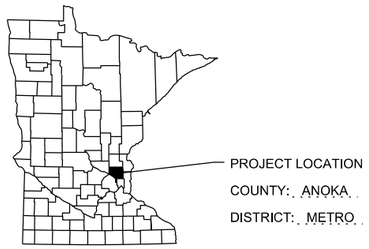
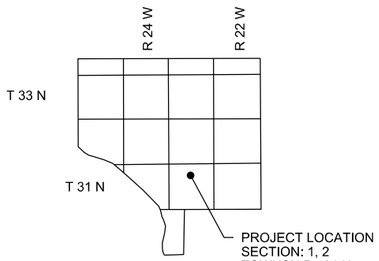
MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF BLAINE, ANOKA COUNTY, MINNESOTA

CONSTRUCTION PLAN FOR GRADING, BITUMINOUS PAVING, CONCRETE CURB & GUTTER, ADA IMPROVEMENTS, AND SIGNAL SYSTEM

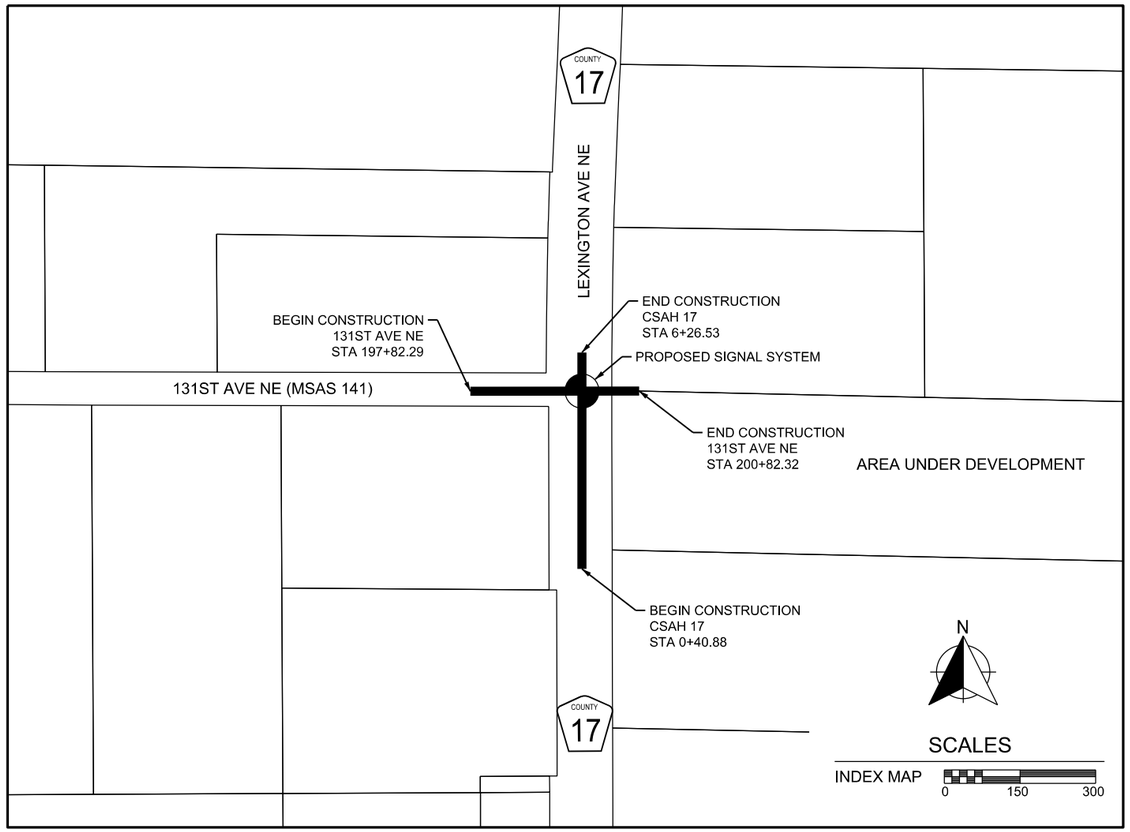
LOCATED ON CSAH 17 (LEXINGTON AVE NE) AT 131ST AVE NE (MSAS 141)



PROJECT LOCATION
COUNTY: ANOKA
DISTRICT: METRO



PROJECT LOCATION
SECTION: 1, 2
TOWNSHIP: 31 N
RANGE: 23 W



PLAN REVISIONS		
DATE	SHEET NO.	APPROVED BY

EXCAVATION NOTICE SYSTEM

A CALL TO GOPHER STATE ONE CALL (651-454-0002) IS REQUIRED A MINIMUM OF 48 HOURS PRIOR TO PERFORMING ANY EXCAVATION.

UTILITY INFORMATION

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."

GOPHER ONE CALL TICKET NUMBER(S):
221150968, 221150970

DESIGN DESIGNATION

	CSAH 17 (LEXINGTON AVE NE)	131ST AVE NE (MSAS 141)
GROSS LENGTH	585.65' =0.111 MILES	300.03' = 0.057 MILES
BRIDGES-LENGTH	NA	NA
EXCEPTIONS-LENGTH	NA	NA
NET LENGTH	585.65' =0.111 MILES	300.03' = 0.057 MILES
R VALUE	NA	50
CURRENT ADT (2022)	13,400	250
FUTURE ADT (2042)	25,400	300
D (DIRECTIONAL DISTR.)	50 / 50	50 / 50
HEAVY COMMERCIAL	3.83%	3.84%
ESALS	NA	30,000
DESIGN SPEED	55 MPH	30 MPH
BASED ON SIGHT DISTANCE	STOPPING	STOPPING
HEIGHT OF EYE / OBJECT	3.5' / 2.0'	3.5' / 2.0'
FUNCTIONAL CLASS	MINOR ARTERIAL	LOCAL
NO. OF TRAFFIC LANES	4	2
NO. OF PARKING LANES	0	0
SHOULDER WIDTH	8'	NA
TON DESIGN	10	10
DESIGN SPEED NOT ACHEIVED AT	NA	NA

GOVERNING SPECIFICATIONS

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

THE CITY OF BLAINE STANDARD SPECIFICATIONS SHALL GOVERN.

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

PLAN SHEET INDEX

THIS PLAN CONTAINS **53** SHEETS

ALL APPLICABLE FEDERAL, STATE, AND LOCAL LAWS AND ORDINANCES WILL BE COMPLIED WITH IN THE CONSTRUCTION OF THIS PROJECT.

wsb

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

NICHOLAS E. HENTGES, PE
PRINTED NAME

44620
LICENSE NO.

APPROVED: CITY OF BLAINE ENGINEER

APPROVED: ANOKA COUNTY ENGINEER

I HEREBY CERTIFY THAT THE FINAL FIELD REVISIONS, IF ANY, OF THE PLAN WERE MADE BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

PRINTED NAME

LICENSE NO.

WSB PROJECT
019869-000

SHEET
1
OF
53
SHEETS

PLOTTED/REVISED: 7/29/2022 12:24:01 PM

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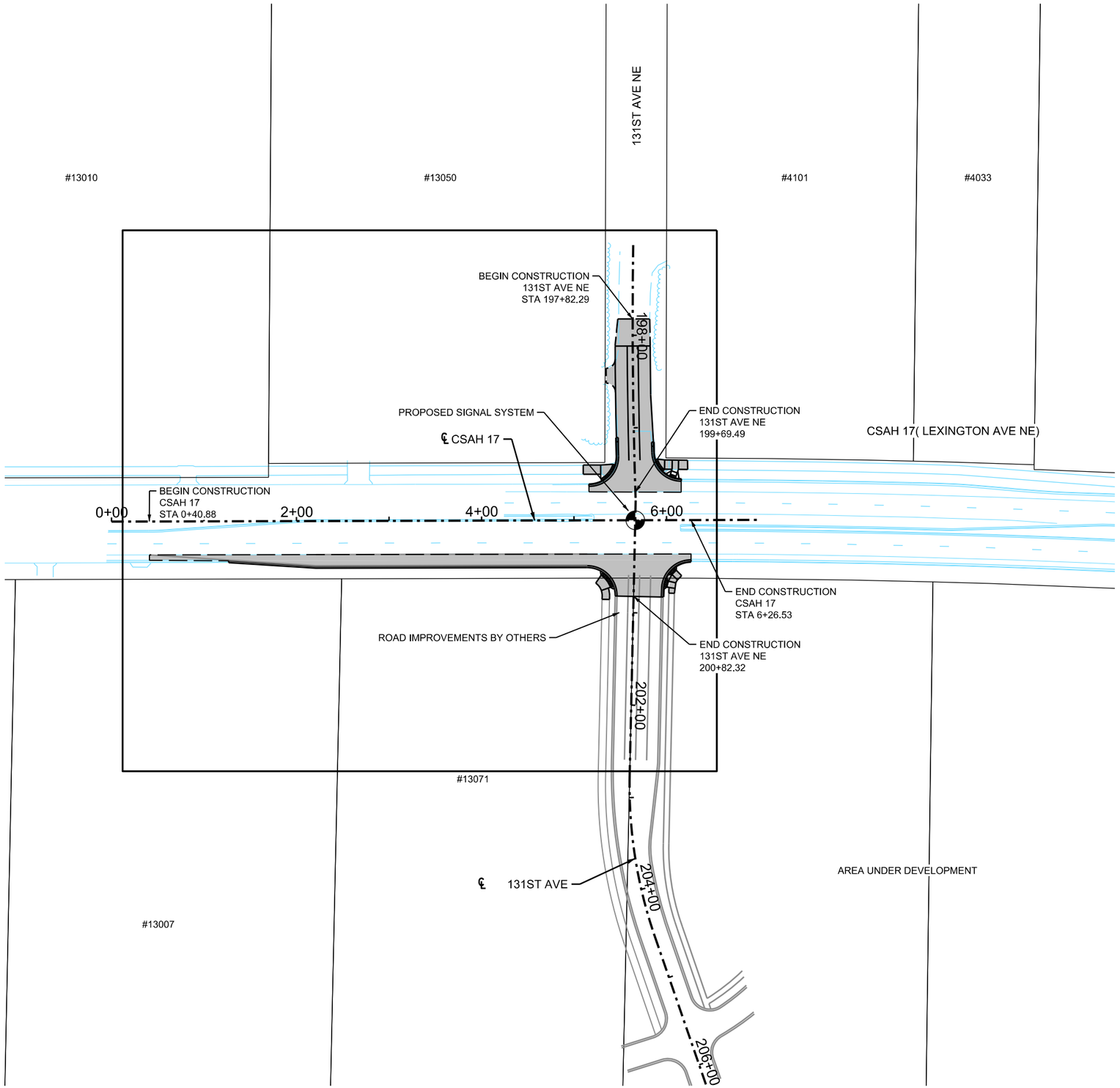
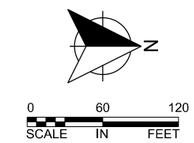
CSAH 17





SHEET INDEX	
ALIGNMENT PLAN	27
INPLACE TOPOGRAPHY & REMOVAL PLAN	29
STREET, DRAINAGE, SITE RESTORATION PLAN	30

wsb

WSB PROJECT NO.: 019869-000

SCALE: AS SHOWN
DESIGN BY: AJF
PLAN BY: AJF
CHECK BY: NEH

REVISIONS

NO.	DATE	DESCRIPTION

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NICHOLAS E. HENTGES. PE
LIC. NO: 44620
DATE: 7/29/2022

CITY OF BLAINE, MN

LEXINGTON AVENUE NE AT 131ST AVENUE NE INTERSECTION IMPROVEMENTS

GENERAL LAYOUT

PLOTTED/REVISED: 7/29/2022 12:24:11 PM

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STATEMENT OF ESTIMATED QUANTITIES

ITEM NUMBER	DESCRIPTION	NOTES	UNIT	PROJECT TOTAL	DEVELOPER / CITY SHARED	DEVELOPER	CITY OF BLAINE
				ESTIMATED QUANTITY	ESTIMATED QUANTITY	ESTIMATED QUANTITY	ESTIMATED QUANTITY
2021.501	MOBILIZATION		LUMP SUM	1	0.71	0.17	0.11
2104.502	REMOVE LIGHTING UNIT		EACH	1			1
2104.502	REMOVE CASTING		EACH	2		2	
2104.502	REMOVE SIGN		EACH	2			2
2104.502	REMOVE HANDHOLE		EACH	1		1	
2104.502	REMOVE LIGHT FOUNDATION		EACH	1			1
2104.502	REMOVE MAIL BOX SUPPRT		EACH	1		1	
2104.502	SALVAGE CASTING		EACH	2			2
2104.503	SAWING BIT PAVEMENT (FULL DEPTH)		LIN FT	664		500	164
2104.503	REMOVE CURB AND GUTTER		LIN FT	626		500	126
2104.504	REMOVE BITUMINOUS PAVEMENT		SQ YD	92			92
2104.518	REMOVE BITUMINOUS WALK		SQ FT	392			392
2104.518	REMOVE CONCRETE WALK		SQ FT	292			292
2106.507	EXCAVATION - COMMON		CU YD	700		400	300
2106.507	EXCAVATION - SUBGRADE		CU YD	175		175	
2106.507	COMMON EMBANKMENT (CV)		CU YD	100		50	50
2106.507	SELECT GRANULAR EMBANKMENT (CV)		CU YD	175		175	
2112.604	SUBGRADE PREPARATION	(P)	SQ YD	1583		668	915
2123.610	STREET SWEEPER (WITH PICKUP BROOM)		HOUR	30		15	15
2130.523	WATER	(1)	MGAL	30		15	15
2118.509	AGGREGATE SURFACING CLASS 2		TON	47			47
2211.509	AGGREGATE BASE CLASS 5		TON	509		254	255
2231.509	BITUMINOUS PATCHING MIXTURE		TON	15			15
2232.504	MILL BITUMINOUS SURFACE (1.5")		SQ YD	668		368	300
2301.602	DRILL & GROUT REINF BAR (EPOXY COATED)		EACH	75	75		
2357.506	BITUMINOUS MATERIAL FOR TACK COAT		GALLON	140		97	43
2360.509	TYPE SP 9.5 WEARING COURSE MIXTURE (3,C)		TON	69			69
2360.509	TYPE SP 12.5 NON WEARING COURSE MIXTURE (3,B)		TON	100		100	
2360.509	TYPE SP 12.5 NON WEARING COURSE MIXTURE (3,C)		TON	55			55
2360.509	TYPE SP 12.5 WEARING COURSE MIX (3,F)		TON	120		120	
2503.503	15" RC PIPE SEWER DES 3006 CL V		LIN FT	16		16	
2506.502	CASTING ASSEMBLY		EACH	4		4	
2506.502	INSTALL CASTING		EACH	2			2
2506.503	CONSTRUCT DRAINAGE STRUCTURE DESIGN H		LIN FT	7		7	
2506.602	CONNECT INTO EXISTING DRAINAGE STRUCTURE		EACH	2		2	
2521.518	6" CONCRETE WALK		SQ FT	1426	853	154	419
2531.503	CONCRETE CURB & GUTTER DESIGN B424		LIN FT	633		507	126
2531.618	TRUNCATED DOMES		SQ FT	140	140		
2563.601	TRAFFIC CONTROL		LUMP SUM	1	0.71	0.17	0.11
2563.613	PORTABLE CHANGEABLE MESSAGE SIGN		UNIT DAY	14		14	
2564.518	SIGN PANELS TYPE C		SQ FT	30		22	8
2565.501	EMERGENCY VEHICLE PREEMPTION SYSTEM		LUMP SUM	1	1		
2565.516	TRAFFIC CONTROL SIGNAL SYSTEM		SYSTEM	1	1		
2573.502	STORM DRAIN INLET PROTECTION		EACH	11		4	7
2573.502	CULVERT END CONTROLS		EACH	1			1
2573.503	SILT FENCE, TYPE MS		LIN FT	222			222
2573.503	SEDIMENT CONTROL LOG TYPE COMPOST		LIN FT	569		400	169
2574.505	SOIL BED PREPARATION		ACRE	0.3		0.2	0.1
2574.507	COMMON TOPSOIL BORROW		CU YD	122		70	52
2574.508	FERTILIZER TYPE 3		POUND	105		70	35
2575.504	ROLLED EROSION PREVENTION CATEGORY 20		SQ YD	792		269	523
2575.508	SEED MIXTURE 25-131		POUND	66		44	22
2575.523	RAPID STABILIZATION METHOD 3		MGAL	3		2	1
2581.503	REMOVABLE PREFORM PAVEMENT MARKING TAPE	(3)	LIN FT	841		715	126
2582.503	4" SOLID LINE MULTI COMP		LIN FT	912		788	124
2582.503	4" DBLE SOLID LINE MULTI COMP		LIN FT	136		12	124
2582.503	24" SOLID LINE PREF THERMO		LIN FT	107	107		
2582.518	PAVT MSSG PREF THERMO		SQ FT	109		62	47
2582.518	CROSSWALK PREF THERMO		SQ FT	900	900		

NOTES

(1) TO BE USED FOR DUST CONTROL AS DIRECTED BY THE ENGINEER.
(2) TO BE USED AS DIRECTED BY THE ENGINEER.
(3) 4" WHITE
(P) PLAN QUANTITY

wsb

WSB PROJECT NO.: 019869-000

SCALE: AS SHOWN
DESIGN BY: AJF
PLAN BY: AJF
CHECK BY: NEH

REVISIONS

NO.	DATE	DESCRIPTION

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NICHOLAS E. HENTGES. PE
LIC. NO: 44620
DATE: 7/29/2022

CITY OF BLAINE, MN

LEXINGTON AVENUE NE AT 131ST AVENUE NE INTERSECTION IMPROVEMENTS

STATEMENT OF ESTIMATED QUANTITIES

PLOTTED/REVISED: 7/29/2022 12:24:19 PM

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SOILS & CONSTRUCTION NOTES

1. GRADING GRADE IS DEFINED AS THE BOTTOM OF THE PROPOSED AGGREGATE LAYER. SUITABLE GRADING MATERIAL IS DEFINED AS ANY ON SITE MINERAL SOIL NOT DEFINED AS UNSUITABLE.
2. SELECT GRADING MATERIAL SHALL CONSIST OF ALL MINERAL SOILS ENCOUNTERED WITH THE EXCEPTION OF TOPSOIL, DEBRIS, ORGANIC MATERIAL, AND OTHER UNSUITABLE SOILS.
3. SLOPE DRESSING ON THE PROJECT IS DEFINED AS THE TOPSOIL OR OTHER SOIL PLACED DURING CONSTRUCTION TO PROVIDE A MEDIUM FOR ESTABLISHING TURF. INPLACE SLOPE DRESSING GENERALLY CONSISTS OF SILTY SAND (SM) WHICH WAS DARK BROWN, MOIST, AND HAD TRACES OF GRAVEL.
4. STRIP ALL INPLACE SLOPE DRESSING (TOPSOIL) WHERE PRESENT IN AREAS TO BE DISTURBED BY CONSTRUCTION AND REUSE AS SLOPE DRESSING.
5. UNSUITABLE SOILS ARE DEFINED AS MARL, SILT, SILTY LOAM, PEAT, MUCK, TOPSOIL AND OTHER ORGANIC SOILS WHICH DO NOT MEET OR ARE NOT MANUFACTURED TO MEET ANY OF THE DEFINED CATEGORIES, AND ARE THEREFORE NOT REUSABLE. UNSUITABLE MATERIAL MAY NOT BE PLACED WITHIN A 1(V):1.5(H) SLOPE DOWNWARD AND OUTWARD FROM THE GRADING EMBANKMENT PI OR ABOVE THE ELEVATION OF THE BOTTOM OF THE SELECT GRANULAR SUBGRADE CORRECTION MATERIAL. ALL MATERIAL IS SUBJECT TO THE DISCRETION OF THE ENGINEER.
6. UNLESS OTHERWISE SPECIFICALLY ALLOWED OR REQUIRED BY THE CONTRACT, BITUMINOUS AND CONCRETE ITEMS DISTURBED BY CONSTRUCTION SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE RECYCLED TO THE EXTENT ALLOWED IN BASE AND SURFACING ITEMS OR DISPOSED OF OUTSIDE OF THE RIGHT-OF-WAY IN ACCORDANCE WITH SPEC 2104.3D3.
7. OBTAIN COMPACTION ON PERMANENT GRADING PORTIONS OF CONSTRUCTION IN ACCORDANCE WITH THE "QUALITY COMPACTION METHOD" REQUIREMENTS.
8. OBTAIN COMPACTION OF GRADING PORTIONS OF TEMPORARY CONSTRUCTION IN ACCORDANCE WITH THE "QUALITY COMPACTION METHOD" REQUIREMENTS.
9. NO FLY ASH, LIME, OR CEMENT STABILIZATION OF THE SUBGRADE SOILS WILL BE ALLOWED PER MNDOT.
10. COMPACTION OF THE AGGREGATE BASE LAYERS SHALL BE OBTAINED IN ACCORDANCE WITH THE SPECIFIED DENSITY COMPACTION METHOD.
11. ANY TRAFFIC LANES USED DURING CONSTRUCTION ADJACENT TO EXCAVATIONS MUST BE DELINEATED TO KEEP VEHICLES A SAFE DISTANCE AWAY FROM THE EXCAVATIONS, THE DELINEATION SHOULD COINCIDE WITH POINTS ESTABLISHED BY A 1(V):2(H) OR FLATTER SLOPE DETWEEN THE EDGE OF THE TRAFFIC SURFACE AND TEH NEAR EDGE OF THE EXCAVATION BOTTOM.
12. DISPOSITION OF EXCAVATED MATERIAL SHALL BE IN ACCORDANCE WITH SPEC 2106.
13. WHERE CONNECTING TO INPLACE ROADWAYS AT THE TERMINI OF THE PROPOSED NEW CONSTRUCTION, CUT VERTICALLY TO TEH BOTTOM OF THE INPLACE SURFACING OR TO THE BOTTOM OF THE NEW SURFACING DESIGN, WHICHEVER IS DEEPER; THAN AT A 1(V):20(H) TAPER TO THE BOTTOM OF THE SUBGRADE EXCAVATION.
14. PROVIDE A SAWCUT TO ENSURE A UNIFORM JOINT WHEN PLACING NEW PAVEMENT ADJACENT TO INPLACE PAVEMENT. SAWCUTTING OF CONCRETE WALK AND CURB & GUTTER IS INCIDENTAL.
15. THE BITUMINOUS TACK COAT MATERIAL SHALL CONSIST OF EMULSIFIED ASPHALT (CSS-1 OR CSS-AH) AND BE APPLIED BETWEEN COURSES AND TO MILLED SURFACES. THE TACK COAT SHALL HAVE WATER ADDED AT A RATE OF 30-40 PERCENT OF THE VOLUME OF THE EMULSION. THE TACK COAT MATERIAL SHALL BE APPLIED AT A UNIFORM RATE OF 0.03 TO 0.05 GAL PER SQUARE YARD BETWEEN NEW BITUMINOUS LAYERS AND AND AT A RATE OF 0.07 TO 0.09 GAL PER SQUARE YARD OVER A MILLED BITUMINOUS SURFACE. THESE APPLICATION RATES ARE FOR UNDILUTED EMULSION (AS SUPPLIED FROM THE REFINERY).
16. THE BITUMINOUS MIXTURE SHALL MEET THE REQUIREMENTS OF MNDOT SPECIFICATION 2360.
17. THE INFORMATION SHOWN ON THESE DRAWING CONCERNING TYPE AND LOCATION OF PRIVATE UTILITIES IS NOT GUARANTEED TO BE ACCURATE OR ALL-INCLUSIVE. THE CONTRACTOR IS RESPONSIBLE FOR MAKING THEIR OWN DETERMINATIONS AS TO THE TYPE AND LOCATION OF PRIVATE UTILITIES AS MAY BE NECESSARY TO AVOID DAMAGE THERETO. CONTRACTOR TO CALL GOPHER STATE ONE CALL A MINIMUM OF 48 HOURS PRIOR TO EXCAVATION.
18. TEMPORARY EROSION CONTROL - 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 FROM THE RESPONSIBILITY TO CONDUCT CONSTRUCTION IN A MANNER THAT WILL CONTROL EROSION. RESPONSIBILITY FOR CONTROLLING EROSION AND MAINTENANCE OF EROSION CONTROL AS SET IN MNDOT SPECIFICATIONS: 1717, 1803, 2101, 2106, 2575 AND IS AMEND BY THE SPECIAL PROVISIONS.
19. ALL TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE LATEST EDITION OF THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, INCLUDING THE FIELD MANUAL.
20. THE CONSTRUCTION LIMITS SHOWN IN THE PLANS REPRESENT THE POINT OF INTERSECTION BETWEEN THE REQUIRED FILL OR CUT SLOPE AND THE EXISTING GROUND LINE AS DEPICTED ON THE CROSS SECTIONS. THE CONSTRUCTION LIMITS DO NOT INCLUDE AREAS REQUIRED FOR SLOPE ROUNDING.

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

MNDOT STANDARD PLATES

PLATE NO.	DESCRIPTION
4026A	CONCRETE ENCASED CONCRETE ADJUSTING RINGS
4108F	ADJUSTING RINGS FOR CATCH BASINS AND MANHOLES
7100H	CONCRETE CURB AND GUTTER (DESIGN B AND DESIGN V)
7111J	INSTALLATION OF CATCH BASIN CASTINGS (CONCRETE CURB AND GUTTER)
8000K	TEMPORARY CHANNELIZERS (3 SHEETS)
8111E	TRAFFIC SIGNAL BRACKETING (PEDESTAL MOUNTED) (3 SHEETS)
8112I	PEDESTAL FOUNDATION (TRAFFIC CONTROL SIGNALS)
8119C	GROUND MOUNTED CABINET FOUNDATION
8122F	PEDESTAL AND PEDESTAL BASE (FOR TRAFFIC CONTROL SIGNALS SUPPORT) (2 SHEETS)
8123G	POLE AND MAST ARM - LUMINAIRES AND TRAFFIC LIGHTS ASSEMBLY (FOR ALL POLE TYPES) (2 SHEETS)
8126L	POLE FOUNDATION (PA90 AND PA100)
8129A	SHIM AND WASHER (TRAFFIC CONTROL SIGNALS AND ROADWAY LIGHTING)
8132B	PREFORMED RIGID PVC CONDUIT LOOP DETECTOR - LAYOUT DETAILS, LAYOUT NOTES, TYPICAL INSTALLATION (3 SHEETS)

SEE SHEET 36 FOR ADDITIONAL STANDARD PLATES APPLICABLE TO THIS PROJECT.

CITY OF BLAINE STANDARD PLATES

PLATE NO.	DESCRIPTION
ST-6	CONCRETE C&G
ST-10	RURAL SECTION ROAD
ST-11	RURAL SECTION DRIVEWAY & CULVERT
ST-12	TYPICAL SIDEWALK
ST-13	OFF ROAD TRAIL TYPICAL SECTION

UTILITY NOTES

1. THE CONTRACTOR SHALL BE RESPONSIBLE TO COORDINATE WITH THE UTILITY COMPANIES. CALL GOPHER STATE ONE CALL AT LEAST 48 HOURS PRIOR TO EXCAVATION OR CONSTRUCTION.

THE FOLLOWING IS A LIST OF UTILITY COMPANIES INVOLVED IN THIS PROJECT:
ANOKA COUNTY
ARVIG
CENTERPOINT ENERGY
LUMEN
CITY OF BLAINE
COMCAST
CONNEXUS ENERGY
MCI
XCEL ENERGY

wsb

WSB PROJECT NO.: 019869-000

SCALE: AS SHOWN | DESIGN BY: AJF

PLAN BY: AJF | CHECK BY: NEH

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NICHOLAS E. HENTGES. PE LIC. NO: 44620

DATE: 7/29/2022

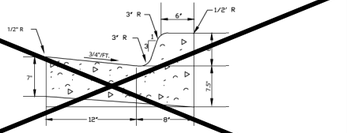
CITY OF BLAINE, MN

LEXINGTON AVENUE NE AT 131ST AVENUE NE INTERSECTION IMPROVEMENTS

CONSTRUCTION NOTES & STANDARD PLATES

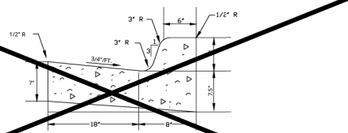
SHEET **4** OF **53** SHEETS

PLOTTED/REVISED: 7/29/2022 12:24:20 PM



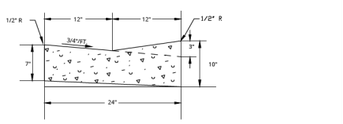
B-612 CONCRETE CURB & GUTTER

MNDOT Standard Plate 7100H



B-618 CONCRETE CURB & GUTTER

MNDOT Standard Plate 7100H



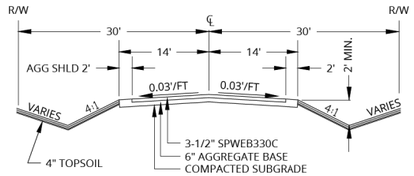
D-312 CONCRETE CURB & GUTTER

CONCRETE CURB & GUTTER Plate No. ST-6

2022 STANDARD DETAIL PLATE

City of Blaine - Engineering Department

10801 Town Square Drive NE, Blaine, Minnesota 55449 763-785-6172 Fax 763-785-6139



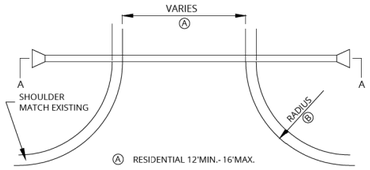
NOTE: SOD 4' BEYOND AGGREGATE BASE, SEED AND MULCH REMAINING R/W

RURAL SECTION ROAD Plate No. ST-10

2022 STANDARD DETAIL PLATE

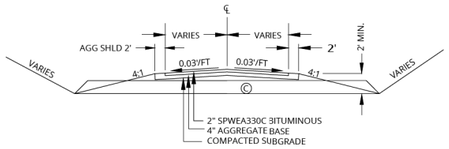
City of Blaine - Engineering Department

10801 Town Square Drive NE, Blaine, Minnesota 55449 763-785-6172 Fax 763-785-6139



Ⓐ RESIDENTIAL 12'MIN.- 16'MAX.
Ⓑ RESIDENTIAL VARIES
Ⓒ 15" CORRUGATED METAL PIPE WITH APRONS.

NOTES: ELEVATE CULVERT FOR POSITIVE DRAINAGE. CORRUGATED METAL PIPE SHALL CONFORM TO MNDOT SPECIFICATION.



SECTION A-A

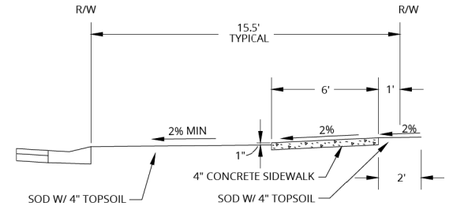
NOTE: ① WHEN APPROVED IN FARM RESIDENTIAL ZONING, 8" AGGREGATE BASE MAY BE SUBSTITUTED IN LIEU OF 2" BITUMINOUS/4" AGGREGATE BASE.
② A MINIMUM OF 35' DIRECTLY ADJACENT TO A PAVED PUBLIC STREET MUST HAVE A BITUMINOUS SURFACE.

RESIDENTIAL RURAL SECTION DRIVEWAY & CULVERT INSTALLATION Plate No. ST-11

2022 STANDARD DETAIL PLATE

City of Blaine - Engineering Department

10801 Town Square Drive NE, Blaine, Minnesota 55449 763-785-6172 Fax 763-785-6139



NOTES:

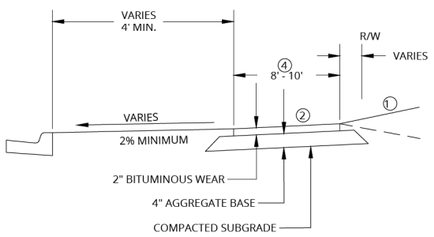
1. INCREASE SIDEWALK THICKNESS THROUGH EXISTING DRIVEWAYS TO 6" MINIMUM.
2. SEE MNDOT STANDARD SPECIFICATIONS 2521.3 D.2 JOINT CONSTRUCTION.
3. SEE DETAIL ST-14 FOR PEDESTRIAN RAMP.

TYPICAL SIDEWALK Plate No. ST-12

2022 STANDARD DETAIL PLATE

City of Blaine - Engineering Department

10801 Town Square Drive NE, Blaine, Minnesota 55449 763-785-6172 Fax 763-785-6139



NOTES:
① - SLOPE VARIES 1:2 TO 1:4
② - CROSS SLOPE 2%
③ - RESTORE ALL DISTURBED AREAS WITH 4" TOPSOIL AND SOD.
④ - CHECK WITH CITY ENGINEERING DEPARTMENT FOR REQUIRED WIDTH.

OFF ROAD TRAIL TYPICAL SECTION Plate No. ST-13

2022 STANDARD DETAIL PLATE

City of Blaine - Engineering Department

10801 Town Square Drive NE, Blaine, Minnesota 55449 763-785-6172 Fax 763-785-6139

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WSB PROJECT NO.: 019869-000

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PLAN BY:	CHECK BY:
AJF	NEH

REVISIONS

NO.	DATE	DESCRIPTION

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NICHOLAS E. HENTGES. PE LIC. NO: 44620

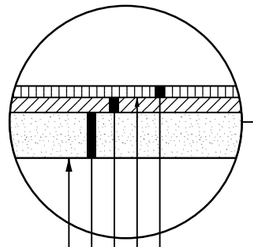
DATE: 7/29/2022

CITY OF BLAINE, MN

LEXINGTON AVENUE NE AT 131ST AVENUE NE INTERSECTION IMPROVEMENTS

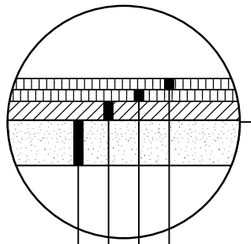
CONSTRUCTION NOTES & STANDARD PLATES

SHEET 5 OF 53 SHEETS



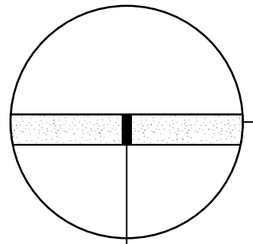
INSET A
131ST AVE NE

1.5" TYPE SP 9.5 WEARING COURSE MIXTURE SPWEA340C
BITUMINOUS TACK COAT (0.05 GAL/SQ YD)
2.0" TYPE SP 12.5 NON-WEARING COURSE MIXTURE SPNWB330C
6.0" AGGREGATE BASE (CV) CLASS 5
SUBGRADE PREPARATION



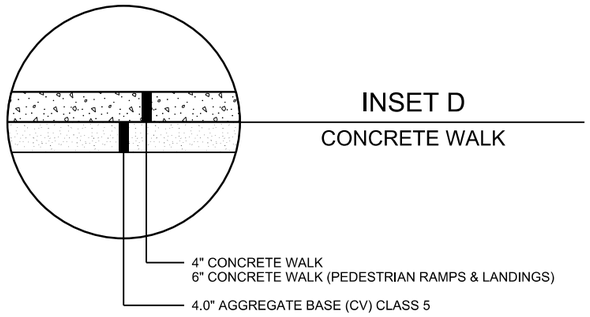
INSET B
CSAH 17
(LEXINGTON AVE NE)

1.5" TYPE SP 12.5 WEARING COURSE MIXTURE SPWEB340F
1.5" TYPE SP 12.5 WEARING COURSE MIXTURE SPWEB340F
2.5" TYPE SP 12.5 NON-WEARING COURSE MIXTURE SPNWB330B
6.0" AGGREGATE BASE (CV) CLASS 5



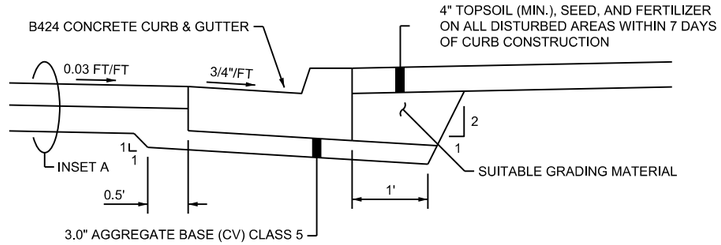
INSET C
AGGREGATE DRIVEWAY
(RESIDENTIAL)

6.0" AGGREGATE SURFACING (CV) CLASS 2

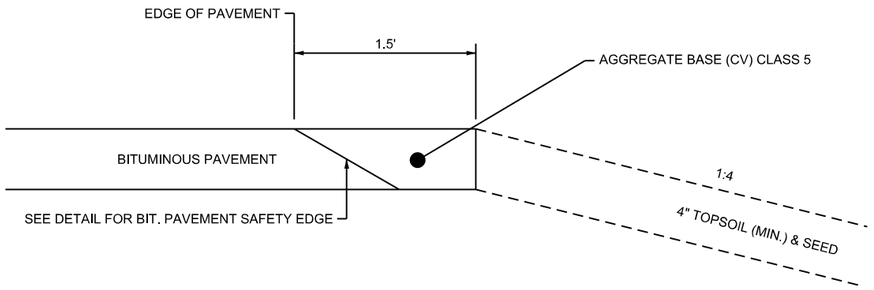


INSET D
CONCRETE WALK

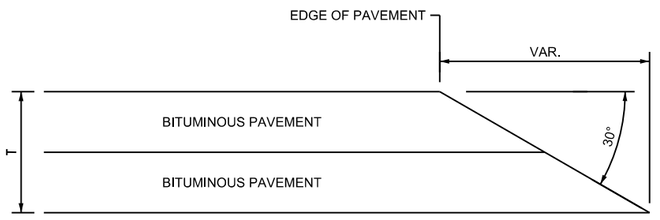
4" CONCRETE WALK
6" CONCRETE WALK (PEDESTRIAN RAMPS & LANDINGS)
4.0" AGGREGATE BASE (CV) CLASS 5



DETAIL A
CONCRETE CURB & GUTTER



DETAIL B
RURAL AGGREGATE SHOULDER



BITMINOUS PAVEMENT SAFETY EDGE
FOR T < 6"

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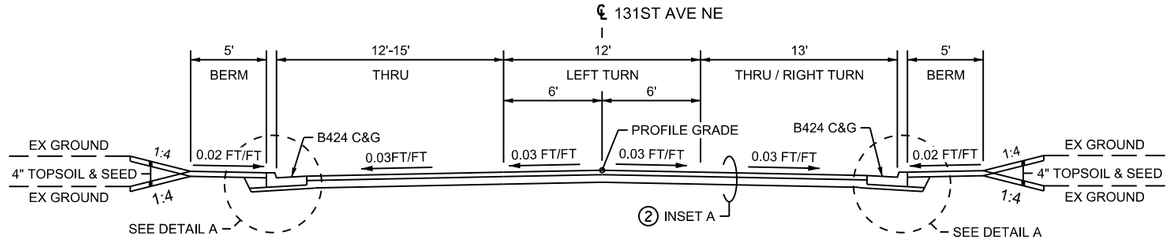
NICHOLAS E. HENTGES. PE
DATE: 7/29/2022 LIC. NO: 44620

CITY OF BLAINE, MN

LEXINGTON AVENUE NE AT 131ST AVENUE NE INTERSECTION IMPROVEMENTS

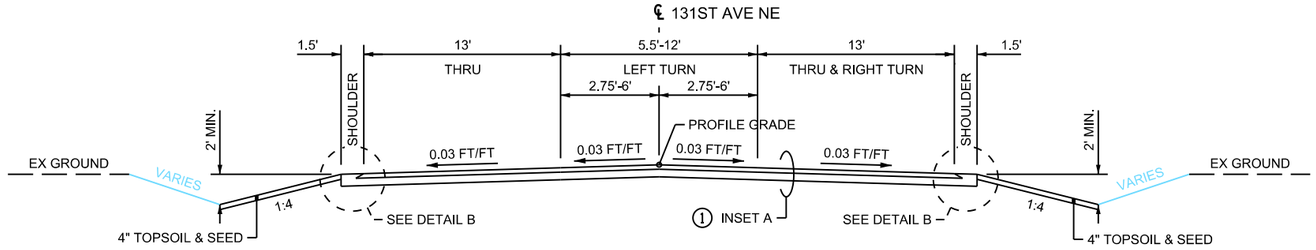
TYPICAL SECTIONS

SHEET **6** OF **53** SHEETS



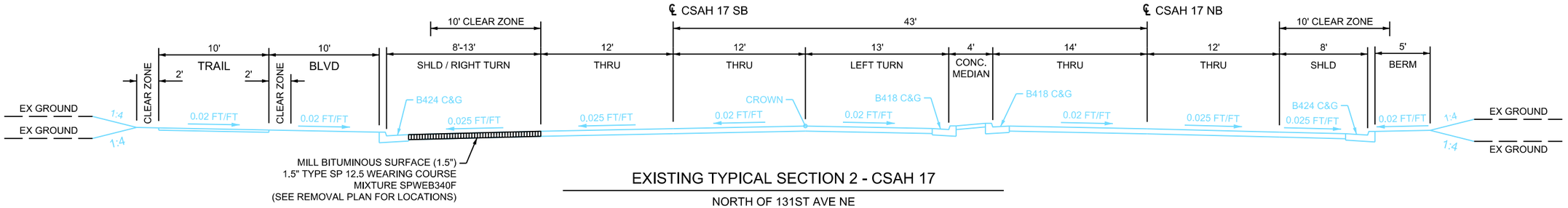
PROPOSED TYPICAL SECTION 3 - 131ST AVENUE NE

STA 199+10 TO STA 199+69.49



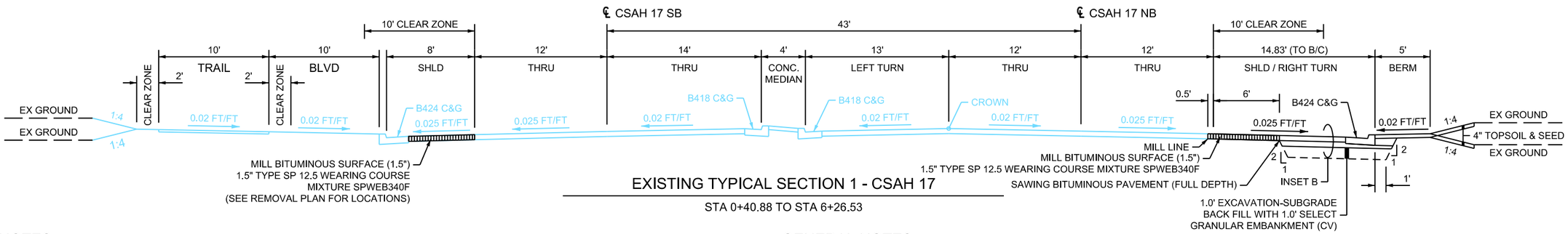
PROPOSED TYPICAL SECTION 1 - 131ST AVENUE NE

STA 197+82.29 TO STA 199+69.49



EXISTING TYPICAL SECTION 2 - CSAH 17

NORTH OF 131ST AVE NE



EXISTING TYPICAL SECTION 1 - CSAH 17

STA 0+40.88 TO STA 6+26.53

NOTES

① AGGREGATE SURFACING FROM STA 197+82.29 TO STA 198+11, SURFACE ROADWAY WITH 6.0" OF AGGREGATE SURFACING CLASS 2. BEGIN INSET A AT STA 198+11

② MILL BITUMINOUS SURFACE (1.5"), PLACE 1.5" TYPE SP 12.5 WEARING COURSE MIXTURE SPWEB340F BEGINNING STA 119+16

GENERAL NOTES

1. PREPARATION OF THE EXISTING SUBGRADE SHALL BE IN ACCORDANCE WITH MNDOT SPECIFICATIONS AND SHALL BE INCIDENTAL.
2. UNLESS OTHERWISE SPECIFIED, THE SUBGRADE CROSS SLOPE WILL BE THE SAME AS THE FINISHED SLOPE.
3. ALL UNSUITABLE MATERIAL SHALL BE REMOVED FROM THE ROADWAY.
4. ALL EDGE DIMENSIONS ARE FACE TO FACE OF CURB OR TO THE EDGE OF THE PAVEMENT UNLESS OTHERWISE NOTED.
5. COMMON TOPSOIL SHALL BE INCLUDED IN TEH COMMON EMBANKMENT (CV).
6. ALL EMBANKMENT MATERIAL SHALL BE APPROVED BY THE ENGINEER. ALL CONCRETE AND BITUMINOUS REMOVALS MUST BE DISPOSED OF OFF-SITE. REMOVAL AND DISPOSAL OF EXCESS MATERIAL SHALL BE INCIDENTAL.
7. 2' CLEAR ZONE SHALL BE PROVIDED ON EACH SIDE OF THE TRAIL.
8. UNLESS OTHERWISE NOTED, AGGREGATE BASE FOR PEDESTRIAN FACILITIES SHALL EXTEND 12" BEYOND THE CONCRETE OR BITUMINOUS SURFACING.

