MINNESOTA DEPARTMENT OF TRANSPORTATION

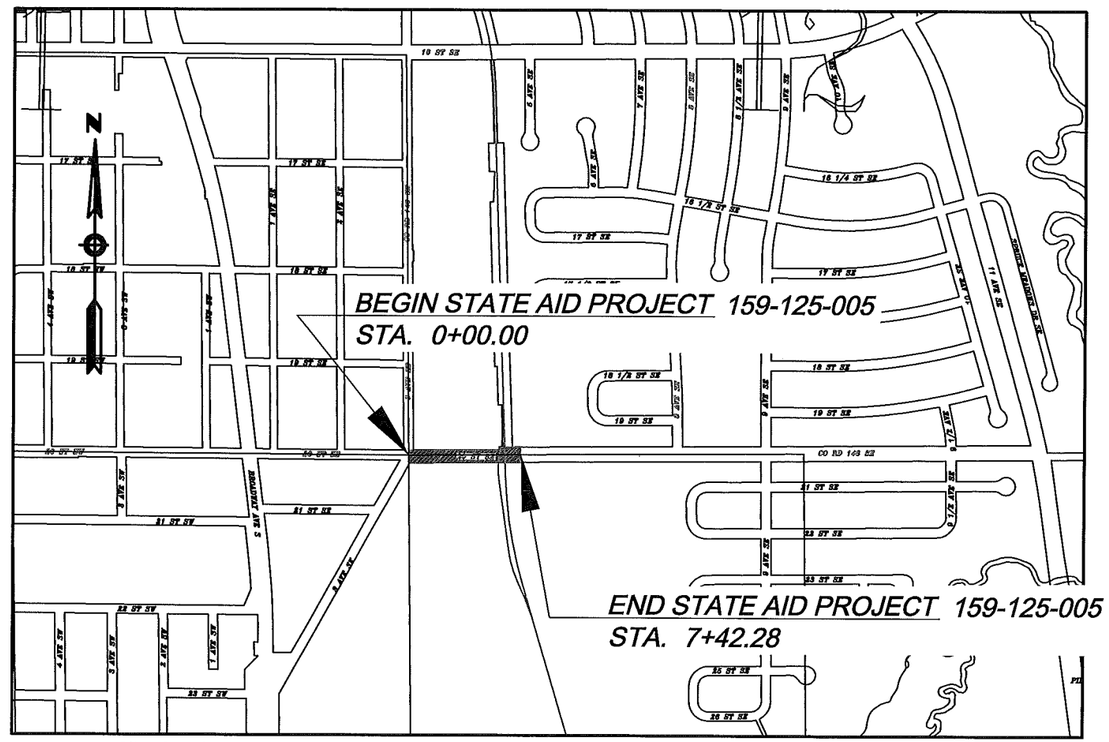
City of Rochester, Minnesota

Department Of Public Works

CONCRETE REHAB AND WATERMAIN ON 20TH STREET SE
FROM 3RD AVENUE TO 11TH AVENUE SE

TOWNSHIP 106 **RANGE** 14 **SECTION** 12, 13

GROSS LENGTH	742.28	FEET	0.140 MILES
BRIDGE LENGTH	0.00	FEET	0.000 MILES
EXCEPTION LENGTH	0.00	FEET	0.000 MILES
NET LENGTH	742.28	FEET	0.140 MILES

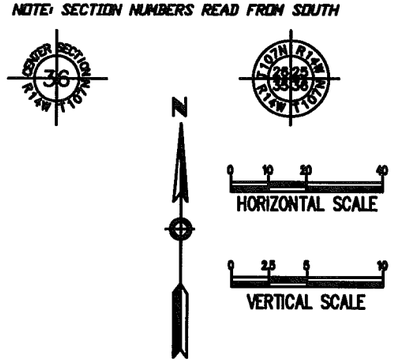


CONVENTIONAL SIGNS AND ABBREVIATIONS

CORPORATE LIMITS	
SECTION LINE	
RIGHT OF WAY LINE (STATE)	
PROPERTY LINE (STREET)	
ADDITION LINE	
SURVEY LINE	1 2
CENTER LINE	
WIRE FENCE	
STONE WALL OR FENCE	
HEDGE	
GUARD RAIL	
CREEK OR RIVER	
DRY RUN	
RAILROAD	
RAILROAD RIGHT OF WAY LINE	
CURB & GUTTER INP.	
SIDEWALK INP.	
SANITARY SEWER INP.	
STORM SEWER INP.	
WATERMAIN, GATEVALVE & BOX INP.	
ELECTRIC UNDERGROUND INP.	E
TELEPHONE UNDERGROUND INP.	T
STEAM MAIN INP.	S
GAS MAIN INP.	
CURB INP.	
HYDRANT INP.	
TELEPHONE, POWER POLES	
LIGHT POLES	
TRAFFIC SIGNAL	
FIRE ALARM BOX	
RAILROAD CROSSING SIGN	RXR
RAILROAD CROSSING BELL	
TREE	
STUMP	
BUILDING	I-S-F
IRON PIPE	
STONE MONUMENT	
MANHOLE INP.	
BRICK INP.	
BRIDGE INP.	
CULVERT INP.	
CATCH BASIN INP.	
CURB & GUTTER CONST.	
SIDEWALK CONST.	
SANITARY, STORM SEWER CONST.	
WATERMAIN CONST.	
MANHOLE CONST.	
CATCH BASIN CONST.	
HYDRANT CONST.	
CROSS	
TEE	
TAPPING MACHINE SLEEVE & VALVE	
BEND, ELBOW	
INCREASER, DECREASER	
CONCRETE	
SAND	
CRUSHED ROCK	R
BITUMINOUS	
CLEAR & GRUB TREE	
SW, C&G, CONC BASE, DRWY-REMOVE(GRD & ALIGN)	
SW, C&G, CONC BASE, DRWY-REMOVE(CONDEMED SW)	
SOIL BORING LOCATION	NO.2

ACRE	A.
ADJUST	ADJ.
AGGREGATE	AGG.
APPROACH	APP.
BENCH MARK	B.M.
BITUMINOUS	BIT.
BRIDGE	BR.
BUILDING	BLDG.
CAST IRON PIPE	C.I.P.
CATCH BASIN	C.B.
CENTER LINE	℄
CENTER TO CENTER	C TO C
CLAY SEWER PIPE	C.S.P.
CONCRETE	CONC.
CONSTRUCT	CONST.
CORNER	COR.
CORRUGATED METAL PIPE	C.M.P.
CORRUGATED METAL PIPE ARCH	C.M.P.-A
CRUSHED ROCK	CR. RK.
CURB & GUTTER	C & G
DEFLECTION LEFT	D L
DEFLECTION RIGHT	D R
DEGREE OF CURVE	D
DELTA OR INTERSECTION ANGLE	Δ
DRIVE	DR.
DRIVEWAY	DRWY.
DROP INLET	D.I.
DUCTILE IRON PIPE	D.I.P.
EAST	E.
ELEVATION	EL.
EMBANKMENT	EMB.
ENTRANCE	ENT.
EQUATION	EQ.
ESTIMATE	EST.
EXCAVATION	EXC.
EXPANSION	EXP.
FLOW LINE	F.L.
FOOT	FT.
FOUNDATION	FDN.
FRAME	FR.
FURNISH AND INSTALL	F. & I.
GALLON	GAL.
GATEVALVE	GV
GRATE	GR.
HIGH WATER	H.W.
HIGHWAY	HWY.
HORIZONTAL	HORIZ.
HYDRANT	HYD.
INLET	INL.
INPLACE	INPL.
INSTALL	INST.
INVERT	INV.
IRON PIPE	I. P.
JUNCTION	JCT.
LEFT	LT.
LENGTH OF CURVE	L.
LINEAL	LIN.
LOW WATER	L.W.
MANHOLE	M.H.
MINIMUM	MIN.
MISCELLANEOUS	MISC.
MONUMENT	MON.
NORTH	N.
NORTH EAST	N.E.
NORTH WEST	N.W.
NUMBER	NO.
OUTLET	OUTL.
PERFORATED	PERF.
POINT OF CURVATURE	P.C.
POINT OF INTERSECTION	P.I.
POINT OF TANGENCY	P.T.
POINT ON TANGENT	P.O.T.
RADIUS, ROCK, RANGE	R.
RAILROAD	R.R.
REINFORCED	REINF.
REINFORCED CONCRETE PIPE	R.C.P.
RETURN	RET.
RIGHT	RT.
SANITARY	SAN.
SEWER	SEW.
SIDEWALK, SOUTH WEST	S.W.
SOUTH	S.
SOUTH EAST	S.E.
SPECIFICATION, SPECIAL	SPEC.
STANDARD	STD.
STATION	STA.
STORM, STATE, STUCCO	ST.
STREET, STONE, STEEL	ST.
SUBDRAIN	SD,SUBD
SURFACE	SURF.
TANGENT	TAN.
TURNING POINT, TELEPHONE POLE	T.P.
VARIABLE	VAR.
VEHICULAR MEASURE	V.M.
VERTICAL	VERT.
VERTICAL CURVE	V.C.
VETRIFIED	VIT.
WEST, WATER	W.

NOTE: SECTION NUMBERS READ FROM SOUTH



GOVERNING SPECIFICATIONS

State of Minnesota
The 2016 edition of the Minnesota Department of Transportation "Standard Specifications for Construction" shall govern except as modified by special provision.

UTILITY QUALITY LEVEL

The subsurface utility information in this plan is utility quality level D. This quality level was determined according to the guidelines of CI/ASCE 38-2, entitled "Standard Guidelines for the Collection and Depiction of Existing Subsurface Utility Data."

ADT (Current Year)	2017	7,980
ADT (Future Year)	2037	10,770
HCADT (Future Year)	2037	3.57%
DESIGN LOADING		9 - TON
R - VALUE		10
SIGMA N_{18} (20)		1,180,000
FUNCTIONAL CLASSIFICATION		MINOR ARTERIAL
NO. AND WIDTH OF TRAFFIC L/		4 @ 12 FT
NO. AND WIDTH OF PARKING L		NONE
DESIGN SPEED		40 MPH

BASED ON SIGHT DISTANCE	STOPPING
HEIGHT OF EYE	3.5 FT
HEIGHT OF OBJECT	2.0 FT
STOP CONDITION AT:	

INDEX TO PLANS

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STRIPING	9
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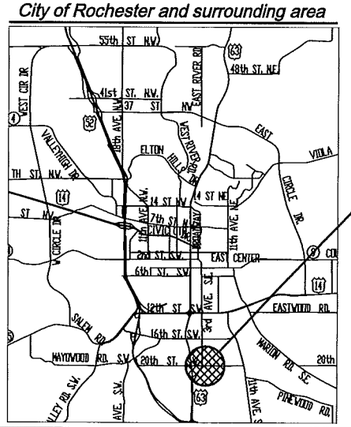
This plan contains 17 Total sheets

City of Rochester and surrounding area



APPROXIMATE PROJECT LOCATION

LEGAL DESCRIPTION:
From NW Cor of Section 13 T106 R14 East 11.07' then North 25.75' to a point of Begining to a point from NW Cor of Section 13 T106 R14 East 742.34' then North 24.71' In The City of Rochester, Olmsted County, Minnesota

PROJECT LOCATION
OLMSTED COUNTY
ROCHESTER DISTRICT

City of Rochester, Minnesota
Department Of Public Works

201 4th Street S.E.
Room 108 - City Hall
Rochester, MN 55904
Phone: (507) 328-2400
Fax: (507) 328-2401

Calvin Feine, Design Technician — Date 9-22-16

Russell Kelm, 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.
Date: 9-22-16 License Number 24667

Approved: Douglas Nelson, Assist. City of Rochester Engineer — Date 9/22/16

Approved: Richard Freese, City of Rochester Engineer — Date 9/22/16

Recommended for Approval: — Date 10/12/16

District State Aid Engineer: Reviewed for Compliance with State Aid Rules/Policy — Date 10/12/16

State Aid Engineer: Approved for State Aid Funding — Date

S.A.P. No. 159-125-005
Project No 6220-3-15 J 7306
Sheet 1 of 17 Sheets

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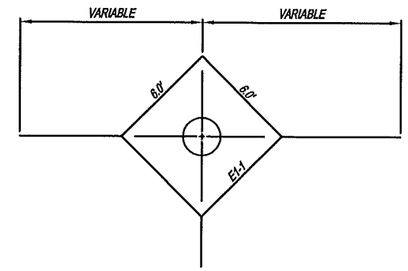
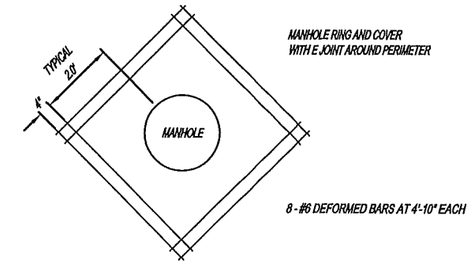
ESTIMATED QUANTITIES

