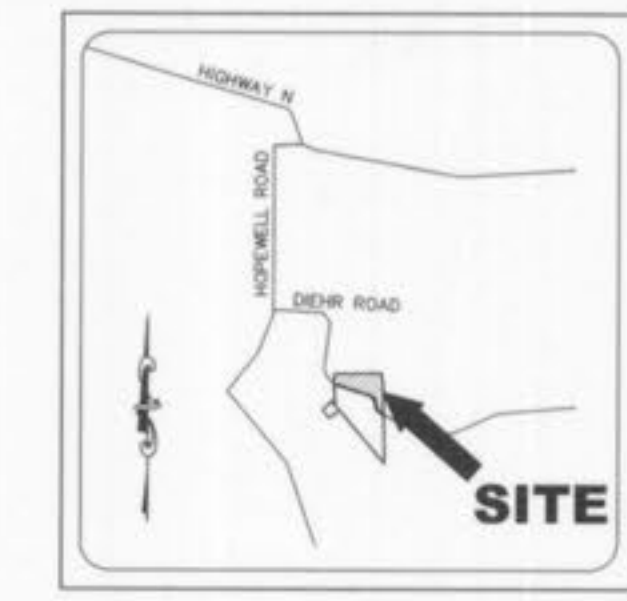


GRADING NOTES

GENERAL NOTES

**A SET OF ASBUILT PLANS FOR
WILLOW WALK ESTATES PHASE 1**
TRACTS OF LAND IN U.S. SURVEY 418, AND IN
FRACTIONAL SECTION 17, TOWNSHIP 46 NORTH,
RANGE 2 EAST OF THE FIFTH PRINCIPAL
MERIDIAN ST. CHARLES COUNTY, MISSOURI