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NICHOLAS E. HENTGES. PE

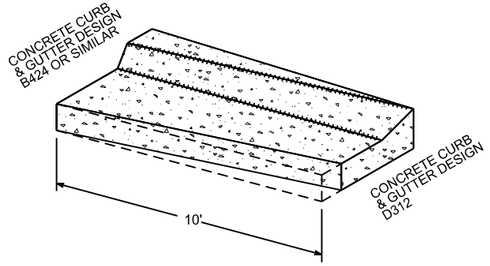
DATE: 7/29/2022 LIC. NO: 44620

CITY OF BLAINE, MN

LEXINGTON AVENUE NE AT 131ST AVENUE NE INTERSECTION IMPROVEMENTS

TYPICAL SECTIONS

SHEET **7** OF **53** SHEETS

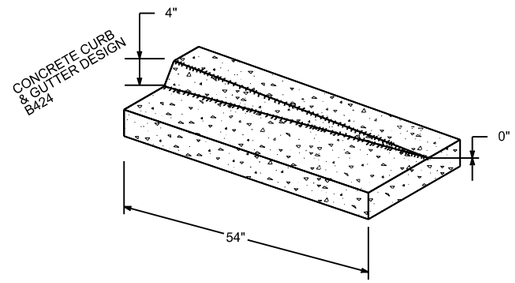


FOR OTHER DIMENSIONS SEE STANDARD PLATE NO. 7100 AND CITY STANDARD PLATE ST-6

PAYMENT SHALL BE MADE AS THE CURB & GUTTER TYPE B424 BY THE FOOT

CURB TRANSITION (B424 TO D312)

NO SCALE



FOR OTHER DIMENSIONS SEE STANDARD PLATE NO. 7100

PAYMENT SHALL BE MADE AS THE CURB & GUTTER TYPE B424 BY THE FOOT

CURB TRANSITION TO 0" HEIGHT

NO SCALE

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NICHOLAS E. HENTGES. PE LIC. NO: 44620

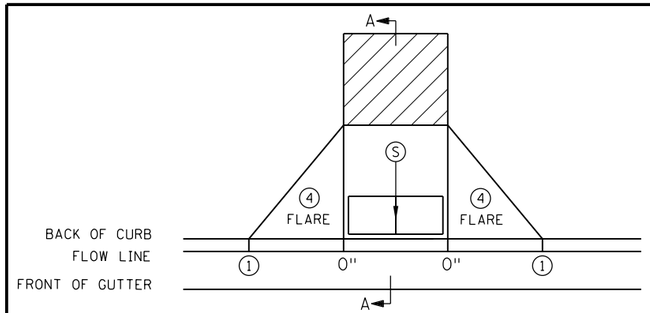
DATE: 7/29/2022

CITY OF BLAINE, MN

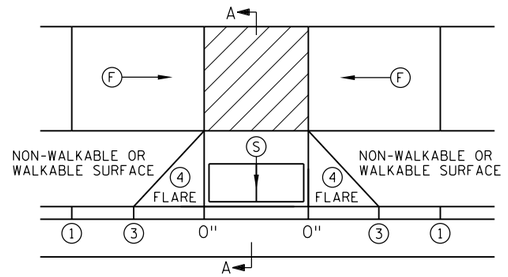
LEXINGTON AVENUE NE AT 131ST AVENUE NE INTERSECTION IMPROVEMENTS

MISCELLANEOUS DETAILS

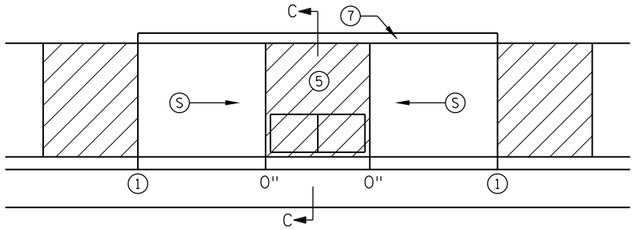
SHEET **8** OF **53** SHEETS



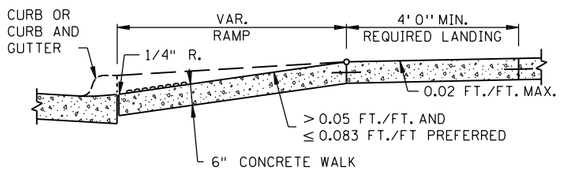
PERPENDICULAR



TIERED PERPENDICULAR

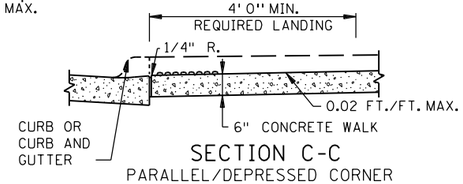


PARALLEL



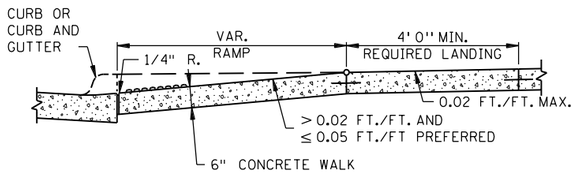
SECTION A-A

PERPENDICULAR/TIERED/DIAGONAL



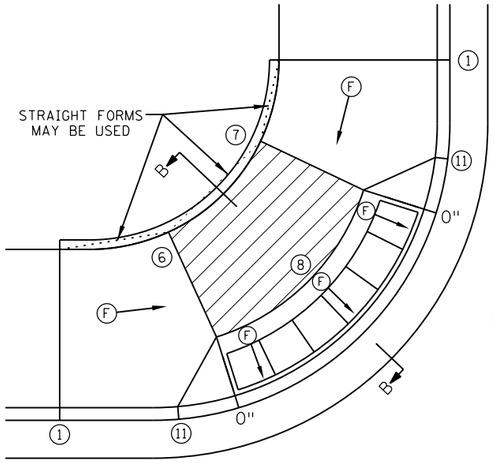
SECTION C-C

PARALLEL/DEPRESSED CORNER

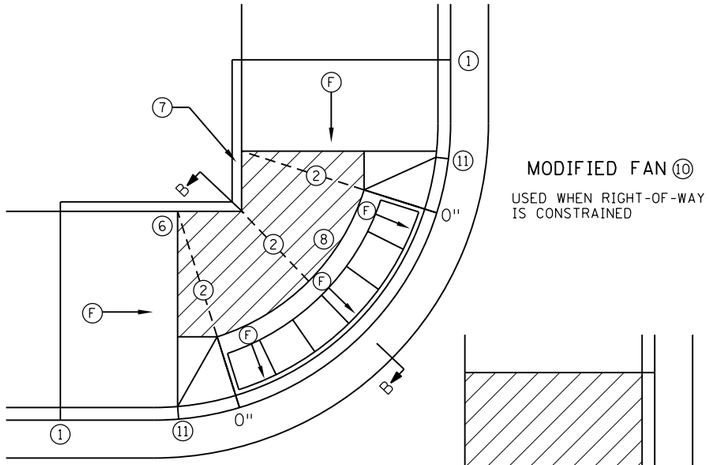


SECTION B-B

FAN

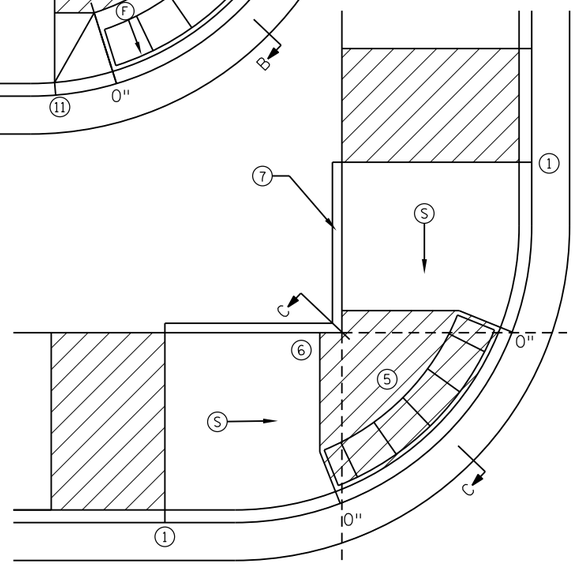


FAN (10)

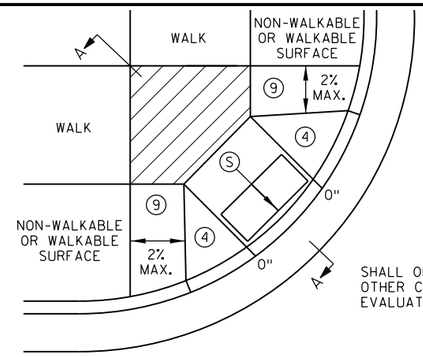


MODIFIED FAN (10)

USED WHEN RIGHT-OF-WAY IS CONSTRAINED



DEPRESSED CORNER



DIAGONAL

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

NOTES:

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

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

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

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

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

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

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

MAINTAIN POSITIVE BOULEVARD DRAINAGE TO TOP OF CURB.

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

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

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

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

(1) MATCH FULL HEIGHT CURB.

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

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

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

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

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

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

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

(9) PAVE FULL WALK WIDTH.

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

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

LEGEND

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

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

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

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

X" CURB HEIGHT

REVISION:

APPROVED: 11-04-2021

JOFFREY PERKINS
OPERATIONS DIVISION

MINNESOTA DEPARTMENT OF TRANSPORTATION

STANDARD PLAN 5-297.250 | **1 OF 6**

APPROVED: 11-04-2021
REVISED:

THOMAS STYRBICKI
STATE DESIGN ENGINEER

PEDESTRIAN CURB RAMP DETAILS

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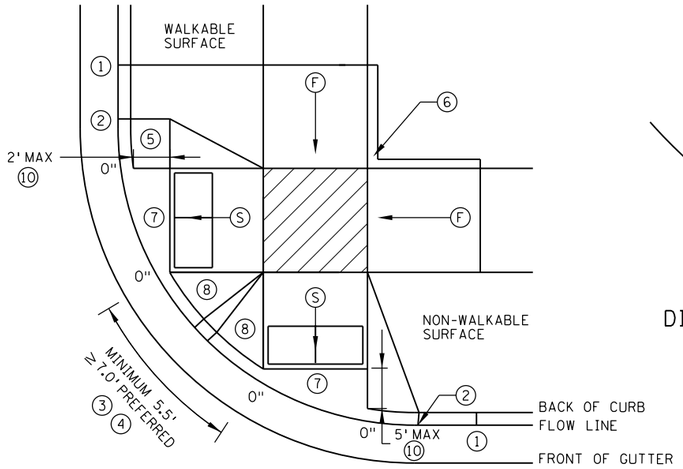
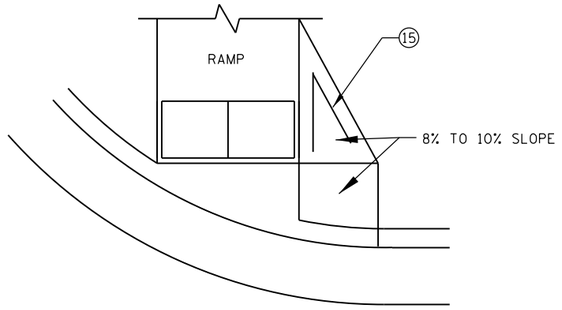
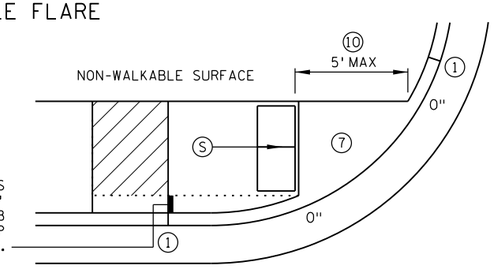


COMBINED DIRECTIONAL

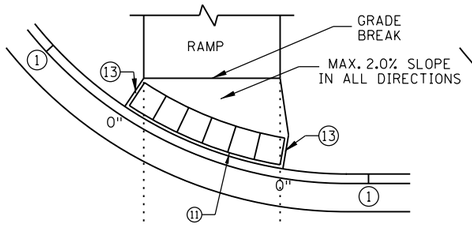


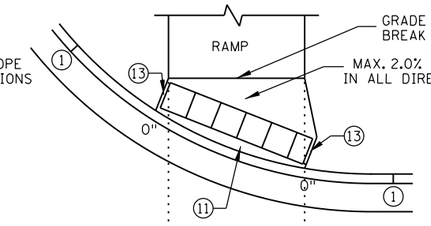
DIRECTIONAL RAMP WALKABLE FLARE

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



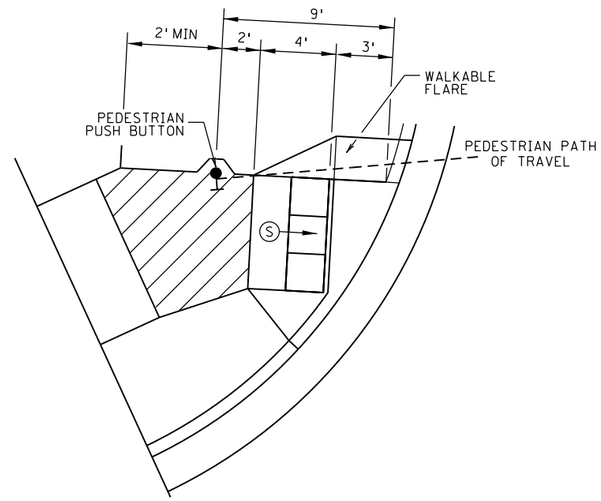
STANDARD ONE-WAY DIRECTIONAL ⑨





DETECTABLE WARNING PLACEMENT WHEN SETBACK CRITERIA IS EXCEEDED ⑫

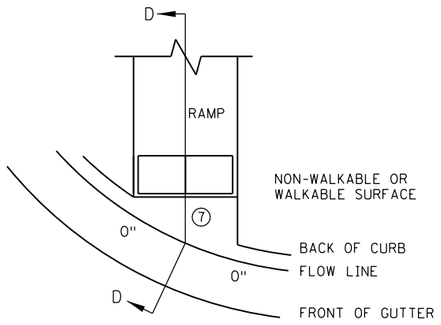
ONE-WAY DIRECTIONAL WITH DETECTABLE WARNING AT BACK OF CURB

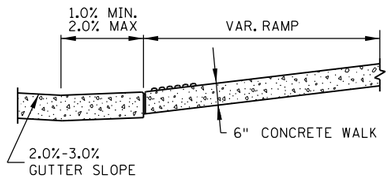


SEMI-DIRECTIONAL RAMP ③④⑨

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

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





SECTION D-D

CURB FOR DIRECTIONAL RAMPS ⑭

NOTES:

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

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

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

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

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

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

TOP OF CURB SHALL MATCH PROPOSED ADJACENT WALK GRADE.

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

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

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

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

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

① MATCH FULL CURB HEIGHT.

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

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

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

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

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

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

⑧ 8% TO 10% WALKABLE FLARE.

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

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

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

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

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

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

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

LEGEND

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

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

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

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

X" CURB HEIGHT

REVISION:

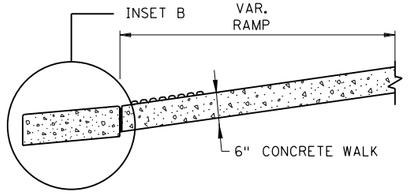
APPROVED: 11-04-2021
JEFFREY PERKINS
OPERATIONS DIVISION

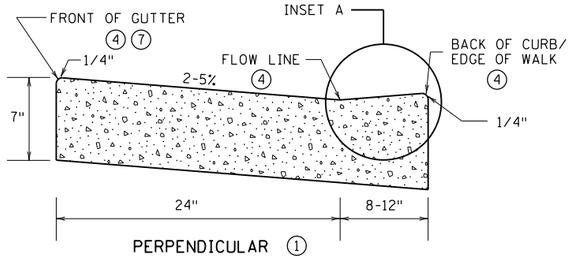
MINNESOTA DEPARTMENT OF TRANSPORTATION

STANDARD PLAN 5-297.250 | 2 OF 6

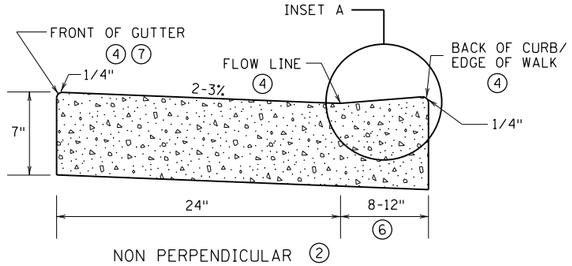
APPROVED: 11-04-2021
REVISED:
THOMAS STYRBICKI
STATE DESIGN ENGINEER

PEDESTRIAN CURB RAMP DETAILS

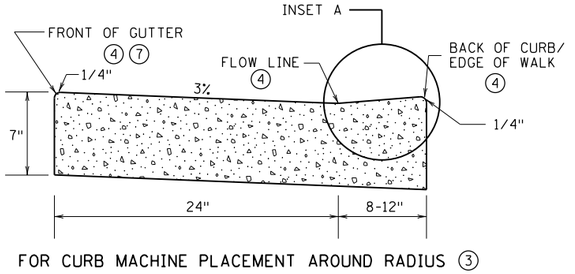




PERPENDICULAR (1)

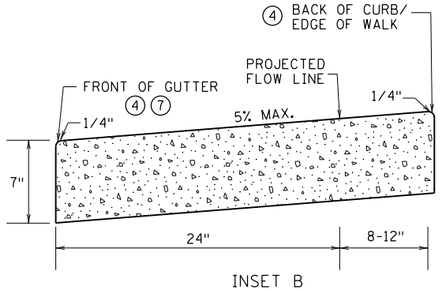


NON PERPENDICULAR (2)



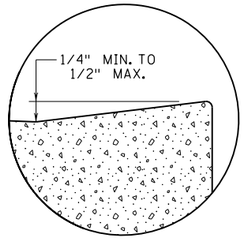
FOR CURB MACHINE PLACEMENT AROUND RADIUS (3)
(REGARDLESS OF RAMP TYPE)

PEDESTRIAN ACCESS ROUTE CURB & GUTTER DETAIL

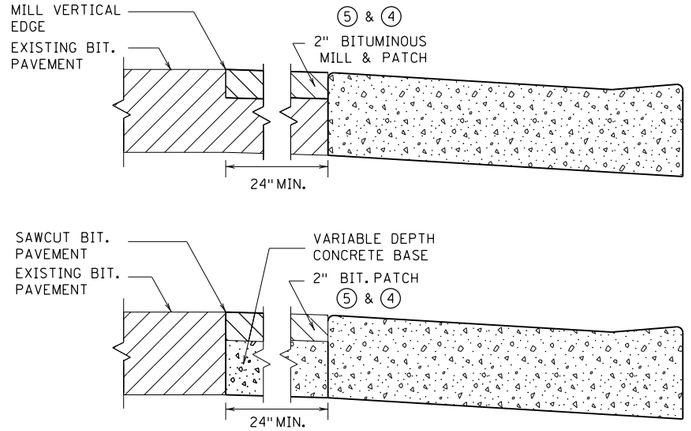


INSET B

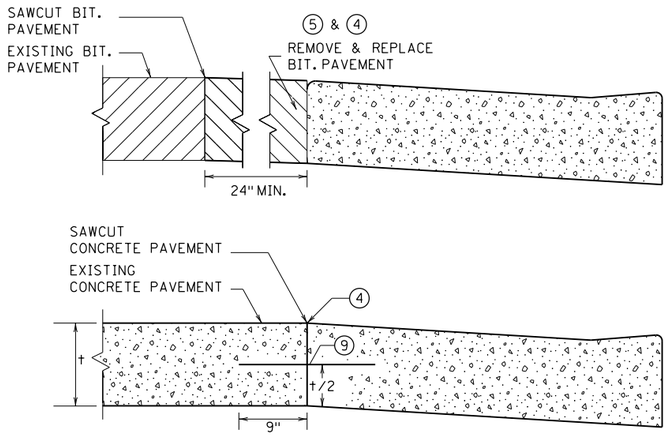
OUTFLOW GUTTER (8)



INSET A

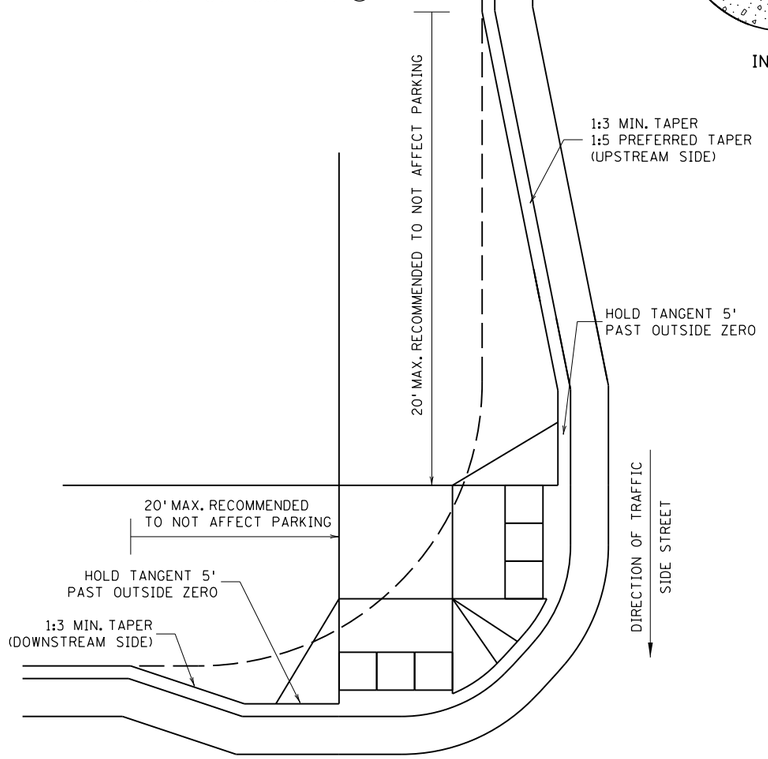


ONLY ALLOWED PER ENGINEER'S APPROVAL

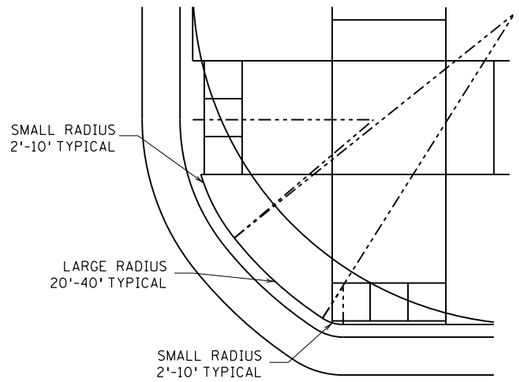


PAVEMENT TREATMENT OPTIONS IN FRONT OF CURB & GUTTER

FOR USE ON CURB RAMP RETROFITS



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



COMBINED DIRECTIONAL (10)
(COMPOUND RADIUS)

NOTES:

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

NO PONDING SHALL BE PRESENT IN THE PAR.

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

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

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

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

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

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

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

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

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

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

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

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

REVISION:

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JEFFREY PERKINS
OPERATIONS DIVISION

MINNESOTA DEPARTMENT OF TRANSPORTATION

STANDARD PLAN 5-297.250 | 3 OF 6

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REVISED:

THOMAS STYRBICKI
STATE DESIGN ENGINEER

PEDESTRIAN CURB RAMP DETAILS

PLOTTED/REVISED: 7/29/2022 12:24:28 PM

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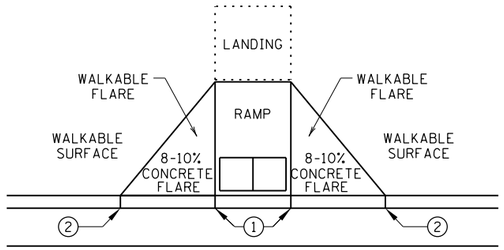
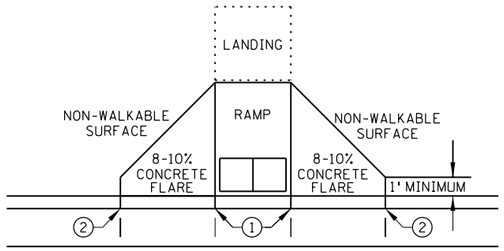
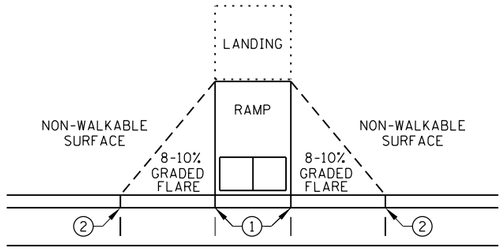


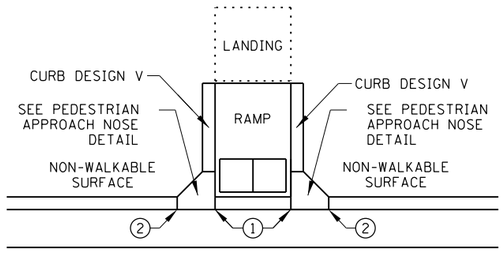
PAVED FLARES
ADJACENT TO WALKABLE SURFACE



PAVED FLARES
ADJACENT TO NON-WALKABLE SURFACE

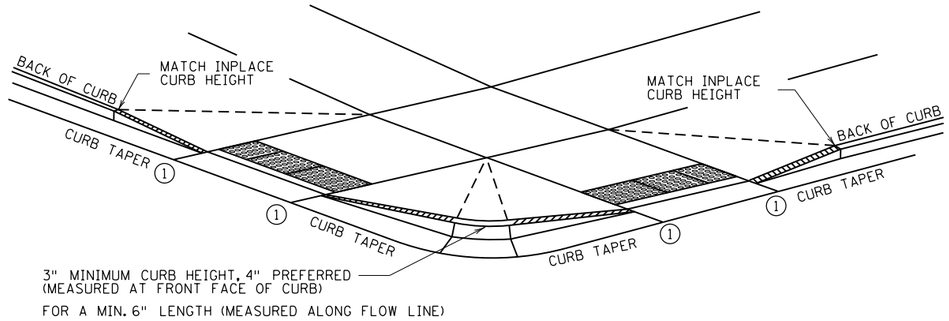


GRADED FLARES

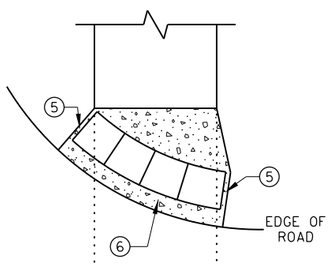


RETURNED CURB ④

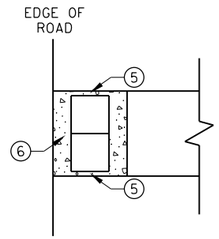
TYPICAL SIDE TREATMENT OPTIONS ③ ⑩



DETECTABLE EDGE WITH ⑦
CURB AND GUTTER

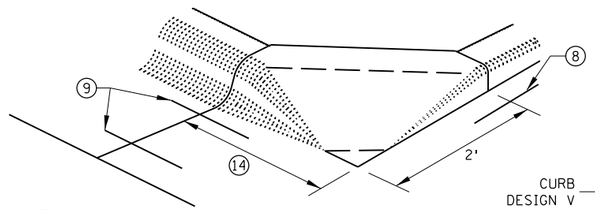


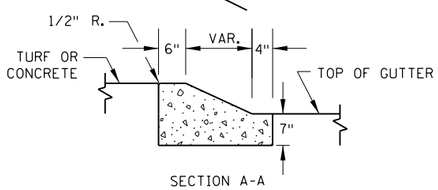
RADIAL DETECTABLE WARNING



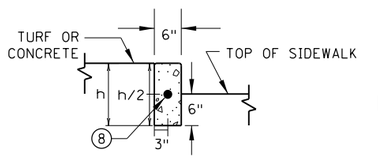
RECTANGULAR DETECTABLE WARNING

DETECTABLE EDGE WITHOUT CURB AND GUTTER

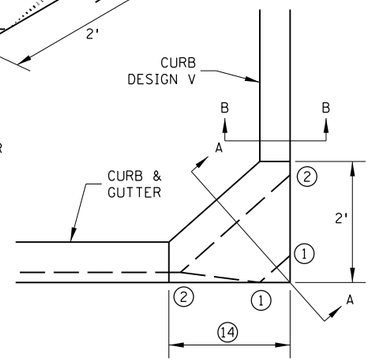




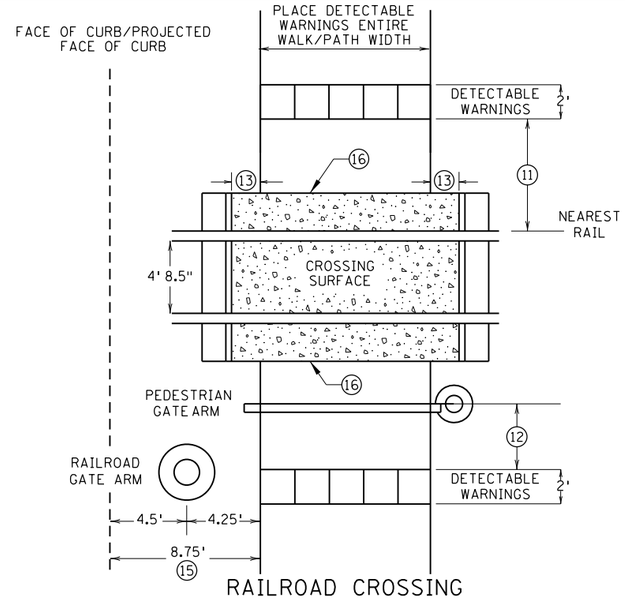
SECTION A-A



SECTION B-B



PEDESTRIAN APPROACH
NOSE DETAIL
(FOR RETURNED CURB
SIDE TREATMENT)



RAILROAD CROSSING
PLAN VIEW

NOTES:

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

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

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

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

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

② FULL CURB HEIGHT.

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

④ TYPICALLY USED FOR MEDIANS AND ISLANDS.

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

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

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

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

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

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

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

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

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

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

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

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

REVISION:

APPROVED: 11-04-2021
JEFFREY PERKINS
OPERATIONS DIVISION

MINNESOTA DEPARTMENT OF TRANSPORTATION

STANDARD PLAN 5-297.250 | 4 OF 6

APPROVED: 11-04-2021
REVISED:

THOMAS STYRBICKI
STATE DESIGN ENGINEER

PEDESTRIAN CURB RAMP DETAILS

PLOTTED/REVISED: 7/29/2022 12:24:28 PM
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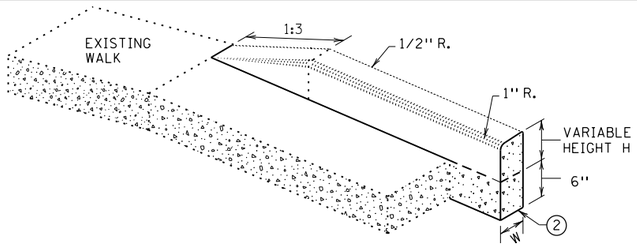
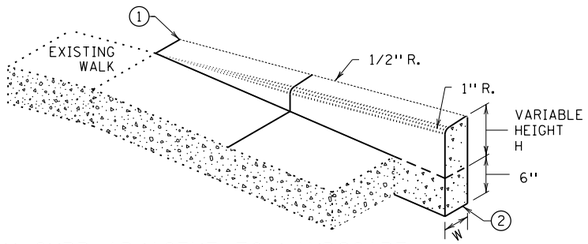


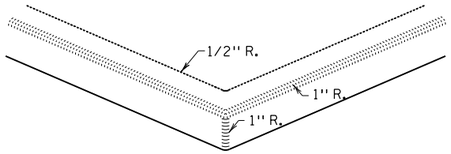
V CURB ADJACENT TO LANDSCAPE

CURB WITHIN SIDEWALK LIMITS

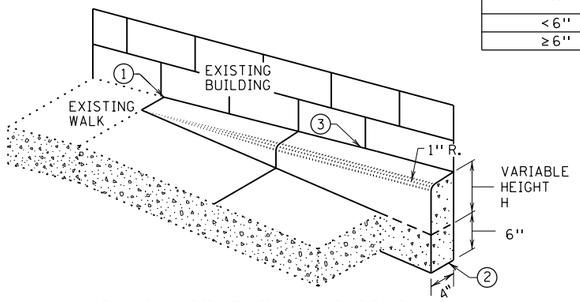


V CURB ADJACENT TO LANDSCAPE

CURB OUTSIDE SIDEWALK LIMITS

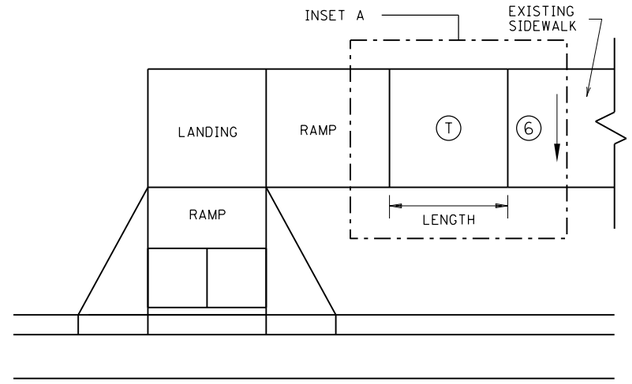


V CURB INTERSECTION

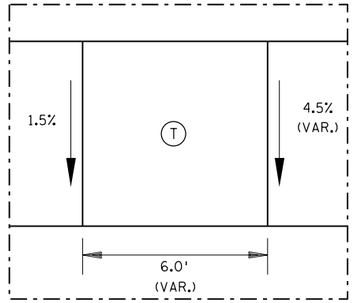


V CURB ADJACENT TO BUILDING OR BARRIER

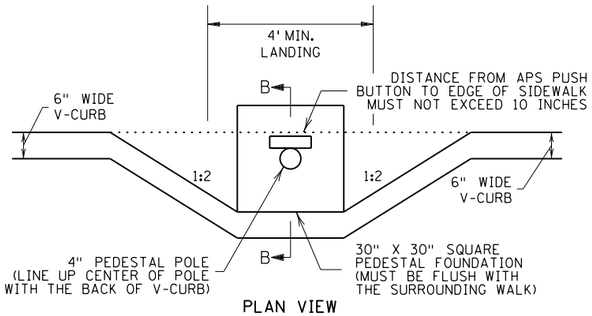
CONCRETE CURB DESIGN V	
CURB HEIGHT H	CURB WIDTH W
< 6"	4"
≥ 6"	6"



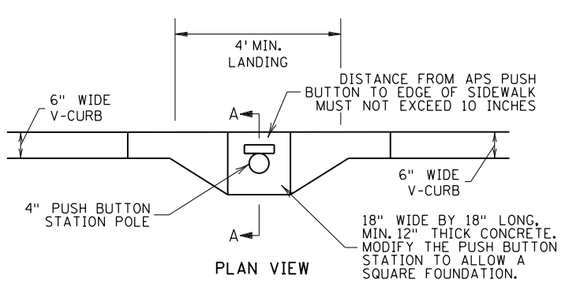
TRANSITION PANEL ④⑤



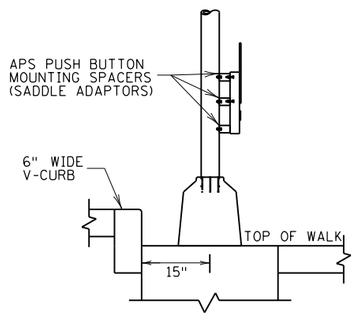
INSET A



PLAN VIEW

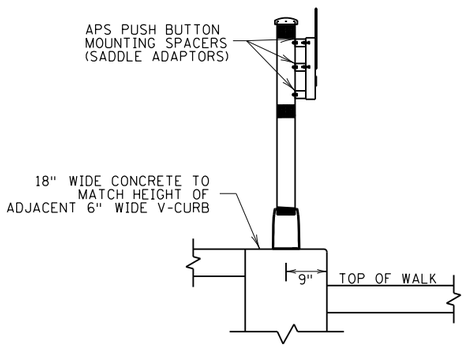


PLAN VIEW



SECTION B-B

SIGNAL PEDESTAL & PUSH BUTTON (V-CURB)



SECTION A-A

PUSH BUTTON STATION (V-CURB)

NOTES:

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

ALL V CURB CONTRACTION JOINTS SHALL MATCH CONCRETE WALK JOINTS.

