DRAINAGE PRIVATE PROJECT PLANS FOR

QUIKTRIP STORE #322

35TH ST. N & OLIVER AVE.

WICHITA, SEDGWICK COUNTY, KS.

207 PPD (O.C.A. NO. 607861)

GARY JANZEN, P.E., CITY ENGINEER

NOVEMBER 2013

A. IN ACCORDANCE WITH GENERALLY ACCEPTED CONSTRUCTION PRACTICES, THE CONTRACTOR SHALL BE SOLELY AND COMPLETELY RESPONSIBLE FOR CONDITIONS OF THE JOB SITE, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY DURING PERFORMANCE OF THE WORK. THIS REQUIREMENT WILL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS. ANY CONSTRUCTION OBSERVATION BY THE ENGINEER OF THE CONTRACTOR'S PERFORMANCE IS NOT INTENDED TO INCLUDE REVIEW OF THE ADEQUACY OF THE CONTRACTOR'S SAFETY MEASURES, IN, ON OR NEAR THE CONSTRUCTION SITE.

B. CONTRACTOR SHALL BE RESPONSIBLE FOR RAZING AND REMOVAL OF THE EXISTING STRUCTURES, RELATED UTILITIES, PAVING, AND ANY OTHER EXISTING IMPROVEMENTS AS NOTED. REF. SITE WORK SPECIFICATIONS.

C. CONTRACTOR IS TO REMOVE AND DISPOSE OF ALL DEBRIS, RUBBISH AND OTHER MATERIALS RESULTING FROM PREVIOUS AND CURRENT DEMOLITION OPERATIONS. DISPOSAL WILL BE IN ACCORDANCE WITH ALL LOCAL, STATE AND/OR FEDERAL REGULATIONS GOVERNING SUCH OPERATIONS.

D. THE GENERAL CONTRACTOR WILL BE HELD SOLELY RESPONSIBLE FOR AND SHALL TAKE ALL PRECAUTIONS NECESSARY TO AVOID PROPERTY DAMAGE TO ADJACENT PROPERTIES DURING THE CONSTRUCTION PHASES OF THIS PROJECT.

E. ALL CONSTRUCTION IN STATE HIGHWAY DEPARTMENT RIGHT-OF-WAY SHALL BE COORDINATED WITH THE HIGHWAY DEPARTMENT RESIDENT MAINTENANCE ENGINEER. SPECIFICATIONS ADOPTED BY USA DEPARTMENT OF TRANSPORTATION, MARCH 1, 1993, AND SPECIFICATION ITEMS LISTED AND DATED AS FOLLOWS SHALL GOVERN ON THIS PROJECT.

F. ALL SITE WORK FOR THIS PROJECT SHALL MEET OR EXCEED THE SPECIFICATIONS OF THE RELEVANT UTILITY COMPANY OR REGULATORY AUTHORITY, AND THE SPECIFICATIONS FOR THE CONSTRUCTION OF THE EXISTING IMPROVEMENTS WHICH ARE BEING ALTERED OR REPLACED. CONTRACTOR SHALL CONTACT THE ENGINEER FOR SPECIFICATION SECTIONS FOR ITEMS SUCH AS LANDSCAPING AND IRRIGATION THAT ARE AFFECTED BY THE WORK BUT NOT COMPLETELY DETAILED OR SPECIFIED ON THESE PLANS.

G. THE CONTRACTOR IS RESPONSIBLE FOR TRAFFIC CONTROL; TWO-WAY TRAFFIC MUST BE MAINTAINED THROUGHOUT THE PROJECT. TRAFFIC CONTROL DEVICES AND SIGNING SHALL BE IN ACCORDANCE OF THE LATEST ADDITION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD).

H. ALL PROPERTY CORNER MONUMENTS SHALL BE PRESERVED, ANY DISTURBED MONUMENTS SHALL BE RESET ONLY BY A LICENSED SURVEYOR.

WETLANDS NOTICE:

ANY DEVELOPMENT, EXCAVATION, CONSTRUCTION, OR FILLING IN A U.S. CORPS OF ENGINEERS DESIGNATED WETLAND IS SUBJECT TO LOCAL, STATE AND FEDERAL APPROVALS. THE CONTRACTOR SHALL COMPLY WITH ALL PERMIT REQUIREMENTS AND/OR RESTRICTIONS AND ANY VIOLATION WILL BE SUBJECT TO FEDERAL PENALTY. THE CONTRACTOR SHALL HOLD THE OWNER/ DEVELOPER, THE ENGINEER AND THE LOCAL GOVERNING AGENCIES HARMLESS AGAINST SUCH VIOLATION.

WARRANTY/DISCLAIMER:

THE DESIGNS REPRESENTED IN THESE PLANS ARE IN ACCORDANCE WITH ESTABLISHED PRACTICES OF CIVIL ENGINEERING FOR THE DESIGN FUNCTIONS AND USES INTENDED BY THE OWNER AT THIS TIME. HOWEVER, NEITHER THE ENGINEER NOR ITS PERSONNEL CAN OR DO WARRANT THESE DESIGNS OR PLANS AS CONSTRUCTED EXCEPT IN THE SPECIFIC CASES WHERE THE ENGINEER INSPECTS AND CONTROLS THE PHYSICAL CONSTRUCTION ON A CONTEMPORARY BASIS AT THE SITE.

NOTICE TO BIDDERS:

ALL QUESTIONS REGARDING THE PREPARATION OF THE GENERAL CONTRACTOR'S BID SHALL BE DIRECTED TO THE OWNER'S CONSTRUCTION DEPARTMENT AT 918-615-7816. SUBCONTRACTORS MUST DIRECT THEIR QUESTIONS THROUGH THE GENERAL CONTRACTOR. THE CONSULTING ARCHITECT AND/OR THE CONSULTING ENGINEER SHALL NOT BE CONTACTED DIRECTLY WITHOUT PRIOR AUTHORIZATION FROM THE OWNER/DEVELOPER.

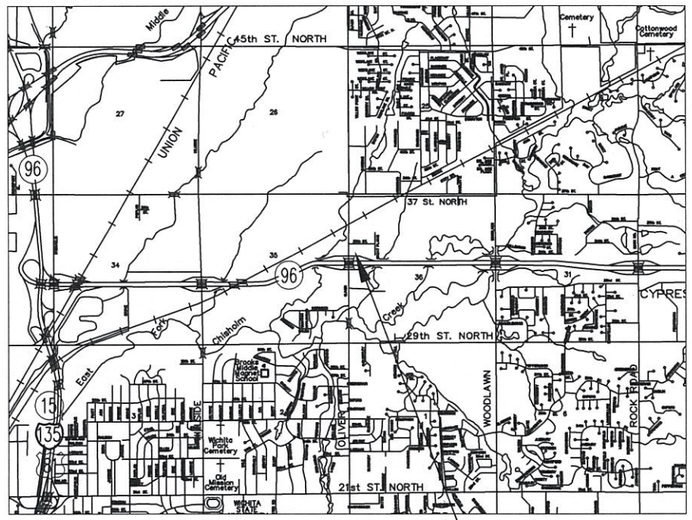
FLOOD CERTIFICATION:

THIS PROPERTY LIES IN ZONE "X" AND DOES NOT LOCATE WITHIN ANY PRESENTLY ESTABLISHED 100-YEAR FLOOD PLAIN, AS SHOWN BY THE FEDERAL EMERGENCY MANAGEMENT AGENCY, FLOOD INSURANCE RATE MAP FOR THE COUNTY OF CITY, STATE, COMMUNITY PANEL NUMBER 20173C0357E EFFECTIVE DATE FEBRUARY 2, 2007.

BENCHMARKS:

BM 1- CHISELED SQUARE ON TOP OF CURB ON SOUTH SIED OF 35TH STREET NORTH DIRECTLY NORTH OF THE NORTHEAST CORNER OF LOT 1, BLOCK 3, GREAT PLAINS BUSINESS PARK 2ND ADDITION. ELEV.=1367.85 N.A.V.D. 88

BM 2- CHISELED SQUARE ON TOP OF CURB ON END OF NORTHEAST CURB RETURN IN THE SOUTHEAST QUADRANT OF THE INTERSECTION OF OLIVER STREET AND 35TH STREET NORTH GENERALLY LOCATED AT THE NORTHWEST CORNER OF LOT 1, BLOCK 3, GREAT PLAINS BUSINESS PARK 2ND ADDITION. ELEV.=1363.65 N.A.V.D. 88



Not to Scale

Project Location

Vicinity Map

SHEET INDEX

APPROVED AS NOTED By
CITY ENGINEER OF WICHITA

Storm Sewers by City Engineer _____ 6/16/14

by Storm Water Engineer _____ 6/13/14

NOTE TO CONTRACTOR

INSPECTION AND TESTING FOR THIS PROJECT IS TO BE PROVIDED BY A LICENSED CONSULTING ENGINEERING FIRM UNDER CONTRACT WITH THE OWNER/DEVELOPER. SAID INSPECTION TO BE IN ACCORDANCE WITH THE CITY OF WICHITA STANDARD CONSTRUCTION ENGINEERING PRACTICES AND CERTIFIED BY A LICEASED PROFESSIONAL ENGINEER. NO WORK SHALL BE PERFORMED IN DEDICATED EASEMENTS OR THE PUBLIC RIGH-OF-WAY BY THE CONTRACTOR WITHOUT SUCH INSPECTION NOR SHALL ANY WORK BE COMMENCED IN DEDICATED EASEMENTS OR PUBLIC RIGHT-OF-WAY WITHOUT WRITTEN AUTHORIZATION BY THE CITY ENGINEER.

STORMWATER COMPLIANCE

TOTAL DISTURBED AREA
- 3.16 ACRES

PROJECT PROPERTY AREA
- 2.75 ACRES

DEVELOPED IMPERVIOUS AREA
- 1.62 ACRES

EXISTING IMPERVIOUS AREA
- 0 ACRES

DETENTION =REQUIRED (MORE THAN 1 ACRE OF NEW IMPERVIOUS AREA), 0.519 AC-FT PROVIDED

CHANNEL PROTECTION VOLUME = REQUIRED, 0.281 AC-FT PROVIDED

CHANNEL PROTECTION DETENTION TIME:
REQUIRED = 24 TO 48 HOURS
PROVIDED = 26.5 HOURS

WATER QUALITY ACHIEVED BY: FLOGUARD DUAL-VORTEX DVS-60C HYDROGUARD SEPARATOR MANUFACTURED BY KRISTAR ENTERPRISES, INC.

DEVELOPMENT COMPLIES WITH SECTION 16.32 OF CITY CODE.

MUNICIPAL CONTACT LIST:

CITY OF WICHITA

OFFICE OF CENTRAL INSPECTION DEPARTMENT - PLANNING DIVISION
CITY HALL, 7TH FLOOR
455 N. MAIN
WICHITA, KS, 67202
TEL: (316) 268-4477
FAX: (316) 268-4663
CONTACT: PAUL HAYS

CAPITAL IMPROVEMENT PROJECTS/ ENGINEERING DEPARTMENT
CITY HALL, 7TH FLOOR
455 N. MAIN
WICHITA, KS, 67202
TEL: (316) 268-4236
FAX: (316) 268-4114
CONTACT: JULIANNE KALLMAN, P.E.

CITY OF WICHITA STORM WATER MANAGEMENT DEPARTMENT
CITY HALL, 8TH FLOOR
455 N. MAIN
WICHITA, KS, 67202
TEL: (316) 268-4498
CONTACT: SCOTT LINDEBAK, P.E.

CITY FIRE DEPARTMENT
CITY HALL, 11TH FLOOR
455 N. MAIN
WICHITA, KS, 67202
TEL: (316) 268-4510
FAX: (316) 858-7702
CONTACT: CHIEF ROBERT THOMPSON

OFFICE OF CENTRAL INSPECTION DEPARTMENT - INSPECTIONS DIVISION
CITY HALL, 7TH FLOOR
455 N. MAIN
WICHITA, KS, 67202
TEL: (316) 268-4648
FAX: (316) 268-4663
CONTACT: PAUL HAYS

CITY TRAFFIC ENGINEER
CITY HALL, 7TH FLOOR
455 N. MAIN
WICHITA, KS, 67202
TEL: (316) 268-4393
FAX: (316) 268-4114
CONTACT: PAUL GUNZELMAN, P.E.

CITY OF WICHITA WATER & SEWER UTILITIES
CITY HALL, 8TH FLOOR
455 N. MAIN
WICHITA, KS, 67202
TEL: (316) 268-4555
CONTACT: KERRY GIBSON
ALT. CONTACTS: GREG LOLLEY OR LaDONNA LAWRENZ
TEL: (316) 268-4501

PRIVATE UTILITIES LIST:

ELECTRIC COMPANY (WESTAR ENERGY)
TEL: (316) 261-6315
CONTACT: SHANE PRICE
EMAIL: SHANE.PRICE@WESTARENERGY.COM

GAS COMPANY (KANSAS GAS SERVICE)
TEL: (316) 261-831-5664
CONTACT: CINDY LITTLEJOHN
EMAIL: CINDY.LITTLEJOHN@ONEOK.COM

FIBER OPTIC (LEVEL 3)
TEL: (720) 888-2013
CONTACT: TOM MIECZKOWSKI
EMAIL: THOMAS.MIECZKOWSKI@LEVEL3.COM

TELEPHONE COMPANY (AT&T)
TEL: (316) 268-2762
CONTACT: JIM TOBEN
EMAIL: JT7372@ATT.COM

CABLE COMPANY (COX COMMUNICATIONS)
TEL: (316) 260-7475
CONTACT: JEFF CAPPS
EMAIL: JEFF.CAPPS@COX.COM

As-Built Plans
Contractor: Dondlinger Construction
Superintendent: Mike Sullivan
Foreman:Chris Peterson
Client:City Of Wichita
Inspector:Caleb Wilson
PDF by: CFW, 01/27/15

PROJECT CONTACT LIST:

SURVEYOR OF RECORD
MKEC
MICHAEL E. SMALL, P.L.S.
411 N WEBB RD.
WICHITA, KS 67206
TEL: (316) 684-9600

ENGINEER OF RECORD
SCHWAB-EATON
ANNE STEPHENS, P.E.
8615 W. FRAZIER LANE, SUITE 2
WICHITA, KS 67212
TEL: (316) 722-4472

QT REAL ESTATE PROJECT MANAGER
QUIKTRIP CORPORATION
JOE KIM
4705 S. 129TH EAST AVE.
TULSA, OK 74134
TEL: (918) 615-7140
FAX: (918) 606-8139

QT CIVIL PROJECT MANAGER
QUIKTRIP CORPORATION
TIM KELLY, P.E.
4705 S. 129TH EAST AVE.
TULSA, OK 74134
TEL: (918) 615-7381
FAX: (918) 615-7451

ONE CALL
KANSAS
KS:
1-800-344-7233
WICHITA: 316-687-2470

KANE STEPHENS 19299 LICENSED PROFESSIONAL ENGINEER June 2, 2014

PROJECT NO.: 13.W024

Schwab Eaton
8615 W. Frazier, Suite 2
Wichita, Kansas
p. 316.722.4472
f. 316.722.4479

QuikTrip No. 0322
3520 NORTH OLIVER ST.
WICHITA, KS.

PROTOTYPE: P-79 (05/01/14)
DIVISION: WICHITA
VERSION: 001
DESIGNED BY: AS
DRAWN BY: AL
REVIEWED BY: TK

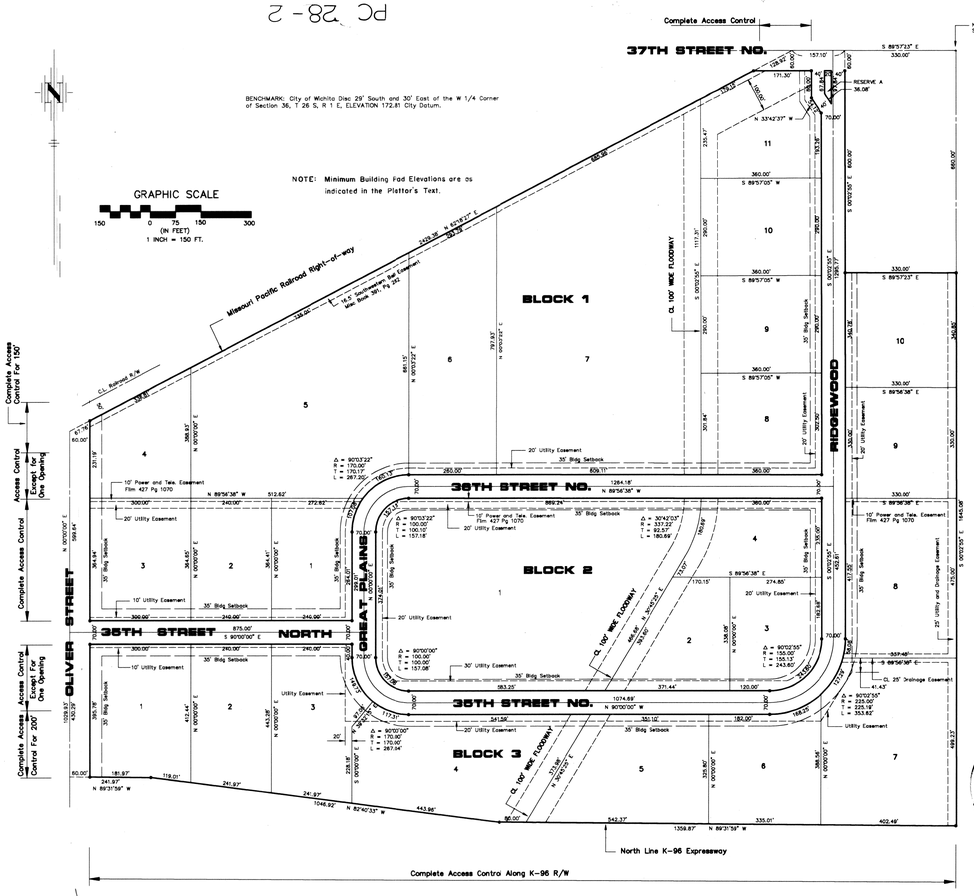
REV	DATE	DESCRIPTION
		ORIGINAL ISSUE DATE:

SHEET TITLE: COVER SHEET

SHEET NUMBER: 1

FILE LOCATION:W:\Projects\13.W024 QuikTrip Store 0322\CAD Files\03-0322 PPD.dwg TAB NAME:Cover 01 USER:alopez SAVED:6/4/2014 9:37 AM PLOTTED:6/4/2014 10:20 AM

PC 28-2



GREAT PLAINS BUSINESS PARK 2ND ADDITION

TO WICHITA, SEDGWICK COUNTY, KANSAS

PC 28-2

STATE OF KANSAS, COUNTY OF SEDGWICK: ss.

I, Kenny E. Hill, being a duly licensed Land Surveyor in said County and State, do hereby certify that I have been in responsible charge of surveying and plotting "GREAT PLAINS BUSINESS PARK 2ND ADDITION" to Wichita, Kansas, being described as follows:

A replat of North Oliver Industrial Park Addition, an adjacent tract and Great Plains Business Park Addition being more particularly described as follows:

Commencing at the Northeast corner of the Northwest Quarter (NW1/4) of Section 36, Township 26 South, Range 1 East of the 6th P.M. Sedgwick County, Kansas; thence N 89° 57' 23" W along the North line of said Northwest Quarter (NW 1/4) for a distance of 330.00 feet to the point of beginning; thence S 0° 03' 55" E for a distance of 860.00 feet to the Southwest corner of Town and Country Christian Church Addition; thence S 89° 57' 23" E for a distance of 330.00 feet to the Southeast corner of Town and Country Christian Church Addition; thence S 0° 03' 55" E for a distance of 1645.08 feet on the East line of the Northwest Quarter (NW 1/4) of said Section 36 to a point on the North line of the K-96 Expressway Right-of-way; hence N 89° 31' 59" W for a distance of 1359.87 feet on the North line of said Expressway; thence N 82° 40' 33" W for a distance of 1046.92 feet on the North line of said expressway; thence N 89° 31' 59" W for a distance of 241.97 feet on the North line of said Expressway extended, to a point on the West line of the Northwest Quarter (NW 1/4) of said Section 36; thence N 0° 00' 00" E for a distance of 1029.93 feet; thence N 62° 18' 27" E along the South line of the Missouri Pacific Railroad Right-of-way for a distance of 2429.38 feet to a point on the North line of the Northwest Quarter (NW 1/4) of said Section 36; thence S 89° 57' 23" E for a distance of 157.10 feet to the point of beginning, containing 103.96 acres more or less. Easements and other public reservations are hereby vacated to conform to those shown on this plat by virtue of KSA 12-512(b) as amended.

The accompanying plat is a true and correct exhibit of property surveyed.

Dated this 21ST day of JULY, 1991.

Kenny E. Hill, L.S.

KNOW ALL MEN BY THESE PRESENTS:

That we, the undersigned, have caused the land described in the Surveyor's Certificate to be platted into lots, blocks, streets and a reserve. The streets are hereby dedicated to and for the use of the public. Easements are hereby granted as indicated for the construction and maintenance of drainage and utilities. Reserve A is for landscaping, entry monuments and utilities. The reserve is to be owned and maintained by the owners of Lot 1, Block 2, Great Plains Business Park 2nd Addition. All abutters' rights of access to or from Oliver Street, 37th Street North and K-96 Expressway over and across the North line of Lot 11, Block 1, the South line of Lots 1 through 7, Block 3, the West line of Lot 1, Block 3, except for one opening in the North 195 feet, the West line of Lot 3 and 4, Block 1, except for one opening to Lot 4 being a minimum of 150.00 feet south of the centerline of the Missouri Pacific Railroad right-of-way are hereby granted to the appropriate governing body. The floodway shall be the responsibility of the adjacent property owners until such time as the governing body exercising jurisdiction elects to assume responsibility for maintenance and improvement of the drainage, provided further that no building shall be constructed on or within said floodway, nor shall any fill, change of grade, creation of channel or any other work be carried on without the permission of the Wichita-Valley Center Flood Control office or their successors of office. A minimum building pad elevation on City of Wichita Datum shall be maintained on the following lots, Lot 3, Block 1, elevation 176.0, Lots 4 and 5, Block 1, elevation 179.5, the North 1/2 of Lot 7 and all of Lot 10, Block 1, elevation 185.0, the South 1/2 of Lot 7 and all of Lots 8 and 9, Block 1, elevation 183.0, Lot 11, Block 1, elevation 187.0, Lots 1, 2 and 4, Block 2, elevation 179.0, Lots 4 and 5, Block 3, elevation 176.5. Minimum building pads are referencing floor elevations.

