

12-5-96 ①

MAPLE DUNES

SB1 SECTION 23 DA = 45.0 AC = 0.073 SQ. MI.

SOIL TYPES

Vb VANDAS 70% } HYDROLOGIC GROUP B
Eb ELANDCO 5% } (ALL SUBBASINS)
Mb MILAN 5%

CN EXISTING CONDITION = 81.0 CULTIVATED W/OUT
CONSERVATION TREATMENT

$S = \frac{1000}{81} - 10 = 2.35$

LENGTH = 3400' SLOPE = 50' = 1.47%

$LAG = \frac{3400 \cdot 1.47 \cdot 1.7}{1900 \cdot 1.47 \cdot 5} = 0.08 \text{ HR}$

SB2 SECTION 24 DA = 56.0 AC = 0.075 SQ. MI.

CN = 81.0 EXISTING

LENGTH = 2800' SLOPE = 15' = 0.54%

$LAG = \frac{2800 \cdot 0.54 \cdot 1.7}{1900 \cdot 0.54 \cdot 5} = 0.96 \text{ HR}$

②

SB3 SEC 25 AND 26 DA = 43.0 AC = 0.1297 SQ. MI.

CN = 81.0 EXISTING

LENGTH = 5000' S = 50' = 1.0%

$LAG = \frac{5000 \cdot 1.0 \cdot 1.7}{1900 \cdot 1.0 \cdot 5} = 1.12 \text{ HR}$

POUND STORAGE

ELEV	AREA	STORAGE
130.5	1.33 AC	0
136.0	3.00 AC	11.9 AC FT

DISCHARGE STRUCTURE - WEIR

③

482

SECTION 24 DEVELOPED

RECID LOSS	CU	AREA	
COMMERCIAL	75	45	3375
OPEN SPACE	92	3.7	340
PAVD	61	6.0	3660
	100	1.3	1300
		56	1211
			75.2

PERCENT IMPERVIOUS

	%	AREA	
RESIDENTIAL	38	45	1710
COMMERCIAL	85	3.7	315
PAVD	20	1.3	1300
OPEN	-	6.0	-
		56.0	2155
			38.5% IMP.

DEVELOPED LAG TIME

$LAG = 0.47 \left[\frac{0.55}{\sqrt{24}} \right] \cdot 385 - 0.57 = 0.27 \text{ HR}$

***** FLOOD HYDROGRAPH PACKAGE (HBC-1) *****
 MAY 1991
 VERSION 4.0.1E
 RUN DATE 12/05/96 TIME 11:52:26

***** U.S. ARMY CORPS OF ENGINEERS *****
 HYDROLOGIC ENGINEERING CENTER
 609 SECOND STREET
 DAVIS, CALIFORNIA 95616
 (916) 551-1748

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THIS PROGRAM REPLACES ALL PREVIOUS VERSIONS OF HBC-1 KNOWN AS HBC1 (JAN 73), HBC1G, HBC1D, AND HBC1W.
 THE DEFINITIONS OF VARIABLES -RIMP- AND -RTOR- HAVE CHANGED FROM THOSE USED WITH THE 1973-STYLE INPUT STRUCTURE.
 THE DEFINITION OF -ANRR- ON RM-CARD HAS CHANGED WITH REVISIONS DATED 28 SEP 81. THIS IS THE FORTRAN77 VERSION.
 NEW OPTIONS: DAMBRAN OUTFLOW SUBMERGENCE, SINGLE EVENT DAMAGE CALCULATION, DSS-WRITE STAGE FREQUENCY,
 DSS-READ TIME SERIES AT DESIRED CALCULATION INTERVAL, LOSS RATE-GREEN AND AMPY INFILTRATION
 KINEMATIC WAVE: NEW FINITE DIFFERENCE ALGORITHM

MAPLE DUNES
 6HR - Q100 STORM
 AFTER DEVELOPMENT OF MAPLE DUNES
 11.9 AC FT STORAGE AVAILABLE W PAVD 130.5 NWS
 TO 136.0
 FILE: MAPLE

HBC-1 INPUT PAGE 1

LINE ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10.....

