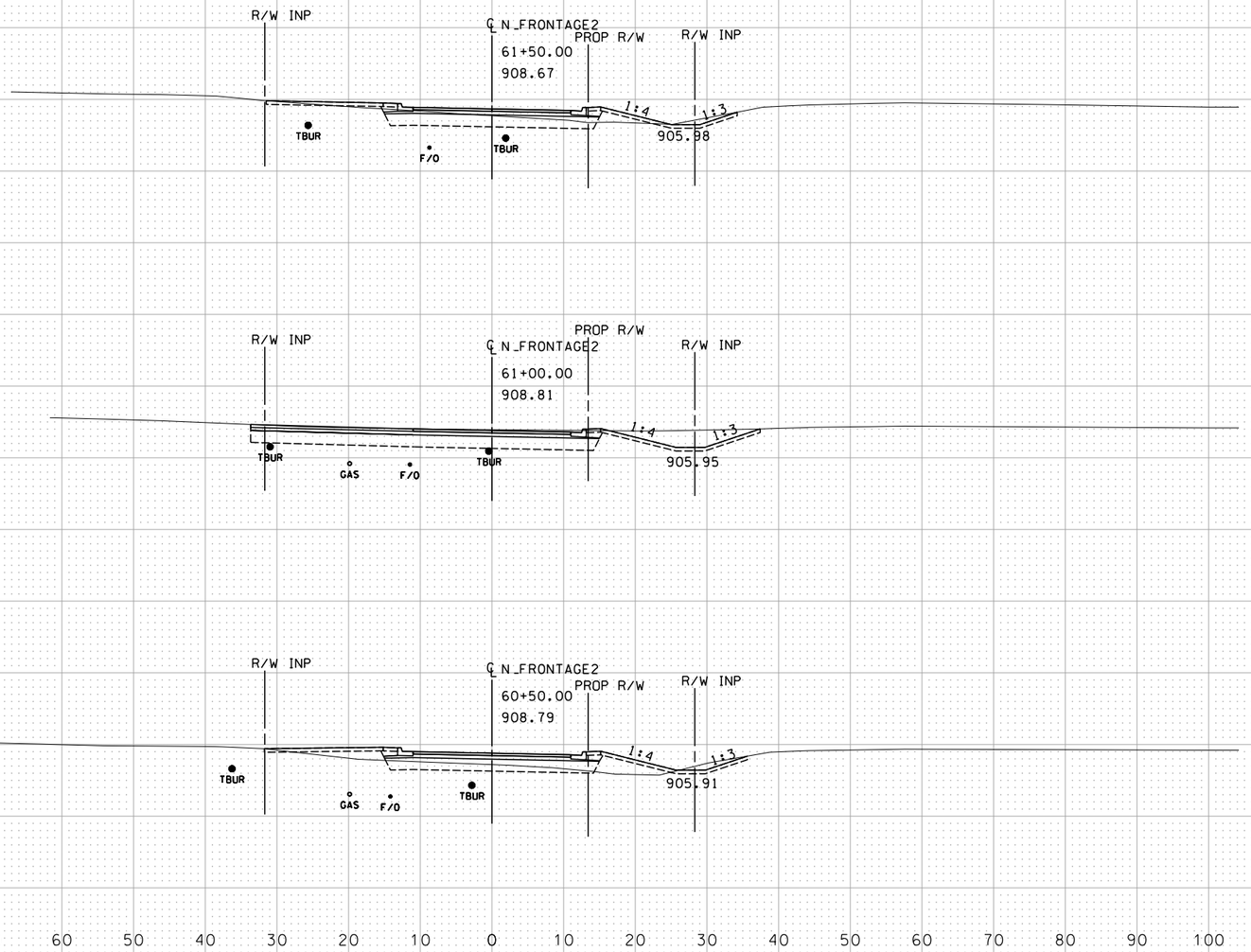


SEH

S.A.P. 002-623-017
S.A.P. 244-020-002

(CSAH 23) SHEET NO. XS10 OF XS39 SHEETS





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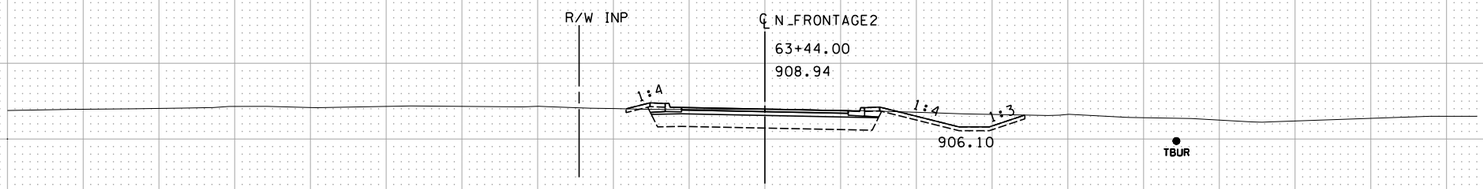
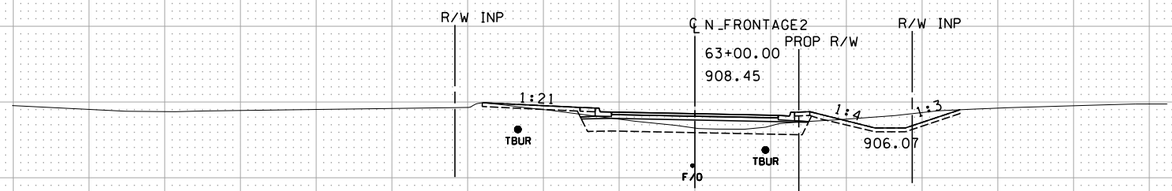
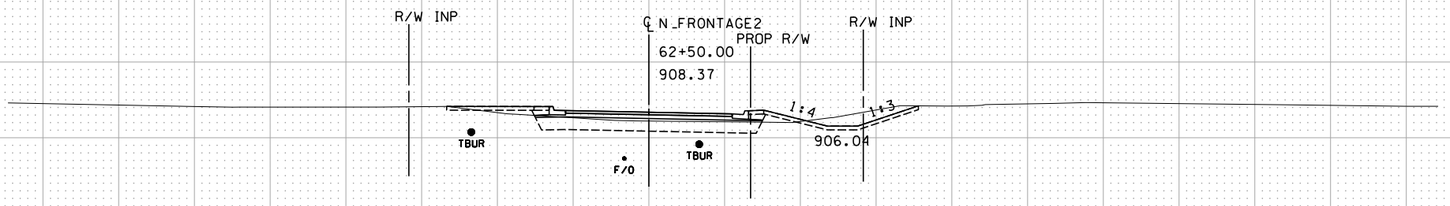
END CONSTRUCTION N FRONTAGE 2 STA 63+47



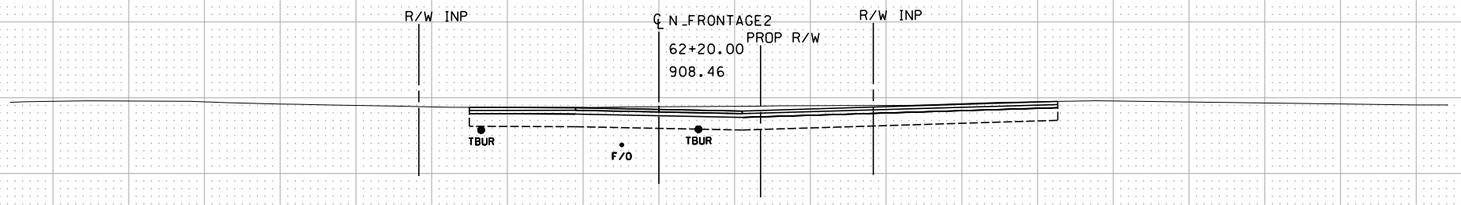
63+44.00



63+00.00



62+50.00



62+20.00

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S.A.P. 244-020-002

(CSAH 23) SHEET NO. XS12 OF XS39 SHEETS

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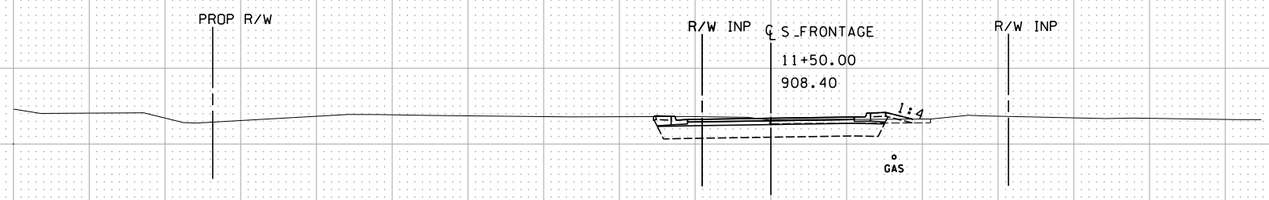
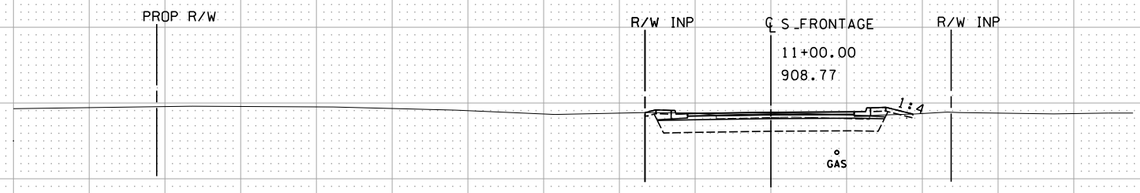
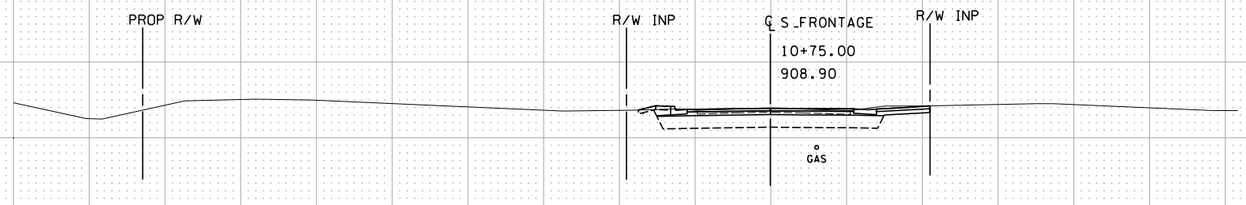