The City of Bel Aire, Kansas

Harold Smith, Mayor

Attest: Sherryl L. Cutter, City Clerk

Great Plains Ventures, Inc.

Kenneth W. Rix, Vice-President

STATE OF KANSAS, COUNTY OF SEDGWICK: ss.

This instrument was acknowledged before me on this 3rd day of February, 1992, by Kenneth W. Rix, Harold Smith and Sherryl L. Cutter.

Betty L. Martine
NOTARY PUBLIC
State of Kansas
Appt. Expires 12-22-95

Notary Public Betty L. MARTINE

12-22-95
My Appointment Expires:

This plat of GREAT PLAINS BUSINESS PARK 2ND ADDITION to Wichita, Sedgwick County, Kansas has been submitted to and approved by this WICHITA-SEDGWICK COUNTY METROPOLITAN AREA PLANNING COMMISSION, Wichita, Kansas.

Dated this 17th day of July, 1991.

WICHITA SEDGWICK COUNTY METROPOLITAN AREA PLANNING COMMISSION

George D. Sherman, Chairman

Marvin S. Krout, Secretary

This plat approved and all dedications shown hereon accepted by the Governing Body of the City of Wichita, Kansas, this 25 day of February, 1992.

Bob Knight, Mayor

Pat Burnett, Deputy City Clerk

Entered on transfer record this 31 day of March, 1992.

Don Wright, County Clerk

This is to certify that this instrument was filed for record in the Register of Deeds Office at 9:00 A.M. P.M. on the 31st day of March 1992.

1198735

Pat Kettler, Register of Deeds
by Ed Rosa

Ed Rosa, Chief Deputy

Inches

This digital plat record accurately reproduces in all details the original plat filed with the Sedgwick County Register of Deeds. Digitized under the supervision of Register of Deeds Bill Meek by Sedgwick County Geographic Information Systems.

Bill Meek, Register of Deeds
Digitized rendition of original signature

Inches

Note: The Original Drawing Has Been Reduced to Fit Sheet Dimensions and is not to scale.

Schwab Eaton
8615 W. Frazier, Suite 2
Wichita, Kansas
p. 316.722.4472
f. 316.722.4479

PROJECT NO.:13.W024

QuikTrip No. 0322
3520 NORTH OLIVER ST.
WICHITA, KS.

PROTOTYPE: P-79 (05/01/14)
DIVISION: WICHITA
VERSION: 001
DESIGNED BY: AS
DRAWN BY: AL
REVIEWED BY: TK

REV	DATE	DESCRIPTION
1	06/17/14	EDIT STORM SWR. LENGHTS

ORIGINAL ISSUE DATE: 06-02-2014

SHEET TITLE: EXISTING PLAT

SHEET NUMBER: 2

POTHOLE #1
– Cox Comms – 2½" plastic line, 5' below exist. grade.
– AT&T – 2" plastic line, 2'–5" below exist. grade.
– Irrigation – ½" PVC line, 1'–4" below exist. grade.
– KS Gas Service – 4½" plastic line, 3'–6" below exist. grade.
– Westar Energy – 2" plastic conduit, 5' below exist. grade.

POTHOLE #2
– Wichita Water – 14" Conc. Pipe, 4' below exist. grade.

POTHOLE #3
– Cox Comms. – 2 ½" plastic line, 4'–3" below exist. grade.
– AT&T – 2" plastic line, 2'–1" below exist. grade.
– KS Gas – 4 ½" Plastic line, 3'–5" below exist. grade.
– Irrigation – 1 ¾" PVC line, 13" below exist. grade.
– Westar Energy – 2" Grey plastic conduit, 5' below exist. grade.

POTHOLE #4
– KS Gas – 6" Plastic line, 9'–5" below exist. grade, running N–S.
– Westar Energy – 2½" Plastic line, 4' below exist. grade.
– Irrigation line – ½" plastic line, 11" below exist. grade.

40' TEMPORARY CONSTRUCTION EASEMENT

S00°48'43"E 412.49'(M)
412.44'(P)

PROPOSED DRY DETENTION POND 100–YR FLOOD ELEVATION = 1364.79

POTHOLE #5
– AT&T – 2 – 1½" plastic lines, 5'–3" below exist. grade.
– City of Wichita San. Swr. – 24" PVC line, 13'–6" below exist. grade.

POTHOLE #6
– AT&T – 2–1 ¼" Plastic lines, 5'–7" below exist. grade.
– Wichita San. Swr. – 24" PVC line, 15'–10" below exist. grade.
– Irrigation – 1" PVC line, 11" below exist. grade.

N83°28'03"W 118.86'(M)
119.01'(P)

POTHOLE LOCATION #1
POTHOLE LOCATION #2
POTHOLE LOCATION #3
POTHOLE LOCATION #4
POTHOLE LOCATION #5
POTHOLE LOCATION #6
POTHOLE LOCATION #7
No Utilities were found at this location, excavated to depth of 4'.

253.23'
26.86'
24.02'
51.68'
R50'
R50'
153.7'
RESERVE "A" (26,973 SQ. FT.)
35' BLDG. STBK.(P)
98.99'
47.3'

306.00'(P)
N89°13'29"E 299.86'(M)

LOT 1, BLOCK 3

395.78'(P)
N00°46'04"W 395.89'(M)
BASIS OF BEARINGS

S89°41'32"W 182.28'(M)
181.97'(P)

35TH STREET NORTH

OLIVER STREET

RE: KDOT PERMIT #5–14–231

swmh top 1366.04
top is 4" below grade.
pipe s 18" fl = 1360.60
pipe w 18" fl = 1360.60
pipe se 15" fl = 1360.60

SSMH Top 1363.24
Pipe N 18" Pvc Fl = 1350.09
Pipe S 18" Pvc Fl = 1350.04
Pipe E 12" Clay Fl = 1353.04

SSMH Top 1366.04
Pipe W 18" Pvc Fl = 1348.94
Pipe S 18" Pvc Fl = 1348.84

30 15 0 30 60

SITE LEGEND

- BOUNDARY LINE
- CONCRETE CURB AND GUTTER
- QT ACCENT CONCRETE
- MOUNTABLE CURB W/RADIUS PROTECTOR
- 7 — PARKING SPACE INDICATOR
- AREA LIGHT
- MULTIPLE PRODUCT DISPENSER WITH CANOPY COLUMNS AND BOLLARDS
- TFR — TRANSFORMER
- FUEL SYSTEM ACCESS MANWAY

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REV	DATE	DESCRIPTION
1	06/17/14	EDIT STORM SWR. LENGHTS

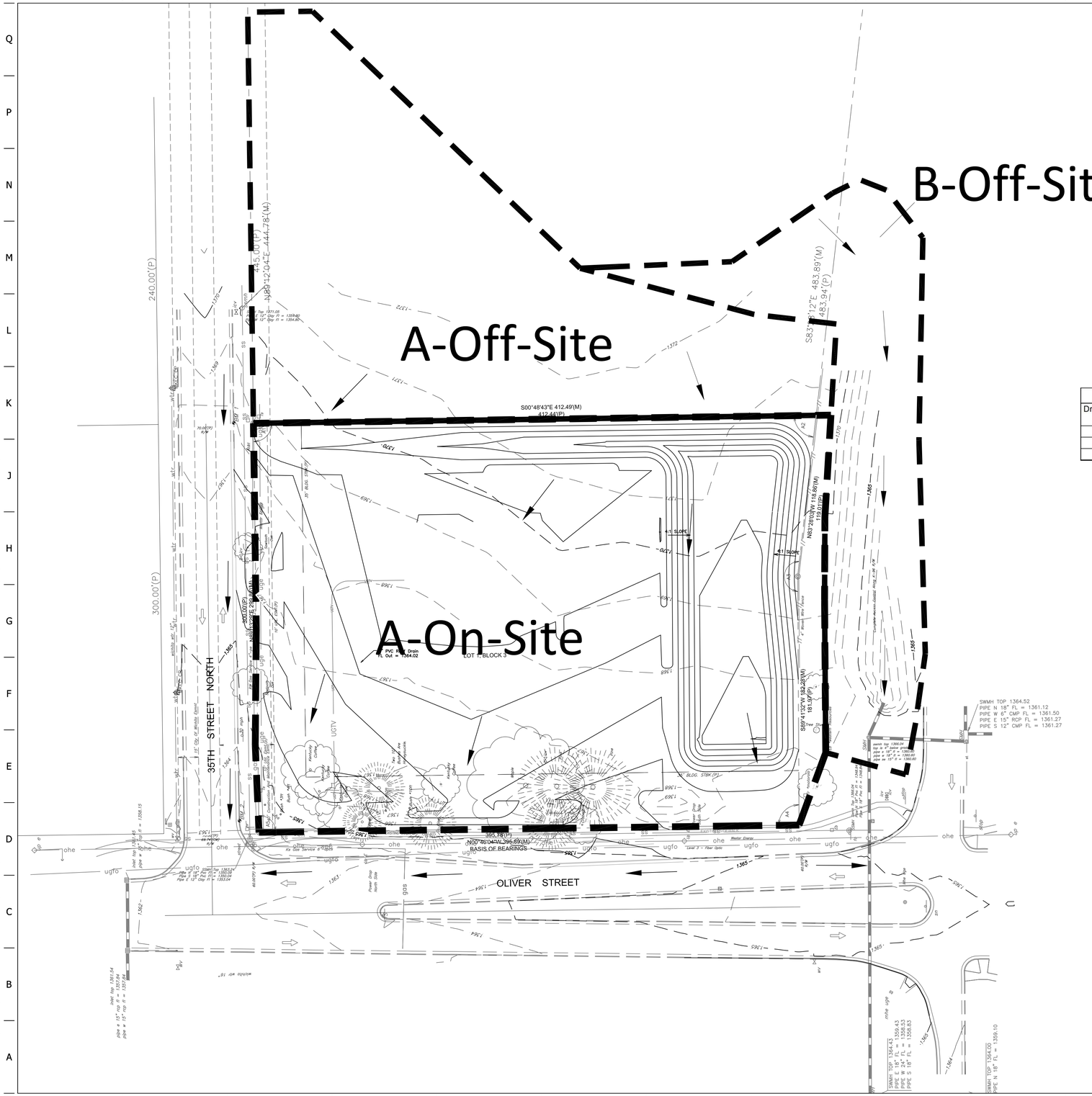
ORIGINAL ISSUE DATE: 06-02-2014

SHEET TITLE:
SITE PLAN

SHEET NUMBER:
3

BUILT TO PLAN

FILE LOCATION:W:\Projects\13.W024 QuikTrip Store 0322\CAD Files\03–0322 PPD.dwg TAB NAME:Site Plan 03 USER:alopez SAVED:6/19/2014 2:50 PM PLOTTED:6/19/2014 4:33 PM



SITE DRAINAGE LEGEND

X — DRAINAGE AREA LABEL

STORM PIPE (> 12" EXISTING)

XXX — MAJOR CONTOUR (EXISTING)

XXX — MINOR CONTOUR (EXISTING)

DRAINAGE AREA BOUNDARY

Project Boundary

Pre-Development Drainage Summary Chart

Drainage Basin ID	Drainage Area (acres)	Hydrologic Soil Group	Curve Number	Tc (min)	100 Yr 24 Hour Precipitation	100 Yr. Discharge (cfs)
A-On-Site	2.87	B	71	35	7.8"	10.1
A-Off-Site	0.96	B	71	33	7.8"	3.4
B-Off-Site	0.80	B	71	12	7.8"	4.7

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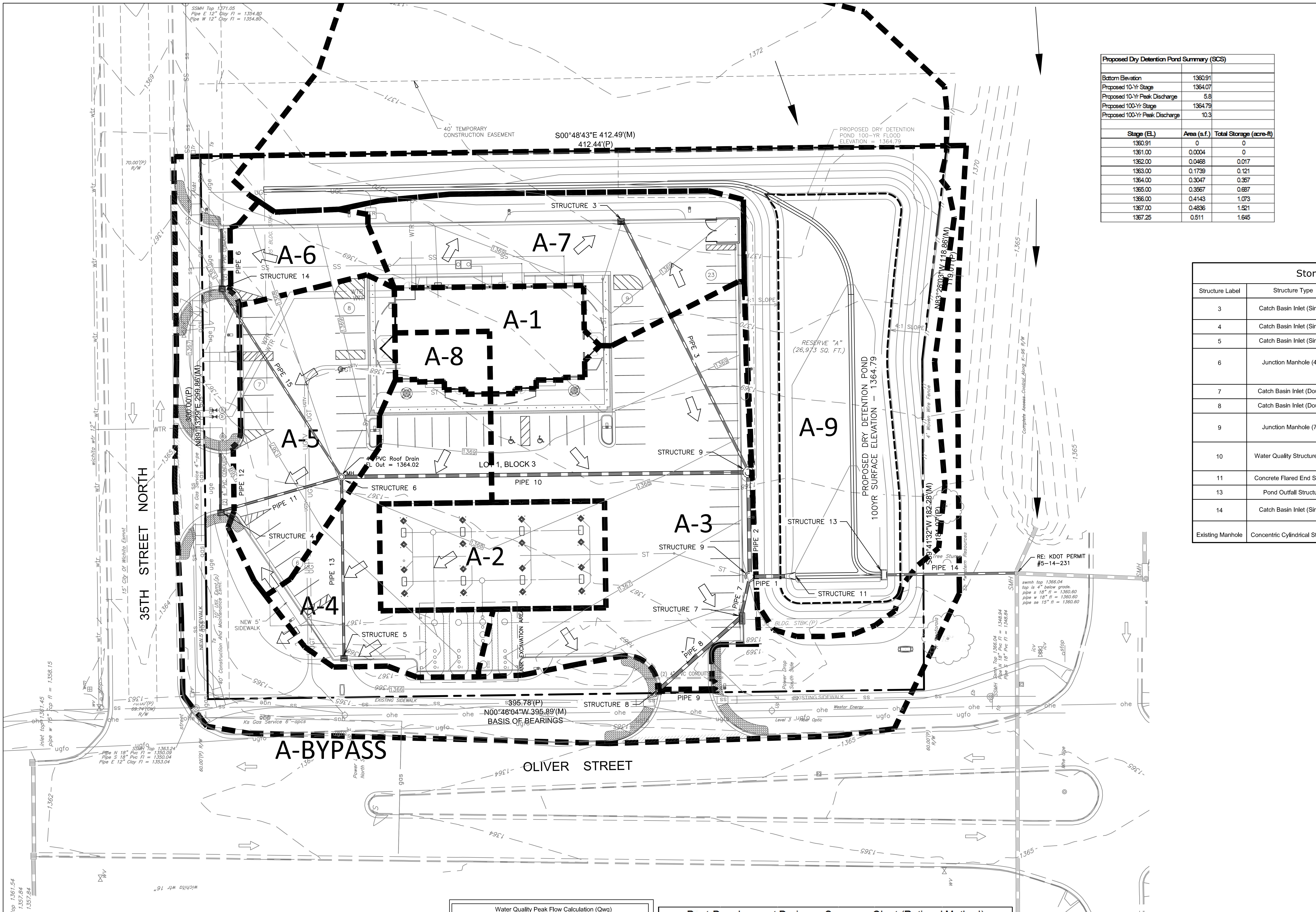
ORIGINAL ISSUE DATE: 06-02-2014

SHEET TITLE:

PRE DEVELOPMENT DRAINAGE MAP

SHEET NUMBER:

4



SITE DRAINAGE LEGEND

X	DRAINAGE AREA LABEL
	STORM PIPE (> 12" EXISTING)
XXX	MAJOR CONTOUR (EXISTING)
XXX	MINOR CONTOUR (EXISTING)
XXX	MAJOR CONTOUR (NEW)
XXX	MINOR CONTOUR (NEW)
▬ ▬ ▬	DRAINAGE AREA BOUNDARY
	STRUCTURE LABEL
	STORM GRATE (NEW)
⇨	FLOW DIRECTION

Proposed Dry Detention Pond Summary (SCS)		
Bottom Elevation	1360.91	
Proposed 10-Yr Stage	1364.07	
Proposed 10-Yr Peak Discharge	5.8	
Proposed 100-Yr Stage	1364.79	
Proposed 100-Yr Peak Discharge	10.3	
Stage (EL)	Area (s.f.)	Total Storage (acre-ft)
1360.91	0	0
1361.00	0.0004	0
1362.00	0.0468	0.017
1363.00	0.1739	0.121
1364.00	0.3047	0.357
1365.00	0.3567	0.687
1366.00	0.4143	1.073
1367.00	0.4836	1.521
1367.25	0.511	1.645

Storm Sewer Structure Table

Structure Label	Structure Type	Grate Elevation	Flowline Elevation	100 Yr. Ponding Elev.
3	Catch Basin Inlet (Single)	1367.75	Pipe - 3 FL OUT = 1362.86	1365.12
4	Catch Basin Inlet (Single)	1365.66	Pipe - 12 FL IN = 1364.16 Pipe -11 FL OUT = 1362.66	1365.25
5	Catch Basin Inlet (Single)	1365.46	Pipe -13 FL OUT = 1362.74	1365.25
6	Junction Manhole (48")	1368.08	Pipe - 11 FL IN = 1362.45 Pipe - 13 FL IN = 1362.45 Pipe - 15 FL IN = 1362.45 Pipe - 10 FL OUT = 1362.35	1365.10
7	Catch Basin Inlet (Double)	1365.80	Pipe - 8 FL IN = 1362.00 Pipe -7 FL OUT = 1361.90	1365.05
8	Catch Basin Inlet (Double)	1365.20	Pipe - 9 FL IN = 1363.70 Pipe -8 FL OUT = 1362.30	1365.15
9	Junction Manhole (72")	1368.30	Pipe - 3 FL IN = 1362.24 Pipe - 10 FL IN = 1361.65 Pipe - 2 FL OUT = 1361.55	1365.05
10	Water Quality Structure (60")	1367.30	Pipe - 2 FL IN = 1361.39 Pipe - 7 FL IN = 1361.79 Pipe - 1 FL OUT = 1361.29	1365.00
11	Concrete Flared End Section	-	Pipe - 1 FL OUT = 1361.21	1364.79
13	Pond Outfall Structure	1363.67	Pipe - 14 FL OUT = 1360.91	1364.79
14	Catch Basin Inlet (Single)	1367.00	Pipe - 6 FL IN = 1365.50 Pipe - 15 FL OUT = 1363.10	1365.25
Existing Manhole	Concentric Cylindrical Structure	1366.04	Pipe - 14 FL IN = 1360.60	1365.20

Storm Sewer Pipe Table

Pipe Name	Structure (Downstream)	Structure (Upstream)	Size	Length	Slope
Pipe - 1	11	10	24"	25.3	0.32%
Pipe - 2	10	9	24"	57.7	0.30%
Pipe - 3	9	3	15"	147.9	0.40%
Pipe - 6	14	-	12"	31.8	1.61%
Pipe - 7	10	7	18"	23.4	0.47%
Pipe - 8	7	8	18"	60.6	0.50%
Pipe - 9	8	-	12"	27.7	0.68%
Pipe - 10	9	6	24"	224.9	0.31%
Pipe - 11	6	4	15"	69.4	0.30%
Pipe - 12	4	-	12"	31.5	1.17%
Pipe - 13	6	5	15"	100.2	0.29%
Pipe - 14	Existing Manhole	13	15"	72.3	0.43%
Pipe - 15	6	14	12"	123.3	0.53%

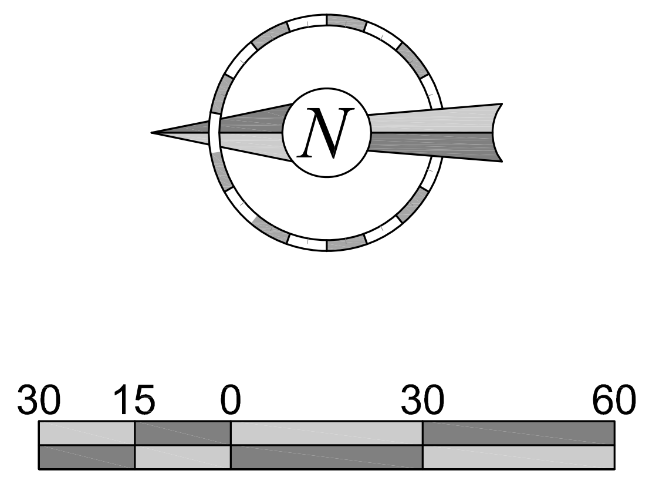
Existing & Developed Peak Discharge w/Detention (SCS)	
Description	Q (cfs)
Existing Runoff (2yr.)	3.0
Existing Runoff (5yr.)	5.2
Existing Runoff (10yr.)	6.9
Existing Runoff (25yr.)	9.1
Existing Runoff (100yr.)	13.5
Developed Runoff (2yr.)	1.0
Developed Runoff (5yr.)	3.6
Developed Runoff (10yr.)	5.8
Developed Runoff (25yr.)	8.0
Developed Runoff (100yr.)	10.3

