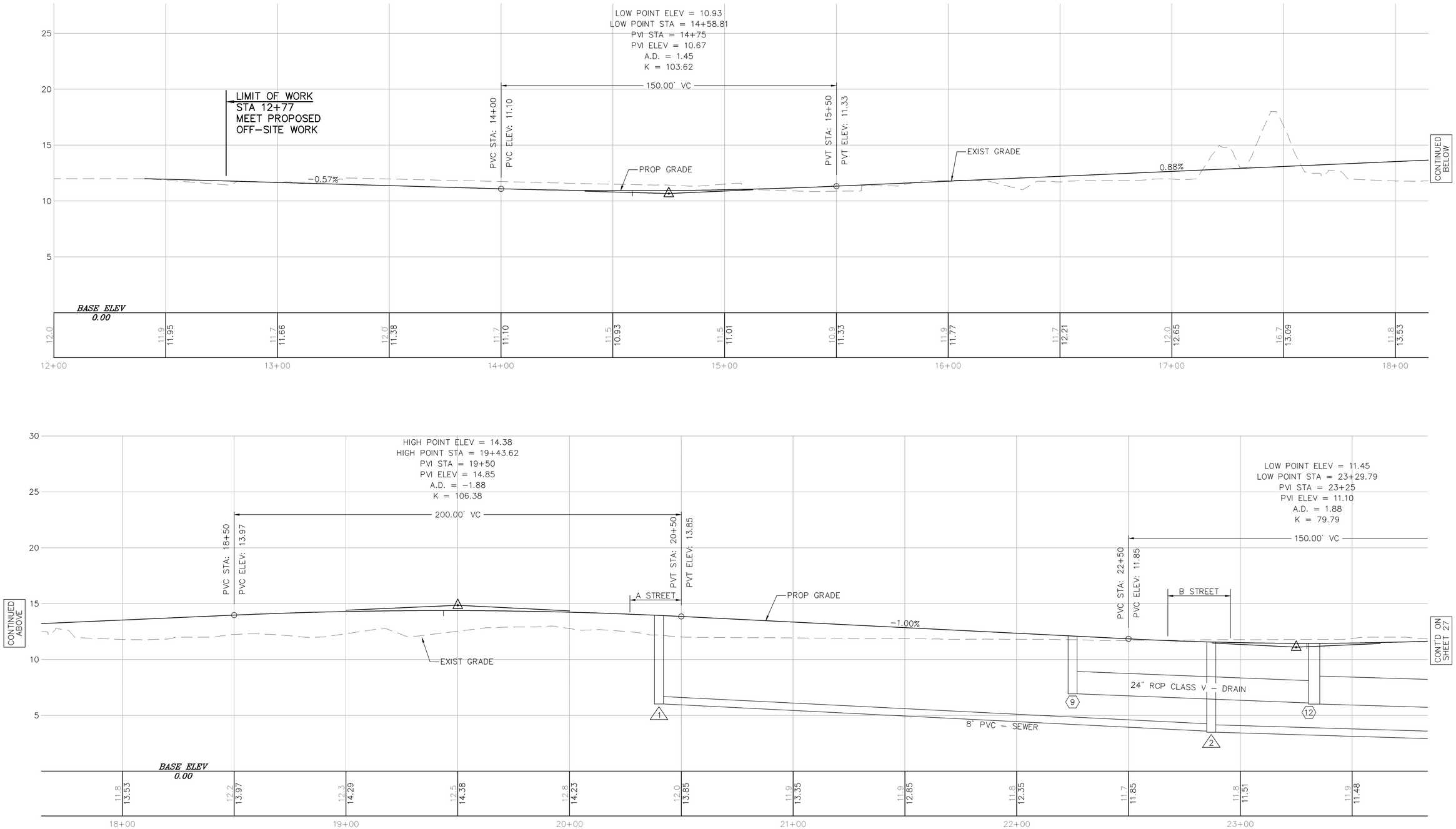
SOMERVILLE
ASSEMBLY SQUARE DRIVE
PROFILE
SHEET 26 OF 72



ASSEMBLY SQUARE DRIVE PROFILE

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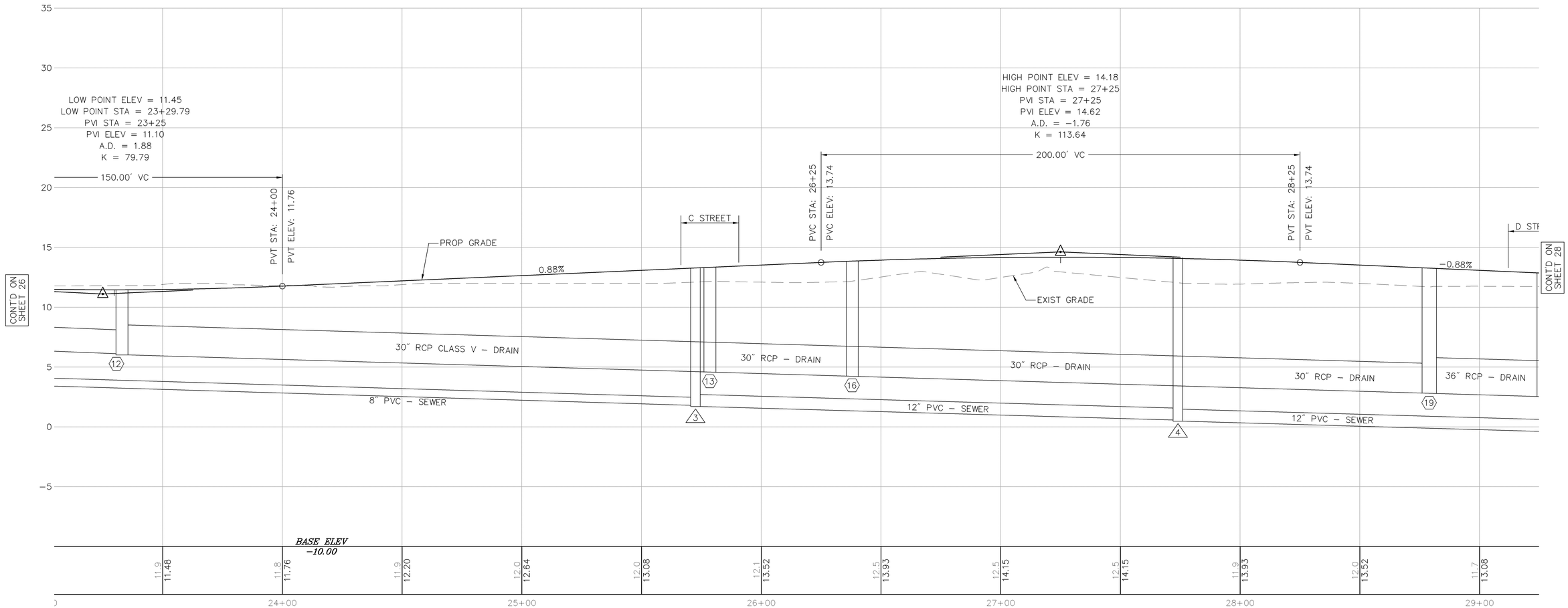
SOMERVILLE
ASSEMBLY SQUARE DRIVE
PROFILE
SHEET 27 OF 72



ASSEMBLY SQUARE DRIVE PROFILE

HORIZONTAL
20 0 20 40
4 0 4 8
VERTICAL
SCALE IN FEET

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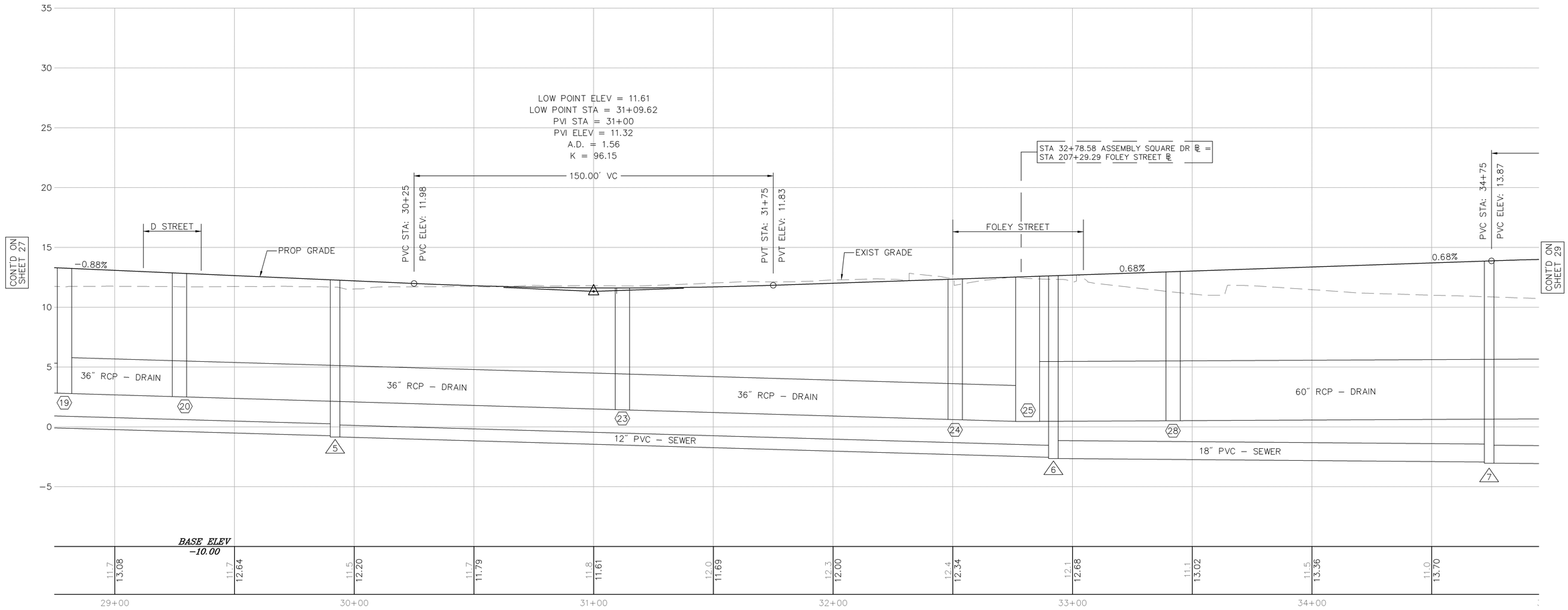
SOMERVILLE
ASSEMBLY SQUARE DRIVE
PROFILE
SHEET 28 OF 72



ASSEMBLY SQUARE DRIVE PROFILE

HORIZONTAL
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4 0 4 8
VERTICAL
SCALE IN FEET

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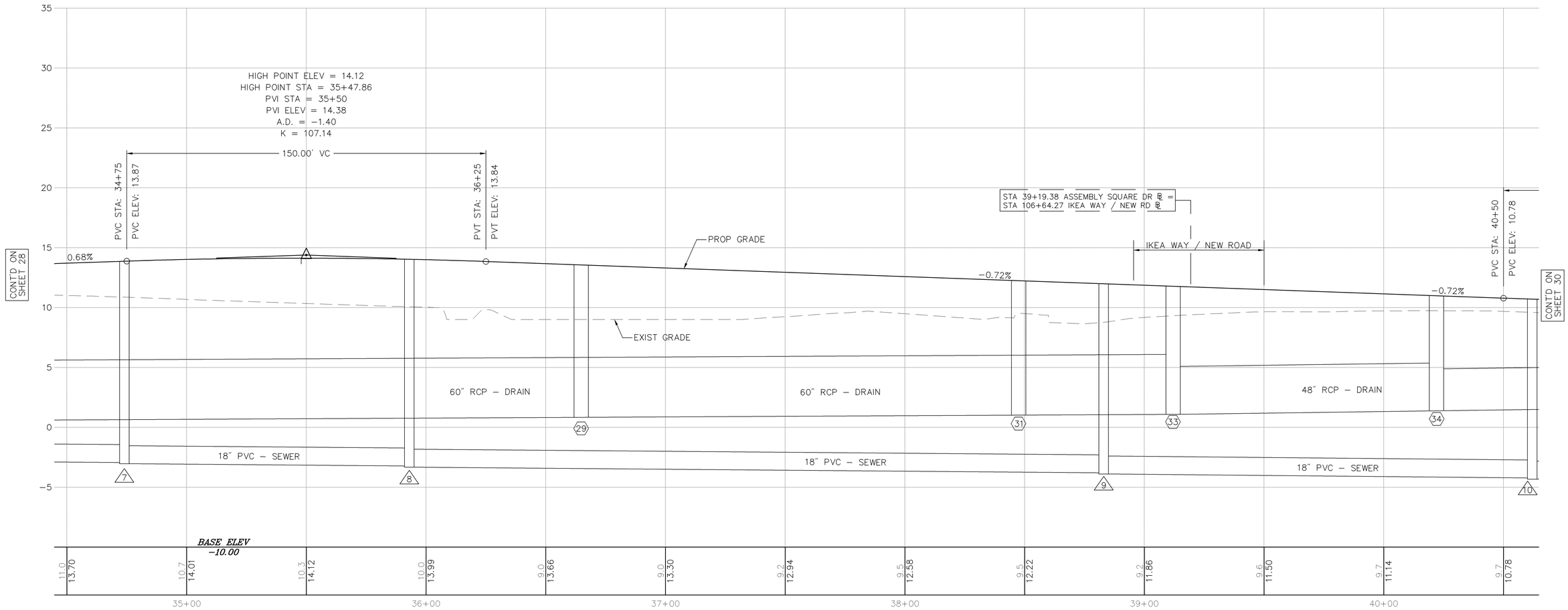
SOMERVILLE
ASSEMBLY SQUARE DRIVE
PROFILE
SHEET 29 OF 72



ASSEMBLY SQUARE DRIVE PROFILE

HORIZONTAL
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4 0 4 8
VERTICAL
SCALE IN FEET

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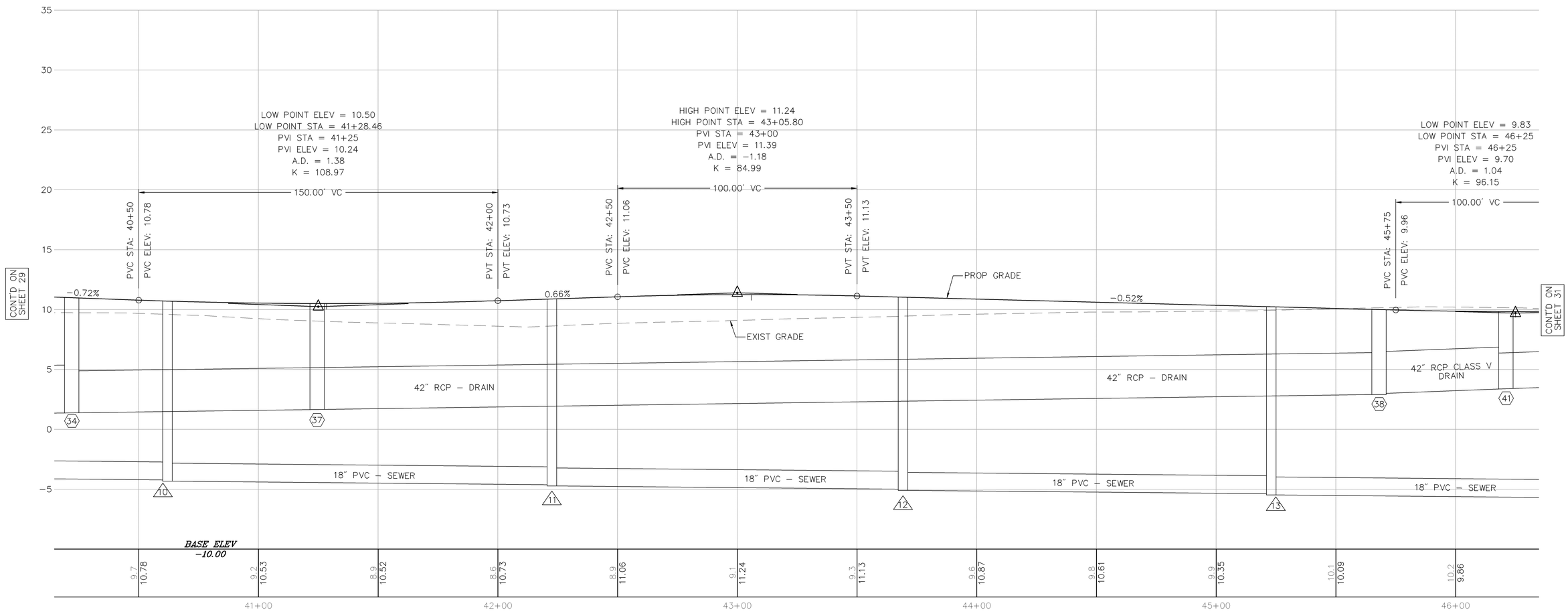
SOMERVILLE
ASSEMBLY SQUARE DRIVE
PROFILE
SHEET 30 OF 72



ASSEMBLY SQUARE DRIVE PROFILE

HORIZONTAL
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4 0 4 8
VERTICAL
SCALE IN FEET

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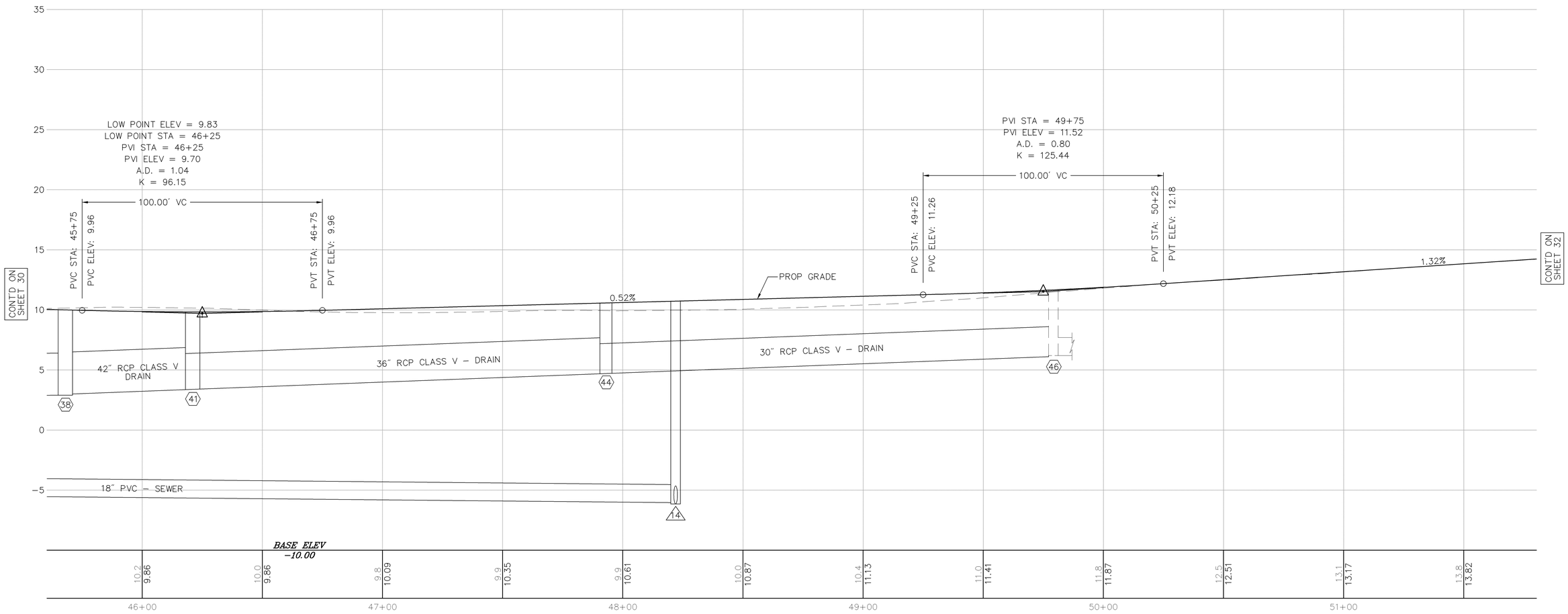
SOMERVILLE
ASSEMBLY SQUARE DRIVE
PROFILE
SHEET 31 OF 72



ASSEMBLY SQUARE DRIVE PROFILE

HORIZONTAL
20 0 20 40
4 0 4 8
VERTICAL
SCALE IN FEET

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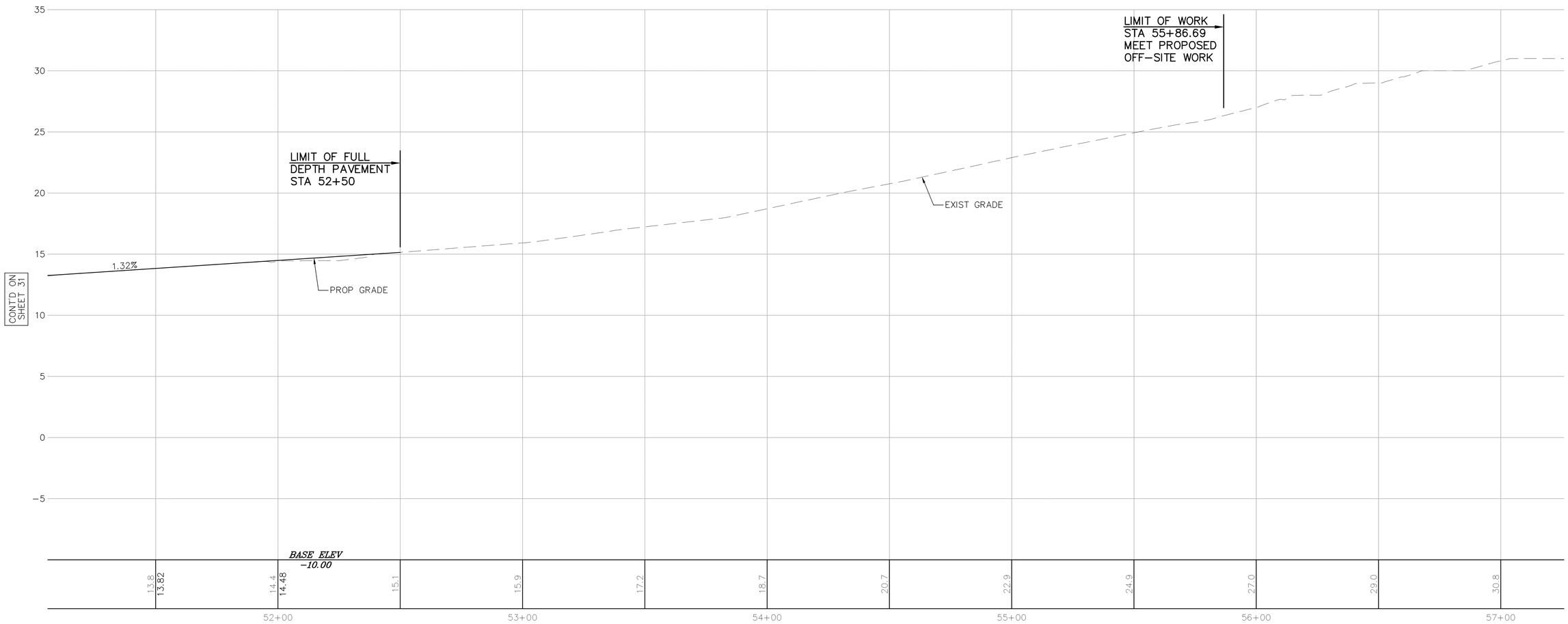
SOMERVILLE
ASSEMBLY SQUARE DRIVE
PROFILE
SHEET 32 OF 72



ASSEMBLY SQUARE DRIVE PROFILE

HORIZONTAL
20 0 20 40
4 0 4 8
VERTICAL
SCALE IN FEET

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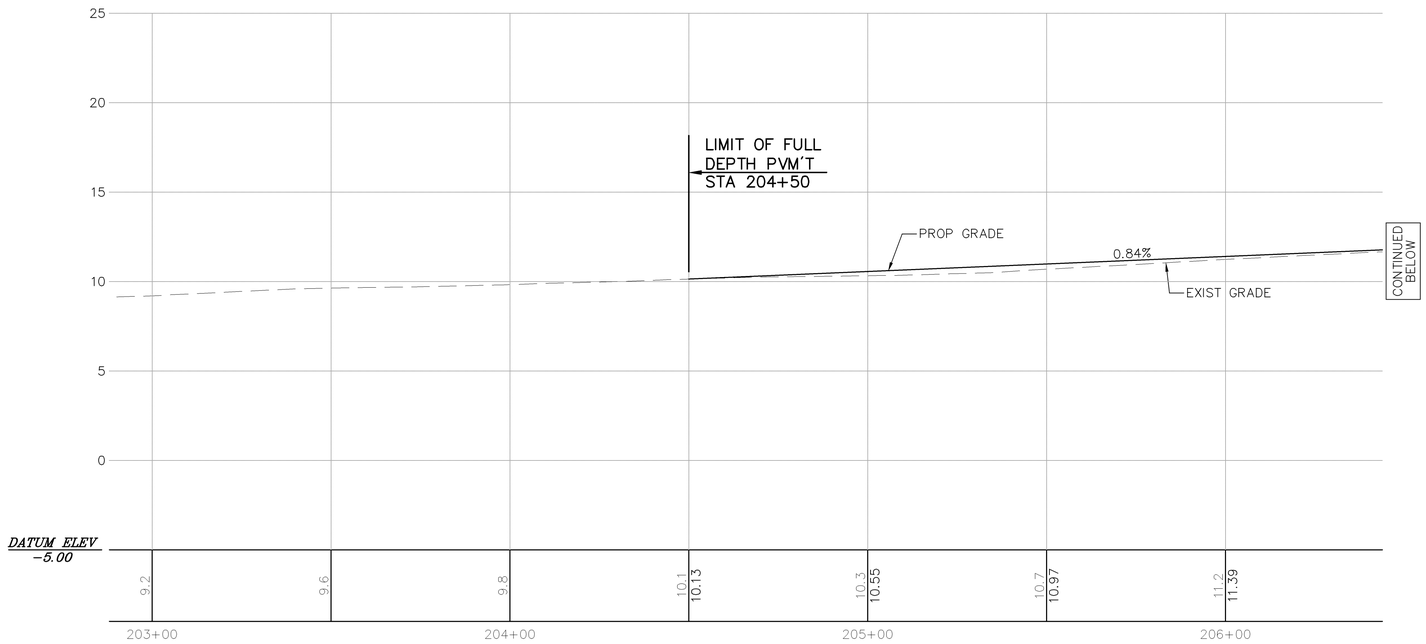
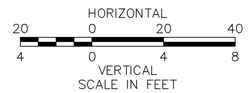
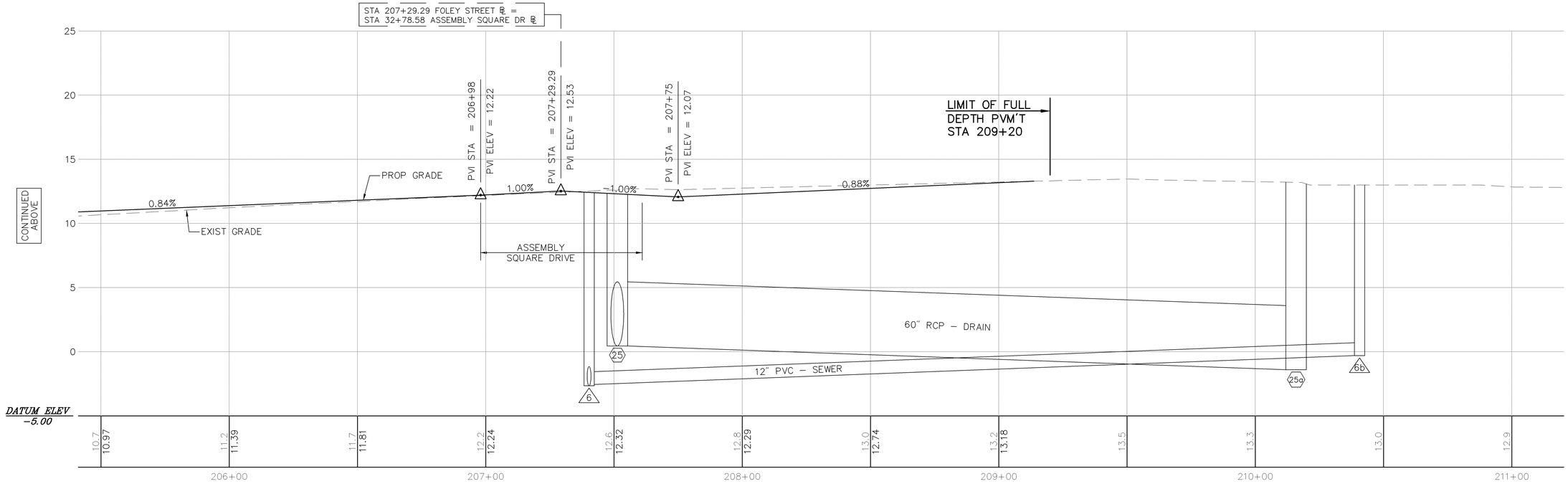
SOMERVILLE
ASSEMBLY SQUARE DRIVE
PROFILE
SHEET 33 OF 72







FOLEY STREET PROFILE

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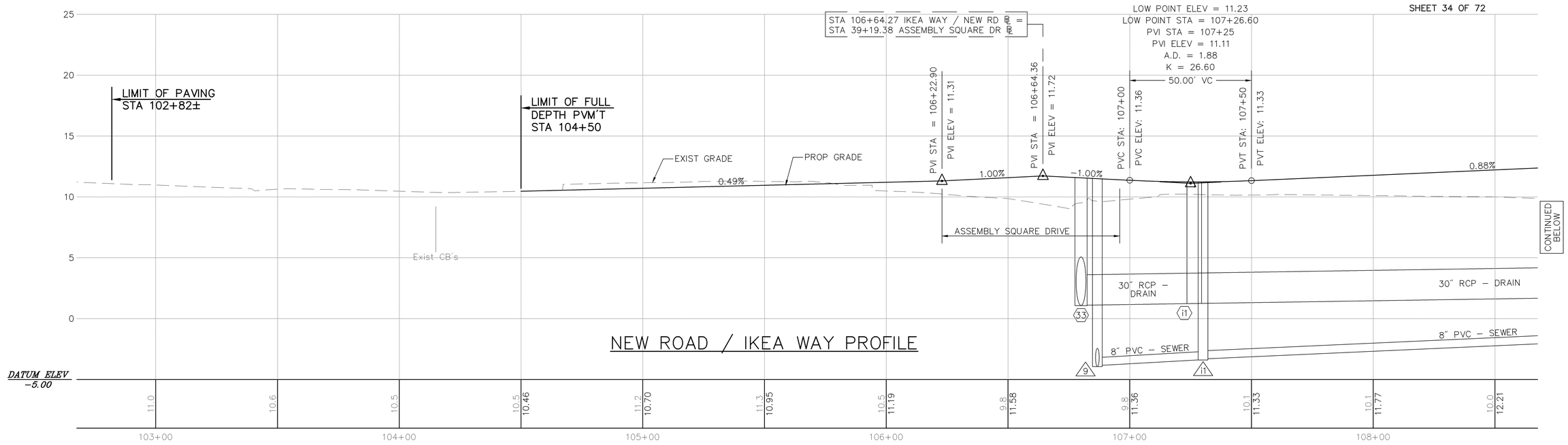
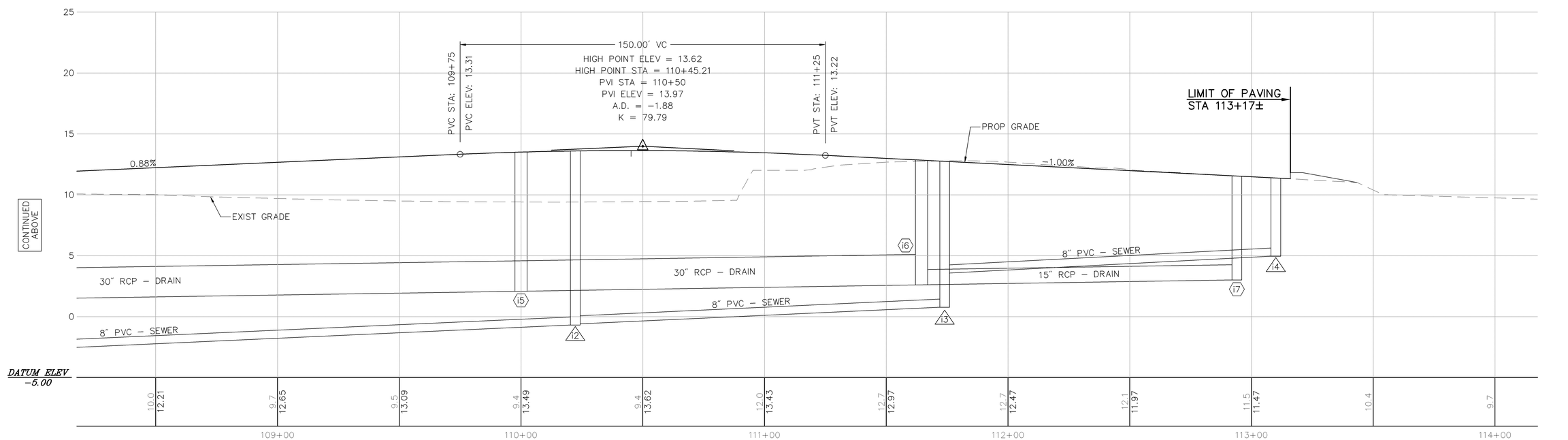
SOMERVILLE
ASSEMBLY SQUARE DRIVE
PROFILE

