

WOODLAND LAKES ESTATES 2ND ADD
 PROJECT NAME

DRAINAGE & UTILITY PLAN
 SHEET TITLE

GA/TH CONSULTANTS, INC.
 411 N. WEBB ROAD
 WICHITA, KS 67208
 MARCH 1998
 921580UDWC JOB NO.
 11-11-101 DATE

GA/TH MID-KANSAS ENGINEERING
 CONSULTANTS, INC.
 611 N. WEBB ROAD
 WICHITA, KS 67208
 MARCH 1998
 921580UDWC JOB NO.
 11-11-101 DATE

BENCHMARKS

BM #1: "T" POST 10' E. OF CUR-DE-SAC ON WEST SIDE LOT 4, BLOCK 2
 WOODLAND LAKES ADDITION
 NGVD EL.=1356.32

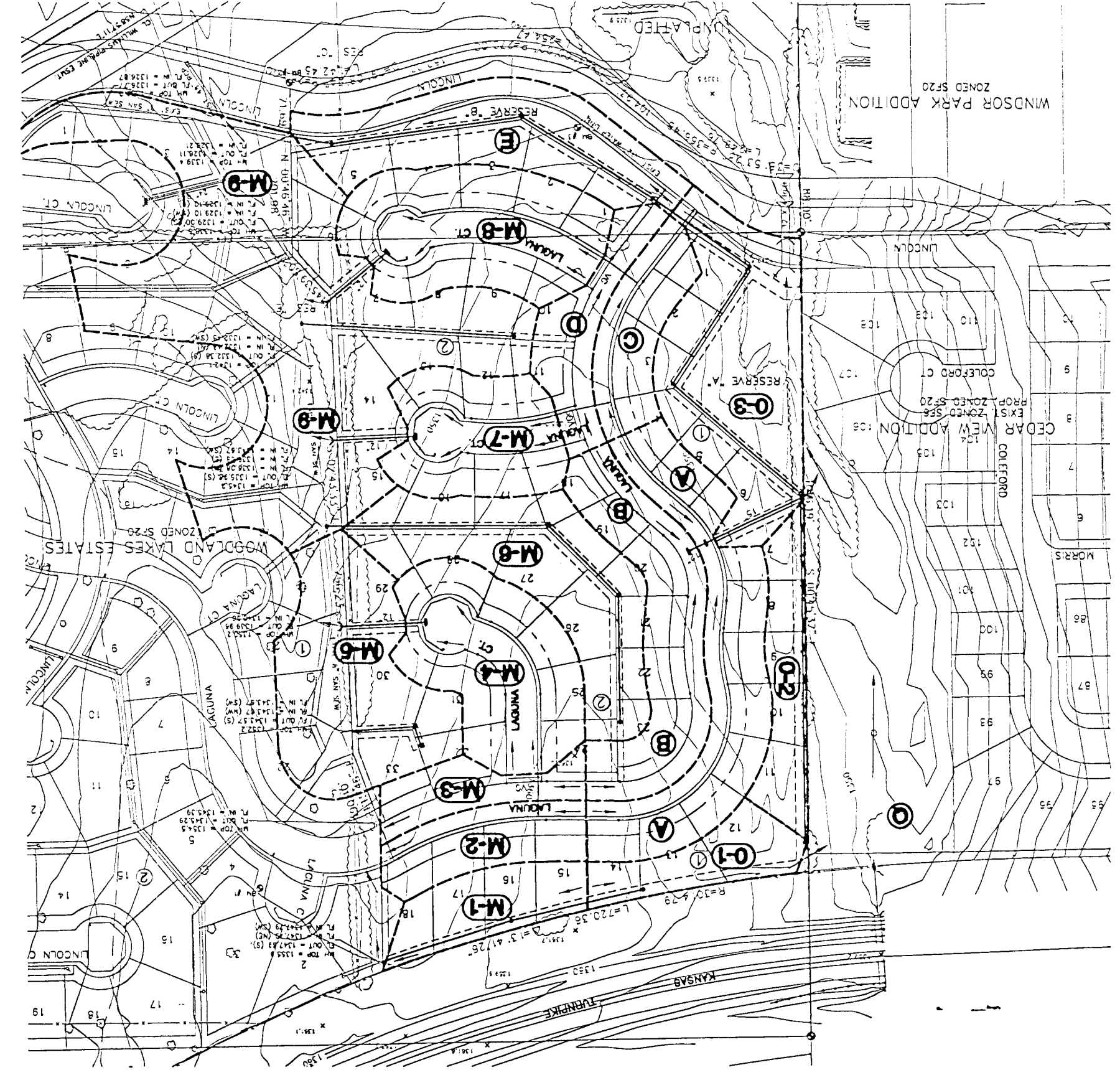
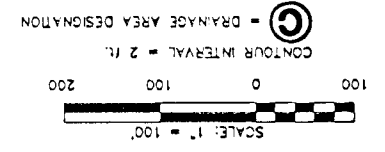
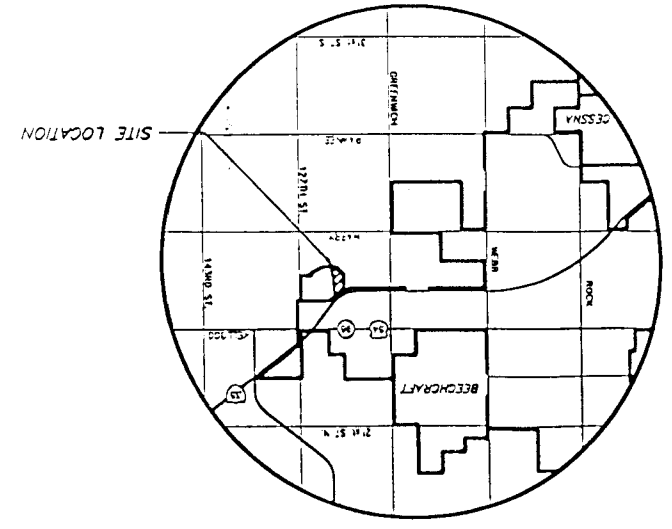
BM #2: "T" POST 10' S. OF P.I. ON SOUTH SIDE OF LINCOLN, 358' EAST OF CENTER OF SECTION 27, 127S, R2E.
 NGVD EL.=1338.58