1 ID Maple Dunes
 2 PRM FLOW - MAPLE DUNES DEVELOPED
 3 ID Q100 - 6HR STORM
 4 FILE: MAPLE 1
 5 IT 2 0 181
 6 IO 5 0

7 KK SB1
 8 KM COMPUTE HYDROGRAPH
 9 KO 21
 10 BA .0703
 11 PR 100 0 .87 1.86 3.8 4.6 5.1 6.0
 12 LS 0 81.0
 13 UD .68

14 KK SB2
 15 KM COMPUTE HYDROGRAPH
 16 KO 21
 17 BA .0875
 18 LS 0 75.2
 19 UD .27

20 KK SB3
 21 KM COMPUTE HYDROGRAPH
 22 KO 21
 23 BA .1297
 24 LS 0 81.0
 25 UD 1.12

26 KK J1 COMBINE SB1 THROUGH SB3 AT J1
 27 KC 3
 28 KO 21

29 KK WEIR 25' WEIR WITH 5'X3.5' NOTCH
 30 KM ROUTE FLOW AT J1 THROUGH WEIR
 31 KO 21
 32 RS 1 STOR -1
 33 SV 0 11.9
 34 SE 130.5 135.0
 35 SQ 0 100.8 208.6 372.8
 36 SE 130.5 134.0 135.0 136.0
 37 ZZ

***** FLOOD HYDROGRAPH PACKAGE (HBC-1) *****
 MAY 1991
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U.S. ARMY CORPS OF ENGINEERS
 HYDROLOGIC ENGINEERING CENTER
 609 SECOND STREET
 DAVIS, CALIFORNIA 95616
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Maple Dunes
 PAVD LOW - MAPLE DUNES DEVELOPED
 Q100 - 6HR STORM
 FILE: MAPLE 1

6 IO OUTPUT CONTROL VARIABLES
 IPRT 5 PRINT CONTROL
 IPLOT 0 PLOT CONTROL
 QSCAL 0. HYDROGRAPH PLOT SCALE
 IPNCH 0 PUNCH COMPUTED HYDROGRAPH
 IOPT 21 SAVE HYDROGRAPH ON THIS UNIT
 ISAV1 1 FIRST ORIGINATE PUNCHED OR SAVED
 ISAV2 181 LAST ORIGINATE PUNCHED OR SAVED
 TIMINT 0.033 TIME INTERVAL IN HOURS

HYDROGRAPH TIME DATA
 NINT 2 MINUTES IN COMPUTATION INTERVAL
 IDATE 1 0 STARTING DATE
 ITIME 0000 STARTING TIME
 NO 181 NUMBER OF HYDROGRAPH ORIGINATES
 HDATE 1 0 ENDING DATE
 HTIME 0600 ENDING TIME
 ICENT 15 CENTURY MARK

COMPUTATION INTERVAL 0.03 HOURS
 TOTAL TIME BASE 6.00 HOURS

ENGLISH UNITS
 DRAINAGE AREA SQUARE MILES
 PRECIPITATION DEPTH INCHES
 LENGTH, ELEVATION FEET
 FLOW CUBIC FEET PER SECOND
 STORAGE VOLUME ACO-FEET
 SURFACE AREA ACRES
 TEMPERATURE DEGREES FAHRENHEIT

QSCAL 0. HYDROGRAPH PLOT SCALE
 IPNCH 0 PUNCH COMPUTED HYDROGRAPH
 IOPT 21 SAVE HYDROGRAPH ON THIS UNIT
 ISAV1 1 FIRST ORIGINATE PUNCHED OR SAVED
 ISAV2 181 LAST ORIGINATE PUNCHED OR SAVED
 TIMINT 0.033 TIME INTERVAL IN HOURS

14 KK SB2

16 IO OUTPUT CONTROL VARIABLES
 IPRT 5 PRINT CONTROL
 IPLOT 0 PLOT CONTROL
 QSCAL 0. HYDROGRAPH PLOT SCALE
 IPNCH 0 PUNCH COMPUTED HYDROGRAPH
 IOPT 21 SAVE HYDROGRAPH ON THIS UNIT
 ISAV1 1 FIRST ORIGINATE PUNCHED OR SAVED
 ISAV2 181 LAST ORIGINATE PUNCHED OR SAVED
 TIMINT 0.033 TIME INTERVAL IN HOURS

20 KK SB3

22 IO OUTPUT CONTROL VARIABLES
 IPRT 5 PRINT CONTROL
 IPLOT 0 PLOT CONTROL
 QSCAL 0. HYDROGRAPH PLOT SCALE
 IPNCH 0 PUNCH COMPUTED HYDROGRAPH
 IOPT 21 SAVE HYDROGRAPH ON THIS UNIT
 ISAV1 1 FIRST ORIGINATE PUNCHED OR SAVED
 ISAV2 181 LAST ORIGINATE PUNCHED OR SAVED
 TIMINT 0.033 TIME INTERVAL IN HOURS