SHEET 34 OF 72





IKEA WAY PROFILE

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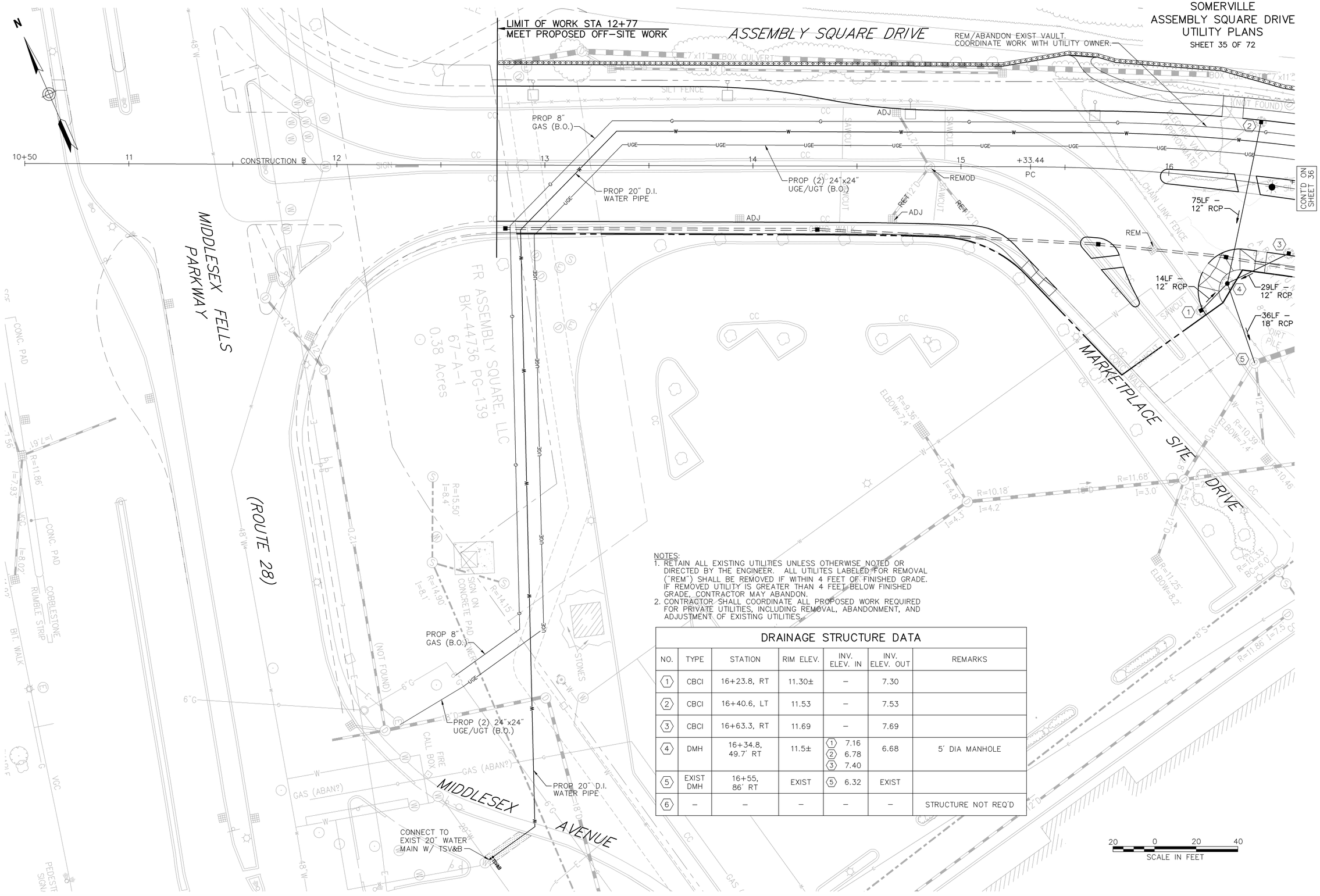
SOMERVILLE
ASSEMBLY SQUARE DRIVE
UTILITY PLANS
SHEET 35 OF 72



NOTES:
1. RETAIN ALL EXISTING UTILITIES UNLESS OTHERWISE NOTED OR DIRECTED BY THE ENGINEER. ALL UTILITES LABELED FOR REMOVAL ("REM") SHALL BE REMOVED IF WITHIN 4 FEET OF FINISHED GRADE. IF REMOVED UTILITY IS GREATER THAN 4 FEET BELOW FINISHED GRADE, CONTRACTOR MAY ABANDON.
2. CONTRACTOR SHALL COORDINATE ALL PROPOSED WORK REQUIRED FOR PRIVATE UTILITIES, INCLUDING REMOVAL, ABANDONMENT, AND ADJUSTMENT OF EXISTING UTILITIES.

DRAINAGE STRUCTURE DATA

NO.	TYPE	STATION	RIM ELEV.	INV. ELEV. IN	INV. ELEV. OUT	REMARKS
1	CBCI	16+23.8, RT	11.30±	–	7.30	
2	CBCI	16+40.6, LT	11.53	–	7.53	
3	CBCI	16+63.3, RT	11.69	–	7.69	
4	DMH	16+34.8, 49.7' RT	11.5±	1 7.16 2 6.78 3 7.40	6.68	5' DIA MANHOLE
5	EXIST DMH	16+55, 86' RT	EXIST	5 6.32	EXIST	
6	–	–	–	–	–	STRUCTURE NOT REQ'D

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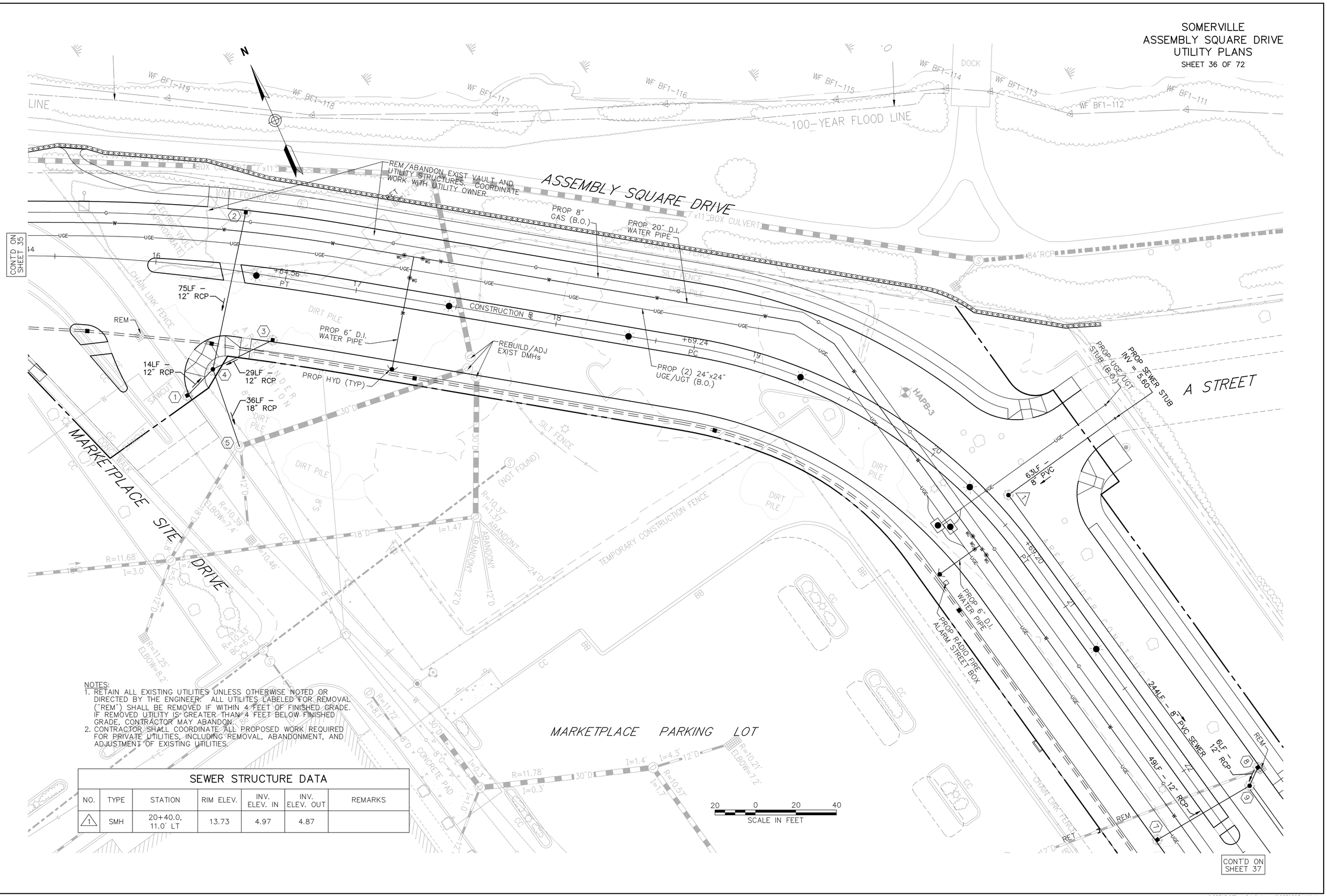
SOMERVILLE
ASSEMBLY SQUARE DRIVE
UTILITY PLANS
SHEET 36 OF 72



NOTES:
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2. CONTRACTOR SHALL COORDINATE ALL PROPOSED WORK REQUIRED FOR PRIVATE UTILITIES, INCLUDING REMOVAL, ABANDONMENT, AND ADJUSTMENT OF EXISTING UTILITIES.

SEWER STRUCTURE DATA

NO.	TYPE	STATION	RIM ELEV.	INV. ELEV. IN	INV. ELEV. OUT	REMARKS
1	SMH	20+40.0, 11.0' LT	13.73	4.97	4.87	

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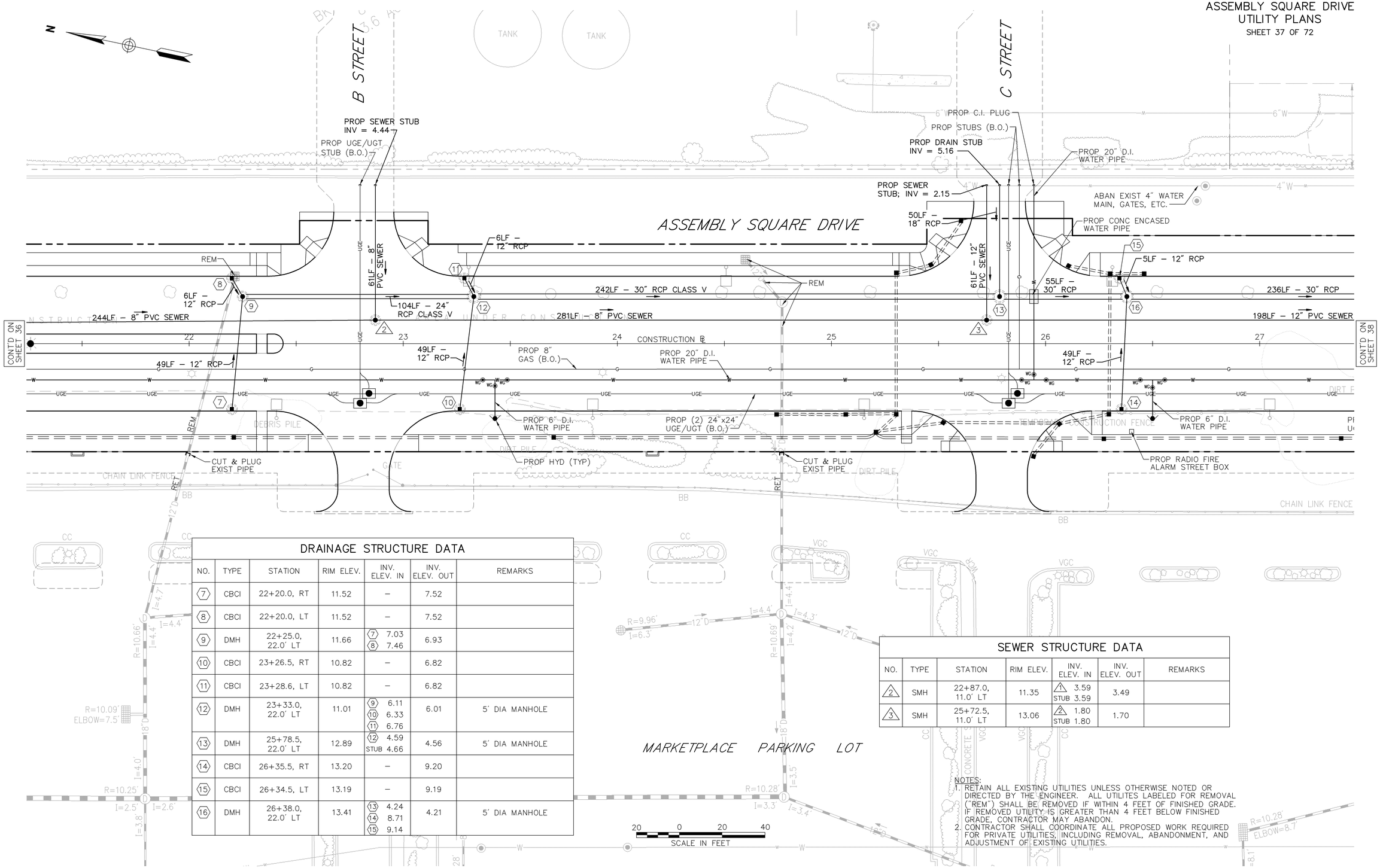
SOMERVILLE
ASSEMBLY SQUARE DRIVE
UTILITY PLANS
SHEET 37 OF 72



DRAINAGE STRUCTURE DATA

NO.	TYPE	STATION	RIM ELEV.	INV. ELEV. IN	INV. ELEV. OUT	REMARKS
7	CBCI	22+20.0, RT	11.52	–	7.52	
8	CBCI	22+20.0, LT	11.52	–	7.52	
9	DMH	22+25.0, 22.0' LT	11.66	7 7.03 8 7.46	6.93	
10	CBCI	23+26.5, RT	10.82	–	6.82	
11	CBCI	23+28.6, LT	10.82	–	6.82	
12	DMH	23+33.0, 22.0' LT	11.01	9 6.11 10 6.33 11 6.76	6.01	5' DIA MANHOLE
13	DMH	25+78.5, 22.0' LT	12.89	12 4.59 STUB 4.66	4.56	5' DIA MANHOLE
14	CBCI	26+35.5, RT	13.20	–	9.20	
15	CBCI	26+34.5, LT	13.19	–	9.19	
16	DMH	26+38.0, 22.0' LT	13.41	13 4.24 14 8.71 15 9.14	4.21	5' DIA MANHOLE

SEWER STRUCTURE DATA

NO.	TYPE	STATION	RIM ELEV.	INV. ELEV. IN	INV. ELEV. OUT	REMARKS
2	SMH	22+87.0, 11.0' LT	11.35	1 3.59 STUB 3.59	3.49	
3	SMH	25+72.5, 11.0' LT	13.06	2 1.80 STUB 1.80	1.70	

NOTES:
1. RETAIN ALL EXISTING UTILITIES UNLESS OTHERWISE NOTED OR DIRECTED BY THE ENGINEER. ALL UTILITES LABELED FOR REMOVAL ("REM") SHALL BE REMOVED IF WITHIN 4 FEET OF FINISHED GRADE. IF REMOVED UTILITY IS GREATER THAN 4 FEET BELOW FINISHED GRADE, CONTRACTOR MAY ABANDON.
2. CONTRACTOR SHALL COORDINATE ALL PROPOSED WORK REQUIRED FOR PRIVATE UTILITIES, INCLUDING REMOVAL, ABANDONMENT, AND ADJUSTMENT OF EXISTING UTILITIES.

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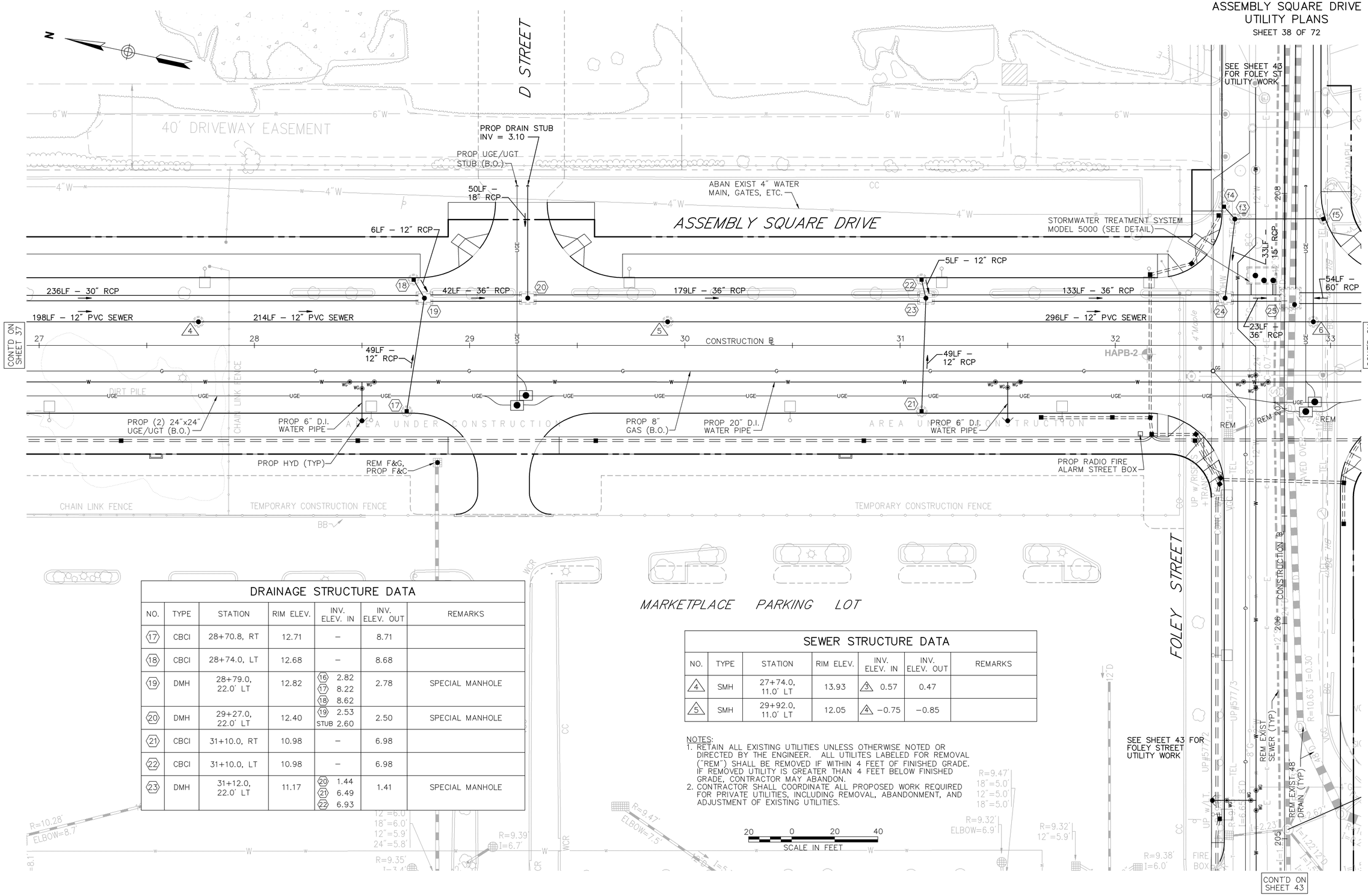
SOMERVILLE
ASSEMBLY SQUARE DRIVE
UTILITY PLANS
SHEET 38 OF 72



DRAINAGE STRUCTURE DATA

NO.	TYPE	STATION	RIM ELEV.	INV. ELEV. IN	INV. ELEV. OUT	REMARKS
17	CBCI	28+70.8, RT	12.71	–	8.71	
18	CBCI	28+74.0, LT	12.68	–	8.68	
19	DMH	28+79.0, 22.0' LT	12.82	16 2.82 17 8.22 18 8.62	2.78	SPECIAL MANHOLE
20	DMH	29+27.0, 22.0' LT	12.40	19 2.53 STUB 2.60	2.50	SPECIAL MANHOLE
21	CBCI	31+10.0, RT	10.98	–	6.98	
22	CBCI	31+10.0, LT	10.98	–	6.98	
23	DMH	31+12.0, 22.0' LT	11.17	20 1.44 21 6.49 22 6.93	1.41	SPECIAL MANHOLE

SEWER STRUCTURE DATA

NO.	TYPE	STATION	RIM ELEV.	INV. ELEV. IN	INV. ELEV. OUT	REMARKS
4	SMH	27+74.0, 11.0' LT	13.93	3 0.57	0.47	
5	SMH	29+92.0, 11.0' LT	12.05	4 –0.75	–0.85	

NOTES:
1. RETAIN ALL EXISTING UTILITIES UNLESS OTHERWISE NOTED OR DIRECTED BY THE ENGINEER. ALL UTILITES LABELED FOR REMOVAL ("REM") SHALL BE REMOVED IF WITHIN 4 FEET OF FINISHED GRADE. IF REMOVED UTILITY IS GREATER THAN 4 FEET BELOW FINISHED GRADE, CONTRACTOR MAY ABANDON.
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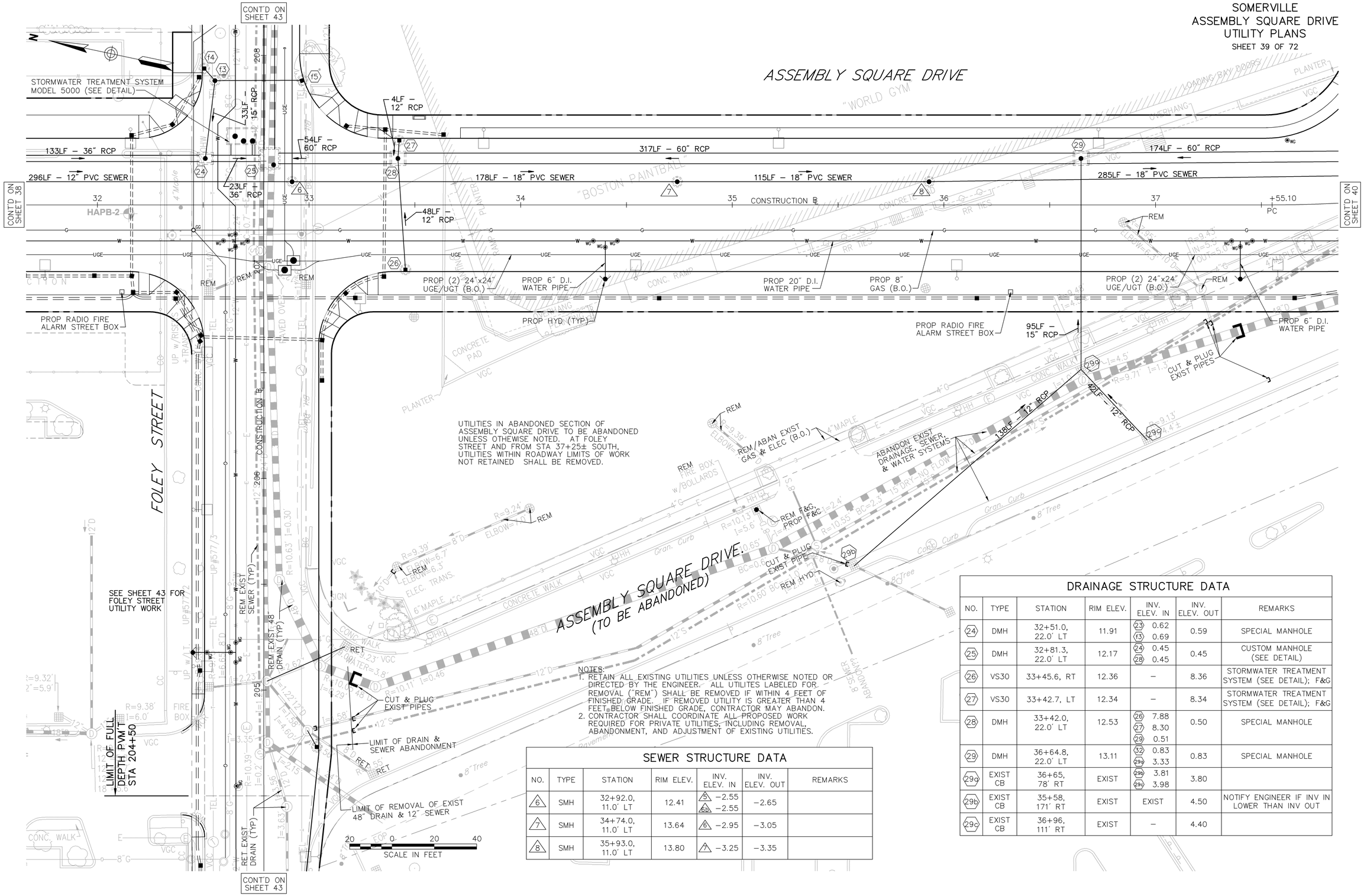
SOMERVILLE
ASSEMBLY SQUARE DRIVE
UTILITY PLANS
SHEET 39 OF 72



NOTES:
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SEWER STRUCTURE DATA

NO.	TYPE	STATION	RIM ELEV.	INV. ELEV. IN	INV. ELEV. OUT	REMARKS
6	SMH	32+92.0, 11.0' LT	12.41	5 −2.55 6b −2.55	−2.65	
7	SMH	34+74.0, 11.0' LT	13.64	6 −2.95	−3.05	
8	SMH	35+93.0, 11.0' LT	13.80	7 −3.25	−3.35	

DRAINAGE STRUCTURE DATA

NO.	TYPE	STATION	RIM ELEV.	INV. ELEV. IN	INV. ELEV. OUT	REMARKS
24	DMH	32+51.0, 22.0' LT	11.91	23 0.62 13 0.69	0.59	SPECIAL MANHOLE
25	DMH	32+81.3, 22.0' LT	12.17	24 0.45 28 0.45	0.45	CUSTOM MANHOLE (SEE DETAIL)
26	VS30	33+45.6, RT	12.36	–	8.36	STORMWATER TREATMENT SYSTEM (SEE DETAIL); F&G
27	VS30	33+42.7, LT	12.34	–	8.34	STORMWATER TREATMENT SYSTEM (SEE DETAIL); F&G
28	DMH	33+42.0, 22.0' LT	12.53	26 7.88 27 8.30 29 0.51	0.50	SPECIAL MANHOLE
29	DMH	36+64.8, 22.0' LT	13.11	32 0.83 29a 3.33	0.83	SPECIAL MANHOLE
29a	EXIST CB	36+65, 78' RT	EXIST	29b 3.81 29c 3.98	3.80	
29b	EXIST CB	35+58, 171' RT	EXIST	EXIST	4.50	NOTIFY ENGINEER IF INV IN LOWER THAN INV OUT
29c	EXIST CB	36+96, 111' RT	EXIST	–	4.40	

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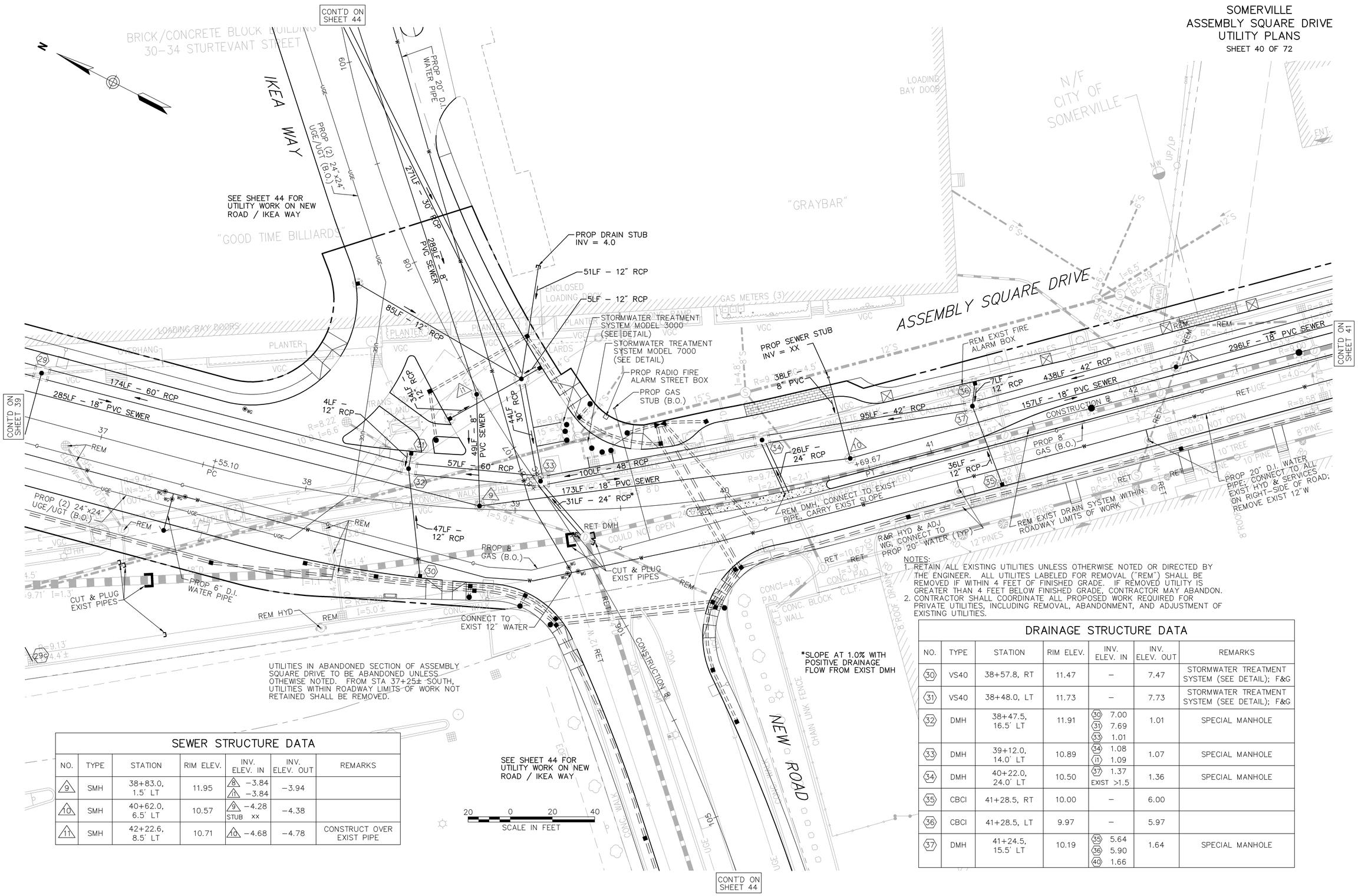

