

GENERAL NOTES:

- 1) THE UTILITIES SHOWN HEREIN WERE PLOTTED FROM AVAILABLE INFORMATION AND DO NOT NECESSARILY REFLECT THE ACTUAL EXISTENCE, NON-EXISTENCE, SIZE, TYPE OR LOCATION OF THESE OR OTHER UTILITIES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE ACTUAL LOCATION OF ALL UTILITIES, SHOWN OR NOT SHOWN, AND SAID UTILITIES SHALL BE LOCATED IN THE FIELD PRIOR TO ANY CONSTRUCTION OF IMPROVEMENTS. THESE PROVISIONS SHALL IN NO WAY ABSOLVE ANY PARTY FROM COMPLYING WITH THE UNDERGROUND FACILITY SAFETY AND DAMAGE PREVENTION ACT, CHAPTER 319 RSMo.
- 2) ALL ELEVATIONS ARE BASED ON U.S.G.S. DATUM.
- 3) BOUNDARY AND TOPOGRAPHIC SURVEY BY J.R. GRIMES CONSULTING ENGINEERS, INC.
- 4) ALL MATERIALS AND METHODS OF CONSTRUCTION TO MEET THE CURRENT STANDARDS AND SPECIFICATIONS OF THE CITY OF OFFALLON.
- 5) ALL GRADED AREAS SHALL BE PROTECTED FROM EROSION BY EROSION CONTROL DEVICES AND/OR SEEDING AND MULCHING AS REQUIRED BY THE CITY OF OFFALLON.
- 6) PRIOR TO BEGINNING ANY WORK ON THE SITE, THE CONTRACTOR SHALL CONTACT THE OFFICE OF THE DEVELOPER 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 PER THE CITY OF OFFALLON.
- 8) ALL FILLS AND BACKFILLS SHALL BE MADE OF SELECTED EARTH MATERIALS, FREE FROM BROKEN ROCK, FROZEN EARTH, RUBBISH, ORGANIC MATERIAL AND DEBRIS.
- 9) GRADING CONTRACTOR SHALL KEEP EXISTING ROADWAYS CLEAN OF MUD AND DEBRIS AT ALL TIMES.
- 10) PROPOSED CONTOURS SHOWN ARE FINISHED ELEVATIONS ON PAVED AREAS.
- 11) NO GRADE SHALL EXCEED 3:1 SLOPE.
- 12) A GRADING PERMIT IS REQUIRED PRIOR TO ANY GRADING ON THE SITE. NO CHANGE IN WATERSHEDS SHALL BE PERMITTED.
- 13) INTERIM STORMWATER DRAINAGE CONTROL IN THE FORM OF SILTATION CONTROL MEASURES ARE REQUIRED.
- 14) THE DEVELOPER IS REQUIRED TO PROVIDE ADEQUATE STORMWATER SYSTEMS IN ACCORDANCE WITH THE CITY OF OFFALLON AND M.S.D. STANDARDS.
- 15) ALL STORMWATER SHALL BE DISCHARGED AT AN ADEQUATE NATURAL DISCHARGE POINT.
- 16) ADEQUATE TEMPORARY OFF-STREET PARKING SHALL BE PROVIDED FOR CONSTRUCTION EMPLOYEES. PARKING ON NON-SURFACED AREAS SHALL BE 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.
- 17) INSTALLATION OF LANDSCAPING AND ORNAMENTAL ENTRANCE MONUMENT OR IDENTIFICATION SIGNAGE CONSTRUCTION IF PROPOSED, SHALL BE REVIEWED BY THE DEPARTMENT OF HIGHWAYS AND TRAFFIC FOR SIGHT DISTANCE CONSIDERATIONS AND APPROVED PRIOR TO INSTALLATION OR CONSTRUCTION.
- 18) THE DEVELOPER IS ADVISED THAT UTILITY COMPANIES WILL REQUIRE COMPENSATION FOR RELOCATION OF THEIR UTILITY FACILITIES WITHIN PUBLIC ROAD RIGHT-OF-WAY. UTILITY RELOCATION COST SHALL BE CONSIDERED THE DEVELOPER'S RESPONSIBILITY. THE DEVELOPER SHOULD ALSO BE AWARE OF EXTENSIVE DELAYS IN UTILITY COMPANY RELOCATION AND ADJUSTMENTS. SUCH DELAYS WILL NOT CONSTITUTE A CAUSE TO OCCUPANCY PRIOR TO COMPLETION OF ROAD IMPROVEMENTS.
- 19) ALL DISTURBED EARTH AREAS WITHIN THE CITY OF OFFALLON RIGHT-OF-WAY AND MODOT RIGHT-OF-WAY SHALL BE SOODED.
- 20) THE OWNER SHALL, AT ALL TIMES, CONTAIN MUD AND OTHER SPILLS ON THIS SITE. NO VEHICLE, TRAILER OR CONSTRUCTION EQUIPMENT IS TO DEPOSIT MUD OR ANY OTHER MATERIAL ON PUBLIC STREETS. PROJECT WILL BE STOPPED IF STREETS ARE NOT CLEANED IMMEDIATELY.
- 21) THE SPECIFICATIONS AND DETAILS SHOWN HEREIN SHALL BE UTILIZED AS THE REQUIRED STORMWATER POLLUTION PREVENTION PLAN (SWPPP).
- 22) ALL WALLS WILL REQUIRE A BUILDING PERMIT FROM THE CITY OF OFFALLON DEPARTMENT OF PUBLIC WORKS.
- 23) THE DEVELOPER MUST SUPPLY THE CITY CONSTRUCTION INSPECTORS WITH SOILS REPORTS PRIOR TO OR DURING SITE SOIL TESTING. THE SOILS REPORT WILL BE REQUIRED TO CONTAIN THE FOLLOWING INFORMATION ON SOIL TEST CURVES (PROCTOR REPORTS) FOR PROJECT 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-1557) 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 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.
- 24) RIP RAP SHOWN AT FLARED END SECTIONS WILL BE EVALUATED IN THE FIELD AFTER INSTALLATION FOR EFFECTIVENESS AND MODIFIED IF NECESSARY TO REDUCE EROSION ON AND OFF SITE.
- 25) ALL FILL PLACED UNDER PROPOSED STORM AND SANITARY SEWER, PROPOSED ROADS, AND/OR PAVED AREAS SHALL BE COMPACTED TO 90% 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 OFFALLON PRIOR TO THE PLACEMENT OF FILL. PROOF ROLLING MAY BE REQUIRED TO VERIFY SOIL STABILITY AT THE DISCRETION OF THE CITY OF OFFALLON.
- 26) ALL SIDEWALKS, CURB RAMPS, RAMP 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 CONTRACTOR PRIOR TO ANY CONSTRUCTION SHALL NOTIFY THE PROJECT ENGINEER.

