

BILLINGS PARK STORM SEWER AND WATER QUALITY BASIN

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ORIGINATION DATE: 08/24/09
 REVISION DATE: 02/12/10
 REVISION DATE: 05/06/10

ENGINEER
PROJECT ENGINEER
RESIDENT PROJECT REP.
SURVEYOR
GENERAL CONTRACTOR
SUBCONTRACTORS
 AGG. & SEL. GRAN. BASE
 BITUMINOUS
 EXCAVATING & GRADING
 EROSION CONTROL
 TURF ESTABLISHMENT
 UNDERGROUND UTILITIES
 (SANITARY,STORM)
 TESTING-MATERIALS
 TESTING-UTILITIES
 YEAR OF CONSTRUCTION

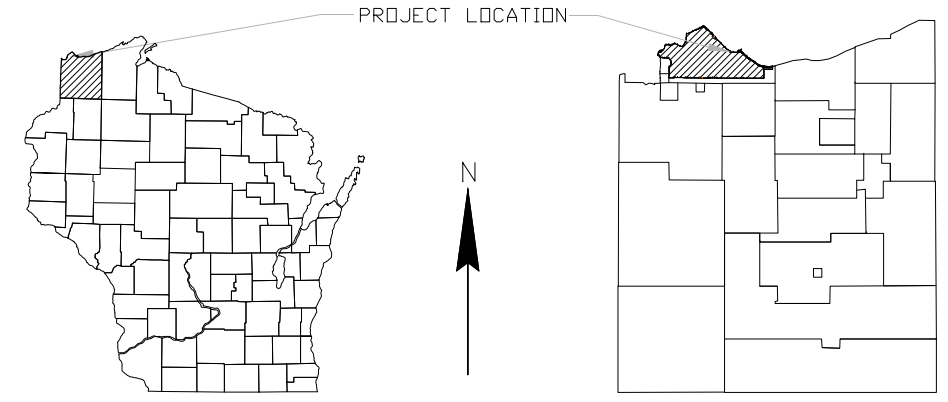
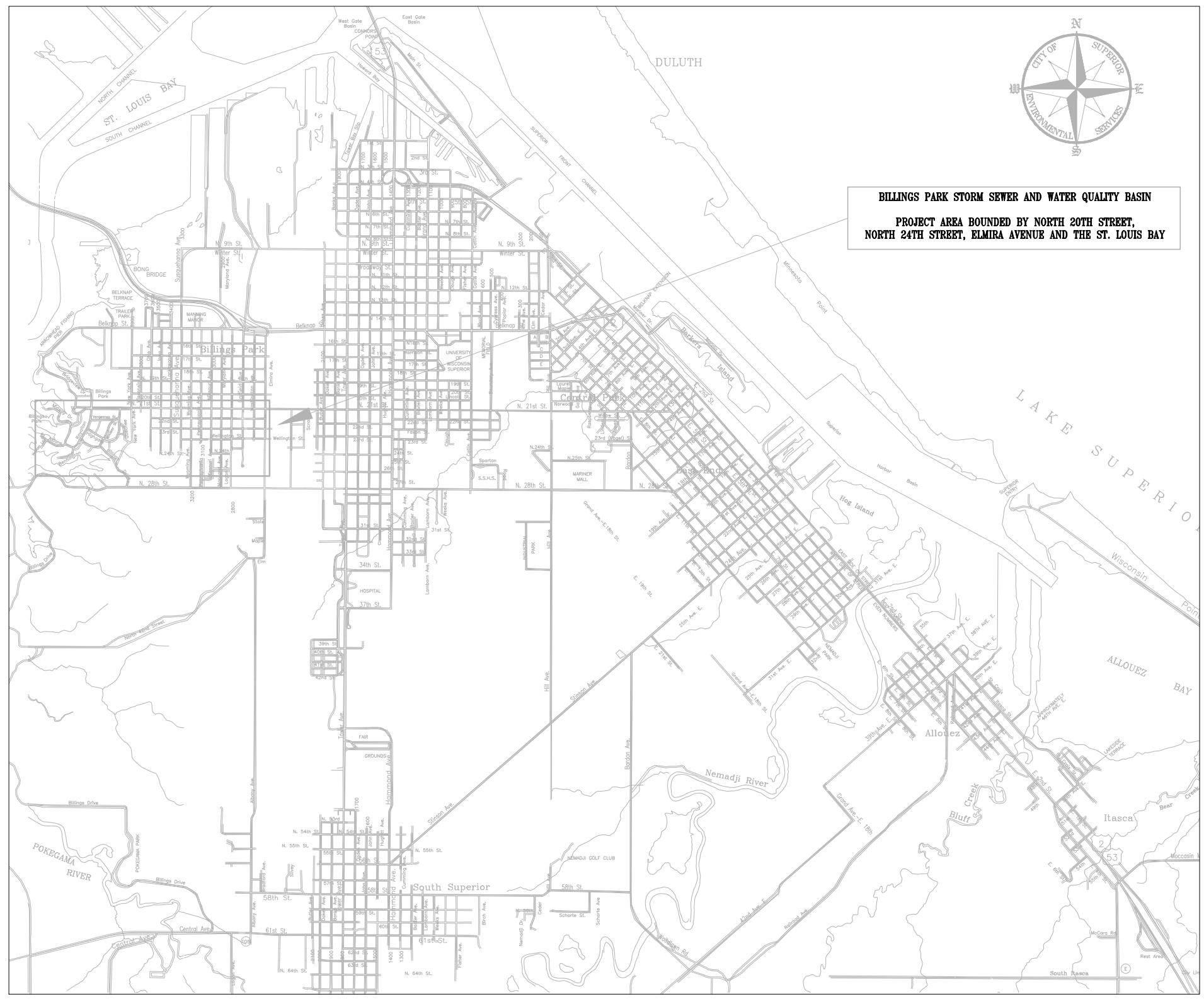
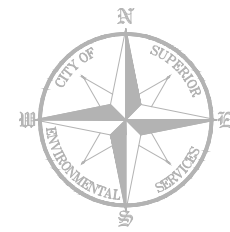
SHORT ELLIOTT HENDRICKSON INC.
DAN HINZMANN
JEROLD HALDORSON
AYRES ASSOCIATES
RJS CONSTRUCTION GROUP

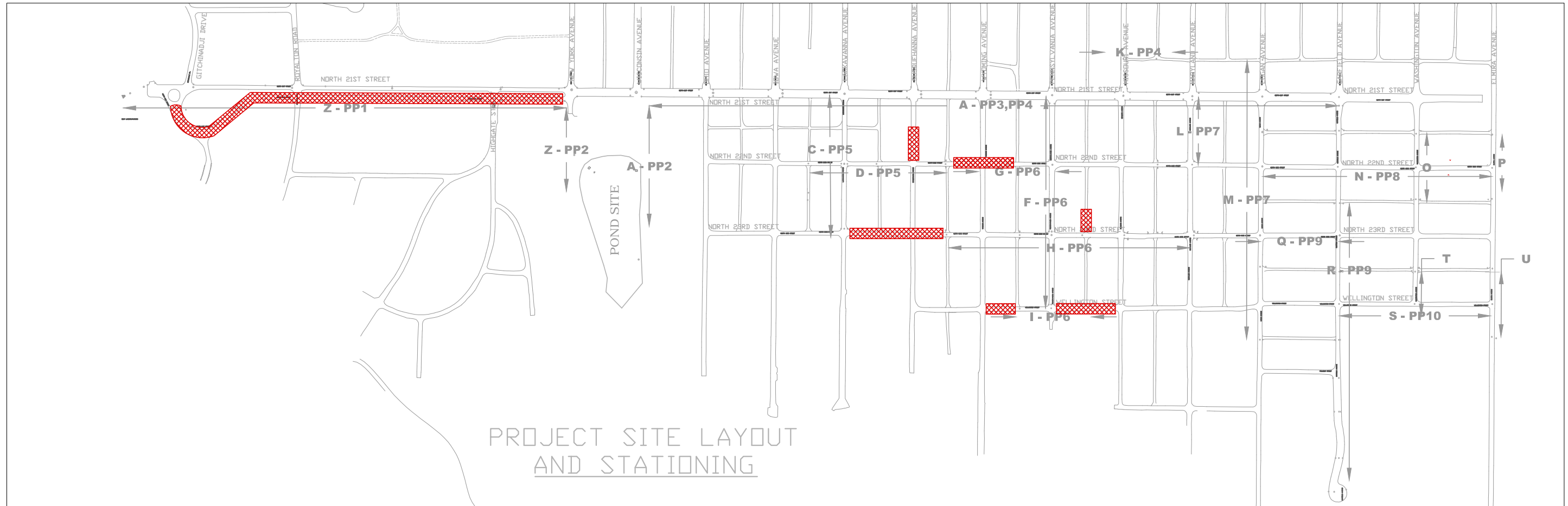
MONARCH PAVING

SUPERIOR LANDSCAPING
SUPERIOR LANDSCAPING
RJS CONSTRUCTION GROUP

AMERICAN ENGINEERING TESTING
GREAT LAKES PIPE SERVICE
2010-2013

BILLINGS PARK STORM SEWER AND WATER QUALITY BASIN
PROJECT AREA BOUNDED BY NORTH 20TH STREET,
NORTH 24TH STREET, ELMIRA AVENUE AND THE ST. LOUIS BAY





