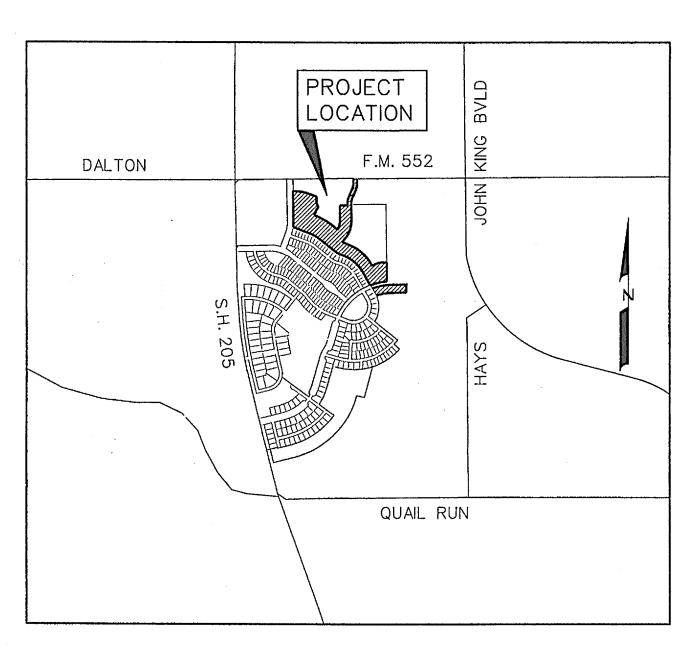
DEVELOPMENT PLANS

FOR

STONE CREEK PHASE VI

CITY OF ROCKWALL, TEXAS



PREPARED FOR STONE CREEK SF LTD.

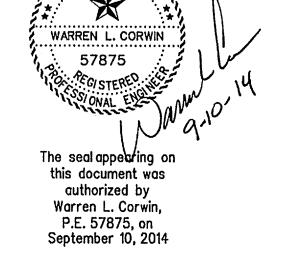
8214 WESTCHESTER DRIVE, SUITE 710 DALLAS, TEXAS 75225

CORWIN ENGINEERING, INC. — CONSULTING ENGINEERS

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AS-BUILT SEPTEMBER 2015
INFORMATION PROVIDED
BY CONTRACTORS
(NOT FIELD VERIFIED)



200 W. BELMONT, SUITE E

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TBPE FIRM #5951

ALLEN, TEXAS 75013

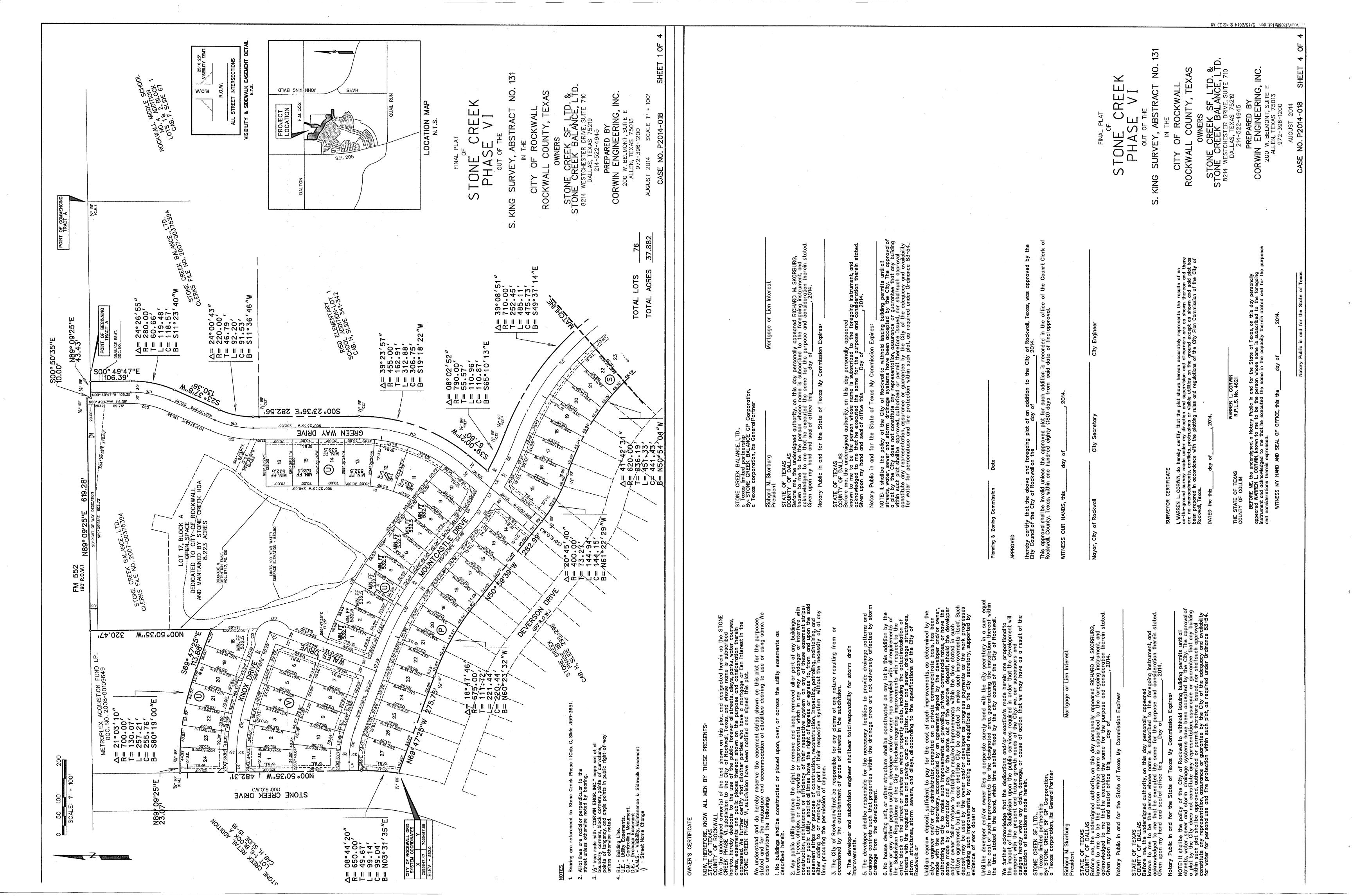
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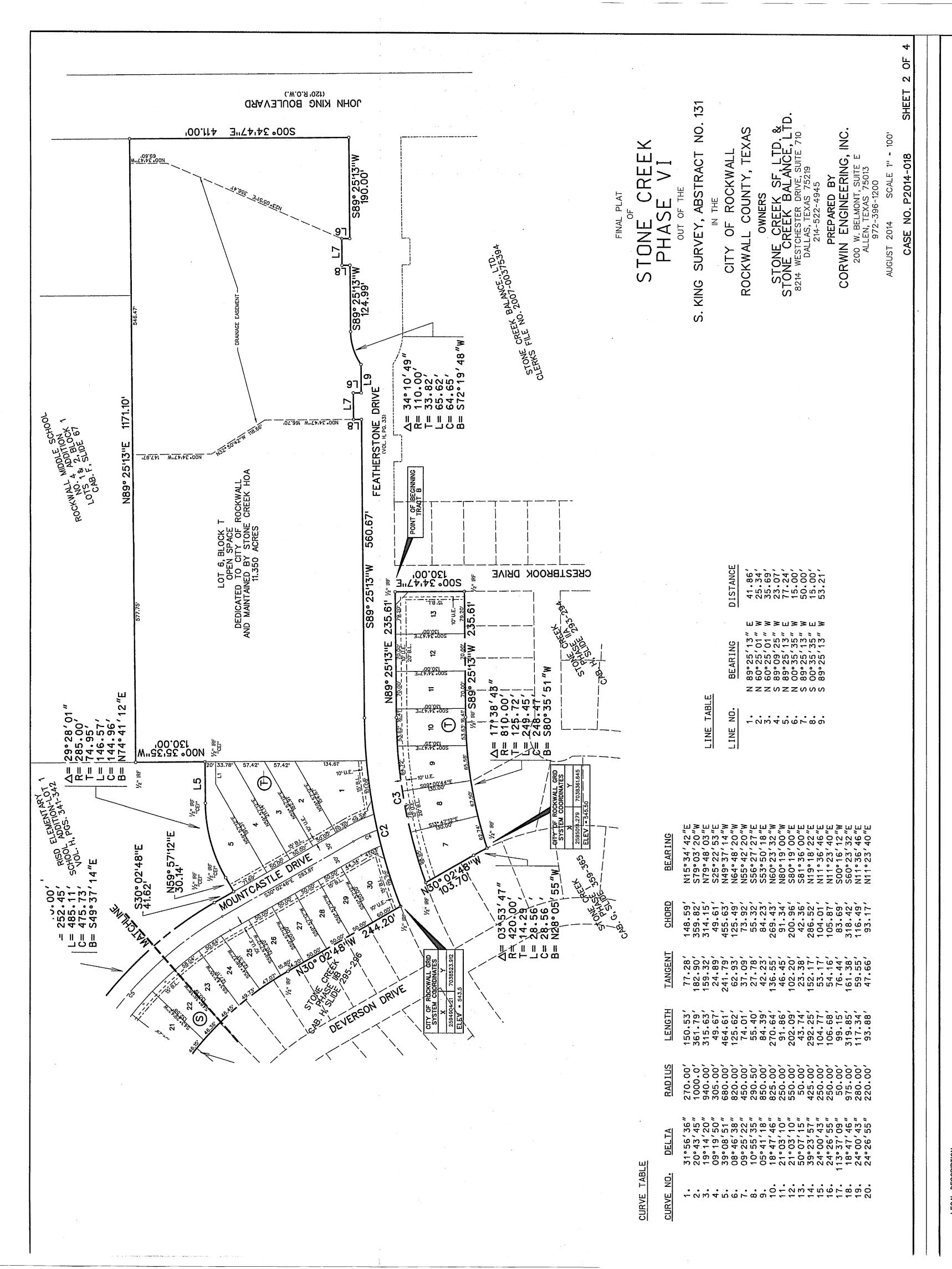
CITY OF ROCKWALL SURVEY MONUMENT ON AN INLET AT THE NORTHWEST CORNER OF FEATHERSTONE DR. AND HARVARD DR. ELEV. 525.31

NOTE:

CITY OF ROCKWALL STANDARDS AND NCTCOG 3rd ADDITION STANDARDS SHALL BE USED FOR REFERENCE.

