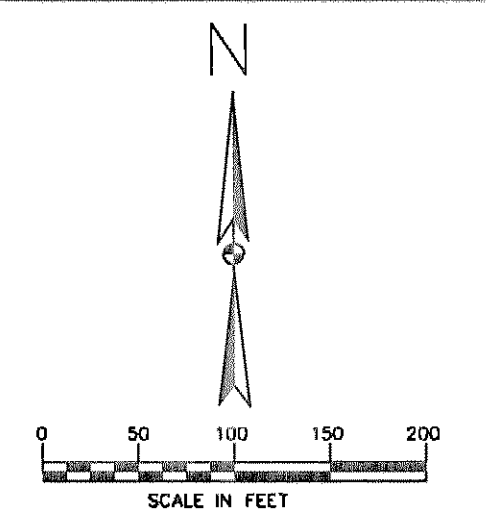
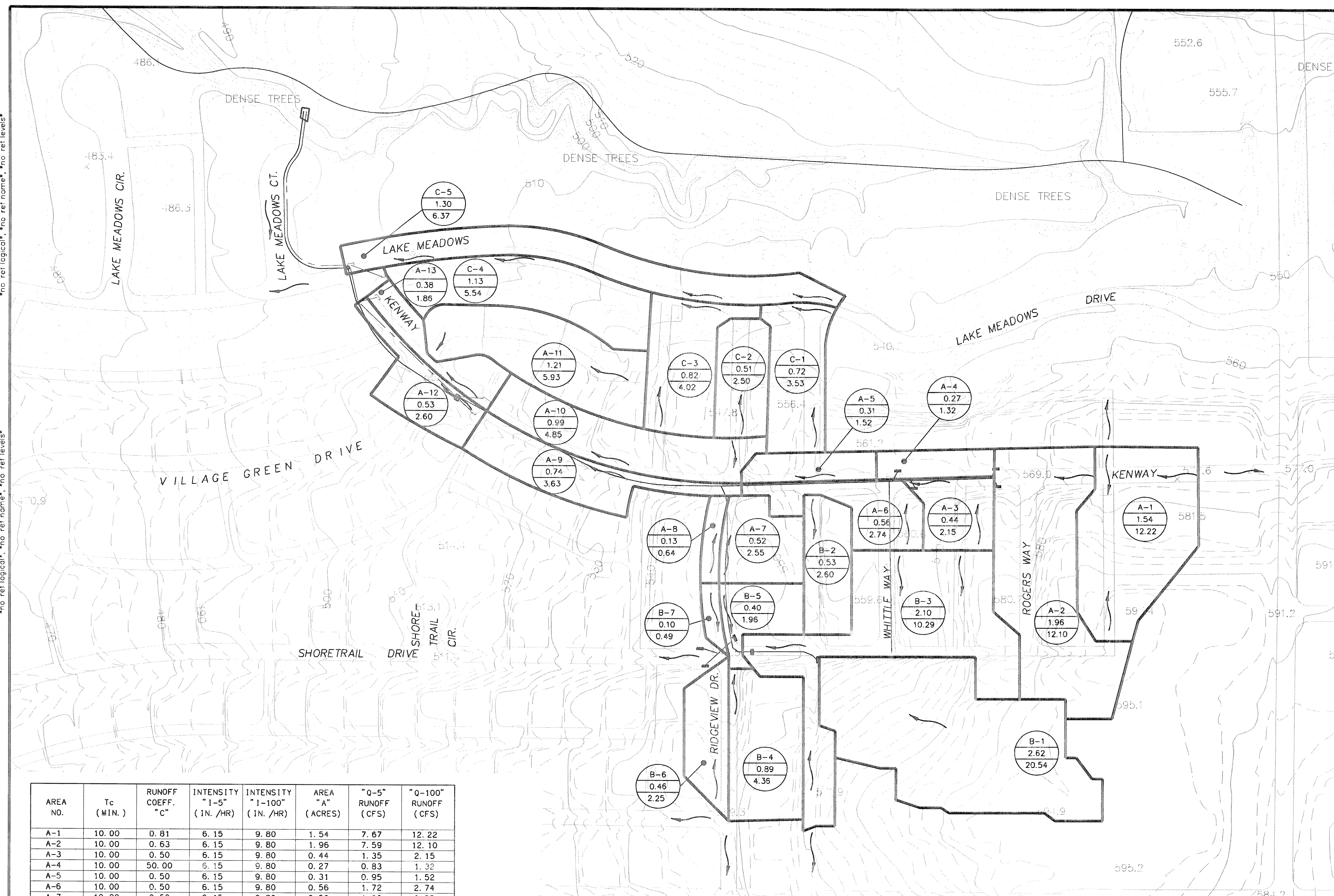


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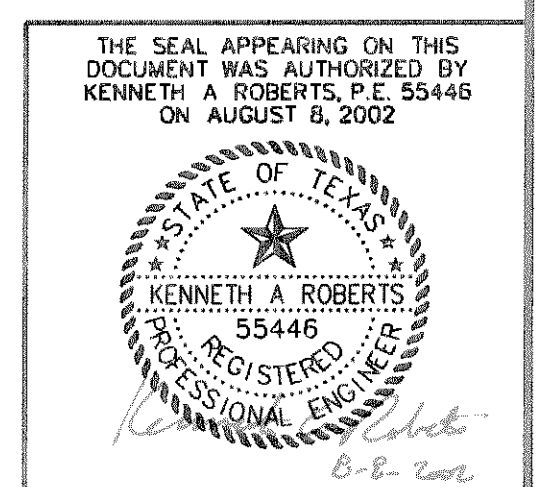
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B-3	AREA
0.45	ACRES
10.25	Q100

RECORD DRAWINGS JULY 25, 2003  
 THIS RECORD DOCUMENT HAS BEEN PREPARED BASED ON INFORMATION PROVIDED BY OTHERS. THE CONSULTANT HAS NOT VERIFIED THE ACCURACY AND/OR COMPLETENESS OF THIS INFORMATION AND SHALL NOT BE RESPONSIBLE FOR ANY ERRORS OR OMISSIONS THAT MAY BE INCORPORATED AS A RESULT OF ERRONEOUS INFORMATION PROVIDED BY OTHERS.



AREA NO.	Tc (MIN.)	RUNOFF COEFF. "C"	INTENSITY "1-5" (IN./HR)	INTENSITY "1-100" (IN./HR)	AREA "A" (ACRES)	"0-5" RUNOFF (CFS)	"0-100" RUNOFF (CFS)
A-1	10.00	0.81	6.15	9.80	1.54	7.67	12.22
A-2	10.00	0.63	6.15	9.80	1.96	7.59	12.10
A-3	10.00	0.50	6.15	9.80	0.44	1.35	2.15
A-4	10.00	50.00	6.15	9.80	0.27	0.83	1.32
A-5	10.00	0.50	6.15	9.80	0.31	0.95	1.52
A-6	10.00	0.50	6.15	9.80	0.56	1.72	2.74
A-7	10.00	0.50	6.15	9.80	0.52	1.60	2.55
A-8	10.00	0.50	6.15	9.80	0.13	0.40	0.64
A-9	10.00	0.50	6.15	9.80	0.74	2.28	3.63
A-10	10.00	0.50	6.15	9.80	0.99	3.04	4.85
A-11	10.00	0.50	6.15	9.80	1.21	3.72	5.93
A-12	10.00	0.50	6.15	9.80	0.53	1.63	2.60
A-13	10.00	0.50	6.15	9.80	0.38	1.17	1.86
B-1	10.00	0.80	6.15	9.80	2.62	12.89	20.54
B-2	10.00	0.50	6.15	9.80	0.53	1.63	2.60
B-3	10.00	0.50	6.15	9.80	2.10	6.46	10.29
B-4	10.00	0.50	6.15	9.80	0.89	2.74	4.36
B-5	10.00	0.50	6.15	9.80	0.40	1.23	1.96
B-6	10.00	0.50	6.15	9.80	0.46	1.41	2.25
B-7	10.00	0.50	6.15	9.80	0.10	0.31	0.49
C-1	10.00	0.50	6.15	9.80	0.72	2.21	3.53
C-2	10.00	0.50	6.15	9.80	0.51	1.57	2.50
C-3	10.00	0.50	6.15	9.80	0.82	2.52	4.02
C-4	10.00	0.50	6.15	9.80	1.13	3.47	5.54
C-5	10.00	0.50	6.15	9.80	1.30	4.00	6.37

NO.	DATE	REVISIONS	APPROVED

**DRAINAGE AREA MAP**

**RIDGE VIEW ADDITION REHAB**

**HUITT-ZOLLARS**  
Huitt-Zollars, Inc. Dallas  
 383 McKinney Avenue, Suite 800  
 Dallas, Texas 75204-2489  
 Phone (214) 871-3811 Fax (214) 871-0757

**CITY OF ROCKWALL, TEXAS**

DESIGN	DRAWN	APPR.	SCALE	DATE	PROJECT NO.	NO.
HZI	HZI	KAR	1" = 100'	AUGUST 2002	01-3018-01	ST-1

















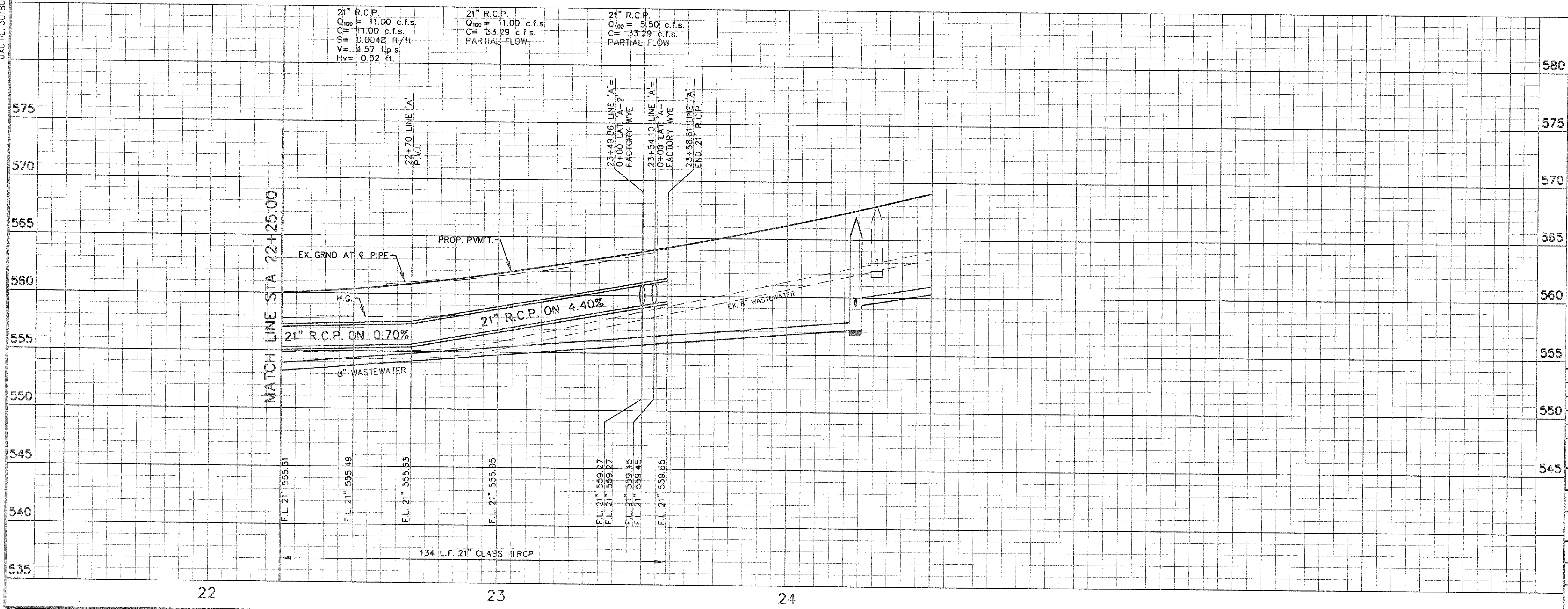
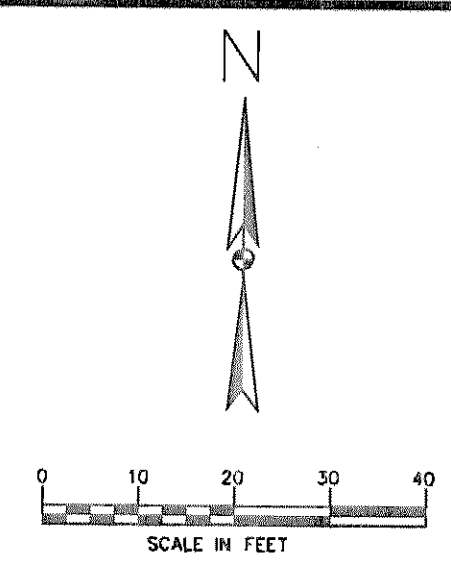
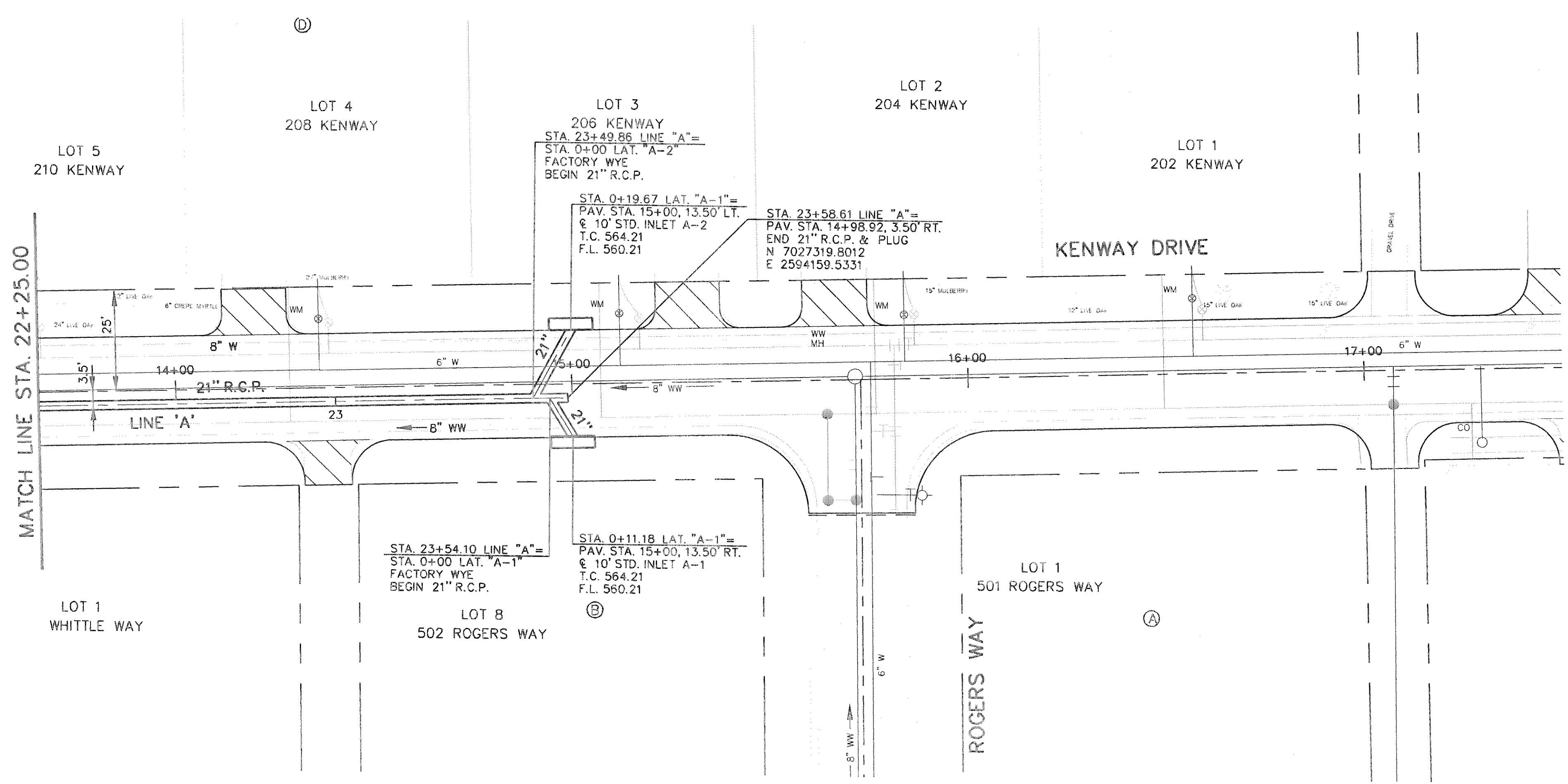


