THE CROSSING AT RIVERSIDE CENTRE

A TRACT OF LAND BEING FUTURE DEVELOPMENT ON THE PLAT OF RIVERSIDE INDUSTRIAL CENTRE
AS RECORDED IN PLAT BOOK 30, PAGE 288
LOCATED IN U.S. SURVEY 731, TOWNSHIP 47 NORTH, RANGE 3 EAST OF THE 5TH PRINCIPAL MERIDIAN
ST. CHARLES COUNTY, MISSOURI

~~IMPROVEMENT~~ AS-BUILT PLANS

LEGEND

EXISTING SANITARY SEWER
EXISTING STORM SEWER
EXISTING TREE
EXISTING BUILDING
EXISTING CONTOUR
SPOT ELEVATION
EXISTING UTILITIES
FOUND 1/2" IRON PIPE
SET IRON PIPE
FOUND CROSS
FOUND STONE
FIRE HYDRANT
LIGHT STANDARD
BUSH
SIGN
GUY WIRE
POWER POLE
WATER VALVE
DENOTES RECORD INFORMATION ( )

ABBREVIATIONS

DB. – DEED BOOK
E – ELECTRIC
ESM'T – EASEMENT
F.E.S. – FLARED END SECTION
FL – FLOWLINE
FT – FEET
FND. – FOUND
G – GAS
M.H. – MANHOLE
N/F – NOW OR FORMERLY
PB. – PLAT BOOK
PG. – PAGE
P.V.C. – POLYVINYL CHLORIDE PIPE
R.C.P. – REINFORCED CONCRETE PIPE
SQ. – SQUARE
T – TELEPHONE CABLE
V.C.P. – VETRIFIED CLAY PIPE
W – WATER
(95'W) – RIGHT-OF-WAY WIDTH
HSR – HEAVY STONE REVETMENT

SITE DEVELOPMENT PLAN

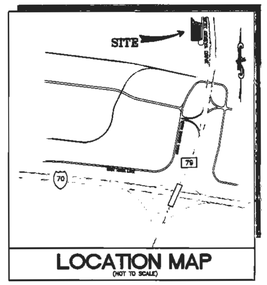
DIVISION FILE NUMBER: 19 10.02
APPROVAL DATE: 12-02-2010

SITE DEVELOPMENT PLAN REQUIREMENTS:

1. THE SITE PLAN CERTIFICATE SHALL EXPIRE, AND BE OF NO EFFECT, ONE HUNDRED EIGHTY (180) DAYS AFTER THE DATE OF ISSUANCE THEREOF, UNLESS WITHIN SUCH TIME A BUILDING PERMIT FOR ANY PROPOSED WORK AUTHORIZED UNDER SAID SITE CERTIFICATE HAS BEEN ISSUED. THE SITE PLAN CERTIFICATE SHALL EXPIRE AND BE OF NO EFFECT THREE HUNDRED AND SIXTY (360) DAYS AFTER THE DATE OF ITS ISSUANCE, IF CONSTRUCTION HAS NOT BEGUN AND BEEN PURSUED DILIGENTLY ON THE PROPERTY. (ORD. NO. 1151 27.07, 10-18-81)
2. PRIOR TO APPROVAL OF A BUILDING PERMIT, A CONSTRUCTION SITE PLAN MUST BE REVIEWED AND APPROVED BY CITY STAFF.
3. THE APPROPRIATE FIRE DISTRICT WILL NEED TO REVIEW AND APPROVE THE DEVELOPMENT.
4. ANY SIGNAGE TO BE PLACED ON THE SUBJECT PROPERTY REQUIRES A SEPARATE SIGN PERMIT.
5. ANY BUSINESS OCCUPYING THE SITE REQUIRES APPROVAL OF A BUSINESS LICENSE.
6. ALL CONDITIONS OF APPROVAL SHALL BE NOTED ON THE CONSTRUCTION SITE PLANS.

SITE DEVELOPMENT PLAN CONDITIONS:

NO CONDITIONS PER CITY LETTER DATED DECEMBER 3, 2010

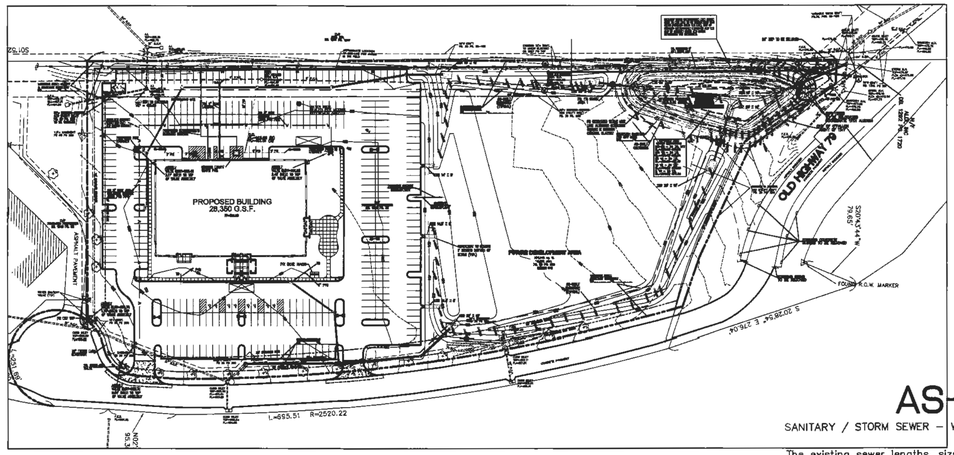


LOCATION MAP
(NOT TO SCALE)

SUBJECT PROPERTY LIES WITHIN FLOOD ZONE "X" (AREAS DETERMINED TO BE OUTSIDE THE 500-YEAR FLOODPLAIN) PER NATIONAL FLOOD INSURANCE PROGRAM FLOOD INSURANCE RATE MAP FOR ST. CHARLES COUNT, MISSOURI, AND INCORPORATED AREAS. THE F.I.R.M. IS IDENTIFIED AS MAP NO. 29183 C 0242E WITH AN EFFECTIVE DATE OF AUGUST 2, 1996.

PERTINENT DATA

SITE ACREAGE	=	8.589 Ac.±
OWNER (CONTRACT)	=	WINDSOR CROSSING CHURCH
SITE ADDRESS	=	6000 W GENEVA DRIVE ST. PETERS, MISSOURI 63376
ZONING	=	C-3 "HIGHWAY COMMERCIAL DISTRICT"
FIRE DISTRICT	=	CENTRAL COUNTY
SEWER DISTRICT	=	CITY OF O'FALLON
WATER SERVICE	=	CITY OF O'FALLON
GAS SERVICE	=	LACLEDE GAS COMPANY
ELECTRIC SERVICE	=	AmerenUE ELECTRIC COMPANY
PHONE SERVICE	=	CENTURYLINK
WATERSHED	=	BELLEAU CREEK
WUNNENBERG'S	=	PAGE 31, GRID 00-15



PLAN VIEW
SCALE: 1"=100'

SHEET INDEX

AS-BUILT

SANITARY / STORM SEWER – WATER QUALITY FEATURE – WATER LINE

The existing sewer lengths, sizes, flowlines, depths of structures and sewers locations with respect to existing or proposed easements have been measured. Water Quality Features, Retention Basins and drainage swales have been measured. Fire hydrants and valves have been measured. The results of those measurements are shown on this set of Final Measurement plans. Since the sanitory wye locations have been plotted from information provided by the sewer contractor or other sources, I disclaim any responsibility for thot specific information.

All public sewers are located within designoted existing or proposed easements.

Randall S. Rosson, P.L.S. NO. 2005-000171 — Date 3-9-16

PROPERTY DESCRIPTION

A tract of land being the "FUTURE DEVELOPMENT" area of Riverside Industrial Centre as recorded in Plat Book 30 page 288 of the St. Charles County, Missouri records in U.S. Survey 731, Township 47 North, Range 3 East, Fifth Principal Meridian, City of O'Fallon, St. Charles County, Missouri, and being more particularly described as follows:

Beginning at the southwest corner of above said "FUTURE DEVELOPMENT" area, also being the northwest corner of Lot 1 of above said Riverside Industrial Centre; thence along the west line of said "FUTURE DEVELOPMENT" area North 01 degree 52 minutes 41 seconds West 1,045.14 feet to the northwest corner of said "FUTURE DEVELOPMENT" area; thence along the northerly line of said "FUTURE DEVELOPMENT" area North 89 degrees 43 minutes 22 seconds East 33.04 feet to the southwesterly line of Old Highway 79; thence along last said southwesterly line the following courses and distances: South 38 degrees 25 minutes 10 seconds East 149.93 feet, South 67 degrees 17 minutes 06 seconds East 168.19 feet, and South 73 degrees 10 minutes 02 seconds East 73.47 feet to a point on a curve on the westerly line of West Geneva Drive, 50 feet wide; thence departing last said southwesterly line along last said westerly line the following courses and distances: Southeasterly along last said curve to the right, for which the radius point bears South 71 degrees 50 minutes 08 seconds West 2,407.22 feet and a chord which bears South 09 degrees 52 minutes 59 seconds East 711.60 feet, an arc distance of 714.08 feet, South 02 degrees 31 minutes 45 seconds West 58.10 feet to the beginning of a curve to the right for which the radius point bears North 87 degrees 28 minutes 15 seconds West 50.00 feet; Southwesterly along last curve with a chord which bears South 38 degrees 58 minutes 45 seconds West 59.41 feet, an arc distance of 63.62 feet to a point of reverse curvature; Southwesterly along a curve to the left for which the radius point bears South 14 degrees 34 minutes 15 seconds East 67.00 feet and a chord which bears South 56 degrees 30 minutes 10 seconds West 43.46 feet, an arc distance of 44.26 feet to the southerly line of above said "FUTURE DEVELOPMENT" area; thence departing last said westerly line along last said southerly line South 88 degrees 08 minutes 27 seconds West 363.57 feet to the point of beginning, containing 374,148 square feet or 8.589 acres, more or less.

Agency Contacts

Sanitary Sewer
City of O'Fallon
100 N. Main St.
O'Fallon, MO. 63366
Contact: 636-281-2858

Water
City of O,Fallon
100 N. Main St.
O'Fallon, MO. 63366
Contact: 636-281-2858

Storm Sewer
City of O'Fallon
100 N. Main St.
O'Fallon, MO. 63366
636-281-2858

Central County Fire
1 Timberbrook Dr.
St. Peters, MO 63376
636-970-9700

Ameren UE
200 Callahan Road
Wentzville, MO. 63385
636-639-8312

Gas
Laclede Gas Company
3950 Forest Park Ave.
St. Louis, MO. 63134
314-558-5437

Telephone
Century Link
1151 Century Link Dr.
Wentzville, MO. 63385
636-332-7030

4	WATER QUALITY	02/17/11
3	CITY APPROVAL	02/01/11
2	CITY COMMENTS	01/26/11
1	CITY COMMENTS	01/13/11

THE NECESSARY EASEMENTS TO BE GRANTED BY RECORDING THE EASEMENT PLAT IS A CONDITION OF APPROVAL OF THESE PLANS.

