FED. PROJ. NO. STPM 5614(012)

MINNESOTA DEPARTMENT OF TRANSPORTATION

CONSTRUCTION PLAN FOR GRADING, BITUMINOUS MILLING & SURFACING, ADA IMPROVEMENTS, RETAINING WALLS, AND END POSTS FOR BRIDGES NO. 9406 & NO. 56007

LOCATED ON TH 78 FROM TH 210 IN BATTLE LAKE TO TH 10 IN PERHAM

STATE PIT NO. 56117 IS A POSSIBLE AGGREGATE SOURCE. LOCATION IS SW 1/4 OF SW 1/4 OF SECTION 27, T136N, R39W IN OTTER TAIL COUNTY. APPROX. 103,000 CU YD OF CLASS 5 MATERIAL IS AVAILABLE.

STATE PROJ. NO. 5620-24 (TH 78)		STATE PROJ. NO. 5621-23 (TH 78)	
GROSS LENGTH	77626.05 FEET 14.702 MILES	GROSS LENGTH	57875.57 FEET 10.961 MILES
BRIDGES-LENGTH	FEET MILES	BRIDGES-LENGTH	454.00 FEET 0.086 MILES
EXCEPTIONS-LENGTH	FEET MILES	EXCEPTIONS-LENGTH	FEET MILES
NET LENGTH	77626.05 FEET 14.702 MILES	NET LENGTH	57875.57 FEET 10.961 MILES
REF. POINT	21+00.543 TO REF. POINT 36+00.379	REF. POINT	36+00.379 TO REF. POINT 47+00.265

SP 5620-24 EQUATIONS

93+08.99 BK = 93+11.90 AH
379+40.13 BK = 387+21.71 AH
431+56.04 BK = 431+78.68 AH
448+04.55 BK = 448+02.98 AH
472+17.07 BK = 472+18.72 AH
504+65.26 BK = 504+55.54 AH
530+67.84 BK = 530+69.27 AH
561+91.55 BK = 561+93.33 AH
579+57.65 BK = 579+58.94 AH
598+09.53 BK = 598+04.92 AH
610+86.23 BK = 610+90.92 AH
635+85.49 BK = 635+90.95 AH
686+90.08 BK = 686+94.19 AH
732+94.11 BK = 732+95.57 AH
762+43.68 BK = 762+46.33 AH
796+24.39 BK = 796+10.19 AH

SP 5621-23 EQUATIONS

847+52.60 BK = 848+29.64 AH
862+12.96 BK = 861+91.26 AH
873+74.95 BK = 873+69.10 AH
881+34.56 BK = 881+51.82 AH
912+97.86 BK = 912+94.70 AH
951+83.65 BK = 963+91.30 AH
973+93.57 BK = 973+98.06 AH
990+01.20 BK = 990+00.88 AH
1015+92.92 BK = 1015+95.07 AH
1065+27.02 BK = 1065+27.65 AH
1097+11.74 BK = 1096+24.38 AH
1177+42.73 BK = 1177+44.00 AH
1243+95.51 BK = 1243+97.84 AH
1301+41.57 BK = 1301+47.68 AH

TH 78 REF. PTS. TO STATION

R.P. 23 = 91+73	R.P. 36 = 779+61
R.P. 24 = 144+27	R.P. 37 = 832+10
R.P. 25 = 196+79	R.P. 38 = 885+57
R.P. 26 = 249+96	R.P. 39 = 938+83
R.P. 27 = 308+20	R.P. 40 = 1004+26
R.P. 28 = 357+52	R.P. 41 = 1056+53
R.P. 29 = 411+56	R.P. 42 = 1108+73
R.P. 30 = 463+79	R.P. 43 = 1161+08
R.P. 31 = 516+57	R.P. 44 = 1214+03
R.P. 32 = 569+66	R.P. 45 = 1266+95
R.P. 33 = 621+98	R.P. 46 = 1319+99
R.P. 34 = 674+60	R.P. 47 = 1372+81
R.P. 35 = 726+90	

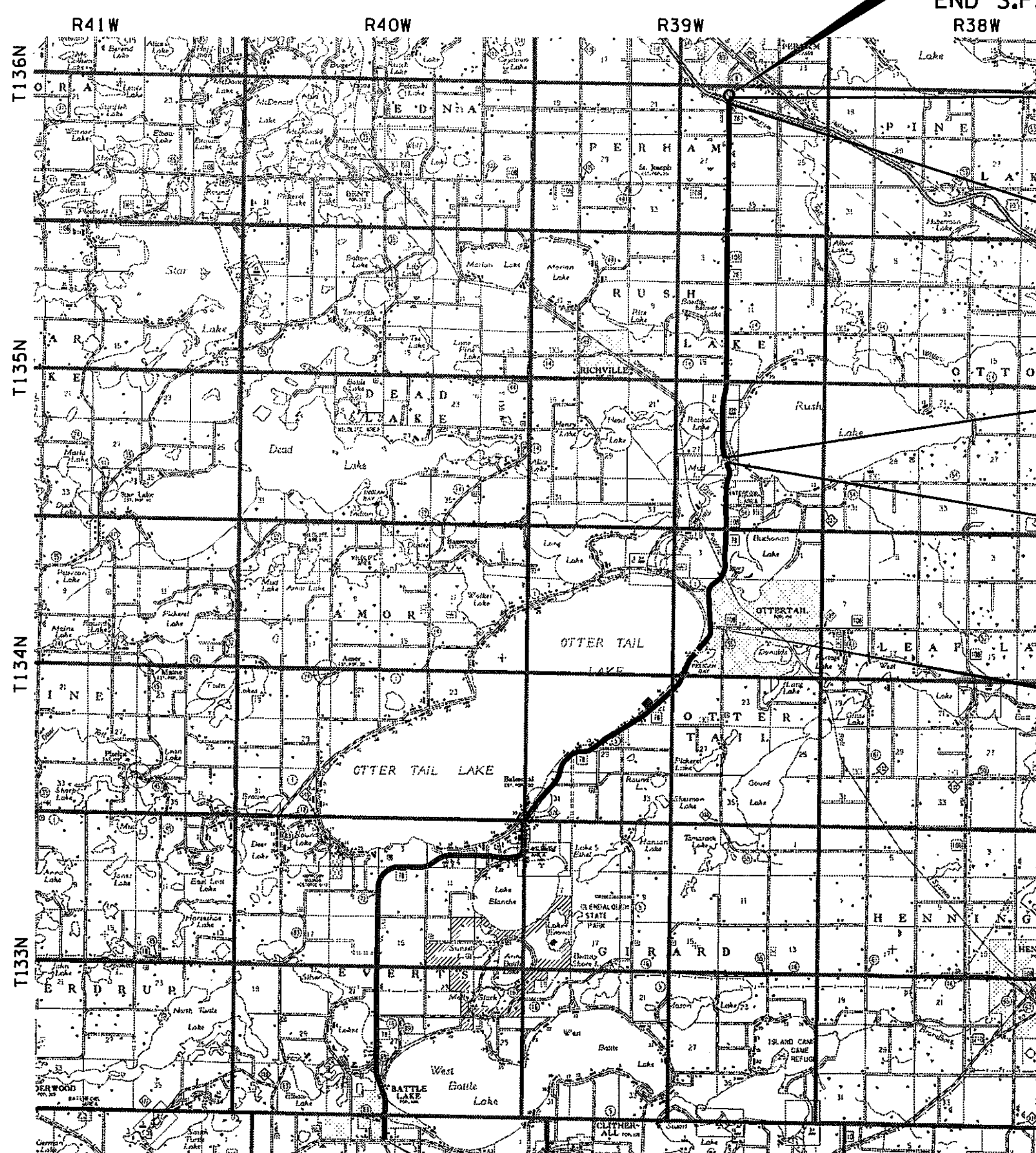
SCALES

INDEX MAP 10000'

GENERAL LAYOUT 500'

PLAN REVISIONS		
DATE	SHEET NO.	APPROVED BY

T.H. 78 STA. 1390+05.61
END S.P. 5621-23



STA. 1381+41.64

STA. 999+16.57

STA. 997+73.01

BRIDGE LENGTH

BRIDGE #9406 LENGTH = 144'

Reconstruction projects must include 20-scale sidewalk and curb ramp detail sheets with sidewalk profiles.

BEGIN S.P. 5621-23
END S.P. 5620-24
T.H. 78 STA. 799+29.50

BEGIN S.P. 5620-24
T.H. 78 STA. 15+01.90

DESIGN DESIGNATION

Design ESALS	2009 = 1,076,000	
ADT (Current Year)	2011 = 5600	Design Speed 60 MPH
ADT (Future Year)	2031 = 7300	Based on STOPPING Sight Distance
DHV (Design Hr. Vol.)	= 875	Height of eye 3.5' Height of object 2.0'
D (Directional Distr.)	= 40/60 %	Design Speed not achieved at: Locally Restricted
T (Heavy Commercial)	= 5.3 %	STA. TO STA. MPH
		STA. TO STA. MPH

PROJECT LOCATION
COUNTY : OTTER TAIL
DISTRICT : 4

FOR PLANS AND UTILITIES SYMBOLS SEE TECHNICAL MANUAL

STATE PROJ. NO.	CHARGE IDENTIFIER
5621-23	
5620-24	

GOVERNING SPECIFICATIONS

THE 2005 EDITION OF THE MINNESOTA DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR CONSTRUCTION", SHALL GOVERN.

INDEX

THIS PLAN CONTAINS 131 SHEETS

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

PRINT NAME: JASON P. SCHMIDT LICENSE # 42788

DATE: 2/4/2013 SIGNATURE: [signature]

RECOMMENDED FOR APPROVAL [signature] 2-5 20 13
DISTRICT TRANSPORTATION ENGINEER

RECOMMENDED FOR APPROVAL [signature] 2-5 20 13
DISTRICT MATERIALS ENGINEER

RECOMMENDED FOR APPROVAL [signature] 2-5 20 13
DISTRICT WATER RESOURCES/HYDRAULICS ENGINEER

RECOMMENDED FOR APPROVAL [signature] 2-5 20 13
DISTRICT TRAFFIC ENGINEER

RECOMMENDED FOR APPROVAL [signature] 3/13 20 13
STATE PRE-LETTING ENGINEER

OFFICE OF LAND MANAGEMENT APPROVAL [signature] 3/14 20 13
DIRECTOR, LAND MANAGEMENT

APPROVED 3/14 20 13 [signature]
STATE DESIGN ENGINEER

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

PRINT NAME: LICENSE #

DATE: SIGNATURE:

BOLTON & MENK, INC.
CONSULTING ENGINEERS & SURVEYORS
MANKATO, MN FAIRMONT, MN SLEEPY EYE, MN
BURNSVILLE, MN WILLMAR, MN CHASKA, MN
RAMSEY, MN MAPLEWOOD, MN BRAINERD, MN AMES, IA

S.P. 5620-24 (TH 78 = 180)
STATE PROJ. NO. 5621-23 (TH 78 = 181)

STATEMENT OF ESTIMATED QUANTITIES

SHEET NO.	ITEM NO.	DESCRIPTION	UNITS	TOTAL ESTIMATED QUANTITIES	SP 5620-24 (1)	SP 5621-23	100% CITY
15	2360.503	TYPE SP 12.5 WEARING COURSE MIXTURE (3,B) 2.5" THICK	SQ YD	4792	1945	2847	
29A	2411.501	STRUCTURAL CONCRETE (1A43)	CU YD	23	23		
16	2411.501	STRUCTURAL CONCRETE (3A34)	CU YD	3	3		
16	2411.541	REINFORCEMENT BARS	POUND	224	224		
18,27	2411.602	PLUG & ABANDON CATTLE PASS	EACH	1	1		
16,29	2411.607	CONCRETE STEPS	CU YD	30	30		
29A	2411.618	MODULAR BLOCK RETAINING WALL	SQ FT	677	677		
29A	2411.618	ANTI-GRAFFITI COATING	SQ FT	832	832		
29A	2451.501	STRUCTURE EXCAVATION CLASS U	CU YD	64 (P)	64		
18	2451.509	AGGREGATE BEDDING (CV)	CU YD	715 (P)	259	456	
	2478.601	ORGANIC ZINC-RICH PAINT SYSTEM (OLD) (2)	LUMP SUM	1	1		
18	2501.511	24" RC PIPE CULVERT	LIN FT	706	248	458	
18	2501.511	24" RC PIPE CULVERT CLASS V-JACKED	LIN FT	110		110	
18	2501.511	36" RC PIPE CULVERT	LIN FT	130	48	82	
18	2501.515	24" RC PIPE APRON	EACH	4	2	2	
18	2501.569	24" RC SAFETY APRON	EACH	20	6	14	
18	2501.569	36" RC SAFETY APRON	EACH	4	2	2	
18	2501.602	PLUG FILL & ABANDON PIPE CULVERT	EACH	1		1	
	2502.521	4" TP PIPE DRAIN (3)	LIN FT	175	175		
18	2503.541	12" RC PIPE SEWER DESIGN 3006	LIN FT	509	509		
18	2503.541	15" RC PIPE SEWER DESIGN 3006	LIN FT	352	352		
18	2503.541	18" RC PIPE SEWER DESIGN 3006	LIN FT	224	224		
18	2503.541	24" RC PIPE SEWER DESIGN 3006	LIN FT	328	328		
SW4	2503.602	CONNECT TO EXISTING SANITARY SEWER	EACH	5			5
18	2503.602	CONNECT TO EXISTING STORM SEWER	EACH	4	4		
SW4	2503.602	CONNECT TO EXISTING SANITARY SEWER SERVICE	EACH	15			15
SW4	2503.602	PLUG & ABANDON PIPE SEWER (4)	EACH	1			1
SW4	2503.602	8" PIPE PLUG	EACH	1			1
SW4	2503.602	8"X4" PVC WYE	EACH	15			15
SW4	2503.603	8" PVC PIPE SEWER	LIN FT	936			936
SW4	2503.603	4" PVC SANITARY SERVICE PIPE	LIN FT	604			604
SW4	2504.602	CONNECT TO EXISTING WATER MAIN	EACH	6			6
SW4	2504.602	CONNECT TO EXISTING WATER SERVICE	EACH	25			25
SW4	2504.602	HYDRANT	EACH	3			3
22	2504.602	ADJUST GATE VALVE	EACH	5			5
SW4	2504.602	0.75" CORPORATION STOP	EACH	22			22
SW4	2504.602	1.5" CORPORATION STOP	EACH	3			3
SW4	2504.602	6" GATE VALVE AND BOX	EACH	3			3
SW4	2504.602	8" GATE VALVE AND BOX	EACH	5			5
SW4	2504.602	0.75" CURB STOP & BOX	EACH	22			22
SW4	2504.602	1.5" CURB STOP & BOX	EACH	3			3
SW4	2504.603	3/4" TYPE PE PIPE	LIN FT	955			955
SW4	2504.603	1 1/2" TYPE PE PIPE	LIN FT	133			133
SW4	2504.603	6" PVC WATERMAIN	LIN FT	212			212
SW4	2504.603	8" PVC WATERMAIN	LIN FT	1387			1387
SW4	2504.608	DUCTILE IRON FITTINGS	POUND	881			881
18	2506.501	CONST DRAINAGE STRUCTURE DESIGN H	LIN FT	52.8	52.8		
18	2506.501	CONST DRAINAGE STRUCTURE DESIGN 48-4020	LIN FT	40.5	40.5		
18	2506.516	CASTING ASSEMBLY	EACH	21	21		
22	2506.522	ADJUST FRAME & RING CASTING	EACH	1			1
SW4	2506.602	CONST DRAINAGE STRUCTURE DESIGN SPECIAL	EACH	4			4
18	2511.501	RANDOM RIPRAP CLASS III (5)	CU YD	100	40	60	
16,28	2514.604	SLOPE PAVING SPECIAL	SQ YD	5	5		
16	2521.501	4" CONCRETE WALK	SQ FT	22992	22992		
16	2521.501	4" CONCRETE WALK SPECIAL	SQ FT	4497	4497		
16	2521.501	6" CONCRETE WALK	SQ FT	4426	4354		72

CONSTRUCTION NOTES:

(P) DENOTES PLANNED QUANTITY.

(1) SEE AGREEMENT #03276 FOR LUMP SUM AGREEMENT.
(2) PAINT EXISTING ORNAMENTAL METAL RAILING ON RETAINING WALL (STA 59+75 RT - 66+50 RT).
(3) TO BE PLACED AT BASE OF MODULAR BLOCK RETAINING WALL. SEE STANDARD PLANS FOR PIPE LOCATION. SEE SHEET 29A FOR RETAINING WALL LOCATION.
(4) INCLUDES FILLING.
(5) FILTER IS INCIDENTAL.

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Jasonsc 3/12/2013

H:\MDOT\T42104881\CAD\plans\Tabs\CD562123_seq02.dgn

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.
JASON P. SCHMIDT
LIC. NO. 42788 DATE 01-16-2013

DESIGNED JPS
DRAWN LLK
CHECKED DKA

BOLTON & MENK, INC.
CONSULTING ENGINEERS & SURVEYORS
MANKATO, MN FAIRMONT, MN SLEEPY EYE, MN
BURNSVILLE, MN WILLMAR, MN CHASKA, MN
RAMSEY, MN MAPLEWOOD, MN BRAINERD, MN AMES, IA

REV.	BY	DATE

STATE PROJECT NO. 5621-23
TH 78 BATTLE LAKE TO PERHAM
ESTIMATED QUANTITIES

SHEET 8 OF 77

This particular project includes a mill and inlay through part of town. The "Concrete Walk" and "Concrete Curb & Gutter" pay items are used in the mill and inlay segment. Traditional pay items (4" or 6" Concrete Walk and Concrete Curb & Gutter Design xxxx) are used for reconstruction projects.

Site Restoration is used because this particular project included a mill and inlay segment. Traditional turf establishment items should be used for reconstruction projects.

SHEET NO.	ITEM NO.	DESCRIPTION						
16	2521.618	CONCRETE WALK						
16	2531.501	CONCRETE CURB & GUTTER DESIGN B624	LIN FT	2639	2614			25
16	2531.501	CONCRETE CURB & GUTTER DESIGN D424	LIN FT	52	52			
16	2531.502	CONCRETE CURB DESIGN V6	LIN FT	26	26			
16	2531.507	8" CONCRETE DRIVEWAY PAVEMENT	SQ YD	568	568			
16	2531.603	CONCRETE CURB & GUTTER	LIN FT	175	175			
16	2531.618	TRUNCATED DOMES	SQ FT	458	438			20
17	2540.602	MAIL BOX SUPPORT	EACH	225	159	66		
16	2540.603	METAL RAILING	LIN FT	86	86			
14	2554.501	TRAFFIC BARRIER DESIGN SPECIAL	LIN FT	200		200		
14	2554.501	TRAFFIC BARRIER DESIGN B8338	LIN FT	675		675		
18	2554.509	GUIDE POST TYPE B	EACH	26	8	18		
14	2554.523	END TREATMENT-ENERGY ABSORBING TERMINAL	EACH	8		8		
17	2557.603	INSTALL WOVEN WIRE FENCE	LIN FT	320	320			
16,28	2557.603	ORNAMENTAL IRON FENCE	LIN FT	154	154			
	2563.601	TRAFFIC CONTROL	LUMP SUM	1	0.59	0.37		0.04
	2563.601	TEMPORARY PEDESTRIAN ACCESS CONTROL	LUMP SUM	1		1		
	2563.601	DETOUR SIGNING	LUMP SUM	1		1		
	2563.602	PORTABLE CHANGEABLE MESSAGE SIGN	EACH	4		4		
S6	2564.531	SIGN PANELS TYPE C	SQ FT	187	162	25		
S6	2564.531	SIGN PANELS TYPE D	SQ FT	90	90			
S6	2564.537	INSTALL SIGN TYPE C	EACH	7	3	4		
S6	2564.537	INSTALL SIGN TYPE D	EACH	1	1			
17	2571.602	TREE GRATE	EACH	4	4			
19	2573.502	SILT FENCE, TYPE MACHIN		7059	3026	4033		
18	2573.530	STORM DRAIN INLET PROT		13	13			
18,26,35	2573.602	CULVERT PROTECTION		15	6	9		
19	2575.501	SEEDING		3.6	1.2	2.4		
19	2575.502	SEED MIXTURE 250		251	82	169		
19	2575.505	SODDING TYPE LAWN		819	819			
19	2575.511	MULCH MATERIAL TYPE 1		7.2	2.4	4.8		
19	2575.519	DISK ANCHORING	ACRE	3.6	1.2	2.4		
19	2575.523	EROSION CONTROL BLANKETS CATEGORY 3	SQ YD	356	148	208		
19	2575.532	FERTILIZER TYPE 3	POUND	1257	410	847		
16	2575.602	SITE RESTORATION	EACH	9	8			1
	2575.604	MULCH MATERIAL TYPE SPECIAL (2)	SQ YD	14	14			
	2580.601	INTERIM PAVEMENT MARKING	LUMP SUM	1		1		
14	2582.501	PAVEMENT MESSAGE (LT ARROW) POLY PREF-GR IN	EACH	14	14			
14	2582.501	PAVEMENT MESSAGE (RT ARROW) POLY PREF-GR IN	EACH	5	1	4		
14	2582.501	PAVEMENT MESSAGE (THRU ARROW) POLY PREF-GR IN	EACH	1		1		
14	2582.501	PAVEMENT MESSAGE (SCHOOL XING) POLY PREF-GR IN	EACH	2	2			
14	2582.501	PAVEMENT MESSAGE (STOP AHEAD) POLY PREF-GR IN	EACH	2	2			
14	2582.501	PAVEMENT MESSAGE (RR XING) POLY PREF-GR IN	EACH	2		2		
14	2582.502	24" STOP LINE WHITE-POLY PREF (GR IN)	LIN FT	132	60	72		
14	2582.502	4" SOLID LINE WHITE-EPOXY (GROUND IN)	LIN FT	15530	11515	4015		
14	2582.502	8" DOTTED LINE WHITE-EPOXY (GROUND IN)	LIN FT	366	213	153		
14	2582.502	4" SOLID LINE YELLOW-EPOXY (GROUND IN)	LIN FT	29190	21200	7990		
14	2582.502	24" SOLID LINE YELLOW-EPOXY (GROUND IN)	LIN FT	103	95	8		
14	2582.502	4" BROKEN LINE YELLOW-EPOXY (GROUND IN)	LIN FT	24650	14220	10430		
14	2582.502	4" DBLE SOLID LINE YELLOW-EPOXY (GR IN)	LIN FT	12960	8750	4210		
14	2582.503	CROSSWALK MARKING-POLY PREFORM (GR IN)	SQ FT	1584	1584			
14	2582.603	4" SOLID LINE WHITE-EPOXY (WR)	LIN FT	258050	144135	113915		

CONSTRUCTION NOTES:

(P) DENOTES PLANNED QUANTITY.