Water Quality Volume Calculation (WQv)		
WQv =P*Rv*A/12		
Rv Calculation		
	Coeff.	Area
Rv Undisturbed =	0.03	0
Rv Disturbed =	0.20	1.14
Rv Impervious =	0.95	1.61
Weighted Rv =	0.64	
WQv Calculation		
Water Quality Rainfall Depth, P =	1.2	Inches
Runoff Coeff., Rv =	0.64	
Drainage Area, A =	2.75	acres
Water Quality Volume, WQv =	0.18	acres-ft

Water Quality Peak Flow Calculation (Qwq)		
Qwq = qu*A*Qwv*Fp		
Data		
Drainage Area, A =	2.75	Acres
Time of Conc., Tc =	0.24	hrs
WQ Rainfall Depth, P =	1.2	inches
Runoff Coeff., Rv =	0.64	
Calculation		
WQ Prot. Volume, WQv =	0.768	Inches
Calculated CN =	95.4	
S =	0.482	inches
Ia =	0.096	inches
Ia/P =	0.0804	
qu =	750	cfs/sq. mi/in
Water Quality Peak Flow Rate, Qwq =	2.48	cfs

Post-Development Drainage Summary Chart (Rational Method)

Drainage Basin ID	Drainage Area (acres)	Runoff Coefficient	Tc (min)	Rainfall Intensity (100 Yr)	100 Yr. Runoff(cfs)
A-1	0.10	0.93	15	7.37	0.7
A-2	0.17	0.93	15	7.37	1.2
A-3	0.51	0.9	15	7.37	3.4
A-4	0.23	0.9	15	7.37	1.5
A-5	0.26	0.93	15	7.37	1.8
A-6	0.08	0.77	15	7.37	0.5
A-7	0.27	0.59	15	7.37	1.2
A-8	0.04	0.59	15	7.37	0.2
A-9	0.79	0.7	15	7.37	4.1
A-Offsite	0.96	0.7	15	7.37	5.0



19299
June 2, 2014

PROJECT NO.: 13.W024

Schwab Eaton

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Wichita, Kansas
p. 316.722.4472
f. 316.722.4479

QuikTrip No. 0322

3520 NORTH OLIVER ST.
WICHITA, KS.

PROTOTYPE: P-79 (05/01/14)
DIVISION: WICHITA
VERSION: 001
DESIGNED BY: AS
DRAWN BY: AL
REVIEWED BY: TK

REV	DATE	DESCRIPTION
1	06/17/14	EDIT STORM SWR. LENGHTS

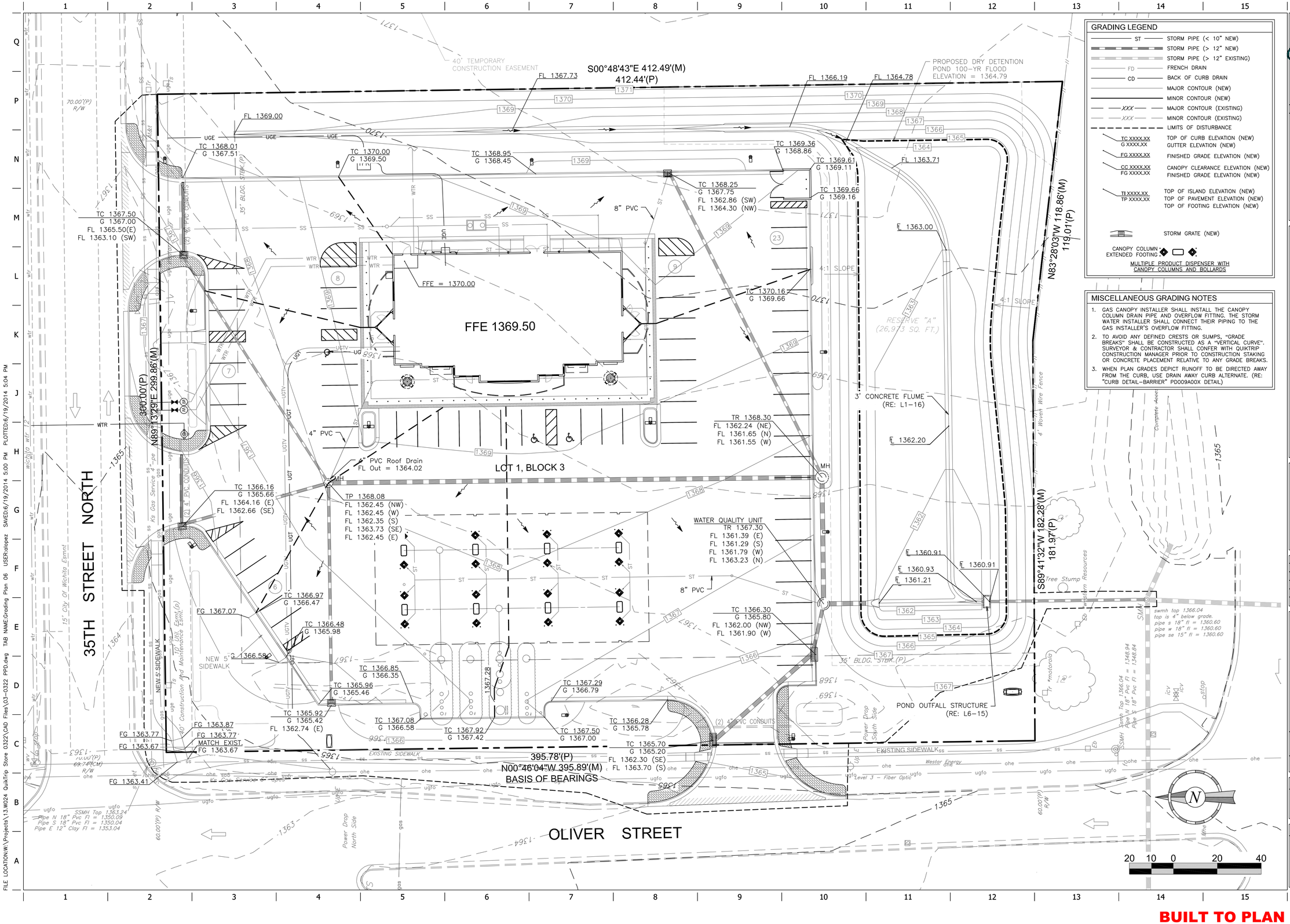
ORIGINAL ISSUE DATE: 06-02-2014

SHEET TITLE:
POST DEVELOPMENT
DRAINAGE MAP

SHEET NUMBER:
5

FILE LOCATION:W:\Projects\13.W024 QuikTrip Store 0322\CAD Files\03-0322 PPD.dwg TAB NAME:Post Dev Drainage Map 05 USER:alopez SAVED:6/19/2014 5:00 PM PLOTTED:6/19/2014 5:03 PM

BUILT TO PLAN



GRADING LEGEND

- ST — STORM PIPE (< 10" NEW)
- STORM PIPE (> 12" NEW)
- STORM PIPE (> 12" EXISTING)
- FD — FRENCH DRAIN
- CD — BACK OF CURB DRAIN
- MAJOR CONTOUR (NEW)
- MINOR CONTOUR (NEW)
- XXX — MAJOR CONTOUR (EXISTING)
- XXX — MINOR CONTOUR (EXISTING)
- LIMITS OF DISTURBANCE
- TC XXXX.XX / G XXXX.XX — TOP OF CURB ELEVATION (NEW) / GUTTER ELEVATION (NEW)
- FG XXXX.XX — FINISHED GRADE ELEVATION (NEW)
- CC XXXX.XX / FG XXXX.XX — CANOPY CLEARANCE ELEVATION (NEW) / FINISHED GRADE ELEVATION (NEW)
- TI XXXX.XX / TP XXXX.XX — TOP OF ISLAND ELEVATION (NEW) / TOP OF PAVEMENT ELEVATION (NEW) / TOP OF FOOTING ELEVATION (NEW)
- STORM GRATE (NEW)
- CANOPY COLUMN / EXTENDED FOOTING
- MULTIPLE PRODUCT DISPENSER WITH CANOPY COLUMNS AND BOLLARDS

MISCELLANEOUS GRADING 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.
3. WHEN PLAN GRADES DEPICT RUNOFF TO BE DIRECTED AWAY FROM THE CURB, USE DRAIN AWAY CURB ALTERNATE. (RE: "CURB DETAIL-BARRIER" PD0090X0X DETAIL)

KYLE STEVEN LAMBERTON
19299
JUNE 2, 2014
PROFESSIONAL ENGINEER

PROJECT NO.: 13.W024

Schwab Eaton
8615 W. Frazier, Sulte 2
Wichita, Kansas
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QuikTrip No. 0322

3520 NORTH OLIVER ST.
WICHITA, KS.

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REVIEWED BY:	TK

REV	DATE	DESCRIPTION
1	06/17/14	EDIT STORM SWR. LENGHTS

ORIGINAL ISSUE DATE: 06-02-2014

SHEET TITLE:
GRADING PLAN

SHEET NUMBER:
6

BUILT TO PLAN

FILE LOCATION:W:\Projects\13.W024 QuikTrip Store 0322\CAD Files\03-0322 PPD.dwg TAB NAME:Grading Plan 06 USER:clopez SAVED:6/19/2014 5:04 PM PLOTTED:6/19/2014 5:04 PM

S00°48'43"E 412.49'(M)
412.44'(P)

70.00'(P) R/W

INSTALL SILT FENCE AT LOWER PERIMETER OF SITE (TYP.).

35' BLDG. STBK.(P)

4:1 SLOPE

4:1 SLOPE

N83°28'03"W 118.86'(M)
119.01'(P)

INSTALL TEMPORARY STABILIZED CONSTRUCTION ENTRANCE, MIN. 50' LENGTH.

PVC Roof Drain
FL Out = 1364.02

LOT 1, BLOCK 3

INSTALL SILT FENCE AT PERIMETER OF SITE (TYP.).

300.00'(P)
N89°13'29"E 299.86'(M)

S89°41'32"W 182.28'(M)
181.97'(P)

35TH STREET NORTH

40' Construction And Maintenance Esmt.(P)

EXISTING SIDEWALK

395.78'(P)
N00°46'04"W 395.89'(M)
BASIS OF BEARINGS

EXISTING SIDEWALK

OLIVER STREET

INSTALL SILT FENCE AT LOWER PERIMETER OF SITE (TYP.).

60.00'(P) R/W

SSMH Top 1363.24
Pvc Fl = 1350.09
Pvc Fl = 1350.04
Clay Fl = 1353.04

20 10 0 20 40

EROSION CONTROL PHASE 1 LEGEND

- XXX — MAJOR CONTOUR (EXISTING)
- XXX — MINOR CONTOUR (EXISTING)
- SF — SILT FENCE
- LIMITS OF DISTURBANCE
- DRIVE ENTRANCE BARRICADE
- INLET PROTECTION
- TEMPORARY STABILIZED CONSTRUCTION ENTRANCE

OWNERSHIP / CONTRACTOR SUMMARY

OWNER/DEVELOPER:
QUIKTRIP CORPORATION
4705 S 129th East Ave
Tulsa, OK 74134-7008
(918) 615-7381

SITE OPERATOR/GENERAL CONTRACTOR:
TBD

SUPERINTENDENT:
TBD

NOTE TO DESIGNER: PHASE 1 EROSION CONTROL IS INTENDED TO TAKE PLACE BEFORE ANY DEMOLITION OR SITE CLEARING HAS TAKEN PLACE.

KANSAS REGISTERED PROFESSIONAL ENGINEER
19299
June 19, 2014

PROJECT NO.: 13.W024

Schwab Eaton
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REV	DATE	DESCRIPTION
1	06/17/14	EDIT STORM SWR. LENGHTS

ORIGINAL ISSUE DATE: 06-02-2014

SHEET TITLE:
EROSION CONTROL PHASE 1

SHEET NUMBER:
7

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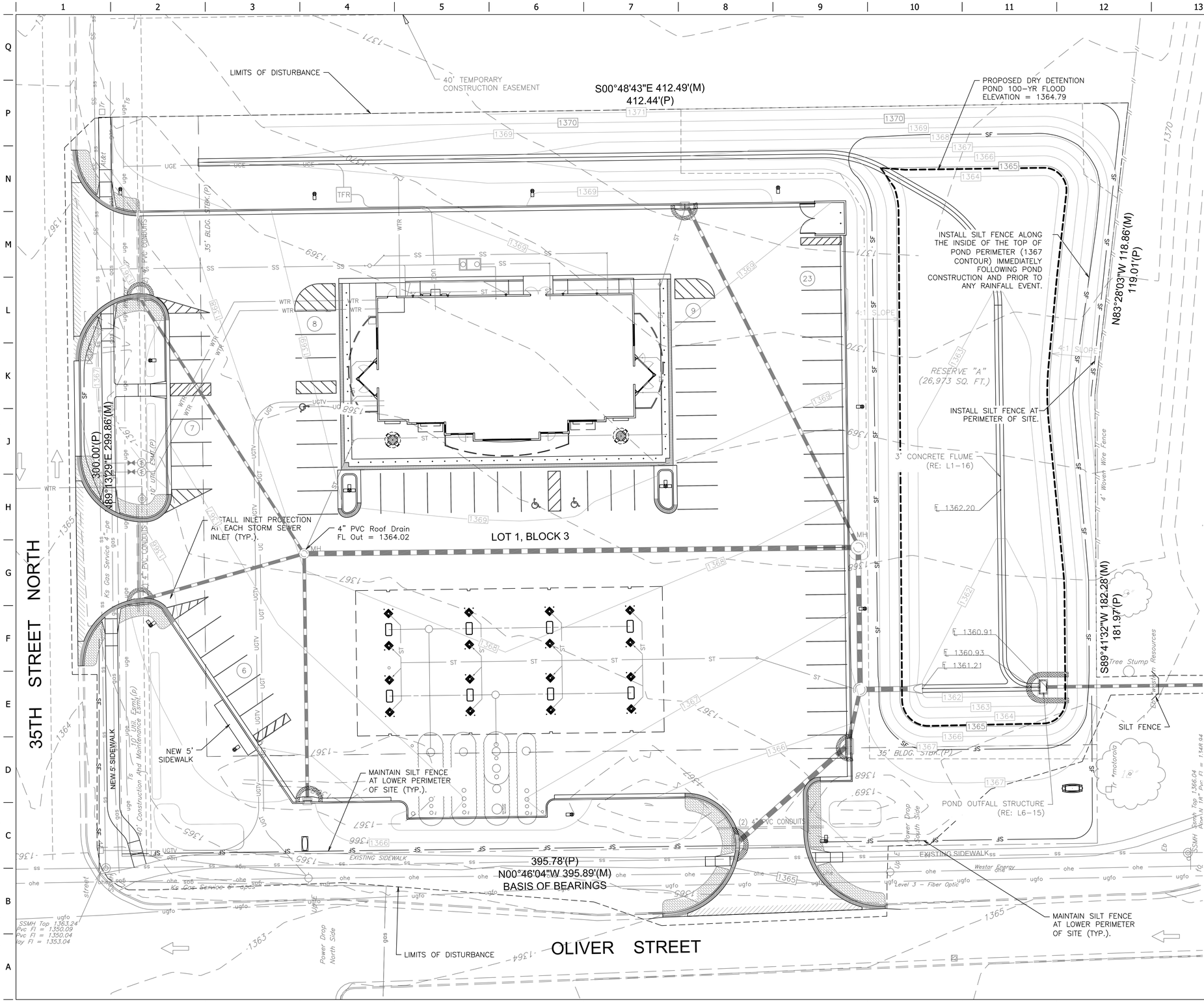

EROSION CONTROL PH2 LEGEND

- MAJOR CONTOUR (NEW)
- MINOR CONTOUR (NEW)
- STORM GRATE (NEW)
- SF — SILT FENCE
- LIMITS OF DISTURBANCE
- INLET PROTECTION
- TEMPORARY STABILIZED CONSTRUCTION ENTRANCE

ACREAGE SUMMARY	
IMPERVIOUS AREA	1.62 ACRES
LANDSCAPE AREA	1.13 ACRES
TOTAL DISTURBED	±3.16 ACRES

OWNERSHIP / CONTRACTOR SUMMARY

OWNER/DEVELOPER:
QUIKTRIP CORPORATION
4705 S 129th East Ave
Tulsa, OK 74134-7008
(918) 615-7381

SITE OPERATOR/GENERAL CONTRACTOR:
TBD

SUPERINTENDENT:
TBD

KANE STEPHEN ENGLEHART
19299
June 19 2014
KANSAS
PROFESSIONAL ENGINEER

PROJECT NO.:13.W024

Schwab Eaton
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QuikTrip No. 0322

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WICHITA, KS.

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REV	DATE	DESCRIPTION
1	06/17/14	EDIT STORM SWR. LENGHTS

ORIGINAL ISSUE DATE: 06-02-2014

SHEET TITLE:
EROSION CONTROL PHASE 2

SHEET NUMBER:
8

20 10 0 20 40

BUILT TO PLAN

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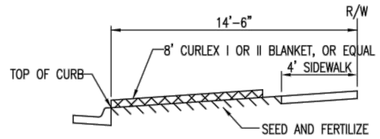
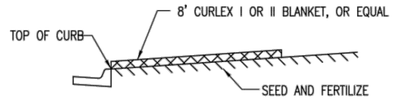
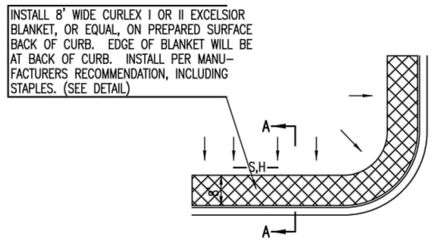


SECTION B–B



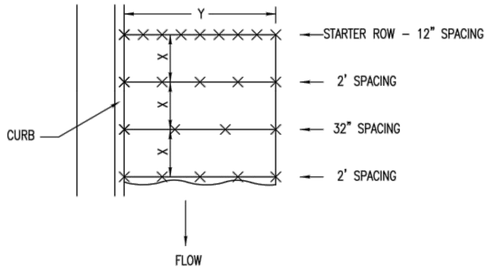
SECTION A–A



GENERAL NOTES

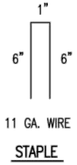
1. EXCELSIOR MAT TO BE INSTALLED WHEN SOD IS NOT SPECIFIED ON PROJECT.
2. EXCELSIOR BLANKET TO BE INSTALLED OVER SEED AND FERTILIZER, AS SPECIFIED IN THE PROJECT SPECIFICATIONS.
3. AFTER INSTALLATION OF EXCELSIOR BLANKET, AT LOCATIONS WHERE CONCENTRATED FLOW CARRIES SEDIMENT OVER THE CURB AND INTO THE GUTTER, SUPPLEMENTAL EROSION CONTROL DEVICES WILL BE INSTALLED BY THE CONTRACTOR AS NEEDED, TO FIX THE PROBLEM.

BACK OF CURB PROTECTION DETAIL



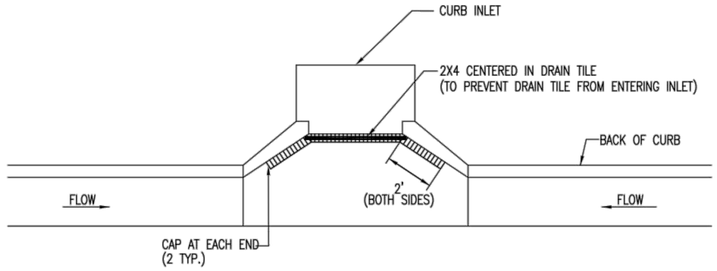
STAPLE PATTERN

NOTES: USE 6" SEAM OVERLAP
(X & Y = RECOMMENDED BY MANUFACTURE)



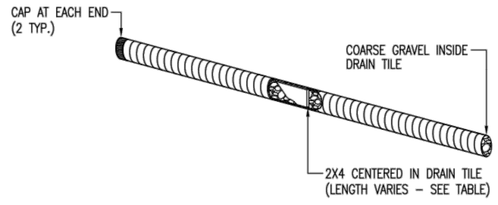
STAPLE

DETAILS FOR APPROVED EROSION CONTROL MAT

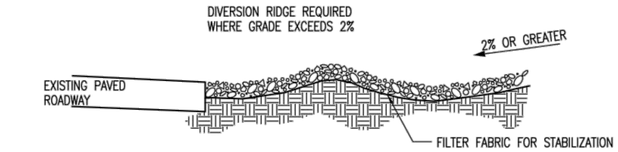


NOTE:
PLACE 4" PERFORATED PVC PIPE, FILLED WITH 1/2"–1" DIA. GRAVEL, IN FRONT OF CURB INLET AS SHOWN.