SHEET NO.	TAB	NOTES	Item No.	Description	Units	Participating 4th Ave NW (159-107-)	Non-Participating	Storm Sewer	Total Estimating Quantity
				1 STREET (350)					
			2021.501/00010	MOBILIZATION	LS	0.86	0.14		1
3	E		2101.502/00010	CLEARING	TREE	3			3
3	E		2101.507/00010	GRUBBING	TREE	3			3
3	D		2104.501/00022	REMOVE CURB & GUTTER	L F	871			871
3	C		2104.505/00108	REMOVE CONCRETE DRIVEWAY PAVEMENT	S Y	132			132
3	D		2105.505/00120	REMOVE BITUMINOUS PAVEMENT	S Y	259			259
3	D		2104.511/00011	SAWING CONCRETE PAVEMENT (FULL DEPTH)	L F	440			440
3	D		2104.513/00011	SAWING BIT PAVEMENT (FULL DEPTH)	L F	232			232
4	M	3	2105.507/00010	COMMON EXCAVATION	C Y	451			451
		1	2105.507/00010	SUBGRADE EXCAVATION	C Y	50			50
		1	2211.501/00050	AGGREGATE BASE CLASS 5	TON	50			50
3	H	3	2211.503/00050	AGGREGATE BASE (CV) CLASS 5	C Y	492			492
3	J		2302.602/00010	DOWEL BAR RETROFIT	EACH	152			152
3	J		2302.602/00020	DOWEL BAR	EACH	1674			1674
3	J		2302.602/00030	DRILL & GROUT REINF BAR (EPOXY COATED)	EACH	223			223
3	J		2302.603/11000	JOINT REPAIR (TYPE A1)	L F	1678			1678
3	J		2302.603/34010	FULL DEPTH REPAIR (TYPE CD-LV)	L F	276			276
3	J		2302.604/00130	PAVEMENT REPLACEMENT (TYPE CX)	S Y	2078			2078
3	J		2302.608/00210	SUPPLEMENTAL REINF BARS (EPOXY COATED)	LB	850			850
3	J		2302.618/21000	PARTIAL DEPTH REPAIR (TYPE BA)	S F	336			336
3	J		2302.618/25000	PARTIAL DEPTH REPAIR (TYPE BE)	S F	50			50
3	J		2302.618/31010	SPOT FULL DEPTH REPAIR (TYPE C1-LV)	S F	36			36
3	H		2360.501/13200	TYPE SP 9.5 WEARING COURSE MIX (3;B)	TON	19			19
3	H		2360.502/23200	TYPE SP 12.5 NON WEAR COURSE MIX (3;B)	TON	50			50
3	A		2506.516/00010	CASTING ASSEMBLY	EACH	7			7
3	A		2506.522/00011	ADJUST FRAME & RING CASTING	EACH	4			4
3	H		2531.501/02320	CONCRETE CURB & GUTTER DESIGN B624	L F	873			873
3	F		2531.507/00070	7" CONCRETE DRIVEWAY PAVEMENT	S Y	117			117
		2	2563.601/00010	TRAFFIC CONTROL	LS	0.86	0.14		1
3	I		2573.530/00010	STORM DRAIN INLET PROTECTION	EACH	5			5
3	I		2574.525/00010	COMMON TOPSOIL BORROW	C Y	57			57
3	I		2575.505/00060	SODDING TYPE MINERAL	S Y	684			684
3	L		2582.501/10000	PAVT MSSG PAINT	S F	247			247
3	L		2582.502/10124	24" SOLID LINE PAINT	L F	48			48
3	L		2582.502/10204	4" BROKEN LINE PAINT	L F	280			280
3	L		2582.502/10404	4" DBLE SOLID LINE PAINT	L F	685			685
				2 PED FACILITIES (550)					
3	D		2104.503/00021	REMOVE CONCRETE WALK	S F	3476			3476
3	G		2521.501/00050	5" CONCRETE WALK	S F	5199			5199
3	G		2521.501/00051	5" CONCRETE WALK-EXPOSED AGGREGATE	S F	1042			1042
3	G		2521.501/00060	6" CONCRETE WALK	S F	551			551
3	G		2521.501/00070	7" CONCRETE WALK	S F	534			534
3	G		2531.618/00010	TRUNCATED DOMES	S F	56			56
				5 WATERMAIN (150)					
3	K		2104.501/00013	REMOVE WATER MAIN	L F		67		67
3	B		2104.509/00108	REMOVE GATE VALVE & BOX	EACH		4		4
3	K		2504.602/00010	CONNECT TO EXISTING WATER MAIN	EACH		3		3
3	K		2504.602/00812	12" GATE VALVE & BOX	EACH		3		3
3	K		2504.603/01122	12" WATERMAIN DUCTILE IRON CL 52	L F		743		743
3	K		2504.608/00015	WATERMAIN FITTINGS	LB		676		676

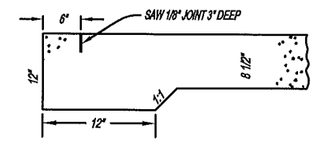
NOTES
1 INCLUDES AS A TOKEN AMOUNT NOT SUBJECT TO THE PROVISIONS OF 1903
2 THIS ITEM INCLUDES ALL TRAFFIC CONTROL ITEM NECESSARY FOR CONTROL OF TRAFFIC DURING CONTRACTORS OPERATIONS, INCLUDING ASSOCIATED SIGNAL AND TRAFFIC CONTROL DEVICES FOR LANE CLOSURES AND FLAGGING OPERATIONS AS NECESSARY. ALL TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE MOST RECENT EDITION OF THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, INCLUDING "FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS".
3 PLAN QUANTITY



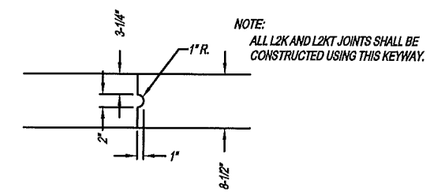
TYPICAL BOX OUT DETAIL AT MANHOLE



TYPICAL REINFORCEMENT AT MANHOLES



THICKENED EDGE WITH TEMPORARY HEADER

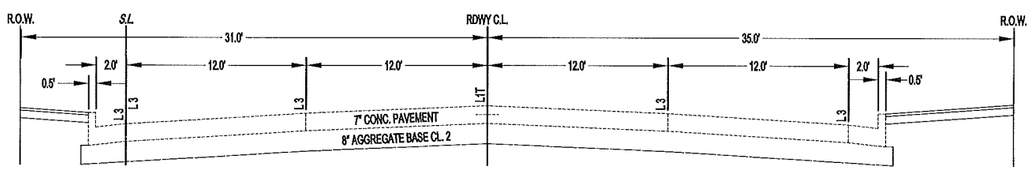


NOTE:
ALL L2K AND L2KT JOINTS SHALL BE CONSTRUCTED USING THIS KEYWAY.

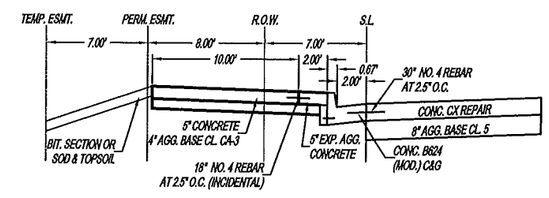
PAVEMENT KEYWAY

THE FOLLOWING STANDARD PLATES, APPROVED BY THE FEDERAL HIGHWAY ADMINISTRATION SHALL APPLY ON THIS PROJECT	
STATE OF MINNESOTA	
NO.	DETAIL PLATE
8000J	Channelizers

STANDARD DETAIL PLATES	
CITY OF ROCHESTER	
NO.	DETAIL PLATE
1-07 B	MANHOLE WATERPROOFING
1-11 I	CASTING REFERENCE NUMBERS
1-12 B	STANDARD CASTING ASSEMBLIES
1-13 C	STRUCTURE ADJUSTING RINGS
2-01 E	CONCRETE CURB & GUTTER
2-02 E	CONCRETE SILL
2-05 C	TRANSITION CURB & GUTTER DRIVEOVER TO TYPE B OR V
2-06 D	CURB & GUTTER REINFORCEMENT AT CATCH BASINS
2-12 F	CONCRETE DRIVE APPROACH TYPE E
2-14 J	PEDESTRIAN CURB RAMP
2-15 F	SIDEWALK DETAILS
6-06 A	POLYETHYLENE ENCASEMENT
6-08 B	ELECTRICAL CONTINUITY
6-09 A	INSTALLATION DETAIL
7-05 A	INLET PROTECTION



EXISTING TYPICAL SECTION
20TH STREET SE
3RD AVE TO STA. 7+42.28



CONCRETE WALK TYPICAL SECTION
20TH STREET SE
3RD AVE TO STA. 7+42.28

Revision comment: —
Revised: —

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.
Russell J. Kline Date: 9-19-16 Lic. No. 24667

City of Rochester, Minnesota
Department Of Public Works
201 4th Street S.E.
Rochester, MN 55904
Phone: (507) 328-2429
FAX: (507) 328-2401

Title: ESTIMATED QUANTITIES AND TYPICAL SECTION ON 20TH STREET SE FROM 3RD AVENUE TO 150 FT EAST OF RAILROAD TRACKS

Designer: CWF
Checker: RJK

S.A.P. No. 159-125-005
Project No. 6220-3-15 J7306
Sheet 2 of 17 Sheets

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INPLACE STORM SEWER STRUCTURES "A"

STATION-LOCATION	STRUCT TYPE	INPLACE CASTING ELEV.	ADJ CB	NEW CASTING ELEV.	T.C. EL.	CASTING ASSEMBLY	CASTING TYPE	INL. EL.	INL. EL.	INL. EL.	INV EL.	OUTL. EL.	REMARKS
0-10.7-31.3' RT	M H	1047.25						1042.62-12" SE	1041.83-21" E	1041.90-21" SW		1041.76-21" N	
0+24.8-49.9' RT	C B	1046.65								1042.60-6" SE		1042.50-12" N	
1+17.5-2.2' LT	C B	1046.77	1	1046.68	1047.33					1043.21-6" NE		1043.19--12" S	
1+22.8-4.6' LT	M H	1047.52		1047.39		1	1			1043.25-6" E&W		1043.23-6" SW	
1+60.3-30.9' RT	M H	1047.86		1047.86		1	1			1042.43-E		1042.43-W	
3+99.3-53.0' RT	M H	1048.42								1044.00-6" E		1044.00-6" W	
4+08.8-4.8' LT	M H	1048.38		1048.42		1	1			1044.16-6" E		1044.16-6" W	
4+09.2-30.2' RT	M H	1048.49		1048.49		1	1	1043.68-12" N	1043.68-12" S	1043.30-21" E		1043.30-21" W	
4+11.7-50.4' RT	C B	1047.70										1043.91-12" N	
4+11.9-2.0' LT	C B	1047.61	1	1047.75	1048.40							1044.23-12" S	
5+80.0-53.0' RT	M H	1050.17									1045.98	1046.08-6" W	
5+90.2-5.0' LT	M H	1050.03		1050.11		1	1			1045.49-6" S		1045.42-6" W	
6+17.4-30.2' RT	M H	1050.58		1050.54		1	1		1044.53-S	1044.13-N	1044.03-E	1044.03-W	
6+52.6-50.4' RT	C B	1050.54	1	1050.41	1051.06				1046.34-6" SE	1047.05-12" S		1045.24-12" N	
6+53.0-2.1' LT	C B	1050.37	1	1050.02	1050.67					1045.97-6" NE		1045.77-12" S	
6+74.6-30.5' RT	M H	1051.47		1051.17		1	1			1044.61-12" NE		1044.23-21" W	
6+95.6-4.0' LT	M H	1052.89							1046.18-6" E&W	1045.24-12" N		1045.09-12" S	
6+99.0-29.2' LT	M H	1052.06								1047.0-2" N		1045.69-12" S	
			4			7							

NOTES: USE 6" OR 4" ADJUSTING RINGS WHERE POSSIBLE
SEE CITY OF ROCHESTER DETAIL PLATES 1-11I & 1-12B FOR CASTING DETAILS

INPLACE WATERMAIN FITTINGS "B"

STATION-LOCATION	GATE VALVE	HYD	REMOVE	REMARKS
0+11.0-8.0' LT	X			
0+34.4-14.0' RT	X		1	
3+29.3-1.5' RT	X		1	
3+72.1-14.6' RT	X		1	
7+35.9-13.1' RT	X		1	
7+42.1-7.7' RT	X			
7+47.3-12.7' RT	X			
10+71.3-14.2' RT	X			
			4	TOTALS

REMOVE CONCRETE DRIVES "C"

LOCATION	SQ YARDS (SY)
2+28.8 - 2+56.9 LT	18.5
4+98.2 - 5+27.1 LT	18.9
5+18.6 - 5+58.5 RT	29.9
5+49.7 - 5+81.8 LT	55.3
7+25.4 - 7+35.5 LT	8.7
TOTALS	132

REMOVE CONC. WALK, CURB & GUTTER "D"

LOCATION	SAW CUT BIT. (FULL DEPTH)	SAW CUT CONC. (FULL DEPTH)	REMOVE C&G	REMOVE BIT.	REMOVE CONC WALK
	LIN FT	LIN FT	LIN FT	SQ YD	SQ FT
3RD AVE SE TO EAST RR TRACK	231.44	439.09	681.73	258.12	2901.91
EAST RR TRACK TO STA. 7+42.28			189.25		573.31
TOTALS	232	440	871	259	3476

TREES "E"

20TH STREET SE FROM	TO	EXISTING TREES	CLEAR & GRUB TREE
		EACH	EACH
3RD AVE SE	EAST RR TRACK	3	3
EAST RR TRACK	STA. 7+42.28		
	TOTALS	3	3

CONSTRUCT DRIVE APPROACHES "F"

LOCATION	WIDTH (FT)	MATERIAL	CONC DEPTH (IN)	AGG BASE DEPTH (IN) (INCIDENTAL)	SQ YARDS (SY)
2+28.61 - 2+56.61 LT	28	CONC	7	4	20.68
4+98.18 - 5+27.05 LT	28.9	CONC	7	4	21.26
5+18.53 - 5+58.53 RT	39.9	CONC	7	4	41.65
5+49.88 - 5+81.85 LT	32	CONC	7	4	23.33
7+25.37 - 7+35.48 LT	10.1	CONC	7	4	9.23
					117

CONSTRUCT SIDEWALK (SQ FT) "G"

LOCATION	OFFSET LT	OFFSET RT	DEPTH EXPOSED AGG.	DEPTH 5"	DEPTH 6"	DEPTH 7"	TRUNCATED DOMES
0+22.4 - 0+45.67	X				276.48		16.00
0+45.67 - 2+28.61	X		359.36	1826.87			
2+28.61 - 2+56.61	X					168.12	
2+56.61 - 4+98.18	X		470.09	2410.63			
4+98.18 - 5+27.05	X					173.31	
5+27.05 - 5+49.88	X		32.61	223.20			
5+49.88 - 5+81.85	X					191.94	
5+81.85 - 5+99.78	X		49.78	24.02	147.10		20.00
6+07.72 - 6+30.17	X		47.89	231.53			
6+38.07 - 7+18.91	X		81.96	482.26	126.98		20.00
TOTALS			1042	5199	551	534	56

CONSTRUCT CONCRETE CURB & GUTTER "H"

LOCATION	CONST. B624 C&G (1)	TYPE SP 9.5 WEARING SPWEA340B	TYPE SP 12.5 NON-WEARING SPNWB340B	AGG BASE CL. 5 (2)
	LIN FT	TON	TON	CU YD
3RD AVE SE TO EAST RR TRACK	682.39	18.51	49.56	429.90
EAST RR TRACK TO STA. 7+42.28	190.35	0.00	0.00	61.50
TOTALS	873	19	50	492

NOTES: (1) INCLUDES B624 (MOD) CURB & GUTTER
(2) INCLUDES 8" AGG. BASE OVER WATERMAIN AND FILL FOR RAISING TRACKS

TURF ESTABLISHMENT / EROSION CONTROL "I"

LOCATION	LT SIDE	RT SIDE	TOPSOIL BORROW (CV)	SODDING TYPE MINERAL	FERTILIZER TYPE 1 (INCIDENTAL)	INLET PROTECTION TYPE C
			CU YD	SQ YD	POUND	EACH
3RD AVE SE TO EAST RR TRACK	X		30.52	366.25	22.70	2.00
3RD AVE SE TO EAST RR TRACK		X	4.34	52.05	3.23	1.00
3RD AVE SE TO EAST RR TRACK	X		11.95	143.40	8.89	1.00
EAST RR TRACK TO STA. 7+42.28		X	10.22	122.60	7.60	1.00
			57	684	42	5