(1) SEE AGREEMENT #03276 FOR LUMP SUM AGREEMENT.
(2) TO BE PLACED IN TREE GRATES (SEE DETAIL ON SHEET 27) AND AT 38+72 LT TO 39+07 LT.

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.

JASON P. SCHMIDT
LIC. NO. 42788 DATE 01-16-2013

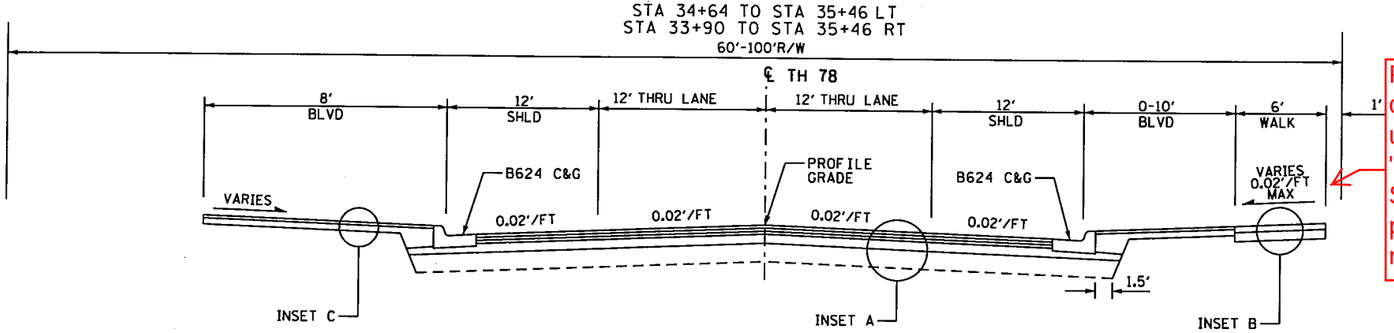
DESIGNED JPS
DRAWN LLK
CHECKED DKA

BOLTON & MENK, INC.
CONSULTING ENGINEERS & SURVEYORS
MANKATO, MN FAIRMONT, MN SLEEPY EYE, MN
BURNSVILLE, MN WILLMAR, MN CHASKA, MN
RAMSEY, MN MAPLEWOOD, MN BRAINERD, MN AMES, IA

REV.	BY	DATE

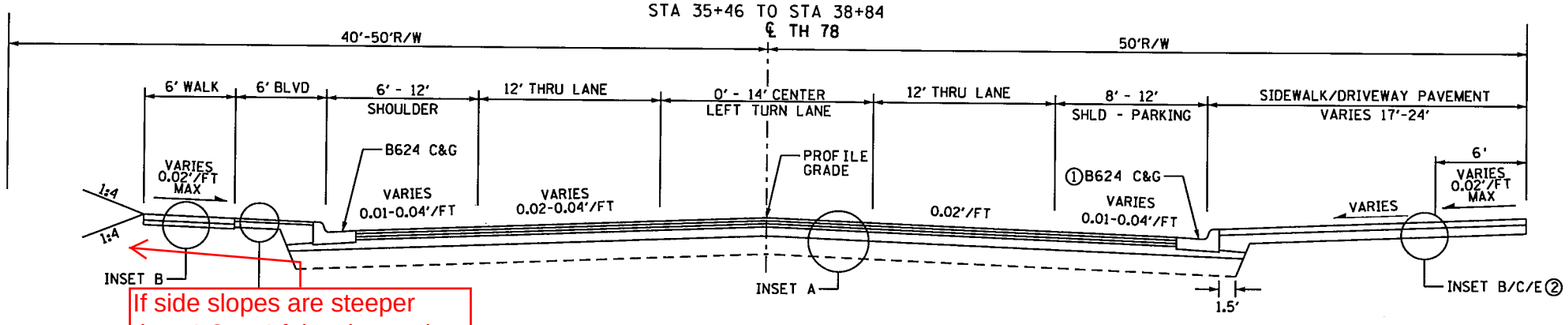
STATE PROJECT NO. 5621-23
TH 78 BATTLE LAKE TO PERHAM
ESTIMATED QUANTITIES

PROPOSED TYPICAL SECTION
STA 34+64 TO STA 35+46 LT
STA 33+90 TO STA 35+46 RT



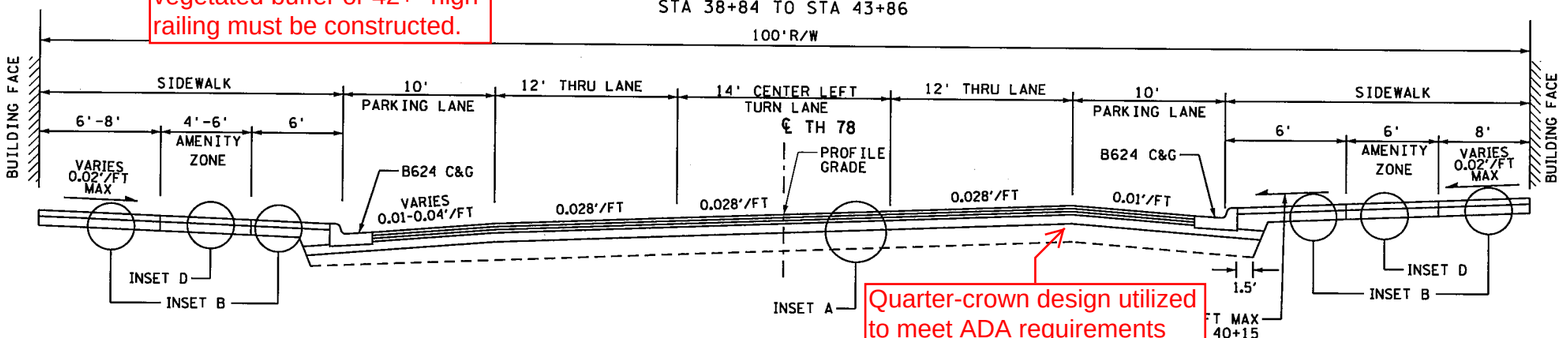
PARs should be designed at 0.015 cross slope. Where 0.02 must be used, it must be communicated as "0.020 MAX" considering MnDOT Spec 1503. This applies to all types of projects (i.e. it is not exclusive to reconstruction projects).

PROPOSED TYPICAL SECTION
STA 35+46 TO STA 38+84



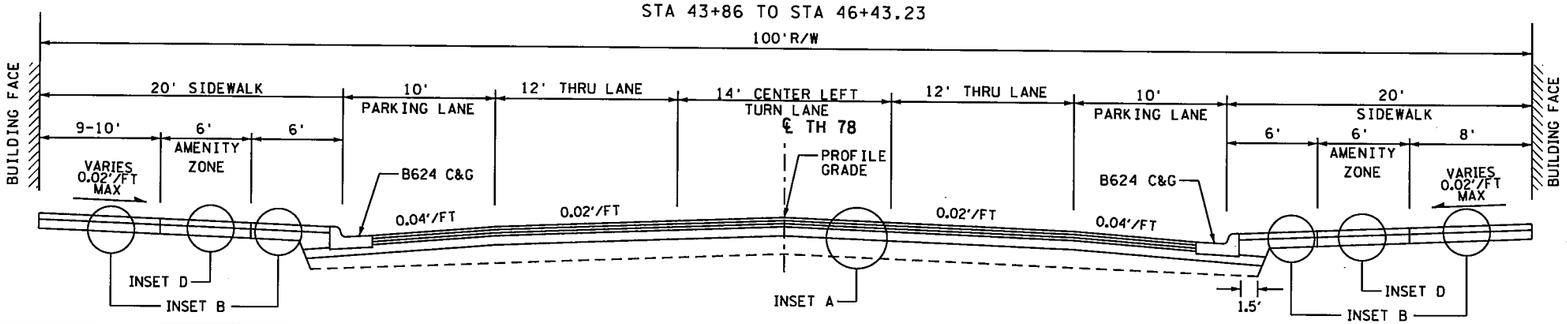
If side slopes are steeper than 1:3, a 4 ft level grass/ vegetated buffer or 42+" high railing must be constructed.

PROPOSED TYPICAL SECTION
STA 38+84 TO STA 43+86

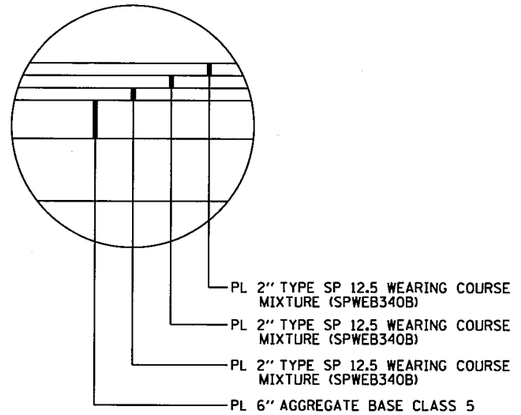


Quarter-crown design utilized to meet ADA requirements along the sidewalks.

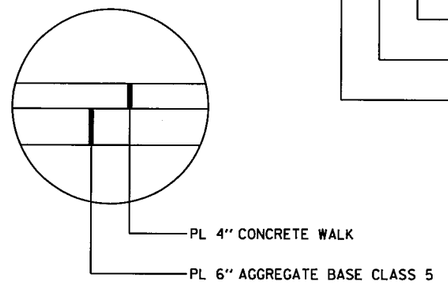
PROPOSED TYPICAL SECTION
STA 43+86 TO STA 46+43.23



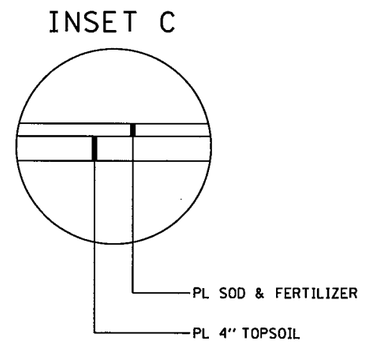
INSET A



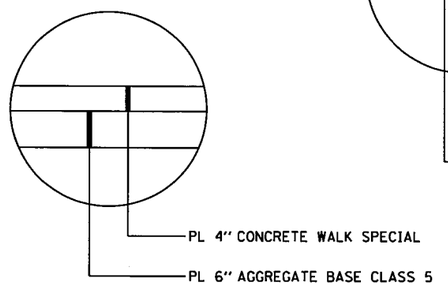
INSET B



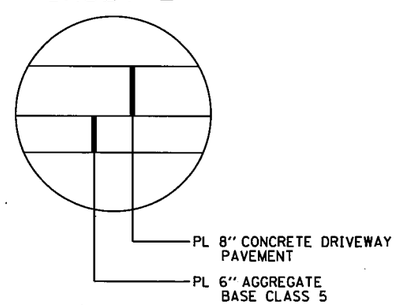
INSET C



INSET D



INSET E



① D424 C&G
STA 36+11 TO 36+63

② SEE CONSTRUCTION PLANS FOR CONCRETE DRIVEWAY LOCATIONS

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.

JASON P. SCHMIDT
LIC. NO. 42788 DATE 01-16-2013

DESIGNED	DRAWN	CHECKED
JPS	LLK	AJW

BOLTON & MENK, INC.
CONSULTING ENGINEERS & SURVEYORS
MANKATO, MN FAIRMONT, MN SLEEPY EYE, MN
BURNSVILLE, MN WILLMAR, MN CHASKA, MN
RAMSEY, MN MAPLEWOOD, MN BRAINERD, MN AMES, IA

REV.	BY	DATE

STATE PROJECT NO. 5621-23
TH 78 BATTLE LAKE TO PERHAM
TYPICAL SECTIONS

SHEET 11 OF 77

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CONCRETE CURB & GUTTER / WALK / DRIVEWAY PAVEMENT / METAL RAILING AND FENCE

SP	STATION	LOCATION	INTERSECTION QUADRANT	REMOVE CURB & GUTTER (4)	REMOVE CONCRETE WALK (4)	SALVAGE BRICK PAVERS	REMOVE CONCRETE DRIVEWAY PAVEMENT (4)	AGGREGATE BASE (CV) CLASS 5	METAL RAILING (9)	ORNAMENTAL IRON FENCE (9)	STRUCTURAL CONCRETE (3A34) (6)	REINFORCEMENT BARS (6)	CONCRETE STEPS (8)	SLOPE PAVING SPECIAL	4" CONCRETE WALK	4" CONCRETE WALK SPECIAL (3)	6" CONCRETE WALK	CONCRETE WALK (5)	8" CONCRETE DRIVEWAY PAVEMENT	CONCRETE CURB & GUTTER DESIGN B624	CONCRETE CURB & GUTTER DESIGN D424	CONCRETE CURB DESIGN V6	CONCRETE CURB & GUTTER	TRUNCATED DOMES	SITE RESTORATION	REMARKS
				LIN FT	SQ FT	SQ FT	SQ FT	CU YD	LIN FT	LIN FT	CU YD	POUND	CU YD	SQ YD	SQ FT	SQ FT	SQ FT	SQ FT	SQ YD	LIN FT	LIN FT	LIN FT	LIN FT	SQ FT	EACH	
5620-24	33+48 - 35+05	LT		204																	202						
	34+71 - 38+24	RT		402	1029			58							3149						398	52					
	34+72 - 34+82	RT	DAIRY QUEEN NE					1									78								12		
	34+81 - 34+93	LT	HOLDT ST SW					2									88								12		
	35+29	RT						15											92								
	35+51 - 38+22	LT		286	146			21							1127						323						
	35+64	LT	HOLDT ST NW					2									95								12		
	35+82	LT	HOLDT ST NW					2									86								12		
	35+82	RT	HOLDT ST NE					2									81								12		
	36+11 - 36+98	RT					207	33											198								
	36+46	LT						6											35								
	37+16	LT						4											26								
	37+61 - 37+93	LT					765	12											69								
	37+82	RT					189	9											54								
	38+07	LT	HENNING ST SW					3									147								12		
	38+07	RT	HENNING ST SE					3									153								12		
	38+10	RT	HENNING ST SE					3									153								12		
	38+12	LT	HENNING ST SW					3									147								12		
	38+66 - 41+86	RT		359	3410	347		105		135					4590	1086					369		5				
	38+69 - 41+86	LT		357	3594			84							3852	697					362						
	38+76	RT	HENNING ST NE					4									191								12		
	38+78	LT	HENNING ST NW					3									169								12		
	38+86	RT							14				6														
	38+89	LT	HENNING ST NW					3									169								12		
	38+89	RT	HENNING ST NE					4									191								12		
	39+24	RT							12				5														
	39+39	RT							12				5														
	39+78	RT							8				4														
	39+83	LT							14				3														
	40+09	LT							14				3														
	40+27	RT					350	10											62								
	40+29	LT					193	5											32								
	41+66	RT	MAIN ST SE					3									167								12		
	41+66	LT	MAIN ST SW					3									169								12		
	41+76	RT	MAIN ST SE					3									167								12		
	41+77	LT	MAIN ST SW					3									169								12		
	42+34 - 45+61	LT		358	3623			112							4732	1308					409						
	42+35 - 45+62	RT		351	3992			105							4239	1406					373						
	42+44	LT	MAIN ST NW					3									178								12		
	42+44	RT	MAIN ST NE					3									172								12		
	42+55	LT	MAIN ST NW					3									178								12		
	42+55	RT	MAIN ST NE					3									172								12		
	45+21 - 45+38	LT							12	19	3	224		5									21				
	45+42	LT	SUMMIT ST SW					3									146								12		
	45+42	RT	SUMMIIT ST SE					3									178								12		
	45+51	LT	SUMMIT ST SW					3									146								12		
	45+53	RT	SUMMIT ST SE					3									178								12		
	45+56	LT											4														
	45+99 - 46+42	LT		84	128			1							69						85						
	46+00 - 46+75	RT		88	161			1							39						93						
	46+07	LT	SUMMIT ST NW					3									152								12		
	46+11	RT	SUMMIT ST NE					3									141								12		
	46+19	LT	SUMMIT ST NW					3									152								12		
	46+19	RT	SUMMIT ST NE					3									141								12		
	49+25	LT	BOWMAN ST SW	25	50													50						25	10	1	(1)(2)
	49+25	RT	BOWMAN ST SE	25	58													58						25	10	1	(1)(2)
	49+60	LT	BOWMAN ST NW	25	55													55						25	10	1	(1)(2)
	49+60	RT	BOWMAN ST NE	25	55													55						25	10	1	(1)(2)
	52+90	LT	DUNTON ST SW	25	44													44						25	10	1	(1)(2)
	52+90	RT	DUNTON ST SE	25	58													58						25	10	1	(1)(2)
	53+18 - 55+14	LT	DUNTON ST NW	25 (10)				23							1195		72 (10)				25 (10)				20 (10)	1 (10)	(2)(7)(11)
	53+25	RT	DUNTON ST NE	25	54													54						25	20	1	(2)(11)
	68+25	RT	LAKESHORE DR SE		12													12							10	1	(1)(2)(7)
	TOTAL			2689	16469	347	1704	687	86	154	3	224	30	5	22992	4497	4426	386	568	2639	52	26	175	458	9	

NOTES:

(1) ONE-WAY DIRECTIONAL PEDESTRIAN CURB RAMP, SEE STANDARD PLANS FOR CONSTRUCTION DETAILS (SHEETS 30-34).
(2) REQUIRES USE OF 24" X 36" TRUNCATED DOME PLATES (STD PLATE 7038)
(3) COLORED CONCRETE WITH SWIRL BRUSHED FINISH, SEE SPECIAL PROVISIONS
(4) SAWING IS INCIDENTAL
(5) AGGREGATE BASE (CV) CLASS 5 IS INCIDENTAL
(6) SEE CONCRETE TOE WALL DETAILS ON SHEET 28
(7) SEE SHEET 61.
(8) INCLUDES CHEEK WALLS, SEE DETAIL ON SHEET 29.
(9) FIELD VERIFY LENGTH.
(10) 100% CITY OF BATTLE LAKE FUNDING.
(11) COMBINED DIRECTIONAL RAMP, SEE STANDARD PLANS FOR CONSTRUCTION DETAILS (SHEETS 30-34).