- 27.) ALL SIGN POST AND BACKS AND PRACKET ARMS SHALL BE PAINTED BLACK USING CARBOLINE RUSTBOND PENETRATING SEALER 50 AND CARBOLINE 133 HB PAINT (OR EQUIVALENT AS APPROVED BY THE CITY OF OFFALLON AND MODOT). SIGNS DESIGNATING STREET NAMES SHALL BE ON THE OPPOSITE SIDE OF THE STREET FROM TRAFFIC CONTROL SIGNS.
- 28.) ALL PROPOSED UTILITIES SHALL BE LOCATED UNDERGROUND.
- 29.) TRAFFIC CONTROL IS TO BE PER MODOT OR MUTCD, WHICHEVER IS MOST STRINGENT.
- 30.) ALL STORM SEWER INLETS TO HAVE MARKING (SEE DETAILS, SHEET C11)

STORM SEWER NOTES:

- 1.) ALL MATERIALS AND METHODS OF CONSTRUCTION FOR STORM SEWERS TO MEET REQUIREMENTS OF M.S.D. "STANDARD CONSTRUCTION SPECIFICATIONS", 2000 AND THE CITY OF OFFALLON.
- 2.) 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 M.S.D. STANDARDS.
- 3.) ALL REINFORCED CONCRETE PIPE SHALL BE CLASS III PIPES
- 4.) CONTRACTOR TO START LAYING PIPE AT DOWNSTREAM MANHOLE AND WORK UPSTREAM.
- 5.) TYPE "C" BEDDING PER THE CITY OF OFFALLON STANDARDS REQUIRED FOR PIPES IN ROCK.
- 6.) THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION OF UTILITY CONNECTIONS FROM THE EXTERIOR TO INTERIOR OF THE BUILDING.
- 7.) MAINTENANCE OF THE SEWERS DESIGNATED AS "PUBLIC" SHALL BE THE RESPONSIBILITY OF THE CITY OF OFFALLON UPON DEDICATION OF THE SEWERS TO THE CITY.
- 8.) ALL RCP SHALL BE CLASS III OR BETTER, O-RING PIPE.
- 9.) A 5/8" TRASH BAR SHALL BE REQUIRED IN THE THROAT OF ALL INLETS.
- 10.) BRICK SHALL NOT BE USED IN THE CONSTRUCTION OF STORM SEWER STRUCTURES. ALL STRUCTURES SHALL BE PRE-CAST CONCRETE.