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

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

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

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

② ALL V CURB SHALL MATCH BOTTOM OF ADJACENT WALK.

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

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

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

⑥ EXISTING CROSS SLOPE GREATER THAN 2.0%.

LEGEND

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

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

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

Ⓣ TRANSITION PANEL(S) - TO BE USED FOR TRANSITIONING THE CROSS-SLOPE OF A RAMP TO THE EXISTING WALK CROSS-SLOPE. RATE OF TRANSITION SHOULD BE 0.5% PER 1 LINEAR FOOT OF WALK. SEE THIS SHEET FOR ADDITIONAL INFORMATION.

REVISION:

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OPERATIONS DIVISION

MINNESOTA DEPARTMENT OF TRANSPORTATION

STANDARD PLAN 5-297.250 | 5 OF 6

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REVISED:

THOMAS STYRBICKI
STATE DESIGN ENGINEER

PEDESTRIAN CURB RAMP DETAILS

PLOTTED/REVISED: 7/29/2022 12:24:28 PM
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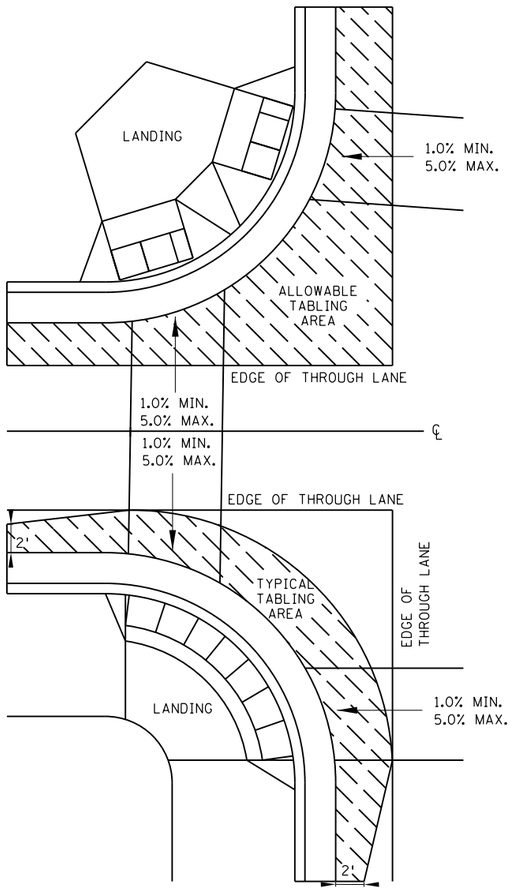
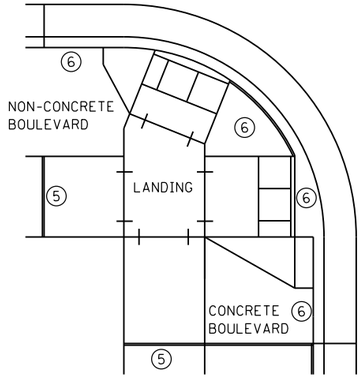
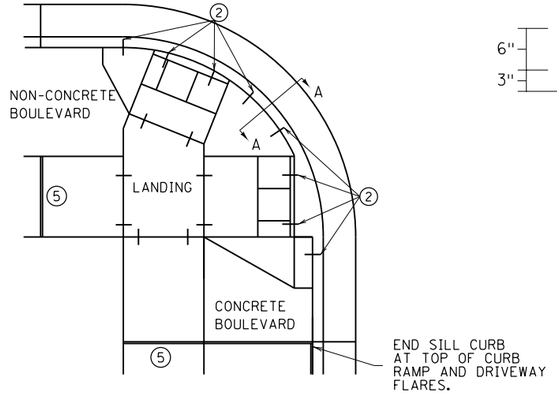


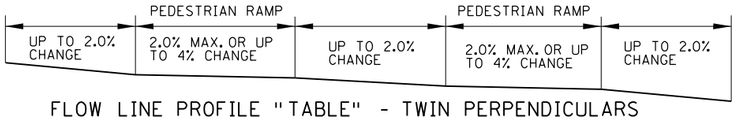
CURB LINE AND ROAD CROSSING ADJUSTMENTS



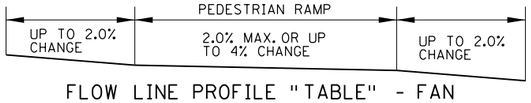
EXPANSION MATERIAL PLACEMENT
FOR CONCRETE ROADWAYS



CURB LINE REINFORCEMENT ④
PLACEMENT ON BITUMINOUS ROADWAYS



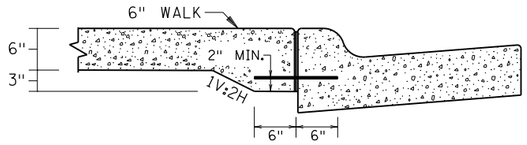
FLOW LINE PROFILE "TABLE" - TWIN PERPENDICULARS



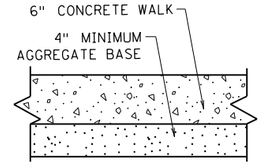
FLOW LINE PROFILE "TABLE" - FAN

FLOW LINE PROFILE RAISE - TWIN PERPENDICULARS

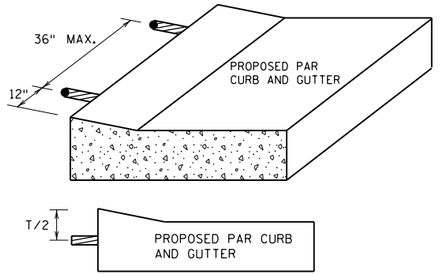
FLOW LINE PROFILE RAISE - FAN

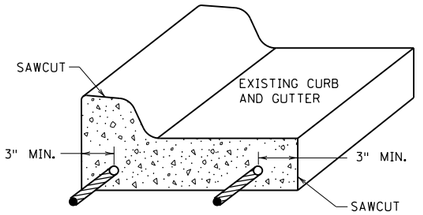


SECTION VIEW A-A
THICKENED SECTION
THROUGH CURB RAMP FLARES



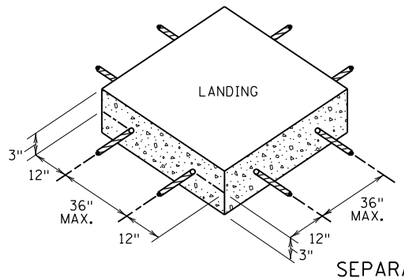
TYPICAL SIDEWALK SECTION
WITHIN INTERSECTION CORNER

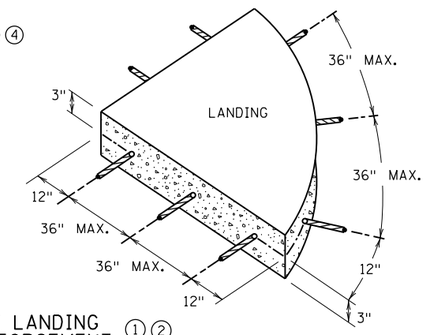




CURB AND GUTTER
REINFORCEMENT ③

CURB RAMP REINFORCEMENT DETAILS ②④





SEPARATE LANDING
POUR REINFORCEMENT ①②

GENERAL NOTES:

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

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

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

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

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

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

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

NOTES:

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

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

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

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

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

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

REVISION:

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JEFFREY PERKINS
OPERATIONS DIVISION

MINNESOTA DEPARTMENT OF TRANSPORTATION

STANDARD PLAN 5-297.250 | 6 OF 6

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REVISED:

THOMAS STYRBICKI
STATE DESIGN ENGINEER

PEDESTRIAN CURB RAMP DETAILS

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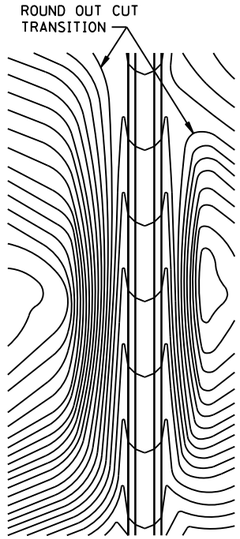
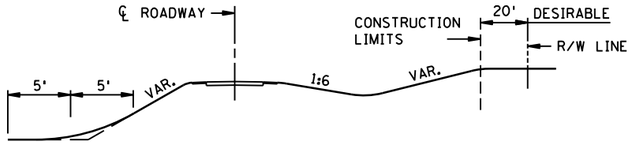
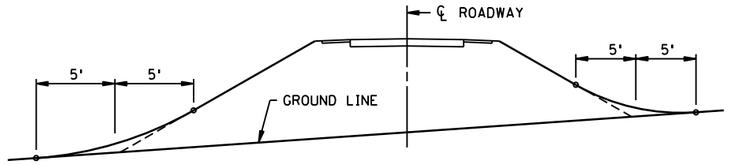


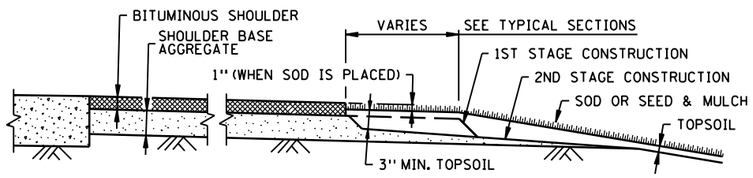
CONTOURING ROAD CUTS



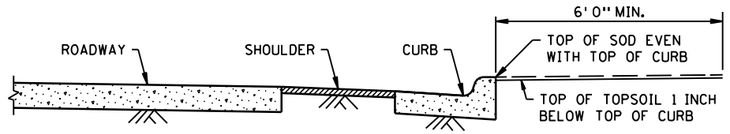
ROUNDING SHOULDERS AND BACKSLOPES



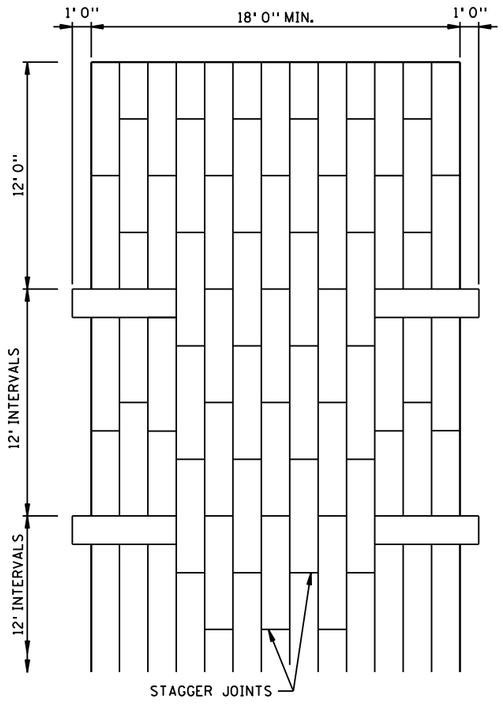
SHAPING FOR DRAINAGE ALONG THE TOE OF FILL SLOPES



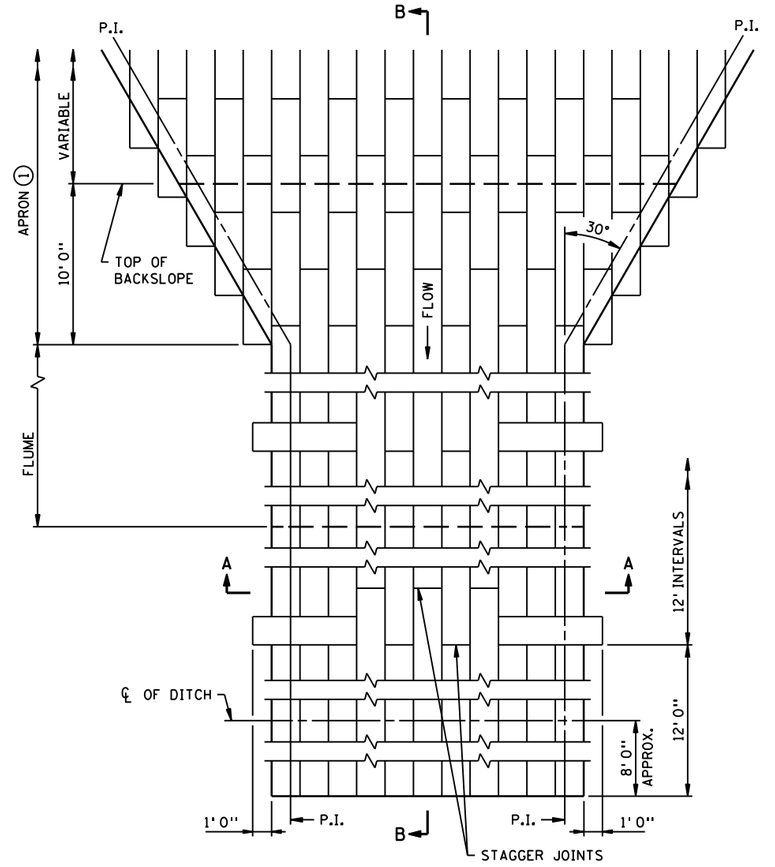
SHAPING AND TOPSOILING INSLOPES



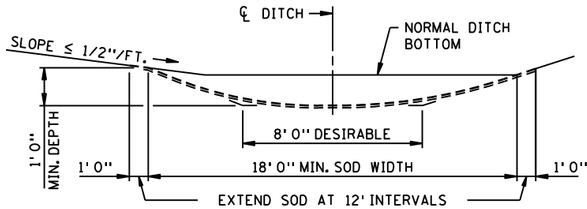
SHAPING ADJACENT TO CURBS WHEN SOD IS PLACED



PLAN VIEW

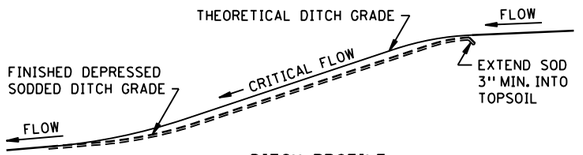


PLAN VIEW



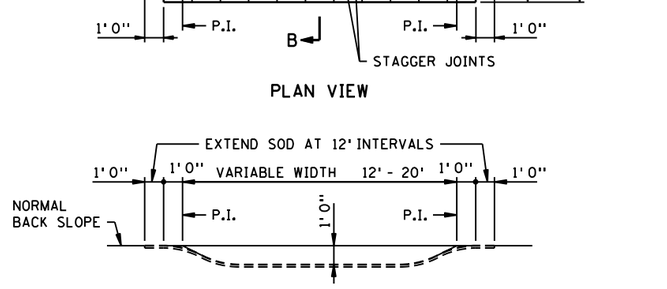
SODDED DITCH CROSS SECTION

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

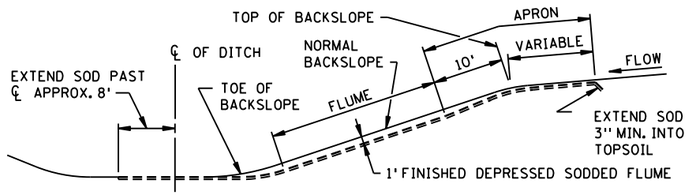


DITCH PROFILE

SODDED DITCH DETAILS



SECTION A-A



SECTION B-B

SODDED FLUME DETAILS

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

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

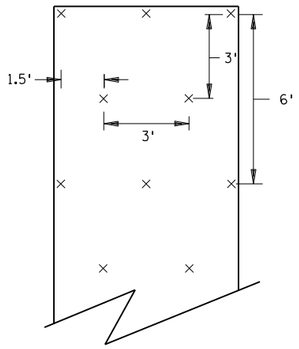
MINNESOTA DEPARTMENT OF TRANSPORTATION

STANDARD PLAN 5-297.404 | 1 OF 3

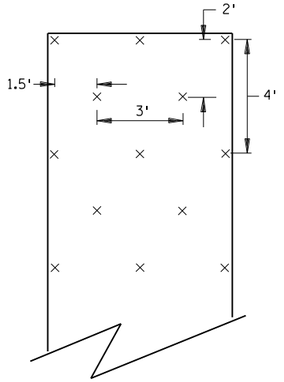
APPROVED: 2-28-2017
REVISED:

STATE DESIGN ENGINEER

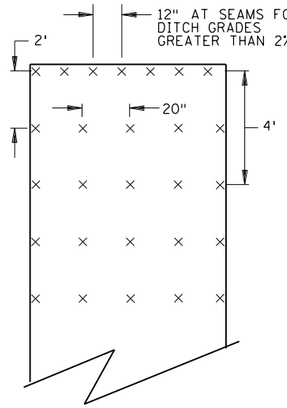
PERMANENT EROSION CONTROL
ALONG ROADWAYS, DITCHES AND FLUMES



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

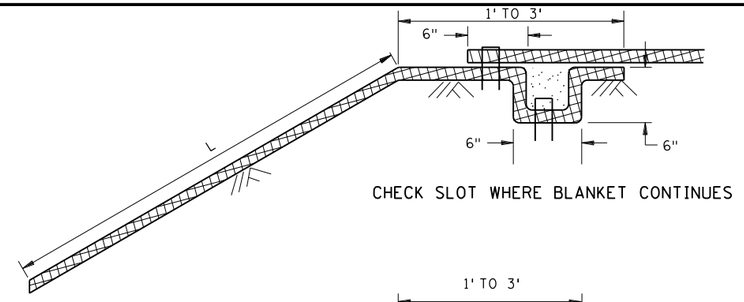


SLOPES 1:2 TO 1:1
170 STAPLES PER 100 SQ YD



CHANNEL AND DITCH APPLICATIONS
350 STAPLES PER 100 SQ YD

BLANKET STAPLE PATTERN



CHECK SLOT REQUIREMENTS

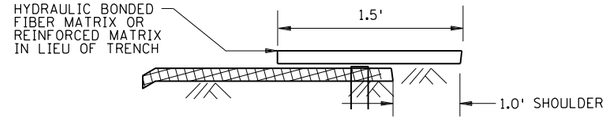
DIG 6" BY 6" TRENCH.

INSERT BLANKET INTO ENTIRE TRENCH PERIMETER.

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

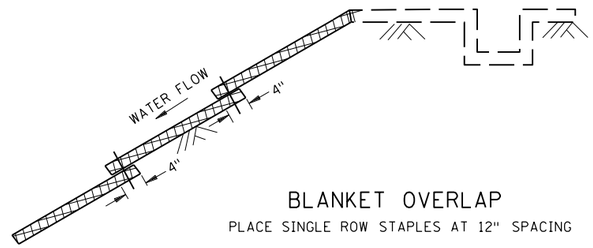
BACKFILL TRENCH WITH SOIL AND TAMP.

PLACE SINGLE ROW STAPLES AT 3' SPACING ON OVERLAP.

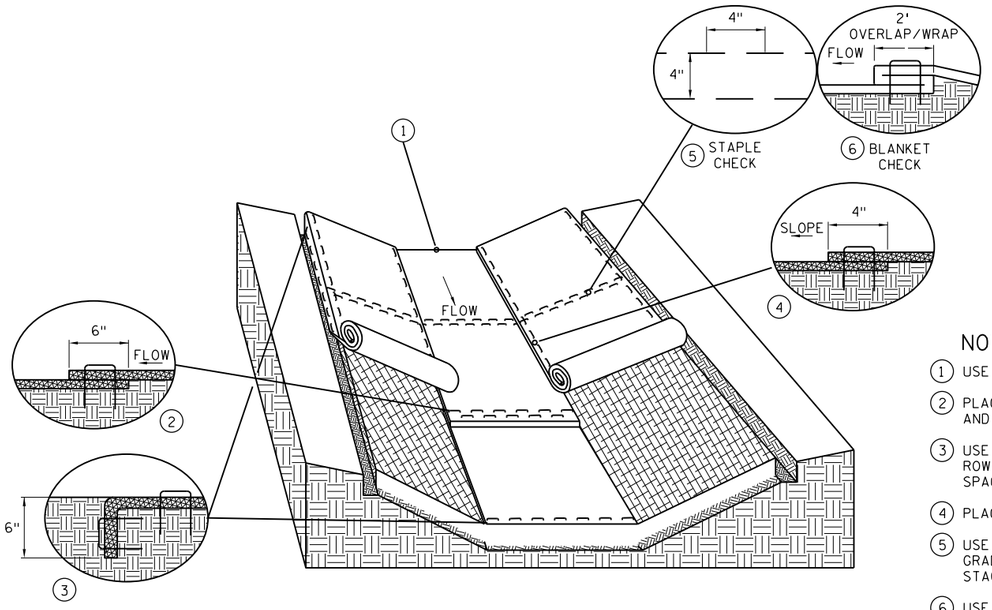


CHECK SLOT ALTERNATIVE
PLACE SINGLE ROW STAPLES AT 12" SPACING

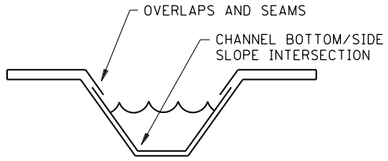
CHECK SLOT DETAILS



BLANKET OVERLAP
PLACE SINGLE ROW STAPLES AT 12" SPACING



DITCH BLANKET STAPLE DETAIL



DITCH BLANKET CRITICAL POINTS (7)

NOTES:

(1) USE CHECK SLOT DETAIL (NO ALTERNATES).

(2) PLACE DOUBLE ROW OF STAPLES STAGGERED 4" APART AND 4" ON CENTER.

(3) USE 6" X 6" TRENCH TO PLACE BLANKET. PLACE SINGLE ROW OF STAPLES ON TOP AND TRENCH SIDES AT 12" SPACING. BACKFILL TRENCH WITH SOIL AND TAMP.

(4) PLACE SINGLE ROW OF STAPLES AT 12" SPACING.

(5) USE STAPLE CHECK FOR CHANNEL SLOPES LESS THAN 2.5%. GRADE AT 100' INTERVALS. PLACE DOUBLE ROW OF STAPLES STAGGERED 4" APART AND AT 4" SPACING.

(6) USE BLANKET CHECKS FOR THE FOLLOWING SLOPES:
2.5%-3% 100' INTERVALS
3%-5% 50' INTERVALS
5%-7% 25' INTERVALS

(7) CRITICAL POINTS SHALL BE SECURED WITH PROPER STAPLE PATTERNS.

GENERAL BLANKET INSTALLATION REQUIREMENTS

REPP = ROLLED EROSION PREVENTION PRODUCT.

PREPARE SOIL AS PER SPECIFICATION 2574.

LAY PARALLEL OR PERPENDICULAR TO THE DIRECTION OF WATER FLOW.

OVERLAP ADJACENT STRIP EDGES A MINIMUM OF 4".

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

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

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REVISION:

APPROVED: JANUARY 8, 2020
MARNI KARNOWSKI
CHIEF ENVIRONMENTAL OFFICER

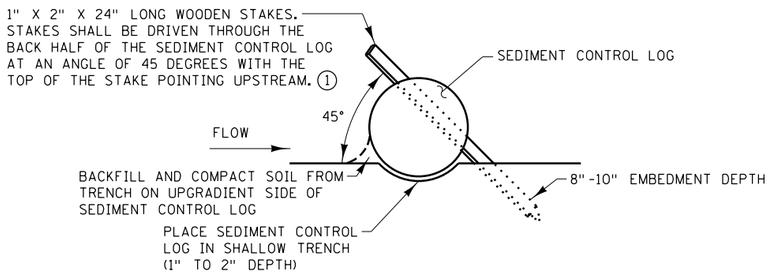
MINNESOTA DEPARTMENT OF TRANSPORTATION

STANDARD PLAN 5-297.404 | 3 OF 3

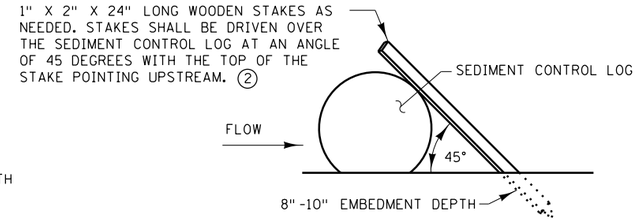
APPROVED: 1-8-2020
REVISED:
THOMAS STYRBICKI
STATE DESIGN ENGINEER

PERMANENT EROSION CONTROL

REPP (BLANKET) STAPLE PATTERN FOR SLOPES

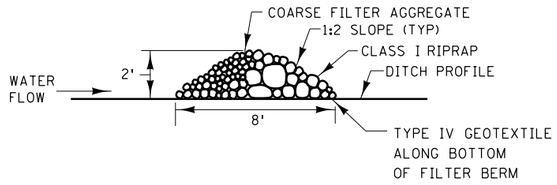


TYPES: STRAW, WOOD FIBER, OR COIR

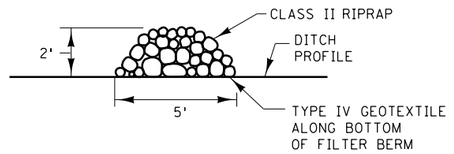


TYPES: WOOD CHIP, COMPOST, OR ROCK

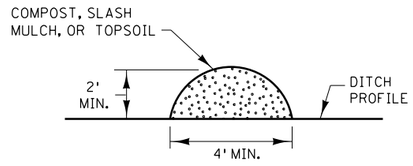
SEDIMENT CONTROL LOGS



TYPE 3 (ROCK WEEPER)

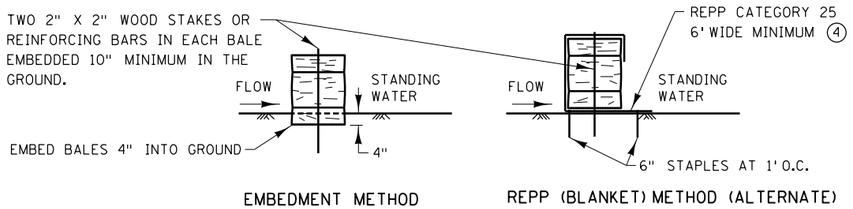


TYPE 5 (ROCK)



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

FILTER BERMS



EMBEDMENT METHOD

REPP (BLANKET) METHOD (ALTERNATE)

BALE BARRIERS (3)

NOTES:

REPP = ROLLED EROSION PREVENTION PRODUCT.

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

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

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

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

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

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MARNI KARNOWSKI
CHIEF ENVIRONMENTAL OFFICER

MINNESOTA DEPARTMENT OF TRANSPORTATION

STANDARD PLAN 5-297.405 | 2 OF 8

APPROVED: 1-8-2020
REVISED:

THOMAS STYRBICKI
STATE DESIGN ENGINEER

TEMPORARY SEDIMENT CONTROL

FILTER BERMS, SEDIMENT CONTROL LOGS, AND BALE BARRIERS

SHEET 17 OF 53 SHEETS

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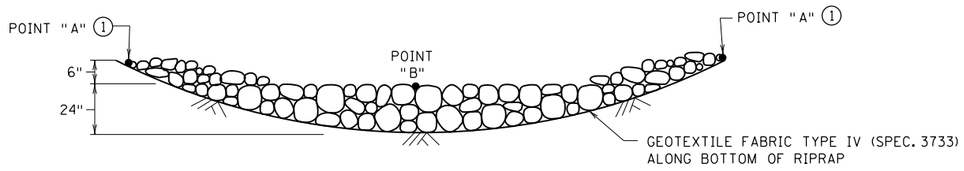
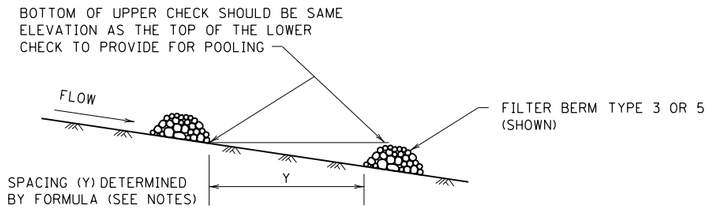
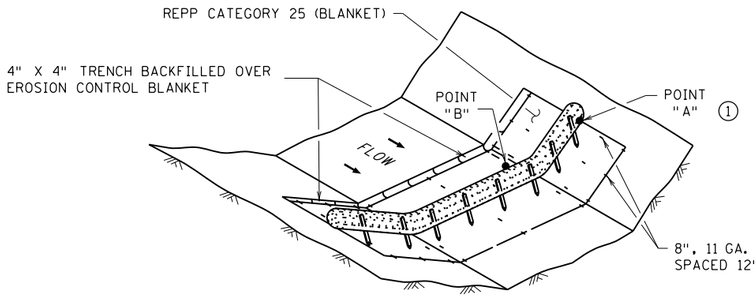
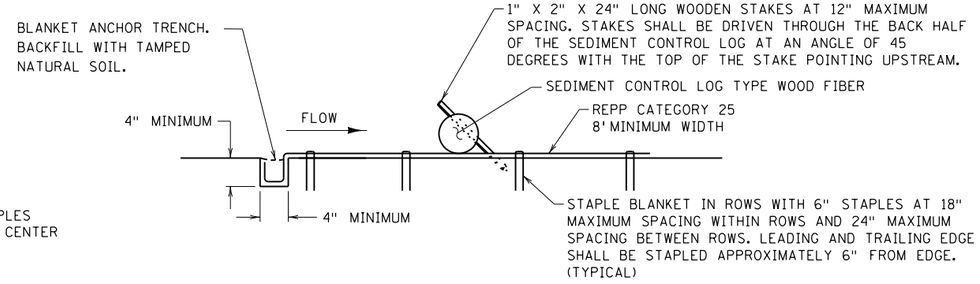


ROCK DITCH CHECKS
FILTER BERMS TYPE 3 (ROCK WEEPER) OR FILTER TYPE 5 (ROCK) ③
FOR USE ON ROUGH-GRADED AREAS
ONLY FOR USE OUTSIDE CLEAR ZONE ②

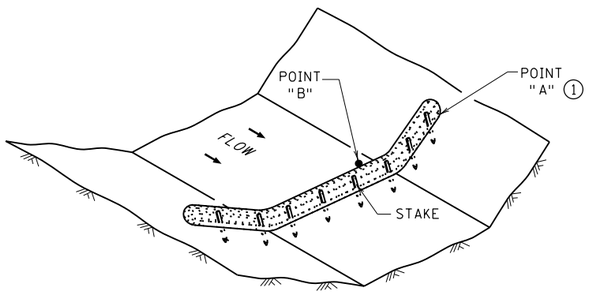


DITCH CHECK SPACING
FOR ALL FILTER BERM TYPES





SEDIMENT CONTROL LOG TYPE REPP (BLANKET) SYSTEM ④



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

NOTES:

REPP = ROLLED EROSION PREVENTION PRODUCT.

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

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

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

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

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

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

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

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

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

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MARNI KARNOWSKI
CHIEF ENVIRONMENTAL OFFICER

MINNESOTA DEPARTMENT OF TRANSPORTATION

STANDARD PLAN 5-297.405 | 3 OF 8

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

TEMPORARY SEDIMENT CONTROL
DITCH CHECK

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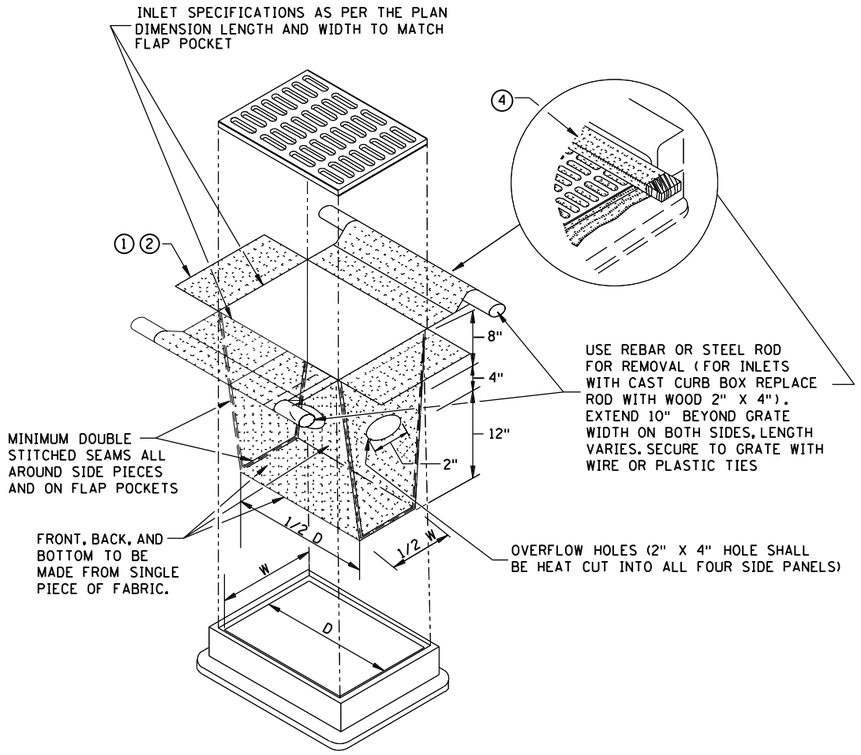
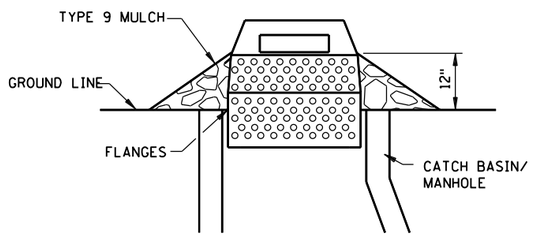


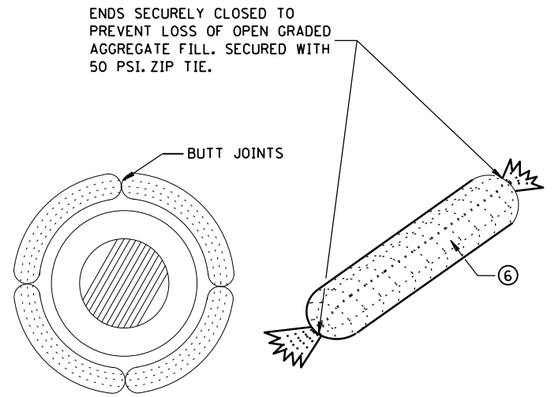
FILTER BAG INSERT ③

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

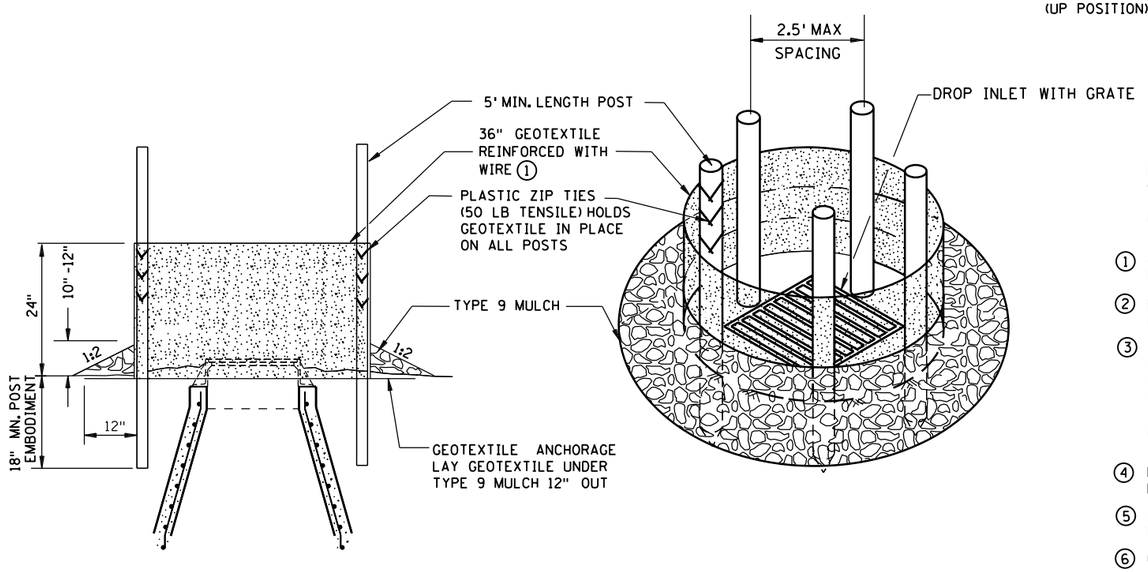


SEDIMENT CONTROL INLET HAT

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

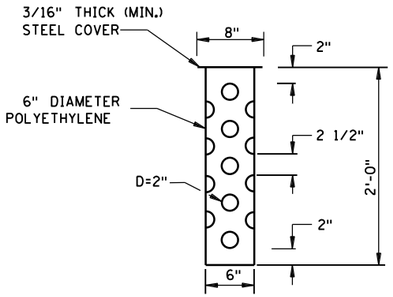


ROCK LOG/COMPOST LOG

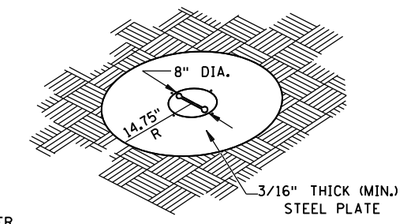


SILT FENCE RING AND ROCK FILTER BERM

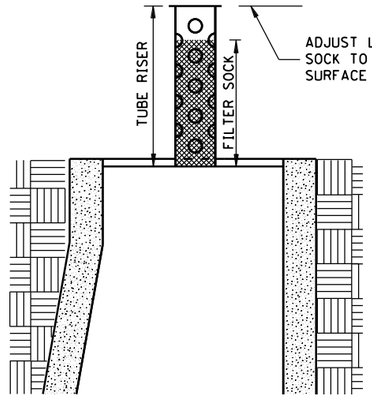
USE WHERE INLET DRAINS IN AN AREA WITH SLOPES AT 1:3 or LESS



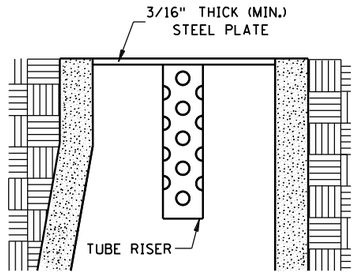
TUBE RISER



PERSPECTIVE VIEW



SECTION
(UP POSITION)



SECTION
(DOWN POSITION)

POP-UP HEAD

NOTES:

SEE SPECS. 2573, 3137, & 3886.