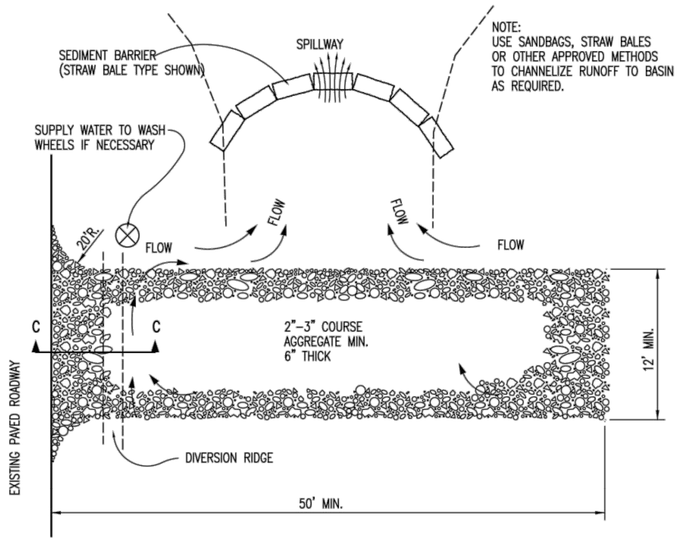
2X4 LENGTH	INLET TYPE	INLET OPENING
5'–6"	1–A	5'–0"
10'–6"	1–A	10'–0"
15'–6"	1–A	15'–0"



CURB INLET PROTECTION
4" PERFORATED PIPE W/ GRAVEL



SECTION C–C



STABILIZED CONSTRUCTION ENTRANCE

GENERAL NOTES

1. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS–OF–WAY. THIS MAY REQUIRE TOP DRESSING, REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT.
2. WHEN NECESSARY, WHEELS SHALL BE CLEANED PRIOR TO ENTRANCE ONTO PUBLIC RIGHT–OF–WAY.
3. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE THAT DRAINS INTO AN APPROVED SEDIMENT TRAP OR SEDIMENT BASIN, AS SHOWN ABOVE.
4. DRIVE ENTRANCES ONTO RESIDENTIAL LOTS WILL NOT BE REQUIRED TO HAVE THE SEDIMENT BARRIER SHOWN, BUT WHEEL WASHING MAY BE REQUIRED IF STABILIZED ENTRANCE IS NOT SUFFICIENT TO KEEP MUD FROM BEING TRACKED ONTO ADJACENT STREET. ENTRANCE SHALL EXTEND FROM BACK OF CURB TO DWELLING.

CITY OF WICHITA
PUBLIC WORKS & UTILITIES
ENGINEERING DIVISION

BACK OF CURB PROTECTION, CURB INLET PROTECTION AND CONSTRUCTION ENTRANCE

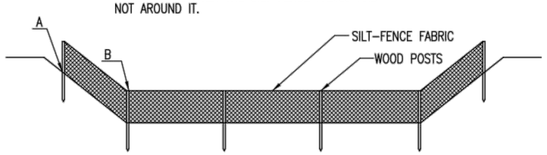
CITY ENGINEER
GARY JANZEN, P.E.

PROJECT NUMBER	OCA NUMBER	DATE
		08/2012

CITY ENGINEER'S OFFICE
CITY HALL - SEVENTH FLOOR
455 NORTH MAIN STREET
WICHITA, KANSAS 67202-1620
(316) 268-4501

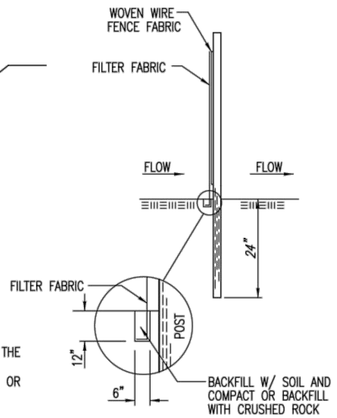
SHEET 9

NOTE: POINT A MUST BE HIGHER THAN POINT B SO THAT WATER FLOWS OVER THE SILT FENCE FABRIC AND NOT AROUND IT.



ELEVATION

SILT FENCE DITCH CHECKS
(STREAM PROTECTION)



ANCHOR TRENCH DETAIL

MATERIAL SPECIFICATION:

SILT FENCE FABRIC SHOULD CONFORM TO THE AASHTO M288 96 SILT FENCE SPECIFICATION.
THE POSTS USED TO SUPPORT THE SILT FENCE FABRIC SHOULD BE A HARDWOOD MATERIAL WITH THE FOLLOWING MINIMUM DIMENSIONS: 2" SQUARE (NOMINAL) BY 4' LONG.
SILT FENCE FABRIC SHOULD BE ATTACHED TO THE WOODEN POSTS WITH STAPLES, WIRE, ZIP TIES, OR NAILS.

PLACEMENT:

PLACE SILT FENCE IN DITCHES WHERE IT IS UNLIKELY THAT IT WILL BE OVERTOPPED.
WATER SHOULD FLOW THROUGH A SILT FENCE DITCH CHECK, NOT OVER IT. SILT FENCE DITCH CHECKS OFTEN FAIL WHEN OVERTOPPED.
SILT FENCE DITCH CHECKS SHOULD BE PLACED PERPENDICULAR TO THE FLOWLINE OF THE DITCH.
THE SILT FENCE SHOULD EXTEND FAR ENOUGH SO THAT THE GROUND LEVEL AT THE ENDS OF THE FENCE IS HIGHER THAN THE TOP OF THE LOW POINT OF THE FENCE. THIS PREVENTS WATER FROM FLOWING AROUND THE CHECK.
SILT FENCE DITCH CHECKS SHOULD NOT BE PLACED IN DITCHES WHERE HIGH FLOWS ARE EXPECTED. ROCK CHECKS SHOULD BE USED INSTEAD.
SILT FENCE SHOULD BE PLACED IN DITCHES WITH SLOPES OF 6% OR LESS. FOR SLOPES STEEPER THAN 6%, ROCK CHECKS SHOULD BE USED.

THE FOLLOWING TABLE PROVIDES CHECK SPACING FOR A GIVEN DITCH GRADE:

DITCH CHECK DITCH GRADE (%)	SPACING CHECK SPACING (FEET)
0.5	200
1.0	200
2.0	100
3.0	65
4.0	50
5.0	40
6.0	30

PROPER INSTALLATION METHOD:

EXCAVATE A TRENCH PERPENDICULAR TO THE DITCH FLOWLINE THAT IS AT LEAST 12" DEEP BY 6" WIDE.
EXTEND THE TRENCH IN A STRAIGHT LINE ALONG THE ENTIRE LENGTH OF THE PROPOSED DITCH CHECK.
PLACE THE SOIL ON THE UPSTREAM SIDE OF THE TRENCH FOR LATER USE.
ROLL OUT A CONTINUOUS LENGTH OF SILT FENCE FABRIC ON THE DOWNSTREAM SIDE OF THE TRENCH.
PLACE THE EDGE OF THE FABRIC IN THE TRENCH STARTING AT THE TOP UPSTREAM EDGE OF THE TRENCH.
LINE TWO SIDES OF THE TRENCH WITH THE FABRIC AS SHOWN ON DETAIL. BACKFILL OVER THE FABRIC IN THE TRENCH WITH THE EXCAVATED SOIL AND COMPACT. AFTER FILLING THE TRENCH, APPROXIMATELY 24" TO 36" OF SILT FENCE FABRIC SHOULD REMAIN EXPOSED.
LAY THE EXPOSED SILT FENCE ON THE UPSTREAM SIDE OF THE TRENCH TO CLEAR AN AREA FOR DRIVING IN THE POSTS. JUST DOWNSTREAM OF THE TRENCH, DRIVE POSTS INTO THE GROUND TO A DEPTH OF AT LEAST 24". PLACE POSTS NO MORE THAN 4' APART.
ATTACH THE SILT FENCE TO THE ANCHORED POST WITH STAPLES, WIRE, ZIP TIES, OR NAILS.

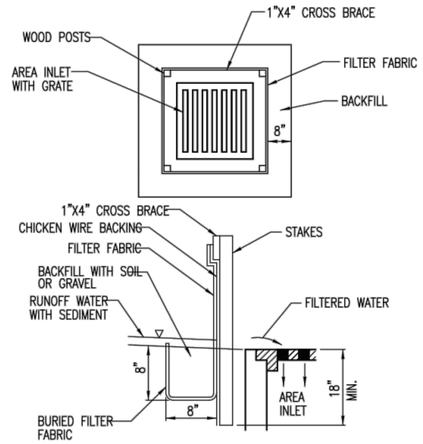
LIST OF COMMON PLACEMENT/INSTALLATION MISTAKES TO AVOID:

WATER SHOULD FLOW THROUGH A SILT FENCE DITCH CHECK–NOT OVER IT. PLACE SILT FENCE IN DITCHES WHERE IT IS UNLIKELY THAT IT WILL BE OVERTOPPED. SILT FENCE INSTALLATIONS QUICKLY DETERIORATE WHEN WATER OVERTOPS THEM.
DO NOT PLACE SILT FENCE POSTS ON THE UPSTREAM SIDE OF THE SILT FENCE FABRIC. IN THIS CONFIGURATION, THE FORCE OF THE WATER IS NOT RESTRICTED BY THE POSTS, BUT ONLY BY THE STAPLES (WIRE, ZIP TIES, NAILS, ETC.). THE SILT FENCE WILL RIP AND FAIL.
DO NOT PLACE A SILT FENCE DITCH CHECK DIRECTLY IN FRONT OF A CULVERT OUTLET. IT WILL NOT STAND UP TO THE CONCENTRATED FLOW.
DO NOT PLACE SILT FENCE DITCH CHECKS IN DITCHES THAT WILL LIKELY EXPERIENCE HIGH FLOWS. THEY WILL NOT STAND UP TO CONCENTRATED FLOW.
FOLLOW PRESCRIBED DITCH CHECK SPACING GUIDELINES. IF SPACING GUIDELINES ARE EXCEEDED, EROSION WILL OCCUR BETWEEN THE DITCH CHECKS.
DO NOT ALLOW WATER TO FLOW AROUND THE DITCH CHECK. MAKE SURE THAT THE DITCH CHECK IS LONG ENOUGH SO THAT THE GROUND LEVEL AT THE ENDS OF THE FENCE IS HIGHER THAN THE LOW POINT ON THE TOP OF THE FENCE.
DO NOT PLACE SILT FENCE DITCH CHECKS IN CHANNELS WITH SHALLOW SOILS UNDERLAIN BY ROCK. IF THE CHECK IS NOT ANCHORED SUFFICIENTLY, IT WILL WASH OUT.

INSPECTION AND MAINTENANCE:

SILT FENCE DITCH CHECKS SHOULD BE INSPECTED EVERY 7 DAYS AND WITHIN 24 HOURS OF A RAINFALL OF 1/2" OR MORE. THE FOLLOWING IS A LIST OF QUESTIONS THAT SHOULD BE ADDRESSED DURING EACH INSPECTION:

DOES WATER FLOW AROUND THE DITCH CHECK?
DOES WATER FLOW UNDER THE DITCH CHECK?
DOES THE SILT FENCE SAG EXCESSIVELY?
HAS THE SILT FENCE TORN OR BECOME DETACHED FROM THE POSTS?
DOES SEDIMENT NEED TO BE REMOVED FROM BEHIND THE DITCH CHECK?



SILT FENCE BARRIERS FOR AREA INLETS
(INLET PROTECTION)

MATERIAL SPECIFICATION:

SILT FENCE FABRIC SHOULD CONFORM TO THE AASHTO M288 96 SILT FENCE SPECIFICATION.
THE WIRE OR POLYMERIC MESH BACKING USED TO HELP SUPPORT THE SILT FENCE FABRIC SHOULD CONFORM TO THE AASHTO M288 96 SILT FENCE SPECIFICATION.
THE POSTS USED TO SUPPORT THE SILT FENCE FABRIC SHOULD BE A HARDWOOD MATERIAL WITH THE FOLLOWING MINIMUM DIMENSIONS: 2" SQUARE (NOMINAL) BY 4' LONG.
THE MATERIAL USED TO FRAME THE TOPS OF THE POSTS SHOULD BE 1" BY 4" BOARDS.
SILT FENCE FABRIC AND SUPPORT BACKING SHOULD BE ATTACHED TO THE WOODEN POSTS AND FRAME WITH STAPLES, WIRE, ZIP TIES, OR NAILS.

PLACEMENT:

PLACE A SILT FENCE DROP INLET BARRIER IN A LOCATION WHERE IT IS UNLIKELY TO BE OVERTOPPED.
WATER SHOULD FLOW THROUGH SILT FENCE, NOT OVER IT. SILT FENCE BARRIERS FOR AREA INLETS OFTEN FAIL WHEN REPEATEDLY OVERTOPPED.
WHEN USED AS A BARRIER FOR AREA INLETS, SILT FENCE FABRIC AND POSTS MUST BE SUPPORTED AT THE TOP BY A WOODEN FRAME.
WHEN A SILT FENCE BARRIER FOR AREA INLETS IS LOCATED NEAR AN INLET THAT HAS STEEP APPROACH SLOPES, THE STORAGE CAPACITY BEHIND THE BARRIER IS DRASTICALLY REDUCED. TIMELY REMOVAL OF SEDIMENT MUST OCCUR FOR A BARRIER TO OPERATE PROPERLY IN THIS LOCATION.

PROPER INSTALLATION METHOD:

EXCAVATE A TRENCH AROUND THE PERIMETER OF THE AREA INLET THAT IS AT LEAST 8" DEEP BY 8" WIDE.
DRIVE POSTS TO A DEPTH OF AT LEAST 18" AROUND THE PERIMETER OF THE AREA INLET.
THE DISTANCE BETWEEN POSTS SHOULD BE 4' OR LESS. IF THE DISTANCE BETWEEN TWO ADJACENT CORNER POSTS IS MORE THAN 4', ADD ANOTHER POST(S) BETWEEN THEM.
CONNECT THE TOPS OF ALL THE POSTS WITH A WOODEN FRAME MADE OF 1" BY 4" BOARDS. USE NAILS OR SCREWS FOR FASTENING.
ATTACH THE WIRE OR POLYMERIC–MESH BACKING TO THE OUTSIDE OF THE POST/FRAME STRUCTURE WITH STAPLES, WIRE, ZIP TIES, OR NAILS.
ROLL OUT A CONTINUOUS LENGTH OF SILT FENCE FABRIC LONG ENOUGH TO WRAP AROUND THE PERIMETER OF THE AREA INLET. ADD MORE LENGTH FOR OVERLAPPING THE FABRIC JOINT. PLACE THE EDGE OF THE FABRIC IN THE TRENCH, STARTING AT THE OUTSIDE EDGE OF THE TRENCH. LINE ALL THREE SIDES OF THE TRENCH WITH THE FABRIC. BACKFILL OVER THE FABRIC IN THE TRENCH WITH THE EXCAVATED SOIL AND COMPACT. AFTER FILLING THE TRENCH, APPROXIMATELY 24" TO 36" OF SILT FENCE FABRIC SHOULD REMAIN EXPOSED.
ATTACH THE SILT FENCE TO THE OUTSIDE OF THE POST/FRAME STRUCTURE WITH STAPLES, WIRE, ZIP TIES, OR NAILS. THE JOINT SHOULD BE OVERLAPPED TO THE NEXT POST.

NOTE: WHEN A SILT FENCE BARRIER FOR AREA INLET IS PLACED IN A SHALLOW MEDIAN DITCH, MAKE SURE THAT THE TOP OF THE BARRIER IS NOT HIGHER THAN THE PAVED ROAD. IN THIS CONFIGURATION, WATER MAY SPREAD ONTO THE ROADWAY CAUSING A HAZARDOUS CONDITION.

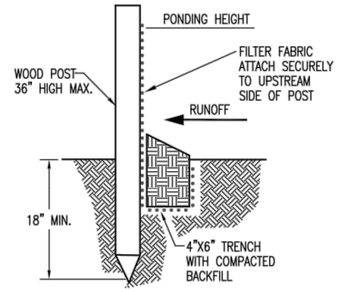
LIST OF COMMON PLACEMENT/INSTALLATION MISTAKES TO AVOID:

WATER SHOULD FLOW THROUGH A SILT FENCE BARRIER FOR AREA INLET–NOT OVER IT. PLACE A SILT FENCE BARRIER FOR AREA INLET IN A LOCATION WHERE IT IS UNLIKELY TO BE OVERTOPPED. SILT FENCE BARRIER FOR AREA INLETS OFTEN FAIL WHEN REPEATEDLY OVERTOPPED.
DO NOT PLACE POSTS ON THE OUTSIDE OF THE SILT FENCE BARRIER FOR AREA INLET. IN THIS CONFIGURATION, THE FORCE OF THE WATER IS NOT RESISTED BY THE POSTS, BUT ONLY BY THE STAPLES (WIRE, ZIP TIES, NAILS, ETC.). THE SILT FENCE WILL RIP AND FAIL.
DO NOT INSTALL SILT FENCE BARRIER FOR AREA INLETS WITHOUT FRAMING THE TOP OF THE POSTS. THE CORNER POSTS AROUND AREA INLETS ARE STRESSED IN TWO DIRECTIONS WHEREAS A NORMAL SILT FENCE IS ONLY STRESSED IN ONE DIRECTION. THIS ADDED STRESS REQUIRES MORE SUPPORT.

INSPECTION AND MAINTENANCE:

SILT FENCE BARRIER FOR AREA INLETS SHOULD BE INSPECTED EVERY 7 DAYS AND WITHIN 24 HOURS OF A RAINFALL OF 1/2" OR MORE. THE FOLLOWING IS A LIST OF QUESTIONS THAT SHOULD BE ADDRESSED DURING EACH INSPECTION:

DOES WATER FLOW UNDER THE SILT FENCE?
DOES THE SILT FENCE SAG EXCESSIVELY?
HAS THE SILT FENCE TORN OR BECOME DETACHED FROM THE POSTS?
DOES SEDIMENT NEED TO BE REMOVED FROM BEHIND THE AREA INLET BARRIER?



SILT FENCE BARRIERS

MATERIAL SPECIFICATION:

SILT FENCE FABRIC SHOULD CONFORM TO THE AASHTO M288 96 SILT FENCE SPECIFICATION.
THE POSTS USED TO SUPPORT THE SILT FENCE FABRIC SHOULD BE A HARDWOOD MATERIAL WITH THE FOLLOWING MINIMUM DIMENSIONS: 2" SQUARE (NOMINAL) BY 4' LONG.
SILT FENCE FABRIC SHOULD BE ATTACHED TO THE WOODEN POSTS WITH STAPLES, WIRE, ZIP TIES, OR NAILS.

PLACEMENT:

A SLOPE BARRIER SHOULD BE USED AT THE TOE OF A SLOPE WHEN A DITCH DOES NOT EXIST. THE SLOPE BARRIER SHOULD BE PLACED ON NEARLY LEVEL GROUND 5' TO 10' AWAY FROM THE TOE OF A SLOPE. THE BARRIER IS PLACED AWAY FROM THE TOE OF THE SLOPE TO PROVIDE ADEQUATE STORAGE FOR SETTLING OUT SEDIMENT.
WHEN PRACTICABLE, SILT FENCE SLOPE BARRIERS SHOULD BE PLACED ALONG CONTOURS TO AVOID A CONCENTRATION OF FLOW.
SILT FENCE SLOPE BARRIERS CAN ALSO BE PLACED ALONG RIGHT–OF–WAY FENCE LINES TO KEEP SEDIMENT FROM CROSSING ONTO ADJACENT PROPERTY. WHEN PLACED IN THIS MANNER, THE SLOPE BARRIER WILL NOT LIKELY FOLLOW CONTOURS.

PROPER INSTALLATION METHOD:

EXCAVATE A TRENCH THE LENGTH OF THE PLANNED SLOPE BARRIER THAT IS 6" DEEP BY 4" WIDE.
MAKE SURE THAT THE TRENCH IS EXCAVATED ALONG A SINGLE CONTOUR. WHEN PRACTICABLE, SLOPE BARRIERS SHOULD BE PLACED ALONG CONTOURS TO AVOID A CONCENTRATION OF FLOW. PLACE THE SOIL ON THE UPSLOPE SIDE OF THE TRENCH FOR LATER USE.
ROLL OUT A CONTINUOUS LENGTH OF SILT FENCE FABRIC ON THE DOWNSLOPE SIDE OF THE TRENCH.
PLACE THE EDGE OF THE FABRIC IN THE TRENCH STARTING AT THE TOP UPSLOPE EDGE. LINE ALL THREE SIDES OF THE TRENCH WITH THE FABRIC. BACKFILL OVER THE FABRIC IN THE TRENCH WITH THE EXCAVATED SOIL AND COMPACT. AFTER FILLING THE TRENCH, APPROXIMATELY 24" TO 36" OF SILT–FENCE FABRIC SHOULD REMAIN EXPOSED.
LAY THE EXPOSED SILT FENCE UPSLOPE OF THE TRENCH TO CLEAR AN AREA FOR DRIVING IN THE POSTS. JUST DOWNSLOPE OF THE TRENCH, DRIVE POSTS INTO THE GROUND TO A DEPTH OF AT LEAST 18".
PLACE POSTS NO MORE THAN 4' APART.
ATTACH THE SILT FENCE TO THE ANCHORED POST WITH STAPLES, WIRE, ZIP TIES, OR NAILS.

LIST OF COMMON PLACEMENT/INSTALLATION MISTAKES TO AVOID:

WHEN PRACTICABLE, DO NOT PLACE SILT FENCE SLOPE BARRIERS ACROSS CONTOURS. SLOPE BARRIERS SHOULD BE PLACED ALONG CONTOURS TO AVOID A CONCENTRATION OF FLOW. WHEN THE FLOW CONCENTRATES, IT OVERTOPS THE BARRIER AND THE SILT FENCE SLOPE BARRIER QUICKLY DETERIORATES.
DO NOT PLACE SILT–FENCE POSTS ON THE UPSLOPE SIDE OF THE SILT FENCE FABRIC. IN THIS CONFIGURATION, THE FORCE OF THE WATER IS NOT RESTRICTED BY THE POSTS, BUT ONLY BY THE STAPLES (WIRE, ZIP TIES, NAILS, ETC.). THE SILT FENCE WILL RIP AND FAIL.
DO NOT PLACE SILT FENCE SLOPE BARRIERS IN AREAS WITH SHALLOW SOILS UNDERLAIN BY ROCK. IF THE BARRIER IS NOT SUFFICIENTLY ANCHORED, IT WILL WASH OUT.
SILT FENCE SLOPE BARRIERS MUST BE DUG INTO THE GROUND–SILT FENCE AT GROUND LEVEL DOES NOT WORK BECAUSE WATER WILL FLOW UNDERNEATH.