26 KK J1 COMBINE SB1 THROUGH SB3 AT J1

28 IO OUTPUT CONTROL VARIABLES
 IPRT 5 PRINT CONTROL
 IPLOT 0 PLOT CONTROL
 QSCAL 0. HYDROGRAPH PLOT SCALE
 IPNCH 0 PUNCH COMPUTED HYDROGRAPH
 IOPT 21 SAVE HYDROGRAPH ON THIS UNIT
 ISAV1 1 FIRST ORIGINATE PUNCHED OR SAVED
 ISAV2 181 LAST ORIGINATE PUNCHED OR SAVED
 TIMINT 0.033 TIME INTERVAL IN HOURS

29 KK WEIR 25' WEIR WITH 5'X3.5' NOTCH

31 IO OUTPUT CONTROL VARIABLES
 IPRT 5 PRINT CONTROL
 IPLOT 0 PLOT CONTROL
 QSCAL 0. HYDROGRAPH PLOT SCALE
 IPNCH 0 PUNCH COMPUTED HYDROGRAPH
 IOPT 21 SAVE HYDROGRAPH ON THIS UNIT
 ISAV1 1 FIRST ORIGINATE PUNCHED OR SAVED
 ISAV2 181 LAST ORIGINATE PUNCHED OR SAVED
 TIMINT 0.033 TIME INTERVAL IN HOURS

RUNOFF SUMMARY FLOW IN CUBIC FEET PER SECOND TIME IN HOURS, AREA IN SQUARE MILES									
OPERATION	STATION	PEAK FLOW	TIME OF PEAK	AVERAGE FLOW FOR MAXIMUM PERIOD			BASIN AREA	MAXIMUM STAGE	TIME OF MAX STAGE
HYDROGRAPH AT	SB1	119.	3.77	28.	28.	28.	0.07		
HYDROGRAPH AT	SB2	207.	3.33	30.	30.	30.	0.09		
HYDROGRAPH AT	SB3	155.	4.27	46.	46.	46.	0.13		
3 COMBINED AT	J1	326.	3.56	104.	104.	104.	0.29		
ROUTED TO	WEIR	304.	3.97	90.	90.	90.	0.29	135.8'	3.97

*** NORMAL END OF HEC-1 ***

* FLOOD HYDROGRAPH PACKAGE (HEC-1) *
* MAY 1991 *
* VERSION 4.0.1E *
* RUN DATE 12/05/96 TIME 09:04:18 *

* U.S. ARMY CORPS OF ENGINEERS *
* HYDROLOGIC ENGINEERING CENTER *
* 609 SECOND STREET *
* DAVIS, CALIFORNIA 95616 *
* (916) 551-1748 *

X X XXXXX XXXX X
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X X X X X X
X X X X X X
X X XXXXX XXXX X

THIS PROGRAM REPLACES ALL PREVIOUS VERSIONS OF HEC-1 KNOWN AS HEC1 (JAN 73), HEC1GS, HEC1DS, AND HEC1KW.
THE DEFINITIONS OF VARIABLES -RTIME- AND -RTOR- HAVE CHANGED FROM THOSE USED WITH THE 1973-STYLE INPUT STRUCTURE.
THE DEFINITION OF -JUNK- ON RM-CARD HAS CHANGED WITH REVISIONS DATED 28 SEP 81. THIS IS THE FORTRAN77 VERSION
NEW OPTIONS: DAMBREAK OUTFLOW SUBMERGENCE, SINGLE EVENT DAMAGE CALCULATION, DSS-WRITE STAGE FREQUENCY,
DSS-READ TIME SERIES AT DESIRED CALCULATION INTERVAL LOSS RATE-GREEN AND ANET INFILTRATION
KINEMATIC WAVE: NEW FINITE DIFFERENCE ALGORITHM

MAPLE DUNES
GAR - Q100 STORM
EXISTING CONDITIONS
FILE: MAPLE

HEC-1 INPUT PAGE 1

LINE	ID	1	2	3	4	5	6	7	8	9	10
1	ID	Maple Dunes									
2	ID	PEAK FLOW EXISTING CONDITION									
3	ID	Q100 - 6HR STORM									
4	ID	File: Maple									
5	IT	2	0	181							
6	IO	5	0								
7	KK	SB1									
8	KM	COMPUTE HYDROGRAPH									
9	RO			21							
10	BA	.0703									
11	PM	100	0	.87	1.86	3.8	4.6	5.1	6.0		
12	LS	0	81.0								
13	UD	.68									
14	KK	SB2									
15	KM	COMPUTE HYDROGRAPH									
16	RO			21							
17	BA	.0875									
18	LS	0	81.0								
19	UD	.96									
20	KK	SB3									
21	KM	COMPUTE HYDROGRAPH									
22	RO			21							
23	BA	.1297									
24	LS	0	81.0								
25	UD	1.12									
26	KK	J1									
27	BC	3									
28	RO			21							
29	IS										

