

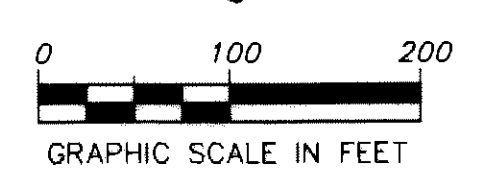
LEGEND

- Proposed Area Designation
Runoff in C.F.S.
- Proposed Drainage Area Divide
- Proposed Storm Sewer w/Inlet
& Pipe Size Indication
- Existing Contours
- Direction of Flow
- Inlet Number

RATIONAL METHOD

$Q = CIA$

Q ~ Flow (c.f.s.)
C ~ Runoff Coefficient
I ~ Intensity (in./hr.)
A ~ Drainage Area (Acres)



AREA		DRAINAGE CALCULATIONS								INLET PICK-UP POINTS	
NO.	ACRES	C	Tc	I2	Q2	I1	Q1				
A	0.90	0.50	10	6.20	2.8	9.80	4.4				WETLAND TO LAKE
B	0.54	0.50	10	6.20	1.7	9.80	2.6				14
C	1.28	0.50	10	6.20	4.0	9.80	6.3				15
D	0.16	0.50	10	6.20	0.5	9.80	0.8				15
E	2.00	0.50	10	6.20	6.2	9.80	9.8				17
F	0.58	0.50	10	6.20	1.8	9.80	2.9				16
G	0.91	0.50	10	6.20	2.8	9.80	4.5				16
H	0.74	0.50	10	6.20	2.3	9.80	3.6				1
I	1.20	0.50	10	6.20	3.7	9.80	5.9				10
J	1.22	0.50	10	6.20	3.8	9.80	6.0				9
K	1.19	0.50	10	6.20	3.7	9.80	5.8				8
L	0.88	0.50	10	6.20	2.7	9.80	4.3				12
M	0.27	0.50	10	6.20	0.8	9.80	1.3				13
N	0.48	0.50	10	6.20	1.5	9.80	2.4				13
O	1.19	0.50	10	6.20	3.7	9.80	5.3				11
P	0.86	0.50	10	6.20	2.7	9.80	4.2				6
Q	0.98	0.50	10	6.20	3.0	9.80	4.8				5
R	0.39	0.50	10	6.20	1.2	9.80	1.9				6
S	0.84	0.50	10	6.20	2.6	9.80	4.1				7
T	1.44	0.50	10	6.20	4.5	9.80	7.1				4
U	0.92	0.50	10	6.20	2.8	9.80	4.5				2
V	1.44	0.50	10	6.20	4.5	9.80	7.0				3
W	0.47	0.50	10	6.20	1.5	9.80	2.3				3
X	0.37	0.50	10	6.20	1.1	9.80	1.8				15
Y	0.42	0.50	10	6.20	1.3	9.80	2.0				1
Z	1.97	0.50	10	6.20	6.1	9.80	9.6				LAKE
Z1	1.43	0.50	10	6.20	4.4	9.80	7.0				EX. SWALE TO LAKE

BENCHMARKS:

- SQUARE CUT ON NORTHEAST CURB ± 150' NORTHWEST OF RAILROAD ON TURTLE COVE BOULEVARD
ELEV. 469.36
- SQUARE CUT ON CENTERLINE OF INLET WESTERLY FROM CLUBHOUSE ENTRANCE
ELEV. 447.21

RECORD DRAWING

DATE: 7-28-00

THIS RECORD DRAWING HEREBY REFLECTS TO THE BEST OF THE DESIGN ENGINEER'S KNOWLEDGE THE APPROXIMATE LOCATION OF THE CONSTRUCTED WORK USING INFORMATION AS PROVIDED BY THE CONTRACTOR(S).

NO.	REVISION	BY	DATE

THE SEAL APPEARING ON THIS DOCUMENT WAS AUTHORIZED BY BRIAN L. UMBERGER, P.E. #2474

BRIAN L. UMBERGER
REGISTERED PROFESSIONAL ENGINEER
82474

SCALE: AS SHOWN

DESIGNED: PPS&J

DRAWN: PPS&J

DATE: 7-28-00

DWG FILE:

PBS&J

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DRAINAGE AREA MAP
TURTLE COVE ADDITION, PHASE 3

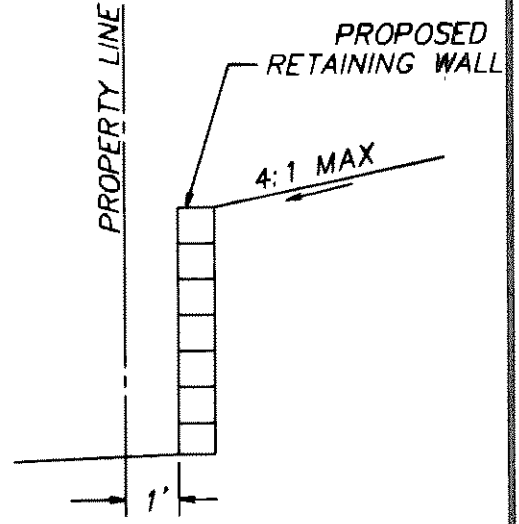
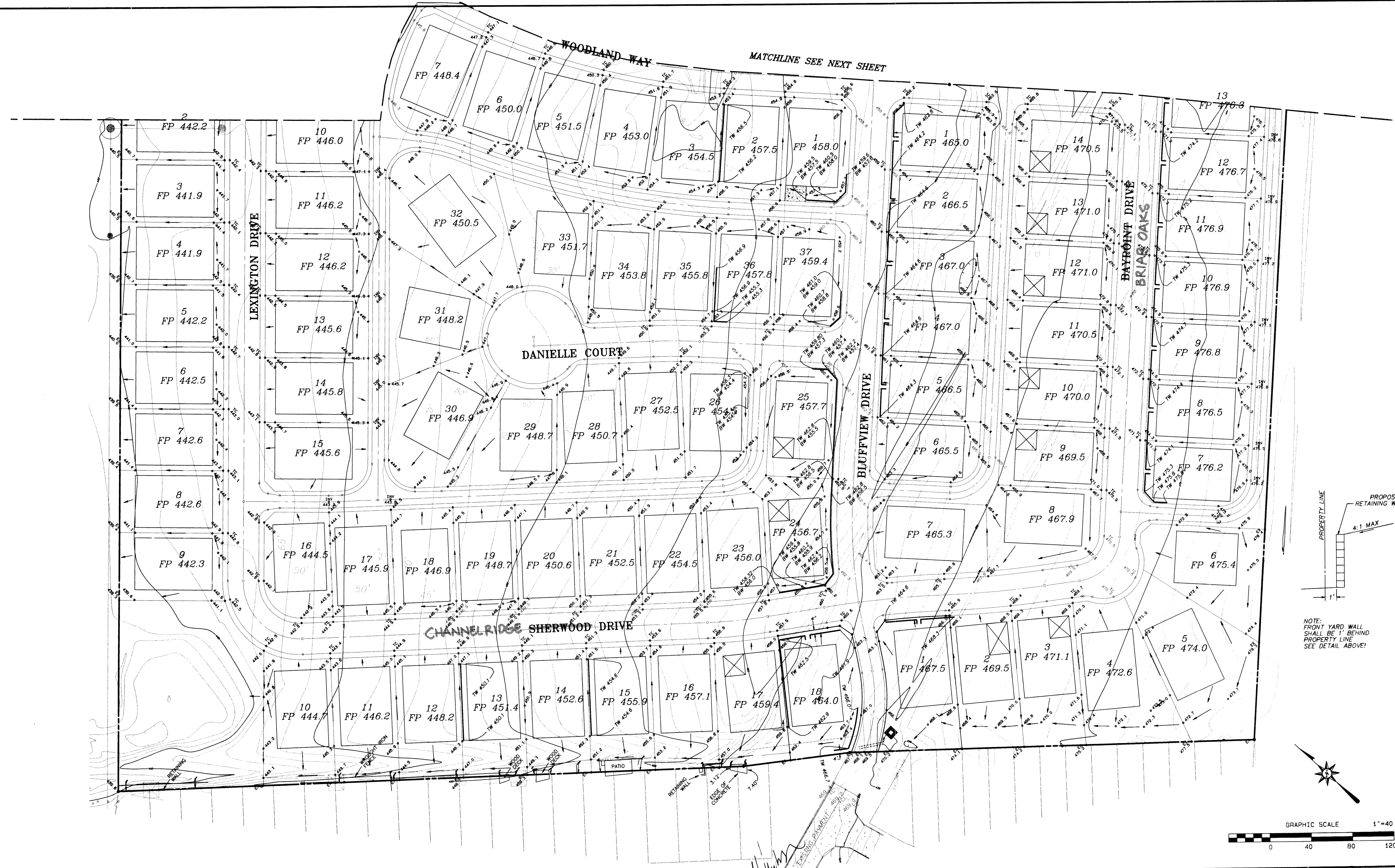
ROCKWALL
ROCKWALL COUNTY, TEXAS

