GENERAL NOTES

1. BOUNDARY AND TOPOGRAPHIC SURVEY BY COLE AND ASSOCIATES.
2. ALL UNDERGROUND UTILITIES SHOWN HAVE BEEN PLOTTED FROM AVAILABLE INFORMATION, AND THEREFORE, THEIR LOCATIONS MUST BE CONSIDERED APPROXIMATE ONLY. THE VERIFICATION OF ALL UTILITIES SHOWN OR NOT SHOWN SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AND SHALL BE LOCATED PRIOR TO ANY GRADING OR CONSTRUCTION OF IMPROVEMENTS.
3. NO SLOPE SHALL BE STEEPER THAN 3 (HORIZONTAL) TO 1 (VERTICAL).
4. ALL SLOPES TO BE STABILIZED IMMEDIATELY AFTER GRADING.
5. ALL UTILITIES SERVING SITE SHALL BE UNDERGROUND.
6. ALL EXTERNAL UTILITY EQUIPMENT SHALL BE SCREENED.
7. HANDICAP STALL LOCATIONS ARE TO BE DETERMINED AND COORDINATED WITH THE CITY OF O'FALLON.
8. DEVELOPER MUST SUPPLY CITY CONSTRUCTION INSPECTORS WITH SOILS REPORTS PRIOR TO OR DURING SITE SOIL TESTING. THE SOILS REPORT WILL BE REQUIRED TO CONTAIN THE FOLLOWING INFORMATION IN SOIL TEST CURVES (PROCTOR REPORTS) FOR PROJECTS WITHIN THE CITY:
   1. MAXIMUM DRY DENSITY
   2. OPTIMUM MOISTURE CONTENT
   3. MAXIMUM AND MINIMUM ALLOWABLE MOISTURE CONTENT
   4. CURVE MUST BE PLOTTED TO SHOW DENSITY FROM A MINIMUM OF 90% COMPACTION AND ABOVE AS DETERMINED BY THE "MODIFIED AASHTO T-180 COMPACTION TEST" (A.S.T.M.-D-1157) OR FROM A MINIMUM OF 95% AS DETERMINED BY THE "STANDARD PROCTOR TEST ASSHTO 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.
9. ALL FILLS PLACED UNDER PROPOSED STORM AND SANITARY SEWER 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 ASSHTO 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 FILL AREAS IS TO CORRESPOND TO THE COMPACTIVE EFFORT AS DEFINED BY THE STANDARD OR MODIFIED PROCTOR TEST. OPTIMUM MOISTURE CONTTENT SHALL BE DETERMIED 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.
10. ALL LOW PLACES WHETHER ON-SITE OR OFF-SITE SHOULD BE GRADED TO ALLOW DRAINAGE. THIS CAN BE ACCOMPLISHED WITH TEMPORARY DITCHES. ANY OFF-SITE DRAINAGE EASEMENTS WILL BE ACQUIRED BEFORE GRADING BEGINS.
11. CONTRACTOR REQUIRED TO GRADE SITE WITHIN 0.10 FT OF PROPOSED GRADES.
12. ALL MATERIALS AND METHODS OF CONSTRUCTION TO MEET THE CURRENT STANDARDS AND SPECIFICATIONS AS REQUIRED BY THE CITY OF O'FALLON.
13. ALL GRADED AREAS INDICATED SHALL BE PROTECTED FROM EROSION BY EROSION CONTROL DEVICES, SEEDING AND MULCHING AS INDICATED.
14. 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.
15. GRADING CONTRACTOR SHALL INSTALL SILTATION CONTROL PRIOR TO STARTING THE GRADING PER SILTATION SPECIFICATIONS. ADDITIONAL SILTATION CONTROL DEVICES MAY BE REQUIRED AS DIRECTED BY THE CITY OF O'FALLON.
16. ALL FILLS AND BACKFILLS SHALL BE MADE OF SELECTED EARTH MATERIALS, FREE FROM BROKEN MASONRY, ROCK, FROZEN EARTH, RUBBISH, ORGANIC MATERIAL AND DEBRIS.
17. GRADING CONTRACTOR SHALL KEEP EXISTING ROADWAYS CLEAN OF MUD AND DEBRIS AT ALL TIMES.
18. PROPOSED CONTOURS SHOWN ARE FINISHED ELEVATIONS ON PAVED AREAS. CONTRACTOR TO GRADE ALL AREAS TO REQUIRED SUBGRADE.
19. EROSION CONTROL SHALL NOT BE LIMITED TO WHAT IS SHOWN ON THE PLAN. WHATEVER MEANS NECESSARY SHALL BE TAKEN TO PREVENT SILTATION AND EROSION FROM ENTERING NATURAL STREAMS AND ADJACENT ROADWAYS, PROPERTIES, AND DITCHES.
