

KANSAS

DEPARTMENT OF TRANSPORTATION
DEB MILLER, SECRETARY

KATHLEEN SEBELLIUS, GOVERNOR

ROBERT A COOK, P.E., DISTRICT ENGINEER

September 21, 2006

Ruggles & Bohm, P.A.
924 North Main
Wichita, Ks. 67203
Attn: Christopher Bohm


RE: Armstrong Estates Site Drainage to I-235 Highway
North of Central and East of I-235 Highway
Sedgwick County

Dear Christopher:

Enclosed please find the results of the cursory review by the KDOT Bureau of Design on your final drainage report for the above referenced location.

If further information is needed, please feel free to call #316-744-1271 or Cell #316-250-9836 or e-mail benko@ksdot.org.

Respectfully,
Benny P. Tarverdi, P.E.
Metro Engineer


Benjamin L. Koerner
Program Consultant

Attachments: Drainage Review

CC: City of Wichita
File

BENNY P. TARVERDI, P.E., METRO ENGINEER
3200 EAST 45TH ST. N., WICHITA, KS 67220-1432
VOICE 316-744-1271 TTY 785-296-3585 FAX 316-744-6650 <http://www.ksdot.org>

Kansas Department of Transportation

RECEIVED
SEP 20 2006
METRO ENGINEERING
WICHITA OFFICE

MEMO TO: Robert A. Cook, P.E.
District V Engineer

ATTENTION: Barry Santee
Technical Assistant (Construction)

FROM: Jim L. Kowach, P.E.
Chief, Bureau of Design

BY: James O. Brewer, P.E.
Engineering Manager
State Road Office



DATE: September 14, 2006

REFERENCE: I-235 in Sedgwick County

SUBJECT: Armstrong Estates Site Drainage to I-235 Highway
North of Central and East of I-235 Highway

We have reviewed the attached drainage calculations submitted by Ruggles & Bohm, P.A., for the Armstrong Estates and recommend approval of the drainage permit if the following provisions are met. The concrete flume should be extended to the flowline of the KDOT ditch and then lined with riprap at the end. The side slopes of the flume located on KDOT right-of-way should be flat enough to accommodate mowers. Also, necessary erosion control procedures should be used during construction of the Armstrong Estates.

It is important to note that KDOT, along with the city of Wichita, is taking a fresh look at possible improvements to I-235 and the Kellogg and Central interchanges. The lots adjacent to KDOT right-of-way could be impacted although the effects of the future improvements have yet to be determined. A consideration should be made to relocate the foundations contained in the rear lots as far from the existing KDOT right-of-way as possible.

Please update us if there are any changes to the drainage plans, and let us know if you have any questions.

JOB:DDT'js

Attachment

cc: Scott King, Road Design Leader



Ruggles & Bohm P.A.

Engineering, Surveying, Land Planning

August 14, 2006

Ben Koerner
Kansas Department of Transportation
3200 E. 45th Street North
Wichita, KS 67220

924 North Main
Wichita, Kansas 67203

(316) 264-8008
fax (316) 264-4621

www.rbkansas.com
info@rbkansas.com

As requested, I have tabulated the pre and post developed flows for Armstrong Addition, generally located near the intersection of 9th Street and Hoover in Wichita, Kansas. The rear of the addition abuts I-235, and much of the existing area drains to the highway right-of-way. The summary of the pre and post flows is as follows:

Pre-Development: Area to KDOT RW = 1.31 Acres, Type A Soil, $T_c = 15$ minutes

I2 = 3.83"/hr, C2 = 0.26 (Undeveloped Type A Soils) **Q2 = 1.30 cfs**
I100 = 7.37"/hour, C100 = 0.40 (Undeveloped Type A Soils), **Q100 = 3.9 cfs**

Post Development (see attached plan) **Q2 = 1.8; Q100 = 4.6 cfs**

Please note that the pre and post development C factors are based on information from Attachment D, City of Wichita Drainage Policy.

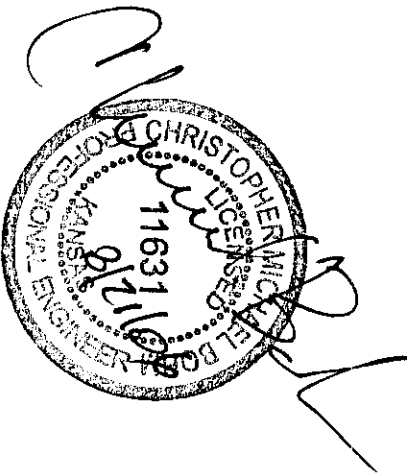
We would agree to place rip-rap on the private side of the fence to break up the flow, and not disturb any of the KDOT RW with the work.

