

CONSTRUCTION NOTES

- 1. THESE PLANS ARE A REVISION TO PINNACLE ENGINEERING PLANS, REVISED 31 JANUARY 2007, OF THE GRADING & DRAINAGE, FROM SOUTH OF BUILDING A-1 TO SOUTH OF BUILDINGS B-1 AND B-2. THE AREA EAST OF BUILDING A-1 AND EAST OF BUILDING B-2 HAS ALSO BEEN REVISED.
2. REFER TO PINNACLE ENGINEERING PLANS, REVISED 31 JANUARY 2007, FOR ALL DETAILS AND NOTES NOT INCLUDED IN THESE PLANS.
3. INTEGRAL CURB SECTION IS AN ACCEPTABLE ALTERNATIVE TO CURB & GUTTER IN AREAS IDENTIFIED ON THE PLANS AS CURB & GUTTER.
4. EXISTING UTILITIES ARE SHOWN IN THEIR APPROXIMATE LOCATIONS. THE CONTRACTOR WILL BE RESPONSIBLE FOR CONTACTING THE VARIOUS UTILITY COMPANIES AND VERIFYING LOCATIONS BEFORE STARTING CONSTRUCTION.
5. CONTRACTOR SHALL UTILIZE TOPSOIL FROM SITE IN LANDSCAPED AREAS WITH ANY EXCESS STOCKPILED ON SITE.
6. IMMEDIATELY UPON COMPLETION OF FINISH GRADING IN EACH AREA, ALL LANDSCAPING AREAS SHALL BE SEEDED AND MULCHED.
7. CONTRACTOR WILL REMOVE ALL TRASH, DEBRIS, TREES & BRUSH AND OTHER MATERIAL CREATED AS A RESULT OF THE CONSTRUCTION WORK AND THE SITE WILL BE RETURNED TO ITS ORIGINAL CONDITION.
8. ALL PERIMETER LANDSCAPED AREAS SHALL BE GRASS COVERED.
9. RETAINING WALL TO BE DESIGNED BY OTHERS. DESIGN SHALL BE PREPARED BY A PROFESSIONAL ENGINEER, REGISTERED TO PRACTICE IN MISSOURI. DESIGN SHALL BE SUBMITTED FOR REVIEW PRIOR TO CONSTRUCTION.
10. ALL DIMENSIONS ARE TO BACK OF CURB OR FACE OF THICKENED SIDEWALK.
11. PAVED AREAS TO BE PAINTED WITH 4" WIDE SINGLE WHITE SOLID LINES. CONCRETE PAVED AREAS TO BE PAINTED WITH 4" WIDE SINGLE YELLOW SOLID LINES.
12. PEDESTRIAN CROSSWALK TO BE PAINTED WITH 4" WIDE PAINTED WHITE OR YELLOW STRIPING PARALLEL TO DIRECTION OF TRAFFIC AT 2'-0" O.C.
13. WHERE WATER MAINS MUST CROSS OVER STORM DRAINS, OR SANITARY SEWERS, THE WATER MAIN MUST BE LAID AT SUCH AN ELEVATION THAT THE BOTTOM OF THE WATER MAIN IS AT LEAST 18 INCHES ABOVE THE TOP OF THE SEWER, AND A FULL LENGTH OF WATER MAIN PIPE MUST BE CENTERED OVER THE SEWER TO BE CROSSED SO BOTH OF THE JOINTS WILL BE EQUALLY DISTANT FROM THE SEWER AND AS REMOTE FROM THERE AS POSSIBLE. WHERE CONDITIONS PREVENT THE MINIMUM VERTICAL SEPARATION FROM BEING MAINTAINED OR WHERE IT IS NECESSARY FOR THE WATER MAIN TO PASS UNDER A SEWER LINE, THE WATER MAIN MUST BE BACKFILLED WITH COMPACTED CLAY TO A MINIMUM OF 18 INCHES ABOVE AND BELOW THE OUTSIDE DIMENSION OF THE WATER MAIN AND FOR A HORIZONTAL DISTANCE OF 10 FEET FROM THE SEWER BEING CROSSED. IN NO CASE SHALL THE WATER MAIN AND THE SEWER SHARE THE SAME GRANULAR FILL BED. IN MAKING SUCH CROSSINGS, A FULL LENGTH OF PIPE MUST BE CENTERED OVER OR UNDER THE SEWER TO BE CROSSED SO THAT THE JOINTS WILL BE EQUALLY DISTANT FROM THE SEWER AND AS REMOTE THERE FROM AS POSSIBLE. WHERE A WATER MAIN MUST CROSS UNDER A SEWER, A VERTICAL SEPARATION OF AT LEAST 18 INCHES BETWEEN THE BOTTOM OF THE SEWER LINE AND THE TOP OF THE WATER MAIN MUST BE MAINTAINED WITH ADEQUATE SUPPORT FOR THE LARGER SIZE SEWER LINES TO PREVENT THEM FROM SETTLING. IN NO CASE SHALL THE WATER MAIN AND THE SEWER MAIN SHARE THE SAME GRANULAR BED.
14. ALL PAVING TO BE IN ACCORDANCE WITH THE ST. CHARLES COUNTY STANDARDS AND SPECIFICATIONS, EXCEPT AS MODIFIED BY THE CITY OF O'FALLON ORDINANCES.
15. ALL STORM SEWER INLETS SHALL BE MARKED WITH ONE OF THE FOLLOWING (OR APPROVED EQUAL BY ALMETEX INDUSTRIES):

Table with 5 columns: MANUFACTURER, SIZE, ADHESIVE, STYLE, MESSAGE. Rows include ACP INTERNATIONAL (3 7/8" EPOXY CRYSTAL CAP), DAS MANUFACTURING, INC. (4" EPOXY STANDARD STYLE), and PEEL & STICK PADS (WILL NOT BE ALLOWED).

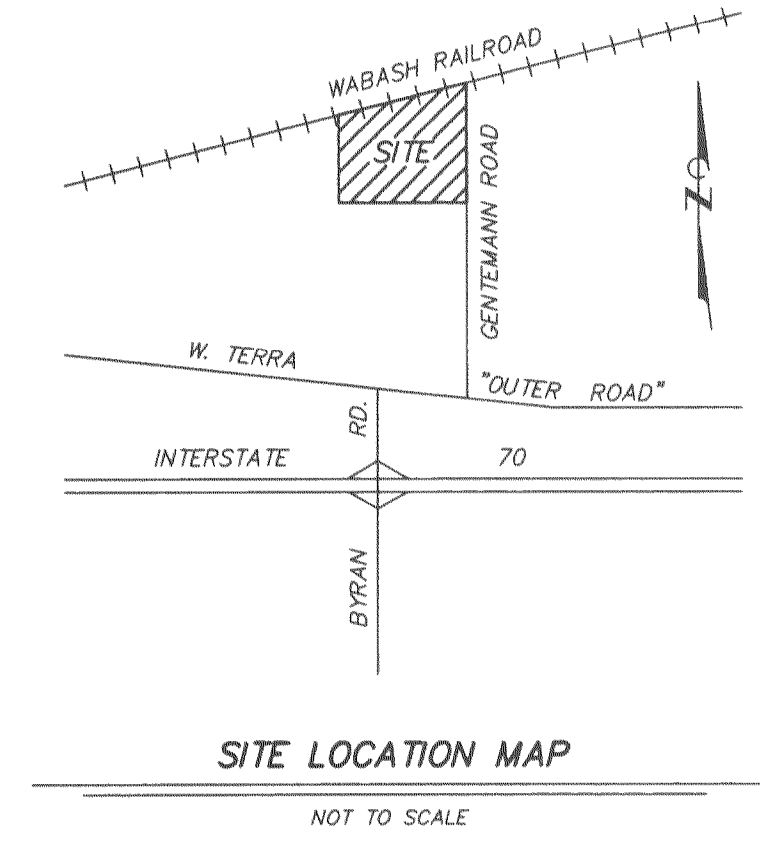
- 16. SIDEWALKS, CURB RAMPS, RAMP, AND ACCESSIBLE PARKING SPACES SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE CURRENT APPROVED "AMERICAN WITH DISABILITIES ACT ACCESSIBILITY GUIDELINES" (ADAAG) ALONG WITH THE REQUIRED GRADES, CONSTRUCTION MATERIALS, SPECIFICATIONS AND SIGNAGE. IF ANY CONFLICT OCCURS BETWEEN THE ABOVE INFORMATION AND THE PLANS, THE ADAAG GUIDELINES SHALL TAKE PRECEDENCE AND THE CONTRACTOR, PRIOR TO ANY CONSTRUCTION, SHALL NOTIFY THE PROJECT ENGINEER. PROTECT AT LEAST ONE 8' WIDE ADA ACCESS AISLE AND CURB RAMPS SHALL NOT PROJECT INTO ADA ACCESS AISLE.
17. LIGHTING VALUES WILL BE REVIEWED ON SITE PRIOR TO THE FINAL OCCUPANCY INSPECTION. CORRECTIONS WILL NEED TO BE MADE IF NOT IN COMPLIANCE WITH CITY STANDARDS.
18. ALL SIGN LOCATIONS AND SIZES MUST BE APPROVED SEPARATELY THROUGH THE PLANNING DIVISION.
19. ALL SIGN POST AND BACKS AND BRACKET ARMS SHALL BE PAINTED BLACK USING CARBONLINE RUSTBOND PENETRATING SEALER SG AND CARBONLINE 133 HB PAINT (OR EQUIVALENT AS APPROVED BY CITY.) SIGNS DESIGNATING STREET NAMES SHALL BE ON THE OPPOSITE SIDE OF THE STREET FROM TRAFFIC CONTROL SIGNS.
20. TRAFFIC CONTROL SHALL BE PER MISSOURI DEPARTMENT OF TRANSPORTATION OR MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES, WHICHEVER IS MOST STRINGENT.

