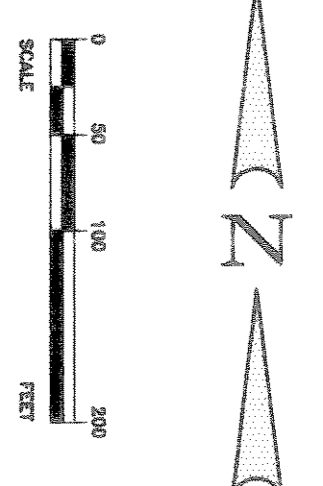
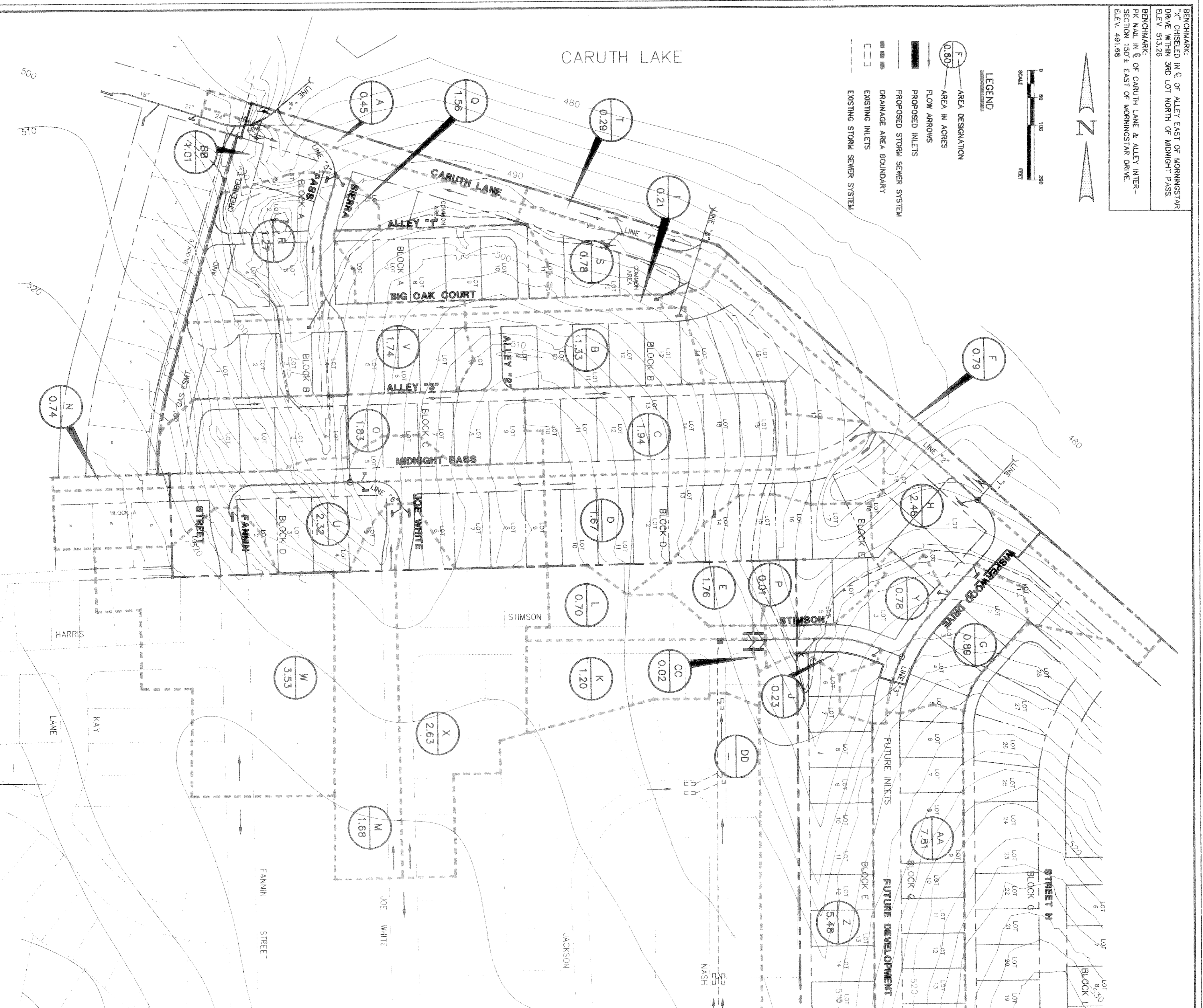


