

City of O'Fallon – Engineering Department

100 North Main Street
O'Fallon, Missouri 63366
www.ofallon.mo.us
636.379.5556



Residential Construction Site Plan Application

Permit applications are now submitted online through the O'Fallon Portal, called the O'Fallon Permitting, Licensing, and Enforcement portal (OPLE). This portal allows you to apply for permits, schedule inspections, pay for permits, and view your permitting information realtime online.

<http://www.ofallon.mo.us/engineering>

The portal can be viewed from any browser on any device connected to the

This type of permit is a **Development Application**, not a Permit as the description indicates.

If you have not tried the portal before, please visit the site and click on the 'Account Login' button. Under the area to input the login credentials, select "FORGOT YOUR USERNAME OR PASSWORD" and your login credentials will be e-mailed to you.

Below is the remaining checklist that is still required to be adhered to.

Application Fee: Two percent (2%) of the approved estimated cost of improvements for the development as reviewed by the Engineering Department and due prior to plan approval.

Submittal Fee: (**New in 2016) Refer to the municipal code Chapter 4 (Notes and Appendixes), specifically Appendix B Schedule of Fees, Costs and Expenses. A fifty dollar (\$50) per page (capped at \$4,500) submittal fee (for the first submittal only) shall be made. The submittal fee comes out of the above application fee.

Review Fee: (**New in 2016) Refer to the municipal code Chapter 4 (Notes and Appendixes), specifically Appendix B Schedule of Fees, Costs and Expenses. The first and second reviews of the site plans have no charge. Each additional review is two hundred dollars (\$200). Review fees for subsequent submittals may be waived if the developer meets with City staff to discuss comments.

After approval of the applicable site plan, preliminary plat or area plan and prior to City Council approval of the record plat, construction plans prepared by an engineer for the subdivision of all, or a specified stage, of the tract shall be submitted to the City Engineer. If substantive changes are to be made after approval of the construction plans, the City Engineer shall require revised plans to be submitted for approval.

Staff will conduct a comprehensive review of the applicant's submission of three (3) sets of plans and provide a listing of any items that will need to be corrected, modified, or amended in order to meet the City of O'Fallon standards and specifications as outline in Chapter 405: Subdivision and Land Development, of the O'Fallon Municipal Code. The *Residential Construction Site Plans* will only be approved once all outstanding items have been addressed including the recording of any off-site easements or off-site Right of Way dedications to the satisfaction of the Engineering Department. Approvals that are required by other Municipal, County or State agencies which have jurisdiction in the area shall provide written confirmation of their approvals to the City prior to Final Approval of the Construction Plans by the City of O'Fallon. **In all cases first submittal must include the required sets of Construction Plans along with the *Residential Construction Site Plan Application* with original signatures and a completed checklist or it will be rejected.**

The application shall be accompanied by the following information:

- Provide an estimated cost of improvements for the development to be approved. "*Improvements*" shall include any structural, material or physical change incident to servicing or furnishing facilities for the site, such as, but not limited to, the removal of trees and other vegetative cover, altering the natural or existing grade, siltation control, sediment basins, revegetation of the site, the installation of streets, curbs and gutters, installation and removal of temporary turnarounds, necessary offsite roadway improvements, traffic signals, traffic control signs, street name signs, street lights, sidewalks and handicap ramps adjacent to common ground areas, multi-purpose trails, any on-site and off-site water mains and appurtenances, proposed lift stations, force mains, access roads, sanitary sewer mains, wyes, manholes and any other necessary items to complete the sanitary system, storm sewer mains, catch inlets, culverts, bridges, outfall structures, detention facilities, lakes, waterways, canals, street trees adjacent to common ground, landscaping within common ground areas and any other improvements required or deemed necessary with the approved *Construction Site Plan*.
- This cost shall be estimated using the unit cost as published and updated by the City of O'Fallon. The attached schedule of unit prices is to be used when possible. Items not in the schedule will be estimated by the Consulting Engineer and reviewed and approved by the City.