* FLOOD HYDROGRAPH PACKAGE (HEC-1) *
* MAY 1991 *
* VERSION 4.0.1E *
* RUN DATE 12/05/96 TIME 09:04:18 *

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Maple Dunes
PEAK FLOW EXISTING CONDITION
Q100 - 6HR STORM
File: Maple

6 IO OUTPUT CONTROL VARIABLES
IPRNT 5 PRINT CONTROL
IPLOT 0 PLOT CONTROL
QSCAL 0. HYDROGRAPH PLOT SCALE
IT HYDROGRAPH TIME DATA
NMIN 2 MINUTES IN COMPUTATION INTERVAL
INITE 1 0 STARTING DATE
ITIME 0000 STARTING TIME
NQ 181 NUMBER OF HYDROGRAPH ORIGINATES
HDATE 1 0 ENDING DATE
HTIME 0600 ENDING TIME
ICENT 19 CENTURY MARK
COMPUTATION INTERVAL 0.03 HOURS
TOTAL TIME BASE 6.00 HOURS
ENGLISH UNITS
DRAINAGE AREA SQUARE MILES
PRECIPITATION DEPTH INCHES
LENGTH, ELEVATION FEET
FLOW CUBIC FEET PER SECOND
STORAGE VOLUME ACRES-Feet
SURFACE AREA ACRES
TEMPERATURE DEGREES FAHRENHEIT

*** END OF HEC-1 ***

* *
7 KK * SB1 *
* *

9 RO OUTPUT CONTROL VARIABLES
IPRNT 5 PRINT CONTROL
IPLOT 0 PLOT CONTROL

QSCAL 0. HYDROGRAPH PLOT SCALE
IPRNT 0 PUNCH COMPUTED HYDROGRAPH
IOUT 21 SAVE HYDROGRAPH ON THIS UNIT
ISAV1 1 FIRST ORIGINATE PUNCHED OR SAVED
ISAV2 181 LAST ORIGINATE PUNCHED OR SAVED
TIMINT 0.033 TIME INTERVAL IN HOURS

*** END OF HEC-1 ***

* *
14 KK * SB2 *
* *

16 RO OUTPUT CONTROL VARIABLES
IPRNT 5 PRINT CONTROL
IPLOT 0 PLOT CONTROL
QSCAL 0. HYDROGRAPH PLOT SCALE
IPRNT 0 PUNCH COMPUTED HYDROGRAPH
IOUT 21 SAVE HYDROGRAPH ON THIS UNIT
ISAV1 1 FIRST ORIGINATE PUNCHED OR SAVED
ISAV2 181 LAST ORIGINATE PUNCHED OR SAVED
TIMINT 0.033 TIME INTERVAL IN HOURS

*** END OF HEC-1 ***

* *
20 KK * SB3 *
* *

22 RO OUTPUT CONTROL VARIABLES
IPRNT 5 PRINT CONTROL
IPLOT 0 PLOT CONTROL
QSCAL 0. HYDROGRAPH PLOT SCALE
IPRNT 0 PUNCH COMPUTED HYDROGRAPH
IOUT 21 SAVE HYDROGRAPH ON THIS UNIT
ISAV1 1 FIRST ORIGINATE PUNCHED OR SAVED
ISAV2 181 LAST ORIGINATE PUNCHED OR SAVED
TIMINT 0.033 TIME INTERVAL IN HOURS

*** END OF HEC-1 ***

* *
26 KK * J1 *
* *

RUNOFF SUMMARY FLOW IN CUBIC FEET PER SECOND TIME IN HOURS, AREA IN SQUARE MILES									
OPERATION	STATION	PEAK FLOW	TIME OF PEAK	AVERAGE FLOW FOR MAXIMUM PERIOD			BASIN AREA	MAXIMUM STAGE	TIME OF MAX STAGE
HYDROGRAPH AT	SB1	119.	3.77	28.	28.	28.	0.07		
HYDROGRAPH AT	SB2	117.	4.07	33.	33.	33.	0.09		
HYDROGRAPH AT	SB3	155.	4.27	46.	46.	46.	0.13		
3 COMBINED AT	J1	366.	4.03	107.	107.	107.	0.29		

*** NORMAL END OF HEC-1 ***

LOT GRADING PLAN

MAPLE DUNES ADDITION

WICHITA, SEDGWICK COUNTY, KANSAS

SW 1/4, SECTION 24, T27S, R2W

MAY 1, 1997
REVISED DECEMBER 10, 1997
REVISED JULY 16, 1998

△ Denotes revisions for that date.

