



CITY OF SAINT PAUL

Christopher B. Coleman, Mayor

25 West Fourth Street
Saint Paul, MN 55102

Telephone: 651-266-6700
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TRANSPORTATION COMMITTEE OF THE PLANNING COMMISSION

Monday, March 2, 2015, 4:00 p.m. – 5:30 p.m.

All meetings are held in the City Hall Annex 13th floor

Conference room at 25 West 4th Street in Saint Paul

REVISED AGENDA

1. Bruce Vento Ped/Bike Bridge – Don Varney, Parks, 15 minutes
2. Como-Chatsworth RSVP – Barb Mundahl, Public Works, 5 minutes
3. Raymond Ave Phase II – Barb Mundahl, Public Works, 10 minutes
4. Downtown Parking Management Strategy Update – Hilary Holmes, PED, 30 minutes

Upcoming Transportation Committee Meetings

- March 16
- March 30

Meetings are open to the public. The Chair may allow five minutes for informal public comment (from non-committee members) at the beginning of each agenda as needed. Additional time may be allocated for comments or further discussion at the discretion of the Chair. Meetings will be cancelled if there is not a quorum expected, or if there are no agenda items. For additional information on the Transportation Committee of the Planning Commission, please visit our website at bit.ly/StPaulTC or contact Hilary Holmes at hilary.holmes@ci.stpaul.mn.us or 651-266-6612.

Transportation Committee Staff Report

Committee date: March 9, 2015

Project Name	<i>Como-Chatsworth Residential Street Paving</i>
Geographic Scope	<i>Area from Lexington to Chatsworth and Front to Horton</i>
Ward(s)	<i>Ward 5</i>
District Council(s)	<i>District 10</i>
Project Description	<i>New concrete curb & gutter, new pavement, sidewalks, utility upgrades and lantern style street lighting</i>
Project Contact	<i>Barb Mundahl</i>
Contact email/phone	<i>Barbara.mundahl@ci.stpaul.mn.us</i>
Lead Agency/Department	<i>Public Works</i>
Purpose of Project/Plan	<i>To upgrade existing utilities and roadway quality.</i>
Planning References	<i>Neighborhood meeting in Sept. 2014, several letters to residents</i>
Project stage	<i>Engineering</i>
General Timeline	<i>Advertise for Bid in April, 2015, build June through November 2015</i>
District Council position (if applicable)	<i>Supports</i>
Level of Committee Involvement	<i>Inform</i>
Previous Committee action	<i>none</i>
Level of Public Involvement	<i>Inform, advise & consent, involve, development of project</i>
Public Hearing	<i>March 18, 2015</i>
Public Hearing Location	<i>City Council</i>
Primary Funding Source(s)	<i>Street Improvement Bonds and Assessments</i>
Cost	<i>\$4,500,000</i>

Staff recommendation	<i>Describe, if any</i>
Action item requested of the Committee	<i>Recommend approval</i>
Committee recommendation	
Committee vote	

CITY OF ST. PAUL

Department of Public Works

CONSTRUCTION PLAN

for

SAINT PAUL STREET PAVING

of

COMO/CHATSWORTH

SAINT PAUL STREET VITALITY PROJECT

CITY PROJECT NO. 15-P-8165

includes

GRADING, CURB AND GUTTER, AGGREGATE BASE,
BITUMINOUS PAVING, STORM SEWER AND STREET LIGHTING



PLAN SHEET INDEX

1. TITLE SHEET
2. LEGEND AND PLAN SHEET LOCATION MAP
3. STATEMENT OF ESTIMATED QUANTITIES
4. EXISTING SEWER CHART
5. SEWER CONSTRUCTION CHART
- 6-7. TYPICAL SECTIONS
8. DETAILS, STANDARD DETAIL PLATES
9. EROSION AND SEDIMENT CONTROL PLAN
- 10-24. PAVING PLANS

LT1-LT17. STREET LIGHTING PLANS (FOR INFORMATION ONLY -
WORK BY OTHERS)

SPECIFICATIONS

THE 2014 EDITION OF THE MINNESOTA DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR CONSTRUCTION" SHALL GOVERN. THESE SHALL BE FURTHER AMENDED BY THE CITY OF SAINT PAUL "STANDARD SUPPLEMENTAL SPECIFICATIONS FOR CONSTRUCTION" AND THE SPECIAL PROVISIONS.

ALL TRAFFIC CONTROL DEVICES AND SIGNING SHALL CONFORM TO THE LATEST EDITION OF THE MUTCD, INCLUDING "FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS"

THIS PLAN CONTAINS 27 SHEETS

APPROVED..... DATE.....
Manager Street Engineering/Construction Division

APPROVED..... DATE.....
Saint Paul City Engineer

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".

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

Signature: BARBARA R. MUNDAHL Date: 1/13/15
Lic. No. 43099

PREPARED BY STREET ENGINEERING DIVISION FOR THE CITY OF ST. PAUL, DEPARTMENT OF PUBLIC WORKS

COMO/CHATSWORTH

PROJECT: 15-P-8165

DRAWER: 12

DWG. NO. 1575

STATE AID
PROJECT NUMBER:

CAD NAME: PROJECTS/CURRENT/COMOCHATSWORTH/CCHTITLE

DATE: 2/25/2015 SHEET NO. 1 OF 24 SHEETS

EXISTING & REMOVAL LEGEND

---	EXISTING CURB & GUTTER	A	ASPHALT DRIVE
---	EXISTING CURB	C	CONCRETE DRIVE
---	EXISTING WALK	D	DIRT DRIVE
+	HYDRANT	G	GRAVEL DRIVE
+	UTILITY POLE	B	BRICK DRIVE
+	LIGHT STANDARD		
+	TRAFFIC SIGNAL		
+	PULLBOX		
+	UTILITY MANHOLE		
+	EXISTING MANHOLE (NO. REFERS TO EXISTING SEWER CHART)		
+	EXISTING CATCH BASIN (NO. REFERS TO EXISTING SEWER CHART)		
+	EXISTING SIDE INLET		
+	EXISTING SEWER		
+	EXISTING PIPE OR C.B. LEAD, CONSTR. 6" BRICK BULKHEAD		
+	EXISTING UTILITY GATE VALVE		
+	EXISTING WATER VALVE		
+	EXISTING WATER MAIN		
+	EXISTING GAS MAIN		
+	EXISTING CONDUIT (L=LIGHTING, T=TELEPHONE, E=ELECTRIC, T.S.=TRAFFIC SIGNAL, F.O.=FIBER OPTIC)		
+	EXISTING TREE (NO. REFERS TO SIZE)		
---	REMOVE CONCRETE CURB AND GUTTER		
---	REMOVE CONCRETE CURB OR SANDSTONE CURB		
---	SALVAGE GRANITE CURB		
---	REMOVE CONCRETE WALK		
---	REMOVE CONCRETE DRIVE		
---	REMOVE TREE (NO. REFERS TO SIZE)		
---	REMOVE STUMP		
---	REMOVE PAVEMENT OR TRENCH PAVEMENT		
---	REMOVE CONCRETE STEPS		
---	MILL BITUMINOUS SURFACE		

CONSTRUCTION LEGEND

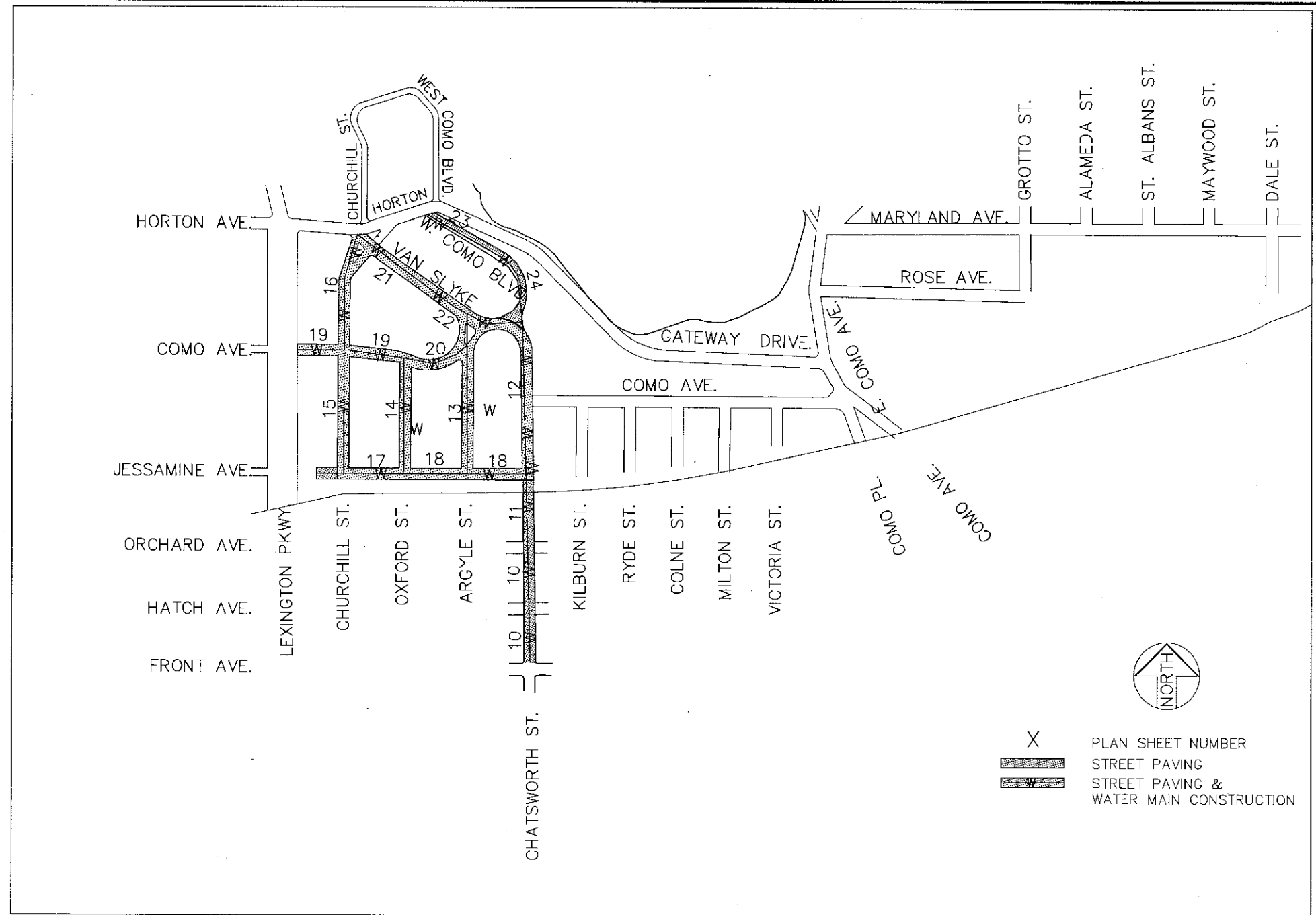
---	CONSTRUCT PAVEMENT (SEE TYPICAL SECTIONS)
---	BITUMINOUS OVERLAY
---	PAVEMENT OR TRENCH PAVEMENT RESTORATION
---	CONSTRUCT CURB OR CURB & GUTTER (SEE TYPICAL SECTION FOR TYPE)
---	CONSTRUCT CURB & GUTTER (SEE TYPICAL SECTION FOR TYPE)
---	ADJUST MANHOLE (NO. REFERS TO EXISTING SEWER CHART)
---	ADJUST UTILITY MANHOLE
---	CONSTRUCT CONCRETE WALK (4" THICK MAINLINE WALK AND OUTWALKS) (6" THICK IN PEDESTRIAN RAMP AREAS)
---	CONSTRUCT CONCRETE DRIVEWAY PAVEMENT (TYPE 6) 6" THICK UNLESS OTHERWISE NOTED.
+	EXCAVATE FOR NEW WATER HYDRANT - EXCAVATE FOR NEW GATE VALVE HOUSING
+	ADJUST EXISTING GATE VALVE HOUSING OR EXCAVATE FOR NEW GATE VALVE HOUSING
+	PEDESTRIAN CURB RAMP- R INDICATES TRUNCATED DOMES
+	CONSTRUCT CATCH BASIN (NO. REFERS TO SEWER CONST. CHART)
+	CONSTRUCT CATCH BASIN LEAD (12" DIA. UNLESS OTHERWISE NOTED)
+	NEW MANHOLE- TYPE AS NOTED (NO. REFERS TO SEWER CONST. CHART)
+	NEW TYPE IV OR IV-A MANHOLE MANHOLE (NO. REFERS TO SEWER CONST. CHART)
+	CONSTRUCT POSSIBLE SANITARY SERVICE RECONNECTION
+	LEAD WATER SERVICE

NOTES

1. WATER, GAS, ELECTRIC, TELEPHONE COMMUNICATION, SEWER AND T.V. CABLE LINES SHOWN ON THE DRAWINGS AND CROSS-SECTIONS ARE PLOTTED FROM THE BEST INFORMATION AVAILABLE AT THE TIME OF PLAN PREPARATION, BUT MAY NOT REFLECT ACTUAL LOCATIONS OR ELEVATIONS, THE CONTRACTOR SHALL VERIFY LOCATIONS OF ALL UTILITIES BEFORE BEGINNING CONSTRUCTION WHICH MAY BE AFFECTED BY A UTILITY CONFLICT. THE CONTRACTOR SHALL GIVE 48 HOURS NOTICE TO THE OWNERS OF ALL KNOWN UTILITIES BEFORE STARTING ANY OPERATIONS AFFECTING THOSE PROPERTIES, OR BEGINNING EXCAVATION IN THE VICINITY OF THOSE PROPERTIES. THE CONTRACTOR'S ATTENTION IS DIRECTED TO SECTION 1507 IN THE STANDARD SPECIFICATIONS.
2. ALL CURB RADII 20 FEET UNLESS OTHERWISE NOTED.
3. CONSTRUCT A 3 FOOT CONCRETE OUTWALK AT EACH RESIDENCE OR AS DIRECTED BY THE ENGINEER.
4. 12" CATCH BASIN LEADS TO BE CLASS V
15" CATCH BASIN LEADS TO BE CLASS V
5. WHERE EXISTING UTILITIES ARE IN CONFLICT WITH SEWER CONSTRUCTION, THE UTILITY COMPANY WILL RELOCATE, OFFSET OR SUPPORT THE UTILITY UNLESS OTHERWISE INDICATED ON THE PLAN SHEET OR STATED IN THE SPECIAL PROVISIONS.
6. WHERE EXISTING FIRE HYDRANTS AND/OR LIGHT STANDARDS CONFLICT WITH SEWER CONSTRUCTION, THEY WILL BE RELOCATED BY OTHERS.
7. GAS MAINS SHOWN ON THE PLAN SHEETS ARE EXISTING MAINS. IN CONJUNCTION WITH THIS SEWER AND PAVING PROJECT, XCEL ENERGY MAY ABANDON SOME OF THE GAS MAINS IN THE AREA AND CONSTRUCT NEW MAINS IN THE SIDEWALK AREAS.
8. SOIL CLASSIFICATION SHOWN ON SOIL BORINGS IS ACCORDING TO A.S.T.M. DESIGNATION D2487 "STANDARD TEST METHOD FOR CLASSIFICATION OF SOILS FOR ENGINEERING PURPOSES".
9. ALL CONCRETE WALK IN QUADRANT AREAS AT THE CORNERS OF INTERSECTIONS SHALL BE 6" THICK.
10. RECORDS INDICATE THERE ARE PROPERTY IRONS AT THE BLOCK CORNERS IN THE PROJECT AREA. DO NOT DISTURB THESE IRONS WHEN REMOVING CONCRETE PANELS. IF REMOVED, REPLACEMENT MUST BE BY A LICENSED SURVEYOR, AT THE CONTRACTOR'S EXPENSE.

CONTRACTOR SHALL PROVIDE O.S.H.A. COMPLIANT TRENCH BOXES FOR ALL S.P.R.W.S. TRENCH EXCAVATIONS. CONTRACTOR SHALL PROVIDE REQUIRED TRENCH BOX SIZES AS LISTED IN SPECIAL PROVISION 2504 WATER SYSTEM. NO COMPENSATION SHALL BE PROVIDED FOR WORK STOPPAGES CAUSED BY THE FAILURE TO MEET THE APPROPRIATE O.S.H.A. APPROVED TRENCH BOX REQUIREMENTS. EXCAVATION MUST MEET CURRENT S.P.R.W.S. TRENCH SAFETY SPECIFICATIONS.

NOTE -
LOCATIONS FOR WATER DISTRIBUTION SYSTEM BID ITEMS UNDER 2504.602, 2504.603, AND 2504.604 ARE NOT COMPLETELY SHOWN ON PLANS - WORK SHALL BE DIRECTED IN THE FIELD BY SAINT PAUL REGIONAL WATER SERVICES WITH PAYMENT MADE AT THE CONTRACT BID PRICE FOR THE APPROPRIATE BID ITEM



LEGEND LOCATION AREA MAP



DESIGNED	ASO
DRAWN	ASO
APPROVED	BRM

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	
Signature: <i>Barbara R. Munda</i>	Date: 00
BARBARA R. MUNDAHL	Lic. No. 43099

PREPARED BY STREET ENGINEERING DIVISION FOR THE CITY OF ST. PAUL, DEPARTMENT OF PUBLIC WORKS

COMO/CHATSWORTH

PROJECT: 15-P-8165

DRAWER: 12

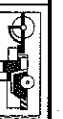
DWG. NO. 1575

STATE AID
PROJECT NUMBER:

CAD NAME: PROJECTS/CURRENT/COMOCHATSWORTH/CCHLEGEND

DATE: 2-2-2015

SHEET NO. 2 OF 24 SHEETS



CHATSWORTH(SHEET 10-12)

STR. NO.	STATION	LT.	CENTER	RT.	REMAIN AS IS	REMOVE MH	REMOVE CB	RECON	REMOVAL DATE	ADJUST MH	ABANDON PIPE	REMOVE PIPE
1	00+1.2		X							X		
2	00+3.5	6.2								X		
3	00+9.4			25.5	X							
4	00+20.0	36.4					X					
5	02+05.1			2.2						X		
6	03+76.6			19.8			X					
7	03+91.3	25.4					X					
8	04+06.8			29.1						X		
9	04+15.3			15.5						X		
10	04+10.9	0.3								X		
11	04+14.1	17.0								X		
12	04+24.7	39.2					X					
13	06+16.1		X							X		
14	06+16.8			16.0						X		
15	08+02.8	26.1				X						
16	08+07.4	34.4					X					
17	08+17.7	20.9								X		
18	07+89.3			19.6			X					
19	08+17.9			16.5						X		
20	08+21.6			0.1						X		
21	10+90.0			14.8						X		
22	11+92.9		X							X		
23	12+20.6			13.9						X		
24	12+23.1	18.7					X					
25	12+70.0			13.4						X		
26	12+70.4	25.2					X					
27	13+02.5			22.0			X					
28	13+13.4			12.9						X		
29	14+51.9	1.3								X		
30	15+56.2			12.4						X		
31	15+57.2			67.1	X							
32	16+87.6			22.5			X					
33	16+93.4	25.2					X					
34	17+02.1			14.2						X		
35	17+10.0	1.3								X		
36	17+25.0			42.5			X					
37	19+78.6	1.6								X		
38	20+01.6			14.1						X		
39	19+98.1	2.3				X						
40	19+90.8	29.5								X		
41	19+76.8	43.8			X							
42	19+76.1	172.7			X							
43	18+14.6	172.3			X							

ARGYLE ST.(SHEET 13)

STR. NO.	STATION	LT.	CENTER	RT.	REMAIN AS IS	REMOVE MH	REMOVE CB	RECON	REMOVAL DATE	ADJUST MH	ABANDON PIPE	REMOVE PIPE
44	00+39.2		X							X		
45	02+51.9		X							X		
46	04+64.9		X							X		
47	05+80.9	21.5					X					
48	05+83.3			1.8						X		
49	05+87.1			20.8		X						
50	05+88.0			9.5						X		
51	06+02.8	21.8								X		
52	06+15.1	21.1					X					

OXFORD ST.(SHEET 14)

53	00+29.8			X							X	
54	02+02.0			X							X	
55	03+92.3			X							X	
56	05+44.8								19.5			
57	05+65.7	18.2								X		

CHURCHILL ST.(SHEET 15-16)

STR. NO.	STATION	LT.	CENTER	RT.	REMAIN AS IS	REMOVE MH	REMOVE CB	RECON	REMOVAL DATE	ADJUST MH	ABANDON PIPE	REMOVE PIPE
58	00+26.9			2.1						X		
59	02+34.3			1.8						X		
60	04+53.5			1.0						X		
61	06+13.0			17.3			X					
62	06+10.8	14.7					X					
63	06+26.8			7.0						X		
64	06+27.6			35.4	X							
65	06+46.0			25.9						X		
66	06+59.1			43.0	X							
67	06+43.4		X							X		
68	06+44.7	16.4								X		
69	08+26.7			1.1						X		
70	06+00.0	31.5								X		
71	11+22.7	67.2				X						

COMO AVE(SHEET 19-20)

STR. NO.	STATION	LT.	CENTER	RT.	REMAIN AS IS	REMOVE MH	REMOVE CB	RECON	REMOVAL DATE	ADJUST MH	ABANDON PIPE	REMOVE PIPE
72	00+01.4			2.8	X							
73	00+16.3			41.5	X							
74	00+53.4			15.9			X					
75	00+51.3		X							X		
76	00+55.4	14.0					X					
77	05+24.6	1.7								X		
78	06+25.1	11.1								X		
79	06+55.4		X							X		
80	08+64.1			10.1						X		
81	10+39.3		X							X		
82	11+01.5	10.6								X		
83	06+55.5			40.9						X		

VAN SLYKE AVE.(SHEET 21-22)

STR. NO.	STATION	LT.	CENTER	RT.	REMAIN AS IS	REMOVE MH	REMOVE CB	RECON	REMOVAL DATE	ADJUST MH	ABANDON PIPE	REMOVE PIPE
84	3.26			47.0	X							
85	00+14.7			26.1	X							
86	00+71.8			35.7						X		
87	01+13.4			43.3						X		
88	01+28.0			15.7						X		
89	01+26.0	7.5								X		
90	02+48.9			32.0						X		
91	03+72.3			17.2						X		
92	05+02.6			3.3						X		
93	06+27.8			3.4						X		
94	08+48.2	3.6								X		
95	9+15.9	21.7								X		
96	9+44.4	1.4								X		
97	10+82.9			76.1			X					

WEST COMO BLVD (SHEET 23-24)

98	00+30.3			22.2	X							
99	00+7.2			22.2			X					
100	00+49.4			11.1			X					
101	00+50.0	6.4					X					
102	00+55.7	23.5			X							
103	01+21.7		X							X		
104	02+67.0			9.9						X		
105	00+53.3	14.0			X							
106	02+18.9				X							
107	03+02.7	11.7		1.5						X		
108	03+34.1	46.1			X					X		
109	03+76.5			16.3	X							

EXISTING SEWER STRUCTURES CHART

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DESIGNED	ASO
DRAWN	ASO
APPROVED	BRM

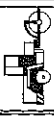
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Signature: *Barbara R. Munda* Date: 1/25/2015
BARBARA R. MUNDAHL Lic. No. 42099

PREPARED BY STREET ENGINEERING DIVISION FOR THE CITY OF ST. PAUL, DEPARTMENT OF PUBLIC WORKS

COMO/CHATSWORTH

PROJECT: 15-P-8165	STATE AID PROJECT NUMBER:
DRAWER: 12	CAD NAME: PROJECTS/CURRENT/COMOCHATSWORTH/CC-CHARTS
DWG. NO. 1575	DATE: 2/25/2015 SHEET NO. 4 OF 24 SHEETS



CHATS WORTH(SHEET 10-12)

STR NO.	STATION	LT.	RT.	MH	CB	LENGTH	SIZE	TYPE
200	00+18.6	38			7B	35.1	15"	R.C.P.
201	03+42.6	19			7B	34.1	15"	R.C.P.
202	03+42.1		19		7B	65.8	15"	R.C.P.
203	03+98.5	14			7B	24.6	15"	R.C.P.
204	03+98.4		14		7B	12.2	15"	R.C.P.
205	04+23.0	14			7B	22.8	15"	R.C.P.
206	04+23.0		14		7B	18.4	15"	R.C.P.
207	07+54.7	19			7B	34	15"	R.C.P.
208	07+54.7		19		7B	63.2	15"	R.C.P.
209	08+09.2	14			7B	18.9	15"	R.C.P.
210	08+33.8	14			7B	23.3	15"	R.C.P.
211	08+08.8		14		7B	23.5	15"	R.C.P.
212	08+34.1		14		7B	27.1	15"	R.C.P.
213	10+79.5		19		7B	10.8	15"	R.C.P.
214	10+78.3	19			7B	33.8	15"	R.C.P.
215	12+08.9		13		7B	12	15"	R.C.P.
216	12+22.6	13			7B	24.9	15"	R.C.P.
217	12+70.1	13			7B	24.2	15"	R.C.P.
218	12+60.7		13		7B	9.5	15"	R.C.P.
219	13+02.8		13		7B	10.7	15"	R.C.P.
220	13+12.9		14		7B	6.3	15"	R.C.P.
221	13+19.3		6	TYPE IV		57.2		
222	13+36.9	14			7B	17.6	15"	R.C.P.
223	13+89.6	16			7B	81.9	15"	R.C.P.
224	16+67.7		16		7B	34.4	15"	R.C.P.
225	16+93.3	16			7B	32.3	15"	R.C.P.
226	16+94.8	16			7B	27.6	15"	R.C.P.
227	17+22.6		16		7B	36.3	15"	R.C.P.
228	19+95.0		19		7B	7.3	15"	R.C.P.
229	20+02.5	19			7B	16.9	15"	R.C.P.
230	20+54.6	19			7B	72.8	15"	R.C.P.

JESSAMINE AVE. (SHEET 17-18)

STR NO.	STATION	LT.	RT.	MH	CB	LENGTH	SIZE	TYPE
231	10+40.0		14		7B	6	15"	R.C.P.
232	10+40.0		6	TYPE IV		224.3		
233	10+40.0	14			7B	18	15"	R.C.P.
234	10+22.5		14		7B	17.5	15"	R.C.P.
235	10+22.5	14			7B	17.5	15"	R.C.P.

ARGYLE ST.(SHEET 13)

STR NO.	STATION	LT.	RT.	MH	CB	LENGTH	SIZE	TYPE
236	05+80.4		15		7B	8.8	15"	R.C.P.
237	05+79.7	15			7B	16.2	15"	R.C.P.
238	06+18.3		18		7B	20.5	15"	R.C.P.
239	06+58.8	18			7B	39.5	15"	R.C.P.

OXFORD ST.(SHEET 14)

STR NO.	STATION	LT.	RT.	MH	CB	LENGTH	SIZE	TYPE
240	05+46.7		15		7B	30.8	15"	R.C.P.
241	05+63.2	15			7B	30.8	15"	R.C.P.

CHURCHILL ST.(SHEET 15-16)

STR NO.	STATION	LT.	RT.	MH	CB	LENGTH	SIZE	TYPE
242	06+03.0		14		7A	24.7	15"	R.C.P.
243	06+04.8	14			7A	28.1	15"	R.C.P.
244	11+98.0	71		TYPE I		178		
245	11+84.7	66			7A	37	15"	R.C.P.
246	11+89.2	87			7A	16.4	15"	R.C.P.
247	11+79.5	16			7A	35	15"	R.C.P.
248	11+81.6		16		7A	43	15"	R.C.P.

COMO AVE (SHEET 19-20)

STR NO.	STATION	LT.	RT.	MH	CB	LENGTH	SIZE	TYPE
249	00+53.5		14		7B	11.3	15"	R.C.P.
250	00+55.4	14			7B	13.5	15"	R.C.P.
251	10+35.1	18			7B	25.8	15"	R.C.P.
252	11+63.1	18			7B	35.8	15"	R.C.P.
253	11+79.3		18		7B	36.1	15"	R.C.P.

VAN SLYKE (SHEET 21-22)

STR NO.	STATION	LT.	RT.	MH	CB	LENGTH	SIZE	TYPE
254	01+71.3	21			7B	38	15"	R.C.P.
255	01+75.3		21		7B	54	15"	R.C.P.
256	07+53.0	21			7B	43	15"	R.C.P.
257	07+73.8		18		7B	96	15"	R.C.P.

COMO BLVD (SHEET 23-24)

STR NO.	STATION	LT.	RT.	MH	CB	LENGTH	SIZE	TYPE
258	0+0.4		18		7B	20	15"	R.C.P.
259	00+49.7		10		7B	16	15"	R.C.P.
260	00+50.2	10			7B	15	15"	R.C.P.
261	08+18.6	10			7B	18	15"	R.C.P.
262	08+27.2		10		7B	15	15"	R.C.P.
263	08+36.4	4		TYPE IV		0	15"	

SEWER CONSTRUCTION CHART

Z:\projects\projects\current\Como-Chatsworth\DWG\plan sheets\CC-Charts.dwg Feb 25, 2015 - 3:29pm



DESIGNED	ASO	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 Signature: <u>Barbara R. Munda</u> Date: <u>1/25/2015</u> BARBARA R. MUNDAHL Lic. No. <u>42099</u>
DRAWN	ASO	
APPROVED	BRM	

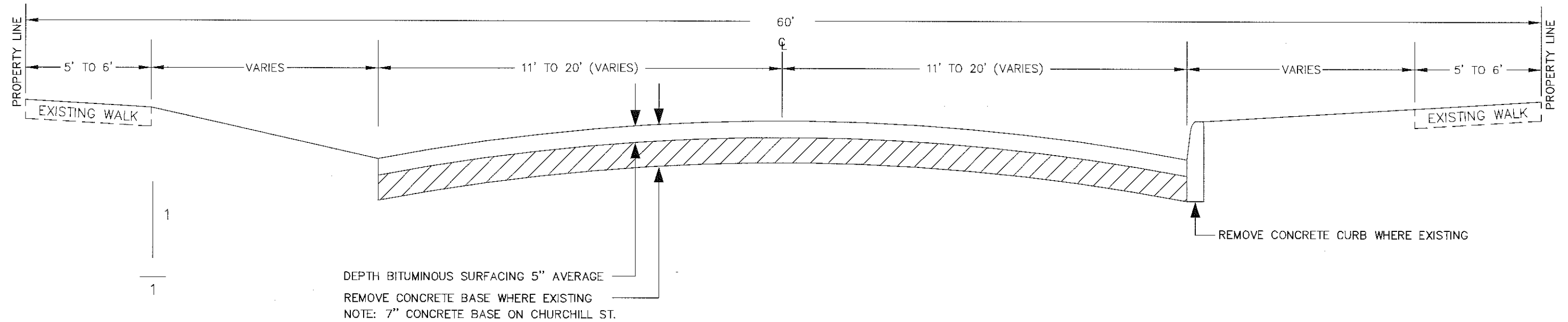
PREPARED BY STREET ENGINEERING DIVISION FOR THE CITY OF ST. PAUL, DEPARTMENT OF PUBLIC WORKS

COMO/CHATS WORT

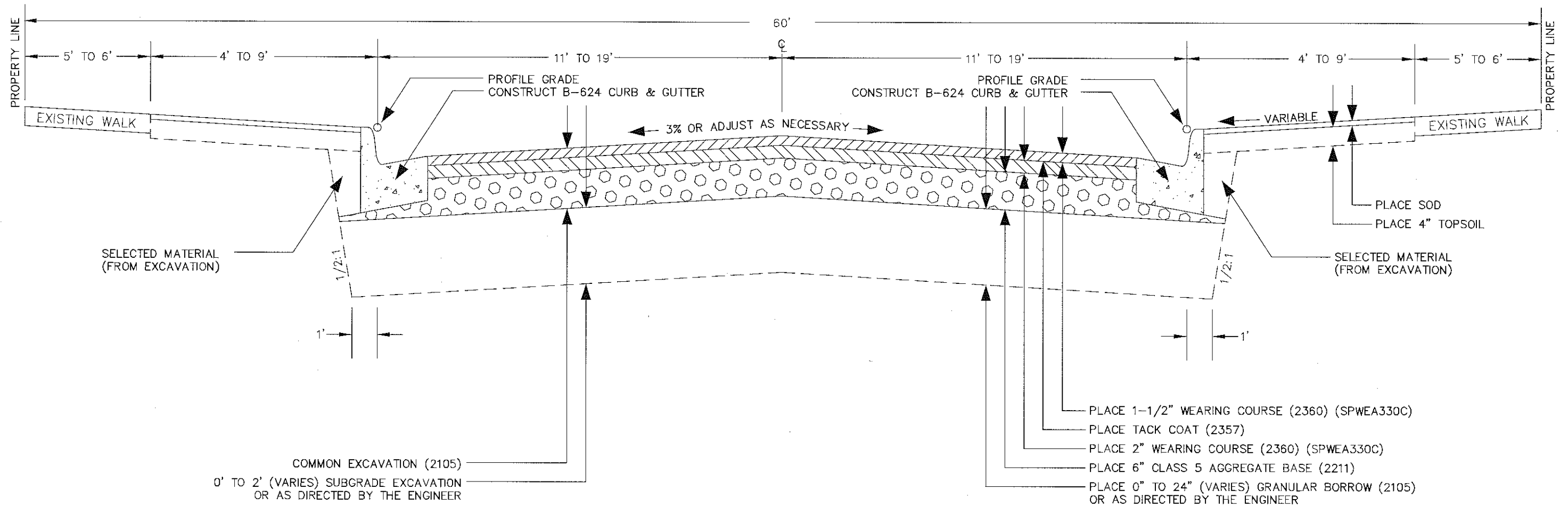
PROJECT: 15-P-8165	STATE AID PROJECT NUMBER:
DRAWER: 12	CAD NAME: PROJECTS/CURRENT/COMOCHATS WORTH/CC-CHARTS
DWG. NO. 1575	DATE: 2/25/2015 SHEET NO. 5 OF 24 SHEETS



EXISTING RESIDENTIAL STREET TYPICAL SECTION



PROPOSED RESIDENTIAL STREET TYPICAL SECTION



RESIDENTIAL STREET
TYPICAL SECTIONS

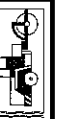
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DESIGNED	ASO	I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA. Signature: <i>Barbara R. Munda</i> Date: 0/0/15 BARBARA R. MUNDAHL Lic. No. 000	
DRAWN	ASO		
APPROVED	BRM		

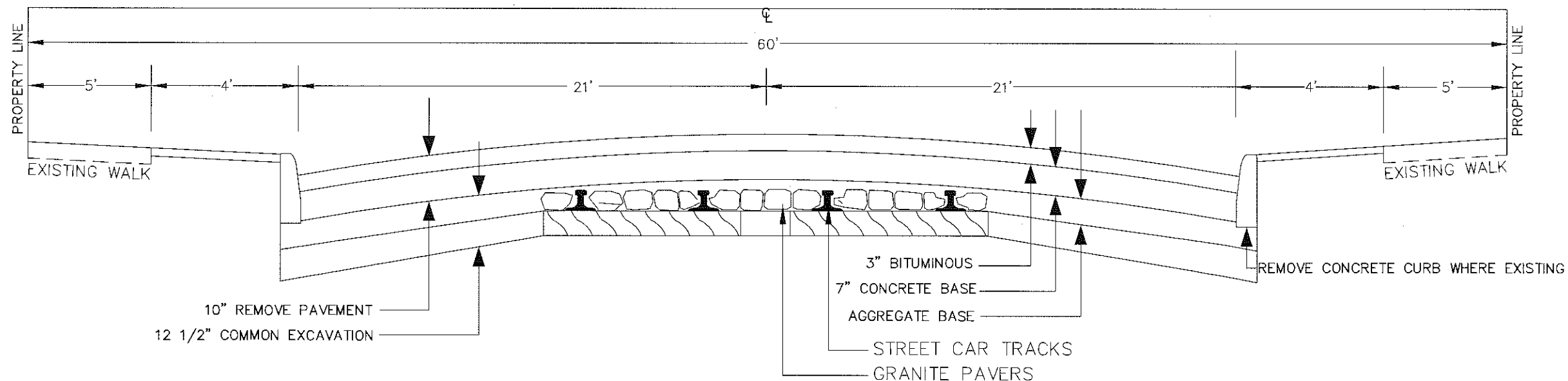
PREPARED BY STREET ENGINEERING DIVISION FOR THE CITY OF ST. PAUL, DEPARTMENT OF PUBLIC WORKS

COMO/CHATSWORTH RVSP

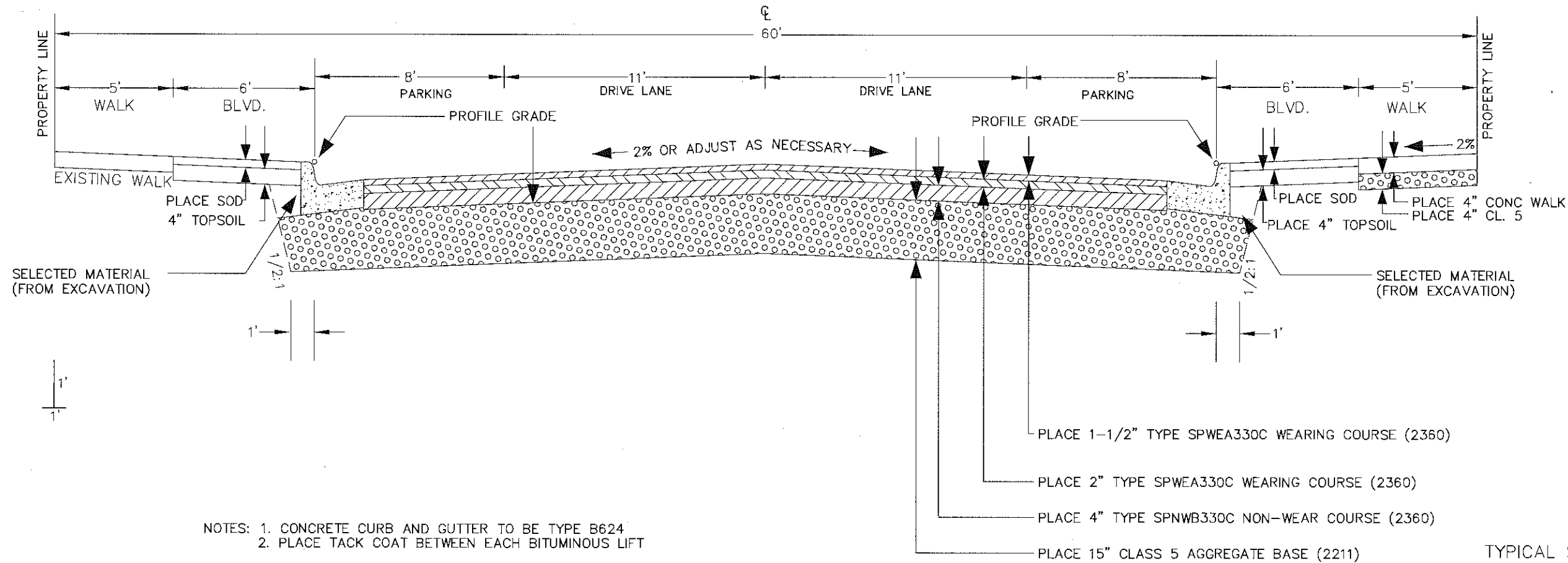
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DRAWER: 12	CAD NAME: PROJECTS/CURRENT/COMOCHATSWORTH/CCHTYPICAL
DWG. NO. 1575	DATE: 2/18/2015 SHEET NO. 6 OF 24 SHEETS



EXISTING STREET TYPICAL SECTION
CHATSWORTH-FRONT ST. TO COMO AVE
VAN SLYKE - CHATSWORTH TO HORTON.



PROPOSED STREET TYPICAL SECTION
CHATSWORTH - FRONT ST. TO COMO AVE.
VAN SLYKE - CHATSWORTH ST. TO HORTON



NOTES: 1. CONCRETE CURB AND GUTTER TO BE TYPE B624
2. PLACE TACK COAT BETWEEN EACH BITUMINOUS LIFT

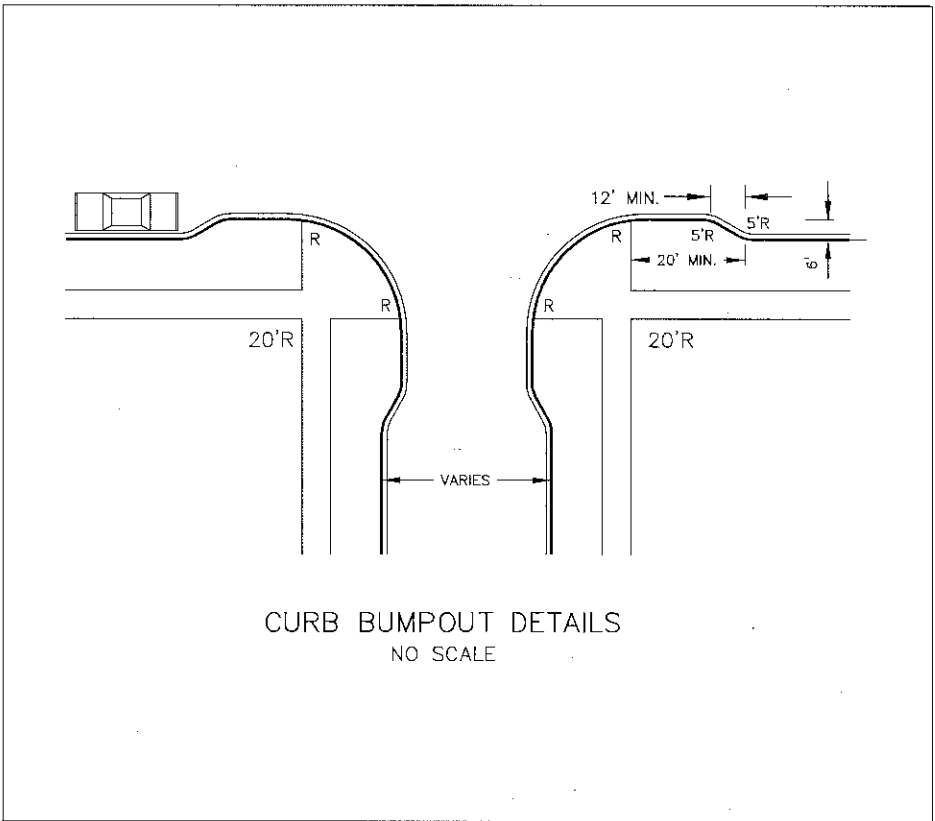
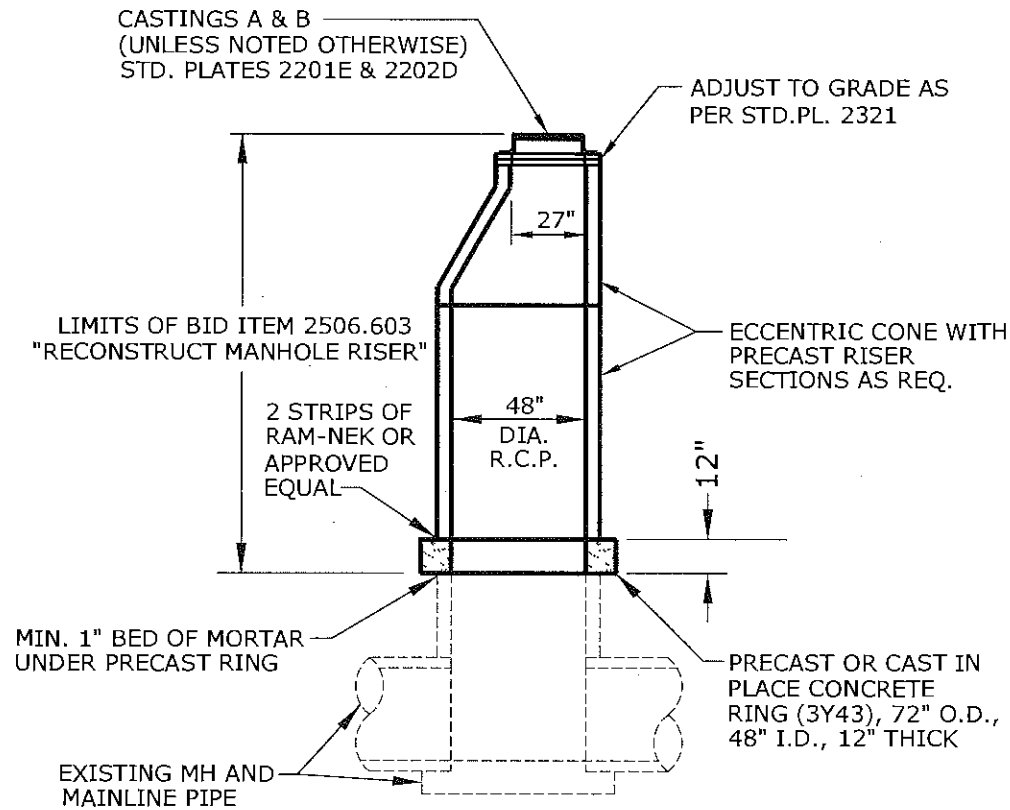
TYPICAL SECTION
CHATSWORTH-FRONT ST. TO COMO AVE.
VAN SLYKE-CHATSWORTH TO HORTON.