2	REVISED PER CITY COMMENTS	7-28-14	
1	REVISED PER CITY COMMENTS	6-18-14	
NO.	REVISIONS	DATE	



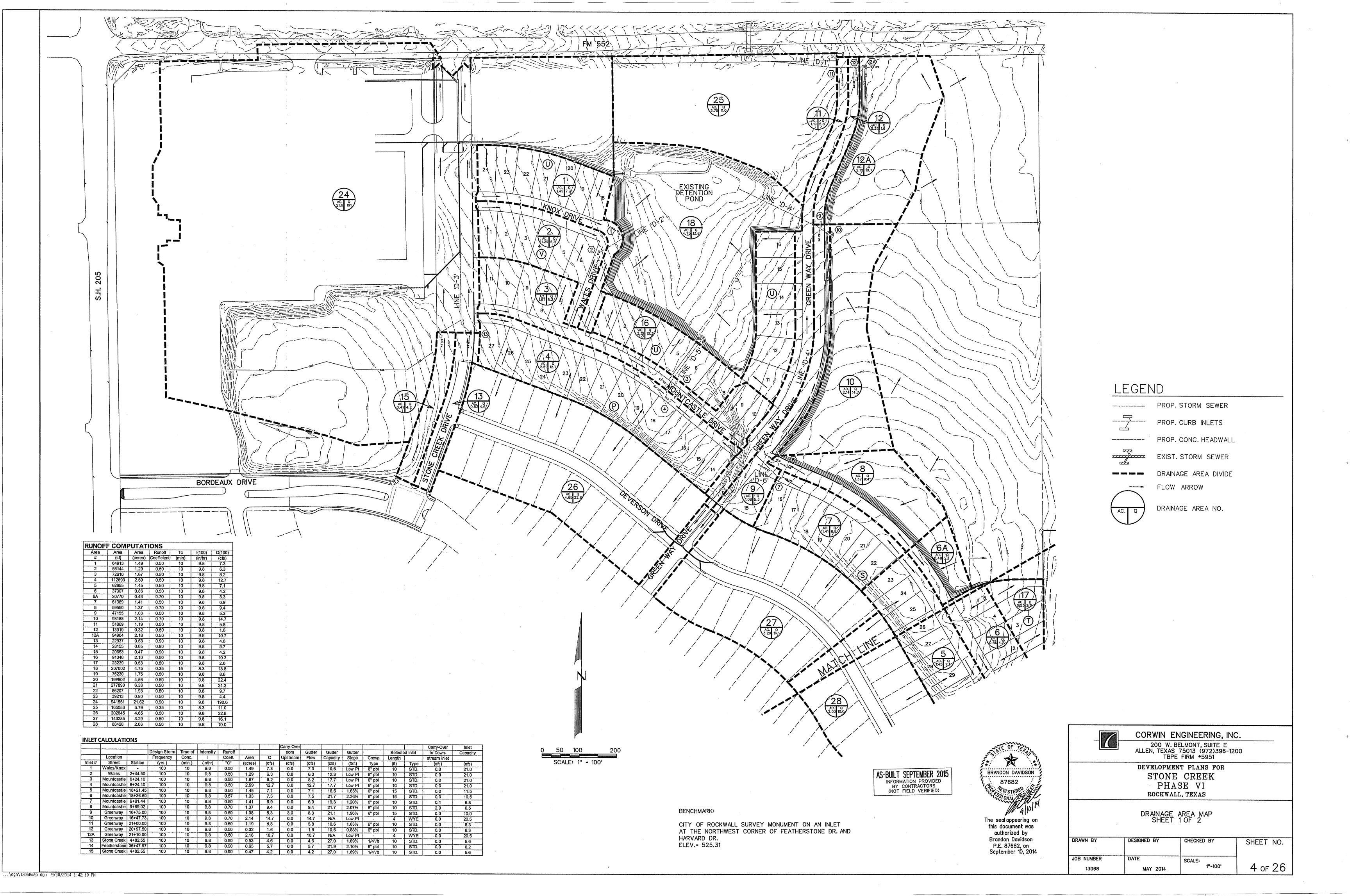


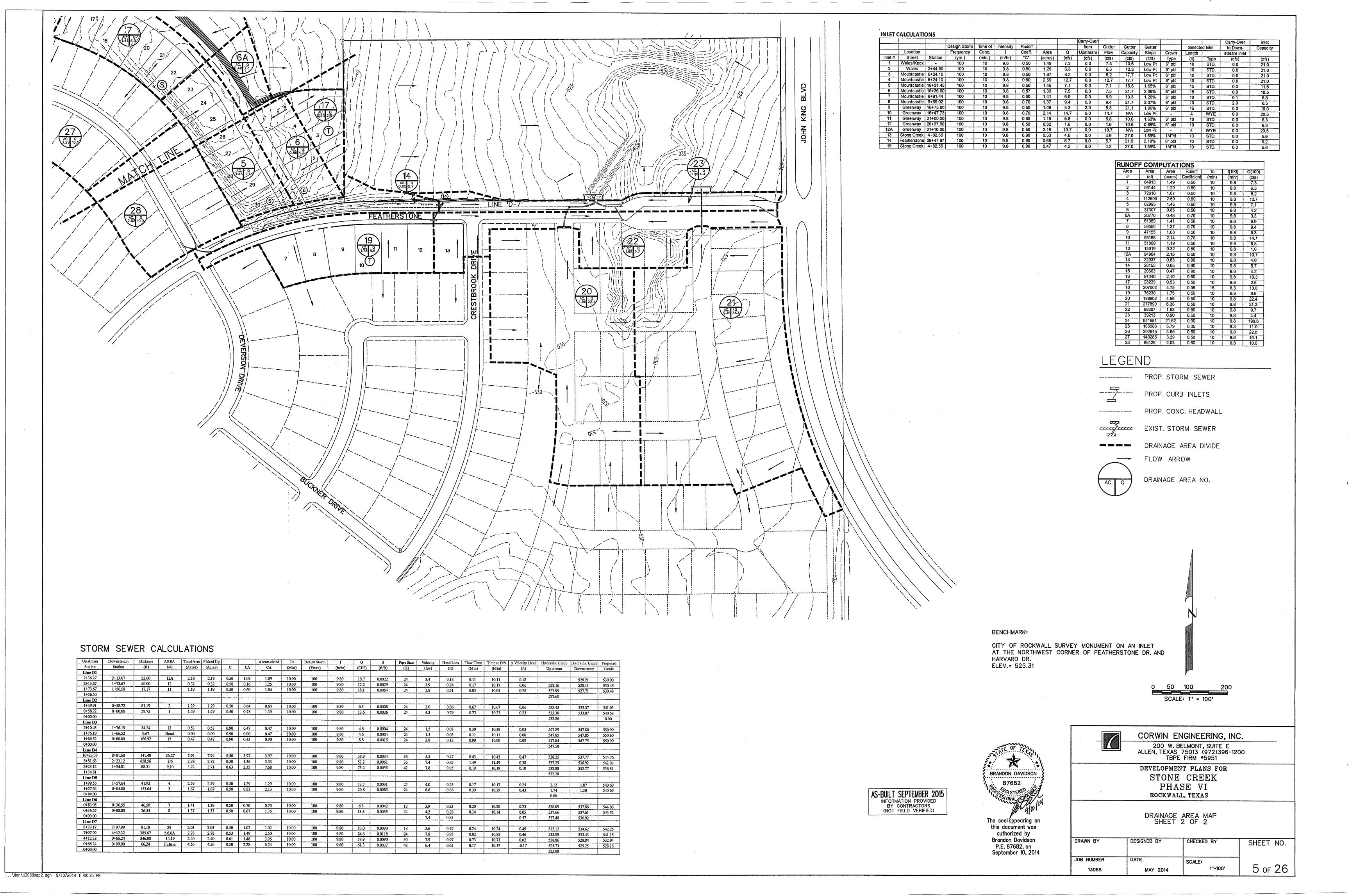
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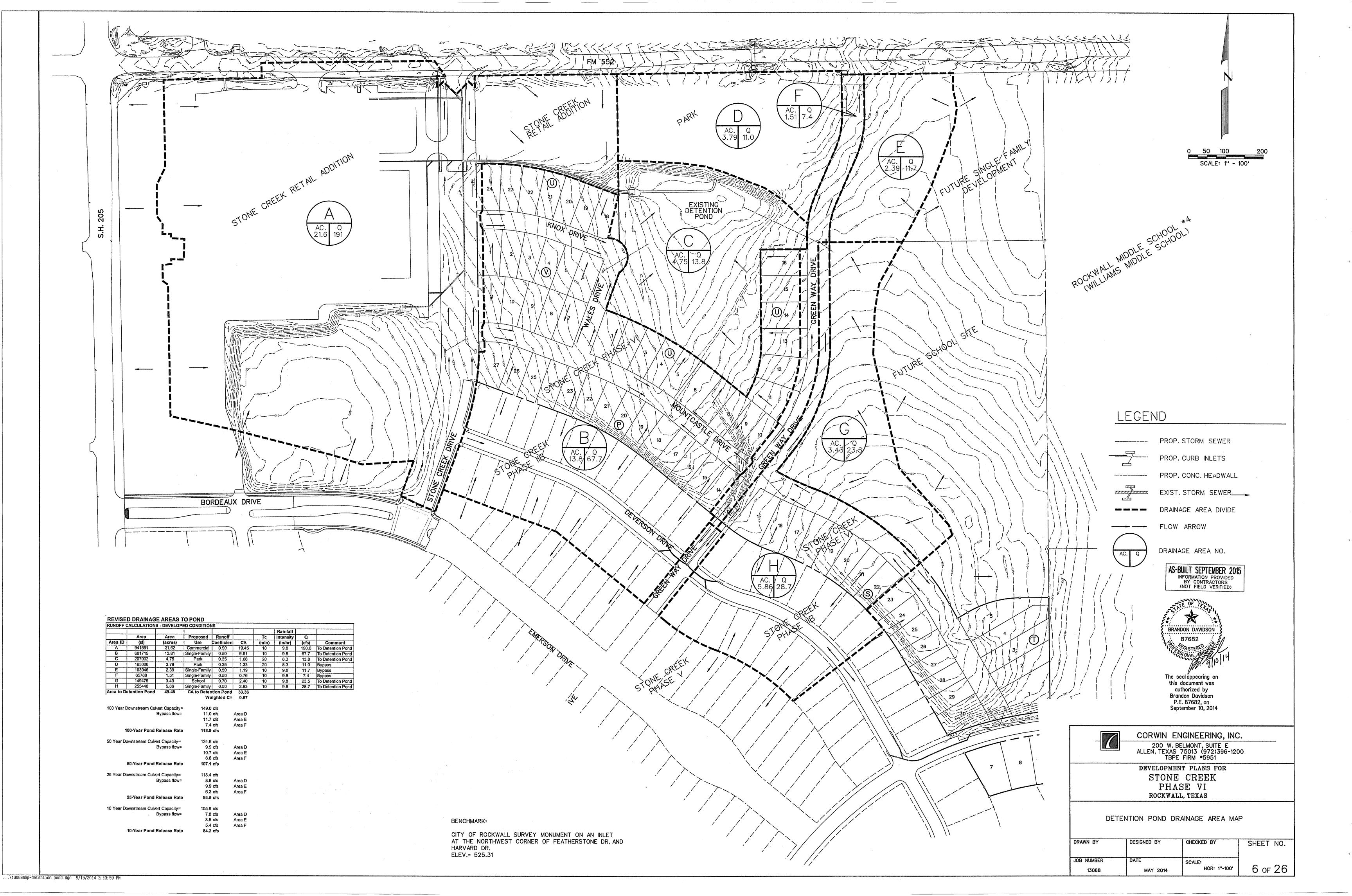
STONE CREEK SF, LTD STONE CREEK BALANCE, 8214 WESTCHESTER DRIVE, SUITE DALLAS, TEXAS 75219