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JASON P. SCHMIDT
LIC. NO. 42788 DATE 01-16-2013

DESIGNED JPS
DRAWN LLK
CHECKED DKA

BOLTON & MENK, INC.
CONSULTING ENGINEERS & SURVEYORS
MANKATO, MN FAIRMONT, MN SLEEPY EYE, MN
BURNSVILLE, MN WILLMAR, MN CHASKA, MN
RAMSEY, MN MAPLEWOOD, MN BRAINERD, MN AMES, IA

REV.	BY	DATE

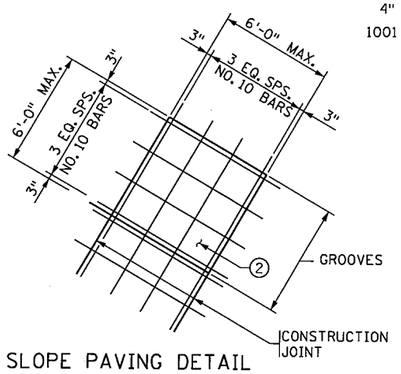
STATE PROJECT NO. 5621-23
TH 78 BATTLE LAKE TO PERHAM
QUANTITY TABULATIONS

CONCRETE & REINFORCEMENT UNIT QUANTITIES:

ALL REBARS ARE IN METRIC DESIGNATIONS

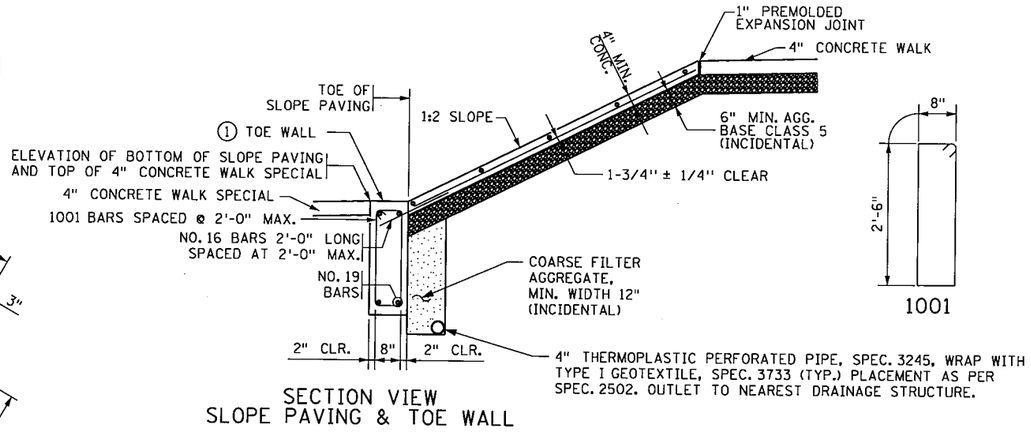
① 0.111 CU. YD. OF CONCRETE/LIN. FT.
8.37 LBS. OF REINFORCEMENT/LIN FT.

② 0.111 CU. YD. OF CONCRETE/SQ. YD.
4.50 LBS. OF REINFORCEMENT/SQ. YD.

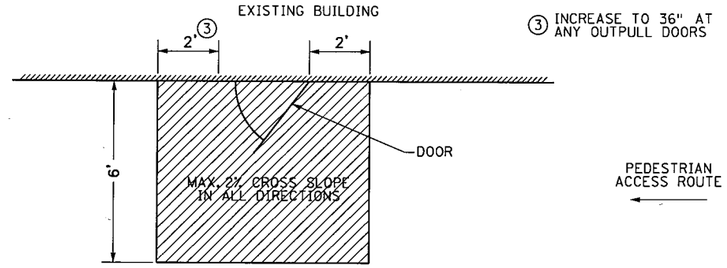


SLOPE PAVING DETAIL

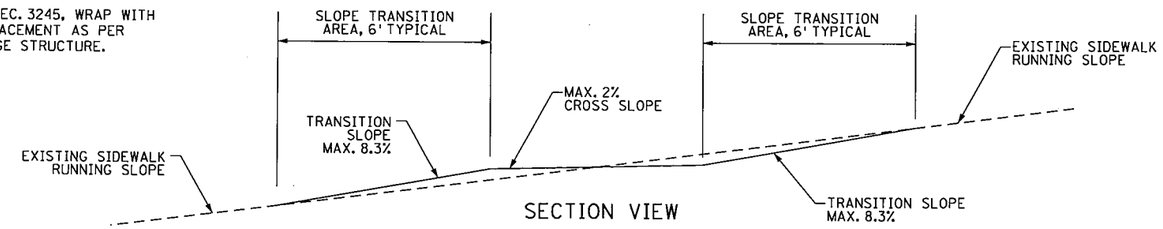
SLOPE PAVING AS PER SPEC. 2514.



SECTION VIEW
SLOPE PAVING & TOE WALL



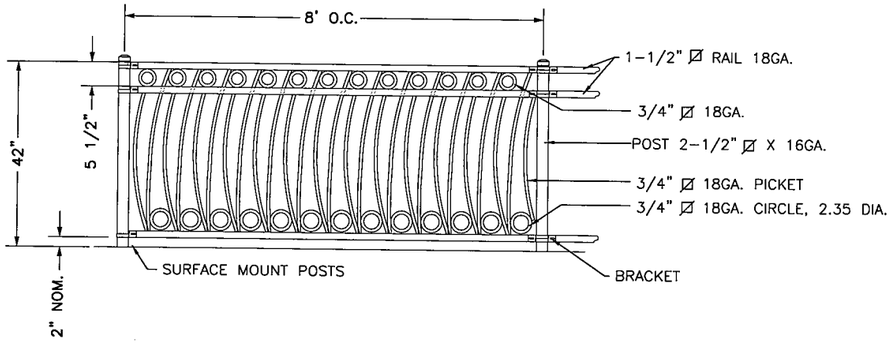
PLAN VIEW



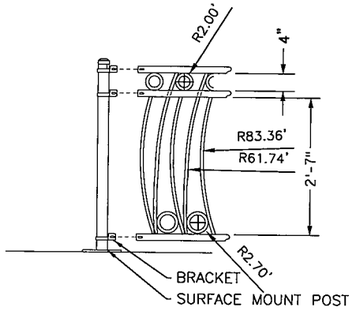
SECTION VIEW

SIDEWALK SLOPE TRANSITION DETAIL AT BUILDING ENTRANCES

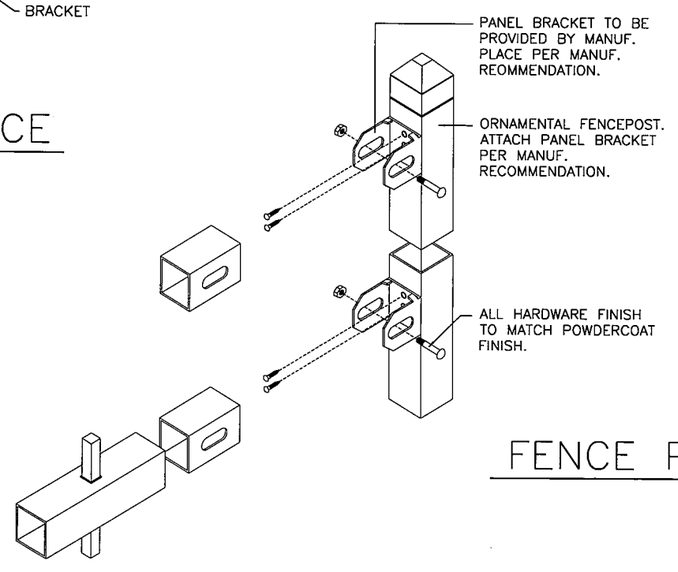
Review Sections 402 through 405 (pages 117-130) of Department of Justice's 2010 ADA Standards for design requirements at building entrances.
http://www.ada.gov/regs2010/2010ADAStandards/2010ADAStandards.pdf

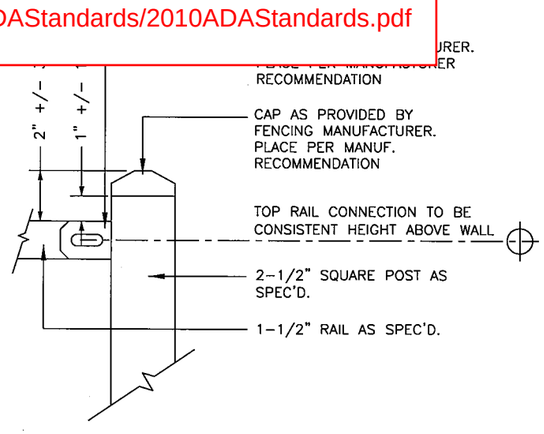


ORNAMENTAL IRON FENCE



PICKET LAYOUT DETAIL





FENCE POST CONNECTION

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JASON P. SCHMIDT
LIC. NO. 42788 DATE 01-16-2013

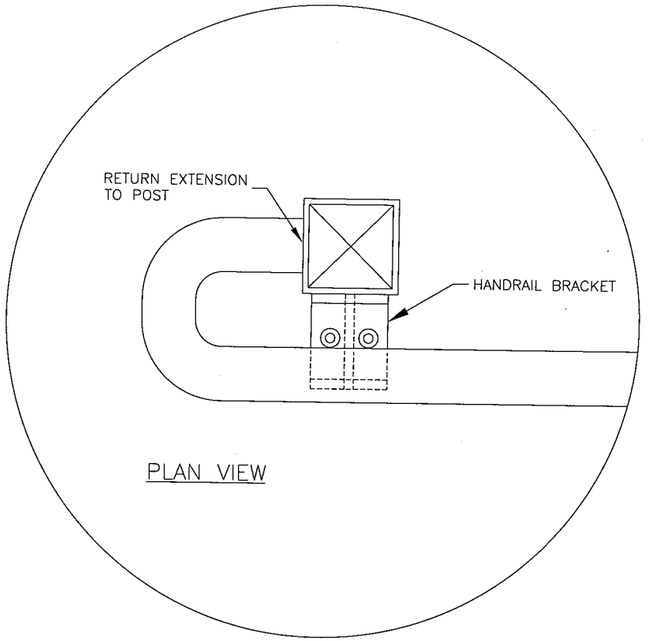
DESIGNED JPS
DRAWN LLK
CHECKED DKA

BOLTON & MENK, INC.
CONSULTING ENGINEERS & SURVEYORS
MANKATO, MN FAIRMONT, MN SLEEPY EYE, MN
BURNSVILLE, MN WILLMAR, MN CHASKA, MN
RAMSEY, MN MAPLEWOOD, MN BRAINERD, MN AMES, IA

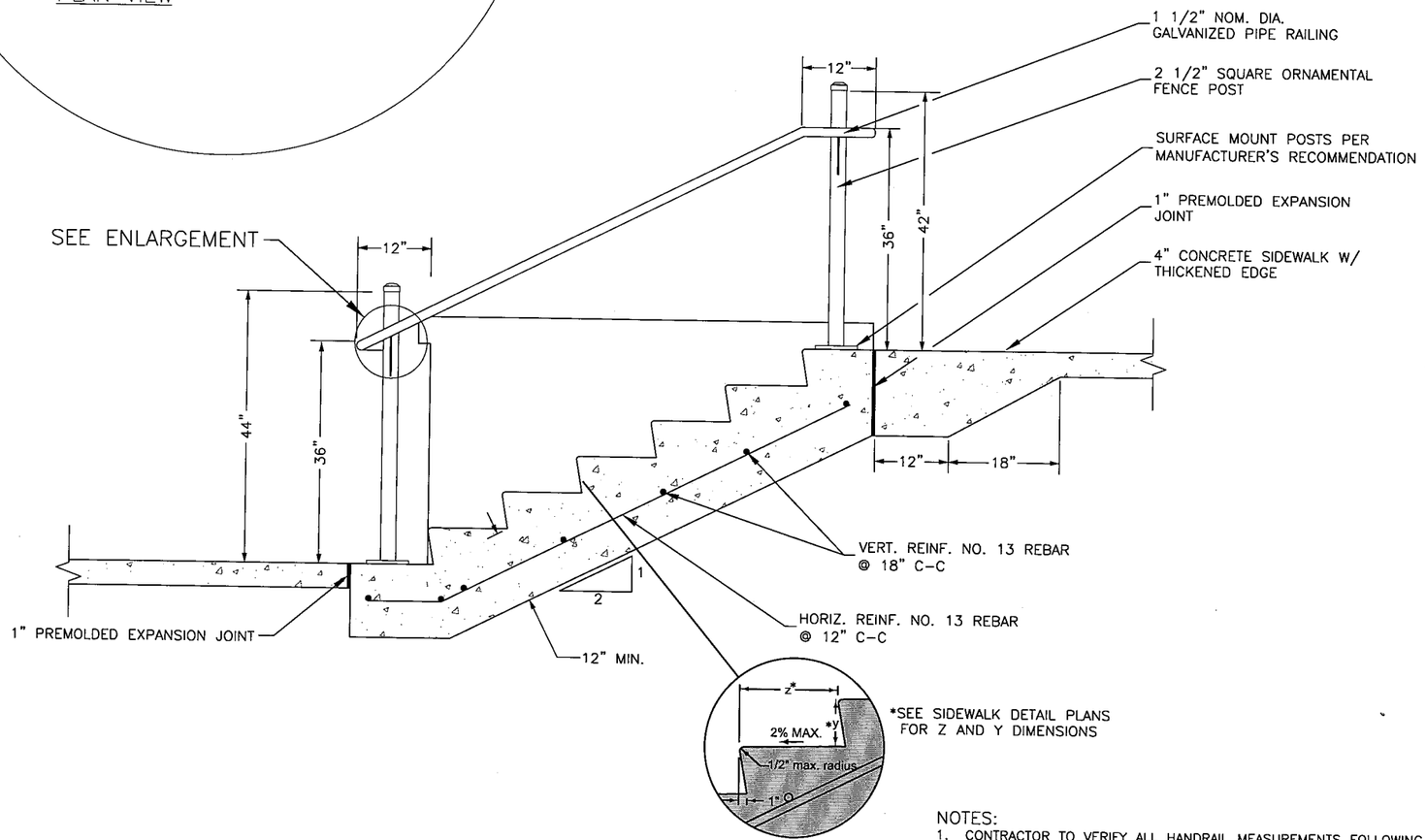
REV.	BY	DATE

STATE PROJECT NO. 5621-23
TH 78 BATTLE LAKE TO PERHAM
DESIGN DETAILS

SHEET 28 OF 77

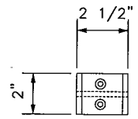


PLAN VIEW

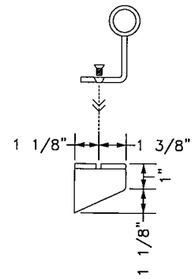


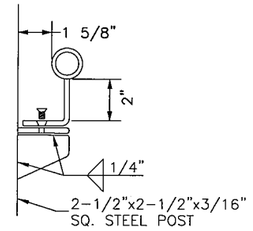
NOTES:
1. CONTRACTOR TO VERIFY ALL HANDRAIL MEASUREMENTS FOLLOWING CONSTRUCTION OF STAIRS AND PRIOR TO FABRICATION.

TYPICAL STEPS & RAILING SECTION



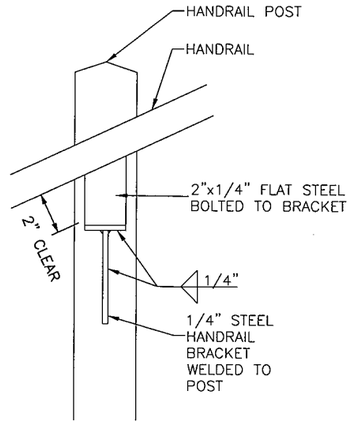
PLAN VIEW





NOTES:
ALL HANDRAIL BRACKETS SHALL HAVE SMOOTH AND CONTINUOUS WELDS AND SHALL FOLLOW MATERIALS NOTED UNLESS OTHERWISE STATED.

SECTION: HANDRAIL BRACKET



HANDRAIL ELEVATION

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DESIGNED	DRAWN	CHECKED
JPS	LLK	DKA

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STATE PROJECT NO. 5621-23
TH 78 BATTLE LAKE TO PERHAM
DESIGN DETAILS

SHEET 29 OF 77

LARRY'S SUPERMARKET

GILBERTSON ST W

HOLDT ST W (CR 83)

LEGEND

- REMOVE CURB AND GUTTER
- REMOVE CONCRETE DRIVEWAY PAVEMENT
- REMOVE DRAINAGE STRUCTURE
- REMOVE BITUMINOUS PAVEMENT
- REMOVE SEWER PIPE (STORM)

SAWCUT (BIT.)

COORDINATE WITH ENGINEER FOR PAVEMENT REMOVAL LIMITS FOR STORM SEWER CONSTRUCTION. SEE DRAINAGE PLANS.

SAWCUT (BIT.)

℄ TH 78

SAWCUT (BIT.)

MILL & OVERLAY

SAWCUT (BIT.)

34

35

36

MATCHLINE STA 36+20

COORDINATE WITH ENGINEER FOR PAVEMENT REMOVAL LIMITS FOR WATERMAIN CONSTRUCTION. SEE SANITARY SEWER AND WATERMAIN PLANS.

SAWCUT (BIT.)

SAWCUT (BIT.)

BEGIN RECONSTRUCTION
STA. 34+64.00

DAIRY QUEEN

STUB'S

SAWCUT (BIT.)

BLOCK RETAINING WALL

EVERTS LUMBER

0 10 20
SCALE FEET

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JASON P. SCHMIDT
LIC. NO. 42788 DATE 01-16-2013

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DRAWN	LLK
CHECKED	AJW

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STATE PROJECT NO. 5621-23
TH 78 BATTLE LAKE TO PERHAM
REMOVAL PLAN SHEET

SHEET 51 OF 77

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EVERTS LUMBER

BATTLE LAKE CHIROPRACTIC

HENNING ST W

YE OLDE STATION

REMOVE 7 LF RETAINING WALL
PROTECT REMAINING WALL

CONCRETE RETAINING WALL

SAWCUT (CONC.) ①

SAWCUT (BIT.)

SAWCUT (BIT.)

SAWCUT (CONC.) ①

MATCHLINE STA 36+20

℄ TH 78

37

38

39

MATCHLINE STA 39+20

① SAWCUT (CONC.)

All "Protect..." notes should be included on Removal Plans.

PROTECT EXISTING ENTRANCE AREA

① SAWCUT (CONC.)

PROTECT EXISTING WOOD DOOR FRAME

CONCRETE RETAINING WALL

SAWCUT (BIT.)

PLANTER

BRICKS

BLOCK RETAINING WALL

STEPS

SALVAGE BRICK PAVERS

EVERTS LUMBER

PRAIRIE NEEDLES

HENNING ST E

OLD BRICK INN

THE MAIN ATTRACTION

① SAWING CONCRETE WALK AND DRIVEWAY PAVEMENT IS INCIDENTAL

LEGEND

- REMOVE CONCRETE WALK
- REMOVE CONCRETE DRIVEWAY PAVEMENT
- REMOVE BITUMINOUS PAVEMENT
- REMOVE CURB AND GUTTER
- REMOVE DRAINAGE STRUCTURE
- REMOVE SEWER PIPE (STORM)

SCALE 0 10 20 FEET

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JASON P. SCHMIDT
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STATE PROJECT NO. 5621-23
TH 78 BATTLE LAKE TO PERHAM
REMOVAL PLAN SHEET

SHEET 52 OF 77

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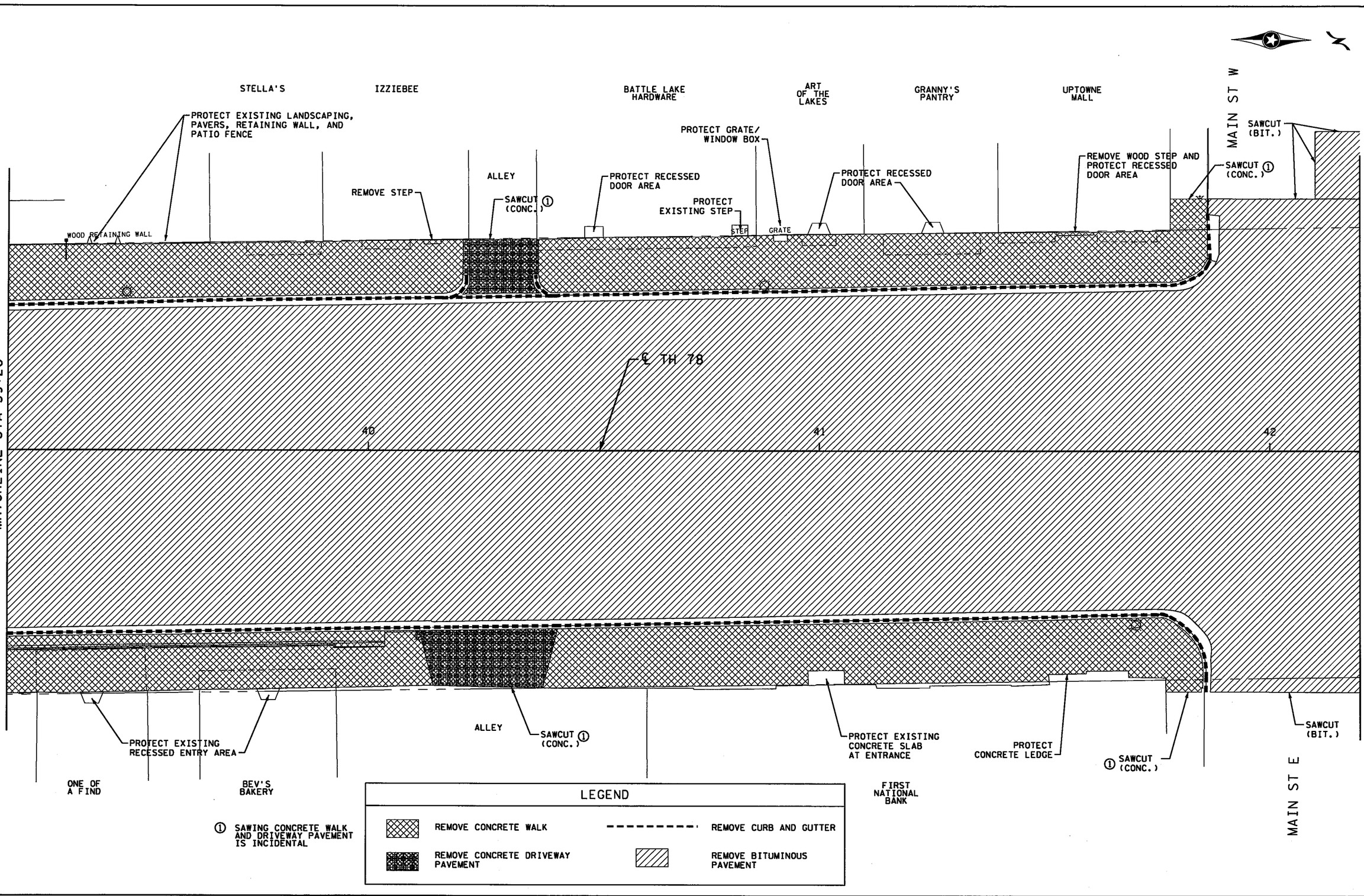

0 10 20
SCALE FEET

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CHECKED	AJW

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CONSULTING ENGINEERS & SURVEYORS
MANKATO, MN FAIRMONT, MN SLEEPY EYE, MN
BURNSVILLE, MN WILLMAR, MN CHASKA, MN
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REV.	BY	DATE

STATE PROJECT NO. 5621-23
TH 78 BATTLE LAKE TO PERHAM
REMOVAL PLAN SHEET

SHEET 53 OF 77

MAIN ST W

MATCHLINE STA 42+20

MATCHLINE STA 45+20

SAWCUT (BIT.)