EARTHWORK NOTES:

BULK CUT.....10,075 C.Y. + CUBIC YARD
 BULK FILL 14,020 C.Y. (W/ 15% SHRINKAGE).....+ CUBIC YARD

THE ENGINEER HAS CALCULATED THE ABOVE QUANTITIES OF EARTHWORK TO BE REGARDED AS AN ESTIMATE OF THE BULK MOVEMENT OR REDISTRIBUTION OF SOILS ON THIS PROJECT. AS AN ESTIMATE, THESE QUANTITIES ARE INTENDED FOR GENERAL USE, AND THE ENGINEER ASSUMES NO LIABILITY FOR COST OVERRUNS DUE TO EXCESS EXCAVATED MATERIALS OR SHORTAGES OF FILL.

THE QUANTITIES ESTIMATED FOR EACH OF THE IMPROVEMENT ITEMS LISTED ABOVE ARE BASED UPON THE HORIZONTAL AND VERTICAL LOCATION OF THE IMPROVEMENTS AS PROPOSED ON THE SITE ENGINEERING PLANS PREPARED BY J. R. GRIMES CONSULTING ENGINEERS.

THE ENGINEER'S EARTHWORK ESTIMATE DOES NOT INCLUDE ANY OF THE FOLLOWING ITEMS REQUIRING EARTHWORK THAT MAY BE NECESSARY FOR COMPLETION OF THE PROJECT: MISCELLANEOUS UNDERGROUND CONDUITS, INCLUDING SEWER LINES AND WATER MAINS LESS THAN TWENTY-FOUR INCHES IN DIAMETER, STANDARD MANHOLES, PROCESS OR TRANSFER PIPING, ELECTRICAL OR TELEPHONE CONDUITS; BASES FOR LIGHT STANDARDS; BUILDING FOOTINGS AND FOUNDATIONS, ETC.

THE ENGINEER ASSUMES NO RESPONSIBILITY FOR THE ACTUAL SIZE OF THE FIELD EXCAVATIONS MADE FOR THE INSTALLATION OF UNDERGROUND STRUCTURES, AND AS SUCH, THE ACTUAL QUANTITIES OF EARTHWORK FROM SUCH ITEMS MAY VARY FROM THE ESTIMATE SHOWN ABOVE.

THE ENGINEER ASSUMES NO RESPONSIBILITY FOR COSTS INCURRED DUE TO REMOVAL UNSUITABLE MATERIAL WHICH MUST BE REMOVED FROM SITE.