LOCATION MAP
NOT TO SCALE

**DUCKETT CREEK SANITARY DISTRICT
CONSTRUCTION NOTES**

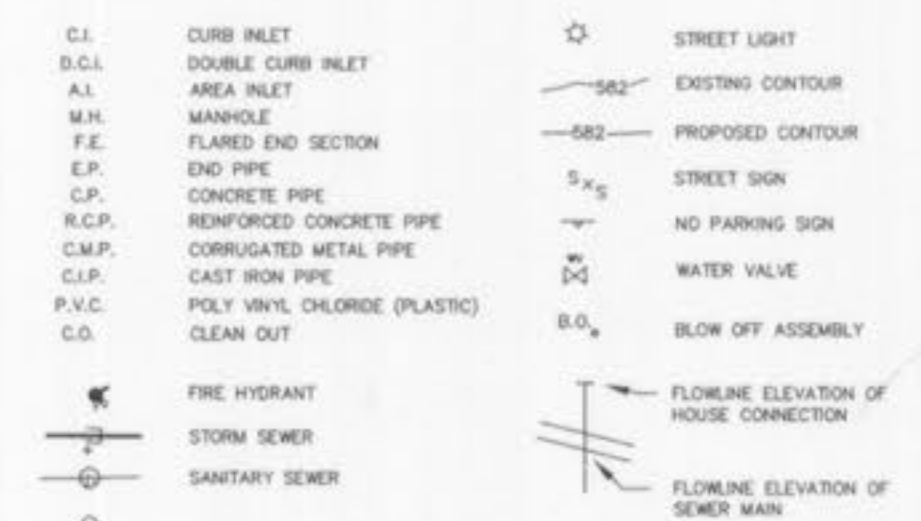
DEVELOPMENT NOTES

- A Geotechnical Engineer shall be employed by the owner and be on site during grading operations. All soil tests shall be verified by the Geotechnical Engineer concurrent with the grading and backfilling operations.
- The grading contractor shall perform a complete grading and compaction operation as shown on the plans, stated in these notes, or reasonably implied therefrom, all in accordance with the plans and notes as interpreted by the Geotechnical Engineer.
- The Contractor shall notify the Soils Engineer at least two days in advance of the start of the grading operation.
- All areas shall be allowed to drain. All low points shall be provided with temporary ditches.
- All filled places, including trench backfills, under buildings, proposed storm and sanitary sewer lines, proposed roads and/or paved areas, shall be compacted to 90% maximum density as determined by the Modified AASHTO T-180 Compaction Test, (A.S.T.M.-D-1557), or 90% of maximum density as determined by the Standard Proctor Test AASHTO T-99. All filled places within public roadways shall be compacted from the bottom of the fill up to 90% maximum density as determined by the Modified AASHTO T-180 Compaction Test or 90% of maximum density as determined by the Standard Proctor Test AASHTO T-99, Method "C" (A.S.T.M.-D-698). All test shall be verified by a soils engineer concurrent with grading and backfilling operations. Ensure the moisture content of the soil in fill areas is to correspond to the compactive effort as defined by the Standard or Modified Proctor Test. Optimum moisture content shall be determined using the same test that was used for compaction. Soil compaction curves shall be submitted to the City of O'Fallon prior to the placement of fill. Proof rolling may be required to verify soil stability at the discretion of the City of O'Fallon.
- A sediment control plan that includes monitored and maintained sediment control basins and/or straw bales should be implemented as soon as possible. No graded area is to be allowed to remain bare without being seeded and mulched. Care should be exercised to prevent soil from damaging adjacent property and sitting up existing downstream storm drainage systems. All erosion control systems shall be inspected and necessary corrections made within 24 hours of any rain storm resulting in 1/2 inch of rain or more.
- Debris and foundation material from any existing on-site building or structure which is scheduled to be razed for this development must be disposed of off-site.
- Trees, organic debris, rubble, foundations and other deleterious material shall be removed for the site and disposed in compliance with all applicable laws and regulations. Landfill tickets for such disposal shall be maintained on file by the developer. Burning on site shall be allowed only by permit from the local fire district. If a burn pit is proposed the location and mitigation shall be shown on the grading plan and documented by the soils engineer.
- Soft soil in the bottom and banks of any existing or former pond sites or tributaries or on any sediment basins or traps should be removed, spread out and permitted to dry sufficiently to be used as fill. None of this material should be placed in proposed public right-of-way locations or on any storm sewer locations.