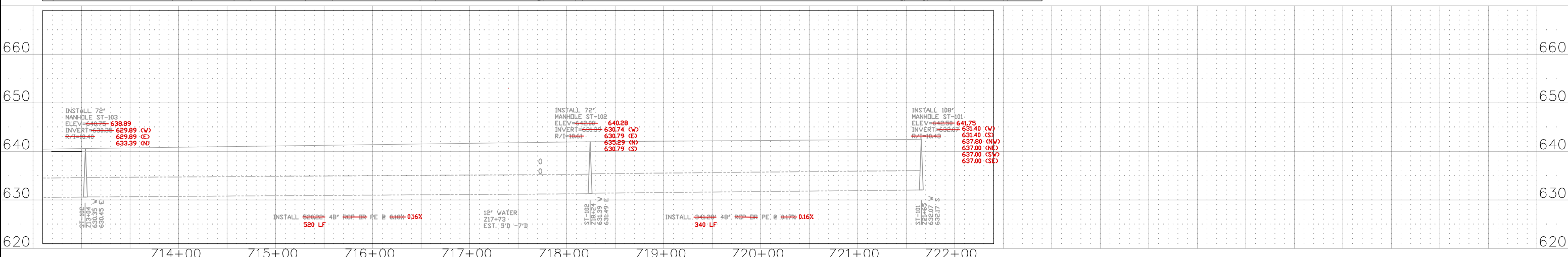
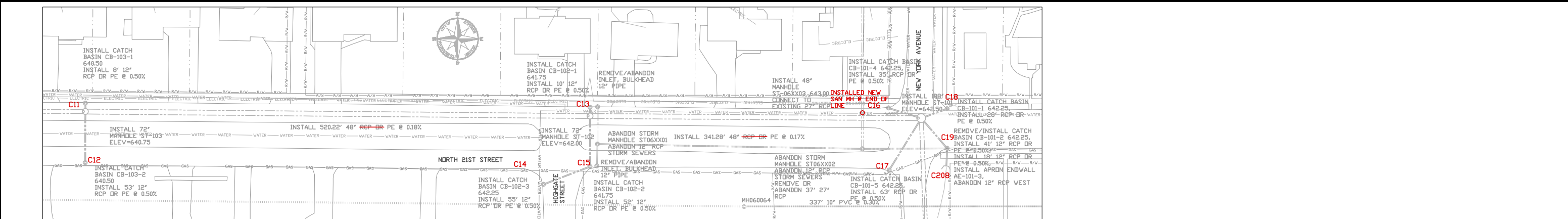
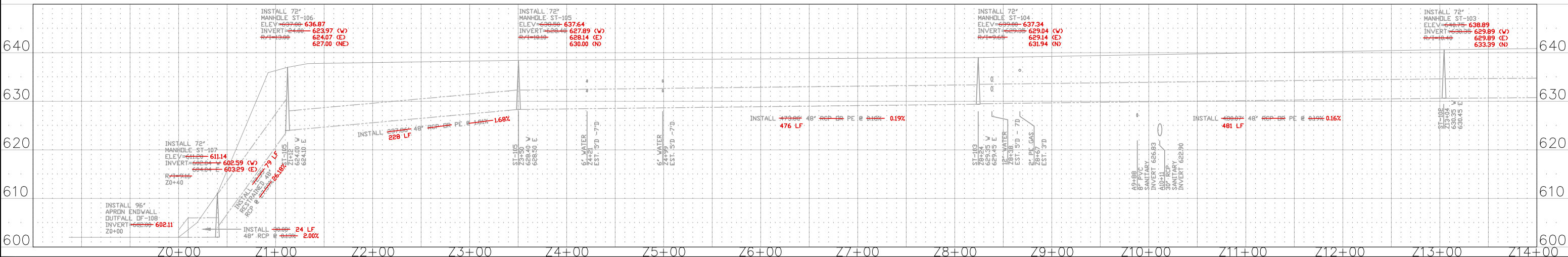
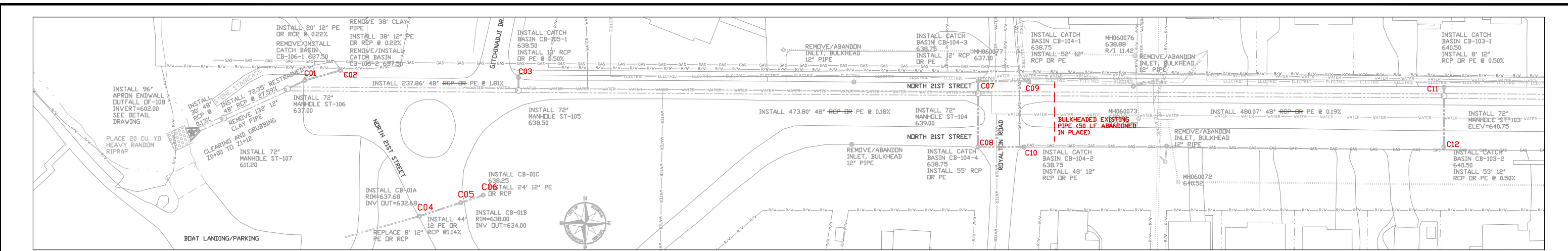
PROJECT SITE LAYOUT AND STATIONING

LEGEND

	PROPOSED STORM SEWER		U.G. ELECTRIC		4.0" ASPHALT ROADWAY RESURFACING
	PROPOSED SANITARY SEWER		GASLINE		3.0" ASPHALT DRIVEWAY AND ALLEY RESURFACING
	STORM SEWER		WATER MAIN		GRAVEL ALLEY RESURFACING
	SANITARY SEWER		PROPOSED MANHOLE OR CATCH BASIN		TOPSOIL, SEED AND MULCH SURFACE RESTORATION IN UNDEVELOPED AREA
	RIGHT OF WAY LINE		EXISTING MANHOLE OR CATCH BASIN		CONCRETE SIDEWALK REPLACEMENT
	PROPERTY LINE		PROPOSED APRON ENDWALL		DELINEATED WETLAND
	R.R. TRACKS		EXISTING APRON ENDWALL		
	SWALE		POWER POLE		
	PROPOSED SWALE				

ADDITIONAL ROADWAY SECTION RECONSTRUCT

ALTHOUGH FEATURES SHOWN OUTSIDE THE RIGHT-OF-WAY WILL GENERALLY BE FOUND AT THE LOCATIONS INDICATED, IT IS NOT THE INTENT OF THE PLANS TO GUARANTEE THE LOCATIONS.



1"=50' HORZ.
1"=10' VERT.

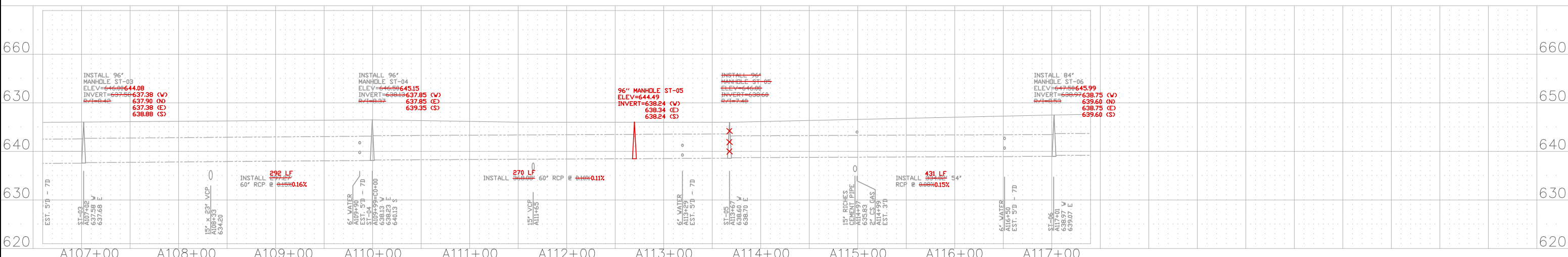
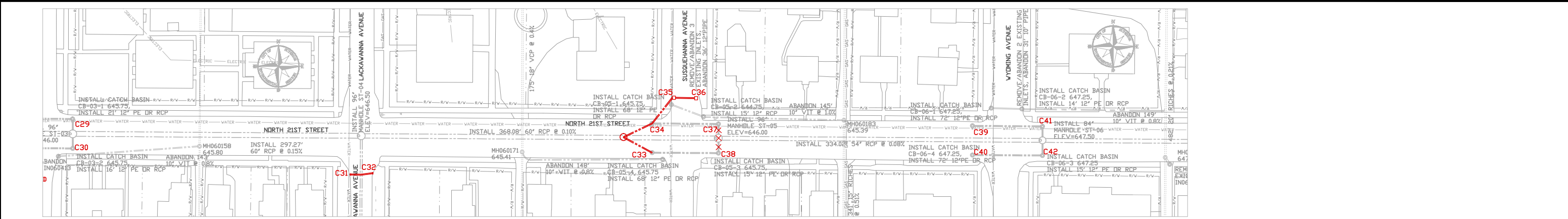
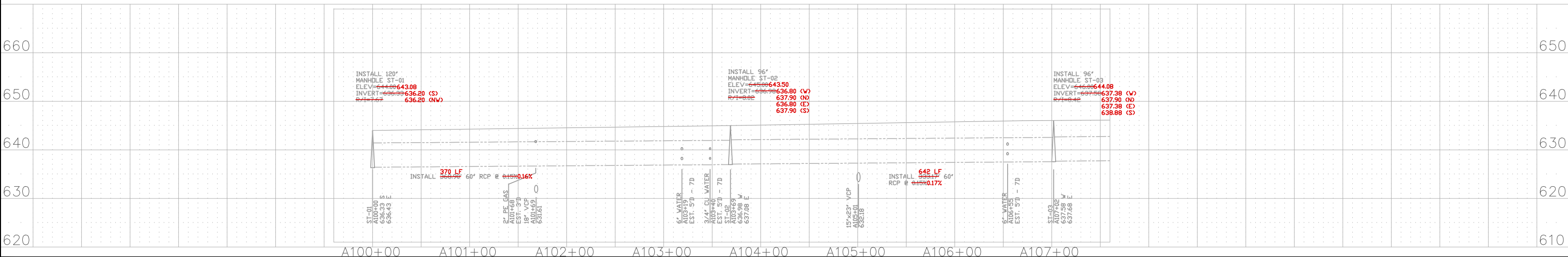
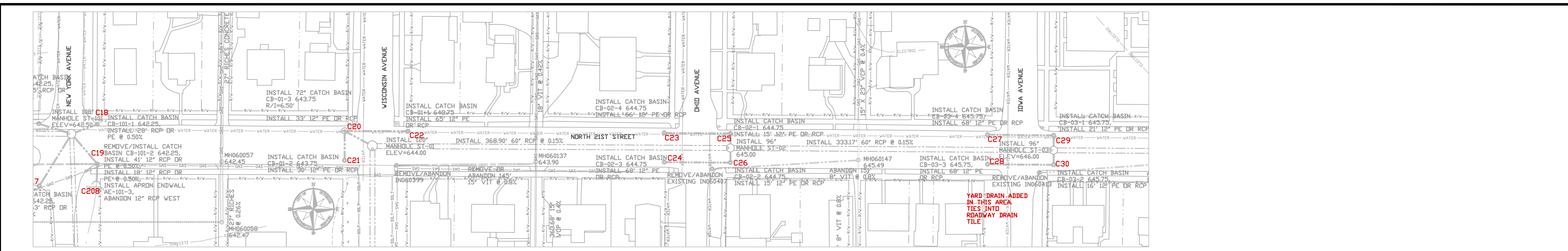
FOR 22"x34" SHEETS
PLAN AND PROFILE DRAWINGS