BASIS FOR QUANTITIES
PERMANENT COMMERCIAL FERTILIZER ANALYSIS 22-5-10 300 LBS / ACRE (INCIDENTAL)
TOPSOIL @ 3 IN DEPTH FOR SODDING, AND @ 4 IN DEPTH FOR SEEDING

CONCRETE REPAIR TABULATION "J"

20TH STREET SE FROM	TO	JOINT REPAIR (TYPE A1)	FULL DEPTH REPAIR (TYPE CD-LV)	SPOT FULL DEPTH REPAIR (TYPE C1-LV)	PAVEMENT REPLACEMENT (TYPE CX)	DOWEL BARS	DRILL & GROUT REBARS	REINFORCEMENT BARS	DOWEL BAR RETROFIT	PARTIAL DEPTH REPAIR (TYPE BA)	PARTIAL DEPTH REPAIR (TYPE BE)
		LIN FT	LIN FT	SQ FT	SQ YD	EACH	EACH	LBS	EACH	SQ FT	SQ FT
3RD AVE SE	EAST RR TRACK	1678	228	36	1374	1236	217	407.13	152	336	50
EAST RR TRACK	STA. 7+42.28	0	48		704	438	6	442.12		0	0
	TOTALS	1678	276	36	2078	1674	223	850	152	336	50

CONSTRUCT WATERMAIN PIPE (K)

FITTING NO.	STATION-LOCATION	DESCRIPTION	WGT (LBS)	CONNECT TO EXISTING	GATEVALVE SIZE 12"	PIPE SIZE AND TYPE 12" DIP (L.F.)	PIPE SIZE AND TYPE 12" DIP (RJ)(L.F.)	TO	REMOVE WM PIPE (LF)	REMARKS
S-1	0+10.9-14.0' RT	CONNEC TO EXISTING WM		1		3.00		S-2		RESTORSE SREVICE TO W.
S-2	0+13.9-14.0' RT	12" G.V. & BOX			1	3.00		S-3		RETAIN TO WEST
S-3	0+16.9-14.0' RT	12" BEND 45D	86			11.43		S-4		
S-4	0+25.0-6.0' RT	12" BEND 45D	86			338.18		S-5A		
S-5A	3+63.2-5.7' RT	12" X 12" TEE	160			206.89		S-6		
S-5B	3+63.2-8.7' RT	12 G.V. & BOX			1	3.00		S-5A		
S-5C	3+63.2-11.7' RT	12" BEND 45D	86			3.00		S-5B		
S-5D	3+63.2-15.7' RT	12" BEND 45D	86			4.00		S-5C		
S-5E	3+63.2-16.7' RT	CONNEC TO EXISTING WM		1		1.00		D-5D		
S-6	5+70.0-5.6' RT	12" BEND 45D	86			10.85		S-7		
S-7	5+77.7-13.2' RT	12" BEND 45D	86			7.28		S-8		
S-8	5+85.0-13.2' RT	12" DIP (RJ)					67.00	S-9	67	BEGIN CASING
S-9	6+52.0-13.2' RT	12" DIP (RJ)				80.94		S-10		END CASING
S-10	7+32.9-13.2' RT	12" G.V. & BOX			1	3.00		S-11		RETAIN TO WEST
S-11	7+35.9-13.1' RT	CONNEC TO EXISTING WM		1						RESTORSE SREVICE TO E.
			676	3	3	676	67		67	

NOTES: CONTRACTOR TO PROVIDE A MEANS TO FLUSH & TEST NEW WATER MAIN (INCIDENTAL)
RJ IS FOR RESTAINED JOINT PIPE PAID AS 12"WM DIP CL. 52

PAVEMENT MARKINGS AND STRIPING (L)

20TH STREET SE FROM	TO	PAVEMENT MESSAGE RR XING	24" SOLID LINE WHITE	4" DOUBLE LINE YELLOW	4" BROKEN LINE WHITE
		SQ FT	LIN FT	LIN FT	LIN FT
3RD AVE SE	EAST RR TRACK	123.44	24.00	554.23	220.00
EAST RR TRACK	STA. 7+42.28	123.44	24.00	130.54	60.00
	TOTALS	247	48	685	280

CONTROL & TRAVERSE POINTS

NODE ID	LOCATION	DESCRIPTION	NORTHING	EASTING
6	0+9.01-74.81' RT	BLK COR	158167.438	620563.294
9	1+12.57-54.87' RT	TRAV PT	158187.909	620666.750
7	6+76.76-10.71' LT	TRAV PT	158256.415	621230.597
8	16+36.14-7.37' LT	TRAV PT	158258.043	622189.982

ALGNMENT ON NORTH LIP OF CURB

LINE #	LOCATION	DESCRIPTION	NORTHING	EASTING
L23	0+00	BEGIN ALIGNMENT	158242.198	620553.901
	11+46.965	END ALIGNMENT	158248.142	621700.851

Revision comment: –
Revised: –

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Russell A. Kline Date: 9-19-16 Lic. No. 24667

City of Rochester, Minnesota
Department Of Public Works
201 4th Street S.E.
Rochester, MN 55904
Phone: (507) 328-2400
FAX: (507) 328-2401

Title: TABULATIONS ON 20TH STREET SE FROM 3RD AVENUE TO 150 FT EAST OF RAILROAD TRACKS

Designer: CWF
Checker: RJK

S.A.P. No. 159-125-005 J 7306
Project No. 6220-3-15
Sheet 3 of 17 Sheets

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TOTAL VOLUME TABLE
Lip of Curb North

Station	Cut Area (SF)	Fill Area (SF)	Cut Vol (CY)	Fill Vol (CY)	Cum Cut Vol (CY)	Cum Fill Vol (CY)	Net Vol (CY)
0+41.72	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0+50.00	54.53	0.00	9.20	0.00	9.20	0.00	9.20
0+75.00	35.06	0.00	45.62	0.00	54.82	0.00	54.82
1+00.00	34.49	0.00	35.42	0.00	90.24	0.00	90.24
1+25.00	33.30	0.00	34.53	0.00	124.77	0.00	124.77
1+50.00	31.88	0.03	33.19	0.02	157.96	0.02	157.94
1+75.00	33.23	0.00	33.16	0.02	191.12	0.04	191.08
2+00.00	33.63	0.00	34.05	0.00	225.17	0.04	225.13
2+21.00	36.60	0.00	30.04	0.00	255.22	0.04	255.18
2+30.00	36.84	0.00	13.46	0.00	268.68	0.04	268.64
2+45.00	30.77	0.00	20.66	0.00	289.34	0.04	289.30
2+55.00	29.26	0.25	12.23	0.06	301.57	0.10	301.47
2+63.50	24.90	3.00	9.38	0.68	310.94	0.76	310.18
2+75.00	25.48	2.52	11.80	1.53	322.75	2.29	320.45
3+00.00	26.32	1.84	26.38	2.62	349.13	4.91	344.21
3+25.00	25.83	1.00	26.56	1.71	375.68	6.62	369.06
3+50.00	27.63	0.51	27.22	0.91	402.91	7.53	395.38
3+75.00	26.12	0.88	27.37	0.84	430.28	8.36	421.91
4+00.00	26.48	0.66	26.79	0.93	457.07	9.29	447.77
4+25.00	26.79	0.55	27.13	0.73	484.20	10.02	474.18
4+50.00	28.88	0.07	28.35	0.37	512.55	10.39	502.16
4+75.00	30.20	0.00	30.09	0.04	542.63	10.44	532.20

TOTAL VOLUME TABLE
Lip of Curb North

Station	Cut Area (SF)	Fill Area (SF)	Cut Vol (CY)	Fill Vol (CY)	Cum Cut Vol (CY)	Cum Fill Vol (CY)	Net Vol (CY)
4+91.60	24.47	1.19	18.49	0.48	561.12	10.91	550.21
5+00.00	55.96	0.00	13.76	0.24	574.88	11.15	563.73
5+25.00	49.70	0.11	53.81	0.07	628.69	11.22	617.47
5+33.60	37.34	4.11	15.25	0.87	643.94	12.10	631.84
5+43.30	34.05	1.80	14.11	1.38	658.05	13.48	644.57
5+51.00	36.45	0.00	11.06	0.33	669.10	13.81	655.29
5+65.00	27.78	0.00	18.31	0.00	687.42	13.81	673.61
5+80.00	29.92	0.00	17.63	0.00	705.05	13.81	691.24
5+88.40	15.55	2.35	7.78	0.47	712.83	14.28	698.54
5+92.83	15.43	3.45	2.80	0.62	715.62	14.90	700.72
6+07.65	24.84	0.50	12.16	1.41	727.78	16.31	711.47
6+20.00	39.29	0.06	16.13	0.17	743.91	16.48	727.43
6+30.19	48.84	0.00	18.29	0.02	762.21	16.50	745.71
6+39.94	44.56	0.00	18.55	0.00	780.76	16.50	764.26
6+55.00	54.75	2.63	30.47	0.95	811.22	17.45	793.78
6+68.92	66.73	0.00	34.45	0.88	845.67	18.33	827.34
6+73.04	69.77	0.00	11.46	0.00	857.13	18.33	838.80
6+89.50	73.97	0.00	48.20	0.00	905.32	18.33	886.99
7+00.00	70.10	0.00	30.82	0.00	936.14	18.33	917.81
7+18.80	65.61	0.00	51.97	0.00	988.11	18.33	969.78
7+30.00	47.81	0.00	25.88	0.00	1013.99	18.33	995.66
7+41.80	40.62	0.00	21.26	0.00	1035.24	18.33	1016.92

COMMON EXCAVATION (M)	
TOTAL EXCAVATION	1,035
CONC PVMT REMOVAL	504
CONC WALK REMOVAL	54
CONC DRIVE REMOVAL	25
EMBANKMENT (CV)	18
COMMON EXCAVATION	451
EXCESS MATERIAL AVAILABLE (CV)	433

Revision comment: —
Revised: —

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.

Russell A. Klein Date: 9-19-16 Lic. No. 24667

Department Of Public Works
City of Rochester, Minnesota
201 4th Street S.E.
Rochester, MN 55904
www.rochestermn.gov/departments/public-works
Phone: (507) 328-2400 FAX:(507) 328-2401

TABULATIONS
ON 20TH STREET SE
FROM 3RD AVE TO 150' EAST OF RAILROAD TRACKS

Designer: CWF
Checker: RJK

S.A.P. No. 159-125-005
City Job# 7306
Sheet 4 of 17 Sheets

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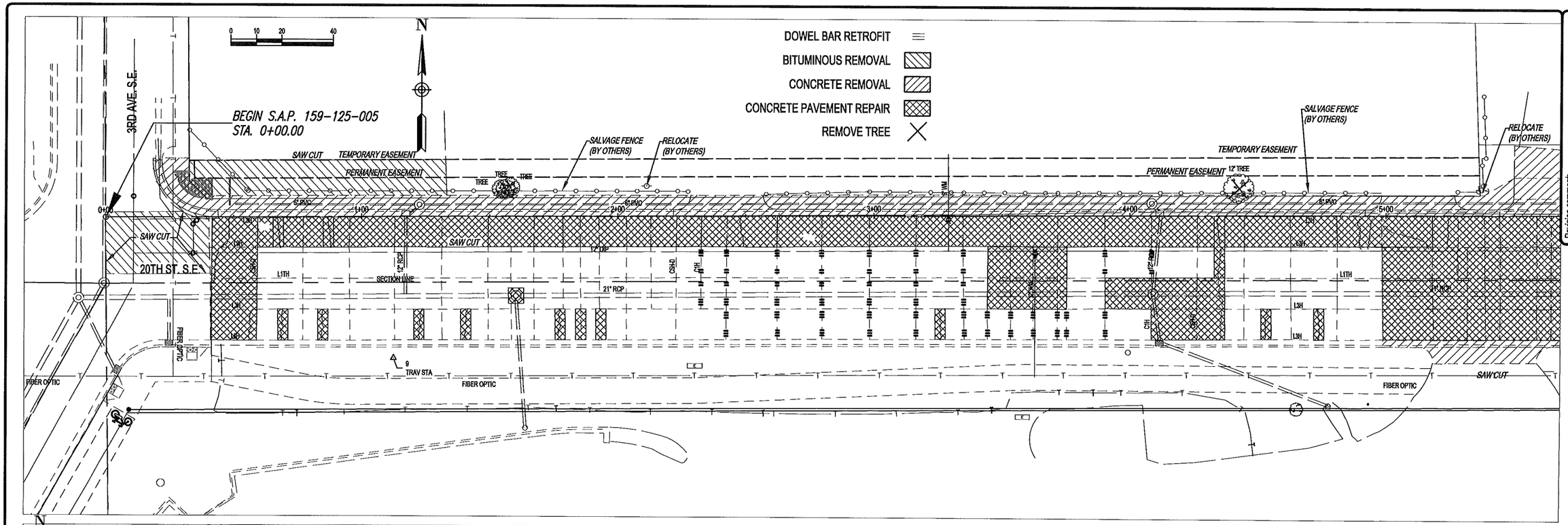

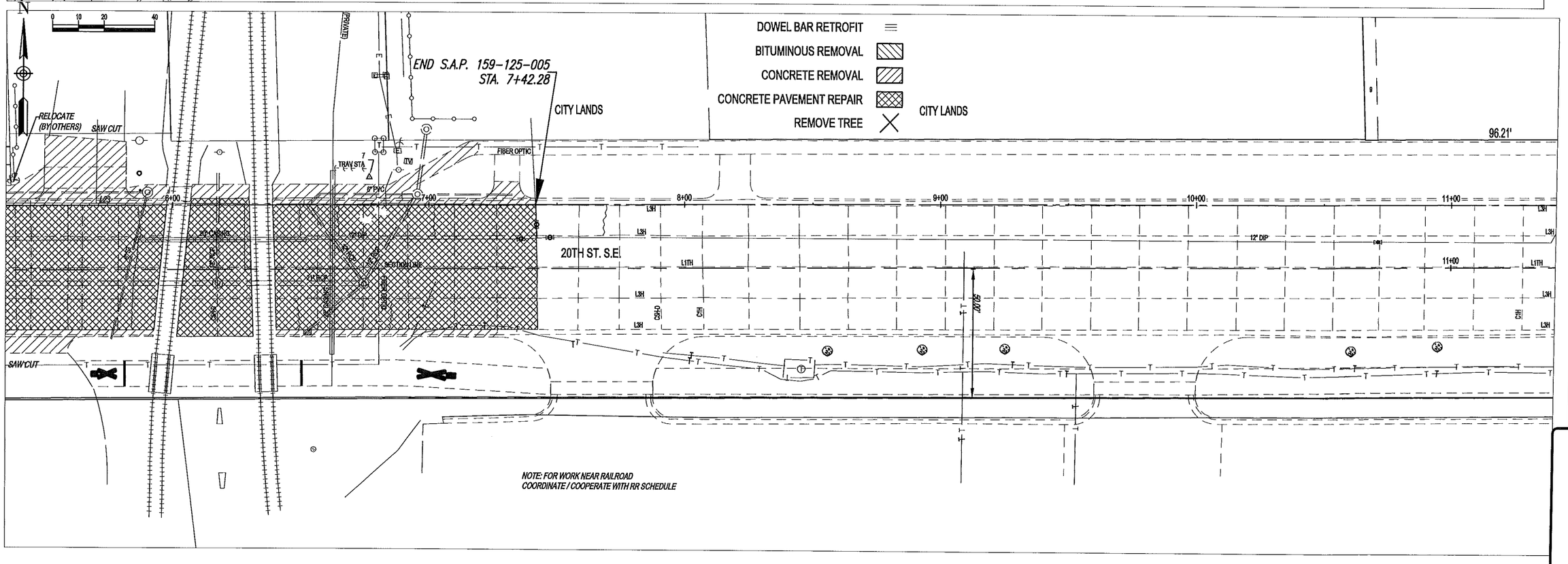

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REMOVALS AND CONCRETE REPAIRS
ON 20TH STREET SE
FROM 3RD AVENUE TO 11TH AVENUE SE