ELEVATIONS SHOWN AROUND STREET R/W ARE STREET R/W ELEVATIONS,
NOT TOP OF CURB ELEVATIONS. TOP OF CURB ELEVATIONS ARE
0.5 FEET LOWER THAN STREET R/W ELEVATIONS.

LEGEND

- G = GARAGE FLOOR ELEVATION
F = TOP OF FOUNDATION WALL ELEVATION
R = REAR SOIL ELEVATION (VIEW OUT)
(REAR WALL 0.5' ABOVE SOIL & 3.5' ABOVE BASEMENT FLOOR)
W = BASEMENT FLOOR ELEVATION (WALK OUT)
NO = NO VIEW OUT
V = VIEW OUT
W = WALKOUT

BENCHMARKS

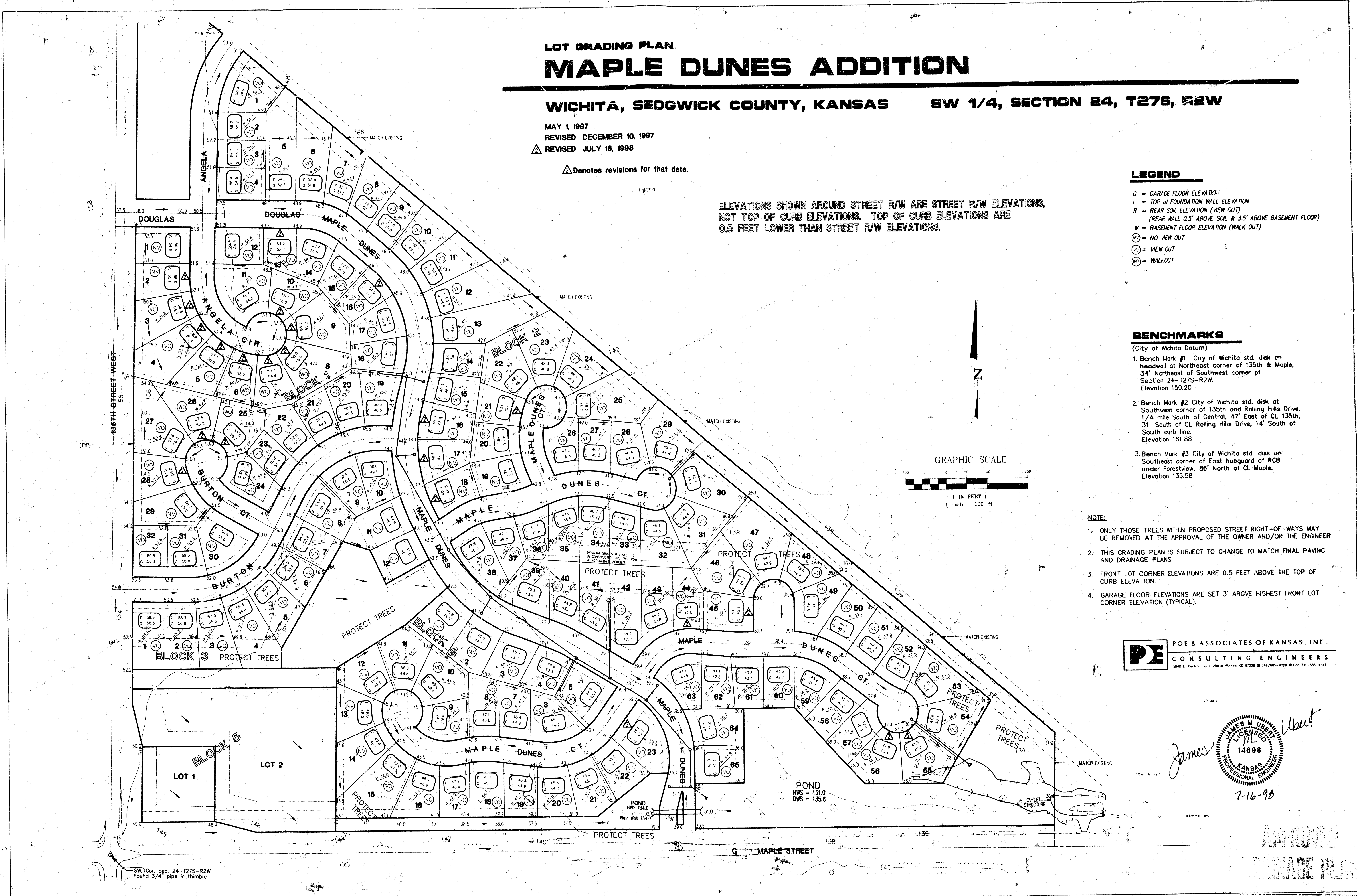
- (City of Wichita Datum)
- Bench Mark #1 City of Wichita std. disk on headwall at Northeast corner of 135th & Maple, 34' Northeast of Southwest corner of Section 24-T27S-R2W. Elevation 150.20
 - Bench Mark #2 City of Wichita std. disk at Southwest corner of 135th and Rolling Hills Drive, 1/4 mile South of Central, 47' East of CL 135th, 31' South of CL Rolling Hills Drive, 14' South of South curb line. Elevation 161.88
 - Bench Mark #3 City of Wichita std. disk on Southeast corner of East hubguard of RCB under Forestview, 86' North of CL Maple. Elevation 135.58

