GENERAL NOTES

- 1.) ALL UTILITIES SHOWN HAVE BEEN LOCATED BY THE ENGINEER FROM AVAILABLE RECORDS. THEIR LOCATION SHOULD BE CONSIDERED APPROXIMATE. THE CONTRACTOR HAS THE RESPONSIBILITY TO NOTIFY ALL UTILITY COMPANIES, PRIOR TO CONSTRUCTION, TO HAVE EXISTING UTILITIES FIELD LOCATED, THE CONTRACTOR SHALL BE ON RECORD WITH THE MISSOURI ONE CALL SYSTEM. ALL PROPOSED UTILITIES TO BE UNDERGROUND.
- 2.) ALL ELEVATIONS ARE BASED ON BENCHMARK NOTED ON THIS SHEET. 3.) BOUNDARY AND TOPOGRAPHIC SURVEY BY MARLER SURVEYING COMPANY, INC. 4.) ALL ON-SITE MATERIALS AND METHODS OF CONSTRUCTION TO MEET THE CURRENT STANDARDS AND SPECIFICATIONS OF THE CITY OF O'FALLON
- DEPARTMENT OF PUBLIC WORKS. 5.) ALL GRADED AREAS SHALL BE PROTECTED FROM EROSION BY EROSION CONTROL DEVICES AND/OR SEEDING AND MULCHING AS REQUIRED BY
- 6.) PRIOR TO BEGINNING ANY WORK ON THE SITE, THE SUB-CONTRACTOR SHALL CONTACT THE GENERAL CONTRACTOR FOR SPECIFIC INSTRUCTIONS RELEVANT TO THE SEQUENCING OF WORK.
- 7.) GRADING CONTRACTOR SHALL INSTALL SILTATION CONTROL PRIOR TO STARTING THE GRADING. ADDITIONAL SILTATION CONTROL DEVICES SHALL BE INSTALLED AS DIRECTED BY THE CITY
- 8.) ALL FILLS AND BACKFILLS SHALL BE MADE OF SELECTED EARTH MATERIALS, FREE FROM BROKEN MASONRY, ROCK, FROZEN EARTH, RUBBISH, ORGANIC MATERIAL AND DEBRIS.
- 9.) GRADING CONTRACTOR SHALL KEEP EXISTING ROADWAYS CLEAN OF MUU AND DEBRIS AT ALL TIMES.
- 10.) PROPOSED CONTOURS SHOWN ARE FINISHED ELEVATIONS ON PAVED AREAS.
- 11.) ALL GRADING & DRAINAGE TO BE IN CONFORMANCE WITH CITY STANDARDS. 12.) DRIVE ENTRANCES ARE TO BE CONSTRUCTED IN ACCORDANCE WITH THE CITY.
- 13.) SEEDING, SODDING, MULCHING AND PLANTINGS FOR ALL DISTURBED AREAS SHALL BE SPECIFIED ON THE LANDSCAPE PLAN.
- 14.) SIDEWALKS ALONG THE ACCESSIBLE ROUTE SHALL NOT HAVE A SLOPE EXCEEDING 1'V: 20'H. SLOPES GREATER THAN 1'V: 20'H MUST BE DESIGNED AS A RAMP. SIDEWALKS TO BE CONSTRUCTED TO ADA STANDARDS
- 15.) SIDEWALKS, CURB RAMPS, RAMPS AND ACCESSIBLE PARKING SPACES SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE CURRENT APPROVED 'AMERICANS WITH DISABILITIES ACT ACCESSIBILITY GUIDELINES" (ADAAC) ALONG WITH THE REQUIRED GRADES, CONSTRUCTION MATERIALS, SPECIFICATIONS AND SIGNAGE. IF ANY CONFLICT OCCURS BETWEEN THE ADAAC GUIDELINES AND THE INFORMATION ON THE PLANS, THE ADAAC GUIDELINES SHALL TAKE PRECEDENCE AND THE CONTRACTOR SHALL NOTIFY THE PROJECT ENGINEER PRIOR TO ANY CONSTRUCTION.