Designer: CWF
Checker: RJK

S.A.P. No. 159-125-005
City Job# 7306
Sheet 5 of 17 Sheets

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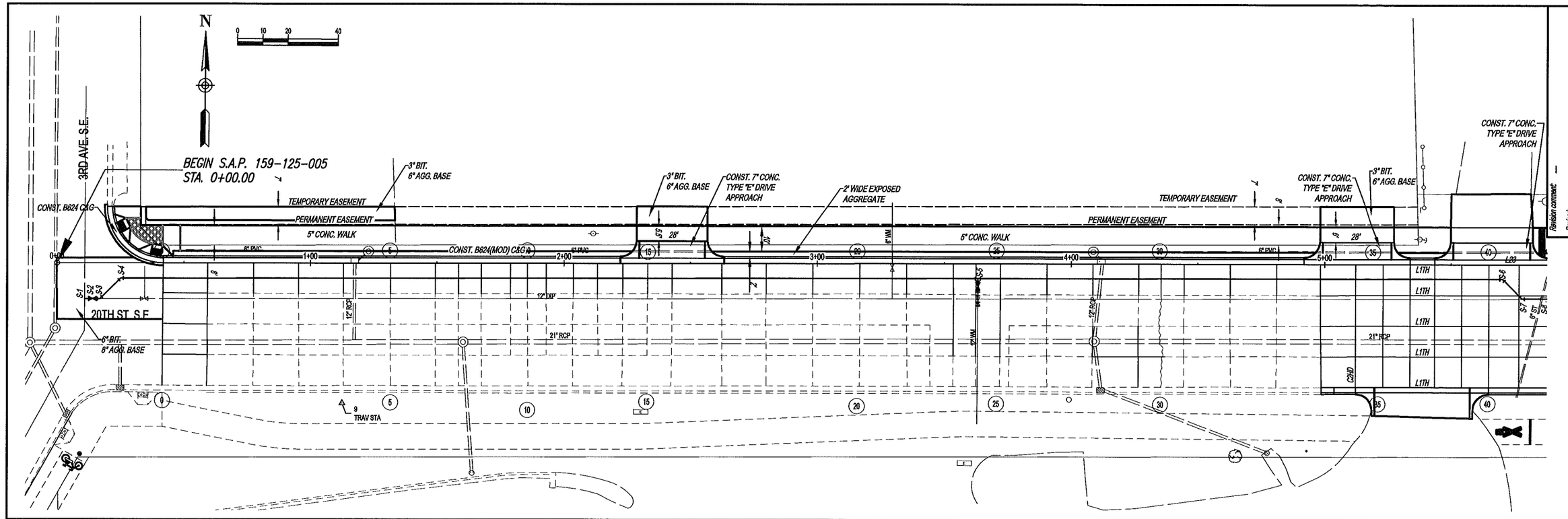

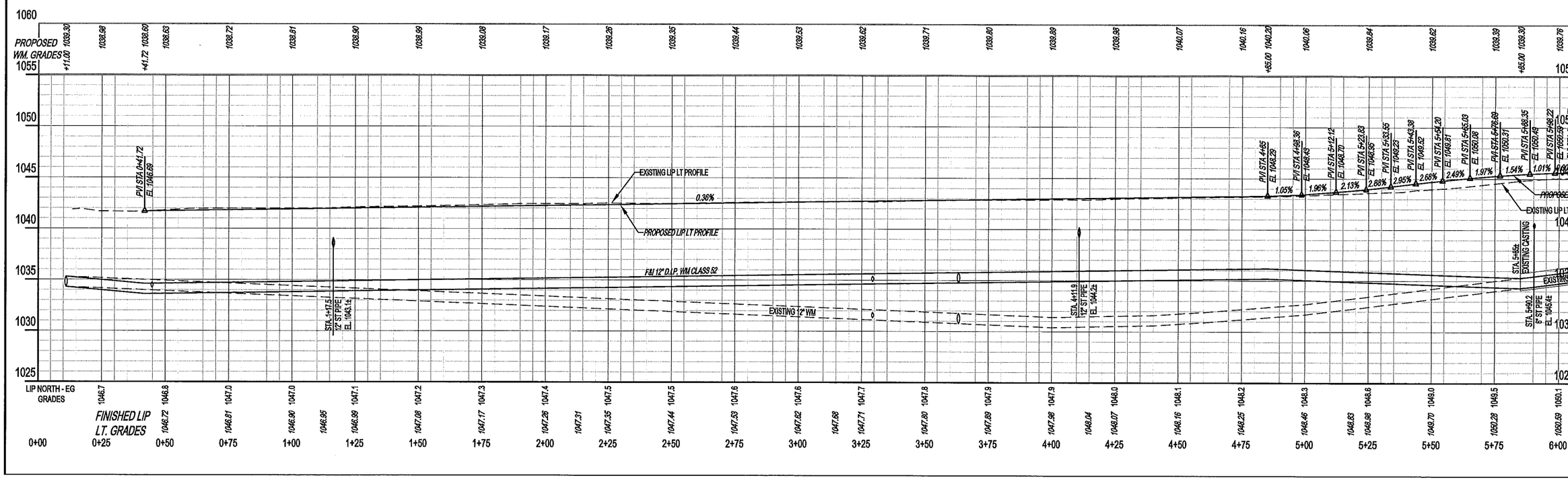

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Department Of Public Works
201 4th Street S.E.
Rochester, MN 55904
Phone: (507) 328-2400
FAX: (507) 328-2401

I hereby certify that this plan was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.
Date: 9-19-16 Lic. No. 24667

Title: CONCRETE REHAB AND WATERMAIN ON 20TH STREET SE FROM 3RD AVE TO 150' EAST OF RAILROAD TRACKS

Designer: CWF
Checker: RJK

S.A.P. No. 159-125-005
Project No. 6220-3-15 J7306
Sheet 6 of 17 Sheets

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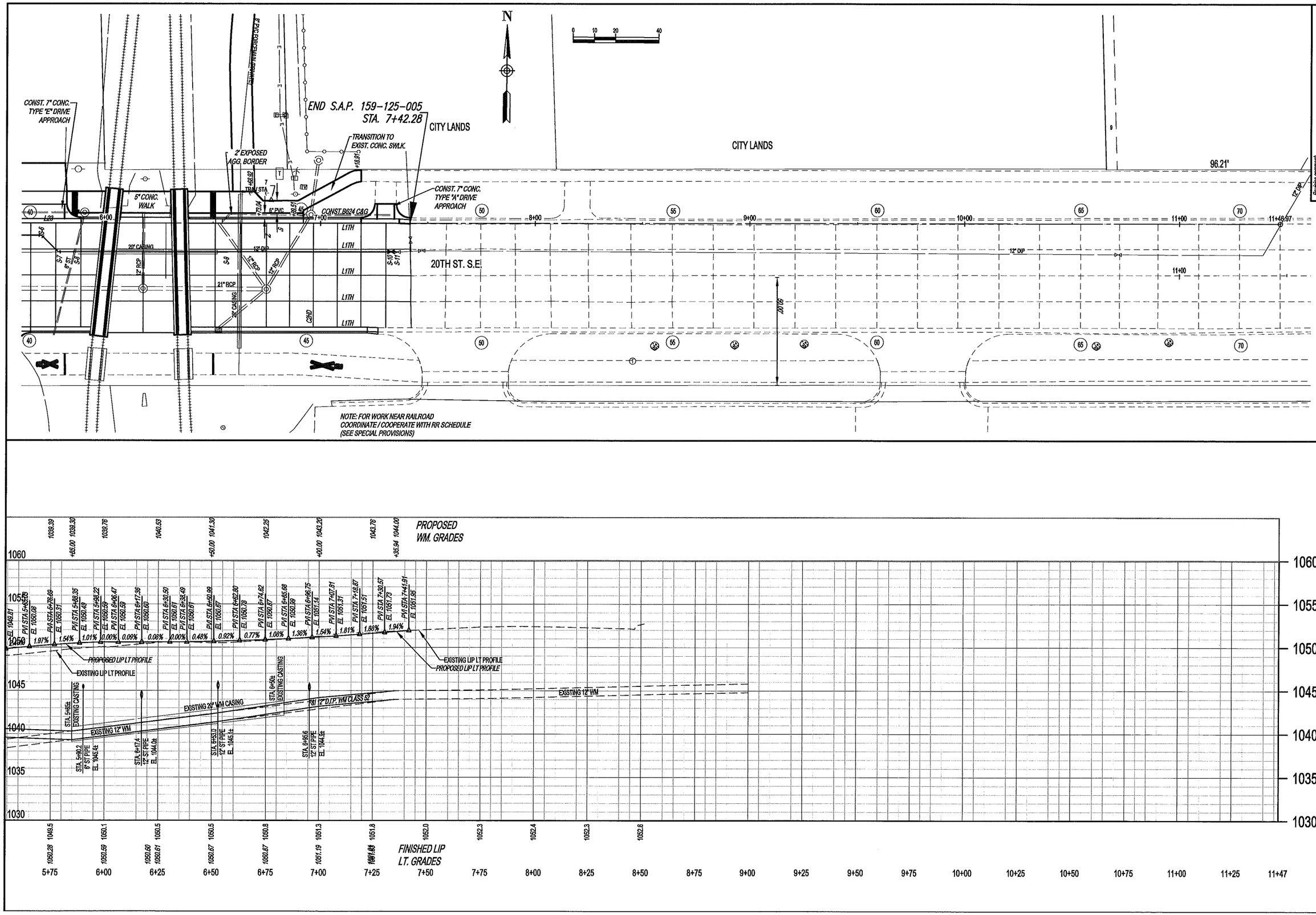

Revision comment: —
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City of Rochester, Minnesota
Department Of Public Works
201 4th Street S.E.
Rochester, MN 55904
Phone: (507) 328-3450
FAX: (507) 328-2401

Title: CONCRETE REHAB AND WATERMAIN ON 20TH STREET SE FROM 3RD AVE TO 150' EAST OF RAILROAD TRACKS

Designer: CMF
Checker: RJK

S.A.P. No. 159-125-005
Project No. 6220-3-15 J7306
Sheet 7 of 17 Sheets

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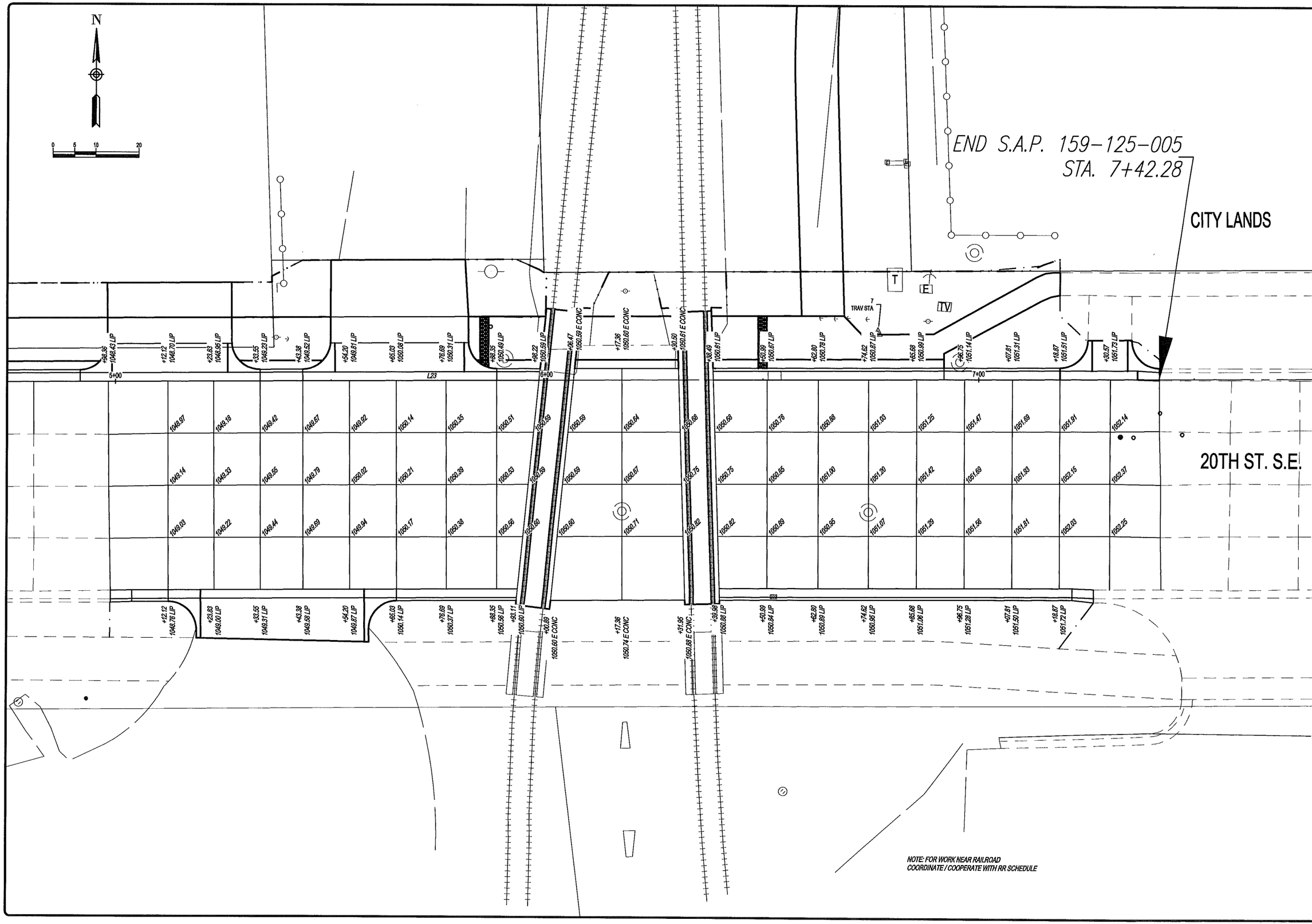

