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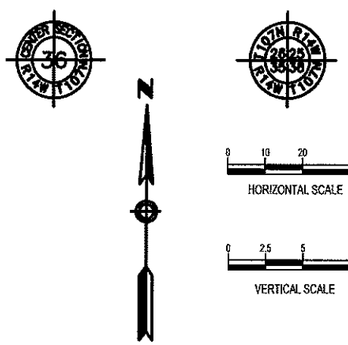
ELECTRONIC FILE

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	
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	FD'N.
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

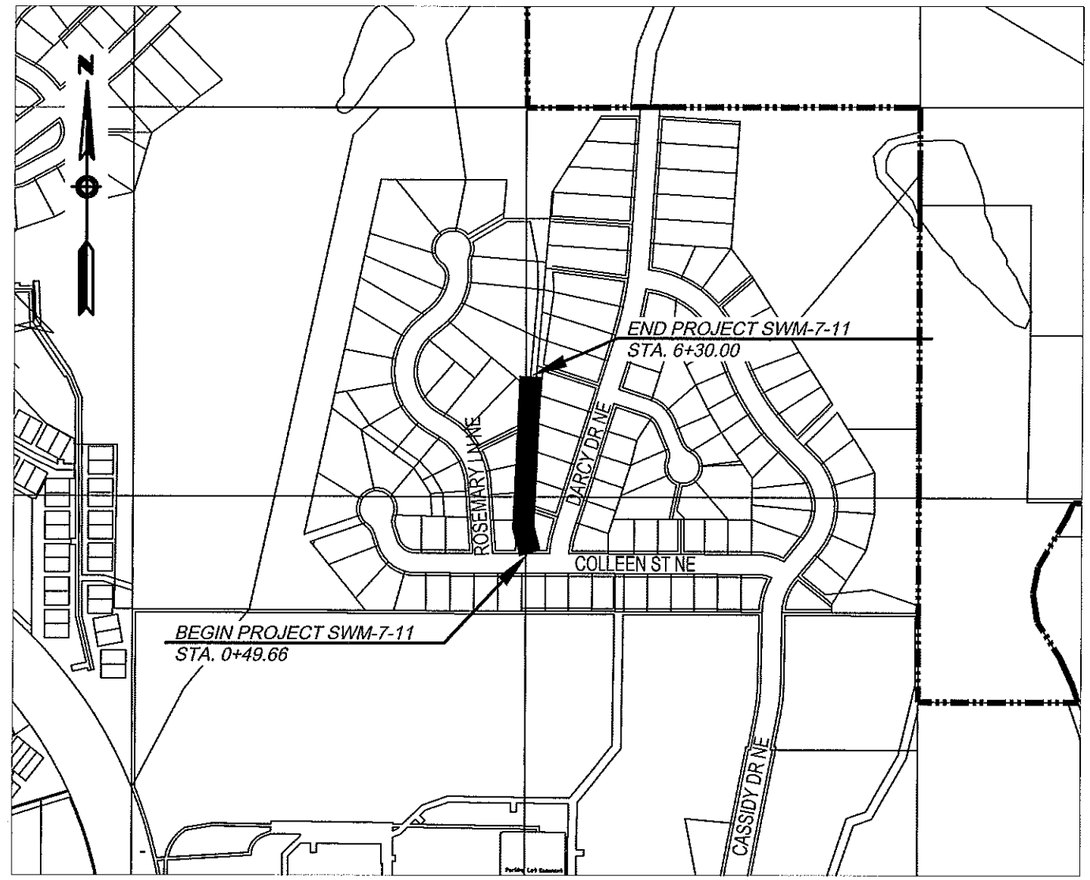


City of Rochester, Minnesota

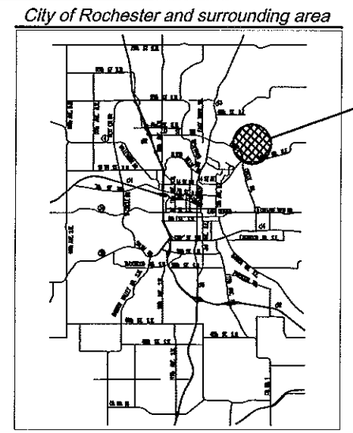
Department Of Public Works

EMERALD HILLS DRAINAGEWAY REPAIR

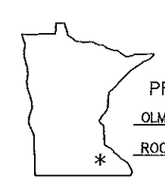
TOWNSHIP 107N RANGE 13W SECTION 9



City of Rochester and surrounding area



APPROXIMATE PROJECT LOCATION



PROJECT LOCATION

OLMSTED COUNTY

ROCHESTER DISTRICT

GOVERNING SPECIFICATIONS

State of Minnesota

The 2014 edition of the Minnesota Department of Transportation "Standard Specifications for Construction" shall govern except as modified by special provision.

City of Rochester, Minnesota

- General Requirements and Covenants for Public Works Construction, 2000 edition.
- S100 Standard Specifications for Sewer Construction.
- C150 Standard Specifications for Construction of Service Connections.
- W200 Standard Specifications for Watermain Construction.
- T100 Standard Specifications for Trench Excavation, Backfill & Surface Restoration
- C700 Standard Specifications for Sidewalk Construction.

UTILITY QUALITY LEVEL

The subsurface utility information in this plan is 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."

INDEX TO PLANS

Sheet Title	Sht. No.
TITLE SHEET	1
ESTIMATED QUANTITIES, TYPICAL SECTIONS & TABULATIONS	2
REMOVALS	3
GRADING & UNDERGROUND	4 - 5
EROSION CONTROL & TURF ESTABLISHMENT	6 - 7
CROSS SECTIONS	8-10

This plan contains 10 Total sheets

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

7-6-15

Alvin L. Horstmann, Design Technician — Date

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: 7-1-15 — Registration Number 24667

6/30/15

Approved: Douglas Nelson, Assist. City of Rochester Engineer — Date

7/1/15

Approved: Richard Frease, City of Rochester Engineer — Date

Project No SWM-7-11 J 6612

Sheet 1 of 10 Sheets

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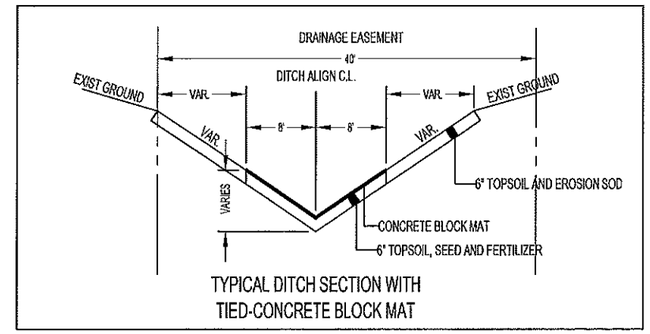
ESTIMATED QUANTITIES