- 16.) A DRAINLAYER PERMIT IS REQUIRED BY THE CITY DEPARTMENT OF PUBLIC WORKS FOR ALL PRIVATE STORM SEWERS.
- 17.) BY GRAPHIC PLOTTING ONLY, THIS PROPERTY DOES NOT LIE WITHIN ANY SPECIAL FLOOD ZONE AREAS ACCORDING TO THE FLOOD INSURANCE RATE MAP PANEL NUMBER 29183C0430 E AND COMMUNITY NUMBER 290316 (CITY OF O'FALLON) WHICH BEARS AN EFFECTIVE DATE OF AUGUST 2, 1996. THE PROPERTY LIES WITHIN UNSHADED ZONE X (AREAS DETERMINED TO BE OUTSIDE 500 YEAR FLOOD PLAIN).
- 18.) NO GRADE SHALL EXCEED 3:1 SLOPE.
- 19.) STORMWATER SHALL BE DISCHARGED AT ADEQUATE NATURAL DISCHARGE POINT. SINKHOLES ARE NOT ADEQUATE NATURAL DISCHARGE POINTS.
- 20.) ALL LANDSCAPE AREAS TO BE FILLED WITH A MINIMUM OF 6" OF TOPSOIL. 21.) ALL LANDSCAPED AREAS DISTURBED BY OFF-SITE WORK SHALL BE IMMEDIATELY SEEDED OR SODDED, AS DIRECTED BY CITY DEPARTMENT OF PUBLIC WORKS UPON COMPLETION OF WORK IN AREA AFFECTED.
- 22.) ADEQUATE TEMPORARY OFF-STREET PARKING FOR CONSTRUCTION EMPLOYEES SHALL BE PROVIDED. PARKING ON NON-SURFACED AREAS SHALL BE PROHIBITED IN ORDER TO ELIMINATE THE CONDITION WHEREBY MUD FROM CONSTRUCTION AND EMPLOYEES' VEHICLES IS TRACKED ONTO
- THE PAVEMENT CAUSING HAZARDOUS ROADWAY AND DRIVEWAY CONDITIONS 23.) ALL PUBLIC SEWER CONSTRUCTION MUST CONFORM TO 2000 M.S.D. STANDARD CONSTRUCTION SPECIFICATION & DETAILS".
- 24.) NO STEP ALLOWED AT ACCESSIBLE ENTRANCE DOORS.
- 25.) ALL ROOF TOP UNITS SHALL BE SCREENED BY A PARAPET WALL THAT EXTENDS AROUND THE PERIMETER OF THE BUILDING.
- 26.) STORM WATER DETENTION SHALL BE PROVIDED IN THE EXISTING BASIN PROVIDED BY THE WATERBURY SUBDIVISION
- 27.) ALL PAVING TO BE TO ST. CHARLES COUNTY STANDARDS EXCEPT AS MODIFIED BY THE CITY OF O'FALLON.
- 28.) THE SITE WILL BE IN COMPLIANCE WITH PHASE II ILLICIT STORM WATER DISCHARGE GUIDELINES PER ORD, 5082 (TRITON CATCH BASIN INSERTS).
- 29.) SETBACKS PER ZONING PARKING BUILDING
 - FRONT = 10' FRONT = 25' SIDE = 0SIDE REAR REAR = 0'
- 30.) ALL PROPOSED FENCING REQUIRES A SEPARATE PERMIT. 31.) ALL SIGN LOCATIONS AND SIZES MUST BE APPROVED SEPARATELY. THROUGH THE PLANNING DIVISION.
- 32.) REQUIRED INTERIOR LANDSCAPING: 6% OF 51 P.S. X 270 S.F.=826 S.F. PROVIDED INTERIOR LANDSCAPING = 1892 S.F.