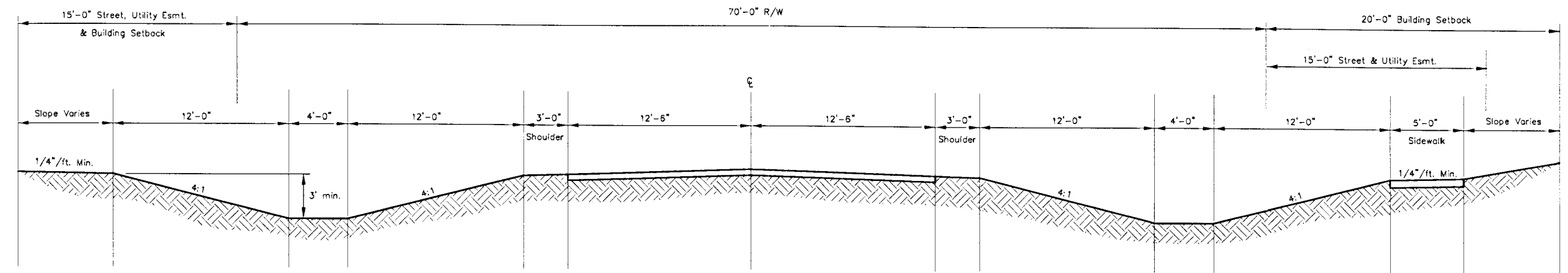
BM #3: "T" POST 10' S. OF P.C. ON NORTH SIDE OF LINCOLN, 358' EAST OF CENTER OF SECTION 27, 127S, R2E.
 NGVD EL.=1345.23