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 CHALIGN, 301801CHARI.DGN, 1,3  
 CSTPLAN, 301801CSTR1.DGN, 31,35  
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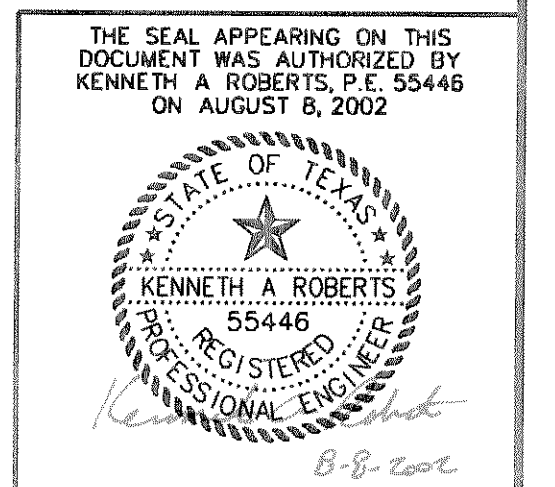
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RECORD DRAWINGS JULY 25, 2003  
 THIS RECORD DOCUMENT HAS BEEN PREPARED BASED ON INFORMATION PROVIDED BY OTHERS. THE CONSULTANT HAS NOT VERIFIED THE ACCURACY AND/OR COMPLETENESS OF THIS INFORMATION AND SHALL NOT BE RESPONSIBLE FOR ANY ERRORS OR OMISSIONS THAT MAY BE INCORPORATED AS A RESULT OF ERRONEOUS INFORMATION PROVIDED BY OTHERS.

**BENCHMARKS:**  
 BM #1 "I" CUT ON BACK OF CURB NORTH SIDE OF SHORETRAIL DRIVE APPROXIMATELY 150 FT. WEST OF THE INTERSECTION OF SHORETRAIL DR. AND RIDGE VIEW, ALSO AT SOUTH SIDE BASE OF POWER POLE.  
 ELEVATION = 550.33  
 BM #2 "I" CUT ON BACK OF CURB & OF A CURB INLET ON SOUTH SIDE OF LAKE MEADOWS DR. BETWEEN LAKE MEADOWS CT. AND LAKE MEADOW CIRCLE IN FRONT OF HOUSE # 709.  
 ELEVATION = 484.53



<b>STORMWATER PLAN &amp; PROFILE</b>						
<b>LINE 'A' STA. 22+25 TO END</b>						
<b>RIDGE VIEW ADDITION REHAB</b>						
<b>HUITT-ZOLLARS</b>						
<b>CITY OF ROCKWALL, TEXAS</b>						
DESIGN	DRAWN	APPR.	SCALE	DATE	PROJECT NO.	NO.
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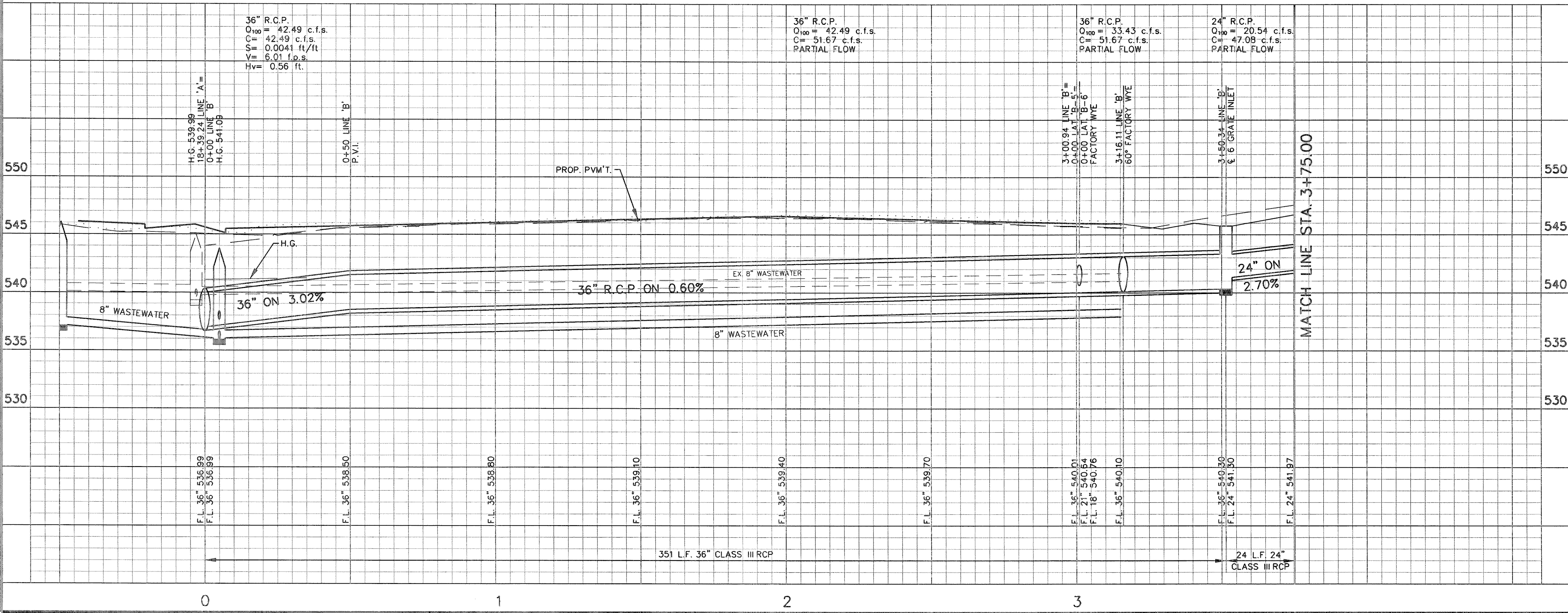
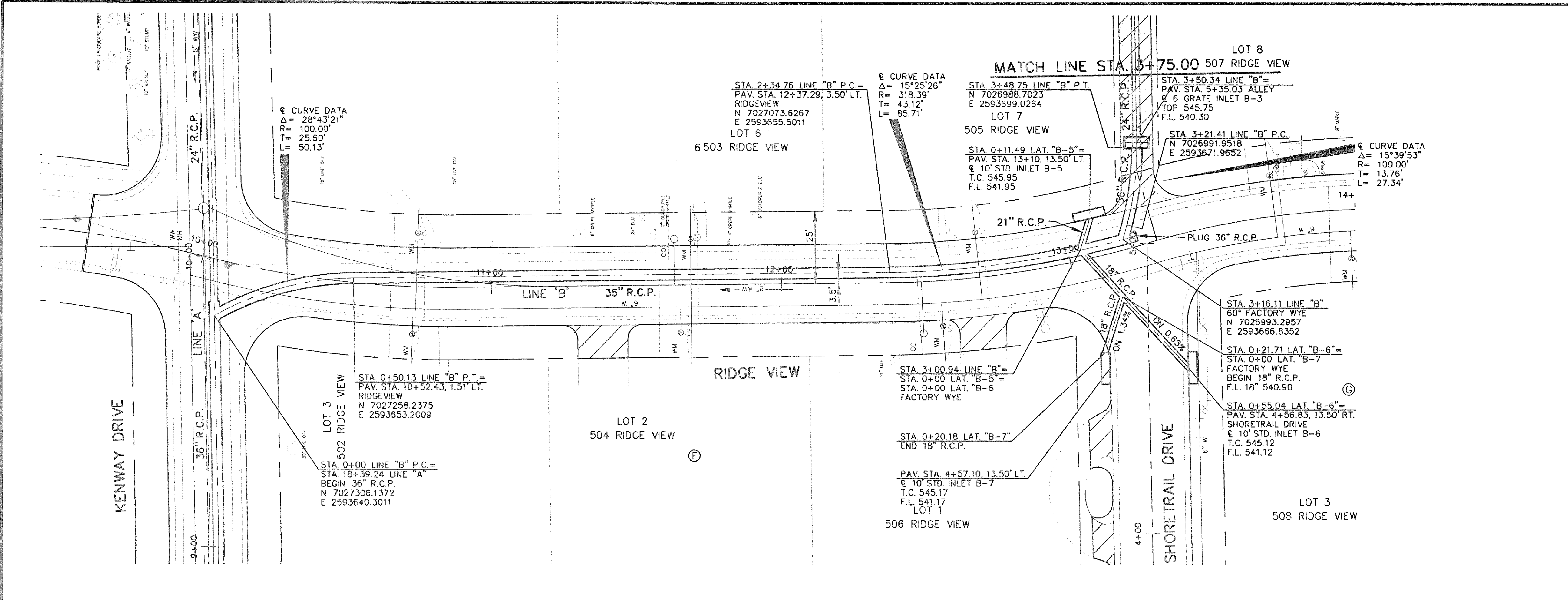


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 UTRPF-2WW, 301801UPFR2.DGN, 36,37,55,56

BORDER, 301801BDR1.DGN, 1-4,7,11,12,21,30,31,37,40,41,45-48,50  
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 CSTPLAN, 301801CSTR1.DGN, 31,35  
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 UKUTLL, 301801UKXR1.DGN, 36,37,55,56