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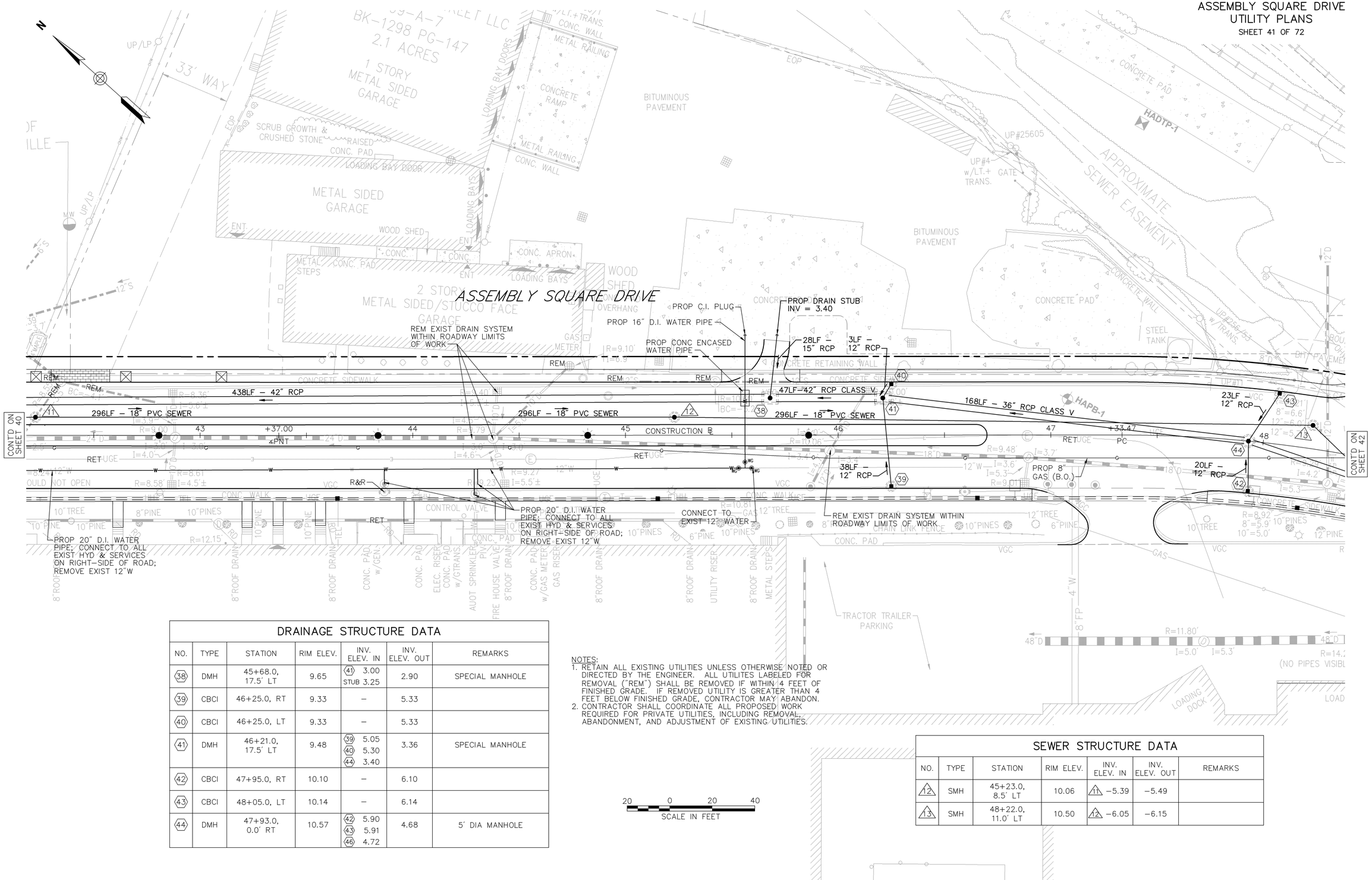
SEWER STRUCTURE DATA

NO.	TYPE	STATION	RIM ELEV.	INV. ELEV. IN	INV. ELEV. OUT	REMARKS
9	SMH	38+83.0, 1.5' LT	11.95	8 −3.84 11 −3.84	−3.94	
10	SMH	40+62.0, 6.5' LT	10.57	9 −4.28 STUB xx	−4.38	
11	SMH	42+22.6, 8.5' LT	10.71	10 −4.68	−4.78	CONSTRUCT OVER EXIST PIPE

DRAINAGE STRUCTURE DATA

NO.	TYPE	STATION	RIM ELEV.	INV. ELEV. IN	INV. ELEV. OUT	REMARKS
30	VS40	38+57.8, RT	11.47	–	7.47	STORMWATER TREATMENT SYSTEM (SEE DETAIL); F&G
31	VS40	38+48.0, LT	11.73	–	7.73	STORMWATER TREATMENT SYSTEM (SEE DETAIL); F&G
32	DMH	38+47.5, 16.5' LT	11.91	30 7.00 31 7.69 33 1.01	1.01	SPECIAL MANHOLE
33	DMH	39+12.0, 14.0' LT	10.89	34 1.08 11 1.09	1.07	SPECIAL MANHOLE
34	DMH	40+22.0, 24.0' LT	10.50	37 1.37 EXIST >1.5	1.36	SPECIAL MANHOLE
35	CBCI	41+28.5, RT	10.00	–	6.00	
36	CBCI	41+28.5, LT	9.97	–	5.97	
37	DMH	41+24.5, 15.5' LT	10.19	35 5.64 36 5.90 40 1.66	1.64	SPECIAL MANHOLE

SOMERVILLE
ASSEMBLY SQUARE DRIVE
UTILITY PLANS
SHEET 41 OF 72



DRAINAGE STRUCTURE DATA

NO.	TYPE	STATION	RIM ELEV.	INV. ELEV. IN	INV. ELEV. OUT	REMARKS
38	DMH	45+68.0, 17.5' LT	9.65	41 3.00 STUB 3.25	2.90	SPECIAL MANHOLE
39	CBCI	46+25.0, RT	9.33	–	5.33	
40	CBCI	46+25.0, LT	9.33	–	5.33	
41	DMH	46+21.0, 17.5' LT	9.48	39 5.05 40 5.30 44 3.40	3.36	SPECIAL MANHOLE
42	CBCI	47+95.0, RT	10.10	–	6.10	
43	CBCI	48+05.0, LT	10.14	–	6.14	
44	DMH	47+93.0, 0.0' RT	10.57	42 5.90 43 5.91 46 4.72	4.68	5' DIA MANHOLE

NOTES:
1. RETAIN ALL EXISTING UTILITIES UNLESS OTHERWISE NOTED OR DIRECTED BY THE ENGINEER. ALL UTILITES LABELED FOR REMOVAL ("REM") SHALL BE REMOVED IF WITHIN 4 FEET OF FINISHED GRADE. IF REMOVED UTILITY IS GREATER THAN 4 FEET BELOW FINISHED GRADE, CONTRACTOR MAY ABANDON.
2. CONTRACTOR SHALL COORDINATE ALL PROPOSED WORK REQUIRED FOR PRIVATE UTILITIES, INCLUDING REMOVAL, ABANDONMENT, AND ADJUSTMENT OF EXISTING UTILITIES.

20 0 20 40
SCALE IN FEET

SEWER STRUCTURE DATA

NO.	TYPE	STATION	RIM ELEV.	INV. ELEV. IN	INV. ELEV. OUT	REMARKS
12	SMH	45+23.0, 8.5' LT	10.06	11 –5.39	–5.49	
13	SMH	48+22.0, 11.0' LT	10.50	12 –6.05	–6.15	

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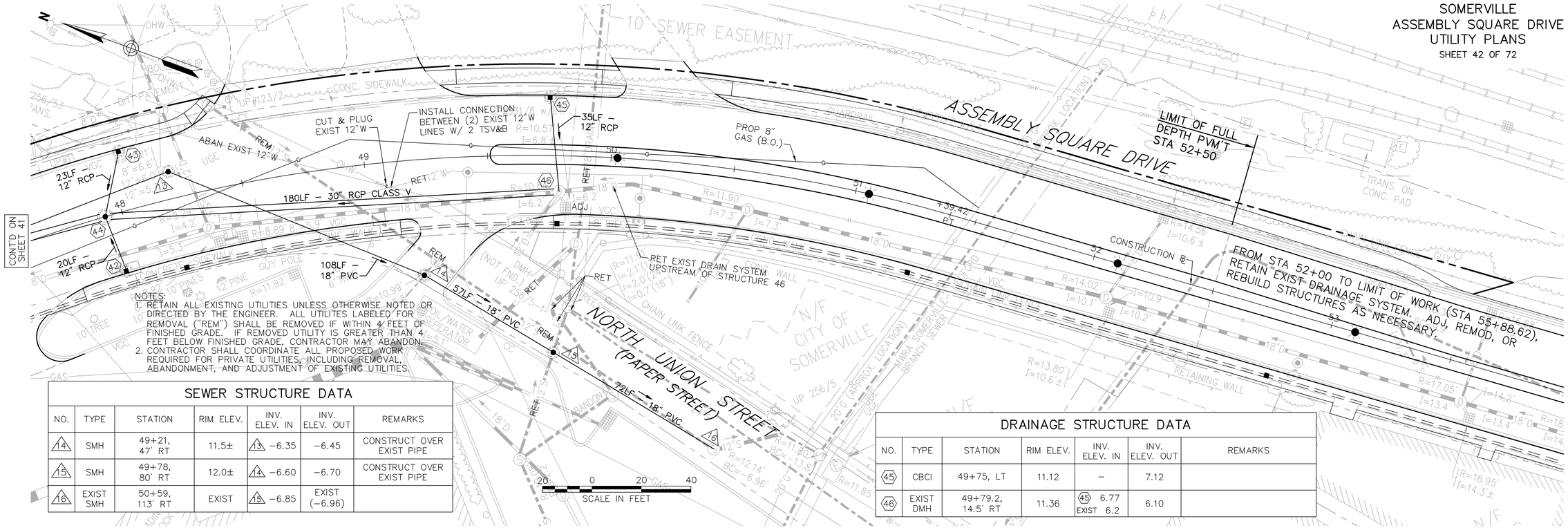
SOMERVILLE
ASSEMBLY SQUARE DRIVE
UTILITY PLANS
SHEET 42 OF 72



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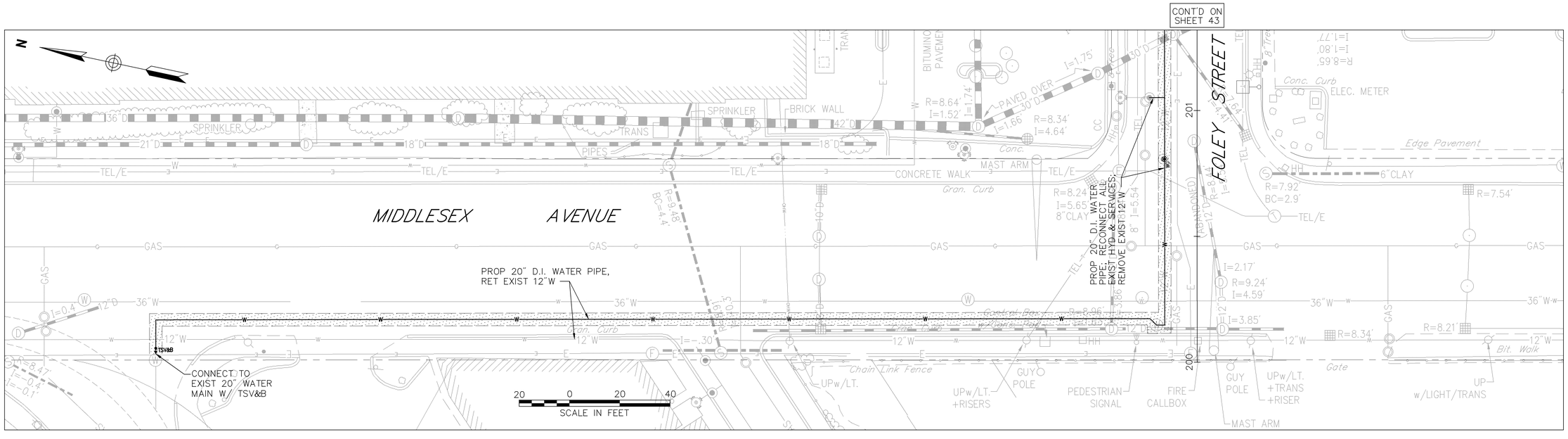
SEWER STRUCTURE DATA

NO.	TYPE	STATION	RIM ELEV.	INV. ELEV. IN	INV. ELEV. OUT	REMARKS
14	SMH	49+21, 47' RT	11.5±	13 –6.35	–6.45	CONSTRUCT OVER EXIST PIPE
15	SMH	49+78, 80' RT	12.0±	14 –6.60	–6.70	CONSTRUCT OVER EXIST PIPE
16	EXIST SMH	50+59, 113' RT	EXIST	15 –6.85	EXIST (–6.96)	

DRAINAGE STRUCTURE DATA

NO.	TYPE	STATION	RIM ELEV.	INV. ELEV. IN	INV. ELEV. OUT	REMARKS
45	CBCI	49+75, LT	11.12	–	7.12	
46	EXIST DMH	49+79.2, 14.5' RT	11.36	45 6.77 EXIST 6.2	6.10	



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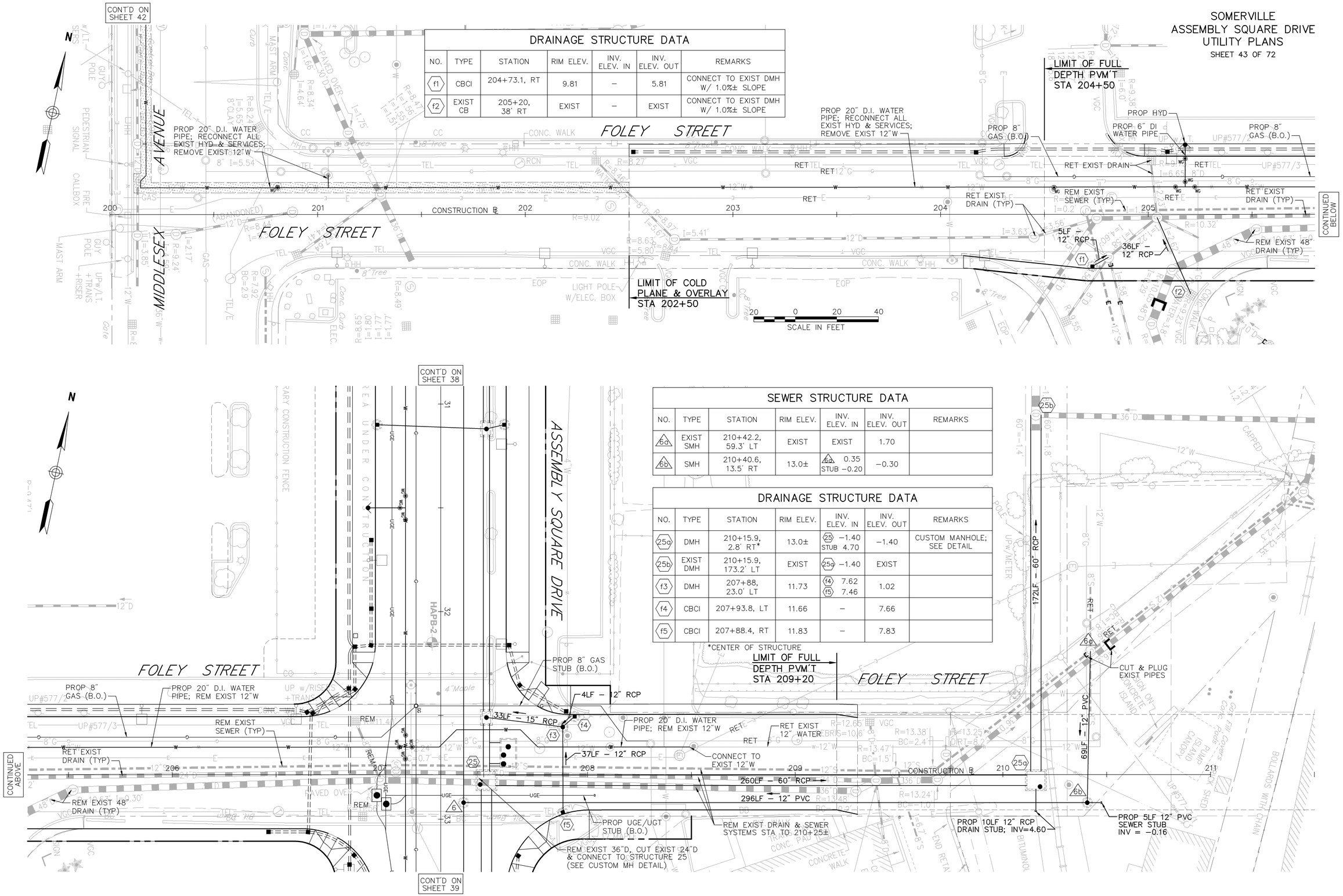
SOMERVILLE
ASSEMBLY SQUARE DRIVE
UTILITY PLANS
SHEET 43 OF 72



DRAINAGE STRUCTURE DATA

NO.	TYPE	STATION	RIM ELEV.	INV. ELEV. IN	INV. ELEV. OUT	REMARKS
f1	CBCI	204+73.1, RT	9.81	–	5.81	CONNECT TO EXIST DMH W/ 1.0%± SLOPE
f2	EXIST CB	205+20, 38' RT	EXIST	–	EXIST	CONNECT TO EXIST DMH W/ 1.0%± SLOPE

SEWER STRUCTURE DATA

NO.	TYPE	STATION	RIM ELEV.	INV. ELEV. IN	INV. ELEV. OUT	REMARKS
6a	EXIST SMH	210+42.2, 59.3' LT	EXIST	EXIST	1.70	
6b	SMH	210+40.6, 13.5' RT	13.0±	6a 0.35 STUB –0.20	–0.30	

DRAINAGE STRUCTURE DATA

NO.	TYPE	STATION	RIM ELEV.	INV. ELEV. IN	INV. ELEV. OUT	REMARKS
25a	DMH	210+15.9, 2.8' RT*	13.0±	25 –1.40 STUB 4.70	–1.40	CUSTOM MANHOLE; SEE DETAIL
25b	EXIST DMH	210+15.9, 173.2' LT	EXIST	25a –1.40	EXIST	
f3	DMH	207+88, 23.0' LT	11.73	f4 7.62 f5 7.46	1.02	
f4	CBCI	207+93.8, LT	11.66	–	7.66	
f5	CBCI	207+88.4, RT	11.83	–	7.83	

*CENTER OF STRUCTURE

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SOMERVILLE
ASSEMBLY SQUARE DRIVE
UTILITY PLANS

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DRAINAGE STRUCTURE DATA

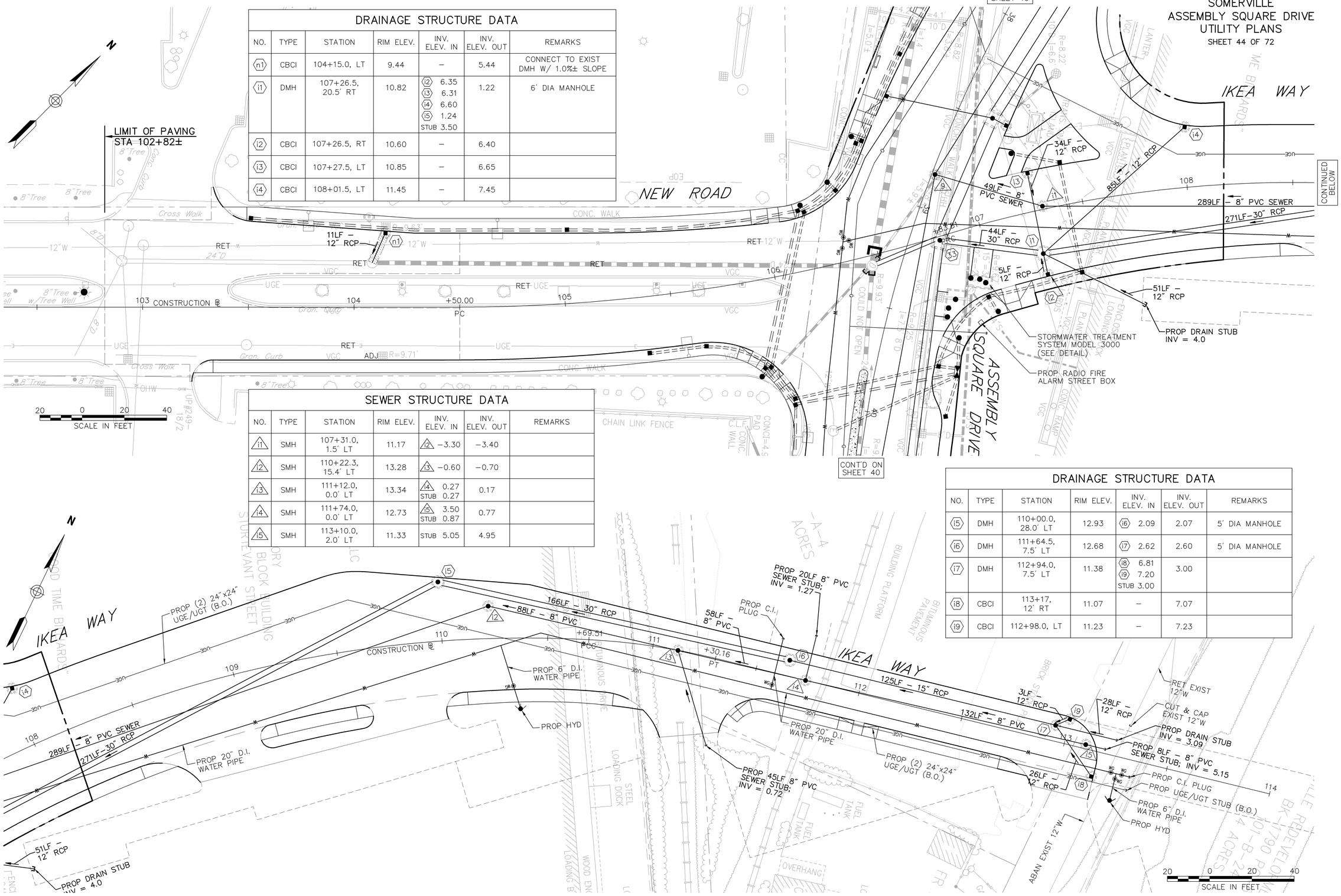
NO.	TYPE	STATION	RIM ELEV.	INV. ELEV. IN	INV. ELEV. OUT	REMARKS
n1	CBCI	104+15.0, LT	9.44	–	5.44	CONNECT TO EXIST DMH W/ 1.0%± SLOPE
i1	DMH	107+26.5, 20.5' RT	10.82	i2 6.35 i3 6.31 i4 6.60 i5 1.24 STUB 3.50	1.22	6' DIA MANHOLE
i2	CBCI	107+26.5, RT	10.60	–	6.40	
i3	CBCI	107+27.5, LT	10.85	–	6.65	
i4	CBCI	108+01.5, LT	11.45	–	7.45	

SEWER STRUCTURE DATA

NO.	TYPE	STATION	RIM ELEV.	INV. ELEV. IN	INV. ELEV. OUT	REMARKS
i1	SMH	107+31.0, 1.5' LT	11.17	i2 −3.30	−3.40	
i2	SMH	110+22.3, 15.4' LT	13.28	i3 −0.60	−0.70	
i3	SMH	111+12.0, 0.0' LT	13.34	i4 0.27 STUB 0.27	0.17	
i4	SMH	111+74.0, 0.0' LT	12.73	i5 3.50 STUB 0.87	0.77	
i5	SMH	113+10.0, 2.0' LT	11.33	STUB 5.05	4.95	

DRAINAGE STRUCTURE DATA

NO.	TYPE	STATION	RIM ELEV.	INV. ELEV. IN	INV. ELEV. OUT	REMARKS
i5	DMH	110+00.0, 28.0' LT	12.93	i6 2.09	2.07	5' DIA MANHOLE
i6	DMH	111+64.5, 7.5' LT	12.68	i7 2.62	2.60	5' DIA MANHOLE
i7	DMH	112+94.0, 7.5' LT	11.38	i8 6.81 i9 7.20 STUB 3.00	3.00	
i8	CBCI	113+17, 12' RT	11.07	–	7.07	
i9	CBCI	112+98.0, LT	11.23	–	7.23	



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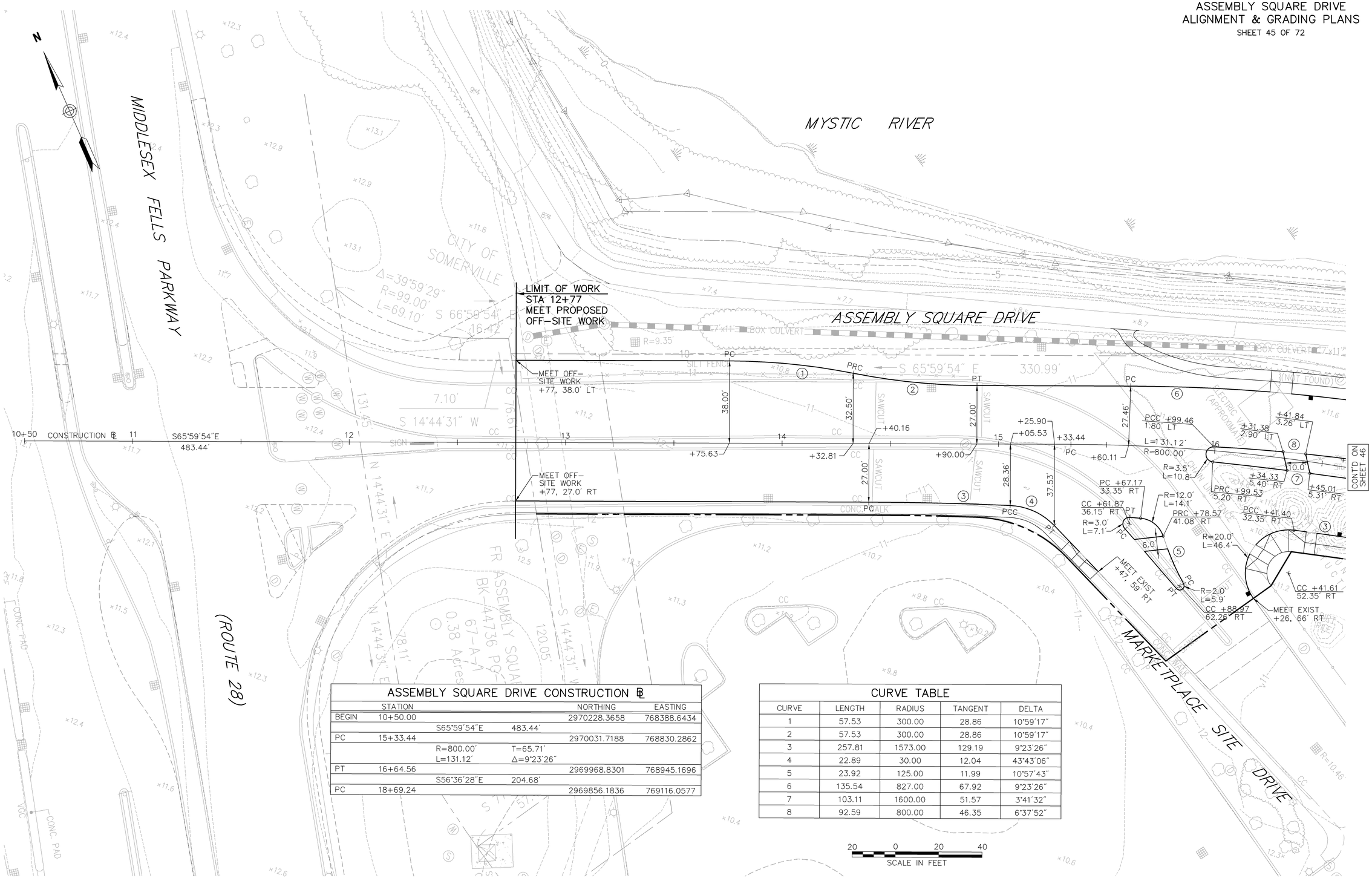
SOMERVILLE
ASSEMBLY SQUARE DRIVE
ALIGNMENT & GRADING PLANS
SHEET 45 OF 72



ASSEMBLY SQUARE DRIVE CONSTRUCTION ℄

	STATION			NORTHING	EASTING
BEGIN	10+50.00			2970228.3658	768388.6434
		S65°59'54"E	483.44'		
PC	15+33.44			2970031.7188	768830.2862
		R=800.00'	T=65.71'		
		L=131.12'	Δ=9°23'26"		
PT	16+64.56			2969968.8301	768945.1696
		S56°36'28"E	204.68'		
PC	18+69.24			2969856.1836	769116.0577

CURVE TABLE

CURVE	LENGTH	RADIUS	TANGENT	DELTA
1	57.53	300.00	28.86	10°59'17"
2	57.53	300.00	28.86	10°59'17"
3	257.81	1573.00	129.19	9°23'26"
4	22.89	30.00	12.04	43°43'06"
5	23.92	125.00	11.99	10°57'43"
6	135.54	827.00	67.92	9°23'26"
7	103.11	1600.00	51.57	3°41'32"
8	92.59	800.00	46.35	6°37'52"

