

COMMERCIAL

GENERAL NOTES

- GN #1 Driveway locations shall not interfere with the sidewalk handicap ramps, or curb inlet sumps
GN #2 Sidewalks, curb ramps, ramps 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.
GN #3 Truncated domes for curb ramps located in public right of way shall meet ADA requirements and shall be constructed using red pre cast truncated domes per pavement details.
GN #4 Any proposed pavilions or playground areas will need a separate permit from the Building Division.
GN #5 The Contractor is responsible to call Missouri One Call and The City of O'Fallon for the location of utilities.
GN #6 All proposed utilities and/or utility relocations shall be located underground.
GN #7 All proposed fencing requires a separate permit through the Building Division.
GN #8 All construction operations and work zone traffic control within the right of way will follow MoDOT or M.U.T.C.D. standards whichever is more stringent.
GN #9 All free standing signs shall be located a minimum of ten (10) feet away from any right of way line and/or property line and a minimum of three (3) feet from the back of curbing or sidewalk.
GN #10 All subdivision identification or directional sign(s) must have the locations and sizes approved and permitted separately through the Planning and Development Division.
GN #11 Materials such as trees, organic debris, rubble, foundations and other deleterious material that are not to be reused, shall be removed from the site and disposed of in compliance with all applicable laws and regulations.
GN #12 Twenty-four (24) hours prior to starting any of the work covered by the above plans and after approval thereof, the developer shall make arrangements with the Construction Inspection Office to provide for inspection of the work, sufficient in the opinion of the City Engineer, to assure compliance with the plans and specifications as approved.
GN #13 The City Engineer or their duly authorized representative shall make all necessary inspections of City infrastructure, escrow items or infrastructure located on the approved plans.

Erosion Control Notes

- EN #1 The Permittee shall assume complete responsibility for controlling all siltation and erosion of the project area. The Permittee 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).
EN #2 All erosion control systems are to be inspected and corrected weekly, especially within 48 hours of any rain storm resulting in one-half inch of rain or more.
EN #3 Erosion control devices (silt fence, sediment basin, etc.) shall be in accordance with St. Charles County Soil and Water Conservation District Erosion and Sediment Control guidelines.
EN #4 This development is required to provide long term post construction BMP's such as: low impact design, source control and treatment controls that protects water quality and controls runoff to the maximum extent practical in compliance with Phase II Illicit Storm Water Discharge Guidelines.
EN #5 Graded areas shall be seeded and mulched (strawed) within 14 days of stopping land disturbance activities. Unless it can be shown to the City Engineer that weather conditions are not favorable, vegetative growth is to be established within 6 weeks of stopping grading work on the project.

Grading Notes

- GRN #1 Developer must supply City construction inspectors with an Engineer's soils report prior to and during site grading. The soils report will be required to contain the following information on soil test curves (Proctor reports) for projects within the City:
1. Maximum dry density.
2. Optimum moisture content.
3. Maximum and minimum allowable moisture content.
4. Curve must be plotted 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-1157) or from a minimum of 95% compaction and above as determined by the "Standard Proctor Test AASHTO T-99, Method C" (A.S.T.M.-D-698).
5. Curve must have at least 5 density points with moisture content and sample locations listed on document.
6. Specific gravity.
7. Natural moisture content.
8. Liquid limit.
9. Plastic limit.
Be advised that if this information is not provided to the City's Construction Inspector, the City will not allow grading or construction activities to proceed on any project site.
GRN #2 All fill placed in areas other than proposed storm sewers, sanitary sewers, proposed roads, and paved areas shall be compacted from the bottom of the fill up in 8" lifts and compacted to 90% maximum density as determined by Modified AASHTO T-180 compaction test or 95% of maximum of the density as determined by the Standard Proctor Test AASHTO T-99.
GRN #3 The surface of the fill shall be finished so it will not impound water.
GRN #4 All sediment and detention basins are to be constructed during the initial phase of the grading operation or in accordance with the approved SWPPP.
GRN #5 When grading operations are complete or suspended for more than 14 days, permanent grass must be established at sufficient density to provide erosion control on site.
GRN #6 No slopes shall exceed 3 (horizontal): 1 (vertical) unless otherwise approved by the soils report and specifically located on the plans and approved by the City Engineer.
GRN #7 All low places whether on site or off shall be graded to provide drainage with temporary ditches.
GRN #8 All existing wells on site shall be capped per DNR standards.