CITY OF O'FALLON
COMMUNITY DEVELOPMENT DEPARTMENT
ACCEPTED FOR CONSTRUCTION
BY:_____ DATE_____
PROFESSIONAL ENGINEER'S SEAL
INDICATES RESPONSIBILITY FOR DESIGN

City approval of any construction site plans does not mean that any building can be constructed on the lots without meeting the building setbacks as required by the zoning codes.
All installations and construction shall conform to the approved engineering drawings. However, if the developer chooses to make minor modifications in design and/or specifications during construction, they shall make such changes at their own risk, without any assurance that the City Engineer will approve the completed installation or construction. It shall be the responsibility of the developer to notify the City Engineer of any changes from the approved drawings. The developer may be required to correct the installed improvement so as to conform to the approved engineering drawings. The developer may request a letter from the Construction Inspection Division regarding any field changes approved by the City Inspector.
Lighting values will be reviewed on site prior to the final occupancy inspection.

- CITY OF O'FALLON CONSTRUCTION WORK HOURS PER CITY ORDINANCE 3429 AS SHOWN IN SECTION 500.420 OF THE MUNICIPAL CODE OF THE CITY OF O'FALLON ARE AS FOLLOWS:
  OCTOBER 1 THROUGH MAY 31
  7:00 A.M. TO 7:00 P.M. MONDAY THROUGH SUNDAY
  JUNE 1 THROUGH SEPTEMBER 30
  5:00 A.M. TO 8:00 P.M. MONDAY THROUGH FRIDAY
  7:00 A.M. TO 8:00 P.M. SATURDAY AND SUNDAY
- THE AREA OF THIS PHASE OF DEVELOPMENT IS: 8.59 AC
  THE AREA OF LAND DISTURBANCE IS: 7.21 AC
  NUMBER OF PROPOSED LOTS IS: 1
  BUILDING SETBACK INFORMATION: FRONT 30 FEET
  SIDE 25 FEET
  REAR 50 FEET
- THE ESTIMATED SANITARY FLOW IN GALLONS PER DAY IS 6960
- PARKING CALCULATIONS
  REQUIRED PARKING BASED ON CLASSIFICATION: CHURCH
  REQUIRED PARKING = 1 SPACE PER 3 SEATS
  NUMBER OF SEATS IN BUILDING = 1014
  TOTAL REQUIRED = 1014/3 = 338 SPACES
  TOTAL PROVIDED: 338 SPACES
  ACCESSIBLE SPACES
  REQUIRED: 301-400 SPACES PROVIDED
  REQUIRED: 8 ACCESSIBLE SPACE (1 VAN ACCESSIBLE)
  PROVIDED: 8 ACCESSIBLE SPACES (2 VAN ACCESSIBLE)
  LOADING CALCULATIONS:
  REQUIRED: 1 PER 5000 SF + 1 PER EACH ADDITIONAL 20,000 SF = 2 REQ'D
  PROVIDED: 2
  BIKE RACK REQUIREMENTS:
  4 RACK SPACES REQUIRED PER PLANNING AND ZONING
  PROVIDED: 4 RACK SPACES

U.S.G.S. BENCHMARK

STATION SC-06
ELEV.= 529.23 (NGVD 1929 (1991)
THE STATION IS LOCATED ON THE EAST SHOULDER OF NORTH BOUND LANE OF MO. HWY 79 ABOUT ½ MILE NORTH OF I-70. IT IS 280± NORTH OF THE NORTH END OF THE RAILROAD OVERPASS AT APPROXIMATE HWY 79 STATION 537+52 AND ON A LINE EXTENDED FROM THE NORTHERLY FENCE ENCLOSING THE LOADING DOCKS OF WAINWRIGHT INDUSTRIES, INC., 14.82 FEET S.E. OF A COTTON PICKER SPINOLE IN THE JOINT OF PAVEMENT AND THE SHOULDER; 14.72' N.E. OF ANOTHER; 12.4 FEET EASTERLY OF THE JOINT BETWEEN THE PAVEMENT AND SHOULDER; AND 2.05' SOUTH OF A CARSONITE WITNESS POST.

UTILITY LOCATES

MISSOURI ONE-CALL
1 800 344-7483
CITY OF O'FALLON
TRAFFIC
(636) 379-5502
ENGINEERING
(636) 379-5556
CONSTRUCTION INSPECTION
(636) 379-5569

UTILITY NOTE:

UNDERGROUND FACILITIES, STRUCTURES AND UTILITIES HAVE BEEN PLOTTED FROM AVAILABLE SURVEYS, RECORDS AND INFORMATION, AND , THEREFORE DO NOT NECESSARILY REFLECT THE ACTUAL EXISTENCE, NON-EXISTENCE, SIZE, TYPE, NUMBER, OR LOCATION OF THESE FACILITIES, STRUCTURES AND UTILITIES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE ACTUAL LOCATION OF ALL UNDERGROUND FACILITIES, STRUCTURES, AND UTILITIES, EITHER SHOWN OR NOT SHOWN ON THESE PLANS. THE UNDERGROUND FACILITIES, STRUCTURES, AND UTILITIES SHALL BE LOCATED IN THE FIELD PRIOR TO ANY GRADING, EXCAVATION OR CONSTRUCTION OF IMPROVEMENTS. THESE PROVISIONS SHALL IN NO WAY ABSOLVE ANY PARTY FROM COMPLYING WITH THE UNDERGROUND FACILITY SAFETY AND DAMAGE PREVENTION ACT, CHAPTER 319 RSMo.

STOCK AND ASSOCIATES CONSULTING ENGINEERS, INC. AND THE UNDERSIGNED ENGINEER HAVE NO RESPONSIBILITY FOR SERVICES PROVIDED BY OTHERS TO IMPLEMENT THE IMPROVEMENTS SHOWN ON THIS PLAN AND ALL OTHER DRAWINGS WHERE THE UNDERSIGNED ENGINEER'S SEAL APPEARS. THE CONSTRUCTION MEANS AND METHODS ARE THE SOLE RESPONSIBILITY OF THE OWNER AND CONTRACTOR. STOCK AND ASSOCIATES CONSULTING ENGINEERS, INC. HAS NO RESPONSIBILITY TO VERIFY FINAL IMPROVEMENTS AS SHOWN ON THIS PLAN UNLESS SPECIFICALLY ENGAGED AND AUTHORIZED TO DO SO BY THE OWNER OR CONTRACTOR.

PREPARED FOR:

OWNER/CONTRACT
WINDSOR CROSSING CHURCH
114 NORTH EARTHERTON
CHESTERFIELD, MO 63005
CONTACT: ART KUIPER

MISSOURI DEPT. OF NATURAL RESOURCES

PERMIT NO. – MOR10D698
EXPIRATION DATE: 02/07/2012

02/17/11

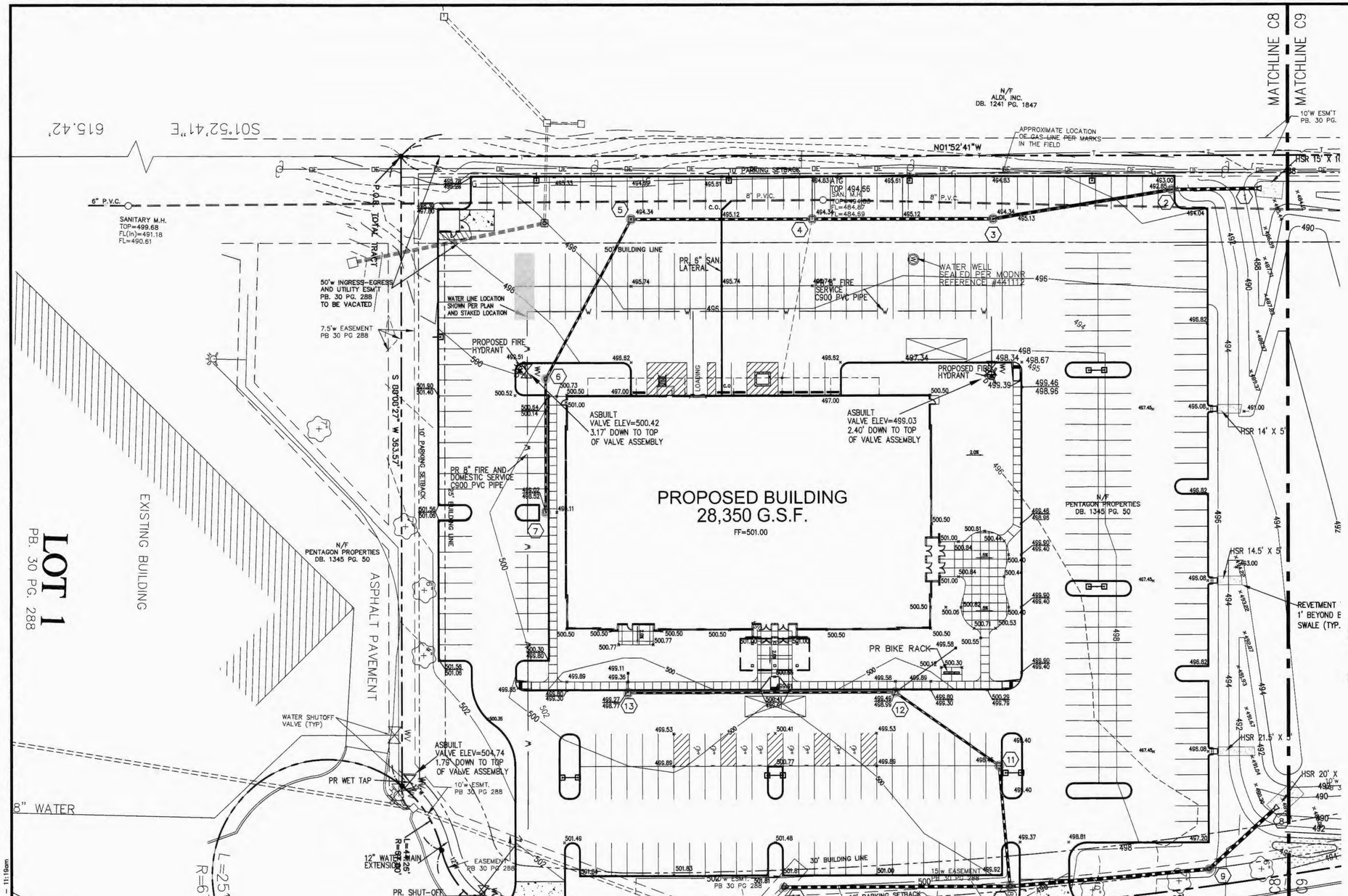
GEORGE M. STOCK E-25115
CIVIL ENGINEER
CERTIFICATE OF AUTHORITY
NUMBER: 000996

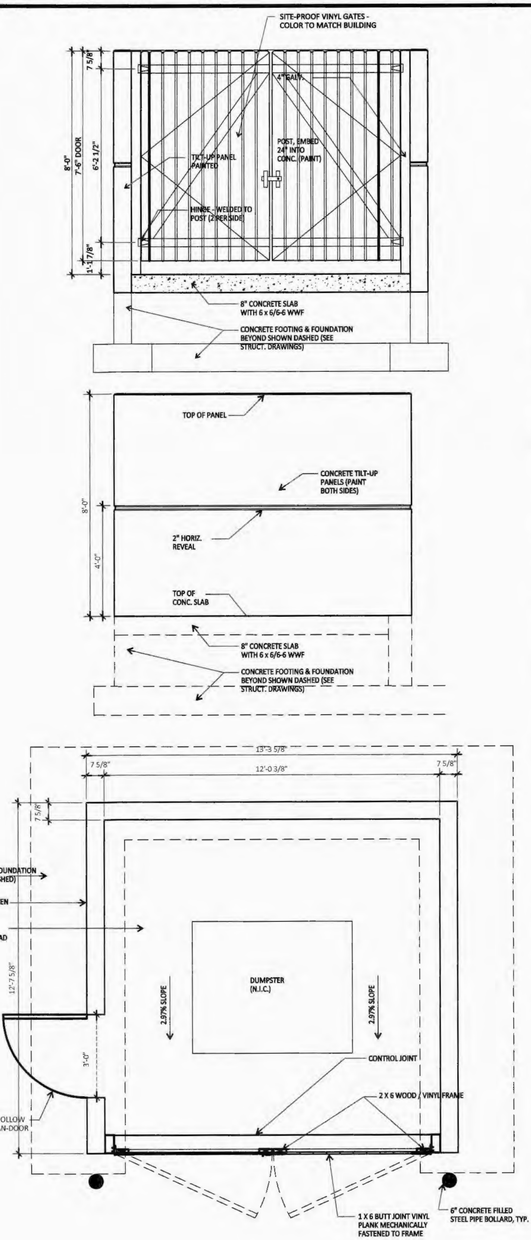
THE CROSSING AT RIVERSIDE CENTRE
TITLE SHEET