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Rochester, MN 55904
www.rochestermn.gov/departments/public-works
Phone: (507) 328-2400 FAX: (507) 328-2401

CONCRETE GRADES AT RAILROAD CROSSING
ON 20TH STREET SE
FROM 3RD AVE TO 150' EAST OF RAILROAD TRACKS

Designer: CMF
Checker: RJK

S.A.P. No. 159-125-005
City Job# 7306
Sheet 8 of 17 Sheets

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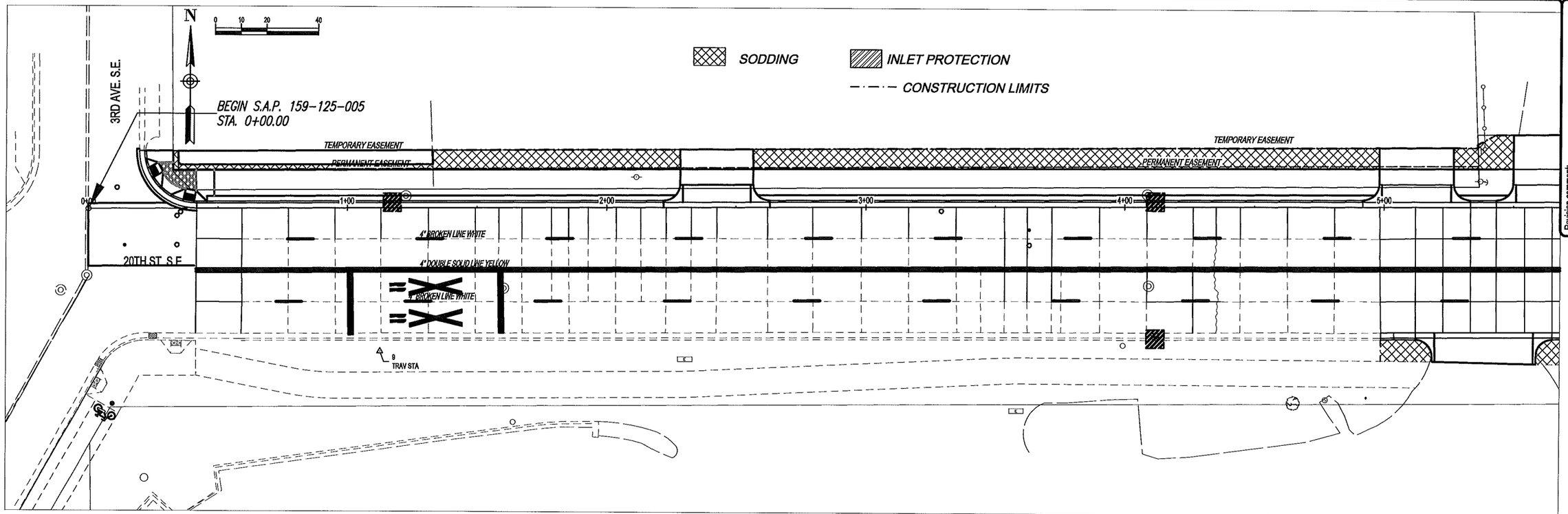

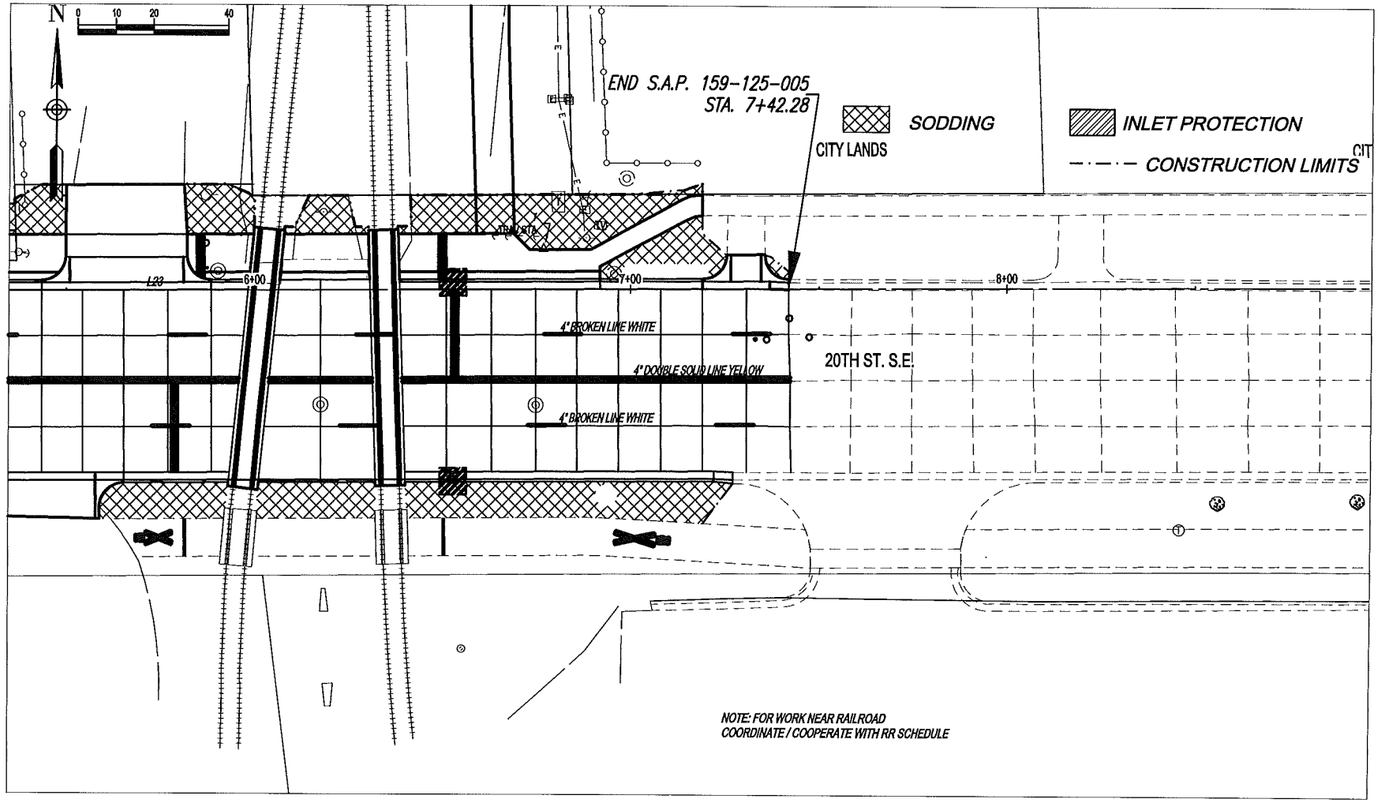

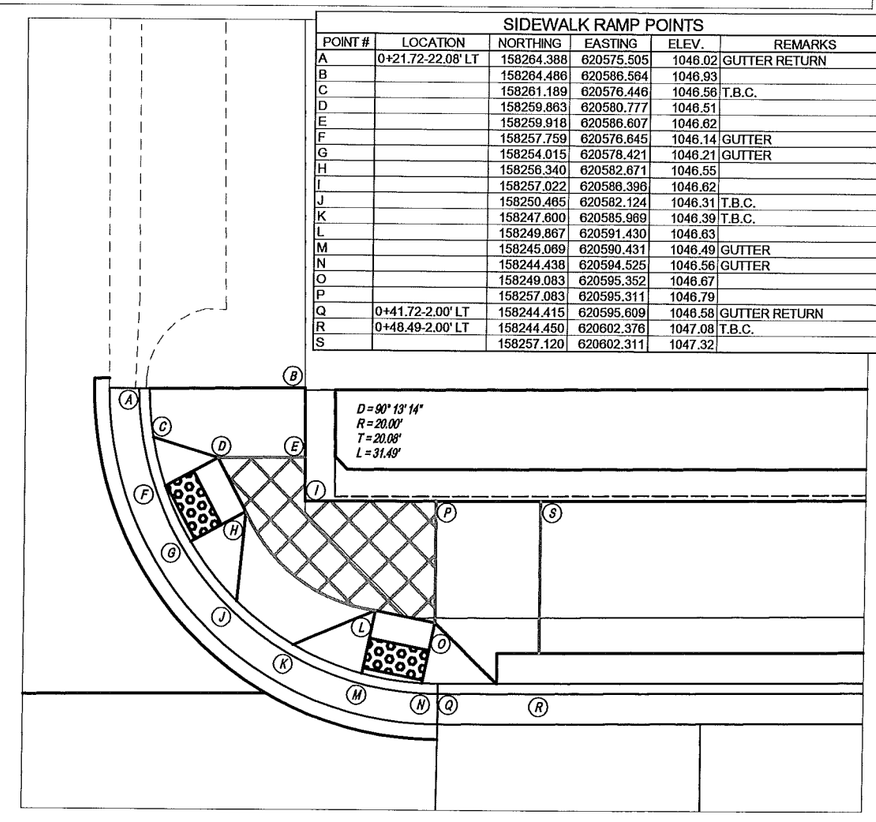

SIDEWALK RAMP POINTS

POINT #	LOCATION	NORTHING	EASTING	ELEV.	REMARKS
A	0+21.72-22.08' LT	158264.388	620575.505	1046.02	GUTTER RETURN
B		158264.486	620586.564	1046.93	
C		158261.189	620576.446	1046.56	T.B.C.
D		158259.863	620580.777	1046.51	
E		158259.918	620586.607	1046.62	
F		158257.759	620576.645	1046.14	GUTTER
G		158254.015	620578.421	1046.21	GUTTER
H		158256.340	620582.671	1046.55	
I		158257.022	620586.396	1046.62	
J		158250.465	620582.124	1046.31	T.B.C.
K		158247.600	620585.969	1046.39	T.B.C.
L		158249.867	620591.430	1046.63	
M		158245.069	620590.431	1046.49	GUTTER
N		158244.438	620594.525	1046.56	GUTTER
O		158249.083	620595.352	1046.67	
P		158257.083	620595.311	1046.79	
Q	0+41.72-2.00' LT	158244.415	620595.609	1046.58	GUTTER RETURN
R	0+48.49-2.00' LT	158244.450	620602.376	1047.08	T.B.C.
S		158257.120	620602.311	1047.32	

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Revised: --

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Rochester, MN 55904
www.rochestermn.gov/departments/public-works
Phone: (507) 328-2400 FAX:(507) 328-2401

TURF ESTAB, STRIPING AND SWILK RAMPS
ON 20TH STREET SE
FROM 3RD AVE TO 150' EAST OF RAILROAD TRACKS

Designer: CWF
Checker: RJK

S.A.P. No. 159-125-005
City Job# 7306
Sheet 9 of 17 Sheets

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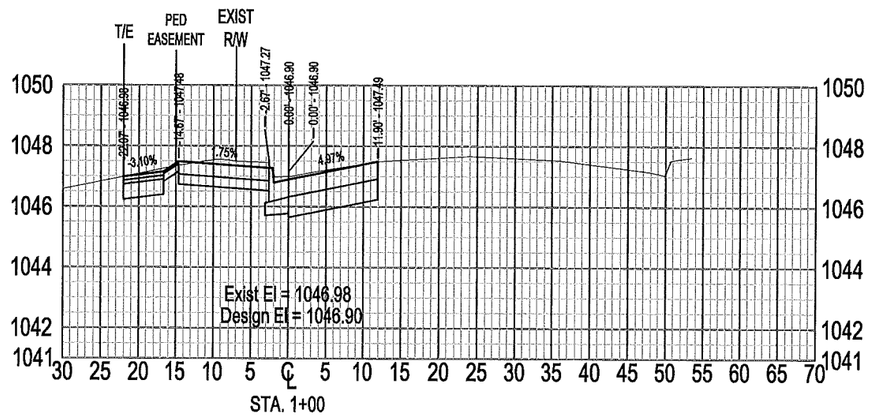

