- 3. NO SLOPES SHALL EXCEED 3 (HORIZONTAL):1 (VERTICAL).
- 4. ALL SLOPES TO BE STABILIZED IMMEDIATELY AFTER GRADING.
- 5. ALL PROPOSED UTILITIES AND/OR UTILITY RELOCATIONS SHALL BE LOCATED UNDERGROUND.
- 6. ALL OUTSIDE TRASH CONTAINERS, HVAC UNITS, ELECTRIC, TELEPHONE AND GAS METERS, SATELLITE DISHES, AND ROOFTOP MECHANICAL APPARATUS SHALL BE THOROUGHLY SCREENED WITH MATERIALS AND/OR LANDSCAPING TO CONCEAL THE VISIBILITY OF SUCH ITEMS FROM THE VIEW OF RIGHT-OF-WAY AND/OR ADJACENT PROPERTIES AS REVIEWED AND APPROVED BY THE PLANNING DIVISION.
- 7. ALL HVAC AND MECHANICAL UNITS ON SITE SHALL BE PROPERLY SCREENED AS REQUIRED BY CITY CODE. ROOFTOP UNITS SHALL BE SCREENED BY A PARAPET WALL THAT EXTENDS AROUND THE ENTIRE PERIMETER OF THE BUILDING; THE PARAPET SHALL HAVE A MINIMUM HEIGHT THAT IS AT LEAST AS TALL AS THE TALLEST UNIT MOUNTED ON THE ROOF; GROUND MOUNTED HVAC AND MECHANICAL UNITS SHALL BE SCREENED BY FENCING, VEGETATION, OR SOME OTHER MEANS (APPROVED BY THE PLANNING AND ZONING COMMISSION) THAT HAS A MINIMUM HEIGHT THAT IS AT LEAST AS TALL AS THE TALLEST UNIT BEING SCREENED.
- 8. ALL CONSTRUCTION AND MATERIALS USED SHALL CONFORM TO CURRENT CITY OF O'FALLON STANDARDS.
- 9. MAX BUILDING HEIGHT 50'. SEE ARCHITECTURAL DRAWINGS FOR BUILDING HEIGHT AND DIMENSIONS.
- MATERIAL ARE NOT TO BE REUSED, THEY SHALL BE REMOVED FROM THE SITE AND DISPOSED OF IN COMPLIANCE WITH ALL APPLICABLE LAWS AND REGULATIONS.