- 21. DEVELOPER MUST SUPPLY CITY CONSTRUCTION INSPECTORS WITH SOIL REPORTS PRIOR TO OR DURING SITE SOIL TESTING. THE SOIL REPORT WILL BE REQUIRED TO CONTAIN THE FOLLOWING INFORMATION ON SOIL TEST CURVES (PROCTOR REPORTS) FOR PROJECTS WITHIN THE CITY:
- MAXIMUM DRY DENSITY
- OPTIMUM MOISTURE CONTENT
- MAXIMUM AND MINIMUM ALLOWABLE MOISTURE CONTENT
- CURVE MUST BE PLATTED TO SHOW DENSITY FROM A MINIMUM OF 90% COMPACTION AND ABOVE AS DETERMINED BY THE "MODIFIED AASHTO T-180 COMPACTION TEST" (A.S.T.M.-D-1517) OR FROM A MINIMUM OF 95% AS DETERMINED BY THE "STANDARD PROCTOR TEST AASHTO T-99, METHOD C" (A.S.T.M.-D-698). PROCTOR TYPE MUST BE DESIGNATED ON DOCUMENT.
- CURVE MUST HAVE AT LEAST 5 DENSITY POINTS WITH MOISTURE CONTENT AND SAMPLE LOCATIONS LISTED ON DOCUMENT.
- SPECIFIC GRAVITY.
- NATURAL MOISTURE CONTENT.
- LIQUID LIMIT.
- PLASTIC LIMIT.

SWPPP NOTES

- 1. CONTRACTOR SHALL FOLLOW STORM WATER POLLUTION PREVENTION PLAN (SWPPP) AND ADHERE TO ALL TERMS & CONDITIONS AS OUTLINED IN THE GENERAL N.P.I.D.E.S. PERMIT FOR STORM WATER DISCHARGE ASSOCIATED WITH CONSTRUCTION ACTIVITIES. A COPY OF THIS PLAN AND PERMIT SHALL REMAIN ON SITE THROUGHOUT CONSTRUCTION.
2. CONSTRUCTION SHALL COMPLY WITH ALL APPLICABLE GOVERNING CODES AND BE CONSTRUCTED TO SAME. CONTRACTOR SHALL REFERENCE THE ST. CHARLES COUNTY SOIL AND WATER CONSERVATION DISTRICT EROSION AND SEDIMENT CONTROL GUIDELINES.
3. NO LAND CLEARING OR GRADING SHALL BEGIN UNTIL ALL EROSION CONTROL MEASURES HAVE BEEN INSTALLED AND APPROVAL HAS BEEN RECEIVED FROM ALL GOVERNING AUTHORITIES. CONTRACTOR SHALL UTILIZE TOPSOIL FROM SITE IN LANDSCAPED AREAS WITH ANY EXCESS BEING REMOVED FROM SITE.
4. IMMEDIATELY UPON COMPLETION OF FINISH GRADING IN EACH AREA, ALL LANDSCAPING AREAS SHALL BE SEEDED AND MULCHED.
5. SHOULD CONSTRUCTION STOP FOR LONGER THAN 14 DAYS, THE SITE SHALL BE SEEDED AS SPECIFIED IN THE SWPPP.
6. INSPECT AND MAINTAIN EROSION CONTROL MEASURES WITH 24 HOURS OF ANY RAIN STORM RESULTING IN 1/2 INCH OF RAIN OR MORE AND AT LEAST ONCE A WEEK.
7. CONTRACTOR SHALL COMPLY WITH ALL STATE AND LOCAL ORDINANCES THAT APPLY.
8. CONTRACTOR SHALL ASSUME COMPLETE RESPONSIBILITY OF CONTROLLING ALL SILTATION AND EROSION OF THE PROJECT AREA. CONTRACTOR SHALL USE WHATEVER MEANS NECESSARY TO CONTROL SILTATION AND EROSION INCLUDING, BUT NOT LIMITED TO, STAKED STRAW BALES AND/OR SILTATION FENCES (POSSIBLE METHODS OF CONTROL ARE DETAILED ON THE PLAN). CONTROL SHALL COMMENCE WITH GRADING AND BE MAINTAINED THROUGHOUT THE PROJECT UNTIL ACCEPTANCE OF THE WORK BY THE OWNER. OWNER MAY, AT THEIR OPTION, DIRECT THE CONTRACTOR IN HIS METHODS AS DEEMED FIT TO PROTECT PROPERTY AND IMPROVEMENTS. ANY DEPOSITION OF SILT OR MUD IN NEW OR EXISTING STORM SEWERS OR SWALES SHALL BE REMOVED AFTER EACH RAIN AND AFFECTED AREA CLEANED TO THE SATISFACTION OF THE OWNER AND THE CITY OF O'FALLON.
9. CONTRACTOR SHALL PROVIDE A 20' x 40' TEMPORARY TRUCK WASH OFF AREA, CONSTRUCT PER CONSTRUCTION ENTRANCE DETAIL. CONTRACTOR SHALL PROVIDE WATER TO THE TEMPORARY WASH OFF AREA. IF ON-SITE WATER IS NOT AVAILABLE, CONTRACTOR SHALL PROVIDE A WATER TRUCK.
10. NO SLOPES SHALL BE STEEPER THAN 3:1.
11. CONTRACTOR SHALL REMOVE ALL TRASH, DEBRIS, TREES & BRUSH AND OTHER MATERIAL CREATED AS A RESULT OF THE CONSTRUCTION WORK AND THE SITE SHALL BE RETURNED TO ITS ORIGINAL CONDITION.
12. ALL PERIMETER LANDSCAPED AREAS SHALL BE GRASS COVERED.

GENTEMANN MANOR II SOUTH GRADING AND DRAINAGE PLAN 5 MARCH 2007 REVISED: 18 MAY 2007 AS-BUILT: 5 MAY 2008



OWNER: GENTEMANN MANOR II, L.P., P.O. BOX 7688, COLUMBIA, MO 65205

ZONING NOTE: R-4 (APARTMENT HOUSE DISTRICT) WITH SENIOR OVERLAY DISTRICT

PROPERTY DESCRIPTION: GENTEMANN MANOR LOT 1 PART OF THE NORTHWEST QUARTER OF SECTION 30 T47N R3E O'FALLON, ST. CHARLES COUNTY, MISSOURI

FLOOD PLAIN NOTE: THIS PROPERTY IS LOCATED IN ZONE "X" AREAS DETERMINED TO BE OUTSIDE 500-YEAR FLOOD PLAIN, AS SHOWN BY FLOOD INSURANCE RATE MAP NUMBER 29183C0240 E, DATED AUGUST 2 1996.

