MINNESOTA DEPARTMENT OF TRANSPORTATION

City of Rochester, Minnesota

Department Of Public Works

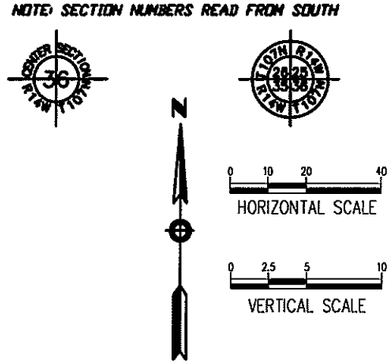
CONSTRUCTION PLANS FOR: BRIDGE NO. 55J89 ON 10TH AVENUE SE BETWEEN 4TH STREET AND 6TH STREET SE

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



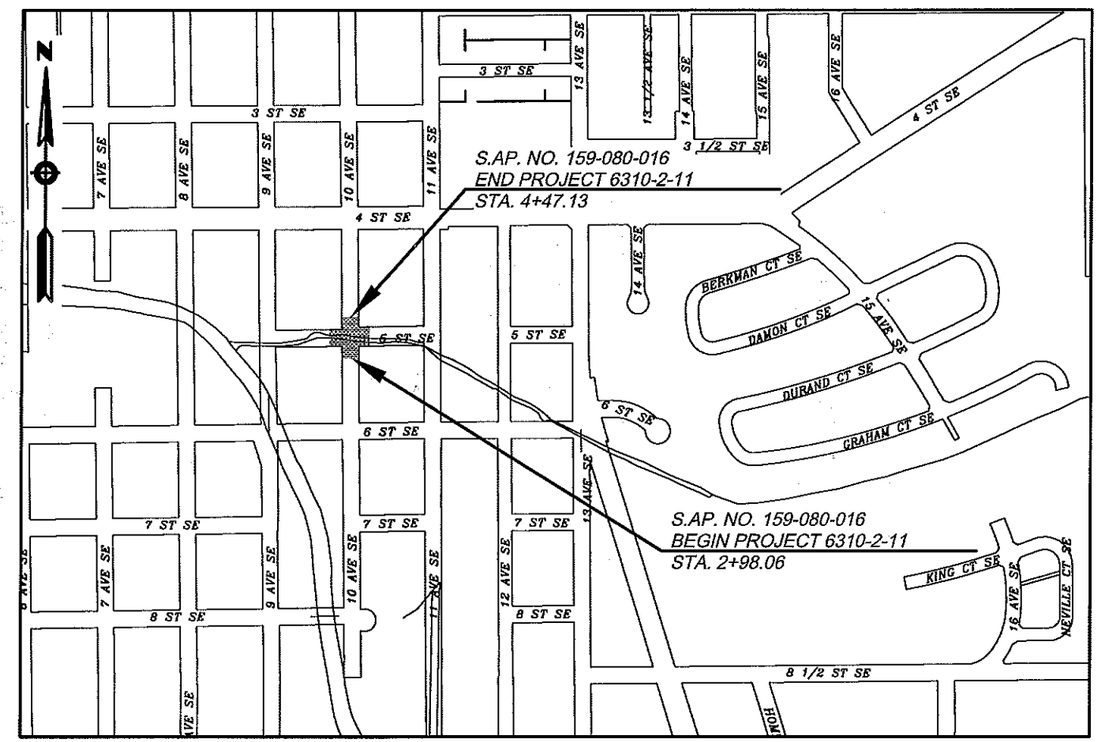
PROPOSED BRIDGE NO. 55J89

TOWNSHIP 106 RANGE 14 SECTION 1

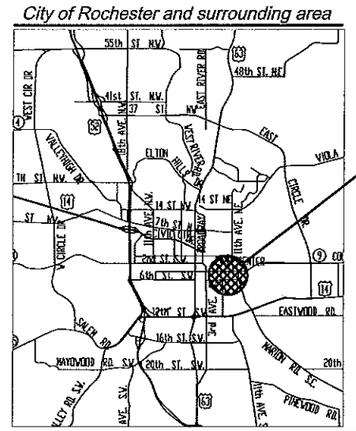
GROSS LENGTH	149.07 FEET	0.028 MILES
BRIDGE LENGTH	36.68 FEET	0.007 MILES
EXCEPTION LENGTH	FEET	MILES
NET LENGTH	149.07 FEET	0.028 MILES

EXISTING BRIDGE NO. L6362

LENGTH	64'
ROADWAY WIDTH	34'
YEAR BUILT	1920
REMODELED	1976



City of Rochester and surrounding area



APPROXIMATE PROJECT LOCATION

LEGAL DESCRIPTION:
From NW Cor of NE 1/4 Sec 1 T106 R14
West 329.79' then South 1233.72' to a
point of begining to a point from NW Cor of
NE 1/4 Sec 1 T106 R14 West 329.79'
then South 1382.79'

PROJECT LOCATION
OLMSTED COUNTY
ROCHESTER DISTRICT

GOVERNING SPECIFICATIONS

State of Minnesota
The 2005 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)	2012	1,000
ADT (Future Year)	2032	1,400
HCADT (Future Year)	2032	5.9%
DESIGN LOADING		10 - TON
R - VALUE		10
SIGMA N_{18} (20)		310,000
FUNCTIONAL CLASSIFICATION		LOCAL
NO. AND WIDTH OF TRAFFIC LANES		2 @ 12 FT
NO. AND WIDTH OF PARKING LANES		0
DESIGN SPEED		30 MPH
		MPH
BASED ON SIGHT DISTANCE		STOPPING
HEIGHT OF EYE		3.5 FT
HEIGHT OF OBJECT		2.0 FT
STOP CONDITION AT:		0

DESIGN SPEED NOT ACHIEVED AT:
STA. _____ TO _____ ____ MPH

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TITLE SHEET	1
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This plan contains 15 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

Calvin Leino, Design Technician — Date 8-1-12

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: 8-1-12 License Number 24687

Approved: Douglas Nelson, Asst. City of Rochester Engineer — Date 8/1/12

Approved: Richard Freese, City of Rochester Engineer — Date 8/1/12

District State Aid Engineer: Reviewed for Compliance with State Aid Rules/Policy — Date 08/15/2012

State Aid Engineer: Approved for State Aid Funding — Date 08/15/2012

S.A.P. No. 159-080-016
Project No 6310-2-11 J7911
Sheet 1 of 15 Sheets

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ELECTRONIC FILE

STATEMENT OF ESTIMATED QUANTITIES

NOTES	TABLE	SHEET NO	SPEC. REF. NUMBER	ITEM DESCRIPTION	UNIT	STATE BRIDGE BOND (SBB)	NON-PARTICIPAITNG (LOCAL)	TOTAL ESTIMATED QUANTITY
			1 BRIDGE (365)					
			2021.501	MOBILIZATION	LS	1.00		1.00
	H	8	2101.511	CLEARING AND GRUBBING	LS		1.00	1.00
	F	8	2104.501	REMOVE STONE MASONRY WALL	L F		34.00	34.00
	D	8	2104.501	REMOVE CONCRETE CULVERT	L F		65.00	65.00
	B	8	2104.501	REMOVE SEWER PIPE (STORM)	L F		101.00	101.00
	D	8	2104.501	REMOVE CONCRETE BOX CULVERT	L F		64.00	64.00
	F	8	2104.507	REMOVE GABION	C Y		37.00	37.00
	D	8	2104.509	REMOVE CONCRETE HEADWALL	EACH		2.00	2.00
	B	8	2104.509	REMOVE MANHOLE OR CATCH BASIN	EACH		4.00	4.00
	G	8	2104.521	SALVAGE GUARD RAIL-PLATE BEAM	L F		16.00	16.00
	Q	9	2105.522	SELECT GRANULAR BORROW MOD (CV)	C Y		67.00	67.00
	R	9	2105.525	TOPSOIL BORROW (CV) (P)	C Y		61.00	61.00
	Q	9	2411.511	STRUCTURE EXCAVATION CLASS U	C Y		73.00	73.00
	Q	9	2411.604	MODULAR BLOCK RETAINING WALL SPECIAL	S Y		62.00	62.00
	O	9	2501.521	73" SPAN RC PIPE-ARCH CULV CL IIA	L F	240.00		240.00
	N	9	2501.525	73" SPAN RC PIPE-ARCH APRON	EACH	6.00		6.00
	Q	9	2502.601	DRAINAGE SYSTEM	LS		2.00	2.00
	O	9	2503.511	12" RC PIPE SEWER CLASS V	L F		63.00	63.00
	O	9	2503.511	15" RC PIPE SEWER CLASS III	L F		85.00	85.00
	N	9	2503.602	CONNECT TO EXISTING STORM SEWER	EACH	3.00		3.00
1	N	9	2506.502	CONST DRAINAGE STRUCTURE DESIGN SPEC 1	EACH		4.00	4.00
	R	9	2514.501	CONCRETE SLOPE PAVING	S Y	9.00		9.00
	G	8	2554.603	INSTALL GUARDRAIL	L F		16.00	16.00
			2563.601	TRAFFIC CONTROL	LS	1.00		1.00
	R	9	2573.502	SILT FENCE, TYPE MACHINE SLICED	L F		191.00	191.00
2	R	9	2573.505	FLOTATION SILT CURTAIN TYPE STILL WATER	L F		20.00	20.00
3	R	9	2573.530	STORM DRAIN INLET PROTECTION	EACH		4.00	4.00
	R	9	2575.502	SEED MIXTURE 350	LB		2.00	2.00
	R	9	2575.505	SODDING TYPE MINERAL	S Y		349.00	349.00
	R	9	2575.523	EROSION CONTROL BLANKET CATEGORY 3	S Y		102.00	102.00
	R	9	2575.532	FERTILIZER TYPE 3	LB		23.00	23.00
	R	9	2575.604	SEEDING	S Y		102.00	102.00
			2 STREET (350)					
	E	8	2104.505	REMOVE CONCRETE DRIVEWAY PAVEMENT	S Y		47.00	47.00
	E	8	2104.505	REMOVE BITUMINOUS PAVEMENT	S Y		550.00	550.00
	E	8	2104.513	SAWING BITUMINOUS PAVEMENT	L F		91.00	91.00
	S	9	2105.501	COMMON EXCAVATION (P)	C Y		68.00	68.00
	S	9	2105.523	COMMON BORROW (CV)	C Y		19.00	19.00
	P	9	2211.501	AGGREGATE BASE CLASS 2	TON		16.00	16.00
	M	9	2211.503	AGGREGATE BASE (CV) CLASS 5	C Y		112.00	112.00
	M	9	2301.501	CONCRETE PAVEMENT	S Y		171.00	171.00
	M	9	2301.511	STRUCTURAL CONCRETE	C Y		33.00	33.00
	M	9	2301.521	PAVEMENT REINFORCEMENT	S Y		171.00	171.00
	M	9	2301.529	REINFORCEMENT BARS (EPOXY COATED)	LB		1,400.00	1,400.00
	M	9	2301.538	DOWEL BAR	EACH		96.00	96.00
4	M	9	2360.501	TYPE SP 9.5 WEARING COURSE MIX (2,B)	TON		28.00	28.00
4	M	9	2360.502	TYPE SP 12.5 NON WEAR COURSE MIX (2,B)	TON		56.00	56.00
	L	9	2531.501	CONCRETE CURB & GUTTER DESIGN B624	L F		209.00	209.00
	P	9	2531.507	4" CONCRETE DRIVEWAY PAVEMENT	S Y		51.00	51.00
	P	9	2531.507	6" CONCRETE DRIVEWAY PAVEMENT	S Y		35.00	35.00
5	L	9	2535.501	BITUMINOUS CURB	L F		47.00	47.00
			3 PED FACILITIE S (550)					
	E	8	2104.505	REMOVE SIDEWALK	S Y		82.00	82.00
	L	9	2521.501	5" CONCRETE WALK	S F		583.00	583.00
	L	9	2521.501	6" CONCRETE WALK	S F		119.00	119.00
			4 SANITARY SEWER (250)					
	A	8	2104.501	REMOVE SEWER PIPE (SANITARY)	L F		79.00	79.00
	A	8	2104.509	REMOVE MANHOLE	EACH		2.00	2.00
	J	9	2503.511	8" DUCTILE IRON PIPE SEWER CL 52	L F		79.00	79.00
6	I	9	2506.502	CONST DRAINAGE STRUCTURE DESIGN SPEC 3	EACH		2.00	2.00
			5 WATERMAIN (150)					
	C	8	2104.501	REMOVE WATER MAIN	L F		156.00	156.00
	C	8	2104.509	REMOVE HYDRANT	EACH		1.00	1.00
	K	9	2503.603	24" STEEL CASING PIPE	L F		33.00	33.00
	K	9	2504.602	HYDRANT	EACH		1.00	1.00
	K	9	2504.602	6" GATE VALVE AND BOX	EACH		1.00	1.00
	K	9	2504.602	12" GATE VALVE AND BOX	EACH		2.00	2.00
7	K	9	2504.603	6" WATERMAIN DUCTILE IRON CL 52	L F		23.00	23.00
7	K	9	2504.603	12" WATERMAIN DUCTILE IRON CL 52	L F		128.00	128.00
	K	9	2504.608	WATERMAIN FITTINGS	LB		294.00	294.00