- Site preparation includes the clearance of all stumps, trees, bushes, shrubs, and weeds; the grubbing and removal of roots and other surface obstructions from the site; and the demolition and removal of any man-made structures. The material shall be properly disposed of off-site. Topsoil and grass in the fill areas shall be thoroughly disced prior to the placement of any fill. The Soils Engineer shall approve the discing operation.
- Compaction equipment shall consist of tamping rollers, pneumatic-tired rollers, vibratory roller, or high speed impact type drum rollers acceptable to the Soils Engineer. The roller shall be designed so as to avoid the creation of a layered fill without proper blending of successive fill layers.
- The Soils Engineer shall observe and test the placement of the fill to verify that specifications are met. A series of fill density tests will be determined on each lift of fill. Interim reports showing fill quality will be made to the Owner at regular intervals.
- The Soils Engineer shall notify the Contractor of rejection of a lift of fill or portion thereof. The Contractor shall rework the rejected portion of fill and obtain notification from the Soils Engineer of its acceptance prior to the placement of additional fill.
- All areas to receive fill shall be scarified to a depth of not less than 6 inches and then compacted in accordance with the specifications given below. Natural slopes steeper than 1 vertical to 5 horizontal to receive fill shall have horizontal benches cut into the slopes before the placement of any fill. The width and height to be determined by the Soils Engineer. The fill shall be loosely placed in horizontal layers not exceeding 8 inches in thickness and compacted in accordance with the specifications given below. The Soils Engineer shall be responsible for determining the acceptability of soils placed. Any unacceptable soils placed shall be removed at the Contractor's expense.
- The sequence of operation in the fill areas will be fill, compact, verify acceptable soil density, and repetition of the sequence. The acceptable moisture contents during the filling operation are those at which satisfactory dry densities can be obtained. The acceptable moisture contents during the filling operation in the remaining areas are from 2 to 8 percent above the optimum moisture control.
- The surface of the fill shall be finished so that it will not impound water. If at the end of a days work it would appear that there may be rain prior to the next working day, the surface shall be finished smooth. If the surface has been finished smooth for any reason, it shall be scarified before proceeding with the placement of succeeding lifts. Fill shall not be placed on frozen ground, nor shall filling operations continue when the temperature is such as to permit the layer under placement to freeze.
- Developer must supply City construction inspectors with soil reports prior to or during site soil testing.
- Fill and backfill should be compacted to the criteria specified in the following table:

CATEGORY	MINIMUM PERCENT COMPACTION
Fill in building areas below footings	90%
Fill under slabs, walls, and pavement	90%
Fill other than building areas	88%
Natural subgrade	88%
Pavement subgrade	90%
Pavement base course	90%

Measured as a percent of the maximum dry density as determined by modified Proctor Test (ASTM-D-1557).