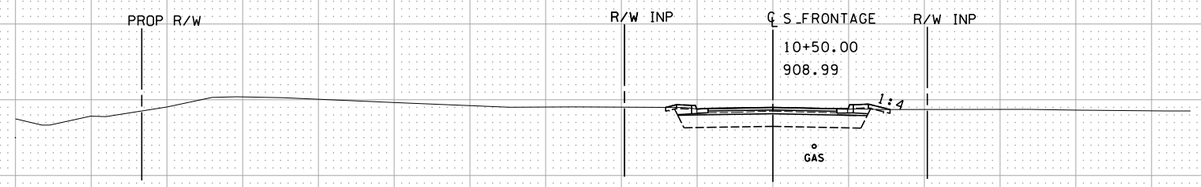
11+50.00



11+00.00



10+75.00



10+50.00

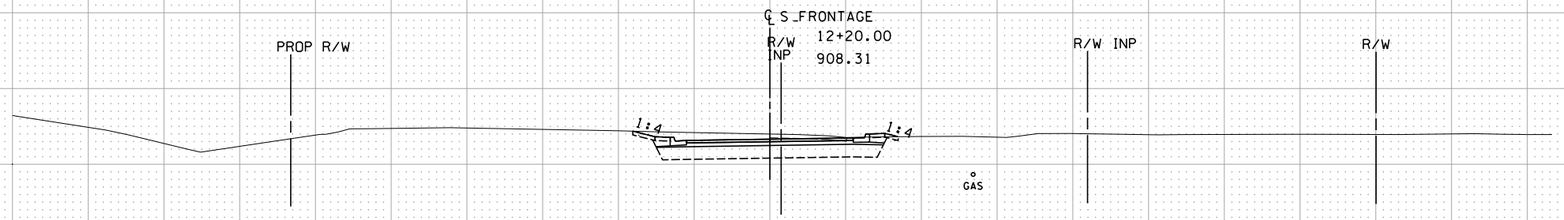
BEGIN CONSTRUCTION S FRONTAGE STA 10+47

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

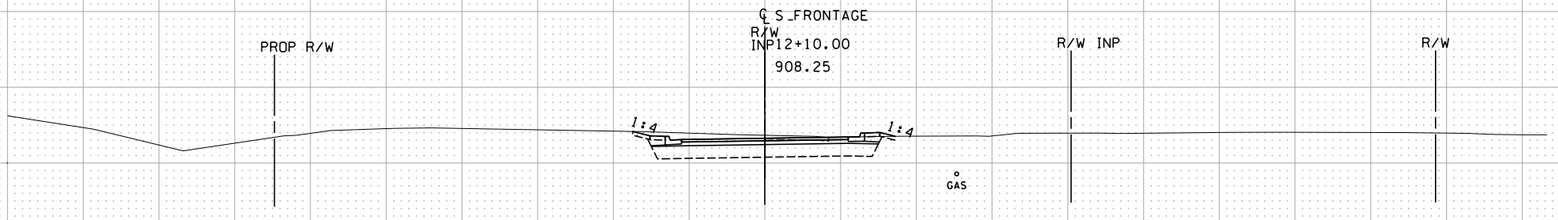
SEH

S.A.P. 002-623-017
S.A.P. 244-020-002

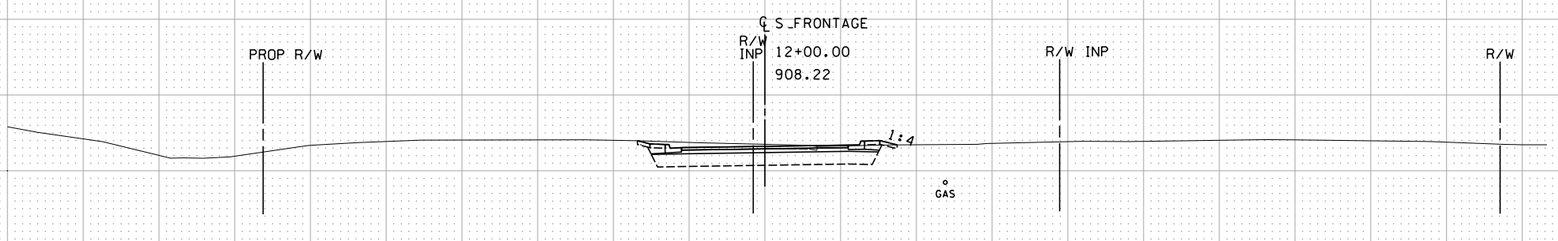
(CSAH 23) SHEET NO. XS13 OF XS39 SHEETS



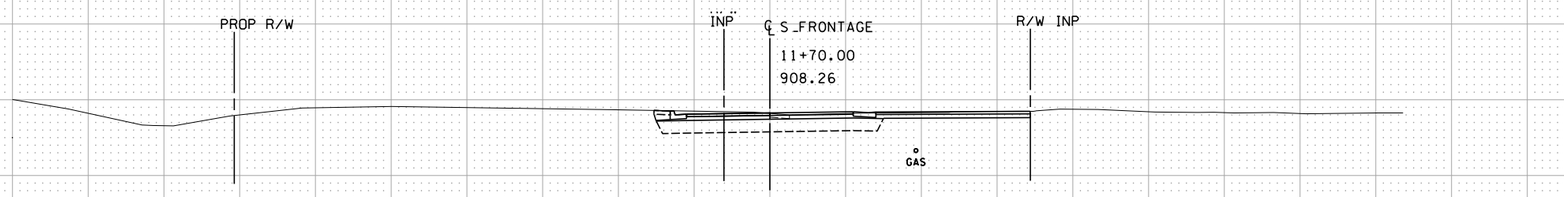
12+20.00



12+10.00



12+00.00



11+70.00

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

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S.A.P. 244-020-002

(CSAH 23) SHEET NO. XS14 OF XS39 SHEETS

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2/13/2018
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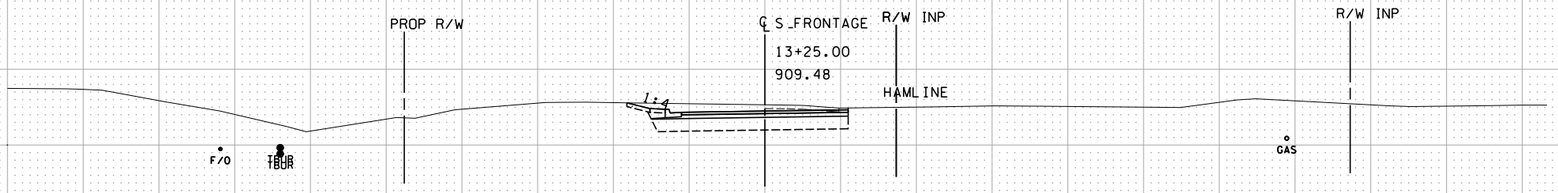
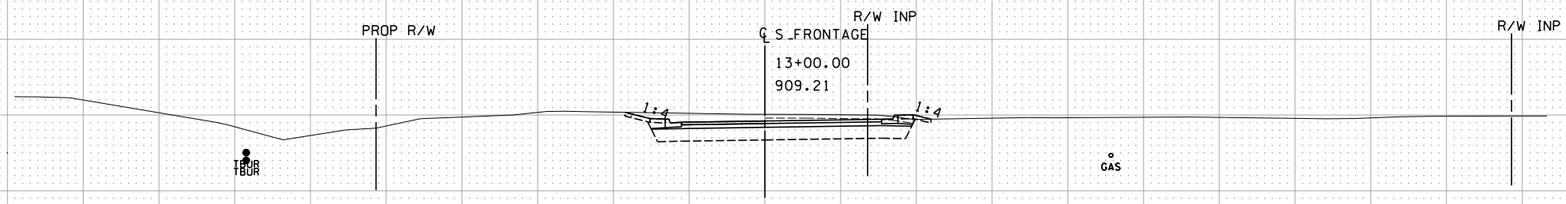
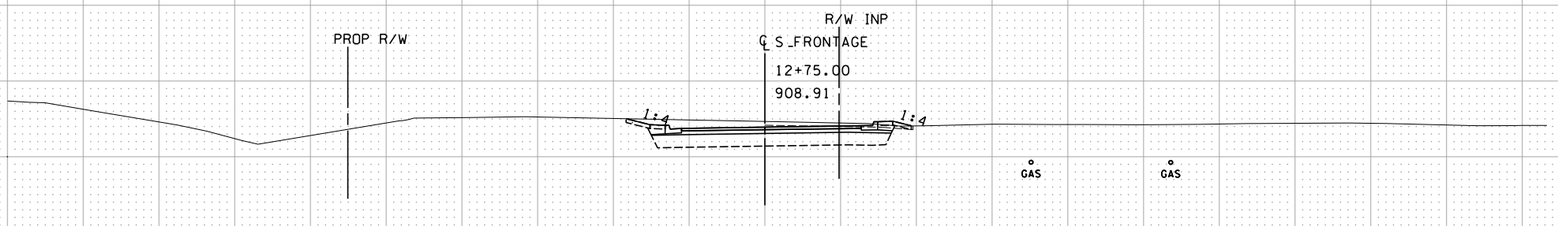


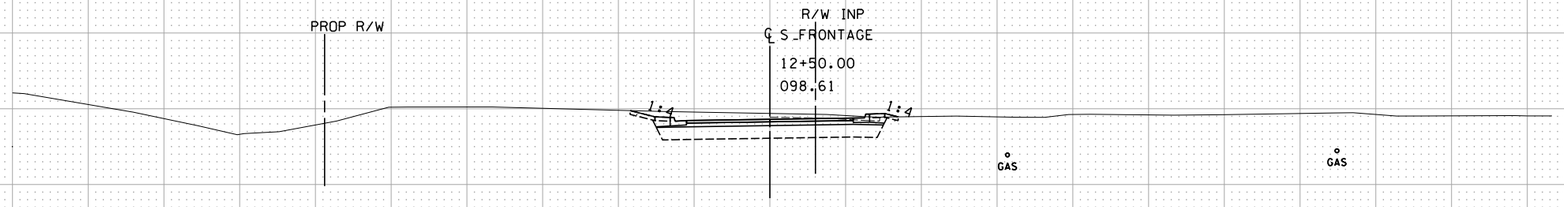
13+25.00



13+00.00



12+75.00



12+50.00

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S.A.P. 002-623-017
S.A.P. 244-020-002

(CSAH 23) SHEET NO. XS15 OF XS39 SHEETS

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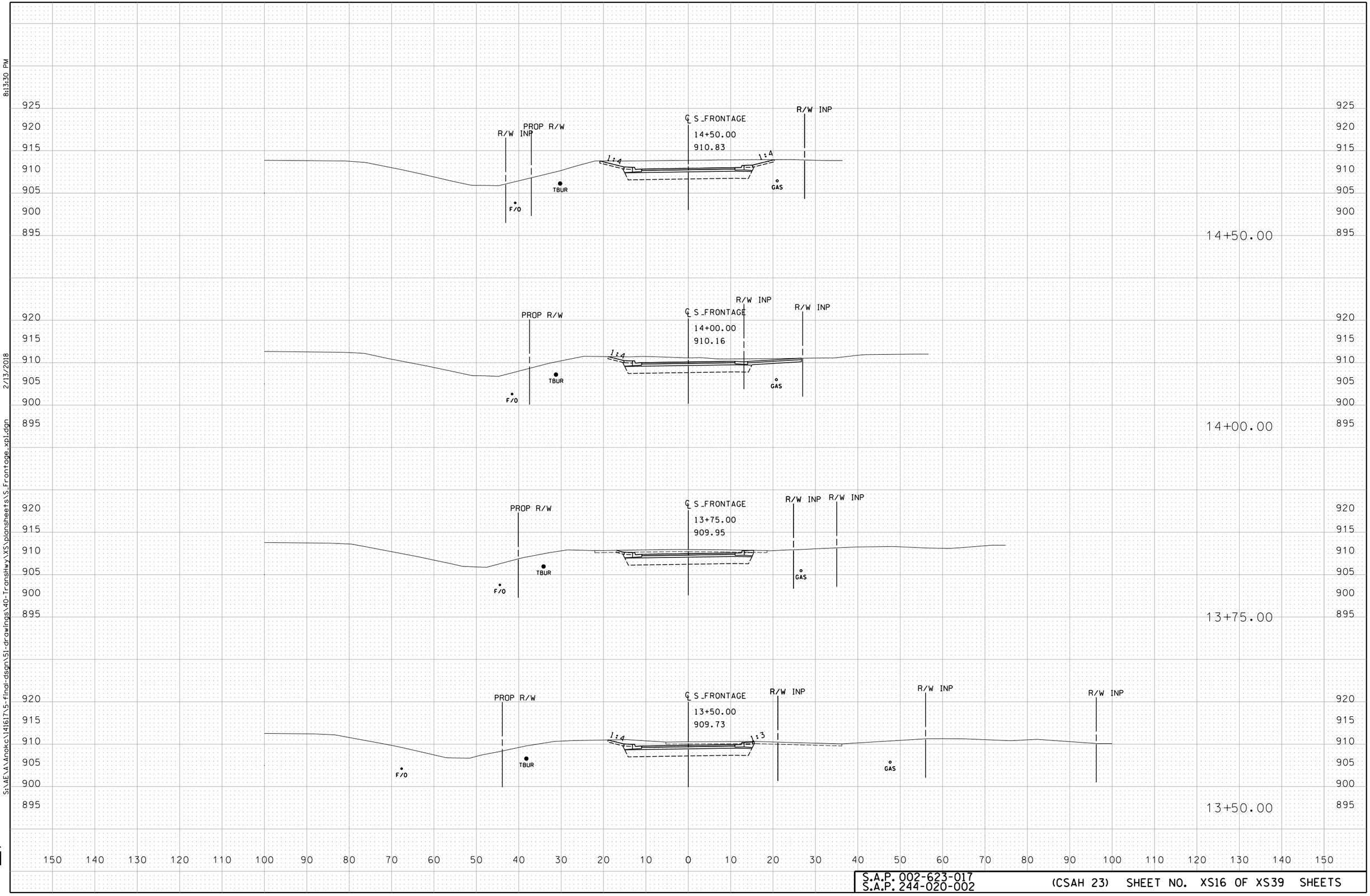