NOTE:

- ONLY THOSE TREES WITHIN PROPOSED STREET RIGHT-OF-WAYS MAY BE REMOVED AT THE APPROVAL OF THE OWNER AND/OR THE ENGINEER
- THIS GRADING PLAN IS SUBJECT TO CHANGE TO MATCH FINAL PAVING AND DRAINAGE PLANS.
- FRONT LOT CORNER ELEVATIONS ARE 0.5 FEET ABOVE THE TOP OF CURB ELEVATION.
- GARAGE FLOOR ELEVATIONS ARE SET 3' ABOVE HIGHEST FRONT LOT CORNER ELEVATION (TYPICAL).

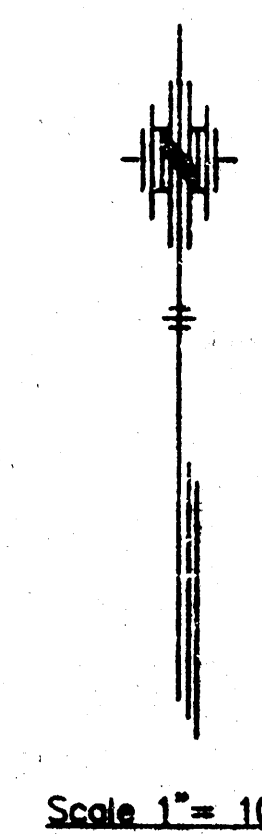
PE POE & ASSOCIATES OF KANSAS, INC.
CONSULTING ENGINEERS
5840 E. Central, Suite 200 • Wichita, KS 67208 • 316/885-1100 • Fax 317/885-6148

James M. USEB
LICENSED
14698
KANSAS
PROFESSIONAL ENGINEER
7-16-98



DRAINAGE PLAN MAPLE DUNES ADDITION

DECEMBER 5, 1996



Visible topography from
aerial photography
taken 7-12-96 by:
WESTERN AIR MAPS, INC.
LEWIS, MISSOURI 64501