Grading Notes Continued

- GRN #10 All trench back fills under paved areas shall be granular back fill, and compacted mechanically.
a) Depth, Trench back fills less than 8 feet deep shall be probed to a depth extending half the depth of the trench back fill but not greater than 8 feet.
b) Equipment, The jetting probe shall be a metal pipe with an interior diameter of 1.5 to 2 inches.
c) Method, Jetting shall be performed from the lowest surface topographic point and proceed toward the highest point, and from the bottom of the trench back fill toward the surface.
d) Surface Bridging, The contractor shall identify the locations of the surface bridging (the tendency for the upper surface to crust and arch over the trench rather than collapse and consolidate during the jetting process).
GRN #11 Site grading.
a. Within City right-of-way. Material is to be placed in eight (8) inch to twelve (12) inch loose lifts and compacted per the approved compaction requirements.
b. Outside of City right-of-way. Material is to be placed in eight (8) inch to twelve (12) inch loose lifts and compacted per the approved compaction requirements.

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.
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.
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.
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.
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.
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.
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.
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.

Water Notes

- WN #1 Fire hydrants shall be a maximum of 600' apart.
WN #2 Coordinate with the water company on the location of water meters.
WN #3 All water main must have a minimum of 42" of cover.
WN #4 Provide water valves to isolate the system.
WN #5 All water mains shall be class 200 SDR 21 or equal with locator/tracer wires
WN #6 DISINFECTING:
Disinfecting shall be accomplished by placing sufficient hypo chlorite granule (HTH) in each section of pipe to achieve a chlorine residual in the pipeline, upon initial filling, of 50 mg/L (PPM).
WN #7 PRESSURE TESTING:
Immediately following disinfection, the piping shall be pumped to a pressure (at the lowest point in the project) of 150 psi or higher where the working pressure is higher than 150 PSI as determined by the City.
WN #8 All tops for valves, meters, and manholes are to be constructed to within 1 inch (0.08") of finish grade.

Water Notes

- WN #10 BACTERIOLOGICAL TESTING:
After satisfactory disinfection and pressure testing, a sample shall be taken by the contractor in the presence of a City representative and submitted to a laboratory approved by the Missouri Department of Natural Resources and the City for bacteriological analysis.
A second sample shall be taken in a like manner and submitted for analysis.
The two samples taken on consecutive days, a minimum of 24 hours apart, must be found to be "safe" by the testing laboratory, and copies of the test results must be supplied to the City.