Moisture content must be within 2 percent below or 4 percent above optimum moisture content if fill is deeper than 10 feet.



ASBUILTS ADDED SEPTEMBER, 2007

- Underground utilities have been plotted from available information and therefore their locations shall be considered approximate only. The verification of the location of all underground utilities, either shown or not shown on these plans shall be the responsibility of the contractor, and shall be located prior to any grading or construction of the improvements.
- All trench backfills under paved areas shall be granular backfill, and shall be Modified compacted to 90% of the maximum density as determined by the "AASHTO T-180 Compaction Test," (A.S.T.M.-D-1557). All other trench backfills may be earth material (free of large clods or stones). All trench backfills shall be water jetted.
- No area shall be cleared without the permission of the Project Engineer.
- All P.V.C. sanitary sewer is to be SDR-35 or equal with clean 1/2" to 1" granular stone bedding uniformly graded. This bedding shall extend from 4" below the pipe to the springline of the pipe. Immediate backfill over pipe shall consist of same size "clean" or minus stone from springline of pipe to 12" above the top of pipe.
- All soils test shall be verified by a Soils Engineer concurrent with the grading and backfilling operations.
- Easements shall be provided for sanitary sewers, and all utilities on the Record Plat. See Record Plat for location and size of easements.
- Maintenance and upkeep of the common ground area shall be the responsibility of the developer and/or successors.
- The City of O'Fallon shall be notified 48 hours prior to construction for coordination and inspection.
- All storm inlets must be installed with a 5/8" trash bar across the opening.
- Concrete pipe for storm sewers shall be Class III, A.S.T.M. C-76 with a minimum diameter of 12" except in the R.O.W. it shall be 15".
- The ADS N-12 pipe shall have a smooth interior wall.
- Concrete pipe joints shall be MSD type "A" approved compression-type joints and shall conform to the requirements of the specifications for joints for circular concrete sewer and culvert pipe, using flexible, watertight, rubber-type gaskets (A.S.T.M.-C-443). Bond-type gaskets depending entirely on cement for adhesion and resistance to displacement during jointing shall not be used.
- When HDPE pipe is used, City of O'Fallon specifications or manufacturers specifications, which ever are more stringent, shall be followed.
- The use of High Density Polyethylene Corrugated pipe, ADS N-12WT or equal will be permitted as an acceptable alternative to reinforced concrete pipe. Pipe shall meet A.S.T.M. F1417 water tight field test.
- All flared end sections and inlet structures will be concrete.
- All storm sewer pipe installed in the Public Right-of-Way shall be Reinforced concrete Class III pipe.
- All concrete pipe or ADS N-12 pipe shall be installed with "O-Ring" Rubber type gaskets per M.S.D. standard construction specifications or manufacturer.
- All utilities shall be located underground.
- Storm and sanitary sewer pipe shall be placed at less than 1% slope shall have field verification of pipe slope before backfilling.
- Any permits, licenses, easements, or approvals required to work on public or private properties or roadways are the responsibility of the developer.
- No slopes shall exceed 3(H):1(V).
- Driveway locations shall not interfere with the sidewalk curb ramps.
- City approval of the Construction plans does not mean that Single Family dwelling units can be constructed on lots without meeting the minimum building setbacks as required by the Zoning Code.
- Sidewalks and sidewalk curb ramps shall be constructed in accordance with the current approved "Americans with Disabilities Act: Accessibility Guidelines" (A.D.A.A.G.). If any conflict occurs between the above information and the plans the A.D.A.A.G. shall take precedence and the contractor prior to any construction shall notify the Project Engineer.
- Contractor shall assume complete responsibility for controlling all siltation and erosion of the project area. The contractor shall use whatever means necessary to control erosion and siltation including, but not limited to, staked straw bales and/or siltation fabric fences (possible methods of control are detailed in the plan). Control shall commence with grading and be maintained throughout the project until acceptance of the work by the owner and/or the City of O'Fallon. The contractor's responsibilities include all design and implementation as required to prevent erosion and the depositing of silt. The Owner and/or the City of O'Fallon may at their option direct the contractor in his methods as deemed fit to protect property and improvements. Any depositing of silt or mud on new or existing pavement or in new or existing storm sewers or swales shall be removed after each rain and affected areas cleaned to the satisfaction of the Owner and/or City of O'Fallon and/or MoDOT.
- All paving to be in accordance with St. Charles County Standards and Specifications except as modified by the City of O'Fallon ordinances.
- All sign post, backs, bracket arms, street signs and traffic signals shall be painted black using Carboline Rustbond Penetrating Sealer SG and Carboline 133 HB point (or equivalent as approved by the City of O'Fallon and/or MoDOT).
- Any proposed pavilions or playground areas will need a separate permit from the building division.
- All sign locations and sizes must be approved separately through the Planning and Engineering Departments.
- Brick shall not be used in the construction of storm sewer structures.
- Provide a marking on the storm sewer inlets. The City will allow the following markers and adhesive procedures only as shown in the table below or an approved equal by Almetek Industries. "Peel and stick" adhesive pads will not be allowed.