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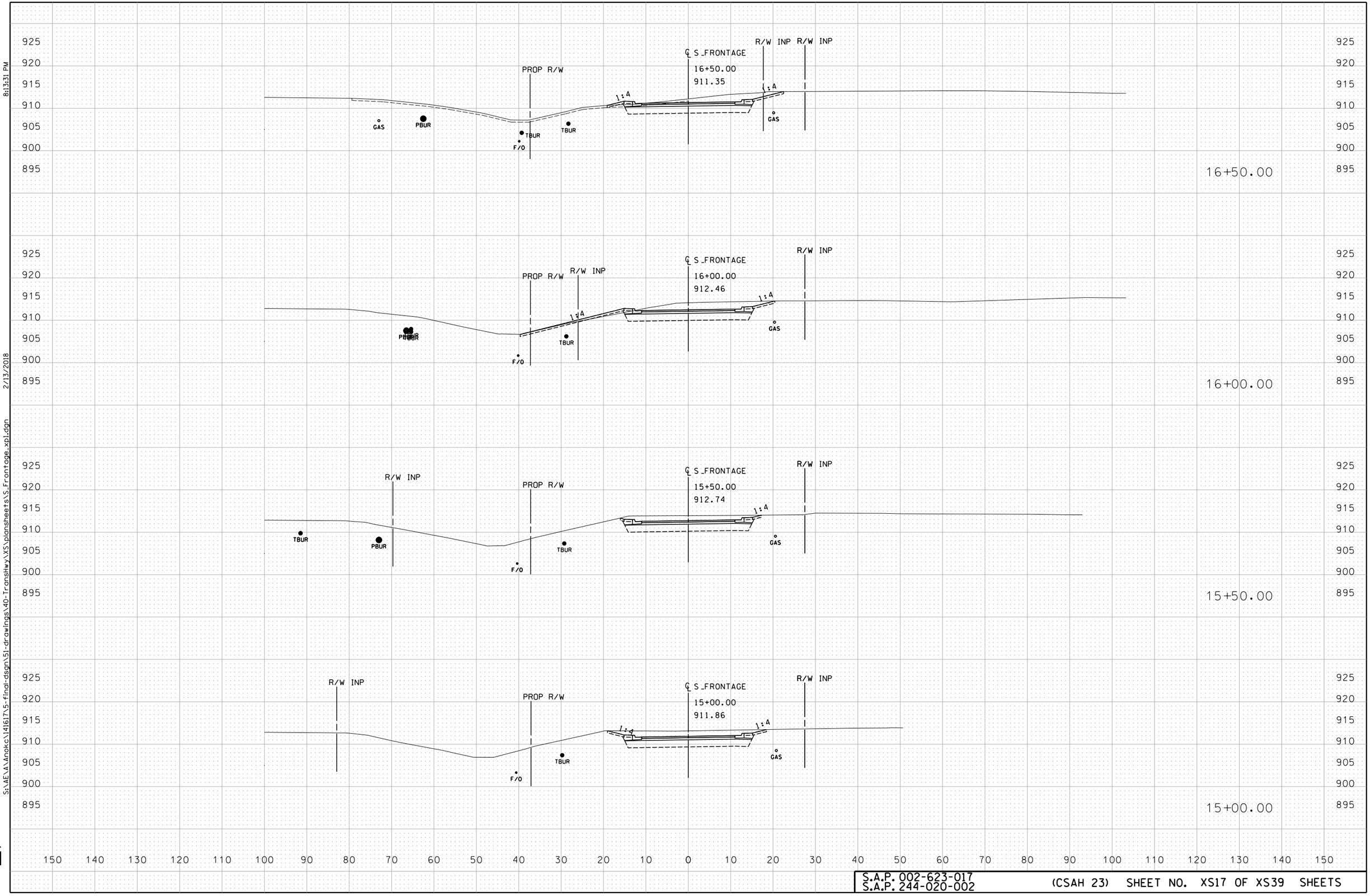
S.A.P. 244-020-002

(CSAH 23) SHEET NO. XS16 OF XS39 SHEETS



SEH

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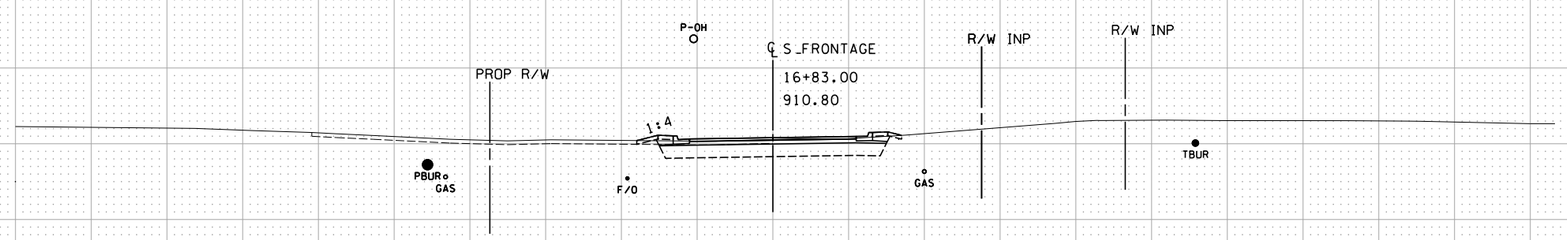
END CONSTRUCTION S FRONTAGE STA 17+18



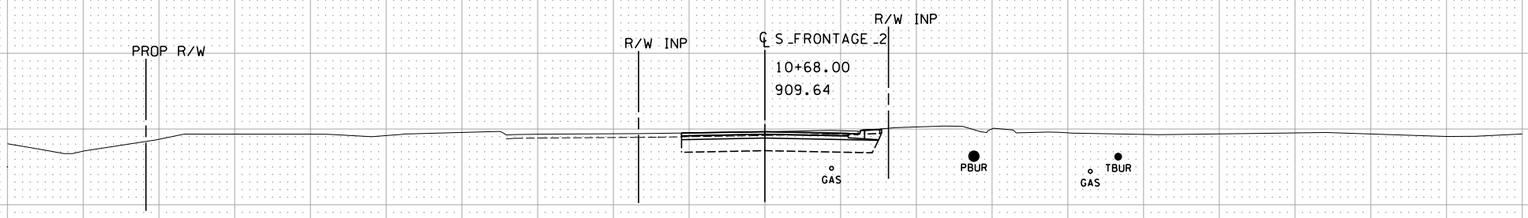
150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

SEH

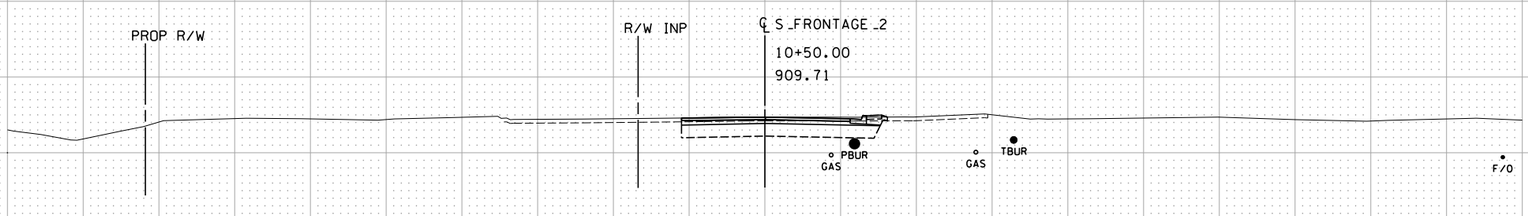
S.A.P. 002-623-017
S.A.P. 244-020-002

(CSAH 23) SHEET NO. XS18 OF XS39 SHEETS

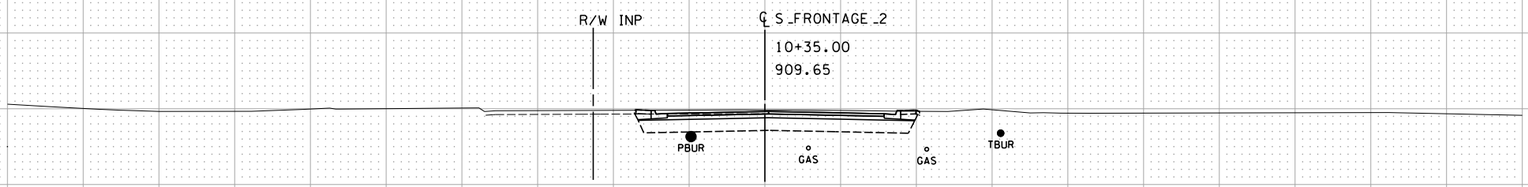
END CONSTRUCTION S FRONTAGE 2 STA 10+69



10+68.00



10+50.00



10+35.00

BEGIN CONSTRUCTION S FRONTAGE 2 STA 10+00

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

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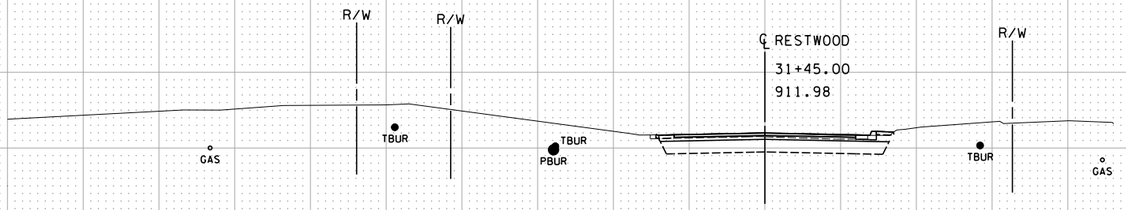
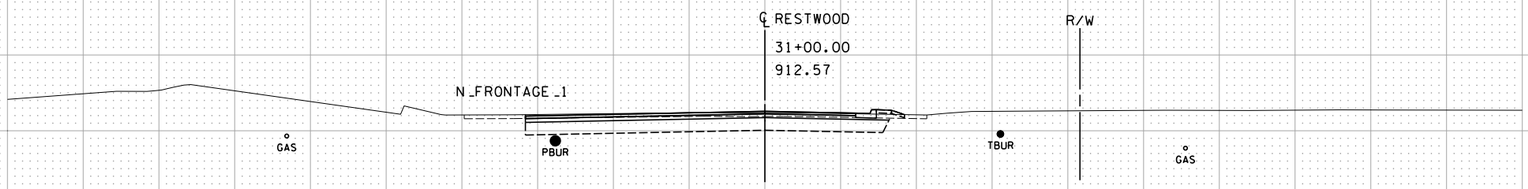
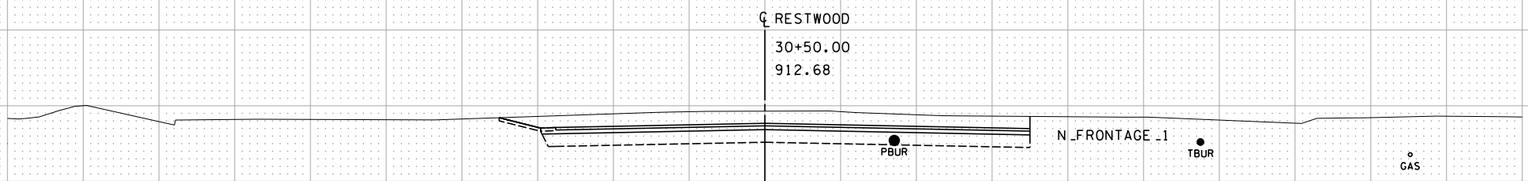
END CONSTRUCTION RESTWOOD STA 31+46