The construction of all subdivision improvements shall be completed within two (2) years of the City Engineer's approval of the construction plans. Time extensions may be granted by the Community Development Department for those developments showing good cause as to why the improvements have not been completed. If construction under the approved construction plan is to continue beyond the two (2) year period, the developer must request an extension of the approved plan and provide for extending the escrow or other surety on the project prior to the expiration of the plan, otherwise work on the project must cease. Any request for an extension under this Section that is denied by City staff can be appealed to the Planning and Zoning Commission. The developer may request a period of construction longer than two (2) years with the initial approval at the Planning and Zoning Commission meeting by providing a suitable explanation for the request. On projects with an extended construction period, suitable escrows must be provided for the extended period. If construction is

not actively pursued during the course of the extended period of construction approval (beyond the initial two (2) year period), the City may cancel the extension with thirty (30) days written notice to the developer. Any cancelled extension under this Section may be appealed to the Planning and Zoning Commission.

The following information is required for all *Residential Construction Site Plan* submittals for approval. The required information may be combined for presentation on one (1) or more drawings or maps. The City Engineer may request that the information be presented on drawings or maps in addition to those submitted in the interest of clarity, speed and efficiency in the review process. Below is a listing of items that are to be addressed on all *Residential Construction Site Plan* submittals to the Engineering Division for review.

CHECKLIST

(In the space provided, indicate which Sheet the item is located)

General Requirements

- The construction plan shall be any scale from 1 inch = 10 feet through 1 inch = 100 feet, so long as the scale is an increment of ten (10) feet and is sufficiently clear in reflecting details of the proposed construction. Construction plans shall be prepared on exhibits twenty-three and one-half (23½) inch by thirty-four and one-half (34½) inch with north arrow and scale indicated. The site plan or title page shall be used as the cover sheet for the construction plan.
- The submittal shall include all general notes and specifications, site plan(s), grading plan(s) with existing and proposed contours, water plan(s) and drainage area map(s) showing acreage of existing drainage areas to existing discharge points of the site and proposed drainage areas with acreage to each detention basin(s) and all details necessary for construction. Include profile sheets for streets, storm sewers and sanitary sewers.
- Prior to Construction Plan approval, provide copies of approval letters or necessary permits from all responsible reviewing agencies including, but not limited to, the appropriate fire protection district, school district, water supply district, sanitary sewer district, MoDOT, Army Corps of Engineers and/or Missouri Department of Natural Resources.
- Prior to Construction Plan approval, provide a recorded copy of all required off-site easements necessary to cover sanitary sewers, storm sewers, water mains, detention facilities or any other utility for this development.
- Provide right-of-way warranty deeds required with this development.
- Provide a copy of any cross access easements required with this development.
- All plans, details and reports shall be sealed, signed with original signature (not stamped) and dated by a Registered Professional Engineer. (Per MO Econ. Dev. Requirement)

General Construction Plan Notes

- Provide a location map of the site on the cover sheet with north arrow and scale indicated.
- Add notes stating the development phase area, number of proposed lots and building setback information.
- Provide the reference benchmark and site benchmark that is used on the Cover Sheet. The benchmarks used to tie in elevation information shall be on U.S.G.S. datum. The site benchmark shall be shown on the plan sheets.
- Provide the City of O’Fallon construction working hours to the plans per City Ordinance 3429 as shown in Section 500.420 of the Municipal Code of the City of O’Fallon as follows:
Construction work shall only be allowed during the following hours:
October 1 -- May 31
7:00 A.M. to 7:00 P.M. Monday—Sunday

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June 1 -- September 30

6:00 A.M. to 8:00 P.M.

Monday—Friday

7:00 A.M. to 8:00 P.M.

Saturday and Sunday

Construction work to be done outside of these hours requires prior written approval from the City Administrator or City Engineer.

