

IMPROVEMENT PLANS SIGMUND PLACE

A PART OF FRACTIONAL SECTIONS 12 AND 13,
TOWNSHIP 47 NORTH, RANGE 2 EAST,
CITY OF ST. PAUL, ST. CHARLES COUNTY, MISSOURI

GRADING NOTES

- A Geotechnical Engineer shall be employed by the owner and be on site during grading operations. All soils tests shall be verified by the Geotechnical Engineer and City of St. Paul concurrent with the grading and backfilling operations.
- The grading contractor shall perform a complete grading and backfilling 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 and City of St. Paul.
- The Contractor shall notify the Soil Engineer and City of St. Paul 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.
- A settlement control plan that includes monitored and maintained settlement control basins and geotextile basins should be implemented as soon as possible. No graded area is to be allowed to remain bare even the winter without being seeded and mulched. Care should be exercised to prevent soil from compacting adjacent property and adding an existing downstream storm drainage system.
- Soft soil in the bottom and banks of any existing or former ponds, ditches or tributaries should be removed, spread out and permitted to dry sufficiently to be used as fill. None of this material should be placed in proposed right-of-way locations or in 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 masonry structures. The unusable material shall be properly disposed of off-site. Topsoil and grass in the fill areas shall be thoroughly discing prior to the placement of any fill. The Soil Engineer and the City of St. Paul shall approve the discing operation.
- Compaction equipment shall consist of tandem rollers, pneumatic-tired rollers, vibratory rollers, or high speed treads that drive rollers acceptable to the Soil Engineer and the City of St. Paul. The roller shall be designed so as to avoid the creation of a layered fill without proper blending of successive fill layers.
- The Soil 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 and the City of St. Paul at regular intervals.
- The Soil Engineer shall notify the Contractor and the City of St. Paul of rejection of a lift of fill or portion thereof. The Contractor shall rework the rejected portion of fill and obtain notification from the Soil 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 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 Soil Engineer and the City of St. Paul. 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 Soil 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 3 percent above the optimum moisture content.
- The surface of the fill shall be finished so that it will not impound water. If at the end of a day 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.
- Fill and backfill should be compacted to the criteria specified in the following table:

CATEGORY	MINIMUM PERCENT COMPACTION
Fill in building areas below footings	80%
Fill under slabs, walks, and pavement	90%
Fill other than building areas	95%
Natural sub-grade	88%
Pavement sub-grade	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 maximum moisture content if fill is deeper than 10 feet.