SAWCUT (CONC.) ①

NORTHERN LIGHT GALLERY

CARLSON HIGHLAND

CREATIVE CUTS

SEIP DRUG

PAULSON LAND CO.

ACS

PROTECT EXISTING DOOR FRAME

PROTECT EXISTING STEPS

PROTECT WOOD FENCE

PROTECT EXISTING DOOR FRAME

PROTECT EXISTING STEP

PROTECT EXISTING RECESSED DOOR AREA

PROTECT WOOD FENCE AND BOULDER LANDSCAPE WALL

PROTECT EXISTING STEP

PROTECT WOOD FENCE

STEP

WOOD FENCE

℄ TH 78

43

44

45

MAIN ST E

SAWCUT (BIT.)

SAWCUT (CONC.) ①

PROTECT EXISTING WOOD DOOR FRAME

PROTECT EXISTING STEP AND WOOD COLUMNS

PROTECT EXISTING STEP

PROTECT EXISTING RECESSED ENTRY AREA

PROTECT EXISTING WOOD DOOR FRAME

PROTECT CONCRETE SLAB ADJACENT TO PUBLIC WALK

POST OFFICE

BEADS AND MORE

FIELDING'S

LAKES TECHNOLOGY GROUP

STEVELLY'S

BATTLE LAKE REVIEW

① SAWING CONCRETE WALK AND DRIVEWAY PAVEMENT IS INCIDENTAL

LEGEND

REMOVE CONCRETE WALK

REMOVE CURB AND GUTTER

REMOVE BITUMINOUS PAVEMENT

0 10 20

SCALE FEET

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JASON P. SCHMIDT

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DESIGNED	JPS
DRAWN	LLK
CHECKED	AJW

BOLTON & MENK, INC.

CONSULTING ENGINEERS & SURVEYORS

MANKATO, MN FAIRMONT, MN SLEEPY EYE, MN

BURNSVILLE, MN WILLMAR, MN CHASKA, MN

RAMSEY, MN MAPLEWOOD, MN BRAINERD, MN AMES, IA

REV.	BY	DATE

STATE PROJECT NO. 5621-23

TH 78 BATTLE LAKE TO PERHAM

REMOVAL PLAN SHEET

SHEET 54 OF 77

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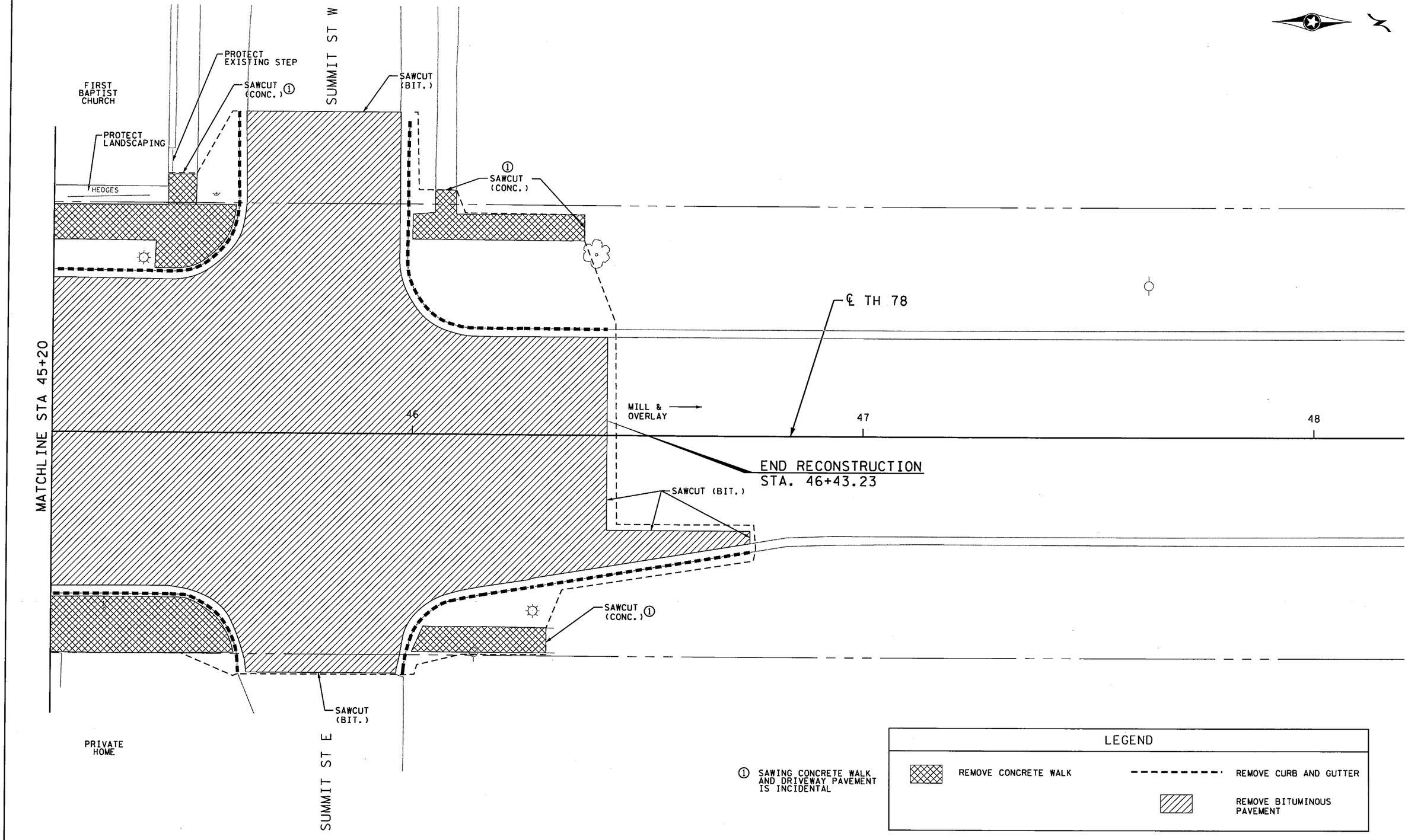

① SAWING CONCRETE WALK AND DRIVEWAY PAVEMENT IS INCIDENTAL

LEGEND

- REMOVE CONCRETE WALK
- REMOVE CURB AND GUTTER
- REMOVE BITUMINOUS PAVEMENT

0 10 20
SCALE FEET

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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.

JASON P. SCHMIDT
LIC. NO. 42788 DATE 01-16-2013

DESIGNED	DRAWN	CHECKED
JPS	LLK	AJW

BOLTON & MENK, INC.
CONSULTING ENGINEERS & SURVEYORS
MANKATO, MN FAIRMONT, MN SLEEPY EYE, MN
BURNSVILLE, MN WILLMAR, MN CHASKA, MN
RAMSEY, MN MAPLEWOOD, MN BRAINERD, MN AMES, IA

REV.	BY	DATE

STATE PROJECT NO. 5621-23
TH 78 BATTLE LAKE TO PERHAM
REMOVAL PLAN SHEET

SHEET 55 OF 77

jasonsc 3/8/2013
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LEGEND

4" CONCRETE WALK	MS	SILT FENCE, TYPE MACHINE SLICED
6" CONCRETE WALK		EXISTING RIGHT-OF-WAY
8" CONCRETE DRIVEWAY PAVEMENT		TRAFFIC FLOW
SOD, TYPE LAWN		

NOTES

-STREET DIMENSIONS ARE TO FACE OF CURB UNLESS OTHERWISE NOTED.
-CURB RADII ARE 15' UNLESS OTHERWISE NOTED.

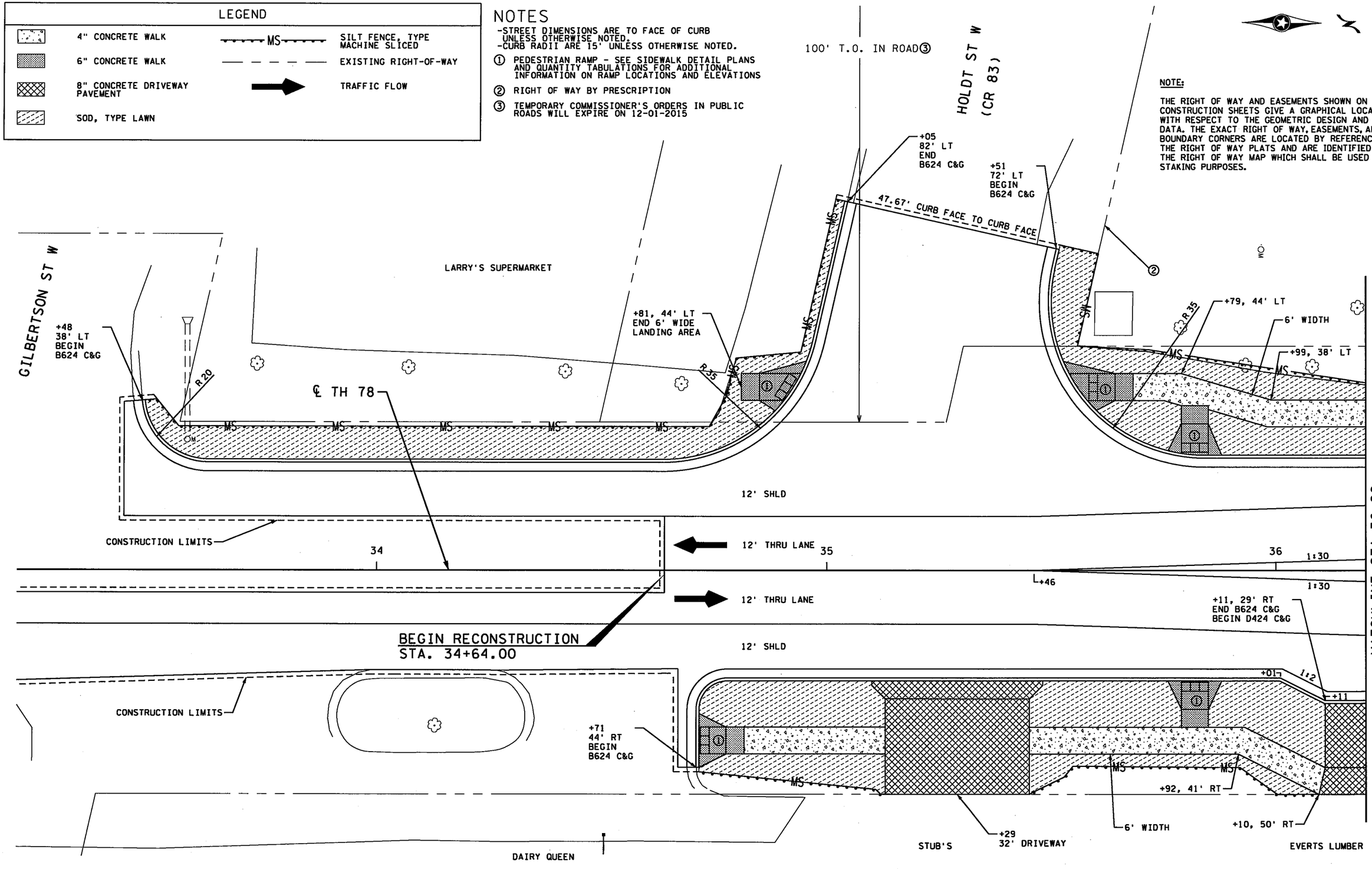
① PEDESTRIAN RAMP - SEE SIDEWALK DETAIL PLANS AND QUANTITY TABULATIONS FOR ADDITIONAL INFORMATION ON RAMP LOCATIONS AND ELEVATIONS

② RIGHT OF WAY BY PRESCRIPTION

③ TEMPORARY COMMISSIONER'S ORDERS IN PUBLIC ROADS WILL EXPIRE ON 12-01-2015

NOTE:

THE RIGHT OF WAY AND EASEMENTS SHOWN ON THE CONSTRUCTION SHEETS GIVE A GRAPHICAL LOCATION WITH RESPECT TO THE GEOMETRIC DESIGN AND MAP DATA. THE EXACT RIGHT OF WAY, EASEMENTS, AND BOUNDARY CORNERS ARE LOCATED BY REFERENCE TO THE RIGHT OF WAY PLATS AND ARE IDENTIFIED ON THE RIGHT OF WAY MAP WHICH SHALL BE USED FOR STAKING PURPOSES.



0 10 20
SCALE FEET

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LIC. NO. 42788 DATE 01-16-2013

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JPS	LLK	AJW

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BURNSVILLE, MN WILLMAR, MN CHASKA, MN
RAMSEY, MN MAPLEWOOD, MN BRAINERD, MN AMES, IA

REV.	BY	DATE

STATE PROJECT NO. 5621-23
TH 78 BATTLE LAKE TO PERHAM
CONSTRUCTION PLAN SHEET

SHEET 56 OF 77

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EVERTS LUMBER

BATTLE LAKE CHIROPRACTIC

HENNING ST W

50' T.O. IN ROAD ⑤

YE OLDE STATION

+46 24' DRIVEWAY

CONSTRUCTION LIMITS

4" CONC. WALK, 6' WIDE

+16 18' DRIVEWAY

+77 32' DRIVEWAY

④

+22 49' LT END B624 C&G

+69 49' LT BEGIN B624 C&G

PL 14 SQ YD MULCH MATERIAL TYPE SPECIAL

10' PARKING LANE

+72

+07

MS

③

℄ TH 78

+07

+99

1:2

MATCHLINE STA 36+20

+66

+00

+26

+60

6' SHLD

+62

0.04

6' SHLD

12' THRU LANE

1:30

0.02

0.04

0.04

0.02

+56

0.02

0.028

12' THRU LANE

38

+07

39

14'

CTWLTL

1:30

12' THRU LANE

0.02

0.00

0.028

12' THRU LANE

+63, 29' RT END D424 C&G BEGIN B624 C&G

+51

+56

+68

6' SHLD

+84

6' SHLD

+96

10' PARKING LANE

10' PARKING LANE

1:2

1:2

REVERSE GUTTER SLOPE AT MID-RADIUS

+60

+04

+04

①

②

+82 32' DRIVEWAY

ORNAMENTAL IRON FENCE

EVERTS LUMBER

CONSTRUCTION LIMITS

+82 16' DRIVEWAY

④

+24 57' RT END B624 C&G

HENNING ST E

+66 57' RT BEGIN B624 C&G

+86, 54' RT BEGIN MODULAR BLOCK RETAINING WALL

PRAIRIE NEEDLES

OLD BRICK INN

THE MAIN ATTRACTION

+72, 57'-62' RT CURB DES. V6

50' T.O. IN ROAD ⑤

MATCHLINE STA 39+20

LEGEND

- 4" CONCRETE WALK
- 6" CONCRETE WALK
- 8" CONCRETE DRIVEWAY PAVEMENT
- SUPERELEVATION TRANSITION FT/FT
- SOD, TYPE LAWN
- MS — SILT FENCE, TYPE MACHINE SLICED
- MODULAR BLOCK RETAINING WALL
- EXISTING RIGHT-OF-WAY
- METAL RAILING/FENCE
- TRAFFIC FLOW

NOTES

-STREET DIMENSIONS ARE TO FACE OF CURB UNLESS OTHERWISE NOTED.
-CURB RADII ARE 15' UNLESS OTHERWISE NOTED.

① 4" CONCRETE WALK SPECIAL

② CONCRETE STEPS

③ PEDESTRIAN RAMP - SEE SIDEWALK DETAIL PLANS AND QUANTITY TABULATIONS FOR ADDITIONAL INFORMATION ON RAMP LOCATIONS AND ELEVATIONS

④ RIGHT OF WAY BY PRESCRIPTION

⑤ TEMPORARY COMMISSIONER'S ORDERS IN PUBLIC ROADS WILL EXPIRE ON 12-01-2015

0 10 20
SCALE FEET

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JASON P. SCHMIDT
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DESIGNED	JPS
DRAWN	LLK
CHECKED	AJW

BOLTON & MENK, INC.
CONSULTING ENGINEERS & SURVEYORS
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BURNSVILLE, MN WILLMAR, MN CHASKA, MN
RAMSEY, MN MAPLEWOOD, MN BRAINERD, MN AMES, IA

REV.	BY	DATE

STATE PROJECT NO. 5621-23
TH 78 BATTLE LAKE TO PERHAM
CONSTRUCTION PLAN SHEET

SHEET 57 OF 77

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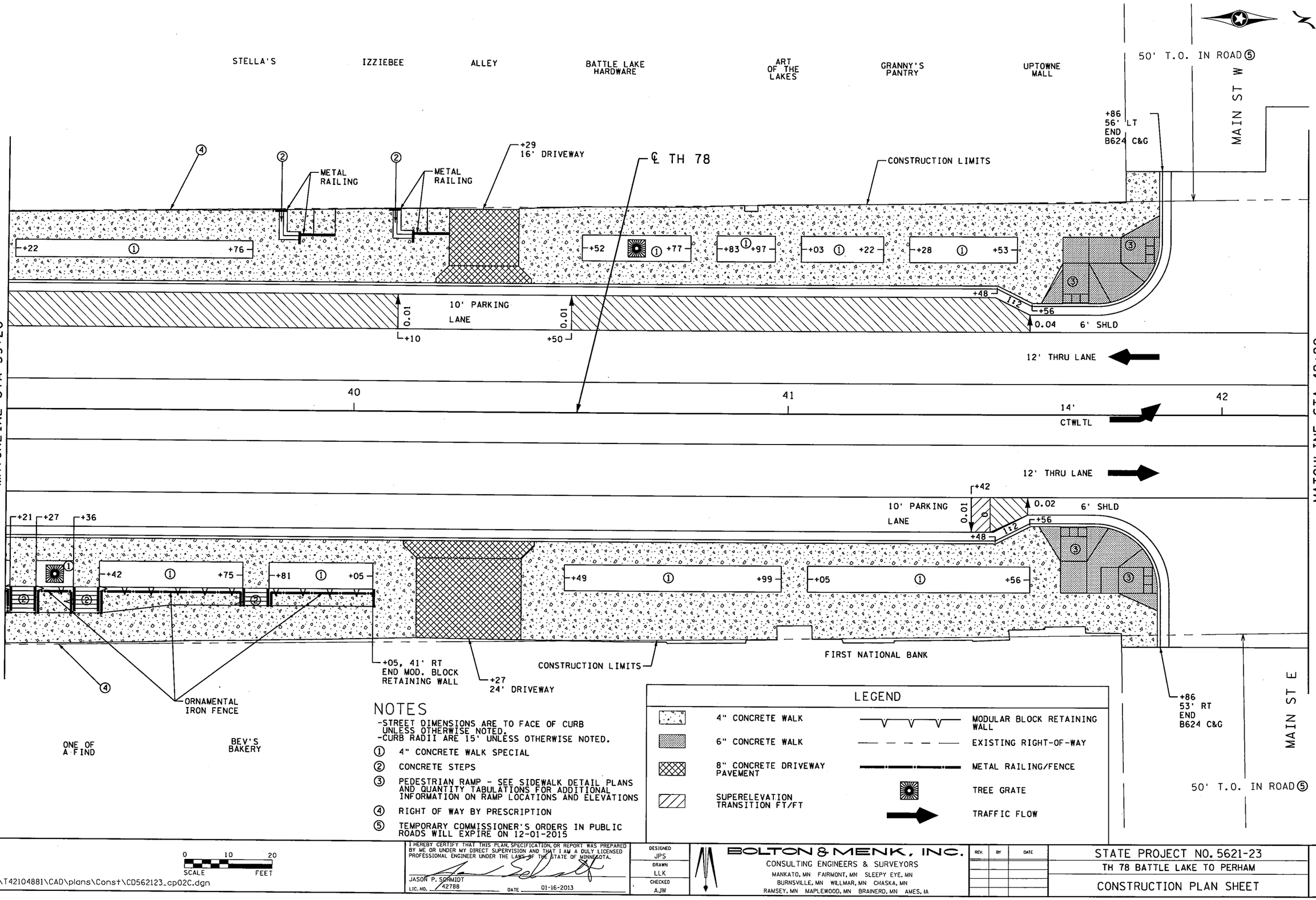

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-CURB RADII ARE 15' UNLESS OTHERWISE NOTED.

