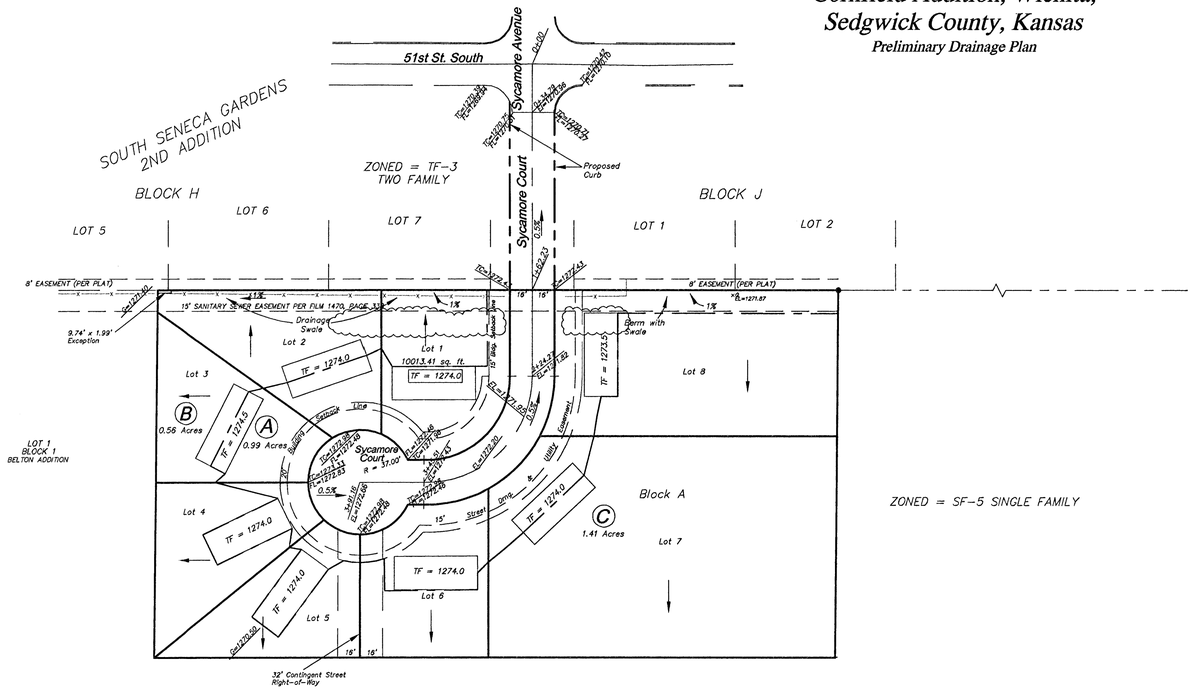
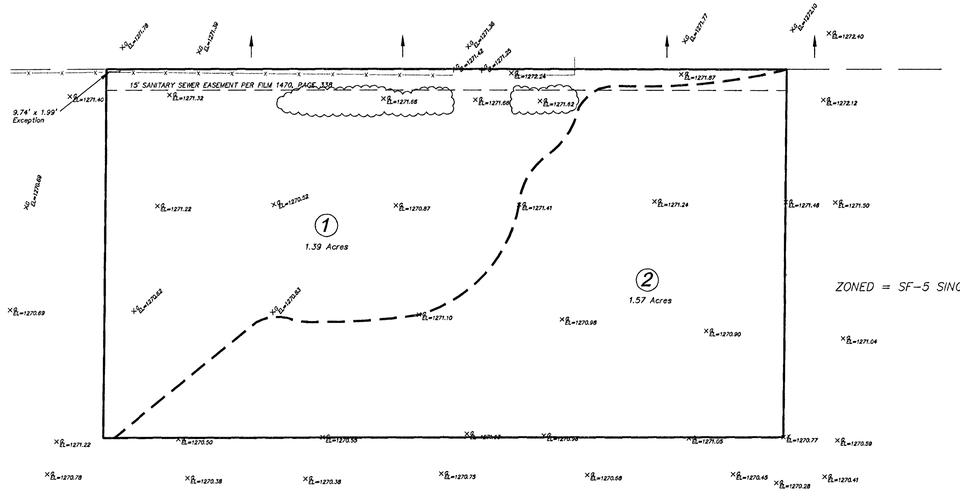
Cornfield Addition, Wichita, Sedgwick County, Kansas

Preliminary Drainage Plan





Storm Drainage Study of "Cornfield Addition" to the City of Wichita, Sedgwick County, State of Kansas

General Information:

The proposed "Cornfield Addition", is a 3 Acre Addition containing 8 Lots. The existing property is currently Zoned SF-5, Single Family. The "Addition" is to remain SF-5, Single Family.

The platted land to the North, South Seneca Gardens 2nd.Addition, is Zoned SF-5, Single Family.

The platted land to the West, Belton Addition, is Zoned SF-5, Single Family. Belton Addition is un-developed land.

The un-platted land to the East and the South is zoned SF-5, Single Family, and un-developed land.

Location:

The "Addition" lies within the City of Wichita.

The "Addition" is the East 3 Acres of the North 4 Acres of the West Half of the North Half of the Northeast Quarter of the Southwest Quarter of Section 20, Township 28 South, Range 01 East of the 6th. Principal Meridian, Sedgwick County, State of Kansas.

The "Addition" is in Zone "X", as shown on FIRM Panel 505 Of 700.

