

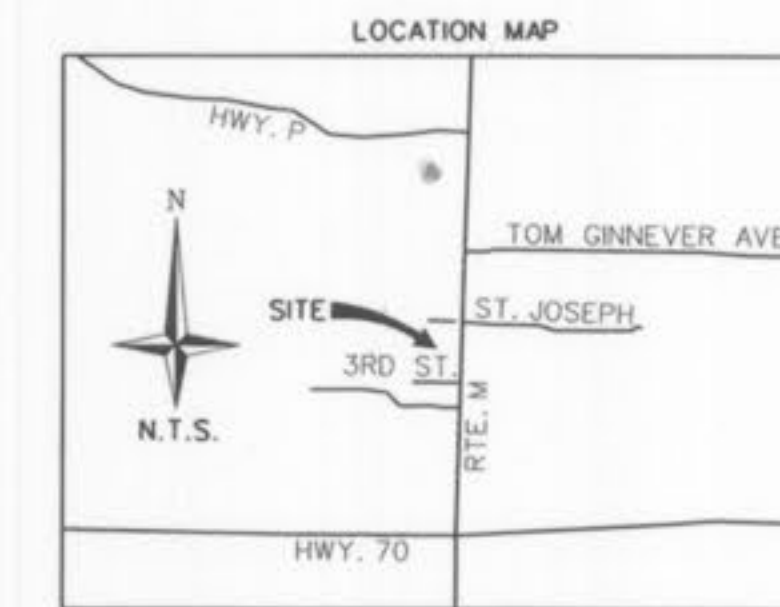


ASSUMPTION

of Blessed Virgin Mary Church

O'FALLON, MISSOURI

FINAL STORM SEWER MEASUREMENTS



The existing sewer lengths, sizes, flowlines, depths of structures and sewers and locations with respect to the existing improvements have been measured. The results of those measurements are shown on this set of Final Measurement Plans.



Richard G. Norvell
Richard G. Norvell, P.L.S.
Professional Land Surveyor
Mo. P.L.S. #2005000077

Notes:

- The results of those measurements are shown on this drawing by lining out the planned number and indicating the measured number adjacent to the planned number. All other numbers shown have not been measured or verified. Structure numbers 30 - 33 and 35-44 have no plan information for comparison and are shown with a single set of measured numbers.
 - The location of the sewers were determined by locating the manholes and traversing in a straight line between them.
 - Benchmark: Elevation 542.88; Std. Tablet stamped F 149 1935, top concrete post, 40' east of Main Street centerline, 30' north of centerline of main tracks.
Site Benchmark: Elevation 516.54; Box on light base, northwest corner of church parking lot.
- Benchmark information taken from topographic survey by Bax/Walker Associates dated 6-14-99.

O'Fallon Fire Protection District
Fort Zumalt School District
Public Water District
Duckett Creek Sanitary Sewer District
St. Charles/ Laclede Gas Company
Ameren UE Electric Company

FILE NUMBER 1102.01

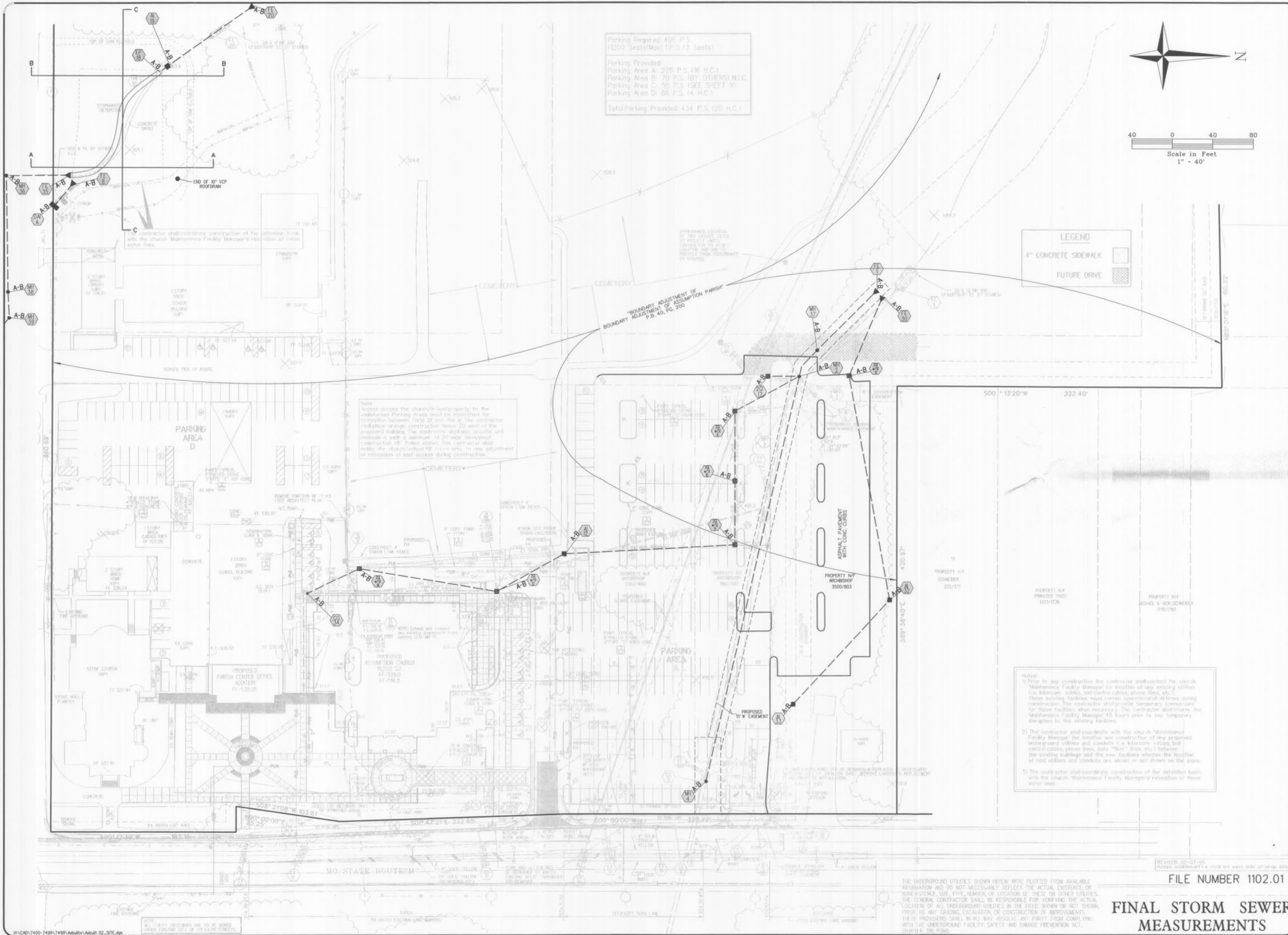
Chadwick
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10849 Indian Head Industrial Blvd.
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Engineers
Land Planners
Land Surveyors
VOLZ