GRADING NOTES

- 1. THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF THE VARIOUS UTILITY COMPANIES, AND WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THE INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE CONTRACTOR MUST CALL THE APPROPRIATE UTILITY COMPANIES AT LEAST 72 HOURS BEFORE ANY EXCAVATION TO REQUEST EXACT FIELD LOCATION OF UTILITIES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS.
2. CONSTRUCTION SHALL COMPLY WITH ALL APPLICABLE GOVERNING CODES AND BE CONSTRUCTED TO SAME.
3. ALL STORM SEWER PIPES AND INLETS SHALL MEET HEAVY DUTY TRAFFIC (HS20) LOADING AND BE INSTALLED ACCORDINGLY.
4. PROVIDE 5/8" DIAMETER TRASH BAR FOR ALL SIDE OPENING INLETS.
5. CONNECTION AT ALL SANITARY AND STORM SEWER STRUCTURES SHALL BE MADE WITH A-LOCK JOINTS, OR APPROVED EQUAL.
6. BRICK SHALL NOT BE USED IN THE CONSTRUCTION OF SANITARY OR STORM SEWER STRUCTURES. CONTRACTOR SHALL USE BRICK STRUCTURES UNLESS OTHERWISE NOTED AND APPROVED BY THE CITY OF O'FALLON.
7. HDPE PIPE SHALL BE ADS N-12WT WATER TIGHT (TO MEET ASTM F1417 WATER TIGHT FIELD TEST), SMOOTH INTERIOR PIPE OR APPROVED EQUAL, TO MEET THE REQUIREMENT OF CITY OF O'FALLON FOR GASKETED O-RING TYPE PIPE CONNECTION. INSTALLATION SHALL FOLLOW THE "EMBEDMENT OF PLASTIC STORM SEWERS PIPE" DETAIL.
8. REINFORCED CONCRETE PIPE (RCP) SHALL BE INSTALLED PER THE "EMBEDMENT OF RCP STORM SEWER PIPE" DETAIL WITH GASKETED O-RING TYPE PIPE CONNECTIONS. PIPE CLASS SHALL BE APPROPRIATE TO DEPTH AND BEDDING MATERIAL AS SHOWN IN SCHEDULE.
9. BUILDING PAD AND PARKING AREAS SHALL BE PROOF-ROLLED WITH A FULLY LOADED TANDEM AXLE DUMP TRUCK TO IDENTIFY ANY SOFT OR UNSUITABLE AREAS. PRIOR TO BASE ROCK PLACEMENT, THE PROOF-ROLL SHALL BE OBSERVED BY A GEOTECHNICAL ENGINEER OF THIS FIRM. AREAS IDENTIFIED AS UNSUITABLE SHALL BE OVER EXCAVATED AND RECONSTRUCTED WITH ENGINEERED FILL.
10. PVC PIPE MAY BE USED IN LIEU OF HDPE FOR DIAMETERS LESS THAN 15". PVC PIPE SHALL BE SDR 35 OR GREATER, AS REQUIRED BY DEPTH.
11. CONTRACTOR SHALL ADJUST ALL GRATES, MANHOLES, VALVE BOXES, ETC. TO MATCH FINISH GRADES, AS REQUIRED.
12. ALL STORM STRUCTURES SHALL HAVE A SMOOTH UNIFORM POURED MORTAR INVERT FROM INVERT IN TO INVERT OUT.
13. ALL STORM SEWER MANHOLES IN PAVED AREAS SHALL BE FLUSH WITH PAVEMENT, AND SHALL HAVE TRAFFIC BEARING RING & COVERS. MANHOLES IN UNPAVED AREAS SHALL BE FLUSH WITH FINISH GRADE. LIDS SHALL BE LABELED "STORM SEWER". TOP OF BOXES SHALL BE SLOPED TO MATCH PAVEMENT GRADE.
14. CONTRACTOR SHALL ASSURE POSITIVE DRAINAGE AWAY FROM BUILDINGS FOR ALL NATURAL AND PAVED AREAS.
15. ALL SITES USED FOR IMPORTING OR EXPORTING OF FILL MATERIAL SHALL HAVE AN ACTIVE MISSOURI DEPARTMENT OF NATURAL RESOURCES LAND DISTURBANCE PERMIT.
16. ALL FILL PLACED UNDER PROPOSED STORM AND SANITARY SEWER, PROPOSED ROADS, AND/OR PAVED AREAS SHALL BE COMPACTED TO 90% OF MAXIMUM DRY DENSITY AS DETERMINED BY THE MODIFIED AASHTO T-180 COMPACTION TEST OR 95% OF MAXIMUM DENSITY AS DETERMINED BY THE STANDARD PROCTOR TEST AASHTO T-99. ALL FILL PLACED IN PROPOSED ROADS SHALL BE COMPACTED FROM THE BOTTOM OF THE FILL UP. ALL TESTS SHALL BE VERIFIED BY THE GEOTECHNICAL ENGINEER CONCURRENT WITH GRADING AND BACKFILLING OPERATIONS. MOISTURE CONTENT SHALL BE WITHIN THE RANGE OF THE OPTIMUM MOISTURE CONTENT FOR EACH GIVEN TEST AS SPECIFIED BY THE GEOTECHNICAL ENGINEER. PROCTOR TEST RESULTS SHALL BE SUBMITTED TO THE CITY OF O'FALLON PRIOR TO FILL PLACEMENT. PROOF ROLLING MAY BE REQUIRED TO VERIFY SOIL STABILITY AT THE DISCRETION OF THE CITY OF O'FALLON.
17. CONTRACTOR SHALL REMOVE ALL TRASH AND DEBRIS, TREES AND BRUSH, AND OTHER MATERIAL CREATED AS A RESULT OF CONSTRUCTION. MATERIAL SHALL BE 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 IN THE GRADING PLANS AND DOCUMENTED BY THE SOILS ENGINEER.
18. ENGINEERED FILL SHOULD BE FREE OF FROZEN SOIL, ORGANICS, RUBBISH, LARGE ROCKS, WOOD, OR OTHER DELETERIOUS MATERIAL. COHESIVE FILLS SHOULD BE UNIFORMLY COMPACTED TO AT LEAST 98 PERCENT WITHIN THE BUILDING PAD AND BE WITHIN -2 TO +2 PERCENT OF OPTIMUM MOISTURE CONTENT AS DESCRIBED BY ASTM D698. GRANULAR FILLS SHOULD BE UNIFORMLY COMPACTED TO AT LEAST 98 PERCENT WITHIN THE BUILDING PAD AND 95 PERCENT IN ALL OTHER AREAS, OF THE "STANDARD" MAXIMUM DRY DENSITY AND SHOULD BE DRIER THAN +4 PERCENT OF OPTIMUM MOISTURE CONTENT. PLACE FILL MATERIAL IN LOOSE LIFTS NOT TO EXCEED 8 INCHES IN THICKNESS.
19. IMPORTED SOILS PROPOSED FOR USE AS FILL OR BACKFILL SHOULD BE REVIEWED AND ANALYZED BY THE GEOTECHNICAL ENGINEER PRIOR TO USE ON SITE. SOIL CLASSIFIED AS MH, OH, OL, OR PT (HIGH PLASTICITY SOILS AND ORGANIC SOILS) BY THE UNIFIED SOIL CLASSIFICATION SYSTEM (ASTM D2487) SHOULD NOT BE IMPORTED FOR USE AS ENGINEERED FILL. SUITABLE IMPORTED MATERIALS FOR GENERAL SITE FILL ARE THOSE THAT CLASSIFY AS GW, GM, GC, SC, AND CL IN ACCORDANCE WITH ASTM D2487. MATERIALS CLASSIFIED AS CH SHOULD BE APPROVED BY THE GEOTECHNICAL ENGINEER PRIOR TO THEIR IMPORTATION AND ONLY USED OUTSIDE THE BUILDING PAD AT DEPTHS BELOW THE UPPER 2 FEET OF SUBGRADE. SUBJECT TO FINAL DESIGN REQUIREMENTS FOR WALL BACKFILL, SUITABLE IMPORTED MATERIALS FOR WALL AND TRENCH BACKFILL ARE THOSE THAT CLASSIFY AS GW, GP, GM, GC, SM, SW, SP, SC, AND CL IN ACCORDANCE WITH ASTM D2487.
20. FILLS PLACED IN AREAS WHERE THE NATURAL SLOPE IS GREATER THAN 5H:1V (HORIZONTAL TO VERTICAL) SHOULD BE BENCHED INTO THE EXISTING GRADE TO REDUCE THE POTENTIAL FOR SLIPPAGE BETWEEN EXISTING SLOPES AND ENGINEERED FILL. BENCHES SHOULD BE LEVEL AND WIDE ENOUGH TO ACCOMMODATE COMPACTION AND EARTH MOVING EQUIPMENT.
21. FILL AND SUBGRADE CONSTRUCTION SHOULD NOT BE STARTED ON FOUNDATION SOIL PARTIALLY COMPLETED FILL OR SUBGRADES THAT CONTAIN FROST OR ICE. FILL SHOULD NOT BE CONSTRUCTED OF FROZEN SOIL. FROZEN SOIL SHOULD BE REMOVED PRIOR TO PLACING FILL MATERIAL.
22. AFTER STRIPPING AND GRUBBING OPERATIONS ARE COMPLETED AND PRIOR TO FILL PLACEMENT, AREAS TO BE FILLED SHALL BE PROOF ROLLED USING A LOADED TANDEM AXLE DUMP TRUCK TO IDENTIFY SOFT AND UNSUITABLE AREAS. PER THE DIRECTION OF THE GEOTECHNICAL ENGINEER AND THE CITY OF O'FALLON, SOFT MATERIAL MAY BE MOISTURE CONDITIONED AND REUSED AS ENGINEERED FILL, UNSUITABLE AND DELETERIOUS MATERIAL SHALL BE REMOVED FROM SITE.
23. ALL NEW UTILITY TRENCHES SHOULD BE BACKFILLED IN ACCORDANCE WITH APPROPRIATE CONTROLLED ENGINEERED FILL SPECIFICATIONS.
24. FIELD DENSITY TESTS SHOULD BE CONDUCTED IN ACCORDANCE WITH ASTM D2922 AND D3017 (INCLUDING METHODS) OR ASTM D1556 (SHANK CONE METHOD). DENSITY TESTS SHOULD BE PERFORMED AT THE RATE OF ONE TEST PER 2,500 SQUARE FEET PER LIFT WITHIN THE BUILDING AND 10,000 SQUARE FEET PER LIFT BENEATH PAVEMENTS, SIDEWALKS, AND OTHER POTENTIAL STRUCTURAL AREAS WITH A MINIMUM OF 3 TESTS PER LIFT AND ONE TEST PER 150 LINEAL FEET PER LIFT FOR FOUNDATION, TRENCH AND WALL BACKFILL.
25. FILL AND SUBGRADE CONSTRUCTION SHOULD NOT BE STARTED ON FOUNDATION SOIL PARTIALLY COMPLETED FILL, OR SUBGRADES THAT CONTAIN FROST OR ICE. FILL SHOULD NOT BE CONSTRUCTED OF FROZEN SOIL. FROZEN SOIL SHOULD BE REMOVED PRIOR TO PLACING FILL MATERIAL.