The "Additions" North Boundary Line is the South Boundary Line of sold South Seneca Gardens 2nd. Addition, and the South Line of a Portion of Block H and J. The South Edge of existing Sycamore Avenue Intersects the North Boundary of the "Addition" 253.55' feet East of the Northwest Corner of the "Addition".

The West Boundary Line is the East Boundary Line of Lot 1, Belton Addition.

The rights-of-way of Sycamore and Oak Ave., extend North to the North Boundary Line of South Seneca Gardens 4th. Addition. This is approximately 200 ' feet South of the South Boundary of the "Addition". S. Oak Ave. is constructed to sold N. Boundary Line. Sycamore Ave. is constructed to a point 3 lots South of said N. Boundary line. The North projection of sold Oak Ave. is more in line with Sycamore Ave. to the North, than Sycamore Ave. to the South is. The "Addition" will show a Contingent Right-of-way in extending South from the proposed cul-de-soc of Sycamore Court in alignment with Oak Ave.

Description:

The "Cornfield Addition" is currently un-developed. The "Addition" is well-grassed, and gently sloping, with no trees. The "Addition" is in Soil Group "D".

Drainage Areas:

Exterior Areas:

There are no measurable exterior flows entering the "Addition" . Sycamore Court when constructed should flow Northerly into existing West 51st. St. So..

Lot 1 and 2 of Block "J" in South Seneca Gardens 2nd. Addition currently drain to the street in 51st. South.

Lot 6 and 7 of Block "H" in South Seneca Gardens 2nd. Addition currently drain to the street in 51st. South.

The adjacent areas to the East, West, and South drain away from the "Addition".

Interior Areas:

Existing Interior Areas Area "1", and Area "2".

Area "1" consists of the Northwesterly portion of the "Addition".

Area "2" consists of the Southeasterly portion of the "Addition".

Proposed Developed Interior Areas "A", "B", and "C"

Area "A" consists of the proposed street (Sycamore Court), the portion of the house sites draining to the street including any sidewalks, driveways and landscaped areas.

Area "B" consists of the rear areas of Lots 1, 2, 3, and 4.

Area "C" consists of the rear areas of Lots 5, 6, 7, and 8.

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Drainage Calculations: (assuming total runoff)

Existing Interior Areas "1", and "2".

Q = CIA
C = 0.61; I = 7.4 in/hr, 24 hour - 100 year storm, 15 minute time of concentration

Original Interior Area "1" - A = 1.39 acres
Q = 0.61 x 7.4 x 1.39 = 6.27 c.f.s.

Original Interior Area "2" - A = 1.58 acres
Q = 0.61 x 7.4 x 1.58 = 7.13 c.f.s.

Developed Interior Areas "A", "B", and "C"

Q = CIA
C= 0.76; I = 7.4 in/hr, 24 hour - 100 year storm, 15 minute time of concentration

Developed Interior Area "A" - A = 1.01 acres
Q = 0.76 x 7.4 x 1.01 = 5.68 c.f.s.

Developed Interior Area "B" - A = 0.57 acres
Q = 0.76 x 7.4 x 0.57 = 3.21 c.f.s.

Developed Interior Area "C" - A = 1.39 acres
Q = 0.76 x 7.4 x 1.39 = 7.82 c.f.s.

Portion of Sycamore Court from North of the "Addition" to the paved intersection

Q = CIA
C= 0.76; I = 7.4 in/hr, 24 hour - 100 year storm, 15 minute time of concentration

Portion of Sycamore Court - A = 0.22 acres
Q = 0.76 x 7.4 x 0.22 = 1.24 c.f.s.

Summary:

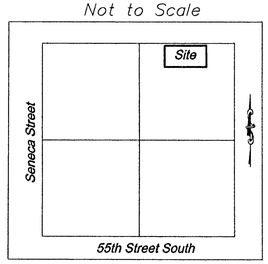
Total Drainage Flow of Area"A" at the North Boundary Line of the "Addition" into the existing right-of-way of Sycamore Court = 5.57 c.f.s.

Total Drainage Flow at the paved return of Sycamore Court and 51st. Street South = Q = 5.57 + 1.24 = 6.81 c.f.s.

Total Drainage Flow to the property West of the "Addition" = 3.21 c.f.s.. There is a recorded Cross Lot Drainage Agreement with the property to the South.

Total Drainage Flow to the property South of the "Addition" = 7.93 c.f.s.

Vicinity Map
Not to Scale



JOB DESCRIPTION: Preliminary Drainage Plan	
PREPARED FOR: John & Elena Elliott	
JOB LOCATION: Osage Avenue	DATE OF PREPARATION: July 21, 2008
JOB NUMBER: 9659	SHEET 1 OF 1
DRAWN BY: AMB	CHECKED BY: CBA

DATE OF TOPOGRAPHICAL SURVEY - MAY 21, 2004 & AUGUST 2008

Notes:

1) All Ground Shot (G) Elevations and Contouring are Existing Elevations, all other grades are proposed.

2) = Grade to Drain

= FENCE

BENCHMARK:

SENECA AND 55TH STREET SOUTH
CITY OF WICHITA BENCH MARK, NORTHWEST CORNER INTERSECTION SOUTHEAST CORNER TRAFFIC SIGNAL LIGHT BASE 66.0 FEET WEST AND 49.4 FEET NORTH OF CENTER LINE OF BOTH. 66.03' FEET NORTHWEST OF 1/2" IRON ON SECTION CORNER.

ELEVATION = 1270.96 (NAVD 88)

SCALE : 1" = 50'

-50 0 25 50 100 150