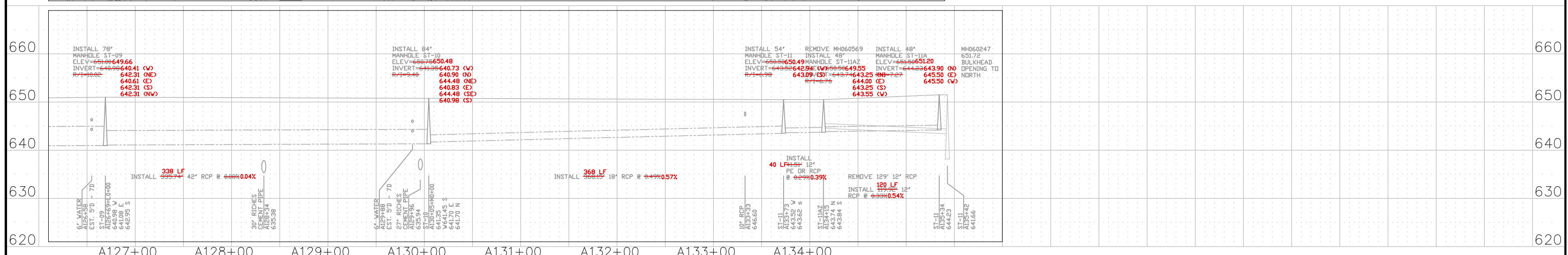
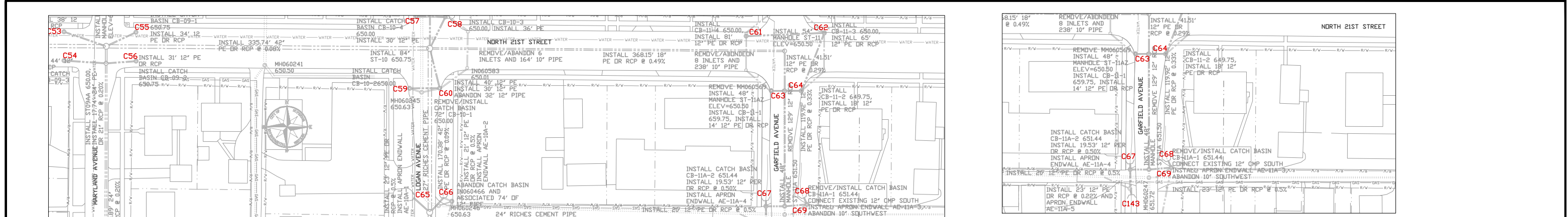
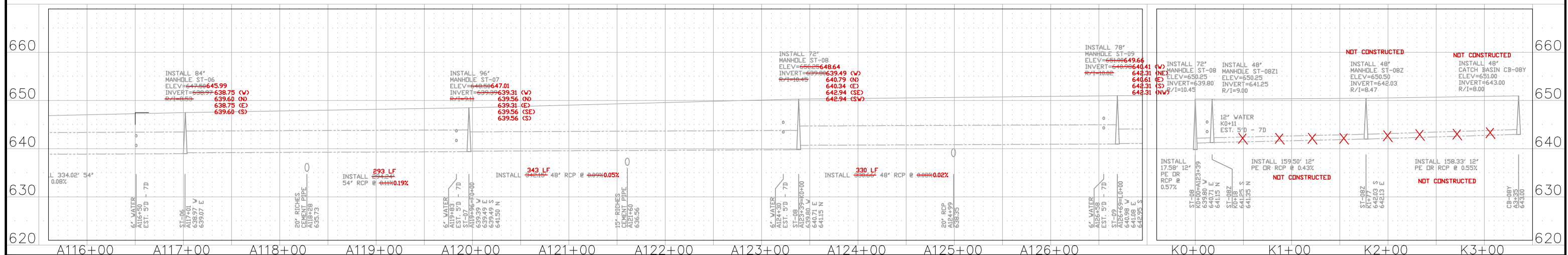
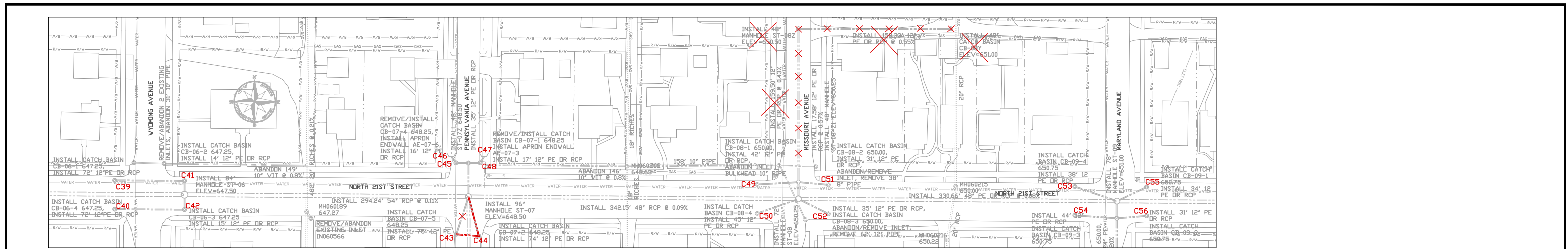
BILLINGS PARK STORMSEWER AND
WATER QUALITY BASIN

RECORD DRAWINGS
UPDATED 11/2013

SUPERIOR, WISCONSIN
AUGUST 24, 2009

SURVEY	VARIABLES	PLANS FOR	SHEET
DRAWN	JM	CONSTRUCTION	PP.1
DESIGN	SGR	DATE: 05/06/2010	
APPROVED	SGR		





1"=50' HORZ.
1"=10' VERT.
FOR 22"x34" SHEETS

PLAN AND PROFILE DRAWINGS

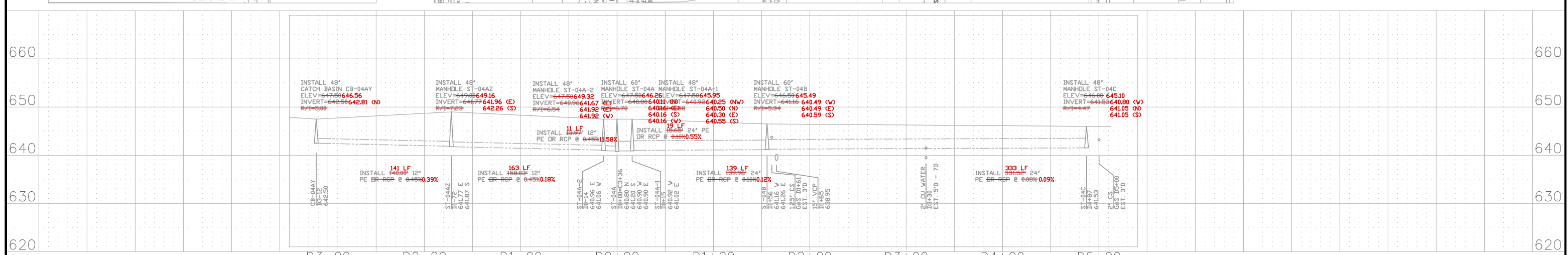
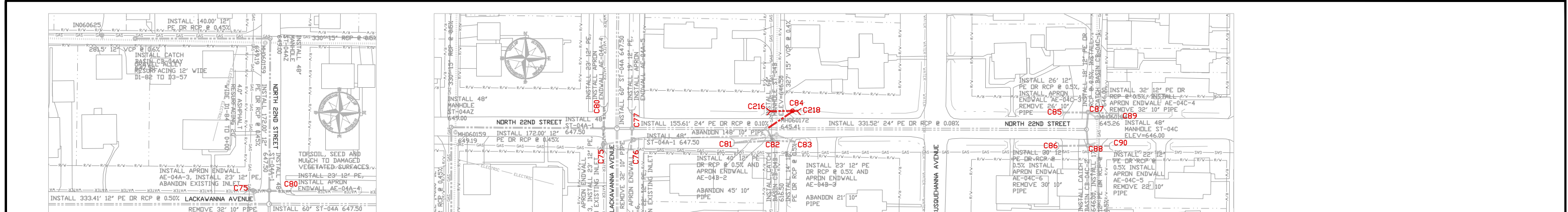
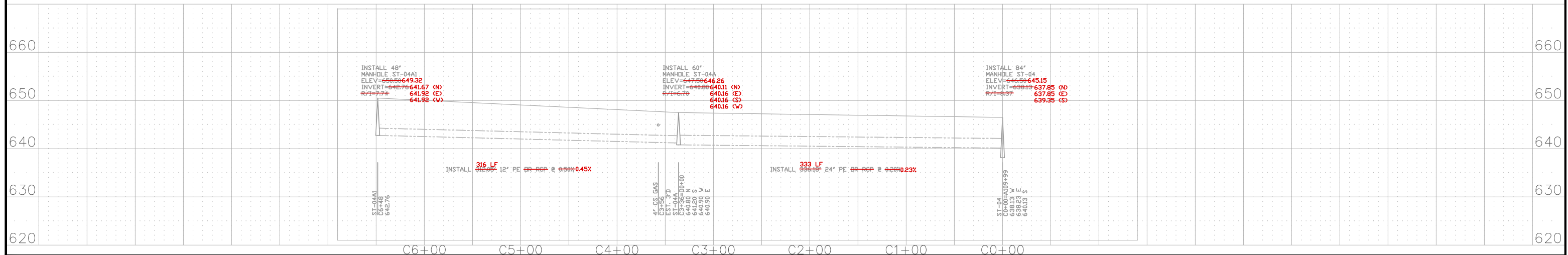
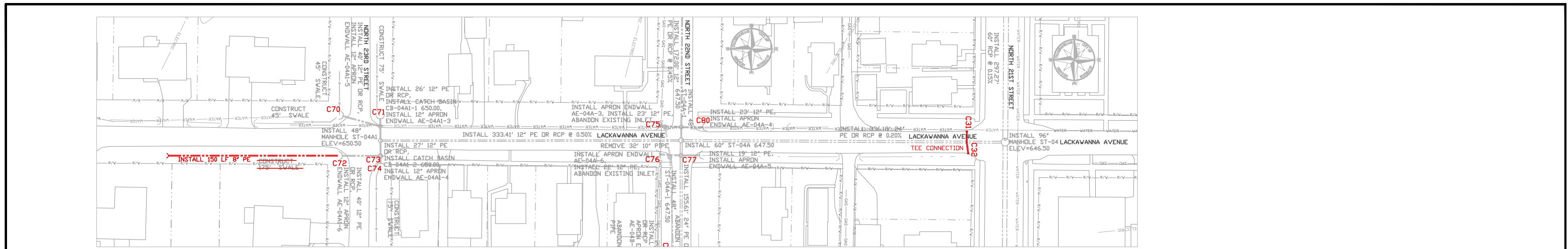
BILLINGS PARK STORM SEWER AND
WATER QUALITY BASIN

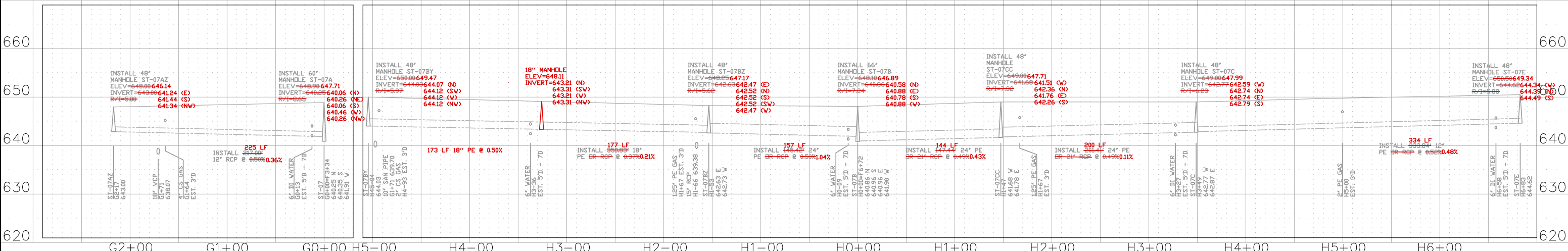
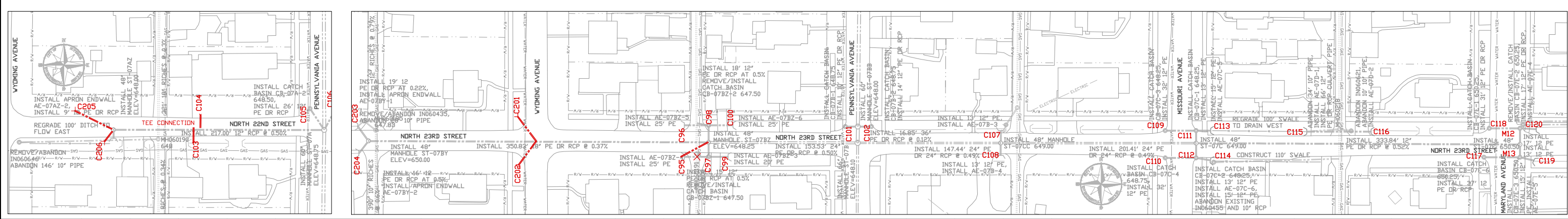
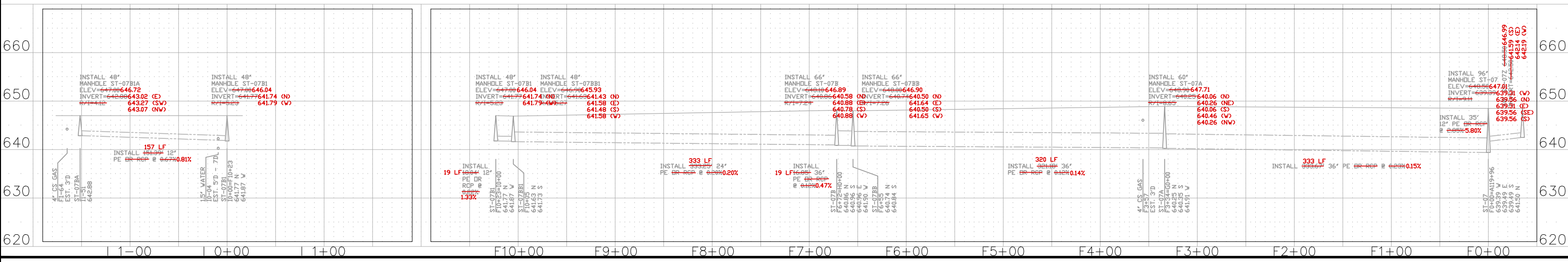
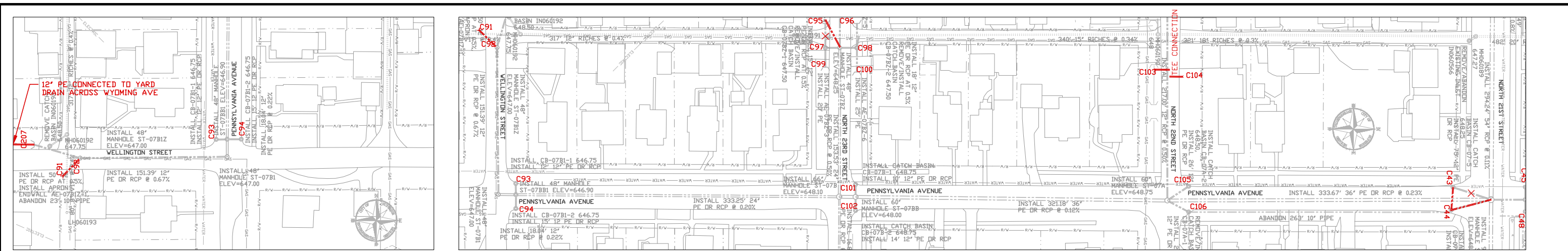
RECORD DRAWINGS
UPDATED 11/2013