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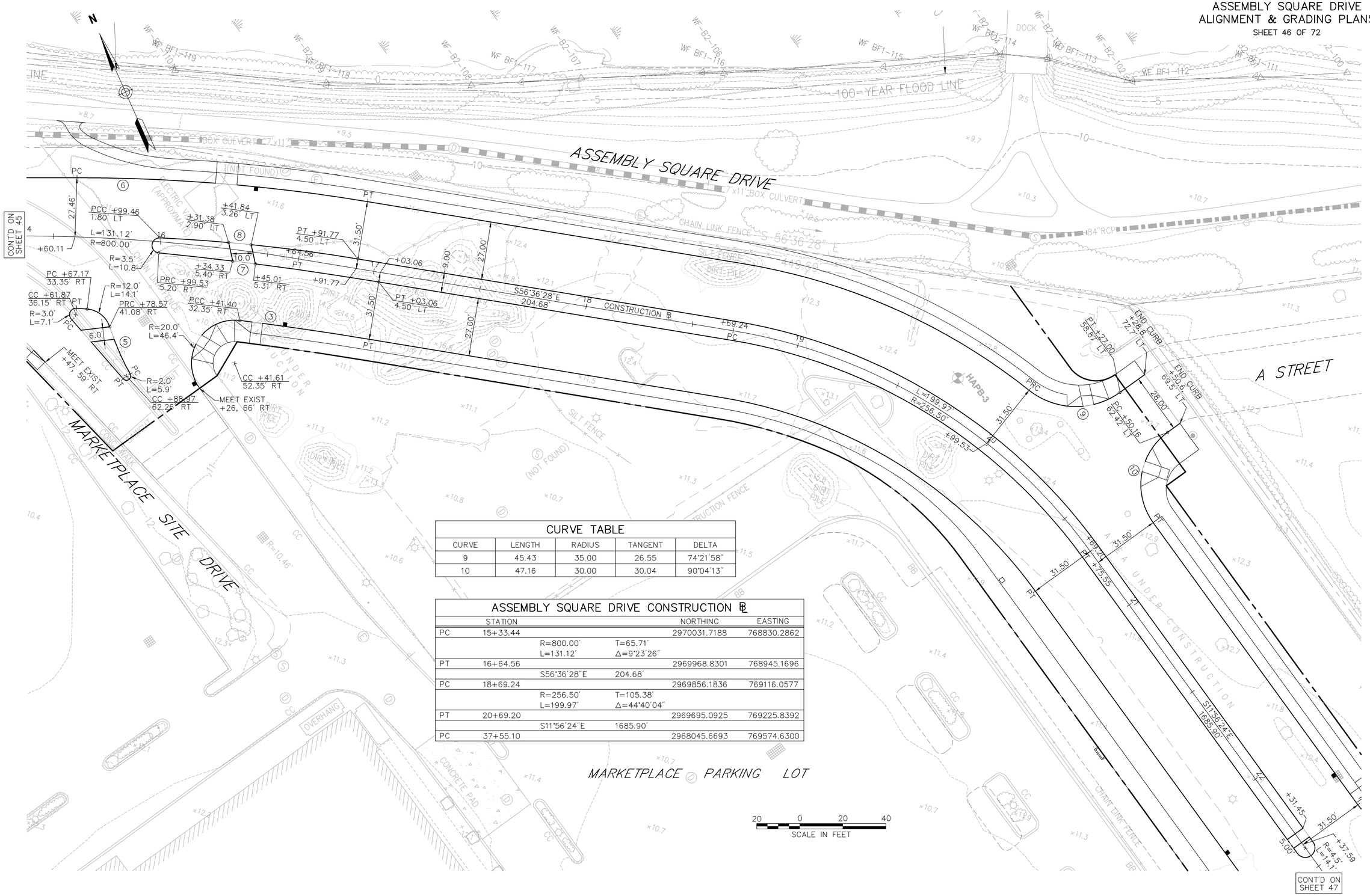
SOMERVILLE
ASSEMBLY SQUARE DRIVE
ALIGNMENT & GRADING PLANS
SHEET 46 OF 72



CURVE TABLE

CURVE	LENGTH	RADIUS	TANGENT	DELTA
9	45.43	35.00	26.55	74°21'58"
10	47.16	30.00	30.04	90°04'13"

ASSEMBLY SQUARE DRIVE CONSTRUCTION ℄

	STATION			NORTHING	EASTING
PC	15+33.44			2970031.7188	768830.2862
		R=800.00'	T=65.71'		
		L=131.12'	Δ=9°23'26"		
PT	16+64.56			2969968.8301	768945.1696
		S56°36'28"E	204.68'		
PC	18+69.24			2969856.1836	769116.0577
		R=256.50'	T=105.38'		
		L=199.97'	Δ=44°40'04"		
PT	20+69.20			2969695.0925	769225.8392
		S11°56'24"E	1685.90'		
PC	37+55.10			2968045.6693	769574.6300

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SOMERVILLE
ASSEMBLY SQUARE DRIVE
ALIGNMENT & GRADING PLANS
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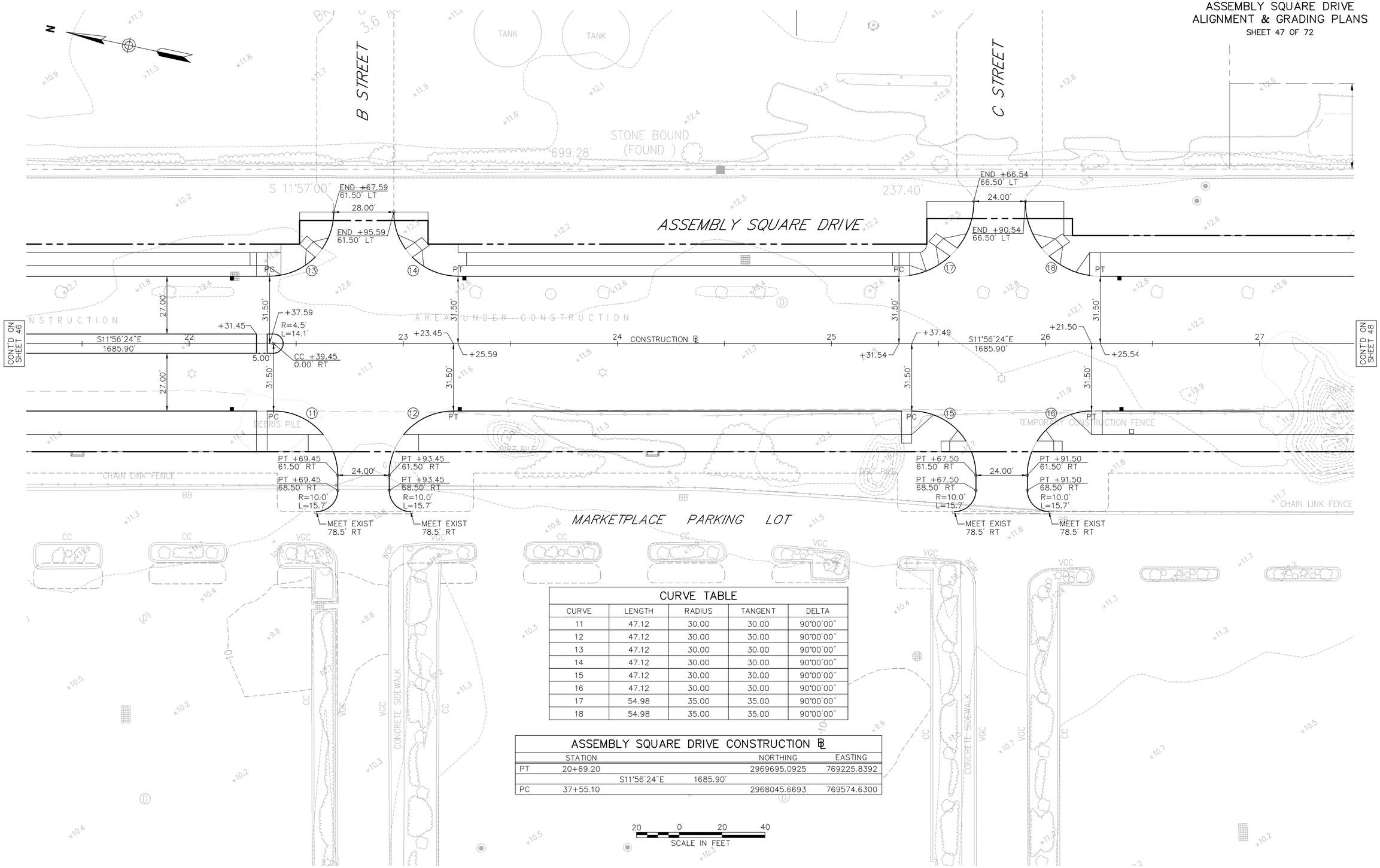

CURVE TABLE				
CURVE	LENGTH	RADIUS	TANGENT	DELTA
11	47.12	30.00	30.00	90°00'00"
12	47.12	30.00	30.00	90°00'00"
13	47.12	30.00	30.00	90°00'00"
14	47.12	30.00	30.00	90°00'00"
15	47.12	30.00	30.00	90°00'00"
16	47.12	30.00	30.00	90°00'00"
17	54.98	35.00	35.00	90°00'00"
18	54.98	35.00	35.00	90°00'00"

ASSEMBLY SQUARE DRIVE CONSTRUCTION ℄				
	STATION		NORTHING	EASTING
PT	20+69.20		2969695.0925	769225.8392
		S11°56'24"E 1685.90'		
PC	37+55.10		2968045.6693	769574.6300

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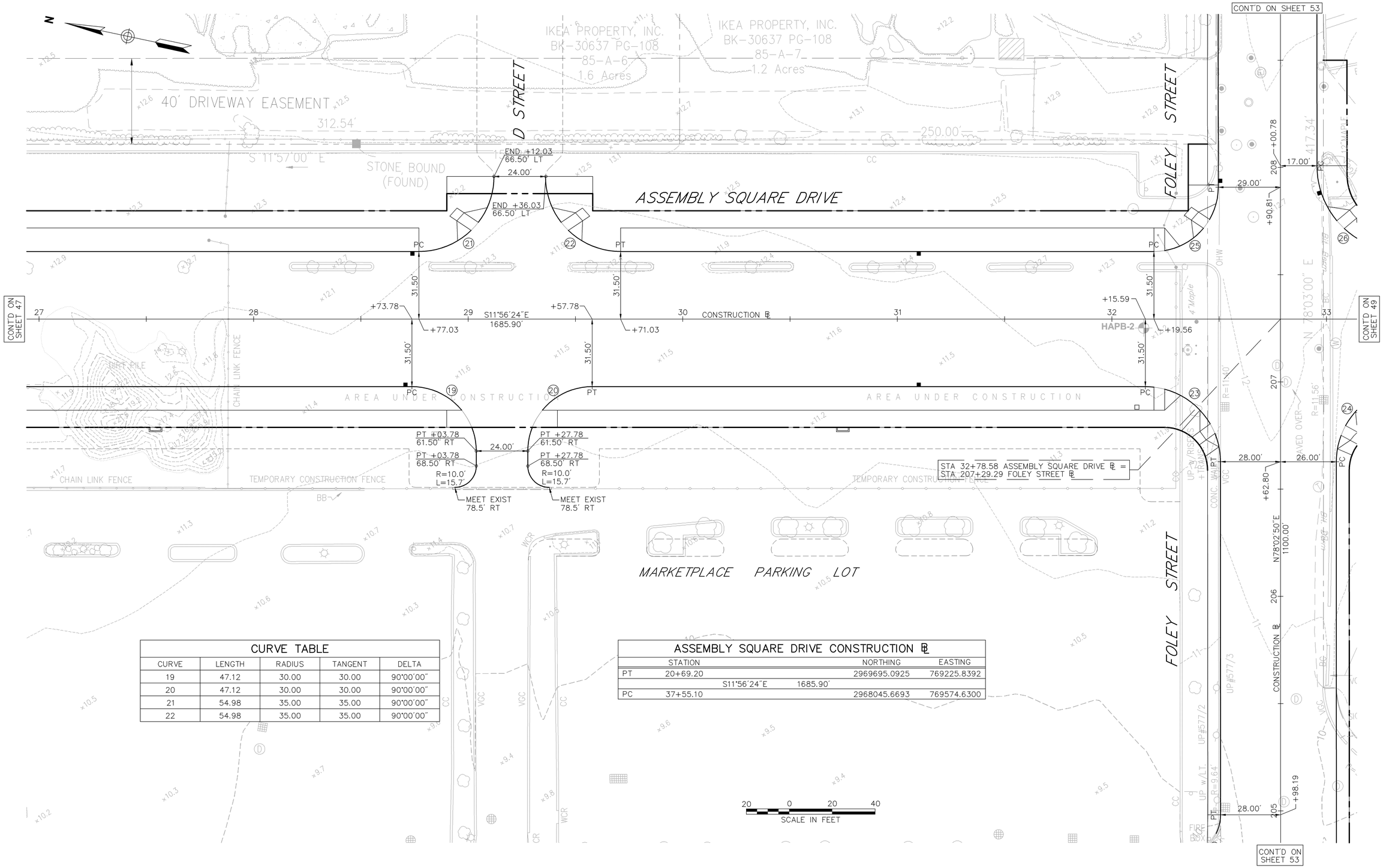
SOMERVILLE
ASSEMBLY SQUARE DRIVE
ALIGNMENT & GRADING PLANS
SHEET 48 OF 72



CURVE TABLE

CURVE	LENGTH	RADIUS	TANGENT	DELTA
19	47.12	30.00	30.00	90°00'00"
20	47.12	30.00	30.00	90°00'00"
21	54.98	35.00	35.00	90°00'00"
22	54.98	35.00	35.00	90°00'00"

ASSEMBLY SQUARE DRIVE CONSTRUCTION ℄

	STATION		NORTHING	EASTING
PT	20+69.20		2969695.0925	769225.8392
		S11°56'24"E 1685.90'		
PC	37+55.10		2968045.6693	769574.6300

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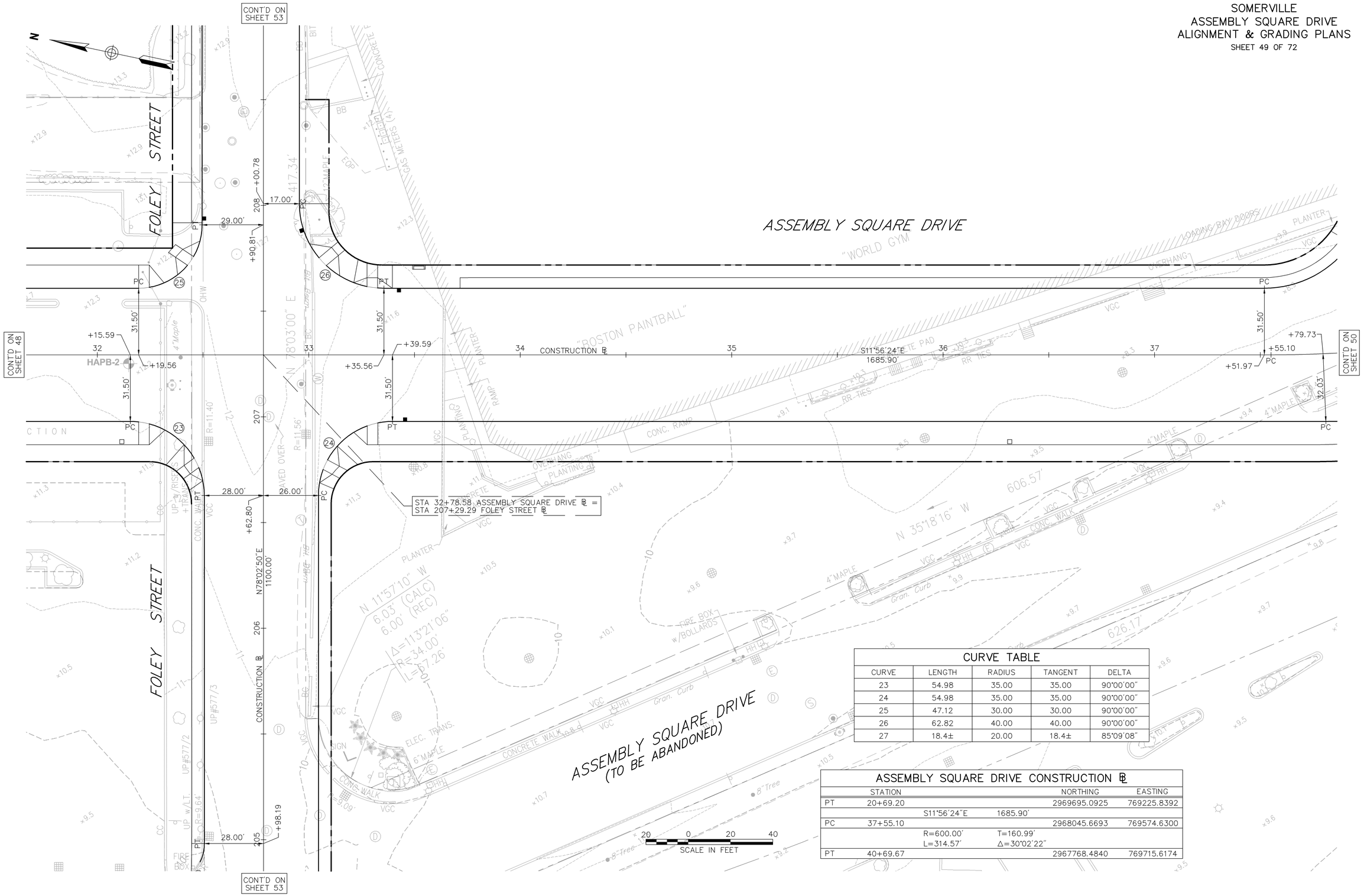
SOMERVILLE
ASSEMBLY SQUARE DRIVE
ALIGNMENT & GRADING PLANS
SHEET 49 OF 72



CURVE TABLE

CURVE	LENGTH	RADIUS	TANGENT	DELTA
23	54.98	35.00	35.00	90°00'00"
24	54.98	35.00	35.00	90°00'00"
25	47.12	30.00	30.00	90°00'00"
26	62.82	40.00	40.00	90°00'00"
27	18.4±	20.00	18.4±	85°09'08"

ASSEMBLY SQUARE DRIVE CONSTRUCTION ℄

	STATION			NORTHING	EASTING
PT	20+69.20			2969695.0925	769225.8392
		S11°56'24"E	1685.90'		
PC	37+55.10			2968045.6693	769574.6300
		R=600.00' L=314.57'	T=160.99' Δ=30°02'22"		
PT	40+69.67			2967768.4840	769715.6174

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SOMERVILLE
ASSEMBLY SQUARE DRIVE
ALIGNMENT & GRADING PLANS

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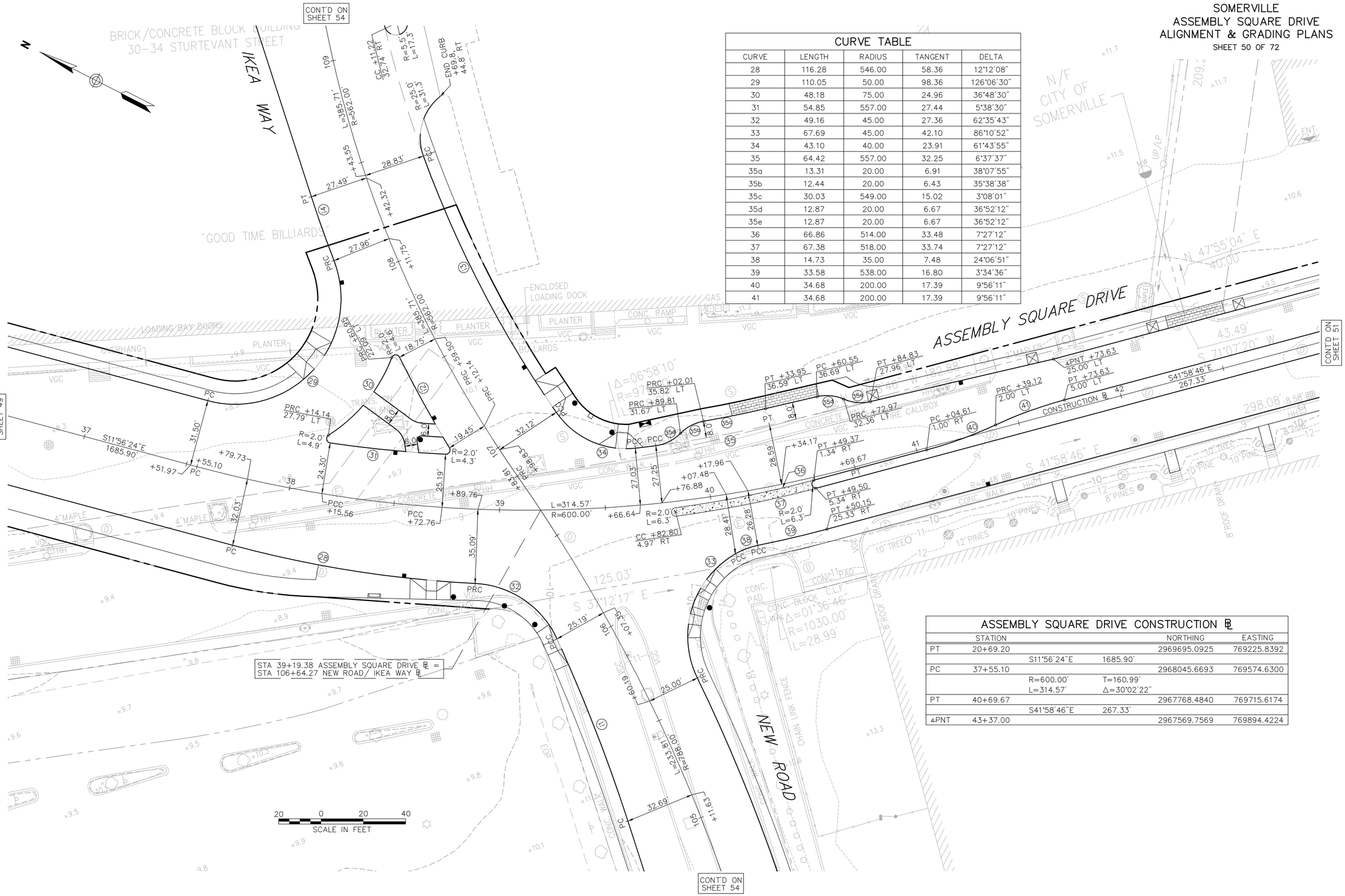

CURVE TABLE

CURVE	LENGTH	RADIUS	TANGENT	DELTA
28	116.28	546.00	58.36	12°12'08"
29	110.05	50.00	98.36	126°06'30"
30	48.18	75.00	24.96	36°48'30"
31	54.85	557.00	27.44	5°38'30"
32	49.16	45.00	27.36	62°35'43"
33	67.69	45.00	42.10	86°10'52"
34	43.10	40.00	23.91	61°43'55"
35	64.42	557.00	32.25	6°37'37"
35a	13.31	20.00	6.91	38°07'55"
35b	12.44	20.00	6.43	35°38'38"
35c	30.03	549.00	15.02	3°08'01"
35d	12.87	20.00	6.67	36°52'12"
35e	12.87	20.00	6.67	36°52'12"
36	66.86	514.00	33.48	7°27'12"
37	67.38	518.00	33.74	7°27'12"
38	14.73	35.00	7.48	24°06'51"
39	33.58	538.00	16.80	3°34'36"
40	34.68	200.00	17.39	9°56'11"
41	34.68	200.00	17.39	9°56'11"

ASSEMBLY SQUARE DRIVE CONSTRUCTION ℄

	STATION			NORTHING	EASTING
PT	20+69.20			2969695.0925	769225.8392
		S11°56'24"E	1685.90'		
PC	37+55.10			2968045.6693	769574.6300
		R=600.00'	T=160.99'		
		L=314.57'	Δ=30°02'22"		
PT	40+69.67			2967768.4840	769715.6174
		S41°58'46"E	267.33'		
∠PNT	43+37.00			2967569.7569	769894.4224

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SOMERVILLE
ASSEMBLY SQUARE DRIVE
ALIGNMENT & GRADING PLANS
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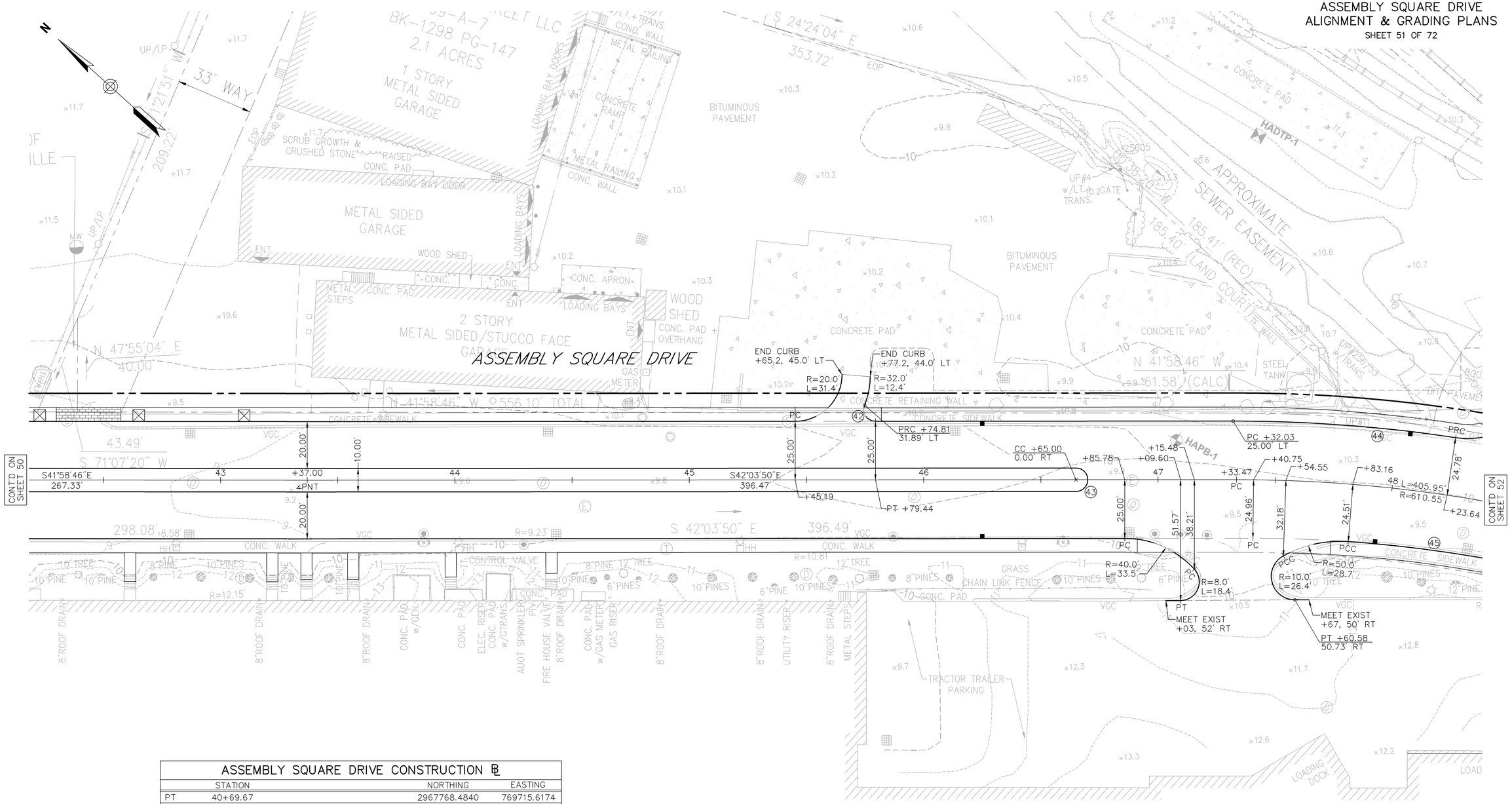

ASSEMBLY SQUARE DRIVE CONSTRUCTION ℄

	STATION			NORTHING	EASTING
PT	40+69.67			2967768.4840	769715.6174
		S41°58'46"E	267.33'		
∡PNT	43+37.00			2967569.7569	769894.4224
		S42°03'50"E	396.47'		
PC	47+33.47			2967275.4200	770160.0386
		R=610.55'	T=210.80'		
		L=405.95'	Δ=38°05'45"		
PT	51+39.42			2966908.6266	770315.8532

20 0 20 40
SCALE IN FEET

CURVE TABLE

CURVE	LENGTH	RADIUS	TANGENT	DELTA
42	9.79	5.00	7.45	112°14'00"
43	15.71	5.00	–	180°00'00"
44	422.21	635.00	219.24	38°05'45"
45	378.99	570.00	196.80	38°05'45"

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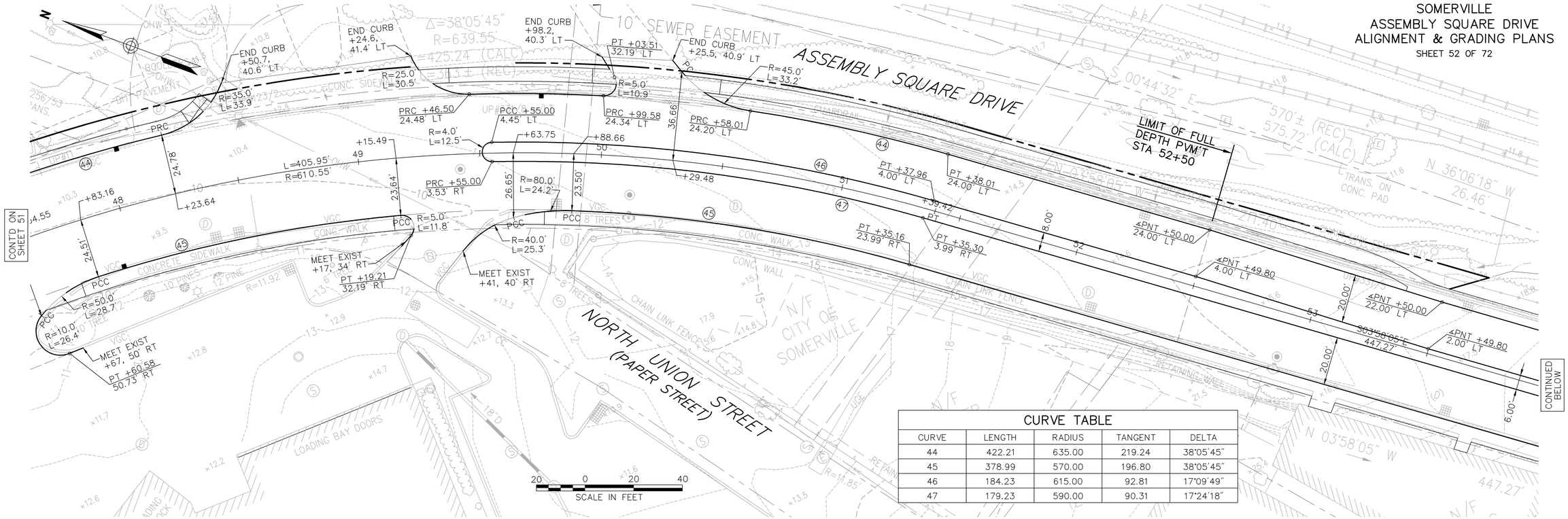
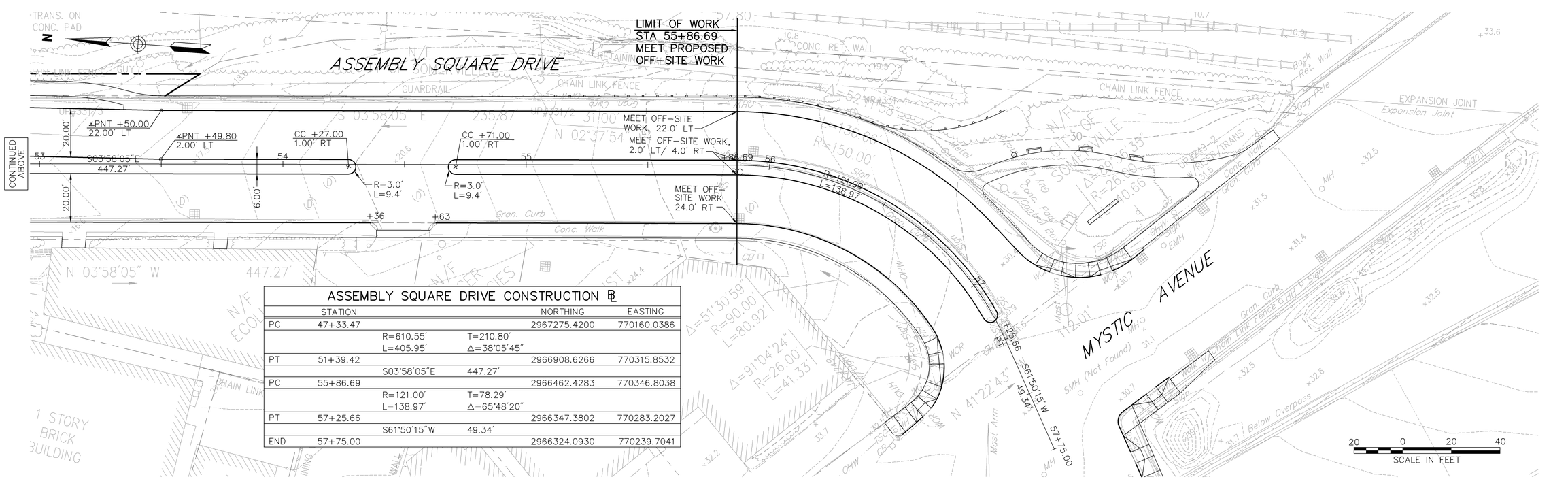
SOMERVILLE
ASSEMBLY SQUARE DRIVE
ALIGNMENT & GRADING PLANS
SHEET 52 OF 72