20. ALL PAVING TO BE IN ACCORDANCE WITH ST. CHARLES COUNTY STANDARDS AND SPECIFICATIONS EXCEPT AS MODIFIED BY THE CITY OF O'FALLON ORDINANCES.
21. RIP RAP SHOWN AT FLARED ENDS WILL BE EVALUATED IN THE FIELD AFTER INSTALLATION FOR EFFECTIVENESS AND FIELD MODIFIED IF NECESSARY TO REDUCE EROSIION ON AND OFF SITE.
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 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 MAY AT THEIR OPTION DIRECT THE 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 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.
23. 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.
24. ANY PROPOSED FENCING REQUIRES A SEPARATE PERMIT THROUGH THE PLANNING DIVISION.
25. ALL SIGN LOCATIONS AND SIZES MUST BE APPROVED SEPARATELY THROUGH THE PLANNING DIVISION.
26. 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). SIGNED DESIGNATING STREET NAME SHALL BE ON THE OPPOSITE SIDE OF THE STREET FROM TRAFFIC CONTROL SIGNS.
27. SIDEWALKS, CURB 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 CONTRACTOR PRIOR TO ANY CONSTRUCTION SHALL NOTIFY THE PROJECT ENGINEER.
28. REQUIRED STORMWATER DETENTION HAS BEEN PROVIDED FOR THE ENTIRE DEVELOPMENT.
29. SITE IS OUTSIDE THE 100 YR FLOOD PLAIN
30. CURRENT ZONING IS "HTCD" HIGH TECH CORRIDOR DISTRICT
31. NO WETLANDS ON THIS SITE.
32. NO SURFACE INTENDED TO BE HANDICAP ACCESSIBLE SHALL EXCEED 2% SLOPE IN ANY DIRECTION.
33. ALL LIGHT POLES SHALL BE LOCATED WITHIN A LANDSCAPE ISLAND.
34. WINGHAVEN STORMWATER DETENTION PROVIDED FOR THE PHASE 1 DEVELOPMENT AND NO ON-SITE DETENTION IS REQUIRED FOR THIS PHASE.
35. STREET IDENTIFICATION SYSTEM SHALL CONFORM TO THE APPROVED WINGHAVEN STANDARDS.
36. TRUST INDENTURES PER WINGHAVEN INDENTURES ON FILE AT CITY.
37. NO SURFACE INTENDED TO BE HANDICAP ACCESSIBLE PARKING SHALL EXCEED 2% SLOPE IN ANY DIRECTION.
38. ALL TREES ALONG TECHNOLOGY DRIVE SHALL BE PRESERVED.
39. BUILDING SETBACKS: FRONT YARD =30'
    SIDE YARD =20'
    REAR YARD =35'
40. AS DETERMINED THROUGH GRAPHIC PLOTTING ONLY, SUBJECT TRACT FALLS IN ZONE X, OUTSIDE OF THE 500 YEAR FLOOD PLAIN PER THE FEDERAL EMERGENCY MANAGEMENT AGENCY, FLOOD INSURANCE RATE MAP FOR ST. CHARLES COUNTY, MISSOURI, PANEL 220 OF 525, MAP NUMBER 29183C0220F, EFFECTIVE DATE OF MARCH 17, 2003.
41. NO EXISTING BUILDINGS ARE ON THE SUBJECT PROPERTY.
42. NO DELIVERY OR LOADING ACTIVITES, TRASH REMOVAL OR COMPACTION, PARKING LOT CLEANING OR OTHER SUCH OPERATIONS SHALL BE PERMITTED BETWEEN THE HOURS OF 10PM AND 7AM.
43. IN ADDITION TO ALL UTILITIES LISTED, THE CITY OF O'FALLON SHALL ALSO BE CONTACTED FOR UTILTIY LOCATES UNDER ITS MAINTENANCE RESPONSIBILITY. THIS MAY INCLUDE WATER, SANITARY, STORM, AND TRAFFIC LOCATES.
44. TRAFFIC CONTROL SHALL BE PER MODOT OR MUTCD SPECIFICATIONS, WHICHEVER IS MORE STRINGENT.
45. TREES, ORGANIC DEBRIS, RUBBLE, FOUNDATIONS AND OTHER DELETRIOUS MATERIAL SHALL BE REMOVED FORM THE SITE AND DISPOSED IN COMPLIANCE WITH ALL APPLICABLE LAWAS 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.
46. THE CONTRACTOR SHALL LABEL STORM SEWER INLETS WITH APPROPIATE LABELING. THE CITY WILL ALLOW THE FOLLOWING MARKERS AND ADHESIVE PROCEDURES ONLY AS SHOWN IN THE TABLE BELOW. '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