① 4" CONCRETE WALK SPECIAL
② CONCRETE STEPS
③ PEDESTRIAN RAMP - SEE SIDEWALK DETAIL PLANS AND QUANTITY TABULATIONS FOR ADDITIONAL INFORMATION ON RAMP LOCATIONS AND ELEVATIONS
④ RIGHT OF WAY BY PRESCRIPTION
⑤ TEMPORARY COMMISSIONER'S ORDERS IN PUBLIC ROADS WILL EXPIRE ON 12-01-2015

LEGEND

- 4" CONCRETE WALK
- 6" CONCRETE WALK
- 8" CONCRETE DRIVEWAY PAVEMENT
- SUPERELEVATION TRANSITION FT/FT
- MODULAR BLOCK RETAINING WALL
- EXISTING RIGHT-OF-WAY
- METAL RAILING/FENCE
- TREE GRATE
- TRAFFIC FLOW

0 10 20
SCALE FEET

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JPS	LLK	AJW

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BURNSVILLE, MN WILLMAR, MN CHASKA, MN
RAMSEY, MN MAPLEWOOD, MN BRAINERD, MN AMES, IA

REV.	BY	DATE

STATE PROJECT NO. 5621-23
TH 78 BATTLE LAKE TO PERHAM
CONSTRUCTION PLAN SHEET

SHEET 58 OF 77

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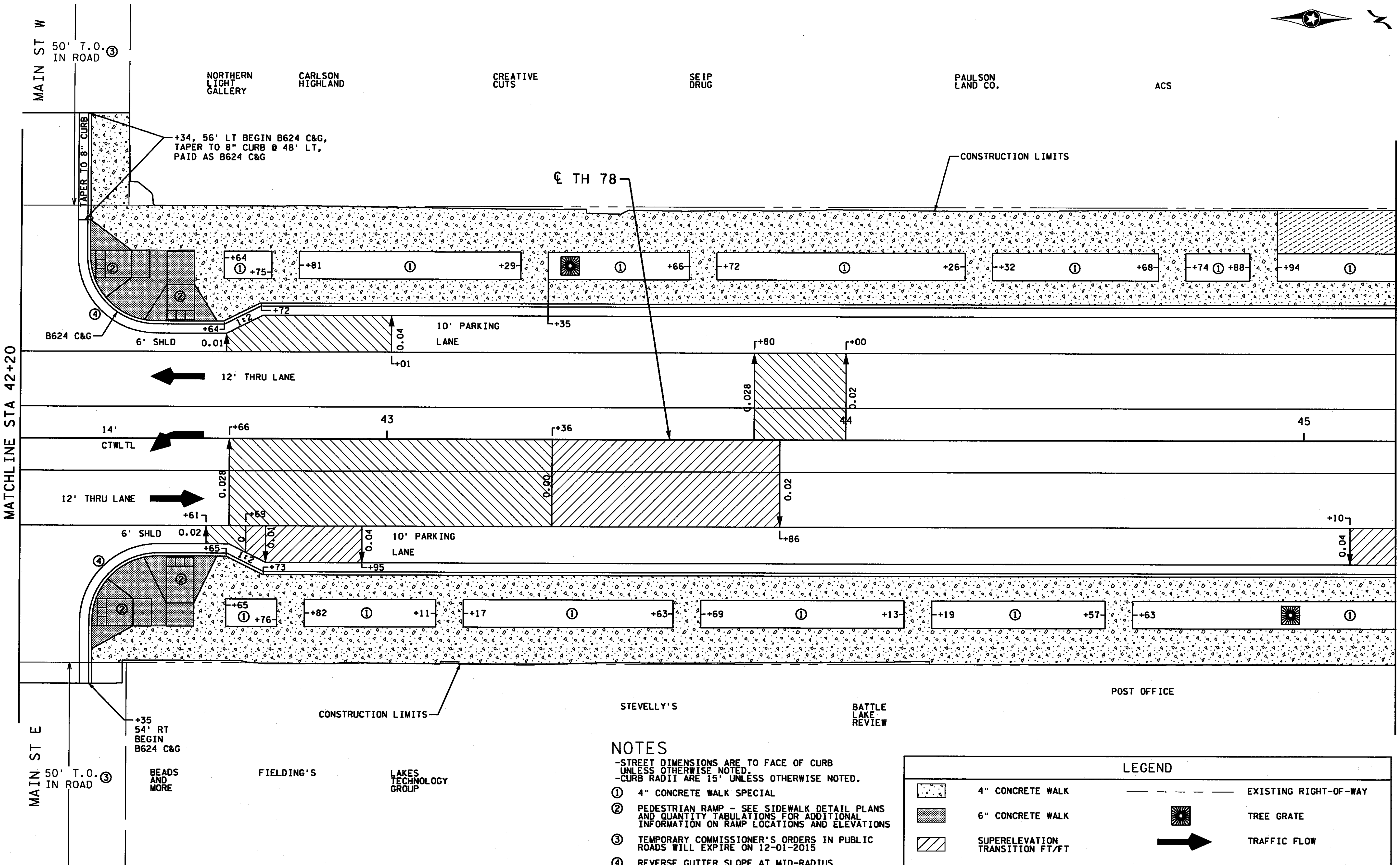

NOTES

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- CURB RADII ARE 15' UNLESS OTHERWISE NOTED.

① 4" CONCRETE WALK SPECIAL

② PEDESTRIAN RAMP - SEE SIDEWALK DETAIL PLANS AND QUANTITY TABULATIONS FOR ADDITIONAL INFORMATION ON RAMP LOCATIONS AND ELEVATIONS

③ TEMPORARY COMMISSIONER'S ORDERS IN PUBLIC ROADS WILL EXPIRE ON 12-01-2015

④ REVERSE GUTTER SLOPE AT MID-RADIUS

LEGEND

[symbol]	4" CONCRETE WALK	[symbol]	EXISTING RIGHT-OF-WAY
[symbol]	6" CONCRETE WALK	[symbol]	TREE GRATE
[symbol]	SUPERELEVATION TRANSITION FT/FT	[symbol]	TRAFFIC FLOW
[symbol]	SOD, TYPE LAWN		

SCALE 0 10 20 FEET

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JASON P. SCHMIDT
LIC. NO. 42788 DATE 01-16-2013

DESIGNED JPS
DRAWN LLK
CHECKED AJW

BOLTON & MENK, INC.
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BURNSVILLE, MN WILLMAR, MN CHASKA, MN
RAMSEY, MN MAPLEWOOD, MN BRAINERD, MN AMES, IA

REV. BY DATE

STATE PROJECT NO. 5621-23
TH 78 BATTLE LAKE TO PERHAM
CONSTRUCTION PLAN SHEET

SHEET 59 OF 77

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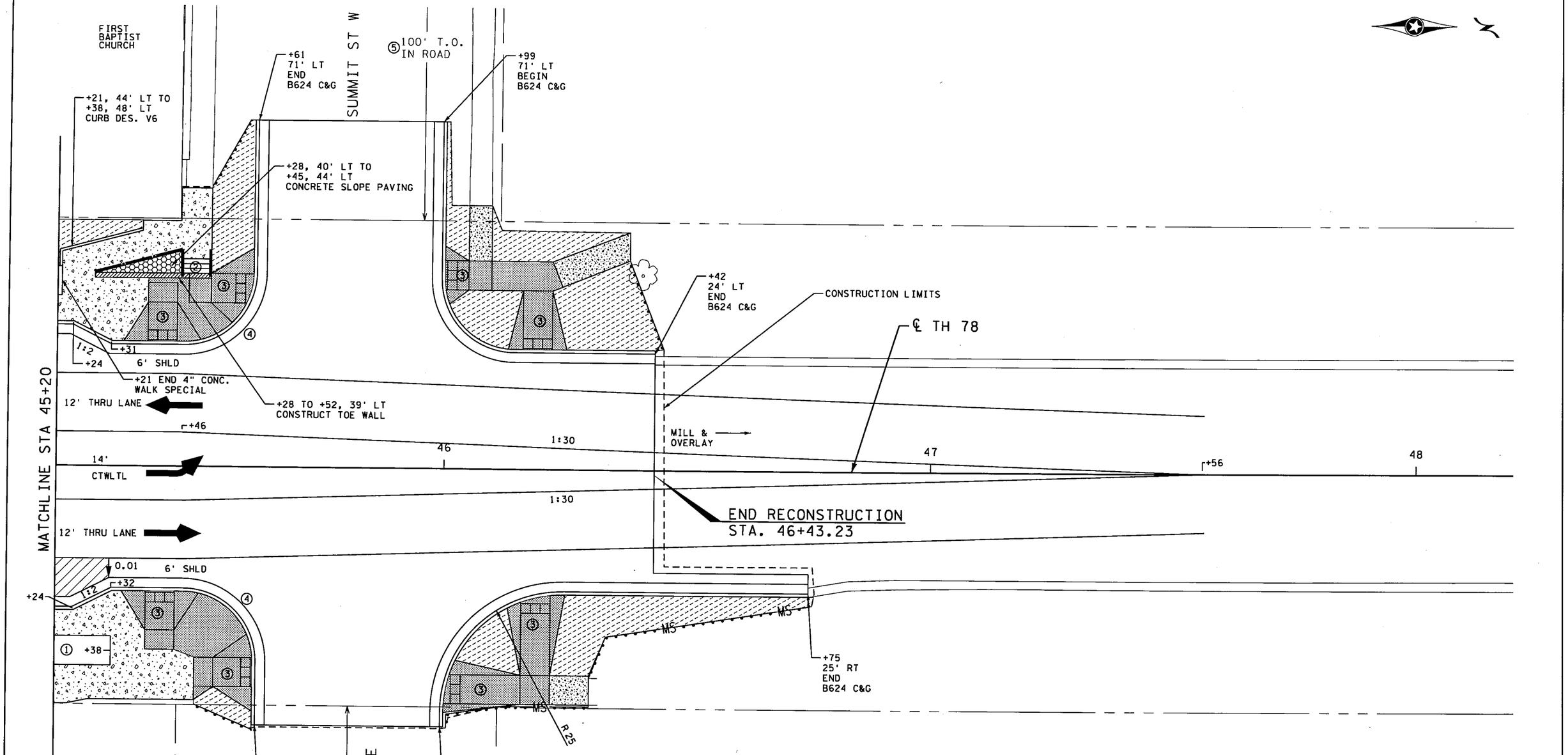

NOTES

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① 4" CONCRETE WALK SPECIAL
② CONCRETE STEPS
③ PEDESTRIAN RAMP - SEE SIDEWALK DETAIL PLANS AND QUANTITY TABULATIONS FOR ADDITIONAL INFORMATION ON RAMP LOCATIONS AND ELEVATIONS
④ REVERSE GUTTER SLOPE AT MID-RADIUS
⑤ TEMPORARY COMMISSIONER'S ORDERS IN PUBLIC ROADS WILL EXPIRE ON 12-01-2015

LEGEND

- 4" CONCRETE WALK
- 6" CONCRETE WALK
- CONCRETE SLOPE PAVING
- SUPERELEVATION TRANSITION FT/FT
- SOD, TYPE LAWN
- MS — SILT FENCE, TYPE MACHINE SLICED
- TOE WALL
- EXISTING RIGHT-OF-WAY
- METAL RAILING/FENCE
- TRAFFIC FLOW

SCALE 0 10 20 FEET

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DRAWN	LLK
CHECKED	AJW

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RAMSEY, MN MAPLEWOOD, MN BRAINERD, MN AMES, IA

REV.	BY	DATE

STATE PROJECT NO. 5621-23
TH 78 BATTLE LAKE TO PERHAM
CONSTRUCTION PLAN SHEET

SHEET 60 OF 77

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LARRY'S GROCERY

GILBERTSON ST W

HOLDT ST W (CR 83)

O. IN ROAD

LEGEND

- DRAINAGE FLOW ARROW
- EL. (XXX) — ELEVATION IN 1300 FT RANGE, SEE SHEETS 72 AND 73 FOR POINT ELEVATIONS NOT IN PLANS (CONTROL POINTS AT GUTTER FLOWLINE ON RAMP/DRWY; TOP CURB/PVMT OTHERWISE)
- LANDING AREA - 4' X 4' MIN. DIMS. MAX 2.0% SLOPE IN ALL DIRECTIONS
- PEDESTRIAN ACCESS ROUTE (ADA)
- TRUNCATED DOMES, SEE STANDARD PLATE 7038
- EXISTING RIGHT-OF-WAY

Denote PAR on ADA detail sheets for sidewalk reconstruction projects.

(x,y,z)s are not provided for curb ramps on preservation projects, but they are provided on reconstruction projects.

Reconstruction project plans must include an (x,y,z) at each edge of domes and one point on the each landing. If the ramp is directional add a third (x,y,z) on the flow line to ensure a max 2.0% slope in all directions on the directional curb.

℄ TH 78

CONSTRUCTION LIMITS

50.64 (100)
6.9%
50.37 (102)
1.6%
50.26 (101)

52.26 (127)
52.17 (103)
8%
1.6%
52.29 (104)
53.21 (106)
2.3%
52.71 (105)
53.29 (107)
53.44 (108)
2%
53.56 (109)

WALK PROFILE FOLLOWS ROAD PROFILE AND TYPICAL SECTIONS (SEE CROSS SECTIONS FOR VARIANCES FROM TYPICAL)

MATCHLINE STA 36+20

34

35

36

BEGIN RECONSTRUCTION
STA. 34+64.00

Ensure that construction limits allow for acceptable vehicle rollover rates and 4 ft minimum width compliant PAR at driveways.

WALK PROFILE FOLLOWS ROAD PROFILE AND TYPICAL SECTIONS (SEE CROSS SECTIONS FOR VARIANCES FROM TYPICAL)

49.38 (110)
49.68 (112)
5%
0.8%
1.5%
49.43 (111)
51.27 (113)
51.40 (114)
1.2%
51.31 (115)
4.7%
50.89 (116)
1%
52.48 (117)
52.59 (118)
1.5%
8.0%
52.50 (119)
51.78 (120)
53.46 (121)
2%
53.58 (124)
53.53 (122)
1.2%
53.61 (123)
54.32 (125)
54.85 (126)

PROFILE GRADE LINE WALK 5 (SEE SIDEWALK PROFILES)

CONSTRUCTION LIMITS

BLOCK RETAINING WALL

EVERTS LUMBER

DAIRY QUEEN

STUB'S

0 10 20
SCALE FEET

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LIC. NO. 42788 DATE 01-16-2013

DESIGNED	DMK
DRAWN	LLK
CHECKED	BJN

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REV.	BY	DATE

STATE PROJECT NO. 5621-23
TH 78 BATTLE LAKE TO PERHAM
SIDEWALK DETAIL PLAN SHEET

SHEET 67 OF 77

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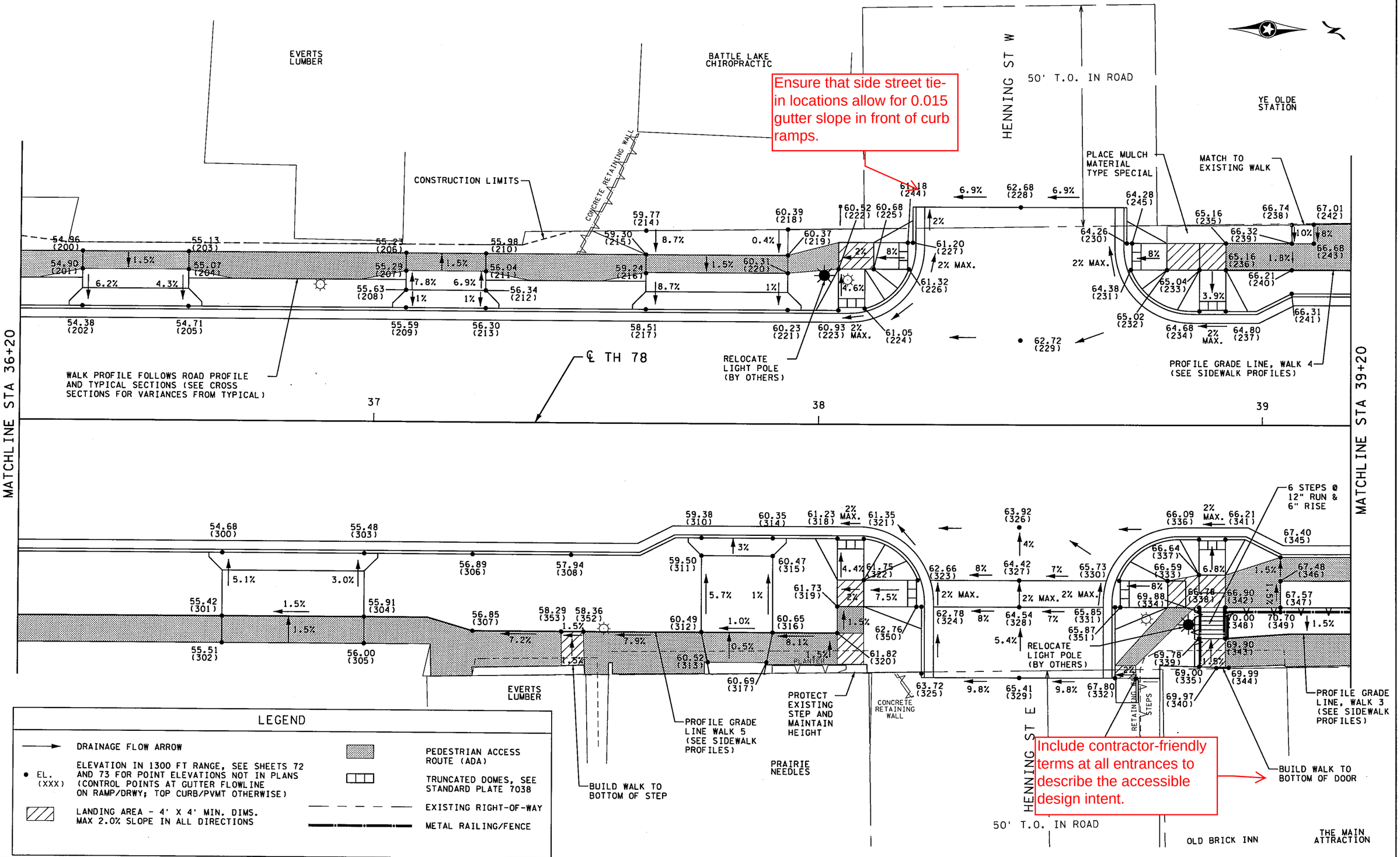

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SCALE 0 10 20 FEET

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DESIGNED DMK
DRAWN LLK
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REV.	BY	DATE

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TH 78 BATTLE LAKE TO PERHAM
SIDEWALK DETAIL PLAN SHEET

SHEET 68 OF 77

STELLA'S | IZZIEBEE | ALLEY | BATTLE LAKE HARDWARE | ART OF THE LAKES | GRANNY'S PANTRY | UPTOWNE MALL

50' T.O. IN ROAD

MAIN ST W

PROTECT WOOD RETAINING WALL

PROTECT FENCE AND PAVERS

MATCH WALK TO GRADE OF PAVERS AT GATE

BUILD WALK TO BOTTOM DOOR ELEVATION

MATCH TO WALK AT RECESSED DOOR

MATCH TO WALK AT BOTTOM OF EX. STEP

EXISTING WINDOW GRATE (PLACE WALK AROUND GRATE)

MATCH TO WALK AT RECESSED DOOR

PLACE WALK FLUSH WITH TOP STEP (ELIMINATE STEPS AT ENTRANCE)

68.00 (400) | 68.08 (401) | 69.93 (403) | 69.87 (404) | 70.28 (405) | 70.11 (406) | 70.24 (407) | (408) | (409) | (410) | (411) | (412) | (413) | (414) (TOP) | (415) | (416) | (417) | (418) | (419) | (420) | (421) | (422) | (423) (TOP) | (424) | (425) | (426) | (427) | 73.98 (428) | 73.83 (429) | 73.68 (430) | 74.42 (431) | 74.32 (432) | 74.57 (433) | 74.95 (434) | STEP | 74.85 (435) | 75.18 (436) | GRATE | 75.20 (437) | 75.09 (438) | 75.36 (439) | 75.51 (440) | 75.41 (441) | 75.51 (442) | 75.52 (443) | 76.48 (444) | 76.36 (445) | 76.49 (446) | 76.35 (447) | 76.23 (448) | 75.56 (449) | 75.67 (450) | 76.08 (452) | 76.27 (451) | 76.15 (459) | 75.88 (461) | 75.96 (460) | 75.50 (455) | 75.99 (T.C.) (462) | 75.88 (453) | 75.92 (454) | 75.92 (456) | 76.40 (457) | 76.65 (458) | (463)