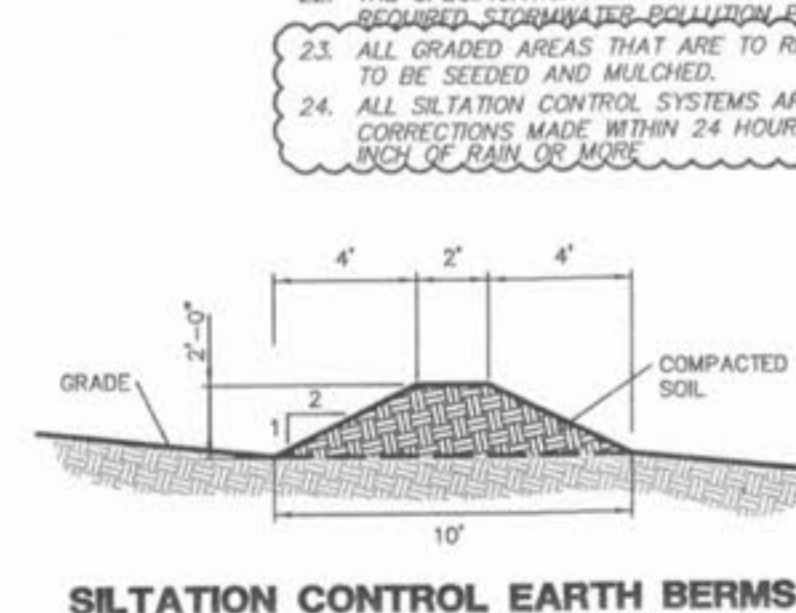
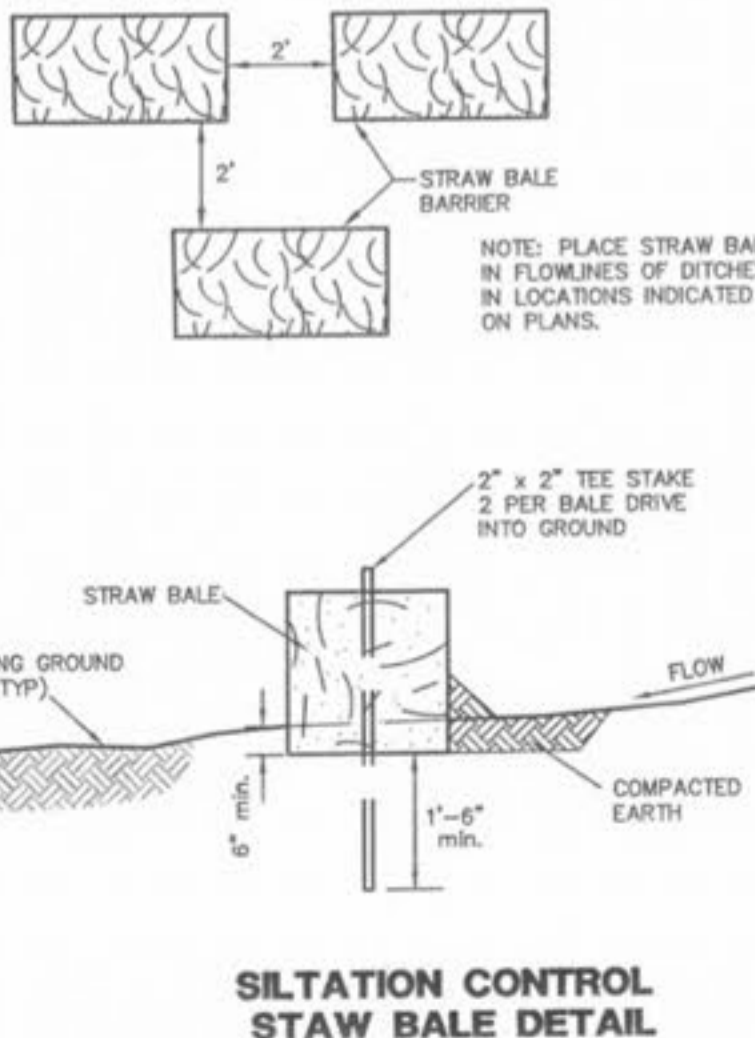
BEST MANAGEMENT PRACTICE

Construction Activities and BMPs for Construction Site Operations

Activity	Best Management Practice (BMP) Addressed	Pollutants
Cleaning or grading land	<ul style="list-style-type: none"> Control runoff and dust during construction and install sediment controls. Clean and maintain sediment controls. Proper disposal of debris. Inspection and maintenance 	Sediment, Nutrients, other pollutants attached to the sediment.
Handling fresh concrete or other cement-related mortars (not applicable to this project)	<ul style="list-style-type: none"> Never wash fresh concrete mortar in to a drain or stream. Use designated wash-out areas. When building concrete aggregate driveways, wash fines to the side, to straw bales, or to a sediment basin. 	Toxic & acidic pollutants, sediments
Painting, sanding, plastering, applying drywall, paper, or tile, or other activities using paint, solvents, or adhesives. (Not applicable to this project)	<ul style="list-style-type: none"> Keep residues such as paint chips from entering storm drain. Keep paints, solvents, and other chemicals and their waste containers & soiled rags covered from the rain. Prepare for and clean up spills. Minimize wastes and properly dispose of all wastes. Fix any oil leaks in equipment. 	Toxins, including metals, & oils & greases.
All activities producing or handling wastes, such as batteries & solvents	<ul style="list-style-type: none"> Minimize wastes and properly dispose of all wastes. Ensure all workers know proper procedures. Provide secure storage site/construction yard. Direct barriers or isolate area to prevent contact with stormwater runoff. 	Toxic pollutants, including metals.
Adjacent to a stream	<ul style="list-style-type: none"> Preserve the stream corridor & take steps to maintain the stream channel & vegetation. 	Sediment.
General contracting & construction management	<ul style="list-style-type: none"> Make sure all applicable BMPs are followed. Ensure all local, state, and federal permits are in place and followed. 	All
Training new employees	<ul style="list-style-type: none"> Include training about water quality BMPs. Ensure all employees understand the project SWPPP. 	Potentially all