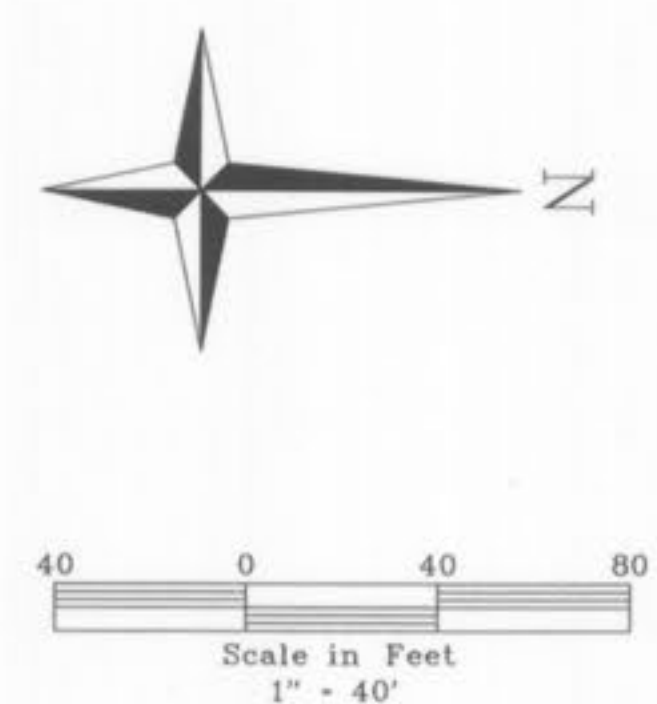
ASSUMPTION
of Blessed Virgin Mary Church
O'FALLON, MISSOURI

FINAL STORM SEWER MEASUREMENTS	8-30-10
ORIGINAL SUBMITTAL	
REVISED	
	7004



Parking Required: 400 P.S.
(1200 Seats/Max 1 P.S./2 Seats)

Parking Provided:
 Parking Area A: 226 P.S. (16 H.C.)
 Parking Area B: 70 P.S. (BY OTHERS) N.C.
 Parking Area C: 50 P.S. (SEE SHEET 9)
 Parking Area D: 86 P.S. (4 H.C.)
 Total Parking Provided: 434 P.S. (20 H.C.)



LEGEND

4" CONCRETE SIDEWALK

FUTURE DRIVE

Note:
 Access across the church's property to the undesignated Parking Area must be maintained for circulation between Hwy 53 and Hwy 54. The contractor shall place orange construction fence 20' west of the proposed building. The contractor shall provide and maintain a path a minimum of 20' wide throughout construction of the building. The contractor shall notify the church/parish of any change in the proposed adjustment of road access during construction.

- Notes:
- 1) Prior to any construction the contractor shall contact the church Maintenance Facility Manager for location of any existing utilities (i.e. Intercom, cables, bus, conduits, phone lines, etc.). These existing facilities must remain operational at all times during construction. The contractor shall provide temporary connections for these facilities when necessary. The contractor shall inform the Maintenance Facility Manager 48 hours prior to any temporary disruption to the existing facilities.
 - 2) The contractor shall coordinate with the church Maintenance Facility Manager the location and construction of any proposed underground utilities and conduits (i.e. Intercom, cables, bus, conduits, phone lines, data "fiber" lines, etc.) between the existing buildings and the new facilities whether the location of bus, cables and conduits are shown or not shown on the plan.
 - 3) The contractor shall coordinate construction of the detention basin with the church Maintenance Facility Manager's relocation of these water lines.

THE UNDERGROUND UTILITIES SHOWN HEREIN WERE PLOTTED FROM AVAILABLE INFORMATION AND DO NOT NECESSARILY REFLECT THE ACTUAL EXISTENCE, OR NON-EXISTENCE, SIZE, TYPE, NUMBER, OR LOCATION OF THESE OR OTHER UTILITIES. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE ACTUAL LOCATION OF ALL UNDERGROUND UTILITIES BY THE FIELD BEFORE OR NOT SHOWN. PRIOR TO ANY GRADING, EXCAVATION, OR CONSTRUCTION OF IMPROVEMENTS, THESE PROVISIONS SHALL IN NO WAY RELIEVE ANY PARTY FROM COMPLYING WITH THE UNDERGROUND FACILITY SAFETY AND DAMAGE PREVENTION ACT, CHAPTER 263.020.

REVISION 02-03-06
 Added adjustment to trucked west side of wrap. 5/10/06

FILE NUMBER 1102.01

FINAL STORM SEWER MEASUREMENTS

Assumption Church Final Storm Sewer As-Builts

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VOLZ

STATE OF MISSOURI
 RICHARD G. NORVELL
 PLS-200800077
 8-30-10
 Richard G. Norvell