NOTES:

(P) PLANNED QUANTITY
(1) SEE CITY OF ROCHESTER STANDARD DETAIL PLATE 1-01
(2) SEE CITY OF ROCHESTER STANDARD DETAIL PLATE 7-02
(3) SEE CITY OF ROCHESTER STANDARD DETAIL PLATE 7-05
(4) BITUMINOUS MATERIAL FOR TACKCOAT INCIDENTAL
(5) INCLUDES TRANSITION CURB
(6) SEE CITY OF ROCHESTER STANDARD DETAIL PLATE 1-03
(7) TO BE POLYETHENE ENCASED SEE CITY DETAIL PLATE 6-05

Revision comment: ---
Revision#: ---

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: 8-1-12 Lic. No. 24697

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 FOR BRIDGE REPLACEMENT ON 10TH AVE SE BETWEEN 4TH ST AND 6TH ST SE

Designer: CVF
Checker: RJK

S.A.P. No. 159-080-016
Project No. 6310-2-11 J7911
Sheet 2 of 15 Sheets

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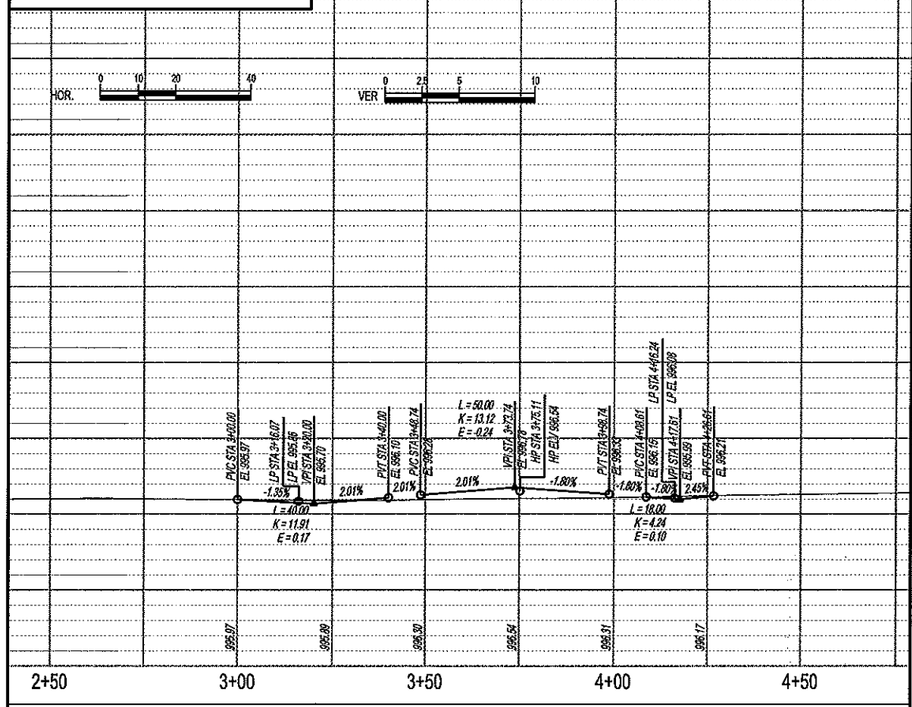
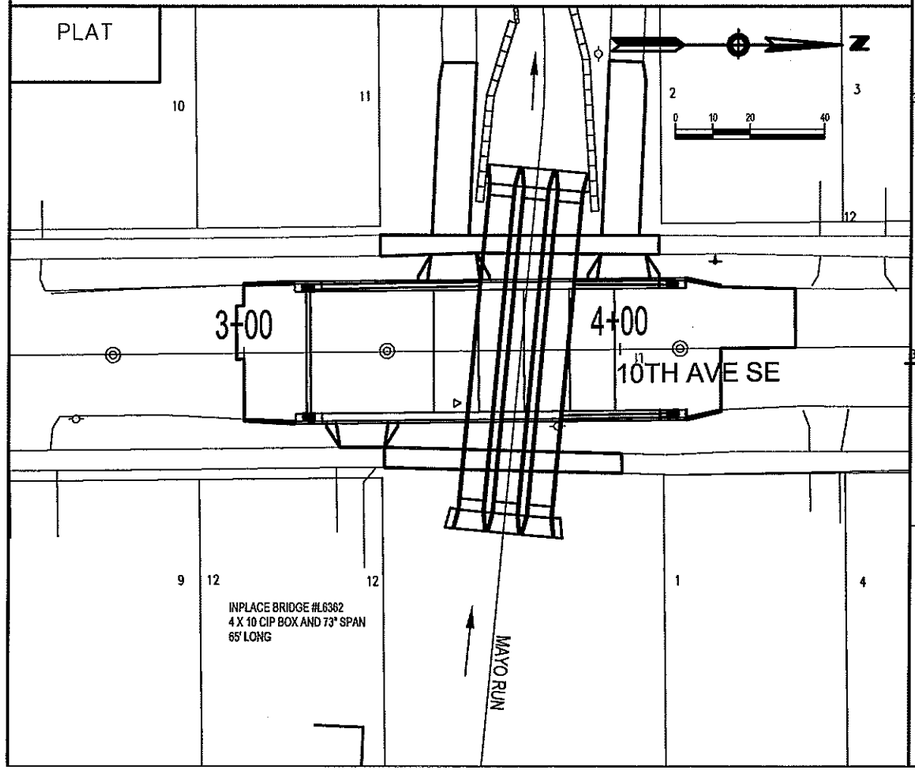
CONTRACTED PROFILE

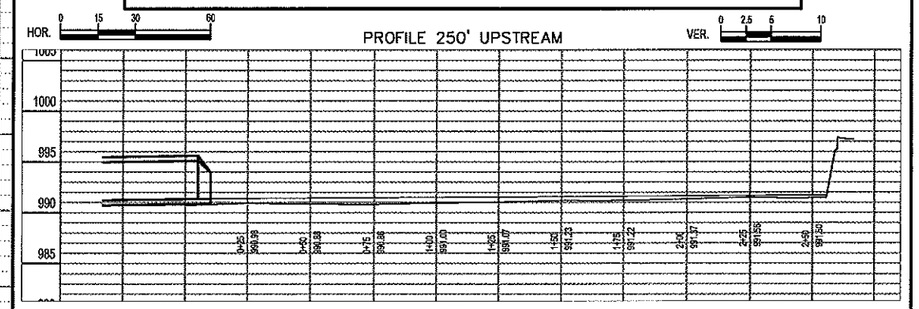


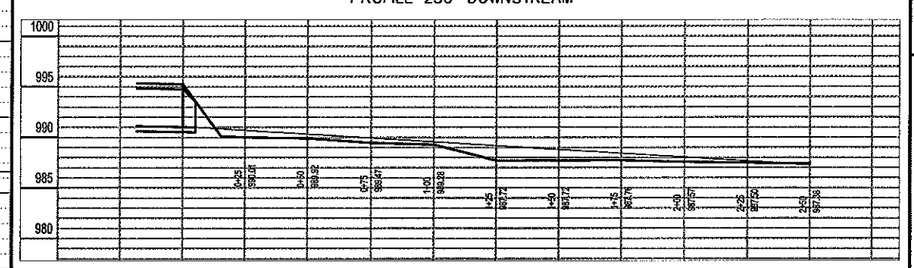
PLAT

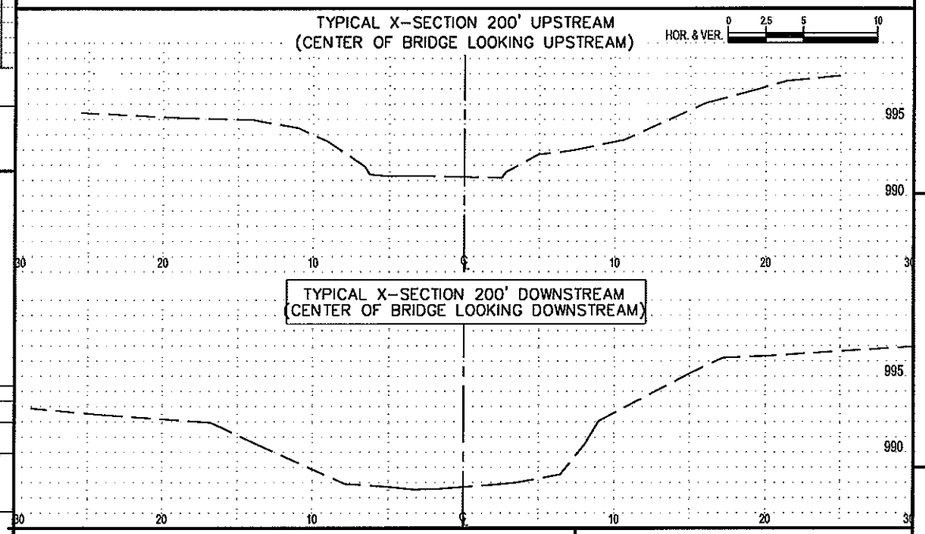


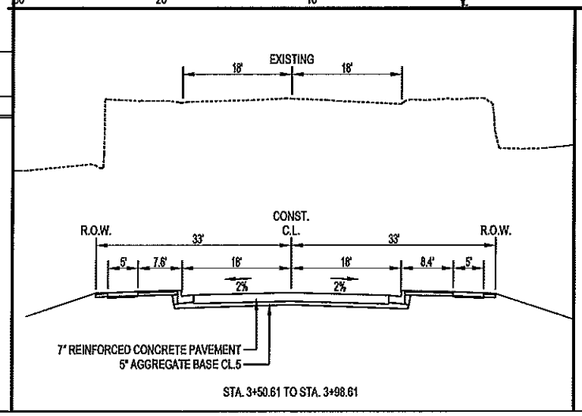
TYPICAL SECTIONS & PERTINENT DATA

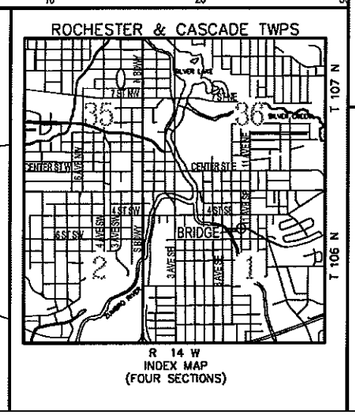
SCALE AS SHOWN











Special Features: Waterfalls, dams, floods, ice, debris, sliding banks, recreational boating.

1.

Other bridges or culverts over the same stream (particularly structures which carry high water without overflow of roadway) :Given location, type, length, height above high water, cross-sectional area etc.

2.

Apparent highwater elevation _____ Obtained from

3. Other data: Approx. velocity of water at time of survey

4.

HYDRAULIC ENGINEER RECOMMENDATION

DATE 7/5/2012

Stream name	Mayo Run
Drainage area	2.38 sq. mi.
Flood of record	Unknown
Maximum observed high-water elevation	Unknown
Design Flood (50-year frequency)	413 cfs
Road sag point elevation	995.86 @ 3+16.82
Headwater elevation	995.79 ft
Minimum waterway opening below elevation	53.1 sq ft 995.8 ft
Mean velocity through structure	7.47 fps
Main channel velocity	5.04 fps
Overtopping: 50-year flood	413 cfs
Headwater elevation	995.79 ft
Basic Flood (100-year frequency)	516 ft
Headwater elevation	996.30 ft

FOUNDATION ENGINEERS RECOMMENDATION

DATE _____

Bridge survey sheets made from: SURVEY CONDUCTED BY CITY OF ROCHESTER

Bench mark elevation _____ (M.S.L. 1929 Adj.)

Location: _____

N

MINNESOTA
DEPARTMENT OF TRANSPORTATION

BRIDGE SURVEY

AT MILE POINT 0.1 MI. S. OF 4TH ST. S.E. ON 10TH AVE. S.E. (T.H., C.S.A.H., C.R. etc.)

PROPOSED BRIDGE LOCATED 0.1 MILES SOUTH OF 4TH STREET S.E.

