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. If any
- conflict occurs between the above information and the plans, the ADAAG guidelines shall take precedence and the Trade Contractor prior to any construction shall notify the Project Engineer 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 Trade Contractor is responsible to call Missouri One Call and The City of O'Fallon for the location of utilities. Contact the City of O'Fallon at (636) 379–3814 for the location of City maintained cable for street lights and traffic signals. Call Missouri One Call at 1–800–DIG–RITE (1-800-344-7483) for all other 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. City Permits will be provided to the Trade Contractor Free of charge. 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. All signs shall abide by the regulations for visibility at comers, including comers from driveways and the street it intersects per Section 400.260 of the O'Fallon Zoning Code.
- 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. City Permits will be provided to the Trade Contractor Free of charge. 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. If the material listed previously are reused, a letter from a soil Engineer must clarify amount, location, depth. ect. and must be approved with the construction plans. Landfill tickets for such disposal shall be maintained on file by the Trade Contractor. 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.
- City Permits will be provided to the Trade Contractor Free of charge. GN #12 Twenty-four (24) hours prior to starting any of the work covered by the above plans and after approval thereof, the Trade Contractor 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. GN #14 City of O'Fallon working hours per City Ordinance 3429 as shown in Section 500.240 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 AM to 7:00 PM Monday Sunday June 1 – September 30
 - 6:00 AM to 8:00 PM Monday Friday
 - 7:00 AM to 8:00 PM Saturday Sunday

Construction work to be done outside of these hours requires prior written approval from the City Administrator or City Engineer. GN #15 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.

GN #16 All installations and construction shall conform to the approved engineering drawings. However, if the Trade Contractor chooses to make minor modifications in design and/or specifications during construction, he/she shall make such changes at his/her own risk, without any assurance that the City Engineer will approve the completed installation or construction. It shall be the responsibility of the Trade Contractor to notify the City Engineer of any changes from the approved drawings. The Trade Contractor may be required to correct the installed improvements so as to conform to the approved engineering drawings. The Trade Contractor may request a letter from the Construction Inspection Division regarding any field changes approved by the City inspectors.

GN #17 Lighting values will be reviewed on site prior to the final occupancy inspection. GN #18 Removed

GN #19 All non-reinforced concrete shall have a strength of 4,000 PSI at 28 days.

<u>Grading Notes</u>

RN # 7 All street stub-outs over 250' in length will require a temporary turnaround. GRN #1 Trade Contractor must supply City construction inspectors with an Engineer's soils report prior to and during site grading. The soils report will be required RN # 8 All sub grade in cut or fill will need to conform to the City of O'Fallon Compaction requirements to contain the following information on soil test curves (Proctor reports) for projects within the City: 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 1. Maximum dry density. discretion. The Trade Contractor's engineer shall perform the following quality control guidelines:

- 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). Proctor type must be designated on document.
- 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 density as determined by the Standard Proctor Test AASHTO T-99. Ensure the moisture content of the soil in fill areas corresponds 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 performed by the City of O'Fallon prior to the placement of fill. The City of O'Fallon
- will provide ITL testing and perform the required soil compaction curves. GRN #3 The surface of the fill shall be finished so it will not impound water. If at the end of a days work it would appear that there may be rain prior to the next working day, the surface shall be finished smooth. If the surface has been finished smooth for any reason, it shall be scarified before proceeding with the placement of succeeding lifts. Fill shall not be placed on frozen ground, nor shall filling operations continue when the temperature is such as to permit the layer under placement to freeze.
- 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. Between permanent grass seeding periods, temporary cover shall be provided according the Vegetation Establishment section on sheet C9.0. All finished grades (areas not to be disturbed by improvements) in excess of 20% slopes (5:1) shall be mulched and tacked at a rate of 100 pounds per 1000 square feet when seeded.
- 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. No known wells are currently known to exist on site.
- GRN #9 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. One (1) compaction test will be performed every two hundred fifty (250) feet along the centerline for each lift. 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. One (1) compaction test will be performed at two (2) foot vertical intervals and approximately every one thousand (1,000) cubic yards.
- GRN #10 Existing Topsoil is to be stripped and stored as directed by the geotechnical engineer and will be determined with the progression of work.
- GRN #11 Removed
- GRN #12 Removed
- (GRN #13 All Temporary and Final Grading shall provide drainage throughout the site. _____
- Erosion Control Notes
- EN #1 The Trade Contractor shall assume complete responsibility for controlling all siltation and erosion of the project area. The Trade Contractor shall use whatever means necessary to control erosion and siltation including, but not limited to, staked straw bales and/or siltation fabric fences (possible methods of control are detailed in the plan). Control shall commence with the clearing operations and be maintained throughout the project until
- acceptance of the work by City of O'Fallon. The Trade Contractor's responsibilities include all design and implementation as required to prevent erosion and the depositing of silt. The City of O'Fallon may at their option direct the Trade Contractor 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 and/or swales shall be removed after each rain and affected areas cleaned to the satisfaction of the City of O'Fallon." 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. Any silt or debris leaving the site and affecting public right of way or storm water drainage facilities shall be cleaned up
- within 24 hours after the end of the storm. 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 run off to the maximum extent practical in compliance with Phase II Illicit Storm Water Discharge Guidelines. (Ord. 5082, section 405.0245)
- 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.
- The vegetative growth established shall be sufficient to prevent erosion and the standard shall be as required by EPA and DNR. (70% coverage per square foot) Ord. 5242, Section 405.070 EN #6 SWPP inpsections will be provided and paid for by the City of O'Fallon. The Trade Contractor will be required to promptly provide all repairs and corrections at the Trade Contractors expense