ASSUMPTION
 of Blessed Virgin Mary Church
 O'FALLON, MISSOURI

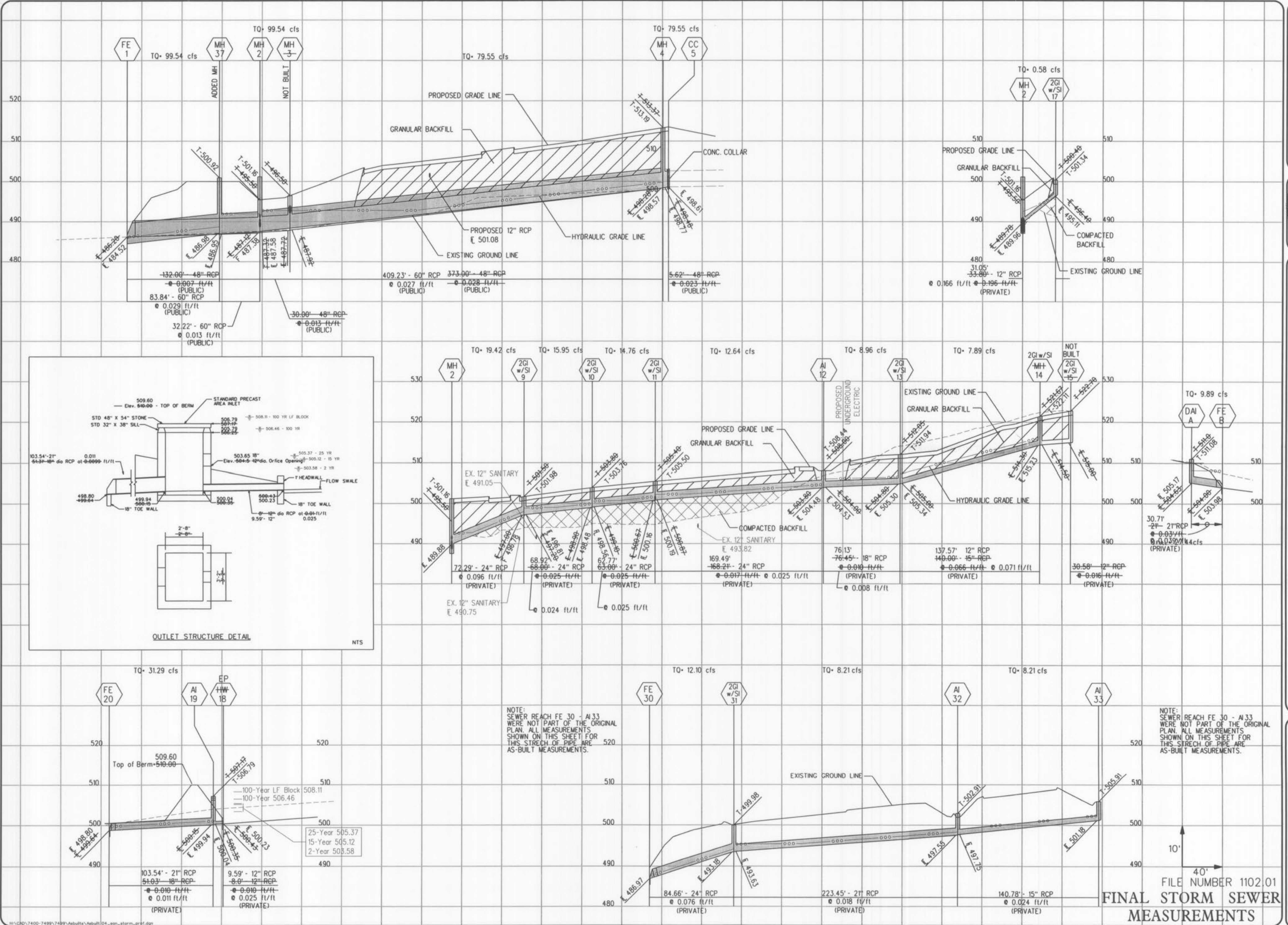
SITE PLAN

Base Map No. XX-XX
 P - XXXXX-XX
 7004

Drawn By: J.A.F.
 Checked By: W.G.K.

As-Built By: R.G.N.
 Design By: J.A.F.

R-30-10
C2



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 9-30-10
 Richard G. Norvell

ASSUMPTION
 of Blessed Virgin Mary Church
 O'FALLON, MISSOURI

SANITARY / STORM
 SEWER PROFILES

Base Map No. XX-XX
 P - XXXXX-XX
 7004

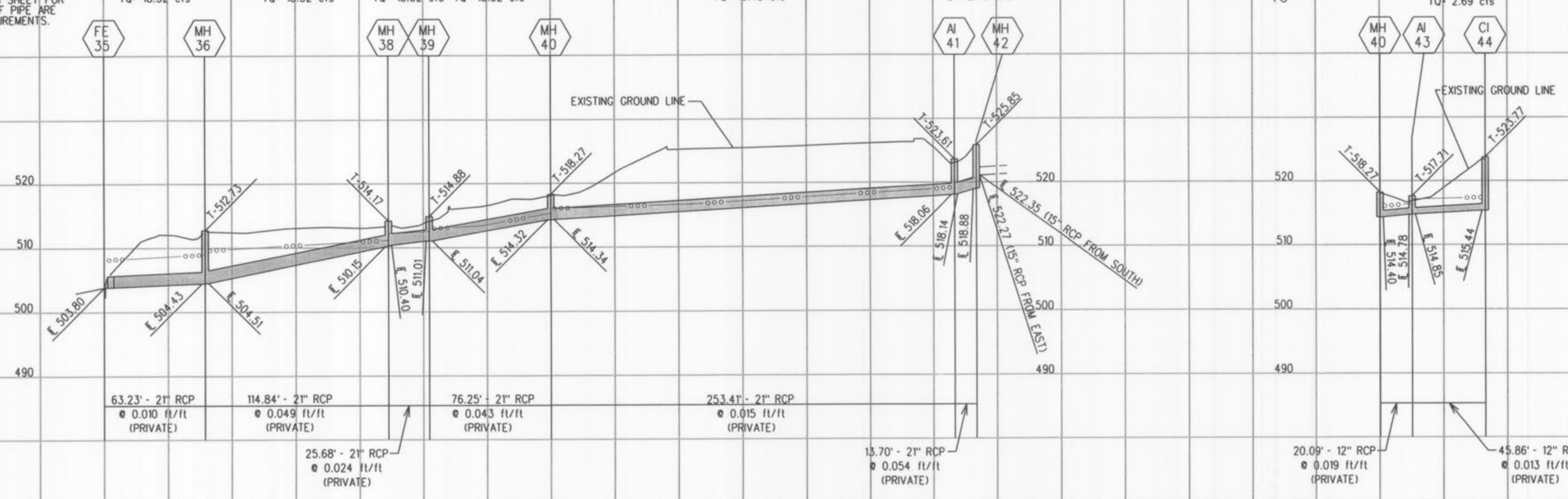
Asst. By: R.C.N.
 Design By: J.A.F.
 Drawn By: J.A.S.
 Checked By: W.G.K.