SEC. 1 TWP. 106 R 14W

TOWNSHIP ROCHESTER COUNTY OLMSTED

BRIDGE NO. 55589

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: 8-1-12 Lic. No. 24087

City of Rochester, Minnesota
Department Of Public Works
201 4th Street S.E.
Rochester, MN 55904
Phone: (507) 328-2450
FAX: (507) 328-2401

Title: BRIDGE SURVEY

Designer: CWF

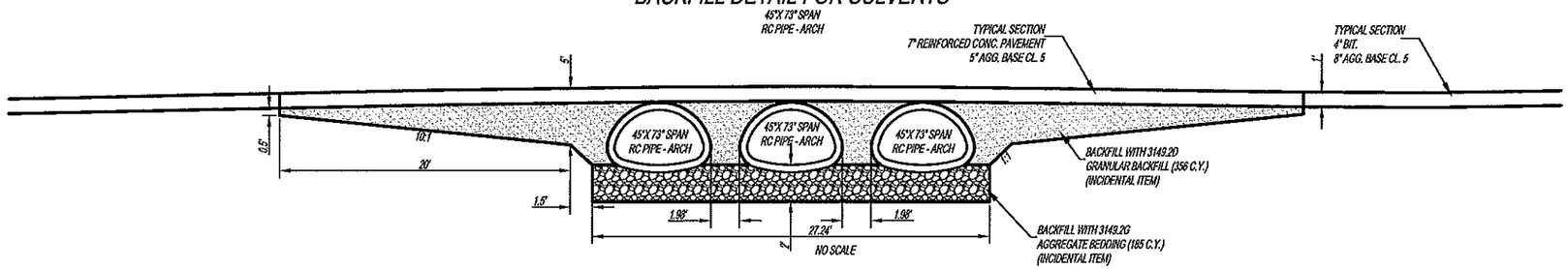
Checker: RJK

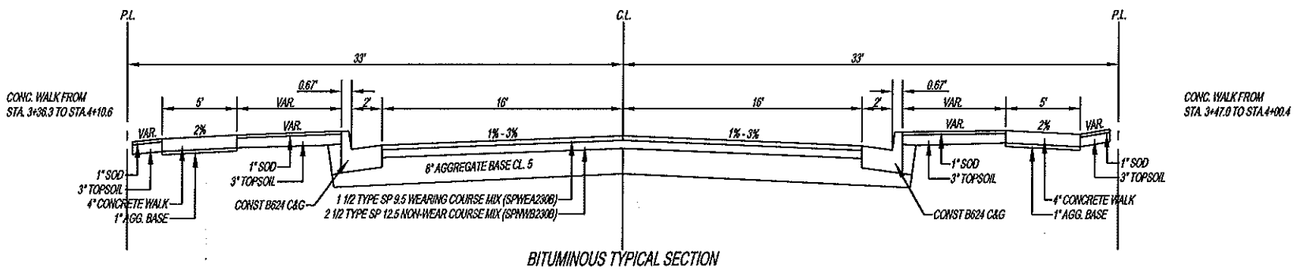
S.A.P. No. 159-080-016 J7911

Project No. 6310-2-11

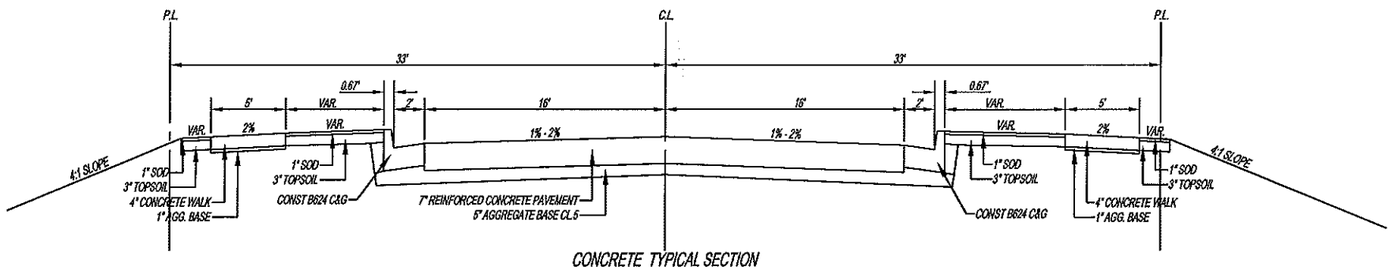
Sheet 3 of 15 Sheets

BACKFILL DETAIL FOR CULVERTS

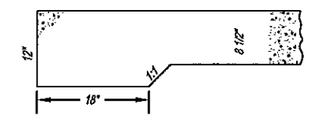




BITUMINOUS TYPICAL SECTION
STA. 3+13.47 TO STA. 3+50.61 AND
STA. 3+98.61 TO 4+17



CONCRETE TYPICAL SECTION
STA. 3+50.61 TO STA. 3+98.61



THICKENED EDGE WITH TEMPORARY HEADER

THE FOLLOWING STANDARD PLATES, APPROVED BY THE FEDERAL HIGHWAY ADMINISTRATION SHALL APPLY ON THIS PROJECT	
STATE OF MINNESOTA	
NO.	DETAIL PLATE
1070M	SUPPLEMENTAL PAVEMENT REINFORCEMENT
1103K	TYPICAL DOWEL BAR ASSEMBLY
3000L	REINFORCED CONCRETE PIPE (5 SHEETS)
3014J	REINFORCED CONCRETE PIPE ARCH (2 SHEETS)
3110G	CONCRETE APRON FOR REINFORCED CONCRETE PIPE-ARCH
3145F	CONCRETE PIPE TIES
8000I	STANDARD BARRICADES
8338D	W-BEAM GUARDRAIL & END ANCHORAGES (STEEL POSTS) (4 SHEETS)

STANDARD DETAIL PLATES	
CITY OF ROCHESTER	
NO.	DETAIL PLATE
1-01	STRUCTURE TYPE 1
1-03	STRUCTURE TYPES 3 AND 3A
1-07	MANHOLE WATERPROOFING
1-11	CASTING REFERENCE NUMBERS
1-12	STANDARD CASTING ASSEMBLIES
1-13	STRUCTURE ADJUSTING RINGS
1-14	BLIND-TIE FIELD CONNECTION FOR R.C.P. STORM SEWER
2-01	CONCRETE CURB & GUTTER
2-04	BITUMINOUS CURB
2-06	CURB & GUTTER REINFORCEMENT AT CATCH BASINS
2-08	CONCRETE DRIVE APPROACH TYPE B
2-14	SIDEWALK DETAILS
5-02	POLYSTYRENE INSULATION
6-06	POLYETHYLENE ENCASEMENT
7-01	SILT FENCE DETAILS
7-02	FLOTATION SILT CURTAINS
7-05	INLET PROTECTION

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: 8-1-12 Lic. No. 24067

City of Rochester, Minnesota
Department Of Public Works
201 4th Street S.E.
Rochester, MN 55904
Phone: (507) 328-2450
FAX: (507) 328-2401

Title: TYPICAL SECTIONS AND DETAILS FOR BRIDGE REPLACEMENT ON 10TH AVE SE BETWEEN 4TH ST AND 6TH ST SE

Designer: CWF
Checker: RJK

S.A.P. No. 159-080-016
Project No. 6310-2-11 J7911
Sheet 4 of 15 Sheets

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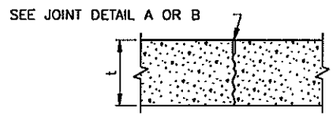
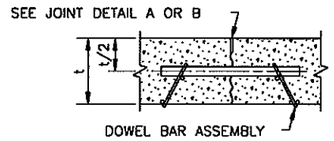
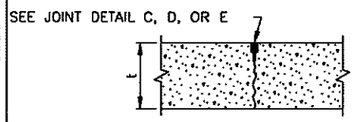


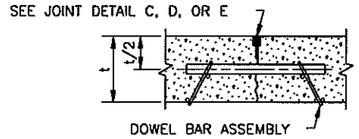
C1U & C2H



C1U–D & C2H–D



C3P, C4S, C5H



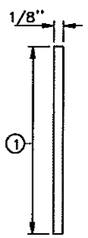
C3P–D, C4S–D, C5H–D

CONTRACTION JOINT REFERENCE, DETAIL & SEALER SPEC. TABLE

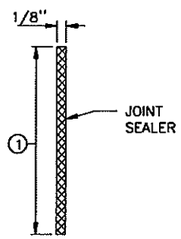
JOINT REFERENCE		JOINT DETAIL	JOINT SEALER SPEC.	JOINT WIDTH
WITHOUT DOWELS	WITH DOWELS			
C1U	C1U–D	A	UNSEALED	1/8"
C2H	C2H–D	B	3725	1/8"
C3P	C3P–D	C	3721	3/8"
C4S	C4S–D	D	3722	3/8"
C5H	C5H–D	E	3725	3/8"

LEGEND — EXAMPLE: C2H–D

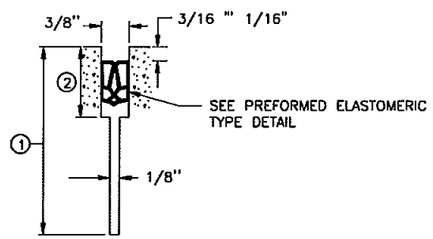
- C = CONTRACTION JOINT
- NO. = JOINT REFERENCE
- U = UNSEALED
- H = HOT POURED
- P = PREFORMED
- S = SILICONE
- –D = DOWEL BARS



JOINT DETAIL A
SAWED & UNSEALED



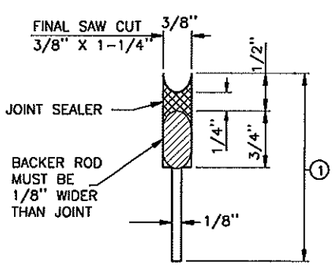
JOINT DETAIL B ③
SAWED & SEALED



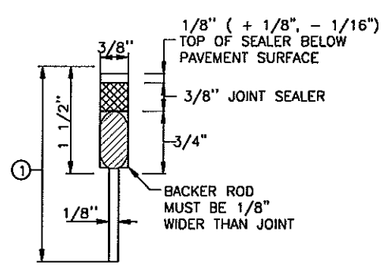
JOINT DETAIL C ③
SAWED AND SEALED

DOWEL BAR DIAMETER TABLE

PAVEMENT THICKNESS t	DOWEL BAR DIAMETER
LESS THAN 6"	NONE
6" – 6 1/2"	1"
7" – 10"	1 1/4"
10 1/2" – 14"	1 1/2"



JOINT DETAIL D ③④
SAWED AND SEALED



JOINT DETAIL E ③⑤
SAWED AND SEALED

NOTES:

SEE STANDARD PLATE 1103 FOR DOWEL BAR ASSEMBLY.

SEE STANDARD PLATE 1150 FOR CONSTRUCTION OF HEADER JOINTS.

JOINT WIDTH TOLERANCE IS + 1/16" TO – 1/32"

FURNISH AND INSTALL ALL JOINT SEALER IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.

SEE STANDARD PLANS 5–297.217 AND 5–297.219, FOR CONCRETE MAINLINE/RAMP PAVEMENT.

SEE PAVING LAYOUTS IN THE PLANS FOR JOINT CLASS DESIGNATION TO BE USED AND SPECIAL REINFORCEMENT REQUIRED.

① JOINT DEPTH SHALL BE:
FOR CONCRETE OVERLAYS – 1/3 THE PAVEMENT THICKNESS
FOR CONCRETE PAVEMENT – 1/4 THE PAVEMENT THICKNESS

② SEE CONTRACTION JOINT SEALER DETAIL. WHEN USING PREFORMED JOINT SEALER, THE DEPTH SHALL BE 1/4" MORE THAN THE PREFORMED SEALER, WHEN COMPRESSED, TO FIT THE JOINT DESIGN WIDTH. "a" DIMENSION SHALL APPLY AT ANY POINT THROUGHOUT "c" DEPTH. SHARP INTERNAL CORNERS WILL NOT BE PERMITTED. ALL CORNERS SHALL BE PROVIDED WITH SUITABLE FILLET.

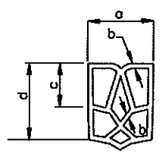
③ WHEN SEALING, THE JOINT FACES SHALL BE CLEANED AND DRIED BY SANDBLASTING AND AIR BLASTING.

④ PRIOR TO SEALING THE JOINT, A 1/2" DIA. CLOSED CELL BACKER ROD SHALL BE PLACED SUCH THAT THE TOP OF THE BACKER ROD IS 1/2"BELOW THE SURFACE OF THE PAVEMENT. NON SELF–LEVELING SILICONE SHALL BE TOOLED INTO THE JOINT MAINTAINING A SEAL AND BEAD THICKNESS OF 1/4".

⑤ PRIOR TO SEALING THE JOINT, A 1/2" DIA. CLOSED CELL BACKER ROD CAPABLE OF WITHSTANDING SEALANT TEMPERATURES OF 400 DEGREES F. SHALL BE PLACED 1/2" BELOW THE TOP OF PAVEMENT.

REQUIRED DIMENSIONS

JOINT TYPE	TRANSVERSE
NOMINAL SEALER SIZE USE IN ALL 3/8" JOINTS	11/16"
a 0.69"	+ 0.13" – 0.05"
b	0.08" ± 0.02"
c	0.25" MIN.
d	0.63" MIN.

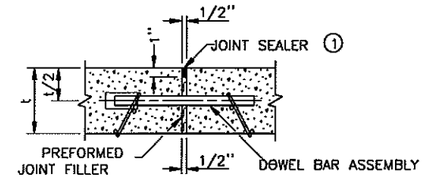


SPEC. REFERENCE 3721

TYPICAL SHAPE FOR SATISFACTORY INSTALLATION IN JOINT (5 CELL MIN.)