NOTES	TABLE	SHEET NO	SPECIFICATION REFERENCE NUMBER	ITEM DESCRIPTION	UNIT	TOTAL ESTIMATED QUANTITY
			2021.501/00010	MOBILIZATION	LS	1
		3	2101.511/00010	CLEARING AND GRUBBING	LS	1
		3	2104.501/00016	REMOVE SEWER PIPE (STORM)	L F	127
		3	2104.503/00021	REMOVE CONCRETE WALK	S F	143
		3	2104.509/00012	REMOVE METAL APRON	EACH	1
		3	2104.523/00095	SALVAGE PIPE APRON	EACH	1
	A	2	2105.501/00010	COMMON EXCAVATION (P)	C Y	202
	A	2	2105.523/00030	COMMON BORROW (CV) (P)	C Y	410
	B	4	2501.573/00017	INSTALL PIPE APRON	EACH	1
	C	4	2503.511/90152	15" RC PIPE SEWER	L F	139
	C	4	2503.511/90242	24" RC PIPE SEWER	L F	350
	B	4	2503.602/00042	CONNECT TO EXISTING STORM SEWER	EACH	2
1	B	4	2506.602/00081	CONST DRAINAGE STRUCTURE DESIGN SPEC 1	EACH	1
2	B	4	2506.602/00082	CONST DRAINAGE STRUCTURE DESIGN SPEC 2	EACH	1
		4	2511.501/00014	RANDOM RIPRAP CLASS IV	C Y	14
		4	2511.515/00014	GEOTEXTILE FILTER TYPE IV	S Y	40
		4	2521.501/00040	4" CONCRETE WALK	S F	143
		6	2573.502/00010	SILT FENCE, TYPE HEAVY DUTY	L F	1,301.00
		6	2573.530/00010	STORM DRAIN INLET PROTECTION	EACH	1
			2573.535/00010	STABILIZED CONSTRUCTION EXIT	LS	1
	A	2	2574.525/00020	SELECT TOPSOIL BORROW	C Y	119
		7	2575.505/00060	SODDING TYPE MINERAL	S Y	1420
3		4	2575.605/00704	SITE RESTORATION TYPE 4	ACRE	0.15

NOTES:
1 48" DROP INLET
2 60" DROP INLET
3 INCLUDES SEED AND FERTILIZER



TYPICAL DITCH SECTION WITH TIED-CONCRETE BLOCK MAT

DITCH EXCAVATION AND TOPSOIL VOLUMES

Total Volume Table

Station	Cut Area	Fill Area	Cut Vol	Fill Vol	Cum Cut Vol	Cum Fill Vol	Net Vol
1+26.33	15.35	0.00	0.00	0.00	0.00	0.00	0.00
1+43.00	10.42	6.24	8.75	2.51	8.75	2.51	6.25
1+50.00	1.23	56.41	1.56	10.71	10.31	13.21	-2.91
1+75.00	1.48	26.41	1.38	49.85	11.68	63.06	-51.38
2+00.00	1.68	19.63	1.61	27.71	13.29	90.77	-77.48
2+13.00	3.12	12.37	1.27	10.02	14.56	100.79	-86.23
2+25.00	1.35	17.26	1.09	8.56	15.65	109.35	-93.70
2+41.70	1.72	16.47	1.05	13.56	16.70	122.91	-106.21
2+50.00	1.49	13.34	0.53	5.85	17.23	128.76	-111.53
2+75.00	1.04	19.05	1.29	19.49	18.52	148.25	-129.73
3+00.00	2.18	16.15	1.64	21.19	20.16	169.44	-149.28
3+25.00	1.95	25.75	2.11	25.22	22.27	194.66	-172.39
3+50.00	3.61	13.63	2.84	23.70	25.10	218.35	-193.25
3+75.00	9.39	6.70	6.62	12.24	31.73	230.59	-198.87
3+85.86	9.14	3.38	4.10	2.64	35.83	233.23	-197.41
4+00.00	9.87	0.41	5.22	1.41	41.05	234.64	-193.59
4+25.00	8.67	0.00	9.44	0.24	50.49	234.88	-184.40
4+25.70	8.43	0.00	0.24	0.00	50.73	234.88	-184.15
4+50.00	1.14	9.67	4.66	5.65	55.40	240.54	-185.14
4+73.20	0.61	25.89	0.83	19.86	56.22	260.40	-204.18
4+75.00	0.44	27.24	0.04	2.30	56.26	262.70	-206.44
5+00.00	10.69	0.00	5.67	16.40	61.93	279.10	-217.17
5+06.27	10.12	0.00	2.66	0.00	64.59	279.10	-214.51

STANDARD DETAIL PLATES

CITY OF ROCHESTER

NO.	DETAIL PLATE
1-04 I	STRUCTURE TYPE 4 (XXin.)
1-07 B	MANHOLE WATERPROOFING
1-11 I	CASTING REFERENCE NUMBERS
1-12 B	STANDARD CASTING ASSEMBLIES
2-15 F	SIDEWALK DETAILS
7-01 B	SILT FENCE DETAILS
7-05 A	INLET PROTECTION
7-06 D	TEMPORARY ROCK CONSTRUCTION ENTRANCE
7-10 A	TREE PROTECTION ZONES

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

STATE OF MINNESOTA

NO.	DETAIL PLATE
3000L	Reinforced Concrete Pipe (5 Sheets)
3006G	Gasket Joint for R.C. Pipe (2 Sheets)
3100G	Concrete Apron for Reinforced Concrete Pipe
3133D	Riprap at RCP Outlets
4011E	Precast Concrete Base
4180J	Manhole or Catch Basin Step
8000I	Standard Barricades

ALIGNMENT DATA

PI Station	Northing	Easting	Distance	Direction
0+00.00	180,340.5389'	629,520.0349'		
			147.322'	N4° 45' 47.38"E
1+47.32	180,487.3524'	629,532.2681'		
			94.379'	N1° 20' 40.88"E
2+41.70	180,581.7054'	629,534.4829'		
			144.159'	N5° 16' 19.30"E
3+85.86	180,725.2544'	629,547.7289'		
			39.841'	N5° 16' 21.22"W
4+25.70	180,764.9264'	629,544.0678'		
			80.572'	N3° 15' 13.54"E
5+06.27	180,845.3681'	629,548.6409'		
			143.349'	N9° 57' 29.88"E
6+49.62	180,986.5577'	629,573.4305'		

HORIZONTAL CONTROL

Point Number	Easting	Northing	Point Elevation	Description
2	629524.6056'	180394.2877'	1234.170'	PROP COR
4	630231.8271'	180390.6299'	0.000'	PROP COR
10	629576.8850'	181022.8087'	1187.553'	PROP COR
12	629513.0245'	180608.3515'	1220.460'	TRAV STA
13	629612.2095'	180715.0009'	1224.240'	TRAV STA
14	629488.9332'	180932.9774'	1213.090'	TRAV STA
15	629619.7822'	180880.2449'	1210.500'	TRAV STA
16	629367.3623'	180981.8338'	1223.262'	TRAV STA

EARTHWORK BALANCE (A)