8-30-10
 C4

FILE NUMBER 1102.01
**FINAL STORM SEWER
 MEASUREMENTS**

NOTE: SEWER REACH FE 35 - MH 42 WERE NOT PART OF THE ORIGINAL PLAN. ALL MEASUREMENTS SHOWN ON THIS SHEET FOR THIS STRETCH OF PIPE ARE AS-BUILT MEASUREMENTS.

NOTE: SEWER REACH MH 40 - CI 44 WERE NOT PART OF THE ORIGINAL PLAN. ALL MEASUREMENTS SHOWN ON THIS SHEET FOR THIS STRETCH OF PIPE ARE AS-BUILT MEASUREMENTS.



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Richard G. Norvell



15YR-20MIN STORM EVENT

STRUCTURE	UPPER	LOWER	LENGTH	PIPE SIZE	FLOWLINE UPPER LOWER GRADE	UPPER STRUCTURE ELEVATION FE/BOARD	HYDRAULIC UPPER LOWER GRADE	FRICTION LOSS	VELOCITY FPS HEAD GAIN	TURN ANGLE LOSS	AREA PI	QUANTITY INCH TOTAL	***	CAPACITY PIPE INLET OUTLET	BYPASS	
LINE 1 5 STRUCTURES	DC	5	48	4	498.62 499.77	-029	502.79 502.77	-0011	.02	8.33	.43	.00	0.00	79.55	242.00	
	MH	4	2	60	499.2 497.68	-027	493.38 492.04	-0100	.18	4.95	.25	.00	0.00	79.55	424.82	
	MH	3	37	30	497.38 496.95	-013	492.60 491.05	-0015	.00	5.07	.40	.31	.35	79.54	300.96	
	MH	37	FE	3	494.00 494.52	-029	495.52 495.40	-0015	.12	5.07	.48	.06	0.00	79.54	444.23	
															18.29gpc	
LINE 2 7 STRUCTURES	301/FE 14	301/FE 13	137.6	12	515.23 505.34	-092	512.31	5.88	516.23 507.27	-0495	6.74	10.94 5.97	.00	0.00	9.56 4.05 2.13	
	301/FE 13	AI	13	76.1	505.30 504.53	-010	511.94	4.67	506.38 505.03	-0073	.35	5.07	.40	.00	40.00	
	AI	32	301/FE 11	149.5	504.48 500.19	-025	508.44	2.43	503.72 502.15	-0093	.53	4.92	.25	.00	25.12	
	301/FE 11	301/FE 10	62.8	24	500.14 499.56	-025	500.50	3.31	500.53 500.54	-0043	.27	4.76	.34	.17	.00	
	301/FE 10	301/FE 9	66.9	24	498.48 496.81	-024	503.76	3.20	499.15 498.01	-0050	.34	5.09	.42	.11	0.00	
	301/FE 9	MH	2	72.3	496.70 499.85	-025	501.96	3.17	493.11 492.38	-0074	.33	6.18	.55	.35	.05	
															7.41gpc	
LINE 3 2 STRUCTURES	301/FE 17	MH	3	31.0	495.15 499.96	-166	501.34	6.23	496.11 492.16	-0003	.01	.74	.01	.00	0.00	
LINE 4 4 STRUCTURES	AI	32	AI	33	149.8	501.18 497.75	-024	505.91	3.68	502.43 499.00	-0162	2.27	4.69	.70	.00	
	AI	32	301/FE 11	231.4	21	497.55 491.63	-018	502.91	3.91	495.38 498.04	-0027	.60	3.42	.18	.00	
	301/FE 11	FE	30	84.7	493.18 494.97	-093	499.08	4.00	495.64 495.40	-0029	.24	3.89	.23	.34	.36	
															15.17gpc	
LINE 5 2 STRUCTURES	AI	10	FE	20	103.5	21	495.94 498.80	-011	506.79	5.18	501.43	.00	0.00	4.04	11.01 2.63	
															11.01gpc	
LINE 6 2 STRUCTURES	DAI	A	FE	8	30.7	21	505.17 503.98	-039	511.08	2.85	508.23 508.11	-0039	.12	4.11	.24	.00
															11.50gpc	

*** At 8' of sides upon a depth of sill
 C/c street grade at inlet
 C/c depth over grate

* lower hydraulic elevation when flowing less than full
 C curve loss in pipe
 H radius of curve
 MH entrance control elevation
 pv partial flow velocity

15YR-20MIN STORM EVENT

STRUCTURE	UPPER	LOWER	LENGTH	PIPE SIZE	FLOWLINE UPPER LOWER GRADE	UPPER STRUCTURE ELEVATION FE/BOARD	HYDRAULIC UPPER LOWER GRADE	FRICTION LOSS	VELOCITY FPS HEAD GAIN	TURN ANGLE LOSS	AREA PI	QUANTITY INCH TOTAL	***	CAPACITY PIPE INLET OUTLET	BYPASS	
LINE 7 7 STRUCTURES	MH	42	AI	41	13.7	21	518.69 518.18	-054	520.80	5.22	520.63 513.89	-0064	.09	5.28	.43	.00
															11.91	
															79	
															38.32	
															38.32	
															4.89	
															18.32	
															38.32	
															38.32	
															15.82	
															7.41gpc	
LINE 8 3 STRUCTURES	CI	44	AI	43	45.8	13	515.64 514.65	-013	523.77	4.31	517.46 517.20	-0057	.36	3.43	.18	.00
	AI	43	MH	40	26.1	13	514.78 514.40	-019	517.71	.81	518.47 516.09	-0188	.38	6.23	.42	.67
															.67	
															2.19	
															4.89	
															4.90	
															13.42	