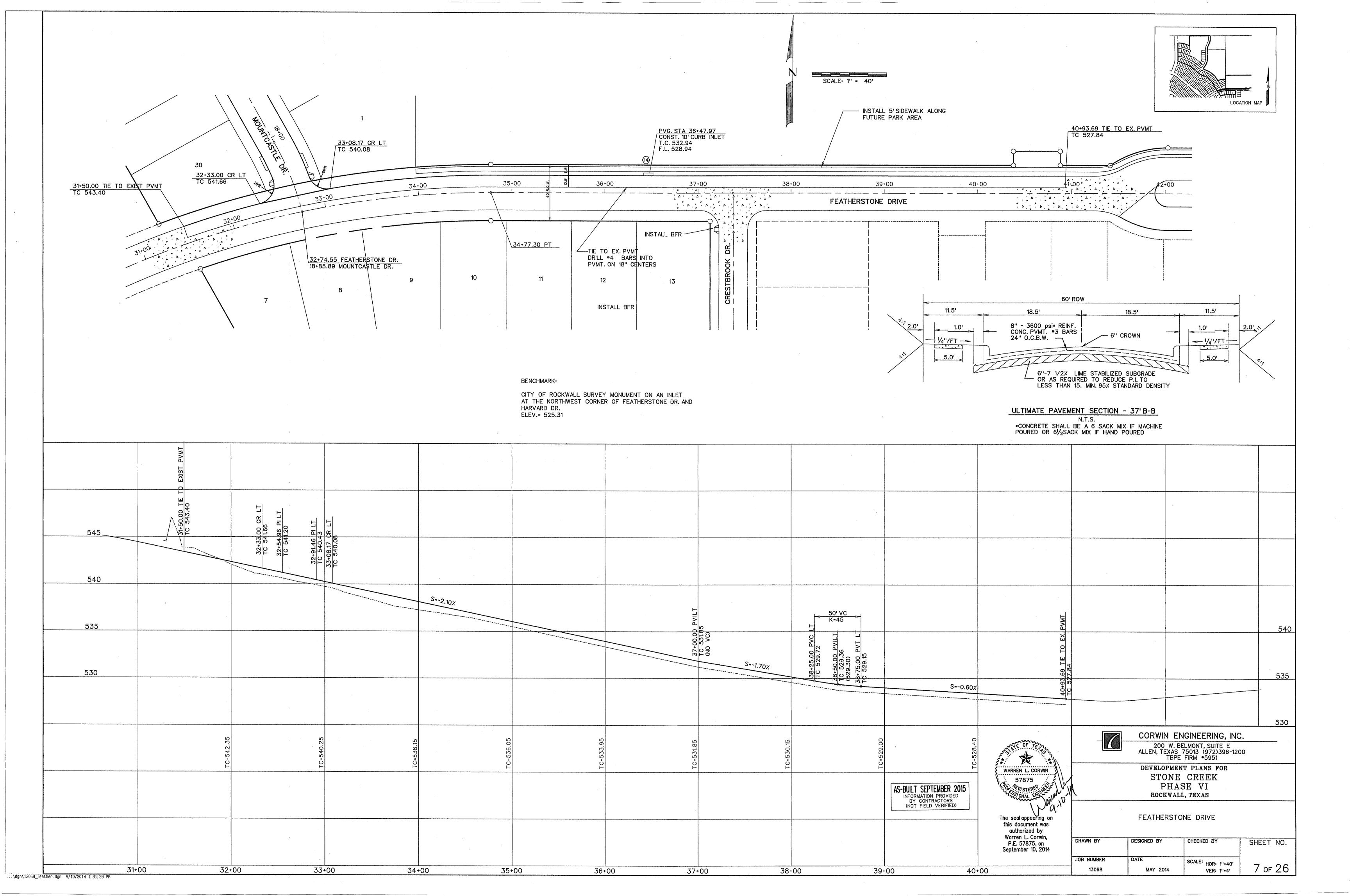
PREPARED BY
CORWIN ENGINEERING, II
200 W. BELMONT, SUITE E
ALTEXAS 75013

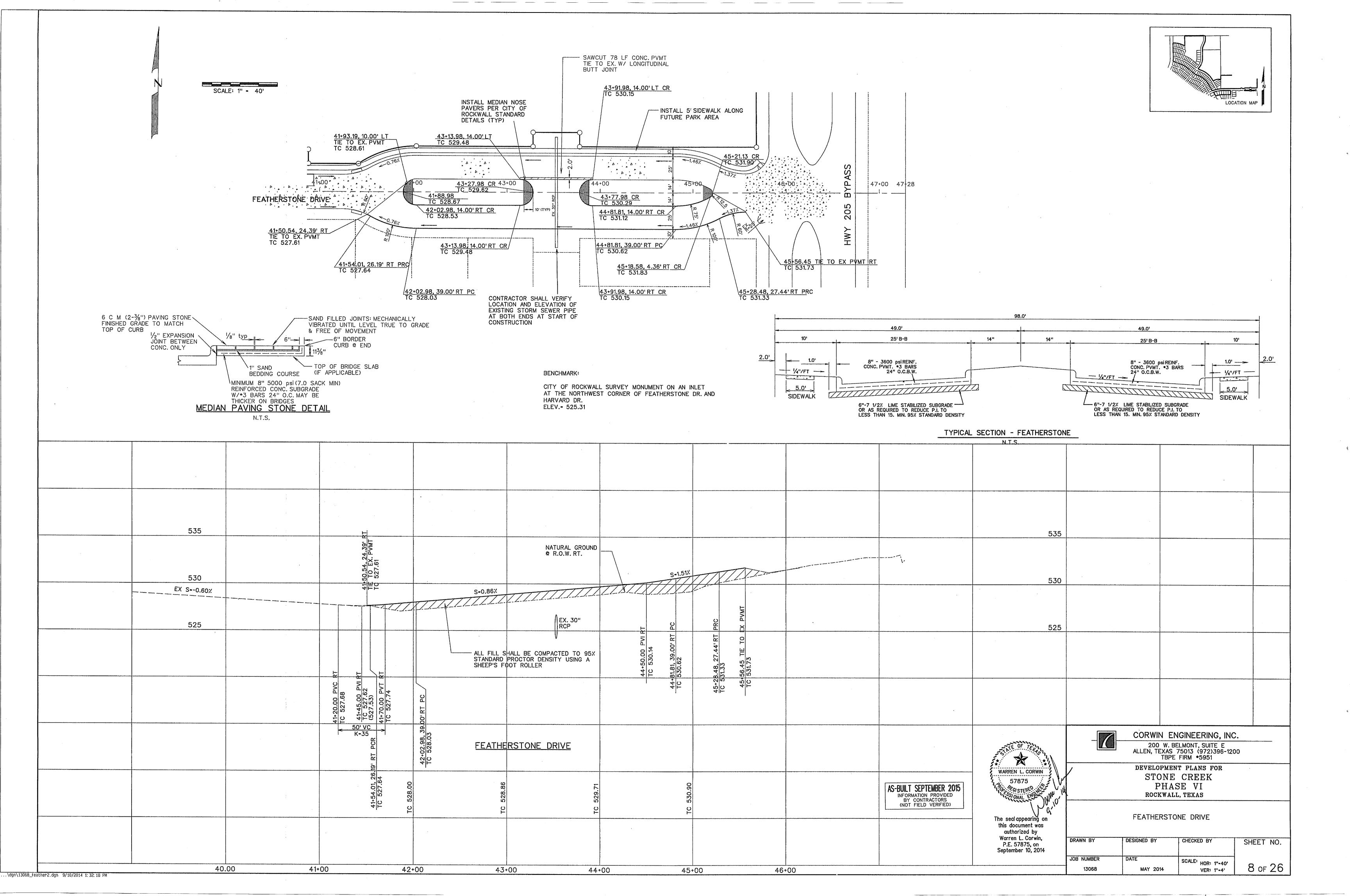
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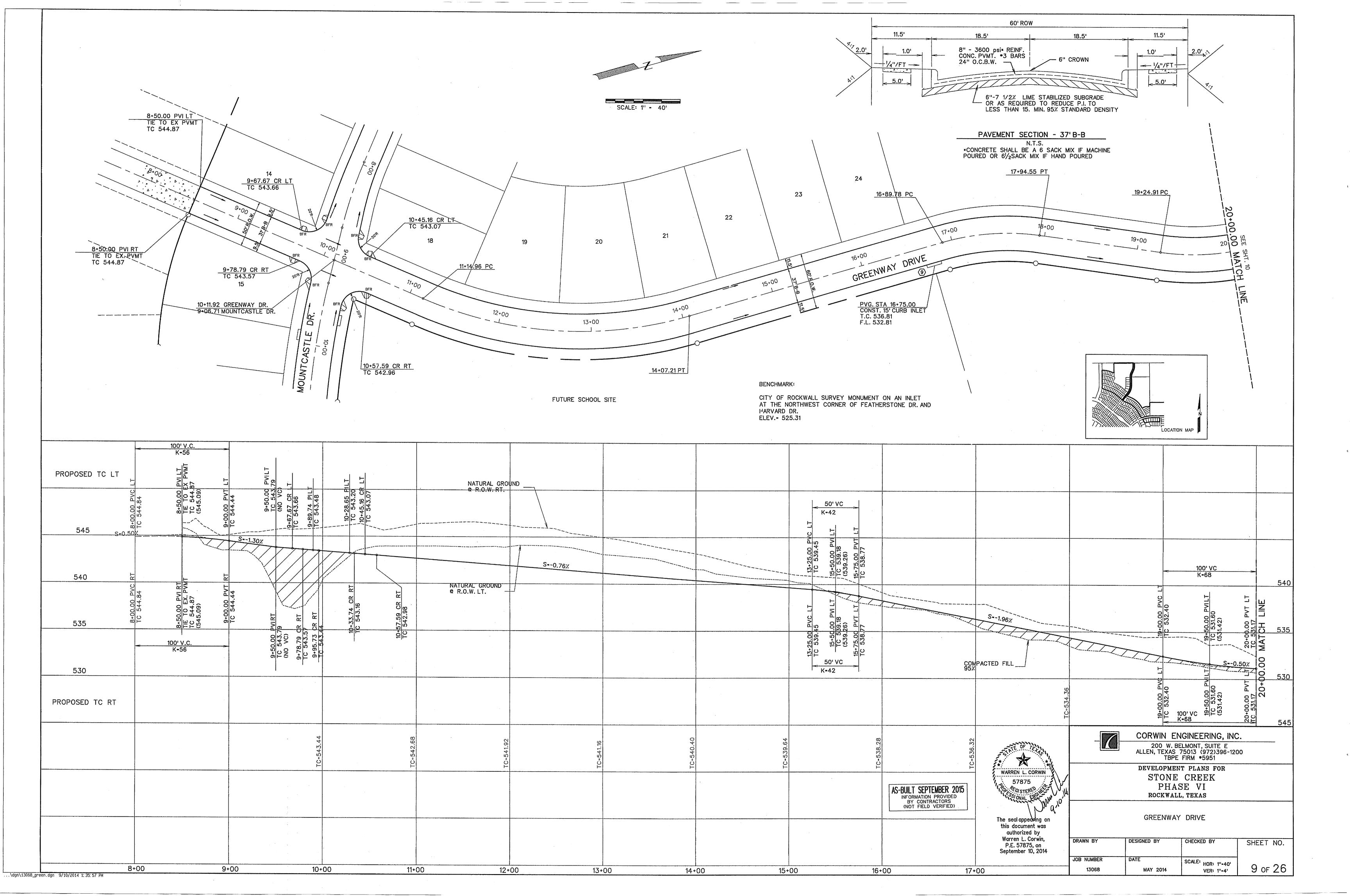




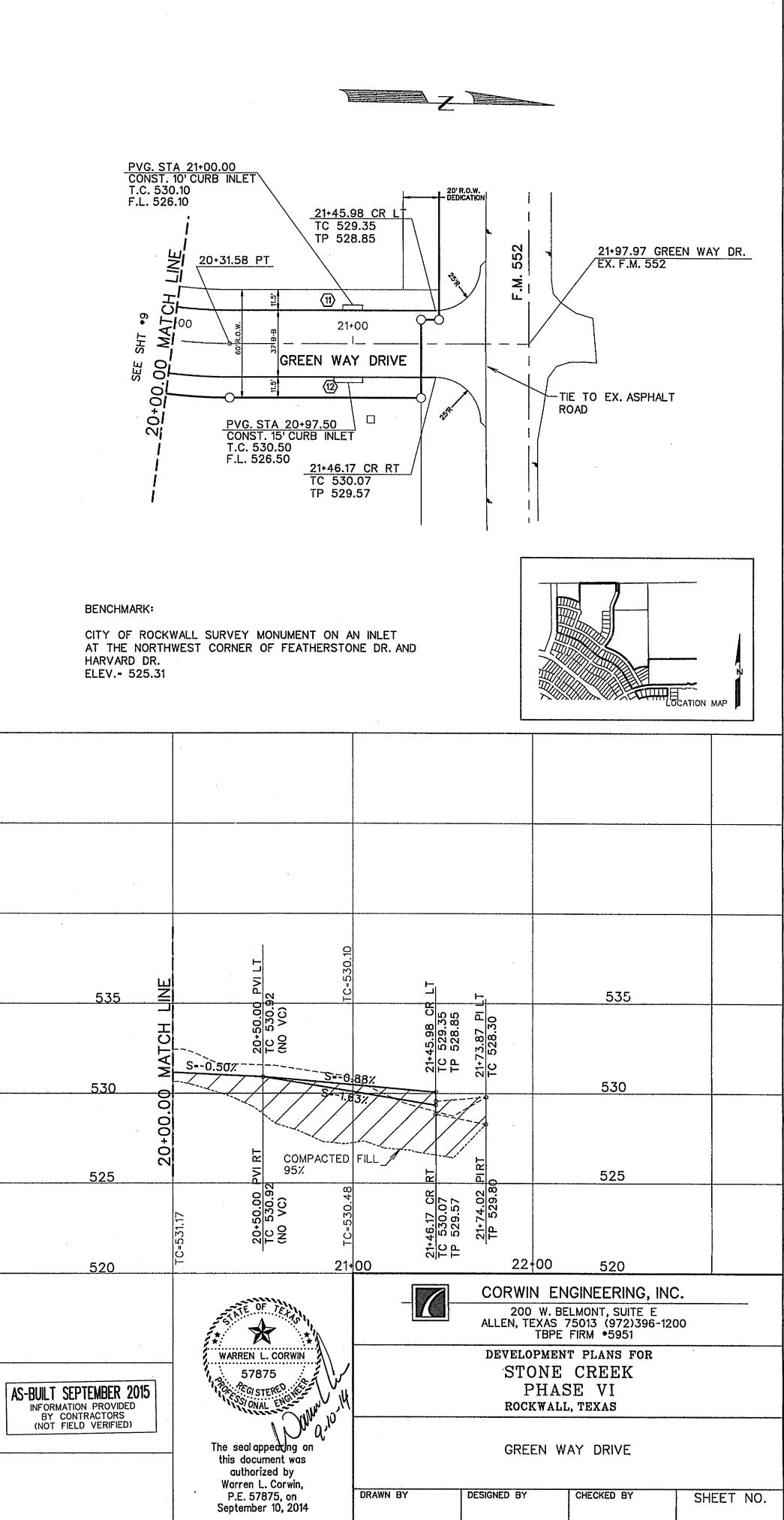








SCALE: 1" - 40'