RESERVE "A"
 DRAINAGE
 OPEN SPACE
 LANDSCAPING
 SIDEWALKS

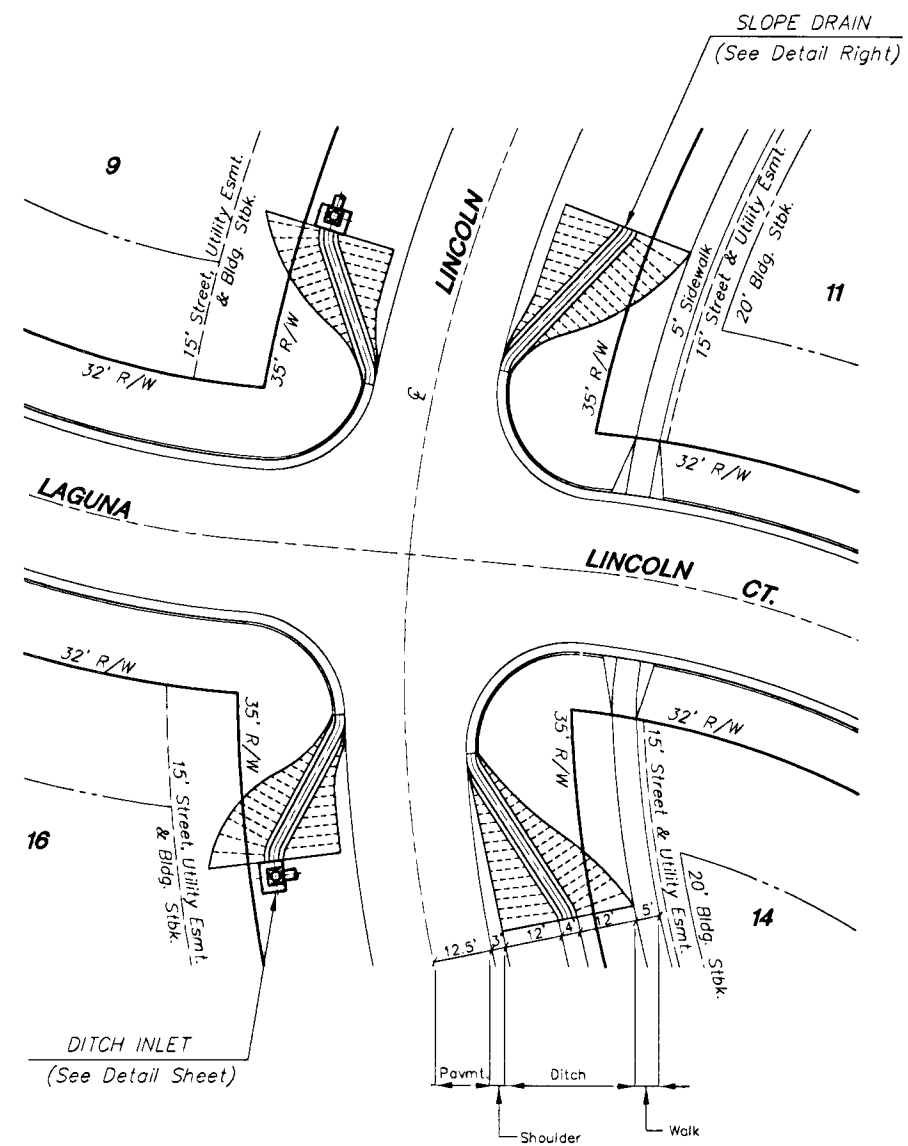
RESERVE "B"
 DRAINAGE
 OPEN SPACE
 LANDSCAPING
 SIDEWALKS

VICINITY MAP

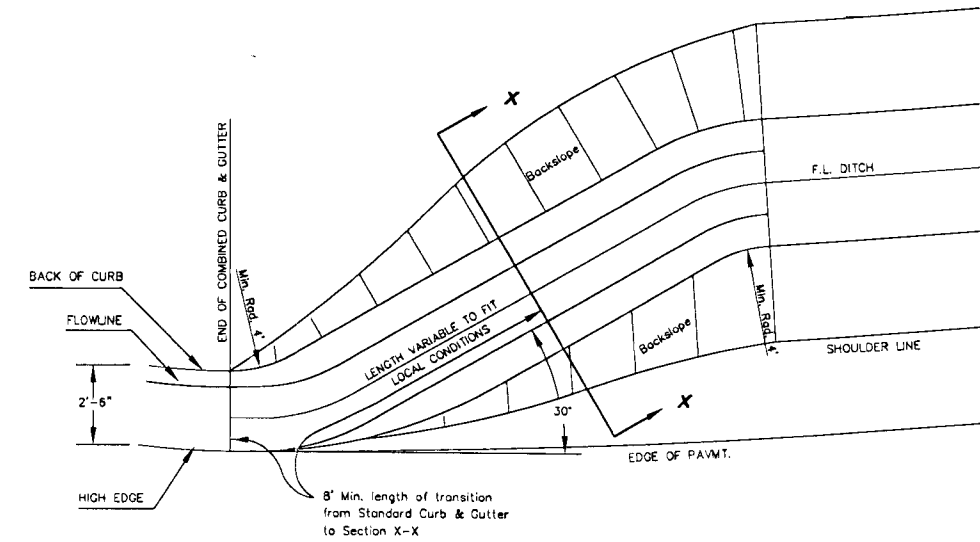




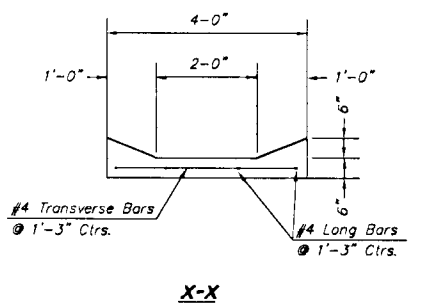
TYPICAL CROSS SECTION FOR LINCOLN



TYPICAL INTERSECTION DETAIL



CONCRETE SLOPE DRAIN DETAIL



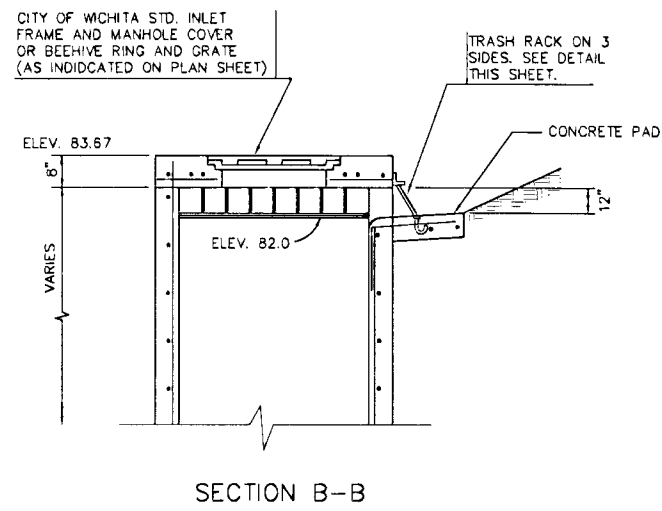
WOODLAND LAKE ESTATES
 PROJECT NAME
RURAL STREET SECTION & DRAINAGE DETAILS
 SHEET TITLE