*** At 8' of sides upon a depth of sill
 C/c street grade at inlet
 C/c depth over grate

* lower hydraulic elevation when flowing less than full
 C curve loss in pipe

FILE NUMBER 1102.01
FINAL STORM SEWER MEASUREMENTS

SANITARY / STORM SEWER PROFILES

Base Map No. XX-XX
 P - XXXXX-XX
 7004

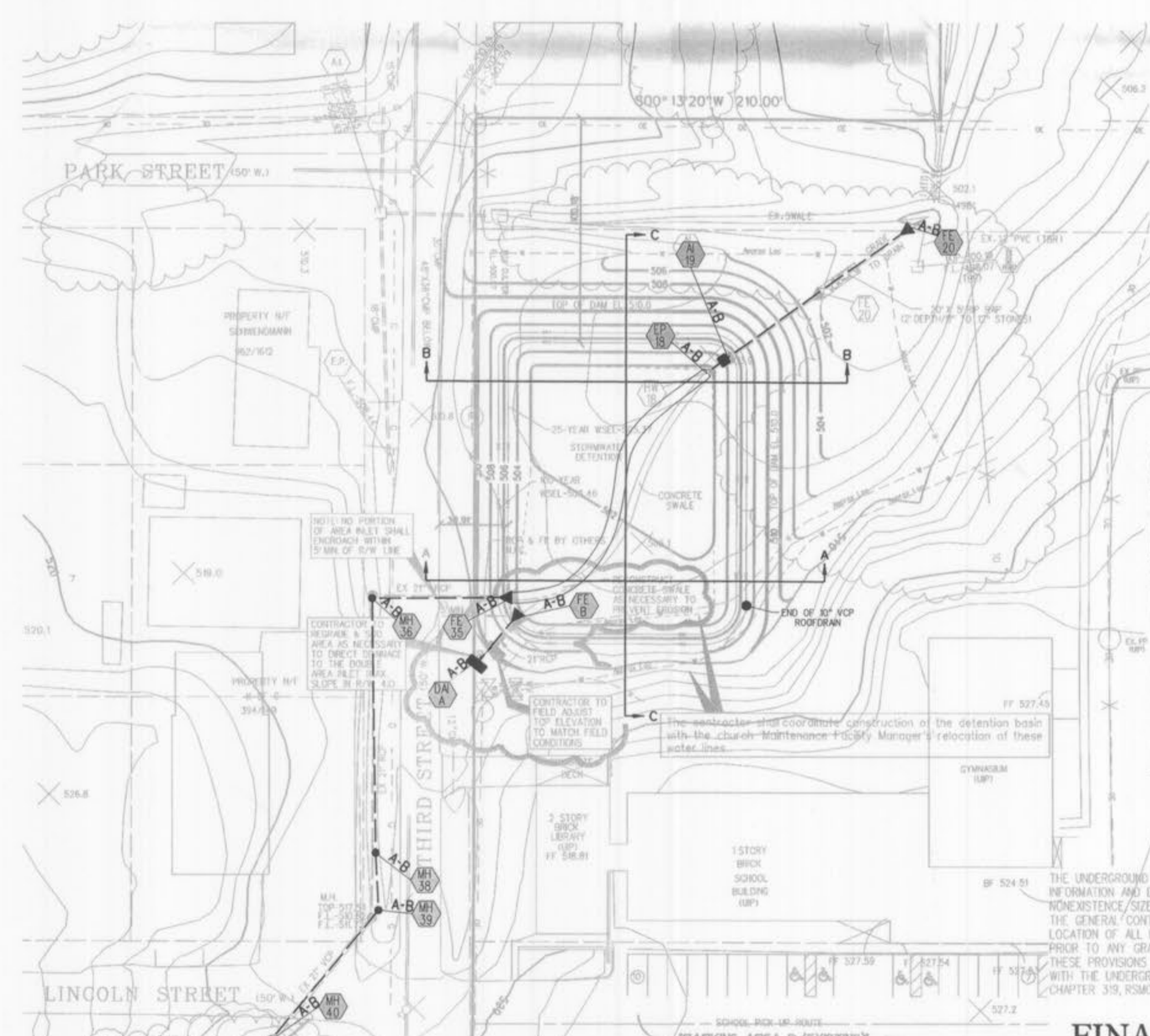
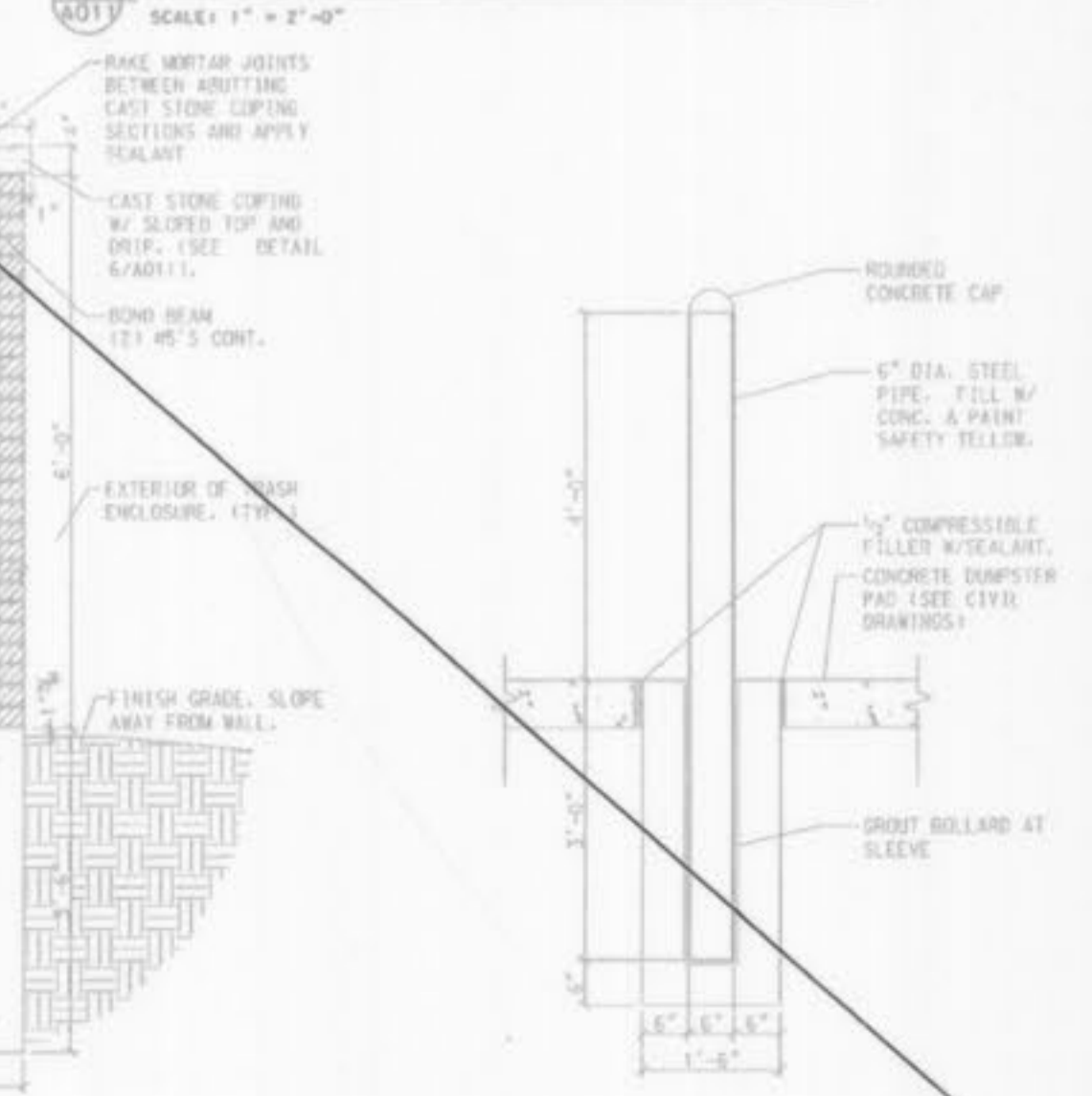