BENCHMARK: X- CHISELED IN @ OF ALLEY EAST OF MORNINGSTAR DRIVE WITHIN 300' NORTH OF MIDNIGHT PASS ELEV. 515.20
 BENCHMARK: PK NAIL IN @ OF CARUTH LANE & ALLEY INTERSECTION 130' EAST OF MORNINGSTAR DRIVE ELEV. 491.98



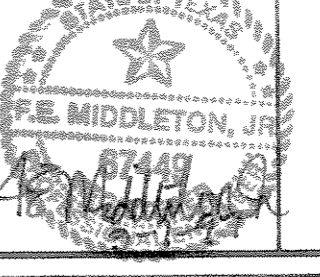
- LEGEND**
- AREA DESIGNATION
 - AREA IN ACRES
 - FLOW ARROWS
 - PROPOSED STORM SEWER SYSTEM
 - DRAINAGE AREA BOUNDARY
 - EXISTING STORM SEWER SYSTEM



INLET DESIGN CALCULATIONS		PROJECT NAME		LINE NAME		BY		DATE								
		CARUTH LAKE PH. 4		N/A		K.G.		5/8/97								
No.	Location	Design Storm Frequency (yrs)	Time of Intensity (min)	Inlet Area (sq. ft.)	Coeff. "C"	Catchment Area (c.a.)	Catchment From Inlet (c.a.)	Total Inlet (c.a.)	Capacity (c.f.s.)	Slope (ft./100ft.)	SELECTED INLET		Catchment To Inlet (c.a.)			
											Length (ft.)	Type				
1	STA. 0+26.62 CARUTH LANE (LT)	100	3	4	5	7	8	9	10	11	12	13	14	15	16	
A	STA. 0+26.62 CARUTH LANE (LT)	100	10	9.8	0.50	0.45	2.21	0	6.52	14.92	1.80	6" PARABOLIC	10'	C.I.	0	
B	STA. 1+14.38 THISTLEDOWN COURT (LT)	100	10	9.8	0.50	1.33	6.52	0	9.51	11.79	1.00	6" PARABOLIC	15'	C.I.	0	
C	STA. 12+71.03 MIDNIGHT PASS (LT)	100	10	9.8	0.50	1.94	9.51	0	8.18	11.79	1.00	6" PARABOLIC	15'	C.I.	0	
D	STA. 12+65.61 MIDNIGHT PASS (RT)	100	10	9.8	0.50	1.87	8.18	0	8.18	11.79	1.00	6" PARABOLIC	15'	C.I.	0	
E	STA. 3+36.18 AREA DRAIN	100	10	9.8	0.50	1.76	8.62	0	N/A	N/A	N/A	6" PARABOLIC	3'	TYPE "A"	0	
F	STA. 15+13.19 CARUTH LANE (LT)	100	10	9.8	0.50	0.79	3.87	0	3.87	SAG	5' PARABOLIC	10'	C.I.	0		
G	STA. 1+03.50 WRENWOOD DRIVE (LT)	100	10	9.8	0.50	0.99	4.36	0	4.36	9.14	0.60	6" PARABOLIC	10'	C.I.	0	
H	STA. 15+13.19 CARUTH LANE (RT)	100	10	9.8	0.50	2.46	12.05	7.51	19.66	SAG	5' PARABOLIC	10'	C.I.	0		
I	STA. 1+53.67 THISTLEDOWN COURT (RT)	100	10	9.8	0.50	0.21	1.03	0	1.03	14.92	1.60	6" PARABOLIC	5'	C.I.	0	
J	STA. 2+37.00 STIMSON (RT)	100	10	9.8	0.50	0.23	1.13	5.68	6.81	9.14	0.60	6" PARABOLIC	5'	C.I.	3.71	
K	STA. 0+40.00 STIMSON (LT)	100	10	9.8	0.50	1.20	3.88	21.20	27.08	18.22	2.40	6" PARABOLIC	15'	C.I.	16.56	
L	STA. 0+40.00 STIMSON (LT)	100	10	9.8	0.50	0.70	3.43	21.20	24.63	18.27	2.40	6" PARABOLIC	15'	C.I.	14.13	
M	STA. 0+59.50 JOE WHITE (RT)	100	10	9.8	0.50	1.68	8.23	0	8.23	9.14	0.60	6" PARABOLIC	10'	C.I.	0.73	
N	STA. 3+55.32 MIDNIGHT PASS (LT)	100	10	9.8	0.50	0.74	3.63	0	3.63	SAG	5' PARABOLIC	5'	C.I.	0		
O	STA. 3+81.88 ALLEY "3" (LT)	100	10	9.8	0.50	1.83	8.97	0	8.97	SAG	5' PARABOLIC	5'	C.I.	3.18		
P	STA. 0+19.98 STIMSON (LT)	100	10	9.8	0.50	0.01	0.06	14.13	14.18	15.82	1.80	6" PARABOLIC	15'	C.I.	0	
Q	STA. 0+60.50 WATERVIEW WAY (LT)	100	10	9.8	0.50	1.56	7.64	0	7.64	11.79	1.00	6" PARABOLIC	5'	C.I.	4.71	
R	STA. 0+80.50 WATERVIEW WAY (RT)	100	10	9.8	0.50	1.27	6.22	0	6.22	11.79	1.00	6" PARABOLIC	10'	C.I.	0	
S	STA. 6+95.45 CARUTH LANE (LT)	100	10	9.8	0.50	0.78	3.82	0	3.82	SAG	5' PARABOLIC	5'	C.I.	0		
T	STA. 6+95.45 CARUTH LANE (RT)	100	10	9.8	0.50	0.78	3.82	0	3.82	SAG	5' PARABOLIC	5'	C.I.	0		
U	STA. 3+55.32 MIDNIGHT PASS (RT)	100	10	9.8	0.50	2.32	11.37	8.53	19.90	SAG	5' PARABOLIC	10'	C.I.	0		
V	STA. 7+85.90 THISTLEDOWN COURT (LT)	100	10	9.8	0.50	1.74	8.53	0	8.53	SAG	5' PARABOLIC	5'	C.I.	0		
W	STA. 0+57.71 FANNIN ST. (LT)	100	10	9.8	0.50	3.53	17.30	0	17.30	26.29	4.97	6" PARABOLIC	15'	C.I.	7.8	
X	STA. 0+59.50 JOE WHITE (LT)	100	10	9.8	0.50	2.63	12.88	0	12.88	9.14	0.60	6" PARABOLIC	15'	C.I.	7.61	
Y	STA. 1+73.50 WRENWOOD DRIVE (RT)	100	10	9.8	0.50	0.78	3.82	6.89	10.71	9.14	0.60	6" PARABOLIC	5'	C.I.	0	
Z	FUTURE - PH. 5	100	10	9.8	0.50	5.48	26.85	0	N/A	N/A	N/A	N/A	N/A	N/A	0	
AA	FUTURE - PH. 5	100	10	9.8	0.50	7.81	38.27	0	N/A	N/A	N/A	N/A	N/A	N/A	0	
BB	STA. 0+26.62 CARUTH LANE (RT)	100	10	9.8	0.50	1.01	4.95	4.71	9.66	SAG	1.80	6" PARABOLIC	5'	C.I.	5.66	
CC	STA. 0+19.98 STIMSON (RT)	100	10	9.8	0.50	0.22	0.10	43.80	16.68	15.82	SAG	1.80	6" PARABOLIC	15'	C.I.	5.66
DD	EXIST. 10' CURB INLET	100	10	9.8	0.50	0.22	0.10	43.80	16.68	15.82	SAG	1.80	6" PARABOLIC	15'	C.I.	42.39