MID-KANSAS ENGINEERING CONSULTANTS, INC.
 411 N. WEBB ROAD
 WICHITA, KS. 67206
 316-684-9600

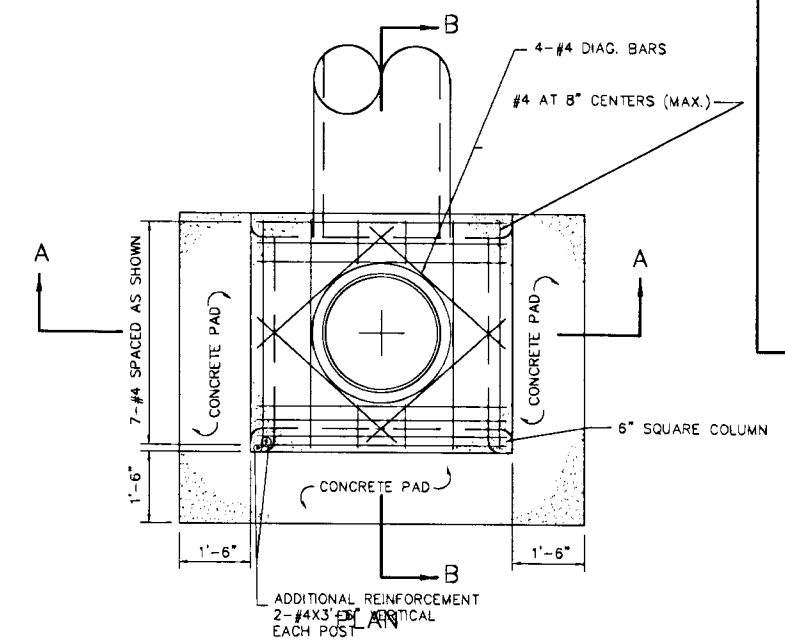
DATE: 12/13/95
 JOB NO.: FLUMEDET

DESIGN BY: KHB
 DRAWN BY: KKL
 CHECKED BY: KHB

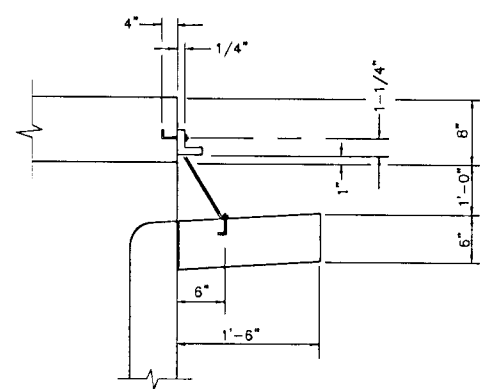
1 / 1
 SHEET OF



SECTION B-B



ADDITIONAL REINFORCEMENT
2-#4X3\"/>



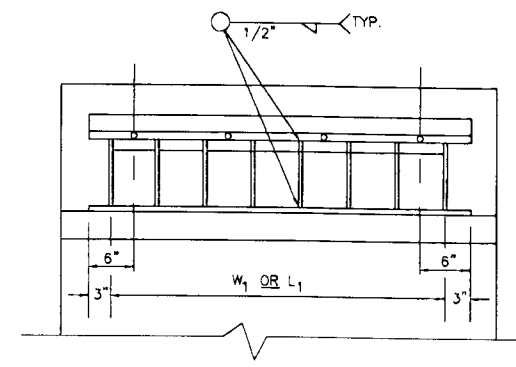
2-1/2" X 2-1/2" X 1/4" \angle
L = (L₁ OR W₁) + 6"

1/2" ϕ BARS X 1'-2" AT 4" O.C.
NUMBER OF BARS = 3 X (L₁ OR W₁) + 1

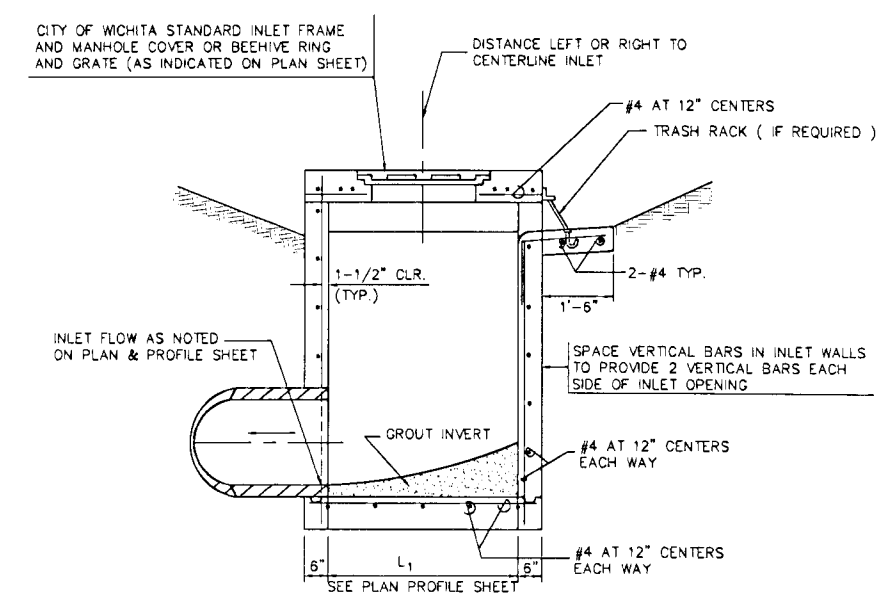
2-1/2" X 1/4" IRON
L = (L₁ OR W₁) + 6"

1/2" ϕ X 6" ST. STEEL BENT ANCHOR
BOLT WITH THREADED END & S.S. HEX
NUT, TYPICAL, 8 REQUIRED, EVENLY
SPACED.

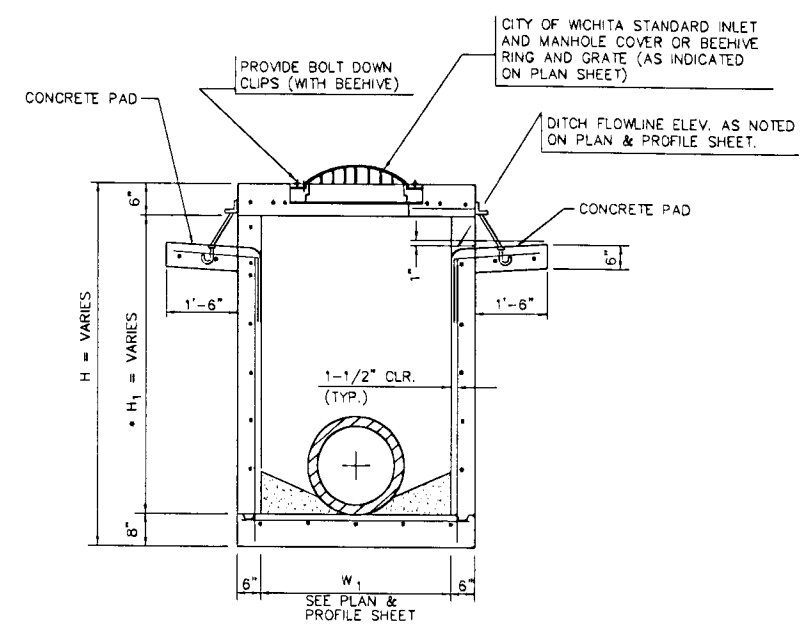
NOTE:
HOT DIP GALVANIZED TRASH
RACK AFTER ASSEMBLY



TRASH RACK DETAIL
FOR USE WITH TYPE 1-A DITCH INLET
(NO SCALE)

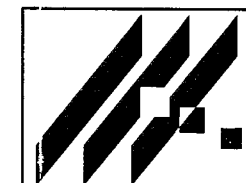


SECTION B-B



* WHERE H₁ IS GREATER THAN 6'-0" USE 8" WALLS.