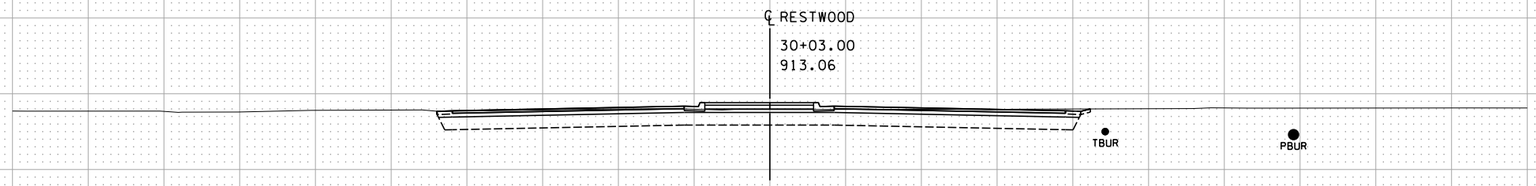
31+45.00



31+00.00



30+50.00



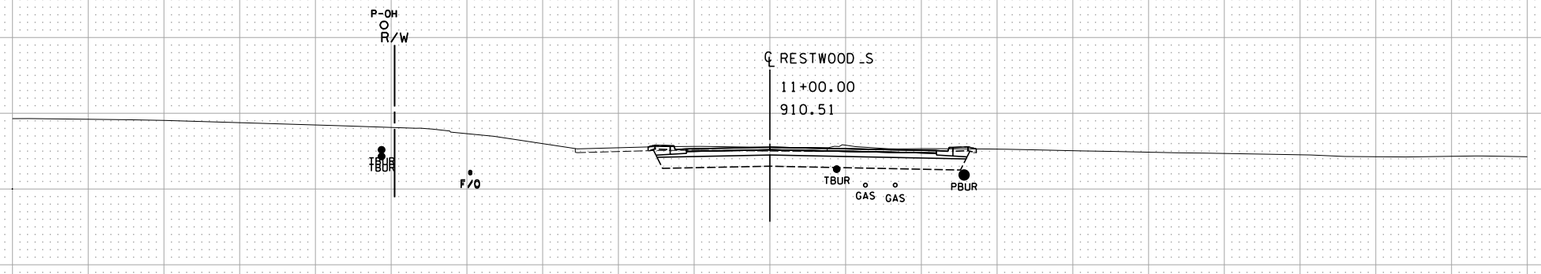
30+03.00

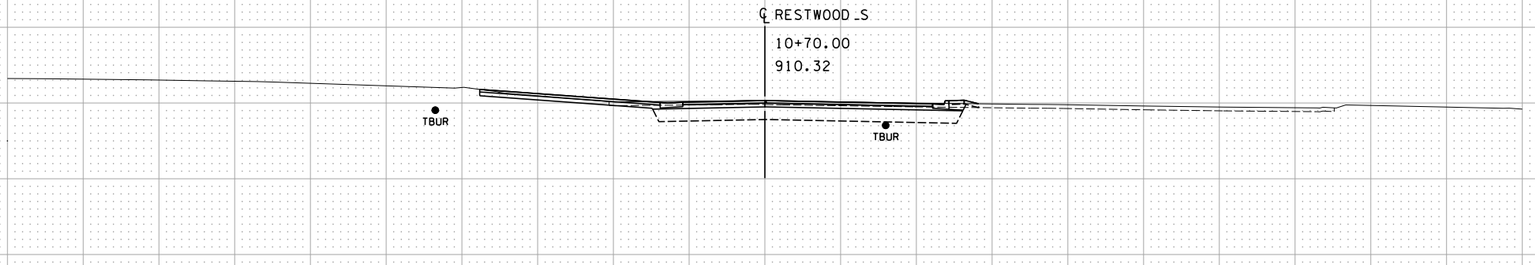
BEGIN CONSTRUCTION RESTWOOD STA 30+00

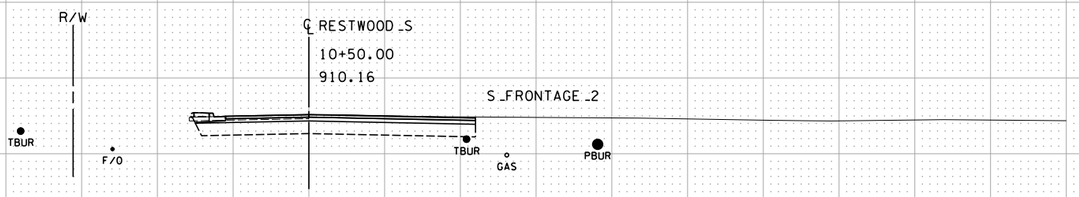
150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

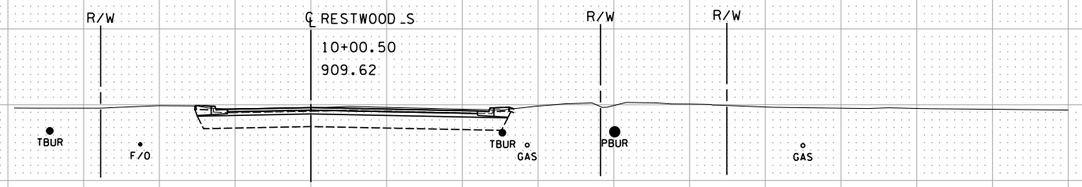
S.A.P. 002-623-017
S.A.P. 244-020-002

(CSAH 23) SHEET NO. XS20 OF XS39 SHEETS









BEGIN CONSTRUCTION RESTWOOD S STA 10+00

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

SEH

S.A.P. 002-623-017
S.A.P. 244-020-002

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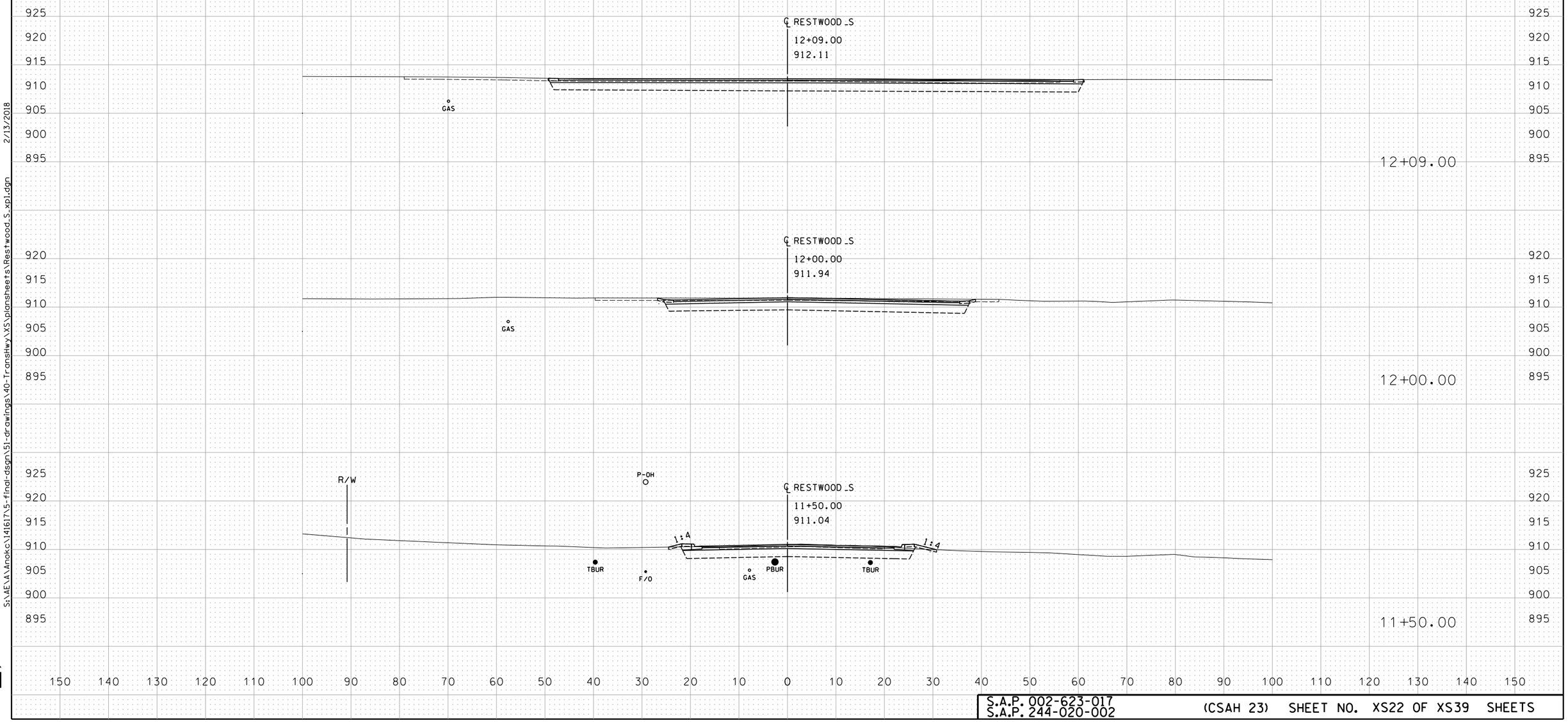
END CONSTRUCTION RESTWOOD S STA 12+09



SEH

S.A.P. 002-623-017
S.A.P. 244-020-002

(CSAH 23) SHEET NO. XS22 OF XS39 SHEETS

8:13:53 PM

2/13/2018

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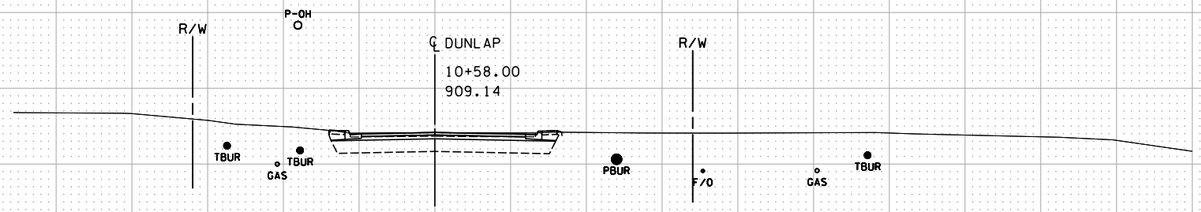
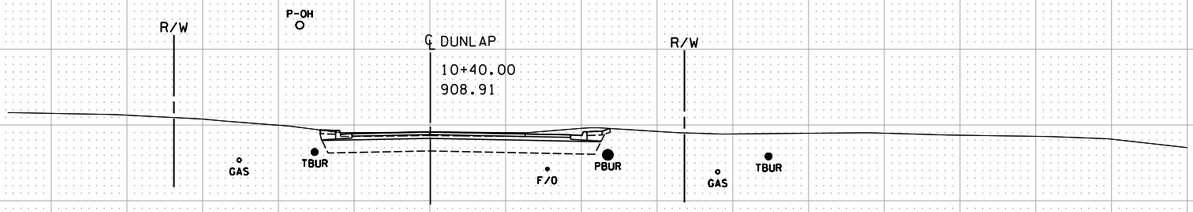
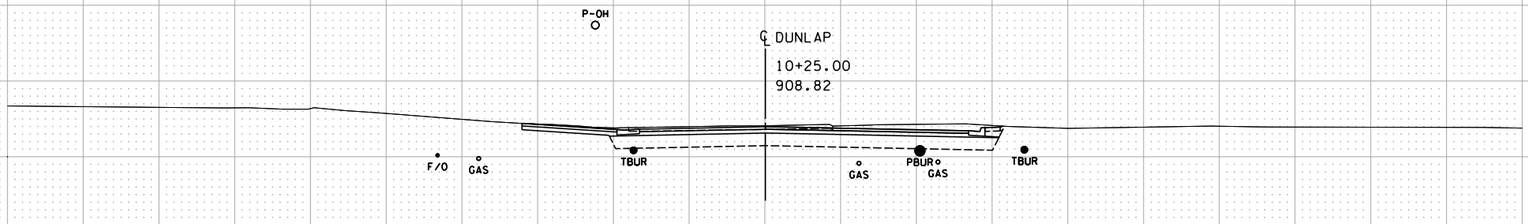
END CONSTRUCTION DUNLAP STA 10+65