DESIGNED	ASO	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 Signature: <i>Barbara R. Munda</i> Date: 00/00/00 BARBARA R. MUNDAHL Lic. No. 00
DRAWN	ASO	
APPROVED	BRM	

PREPARED BY STREET ENGINEERING DIVISION FOR THE CITY OF ST. PAUL, DEPARTMENT OF PUBLIC WORKS
COMO-CHATSWORTH

PROJECT: 15-P-8165	STATE AIDE PROJECT NUMBER
DRAWER: 12	CAD NAME: PROJECTS/CURRENT/COMO-CHATSWORTH/DRAWINGS
DWG. NO. 1575	DATE: 2/19/2015 SHEET NO. 7 OF 24 SHEETS

- NOTES:
- 1. LIMITS OF MANHOLE RECONSTRUCTION TO BE DESIGNATED BY THE ENGINEER.
 - 2. REMOVAL OF THE EXISTING CASTING AND RISER TO BE INCLUDED AS PART OF BID ITEM 2506.603, "RECONSTRUCT MANHOLE RISER".
 - 3. PRECAST RISER SECTION TO MEET ASTM C-478
 - 4. JOINTS BETWEEN PRECAST SECTIONS SHALL USE O-RING RUBBER GASKET CONFORMING TO ASTM C-443



STANDARD DETAIL PLATES	
ST. PAUL DRG. NO.	STANDARD DETAIL
1206C	CONCRETE DRIVEWAY, TYPE 6
1304C	SIGN COLLAR PLACEMENT
2007E	CATCH BASIN, DESIGN TYPE 3C
2015G	CATCH BASIN, DESIGN TYPE 7A
2016	CATCH BASIN, DESIGN TYPE 7B
2101D	MANHOLE, TYPE I
2102D	MANHOLE, TYPE II
2103E	MANHOLE, TYPE III & III-S
2104E	MANHOLE, TYPE IV
2107C	MANHOLE, TYPE VII
2201E	FRAME CASTING A
2202D	COVER CASTINGS B
2203	COVER CASTINGS D
2207D	MANHOLE ADAPTOR RINGS
2211	CATCH BASIN, DESIGN TYPE 7A CASTING DETAILS
2212	MODIFIED TYPE 7A
2306E	RECONNECTION OF HOUSE SERVICES
2309C	CATCH BASIN CONNECTION
2311B	ANCHOR CLAMP DETAIL
2317C	TYPES OF TRENCH BEDDING
2318C	CONCRETE SADDLE FOR PIPE CROSSINGS
2319D	SADDLE CONNECTIONS FOR HOUSE SERVICES
2321	MANHOLE ADJUST
2322A	MANHOLE RECONSTRUCT
3000B	CONCRETE CURB
3003B	PEDESTRIAN CURB RAMP FOR THE HANDICAPPED
3005D	PEDESTRIAN CURB RAMP FOR THE HANDICAPPED
3006D	PEDESTRIAN CURB RAMP FOR THE HANDICAPPED
3008A	SAWED / SEALED JOINTS
3100C	CONCRETE CURB AND GUTTER, DESIGN B
3102B	CONC. CURB & GUTTER OPENING FOR DRIVEWAYS
3107A	CONC. CURB & GUTTER DESIGN D-418
4031B	BARRICADE DESIGNS
4032A	BARRICADING FOR STREET CLOSURE
4035A	WARNING LIGHTS AND CHANNELIZING DEVICES
4036	BARRICADING FOR SIDEWALK REPLACEMENT
6200B	RESET MONUMENT
MnDOT STANDARD DETAIL PLATES	
THESE STANDARD PLATES AS APPROVED BY THE FHWA SHALL APPLY	
MnDOT DRG. NO.	STANDARD DETAIL
3000L	REINFORCED CONCRETE PIPE
3006G	GASKET JOINT FOR R. C. PIPE
3100G	CONCRETE APRON FOR REINFORCED CONCRETE PIPE
3133D	RIPRAP AT R.C.P. OUTLETS
3145G	CONCRETE PIPE TIES
4010H	CONCRETE SHORT CONE & ADJUSTING RING
7038A	DETECTABLE WARNING SURFACE TRUNCATED DOMES
8000I	STANDARD BARRICADES

CONSTRUCTION DETAILS
STANDARD DETAIL PLATES

Z:\streets\streets\projects\current\Como-Chatsworth\DWG\plan sheets\CC-details.dwg Feb 26, 2015 9:48am

DESIGNED	ASO	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
DRAWN	ASO	
APPROVED	BRM	
Signature: <i>Barbara R. Munda</i>		Date: 00/00/14
BARBARA R. MUNDAHL		Lic. No. 43099

PREPARED BY STREET ENGINEERING DIVISION FOR THE CITY OF ST. PAUL, DEPARTMENT OF PUBLIC WORKS

COMO/CHATSWORTH

PROJECT: 15-P-8165

DRAWER: 12

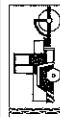
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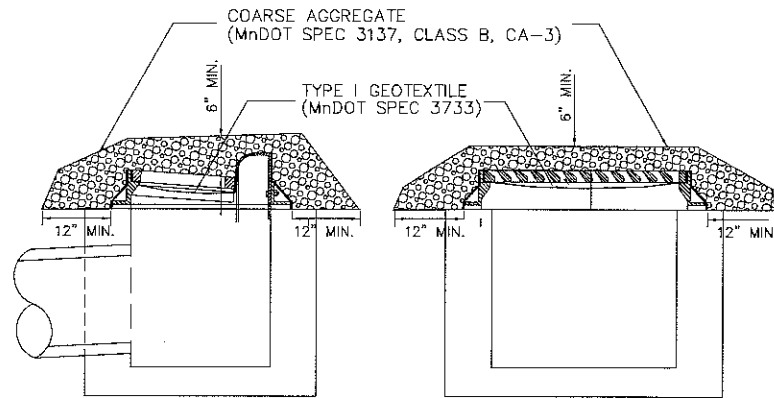
STATE AID
PROJECT NUMBER:

CAD NAME: PROJECTS/CURRENT/COMOCHATSWORTH/CCHDETAILS

DATE: 2-2-2014

SHEET NO. 8 OF 24 SHEETS

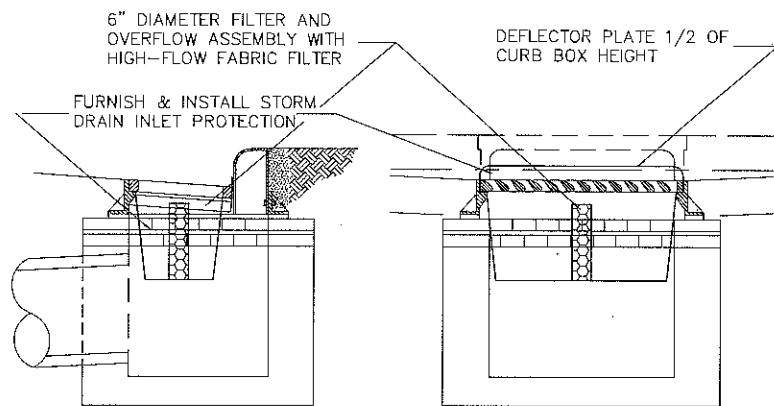




INTERIM SEDIMENT CONTROL FOR CATCH BASINS

NOTES:

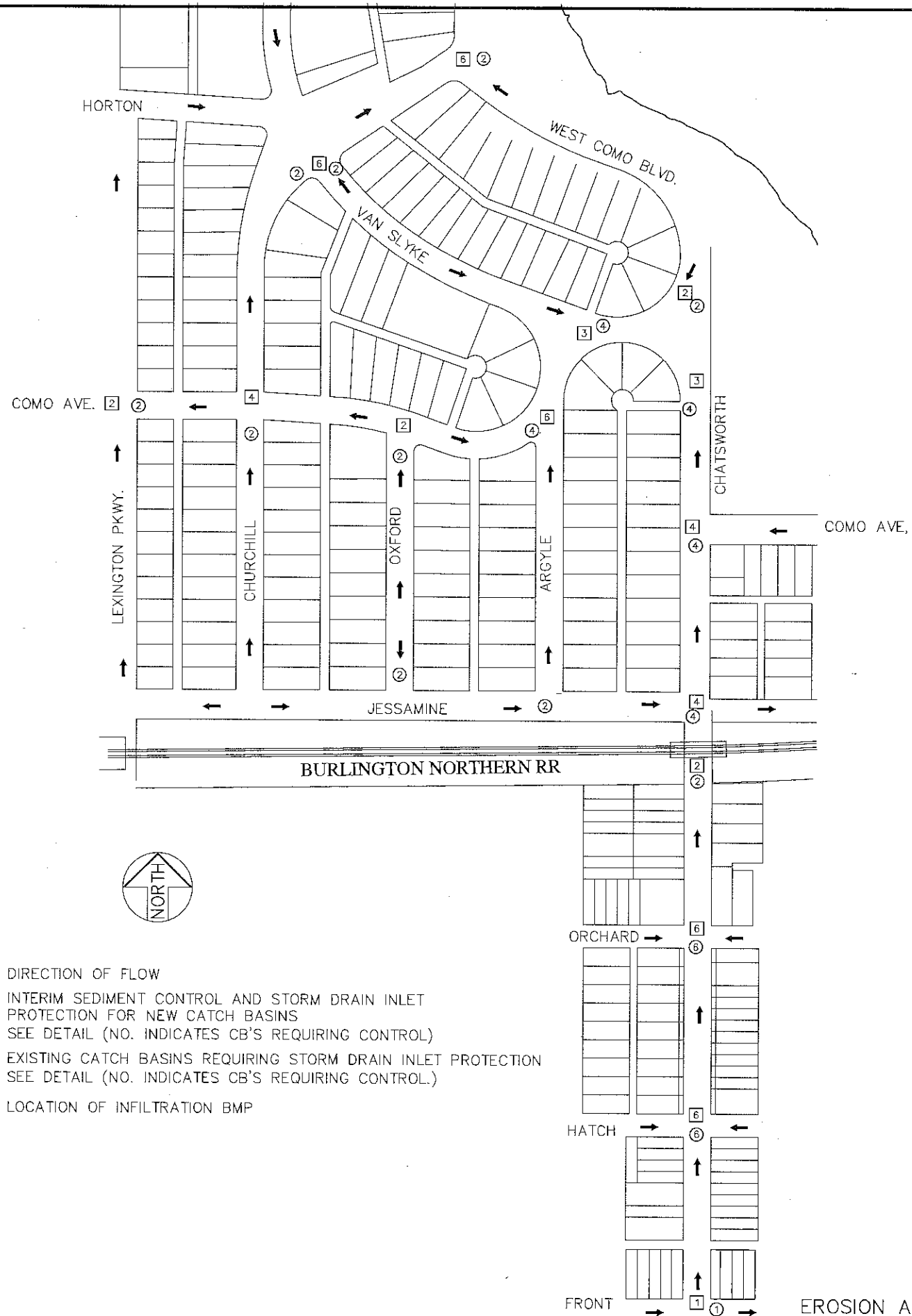
1. INTERIM SEDIMENT CONTROL REQUIRED FOR THE IDENTIFIED NEW CATCH BASINS PRIOR TO CURB AND GUTTER CONSTRUCTION. BID ITEM 2573.602.
2. CONTRACTOR TO INSPECT "INTERIM SEDIMENT CONTROL FOR CATCH BASINS" EVERY 7 DAYS AND WITHIN 24 HOURS AFTER EVERY RAIN EVENT. CONTRACTOR SHALL REPLACE COARSE AGGREGATE AND/OR GEOTEXTILE IF IT BECOMES NONFUNCTIONAL AS A SEDIMENT CONTROL.
3. CATCH BASINS SHALL BE KEPT FUNCTIONAL. CONTRACTOR SHALL CLEAN IF SEDIMENT IS WITHIN 12 INCHES OF OUTLET PIPE.



STORM DRAIN INLET PROTECTION

NOTES:

1. STORM DRAIN INLET PROTECTION REQUIRED FOR NEW CATCH BASINS AFTER CURB AND GUTTER CONSTRUCTION. BID ITEM 2573.530.
2. CONTRACTOR TO INSPECT "STORM DRAIN INLET PROTECTION" EVERY 7 DAYS AND WITHIN 24 HOURS AFTER EVERY RAIN EVENT. CONTRACTOR SHALL REPLACE OR CLEAN INSERT IF IT BECOMES NONFUNCTIONAL.
3. CATCH BASINS SHALL BE KEPT FUNCTIONAL. CONTRACTOR SHALL CLEAN IF SEDIMENT IS WITHIN 12 INCHES OF OUTLET PIPE.
4. EXISTING CATCH BASINS AS IDENTIFIED SHALL ALSO RECEIVE STORM DRAIN INLET PROTECTION FROM THE TIME UPSTREAM CONSTRUCTION ACTIVITIES BEGIN UNTIL CLASS V IS PLACED ON THE ROADWAY AND THE BOULEVARDS HAVE BEEN RESTORED.



LEGEND:

- DIRECTION OF FLOW
- ② INTERIM SEDIMENT CONTROL AND STORM DRAIN INLET PROTECTION FOR NEW CATCH BASINS SEE DETAIL (NO. INDICATES CB'S REQUIRING CONTROL)
- ② EXISTING CATCH BASINS REQUIRING STORM DRAIN INLET PROTECTION SEE DETAIL (NO. INDICATES CB'S REQUIRING CONTROL.)
- ▨ LOCATION OF INFILTRATION BMP



DESIGNED BRM
DRAWN ASO
APPROVED BRM

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

Signature: *Barbara R. Munda*
BARBARA R. MUNDAHL

Date: 12/16/14
Lic. No. 43099

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COMO-CHATSWORTH RSVP

PROJECT: 15-P-8165

DRAWER: 12

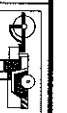
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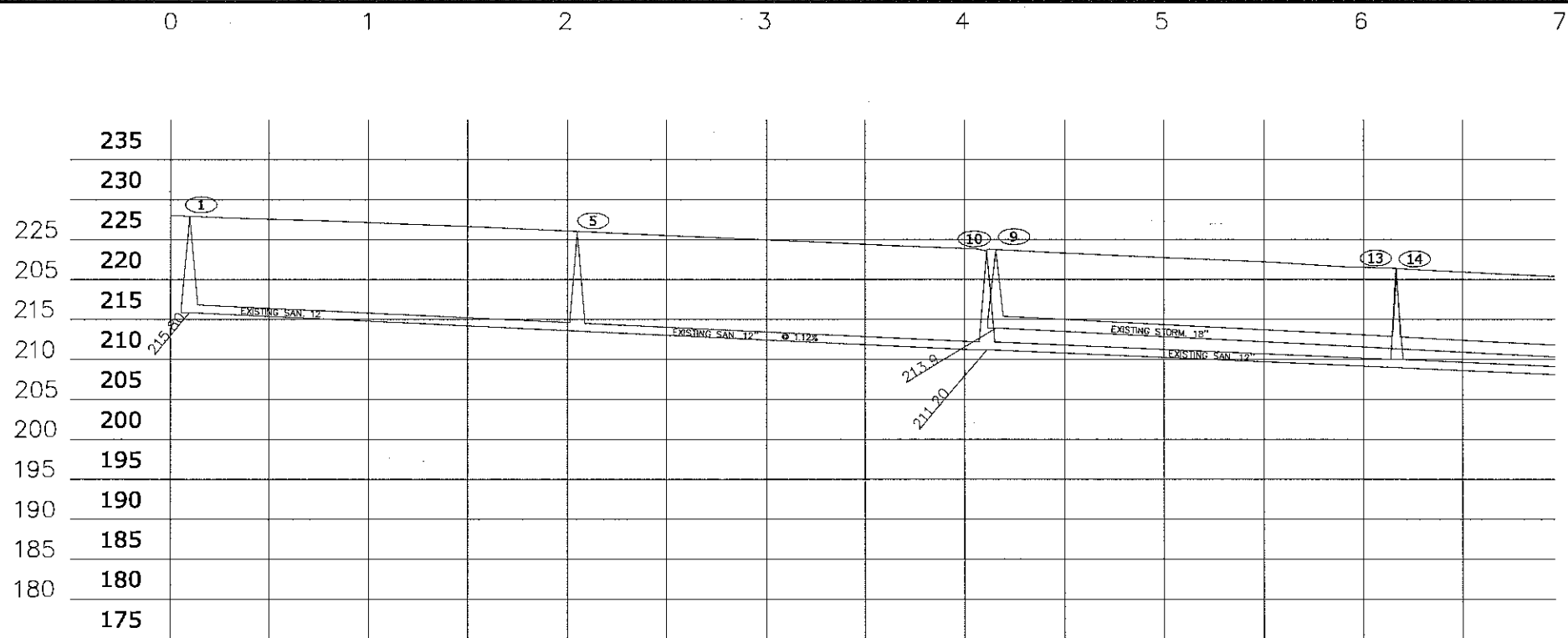
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CAD NAME: PROJECTS/CURRENT/COMOCHATSWORTH-EROSION

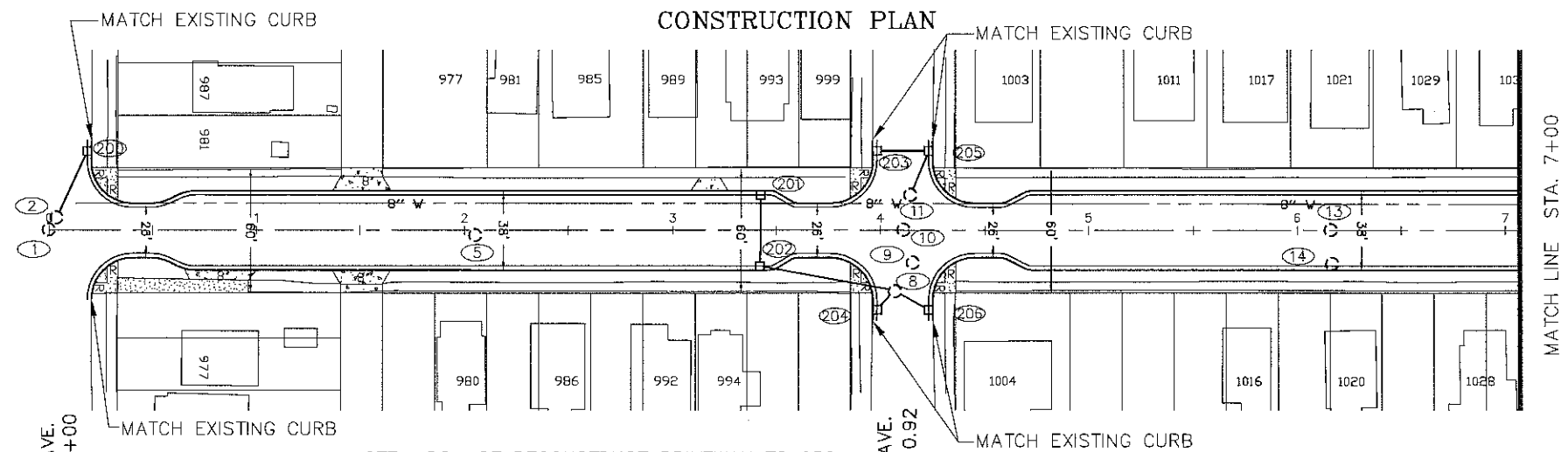
DATE: 12/30/14

SHEET NO. 9 OF 24 SHEETS





NOTE: 2117' OF EXISTING 6" C.I.P. WATER MAIN IN CHATSWORTH ST. FROM FRONT TO W. COMO BLVD TO BE REPLACED WITH NEW 8" D.I.P. WATERMAIN. PIPE INSTALLATION BY SAINT PAUL REGIONAL WATER SERVICES. EXCAVATION BY CONTRACTOR - PAY AS BID ITEM 2504.603 "WATER MAIN TRENCH".



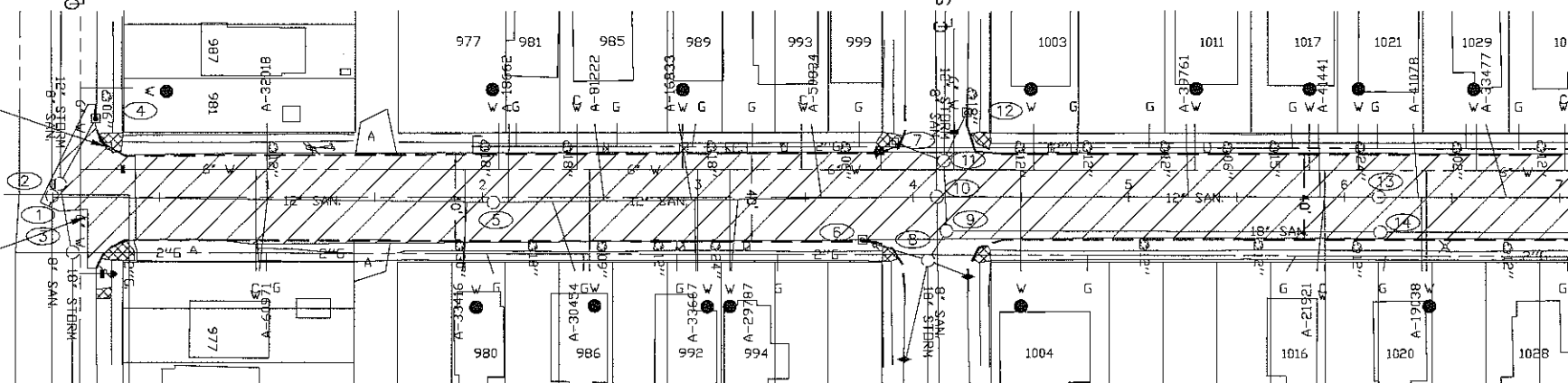
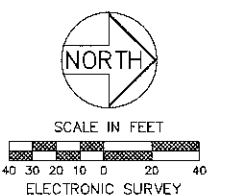
NOTE-- DO NOT RECONSTRUCT DRIVEWAY TO 989 CHATSWORTH UNLESS DRICTED BY THE ENGINEER

CHATSWORTH ST.

CHATSWORTH ST.

EXISTING POWER POLE TO BE RELOCATED BY OTHERS

SAWCUT (INCIDENTAL)



EXISTING AND REMOVAL PLAN

CHATSWORTH ST.
FRONT ST. TO STA 7+00

Z:\streets\projects\current\Como-Chatsworth\DWG\CHATSWORTH ST.dwg Feb 25, 2015 - 11:13am

DESIGNED	ASO	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 Signature: <i>Barbara R. Munda</i> Date: 1/7/2015 BARBARA R. MUNDAHL Lic. No. 43099	
DRAWN	ASO		
APPROVED	BRM		

PREPARED BY STREET ENGINEERING DIVISION FOR THE CITY OF ST. PAUL, DEPARTMENT OF PUBLIC WORKS

COMO-CHATSWORTH

PROJECT: 14-P-8165

DRAWER: 12

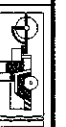
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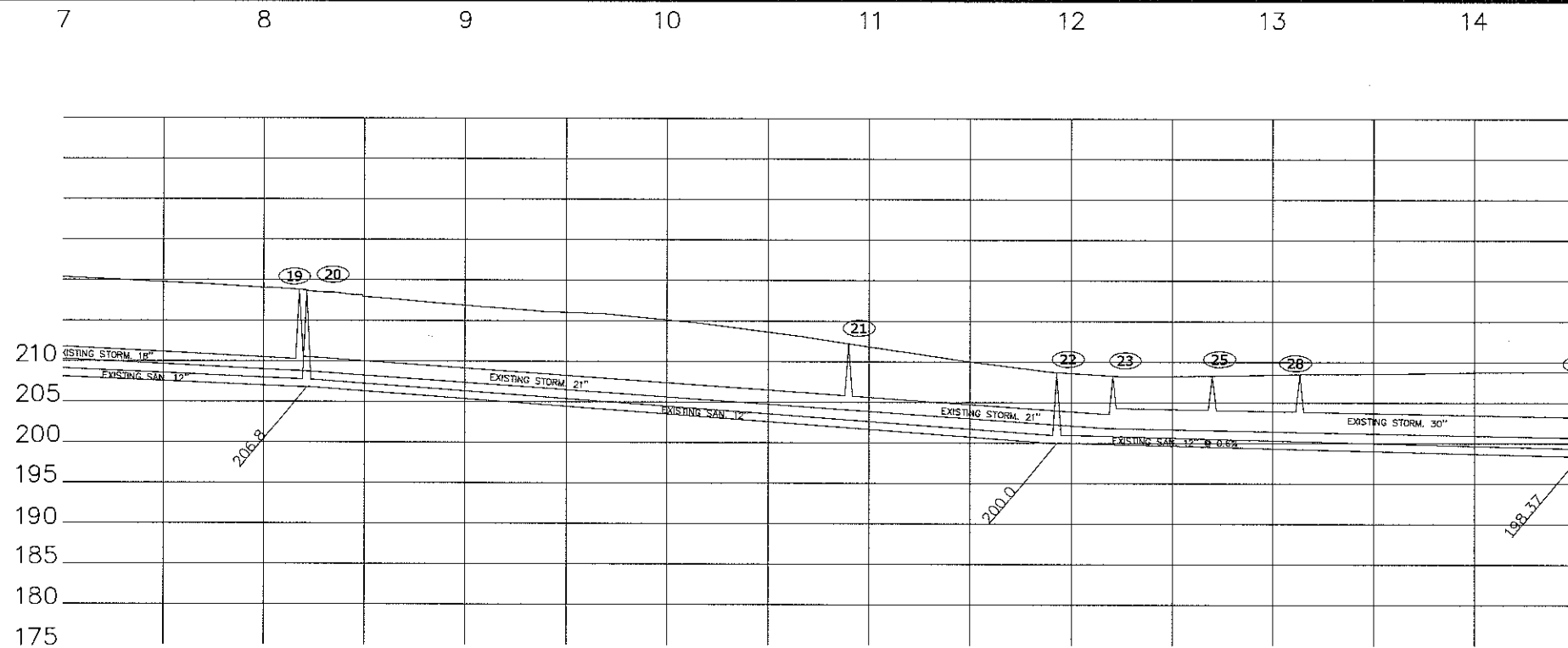
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CAD NAME: PROJECTS/CURRENT/COMO-CHATSWORTH

DATE: 2/25/2015

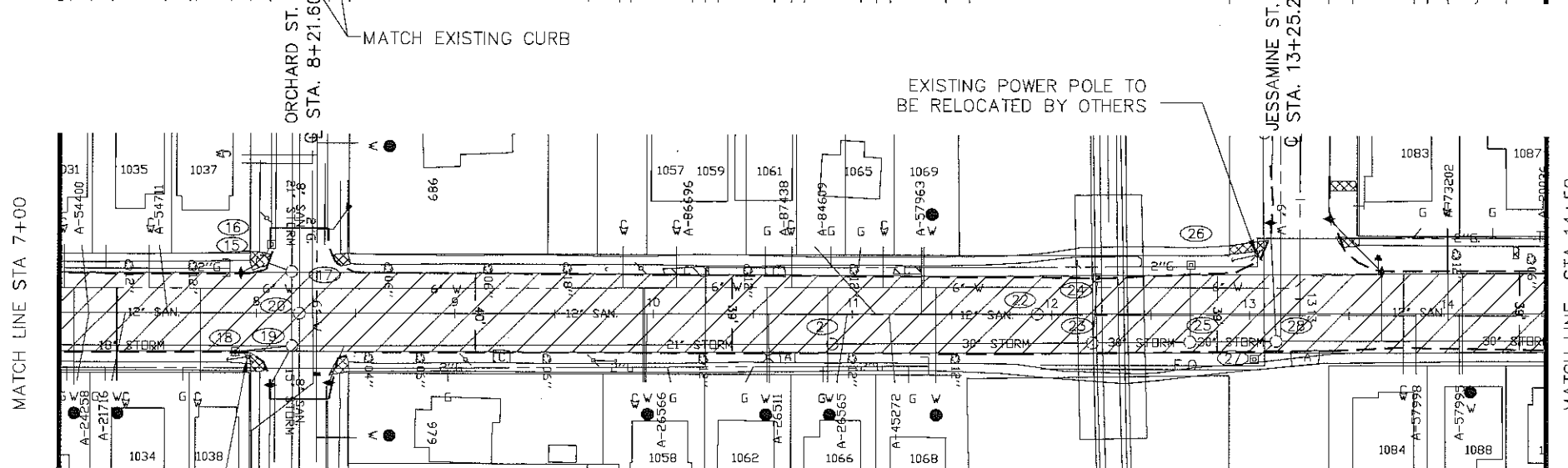
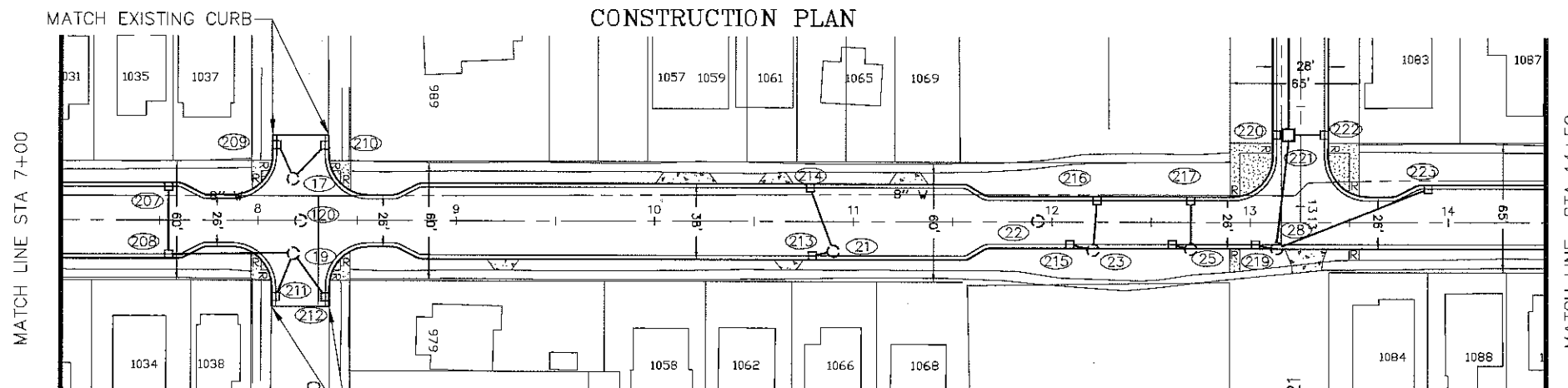
SHEET NO. 10 OF 24 SHEETS





SURVEYOR:
NORTH AND SOUTH TOP
OF CURB GRADES
AVAILABLE UPON REQUEST

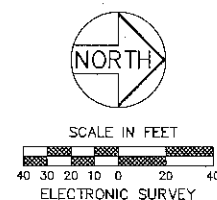
NOTE: 2117' OF EXISTING 6" C.I.P. WATER MAIN IN CHATSWORTH ST. FROM FRONT TO W. COMO BLVD TO BE REPLACED WITH NEW 8" D.I.P. WATERMAIN. PIPE INSTALLATION BY SAINT PAUL REGIONAL WATER SERVICES. EXCAVATION BY CONTRACTOR - PAY AS BID ITEM 2504.603 "WATER MAIN TRENCH".



CHATSWORTH ST.

CHATSWORTH ST.

CHATSWORTH ST.
STA 7+00 TO STA 14+50



EXISTING POWER POLE TO
BE RELOCATED BY OTHERS

EXISTING AND REMOVAL PLAN

Z:\streets\projects\current\Como-Chatsworth\DWG\CHATSWORTH ST.dwg Feb 25, 2015 10:04am



DESIGNED	ASO	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	
DRAWN	ASO	Signature: <i>Barbara R. Mundahl</i>	Date: 1/7/2015
APPROVED	BRM	BARBARA R. MUNDAHL	Lic. No. 43099

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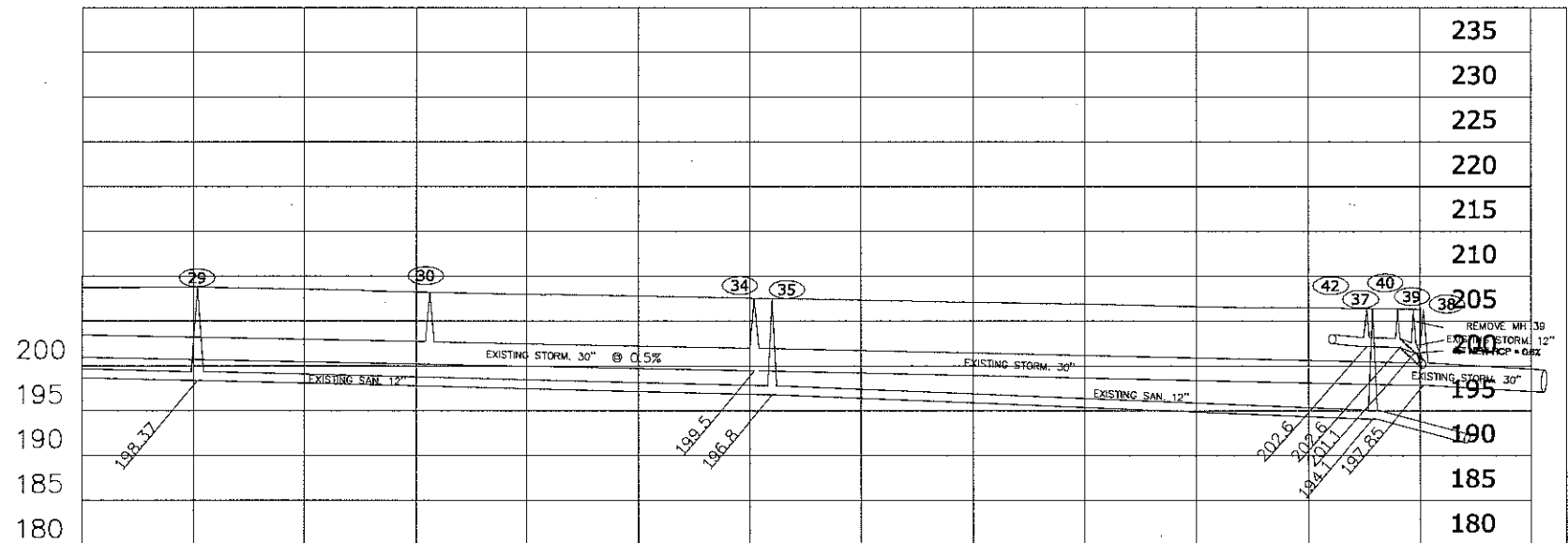
COMO-CHATSWORTH

PROJECT: 14-P-8165	STATE AID PROJECT NUMBER:
DRAWER: 12	CAD NAME: PROJECTS/CURRENT/COMO-CHATSWORTH
DWG. NO. 1575	DATE: 2/25/2015
SHEET NO. 11 OF 24 SHEETS	

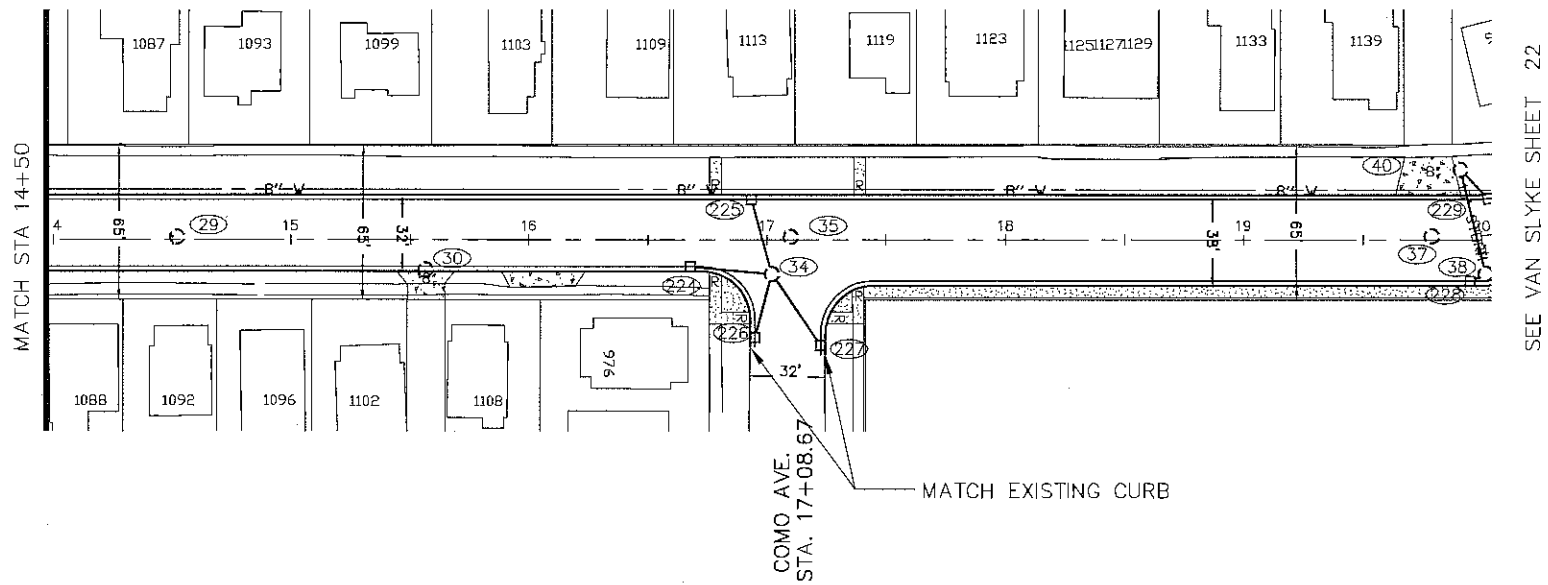


14 15 16 17 18 19 20

SURVEYOR:
NORTH AND SOUTH TOP
OF CURB GRADES
AVAILABLE UPON REQUEST

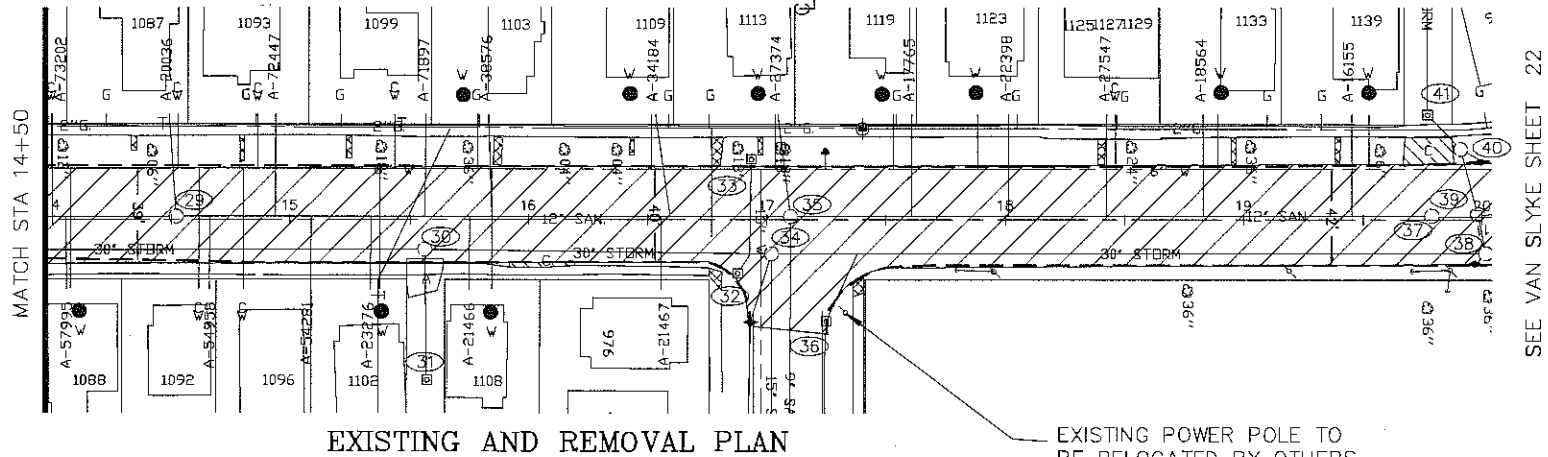
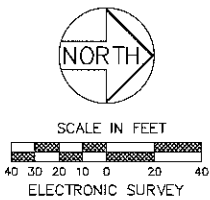


CONSTRUCTION PLAN



CHATSWORTH ST.

REMOVE 40' LF 12" VCP BETWEEN MH 38 TO 40, REPLACE W/40' LF 15" RCP, CLV @ 0.6%
REMOVE STORM MH 39, DO NOT REPLACE
NOTE: SLIGHT ALIGNMENT AND GRADE CHANGE



CHATSWORTH ST.

CHATSWORTH ST.
STA 14+50 TO STA 20+00

NOTE: 2117' OF EXISTING 6" C.I.P. WATER MAIN IN CHATSWORTH ST. FROM FRONT TO W. COMO BLVD TO BE REPLACED WITH NEW 8" D.I.P. WATERMAIN. PIPE INSTALLATION BY SAINT PAUL REGIONAL WATER SERVICES. EXCAVATION BY CONTRACTOR - PAY AS BID ITEM 2504.603 "WATER MAIN TRENCH".

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DESIGNED	ASO
DRAWN	ASO
APPROVED	BRM

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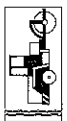
Signature: *Barbara R. MundaHL* Date: 1/5/2015
BARBARA R. MUNDAHL Lic. No. 43099

PREPARED BY STREET ENGINEERING DIVISION FOR THE CITY OF ST. PAUL, DEPARTMENT OF PUBLIC WORKS

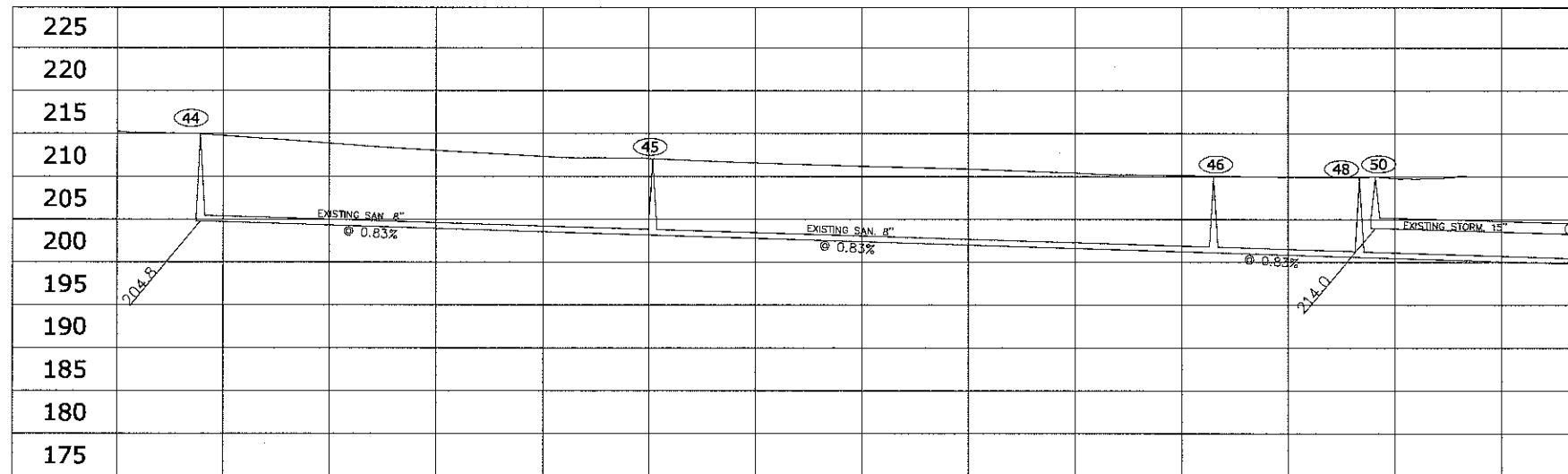
COMO-CHATSWORTH

PROJECT: 14-P-8165
DRAWER: 12
DWG. NO. 1575

STATE AID PROJECT NUMBER:
CAD NAME: PROJECTS/CURRENT/COMO-CHATSWORTH
DATE: 2/25/2015 SHEET NO. 12 OF 24 SHEETS

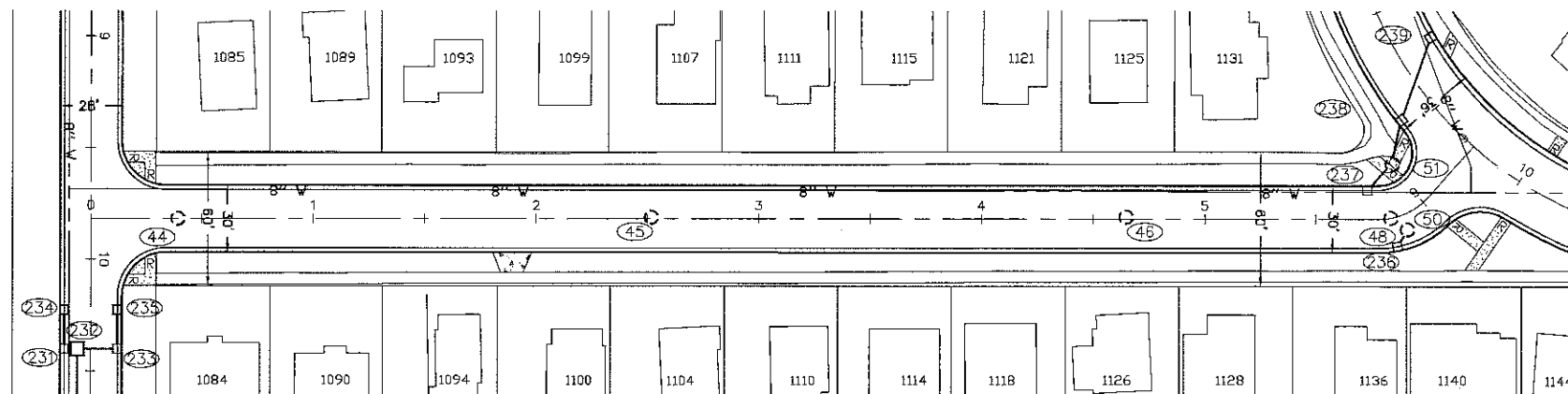


0 1 2 3 4 5 6



CONSTRUCTION PLAN

NOTE: 867' OF EXISTING 6" C.I.P. WATER MAIN IN ARGYLE ST. FROM JESSAMINE AVE. TO COMO AVE. TO BE REPLACED WITH NEW 8" D.I.P. WATERMAIN. PIPE INSTALLATION BY SAINT PAUL REGIONAL WATER SERVICES. EXCAVATION BY CONTRACTOR - PAY AS BID ITEM 2504.603 "WATER MAIN TRENCH".

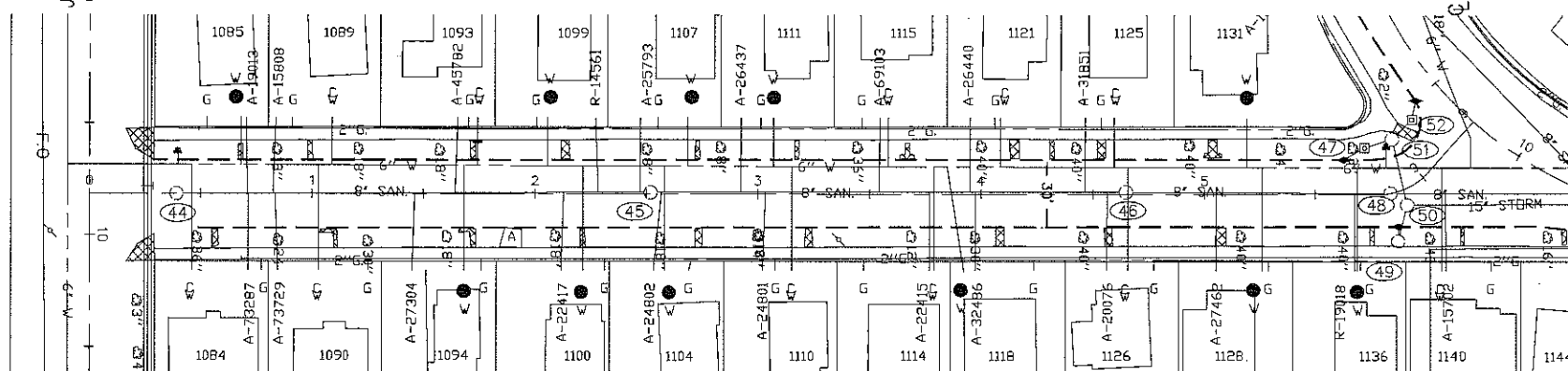


SEE COMO AVE SHEET 20

ARGYLE ST.

