DRAINAGE PLAN

EASY CREDIT AUTO SALES ADDITION

TO

WICHITA, SEDGWICK COUNTY, KANSAS

PREPARED BY

Baughman
ENGINEERING | SURVEYING | PLANNING
LANDSCAPE ARCHITECTURE

14 MAY 2007

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FINAL REPORT

Prepared by Baughman Company, P.A.
14 May 2007

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REPORT CONTENTS

EXISTING CONDITIONS

The site is located southeast of the intersection of 43rd Street South and Broadway Avenue. The property is approximately 1.72 acres and currently is surfaced with gravel and has several existing commercial buildings. The site currently drains to the southeast, off the site and into the Big Slough. There is a FEMA SFHA located on the property; the 100-yr BFE on the site is 1274 NAVD.

PROPOSED CONDITIONS

The property is to remain a commercial site with an additional building proposed as well as asphalt paving. The proposed plat is intended for one lot. Upon development, the site will drain to the east and southeast into a shallow dry detention pond along the east edge of the property. The pond will drain offsite to the south and into the Big Slough.

OFFSITE CONDITIONS

The site generally drains to the southeast. There appears to be no significant amount of offsite drainage encroaching the site.

EXISTING CONDITIONS RUNOFF CALCULATIONS

DRAINAGE METHODS & STANDARDS

The following methods and standards, although not a complete list, were used in calculating the existing conditions runoff values.

- Ø STORM SERIES
  - SCS Unit Hydrograph Method utilized for site runoff
  - 24-hour; 2-yr, 5-yr, 10-yr, 25-yr, 50-yr, 100-yr Storm Events

- Ø DRAINAGE AREAS
  - Areas per existing topography and site visits
  - Hydraflow Hydrograph utilized for flow calculations
  - Time of Concentration using City of Wichita minimum 15 min

SITE CHARACTERISTICS

The proposed site is currently developed commercial and is surface with gravel. The site drains to the southeast corner of the property, offsite, and the south to the Big Slough. A minimum time of concentration of 15 minutes was used for the site. The soil type is Type C, and a curve number of 89 was used to represent the site's current runoff characteristics. The soil survey can be seen in Appendix A.

EXISTING CONDITIONS HYDROLOGIC ANALYSIS

The site produces a total runoff of approximately 3.7 cfs during the 100-year storm event. The site currently drains to the southeast and eventually into the Big Slough. There is a FEMA SFHA on the property, the 100-yr BFE is 1274 NAVD.

DOWNSTREAM DRAINAGE CAPACITY

The site is near the Big Slough, which has a history of flooding. Detention will be provided on this site. After flowing onto the adjacent property, the runoff drains directly into the Big Slough. There appears to be no issues with capacity downstream.

POST-DEVELOPMENT HYDROLOGIC ANALYSIS

DRAINAGE METHODS & STANDARDS

The following methods and standards, although not a complete list, were used in developing the drainage and grading plans.

- Ø STORM SERIES
  - Rational Method utilized for site runoff
  - 24-hour; 2-yr, 5-yr, 10-yr, 25-yr, 50-yr, 100-yr Storm Events
- Ø DRAINAGE AREAS
  - Areas per existing topography and site visits
  - Hydraflow Hydrograph utilized for flow calculations
  - Time of Concentration using City of Wichita minimum 15 min

DETENTION FACILITIES

There is a shallow detention area provided on the east edge of the property. The following tables represent each pond systems inflow and outflow for the 24-hour, 100-yr storm event.

Detention Pond

POND	INFLOW	OUTFLOW	100-yr WSE	OUTLET
Pond A	5.4 cfs	3.6 cfs	1274.5	10" RCP

PROPOSED CONDITIONS HYDROLOGIC ANALYSIS

The site will generate approximately 1.7 cfs more of runoff than the existing site for a total of 5.4 cfs. The site is developed into commercial currently, and will be commercial when re-developed. We expect to drain the site to the southeast into a drainage pond and offsite to the south onto the adjacent property.

POTENTIAL UPSTREAM/DOWNSTREAM IMPACTS

No potential upstream or downstream impacts are expected with this development.

SOURCE OF FLOODPLAIN INFORMATION

FEMA Floodplain and Floodway information were obtained from the Sedgwick County, Kansas FIRM Panel 505 of 700 dated February 2, 2007.
The base flood elevation (BFE) of the adjacent Big Slough is 1274 NAVD at the site location. The floodplain encroaches the property near Broadway Avenue. This area of inundation will be elevated above the BFE before any structures are constructed.
There is no floodway boundary on the proposed property.
The scaled floodplain and floodway locations are shown on the Drainage and Grading Plans. The actual FEMA FIRM Panel can be viewed as Exhibit 5.
The Floodway data table, as provided by the National Flood Insurance Program, can be seen in Exhibit 6. The corresponding Flood Profiles are attached as Exhibit 7.

Note: The elevations shown on the plan sheets are in NGVD. The elevations on the FEMA FIRM Panels are in NAVD. To convert NAVD to NGVD, subtract 0.4.

US ARMY CORPS OF ENGINEERS

There does not appear to be any USACOE permitting needed on the proposed project.

KANSAS DEPT OF AGRICULTURE – DWR PERMITTING

There does not appear to be any DWR permitting needed on the proposed site at this time.

FEMA

As stated earlier, a portion of the floodplain lies on the proposed site. This area should be filled (to at least BFE) and removed from the mapped floodplain by a Letter of Map Revision based on Fill (LOMR-F).

KANSAS DEPT OF TRANSPORTATION

There does not appear to be any KDOT permitting needed on the proposed project.

SEDGWICK COUNTY ROW

There does not appear to be any Sedgwick County Permitting on the proposed project.

DRAINAGE/GRADING PLAN Scale 1:30

APPENDIX A: USGS Soils Survey

APPENDIX B: HydraFlow Hydrographs

USGS Soils Survey

HydraFlow Hydrograph