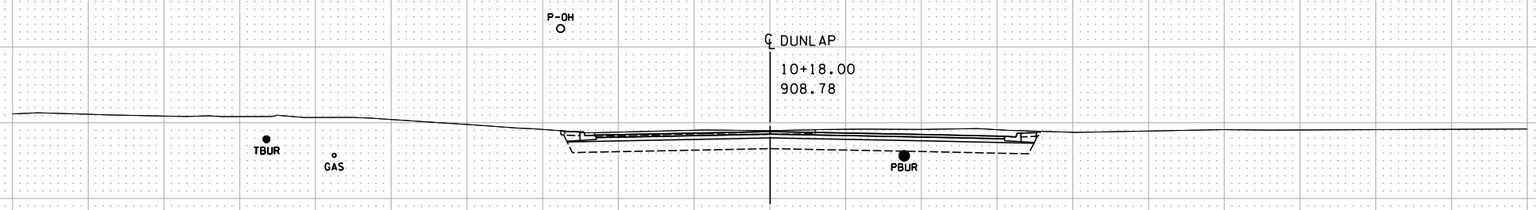
10+58.00



10+40.00



10+25.00



10+18.00

BEGIN CONSTRUCTION DUNLAP STA 10+00

SEH

S.A.P. 002-623-017
S.A.P. 244-020-002

(CSAH 23) SHEET NO. XS23 OF XS39 SHEETS

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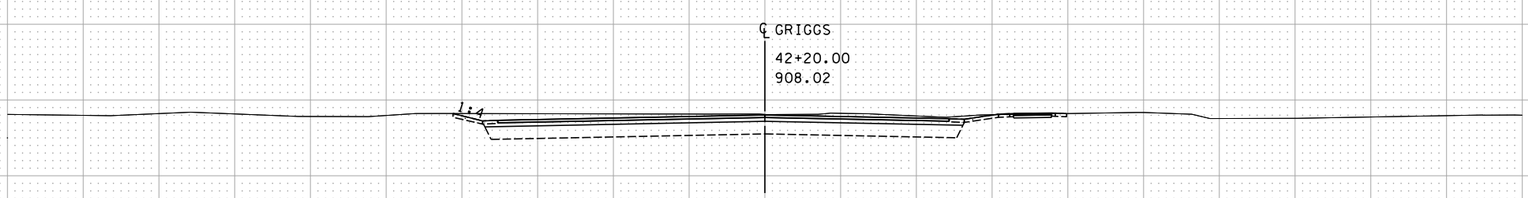
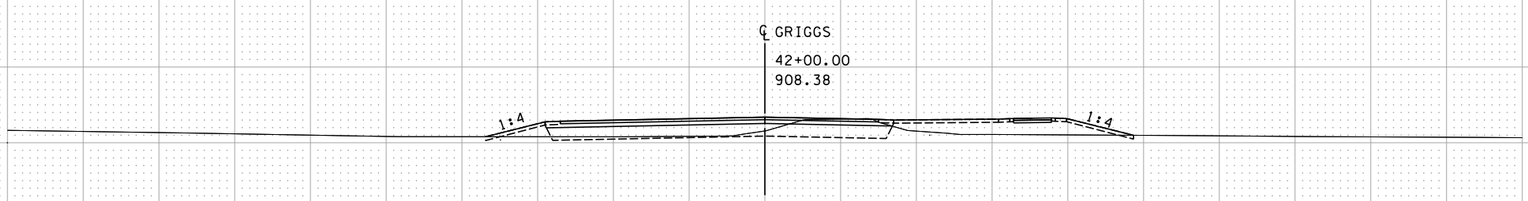
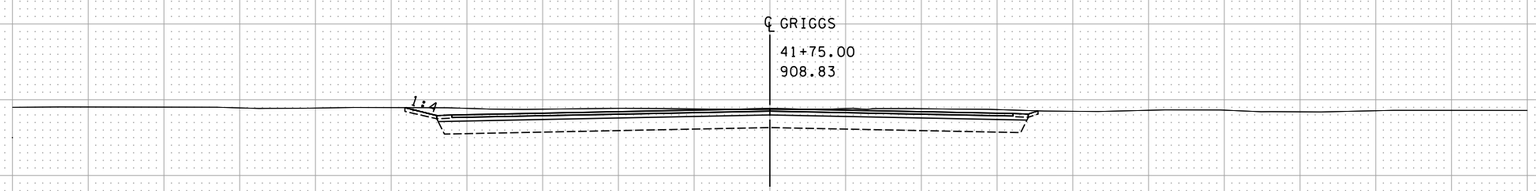
END CONSTRUCTION GRIGGS STA 42+25







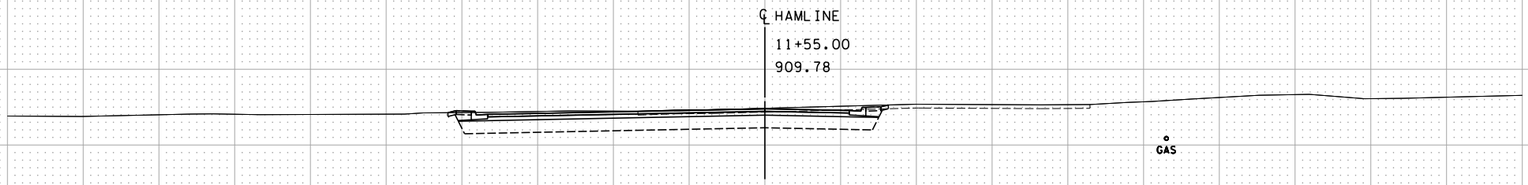
BEGIN CONSTRUCTION GRIGGS STA 41+72

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

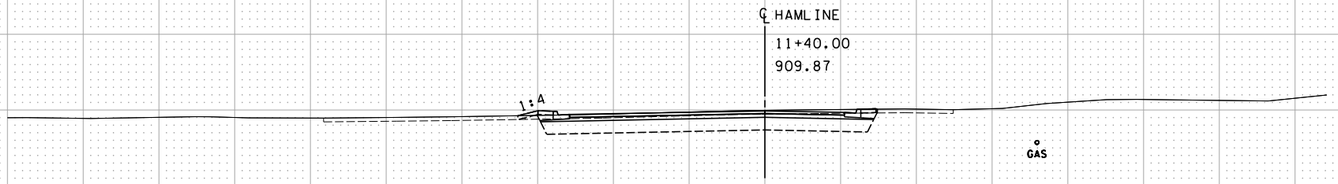
SEH

S.A.P. 002-623-017
S.A.P. 244-020-002

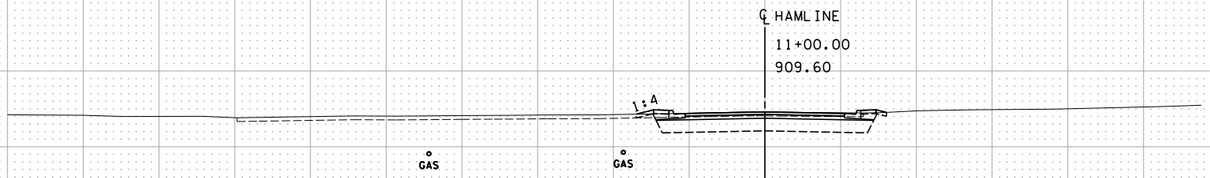
END CONSTRUCTION HAMLINE STA 11+77



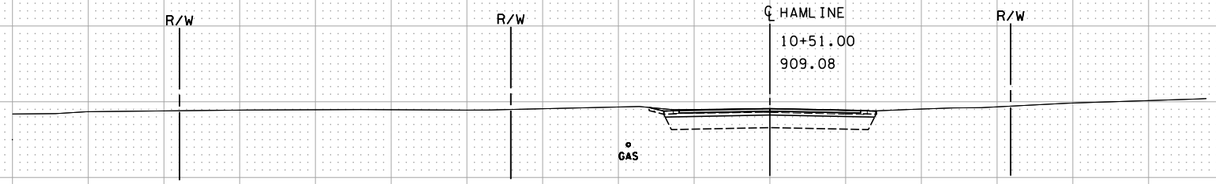
11+55.00



11+40.00



11+00.00



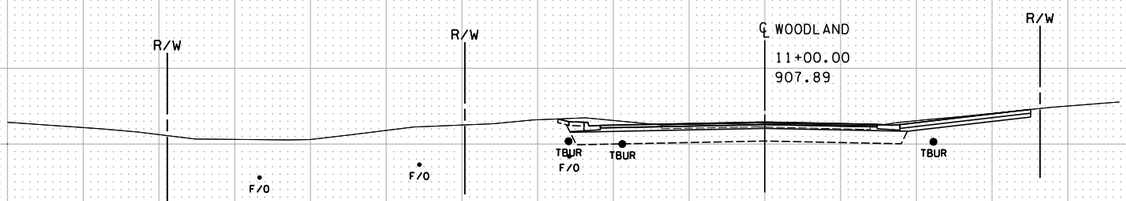
10+51.00

BEGIN CONSTRUCTION HAMLINE STA 10+50

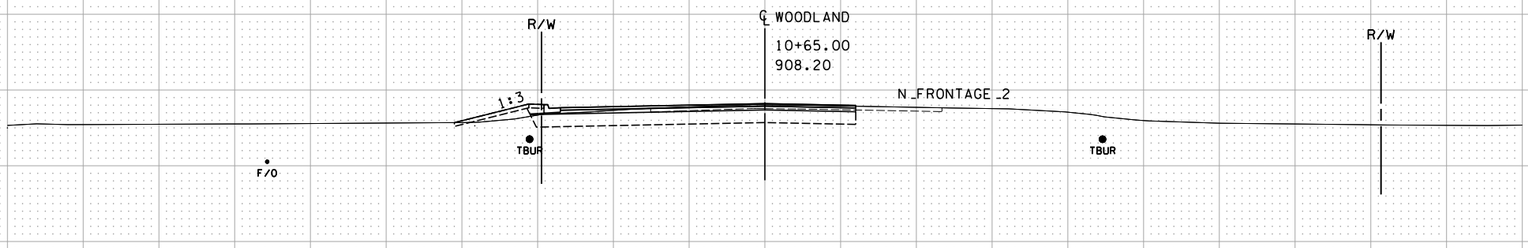
150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