= 0

33.) LIGHTING VALUES WILL BE REVIEWED ON SITE PRIOR TO THE FINAL OCCUPANCY INSPECTION. CORRECTIONS WILL NEED TO BE MADE IF NOT IN COMPLIANCE WITH CITY STANDARDS. LIGHTING ON SITE MUST BE AIMED AND SHIELDED STO THAT AMBIENT LIGHT LEVEL ON SITE DOES NOT EXCEED 0.5 FOOT CANDLES AT THE PROPERTY LINE. 34.) DENSITY CALCULATIONS

SITE COVERAGE: 33,416 s.f. (bldg & pvmt.) X 100 =82% 40,654 s.f. total site EAR. 3,056 s.f. bldg. = 0.07540,654 s.f. total site Greenspace: (includes parking lot landscape areas)

7,2381 s.f. pervious X 100 = 17.8% 40,654 s.f. total site Pavement Coverage (includes walks) X 100 = 74% 29,983 s.f. impervious

40,654 s.f. total site Building Coverage (with cooler): X 100 = 8.4%3,433 s.f.

40,654 s.f. total site PARKING CALCULATIONS

PARKING REQUIRED 1.) 20 SPACES PLUS 1 PER 100 S.F. 3,056/100 = 31 SPACES * 3,056 S.F. DOES NOT INCLUDE AREA OF COOLER

TOTAL PARKING REQUIRED = 51 SPACES REQUIRED PARKING PROVIDED 9'x19' = 48 SPACES A.D.A. = 3 SPACE

Total = 51 SPACES TOTAL BIKE PARKING REQUIRED = 4 SPACES BIKE PARKING PROVIDED = 4 SPACES

- 35.) ALL SIGN POST AND BACKS AND BRACKET ARMS SHALL BE PAINTED BLACK USING CARBOLINE RUSTBOND PENETRATING SEALER SG AND CARBOLINE 133 HB PAINT (OR EQUIVALENT AS APPROVED BY CITY AND MODOT). SIGNS DESIGNATING STREET NAME SHALL BE ON THE OPPOSITE SIDE OF THE STREET FROM TRAFFIC CONTROL SIGNS.
- 36.) TRAFFIC CONTROL IS TO BE PER MODOT OR MUTCD WHICHEVER IS MOST STRINGENT.
- 37.) TREES, ORGANIC DEBRIS, RUBBLE, FOUNDATIONS AND OTHER DELETERIOUS MATERIAL SHALL BE REMOVED FROM THE SITE AND DISPOSED IN COMPLIANCE WITH ALL APPLICABLE LAWS AND REGULATIONS. LANDFILL TICKETS FOR SUCH DISPOSAL SHALL BE MAINTAINED ON FILE BY THE DEVELOPER. BURNING ON SITE SHALL BE ALLOWED ONLY BY PERMIT FROM THE LOCAL FIRE DISTRICT, IF A BURN PIT IS PROPOSED THE LOCATION AND MITIGATION SHALL BE SHOWN ON THE GRADING PLAN AND DOCUMENTED BY THE SOILS ENGINEER.
- 38.) ALL SILTATION CONTROL DEVICES (SILT FENCES AND SEDIMENTATION BASINS) SHALL FOLLOW ST. CHARLES COUNTY SOIL AND WATER CONSERVATION DISTRICT EROSION AND SEDIMENT CONTROL GUIDELINES.
- 39.) ALL PROPOSED UTILITIES TO BE LOCATED UNDERGROUND. 40.) WORK HOURS FOR CONSTRUCTION SHALL BE BETWEEN 7 A.M. AND 7 P.M.

