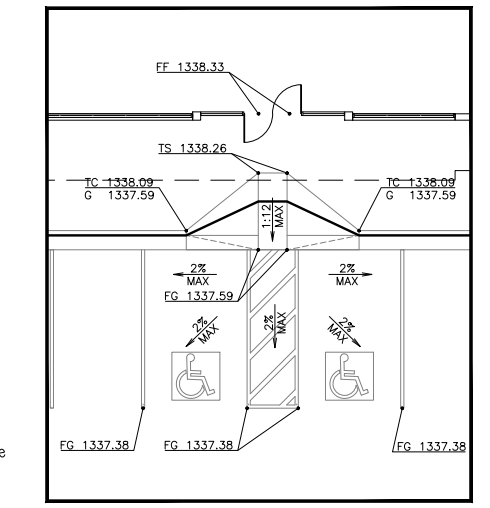
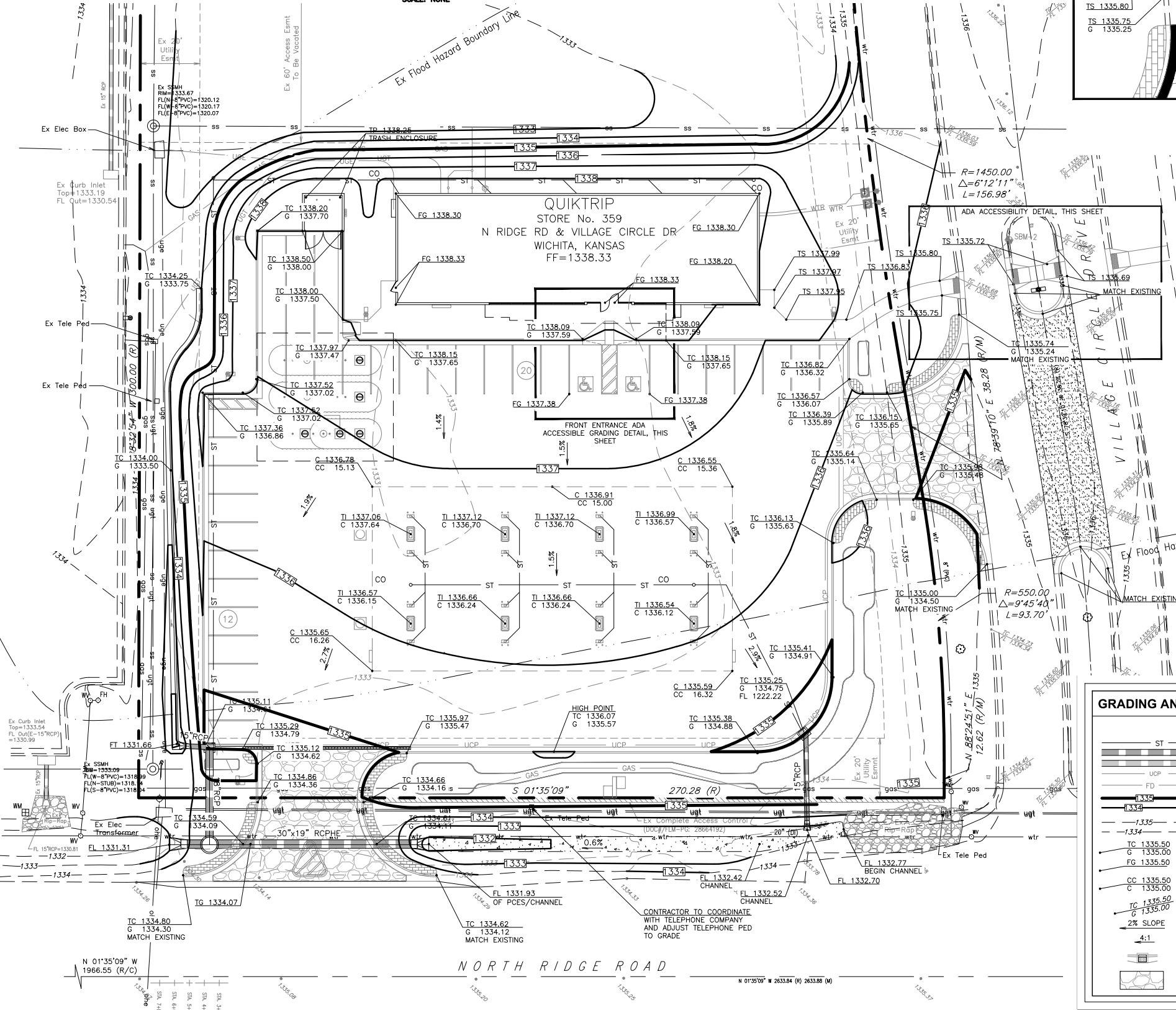
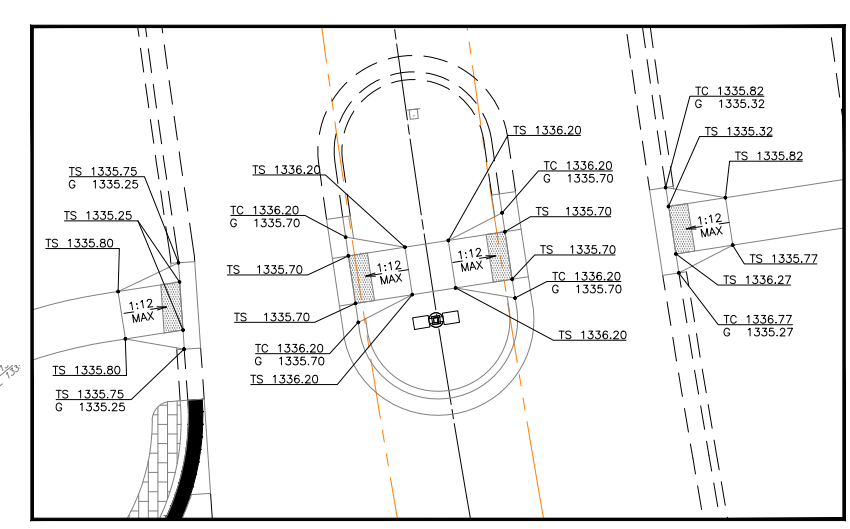
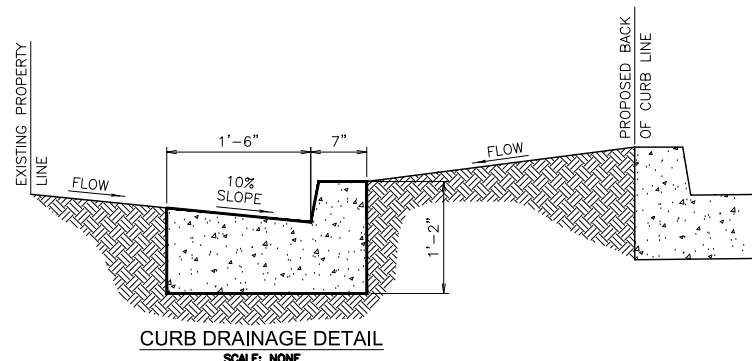
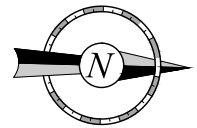