INSPECTION AND MAINTENANCE:

SILT FENCE SLOPE BARRIERS SHOULD BE INSPECTED EVERY 7 DAYS AND WITHIN 24 HOURS OF A RAINFALL OF 1/2" OR MORE. THE FOLLOWING IS A LIST OF QUESTIONS THAT SHOULD BE ADDRESSED DURING EACH INSPECTION:

ARE THERE ANY POINTS ALONG THE SLOPE BARRIER WHERE WATER IS CONCENTRATING?
DOES WATER FLOW UNDER THE SLOPE BARRIER?
DO THE SILT FENCES SAG EXCESSIVELY?
HAS THE SILT FENCE TORN OR BECOME DETACHED FROM THE POSTS?
DOES SEDIMENT NEED TO BE REMOVED FROM BEHIND THE SLOPE BARRIER?

CITY OF WICHITA
PUBLIC WORKS & UTILITIES ENGINEERING DIVISION

SILT FENCE DITCH CHECK AND BARRIER DETAILS

CITY ENGINEER
GARY JANZEN, P.E.

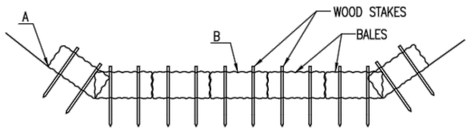
PROJECT NUMBER	OCA NUMBER	DATE
		11/2010

CITY ENGINEER'S OFFICE
CITY HALL - SEVENTH FLOOR
455 NORTH MAIN STREET
WICHITA, KANSAS 67202-1620
(316) 268-4501

SHEET
10

SW-502

NOTE: POINT A MUST BE HIGHER THAN POINT B SO THAT WATER FLOWS OVER THE BALES AND NOT AROUND THEM.



STRAW BALE DITCH CHECKS

MATERIAL SPECIFICATION:

BALE DITCH CHECKS MAY BE CONSTRUCTED OF WHEAT STRAW, OAT STRAW, PRAIRIE HAY, OR BROMEGRASS HAY THAT IS FREE OF WEEDS DECLARED NOXIOUS BY THE KANSAS STATE BOARD OF AGRICULTURE.
THE STAKES USED TO ANCHOR THE BALES SHOULD BE A HARDWOOD MATERIAL WITH THE FOLLOWING MINIMUM DIMENSIONS: 2" SQUARE (NOMINAL) BY 4' LONG.
OPTIONAL: THE DOWNSTREAM SCOUR APRON SHOULD BE CONSTRUCTED OF A DOUBLE–NETTED STRAW EROSION–CONTROL BLANKET AT LEAST 6' WIDE.
OPTIONAL: THE METAL LANDSCAPE STAPLES USED TO ANCHOR THE EROSION–CONTROL BLANKET SHOULD BE AT LEAST 8" LONG.

PLACEMENT:

BALE DITCH CHECKS SHOULD BE PLACED PERPENDICULAR TO THE FLOWLINE OF THE DITCH.
THE DITCH CHECK SHOULD EXTEND FAR ENOUGH SO THAT THE GROUND LEVEL AT THE ENDS OF THE CHECK IS HIGHER THAN THE TOP OF THE LOWEST CENTER BALE. THIS PREVENTS WATER FROM FLOWING AROUND THE CHECK.
STRAW BALE DITCH CHECKS SHOULD NOT BE PLACED IN DITCHES WHERE HIGH FLOWS ARE EXPECTED. ROCK CHECKS SHOULD BE USED INSTEAD.
BALES SHOULD BE PLACED IN DITCHES WITH SLOPES OF 6% OR LESS. FOR SLOPES STEEPER THAN 6%, ROCK CHECKS SHOULD BE USED.
THE FOLLOWING TABLE PROVIDES CHECK SPACING FOR A GIVEN DITCH GRADE:

DITCH GRADE (%)	CHECK SPACING (FEET)
0.5	200
1.0	200
2.0	100
3.0	65
4.0	50
5.0	40
6.0	30

PROPER INSTALLATION METHOD:

EXCAVATE A TRENCH PERPENDICULAR TO THE DITCH FLOWLINE THAT IS 4" DEEP AND A BALE'S WIDTH WIDE. EXTEND THE TRENCH IN A STRAIGHT LINE ALONG THE ENTIRE LENGTH OF THE PROPOSED DITCH CHECK. PLACE THE SOIL ON THE UPSTREAM SIDE OF THE TRENCH–IT WILL BE USED LATER.
OPTIONAL: ON THE DOWNSTREAM SIDE OF THE TRENCH, ROLL OUT A LENGTH OF EROSION–CONTROL BLANKET (SCOUR APRON) EQUAL TO THE LENGTH OF THE TRENCH. PLACE THE UPSTREAM EDGE OF THE EROSION–CONTROL BLANKET ALONG THE BOTTOM UPSTREAM EDGE OF THE TRENCH. THE EROSION CONTROL BLANKET SHOULD BE ANCHORED IN THE TRENCH WITH ONE ROW OF 8" LANDSCAPE STAPLES PLACED ON 18" CENTERS. THE REMAINDER OF THE EROSION–CONTROL BLANKET (THE PORTION THAT IS NOT LYING IN THE TRENCH) WILL SERVE AS THE DOWNSTREAM SCOUR APRON. THIS SECTION OF THE BLANKET SHOULD BE ANCHORED TO THE GROUND WITH 8" LANDSCAPE STAPLES PLACED AROUND THE PERIMETER OF THE BLANKET ON 18" CENTERS. THE REMAINDER OF THE BLANKET SHOULD BE ANCHORED USING TWO EVENLY SPACED ROWS OF 8" LANDSCAPE STAPLES ON 18" CENTERS PLACED PERPENDICULAR TO THE FLOWLINE OF THE DITCH.
PLACE THE BALES IN THE TRENCH, MAKING SURE THAT THEY ARE BUTTED TIGHTLY. TWO STAKES SHOULD BE DRIVEN THROUGH EACH BALE ALONG THE CENTERLINE OF THE DITCH CHECK, APPROXIMATELY 6" TO 8" IN FROM THE BALE ENDS. STAKES SHOULD BE DRIVEN AT LEAST 12" INTO THE GROUND.
ONCE ALL THE BALES HAVE BEEN INSTALLED AND ANCHORED, PLACE THE EXCAVATED SOIL AGAINST THE UPSTREAM SIDE OF THE CHECK AND COMPACT IT. THE COMPACTED SOIL SHOULD BE NO MORE THAN 3" TO 4" DEEP AND EXTEND UPSTREAM NO MORE THAN 24".

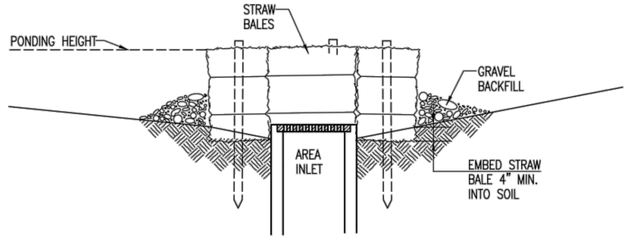
LIST OF COMMON PLACEMENT/INSTALLATION MISTAKES TO AVOID:

DO NOT PLACE A BALE DITCH CHECK DIRECTLY IN FRONT OF A CULVERT OUTLET. IT WILL NOT STAND UP TO THE CONCENTRATED FLOW.
DO NOT PLACE BALE DITCH CHECKS IN DITCHES THAT WILL LIKELY EXPERIENCE HIGH FLOWS. THEY WILL NOT STAND UP TO CONCENTRATED FLOW.
FOLLOW PRESCRIBED DITCH–CHECK SPACING GUIDELINES. IF SPACING GUIDELINES ARE EXCEEDED, EROSION WILL OCCUR BETWEEN THE DITCH CHECKS.
DO NOT ALLOW WATER TO FLOW AROUND THE DITCH CHECK. MAKE SURE THAT THE DITCH CHECK IS LONG ENOUGH SO THAT THE GROUND LEVEL AT THE ENDS OF THE CHECK IS HIGHER THAN THE TOP OF THE LOWEST CENTER BALE.
DO NOT PLACE BALE DITCH CHECKS IN CHANNELS WITH SHALLOW SOILS UNDERLAIN BY ROCK. IF THE CHECK IS NOT ANCHORED SUFFICIENTLY, IT WILL WASH OUT.
BALE DITCH CHECKS MUST BE DUG INTO THE GROUND. BALES AT GROUND LEVEL DO NOT WORK BECAUSE THEY ALLOW WATER TO FLOW UNDER THE CHECK.

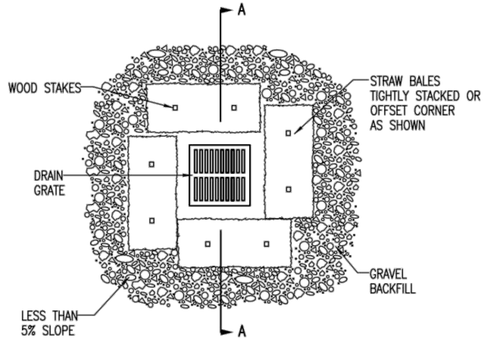
INSPECTION AND MAINTENANCE:

BALE DITCH CHECKS SHOULD BE INSPECTED EVERY 7 DAYS AND WITHIN 24 HOURS OF A RAINFALL OF 1/2" OR MORE. THE FOLLOWING IS A LIST OF QUESTIONS THAT SHOULD BE ADDRESSED DURING EACH INSPECTION:

DOES WATER FLOW AROUND THE DITCH CHECK?
DOES WATER FLOW UNDER THE DITCH CHECK?
DOES WATER FLOW THROUGH SPACES BETWEEN ABUTTING BALES?
ARE ANY BALES AND/OR SCOUR APRONS (OPTIONAL) DISLODGED?
ARE BALES DECOMPOSING DUE TO AGE AND/OR WATER DAMAGE?
DOES SEDIMENT NEED TO BE REMOVED FROM BEHIND THE DITCH CHECK?



SECTION A–A



STRAW BALE BARRIERS FOR AREA INLETS
(INLET PROTECTION)

MATERIAL SPECIFICATION:

BALE AREA INLET BARRIERS SHOULD BE CONSTRUCTED OF WHEAT STRAW, OAT STRAW, PRAIRIE HAY, OR BROMEGRASS HAY THAT IS FREE OF WEEDS DECLARED NOXIOUS BY THE KANSAS STATE BOARD OF AGRICULTURE.
THE STAKES USED TO ANCHOR THE BALES SHOULD BE A HARDWOOD MATERIAL WITH THE FOLLOWING MINIMUM DIMENSIONS: 2" SQUARE (NOMINAL) BY 4' LONG.
TWINE SHOULD BE USED TO BIND BALES. THE USE OF WIRE BINDING IS PROHIBITED BECAUSE IT DOES NOT BIODEGRADE READILY.

PLACEMENT:

BALE AREA INLET BARRIERS SHOULD BE PLACED DIRECTLY AROUND THE PERIMETER OF A DROP INLET.
WHEN A BALE AREA INLET BARRIER IS LOCATED NEAR AN INLET THAT HAS STEEP APPROACH SLOPES, THE STORAGE CAPACITY BEHIND THE BARRIER IS DRASTICALLY REDUCED. TIMELY REMOVAL OF SEDIMENT MUST OCCUR FOR A BARRIER TO OPERATE PROPERLY IN THIS LOCATION.

PROPER INSTALLATION METHOD:

EXCAVATE A TRENCH AROUND THE PERIMETER OF THE AREA INLET THAT IS AT LEAST 4" DEEP BY A BALE'S WIDTH WIDE.
PLACE THE BALES IN THE TRENCH, MAKING SURE THAT THEY ARE BUTTED TIGHTLY. SOME BALES MAY NEED TO BE SHORTENED TO FIT INTO THE TRENCH AROUND THE AREA INLET. TWO STAKES SHOULD BE DRIVEN THROUGH EACH BALE, APPROXIMATELY 6" TO 8" IN FROM THE BALE ENDS.
STAKES SHOULD BE DRIVEN AT LEAST 12" INTO THE GROUND.
ONCE ALL THE BALES HAVE BEEN INSTALLED AND ANCHORED, PLACE THE EXCAVATED SOIL AGAINST THE RECEIVING SIDE OF THE BARRIER AND COMPACT IT. THE COMPACTED SOIL SHOULD BE NO MORE THAN 3" TO 4" DEEP.
NOTE: WHEN A BALE AREA INLET BARRIER IS PLACED IN A SHALLOW MEDIAN DITCH, MAKE SURE THAT THE TOP OF THE BARRIER IS NOT HIGHER THAN THE PAVED ROAD. IN THIS CONFIGURATION, WATER MAY SPREAD ONTO THE ROADWAY CAUSING A HAZARDOUS CONDITION.

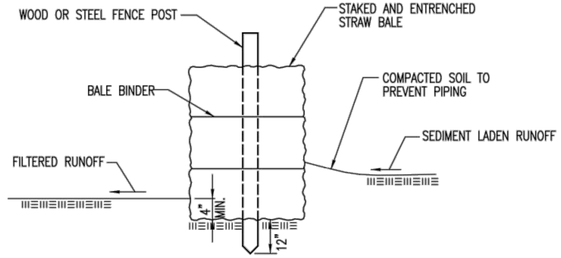
LIST OF COMMON PLACEMENT INSTALLATION MISTAKES TO AVOID:

BALES SHOULD BE PLACED DIRECTLY AGAINST THE PERIMETER OF THE AREA INLET. THIS ALLOWS OVERTOPPING WATER TO FLOW DIRECTLY INTO THE INLET INSTEAD OF ONTO NEARBY SOIL CAUSING SCOUR.
BALE AREA INLET BARRIERS MUST BE DUG INTO THE GROUND. BALES AT GROUND LEVEL DO NOT WORK BECAUSE THEY ALLOW WATER TO FLOW UNDER THE BARRIER.

INSPECTION AND MAINTENANCE:

BALE AREA INLET BARRIERS SHOULD BE INSPECTED EVERY 7 DAYS AND WITHIN 24 HOURS OF A RAINFALL 1/2" OR MORE. THE FOLLOWING IS A LIST OF QUESTIONS THAT SHOULD BE ADDRESSED DURING EACH INSPECTION:

DOES WATER FLOW UNDER THE AREA INLET BARRIER?
DOES WATER FLOW THROUGH SPACES BETWEEN ABUTTING BALES?
ARE ANY BALES DISLODGED?
ARE BALES DECOMPOSING DUE TO AGE AND/OR WATER DAMAGE?
DOES SEDIMENT NEED TO BE REMOVED FROM BEHIND THE AREA INLET BARRIER?



STRAW BALE BARRIERS

MATERIAL SPECIFICATION:

BALE SLOPE BARRIERS MAY BE CONSTRUCTED OF WHEAT STRAW, OAT STRAW, PRAIRIE HAY, OR BROMEGRASS HAY THAT IS FREE OF WEEDS DECLARED NOXIOUS BY THE KANSAS STATE BOARD OF AGRICULTURE.
THE STAKES USED TO ANCHOR THE BALES SHOULD BE A HARDWOOD MATERIAL WITH THE FOLLOWING MINIMUM DIMENSIONS: 2" SQUARE (NOMINAL) BY 4' LONG.
TWINE SHOULD BE USED TO BIND BALES. THE USE OF WIRE BINDING IS PROHIBITED BECAUSE IT DOES NOT BIODEGRADE READILY.

PLACEMENT:

A SLOPE BARRIER SHOULD BE USED AT THE TOE OF A SLOPE WHEN A DITCH DOES NOT EXIST. THE SLOPE BARRIER SHOULD BE PLACED ON NEARLY LEVEL GROUND 5' TO 10' AWAY FROM THE TOE OF A SLOPE. THE BARRIER IS PLACED AWAY FROM THE TOE OF THE SLOPE TO PROVIDE ADEQUATE STORAGE FOR SETTLING OUT SEDIMENT.
WHEN PRACTICABLE, BALE SLOPE BARRIERS SHOULD BE PLACED ALONG CONTOURS TO AVOID A CONCENTRATION OF FLOW.
BALE SLOPE BARRIERS CAN ALSO BE PLACED ALONG RIGHT–OF–WAY FENCE LINES TO KEEP SEDIMENT FROM CROSSING ONTO ADJACENT PROPERTY. WHEN PLACED IN THIS MANNER, THE SLOPE BARRIER WILL NOT LIKELY FOLLOW CONTOURS.

PROPER INSTALLATION METHOD:

EXCAVATE A TRENCH THE LENGTH OF THE PLANNED SLOPE BARRIER THAT IS 4" DEEP AND A BALE'S WIDTH WIDE. MAKE SURE THAT THE TRENCH IS EXCAVATED ALONG A SINGLE CONTOUR. WHEN PRACTICABLE, SLOPE BARRIERS SHOULD BE PLACED ALONG CONTOURS TO AVOID A CONCENTRATION OF FLOW. PLACE THE SOIL ON THE UPSLOPE SIDE OF THE TRENCH FOR LATER USE.
PLACE THE BALES IN THE TRENCH, MAKING SURE THAT THEY ARE BUTTED TIGHTLY. TWO STAKES SHOULD BE DRIVEN THROUGH EACH BALE ALONG THE CENTERLINE OF THE DITCH CHECK, APPROXIMATELY 6" TO 8" IN FROM THE BALE ENDS. STAKES SHOULD BE DRIVEN AT LEAST 12" INTO THE GROUND.
ONCE ALL THE BALES HAVE BEEN INSTALLED AND ANCHORED, PLACE THE EXCAVATED SOIL AGAINST THE UPSLOPE SIDE OF THE CHECK AND COMPACT IT. THE COMPACTED SOIL SHOULD BE NO MORE THAN 3" TO 4" DEEP.

LIST OF COMMON PLACEMENT/INSTALLATION MISTAKES TO AVOID:

WHEN PRACTICAL, DO NOT PLACE BALE SLOPE BARRIERS ACROSS CONTOURS. SLOPE BARRIERS SHOULD BE PLACED ALONG CONTOURS TO AVOID A CONCENTRATION OF FLOW. CONCENTRATED FLOW OVER A SLOPE BARRIER CREATES A SCOUR HOLE ON THE DOWNSLOPE SIDE OF THE BARRIER. THE SCOUR HOLE EVENTUALLY UNDERMINES THE BALES AND THE BARRIER FAILS.
DO NOT PLACE BALE SLOPE BARRIERS IN AREAS WITH SHALLOW SOILS UNDERLAIN BY ROCK. IF THE BARRIER IS NOT ANCHORED SUFFICIENTLY, IT WILL WASH OUT.
BALE SLOPE BARRIERS MUST BE DUG INTO THE GROUND. BALES AT GROUND LEVEL DO NOT WORK BECAUSE THEY ALLOW WATER TO FLOW UNDER THE BARRIER.

INSPECTION AND MAINTENANCE:

BALE SLOPE BARRIERS SHOULD BE INSPECTED EVERY 7 DAYS AND WITHIN 24 HOURS OF A RAINFALL OF 1/2" OR MORE. THE FOLLOWING IS A LIST OF QUESTIONS THAT SHOULD BE ADDRESSED DURING EACH INSPECTION:

ARE THERE ANY POINTS ALONG THE SLOPE BARRIER WHERE WATER IS CONCENTRATING?
DOES WATER FLOW UNDER THE SLOPE BARRIER?
DOES WATER FLOW THROUGH SPACES BETWEEN ABUTTING BALES?
ARE ANY BALES DISLODGED?
ARE BALES DECOMPOSING DUE TO AGE AND/OR WATER DAMAGE?
DOES SEDIMENT NEED TO BE REMOVED FROM BEHIND THE SLOPE BARRIER?

CITY OF WICHITA
PUBLIC WORKS & UTILITIES ENGINEERING DIVISION

STRAW BALE DITCH CHECK AND BARRIER DETAILS

CITY ENGINEER
GARY JANZEN, P.E.