Should you need any additional information, please do not hesitate to contact me. We will prepare the necessary permit forms once we receive confirmation.

Best regards,

Christopher M. Bohm, P.E.

Encl.

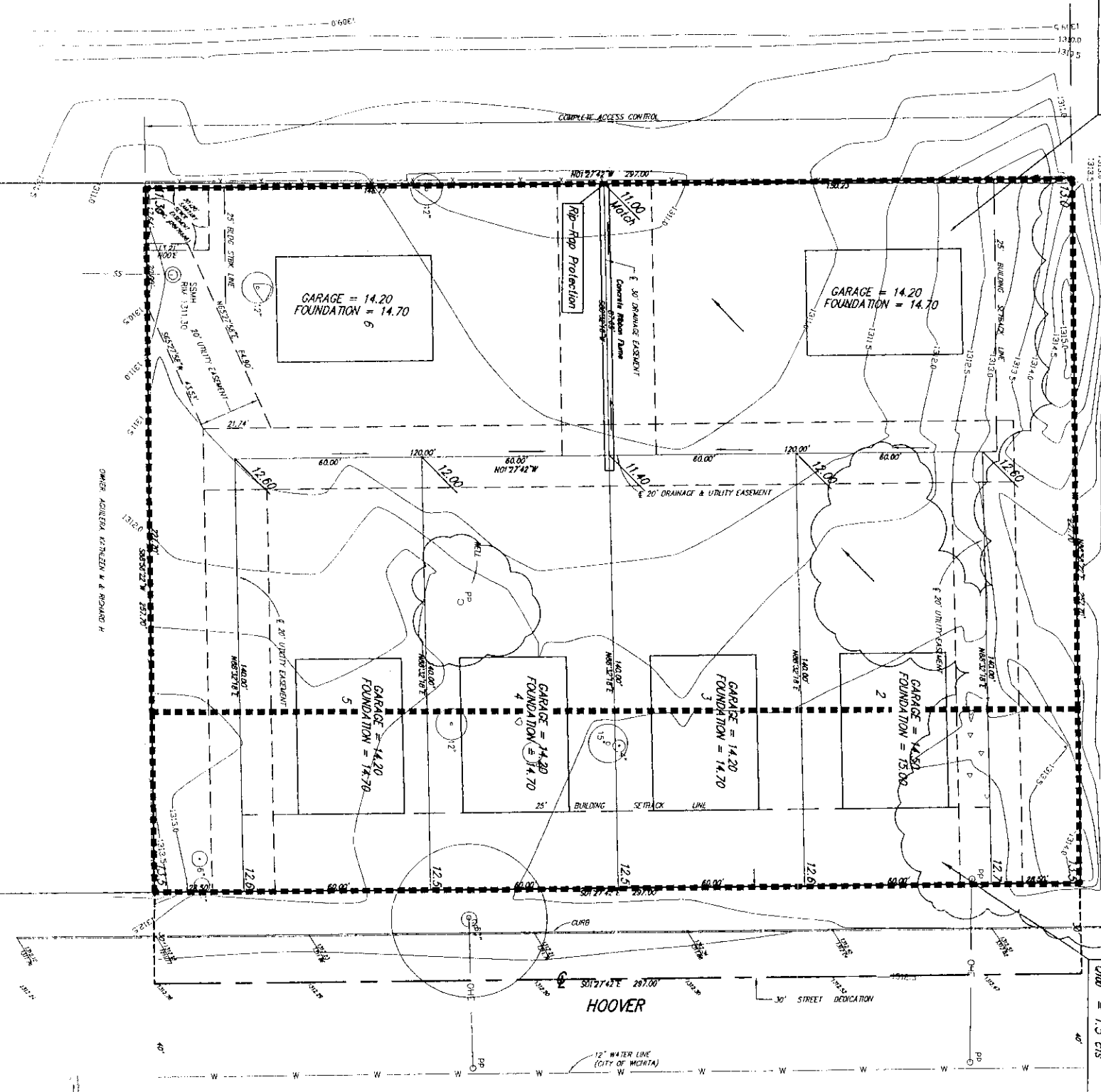


A circular professional engineer seal for Christopher M. Bohm, License No. 11633110, State of Kansas. The seal is stamped over a handwritten signature in black ink.