C:\TEMP\TEMP\_AcPublish\_856\0359\_BASE.dwg - Grading Dec 11, 2009 3:04pm - Bobby



**GRADING AND DRAINAGE LEGEND**

ST	STORM PIPE (<10" NEW)
ST	STORM PIPE (>12" NEW)
ST	STORM PIPE (>12" EXISTING)
UCP	UNDER CURB OR PAVEMENT DRAIN
FD	FRENCH DRAIN
1335	MAJOR CONTOUR (NEW)
1335	MINOR CONTOUR (NEW)
1335	MAJOR CONTOUR (EXISTING)
1334	MINOR CONTOUR (EXISTING)
TC 1335.50 G 1335.00	TOP CURB/GUTTER (NEW)
FG 1335.50	FINISHED GRADE (NEW)
CC 1335.50	CANOPY CLEARANCE/CONCRETE
TC 1335.50 G 1335.00	SPOT ELEVATION (EXISTING)
2% SLOPE	SLOPE PERCENTAGE (RISE/RUN)
4:1	SLOPE RATIO (RUN:RISE)
[Symbol]	STORM GRATE (NEW)
[Symbol]	CRUSHED STONE SUB-BASE IN LIEU OF STANDARD # 57 STONE



**QuikTrip**

4705 South 129th East Ave.  
Tulsa, OK 74134-7008  
P.O. Box 3475  
Tulsa, OK 74101-3475  
(918) 615-7700

**GENERAL NOTES**

1. GAS CANOPY INSTALLER SHALL INSTALL THE CANOPY COLUMN DRAIN PIPE AND OVERFLOW FITTING. THE STORM WATER INSTALLER SHALL CONNECT THEIR PIPING TO THE GAS INSTALLER'S OVERFLOW FITTING.
2. TO AVOID ANY DEFINED CRESTS OR SUMPS, "GRADE BREAKS" SHALL BE CONSTRUCTED AS A "VERTICAL CURVE". SURVEYOR & CONTRACTOR SHALL CONFER WITH QUIKTRIP CONSTRUCTION MANAGER PRIOR TO CONSTRUCTION STAKING OR CONCRETE PLACEMENT RELATIVE TO ANY GRADE BREAKS.

© COPYRIGHT  
1996 QUIKTRIP CORPORATION  
DESIGN PATENTS  
QUIKTRIP PLANS ARE THE EXCLUSIVE PROPERTY OF QUIKTRIP CORPORATION, TULSA, OKLAHOMA. THESE PLANS ARE PROTECTED IN THEIR ENTIRETY BY DOMESTIC AND INTERNATIONAL COPYRIGHT AND PATENT STATUTES. ANY UNAUTHORIZED USE, REPRODUCTION, PUBLICATION, DISTRIBUTION OR SALE IN WHOLE OR IN PART, IS STRICTLY FORBIDDEN.

No.	Revision	Date

**HRAOK, Inc.**

ENGINEERS•SURVEYORS•PLANNERS•LANDSCAPE ARCHITECTS  
OKLAHOMA: CA# 3643•EXP. DATE: 6-30-2011  
KANSAS: CN# 1600•EXP. DATE: 12-31-2010  
1913 WEST TACOMA - SUITE A VOICE: (918) 258-3737  
BROKEN ARROW, OKLAHOMA 74012 FAX: (918) 258-2554  
WWW.HRAOK.COM INFO@HRAOK.COM



THIS DOCUMENT IS PRELIMINARY IN NATURE AND IS NOT A SIGNED AND SEALED DOCUMENT.