BENCH MARK

BM - CUT "A" IN CONCRETE SIDEWALK EAST OF BUILDING A-1, BY OTHERS. ELEVATION=593.83
ENGINEERING SURVEYS & SERVICES UTILIZED EXISTING CONTROL ESTABLISHED BY LDC INCORPORATED. THE BENCHMARK PROVIDED FOR THIS CONTROL, AS TAKEN FROM THE ALTA/ACSM LAND TITLE SURVEY FOR GENTEMANN MANOR LOT 1 PREPARED JANUARY 1, 2005, IS AS FOLLOWS:
BENCHMARKS PROJECT BENCHMARK: STANDARD DISK STAMPED D 149 1935 2.3 MILES WEST OF O'FALLON ALONG THE WABASH RAILROAD, 42 FEET SOUTHWEST OF A PRIVATE ROAD CROSSING, 25 FEET WEST OF A GATE. EL: 590.82 (NGVD 29) SITE BENCHMARK: CROSS CUT IN BOLT AT BASE OF THE RAILROAD SIGNAL AT THE SOUTHEAST CORNER OF GENTEMANN ROAD AND THE WABASH RAILROAD EL=576.14 (617.67 NGVD 29) TO OBTAIN U.S.G.S. ELEVATIONS FOR THIS SITE ADD 41.73 FEET.

LEGEND

Legend table mapping symbols to features: PROPERTY LINE, SANITARY SEWER LINE, STORM SEWER LINE, WATER LINE, FENCE, DRAINAGE SWALE, LIGHT STANDARD, UNDERGROUND ROOF DRAIN, WATER VALVE, FIRE HYDRANT, CLEANOUT, HIGH DENSITY POLYETHYLENE PIPE, POLYVINYL CHLORIDE PIPE, TOP OF WALL, IRON, EXISTING CONTOUR, FINISH CONTOUR, FINISH ELEVATION, EROSION CONTROL BARRIER, DIVERSION BERM, PROPOSED STORM SEWER LINE, PROPOSED FIRE HYDRANT & VALVE, STORM SEWER DESIGNATION, WATER TIGHT HDPE, FINISHED GROUND.

SURVEY CONTROL POINTS

Table with 5 columns: POINT NUMBER, NORTH, EAST, ELEVATION, DESCRIPTION. Rows include CP1 (100.00, 600.00, 593.19, DRILL HOLE CUT "+") and CP2 (365.06, 600.00, 593.83).

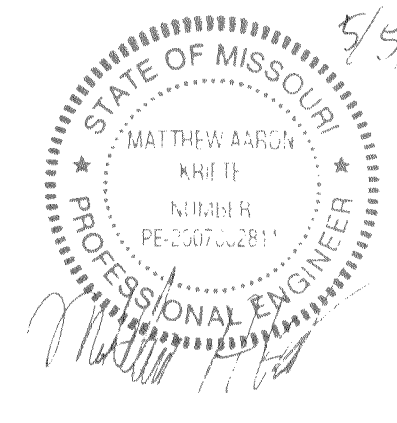
UTILITY NOTES

- WATER: ALLIANCE WATER RESOURCES CITY OF O'FALLON CONTACT: 636-281-2858
ELECTRIC: AMEREN UE CONTACT: MIKE JAMES 636-639-8235
GAS: AMEREN UE CONTACT: MIKE JAMES 636-639-8235
TELEPHONE: CENTURYTEL CONTACT: CARL OWENS 636-382-7392
SANITARY SEWER: ALLIANCE WATER RESOURCES CITY OF O'FALLON CONTACT: 636-281-2858
STORM SEWER: ALLIANCE WATER RESOURCES CITY OF O'FALLON CONTACT: 636-281-2858
FIRE DEPARTMENT: CONTACT: ASSISTANT FIRE MARSHALL MARK MORRISON 636-272-3493