	DESCRIPTION	DITCH CU YD	POND CU YD	TOTALS CU YD
1	COMMON EXCAVATION (CV)	65	137	202
2	EMBANKMENT REQUIRED (LV)	279	80	359
3	TOPSOIL REQUIRED (CV)	119	135	254
	COMMON BORROW (CV)			410

NOTES
(1) 1.1 SHRINKAGE FACTOR FROM EXCAVATED VOLUME (EV) TO COMPACTED VOLUME (CV) IN QUANTITY SHOWN
(2) 1.3 SHRINKAGE FACTOR FROM COMPACTED VOLUME (CV) TO LOOSE VOLUME (LV) IN QUANTITY SHOWN
(3) TO BE OBTAINED FROM COMMON EXCAVATION

VERTICAL CONTROL

B.M. ELEV.	1238.43	TOP OF HYDRANT NUT NE COR COLLEEN ST NE & ROSEMARY LN NE
B.M. ELEV.	1234.60	TOP OF HYDRANT NUT NE COR COLLEEN ST NE & DARCY DR NE
B.M. ELEV.	1236.24	TOP OF HYD NUT FRONT OF #2673 COLLEEN ST NE
B.M. ELEV.	1234.60	TOP OF HYD NUT @ NE COR COLLEEN ST NE & DARCY DR NE

CONSTRUCT STORM SEWER PIPE (C)

FROM	TO	15" RCP C.C. LENGTH (FT)	24" RCP C.C. LENGTH (FT)	SLOPE (%) C. TO C.
S-1	S-2		70.71	1.00
S-2	S-3		279.02	1.00
S-4	S-2	138.99		5.55
TOTALS		138.99	349.73	

Cut/Fill Summary for Pond Grading

Name	Cut Factor	Fill Factor	2d Area	Cut	Fill	Net
POND VOLUME	1.100	1.300	7180.45 Sq. Ft.	137.41 Cu. Yd.	79.71 Cu. Yd.	57.70 Cu. Yd.<Cut>
Totals			7180.45 Sq. Ft.	137.41 Cu. Yd.	79.71 Cu. Yd.	57.70 Cu. Yd.<Cut>

CONSTRUCT STORM SEWER STRUCTURES (B)

NO.	STATION-LOCATION	MH DES. SPEC 1 (48 IN) 10'-13'	MH DES. SPEC 2 (60 IN) 17'-19'	INSTALL 24" RCP APRON	CASTING ASSEM.	CASTING ELEV.	C-INL. EL.	C-INL. EL.	C-OUTL. EL.	REMARKS
S-1	1+43.06-0.27' LT	1			TYPE 4	1228.18	1224.17		1217.95	CONNECT TO EXIST. PIPE
S-2	2+13.79-CL		1		TYPE 4	1221.24	1217.24-24" S	1217.99-15" E	1203.33-24" N	
S-3	4+93.34-CL			1					1200.53	
S-4	1+73.82-133.11' RT								1225.70	CONNECT TO EXIST. C.B.
TOTAL		1	1	1	2					

Revision comment: —
Revised: —

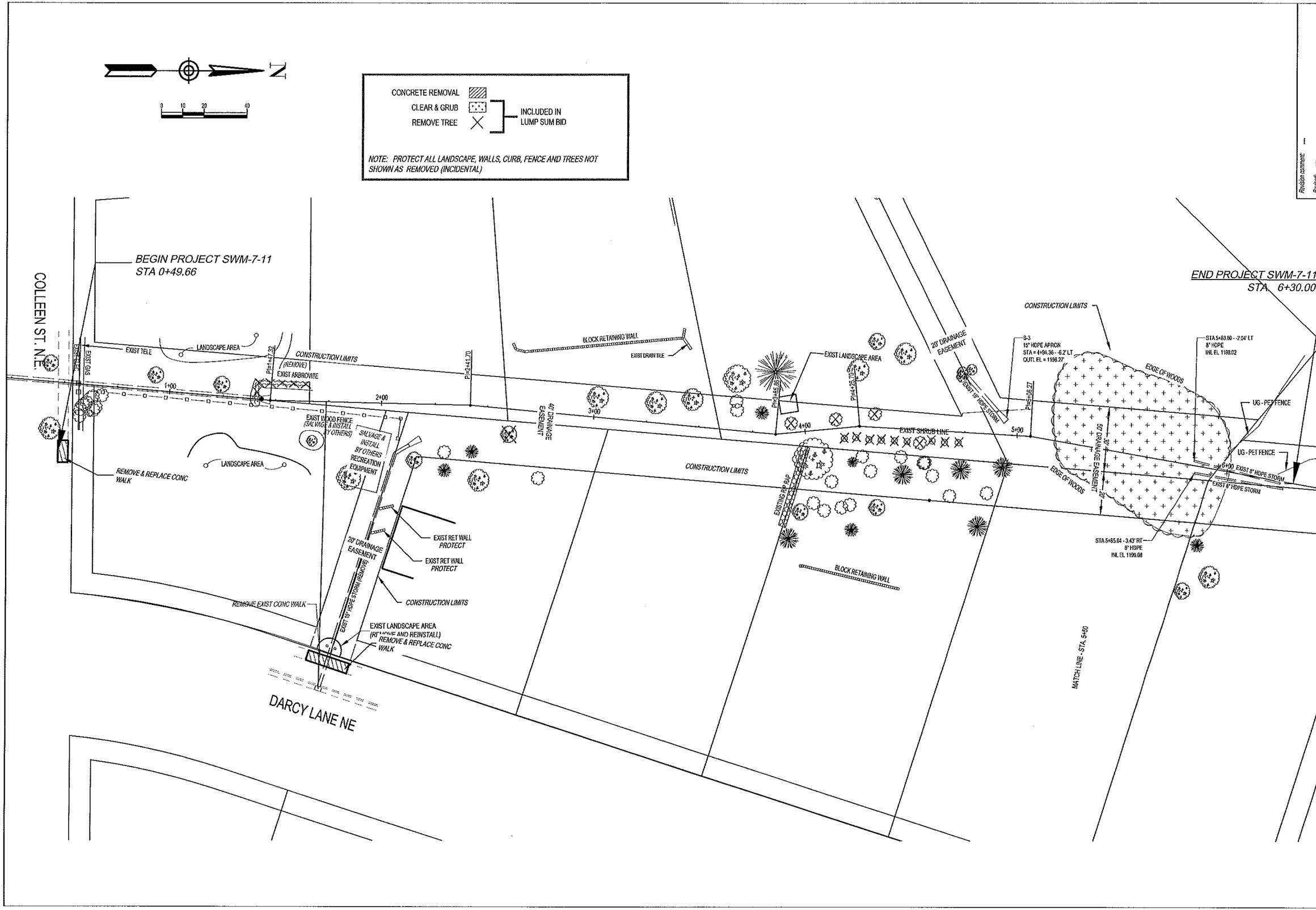
I hereby certify that this plan was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.
Date: 10/27/14 Lic. No. 24667