**GRADING PLAN**

DRAWN BY: JAW/BLJ	SHEET
DESIGNED BY: DKH/BLJ	4
CHECKED BY: WAR/BSR	
ISSUE DATE: 6/26/09	OF 23

WICHITA, KANSAS  
N RIDGE RD & VILLAGE CIRCLE DR  
QuikTrip Store No. : 359

Drainage Summary Chart

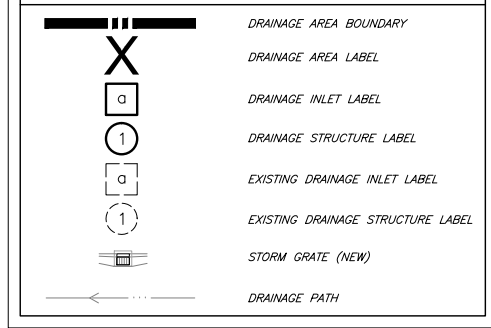
Drainage Area Basin	Inlet Label	Drainage Area (Acres)	C <sub>s</sub> (Weighted)	Overland Reach (Feet)	Overland Slope (%)	Overland Velocity (FPS)	Grassway Reach (Feet)	Grassway Slope (%)	Grassway Velocity (FPS)	Pavement Reach (Feet)	Pavement Slope (%)	Pavement Velocity (FPS)	Total T <sub>c</sub> (Minutes)	100 (in./hr.)	Q <sub>100</sub> (CFS)	Design Q' (Sum at Inlet)	# Slope at Inlet	Clogging Factor	Depth @ Inlet (FT)	Inlet Intercept (CFS)	Inlet Capacity (CFS)	Inlet Bypass (CFS)	Bypass to Inlet #	Inlet Design
A	a	0.16	0.95	-	-	-	-	-	-	225	1.37	2.38	1.58	12.21	1.9	1.9	1.9	0.70	0.32	1.9	3.6	-	-	SINGLE INLET
B	b	0.41	0.71	-	-	-	-	-	-	227	1.83	2.75	1.38	12.35	3.6	-	-	-	-	-	3.6	-	-	VANE DRAIN
C	4	0.91	0.95	-	-	-	205	0.60	1.25	359	0.92	1.95	5.80	10.05	8.7	-	-	-	-	-	-	-	-	30"x19" PCES
R1	a	0.17	0.95	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	ROOF DRAINS
R2	b	0.10	0.95	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	ROOF DRAINS
X	*	0.61	0.85	245	0.50	0.49	-	-	-	-	-	-	8.25	9.18	4.8	-	-	-	-	-	-	-	-	15" PCES
Y	3	0.13	0.35	24	0.50	0.49	-	-	-	162	0.50	1.44	2.69	11.53	0.5	-	-	-	-	-	-	-	-	15" PCES

FULLY DEVELOPED AREA WILL BE ROUTED TO STRUCTURE 3

Storm Sewer Structure Table

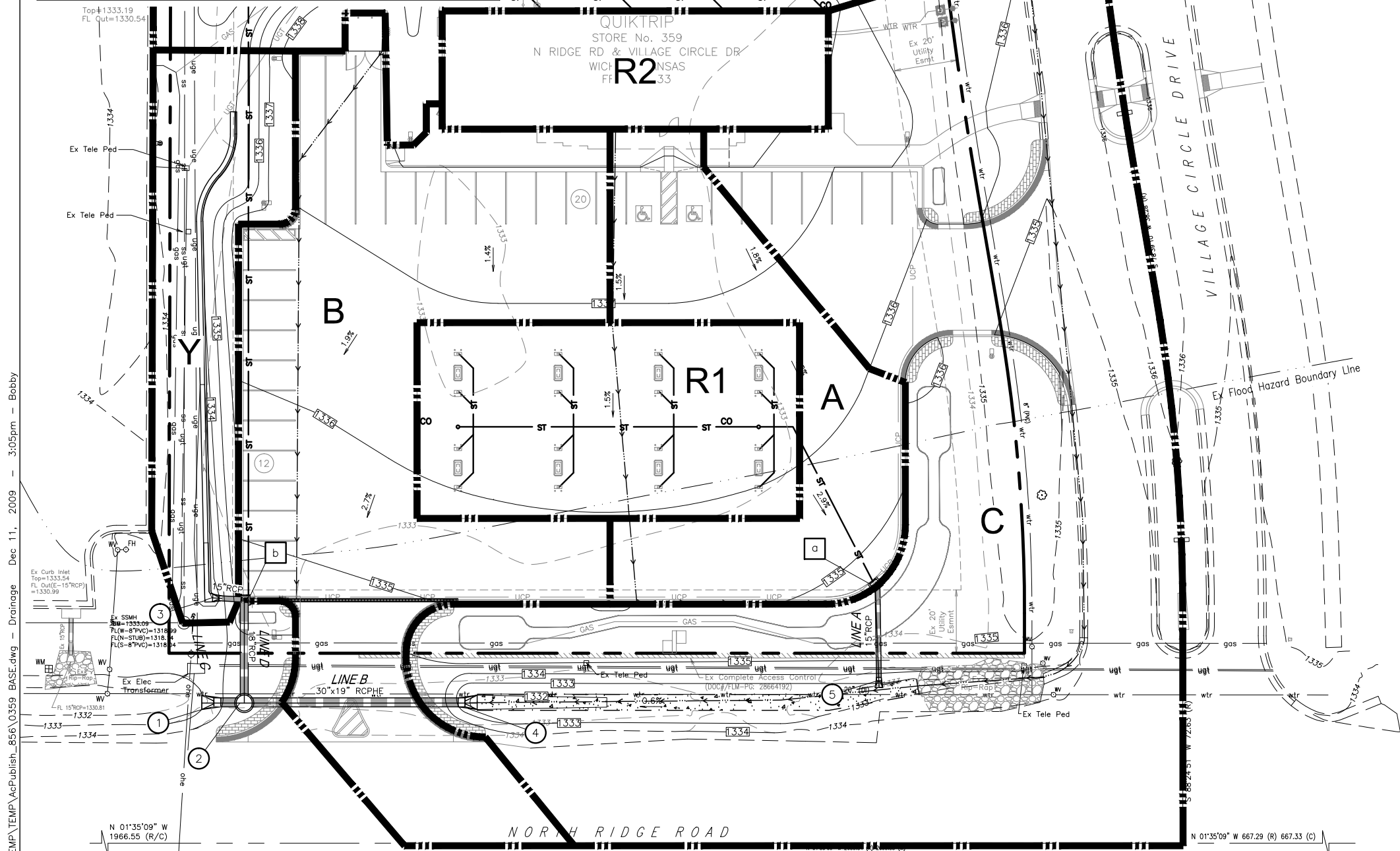
STRUCTURE LABEL	STRUCTURE TYPE	STRUCTURE LABEL	STRUCTURE TYPE
a	SINGLE INLET	3	15" PCES
b	SINGLE INLET w/VANE DRAIN	4	30"x19" PCES
1	30"x19" PCES	5	15" PCES
2	4'x6' RCB		