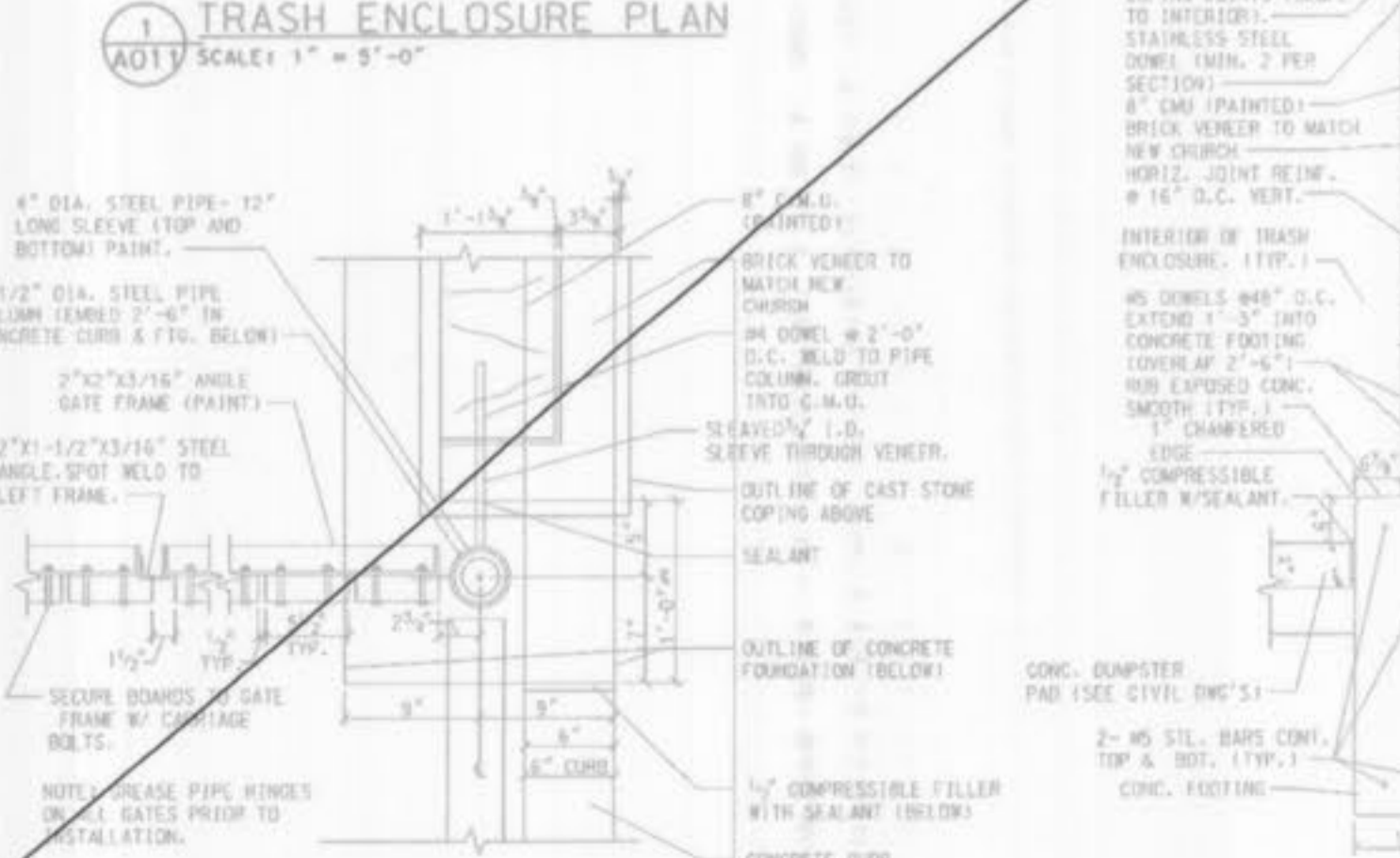
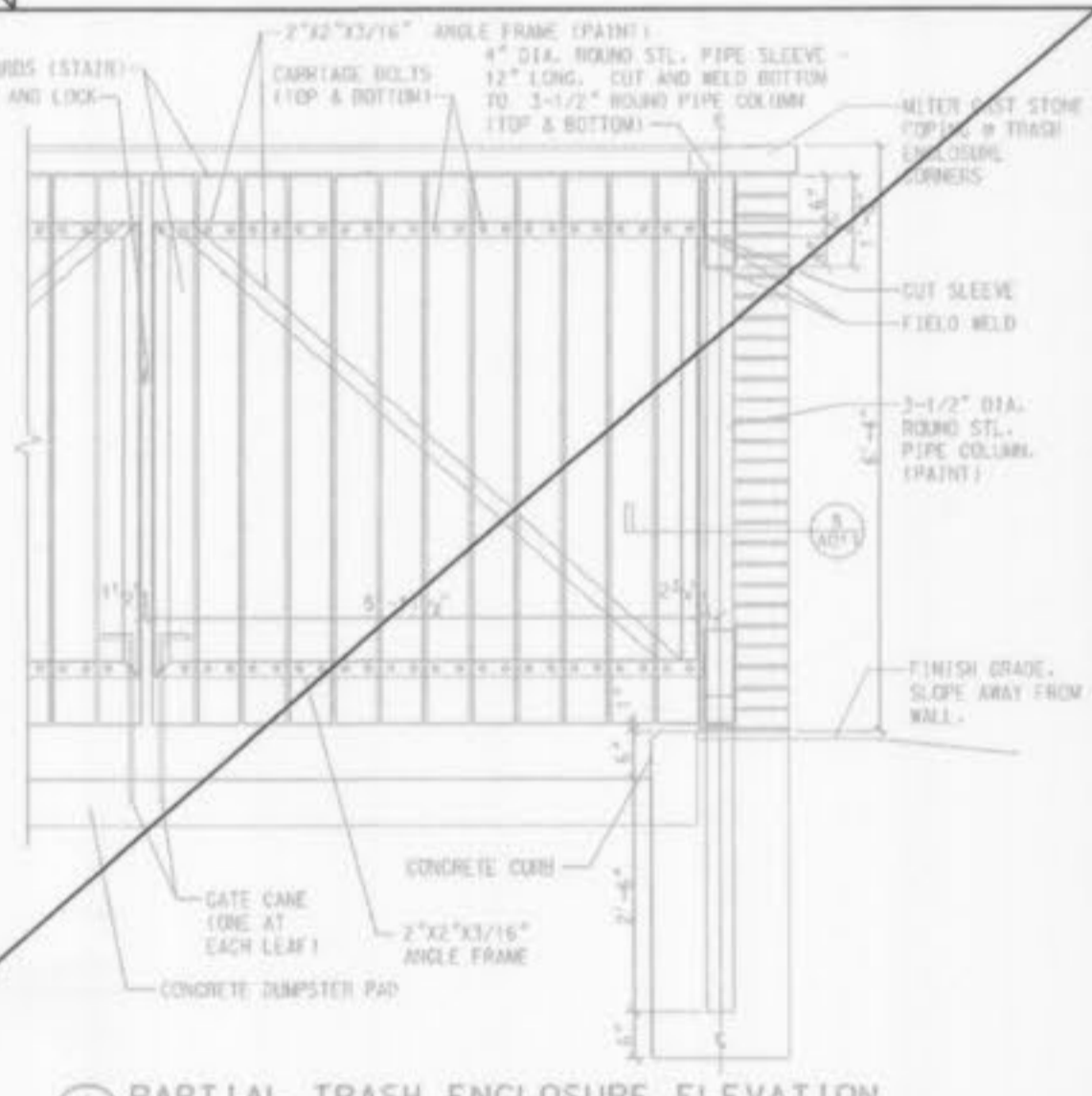
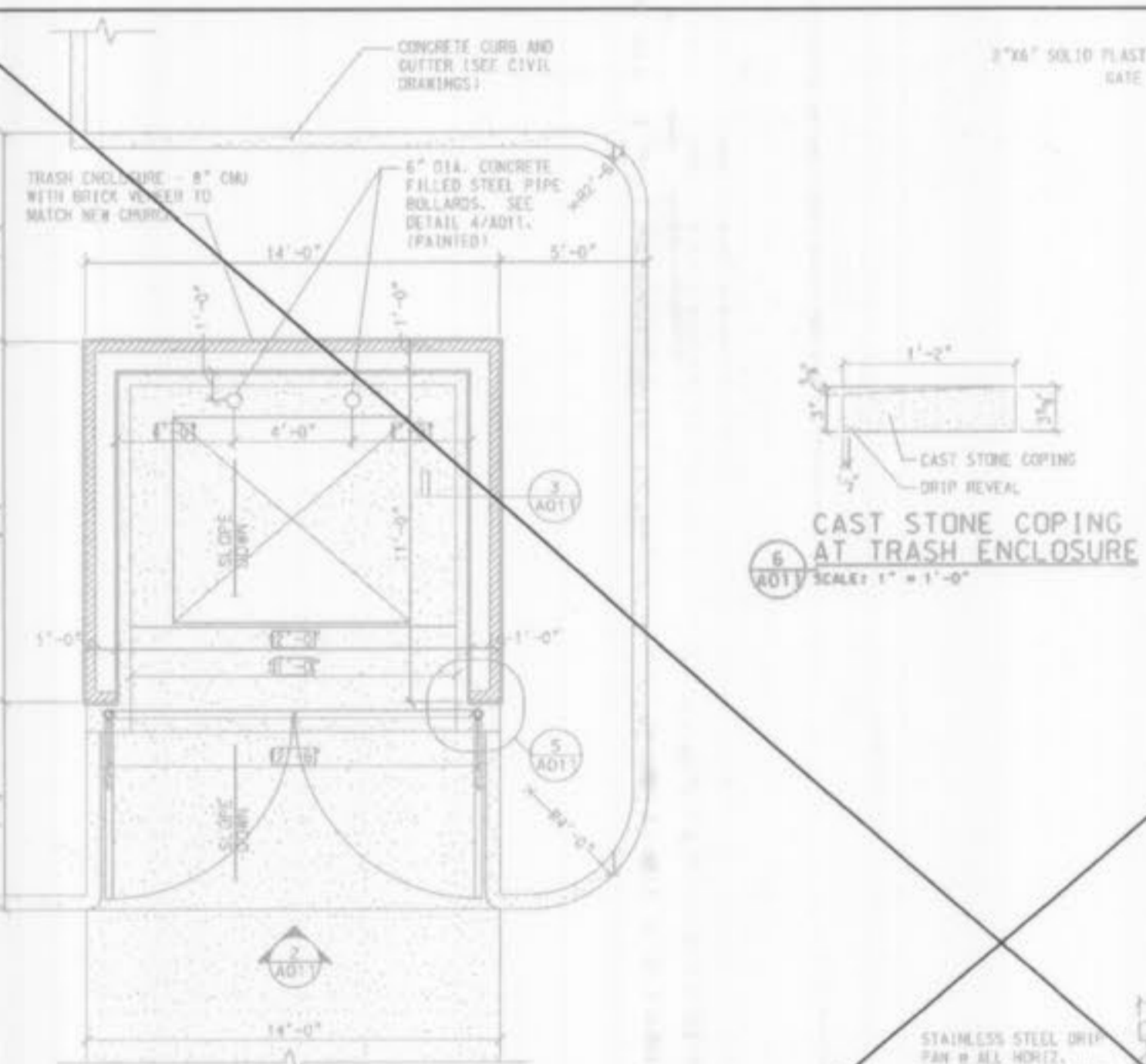
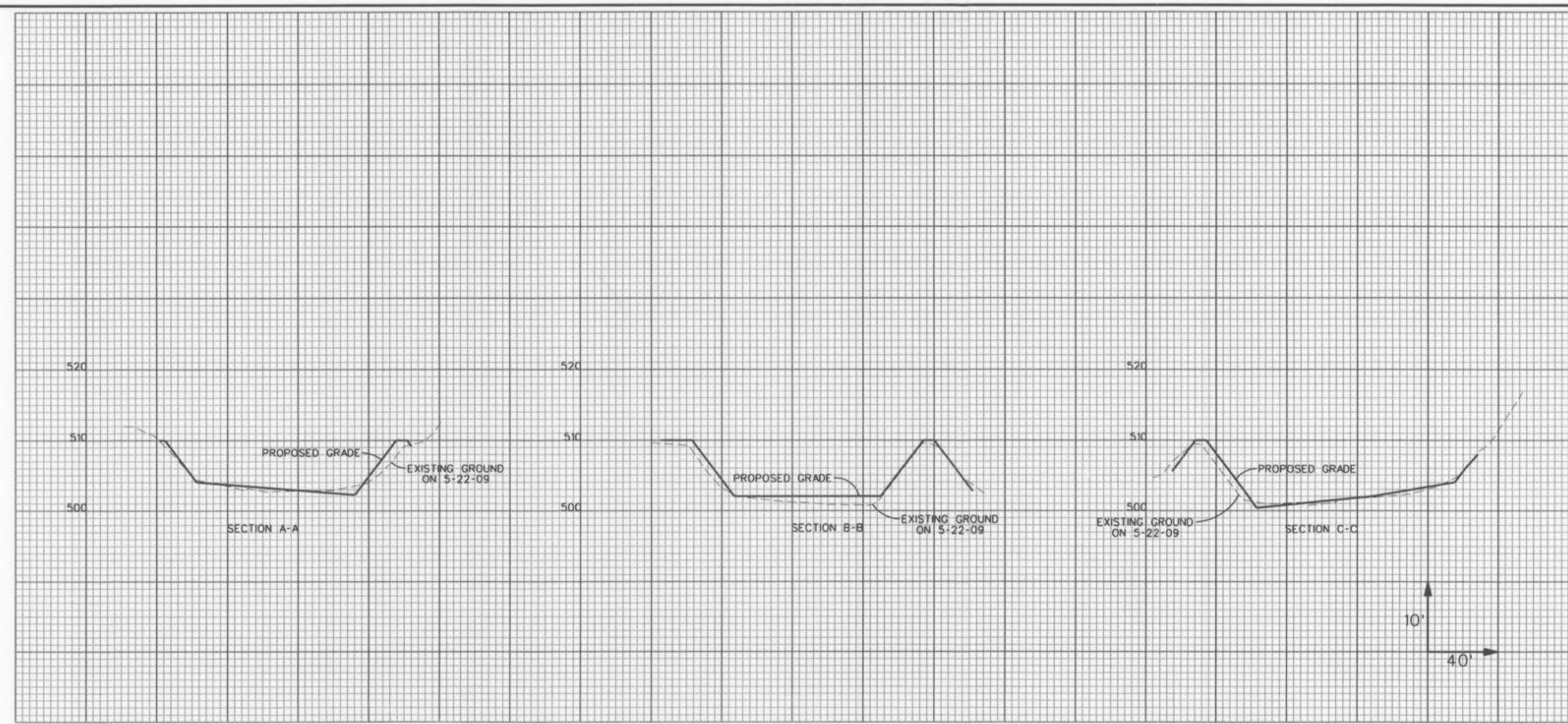
Scale: 8" = 30' @ 10'