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: ESTIMATED QUANTITIES, TABULATIONS & TYPICAL SECTION

Designer: ALH
Checker: RJK

Project No. SWM-7-11 J6612
Sheet 2 of 10 Sheets



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FAX: (507) 328-2461

Title: REMOVALS

Designer: ALH
Checker: RJK

Project No. SWM-7-11 J6612
Sheet 3 of 10 Sheets

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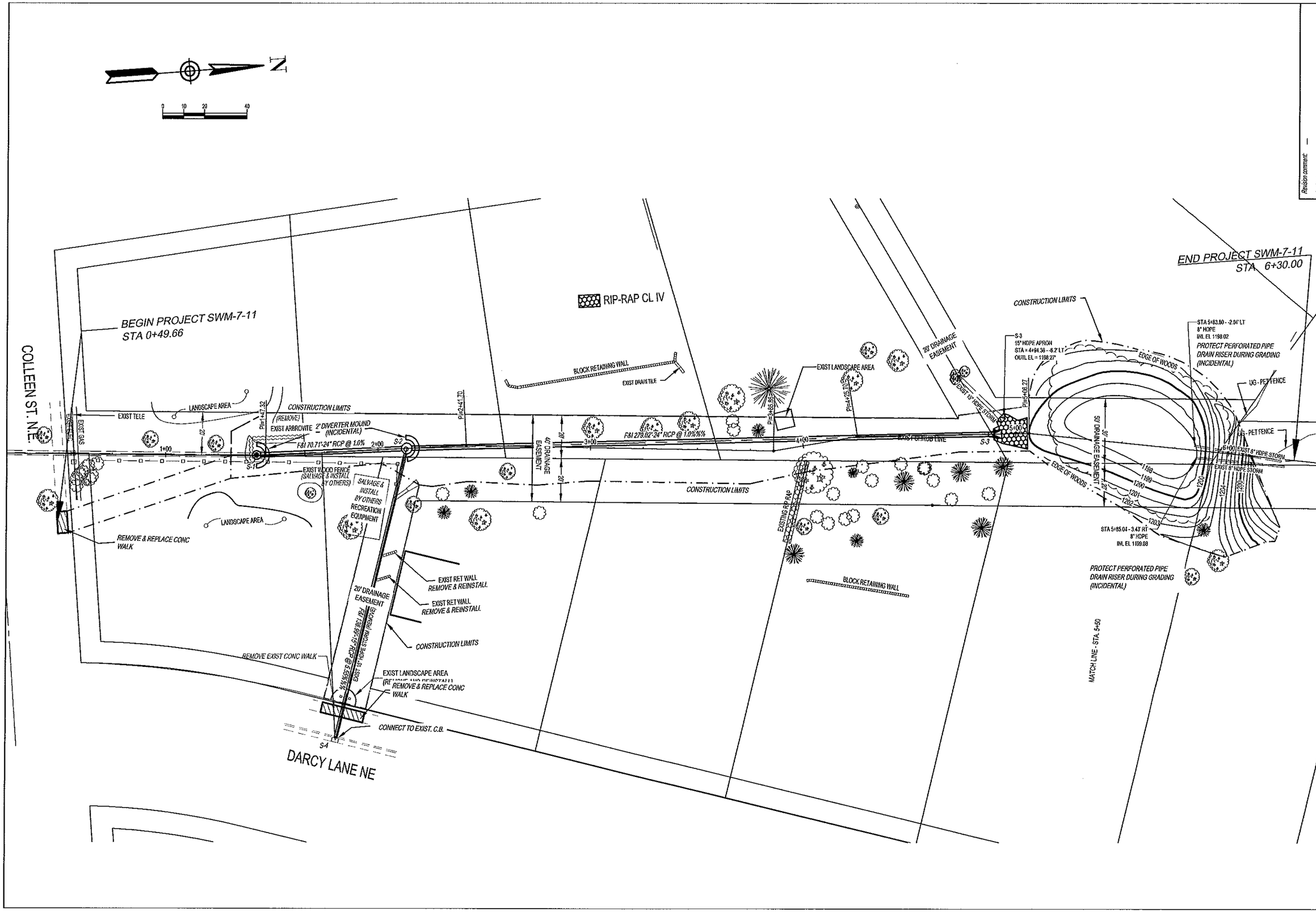

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City of Rochester, Minnesota
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Phone: (507) 328-2450
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Title: GRADING & UNDERGROUND PLAN

Designer: ALH
Checker: RJK

Project No. SWM-7-11 J6612
Sheet 4 of 10 Sheets

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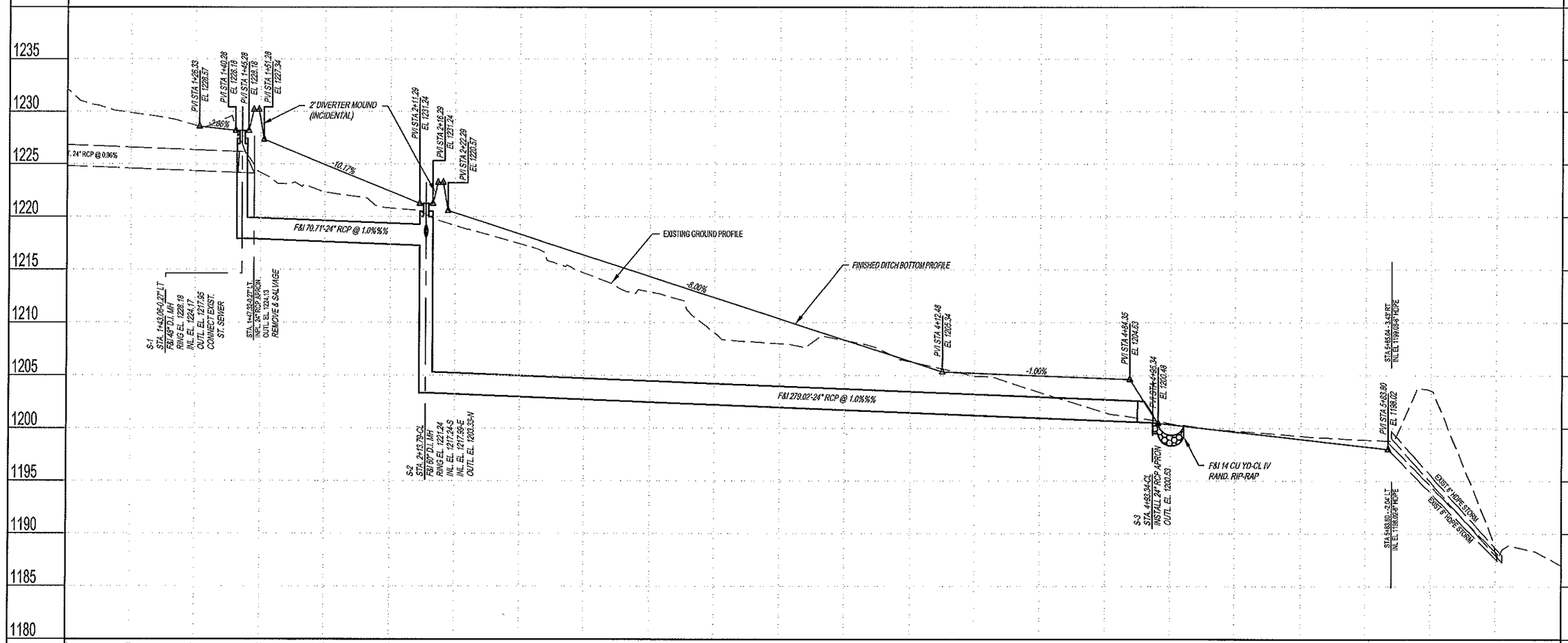
DITCH PROFILE