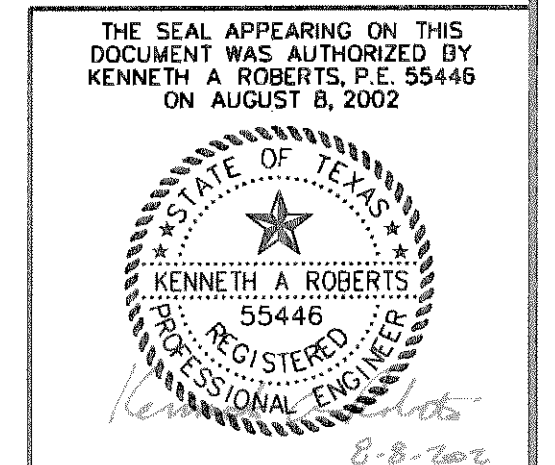
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RECORD DRAWINGS JULY 25, 2003  
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BENCHMARKS:  
 BM #1 "O" CUT ON BACK OF CURB NORTH SIDE OF SHORETRAIL DRIVE APPROXIMATELY 150 FT. WEST OF THE INTERSECTION OF SHORETRAIL DR. AND RIDGE VIEW, ALSO AT SOUTH SIDE BASE OF POWER POLE. ELEVATION = 550.33  
 BM #2 "O" CUT ON BACK OF CURB E OF A CURB INLET ON SOUTH SIDE OF LAKE MEADOWS DR. BETWEEN LAKE MEADOWS DR. BETWEEN LAKE MEADOWS CT. AND LAKE MEADOW CIRCLE IN FRONT OF HOUSE # 709. ELEVATION = 484.53



NO.	DATE	REVISIONS	APPROVED

**STORMWATER PLAN & PROFILE**

**LINE "B" STA. 0+00 TO 3+75**

**RIDGE VIEW ADDITION REHAB**

**HUITT-ZOLLARS** Huitt-Zollars, Inc. 839 McKinney Avenue, Suite 600 Dallas, Texas 75204-2489 Phone (214) 871-3311 Fax (214) 871-0757

**CITY OF ROCKWALL, TEXAS**

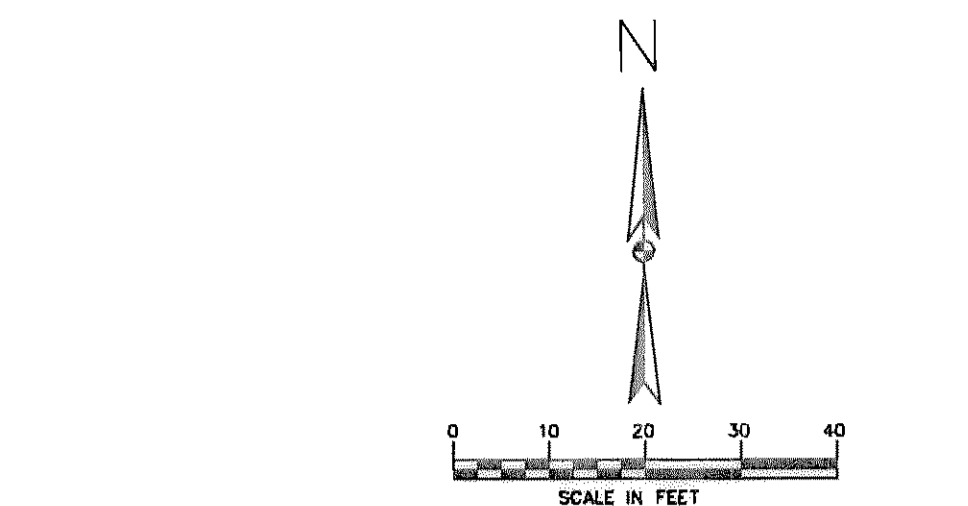
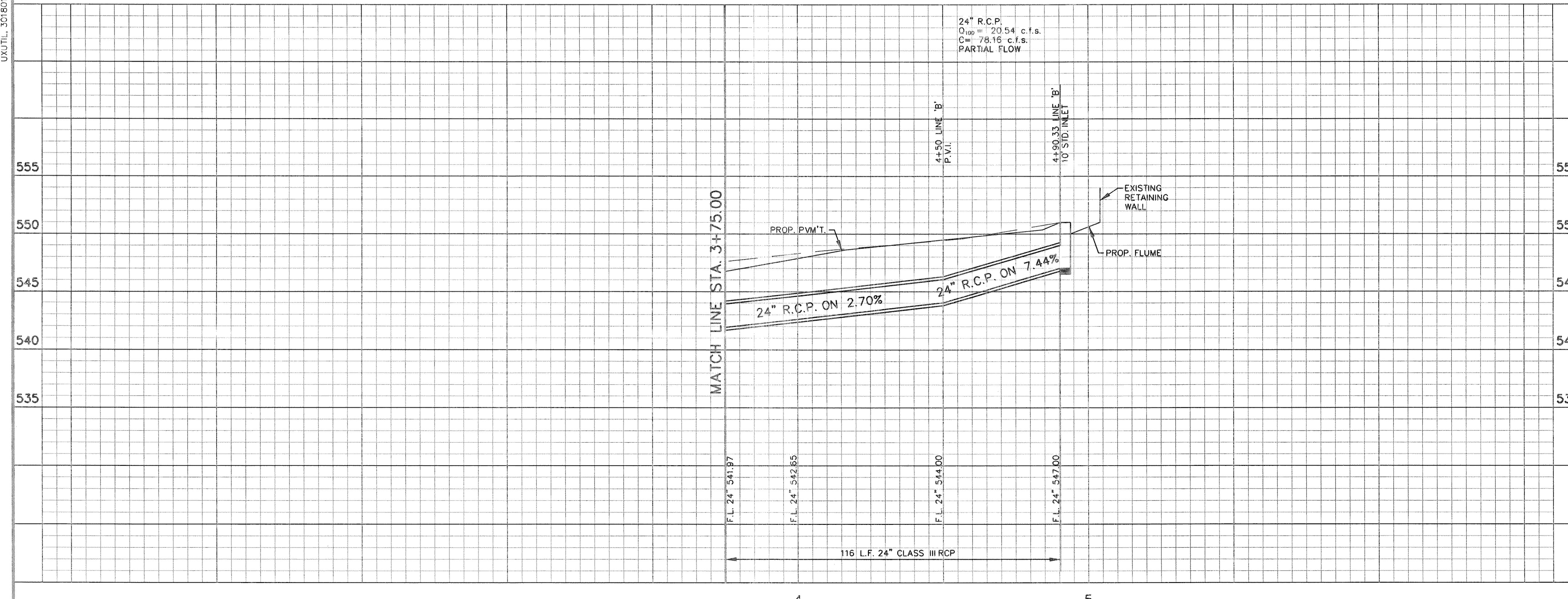
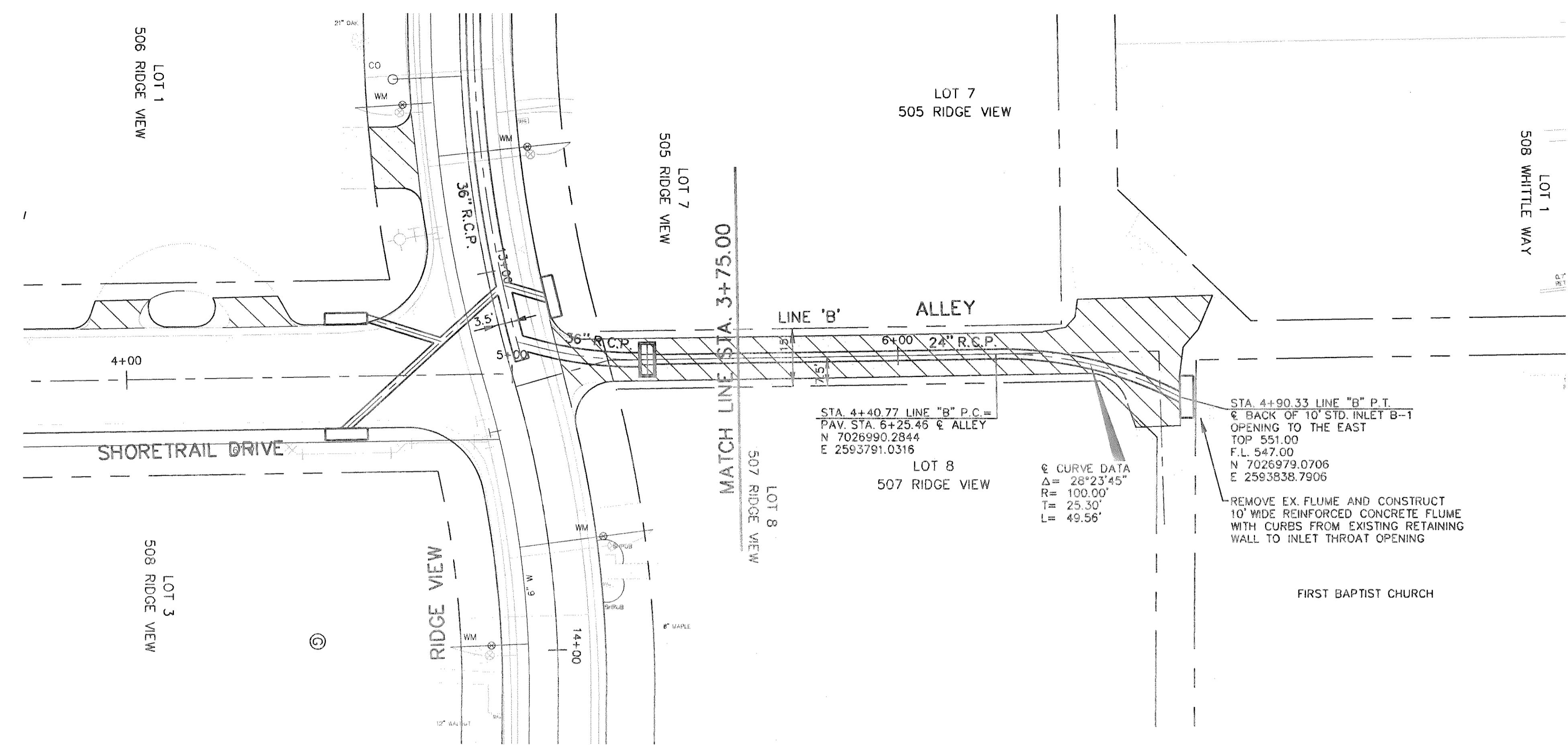
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 CVALIGN, 301801CVAR1.DGN, 1,2,23,27,28  
 UTPROF25M, 301801UPFR2.DGN, 2,3,11,17,19,27,36,38-40,57,58,60  
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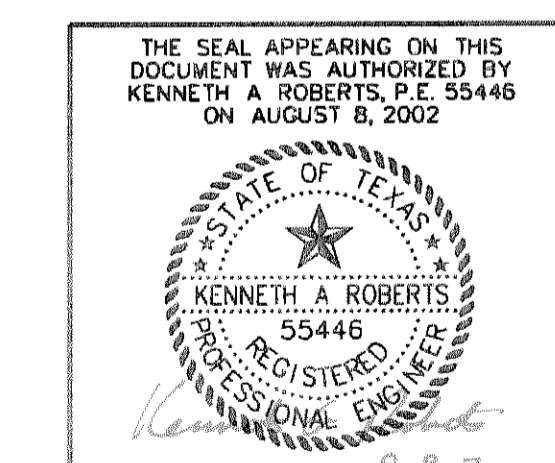
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 CHALIGN, 301801CHAR1.DGN, 1,3  
 CSTPLAN, 301801CSTR1.DGN, 31,35  
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RECORD DRAWINGS, JULY 25, 2003  
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**BENCHMARKS:**  
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 ELEVATION = 550.33  
 BM #2 "I" CUT ON SOUTH SIDE OF CURB & OF A CURB INLET ON SOUTH SIDE OF LAKE MEADOWS DR. BETWEEN LAKE MEADOWS DR. BETWEEN LAKE MEADOWS CT. AND LAKE MEADOW CIRCLE IN FRONT OF HOUSE # 709.  
 ELEVATION = 484.53



NO.	DATE	REVISIONS	APPROVED

**STORMWATER PLAN & PROFILE**  
**LINE "B" STA. 3+75 TO END**  
**RIDGE VIEW ADDITION REHAB**

**HUITT-ZOLLARS**  
 Huitt-Zollars, Inc. Dallas  
 3131 McKinney Avenue, Suite 600  
 Dallas, Texas 75204-2489  
 Phone (214) 871-5201 Fax (214) 871-0757

**CITY OF ROCKWALL, TEXAS**

DESIGN	DRAWN	APPR.	SCALE	DATE	PROJECT NO.	NO.
HZI	HZI	KAR	H <sup>1</sup> =20' V <sup>1</sup> =4'	AUGUST 2002	01-3018-01	ST-9