PREFORMED ELASTOMERIC TYPE DETAIL

CONTRACTION JOINTS
DESIGN C



E1H–D (W/DOWELS) E1H (W/O DOWELS)

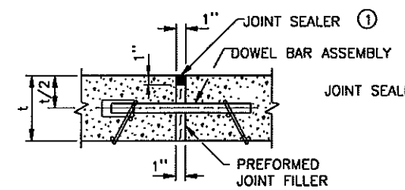
JOINT DETAIL A

EXPANSION JOINT REFERENCE, DETAIL & SEALER SPEC. TABLE

JOINT REFERENCE		JOINT DETAIL	JOINT SEALER SPEC.	JOINT WIDTH
WITHOUT DOWELS	WITH DOWELS			
E1H	E1H–D	A	3725	1/2"
E2H	E2H–D	B	3725	1"
E4H		C	3725	2"
	E4H–D	D	3725	2"
E8H		STANDARD PLAN 5–297.229	3725	4"

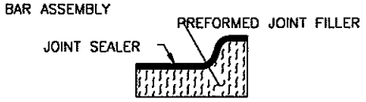
LEGEND — EXAMPLE: E4H–D

- E = EXPANSION JOINT
- NO. = JOINT REFERENCE
- H = HOT POURED
- –D = DOWEL BARS

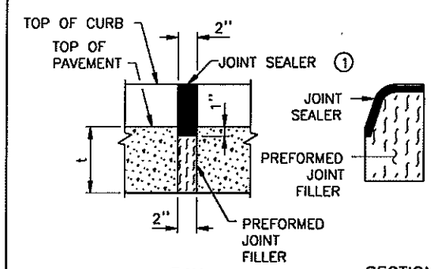


E2H–D (W/DOWELS) E2H (W/O DOWELS)

JOINT DETAIL B



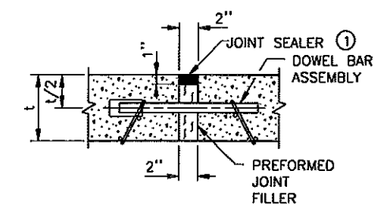
SECTION THRU CURB



E4H (W/O DOWELS)

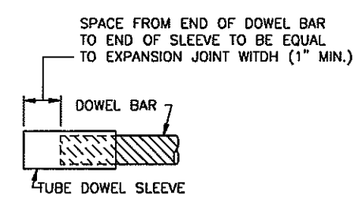
SECTION THRU CURB

JOINT DETAIL C



E4H–D (W/DOWELS)

JOINT DETAIL D



DOWEL BAR SLEEVE DETAIL

NOTES:

PREFORMED JOINT FILLER MATERIAL, SPEC. 3702.

FOR DOWEL BAR ASSEMBLY, SEE STANDARD PLATE 1103.

① JOINT SEALER SPEC. 3725. THE JOINT FACES SHALL BE CLEANED AND DRIED BY SANDBLASTING AND AIR BLASTING. TOP OF SEALER, FLUSH TO 1/8" BELOW TOP OF PAVEMENT SURFACE. MAKE TOP OF SEALER FOR CURB SECTION D JOINTS FLUSH WITH SURFACE '1/8".

EXPANSION JOINTS
DESIGN E

STANDARD SHEET NO. 5-297.221 (1 OF 2)
STANDARD APPROVED: APRIL 14, 2010
TITLE: PAVEMENT JOINTS
CONTRACTION (DESIGN C) AND EXPANSION (DESIGN E)

PROJ. NO. 6310-2-11 J7911

S.A.P. NO. 159-080-016 (TH) SHEET NO. 5 OF 15 SHEETS

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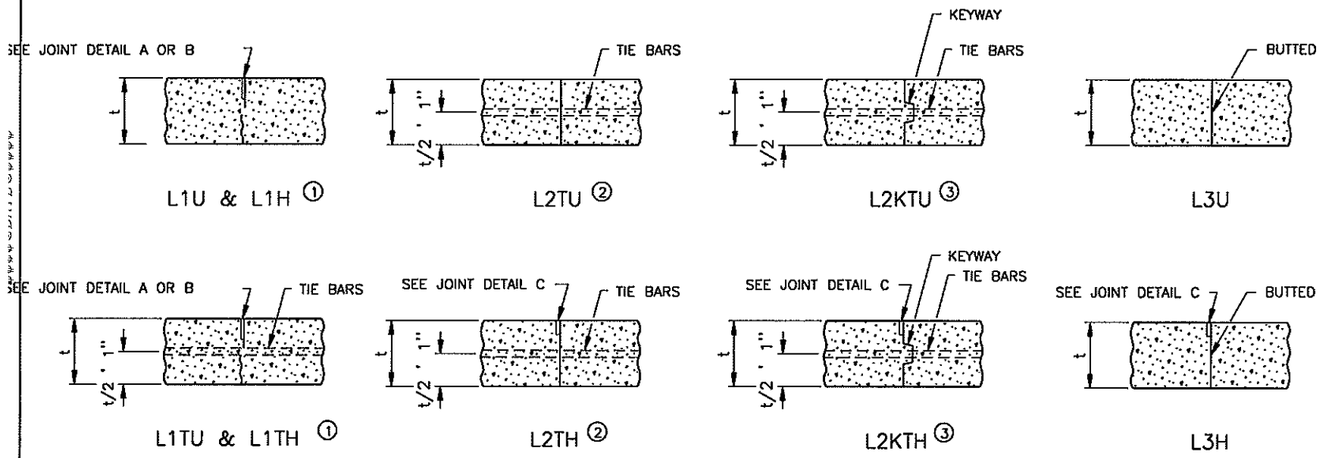
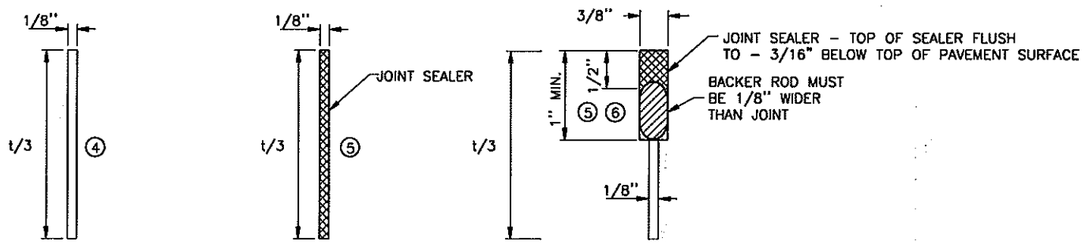
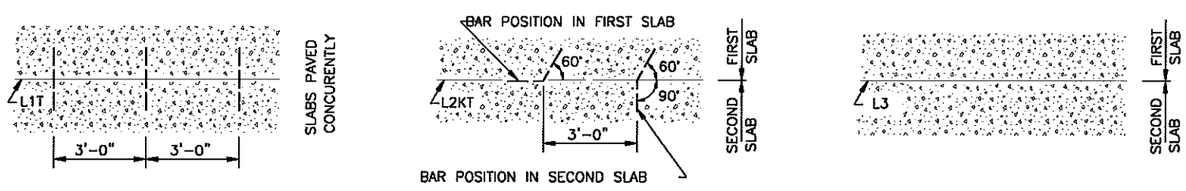






TIEBAR TABLE

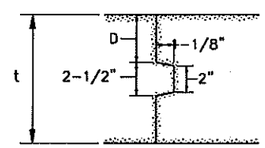
PAVEMENT THICKNESS	TIEBAR SIZE	LENGTH
< 10-1/2"	NO. 13	30"
≥ 10-1/2"	NO. 16	36"
ALL THICKNESS WHEN TYING TO CURB AND GUTTER	NO. 13	30"

ALL REBARS ARE IN METRIC DESIGNATIONS

THE TIE BAR SPACING FOR ALL L2T AND L2KT JOINTS SHALL BE 3'-0" CENTER TO CENTER AND BENT 60° AS SHOWN, EXCEPT WHEN NOTED OTHERWISE IN THE PLANS.

TIE BARS IN THE L2T AND L2KT JOINTS SHALL BE THE SAME SIZE AND LENGTH AS USED FOR THE L1T JOINTS, WHEN TYING PAVEMENT TO PAVEMENT. TIE BARS IN THE L2KT JOINTS SHALL BE NO. 13 X 2' – 6", WHEN TYING CURB & GUTTER TO PAVEMENT.

ALL TIE BARS SHALL BE EPOXY COATED AND COMPLY WITH SPEC. 3301.



PAVEMENT KEYWAY DETAIL

KEYWAY DIMENSION TABLE

t PAVEMENT THICKNESS	D (TOLERANCE ' 1/4")
< 7"	NO KEYWAY
7"TO 7-1/2"	3"
8"TO 10"	4"
≥ 10-1/2"	5"

KEYWAY (1-1/8" x 2" x 2-1/2") MAY BE FORMED WITH MOLD OR METAL FORM. OTHER APPROVED KEYWAY SHAPES GIVING EQUIVALENT CONSTRUCTION FEATURES MAY BE USED WITH APPROVAL OF THE ENGINEER.

LONGITUDINAL JOINT REFERENCE, DETAIL & SEALER SPECIFICATION TABLE

JOINT REFERENCE			JOINT DETAIL	JOINT SEALER SPEC	JOINT WIDTH
WITHOUT TIE BARS	WITH TIE BARS	WITH KEYWAY & TIE BARS			
L1U	L1TU		A	UNSEALED	1/8"
L1H	L1TH		B	3725	1/8"
	L2TU	L2KTU	NONE	UNSEALED	
	L2TH	L2KTH	C	3725	3/8"
L3U			NONE	UNSEALED	
L3H			C	3725	3/8"

LEGEND

L = LONGITUDINAL JOINT
NO. = JOINT REFERENCE
1 = PAVED CONSTRUCTION JOINT
2 = TIED/KEYED CONSTRUCTION JOINT
3 = BUTTED CONSTRUCTION JOINT
K = KEYWAY
T = TIE BARS
U = UNSEALED
H = HOT POURED

EXAMPLE: L2KTH

NOTES:

NORMALLY, TIED PAVEMENT WIDTHS SHALL NOT EXCEED FOUR LANES, EXCEPT BRIDGE APPROACH PANELS AND PAVEMENT TAPERS.

JOINT WIDTH TOLERANCE IS + 1/16 IN. TO – 1/32 IN.

FURNISH AND INSTALL ALL JOINT SEALER IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.

TIED/KEYED AND BUTTED CONSTRUCTION JOINTS SHALL BE UNSEALED EXCEPT AS OTHERWISE NOTED IN THE PLAN OR REQUIRED BY THE ENGINEER.

SEE STANDARD PLANS 5-297.217 AND 5-297.219 FOR CONCRETE MAINLINE AND RAMP PAVEMENT.

SEE PAVING LAYOUTS IN THE PLANS FOR JOINT CLASS DESIGNATIONS TO BE USED AND SPECIAL REINFORCEMENT REQUIRED.

WHEN CURB AND GUTTER IS PLACED ADJACENT TO CONCRETE MAINLINE, THE TIEBARS SHALL BE PLACED A MINIMUM OF 2" ABOVE THE CURB AND GUTTER GRADE.

① SEE THE LONGITUDINAL JOINT REFERENCE, DETAIL & SEALER SPECIFICATION TABLE TO DETERMINE JOINT DETAIL.

② CONCRETE PAVEMENTS LESS THAN 7" SHALL USE L2TU AND L2TH JOINTS UNLESS OTHERWISE ALLOWED BY THE ENGINEER.

③ CONCRETE PAVEMENTS GREATER THAN OR EQUAL TO 7" SHALL USE L2KTU AND L2KTH JOINTS UNLESS OTHERWISE ALLOWED BY THE ENGINEER.

④ THE JOINT FACES SHALL BE CLEANED WITH WATER DURING THE SAW CUTTING OPERATION OR BY WATER BLASTING AFTER SAWING.

⑤ THE JOINT FACES SHALL BE CLEANED AND DRIED BY SANDBLASTING AND AIR BLASTING.

⑥ PRIOR TO SEALING THE JOINT, A 1/2" DIAMETER CLOSED CELL BACKER ROD CAPABLE OF WITHSTANDING SEALANT TEMPERATURES OF 400 DEGREES F. SHALL BE PLACED 1/2" BELOW THE TOP OF THE PAVEMENT.