PROJECT NUMBER	OCA NUMBER	DATE
		11/2010

CITY ENGINEER'S OFFICE
CITY HALL - SEVENTH FLOOR
455 NORTH MAIN STREET
WICHITA, KANSAS 67202-1620
(316) 268-4501

SHEET
11

SW–503

Structure 11
STA: 0+00.00,
INSTALL 1 24 inch Flared End Section 67 x 74
FL=1361.21
100 YR HGL = 1364.79
N: 1708031.440 (N & E ARE MEASURED TO
E: 1665204.739 CENTER OF LIP OF STRUCTURE)

Pipe – 1 25.3 L.F.
24" HDPE
@ 0.32%

Structure 10
EAST RUN STA: 0+25.29, INSTALL
1 – Water Quality Structure (See Detail Sheet 15)
RIM ELEV. = 1367.30
18" FL IN (NW) = 1361.79
24" FL OUT (S) = 1361.29
24" FL IN (E) = 1361.39
8" FL (N) = 1363.23
100 YR HGL = 1365.00
N: 1708056.730 (N & E ARE MEASURED
E: 1665204.397 TO CENTER OF STRUCTURE)

Pipe – 2 57.7 L.F.
24" HDPE
@ 0.3%

Structure 9
EAST RUN STA: 0+82.94, INSTALL
1 – STANDARD SWS MH (6' DIA)
RIM ELEV = 1368.30
15" FL IN (NE) = 1362.24
24" FL IN (N) = 1361.65
24" FL OUT (W) = 1361.55
100 YR HGL = 1365.05
N: 1708057.493 (N & E ARE MEASURED
E: 1665262.041 TO CENTER OF STRUCTURE)

Pipe – 3 155.35 L.F.
15" HDPE
@ 0.40%

Structure 3
EAST RUN STA: 2+38.29, INSTALL
1 – QT CATCH BASIN INLET
(RE: SHEET 15 & 16)
GRATE ELEV = 1367.75
15" FL OUT (SW) = 1362.86
8" FL (NW) = 1364.30
100 YR HGL = 1365.120
N: 1708127.874 (N & E ARE MEASURED
E: 1665400.359 TO CENTER OF STRUCTURE)

S89°41'13"E 1015.97'(M)

N89°13'29"E 299.86'(M) 300.00'(P)

LOT 1, BLOCK 3

H STREET NORTH

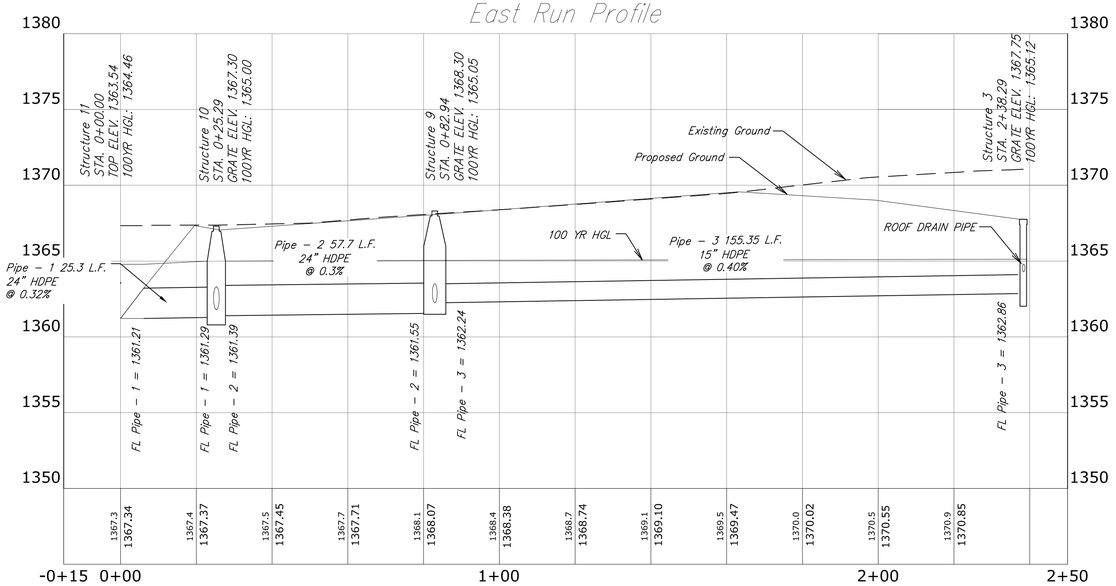
RESERVE "A" (26,973 SQ. FT.)

4:1 SLOPE

4" Woven Wire Fence

N83°28'03"W 119.02'

East Run Profile



20 10 0 20 40

KANE STEPHEN HEATH
19299
June 19, 2014
KANSAS
PROFESSIONAL ENGINEER

PROJECT NO.: 13.W024

Schwab Eaton
8615 W. Frazier, Suite 2
Wichita, Kansas
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f. 316.722.4479

QuikTrip No. 0322

3520 NORTH OLIVER ST.
WICHITA, KS.

PROTOTYPE:	P-79 (05/01/14)
DIVISION:	WICHITA
VERSION:	001
DESIGNED BY:	AS
DRAWN BY:	AL
REVIEWED BY:	TK

REV	DATE	DESCRIPTION
1	06/17/14	EDIT STORM SWR. LENGHTS

ORIGINAL ISSUE DATE: 06-02-2014

SHEET TITLE:
STORM WATER SEWER PLAN AND PROFILE 01

SHEET NUMBER:
12

BUILT TO PLAN

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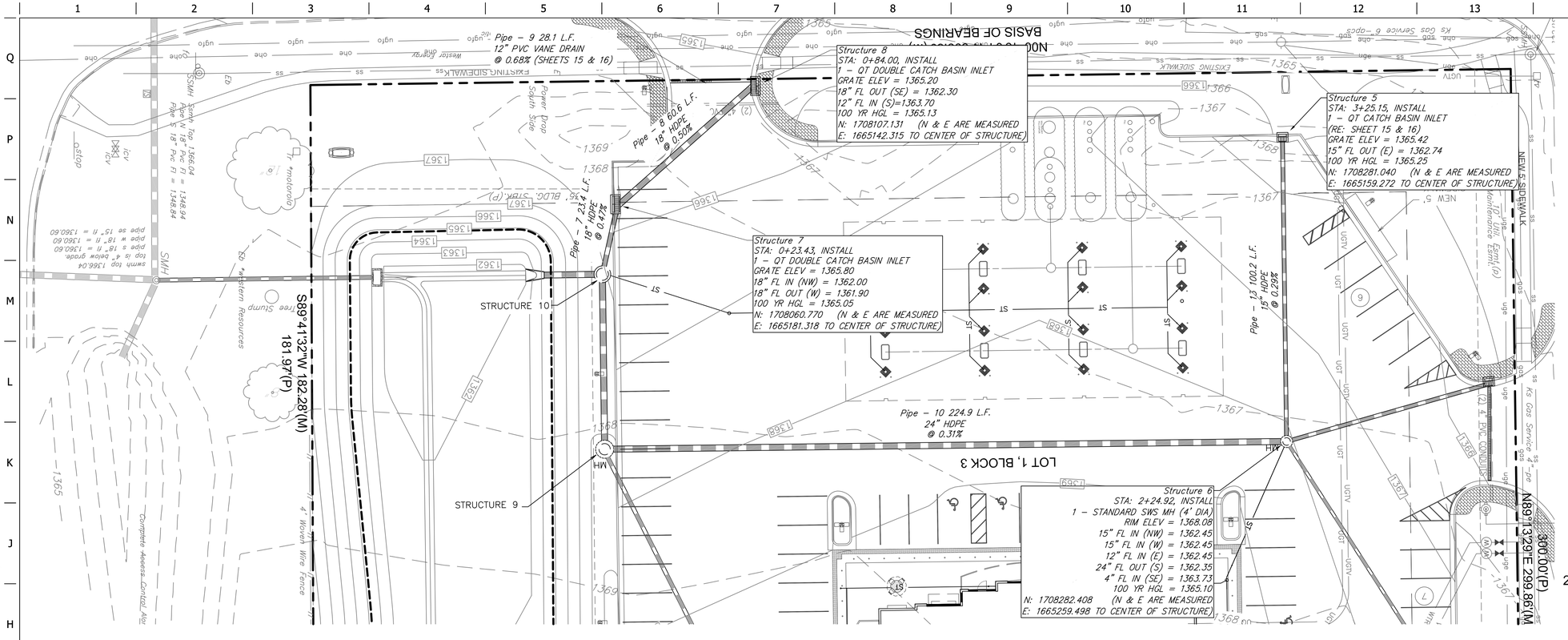

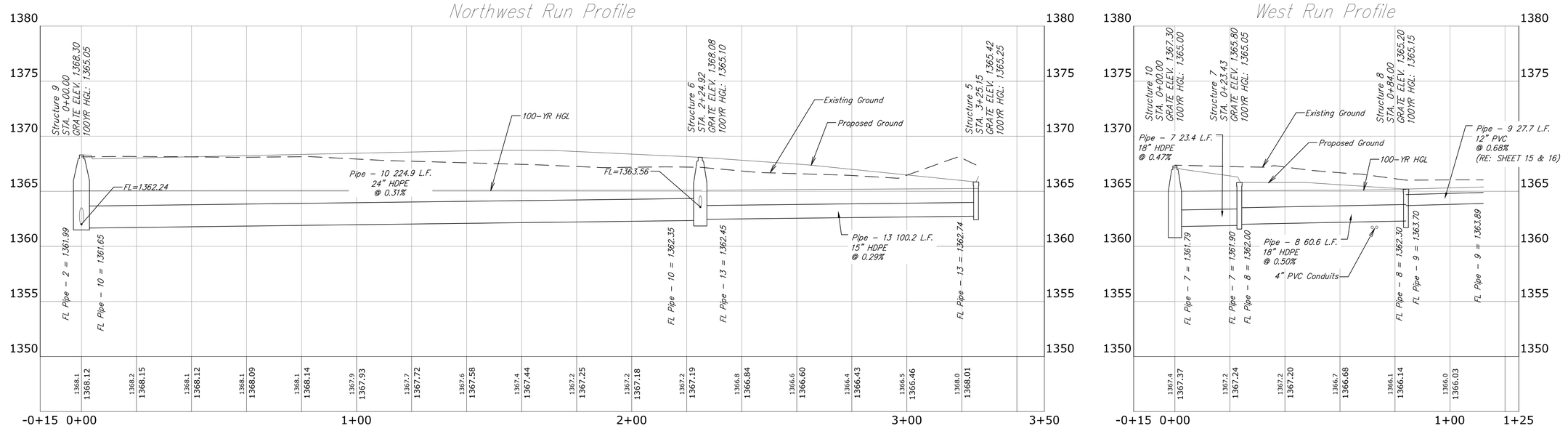

KANE STEPHEN WEBER
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June 19 2014
KANSAS
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PROJECT NO.:13.W024

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DRAWN BY:	AL
REVIEWED BY:	TK

REV	DATE	DESCRIPTION
1	06/17/14	EDIT STORM SWR. LENGHTS

ORIGINAL ISSUE DATE: 06-02-2014

SHEET TITLE:

STORM WATER SEWER PLAN AND PROFILE 2

SHEET NUMBER:

13

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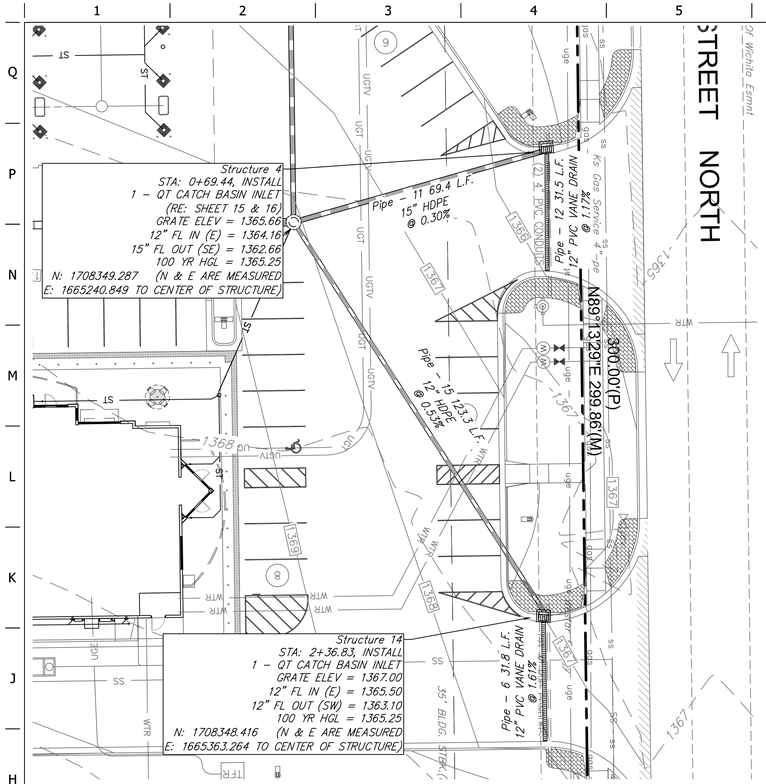

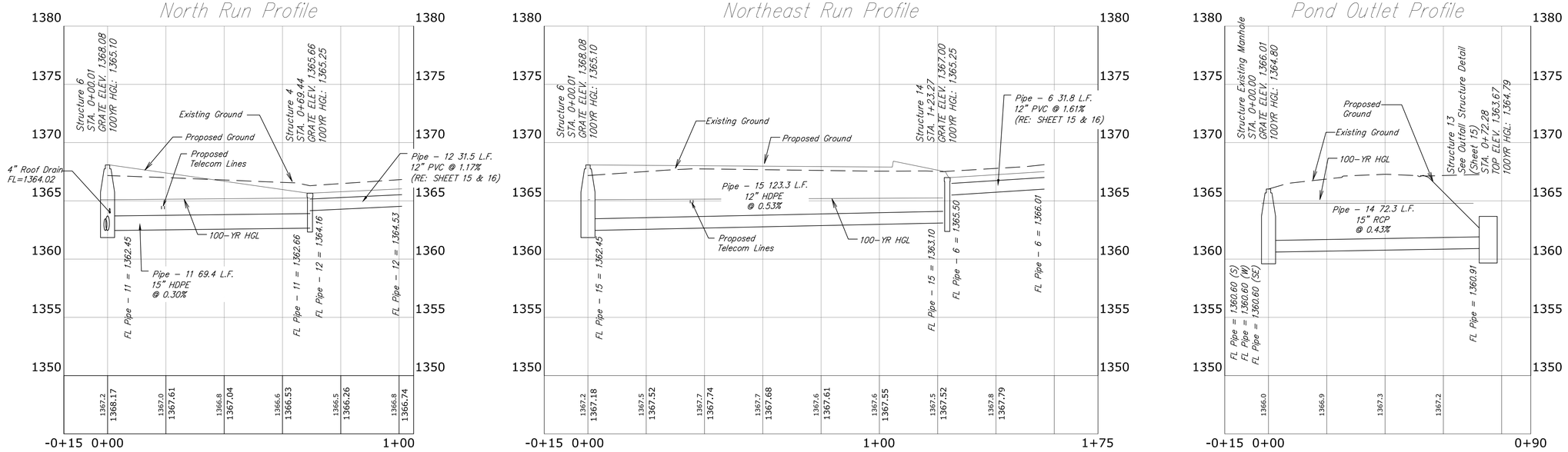

KYLE STEPHEN GEARHART
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3520 NORTH OLIVER ST.
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PROTOTYPE:	P-79 (05/01/14)
DIVISION:	WICHITA
VERSION:	001
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DRAWN BY:	AL
REVIEWED BY:	TK

REV	DATE	DESCRIPTION
1	06/17/14	EDIT STORM SWR. LENGHTS

ORIGINAL ISSUE DATE: 06-02-2014

SHEET TITLE:
STORM WATER SEWER PLAN AND PROFILE 3

SHEET NUMBER:
14

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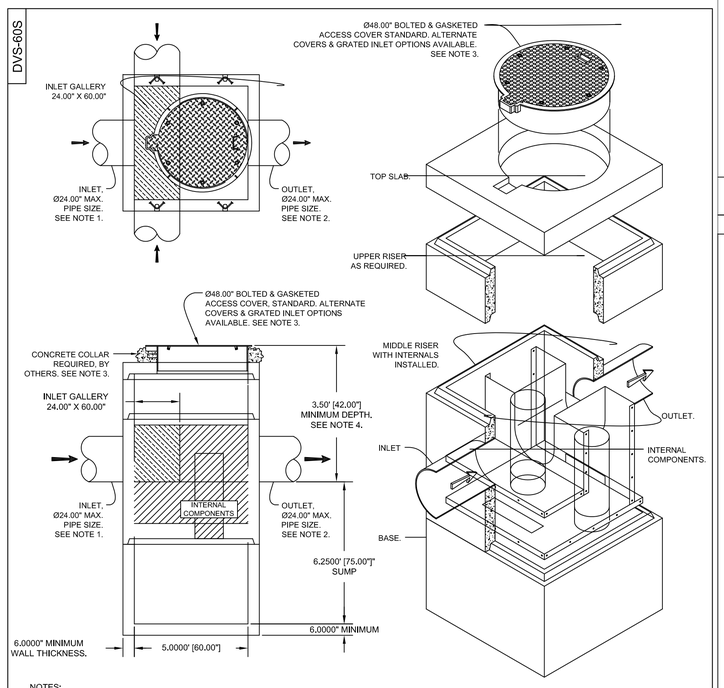


NOTES:

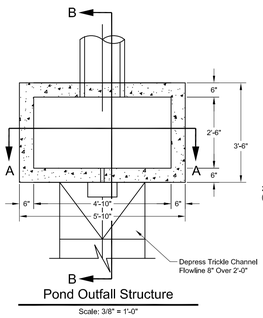
1. ALL INLET PIPES MUST ENTER SEPARATOR AT INLET GALLERY, (OBLIQUE ANGLES ALLOWED).
2. STANDARD OUTLET PIPE CONFIGURATION TO EXIT SEPARATOR AT THE CENTER LINE, (OBLIQUE ANGLES ALLOWED). CUSTOM OUTLET CONFIGURATIONS AVAILABLE UPON REQUEST.
3. BOLTED & GASKETED MANHOLE ACCESS COVER ELEVATION MAY BE ADJUSTED TO GRADE. FIELD POURED CONCRETE COLLAR AS REQUIRED, BY OTHERS. INLET GRATES & ALTERNATE COVER OPTIONS AVAILABLE.
4. FOR DEPTHS LESS THAN THE MINIMUM SHOWN CONTACT KRISTAR ENTERPRISES FOR ENGINEERING ASSISTANCE.
5. CONCRETE COMPONENTS SHALL BE MANUFACTURED IN ACCORDANCE WITH ASTM DESIGNATION C858.
6. REMOVABLE INTERNAL COMPONENTS MAY BE AVAILABLE TO FACILITATE MAINTENANCE. CONTACT KRISTAR ENTERPRISES FOR DETAILS.

TITLE

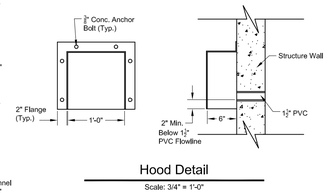
FloGard DUAL-VORTEX
HYDRODYNAMIC SEPARATOR
SQUARE STRUCTURE
DVS-60S

KriStar Enterprises, Inc.
360 Sutton Place, Santa Rosa, CA 95407
Ph: 800.579.8819, Fax: 707.524.8186, www.kristar.com

DRAWING NO.	REV.	ECO	DATE	SHEET
DVS-60S	A	0103 JPR 4/10/12	JPR 4/25/11	SHEET 1 OF 1



Pond Outfall Structure
Scale: 3/8" = 1'-0"



Hood Detail
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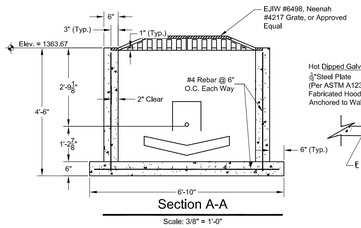
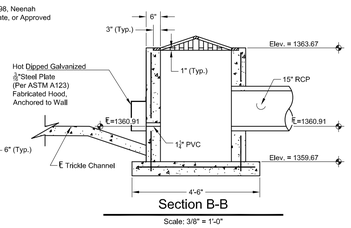


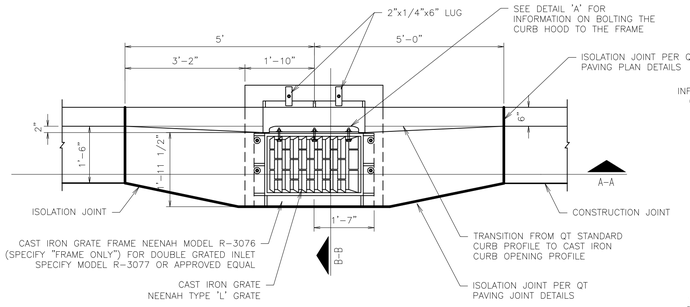
Section A-A
Scale: 3/8" = 1'-0"



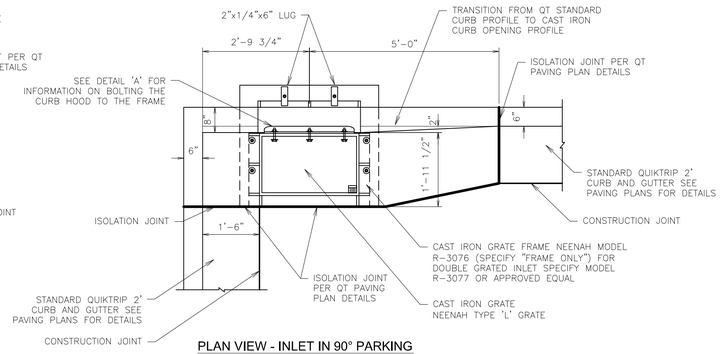
Section B-B
Scale: 3/8" = 1'-0"

L6 POND OUTFALL STRUCTURE DETAIL

SCALE_AS_SHOWN

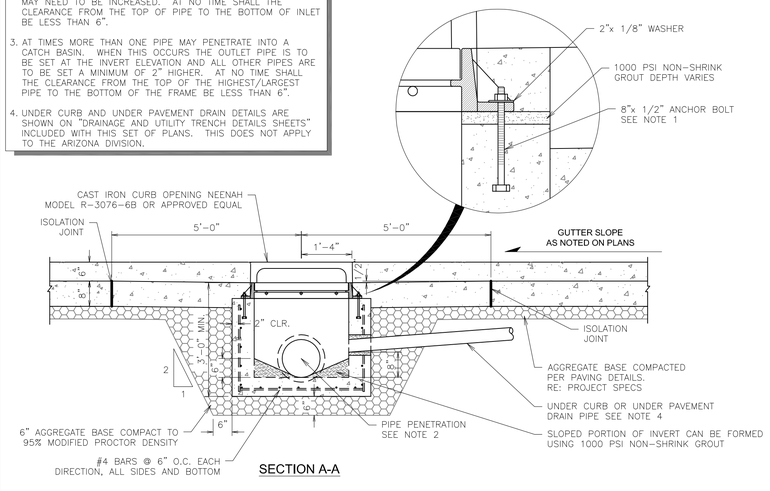


PLAN VIEW - INLET ON CONTINUOUS GRADE

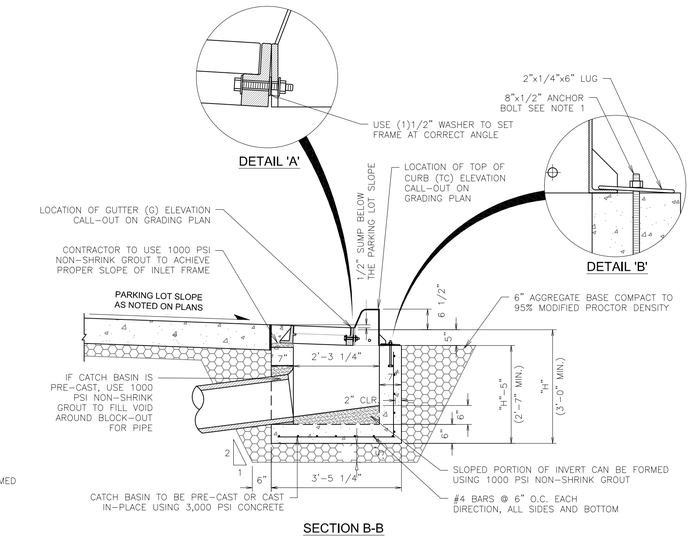


PLAN VIEW - INLET IN 90° PARKING

1. CONTRACTOR CAN SUBSTITUTE HILTI DRILLED BOLT SYSTEM FOR ANCHOR BOLT SET IN CONCRETE FOR EASE OF CONSTRUCTION
2. 12" PIPE IS THE MINIMUM PIPE SIZE ACCEPTED BY QUIKTRIP. PIPE TYPE MAY VARY BY REGION AND MUNICIPALITY. IF HYDRAULICS REQUIRES A LARGER PIPE, DEPTH OF THE INLET MAY NEED TO BE INCREASED. AT NO TIME SHALL THE CLEARANCE FROM THE TOP OF PIPE TO THE BOTTOM OF INLET BE LESS THAN 6".
3. AT TIMES MORE THAN ONE PIPE MAY PENETRATE INTO A CATCH BASIN. WHEN THIS OCCURS THE OUTLET PIPE IS TO BE SET AT THE INVERT ELEVATION AND ALL OTHER PIPES ARE TO BE SET A MINIMUM OF 2" HIGHER. AT NO TIME SHALL THE CLEARANCE FROM THE TOP OF THE HIGHEST/LARGEST PIPE TO THE BOTTOM OF THE FRAME BE LESS THAN 6".
4. UNDER CURB AND UNDER PAVEMENT DRAIN DETAILS ARE SHOWN ON "DRAINAGE AND UTILITY TRENCH DETAILS SHEETS" INCLUDED WITH THIS SET OF PLANS. THIS DOES NOT APPLY TO THE ARIZONA DIVISION.