Roadway Notes

- RN #1 All paving (public and private) to be in accordance with 2006 St. Charles County Standards and Specifications except as modified by the City of O'Fallon ordinances.
RN #2 If the intersecting road does not have a curb, then the curb on the new entrance shall begin 10' from the edge of the existing road.
RN #3 Provide 6" of concrete over 4" of MoDot type 1 or type 5 aggregate rock or asphalt equivalent for minor residential streets per City Code 405.370.
RN #4 Multi-use trail (when required) shall have a minimum of 3" Type "C" Asphalt over 4" aggregate base per City requirements.
RN #5 Type C (BP-1) Compaction requirements shall be 98% minimum density according to St. Charles Co. Standard Specifications.
RN #6 Provide pavement striping at any point where the multi-use trail crosses existing or proposed pavement.
RN #7 All street stub-outs over 250' in length will require a temporary turnaround.
RN #8 All sub grade in cut or fill will need to conform to the City of O'Fallon Compaction requirements.
RN #9 Material Testing And Frequency. Materials for construction shall be tested and inspected per the appropriate ASTM code or at the City Engineer's discretion.
1. Concrete.
a. Cylinders/compressive strength.
b. Percent air and temperature.
c. Slump.
d. If concrete is batched from more than one (1) plant, then the aforementioned guidelines will be applicable to each plant.
2. Sub grade and base.
a. Proof roll as described in Section 405.210(B).
b. One (1) compaction test per two hundred fifty (250) feet of mainline paving, three (3) tests per intersection, five (5) tests within cul-de-sacs and one (1) test per repair slab.
c. Gradation test for sub base material.
3. Asphalt.
a. One (1) set of compaction tests per two hundred fifty (250) feet of mainline.
b. One (1) bulk density test per paving operation.
RN #10 Approval Of Sub grade And Base (Sub base). The City Engineer or representative shall approve the sub grade before any base is placed thereon and shall approve the base before concrete or surface course is placed.
RN #11 In all fill areas in the roadways, soil tests shall be submitted and approved by the City Engineer for each foot of fill and at least one (1) test and an average of one (1) test within every two hundred fifty (250) feet.
RN #12 No traffic will be allowed on new concrete pavement until it has cured for seven (7) days and it reaches three thousand five hundred (3,500) psi within 28 days.
RN #13 Prior to placement of aggregate base material on sub grade and prior to placement of pavement on base material, the sub grade and base must be proof-rolled with a fully loaded (ten (10) ton load) tandem truck or equivalent tire vehicle with one (1) pass down each driving lane no faster than three (3) miles per hour.
RN #14 Sub grade and base beneath pavements shall be compacted to St. Charles County Highway Department specifications.
RN #15 The entire width and length will conform to line, grade and cross section shown on the plans or as established by the engineer.
RN #16 Utility Work Prior To Base Construction. No base course work may proceed on any street until all utility excavations (storm and sanitary sewers, water, gas, electric, etc.) have been properly back filled with granular material, crushed stone or gravel mechanically tamped in ten (10) inch lifts.
RN #17 Equipment calibration.
a. Air meter--weekly.
b. Cylinder compression--annually by independent calibration service.
c. Batch scales--monthly.
d. Nuclear testing devices--every six (6) months.
e. Proctor equipment--every six (6) months.
f. Slump cone--monthly.
RN #18 All permanent traffic control will be per M.U.T.C.D. or MoDot standards.
RN #19 All traffic signals, street signs, sign posts, back and bracket arms shall be painted black using Carboline Rust Bond Penetrating Sealer SG and Carboline 133 HB paint (or equivalent as approved by City of O'Fallon and MoDOT).

Flood plain Information

- FP #1 A flood plain development application from the City is required for any work within the flood plain limits.

Retaining Walls: Terraced and Vertical

- RW #1 A permit is required for all retaining walls that are 48 inches or taller in height, measured from the top of the footing to the top of the wall or for walls that support a surcharge load or that alters the channelized drainage of any lot or drainage area.
RW #2 Retaining walls will not be allowed in public right-of-way without written approval from the City Engineer.
RW #3 Any retaining wall more than thirty (30) inches tall which supports a walking surface that is within two (2) feet of the wall will require a guard on the retaining wall.
RW #4 Retaining walls that alter the channelled drainage of any lot or drainage area shall not be constructed without prior approval and permitting from the City of O'Fallon Engineering Department regardless of the height of the wall.
RW #5 See section 405.275 of the City code for additional design requirements.

ST. LOUIS RV SALES

ST. CHARLES ENGINEERING & SURVEYING, INC.
800 S. FIFTH STREET, SUITE 202
ST. CHARLES, MO 63001
TEL: (636) 847-0607
FAX: (636) 847-2448

ENGINEER SIGNATURE BLOCK



PREPARED FOR: MISSION HILLS DEVELOPMENT
225 N. HWY 67 FLORISSANT, MO, 63001
CONTACT: GEMM TRAVERS
(314) 830-2730

P+Z No.
Approval Date
City No.
Page No.

120146 IMPROVEMENT PLANS

City of O'Fallon Commercial Notes