STANDARD SHEET NO. 5-297.221 (2 OF 2)
STANDARD APPROVED: APRIL 14, 2010
TITLE: PAVEMENT JOINTS
LONGITUDINAL (DESIGN L)

PROJ. NO. 6310-2-11 J7911 S.A.P. NO. 159-080-016 (TH) SHEET NO. 6 OF 15 SHEETS

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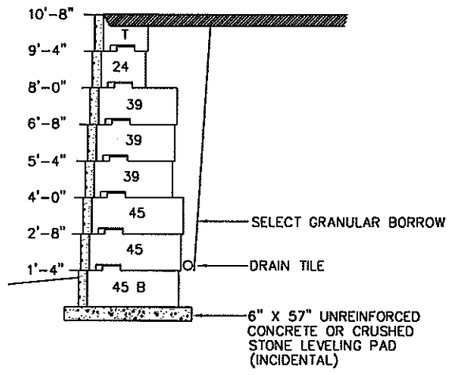
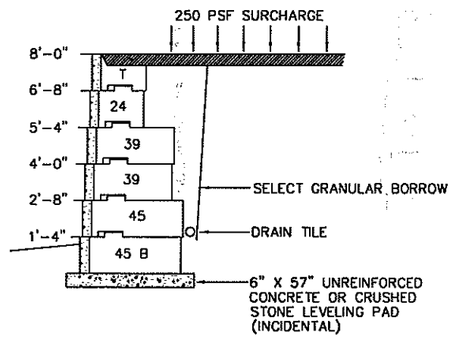
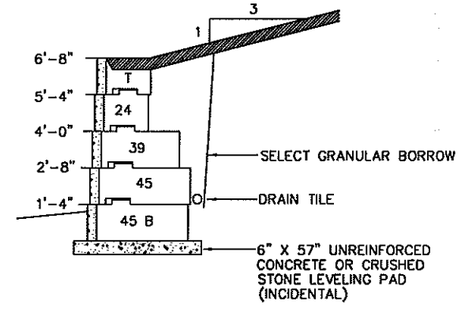
NO SLOPE, NO SURCHARGE, 28° SOIL, 45" BASE BLOCK



NO SLOPE, 250 PSF SURCHARGE, 28° SOIL, 45" BASE BLOCK



3/1 SLOPE, NO SURCHARGE, 28° SOIL, 45" BASE BLOCK



TYPICAL MAXIMUM GRAVITY WALL HEIGHTS TABLE	MAXIMUM TOTAL GRAVITY WALL HEIGHT		
KEY ASSUMUMPTIONS REGARDING (A) DEPTH OF BASE BLOCK, (B) SURCHARGE, AND (C) SLOPE	SOIL TYPE= CLAY 26°	SOIL TYPE= SILTS 28°	SOIL TYPE= SAND 30°
45" DEEP BLOCKS, NO SURCHARGE, NO TOP SLOPE	9'-4"	10'-8"	12'-0"
45" DEEP BLOCKS, NO SURCHARGE, 3/1 TOP SLOPE	6'-8"	6'-8"	8'-0"
45" DEEP BLOCKS, 250 PSF SURCHARGE, NO TOP SLOPE	6'-8"	8'-0"	8'-0"
39"DEEP BLOCKS, NO SURCHARGE, NO TOP SLOPE	8'-0"	9'-4"	9'-4"
39" DEEP BLOCKS, NO SURCHARGE, 3/1 TOP SLOPE	5'-4"	6'-8"	6'-8"
39" DEEP BLOCKS, 250 PSF SURCHARGE, NO TOP SLOPE	6'-8"	6'-8"	6'-8"
24" DEEP BLOCKS, NO SURCHARGE, NO TOP SLOPE	5'-4"	5'-4"	5'-4"
24" DEEP BLOCKS, NO SURCHARGE, 3/1 TOP SLOPE	2'-8"	2'-8"	4'-0"
24" DEEP BLOCKS, 250 PSF SURCHARGE, NO TOP SLOPE	2'-8"	2'-8"	2'-8"

CRITICAL ASSUMPTIONS:

1. IT IS ASSUMED THAT THE 250 PSF SURCHARGE IS LOCATED 3'-0" INWARD FROM THE FACE OF THE BLOCK.
2. IT IS ASSUMED THAT THE 3/1 TOP SLOPE IS OFF THE FACE OF THE WALL (NOT THE BACK OF THE BASE BLOCK).
3. IT IS ASSUMED THAT THE EMBEDMENT DEPTH IS 10 PERCENT OF THE TOTAL WALL HEIGHT.
4. MAXIMUM WALL HEIGHT MAY VARY DEPENDING ON THE TYPE OF LEVELING PAD USED. ALWAYS SPECIFY WHICH TYPE IS BEING USED.
5. MINIMUM FACTORS OF SAFETY ARE 1.5 FOR SLIDING, 1.5 FOR OVERTURNING AND 2.0 FOR BEARING CAPACITY.

Revision: —
Creation Date: —
Revision comment:

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: 8-1-12 Lic. No. 24657

City of Rochester, Minnesota
Department Of Public Works
201 4th Street S.E.
Rochester, MN 55904
Phone: (507) 328-2450
FAX: (507) 328-2401

Title: DETAILS OF MODULAR BLOCK RETAINING WALL SPECIAL

Designer: CWF
Checker: RJK

S.A.P. No. 159-080-016
Project No. 6310-2-11 J 7911
Sheet 7 of 15 Sheets

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CONTROL & TRAVERSE POINTS

NODE ID	LOCATION	LOCATION	DESCRIPTION	NORTHING	EASTING
	MAYO RUN	10TH AVE SE			
1	13+47.76-15.53 RT	3+56.73-13.61 RT	TRAV_STA	167454.745	622778.879
2	13+41.00-403.31 RT		FS	167069.222	622736.620
3	13+03.46-40.58 RT	3+36.32-33.01 LT	BLK_COR	167433.865	622732.471
4	12+90.89-82.41 LT	4+59.95-33.00 LT	BLK_COR	167557.487	622731.231
5	13+79.41-132.66 RT	2+36.99-33.19 RT	PROP_COR	167335.208	622799.666
6	13+06.27-41.22 LT	4+17.41-21.90 LT	PROP_COR	167515.058	622742.763
7	12+70.26-514.43 LT		PROP_COR	167990.589	622736.394
8	16+24.62-22.33 LT	3+52.44-298.03 RT	TRAV_STA	167453.312	623063.327
13	10+30.98-8.56 RT	3+44.02-298.87 LT	TRAV_STA	167438.883	622466.546

MAYO RUN ALIGNMENT

CONTROL POINT	STATION	NORTHING	EASTING	DIRECTION	DISTANCE
BOP	8+50.00	167448.0208	622285.5040	N 89°32'54" E	192.29
PC	10+42.29	167447.5362	622477.7880		
RADIUS	N/A	167944.0658	622473.8748		
PI	10+92.29	167447.9303	622527.7864		
PT	11+41.95	167458.2846	622576.7026	N 78°02'54" E	72.07
PC	12+14.02	167473.2090	622647.2087		
RADIUS	N/A	167271.8898	622689.8230		
PI	12+45.16	167479.6571	622677.6708		
PT	12+75.83	167476.8042	622708.6769	S 84°44'35" E	204.97
PC	14+80.80	167458.0243	622912.7863		
RADIUS	N/A	167837.3222	622947.6852		
PI	14+99.79	167456.2843	622931.6974		
PT	15+18.75	167456.4340	622950.6878	N 89°32'54" E	21.01
PC	15+39.76	167456.5996	622971.6962		
RADIUS	N/A	167307.3222	622972.8730		
PI	15+79.76	167456.9150	623011.6949		
PT	16+17.92	167437.1887	623046.4925	S 60°27'06" E	60.00
PI	16+77.92	167407.5992	623098.6889	S 61°01'56" E	278.41
PI	19+56.33	167272.7601	623342.2694	S 60°58'12" E	83.98
PI	20+40.32	167232.0050	623415.7030	S 61°22'04" E	162.32
PI	22+02.64	167154.2230	623558.1752	S 61°22'03" E	291.55
EOP	24+94.19	167014.5144	623814.0722		

10TH AVENUE SE ALIGNMENT

CONTROL POINT	STATION	NORTHING	EASTING	DIRECTION	DISTANCE
BOP	0+00.00	167097.8923	622768.8617	N 00°34'37" W	810.00
EOP	8+10.00	167907.8512	622760.7037		

EXISTING POLES

STATION LOCATION	OFFSET LT	OFFSET RT	INPLACE UTILITY	LEAVE AS IS	RELOCATE	NOTES
3+83.4		19.9	P.P.		X	
3+94.7	77.8		P.P.	X		

NOTES:
THE "LEAVE AS IS" AND "RELOCATE" COLUMNS ARE BASED UPON THE BEST INFORMATION AVAILABLE AND MAY NOT REFLECT THE ACTUAL EFFECTS ON THE UTILITIES CONSTRUCTION. ACTUAL DETERMINATION WILL BE MADE IN THE FIELD DURING CONSTRUCTION.

UTILITIES ARE SHOWN AT APPROXIMATE LOCATIONS. THE CONTRATOR SHALL DETERMINE THE ACTUAL LOCATION OF ALL UTILITIES IN THE FIELD.

ALL UTILITY WORK SHOWN ON THIS SHEET WILL BE DONE BY OTHERS UNLESS NOTED.

EXISTING NATURAL GAS LOCATIONS

STATION LOCATION	OFFSET LT	OFFSET RT	INPLACE UTIL	LEAVE AS IS	RELOCATE	NOTES
2+75 TO 4+30		12'	10" GAS LINE		X	
2+75 TO 4+30		17'	6" GAS LINE		X	

NOTES:
THE "LEAVE AS IS" AND "RELOCATE" COLUMNS ARE BASED UPON THE BEST INFORMATION AVAILABLE AND MAY NOT REFLECT THE ACTUAL EFFECTS ON THE UTILITIES CONSTRUCTION. ACTUAL DETERMINATION WILL BE MADE IN THE FIELD DURING CONSTRUCTION.

UTILITIES ARE SHOWN AT APPROXIMATE LOCATIONS. THE CONTRATOR SHALL DETERMINE THE ACTUAL LOCATION OF ALL UTILITIES IN THE FIELD.

ALL UTILITY WORK SHOWN ON THIS SHEET WILL BE DONE BY OTHERS UNLESS NOTED.

INPLACE SANITARY SEWER STRUCTURES (A)

STATION-LOCATION	STRUCT TYPE	INPLACE CASTING EL.	*REMOVE*	INV EL	REMOVE PIPE	*REMARKS*
3.38.0-0.2' LT	M.H.	995.9	*1*	989.69	78.1	*SEE CONST SAN. CHART*
4+16.1-0.1' LT	M.H.	996.17	*1*	989.59		*SEE CONST SAN. CHART*
			2		*79*	

INPLACE STORM SEWER STRUCTURES (B)

STATION-LOCATION	STRUCT TYPE	INPLACECASTING EL.	*REMOVE CB*	INL EL	OUTL EL	REMOVE PIPE (LIN FT)	*REMARKS*
3+16.5-18.2' RT	C.B.	995.02	*1*		993.08	36.0	
3+17.0-17.9' LT	C.B.	995.12	*1*	992.3	991.73	47.0	
3+88.6-18.1' LT	C.B.	995.53	*1*		992.21	5.8	
3+88.7-18.0' RT	C.B.	995.6	*1*		992.19	12.0	
			4	TOTALS		*101*	

INPLACE WATERMAIN (C)

STATION-LOCATION	GATE VALVE	HYD	REMOVE	CURB BOX	REMOVE PIPE	*REMARKS*
4+17.4-22.2' LT		X	*1*		*155.5*	
			1		*156*	*TOTALS*

REMOVE CULVERT (D)

LOCATION	SIZE AND TYPE	CONC. CULVERT	CONC. BOX CULVERT	REMOVE HEAD WALL	REMARKS
		LIN FT	LIN FT		
13+01.0 TO 13+65.9	73" SPAN RCP	64.7		*1.0*	*HEAD WALL ON WEST SIDE 10TH AVE*
13+01.0 TO 13+65.9	8.5 X 4' BOX		63.7	*1.0*	*HEAD WALL ON EAST SIDE 10TH AVE*
		65	*64*	*2*	*TOTALS*

SIDEWALK, DRIVEWAY, & BIT. PAVEMENT REMOVALS (E)

6TH STREET SW LOCATION FROM	TO	SIDE	REMOVE CONC DRIVE (SQ FT)	REMOVE SIDEWALK (SQ YD)	SAW CUT BITUMINOUS (FULL DEPTH) (LIN FT)	REMOVE BIT PAVEMENT (SQ YD)
3+00	3+55.40	WEST	0.0	12.2	45.3	114.6
3+00	3+55.40	EAST	0.0	10.9	45.4	114.1
3+55.40	3+92.08	WEST	0.0	23.2		75.7
3+55.40	3+92.08	EAST	0.0	20.1		75.4
3+92.08	4+27	WEST	46.9	10.3		102.2
3+92.08	4+27	EAST	0.0	4.7		67.6
		TOTALS	47	82	91	550

REMOVE LIMSTONE WALL AND GABION BASKESTS (F)

STATION LOCATION	SIDE LT	SIDE RT	GABION BASKESTS (CU YD)	LIMESTONE WALL (1) (LIN FT)
12+40.6 TO 13+00.3	X		*27.2*	
12+45.8 TO 12+68.1		X	*9.8*	
12+68.1 TO 13+01.7		X		*33.5*
		TOTALS	*37*	*34*

NOTES:
(1) LIMESTONE WALL IS APPROXIMATELY 6' TALL

SALVAGE AND INSTALL GUARD RAIL (G)

STATION LOCATION	OFFSET LT	OFFSET RT	SALVAGE (LF)	*INSTALL (LF)*	NOTES
3+91.4 TO	32.3		*15.2*	*15.2*	
3+93.0	47.5				
			16	*16*	*TOTALS*

EXISTING TREES (H)

