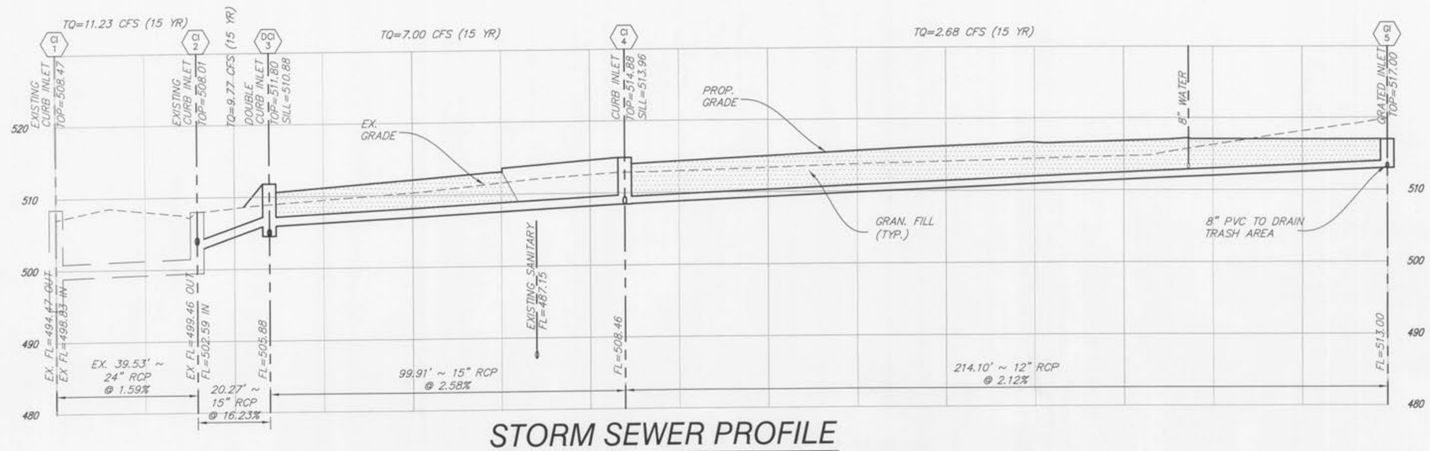
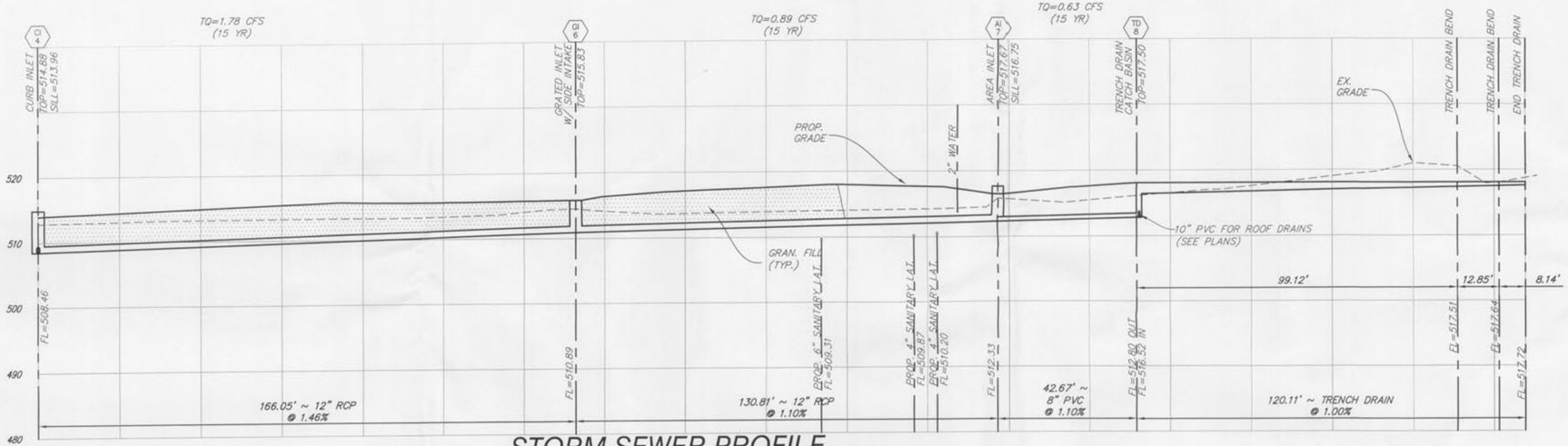