NOTE: DO NOT RECONSTRUCT DRIVEWAY TO 1126 ARGYLE ST UNLESS DIRECTED BY ENGINEER

COMO AVE.
STA. 6+33.47

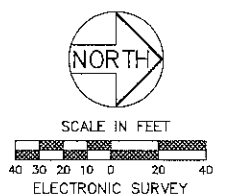


SEE COMO AVE SHEET 20

ARGYLE ST.

EXISTING AND REMOVAL PLAN

ARGYLE ST.
JESSAMINE AVE. TO COMO AVE.



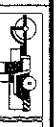
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DESIGNED	ASO	I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA Signature: <i>Barbara R. Munda</i> Date: 1/7/2015 BARBARA R. MUNDAHL Lic. No. 43099
DRAWN	ASO	
APPROVED	BRM	

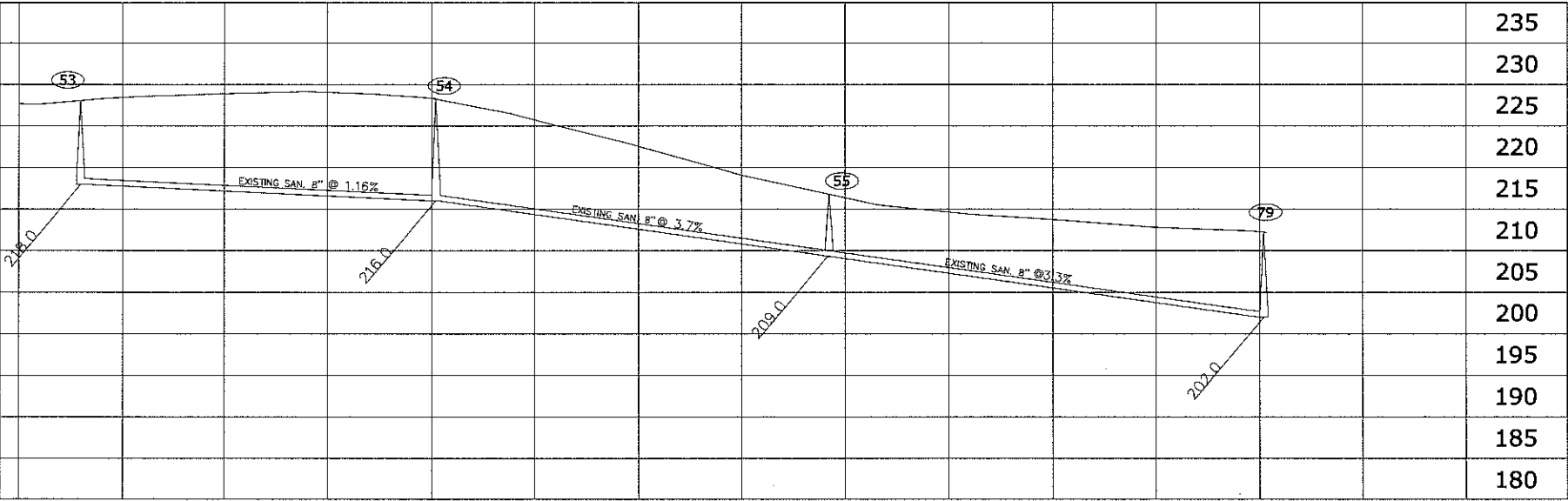
PREPARED BY STREET ENGINEERING DIVISION FOR THE CITY OF ST. PAUL, DEPARTMENT OF PUBLIC WORKS

COMO-CHATSWORTH

PROJECT: 14-P-8165	STATE AID PROJECT NUMBER:
DRAWER: 12	CAD NAME: PROJECTS/CURRENT/COMO-CHATSWORTH
DWG. NO. 1575	DATE: 2/25/2015 SHEET NO. 13 OF 24 SHEETS

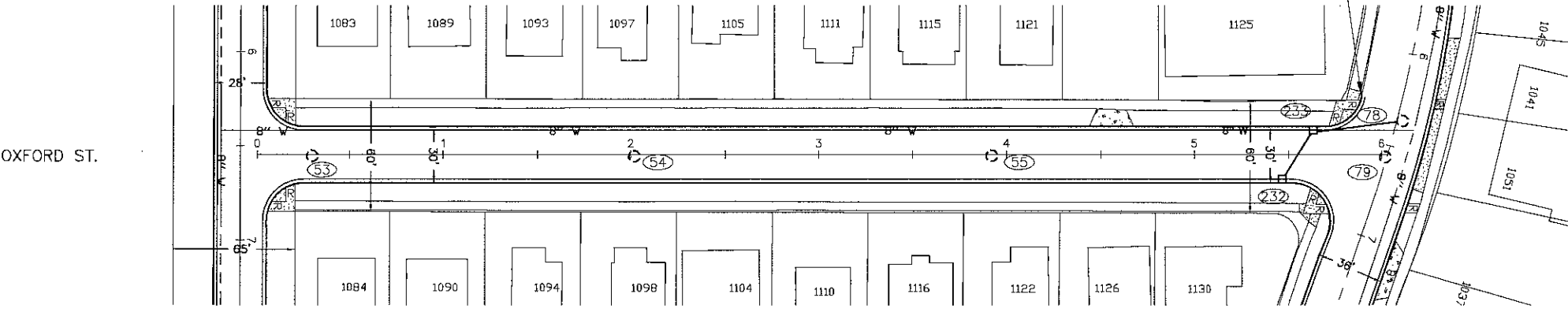


SURVEYOR:
NORTH AND SOUTH TOP
OF CURB GRADES
AVAILABLE UPON REQUEST



CONSTRUCTION PLAN

MATCH EXISTING CURB



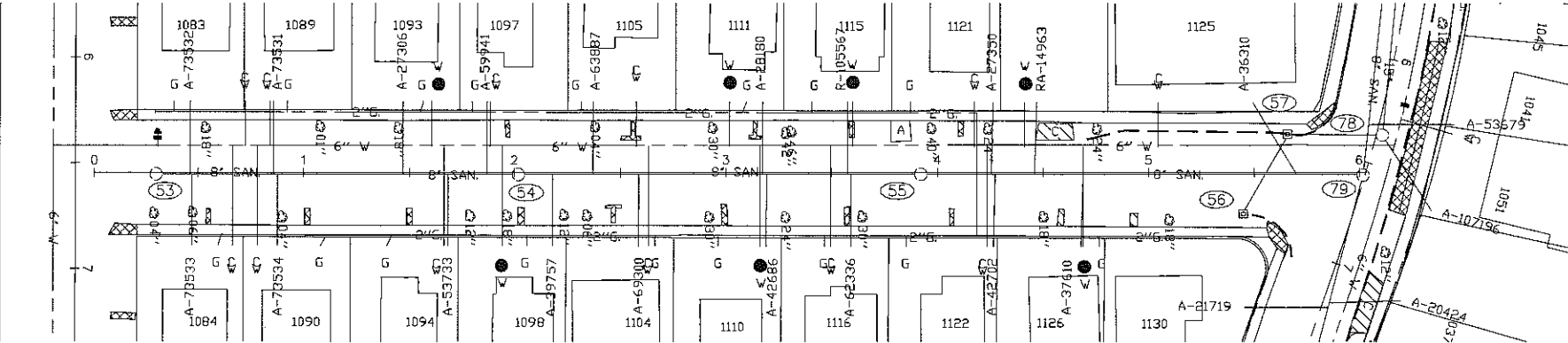
OXFORD ST.

JESSAMINE AVE.
Q STA. 0+00
SEE SHEET 17

NOTE: DO NOT RECONSTRUCT
DRIVEWAY TO 1121 OXFORD ST
UNLESS DIRECTED BY ENGINEER

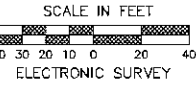
COMO AVE.
Q STA. 6+03.22
SEE SHEET 19

OXFORD ST.



EXISTING AND REMOVAL PLAN

NOTE: 634' CI OF EXISTING 6" C.I.P.
WATER MAIN IN OXFORD ST. FROM
JESSAMINE AVE. TO COMO AVE. TO BE
REPLACED WITH NEW 8" D.I.P.
WATERMAIN. PIPE INSTALLATION BY
SAINT PAUL REGIONAL WATER
SERVICES. EXCAVATION BY CONTRACTOR
— PAY AS BID ITEM 2504.603 "WATER
MAIN TRENCH".



OXFORD ST.
JESSAMINE AVE. TO COMO AVE.

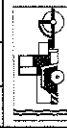
Z:\streets\projects\current\Como-Chatsworth\DWG\OXFORD ST.dwg Feb 25, 2015 10:40am

	DESIGNED	ASO	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. Signature: <i>Barbara R. MundaHL</i> Date: 1/5/2015 BARBARA R. MUNDAHL Lic. No. 43099
	DRAWN	ASO	
	APPROVED	BRM	

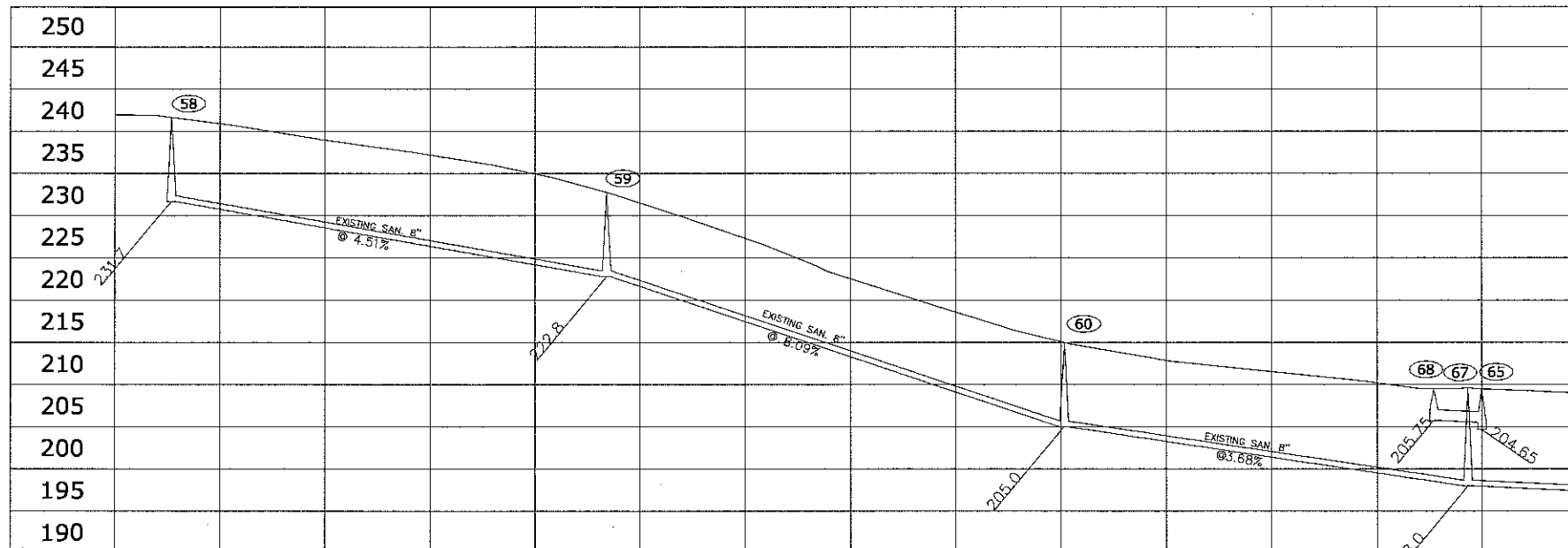
PREPARED BY STREET ENGINEERING DIVISION FOR THE CITY OF ST. PAUL, DEPARTMENT OF PUBLIC WORKS

COMO-CHATSWORTH

PROJECT: 14-P-8165	STATE AID PROJECT NUMBER:
DRAWER: 12	CAD NAME: PROJECTS/CURRENT/COMO-CHATSWORTH
DWG. NO. 1575	DATE: 2/25/2015 SHEET NO. 14 OF 24 SHEETS

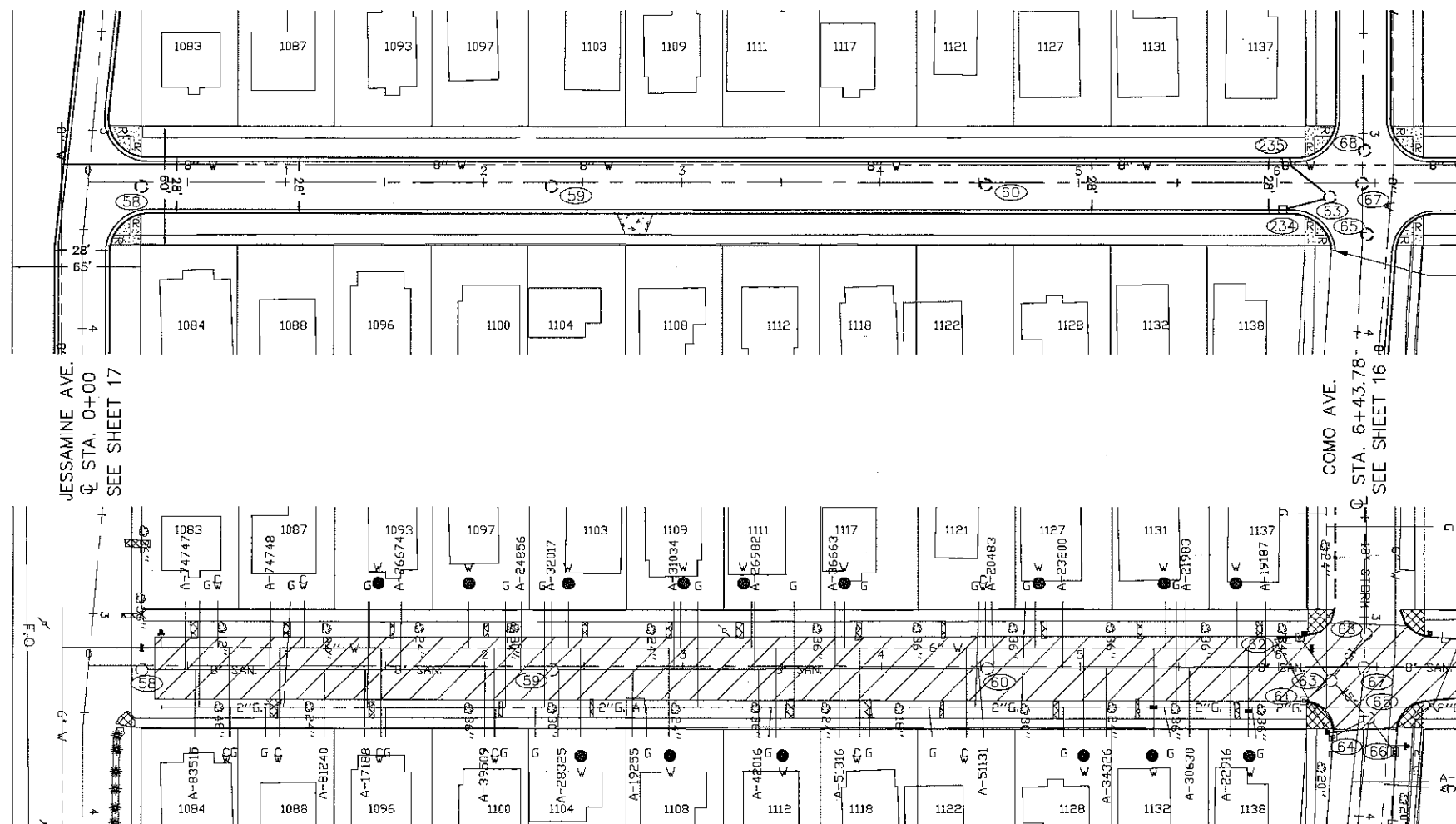


0 1 2 3 4 5 6 7



NOTE: 1325' OF EXISTING 6" C.I.P. WATER MAIN IN CHURCHILL ST. FROM JESSAMINE TO VAN SLYKE TO BE REPLACED WITH NEW 8" D.I.P. WATERMAIN. PIPE INSTALLATION BY SAINT PAUL REGIONAL WATER SERVICES. EXCAVATION BY CONTRACTOR - PAY AS BID ITEM 2504.603 "WATER MAIN TRENCH".

CONSTRUCTION PLAN



EXISTING AND REMOVAL PLAN

CHURCHILL ST.

MATCH EXISTING CURB



SCALE IN FEET
40 30 20 10 0 20 40
ELECTRONIC SURVEY

CHURCHILL ST.

CHURCHILL ST.
JESSAMINE AVE. TO COMO AVE.



DESIGNED	ASO
DRAWN	ASO
APPROVED	BRM

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

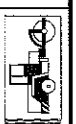
Signature: *Barbara R. Munda* Date: 1/6/2015
BARBARA R. MUNDAHL Lic. No. 43099

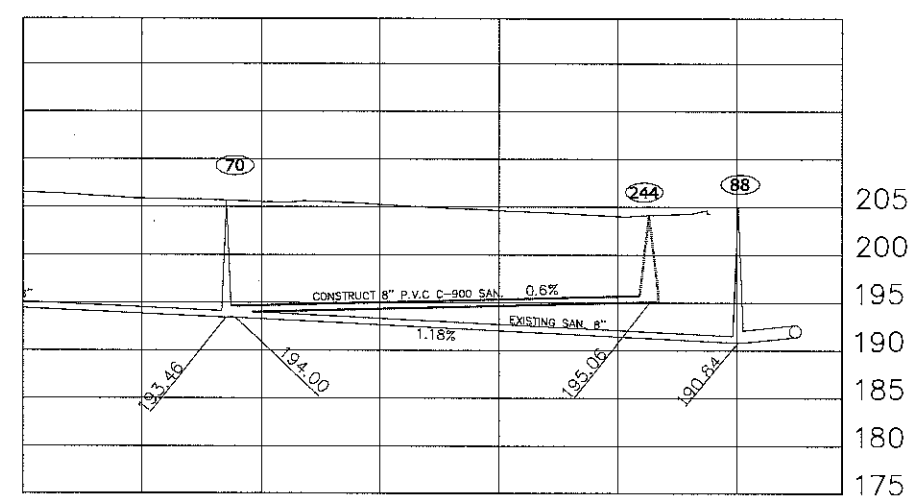
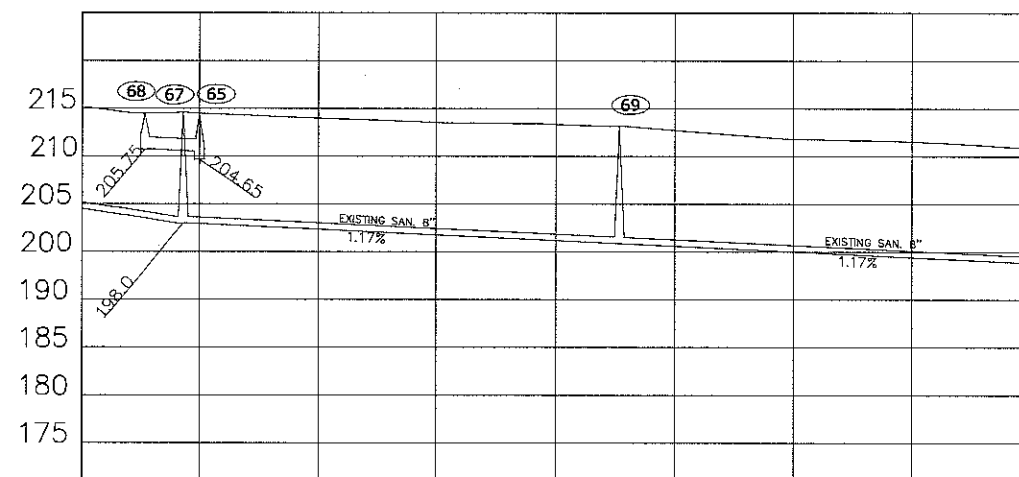
PREPARED BY STREET ENGINEERING DIVISION FOR THE CITY OF ST. PAUL, DEPARTMENT OF PUBLIC WORKS

COMO-CHATSWORTH

PROJECT: 14-P-8165
DRAWER: 12
DWG. NO. 1575

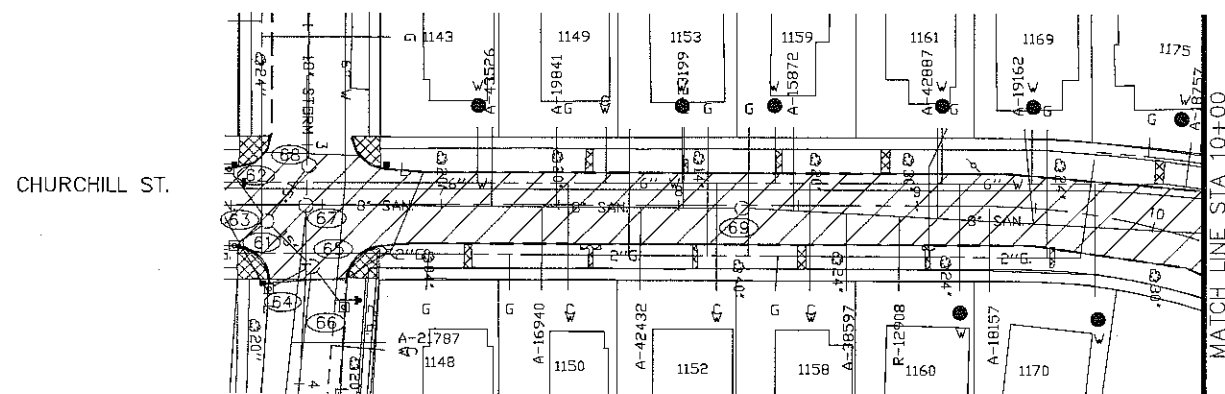
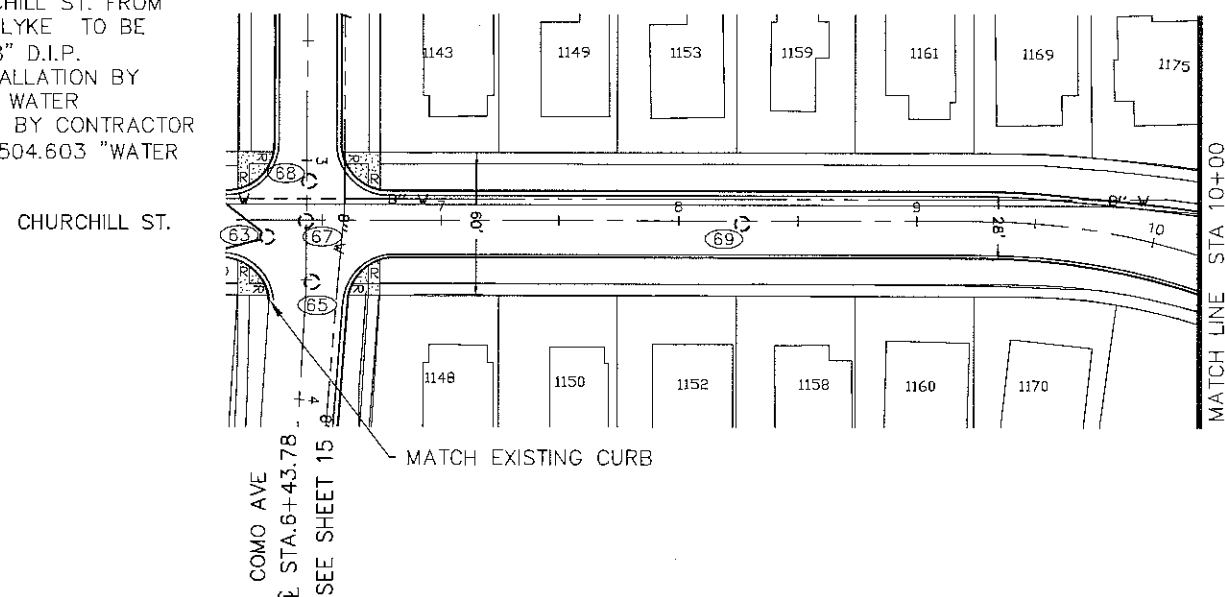
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CAD NAME: PROJECTS/CURRENT/COMO-CHATSWORTH
DATE: 2/25/2015 SHEET NO. 15 OF 24 SHEETS



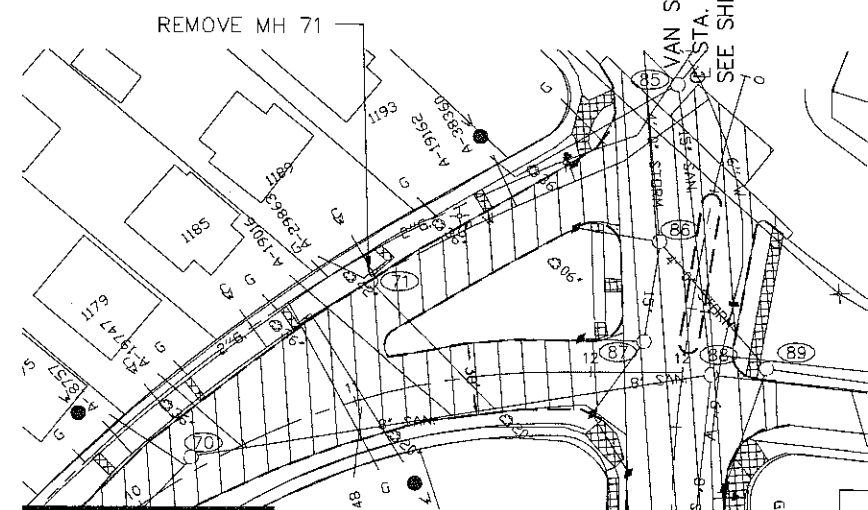
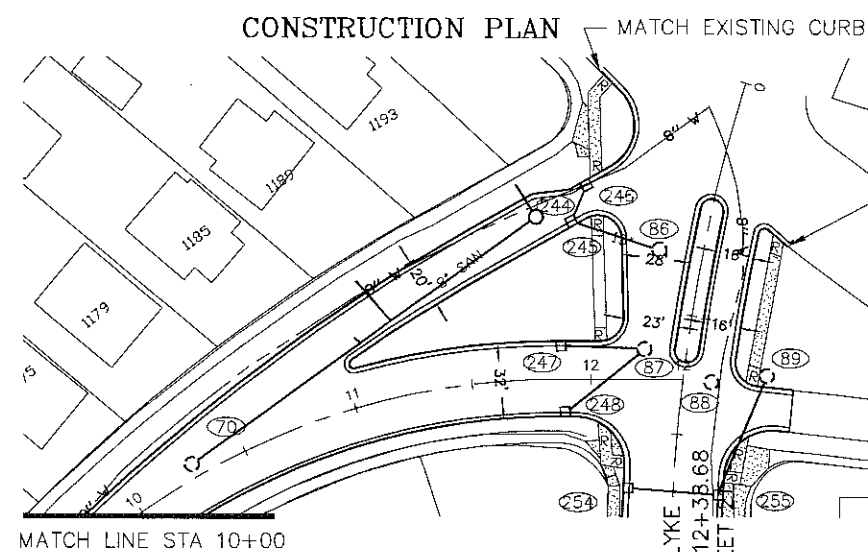


NOTE: 1325' OF EXISTING 6" C.I.P. WATER MAIN IN CHURCHILL ST. FROM JESSAMINE TO VAN SLYKE TO BE REPLACED WITH NEW 8" D.I.P. WATERMAIN. PIPE INSTALLATION BY SAINT PAUL REGIONAL WATER SERVICES. EXCAVATION BY CONTRACTOR - PAY AS BID ITEM 2504.603 "WATER MAIN TRENCH".

CONSTRUCTION PLAN



EXISTING AND REMOVAL PLAN



EXISTING AND REMOVAL PLAN

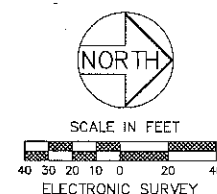
8" PVC

MATCH EXISTING CURB

CHURCHILL ST.

CHURCHILL ST.

CHURCHILL ST.
COMO AVE TO VAN SLYKE



DESIGNED	ASO	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 Signature: <i>Barbara R. Munda</i> Date: 1/6/2015 BARBARA R. MUNDAHL Lic. No. 43099	
DRAWN	ASO		
APPROVED	BRM		

PREPARED BY STREET ENGINEERING DIVISION FOR THE CITY OF ST. PAUL, DEPARTMENT OF PUBLIC WORKS

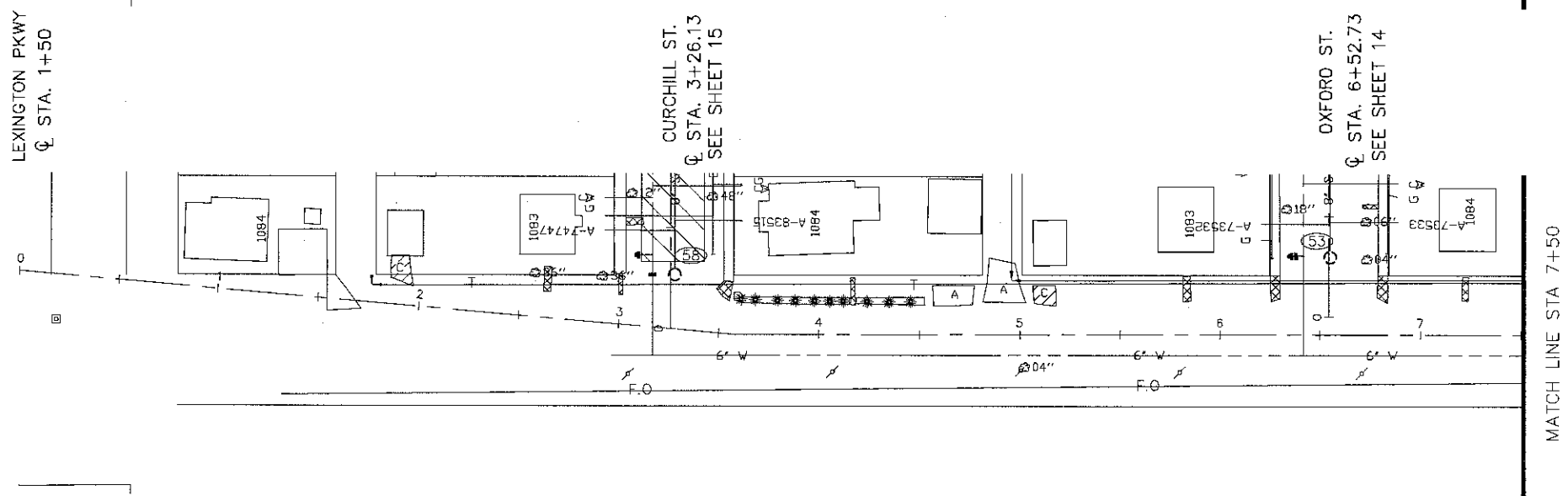
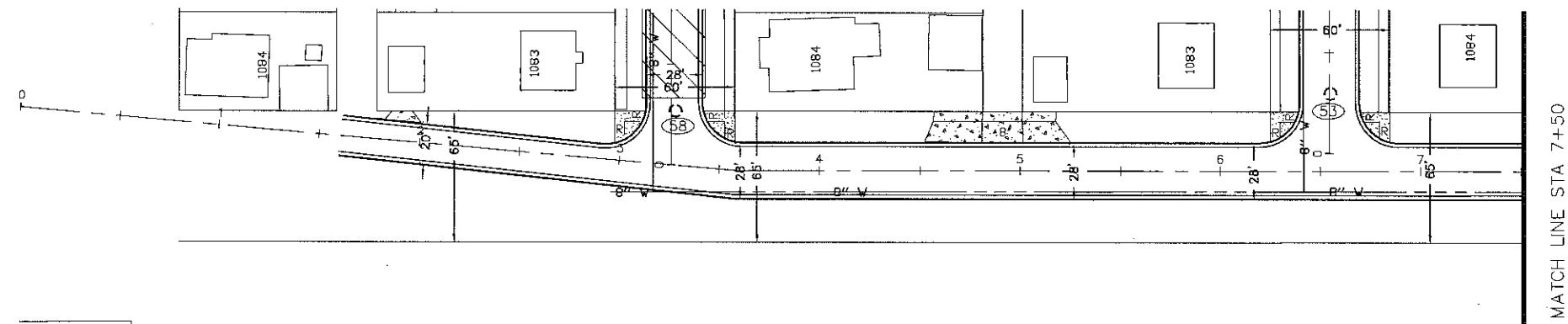
COMO-CHATSWORTH

PROJECT: 14-P-8165	STATE AID PROJECT NUMBER:
DRAWER: 12	CAD NAME: PROJECTS/CURRENT/COMO-CHATSWORTH
DWG. NO. 1575	DATE: 2/25/2015 SHEET NO. 16 OF 24 SHEETS



NOTE-- 111' OF EXISTING 6" C.I.P.
WATER MAIN IN JESSAMINE ST. FROM
LEXINGTON PRKW TO CHATSWORTH ST.
TO BE REPLACED WITH NEW 8" D.I.P.
WATERMAIN. PIPE INSTALLATION BY
SAINT PAUL REGIONAL WATER
SERVICES. EXCAVATION BY CONTRACTOR
— PAY AS BID ITEM 2504.603 "WATER
MAIN TRENCH".

CONSTRUCTION PLAN

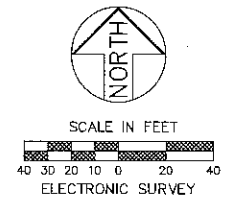


JESSAMINE AVE.

JESSAMINE AVE.

JESSAMINE AVE.

STA 1+50 TO STA 7+50



EXISTING AND REMOVAL PLAN

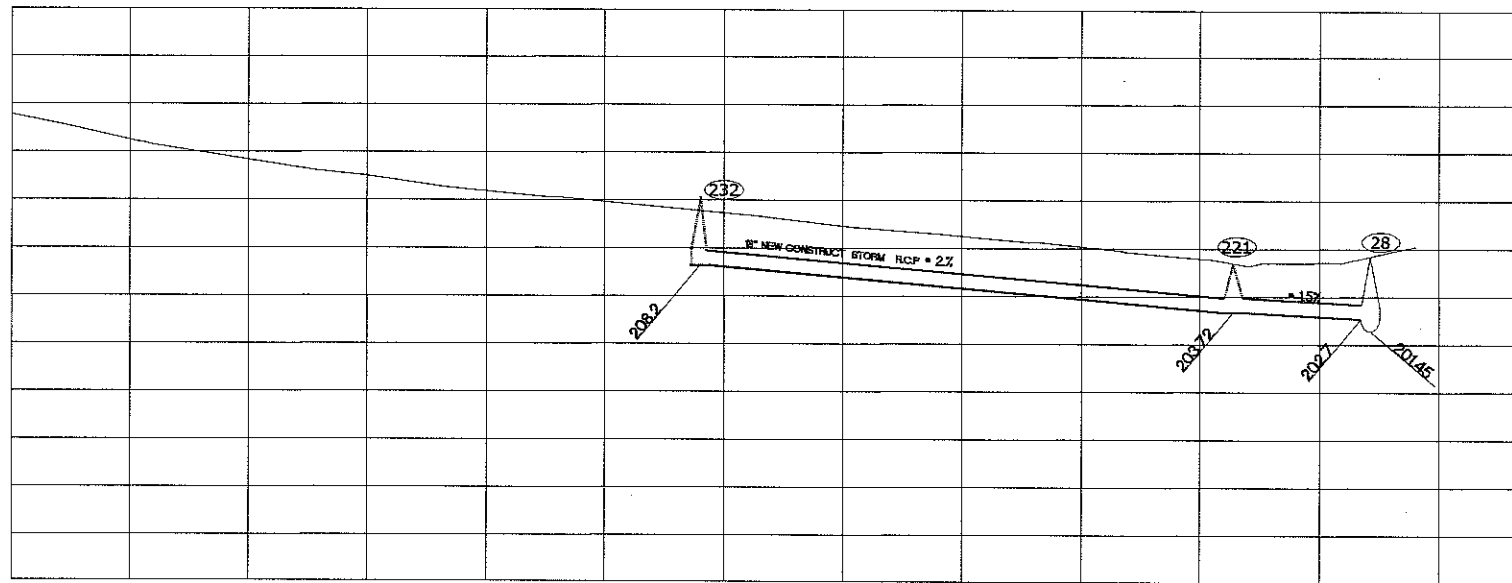
	DESIGNED	ASO	I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA Signature: <i>Barbara R. Munda</i> Date: 1/6/2015 BARBARA R. MUNDAHL Lic. No. 43099
	DRAWN	ASO	
	APPROVED	BRM	

PREPARED BY STREET ENGINEERING DIVISION FOR THE CITY OF ST. PAUL, DEPARTMENT OF PUBLIC WORKS

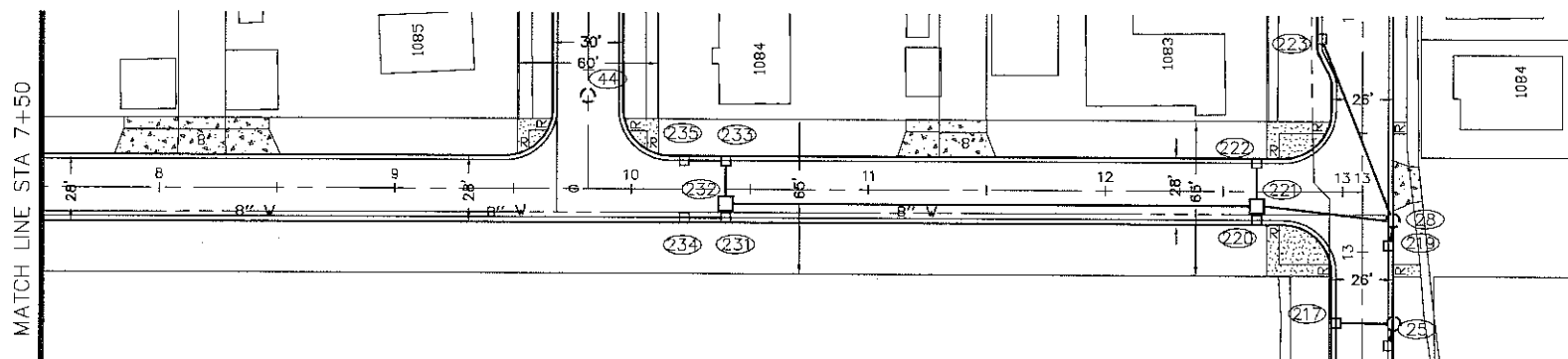
COMO-CHATSWORTH

PROJECT: 14-P-8165	STATE AID PROJECT NUMBER:
DRAWER: 12	CAD NAME: PROJECTS/CURRENT/COMO-CHATSWORTH
DWG. NO. 1575	DATE: 2/25/2015 SHEET NO. 17 OF 24 SHEETS

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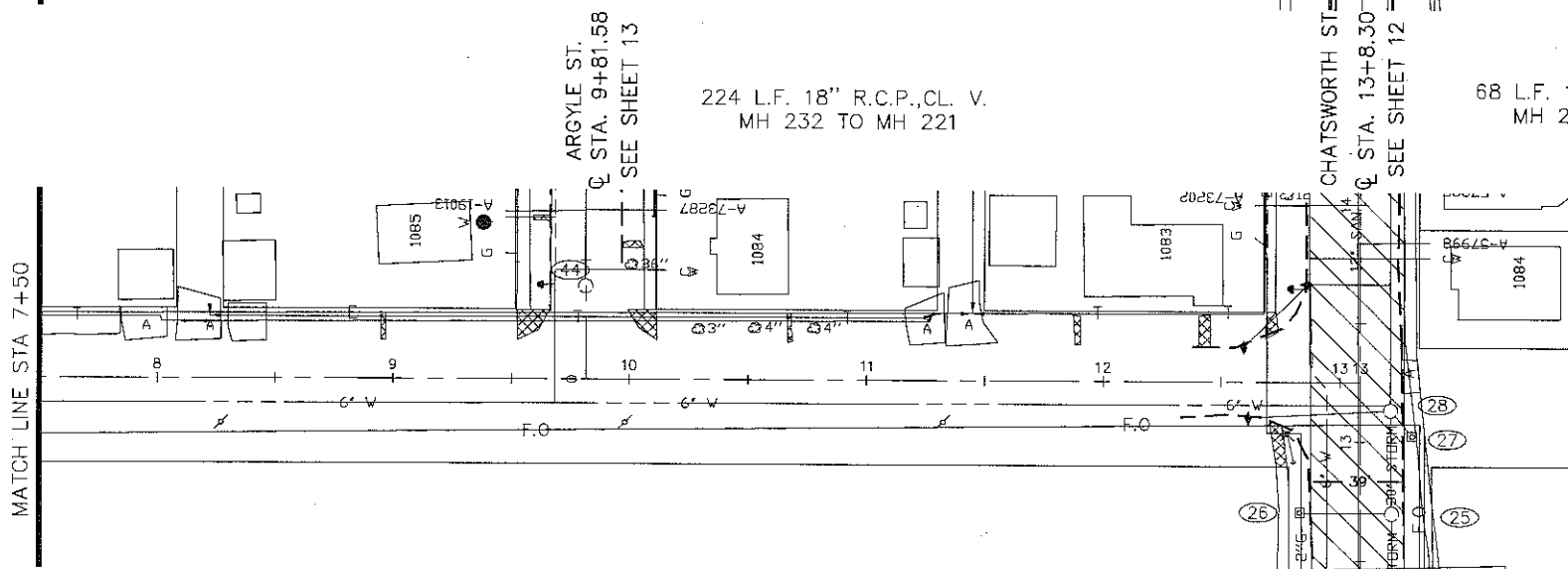


CONSTRUCTION PLAN



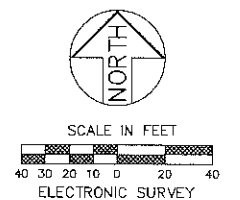
JESSAMINE AVE.

NOTE- 111' OF EXISTING 6" C.I.P. WATER MAIN IN JESSAMINE ST. FROM LEXINGTON PRKW TO CHATSWORTH ST. TO BE REPLACED WITH NEW 8" D.I.P. WATERMAIN. PIPE INSTALLATION BY SAINT PAUL REGIONAL WATER SERVICES. EXCAVATION BY CONTRACTOR - PAY AS BID ITEM 2504.603 "WATER MAIN TRENCH".



JESSAMINE AVE.

EXISTING AND REMOVAL PLAN



JESSAMINE AVE.
OXFORD ST. TO CHATSWORTH ST.

Z:\streets\projects\current\Como-Chatsworth.DWG\JESSAMINE AVE.dwg Feb 25, 2015 - 12:58pm



DESIGNED	ASO
DRAWN	ASO
APPROVED	BRM

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

Signature: *Barbara R. Munda* Date: 1/5/2015
BARBARA R. MUNDAHL Lic. No. 43099

PREPARED BY STREET ENGINEERING DIVISION FOR THE CITY OF ST. PAUL, DEPARTMENT OF PUBLIC WORKS

COMO-CHATSWORTH

PROJECT: 14-P-8165

DRAWER: 12

DWG. NO. 1575

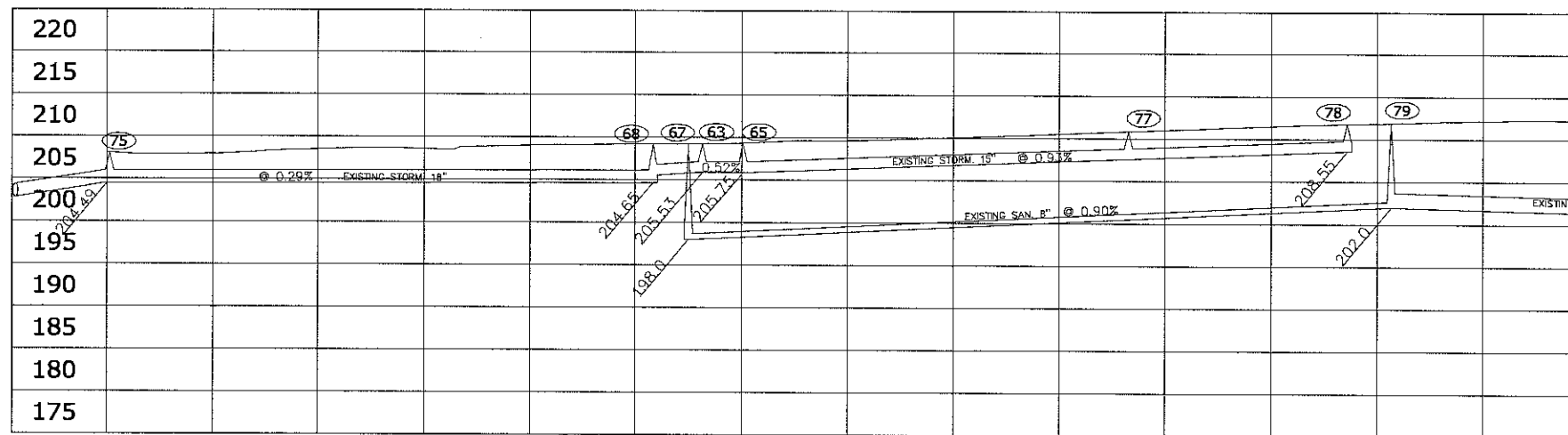
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PROJECT NUMBER:

CAD NAME: PROJECTS/CURRENT/COMO-CHATSWORTH

DATE: 2/25/2015 SHEET NO. 18 OF 24 SHEETS

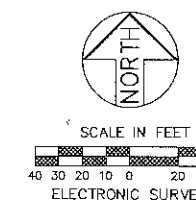
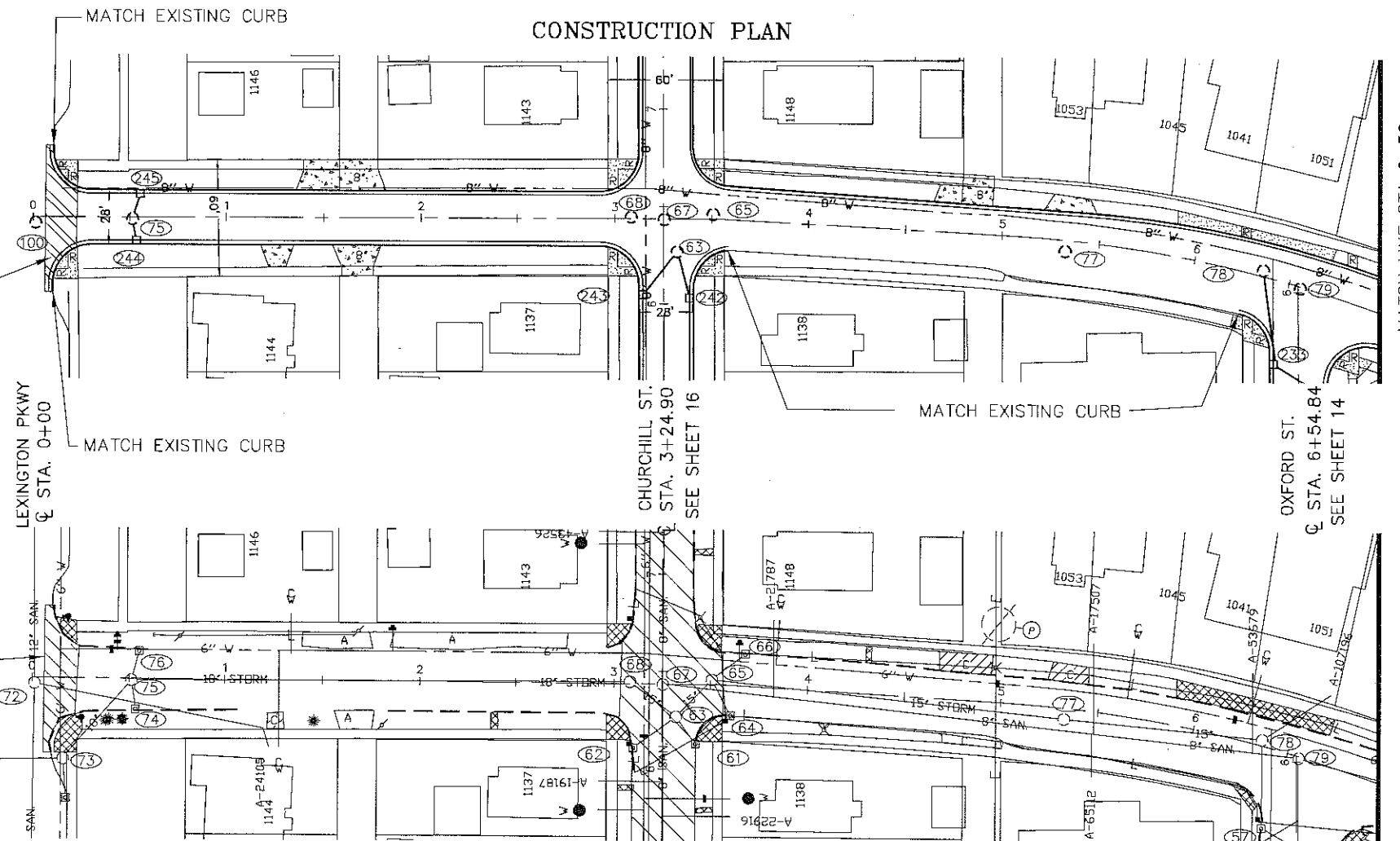


0 1 2 3 4 5 6



NOTE: 1019' OF EXISTING 6" C.I.P. WATER MAIN IN ARGYLE ST. FROM LEXINGTON PRKWAY TO ARGYLE TO BE REPLACED WITH NEW 8" D.I.P. WATERMAIN. PIPE INSTALLATION BY SAINT PAUL REGIONAL WATER SERVICES. EXCAVATION BY CONTRACTOR - PAY AS BID ITEM 2504.603 "WATER MAIN TRENCH".