STATION LOCATION	OFFSET LT	OFFSET RT	INPLACE TREE (SIZE)	CLEAR TREE	GRUB TREE	CLEAR & GRUB ACRE
10+35 - 12+35	X		WOODS			
10+45.58		26.2	9" MAPLE			
10+58.37		14.2	12" BOX ELDER			
10+59.96		13.7	5" BOX EDLER			
10+65.01		14.4	8" ELM			
10+73.03		13.6	8" ELM			
10+94.12		13.1	14" BOX ELDER			
10+94.67		10.4	10" ELM			
11+21.57		14.8	12" WALNUT			
11+27.58		15.3	15" ELM			
11+32.25		14.2	12" WALNUT			
11+39.15		13.3	12" WALNUT			
11+44.12		15.8	6" WALNUT			
11+54.88		7.4	6" ELM			
11+55.70		8.5	6" ELM			
11+59.43		14.3	12" BOX ELDER			
11+66.80		8.0	6" ELM			
11+78.25		15.3	54" WILLOW			
11+92.60		15.0	15" CEDAR			
12+22.13		9.2	8" STUMP			
12+35 - 12.99	X		WOODS			*0.013*
12+37.08		12.6	16" ELM			
12+60.09		10.2	8" STUMP		*1*	
12+72.93		13.0	10" STUMP		*1*	
12+78.11		12.8	24" STUMP		*1*	
12+78.53	7.4		10" STUMP		*1*	
12+79.85		8.0	8" STUMP		*1*	
12+91.76	9.0		6" STUMP		*1*	
12+95.32		8.1	10" STUMP		*1*	
12+95.76	8.9		10" STUMP		*1*	
12+96.90	11.6		10" STUMP		*1*	
12+98.08		10.6	8" STUMP		*1*	
12+98.54	11.6		14" STUMP		*1*	
12+98.78		11.0	6" STUMP		*1*	
13+02.36	103.0		16" MAPLE			
13+17.79		65.8	16" MAPLE			
13+22.58		104.7	10" MAPLE			
13+62.13		63.5	15" MAPLE			
13+64.37		108.1	16" MAPLE			
13+65 - 13+91	X		WOODS			*0.008*
13+74.49		17.2	9" ELM	*1*	*1*	
13+77.02		19.0	5" ELM	*1*	*1*	
13+91 - 15+29	X		WOODS			
14+39.94		20.8	27" ELM			
14+72.36		8.5	8" ELM			
14+75.88		11.1	11" BOX ELDER			
14+82.84		10.9	16" BOX ELDER			
15+61.87		15.2	42" WILLOW			
15+74.77		14.3	20" MAPLE			
15+85.62		12.7	16" MAPLE			
15+86.34		15.5	18" MAPLE			
16+19.62		12.4	6" WHITE PINE			
16+21.26		12.8	6" WHITE PINE			
16+22.44		13.6	6" WHITE PINE			
16+25.94		13.9	6" WHITE PINE			
			TOTALS	*2*	*14*	*0.02*

NOTES:
CLEAR & GRUB TO BE PAID AS LUMP SUM

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: 8-1-12 Lic. No. 24087

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: TABULATIONS FOR BRIDGE REPLACEMENT ON 10TH AVE SE BETWEEN 4TH ST AND 6TH ST SE

Designer: CWF
Checker: RJK

S.A.P. No. 159-080-016
Project No. 6310-2-11 J7911
Sheet 8 of 15 Sheets

CONSTRUCT SANITARY SEWER STRUCTURES (I)

NO.	STATION-LOCATION	TYPE SPEC. 3 (1)	CAST. EL.	C-INV EL	REMARKS
NO. 1	3.38.0-0.2' LT	1	996.04	989.69	
NO. 2	4+16.1-0.1' LT	1	996.01	989.59	
		2		TOTALS	

NOTE: (' (1) SEE CITY OF ROCHESTER DETAIL PLATE 1-03

CONSTRUCT SANITARY SEWER PIPE (J)

FROM	TO	PIPE SIZE	SLOPE (%) C.C.	REMARKS
		8" D.I.P.		
NO. 1	NO. 2	78.1	0.13	
		79		

CONSTRUCT WATERMAIN PIPE (K)

FITTING NO.	STATION-LOCATION	DESCRIPTION	WGT (LBS)	HYDRANT 6"	HYDRANT B.O. EL.	GATEVALVE SIZE 6"	GATEVALVE SIZE 12"	PIPE SIZE AND TYPE 6" DIP (L.F.)	PIPE SIZE AND TYPE 12" DIP (L.F.)	PIPE SIZE AND TYPE 12" DIP (RJ) (L.F.)	24" STEEL CASIN	TO	REMARKS
W-1	3+05.1-5.3' LT	6" BEND 45D	32					8.2				W-2	
W-2	3+11.0-11.0' LT	6" BEND 45D	32					3.0				W-3	
W-3	3+14.0-11.0' LT	12" X 6" REDUCER	60						6.0			W-4	
W-4	3+20.0-11.0' LT	12" GATEVALVE & BOX					1		38.4			W-5	
W-5	3+58.4-11.0' LT	24" CASING RESTAINED JT PIPE								33.0	33.0	W-6	
W-6	3+91.4-11.0' LT	24" CASING RESTAINED JT PIPE							34.2			W-7C	
W-7A	4+25.6-22.8' LT	6" HYDRANT		1	996.2			3.0				W-7B	
W-7B	4+25.6-19.8' LT	6" GATEVALVE & BOX				1		8.8				W-7C	
W-7C	4+25.6-11.0' LT	12" X 6" TEE	110						3.0			W-8	
W-8	4+28.6-10.7' LT	12" GATEVALVE & BOX					1		12.6			W-9	
W-9	4+41.1-9.6' LT	12" X 6" REDUCER	60										
		TOTALS	294	1		1	2	23	95	33	33		

NOTES:
(RJ) IS FOR RESTRAINED JOINTS
RESTAINED JOINT PIPE TO BE PAID AS 12" DIP

CONST. CURB & GUTTER, DRIVEWAY, AND SIDEWALK (L)

6TH STREET SW LOCATION FROM	TO	SIDE	CONST B624 C&G	CONST 6" BIT. CURB	CONST 5" CONC WALK (2)	CONST 6" CONC WALK (1)(3)
			(LIN FT)	(LIN FT)	(SQ FT)	(SQ FT)
3+00	3+55.40	WEST	41.93	13.47	73.44	58.50
3+00	3+55.40	EAST	41.93	13.49	97.71	
3+55.40	3+92.08	WEST	36.67		144.19	
3+55.40	3+92.08	EAST	36.67		192.19	
3+92.08	4+27	WEST	25.54	9.57	32.33	59.67
3+92.08	4+27	EAST	25.54	9.58	42.36	
		TOTALS	209	47	583	119

NOTES:
(1) FOR CONCRETE WALK AT DRIVEWAYS
(2) INCLUDES 4" AGG. BASE CA-3
(3) INCLUDES 4" AGG. BASE CL. 5

CONSTRUCT ROADWAY (M)

6TH STREET SW FROM	TO	AGG. BASE CL. 5 OR CL 7C UNDER CONC.	AGG. BASE CL.5 OR CL 7C UNDER BIT.	7" CONC. PAVEMENT	PAVEMENT REINFORCEMENT	STRUCTURAL CONCRETE	(2) REINF. #13 BARS (EXOPY COATED)	DOWEL BARS	(1) 2350 TYPE SP 9.5 WEAR (SPWEA230B)	(1)(4) 2350 TYPE SP 12.5 NON-WEAR (SPNWB230B)
		(CU YD)	(CU YD)	(SQ YD)	(SQ YD)	(CU YD)	(POUND)	(EACH)	(TON)	(TON)
3+00	3+55.40	1.34	48.62	17.03	17.03	3.29	190.75		16.11	32.22
3+55.40	3+92.08	21.87	0.00	130.39	130.39	25.21	1069.54	96	0.00	0.00
3+90.08	4+27	3.90	34.69	23.24	23.24	4.49	139.71		11.84	23.69
		28	84	171	171	33	1400	96	28	56

NOTES:
(1) QUANTITIES COMPUTED AT A RATE OF 113/LBS/SQ YD/INCH
(2) QUANTITIES COMPUTED AT A RATE OF 0.668LBS/LIN FT

CONSTRUCT STORM SEWER STRUCTURES (N)

NO.	STATION-LOCATION	S.A. STATIONING	TYPE 1 0'-4'	73" SPAN RCP APRON	CONNECT TO EXISTING STORM SEWER	CAST ASSEM	CASTING EL.	T.C. EL	DEPTH	C-INL EL	C-OUTL EL	C-INV EL	REMARKS
S-1	3+16.97-17.67' LT		1			B	995.02	995.67	3.04	991.98	991.98		
S-2	3+16.97-17.67' RT		1			B	995.02	995.67	2.86		992.16		
S-3	3+59.89-46.84' RT	13+80.49-9.02' RT		1								991.40	
S-4	3+66.48-17.67' LT	13+15.65-9.02' RT			1					991.73		991.14	
S-5	3+68.86-47.75' RT	13+80.49-S.A.		1								991.40	
S-6	3+69.65-48.67' LT	12+84.49-9.02' RT		1								991.02	
S-7	3+77.83-48.67' RT	13+80.49-9.02' LT		1								991.40	
S-8	3+78.62-47.75' LT	12+84.49-S.A.		1								991.02	
S-9	3+81.00-17.67' RT	13+49.33-9.02' LT			1					991.99		991.28	
S-10	3+84.61-17.67' LT	13+13.80-9.02' LT			1					991.85		991.14	
S-11	3+87.59-46.84' LT	12+84.49-9.02' LT		1								991.02	
S-12	4+14.11-17.67' LT		1			B	995.32	995.97	3.17		992.15		
S-13	4+14.11-17.67' RT		1			B	995.31	995.96	2.99		992.32		
		TOTALS	4	6	3								

CONSTRUCT STORM SEWER PIPE (O)

FROM	TO	12" RCP C.C. LENGTH (FT)	15" RCP C.C. LENGTH (FT)	73" SPAN RCP C.C. LENGTH (FT)	SLOPE (%) C. TO C.	REMARKS
S-1	S-4		49.51		0.50	
S-2	S-1		35.34		0.50	
S-3	S-6			80.00	0.40	
S-5	S-8			80.00	0.40	
S-7	S-11			80.00	0.40	
S-9	S-13	33.11			1.00	
S-10	S-12	29.50			1.00	
		63	85	240	TOTALS	

CONSTRUCT DRIVE & APPROACHES (P)

ADDRESS	WIDTH (FT)	CONC DEPTH (4IN) (1)	CONC DEPTH (6IN) (1)	DRIVE 6" AGG. BASE CL. 2
		(SQ YD)	(SQ YD)	(TON)
#502	12		11.2	
#501	12		12.3	15.6
#435 1/2	12	50.7	11.2	
	TOTALS	51	35	16

NOTES:
(1) INCLUDES 4" AGGREGATE BASE CLASS 5

CONSTRUCT MODULAR RETAINING WALL SPECIAL (Q)

STATION LOCATION	SIDE LT	SIDE RT	RETAINING WALL	SELECT GRANULAR BORROW MOD (CV)	STRUCTURE EXCAVATION CLASS U	DRAINAGE SYSTEM
			(SQ YD)	(CU YD)	(CU YD)	(LUMP SUM)
12+40.6 TO 13+00.3	X		33.0	33.0	36	1
12+68.1 TO 13+01.7		X	28.3	33.5	37	1
		TOTALS	62	67	73	2

TURF ESTABLISHMENT / EROSION CONTROL (R)

LOCATION	LT SIDE	RT SIDE	SEEDING	SEED MIXTURE 350	TOPSOIL BORROW SEEDING 6" (LV)	TOPSOIL BORROW SODDING 3" (LV)	FERT. SLOW RELEASE (SEED AREA) 22-5-10 (1)	FERT. SLOW RELEASE (SOD AREA) 22-5-10(2)	SODDING MINERAL	SILT FENCE TYPE MACHINE SLICED	EROSION CONTROL BLANKET CAT. 3	SLOPE PAVING (4IN)	INLET PROTECTION TYPE C	FLOATATION SILT CURTAIN TYPE STILL WATER
			SQ YD	POUND	(CU YD)	(CU YD)	POUND	POUND	SQ YD	LIN FT	SQ YD	(SQ YD)	EACH	(LIN FT)
3+00 TO 3+55.40	X		0.00	-	0.00	5.17	0.0	2.0	47.7		-	0.0	1	
3+00 TO 3+55.40		X	20.73	0.4	4.49	4.43	1.5	1.7	40.9	38.5	20.7	0.0	1	
3+55.40 TO 3+92.08	X		0.00	-	0.00	8.43	0.0	3.2	77.8	45.5	-	3.4		10.0
3+55.40 TO 3+92.08		X	81.21	1.4	17.60	8.11	5.9	3.1	74.9	30.2	81.2	5.1		10.0
3+92.08 TO 4+27	X		0.00	-	0.00	7.36	0.0	2.8	68.0	66.0	-	0.0	1	
3+92.08 TO 4+27		X	0.00	-	0.00	4.24	0.0	1.6	39.2	9.8	-	0.0	1	
			102	2	23	38	8	15	349	191	102	9	4	20

BASIS FOR QUANTITIES
SEED MIXTURE 350 @ 84.5 LBS / ACRE
(1) SLOW RELEASE FERTILIZER ANALYSIS 22-5-10 350 LBS / ACRE
(2) SLOW RELEASE FERTILIZER ANALYSIS 22-5-10 200 LBS / ACRE

EARTHWORK BALANCE (S)

COMMON EXCAVATION (BM) (1)	160
TOPSOIL REQUIRED (CV) (2)	61
REMOVE BIT. PAVEMENT	92
MATERIAL AVAILABLE (BM)	68
MATERIAL AVAILABLE (CV) (3)	62
EMBANKMENT (CV)	81
COMMON BORROW (CV)	19

NOTES:
(1) INCLUDES TOPSOIL STRIPPING VEGETATION IN FILL AREAS
(2) 1.0 SHRINKAGE FACTOR FROM TOPSOIL REQUIRED COMPACTED VOLUME (CV) TO BANK MEASURE (BM)
(3) 1.1 SHRINKAGE FACTOR FROM BANK MEASURE (BM) TO COMPACTED VOLUME (CV) AND LOOSE VOLUME (LV) TO COMPACTED VOLUME (CV)