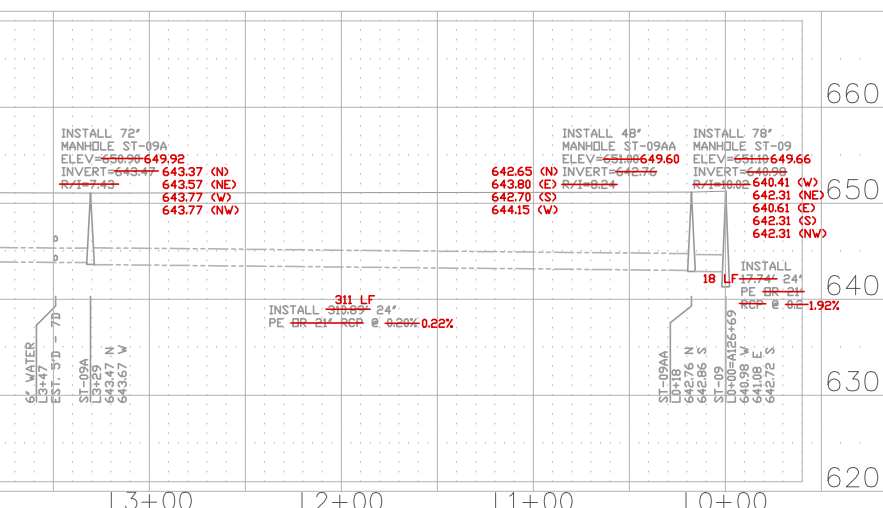
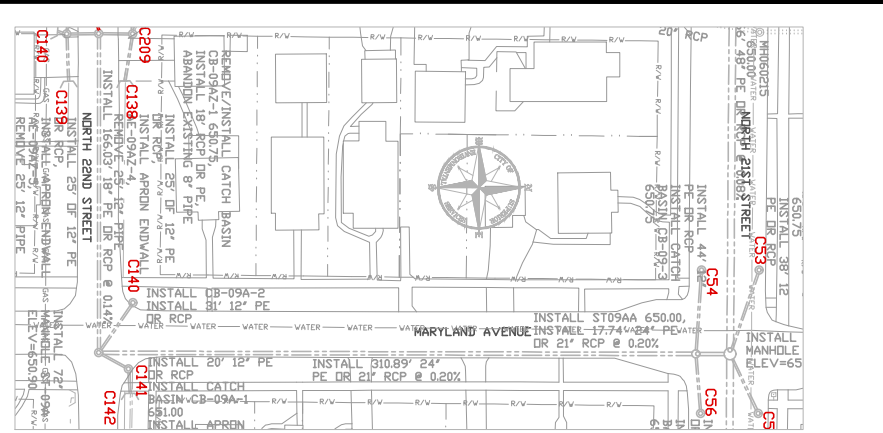
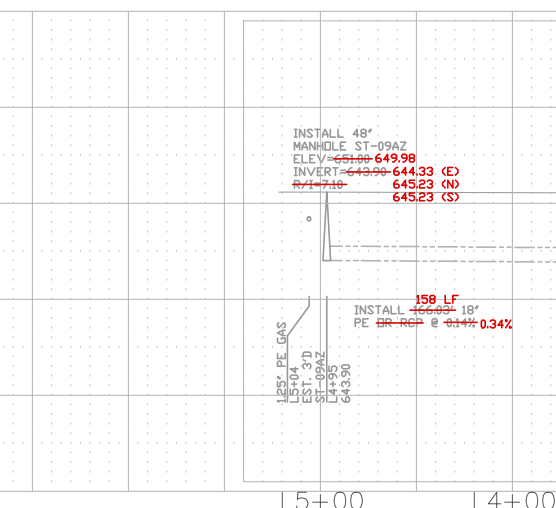
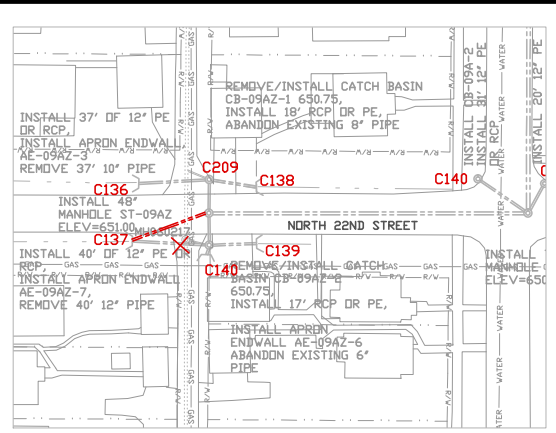
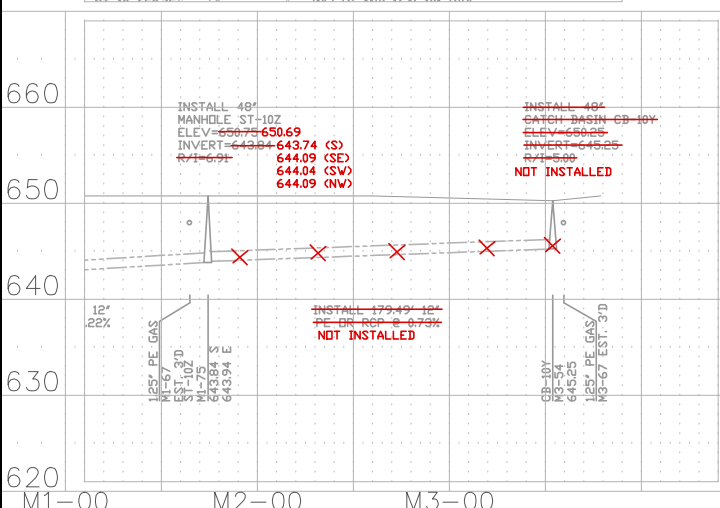
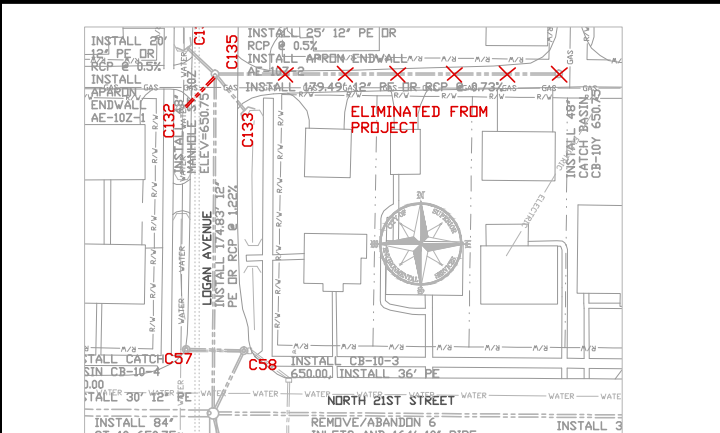
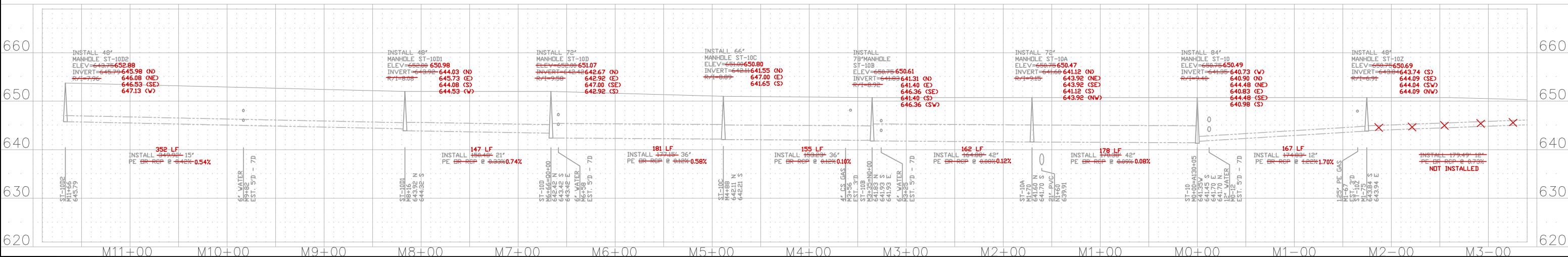
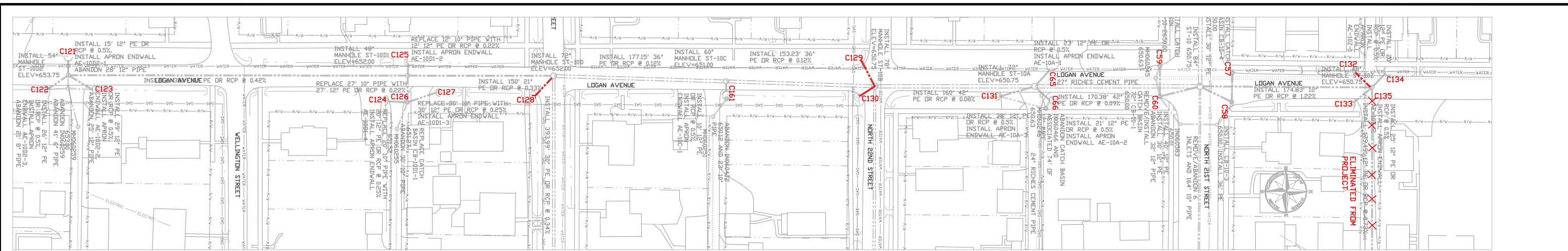
SUPERIOR, WISCONSIN