10. IF MATERIALS SUCH AS TREES, ORGANIC DEBRIS, RUBBLE, FOUNDATIONS AND OTHER DELETERIOUS

- 11. STORM WATER DETENTION PER THE CITY OF O'FALLON STORM WATER MANAGEMENT DESIGN STANDARDS AND DETAILS.
- 12. ALL SIGNS SHALL BE APPROVED AS A SEPARATE SIGN PACKAGE AS REVIEWED AND APPROVED AS PART OF CONSTRUCTION SITE PLAN APPROVAL
- 13. ALL TRASH ENCLOSURES SHALL CONSIST OF MINIMUM 6' HIGH SOLID WALL W/ SIGHT PROOF VINYL GATE. WALLS SHALL BE CONSISTENT W/ ARCHITECTURAL THEME OF BUILDING.
- 14. BICYCLE PARKING RACKS SHOULD BE LOCATED IN CLOSE PROXIMITY TO THE BUILDING ENTRANCE(S) IN HIGHLY VISIBLE WELL LIGHTED AREAS. BICYCLE PARKING RACKS SHOULD BE SECURELY ANCHORED TO THE GROUND SO THAT THEY CANNOT BE EASILY REMOVED AND SHOULD BE OF SUFFICIENT STRENGTH TO RESIST VANDALISM AND THEFT
- 15. PRIOR TO CONSTRUCTION SITE PLAN APPROVAL, A PHOTOMETRIC LIGHTING PLAN IN ACCORDANCE WITH THE CITY'S EXTERIOR LIGHTING STANDARDS SHALL BE SUBMITTED FOR REVIEW AND APPROVAL FOR ALL PROPOSED EXTERIOR LIGHTING.
- 16. REFER TO LANDSCAPE PLAN FOR ISSUES PERTINENT TO LANDSCAPING, TRANSITION BUFFERS, AND TREE PRESERVATION CALCULATIONS.
- 17. IMPROVEMENTS ARE TO BE MADE TO THE ADJACENT RIGHT OF WAY OF ALL DEVELOPMENTS TO MEET CITY OF O'FALLON STANDARDS AND SPECIFICATIONS. ANY ADJUSTMENTS IN THE GRADING OF RIGHT OF WAY WHETHER IT BE EXISTING CONDITIONS OR CAUSED BY THE CONSTRUCTION OF THE DEVELOPMENT SHALL BE APPROVED BY THE CITY OF O'FALLON UPON INSPECTION OF THE SITE.
- 18. ALL PAVING TO BE IN ACCORDANCE WITH ST. CHARLES COUNTY STANDARDS AND SPECIFICATIONS EXCEPT AS MODIFIED BY THE CITY OF O'FALLON ORDINANCES.
- 19. ALL ON SITE STORM SEWERS ARE TO BE PRIVATE. EASEMENTS OVER THOSE SEWERS ARE TO BE GRANTED TO ADJACENT PROPERTIES FOR THE CONVEYANCE OF STORM WATER TO THE BASIN AND NOT THE CITY.
- 20. ROOF TOP MECHANICAL EQUIPMENT ARE SCREENED BY PARAPET WALL AND GROUND MOUNTED MECHANICAL EQUIPMENT MUST BE FULLY SCREENED WITH LANDSCAPING OR
- 21. ALL FILL PLACED UNDER PROPOSED STORM AND SANITARY SEWER, PROPOSED ROADS, AND/OR PAVED AREAS SHALL BE COMPACTED TO 90% OF MAXIMUM DENSITY AS DETÉRMINED BY THE MODIFIED AASHTO T-180 COMPACTION TEST OR 95% OF MAXIMUM DENSITY AS DETERMINED BY THE STANDARD PROTOR TEST AASHTO T-99. ALL FILL PLACED IN PROPOSED ROADS SHALL BE COMPACTED FROM THE BOTTOM OF THE FILL UP. ALL TESTS SHALL BE VERIFIED BY A SOILS ENGINEER CONCURRENT WITH GRADING AND BACKFILLING OPERATIONS. MOISTURE CONTENT OF THE SOIL IN FILL AREAS IS TO CORRESPOND TO THE COMPACTIVE EFFORT AS DEFINED BY THE STANDARD OR MODIFIED PROCTOR TEST. OPTIMUM MOISTURE CONTENT SHALL BE DETERMINED USING THE SAME TEST THAT WAS USED FOR COMPACTION. SOIL COMPACTION CURVES SHALL BE SUBMITTED TO THE CITY OF O'FALLON PRIOR TO THE PLACEMENT OF FILL. PROOF ROLLING MAY BE REQUIRED TO VERIFY SOIL STABILITY AT THE DISCRETION OF THE CITY OF O'FALLON.
- 22. DEVELOPER MUST SUPPLY CITY CONSTRUCTION INSPECTORS WITH SOIL REPORTS PRIOR TO OR DURING SITE SOIL TESTING. REPORTS MUST CONTAIN THE FOLLOWING INFORMATION: MAXIMUM DRY DENSITY
  - OPTIMUM MOISTURE CONTENT MAXIMUM/MINIMUM ALLOWABLE MOISTURE CONTENT