CURVE TABLE				
CURVE	LENGTH	RADIUS	TANGENT	DELTA
44	422.21	635.00	219.24	38°05'45"
45	378.99	570.00	196.80	38°05'45"
46	184.23	615.00	92.81	17°09'49"
47	179.23	590.00	90.31	17°24'18"



ASSEMBLY SQUARE DRIVE CONSTRUCTION ℄					
	STATION			NORTHING	EASTING
PC	47+33.47			2967275.4200	770160.0386
		R=610.55'	T=210.80'		
		L=405.95'	Δ=38°05'45"		
PT	51+39.42			2966908.6266	770315.8532
		S03°58'05"E	447.27'		
PC	55+86.69			2966462.4283	770346.8038
		R=121.00'	T=78.29'		
		L=138.97'	Δ=65°48'20"		
PT	57+25.66			2966347.3802	770283.2027
		S61°50'15"W	49.34'		
END	57+75.00			2966324.0930	770239.7041

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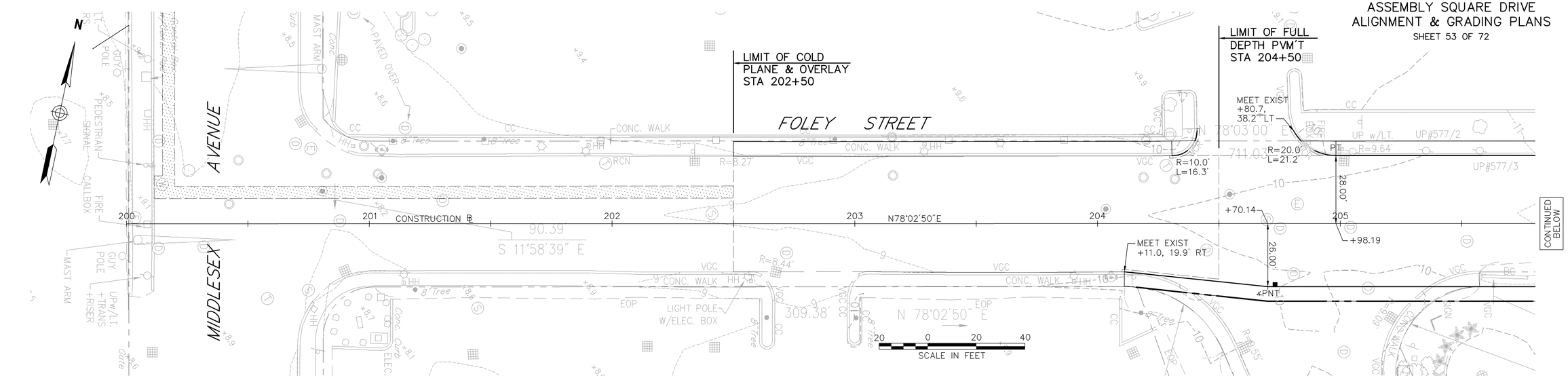
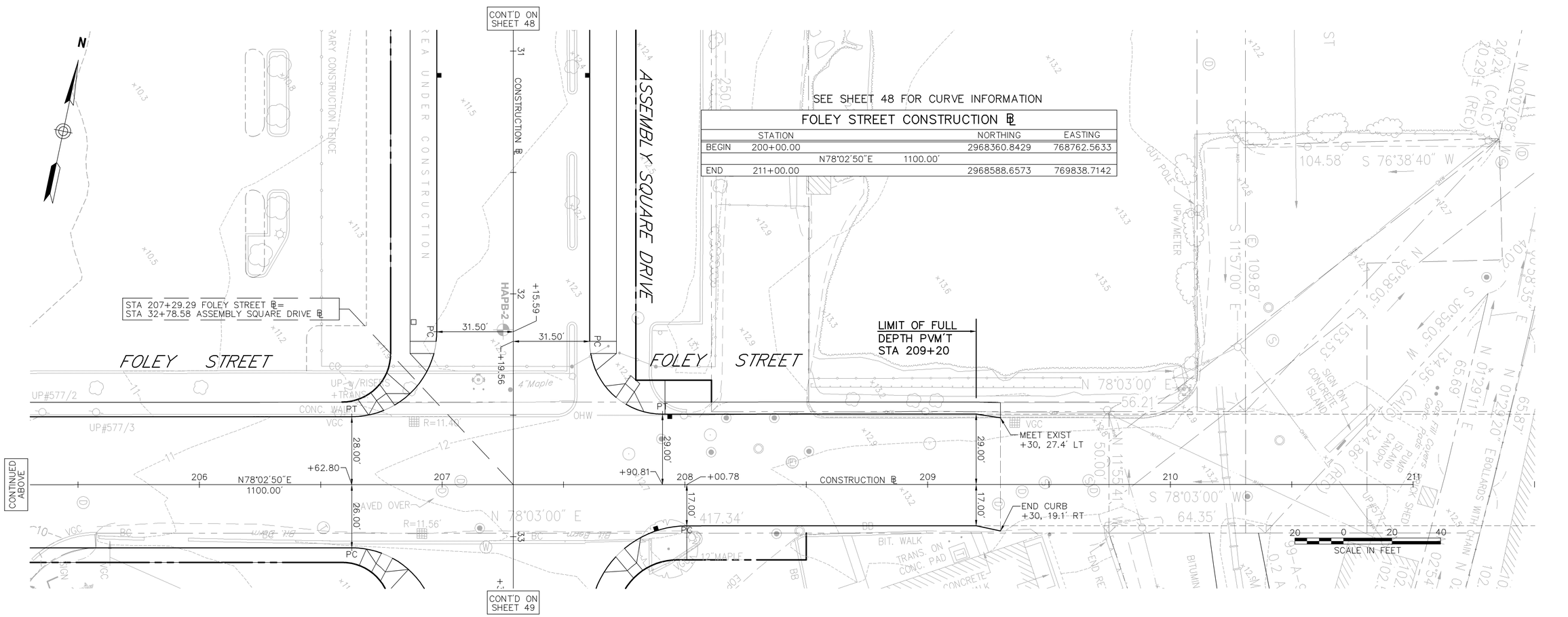
SOMERVILLE
ASSEMBLY SQUARE DRIVE
ALIGNMENT & GRADING PLANS
SHEET 53 OF 72





FOLEY STREET CONSTRUCTION ℄				
	STATION		NORTHING	EASTING
BEGIN	200+00.00		2968360.8429	768762.5633
		N78°02'50"E 1100.00'		
END	211+00.00		2968588.6573	769838.7142

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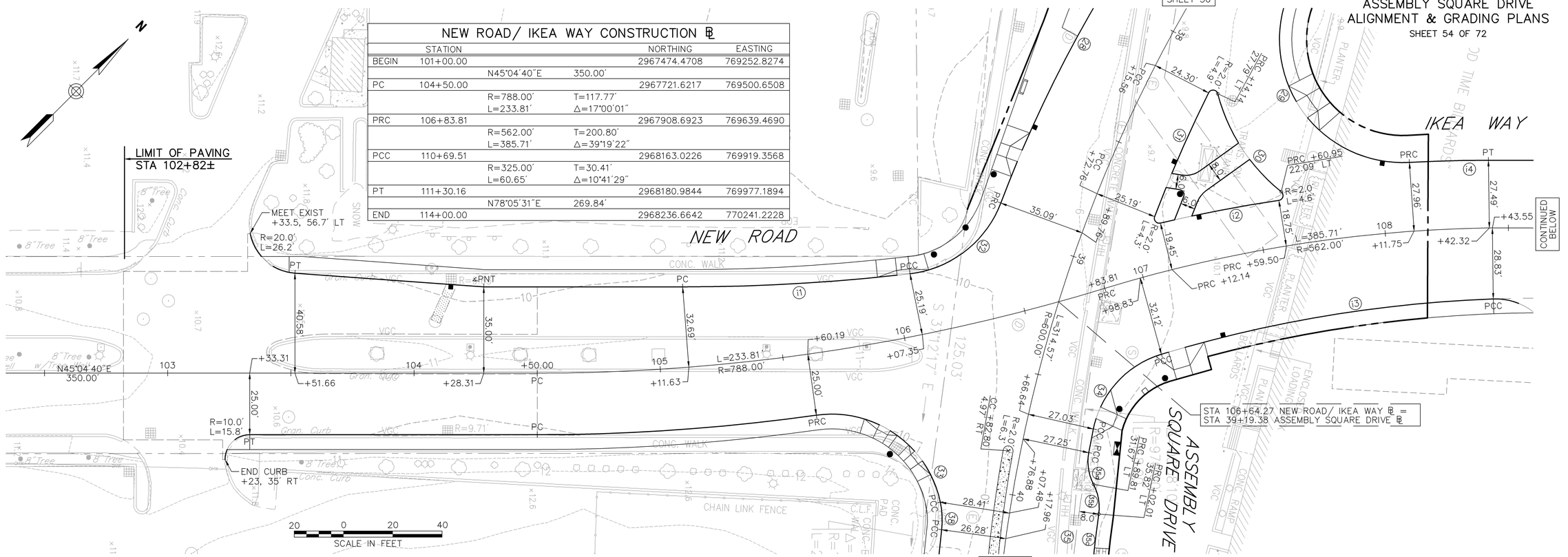
SOMERVILLE
ASSEMBLY SQUARE DRIVE
ALIGNMENT & GRADING PLANS

SHEET 54 OF 72

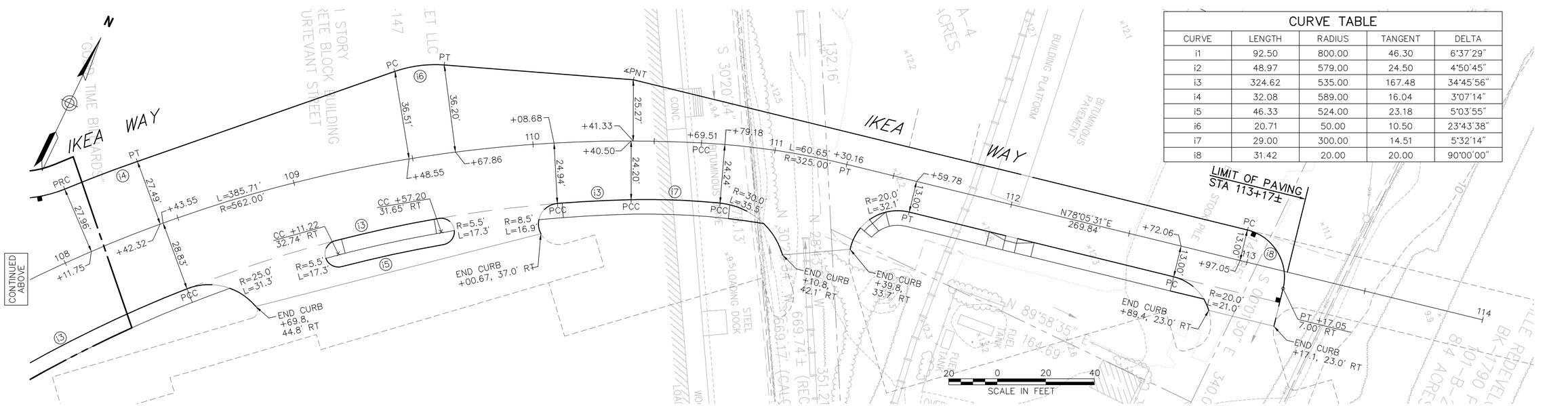
NEW ROAD/ IKEA WAY CONSTRUCTION ℄

	STATION			NORTHING	EASTING
BEGIN	101+00.00			2967474.4708	769252.8274
		N45°04′40″E	350.00′		
PC	104+50.00			2967721.6217	769500.6508
		R=788.00′	T=117.77′		
		L=233.81′	Δ=17°00′01″		
PRC	106+83.81			2967908.6923	769639.4690
		R=562.00′	T=200.80′		
		L=385.71′	Δ=39°19′22″		
PCC	110+69.51			2968163.0226	769919.3568
		R=325.00′	T=30.41′		
		L=60.65′	Δ=10°41′29″		
PT	111+30.16			2968180.9844	769977.1894
		N78°05′31″E	269.84′		
END	114+00.00			2968236.6642	770241.2228



CURVE TABLE

CURVE	LENGTH	RADIUS	TANGENT	DELTA
i1	92.50	800.00	46.30	6°37′29″
i2	48.97	579.00	24.50	4°50′45″
i3	324.62	535.00	167.48	34°45′56″
i4	32.08	589.00	16.04	3°07′14″
i5	46.33	524.00	23.18	5°03′55″
i6	20.71	50.00	10.50	23°43′38″
i7	29.00	300.00	14.51	5°32′14″
i8	31.42	20.00	20.00	90°00′00″



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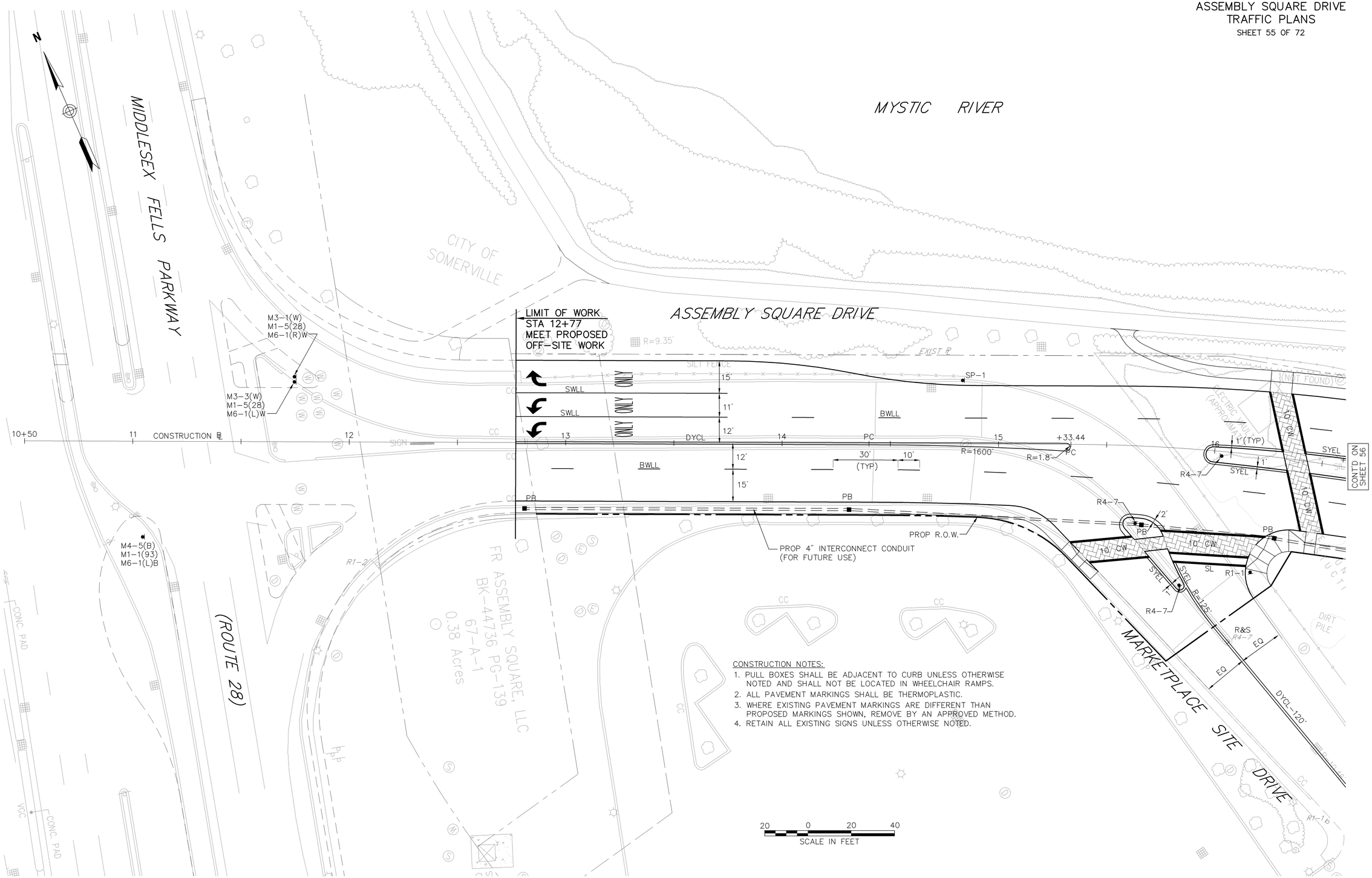
SOMERVILLE
ASSEMBLY SQUARE DRIVE
TRAFFIC PLANS
SHEET 55 OF 72



CONSTRUCTION NOTES:

1. PULL BOXES SHALL BE ADJACENT TO CURB UNLESS OTHERWISE NOTED AND SHALL NOT BE LOCATED IN WHEELCHAIR RAMPS.
2. ALL PAVEMENT MARKINGS SHALL BE THERMOPLASTIC.
3. WHERE EXISTING PAVEMENT MARKINGS ARE DIFFERENT THAN PROPOSED MARKINGS SHOWN, REMOVE BY AN APPROVED METHOD.
4. RETAIN ALL EXISTING SIGNS UNLESS OTHERWISE NOTED.

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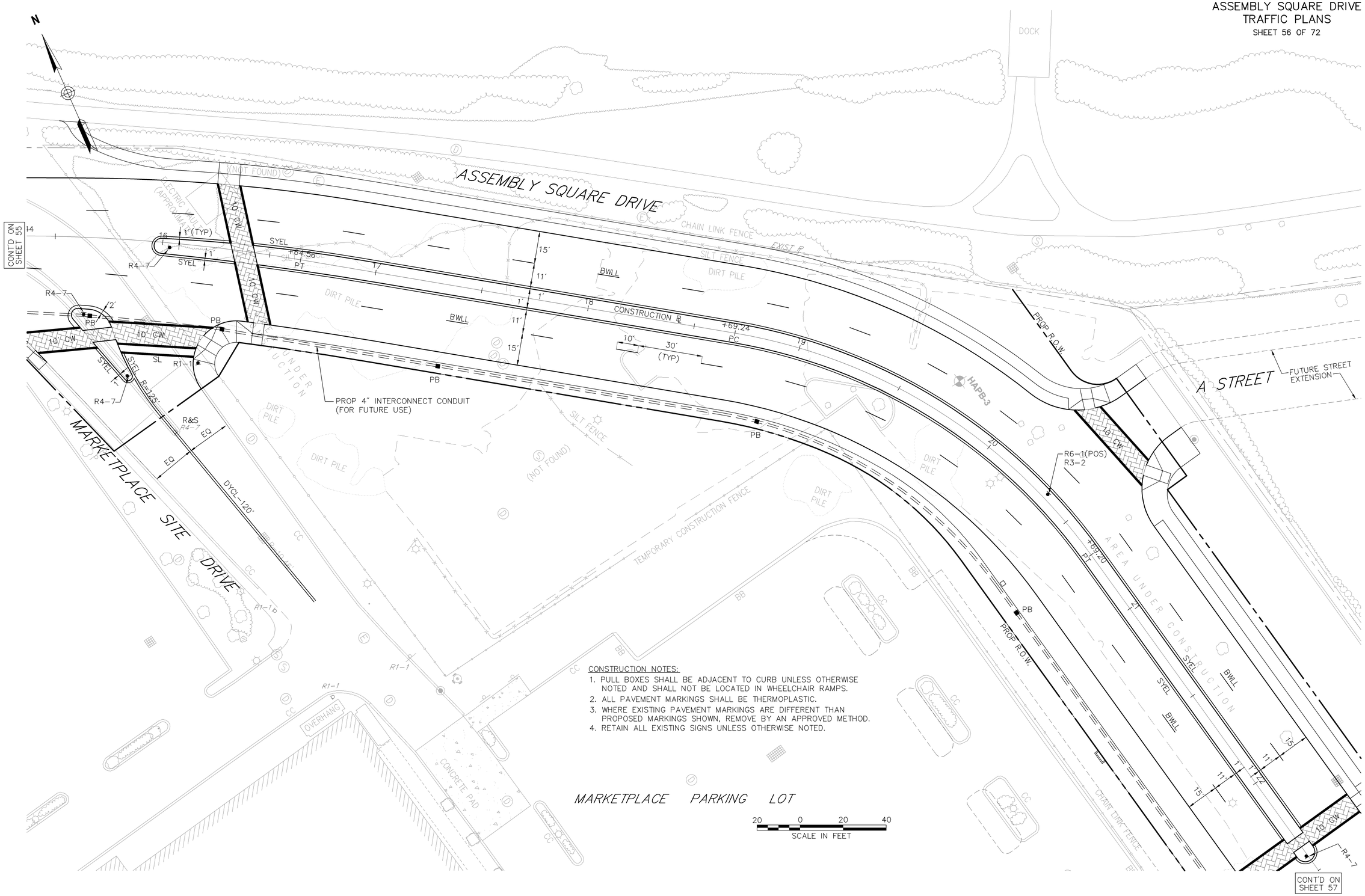
SOMERVILLE
ASSEMBLY SQUARE DRIVE
TRAFFIC PLANS
SHEET 56 OF 72



CONSTRUCTION NOTES:

1. PULL BOXES SHALL BE ADJACENT TO CURB UNLESS OTHERWISE NOTED AND SHALL NOT BE LOCATED IN WHEELCHAIR RAMPS.
2. ALL PAVEMENT MARKINGS SHALL BE THERMOPLASTIC.
3. WHERE EXISTING PAVEMENT MARKINGS ARE DIFFERENT THAN PROPOSED MARKINGS SHOWN, REMOVE BY AN APPROVED METHOD.
4. RETAIN ALL EXISTING SIGNS UNLESS OTHERWISE NOTED.

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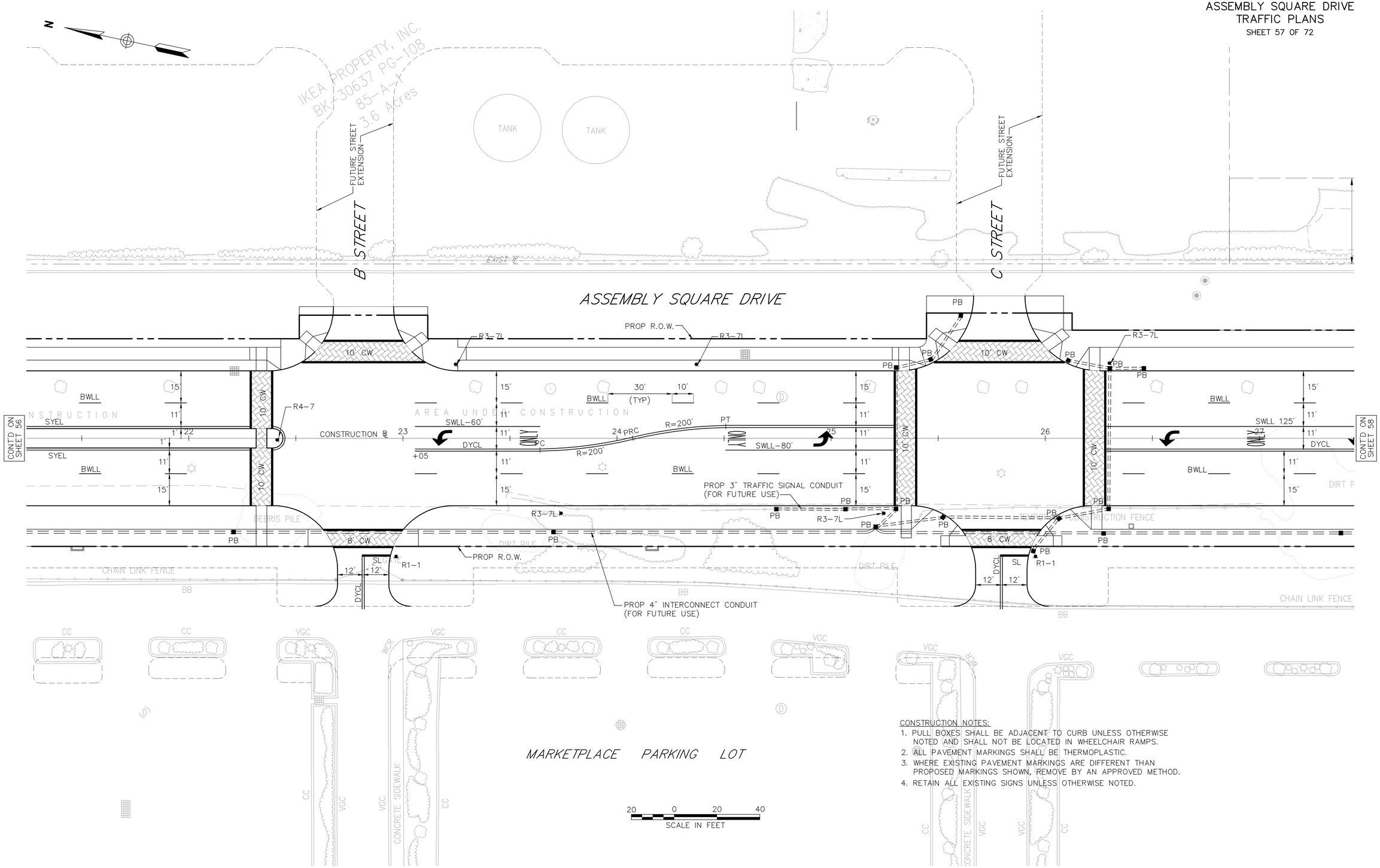
SOMERVILLE
ASSEMBLY SQUARE DRIVE
TRAFFIC PLANS
SHEET 57 OF 72



CONSTRUCTION NOTES:

1. PULL BOXES SHALL BE ADJACENT TO CURB UNLESS OTHERWISE NOTED AND SHALL NOT BE LOCATED IN WHEELCHAIR RAMPS.
2. ALL PAVEMENT MARKINGS SHALL BE THERMOPLASTIC.
3. WHERE EXISTING PAVEMENT MARKINGS ARE DIFFERENT THAN PROPOSED MARKINGS SHOWN, REMOVE BY AN APPROVED METHOD.
4. RETAIN ALL EXISTING SIGNS UNLESS OTHERWISE NOTED.

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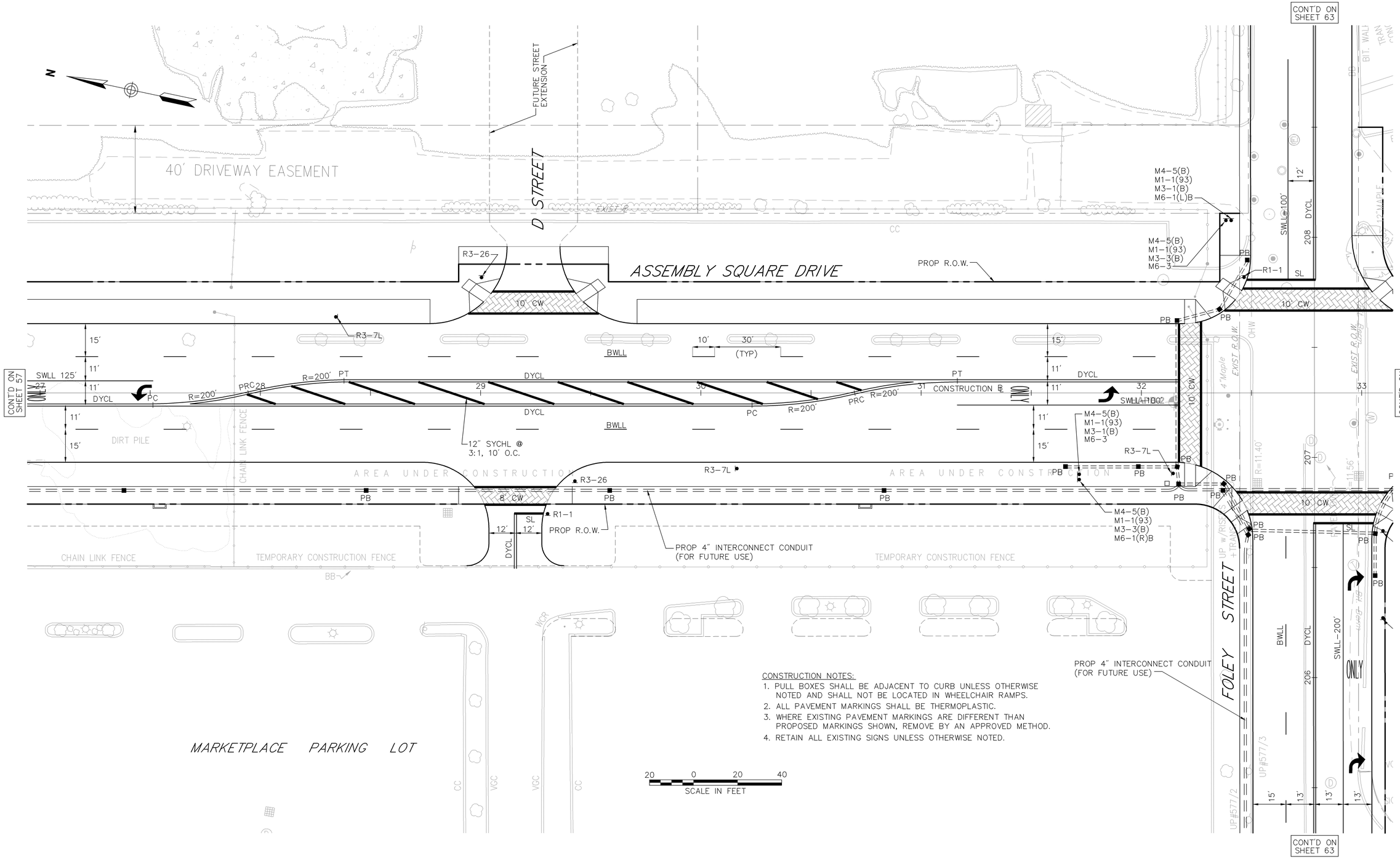
SOMERVILLE
ASSEMBLY SQUARE DRIVE
TRAFFIC PLANS
SHEET 58 OF 72



CONSTRUCTION NOTES:

1. PULL BOXES SHALL BE ADJACENT TO CURB UNLESS OTHERWISE NOTED AND SHALL NOT BE LOCATED IN WHEELCHAIR RAMPS.
2. ALL PAVEMENT MARKINGS SHALL BE THERMOPLASTIC.
3. WHERE EXISTING PAVEMENT MARKINGS ARE DIFFERENT THAN PROPOSED MARKINGS SHOWN, REMOVE BY AN APPROVED METHOD.
4. RETAIN ALL EXISTING SIGNS UNLESS OTHERWISE NOTED.