NOT TO SCALE

REFERENCE BENCHMARK

REFERENCE BENCHMARK ELEVATION 544.08
CHISEL SQUARE ON THE SOUTHWEST CORNER OF RETAINING WALL ON NORTHWEST CORNER OF HOPWELL ROAD BRIDGE OVER DARDENNE CREEK, NORTH OF THE INTERSECTION OF HOPWELL ROAD AND HOFFMAN ROAD

SITE BENCHMARK

OLD STONE AT THE NORTHWEST BOUNDARY CORNER AND THE SOUTHWEST CORNER OF LOT 18 OF FALLING LEAF FARMS PLAT TWO PB 22, Pg. 92.
ELEV. - 621.65 (U.S.G.S.)



**TYPICAL LOT SIZES
NOT TO SCALE**

P.W.S.D. # 2 WATER NOTES

- The St. Charles County Public Water Supply District No. 2 shall be notified at least 48 hours prior to construction for coordination of inspection.
- All PVC water pipe shall conform to A.S.T.M.-D-2241, SDR 21 Standard Specification for P.V.C. Pressure Pipe, 200 P.S.I. working pressure for water, with approved joint. P.V.C. pipe used for waterlines is to be certified by NSF, listed in NSF Standard 61, and have the NSF logo stamped on the pipe.
- All Water mains, valves, hydrants and related items are to be installed in accordance with the current St. Charles County Public Water Supply District No. 2 guidelines and specifications as approved by MDNR on review number 61996-04R.
- All Water hydrants and valves shall be ductile iron and installed in accordance with the plans and details. All ductile iron pipe for water mains shall conform to A.W.W.A. Specification C-151 and be cement lined and seal coated in accordance with A.W.W.A. Specification C-104. The ductile iron fittings shall conform to A.W.W.A. Specification C-153. All joints for water ductile iron pressure pipe shall be push on type with rubber gasket conforming to A.W.W.A. Specification C-111 and fittings shall be ductile iron, Class 350, conforming to A.W.W.A. Specification C-153.
- All water lines shall be laid at least 10 feet horizontally, from any sanitary sewer, storm sewer, or manhole. 18" vertical clearance from outside of pipe to outside of pipe shall be maintained wherever water lines must cross sanitary sewers, laterals, or storm drains the water line shall be laid at such an elevation that the bottom of the water line is above the top of the drain or sewer. A full length of water pipe shall be centered over the sewer line to be crossed so that the joints will be equally distant from the sewer and as remote therefrom as possible. This vertical separation shall be maintained for that portion of the water line located within 10 feet horizontally, of any sewer or drain it crosses.
- Blow-off hydrants and water meters shall not be located in any pavement or hard surfaced area including, but not limited to, driveways, sidewalks, and streets. Since the location of all such areas is not shown on this plan all costs to relocate any blow-off hydrants and water meters from any pavement or hard surfaced areas shall be borne by the Developer or the Builders.