SECTION A-A



SECTION B-B

A6 CATCH BASIN INLET DETAIL (SINGLE)

NTS

SN: DD001A007

KANE STEVEN ELLIS
19299
REGISTERED PROFESSIONAL ENGINEER
JUN 2 2014

PROJECT NO.: 13.W024

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QuikTrip No. 0322
3520 NORTH OLIVER ST.
WICHITA, KS.

PROTOTYPE:	P-79 (05/01/14)
DIVISION:	WICHITA
VERSION:	001
DESIGNED BY:	AS
DRAWN BY:	AL
REVIEWED BY:	TK

REV.	DATE	DESCRIPTION
1	06/17/14	EDIT STORM SWR. LENGHTS

ORIGINAL ISSUE DATE: 06-02-2014

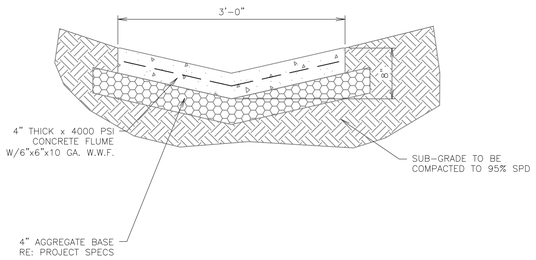
SHEET TITLE:

QT DRAINAGE DETAILS 1

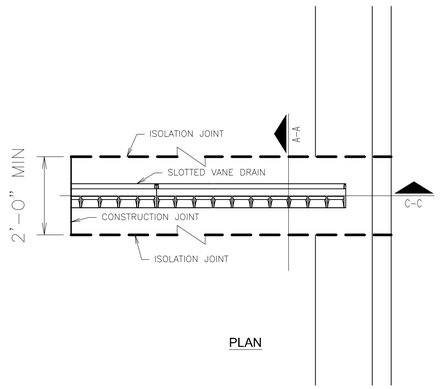
SHEET NUMBER:

15

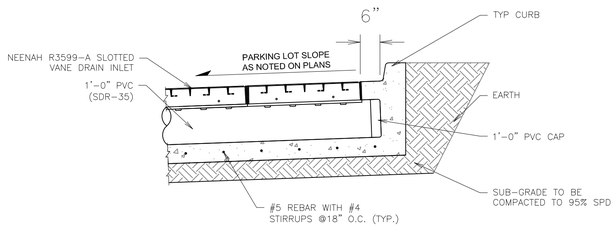
BUILT TO PLAN



L1	3' CONCRETE FLUME SECTION
NTS	SN: DD002A005



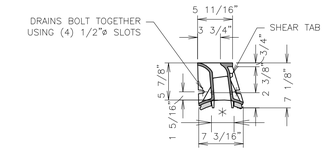
PLAN

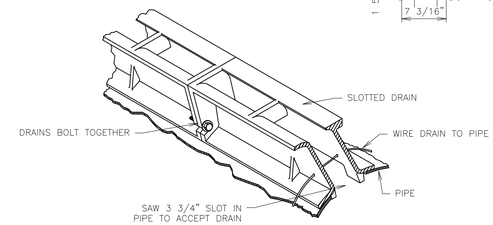


SECTION C-C

F1	SLOTTED VANE DRAIN INSTALLATION DETAIL
NTS	SN: DD005A003

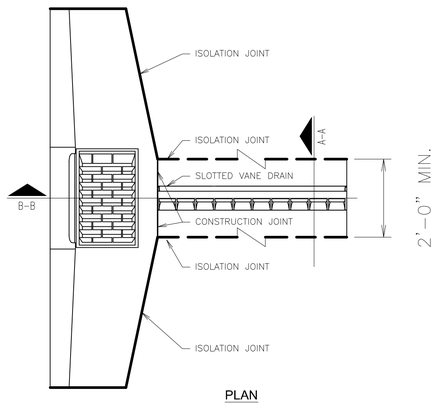
*CUT 3 3/4" SLOT IN PIPE TO ACCEPT DRAIN



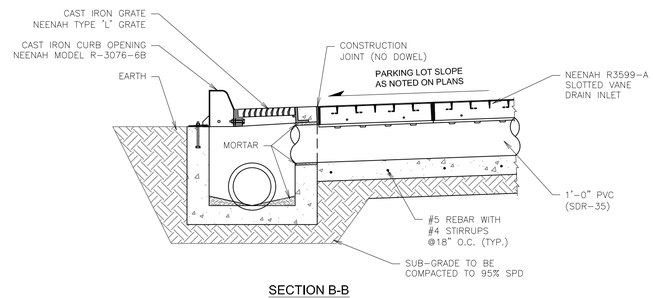


F11	SLOTTED VANE DRAIN (ISOMETRIC VIEW)
NTS	SN: DD007A003

STANDARD QT CATCH BASIN LOCATED AT LOW END OF STRIP VANE DRAIN (UNLESS NOTED OTHERWISE)

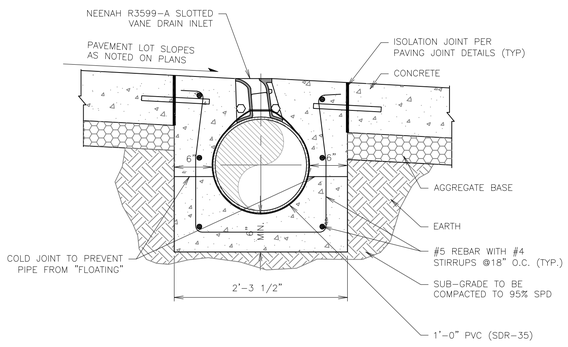


PLAN



SECTION B-B

A1	SLOTTED VANE DRAIN INSTALLATION @ CATCH BASIN DETAIL
NTS	SN: DD004A003



SECTION A-A

A11	SLOTTED VANE DRAIN INSTALLATION CROSS SECTION "A-A"
NTS	SN: DD006A005

KYLE STEPHEN LAMBERT
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PROFESSIONAL ENGINEER
6-2-2014

PROJECT NO.: 13.W024

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QuikTrip No. 0322

3520 NORTH OLIVER ST.
WICHITA, KS.

PROTOTYPE:	P-79 (05/01/14)
DIVISION:	WICHITA
VERSION:	001
DESIGNED BY:	AS
DRAWN BY:	AL
REVIEWED BY:	TK

REV	DATE	DESCRIPTION
1	06/17/14	EDIT STORM SWR. LENGHTS

ORIGINAL ISSUE DATE: 06-02-2014

SHEET TITLE:
QT DRAINAGE DETAILS 2

SHEET NUMBER:
16

BUILT TO PLAN

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L1 | NOT USED

NTS | SN:

L6 | NOT USED

NTS | SN:

L11 | NOT USED

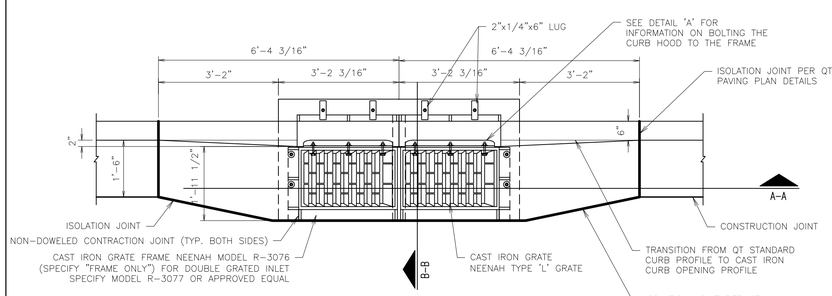
NTS | SN:

NOT USED

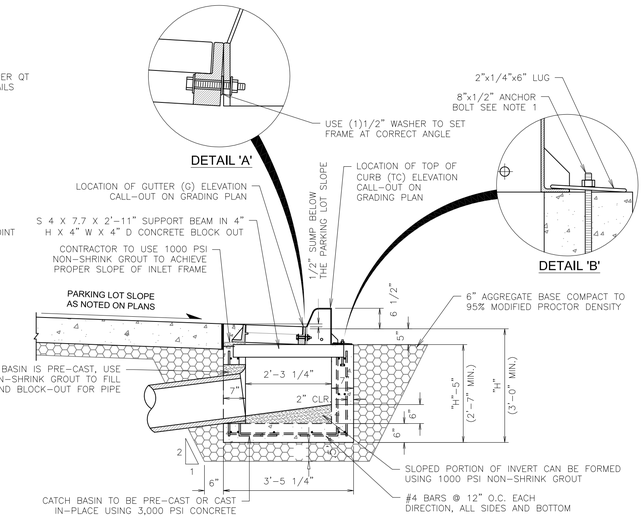
NTS | SN:

NOT USED

NTS | SN:



PLAN VIEW - INLET ON CONTINUOUS GRADE



SECTION B-B

1. CONTRACTOR CAN SUBSTITUTE HILTI DRILLED BOLT SYSTEM FOR ANCHOR BOLT SET IN CONCRETE FOR EASE OF CONSTRUCTION
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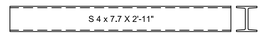
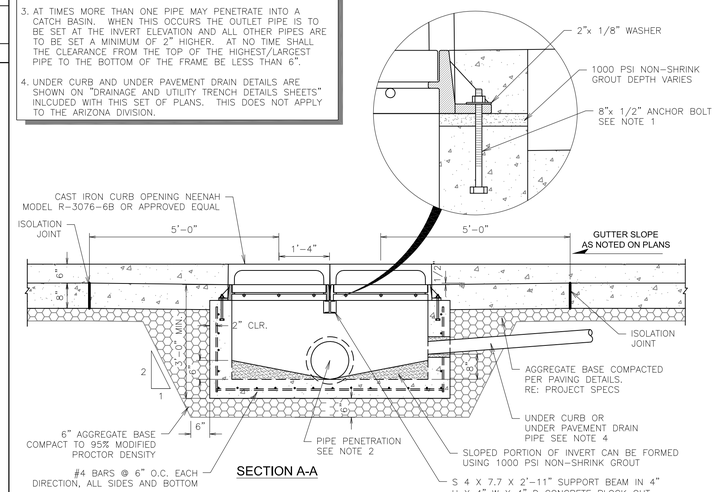
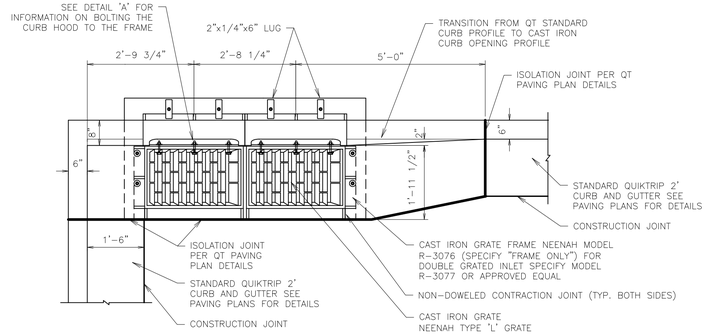


I-BEAM SUPPORT



SECTION A-A



PLAN VIEW - INLET IN 90° PARKING

CATCH BASIN INLET DETAIL (DOUBLE)

NTS | SN: DD0018008

FILE LOCATION:W:\Projects\13.W024 QuikTrip Store 0322\CAD Files\03-0322 PPD.dwg TAB NAME:QT Drain Details 03 17 USER:dlopez SAVED:6/17/2014 9:51 AM PLOTTED:6/17/2014 3:29 PM

Schwab Eaton

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PROJECT NO.:13.W024

QuikTrip No. 0322

3520 NORTH OLIVER ST.
WICHITA, KS.

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DRAWN BY:	AL
REVIEWED BY:	TK

REV	DATE	DESCRIPTION
1	06/17/14	EDIT STORM SWR. LENGHTS

ORIGINAL ISSUE DATE: 06-02-2014

SHEET TITLE:

QT DRAINAGE DETAILS 3

SHEET NUMBER:

17

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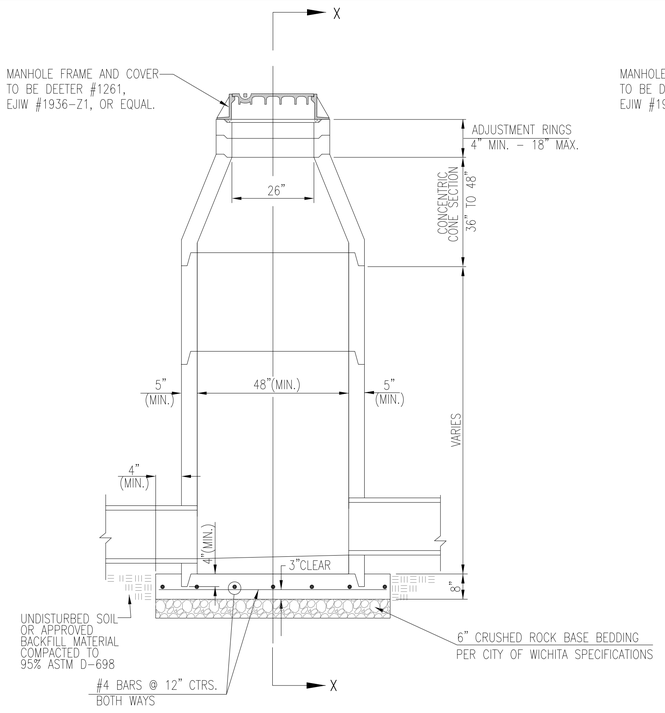
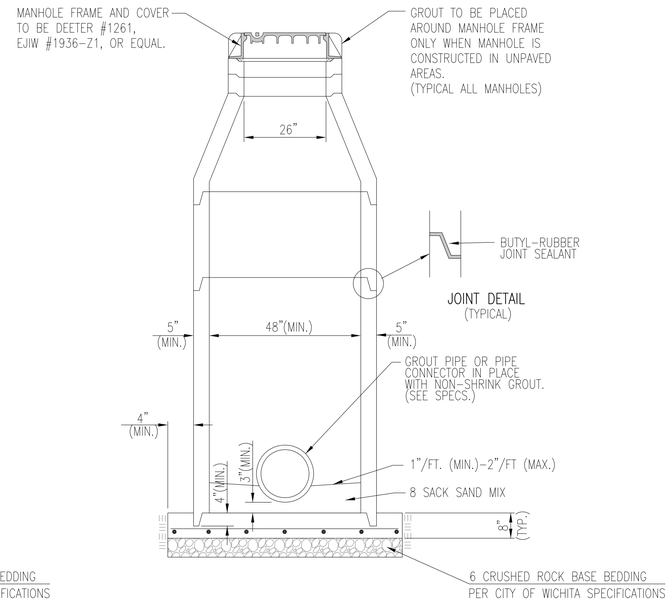
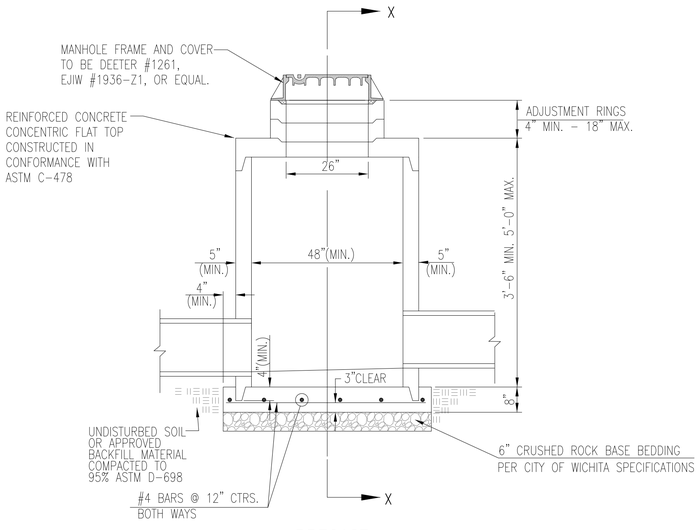


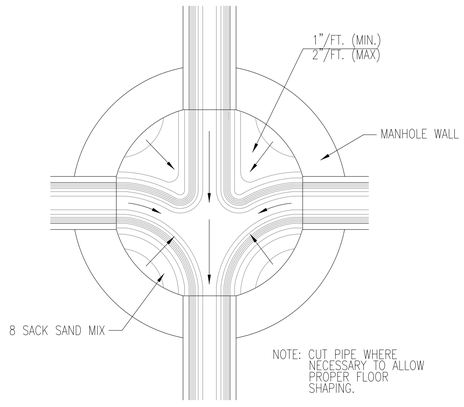
PRECAST
STANDARD MANHOLE
TYPE "A"



SECTION X-X
(TYPICAL)



PRECAST
SHALLOW MANHOLE
TYPE "B"



TYPICAL MANHOLE
FLOOR SHAPING

GENERAL NOTES

1. IF, IN THE OPINION OF THE ENGINEER, THE MANHOLE SUBGRADE APPEARS UNSTABLE, THE CONTRACTOR WILL HAVE THE OPTION TO COMPACT SUBGRADE AS SHOWN OR INCREASE THE THICKNESS OF THE MANHOLE BASE AS DIRECTED BY THE ENGINEER.
2. STEEL REINFORCING WILL BE REQUIRED IN ALL MANHOLE BASES.
3. ALL MANHOLE CONSTRUCTION SHALL BE WATER TIGHT.
4. TOP OF MANHOLE FLOOR SLAB SHALL BE AT LEAST 3 INCHES BELOW THE FLOW LINE OF THE OUTLET PIPE TO INSURE SUFFICIENT MINIMUM THICKNESS OF SHAPED INVERT.
5. ALL PRECAST CONCRETE MANHOLE SECTIONS SHALL CONFORM TO THE LATEST REVISION OF ASTM C-478 AS MODIFIED BY THE SPECIFICATIONS.
6. CONCRETE USED FOR MANHOLE CONSTRUCTION SHALL CONFORM TO CITY OF WICHITA SPECIFICATIONS FOR CONCRETE PAVEMENT MIX.
7. PRECAST MANHOLES SHALL BE SET AT LEAST 4 INCHES INTO MANHOLE BASE.
8. MANHOLES WITH PIPE SIZES 24" AND LARGER SHALL HAVE 5 FOOT INSIDE DIAMETER (MIN.)
9. MANHOLES WITH PRECAST BASES MAY BE USED AT THE CONTRACTORS OPTION. THESE MANHOLES SHALL HAVE AN 8" MINIMUM BASE THICKNESS AND SHALL BE PLACED ON AN 8" MIN. CRUSHED ROCK BASE. PIPES SHALL BE ENCASED WITH CRUSHED ROCK TO AT LEAST 3 FEET FROM THE MANHOLE WALL.
10. CONTRACTOR SHALL REMOVE LIFTING HOOKS AFTER INSTALLATION. RECESSES IN MANHOLE WALL SHALL BE GROUTED FLUSH TO THE MANHOLE WALL WITH HYDRAULIC CEMENT AFTER THE MANHOLE IS IN PLACE. LIFTING HOLES THRU THE MANHOLE WALL WILL NOT BE ACCEPTED.
11. THE ENDS OF ALL PIPES IN MANHOLES SHALL BE CUT OFF FLUSH WITH THE INSIDE FACE OF THE MANHOLE WALL.
12. MANHOLE INVERT SHALL BE SHAPED WITH 8 SACK SAND MIX CONCRETE TO CREATE FLOW CHANNELS AND TO INCREASE HYDRAULIC EFFICIENCY SUCH THAT THE MANHOLE WILL BE SELF CLEANING BETWEEN ALL INLET AND/OR OUTLET PIPES.
13. MANHOLE FRAME AND COVER TO BE DEETER #1261, EJIW #1936-Z1, OR APPROVED EQUAL, SEE SW-303.
14. FOR FLAT GRATED INLET APPLICATION, GRATE TO BE DEETER #1933, EJIW #1205 MDI, OR APPROVED EQUAL.
15. FOR BEEHIVE GRATE APPLICATION, GRATE TO BE DEETER #4495, EJIW #120545, OR APPROVED EQUAL.