SECTION A-A



WOODLAND LAKE ESTATES
PROJECT NAME

DITCH INLET DETAILS
SHEET TITLE

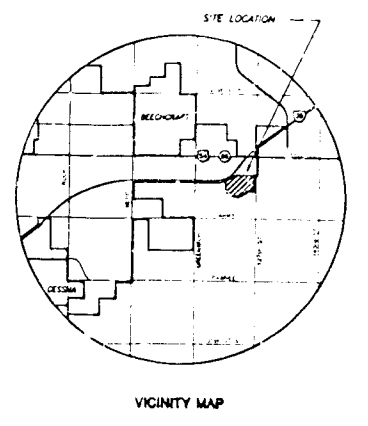
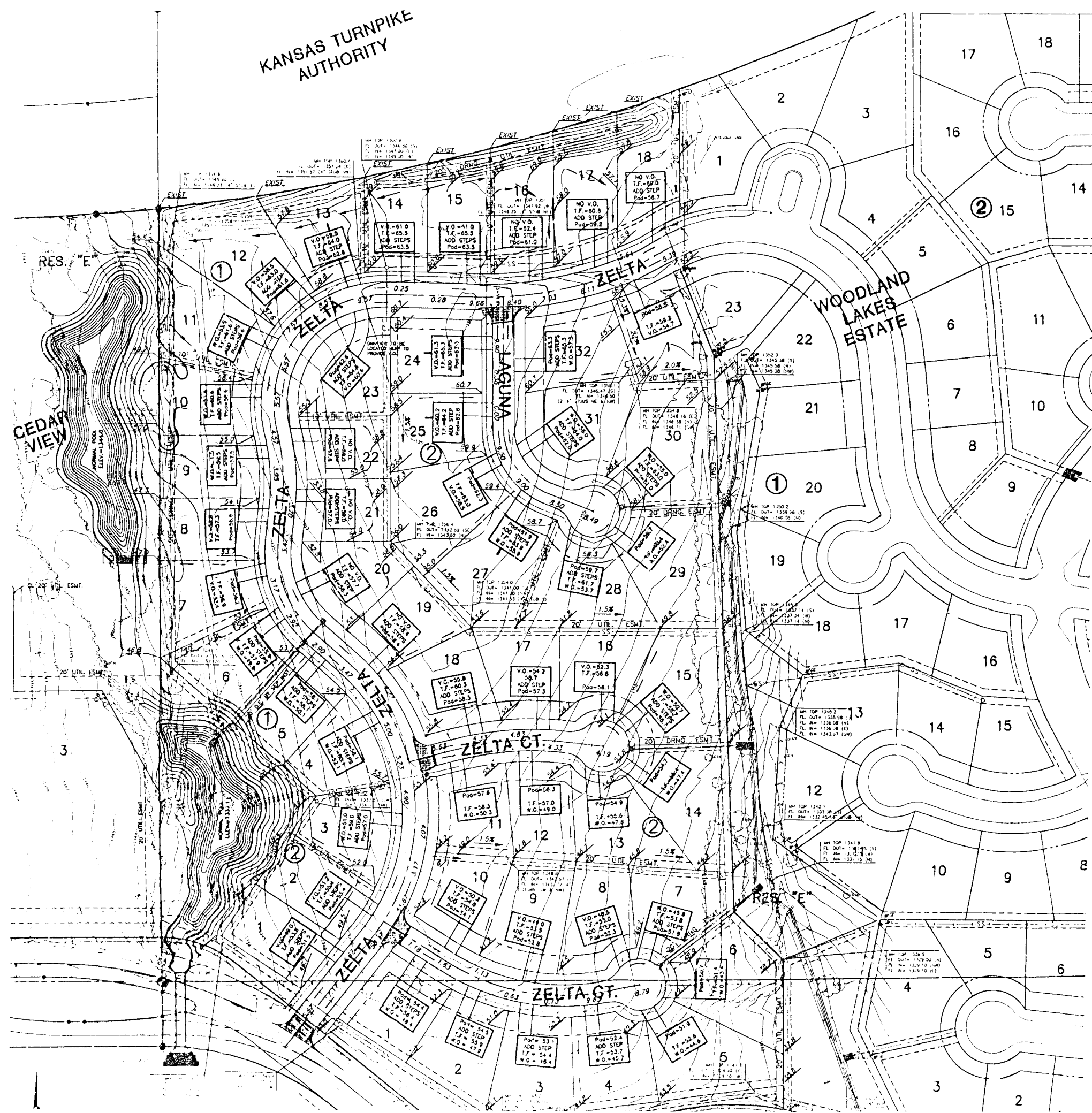
MID-KANSAS ENGINEERING
CONSULTANTS, INC.
411 N. WEBB ROAD
WICHITA, KS. 67205
316-684-9600

