

# DRAINAGE PLAN

## GOLDEN CORRAL ADDITION

Wichita, Sedgwick County, Kansas

September 18, 2006

### EXISTING CONDITIONS

Golden Corral Addition is located just west of the intersection of Kellogg Avenue and Greenwich Road. The site is approximately 4.8 acres and contains an existing pond and drainage ditch which runs along/near the east property line. The pond currently discharges into a 3 barrel 6'x3' RCBC under Kellogg Avenue.

The site drains a 54" RCP from the east as well as properties from the north and west. A site visit was performed to delineate all offsite flow to the site. A basin was delineated and consisted of approximately 51 acres draining from the east into the existing 54" RCP. In addition, there is currently 4.7 acres from the north (movie theatre and parking lot), 18 acres from the west (open space with heavy brush), and a 24" CMP outfall from a north pond. The flow from the north pond was calculated with the outfall pipe having 5' head.

### DEVELOPED CONDITIONS

The site will consist of a commercial development with a structure and associated parking. The existing pond will be reconfigured to better serve the offsite drainage as well as the proposed site. A portion of the pond will be filled in and will be replaced with at least equal storage capacity. Internal storm sewer will be utilized to drain the developed site into the detention pond. The existing box culvert will be utilized under Kellogg Avenue.

### DETENTION

The pond was modeled as existing condition and proposed conditions. In both cases, the above mentioned offsite flow remained the same. Under developed conditions, the peak flow from the site was limited to equal the existing conditions for the 100-yr storm event. The developed 2-yr and 5-yr storm events yielded a lower pond outflow than existing conditions. The water surface elevations for the 2, 5, and 100-yr events remained the same for existing to developed conditions.

### NOTES

There is no FEMA mapped floodplain or floodway on this property as of September 18, 2006. The 'Spring Branch Master Drainage Plan', prepared for the City of Wichita by PEC, December 2004, portrays a fully developed flow of 530 cfs through a cross section just south of Kellogg Avenue and the above referenced box culvert. This flow, as well as a flow of 1859 cfs added downstream, yielded a base flood elevation of a 1347.4. This elevation is also the elevation our models yielded for a 100-yr water surface elevation for the existing/proposed pond. In our pond modeling, a free outfall was assumed. It is our assumption that this basin will drain well before the larger basin to the west meets its peak flow.