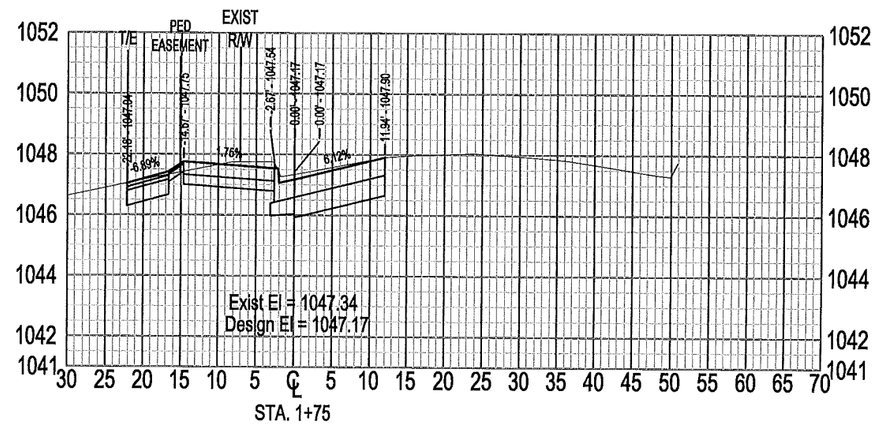

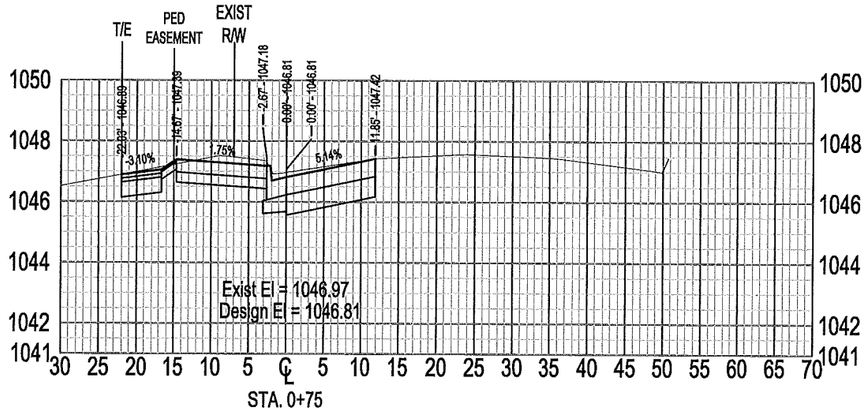

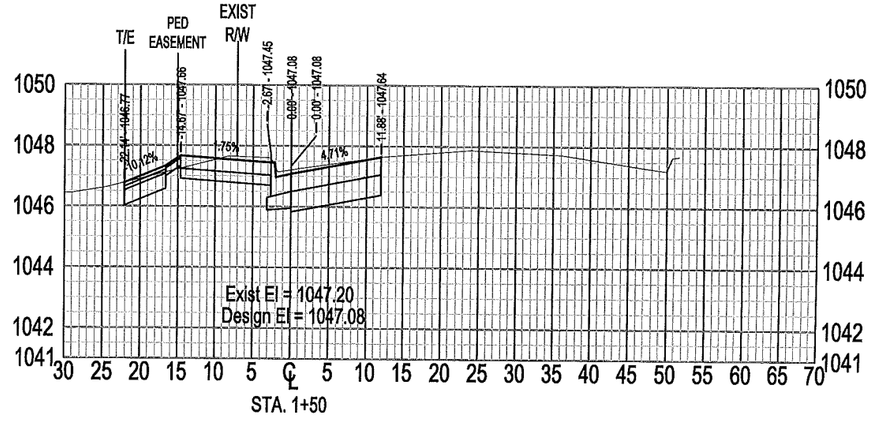

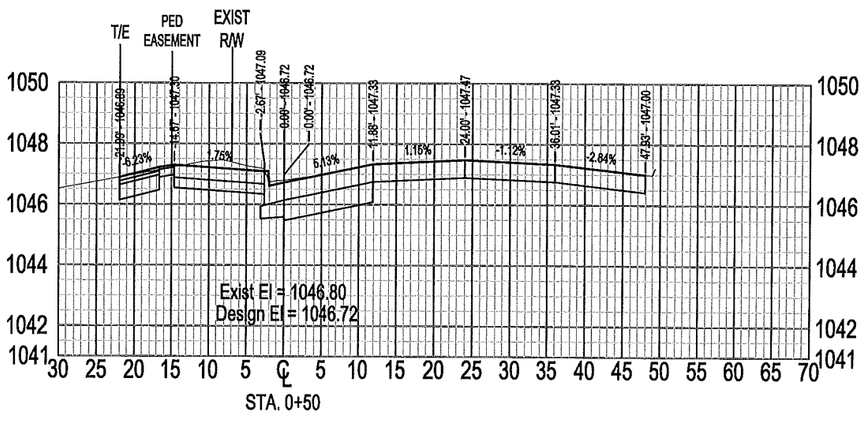

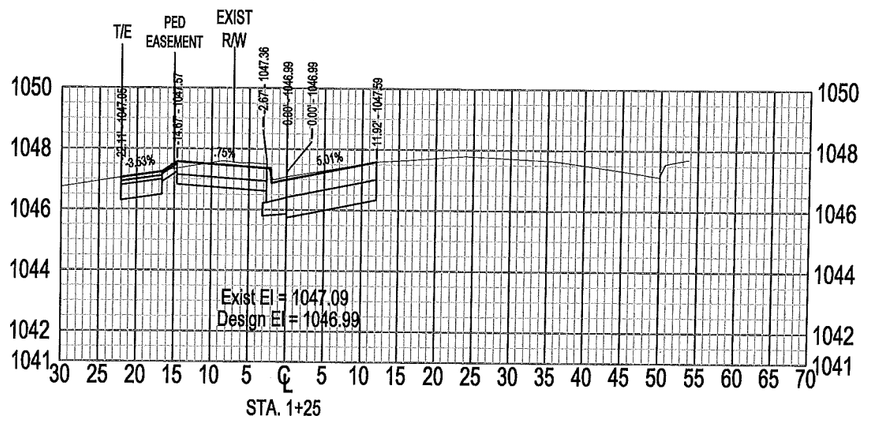

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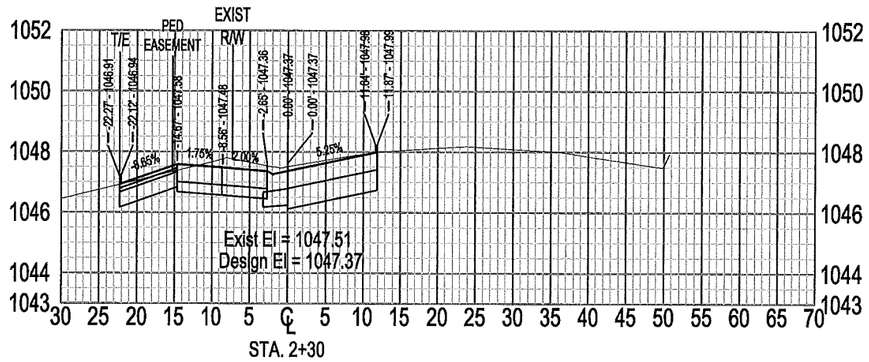

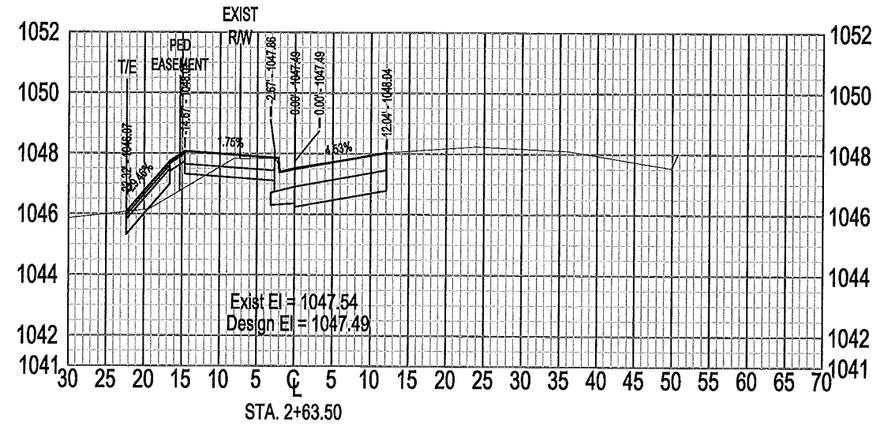

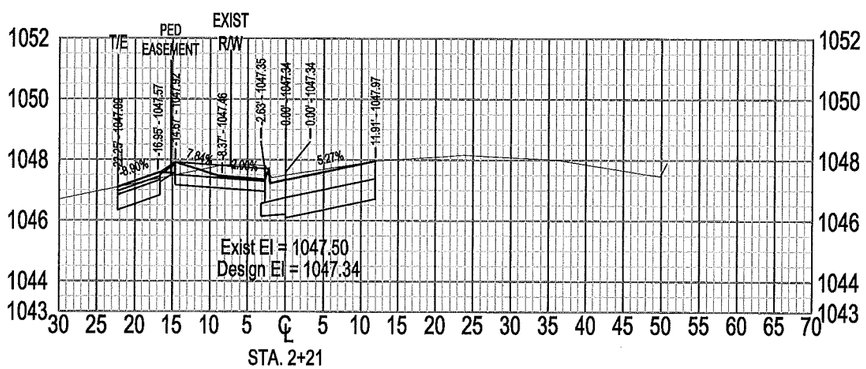

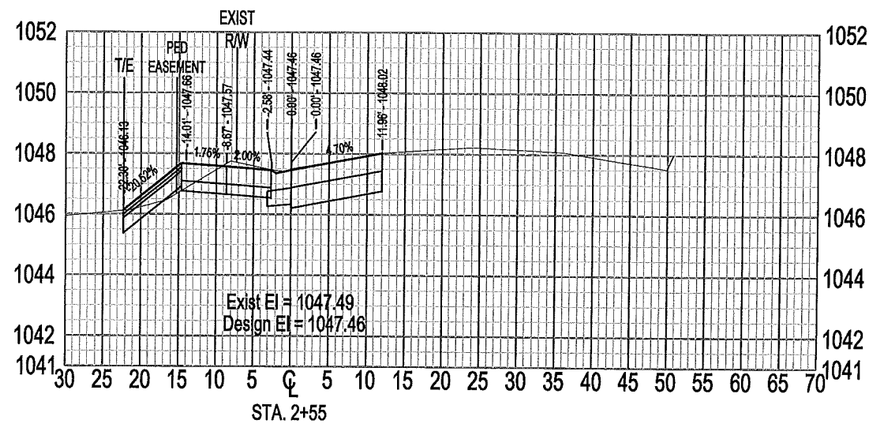

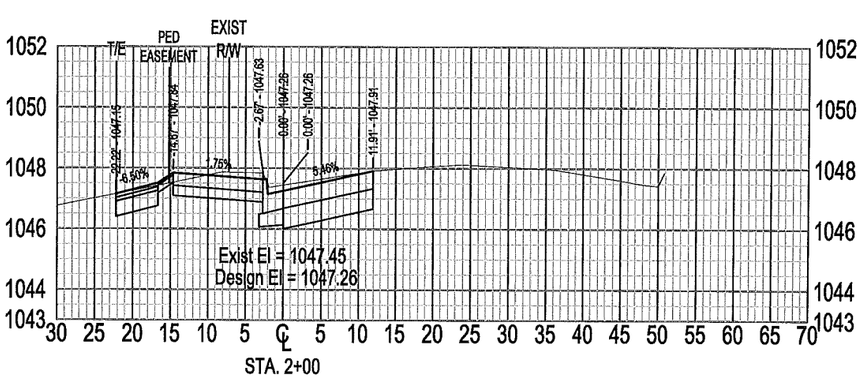

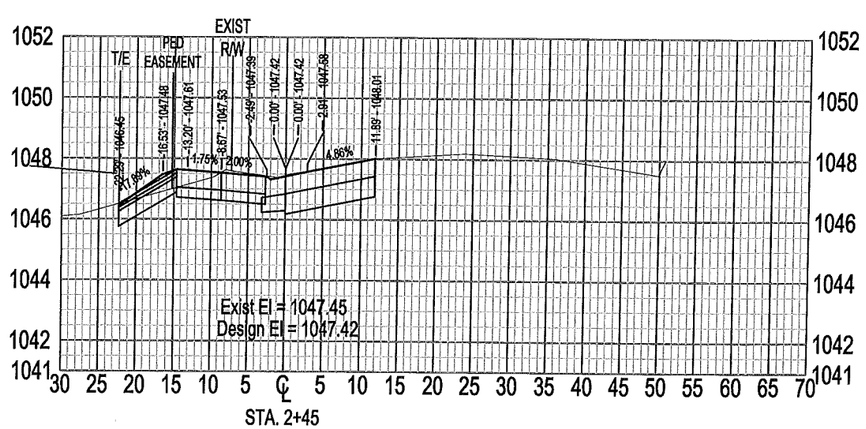

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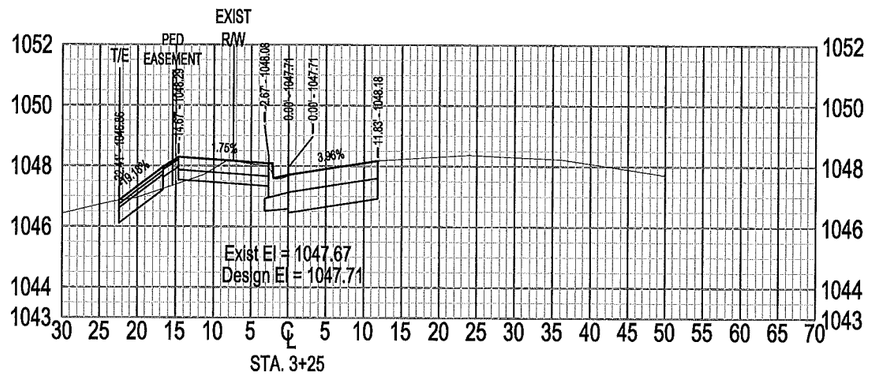