STOCK & ASSOCIATES
Consulting Engineers, Inc.
257 Chesterfield Business Parkway
St. Louis, MO 63005
PH. (636) 530-9100
FAX (636) 530-9130
e-mail: general@stockassoc.com
Web: www.stockassoc.com

DRAWN BY:	DATE:	CHECKED BY:	DATE:	JOB NUMBER:	SHEET:
P.R.G.	12/21/10	G.M.S.	12/21/10	210-4626.2	C1

D:\DRAWINGS\2104626\Survey\CityAsBuilts\4626-Base2-baseinborm.dwg Mar 09, 2016 - 11:18am





TRASH ENCLOSURE DETAILS

NTS

4	WATER QUALITY 02/17/11
3	CITY APPROVAL 02/01/11
2	CITY COMMENTS 01/26/11
1	CITY COMMENTS 01/13/11

AS-BUILT

SANITARY / STORM SEWER – WATER QUALITY FEATURE – WATER LINE

The existing sewer lengths, sizes, flowlines, depths of structures and sewers locations with respect to existing or proposed easements have been measured. Water Quality Features, Retention Basins and drainage swales have been measured. Fire hydrants and valves have been measured. The results of those measurements are shown on this set of Final Measurement plans. Since the sanitary wye locations have been plotted from information provided by the sewer contractor or other sources, I disclaim any responsibility for that specific information.

All public sewers are located within designated existing or proposed easements.

STATE OF MISSOURI
RANDALL S. ROSSON
NUMBER
PROFESSIONAL LAND SURVEYOR

Randall S. Rosson, P.L.S. NO. 2006-000171 — 3-9-16 Date

02/17/11

GEORGE M. STOCK E-25116
CIVIL ENGINEER
CERTIFICATE OF AUTHORITY NUMBER: 000996

THE CROSSING AT RIVERSIDE CENTRE

SITE AND GRADING PLAN

STOCK & ASSOCIATES
Consulting Engineers, Inc.
257 Chesterfield Business Parkway
St. Louis, MO 63005
PH. (636) 530-9100
FAX (636) 530-9130
e-mail: general@stockassoc.com
Web: www.stockassoc.com

DRAWN BY:	DATE:	CHECKED BY:	DATE:	JOB NUMBER:	SHEET:
P.R.G.	12/21/10	G.M.S.	12/21/10	210-4626	C8

AS-BUILT

SANITARY / STORM SEWER – WATER QUALITY FEATURE – WATER LINE

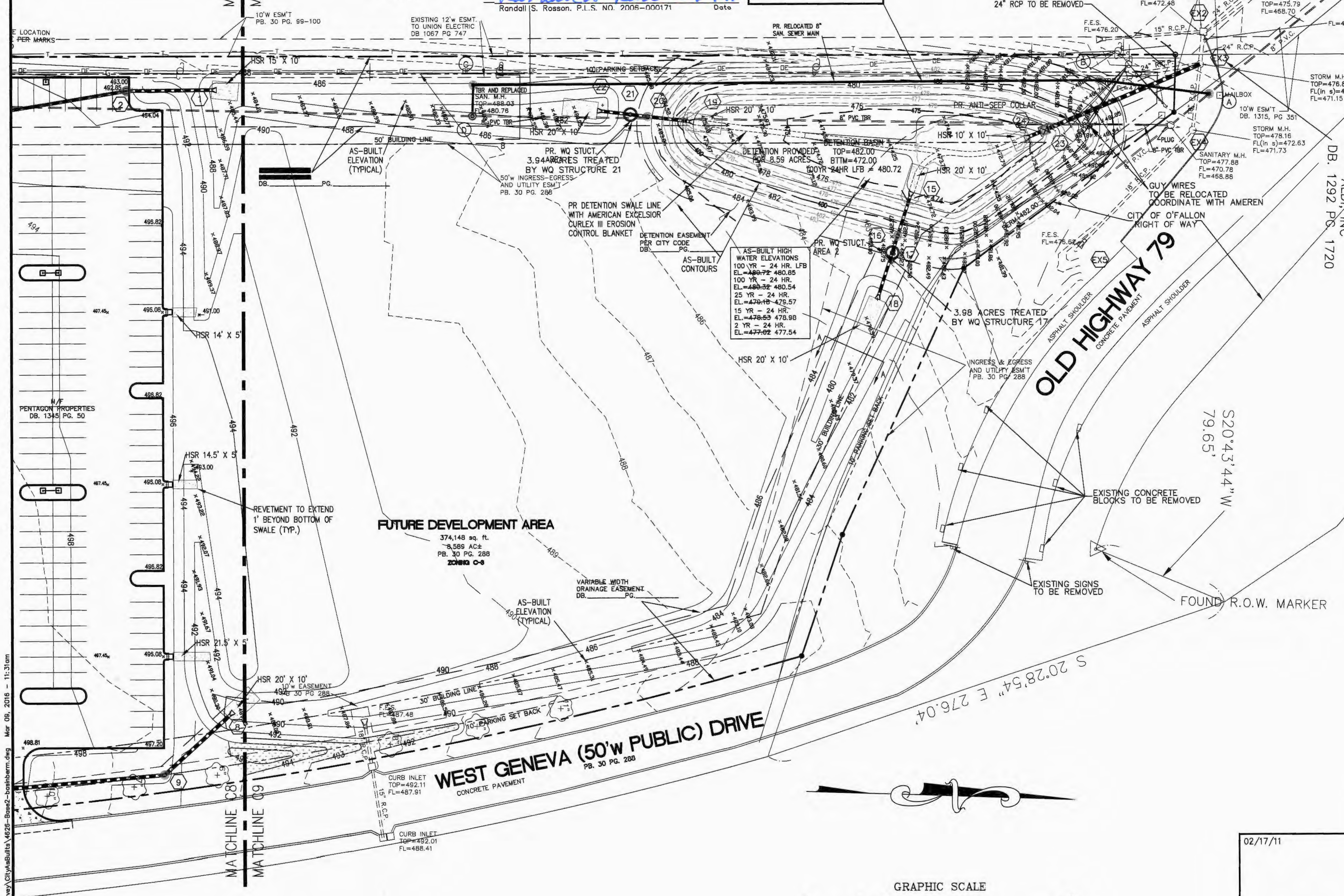
The existing sewer lengths, sizes, flowlines, depths of structures and sewers locations with respect to existing or proposed easements have been measured. Water Quality Features, Retention Basins and drainage swales have been measured. Fire hydrants and valves have been measured. The results of those measurements are shown on this set of Final Measurement plans. Since the sanitary wye locations have been plotted from information provided by the sewer contractor or other sources, I disclaim any responsibility for that specific information.

All public sewers are located within designated existing or proposed easements.

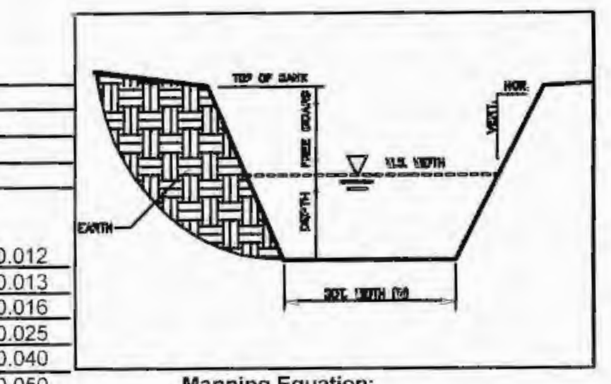
Randall S. Rosson, P.L.S. NO. 2006–000171 — 3-9-16 (Date)

THE MAINTENANCE INSTRUCTIONS FOR THE POST CONSTRUCTION BEST MANAGEMENT PRACTICES ARE INCLUDED IN THE DETENTION REPORT

SANITARY SEWER CONSTRUCTION MAIN SWITCH OVER TO NEW MAIN TO BE COORDINATED WITH OTHER FACILITIES USING THE MAIN, CITY OF O'FALLON CONSTRUCTION INSPECTOR AND THE CITY OF O'FALLON WATER AND SEWER DEPARTMENT FOR SCHEDULING.



Stream Channel: (swale A-A)



Project # :	210-4626
Name:	Crossing
Calculated:	PRG 12-08-10
Checked:	
Station #:	swale A-A

Roughness Coefficient (n)

Concrete	0.012
Asphalt, smooth	0.013
Asphalt, rough	0.016
Gravel beds, straight	0.025
Gravel beds plus large boulders	0.040
Earth winding w/ grass	0.050
Earth, straight w/ grass	0.026

Manning Equation:
$Q = (1.49/n)*A*R^{2/3}*S^{1/2}$

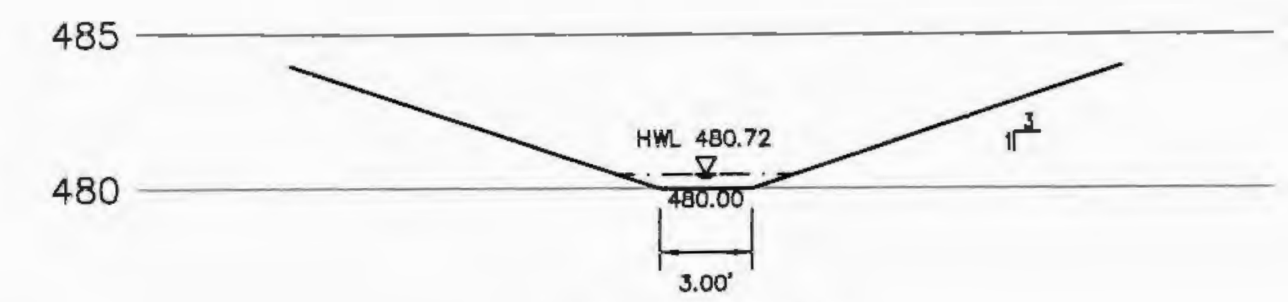
FIND DEPTH OF WATER AND WIDTH OF THE CHANNEL:

INPUT:

Q =	19.69 (cfs)	Top Of bank Elevation =	484.00
Stream Slope=	0.0223 (ft/ft)	Bot. Elevation =	480.00
n =	0.026	Side Slope: Horizontal (H) =	3
W (Bottom width) =	3 (ft)	Vertical (V)=	1

OUTPUT:

