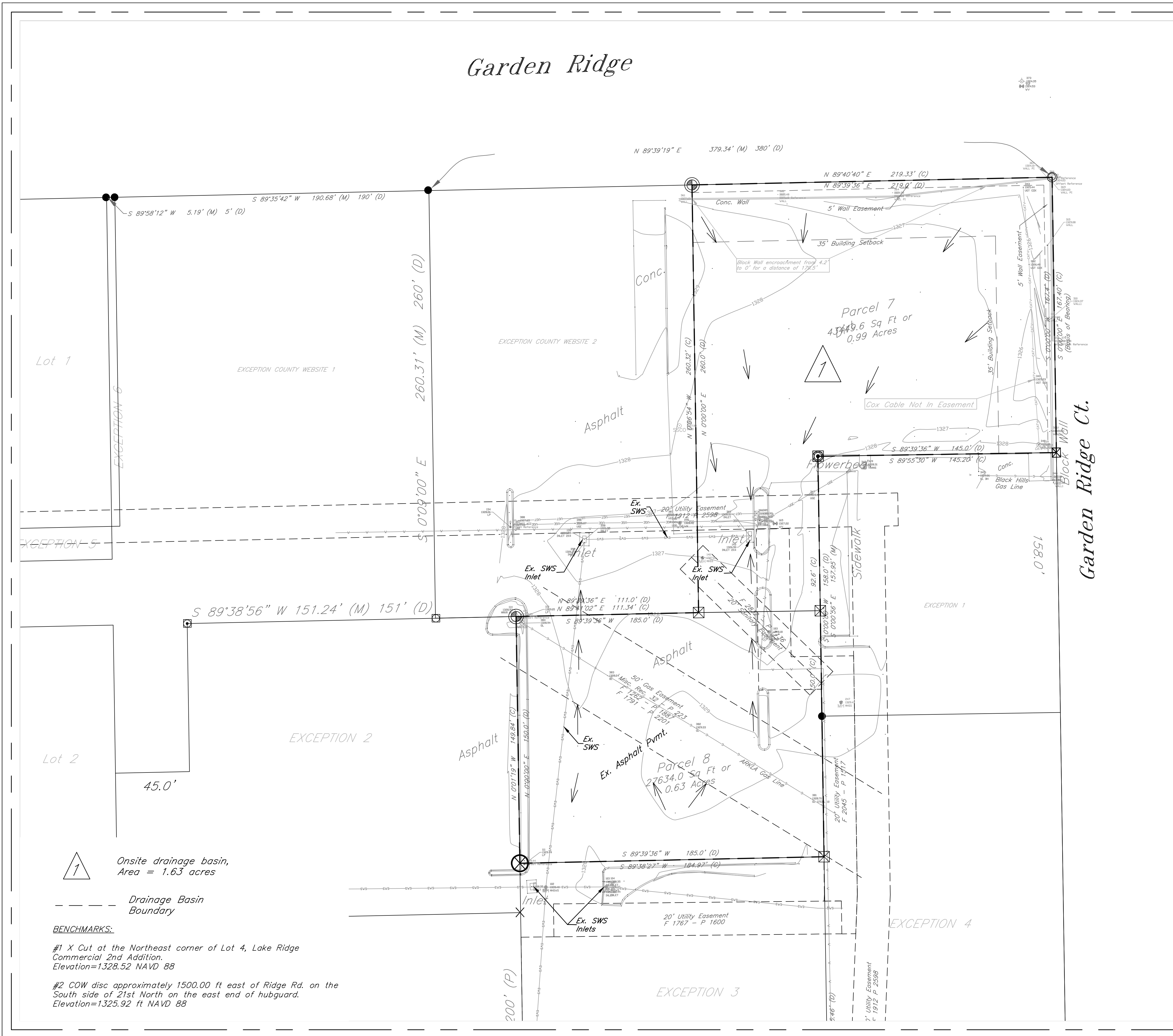


Garden Ridge



Project Narrative:
 The site is located at northeast of 21st St N and Ridge Road. More Specifically the site is located at southwest corner of Garden Ridge and Garden Ridge Ct. The entire parcel 8 and south portion of parcel 7 are covered with asphalt pavement. The north 0.84 acres of parcel 7 is disturbed, undeveloped and covered by grass. The purpose of lot split is to build a commercial building and a parking lot. There are storm sewers available on site. Most of parcel 7 in existing condition drains to the existing inlet on south side of parcel 7 and parcel 8 drains to the existing inlets located south and North of parcel 8 as indicated by flow arrows. The site is not in FEMA designated 100-yr floodplain (FIRM 20173C0335E). The proposed drainage pattern will remain same as existing.

Water Quality and TSS Removal Calculation

The water quality volume and runoff does not need to be treated as total site disturbance is likely to be less than an acre. However if cumulative site disturbance equal or exceeds 1 acre then 100% WQv from new development and 30% WQv from redevelopment shall be treated in order to comply with City of Wichita Stormwater Regulations.

Channel Protection Volume (CPV)

The Channel protection volume detention (1-yr storm for 24 hrs) is not required for this site as the total disturbance of proposed development does not exceed 5.0 acres.