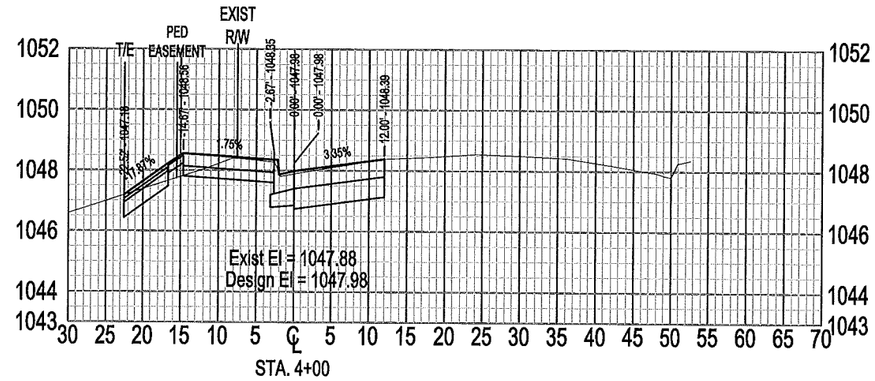

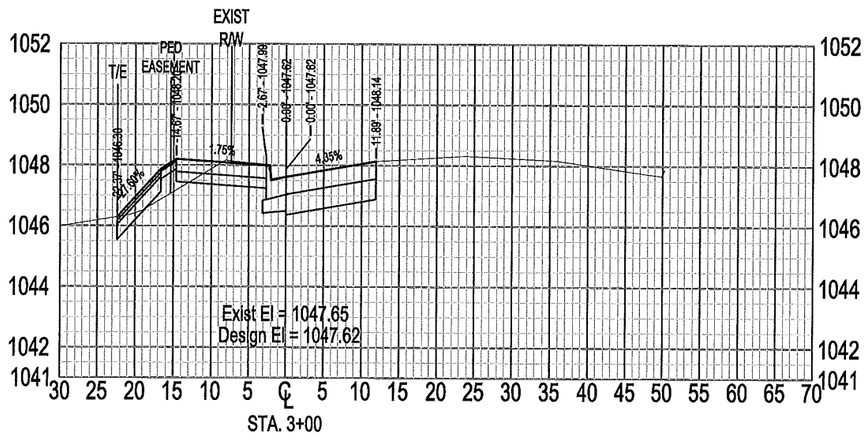

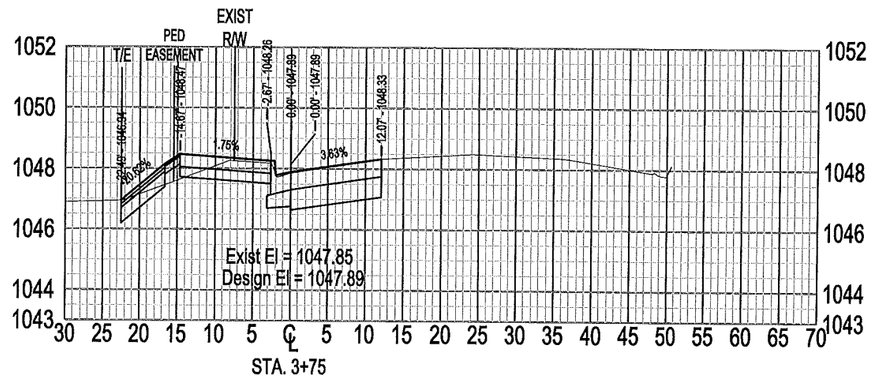

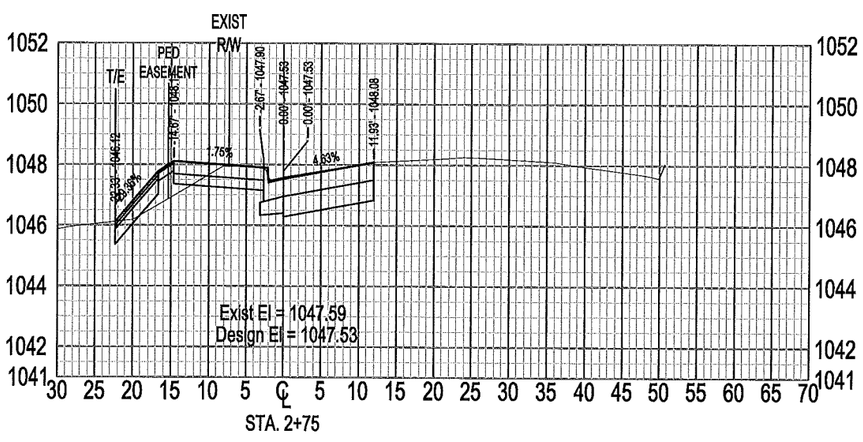

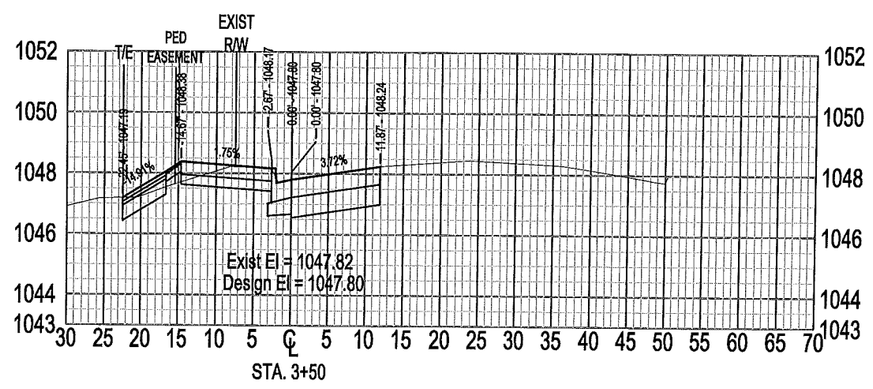

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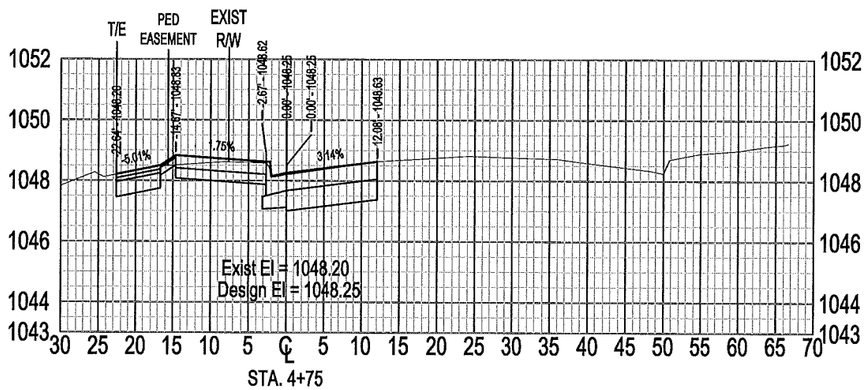

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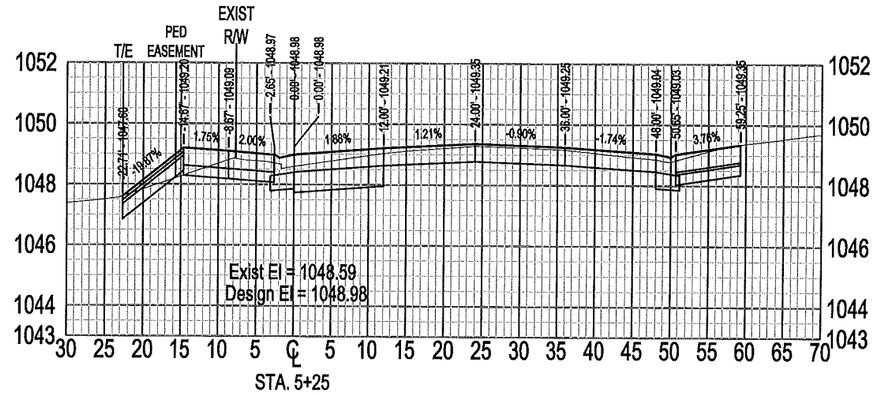

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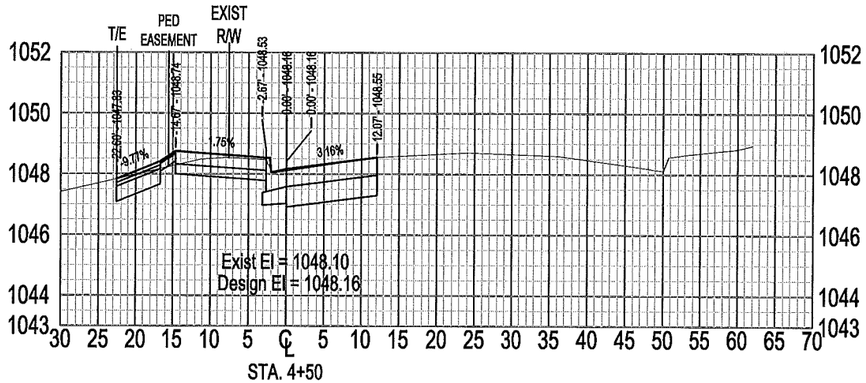

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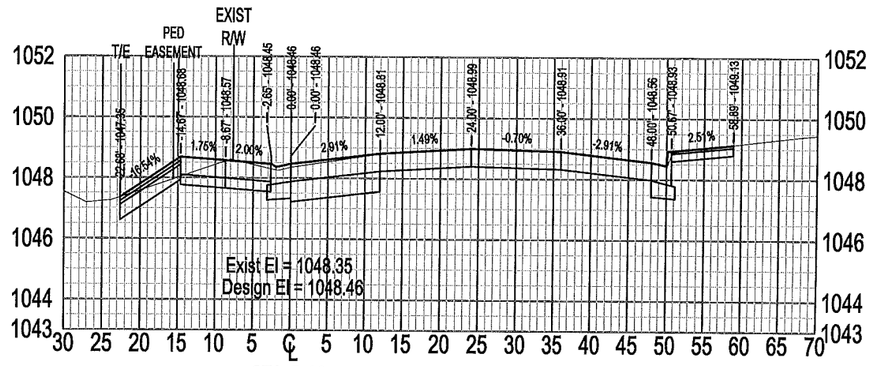

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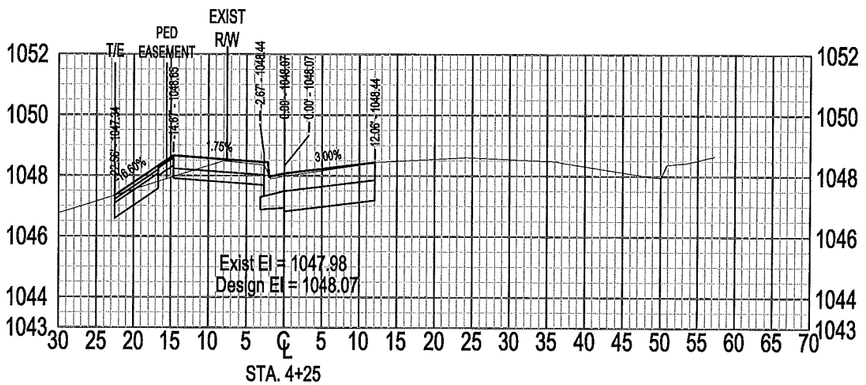

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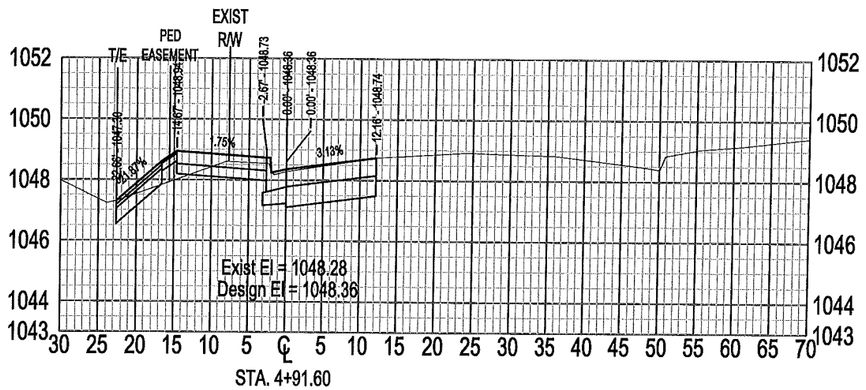

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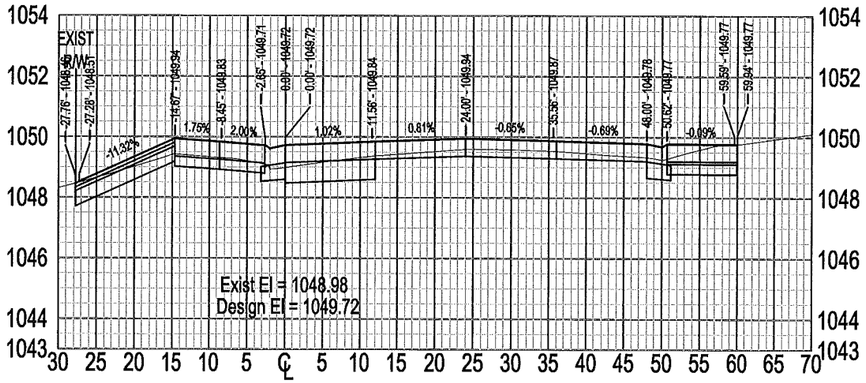

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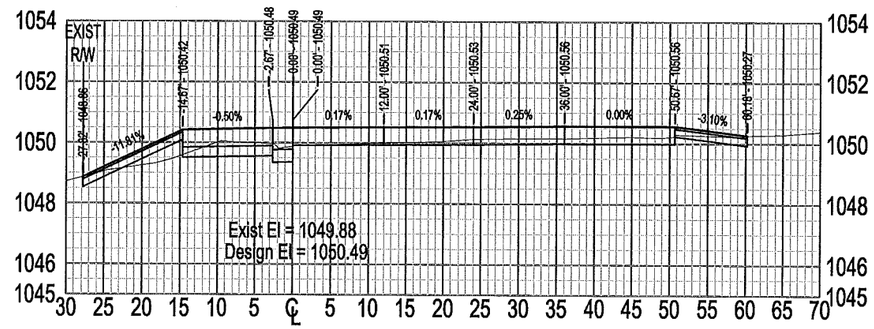

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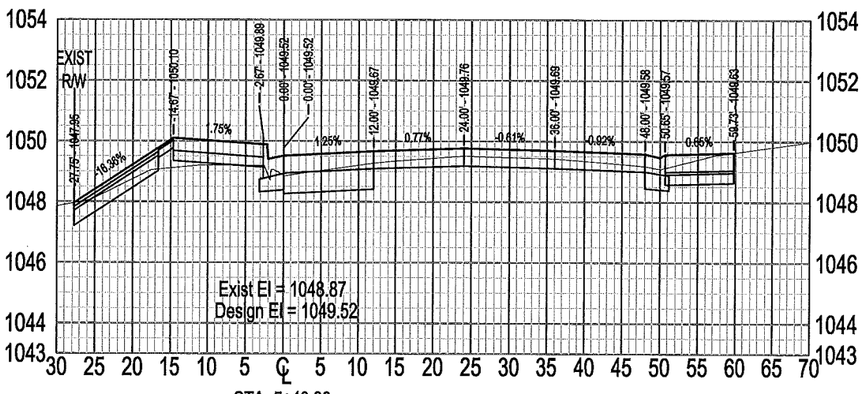

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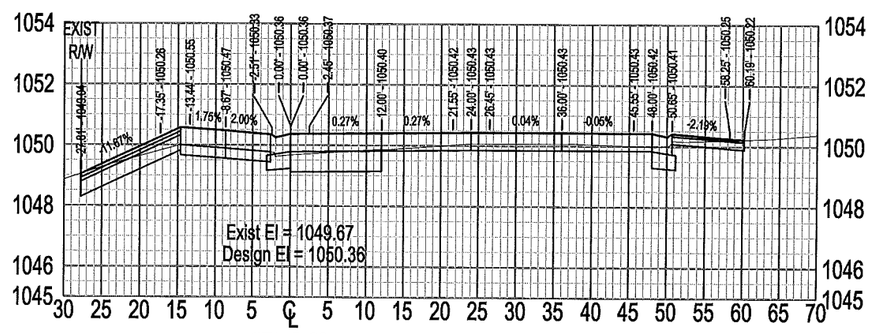

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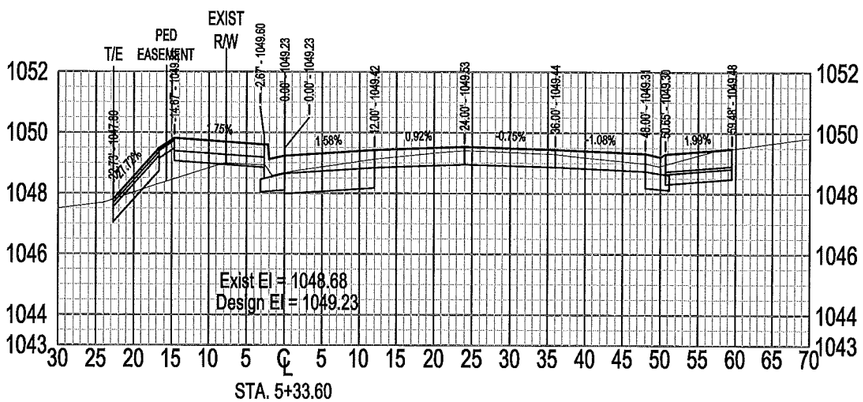

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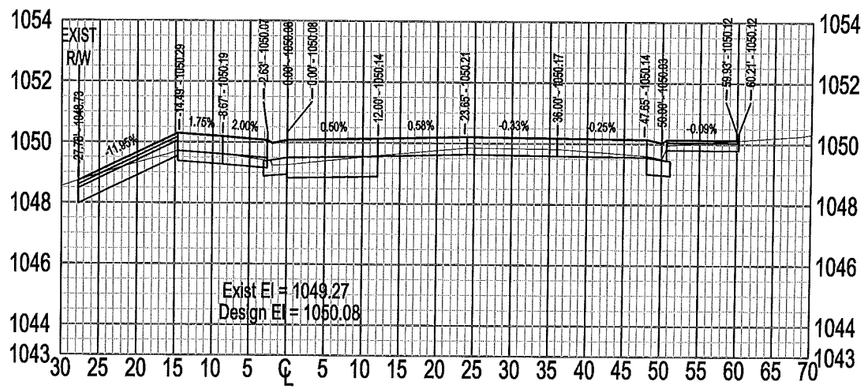