SILTATION CONTROL SPECIFICATIONS

SILTATION CONTROL GENERAL NOTES

1. INSTALLATION OF ALL PERIMETER SEDIMENT CONTROL SHALL BE IMPLEMENTED AS THE FIRST STEP OF GRADING AND WITHIN SEVEN (7) DAYS OF GRUBBING THE SITE.
2. INSPECTION OF SILTATION CONTROL DEVICES SHALL TAKE PLACE ONCE EVERY SEVEN DAYS AND WITHIN 24 HOURS OF ANY 0.5"/24 HOUR RAIN EVENT OR GREATER. ANY SILTATION CONTROL IN NEED OF REPAIR SHALL OCCUR IMMEDIATELY.
3. ALL SLOPES OR DRAINAGE CHANNELS, ONCE CONSTRUCTED TO FINAL GRADE, SHALL BE SEEDED AND MULCHED PER SPECIFICATIONS WITHIN SEVEN (7) DAYS.
4. SILT FENCES SHALL BE INSTALLED IMMEDIATELY AROUND EACH STORM SEWER STRUCTURE ONCE FINAL CONSTRUCTION OF EACH INDIVIDUAL STRUCTURE IS COMPLETE.
5. ALL SILTATION CONTROL DEVICES SHALL REMAIN IN PLACE UNTIL UPSLOPE AREAS HAVE BEEN PERMANENTLY STABILIZED.
6. GRADED AREAS THAT ARE TO REMAIN BARE FOR MORE THAN 2 WEEKS SHALL BE SEEDED AND MULCHED.

SILTATION CONTROL SCHEDULE IMPLEMENTATION

1. PERIMETER SILTATION CONTROL AND CONSTRUCTION ENTRANCES TO BE INSTALLED.
2. BEGIN PLACING AGGREGATE BASE IN PARKING AREAS ONCE AREA HAS REACHED FINAL GRADE TO PREVENT EROSION.
3. PLACE SILT FENCE AROUND EACH STORM SEWER STRUCTURE AS IT IS COMPLETED.
4. IMMEDIATELY SEED AREAS UPON REACHING FINAL GRADE THAT ARE TO BE PERMANENTLY SEEDED.

TEMPORARY ACCESS ROADS AND PARKING AREAS SPECIFICATIONS

1. TEMPORARY ROADS SHALL FOLLOW THE CONTOUR OF THE NATURAL TERRAIN TO THE EXTENT POSSIBLE. SLOPES SHOULD NOT EXCEED 10 PERCENT.
2. GRADES SHOULD BE SUFFICIENT TO PROVIDE DRAINAGE, BUT SHOULD NOT EXCEED 4 PERCENT.
3. ROADBEDS SHALL BE AT LEAST 24 FEET WIDE.
4. ALL CUTS AND FILLS SHALL BE 3:1 OR FLATTER TO THE EXTENT POSSIBLE.
5. DRAINAGE DITCHES SHALL BE PROVIDED AS NEEDED.
6. THE ROADBED OR PARKING SURFACE SHALL BE CLEARED OF ALL VEGITATION, ROOTS AND OTHER OBJECTIONABLE MATERIAL.
7. AN 8-INCH COURSE OF 2" MINUS AGGREGATE SHALL BE APPLIED IMMEDIATELY AFTER GRADING OR THE COMPLETION OF UTILITY INSTALLATION WITHIN THE RIGHT-OF-WAY. FILTER FABRIC (MIRAFI 500X) MAY BE APPLIED TO THE ROADBED FOR ADDITIONAL STABILITY IN ACCORDANCE WITH FABRIC MANUFACTURER'S SPECIFICATIONS.

VEGETATION

OFFSITE AREAS:

ALL ROADSIDE DITCHES, CUTS, FILLS AND DISTURBED AREAS ADJACENT TO PARKING AREAS AND ROADS SHALL BE STABILIZED WITH APPROPRIATE TEMPORARY OR PERMANENT VEGETATION ACCORDING TO THE APPLICABLE STANDARDS AND SPECIFICATIONS.

ONSITE:

STABILIZED WITH APPROPRIATE TEMPORARY OR PERMANENT VEGETATION ACCORDING TO THE APPLICABLE STANDARDS AND SPECIFICATIONS.