JOB NO. 95115.02

SHEET 20 of 28

STORM SEWER CALCULATIONS

LINE	No.	TYPE	STORM STATION	LOCATION	STREET NAME	CONDUIT		ELEVATIONS			CLEARANCE		HYDROLOGY FLOW										REMARKS							
						DESIGN FLOW Q ₁	DIA	IN	OUT	TOP	IN	OUT	Capacity @ Full Flow	Velocity @ Full Flow	Depth	Water Flow	Hydro. Grade @ lower section	Hydro. Grade @ upper section	Hydraulic Slope	Mean Vel. Head	Friction Head	Hydraulic Depth								
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	
1	CB1	10' Curb in Sac	7+39.18	E	Baypoint Drive	5.60	18	RCP	0.013	279.79	4.90	13.70																		
2	RCP	Grade Reduction	4+59.37	E	Woodland Way	5.60	18	RCP	0.013	76.00	3.95	3.00	462.97	462.97	467.80	2.92	2.92	20.87	11.8	10.3	35	453.49	465.47	454.99	4.21	1.83	3.20	2.81		
3	CB2	10' Curb on Grade	0+17.32	E2	Woodland Way	5.60	18	RCP	0.013	17.32	2.19	0.38																		
4	18"x18"	RCP WYE-15	3+83.37	E	Woodland Way	11.50	18	RCP	0.013	14.23	1.20	0.17	449.87	449.87	454.96	3.30	3.30	11.82	6.5	6.5	99	451.46	462.27	453.21	1.13	0.66	0.16	1.77		
5	CB3	10' Curb on Grade	0+20.12	E1	Woodland Way	9.30	18	RCP	0.013	4.51	2.40	0.11	449.80	449.80	454.48	2.97	2.95	24.63	10.2	10.2	48	450.38	462.11	452.45	2.47	1.50	0.11	2.03		
6	21"x18"	RCP Reducer-9 to WYE-15	3+69.14	E	Woodland Way	11.50	21	RCP	0.013	384.63	2.40	0.74	449.87	449.87	454.48	3.21	3.06	24.53	10.2	11.2	70	450.87	462.00	451.52	2.29	1.94	8.35	2.96		
7	21"x18"	RCP WYE-14	3+64.63	E	Woodland Way	20.80	21	RCP	0.013	105.40	1.27	1.34																		
8	CB4	4Grate Combined on Grade	8+36.52	D	Existing Alley	7.10	18	RCP	0.013	5.44	0.76	0.04	441.48	441.48	445.15	1.73	1.71	11.90	4.9	5.0	99	443.18	444.04	444.04	0.82	0.45	0.04	1.11		
9	CB5	10' Curb on Grade	0+05.44	D3	Woodland Way	4.80	21	RCP	0.013	4.51	0.56	0.03	441.71	441.46	445.15	1.73	1.71	11.90	4.9	5.0	99	443.18	444.99	444.48	0.53	0.38	0.17	0.87		
10	21"x21"	RCP Reducer-8 to CB4	5+31.12	D	Woodland Way	7.10	21	RCP	0.013	32.69	0.56	0.18	441.44	441.44	445.15	1.73	1.73	11.90	4.9	5.0	99	443.18	443.99	444.48	0.82	0.45	0.03	1.15		
11	21"x21"	RCP WYE-13	5+26.61	D	Woodland Way	11.90	21	RCP	0.013	17.67	1.66	0.29																		
12	CB6	10' Curb on Grade	0+17.57	D2	Woodland Way	6.10	21	RCP	0.013	10.74	1.30	0.14	441.26	441.26	445.23	2.00	2.00	18.99	7.5	7.5	99	443.00	443.82	443.89	1.22	0.87	0.13	1.34		
13	21"x21"	RCP WYE-12	4+34.52	D	Woodland Way	18.00	21	RCP	0.013	4.72	0.89	0.04	441.12	440.37	445.38	2.29	2.22	36.60	7.9	7.9	48	441.56	443.89	443.72	0.90	0.94	0.04	1.66		
14	30"x21"	RCP Reducer-7 to WYE-12	4+83.78	D	Woodland Way	18.00	30	RCP	0.013	143.89	0.89	1.29	440.70	440.33	445.38	1.89	2.27	38.80	7.9	7.9	99	442.81	443.65	443.63	0.85	0.97	1.22	1.85		
15	30"x21"	RCP WYE-11	4+78.06	D/E	Alley D-2	38.80	30	RCP	0.013	63.00	7.68	4.85																		
16	CB7	3Grate Combined on Grade	0+63.06	D1	Alley D-2	4.10	18	RCP	0.013	4.88	0.41	0.02	439.04	438.54	446.34	5.60	4.47	42.96	6.1	6.9	74	440.76	442.43	442.35	0.54	0.74	0.03	4.00		
17	39"x30"	RCP Reducer-6 to WYE-11	3+35.97	D	Alley D-2	42.80	36	RCP	0.013	330.51	0.41	1.37	439.27	438.52	446.26	5.28	4.41	42.96	6.1	6.1	99	441.50	442.41	442.51	0.41	0.57	1.37	3.75		
18	CB8	10' Curb in Sac	1+31.76	C2	Danielle Court	5.80	18	RCP	0.013	131.76	0.69	0.91																		
19	CB9	3Grate Combined on Grade	2+20.82	C	Alley D-1	6.00	18	RCP	0.013	26.8	3.28	0.88	442.23	442.23	445.79	1.85	1.93	19.03	10.8	9.7	38	442.80	444.26	444.74	3.45	1.47	0.92	1.08		
20	CB9	3Grate Combined on Grade	2+20.82	C	Alley D-1	6.00	18	RCP	0.013	26.8	3.28	0.88	442.23	442.23	445.79	1.85	1.93	19.03	10.8	9.7	38	442.80	444.26	444.74	3.45	1.47	0.92	1.08		
21	18"x18"	RCP WYE-9	1+93.72	C	Alley D-1	11.80	18	RCP	0.013	64.62	4.15	2.68	441.35	441.35	444.99	1.93	1.93	21.41	12.1	11.2	82	442.14	443.33	442.59	3.52	1.96	2.27	2.40		
22	39"x18"	RCP Reducer-5 to WYE-9	1+29.20	C	Alley D-1	11.80	39	RCP	0.013	4.94	0.44	0.02	438.67	438.62	444.79	4.41	4.27	54.76	6.9	5.4	31	437.93	441.06	441.29	0.47	0.45	0.02	3.50		
23	39"x30"	RCP WYE-8	1+24.28	C/D	Alley D-1	14.70	39	RCP	0.013	85.04	0.44	0.29	437.15	436.90	444.66	4.18	4.16	54.76	6.6	6.6	99	440.13	441.04	441.19	0.42	0.68	0.27	3.47		
24	CB10	3Grate Combined on Grade	0+06.62	C1	Alley D-1	5.80	18	RCP	0.013	6.82	24.81	1.84	439.13	438.53	443.83	2.69	52.33	29.6	19.8	23	439.47	442.45	442.45	25.43	0.88	1.68	1.08			
25	39"x18"	RCP WYE-7	0+59.22	C	Alley D-1	60.90	39	RCP	0.013	59.22	0.64	0.32	437.49	436.61	443.17	3.67	2.95	60.69	7.3	7.3	99	439.84	440.77	441.17	0.51	0.83	0.30	2.00		
26	CB11	10' Curb on Grade	5+55.39	B																										