RESTORE PAVEMENT WITH:
3-1/2" WEARING COURSE (SPWEA340B)
7" CONCRETE BASE (2201)
6" AGGREGATE BASE (2211)



COMO AVE.
LEXINGTON PKWAY TO OXFORD ST.

Z:\streets\projects\current\Como-Chatsworth\DWG\COMO AVE.dwg Feb 25, 2015 - 1:08pm



DESIGNED	ASO
DRAWN	ASO
APPROVED	BRM

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

Signature: *Barbara R. Munda*
BARBARA R. MUNDAHL

Date: 1/7/2015
Lic. No. 43099

PREPARED BY STREET ENGINEERING DIVISION FOR THE CITY OF ST. PAUL, DEPARTMENT OF PUBLIC WORKS

COMO-CHATSWORTH

PROJECT: 14-P-8165
DRAWER: 12
DWG. NO. 1575

STATE AID PROJECT NUMBER:
CAD NAME: PROJECTS/CURRENT/COMO-CHATSWORTH
DATE: 2/25/2015 SHEET NO. 19 OF 24 SHEETS



7

8

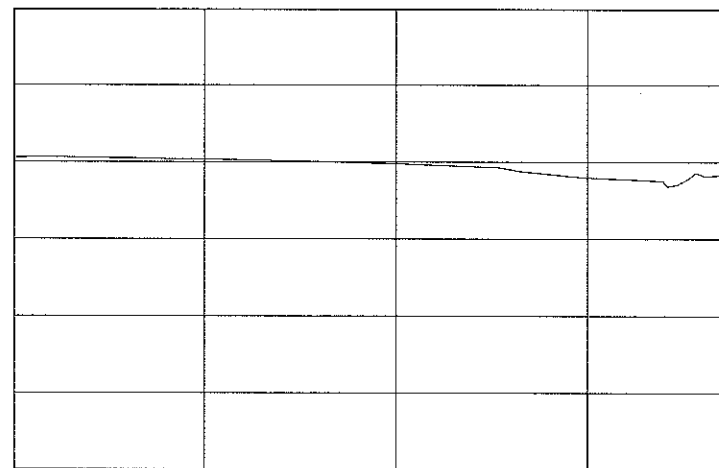
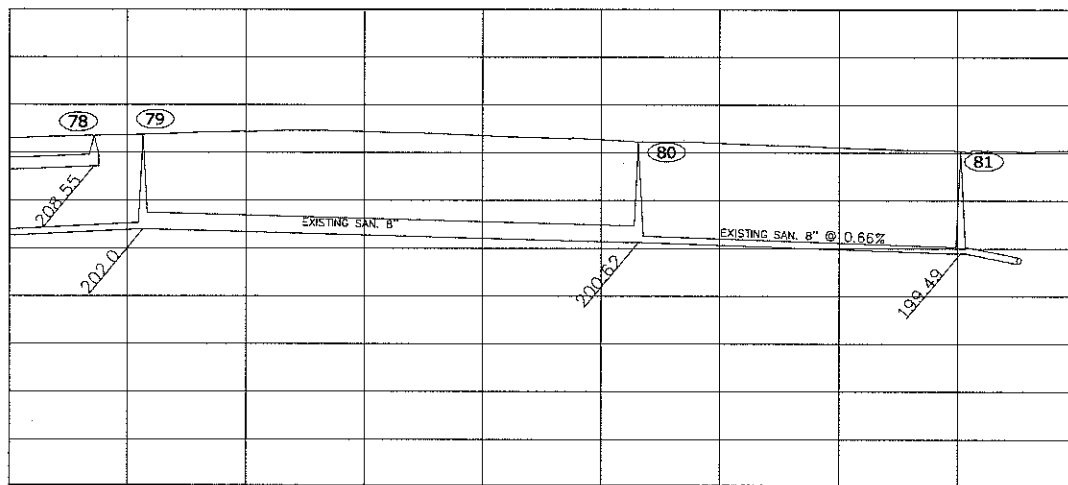
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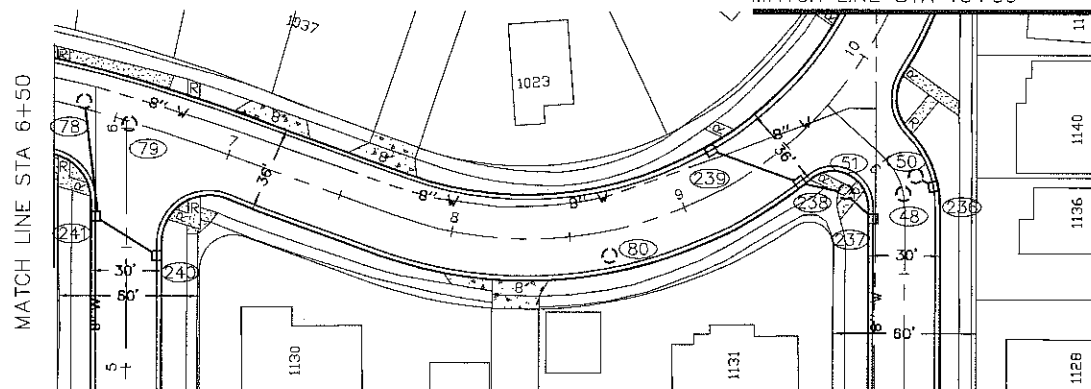
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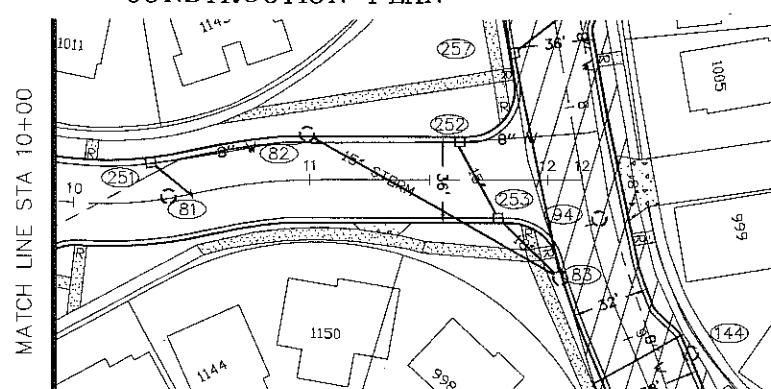


CONSTRUCTION PLAN

MATCH LINE STA 10+00

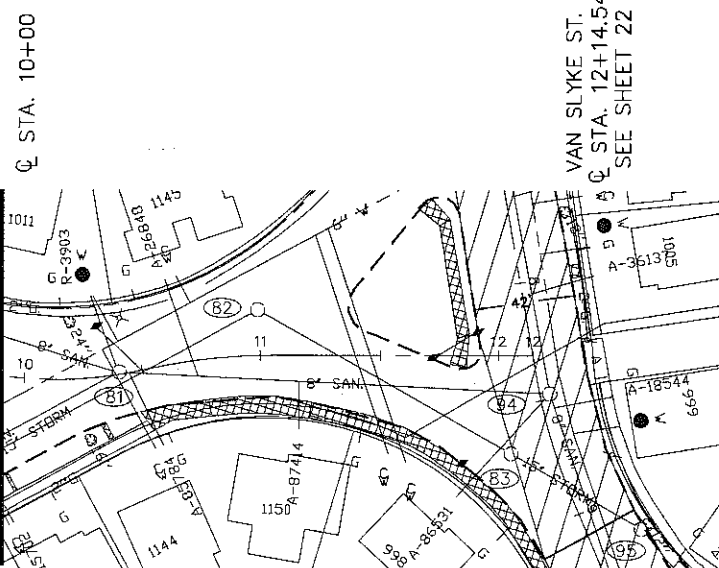
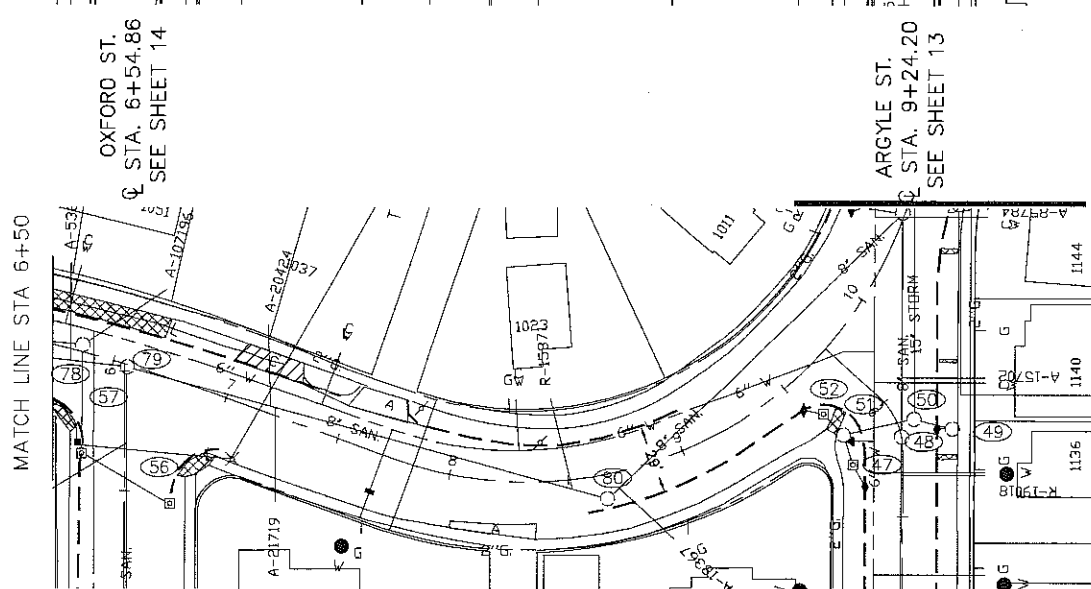


CONSTRUCTION PLAN

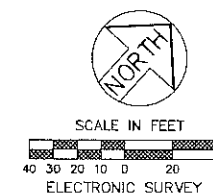


COMO AVE

NOTE: 1019' OF EXISTING 6" C.I.P. WATER MAIN IN ARGYLE ST. FROM LEXINGTON PRKWAY. TO ARGYLE TO BE REPLACED WITH NEW 8" D.I.P. WATERMAIN. PIPE INSTALLATION BY SAINT PAUL REGIONAL WATER SERVICES. EXCAVATION BY CONTRACTOR - PAY AS BID ITEM 2504.603 "WATER MAIN TRENCH".



COMO AVE



EXISTING AND REMOVAL PLAN

EXISTING AND REMOVAL PLAN

COMO AVE.
OXFORD ST. TO VAN SLYKE



DESIGNED	ASO
DRAWN	ASO
APPROVED	BRM

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

Signature: *Barbara R. Munda*
BARBARA R. MUNDAHL

Date: 1/7/2015
Lic. No. 43099

PREPARED BY STREET ENGINEERING DIVISION FOR THE CITY OF ST. PAUL, DEPARTMENT OF PUBLIC WORKS

COMO-CHATSWORTH

PROJECT: 14-P-8165

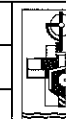
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DWG. NO. 1575

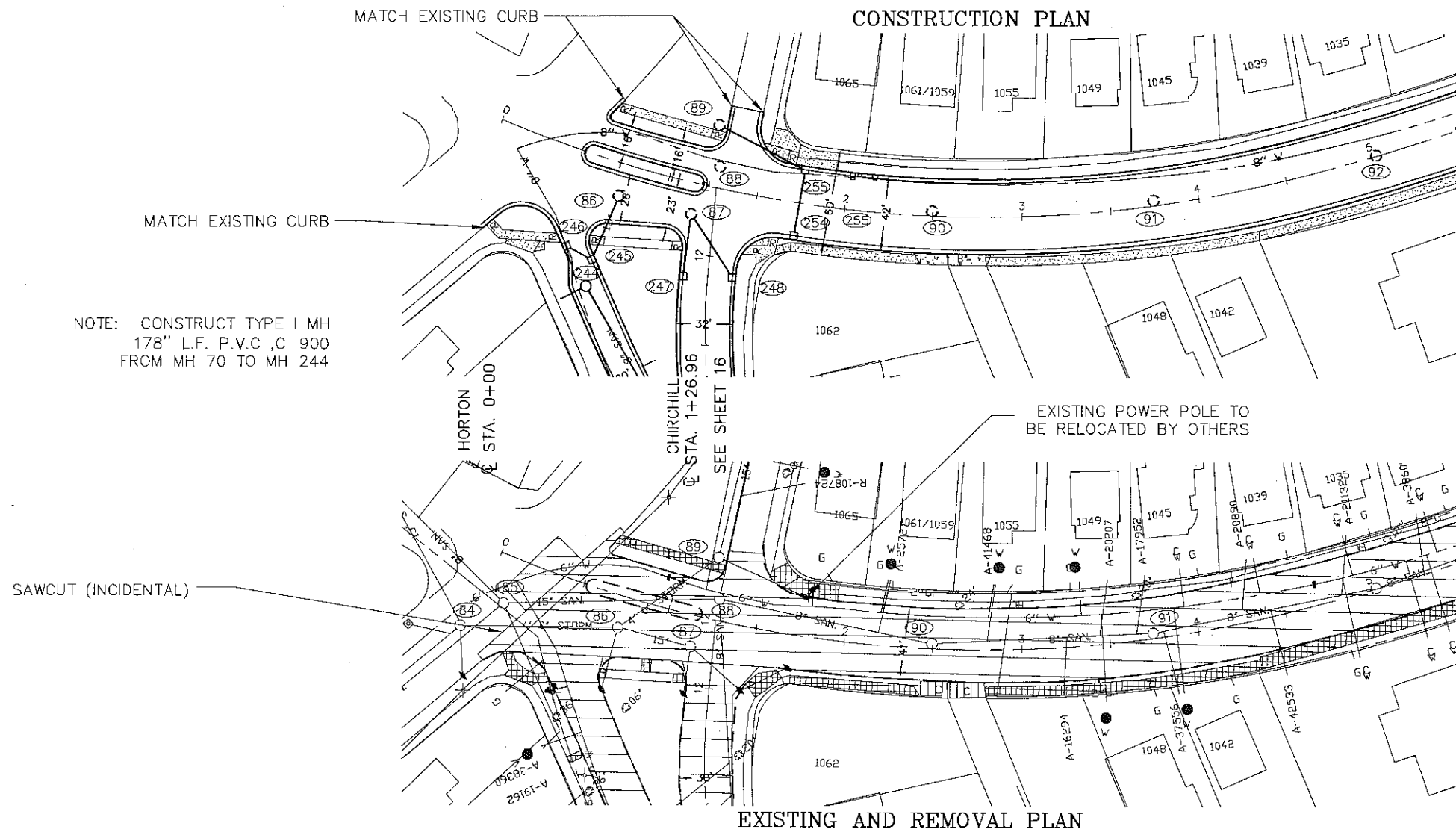
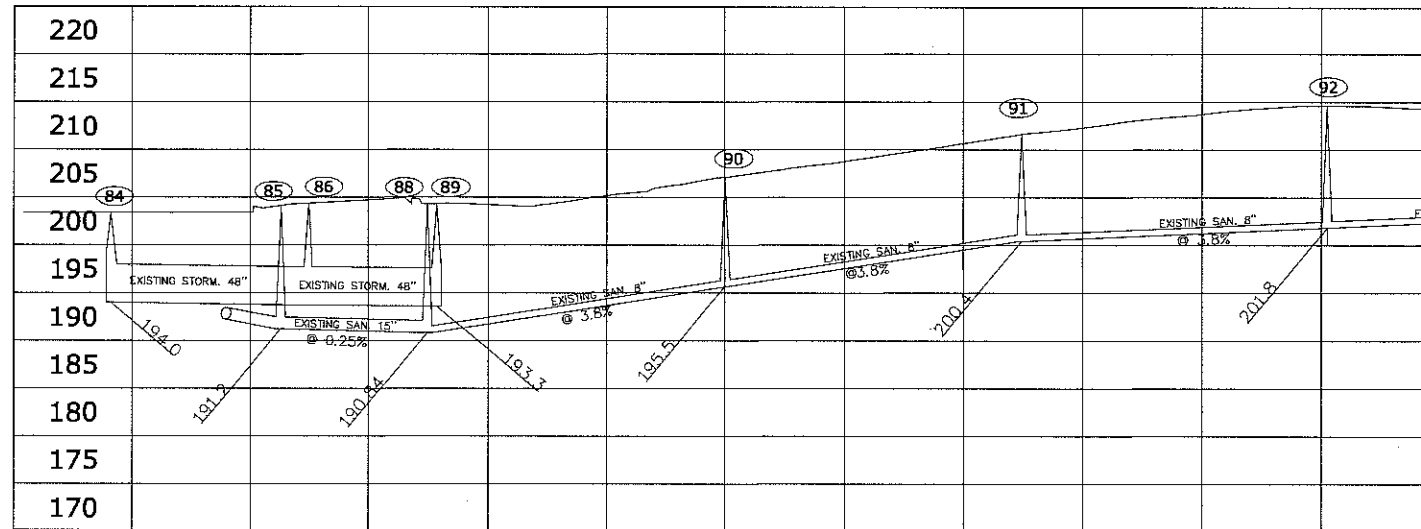
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CAD NAME: PROJECTS/CURRENT/COMO-CHATSWORTH

DATE: 2/25/2015 SHEET NO. 20 OF 24 SHEETS



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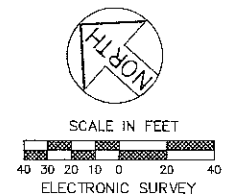
MATCH LINE STA 5+50

MATCH LINE STA 5+50

VAN SLYKE

VAN SLYKE

NOTE: 918' OF EXISTING 6" C.I.P. WATER MAIN IN VAN SLYKE FROM HORTON TO CHATSWORTH ST. TO BE REPLACED WITH NEW 8" D.I.P. WATERMAIN. PIPE INSTALLATION BY SAINT PAUL REGIONAL WATER SERVICES. EXCAVATION BY CONTRACTOR - PAY AS BID ITEM 2504.603 "WATER MAIN TRENCH".



VAN SLYKE
HORTON TO STA 5+50

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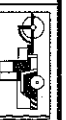


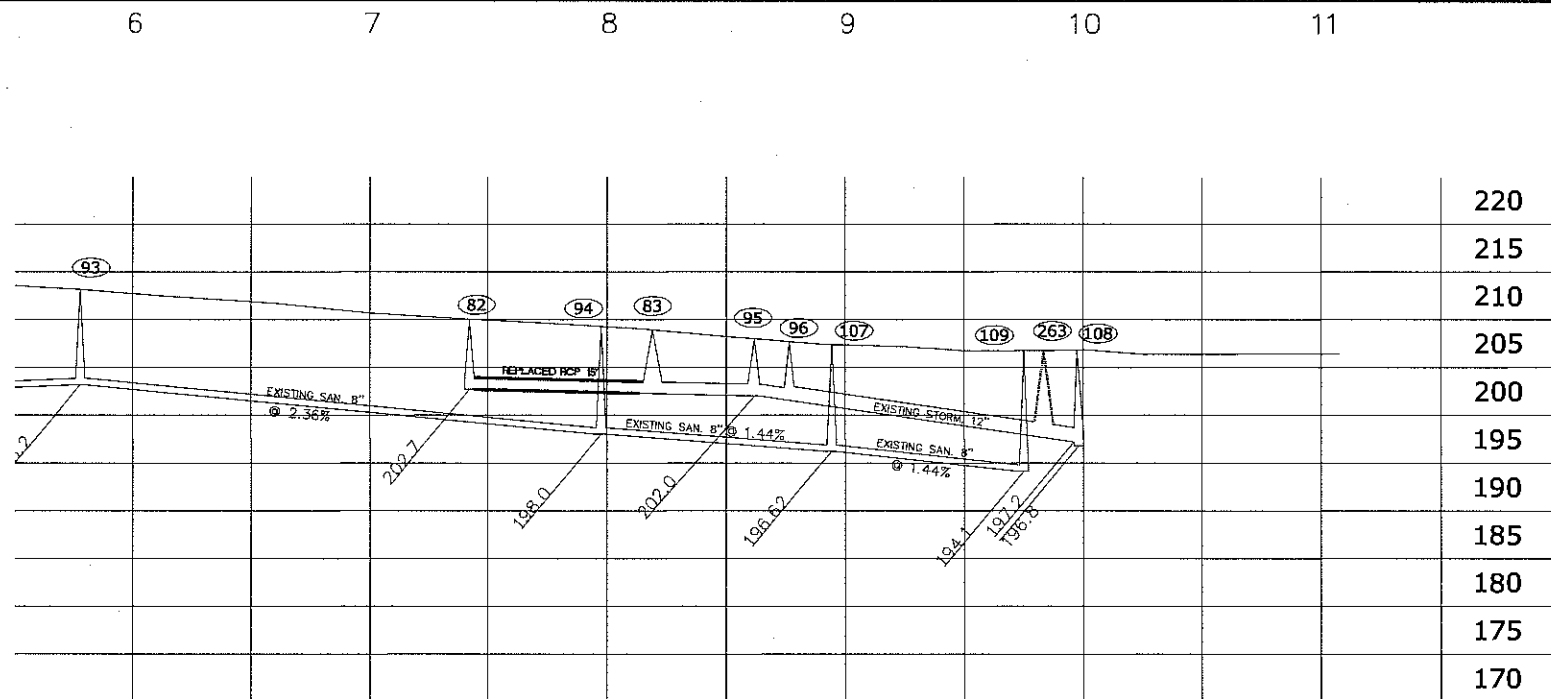
DESIGNED	ASO	I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA Signature: <i>Barbara R. Munda</i> Date: 1/5/2015 BARBARA R. MUNDAHL Lic. No. 43099	
DRAWN	ASO		
APPROVED	BRM		

PREPARED BY STREET ENGINEERING DIVISION FOR THE CITY OF ST. PAUL, DEPARTMENT OF PUBLIC WORKS

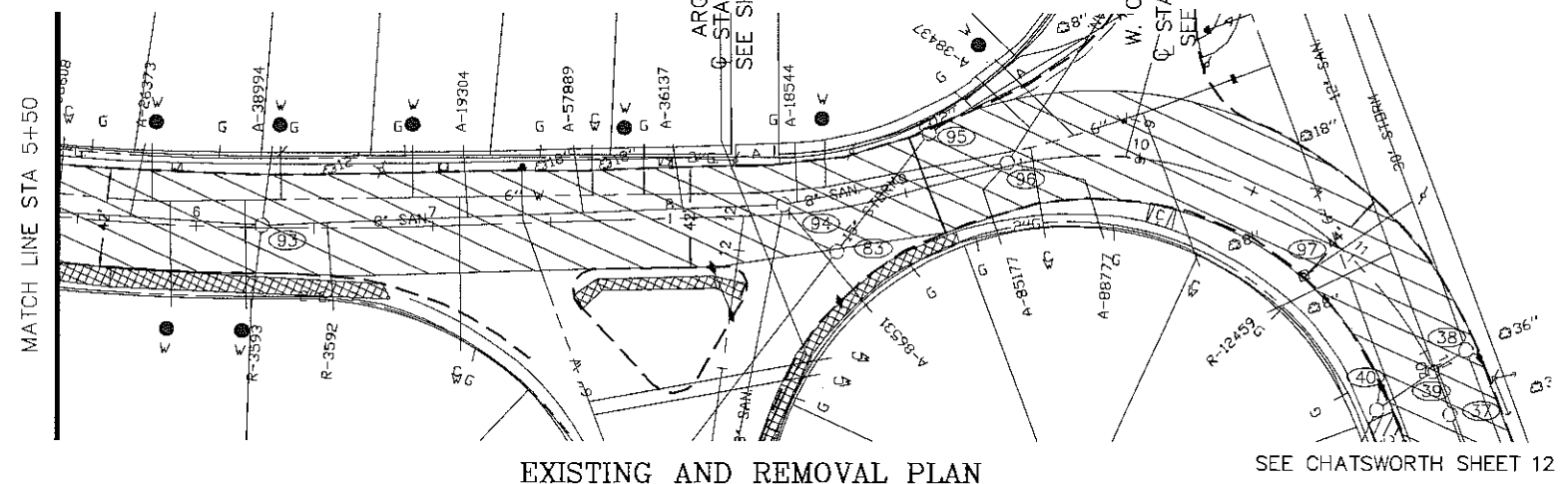
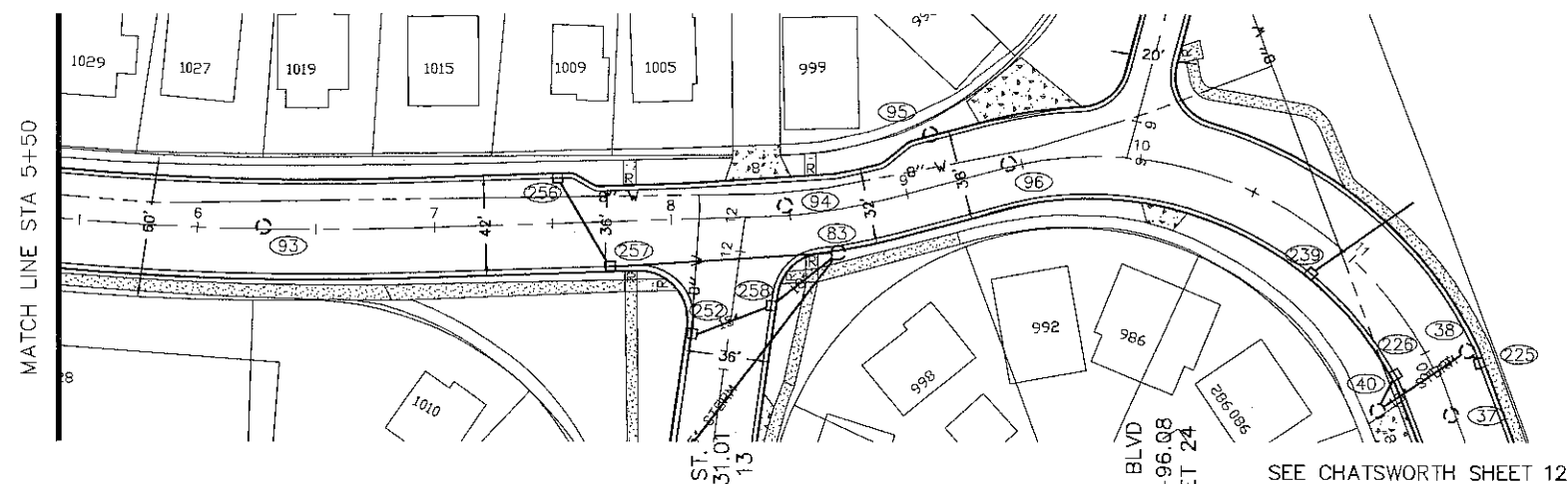
COMO-CHATSWORTH

PROJECT: 14-P-8165	STATE AID PROJECT NUMBER:
DRAWER: 12	CAD NAME: PROJECTS/CURRENT/COMO-CHATSWORTH
DWG. NO. 1575	DATE: 2/19/2015 SHEET NO. 21 OF 24 SHEETS





CONSTRUCTION PLAN



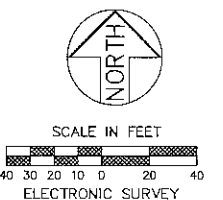
EXISTING AND REMOVAL PLAN

NOTE: 918' OF EXISTING 6" C.I.P. WATER MAIN IN VAN SLYKE FROM HORTON TO CHATSWORTH ST. TO BE REPLACED WITH NEW 8" D.I.P. WATERMAIN. PIPE INSTALLATION BY SAINT PAUL REGIONAL WATER SERVICES. EXCAVATION BY CONTRACTOR - PAY AS BID ITEM 2504.603 "WATER MAIN TRENCH".

VAN SLYKE

NOTE- REMOVE 122 LF 15" V.C.P. FROM MH 83 TO 83
REPLACE W/122 LF 15" RCP,CLV @ SAME LOCATION AND GRADE

VAN SLYKE



VAN SLYKE
STA 5+50 TO STA 11+50

Z:\streets\streets\projects\current\Como-Chatsworth\DWG\VAN SLYKE.dwg Feb 26, 2015 - 9:34am

	DESIGNED	ASO	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 Signature: <i>Barbara R. Mundahl</i> Date: 1/5/2015 BARBARA R. MUNDAHL Lic. No. 43099
	DRAWN	ASO	
	APPROVED	BRM	

PREPARED BY STREET ENGINEERING DIVISION FOR THE CITY OF ST. PAUL, DEPARTMENT OF PUBLIC WORKS

COMO-CHATSWORTH

PROJECT: 14-P-8165

DRAWER: 12

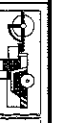
DWG. NO. 1575

STATE AID
PROJECT NUMBER:

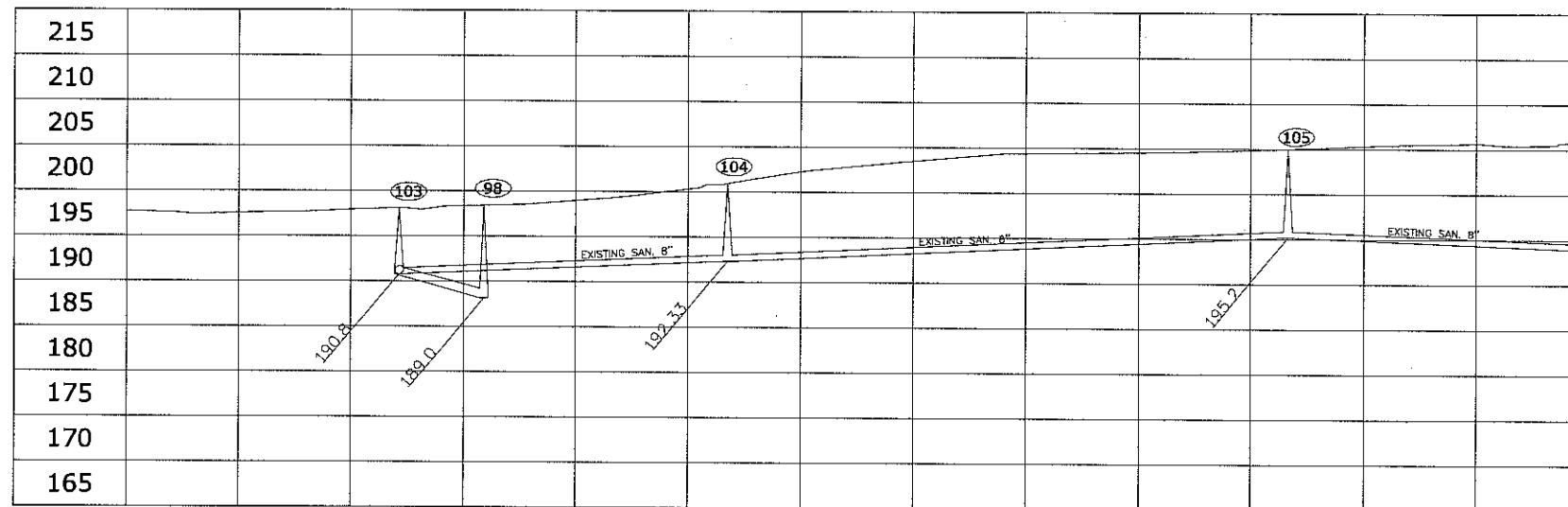
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DATE: 2/25/2015

SHEET NO. 22 OF 24 SHEETS

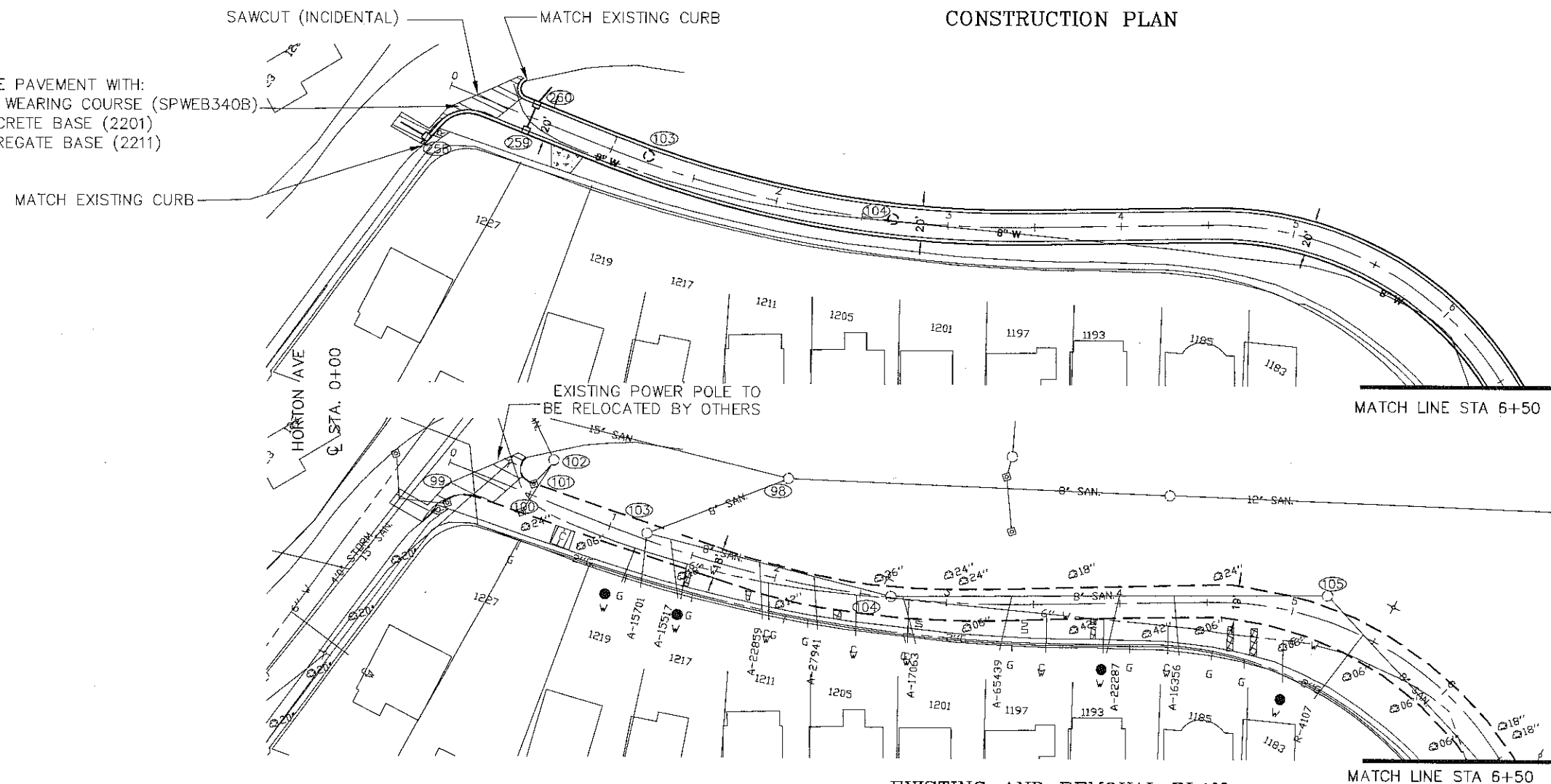


0 1 2 3 4 5 6 7



CONSTRUCTION PLAN

RESTORE PAVEMENT WITH:
3-1/2" WEARING COURSE (SPWEB340B)
4" CONCRETE BASE (2201)
6" AGGREGATE BASE (2211)



NOTE: 853' OF EXISTING 6" C.I.P. WATER MAIN IN W.COMO BLVD FROM HORTON TO VAN SLYKE TO BE REPLACED WITH NEW 8" D.I.P. WATERMAIN. PIPE INSTALLATION BY SAINT PAUL REGIONAL WATER SERVICES. EXCAVATION BY CONTRACTOR - PAY AS BID ITEM 2504.603 "WATER MAIN TRENCH".



SCALE IN FEET
40 30 20 10 0 20 40
ELECTRONIC SURVEY

EXISTING AND REMOVAL PLAN

W. COMO BLVD
HORTON TO STA 6+50



DESIGNED	ASO
DRAWN	ASO
APPROVED	BRM

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

Signature: *Barbara R. Munda* Date: 1/6/2015
BARBARA R. MUNDAHL Lic. No. 43099

PREPARED BY STREET ENGINEERING DIVISION FOR THE CITY OF ST. PAUL, DEPARTMENT OF PUBLIC WORKS

COMO-CHATSWORTH

PROJECT: 15-P-8165
DRAWER: 12
DWG. NO. 1575

STATE AID PROJECT NUMBER:
CAD NAME: PROJECTS/CURRENT/COMO-CHATSWORTH
DATE: 2/25/2015 SHEET NO. 23 OF 24 SHEETS



Transportation Committee Staff Report

Committee date: ?, 2015

Project Name	<i>Raymond Avenue Streetscape – Phase II</i>
Geographic Scope	<i>Raymond Avenue between Hampden and Energy Park Drive</i>
Ward(s)	<i>Ward 4</i>
District Council(s)	<i>District 12</i>
Project Description	<i>New concrete curb & gutter, new pavement, sidewalks, designated bike lanes, lantern style street lighting and traffic signals</i>
Project Contact	<i>Barb Mundahl</i>
Contact email/phone	<i>Barbara.mundahl@ci.stpaul.mn.us</i>
Lead Agency/Department	<i>Public Works</i>
Purpose of Project/Plan	<i>To improve safety and accessibility of the roadway and to provide improved facilities for non-motorized users.</i>
Planning References	<i>Multiple meeting with SAP district council transportation committee</i>
Project stage	<i>Engineering</i>
General Timeline	<i>Plans to MnDOT by March 31, 2015, Advertise for Bid by June 1, 2015, build July through November 2015</i>
District Council position (if applicable)	<i>Supports</i>
Level of Committee Involvement	<i>Inform</i>
Previous Committee action	<i>Committee approved phase I of this 3 phase project</i>
Level of Public Involvement	<i>Inform, advise & consent, involve, development of project</i>
Public Hearing	<i>To be determined</i>
Public Hearing Location	<i>City Council</i>
Primary Funding Source(s)	<i>Federal Aid \$1,000,000; State Aid \$895,000; Assessments \$180,000</i>
Cost	<i>\$2,075,000</i>

Staff recommendation	<i>Describe, if any</i>
Action item requested of the Committee	<i>Recommend approval</i>
Committee recommendation	
Committee vote	

Level of Committee Involvement

INFORM: Informational briefings	Projects that are in implementation phase; projects from other jurisdictions; policy documents from other agencies/jurisdictions
ADVISE AND CONSENT: Informational briefings with policy discussion, general directives to staff for follow-through	Project and program reviews primarily initiated by staff; or involvement with program development by others
INVOLVE: Discussions to develop directions for projects & programs	Policy involvement from inception through design, inc. policy development; environmental documentation,
DEVELOPMENT OF PROJECT/PROGRAM: Discussion to form process; screening of ideas; development of recommendations; and managing outreach to the community	Committee has primary responsibility for concept development, and/or overseeing participation process, and/or making specific recommendations to Planning Commission, Mayor and/or City Council

MINNESOTA DEPT. OF TRANSPORTATION

CITY OF ST. PAUL
Department of Public Works
CONSTRUCTION PLAN

for
GRADING, CURB AND GUTTER, BITUMINOUS PAVING,
STREET LIGHTING, STORM SEWER, STRIPING AND SIGNING
on

RAYMOND AVENUE

from
HAMPDEN AVENUE TO ENERGY PARK DRIVE
S.P. NO. 164-020-133

Includes

ENERGY PARK DRIVE

from

EVERETT COURT TO 200' WEST OF RAYMOND

CITY PROJECT NO. 15-P-1393

GROSS LENGTH	2201.30	FEET	0.417	MILES
BRIDGES LENGTH	0.00	FEET	0.000	MILES
EXCEPTIONS LENGTH	0.00	FEET	0.000	MILES
NET LENGTH	2201.30	FEET	0.417	MILES

RAYMOND AVENUE		ENERGY PARK DRIVE	
DESIGN DESIGNATION		DESIGN DESIGNATION	
PRESENT ADT (2014)	6,500		14,575
PROJECTED ADT (2034)	9,000		16,000
FUNCTIONAL CLASSIFICATION:	Arterial		Arterial
NO. OF TRAFFIC LANES	2		3
NO. OF PARKING LANES	1		0
R VALUE	15		15
INIB FACTOR	1,819.372		3,259.619
DESIGN LOAD (TON)	10		10
DESIGN SPEED (MPH)	30		35
STOPPING SIGHT DISTANCE BASED ON:	3.5' HEIGHT OF EYE & 2.0' HEIGHT OF OBJECT		2.0' HEIGHT OF OBJECT

APPROVED.....DATE.....
City of St. Paul Manager Street Engineering/Construction Division

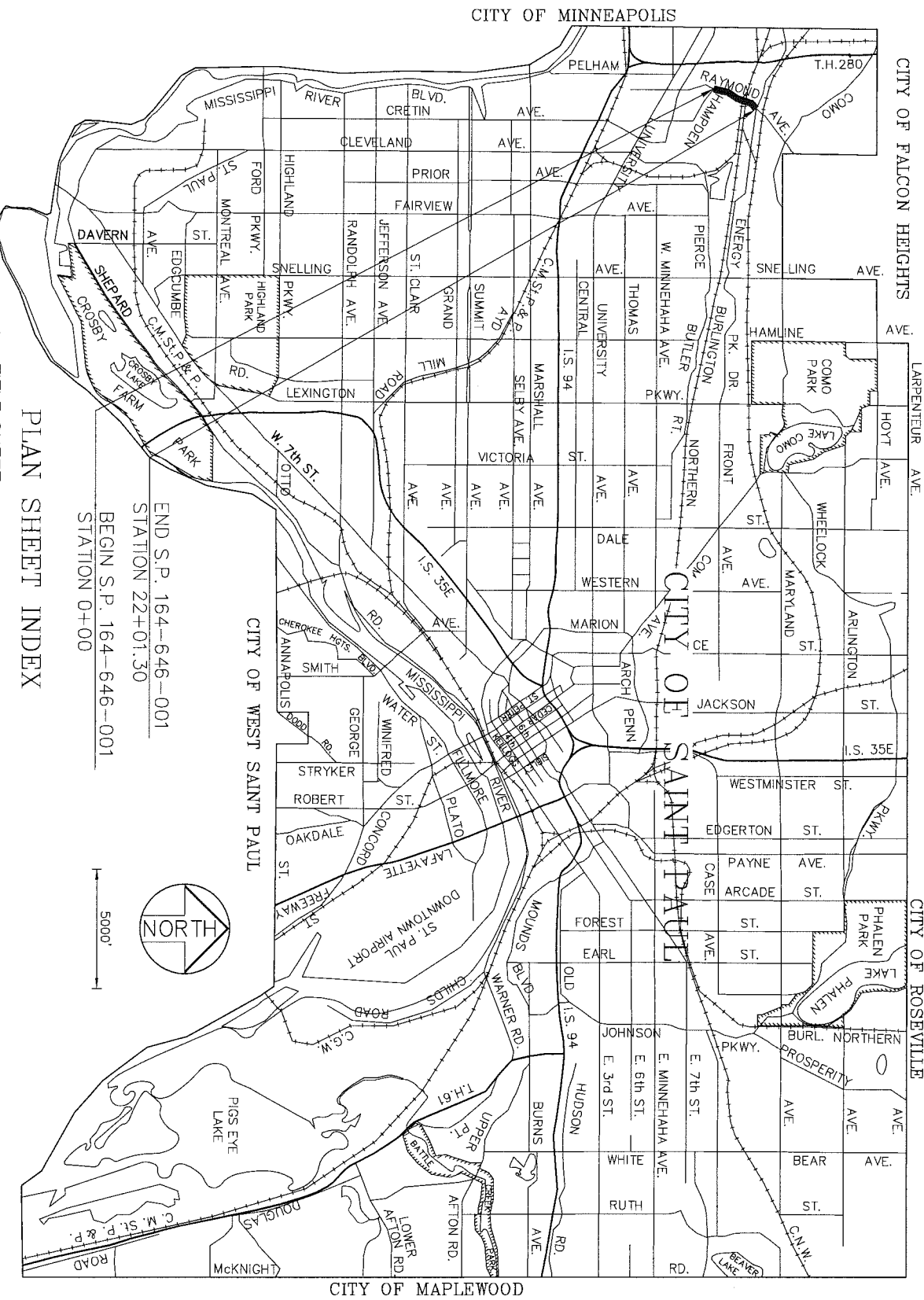
APPROVED.....DATE.....
Saint Paul City Engineer

APPROVED.....DATE.....
Ramsey County Engineer

RECOMMENDED FOR APPROVAL.....DATE.....
District State Aid Engineer, Reviewed for Compliance with State and/or Federal Aid Rules/Policy

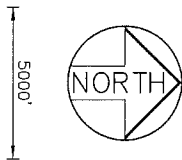
RECOMMENDED FOR APPROVAL.....DATE.....
Approved for State and/or Federal Aid Funding: State Aid Engineer

TOWNSHIP 29; RANGE 23



PLAN SHEET INDEX

1. TITLE SHEET
2. LEGEND, LOCATION MAP & CONSTRUCTION NOTES
3. STATEMENT OF ESTIMATED QUANTITIES
4. SEWER CHARTS
- 5.-11. TYPICAL SECTIONS
- 12.-18. STANDARD DETAIL PLATES, TABS & DETAILS
19. EROSION CONTROL PLAN
- 20.-24. EXISTING/REMOVAL & CONSTRUCTION PLANS
25. TREE PLANTING PLANS
- L1.-L9. LIGHTING PLANS
- ST1.-ST7. STRIPING AND SIGNING PLANS
- X1.-X9. CROSS SECTIONS



SPECIFICATIONS

THE 2014 EDITION OF THE MINNESOTA DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR CONSTRUCTION" AND THE 2014 EDITION OF THE "MATERIALS LAB SUPPLEMENTAL SPECIFICATIONS FOR CONSTRUCTION" SHALL GOVERN.
ALL TRAFFIC CONTROL DEVICES AND SIGNING SHALL CONFORM TO THE LATEST EDITION OF THE MUTCD, INCLUDING THE LATEST FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS"

THIS PLAN CONTAINS 58 SHEETS

THE SUBSURFACE UTILITY INFORMATION IN THIS PLAN IS UTILITY QUALITY D. THIS UTILITY QUALITY LEVEL WAS DETERMINED ACCORDING TO THE GUIDELINES OF C/ASCE 38-02 ENTITLED "STANDARD GUIDELINES FOR THE COLLECTION AND DEPICTION OF EXISTING SUBSURFACE UTILITY DATA.