GRADING NOTES

- 1. Notify the City of O'Fallon Department of Public Works 48 hours prior to the commencement of grading and/or prior to the commencement of construction.
- Parking on non-surfaced areas is prohibited in order to eliminate the condition whereby mud from construction and employee vehicles is tracked onto the pavement causing hazardous roadway and driving conditions. Contractor shall keep road clear of mud and debris.
- The streets surrounding this development and any street used for construction access thereto shall be cleaned throughout
- Erosion and siltation control shall be installed prior to any grading and be maintained throughout the project until acceptance of the work by the owner and/or controlling regulatory agency and adequate vegetative growth insures no further erosion of the soil.
- 5. Additional siltation control may be required as deemed necessary by the City of O'Fallon.
- Temporary siltation control measures (structural) shall be maintained until vegetative cover is established at a sufficient density to provide erosion control on the site.
- Where natural vegetation is removed during grading, vegetation shall be reestablished in such a density as to prevent erosion.
- When clearing and/or grading operations are completed or suspended for more than 14 days, all necessary precautions shall be taken to retain soil materials on site. Protective measures may be required by the Director of Public Works. Such as permanent seeding, periodic wetting, mulching, or other suitable means.
- 9. If cut and fill operations occur during a season not favorable for immediate establishment of permanent ground cover, a fast germinating annual such as rye grasses or sudan grasses shall be utilized to retard erosion, if adequate stormwater detention and erosion control devices have not been established.
- 10. All finished grades (areas not to be disturbed by future improvement) shall be seeded/sodded.
- 11. Siltation fences shall be inspected periodically for damage and for the amount of sediment which has accumulated. Removal of sediment will be required when it reaches 1/2 the height of the siltation fence.
- 12. All trash and debris on-site, either or from construction, must be removed and properly disposed of off-site.
- 13. Any wells, cisterns and/or springs, which may exist on this property, should be located and sealed in a manner acceptable to the City of O'Fallon and the Missouri Department of Natural Resources.
- All excavations, grading or filling shall have a finished grade not to exceed a 3:1 slope (33%), unless specifically approved
- 15. Storm water pipes, outlets, and channels shall be protected by silt barriers and kept free of waste and silt at all times prior to final surface stabilization and/or paving.
- No construction parking shall be permitted on Highway K.
- 17. No excavation shall be made so close to the property line as to endanger any adjoining property of any public or private street without supporting and protecting such public or private street or property from settling, cracking or other damage.
- 18. Developer must supply city construction inspectors with soil reports prior to or during site soil testing. The soil report will be required to contain the following information
- on soil test curves (Proctor Reports):
- Maximum Dry Density Optimum Moisture Content
- Maximum and Minimum allowable moisture content Curve must be plotted to show density from a minimum of 95% compaction and above as determined by the "Modified AASHTO T-180 Compaction Test" (A.S.T.M. D-1157) or from a minimum of 100% as determined by the "Standard Proctor Test AASHTO T-99, Method C" (A.S.T.M. D-698). Proctor type
- must be designated on document . Curve must have at least 5 density points with moisture
- content and sample locations listed on document
- Specific Gravity Natural Moisture Content
- Liquid Limit Plastic Limit
- 19. Graded areas that are to remain bare for over 2 weeks shall be seeded and mulched, (DNR requirement)
- 20. All erosion control systems are to be inspected and necessary corrections made within 24 hours of any rainstorm resulting in one-half inch of rain or more.
- 21. All fill placed under proposed storm and sanitary sewer, proposed roads, and/or paved areas shall be compacted to 95% of maximum density as determined by the Modified AASHTO T-180 compaction test or 100% 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. Note that the moisture content of the soil in the 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.
- 22. The contractor shall assume complete responsibility for controlling all siltation and erosion of the project area. The 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 are detailed in the plan). Control shall commence with grading and be maintained throughout the project until acceptance of the work by the owner and/or the City of O'Fallon and/or MoDOT. The contractor's responsibilities include all design and implementation as required to prevent erosion and the depositing of silt. The owner and/or the City of O'Fallon and/or MoDOT may at their option direct the contractor in his methods as deemed fit to protect property and improvements. Any depositing of sitt or mud in new or existing povement shall be removed immediately. Any depositing of silt 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 owner and/or the City of O'Fallon and/or MoDOT.

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.

WHEAT OR RYE: 150 LBS./AC. OATS: 120 LBS./AC. 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 S.F. (4,356 LBS. PER ACREA) FERTILIZER RATES: NITROGEN 30 LBS./AC.

PHOSPHATE 30 LBS./AC POTASSIUM 30 LBS./AC. LIME 600 LBS./AC. ENM* *ENM = EFFECTIVE NEUTRALIZING MATERIAL AS PER STATE EVALUATION OF QUARRIED ROCK.