JOB NUMBER

20+00

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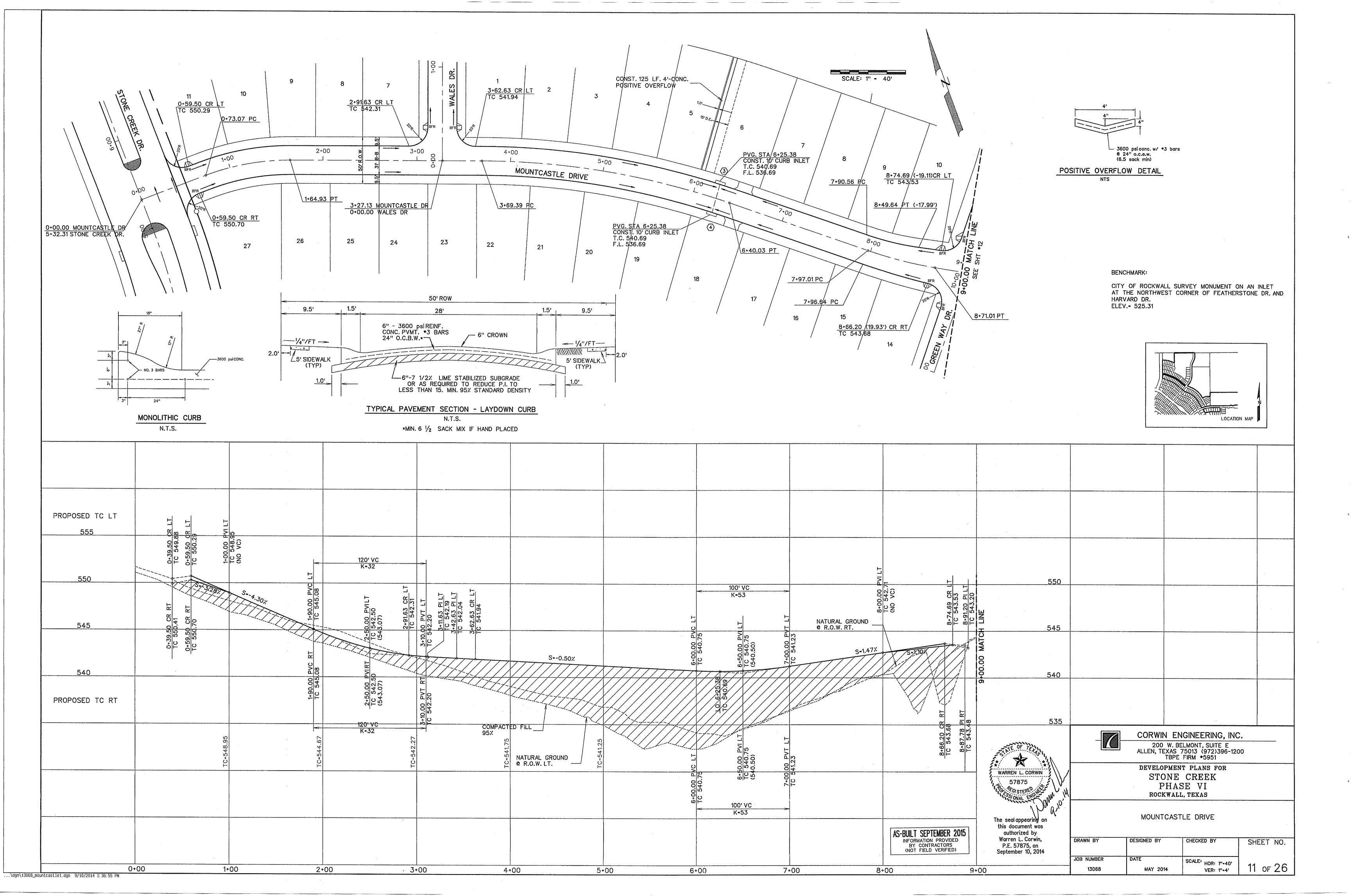
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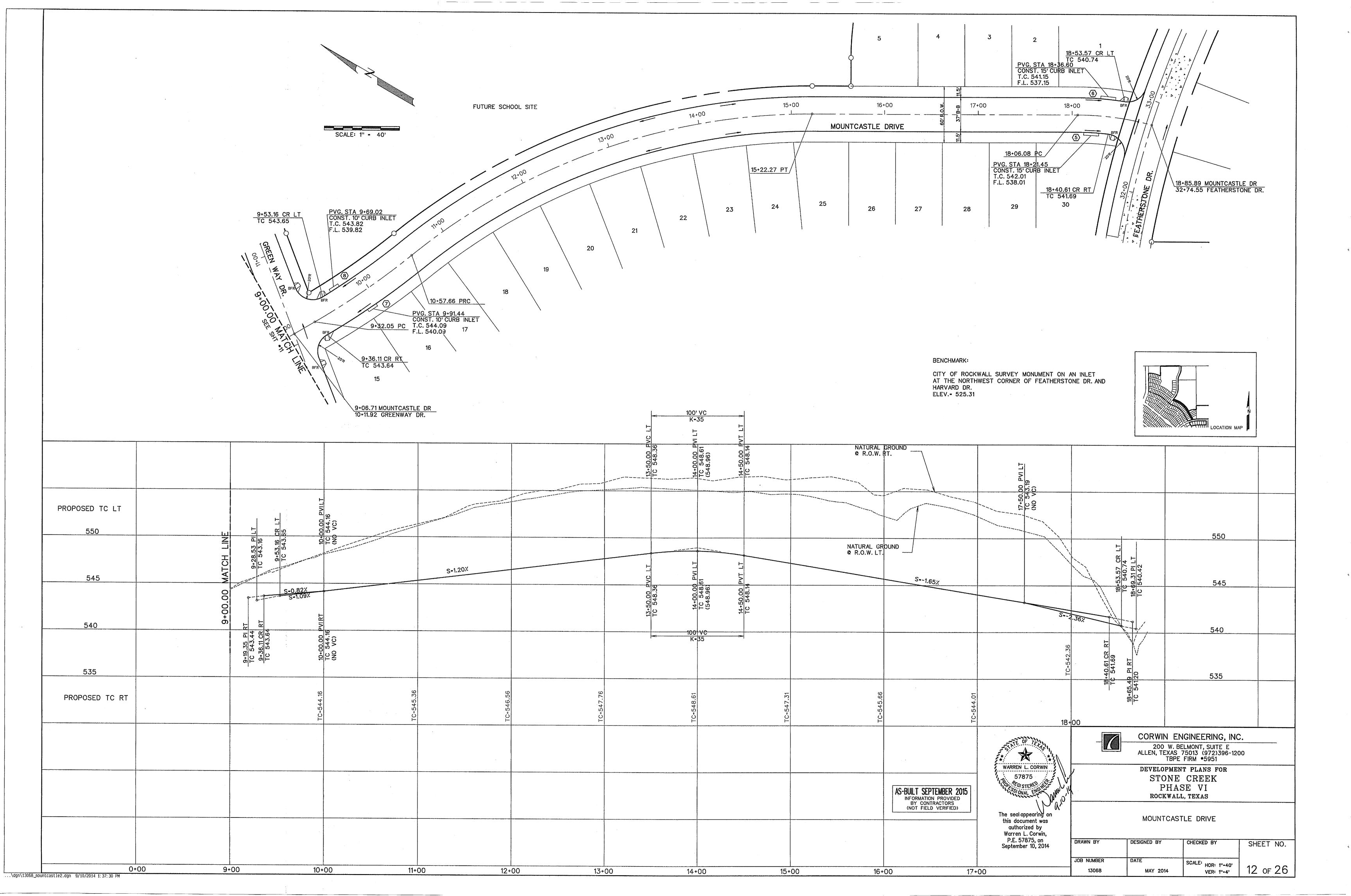
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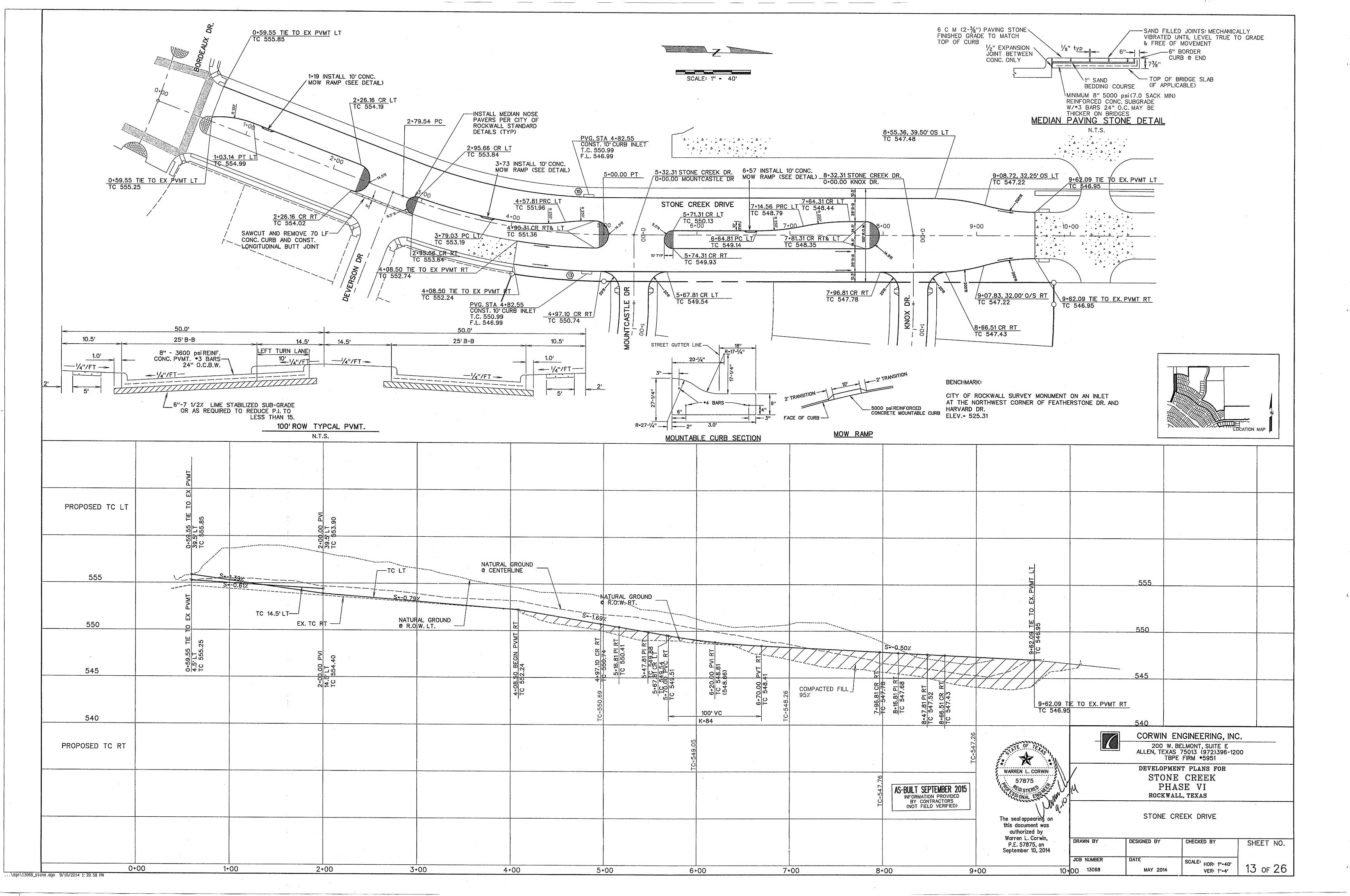
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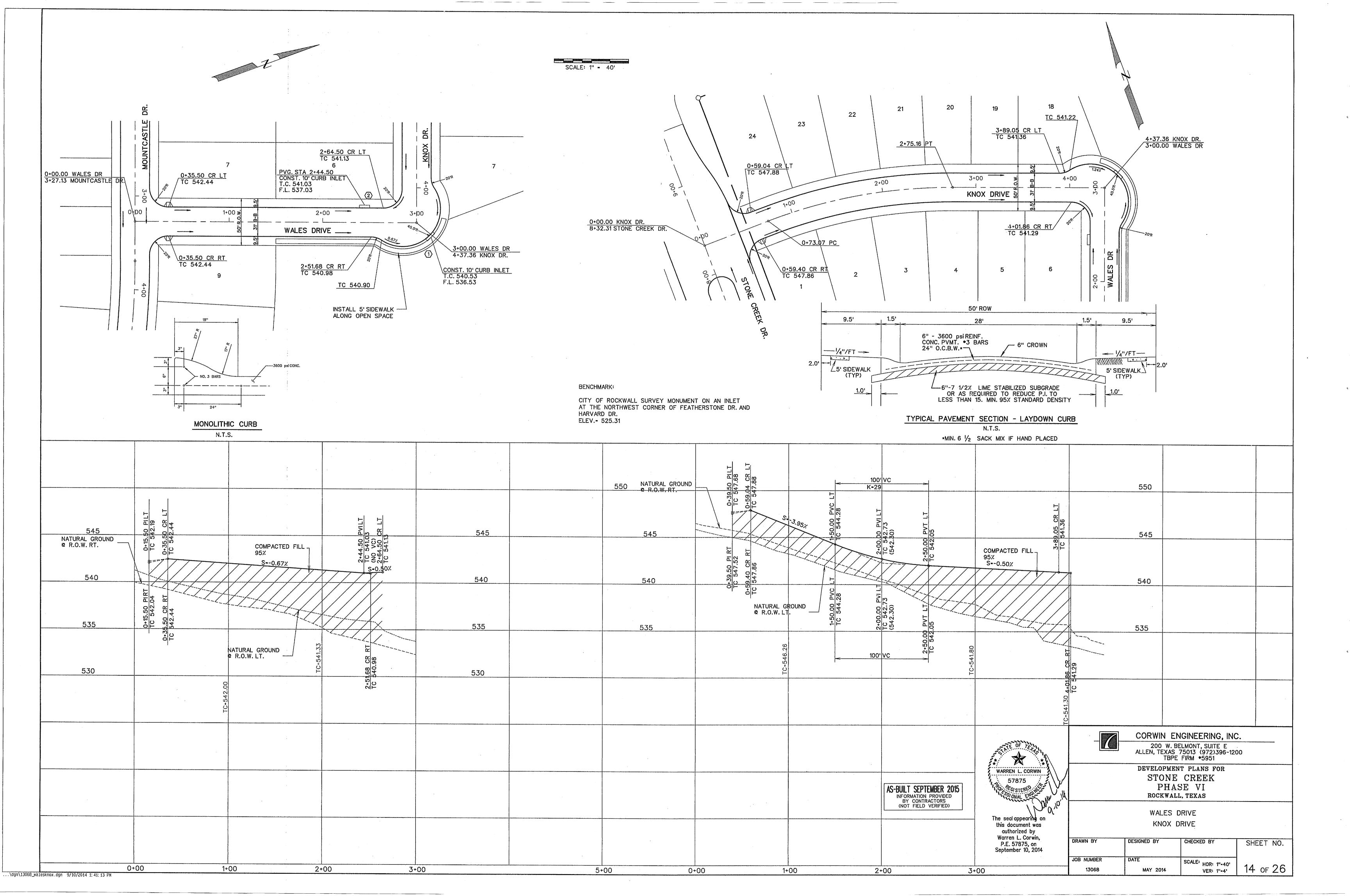
MAY 2014