NOTE: FRONT YARD WALL SHALL BE 1' BEHIND PROPERTY LINE SEE DETAIL ABOVE!

RECORD DRAWING
 DATE: 7-28-00
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BENCHMARKS:

NO.	REVISION	BY	DATE

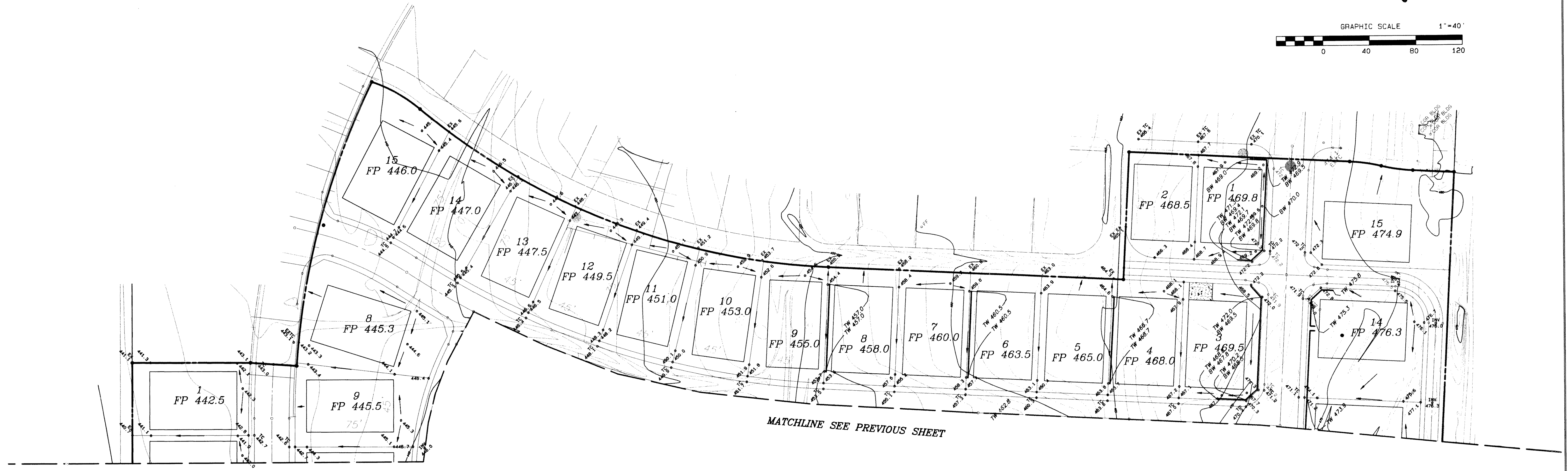
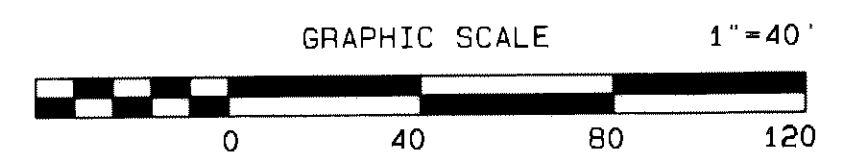
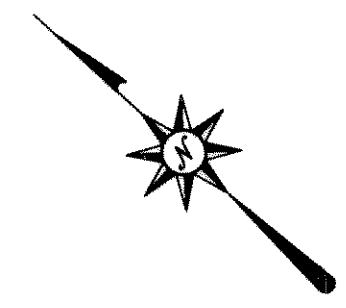
STATE OF TEXAS
 BRIAN L. UMBERGER
 82474
 REGISTERED PROFESSIONAL ENGINEER
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PBS&J
 5999 SUMMERSIDE DRIVE ~ SUITE 202
 DALLAS, TEXAS 75252
 PH. (972) 380-2605 FAX (972) 380-2809