- Provide tree preservation calculations.
- Provide a listing of all utility companies and contact information serving the development. The City of O'Fallon shall also be contacted for utility locates under its maintenance responsibility. For water main, sanitary sewer and storm sewer locates, contact 636-281-2858, for traffic locates, contact 636-379-5602. Contact the Engineering Division at 636-379-5556 and the Construction Inspection Division at 636-379-5596.
- Add the following statement to the general notes: City approval of the construction site plans does not mean that any building can be constructed on the lots without meeting the building setbacks as required by the Zoning Code.
- Note the appropriate F.I.R.M. panel number, flood zone and latest revision date for the property.
- Provide a list of all lots that are in the existing floodplain.
- Provide a note stating, "All proposed utilities and/or utility relocations shall be located underground."
- List the requirements and conditions of approval from the Planning and Zoning Commission on the cover sheet.
- Provide the Planning and Development Division file number and the date the plan was approved by the Planning and Zoning Commission in lower right corner of the Cover Sheet.
- Provide a note stating, "If materials such as trees, organic debris, rubble, foundations and other deleterious material are not to be reused, they shall be removed from the site and disposed of in compliance with all applicable laws and regulations." If the materials listed previously are reused, a letter from a soils engineer must clarify amount, location, depth, etc and be approved with the construction plans. 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.
- Provide a note stating, "No slopes shall exceed 3 (horizontal): 1 (vertical)."
- Provide a note stating, "All fill placed under proposed storm and sanitary sewers, proposed roads and/or paved areas shall be compacted to 90% of maximum 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 a soils engineer concurrent with grading and backfilling operations." 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.
- Provide a note stating, "Developer must supply City construction inspectors with an Engineer's soil reports prior to and during site soil testing." The soils 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.

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- Maximum and minimum allowable moisture content.
- Curve must be plotted to show density from a minimum of 90% as determined by the “Modified AASHTO T-180 Compaction Test” (A.S.T.M.-D-1157) 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 the 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.

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.

Provide a note stating, “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). Control shall commence with the clearing operations and be maintained throughout the project until acceptance of the work by the City of O’Fallon and as necessary by MoDOT. The Permittee’s responsibilities include all design and implementation as required to prevent erosion and the depositing of silt. The City of O’Fallon and as required by MoDOT may at their option direct the Permittee in his methods as deemed fit to protect property and improvements. Any depositing of silt or mud on new or existing pavement shall be removed immediately. Any depositing of silts or mud in new or existing storm sewers or swales shall be removed after each rain and affected areas cleaned to the satisfaction of the City of O’Fallon and as required by MoDOT.”

Provide a note stating, “All erosion control systems are inspected and corrected weekly, especially within 48 hours of any rainstorm resulting in one-half inch of rain or more. Any silt or debris leaving the site and affecting public rights-of-ways or storm water drainage facilities shall be cleaned up within 24 hours after the end of the storm.”

Provide a note stating, “Any existing wells and/or springs which may exist on the property must be sealed in a manner acceptable to the City of O’Fallon Construction Inspection Department and following Missouri Department of Natural Resources standards and specifications.”

Provide a note stating, “All paving to be in accordance with St. Charles County standards and specifications except as modified by the City of O’Fallon ordinances.”

Provide a note stating, “Sidewalks, curb ramps and accessible parking spaces shall be constructed in accordance with currently approved Americans with Disabilities Act Accessibility Guidelines along with the required grades, signage, specifications and construction materials. If any conflict occurs between the above information and the plans, the ADAAG guidelines shall be followed and the contractor, prior to any construction, shall notify the Project Engineer.”

Provide a note stating, “Driveway locations shall not interfere with the sidewalk handicap ramps or curb inlets.”

Provide a note stating, “Traffic control is to be per MoDOT or MUTCD whichever is more stringent.”

Provide a note stating, “All traffic signals, street signs, sign post, backs and bracket arms shall be painted black using Carboline Rustbond Penetrating Sealer SG and Carboline 133 HB paint (or equivalent as approved by the City of O’Fallon and MoDOT).

