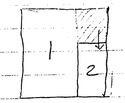
①

Villa Centra Addition Lot Split 11-6-95
Runoff Calculations JCR



Area of Parcel 1 lying north of Parcel 2 = 0.54 Ac.
Parcel 2 = 0.81 Ac.
Total D.A. = 1.35 Ac.

Parcel 1 A. = 0.54 Time of concentration = 5 min.
using Rational Method Q = CIA, calculate Q_{100}.
(From City of Wichita Drainage Criteria manual)
Assume 95% impervious, 5% grass surface
C value for impervious = 0.92 (x 95% of area = 0.874)
for grass = 0.50 (x 5% = 0.025)
Weighted C factor = 0.899 (use 0.90)
I_{100} for t_c = 5 min. = 10.32 inches/hour
Q_{100} = 0.90 (10.32)(0.54) = 5.0 cfs (@ N. line Parcel 2)

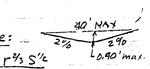
For combined D.A. = 1.35 Ac., using same parameters:
Q_{100} = 0.90 (10.32)(1.35) = 12.5 cfs (total @ S. line of Parcel 2, including flow intercepted by inlet system).

Assume inlet system is limited to capacity of 12" RCP @ 0.5% slope = 2.5 cfs

∴ Net surface flow Q_{100} @ S. line Parcel 2:
12.5 - 2.5 = 10.0 cfs

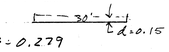
Use 10.0 cfs for surface flow through parking lot.

②

For parking lot flow section use: 

using Manning's Equation, $V = \frac{1.486}{n} r^{2/3} S^{1/2}$
where n = 0.018 (asphalt)
slope = 0.20% , $S^{1/2}$ = 0.045 r = A/WP
A = 8.0 s.f. WP = 20.0' r = 0.250 $r^{2/3}$ = 0.340
$V = \frac{1.486\ (0.340)\ (0.045)}{0.018}$ = 1.26 fps (x A = Q)

Q = 1.26 x 8.0 = 10.1 cfs > Q_{100} surface flow

For drive approach section use 

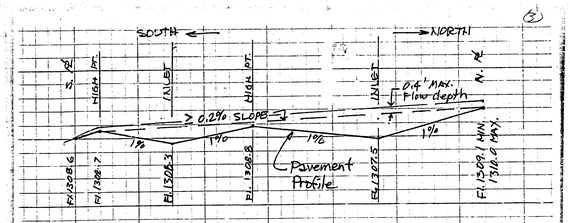
A = 4.5 s.f. WP = 30.3 r = 0.149 $r^{2/3}$ = 0.279
use slope ≥ 1% $S^{1/2}$ = 0.10
$V = \frac{1.486\ (0.279)\ (0.100)}{0.018}$ = 2.30 fps (x A = Q)

Q_{100} = 10.4 cfs > Q_{100} surface flow

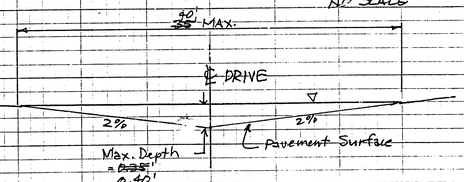
Recommend 40' wide easement from n. line of Parcel 2 to s. curb of parking lot; may narrow to 30' to s. line Parcel 2 through drive.