CURVE MUST HAVE ATLEAST 5 DENSITY POINTS

- CURVE MUST BE PLOTTED SHOWING DENSITY FROM A MINIMUM OF 90% COMPACTION AND ABOVE DETERMINED BY THE "MODIFIED AASHTO-180 COMPACTION TEST" OR FROM A MINIMUM OF 95% AS DETERMINED BY THE "STANDARD PROCTOR TEST AASHTO T-99. METHOD C" (ASTM D-698). PROCTOR TYPE MUST BE DESIGNATED ON DOCUMENT.
- SPECIFIC GRAVITY NATURAL MOISTURE CONTENT
- LIQUID LIMIT
- PLASTIC LIMIT
- 23. ALL PAVED ROADWAYS GOING ON AND OFFSITE WILL BE KEPT FREE OF DIRT, ROCKS, GRAVEL OR OTHER MATERIALS DURING CONSTRUCTION.
- 24. RIP RAP SHOWN AT FLARED ENDS WILL BE EVALUATED IN THE FIELD BY THE ENGINEER, CONTRACTOR AND CITY INSPECTOR AFTER INSTALLATION FOR EFFECTIVENESS AND FIELD MODIFIED IF NECESSARY TO REDUCE EROSION ON AND OFF SITE.
- 26. BRICK SHALL NOT BE USED IN THE CONSTRUCTION OF STORM SEWER STRUCTURES.

25. ALL PROPOSED WATER LINE SHALL BE SDR 21 PVC OR BETTER. (PWSD-2/FIRE APPROVAL REQUIRED)

- 27. ALL PROPOSED FENCING REQUIRES A SEPARATE PERMIT THROUGH THE PLANNING & DEVELOPMENT DIVISION. 28. ALL IDENTIFICATION OR DIRECTIONAL SIGN(S) MUST HAVE THE LOCATIONS AND SIZES APPROVED AND
- 29. ALL TRAFFIC SIGNALS, STREET SIGNS, SIGN POSTS, BACKS AND BRACKET ARMS SHALL BE PAINTED BLACK USING CARBOLINE RUSTBOND PENETRATING SEALER SG AND CARBOLINE 133 HB PAINT (OR EQUIVALENT AS APPROVED BY THE CITY AND MODOT). SIGNS DESIGNATING STREET
- NAME SHALL BE ON THE SAME POST AS TRAFFIC CONTROL SIGNS. 30. CONTRACTOR TO FOLLOW GEOTECHNICAL ENGINEER RECOMMENDATIONS
- 31. CONTRACTOR IS RESPONSIBLE FOR REMOVAL OF ANY ROCK ENCOUNTERED. CONTRACTOR SHOULD FAMILIARIZE THEMSELVES WITH ALL THE GEOTECHNICAL REPORTS

AND PERMITTED SEPARATELY THROUGH THE PLANNING AND DEVELOPMENT DIVISION.