DESIGN BY:	KKL	CHECKED BY:	KHB
DATE:	12/13/95	JOB NO.:	DITCH-IN
		SHEET OF:	1 / 1

RATIONAL FORMULA DRAINAGE ANALYSIS
WOODLAND LAKES ESTATES 2ND ADDITION

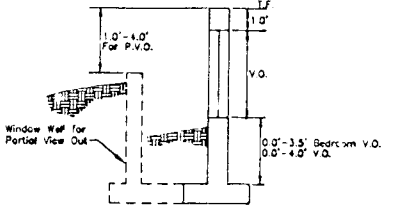
Area ID**	Area ac	Accum. Area ac	C2	C100	Tc2 min	Tc100 min	I2 in/hr	I100 in/hr	Q2 cfs	Q100 cfs	INLET		PIPE		COMMENTS
											Qi cfs	Qb cfs	Pipe Size in	Min Slope %	
A*	1.97		0.50	0.76	23	15	3.10	7.37	3.06	11.06	3.06		12	1.00%	2-year Design
B*	1.59		0.50	0.76	19	15	3.42	7.37	2.72	8.90	2.72				2-year Design
A + B		3.6	0.50	0.76	23	15	3.10	7.37	5.52	19.95			15	2.00%	2-year pipe, dmge esmnt between Lots 6 and 7, Block 1 for 100-yr
C*	0.79		0.50	0.76	18	15	3.51	7.37	1.43	4.44					To north side Lincoln, Reserve A at Cedar View Addition
D*	0.73		0.50	0.76	20	15	3.42	7.37	1.25	4.08					E Side Laguna Runoff
E*	1.78		0.50	0.76	26	15	2.96	7.37	2.83	9.96					Runoff from N. Side Lincoln
D + E		2.5	0.50	0.76	34	19	2.52	6.68	3.16	12.72				0.10%	Channel Flow E to 48" RCP @ WLE Reserve E
M-1	0.76		0.68	0.80	15	15	3.83	7.37	1.97	4.47					To WLE Watershed F-1
M-2	0.79		0.68	0.80	15	15	3.83	7.37	2.06	4.66					To WLE Watershed F-1
M-1 + M-2		1.5	0.50	0.76	20	15	3.33	7.37	2.58	8.67				0.10%	To WLE Watershed F-1
M-3	0.57		0.50	0.76	18	15	3.61	7.37	1.03	3.21					To WLE Watershed H-2
M-4	1.77		0.50	0.76	19	15	3.51	7.37	3.10	9.90	3.10		12		2-year pipe, dmge esmnt between Lots 29 and 30, Block 2 for 100-yr
M-5	2.11		0.32	0.67	23	15	3.10	7.37	2.09	10.4					Intervening Flow to Reserve E
M-1 THRU M-5		6.0	0.44	0.73	27	15	2.84	7.37	7.44	32.2				0.10%	Total to narrow section of Reserve E
M-6	1.93		0.50	0.76	26	15	2.96	7.37	2.86	10.8					Average slope = 1.5 percent
M-7	1.25		0.50	0.76	15	15	3.83	7.37	2.40	7.01	2.40		12	2.00%	2-year pipe, dmge esmnt between Lots 14 and 15, Block 2 for 100-yr
M-8	1.87		0.50	0.76	15	15	3.83	7.37	3.59	10.50	3.59		12	2.00%	2-year pipe, dmge esmnt between Lots 6 and 7, Block 2 for 100-yr
M-9	5.95		0.32	0.67	33	18	2.52	6.84	4.80	27.26					South half of Reserve E
M-1 THRU M-9		17.0	0.41	0.72	40	22	2.24	6.26	15.79	76.34				0.10%	Discharge to 48 in RCP at Woodland Lake Estates under Lincoln
O-1	0.96		0.32	0.67	32	17	2.62	7.00	0.56	3.11					Discharge to Cedar View Reserve H
O-2	0.76		0.32	0.67	15	15	3.83	7.37	0.93	3.76					Discharge to Cedar View Reserve H
O-3	2.32		0.32	0.67	32	18	2.57	7.00	1.91	10.87					Discharge to Cedar View Reserve H
O-1 THRU O-3		3.7	0.24	0.51	36	25	2.44	6.01	2.19	11.47					Discharge to Cedar View Reserve H
Q	147.00		0.52	0.68	72	52	1.47	4.05	112.37	404.84					Off-site watershed including area north of I-35
O-1 THRU O-3 + Q + A + B		154.3	0.51	0.66	72	52	1.47	4.05	116.31	412.57					Check flow to 12x4 RCB at Lincoln
Pre-development East	18.00		0.30	0.65	46	26	2.08	5.90	11.23	69.03					Discharge to Woodland Lakes Estates Reserve E
Pre-development West	9.00		0.30	0.65	44	25	2.11	6.01	5.70	35.16					Discharge to Cedar View Reserve H

From Sedgwick Co. Soil Survey, soils on site are in HSG D
Tc Calculated Using City of Wichita Procedure
Watersheds are single family 1/4 Acre areas except as noted below
Watersheds M-5 and M-9 are Urban Lawn areas



MINIMUM PAD ELEVATIONS (LOWEST OPENINGS)