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: 8-1-12 Lic. No. 24067

City of Rochester, Minnesota
Department Of Public Works
201 4th Street S.E.
Rochester, MN 55904
Phone: (507) 328-2450
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Title: TABULATIONS FOR BRIDGE REPLACEMENT ON 10TH AVE SE BETWEEN 4TH ST AND 6TH ST SE

Designer: CWF
Checker: RJK

S.A.P. No. 159-080-016 J7911
Project No. 6310-2-11
Sheet 9 of 15 Sheets

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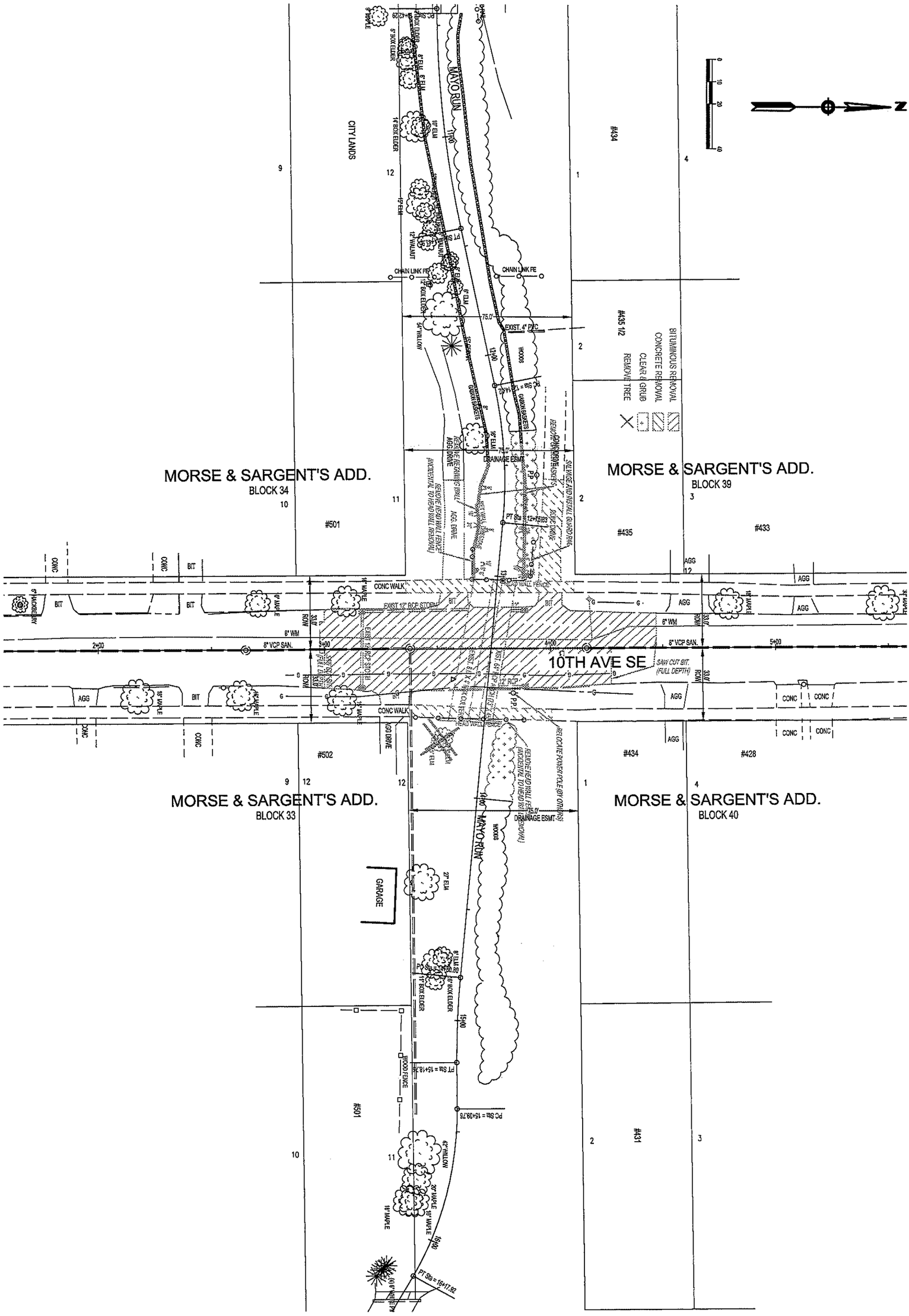
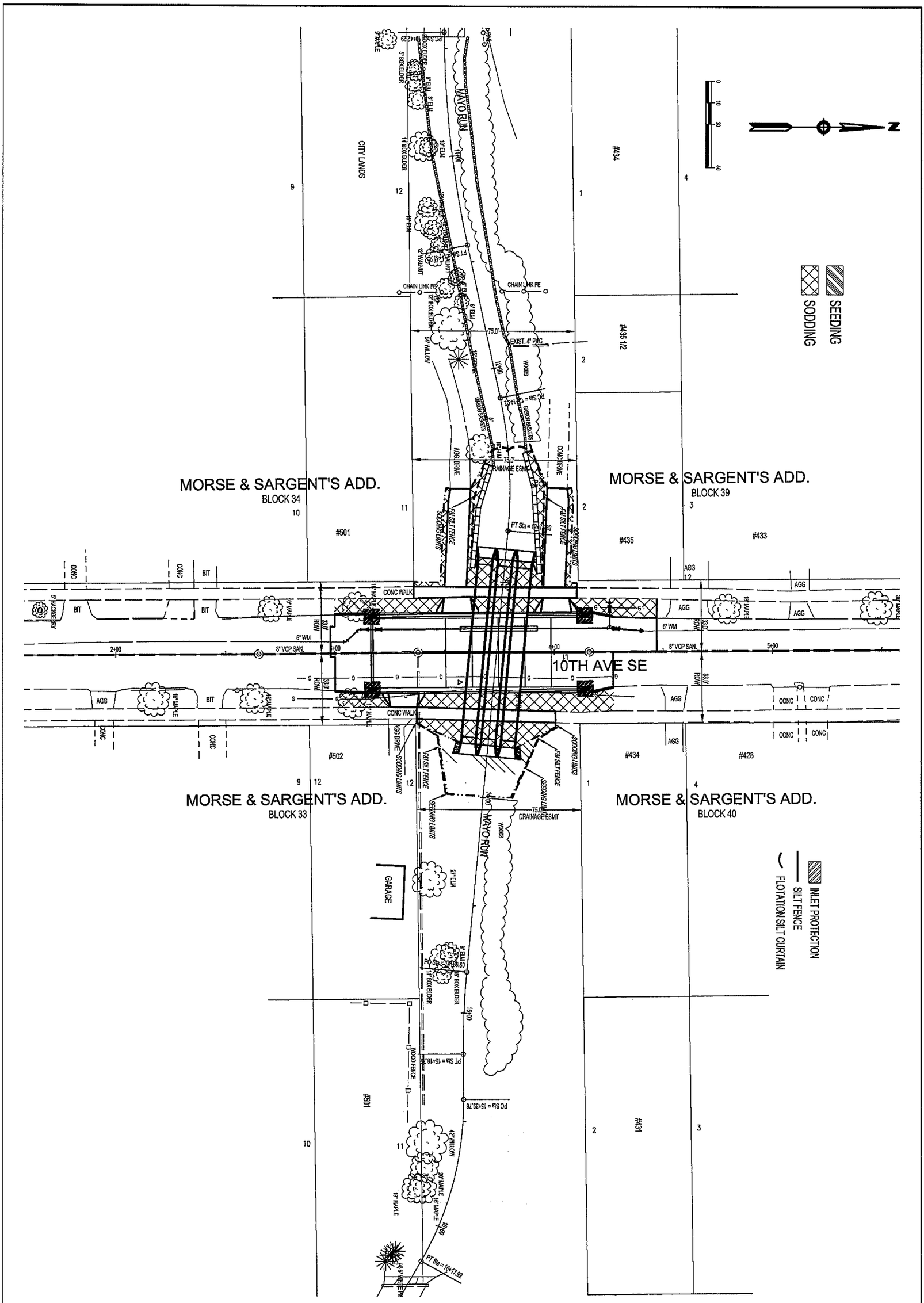


S.A.P. No. 159-080-016 Project No. 6310-2-11 J7911 Sheet 10 of 15 Sheets	Designer: CWF Checker: RJK	Title: REMOVALS ON 10TH AVENUE SE BETWEEN 4TH ST AND 6TH ST SE	City of Rochester, Minnesota Department Of Public Works 201 4th Street S.E. Rochester, MN 55904 Phone: (507) 328-2450 FAX: (507) 328-2401

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. Klun Date: 8-1-12 Lic. No. 24667



S.A.P. No. 159-080-016 Project No. 6310-2-11 J7911 Sheet 11 of 15 Sheets	Designer: CWF Checker: RJK	Title: EROSION CONTROL & TURF ESTABLISHMENT FOR BRIDGE REPLACEMENT ON 10TH AVE SE BETWEEN 4TH ST AND 6TH ST SE	City of Rochester, Minnesota Department Of Public Works	201 4th Street S.E. Rochester, MN 55904 Phone: (507) 328-2450 FAX: (507) 328-2401

Revision comment: —
Revised: —

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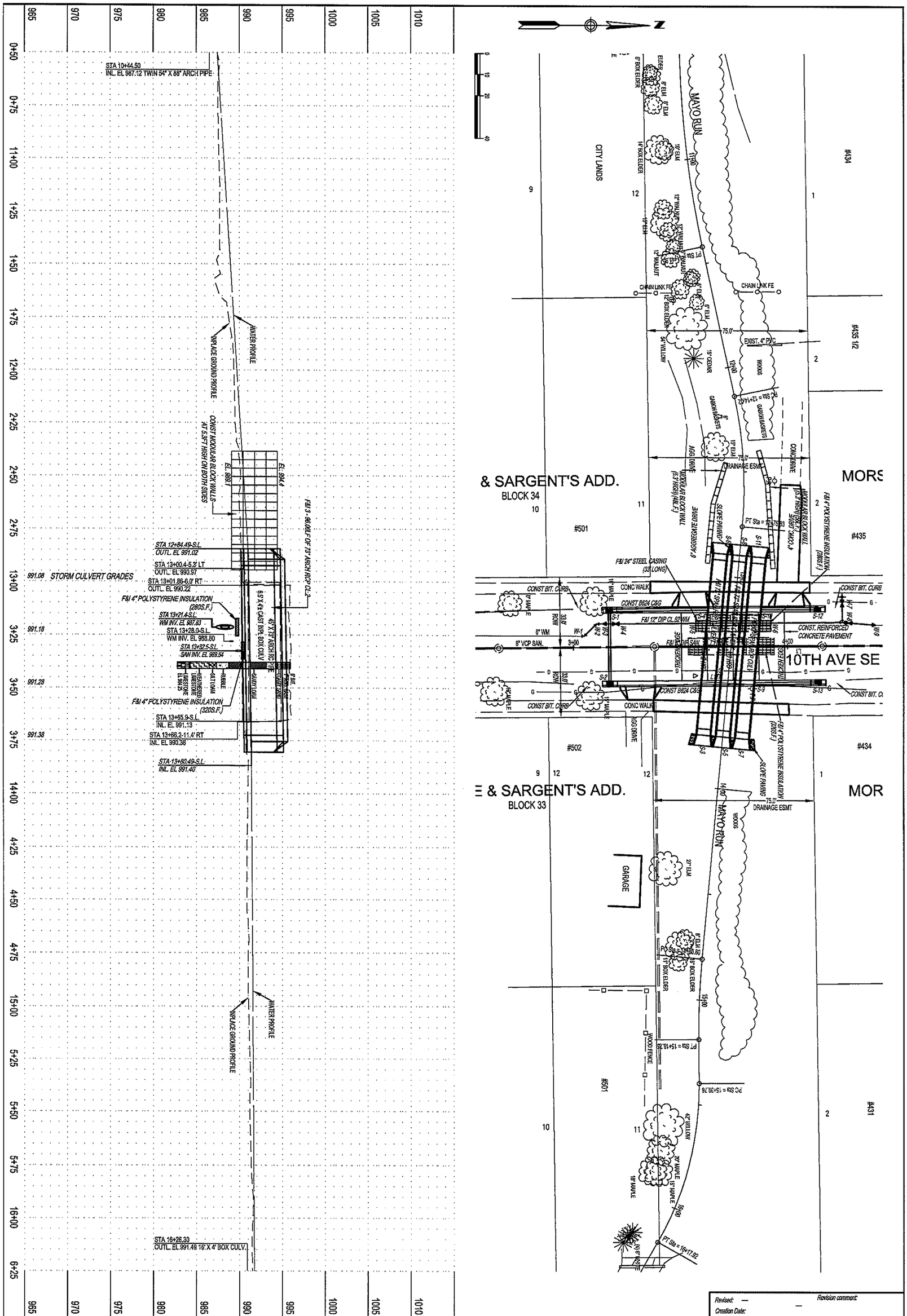
Russell J. Klun Date: 8-1-12 Lic. No. 24667