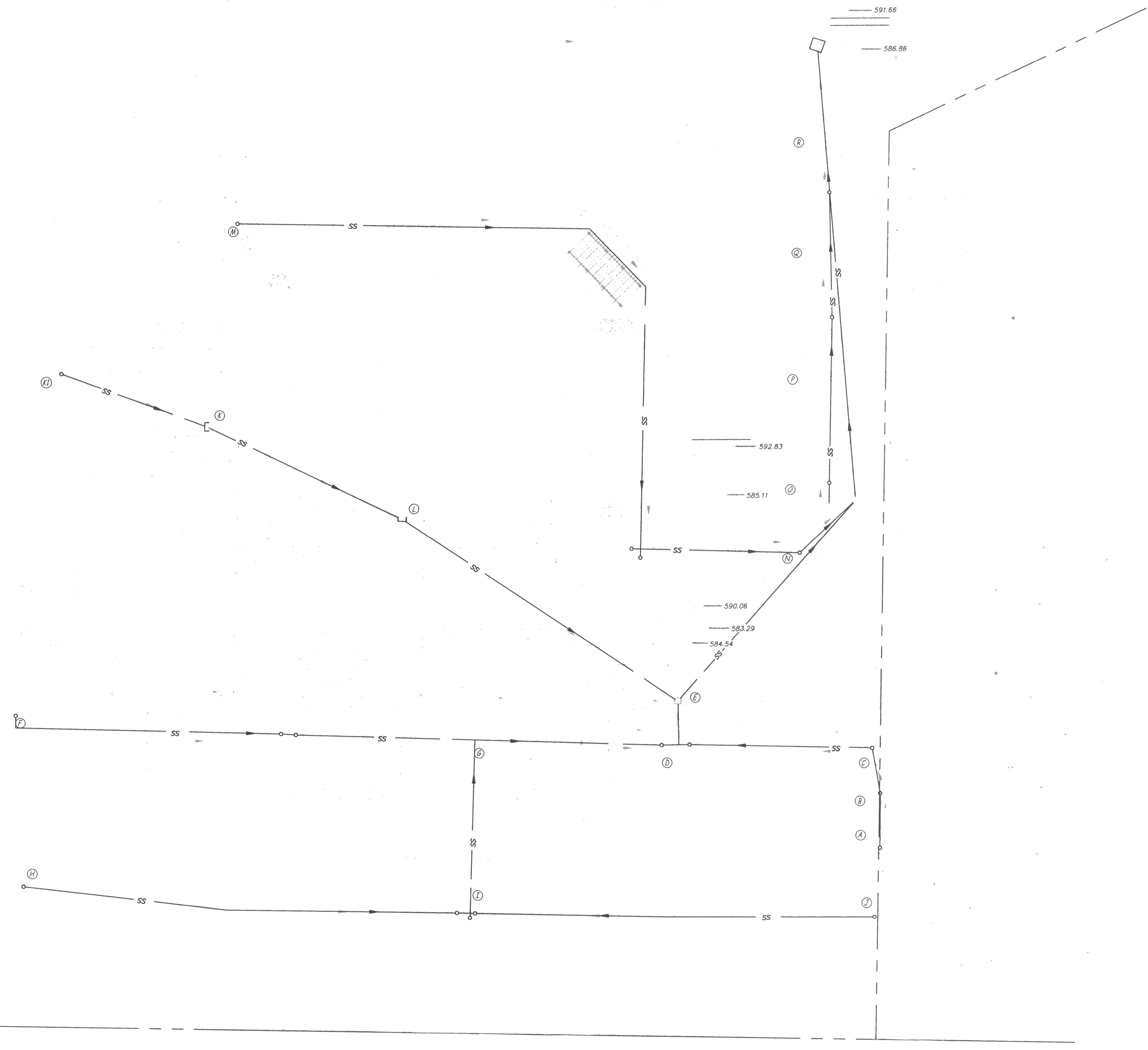
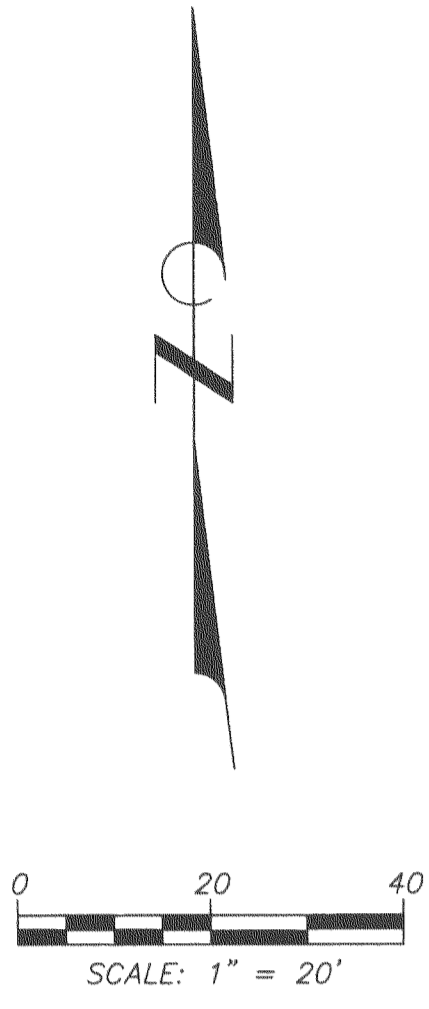
NOTE: UNDERGROUND UTILITIES ARE FROM RECORD DRAWINGS AND WERE NOT VERIFIED IN THE FIELD.

SHEET INDEX

- 1 COVER
2 STORM SEWER AS-BUILT & DRAINAGE SCHEDULE
3 STORM SEWER PROFILE
4 WATER LINE AS-BUILT
5 SANITARY SEWER AS-BUILT

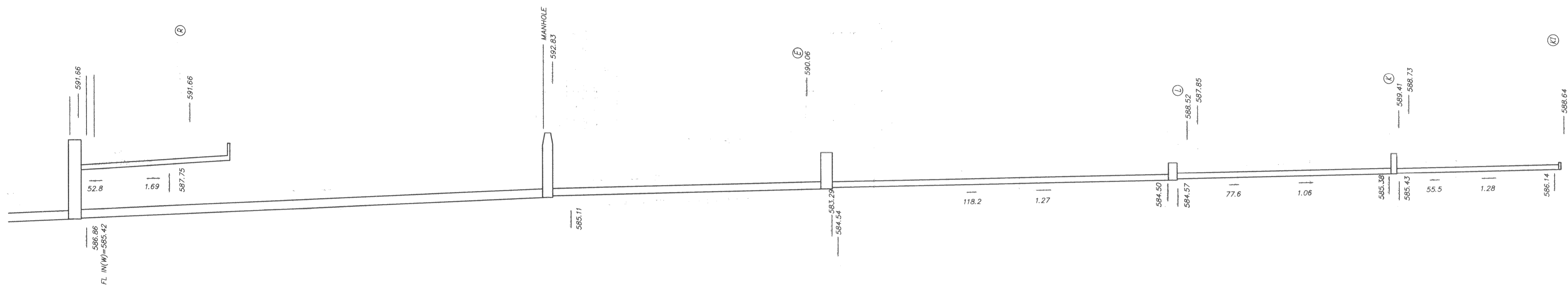


PLANNING & DEVELOPMENT #4204.04 Engineering Surveys & Services 1113 Fay Street Columbia, Missouri 573-449-2646



		PLANNING & DEVELOPMENT #4204.04 STORM SEWER AS-BUILT	
		GENTEMANN MANOR II <small>OF ALLON, ST. CHARLES COUNTY, MISSOURI</small>	
Surveyed: FEC Drawn: J.S. Checked: TO/DB		1113 Fay Street Columbia, Missouri 573 - 449 - 2646	
Scale 1" = 20'	Date 5 MARCH 2007	Job 0579/0865	Sheet 2 of 5

Revised
 25 APR 2007
 18 MAY 2007
 11 DEC 2007
 AS-BUILT
 15 FEB 2008
 5 MAY 2008



DRAINAGE SCHEDULE A THRU E

STRUCTURE I.D.	STRUCTURE TYPE/SIZE	TOP ELEV	THROAT ELEV	FL IN	FL IN	FL OUT
PIPE I.D.	PIPE LENGTH (LF)	PIPE TYPE/SIZE	SLOPE (%)			
A	NYOPLAST 10" INLINE DRAIN	599.5	590.71	-	-	588.27
A-B	20 19.5	10" PVC	9.1% 2.46%			
B	NYOPLAST 10" DRAIN BASIN	599.5	590.30	588.0	587.79	587.79
B-C	46 16.5	10" PVC	1.3% 5.64%			
C	NYOPLAST 12" DRAIN BASIN	599.5	590.76	586.6	586.86	586.86
C-D	70 69.5	10" PVC	1.0%			
D	10" TEE	-	-	COULD NOT OPEN	-	583.9
D-E	77 16.4	10" PVC	1.2%			
E	GRATE INLET C1-3	599.5	590.06	L=583.45 D=583.7		583.25
				L=583.29 D=584.54		