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
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 SQ. FEET (4,356 LBS. PER ACRE)

FERTILIZER RATES:
NITROGEN 30 LBS./AC.
PHOSPHATE 30 LBS./AC.
POTASSIUM 30 LBS./AC.
LIME 600 LBS./AC. ENM*

* ENM = EFFECTIVE NUETRALIZING MATERIAL AS PER STATE EVALUATION OF QUARRIED ROCK.

MAINTENANCE

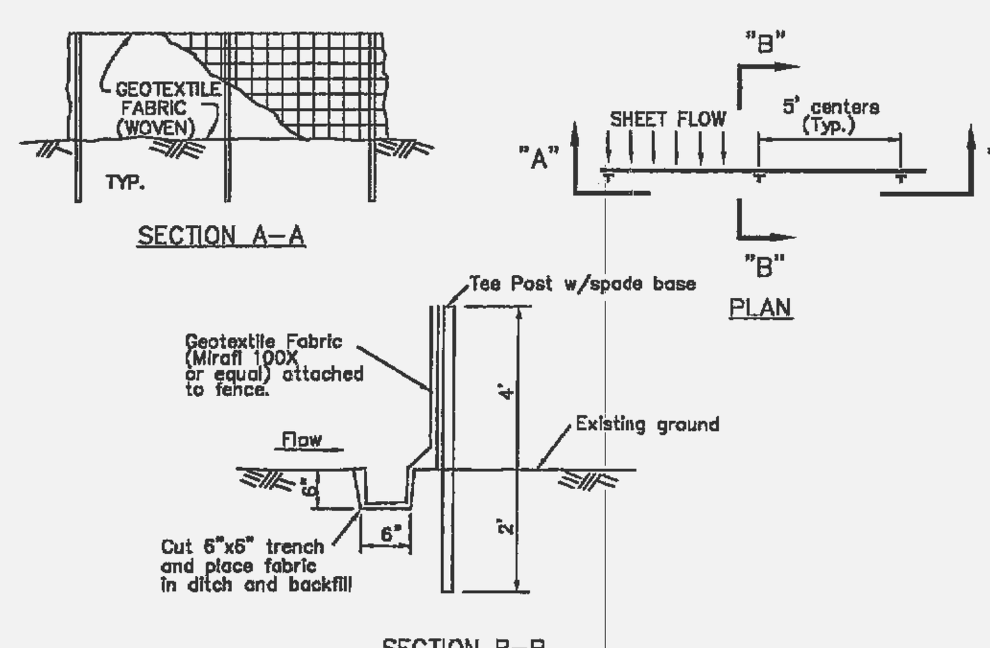
SEEDED AREAS ADJACENT TO THE ROADS AND PARKING AREAS SHOULD BE CHECKED PERIODICALLY TO ENSURE THAT A VIGOROUS STAND OF VEGETATION IS MAINTAINED. ROADSIDE DITCHES AND OTHER DRAINAGE STRUCTURES SHOULD BE CHECKED REGULARLY TO ENSURE THAT THEY DO NOT BECOME CLOGGED WITH SILT OR OTHER DEBRIS.

SILT FENCE SPECIFICATIONS

1. SILT FENCE TO BE WOVEN GEOTEXTILE FABRIC MIRAFI 100X OR EQUAL.
2. FABRIC TO BE SUPPORTED BY WOODEN POSTS SPACED ON 5' CENTERS.
3. FABRIC SHALL BE ENTRENCHED AND BACKFILLED. A TRENCH SHALL BE EXCAVATED A MINIMUM OF 6 INCHES DEEP FOR THE LENGTH OF THE FENCE. THE EXCAVATED SOIL SHALL BE BACKFILLED AGAINST THE FENCE. SEE DETAIL THIS SHEET.
4. FENCE HEIGHT SHALL BE A MINIMUM OF 4 FEET IN HEIGHT, WITH THE FABRIC INSTALLED ON THE FENCE ON THE UPSTREAM SIDE.
5. SILT FENCES SHALL BE USED ONLY ON SHEET FLOW CONDITIONS.
6. SILT FENCES SHALL BE INSTALLED AROUND ALL STORM SEWER STRUCTURES.