DRAINAGE AREA MAP LEGEND



Storm Sewer Summary Table

PIPE RUN FROM	PIPE RUN TO	SIZE (IN)	SLOPE (%)	FLOW (CFS)	CAPACITY (CFS)	VELOCITY (FPS)	HGL DOWN (FT)	EGL DOWN (FT)	HGL UP (FT)	EGL UP (FT)
a	5	15	0.50	4.0	4.9	4.21	1333.52	1333.88	1333.92	1334.20
1	2	30x19	1.40	18.1	27.6	9.16	1334.41	1334.82	1334.98	1335.40
2	4	30x19	0.68	12.7	18.2	6.33	1332.81	1334.56	1332.98	1334.73
3	b	15	1.00	0.5	6.5	3.12	1334.38	1334.39	1334.39	1334.39
b	2	18	1.00	10.0	11.3	5.99	1334.20	1334.70	1334.71	1335.21



**QuikTrip**

4705 South 129th East Ave.  
Tulsa, OK 74134-7008  
P.O. Box 3475  
Tulsa, OK 74101-3475  
(918) 615-7700

GENERAL NOTES

© COPYRIGHT  
1996 QUIKTRIP CORPORATION  
DESIGN PATENTS  
QUIKTRIP PLANS ARE THE EXCLUSIVE PROPERTY OF QUIKTRIP CORPORATION, TULSA, OKLAHOMA. THESE PLANS ARE PROTECTED IN THEIR ENTIRETY BY DOMESTIC AND INTERNATIONAL COPYRIGHT AND PATENT STATUTES. ANY UNAUTHORIZED USE, REPRODUCTION, PUBLICATION, DISTRIBUTION OR SALE IN WHOLE OR IN PART, IS STRICTLY FORBIDDEN.