GRADING PLAN		JOB NO.
TURTLE COVE ADDITION, PHASE 3		95115.02
ROCKWALL ROCKWALL COUNTY, TEXAS		SHEET
		3 OF 28

P B S & J, INC. * DALLAS, TEXAS



MATCHLINE SEE PREVIOUS SHEET

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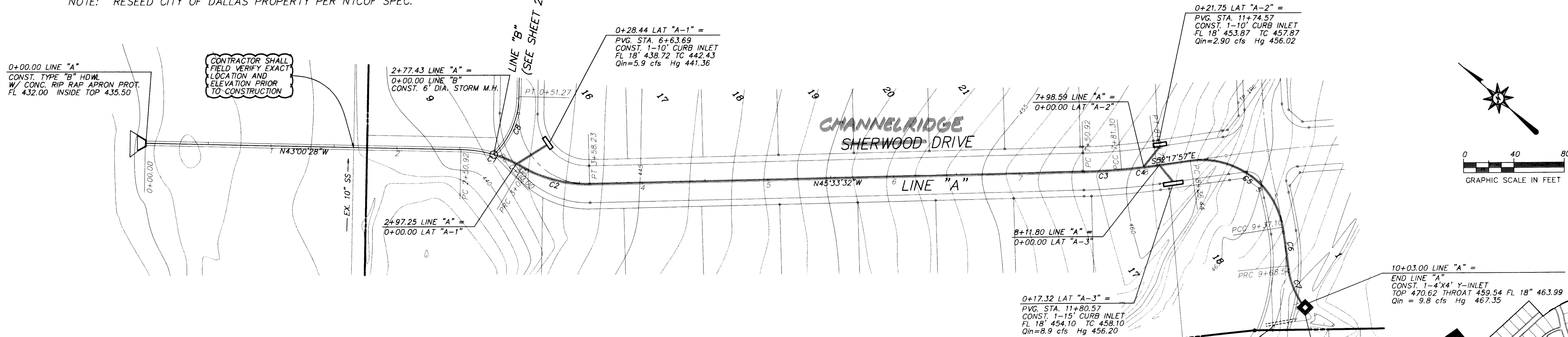
GRADING PLAN
 TURTLE COVE ADDITION, PHASE 3
 ROCKWALL
 ROCKWALL COUNTY, TEXAS

JOB NO. 95115.02
 SHEET 4 OF 28

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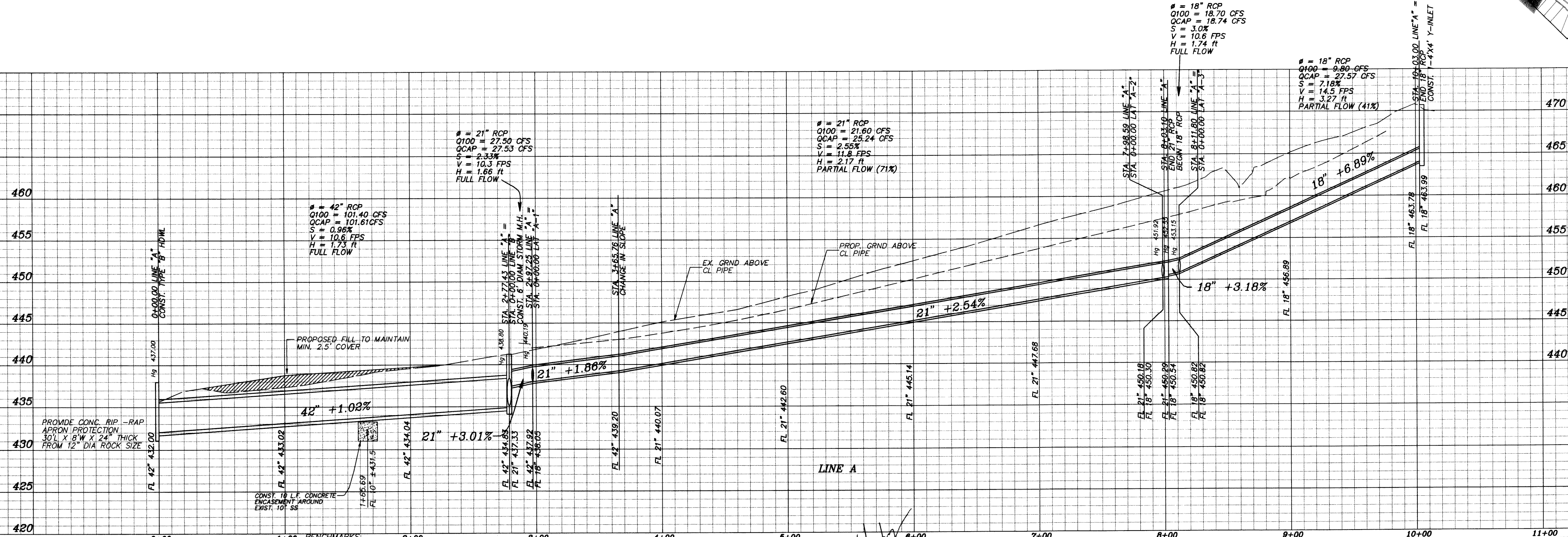
TURTLE COVE ADDITION, PHASE 3, GRADING PLAN

NOTE: RESEED CITY OF DALLAS PROPERTY PER NTCOF SPEC.



CURVE	RADIUS	DELTA	ARC	CHORD BEARING	CHORD
C1	100.00'	29°28'05"	51.43'	S28°16'26"E	50.87'
C2	100.00'	32°01'09"	55.88'	S29°32'58"E	55.16'
C3	500.00'	3°28'50"	30.37'	S47°17'57"E	30.37'
C4	500.00'	3°15'34"	28.45'	S50°40'10"E	28.44'
C5	65.00'	88°43'35"	100.66'	S07°56'09"E	90.90'
C6	500.00'	3°36'11"	31.44'	S38°13'44"W	31.44'
C7	65.00'	28°16'35"	32.08'	S25°53'32"W	31.75'

NOTE: NOTIFY DWJ CONSTRUCTION INSPECTION AT (214) 948-4562 FORTY EIGHT (48) HOURS PRIOR TO CONSTRUCTION. ALSO, SEE DWJ DETAILS FOR TYPICAL STORM SEWER INSTALLATION ON DRAINAGE AREA MAP



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- SQUARE CUT ON NORTHEAST CURB ± 150' NORTHWEST OF RAILROAD ON TURTLE COVE BOULEVARD ELEV. 469.36
- SQUARE CUT ON CENTERLINE OF INLET WESTERLY FROM CLUBHOUSE ENTRANCE ELEV. 447.21