- LISTED ABOVE AND REVIEW THE RECOMMENDATIONS OF THE GEOTECHNICAL ENGINEER. 32. SIDEWALKS, CURB RAMPS AND ACCESSIBLE PARKING SPACES SHALL BE CONSTRUCTED IN ACCORDANCE WITH CURRENTLY APPROVED AMERICANS WITH DISABILITIES ACT ACCESSIBILITY GUIDELINES ALONG WITH THE REQUIRED GRADES, SIGNAGE, SPECIFICATIONS AND CONSTRUCTION MATERIALS. IF ANY CONFLICT OCCURS BETWEEN THE ABOVE INFORMATION AND THE PLANS, THE
- ADAAG GUIDELINES SHALL BE FOLLOWED AND THE CONTRACTOR, PRIOR TO ANY CONSTRUCTION SHALL NOTIFY THE PROJECT ENGINEER.
- 33. TRAFFIC CONTROL IS TO BE PER MODOT OR MUTCD, WHICHEVER IS MORE STRINGENT. 34. LIGHTING VALUES WILL BE REVIEWED ON SITE PRIOR TO THE FINAL OCCUPANCY INSPECTION
- 35. IT IS THE CONTRACTOR'S RESPONSIBILITY TO FOLLOW RECOMMENDATIONS PROVIDED IN THE GEOTECHNICAL REPORT PREPARED BY SCI ENGINEERING, INC. (PROJ. NO. 2012-0308.11, TASK 101) DATED JULY 2019, TITLED 1147 TECHNOLOGY DRIVE, O'FALLON, MISSOURI AND ADDENDUM DATED FEBRUARY 10, 2020, TITLED "GEOTECHNICAL REPORT ADDENDUM - PTI SLAB PARAMETERS, SCI NO. 2012-0308.11, TASK 102, AND ALL ITS SUPPLEMENTAL PROVISIONS FOR ADDITIONAL EARTHWORK REMEDIATION, SUBGRADE PREPARATION, BACKFILL AND PAVEMENT RECOMMENDATIONS.
- 36. 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.
- 37. PERMITTEE SHALL ASSUME COMPLETE RESPONSIBILITY FOR CONTROLLING ALL SILTATION AND EROSION OF THE PROJECT AREA. THE PERMITTEE SHALL USE WHATEVER MEANS NECESSARY TO CONTROL EROSION AND SILTATION INCLUDING. BUT NOT LIMITED TO, STAKED STRAW BALES AND/OR SILTATION FABRIC FENCES (POSSIBLE METHODS OF CONTROL ARE DETAILED IN THE PLAN). CONTROL SHALL COMMENCE WITH THE CLEARING OPERATIONS AND BE MAINTAINED THROUGHOUT THE PROJECT UNTIL ACCEPTANCE OF THE WORK BY THE CITY OF O'FALLON AND AS NECESSARY BY MODOT. THE PERMITTEE'S RESPONSIBILITIES INCLUDE ALL DESIGN AND IMPLEMENTATION AS REQUIRED TO PREVENT EROSION AND THE DEPOSITING OF SILT. THE CITY OF O'FALLON AND AS REQUIRED BY MODOT MAY AT THEIR OPTION DIRECT THE PERMITTEE IN HIS METHODS AS DEEMED FIT TO PROTECT PROPERTY AND IMPROVEMENTS. ANY DEPOSITING OF SILT OF MUD ON NEW OR EXISTING PAVEMENT SHALL BE REMOVED IMMEDIATELY. ANY DEPOSITING OF SILTS OR MUD IN NEW OR EXISTING STORM SEWERS OR SWALES SHALL BE REMOVED AFTER EACH RAIN AND AFFECTED AREAS CLEANED TO THE SATISFACTION OF THE CITY OF O'FALLON AND AS REQUIRED BY MODOT.
- 38. ALL EROSION CONTROL SYSTEMS ARE INSPECTED AND CORRECTED WEEKLY, ESPECIALLY WITHIN 48 HOURS OF ANY RAINSTORM RESULTING IN ONE-HALF INCH OF RAIN OR MORE. ANY SILT OR DEBRIS LEAVING THE SITE AND AFFECTING PUBLIC RIGHTS-OF-WAYS OR STORM WATER DRAINAGE FACILITIES SHALL BE CLEANED UP WITHIN 24 HOURS AFTER THE END OF THE STORM.
- 39. ANY EXISTING WELLS AND/OR SPRINGS WHICH MAY EXIST ON THE PROPERTY MUST BE SEALED IN A MANNER ACCEPTABLE TO THE CITY OF O'FALLON CONSTRUCTION INSPECTION DEPARTMENT AND FOLLOWING

MISSOURI DEPARTMENT OF NATURAL RESOURCES STANDARDS AND SPECIFICATIONS.

40. ALL INSTALLATIONS AND CONSTRUCTION SHALL CONFORM TO THE APPROVED ENGINEERING DRAWINGS. HOWEVER IF THE DEVELOPER 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 DEVELOPER TO NOTIFY THE CITY ENGINEER OF ANY CHANGES FROM THE APPROVED DRAWINGS. THE DEVELOPER MAY BE REQUIRED TO CORRECT THE INSTALLED IMPROVEMENTS SO AS TO CONFORM TO THE APPROVED ENGINEERING DRAWINGS. THE DEVELOPER MAY REQUEST A LETTER FROM THE CONSTRUCTION INSPECTION DIVISION REGARDING ANY FIELD CHANGES APPROVED BY THE CITY INSPECTORS.