DESIGNED	BRM	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	
DRAWN	ATT	Signature:	Date:
APPROVED	BRM	BARBARA R. MUND AHL	lic. No. 43099

PREPARED BY	STREET ENGINEERING DIVISION	FOR THE CITY OF ST. PAUL, DEPARTMENT OF PUBLIC WORKS
RAYMOND AVENUE—PHASE II		

PROJECT:	15-P-1393	STATE AID PROJECT NUMBER:	164-020-133
DRAWER:	12	CAD NAME:	PROJECTS/CURRENT/RAYMOND2/DWG-TITLE
DWG. NO.	1580	DATE:	1/21/15
		SHEET NO.	1 OF 25 SHEETS

EXISTING & REMOVAL LEGEND

	EXISTING CURB & GUTTER
	EXISTING CURB
	EXISTING WALK
	HYDRANT
	UTILITY POLE
	LIGHT STANDARD
	TRAFFIC SIGNAL
	PULLBOX
	UTILITY MANHOLE
	EXISTING SURVEY MONUMENT
	EXISTING MANHOLE (NO. REFERS TO EXISTING SEWER CHART)
	EXISTING CATCH BASIN (NO. REFERS TO EXISTING SEWER CHART)
	EXISTING SIDE INLET
	EXISTING SEWER
	EXISTING PIPE OR C.B. LEAD, CONSTR. 8" BRICK BULKHEAD
	EXISTING UTILITY GATE VALVE
	EXISTING WATER VALVE
	EXISTING WATER MAIN
	EXISTING GAS MAIN
	EXISTING CONDUIT (L=LIGHTING, T=TELEPHONE, E=ELECTRIC, F.O.=FIBER OPTIC)
	EXISTING TREE (NO. REFERS TO SIZE)
	REMOVE CONCRETE CURB AND GUTTER
	REMOVE CONCRETE CURB
	REMOVE CONCRETE WALK
	REMOVE CONCRETE DRIVE
	REMOVE TREE (NO. REFERS TO SIZE)
	REMOVE STUMP
	REMOVE TRENCH PAVEMENT
	REMOVE CONCRETE STEPS

CONSTRUCTION LEGEND

	CONSTRUCT PAVEMENT (SEE TYPICAL SECTIONS)
	CONSTRUCT TRENCH PAVEMENT
	CONSTRUCT CURB (SEE TYPICAL SECTION FOR TYPE)
	CONSTRUCT CURB & GUTTER (SEE TYPICAL SECTION FOR TYPE)
	ADJUST MANHOLE (NO. REFERS TO EXISTING SEWER CHART)
	ADJUST UTILITY MANHOLE
	CONSTRUCT CONCRETE WALK (4" THICK MAINLINE WALK AND OUTWALKS) (6" THICK IN PEDESTRIAN RAMP AREAS)
	CONSTRUCT CONCRETE DRIVEWAY PAVEMENT (TYPE 6)
	6" THICK UNLESS OTHERWISE NOTED
	ADJUST WATER GATE VALVE HOUSING
	PEDESTRIAN CURB RAMP - R INDICATES TRUNCATED DOMES
	CONSTRUCT CATCH BASIN (NO. REFERS TO SEWER CONST. CHART)
	CONSTRUCT CATCH BASIN LEAD (12" DIA. UNLESS OTHERWISE NOTED)
	NEW MANHOLE- TYPE AS NOTED (NO. REFERS TO SEWER CONST. CHART)
	NEW TYPE IV OR IV-A MANHOLE MANHOLE (NO. REFERS TO SEWER CONST. CHART)
	CONSTRUCT POSSIBLE SANITARY SERVICE RECONNECTION
	LEAD WATER SERVICE

NOTES

1. WATER, GAS, ELECTRIC, TELEPHONE COMMUNICATION, SEWER AND T.V. CABLE LINES SHOWN ON THE DRAWINGS AND CROSS-SECTIONS ARE PLOTTED FROM THE BEST INFORMATION AVAILABLE AT THE TIME OF PLAN PREPARATION, BUT MAY NOT REFLECT ACTUAL LOCATIONS OR ELEVATIONS. THE CONTRACTOR SHALL VERIFY LOCATIONS OF ALL UTILITIES BEFORE BEGINNING CONSTRUCTION WHICH MAY BE AFFECTED BY A UTILITY CONFLICT. THE CONTRACTOR SHALL GIVE 48 HOURS NOTICE TO THE OWNERS OF ALL KNOWN UTILITIES BEFORE STARTING ANY OPERATIONS AFFECTING THOSE PROPERTIES, OR BEGINNING EXCAVATION IN THE VICINITY OF THOSE PROPERTIES. THE CONTRACTOR'S ATTENTION IS DIRECTED TO SECTION 1507 IN THE STANDARD SPECIFICATIONS.

2. ALL CURB RADII 20 FEET UNLESS OTHERWISE NOTED.

3. CONSTRUCT A 3 FOOT CONCRETE OUTWALK AT EACH RESIDENCE OR AS DIRECTED BY THE ENGINEER.

4. 12" CATCH BASIN LEADS TO BE CLASS V

15" CATCH BASIN LEADS TO BE CLASS V

5. WHERE EXISTING UTILITIES ARE IN CONFLICT WITH SEWER CONSTRUCTION, THE UTILITY COMPANY WILL RELOCATE, OFFSET OR SUPPORT THE UTILITY UNLESS OTHERWISE INDICATED ON THE PLAN SHEET OR STATED IN THE SPECIAL PROVISIONS.

6. WHERE EXISTING FIRE HYDRANTS AND/OR LIGHT STANDARDS CONFLICT WITH SEWER CONSTRUCTION, THEY WILL BE RELOCATED BY OTHERS.



7. GAS MAINS SHOWN ON THE PLAN SHEETS ARE EXISTING MAINS. IN CONJUNCTION WITH THIS SEWER AND PAVING PROJECT, XCEL ENERGY MAY ABANDON SOME OF THE GAS MAINS IN THE AREA AND CONSTRUCT NEW MAINS IN THE SIDEWALK AREA.

8. SOIL CLASSIFICATION SHOWN ON SOIL BORINGS IS ACCORDING TO A.S.T.M. DESIGNATION D2487 "STANDARD TEST METHOD FOR CLASSIFICATION OF SOILS FOR ENGINEERING PURPOSES".

9. ALL CONCRETE WALK IN QUADRANT AREAS AT THE CORNERS OF INTERSECTIONS SHALL BE 6" THICK.

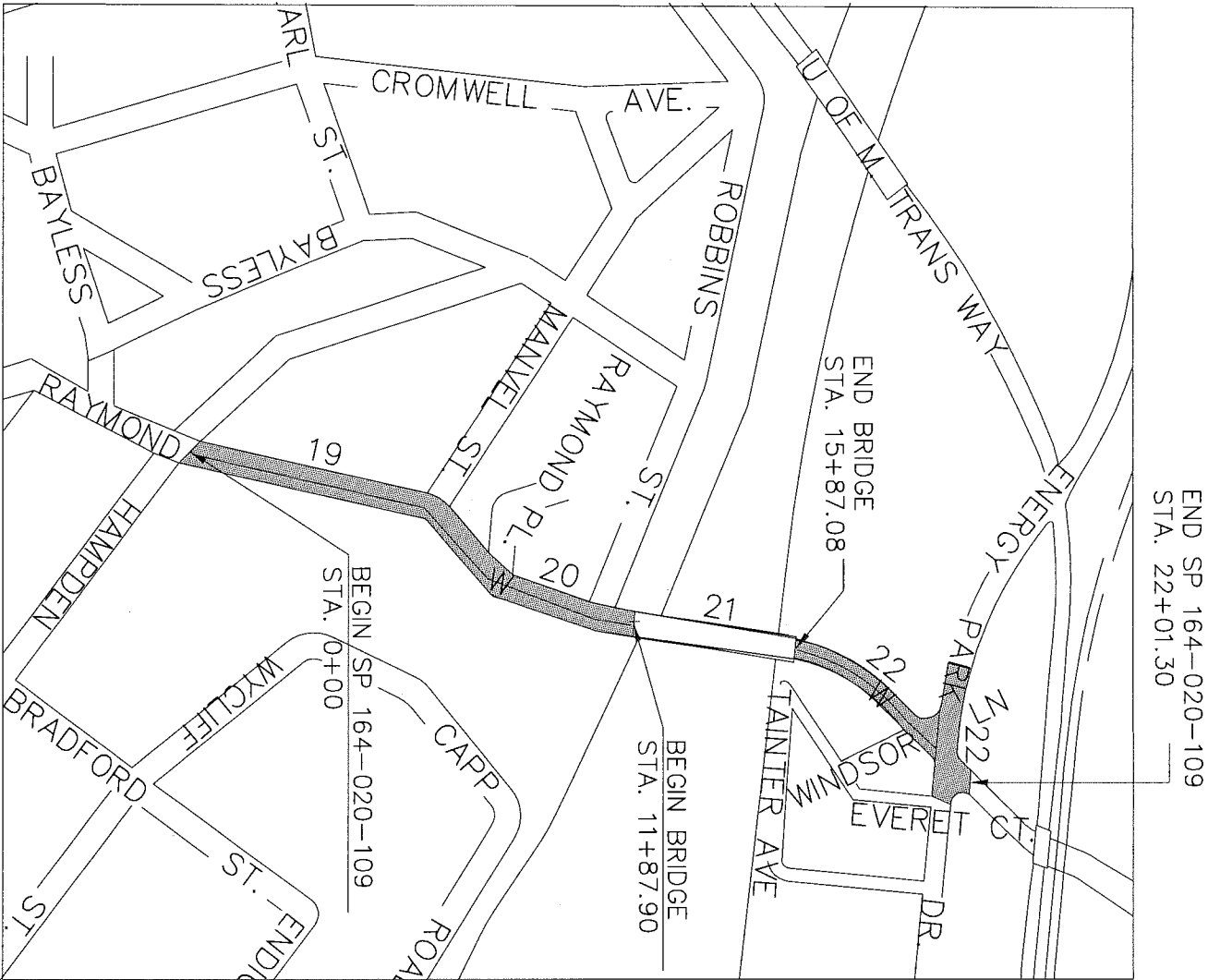
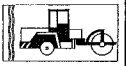
10. RECORDS INDICATE THERE ARE PROPERTY IRONS AT THE BLOCK CORNERS IN THE PROJECT AREA. DO NOT DISTURB THESE IRONS WHEN REMOVING CONCRETE PANELS. IF REMOVED, REPLACEMENT BY A LICENSED SURVEYOR, AT THE CONTRACTOR'S EXPENSE

11. CONTRACTOR SHALL PROVIDE OSHA COMPLIANT TRENCH BOXES FOR ALL SPRWS TRENCH EXCAVATION. CONTRACTOR SHALL PROVIDE REQUIRED TRENCH BOX SIZES AS LISTED IN SPECIFICATION 2504. NO COMPENSATION WILL BE PROVIDED FOR WORK STOPPAGES CAUSED BY FAILURE TO PROVIDE APPROPRIATE OSHA APPROVED TRENCH BOX REQUIREMENTS.

	DESIGNED	BRM	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
DRAWN	ATT		
APPROVED	BRM		
Signature: 			
BARBARA R. MUNDAHL		Date: 1/21/15	
		Lic. No. 43099	

PREPARED BY	STREET ENGINEERING DIVISION	FOR THE CITY OF ST. PAUL, DEPARTMENT OF PUBLIC WORKS
RAYMOND AVENUE-PHASE II		

PROJECT:	13-T-1319	STATE AID PROJECT NUMBER:	164-020-133
DRAWER:	12	CAD NAME:	PROJECTS/CURRENT/RAYMOND/Roymond-legend
DWG. NO.	1580	DATE:	1/21/15
		SHEET NO.	2 OF 25 SHEETS



15	PLAN SHEET NUMBER
	STREET PAVING
	WATER MAIN REPLACEMENT

LEGEND
STANDARD DETAILS
LOCATION AREA MAP

NOTE -
CONTRACTOR MAY BE ASKED TO EXCAVATE FOR LEAD WATER SERVICE REPLACEMENTS. PAY AS BID ITEM 2504.603, "WATER SERVICE TRENCH EXCAVATION". LOCATIONS FOR WATER DISTRIBUTION SYSTEM BID ITEMS UNDER 2504.602, 2504.603, AND 2504.604 ARE NOT COMPLETELY SHOWN ON PLANS - WORK SHALL BE DIRECTED IN THE FIELD BY SAINT PAUL REGIONAL WATER SERVICES WITH PAYMENT MADE AT THE CONTRACT BID PRICE FOR THE APPROPRIATE BID ITEM.

The subsurface utility information in this plan is utility level D. This quality level was determined according to the guidelines of CI/ASCE 38-02 entitled "Standard Guidelines for the Collection and Depiction of Existing Subsurface Utility Data."

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RAYMOND AVENUE S.P. 164-020-133, CITY PROJECT NO. 15-P-1393						
STATEMENT OF ESTIMATED QUANTITIES						
ITEM NO.	ITEM	UNIT	Participating	Participating	Non-Participating	TOTAL
			164-020-133	164-020-133		
			ROADWAY	SEWER	WATER	
			QUANTITY	QUANTITY	QUANTITY	QUANTITIES
2021.501	MOBILIZATION	LUMP SUM	1			1
2041.610	TRAINEES	HOUR	400			400
2101.502	CLEARING	TREE	6			6
2101.507	GRUBBING	TREE	6			6
2101.507	TREE ROOT REMOVAL	TREE	4			4
2102.502	PAVEMENT MARKING REMOVAL	LIN. FT.	3,400			3,400
2102.503	PAVEMENT MARKING REMOVAL	SQ.FT.	100			100
2104.501	REMOVE CONCRETE CURB OR CURB & GUTTER	LIN. FT.	4,169			4,169
2104.501	REMOVE LIGHTING CONDUCTOR	LIN. FT.	1,350			1,350
2104.501	REMOVE WATERMAIN	LIN. FT.			473	
2104.503	REMOVE CONCRETE WALK	SQ. FT.	5,966		100	6,066
2104.505	REMOVE CONCRETE DRIVEWAY PAVEMENT	SQ. YD.	171			171
2104.505	REMOVE PAVEMENT	SQ. YD.	11,284			11,284
2104.505	REMOVE TRENCH PAVEMENT	SQ. YD.				0
2104.509	REMOVE CATCH BASIN OR MANHOLE	EACH	15			15
2104.509	REMOVE LIGHT BASE FOUNDATION	EACH	9			9
2104.509	REMOVE LIGHTING UNIT	EACH	9			9
2104.509	REMOVE SERVICE CABINET	EACH	1			1
2104.509	REMOVE HANDHOLE	EACH	1			1
2104.509	REMOVE SIGN PANEL, TYPE C	EACH	50			50
2104.509	REMOVE SIGN, TYPE C	EACH	25			25
2104.513	SAWING PAVEMENT	LIN. FT.	314			314
2104.523	SALVAGE LIGHTING UNIT	EACH				0
2105.501	COMMON EXCAVATION (P)	CU. YD.	4,685			4,685
2105.607	EXCAVATION SPECIAL	CU. YD.	0			0
2105.607	EXCAVATION SPECIAL 1	CU. YD.				0
2105.609	GRANULAR BORROW	TON	14,810			14,810
2118.501	AGGREGATE SURFACING, CLASS 5	TON				0
2123.610	STREET SWEEPING	HOUR	40			40
2130.501	WATER	1000 GALLON				0
2211.503	AGGREGATE BASE PLACED (C.V.), CLASS 5 (P)	CU. YD.	4,633			4,633
2301.504	CONCRETE PAVEMENT 6"	SQ. YD.				0
2331.603	SAWED AND SEALED JOINT	LIN. FT.	3,381			3,381
2357.502	BITUMINOUS MATERIAL FOR TACK COAT	GALLON	554			554
2360.501	TYPE SPWEA330C WEARING COURSE MIXTURE	TON	1,607			1,607
2360.501	TYPE SPNVB330C NON-WEARING COURSE MIXTURE	TON	3,214			3,214
2360.503	TYPE SPWEA330C WEARING COURSE MIXTURE, 3" THICK	SQ. YD.	10			10
2451.609	GRANULAR BACKFILL	TON			2,371	2,371
2451.609	GRANULAR BEDDING AND/OR FOUNDATION	TON				0
2503.511	8" DUCTILE IRON PIPE SEWER	LIN. FT.				0
2503.541	12" R.C. PIPE SEWER, DESIGN 3006, CLASS V	LIN. FT.				0
2503.541	15" R.C. PIPE SEWER, DESIGN 3006, CLASS V	LIN. FT.	288			288
2503.541	18" R.C. PIPE SEWER, DESIGN 3006, CLASS V	LIN. FT.	202			202
2503.602	CONNECT TO EXISTING STRUCTURE	EACH				0
2503.602	SANITARY SEWER SERVICE REPAIR EXCAVATION 14' OR LESS AT MAIN	EACH	1			1
2503.602	SANITARY SEWER SERVICE REPAIR EXCAVATION GREATER THAN 14' AT MAIN	EACH	1			1
2503.603	SANITARY SEWER SERVICE REPAIR 14' OR LESS AT MAIN	LIN. FT.	30			30
2503.603	SANITARY SEWER SERVICE REPAIR GREATER THAN 14' AT MAIN	LIN. FT.	30			30
2503.603	SANITARY SEWER SERVICE RECONNECTION	LIN. FT.		1,700		0
2503.603	TELEWISE PROJECT SANITARY SEWER	LIN. FT.				
2504.602	ADJUST SERVICE CURB STOP BOX	EACH			2	2
2504.602	REPAIR VALVE BOX	EACH			1	1
2504.602	REPLACE VALVE BOX	EACH			1	1
2504.602	SERVICE STOP BOX	EACH			2	2
2504.602	WATER UTILITY HOLE	EACH			3	3
2504.602	EXCAVATION FOR WATER MAIN OFFSET TRENCH / REPLACEMENT TRENCH	EACH			1	1
2504.603	WATER MAIN TRENCH	LIN. FT.			1,700	1,700
2504.603	WATER SERVICE EXCAVATION	LIN. FT.			60	60
2504.604	2" INSULATION	SQ. YD.			14	14
2506.503	RECONSTRUCT PRECAST CONCRETE MANHOLE	LIN. FT.				0
2506.503	RECONSTRUCT BRICK MANHOLE	LIN. FT.				0
2506.516	CASTING ASSEMBLY	EACH	22			22
2506.602	ADJUST MANHOLE CASTING ASSEMBLY, 0" TO 6"	EACH				0
2506.602	ADJUST MANHOLE CASTING ASSEMBLY, 7" TO 17"	EACH				0

RAYMOND AVENUE S.P. 164-020-133, CITY PROJECT NO. 15-P-1393						
STATEMENT OF ESTIMATED QUANTITIES						
ITEM NO.	ITEM	UNIT	Participating	Participating	Non-Participating	TOTAL
			164-020-133	164-020-133		
			ROADWAY	SEWER	WATER	
			QUANTITY	QUANTITY	QUANTITY	QUANTITIES
2506.602	CONSTRUCT MANHOLE, DESIGN TYPE III W/2' SUMP	EACH				0
2506.602	CONSTRUCT MANHOLE SPECIAL	EACH				0
2506.602	CONSTRUCT MANHOLE, DESIGN TYPE IV	EACH				0
2506.602	CONSTRUCT CATCH BASIN, DESIGN TYPE 7A	EACH				0
2506.602	CONSTRUCT CATCH BASIN, DESIGN TYPE 7B	EACH				18
2521.501	4" CONCRETE WALK	SQ. FT.	1,855			1,855
2521.501	6" CONCRETE WALK	SQ. FT.	2,398			2,398
2531.501	CONCRETE CURB & GUTTER, DESIGN B-624	LIN. FT.	1,220			1,220
2531.501	CONCRETE CURB & GUTTER, DESIGN B-612-Modified	LIN. FT.	3,518			3,518
2531.507	6" CONCRETE DRIVEWAY PAVEMENT	SQ. YD.	44			44
2531.507	8" CONCRETE DRIVEWAY PAVEMENT	SQ. YD.	115			115
2531.603	HAND FORM CONCRETE CURB	LIN. FT.				0
2531.618	TRUNCATED DOME	SQ. FT.	176			176
2540.602	CONSTRUCT SURVEY MONUMENT	EACH				0
2545.511	LIGHTING UNIT TYPE L10	EACH	10			10
2545.513	LUMINAIRE TYPE R100	EACH	10			10
2545.515	LIGHT BASE FOUNDATION TYPE STANDARD	EACH	10			10
2545.521	2" RIGID STEEL CONDUIT	LIN. FT.				0
2545.523	1-1/2" NMC	LIN. FT.	3,620			3,620
2545.523	1-1/2" NMC TRENCH & RESTORE/PUSH	LIN. FT.				0
2545.531	1C #4 AWG	LIN. FT.	9,360			9,360
2545.531	1C #8 AWG INSULATED	LIN. FT.	500			500
2545.541	METERED SERVICE CABINET (LIGHTING)	EACH	1			1
2545.553	HANDHOLE TYPE L	EACH	6			6
2545.602	REINSTALL LIGHTING UNIT	EACH				0
2563.601	TRAFFIC CONTROL	LUMP SUM				0
2564.533	F&I SIGN PANEL TYPE C	SQ.FT.	192			192
2564.602	INSTALL SIGN COLLARS	EACH	3			3
2564.602	F&I SIGN POST	EACH	46			46
2564.602	F&I SIGN POST-SPECIAL-ROUND	EACH	3			3
2571.502	DECIDUOUS TREE 2.5" CAL. B&B	TREE	24			24
2571.505	DECIDUOUS SHRUB	SHRUB				0
2571.507	PERENNIAL	PLANT				0
2571.604	GEOTEXTILE WEED BARRIER FABRIC	SQ.YD.	198			198
2573.530	STORM DRAIN INLET PROTECTION	EACH	19			19
2573.602	INTERIM SEDIMENT CONTROL FOR CATCH BASINS	EACH	18			18
2574.525	TOPSOIL BORROW (L.V.)	CU. YD.	279			279
2575.505	SODDING, TYPE LAWN	SQ. YD.	2,515		4	2,519
2575.513	HARDWOOD MULCH, TYPE 6 - DOUBLE SHREDDED	CU. YD.	20			20
2575.560	HYDRAULIC SOIL STABILIZER, TYPE 5	POUND				0
2575.607	SELECT TOPSOIL BORROW (SOIL FOR GARDEN)	CU. YD.				0
2582.501	PAVEMENT MESSAGE (LEFT ARROW) - POLY PREFORM-INLAY	EACH	8			8
2582.501	PAVEMENT MESSAGE (LEFT ARROW) - POLY PREFORM-GROUND IN	EACH	1			1
2582.501	PAVEMENT MESSAGE (TRANSITION ARROW)-PAINT	EACH	2			2
2582.501	PAVEMENT MESSAGE (BIKE LANE ARROW) - POLY PREFORM - INLAY	EACH	18			18
2582.501	PAVEMENT MESSAGE (BIKE LANE ARROW) - POLY PREFORM -GROUND IN	EACH	3			3
2582.502	4" SOLID LINE WHITE - POLY PREFORM (INLAY)	LIN. FT.	4,200			4,200
2582.502	4" DOUBLE SOLID LINE YELLOW - POLY PREFORM (INLAY)	LIN. FT.	2,600			2,600
2582.502	4" DOTTED LINE WHITE-POLY PREFORM (INLAY)	LIN. FT.	300			300
2582.502	8" SOLID LINE WHITE - POLY PREFORM (INLAY)	LIN. FT.	30			30
2582.502	8" SOLID LINE YELLOW - POLY PREFORM (INLAY)	LIN. FT.	240			240
2582.502	12" SOLID LINE WHITE - POLY PREFORM (INLAY)	LIN. FT.	625			625
2582.502	4" SOLID LINE WHITE - POLY PREFORM (GROUND IN)	LIN. FT.	2,100			2,100
2582.502	4" DOUBLE SOLID LINE YELLOW - POLY PERFORM (GROUND IN)	LIN. FT.	500			500
2582.502	4" DOTTED LINE WHITE-POLY PREFORM (GROUND IN)	LIN. FT.	60			60
2582.502	8" SOLID LINE WHITE - POLY PREFORM (GROUND IN)	LIN. FT.	30			30
2582.502	8" SOLID LINE YELLOW - POLY PREFORM (GROUND IN)	LIN. FT.	10			10
2582.502	4" SOLID LINE WHITE-PAINT	LIN. FT.	80			80
2582.502	4" DOUBLE SOLID LINE YELLOW-PAINT	LIN. FT.	700			700
2582.502	8" SOLID LINE YELLOW-PAINT	LIN. FT.	170			170
2582.502	PAVEMENT MESSAGE (SOLID GREEN)-PREFORMED THERMOPLASTIC	SQ.FT.	550			550
2582.502	PAVEMENT MESSAGE (SOLID GREEN)-EPOXY	SQ.FT.	350			350

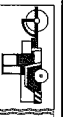


DESIGNED	BRM
DRAWN	ATT
APPROVED	BRM

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	
Signature:	Date: 2/3/15
BARBARA R. MUNDAAL	
Lic. No. 43099	

PREPARED BY	STREET ENGINEERING DIVISION	FOR THE CITY OF ST. PAUL, DEPARTMENT OF PUBLIC WORKS
RAYMOND AVENUE-PHASE II		

PROJECT: 15--P-1393	STATE AID PROJECT NUMBER: 164-020-133
DRAWER: 12	CAD NAME: PROJECTS/CURRENT/RAYMOND/Raymond-estimate
DWG. NO. 1580	DATE: 2/3/15
SHEET NO. 3 OF 25 SHEETS	



STATEMENT OF ESTIMATED QUANTITIES

EXISTING SEWER STRUCTURES

STR NO.	STATION	LT.	CENTER	RT.	REM CB	ADJ MH
Raymond (SHEET 20)						
1	0+0.55	58.95				X
2	0+47.94	26.77			X	
3	0+61.60	26.65			X	
4	1+26.10			4.26		X
5	3+29.13		X			X
6	3+68.63	20.24			X	
7	3+70.80			27.28		X
8	3+99.27			20.31	X	
9	4+54.96			26.63		X
10	4+86.93	0.95				X
11	5+20.42			26.71		X
12	5+94.51			27.05		X
13	6+05.41	11.22				X
14	6+12.18	40.7			X	
15	6+36.67		X			X
Raymond (SHEET 21)						
16	6+42.90	36.2			X	
17	7+46.98			26.84		X
18	7+49.61	19.49			X	
19	7+55.78			1.44		X
20	7+64.60	34.19			X	
21	8+11.29	36			X	
22	8+25.17			21.59	X	
23	8+25.66			28.32		X
24	8+95.56			6.33		X
25	10+78.40	39.99				X
26	11+42.84	22.61			X	
27	11+41.88			22.76	X	
Raymond (SHEET 22)						
28	17+15.45	19.08				X
29	17+54.86			23.23	X	
30	17+60.41	20.61			X	
31	17+87.00	2.36				X
32	17+92.93			5.2		X
Raymond (SHEET 23)						
33	19+26.61	21.63			X	
34	19+58.06	4.46				X
35	19+60.67			8.11		X
36	19+63.91			22.58	X	
37	19+81.76			20.09		X
EnergyPark (SHEET 24)						
38	3+22.84			22.79	X	
39	3+33.64		X			X
40	3+49.81			5.73		X
41	3+48.16	25.73			X	
42	3+82.41		X			X

PROPOSED SEWER STRUCTURES

STR NO.	STATION	LT.	RT.	MH	CB	15" RCP	18" RCP
Raymond2 (SHEET 20)							
100	0+49.37	20.83			7A		
101	0+59.77	21.25			7A		
102	3+68.64	21			7B	48.1	
103	3+99.30		18.92		7B		29.2
Raymond2 (SHEET 21)							
104	6+14.16	42.52			7B		38.3
105	6+39.99	39.79			7B	35.6	
106	7+12.40	21			7B	42.4	
107	7+77.44		19.33		7B	13.7	
108	7+64.27	44.69			7B	28.8	
109	7+88.47	37.4			7B		74.7
120	7+92.91		12.46	TYPE IV		33.4	
110	8+16.07	11.02			7B	28.9	
111	8+16.34		18.98		7B	10.2	
Raymond2 (SHEET 22)							
112	11+42.87	20.09			7B	37.3	
113	11+41.95		19.15		7B		
Raymond2 (SHEET 23)							
114	17+60.44	20.31			7B	38.8	
115	17+55.16		20.15		7B	39.5	
116	19+26.54	20.01			7B	53.4	
117	19+63.14		22.16		7B	15.7	
EnergyPark (SHEET 24)							
118	3+22.95		14.8		7B	31.9	
119	3+48.20	24.26			7B	27.1	

SEWER STRUCTURES CHART

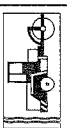
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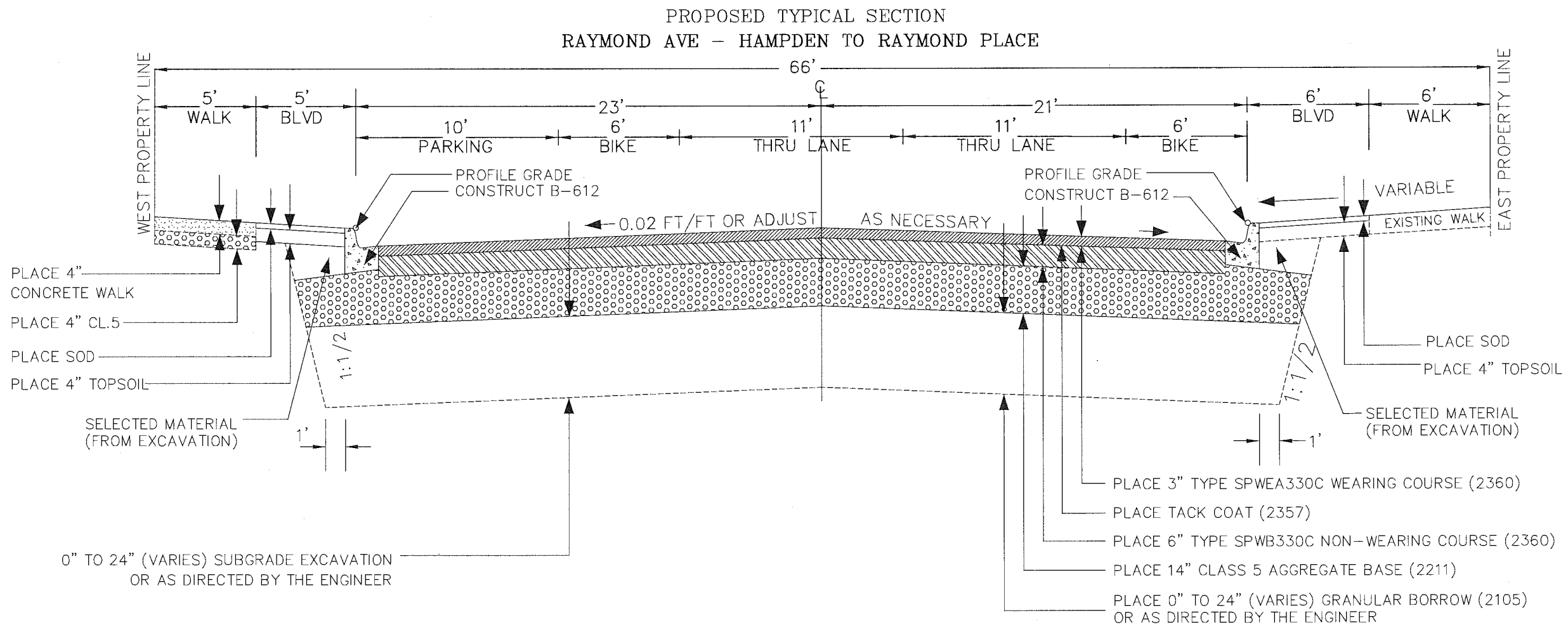
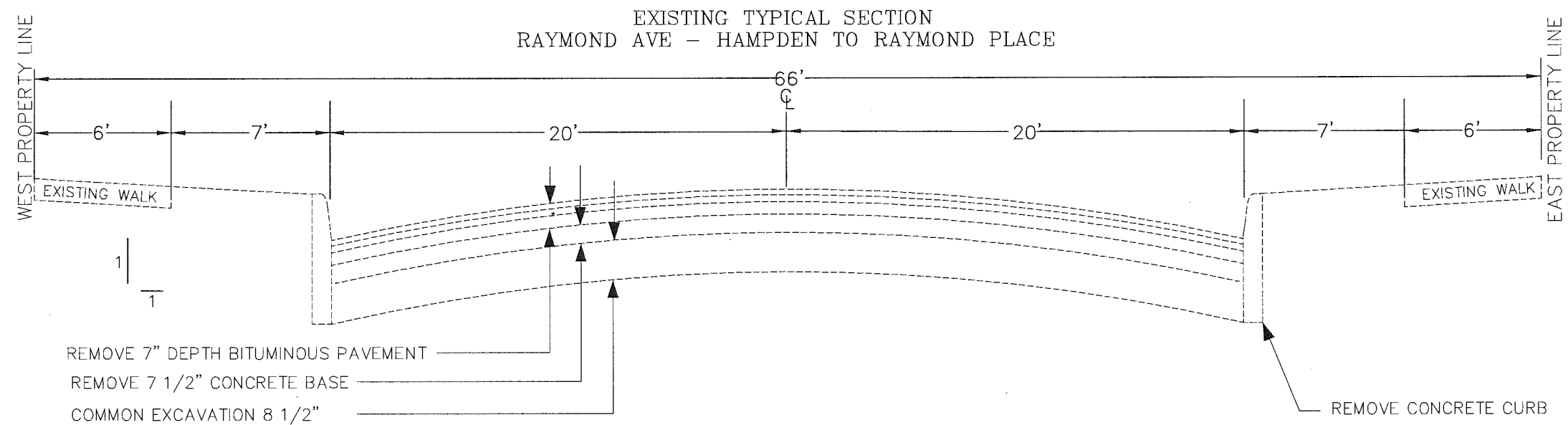


DESIGNED	BRM	I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA Signature: <u>Barbara R. MundaHL</u> Date: <u>1/29/15</u> BARBARA R. MUNDAHL Lic. No. <u>43099</u>	
DRAWN	ATT		
APPROVED	BRM		

PREPARED BY	STREET ENGINEERING DIVISION	FOR THE CITY OF ST. PAUL, DEPARTMENT OF PUBLIC WORKS
RAYMOND AVENUE--PHASE II		

PROJECT: 15-P-1393	STATE AID PROJECT NUMBER: 164-020-133
DRAWER: 12	CAD NAME: PROJECTS/CURRENT/RAYMOND2/SEWER CHARTS
DWG. NO. 1580	DATE: 1/29/15
SHEET NO. 4 OF 25 SHEETS	





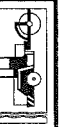
RAYMOND TYPICAL SECTION
HAMPDEN TO RAYMOND PLACE

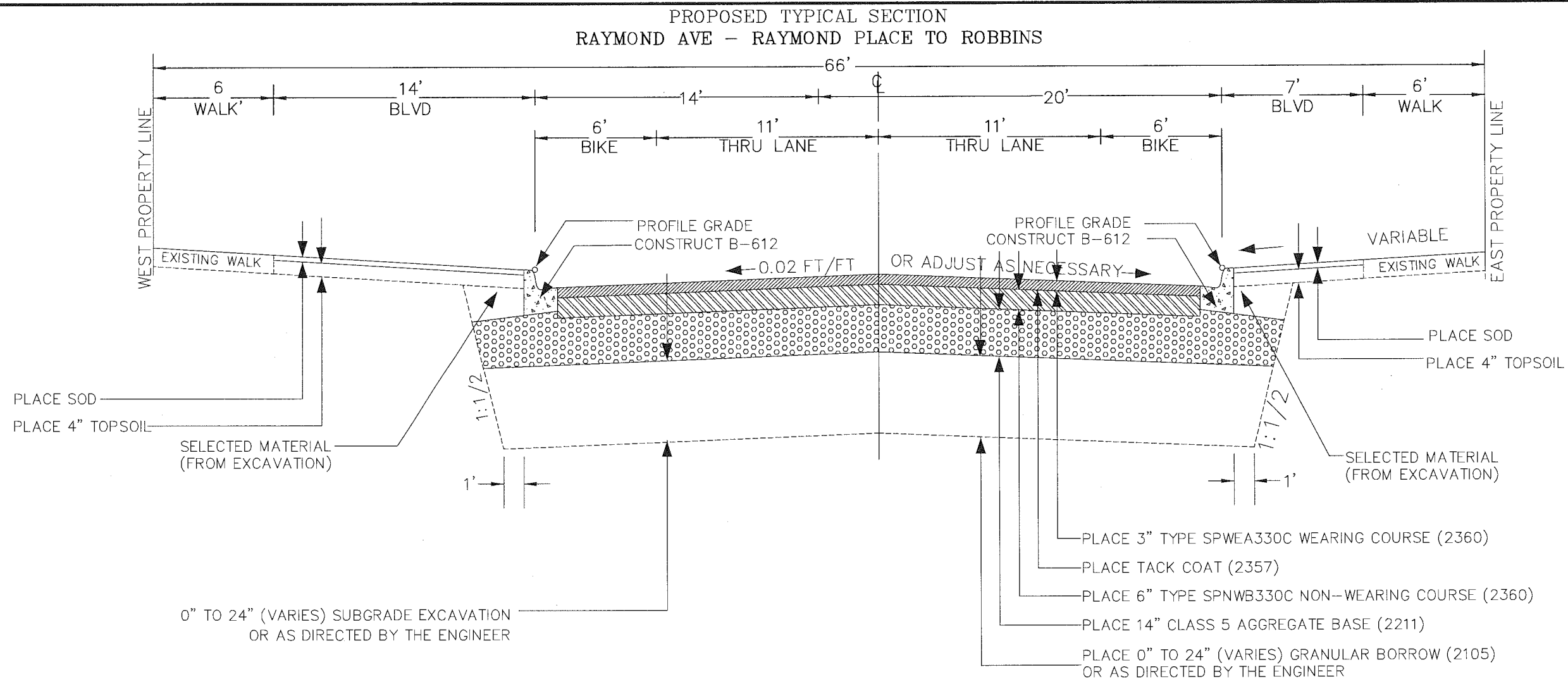
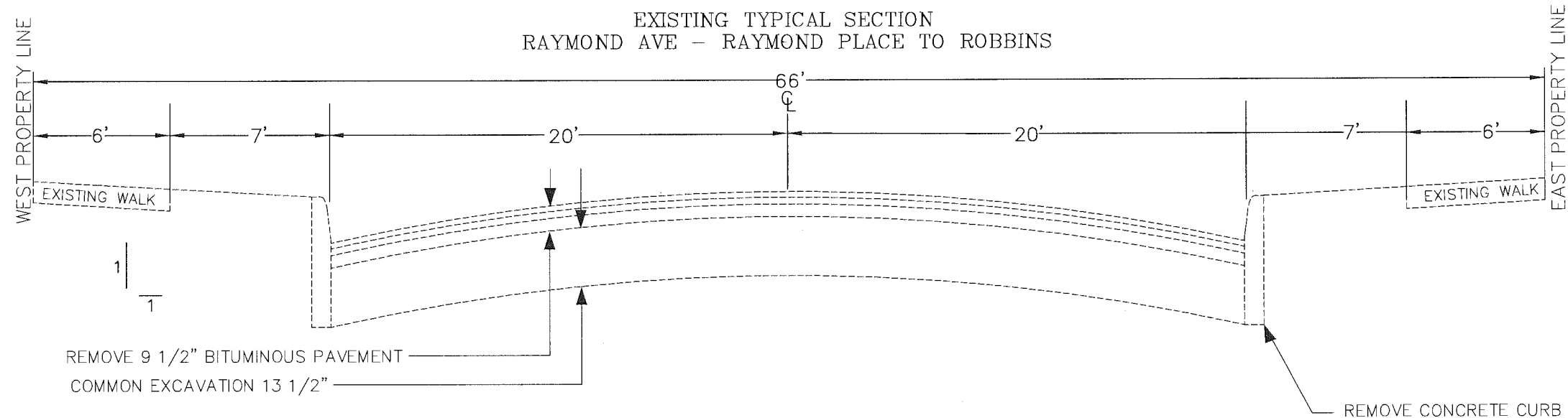
	DESIGNED	BRM	I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA. Signature: <i>Barbara R. Mundaahl</i> Date: 1/22/15 BARBARA R. MUNDAHL Lic. No. 43099
	DRAWN	ATT	
	APPROVED	BRM	

PREPARED BY STREET ENGINEERING DIVISION FOR THE CITY OF ST. PAUL, DEPARTMENT OF PUBLIC WORKS

RAYMOND AVENUE-PHASE II

PROJECT: 15-P-1393	STATE AID PROJECT NUMBER: 164-020-133
DRAWER: 12	CAD NAME: PROJECTS/CURRENT/RAYMOND2/Raymond-typicals
DWG. NO. 1580	DATE: 1/22/15 SHEET NO. 5 OF 25 SHEETS





RAYMOND TYPICAL SECTION
RAYMOND PL TO ROBBINS

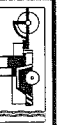
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	DESIGNED	BRM	I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA	
	DRAWN	ATT		
	APPROVED	BRM	Signature:	Date: 1/22/15 Lic. No. 43099

PREPARED BY STREET ENGINEERING DIVISION FOR THE CITY OF ST. PAUL, DEPARTMENT OF PUBLIC WORKS

RAYMOND AVENUE—PHASE II

PROJECT: 15-P-1393	STATE AID PROJECT NUMBER: 164-020-133
DRAWER: 12	CAD NAME: PROJECTS/CURRENT/RAYMOND2/Raymond-typicals
DWG. NO. 1580	DATE: 1/22/15 SHEET NO. 6 OF 25 SHEETS





DESIGNED	BRM
DRAWN	ATT
APPROVED	BRM

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

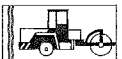
Signature: *Barbara R. Munda*
BARBARA R. MUNDAHL

Date: 1/22/15
Lic. No. 43099

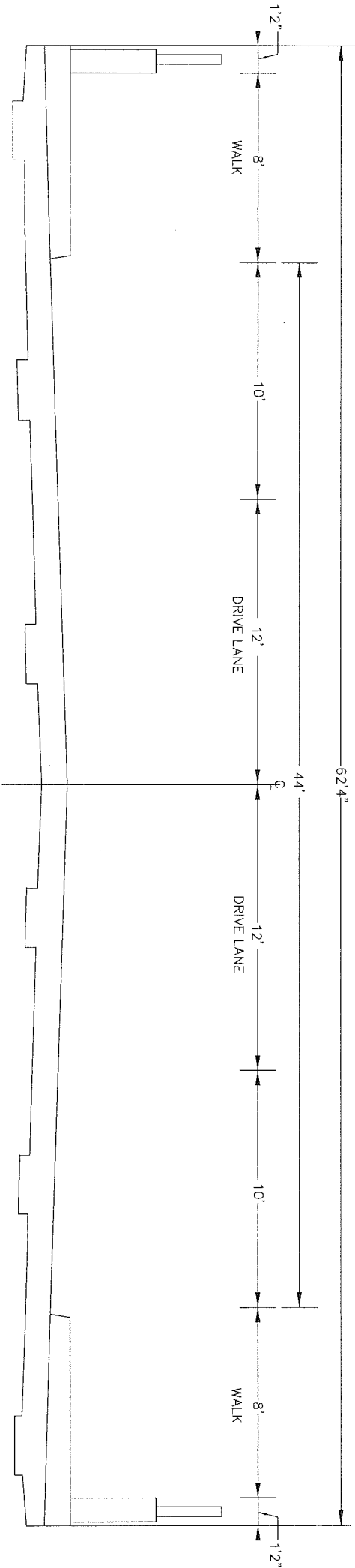
PREPARED BY STREET ENGINEERING DIVISION FOR THE CITY OF ST. PAUL, DEPARTMENT OF PUBLIC WORKS

RAYMOND AVENUE—PHASE II

PROJECT:	15—P—1393	STATE AID PROJECT NUMBER:	164—020—133
DRAWER:	12	CAD NAME:	PROJECTS/CURRENT/RAYMOND/Raymond—typicals
DWG. NO.	1580	DATE:	1/22/15
		SHEET NO.	7 OF 25 SHEETS

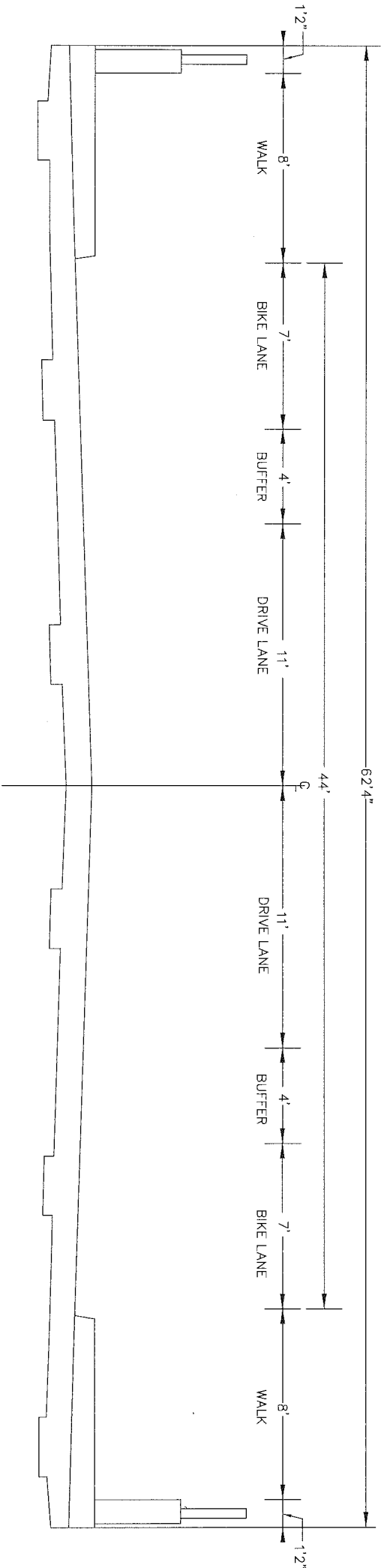


EXISTING BRIDGE TYPICAL SECTION
RAYMOND AVENUE BRIDGE #62546
STA. 11+88 TO STA. 15+90



1 | 1

PROPOSED BRIDGE TYPICAL SECTION
RAYMOND AVENUE BRIDGE #62546
STA. 11+55 TO STA. 15+90



1 | 1

NOTE: BRIDGE WILL NOT BE RECONSTRUCTED.
STRIPING TO BE ADDED FOR BUFFERED BIKE LANES

TYPICAL SECTION
RAYMOND BRIDGE
STA. 11+88 TO STA. 15+90

Plan view of the proposed excavation area. The diagram shows a cross-section of the site with the following dimensions and features:

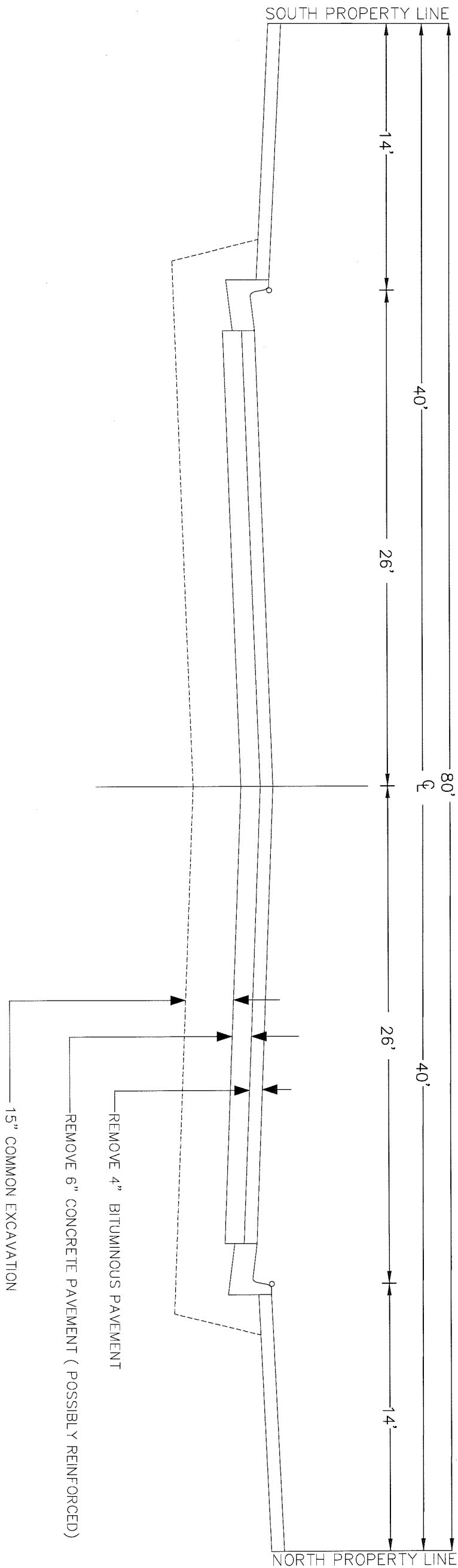
- Property Lines:** Indicated by vertical lines at the left and right edges.
- Dimensions:**
 - 6' from the left property line to the start of the excavation.
 - 7' from the start of the excavation to the centerline.
 - 22.5' from the centerline to the right edge of the excavation.
 - 22.5' from the right edge of the excavation to the right property line.
 - 2' from the right property line to the end of the excavation.
 - 6' from the end of the excavation to the right property line.
 - Total width: 66'.
- Existing Features:**
 - EXISTING WALK (dashed line) on the left side.
 - EXISTING WALK (dashed line) on the right side.
 - REMOVE 10 1/2" BITUMINOUS PAVEMENT (indicated by a dashed line and an arrow pointing to the excavation area).
 - COMMON EXCAVATION 12 1/2" (indicated by a dashed line and an arrow pointing to the excavation area).
 - REMOVE CONCRETE CURB (indicated by a dashed line and an arrow pointing to the excavation area).
- Scale:** 1" = 1'.