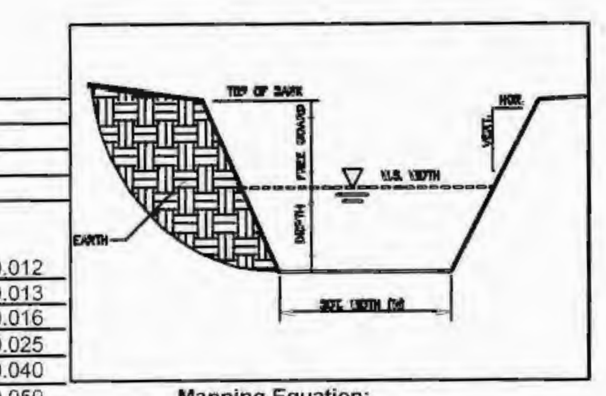
Depth =	0.72 (ft)	Water Surface Width =	7.30 (ft)
Velocity =	5.34 (ft/sec)	$R^{2/3}$ =	0.62
Water Surface Elev.=	480.72	Perimeter =	7.53 (ft)
Free Board=	3.28 (ft)	Cross section Area =	3.69 (ft^2)



SECTION A–A

SCALE: HORZ: 1"=10'
VERT: 1"=10'

Stream Channel: (swale B-B)



Project # :	210-4626
Name:	Crossing
Calculated:	PRG 12-08-10
Checked:	
Station #:	swale A-A

Roughness Coefficient (n)

Concrete	0.012
Asphalt, smooth	0.013
Asphalt, rough	0.016
Gravel beds, straight	0.025
Gravel beds plus large boulders	0.040
Earth winding w/ grass	0.050
Earth, straight w/ grass	0.026

Manning Equation:
$Q = (1.49/n)*A*R^{2/3}*S^{1/2}$

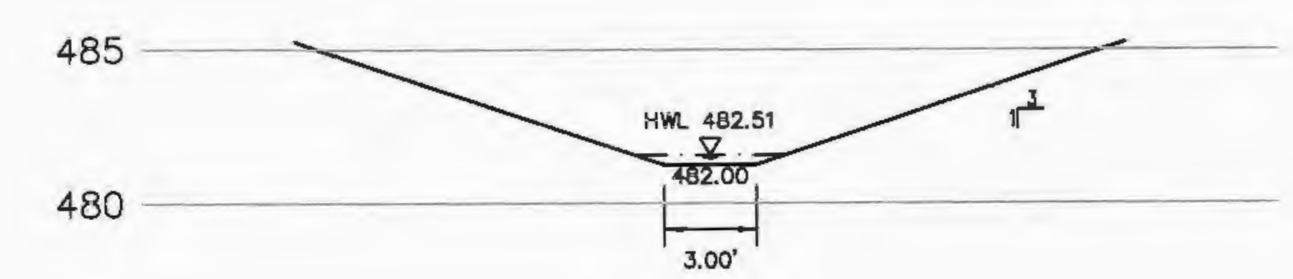
FIND DEPTH OF WATER AND WIDTH OF THE CHANNEL:

INPUT:

Q =	10.72 (cfs)	Top Of bank Elevation =	486.00
Stream Slope=	0.0223 (ft/ft)	Bot. Elevation =	482.00
n =	0.026	Side Slope: Horizontal (H) =	3
W (Bottom width) =	3 (ft)	Vertical (V)=	1

OUTPUT:

Depth =	0.52 (ft)	Water Surface Width =	6.12 (ft)
Velocity =	4.52 (ft/sec)	$R^{2/3}$ =	0.52
Water Surface Elev.=	482.52	Perimeter =	6.29 (ft)
Free Board=	3.48 (ft)	Cross section Area =	2.37 (ft^2)



SECTION B–B

SCALE: HORZ: 1"=10'
VERT: 1"=10'

Rev.	Description	Date
4	WATER QUALITY	02/17/11
3	CITY APPROVAL	02/01/11
2	CITY COMMENTS	01/26/11
1	CITY COMMENTS	01/13/11

02/17/11

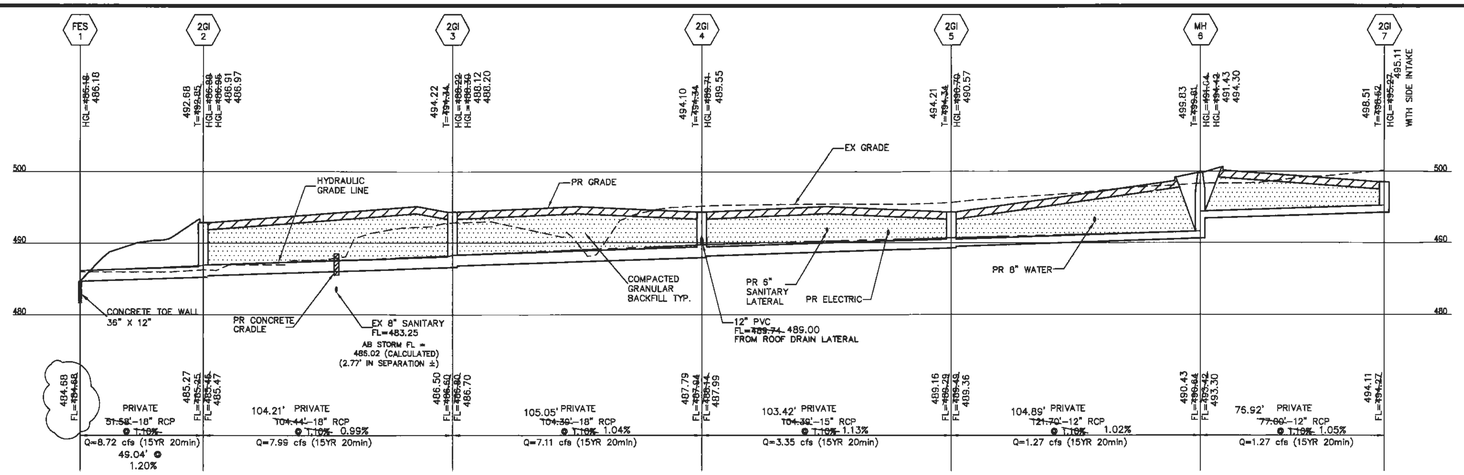
THE CROSSING AT RIVERSIDE CENTRE

SITE AND GRADING PLAN

STOCK & ASSOCIATES Consulting Engineers, Inc.
257 Chesterfield Business Parkway
St. Louis, MO 63005
PH. (636) 530-9100
FAX (636) 530-9130
e-mail: general@stockassoc.com
Web: www.stockassoc.com

GEORGE M. STOCK E–25116
CIVIL ENGINEER
CERTIFICATE OF AUTHORITY NUMBER: 000996

DRAWN BY:	DATE:	CHECKED BY:	DATE:	JOB NUMBER:	SHEET:
P.R.G.	12/21/10	G.M.S.	12/21/10	210–4626	C9



STORM SEWERS

SCALE: HORZ:1"=30'
VERT:1"=10'

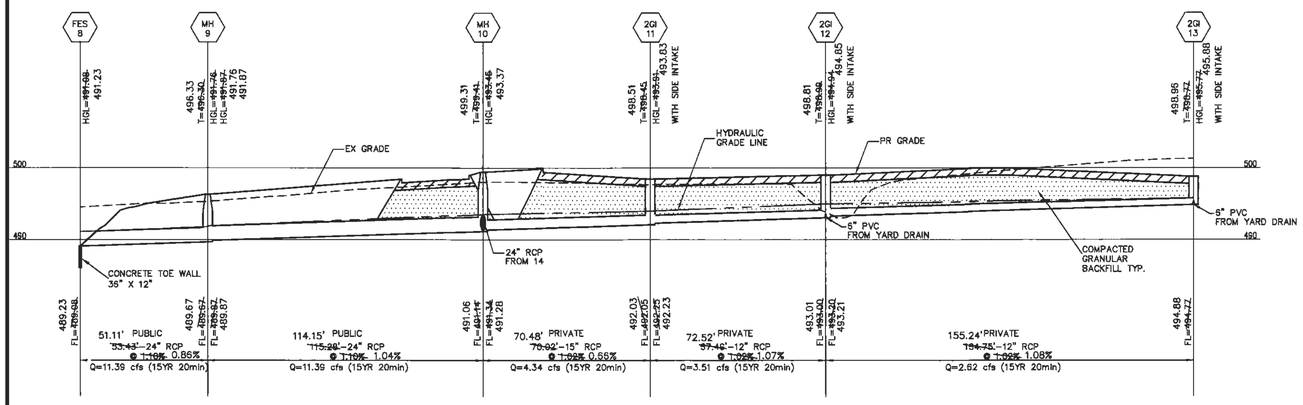
STORM SEWER NOTE

ALL DETAILS SHOWN ON THIS SHEET ARE FOR THE CONVENIENCE OF THE CONTRACTOR. THE DETAILS ARE TO BE VERIFIED PER METROPOLITAN ST. LOUIS SEWER DISTRICT STANDARDS FOR FOR STORM SEWERS, & CITY OF OFALLON CONSTRUCTION SPECIFICATIONS. ALL METHODS, MEANS AND MATERIALS SHALL CONFORM TO M.S.D. CURRENT STANDARD CONSTRUCTION SPECIFICATIONS.

CONSTRUCTION NOTES:

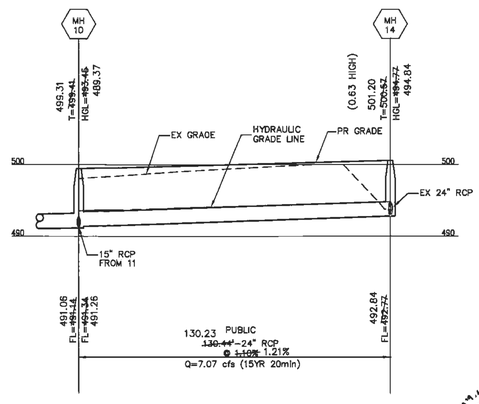
1. ALL R.C.P. SHALL BE CLASS III UNLESS NOTED OTHERWISE.
2. ALL P.V.C. SHALL BE SDR 35 UNLESS NOTED OTHERWISE.
3. ALL NEW PIPE DISIGNATED PUBLIC WILL NOT BE MAINTAINED BY THE CITY UNTIL IT IS ACCEPTED FOR MAINTENANCE

ALL SEWERS SHOWN ARE PRIVATE, UNLESS OTHERWISE NOTED. ENGINEER APPROVED SHOP DRAWINGS MUST BE SUBMITTED TO THE CITY OF O'FALLON



STORM SEWERS

SCALE: HORZ:1"=30'
VERT:1"=10'



STORM SEWERS

SCALE: HORZ:1"=30'
VERT:1"=10'

AS-BUILT

SANITARY / STORM SEWER – WATER QUALITY FEATURE – WATER LINE

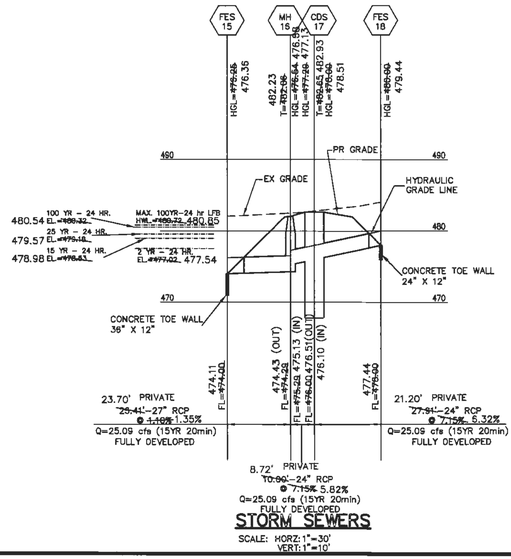
The existing sewer lengths, sizes, flowlines, depths of structures and sewers locations with respect to existing or proposed easements have been measured. Water Quality Features, Retention Basins and drainage swales have been measured. Fire hydrants and valves have been measured. The results of those measurements are shown on this set of Final Measurement plans. Since the sanitary wye locations have been plotted from information provided by the sewer contractor or other sources, I disclaim any responsibility for that specific information.