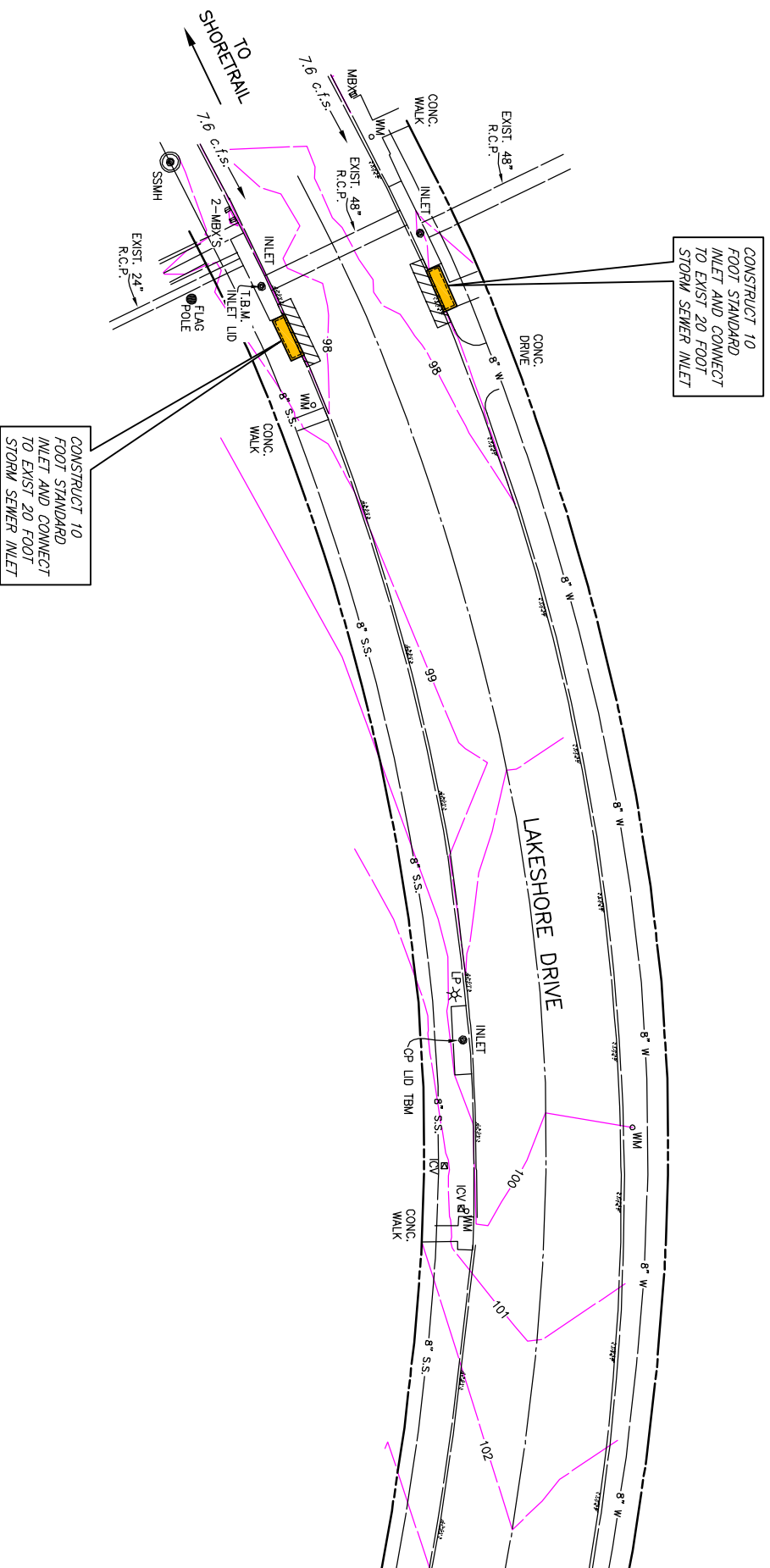
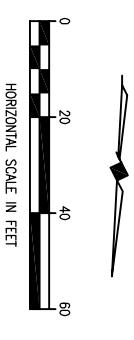












T.B.M.:  
 CENTER OF INLET LID ON THE  
 EAST SIDE OF LAKESHORE DRIVE  
 NORTH OF SHORETRAIL DRIVE.  
 ELEV. 98.50

*This record drawing is a compilation of the sealed engineering drawing for this project, modified by addenda, change orders and information furnished by the contractor. The engineer shall not be responsible for any errors or omissions provided by the contractor or otherwise, and shall not be held liable for any damages or claims resulting from the design. This original sealed drawing is on file at the offices of Birkhoff, Hendricks & Conway, L.L.P.*

BY RVC DATE 5/12/09

**BIRKHOFF, HENDRICKS & CONWAY, L.L.P.**  
 CONSULTING ENGINEERS  
 7502 Greenville Ave., Suite 220  
 Dallas, Texas  
 (214) 361-7900



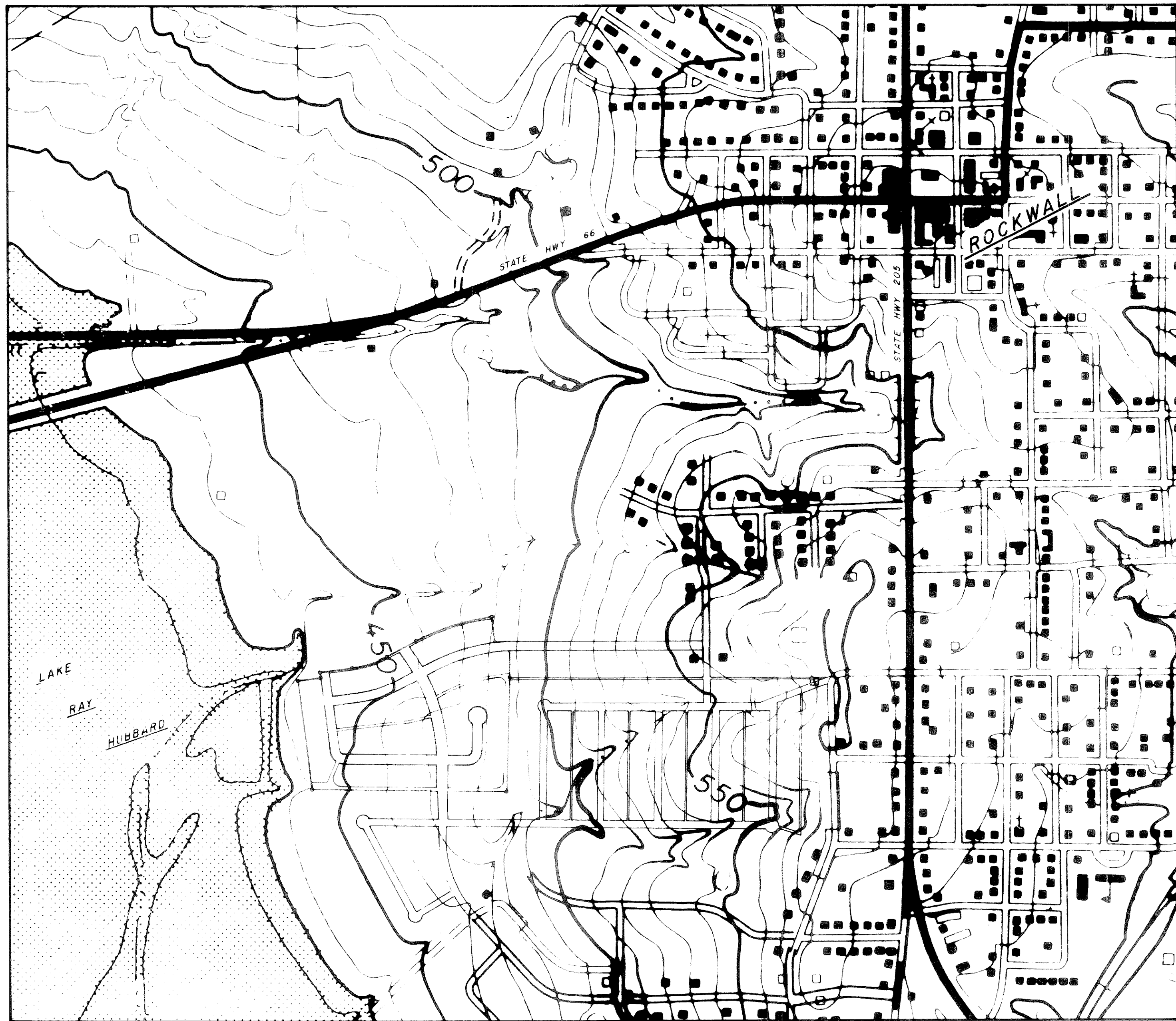
*Ronald V. Conway*  
 4/21/07

**CITY OF ROCKWALL, TEXAS**  
 NEIGHBORHOOD DRAINAGE IMPROVEMENTS  
 DRAINAGE SITE 1 IMPROVEMENTS  
 LAKESHORE DRIVE NORTH OF SHORETRAIL DRIVE

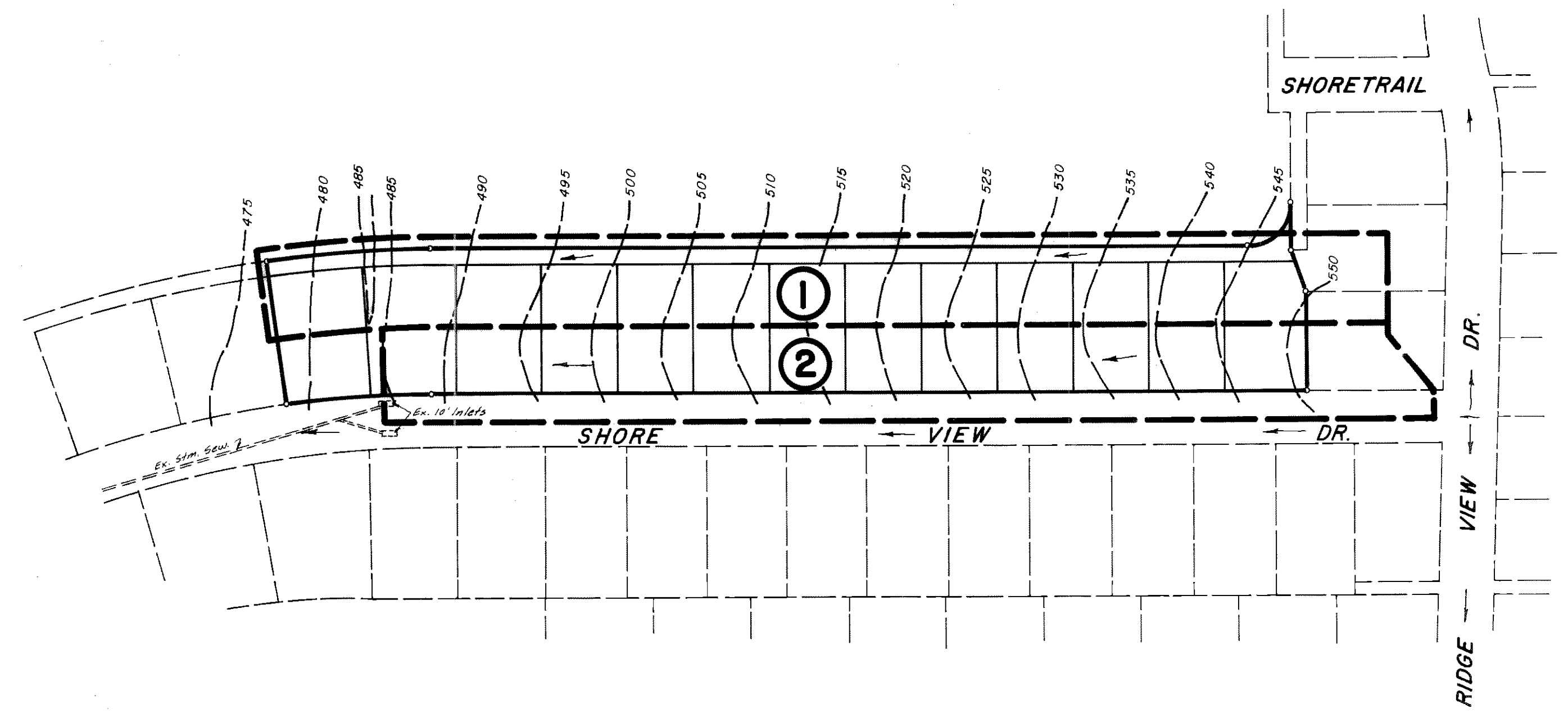
BHC  
 PROJECT NO.  
 2006-182  
 JANUARY, 2007