SITE BENCHMARK
1 COVER SHEET
2 SITE PLAN
3 SANITARY & STORM SEWER PROFILES
4 STORM SEWER PROFILES

CALL BEFORE YOU DIG!
1-800-DIG-RITE
MoDOT - (314) 340-4100

THE EXISTING SEWER LENGTHS, SIZES, FLOWLINES, DEPTHS OF STRUCTURES AND SEWERS AND LOCATIONS WITH RESPECT TO EXISTING OR PROPOSED EASEMENTS HAVE BEEN MEASURED. THE RESULTS OF THESE MEASUREMENTS ARE SHOWN ON THIS SET OF FINAL MEASUREMENT PLANS.

ALL PUBLIC SEWERS ARE LOCATED WITHIN DESIGNATED EXISTING OR PROPOSED EASEMENTS EXCEPT AS FOLLOWS:

SIGNED: _____
P.E./L.S. _____
DATE _____

SEWER MEASUREMENTS

City of O'Fallon Planning and Engineering File No. 5104.01 was approved Feb. 3, 2006

WILLOW WALK ESTATES PHASE 1

PREPARED FOR:
FIRST LAND CO. OF ST. CHARLES CNTY, INC.
P.O. BOX 176
ST. PETERS, MO. 63376
636-928-4988

REVISIONS

DATE	REVISIONS
04/04/08	CITY COMMENTS
05/09/08	CITY COMMENTS

ENGINEERING PLANNING SURVEYING

221 Point West Blvd.
St. Charles, MO 63301
636-928-5552
636-928-1718

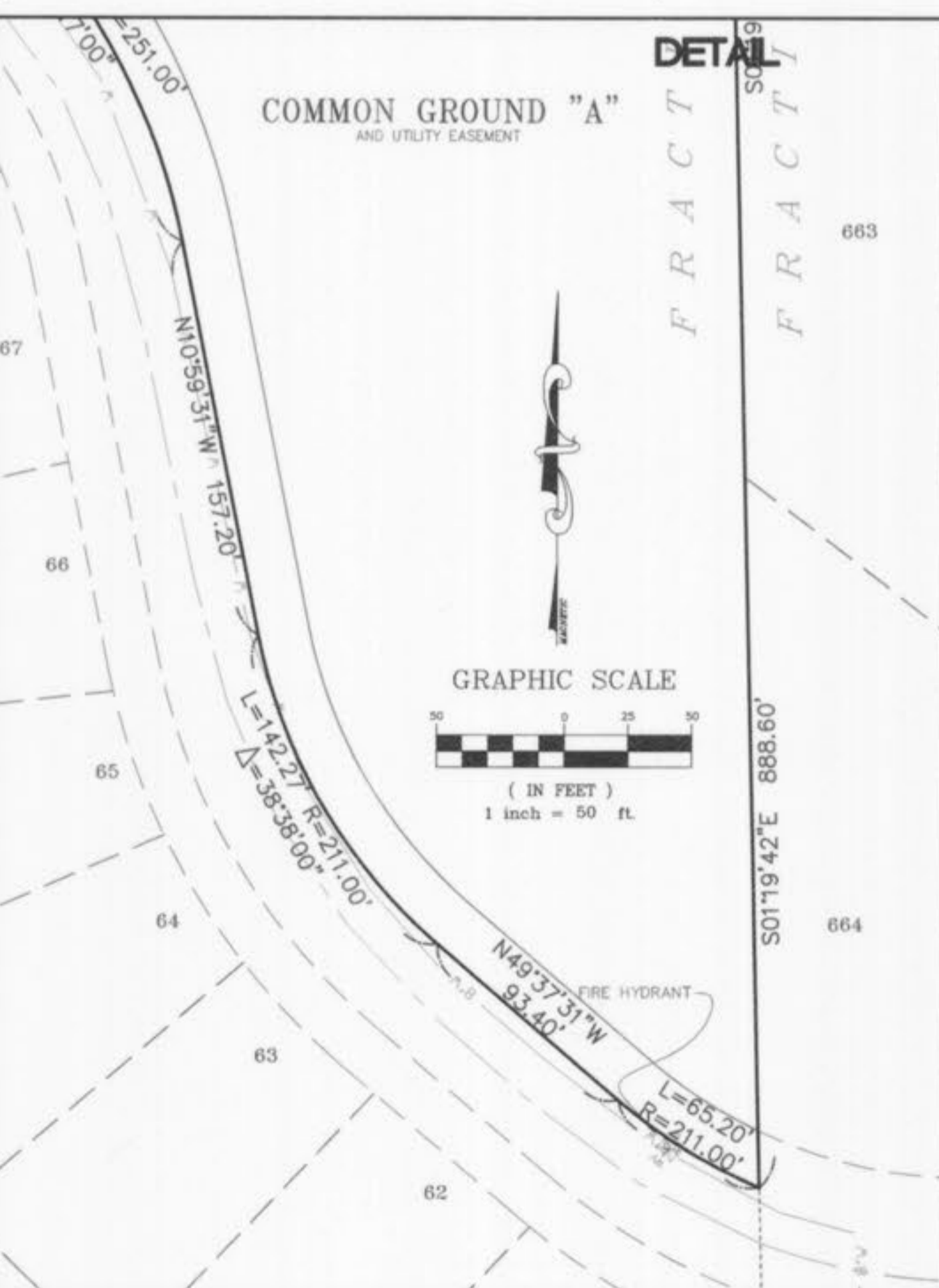
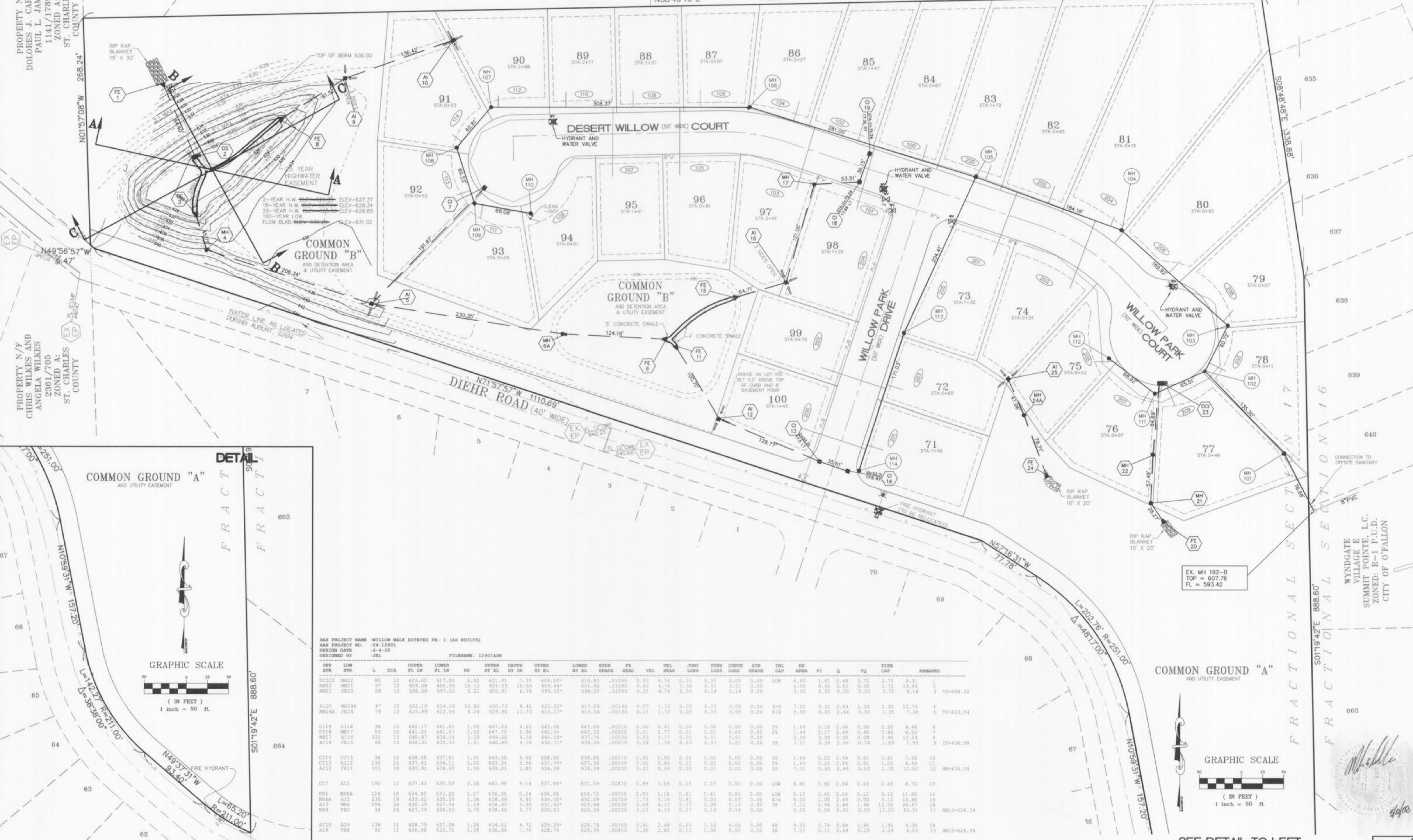
9-28-07
DATE
04-12901
PROJECT NUMBER
1 OF 4
SHEET OF
12901-ASB.DWG
FILE NAME
SAZ
DRAWN
MUT DRO
DESIGNED CHECKED