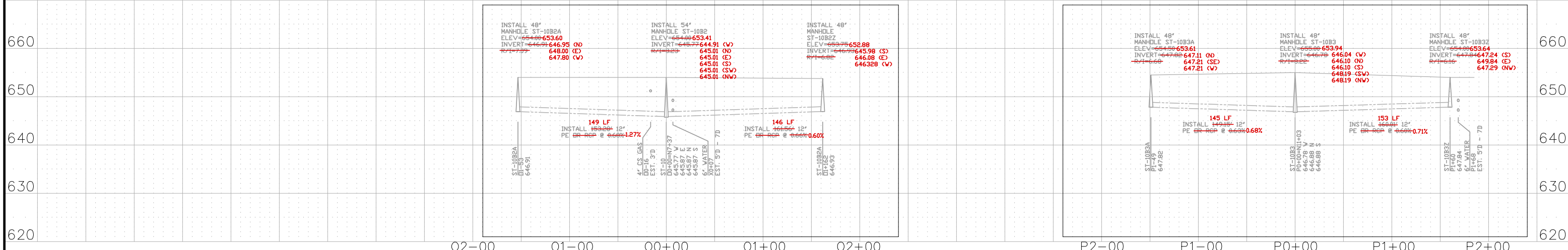
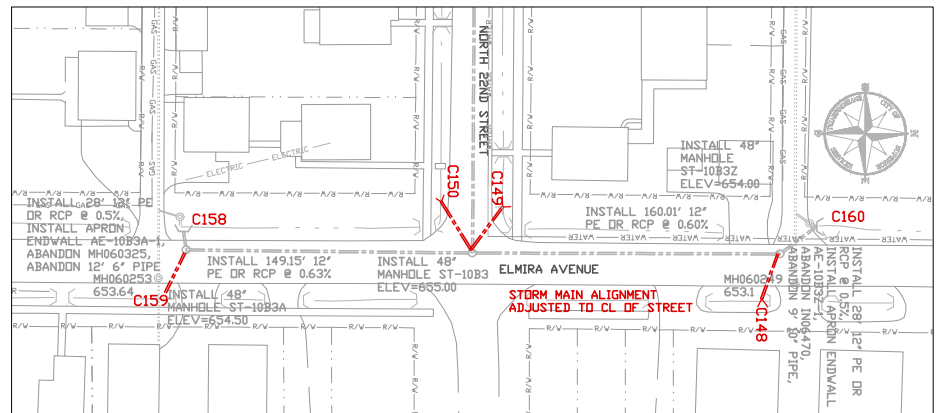
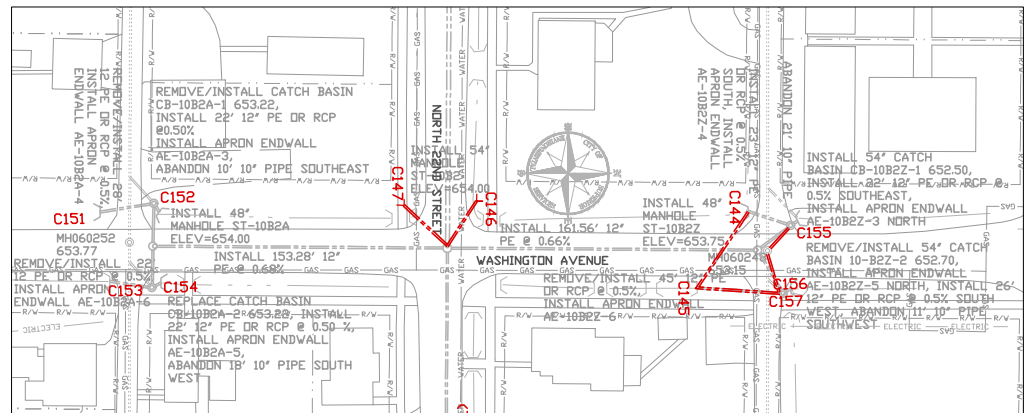
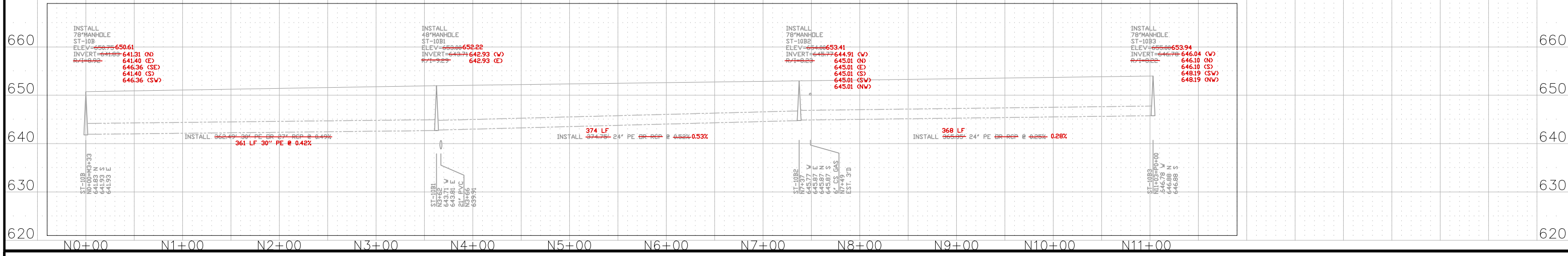
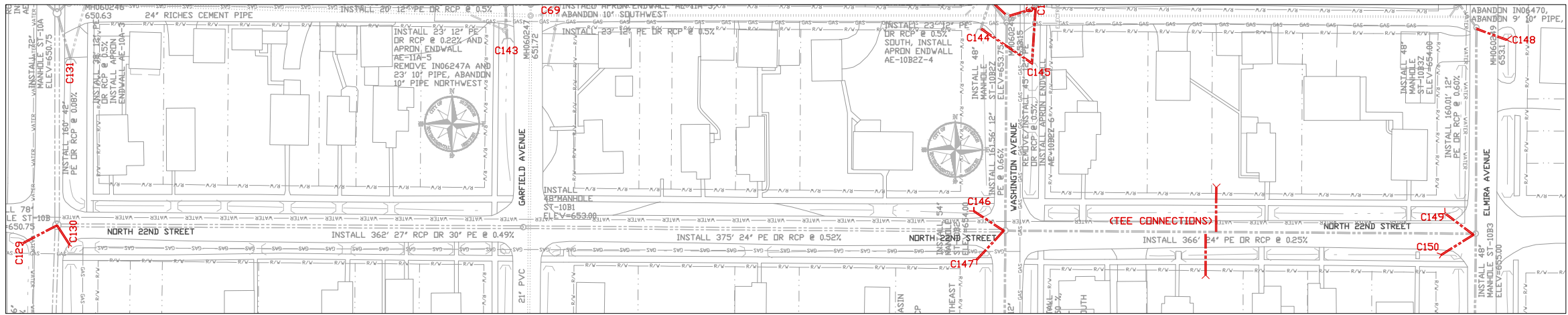
SURVEY	VARIABLES	PLANS FOR CONSTRUCTION	SHEET
DRAWN	JM	DATE: 05/06/2010	PP.2
DESIGN	SGR		
APPROVED	SGR		

AUGUST 24, 2009









1"=50' HORZ.
1"=10' VERT.

FOR 22"x34" SHEETS

PLAN AND PROFILE DRAWINGS

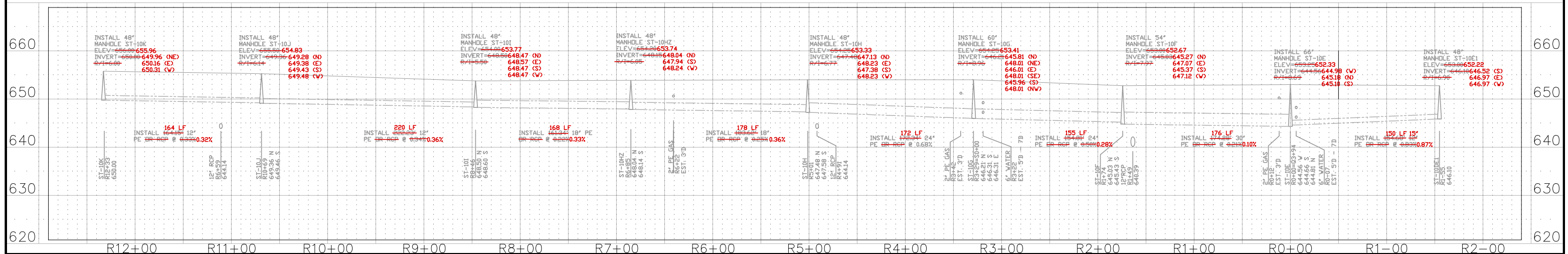
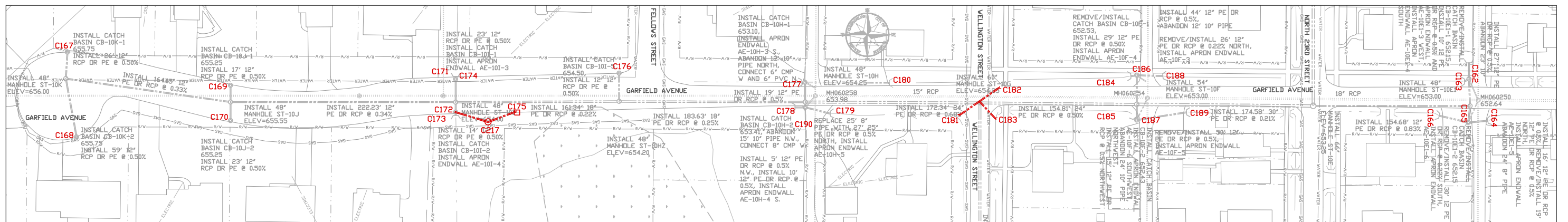
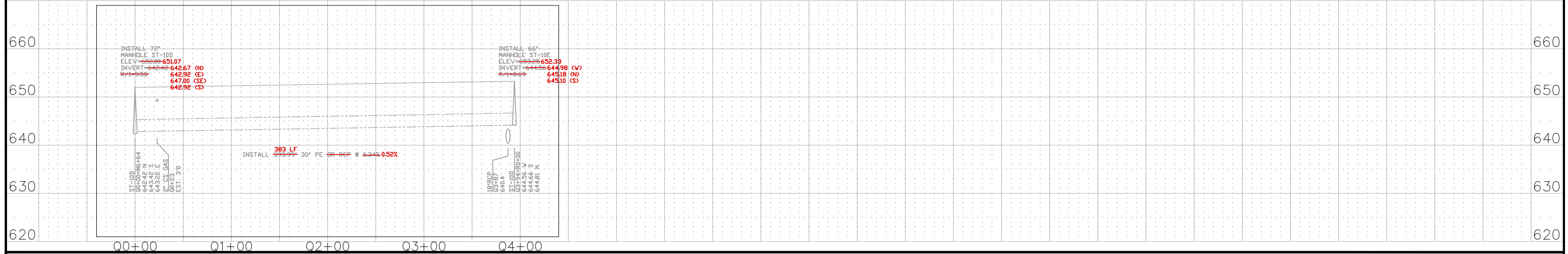
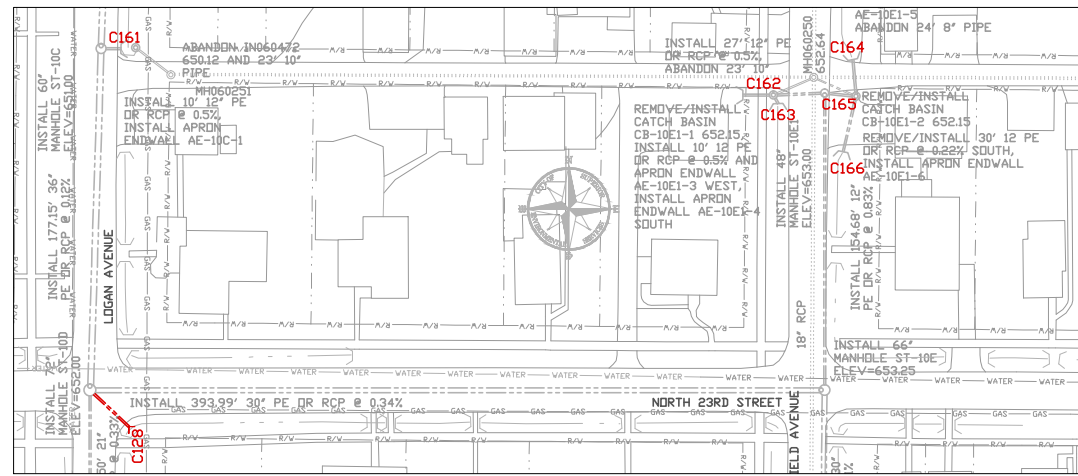
BILLINGS PARK STORM SEWER AND
WATER QUALITY BASIN