**8**



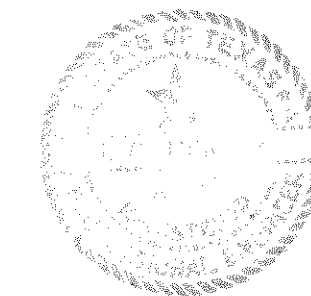


**OFF-SITE DRAINAGE AREAS**  
SCALE 1"=400'



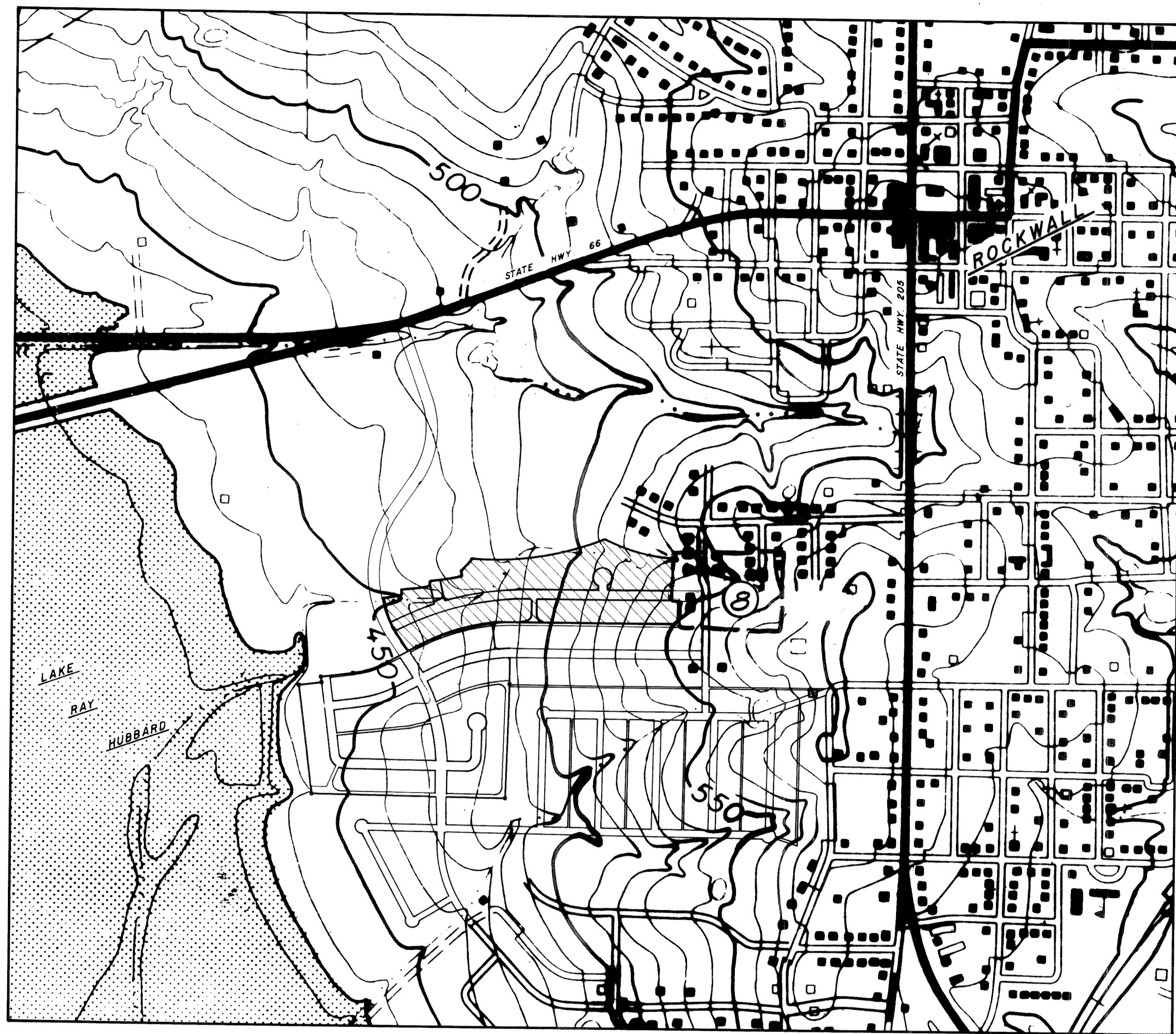
**ON-SITE DRAINAGE AREAS**  
SCALE 1"=100'

NO.	ACRES	C	$I_{50}$	$Q_{50}$
1	2.12	0.4	9.0	7.63
2	1.91	0.4	9.0	6.88

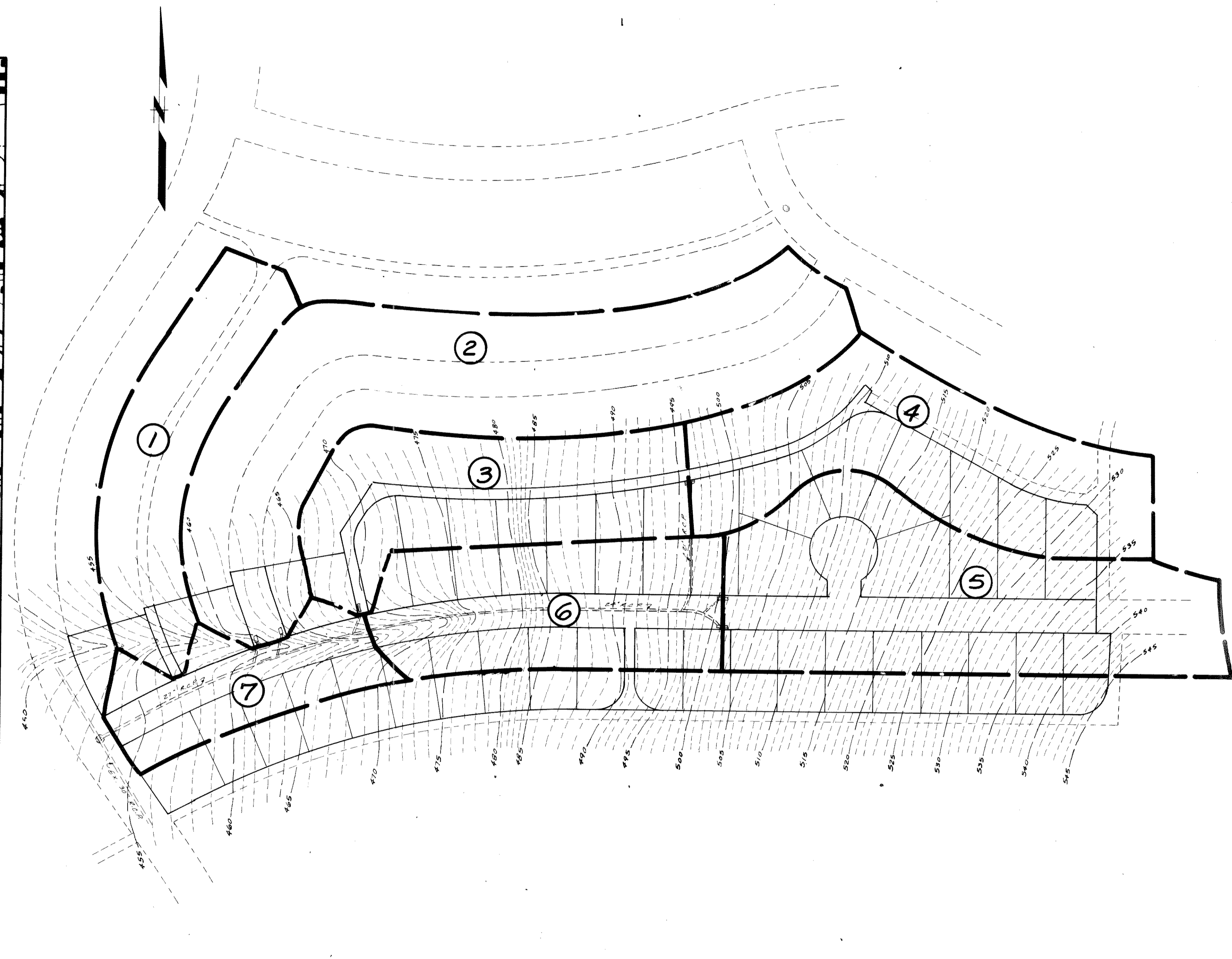


<b>DRAINAGE AREA MAP</b>						
<b>STONEBRIDGE MEADOWS</b>						
<b>PHASE TWO</b>						
<b>ROCKWALL CO., TEXAS</b>						
THREADGILL - DOWDEY and ASSOCIATES						
CONSULTING ENGINEERS DALLAS, TEXAS						
DESIGN	DRAWN	CHECKED	DATE	SCALE	JOB	SHEET
A.R.W.	M.H.	J.C.H.	1-77	AS SHOWN	459-E	1/1





**OFF-SITE DRAINAGE AREAS**  
SCALE: 1" = 400'



**ON-SITE DRAINAGE AREAS**  
SCALE: 1" = 100'

DRAINAGE AREAS				
No.	Acres	C	150	450
1	1.5	0.4	9.0	0.5
2	3.9			1.4
3	1.9			0.7
4	2.3			0.8
5	2.8			10.0
6	1.8			60.6
7	1.0			0.4
8	4.3	0.4	9.0	15.5

**DRAINAGE AREA MAP**  
**STONEBRIDGE MEADOWS**  
PHASE THREE  
ROCKWALL, TEXAS

THREADGILL - DOWDEY and ASSOCIATES  
CONSULTING ENGINEERS DALLAS, TEXAS

DESIGN	DRAWN	CHECKED	DATE	SCALE	JOB	SHEET
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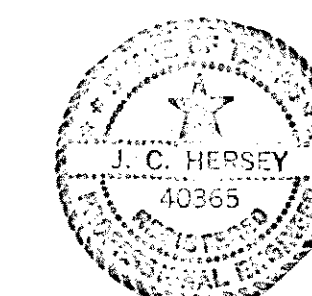


DRAINAGE AREA DATA

AREA	ACRES	C	$I_s$	$Q_s$
1	0.78	.5	6.6	2.57
2	1.03			3.40
3	1.82			6.01
4	0.24			0.79
5	0.95			3.14
6	1.03			3.40
7	4.45			14.69
8	1.31			4.32
9	2.54			8.38
10	0.89			2.94
11	1.99			6.57
12	1.50			4.95
13	3.90			12.87
14	2.30			7.59
15	2.80			9.24
16	1.00			3.30
17	1.80			5.94
18	2.80	.5	6.6	9.24
19	2.33	.5	6.6	7.69
20	0.76	.5	6.6	2.51

BACKWATER CALCULATIONS

SECTION NO.	WS. ELEV.	LENGTH	AREA	$W_p$	$n$	$\frac{1.486(A)}{n}$	HR	$HR^2$	$S_{hg}$	AVERAGE $S_{hg}$	$Q_{25}$	$V$	$V^2$	$\frac{V^2}{2g}$	$h_1 - h_2$	$\Delta H$	W.S. ELEV.
0+00	478.0	200	145	52	.035	6156	2.79	1.98	.00046	—	262	1.8	3.24	0.05	—	—	478.0
2+00	479.9	200	38	29	.035	1613	1.31	1.20	.01645	.01238	252	6.6	43.56	0.66	-0.61	1.9	479.9
4+00	486.1	200	75	34	.035	3184	2.21	1.69	.00211	.02876	252	3.3	10.89	0.17	0.49	6.2	486.1
6+00	489.8	200	30	16	.035	1274	1.88	1.52	.01515	.02235	241	8.0	64.0	0.99	-0.82	3.7	489.8
8+00	492.4	200	39	18	.035	1656	2.17	1.67	.00694	.01105	241	6.1	37.2	0.57	0.42	2.6	492.4
10+00	496.1	200	27	16	.035	1146	1.69	1.42	.01747	.02098	230	8.2	67.2	1.05	-0.48	3.7	496.1
12+00	503.8	200	20	15	.035	849	1.33	1.21	.04583	.04255	218	10.9	118.8	1.84	-0.79	7.7	503.8
14+00	520.9	200	199	64	.035	8449	3.11	2.13	.00013	.07615	205	1.0	1.0	0.01	1.83	17.1	520.9
15+50	521.0	150	56	35	.035	2378	1.60	1.37	.00386	.00199	205	3.6	12.96	0.20	-0.19	0.1	521.0