No.	Revision	Date

**HRAOK, Inc.**

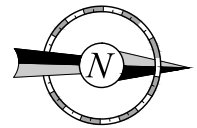
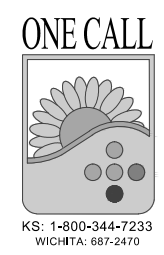
ENGINEERS•SURVEYORS•PLANNERS•LANDSCAPE ARCHITECTS  
OKLAHOMA: CA# 3643•EXP. DATE: 6-30-2011  
KANSAS: CN# 1600•EXP. DATE: 12-31-2010  
1913 WEST TACOMA - SUITE A VOICE: (918) 258-3737  
BROKEN ARROW, OKLAHOMA 74012 FAX: (918) 258-2554  
WWW.HRAOK.COM INFO@HRAOK.COM



THIS DOCUMENT IS PRELIMINARY IN NATURE AND IS NOT A SIGNED AND SEALED DOCUMENT.

DRAINAGE AREA MAP

DRAWN BY: JAW/BLJ	SHEET <b>7</b> OF 23
DESIGNED BY: DKH/BLJ	
CHECKED BY: WAR/BSR	
ISSUE DATE: 6/26/09	



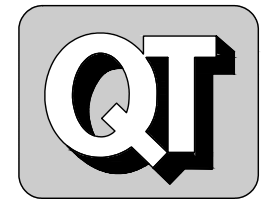
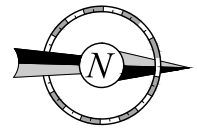
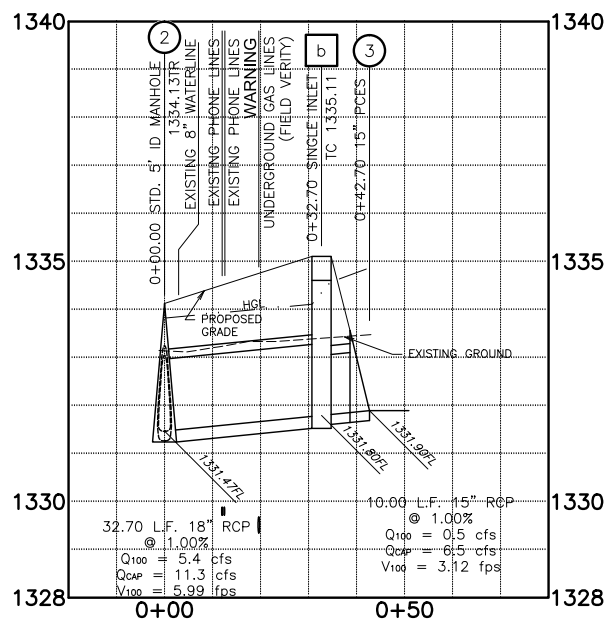
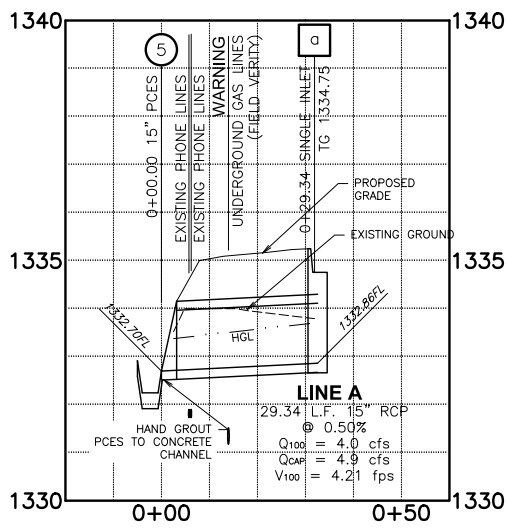
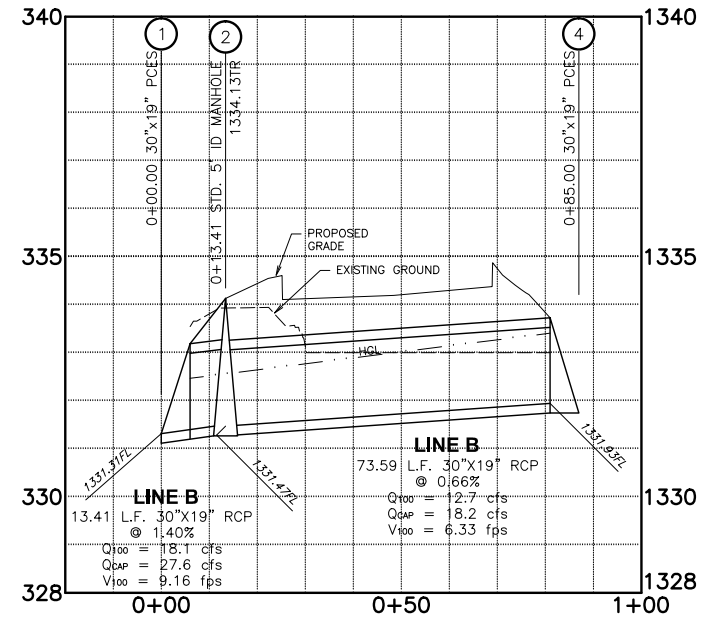
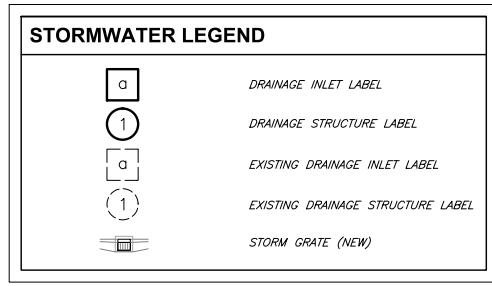
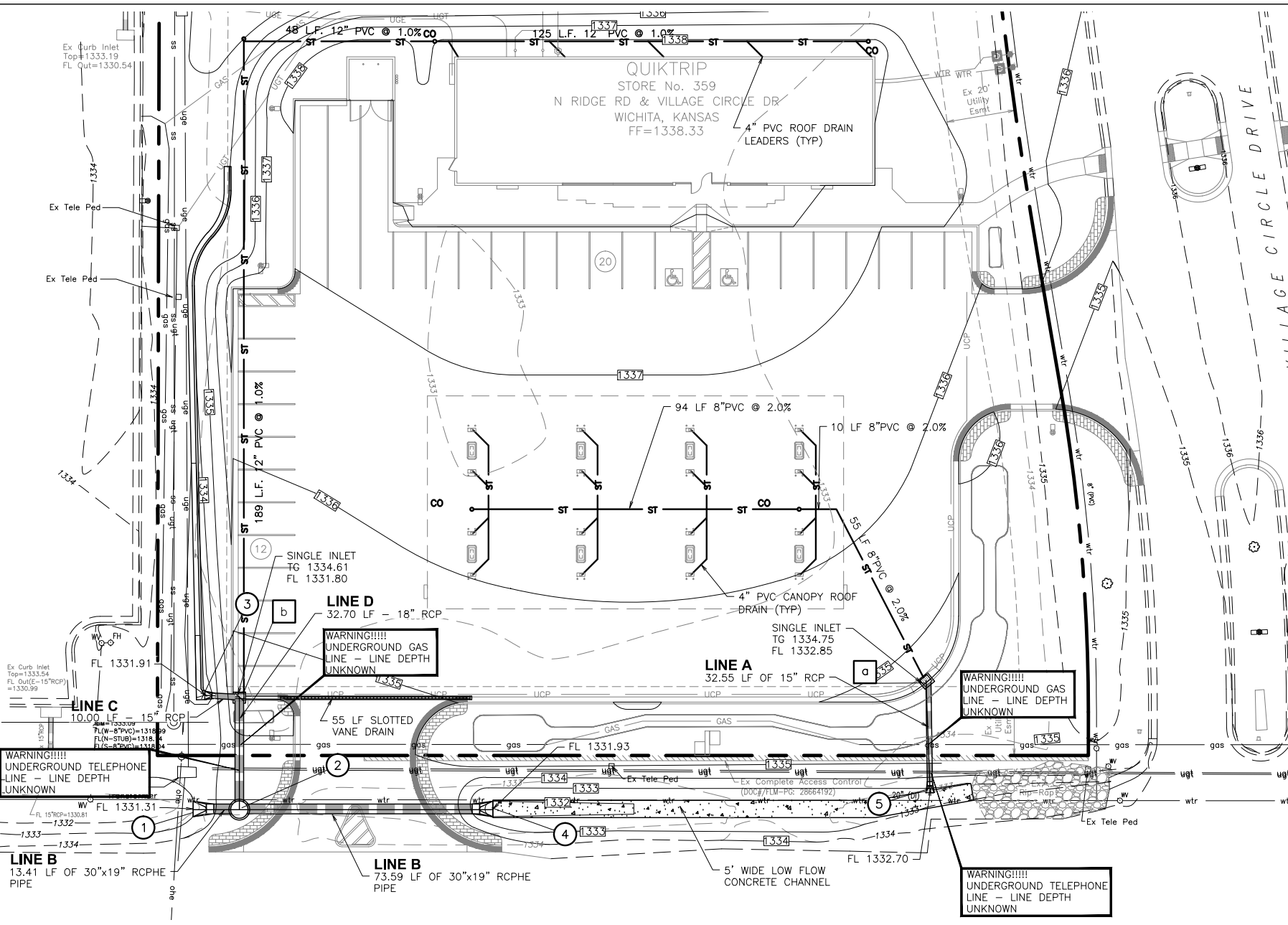
C:\TEMP\TEMP\_AcPublish\_856\03159\_BASE.dwg Dec 11, 2009 3:05pm - Bobby