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

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

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

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

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

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

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

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CHIEF ENVIRONMENTAL OFFICER

MINNESOTA DEPARTMENT OF TRANSPORTATION

STANDARD PLAN 5-297.405 | 4 OF 8

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

TEMPORARY SEDIMENT CONTROL

STORM DRAIN INLET PROTECTION

SHEET 19 OF 53 SHEETS

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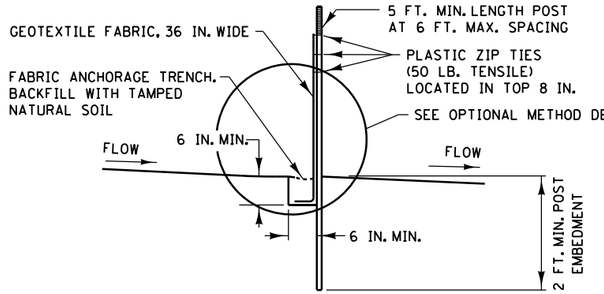
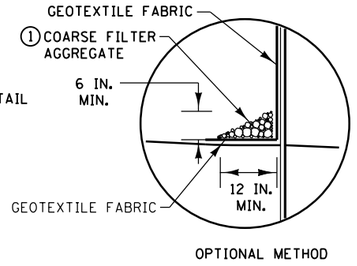
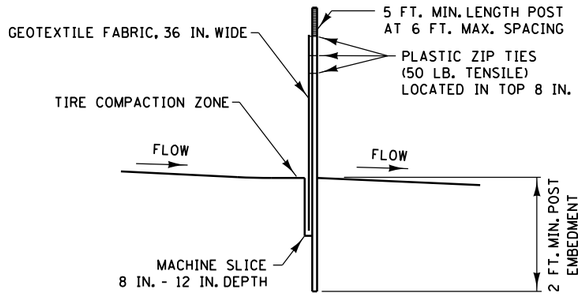


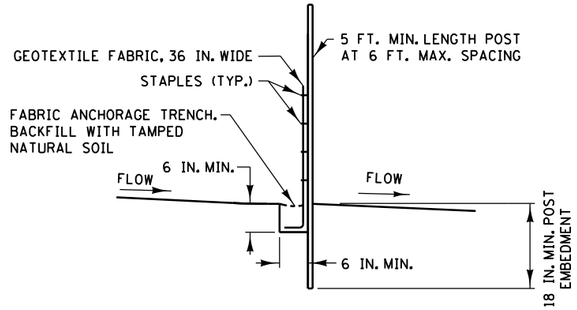


OPTIONAL METHOD

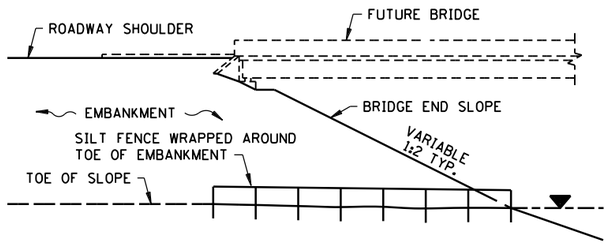
SILT FENCE TYPE HI ②
(HAND INSTALLED)



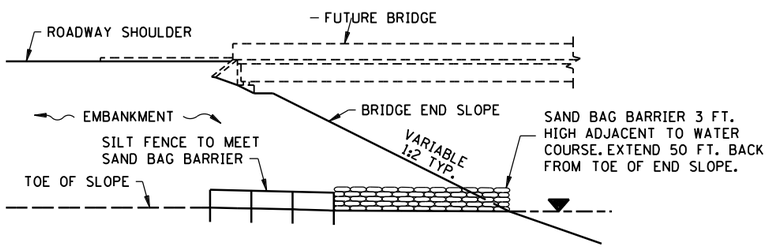
SILT FENCE TYPE MS ②
(MACHINE SLICED)



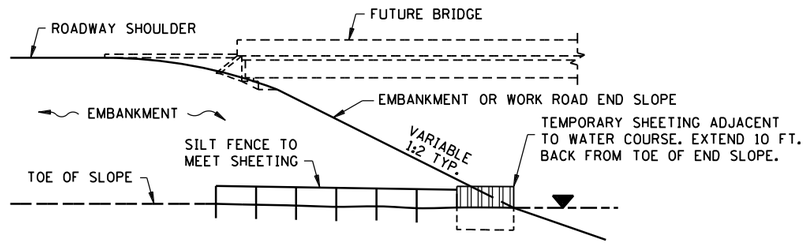
SILT FENCE TYPE PA ③
(PREASSEMBLED)



SILT FENCE ONLY ④



SILT FENCE WITH SAND BAGS ⑤



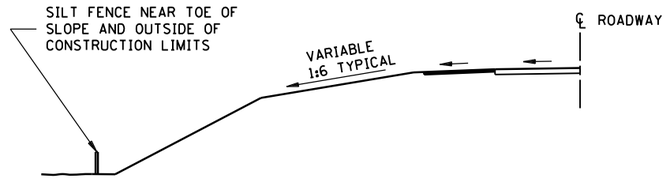
SILT FENCE WITH SHEETING ⑥

INSTALLATION AT BRIDGE EMBANKMENT ADJACENT TO WATER

PLAN VIEW

PERSPECTIVE VIEW

J-HOOK INSTALLATION



LOCATION AT TOE OF ROADWAY EMBANKMENT

NOTES:

SEE SPECS. 2573, 3149 & 3886.

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

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

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

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

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

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

REVISION:

APPROVED: 2-28-2017

CHIEF ENVIRONMENTAL OFFICER

MINNESOTA DEPARTMENT OF TRANSPORTATION

STANDARD PLAN 5-297.405 | 6 OF 8

APPROVED: 2-28-2017
REVISED:

STATE DESIGN ENGINEER

TEMPORARY SEDIMENT CONTROL
SILT FENCE

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NOTES & GUIDELINES

GENERAL INFORMATION:

1. ALL DISTANCES ARE APPROXIMATE.
2. WHEN WORK IS BEING PERFORMED WITHIN 6 FEET OF CSAH 17 TRAFFIC THE CONTRACTOR SHALL PROVIDE A SHORT TERM LANE CLOSURE. LANE CLOSURES ON CSAH 17 WILL NOT BE ALLOWED 6AM TO 9AM SOUTHBOUND AND 3PM TO 6PM NORTHBOUND.
3. LONGITUDINAL DROPOFFS SHALL BE PROTECTED AS REQUIRED IN THE "MINNESOTA TEMPORARY TRAFFIC CONTROL FIELD MANUAL".
4. 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 TEMPORARY SIGNS ARE REQUIRED TO BE CRASHWORTHY PER THE AASHTO MANUAL FOR ASSESSING SAFETY HARDWARE 2016 (MASH-2016). TEMPORARY SIGN STRUCTURES THAT ARE CRASHWORTHY UNDER THE NATIONAL COOPERATIVE HIGHWAY RESEARCH PROGRAM REPORT 350 (NCHRP-350) MAY BE USED PROVIDED THE DEVICES WERE ACQUIRED BY THE CONTRACTOR PRIOR TO DECEMBER 31ST, 2019. THE MINNESOTA TYPE "C" AND "D" BRACED LEG U-CHANNEL (KNEE BRACE) SIGN SUPPORT IS NOT ALLOWED.
2. THE CONTRACTOR SHALL COORDINATE THE INSTALLATION OF THE FINAL SIGNS TO ASSURE THAT THE FINAL SIGNS ARE PLACED AS NEEDED, OR PROVIDE TEMPORARY SIGNING UNTIL THE FINAL SIGNING IS PLACED.
3. WHEN MULTIPLE GROUND MOUNTED SIGN STRUCTURES ARE PLACED ADJACENT TO EACH OTHER THERE SHOULD BE NO MORE THAN 2 POSTS WITHIN 84" OF EACH OTHER. WHEN THIS SPACING CAN NOT BE MAINTAINED, THEN SIGN STRUCTURES SHALL BE OFFSET, AND STAGGERED WITH A MINIMUM OF 4' BETWEEN SIGN STRUCTURES BOTH LATERALLY AND LONGITUDINALLY. EXAMPLE SHOWS DETOUR SIGNAGE, BUT THIS REQUIREMENT APPLIES TO ALL SIGNAGE.
4. WHEN A SIGN OR BARRICADE IS ORIENTED SUCH THAT VISIBILITY TO ROAD USERS INCLUDING BIKES AND PEDESTRIANS IS REDUCED ENOUGH TO CAUSE A HAZARD, DELINEATE THE SIGN/BARRICADE WITH APPROPRIATE DEVICES.
5. TEMPORARY SIGNS SHALL BE PLACED SUCH THAT OBSTACLES DO NOT BLOCK THEM FROM BEING VIEWED BY APPROACHING ROAD USERS. OBSTACLES MAY INCLUDE, BUT ARE NOT LIMITED TO, LIGHT POLES, TREES, SIGNS, AND BUILDINGS.
6. TEMPORARY SIGNS SHALL BE PLACED AND ORIENTED APPROXIMATELY AS SHOWN IN THE PLAN, AT RIGHT ANGLES TO DIRECTION OF AND FACING THE TRAFFIC THEY ARE INTENDED TO SERVE, UNLESS OTHERWISE SPECIFIED.
7. LONGITUDINAL DROPOFFS SHALL BE SIGNED AS SHOWN IN THE "MINNESOTA TEMPORARY TRAFFIC CONTROL FIELD MANUAL" PAGES (6K-aj) THRU (6K-al) UNLESS OTHERWISE SPECIFIED IN THESE PLANS.
8. AFTER REMOVAL OF SIGN AND/OR SIGN BASE, BACK FILL, COMPACT, AND LEVEL SOIL TO MATCH SURROUNDING SOIL.

PAVEMENT MARKING:

1. MASK OR REMOVE ANY CONFLICTING PAVEMENT MARKINGS AS SHOWN IN THE PLAN OR APPROVED BY THE ENGINEER.
2. ALL TEMPORARY PAVEMENT MARKINGS SHALL BE WET REFLECTIVE. ALL PAVEMENT MARKINGS IN TAPERS AND TRANSITIONS SHALL BE 6" IN WIDTH.
3. SEE 2582 IN THE SPECIAL PROVISIONS FOR PAVEMENT MARKING SPOTTING RESPONSIBILITIES.

CONSTRUCTION INFORMATION SIGNING:

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

   PLACE THE G20-X1 ADVANCE WORK NOTICE SIGN(S) 7 DAYS PRIOR TO THE PLANNED CLOSURE DATE.

   IF CONSTRUCTION INFORMATION SIGNING IS NO LONGER VISIBLE TO THE MOTORING PUBLIC ONCE WORK BEGINS, MOVE SAID SIGNING TO A SITE IN ADVANCE OF THE WORK ZONE OR CLOSURE AS SHOWN IN THE PLAN OR APPROVED BY THE ENGINEER.

UPDATED 12/20/2021

PAVEMENT MARKING SYMBOLS AND MATERIALS LEGEND

SOLID LINE PAVEMENT MARKING WITH TEMPORARY RAISED PAVEMENT MARKERS AT 10' SPACES

BROKEN LINE-40' CYCLE (10' LINE, 30' GAP)

STRIPING KEY

BOX-REMOVABLE PREFORMED PLASTIC MARKING

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

EXAMPLE: 4SW = 4" SOLID LINE WHITE REMOVABLE PREFORMED PLASTIC MARKING

TRAFFIC CONTROL DEVICES & SYMBOLS LEGEND

SYMBOL	DESCRIPTION
	AREA CLOSED TO TRAFFIC / WORK AREA
	CONSTRUCT UNDER TRAFFIC
	TRAFFIC CONTROL SIGN
	TYPE III BARRICADE =
	FLASHING ARROW BOARD TYPE C = (4'X8' UNLESS OTHERWISE NOTED)
	DRUM-LIKE CHANNELIZER (TYPE B) =

TRAFFIC CONTROL INDEX

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WSB PROJECT NO.: 019869-000

SCALE: AS SHOWN | DESIGN BY: AJF

PLAN BY: AJF | CHECK BY: NEH

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

NICHOLAS E. HENTGES, PE LIC. NO: 44620

DATE: 7/29/2022

CITY OF BLAINE, MN

LEXINGTON AVENUE NE AT 131ST AVENUE NE INTERSECTION IMPROVEMENTS

CONSTRUCTION STAGING & TRAFFIC CONTROL

PLOTTED/REVISED: 7/29/2022 12:24:32 PM

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"R" SERIES

SIGN	SIGN NO.	COLOR	SIZE (IN. X IN.) (WxH)
	R3-6 (R/L)	BLACK ON WHITE	30X36
	R9-9	BLACK ON WHITE	30X18
	R11-2M	BLACK ON WHITE	48X30

"W" SERIES

SIGN	SIGN NO.	COLOR	SIZE (IN. X IN.) (WxH)	ASSEMBLY (IN. X IN.) WxH)	NUMBER OF POST
	W8-23	BLACK ON ORANGE	48X48	48X48	2
	W20-1	BLACK ON ORANGE	48X48	48X48	2
	W20-X5	BLACK ON ORANGE	48X48	48X48	2
	W20-X17	BLACK ON ORANGE	48X48	48X48	2

NOTE: FOR MEDIAN PLACEMENT WHERE THERE IS INSUFFICIENT SPACE FOR 48X48 WARNING SIGNS, USE SIZE 36X36 INSTEAD.

"G" SERIES

SIGN	SIGN NO.	COLOR	SIZE (IN. X IN.) (WxH)	ASSEMBLY (IN. X IN.) WxH)	NUMBER OF POST	POST SPACING (INCHES)
	G20-X1	BLACK ON ORANGE	72X60	72X60	2	42

GENERAL NOTES:

1. SIGN STRUCTURE TABULATIONS INDICATE SQUARE TUBE GROUND MOUNTED SIGN STRUCTURES THAT ARE MASH-16 COMPLIANT.
2. USE PRODUCTS FROM THE BASES FOR SQUARE TUBE SIGN STRUCTURES APPROVED/QUALIFIED PRODUCTS LIST FOR THE INDICATED SQUARE TUBE RISER POST SIZE. PLACE PER THE MANUFACTURER'S SPECIFICATIONS.
3. ALUMINUM STRINGERS SHALL BE USED FOR SIGNS 36 INCHES AND WIDER. SEE MANUFACTURER'S SPECIFICATIONS FOR SQUARE TUBE MOUNTING DETAILS. STRINGERS ON SINGLE POST ASSEMBLIES ARE REQUIRED TO BE AT LEAST 9 INCHES IN FROM THE EDGE OF THE SIGN.
4. UNLESS OTHERWISE INDICATED, USE 2-1/2 INCH RISER POSTS FOR GROUND MOUNTED SIGN STRUCTURES.

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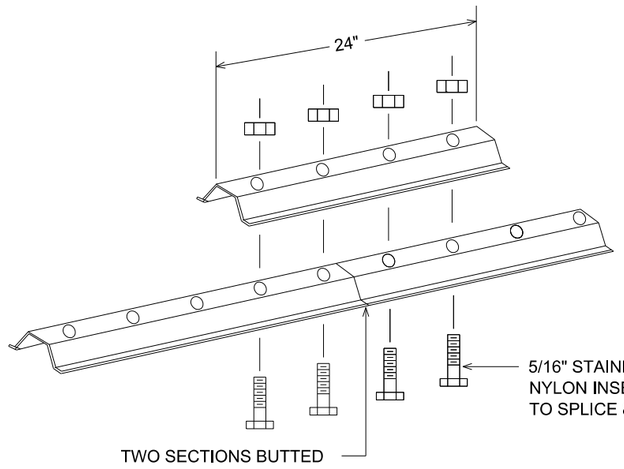
CITY OF BLAINE, MN

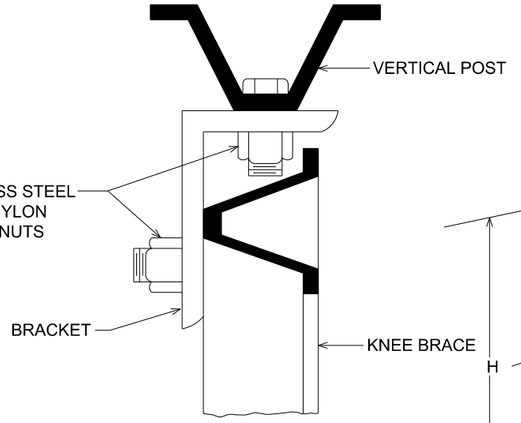
LEXINGTON AVENUE NE AT 131ST AVENUE NE INTERSECTION IMPROVEMENTS

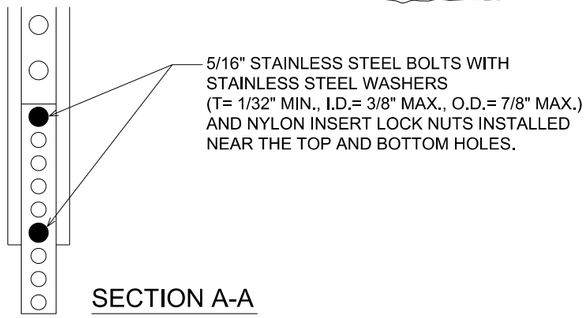
CONSTRUCTION STAGING & TRAFFIC CONTROL

SHEET **22** OF **53** SHEETS

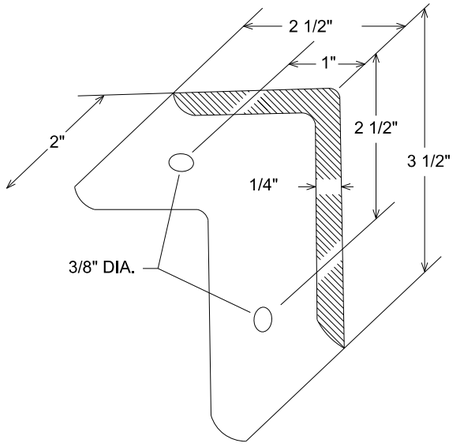


LATERAL BRACE OR STRINGER SPLICE DETAIL (EXPLODED VIEW)



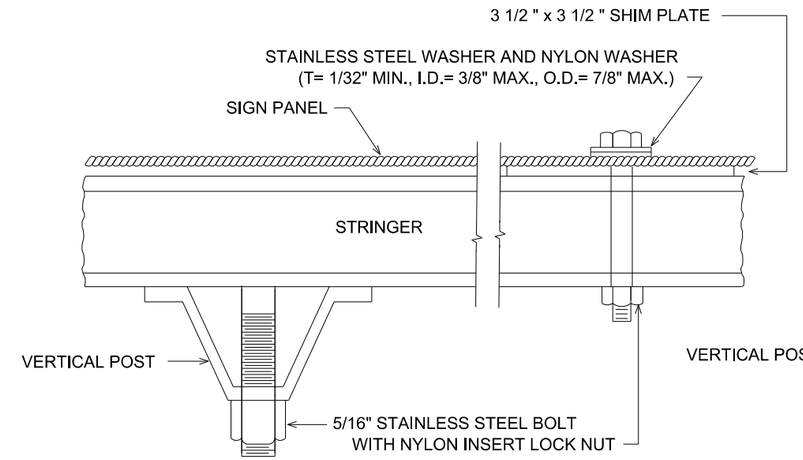


SECTION A-A

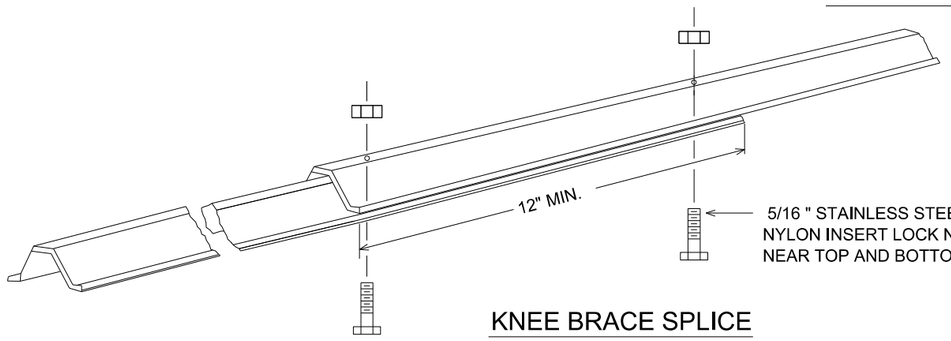


A-FRAME BRACKET

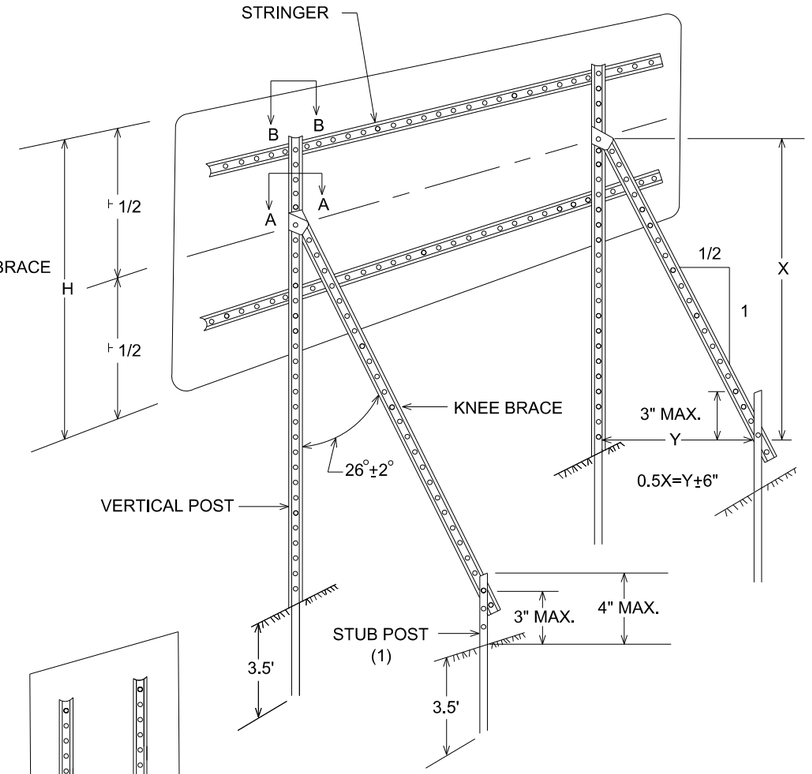
(STEEL MN/DOT 3306 GALVANIZED PER MN/DOT 3394)



SECTION B-B

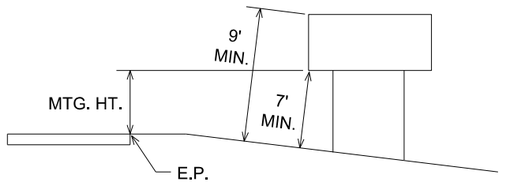


KNEE BRACE SPLICE



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

TYPICAL INSTALLATION 36" AND LARGER TYPE "C" SIGNS



TYPICAL MOUNTING

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

TYPE C & D SIGN STRUCTURAL DETAILS

ANOKA COUNTY HIGHWAY DEPARTMENT SIGN DETAILS

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LEXINGTON AVENUE NE AT 131ST AVENUE NE INTERSECTION IMPROVEMENTS

CONSTRUCTION STAGING & TRAFFIC CONTROL

SHEET 23 OF 53 SHEETS

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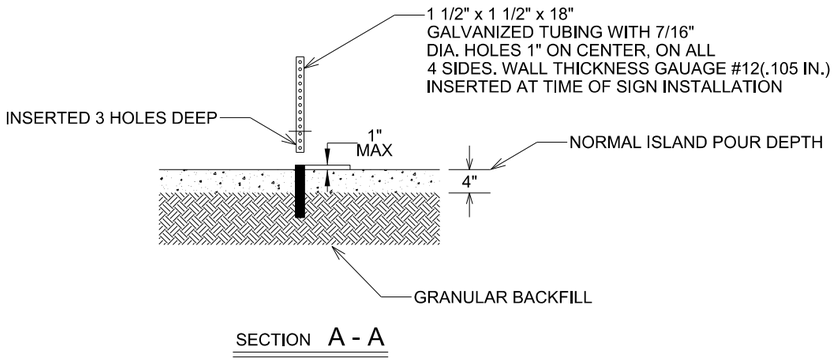
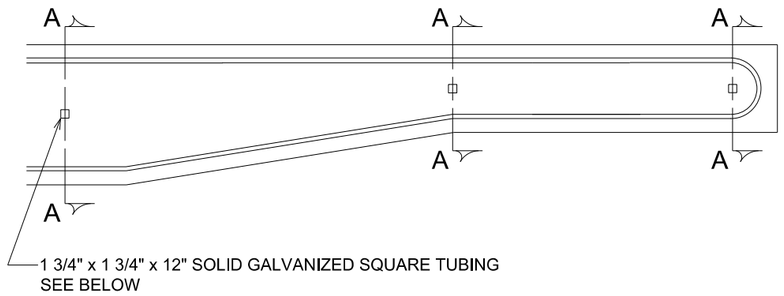
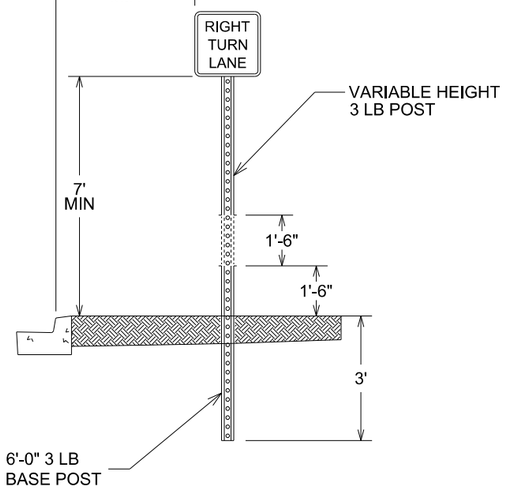


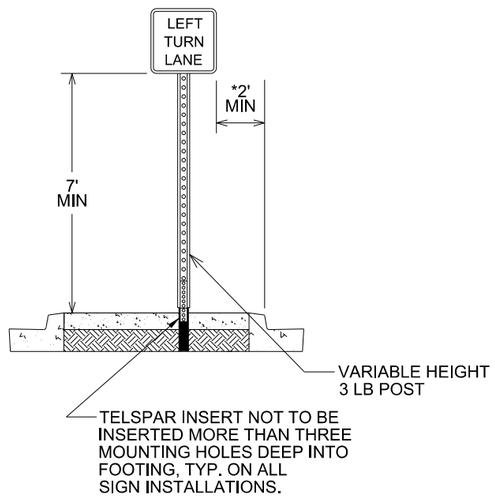
SECTION A - A



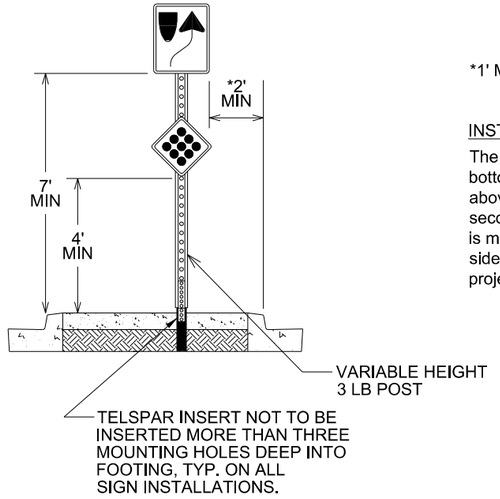
GROUND POST MOUNT SIGN
INSTALLATION TYPICAL



ISLAND MOUNT BREAK-AWAY SIGN
INSTALLATION TYPICAL



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



*1' MIN FOR NARROW URBAN LOCATIONS

INSTALLATION NEAR SIDEWALK (MN MUTCD)

The minimum height, measured vertically from the bottom of the sign to the sidewalk, of signs installed above sidewalks shall be 7 feet. If the bottom of a secondary sign that is mounted below another sign is mounted lower than 7 feet above a pedestrian sidewalk or pathway, the secondary sign shall not project more than 4 inches into the pedestrian facility.

ANOKA COUNTY HIGHWAY DEPARTMENT SIGN PLACEMENT

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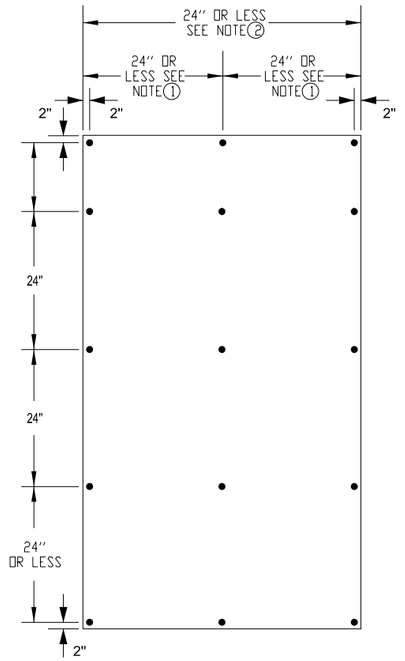
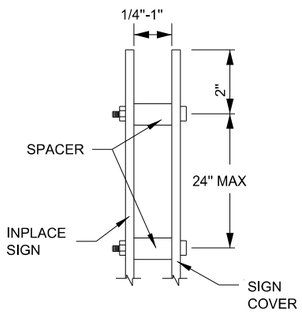
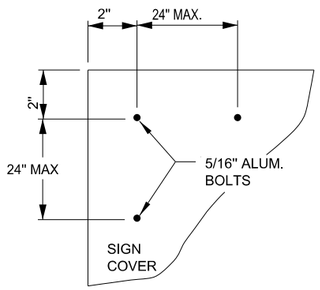
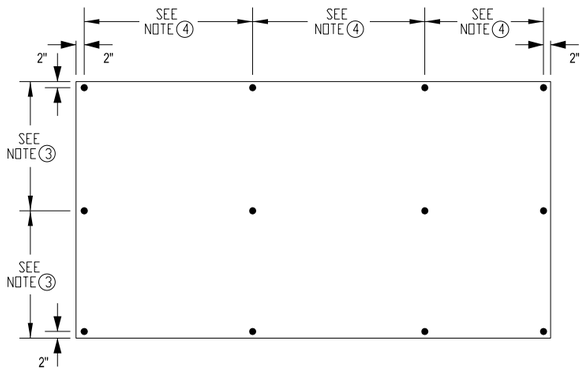








OVERLAY ASSEMBLY STEPS FOR COVERING COMPLETE OR PORTION OF EXTRUDED SIGN PANEL:

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.

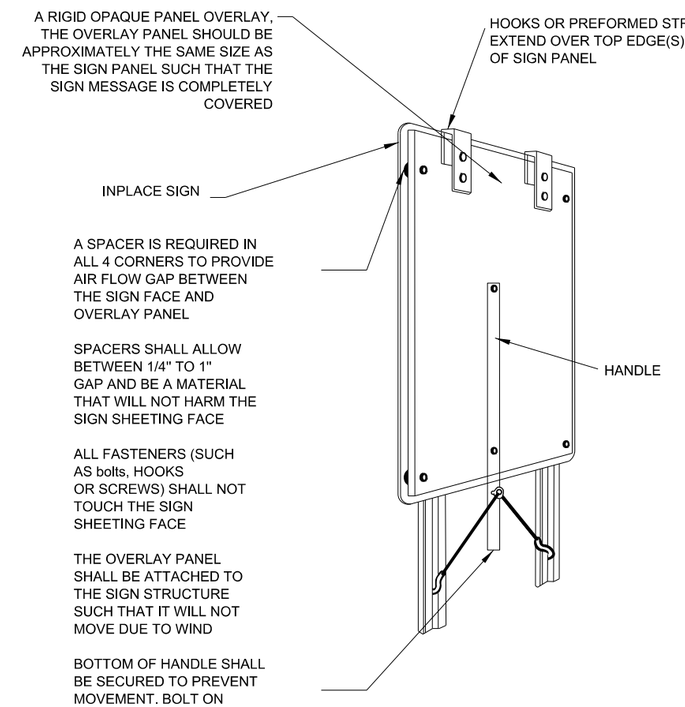
SPACERS SHALL BE A MATERIAL THAT WILL NOT HARM THE SIGN SHEETING FACE (SUCH AS PLASTIC OR RUBBER).

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:



SPACERS SHALL ALLOW BETWEEN 1/4" TO 1" GAP AND BE A MATERIAL THAT WILL NOT HARM THE SIGN SHEETING FACE

ALL FASTENERS (SUCH AS bolts, HOOKS OR SCREWS) SHALL NOT TOUCH THE SIGN SHEETING FACE

THE OVERLAY PANEL SHALL BE ATTACHED TO THE SIGN STRUCTURE SUCH THAT IT WILL NOT MOVE DUE TO WIND

BOTTOM OF HANDLE SHALL BE SECURED TO PREVENT MOVEMENT. BOLT ON HANDLE SHALL BE ATTACHED TO OVERLAY PANEL AS TO NOT DAMAGE INPLACE SIGN PANEL.

ACHD REFERENCE DATE: 01/26/2018

ANOKA COUNTY HIGHWAY DEPARTMENT TEMPORARY SIGN COVERING

PLOTTED/REVISED: 7/29/2022 12:24:35 PM

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AJF	NEH

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NICHOLAS E. HENTGES. PE

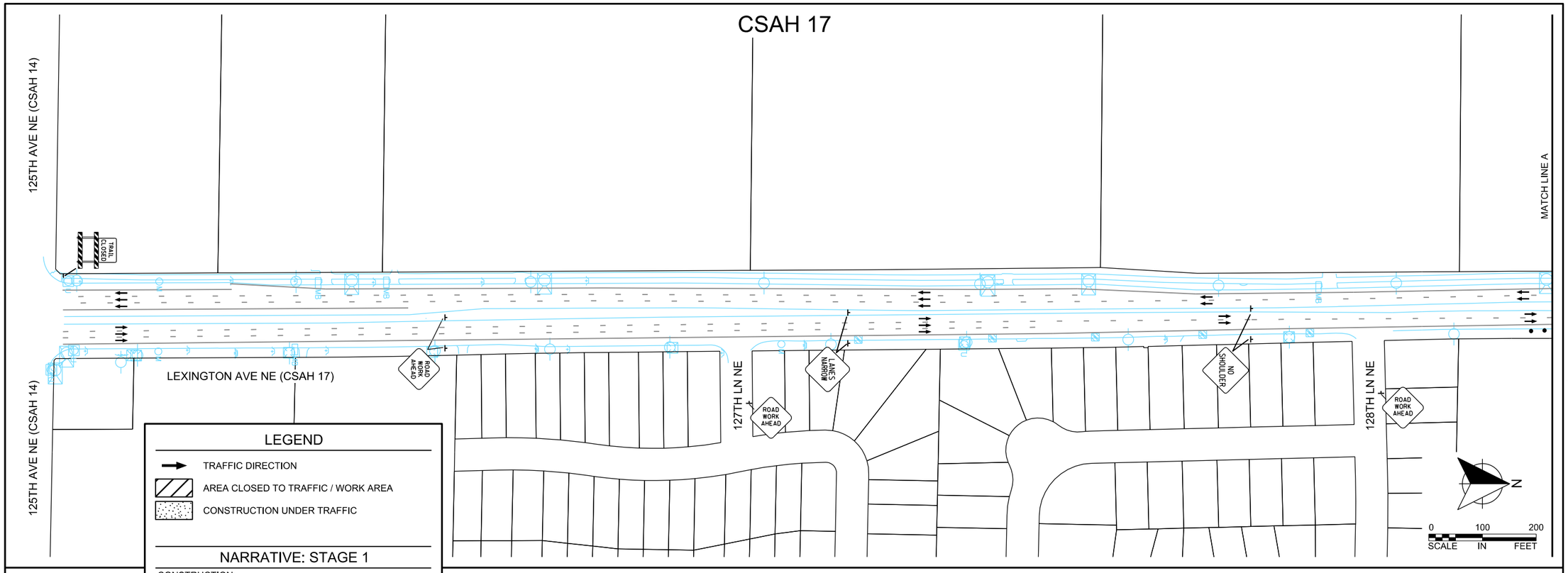
DATE: 7/29/2022 LIC. NO: 44620

CITY OF BLAINE, MN

LEXINGTON AVENUE NE AT 131ST AVENUE NE INTERSECTION IMPROVEMENTS

CONSTRUCTION STAGING & TRAFFIC CONTROL

SHEET 25 OF 53 SHEETS



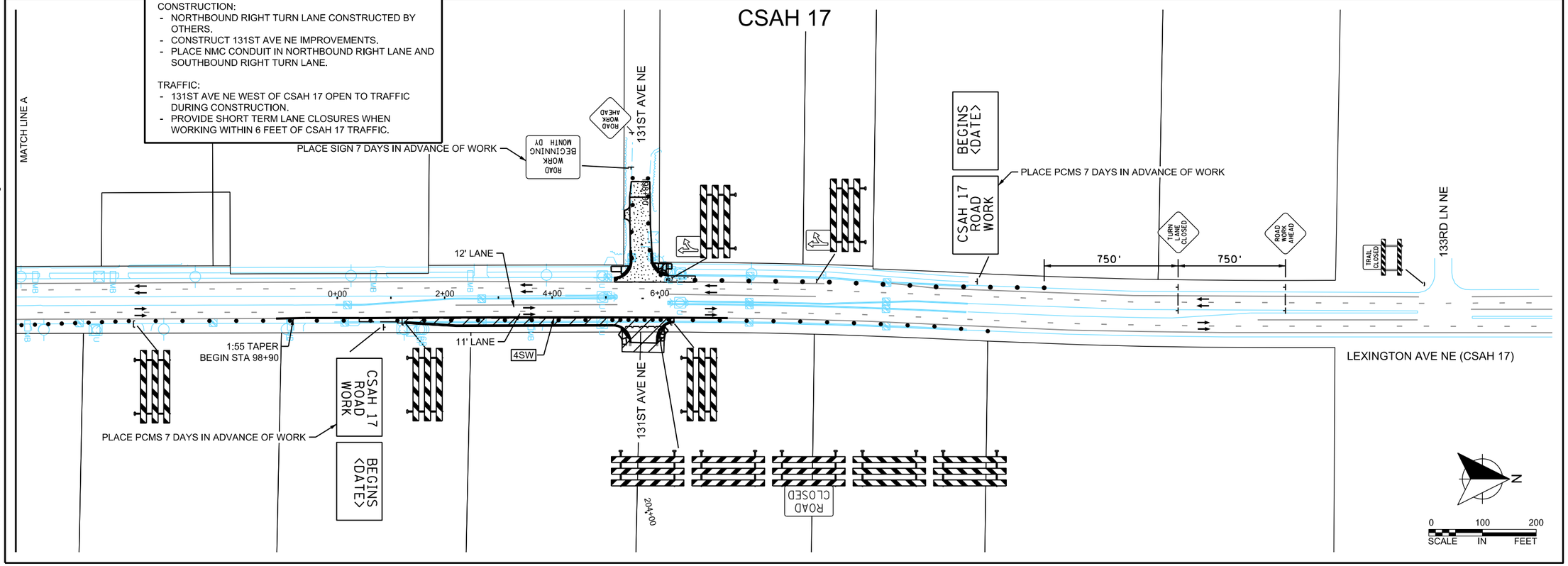
LEGEND

- TRAFFIC DIRECTION
- AREA CLOSED TO TRAFFIC / WORK AREA
- CONSTRUCTION UNDER TRAFFIC

NARRATIVE: STAGE 1

CONSTRUCTION:
- NORTHBOUND RIGHT TURN LANE CONSTRUCTED BY OTHERS.
- CONSTRUCT 131ST AVE NE IMPROVEMENTS.
- PLACE NMC CONDUIT IN NORTHBOUND RIGHT LANE AND SOUTHBOUND RIGHT TURN LANE.