MAINTENANCE

1. SILT FENCE BARRIERS SHALL BE INSPECTED IMMEDIATELY AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL.
2. CLOSE ATTENTION SHALL BE PAID TO THE REPAIR OF DAMAGED BALES, END RUNS AND UNDERCUTTING BENEATH BALES.
3. NECESSARY REPAIRS TO BARRIERS OR REPLACEMENT OF BALES SHALL BE ACCOMPLISHED PROMPTLY.
4. SEDIMENT DEPOSITS SHOULD BE REMOVED AFTER EACH RAINFALL. THEY MUST BE REMOVED WHEN THE LEVEL OF DEPOSITION REACHES APPROXIMATELY ONE-HALF THE HEIGHT OF THE BARRIER.
5. ANY SEDIMENT DEPOSITS REMAINING IN PLACE AFTER THE SILT FENCE BARRIER IS NO LONGER REQUIRED SHALL BE DRESSED TO CONFORM TO THE EXISTING GRADE, PREPARED AND SEEDED.



SILTATION CONTROL
SILTFENCE DETAIL
(n.t.s.)

GENERAL NOTES:
1. Do not scale drawing. Follow Dimensions
2. Additional siltation control shall be provided as directed by the City of O'fallon.
3. Siltation Control Devices to remain in place until adequate vegetative growth insures no further erosion of the soil.
4. Siltation Fences shall be inspected periodically for damage and for the amount of sedimentation which has accumulated. Removal of sediment will be required when it reaches 1/2 of th height of the siltation fence.
5. Attachment of Welded Wire Fence and Geotextile Fabric to be in accordance with the manufacturer's recommendation.

PARKING CALCULATIONS

BUILDING:

GENERAL OFFICE BUILDING
75,000 S.F.

REQUIRED PARKING:

5 P.S./1000 S.F. BLDG. AREA.
75,000 S.F./200 S.F.= 375 SPACES REQUIRED

TOTAL SPACES PROVIDED= 375

HANDICAP SPACES REQUIRED 8 (1 VAN)

HANDICAP SPACES PROVIDED 8 (2 VAN)

TOTAL LOADING PROVIDED:

REQUIRED LOADING:
1 SPACE FOR 1ST 5,000 S.F.
PLUS 1 SPACE FOR EACH ADDITIONAL 20,000 S.F.
3-12'X35' LOADING SPACES REQUIRED
3 SPACES PROVIDED

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 OF 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 PRE CONSTRUCTION CONDITIONS.

4.) ALL FILL INCLUDING PLACES UNDER PROPOSED STORM AND SANITARY SEWER LINES AND PAVED AREAS INCLUDING TRENCH BACK FILLS WITHIN AND OFF THE ROAD RIGHT-OF-WAY SHALL BE COMPACTED TO 90 PERCENT OF MAXIMUM DENSITY AS DETERMINED BY THE "MODIFIED ASTHMA T-180 COMPACTION TEST (ASTM D1557)". ALL TESTS SHALL BE VERIFIED BY A SOILS ENGINEER CONCURRENT WITH GRADING AND BACK FILLING OPERATIONS. THE COMPACTED FILL SHALL BE FREE OF RUTTING 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 FLOW LINES AND TOPS BUILT WITHOUT ELEVATIONS FURNISHED BY THE ENGINEER WILL BE THE RESPONSIBILITY OF THE 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 AT LEAST 48 HOURS PRIOR TO CONSTRUCTION FOR COORDINATION OF 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 FLOW LINE 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 THE MISSOURI DEPT. OF NATURAL RESOURCES SPECIFICATION 10 CSR-8.120(7)(E).

12.) ALL PVC SANITARY SEWER PIPE SHALL CONFORM TO THE REQUIREMENTS OF ASTM D-3034 STANDARD SPECIFICATION FOR PVC 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 SPRING LINE OF PIPE. IMMEDIATE BACK FILL OVER PIPE SHALL CONSIST OF SAME SIZE "CLEAN" OR "MINUS" STONE FROM SPRING LINE OF PIPE TO 6 INCHES ABOVE THE TOP OF PIPE.

13.) ALL SANITARY AND STORM SEWER TRENCH BACK FILLS SHALL BE WATER JETTED. GRANULAR BACK FILL WILL BE USED UNDER PAVEMENT AREAS.

14.) ALL PIPES SHALL HAVE POSITIVE DRAINAGE THROUGH MANHOLES. FLAT INVERT STRUCTURES NOT ALLOWED.

15.) ALL CREEK CROSSINGS SHALL BE LINED WITH RIP-RAP AS DIRECTED BY DISTRICT INSPECTORS.

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 ROADWAYS 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.

22.) CONNECTIONS AT ALL SANITARY STRUCTURE WITHS PIPES 24" OR SMALLER TO BE MADE WITH A-LOCK JOINT OR EQUAL.