WATER LINE NOTES

ALWAYS KEEP THE WATER MAIN ON EASEMENT

- Water main should be located 5' behind the curb, as not to interfere with other utility locations.
- All water mains should be 8 inches in diameter, or larger. The pipe should meet the City of O'Fallon Fire Protection District specifications. All water mains of PVC material shall be certified by NSF and listed in NSF Standard 61. NSF stands for NSF International, which is an agency that certifies materials, such as pipe, valves, etc. for use in potable water systems among other things. Standard 61 is the (ANSI/NSF Standard 61) is a listing of certified drinking water system components. The Missouri DNR requires that product which comes in contact with drinking water be listed in NSF Standard 61. If the pipe is NSF certified, it will have a stamp on the pipe that says "NSF-pw".
- Fire hydrants must be Mueller Steamers Centurion and painted yellow in color. All valves must be Mueller mechanical joint resilient wedge gate valve. A fire hydrant is required at the end of all dead and waterlines, including those which may be extended at a later date.
- All fire hydrants are to have valves flanged to the tee and (with a total length of 30" or less) hydrant swivel anchored to the valve. Clean 1" rock should be used to back fill above the weep holes of the fire hydrant.
- The contractor shall place all fire hydrants between 1.5 (1 1/2) feet and three feet (3') from the street curb (measured from the edge of the fire hydrant). The bury line should be set 6" higher in elevation than top of curb.
- These water bends (45°, 22 1/2°, 11 1/4°), are to be made with mechanical joint fittings using mega lugs up to 10' diameter, 12" and larger requires mega lugs and concrete blocking. Concrete not to be on nuts or bolts. Ninety degree (90°) bends are not allowed. The first slip joint, up and down stream after fittings, should be resupported per pipe manufacturer specs. Birmudex Coat Spray, shall be applied to all bolts for mechanical connections.
- Tees, 4-ways, etc. shall have concrete blocking. Concrete not to be on nuts or bolts.
- Rocky soils shall require bedding 6" under and 6" over water pipe.
- Concrete encasement required, to DNR Specification, when crossing storm or sanitary sewers. Sanitary: Vertical is 18", horizontal is 10". Storm: vertical is 12", horizontal is 3".
- Must use appropriate sized casings when crossing streets.
- Must attach coated solid core, 12-gauge tracer wire, taped to the top of the pipe. All wire must run up the outside of the PVC SDR 21 valve box and is to be tucked inside the valve box under the water lid.
- Use 3M waterproof splice kits for all splicing of tracer wire.
- Any project where fire hydrants, or valves, are over 600' apart, tracer wire with a connecting box must be installed every 600'. The connecting box will be a Coranite Scepter Telecommunications Test Station with white post and blue cap made of Lexan material.
- A chlorine test is required. It must initially test at 25 PPM, or greater, and 24 hours later 10 PPM must be present. A City Inspector must test it, and have 24 hours notice prior to that inspection. The main will be tested for CL2 every 1,000' of pipe.
- If chlorine test fails then main must be rechlorinated.
- The contractor will meter water and pay for it, or they may purchase one (1) day usage tags. Daily tags are \$25.00 per day, daily jetting tags are \$50.00 per day not to exceed five (5) days. Hydrant meters are required for all over 5 days usage requests. Hydrant meters are at Public Works and meters require a \$1,500 deposit. NOTE: All jetting requires appropriate backflow protection.
- Coliform samples should be collected every 1,200'.
- First Pressure Test: The water main must be pumped up to 150 PSI, and maintain this pressure for one hour without any drop in pressure. The City may require a higher pressure test if deemed necessary.
- Gas, water, and other underground utilities shall not conflict with the depth or horizontal location of existing and proposed sanitary and storm sewers including house laterals.
- All waterline construction shall conform to current City of Wentzville Standards and Specifications.
- The contractor shall place the "steamer" outlet of the fire hydrant toward the street.
- Back fill no debris larger than 6" in diameter.
- All creek crossings will require ductile iron pipe except when C905 is used. If less than 3' of cover, concrete encasement with riprap required.
- Hydrant distances: 600' / 300' - Residential/Commercial pending.
- Easements shall be provided for water mains, and all utilities on the record plat. See record plat for location, size, and width of easements.
- The O'Fallon Fire Protection District shall be notified at least 48 hours prior to construction of water mains for coordination and inspections.
- All open mains should be properly capped when the main is unattended for more than 4 hours. Duct tops, the end closed so it is visually seen.
- All bare castings, except service lines, shall have a casing spacer every 10' and C900 DR 17 Class 100 pipe will be required.
- All service lines under the streets are to have a 2" PVC casing installed, at a minimum of 30" depth. Larger casing may be required depending on service size requested or required. All water mains shall be buried at a depth to allow a minimum cover of 42".
- Notify the City when work stops and when the Contractor will not be continuing work. Twenty-four (24) hour notice is required notifying when work will continue.
- All water mains are to be installed in a straight line (no bends in individual pipes). A 3% deflection in joints is allowed. Bends around cul-de-sacs are to be made with 22 1/2° elbows.
- Small field changes may be made by the City Inspector. Larger changes have to be resubmitted by the Developer's Engineer for approval.
- As-built drawings must be sent to the City before the project can be considered final. (Ex: showing location changes of elbows, elevations, easements, etc.)