RECORD DRAWINGS
UPDATED 11/2013

SUPERIOR, WISCONSIN

SURVEY	VARIABLES	PLANS FOR CONSTRUCTION	SHEET
DRAWN	JM	DATE: 05/06/2010	PP8.2
DESIGN	SGR		
APPROVED	SGR		

AUGUST 24, 2009



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FOR 22"x34" SHEETS

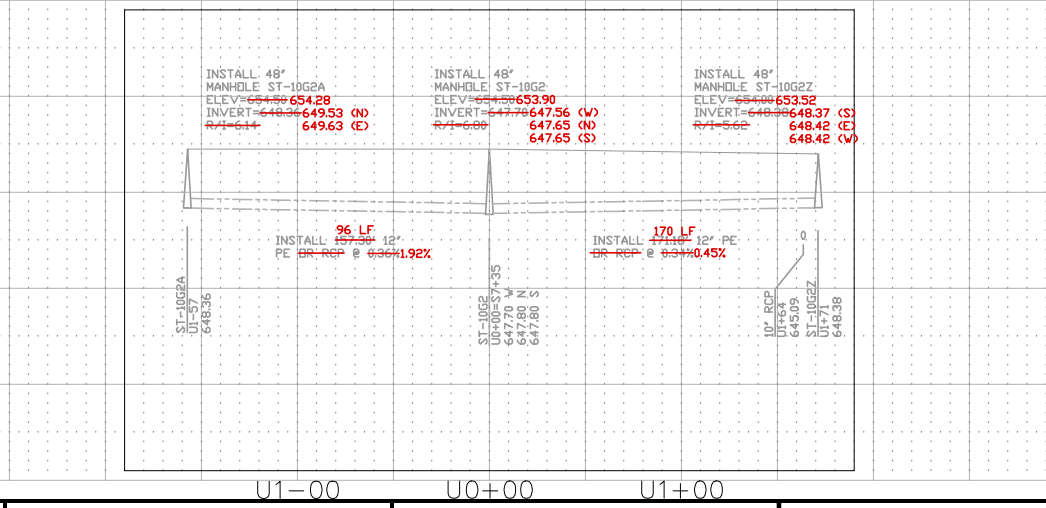
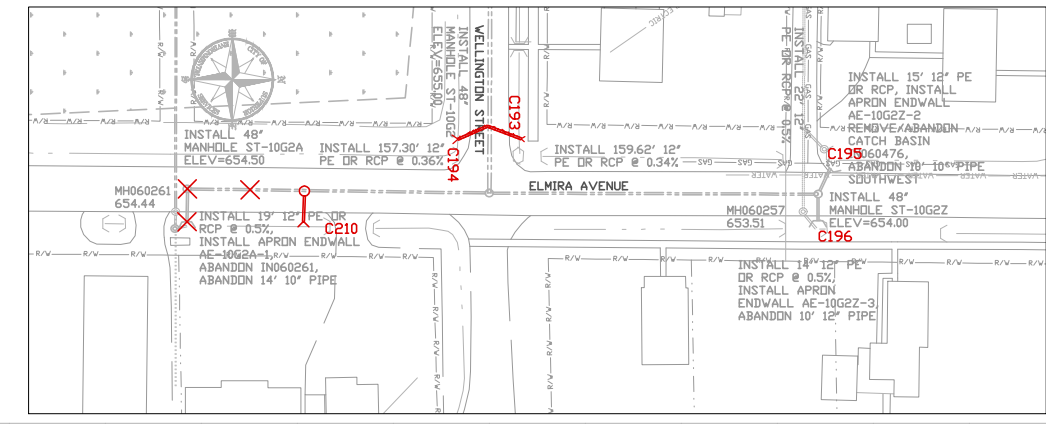
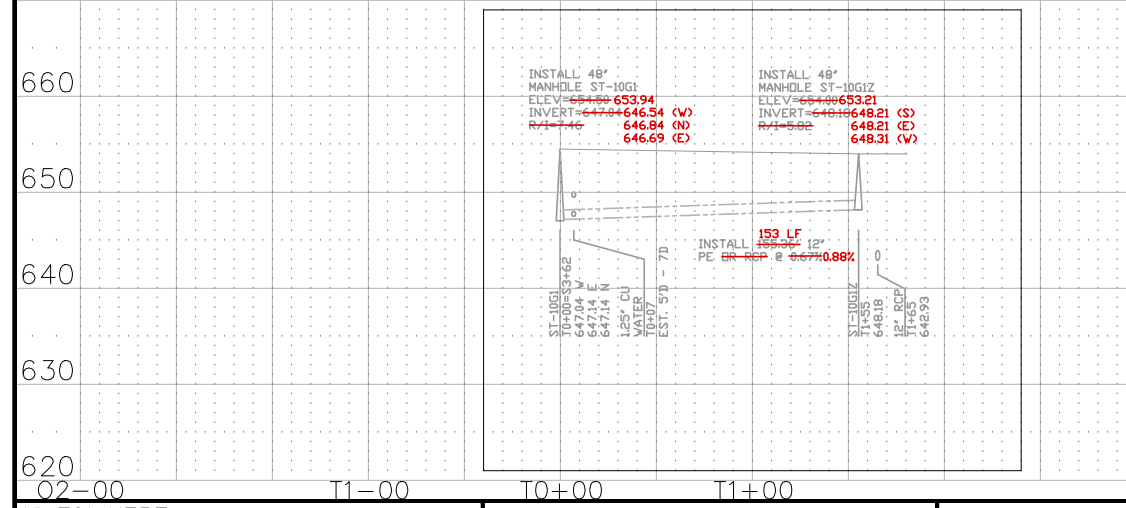
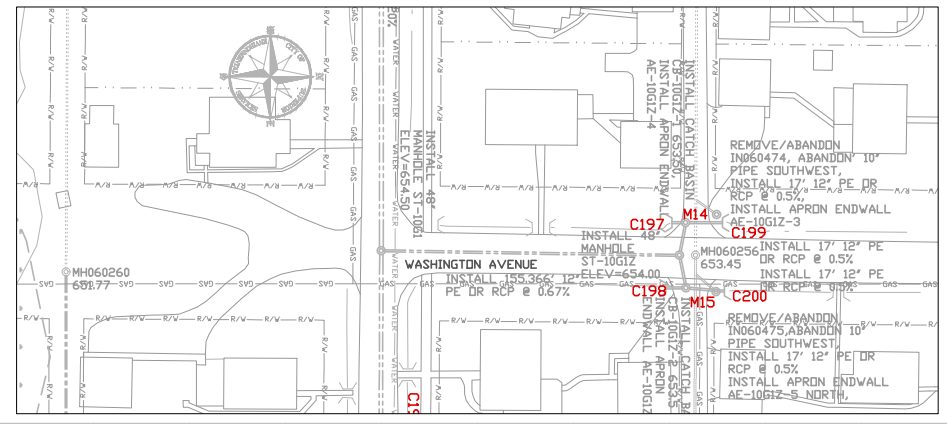
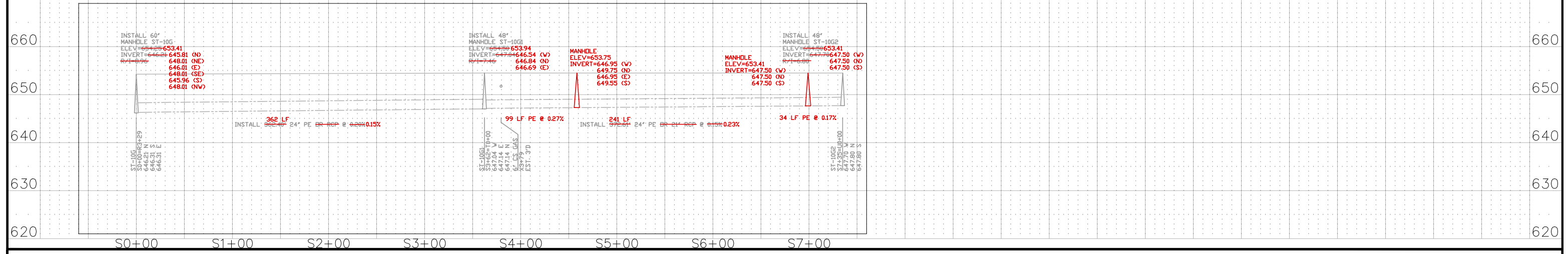
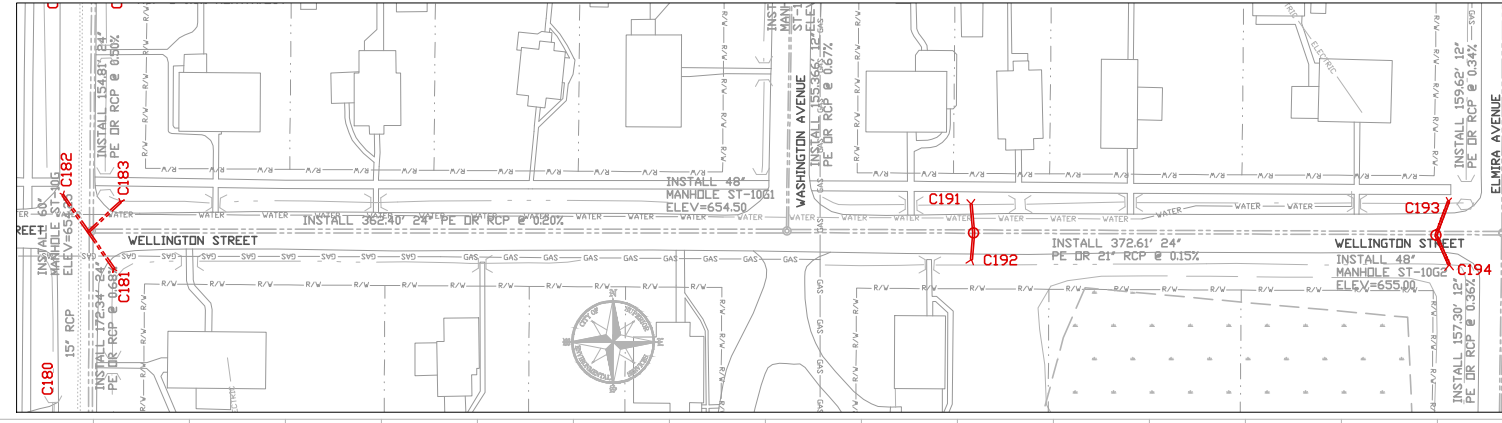
PLAN AND PROFILE DRAWINGS