### **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.
- 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 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 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
- 5. THE CONTRACTOR SHALL PREVENT ALL STORM, SURFACE WATER, MUD AND CONSTRUCTION DEBRIS FROM ENTERING THE EXISTING SANITARY SEWER SYSTEM. THE CONTRACTOR WILL BE REQUIRED TO INSTALL A BRICK BULKHEAD ON THE DOWNSTREAM SIDE OF THE FIRST NEW MANHOLE CONSTRUCTED WHEN CONNECTING INTO EXISTING SEWERS.
- ALL SANITARY SEWER FLOWLINES 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 ON THE RECORD PLAT.
- 8. ALL SANITARY SEWER CONSTRUCTION AND MATERIALS SHALL CONFORM TO THE CURRENT CONSTRUCTION STANDARDS OF THE DUCKETT CREEK SANITARY DISTRICT.
- THE DUCKETT CREEK SANITARY DISTRICT SHALL BE NOTIFIED AT LEAST 48 HOURS PRIOR TO CONSTRUCTION FOR COORDINATION OF
- 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 WATERTIGHT IN ACCORDANCE WITH MISSOURI DEPT. OF NATURAL RESOURCES SPECIFICATION 10 CSR-8.120(6)(F)1
- 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 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. FINAL BACKFILL MATERIAL SHALL BE OF SUITABLE MATERIAL REMOVED FROM EXCAVATION EXCEPT AS OTHER MATERIAL IS SPECIFIED. DEBRIS, FROZEN MATERIALS, LARGE ROCKS OR STONES, OR OTHER UNSTABLE MATERIALS SHALL NOT BE USED WITHIN 2 FEET FROM TOP OF PIPE.
- 13. ALL SANITARY AND STORM SEWER TRENCH BACKFILLS SHALL BE WATER JETTED OUTSIDE OF PAVED AREAS. GRANULAR BACKFILL WITH PROPER COMPACTION WILL BE USED UNDER PAVEMENT AREAS.
- 14. ALL PIPES SHALL HAVE POSITIVE DRAINAGE THROUGH MANHOLES. NO FLAT INVERT STRUCTURES ARE 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
- 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. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO ADJUST ALL SANITARY SEWER MANHOLES (THAT ARE AFFECTED BY THE DEVELOPMENT) TO FINISH GRADE.
- 23. EPOXY COATING SHALL BE USED ON ALL SANITARY SEWER MANHOLES THAT RECEIVE
- 24. ALL SANITARY SEWER SYSTEM WORK SHALL BE CONDUCTED UNDER THE INSPECTION OF A REPRESENTATIVE OF THE DISTRICT. ALL WORK MAY NOT REQUIRE INSPECTION BUT THE DISTRICT'S REPRESENTATIVE MAY DESIGNATE SPECIFIC AREAS THAT MUST BE INSPECTED BEFORE THE WORK IS BACKFILLED. ALL TESTING MUST BE WITNESSED BY THE DISTRICT'S INSPECTOR AND THE CONTRACTOR SHALL FURNISH ALL TESTING EQUIPMENT AS APPROVED BY THE DISTRICT. TESTING SHALL INDLUDE:
  - A MANDREL TEST OF ALL GRAVITY SEWERS USING A MANDREL WITH A DIAMETER THAT HAS A DIAMETER 95% OF THE INSIDE PIPE DIAMETER. IF THE MANDREL FAILS ON ANY SECTION OF PIPE, THAT SECTION OF PIPE SHALL BE UNCOVERED AND REPLACED NO EXPANSION DEVICES WILL BE ALLOWED TO BE USED TO "FORCE" THE PIPE THAT IS DEFORMED BACK INTO ROUND. ANY STRING LINES USED IN MANDREL TESTING SHALL BE REMOVED AFTER TESTING IS COMPLETED. DEFLECTION TESTING CANNOT BE CONDUCTED PRIOR TO 30 DAYS AFTER FINAL BACKFILL. - AN AIR PRESSURE TEST OF ALL GRAVITY SEWERS TO A PRESSURE OF 5 PSI WITH NO OBSERVED DROP IN PRESSURE DURING A TEST PERIOD OF 5 MINUTES. - A VACUUM TEST OF ALL MANHOLES FOR A PERIOD OF 1 MINUTE AND THE VACUUM SHALL BE 10" OF MERCURY AND MAY NOT DROP BELOW 9" OF MERCURY AT THE END OF THE 1 MINUTE TEST.

