

FILE LOCATION: C:\Users\Engineer\OneDrive - CED\Projects\2022\2022102\DWG\Bel Aire Lakes - Drainage Plan 3.dwg, TAB NAME: DP-1, USER: Engineer, 1, SAVED: 3/30/2023 9:23 PM, PLOTTED: 3/30/2023 9:30 PM

DRAINAGE PLAN BEL AIRE LAKES BEL-AIRE, SEDGWICK COUNTY, KANSAS

DRAINAGE LEGEND

- SHEET FLOW
- CONCENTRATED FLOW
- DRAINAGE FLOW PATH
- DRAINAGE SUB-BASIN LABEL
- DRAINAGE SUB-BASIN BOUNDARY
- OFFSITE DRAINAGE BOUNDARY
- EXISTING CONTOURS
- PROPOSED CONTOURS
- PROPOSED STORM SEWER/CULVERT
- WETLAND AREAS

MINIMUM PAD ELEVATION FOR LOWEST OPENING

LOT	BLOCK	ELEVATION (NAVD88)
1,25	C	1395.3
1-10	D	1395.5
19-27	D	1395.5
1,2,27,28	E	1391.0
1,2,28,29	F	1390.0
1	G	1388.9
2-4	G	1387.4
5-7	G	1387.9
1-3	H	1389.4
4-6	H	1389.8
7-10	H	1392.0

A MASTER FOUR-CORNER LOT GRADING PLAN WILL BE DEVELOPED AT TIME OF STREET PLANS TO IDENTIFY A MIN. PAD ELEVATION FOR LOWEST OPENING ON EVERY LOT. INFORMATION ABOVE IS FOR LOTS NEAR 100-YR FLOODPLAIN OR PONDS.

Existing Ponding Area 1

Stage (EL)	Area (s.f.)	(c.f.)	acre-ft
1381.8	0	0	0.00
1382	161	16	0.00
1383	6,082	3,138	0.07
1384	23,652	18,005	0.41
1385	38,235	48,948	1.12
1386	59,561	97,846	2.25
1387	92,655	173,954	3.99

Existing Ponding Area 2

Stage (EL)	Area (s.f.)	(c.f.)	acre-ft
1383.5	0	0	0.00
1384	1,726	432	0.01
1385	19,403	10,996	0.25
1386	58,456	49,926	1.15
1387	97,875	128,091	2.94
1388	130,429	242,243	5.56
1389	174,666	394,791	9.06

Reserve D Pond

Stage (EL)	Area (s.f.)	(c.f.)	acre-ft
1391.5	54,533	0	0.00
1392.5	58,445	56,489	1.30
1393.5	62,458	116,941	2.68
1394.5	66,571	181,455	4.17

Pre VS Post Development Runoff - SCS Method

	Pre	Post
(2 yr.)	253.20	245.75
(5 yr.)	357.32	333.52
(10 yr.)	450.15	427.56
(25 yr.)	583.82	546.29
(100 yr.)	814.52	745.43

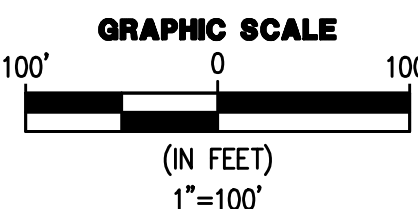
PRE VS POST DEVELOPMENT RUNOFF CALCULATIONS ARE TO THE TWO RCB CULVERTS LOCATED NORTH OF THE NORTHEAST CORNER OF THE SITE.

ENGINEERING NOTES:

- The SCS method was used to compute the peak discharges for existing and developed conditions. Curve numbers were assigned to the existing site and proposed improvements from the City of Wichita Storm Water Manual and the National Engineering Handbook. The rational method was also used to compute peak discharges for developed conditions. Rational C Factors were assigned to the existing site and proposed improvements from the City of Wichita Storm Water Manual. Soil Types were determined from the Natural Resource Conservation Soil Survey website.
- The platted property is located in a FEMA flood hazard area (FIRM# 20173C024G). Any development work located in a floodplain shall be approved as necessary by the Kansas Department of Agriculture, the U.S. Army Corps of Engineers, and FEMA.
- Detention is required for this subdivision. As can be seen from the table on sheet 1, post development runoff has been reduced to below pre development runoff calculations for the 2, 5, 10, 25, and 100 yr design storms.
- The storm sewer has not been fully designed until the time of the street plans. This storm sewer system will be designed for the 5-yr storm using the rational method.
- All agricultural terraces shall be removed at the time of development.
- All elevations shown are in NAVD 88 vertical datum.
- All structures shall be elevated a minimum of 1 foot above the 100-yr BFE according to City of Bel Aire Code.

PROPOSED V-BOTTOM CHANNEL
SIDE SLOPES = 4:1
MAX DEPTH 100-YR = 1.41 FT
MAX WIDTH 100-YR = 11.3 FT
MIN. SLOPE = 0.75%

BENCHMARKS:
BM#1: Square Cut at the S.E. Corner of the Double 7x4' RCBC located 202.7' S & 81.3' W of the N.W. Cor. of the SE 1/4 of SEC. 17-26S-2E
Elev. = 1387.16 (NAVD 88)



CERTIFIED ENGINEERING DESIGN, P.A.

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SHEET 1
TOTAL 1