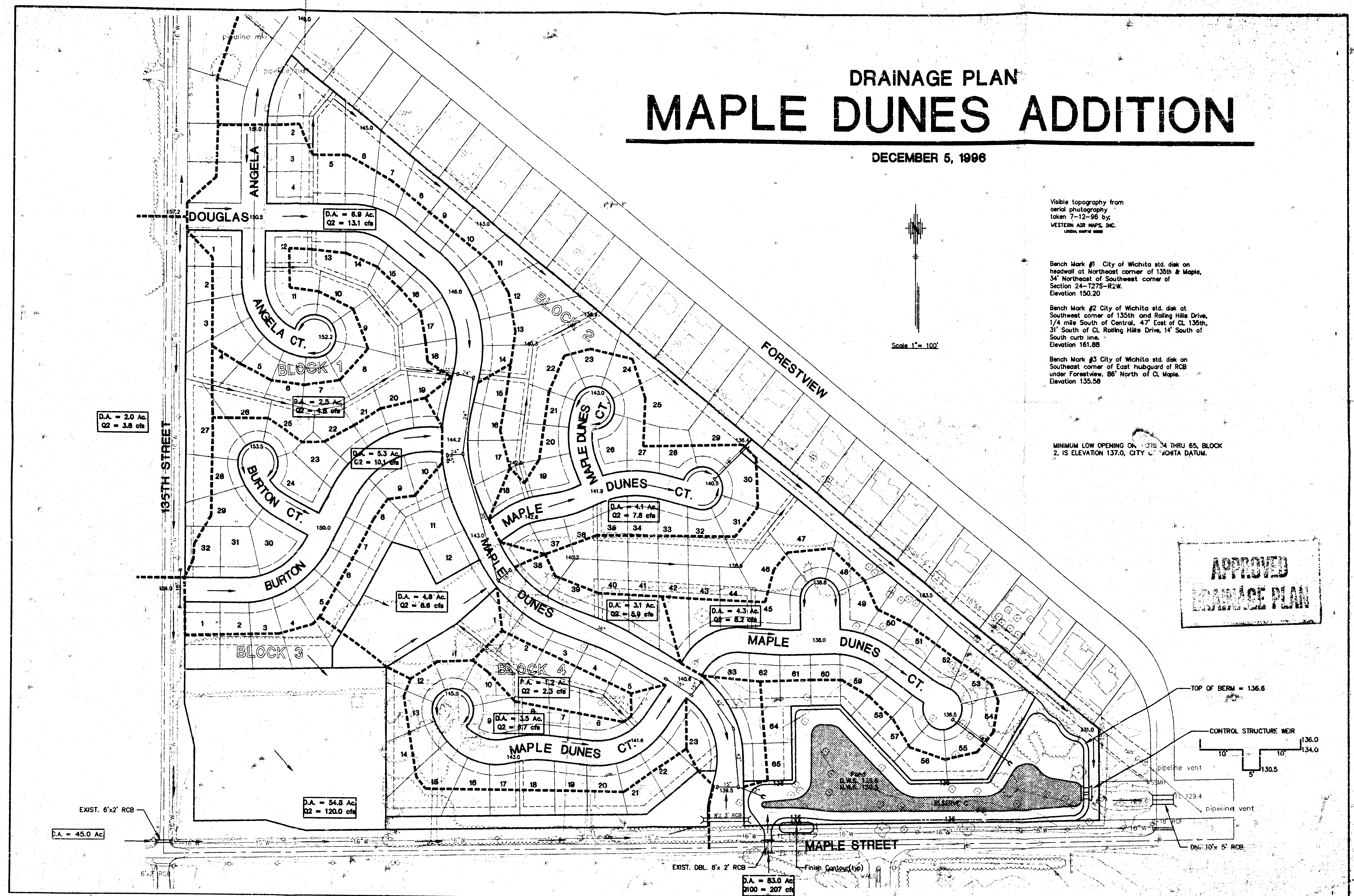
Bench Mark #1 City of Wichita std. disk on
headwall at Northeast corner of 135th & Maple,
34' Northeast of Southwest corner of
Section 24-T275-R2W.
Elevation 150.20

Bench Mark #2 City of Wichita std. disk at
Southwest corner of 135th and Rolling Hills Drive,
1/4 mile South of Central, 47' East of CL 135th,
31' South of CL Rolling Hills Drive, 14' South of
South curb line.
Elevation 161.88

Bench Mark #3 City of Wichita std. disk on
Southeast corner of East hubguard of RCB
under Forestview, 85' North of CL Maple.
Elevation 135.58

MINIMUM LOW OPENING ON STS 34 THRU 65, BLOCK
2, IS ELEVATION 137.0, CITY OF WICHITA DATUM.

**APPROVED
DRAINAGE PLAN**



DRAINAGE PLAN MAPLE DUNES ADDITION

DECEMBER 5, 1996

Visible topography from
aerial photography
taken 7-12-96 by
WESTERN AIR MAPS, INC.
LINCOLN, NEBRASKA