Winkelmann & Associates, Inc. hereby states that this plan, to the best of our knowledge is "As Built." Modifications from the originally approved construction documents have been made as per information provided by the contractor, Winkelmann & Associates, Inc. does not certify as to the correctness or quality of construction as no field inspection was performed.
 WINKELMANN & ASSOCIATES, INC. DATE 7/20/98

No.	DATE	REVISION	APPROV.



Winkelmann & Associates, Inc.
 CONSULTING CIVIL ENGINEERS & SURVEYORS
 1800 HILLCREST ROAD, SUITE 200
 DALLAS, TEXAS 75230
 (972) 490-7000
 (972) 490-7000 FAX

CARUTH LAKE PHASE FOUR
 S.S. MCCURRY SURVEY, ABSTRACT NO. 146
 M.B. JONES SURVEY, ABSTRACT NO. 122
 CITY OF ROCKWALL
 ROCKWALL COUNTY, TEXAS
 LUMBERMEN'S INVESTMENT CORPORATION
 5485 BELTLINE ROAD, SUITE 2225
 DALLAS, TEXAS 75240

**DRAINAGE AREA MAP
 CARUTH LAKE PHASE FOUR**

Scale : 1"=100' Date : 5-9-97
 Designed By : K.G.
 Drawn By : T.C./K.G.
 Checked By : F.E.M.
 File : I4633DM.DWG
 Project No. : I4633.01(20)