TRAFFIC:
- 131ST AVE NE WEST OF CSAH 17 OPEN TO TRAFFIC DURING CONSTRUCTION.
- PROVIDE SHORT TERM LANE CLOSURES WHEN WORKING WITHIN 6 FEET OF CSAH 17 TRAFFIC.



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DATE: 7/29/2022

CITY OF BLAINE, MN

LEXINGTON AVENUE NE AT 131ST AVENUE NE INTERSECTION IMPROVEMENTS

CONSTRUCTION STAGING & TRAFFIC CONTROL

PLOTTED/REVISED: 7/29/2022 12:24:37 PM

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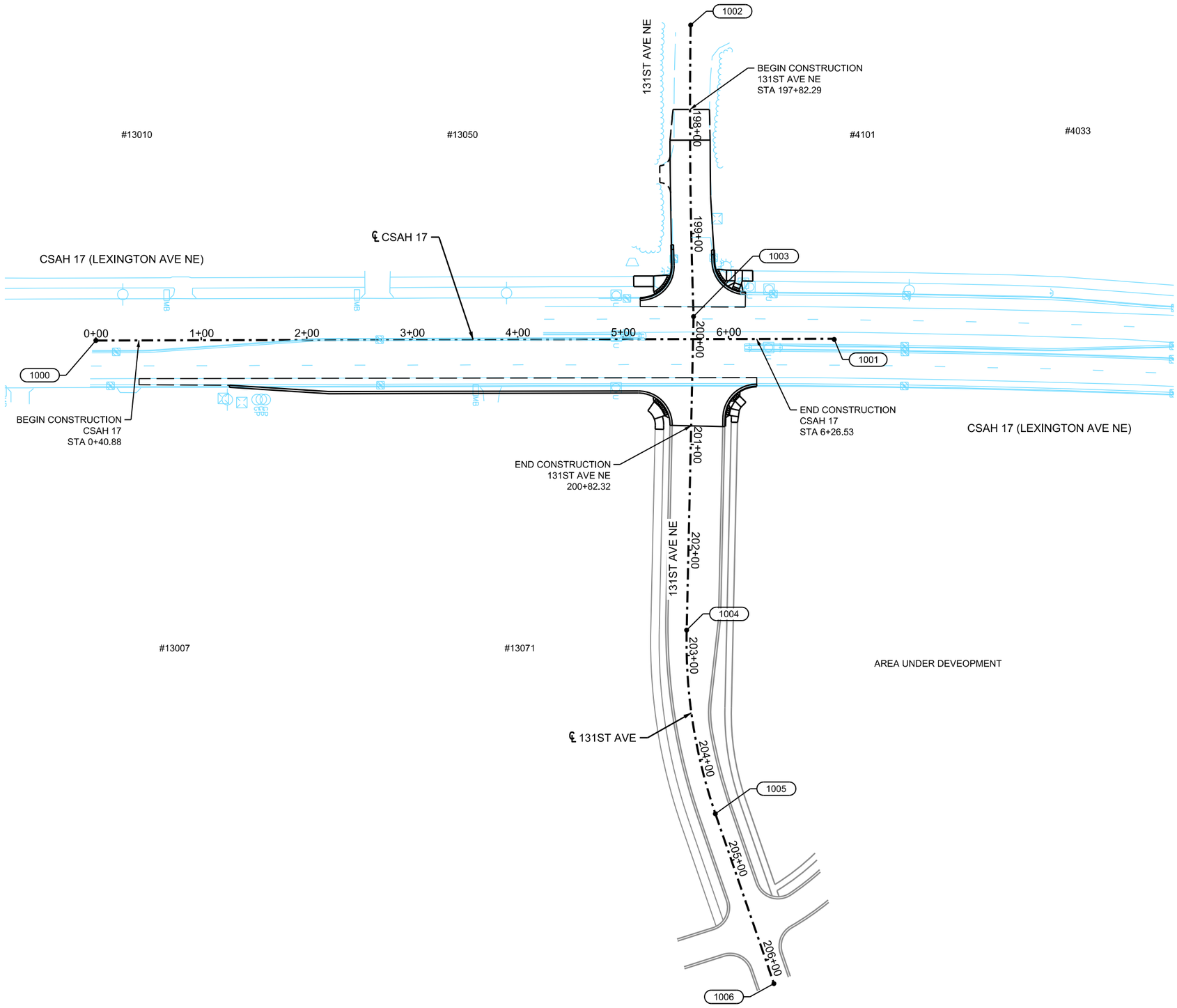
CSAH 17



N

0 50 100
SCALE IN FEET

HORIZONTAL CONTROL FOR THIS PLAN IS ANOKA COUNTY COORDINATE SYSTEM, NAD 83 (1996 ADJUSTMENT)

LEGEND

XXXX — POINT NUMBER (POINT DETAILS FOUND ON ALIGNMENT TABULATION SHEETS)

wsb

WSB PROJECT NO.: 019869-000

SCALE:	DESIGN BY:
AS SHOWN	AJF
PLAN BY:	CHECK BY:
AJF	NEH

REVISIONS

NO.	DATE	DESCRIPTION

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

NICHOLAS E. HENTGES. PE

DATE: 7/29/2022 LIC. NO: 44620

CITY OF BLAINE, MN

LEXINGTON AVENUE NE AT 131ST AVENUE NE INTERSECTION IMPROVEMENTS

ALIGNMENT PLAN

SHEET **27** OF **53** SHEETS

PLOTTED/REVISED: 7/29/2022 12:24:38 PM

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ALIGNMENT TABULATION

POINT NUMBER	POINT	STATION	DELTA	DEGREE	RADIUS	TANGENT	LENGTH	COORDINATES X	COORDINATES Y	BEARING
		CSAH 17								
1000	POT	0+00.00						526,737.492	162,299.549	
1001	POT	7+00.00						526,735.781	162,999.547	
		131ST AVENUE NE								
1002	PC	197+02.355						526,438.510	162,863.552	S 89° 07' 35.1" E
	PI	198+40.534	2° 51' 48.1" LT	1° 02' 10.8"	5,528.752'	138.179'	276.300'	526,576.673	162,861.446	PI
	CC							526,522.803	168,391.662	
1003	PT	199+78.655						526,714.769	162,866.243	N 88° 00' 36.8" E
1004	PC	202+75.956						527,011.997	162,859.705	S 88° 44' 23.0" E
	PI	203+65.460	20° 17' 52.4" LT	11° 27' 33.0"	500.000'	89.504'	177.132'	527,101.480	162,857.736	PI
	CC							527,022.994	163,359.584	
1005	PT	204+53.089						527,186.089	162,886.931	N 70° 57' 44.6" E
1006	POT	206+23.34						527,347.030	162,942.466	

wsb

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NICHOLAS E. HENTGES. PE LIC. NO: 44620

DATE: 7/29/2022

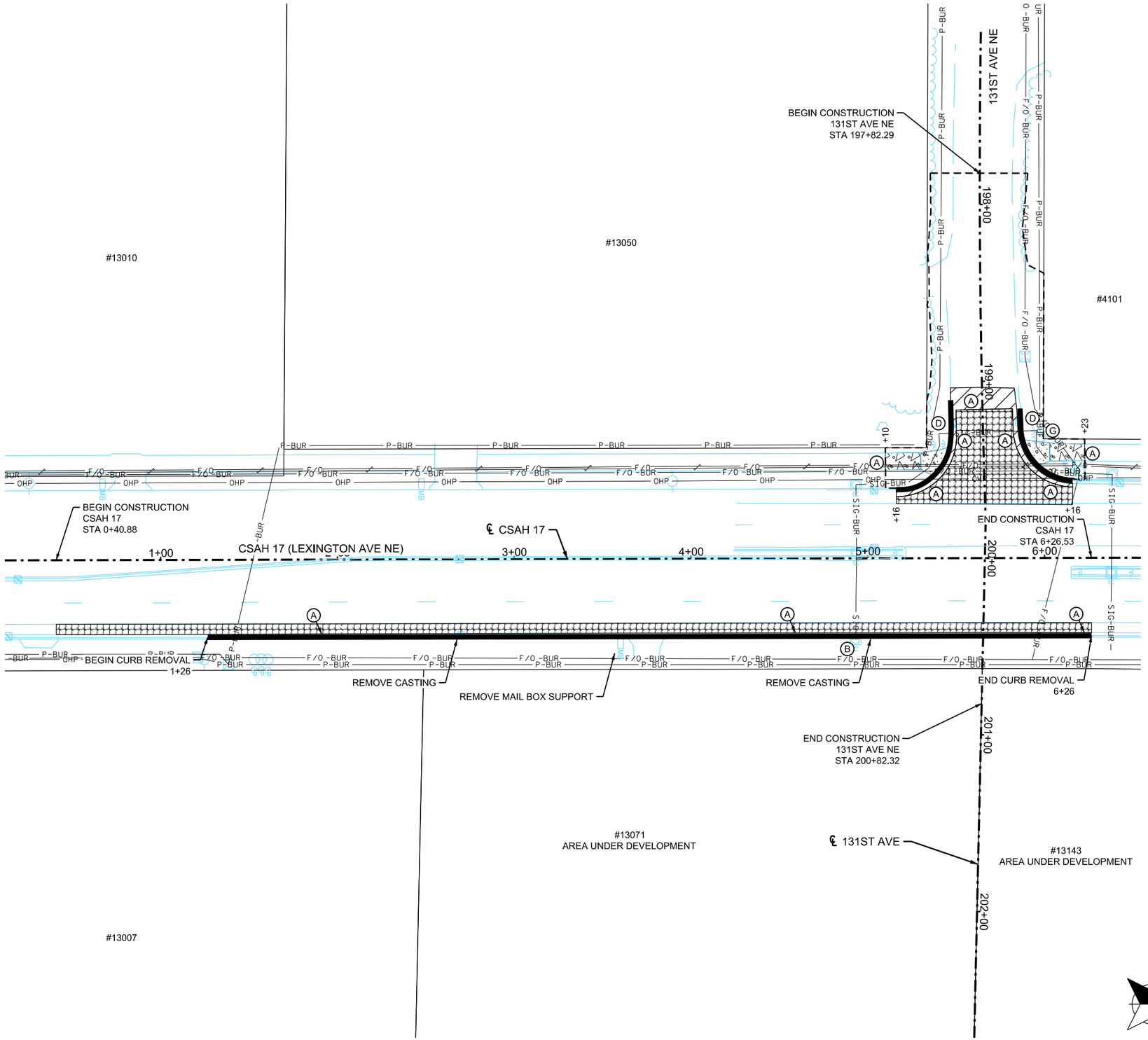
CITY OF BLAINE, MN

LEXINGTON AVENUE NE AT 131ST AVENUE NE INTERSECTION IMPROVEMENTS

ALIGNMENT PLAN

SHEET **28** OF **53** SHEETS

CSAH 17



LEGEND

- T-BUR — BURIED FIBER OPTIC LINE
- P-BUR — BURIED POWER LINE
- SIG-BUR — BURIED SIGNAL LINE
- T-BUR — BURIED TELEPHONE LINE
- TV-BUR — BURIED TELEVISION LINE
- OHP — OVERHEAD POWER LINE
- OHU — OVERHEAD UTILITY LINE
- SANITARY SEWER
- STORM SEWER
- G — UNDERGROUND GAS MAIN / SERVICE
- UTILITY IN CONDUIT
- W — WATER MAIN
- CULVERT
- CABINET
- CATCH BASIN
- HANDHOLE
- HYDRANT
- LIGHT POLE
- MANHOLE
- PIPE APRON
- POWER / UTILITY POLE
- SIGN STRUCTURE
- SIGNAL POLE
- UTILITY PEDESTAL
- VALVE
- VEGITATION
- XC — FENCE
- REMOVE BITUMINOUS PAVEMENT
- REMOVE BITUMINOUS WALK
- REMOVE CONCRETE WALK
- MILL BITUMINOUS SURFACE (1.5")
- REMOVE CONCRETE CURB & GUTTER
- GRADING LIMITS (APPROX.)
- (A) SAWING BITUMINOUS PAVEMENT (FULL DEPTH)
- (B) REMOVE HANDHOLE
- (D) SALVAGE CASTING ASSEMBLY
- (G) REMOVE LIGHTING UNIT, REMOVE LIGHT FOUNDATION

GENERAL NOTES

1. REMOVAL OF AGGREGATE BASE AND SURFACING SHALL BE INCLUDED IN EXCAVATION-COMMON.
2. ALL REMOVAL ITEMS SHALL BE DISPOSED OF OFF THE PROJECT SITE.
3. DRIVEWAY REMOVALS ARE SHOWN TO THE RIGHT OF WAY FOR ILLUSTRATIVE PURPOSES ONLY. ACTUAL EXTENT OF DRIVEWAY REMOVAL WILL BE DETERMINED IN THE FIELD BY THE ENGINEER.
4. EXISTING PAVEMENT DEPTH VARIES BETWEEN 5" AND 6".
5. THE EXISTING SUBSURFACE UTILITY INFORMATION IS QUALITY LEVEL D IN ACCORDANCE WITH THE GUIDELINES OF CI/ASCE 38-02.
6. UTILITIES ARE SHOWN AT APPROXIMATE LOCATIONS. THE CONTRACTOR SHALL DETERMINE THE ACTUAL LOCATION OF ALL BURIED UTILITIES IN THE FIELD.
7. THE CONTRACTOR SHALL BE RESPONSIBLE TO COORDINATE RELOCATIONS AND LOCATES WITH THE UTILITY COMPANIES. CALL GOPHER STATE ONE CALL AT LEAST 48 HOURS PRIOR TO EXCAVATION OR CONSTRUCTION.
8. SAWING OF CONCRETE CURB & GUTTER, CONCRETE WALK, BITUMINOUS WALK SHALL BE INCIDENTAL.

wsb

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NICHOLAS E. HENTGES. PE — LIC. NO: 44620

DATE: 7/29/2022

CITY OF BLAINE, MN

LEXINGTON AVENUE NE AT 131ST AVENUE NE INTERSECTION IMPROVEMENTS

INPLACE TOPOGRAPHY & REMOVALS

SHEET **29** OF **53** SHEETS

PLOTTED/REVISED: 7/29/2022 12:24:39 PM

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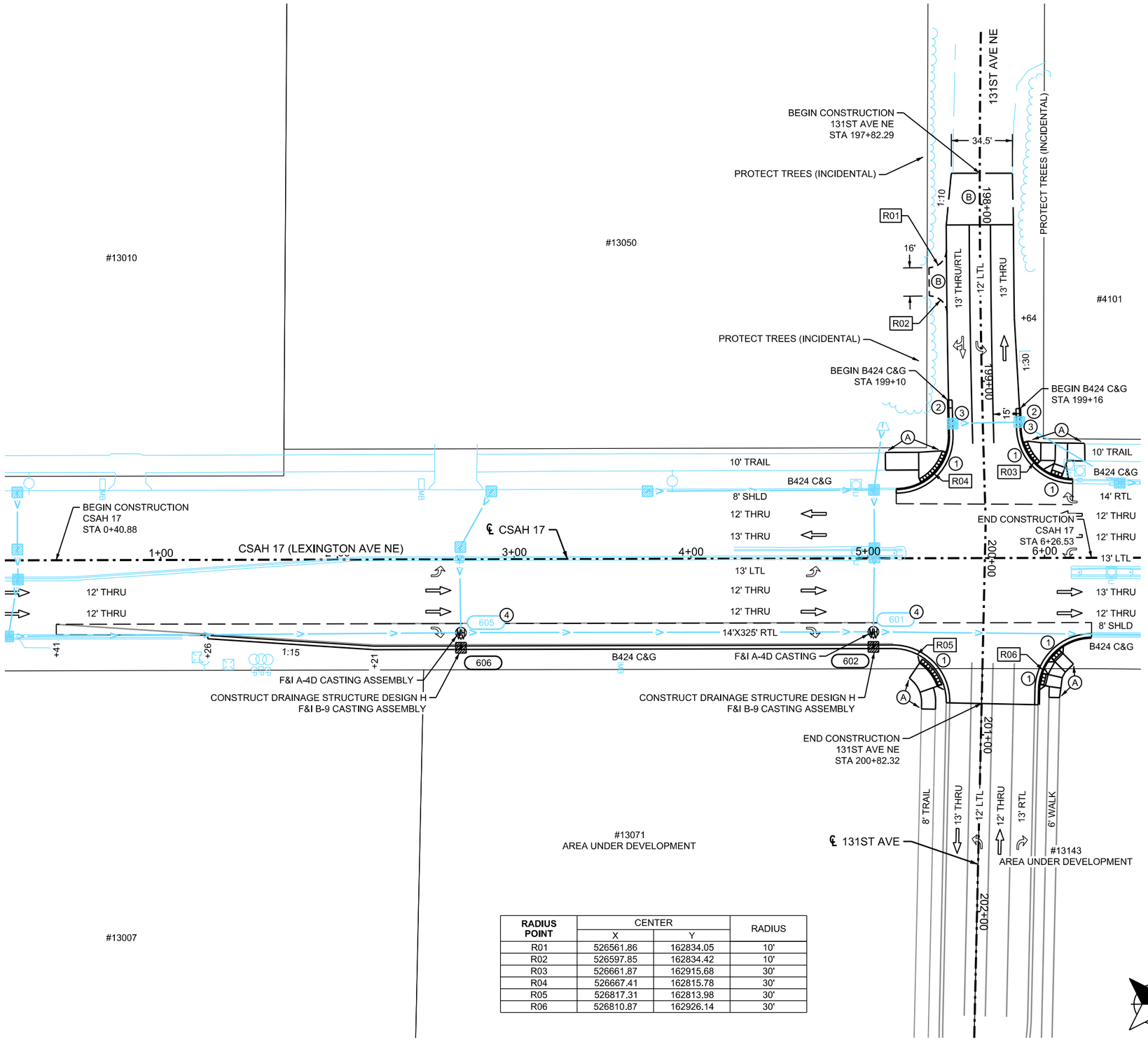
CSAH 17



RADIUS POINT	CENTER		RADIUS
	X	Y	
R01	526561.86	162834.05	10'
R02	526597.85	162834.42	10'
R03	526661.87	162915.68	30'
R04	526667.41	162815.78	30'
R05	526817.31	162813.98	30'
R06	526810.87	162926.14	30'

LEGEND

- TRAFFIC DIRECTION
- (1) CONSTRUCT CONCRETE PEDESTRIAN RAMP WITH TRUNCATED DOMES. SEE PEDESTRIAN RAMP DETAILS.
- (2) CURB TRANSITION, SEE MISCELLANEOUS DETAILS
- (3) INSTALL CASTING
- (4) CONNECT INTO EXISING DRAINAGE STRUCTURE
- (A) 6" CONCRETE WALK
- (B) 6" AGGREGATE SURFACING CLASS 2
- RXX — EXISTING DRAINAGE STRUCTURE NUMBER (RADIUS CALCULATE FACE OF CURB OR EDGE OF AGGREGATE)
- PROP. DRAINAGE STRUCTURE NUMBER
- XXX — EXISTING STORM SEWER PIPE
- XXX — PROPOSED STORM SEWER PIPE
- EXISTING MANHOLE / CATCH BASIN
- PROPOSED MANHOLE / CATCH BASIN

GENERAL NOTES

1. ALL DIMENSIONS ARE TO FACE OF CURB OR EDGE OF BITUMINOUS UNLESS OTHERWISE NOTED.
2. SEE ALIGNMENT PLAN FOR CURVE DATA.

VERTICAL CONTROL

ELEVATIONS FOR THIS PLAN ARE BASED ON NAVD 88 DATUM.

wsb

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DATE: 7/29/2022

CITY OF BLAINE, MN

LEXINGTON AVENUE NE AT 131ST AVENUE NE INTERSECTION IMPROVEMENTS

STREET & DRAINAGE PLAN

SHEET **30** OF **53** SHEETS

PLOTTED/REVISED: 7/29/2022 12:24:41 PM

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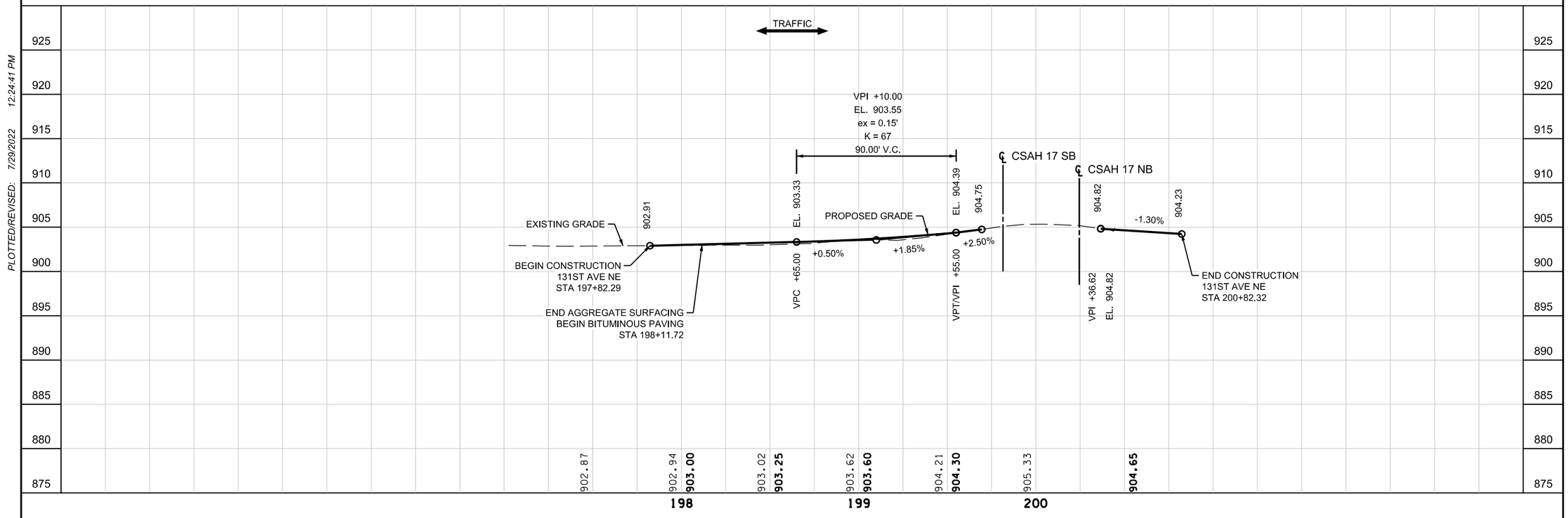
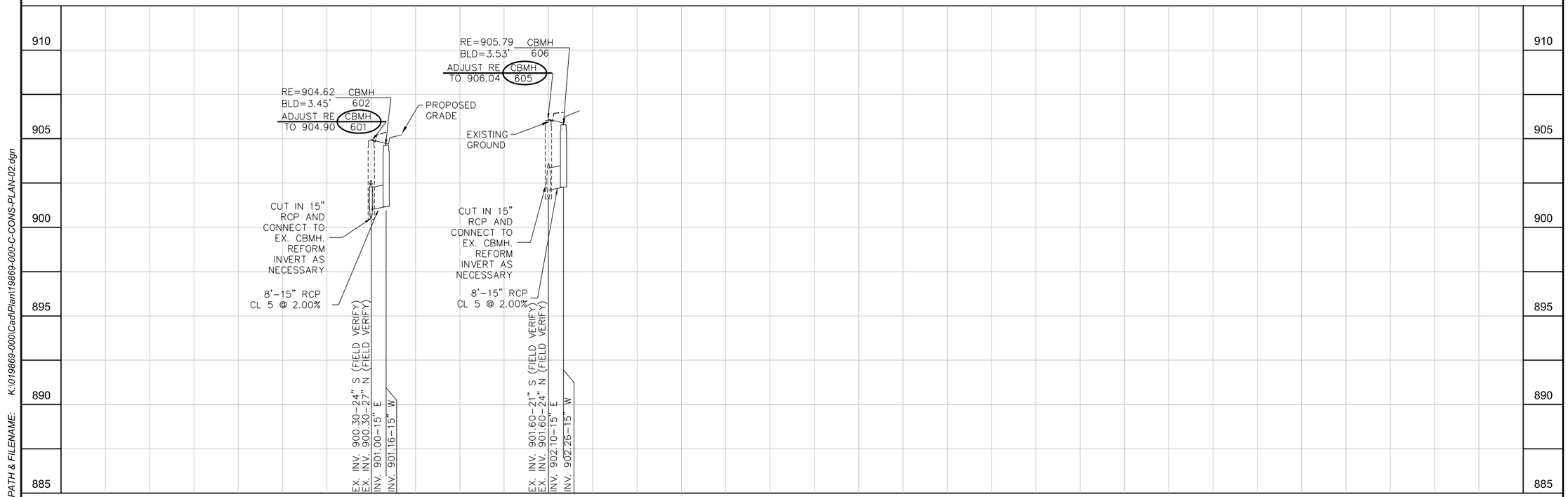
131ST AVENUE NE PROFILE



STORM SEWER PROFILES



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wsb

WSB PROJECT NO.: 019869-000

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DATE: 7/29/2022 LIC. NO:

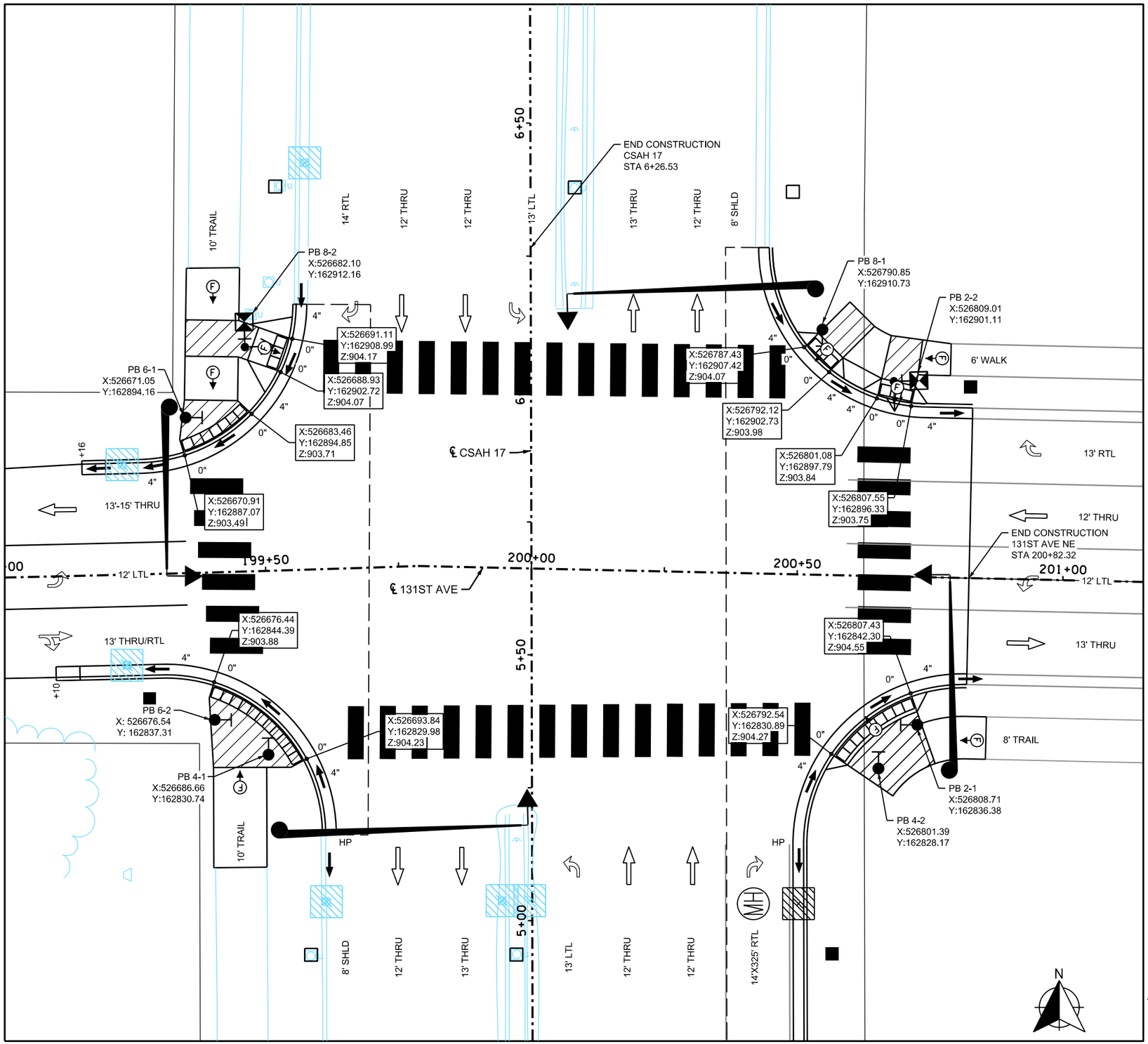
CITY OF BLAINE, MN

LEXINGTON AVENUE NE AT 131ST AVENUE NE INTERSECTION IMPROVEMENTS

STREET & DRAINAGE PLAN

SHEET 31 OF 53 SHEETS

CSAH 17 at 131st Avenue NE



LEGEND

- PEDESTRIAN PUSH BUTTON STATION
- HP / LP — LOCALIZED HIGH / LOW POINT
- XXX — CONTROL POINTS AT GUTTER FLOW LINE
- TRUNCATED DOMES (SEE STANDARD PLATE 7038)
- CATCH BASIN
- 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 SLOPE SHALL NOT EXCEED 2.0%.
- DRAINAGE FLOW ARROW

GENERAL NOTES

- MAINTAIN A MINIMUM 4' WIDE PEDESTRIAN ACCESS ROUTE OBSTRUCTION TO OBSTRUCTION AND/OR OBSTRUCTION TO FAR EDGE OF WALK.
- THE CROSS SLOPE OF THE PEDESTRIAN ACCESS ROUTE SHALL NOT EXCEED 0.020 FT/FT

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WSB PROJECT NO.: 019869-000

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AJF	NEH

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NICHOLAS E. HENTGES. PE — LIC. NO: 44620

DATE: 7/29/2022

CITY OF BLAINE, MN

LEXINGTON AVENUE NE AT 131ST AVENUE NE INTERSECTION IMPROVEMENTS

STREET & DRAINAGE PLAN

SHEET 32 OF 53 SHEETS

PLOTTED/REVISED: 7/29/2022 12:24:43 PM

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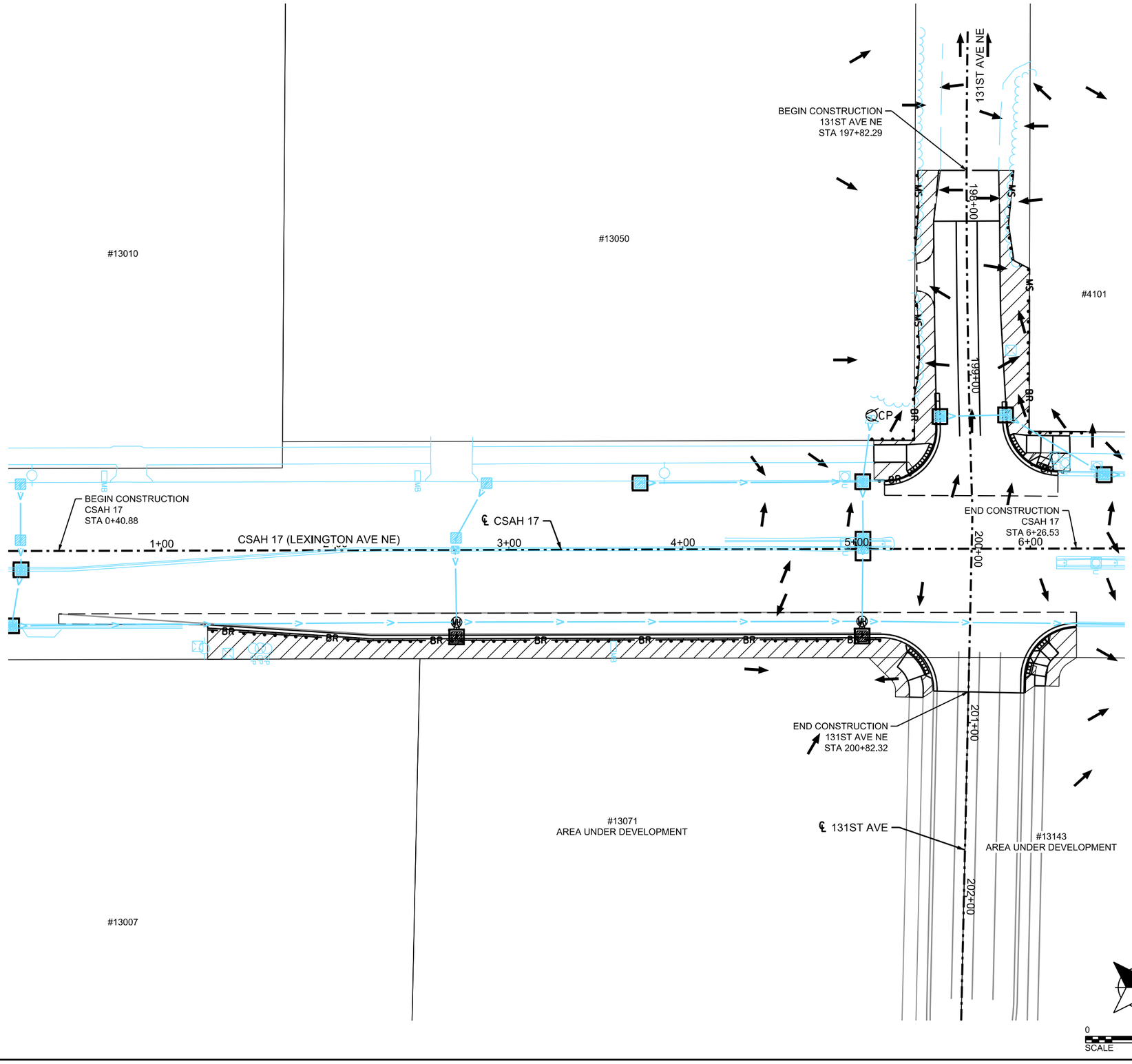
CSAH 17



LEGEND

TEMPORARY:
RAPID STABILIZATION METHOD 3

PERMANENT:
ROLLED EROSION PREVENTION CATEGORY 20
SEED MIX 25-131 (220 LBS/ACRE)
FERTILIZER TYPE 3 (350 LBS/ACRE)

- SURFACE FLOW DIRECTION
- INLET PROTECTION
- BR — SEDIMENT CONTROL LOG TYPE COMPOST
- MS — SILT FENCE, TYPE MS
- CONSTRUCTION LIMITS

GENERAL NOTES

1. SOILS SHALL RECEIVE TEMPORARY OR PERMANENT STABILIZATION MEASURES IMMEDIATELY AND WITHIN 7 DAYS OF INACTIVITY.
2. THE CONTRACTOR SHALL AMEND THE EROSION CONTROL PLAN SHEETS TO SHOW LOCATIONS INCLUDING BUT NOT LIMITED TO: STAGING AND MATERIAL STORAGE AREAS, STOCKPILE LOCATIONS, AND LOCATIONS OF POTENTIAL POLLUTANT GENERATING ACTIVITIES (I.E. FUELING LOCATIONS, DESIGNATED CONCRETE WASHOUT AREAS, ETC.)
3. ALL DISTURBED AREAS GENERATED BY CONTRACTOR ACTIVITIES SHALL BE RESTORED WITH THE ROLLED EROSION PREVENTION, SEED MIX, AND FERTILIZER IDENTIFED IN THE LEGEND.

wsb

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DATE: 7/29/2022 LIC. NO: 44620

CITY OF BLAINE, MN

LEXINGTON AVENUE NE AT 131ST AVENUE NE INTERSECTION IMPROVEMENTS

TURF ESTABLISHMENT & EROSION CONTROL

SHEET **33** OF **53** SHEETS

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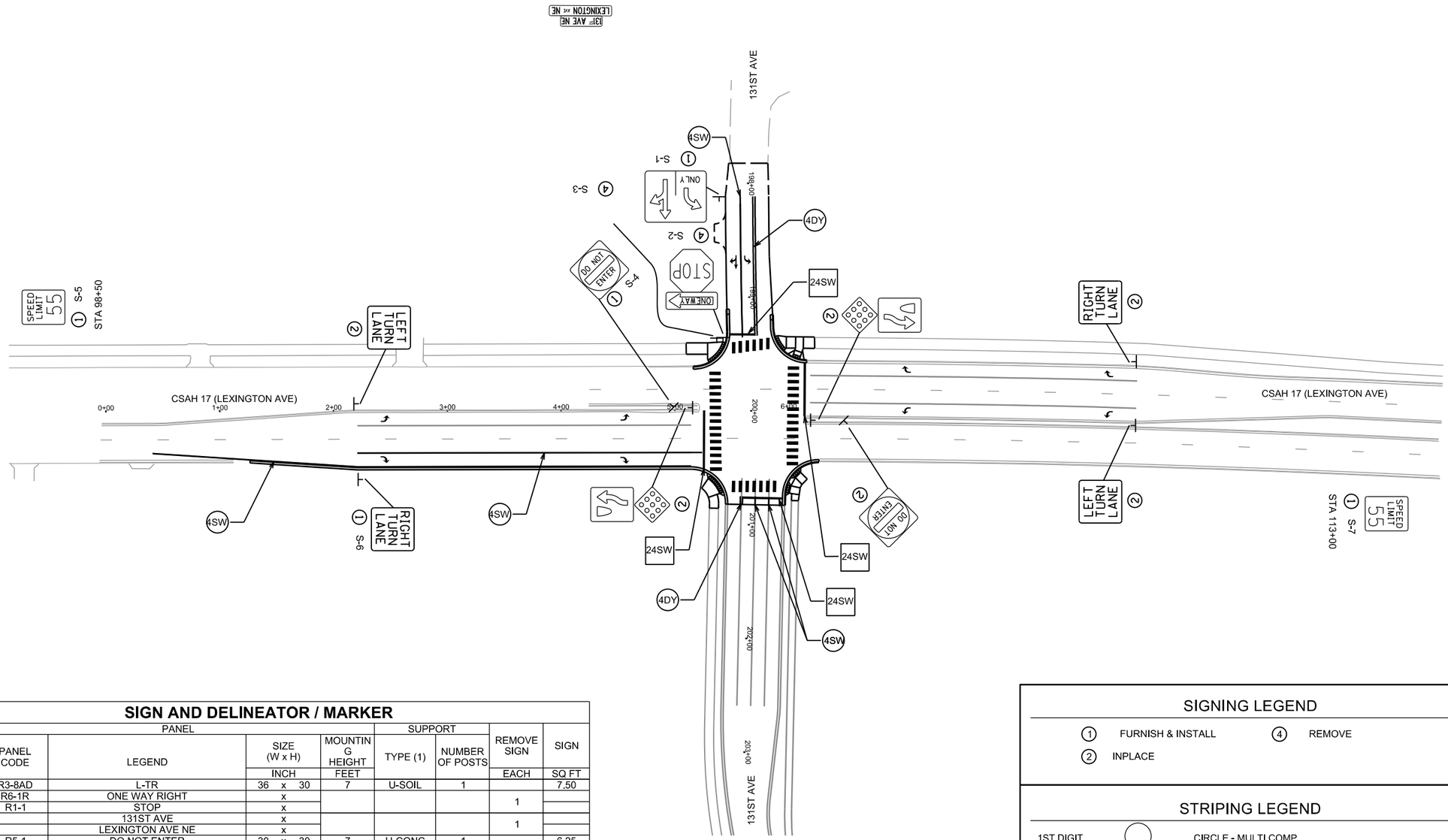

0 50 100
SCALE IN FEET

SIGN AND DELINEATOR / MARKER

SIGN NUMBER	PANEL				SUPPORT		REMOVE SIGN	SIGN
	PANEL CODE	LEGEND	SIZE (W x H)	MOUNTING HEIGHT	TYPE (1)	NUMBER OF POSTS		
			INCH	FEET			EACH	SQ FT
S-1	R3-8AD	L-TR	36 x 30	7	U-SOIL	1		7.50
S-2	R6-1R	ONE WAY RIGHT	x				1	
	R1-1	STOP	x					
S-3		131ST AVE	x				1	
		LEXINGTON AVE NE	x					
S-4	R5-1	DO NOT ENTER	30 x 30	7	U-CONC	1		6.25
S-5	R2-1	SPEED LIMIT 55	24 x 30	7	U-SOIL	1		5.00
S-6	R3-7R (MOD)	RIGHT TURN LANE	30 x 30	7	U-SOIL	1		6.25
S-7	R2-1	SPEED LIMIT 55	24 x 30	7	U-SOIL	1		5.00
						TOTAL:	2	30

SPECIFIC NOTE(S):
(1) U-CHANNEL 3# PER FOOT BLACK POST

SIGNING LEGEND

(1) FURNISH & INSTALL
(2) INPLACE
(4) REMOVE

STRIPING LEGEND

1ST DIGIT
WIDTH
4",6",8",24"

CIRCLE - MULTI COMP
SQUARE - PREF THERMO

2ND DIGIT
PATTERN
S = SOLID
B = BROKEN
D = DOUBLE
T = DOTTED

3RD DIGIT
COLOR
W = WHITE
Y = YELLOW
B = BLACK

ARROWS - PREF THERMO
CROSSWALK (3'X10' BLOCKS) - PREF THERMO

wsb

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SEAN DELMORE, PE
DATE: 7/29/2022 LIC. NO: 40945

CITY OF BLAINE, MN

LEXINGTON AVENUE NE AT 131ST AVENUE NE INTERSECTION IMPROVEMENTS

SIGNING & STRIPING

SHEET **34** OF **53** SHEETS

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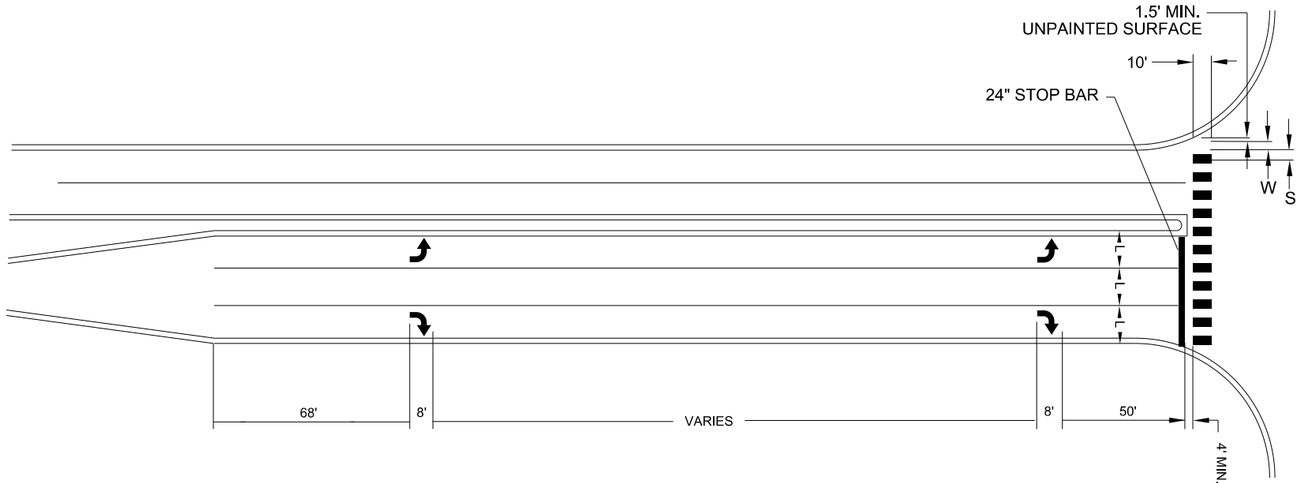
MARKINGS FOR PEDESTRIAN CROSSWALKS



(L)	(W)	(S)
WIDTH OF INSIDE LANE	WIDTH OF PAINTED AREAS	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.