STORM SEWER PROFILE

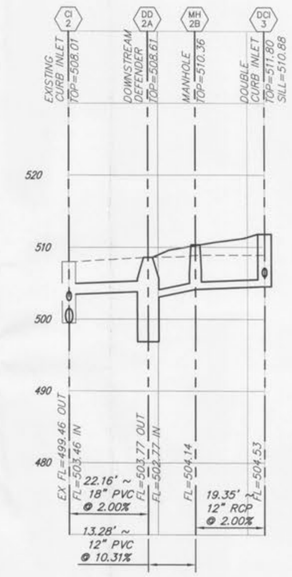
SCALE 1"=20'H
1"=10'V

STRUCT NO	LINE UPPER STRUCT	LINE LOWER STRUCT	PLUMBING ELEVATIONS UPPER FL	PLUMBING ELEVATIONS LOWER FL	LGth (ft)	CONNECT GRADE (%)	PIPE SIZE (in)	PIPE CAP (cfs)	PIPE AREA (sq ft)	TIME AREA (mins)	Fi (in/hr)	C-FACTOR (dimensionless)	TOTAL FLOW (cfs)	FREE FLOW (cfs)	VEL FLOW (fps)	CAP (%)	HGL DATA PIPE (ft)	HGL DATA STRUCTURE LOSSES Structure	HGL DATA STRUCTURE LOSSES Bend	HGL DATA STRUCTURE LOSSES Turbl	HGL DATA STRUCTURE LOSSES Angle	HGL DATA STRUCTURE LOSSES Total	HYDRAULIC ELEVATIONS UPPER HGL (ft)	HYDRAULIC ELEVATIONS LOWER HGL (ft)	HYDRAULIC ELEVATIONS PIPE HGL (ft)	HYDRAULIC ELEVATIONS TOP OF GRATE (ft)	HYDRAULIC ELEVATIONS GRADE (ft)	GRADE GUARD (ft)	n FACTOR	COMMENTS
2	2	1	508.46	498.00	0.50	.42	0.07594	.34	0.14	20.09	0.08	0.90	0.42	0.22	3.07	0.20	0.20	0.10			0.10	.10	0.10	510.46	500.00	500.42	0.00625	501.00	507.00	0.013
3	3	2	509.00	502.59	3.39	.25	0.14025	.75	1.23	20.09	0.75	0.90	2.77		0.77	7.98	0.98	0.10	0.40	0.60		0.39	.21	510.98	507.10	504.30	0.01279	509.21	510.88	.207	0.013
4	4	3	510.40	505.00	2.00	1.00	0.02200	.71	1.23	10.00	0.00	0.90	2.54		2.00	3.70	0.91	0.04	1.17	0.00	0.04		0.09	510.71	509.00	506.70	0.02917	510.00	513.00	.175	0.013
5	5	4	513.00	508.46	4.54	.24	0.02273	.12	0.79	5.19	0.00	0.90	2.08		2.08	3.41	0.19	0.40	1.21				0.40	513.40	511.07	510.10	0.00833	514.00	517.00	.132	0.013
																														0.013
6	6	4	510.00	508.46	3.40	.98	0.01440	.0	0.79	4.37	0.00	0.90	0.88		1.76	2.27	0.08	0.14	0.47	0.08		0.08	.10	510.14	510.00	510.08	0.00625	510.00	513.00	.102	0.013
7	7	6	512.00	510.00	1.44	.70	0.01410	.0	0.79	3.74	0.00	0.90	0.39		0.39	1.13	0.02	0.02	0.02	0.08		0.09	.11	512.11	512.00	512.02	0.00208	513.00	516.00	.141	0.013
8	8	7	513.00	512.00	0.47	.21	0.02128	.0	0.00	1.71	0.00	0.90	0.00		0.00	1.00	0.00	0.00	0.00	0.08		0.09	.11	513.11	513.00	513.00	0.00000	513.00	516.00	.000	0.013