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Date: 10/27/14 Lic. No. 24667

City of Rochester, Minnesota
Department Of Public Works
201 4th Street S.E.
Rochester, MN 55904
Phone: (507) 328-2450
FAX: (507) 328-2411

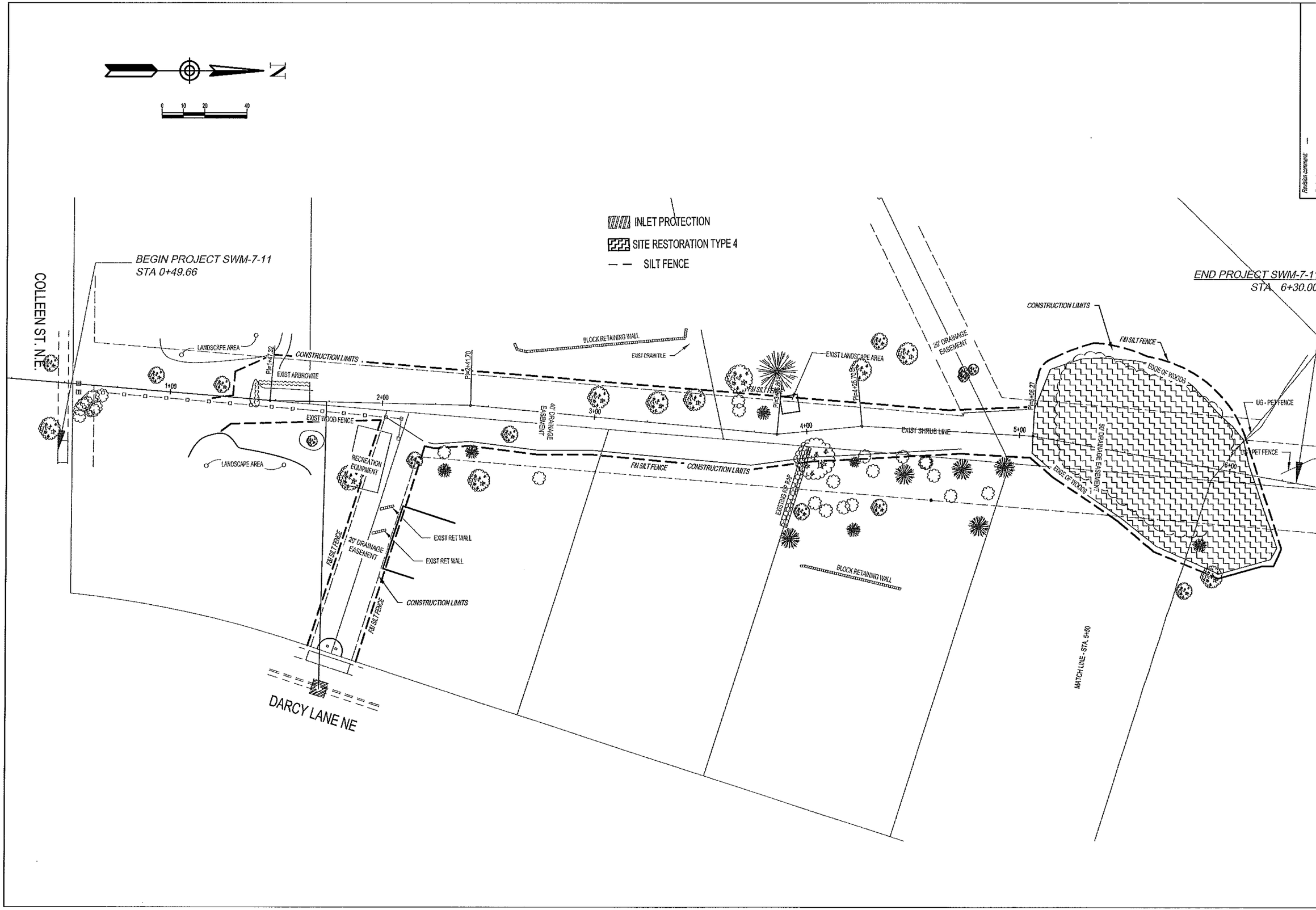
Title: GRADING & UNDERGROUND PROFILE

Designer: ALH

Checker: RJK

Project No. SWM-7-11 J6612

Sheet 5 of 10 Sheets



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Revised: —

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Phone: (507) 328-2429
FAX: (507) 328-2401