All public sewers are located within designated existing or proposed easements.

STATE OF MISSOURI
RANDALL S ROSSON
NUMBER PLS-2005000171
PROFESSIONAL LAND SURVEYOR

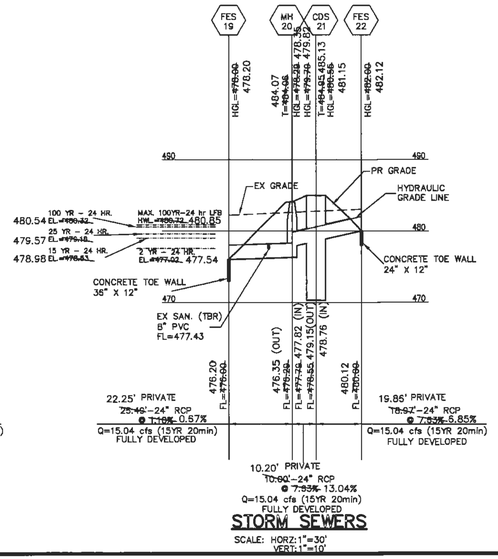
Randall S. Rosson 3-9-16

Randall S. Rosson, P.L.S. NO. 2005–000171 Date



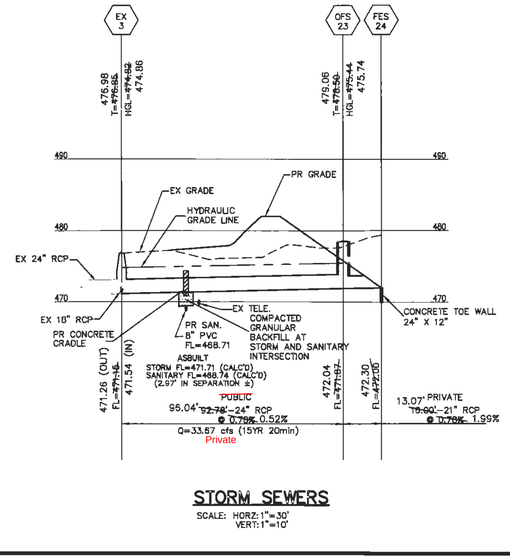
STORM SEWERS

SCALE: HORZ:1"=30'
VERT:1"=10'



STORM SEWERS

SCALE: HORZ:1"=30'
VERT:1"=10'



STORM SEWERS

SCALE: HORZ:1"=30'
VERT:1"=10'

4	WATER QUALITY 02/17/11
3	CITY APPROVAL 02/01/11
2	CITY COMMENTS 01/26/11
1	CITY COMMENTS 01/13/11

02/17/11

GEORGE M. STOCK E-25115
CIVIL ENGINEER
CERTIFICATE OF AUTHORITY
NUMBER: 000955

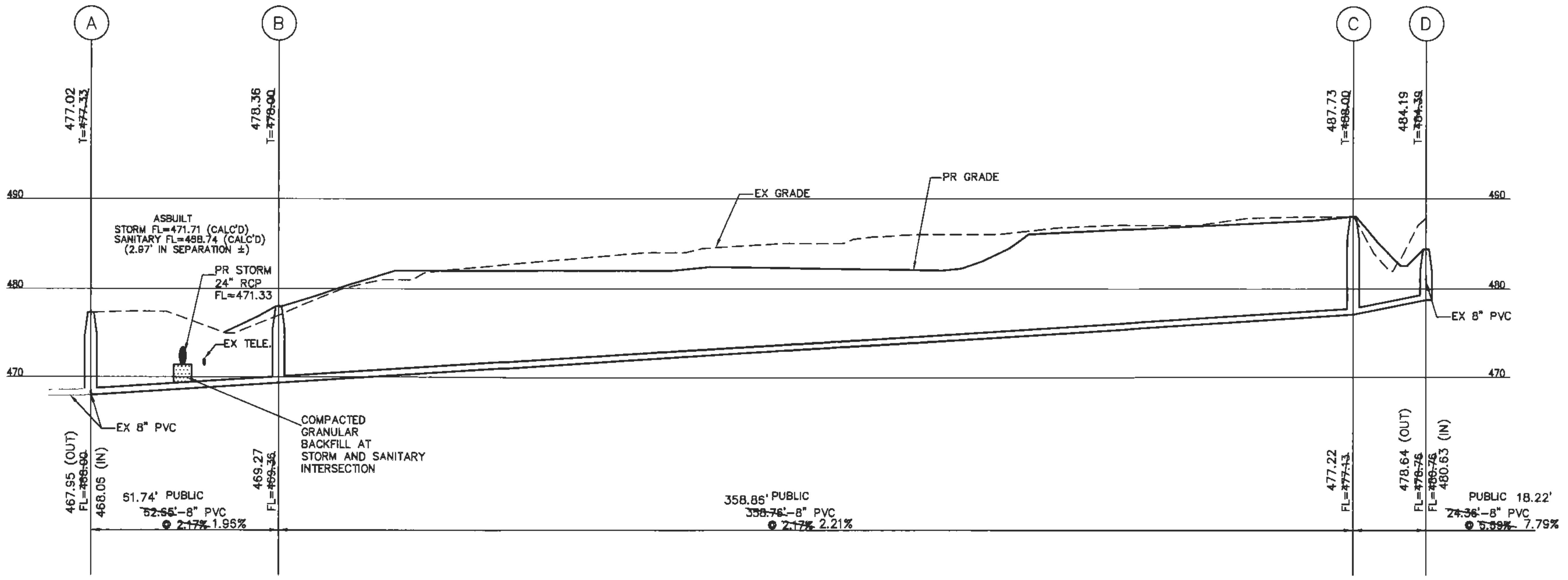
THE CROSSING AT RIVERSIDE CENTRE

STORM SEWER PROFILES

STOCK & ASSOCIATES
Consulting Engineers, Inc.
257 Chesterfield Business Parkway
St. Louis, MO 63005
PH. (636) 530-9100
FAX (636) 530-9130
e-mail: general@stockassoc.com
Web: www.stockassoc.com

DRAWN BY:	DATE:	CHECKED BY:	DATE:	JOB NUMBER:	SHEET:
P.R.G.	12/21/10	G.M.S.	12/21/10	210–4626	C13

O:\DRAW4600\2104626\Survey\CityAsBuilts\4626-Base2-boshberm.dwg Mar 09, 2016 - 11:21am



SANITARY SEWER CONSTRUCTION MAIN SWITCH OVER TO NEW MAIN TO BE COORDINATED WITH OTHER FACILITIES USING THE MAIN, CITY OF O'FALLON CONSTRUCTION INSPECTOR AND THE CITY OF O'FALLON WATER AND SEWER DEPARTMENT FOR SCHEDULING.

SANITARY SEWERS

SCALE: HORZ: 1"=30'
VERT: 1"=10'

SANITARY SEWER NOTE

ALL DETAILS SHOWN ON THIS SHEET ARE FOR THE CONVENIENCE OF THE CONTRACTOR. THE DETAILS ARE TO BE VERIFIED PER MSD STANDARDS FOR SANITARY SEWERS & CITY OF OFALLON CONSTRUCTION SPECIFICATIONS.

CONSTRUCTION NOTES:

1. ALL R.C.P. SHALL BE CLASS III UNLESS NOTED OTHERWISE.
2. ALL P.V.C. SHALL BE SDR 35 UNLESS NOTED OTHERWISE.

ALL SEWERS SHOWN ARE PRIVATE, UNLESS OTHERWISE NOTED.

ENGINEER APPROVED SHOP DRAWINGS MUST BE SUBMITTED TO THE CITY OF O'FALLON

AS-BUILT

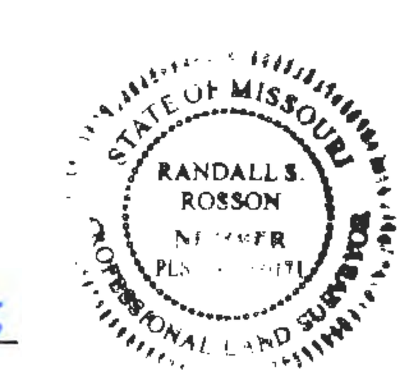
SANITARY / STORM SEWER – WATER QUALITY FEATURE – WATER LINE

The existing sewer lengths, sizes, flowlines, depths of structures and sewers locations with respect to existing or proposed easements have been measured. Water Quality Features, Retention Basins and drainage swales have been measured. Fire hydrants and valves have been measured. The results of those measurements are shown on this set of Final Measurement plans. Since the sanitary wye locations have been plotted from information provided by the sewer contractor or other sources, I disclaim any responsibility for that specific information.

All public sewers are located within designated existing or proposed easements.

Randall S Rosson 3-9-16

Randall S. Rosson, P.L.S. NO. 2006-000171 Date



HYDRAULIC CALCULATION SHEET (SEE DRAINAGE AREA MAP SHEET FOR P.I. AND Q (inflow) FOR EACH STRUCTURE)

Project name:	*The Crossing at Riverside Centre*	Calculated By:	*PRG*	15yr 20min	
Project number:	*210-4626*	Checked By:	*GMS*		
Project Location:	*Ofallon, MO*	Date:	~~*7/11/2011*~~ UPDATED 3/19/12		

Bend Coefficients:

5° = 0.06	20° = 0.24	35° = 0.4	50° = 0.50	65° = 0.57	80° = 0.65
10° = 0.11	25° = 0.30	40° = 0.43	55° = 0.52	70° = 0.60	85° = 0.67
15° = 0.18	30° = 0.35	45° = 0.47	60° = 0.55	75° = 0.62	90° = 0.70