Provide a typical lot exhibit showing easement and setback requirements.

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Provide a note stating, "All onsite utility easements required for this development will be shown on the Record Plat."

- Note the estimated sanitary flow in gallons per day on the plan.
- Provide a note stating, "Connections at all sanitary or storm structures to be made with A-lock joint or equal."
- Provide a note stating, "Brick shall not be used in the construction of sanitary or storm sewer structures". Pre-cast concrete structures are to be used unless otherwise approved by the City.
- Provide a note stating, "All concrete pipes will be installed with O-ring rubber type gaskets."
- Provide a note stating, "HDPE pipe is to be N-12WT or equal and to meet ASTM F1417 water tight field test."
- Provide the Water Jetting specifications as a note as shown in Section 405.210(D).
- Provide a note stating, "A 5/8" trash bar shall be centered within the opening(s) of all curb inlets and area inlets."
- Provide a note stating, "Rip-rap shown at flared ends will be evaluated in the field by the Engineer, Contractor and City Inspector after installation for effectiveness and field modified, if necessary, to reduce erosion on and off-site."
- 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. 'Peel and stick' adhesive pads will not be allowed.

Manufacturer	Size	Adhesive	Style	Message (Part #)	Website
ACP International	3 7/8"	Epoxy	Crystal Cap	No Dumping Drains To Waterways (SD-W-CC)	www.acpinternational.com
DAS Manufacturing, Inc.	4"	Epoxy	Standard Style	No Dumping Drains To Stream (#SDS)	www.dasmanufacturing.com

- Provide a note stating, "All subdivision identification or directional sign(s) must have the locations and sizes approved and permitted separately through the Planning and Development Division."
- Provide a note stating, "Any proposed pavilions or playground areas will need a separate permit from the Building Division."
- Provide a note stating, "All proposed fencing requires a separate permit from the Planning & Development Division."

Construction Plan Requirements (Site Plan, Grading Plan, Water Plan, Drainage Area Plan)

- If the existing road does not have a curb, the new entrance curb shall begin 10' from the edge of existing pavement.
- Show the locations of all existing entrances on both sides of the street, within 300 feet of any proposed entrance.
- Show the limits of any cross access easements required for this development on the plan.
- All street stub-outs over 250' in length will require a temporary turnaround.
- Provide any construction signage required for any work proposed within the right-of-way.
- Label handicap ramps and types at all intersections.

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- Show the locations with stationing of all Type “A” joints.
- Show the locations of all proposed traffic calming within the development.
- Show proposed streetlight locations and approximate location of the conduit system (for the street lights). Pedestals, junction boxes and transformers associated with the street lights can be shown on the as-builts. Streetlights should be located at all intersections and in cul-de-sacs. Placement of street lights shall be on the extension of the property line between the curb and sidewalk a maximum of three hundred (300) feet apart.
- Show the proposed traffic control sign layout. Signs designating street names shall be placed on the top of the traffic control signs. Provide a striping plan for cross walks as necessary.
- Provide a plan showing the placement of all required trees. This includes street trees and any trees placed within common areas to fulfill the tree preservation requirements.
- Show the location of a multi-use trail (when required) on the plans.
- Provide pavement striping at any point where the multi-use trail crosses existing or proposed pavement.
- Provide the location of the temporary construction entrance and parking area.
- Provide the location of all Subdivision Identification Signs on the plans. 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 any curbing or sidewalk. All signs shall abide by the regulations for visibility at corners, including visibility corners from driveways and the street it intersects per Section 400.260 of the *O’Fallon Zoning Code*.
- Clearly label all walkout lots on the plans.
- Beginning at the existing pavement, provide a 20’ wide x 50’ long aggregate wash off area using 2” clean rock, approximately 6” deep for use during construction. If placed at points of ingress or egress, width shall not be less than full width of proposed pavement. Include a detail in the plans. Provide a note to the plans and detail, “If water is not available, a water truck will be provided.”
- If stub streets are planned for future extensions, the pavement for those streets shall be extended as close to the property line as possible to allow for grading and drainage. On-site grading easements shall be provided on the proposed lots adjacent to the stub street right-of-way to allow for future grading in conjunction with the connection of the stub street.
- Show the location and size of all existing water mains. Provide a water main layout, with size of main, tees, valves, blow-offs, etc. per City of O’Fallon specifications. City water mains shall have 42” minimum cover.
- Show the location of the nearest existing fire hydrant and any fire hydrants proposed for the development. Fire hydrant spacing shall not exceed 600’ or 300’ from any proposed building.
- Show water meter locations for sites within the City of O’Fallon Water District.
- Show the location of any existing wells, cisterns and/or springs on the property or provide a note that no wells, cisterns and/or springs exist on the property.
- Show the location of all siltation control devices (silt fences, sediment basins, etc.) following St. Charles County Soil and Water Conservation District Erosion and Sediment Control guidelines.
- All swales shall be a minimum of two (2) percent. Provide spot elevations of the swale at each property line to show