[illegible]

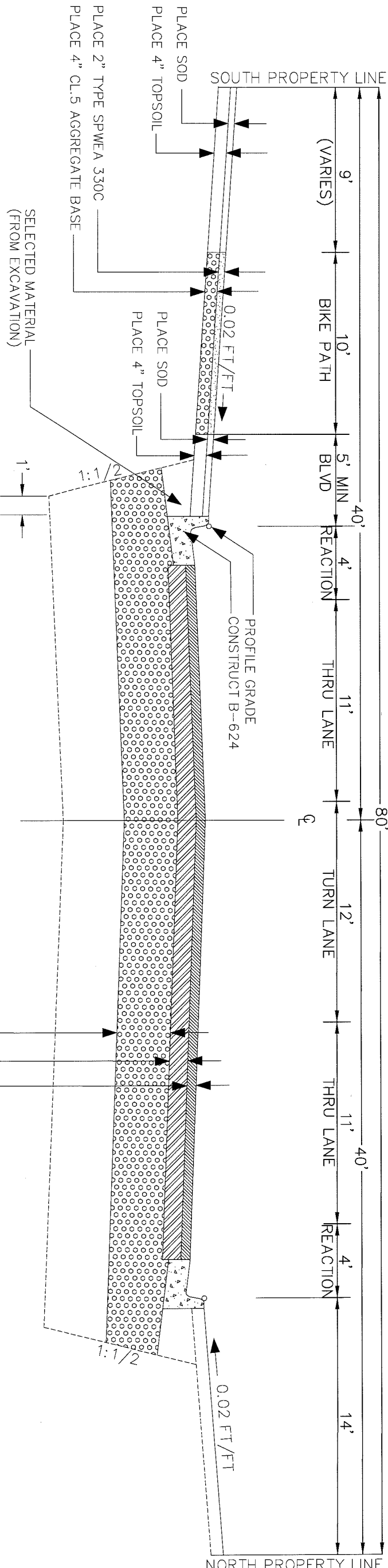
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	DESIGNED	BRM	I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA Signature: <u><i>Barbara R. Munda</i></u> Date: <u>1/29/15</u> BARBARA R. MUNDAHL Lic. No. <u>43099</u>	PREPARED BY <u>STREET ENGINEERING DIVISION</u> FOR THE CITY OF ST. PAUL, DEPARTMENT OF PUBLIC WORKS <h2 style="text-align: center;">RAYMOND AVENUE—PHASE II</h2>	PROJECT: <u>15-P-1393</u>	STATE AID PROJECT NUMBER: <u>164-020-133</u>		
	DRAWN	ATT			DRAWER: <u>12</u>	CAD NAME: <u>PROJECTS/CURRENT/RAYMOND2/Raymond-typicals</u>		
	APPROVED	BRM			DWG. NO. <u>1580</u>	DATE: <u>1/29/15</u>	SHEET NO. <u>8</u> OF <u>25</u> SHEETS	

EXISTING TYPICAL SECTION
ENERGY PARK DRIVE WEST OF RAYMOND AVE.



PROPOSED TYPICAL SECTION
ENERGY PARK DRIVE WEST OF RAYMOND AVE.





DESIGNED

DRAWN

APPROVED

BRM

ATT

BRM

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

Signature: *Barbara R. Munda*

Date: 1/22/15

BARBARA R. MUNDL

Lic. No. 43099

PREPARED BY

STREET ENGINEERING DIVISION

FOR THE CITY OF ST. PAUL, DEPARTMENT OF PUBLIC WORKS

PROJECT: 15-P-1393

STATE AID PROJECT NUMBER: 164-020-133

DRAWER: 12

CAD NAME: PROJECTS/CURRENT/RAYMOND/Raymond-typicals

DWG. NO. 1580

DATE: 1/22/15

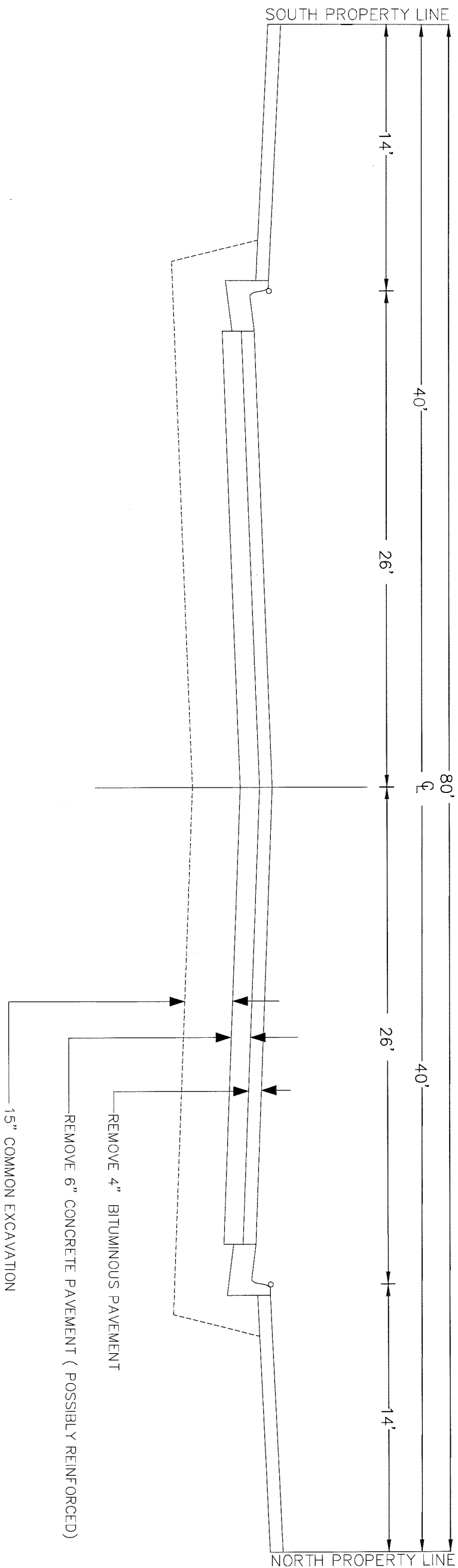
SHEET NO. 9 OF 25 SHEETS



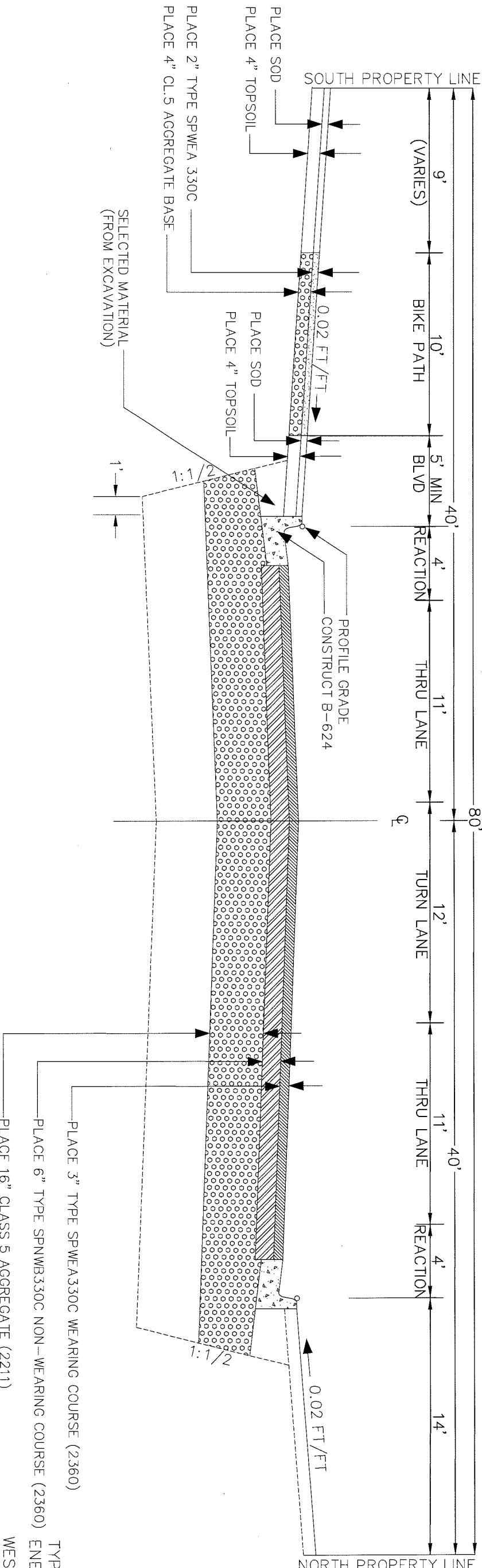
RAYMOND AVENUE—PHASE II

TYPICAL SECTION
ENERGY PARK DRIVE
WEST OF RAYMOND AVE.

EXISTING TYPICAL SECTION
ENERGY PARK DRIVE WEST OF RAYMOND AVE.



PROPOSED TYPICAL SECTION
ENERGY PARK DRIVE WEST OF RAYMOND AVE.





DESIGNED
DRAWN
APPROVED

BRM
ATT
BRM

Signature: *Barbara R. Munda*
Date: 1/22/15
Lic. No. 43099

PREPARED BY
STREET ENGINEERING DIVISION
FOR THE CITY OF ST. PAUL, DEPARTMENT OF PUBLIC WORKS

RAYMOND AVENUE—PHASE II

PROJECT: 15-P-1393
DRAWER: 12
DWG. NO. 1580

STATE AID PROJECT NUMBER: 164-020-133
CAD NAME: PROJECTS/CURRENT/RAYMOND/Raymond-typicals
DATE: 1/22/15

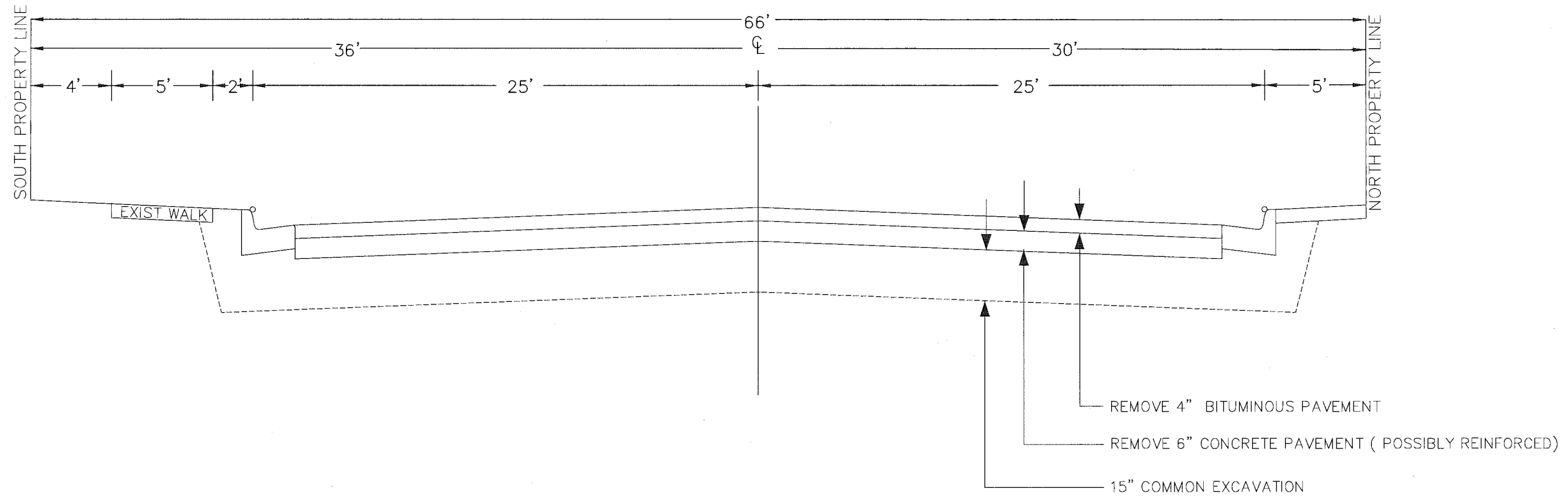
SHEET NO. 10 OF 25 SHEETS

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

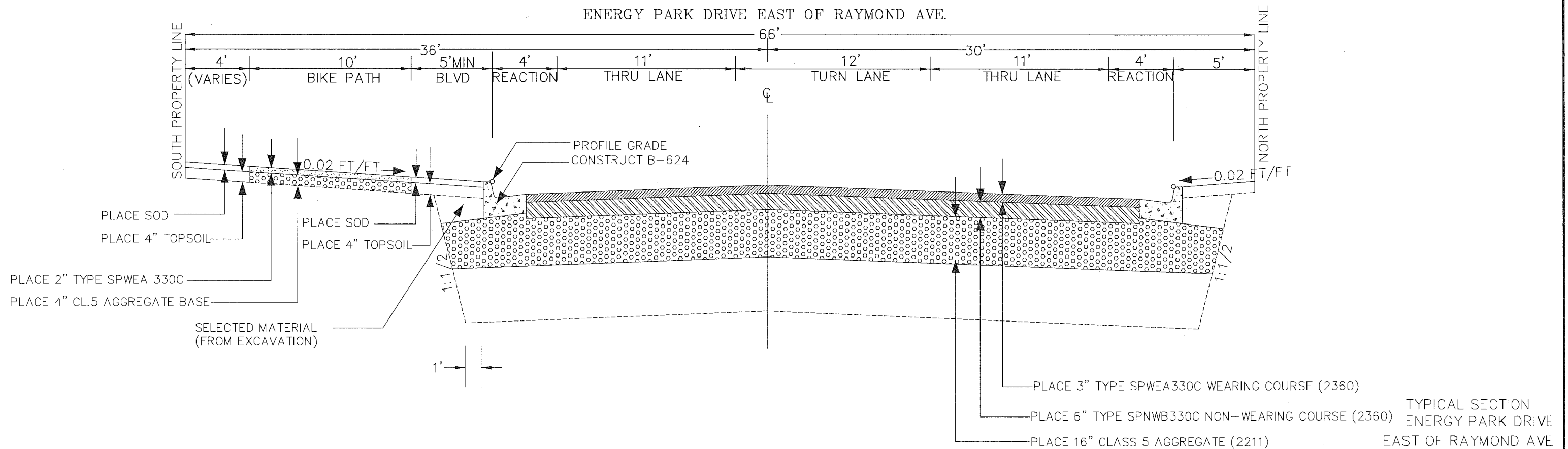
Barbara R. Munda

BARBARA R. MUNDahl

EXISTING TYPICAL SECTION
ENERGY PARK DRIVE EAST OF RAYMOND AVE.



PROPOSED TYPICAL SECTION
ENERGY PARK DRIVE EAST OF RAYMOND AVE.



TYPICAL SECTION
ENERGY PARK DRIVE
EAST OF RAYMOND AVE



DESIGNED
DRAWN
APPROVED

BRM
ATT
BRM

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.

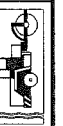
Signature: *Barbara R. Munda* Date: 1/22/15
BARBARA R. MUNDAHL Lic. No. 43099

PREPARED BY STREET ENGINEERING DIVISION FOR THE CITY OF ST. PAUL, DEPARTMENT OF PUBLIC WORKS

RAYMOND AVENUE-PHASE II

PROJECT: 15-P-1393
DRAWER: 12
DWG. NO. 1580

STATE AID PROJECT NUMBER: 164-020-133
CAD NAME: PROJECTS/CURRENT/RAYMOND/Raymond-typicals
DATE: 1/22/15 SHEET NO. 11 OF 25 SHEETS





DESIGNED	BRM	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
DRAWN	ATT	
APPROVED	BRM	

Signature: *Barbara R. MundaHL*

Date: 1/30/15

Lic. No. 43099

STANDARD DETAIL PLATES	
ST. PAUL DRG. NO.	STANDARD DETAIL
1206C	CONCRETE DRIVEWAY, TYPE 6
1304C	SIGN COLLAR PLACEMENT
2007E	CATCH BASIN, DESIGN TYPE 3C
2015G	CATCH BASIN, DESIGN TYPE 7A
2016	CATCH BASIN, DESIGN TYPE 7B
2101D	MANHOLE, TYPE I
2102D	MANHOLE, TYPE II
2103E	MANHOLE, TYPE III & III-S
2104E	MANHOLE, TYPE IV
2107C	MANHOLE, TYPE VII
2201E	FRAME CASTINGS A
2202D	COVER CASTINGS B
2203	COVER CASTINGS D
2207D	MANHOLE ADAPTOR RINGS
2211	CATCH BASIN, DESIGN TYPE 7A CASTING DETAILS
2212	MODIFIED TYPE 7A
2306E	RECONNECTION OF HOUSE SERVICES
2309C	CATCH BASIN CONNECTION
2311B	ANCHOR CLAMP DETAIL
2317C	TYPES OF TRENCH BEDDING
2318C	CONCRETE SADDLE FOR PIPE CROSSINGS
2319D	SADDLE CONNECTIONS FOR HOUSE SERVICES
2321	MANHOLE ADJUST
2322A	MANHOLE RECONSTRUCT
3000B	CONCRETE CURB
3003B	PEDESTRIAN CURB RAMP FOR THE HANDICAPPED
3005D	PEDESTRIAN CURB RAMP FOR THE HANDICAPPED
3006D	PEDESTRIAN CURB RAMP FOR THE HANDICAPPED
3008A	SAVED / SEALED JOINTS
3100C	CONCRETE CURB AND GUTTER, DESIGN B
3102B	CONC. CURB & GUTTER OPENING FOR DRIVEWAYS
3107A	CONC. CURB & GUTTER DESIGN D-418
4031B	BARRICADE DESIGNS
4032A	BARRICADING FOR STREET CLOSURE
4035A	WARNING LIGHTS AND CHANNELIZING DEVICES
4036	BARRICADING FOR SIDEWALK REPLACEMENT
6200B	RESET MONUMENT
MDOT STANDARD DETAIL PLATES	
THESE STANDARD PLATES AS APPROVED BY THE FHWA SHALL APPLY	
MDOT DRG. NO.	STANDARD DETAIL
3000L	REINFORCED CONCRETE PIPE
3006G	GASKET JOINT FOR R. C. PIPE
3100G	CONCRETE APRON FOR REINFORCED CONCRETE PIPE
3133D	RIPRAP AT R.C.P. OUTLETS
3145G	CONCRETE PIPE TIES
4010H	CONCRETE SHORT CONE & ADJUSTING RING
7038A	DETECTABLE WARNING SURFACE TRUNCATED DOMES
8000I	STANDARD BARRICADES

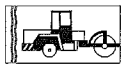
CONCRETE TABULATIONS			
ITEM		UNIT	S.P. 164-020-133 Raymond Avenue QUANTITIES
REMOVE CURB & GUTTER			
Sta. 0+00 to Sta. 6+50		LIN. FT.	1 141
Sta. 6+50 to Sta. 12+00		LIN. FT.	1 065
Sta. 12+00 to Sta. 18+50		LIN. FT.	519
Sta. 18+50 to Sta. 21+69.57		LIN. FT.	562
Energy Park Dr.		LIN. FT.	830
REMOVE CONCRETE WALK			
Sta. 0+00 to Sta. 6+50		SQ. FT.	2 864
Sta. 6+50 to Sta. 12+00		SQ. FT.	2 167
Sta. 12+00 to Sta. 18+50		SQ. FT.	1 106
Sta. 18+50 to Sta. 21+69.57		SQ. FT.	2 490
Energy Park Dr.		SQ. FT.	
REMOVE CONCRETE DRIVEWAY PAVEMENT			
Sta. 0+00 to Sta. 6+50		SQ. YD.	36
Sta. 6+50 to Sta. 12+00		SQ. YD.	
Sta. 12+00 to Sta. 18+50		SQ. YD.	29
Sta. 18+50 to Sta. 21+69.57		SQ. YD.	77
Energy Park Dr.		SQ. YD.	
4" CONCRETE WALK			
Sta. 0+00 to Sta. 6+50		SQ. FT.	2 385
Sta. 6+50 to Sta. 12+00		SQ. FT.	1 991
Sta. 12+00 to Sta. 18+50		SQ. FT.	597
Sta. 18+50 to Sta. 21+69.57		SQ. FT.	
Energy Park Dr.		SQ. FT.	
6" CONCRETE WALK			
Sta. 0+00 to Sta. 6+50		SQ. FT.	485
Sta. 6+50 to Sta. 12+00		SQ. FT.	855
Sta. 12+00 to Sta. 18+50		SQ. FT.	969
Sta. 18+50 to Sta. 21+69.57		SQ. FT.	
Energy Park Dr.		SQ. FT.	
TRUNCATED DOME			
Sta. 0+00 to Sta. 6+50		SQ. FT.	32
Sta. 6+50 to Sta. 12+00		SQ. FT.	40
Sta. 12+00 to Sta. 18+50		SQ. FT.	104
Sta. 18+50 to Sta. 21+69.57		SQ. FT.	
Energy Park Dr.		SQ. FT.	
CONCRETE CURB & GUTTER, DESIGN B612			
Sta. 0+00 to Sta. 6+50		LIN. FT.	1 162
Sta. 6+50 to Sta. 12+00		LIN. FT.	1 190
Sta. 12+00 to Sta. 18+50		LIN. FT.	525
Sta. 18+50 to Sta. 21+69.57		LIN. FT.	645
Energy Park Dr.		LIN. FT.	
CONCRETE CURB & GUTTER, DESIGN B612(MODIFIED)			
Sta. 12+00 to Sta. 18+50		LIN. FT.	323
CONCRETE CURB & GUTTER, DESIGN B624			
Sta. 0+00 to Sta. 6+50		LIN. FT.	
Sta. 6+50 to Sta. 12+00		LIN. FT.	
Sta. 12+00 to Sta. 18+50		LIN. FT.	
Sta. 18+50 to Sta. 21+69.57		LIN. FT.	
Energy Park Dr.		LIN. FT.	
8" CONCRETE DRIVEWAY PAVEMENT			
Sta. 0+00 to Sta. 6+50		SQ. YD.	82
Sta. 6+50 to Sta. 12+00		SQ. YD.	
Sta. 12+00 to Sta. 18+50		SQ. YD.	33
Sta. 18+50 to Sta. 21+69.57		SQ. YD.	35
Energy Park Dr.		SQ. YD.	

AGGREGATE AND BITUMINOUS TABULATIONS			
ITEM		UNIT	S.P. 164-020-133 RAYMOND Avenue QUANTITIES
REMOVE PAVEMENT			
Sta. 0+00 to Sta. 6+50		SQ. YD.	2 700
Sta. 6+50 to Sta. 12+00		SQ. YD.	2 462
Sta. 12+00 to Sta. 18+50		SQ. YD.	1 163
Sta. 18+50 to Sta. 21+69.57		SQ. YD.	1 841
Energy Park Dr.		SQ. YD.	2 513
AGGREGATE BASE PLACED (C.V.), CLASS 5 (P)			
Sta. 0+00 to Sta. 6+50		CU YD.	1 128
Sta. 6+50 to Sta. 12+00		CU YD.	1 117
Sta. 12+00 to Sta. 18+50		CU YD.	540
Sta. 18+50 to Sta. 21+69.57		CU YD.	867
Energy Park Dr.		CU YD.	1 102
Bituminous off-road trail		CU YD.	276
TYPE SPWEA330C WEARING COURSE MIXTURE			
Sta. 0+00 to Sta. 6+50		TON	410
Sta. 6+50 to Sta. 12+00		TON	404
Sta. 12+00 to Sta. 18+50		TON	197
Sta. 18+50 to Sta. 21+69.57		TON	323
Energy Park Dr.		TON	341
Bituminous off-road trail		TON	50
TYPE SPNWB330C NON-WEARING COURSE MIXTURE			
Sta. 0+00 to Sta. 6+50		TON	819
Sta. 6+50 to Sta. 12+00		TON	807
Sta. 12+00 to Sta. 18+50		TON	393
Sta. 18+50 to Sta. 21+69.57		TON	646
Energy Park Dr.		TON	682

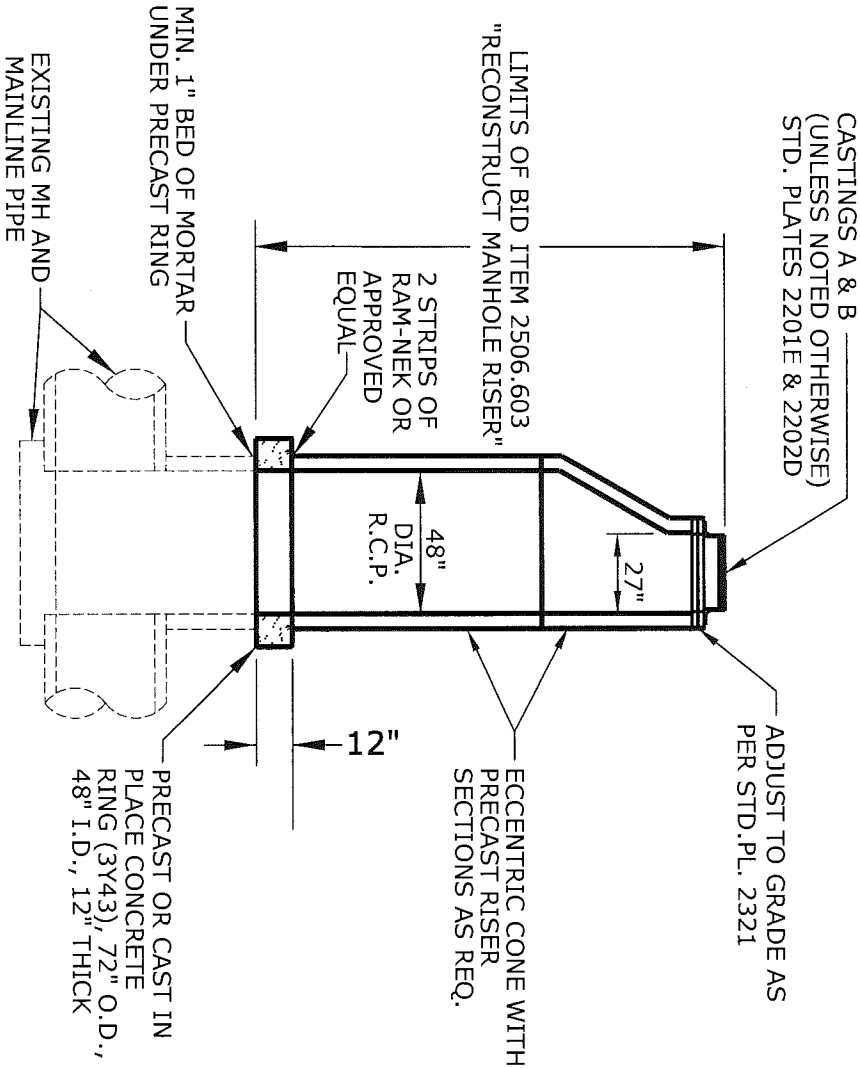
BASIS OF ESTIMATE FOR BITUMINOUS QUANTITIES = 110 lbs/sy/inch
(P) PLAN QUANTITY

STANDARD DETAIL PLATES
CONCRETE & PAVEMENT TABULATIONS

PROJECT:	15-P-1393	STATE AID PROJECT NUMBER:	164-020-133
DRAWER:	12	CAD NAME:	PROJECTS/CURRENT/RAYMOND2/
DWG. NO.	1580	DATE:	1/30/15
		SHEET NO.	12 OF 25 SHEETS

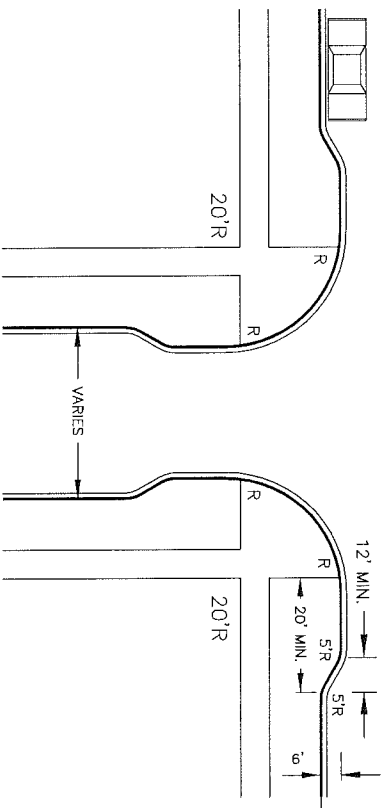


- NOTES:
1. LIMITS OF MANHOLE RECONSTRUCTION TO BE DESIGNATED BY THE ENGINEER.
 2. REMOVAL OF THE EXISTING CASTING AND RISER TO BE INCLUDED AS PART OF BID ITEM 2506.603, "RECONSTRUCT MANHOLE RISER".
 3. PRECAST RISER SECTION TO MEET ASTM C-478
 4. JOINTS BETWEEN PRECAST SECTIONS SHALL USE O-RING RUBBER GASKET CONFORMING TO ASTM C-443



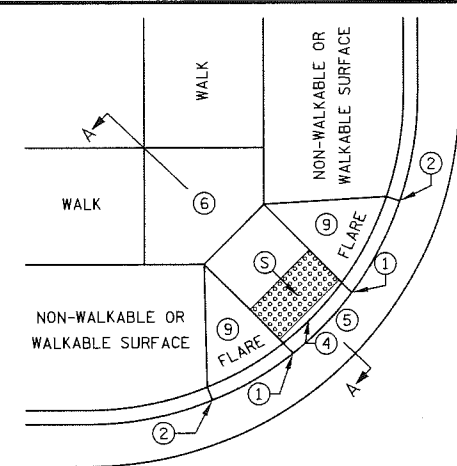
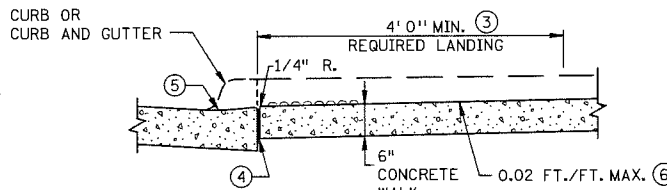
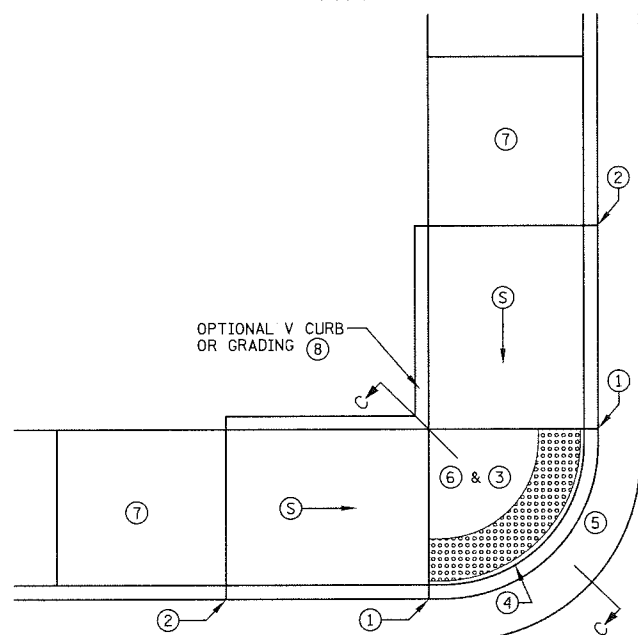
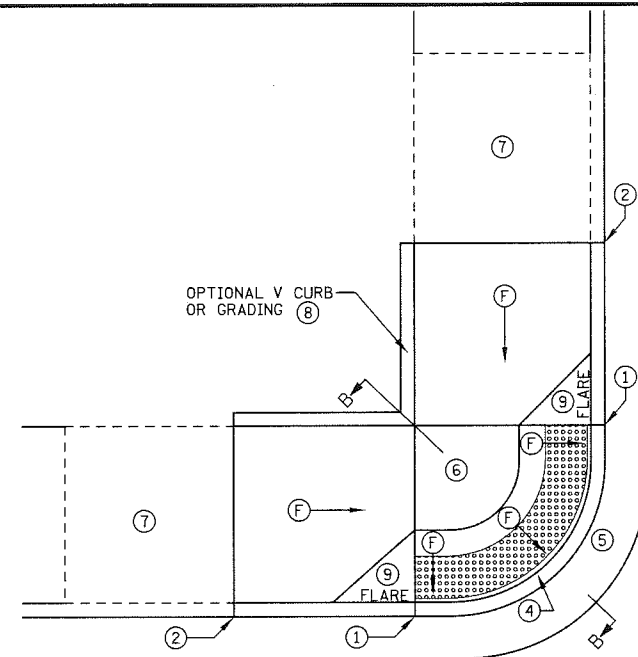
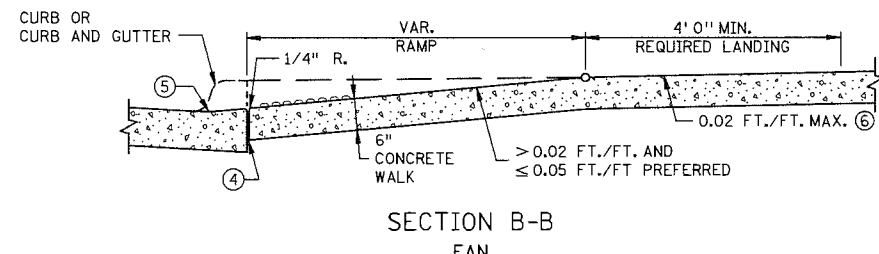
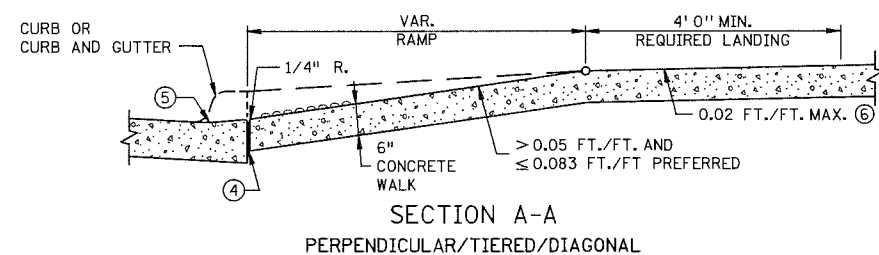
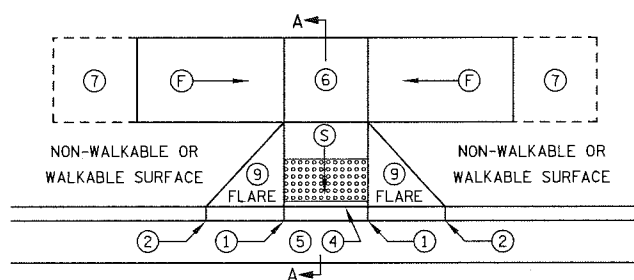
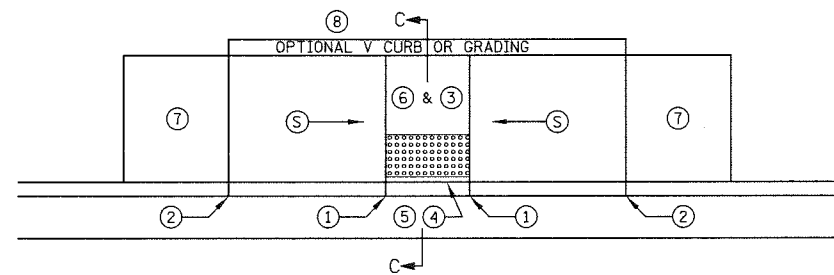
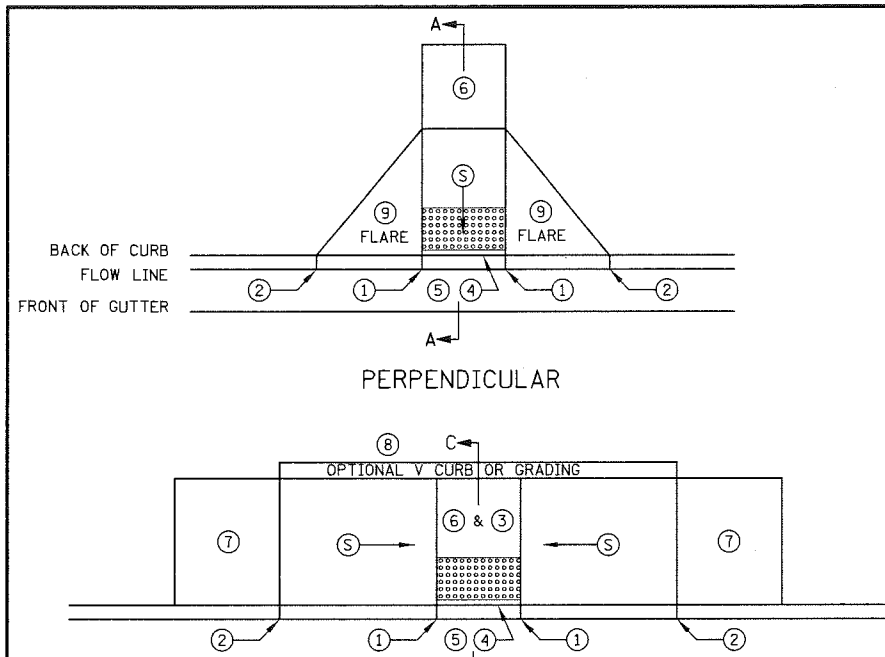
BID ITEM 2506.603,
"RECONSTRUCT MANHOLE RISER"

CURB BUMPOUT DETAILS
NO SCALE



CONSTRUCTION DETAILS
STANDARD DETAIL PLATES

			
DESIGNED	BRM	I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DUTY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA Signature: <i>Barbara R. MundaHL</i> BARBARA R. MUND AHL Date: 1/21/15 Lic. No. 43099	
DRAWN	ATT		
APPROVED	BRM		
PREPARED BY STREET ENGINEERING DIVISION		FOR THE CITY OF ST. PAUL, DEPARTMENT OF PUBLIC WORKS	
RAYMOND AVENUE—PHASE II			
PROJECT: 15—P—1393		STATE AID PROJECT NUMBER:	
DRAWER: 12		CAD NAME: PROJECTS/CURRENT/RAYMOND2/	
DWG. NO. 1580		DATE: 1/21/15 SHEET NO. 13 OF 25 SHEETS	
			



- NOTES:
- LANDINGS SHALL BE LOCATED ANYWHERE THE PEDESTRIAN ACCESS ROUTE CHANGES DIRECTION, AT THE TOP OF RAMP THAT HAVE RUNNING SLOPES GREATER THAN 5.0%, AND IF THE APPROACHING WALK IS INVERSE GRADE.
- INITIAL CURB RAMP LANDINGS SHALL BE CONSTRUCTED WITHIN 15' FROM THE BACK OF CURB, WITH 6' FROM THE BACK OF CURB BEING THE PREFERRED DISTANCE.
- SECONDARY CURB RAMP LANDINGS ARE REQUIRED FOR EVERY 30' OF VERTICAL RISE WHEN THE LONGITUDINAL SLOPE IS GREATER THAN 5.0%.
- CONTRACTION JOINTS SHALL BE CONSTRUCTED ALONG ALL GRADE BREAKS.
- ALL GRADE BREAKS WITHIN THE PAR SHALL BE PERPENDICULAR TO THE PATH OF TRAVEL.
- TO ENSURE RAMP AND LANDINGS ARE PROPERLY CONSTRUCTED, LANDINGS MAY BE CAST SEPARATELY, FOLLOW SIDEWALK REINFORCEMENT DETAILS ON SHEET 5 WHEN LANDINGS ARE CAST SEPARATELY.
- ALL SLOPES ARE ABSOLUTE, RATHER THAN RELATIVE TO SIDEWALK/ROADWAY GRADES.
- TOP OF CURB SHALL MATCH PROPOSED ADJACENT WALK GRADE.
- 4' MINIMUM WIDTH OF DETECTABLE WARNING IS REQUIRED FOR ALL RAMP, DETECTABLE WARNINGS SHALL CONTINUOUSLY EXTEND FOR A MINIMUM OF 24" IN THE PATH OF TRAVEL. SHARED USE PATHS SHALL HAVE DETECTABLE WARNING ACROSS THE ENTIRE WIDTH OF PATH WHEN THE PATH CROSSES A ROAD.
- SEE STANDARD PLATE 7038 AND SHEET 4 OF 5 FOR ADDITIONAL DETAILS ON DETECTABLE WARNING.
- ① 0" CURB HEIGHT.
 - ② FULL CURB HEIGHT.
 - ③ DETECTABLE WARNINGS MAY BE PART OF 4' X 4' LANDING AREA IF IT IS NOT FEASIBLE TO CONSTRUCT THE LANDING OUTSIDE OF THE DETECTABLE WARNING AREA.
 - ④ 1/2" PREFORMED JOINT FILLER MATERIAL AASHTO M 213. JOINT FILLER SHALL BE PLACED FLUSH WITH THE BACK OF CURB AND ADJACENT SIDEWALK. JOINT SHALL BE FREE OF DEBRIS. RECTANGULAR DETECTABLE WARNINGS SHALL BE SETBACK 3" FROM THE BACK OF CURB. RADIAL DETECTABLE WARNINGS SHALL BE SETBACK 3" MINIMUM TO 6" MAXIMUM FROM THE BACK OF CURB.
 - ⑤ SEE PEDESTRIAN ACCESS ROUTE CURB AND GUTTER DETAIL FOR INFORMATION ON CONSTRUCTING CURB AND GUTTER AT CURB OPENINGS. SEE SHEET NO. 3 OF 5.
 - ⑥ 4' BY 4' MIN. LANDING WITH MAX. 2.0% SLOPE IN ALL DIRECTIONS.
 - ⑦ IF LONGITUDINAL SLOPE IS GREATER THAN 5.0%, 4' X 4' MIN. LANDING WITH MAX 2.0% SLOPE IN ALL DIRECTIONS REQUIRED.
 - ⑧ V CURB, IF USED, SHALL BE PLACED OUTSIDE THE SIDEWALK LIMITS WHEN RIGHT OF WAY ALLOWS. SEE SHEET 5 OF 5.
 - ⑨ SEE SHEET 4 OF 5, TYPICAL SIDE TREATMENT OPTIONS, FOR DETAILS ON FLARES AND RETURNED CURBS.
 - ⑩ DIAGONAL RAMP SHOULD ONLY BE USED AFTER ALL OTHER CURB RAMP TYPES HAVE BEEN EVALUATED AND DEEMED IMPRACTICAL.