WICHITA, KANSAS

N RIDGE RD & VILLAGE CIRCLE DR

QuikTrip Store No. : 359

C:\TEMP\TEMP\_AcPublshr\_856\0359\_BASE.dwg - SW P&P Dec 11, 2009 - 3:05pm - Bobby



**QuikTrip**

4705 South 129th East Ave.  
Tulsa, OK 74134-7008  
P.O. Box 3475  
Tulsa, OK 74101-3475  
(918) 615-7700

**GENERAL NOTES**

© COPYRIGHT  
1996 QUIKTRIP CORPORATION  
DESIGN PATENTS  
QUIKTRIP PLANS ARE THE EXCLUSIVE PROPERTY OF QUIKTRIP CORPORATION, TULSA, OKLAHOMA. THESE PLANS ARE PROTECTED IN THEIR ENTIRETY BY DOMESTIC AND INTERNATIONAL COPYRIGHT AND PATENT STATUTES. ANY UNAUTHORIZED USE, REPRODUCTION, PUBLICATION, DISTRIBUTION OR SALE IN WHOLE OR IN PART, IS STRICTLY FORBIDDEN.

No.	Revision	Date

**HRAOK, Inc.**

ENGINEERS•SURVEYORS•PLANNERS•LANDSCAPE ARCHITECTS  
OKLAHOMA: CA# 3643•EXP. DATE: 6-30-2011  
KANSAS: CN# 1600•EXP. DATE: 12-31-2010  
1913 WEST TACOMA - SUITE A VOICE: (918) 258-3737  
BROKEN ARROW, OKLAHOMA 74012 FAX: (918) 258-2554  
WWW.HRAOK.COM INFO@HRAOK.COM

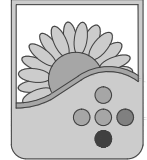


THIS DOCUMENT IS PRELIMINARY IN NATURE AND IS NOT A SIGNED AND SEALED DOCUMENT.

**STORM SEWER PLAN & PROFILES**

DRAWN BY: JAW/BLJ	SHEET
DESIGNED BY: DKH/BLJ	8
CHECKED BY: WAR/BSR	
ISSUE DATE: 6/26/09	OF 23

**ONE CALL**



KS: 1-800-344-7233  
WICHITA: 687-2470

WICHITA, KANSAS

N RIDGE RD & VILLAGE CIRCLE DR

QuikTrip Store No. : 359