Title: EROSION CONTROL

Designer: ALH
Checker: RJK

Project No. SWM-7-11 J6612
Sheet 6 of 10 Sheets

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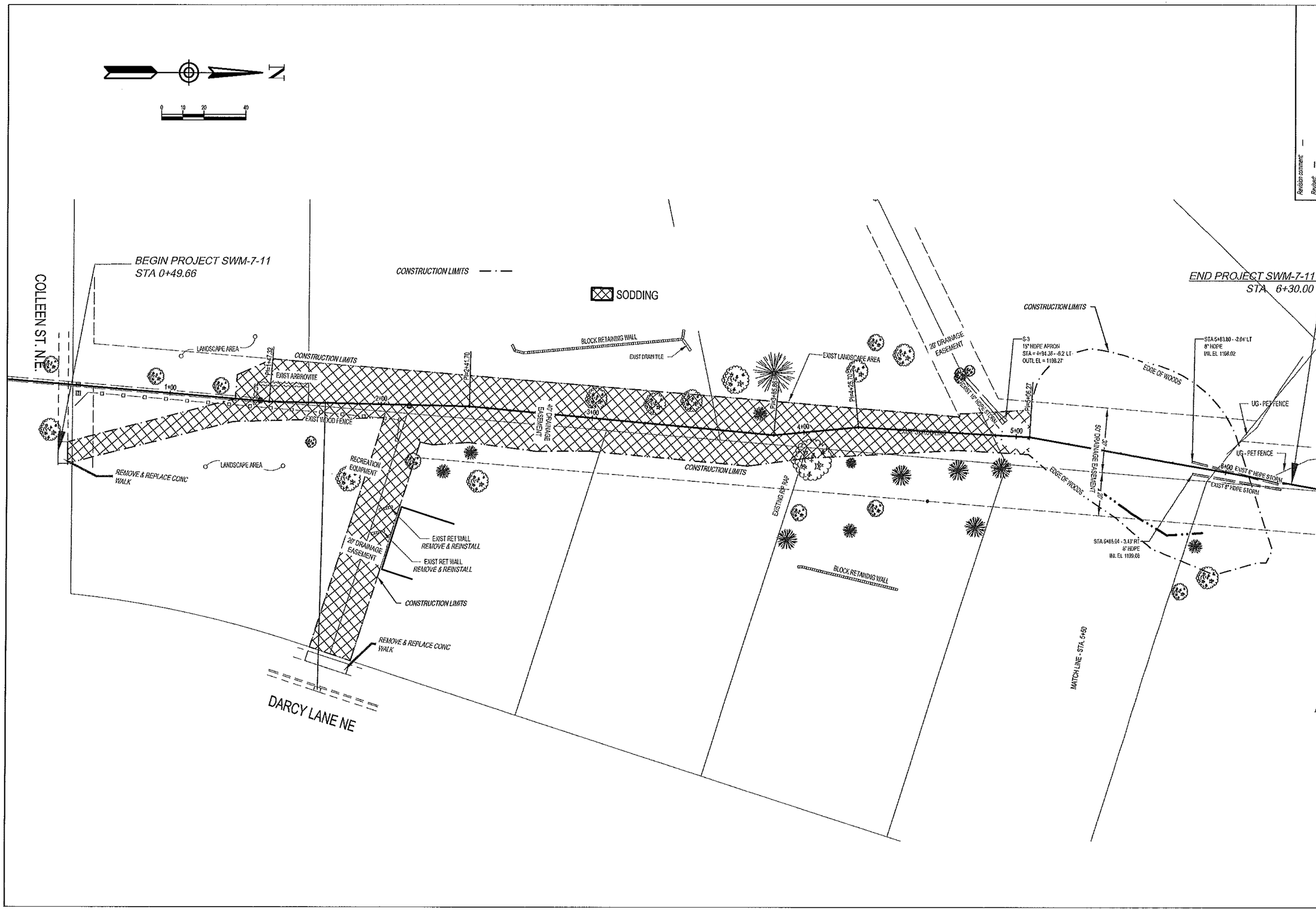

Revision comment: —

Revised: —

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Date: 10/27/14 Lic. No. 24687

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: TURF ESTABLISHMENT

Designer: ALH

Checker: RJK

Project No. SWM-7-11 J6612

Sheet 7 of 10 Sheets

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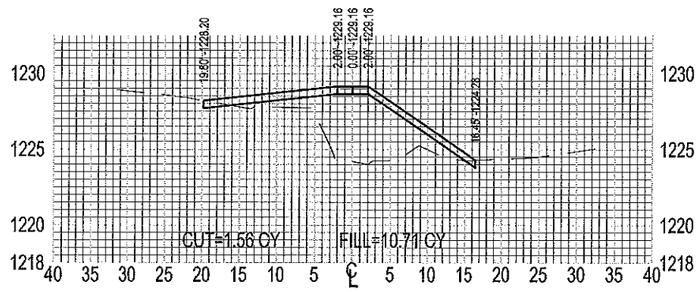

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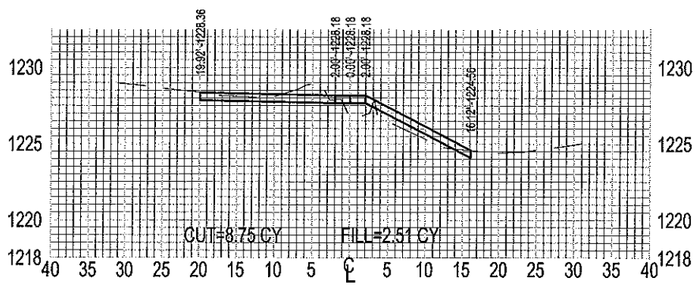

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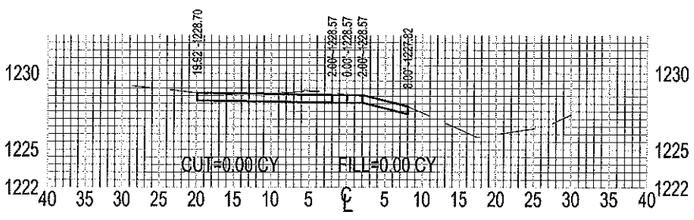

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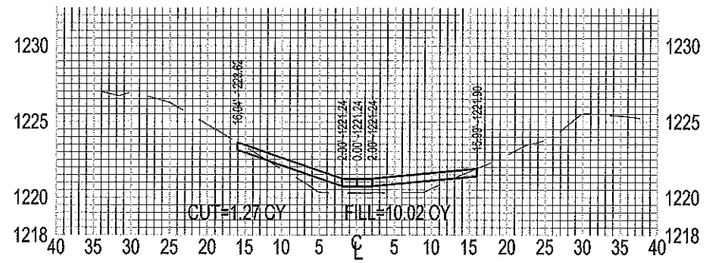

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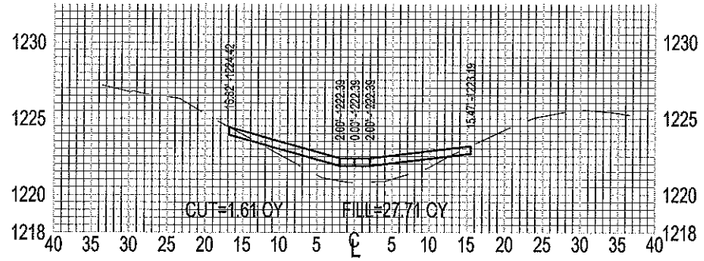

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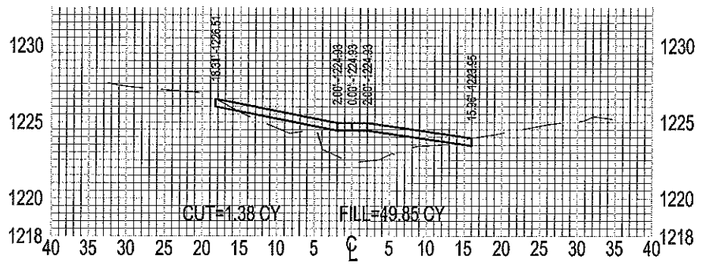

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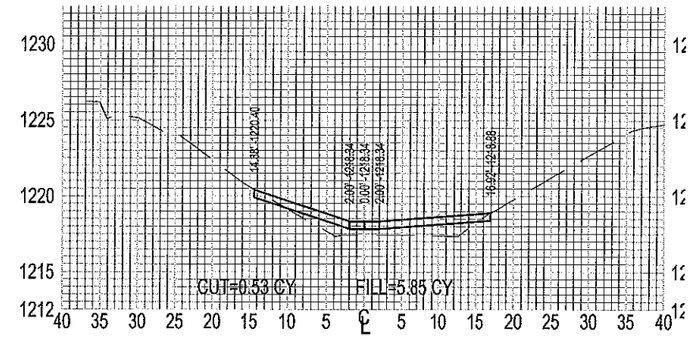