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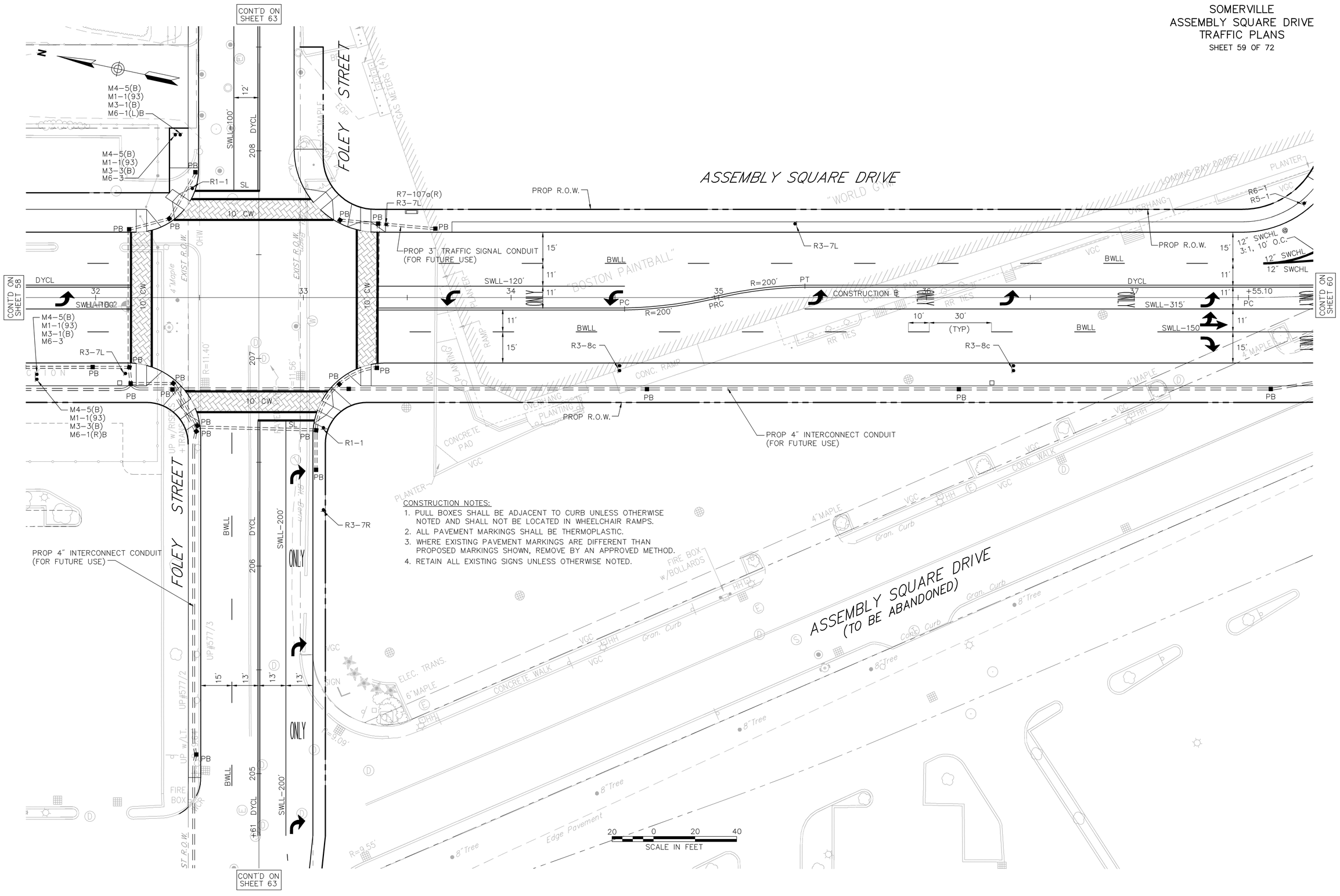
SOMERVILLE
ASSEMBLY SQUARE DRIVE
TRAFFIC PLANS
SHEET 59 OF 72



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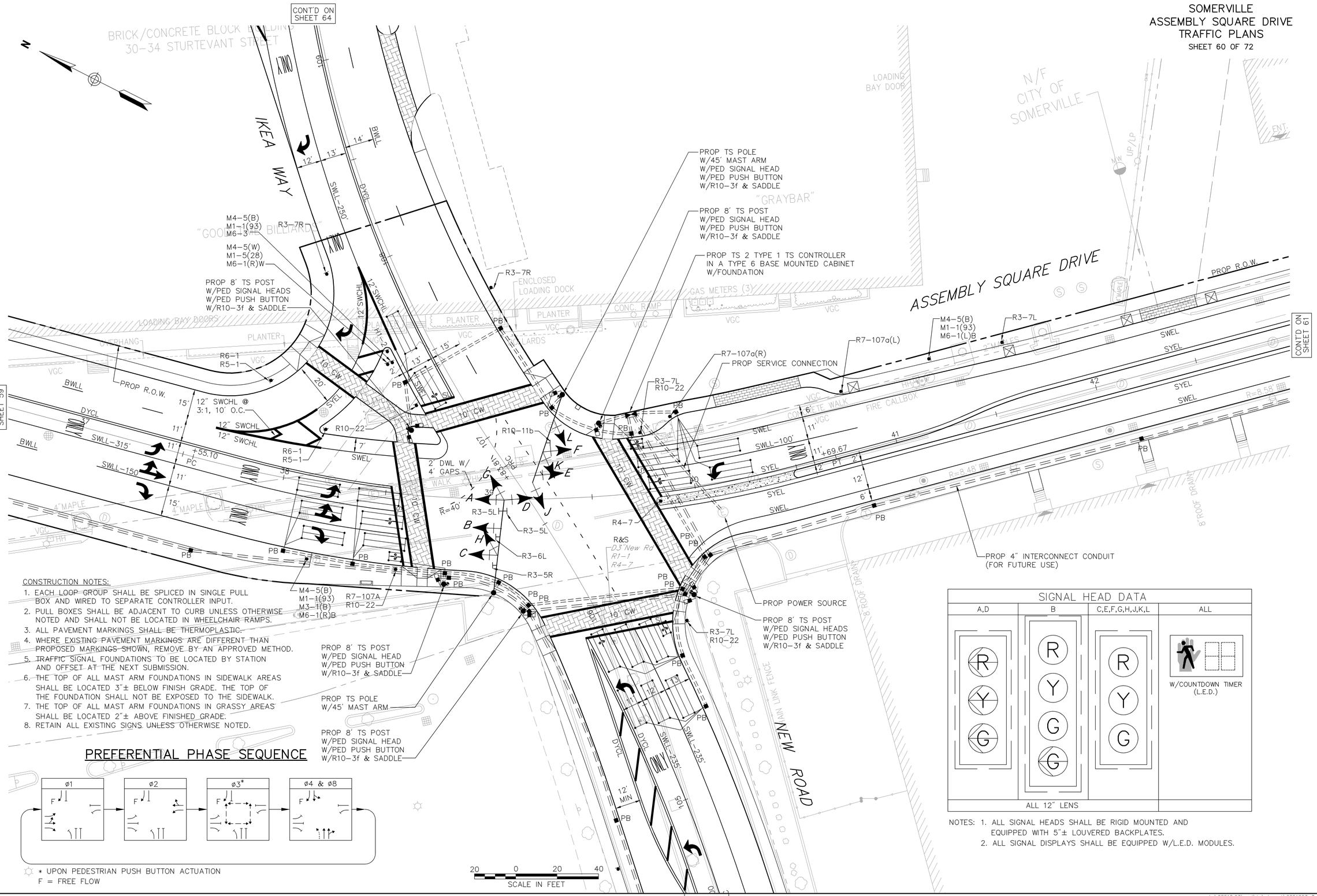
SOMERVILLE
ASSEMBLY SQUARE DRIVE
TRAFFIC PLANS
SHEET 60 OF 72



CONSTRUCTION NOTES:

1. EACH LOOP GROUP SHALL BE SPLICED IN SINGLE PULL BOX AND WIRED TO SEPARATE CONTROLLER INPUT.
2. PULL BOXES SHALL BE ADJACENT TO CURB UNLESS OTHERWISE NOTED AND SHALL NOT BE LOCATED IN WHEELCHAIR RAMPS.
3. ALL PAVEMENT MARKINGS SHALL BE THERMOPLASTIC.
4. WHERE EXISTING PAVEMENT MARKINGS ARE DIFFERENT THAN PROPOSED MARKINGS SHOWN, REMOVE BY AN APPROVED METHOD.
5. TRAFFIC SIGNAL FOUNDATIONS TO BE LOCATED BY STATION AND OFFSET AT THE NEXT SUBMISSION.
6. THE TOP OF ALL MAST ARM FOUNDATIONS IN SIDEWALK AREAS SHALL BE LOCATED 3"± BELOW FINISH GRADE. THE TOP OF THE FOUNDATION SHALL NOT BE EXPOSED TO THE SIDEWALK.
7. THE TOP OF ALL MAST ARM FOUNDATIONS IN GRASSY AREAS SHALL BE LOCATED 2"± ABOVE FINISHED GRADE.
8. RETAIN ALL EXISTING SIGNS UNLESS OTHERWISE NOTED.

PREFERENTIAL PHASE SEQUENCE

* UPON PEDESTRIAN PUSH BUTTON ACTUATION
F = FREE FLOW

SIGNAL HEAD DATA

A,D	B	C,E,F,G,H,J,K,L	ALL
R Y G	R Y G G	R Y G	W/COUNTDOWN TIMER (L.E.D.)
ALL 12" LENS			

NOTES: 1. ALL SIGNAL HEADS SHALL BE RIGID MOUNTED AND EQUIPPED WITH 5"± LOUVERED BACKPLATES.
2. ALL SIGNAL DISPLAYS SHALL BE EQUIPPED W/L.E.D. MODULES.

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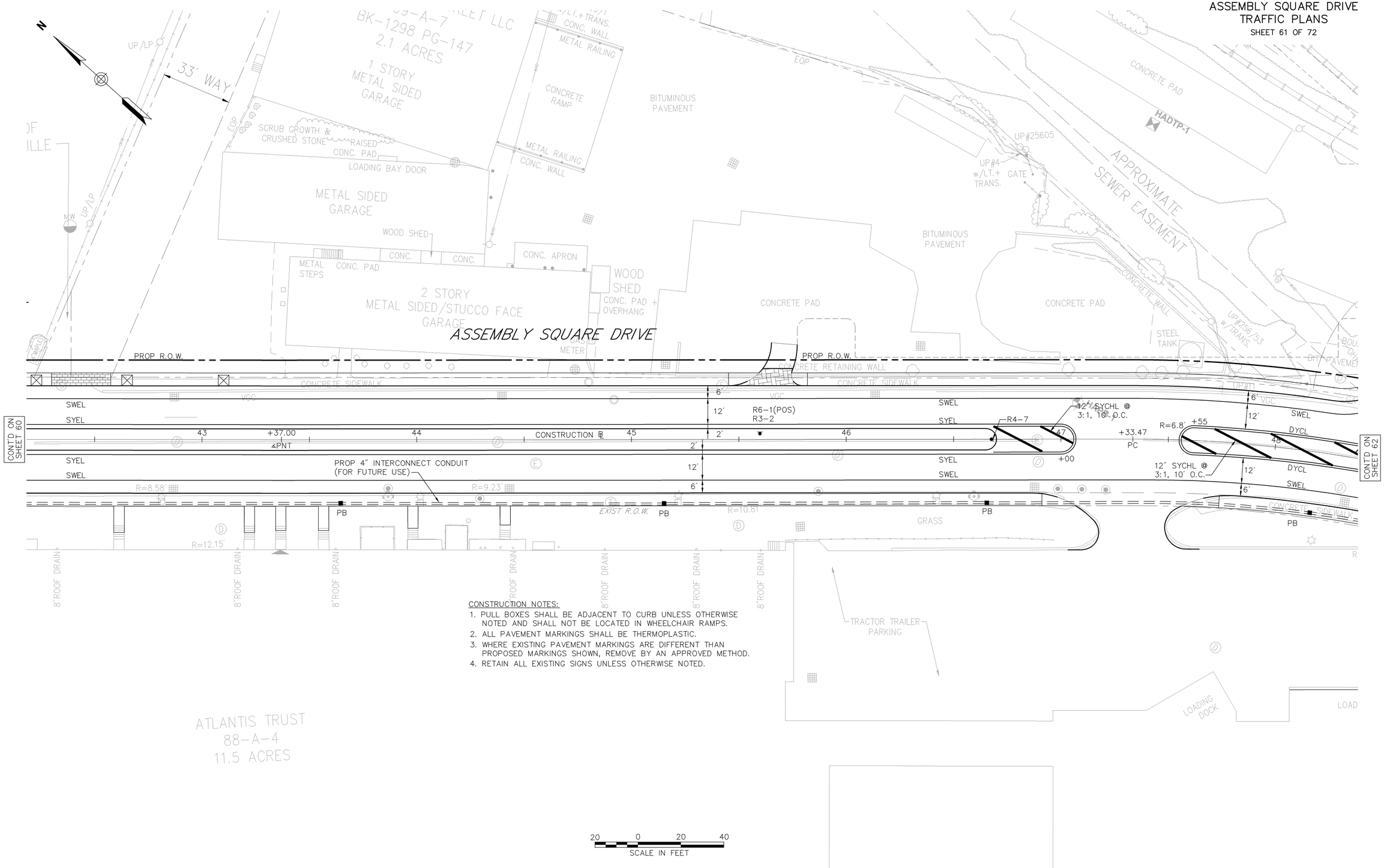
SOMERVILLE
ASSEMBLY SQUARE DRIVE
TRAFFIC PLANS
SHEET 61 OF 72



CONSTRUCTION NOTES:

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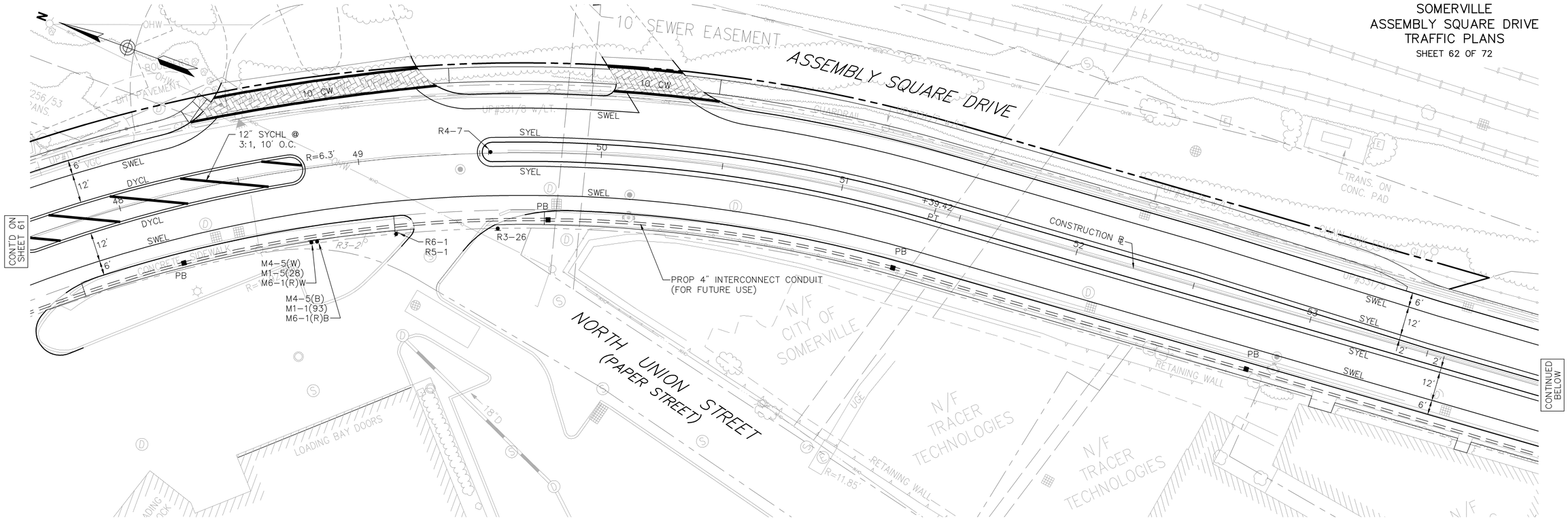
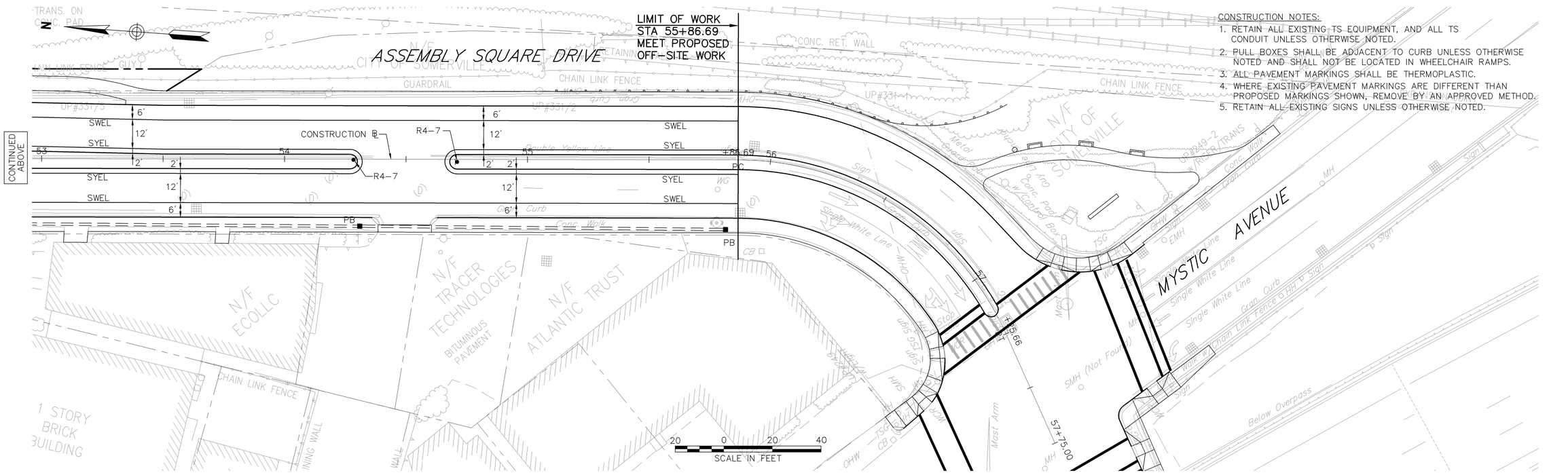
SOMERVILLE
ASSEMBLY SQUARE DRIVE
TRAFFIC PLANS
SHEET 62 OF 72





CONSTRUCTION NOTES:

1. RETAIN ALL EXISTING TS EQUIPMENT, AND ALL TS CONDUIT UNLESS OTHERWISE NOTED.
2. PULL BOXES SHALL BE ADJACENT TO CURB UNLESS OTHERWISE NOTED AND SHALL NOT BE LOCATED IN WHEELCHAIR RAMPS.
3. ALL PAVEMENT MARKINGS SHALL BE THERMOPLASTIC.
4. WHERE EXISTING PAVEMENT MARKINGS ARE DIFFERENT THAN PROPOSED MARKINGS SHOWN, REMOVE BY AN APPROVED METHOD.
5. RETAIN ALL EXISTING SIGNS UNLESS OTHERWISE NOTED.

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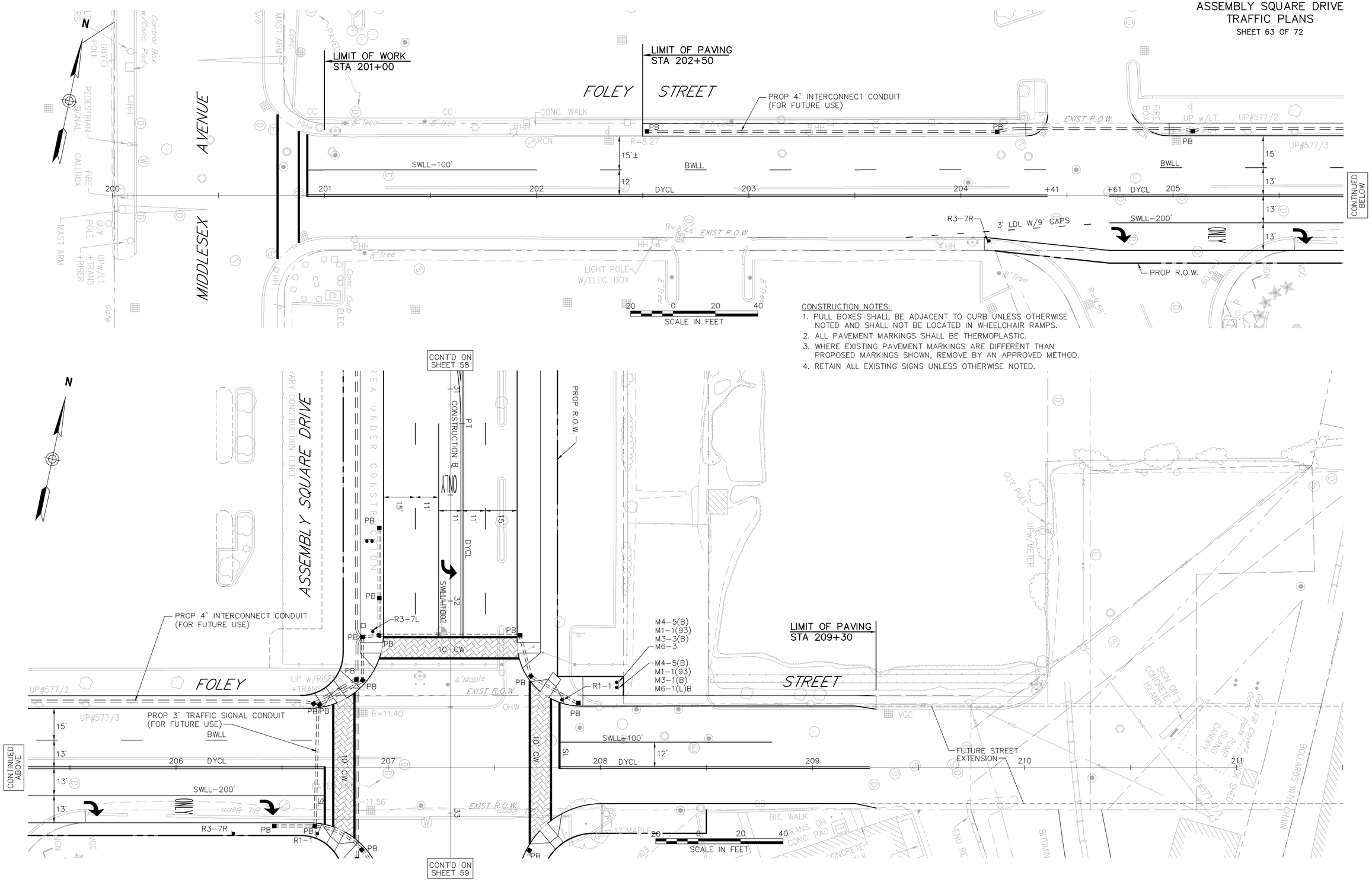
SOMERVILLE
ASSEMBLY SQUARE DRIVE
TRAFFIC PLANS
SHEET 63 OF 72



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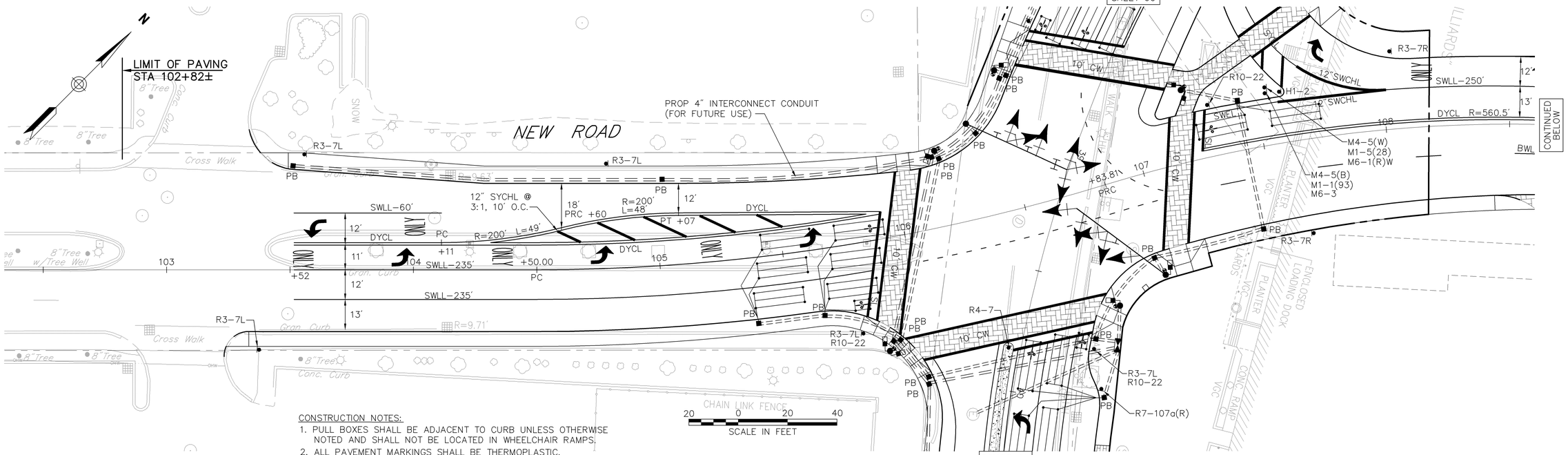
SOMERVILLE
ASSEMBLY SQUARE DRIVE
TRAFFIC PLANS
SHEET 64 OF 72



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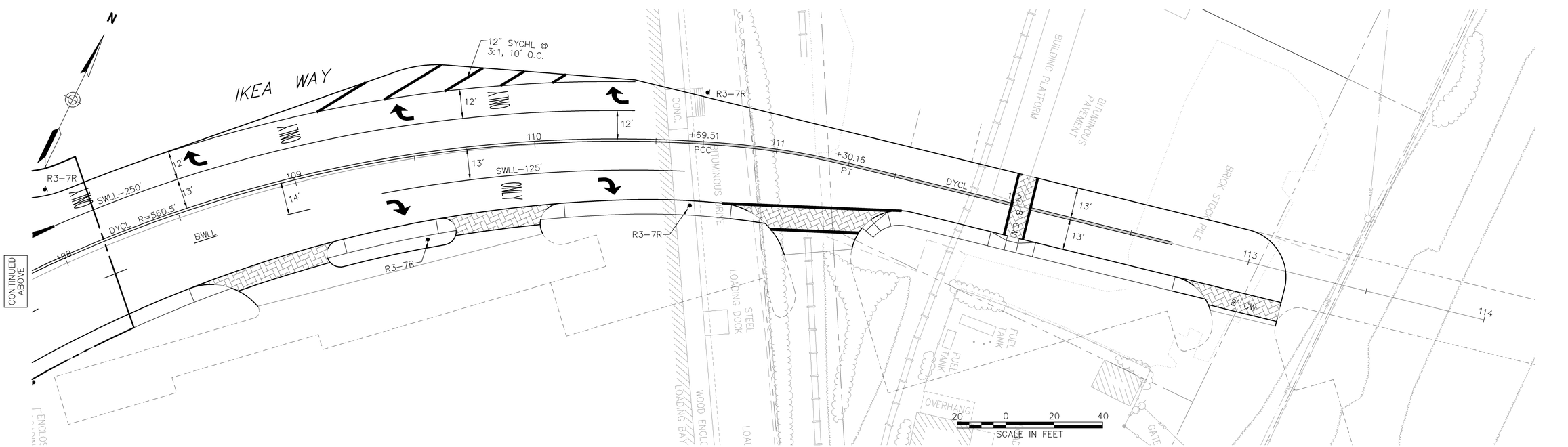

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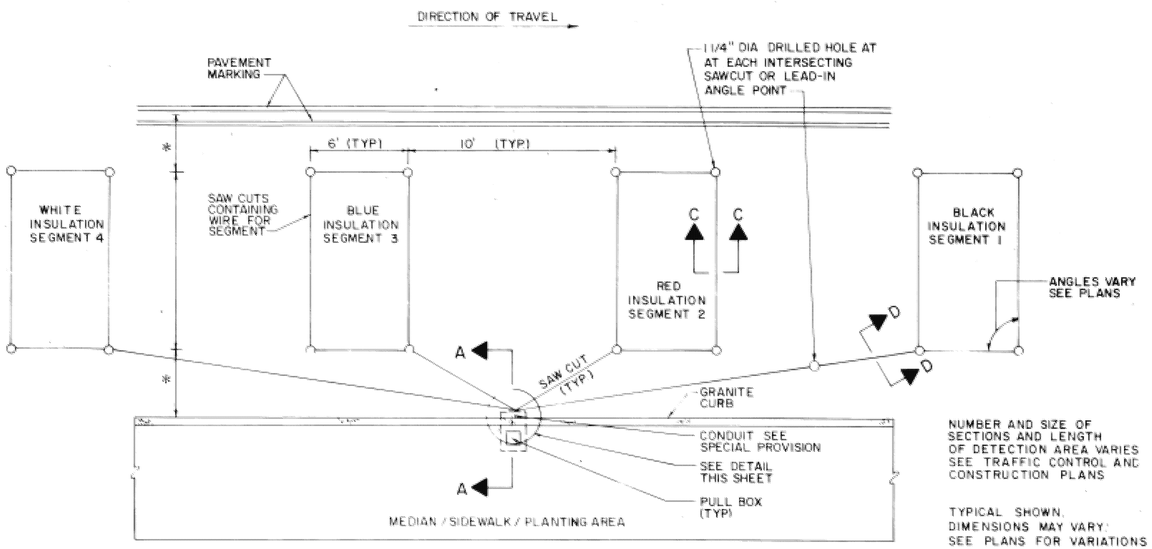
TRAFFIC SIGN SUMMARY

IDENTIFI-CATION NUMBER	SIZE OF SIGN		TEXT	TEXT DIMENSIONS (INCHES)			NUMBER OF SIGNS REQUIRED	COLOR			POST SIZE AND NUMBER REQUIRED	UNIT AREA (S.F.)	AREA IN SQUARE FEET
	WIDTH	HEIGHT		LETTER HEIGHT	VERTICAL SPACING	ARROW RTE. MKR.		BACK-GROUND	LEGEND	BORDER			
R1-1	30"	30"	STOP	SEE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS			6	RED	WHITE	WHITE	P5-6	6.38	38.28
R3-2	24"	24"					2	WHITE	RED/ BLACK	BLACK	2 MTD W/OTHERS	4.00	8.00
R3-5L	30"	36"	ONLY				2	WHITE	BLACK	BLACK	2 MTD ON MAST ARM	7.50	15.00
R3-5R	30"	36"	ONLY				1	WHITE	BLACK	BLACK	1 MTD ON MAST ARM	7.50	7.50
R3-6L	30"	36"					1	WHITE	BLACK	BLACK	1 MTD ON MAST ARM	7.50	7.50
R3-7L	30"	30"	LEFT LANE MUST TURN LEFT				16	WHITE	BLACK	BLACK	P5-16	6.25	100.00
R3-7R	30"	30"	RIGHT LANE MUST TURN RIGHT				7	WHITE	BLACK	BLACK	P5-7	6.25	43.75
R3-8c	45"	30"	ONLY ONLY				2	WHITE	BLACK	BLACK	P5-4	9.38	18.75
R4-7	24"	30"					9	WHITE	BLACK	BLACK	P5-10	5.00	45.00
R5-1	30"	30"	DO NOT ENTER				3	WHITE	RED/ WHITE	–	3 MTD W/OTHERS	6.25	18.75
R6-1	36"	12"	ONE WAY				3	BLACK	WHITE/ BLACK	WHITE	P5-3	3.00	9.00
R6-1(POS)	36"	12"	ONE WAY				2	BLACK	WHITE	BLACK	P5-2	3.00	6.00
R10-11b	30"	30"	NO TURN ON RED				1	WHITE	BLACK	BLACK	1 MTD ON TS POLE	6.25	6.25
M1-1(93)	36"	36"	INTERSTATE 93				9	RED/ BLUE	WHITE	WHITE	P5-9	9.00	81.00
M3-1(W)	30"	15"	NORTH				1	WHITE	BLACK	BLACK	1 MTD W/OTHERS	3.13	3.13
M3-1(B)	30"	15"	NORTH				3	BLUE	WHITE	WHITE	1 MTD W/OTHERS	3.13	9.39
M3-3(W)	30"	15"	SOUTH				1	WHITE	BLACK	BLACK	1 MTD W/OTHERS	3.13	3.13
M3-3(B)	30"	15"	SOUTH				2	BLUE	WHITE	WHITE	1 MTD W/OTHERS	3.13	6.26