Structure Number	LINE Upper structure	LINE Lower structure	FLOW LINE ELEVATIONS Upper	FLOW LINE ELEVATIONS Lower Structure	Length (ft)	Flowline Grade ft/ft	Pipe Size (in.)	Full Flow Cap. (cfs)	Total (Q) (cfs)	Mean Full Flow Vel.(V) (ft/s)	Bend Coef.	Velocity Head (Vh) (ft)	QVh (ft⁴/s)	Pipe Coef. (n)	HEAD LOSS Hf (ft)	HEAD LOSS Junction (ft)	HEAD LOSS Bend (ft)	Total Hmt	Hydraulic Elevations Upper F.L. + Dia.	Hydraulic Elevations Lower H.E. +Hf	Hydraulic Elevations Lower H.E.	Structure Upper H.E. + Hmt	TOP Structure Elevation	Free Board	Structure Number
EX5	EX5	EX4	476.71	472.70	95.21	0.0422	18	21.63	4.20	2.38	0	0.09	0.37	0.013	0.15	0.00	0.00	0.00	478.21	475.11	474.96	478.21	478.21	0.00	EX5
EX4	EX4	EX3	472.70	471.26	37.86	0.0379	18	20.51	4.20	2.38	0.43	0.09	0.37	0.013	0.06	0.00	0.04	0.04	474.20	474.92	474.86	474.96	478.19	3.23	EX4
EX3	EX3	EX2	471.26	470.85	18.74	0.0219	24	33.55	25.84	8.23	0	1.05	27.15	0.013	0.24	1.38	0.00	1.38	473.26	473.48	473.24	474.86	476.85	1.99	EX3
EX2	EX2	EX1	469.14	468.64	40.30	0.0124	24	25.27	33.47	10.65	0.43	1.76	58.99	0.013	0.88	1.27	0.45	1.72	471.14	471.52	470.64	473.24	475.90	2.66	EX2
EX1			468.64										HYDRAULIC FLOW LINE = assume top pipe									470.64			EX1
23	23	EX3	472.04	471.54	96.04	0.0052	24	16.37	21.64	6.89	0	0.74	15.94	0.013	0.88	0.00	0.00	0.00	474.04	475.74	474.86	475.74	479.06	3.32	23
EX3			471.26										HYDRAULIC FLOW LINE = assume top pipe									474.86			EX3
22	22	21	480.12	478.76	19.86	0.0685	24	59.36	15.04	4.79	0	0.36	5.35	0.013	0.09	0.00	0.00	0.00	482.12	481.24	481.15	482.12	482.12	0.00	22
21	21	20	479.15	477.82	10.20	0.1304	24	81.91	15.04	4.79	0	0.36	5.35	0.013	0.05	0.00	0.00	0.00	481.15	479.87	479.82	481.15	485.13	3.98	21
20	20	19	476.35	476.20	22.25	0.0067	24	18.62	15.04	4.79	DROP	0.36	5.35	0.013	0.10	0.00	0.00	0.00	478.35	478.30	478.20	478.35	484.07	5.72	20
19			476.20										HYDRAULIC FLOW LINE = assume top pipe									478.20			19
18	18	17	477.44	476.10	21.20	0.0632	24	57.03	25.09	7.99	0	0.99	24.85	0.013	0.26	0.00	0.00	0.00	479.44	478.77	478.51	479.44	480.00	0.56	18
17	17	16	476.51	475.13	8.72	0.1583	24	90.24	25.09	7.99	0	0.99	24.85	0.013	0.11	0.00	0.00	0.00	478.51	477.24	477.13	478.51	482.93	4.42	17
16	16	15	474.43	474.11	23.70	0.0135	27	36.08	25.09	6.31	DROP	0.62	15.51	0.013	0.16	0.00	0.00	0.00	476.68	476.52	476.36	476.68	482.23	5.55	16
15			474.11										HYDRAULIC FLOW LINE = assume top pipe									476.36			15
14	14	10	492.84	491.26	130.23	0.0121	24	24.99	7.07	2.25	0	0.08	0.56	0.013	0.13	0.00	0.00	0.00	494.84	493.50	493.37	494.84	501.20	6.36	14
10			491.06										HYDRAULIC FLOW LINE = assume top pipe									493.37			10
13	13	12	494.88	493.21	155.24	0.0108	12	3.71	2.62	3.34	0	0.17	0.45	0.013	0.84	0.00	0.00	0.00	495.88	495.69	494.85	495.88	498.96	3.08	13
12	12	11	493.01	492.23	72.52	0.0108	12	3.70	3.51	4.47	0.43	0.31	1.09	0.013	0.70	0.24	0.07	0.32	494.01	494.54	493.83	494.85	498.81	3.96	12
11	11	10	492.03	491.28	70.48	0.0106	15	6.68	4.32	3.52	0.47	0.19	0.83	0.013	0.31	0.00	0.15	0.15	493.28	493.69	493.37	493.83	498.51	4.68	11
10	10	9	491.06	489.87	114.15	0.0104	24	23.16	11.39	3.63	0.06, 0.7	0.20	2.32	0.013	0.29	0.17	0.14	0.31	493.06	492.16	491.87	493.37	499.31	5.94	10
9	9	8	489.67	489.23	51.11	0.0086	24	21.05	11.39	3.63	0.43	0.20	2.32	0.013	0.13	0.00	0.09	0.09	491.67	491.36	491.23	491.76	496.33	4.57	9
8			489.23										HYDRAULIC FLOW LINE = assume top pipe									491.23			8
7	7	6	494.11	493.30	76.92	0.0105	12	3.67	1.27	1.62	0	0.04	0.05	0.013	0.10	0.00	0.00	0.00	495.11	494.40	494.30	495.11	498.51	3.40	7
6	6	5	490.43	489.36	104.89	0.0102	12	3.61	1.27	1.62	DROP	0.04	0.05	0.013	0.13	0.00	0.00	0.00	491.43	490.70	490.57	491.43	499.83	8.40	6
5	5	4	489.16	487.99	103.42	0.0113	15	6.89	3.35	2.73	0.65	0.12	0.39	0.013	0.28	0.13	0.03	0.16	490.41	489.83	489.55	490.57	494.21	3.64	5
4	4	3	487.79	486.70	105.05	0.0104	18	10.73	7.11	4.02	0	0.25	1.79	0.013	0.48	0.26	0.00	0.26	489.29	488.68	488.20	489.55	494.10	4.55	4
3	3	2	486.50	485.47	104.21	0.0099	18	10.47	7.99	4.52	0	0.32	2.54	0.013	0.60	0.12	0.00	0.12	488.00	487.57	486.97	488.12	494.22	6.10	3
2	2	1	485.27	484.68	49.04	0.0120	18	11.55	8.72	4.93	0.06	0.38	3.30	0.013	0.34	0.12	0.02	0.14	486.77	486.52	486.18	486.91	492.68	5.77	2
1			484.68										HYDRAULIC FLOW LINE = assume top pipe									486.18			1

FORMULAS:

MEAN FULL FLOW VELOCITY: $V = Q_{ACT}/A_{PIPE}$

FRICTION LOSS (H_f): $Hf = 2.87\ n^2\ (LV^2/d^{1.33})$

VELOCITY HEAD: $V_h = V^2/2g$

JUNCTION LOSES (JUNC.) = $[Q_{out}Vh_{out} - \text{Sum}(Q_{in}V_{in})] \times 1.33/[Q_{out}]$

BEND LOSES (BEND) = (V^h) * ANGLE COEFFICIENT

Note:
1. IF MORE THAN ONE INCOMING LINE, CALC. EACH BEND LOSS AND ADD TOGETHER.
2. NO STRUCTURE LOSSES TO BE CALCULATED AT A DROP
3. IF $QV_{h(in)} > QV_{h(out)}$, NO JUNCTION LOSES TO BE CALCULATED.

4	WATER QUALITY	02/17/11
3	CITY APPROVAL	02/01/11
2	CITY COMMENTS	01/26/11
1	CITY COMMENTS	01/13/11

THE CROSSING AT RIVERSIDE CENTRE

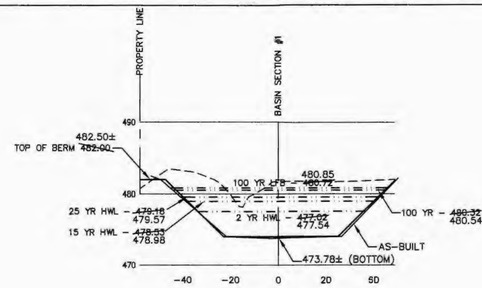
STORM HYDRAULICS AND SANITARY PROFILE

02/17/11

STOCK & ASSOCIATES
Consulting Engineers, Inc.
257 Chesterfield Business Parkway
St. Louis, MO 63005
PH. (636) 530-9100
FAX (636) 530-9130
e-mail: general@stockassoc.com
Web: www.stockassoc.com

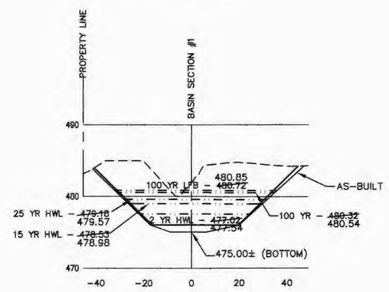
GEORGE M. STOCK E-25116
CIVIL ENGINEER
CERTIFICATE OF AUTHORITY
NUMBER: 000995

DRAWN BY:	DATE:	CHECKED BY:	DATE:	JOB NUMBER:	SHEET:
P.R.G.	12/21/10	G.M.S.	12/21/10	210-4626	C14



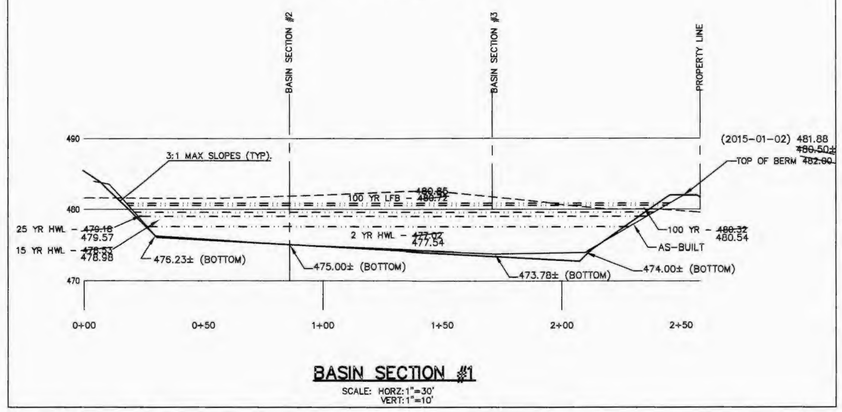
BASIN SECTION #3

SCALE: HORZ:1"=30'
VERT:1"=10'



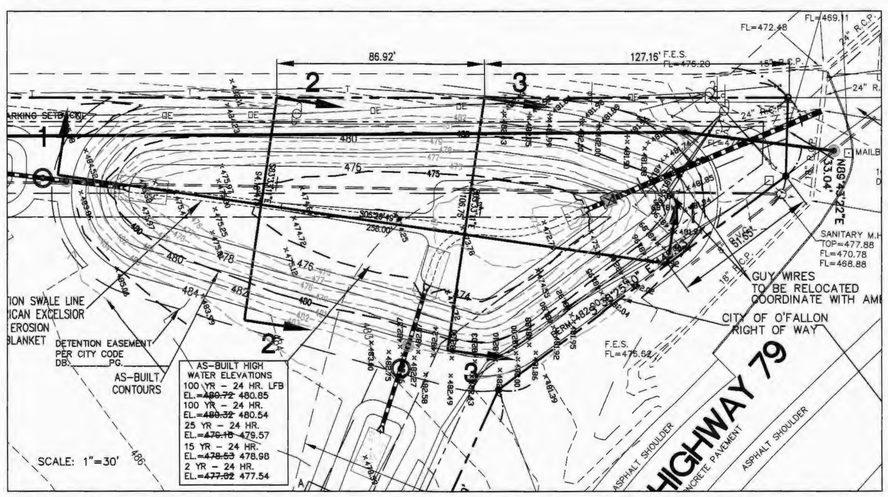
BASIN SECTION #2

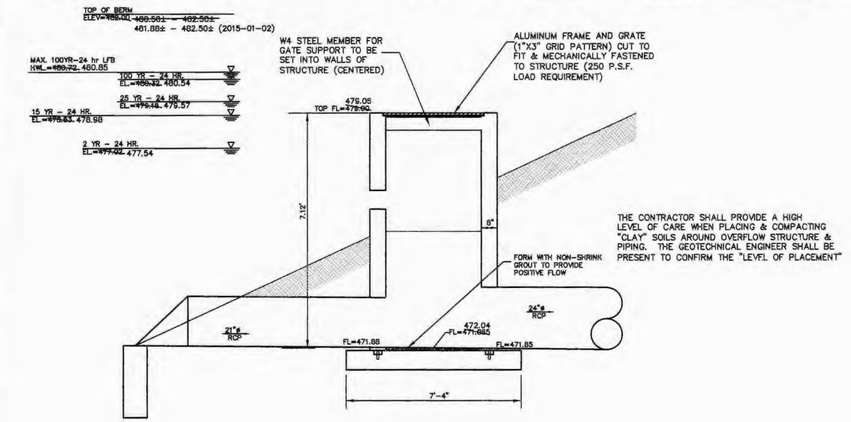
SCALE: HORZ:1"=30'
VERT:1"=10'