1.5% | 4.1% | 3.2% | 3.6% | 5% | 0.7% | 0.67% | 4.4% | 8% | 1.8% | 9.4% | 2.1% | 0.5% | 7.8%

ADJUST LIGHT POLE (BY OTHERS)

BUILD 2 STEPS @ 5.5" RISE & 11" RUN

BUILD 2 STEPS @ 6" RISE & 11" RUN

PROFILE GRADE LINE, WALK 4 (SEE SIDEWALK PROFILES)

ADJUST LIGHT POLE (BY OTHERS)

PROFILE GRADE LINE, WALK 4 (SEE SIDEWALK PROFILES)

℄ TH 78

40 | 41 | 42

MATCHLINE STA 39+20

MATCHLINE STA 42+20

PROFILE GRADE LINE OF LOWER PEDESTRIAN ACCESS ROUTE IS CURB LINE - SEE ROAD PROFILE

PROFILE GRADE LINE, WALK 3 (SEE SIDEWALK PROFILES)

6 STEPS AT 12" RUN & 5.6" RISE

5 STEPS AT 12" RUN & 6" RISE

3 STEPS AT 12" RUN & 6" RISE

68.71 (500) | 68.80 (501) | 69.56 (557) | 69.78 (505) | 69.86 (506) | 71.72 (503) | 71.72 (502) | 68.92 (507) | 72.40 (508) | 71.82 (504) | 72.44 (509) | 72.16 (558) | 72.92 (560) | 71.30 (559) | 72.87 (510) | 72.43 (511) | 72.54 (512) | 72.68 (513) | 74.74 (562) | 74.18 (514) | 74.32 (515) | 73.29 (516) | 73.69 (561) | 74.69 (517) | 73.89 (518) | 73.99 (519) | 74.67 (520) | 73.85 (521) | 74.09 (522) | 75.05 (523) | 75.14 (524) | 74.78 (525) | 75.02 (526) | 75.44 (527) | 75.54 (528) | 75.95 (529) | 76.03 (530) | 76.21 (531) | 76.52 (532) | 76.72 (533) | 76.84 (534) | 76.59 (535) | 76.73 (536) | 76.85 (537) | 76.77 (538) | 77.16 (529) | 77.29 (540) | 77.06 (541) | 77.57 (542) | 77.70 (543) | 76.83 (544) | 76.92 (547) | 77.47 (545) | 77.79 (548) | 78.43 (549) | 77.62 (546) | 77.84 (563) | 77.71 (550) | 77.83 (551) | 78.59 (564) | 78.33 (552) | 78.28 (554) | 78.40 (555) | 78.66 (556) | 77.72 (553)

1.5% | 2% | 0.6% | 1.8% | 3.9% | 7.7% | 6% | 1.6% | 3.4% | 1.2% | 8% | 1% | 2% MAX. | 2.1%

BUILD WALK TO BOTTOM DOOR ELEVATION

MATCH TO WALK AT RECESSED DOOR

PROFILE GRADE LINE, WALK 3 (SEE SIDEWALK PROFILES)

ADJUST LIGHT POLE (BY OTHERS)

MATCH TO AND PROTECT EXISTING CONCRETE SLAB

RELOCATE LIGHT POLE (BY OTHERS)

ONE OF A FIND | BEV'S BAKERY | ALLEY | FIRST NATIONAL BANK

MAIN ST E

50' T.O. IN ROAD

LEGEND

- DRAINAGE FLOW ARROW
- EL. (XXX) — ELEVATION IN 1300 FT RANGE, SEE SHEETS 72 AND 73 FOR POINT ELEVATIONS NOT IN PLANS (CONTROL POINTS AT GUTTER FLOWLINE ON RAMP/DRWY; TOP CURB/PVMT OTHERWISE)
- LANDING AREA - 4' X 4' MIN. DIMS. MAX 2.0% SLOPE IN ALL DIRECTIONS
- PEDESTRIAN ACCESS ROUTE (ADA)
- TRUNCATED DOMES, SEE STANDARD PLATE 7038
- EXISTING RIGHT-OF-WAY
- TREE GRATE
- METAL RAILING/FENCE

SCALE 0 10 20 FEET

H:\MDOT\T42104881\CAD\plans\Const\CD562123_in02C.dgn

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LIC. NO. 42788 DATE 01-16-2013

DESIGNED DMK | DRAWN LLK | CHECKED BJN

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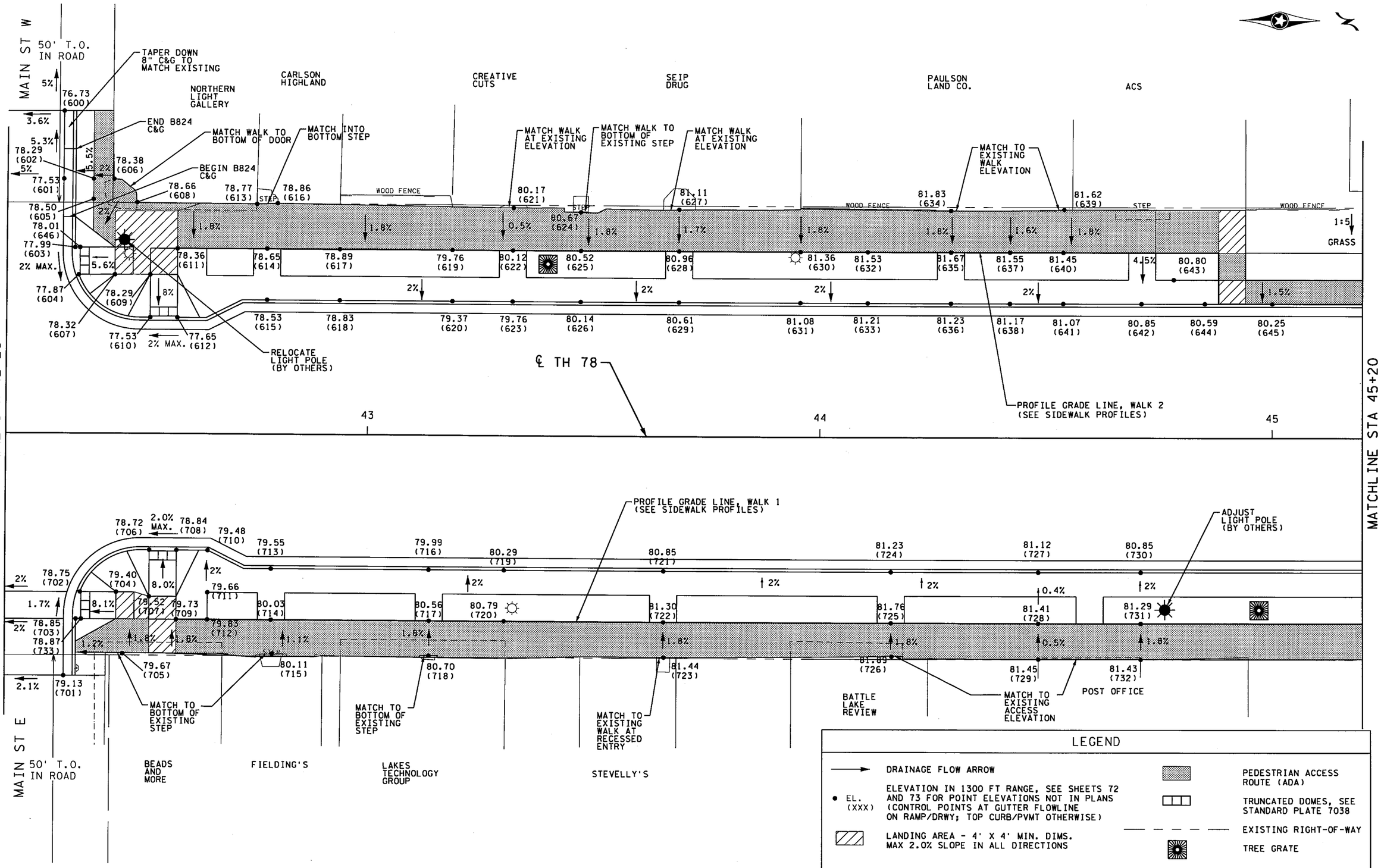
CONSULTING ENGINEERS & SURVEYORS
MANKATO, MN FAIRMONT, MN SLEEPY EYE, MN
BURNSVILLE, MN WILLMAR, MN CHASKA, MN
RAMSEY, MN MAPLEWOOD, MN BRAINERD, MN AMES, IA

REV.	BY	DATE

STATE PROJECT NO. 5621-23
TH 78 BATTLE LAKE TO PERHAM
SIDEWALK DETAIL PLAN SHEET

SHEET 69 OF 77

jasonsc 3/8/2013 | mk-pdf-B and W.pltcfg 12:01:26 PM | bmi.tbl



LEGEND

- DRAINAGE FLOW ARROW
- EL. (XXX) — ELEVATION IN 1300 FT RANGE, SEE SHEETS 72 AND 73 FOR POINT ELEVATIONS NOT IN PLANS (CONTROL POINTS AT GUTTER FLOWLINE ON RAMP/DRWY; TOP CURB/PVMT OTHERWISE)
- LANDING AREA - 4' X 4' MIN. DIMS. MAX 2.0% SLOPE IN ALL DIRECTIONS
- PEDESTRIAN ACCESS ROUTE (ADA)
- TRUNCATED DOMES, SEE STANDARD PLATE 7038
- EXISTING RIGHT-OF-WAY
- TREE GRATE

SCALE 0 10 20 FEET

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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.

JASON P. SCHMIDT
LIC. NO. 42788 DATE 01-16-2013

DESIGNED	DRAWN	CHECKED
DMK	LLK	BJN

BOLTON & MENK, INC.
CONSULTING ENGINEERS & SURVEYORS
MANKATO, MN FAIRMONT, MN SLEEPY EYE, MN
BURNSVILLE, MN WILLMAR, MN CHASKA, MN
RAMSEY, MN MAPLEWOOD, MN BRAINERD, MN AMES, IA

REV.	BY	DATE

STATE PROJECT NO. 5621-23
TH 78 BATTLE LAKE TO PERHAM
SIDEWALK DETAIL PLAN SHEET

SHEET 70 OF 77

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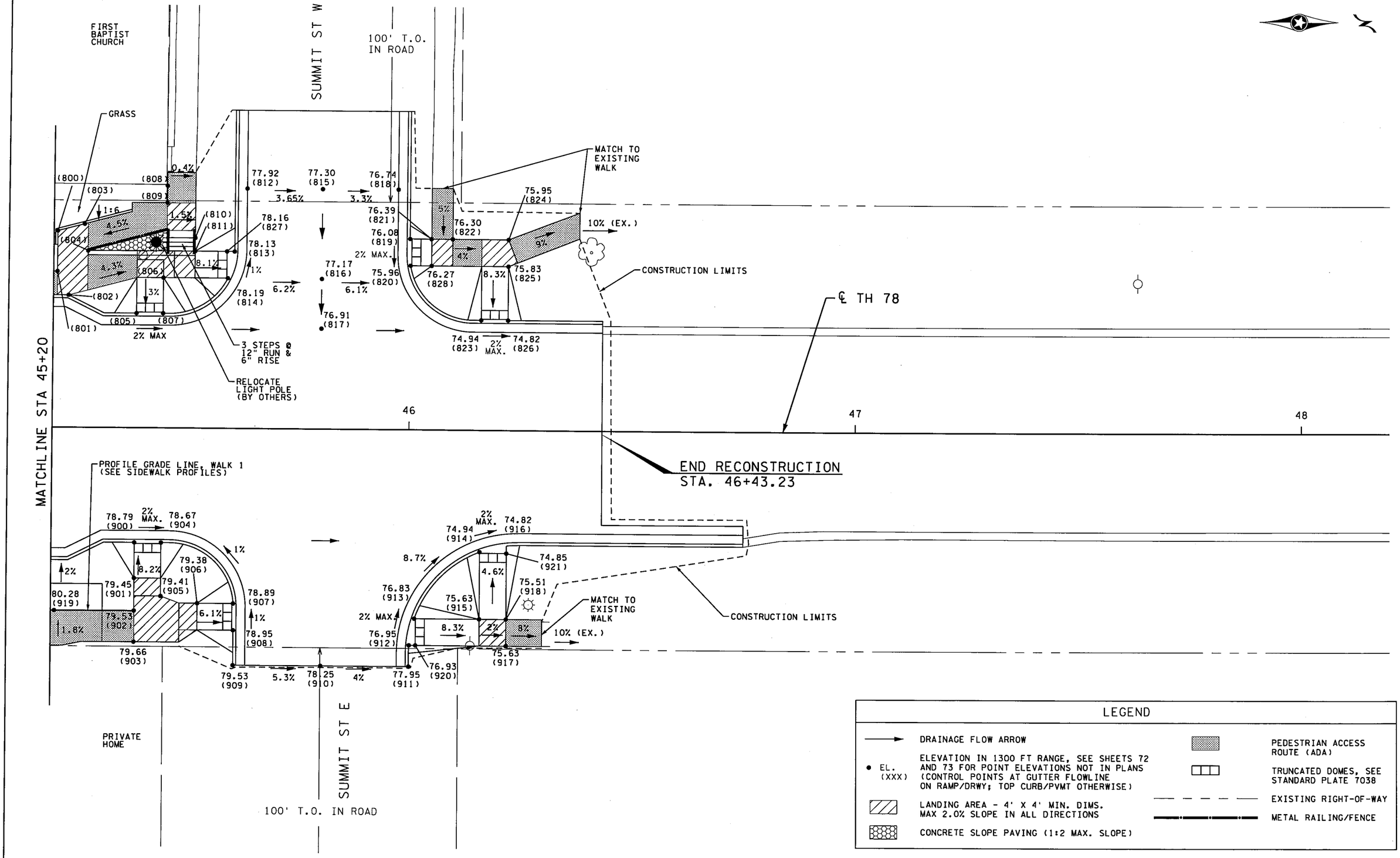

LEGEND

- DRAINAGE FLOW ARROW
- ● EL. (XXX) — ELEVATION IN 1300 FT RANGE, SEE SHEETS 72 AND 73 FOR POINT ELEVATIONS NOT IN PLANS (CONTROL POINTS AT GUTTER FLOWLINE ON RAMP/DRWY; TOP CURB/PVMT OTHERWISE)
- LANDING AREA - 4' X 4' MIN. DIMS. MAX 2.0% SLOPE IN ALL DIRECTIONS
- CONCRETE SLOPE PAVING (1:2 MAX. SLOPE)
- PEDESTRIAN ACCESS ROUTE (ADA)
- TRUNCATED DOMES, SEE STANDARD PLATE 7038
- EXISTING RIGHT-OF-WAY
- METAL RAILING/FENCE

SCALE 0 10 20 FEET

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JASON P. SCHMIDT
LIC. NO. 42788 DATE 01-16-2013

DESIGNED DMK
DRAWN LLK
CHECKED BJN

BOLTON & MENK, INC.
CONSULTING ENGINEERS & SURVEYORS
MANKATO, MN FAIRMONT, MN SLEEPY EYE, MN
BURNSVILLE, MN WILLMAR, MN CHASKA, MN
RAMSEY, MN MAPLEWOOD, MN BRAINERD, MN AMES, IA

REV.	BY	DATE

STATE PROJECT NO. 5621-23
TH 78 BATTLE LAKE TO PERHAM
SIDEWALK DETAIL PLAN SHEET

SHEET 71 OF 77

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CONTROL POINT NO	STATION	OFFSET	LT/RT	ELEVATION
100	34+84.97	37.86	LT	
101	34+90.45	37.86	LT	
102	34+94.21	43.86	LT	
103	35+53.96	43.86	LT	
104	35+58.02	37.86	LT	
105	35+64.18	37.86	LT	
106	35+78.89	36.72	LT	
107	35+78.89	32.72	LT	
108	35+78.89	26.09	LT	
109	35+85.89	25.67	LT	
110	34+71.71	35.00	RT	
111	34+71.71	41.00	RT	
112	34+77.71	35.00	RT	
113	35+13.08	24.67	RT	
114	35+13.08	35.00	RT	
115	35+13.08	41.00	RT	
116	35+13.08	50.00	RT	
117	35+45.08	24.67	RT	
118	35+45.08	35.00	RT	
119	35+45.08	41.00	RT	
120	35+45.08	50.00	RT	
121	35+78.89	24.67	RT	
122	35+78.90	31.00	RT	
123	35+78.91	35.00	RT	
124	35+84.89	24.67	RT	
125	36+11.06	29.67	RT	
126	36+11.06	44.00	RT	

CONTROL POINT NO	STATION	OFFSET	LT/RT	ELEVATION
200	36+34.00	38.00	LT	
201	36+34.00	34.00	LT	
202	36+34.00	25.67	LT	
203	36+58.00	38.00	LT	
204	36+58.00	34.00	LT	
205	36+58.00	25.67	LT	
206	37+07.00	38.00	LT	
207	37+07.00	34.00	LT	
208	37+07.00	29.67	LT	
209	37+07.00	25.67	LT	
210	37+25.00	38.00	LT	
211	37+25.00	34.00	LT	
212	37+25.00	29.67	LT	
213	37+25.00	25.67	LT	
214	37+61.00	43.40	LT	
215	37+61.00	38.00	LT	
216	37+61.00	34.00	LT	
217	37+61.00	25.66	LT	
218	37+93.00	43.85	LT	
219	37+93.00	38.00	LT	
220	37+93.00	34.00	LT	
221	37+93.00	25.66	LT	
222	38+04.33	35.00	LT	
223	38+04.33	25.67	LT	
224	38+10.33	26.08	LT	
225	38+12.33	35.00	LT	
226	38+20.33	35.00	LT	
227	38+21.23	41.00	LT	
228	38+45.34	49.06	LT	
229	38+45.34	19.00	LT	
230	38+69.46	41.00	LT	
231	38+70.36	35.00	LT	
232	38+78.36	35.00	LT	
233	38+85.65	35.00	LT	
234	38+85.65	25.67	LT	
235	38+91.65	41.00	LT	
236	38+91.65	35.00	LT	
237	38+91.65	25.67	LT	
238	39+06.63	45.18	LT	
239	39+06.65	41.00	LT	
240	39+06.64	35.00	LT	
241	39+06.63	29.67	LT	
242	39+11.63	45.28	LT	
243	39+11.63	41.00	LT	
244	38+20.06	41.00	LT	
245	38+70.62	41.00	LT	

CONTROL POINT NO	STATION	OFFSET	LT/RT	ELEVATION
300	36+66.08	29.67	RT	
301	36+66.08	44.00	RT	
302	36+66.08	50.00	RT	
303	36+98.08	29.67	RT	
304	36+98.08	44.00	RT	
305	36+98.08	50.00	RT	
306	37+22.38	29.67	RT	
307	37+22.38	47.00	RT	
308	37+44.58	29.67	RT	
309	37+44.58	47.00	RT	
310	37+73.93	25.66	RT	
311	37+73.93	29.67	RT	
312	37+73.93	47.00	RT	
313	37+75.45	53.73	RT	
314	37+89.93	25.66	RT	
315	37+89.93	29.67	RT	
316	37+89.93	47.00	RT	
317	37+88.58	53.73	RT	
318	38+04.33	25.67	RT	
319	38+04.33	41.00	RT	
320	38+04.33	47.00	RT	
321	38+10.33	25.72	RT	
322	38+10.33	35.00	RT	
323	38+22.57	35.00	RT	
324	38+23.47	41.00	RT	
325	38+23.47	56.15	RT	
326	38+45.23	23.00	RT	
327	38+45.23	35.00	RT	
328	38+45.23	41.00	RT	
329	38+45.23	57.00	RT	
330	38+67.88	35.00	RT	
331	38+66.98	41.00	RT	
332	38+66.98	57.00	RT	
333	38+78.65	35.00	RT	
334	38+85.65	42.00	RT	
335	38+85.65	54.36	RT	
336	38+85.65	25.67	RT	
337	38+85.65	33.67	RT	
338	38+85.65	41.00	RT	
339	38+85.65	48.00	RT	
340	38+89.58	54.68	RT	
341	38+91.65	25.67	RT	
342	38+91.65	41.00	RT	
343	38+91.65	48.00	RT	
344	38+92.40	54.60	RT	
345	39+05.16	29.67	RT	
346	39+05.16	35.00	RT	
347	39+05.16	41.00	RT	
348	38+91.65	42.00	RT	
349	39+05.16	42.00	RT	
350	38+22.31	41.00	RT	
351	38+68.15	41.00	RT	
352	37+47.38	47.00	RT	
353	37+42.38	47.00	RT	

CONTROL POINT NO	STATION	OFFSET	LT/RT	ELEVATION
400	39+32.17	35.00	LT	
401	39+32.17	29.67	LT	
402	39+56.17	45.95	LT	
403	39+56.17	35.00	LT	
404	39+56.17	29.67	LT	
405	39+61.53	46.05	LT	
406	39+61.53	35.00	LT	
407	39+61.53	29.67	LT	
408	39+82.36	39.37	LT	71.70
409	39+82.36	35.00	LT	71.63
410	39+82.36	29.67	LT	71.58
411	39+83.28	46.28	LT	72.71
412	39+83.28	40.28	LT	72.62
413	39+90.28	46.38	LT	72.71
414	39+90.28	40.28	LT	72.62
415	39+95.28	46.48	LT	72.66
416	39+95.28	40.28	LT	72.57
417	40+08.67	39.91	LT	73.17
418	40+08.67	35.00	LT	73.10
419	40+08.67	29.67	LT	73.01
420	40+09.59	46.77	LT	74.26
421	40+09.59	40.82	LT	74.17
422	40+16.59	46.83	LT	74.29
423	40+16.59	40.82	LT	74.20
424	40+21.63	46.75	LT	73.90
425	40+21.63	40.82	LT	73.81
426	40+21.63	36.82	LT	73.75
427	40+21.63	29.66	LT	73.08
428	40+37.63	45.75	LT	
429	40+37.63	36.82	LT	
430	40+37.63	29.66	LT	
431	40+49.98	47.32	LT	
432	40+49.92	41.00	LT	
433	40+49.92	29.67	LT	
434	40+80.63	47.63	LT	
435	40+80.44	41.00	LT	
436	40+80.44	29.67	LT	
437	41+00.05	48.16	LT	
438	40+99.88	41.00	LT	
439	40+99.88	29.67	LT	
440	41+22.15	48.41	LT	
441	41+24.81	41.00	LT	
442	41+24.81	29.67	LT	
443	41+27.50	48.47	LT	
444	41+52.58	48.71	LT	
445	41+52.69	41.00	LT	
446	41+60.81	48.74	LT	
447	41+63.27	41.00	LT	
448	41+63.27	35.00	LT	
449	41+63.27	25.67	LT	
450	41+69.27	25.67	LT	
451	41+76.56	35.00	LT	
452	41+77.75	49.00	LT	
453	41+85.46	41.00	LT	
454	41+84.56	35.00	LT	
455	41+88.13	56.15	LT	
456	42+10.13	71.14	LT	
457	42+10.13	56.14	LT	
458	42+10.13	19.00	LT	
459	41+76.56	41.00	LT	
460	41+77.75	56.15	LT	
461	41+85.46	56.15	LT	
462	41+85.46	46.00	LT	
463	41+84.29	46.00	LT	75.89

NOTE: ELEVATIONS PROVIDED IN TABLE WHEN SPACE NOT ADEQUATE IN PLAN VIEW.