SEH

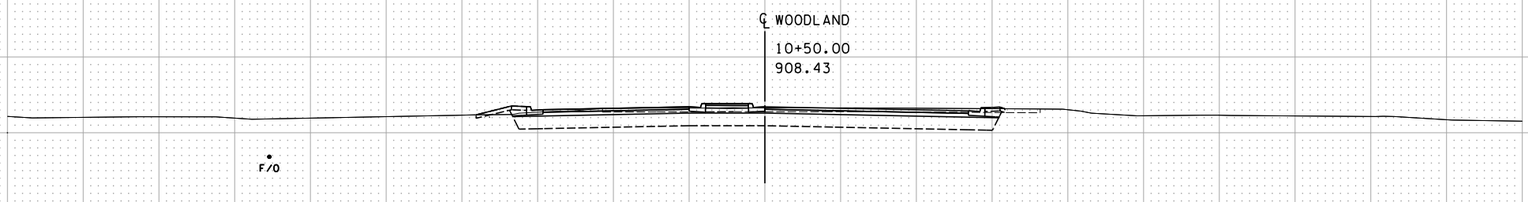
S.A.P. 002-623-017
S.A.P. 244-020-002



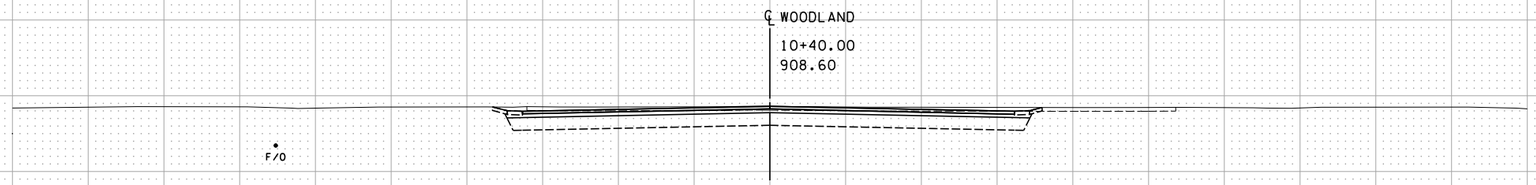
11+00.00



10+65.00



10+50.00



10+40.00

BEGIN CONSTRUCTION WOODLAND STA 10+38

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

SEH

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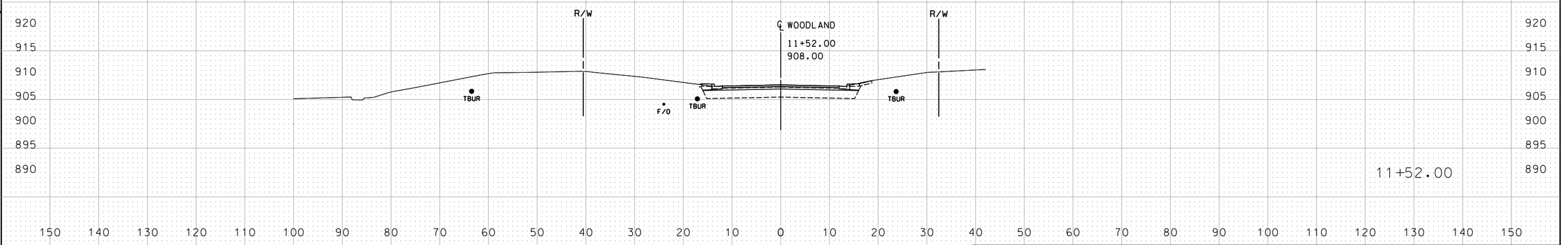
END CONSTRUCTION WOODLAND STA 11+53



S.A.P. 002-623-017
S.A.P. 244-020-002

(CSAH 23) SHEET NO. XS27 OF XS39 SHEETS

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2/13/2018

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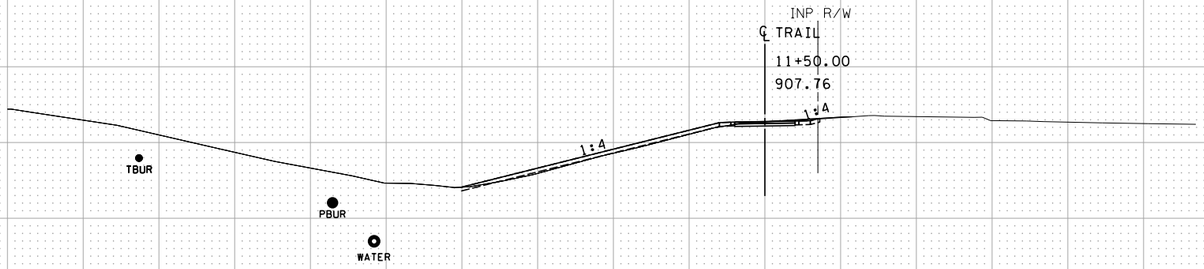
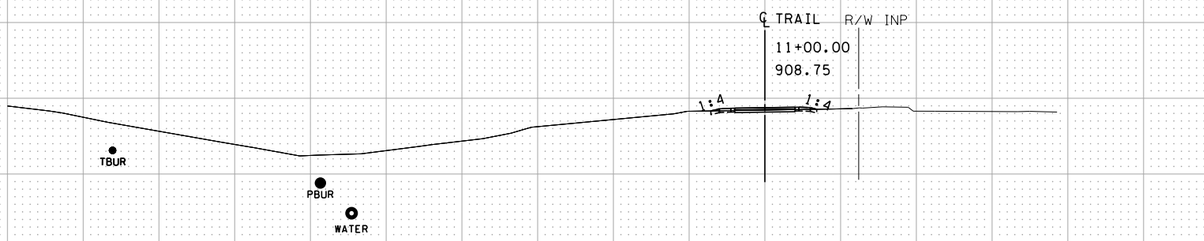
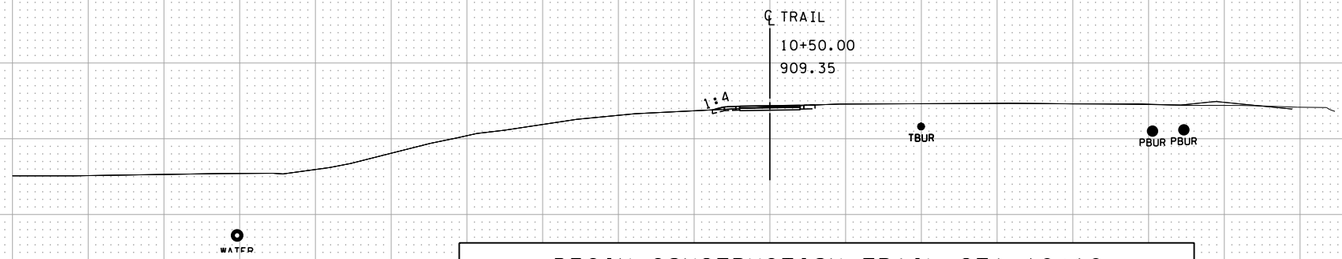


11+50.00



11+00.00

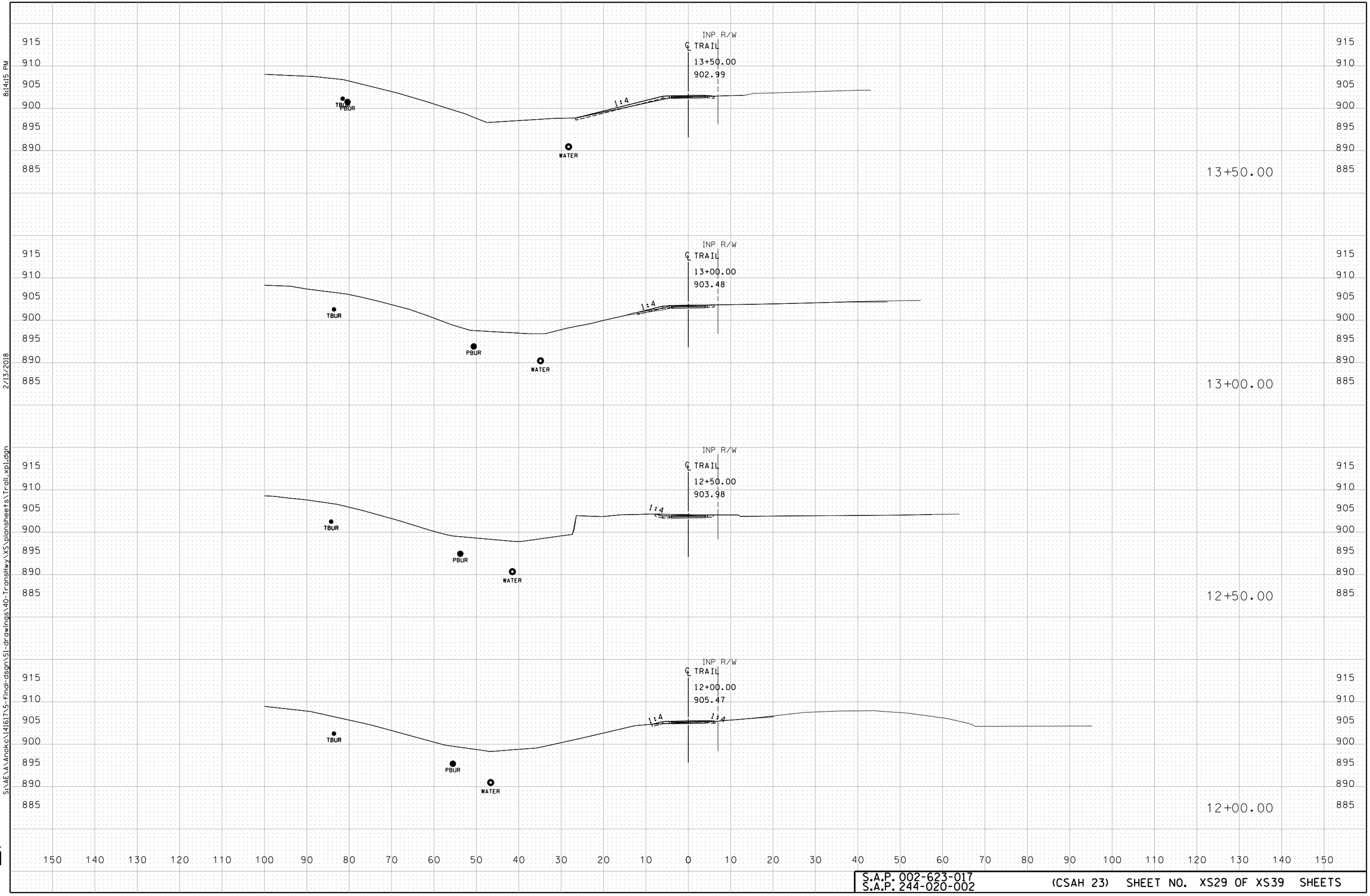


10+50.00

BEGIN CONSTRUCTION TRAIL STA 10+10

S.A.P. 002-623-017
S.A.P. 244-020-002

(CSAH 23) SHEET NO. XS28 OF XS39 SHEETS



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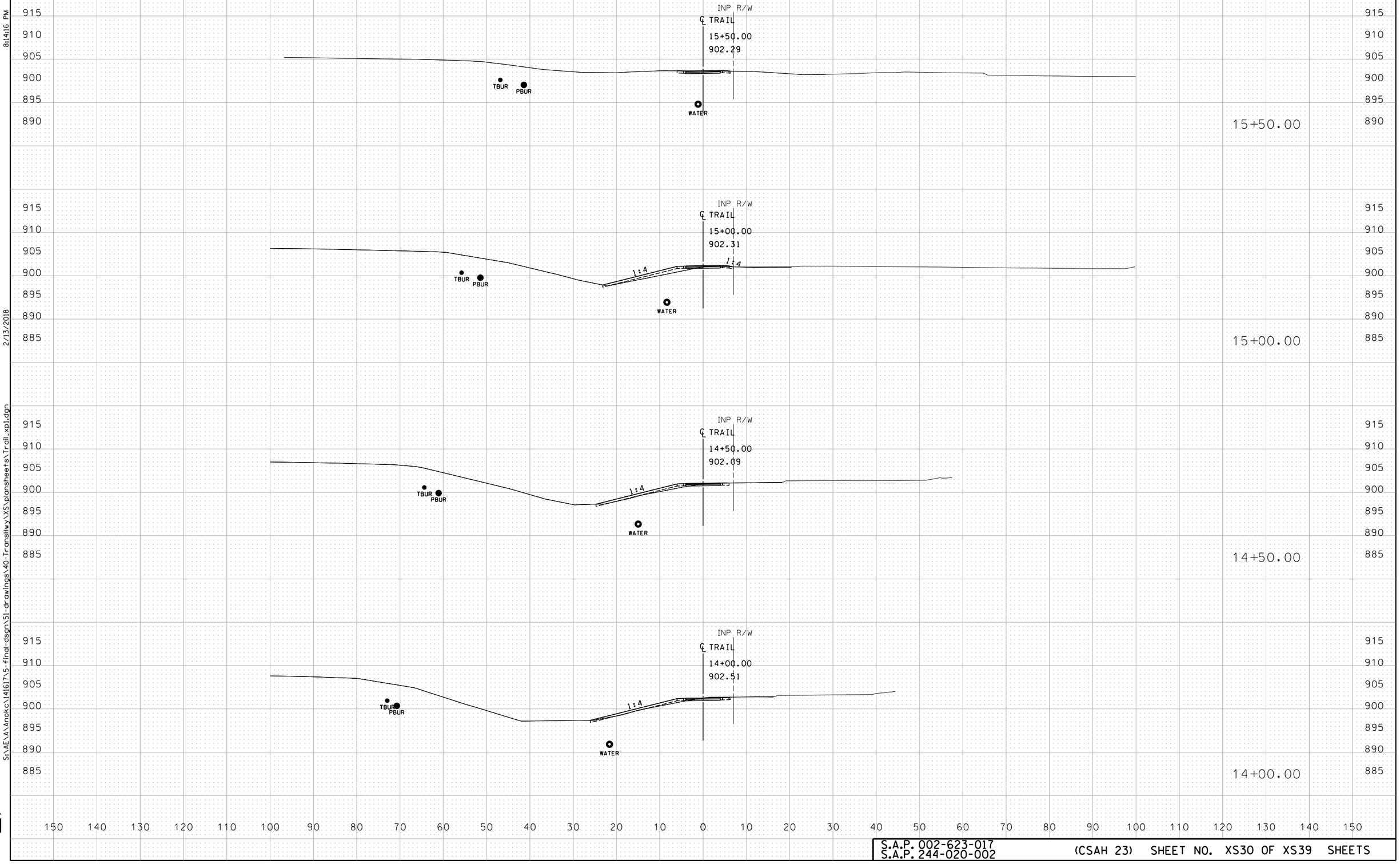
S.A.P. 244-020-002