EARTHWORK NOTES

BULK CUT 315 +/- CUBIC YARD BULK FILL 810 +/- CUBIC YARD (INCLUDES 15% FOR SHRINKAGE)

THE CALCULATED EARTHWORK QUANTITIES SHOULD BE REGARDED AS AN ESTIMATE OF THE BULK MOVEMENT AND/OR REDISTRIBUTION OF SOILS FOR THE SUBJECT PROPERTY. THE CALCULATED QUANTITIES ARE INTENDED FOR GENERAL USE, AND SHOULD BE USED AS A COMPARISON WITH THE QUANTITIES CALCULATED BY THE EARTHWORK SUBCONTRACTOR. THE ENGINEER ASSUMES NO LIABILITY FOR COST OVERRUNS DUE TO EXCESS EXCAVATED MATERIALS OR FILL SHORTAGES. DISCREPANCIES BETWEEN THE ENGINEER'S CALCULATED QUANTITIES AND THE EARTHWORK SUBCONTRACTOR'S ESTIMATE SHOULD BE REPORTED TO THE ENGINEER IMMEDIATELY.

THE FARTHWORK QUANTITIES ESTIMATED FOR THE SUBJECT SITE ARE BASED UPON HORIZONTAL AND VERTICAL LOCATION OF THE IMPROVEMENTS AS PROPOSED ON THE SITE ENGINEERING PLANS PREPARED BY CIVIL ENGINEERING DESIGN CONSULTANTS, INC.

THE ENGINEER'S ESTIMATE DOES NOT INCLUDE ANY OF THE FOLLOWING ITEMS PERTAINING TO EARTHWORK QUANTITIES THAT MAY BE NECESSARY FOR COMPLETION OF THE PROJECT

- A.) MISCELLANEOUS UNDERGROUND CONDUITS AND MANHOLES B.) SEWER LINES AND WATER MAINS LESS THAN TWENTY-FOUR INCHES IN DIAMETER.
- C.) BUILDING FOOTINGS AND FOUNDATIONS D.) UTILITY AND/OR LIGHT STANDARD BASES

THE ENGINEER ASSUMES NO RESPONSIBILITY FOR THE ACTUAL SIZE OF THE FIELD EXCAVATIONS MADE FOR THE INSTALLATION OF UNDERGROUND STRUCTURES, AND THEREFORE, THE ACTUAL EARTHWORK QUANTITIES MAY VARY FROM THE THESE ESTIMATED QUANTITIES. THE ENGINEER ALSO ASSUMES NO RESPONSIBILITY FOR COSTS INCURRED DUE TO THE REMOVAL OF UNSUITABLE MATERIAL WHICH MUST BE REMOVED FROM THE SITE.

- 1.) IT IS ASSUMED THAT THE TOPSOIL, IF ANY, WILL BE REUSED ON-SITE WITHIN LANDSCAPING AREAS AND WILL NOT BE HAULED OFF.
- SUBGRADE FOR BUILDING PAD 10"
- SUBGRADE FOR ASPHALT PAVEMENT SECTIONS 12"
- 4.) ASSUMED 15% SHRINKAGE FACTOR