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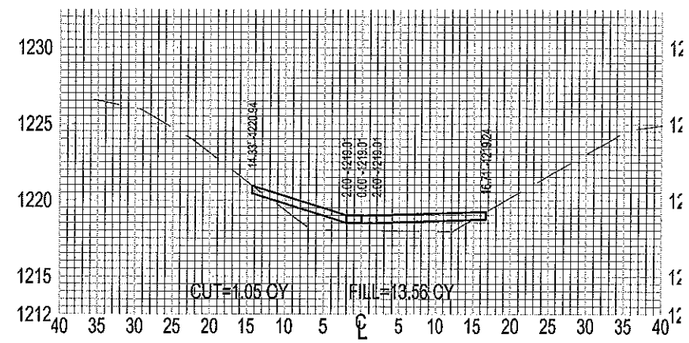

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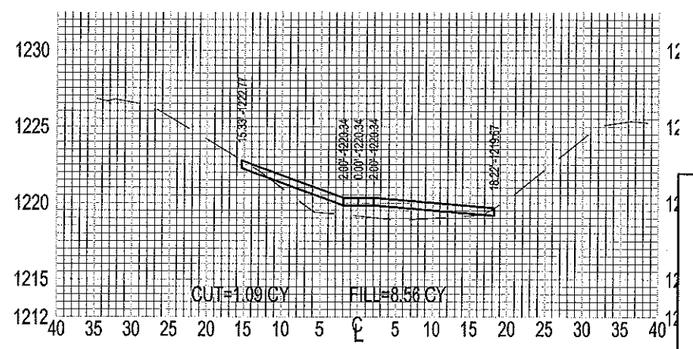

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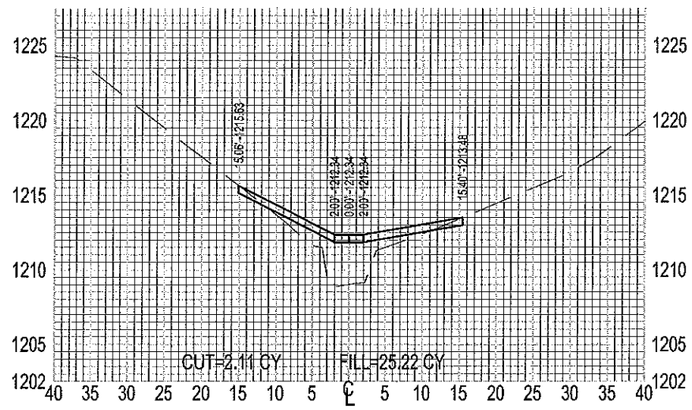

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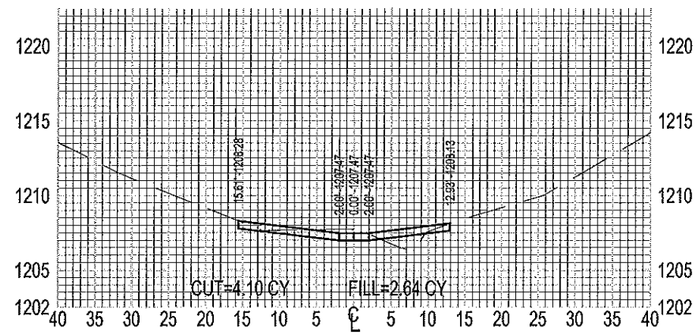

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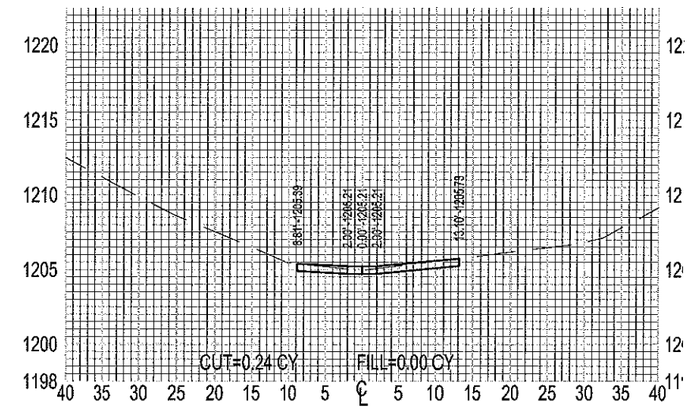

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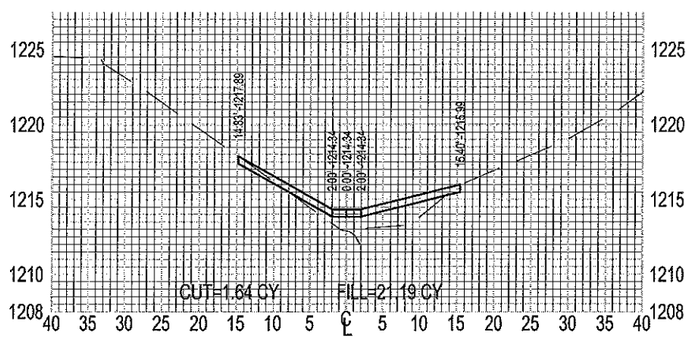

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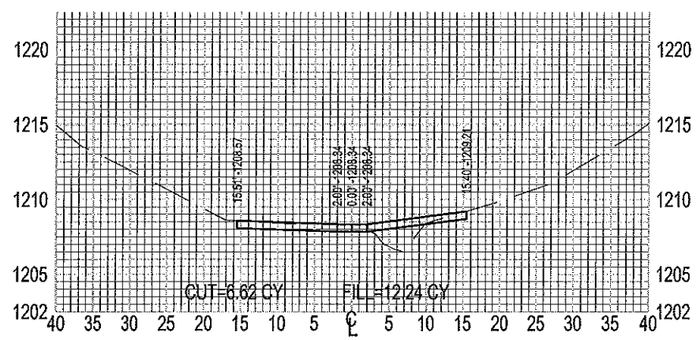

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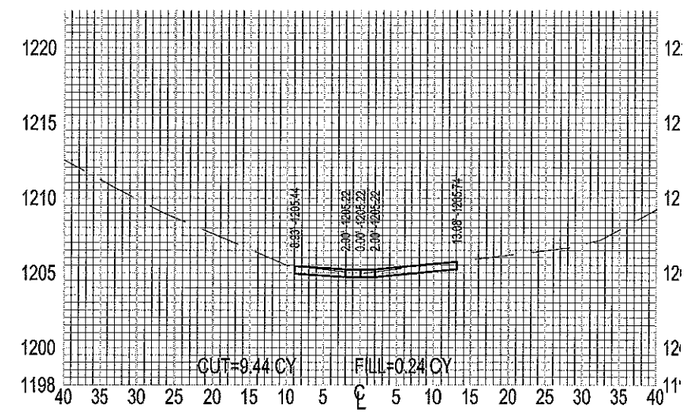