(CSAH 23) SHEET NO. XS29 OF XS39 SHEETS



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(CSAH 23) SHEET NO. XS30 OF XS39 SHEETS

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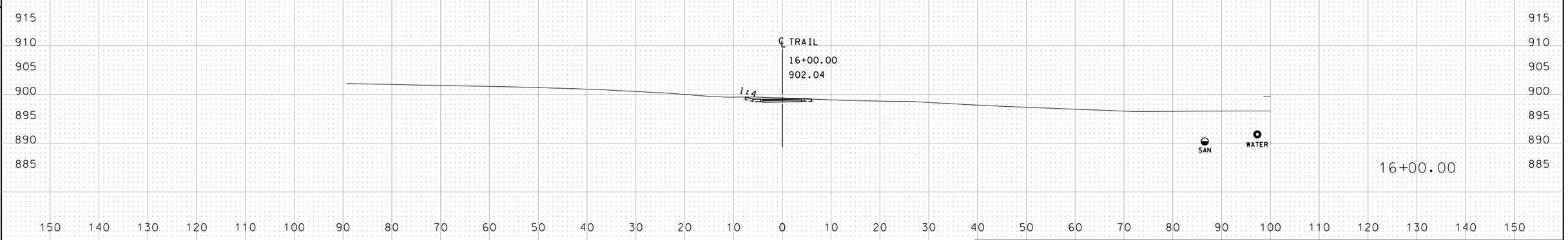
END CONSTRUCTION TRAIL STA 16+41



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S.A.P. 002-623-017
S.A.P. 244-020-002

(CSAH 23) SHEET NO. XS31 OF XS39 SHEETS

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2/13/2018

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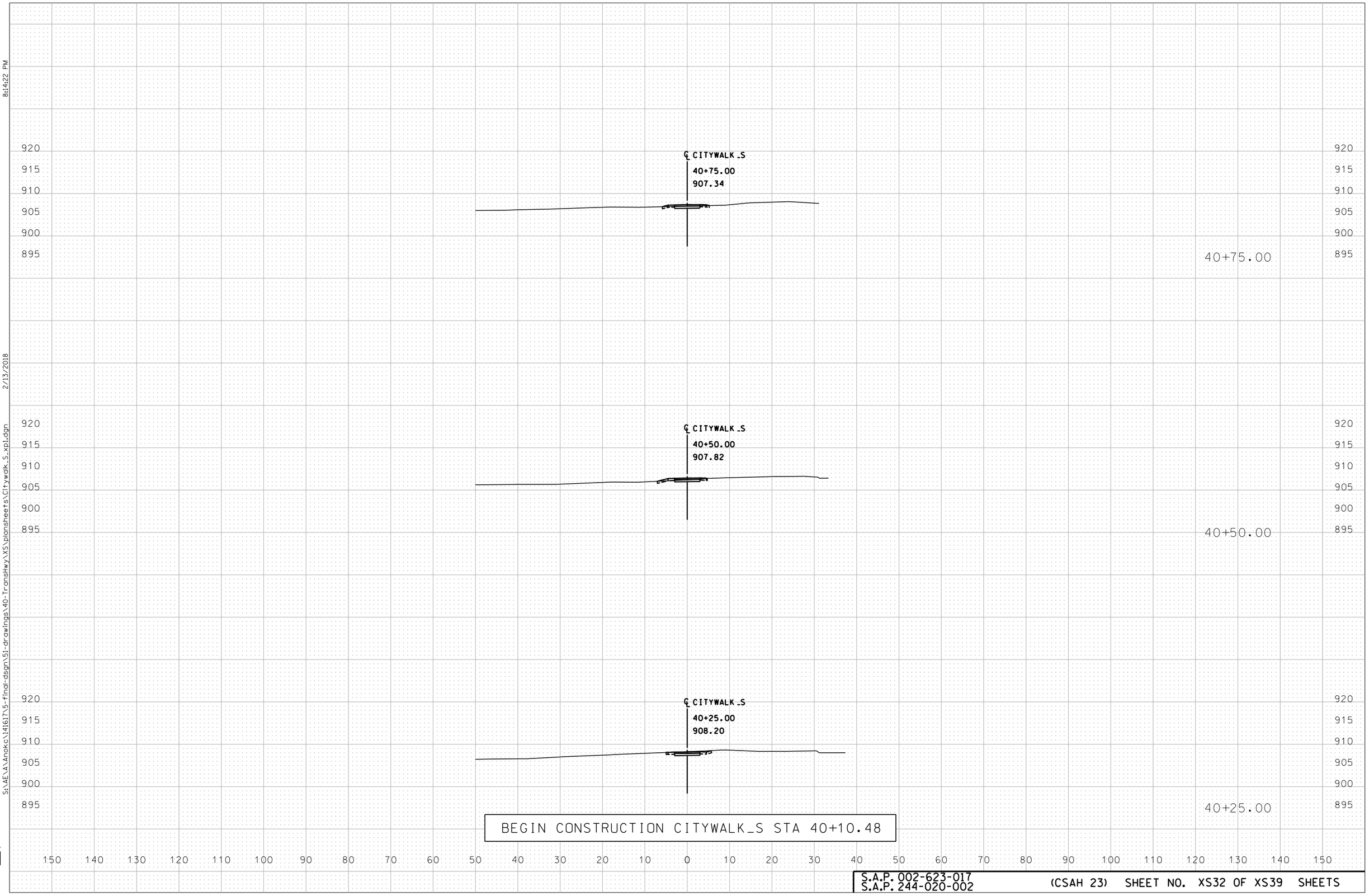