Runoff Calculations (2-, 5-, 10-, 25-, and 100-yr)

Flood detention is not considered for this site as total increase in impervious area will be less than an acre. However extension of existing underground storm sewer system is necessary to drain the site. Following calculation shows the runoff from site in existing and developed condition.

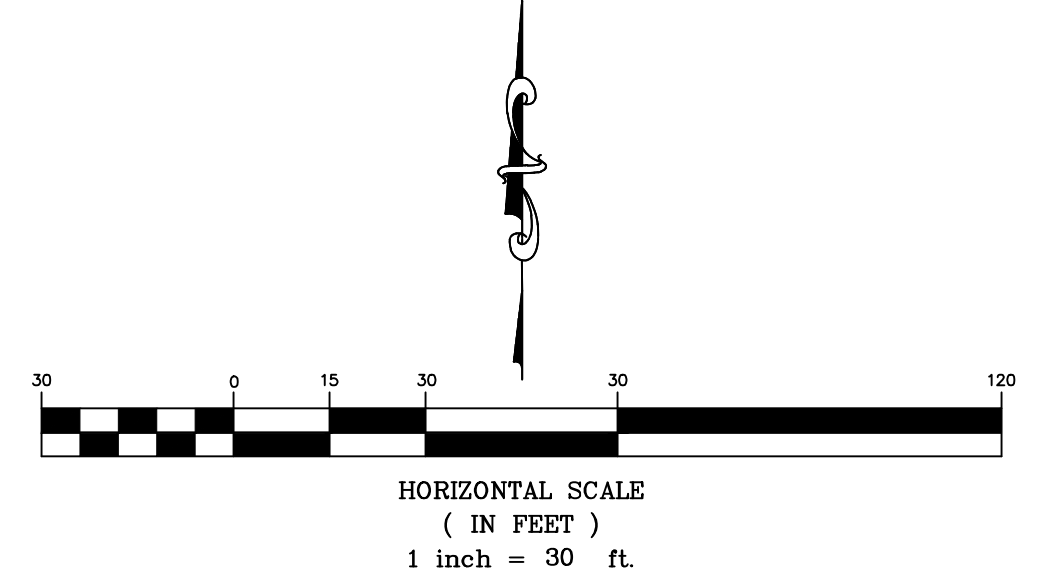
EXISTING CONDITION:
 Total Area A = 1.63 acres (Parcel 7 and Parcel 8)
 Soil Group =B (as per City of Wichita/Sedgwick county HSG map)
 Impervious Area= 0.73 acres , Disturbed Pervious Area= 0.90 acres, CN= 88
 Time of Concentration (Tc)= 13.3 Minutes (first 80 ft sheet @ 0.7% ground slope and 138 ft of shallow conc flow @ 0.7% ground slope)

EXISTING SITE									
DRAINAGE AREA	ACRES	Tc Mins	CN	Q2	Q5	Q10	Q25	Q100	REMARKS
On-site Basin (under consideration)	1.63	13.3	88	5.02	6.97	8.35	10.10	13.41	Draining to Ex. SWS System

DEVELOPED CONDITION:
 Total Area A = 1.63 acres (project area under consideration)
 Soil Group =B (as per City of Wichita/Sedgwick county HSG map)
 Impervious Area= 1.50 acres = 85% of 0.9 acres+0.73 acres
 Disturbed Pervious Area= 0.13 acres, CN= 97
 Time of Concentration (Tc)= 9.3 Minutes (assumed for calculation)

DEVELOPED SITE									
DRAINAGE AREA	ACRES	Tc Mins	CN	Q2	Q5	Q10	Q25	Q100	REMARKS
On-site Basin (under consideration)	1.63	9.3	97	7.19	9.33	10.81	12.72	16.32	Draining to Ex. SWS System

- Notes:**
- Existing and developed flows are calculated using the SCS hydrograph method. "CN" & "Runoff Depth" values are established from "City of Wichita/Sedgwick County Stormwater Design Manual." Time of concentration (Tc) are calculated using TR-55 method.
 - The developed peak flows are calculated for the Type II rainfall distribution for 24 hours. The peak flows shall be routed to the existing sewer system.
 - The proposed drainage from entire site shall be maintained as existing and shall drain to the existing sewer system. Extension of sewer system may be necessary to drain the entire site. The future drainage shall follow as indicated by flow arrows.



Lot 1

Lot 2

1 Onsite drainage basin, Area = 1.63 acres

--- Drainage Basin Boundary

BENCHMARKS:

- #1 X Cut at the Northeast corner of Lot 4, Lake Ridge Commercial 2nd Addition. Elevation=1328.52 NAVD 88
- #2 COW disc approximately 1500.00 ft east of Ridge Rd. on the South side of 21st North on the east end of hubguard. Elevation=1325.92 ft NAVD 88

Lake Ridge Commercial 2nd Addition
Drainage Plan
 Wichita, Kansas

KEMILLER ENGINEERING PA 117 E. Lewis, Wichita, KS 67202 (316)264-0242	PROJECT NUMBER			SHEET 1.0
	KEM NO. 14007	FILE	DATE 03/2014	
DESIGN GP	DRAWN GP	REVISED		