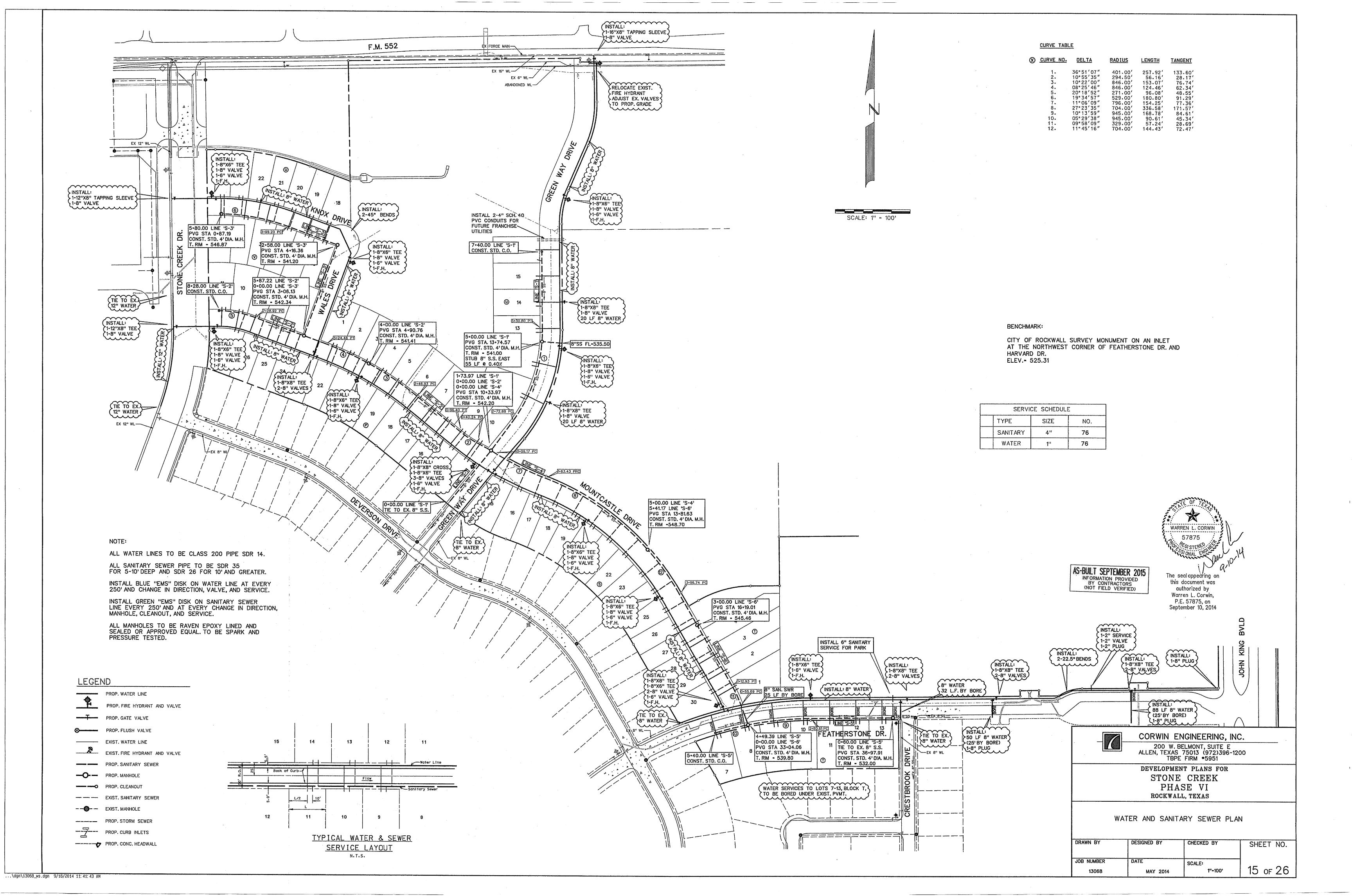
10 of 26

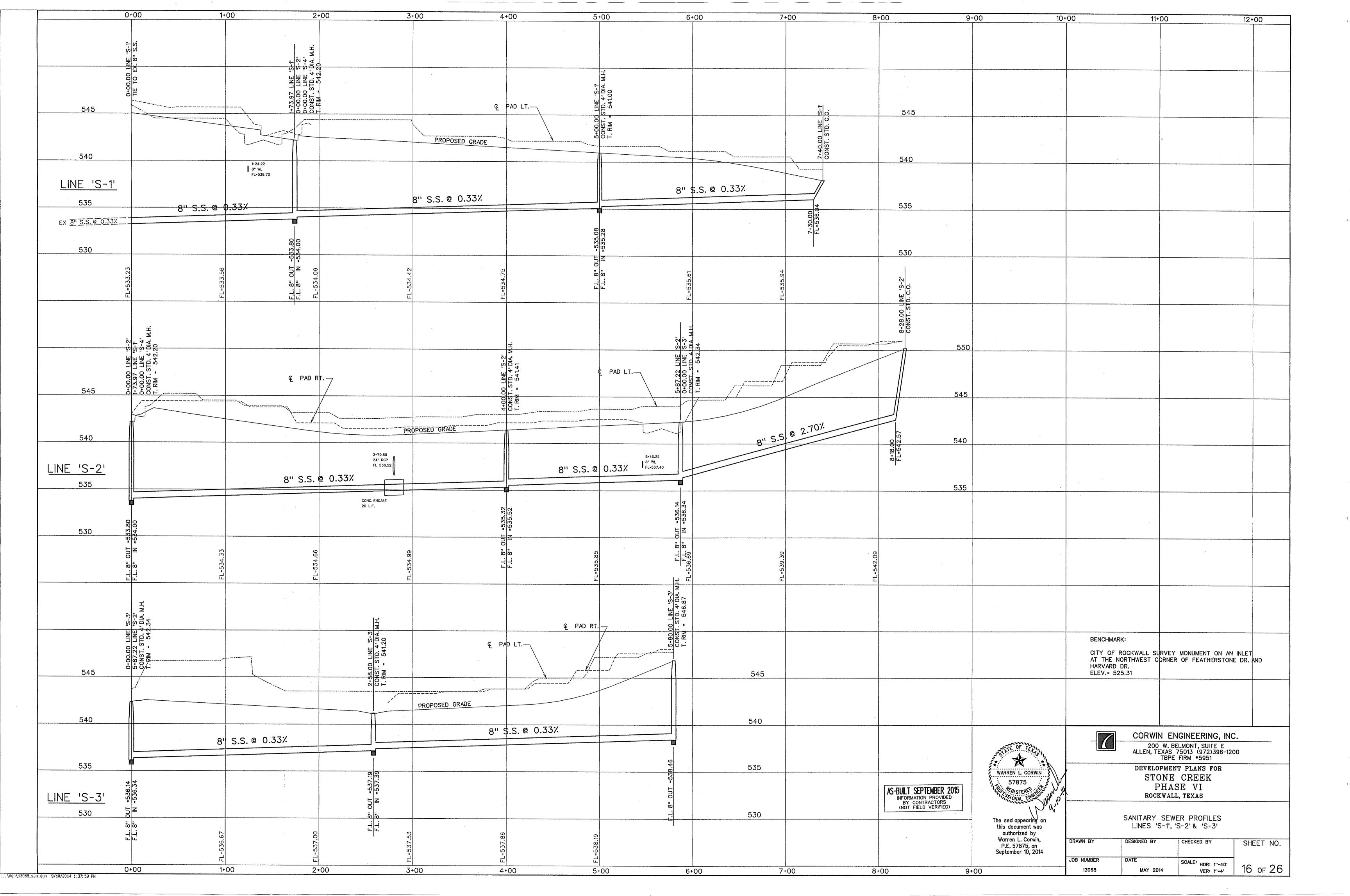


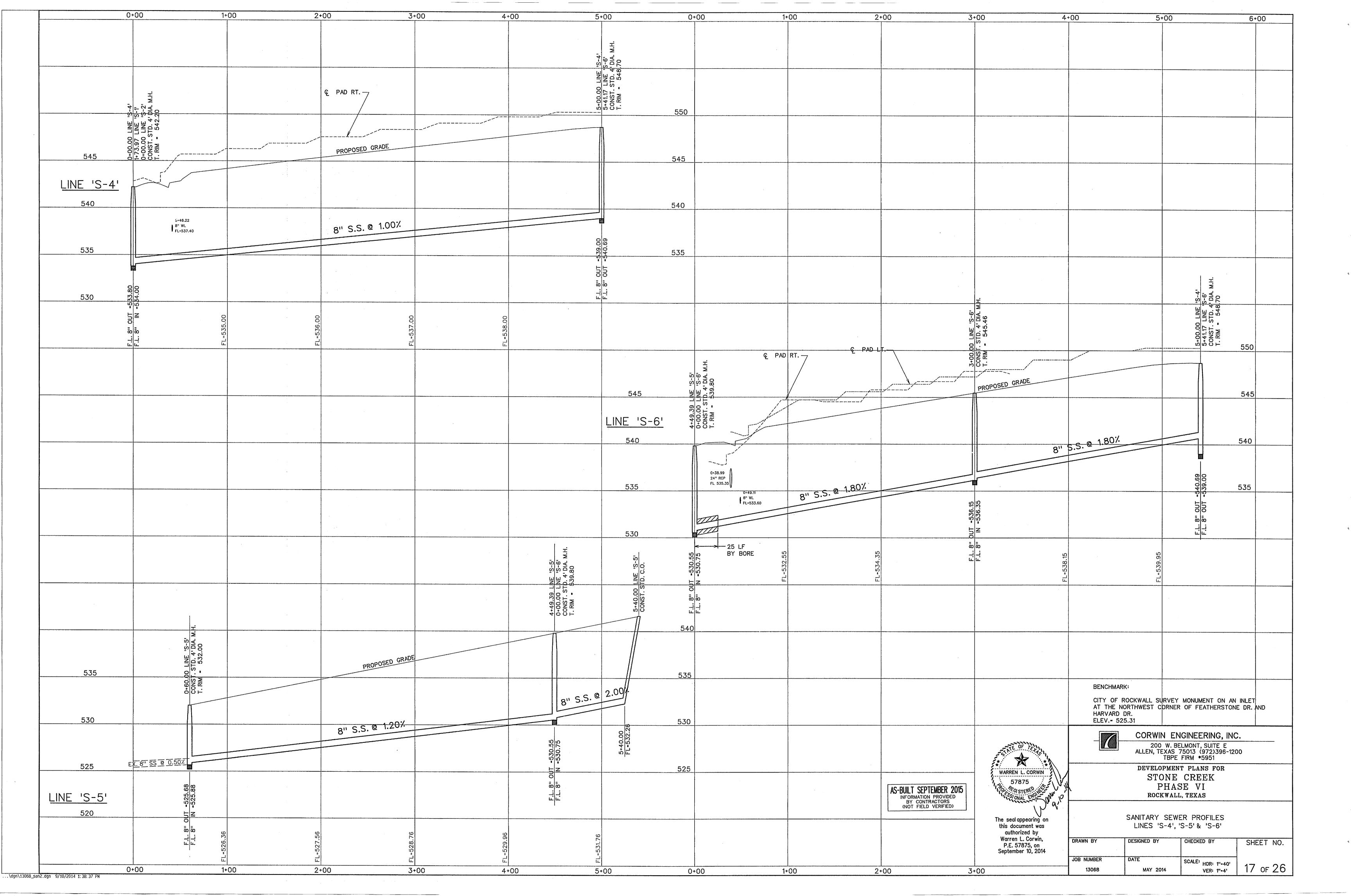


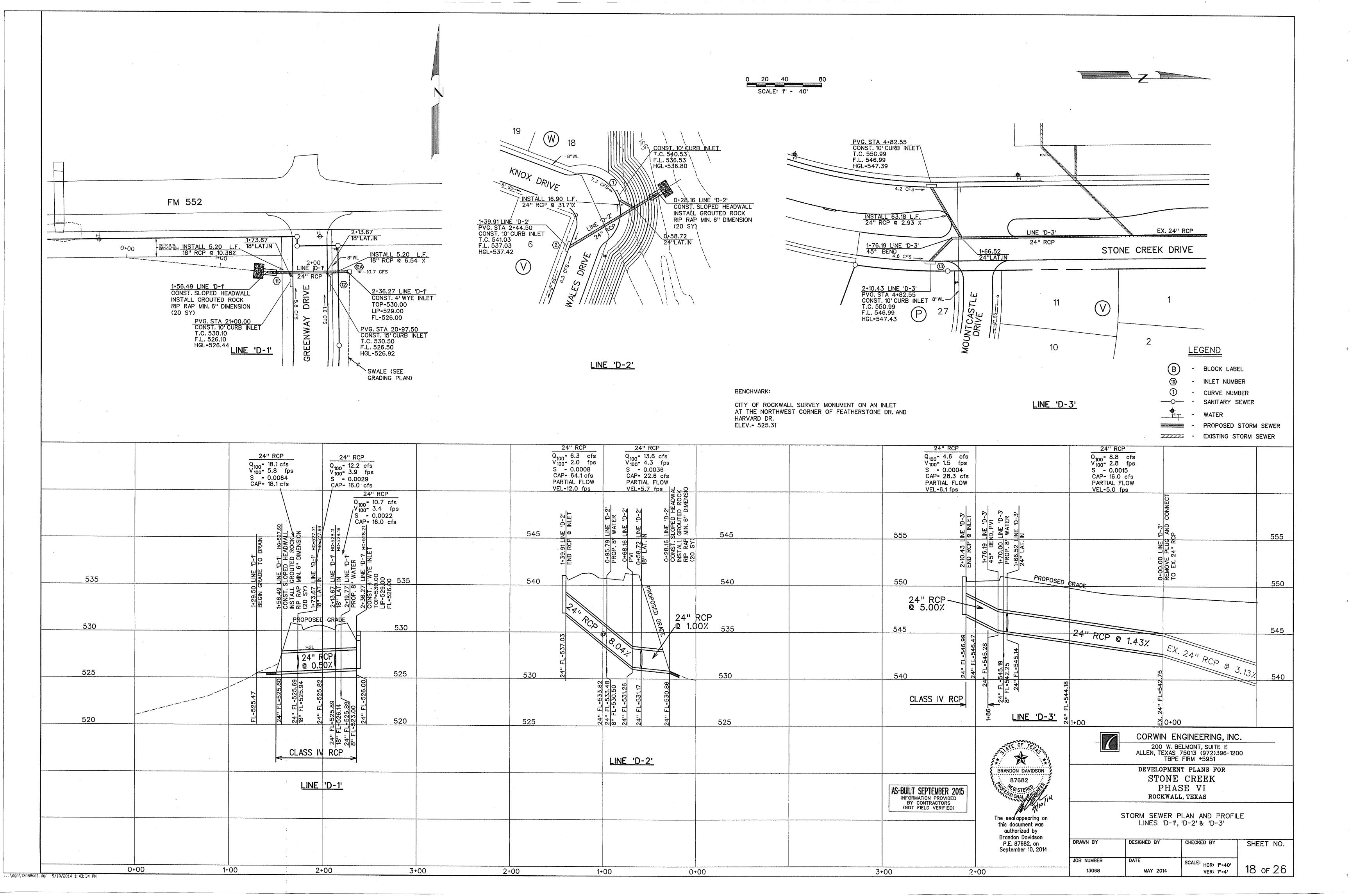


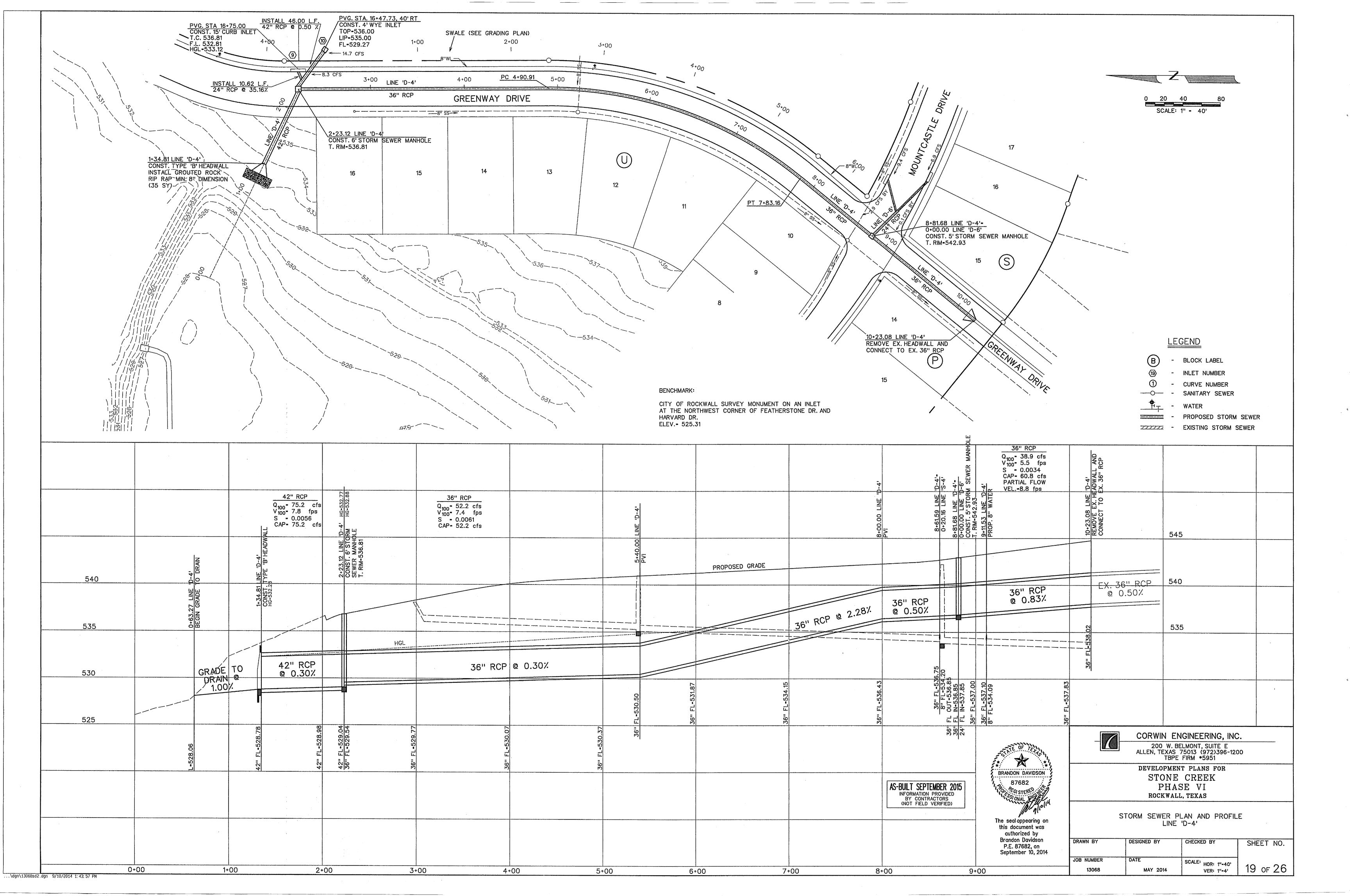


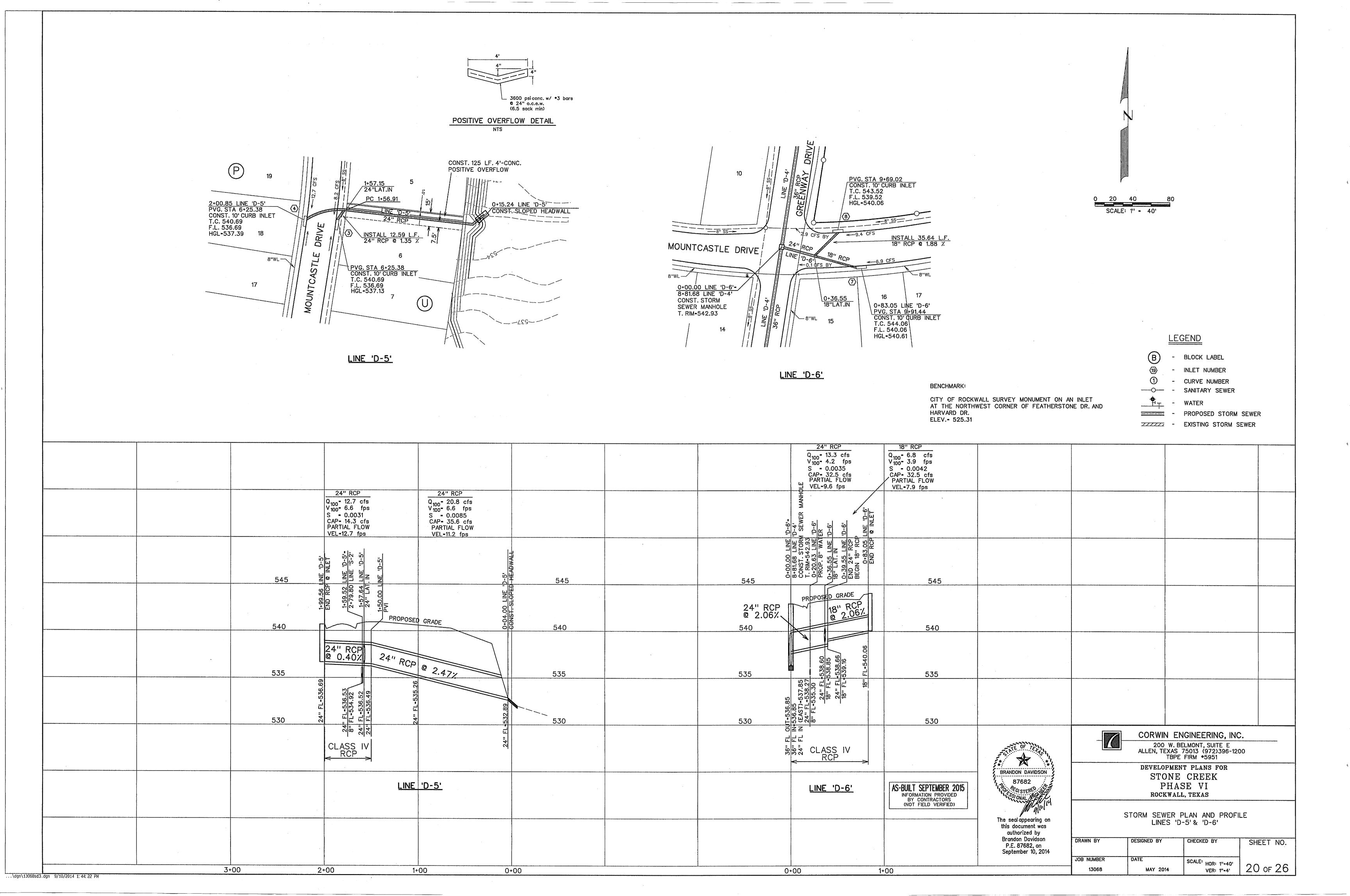


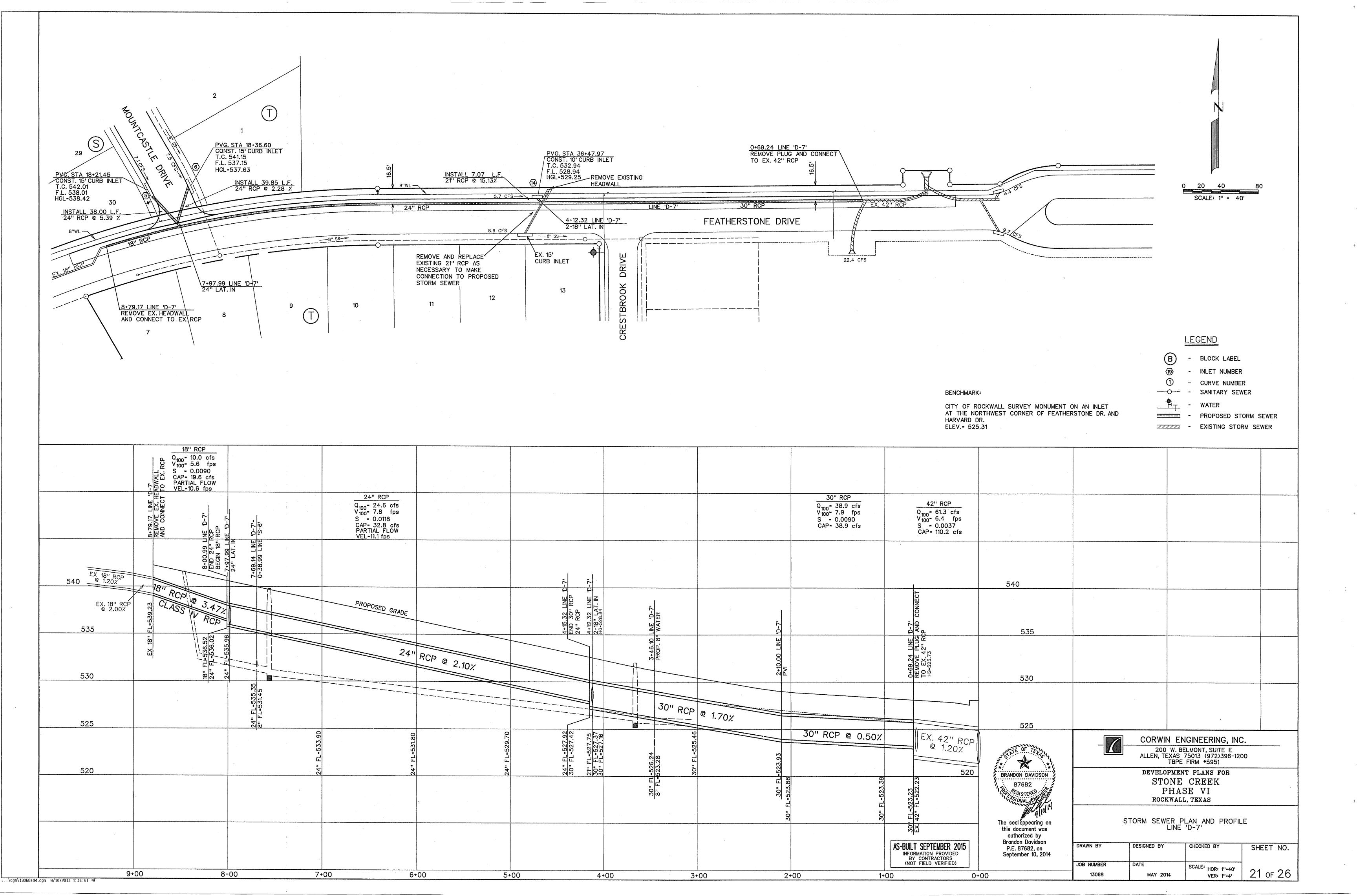