BEGIN CONSTRUCTION CITYWALK_S STA 40+10.48

SEH

S.A.P. 002-623-017
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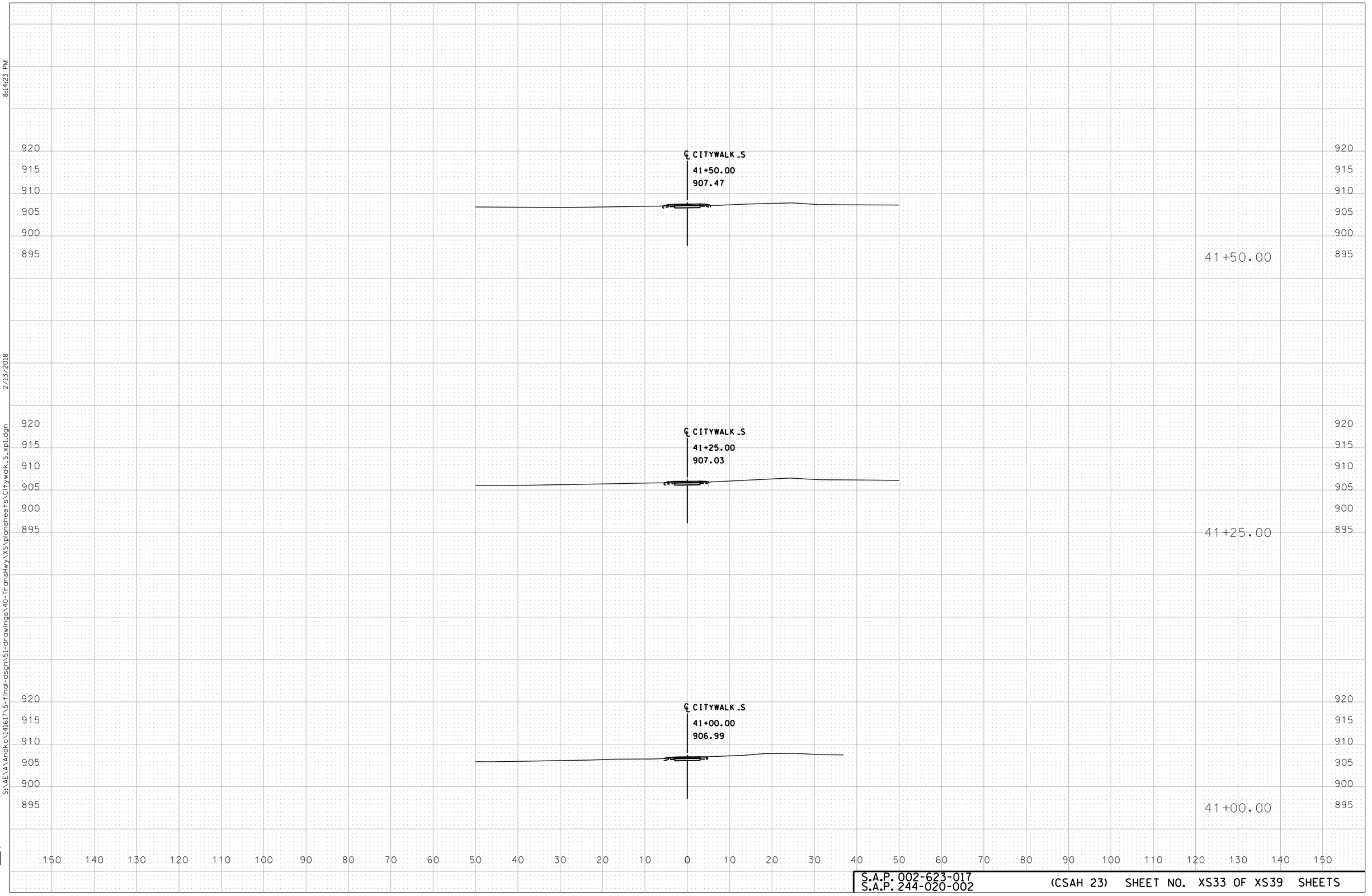
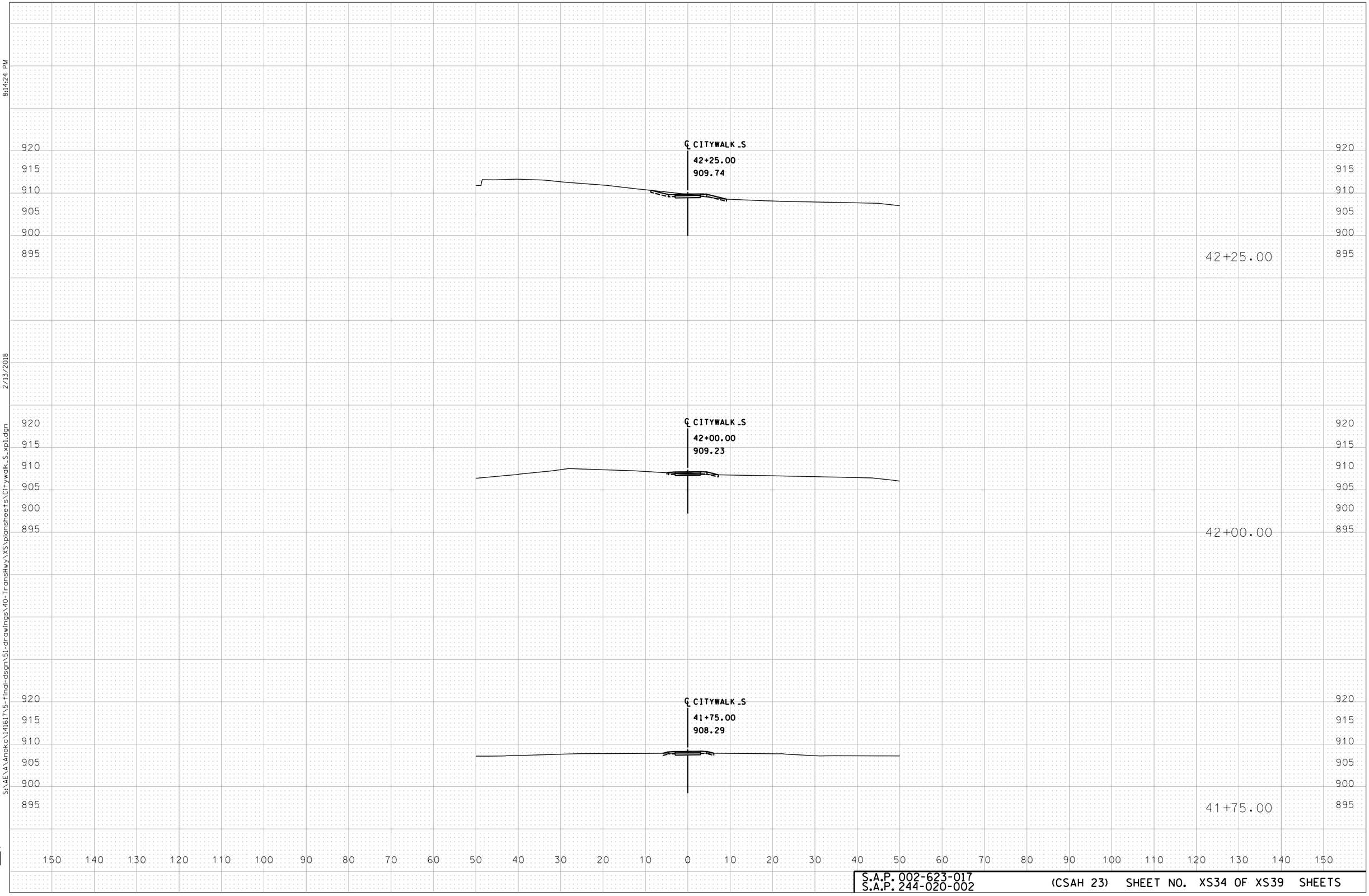
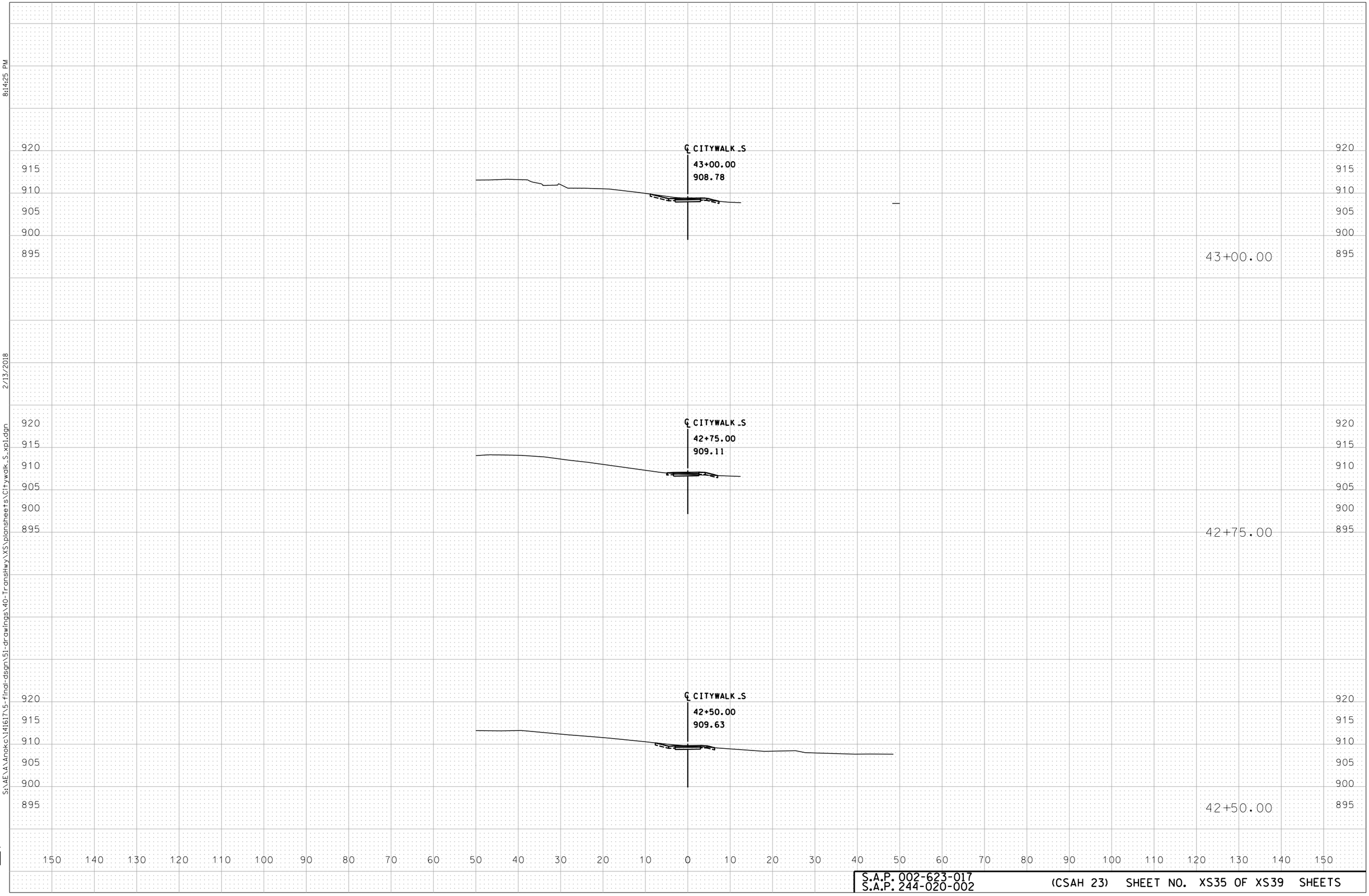


SEH

S.A.P. 002-623-017
S.A.P. 244-020-002

(CSAH 23) SHEET NO. XS33 OF XS39 SHEETS





SEH

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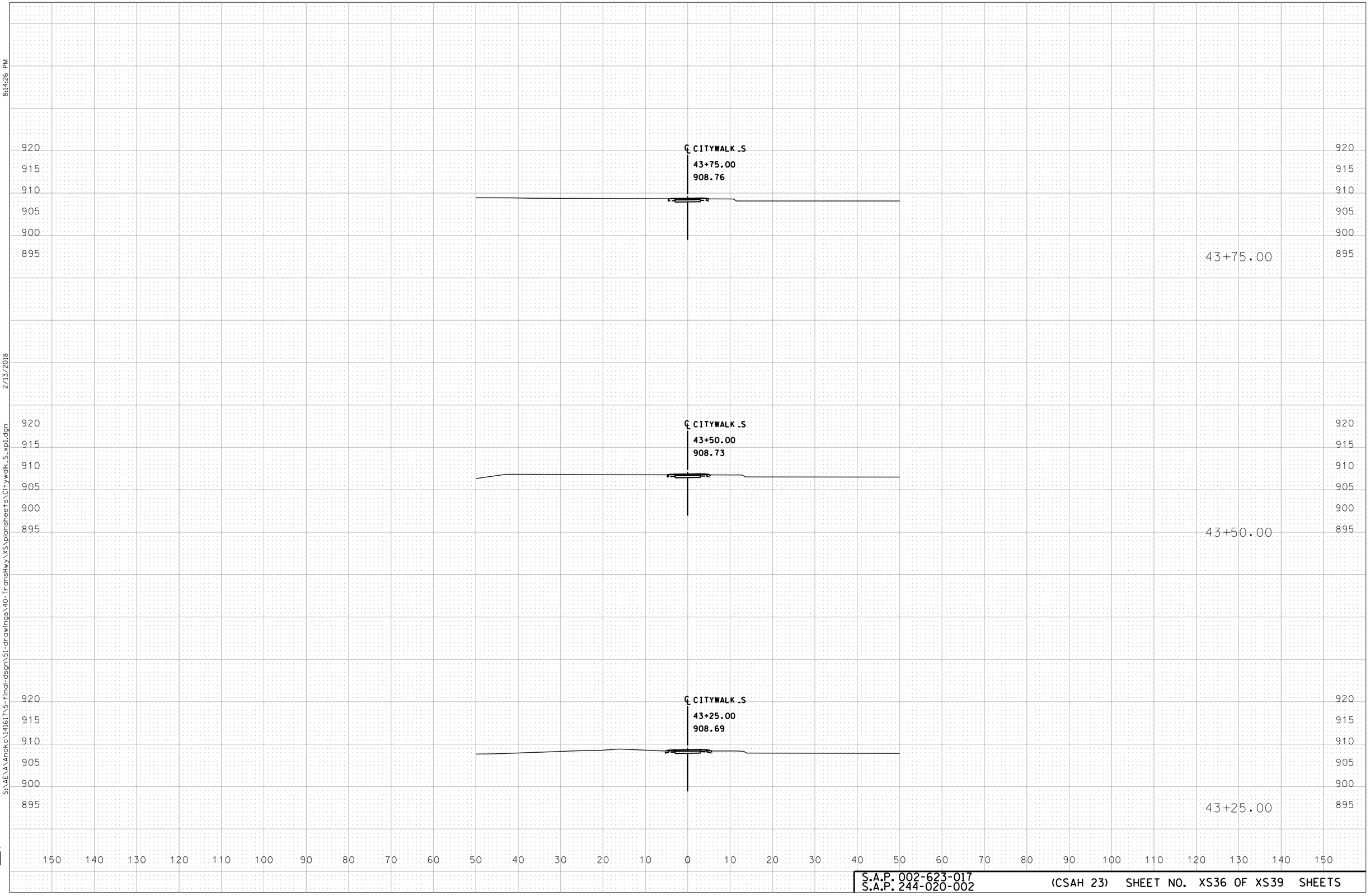

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S.A.P. 244-020-002

(CSAH 23) SHEET NO. XS36 OF XS39 SHEETS

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END CONSTRUCTION CITYWALK_S STA 44+30.11

920
915
910
905
900
895

44+00.00

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

SEH

S.A.P. 002-623-017
S.A.P. 244-020-002

(CSAH 23) SHEET NO. XS37 OF XS39 SHEETS

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920
915
910
905
900
895

℄ CITYWALK_N
31+00.00
908.85

31+00.00

920
915
910
905
900
895

℄ CITYWALK_N
30+75.00
909.18

TBUR

30+75.00

920
915
910
905
900
895

℄ CITYWALK_N
30+50.00
909.37

TBUR

30+50.00

920
915
910
905
900
895

℄ CITYWALK_N
30+25.00
909.21

TBUR

30+25.00

BEGIN CONSTRUCTION CITYWALK_N STA 30+10.63

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

SEH

S.A.P. 002-623-017
S.A.P. 244-020-002

(CSAH 23) SHEET NO. XS38 OF XS39 SHEETS

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END CONSTRUCTION CITYWALK_N STA 31+79.56

SEH

S.A.P. 002-623-017
S.A.P. 244-020-002

(CSAH 23) SHEET NO. XS39 OF XS39 SHEETS