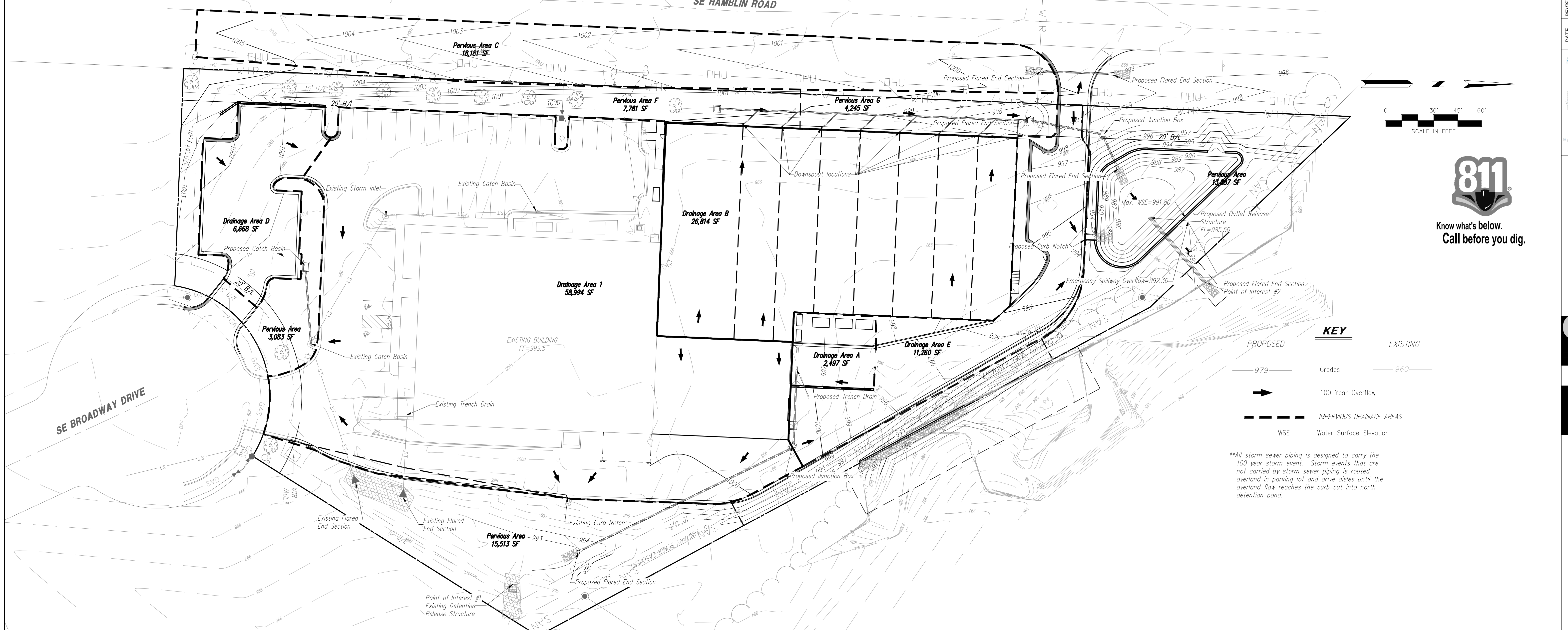


# STORM SEWER CALCULATIONS

HT SOLUTIONS

STORM SEWER NO.	SEWER LOCATION		TRIBUTARY AREA (AC.)		COMPOSITE RUNOFF COEFFICIENT	TIME OF FLOW			10 YEAR DESIGN				100 YEAR DESIGN				CURB INLET		PIPE DESIGN										
	FROM STRUCTURE NO.	TO STRUCTURE	AREA DESIGNATION	TOTAL		T1	Tt	Tc	INTENSITY [in/hr] [I(10)]	RUNOFF [cfs]			INTENSITY [in/hr] [I(100)]	RUNOFF [cfs]			In Pipe Downstream [cfs]	By Pass Out [cfs]	Pipe Size [in]	Pipe Slope [%]	Pipe Type	Rough Coeff [MANNING]	Design Velocity [fps]	Depth Flow (inches) Q[100]	Full Velocity [fps]	Full Flow [cfs]			
										AREA Q[10]	In Pipe Upstream (cfs)	By Pass In (cfs)		Total Q[10]	AREA Q[100]	In Pipe Upstream (cfs)											By Pass In (cfs)	TOTAL Q[100]	
LINE 1	TRENCH DRAIN	JB	A	0.05	0.05	0.90	5.0	0.0	5.0	7.35	0.3	0.0	0.0	0.3	10.32	0.6	0.0	0.0	0.6	0.6	0.0	12	0.50	HDPE	0.011	3.2	7.9	3.8	3.0
LINE 1	JB	FES	-	0.00	0.05	0.00	0.0	0.0	0.0	7.35	0.0	0.3	0.0	0.3	10.32	0.0	0.6	0.0	0.6	0.6	0.0	12	0.50	HDPE	0.011	3.2	6.5	3.8	3.0
LINE 2	FIELD INLET	FIELD INLET	F	0.17	0.22	0.20	5.0	0.0	5.0	7.35	0.2	0.0	0.0	0.2	10.32	0.4	0.0	0.0	0.4	0.4	0.0	15	2.00	HDPE	0.011	1.38	2.3	3.0	11.6
LINE 2	FIELD INLET	JB	B&G	0.79	1.01	0.79	5.0	0.0	5.0	7.35	4.6	0.2	0.0	4.8	10.32	8.1	0.4	0.0	8.5	8.5	0.0	15	2.00	HDPE	0.011	2.58	6.9	3.0	11.6
LINE 2	JB	FES	-	0.00	1.01	0.00	0.0	0.0	0.0	7.35	0.0	0.0	0.0	0.0	10.32	0.0	0.0	0.0	0.0	0.0	0.0	15	9.40	HDPE	0.011	8.4	7.0	9.6	11.6
LINE 3	OUTLET	FES	-	0.00	1.01	0.00	-	-	-	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	0.0	15	0.50	HDPE	0.011	10.6	5.1	1.5	11.6
LINE 4	FES	FES	C	0.41	1.42	0.20	5.0	0.0	5.0	7.35	0.6	0.0	0.0	0.6	10.32	1.1	0.0	0.0	1.1	1.1	0.0	15	1.00	HDPE	0.011	5.6	2.4	6.2	7.6
LINE 5	CB	EX CB	D	0.15	1.57	0.90	5.0	0.0	5.0	7.35	1.0	0.6	0.0	0.6	10.32	1.7	1.1	0.0	2.8	2.8	0.0	12	6.26	HDPE	0.011	5.4	6.0	4.2	5.4
-	FLUME	NORTH DETENTION POND	E	0.26	1.83	0.90	5.0	0.0	5.0	7.35	1.7	NA	NA	1.7	10.32	2.7	NA	NA	2.7	NA	NA	NA	NA	NA	1.8	3.0	1.8	2.7	