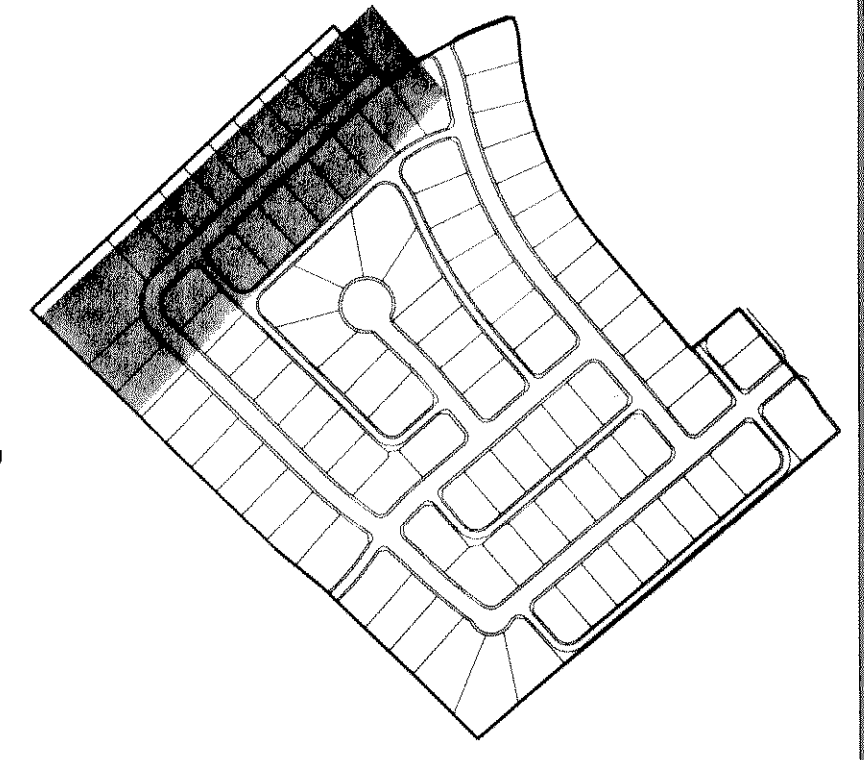
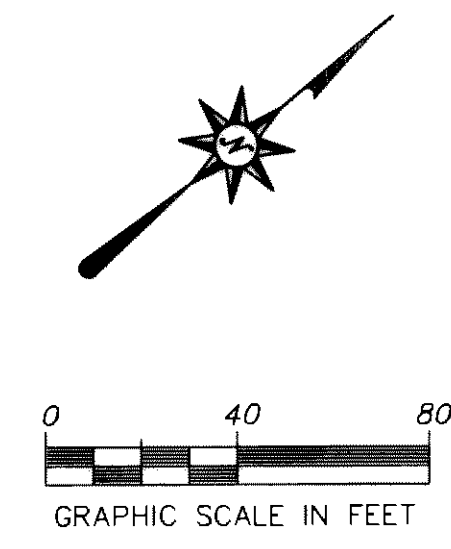
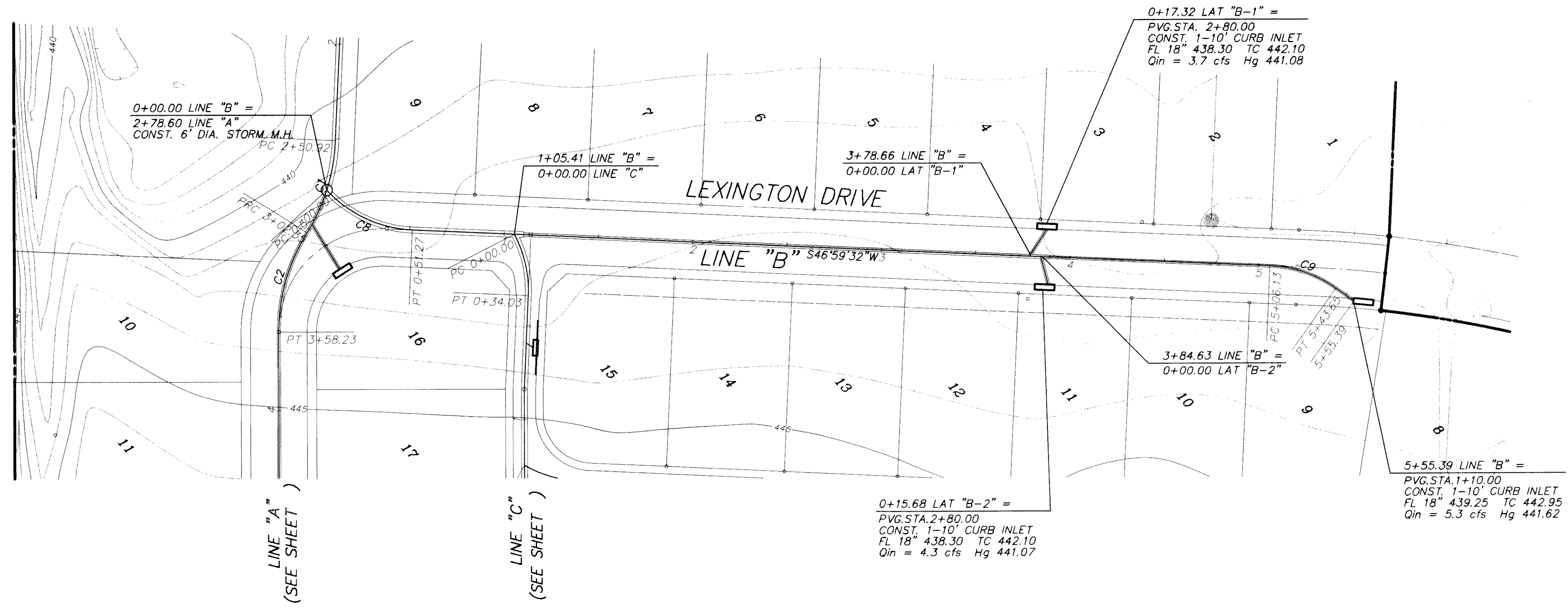
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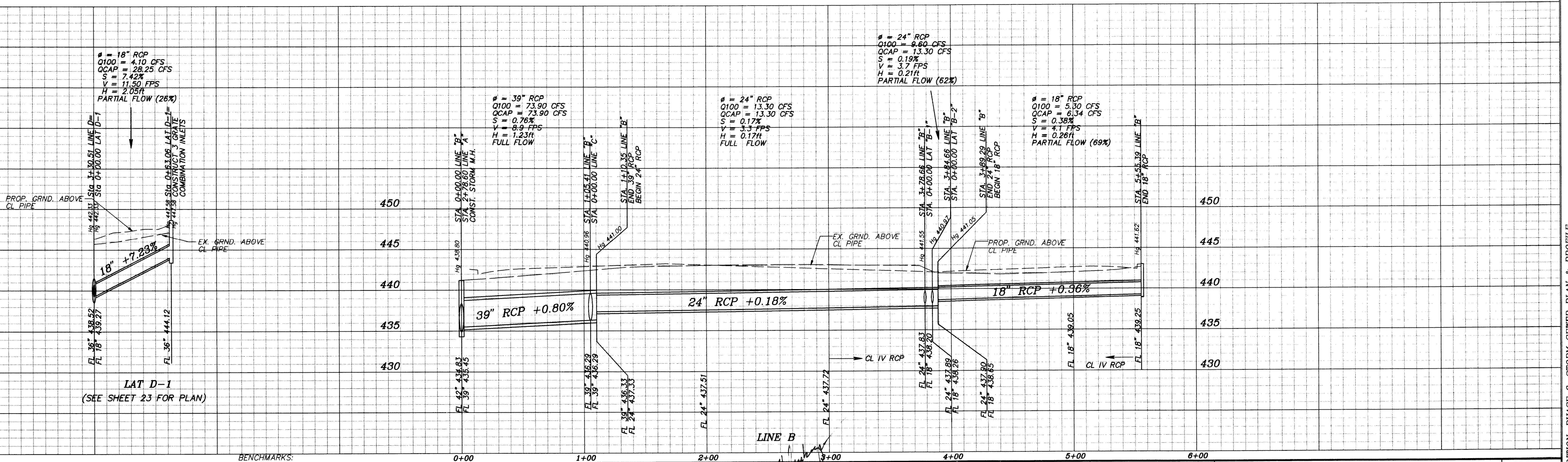
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STORM SEWER PLAN & PROFILE
TURTLE COVE ADDITION, PHASE 3
JOB NO. 95115.02
SHEET 21 of 28
ROCKWALL
ROCKWALL COUNTY, TEXAS