LOTS	BLOCK	ELEVATION (CITY DATUM)	ELEVATION (USGS)
1-6	1	161.6	1349.0
7-12	1	162.6	1351.0



VIEW OUT & PARTIAL VIEW OUT DETAIL

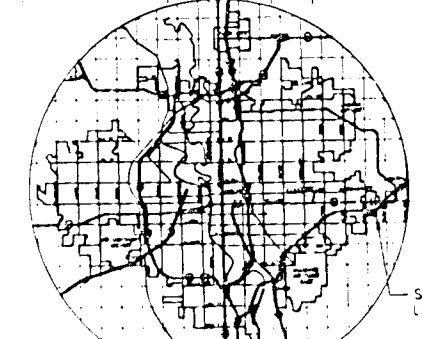
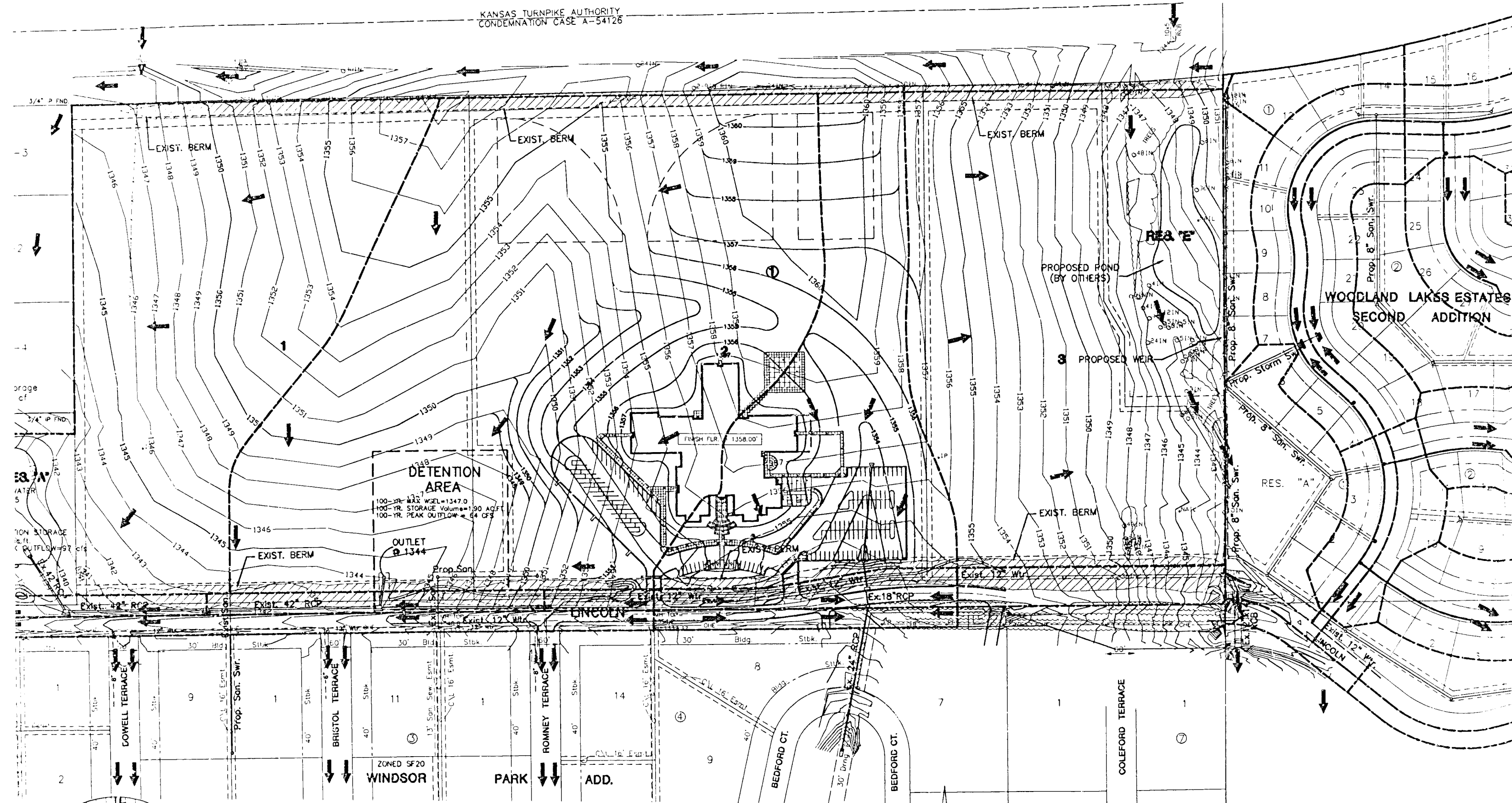
LEGEND

- VO VIEW OUT
- WO WALK OUT
- PVO PARTIAL VIEW OUT
- PWO PARTIAL WALK OUT
- NO VO NO VIEW OUT

BENCHMARKS

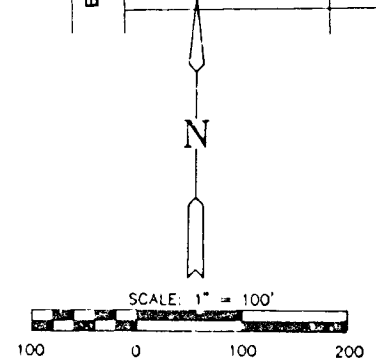
- BM #2 " " OUT ON EAST END OF THE NORTH HUBGUARD U.S. 54 EAST BOUND BRIDGE OVER THE K.T.A. USGS=1364.635 CITY=177.235
- BM #3 " " NE COR. OF HEADWALL OF RCB UNDER LINCOLN 31' E & 11' N OF CTR SEC. 27, T27S, R2E USGS=1345.25 CITY=157.85

APPROVED DRAINAGE PLAN



- ZONING**
 EXISTING - SF20
 PROPOSED - SF6
 (CHANGE BY ANNEXATION)
- RESERVE A-H**
 UTILITY EASEMENT
 LANDSCAPING
 BERMING
 OPEN SPACE
- RESERVE A, H**
 DRAINAGE
 LAKE
- RESERVE I & J**
 ENTRY MONUMENT
 LANDSCAPING
 BERMING
 OPEN SPACE
- RESERVE A**
 ENTRY MONUMENT