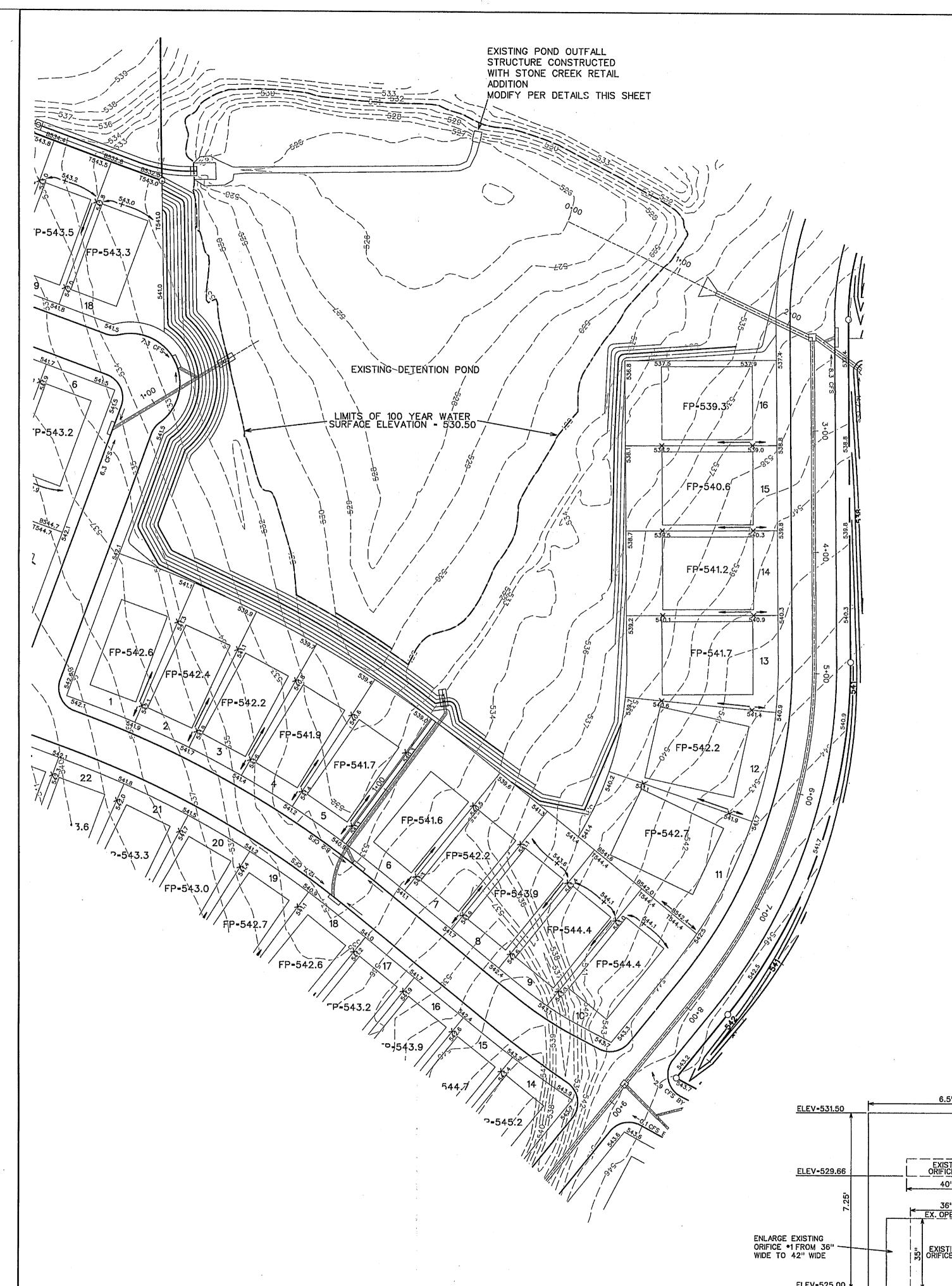












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DETENTION POND CALCULATIONS

SEE MEMORANDUM TO CITY OF ROCKWALL FROM CORWIN ENGINEERING, INC., DATED JUNE 17, 2014, FOR MORE DETAILED EXPLANATION OF THE NEED FOR UPDATED DETENTION CALCULATIONS.