DRAINAGE SCHEDULE K1 THRU E

STRUCTURE I.D.	STRUCTURE TYPE/SIZE	TOP ELEV	THROAT ELEV	FL IN	FL IN	FL OUT
PIPE I.D.	PIPE LENGTH (LF)	PIPE TYPE/SIZE	SLOPE (%)			
K1	NYOPLAST 10" INLINE DRAIN	597.5	588.64	-	-	586.14
K1-K	57 55.5	10" PVC	1.1% 1.28			
K	CURB INLET C1-6	599.5	589.41	588.6	588.73	585.43
K-L	70 77.6	12" WT HDPE	1.1% 1.06			
L	CURB INLET C1-7	599.5	588.52	587.6	587.85	584.57
L-E	119 118.2	12" WT HDPE	1.0% 1.27			
E	GRATE INLET C1-3	599.5	590.06	L=583.45 D=583.7		583.25
E- A1-1	96	15" WT HDPE	1.1%	L=583.29	D=584.54	

DRAINAGE SCHEDULE F THRU D

STRUCTURE I.D.	STRUCTURE TYPE/SIZE	TOP ELEV	THROAT ELEV	FL IN	FL IN	FL OUT
PIPE I.D.	PIPE LENGTH (LF)	PIPE TYPE/SIZE	SLOPE (%)			
F	NYOPLAST 10" INLINE DRAIN	588.0	-	-	-	586.72
F-G	168	10" PVC	1.0%			
G	10" TEE	-	-	-	-	584.7
G-D	74	10" PVC	1.1%			
D	10" TEE	-	-	-	-	583.9

DRAINAGE SCHEDULE M THRU SIDE OPEN INLET A1-1

STRUCTURE I.D.	STRUCTURE TYPE/SIZE	TOP ELEV	THROAT ELEV	FL IN	FL IN	FL OUT
PIPE I.D.	PIPE LENGTH (LF)	PIPE TYPE/SIZE	SLOPE (%)			
M	C.O.	590.0	591.77	-	COULD NOT OPEN	588.3
M-N	342.5 306.5	10" PVC	1.0%			
N	NYOPLAST 12" DRAIN BASIN	590.5	591.85	586.2	-	585.87
N- A1-1	25 27.6	10" PVC	1.2%			

DRAINAGE SCHEDULE H THRU G

STRUCTURE I.D.	STRUCTURE TYPE/SIZE	TOP ELEV	THROAT ELEV	FL IN	FL IN	FL OUT
PIPE I.D.	PIPE LENGTH (LF)	PIPE TYPE/SIZE	SLOPE (%)			
H	C.O.	592.29	-	-	-	590.24
H-I	160 160.6	10" PVC	1.0%			
J	C.O.	593.03	-	-	-	590.63
J-I	145 145.4	10" PVC	1.0%			
I	10" TEE	-	-	-	-	585.3
I-G	60 61.8	10" PVC	1.0%			
G	10" TEE	-	-	-	-	584.7

DRAINAGE SCHEDULE O THRU SIDE OPEN INLET C1-5

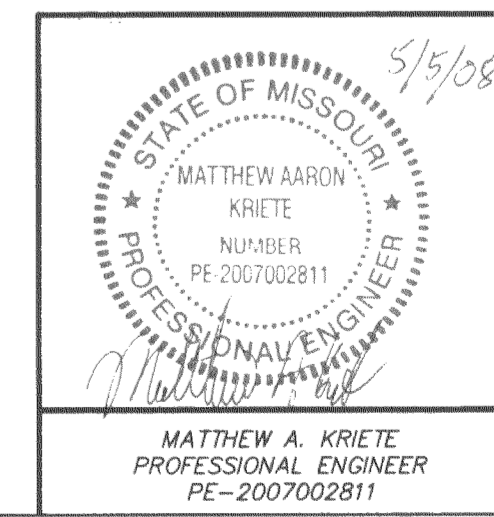
STRUCTURE I.D.	STRUCTURE TYPE/SIZE	TOP ELEV	THROAT ELEV	FL IN	FL IN	FL OUT
PIPE I.D.	PIPE LENGTH (LF)	PIPE TYPE/SIZE	SLOPE (%)			
O	-	-	-	-	-	588.0
O-P	40 8.1	10" PVC	1.0%			
P	NYOPLAST 10" INLINE DRAIN	590.5	591.53	-	-	587.6
P-Q	50 59.2	10" PVC	1.0% 0.76			
Q	NYOPLAST 10" INLINE DRAIN	590.5	591.79	-	-	587.4
Q-R	40 44.6	10" PVC	1.0% 0.52			
R	NYOPLAST 10" DRAIN BASIN	590.5	591.66	586.7	-	586.5
R- C1-5	34.2 52.8	10" PVC	1.5% 1.69			