Storm Sewer Notes

Sanitary 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 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

STM # 2 Brick shall not be used in the construction of storm sewer structures. Pre cast concrete structures are to be used unless otherwise approved by the City of O'Fallon. 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.

SAN # 3 Connections at all sanitary structures are to be made with A-Lock joint or equal STM # 5 Encase with concrete both sanitary and storm sewer at crossing when storm sewer is within 18 inches above sanitary sewer. Add concrete cradle SAN # 4 All sanitary laterals shall be a minimum of 4" residential, 6" commercial diameter pipe. to only RCP storm sewer and encase HDPE storm sewer when it is more than 18 inches above sanitary line. Show on profile sheet. SAN # 5 All sanitary mains shall be a minimum of 8" diameter pipe. STM # 6 The storm sewers should run diagonally through the side yards to minimize any additional utility easements required. SAN # 6 All sanitary sewer line with a slope greater than 20% will require concrete cradle or concrete collar. Sanitary line with a slope greater than 50% STM # 7 All concrete pipes will be installed with O-ring rubber type gaskets. will require a special approved design as shown on detail sheet. SAN # 7 All manholes built within the 100 year flood plain must have lock type watertight manhole covers.

Ordinances

by the City of O'Fallon.

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. All structures and flared end sections must be concrete. Manufacturing specifications must be followed and details provided for the installation of H.D.P.E. pipe. H.D.P.E. pipe will not be allowed for detention

basin outflows, final pipe run to detention basins, creek discharge or other approved means. STM #12 The discharge point of all flared end sections shall be protected by rip rap or other approved means.

SAN #13 All sanitary sewer pipe shall be SDR26 or equal. SAN #14 All sanitary sewer manholes and pipes will be tested to the following specifications. ASTM C1244, Standard testing method for Concrete Sewer STM #13 Rip rap shown at flared end sections will be evaluated in the field by the Engineer, Trade Contractor, and City Inspectors after installation for Manhole by Negative Air Pressure (Vacuum), Latest revision ASTM F1417, Standard testing method for Installation Acceptance of Plastic Gravity effectiveness and field modified, if necessary to reduce erosion on and off site. STM #14 Add compacted 1" minus rock back fill to all storm sewer that lie within the 1:1 shear plane of the road. Sewer Lines Using Low Pressure Air, Latest revision.

Water Notes

WN # 1 Fire hydrants shall be a maximum of 600' apart. Local fire district approval is required.

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. (City water mains) 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). HT. tablets will not be allowed. Following completion of the pipeline, it shall be slowly filled with water and a sample will be taken immediately and the chlorine residual must be 50 mg/L or greater. The solution shall be allowed to stand for 24 hours and a sample shall then be taken. The chlorine residual after 24 hours shall be 30 mg/L or greater. If the piping shows insufficient chlorine residuals in either test, the piping shall be re-chlorinated by the injection of hypo chlorite solution until satisfactory results are achieved. All disinfecting shall be done by the Trade Contractor. Only the testing to determine the chlorine residual will be done by the City. 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. In such cases, the pressure shall be as specified by the City and two pressure tests shall be conducted. The first test shall be with the fire hydrant auxiliary valve open and be to 150 PSI. The second test shall be with the fire hydrant auxiliary valve closed and be to the higher pressure as directed by the City. All pumping equipment and pressure gauges shall be provided by the Trade Contractor. After achieving the test pressure, the piping shall be left closed for a period of two (2) hours. At the end of this time the pressure drop shall not exceed 2 psi. In addition, if the pressure appears, in judgment of the City's representative, to be continuing to drop, the test shall be continued for another two (2) hours and if any further drops occur, the test shall be considered a failure. If the pressure test fails, the Trade Contractor will be required to find and correct the source of the leakage. If this requires draining of the pipeline, when the leakage is corrected, the pipeline must be re-disinfected and the pressure tested again until satisfactory result are achieved. Any