NOTE: 24-HOUR NOTICE REQUIRED ON ALL INSPECTIONS

GENERAL NOTES:

- OWNER/DEVELOPER: SIGMUND BROTHERS DEVELOPMENT, L.L.C.
C/O JAY SIGMUND
1265 LYDIA LANE
ST. PAUL, MISSOURI 63366
- TOTAL ACREAGE OF TRACT = 15.00 ACRES
- CURRENT ZONING OF PROPERTY IS "R-1B", PLANNED UNIT DEVELOPMENT
SETBACKS: FRONT - 50'
SIDES - 10'
REAR - 30'
- USE OF THIS PROPERTY IS TO BE SINGLE FAMILY RESIDENTIAL
- UTILITIES SERVING SITE: TELEPHONE - CENTURYTEL
ELECTRIC - GUIVRE RIVER ELEC.
WATER - CITY OF O'FALLON
- SEWAGE DISPOSAL IS TO BE PROVIDED BY PRIVATE WASTE WATER TREATMENT PLANT
- FIRE DISTRICT IS O'FALLON
- SCHOOL DISTRICT IS FORT ZUMWALT
- THE STREET WILL BE 42 FOOT WIDE PRIVATE EASEMENT WITH 22 FOOT WIDE ASPHALT PAVEMENT.
- A SIGN SHALL BE CONSTRUCTED AT THE ENTRANCE TO THE SUBDIVISION WHICH SHALL STATE: "PRIVATE STREETS MAINTAINED BY PROPERTY OWNERS."
- NO DRIVEWAY ACCESS WILL BE ALLOWED ON TO HIGHWAY "P".
- AN ENTRANCE PERMIT WILL BE REQUIRED FROM MoDOT.
- THE DEVELOPER WILL COMPLY WITH THE RECOMMENDATIONS OF THE SOIL & WATER CONSERVATION SERVICE. AN EROSION PLAN WILL SUBMITTED TO THE ST. CHARLES COUNTY HIGHWAY DEPT. FOR APPROVAL.
- CONTOURS ARE FROM TOPOGRAPHIC SURVEY
- PROPOSED NUMBER OF LOTS = 15
- CONTOURS ARE FROM TOPOGRAPHIC SURVEY
- CONTOURS ARE FROM TOPOGRAPHIC SURVEY

VEGETATIVE ESTABLISHMENT FOR URBAN DEVELOPMENT SITES

APPENDIX A

SEEDING RATES:

PERMANENT:

TALL FESCUE - 30 lbs./ac.
SMOOTH BROME - 20 lbs./ac.
COMBINED - FESCUE
@ 15 lbs./ac. and BROME @ 10 lbs./ac/

TEMPORARY:

WHEAT OR RYE - 150 lbs./ac. (3.5 lbs. per 1,000 square feet)
OATS - 120 lbs./ac/ (2.75 lbs. per 1,000 square feet)

SEEDING PERIODS:

FESCUE OR BROME - MARCH 1 TO JUNE 1
AUGUST 1 TO OCTOBER 1

WHEAT OR RYE - MARCH 15 TO NOVEMBER 1
OATS - MARCH 15 TO SEPTEMBER 15

MULCH RATES: 100 lbs. per 1,000 square feet (4,356 lbs. per acre)

FERTILIZER RATES:

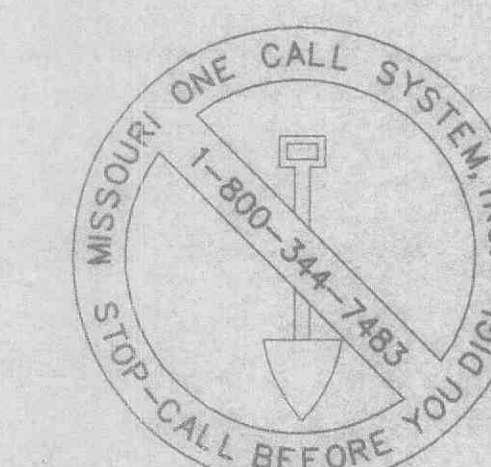
NITROGEN 30 lbs./ac.
PHOSPHATE 30 lbs./ac.
POTASSIUM 30 lbs./ac.
LIME 500 lbs./ac. ENM*

*ENM= EFFECTIVE NEUTRALIZING MATERIAL AS PER STATE EVALUATION OF QUARRIED ROCK.