positive drainage. Flow patterns shall be shown on both the grading plan and drainage area map.

- Use the City's P.I. factors (Section 405.230) for the drainage area calculations.
- Label all bypass flows on the drainage area map. Bypass flows shall be limited to 0.25 c.f.s. maximum.
- No more than one (1) c.f.s of storm water (bypass included) may pass through an intersection.
- All storm sewers, sanitary sewers and/or water mains shall be a minimum of ten (10) feet from the front of any existing or proposed building (front building line).
- Water mains, storm sewers and sanitary sewers shall run diagonally across side yard lot lines to maximize the typical side yard easement.
- All storm sewers, sanitary sewers and water mains shall cross the pavement perpendicular to the centerline. Offsets up to 15 degrees may be considered. Pipe runs and connections under street pavement shall be the minimum needed.
- Provide clean-outs for all sanitary laterals over 100' and for all bends in the laterals.
- Provide Drainage structures in swales when surface flow exceeds three (3) cubic feet per second.
- The discharge point of all flared end sections shall be protected by rip rap or other approved means. Provide calculations showing velocity reductions.
- Provide a 20' wide access strip to the detention basin.
- Show the normal water elevation and minimum depth for all proposed lakes.
- Show the proposed high water elevations for all required storms, including 100 year low flow blocked. Provide a 20' drainage easement surrounding the design high water elevation.
- Provide emergency storm water relief swales at all low points. The swale shall be sized to carry the 15yr/20min storm with one (1) foot of freeboard to the low sill of the building.
- Provide an undisturbed drainage easement and creek bank setbacks for any existing creeks that are to remain in the development. (Ordinance #5271-Section 405.247)
- All developments are required to provide long term post construction BMP's such as; low impact design, source controls and treatment controls that protects water quality and controls run off to the maximum extent practical. (Ordinance 5082-Section 405.245) Indicate on the plans how this site will be in compliance with the Phase II Illicit Storm water discharge guidelines.
- Provide calculations for all Post Construction Best Management Practices.
- Provide a maintenance schedule for all Post Construction Best Management Practices.

Profile Requirements

- The minimum pipe size for sanitary mains shall be 8" with one (1) percent slopes. Sanitary laterals shall be a minimum of 4" with two (2) percent slopes. Sanitary sewer pipe slopes may be reduced per MSD requirements.
- The minimum requirements for storm sewers shall be 12" pipe diameter and one (1) percent pipe slope or a velocity of

three (3) feet per second.

