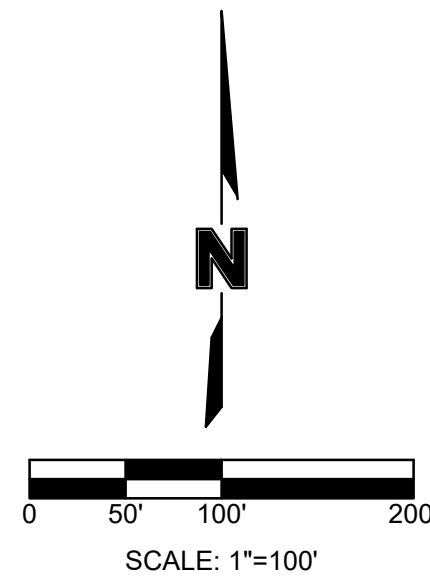




- LEGEND**

	EXISTING MINOR CONTOUR
	EXISTING MAJOR CONTOUR
	PROPOSED MINOR CONTOUR
	PROPOSED MAJOR CONTOUR
	PROPERTY LINE
	PROPOSED DRAINAGE BASIN BOUNDARY
	PROPOSED DRAINAGE BASIN
	PROPOSED STORM SEWER

GENERAL NOTES

1. ALL ELEVATIONS ARE TO NAVD 88 DATUM.
2. EXISTING AND PROPOSED CONTOUR INTERVALS ARE AT 2.0'. CONTOURS ARE AT NAVD 88 DATUM.
3. OUTLET VELOCITIES FOR ALL AREAS WILL BE CONTROLLED WITH RIP-RAP SUFFICIENT TO PREVENT EROSION AT DISCHARGE POINTS. SIZE AND LOCATION OF RIP-RAP WILL BE DETERMINED DURING FINAL DESIGN.

		Total Discharge (cfs)	Culvert Headwater (ft)	Shoulder Elevation (ft)	Freeboard (ft)	Inlet Control Depth (ft)	Outlet Control Depth (ft)	Flow Type	Normal Depth (ft)	Critical Depth (ft)	Outlet Depth (ft)	Tailwater Depth (ft)	Velocity (ft/s)	Tailwater Velocity (ft/s)	
Proposed Culvert #1 Single 36" CMP	10 yr	31	31	1445.85	1445.78	2.87	2.89	M-2C	1.99	1.8	1.8	0.44	0.98	1.84	
	50 yr	42	42	1446.55	1446.78	2.21	3.39	3.55	7-M2C	2.268	2.11	2.11	0.52	7.9	4.22
	100 yr	47	47	1446.94	1447.76	0.82	3.34	3.94	7-M2C	3	2.23	2.23	0.55	8.33	4.37
	100 yr	5	5	1447.65	1448.97	1.25	0.88	0.96	M-2C	0.76	0.63	0.63	0.28	3.83	2.24
Proposed Culvert #2 Single 24" CMP	50 yr	4.5	4.5	1447.65	1448.97	1.25	1.15	2.24	M-2C	0.81	0.75	0.75	0.34	4.22	2.58
	100 yr	5	5	1447.72	1448.97	1.51	1.1	1.22	M-2C	0.96	0.79	0.79	0.36	4.35	2.56

MINIMUM OPENING/FLOOR ELEVATION SUMMARY				
BLOCK	LOT	100 YEAR WATER SURFACE	LOWEST FLOOR ELEVATION	MINIMUM OPENING ELEVATION
1	2*	-	-	1433.00
	3*	-	-	1433.00
	4*	-	-	1433.00
2	2**	1446.94	-	1451.25
	3**	1446.94	-	1451.25
	4**	1447.72	-	1451.50
	5	1436.23	-	1438.50
	6	1422.31	-	1424.50
	7	1417.24	-	1419.50
	8	1415.00	-	1417.50
	9	1413.52	-	1416.00
	10	1415.76	-	1418.00
	11	1417.46	-	1419.50
	12	1417.67	-	1420.00
	13	1419.23	-	1421.50
	14	1423.21	-	1425.50

*NOTE: Min. Opening elevation is based on overtopping of W. Stagecoach Road.
 **NOTE: Min. Opening elevation is based on overtopping of Raegen Road
 ***NOTE: Min. Opening elevation is based on overtopping at the intersection of Raegen Road and S.W. 140th Road.
 Block 2, Lots 5-14 water surface elevations are based on the NRD breach inundation area.

[illegible]

GRADING AND DRAINAGE PLAN

BUTTERFLY ACRES

CRETE, NEBRASKA

drawn by:	zkw
checked by:	jdc
approved by:	jdc
project no.:	2022-0237
drawing no.:	-
date:	07/25/2023