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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.

JASON P. SCHMIDT
LIC. NO. 42788 DATE 01-16-2013

DESIGNED	DMK
DRAWN	LLK
CHECKED	BJN

BOLTON & MENK, INC.
CONSULTING ENGINEERS & SURVEYORS
MANKATO, MN FAIRMONT, MN SLEEPY EYE, MN
BURNSVILLE, MN WILLMAR, MN CHASKA, MN
RAMSEY, MN MAPLEWOOD, MN BRAINERD, MN AMES, IA

REV.	BY	DATE

STATE PROJECT NO. 5621-23
TH 78 BATTLE LAKE TO PERHAM
SIDEWALK POINT ELEVATIONS

SHEET 72 OF 77

CONTROL POINT NO	STATION	OFFSET	LT/RT	ELEVATION
500	39+24.12	29.67	RT	
501	39+24.12	35.00	RT	
502	39+24.12	41.00	RT	
503	39+24.12	47.00	RT	
504	39+24.12	54.06	RT	
505	39+38.73	29.67	RT	
506	39+38.73	35.00	RT	
507	39+38.73	42.00	RT	
508	39+38.73	47.00	RT	
509	39+38.78	53.83	RT	
510	39+58.25	45.00	RT	
511	39+77.78	29.67	RT	
512	39+77.78	35.00	RT	
513	39+77.78	42.00	RT	
514	39+77.78	45.00	RT	
515	39+77.83	53.03	RT	
516	39+92.98	29.67	RT	
517	39+92.98	45.00	RT	
518	40+04.71	29.67	RT	
519	40+04.71	35.00	RT	
520	40+04.71	46.00	RT	
521	40+14.71	29.66	RT	
522	40+14.71	33.67	RT	
523	40+14.71	46.00	RT	
524	40+14.71	52.12	RT	
525	40+38.71	29.66	RT	
526	40+38.71	33.67	RT	
527	40+38.71	46.00	RT	
528	40+38.71	52.41	RT	
529	40+61.96	29.67	RT	
530	40+61.96	41.00	RT	
531	40+61.96	52.70	RT	
532	40+97.57	29.67	RT	
533	40+97.57	41.00	RT	
534	40+97.57	48.83	RT	
535	41+05.64	29.67	RT	
536	41+05.64	41.00	RT	
537	41+05.64	48.75	RT	
538	41+28.26	29.67	RT	
539	41+28.26	41.00	RT	
540	41+28.26	51.50	RT	
541	41+47.88	29.67	RT	
542	41+50.85	41.00	RT	
543	41+50.85	49.57	RT	
544	41+62.86	25.67	RT	
545	41+62.86	33.67	RT	
546	41+62.86	41.00	RT	
547	41+68.86	25.67	RT	
548	41+76.15	35.00	RT	
549	41+76.82	50.33	RT	
550	41+84.15	35.00	RT	
551	41+85.05	41.00	RT	
552	41+87.72	53.47	RT	
553	42+10.47	19.00	RT	
554	41+10.50	35.05	RT	
555	42+10.52	41.05	RT	
556	42+10.54	53.56	RT	
557	39+31.38	41.00	RT	
558	39+31.38	42.00	RT	
559	39+58.22	41.00	RT	
560	39+58.22	42.00	RT	
561	39+92.74	41.00	RT	
562	39+92.74	42.00	RT	
563	41+83.89	41.00	RT	
564	41+85.05	50.33	RT	

CONTROL POINT NO	STATION	OFFSET	LT/RT	ELEVATION
600	42+32.41	71.23	LT	
601	42+32.45	56.23	LT	
602	42+39.08	56.24	LT	
603	42+35.08	41.09	LT	
604	42+35.94	35.10	LT	
605	42+39.08	51.78	LT	
606	42+43.61	56.25	LT	
607	42+43.94	35.13	LT	
608	42+48.71	51.09	LT	
609	42+51.76	35.16	LT	
610	42+51.79	25.67	LT	
611	42+57.73	40.94	LT	
612	42+57.79	25.67	LT	
613	42+75.37	50.87	LT	
614	42+77.67	41.04	LT	
615	42+77.71	29.71	LT	
616	42+79.89	51.08	LT	
617	42+93.69	41.00	LT	
618	42+93.73	29.67	LT	
619	43+18.54	41.00	LT	
620	43+18.59	29.67	LT	
621	43+32.08	50.37	LT	
622	43+31.98	41.00	LT	
623	43+31.98	29.67	LT	
624	43+46.99	49.52	LT	
625	43+47.03	41.00	LT	
626	43+47.03	29.67	LT	
627	43+68.74	50.21	LT	
628	43+68.78	41.00	LT	
629	43+68.78	29.67	LT	
630	43+95.58	41.00	LT	
631	43+95.58	29.67	LT	
632	44+10.52	41.00	LT	
633	44+10.52	29.67	LT	
634	44+28.84	50.22	LT	
635	44+28.85	41.00	LT	
636	44+28.85	29.67	LT	
637	44+41.86	41.00	LT	
638	44+41.86	29.67	LT	
639	44+53.86	50.47	LT	
640	44+53.73	41.00	LT	
641	44+53.73	29.67	LT	
642	44+70.97	29.67	LT	
643	44+78.10	35.00	LT	
644	44+85.00	29.67	LT	
645	45+00.00	29.67	LT	
646	42+36.18	41.10	LT	

CONTROL POINT NO	STATION	OFFSET	LT/RT	ELEVATION
701	42+33.14	53.56	RT	
702	42+36.71	35.00	RT	
703	42+35.81	41.00	RT	
704	42+44.71	35.00	RT	
705	42+46.22	48.63	RT	
706	42+52.00	25.67	RT	
707	42+52.00	36.00	RT	
708	42+58.00	25.67	RT	
709	42+58.00	41.00	RT	
710	42+64.98	25.67	RT	
711	42+64.98	35.00	RT	
712	42+64.98	41.00	RT	
713	42+78.98	29.67	RT	
714	42+79.04	41.00	RT	
715	42+79.31	48.50	RT	
716	43+13.71	29.67	RT	
717	43+13.78	41.00	RT	
718	43+13.75	48.71	RT	
719	43+30.39	29.67	RT	
720	43+30.39	41.00	RT	
721	43+65.55	29.67	RT	
722	43+65.55	41.00	RT	
723	43+65.64	48.78	RT	
724	44+15.83	29.67	RT	
725	44+15.83	41.00	RT	
726	44+15.98	48.41	RT	
727	44+48.28	29.67	RT	
728	44+48.28	41.00	RT	
729	44+48.29	48.91	RT	
730	44+70.93	29.67	RT	
731	44+70.93	41.00	RT	
732	44+70.92	48.97	RT	
733	42+36.97	41.00	RT	

CONTROL POINT NO	STATION	OFFSET	LT/RT	ELEVATION
800	45+20.83	44.09	LT	79.50
801	45+20.83	35.00	LT	79.61
802	45+23.39	29.67	LT	79.49
803	45+26.83	45.65	LT	79.50
804	45+27.65	39.67	LT	79.49
805	45+38.75	25.67	LT	78.67
806	45+44.75	33.67	LT	78.79
807	45+44.75	25.67	LT	78.55
808	45+45.47	54.31	LT	80.51
809	45+45.43	50.50	LT	80.38
810	45+51.74	42.67	LT	80.25
811	45+51.74	39.67	LT	78.75
812	45+63.24	53.83	LT	
813	45+60.56	39.67	LT	
814	45+59.09	33.67	LT	
815	45+80.23	53.83	LT	
816	45+80.23	33.67	LT	
817	45+80.23	22.50	LT	
818	45+97.23	53.83	LT	
819	45+99.90	42.80	LT	
820	46+00.07	36.80	LT	
821	46+04.67	42.66	LT	
822	46+11.37	44.35	LT	
823	46+16.01	24.67	LT	
824	46+22.01	42.80	LT	
825	46+22.01	36.80	LT	
826	46+22.01	24.67	LT	
827	45+58.84	39.67	LT	
828	46.04.75	36.80	LT	

CONTROL POINT NO	STATION	OFFSET	LT/RT	ELEVATION
900	45+38.75	25.67	RT	
901	45+38.75	33.67	RT	
902	45+38.76	40.97	RT	
903	45+38.75	48.00	RT	
904	45+44.75	25.67	RT	
905	45+44.75	37.67	RT	
906	45+52.92	39.24	RT	
907	45+60.92	39.24	RT	
908	45+60.94	45.24	RT	
909	45+60.94	53.10	RT	
910	45+80.60	53.10	RT	
911	46+00.27	53.09	RT	
912	46+00.33	48.33	RT	
913	46+01.51	42.33	RT	
914	46+16.01	27.24	RT	
915	46+16.01	42.33	RT	
916	46+22.01	25.81	RT	
917	46+22.01	48.33	RT	
918	46+22.01	42.33	RT	
919	45+20.80	41.00	RT	
920	46+01.79	48.33	RT	
921	46+22.01	27.50	RT	

NOTE: ELEVATIONS PROVIDED IN TABLE WHEN SPACE NOT ADEQUATE IN PLAN VIEW.

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H:\MDOT\T42104881\CAD\plans\Const\CD562123_cp02Tab02.dgn

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.

JASON P. SCHMIDT
LIC. NO. 42788 DATE 01-16-2013

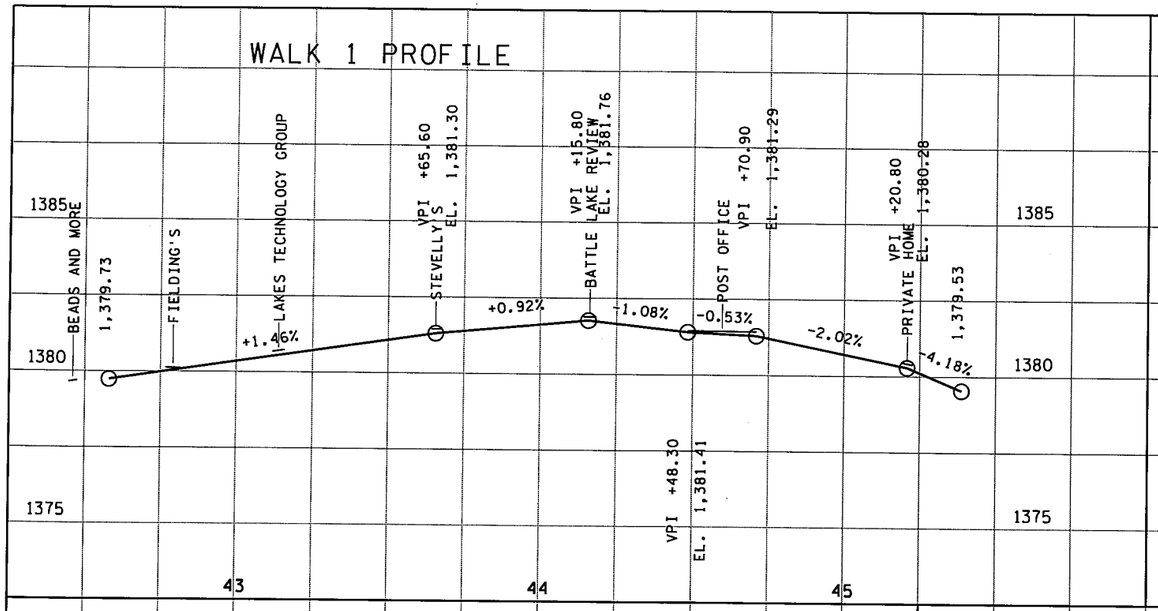
DESIGNED DMK
DRAWN LLK
CHECKED BJN

BOLTON & MENK, INC.
CONSULTING ENGINEERS & SURVEYORS
MANKATO, MN FAIRMONT, MN SLEEPY EYE, MN
BURNSVILLE, MN WILLMAR, MN CHASKA, MN
RAMSEY, MN MAPLEWOOD, MN BRAINERD, MN AMES, IA