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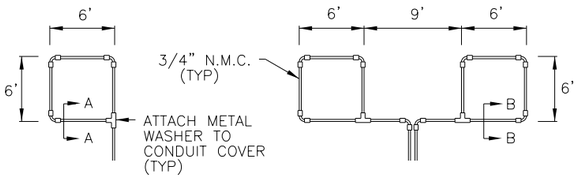
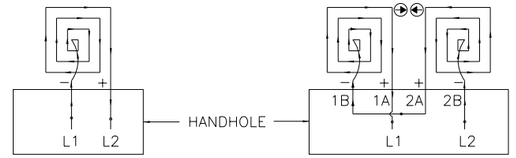
LEXINGTON AVENUE NE AT 131ST AVENUE NE INTERSECTION IMPROVEMENTS

SIGNING & STRIPING



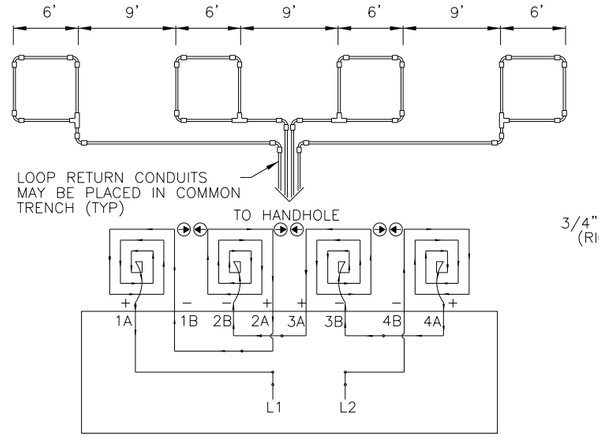


LOOP DETECTOR DETAIL 'A'
(LOOP PHASING FOR SINGLE CONNECTION)

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

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

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

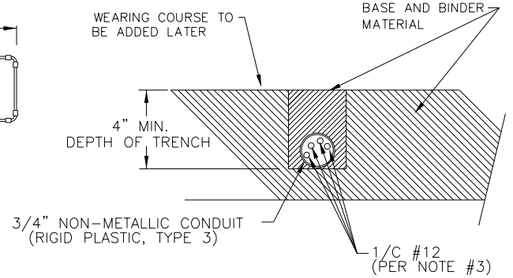


LOOP CONNECTIONS SHALL BE LABELED AND SPLICED IN THE HANDHOLE AS FOLLOWS:

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

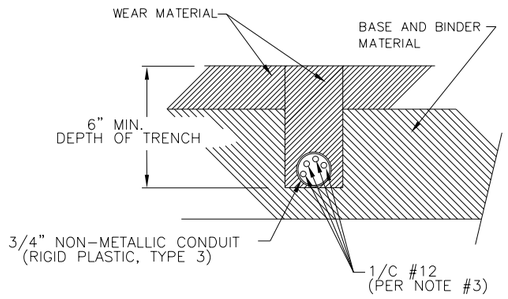
SPLICE CONTROL CABLE TO L1 & L2 IN HANDHOLE. ALL CONDUCTORS SHALL BE TAGGED IN HANDHOLE (1A, 1B, ECT)

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



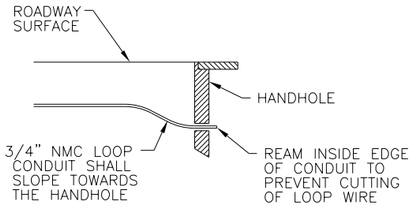
SECTION A-A

DETAIL FOR LOOP INSTALLATION IN NEW ROADWAY



SECTION B-B

DETAIL FOR LOOP INSTALLATION IN EXISTING ROADWAY



DRAINAGE DETAIL

LOOP DETECTOR WIRING

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

LEGEND OF SYMBOLS

- CONTROLLER AND SERVICE EQUIP. NO's — (A)
- SIGNAL BASE NO. — (1)
- SIGNAL FACE NO. — (1-1)
- LUMINAIRE NO. — (1)
- CONTROLLER AND CABINET
- CONTROLLER AND CABINET – IN PLACE
- HANDHOLE
- HANDHOLE – IN PLACE
- RIGID STEEL CONDUIT (RSC)
- RIGID STEEL CONDUIT (RSC) – IN PLACE
- SIGNAL FACE WITH BACKGROUND SHIELD
- SIGNAL FACE W/O BACKGROUND SHIELD
- SIGNAL FACE – IN PLACE
- PEDESTRIAN INDICATORS
- PEDESTRIAN INDICATORS – IN PLACE
- PEDESTRIAN PUSH BUTTONS ON PEDESTAL OR POLE
- PEDESTRIAN PUSH BUTTON STATION
- TRAFFIC SIGNAL PEDESTAL
- TRAFFIC SIGNAL PEDESTAL – INPLACE
- TRAFFIC SIGNAL POLE AND MAST ARM
- TRAFFIC SIGNAL POLE AND MAST ARM – IN PLACE
- STREET LIGHT POLE AND LUMINAIRE
- STREET LIGHT POLE AND LUMINAIRE – IN PLACE
- MAST ARM AND LUMINAIRE
- MAST ARM AND LUMINAIRE – INPLACE
- WOOD POLE
- WOOD POLE – IN PLACE
- SOURCE OF POWER
- RAILROAD SIGNAL – IN PLACE
- RIGHT OF WAY LINE
- CENTERLINE
- EDGE OF ROADWAY
- SHOULDERLINE
- CURB LINE
- STOP BAR
- EMERGENCY VEHICLE PREEMPTION DETECTOR

ABBREVIATIONS

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

CONDUCTOR COLOR CODE

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

STANDARD PLATES - SIGNAL SYSTEMS

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

PLATE NO.		DESCRIPTION
▻ 7038	A	DETECTABLE WARNING SURFACE TRUNCATED DOMES
▻ 7113	A	CONCRETE APPROACH NOSE DETAIL
▻ 8111	E	TRAFFIC SIGNAL BRACKETING (PEDESTAL MOUNTED)
▻ 8117	G	PRECAST CONCRETE HAND HOLE
▻ 8118	D	SERVICE EQUIPMENT AND POLE
► 8119	C	GROUND MOUNTED CABINET FOUNDATION
▻ 8120	O	POLE FOUNDATION (PA-85)
► 8121	H	TRANSFORMER BASE AND POLE BASE PLATE
► 8123	G	POLE AND MAST ARM
► 8126	L	POLE FOUNDATION (PA90 AND PA100)
▻ 8127	E	LIGHTING FOUNDATION E (PEDESTAL)
► 8129	A	SHIM AND WASHER
▻ 8130	E	SAW CUT LOOP DETECTORS
► 8132	B	PREFORMED RIGID PVC CONDUIT LOOP DETECTOR

► STANDARD PLATES APPLICABLE TO THIS PROJECT

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SEAN DELMORE, PE
LIC. NO: 40845
DATE: 7/29/2022

CITY OF BLAINE, MN

LEXINGTON AVENUE NE AT 131ST AVENUE NE INTERSECTION IMPROVEMENTS

TRAFFIC CONTROL SIGNAL SYSTEM

SIGN DETAILS

SIGN PANELS ON SIGNALS

	"A" DISTANCE (FEET) OR POLE	PANEL				
		QTY	CODE NUMBER	LEGEND	SIZE (INCHES)	AREA (SQ FT)
1	18	1	D-1	LEXINGTON AVE	114 x 24	19.00
1	0	1	R10-X12	LEFT TURN YIELD ON FLASHING YELLOW ARROW	42 x 48	14.00
3	21	1	D-2	131ST AVE	78 x 24	13.00
3	0	1	R10-X12	LEFT TURN YIELD ON FLASHING YELLOW ARROW	42 x 48	14.00
5	18	1	D-1	LEXINGTON AVE	114 x 24	19.00
5	0	1	R10-X12	LEFT TURN YIELD ON FLASHING YELLOW ARROW	42 x 48	14.00
6	32	1	D-2	131ST AVE	78 x 24	13.00
6	0	1	R10-X12	LEFT TURN YIELD ON FLASHING YELLOW ARROW	42 x 48	14.00

D-1

3.0" Radius, 1.0" Border, White on, Green;
"Lexington Ave", D 2K;

D-2

3.0" Radius, 1.0" Border, White on, Green;
"131st Ave", D 2K;

GENERAL NOTES:
1. SEE THE CURRENT MnDOT STANDARD SIGNS AND MARKINGS MANUAL FOR STANDARD SIGN DESIGNS, ARROW DETAILS AND SPLICE PLATE DETAILS.
2. FOR NON STANDARD SIGN DESIGNS, LAYOUTS ARE INCLUDED. SIGN PANEL DIMENSIONS ARE IN INCHES.
3. SEE STANDARD PLAN 5-297.731 FOR SIGN MOUNTING TO MAST ARM.
4. SEE STANDARD PLAN 5-297.730 FOR SIGN MOUNTING TO ROUND POST.
5. MOUNTING HEIGHT OF POLE MOUNTED SIGN PANELS MUST BE 7 FOOT MINIMUM.
   MOUNTING HEIGHT IS MEASURED FROM BOTTOM OF SIGN PANEL TO SURFACE IMMEDIATELY BELOW THE SIGN PANEL.
6. "A" DISTANCE = DISTANCE FROM THE END OF THE MAST ARM TO THE EDGE OF EACH SIGN PANEL.
7. SEE INTERSECTION LAYOUT FOR SIGN PLACEMENT.

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DATE: 7/29/2022 LIC. NO: 40845

CITY OF BLAINE, MN

LEXINGTON AVENUE NE AT 131ST AVENUE NE INTERSECTION IMPROVEMENTS

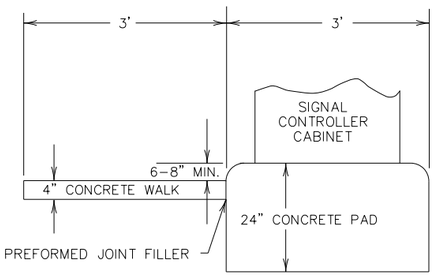
TRAFFIC CONTROL SIGNAL SYSTEM

SHEET **37** OF **53** SHEETS

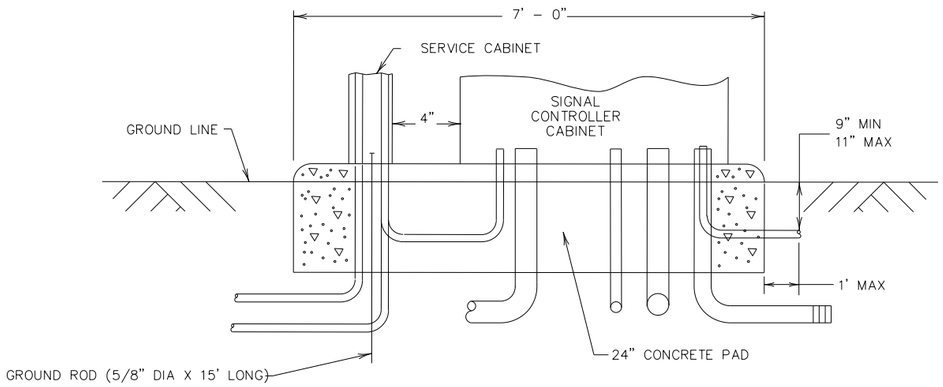
TYPICAL PAD WITH CONTROLLER CABINET AND SERVICE CABINET

SEE INTERSECTION LAYOUT FOR CABLE INFORMATION (NOT TO SCALE)

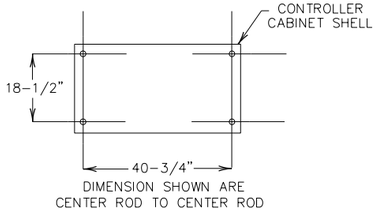
SIDE VIEW



FRONT VIEW



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

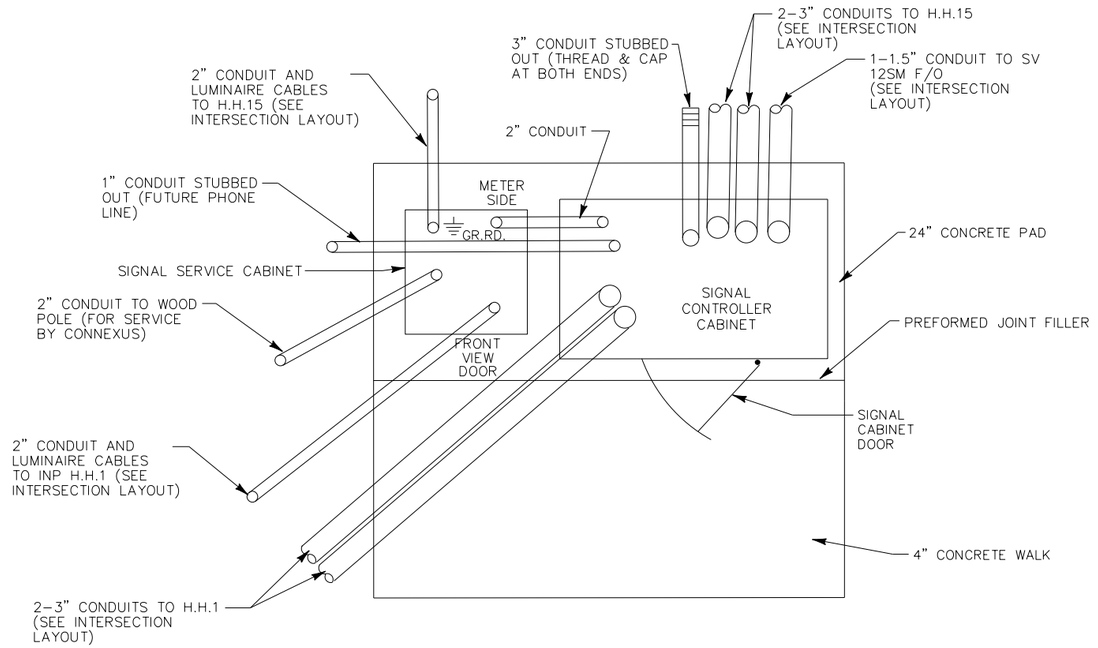


NOTES:

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.

PLAN VIEW

LEXINGTON AVENUE NE
AT 131ST AVENUE NE



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SEAN DELMORE, PE
LIC. NO: 40945
DATE: 7/29/2022

CITY OF BLAINE, MN

LEXINGTON AVENUE NE AT 131ST AVENUE NE INTERSECTION IMPROVEMENTS

TRAFFIC CONTROL SIGNAL SYSTEM

SHEET 38 OF 53 SHEETS

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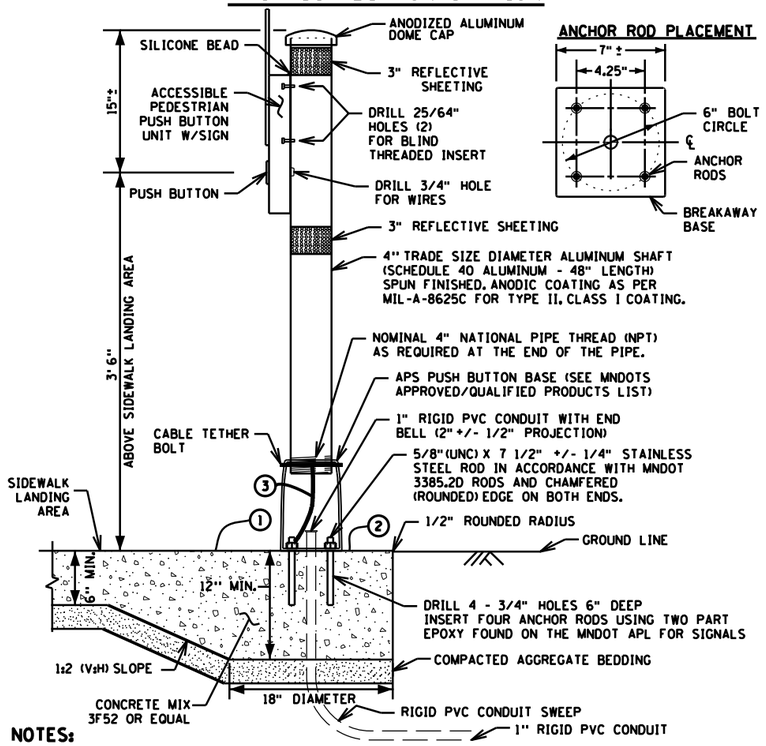
APS PUSH BUTTON STATION



NOTES:

PLACEMENT AND ORIENTATION OF THE PUSH BUTTON STATION IS CRITICAL. MOUNT THE BUTTON SO THAT THE FACE IS PARALLEL WITH THE ASSOCIATED CROSSWALK. SCREW IN SHAFT TO A TIGHTENED POSITION BEFORE MOUNTING ACCESSIBLE PEDESTRIAN PUSH BUTTON UNIT TO THE SHAFT.

ORIENT ACCESS OPENING ON THE BREAKAWAY PEDESTAL DIRECTLY BELOW THE APS BUTTON.

PLUMB THE PUSH BUTTON STATION WITH LEVELING SHIMS IN ACCORDANCE WITH STANDARD PLATE 8129.

INSTALL BLIND THREADED INSERTS USING MANUFACTURER'S SPECIFIC INSERTION TOOL.

USE ZINC PLATED STEEL 1/4 - 20 UNC BLIND THREADED INSERTS SUITABLE FOR MOUNTING ON SURFACE WALL THICKNESS OF .337. APPROVED BLIND INSERTS ARE LISTED ON MNDOT'S APPROVED/QUALITY PRODUCTS LIST WEBSITE FOR TRAFFIC SIGNALS.

USE APS 1/4 - 20 STAINLESS STEEL MOUNTING BOLTS. APPLY BRUSH ON ANTI SEIZE COMPOUND TO BOLTS PRIOR TO ASSEMBLY.

APPLY A BEAD OF 100% SILICONE SEALANT ALONG THE TOP OF THE PUSH BUTTON UNIT WHERE IT COMES IN CONTACT WITH THE 4" SHAFT.

USE WHITE REFLECTIVE SHEETING AT INTERSECTION CORNERS AND YELLOW REFLECTIVE SHEETING IN CENTER MEDIANS. APPROVED TUBE DELINEATOR SHEETING IS LISTED ON MNDOT'S APPROVED/QUALIFIED PRODUCTS LIST WEBSITE FOR SIGNING.

AN 18" X 6" FIBER FORMING TUBE MAY BE USED FOR THE LOWER HALF OF THE FOUNDATION WHEN CONDITIONS DO NOT ALLOW FOR THE 18" X 6" HOLE TO STAND OPEN.

(1) THE PUSH BUTTON STATION FOUNDATION IS MONOLITHIC (POURED AT ONE TIME) WITH THE SIDEWALK. PROVIDE A 1:2 (V:H) SLOPE GRADE WHERE THE 6" MIN SIDEWALK DEPTH TRANSITIONS TO THE 12" MIN FOUNDATION DEPTH. MAINTAIN THE COMPACTED AGGREGATE BEDDING AND THICKNESS USED FOR THE SIDEWALK THROUGHOUT THE SLOPE AND FOUNDATION GRADING. PROVIDE 1:2 (V:H) SLOPE GRADING 360 DEGREES FOR THE TRANSITION FROM THE SIDEWALK TO THE FOUNDATION WHEN THE FOUNDATION IS NOT LOCATED NEAR EDGE OF SIDEWALK AND IS SURROUNDED BY CONCRETE WALK.

(2) ENSURE CONCRETE CONTROL JOINTS AND EDGE OF CONCRETE WALK ARE A MINIMUM 9" FROM THE CENTER OF THE PUSH BUTTON FOUNDATION.

(3) INSTALL THE MANUFACTURER PROVIDED CABLE TETHER ASSEMBLY IN ACCORDANCE WITH THE MANUFACTURER'S INSTALLATION INSTRUCTIONS.

TYPICAL APS PEDESTRIAN PUSH BUTTON LOCATION

THIS IS A GENERAL DETAIL INTENDED TO SHOW THE REQUIREMENTS OF APS PUSH BUTTON LOCATION. FOR PROJECT SPECIFIC INFORMATION REGARDING PEDESTRIAN RAMP LAYOUT AND PUSH BUTTON LOCATIONS, SEE THE PLAN.

SUPPLEMENTAL GUIDANCE FOR CONSTRUCTING COMPLIANT APS PUSH BUTTONS:

(1) THE FACE OF THE BUTTON SHALL BE PARALLEL WITH THE OUTSIDE EDGE OF CROSSWALK.

(2) A MINIMUM 4 FT X 4 FT LANDING AREA SHALL BE PROVIDED ADJACENT TO EACH BUTTON, WITH A 2 PERCENT MAXIMUM SLOPE IN ALL DIRECTIONS.

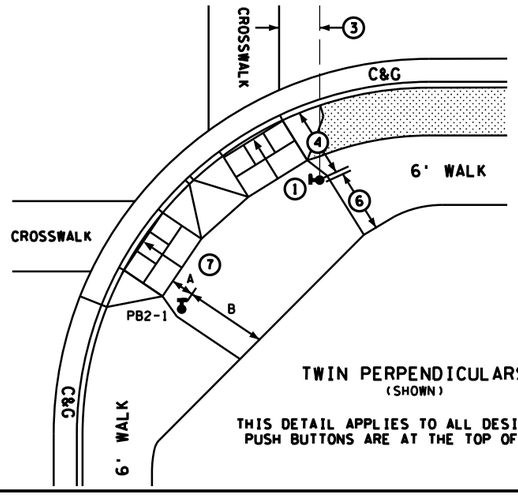
(3) BUTTONS SHALL BE WITHIN 5 FT OF THE OUTSIDE EDGE OF THE CROSSWALK.

(4) BUTTONS SHALL BE BETWEEN 1.5 FT AND 10 FT FROM THE BACK OF CURB OR EDGE OF ROADWAY, MEASURED IN THE DIRECTION OF TRAVEL. STANDALONE PUSH BUTTON STATIONS SHOULD BE 4' MINIMUM FROM THE BACK OF CURB TO AVOID KNOCKDOWNS.

(5) BUTTONS SHALL BE AT LEAST 10 FT APART.

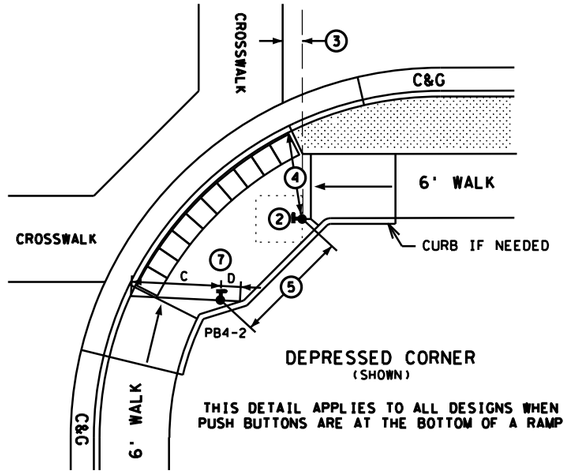
(6) PROVIDE A MAINTENANCE ACCESS ROUTE (MAR) WHEREVER POSSIBLE FOR SNOW REMOVAL PURPOSES. A MAR REQUIRES A 6 FT MINIMUM CLEAR DISTANCE BETWEEN A PUSH BUTTON AND ANY OBSTRUCTIONS, INCLUDING BUILDINGS, V-CURB, ELECTRICAL FOUNDATIONS, SIGNAL CABINETS, OR ANOTHER PUSH BUTTON.

(7) BUTTON SHOULD BE 2 FT MINIMUM FROM RAMP GRADE BREAK AND BACK OF WALK.



TWIN PERPENDICULARS
(SHOWN)

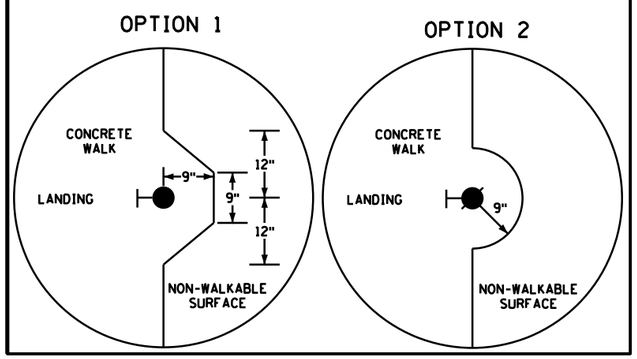
THIS DETAIL APPLIES TO ALL DESIGNS WHEN PUSH BUTTONS ARE AT THE TOP OF A RAMP



DEPRESSED CORNER
(SHOWN)

THIS DETAIL APPLIES TO ALL DESIGNS WHEN PUSH BUTTONS ARE AT THE BOTTOM OF A RAMP

CONTRACTOR MUST USE OPTION 1 OR 2 WHEN THE APS PUSH BUTTON IS SHOWN AT THE EDGE OF WALK. OPTION USED (OR SELECTED) MUST BE THE SAME THROUGHOUT THE ENTIRE PROJECT.



SIGNAL CONTROL POINTS			DISTANCE TO FRONT OF LANDING (FT)	DISTANCE TO BACK OF LANDING (FT)
SIGNAL NO.	X	Y		
PB2-1	-	-	A	B
PB4-2	-	-	C	D

A - DISTANCE MEASURED FROM THE PUSH BUTTON TO THE FRONT OF LANDING/TOP OF RAMP

B - CLEAR DISTANCE MEASURED FROM THE PUSH BUTTON TO THE BACK OF LANDING/EDGE OF WALK

C - CLEAR DISTANCE MEASURED FROM THE PUSH BUTTON TO THE OUTSIDE EDGE OF DOMES IN THE DIRECTION OF TRAVEL

D - CLEAR DISTANCE FROM THE PUSH BUTTON TO THE BACK OF LANDING MEASURED IN THE OPPOSITE DIRECTION OF TRAVEL

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CITY OF BLAINE, MN

LEXINGTON AVENUE NE AT 131ST AVENUE NE INTERSECTION IMPROVEMENTS

TRAFFIC CONTROL SIGNAL SYSTEM

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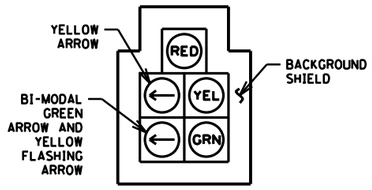
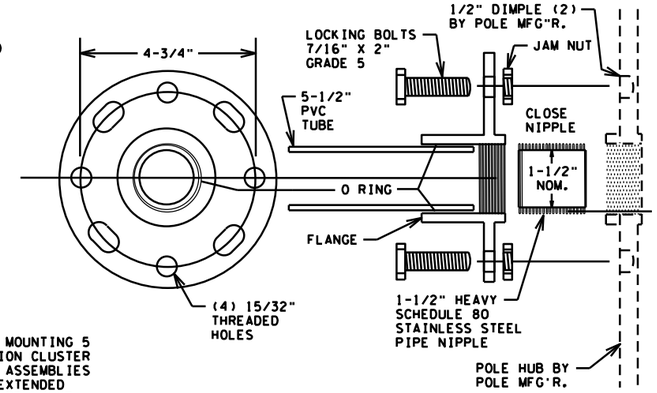
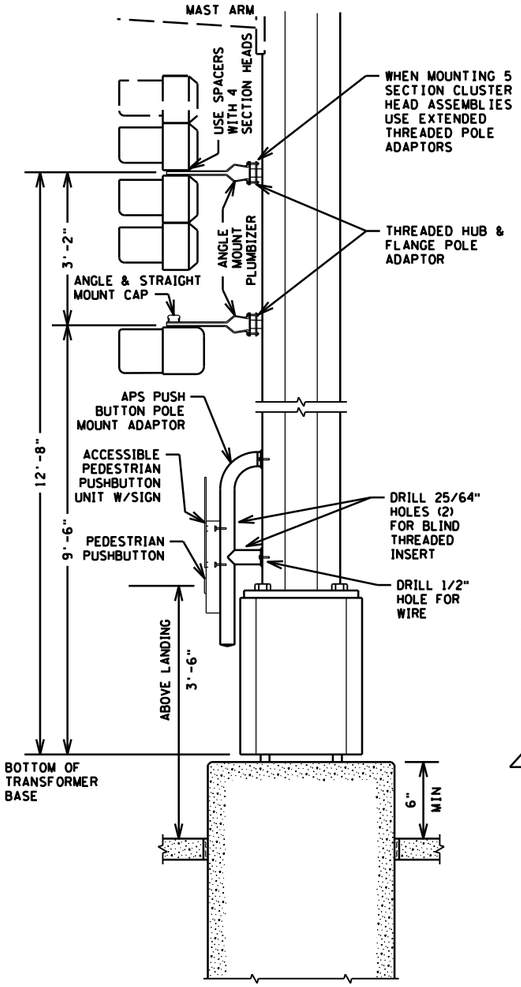


5 SECTION FYA CLUSTER HEAD DETAIL

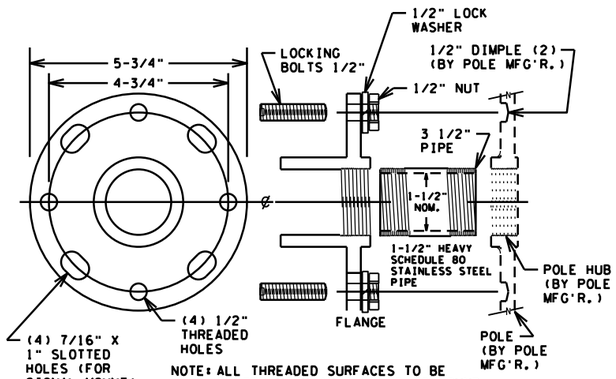


THREADED HUB AND FLANGE POLE ADAPTOR



TYPICAL SIGNAL POLE MOUNTING

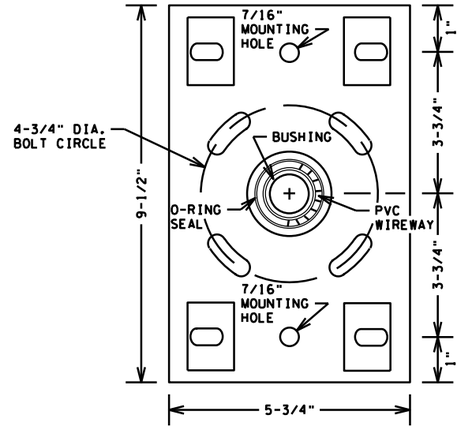
NOT TO SCALE



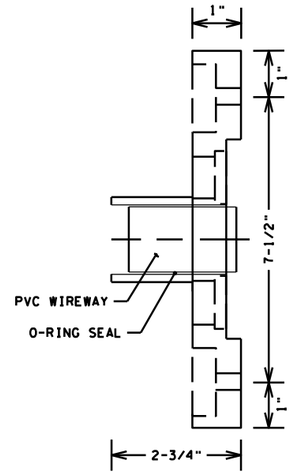
NOTE: ALL THREADED SURFACES TO BE COATED WITH ANTI-SEIZE COMPOUND.

EXTENDED THREADED POLE ADAPTER

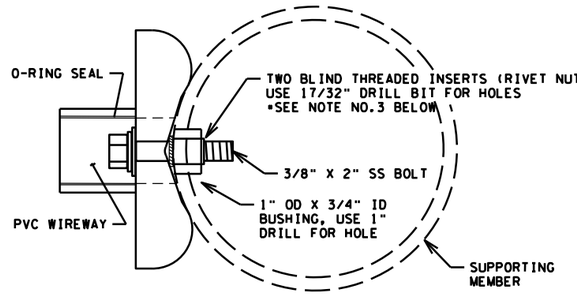
NOTES:
1. ALL THREADED SURFACES TO BE COATED WITH ANTI-SEIZE COMPOUND.
2. USE SIGNAL HEAD MOUNTED SPACERS FOR 4 SECTION POLY HEADS.
3. SEE STANDARD PLATE NUMBER 8123 FOR ADDITIONAL SIGNAL POLE DETAILS.
4. EXTENDED THREADED POLE ADAPTOR ONLY USED WITH 5 SECTION CLUSTER HEADS.