BILLINGS PARK STORM SEWER AND
WATER QUALITY BASIN

RECORD DRAWINGS
UPDATED 11/2013

SUPERIOR, WISCONSIN

SURVEY	VARIABLES	DATE	05/06/2010
DRAWN	JM	DATE	
DESIGN	SGR	DATE	
APPROVED	SGR	DATE	



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SUPERIOR, WISCONSIN
AUGUST 24, 2009

SURVEY	VARIAS	PLANS FOR	CONSTRUCTION
DRAWN	JJM	DATE	05/06/2010
DESIGN	SGR		
APPROVED	SGR		

PP 1.2		
STRUCTURE ID	RIM ELEVATION	INVERT ELEVATION
C01	637.33	628.14
C02	637.34	633.09
C03	637.19	633.04
C04	637.34	632.24
C05	637.41	633.26
C06	638.09	634.09
C07	637.18	632.18
C08	637.11	631.41
C09	637.42	632.92
C10	637.56	632.61
C11	638.79	633.99
C12	638.87	634.12
C13	640.16	635.66
C14	640.01	634.96
C15	640.28	634.13
C16	641.18	638.48
C17	641.05	637.65
C18	641.04	637.79
C19	641.16	637.51
C208	N/A	639.19

PP 4.2		
STRUCTURE ID	RIM ELEVATION	INVERT ELEVATION
C43	646.07	643.37
C44	646.32	642.67
C45	646.80	642.35
C46	N/A	645.99
C47	N/A	646.32
C48	646.49	642.34
C49	647.75	644.00
C50	647.67	644.57
C51	647.99	644.49
C52	647.93	644.53
C53	648.81	644.66
C54	648.94	644.79
C55	649.04	644.99
C56	649.16	645.36
C57	649.68	645.93
C58	649.89	645.24
C59	649.74	645.49
C60	649.63	645.13
C61	649.70	647.05
C62	650.19	646.64
C63	649.04	645.84
C64	649.20	645.10
C65	N/A	648.37
C66	N/A	647.22
C67	650.49	646.99
C68	N/A	649.55
C69	651.36	647.41

PP 6.2		
STRUCTURE ID	RIM ELEVATION	INVERT ELEVATION
C91	N/A	644.42
C92	646.72	643.02
C93	645.64	641.79
C94	645.65	642.00
C95	N/A	644.52
C96	N/A	645.62
C97	647.15	642.95
C98	646.93	642.82
C99	N/A	647.14
C100	N/A	645.24
C101	646.42	643.82
C102	646.46	644.06
C103	N/A	645.37
C104	N/A	645.26
C105	647.22	643.12
C106	647.36	642.71
C107	N/A	646.59
C108	N/A	645.30
C109	647.40	644.15
C110	N/A	646.41
C111	647.59	643.44
C112	647.47	643.62
C113	N/A	646.10
C114	N/A	645.99
C115	N/A	647.20
C116	N/A	647.40
C117	648.87	645.57
C118	648.76	645.11
M12	648.71	644.61
M13	648.95	644.50
C119	N/A	647.00
C120	N/A	647.35
C201	N/A	645.82
C202	N/A	646.03
C203	N/A	646.86
C204	N/A	647.45
C205	643.98	643.98
C206	N/A	643.68
C207	645.84	644.24

PP 2.2		
STRUCTURE ID	RIM ELEVATION	INVERT ELEVATION
C211	N/A	636.80
C212	642.21	636.30
C213	640.84	635.91
C214	640.48	635.27
C215	N/A	633.91

PP 5.2		
STRUCTURE ID	RIM ELEVATION	INVERT ELEVATION
C70	N/A	648.23
C71	N/A	647.72
C72	648.87	645.17
C73	648.95	643.75
C74	N/A	648.64
C75	N/A	644.35
C76	N/A	644.37
C77	N/A	644.60
C81	N/A	644.34
C82	645.00	641.85
C83	N/A	643.42
C84	643.70	N/A
C85	N/A	642.98
C86	N/A	643.17
C87	644.93	641.43
C88	644.84	641.39
C89	N/A	643.17
C90	N/A	643.03
C216	N/A	643.86
C218	N/A	643.25

PP 3.2		
STRUCTURE ID	RIM ELEVATION	INVERT ELEVATION
C20	642.36	637.46
C21	642.24	637.56
C22	643.08	636.20
C23	642.94	639.64
C24	643.05	639.60
C25	643.17	638.87
C26	643.19	638.69
C27	643.42	640.27
C28	643.52	640.42
C29	643.53	639.73
C30	643.67	639.77
C31	644.56	640.46
C32	644.40	640.10
C33	643.72	639.07
C34	643.85	639.05
C35	643.77	639.27
C36	643.70	639.65
C37	643.41	640.36
C38	643.60	640.60
C39	645.36	642.21
C40	645.29	642.09
C41	645.55	641.00
C42	645.55	641.35

PP 7.2		
STRUCTURE ID	RIM ELEVATION	INVERT ELEVATION
C121	N/A	650.31
C122	N/A	651.37
C123	N/A	649.76
C124	N/A	649.48
C125	649.29	649.29
C126	651.54	647.44
C127	N/A	649.82
C128	N/A	648.11
C129	N/A	648.27
C130	N/A	648.45
C131	N/A	648.48
C132	N/A	648.22
C133	N/A	648.04
C134	N/A	648.62
M14	650.69	643.74
C136	N/A	647.83
C137	N/A	648.31
C138	N/A	648.08
C139	N/A	648.51
C140	N/A	649.22
C141	649.62	645.62

PP 8.2

STRUCTURE ID	RIM ELEVATION	INVERT ELEVATION
C143	N/A	649.59
C144	649.96	646.96
C145	N/A	650.46
C146	N/A	651.05
C147	N/A	651.00
C148	N/A	650.86
C149	N/A	651.38
C150	N/A	651.65
C151	N/A	651.47
C152	N/A	650.64
C153	N/A	651.72
C154	N/A	651.59
C155	650.08	650.08
C156	650.82	645.27
C157	N/A	650.27
C158	N/A	649.76
C159	N/A	650.71
C160	N/A	649.63

PP 9.2

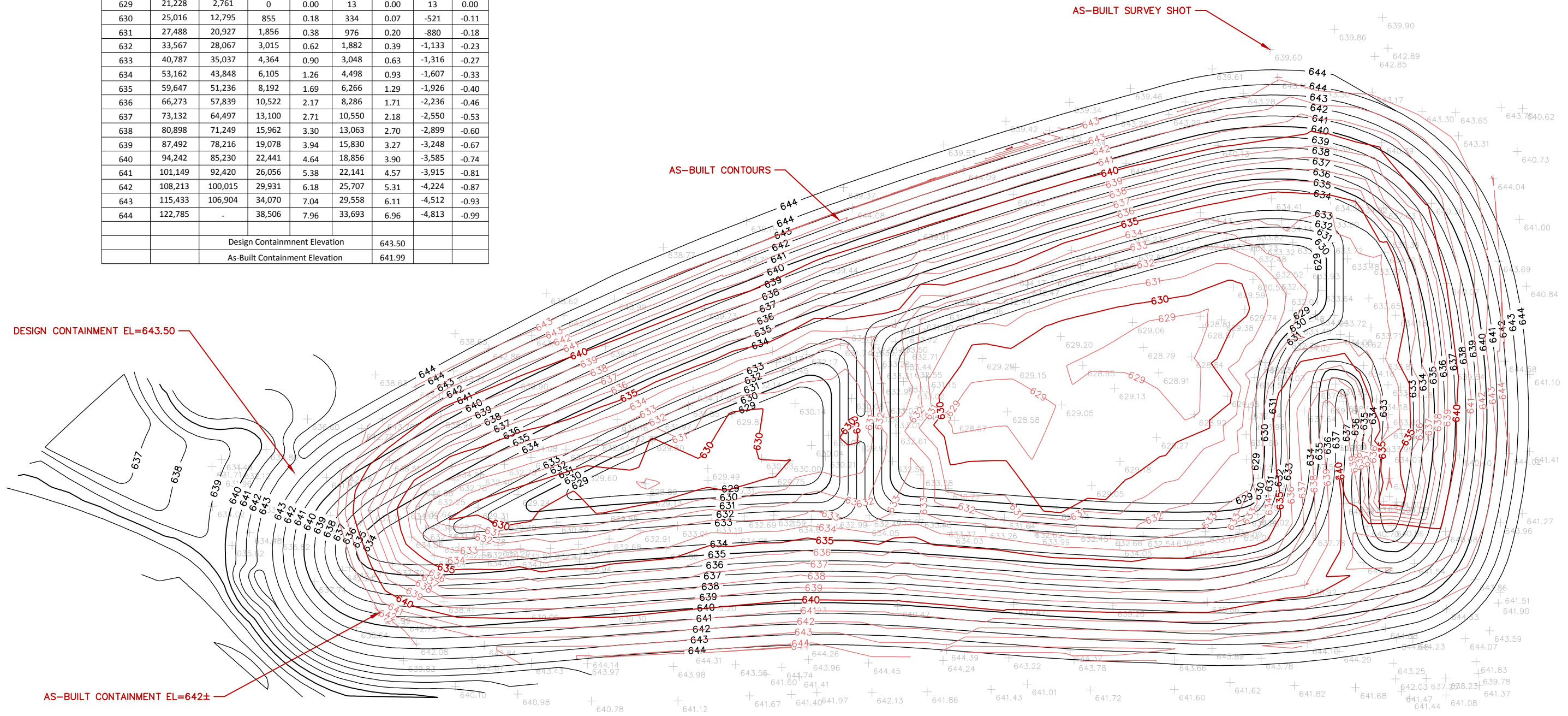
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C162	652.13	648.43
C163	N/A	649.98
C164	N/A	650.25
C165	652.15	648.50
C166	N/A	649.56
C167	655.31	651.61
C168	655.38	651.38
C169	654.49	650.64
C170	654.11	650.61
C171	N/A	651.07
C172	653.47	649.72
C173	653.62	650.32
C174	653.54	649.54
C175	653.37	650.87
C176	653.69	650.24
C177	653.16	649.66
C178	653.18	649.68
C179	N/A	650.59
C180	N/A	651.74
C181	N/A	651.10
C182	651.00	N/A
C183	N/A	650.72
C184	N/A	650.73
C185	N/A	650.35
C186	652.20	648.15
C187	652.78	648.73
C188	N/A	650.48
C190	N/A	650.94
C217	653.83	650.53

PP 10.2

STRUCTURE ID	RIM ELEVATION	INVERT ELEVATION
C191	N/A	651.47
C192	N/A	650.89
C193	651.63	650.03
C194	N/A	649.97
C195	N/A	650.07
C196	N/A	650.94
C197	N/A	650.77
C198	N/A	651.33
C199	N/A	650.59
C200	N/A	651.03
C210	N/A	651.04
M14	652.69	649.22
M15	652.88	649.03