PLANNING & DEVELOPMENT #4204.04

STORM SEWER AS-BUILT

GENTEMANN MANOR II

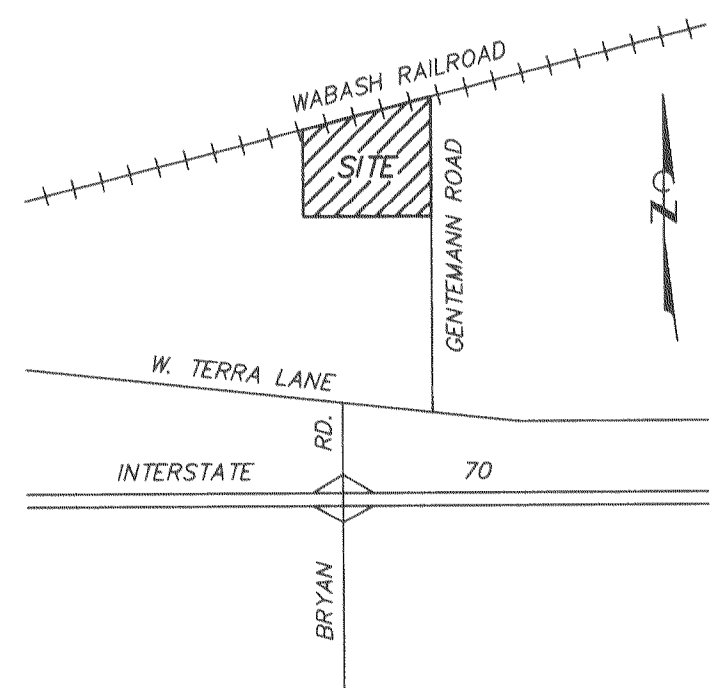
O'FALLON, ST. CHARLES COUNTY, MISSOURI



Drawn: JLS Checked: TO/DB	Scale 1" = 20' HORIZ. 1" = 10' VERT.	Date 5 MARCH 2007	Job 0579	Sheet 3 of 5
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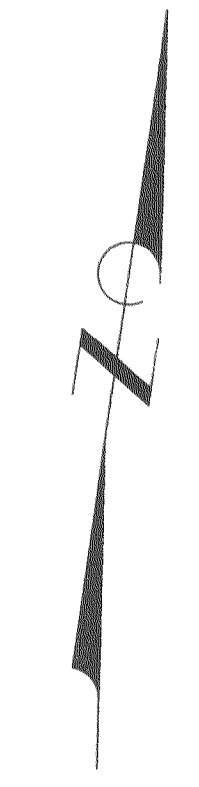
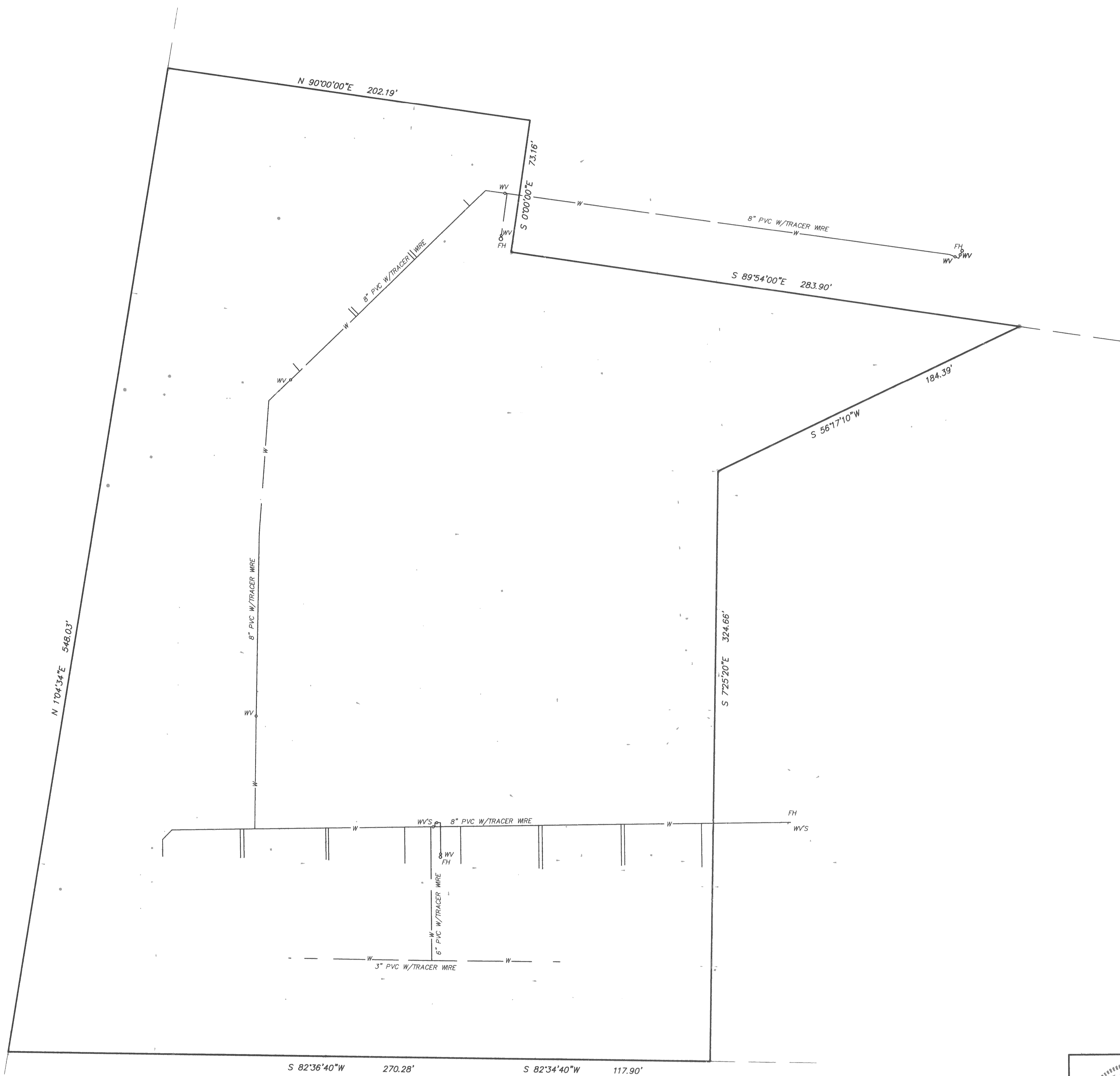
Engineering Surveys & Services
 1113 Fay Street
 Columbia, Missouri
 573 - 449 - 2646

Revised
 25 APR 2007
 AS-BUILT
 15 FEB 2008
 5 MAY 2008



SITE LOCATION MAP

NOT TO SCALE

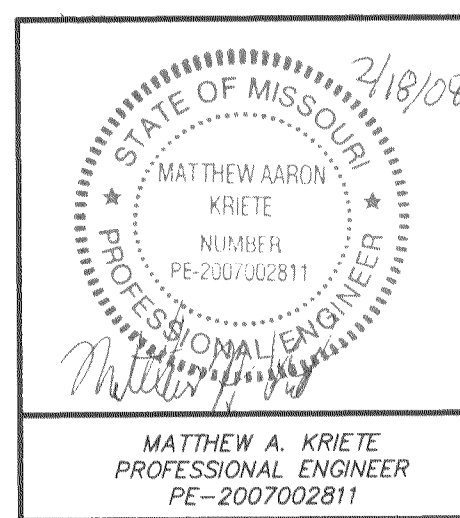


LEGEND

—W—	SANITARY SEWER LINE
—W—	STORM SEWER LINE
—W—	WATER LINE
—W—	UNDERGROUND ELECTRIC LINE
—W—	UNDERGROUND TELEPHONE LINE
—W—	ELECTRIC LINE
—W—	TELEVISION LINE
—W—	FENCE
—W—	TREE & BRUSH LINE
—W—	DRAINAGE SWALE
—W—	LIGHT STANDARD
—W—	UNDERGROUND ROOF DRAIN
—W—	ROOF DRAIN
—W—	WATER VALVE
—W—	WATER METER
—W—	FIRE HYDRANT
—W—	FIRE DEPARTMENT CONNECTION
—W—	CLEAROUT
—W—	TOP OF WALL
—W—	ELECTRIC TRANSFORMER
—W—	ELECTRIC METER
—W—	ELECTRIC PEDESTAL
—W—	TELEPHONE PEDESTAL
—W—	TELEPHONE CONDUIT
—W—	TELEPHONE MARKER
—W—	A/C
—W—	AIR CONDITIONER
—W—	CRAB APPLE
—W—	HDPPE
—W—	HIGH DENSITY POLYETHYLENE PIPE
—W—	CMP
—W—	CORRUGATED METAL PIPE
—W—	PVC
—W—	POLYVINYL CHLORIDE PIPE

UTILITY NOTES

- WATER**
ALLIANCE
CITY OF O'FALLON
CONTACT: 636-281-2858
 - ELECTRIC**
AMEREN UE
CONTACT: MIKE JAMES 636-639-8235
 - GAS**
AMEREN UE
CONTACT: MIKE JAMES 636-639-8235
 - TELEPHONE**
CENTURYTEL
CONTACT: CARL OWENS 636-382-7392
 - SANITARY SEWER**
ALLIANCE
CITY OF O'FALLON
CONTACT: 636-281-2858
 - STORM SEWER**
ALLIANCE
CITY OF O'FALLON
CONTACT: 636-281-2858
 - FIRE DEPARTMENT**
CONTACT: ASSISTANT FIRE MARSHALL
MARK MORRISON 636-272-3493
- NOTE: UNDERGROUND UTILITIES ARE FROM RECORD DRAWINGS AND WERE NOT VERIFIED IN THE FIELD.