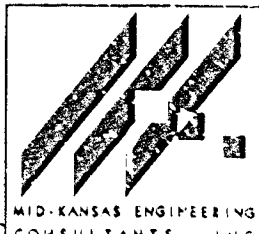
BENCHMARKS
 BM#1 50d in HLP 105' E & 45' W of 1/4 cor.
 Elev.=1334.61

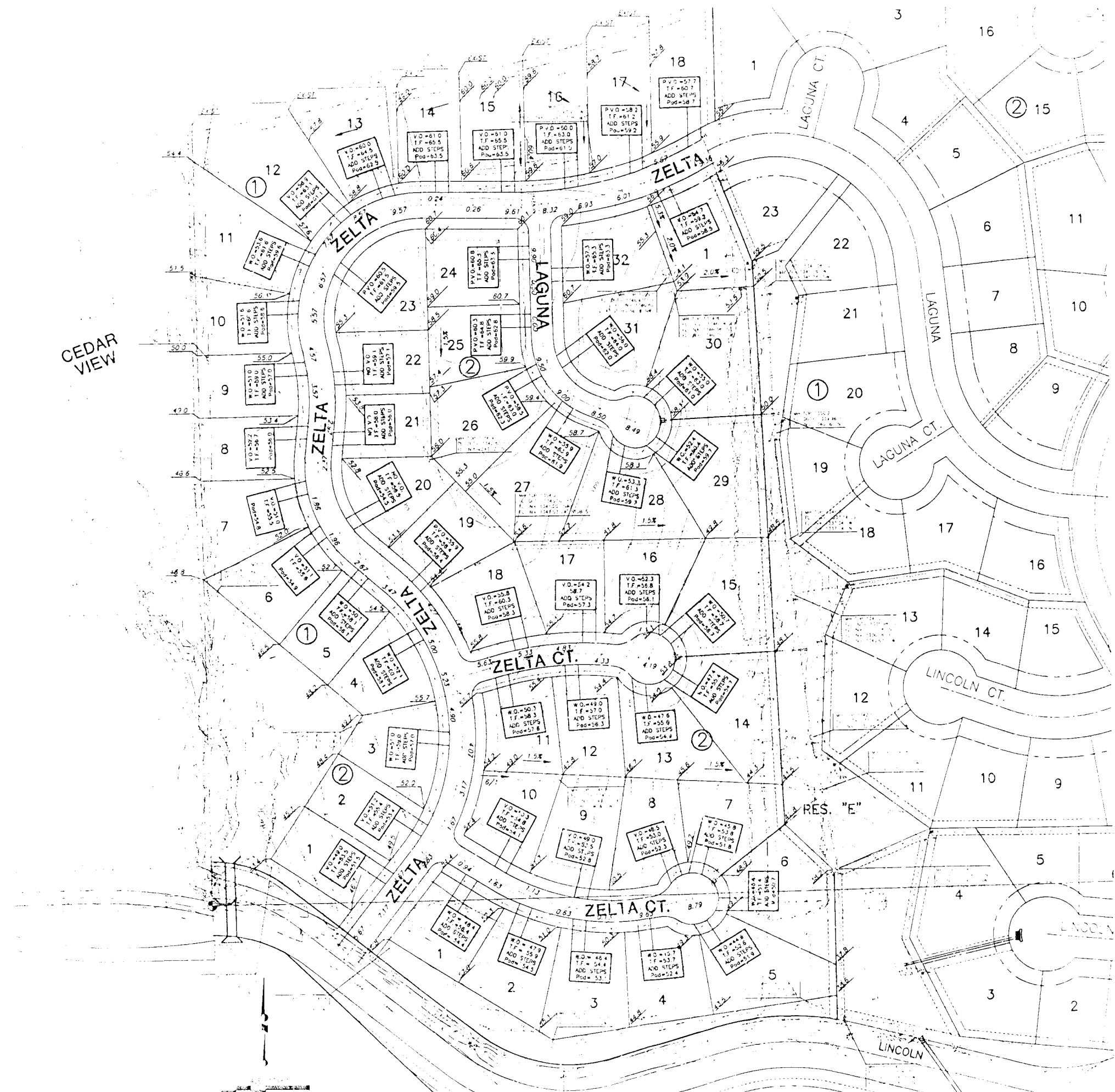


DRAINAGE AND UTILITY PLAN (REVISED 2-3-99)

CEDAR VIEW ADDITION

OWNER: LEEWOOD HOMES, INC.
 JOE LEE, PRESIDENT
 3500 N. ROCK ROAD BLDG. 2200, STE. 204
 WICHITA, KANSAS 67226

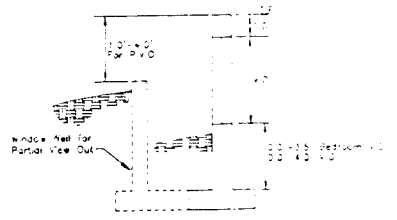




CEDAR VIEW

MINIMUM PAD ELEVATIONS
(LOWEST OPENINGS)

LOTS	BLOCK	ELEVATION	ELEVATION FOOT DATUM
1-6	1	161.6	1349.0
7-12	1	162.6	1350.0



VIEW OUT & PARTIAL VIEW OUT DETAIL

LEGEND

- VO 44'-0"
- WO 44'-0"
- PVO 44'-0"
- PWO 44'-0"
- NO VO 44'-0"