Drawn By: J.A.F.
 Checked By: J.R.S.
 W.G.C.

C4A

Parking Required: 100 P.S.
 (1000 Seats/Max) 1 P.S./3 Seats

Parking Provision:
 Parking Area A: 228 P.S. (8 H.C.)
 Parking Area B: 70 P.S. (BY OTHERS) N.C.
 Parking Area C: 50 P.S. (CONTRACTOR TO RESTRIPE AS SHOWN)
 Parking Area D: 86 P.S. (4 H.C.)
TOTAL PARKING PROVIDED: 434 P.S. (20 H.C.)



CONCRETE SWALE CALCULATIONS (WITHIN BASIN)

INPUT DATA

MANNING'S COEFFICIENT	0.013
CHANNEL SLOPE	0.025000 ft/ft
DEPTH	4.42 ft
BOTTOM WIDTH	4.00 ft

RESULTS

DISCHARGE	14.83 ft ³ /s
FLOW AREA	1.67 ft ²
WETTED PERIMETER	4.83 ft
TOP WIDTH	4.00 ft
CRITICAL DEPTH	0.75 ft
CRITICAL SLOPE	0.004145 ft/ft
VELOCITY	8.89 ft/s
VELOCITY HEAD	1.23 ft
SPECIFIC ENERGY	1.65 ft
FROUDE NUMBER	2.43

FLOW IS SUPERCRITICAL.

FILE NUMBER 1102.01
FINAL STORM SEWER MEASUREMENTS

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VOLZ

STATE OF MISSOURI
 RICHARD G. NORVELL
 PLS-2005000077
 6-30-10
 Richard A. Howell

ASSUMPTION
 of Blessed Virgin Mary Church
 O'FALLON, MISSOURI

MISCELLANEOUS DETAILS

As-built By: R.C.A.
 Design By: J.A.F.
 Drawn By: J.R.S.
 Checked By: W.G.K.

Sheet No. 20-XX
 Date: 8-30-10
 P. XXXXX-XX
 7004