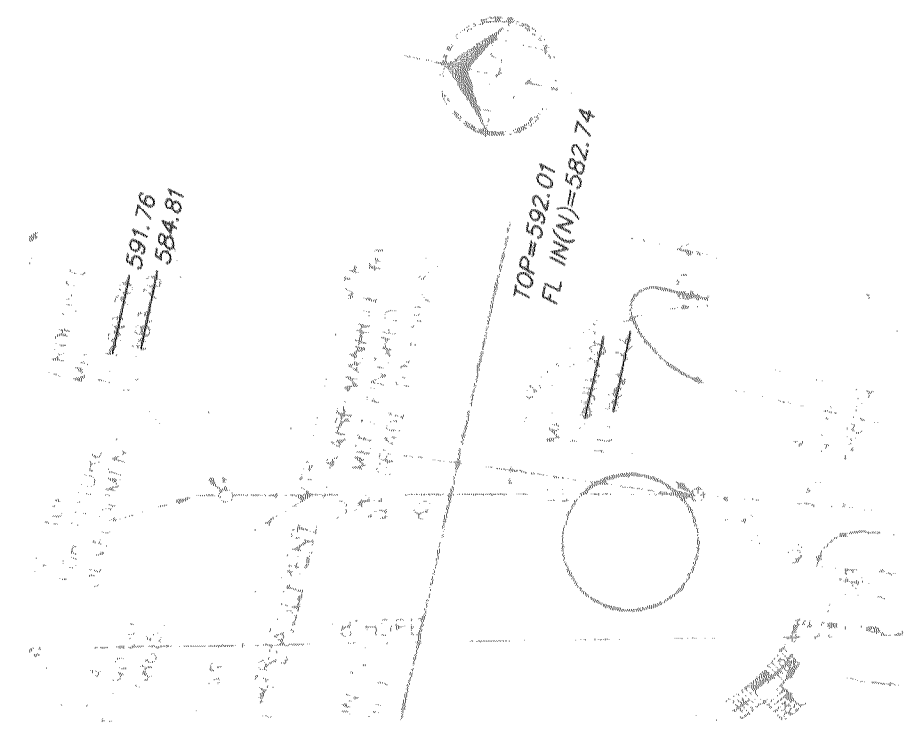
WATER LINE AS-BUILT

GENTEMANN MANOR II

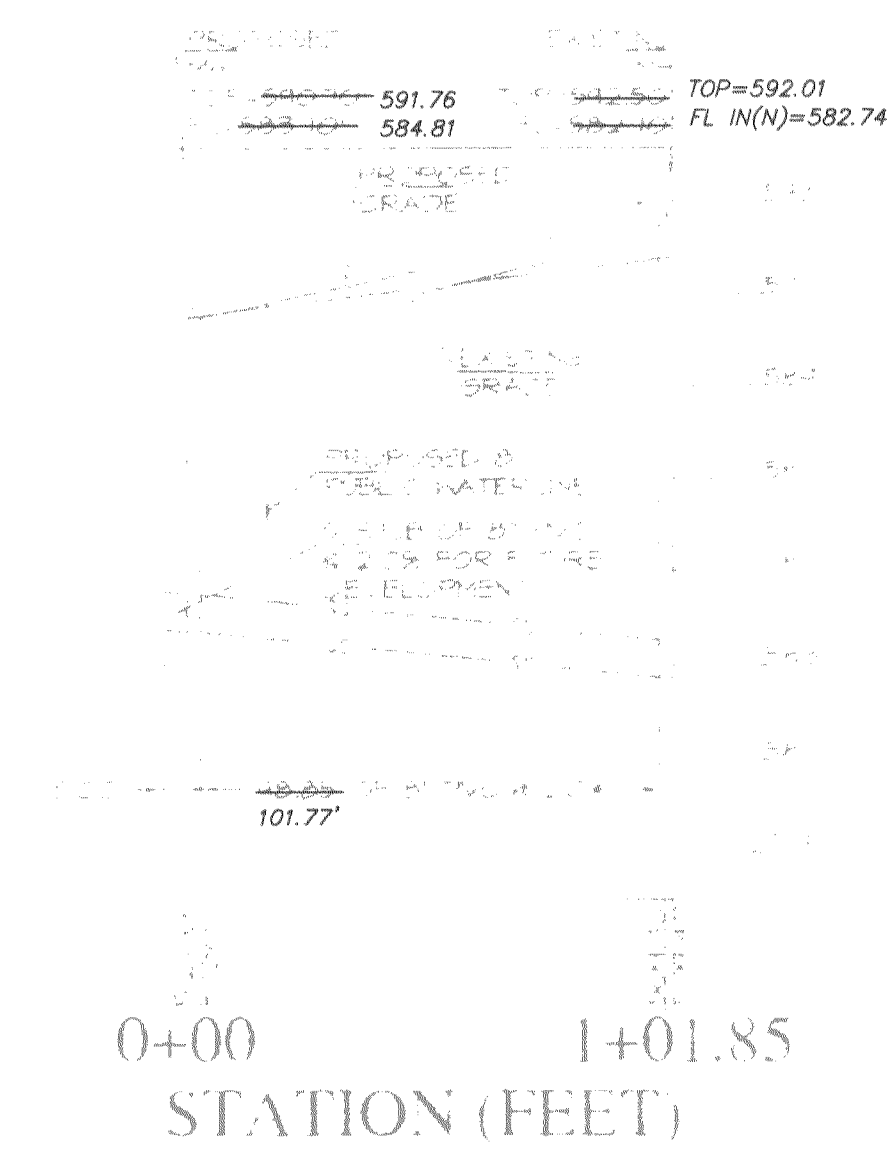
O'FALLON, ST. CHARLES COUNTY, MISSOURI

Surveyed:	2/18/08	Revised:
Drawn: JLS		
Checked: MK		

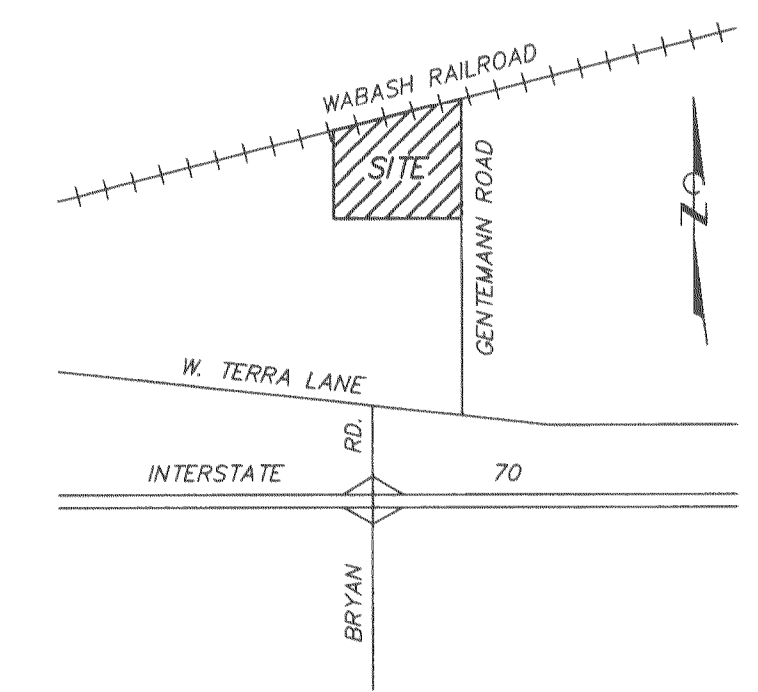
Scale: 1" = 30'	Date: 18 FEBRUARY 2008	Job: 0865	Sheet: 4 of 5
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SANITARY SEWER PLAN



SANITARY SEWER PROFILE



SITE LOCATION MAP

NOT TO SCALE

LEGEND

- C.O. SANITARY SEWER LINE
- MH WATER LINE
- HDPE CLEANOUT
- PVC MANHOLE
- HIGH DENSITY POLYETHYLENE PIPE
- POLYVINYL CHLORIDE PIPE

UTILITY NOTES

- WATER**
ALLIANCE
CITY OF O'FALLON
CONTACT: 636-281-2858
- ELECTRIC**
AMEREN UE
CONTACT: MIKE JAMES 636-639-8235
- GAS**
AMEREN UE
CONTACT: MIKE JAMES 636-639-8235
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ALLIANCE
CITY OF O'FALLON
CONTACT: 636-281-2858
- STORM SEWER**
ALLIANCE
CITY OF O'FALLON
CONTACT: 636-281-2858
- FIRE DEPARTMENT**
CONTACT: ASSISTANT FIRE MARSHALL
MARK MORRISON 636-272-3493

NOTE: UNDERGROUND UTILITIES ARE FROM RECORD DRAWINGS AND WERE NOT VERIFIED IN THE FIELD.

		SANITARY SEWER AS-BUILT			
		GENTEMANN MANOR II			
Drawn: JLS Checked: MK		O'FALLON, ST. CHARLES COUNTY, MISSOURI		Revised 	
		Engineering Surveys & Services 1113 Fay Street Columbia, Missouri 573 - 449 - 2646			
MATTHEW A. KRIETE PROFESSIONAL ENGINEER PE-2007002811		Scale 1" = 40'	Date 18 FEBRUARY 2008	Job 0865	Sheet 5 of 5