STORM SEWER NOTES

1.) ALL CONCRETE SHALL BE REINFORCED, AND CONFORM TO A.S.T.M. DESIGNATION C76 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.

3.) TYPE "C" BEDDING 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 STANDARD CONSTRUCTION SPECIFICATIONS.

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 ALSO IN LIEU OF THE COMPACTED EARTH BACKFILL

6.) JETTING IS NOT AN ACCEPTABLE METHOD OF ACHIEVING BACKFILL COMPACTION. ALL BACKFILL MATERIAL SHALL BE MECHANICALLY COMPACTED TO AT LEAST 90 PERCENT OF THE MATERIAL'S STANDARD PROCTOR MAXIMUM DRY DENSITY.

7.) BRICK SHALL NOT BE USED IN THE CONSTRUCTION OF STORM SEWER STRUCTURES.

8.) ALL STORM SEWER JOINTS SHALL BE GASKETED O-RING TYPE.

9.) TRASH BARS SHALL BE INSTALLED ON ALL STORM SEWER INLETS.

10.) CONNECTIONS AT ALL STORM STRUCTURE WITHS PIPES 24" OR SMALLER TO BE MADE WITH A-LOCK JOINT OR EQUAL.

UTILITY INFORMATION:

UTILITIES SHOWN HAVE BEEN TAKEN FROM AVAILABLE SURVEYS, UTILITY COMPANY MAPS AND PHYSICAL PROPERTY INSPECTION. THE LOCATIONS AND FACILITIES SHALL BE CONSIDERED APPROXIMATE ONLY. THERE MAY BE ADDITIONAL UTILITIES THAT HAVE NOT BEEN SHOWN ON THIS SURVEY. THE CONTRACTOR WILL BE RESPONSIBLE FOR THE LOCATIONS OF ALL UTILITIES PRIOR TO EXCAVATION OR

WATER LINE NOTES

1.) ALL MATERIALS AND METHODS OF CONSTRUCTION FOR WATER MAINS TO MEET THE REQUIREMENTS OF THE PUBLIC WATER SUPPLY DISTRICT NO.2 SPECIFICATIONS AND STANDARDS APPROVED BY MDNR UNER REVIEW NO. 66196-04

2.) WATER MAINS SHALL BE POLY VINYL CHLORIDE (PVC) CLASS 200, SDR 21 PIPE CONFORMING TO A.S.T.M. SPECIFICATION D2241. THE PIPE SHALL BE PRESSURE RATED FOR A HYDROSTATIC WORKING PRESSURE OF 200 PSI AT 73.4 DEGREES F AND SHALL MEET ALL APPLICABLE REQUIREMENTS AS SET FORTH UNDER COMMERCIAL STANDARD (CS) 256-63.

3.) DUCTILE IRON PIPE MATERIALS AND CONSTRUCTION SHALL BE IN ACCORDANCE WITH ALL THE REQUIREMENTS OF U.S.A. STANDARD A2151 (A.W.W.A. C-151-65). THE PIPE SHALL BE FURNISHED WITH MECHANICAL, PUSH ON, OR FLANGE JOINTS AS REQUIRED. THE INTERIOR SURFACE OF PIPE SHALL BE COATED WITH A CEMENT-MORTAR LINING IN ACCORDANCE WITH U.S.A. STANDARD A 21.4 (A.W.W.A. C 104). AFTER DRYING, THE CEMENT LINING SHALL BE SEAL COATED WITH SIMILAR A.W.W.A. APPROVED BITUMINOUS VARNISH. ALL FITTINGS AND BENDS SHALL BE CONSTRUCTED OF CAST OR DUCTILE IRON.

4.) WATER MAIN TRACER TAPE TO BE INSTALLED WITH ALL WATER MAIN AND SHALL CONSIST OF THREE INCH WIDE TAPE MADE OF BONDED LAYER PLASTIC WITH A METALLIC FOIL CORE. TAPE SHALL BE "TERRA TAPE D" AS MANUFACTURED BY THE GRIFFOLYN COMPANY OF HOUSTON, TEXAS, OR APPROVED EQUAL.

5.) WATER MAIN LOCATOR WIRE SHALL BE INSTALLED WITH ALL WATER MAIN, FITTINGS, AND VALVE INSTALLATION AND SHALL CONSIST OF A STANDARD ELECTRIC SERVICE WIRE, A SINGLE NO. 12 U.L. APPROVED COPPER WIRE OF THE SOLID OR STRAND TYPE WITH INSULATION FOR 600 VOLTS.