COTTLEVILLE FIRE PROTECTION DISTRICT NOTES

- 1. EACH FIRE HYDRANT SHALL HAVE NOT LESS THAN TWO 2 1/2 INCH OUTLETS AND ONE 4 1/2 INCH OUTLET, A 5 1/4 INCH VALVE, A 6 INCH BARREL AND SHALL BE OF THE BREAKAWAY DESIGN, FROST FREE WITH CHAIN, LEFT HAND OPEN DESIGN AND HAVE NATIONAL STANDARD THREADS.
- 2. EACH FIRE HYDRANT SHALL BE PROVIDED WITH A CONTROL VALVE IN THE HYDRANT CONNECTION SUCH THAT THE HYDRANT CAN BE REMOVED FROM SERVICE WITHOUT SHUTTING OFF WATER SUPPLY TO OTHER FIRE HYDRANTS.
- 3. IN SETTING HYDRANTS, DUE REGARD SHALL BE GIVEN TO FINAL GRADE LINE. THE CENTER OF A HOSE NOZZLE OUTLET SHALL NOT BE LESS THAN EIGHTEEN (18) INCHES ABOVE GRADE AND THE OUTLETS MUST FACE THE STREET OR ACCESS DRIVE.
- 4. THERE SHALL BE NO OBSTRUCTION, LE. PLANTINGS, BUSHES, TREES, SIGNIS, LIGHT STANDARDS, MAILBOXES, ETC. WITHIN SIX (6) FEET OF ANY FIRE HYDRANT AND/OR FIRE DEPARTMENT CONNECTION TO AN AUTOMATIC SPRINKLER SYSTEM.
- 5. A PERMIT WILL BE REQUIRED THROUGH THE COTTLEVILLE FIRE DEPARTMENT FOR THE INSTALLATION OF THE PRIVATE FIRE SERVICE MAINS.
- 6. UNDERGROUND PIPING FOR PRIVATE SERVICE MAINS SHALL BE LISTED FOR FIRE PROTECTION SERVICE AND SHALL COMPLY WITH AWWA STANDARDS. 7. ALL TEES, PLUGS, BENDS, AND HYDRANT BRANCHES SHALL BE RESTRAINED AGAINST
- MOVEMENT IN ACCORDANCE WITH SECTION 8-6 OF NFPA 24. THE FLUSHING AND TESTING OF THE UNDERGROUND PIPING, ETC. FOR PRIVATE FIRST SERVICE MAINS SHALL COMPLY WITH CHAPTER 9 OF NFPA 24 AND SHALL BE WITNESSED BY A REPRESENTATIVE FROM THE COTTLEVILLE FIRE DEPARTMENT.
- 9. PRIVATE HYDRANTS SHALL BE PAINTED ENTIRELY RED (PORTER 4119 OR EQUAL).