FALLING LEAF FARMS
 PLAT TWO
 P.B.22 PG.92
 ZONED A:
 ST. CHARLES
 COUNTY
 N88°40'15"E 1401.14'

PROPERTY N/F
 DOLORES J. CARR AND
 PAUL L. JAMES
 1141/1789
 ZONED A:
 ST. CHARLES
 COUNTY

PROPERTY N/F
 CHRIS WILKES AND
 ANGELA WILKES
 2361/705
 ZONED A:
 ST. CHARLES
 COUNTY

WYNDGATE
 VILLAGE E
 SUMMIT POINTE, L.C.
 ZONED: R-1 P.U.D.
 CITY OF O'FALLON



ASBUILT PROJECT NAME: WILLOW WALK ESTATES PH. 1 (AS BUILTS)
 ASBUILT PROJECT NO.: 04-12901
 DESIGN DATE: 4-4-06
 DESIGNED BY: JEL
 FILENAME: 12901ASB

UPP STR	LOW STR	L	DIA	UPPER VE. LN	LOWER VE. LN	PS	UPPER ST. EL.	DEPTH	HY. GR.	UPPER HY. EL.	LOWER HY. EL.	HYDR. GRADE	FR. HEAD	VEL. HEAD	JUNC. LOSS	TURN. LOSS	CURVE LOSS	STR. LOSS	INCL. CAP.	DR. AREA	PI	Q	TQ	FIPS CAP.	REMARKS		
DC123	MH22	85	12	623.60	617.80	6.82	631.41	7.37	624.04*	618.80	-0.0990	0.35	4.74	0.35	0.33	0.00	0.00	0.00	6.80	1.41	2.64	3.72	3.72	9.31	1		
MH22	MH21	57	12	609.08	600.46	8.62	625.03	15.59	609.44*	601.46	-0.0990	0.42	4.74	0.35	0.41	0.01	0.00	0.00	0.00	0.00	0.00	3.72	13.84	2			
MH21	FE20	28	12	598.68	597.02	1.66	605.91	6.76	599.15*	598.22	-0.0990	0.31	4.74	0.35	0.14	0.14	0.00	0.00	0.00	0.00	0.00	3.72	9.14	3	TP=598.32		
A125	MH24A	47	12	622.10	616.09	6.01	630.73	8.41	622.32*	617.09	-0.0940	0.07	1.72	0.05	0.05	0.00	0.00	0.00	3.48	7.01	0.51	2.64	1.35	12.76	4		
MH24A	FE24	79	12	615.89	612.54	3.35	629.90	13.73	616.17*	613.54	-0.0940	0.11	1.72	0.05	0.00	0.00	0.00	N/A	0.00	0.00	2.64	0.00	1.35	7.34	5	TP=613.54	
C119	C118	36	15	642.17	641.81	0.36	647.49	4.63	643.06*	643.06	-0.0010	0.00	0.41	0.00	0.00	0.00	0.00	0.00	2.9	1.64	0.19	2.64	0.50	0.50	6.46	6	
C118	MH17	53	15	641.61	641.09	0.52	647.70	5.36	642.34	642.32	-0.0020	0.01	0.27	0.01	0.01	0.00	0.00	0.00	2.9	1.64	0.17	2.64	0.45	0.95	6.52	7	
MH17	A116	121	15	640.87	636.51	4.36	649.66	8.59	641.10*	637.76	-0.0020	0.03	0.27	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.95	12.24	8		
A116	FE15	65	15	636.31	635.33	0.98	640.89	4.18	636.71*	636.58	-0.0070	0.04	1.38	0.03	0.03	0.01	0.00	0.00	3.8	7.01	0.28	2.64	0.74	1.69	7.93	9	TP=636.58
C114	C113	36	15	638.08	637.61	0.47	643.38	4.52	638.96*	638.96	-0.0010	0.00	0.50	0.00	0.00	0.00	0.00	0.00	2.8	1.64	0.23	2.64	0.61	0.61	7.38	10	
C113	A112	130	15	637.41	636.11	1.30	643.34	5.54	637.78*	637.36	-0.0040	0.05	0.59	0.02	0.02	0.00	0.00	0.00	2.8	1.64	0.23	2.64	0.61	1.22	6.45	11	
A112	FE11	101	18	635.91	634.90	1.00	639.21	2.83	636.38	636.34	-0.0030	0.03	0.59	0.02	0.01	0.01	0.00	0.00	3.0	7.01	0.20	2.64	0.53	1.75	10.50	12	HW=636.34
C17	A15	192	12	637.43	630.59	6.84	643.98	6.14	637.84*	631.59	-0.0070	0.89	3.09	0.15	0.15	0.00	0.00	0.00	6.80	0.92	2.64	2.43	2.43	6.72	13		
FE8	MH6A	124	18	634.80	633.22	1.57	636.30	0.24	636.06	634.72	-0.0070	0.93	3.16	0.41	0.41	0.00	0.00	0.00	LOW	9.12	3.45	2.64	9.12	11.86	14		
MH6A	A15	230	18	633.02	630.59	2.43	638.48	4.40	634.09*	632.09	-0.0070	1.73	3.16	0.41	0.02	0.03	0.00	0.00	N/A	0.00	0.00	2.64	0.00	9.12	10.80	15	
A15	MH4	206	24	630.39	627.94	2.45	636.95	5.53	631.42*	629.94	-0.0030	0.48	4.15	0.27	0.00	0.13	0.00	0.00	3.8	7.01	0.56	2.64	1.48	15.03	24.67	16	
MH4	FE3	46	24	627.74	626.03	1.71	636.40	9.77	628.63	628.34	-0.0030	0.15	4.15	0.27	0.14	0.14	0.00	0.00	0.00	0.00	0.00	0.00	15.03	43.51	17	HW15=626.34	
A110	A19	136	12	628.79	627.08	1.71	634.01	4.72	629.29*	628.76	-0.0030	0.41	2.88	0.10	0.10	0.00	0.00	0.00	4.8	9.35	0.74	2.64	1.95	1.95	8.00	18	
A19	FE9	92	12	626.88	625.70	1.18	636.46	7.70	628.16	628.34	-0.0040	0.36	2.85	0.13	0.16	0.00	0.00	0.00	2.8	7.01	0.11	2.64	0.29	2.24	4.03	19	HW15=628.34
OS2	FE1	94	24	621.79	620.22	1.57	630.13	6.34	623.59	622.22	-0.0070	0.74	6.39	0.63	0.63	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	20.07	29.24	20	TP=622.22

* INDICATES CRITICAL DEPTH

ASBUILTS ADDED SEPTEMBER, 2007

O'FALLON FILE NUMBER 5104.01

Willow Walk Estates Phase I ASB 2/4