### 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 METROPOLITAN ST. LOUIS SEWER DISTRICT STANDARD CONSTRUCTION SPECIFICATIONS FOR SEWER AND DRAINAGE FACILITIES, 2009
- 3.) TYPE "C" BEDDING IS REQUIRED FOR PIPES IN ROCK.

9.) PROVIDE 36" MINIMUM COVER FOR STORM SEWERS

- 4.) ALL TRENCH BACKFILLS UNDER PAVEMENT SHALL BE GRANULAR BACKFILLED.
- 5.) ALL CURB INLETS AND AREA INLETS TO HAVE 5/8" TRASH BAR ACROSS
- 6.) "O" RING RUBBER GASKET TO BE USED ON ALL CONCRETE STORM SEWER PIPE.
- 7.) GRANULAR BACKFILL TO BE PLACED WITH A MINIMUM OF 1'H:1'V SLOPE
- 8.) BRICK SHALL NOT BE USED IN THE CONSTRUCTION OF STORM SEWER STRUCTURES.
- 10.) PROVIDE CONCRETE CRADLES FOR RCP AND CONCRETE ENCASEMENTS FOR HDPE AT CROSSING WITH SANITARY SEWER.
- 11.) COMPACTED ROCK BACKFILL IS REQUIRED IN THE DISTURBED GROUND AROUND
- THE STRUCTURE OF ALL DROP STRUCTURES. 12.) ALL STORM SEWERS ARE TO BE CONSIDERED PRIVATE, UNLESS OTHERWISE NOTED.
- 13.) CONTRACTORS TO PROVIDED ALTERNATE BID FOR ADS N-12 ULTRA WT OR EQUAL (SMOOTH INTERIOR) AASHTO TYPE "S" (N-12 ULTRA WT).
- 14.) ALL STRUCTURES AND MANHOLES SHALL HAVE POSITIVE DRAINAGE THROUGH THE STRUCTURE.
- 15.) CONNECTIONS AT ALL STORM OR SANITARY STRUCTURES TO BE MADE WITH "A-LOCK" JOINT OR EQUAL.
- 16.) HDPE PIPE IS TO BE N-12WT OR EQUAL AND TO MEET ASTM F-1417 WATER TIGHT FIELD TEST. NOTE: PROVIDE STORM SEWER INLET MARKINGS PER FOLLOWING:

#### PROVIDE A MARKING ON THE STORM SEWER INLETS. THE CITY WILL ALLLOW THE FOLLOWING MARKERS AND ADHESIVE PROCEDURES ONLY AS SHOWN IN THE TABLE BELOW OR AN APPROVED EQUAL. "PEEL AND STICK" ADHESIVE PADS WILL NOT BE ALLOWED.