6.) ALL VALVES FOR EXTERIOR USE SHALL BE BURIED GATE VALVES WITH A VALVE BOX AND TWO INCH SQUARE NUT ATTACHMENT FOR MANUAL OPERATION WITH STANDARD VALVE WRENCH. GATE VALVES SHALL BE IRON BODIED WITH BRASS OR BRONZE MOUNTED DOUBLE DISC GATE. GATE VALVES SHALL BE OF THE NON-RISING STEM TYPE, OPENED BY TURNING COUNTER-CLOCKWISE. THE VALVE STEM SHALL HAVE DOUBLE "O" RING SEALS AND TERMINATE AT TOP WITH TWO INCH SQUARE NUT. GATE VALVE CONSTRUCTION AND MATERIALS SHALL CONFORM TO THE LATEST GOVERNING SPECIFICATIONS OF THE A.S.T.M. AND A.W.W.A. ALL GATE VALVES FOR USE SHALL BE "MUELLER" OR APPROVED EQUAL.

7.) VALVE BOXES FOR USE SHALL BE BUFFALO TYPE VALVE BOX, TYLER 562-S OR 564-S, OR APPROVED EQUAL. THE TOPS OF THE VALVE BOXES SHALL BE DESIGNED WITH GROOVES TO ACCOMODATE A VALVE BOX ADJUSTING TOOL AS PROVIDED IN THE TOPS OF THE ABOVE REFERENCED TYLER VALVE BOXES, THE VALVE BOXES SHALL BE FURNISHED WITH EXTENSION PIECES WHERE NECESSARY AND THE TOP OF THE BOX SHALL BE FLUSH WITH THE FINNISHED GRADE OR PAVEMENT SURFACE. ALL VALVE BOXES SHALL HAVE A ½" DIAMETER HOLE FIELD DRILLED 3" FROM THE TOP TO ACCOMMODATE THE WATER MAIN LOCATER WIRES.

8.) FIRE HYDRANTS SHALL BE MUELLER "CENTURION" OR THE AMERICAN DARLING MODEL NO. "B-84-B". HYDRANTS SHALL BE TRAFFIC MODEL TYPE WITH A WORKING PRESSURE OF 150 PSI IN FULL COMPLIANCE WITH A.W.W.A. STANDARD SPECIFICATIONS C-502 OF THE LATEST REVISION. HYDRANTS TO BE THREE-WAY WITH TWO 2 ½INCH CONNECTIONS AND ONE 4 ½INCH CONNECTION AND SHALL HAVE A 5 1/4" VALVE, A 6 INCH BARREL, AND SHALL BE OF A BREAKAWAY DESIGN, FROST FREE WITH CHAIN, LEFT HAND OPEN, AND HAVE NATIONAL STANDARD THREADS.

9.) ALL FIRE HYDRANTS SHALL BE SET SO THE CENTER OF A HOSE NOZZLE SHALL NOT BE LESS THAN 18" ABOVE FINISHED GRADE. FIRE HYDRANT OUTLETS MUST FACE THE STREET OR ACCESS DRIVE.

10.) THERE SHALL BE NO OBSTRUCTIONS WITHIN 6 FEET OF ANY FIRE HYDRANT AND/OR FIRE DEPARTMENT CONNECTION TO AN AUTOMATIC SPRINKLER SYSTEM.

11.) FIRE HYDRANT SHALL BE IN ACCORDANCE WITH WENTZVILLE FIRE PROTECTION DISTRICT.

12.) CONCRETE FOR THRUST BLOCKING AT BENDS, TEES, VALVES, HYDRANTS, ETC., SHALL BE 3,500 PSI COMPRESSIVE STRENGTH AT 28 DAYS.

13.) 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 450 PSI AS DETERMINED BY THE DISTRICT. IN SUCH CASES, THE PRESSURE TEST SHALL BE AS SPECIFIED BY THE DISTRICT AND TWO PRESSURE TESTS SHALL BE CONDUCTED. THE FIRST TEST SHALL BE WITH THE FIRE HYDRANT AUXILIARY VALVES OPEN AND BE TO 150 PSI. THE SECOND TEST SHALL BE WITH THE FIRE HYDRANT AUXILIARY VALVES CLOSED AN BE TO A HIGHER PRESSURE AS DIRECTED BY THE DISTRICT.
ALL PUMPING EQUIPMENT AND PRESSURE GAUGES SHALL BE PROVIDED BY THE 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 THE JUDGMENT OF THE DISTRICT'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 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 PIPING MUST BE RE-DISINFECTED AND THE PRESSURE TESTED AGAIN UNTIL SATISFACTORY RESULTS ARE ACHIEVED.