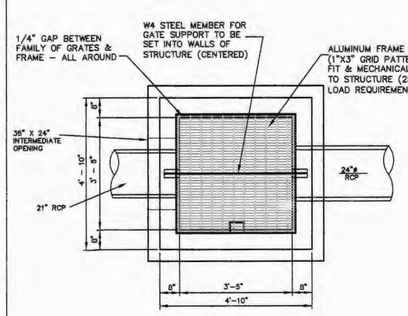
BASIN SECTION #1

SCALE: HORZ:1"=30'
VERT:1"=10'

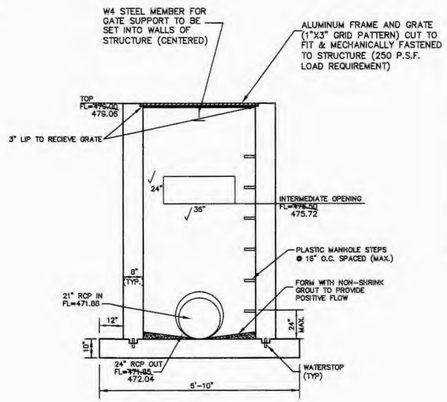




SIDE VIEW



TOP VIEW

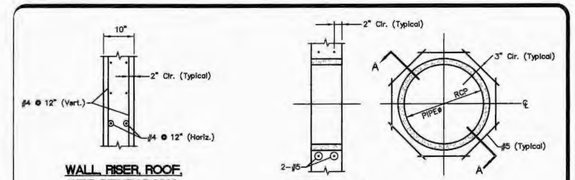


END VIEW

DETENTION STRUCTURE DETAILS

N.T.S.

NOTE:
ENGINEER APPROVED SHOP DRAWINGS MUST BE SUBMITTED TO THE CITY OF O'FALLON FOR REVIEW AND APPROVAL PRIOR TO THE CONSTRUCTION OF THE STRUCTURE

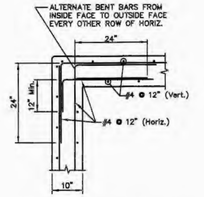


WALL, RISER, ROOF, WEIR REINFORCING

N.T.S.

SECTION A-A

(ROTATED)



REINFORCING • WALL CORNER

N.T.S.

FOOTING REINFORCING

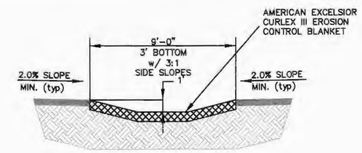
N.T.S.

NOTES:

1. ANY UNSUITABLE SOIL (AS DETERMINED BY SOILS ENGINEER) BELOW DETENTION STRUCTURE SHALL BE REMOVED AND REPLACED WITH SELECTED EARTHEN MATERIAL AND COMPACTED IN PLACE WITH VIBRATORY TAMPER.
2. ALL EXPOSED CONCRETE EDGES TO HAVE 3/4" CHAMFER EDGES.
3. CONCRETE - fc = 3000 psi
   STEEL-fy = 60,000 psi

REINFORCING DETAILS FOR SPECIAL REINFORCED STRUCTURES AND DETENTION OUTFALL STRUCTURES

N.T.S.



GRASS SWALE - DETENTION BASIN AREA

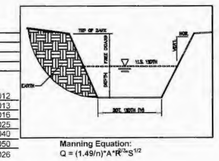
(n.t.s.)

Stream Channel:

Project # : 210-4626
Name: Crossing
Calculated: PRG 12-17-10
Checked:
Station #: Detention Swale

Roughness Coefficient (n)

Concrete	0.012
Asphalt, smooth	0.013
Asphalt, rough	0.016
Gravel beds, straight	0.025
Gravel beds plus large boulders	0.040
Earth winding w/ grass	0.050
Earth, straight w/ grass	0.026



Manning Equation:
$Q = (1.49/n)*A*R^{2/3}*S^{1/2}$

FIND DEPTH OF WATER AND WIDTH OF THE CHANNEL:

INPUT:

Q =	27.55 (cfs)	Top Of bank Elevation =	2.00
Stream Slope=	0.018 (ft/ft)	Bot. Elevation =	1.00
n =	0.026	Side Slope:	
W (Bottom width) =	3 (ft)	Horizontal (H) =	3
		Vertical (V)=	1

OUTPUT:

Depth =	0.94 (ft)	Water Surface Width =	8.62 (ft)
Velocity =	5.07 (ft/sec)	$R^{2/3}$ =	0.72
Water Surface Elev =	1.94	Perimeter =	8.92 (ft)
Free Board=	0.06 (ft)	Cross section Area =	5.44 (ft^2)

2YR 20MIN SWALE CALCULATIONS

AS-BUILT

SANITARY / STORM SEWER - WATER QUALITY FEATURE - WATER LINE

The existing sewer lengths, sizes, flowlines, depths of structures and sewers locations with respect to existing or proposed easements have been measured. Water Quality Features, Retention Basins and drainage swales have been measured. Fire hydrants and valves have been measured. The results of those measurements are shown on this set of Final Measurement plans. Since the sanitary wye locations have been plotted from information provided by the sewer contractor or other sources, I disclaim any responsibility for that specific information.

All public sewers are located within designated existing or proposed easements.

Randall S. Rosson, P.L.S. NO. 2005-000171 — 3-9-16 Date

RANDALL S. ROSSON NUMBER 2005000171 PROFESSIONAL LAND SURVEYOR

3	WATER QUALITY	02/17/11
2	CITY APPROVAL	02/01/11
2	CITY COMMENTS	01/26/11
1	CITY COMMENTS	01/13/11

02/17/11

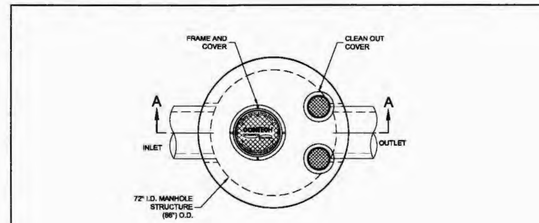
GEORGE M. STOCK E-25115
CIVIL ENGINEER
CERTIFICATE OF AUTHORITY
NUMBER: 000995

THE CROSSING AT RIVERSIDE CENTRE

DETENTION DETAILS

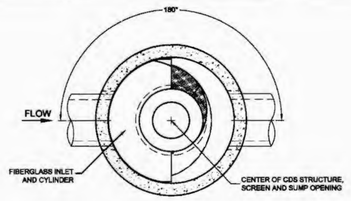
STOCK & ASSOCIATES
Consulting Engineers, Inc.
257 Chesterfield Business Parkway
St. Louis, MO 63005
PH. (636) 530-9100
FAX (636) 530-9130
e-mail: general@stockassoc.com
Web: www.stockassoc.com

DRAWN BY:	DATE:	CHECKED BY:	DATE:	JOB NUMBER:	SHEET:
P.R.G.	12/21/10	G.M.S.	12/21/10	210-4626	C16

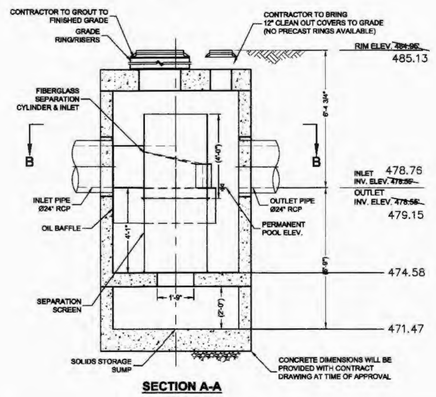


PLAN VIEW

CDS 21



SECTION B-B



SECTION A-A

MATERIALS LIST - PROVIDED BY CONTECH

COUNT	DESCRIPTION	INSTALLED BY
1	FIBERGLASS INLET & CYLINDER	CONTECH
1	2400 MICRON SEP. SCREEN	CONTECH
1	SEALANT FOR JOINTS	CONTRACTOR
1	GRADE RINGS/ RISERS	CONTRACTOR
1	Ø24" FRAME AND COVER	CONTRACTOR
2	Ø12"x4" CLEAN OUT COVER	CONTRACTOR

SITE DESIGN DATA

WATER QUALITY FLOW RATE	3.76 CFS
PEAK FLOW RATE	15.04 CFS
RETURN PERIOD OF PEAK FLOW	25 YRS

GENERAL NOTES
1. CONTECH TO PROVIDE ALL MATERIALS UNLESS NOTED OTHERWISE.
2. DIMENSIONS MARKED WITH ( ) ARE REFERENCE DIMENSIONS. ACTUAL DIMENSIONS MAY VARY.
3. FOR SITE SPECIFIC DRAWINGS WITH DETAILED DIMENSIONS AND WEIGHTS, PLEASE CONTACT YOUR CONTECH CONSTRUCTION PRODUCTS REPRESENTATIVE. www.contech-cpi.com
4. CDS WATER QUALITY STRUCTURE SHALL BE IN ACCORDANCE WITH ALL DESIGN DATA AND INFORMATION CONTAINED IN THIS DRAWING.
5. STRUCTURE SHALL MEET AASHTO HS20 AND CASTINGS SHALL MEET AASHTO M306 LOAD RATING, ASSUMING GROUNDWATER ELEVATION AT, OR BELOW, THE OUTLET PIPE INVERT ELEVATION. ENGINEER OF RECORD TO CONFIRM ACTUAL GROUNDWATER ELEVATION
6. PVC HYDRAULIC SHEAR PLATE IS PLACED ON SHELF AT BOTTOM OF SCREEN CYLINDER. REMOVE AND REPLACE AS NECESSARY DURING MAINTENANCE CLEANING.

INSTALLATION NOTES
1. ANY SUB-BASE, BACKFILL DEPTH, AND/OR ANTI-FLOTATION PROVISIONS ARE SITE-SPECIFIC DESIGN CONSIDERATIONS AND SHALL BE SPECIFIED BY ENGINEER OF RECORD.
2. CONTRACTOR TO PROVIDE EQUIPMENT WITH SUFFICIENT LIFTING AND REACH CAPACITY TO LIFT AND SET THE CDS MANHOLE STRUCTURE (LIFTING CLUTCHES PROVIDED).
3. CONTRACTOR TO ADD JOINT SEALANT BETWEEN ALL STRUCTURE SECTIONS, AND ASSEMBLE STRUCTURE.
4. CONTRACTOR TO PROVIDE, INSTALL, AND GROUT PIPES. MATCH PIPE INVERTS WITH ELEVATIONS SHOWN.
5. CONTRACTOR TO TAKE APPROPRIATE MEASURES TO ASSURE UNIT IS WATER TIGHT, HOLDING WATER TO FLOWLINE INVERT MINIMUM. IT IS SUGGESTED THAT ALL JOINTS BELOW PIPE INVERTS ARE GROUTED.

STRUCTURE WEIGHT
APPROXIMATE HEAVIEST PICK = 14,500 LBS.