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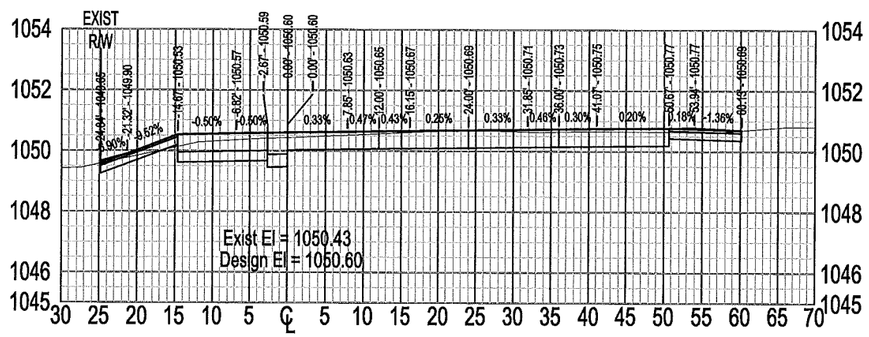

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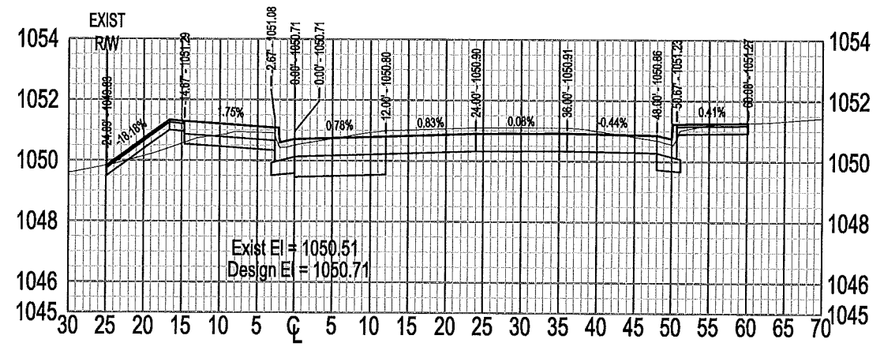

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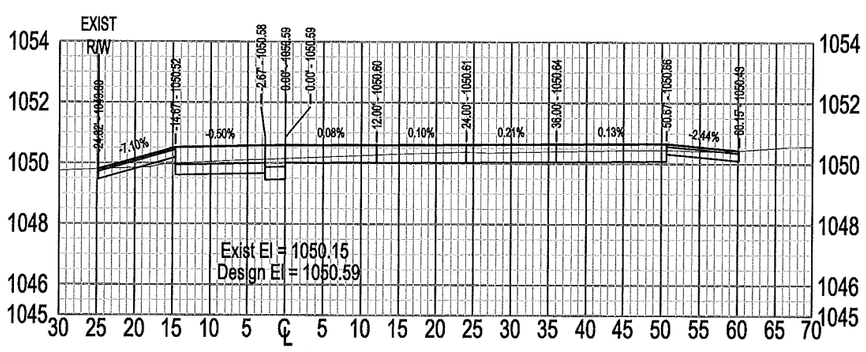

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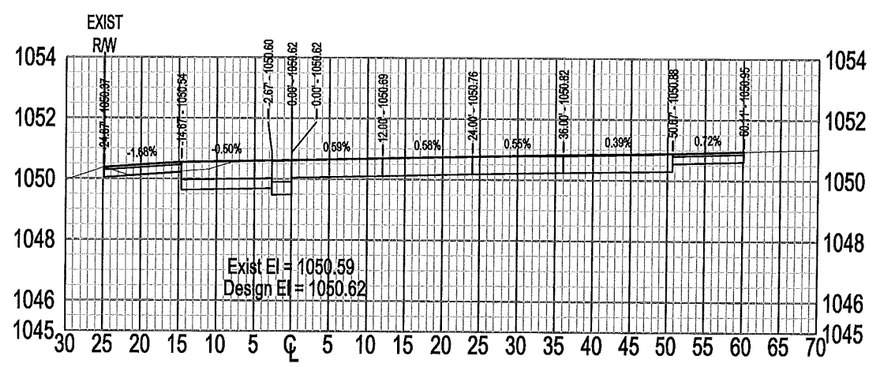

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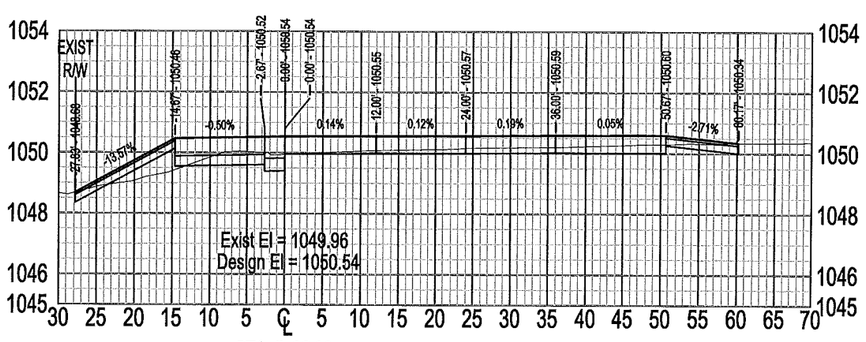

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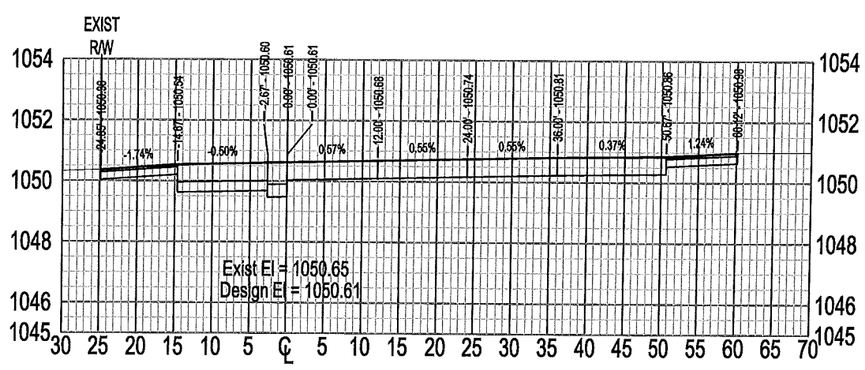

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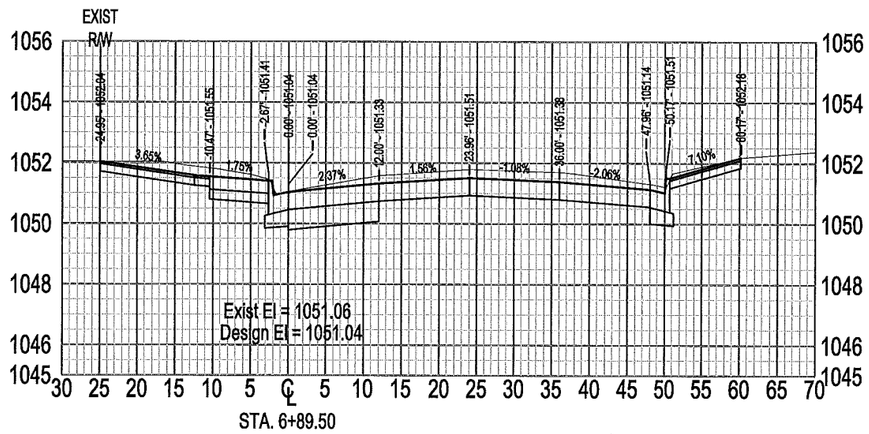

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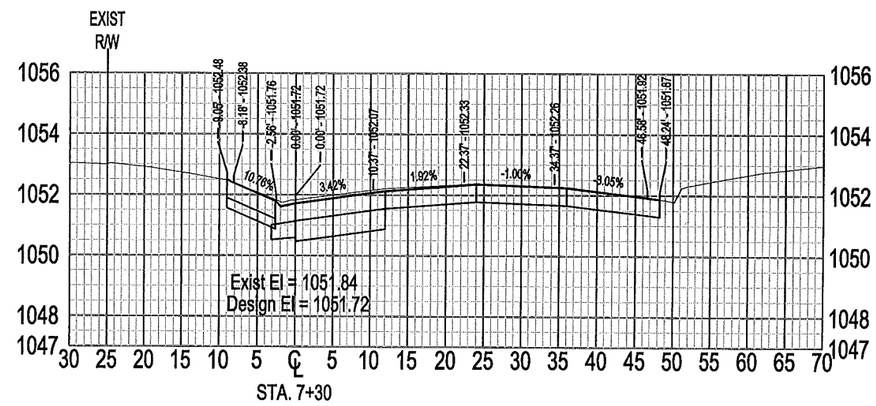

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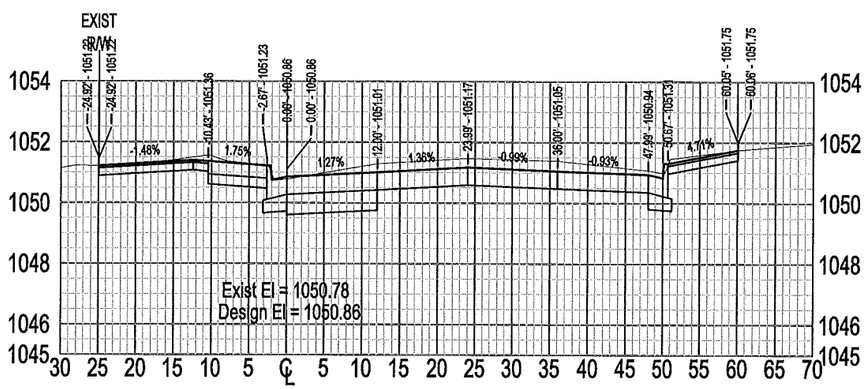

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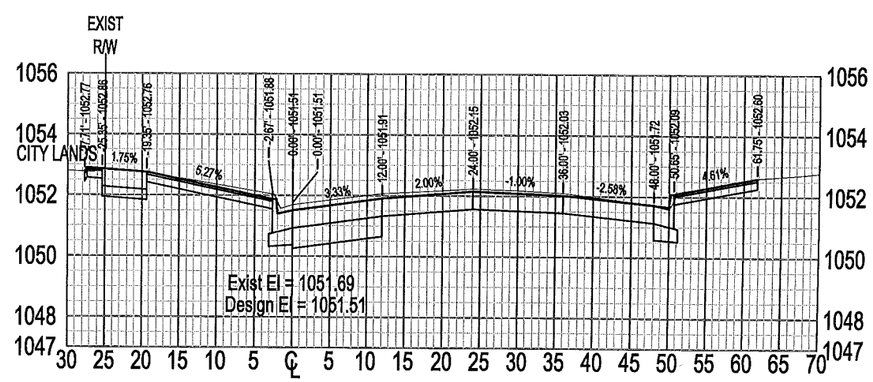

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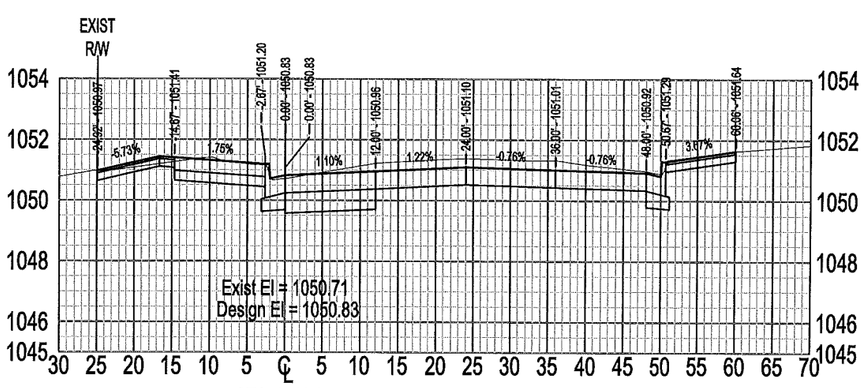

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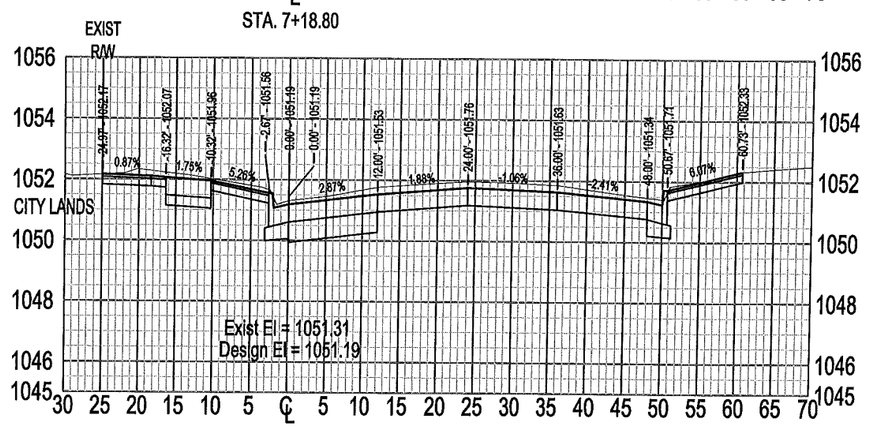

STA. 7+00

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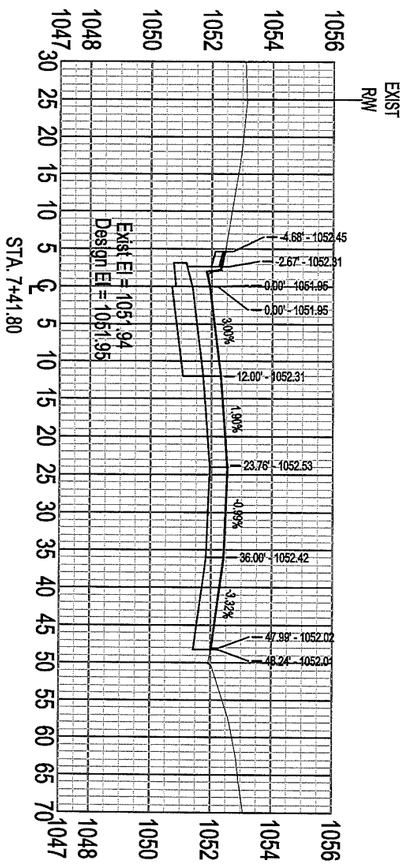

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