See Profile / Sections, Pages 4-5

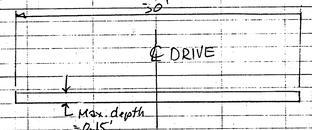
③



SURFACE FLOW (DRAFT) PROFILE
NO SCALE



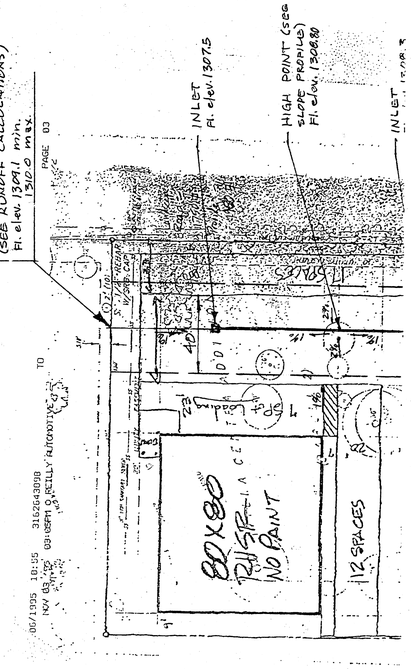
PARKING LOT FLOW SECTION



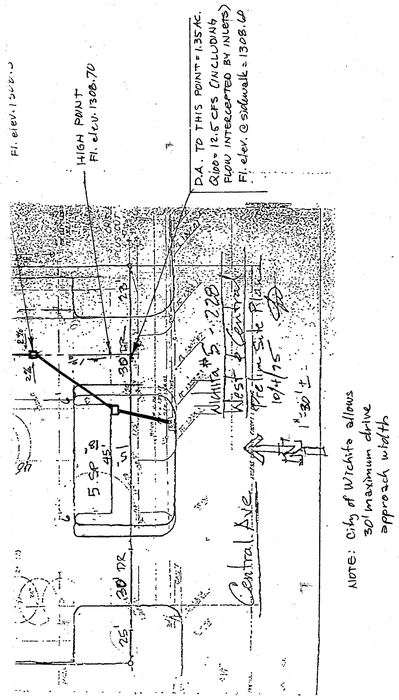
DRIVEWAY FLOW SECTION

④

D.A. FROM NORTH TO THIS POINT = 0.54 ACRES
Q_{100} = 5.0 CFS
(SEE RUNOFF CALCULATIONS)
Fl. elev. 1309.1 min.
1310.0 max.



⑤



Drainage Easement

This Drainage Easement is entered into this ___ day of _____, 1995 by and between Leo A. Borst and Kathleen A. Borst, husband and wife (the "Borsts"), Jeckl Investment Co., a limited partnership ("Jeckl") and O'Reilly Automotive, Inc., a Missouri corporation ("O'Reilly").

Whereas, the Borsts own the following described real property:

Lot 1, except the south 200 feet thereof, Villa Centra Addition to Wichita, Sedgwick County, Kansas

(the "Borsts' Property");

Whereas, the Borsts own an undivided one-half (1/2) interest and Jeckl owns an undivided one-half (1/2) interest in the following described real property:

Lot 2, except the east 25 feet of the south 200 feet thereof, Block A, Agile Third Addition to Wichita, Sedgwick County, Kansas

(the "Borst and Jeckl Property");(the Borsts' Property and the Borst and Jeckl Property are collectively referred to as "Parcel 1"):

Whereas, O'Reilly owns the following described real property, located south of the Borsts' Property and south of a portion of the Borst and Jeckl Property:

The east 25 feet of the south 200 feet of Lot 2, Block A, Agile Third Addition to Wichita, Sedgwick County, Kansas, and the south 200 feet of Lot 1, Villa Centra Addition to Wichita, Sedgwick County, Kansas

("Parcel 2");

Whereas, the northeast portion of Parcel 1 drains storm and surface water south across Parcel 2;

Whereas, O'Reilly is agreeable to allowing the northeast portion of Parcel 1 to drain storm and surface wat.. across a portion of Parcel 2.

Now, therefore, in consideration of the premises, the parties hereto agree as follows:

1. O'Reilly shall allow the Borsts and Jeckl to drain storm and surface water from the northeast portion of Parcel 1 across the cross-hatched portion of Parcel 2 as illustrated on the attached Exhibit A.

2. This agreement may be modified at any time by the owners of Parcel 1 and Parcel 2 by mutual agreement in order to allow for future development of Parcel 2.

In witness whereof, the parties hereto have executed this agreement as of the day and year set forth above.

Leo A. Borst

Kathleen A. Borst

Jeckl Investment Co., a limited partnership

By: _____

O'Reilly Automotive, Inc., a Missouri corporation

By: _____

Attest: _____
Secretary
Seal