CITY OF WICHITA
PUBLIC WORKS & UTILITIES
ENGINEERING DIVISION

PRECAST CONCRETE MANHOLE (STORM SEWER)

CITY ENGINEER
GARY JANZEN, P.E.

PROJECT NUMBER	OCA NUMBER	DATE

CITY ENGINEER'S OFFICE
CITY HALL - SEVENTH FLOOR
455 NORTH MAIN STREET
WICHITA, KANSAS 67202-1620
(316) 268-4501

SHEET

JAMES STEELE JR.
19299
JUNE 2, 2014
REGISTERED PROFESSIONAL ENGINEER

PROJECT NO.:13.W024

Schwab Eaton
8615 W. Frazier, Sulte 2
Wichita, Kansas
p. 316.722.4472
f. 316.722.4479

QuikTrip No. 0322
3520 NORTH OLIVER ST.
WICHITA, KS.

PROTOTYPE:	P-79 (05/01/14)
DIVISION:	WICHITA
VERSION:	001
DESIGNED BY:	AS
DRAWN BY:	AL
REVIEWED BY:	TK

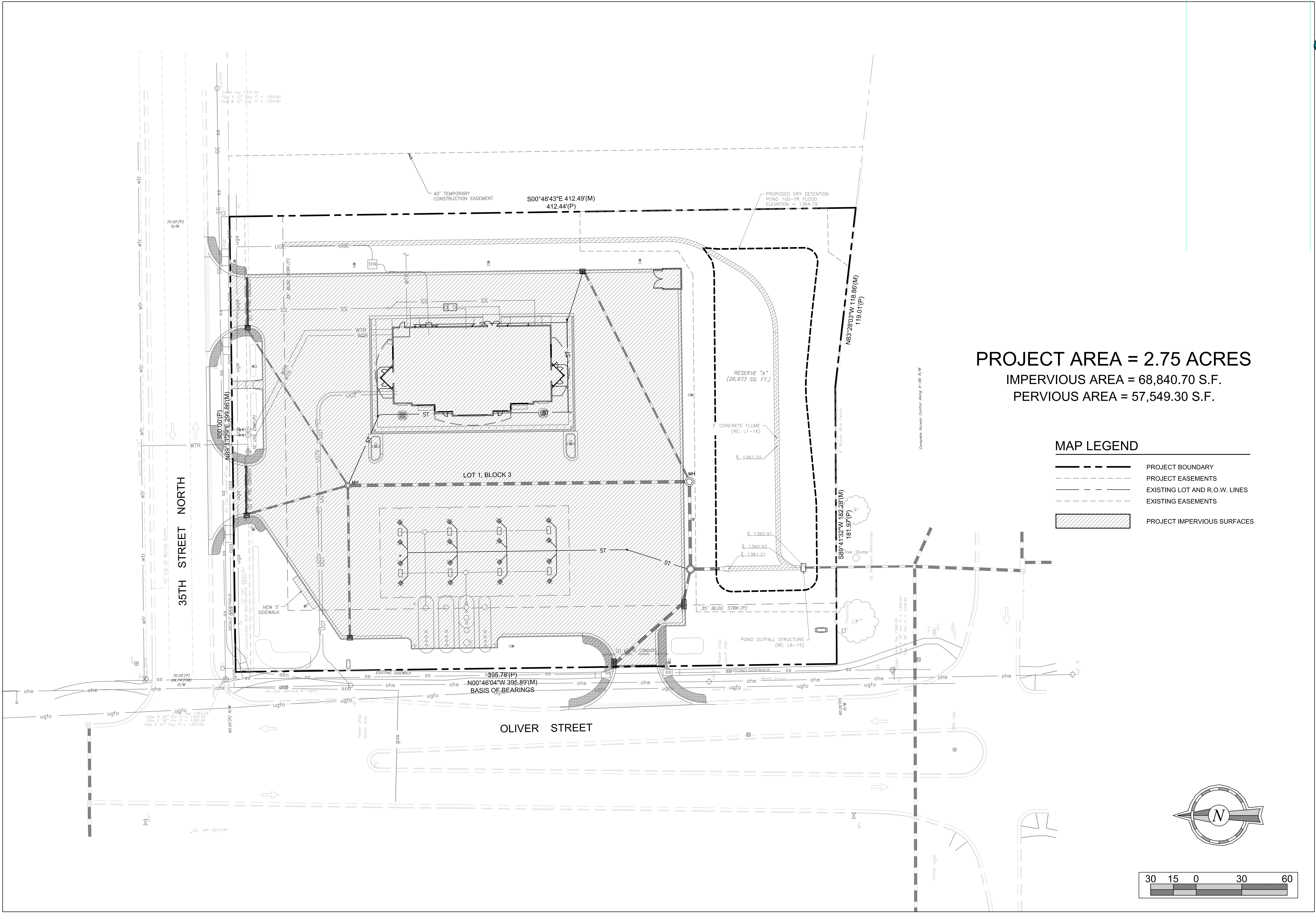
REV	DATE	DESCRIPTION
1	06/17/14	EDIT STORM SWR. LENGHTS

ORIGINAL ISSUE DATE: 06-02-2014

SHEET TITLE:
CITY OF WICHITA MANHOLE DETAIL

SHEET NUMBER:
18

BUILT TO PLAN



PROJECT AREA = 2.75 ACRES

IMPERVIOUS AREA = 68,840.70 S.F.

PERVIOUS AREA = 57,549.30 S.F.

MAP LEGEND

▬ ▬ ▬	PROJECT BOUNDARY
- - - -	PROJECT EASEMENTS
— - —	EXISTING LOT AND R.O.W. LINES
- - - -	EXISTING EASEMENTS
▨	PROJECT IMPERVIOUS SURFACES

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19299
Jun. 2, 2014

PROJECT NO.:13.W024

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SHEET TITLE:
EQUIVALENT RESIDENTIAL UNITS

SHEET NUMBER:
19

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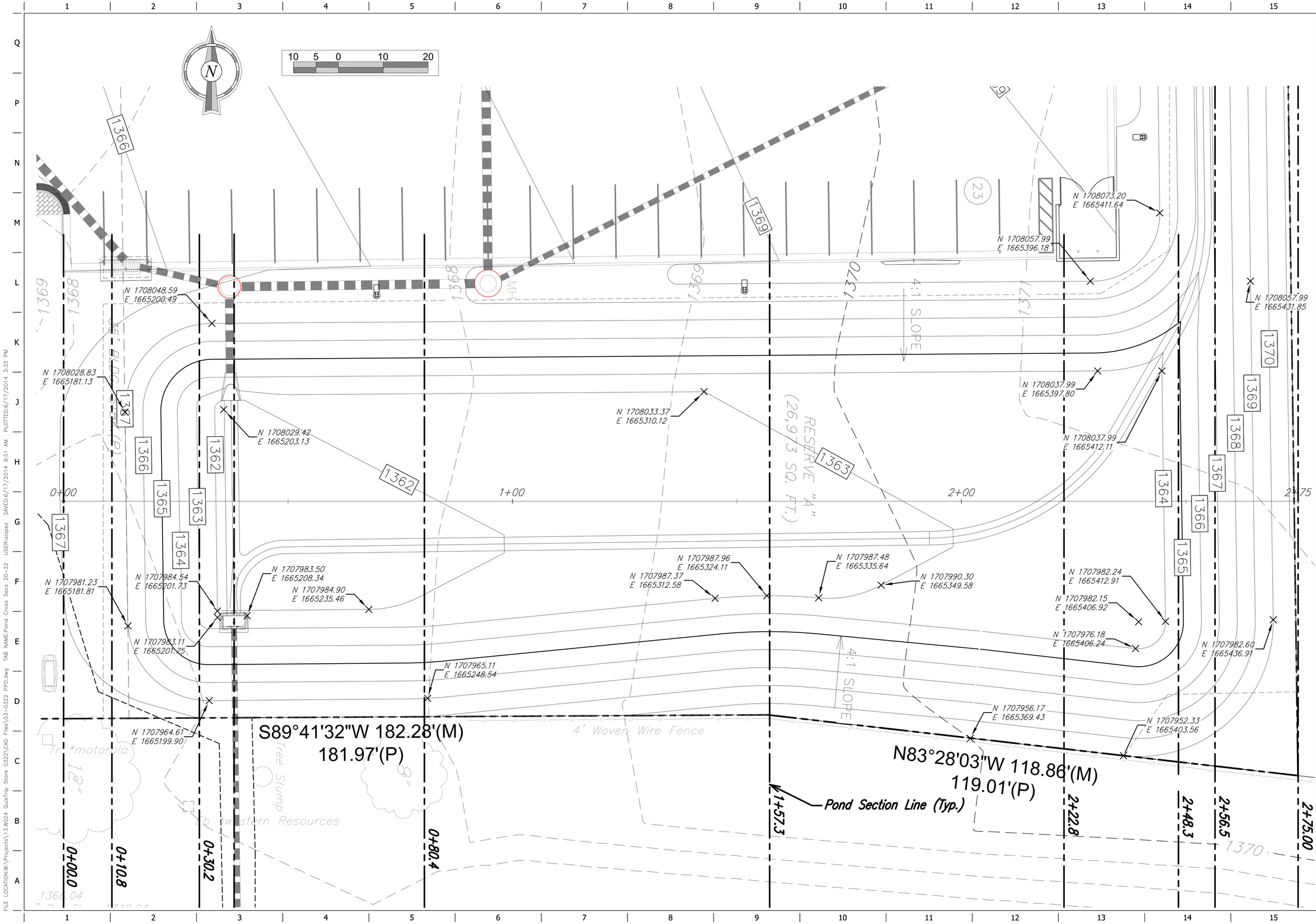

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JUN 2 2014

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SHEET TITLE:
POND CROSS SECTIONS/
POND COORDINATES

SHEET NUMBER:
20

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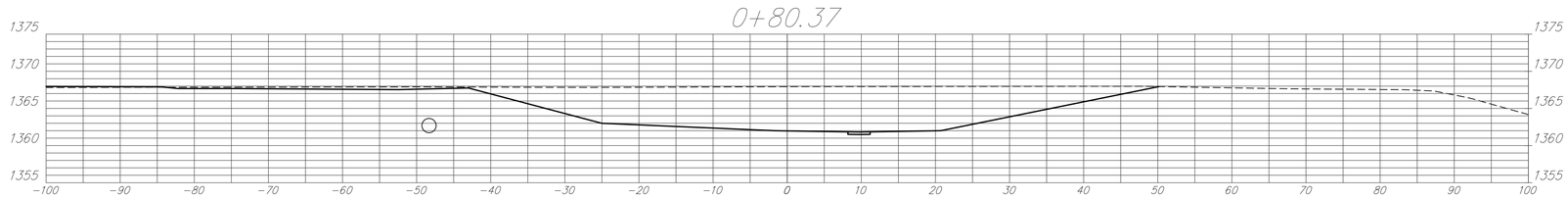

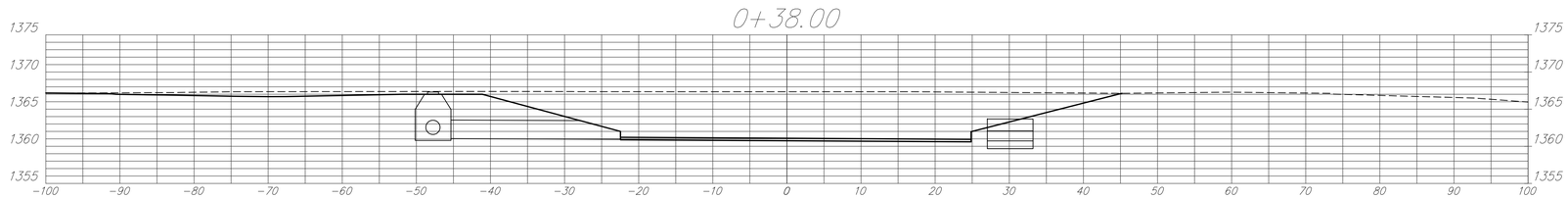

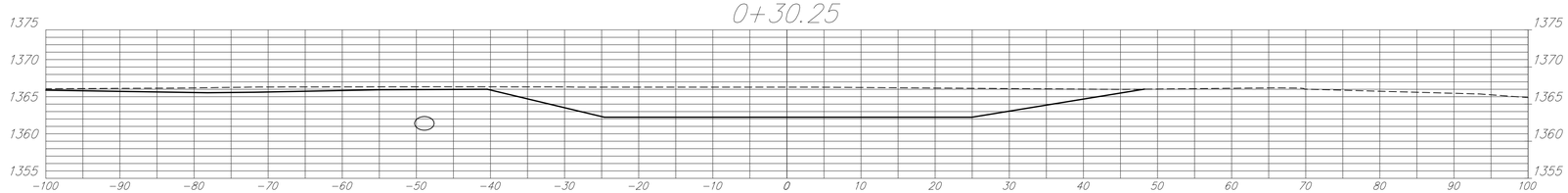

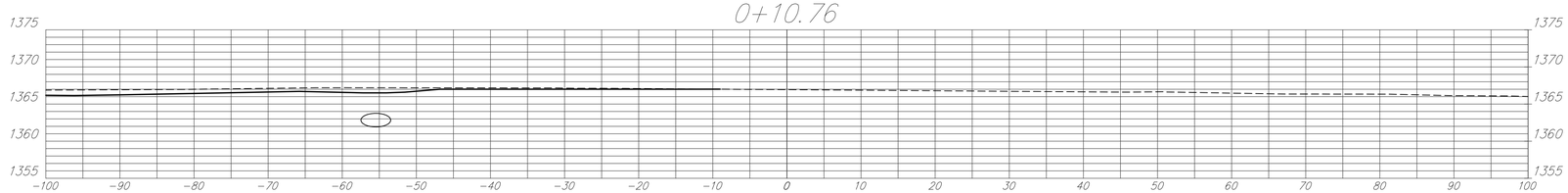

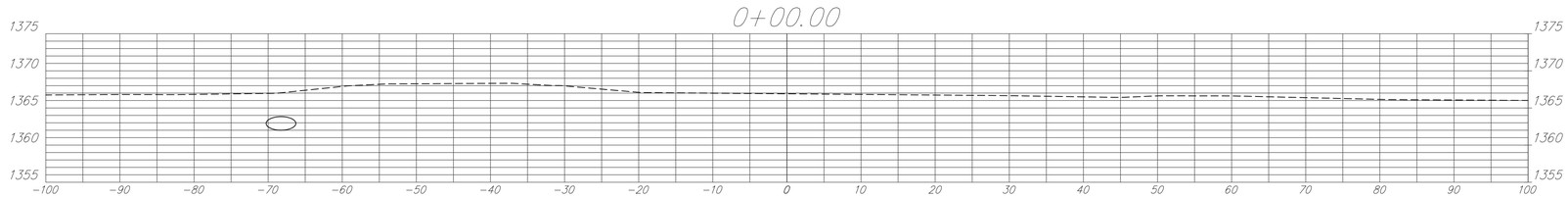

WAYNE STEPHEN EATON
19299
PROFESSIONAL ENGINEER
JUN 2 2014

PROJECT NO.:13.W024

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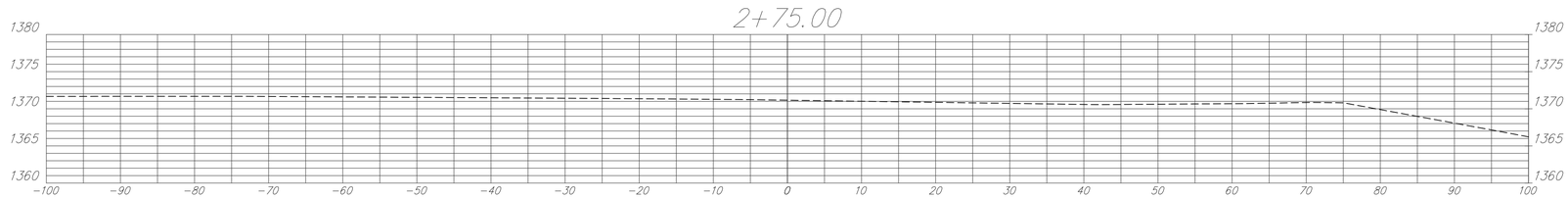
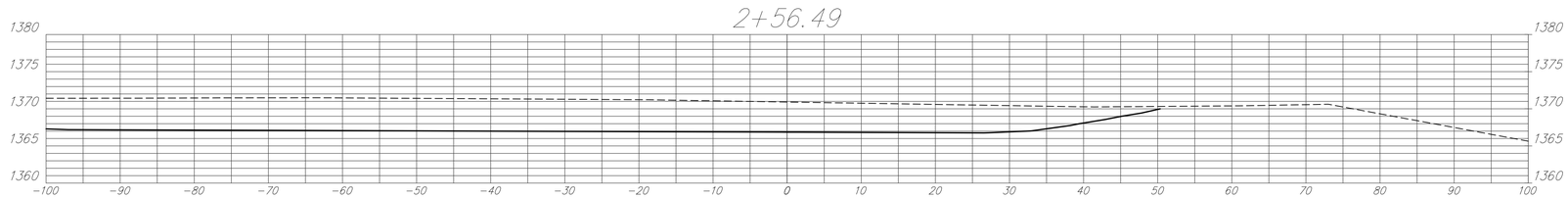
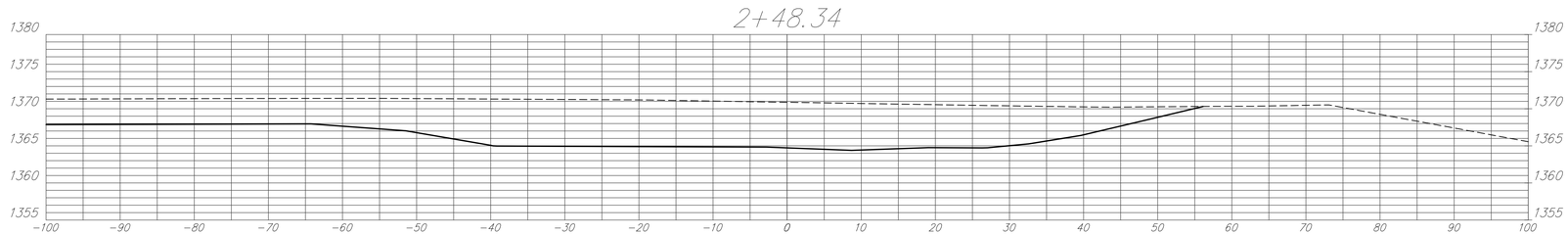
POND CROSS SECTIONS

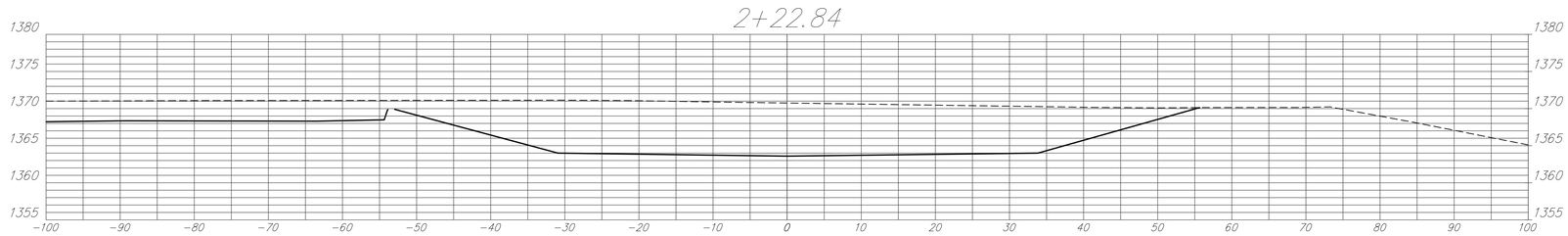
SHEET NUMBER:

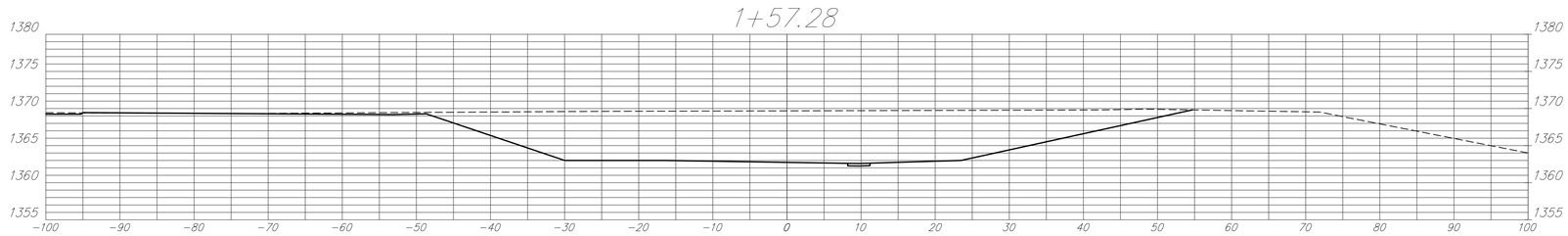
21











WAYNE STEPHEN EATON
19299
PROFESSIONAL ENGINEER
Jun 2 2014

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22