STORM SEWER PROFILE

SCALE 1"=20'H
1"=10'V



Sanitary Sewer Notes

SAN # 1 All sanitary sewer installation is to be in accordance with M.S.D. 2007 standards and specifications except as modified by the City of O'Fallon Ordinances.
SAN # 2 Brick shall not be used in the construction of sanitary sewer structures. Pre cast concrete structures are to be used unless otherwise approved by the City of O'Fallon.
SAN # 3 Connections at all sanitary structures are to be made with A-Lock joint or equal
SAN # 4 All sanitary laterals shall be a minimum of 4" residential, 6" commercial diameter pipe.
SAN # 5 All sanitary mains shall be a minimum of 8" diameter pipe.
SAN # 6 All sanitary sewer line with a slope greater than 20% will require concrete cradle or concrete collar. Sanitary line with a slope greater than 50% will require a special approved design as shown on detail sheet.
SAN # 7 All manholes built within the 100 year flood plain must have lock type watertight manhole covers.
SAN # 8 All sanitary sewer mains must have a minimum of 42" cover.
SAN # 9 When sanitary mains cross over storm line the sanitary main must be ductile iron pipe for 10 feet on each side of the crossing.
SAN #10 Encase with concrete both sanitary and storm sewer at crossing when storm sewer is within 18 inches above sanitary sewer. Add concrete cradle to only RCP storm sewer and encase HDPE storm sewer when it is more than 18 inches above sanitary line. Show on profile sheet.
SAN #11 The sanitary sewers should run diagonally through the side yards to minimize any additional utility easements required.
SAN #12 All sanitary sewer structures shall be waterproofed on the exterior in accordance to Missouri DNR specifications 10CSR-8.120 (7)(E).
SAN #13 All sanitary sewer pipe shall be SDR35 or equal.
SAN #14 All sanitary sewer manholes and pipes will be tested to the following specifications. ASTM C1244, Standard testing method for Concrete Sewer Manhole by Negative Air Pressure (Vacuum), Latest revision ASTM F1417, Standard testing method for Installation Acceptance of Plastic Gravity Sewer Lines Using Low Pressure Air, Latest revision.
SAN #15 Add 1" minus rock back fill to all sanitary sewer and all other utilities that lie within the 1:1 shear plane of the road.

Storm Sewer Notes

STM # 1 All Storm Sewer installation is to be in accordance with M.S.D. 2007 standards and specifications except as modified by the City of O'Fallon ordinances.
STM # 2 Brick shall not be used in the construction of storm sewer structures. Pre cast concrete structures are to be used unless otherwise approved by the City of O'Fallon.
STM # 3 A 5/8" trash bar shall be installed horizontally in the center of the opening(s) in all curb inlets and area inlets.
STM # 4 HDPE pipe is to be N-12WT or equal and to meet ASTM F1417 water tight field test.
STM # 5 Encase with concrete both sanitary and storm sewer at crossing when storm sewer is within 18 inches above sanitary sewer. Add concrete cradle to only RCP storm sewer and encase HDPE storm sewer when it is more than 18 inches above sanitary line. Show on profile sheet.
STM # 6 The storm sewers should run diagonally through the side yards to minimize any additional utility easements required.
STM # 7 All concrete pipes will be installed with O-ring rubber type gaskets.
STM # 8 Connections at all storm structures are to be made with A-lock joint or equal.
STM # 9 Pre cast concrete inlet covers are not to be used.
STM #10 The swale in the detention basins shall have a minimum 1% longitudinal slope and be lined with a permanent erosion control blanket that will allow infiltration of storm water.
STM #11 All storm sewer shall be reinforced concrete pipe or H.D.P.E. pipe. All structures and flared end sections must be concrete. Manufacturing specifications must be followed and details provided for the installation of H.D.P.E. pipe. H.D.P.E. pipe will not be allowed for detention basin outflows, final pipe run to detention basins, creek discharge or other approved means.
STM #12 The discharge point of all flared end sections shall be protected by rip rap or other approved means.
STM #13 Rip rap shown at flared end sections will be evaluated in the field by the Engineer, Contractor, and City inspectors after installation for effectiveness and field modified, if necessary to reduce erosion on and off site.
STM #14 Add 1" minus rock back fill to all storm sewer that lie within the 1:1 shear plane of the road.

Revised	Comment
01/19/12	CITY COMMENTS
02/22/12	CITY AND CLIENT COMMENTS

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Seal

STATE OF MISSOURI
MARK A. DOERING
NUMBER E-23059
3/26/12

MARK DOERING
CIVIL ENGINEER E-23059
3/26/12
MO. CORPORATE
LICENSE NO. 001347
IL. CORPORATE
LICENSE NO. 184.003035

GOLDEN CORRAL
BRAMBLETT ROAD
O'FALLON, MO 63366
SEWER PROFILES

Date: 12/15/11	
Project Number: 11063	
File Name: 11063 CD	
Drawn By: JAB	Sheet
Check By: MAD	C8