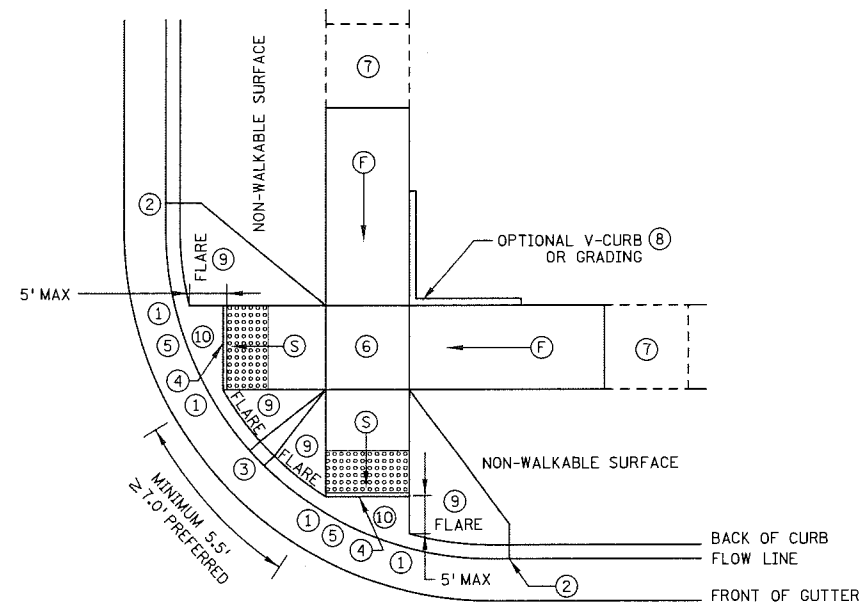
LEGEND	
THESE LONGITUDINAL SLOPE RANGES SHALL BE THE STARTING POINT. IF SITE CONDITIONS WARRANT, LONGITUDINAL SLOPES UP TO 8.3% OR FLATTER ARE ALLOWED.	
⑤	INDICATES PEDESTRIAN RAMP - SLOPE SHALL BE BETWEEN 5.0% MINIMUM AND 8.3% MAXIMUM IN THE DIRECTION SHOWN AND THE CROSS SLOPE SHALL NOT EXCEED 2.0%
⑥	INDICATES PEDESTRIAN RAMP - SLOPE SHALL BE GREATER THAN 2.0% AND LESS THAN 5.0% IN THE DIRECTION SHOWN AND CROSS SLOPE SHALL NOT EXCEED 2.0%

STANDARD PLAN SHEET NO. 5-297.250 (1 OF 5)	PEDESTRIAN CURB RAMP DETAILS	
STANDARD APPROVED: APRIL 10, 2013		
STATE PROJ. NO. 164-214-016 (TH)	SHEET NO. 15 OF 33	SHEETS

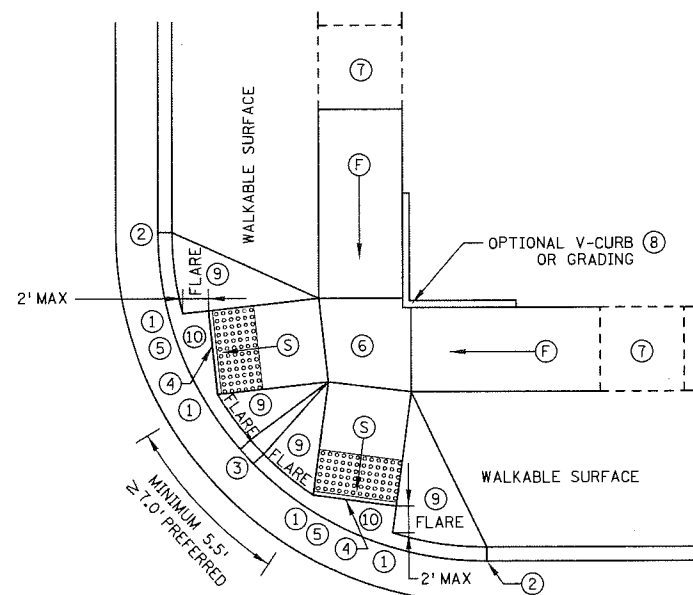
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	DESIGNED	MnDOT	I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA Signature: <i>Barbara R. Munda</i> Date: 1/21/15 BARBARA R. MUNDAHL Lic. No. 43099		PREPARED BY STREET ENGINEERING DIVISION FOR THE CITY OF ST. PAUL, DEPARTMENT OF PUBLIC WORKS RAYMOND AVENUE-PHASE II	PROJECT: 15-P-1393	STATE AID PROJECT NUMBER: 164-020-133
	DRAWN	MnDOT				DRAWER: 12	CAD NAME: PROJECTS/CURRENT/RAYMOND2/
	APPROVED	MnDOT				DWG. NO. 1580	DATE: 1/21/15
							SHEET NO. 14 OF 25 SHEETS

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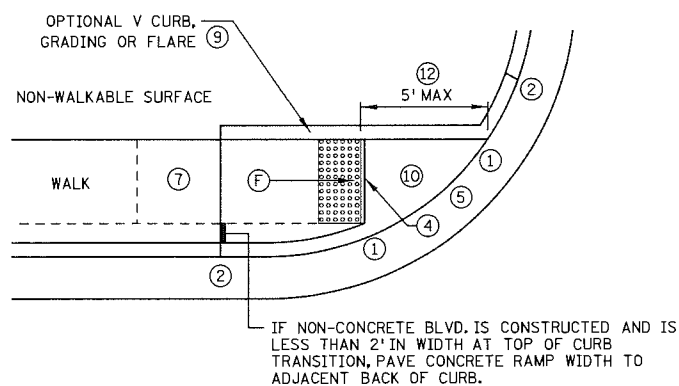


ADJACENT TO NON-WALKABLE SURFACE

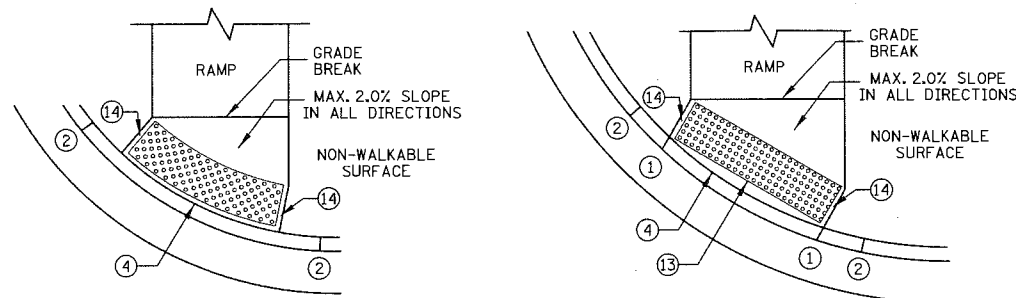


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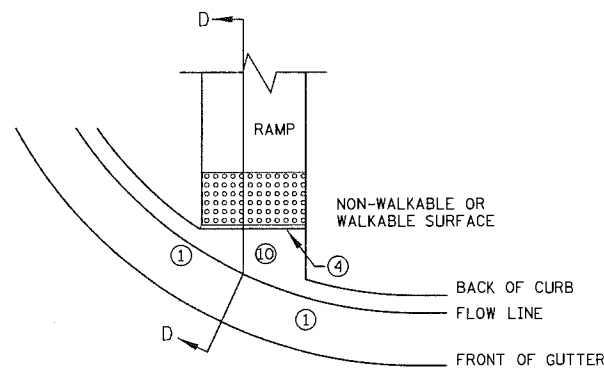
COMBINED DIRECTIONAL 15



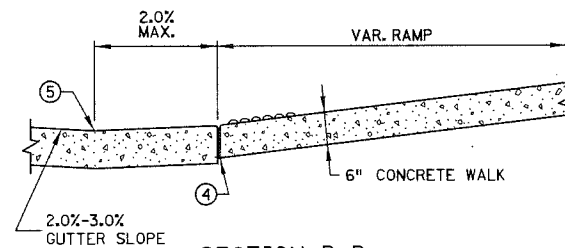
ONE-WAY DIRECTIONAL



DETECTABLE WARNING PLACEMENT WHEN SETBACK CRITERIA IS EXCEEDED



CURB FOR DIRECTIONAL RAMPS 11



SECTION D-D

NOTES:

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

INITIAL CURB RAMP LANDINGS SHALL BE CONSTRUCTED WITHIN 15' FROM THE BACK OF CURB, WITH 6' FROM THE BACK OF CURB BEING THE PREFERRED DISTANCE.

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

CONTRACTION JOINTS SHALL BE CONSTRUCTED ALONG ALL GRADE BREAKS.

ALL GRADE BREAKS WITHIN THE PAR SHALL BE PERPENDICULAR TO THE PATH OF TRAVEL.

TO ENSURE RAMPS AND LANDINGS ARE PROPERLY CONSTRUCTED, LANDINGS MAY BE CAST SEPARATELY, FOLLOW SIDEWALK REINFORCEMENT DETAILS ON SHEET 5 WHEN LANDINGS ARE CAST SEPARATELY.

ALL SLOPES ARE ABSOLUTE, RATHER THAN RELATIVE TO SIDEWALK/ROADWAY GRADES.

TOP OF CURB SHALL MATCH PROPOSED ADJACENT WALK GRADE.

4' MINIMUM WIDTH OF DETECTABLE WARNING IS REQUIRED FOR ALL RAMPS. DETECTABLE WARNINGS SHALL CONTINUOUSLY EXTEND FOR A MINIMUM OF 24" IN THE PATH OF TRAVEL. SHARED USE PATHS SHALL HAVE DETECTABLE WARNING ACROSS THE ENTIRE WIDTH OF PATH WHEN THE PATH CROSSES A ROAD.

SEE STANDARD PLATE 7038 AND SHEET 4 OF 5 FOR ADDITIONAL DETAILS ON DETECTABLE WARNING.

1 0" CURB HEIGHT.
2 FULL CURB HEIGHT.
3 3" MINIMUM CURB HEIGHT, 4" PREFERRED.
4 1/2" PREFORMED JOINT FILLER MATERIAL AASHTO M 213. JOINT FILLER SHALL BE PLACED FLUSH WITH THE BACK OF CURB AND ADJACENT SIDEWALK. JOINT SHALL BE FREE OF DEBRIS. RECTANGULAR DETECTABLE WARNINGS SHALL BE SETBACK 3" FROM THE BACK OF CURB. RADIAL DETECTABLE WARNINGS SHALL BE SETBACK 3" MIN. TO 6" MAX. FROM THE BACK OF CURB.

5 SEE PEDESTRIAN ACCESS ROUTE CURB AND GUTTER DETAIL FOR INFORMATION ON CONSTRUCTING CURB AND GUTTER AT CURB OPENINGS. SEE SHEET NO. 3 OF 5.

6 4' BY 4' MIN. LANDING WITH MAX. 2.0% SLOPE IN ALL DIRECTIONS.

7 IF LONGITUDINAL SLOPE IS GREATER THAN 5.0%, 4' X 4' MIN. LANDING WITH MAX 2.0% SLOPE IN ALL DIRECTIONS REQUIRED.

8 V CURB, IF USED, SHALL BE PLACED OUTSIDE THE SIDEWALK LIMITS WHEN RIGHT OF WAY ALLOWS.

9 SEE SHEET 4 OF 5, TYPICAL SIDE TREATMENT OPTIONS, FOR DETAILS ON FLARES AND RETURNED CURBS.

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

11 TO BE USED FOR ALL DIRECTIONAL RAMPS.

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

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

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

15 FRONT EDGE OF DETECTABLE WARNING SHALL BE SET BACK 2' MAXIMUM WHEN ADJACENT TO WALKABLE SURFACE, AND 5' MAXIMUM WHEN ADJACENT TO NON-WALKABLE SURFACE WITH ONE CORNER SET 3" FROM BACK OF CURB. WHETHER A SURFACE IS WALKABLE OR NOT SHALL BE DETERMINED BY THE ENGINEER

LEGEND

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

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

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

STANDARD PLAN SHEET NO.
5-297.250 (2 OF 5)

STANDARD APPROVED:
APRIL 10, 2013

PEDESTRIAN CURB RAMP DETAILS

STATE PROJ. NO. 164-214-016 (TH) SHEET NO. 16 OF 33 SHEETS



DESIGNED MnDOT
DRAWN MnDOT
APPROVED MnDOT

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
Signature: Barbara R. Mundahl
Date: 1/21/15
Lic. No. 43099

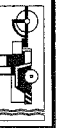
PREPARED BY STREET ENGINEERING DIVISION FOR THE CITY OF ST. PAUL, DEPARTMENT OF PUBLIC WORKS

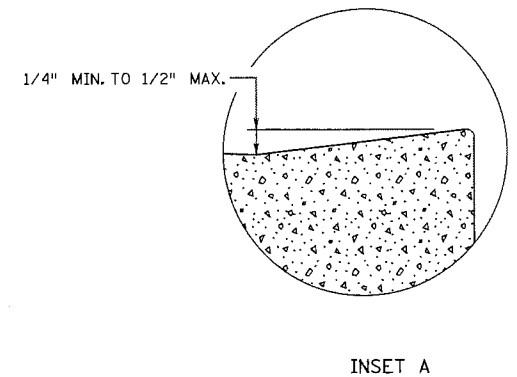
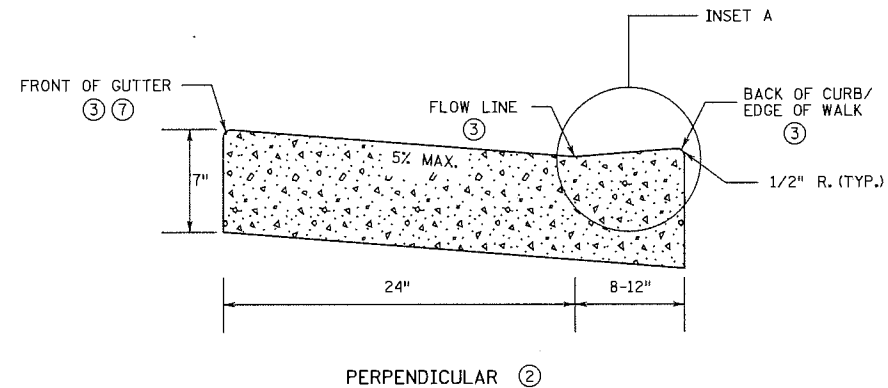
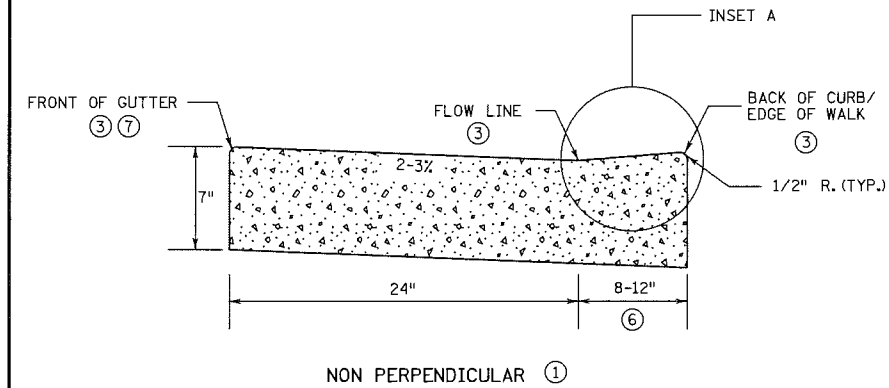
RAYMOND AVENUE-PHASE II

PROJECT: 15-P-1393
DRAWER: 12
DWG. NO. 1580

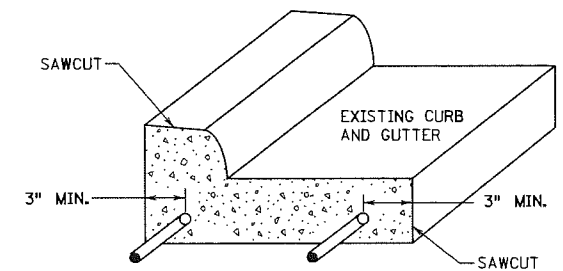
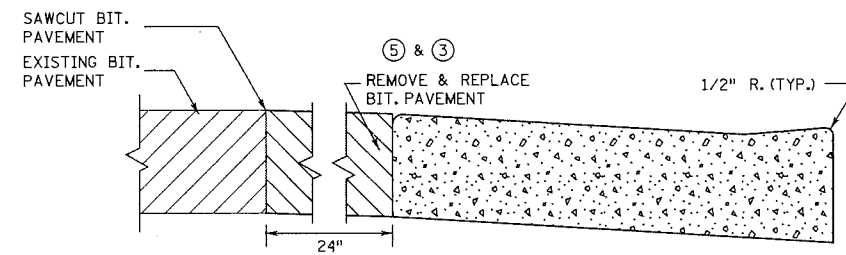
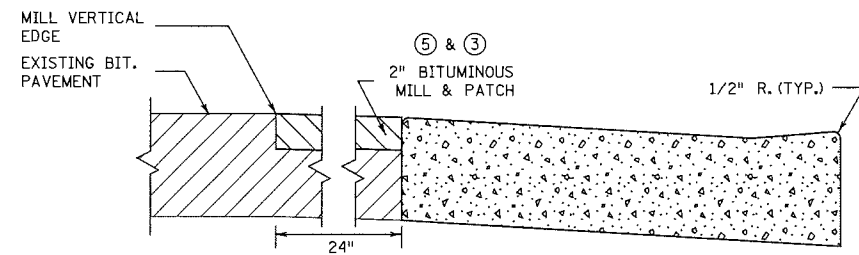
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CAD NAME: PROJECTS/CURRENT/RAYMOND2/
DATE: 1/21/15

SHEET NO. 15 OF 25 SHEETS

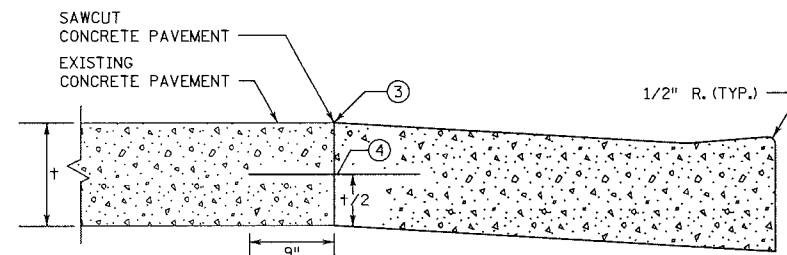
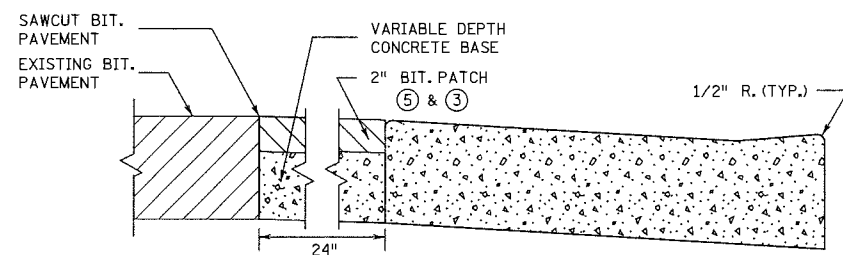




PEDESTRIAN ACCESS ROUTE
CURB & GUTTER DETAIL



CURB AND GUTTER
REINFORCEMENT ⑧
FOR USE ON CURB RAMP RETROFITS



PAVEMENT TREATMENT OPTIONS
IN FRONT OF CURB & GUTTER
FOR USE ON CURB RAMP RETROFITS

NOTES:

- POSITIVE FLOW LINE DRAINAGE SHALL BE MAINTAINED THROUGH THE PEDESTRIAN ACCESS ROUTE (PAR) AT A 2% MAXIMUM.
- NO PONDING SHALL BE PRESENT IN THE PAR.
- ANY VERTICAL LIP THAT OCCURS AT THE FLOW LINE SHALL NOT BE GREATER THAN 1/4 INCH.
- ① FOR USE AT CURB CUTS WHERE THE PEDESTRIAN'S PATH OF TRAVEL IS ASSUMED NON PERPENDICULAR TO THE GUTTER FLOW LINE. RAMP TYPES INCLUDE: FANS, DEPRESSED CORNERS, & ONE WAY AND COMBINED DIRECTIONALS.
- ② FOR USE AT CURB CUTS WHERE THE PEDESTRIAN'S PATH OF TRAVEL IS ASSUMED PERPENDICULAR TO THE GUTTER FLOW LINE. RAMP TYPES INCLUDE: PERPENDICULAR, TIERED PERPENDICULAR, PARALLEL, AND DIAGONAL RAMP.
- ③ THERE SHALL BE NO VERTICAL DISCONTINUITIES GREATER THAN 1/4".
- ④ DRILL AND GROUT NO. 4 EPOXY-COATED 18" LONG TIE BARS AT 30" CENTER TO CENTER INTO EXISTING CONCRETE PAVEMENT.
- ⑤ ELEVATION CHANGE TAKES PLACE FROM THE EXISTING TO NEW FRONT OF GUTTER. PATCH IS USED TO MATCH THE NEW GUTTER FACE INTO THE EXISTING ROADWAY.
- ⑥ VARIABLE WIDTH FOR DIRECTIONAL CURB APPLICATIONS.
- ⑦ TOP FRONT OF GUTTER SHALL BE CONSTRUCTED FLUSH WITH PROPOSED ADJACENT PAVEMENT ELEVATION. PAR GUTTER SHALL NOT BE OVERLAID.
- ⑧ WHERE PLAN SPECIFIES, DRILL AND GROUT 2 - NO. 4 X 12" LONG REINFORCEMENT BARS (EPOXY COATED).

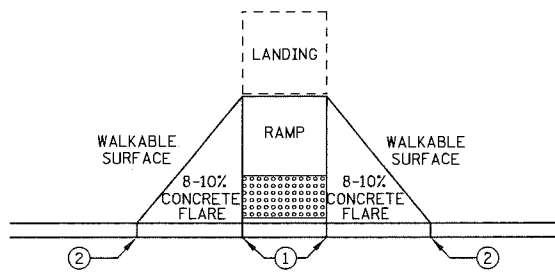
STANDARD PLAN SHEET NO. 5-297.250 (3 OF 5)	PEDESTRIAN CURB RAMP DETAILS	
STANDARD APPROVED: APRIL 10, 2013		
STATE PROJ. NO. 164-214-016 (TH)	SHEET NO. 17 OF 33	SHEETS

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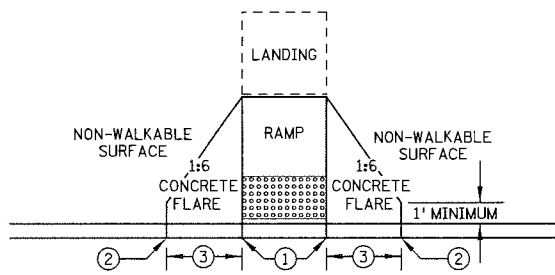
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	DRAWN	MnDOT						DRAWER: 12		CAD NAME: PROJECTS/CURRENT/RAYMOND2/		
	APPROVED	MnDOT						DWG. NO. 1580		DATE: 1/21/15 SHEET NO. 16 OF 25 SHEETS		

Signature: 				Date: 1/21/15
BARBARA R. MUNDAHL				Lic. No. 43099

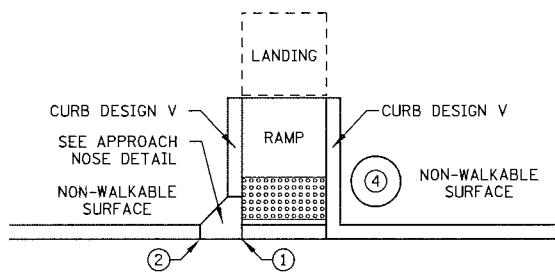
RAYMOND AVENUE-PHASE II									
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PAVED FLARES
ADJACENT TO WALKABLE SURFACE

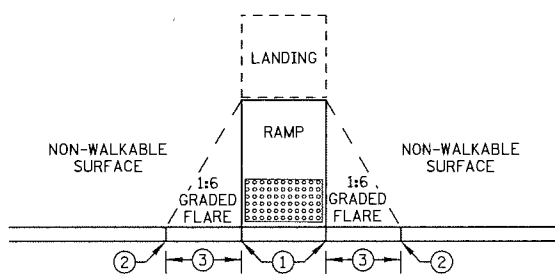


PAVED FLARES
ADJACENT TO NON-WALKABLE SURFACE



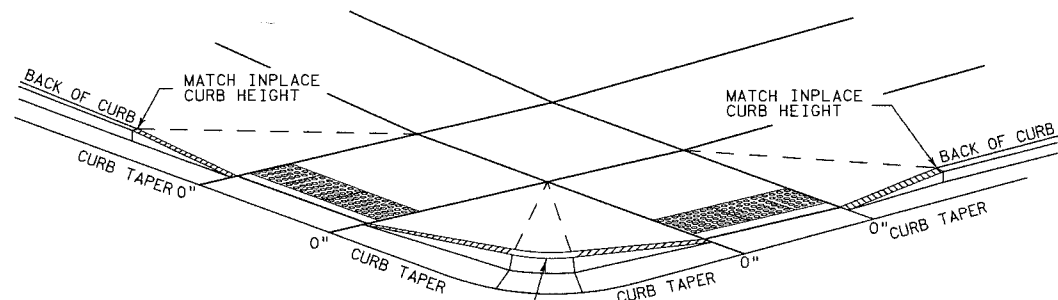
DIRECTION OF TRAFFIC

RETURNED CURB



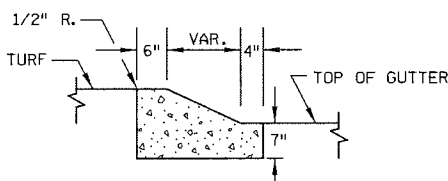
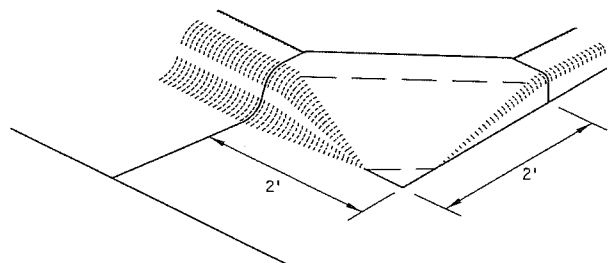
GRADED FLARES

TYPICAL SIDE TREATMENT OPTIONS ⑤



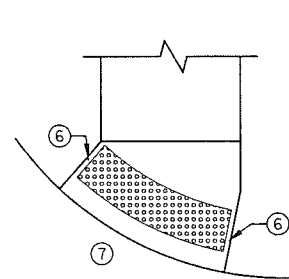
3" MINIMUM CURB HEIGHT, 4" PREFERRED
(MEASURED AT FRONT FACE OF CURB)
FOR A MIN. 6" LENGTH
(MEASURED ALONG FLOW LINE)

DETECTABLE EDGE WITH
CURB AND GUTTER ⑥

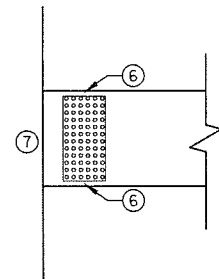


SECTION A-A

APPROACH NOSE DETAIL
FOR DOWNSTREAM SIDE OF TRAFFIC



RADIAL DETECTABLE WARNING



RECTANGULAR DETECTABLE WARNING

DETECTABLE EDGE WITHOUT CURB AND GUTTER

NOTES:

SEE STANDARD PLATE 7038 AND THIS SHEET FOR ADDITIONAL DETAILS ON DETECTABLE WARNING.
WHETHER A SURFACE IS WALKABLE OR NOT SHALL BE DETERMINED BY THE ENGINEER.
CONCRETE FLARE LENGTHS ADJACENT TO NON-WALKABLE SURFACES SHOULD BE LESS THAN 8' LONG
MEASURED ALONG THE RAMP'S FROM THE BACK OF CURB.

- ① 0" CURB HEIGHT.
- ② FULL CURB HEIGHT.
- ③ 2' - 3' FLARE.
- ④ IMMOVABLE OBJECT OR OBSTRUCTION.
- ⑤ SIDE TREATMENTS ARE APPLICABLE TO ALL RAMP TYPES AND SHOULD BE IMPLEMENTED AS NEEDED ON ALL RAMP TYPES AS FIELD CONDITIONS DICTATE. THE ENGINEER SHALL DETERMINE THE RAMP SIDE TREATMENTS BASED ON MAINTENANCE OF BOTH ROADWAY AND SIDEWALK, ADJACENT PROPERTY CONSIDERATIONS, AND MITIGATING CONSTRUCTION IMPACTS.
- ⑥ WHEN NO CONCRETE FLARES ARE PROPOSED, THE CONCRETE WALK SHALL BE FORMED AND CONSTRUCTED PERPENDICULAR TO THE EDGE OF ROADWAY. MAINTAIN 3" BETWEEN EDGE OF DOMES AND EDGE OF CONCRETE.
- ⑦ IF NO CURB AND GUTTER IS PLACED IN RURAL SECTIONS, DETECTABLE WARNINGS SHALL BE PLACED 1' FROM THE EDGE OF ROADWAY TO PROVIDE VISUAL CONTRAST.
- ⑧ ALL CONSTRUCTED CURBS MUST HAVE A CONTINUOUS DETECTABLE EDGE FOR THE VISUALLY IMPAIRED. THIS DETECTABLE EDGE REQUIRES DETECTABLE WARNINGS WHEREVER THERE IS ZERO-INCH HIGH CURB. CURB TAPERS ARE CONSIDERED A DETECTABLE EDGE WHEN THE TAPER STARTS WITHIN 3" OF THE EDGE OF THE DETECTABLE WARNINGS AND UNIFORMLY RISES TO A 3-INCH MINIMUM CURB HEIGHT. ANY CURB NOT PART OF A CURB TAPER AND LESS THAN 3 INCHES IN HEIGHT IS NOT CONSIDERED A DETECTABLE EDGE AND THEREFORE IS NOT COMPLIANT WITH ACCESSIBILITY STANDARDS.

STANDARD PLAN SHEET NO.
5-297.250 (4 OF 5)
STANDARD APPROVED:
APRIL 10, 2013

PEDESTRIAN CURB RAMP DETAILS

STATE PROJ. NO. 164-214-016 (TH) SHEET NO. 18 OF 33 SHEETS

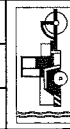
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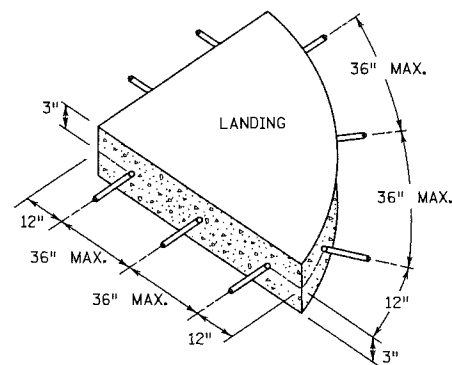
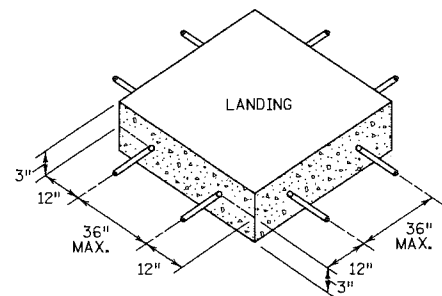
DESIGNED	MnDOT	I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA Signature: <i>Barbara R. Munda</i> Date: 1/21/15 BARBARA R. MUNDAHL Lic. No. 43099
DRAWN	MnDOT	
APPROVED	MnDOT	

PREPARED BY STREET ENGINEERING DIVISION FOR THE CITY OF ST. PAUL, DEPARTMENT OF PUBLIC WORKS

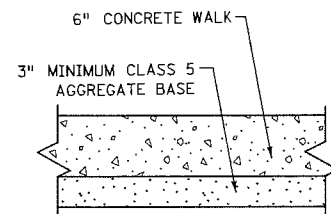
RAYMOND AVENUE-PHASE II

PROJECT: 15-P-1393	STATE AID PROJECT NUMBER: 164-020-133
DRAWER: 12	CAD NAME: PROJECTS/CURRENT/RAYMOND2/
DWG. NO. 1580	DATE: 1/21/15 SHEET NO. 17 OF 25 SHEETS

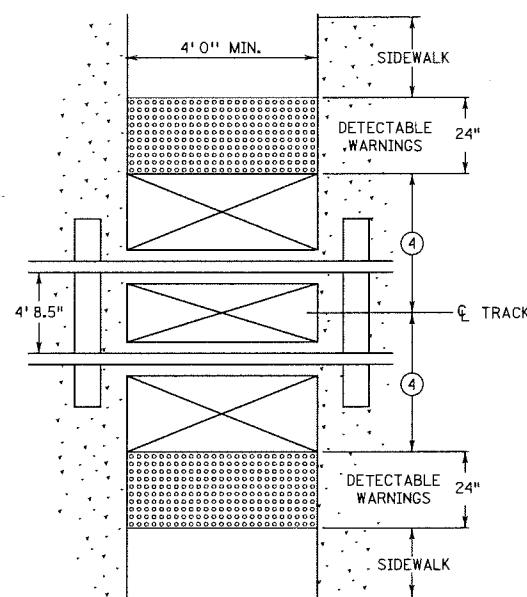




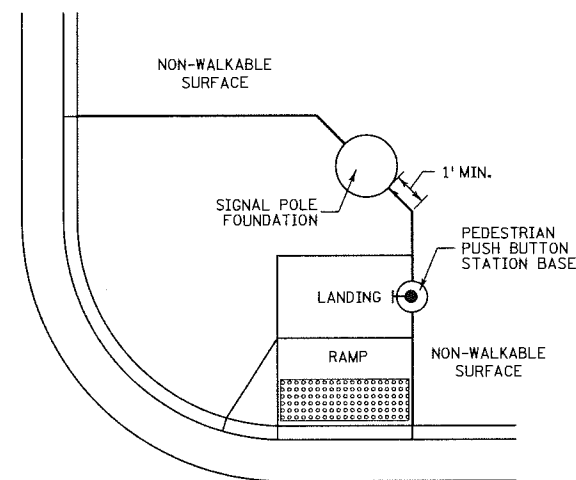
SIDEWALK REINFORCEMENT ⑤ ⑥



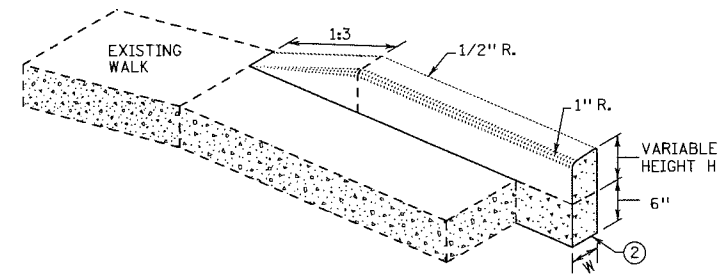
TYPICAL SIDEWALK SECTION
WITHIN INTERSECTION CORNER



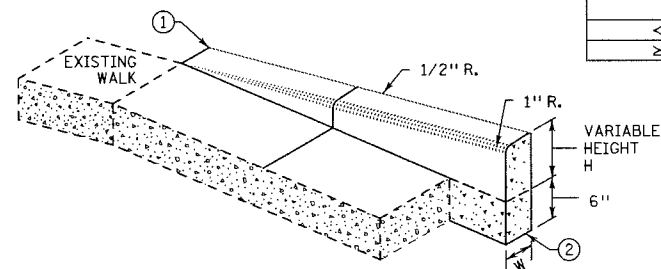
RAILROAD CROSSING
PLAN VIEW



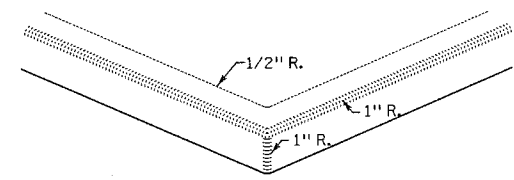
CONCRETE WALK EDGES ADJACENT
TO CONCRETE STRUCTURES



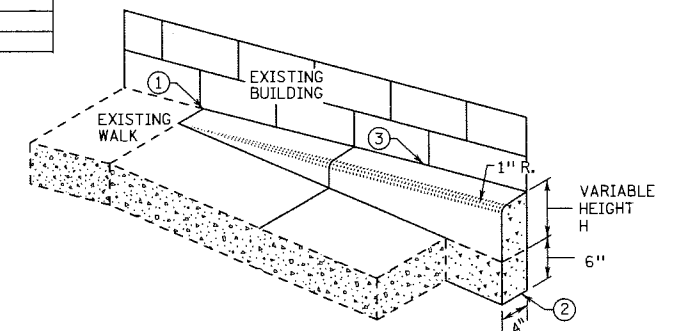
V CURB ADJACENT TO LANDSCAPE
CURB WITHIN SIDEWALK LIMITS



V CURB ADJACENT TO LANDSCAPE
CURB OUTSIDE SIDEWALK LIMITS



V CURB INTERSECTION



V CURB ADJACENT TO BUILDING
OR BARRIER

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

NOTES:

- ALL V CURB CONTRACTION JOINTS SHALL MATCH CONCRETE WALK JOINTS.
- WHERE RIGHT-OF-WAY ALLOWS, USE OF V CURB SHOULD BE MINIMIZED. GRADING ADJACENT TURF OR SLOPING ADJACENT PAVEMENT IS PREFERRED.
- V CURB SHALL BE PLACED OUTSIDE THE SIDEWALK LIMITS WHEN RIGHT OF WAY ALLOWS.
- V CURB NEXT TO BUILDING SHALL BE A 4" WIDTH AND SHALL MATCH PREVIOUS TOP OF SIDEWALK ELEVATIONS.
- ① END TAPERS AT TRANSITION SECTION SHALL MATCH INPLACE SIDEWALK GRADES.
- ② ALL V CURB SHALL MATCH BOTTOM OF ADJACENT WALK.
- ③ EDGE BETWEEN NEW V CURB AND INPLACE STRUCTURE SHALL BE SEALED AND BOND BREAKER SHALL BE USED BETWEEN EXISTING STRUCTURE AND PLACED V-CURB.
- ④ EDGE OF DETECTABLE WARNING SURFACES SHALL BE PLACED 15' MAXIMUM FROM THE CENTERLINE OF THE TRACK. WHEN PEDESTRIAN GATES ARE PROVIDED, DETECTABLE WARNING SURFACES SHALL BE PLACED ON THE SIDE OF THE GATES OPPOSITE THE RAIL, 17" - 19" FROM THE APPROACHING SIDE OF THE GATE ARM.
- ⑤ WHEN PLAN SPECIFIES, DRILL AND GROUT NO. 4 12" LONG REINFORCEMENT BARS AT 36" MAX. CENTER TO CENTER (EPOXY COATED).
- ⑥ TO ENSURE RAMP AND LANDINGS ARE PROPERLY CONSTRUCTED, LANDINGS MAY BE CAST SEPARATELY. FOLLOW SIDEWALK REINFORCEMENT DETAILS ON THIS SHEET WHEN LANDINGS ARE CAST SEPARATELY.

STANDARD PLAN SHEET NO. 5-297.250 (5 OF 5)	PEDESTRIAN CURB RAMP DETAILS	
STANDARD APPROVED: APRIL 10, 2013		
STATE PROJ. NO. 164-214-016 (TH)	SHEET NO. 19 OF 33 SHEETS

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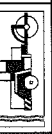


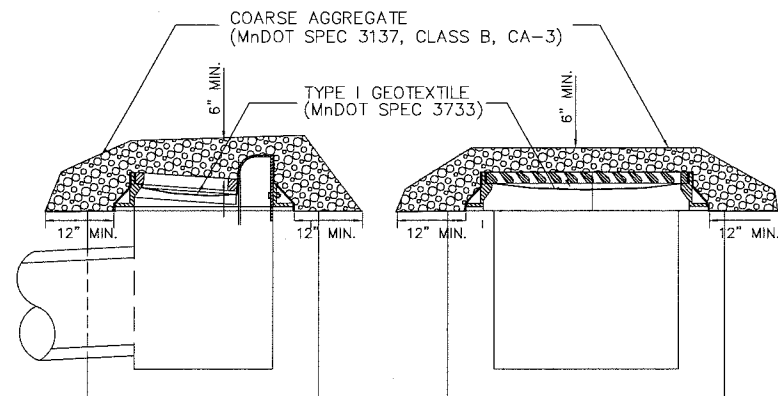
DESIGNED	MnDOT	I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA	
DRAWN	MnDOT		
APPROVED	MnDOT		
Signature: <i>Barbara R. MundaHL</i>		Date: 1/21/15	Lic. No. 43099
BARBARA R. MUNDAHL			

PREPARED BY STREET ENGINEERING DIVISION FOR THE CITY OF ST. PAUL, DEPARTMENT OF PUBLIC WORKS

RAYMOND AVENUE-PHASE II

PROJECT: 15-P-1393	STATE AID PROJECT NUMBER: 164-020-133
DRAWER: 12	CAD NAME: PROJECTS/CURRENT/RAYMOND2/
DWG. NO. 1580	DATE: 1/21/15
SHEET NO. 18 OF 25 SHEETS	

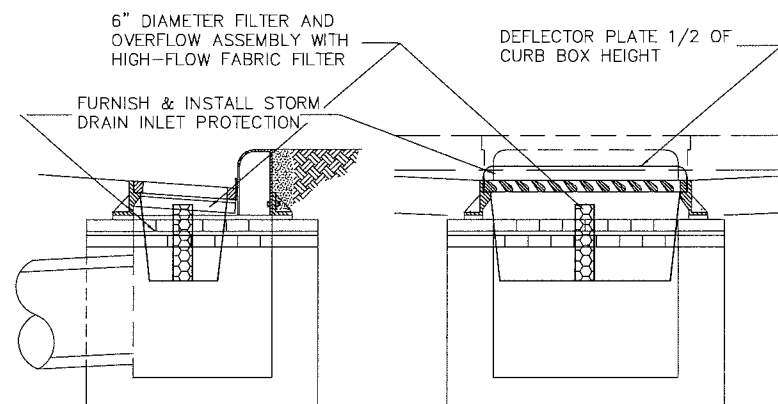




INTERIM SEDIMENT CONTROL FOR CATCH BASINS

NOTES:

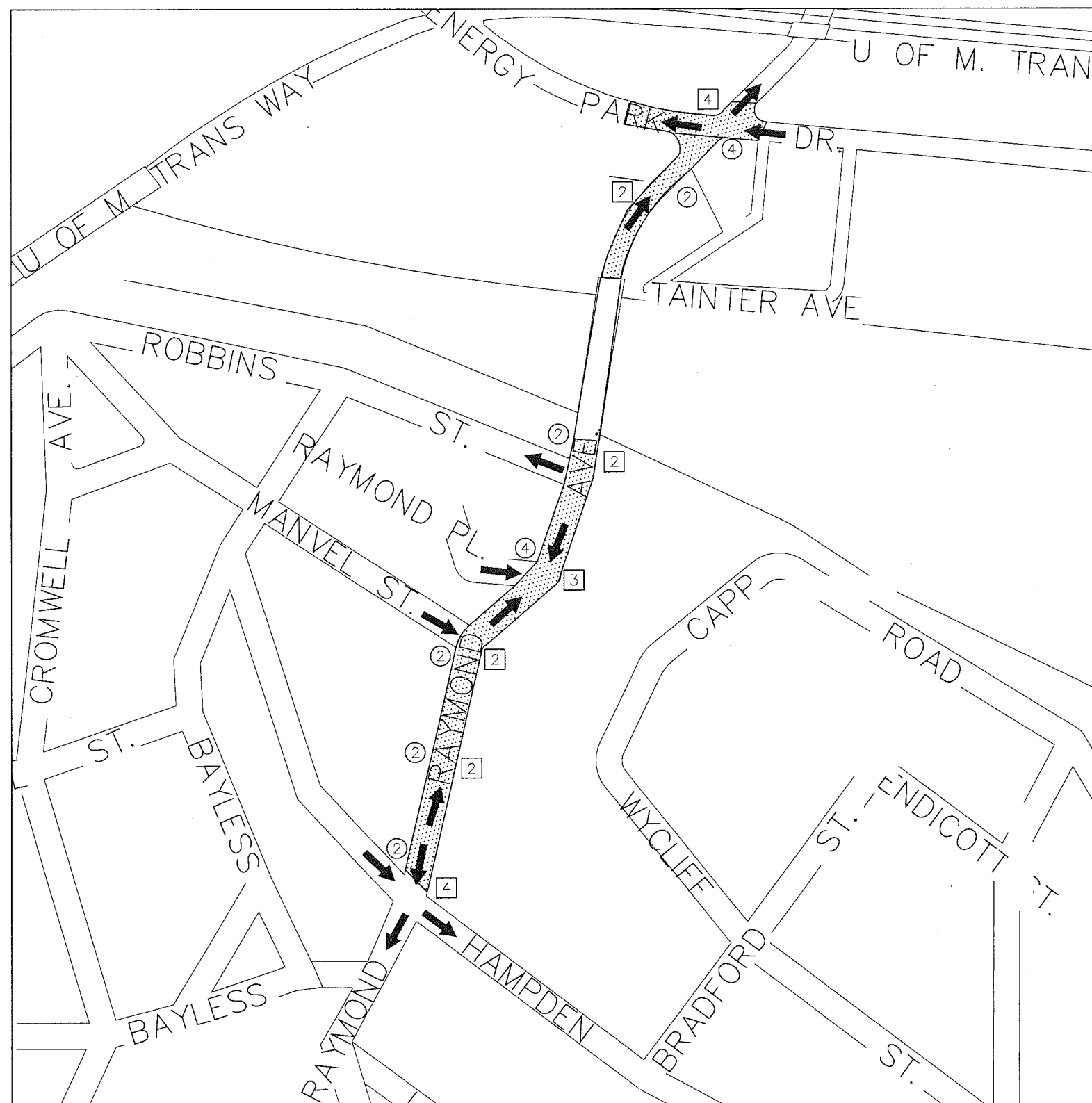
1. INTERIM SEDIMENT CONTROL REQUIRED FOR THE IDENTIFIED NEW CATCH BASINS PRIOR TO CURB AND GUTTER CONSTRUCTION. BID ITEM 2573.602.
2. CONTRACTOR TO INSPECT "INTERIM SEDIMENT CONTROL FOR CATCH BASINS" EVERY 7 DAYS AND WITHIN 24 HOURS AFTER EVERY RAIN EVENT. CONTRACTOR SHALL REPLACE COARSE AGGREGATE AND/OR GEOTEXTILE IF IT BECOMES NONFUNCTIONAL AS A SEDIMENT CONTROL.
3. CATCH BASIN SHALL BE KEPT FUNCTIONAL. CONTRACTOR SHALL CLEAN IF SEDIMENT IS WITHIN 12 INCHES OF OUTLET PIPE.