STA 10+44.50
INL. EL 987.12 TWIN 54" X 85" ARCH PIPE
WATER PROFILE
VILLAGE GROUND PROFILE
CONST MODULAR BLOCK WALLS AT 5.5FT HIGH ON BOTH SIDES
EL. 980.1
EL. 984.4
F&I 3 - 96.60LF OF 53" ARCH RCP CL.3
STA 12+84.49-S.L.
OUTL. EL 991.02
STA 13+00.4-5.3' LT
OUTL. EL 990.97
STA 13+01.86-6.0' RT
OUTL. EL 990.22
991.08 STORM CULVERT GRADES
F&I 4" POLYSTYRENE INSULATION (280S.F.)
STA 13+21.4-S.L.
WM INV. EL 987.83
STA 13+28.0-S.L.
WM INV. EL 988.80
STA 13+32.5-S.L.
SAN INV. EL 989.54
991.18
991.28
991.38
8.5' X 4' CAST INPL BOX CULV.
46' X 7.5' ARCH RC PIPE CULV.
F&I 4" POLYSTYRENE INSULATION (320S.F.)
STA 13+65.9-S.L.
INL. EL 991.13
STA 13+66.2-11.4' RT
INL. EL 990.38
STA 13+80.49-S.L.
INL. EL 991.40
STA 16+26.30
OUTL. EL 991.49 16' X 4' BOX CULV.
MAYO RUN
CITY LANDS
& SARGENT'S ADD.
BLOCK 34
#501
#435
#434
#435 1/2
MORS
CONC WALK
CONST B624 C&G
F&I 12" DIP CL.52 WM
CONST. REINFORCED CONCRETE PAVEMENT
10TH AVE SE
CONST BIT. CURB
8" VCP SAN.
8" WM
33.0' ROW
DRAINAGE ESMT
SLOPE PAVING
F&I 24" STEEL CASING (33' LONG)
MODULAR BLOCK WALL (AS NEEDED)
F&I 4" POLYSTYRENE INSULATION (280S.F.)
CHAIN LINK FE
EXIST. 4" PVC
WOODS
CONC DRIVE
ASG DRIVE
GARAGE
E & SARGENT'S ADD.
BLOCK 33
#502
#501
#431
WOOD FENCE
PT Sta = 15+16.76
PC Sta = 15+39.76
PT Sta = 16+17.92
Revised: —
Revision comment: —
Creation Date:
S.A.P. No. 159-080-016
Project No. 6310-2-11 J7911
Sheet 12 of 15 Sheets
Designer: CWF
Checker: RJK
Title: GRADING AND UNDERGROUND FOR BRIDGE REPLACEMENT ON 10TH AVE SE BETWEEN 4TH ST AND 6TH ST SE
City of Rochester, Minnesota
Department Of Public Works
201 4th Street S.E.
Rochester, MN 55904
Phone: (507) 328-2450
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: 8-1-12 Lic. No. 24667

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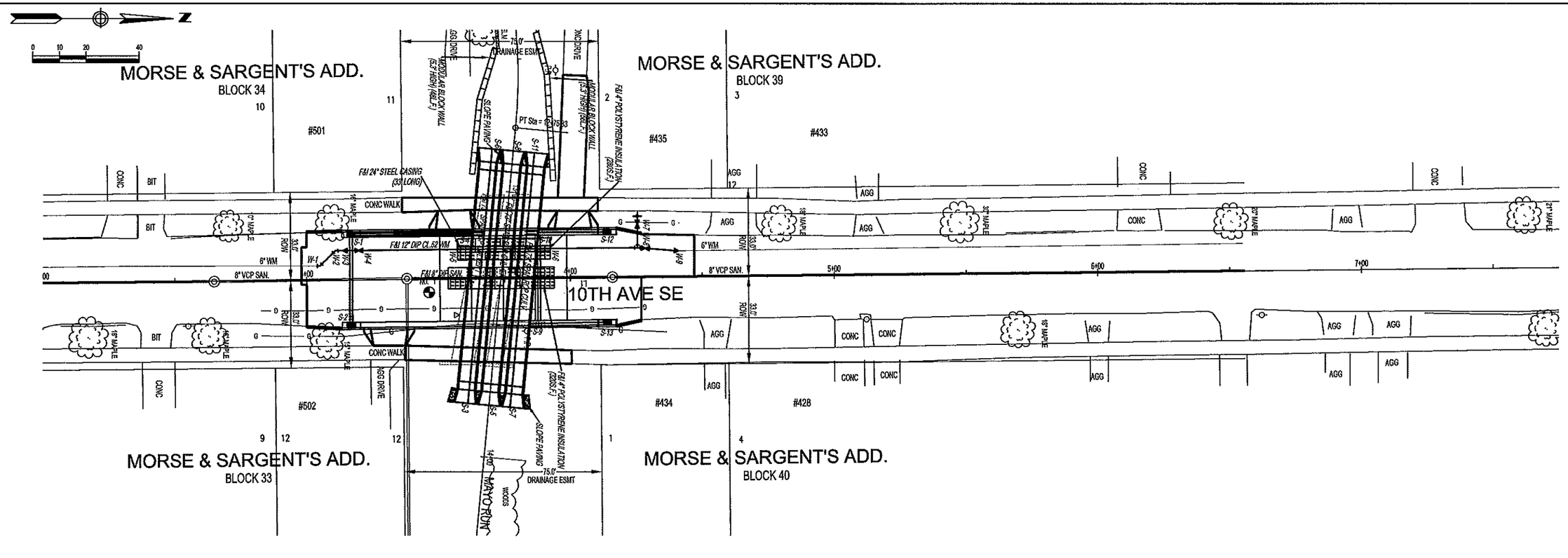

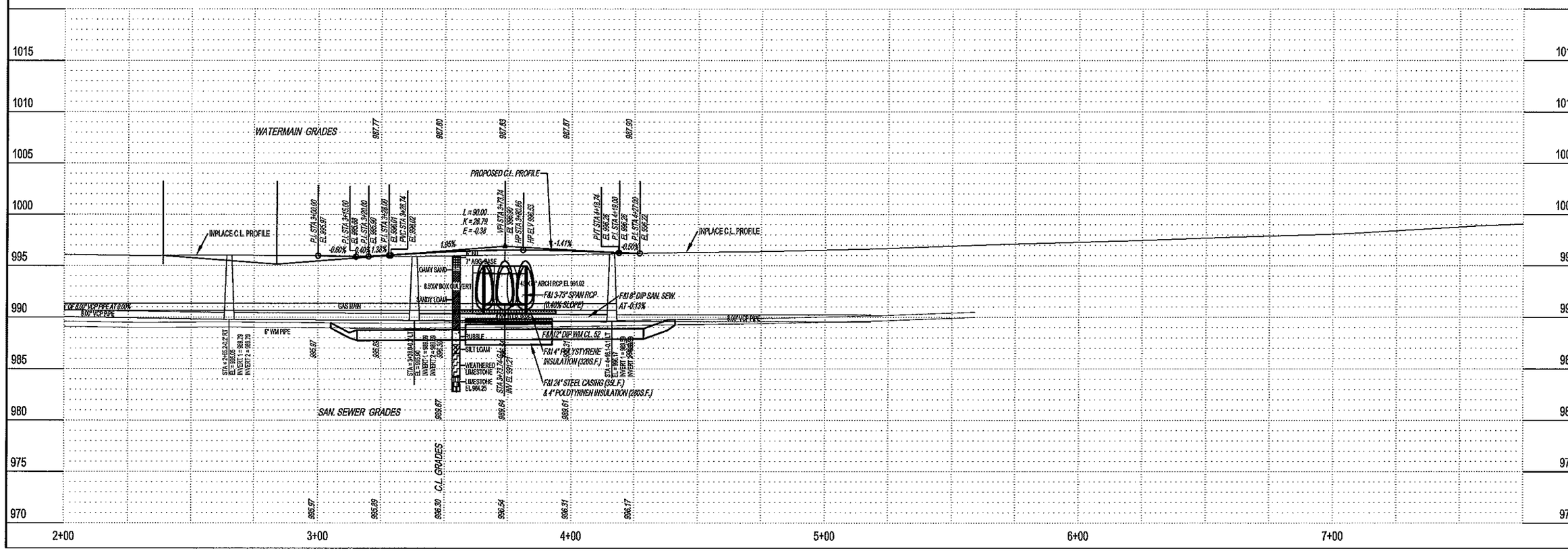

Revision comment: —
Revised: —

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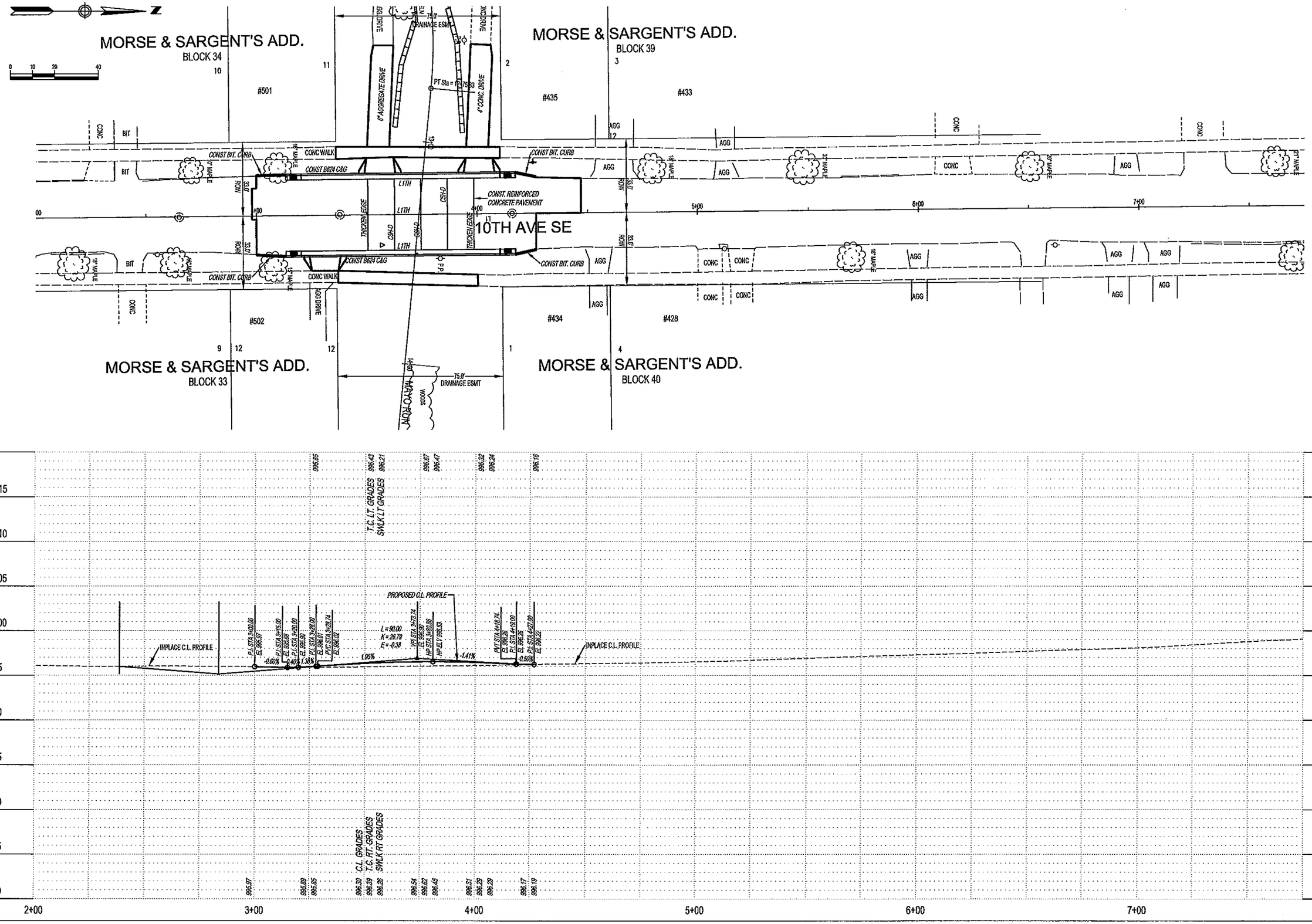
Ronald J. Klu Date: 8-1-12 Lic. No. 24087

City of Rochester, Minnesota
Department Of Public Works
201 4th Street S.E.
Rochester, MN 55904
Phone: (507) 328-2450
FAX: (507) 328-2401

Title: UNDERGROUND FOR BRIDGE REPLACEMENT ON 10TH AVE SE BETWEEN 4TH ST AND 6TH ST SE

Designer: CWF
Checker: RJK

S.A.P. No. 159-080-016
Project No. 6310-2-11 J7911
Sheet 13 of 15 Sheets



Revision comment:

Revised: —

Creation Date: —

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Date: 8-1-12 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) 328-2401

Title: GRADING FOR BRIDGE REPLACEMENT ON 10TH AVE SE BETWEEN 4TH ST AND 6TH ST SE

Designer: CWF

Checker: RJK

S.A.P. No. 159-080-016

Project No. 6310-2-11 J7911

Sheet 14 of 15 Sheets

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Project No. 6310-2-11 J 7911
Sheet 15 of 15 Sheets

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