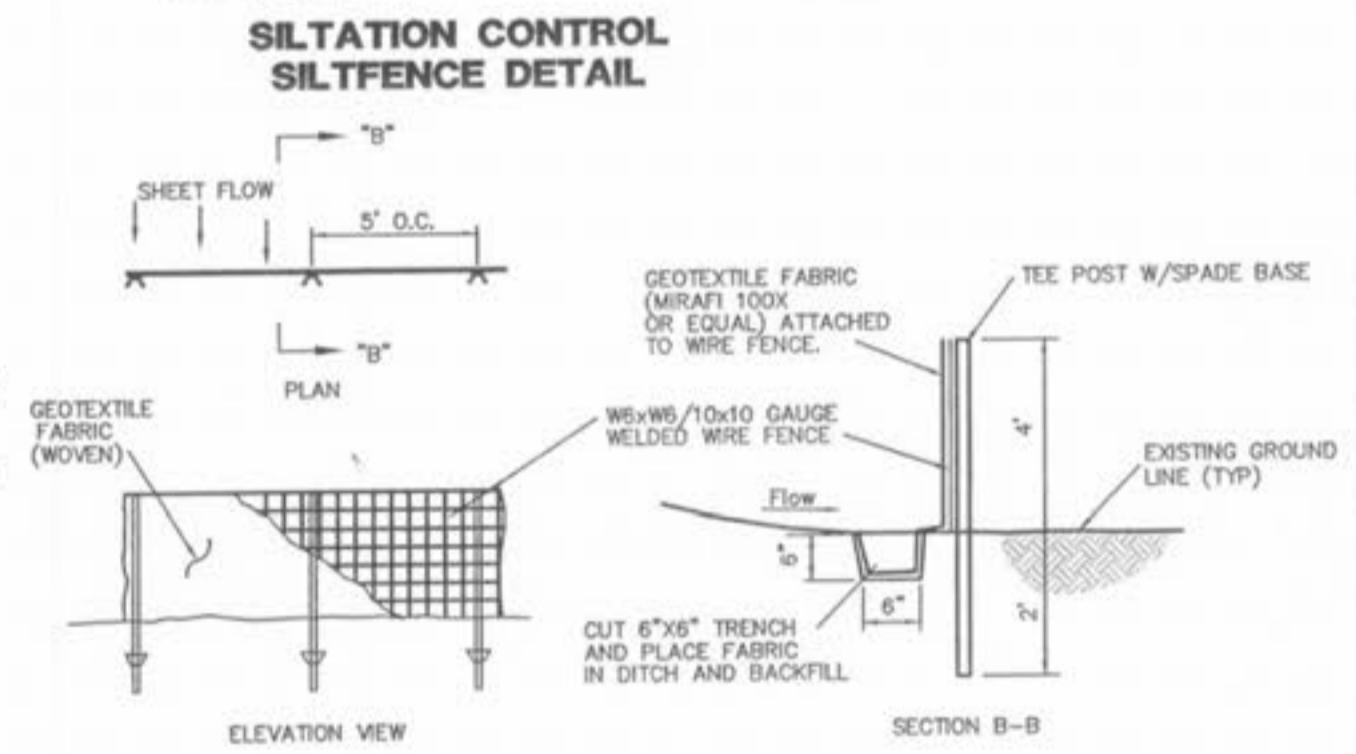
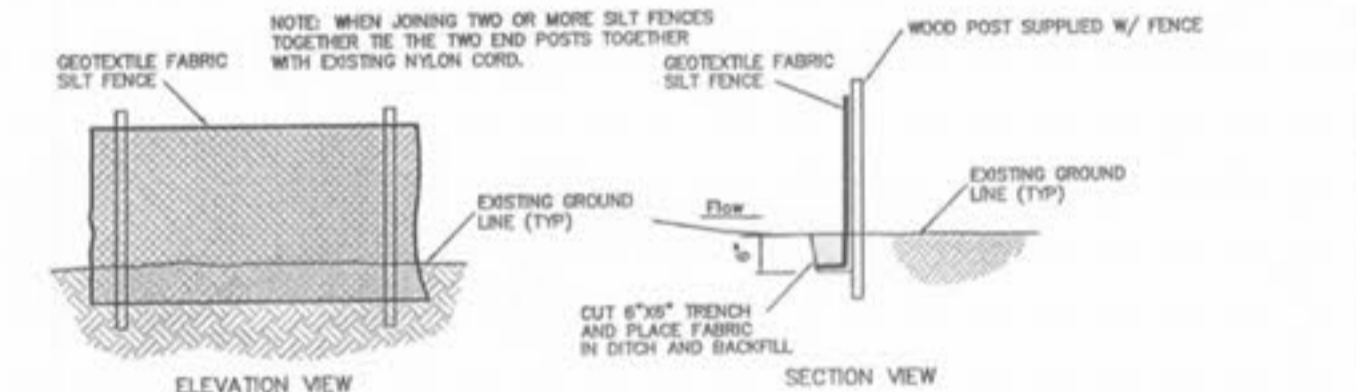
DUCKETT CREEK SANITARY DISTRICT CONSTRUCTION NOTES