CONTECH **PROPOSAL** DRAWING

CDS3035-6-C - 430435-01
THE CROSSING AT RIVERSIDE CTR
O'FALLON, MO
SITE DESIGNATION: WQ AREA 1

MARK	DATE	REVISION DESCRIPTION	BY

CONTECH STORMWATER SOLUTIONS INC.
DATE: 02/02/11
DESIGNED: DRA
DRAWN: N/A
CHECKED:
APPROVED:
PROJECT No.: 430435
SEQUENCE No.: 01
SHEET: 1 OF 1

PROJECT: The Crossing at Riverside Centre **PROJ. NO: 210-4626**

Table 4: Drainage to CDS Hydrodynamic Separator Area 1

STEP 1:	Compute Rv(Volumetric Runoff Coefficient)		
	Drainage Area(A):	2.56	*A(Acres - to BMP)*
	%Impervious	86.0	*I(%)*
	Rv(Volumetric Runoff Coefficient):	0.82	*Rv=.05+.009*I*
STEP 2:	Compute Curve Number(CN)		
	Rainfall Depth(P)	1.14	*P(Inches)** *Rainfall Depth = 1.14" for WQ Storm
	Compute Runoff Volume(Qa):	0.94	*Qa=PxRv*
	Compute CN:	98.1	*CN=1000/((10+5P+10Qa-10x(Qa^2 + 1.25QaP)^.5)*
STEP 3:	Compute Peak Runoff Rate for Water Quality(WQ) Storm		
	Time of Concentration(tc):	6	*Minutes (Assumed)*
	(tc):	0.10	*Hours*
	Compute Initial Abstraction(Ia)	0.038	*Ia=(200/CN)-2*
	Compute Ia/P Ratio	0.03344	*Ia/P*
	Unit Peak Factor(qu)	1000	From Figure D.11.2
	Drainage Area(Am):	0.0040	sq.mi.(Am=A/640)
	Post-Developed Peak Discharge for Water Quality(WQ) Storm (Qp):	3.76	*cfs Qp=qu*Am*Qa*
STEP 4:	Water Quality Volume (WQv)		
	Drainage Area(A):	2.56	*A(Acres - to BMP)*
	%Impervious	86.0	*I(%)*
	(WQv):	8,729	*Cu. FT [WQv=[1.14*(.05+.009I)*A/12]*43560]*

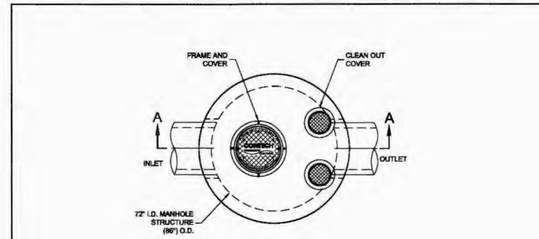
Wq Flow Rate Capacity Required:	3.76	c.f.s.
Wq Flow Rate Capacity Provided:	3.80	c.f.s.
BMP Selected:	CDS-3035	

Table 5: Drainage to CDS Hydrodynamic Separator Area 2

STEP 1:	Compute Rv(Volumetric Runoff Coefficient)		
	Drainage Area(A):	1.96	*A(Acres - to BMP)*
	%Impervious	67.8	*I(%)*
	Rv(Volumetric Runoff Coefficient):	0.66	*Rv=.05+.009*I*
STEP 2:	Compute Curve Number(CN)		
	Rainfall Depth(P)	1.14	*P(Inches)** *Rainfall Depth = 1.14" for WQ Storm*
	Compute Runoff Volume(Qa):	0.75	*Qa=PxRv*
	Compute CN:	95.9	*CN=1000/((10+5P+10Qa-10x(Qa^2 + 1.25QaP)^.5)*
STEP 3:	Compute Peak Runoff Rate for Water Quality(WQ) Storm		
	Time of Concentration(tc):	6	*Minutes (Assumed)*
	(tc):	0.10	*Hours*
	Compute Initial Abstraction(Ia)	0.085	*Ia=(200/CN)-2*
	Compute Ia/P Ratio	0.07434	*Ia/P*
	Unit Peak Factor(qu)	1000	From Figure D.11.2
	Drainage Area(Am):	0.0031	sq.mi.(Am=A/640)
	Post-Developed Peak Discharge for Water Quality(WQ) Storm (Qp):	2.31	*cfs Qp=qu*Am*Qa*
STEP 4:	Water Quality Volume (WQv)		
	Drainage Area(A):	1.96	*A(Acres - to BMP)*
	%Impervious	67.8	*I(%)*
	(WQv):	5,357	*Cu. FT [WQv=[1.14*(.05+.009I)*A/12]*43560]*

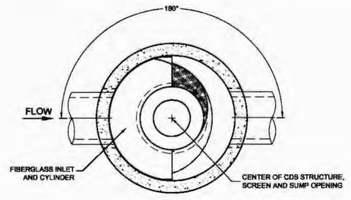
Wq Flow Rate Capacity Required:	2.31	c.f.s.
Wq Flow Rate Capacity Provided:	3.00	c.f.s.
BMP Selected:	CDS-3025	

ALTHOUGH WATER QUALITY STRUCTURES PROVIDE ENOUGH STORM WATER CLEANSING TO MEET THE REQUIREMENTS FOR THIS PHASE OF THE DEVELOPMENT ANY FUTURE DEVELOPMENT WILL REQUIRE THAT THE WATER QUALITY BE REEVALUATED

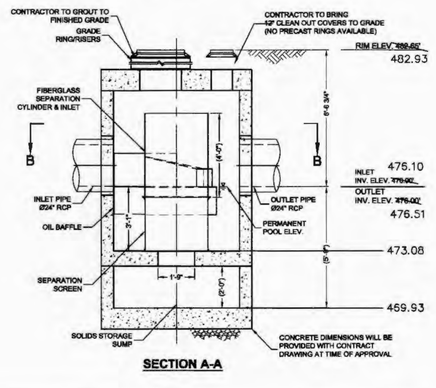


PLAN VIEW

CDS 17



SECTION B-B



SECTION A-A

MATERIALS LIST - PROVIDED BY CONTECH

COUNT	DESCRIPTION	INSTALLED BY
1	FIBERGLASS INLET & CYLINDER	CONTECH
1	2400 MICRON SEP. SCREEN	CONTECH
1	SEALANT FOR JOINTS	CONTRACTOR
1	GRADE RINGS/ RISERS	CONTRACTOR
1	Ø24" FRAME AND COVER	CONTRACTOR
2	Ø12"x4" CLEAN OUT COVER	CONTRACTOR

SITE DESIGN DATA

WATER QUALITY FLOW RATE	2.31 CFS
PEAK FLOW RATE	25.09 CFS
RETURN PERIOD OF PEAK FLOW	25 YRS

GENERAL NOTES
1. CONTECH TO PROVIDE ALL MATERIALS UNLESS NOTED OTHERWISE.
2. DIMENSIONS MARKED WITH ( ) ARE REFERENCE DIMENSIONS. ACTUAL DIMENSIONS MAY VARY.
3. FOR SITE SPECIFIC DRAWINGS WITH DETAILED DIMENSIONS AND WEIGHTS, PLEASE CONTACT YOUR CONTECH CONSTRUCTION PRODUCTS REPRESENTATIVE. www.contech-cpi.com
4. CDS WATER QUALITY STRUCTURE SHALL BE IN ACCORDANCE WITH ALL DESIGN DATA AND INFORMATION CONTAINED IN THIS DRAWING.
5. STRUCTURE SHALL MEET AASHTO HS20 AND CASTINGS SHALL MEET AASHTO M306 LOAD RATING, ASSUMING GROUNDWATER ELEVATION AT, OR BELOW, THE OUTLET PIPE INVERT ELEVATION. ENGINEER OF RECORD TO CONFIRM ACTUAL GROUNDWATER ELEVATION
6. PVC HYDRAULIC SHEAR PLATE IS PLACED ON SHELF AT BOTTOM OF SCREEN CYLINDER. REMOVE AND REPLACE AS NECESSARY DURING MAINTENANCE CLEANING.

INSTALLATION NOTES
1. ANY SUB-BASE, BACKFILL DEPTH, AND/OR ANTI-FLOTATION PROVISIONS ARE SITE-SPECIFIC DESIGN CONSIDERATIONS AND SHALL BE SPECIFIED BY ENGINEER OF RECORD.
2. CONTRACTOR TO PROVIDE EQUIPMENT WITH SUFFICIENT LIFTING AND REACH CAPACITY TO LIFT AND SET THE CDS MANHOLE STRUCTURE (LIFTING CLUTCHES PROVIDED).
3. CONTRACTOR TO ADD JOINT SEALANT BETWEEN ALL STRUCTURE SECTIONS, AND ASSEMBLE STRUCTURE.
4. CONTRACTOR TO PROVIDE, INSTALL, AND GROUT PIPES. MATCH PIPE INVERTS WITH ELEVATIONS SHOWN.
5. CONTRACTOR TO TAKE APPROPRIATE MEASURES TO ASSURE UNIT IS WATER TIGHT, HOLDING WATER TO FLOWLINE INVERT MINIMUM. IT IS SUGGESTED THAT ALL JOINTS BELOW PIPE INVERTS ARE GROUTED.

STRUCTURE WEIGHT
APPROXIMATE HEAVIEST PICK = 14,500 LBS.

CONTECH **PROPOSAL** DRAWING

CDS3025-6-C - 430435-02
THE CROSSING AT RIVERSIDE CTR
O'FALLON, MO
SITE DESIGNATION: WQ AREA 2

MARK	DATE	REVISION DESCRIPTION	BY

CONTECH STORMWATER SOLUTIONS INC.
DATE: 2/2/11
DESIGNED: DRA
DRAWN: N/A
CHECKED:
APPROVED:
PROJECT No.: 430435
SEQUENCE No.: 02
SHEET: 1 OF 1

AS-BUILT

SANITARY / STORM SEWER – WATER QUALITY FEATURE – WATER LINE

The existing sewer lengths, sizes, flowlines, depths of structures and sewers locations with respect to existing or proposed easements have been measured. Water Quality Features, Retention Basins and drainage swales have been measured. Fire hydrants and valves have been measured. The results of those measurements are shown on this set of Final Measurement plans. Since the sanitary wye locations have been plotted from information provided by the sewer contractor or other sources, I disclaim any responsibility for that specific information.

All public sewers are located within designated existing or proposed easements.

STATE OF MISSOURI RANDALL S. ROSSON NUMBER 2006-000171 PROFESSIONAL LAND SURVEYOR

Randall S. Rosson 3-9-16

Randall S. Rosson, P.L.S. NO. 2006-000171 Date

GEORGE M. STOCK E-25115
CIVIL ENGINEER
CERTIFICATE OF AUTHORITY
NUMBER: 000998

4	WATER QUALITY 02/17/11
3	CITY APPROVAL 02/01/11
2	CITY COMMENTS 01/26/11
1	CITY COMMENTS 01/13/11

THE CROSSING AT RIVERSIDE CENTRE

WATER QUALITY DETAILS

STOCK & ASSOCIATES
Consulting Engineers, Inc.
257 Chesterfield Business Parkway
St. Louis, MO 63005
PH. (636) 530-9100
FAX (636) 530-9130
e-mail: general@stockassoc.com
Web: www.stockassoc.com

DRAWN BY:	DATE:	CHECKED BY:	DATE:	JOB NUMBER:	SHEET:
P.R.G.	12/21/10	G.M.S.	12/21/10	210-4626	C18

O:\DRAW\600\2104626\Survey\CityAsBuilts\4626-Base2-basinberm.dwg Mar 09, 2016 - 11:23am