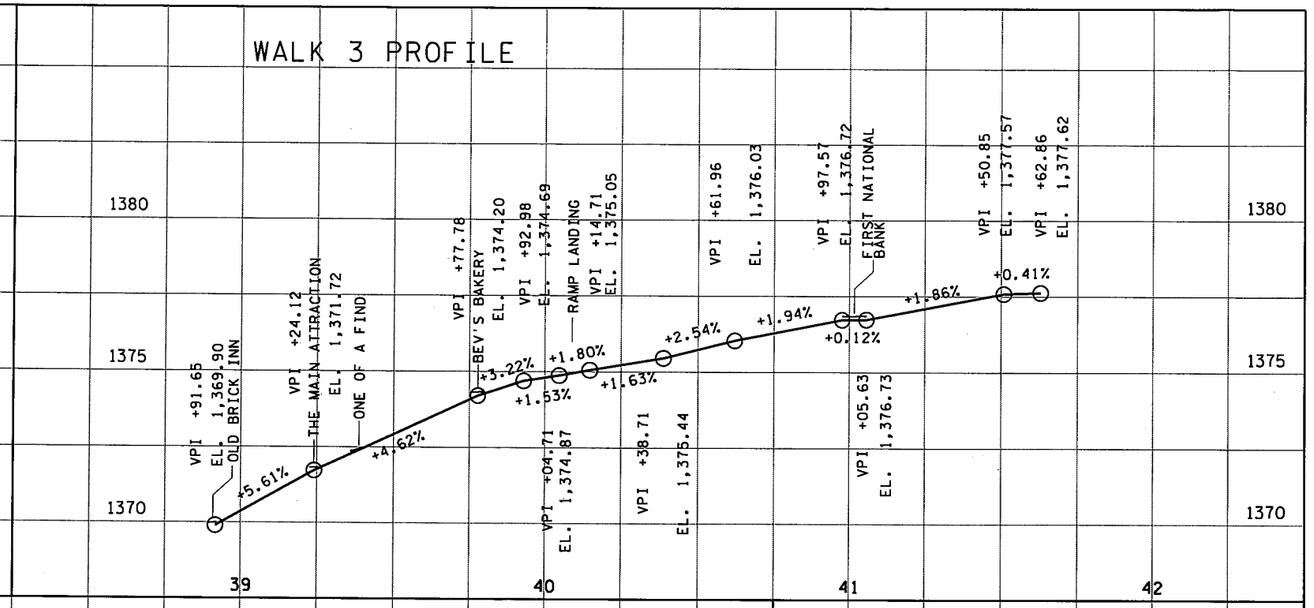
REV.	BY	DATE

STATE PROJECT NO. 5621-23
TH 78 BATTLE LAKE TO PERHAM
SIDEWALK POINT ELEVATIONS

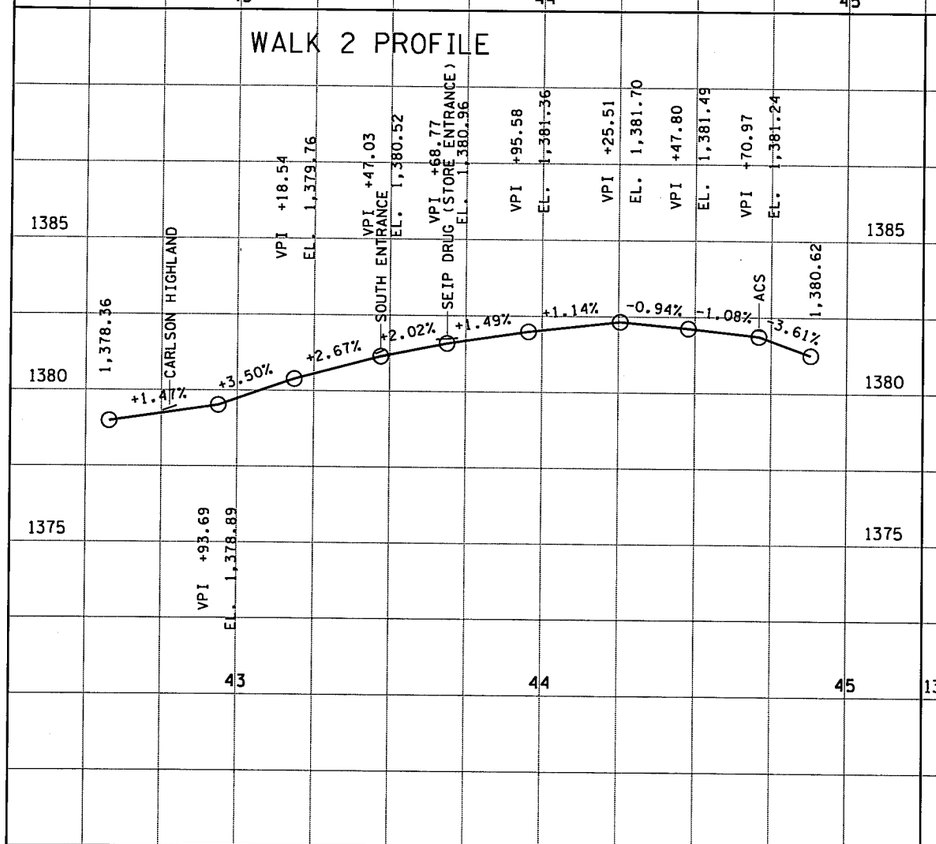
WALK 1 PROFILE



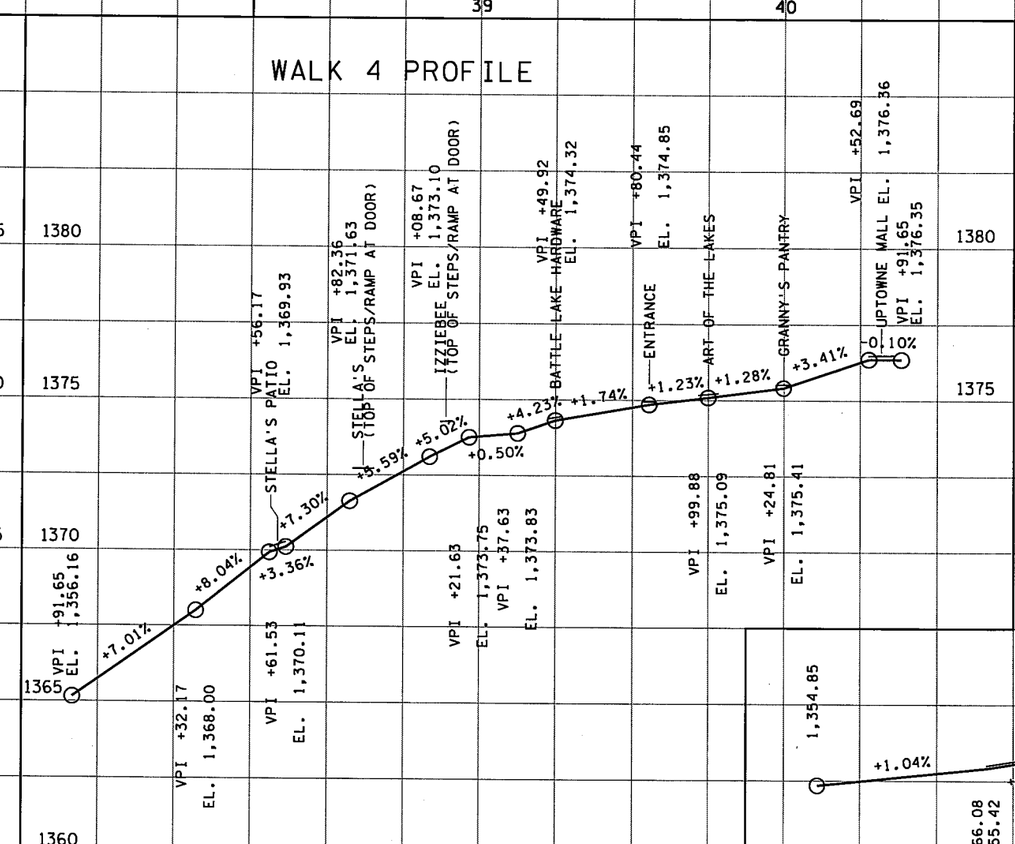
WALK 3 PROFILE



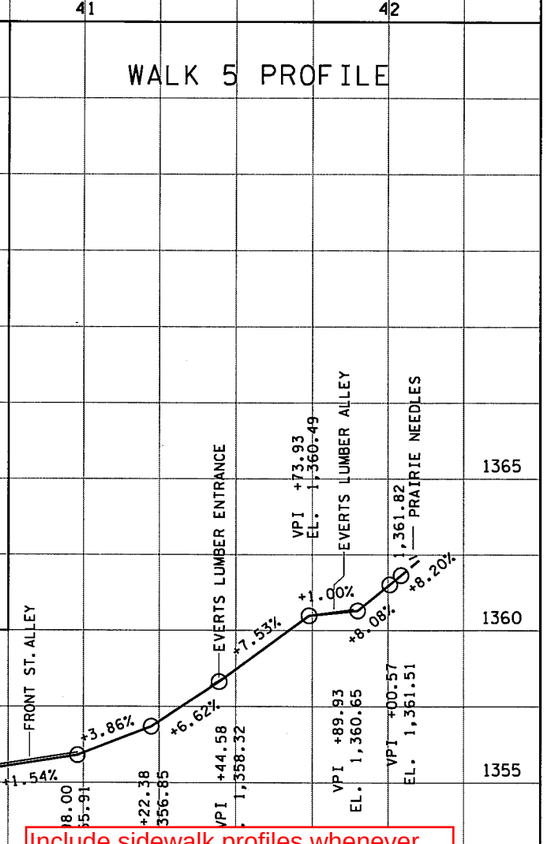
WALK 2 PROFILE



WALK 4 PROFILE



WALK 5 PROFILE



SEE SHEET 28 FOR SIDEWALK SLOPE TRANSITION DETAIL AT BUILDING ENTRANCES.

Include sidewalk profiles whenever the PAR is not at the back of curb. Sidewalk running slopes should not exceed 5% and cannot exceed the highway profile grade at any location.

SCALE 0 25 50 FEET

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JASON P. SCHMIDT
LIC. NO. 42788 DATE 01-16-2013

DESIGNED DMK
DRAWN LLK
CHECKED BJN

BOLTON & MENK, INC.
CONSULTING ENGINEERS & SURVEYORS
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REV.	BY	DATE

SIDEWALK PROFILES

SHEET 74 OF 77

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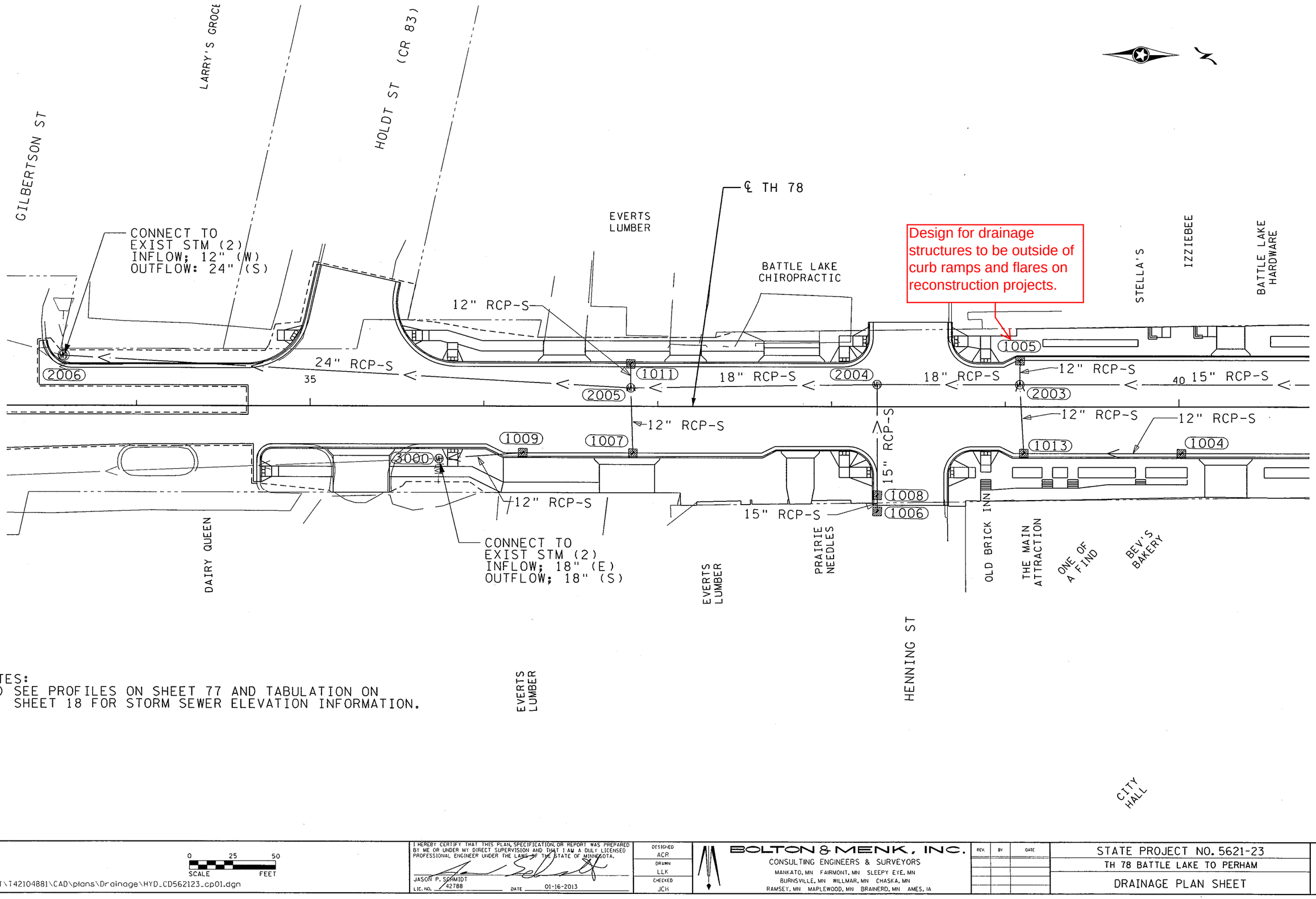

NOTES:
1.) SEE PROFILES ON SHEET 77 AND TABULATION ON SHEET 18 FOR STORM SEWER ELEVATION INFORMATION.

SCALE 0 25 50 FEET

H:\MDOT\T42104881\CAD\plans\Drainage\HYD_CD562123_cp01.dgn

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JASON P. SCHMIDT
LIC. NO. 42788 DATE 01-16-2013

DESIGNED ACR
DRAWN LLK
CHECKED JCH

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BURNSVILLE, MN WILLMAR, MN CHASKA, MN
RAMSEY, MN MAPLEWOOD, MN BRAINERD, MN AMES, IA

REV.	BY	DATE

STATE PROJECT NO. 5621-23
TH 78 BATTLE LAKE TO PERHAM
DRAINAGE PLAN SHEET

SHEET 75 OF 77

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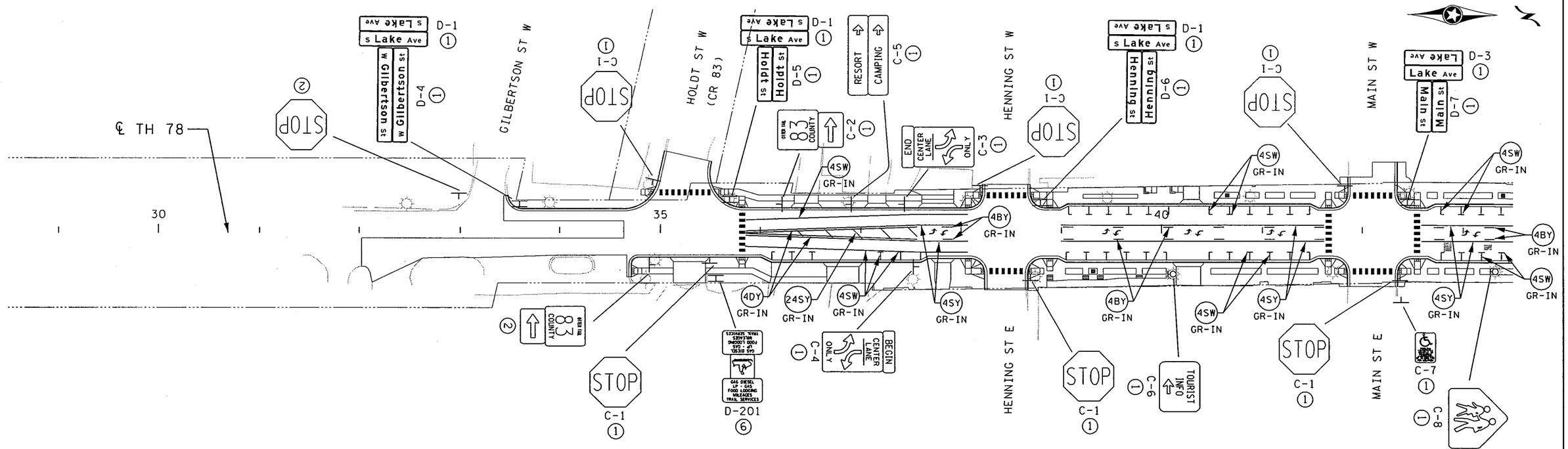

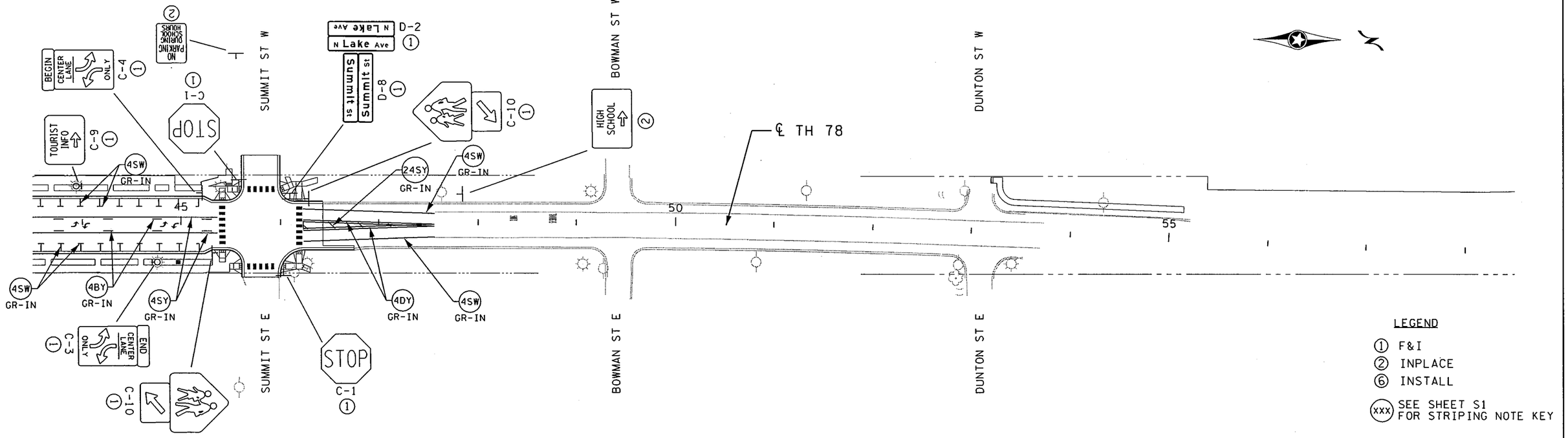

0 50 100
SCALE FEET

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JASON P. SCHMIDT
LIC. NO. 42788 DATE 01-16-2013

DESIGNED JBW
DRAWN LLK
CHECKED JBW

BOLTON & MENK, INC.
CONSULTING ENGINEERS & SURVEYORS
MANKATO, MN FAIRMONT, MN SLEEPY EYE, MN
BURNSVILLE, MN WILLMAR, MN CHASKA, MN
RAMSEY, MN MAPLEWOOD, MN BRAINERD, MN AMES, IA

REV.	BY	DATE

Do not place signs in PAR.

SIGNING AND STRIPING PLAN

SHEET S3 OF S14

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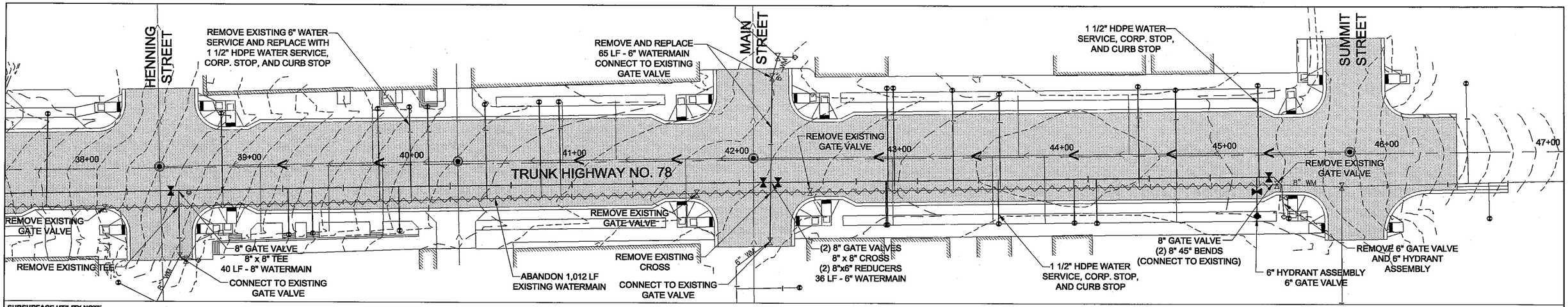
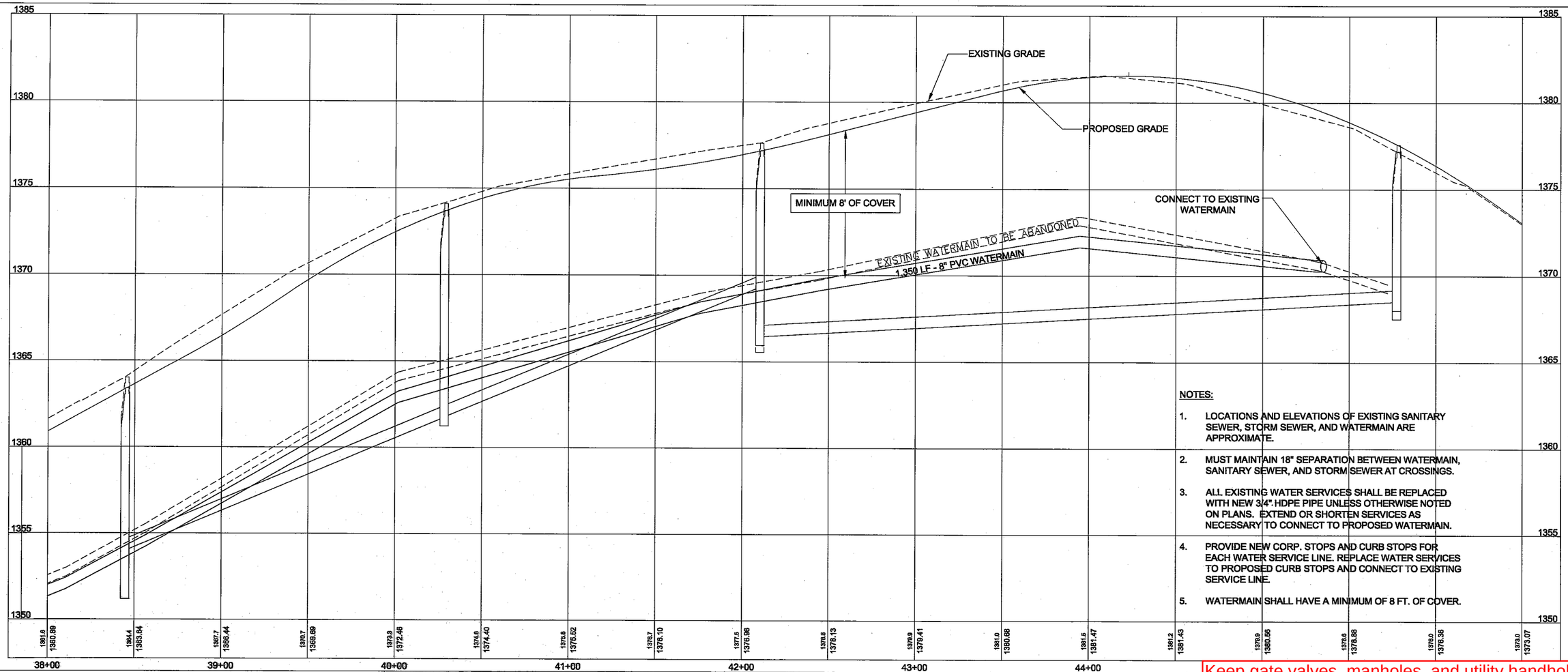


SUBSURFACE UTILITY NOTE
THE SUBSURFACE UTILITY INFORMATION IN THIS PLAN IS UTILITY LEVEL D. THIS UTILITY QUALITY LEVEL WAS DETERMINED ACCORDING TO THE GUIDELINES OF CI/ASCE 38-02. ENTITLED "STANDARD GUIDELINES FOR THE COLLECTION AND DEPICTION OF EXISTING SUBSURFACE UTILITY DATA". **CONTRACTOR IS RESPONSIBLE** FOR VERIFYING LOCATIONS OF ALL UTILITIES.

T.H. 78 WATERMAIN REPLACEMENT PLAN & PROFILE

GOPHER STATE ONE CALL
1-800-252-1166



NOTES:

1. LOCATIONS AND ELEVATIONS OF EXISTING SANITARY SEWER, STORM SEWER, AND WATERMAIN ARE APPROXIMATE.
2. MUST MAINTAIN 18" SEPARATION BETWEEN WATERMAIN, SANITARY SEWER, AND STORM SEWER AT CROSSINGS.
3. ALL EXISTING WATER SERVICES SHALL BE REPLACED WITH NEW 3/4" HDPE PIPE UNLESS OTHERWISE NOTED ON PLANS. EXTEND OR SHORTEN SERVICES AS NECESSARY TO CONNECT TO PROPOSED WATERMAIN.
4. PROVIDE NEW CORP. STOPS AND CURB STOPS FOR EACH WATER SERVICE LINE. REPLACE WATER SERVICES TO PROPOSED CURB STOPS AND CONNECT TO EXISTING SERVICE LINE.
5. WATERMAIN SHALL HAVE A MINIMUM OF 8 FT. OF COVER.

Keep gate valves, manholes, and utility handholes (including signal handholes) outside of PAR.

0 30 60
SCALE FEET

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Jeremy E. Anderson
LIC. NO. 44223 DATE 01-15-13

DESIGNED RJK
DRAWN RJK
CHECKED JEA

Design Tree
320 17th Avenue W. Hibbing, MN 55809 (218) 262-1290
3339 W. St. Germain, Suite 252 St. Cloud, MN 56301 (320) 217-0527 (Phone) (320) 217-1597 (Fax)

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CONSULTING ENGINEERS & SURVEYORS
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REV.	BY

SEWER AND WATER PLAN AND PROFILE

SHEET NO. SW7