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 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 RECONSTRUCTION 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 90 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 ROOTING AND SHALL BE NON-YIELDING AND NON-PUMPING DURING PROOF ROLLING AND COMPACTION.
5. THE CONTRACTOR SHALL PREVENT ALL STORM, SURFACE WATER, MUD AND CONSTRUCTION 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 SEWER CONTRACTOR.
7. EASEMENTS SHALL BE PROVIDED FOR ALL SANITARY SEWERS, STORM SEWERS AND ALL UTILITIES ON THE RECORD PLAT.
8. ALL CONSTRUCTION AND MATERIALS SHALL CONFORM TO THE CURRENT CONSTRUCTION STANDARDS OF THE DUCKETT CREEK SANITARY DISTRICT.
9. THE DUCKETT CREEK SANITARY DISTRICT SHALL BE NOTIFIED 48 HOURS PRIOR TO CONSTRUCTION FOR COORDINATION INSPECTION.
10. ALL SANITARY SEWER BUILDING CONNECTIONS SHALL BE DESIGNED SO THAT THE 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.
11. ALL SANITARY SEWER MANHOLES SHALL BE WATERPROOFED ON THE EXTERIOR IN ACCORDANCE WITH MISSOURI DEPT. OF NATURAL RESOURCES SPECIFICATION 10 CRS-8.120(7)(E).
12. 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" TO 1" GRANULAR STONE BEDDING UNIFORMLY GRADED. THIS BEDDING SHALL EXTEND FROM 4 INCHES BELOW THE PIPE TO THE SPRINGLINE OF PIPE. IMMEDIATE BACKFILL OVER THE PIPE SHALL CONSIST OF SAME SIZE "CLEAN" OR "MINUS" STONE FROM SPRINGLINE OF PIPE TO 6 INCHES ABOVE THE TOP OF PIPE.
13. ALL SANITARY AND STORM SEWER TRENCH BACKFILLS SHALL BE WATER JETTED. GRANULAR BACKFILL WILL BE USED UNDER PAVED AREAS.
14. ALL PIPES SHALL HAVE POSITIVE DRAINAGE THROUGH MANHOLES. NO FLAT INVERT STRUCTURES ARE ALLOWED.
15. ALL CREEK CROSSINGS SHALL BE GROUTED RIP-RAP AS DIRECTED BY THE DISTRICT INSPECTORS. (ALL GROUT SHALL BE HIGH SLUMP READY-MIX CONCRETE).
16. BRICK SHALL NOT BE USED ON SANITARY SEWER MANHOLES.
17. EXISTING SANITARY SEWER SERVICE SHALL NOT BE INTERRUPTED.
18. MAINTAIN ACCESS TO EXISTING RESIDENTIAL DRIVEWAYS AND STREETS.
19. PRE-MANUFACTURED ADAPTERS SHALL BE USED AT ALL PVC TO DIP CONNECTIONS. RUBBER BOOT/ MISSION-TYPE COUPLINGS WILL NOT BE ALLOWED.
20. ANY PERMITS, LICENSES, EASEMENTS, OR APPROVALS REQUIRED TO WORK ON PUBLIC OR PRIVATE PROPERTIES OR ROADWAY ARE THE RESPONSIBILITY OF THE DEVELOPER.
21. TYPE "N" LOCK-TYPE COVER AND LOCKING DEVICE (LOCK-LUG) SHALL BE USED WHERE LOCK-TYPE COVERS ARE REQUIRED.