Total Storage As-Built Calculation								
Elevation	Contour Area (SF)		Cumulative Design Storage		Cumulative As-Built Storage		Difference	
	Design	As-Built	CY	Ac-Ft	CY	Ac-Ft	CY	Ac-Ft
629	21,228	2,761	0	0.00	13	0.00	13	0.00
630	25,016	12,795	855	0.18	334	0.07	-521	-0.11
631	27,488	20,927	1,856	0.38	976	0.20	-880	-0.18
632	33,567	28,067	3,015	0.62	1,882	0.39	-1,133	-0.23
633	40,787	35,037	4,364	0.90	3,048	0.63	-1,316	-0.27
634	53,162	43,848	6,105	1.26	4,498	0.93	-1,607	-0.33
635	59,647	51,236	8,192	1.69	6,266	1.29	-1,926	-0.40
636	66,273	57,839	10,522	2.17	8,286	1.71	-2,236	-0.46
637	73,132	64,497	13,100	2.71	10,550	2.18	-2,550	-0.53
638	80,898	71,249	15,962	3.30	13,063	2.70	-2,899	-0.60
639	87,492	78,216	19,078	3.94	15,830	3.27	-3,248	-0.67
640	94,242	85,230	22,441	4.64	18,856	3.90	-3,585	-0.74
641	101,149	92,420	26,056	5.38	22,141	4.57	-3,915	-0.81
642	108,213	100,015	29,931	6.18	25,707	5.31	-4,224	-0.87
643	115,433	106,904	34,070	7.04	29,558	6.11	-4,512	-0.93
644	122,785	-	38,506	7.96	33,693	6.96	-4,813	-0.99
Design Containment Elevation					643.50			
As-Built Containment Elevation					641.99			



BILLINGS PARK POND AS-BUILT

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DRAWN BY: DRH
 SURVEYOR: SM

NO.	BY	DATE	REVISIONS

SEH
 PHONE: 218.279.3000
 418 W SUPERIOR ST STE 200
 DULUTH, MN 55802-1512
 www.sehinc.com

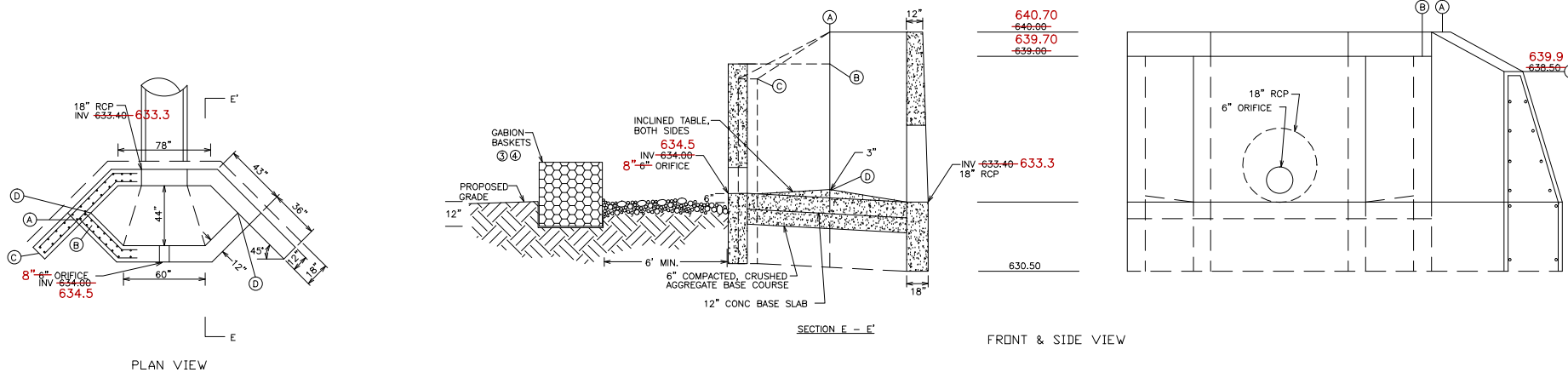
**SUPERIOR,
 WISCONSIN**

**POND AS-BUILT
 BILLINGS PARK STORM SEWER**

FILE NO.
 SUPEW 110600

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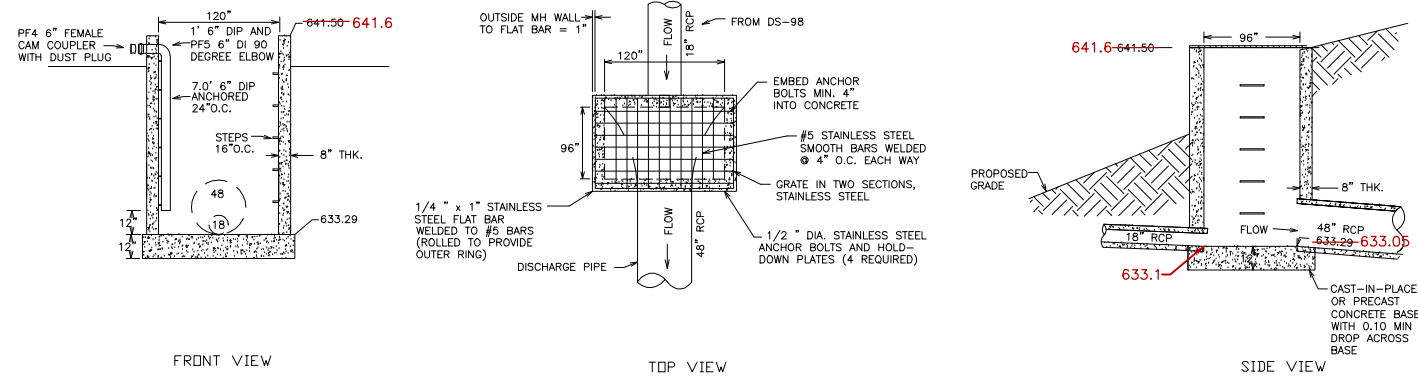
NOT TO SCALE



DRAINAGE STRUCTURE DS-98
SPECIAL DESIGN

- NOTES:
- ① CORE-DRILL OR SAW-CUT ALL OPENINGS FOR SMOOTH SURFACES AND SHARP LINES
 - ② HEAVY RANDOM RIPRAP, 6 FT. OUT ON ALL SIDES (16 CU. YDS.)
 - ③ THE BOTTOM ROW IS 3' W. X 3' H. X 45' L.
 - ④ BOTTOM OF GABION WALL SHALL BE BURIED ONE FOOT BELOW THE POND BOTTOM. THE INSIDE EDGE OF THE GABION WALL SHOULD BE A MINIMUM OF 6' FROM THE STRUCTURE.

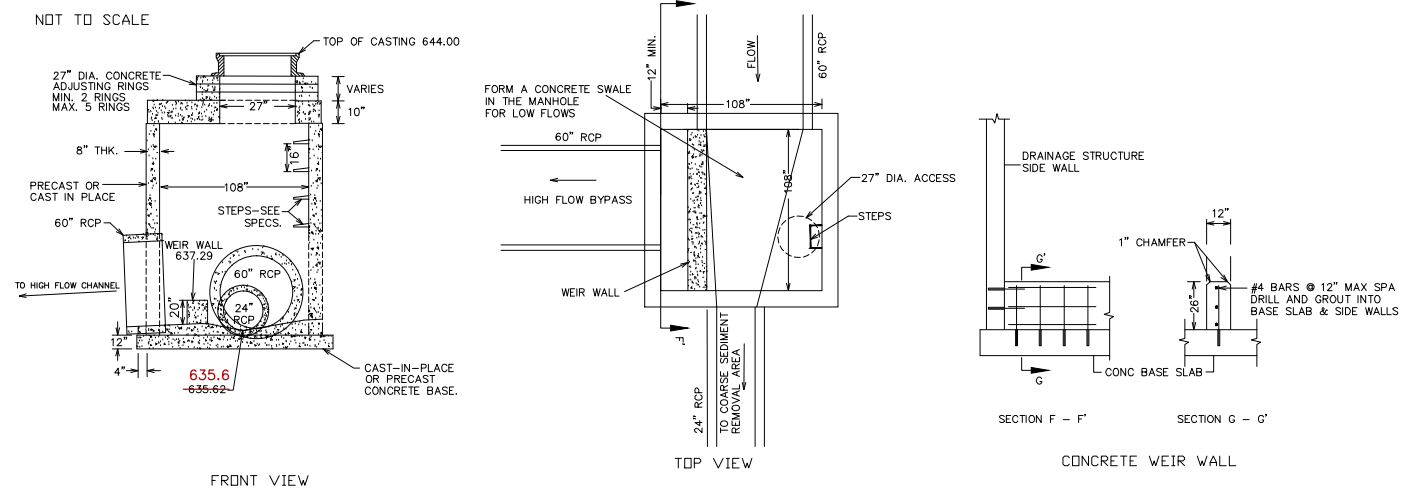
- REINFORCEMENT NOTES:
- ① SUBMIT SHOP DRAWING TO ENGINEER FOR REVIEW.
 - ② MIN CONC COVER 1-1/2" FOR ALL BARS
 - ③ WINGWALLS AND WEIR WALLS REQUIRE #4 BARS 12" C.C. BOTH DIRECTIONS AS SHOWN IN THE DETAIL
 - ④ BASE SLAB REQUIRES #4 BARS 6" C.C. BOTH DIRECTIONS
 - ⑤ BEND AND TIE ALL CORNERS
 - ⑥ BASE SLAB BARS TO TIE INTO WINGWALL AND WEIR WALL BARS WITH #4 BARS.



DRAINAGE STRUCTURE DS-99
SPECIAL DESIGN

- NOTES:
- ① CORE-DRILL OR SAW-CUT ALL OPENINGS FOR SMOOTH SURFACES AND SHARP LINES
- REINFORCEMENT NOTES:
- ① SUBMIT SHOP DRAWING TO ENGINEER FOR REVIEW.
 - ② MIN CONC COVER 1-1/2" FOR ALL BARS
 - ③ SIDE WALLS REQUIRE #4 BARS 12" C.C. BOTH DIRECTIONS
 - ④ BASE SLAB REQUIRES #4 BARS 6" C.C. BOTH DIRECTIONS
 - ⑤ BEND AND TIE ALL CORNERS

NOT TO SCALE



DIVERSION STRUCTURE DS-01B
SPECIAL DESIGN

- NOTES:
- ① CORE-DRILL OR SAW-CUT ALL OPENINGS FOR SMOOTH SURFACES AND SHARP LINES
- REINFORCEMENT NOTES:
- ① SUBMIT SHOP DRAWING TO ENGINEER FOR REVIEW.
 - ② MIN CONC COVER 1-1/2" FOR ALL BARS
 - ③ SIDE WALLS REQUIRE #4 BARS 12" C.C. BOTH DIRECTIONS
 - ④ BASE SLAB REQUIRES #4 BARS 6" C.C. BOTH DIRECTIONS
 - ⑤ TOP SLAB REQUIRES #4 BARS 6" C.C. BOTH DIRECTIONS
 - ⑥ BEND AND TIE ALL CORNERS

BILLINGS PARK POND STRUCTURES AS-BUILT

DRAWN BY: DRH
SURVEYOR: SM

DESIGN TEAM

NO. BY DATE

REVISIONS



**SUPERIOR,
WISCONSIN**

**POND STRUCTURES AS-BUILT
BILLINGS PARK STORM SEWER**

FILE NO.
SUPEW 110600

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