							Rainfall		
	Area	Area	Proposed	Runoff		Tc	Intensity	Q	
Area ID	(sf)	(acres)	Use	Coefficien	CA	(min)	(in/hr)	(cfs)	Comment
Α	941551	21.62	Commercial	0.90	19.45	10	9.8	190.6	To Detention Por
В	601715	13.81	Single-Family	0.50	6.91	10	9.8	67.7	To Detention Por
С	207002	4.75	Park	0.35	1.66	20	8.3	13.8	To Detention Por
D	165086	3.79	Park	0.35	1.33	20	8.3	11.0	Bypass
E	103946	2.39	Single-Family	0.50	1.19	10	9.8	11.7	Bypass
F	65788	1.51	Single-Family	0.50	0.76	10	9.8	7.4	Bypass
G	149475	3.43	School	0.70	2.40	10	9.8	23.5	To Detention Por
Н	255440	5.86	Single-Family	0.50	2.93	10	9.8	28.7	To Detention Por
trea to De	tention Pond	49.48	CA to Deter	tion Pond	33.36				***************************************

Weighted C= 0.67 100 Year Downstream Culvert Capacity= 11.0 cfs 11.7 cfs Area E 7.4 cfs 118.9 cfs 50 Year Downstream Culvert Capacity= 9.9 cfs 10.7 cfs 6.8 cfs Area F 107.1 cfs 25 Year Downstream Culvert Capacity= 8.8 cfs 9.9 cfs 6.3 cfs 10 Year Downstream Culvert Capacity= 7.8 cfs 8.5 cfs Area E 5.4 cfs Area F 10-Year Pond Release Rate 84.2 cfs

		Incremental	Cumulative
Elevation	Area	Volume	Volume
(ft)	(sq. ft)	(cu. ft.)	(cu. ft.)
525	0	0	0
526	18907	9454	9454
527	41042	29975	39428
528	60691	50867	90295
529	78597	69644	159939
530	99043	88820	248759
531	120391	109717	358476
532	142155	131273	489749

Orifice #1 42" Wide x 35" tall, FL=525.0 Orifice #2 40" Wide x 8.5" Tall, FL=529.66 Orifice #3 11' Wide by 1' Tall, FL=530.0 Stage-Discharge Table

		Orifice 1			Orifice 2	:		Orlfice 3		Total	Allowable	Above	
Stage	Н	Area	Discharge	Н	Area	Discharge	Н	Area	Discharge	Discharge	Discharge	(Below)	
525.00	0	0	0	-	-	- 1	-	-	-	0.0			
526.00	0.50	3.50	11.9	_	-	-	-	-	_	11.9			
527.00	1.00	7.00	33.7	-	-	-	-	-		33.7			
528.00	1.46	10.20	59.3	-	-	-	-	-	-	59.3			
529.00	2.46	10.20	77.0	_	-	<u> </u>	-	***************************************	-	77.0			
529.45	2.91	10.20	83.7	_	-	-	-	•	-	83.7	84.2	(0.53)	10-year
529.66	3.12	10.20	86.8	-	-	-	_	_	-	86.8			
529.97	3.43	10.20	91.0	0.16	1.03	2.0		-	-	92.9	93.5	(0.56)	25-year
530.00	3.46	10.20	91.4	0.17	1.13	2.2	-	-	-	93.6			
530.26	3.72	10,20	94.8	0.25	2.36	5.7	0.13	2.90	5.1	105.6	107.1	(1.53)	50-year
530.50	3.96	10.20	97.7	0.49	2.36	8.0	0.25	5.50	13.2	118.9	118.9	0.00	100-year
531.00	4.46	10.20	103.7	0.99	2.36	11.3	0.50	11.00	37.5	152.5		· · · · · · · · · · · · · · · · · · ·	
531.50	4.96	10.20	109.4	1.49	2.36	13.9	1.00	11.00	53.0	176.2			

ELEV-531.50

ELEV-530.00

PROPOSED ORIFICE +3

EAST AND WEST FACE

AS-BUILT SEPTEMBER 2015

INFORMATION PROVIDED
BY CONTRACTORS
(NOT FIELD VERIFIED)

	Allowed Release	Actual Release	Storage	Occurs at
Event	Rate	Rate	Requirement	Elevation
10-year	84.2	83.7	199580	529.45
25-year	93.5	92.9	245485	529.97
50-year	107.1	105.6	277682	530.26
100-year	118.9	118.9	303347	530.50

POND STORAGE CALCULATIONS

DETENTIO	N CALCUL	ATIONS -	10 Year							********		
Storm	Outflow	Area	Future	Future	Future	Rainfall	Inflow	Volume	Volume	Volume	Volume	Outflow
Duration	Duration	(AC.)	"C"	"Kf"	"CA"	intensity	(cfs)	(cubic ft.)	(cubic ft.)	(cubic ft.)	(acre-ft.)	(cfs)
10	20	49,48	0.67	1.00	33.36	7.10	236.8	142103	50225	91878	2.11	83.7
20	30	49.48	0.67	1.00	33.36	5.90	196.8	236172	75337	160834	3.69	83.7
30	40	49.48	0.67	1.00	33.36	4.80	160.1	288210	100450	187760	4.31	83.7
40	50	49.48	0.67	1.00	33.36	4.00	133.4	320233	125562	194671	4.47	83.7
50	60	49.48	0.67	1.00	33.36	3.50	116.8	350255	150675	199580	4.58	83.7
60	70	49.48	0.67	1.00	33.36	3.00	100.1	360262	175787	184475	4.23	83.7
70	80	49.48	0.67	1.00	33.36	2.80	93.4	392285	200899	191386	4.39	83.7
80	90	49.48	0.67	1.00	33.36	2.60	86.7	416303	226012	190291	4.37	83.7
90	100	49.48	0.67	1.00	33.36	2.50	83.4	450327	251124	199203	4.57	83.7
100	110	49.48	0.67	1.00	33.36	2.30	76.7	460335	276237	184098	4.23	83,7
110	120	49.48	0.67	1.00	33.36	2.20	73.4	484352	301349	183003	4.20	83.7
120	130	49.48	0.67	1.00	33.36	2.10	70.1	504367	326462	177905	4.08	83.7
130	140	49.48	0.67	1.00	33.36	2.00	66.7	520378	351574	168804	3.88	83.7
140	150	49.48	0.67	1.00	33.36	1.90	63.4	532387	376686	155701	3.57	83.7

Storm	Outflow	Area	Future	Future	Future	Rainfall	Inflow	Volume	Volume	Volume	Volume	Outflow
Duration	Duration	(AC.)	"C"	"Kt.	"CA"	intensity	(cfs)	(cubic ft.)	(cubic ft.)	(cubic ft.)	(acre-ft.)	(cfs)
10	20	49.48	0.67	1.00	33.36	8.30	276.9	166121	55750	110371	2.53	92.9
20	30	49.48	0.67	1.00	33.36	6.60	220.2	264192	83625	180567	4.15	92.9
30	40	49.48	0.67	1.00	33.36	5.50	183.5	330240	111500	218740	5.02	92.9
40	50	49.48	0.67	1.00	33.36	4.60	153.4	368268	139375	228892	5.25	92.9
50	60	49.48	0.67	1.00	33.36	4.00	133.4	400291	167251	233041	5.35	92.9
60	70	49.48	0.67	1.00	33.36	3.50	116.8	420306	195126	225180	5.17	92.9
70	80	49.48	0.67	1.00	33.36	3.30	110.1	462336	223001	239336	5.49	92.9
80	90	49.48	0.67	1.00	33,36	3.10	103.4	496361	250876	245485	5.64	92.9
90	100	49.48	0.67	1.00	33.36	2.90	96.7	522380	278751	243629	5.59	92.9
100	110	49.48	0.67	1.00	33.36	2.70	90.1	540393	306626	233767	5.37	92.9
110	120	49.48	0.67	1.00	33.36	2.50	83.4	550400	334501	215899	4.96	92.9
120	130	49.48	0.67	1.00	33.36	2.40	80.1	576419	362376	214043	4.91	92.9
130	140	49.48	0.67	1.00	33.36	2.30	76.7	598435	390251	208184	4.78	92.9
140	150	49.48	0.67	1.00	33.36	2.20	73.4	616448	418126	198322	4.55	92.9

~4	1.5	A				T						
Storm	Outflow	Area	Future	Future	Future	Rainfall	Inflow	Volume	Volume	Volume	Volume	Outflow
Duration	Duration	(AC.)	"C"	"Kf"	"CA"	intensity	(cfs)	(cubic ft.)	(cubic ft.)	(cubic ft.)	(acre-ft.)	(cfs)
10	20	49.48	0.67	1.00	33.36	9.00	300.2	180131	63350	116781	2.68	105.6
20	30	49.48	0.67	1.00	33.36	7.50	250.2	300218	95025	205193	4.71	105.6
30	40	49.48	0.67	1.00	33.36	6.10	203.5	366266	126700	239566	5.50	105.6
40	50	49.48	0.67	1.00	33.36	5.20	173.5	416303	158375	257928	5.92	105.6
50	60	49.48	0.67	1.00	33.36	4.50	150.1	450327	190050	260278	5.98	105.6
60	70	49.48	0.67	1.00	33.36	3.90	130.1	468341	221725	246616	5.66	105.6
70	80	49.48	0.67	1.00	33,36	3.70	123.4	518377	253400	264977	6.08	105.6
80	90	49,48	0.67	1.00	33.36	3.50	116.8	560408	285075	275333	6.32	105.6
90	100	49.48	0.67	1.00	33.36	3.30	110.1	594432	316750	277682	6.37	105.6
100	110	49.48	0.67	1.00	33.36	3.00	100.1	600437	348425	252012	5.79	105.6
110	120	49.48	0.67	1.00	33.36	2.80	93.4	616448	380100	236348	5.43	105.6
120	130	49.48	0.67	1.00	33.36	2.70	90.1	648472	411775	236697	5.43	105.6
130	140	49.48	0.67	1.00	33.36	2.60	86.7	676492	443450	233042	5.35	105.6
140	150	49.48	0.67	1.00	33,36	2.40	80.1	672489	475125	197364	4.53	105.6

Storm	Outflow	Area	Future	Future	Future	Rainfall	Inflow	Volume	Volume	Volume	Volume	Outflow
Duration	Duration	(AC.)	"C"	"Kf"	"CA"	intensity	(cfs)	(cubic ft.)	(cubic ft.)	(cubic ft.)	(acre-ft.)	(cfs)
10	20	49.48	0.67	1.00	33.36	9.80	326.9	196143	71357	124785	2.86	118.9
20	30	49.48	0.67	1.00	33.36	8.30	276.9	332242	107036	225206	5.17	118.9
30	40	49.48	0.67	1.00	33.36	6.90	230.2	414301	142714	271587	6.23	118.9
40	50	49.48	0.67	1.00	33.36	5.80	193.5	464338	178393	285945	6.56	118.9
50	60	49.48	0.67	1.00	33.36	5.00	166.8	500364	214072	286292	6.57	118.9
60	70	49.48	0.67	1.00	33.36	4.50	150.1	540393	249750	290643	6.67	118.9
70	80	49.48	0.67	1.00	33.36	4.10	136.8	574418	285429	288989	6.63	118.9
80	90	49,48	0.67	1.00	33.36	3.90	130.1	624454	321107	303347	6.96	118.9
90	100	49.48	0.67	1.00	33.36	3.60	120.1	648472	356786	291685	6.70	118.9
100	110	49.48	0.67	1.00	33,36	3.20	106.7	640466	392465	248001	5.69	118.9
110	120	49.48	0.67	1.00	33.36	2.80	93.4	616448	428143	188305	4.32	118.9
120	130	49.48	0.67	1.00	33.36	2.70	90.1	648472	463822	184650	4.24	118.9
130	140	49.48	0.67	1.00	33.36	2.60	86.7	676492	499500	176991	4.06	118.9
140	150	49.48	0.67	1.00	33.36	2.40	80.1	672489	535179	137310	3.15	118.9

BENCHMARK:

CITY OF ROCKWALL SURVEY MONUMENT ON AN INLET AT THE NORTHWEST CORNER OF FEATHERSTONE DR. AND HARVARD DR. ELEV.= 525.31



The seal appearing on this document was authorized by
Brandon Davidson
P.E. 87682, on
September 10, 2014

CORWIN ENGINEERING, INC. 200 W. BELMONT, SUITE E ALLEN, TEXAS 75013 (972)396-1200 TBPE FIRM *5951

DEVELOPMENT PLANS FOR STONE CREEK PHASE VI ROCKWALL, TEXAS

EXISTING DETENTION POND PLAN AND CALCULATIONS

DRAWN BY	DESIGNED BY	CHECKED BY	SHEET NO.
JOB NUMBER	DATE MAY 2014	SCALE: HOR: 1"-40'	22 of 26

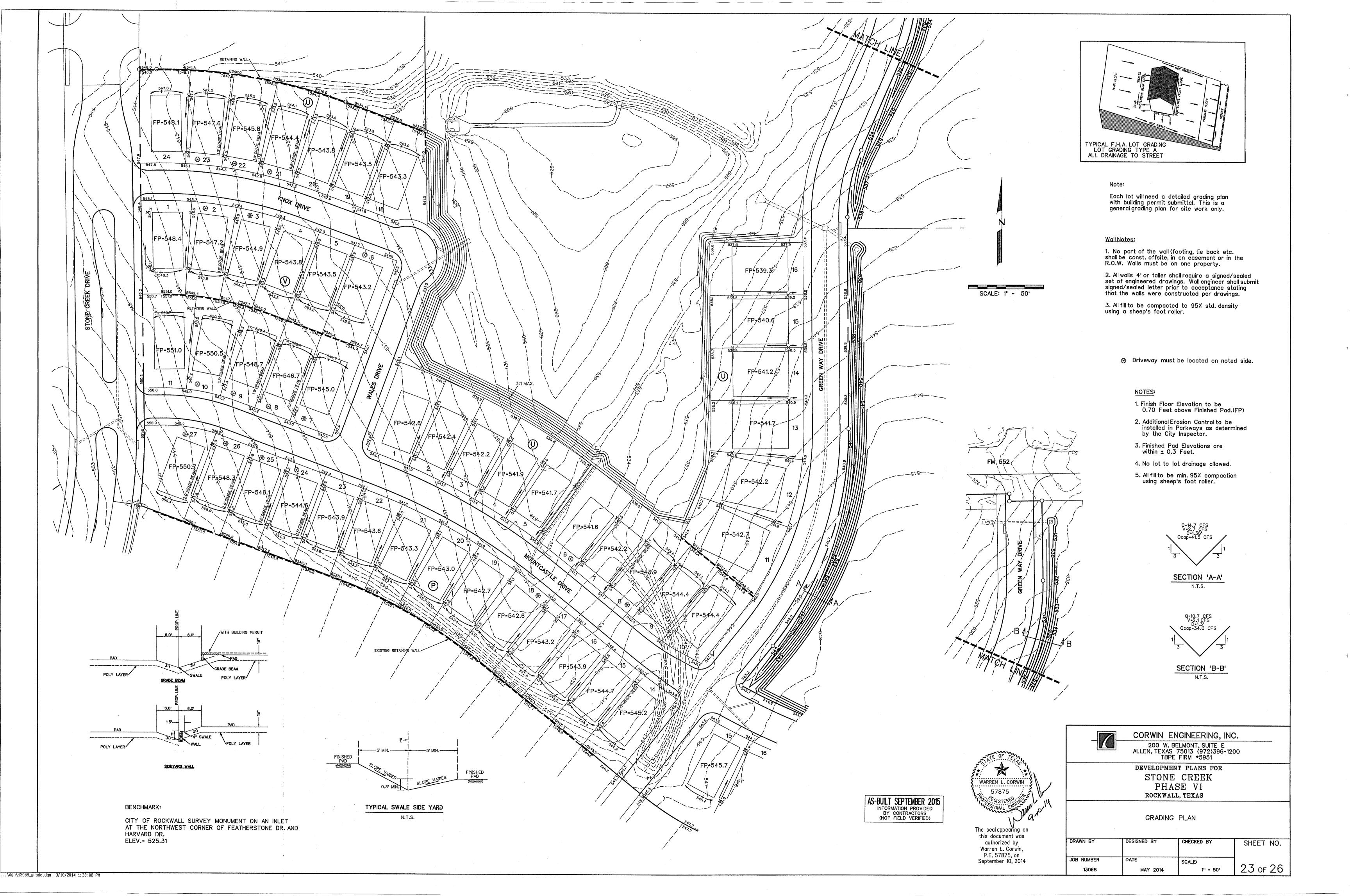
DIMENSIONS FOR THIS STRUCTURE WERE TAKEN FROM ENGINEERING PLANS FOR STONE CREEK RETAIL ADDITION, BLOCK A, LOTS 1-6, DATED APRIL 15, 2010 BY POGUE ENGINEERING & DEVELOPMENT COMPANY, INC.