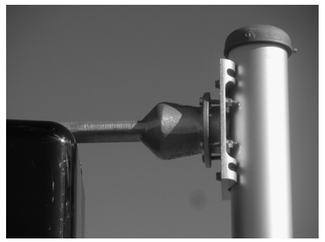
BOLT ON HUB & FLANGE



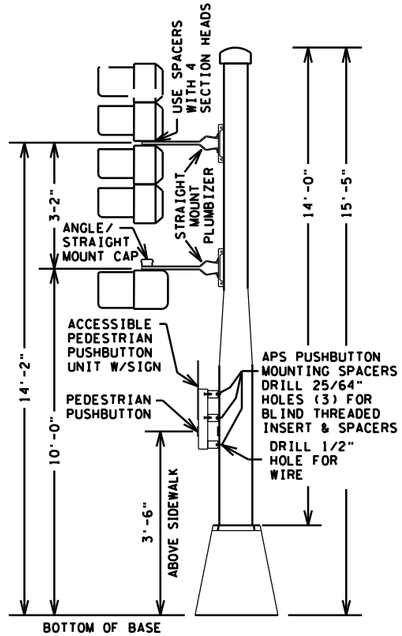
SIDE VIEW



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

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SEAN DELMORE, PE
LIC. NO: 40845
DATE: 7/29/2022

CITY OF BLAINE, MN

LEXINGTON AVENUE NE AT 131ST AVENUE NE INTERSECTION IMPROVEMENTS

TRAFFIC CONTROL SIGNAL SYSTEM

PLOTTED/REVISED: 7/29/2022 12:24:53 PM

CONDUCTOR COLOR CODE

FROM — TO DEVICE

- SIGNAL SERVICE — 1/C 6 EGC — AS SHOWN ON PLAN
- SOP — 3-1/C 2 (R, WH, BLK) — SIGNAL SERVICE
- SIGNAL SERVICE — 3-1/C 6 (BLK, WH, G) — SIGNAL CABINET
- SIGNAL CABINET — (6SM) CABLE — SIGNAL CABINET

SIGNAL CABINET TO DEVICE

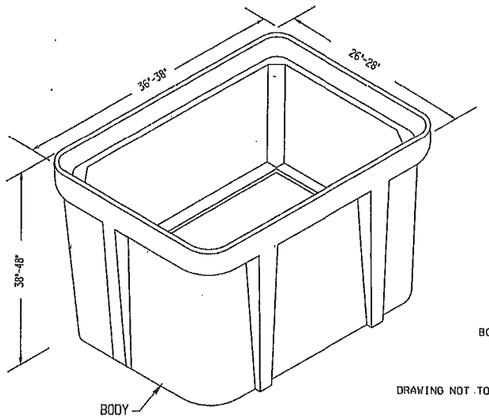
- 6PR 19 — AS SHOWN ON PLAN
- COAXIAL CABLE — AS SHOWN ON PLAN
- 4/C 18 CABLE (R, BLK, WH, G) — AS SHOWN ON PLAN
- 2/C 14 CABLE (BLK, WH OR CLR) — AS SHOWN ON PLAN
- 3/C 20 CABLE (R OR O, WH OR YEL, BLK OR BL) — AS SHOWN ON PLAN
- CAT 5 — AS SHOWN ON PLAN

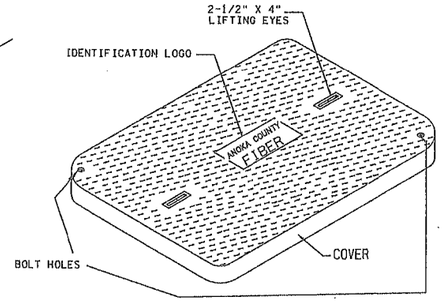
SIGNAL CABINET TO DEVICE

- 6/C 14 CABLE (R, O, BL, WH, BLK/R, BLK) — RED/RLA, YEL/YLA, GRN/GLA, NEU, YLA/FYA, GLA — 4 AND 5 SECTION SIGNAL HEADS
- 4/C 14 CABLE (R, BLK/R, BLK, WH) — RED/DWK, YEL/WLK, GRN/SPR, NEU — 3 SECTION HEAD PED HEADS
- 4/C 14 CABLE (R, BLK/R, BLK, WH) — RED, YEL, GRN, NEU — 5 SECTION (CLUSTER HEADS ONLY)
- 4/C 14 CABLE (R, BLK/R, BLK, WH) — FYA, YLA, GLA, NEU — 5 SECTION (CLUSTER HEADS ONLY)
- 3/C 14 CABLE (BLK, G, WH) — EVP LIGHT/AWF LUMINAIRE, VIDEO CAMERA ENFORCEMENT LIGHT

NOTES:
ARRANGE AND TERMINATE CONDUCTORS AND CABLES AS SHOWN WITHOUT SPLICE.
NUMBER ONLY MEANS AWG CONDUCTOR SIZE (e.g. 14=14AWG)
1/C MEANS AN INDIVIDUAL CONDUCTOR NOT PART OF A CABLE ASSEMBLY

FIBER-OPTIC PULLING VAULT DETAIL





DRAWING NOT TO SCALE

WIRE COLOR CODE KEY

R	Red
O	Orange
BL	Blue
WH	White
BLK	Black
BRN	Brown
CL	Clear
G	Green
R/BLK	Red with Black Stripe
O/BLK	Orange with Black Stripe
BL/BLK	Blue with Black Stripe
WH/BLK	White with Black Stripe
WH/R	White with Red Stripe
BLK/WH	Black with White Stripe
BLK/R	Black with Red Stripe

CONDUCTOR AND CABLE SPECIFICATION CHART

NUMBER OF CONDUCTORS & AWG SIZE	TYPE	Specification Number
1/C 2	INDIVIDUAL SERVICE CONDUCTORS	3815.2B.1
1/C 6	FEEDER AND BRANCH CONDUCTORS	3815.2B.1
1/C 6 INS.GR.	Grounding Conductors	3815.2B.5
2/C 14	Loop Detector Lead-In Cable	3815.2C.4
3/C 14	Signal Control Cable	3815.2C.3
4/C 14	Signal Control Cable	3815.2C.3
6/C 14	Signal Control Cable	3815.2C.3
12/C 14	Signal Control Cable	3815.2C.3
6PR 19	Telephone Cables Outdoor	3815.2C.6.b
3/C 20	EVP Detector Cable	3815.2C.5

CABLE LABELING ABBREVIATIONS

ABBREVIATION	LABEL REFERENCE DSISCRIPTION & EXAMPLE	COMPONENT
X-Y	INDICATION NUMBER 2-1	SIGNAL HEAD
X-Y	LOOP NUMBER D2-1	DETECTOR
X-Y	PUSH BUTTON NUMBER PB2-1	PUSH BUTTON
X-Y	PED INDICATION NUMBER P2-1	PED INDICATION
X-Y	LUMINAIRE NUMBER L1	LUMINAIRE
X-Y	EVP PHASE NUMBER EVP 2+5	EVP DETECTOR
X-Y	EVP LIGHT PHASE NUMBER EVPL 2+5	EVP CON. LIGHT
X-Y	VIDEO DETECTION PHASE V2-1	VIDEO DETECTION
X-Y	RADAR DETECTION PHASE RD2-1	RADAR DETECTION
SS	SIGNAL SERVICE	SERVICE WIRE
CC	CABINET COMMS	COMMS CABLE
FO	FIBER OPTIC	FIBER CABLE
SPARE Y	SPARE WIRE TO POLE NUMB. SPARE1	SPARE WIRE
ELYZ *	ENFORC. LIGHT POLE & DIRECTION	ENFORCEMENT LIGHT
PTZ1	PTZ CAMERA POLE NUMBER PTZ1	PTZ CAMERA
IC	INTERCONNECT CABLE	INTERCONNECT
EGC	EQUIPMENT GROUNDING CONDUCTOR	GROUND

X = SIGNAL SYSTEM PHASE NUMBER; REFER TO THE PLAN
Y = SIGNAL SYSTEM ASSIGNED COMPONENT NUMBER; REFER TO THE PLAN
Z * = DIRECTION
FURNISH AND INSTALL LABELS ON CABLES WITH ABBREVIATIONS SHOWN ON THIS TABLE AND IN ACCORDANCE WITH THE WIRING DIAGRAM.

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SEAN DELMORE, PE
DATE: 7/29/2022 LIC. NO: 40845

CITY OF BLAINE, MN

LEXINGTON AVENUE NE AT 131ST AVENUE NE INTERSECTION IMPROVEMENTS

TRAFFIC CONTROL SIGNAL SYSTEM

NOTES:
1. REFER TO SHEETS FOR INPLACE SIGNAL COMPONENTS.
2. ENSURE THE EXACT LOCATION OF THE HANDHOLES, POLES, LOOP DETECTORS AND EQUIPMENT PAD ARE VERIFIED IN THE FIELD BY TRAFFIC OFFICE PERSONNEL.
3. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING THE CONNECTION OF THE POWER FOR THE TRAFFIC SIGNAL SYSTEM.
4. FOR SIGN PANELS ON SIGNAL SEE DETAIL SHEET. ALL SIGN PANELS REQUIRED ARE INCLUDED IN PAYMENT FOR THE TRAFFIC CONTROL SIGNAL SYSTEM PAY ITEM.
5. ALL PAVEMENT MARKINGS ARE INCLUDED IN PAVEMENT MARKING PLAN.
6. CONSTRUCTION OF PEDESTRIAN CURB RAMPS ARE PART OF THE CONSTRUCTION PLAN AND ARE NOT INCLUDED IN PAYMENT FOR THE SIGNAL SYSTEM.
7. THIS PLAN SPECIFIES CONDUIT SIZES, TYPES, AND GENERAL LOCATIONS. THE EXACT LOCATIONS WILL BE DETERMINED IN THE FIELD. CONDUITS UNDER THE ROADWAYS REQUIRE BORING.
8. USE PVC OR HDPE FOR ALL NEW CONDUIT.
9. CONDUIT SIZES ARE NOMINAL DIAMETER.
10. ALL WIRES LISTED ARE AWG (AMERICAN WIRE GAUGE).
11. ITEMS DENOTED WITH AN * ARE INCLUDED IN PAYMENT FOR THE EVP SYSTEM PAY ITEM.

(A)
EQUIPMENT PAD (SEE DETAIL SHEET)
SERVICE CABINET (SSB) BATTERY BACKUP SYSTEM
(BATTERIES INCLUDED)
CONTROLLER AND CABINET

3" CONDUIT TO INP HH 1:
2-6/C 14
4-4/C 14
6-2/C 14
*1-3/C 14 (EVP)
*1-3/C 20 (EVP)
1-1/C INS. GR.

3" CONDUIT TO HH 15:
2-6/C 14
5-4/C 14
6-2/C 14
*1-3/C 14 (EVP)
*1-3/C 20 (EVP)
1-1/C INS. GR.

3" CONDUIT TO INP HH 1:
2-6/C 14
5-4/C 14
7-2/C 14
*1-3/C 14 (EVP)
*1-3/C 20 (EVP)
1-1/C INS. GR.

3" CONDUIT TO HH 15:
2-5/C 14
4-4/C 14
6-2/C 14
*1-3/C 14 (EVP)
*1-3/C 20 (EVP)
1-1/C INS. GR.

1.5" CONDUIT
12SM F/O

GROUND WIRE AND GROUND ROD - MIN 8' OUT FROM PAD
2-2" AND 1-3" CONDUIT STUBBED OUT (CAPPED BOTH ENDS)
CABINET TO SERVICE CABINET:
2" CONDUIT
3-1/C 6
SERVICE CABINET TO INP HH 1:
2" CONDUIT
2-3/C 14 (LUM)
SERVICE CABINET TO HH 15:
2" CONDUIT
2-3/C 14 (LUM)
SERVICE CABINET TO EXTERNAL GR. RD.
1" CONDUIT
1-1/C 6 INS. GR. (SEE EQUIPMENT PAD DETAIL)

(B) INP SOP (CONNEXUS)
GROUND MOUNTED
TRANSFORMER

1.5" CONDUIT
12SM F/O
TO 25TH AVE
(SEE INTERCONNECT SHEET)

INP:
2-4" CONDUIT
F&I:
2-6/C 14
4-4/C 14
6-2/C 14
*1-3/C 14 (EVP)
*1-3/C 20 (EVP)
1-3/C 14 (LUM)
1-1/C INS. GR.

INP:
2-4" CONDUIT
F&I:
2-6/C 14
4-4/C 14
2-2/C 14
*1-3/C 14 (EVP)
*1-3/C 20 (EVP)
1-3/C 14 (LUM)
1-1/C INS. GR.

PED PB STATION
1-APS PB AND SIGN
(RT ARROW) (PB6-2)
EXTEND INTO HH 12:
1" CONDUIT
1-2/C 14
1-1/C 6 INS. GR.

PED PB STATION
1-APS PB AND SIGN
(LT ARROW) (PB4-1)
EXTEND INTO HH 12:
1" CONDUIT
1-2/C 14
1-1/C 6 INS. GR.

2" CONDUIT
1-2/C 14

3" CONDUIT
4-2/C 14

PED PB STATION
1-APS PB AND SIGN
(LT ARROW) (PB6-1)
EXTEND INTO INP HH 1:
1" CONDUIT
1-2/C 14
1-1/C 6 INS. GR.

2" CONDUIT
2-2/C 14

INP:
4" CONDUIT
F&I:
2-2/C 14
1-1/C INS. GR.
INP:
4" CONDUIT
F&I:
2-6/C 14
5-4/C 14
7-2/C 14
*1-3/C 14 (EVP)
*1-3/C 20 (EVP)
1-3/C 14 (LUM)
1-1/C INS. GR.

INP
2-4" CONDUIT
F&I:
2-6/C 14
5-4/C 14
7-2/C 14
*1-3/C 14 (EVP)
*1-3/C 20 (EVP)
1-3/C 14 (LUM)
1-1/C INS. GR.

2" CONDUIT
2-2/C 14

2" CONDUIT
7-2/C 14
1-4/C 14
1-1/C 6 INS. GR.

PED PB STATION
1-APS PB AND SIGN
(RT ARROW) (PB4-2)
EXTEND INTO HH 8:
1" CONDUIT
1-2/C 14
1-1/C 6 INS. GR.

PED PB STATION
1-APS PB AND SIGN
(LT ARROW) (PB8-1)
EXTEND INTO HH 6:
1" CONDUIT
1-2/C 14
1-1/C 6 INS. GR.

2" CONDUIT
1-2/C 14

PED PB STATION
1-APS PB AND SIGN
(LT ARROW) (PB2-1)
EXTEND INTO HH 8:
1" CONDUIT
1-2/C 14
1-1/C 6 INS. GR.

CSAH 17 (LEXINGTON AVE)
(55 MPH)
MATCHLINE A
MATCHLINE B
131ST AVE NE
(30 MPH)
INP HH 11
INP HH 12
INP HH 1
INP HH 4
INP HH 5
1 & 6 EVP
2 & 5 EVP
3 & 8 EVP
4 & 7 EVP
13' LTL
13' TL
13' RTL
12' LTL
12' TL
D1-1
D1-2
D5-1
D5-2
D7-1
D7-2
D4-1
D4-2
D3-1
D3-2
D8-1
D8-2
D8-3

SCALE IN FEET
0 20 40

LOOP DETECTOR CHART

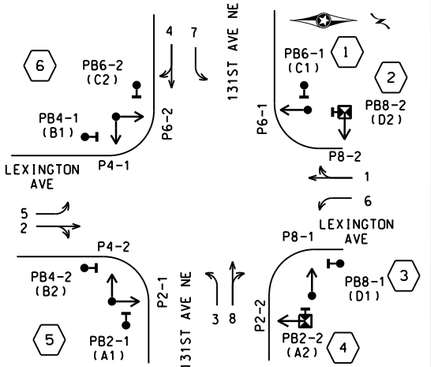
NUMBER	SIZE (FT)	LOCATION
D1-1, D5-1	2-6x6	20 & 50
D1-2, D5-2	2-6x6	5 & 35
D2-1, D2-2	6x6	475
D3-1, D7-1	2-6x6	20 & 50
D3-2, D7-2	2-6x6	5 & 35
D4-1, D8-1	6x6	120
D4-2	2-6x6	5 & 20
D6-1, D6-2	6x6	475
D8-2, D8-3	2-6x6	5 & 20

-ALL LOOP DETECTORS SHALL BE PVC UNLESS NOTED OTHERWISE
-LOCATION: DISTANCE FROM CROSSWALK/STOP BAR IN FEET

SIGNAL SYSTEM OPERATION

- THE SIGNAL SYSTEM FLASH MODE IS ALL RED.
- NORMAL OPERATION IS 8 PHASE, WITH PHASES 1, 3, 5 AND 7 BEING FYA BY TIME OF DAY.
- PHASES 2 & 6 SHALL BE ON VEHICLE RECALL.

CONTROLLER PHASING, PEDESTRIAN INDICATIONS AND PUSH BUTTONS



PEDESTRIAN PUSH BUTTONS SHALL BE LOCATED AS SHOWN ABOVE

SIGNAL FACE CHART

FACE	R	Y	G	RLA	YLA	FYA	GLA
1-1, 1-2				←	←	←	←
2-1, 2-2, 2-3	●	●	●				
3-1, 3-2				←	←	←	←
4-1, 4-2	●	●	●				
5-1, 5-2				←	←	←	←
6-1, 6-2, 6-3	●	●	●				
7-1, 7-2				←	←	←	←
8-1, 8-2	●	●	●				

-ALL SIGNAL INDICATIONS SHALL BE 12" LED
-ALL SIGNAL HEADS SHALL BE BLACK POLYCARBONATE WITH BACKGROUND SHIELDS
-INCLUDE YELLOW REFLECTIVE TAPE ON THE ENTIRE PERIMETER OF THE BACKGROUND SHIELDS
-FYA DENOTES FLASHING YELLOW ARROW

LEXINGTON PKWY & 131ST ST - INTERSECTION LAYOUT

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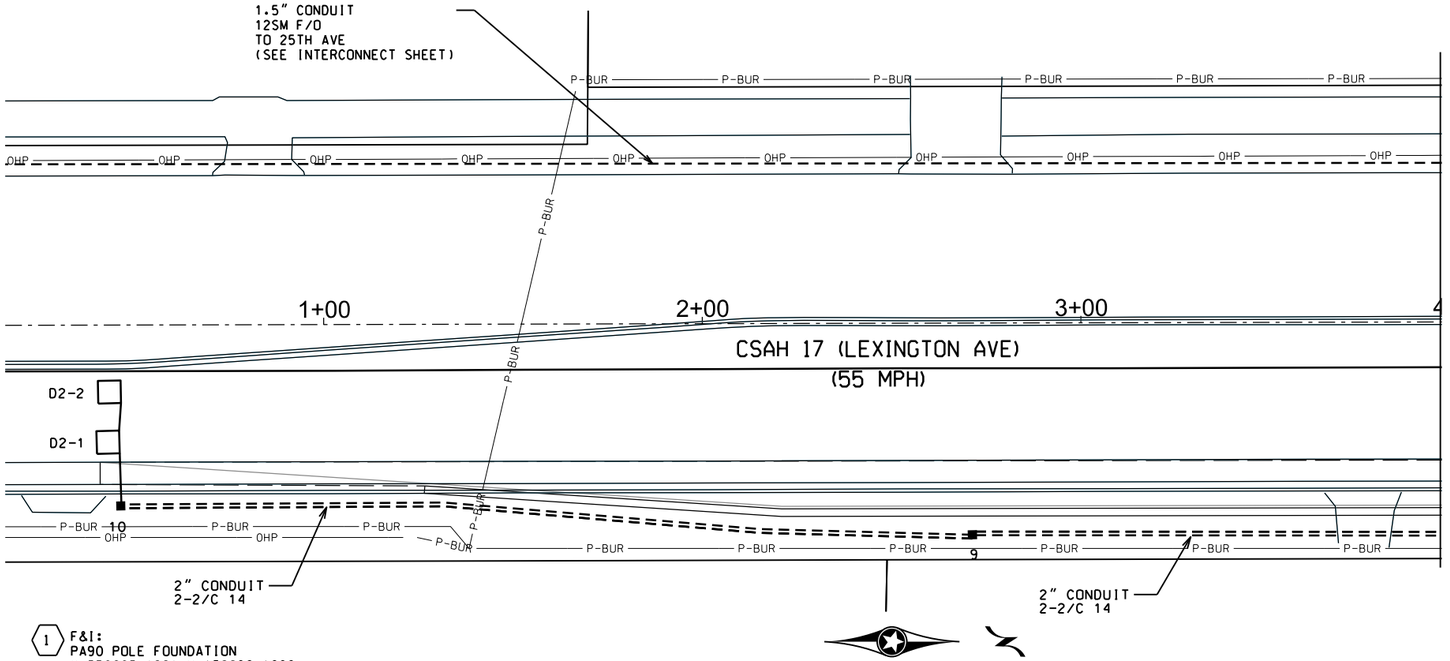
CITY OF BLAINE, MN

LEXINGTON AVENUE NE AT 131ST AVENUE NE INTERSECTION IMPROVEMENTS



1 F&I:
PA90 POLE FOUNDATION
X=530605.1221 Y=150026.1606
TYPE PA90-A-30-D30-9 (DAVIT AT 350 DEG)
1-ANGLE MOUNT SIGNAL OVERHEAD AT 0'
1-STRAIGHT MOUNT SIGNAL OVERHEAD AT 12'
2-ANGLE MOUNT SIGNAL AT 90 & 180 DEG
1-ANGLE MOUNT C.D. PED IND AT 90 DEG
D SIGN (SEE DETAIL SHEET)
LED LUMINAIRE (FOR 40' MOUNTING HEIGHT)
EXTEND INTO INP HH 1:
2-6/C 14
3-4/C 14
✱1-3/C 14 (EVP)
✱1-3/C 20 (EVP)
1-3/C 14 (LUM)
1-1/C INS. GR.

INSTALL:
1-ONE WAY EVP DETECTOR AND CONFIRMATORY
LIGHT (PHASES 3 & 8) (ANOKA CO FURNISHED)

2 F&I:
PEDESTAL FOUNDATION
1-10'SIGNAL PEDESTAL PLUS BASE
1-ANGLE MOUNT C.D. PED IND AT 180 DEG
1-APS PUSH BUTTON AND SIGN
(RT ARROW) (PB8-2)
EXTEND INTO INP HH 1:
1-4/C 14
1-2/C 14
1-1/C INS. GR.

3 F&I:
PA90 POLE FOUNDATION
X=530616.0176 Y=149935.0448
TYPE PA90-A-30-D30-9 (DAVIT AT 350 DEG)
1-ANGLE MOUNT SIGNAL OVERHEAD AT 0'
2-STRAIGHT MOUNT SIGNAL OVERHEAD AT 12' & 24'
2-ANGLE MOUNT SIGNAL AT 90 & 180 DEG
1-ANGLE MOUNT C.D. PED IND AT 90 DEG
D SIGN (SEE DETAIL SHEET)
2-R6-1 SIGN PANELS - POLE MOUNTED O AND 180 DEG
LED LUMINAIRE (FOR 40' MOUNTING HEIGHT)
EXTEND INTO INP HH 5:
2-6/C 14
4-4/C 14
✱1-3/C 14 (EVP)
✱1-3/C 20 (EVP)
1-3/C 14 (LUM)
1-1/C INS. GR.

INSTALL:
1-ONE WAY EVP DETECTOR AND CONFIRMATORY
LIGHT (PHASES 2 & 5) (ANOKA CO FURNISHED)

SCALE IN FEET
0 20 40

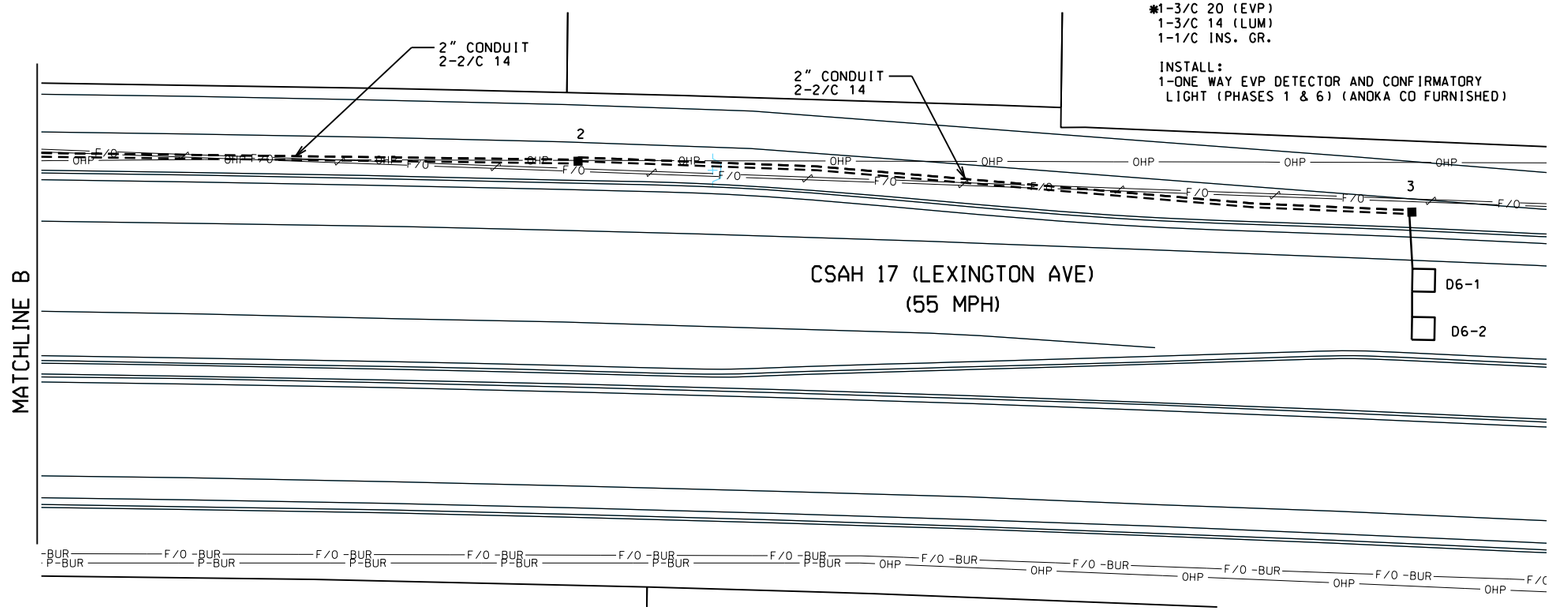
4 F&I:
PEDESTAL FOUNDATION
1-10'SIGNAL PEDESTAL PLUS BASE
1-ANGLE MOUNT C.D. PED IND AT 180 DEG
1-APS PUSH BUTTON AND SIGN
(RT ARROW) (PB2-2)
EXTEND INTO HH 6:
1-4/C 14
1-2/C 14
1-1/C INS. GR.

5 F&I:
PA90 POLE FOUNDATION
X=530501.8090 Y=149926.8684
TYPE PA90-A-30-D30-9 (DAVIT AT 350 DEG)
1-ANGLE MOUNT SIGNAL OVERHEAD AT 0'
1-STRAIGHT MOUNT SIGNAL OVERHEAD AT 12'
2-ANGLE MOUNT SIGNAL AT 90 & 180 DEG
2-ANGLE MOUNT C.D. PED INDS AT 90 & 180 AND DEG
D SIGN (SEE DETAIL SHEET)
LED LUMINAIRE (FOR 40' MOUNTING HEIGHT)
EXTEND INTO HH 8:
2-6/C 14
4-4/C 14
✱1-3/C 14 (EVP)
✱1-3/C 20 (EVP)
1-3/C 14 (LUM)
1-1/C INS. GR.

INSTALL:
1-ONE WAY EVP DETECTOR AND CONFIRMATORY
LIGHT (PHASES 4 & 7) (ANOKA CO FURNISHED)

6 F&I:
PA100 POLE FOUNDATION
X=526668.0246 Y=162896.1544
TYPE PA100-A-45-D30-9 (DAVIT AT 350 DEG)
1-ANGLE MOUNT SIGNAL OVERHEAD AT 0'
2-STRAIGHT MOUNT SIGNALS OVERHEAD AT 12' & 24'
2-ANGLE MOUNT SIGNAL AT 90 & 180 DEG
2-ANGLE MOUNT C.D. PED INDS AT 90 & 180 AND DEG
D SIGN (SEE DETAIL SHEET)
2-R6-1 SIGN PANELS - POLE MOUNTED O AND 180 DEG
LED LUMINAIRE (FOR 40' MOUNTING HEIGHT)
EXTEND INTO INP HH 12:
2-6/C 14
5-4/C 14
✱1-3/C 14 (EVP)
✱1-3/C 20 (EVP)
1-3/C 14 (LUM)
1-1/C INS. GR.

INSTALL:
1-ONE WAY EVP DETECTOR AND CONFIRMATORY
LIGHT (PHASES 1 & 6) (ANOKA CO FURNISHED)



LEXINGTON PKWY & 131ST ST - MATCHLINES

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DATE: 7/29/2022
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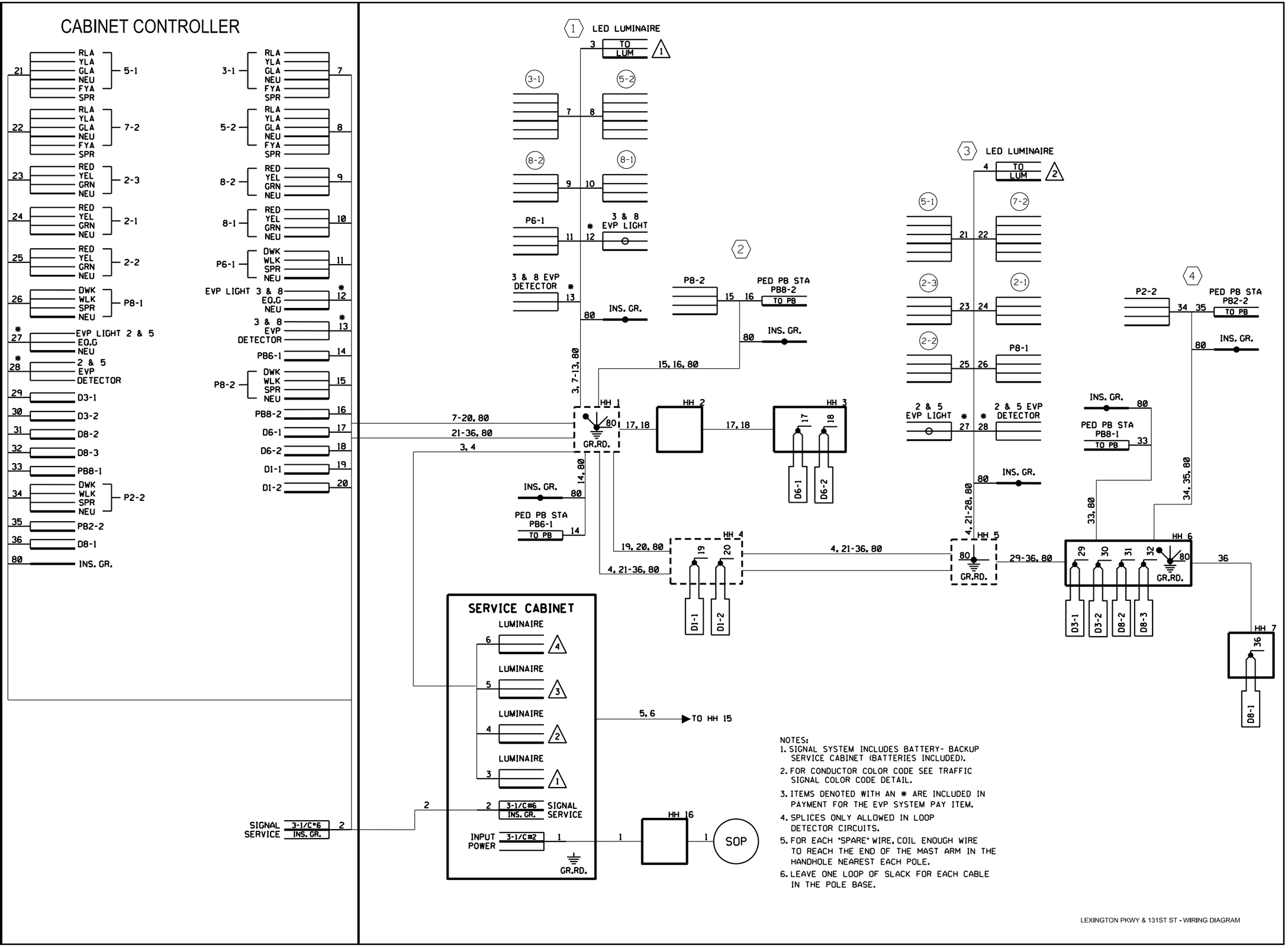
CITY OF BLAINE, MN

LEXINGTON AVENUE NE AT 131ST AVENUE NE INTERSECTION IMPROVEMENTS

TRAFFIC CONTROL SIGNAL SYSTEM

SHEET **43** OF **53** SHEETS



NOTES:
1. SIGNAL SYSTEM INCLUDES BATTERY- BACKUP SERVICE CABINET (BATTERIES INCLUDED).
2. FOR CONDUCTOR COLOR CODE SEE TRAFFIC SIGNAL COLOR CODE DETAIL.
3. ITEMS DENOTED WITH AN * ARE INCLUDED IN PAYMENT FOR THE EVP SYSTEM PAY ITEM.
4. SPLICES ONLY ALLOWED IN LOOP DETECTOR CIRCUITS.
5. FOR EACH "SPARE" WIRE, COIL ENOUGH WIRE TO REACH THE END OF THE MAST ARM IN THE HANDHOLE NEAREST EACH POLE.
6. LEAVE ONE LOOP OF SLACK FOR EACH CABLE IN THE POLE BASE.

LEXINGTON PKWY & 131ST ST - WIRING DIAGRAM

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SEAN DELMORE, PE
DATE: 7/29/2022
LIC. NO: 40845

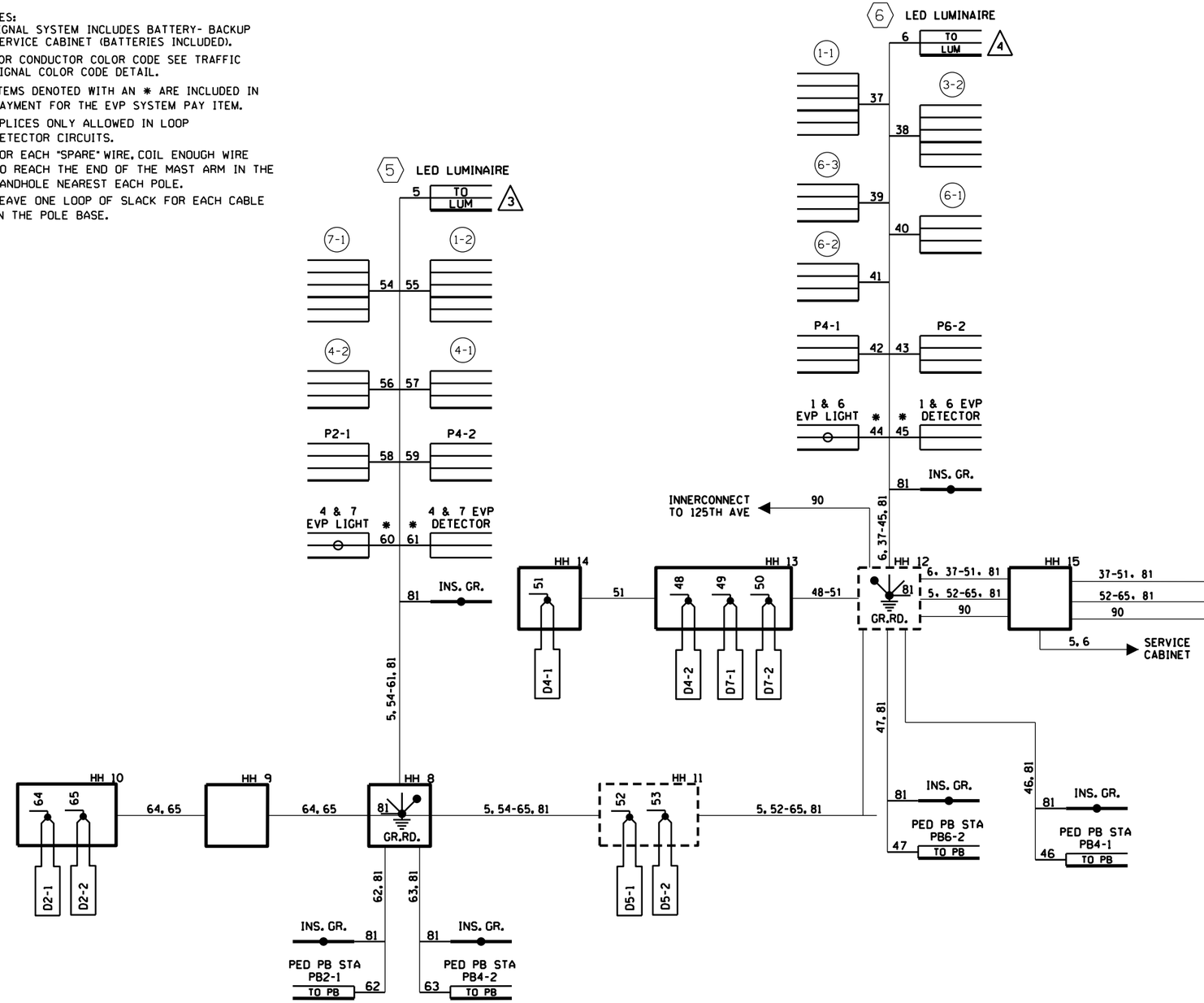
CITY OF BLAINE, MN

LEXINGTON AVENUE NE AT 131ST AVENUE NE INTERSECTION IMPROVEMENTS

TRAFFIC CONTROL SIGNAL SYSTEM

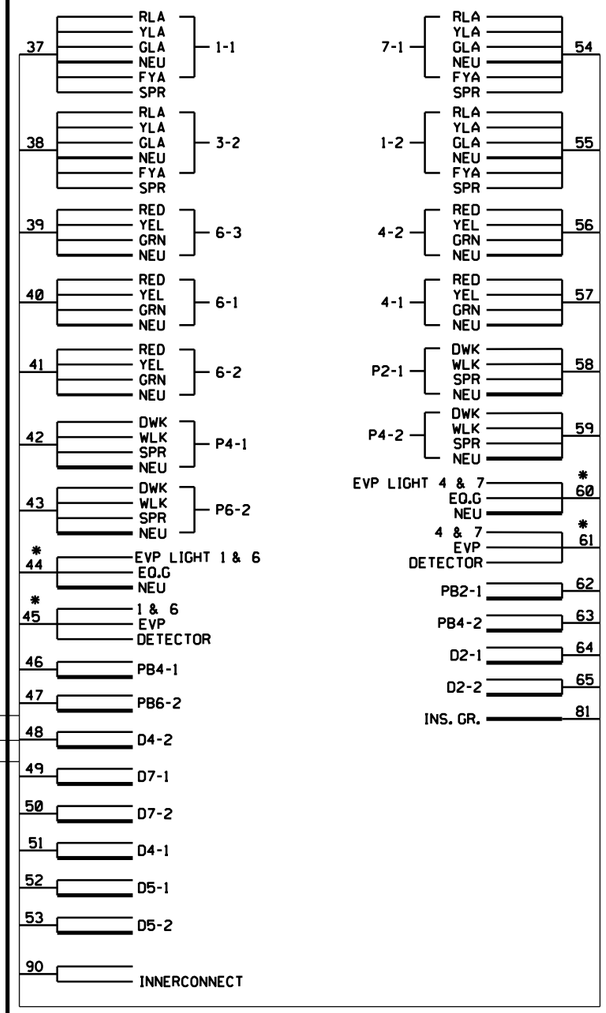
SHEET 44 OF 53 SHEETS

NOTES:
1. SIGNAL SYSTEM INCLUDES BATTERY- BACKUP SERVICE CABINET (BATTERIES INCLUDED).
2. FOR CONDUCTOR COLOR CODE SEE TRAFFIC SIGNAL COLOR CODE DETAIL.
3. ITEMS DENOTED WITH AN * ARE INCLUDED IN PAYMENT FOR THE EVP SYSTEM PAY ITEM.
4. SPLICES ONLY ALLOWED IN LOOP DETECTOR CIRCUITS.
5. FOR EACH "SPARE" WIRE, COIL ENOUGH WIRE TO REACH THE END OF THE MAST ARM IN THE HANDHOLE NEAREST EACH POLE.
6. LEAVE ONE LOOP OF SLACK FOR EACH CABLE IN THE POLE BASE.