SANITARY SEWER NOTES

- Sewer mains are to be at least 8" PVC with A SDR35 rating.
 - Metropolitan Sewer District Specifications are to be followed, unless otherwise directed by the City.
 - On new construction and sewer taps, as-built location of laterals must be provided to the City.
 - Final Testing: See Standard Testing Requirements for sanitary sewers and manholes.
 - Brick shall not be used on sanitary manholes.
 - All sanitary sewer manholes shall be waterproofed on the exterior in accordance with the Missouri D.N.R. Specification 10CSR-8, 120(7) (E).
 - All sanitary sewer construction shall conform to current County of St. Charles Sewer District Standards and Specifications.
 - All pipes shall have positive drainage through manholes. No flat base structures are allowed. All terminal manholes shall have positive drainage.
 - All trench backfill under paved areas shall be 1" clean (minus rock may be used with written approval by the Street Superintendent), granular backfill, water jetted, and all trench backfill may be earth material (free of large clods or stones, nothing over a 6" diameter) and shall be water jetted, inspected and approved by the City of St. Paul.
 - All sewer tops built without elevations furnished by the Engineer will be the responsibility of the sewer contractor.
 - Easements shall be provided for storm sewers, sanitary sewers, and all utilities on the record plat. See record plat for location, size, and width of easements.
 - All drop sewer lines are to be ductile iron for the first 20', upstream from the manhole.
 - All drop manholes are to be 48", waterprooofed. All double drop manholes are to be 60" water proofed.
 - 42" manholes/waterprooofed are used for 8" sewers only.
 - All sewer mains 20" in depth are to be C900PVC.
 - Small field changes may be made by the City Inspector. Larger changes have to be resubmitted to the City Engineer for approval by the Developer's engineering company.
 - As-built drawings must be sent to the City before the project can be turned in as completed.
- I ASSUME FULL RESPONSIBILITY AS TO THE PERFORMANCE OF THE GRADING OPERATION AND I WILL PROVIDE ASSURANCE THAT ALL PROPERTIES AND COUNTY ROADS WILL BE ADEQUATELY PROTECTED

SIGMUND BROTHERS, L.L.C.
OWNER/DEVELOPER



RECEIVED
AUG 16 2006

LANDMARK SURVEYING & ENGINEERING, INC.
802 E. MAIN WENTZVILLE, MO. 63385
PHONE NO. 636-332-9190 636-327-5853
FAX. NO. 636-332-9285

COVER SHEET

DRAWN BY: T.WHITE	DATE: 7/10/06	SHEET 1 OF 4
CHECKED BY: DWW	DATE:	
REVISIONS BY:	DATE:	
FILENAME: Sheet 1 - Cover Sheet		

SHEET INDEX:

- SHEET 1 - COVER SHEET
- SHEET 2 - FLAT PLAN & GRADING PLAN
- SHEET 3 - PROFILE SHEET
- SHEET 4 - DETAIL SHEET
- ST1 - PREDEVELOPMENT DRAINAGE PLAN
- ST2 - DEVELOPED DRAINAGE PLAN

BENCHMARK - ROUTE "P" RIGHT-OF-WAY PLANS BM 109B --- "O" IN
OPEN ON FIRE HYDRANT, 28.00 FEET LEFT EDGE OF PAVEMENT ROUTE "P",
46.00 FEET WEST OF EDGE OF PAVEMENT OF ROYAL OAKS DRIVE.
ELEVATION = 542.59 (N.G.V.D. 1988)