- No flat based structures are allowed. The flow lines of incoming and outgoing storm sewers and sanitary sewers shall maintain a 0.20' drop through the structure.
- All storm sewers shall have 36" minimum cover. All sanitary sewers shall have a minimum of 42" cover.
- All structures and flared end sections shall be concrete. H.D.P.E pipe will not be allowed for detention basin outflows or final pipe run to creek discharge.
- The flow line of any flared end section draining into a lake shall be at or above the normal water elevation of the lake.
- When the sanitary main enters a drop structure, 20 feet of ductile iron pipe with granular backfill within the disturbed area below the sanitary main will be required. Drop manholes must be 48" I.D. minimum.
- 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. Provide 20 feet of ductile iron pipe where the sanitary main crosses over storm sewer lines.
- Sanitary mains at creek crossing must be concrete encased ductile iron pipe.
- Sanitary manholes built within the 100 year flood plain limits must have lock-type watertight manhole covers.
- Add rock backfill to all storm and sanitary sewers that lie within the 1:1 shear plane of the road.
- Concrete cradle or encasement shall be required when pipe slopes exceed twenty (20) percent. Pipe slopes greater than fifty (50) percent will require special approval for the design.
- Provide anti-seepage collars on the outflow pipes from all lakes.
- Show the lake depth and normal pool elevation (as necessary) and the design high water elevations of all required storms on the profile sheets.

Detail Requirements

- Provide a detail of a typical lot resubdivision for any proposed villa units.
- Provide a vegetative establishment table showing seeding, mulch and fertilizer rates and optimum seeding dates following St. Charles County Soil and Water Conservation District Erosion and Sediment Control guidelines.
- Provide details for all siltation control devices (silt fences, sediment basins, etc.) following St. Charles County Soil and Water Conservation District Erosion and Sediment Control guidelines.
- Include an enlarged entrance detail (1"=20') for all proposed intersections with existing streets. This should include spot elevations on both the centerline and edge of the intersecting road, a saw cut line, all necessary dimensions and rounding elevations. Provide a detail of the proposed pavement within the existing right-of-way. Provide sight lines, in plan and profile form, for all proposed streets intersecting with existing streets.
- The pavement depth and composition of proposed subdivision streets intersecting existing streets within the existing right-of-way shall be in accordance with the Comprehensive plan.
- Provide typical pavement sections for all types of pavement.

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- Provide a note with the concrete details stating “All non-reinforced concrete shall be 4,000 p.s.i. at 28 days.”
- Provide a note with the asphalt details stating “The asphalt surface shall be compacted to 98% maximum density.”
- Residential streets shall be a minimum of 6” P.C. concrete over 4” rock base on compacted subgrade per ordinance number 4875. This ordinance number shall be placed next to the typical roadway section.
- Provide typical pavement details, showing jointing and curbing placement and construction.
- Provide details for all proposed traffic calming within the development.
- Provide the City of O’Fallon street name identification sign placement detail.
- Provide a driveway detail showing all construction joints, including 2” expansion joints at the curb and garage ends of the driveway.
- Provide a concrete sidewalk detail with joint spacing shown.
- Provide details for handicap ramps that comply with Americans with Disabilities Act Accessibility Guidelines.
- 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 such as those manufactured by Armor Tile or approved equal.
- Provide a multi-use trail detail (when required) showing a minimum of 3” Type “C” Asphalt over a 4” aggregate base.
- Provide a temporary turnaround detail when required.
- Provide a typical yard swale detail and calculations using the 15yr/20min storm frequency.
- Provide a typical lot detail showing side and rear yard flow patterns. Slopes shall be a minimum of two (2) percent away from the building.
- Provide details for water main construction, including details for fire hydrants, valves, thrust blocks, etc. All water valve boxes shall be cast iron.
- Provide details and manufacturing specifications for H.D.P.E pipe.
- Provide a note on the detail sheets that a 5/8” trash bar shall be centered within the opening(s) of all inlets.
- Remove any reference to brick construction for manholes or inlets and pre-cast concrete inlet or manhole covers.
- Provide a detail of all proposed fences.