CURVE	RADIUS	DELTA	ARC	CHORD BEARING	CHORD
C8	65.00'	45°11'21"	51.27'	N69°35'12"E	49.95'
C9	65.00'	33°04'24"	37.52'	N63°31'44"E	37.00'

NOTE: NOTIFY DWJ CONSTRUCTION INSPECTION AT (214) 948-4562 FORTY EIGHT (48) HOURS PRIOR TO CONSTRUCTION. ALSO, SEE DWJ DETAILS FOR TYPICAL STORM SEWER INSTALLATION ON DRAINAGE AREA MAP



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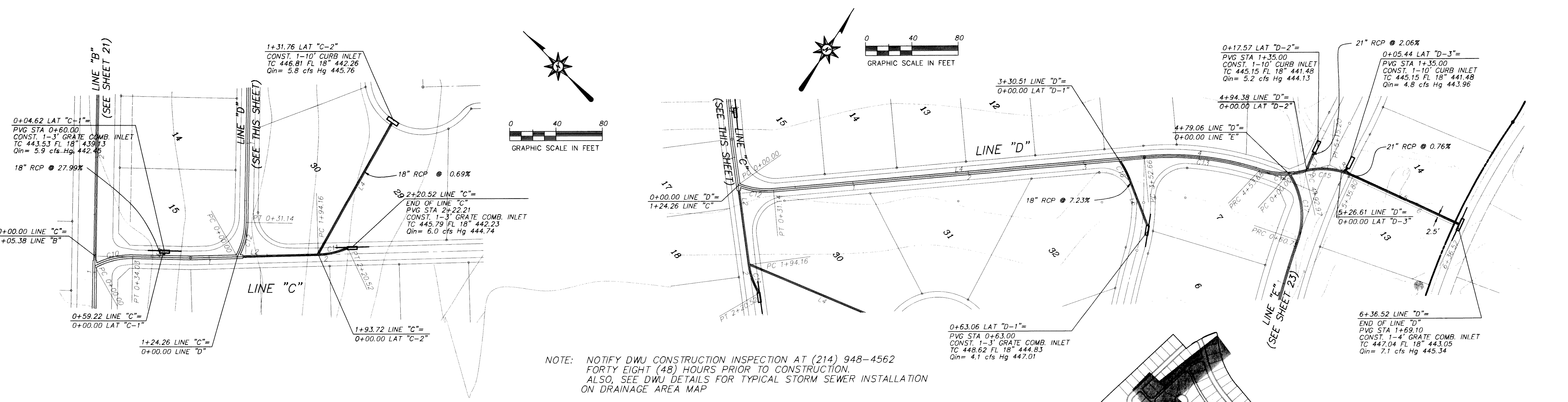
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STATE OF TEXAS
82474

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STORM SEWER PLAN & PROFILE
TURTLE COVE ADDITION, PHASE 3
JOB NO. 95115.02
SHEET 22 of 28
ROCKWALL
ROCKWALL COUNTY, TEXAS

TURTLE COVE ADDITION, PHASE 3, STORM SEWER PLAN & PROFILE

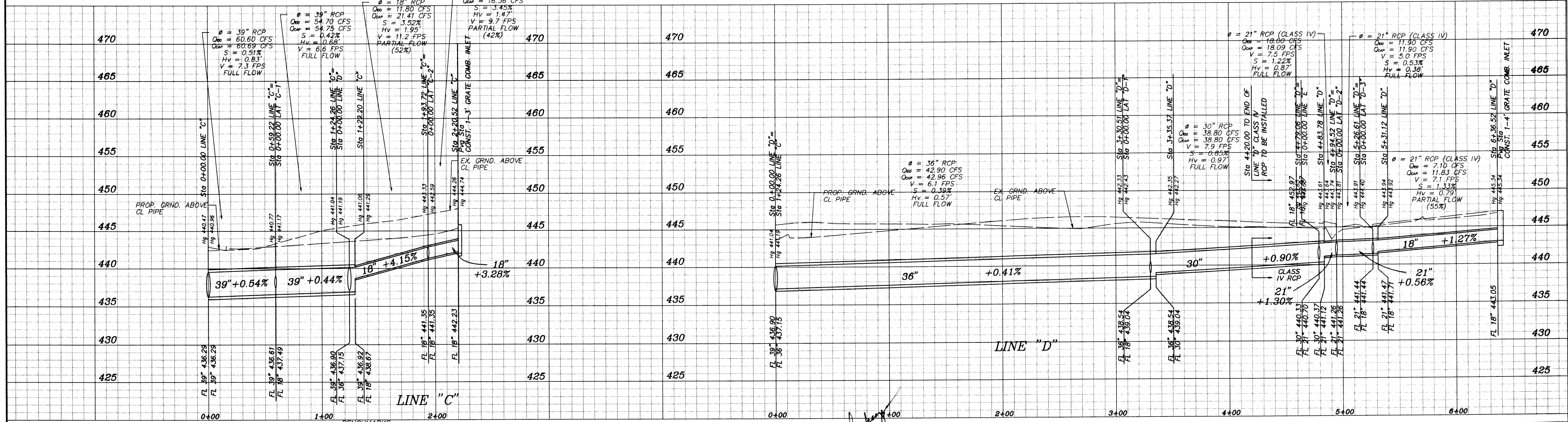
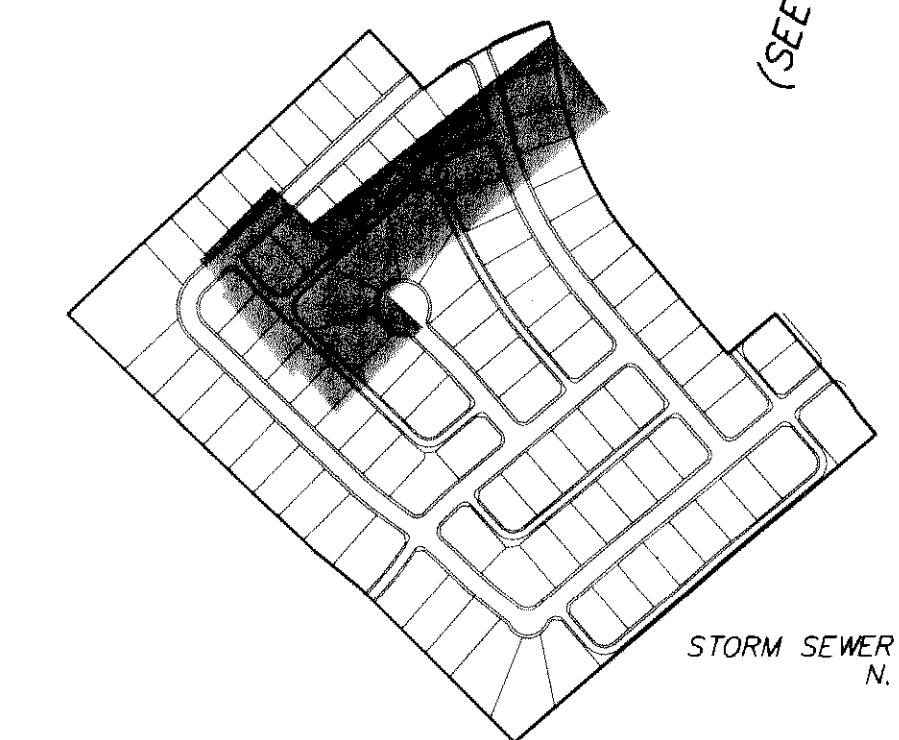