MDNR required dechlorination will be performed by the Trade Contractor. WN # 8 All tops for valves, meters, and manholes are to be constructed to within 1 inch (0.08') of finish grade. Grading around structure tops on slopes need to be accounted for. WN #10 BACTERIOLOGICAL TESTING:

After satisfactory disinfection and pressure testing, a sample shall be taken by the Trade 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. After 24 hours, 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. If the samples are not found to be "safe" further flushing and/or disinfection as directed by the City shall be conducted by the Trade Contractor until "safe" samples on two consecutive test days are achieved. Following successful bacteriological testing and a determination by the City that the samples are "safe", the mains may be placed into service.

<u>Roadway</u> 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 Removed RN # 4 Multi-use trail (when required) Shall have a minimum of 3" Type "C" Asphalt over 4" aaareaate 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

- 1. Concrete. a. Cylinders/compressive strength. One (1) set of four (4) cylinders within the first fifty (50) cubic yards and one (1) set per one hundred (100) cubic yards thereafter. One (1) cylinder must be tested at seven (7) days, one (1) at fourteen (14) days and two (2) at twenty-eight (28) days. If the first (1st) cylinder does not meet specifications at twenty—eight (28) days, then the second (2nd) cylinder must be held and tested at day fifty—six (56).
- b. Percent air and temperature. First (1st) truck batch each day and two (2) thereafter until a consistency is encountered. Once a consistency is encountered, then tests will be performed in conjunction with the concrete cylinders. c. Slump. First (1st) truck batch each day and two (2) thereafter until a consistency is encountered. Once a consistency is encountered, then
- tests will be performed in conjunction with the concrete cylinders. 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. One (1) set includes three (3) tests across the paved lane at the same station. 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. The sub grade and base shall be so constructed that it will be uniform in density throughout.

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. Concrete pavements shall not be approved unless it reaches a strength of four thousand (4,000) psi.Cylinders/compressive strength. One (1) set of four (4) cylinders within the first fifty (50) cubic yards and one (1) set per one hundred (100) cubic yards thereafter. One (1) cylinder must be tested at seven (7) days, one (1) at fourteen (14) days and two (2) at twenty—eight (28) days. If the first (1st) cylinder does not meet specifications at twenty—eight (28) days, then the second (2nd) cylinder must be held and tested at day fifty—six (56).

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. If soft spots are detected, or pumping, rutting or heaving occurs greater than one (1) inch at the sub grade,

the roadbed shall be considered unsatisfactory and the soil in these areas shall be remediated to the depth indicated by the Trade Contractor's testing firm and approved by a representative of the City Engineer. RN #14 Sub grade and base beneath pavements shall be compacted to St. Charles County Highway Department specifications. The moisture range shall

be determined by the Standard or Modified Proctor Density Method AASHTO T-99 and within -2/+4 percentage points of the optimum moisture content settling or washing occurs, or where hauling results in ruts or other objectionable irregularities, the Trade Contractor shall improve the

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. If any sub grade or base to the satisfaction of the City before the pavement is placed. Additional rolling or methods to verify compaction shall be at the discretion of the City Engineer. Tolerance allowed on all lines, grades and cross sections shall be plus or minus four-hundredths (+0.04) feet.

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. Utilities installed after sub arade preparation shall be bored. Compaction reauirements shall follow St. Charles County standards (2006). RN #17 Equipment calibration. The Trade Contractor's Trade Contractors and sub-Trade Contractors must have their equipment calibrated by the following minimum

standards. a. Air meter——weekly.

b. Cylinder compression—annually by independent calibration service.

RW #5 See section 405.275 of the City code for additional design requirements.

- 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. S1-1 from the M.U.T.C.D. manual will be used at all crosswalk locations accompanied with ether w16–9p or w16–7p signs RN #19 All traffic signals, street signs, sign post, backs 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).

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 channeled 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.

City of O'Fallon Standard Commercial Notes and Details – June 2010 (Edited per City Comments 3/15/16)

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. Add concrete cradle to only RCP storm sewer and encase HDPE storm sewer when it is more than 18 inches above sanitary line. Show on profile sheet. SAN #11 The sanitary sewers should run diagonally through the side yards to minimize any additional utility easements required.

SAN # 2 Brick shall not be used in the construction of sanitary sewer structures. Pre cast concrete structures are to be used unless otherwise approved

SAN #12 All sanitary sewer structures shall be waterproofed on the exterior in accordance to Missouri DNR specifications 10CSR-8.120 (7)(E).

SAN #15 Add compacted 1" minus rock back fill to all sanitary sewer and all other utilities that lie within the 1:1 shear plane of the road and between utility crossings.