14.) ALL WATER LINES AND SERVICE LINES SHALL HAVE A MINIMUM OF 42" OF COVERAGE.

15.) VERTICAL CLEARANCE BETWEEN SEWERS AND WATER MAINS SHALL BE A MINIMUM OF 2'-0".

16.) ALL MAINS SHALL BE LAID AT LEAST 10 FEET HORIZONTALLY FROM ANY EXISTING OR PROPOSED SANITARY SEWER MAIN. THE DISTANCES SHALL BE MEASURED EDGE TO EDGE. IN CASES WHERE IT IS NOT PRACTICAL TO MAINTAIN A 10-FOOT SEPARATION, THE DEPARTMENT OF NATURAL RESOURCES MAY ALLOW DEVIATION, IF SUPPORTED BY DATA FROM THE DESIGN ENGINEER. SUCH DEVIATION MAY ALLOW INSTALLATION OF A WATER MAIN CLOSER TO A SANITARY SEWER, PROVIDED THAT THE WATER MAIN IS IN A SEPARATE TRENCH OR ON AN UNDISTURBED EARTH SHELF LOCATED ON ONE SIDE OF THE SEWER AT SUCH AN ELEVATION THAT THE BOTTOM OF THE WATER MAIN IS AT LEAST 18 INCHES ABOVE THE TOP OF THE WATER. WATER MAINS CROSSING SANITARY SEWERS SHALL BE LAID TO PROVIDED A MINIMUM VERTICAL DISTANCE OF 18 INCHES BETWEEN THE OUTSIDE OF THE WATER MAIN AND THE OUTSIDE OF THE SEWER. THIS SHALL BE THE CASE WHERE THE WATER MAIN IS EITHER ABOVE OR BELOW THE SEWER. THE CROSSING SHALL BE ARRANGED SO THAT THE SEWER JOINTS WILL BE EQUIDISTANT AND AS FAR A POSSIBLE FROM THE WATER JOINTS. WHERE A WATER MAIN CROSSES UNDER A SEWER, ADEQUATE STRUCTURAL SUPPORT SHALL BE PROVIDED FOR THE SEWER TO PREVENT DAMAGE TO THE WATER MAIN. WHEN IT IS IMPOSSIBLE TO OBTAIN PROPER HORIZONTAL AND VERTICAL SEPARATION, THE SANITARY SEWER SHALL BE DESIGNED AND CONSTRUCTED EQUAL TO WATER PIPES, AND SHALL BE PRESSURE TESTED TO ASSURE WATER TIGHTNESS PRIOR TO BACKFILLING. A 3-FOOT HORIZONTAL SEPARATION WILL BE PROVIDED FROM OTHER UNDERGROUND UTILITIES TO INCLUDE GAS, ELECTRIC, TELEPHONE, CABLE TV, ETC.

17.) CONTRACTOR TO COORDINATE WATER LINE UTILITY CROSSINGS WITH SEWER PROFILES.

18.) ALL ON SITE PRIVATE FIRE HYDRANTS TO BE PAINTED RED.

CALL 1-800-DIG-RITE (MISSOURI ONE CALL) TO HAVE LOCATIONS MARKED IN THE FIELD (SUBSCRIBING UTILITIES REQUIRE 48 HOURS NOTICE PRIOR TO CONSTRUCTION).
ALSO CALL MODOT AT (314) 340-4100.

REVISIONS

DATE	DESC.
9/19/06	DUCKETT CREEK & PWSD #2
9/28/06	CITY OF O'FALLON REVISIONS
10/18/06	DUCKETT CREEK & PWSD #2
11/3/06	CITY OF O'FALLON REVISIONS
11/9/06	COORDINATION WITH ELECTRICAL PLANS
11/30/06	CITY OF O'FALLON REVISIONS
1/11/07	WINGHAVEN ARCH. REVIEW BOARD COMMENTS
1/16/07	CITY OF O'FALLON REVISIONS

DEVELOPER/OWNER:
McEAGLE PROPERTIES, L.L.C
1001 BOARDWALK SPRINGS PLACE
O'FALLON, MO 63366
(636) 561-9300

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SUMMIT PLACE I
TECHNOLOGY DRIVE AND POST ROAD
O'FALLON, MISSOURI

SPECIFICATIONS SHEET

planning • engineering • surveying • landscape architecture
Cole and ASSOCIATES INCORPORATED
10777 sunset office dr. suite 10
saint louis, missouri 63127
p: 314 984 9887 f: 314 984 0587

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