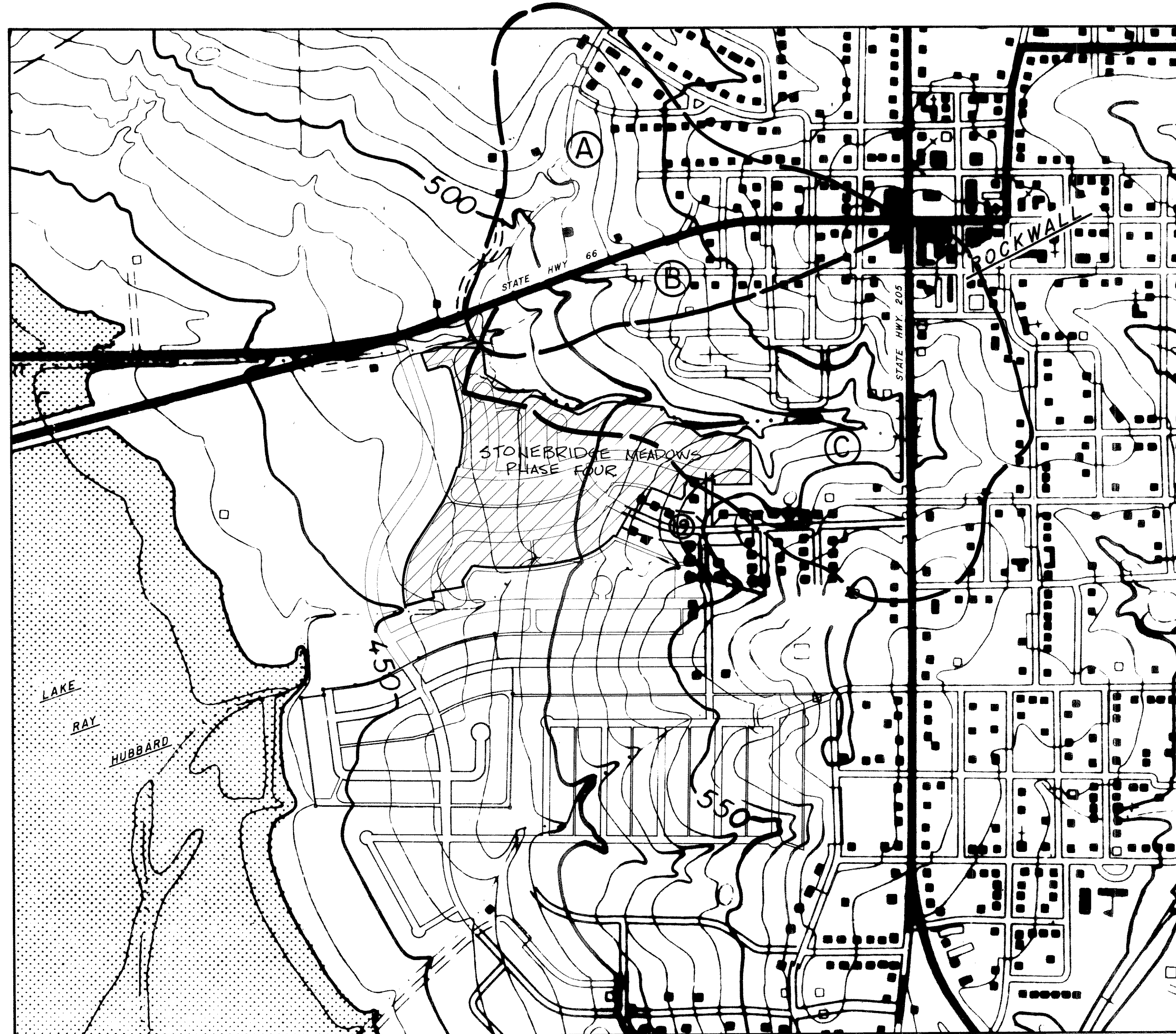


**DRAINAGE AREA MAP**  
**STONEBRIDGE MEADOWS**  
**PHASE FOUR**  
 ROCKWALL COUNTY, TEXAS

THREADGILL - DOWDEY and ASSOCIATES  
 CONSULTING ENGINEERS DALLAS, TEXAS

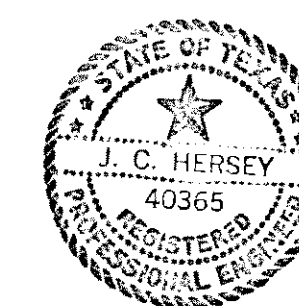
DESIGN	DRAWN	CHECKED	DATE	SCALE	JOB	SHEET
J.G.B.	R.E.	J.C.H.	9-78	1/100'	506-E	2/4





DRAINAGE AREA						
AREA	ACRES	C	T <sub>C</sub>	CA	I <sub>25</sub>	Q <sub>25</sub>
A	32.2	0.5	10 × $\frac{2400}{2 \times 60} = 18 \text{ min.}$	16.1	7.0	112.7
B	16.7	0.53	10 × $\frac{2400}{2 \times 60} = 18 \text{ min.}$	8.9	7.0	62.0
C	71.7	0.57	10 × $\frac{2400}{2 \times 60} = 21.3 \text{ min.}$	40.9	6.4	261.6
19	2.33	0.5	10	1.17	6.6	7.7

OFF-SITE DRAINAGE AREAS  
SCALE: 1" = 400'

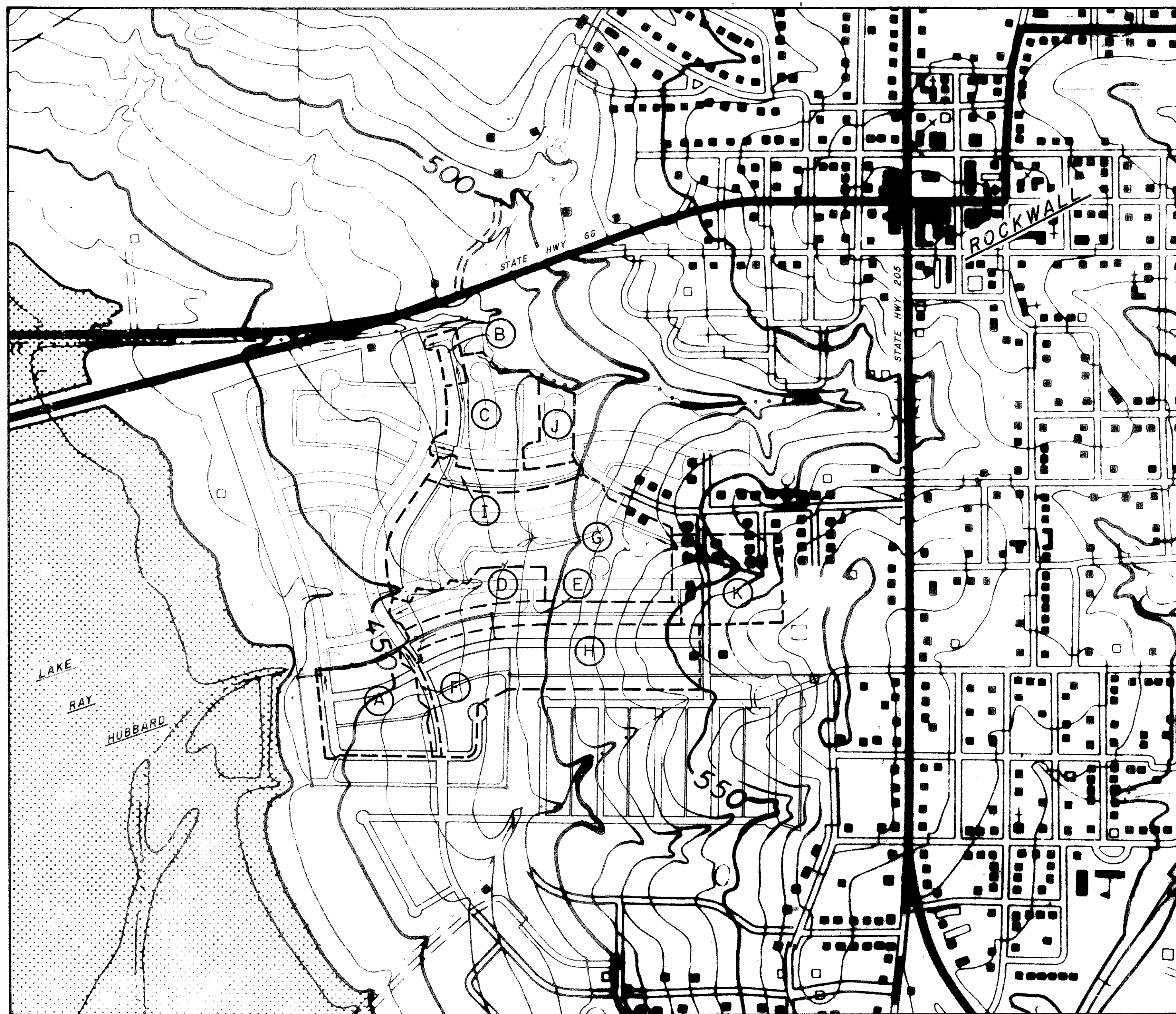


DRAINAGE AREA MAP						
STONEBRIDGE MEADOWS						
PHASE FOUR						
ROCKWALL COUNTY, TEXAS						
THREADGILL - DOWDEY and ASSOCIATES						
CONSULTING ENGINEERS DALLAS, TEXAS						
DESIGN	DRAWN	CHECKED	DATE	SCALE	JOB	SHEET
J.G.B.	R.E.	J.C.H.	9-78	1/4" = 400'	506-E	4







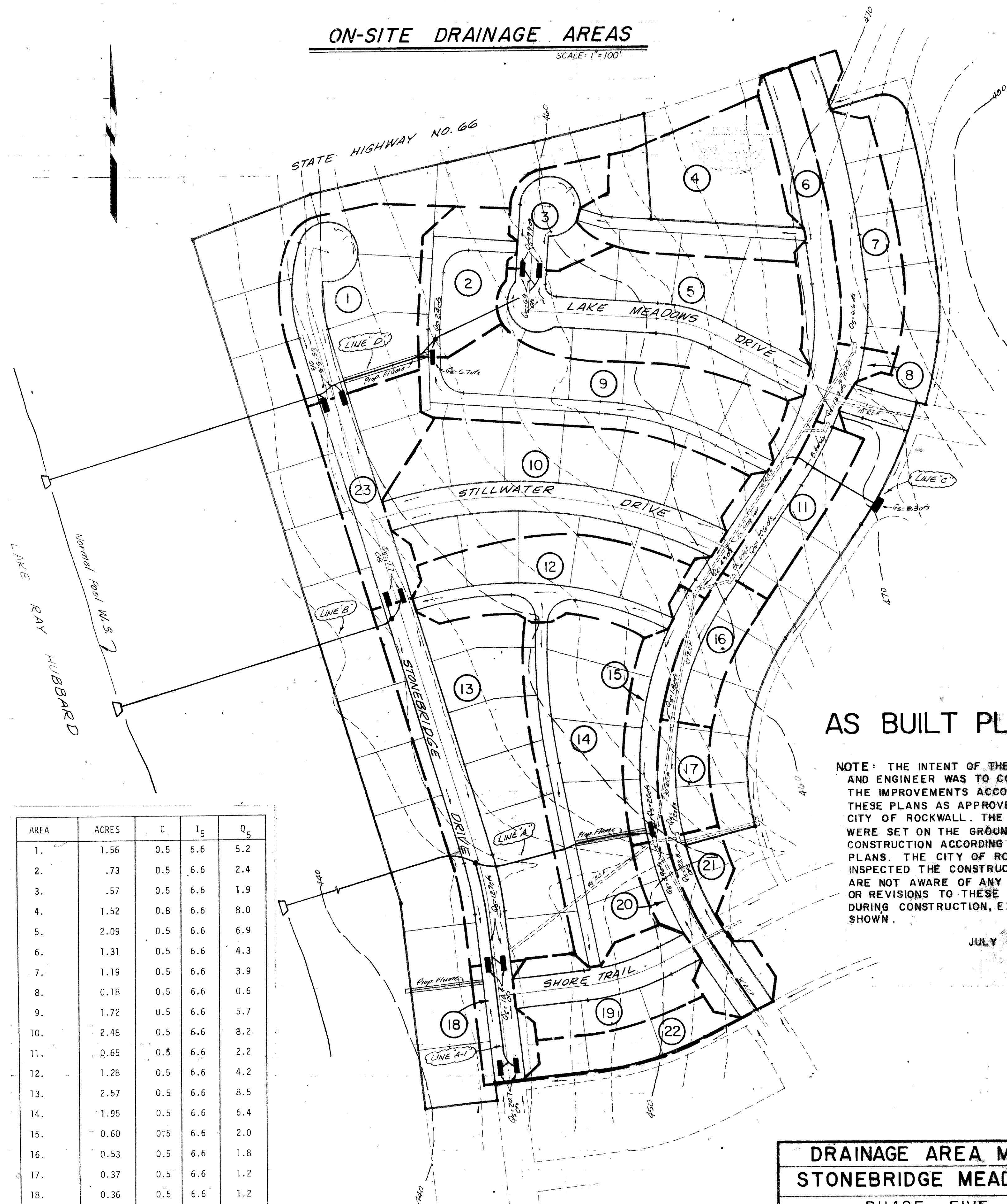


**OFF-SITE DRAINAGE AREAS**  
SCALE: 1" = 400'

AREA	ACRES	C	I <sub>5</sub>	Q <sub>5</sub>
A.	5.9	0.5	6.6	19.5
B.	0.8	0.5	6.6	2.6
C.	5.4	0.5	6.6	17.8
D.	2.8	0.5	6.6	9.2
E.	4.0	0.5	6.6	13.2
F.	0.8	0.5	6.6	2.6
G.	16.9	0.5	6.6	55.8
H.	7.0	0.5	6.6	23.1
I.	2.5	0.5	6.6	8.3
J.	1.8	0.5	6.6	5.9
K.	4.3	0.5	6.6	14.2

**ON-SITE DRAINAGE AREAS**

SCALE: 1" = 100'



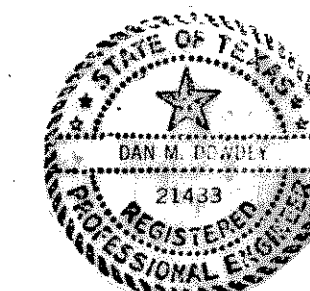
**AS BUILT PLANS**

NOTE: THE INTENT OF THE OWNER AND ENGINEER WAS TO CONSTRUCT THE IMPROVEMENTS ACCORDING TO THESE PLANS AS APPROVED BY THE CITY OF ROCKWALL. THE GRADES WERE SET ON THE GROUND FOR CONSTRUCTION ACCORDING TO SAID PLANS. THE CITY OF ROCKWALL INSPECTED THE CONSTRUCTION. WE ARE NOT AWARE OF ANY CHANGES OR REVISIONS TO THESE PLANS DURING CONSTRUCTION, EXCEPT AS SHOWN.