SILTATION MAINTENANCE NOTES:

1. NOTIFY THE CITY OF OFFALLON DEPARTMENT OF PUBLIC WORKS 48 HOURS PRIOR TO THE COMMENCEMENT OF GRADING AND/OR CONSTRUCTION.
2. PARKING ON NON-SURFACED AREAS IS PROHIBITED IN ORDER TO ELIMINATE THE CONDITION WHEREBY MUD FROM CONSTRUCTION AND EMPLOYEE VEHICLES IS TRACKED ONTO PAVEMENT CAUSING HAZARDOUS ROADWAY AND DRIVING CONDITIONS. CONTRACTOR SHALL KEEP ROAD CLEAR OF MUD AND DEBRIS.
3. THE STREETS SURROUNDING THIS DEVELOPMENT AND ANY STREET USED FOR CONST. ACCESS THERETO SHALL BE CLEANED THROUGHOUT THE DAY.
4. 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 OFFALLON.
6. TEMPORARY SILTATION CONTROL MEASURES (STRUCTURAL) SHALL BE MAINTAINED UNTIL VEGETATIVE COVER IS ESTABLISHED AT A SUFFICIENT DENSITY TO PROVIDE EROSION CONTROL ON SITE.
7. WHERE NATURAL VEGETATION IS REMOVED DURING GRADING, VEGETATION SHALL BE REESTABLISHED IN SUCH A DENSITY AS TO PREVENT EROSION.
8. WHEN CLEARING AND/OR GRADING OPERATIONS ARE COMPLETED OR SUSPENDED FOR MORE THAN 30 DAYS, ALL NECESSARY PRECAUTIONS SHALL BE TAKEN TO RETAIN SOIL MATERIALS AND PREVENT EROSION. MEASURES WILL BE REQUIRED SUCH AS PERMANENT SEEDING, PERIODIC WETTING, MULCHING, OR OTHER SUITABLE MEANS. THE DEVELOPER IS RESPONSIBLE FOR LONG OR SHORT TERM MAINTENANCE OF ALL DISTURBED AREAS.
9. IF CUT AND FILL OPERATIONS OCCUR DURING A SEASON NOT FAVORABLE FOR IMMEDIATE ESTABLISHMENT OF A 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) IN EXCESS OF 20% SLOPES (%:1) SHALL BE MULCHED AND TACKED AT THE RATE OF 100 POUNDS PER 1000 SQUARE FEET WHEN SEEDED.
11. THE LOT SHALL BE SEEDED AND MULCHED AT THE MIN. RATES DEFINED BY ST. LOUIS COUNTY OR SOGDED BEFORE AN OCCUPANCY PERMIT SHALL BE ISSUED EXCEPT THAT A TEMPORARY OCCUPANCY PERMIT MAY BE ISSUED BY THE CITY PLANNING DEPT. IN CASES OF UNDUCE HARSHIP BECAUSE OF UNFAVORABLE GROUND CONDITIONS.
12. 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.
13. STORM SEWER 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.
14. 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. FENCES WITHIN MODOT RIGHT-OF-WAY TO BE CLEARED OF SEDIMENT WHEN IT REACHES 8" IN DEPTH.
15. STRAW BALES SHALL BE INSPECTED PERIODICALLY FOR DETERIORATION. BALES WHICH HAVE ROTTED OR FAILED SHALL BE REPLACED. REMOVAL OF SEDIMENT WILL BE REQUIRED WHEN IT REACHES 1/2 THE HEIGHT OF THE BALES.
16. ALL FILLS PLACED UNDER PROPOSED STORM AND SANITARY SEWER LINES AND/OR PAVED AREAS, INCLUDING TRENCH BACKFILLS WITHIN AND OFF THE ROAD RIGHT-OF-WAY, SHALL BE COMPACTED TO 90% OF THE MAXIMUM DENSITY AS DETERMINED BY THE "MODIFIED AASHTO T-180 COMPACTION TEST" (ASTM D-1557) FOR THE ENTIRE DEPTH OF FILL. COMPACTED GRANULAR BACKFILL IS REQUIRED IN ALL TRENCH EXCAVATION WITHIN THE STREET RIGHT-OF-WAY AND UNDER ALL PAVED AREAS. ALL TESTS SHALL BE PERFORMED UNDER THE DIRECTION OF AND VERIFIED BY A SOILS ENGINEER CONCURRENT WITH GRADING AND BACKFILLING OPERATIONS.
17. SOILS ENGINEER WILL VERIFY THAT ALL COMPRESSIBLE MATERIAL HAS BEEN REMOVED PRIOR TO FILL PLACEMENT AND THAT ALL FILL UNDER SANITARY AND STORM SEWER LINES CONSTRUCTED ABOVE ORIGINAL GRADE, HAS BEEN COMPACTED TO 90% OF "MODIFIED PROCTOR". FILL IS TO BE PLACED IN A MAXIMUM OF 9-INCH LIFTS. TEST SHALL BE TAKEN AT MAXIMUM OF 30-FOOT INTERVALS ALONG THE ROUTE OF THE PIPE. AT A MAXIMUM OF 2-FOOT VERTICALLY, AND LATERALLY ON EACH SIDE OF THE PIPE, AT A DISTANCE EQUAL TO THE DEPTH OF FILL OVER THE PIPE. A COPY OF THESE RESULTS WILL BE SUBMITTED TO MSD PRIOR TO CONSTRUCTION APPROVAL.
18. ALL TRASH AND DEBRIS ONSITE, EITHER EXISTING OR FROM CONSTRUCTION, MUST BE REMOVED AND PROPERLY DISPOSED OF OFFSITE.
19. DEBRIS AND FOUNDATION MATERIAL FROM ANY EXISTING ON-SITE BUILDING OR STRUCTURE WHICH IS SCHEDULED TO BE RAISED FOR THIS DEVELOPMENT MUST BE PROPERLY DISPOSED OF OFFSITE.
20. ANY WELLS, CISTERNS AND/OR SPRINGS, WHICH MAY EXIST ON THIS PROPERTY, SHOULD BE LOCATED AND SEALED IN A MANNER ACCEPTABLE TO MISSOURI DEPARTMENT OF NATURAL RESOURCES.
21. ALL EXCAVATIONS, GRADING OR FILLING SHALL HAVE A FINISHED GRADE NOT TO EXCEED A 3:1 SLOPE (33%), UNLESS SPECIFICALLY APPROVED OTHERWISE.
22. THE SPECIFICATIONS AND DETAILS SHOWN HEREIN SHALL BE UTILIZED AS THE REQUIRED STORMWATER POLLUTION PREVENTION PLAN (SWPPP).
23. ALL GRADED AREAS THAT ARE TO REMAIN BARE FOR OVER 2 WEEKS ARE TO BE SEEDED AND MULCHED.
24. ALL SILTATION 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.