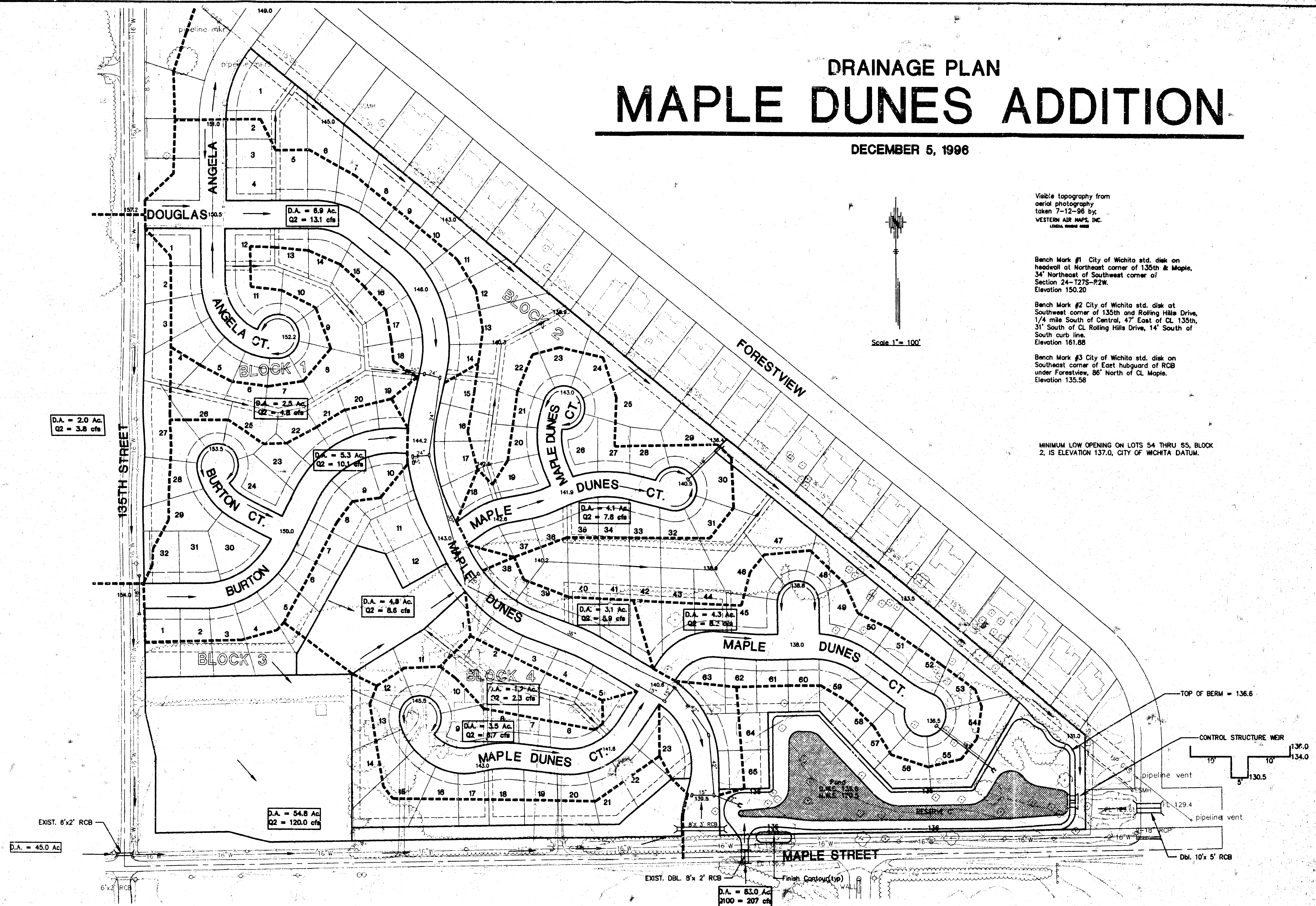
Bench Mark #1 City of Wichita std. disk on
headwall at Northeast corner of 135th & Maple,
34' Northeast of Southwest corner of
Section 24-T27S-R2W.
Elevation 150.20

Bench Mark #2 City of Wichita std. disk at
Southwest corner of 135th and Rolling Hills Drive,
1/4 mile South of Central, 47' East of CL 135th,
31' South of CL Rolling Hills Drive, 14' South of
South curb line.
Elevation 161.88

Bench Mark #3 City of Wichita std. disk on
Southeast corner of East hubguard of RCB
under Forestview, 86' North of CL Maple.
Elevation 135.58

Scale 1" = 100'

MINIMUM LOW OPENING ON LOTS 54 THRU 55, BLOCK
2, IS ELEVATION 137.0, CITY OF WICHITA DATUM.



DRAINAGE PLAN MAPLE DUNES ADDITION

DECEMBER 5, 1996

Visible topography from
aerial photography
taken 7-12-96 by:
WESTERN AIR MAPS, INC.
LITTLE ROCK, AR

Bench Mark #1 City of Wichita std. disk on
headwall at Northeast corner of 135th & Maple,
34' Northeast of Southwest corner of
Section 24-1275-R2W.
Elevation 150.20

Bench Mark #2 City of Wichita std. disk at
Southwest corner of 135th and Rolling Hills Drive,
1/4 mile South of Central, 47' East of CL 135th,
31' South of CL Rolling Hills Drive, 14' South of
South curb line.
Elevation 161.88

Bench Mark #3 City of Wichita std. disk on
Southeast corner of East hubguard of RCB
under Forestview, 86' North of CL Maple.
Elevation 135.58

MINIMUM LOW OPENING ON LOTS 54 THRU 55, BLOCK
2, IS ELEVATION 137.0, CITY OF WICHITA DATUM.