JULY 10, 1981

AREA	ACRES	C	I <sub>5</sub>	Q <sub>5</sub>
1.	1.56	0.5	6.6	5.2
2.	.73	0.5	6.6	2.4
3.	.57	0.5	6.6	1.9
4.	1.52	0.8	6.6	8.0
5.	2.09	0.5	6.6	6.9
6.	1.31	0.5	6.6	4.3
7.	1.19	0.5	6.6	3.9
8.	0.18	0.5	6.6	0.6
9.	1.72	0.5	6.6	5.7
10.	2.48	0.5	6.6	8.2
11.	0.65	0.5	6.6	2.2
12.	1.28	0.5	6.6	4.2
13.	2.57	0.5	6.6	8.5
14.	1.95	0.5	6.6	6.4
15.	0.60	0.5	6.6	2.0
16.	0.53	0.5	6.6	1.8
17.	0.37	0.5	6.6	1.2
18.	0.36	0.5	6.6	1.2
19.	0.83	0.5	6.6	2.7
20.	0.38	0.5	6.6	1.3
21.	0.40	0.5	6.6	1.3
22.	0.36	0.5	6.6	1.2
23.	1.05	0.5	6.6	3.5

BENCH MARK:  
TOP OF SOUTH FLANGE BOLT OF FIRE HYDRANT ON EAST SIDE OF LAKE SHORE DRIVE, 201' NORTH OF THE NORTH PROPERTY LINE OF STONEBRIDGE MEADOWS I.  
ELEV.: 454.36'



**DRAINAGE AREA MAP  
STONEBRIDGE MEADOWS**

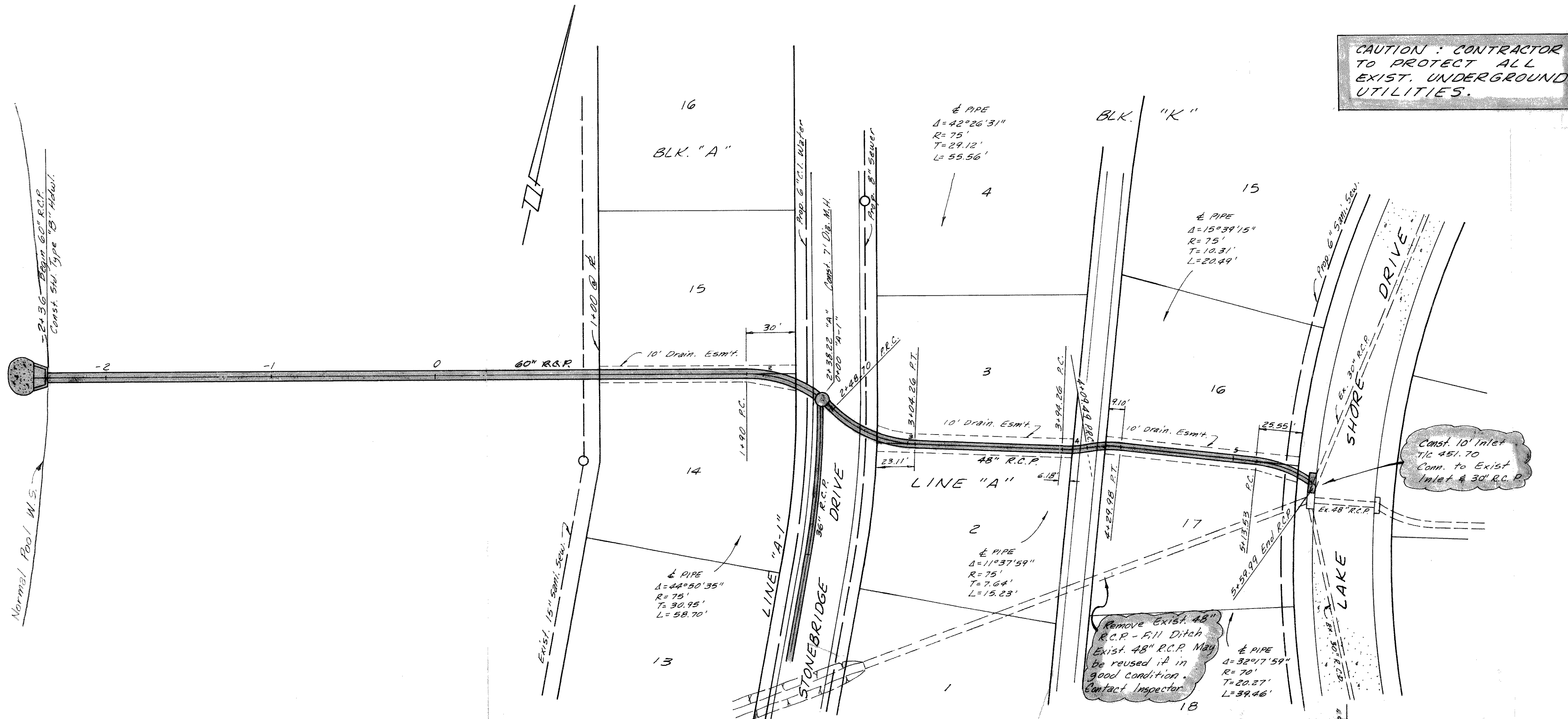
PHASE FIVE  
ROCKWALL, TEXAS

THREADGILL - DOWDEY and ASSOCIATES  
CONSULTING ENGINEERS DALLAS, TEXAS

DESIGN	DRAWN	CHECKED	DATE	SCALE	JOB	SHEET
JGB	JGB	DMD	9-80	as shown	507-E	1/5



LAKE RAY HUBBARD

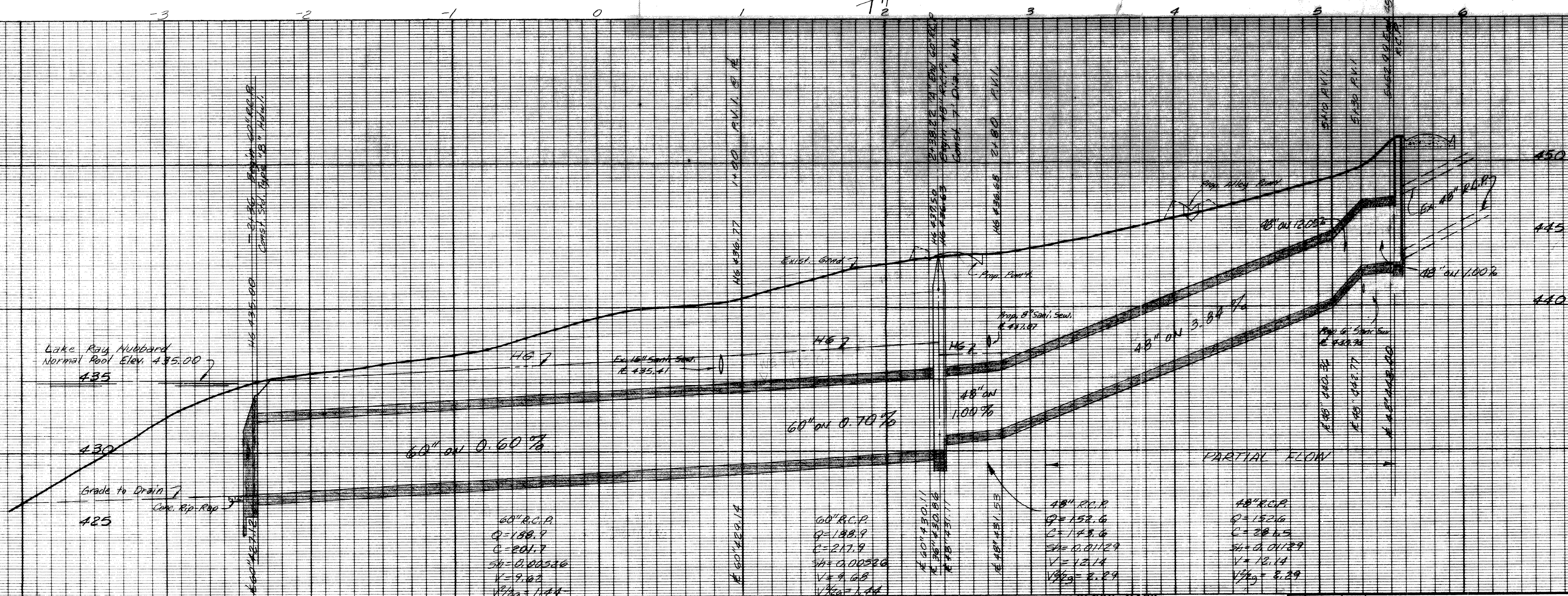


CAUTION: CONTRACTOR TO PROTECT ALL EXIST. UNDERGROUND UTILITIES.

### AS BUILT PLANS

NOTE: THE INTENT OF THE OWNER AND ENGINEER WAS TO CONSTRUCT THE IMPROVEMENTS ACCORDING TO THESE PLANS AS APPROVED BY THE CITY OF ROCKWALL. THE GRADES WERE SET ON THE GROUND FOR CONSTRUCTION ACCORDING TO SAID PLANS. THE CITY OF ROCKWALL INSPECTED THE CONSTRUCTION. WE ARE NOT AWARE OF ANY CHANGES OR REVISIONS TO THESE PLANS DURING CONSTRUCTION, EXCEPT AS SHOWN.

JULY 10, 1981



Lake Ray Hubbard Normal Pool Elev. 435.00

60" R.C.P.  
 $Q = 188.9$   
 $C = 201.7$   
 $S = 0.00506$   
 $V = 7.02$   
 $V_{20} = 1.44$

60" R.C.P.  
 $Q = 188.9$   
 $C = 217.9$   
 $S = 0.00526$   
 $V = 9.08$   
 $V_{20} = 1.44$

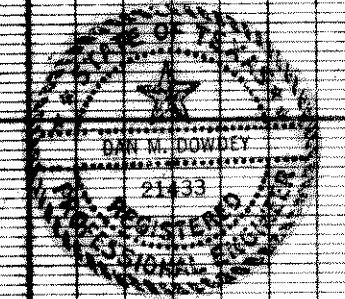
48" R.C.P.  
 $Q = 152.6$   
 $C = 148.6$   
 $S = 0.01129$   
 $V = 12.14$   
 $V_{20} = 2.29$

48" R.C.P.  
 $Q = 152.6$   
 $C = 201.7$   
 $S = 0.01129$   
 $V = 12.14$   
 $V_{20} = 2.29$

BENCH MARK:  
 TOP OF SOUTH FLANGE BOLT OF FIRE HYDRANT ON EAST SIDE OF LAKE SHORE DRIVE, 200' NORTH OF THE NORTH PROPERTY LINE OF STONEBRIDGE MEADOWS I.  
 ELEV. 454.36'

NO.	DATE	BY	REVISION
2	2-24-81	JGB	Rev. Grade Sta 5+10 to 5+52.99
1	10-17-80	R.E.	Added M.H., lengthen Pipe, Revised Profile

LINE "A"  
 STORM SEWER PLANS  
 STONEBRIDGE MEADOWS  
 PHASE FIVE  
 ROCKWALL, TEXAS



THREADGILL-DOWDEY and ASSOCIATES						
CONSULTING ENGINEERS DALLAS, TEXAS						
DESIGN	DRAWN	CHECKED	DATE	SCALE	JOB	SHEET
J.G.B.	R.E.	D.M.D.	10-80	1" = 40'	507-E	2/5