STORM SEWER NOTES

- 1.) ALL CONCRETE SHALL BE REINFORCED, AND CONFORM TO A.S.T.M. DESIGNATION C76-80 CLASS III UNLESS NOTED.
- 2.) ALL STORM SEWER STRUCTURES WITHIN PROJECT SITE TO BE CONSTRUCTED IN ACCORDANCE WITH THE CITY OF O'FALLON STANDARD CONSTRUCTION SPECIFICATIONS AND CITY OF O'FALLON SUBDIVISION AND LAND DEVELOPMENT REGULATIONS.
- 3,) TYPE "C" BEDDING PER CITY OF O'FALLON STANDARDS IS REQUIRED FOR PIPES IN ROCK.
- 4.) ALL TRENCHES UNDER AREAS TO BE PAVED AND UNDER EXISTING PAVING SHALL BE GRANULARLY FILLED WITH 3/4" MINUS CRUSHED LIMESTONE ONLY. BACKFILL SHALL BE PLACED IN ACCORDANCE WITH THE CITY OF O'FALLON STANDARDS AND SPECIFICATIONS AND CITY OF O'FALLON SUBDIVISION AND LAND DEVELOPMENT REGULATIONS.
- 5.) ALL TRENCH BACKFILLS UNDER PAVEMENT WITHIN THE PUBLIC RIGHT-OF-WAY SHALL BE GRANULAR BACKFILLED. TRENCH BACKFILLS UNDER PAVED AREAS, OUTSIDE OF PUBLIC RIGHT-OF-WAY SHALL BE GRANULAR BACKFILL IN LIEU OF THE EARTH BACKFILL COMPACTED TO 95 PERCENT OF THE MODIFIED AASHTO T-180 COMPACTION TEST A.S.T.M. D-1557.
- 6.) ALL BACKFILL MATERIAL SHALL BE MECHANICALLY COMPACTED TO AT LEAST 100 PERCENT OF THE MATERIAL'S STANDARD PROCTOR MAXIMUM DRY DENSITY.
- 7.) FOR SEWER PIPE (STORM, SANITARY AND COMBINED) WITH A DESIGN GRADE LESS THAN ONE PERCENT (1%), VERIFICATION OF THE PIPE GRADE WILL BE REQUIRED FOR EACH INSTALLED REACH OF SEWER, PRIOR TO ANY SURFACE RESTORATION OR INSTALLATION OF ANY SURFACE IMPROVEMENTS. THE CONTRACTOR'S FIELD SUPERVISOR WILL BE REQUIRED TO PROVIDE DAILY DOCUMENTATION VERIFYING THAT THE AS-BUILT PIPE GRADE MEETS THE DESIGN GRADE THROUGH THE SUBMITTAL OF SIGNED CUT SHEETS.
- THE SEWER CONTRACTOR SHALL BE RESPONSIBLE FOR ANY COSTS ASSOCIATED WITH THE FIELD VERIFICATION OF THE SEWER GRADE, OR REMOVAL AND REPLACEMENT OF THE SEWER PIPE OR ASSOCIATED APPURTENANCES.
- 8.) BRICK SHALL NOT BE USED IN THE CONSTRUCTION OF STORM SEWER STRUCTURES PRE-CAST CONCRETE STRUCTURES ARE TO BE USED UNLESS OTHERWISE APPROVED
- 9.) STORM SEWER INLETS SHALL BE LABELED 'NO DUMPING DRAINS TO STREAM' PER O'FALLON REQUIREMENTS. PEEL AND STICK ADHESIVE PADS WILL NOT BE ALLOWED. MARKERS AND ADHESIVE PROCEDURES SHALL BE AS APPROVED BY THE CITY. 10.) RIP-RAP SHOWN AT FLARED ENDS WILL BE EVALUATED IN THE FIELD AFTER
- INSTALLATION FOR EFFECTIVENESS AND FIELD MODIFIED IF NECESSARY TO REDUCE EROSION ON AND OFF SITE.
- 12.) CONNECTIONS AT STRUCTURES TO BE MADE WITH A-LOCK JOINT OR EQUAL. 13.) PIPE JOINTS SHALL BE GASKETED O-RING TYPE.
- 14.) ALL JETTING SHALL BE PER THE CITY OF O'FALLON REQUIREMENTS FOUND BELOW:
- A. Jetting. Granular materials and earth materials associated with new construction outside of pavements may be jetted, taking care to avoid damage to newly laid sewers. The jetting shall be performed with a probe route on not greater than 7.5-foot centers with the jetting probe centered over and parallel with the direction of the pipe. Trench widths greater than 10-feet will require multiple probes every 7.5-foot centers.
- B. Depth. Trench backfill less than 8-feet in depth shall be probed to a depth extending to half the depth of the trench backfill, but not less than 3-fee Trench backfill greater than 8—feet in depth shall be probed to half the depth of the trench backfill but not greater than 8-feet. C. Equipment. The jetting probe shall be a metal pipe with an exterior diameter of
- 1.5 to 2-inches. D. Method. Jetting shall be performed from the low surface topographic point and proceed toward the high point, and from the bottom of the trench backfill towards the surface. The flooding of each jetting probe shall be started slowly allowing slow saturation of the soil. Water is not allowed to flow away from the
- sitch without first saturating the trench. E. Surface Bridging. The contractor shall identify the locations of the surface bridging (the tendency for the upper backfill crust to arch over the trench rather than collapse and consolidate during the jetting process). The contractor shall breakdown the bridged areas using an appropriate method such as wheels or bucket of a backhoe. When the surface crust is collapsed, the void shall be backfilled with the same material used as trench backfill and re-jetted. compaction of the materials within the sunken/jetted area shall be compacted such that no further surface subsidence occurs.