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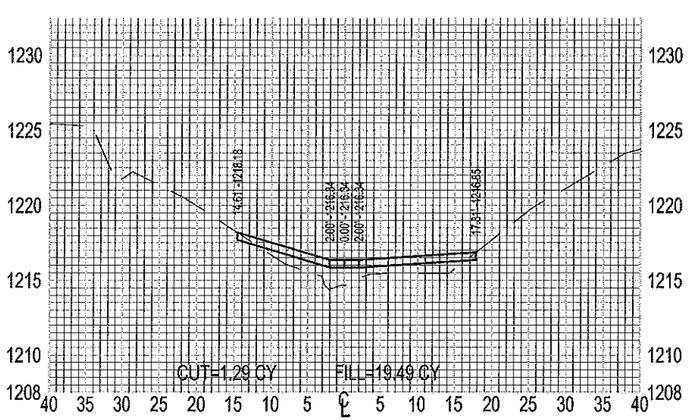

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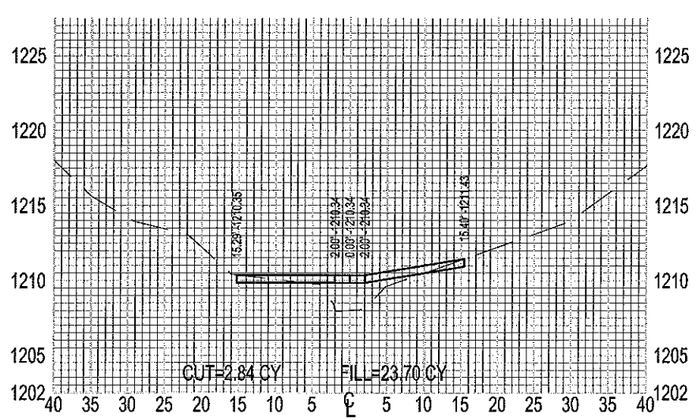

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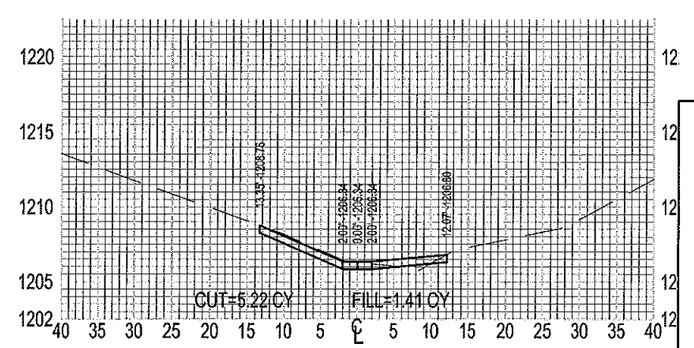

STA. 4+00

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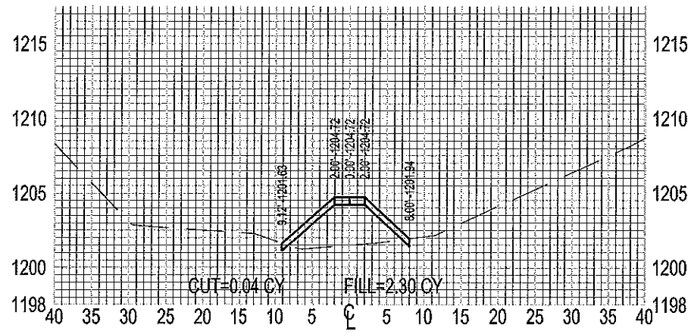

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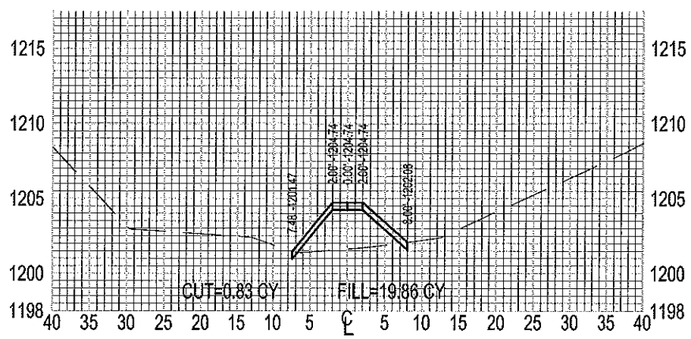

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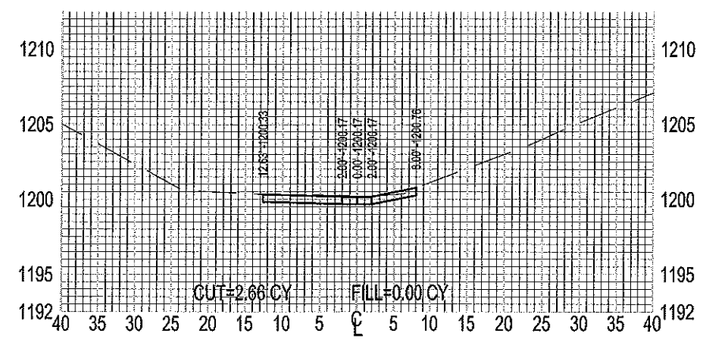

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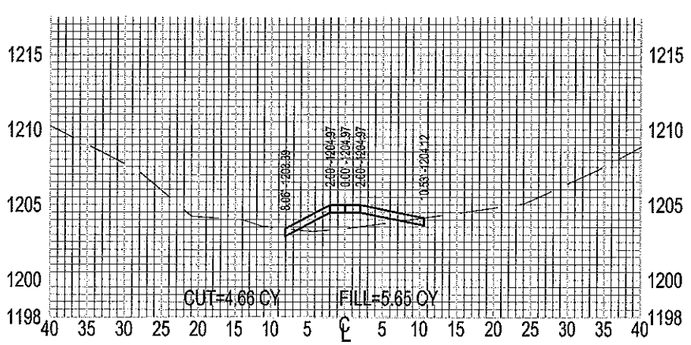

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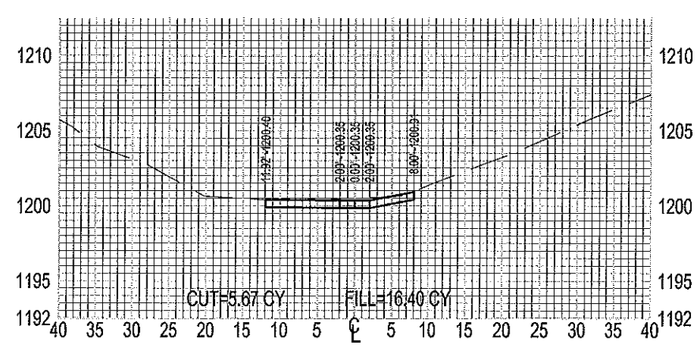

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