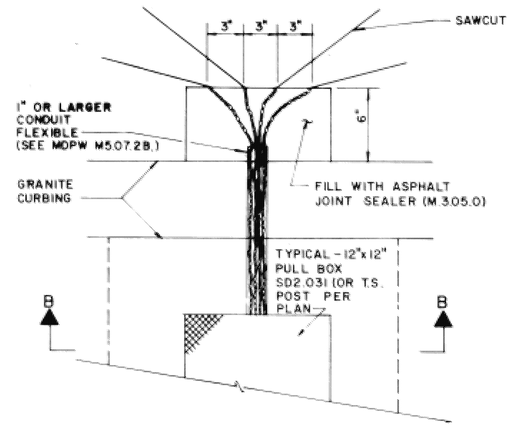
IDENTIFI-CATION NUMBER	SIZE OF SIGN		TEXT	TEXT DIMENSIONS (INCHES)			NUMBER OF SIGNS REQUIRED	COLOR			POST SIZE AND NUMBER REQUIRED	UNIT AREA (S.F.)	AREA IN SQUARE FEET
	WIDTH	HEIGHT		LETTER HEIGHT	VERTICAL SPACING	ARROW RTE. MKR.		BACK-GROUND	LEGEND	BORDER			
M4-5(B)	30"	15"	TO	SEE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS			9	BLUE	WHITE	WHITE	9 MTD W/OTHERS	3.13	28.17
M4-5(W)	30"	15"	TO				2	WHITE	BLACK	BLACK	2 MTD W/OTHERS	3.13	6.26
M6-1(R)W	21"	15"	→				3	WHITE	BLACK	BLACK	3 MTD W/OTHERS	2.19	6.57
M6-1(R)B	21"	15"	→				3	BLUE	WHITE	WHITE	3 MTD W/OTHERS	2.19	6.57
M6-1(L)W	21"	15"	←				1	WHITE	BLACK	BLACK	1 MTD W/OTHERS	2.19	2.19
M6-1(L)B	21"	15"	←				3	BLUE	WHITE	WHITE	3 MTD W/OTHERS	2.19	6.57
M6-3	21"	15"	↑				3	BLUE	WHITE	WHITE	3 MTD W/OTHERS	2.19	6.57
SP-1	45"	30"	ONLY ONLY ONLY				1	WHITE	BLACK	BLACK	P5-2	9.38	9.38
H1-2	24"	24"		AS PER MASSHIGHWAY DEPARTMENT STANDARD			1	YELLOW	YELLOW CLUSTER	– – –	P5-1	INCLUDED UNDER ITEM 827.21	
R3-26	24"	30"	RIGHT TURN ONLY				3	WHITE	BLACK	BLACK	P5-3	5.00	15.00
R7-107a	12"	34"					1	WHITE	RED/ BLACK	BLACK	P5-1	2.83	2.83
R7-107a(L)	12"	34"					1	WHITE	RED/ BLACK	BLACK	P5-1	2.83	2.83
R7-107a(R)	12"	34"					2	WHITE	RED/ BLACK	BLACK	P5-1 1 MTD W/OTHERS	2.83	5.67
R10-3f	5"	8"					6	WHITE	BLACK	BLACK	6 MTD ON TS POLE	INCLUDED UNDER ITEM 815.1	
R10-22	12"	18"	TO REQUEST GREEN WAIT ON				4	WHITE	BLACK	BLACK	P5-1 3 MTD W/OTHERS	1.50	6.00
M1-5(28)	36"	36"	28				4	WHITE	BLACK	BLACK	P5-4	9.00	36.00

NOTE: HIGH INTENSITY REFLECTIVE SHEETING SHALL BE USED FOR ALL SIGNS. SEE FHWA "STANDARD HIGHWAY SIGNS, 2004 EDITION" FOR TEXT DIMENSIONS, AS AMENDED; THE 1977 MASSHIGHWAY DEPARTMENT CONSTRUCTION AND TRAFFIC STANDARD DETAILS, AS AMENDED, FOR SIGNS AND SUPPORTS; AND THE MASSHIGHWAY DEPARTMENT SIGN LISTINGS 1993 EDITION, AS AMENDED.



PLAN OF SEGMENTED DETECTOR DETAIL

NOT TO SCALE



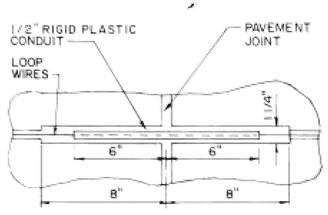
DETAIL - PLAN VIEW

NOT TO SCALE

DETECTOR NOTES

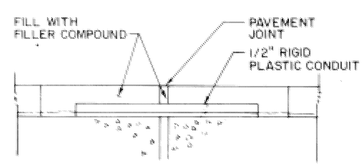
1. IN BASE OR HANDHOLE, SPLICE ALL SEGMENTS TO TYPE II-SHIELDED LOOP DETECTOR LEAD-IN CABLE. SEGMENTS SHALL BE SPLICED IN IN PARALLEL, IN SERIES, OR IN A COMBINATION OF PARALLEL & SERIES AS SHOWN ON THE PLAN SHEET FOR EACH DETECTOR. NUMBER OF TURNS OF WIRE SHALL ALSO BE AS SHOWN ON THE PLAN SHEET FOR EACH DETECTOR. SEE NOTE 12.
2. SEE SPECIAL PROVISIONS FOR REQUIREMENTS OF DETECTOR AMPLIFIER.
3. LEAD-IN WIRES SHALL BE TWISTED FROM SEGMENT TO SPLICE WITH SHIELDED CABLE. FIVE TURNS PER FOOT. LEAD-IN SHALL BE TYPE II (M8.16.11).
4. BEFOPE STARTING ANY SPLICING THE ELECTRICAL CONTRACTOR SHALL FURNISH DATA SHEETS ON THE MATERIALS AND/OR METHODS TO BE USED IN ACCORDANCE WITH THE DEPARTMENTS STANDARD OPERATING PROCEDURES FOR APPROVAL OF SHOP DRAWINGS. SEE SECTION 815.64, ESPECIALLY PARAGRAPH 1.
5. THE METALLIC SHIELD WHICH SHALL ENCASE THE DETECTOR LEADS FROM A SPLICE (TYPICALLY LOCATED IN A PULL BOX NEAR THE ROAD WAY COMPONENT OF THE DETECTOR) TO THE CONTROLLER, AND THE DRAIN WIRE UNDER THE METALLIC SHIELD, SHALL BE FIRMLY BONDED TO THE EARTH GROUNDING BUS IN THE CONTROLLER. HOWEVER, THE SHIELD AND DRAIN WIRE SHALL BE CAREFULLY INSULATED FROM THE TRANSFORMER NEUTRAL OR FROM EARTH GROUND AT ALL OTHER POINTS ALONG ITS LENGTH. SPECIFICALLY, THIS INCLUDES CAREFUL INSULATION OF THE EXPOSED PORTION OF THE SHIELD AND THE DRAIN WIRE AT THE END AWAY FROM THE CONTROLLER WHERE IT IS SPLICED TO WIRES LEADING TO THE ROADWAY COMPONENT OF THE DETECTOR. THIS IS IMPORTANT TO AVOID A GROUND RETURN LOOP.
6. FILL ALL CONDUIT OPENINGS WITH DUCT SEAL.
7. AFTER SAW CUTS ARE COMPLETE, BLOW OUT OIL AND WATER WITH FREE COMPRESSED AIR UNTIL CUTS ARE CLEAN AND DRY. INSERT WIRE INTO CLEAN SLOT WITH A BLUNT, SMOOTH, ROUND EDGED TOOL OF WOOD OR PLASTIC SUCH AS A PAINT STIRRER, DO NOT USE A SCREWDRIVER. THEN INSERT FOAM PLASTIC HOLD DOWN STRIPS, SIMILAR TO ETHA FOAM 5B. STRIPS SHALL BE ABOUT 2" LONG, PLACED IN THE SLOT ABOUT EVERY 2 FEET. THEN POUR SEALER, TAKING CARE TO ELIMINATE BUBBLES.
8. THE COMBINED ROADWAY LOOP, TWISTED LEAD-IN WIRES, SPLICE AND SHIELDED LEAD-IN CABLE SHALL HAVE A RESISTANCE TO GROUND OF AT LEAST 100 MEGOHMS. SEE SPECIAL PROVISIONS FOR ADDITIONAL REQUIREMENTS.
9. FOR INSTALLATION OF SINGLE (ONE SEGMENT) SMALL WIRE LOOP DETECTOR. DETAIL IS THE SAME.
10. CUT LOOPS IN BINDER AND FILL WITH APPROVED FLEXIBLE SEALER.
11. DETECTOR WIRE SHALL BE A DIFFERENT COLOR FOR EACH SEGMENT OF A DETECTOR GROUP. SEE DETAIL.
12. SPLICING PATTERN P= SERIES/PARALLEL: SPLICE SEGMENTS 1 AND 3 OF AN INDIVIDUAL DETECTOR IN SERIES. SPLICE SEGMENTS 2 AND 4 IN SERIES. SPLICE THE RESULTANT TWO GROUPS IN PARALLEL. SPLICE THE RESULTANT COMBINATION TO ONE LEAD-IN CABLE. CONNECT THIS CABLE TO AN OTHERWISE UNUSED AMPLIFIER CHANNEL.

    SPLICING PATTERN S=SERIES: SPLICE ALL SEGMENTS (TYPICALLY FOUR, BUT MAY BE LESS) OF AN INDIVIDUAL DETECTOR IN SERIES. SPLICE THE RESULTANT COMBINATION TO ONE LEAD-IN CABLE TO AN OTHERWISE UNUSED AMPLIFIER CHANNEL.



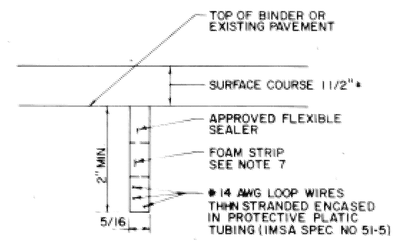
PLAN

TREATMENT AT PAVEMENT JOINTS
NOT TO SCALE



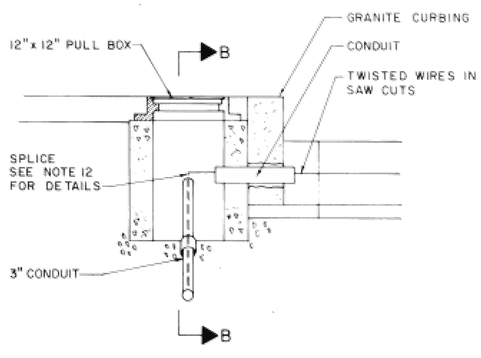
VERTICAL SECTION

TREATMENT AT PAVEMENT JOINTS
NOT TO SCALE



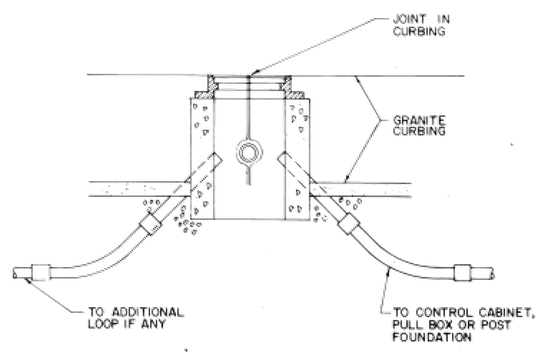
SECTION C-C & D-D

LOOPS IN BINDER COURSE OR EXISTING PAVEMENT TO BE RESURFACE
NOT TO SCALE



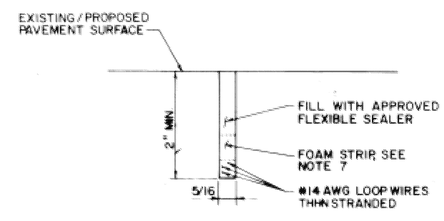
SECTION A-A

NOT TO SCALE



SECTION B-B

NOT TO SCALE

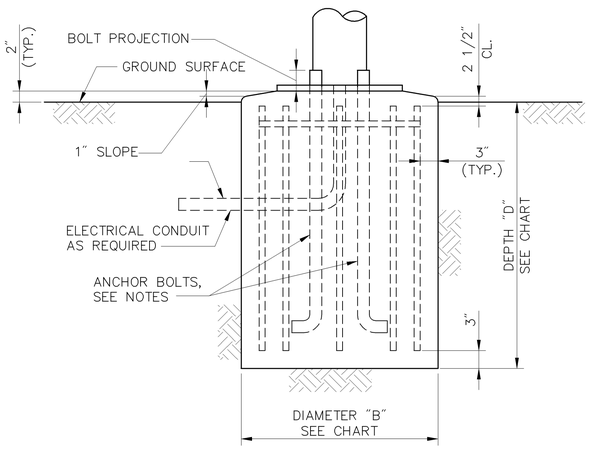


SECTION C-C & D-D

LOOPS IN SURFACE COURSE
NOT TO SCALE

THIS PLAN NOT DESIGNED BY VANASSE HANGEN BRUSTLIN, INC. IT WAS PROVIDED BY THE MASSACHUSETTS HIGHWAY DEPARTMENT AND ALL INFORMATION CONTAINED HEREIN IS ASSUMED TO BE CORRECT.

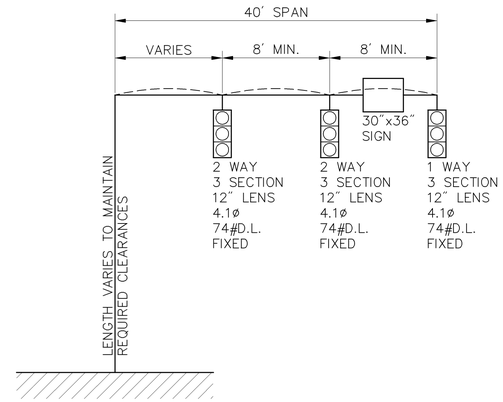
SOMERVILLE
ASSEMBLY SQUARE DRIVE
40′ MAST ARM DETAILS
SHEET 67 OF 72



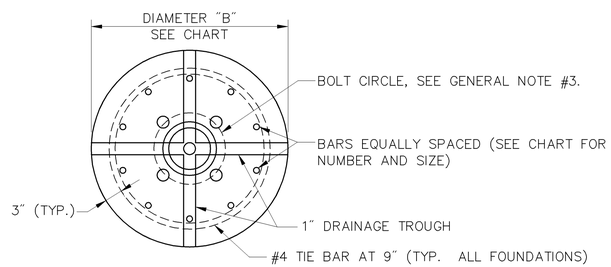
ELEVATION
NOT TO SCALE

NOTES:

1. POLE, BASE PLATE AND ANCHOR BOLTS SHALL BE DESIGNED BY THE POLE MANUFACTURER.
2. MINIMUM FOUNDATION DEPTH SHALL BE CHECKED TO INSURE ADEQUATE ANCHOR BOLT EMBEDMENT CLEARNACE, AND PROJECTION.
3. OPTIONAL END ANCHORAGE FOR ANCHOR BOLTS CAN BE A STEEL PLATE WITH THREADED HOLES DESIGNED BY THE POLE MANUFACTURER



SIGNAL
NOT TO SCALE



PLAN
NOT TO SCALE

GENERAL NOTES:

1. FOUNDATIONS SHALL BE CLASS 4000–1½–565 CEMENT CONCRETE MASONRY.
2. REINFORCEMENT SHALL BE A.S.T.M. A615–GR. 60.
3. BOLT CIRCLE AND ANCHOR BOLTS TO BE PROVIDED BY THE CONTRACTOR. THE ANCHOR BOLTS SHALL BE SUPPLIED WITH A TEMPLATE FOR SETTING THE BOLTS AND NECESSARY BOLT PROJECTIONS.
4. PROVIDE FOR ELECTRICAL CONDUIT AS REQUIRED.
5. EXCAVATION SHALL BE BY THE AUGER METHOD TO THE NEAT LINES OF THE OUTSIDE DIMENSION OF THE FOUNDATION WITHOUT DISTURBING THE SOIL AROUND AND BELOW THE PROPOSED FOUNDATION BOTTOM.
6. IF THE SOIL IS DISTURBED OR REMOVED BEYOND THE NEAT LINES OF THE OUTSIDE DIMENSION OF THE FOUNDATION AS SPECIFIED, IT SHALL BE REPLACED WITH CONCRETE. ANY ADDITIONAL COST FOR THE CONCRETE SHALL BE PAID FOR BY THE CONTRACTOR.
7. DETERMINATION OF EXISTING SOIL CONDITIONS SHALL BE MADE BY THE ENGINEER.
8. VERTICAL REINFORCEMENT BARS ARE TO BE EVENLY SPACED IN THE FOUNDATION AS SHOWN.
9. IF UTILITIES OR OTHER UNDERGROUND OBSTRUCTIONS ARE ENCOUNTERED, THE CONTRACTOR SHALL BACKFILL THE AREA TO ITS ORIGINAL CONDITION UNTIL AN ALTERNATE DESIGN HAS BEEN PROVIDED BY THE DESIGN ENGINEER.
10. THE FOUNDATIONS SHOWN ON THIS DRAWING ARE FOR A 40–FOOT CANTILEVERED TYPE II MAST ARM CARRYING TRAFFIC SIGNALS AS SHOWN.
11. ALL SIGNALS SHALL BE ATTACHED TO THE MAST ARM WITH FIXED LOUVERED BACKPLATES.

SOIL TYPE	DIA. (B)=3′–6″		DIA. (B)=4′–0″		DIA. (B)=4′–6″	
(SEE GENERAL NOTE NO. 7)	DEPTH (D)	VERTICAL BARS	DEPTH (D)	VERTICAL BARS	DEPTH (D)	VERTICAL BARS
DRY SANDY SOIL	10′–10″	10#8	9′–5″	12#8	8′–3″	14#8
WET SANDY SOIL	14′–0″	10#8	12′–0″	12#8	10′–4″	14#8
CLAY SOIL (MEDIUM STIFF)	14′–6″	10#8	13′–3″	12#8	12′–10″	14#8

FOUNDATION DESIGN CHART
NOT TO SCALE

VANASSE HANGEN BRUSTLIN, INC.
101 WALNUT STREET
WATERTOWN, MASSACHUSETTS 02471

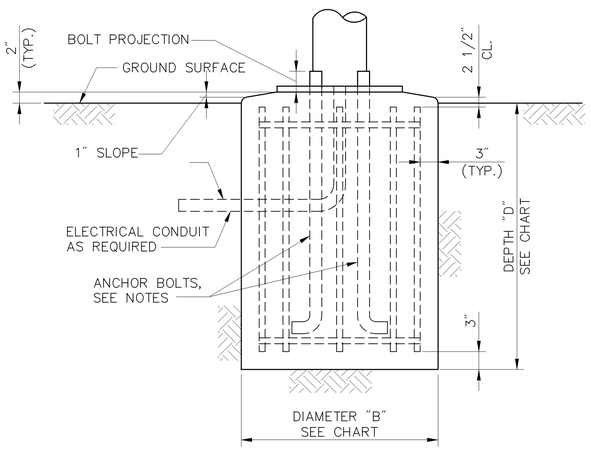
40′ FOOT–TYPE II MAST ARM
CORED PIER FOUNDATIONS

DATE _____

TRAFFIC ENGINEER

STRUCTURAL ENGINEER

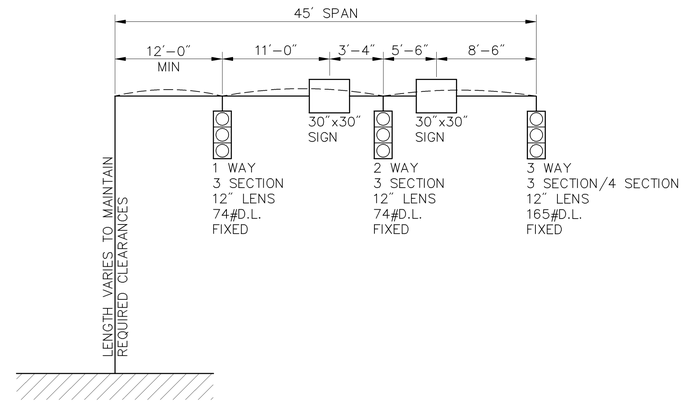
SOMERVILLE
ASSEMBLY SQUARE DRIVE
45–FOOT MAST ARM DETAILS
SHEET 68 OF 72



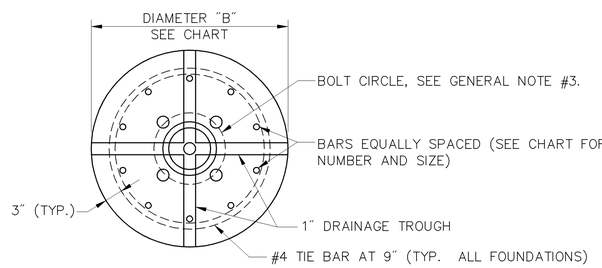
ELEVATION
NOT TO SCALE

NOTES:

1. POLE, BASE PLATE AND ANCHOR BOLTS SHALL BE DESIGNED BY THE POLE MANUFACTURER.
2. MINIMUM FOUNDATION DEPTH SHALL BE CHECKED TO INSURE ADEQUATE ANCHOR BOLT EMBEDMENT CLEARNACE, AND PROJECTION.
3. OPTIONAL END ANCHORAGE FOR ANCHOR BOLTS CAN BE A STEEL PLATE WITH THREADED HOLES DESIGNED BY THE POLE MANUFACTURER



SIGNAL
NOT TO SCALE



PLAN
NOT TO SCALE

GENERAL NOTES:

1. FOUNDATIONS SHALL BE CLASS 4000–1½–565 CEMENT CONCRETE MASONRY.
2. REINFORCEMENT SHALL BE A.S.T.M. A615–GR. 60.
3. BOLT CIRCLE AND ANCHOR BOLTS TO BE PROVIDED BY THE CONTRACTOR. THE ANCHOR BOLTS SHALL BE SUPPLIED WITH A TEMPLATE FOR SETTING THE BOLTS AND NECESSARY BOLT PROJECTIONS.
4. PROVIDE FOR ELECTRICAL CONDUIT AS REQUIRED.
5. EXCAVATION SHALL BE BY THE AUGER METHOD TO THE NEAT LINES OF THE OUTSIDE DIMENSION OF THE FOUNDATION WITHOUT DISTURBING THE SOIL AROUND AND BELOW THE PROPOSED FOUNDATION BOTTOM.
6. IF THE SOIL IS DISTURBED OR REMOVED BEYOND THE NEAT LINES OF THE OUTSIDE DIMENSION OF THE FOUNDATION AS SPECIFIED, IT SHALL BE REPLACED WITH CONCRETE. ANY ADDITIONAL COST FOR THE CONCRETE SHALL BE PAID FOR BY THE CONTRACTOR.
7. DETERMINATION OF EXISTING SOIL CONDITIONS SHALL BE MADE BY THE ENGINEER.
8. VERTICAL REINFORCEMENT BARS ARE TO BE EVENLY SPACED IN THE FOUNDATION AS SHOWN.
9. IF UTILITIES OR OTHER UNDERGROUND OBSTRUCTIONS ARE ENCOUNTERED, THE CONTRACTOR SHALL BACKFILL THE AREA TO ITS ORIGINAL CONDITION UNTIL AN ALTERNATE DESIGN HAS BEEN PROVIDED BY THE DESIGN ENGINEER.
10. THE FOUNDATIONS SHOWN ON THIS DRAWING ARE FOR A 45–FOOT CANTILEVERED TYPE II MAST ARM CARRYING TRAFFIC SIGNALS AS SHOWN.
11. ALL SIGNALS SHALL BE ATTACHED TO THE MAST ARM WITH FIXED LOUVERED BACKPLATES.

SOIL TYPE	DIA. (B)=4'–0"	
(SEE GENERAL NOTE NO. 7)	DEPTH (D)	VERTICAL BARS
DRY SANDY SOIL	12'–6"	12#8
WET SANDY SOIL	16'–3"	12#8
CLAY SOIL (MEDIUM STIFF)	18'–6"	12#8

FOUNDATION DESIGN CHART
NOT TO SCALE

VANASSE HANGEN BRUSTLIN, INC.
101 WALNUT STREET
WATERTOWN, MASSACHUSETTS 02471

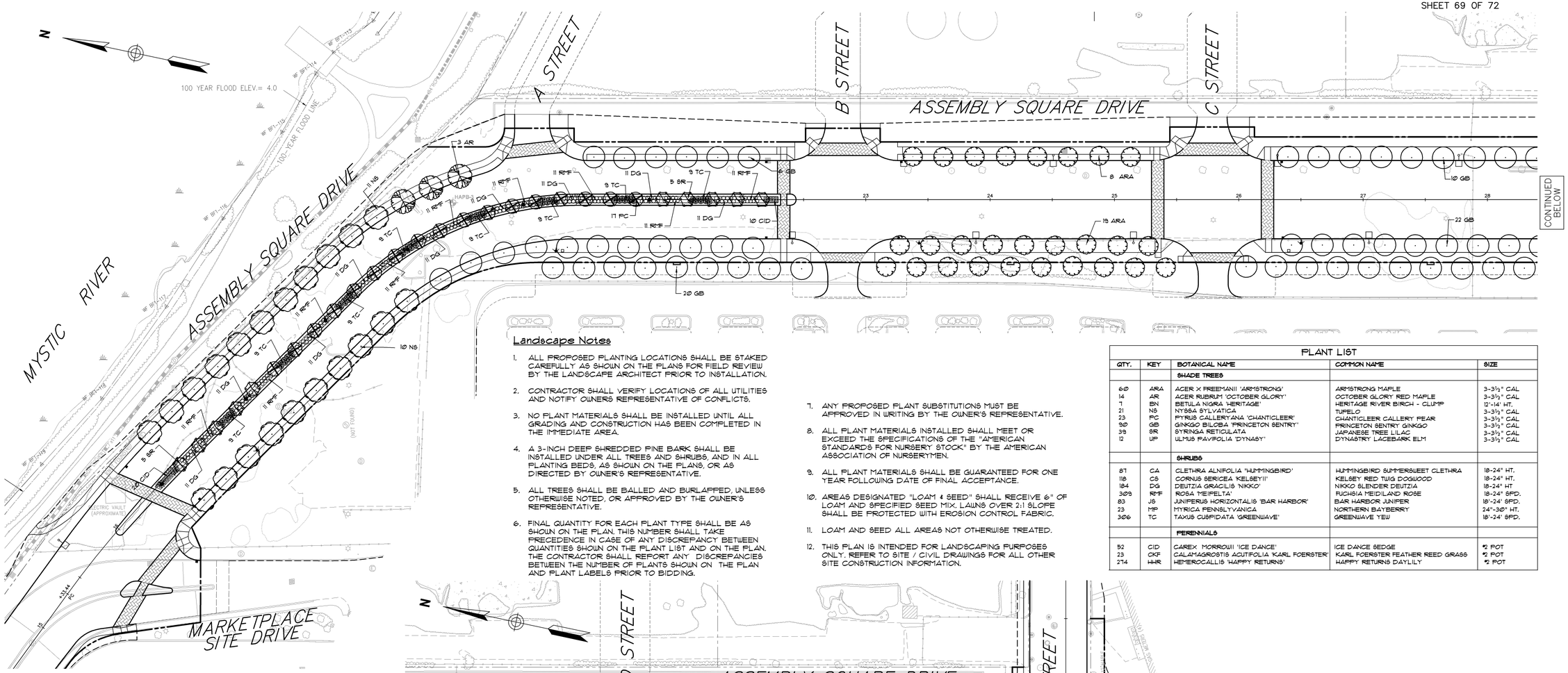
45' FOOT–TYPE II MAST ARM
CORED PIER FOUNDATIONS

DATE _____

TRAFFIC ENGINEER

STRUCTURAL ENGINEER

SOMERVILLE
ASSEMBLY SQUARE DRIVE
LANDSCAPING PLANS
SHEET 69 OF 72

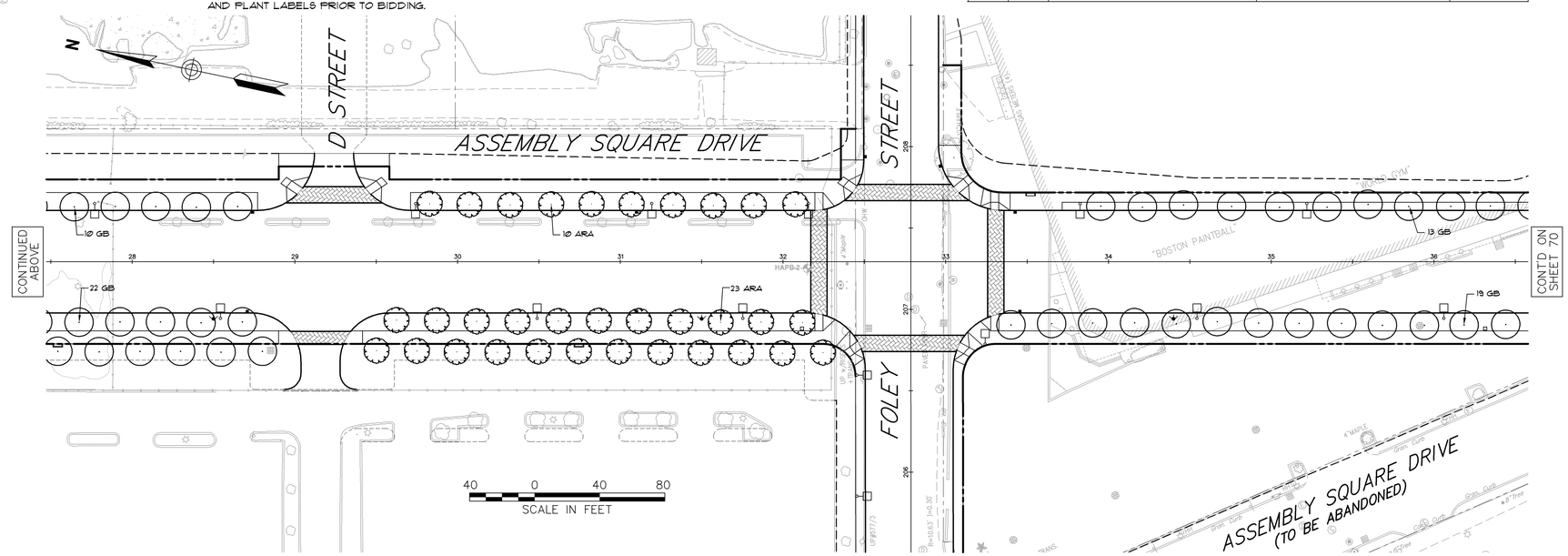


Landscape Notes

1. ALL PROPOSED PLANTING LOCATIONS SHALL BE STAKED CAREFULLY AS SHOWN ON THE PLANS FOR FIELD REVIEW BY THE LANDSCAPE ARCHITECT PRIOR TO INSTALLATION.
2. CONTRACTOR SHALL VERIFY LOCATIONS OF ALL UTILITIES AND NOTIFY OWNERS REPRESENTATIVE OF CONFLICTS.
3. NO PLANT MATERIALS SHALL BE INSTALLED UNTIL ALL GRADING AND CONSTRUCTION HAS BEEN COMPLETED IN THE IMMEDIATE AREA.
4. A 3-INCH DEEP SHREDDED PINE BARK SHALL BE INSTALLED UNDER ALL TREES AND SHRUBS, AND IN ALL PLANTING BEDS, AS SHOWN ON THE PLANS, OR AS DIRECTED BY OWNER'S REPRESENTATIVE.
5. ALL TREES SHALL BE BALLED AND BURLAPPED, UNLESS OTHERWISE NOTED, OR APPROVED BY THE OWNER'S REPRESENTATIVE.
6. FINAL QUANTITY FOR EACH PLANT TYPE SHALL BE AS SHOWN ON THE PLAN. THIS NUMBER SHALL TAKE PRECEDENCE IN CASE OF ANY DISCREPANCY BETWEEN QUANTITIES SHOWN ON THE PLANT LIST AND ON THE PLAN. THE CONTRACTOR SHALL REPORT ANY DISCREPANCIES BETWEEN THE NUMBER OF PLANTS SHOWN ON THE PLAN AND PLANT LABELS PRIOR TO BIDDING.
7. ANY PROPOSED PLANT SUBSTITUTIONS MUST BE APPROVED IN WRITING BY THE OWNER'S REPRESENTATIVE.
8. ALL PLANT MATERIALS INSTALLED SHALL MEET OR EXCEED THE SPECIFICATIONS OF THE "AMERICAN STANDARDS FOR NURSERY STOCK" BY THE AMERICAN ASSOCIATION OF NURSERYMEN.
9. ALL PLANT MATERIALS SHALL BE GUARANTEED FOR ONE YEAR FOLLOWING DATE OF FINAL ACCEPTANCE.
10. AREAS DESIGNATED "LOAM & SEED" SHALL RECEIVE 6" OF LOAM AND SPECIFIED SEED MIX. LAWNS OVER 2:1 SLOPE SHALL BE PROTECTED WITH EROSION CONTROL FABRIC.
11. LOAM AND SEED ALL AREAS NOT OTHERWISE TREATED.
12. THIS PLAN IS INTENDED FOR LANDSCAPING PURPOSES ONLY. REFER TO SITE / CIVIL DRAWINGS FOR ALL OTHER SITE CONSTRUCTION INFORMATION.