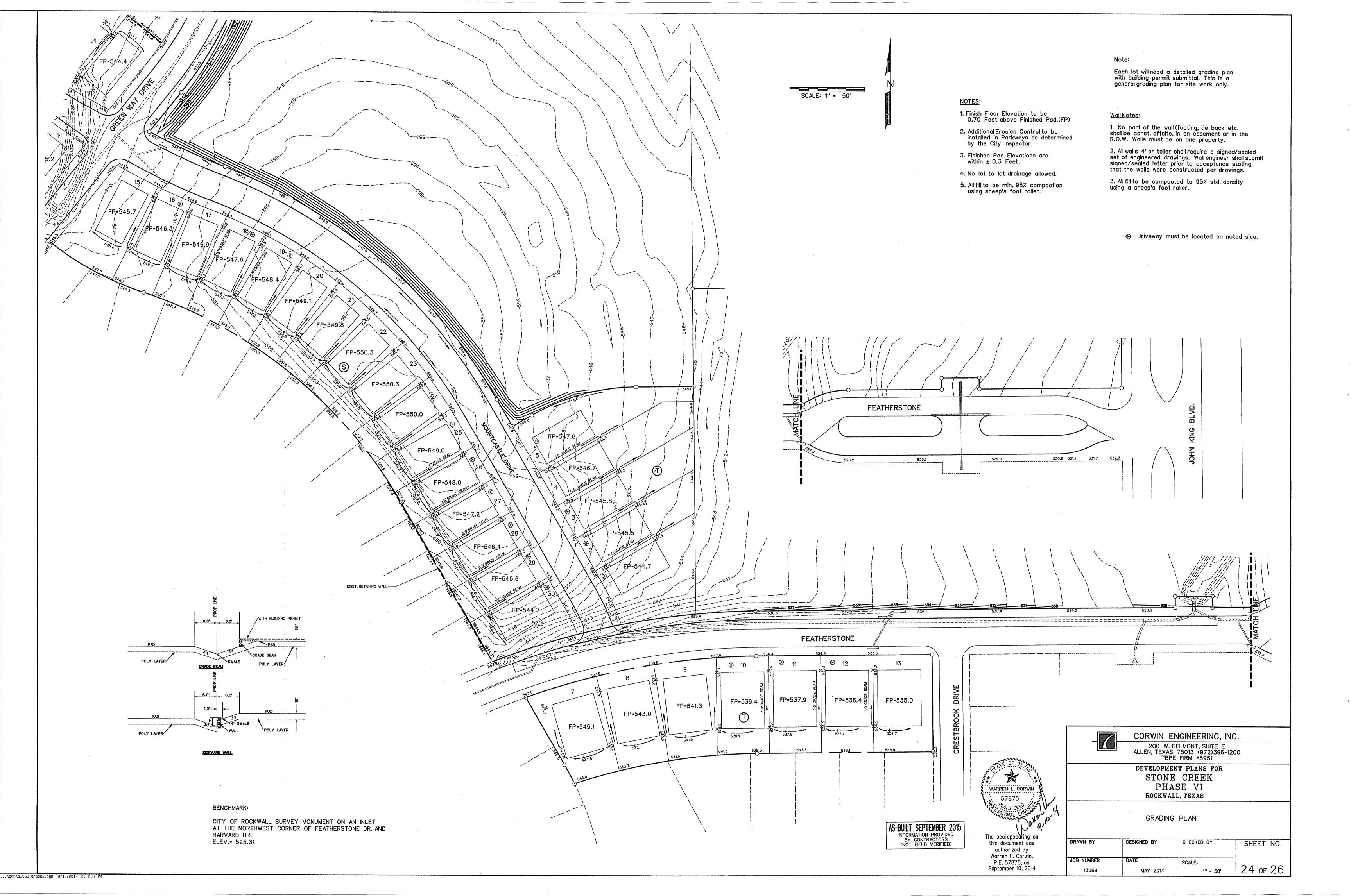
42"
MODIFIED OPENING

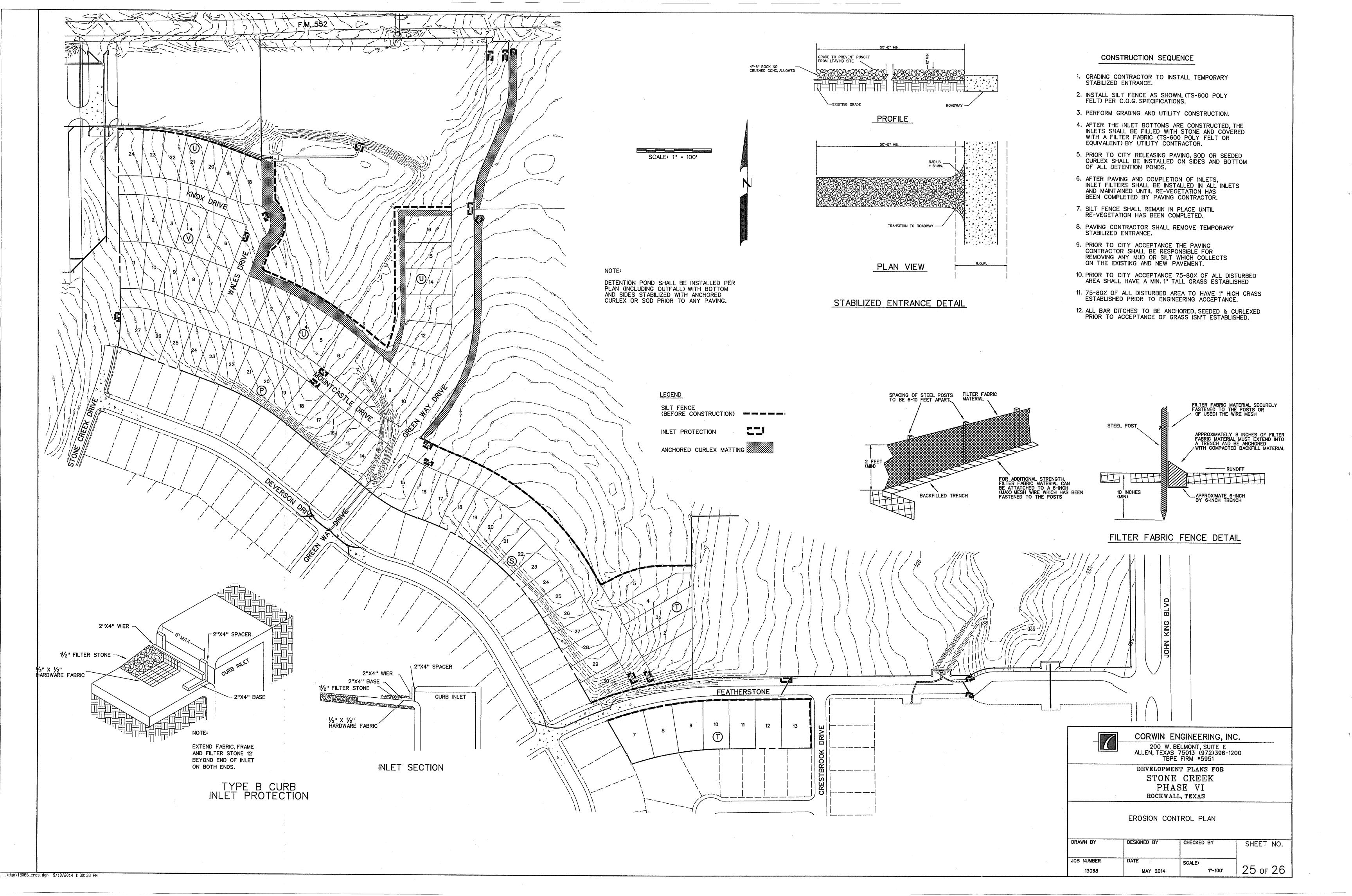
SOUTH FACE

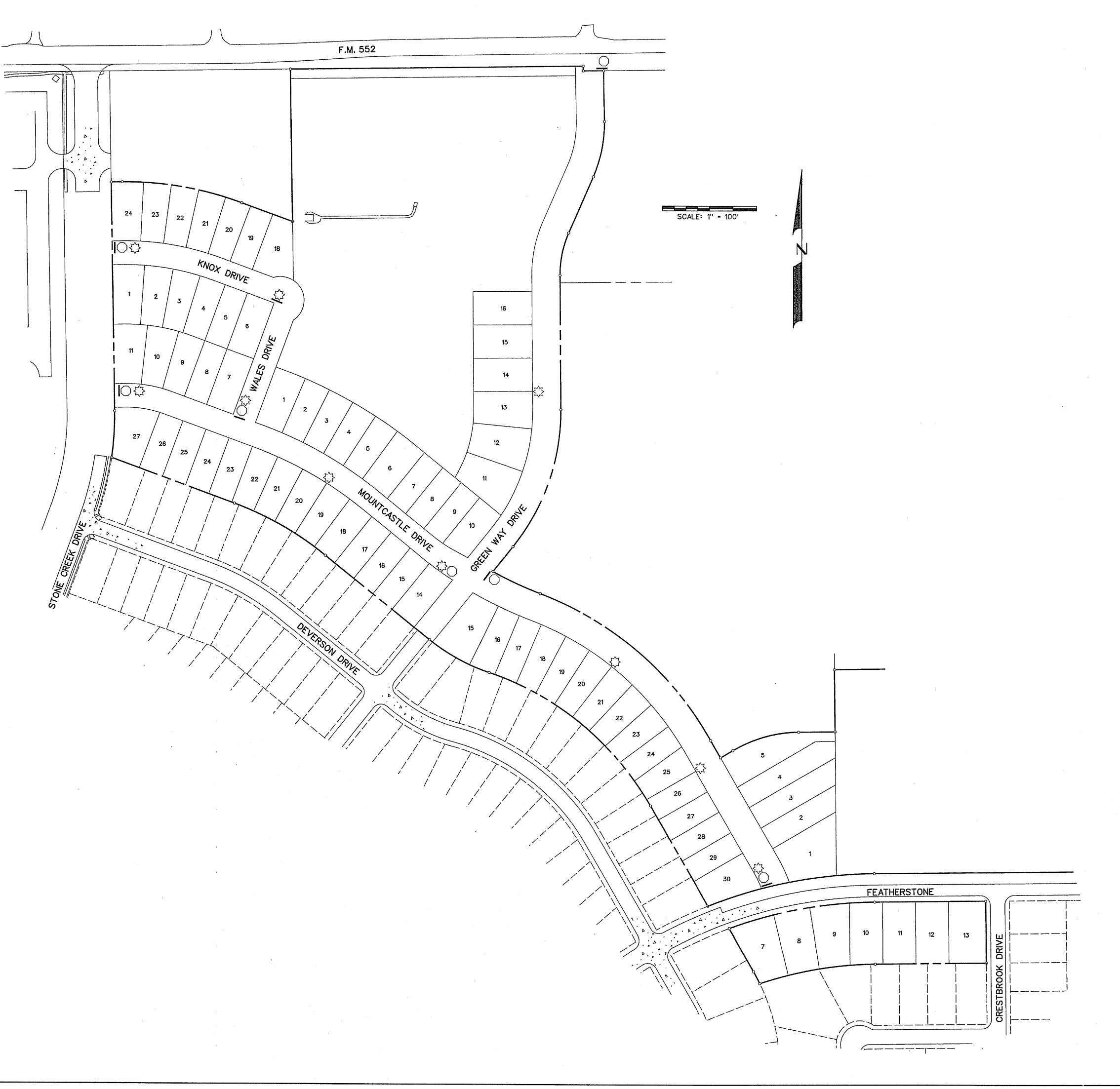
100-YR WSEL-530.50

10-YEAR WSEL-529.45









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STREET SIGN NOTES

All signage installed shall comply with the current "Texas Manual on Uniform Traffic Control Devices" and the "Standard Highway Sign Designs for Texas".

The developer shall be responsible for furnishing and installing all regulatory, warning and street name signs and sign mounts in accordance with the approved engineering plans.

Block Numbers are required on all street name blades.

Street Name Blades shall be nine inch (9") tall extruded aluminum. The blades shall be 0.080 inches thick.

High Intensity Retro reflective Sheeting for Street, Regulatory, and Warning Signs - shall be high intensity diamond grade type III prismatic.

The Lettering for the street blades shall be HIROAD B with all uppercase fonts. "Highway Gothic B" with six- inch letters. Letters for abbreviated street designations shall be three inches (3") tall with all uppercase fonts (i.e., LN, PKWY, CT, etc.). Block numbers shall be three- inches (3") tall.

The street sign background shall be green and the legend shall be white.

The street sign blade must incorporate the current City of Rockwall logo.

For a street with a cul-de-sac end, a standard W 14-2a shall be mounted over the street name blade.

Sign posts shall Be 2%" O.D. galvanized steel tube sign post with a galvanized finish.

Sign clamps and brackets shall be high strength aluminum.

LEGEND

\$\frac{1}{2} - STREET LIGHT

- STOP SIGN

- STREET NAME BLADE

CORWIN ENGINEERING, INC.

200 W. BELMONT, SUITE E
ALLEN, TEXAS 75013 (972)396-1200
TBPE FIRM •5951

DEVELOPMENT PLANS FOR STONE CREEK PHASE VI ROCKWALL, TEXAS

SIGN AND LIGHT PLAN

DRAWN BY	DESIGNED BY	CHECKED BY	SHEET NO.
JOB NUMBER	DATE	SCALE:	
13068	MAY 2014	1''-100'	26 of 26