VEGETATIVE ESTABLISHMENT FOR URBAN DEVELOPMENT SITES APPENDIX A

- SEEDING RATES:**
- PERMANENT:**
 TALL FESCUE - 30 lbs./ac.
 SMOOTH BROME - 20 lbs./ac.
 COMBINED FESCUE @ 15 lbs./ac. AND BROME @ 10 lbs./ac.
- TEMPORARY:**
 WHEAT OR RYE - 150 lbs./ac. (3.5 lbs. PER SQUARE FOOT)
 OATS - 120 lbs./ac. (2.75 lbs. PER SQUARE FOOT)
- SEEDING PERIODS:**
 FESCUE OR BROME - MARCH 1 TO JUNE 1
 WHEAT OR RYE - MARCH 15 TO OCTOBER 1
 OATS - MARCH 15 TO SEPTEMBER 15
- MULCH RATES:**
 100 lbs. PER 1,000 sq. FEET (4,356 lbs. PER ACRE)
- FERTILIZER RATES:**
 NITROGEN 30 lbs./ac.
 PHOSPHATE 30 lbs./ac.
 POTASSIUM 600 lbs./ac. ENM*
- * ENM = EFFECTIVE NEUTRALIZING MATERIAL AS PER STATE EVALUATION OF QUARRIED ROCK.

- PER CITY OF OFFALLON COMMENTS 01/04/06
- PER CITY OF OFFALLON COMMENTS 11/22/05
- PER CITY OF OFFALLON COMMENTS 06/08/03
- PER CITY OF OFFALLON COMMENTS 03/12/03
- PER CITY OF OFFALLON COMMENTS 08/27/02

PREPARED FOR:
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CITY OF OFFALLON FILE NO.
 31.01.01

CRUSHER ROAD SPECIFICATION SHEET

J. R. GRIMES CONSULTING ENGINEERS, INC.

12300 OLD TESSON ROAD SUITE 3000 ST. LOUIS, MO. 63128 PH. (314) 840-8100 FAX (314) 840-6010

DATE: 11/07/01 CHECKED BY: JRJ DATE: 11/07/01 JOB NUMBER: 675E SHEET: C19