PLANT LIST

QTY.	KEY	BOTANICAL NAME	COMMON NAME	SIZE
		SHADE TREES		
60	ARA	ACER X FREEMANII 'ARMSTRONG'	ARMSTRONG MAPLE	3-3½" CAL
14	AR	ACER RUBRUM 'OCTOBER GLORY'	OCTOBER GLORY RED MAPLE	3-3½" CAL
7	BN	BETULA NIGRA 'HERITAGE'	HERITAGE RIVER BIRCH - CLUMP	12'-14' HT.
21	NS	NYSSA SYLVATICA	TUPELO	3-3½" CAL
23	PC	PYRUS CALLERYANA 'CHANTICLEER'	CHANTICLEER CALLERY PEAR	3-3½" CAL
90	GB	GINKGO BILOBA 'PRINCETON SENTRY'	PRINCETON SENTRY GINKGO	3-3½" CAL
39	SR	SYRINGA RETICULATA	JAPANESE TREE LILAC	3-3½" CAL
12	UP	ULMUS PAVIFOLIA 'DYNASY'	DYNASTRY LACEBARK ELM	3-3½" CAL
		SHRUBS		
87	CA	CLETHRA ALNIFOLIA "HUMMINGBIRD"	HUMMINGBIRD SUMMERSWEET CLETHRA	18-24" HT.
118	CS	CORNUS SERICEA 'KELSEYII'	KELSEY RED TWIG DOGWOOD	18-24" HT.
184	DG	DEUTZIA GRACILIS 'NIKKO'	NIKKO SLENDER DEUTZIA	18-24" HT
309	RMF	ROSA 'MEIFELTA'	FUCHSIA MEIDILAND ROSE	18-24" BPD.
83	JS	JUNIPERUS HORIZONTALIS 'BAR HARBOR'	BAR HARBOR JUNIPER	18'-24' BPD.
23	MP	MYRICA PENNSLYVANICA	NORTHERN BAYBERRY	24"-30" HT.
306	TC	TAXUS CUSPIDATA 'GREENWAVE'	GREENWAVE YEW	18'-24' BPD.
		PERENNIALS		
52	CID	CAREX MORROWII 'ICE DANCE'	ICE DANCE SEDGE	#2 POT
23	CKF	CALAMAGROSTIS ACUTIFOLIA 'KARL FOERSTER'	KARL FOERSTER FEATHER REED GRASS	#2 POT
274	HHR	HEMEROCALLIS 'HAPPY RETURNS'	HAPPY RETURNS DAYLILY	#2 POT



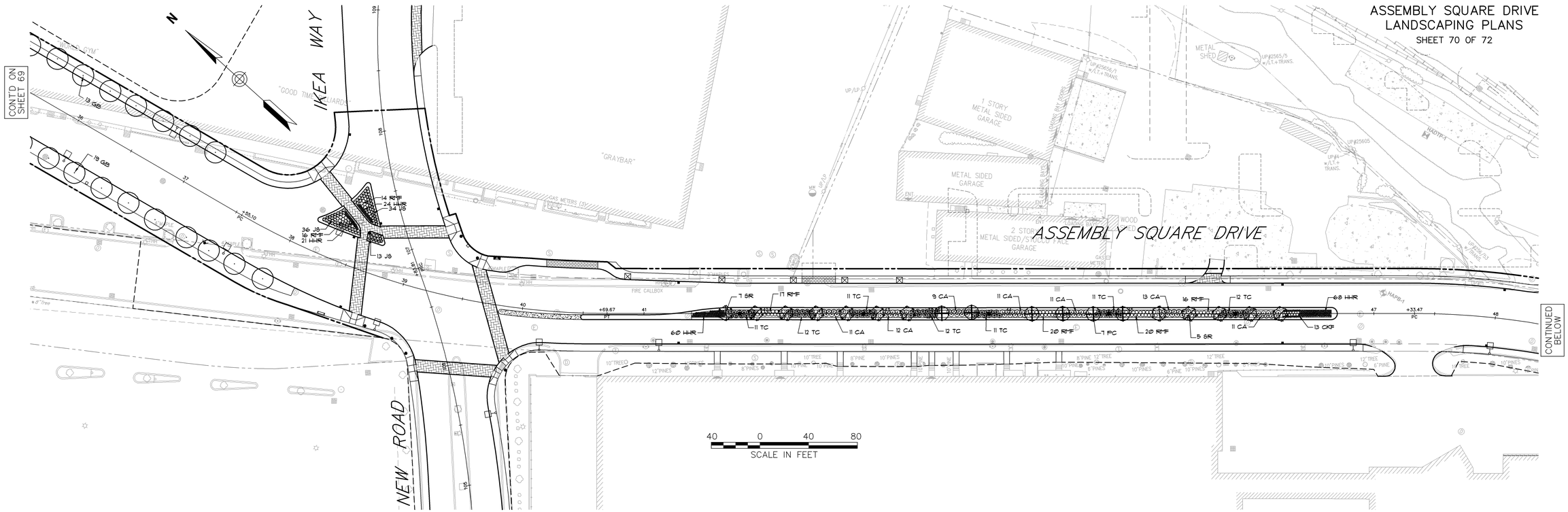
Tree Protection

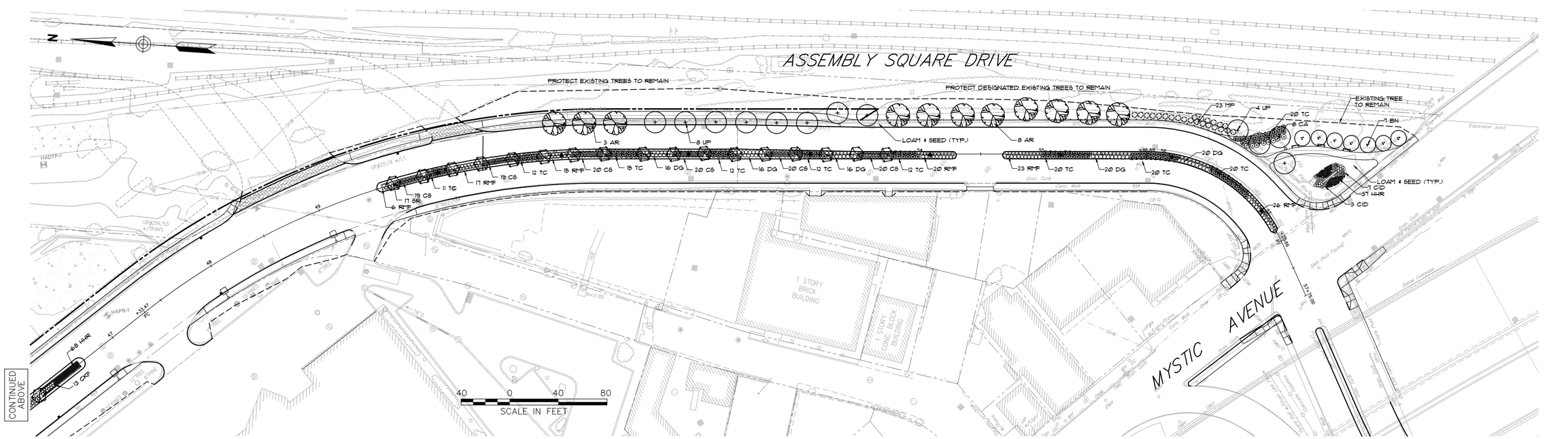
1. EXISTING TREES TO REMAIN SHALL BE PROTECTED WITH TEMPORARY EROSION CONTROL FENCE AND HAY BALE BARRIER. ERECT BARRIER AT EDGE OF THE EARTHWORK CUT LINE PRIOR TO TREE CLEARING. LAY OUT THIS LINE BY FIELD SURVEY.
2. CONTRACTOR SHALL NOT OPERATE VEHICLES WITHIN THE TREE PROTECTION AREA. CONTRACTOR SHALL NOT STORE VEHICLES OR MATERIALS, OR DISPOSE OF ANY WASTE MATERIALS, WITHIN THE TREE PROTECTION AREA.
3. DAMAGE TO EXISTING TREES CAUSED BY THE CONTRACTOR SHALL BE REPAIRED BY A CERTIFIED ARBORIST AT THE CONTRACTOR'S EXPENSE.

Plant Maintenance Notes

1. CONTRACTOR SHALL PROVIDE COMPLETE MAINTENANCE OF THE LAWNS AND PLANTINGS. NO IRRIGATION IS PROPOSED FOR THIS SITE. THE CONTRACTOR SHALL SUPPLY SUPPLEMENTAL WATERING FOR NEW LAWNS AND PLANTINGS DURING THE ONE YEAR PLANT GUARANTEE PERIOD.
2. CONTRACTOR SHALL PROVIDE ALL MATERIALS, LABOR, AND EQUIPMENT FOR THE COMPLETE LANDSCAPE MAINTENANCE WORK. WATER SHALL BE PROVIDED BY THE OWNER.
3. WATERING SHALL BE REQUIRED DURING THE GROWING SEASON, WHEN NATURAL RAINFALL IS BELOW ONE INCH PER WEEK.
4. WATER SHALL BE APPLIED IN SUFFICIENT QUANTITY TO THOROUGHLY SATURATE THE SOIL IN THE ROOT ZONE OF EACH PLANT.
5. CONTRACTOR SHALL REPLACE DEAD OR DYING PLANTS AT THE END OF THE ONE YEAR GUARANTEE PERIOD. CONTRACTOR SHALL TURN OVER MAINTENANCE TO THE FACILITY MAINTENANCE STAFF AT THAT TIME.

SOMERVILLE
ASSEMBLY SQUARE DRIVE
LANDSCAPING PLANS
SHEET 70 OF 72





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GENERAL SEQUENCING

SITE PREPARATION

1. SITE DEMOLITION BY OTHERS. SEE SITE DEMOLITION PLANS.
2. INSTALL EROSION CONTROL PER GENERAL PLANS.

PHASE 1 – UTILITY WORK

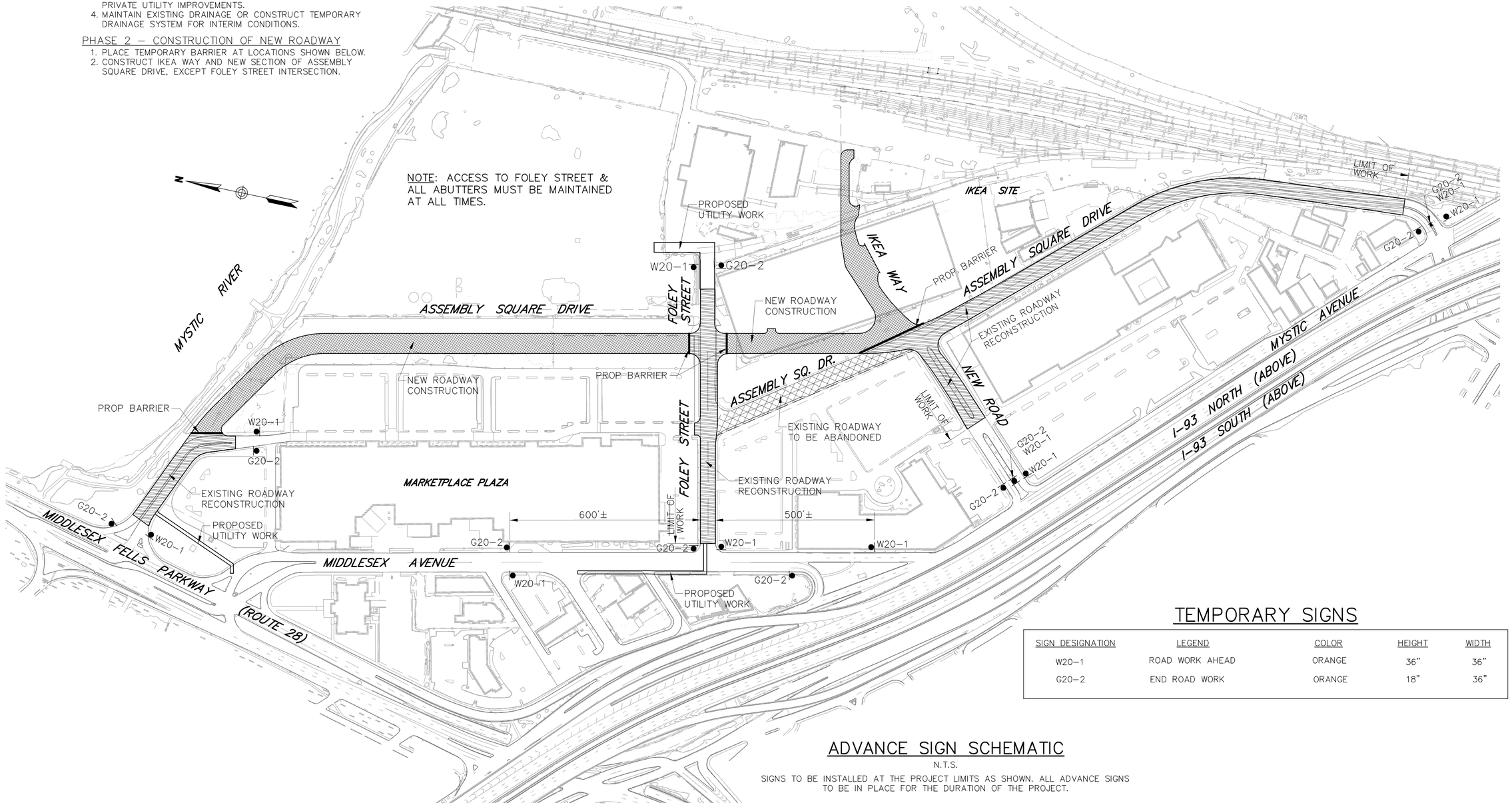
1. INSTALL TEMPORARY SIGNS, DRUMS, AND OTHER TRAFFIC MAINTENANCE DEVICES AS DIRECTED BY THE ENGINEER.
2. MAINTAIN ATLEAST ONE LANE (11 FOOT MIN. WIDTH) OF TRAFFIC IN EACH DIRECTION DURING ALL WORK.
3. CONSTRUCT PROPOSED UTILITIES IMPROVEMENTS PER UTILITY PLANS. COORDINATE WITH PRIVATE UTILITIES FOR PRIVATE UTILITY IMPROVEMENTS.
4. MAINTAIN EXISTING DRAINAGE OR CONSTRUCT TEMPORARY DRAINAGE SYSTEM FOR INTERIM CONDITIONS.

PHASE 2 – CONSTRUCTION OF NEW ROADWAY

1. PLACE TEMPORARY BARRIER AT LOCATIONS SHOWN BELOW.
2. CONSTRUCT IKEA WAY AND NEW SECTION OF ASSEMBLY SQUARE DRIVE, EXCEPT FOLEY STREET INTERSECTION.

PHASE 3 – RECONSTRUCTION OF EXISTING ROADWAY

1. INSTALL TEMPORARY SIGNS, DRUMS, AND OTHER TRAFFIC MAINTENANCE DEVICES AS DIRECTED BY THE ENGINEER. REMOVE TEMPORARY BARRIERS TO ALLOW TRAFFIC FLOW ON NEW SECTIONS OF ASSEMBLY SQUARE DRIVE.
2. MAINTAIN ATLEAST ONE LANE (11 FOOT MIN WIDTH) OF TRAFFIC IN EACH DIRECTION DURING ALL WORK.
3. RECONSTRUCT EXISTING ROADWAY AREAS.
4. ABANDON SECTION OF ASSEMBLY SQUARE DRIVE SHOWN BELOW. PLACE JERSEY BARRIER OR APPROVED EQUAL AT BOTH ENDS OF ABANDONED SECTION & AT ALL OTHER CURB CUTS FOR FUTURE STREETS & DRIVEWAYS (A, B, C, D STREETS & IKEA WAY AND DRIVEWAYS)



TEMPORARY SIGNS

SIGN DESIGNATION	LEGEND	COLOR	HEIGHT	WIDTH
W20-1	ROAD WORK AHEAD	ORANGE	36"	36"
G20-2	END ROAD WORK	ORANGE	18"	36"

ADVANCE SIGN SCHEMATIC

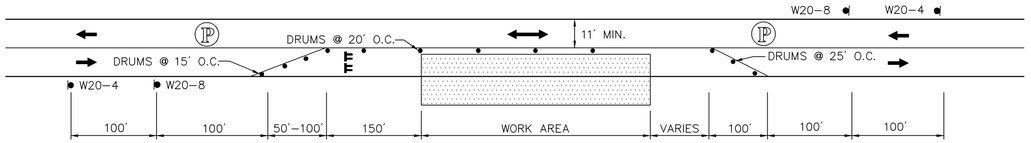
N.T.S.

SIGNS TO BE INSTALLED AT THE PROJECT LIMITS AS SHOWN. ALL ADVANCE SIGNS TO BE IN PLACE FOR THE DURATION OF THE PROJECT.

SOMERVILLE
ASSEMBLY SQUARE DRIVE
TRAFFIC MANAGEMENT PLANS
SHEET 72 OF 72

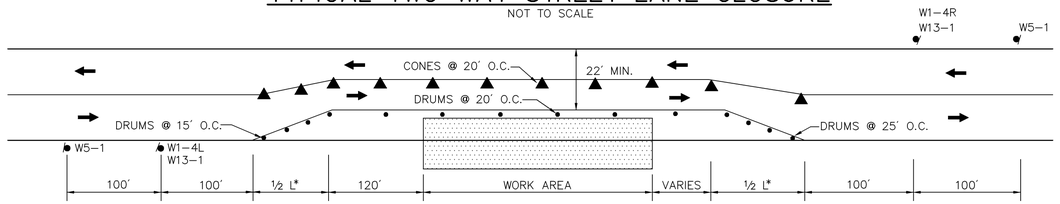
OPERATIONAL SIGNING

LANE CLOSURES SHOWN ARE FOR TEMPORARY CONSTRUCTION.
ALL DRUMS AND SIGNS ARE SHOWN AS THEY SHOULD APPEAR
DURING THE WORKING DAY, OR WHILE OPERATING IN THE WORK ZONE.



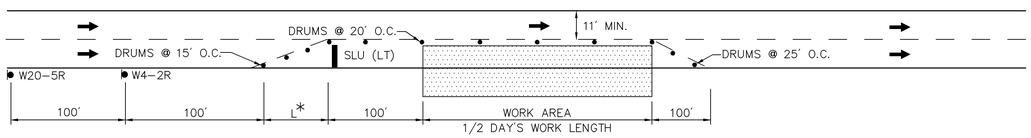
TYPICAL TWO WAY STREET LANE CLOSURE

NOT TO SCALE



TYPICAL TWO WAY STREET LANE SHIFT

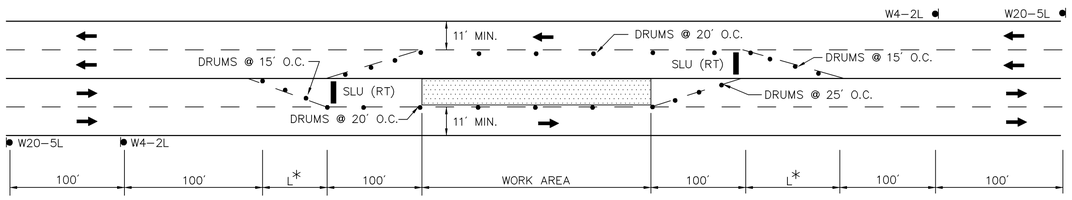
NOT TO SCALE



ONE LANE CLOSURE – RIGHT

NOT TO SCALE

NOTE: THIS DETAIL SHOWS A RIGHT LANE CLOSURE DETAIL. THIS DETAIL CAN ALSO BE USED FOR LEFT LANE CLOSURES, WITH THE SIGN PLACEMENT REVERSED AS APPROPRIATE.



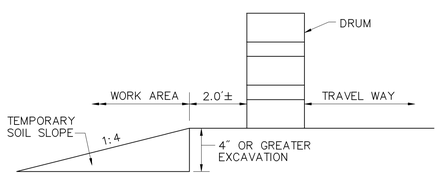
LEFT LANE CLOSURE

NOT TO SCALE

FOR POSTED SPEEDS OF 40 MPH OR LESS

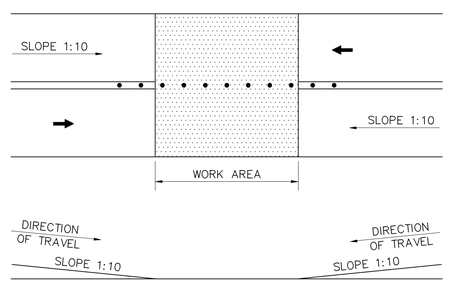
$$^{*}L=\frac{WS^2}{60}$$

L=TAPER LENGTH
W=WIDTH OF ROADWAY TO BE SHIFTED OR REDIRECTED
S=POSTED SPEED LIMIT



ROADWAY SLOPE PROTECTION

NOT TO SCALE



SQUARE OFF THE FULL WIDTH OF THE ROADWAY AT THE END OF WORK DAY

TEMPORARY PAVEMENT TRANSITION DETAIL

NOT TO SCALE

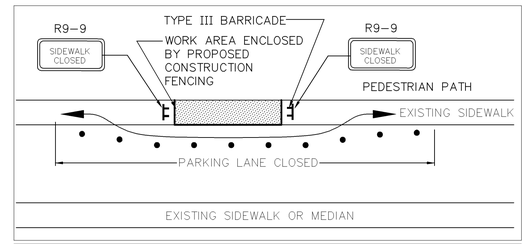
TEMPORARY SIGNS

SIGN DESIGNATION	LEGEND	HEIGHT	WIDTH
W20-1b	ROAD WORK 1500 FT.	36"	36"
W20-1a	ROAD WORK 1000 FT.	36"	36"
W20-1	ROAD WORK AHEAD	36"	36"
W21-5	SHOULDER WORK	30"	30"
W20-4	ONE LANE ROAD AHEAD	36"	36"
W20-8	POLICE OFFICER AHEAD	36"	36"
G20-2	END ROAD WORK	18"	36"
W5-1	ROAD NARROWS	36"	36"
W13-1	ADVISORY SPEED PLATE	24"	24"
W8-3	PAVEMENT ENDS	36"	36"
W1-4R		30"	30"
W1-4L		30"	30"
W4-2R		36"	36"
W4-2L		36"	36"
W20-5L	LEFT LANE CLOSED 500 FT	36"	36"
W20-5R	RIGHT LANE CLOSED 500 FT	36"	36"
W4-2R	BUMP	36"	36"
W4-2L	PAVED SHOULDER AHEAD	36"	36"
R9-9	SIDEWALK CLOSED	12"	24"
R9-11	SIDEWALK CLOSED AHEAD CROSS HERE	12"	24"

PEDESTRIAN BYPASS

TO BE USED IN CONJUNCTION WITH THE PROPOSED LANE CLOSURE DETAILS AND DURING CONSTUCTION STAGING AND AS DIRECTED BY THE ENGINEER.

TYPE I
N.T.S.



TYPE II
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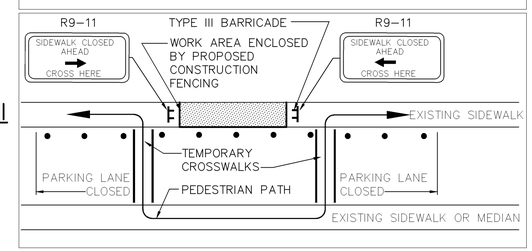


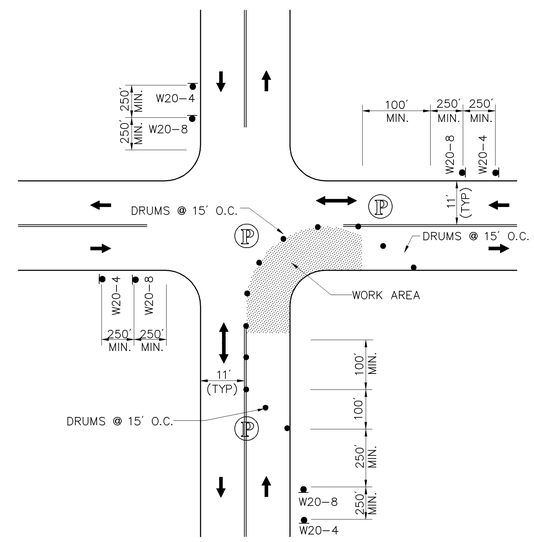
1. ADDITIONAL ADVANCE WARNING MAY BE NECESSARY.
2. CONTROLS FOR PEDESTRIAN TRAFFIC ONLY, ARE SHOWN. VEHICULAR TRAFFIC SHALL BE MAINTAINED AS SHOWN ELSEWHERE.
3. STREET LIGHTING SHOULD BE CONSIDERED WHEN LOCATING CONTROL DEVICES.
4. ◄——► DIRECTION OF PEDESTRIAN TRAVEL.
5. IF THE WORK ZONE DOES NOT PERMIT PEDESTRIANS TO TRAVEL ADJACENT TO IT AS SHOWN IN PEDESTRIAN BYPASS TYPE I, TEMPORARY CROSSWALKS WITH APPROPRIATE SIGNS SHALL BE INSTALLED TO CROSS PEDESTRIANS TO THE OPPOSITE SIDE OF THE STREET AS SHOWN IN PEDESTRIAN BYPASS TYPE II, AND AS DIRECTED BY THE ENGINEER.

LEGEND

●	DRUM		TYPE III BARRICADES
▲	TRAFFIC CONE		WORK AREA PUBLIC ACCESS RESTRICTED
Ⓟ	POLICE OFFICER	←	PROPOSED TRAFFIC FLOW
●	CONSTRUCTION SIGN	NTS	NOT TO SCALE

GENERAL NOTES

1. ALL CONSTRUCTION SIGNING, DRUMS, BARRICADES AND OTHER DEVICES SHALL CONFORM WITH THE 2003 MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (M.U.T.C.D.) AS AMENDED.
2. ALL DRUMS SHALL BE SET AT 20' ON CENTER MAX. UNLESS OTHERWISE NOTED OR ADJUSTED BY THE ENGINEER.
3. ALL DRUMS SHALL BE APPROXIMATELY PLACED AND MOVED AS NECESSARY TO MAINTAIN ADEQUATE ABUTTER ACCESS AT ALL TIMES. WORK MAY REQUIRE ADDITIONAL SIGNS, DRUMS AND OTHER TRAFFIC CONTROL DEVICES, GRADING AND TEMPORARY PAVEMENT FOR PASSAGE OF PEDESTRIAN, VEHICULAR AND EMERGENCY TRAFFIC THROUGH THE WORK AREAS, BOTH DURING AND AFTER WORKING HOURS, TO MAINTAIN SUCH ACCESS.
4. THE CONTRACTOR SHALL NOTIFY EACH ABUTTOR AT LEAST 24 HOURS IN ADVANCE OF THE START OF ANY WORK THAT WILL REQUIRE THE TEMPORARY CLOSURE OF ACCESS, SUCH AS CONDUIT INSTALLATION, EXISTING PAVEMENT EXCAVATION, TEMPORARY DRIVEWAY PAVEMENT PLACEMENT AND SIMILAR OPERATIONS.
5. A MINIMUM OF ONE LANE OF TRAFFIC IN EACH DIRECTION ON TWO WAY STREETS SHALL BE MAINTAINED AT ALL TIMES, EXCEPT THAT DURING WORKING HOURS, TRAFFIC MAY BE REDUCED TO ONE LANE UNDER POLICE CONTROL FOR SHORT TIME PERIODS WHEN REQUIRED FOR THE WORK, AS SHOWN.
6. GRADE SEPARATIONS IN EXCESS OF 2" DURING NON-WORKING HOURS WILL REQUIRE DELINEATION BY USE OF DRUMS.
7. EXCAVATION EDGES IN EXCESS OF 4" DEEP SHALL BE PROTECTED DURING NON-WORKING HOURS BY BACKFILLING WITH A WEDGE OF GRAVEL OR SOIL TO COMPACTED 1:4 SLOPE.
8. 11' MINIMUM LANE WIDTHS SHALL BE MAINTAINED.
9. NON-ESSENTIAL TRAFFIC CONTROL DEVICES SHALL BE COVERED OR REMOVED DURING NON-WORKING HOURS.
10. THE GENERAL SEQUENCE OF WORK IS DEPENDENT UPON THE REMOVAL AND RELOCATION OF THE EXISTING UTILITY POLES AND WIRES THAT ARE FOUND TO BE IN CONFLICT WITH THE PROPOSED WORK, BY THE UTILITY COMPANIES. THE CONTRACTOR SHALL SCHEDULE THE WORK IN EACH AREA TO COORDINATE WITH THE POLE RELOCATION WORK.
11. ADVISORY SPEED PLATES (W13-1) SHALL BE USED IF APPROPRIATE AND AS DIRECTED BY THE ENGINEER.



ONE LANE BI-DIRECTIONAL TRAFFIC AT INTERSECTIONS

NOT TO SCALE

NOTE:
1. ADVANCE WARNING SIGN PLACEMENT TO BE ADJUSTED AS NECESSARY

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