CURVE	RADIUS	DELTA	ARC	CHORD BEARING	CHORD
C10	65.00'	30°00'00"	34.03'	S58°00'28"E	33.65'
C11	65.00'	23°14'10"	26.36'	S57°10'37"E	26.18'

LINE	BEARING
L1	N43°00'28"W
L2	N45°33'32"W
L3	S76°59'32"W
L4	N75°12'30"E

CURVE	RADIUS	DELTA	ARC	CHORD BEARING	CHORD
C12	65.00'	27°26'56"	31.14'	N60°43'00"E	30.84'
C13	250.00'	23°09'06"	101.02'	N58°34'05"E	100.33'
C14	65.00'	31°02'15"	35.21'	N54°37'30"E	34.78'
C15	65.00'	37°45'11"	42.83'	N57°58'58"E	42.06'
C16	80.00'	13°59'50"	19.54'	S66°00'33"E	19.50'

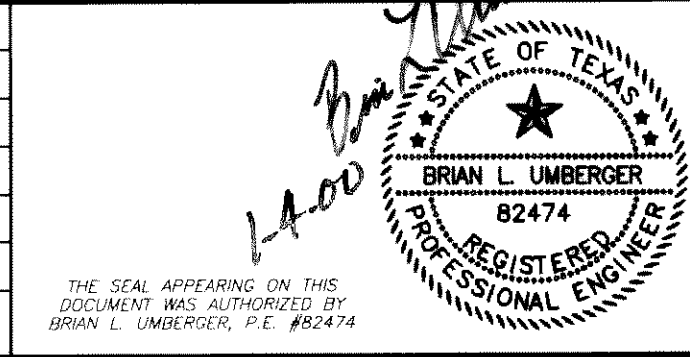
LINE	BEARING
L4	S46°59'32"W
L5	S76°51'34"W
L6	S59°00'38"E
L7	N16°03'28"W
L8	S10°44'54"W



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- SQUARE CUT ON CENTERLINE OF INLET WESTERLY FROM CLUBHOUSE ENTRANCE ELEV. 447.21