Additional Information Required

- Provide hydraulic calculations for all proposed storm sewers and include inlet capacities for each structure. Provide Two (2) foot of free board from the hydraulic grade line to the sill of all Area Inlets, Curb Inlets and Manhole tops.
- Include on the Hydraulic Sheet(s) and on the Construction Plans a minimum of two (2) pipe runs downstream of the proposed connection(s) to off-site storm sewers and indicate the pipe capacities of the offsite storm sewer system being connected to.

- All culverts shall meet the City of O’Fallon guidelines. Entrance control shall be checked with a minimum of two (2) feet of freeboard to the shoulder line.

Detention Requirements

- Provide detention basin calculations for the 2, 15 and 25 year 20 minute storms within the initial phase of development. Maximum ponding elevation shall be calculated using the 100 year low flow blocked. For sites located within the Belleau Creek or the Peruque Creek watersheds, the 100 year, 20 minute storm must be detained. No credit will be given for areas of the detention basin below the base flood elevation.
- Provide pre-development and post development drainage area maps, including off-site areas, with the detention calculations.
- The P.I. values and Detention Basin quantity calculations shall match the Drainage Area Plan.
- Provide a detail and hydraulic calculations for the vegetated swale in the detention basin. The swale shall be designed to hold the 2-year 20 minute storm and have a minimum 1% longitudinal slope and be lined with a permanent erosion control blanket that will allow infiltration of the storm water.
- All detention basins shall be designed to hold two years of sediment storage without jeopardizing the required detention storage and freeboard. Provide sediment storage calculations in the detention report.
- Provide a detail and hydraulic calculations for the vegetated swale in the detention basin. The swale shall be designed to hold the 2-year 20 minute storm and have a minimum 1% longitudinal slope and be lined with a permanent erosion control blanket that will allow infiltration of the storm water.
- Provide the minimum required depth and normal water elevation for all proposed lakes in the Detention Report.
- Provide three (3) cross sections, tied to the property line, through each detention basin. As-Builts will be required for all cross sections prior to final approval of the detention basin(s). Provide a detail of the outfall structure(s) on the plan and in the detention report.
- Spillway discharge for wet detention basins shall be designed to safely pass the required storms. A cross section of the spillway shall be shown on the plans with elevations of the required storms.

Floodplain Information

- Provide a completed Floodplain Development Application from the City of O’Fallon for any work proposed within the floodplain limits. A no-rise certificate signed, sealed and dated by a Missouri Registered Professional Engineer will be required prior the issuance of a Floodplain Development Permit for any activity within the Floodway.
- Provide a copy of the US Army Corps of Engineers 404 permit and Missouri Department of Natural Resources 401 permit, or provide a letter of no permit required.
- Demonstrate compliance with Article 415 of the City Code, specifically compensatory storage for any fill placed in the special flood hazard area.
- Show the proposed and existing floodplain and floodway limits with base flood elevation on the plan.
- Provide a LOMR from FEMA for any land removed from the floodplain. Any cost to the City due to public notification or letters required by FEMA, to be sent by or published by the City will be reimbursed by the developer.
-

Provide a list of any lots that will be within the floodplain after the proposed grading. An elevation certificate signed, sealed and dated by a Missouri Registered Professional Engineer will be required showing that all structures will have a lowest floor elevation a minimum of one (1) foot above the base flood elevation.

Retaining Walls

- Provide a wall on the plan view with the following information:
 - Top of wall and bottom of wall ground elevations.
 - Storm water drainage away from or around wall. Storm water shall not flow over wall.
 - Walls in excess of 6' (30" when supporting a walking surface) shall have a 4' high fence or handrail on top.
 - Existing and proposed grades.

- Provide a wall profile with the following information:
 - Top of wall and footing elevations.
 - Show the steps in the footing.
 - Location of the geogrid designated on the profile.
 - Existing and proposed grades.

- Provide details of any proposed retaining walls.

- Provide retaining wall structural calculation with a 1.5 overturn factor of safety, per IBC code, signed, sealed and dated by a Missouri Registered Professional Engineer.