West Basin:
 Area = 1.2 acres
 I₂ = 3.83 in/hr
 I₁₀₀ = 7.37 in/hr
 C₂ = 0.39
 C₁₀₀ = 0.52
 Q₂ = 1.8 cfs
 Q₁₀₀ = 4.6 cfs

East Basin:
 Area = 0.40 acres
 I₂ = 3.83 in/hr
 I₁₀₀ = 7.37 in/hr
 C₃ = 0.39
 C₁₀₀ = 0.52
 Q₂ = 0.6 cfs
 Q₁₀₀ = 1.5 cfs



Drainage Plan

ARMSTRONG ESTATES

Wichita, Sedgwick County, Kansas

LEGAL DESCRIPTION:
 The east 257.7 feet of the north 297 feet of the SE 1/4 of Sec. 15, T27S
 R1W of the 6th P.M., Sedgwick County, Kansas.

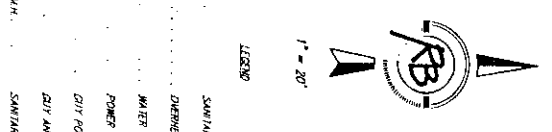
OWNER:
 Attn: Bob Armstrong
 4209 W. Douglas
 Wichita, KS 67212
 Ph. (316) 312-3303

SUBMITTER & ENGINEER:
 Ruggles & Bohm P.A.

EXISTING ZONING:
 Subject property and the rest of the surrounding property is zoned SF-5
 Existing use is vacant land

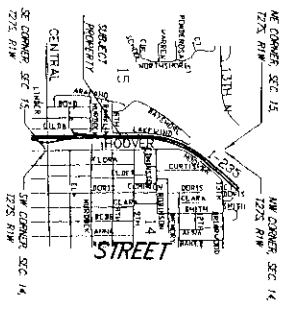
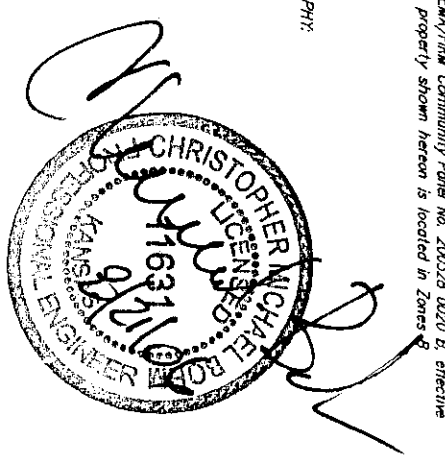
FLOOD ZONE:
 According to the FEMA/FIRM Community Panel No. 200328 0020 B, effective
 May 15, 1996, the property shown hereon is located in Zones B
 GROSS AREA:
 76,534.7 Sq. Ft.
 1.76 Acres

DATE OF TOPOGRAPHY:
 JUNE 14, 2006



- LEGEND
- SS SANITARY SEWER (CITY OF WICHITA)
 - DE-DEHEAD ELECTRIC (WICHITA)
 - ONE-... WATER MAIN (CITY OF WICHITA)
 - W WATER MAIN (CITY OF WICHITA)
 - PIP POWER POLE (WICHITA)
 - OPR CITY POLE
 - D DAY ANDOR
 - SS SANITARY SEWER MANHOLE (CITY OF WICHITA)
 - SP LOCATION OF SPOT ELEVATION
 - TR LOCATIONS OF TREES (CROWN INDICATED)

BOUNDARY: CITY OF WICHITA USE
 OF THE CENTERLINE OF HOOPER &
 STREET OF THE CENTERLINE OF HOOPER STREET
 ELEV = 1315.6 M.S.L.



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|--|--|--|--|
| | | ARMSTRONG ESTATES DRAINAGE PLAN WICHITA, KANSAS | |
| | | Ruggles & Bohm, P.A. Engineering, Surveying, Land Planning 904 North Main Wichita, Kansas 67203 www.rbaengineers.com Phone: (316) 264-8008 Fax: (316) 264-4527 Email: info@rbaengineers.com | Date: July 20, 2006 Project Number: 1 |
| RUGGLES & BOHM ENGINEERS & SURVEYORS LICENSE NO. 163710 STATE OF KANSAS | RUGGLES & BOHM ENGINEERS & SURVEYORS LICENSE NO. 163710 STATE OF KANSAS | DRAWN BY: CUB CHECKED BY: CUB DATE: July 20, 2006 | PROJECT NUMBER: 1 |