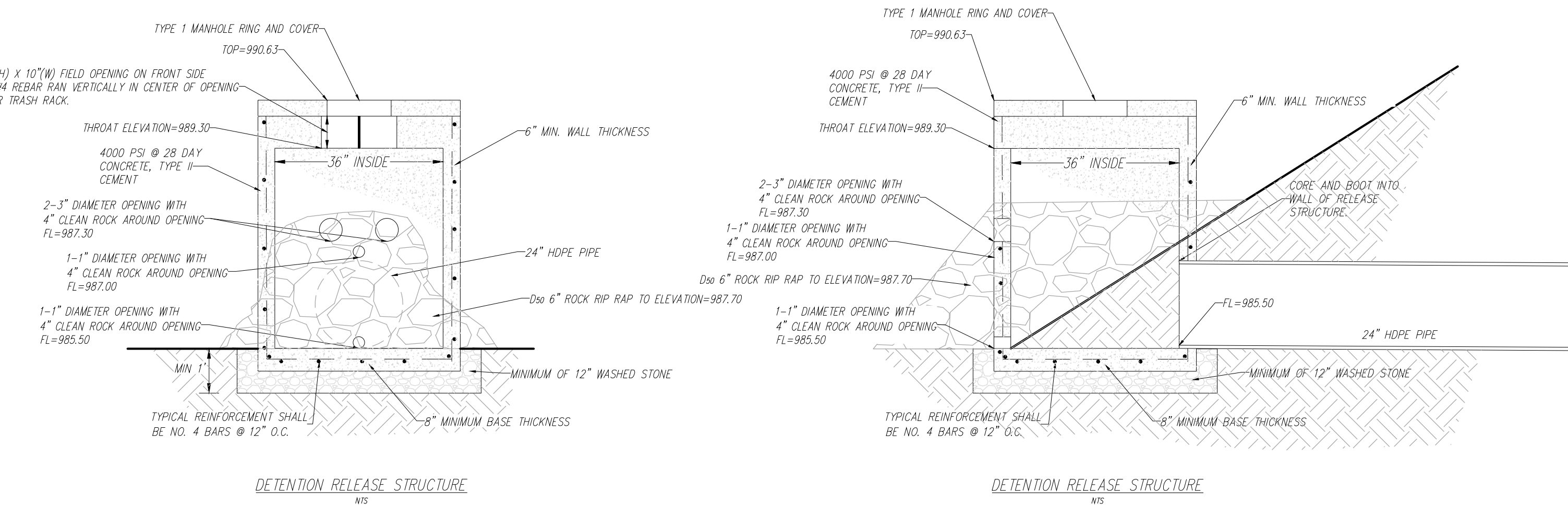


**KEY**

PROPOSED	EXISTING
— 979 —	— 960 —
→	
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WSE	

\*\*All storm sewer piping is designed to carry the 100 year storm event. Storm events that are not carried by storm sewer piping is routed overland in parking lot and drive aisles until the overland flow reaches the curb cut into north detention pond.

**PROJECT BENCHMARK:**  
 #1 Top of Sanitary Manhole lid at south side of site on SE Broadway cul-de-sac. N: 992422.0300 E: 2829012.5430 TOP ELEV. 1001.50



Detention Pond Details:

Elevation (feet)	Surt Area (sq-ft)	Cum.Store (cubic-feet)
985.500	1.50	0
986.000	1,148.80	287.58
987.000	1,759.34	1443.27
988.000	2,253.05	3747.84
989.000	2,800.89	6274.81
990.000	3,400.19	9375.35
991.000	4,050.51	13100.70
992.000	4,066.36	17159.13
993.000	4,306.85	21345.74

NO. BY: CK/PP  
 1 EDH RKS  
 2 EDH RKS  
 3 EDH RKS  
 4 EDH RKS

DATE REVISION  
 3/28/19 Revised per city comments dated 1/30/19  
 4/24/19 Revised per city comments dated 4/16/19  
 9/27/19 Detention release revision  
 10/15/19 Roof drains into storm sewer system

DATE REVISION  
 10/15/19

OF MISSOURI  
 PROFESSIONAL ENGINEER  
 R. KEVIN STREIBER, NO. E-26440

811  
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POST DEVELOPMENT DRAINAGE AREA MAP  
 HIGH TECH SOLUTIONS  
 LEE'S SUMMIT - JACKSON COUNTY - MISSOURI

XREF NO. 181.508  
 DRAWING NO. 1806.3  
 DATE OCTOBER 12, 2018  
 JOB NO. 1806.3

8 OF 11