DUCKETT CREEK

SANITARY SEWER NOTES

- 1.) Underground utilities have been plotted from available information and therefore location shall be considered approximate only. The verification of the location of all underground utilities, either shown or not shown on these plans, shall be the responsibility of the contractor and shall
- be located prior to any grading or construction of improvements. 2.) Gas, water and other underground utilities shall not conflict with the depth or horizontal location of existing or proposed sanitary and storm sewers, including house laterals.
- 3.) All existing site improvements disturbed, damaged or destroyed shall be repaired or replaced to closely match preconstruction conditions.
- 4.) All fill including places under proposed storm and sanitary sewer lines and paved areas including trench backfills within and off the road right-of-way shall be compacted to 95 percent of the maximum density as determined by the "Modified AASHTO T-180 Compaction Test (ASTM D1557)". All tests shall be verified by a Soils Engineer concurrent with grading and backfilling operations. The compacted fill shall be free of rutting and shall be non-yielding and non-pumping during proofrolling and compaction.
- 5.) The contractor shall prevent all storm, surface water, mud and
- onstruction debris from entering the existing sanitary sewer system. 6.) All sanitary sewer flowlines and tops built without elevations furnished by the engineer will be the responsibility of the sewer contractor.
- 7.) It is the responsibility of the contractor to adjust all sanitary sewer manholes (that are affected by the development) to finish grade. 8.) Easements shall be provided for all sanitary sewers, storm sewers and
- all utilities on the record plat. 9.) All sanitary sewer construction and materials shall conform to the
- 10.) The Duckett Creek Sanitary District shall be notified at least 48 hours prior to construction for coordination of inspection. 11.) All sanitary sewer building connections shall be designed so that the

current construction standards of Duckett Creek Sanitary District.

- minimum vertical distance from the low point of the basement to the flowline of a sanitary sewer at the corresponding building connection shall not be less than the diameter of the pipe plus the vertical distance of 2-1/2 feet.
- 12.) All sanitary sewer manholes shall be waterproofed on the exterior in accordance with Missouri Department of Natural Resources specification 10 CSR-8.120(7)(E).
- All PVC sanitary sewer pipe shall conform to the requirements of ASTM D-3034 Standard Specification for PSM Polyvinyl Chloride Sewer Pipe, SDR-35 or equal, with "clean" 1/2 inch to 1 inch granular stone bedding uniformly graded. This bedding shall extend from 4 inches below the pipe to springline of pipe. Immediate backfill over pipe shall consist of same size "clean" or " minus" stone from springline of pipe to 6 inches above the top of pipe.
- 14.) All sanitary and storm trench backfills shall be water jetted. Granular backfill will be used under pavement areas.
- 15.) All pipes shall have positive drainage through manholes. Flat invert
- structures not allowed. 16.) Epoxy coating shall be used on all sanitary sewer manholes that receive pressurized mains.
- 17.) All creek crossings shall be lined with rip-rap as directed by District inspectors.
- 18.) Brick shall not be used on sanitary sewer manholes. 19.) Existing sanitary sewer service shall not be interrupted.
- Maintain access to existing residential driveways and streets.
- 21.) Pre-manufactured adapters shall be used at all PVC to DIP
- connections. Rubber boot/Mission-type couplings will not be allowed. 22.) Any permits, licenses, easements, or approvals required to work on public or private properties or roadways are the responsibility of the
 - 23.) 'Type N' Lock-Type Cover and Locking Device (Lock-Lug) shall be used where lock-type covers are required.

BRANDON A. HARP, P.E. E-28650 CIVIL ENGINEER

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Proj. # 0812 No. Description Date Agency Submittal 09/15/08 per City, DCSD, CFPD 01/05/09

OF 9

Specification

Sheet

Planning and Development No. 9950.14 P & Z Commission Approval - August 7, 2008 City Council Approval - August 28, 2008

METAL CLEANOUT COVER AND FRAME THREADED PLUG -NEENAH R-1976 OF CLEANOUT ADAPTER -APPROVED EQUAL CONCRETE -EXPANSION METAL FRAME AND COVER TYPE CLEANOUT METAL ADJUSTABLE ADJUSTABLE HEAD TYPE CLEANOUT Duckett Creek Sanitary District on By: BSM App By: KLA

MDOB CHA

1-8-01

SEWER LATERAL