LEXINGTON PKWY & 131ST ST - WIRING DIAGRAM

CABINET CONTROLLER



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WSB PROJECT NO.: 019869-000

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PLAN BY:
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SEAN DELMORE, PE
DATE: 7/29/2022
LIC. NO: 40945

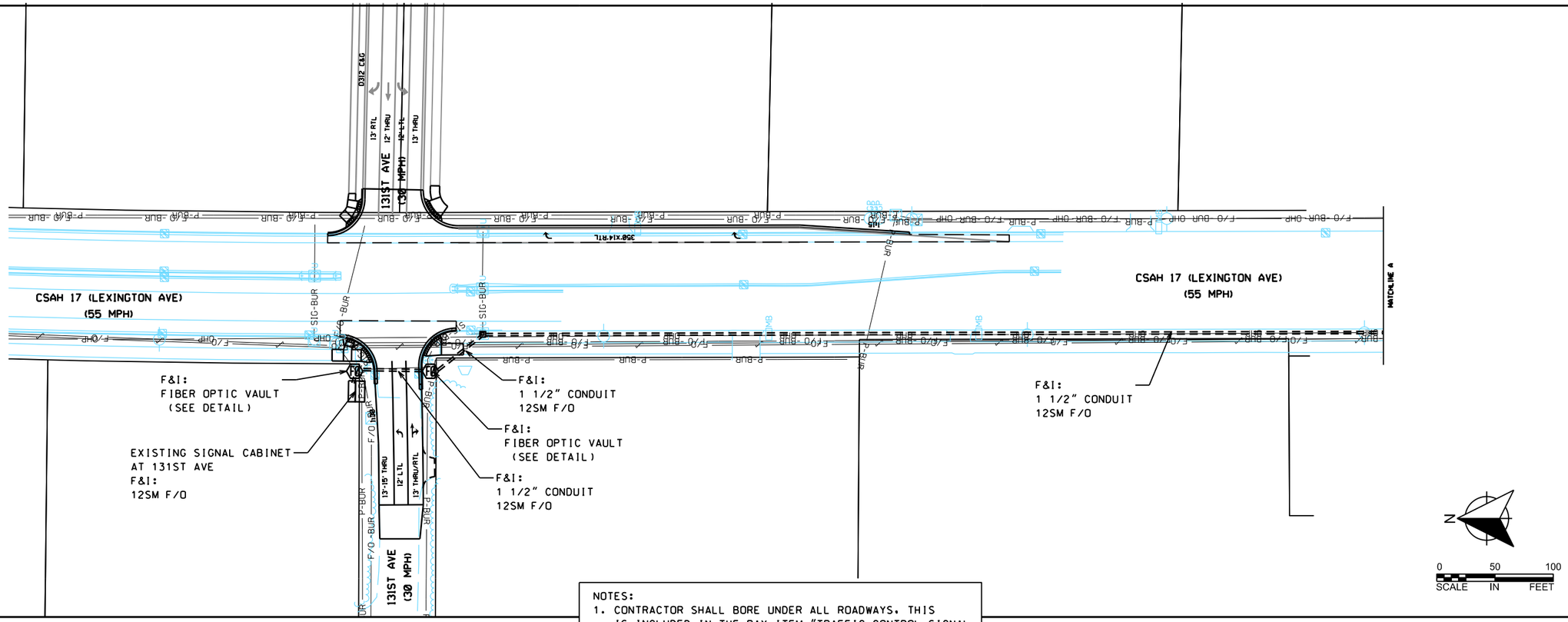
CITY OF BLAINE, MN

LEXINGTON AVENUE NE AT 131ST AVENUE NE INTERSECTION IMPROVEMENTS

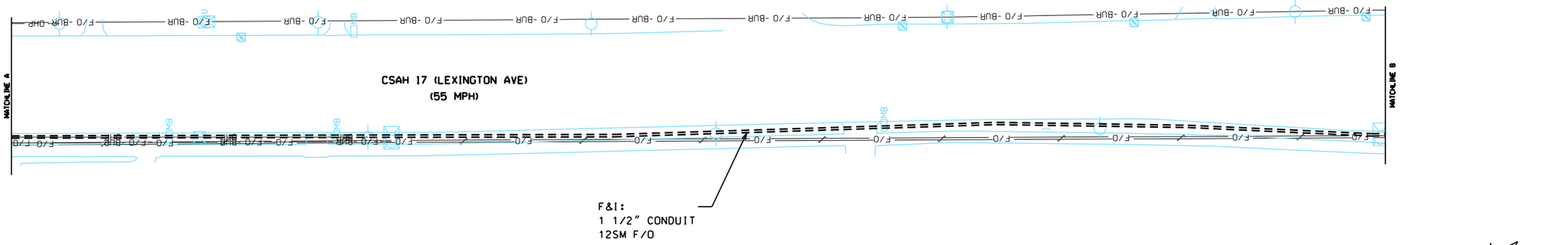
TRAFFIC CONTROL SIGNAL SYSTEM

SHEET 45 OF 53 SHEETS

PLOTTED/REVISED: 7/29/2022 12:25:06 PM



NOTES:
1. CONTRACTOR SHALL BORE UNDER ALL ROADWAYS. THIS IS INCLUDED IN THE PAY ITEM "TRAFFIC CONTROL SIGNAL SYSTEM.
2. SEE "SIGNAL PLAN LAYOUT" SHEET AND "FOR INFORMATION ONLY" SHEET FOR EXISTING HANDHOLES AND CONDUIT.



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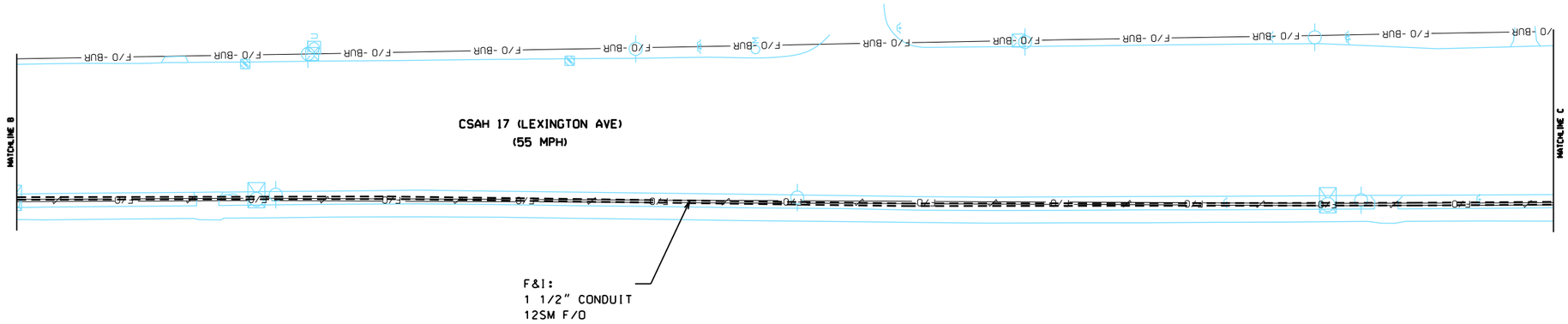
SEAN DELMORE, PE
LIC. NO: 40845
DATE: 7/29/2022

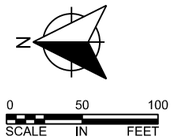
CITY OF BLAINE, MN

LEXINGTON AVENUE NE AT 131ST AVENUE NE INTERSECTION IMPROVEMENTS

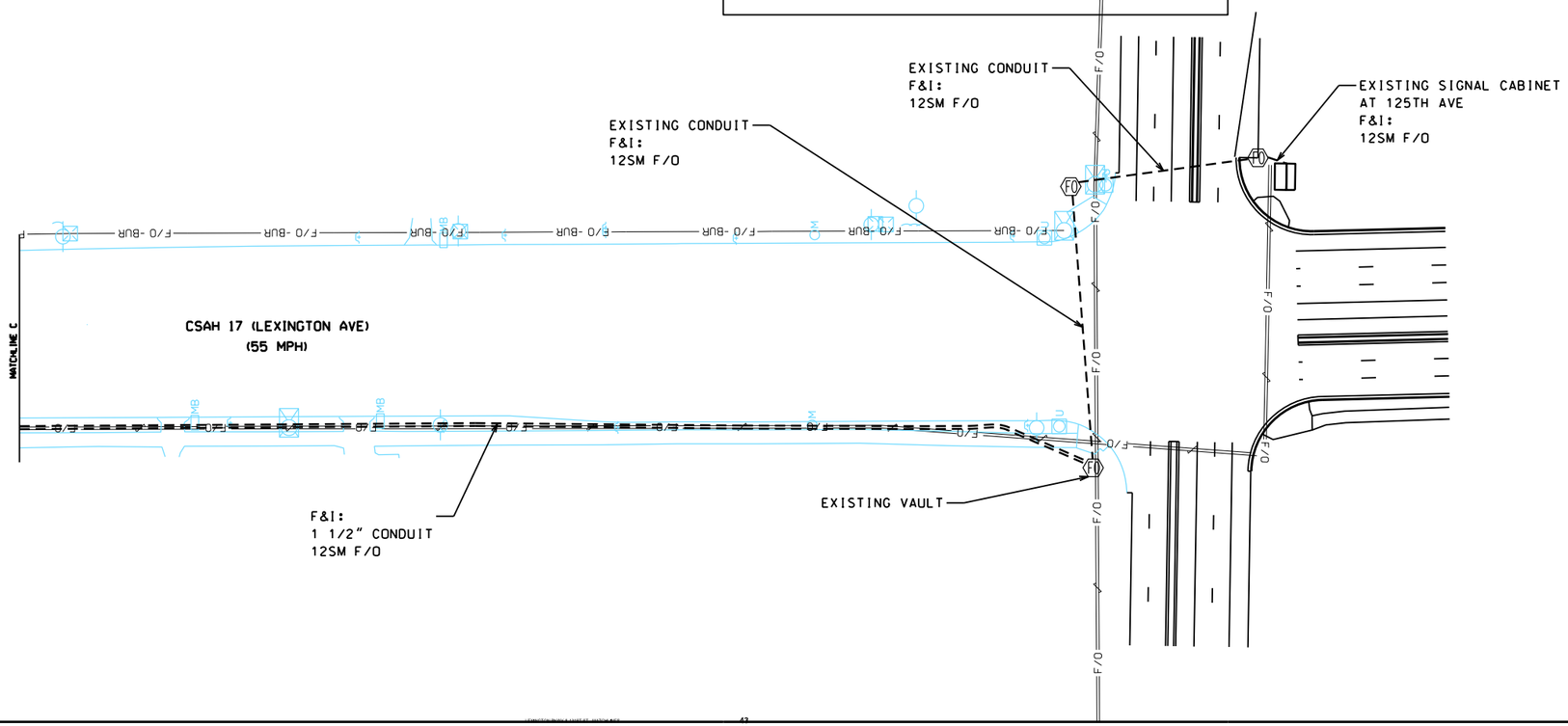
TRAFFIC CONTROL SIGNAL SYSTEM

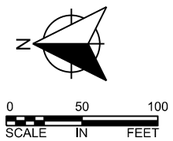
PLOTTED/REVISED: 7/29/2022 12:25:07 PM





NOTES:
1. CONTRACTOR SHALL BORE UNDER ALL ROADWAYS. THIS IS INCLUDED IN THE PAY ITEM "TRAFFIC CONTROL SIGNAL SYSTEM.
2. SEE "SIGNAL PLAN LAYOUT" SHEET AND "FOR INFORMATION ONLY" SHEET FOR EXISTING HANDHOLES AND CONDUIT.





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TRAFFIC CONTROL SIGNAL SYSTEM

wsb

WSB PROJECT NO.: 019869-000

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SEAN DELMORE, PE
LIC. NO: 40945
DATE: 7/29/2022

CITY OF BLAINE, MN

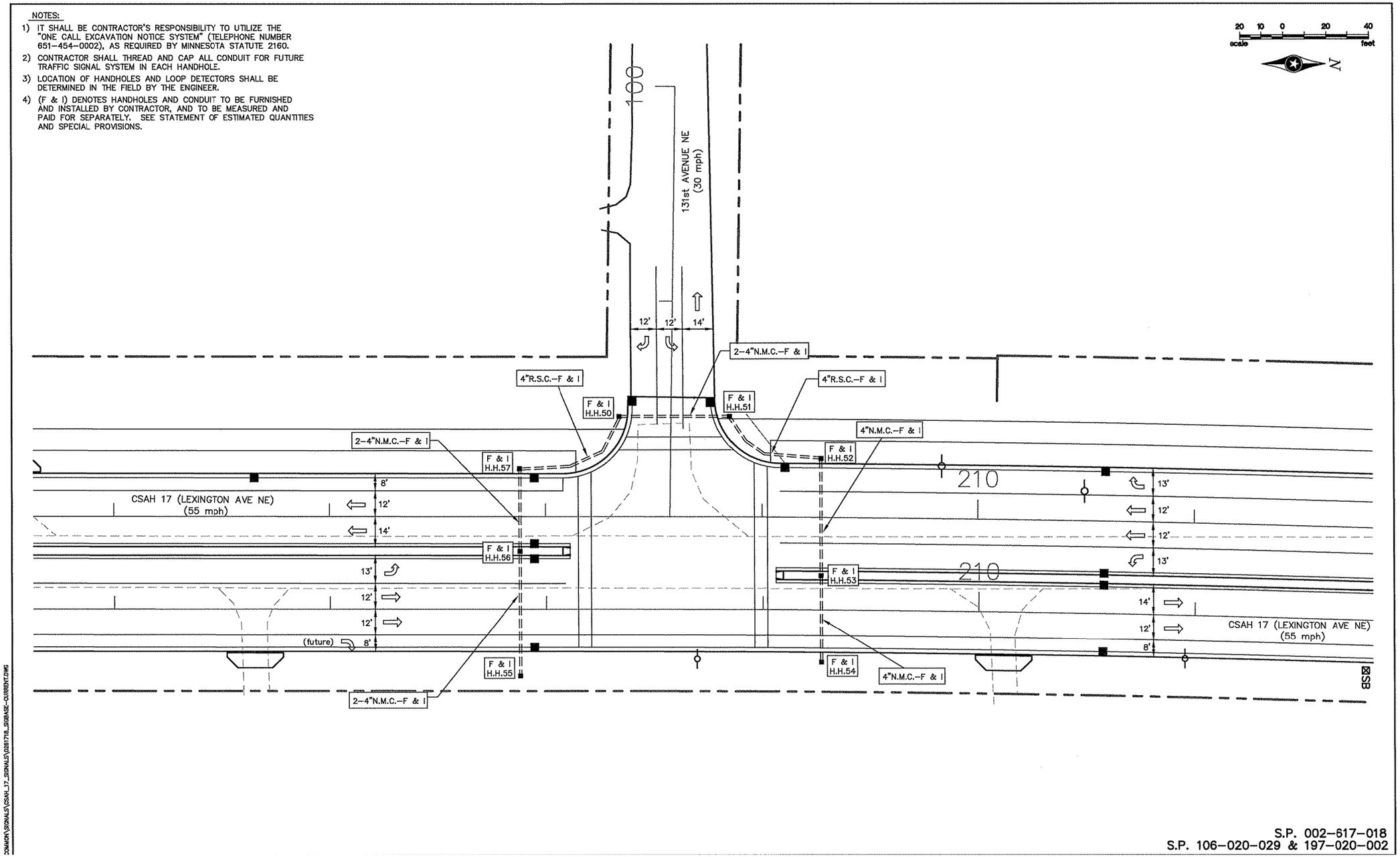
LEXINGTON AVENUE NE AT 131ST AVENUE NE INTERSECTION IMPROVEMENTS

TRAFFIC CONTROL SIGNAL SYSTEM

SHEET 47 OF 53 SHEETS

NOTES:

1) IT SHALL BE CONTRACTOR'S RESPONSIBILITY TO UTILIZE THE "ONE CALL EXCAVATION NOTICE SYSTEM" (TELEPHONE NUMBER 651-454-0002), AS REQUIRED BY MINNESOTA STATUTE 2160.
2) CONTRACTOR SHALL THREAD AND CAP ALL CONDUIT FOR FUTURE TRAFFIC SIGNAL SYSTEM IN EACH HANDHOLE.
3) LOCATION OF HANDHOLES AND LOOP DETECTORS SHALL BE DETERMINED IN THE FIELD BY THE ENGINEER.
4) (F & I) DENOTES HANDHOLES AND CONDUIT TO BE FURNISHED AND INSTALLED BY CONTRACTOR, AND TO BE MEASURED AND PAID FOR SEPARATELY. SEE STATEMENT OF ESTIMATED QUANTITIES AND SPECIAL PROVISIONS.



FOR INFORMATION ONLY

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SEAN DELMORE, PE
LIC. NO: 40845
DATE: 7/29/2022

CITY OF BLAINE, MN

LEXINGTON AVENUE NE AT 131ST AVENUE NE INTERSECTION IMPROVEMENTS

TRAFFIC CONTROL SIGNAL SYSTEM

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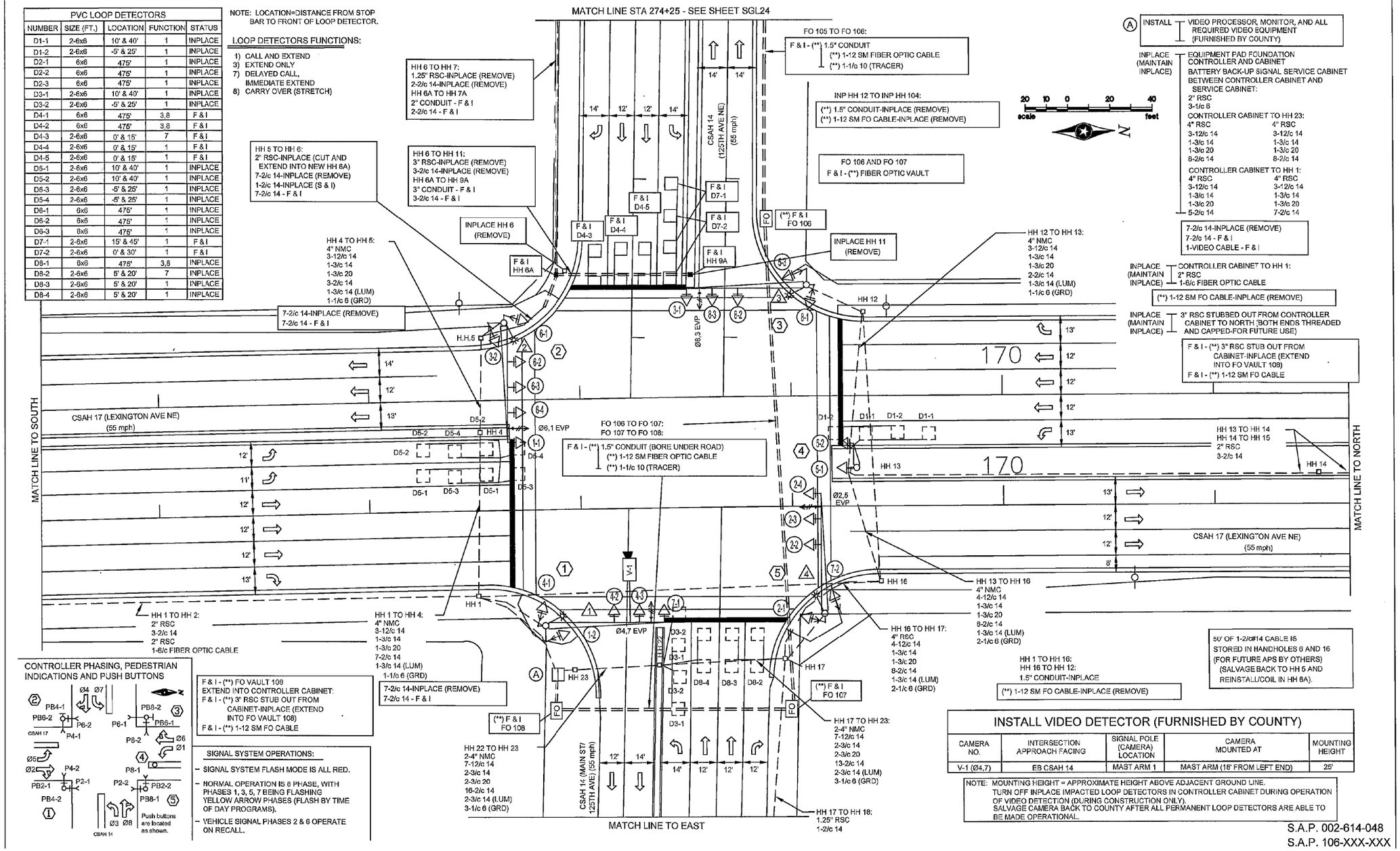
PVC LOOP DETECTORS				
NUMBER	SIZE (FT.)	LOCATION	FUNCTION	STATUS
D1-1	2-6x6	10' & 40'	1	INPLACE
D1-2	2-6x6	-5' & 25'	1	INPLACE
D2-1	6x6	475'	1	INPLACE
D2-2	6x6	475'	1	INPLACE
D2-3	6x6	475'	1	INPLACE
D3-1	2-6x6	10' & 40'	1	INPLACE
D3-2	2-6x6	-5' & 25'	1	INPLACE
D4-1	6x6	475'	3,8	F & I
D4-2	6x6	475'	3,8	F & I
D4-3	2-6x6	0' & 15'	7	F & I
D4-4	2-6x6	0' & 15'	1	F & I
D4-5	2-6x6	0' & 15'	1	F & I
D5-1	2-6x6	10' & 40'	1	INPLACE
D5-2	2-6x6	10' & 40'	1	INPLACE
D5-3	2-6x6	-5' & 25'	1	INPLACE
D5-4	2-6x6	-5' & 25'	1	INPLACE
D6-1	6x6	475'	1	INPLACE
D6-2	6x6	475'	1	INPLACE
D6-3	6x6	475'	1	INPLACE
D7-1	2-6x6	15' & 45'	1	F & I
D7-2	2-6x6	0' & 30'	1	F & I
D8-1	6x6	475'	3,8	INPLACE
D8-2	2-6x6	5' & 20'	7	INPLACE
D8-3	2-6x6	5' & 20'	1	INPLACE
D8-4	2-6x6	5' & 20'	1	INPLACE

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 VIDEO DETECTOR (FURNISHED BY COUNTY)

CAMERA NO.	INTERSECTION APPROACH FACING	SIGNAL POLE (CAMERA) LOCATION	CAMERA MOUNTED AT	MOUNTING HEIGHT
V-1 (Ø4,7)	EB CSAH 14	MAST ARM 1	MAST ARM (18' FROM LEFT END)	25'

NOTE: MOUNTING HEIGHT = APPROXIMATE HEIGHT ABOVE ADJACENT GROUND LINE.
TURN OFF INPLACE IMPACTED LOOP DETECTORS IN CONTROLLER CABINET DURING OPERATION OF VIDEO DETECTION (DURING CONSTRUCTION ONLY).
SALVAGE CAMERA BACK TO COUNTY AFTER ALL PERMANENT LOOP DETECTORS ARE ABLE TO BE MADE OPERATIONAL.

S.A.P. 002-614-048
S.A.P. 106-XXX-XXX

FOR INFORMATION ONLY

wsb

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SEAN DELMORE, PE
LIC. NO: 40945
DATE: 7/29/2022

CITY OF BLAINE, MN

LEXINGTON AVENUE NE AT 131ST AVENUE NE INTERSECTION IMPROVEMENTS

TRAFFIC CONTROL SIGNAL SYSTEM

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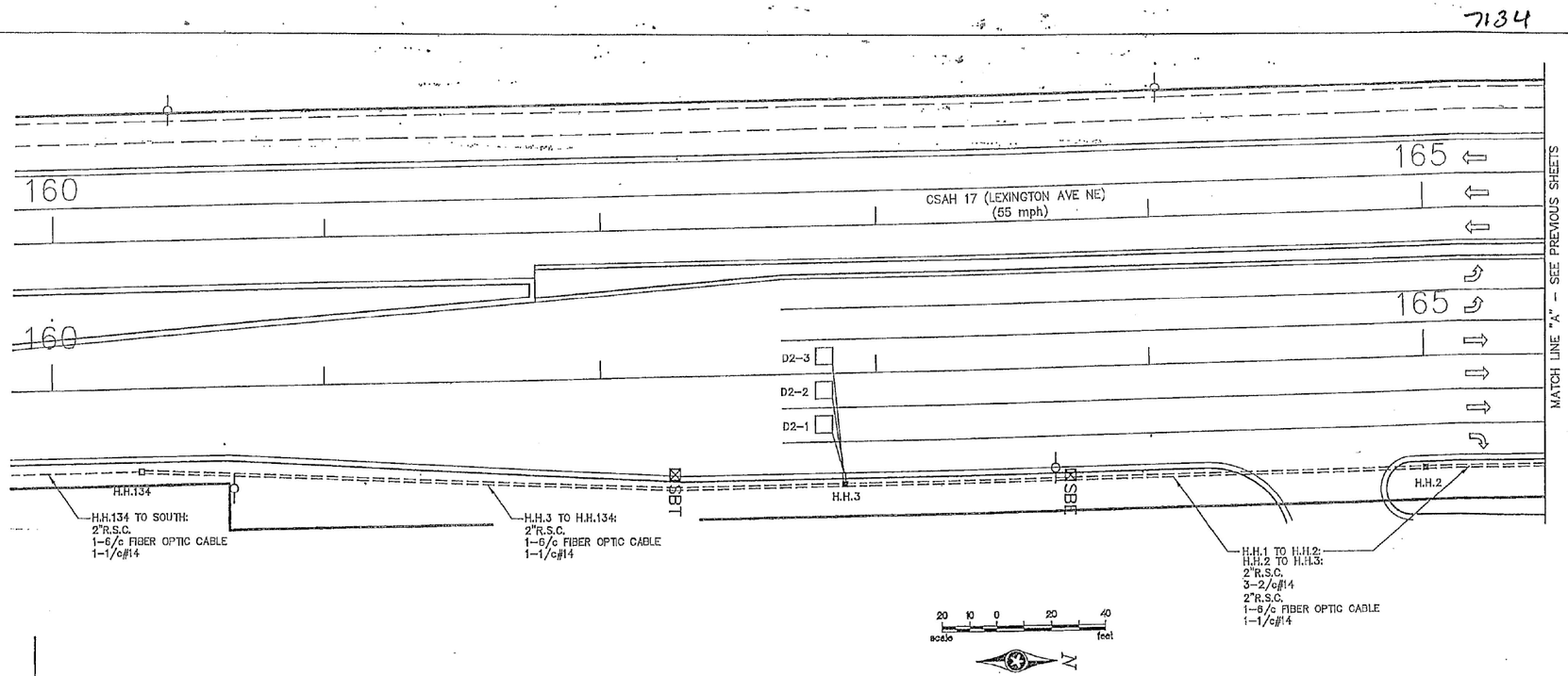

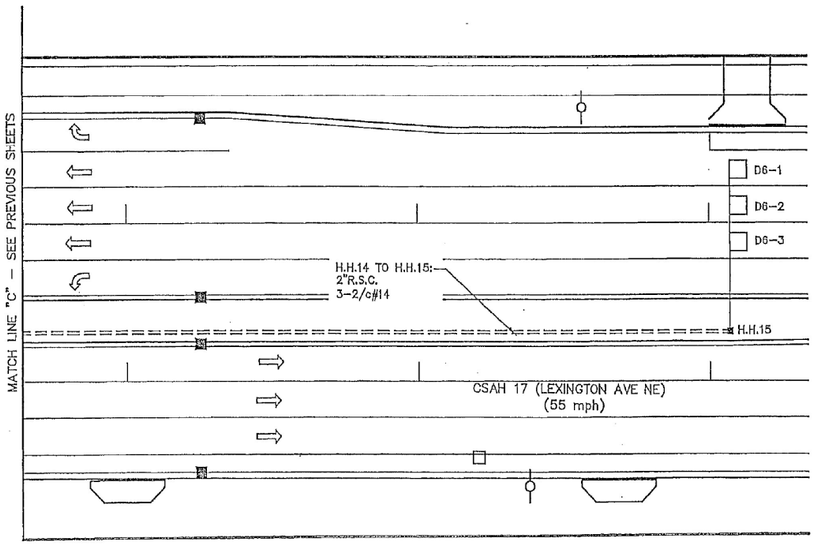

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COUNTY PROJ. 16-25-00

FOR INFORMATION ONLY

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SEAN DELMORE, PE

LIC. NO: 40845

DATE: 7/29/2022

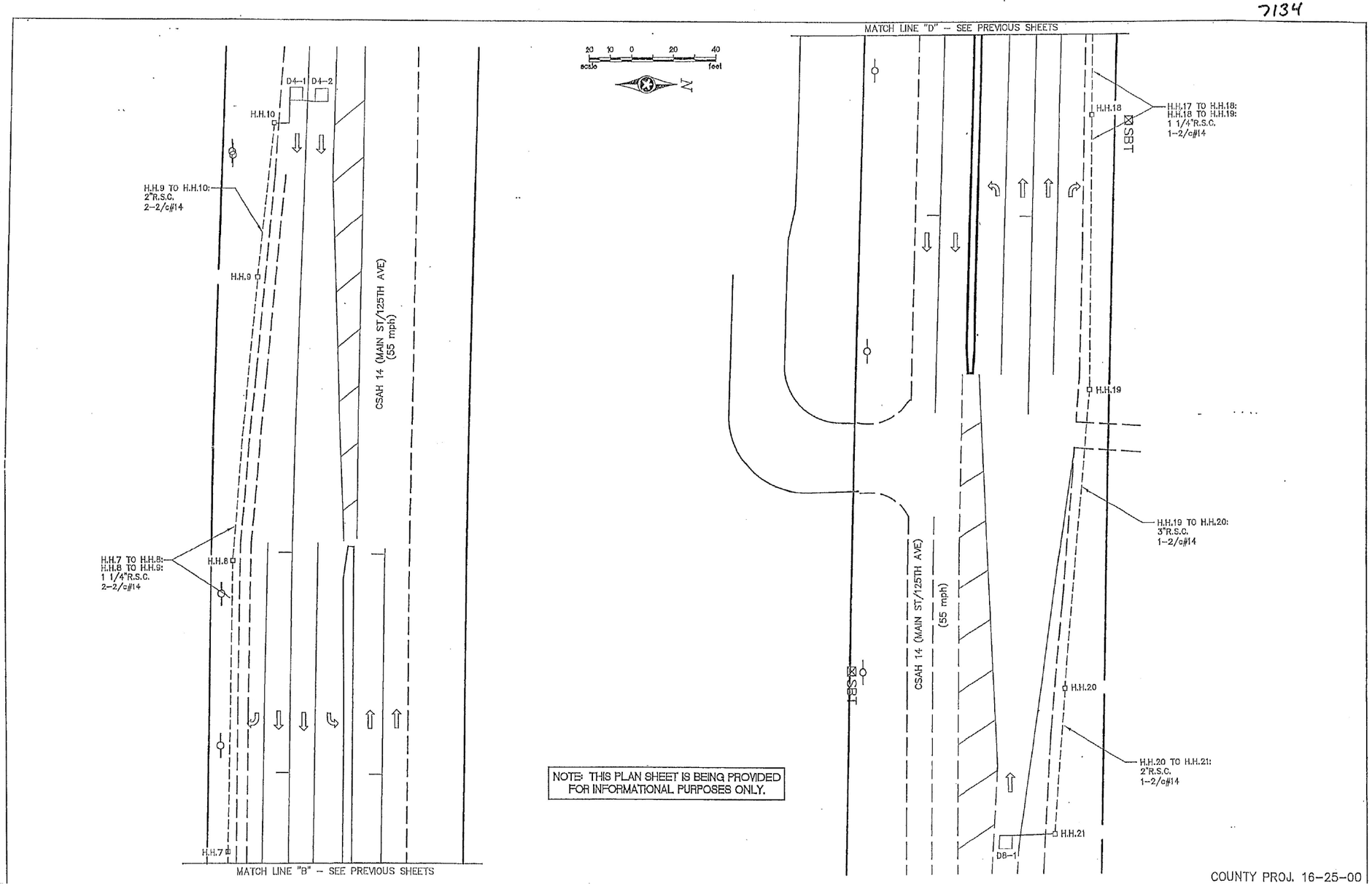
CITY OF BLAINE, MN

LEXINGTON AVENUE NE AT 131ST AVENUE NE INTERSECTION IMPROVEMENTS

TRAFFIC CONTROL SIGNAL SYSTEM

SHEET 50 OF 53 SHEETS

7134



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SEAN DELMORE, PE

DATE: 7/29/2022 LIC. NO: 40845

CITY OF BLAINE, MN

LEXINGTON AVENUE NE AT 131ST AVENUE NE INTERSECTION IMPROVEMENTS

TRAFFIC CONTROL SIGNAL SYSTEM

SHEET 51 OF 53 SHEETS

PLOTTED/REVISED: 7/29/2022 12:25:52 PM

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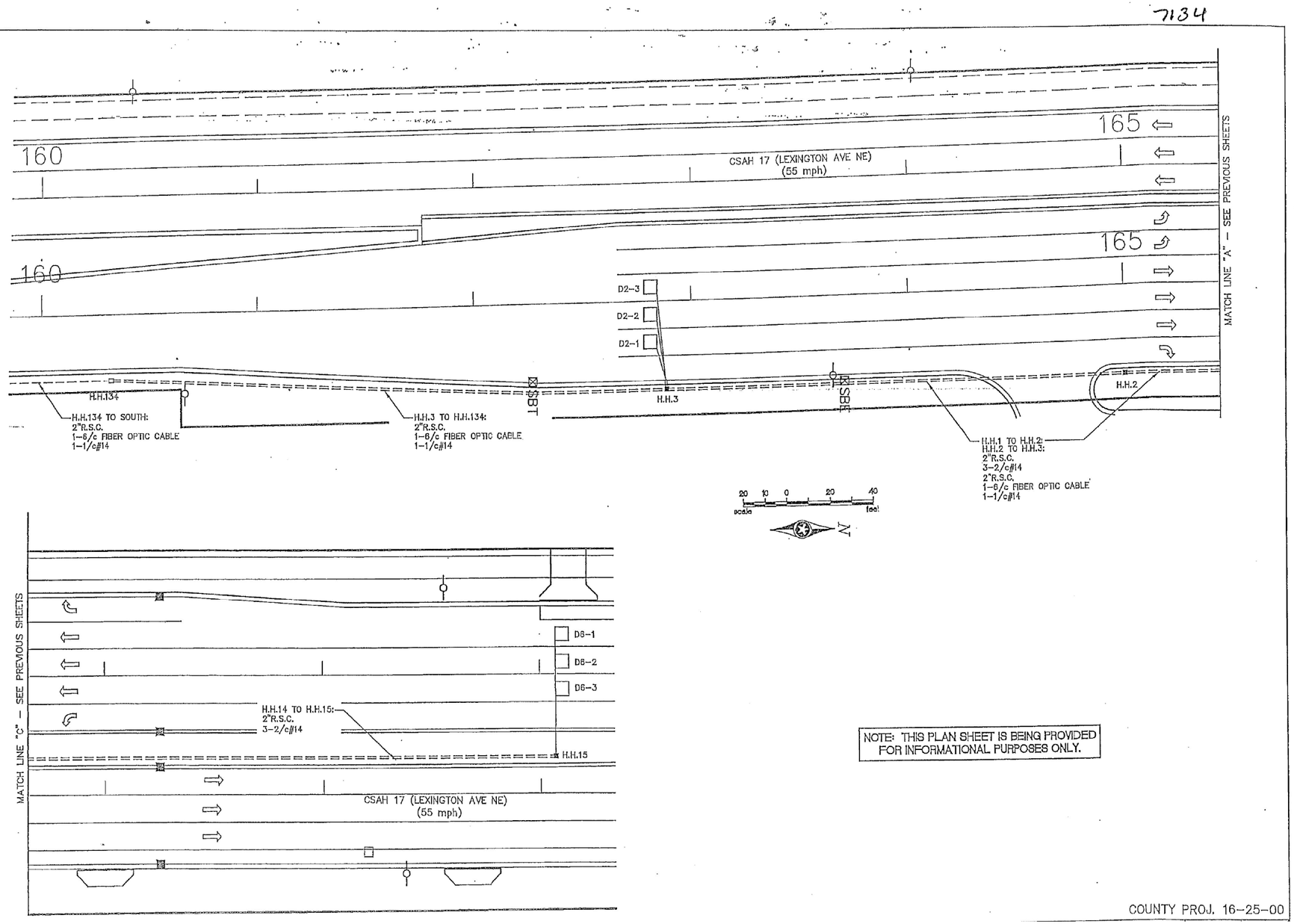

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COUNTY PROJ. 16-25-00

FOR INFORMATION ONLY

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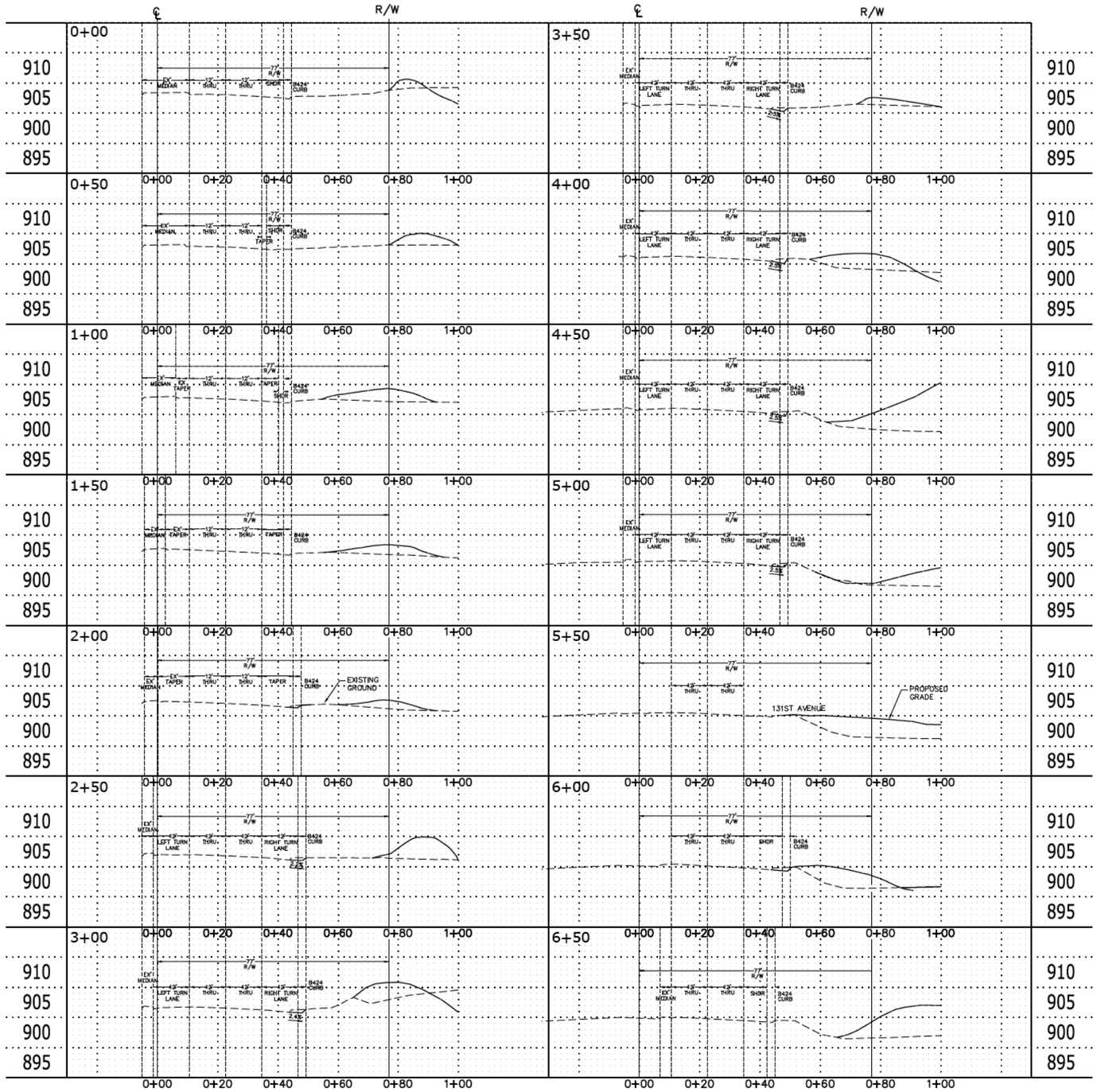
DATE: 7/29/2022 LIC. NO: 40845

CITY OF BLAINE, MN

LEXINGTON AVENUE NE AT 131ST AVENUE NE INTERSECTION IMPROVEMENTS

TRAFFIC CONTROL SIGNAL SYSTEM

SHEET 52 OF 53 SHEETS



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CITY OF BLAINE, MN

LEXINGTON AVENUE NE AT 131ST AVENUE NE INTERSECTION IMPROVEMENTS

CSAH 17 CROSS SECTIONS

SHEET **53** OF **53** SHEETS