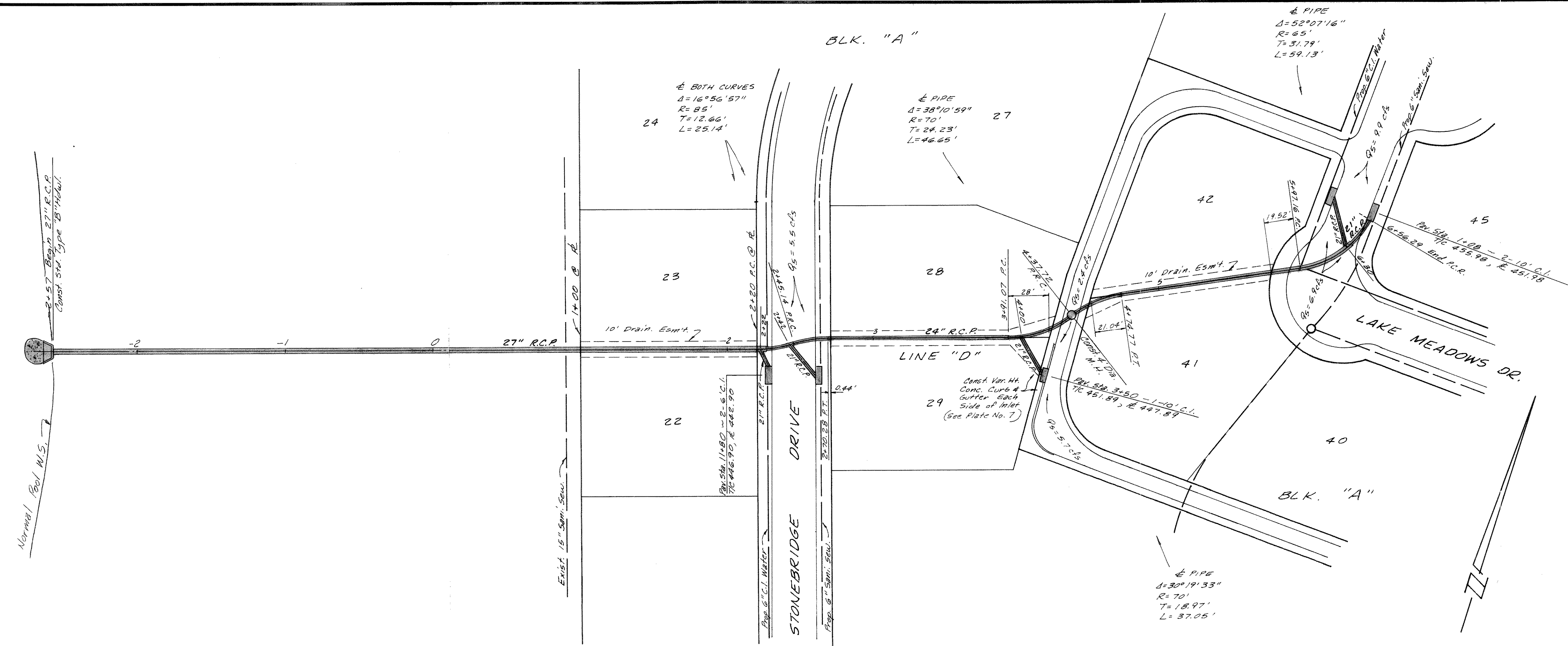








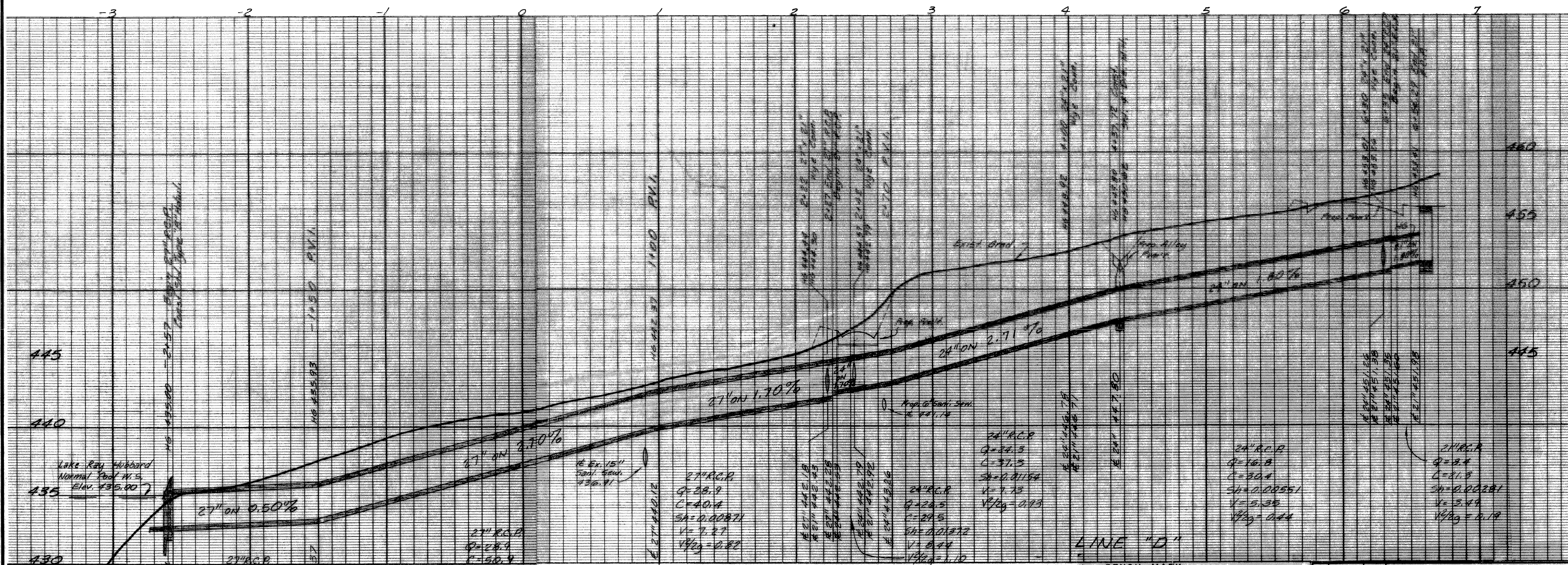
LAKE RAY HUBBARD



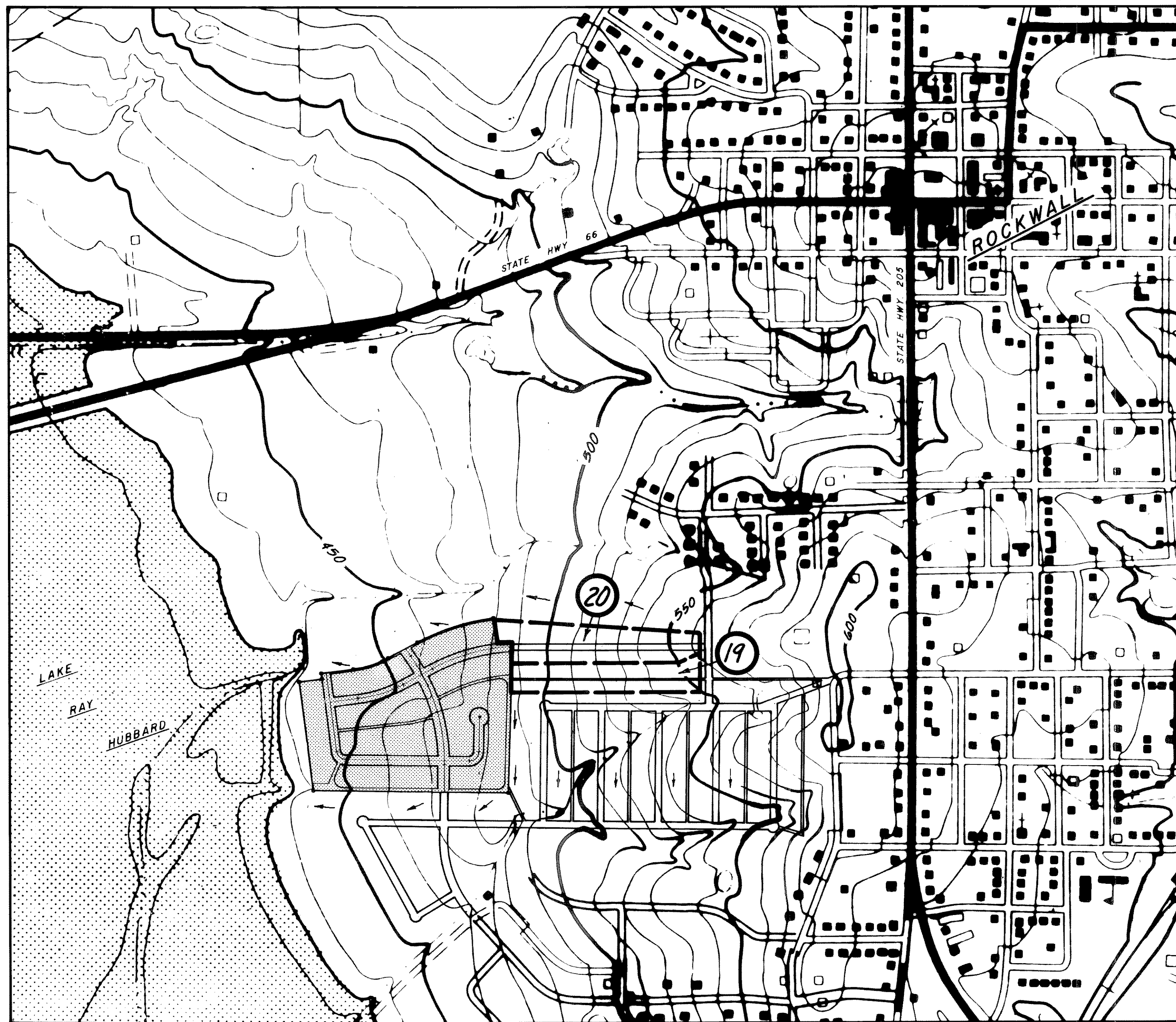
AS BUILT PLANS

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JULY 10, 1981

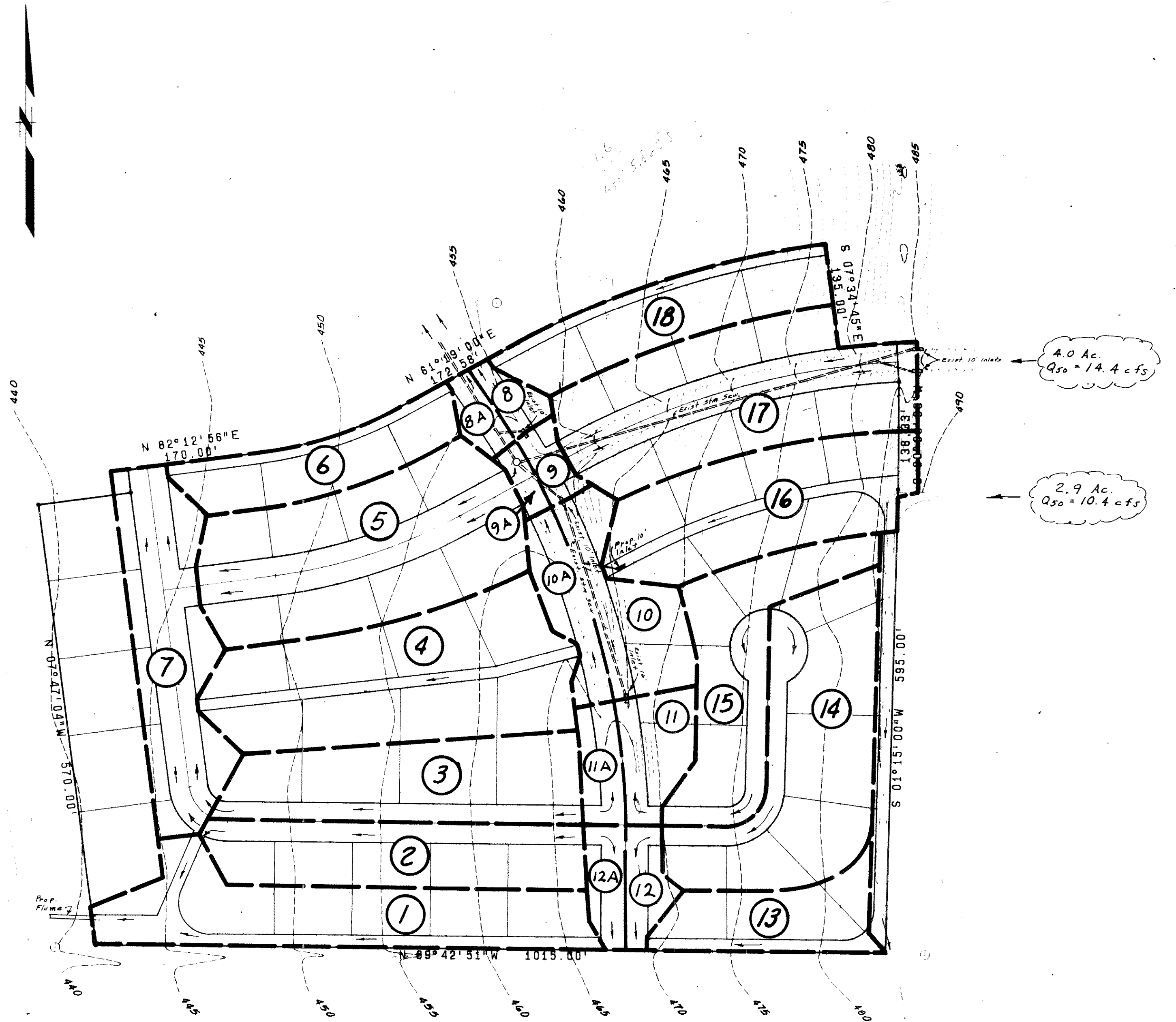






**OFF-SITE DRAINAGE AREAS**

SCALE: 1" = 400'



**ON-SITE DRAINAGE AREAS**

SCALE: 1" = 100'

DRAINAGE AREAS				
No.	Acres	C	I <sub>50</sub>	Q <sub>50</sub>
1	1.3	0.4	9.0	4.7
2	0.9			3.2
3	0.9			3.2
4	1.7			6.1
5	1.6			5.8
6	0.7			2.5
7	1.0			3.6
8	0.1			0.4
9	0.1			0.4
10	0.5			1.8
11	0.4			1.4
12	0.2			0.7
13	0.7			2.5
14	1.1			4.0
15	0.9			3.2
16	1.2			4.3
17	1.6			5.8
18	0.9			3.2
19	2.9			10.4
20	4.0	0.4	9.0	14.4

Time of Concentration = 15 Min.

No.	Acres	C	I <sub>50</sub>	Q <sub>50</sub>
8A	0.2	0.4	9.0	0.7
9A	0.1			0.4
10A	0.3			1.1
11A	0.2			0.7
12A	0.2	0.4	9.0	0.7

DRAINAGE AREA MAP						
STONE BRIDGE MEADOWS						
PHASE ONE						
ROCKWALL, TEXAS						
THREADGILL - DOWDEY and ASSOCIATES						
CONSULTING ENGINEERS DALLAS, TEXAS						
DESIGN	DRAWN	CHECKED	DATE	SCALE	JOB	SHEET
AW	MH	DMD	11/76	A5 SHOWN	456-E	