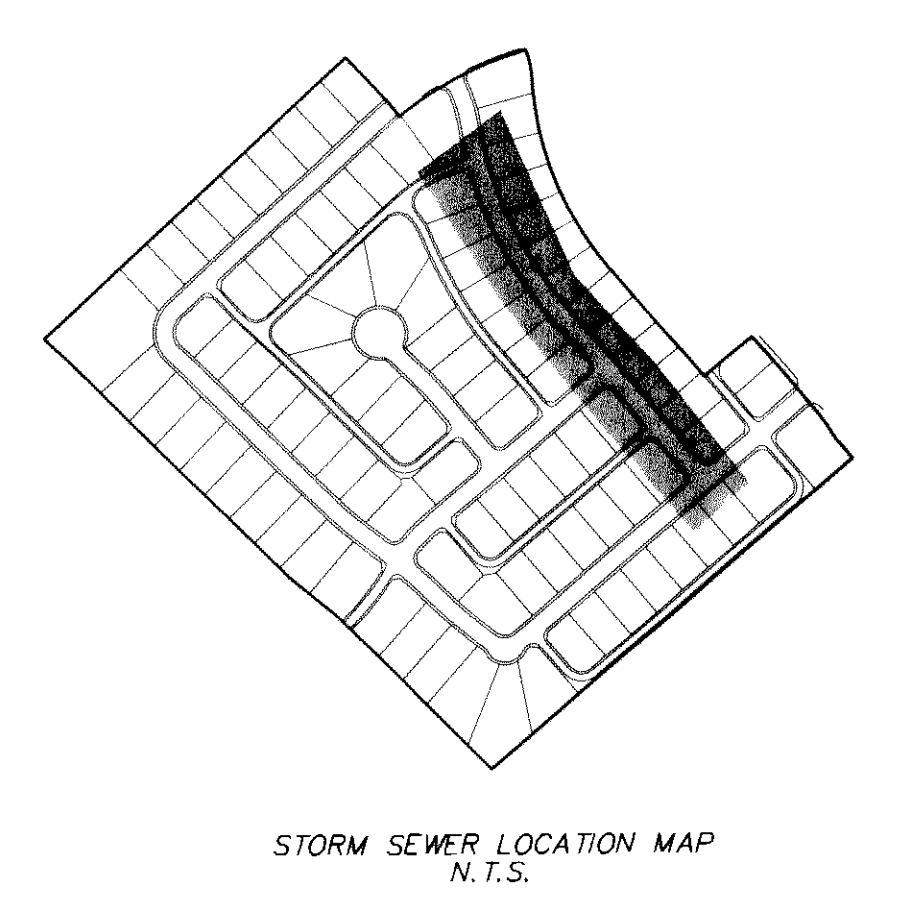
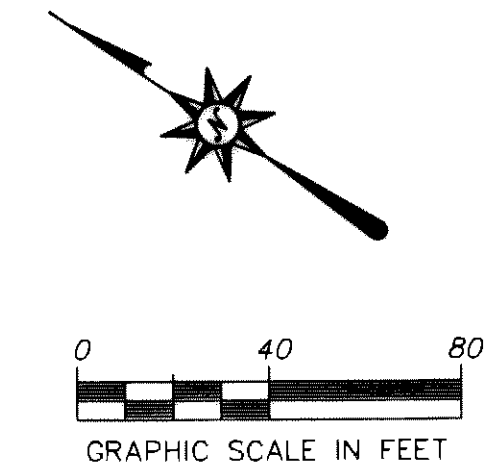
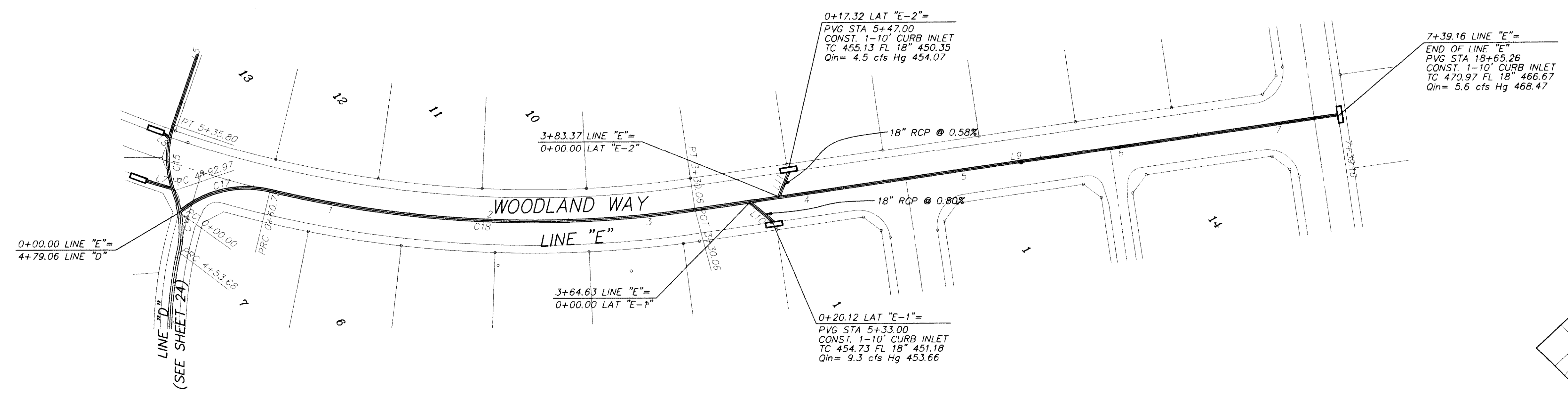
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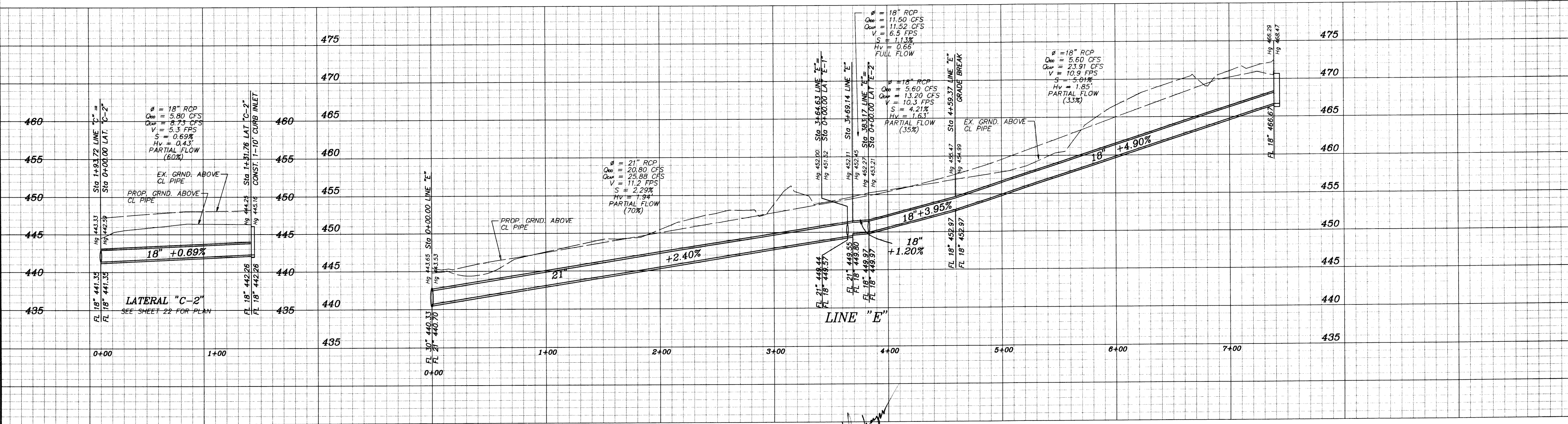
STORM SEWER PLAN & PROFILE
 TURTLE COVE ADDITION, PHASE 3
 ROCKWALL
 ROCKWALL COUNTY, TEXAS
 JOB NO. 95115.02
 SHEET 23 OF 28



CURVE	RADIUS	DELTA	ARC	CHORD BEARING	CHORD
C17	65.00'	53°33'07"	60.75'	S45°27'13"E	58.57'
C18	710.00'	21°43'58"	269.31'	S29°32'38"E	267.70'

LINE	BEARING
L9	N40°24'39"W
L10	S07°47'37"W
L11	S79°35'21"W

NOTE: NOTIFY DWU CONSTRUCTION INSPECTION AT (214) 948-4562 FORTY EIGHT (48) HOURS PRIOR TO CONSTRUCTION. ALSO, SEE DWU DETAILS FOR TYPICAL STORM SEWER INSTALLATION ON DRAINAGE AREA MAP



BENCHMARKS:

RECORD DRAWING
 DATE: 7-28-00
 THIS RECORD DRAWING HEREIN REFLECTS TO THE BEST OF THE DESIGN ENGINEER'S KNOWLEDGE THE APPROXIMATE LOCATION OF THE CONSTRUCTED WORK USING INFORMATION AS PROVIDED BY THE CONTRACTOR(S).

- SQUARE CUT ON NORTHEAST CURB ± 50' NORTHWEST OF RAILROAD ON TURTLE COVE BOULEVARD
ELEV. 469.36
- SQUARE CUT ON CENTERLINE OF INLET WESTERLY FROM CLUBHOUSE ENTRANCE
ELEV. 447.21

NO.	REVISION	BY	DATE

THE SEAL APPEARING ON THIS DOCUMENT HAS AUTHORIZED BY BRIAN L. UMBERGER, P.E. #2474

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STORM SEWER PLAN & PROFILE
 TURTLE COVE ADDITION, PHASE 3
 ROCKWALL
 ROCKWALL COUNTY, TEXAS
 JOB NO. 95115.02
 SHEET 24 of 28

TURTLE COVE ADDITION, PHASE 3, STORM SEWER PLAN & PROFILE