STORM DRAIN INLET PROTECTION

NOTES:

1. STORM DRAIN INLET PROTECTION REQUIRED FOR NEW CATCH BASINS AFTER CURB AND GUTTER CONSTRUCTION. BID ITEM 2573.530.
2. CONTRACTOR TO INSPECT "STORM DRAIN INLET PROTECTION" EVERY 7 DAYS AND WITHIN 24 HOURS AFTER EVERY RAIN EVENT. CONTRACTOR SHALL REPLACE OR CLEAN INSERT IF IT BECOMES NONFUNCTIONAL.
3. CATCHBASIN SHALL BE KEPT FUNCTIONAL. CONTRACTOR SHALL CLEAN IF SEDIMENT IS WITHIN 12 INCHES OF OUTLET PIPE.
4. EXISTING CATCH BASINS AS IDENTIFIED SHALL ALSO RECEIVE STORM DRAIN INLET PROTECTION FROM THE TIME UPSTREAM CONSTRUCTION ACTIVITIES BEGIN UNTIL CLASS V IS PLACED ON THE ROADWAY AND THE BOULEVARDS HAVE BEEN RESTORED.



LEGEND:

- ➔ DIRECTION OF FLOW
- ② INTERIM SEDIMENT CONTROL AND STORM DRAIN INLET PROTECTION FOR NEW CATCH BASINS
SEE DETAIL (NO. INDICATES CB'S REQUIRING CONTROL)
- ④ EXISTING CATCH BASINS REQUIRING STORM DRAIN INLET PROTECTION
SEE DETAIL (NO. INDICATES CB'S REQUIRING CONTROL.)

EROSION AND SEDIMENT CONTROL



DESIGNED	BRM
DRAWN	ATT
APPROVED	BRM

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

Signature: *Barbara R. MundaHL*

Date: 1/21/15
Lic. No. 43099

PREPARED BY STREET ENGINEERING DIVISION FOR THE CITY OF ST. PAUL, DEPARTMENT OF PUBLIC WORKS

RAYMOND AVENUE—PHASE II

PROJECT: 15-P-1393

DRAWER: 12

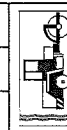
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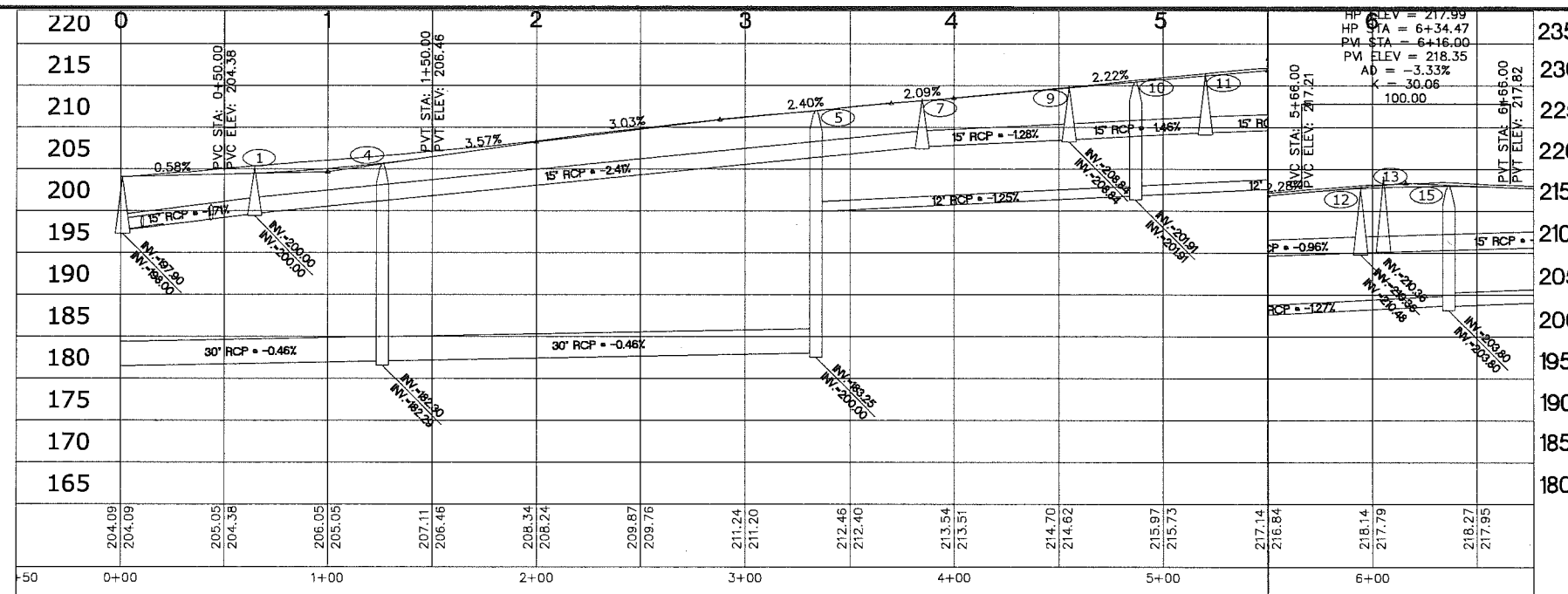
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CAD NAME: PROJECTS/CURRENT/RAYMOND2/DWG-erosion

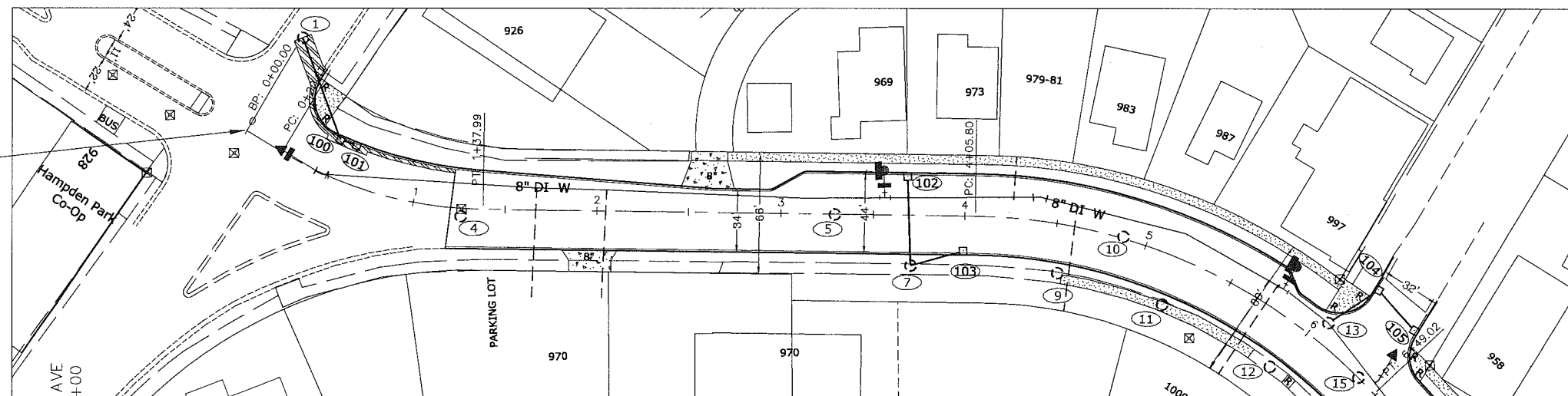
DATE: 1/21/15

SHEET NO. 19 OF 25 SHEETS





CONSTRUCTION PLAN



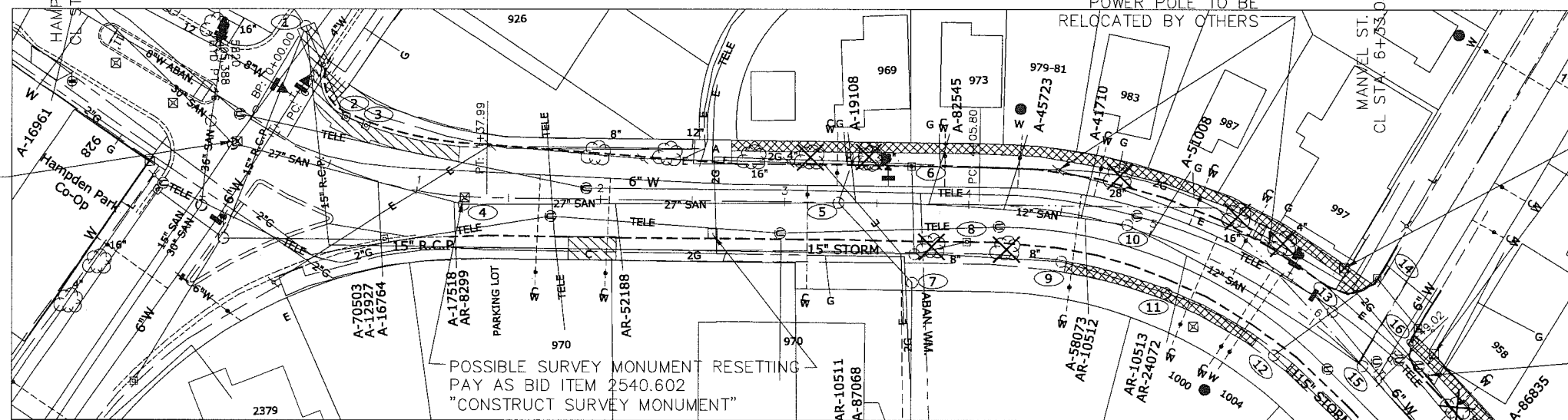
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 Δ 46.4505d
 R. 300'
 T. 128.74
 L. 243.21'
 P.C. 4+05.80
 P.I. 5+34.54
 P.T. 6+49.02

NOTE: REPLACE 1009' OF EXISTING 6" CI WATERMAIN WITH NEW 8" DI WATERMAIN IN RAYMOND AVE. FROM LONG AVE. TO ROBBINS ST. INSTALLATION BY SAINT PAUL REGIONAL WATER SERVICES. EXCAVATION BY CONTRACTOR - PAY AS BID ITEM 2504.603 "WATER MAIN TRENCH".

RAYMOND AVE



SCALE IN FEET
 40 30 20 10 0 20 40
 ELECTRONIC SURVEY



EXISTING AND REMOVAL PLAN

POSSIBLE SURVEY MONUMENT RESETTING
 PAY AS BID ITEM 2540.602
 "CONSTRUCT SURVEY MONUMENT"

RAYMOND AVE

POWER POLE TO BE
 RELOCATED BY OTHERS

RAYMOND AVENUE
 Hampden to Manvel

BEGIN S.P. 164-020-133
 STA. 0+00

POSSIBLE SURVEY
 MONUMENT RESETTING
 PAY AS BID ITEM
 2540.602 "CONSTRUCT
 SURVEY MONUMENT"

POSSIBLE SURVEY MONUMENT RESETTING
 PAY AS BID ITEM 2540.602
 "CONSTRUCT SURVEY MONUMENT"



DESIGNED BRM
 DRAWN ATT
 APPROVED BRM

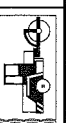
I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA
 Signature: *Barbara R. Mundaal* Date: 2/3/15
 BARBARA R. MUNDAAL Lic. No. 43099

PREPARED BY STREET ENGINEERING DIVISION FOR THE CITY OF ST. PAUL, DEPARTMENT OF PUBLIC WORKS

RAYMOND AVENUE-PHASE II

PROJECT: 15-P-1393
 DRAWER: 12
 DWG. NO. 1580

STATE AID
 PROJECT NUMBER: 164-020-133
 CAD NAME: PROJECTS/CURRENT/Raymond/RaymondBase
 DATE: 2/3/15 SHEET NO. 20 OF 25 SHEETS





DESIGNED	BRM
DRAWN	ATT
APPROVED	BRM

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

Signature: *Barbara R. Mondahl*
BARBARA R. MONDAHL

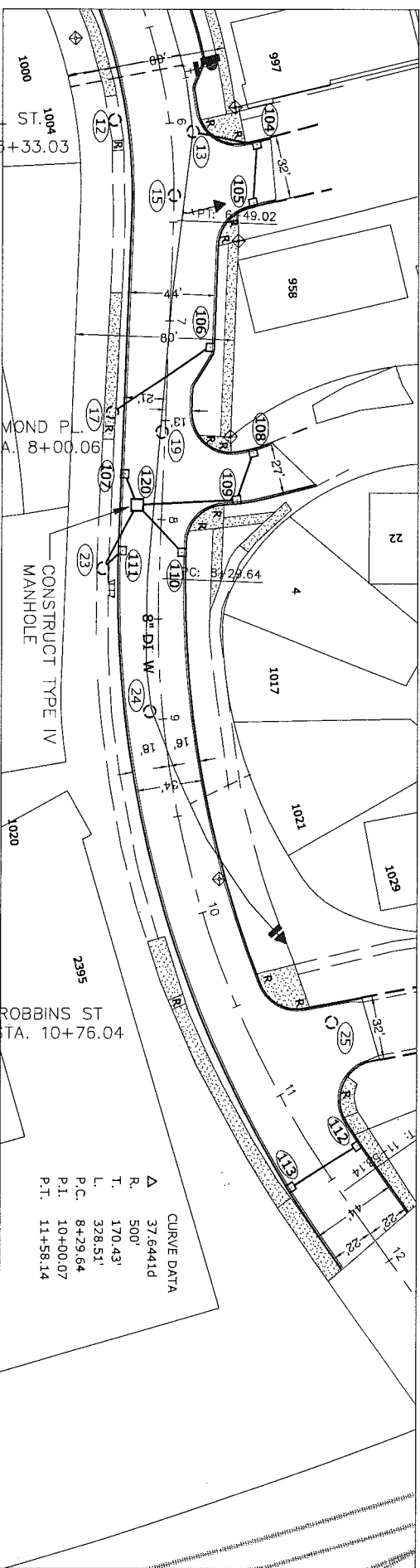
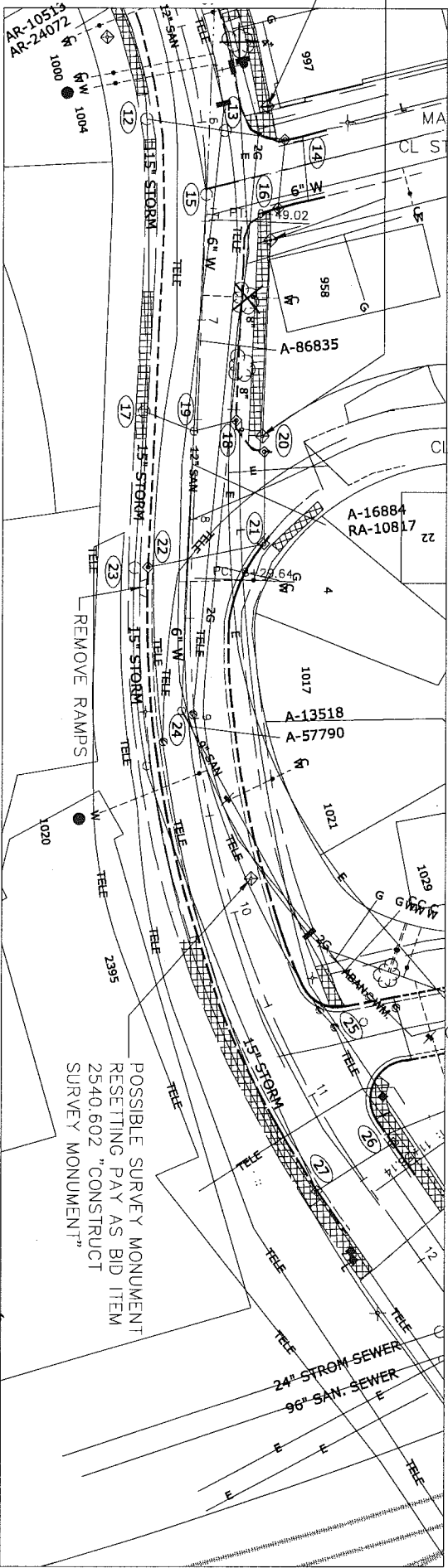
Date: 2/3/15
Lic. No. 43099

PREPARED BY STREET ENGINEERING DIVISION FOR THE CITY OF ST. PAUL, DEPARTMENT OF PUBLIC WORKS

RAYMOND AVENUE—PHASE II

PROJECT: 15-P-1393	STATE AND PROJECT NUMBER: 164-020-133
DRAWER: 12	CAD NAME: PROJECTS/CURRENT/Raymond/RaymondBase
DWG. NO. 1580	DATE: 2/3/15
SHEET NO. 21 OF 25 SHEETS	

POSSIBLE SURVEY MONUMENT
RESETTING PAY AS BID ITEM
2540.602 "CONSTRUCT
SURVEY MONUMENT"



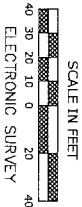
	6	7	8	9	10	11	12
240	HP ELEV = 217.99 HP STA = 6+34.47 PM STA = 6+16.00 PM ELEV = 218.35 AD = -3.33% K = 50.06 100.00						
235		PVT STA: 6+66.00 PVT ELEV: 217.82					
230			UP ELEV = 216.72 LP STA = 8+05.34 PM STA = 8+15.96 PM ELEV = 216.25 AD = 2.42% K = 65.34 158.00				
225				PVT STA: 8+94.80 PVT ELEV: 217.33			
220					1.31%		
215						1.85%	
210							27' RC
205							
200							
195							
190							
216.84	6+00	218.14	217.79	218.27	217.95	217.85	217.46
217.38	7+00	216.95	217.25	216.72	217.31	216.87	217.76
217.40	8+00	218.35	218.09	219.16	218.77	219.90	219.46
220.65	9+00	220.32	221.35	221.25	222.19		
222.19	10+00						
222.19	11+00						
222.19	12+						

CONSTRUCTION PLAN

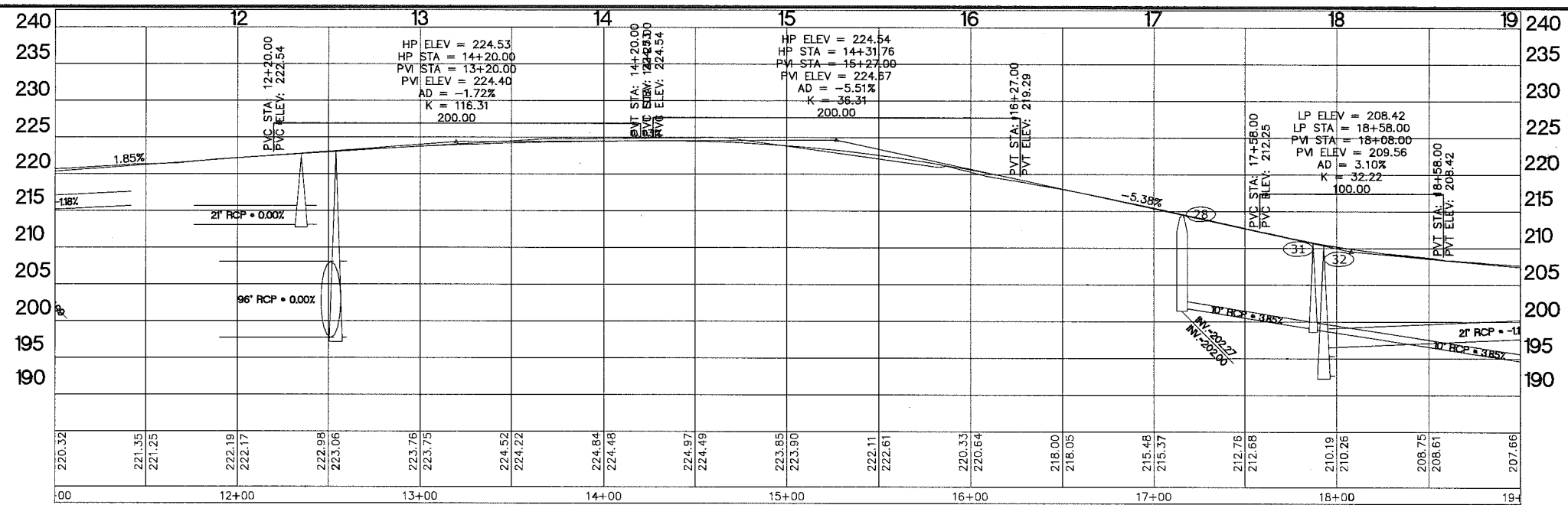
NOTE: REPLACE 1009' OF EXISTING 6" CI WATERMAIN WITH NEW 8" DI WATERMAIN IN RAYMOND AVE. FROM LONG AVE TO ROBBINS ST. INSTALLATION BY SAINT PAUL REGIONAL WATER SERVICES. EXCAVATION BY CONTRACTOR - PAY AS BID ITEM 2504.603 "WATER MAIN TRENCH".

RAYMOND AVE.

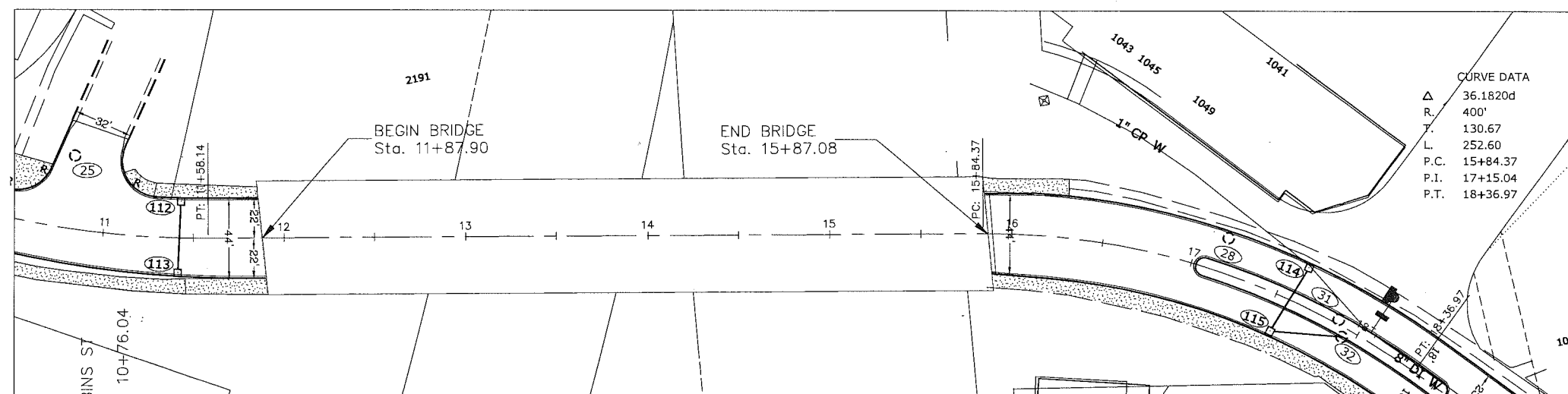
RAYMOND AVE.



RAYMOND AVENUE
Manvel to Robbins

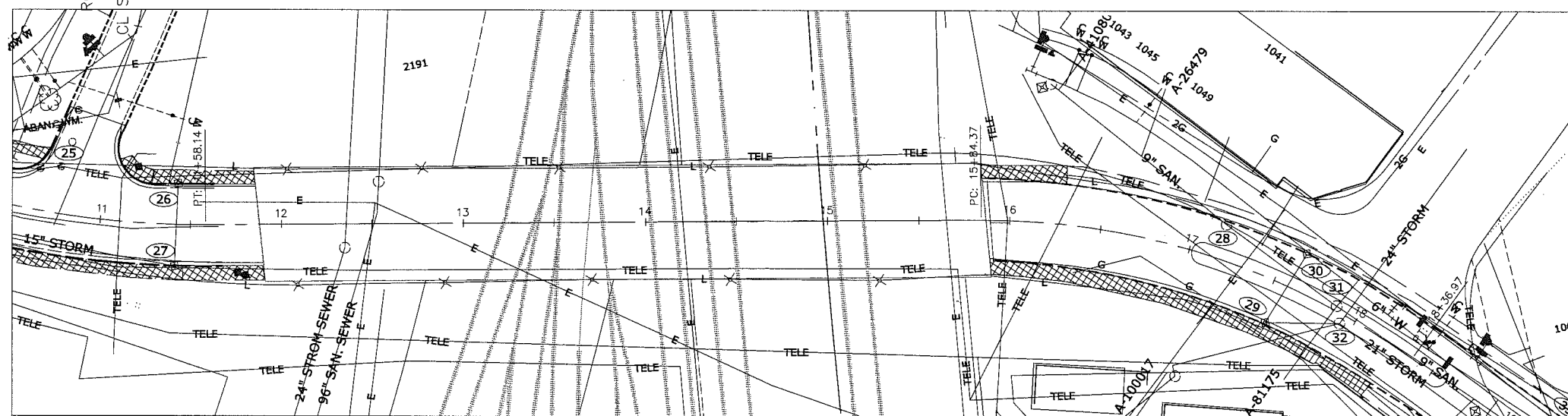
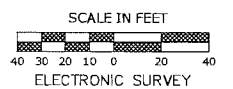


CONSTRUCTION PLAN





NOTE: REPLACE 566' OF EXISTING 6" CI WATERMAIN WITH NEW 8" DI WATERMAIN IN RAYMOND AVE. FROM TAINTER AVE TO ENERGY PARK DR. INSTALLATION BY SAINT PAUL REGIONAL WATER SERVICES. EXCAVATION BY CONTRACTOR - PAY AS BID ITEM 2504.603 "WATER MAIN TRENCH".

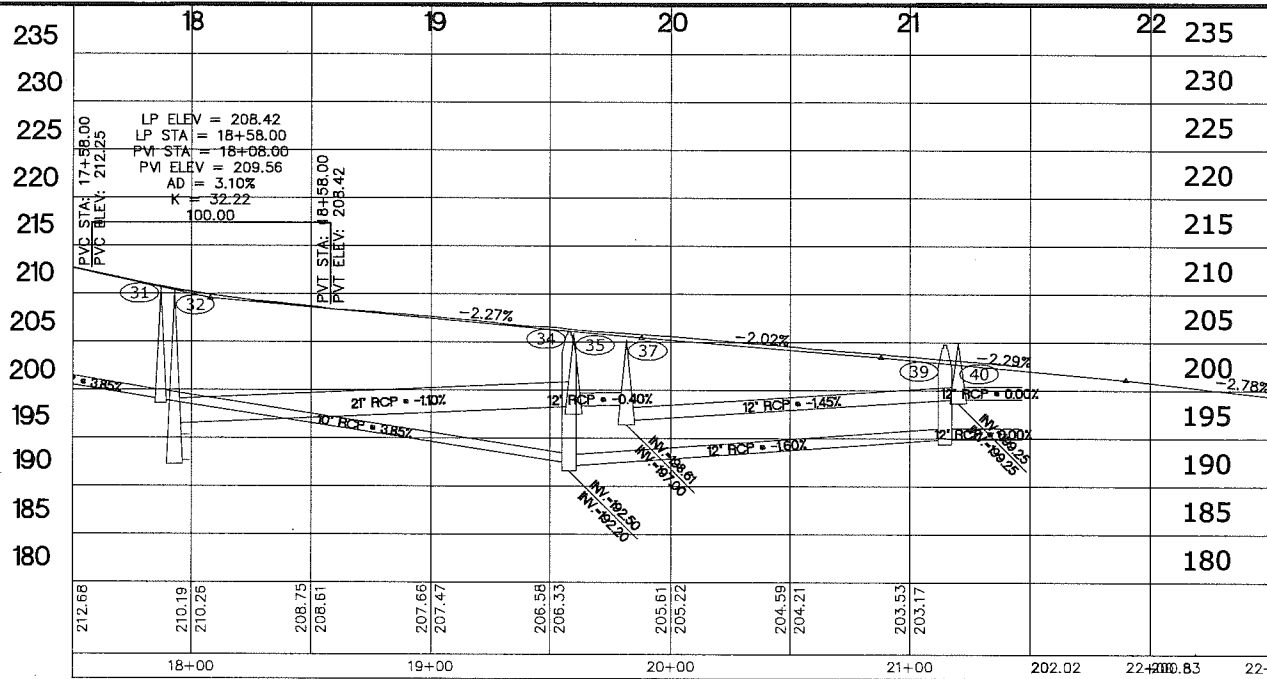
RAYMOND AVENUE



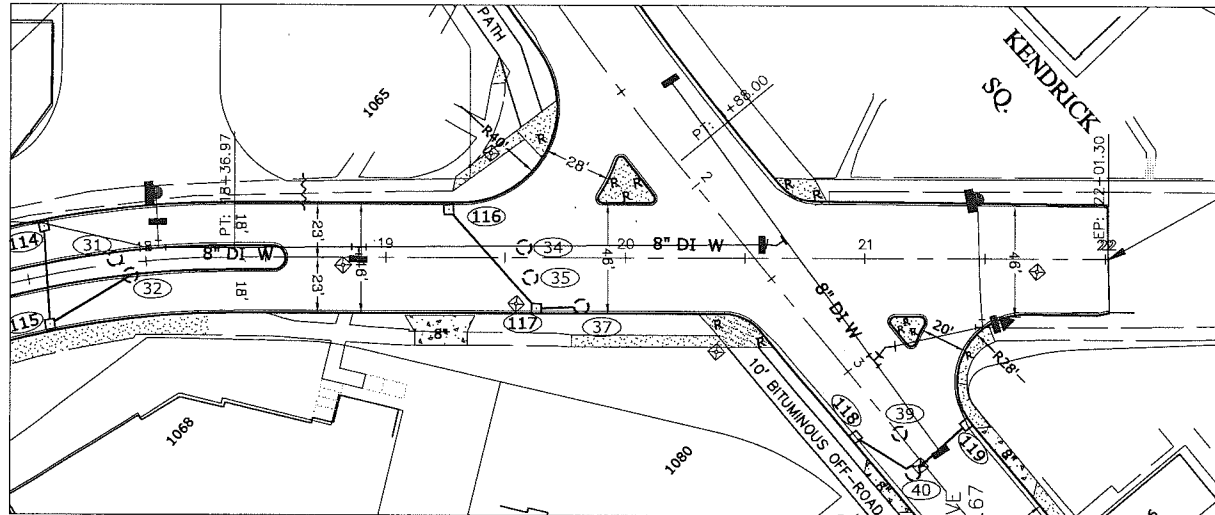
EXISTING AND REMOVAL PLAN

Raymond Pl to St.18+00

	DESIGNED	BRM	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 Signature: <u><i>Barbara R. Mundahl</i></u> Date: <u>2/3/15</u> BARBARA R. MUNDAHL Lic. No. <u>43099</u>	PREPARED BY STREET ENGINEERING DIVISION FOR THE CITY OF ST. PAUL, DEPARTMENT OF PUBLIC WORKS <h2 style="text-align: center;">RAYMOND AVENUE—PHASE II</h2>	PROJECT: 15—P--1393	STATE AID PROJECT NUMBER: 164--020--133		
	DRAWN	ATT			DRAWER: 12	CAD NAME: PROJECTS/CURRENT/Raymond/RaymondBase		
	APPROVED	BRM			DWG. NO. 1580	DATE: 2/3/15	SHEET NO. 22 OF 25 SHEETS	



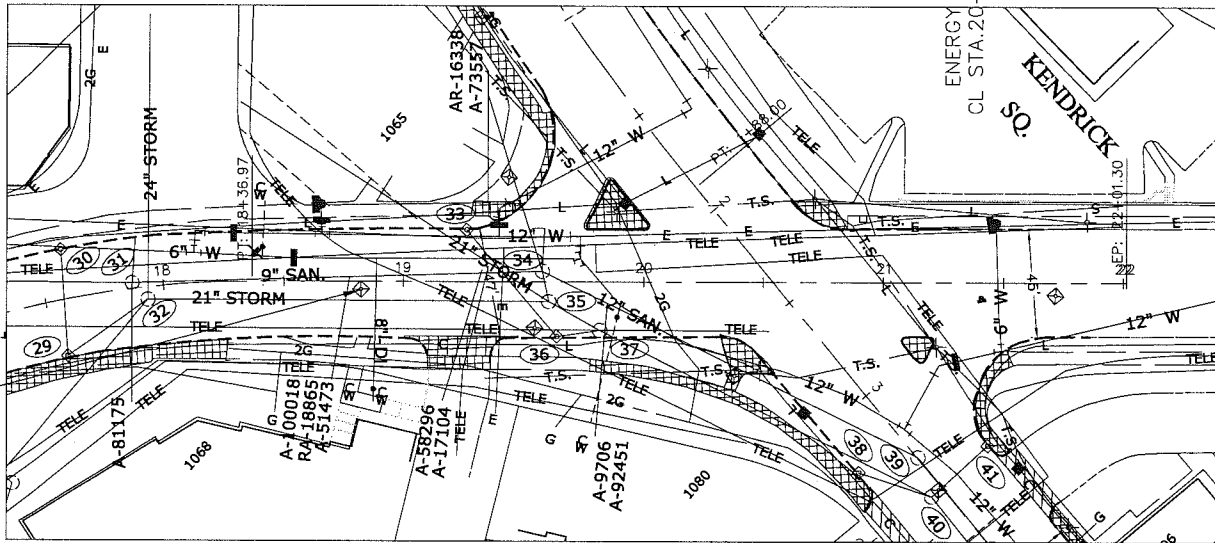
CONSTRUCTION PLAN



END S.P. 164-020-133
STA. 22+01.30

RAYMOND AVE.

NOTE: REPLACE 566' OF EXISTING 6" CI WATERMAIN WITH NEW 8" DI WATERMAIN IN RAYMOND AVE. FROM TANTER AVE TO ENERGY PARK DR. INSTALLATION BY SAINT PAUL REGIONAL WATER SERVICES. EXCAVATION BY CONTRACTOR - PAY AS BID ITEM 2504.603 'WATER MAIN TRENCH'.



POSSIBLE SURVEY MONUMENT
RESETTING PAY AS BID ITEM
2540.602"CONSTRUCT
SURVEY MONUMENT



SCALE IN FEET
40 30 20 10 0 20 40
ELECTRONIC SURVEY

RAYMOND AVE.

EXISTING AND REMOVAL PLAN

RAYMOND AVENUE
Sta.18+00 to Energy Park



DESIGNED	BRM
DRAWN	ATT
APPROVED	BRM

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

Signature: *Barbara R. Munda* Date: 2/3/15
BARBARA R. MUNDAHL Lic. No. 43099

PREPARED BY STREET ENGINEERING DIVISION FOR THE CITY OF ST. PAUL, DEPARTMENT OF PUBLIC WORKS

RAYMOND AVENUE-PHASE II

PROJECT: 15-P-1393

DRAWER: 12

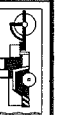
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STATE AID PROJECT NUMBER: 164-020-133

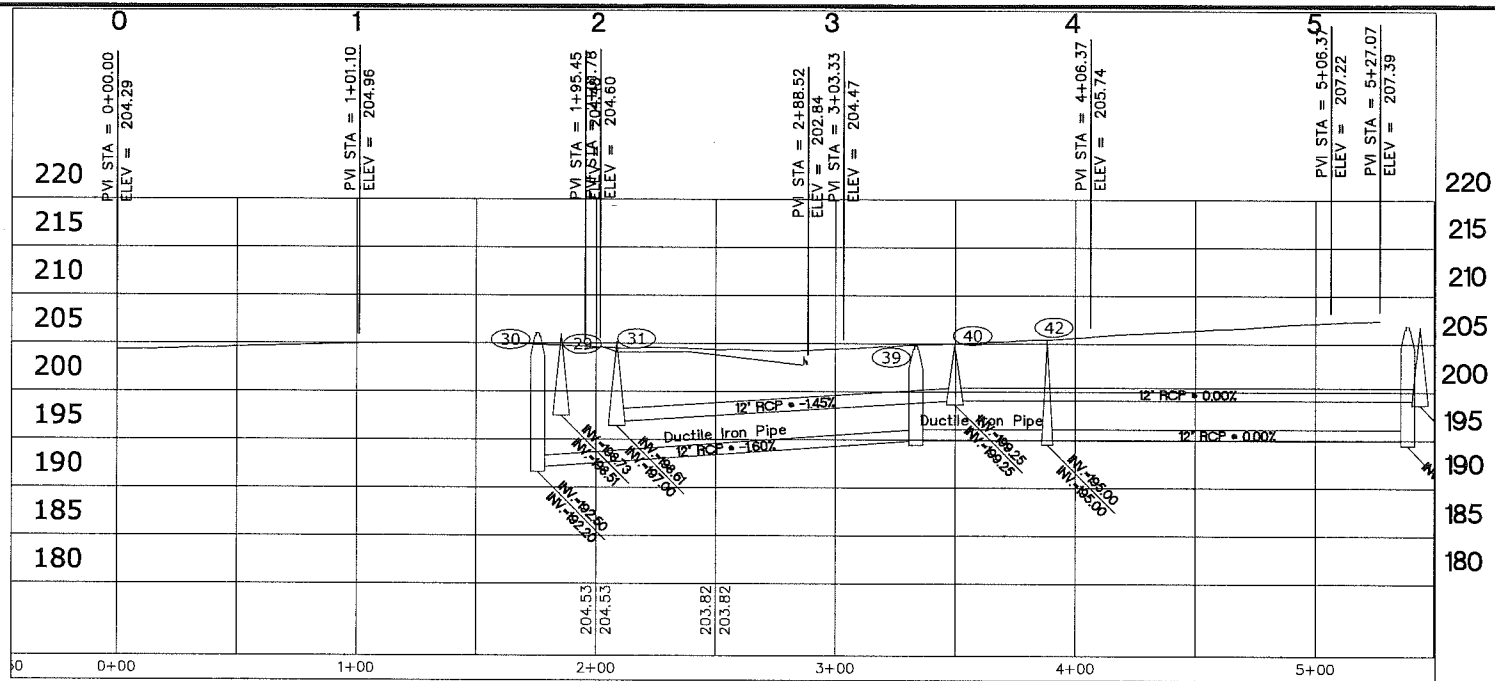
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DATE: 2/3/15

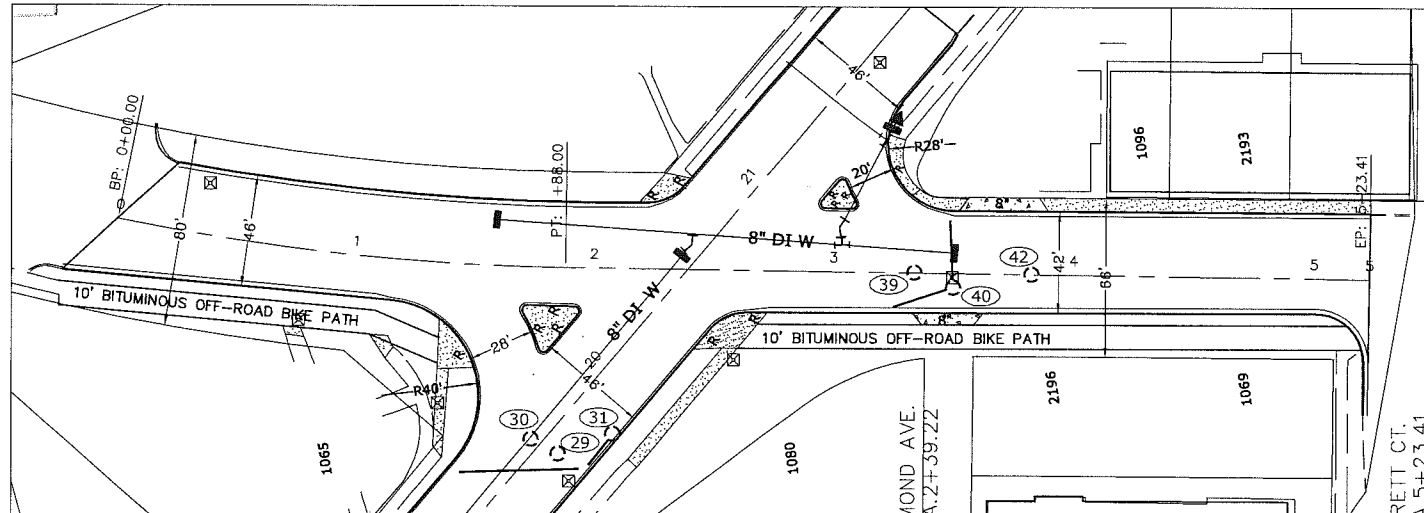
SHEET NO. 23 OF 25 SHEETS



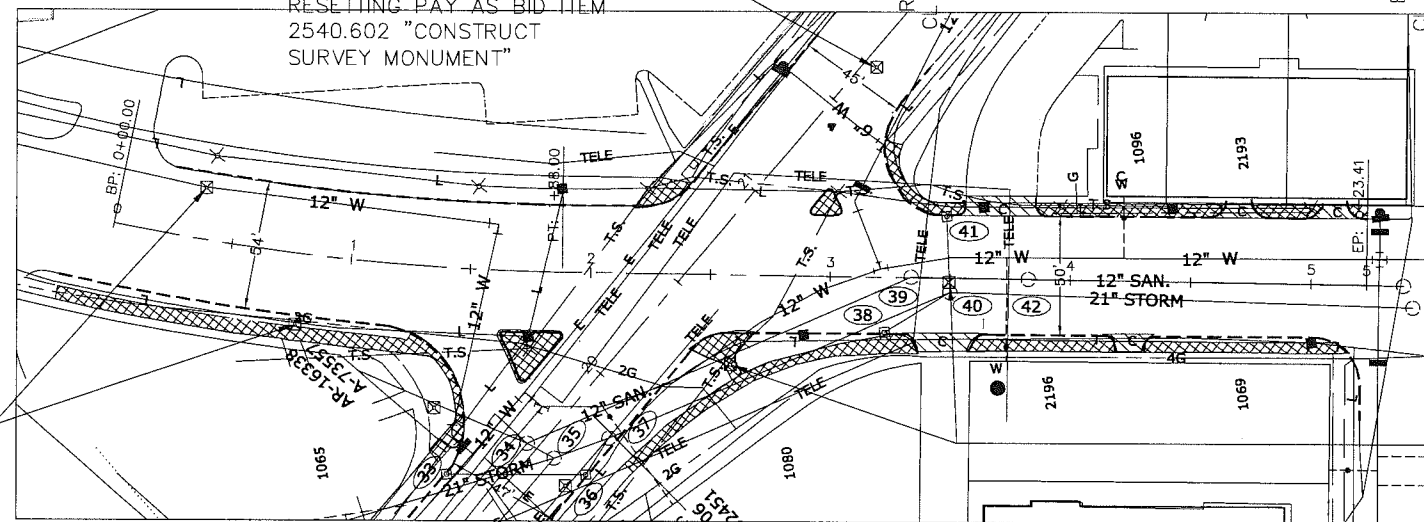
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CONSTRUCTION PLAN



POSSIBLE SURVEY MONUMENT
RESETTING PAY AS BID ITEM
2540.602 "CONSTRUCT
SURVEY MONUMENT"



EXISTING AND REMOVAL PLAN

ENERGY PARK DR.

NOTE: ISLAND RADII TO BE 2'

NOTE: REPLACE 566' OF EXISTING 6" CI
WATERMAIN WITH NEW 8" DI WATERMAIN IN
RAYMOND AVE. FROM TANTER AVE TO
ENERGY PARK DR. INSTALLATION BY
SAINT PAUL REGIONAL WATER SERVICES.
EXCAVATION BY CONTRACTOR - PAY AS
BID ITEM 2504.603 "WATER MAIN TRENCH".

ENERGY PARK DR.



SCALE IN FEET
40 30 20 10 0 20 40
ELECTRONIC SURVEY

POSSIBLE SURVEY MONUMENT
RESETTING PAY AS BID ITEM
2540.602 "CONSTRUCT
SURVEY MONUMENT"

POSSIBLE SURVEY MONUMENT
RESETTING PAY AS BID ITEM
2540.602 "CONSTRUCT
SURVEY MONUMENT"

ENERGY PARK DRIVE.
Sta.0+00 to Sta.5+23.41



DESIGNED	BRM
DRAWN	ATT
APPROVED	BRM

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

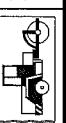
Signature: *Barbara R. Munda* Date: 2/3/15
BARBARA R. MUNDAHL Lic. No. 43099


PREPARED BY STREET ENGINEERING DIVISION FOR THE CITY OF ST. PAUL, DEPARTMENT OF PUBLIC WORKS

RAYMOND AVENUE-PHASE II

PROJECT: 15-P-1393
DRAWER: 12
DWG. NO. 1580

STATE AID
PROJECT NUMBER: 164-020-133
CAD NAME: PROJECTS/CURRENT/Raymond/RaymondBase
DATE: 2/3/15 SHEET NO. 24 OF 25 SHEETS



PROJECT:	15-P-1393	STATE AD PROJECT NUMBER:	164-020-133
DRAWER:	12	CAD NAME:	PROJECTS/CURRENT/Raymond/RaymondBase
DWG. NO.	1580	DATE:	1/22/15
		SHEET NO.	25 OF 25 SHEETS
			

PLANTING SCHEDULE