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

# EROSION AND SEDIMENT CONTROL NOTES

- INSTALLATION OF PERIMETER SEDIMENT CONTROL SHALL BE IMPLEMENTED
- INSPECTION OF SILTATION CONTROL DEVICES SHALL TAKE PLACE ONCE EVERY SEVEN DAYS AND WITHIN 48 HOURS OF ANY 0.25"/24 HOUR RAIN OR GREATER RAIN EVENT. ANY SILT OR DEBRIS LEAVING THE SITE AND AFFECTING PUBLIC RIGHT-OF-WAY OR STORM DRAINAGE FACILITIES SHALL BE CLEANED UP WITHIN 24 HOURS AFTER THE END OF THE STORM.
- NO GRADED AREAS ARE TO REMAIN BARE FOR OVER 14 DAYS WITHOUT BEING SEEDED AND MULCHED PER SPECIFICATIONS. IF SEASONAL CONDITIONS PROHIBIT SEEDING, MULCHING OR MATTING SHALL BE USED.
- 4. ALL SLOPES OR DRAINAGE CHANNELS, ONCE CONSTRUCTED TO FINAL GRADE, SHALL BE SEEDED AND MULCHED PER SPECIFICATIONS WITHIN
- 5. SILT FENCES SHALL BE INSTALLED IMMEDIATELY AROUND EACH STORM SEWER STRUCTURE ONCE FINAL CONSTRUCTION OF EACH INDIVIDUAL
- ALL SILTATION CONTROL DEVICES SHALL REMAIN IN PLACE UNTIL UPSLOPE AREAS HAVE BEEN PERMANENTLY STABILIZED.

AS THE FIRST STEP OF GRADING THE SITE.

- 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. 8. WHEN DEEMED NECESSARY, POSITIVE STEPS SHOULD BE EXERCISED TO PREVENT THIS SOIL FROM DAMAGING ADJACENT PROPERTY AND SILTING UP ALL STORM DRAINAGE SYSTEMS WHETHER ON OR OFF SITE.
- LOCATIONS AND DETAILS FOR ALL SILTATION CONTROL DEVICES SHALL FOLLOW, "ST. CHARLES COUNTY SOIL AND WATER CONSERVATION DISTRICT EROSÍON AND SEDIMENT CONTROL" GUIDELINES. SILTATION CONTROL SCHEDULE IMPLEMENTATION
- PERIMETER SILTATION CONTROL AND CONSTRUCTION ENTRANCES TO BE INSTALLED.
- 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

- 4. IMMEDIATELY SEED AREAS UPON REACHING FINAL GRADE THAT ARE TO
- TEMPORARY ACCESS ROADS AND PARKING AREAS SPECIFICATIONS
- TEMPORARY ROADS SHALL FOLLOW THE CONTOUR OF THE NATURAL TERRAIN TO THE EXTENT POSSIBLE. SLOPES SHOULD NOT EXCEED 10
- GRADES SHOULD BE SUFFICIENT TO PROVIDE DRAINAGE, BUT SHOULD NOT EXCEED 10 PERCENT.
- 3. ROADBEDS SHALL BE AT LEAST 24 FEET WIDE.
- 5. DRAINAGE DITCHES SHALL BE PROVIDED AS NEEDED.

4. ALL CUTS AND FILLS SHALL BE 3:1 OR FLATTER TO THE EXTENT

- 6. THE ROADBED OR PARKING SURFACE SHALL BE CLEARED OF ALL VEGETATION, ROOTS AND OTHER OBJECTIONABLE MATERIAL.
- 7. A 10-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 MAY BE APPLIED TO THE ROADBED FOR ADDITIONAL STABILITY IN ACCORDANCE WITH FABRIC MANUFACTURER'S SPECIFICATIONS.

VEGETATION

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.

BOTH TEMPORARY AND PERMANENT ROADS AND PARKING AREAS MAY REQUIRE PERIODIC TOP DRESSING WITH NEW GRAVEL. 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 O ENSURE THAT THEY DO NOT BECOME CLOGGED WITH SILT OR OTHER

SILT FENCES SHALL BE USED ONLY ON SHEET FLOW CONDITIONS. ALL EROSION CONTROL SYSTEMS SHALL BE INSPECTED AND NECESSARY CORRECTIONS MADE WITHIN 24 HOURS OF ANY RAINSTORM RESULTING IN 1/4 INCH OF RAIN

## **VEGETATION ESTABLISHMENT**

TILLAGE PREPARATIONS

WHEAT/RYE

\*TILL TOP 4" OF SOIL

\* PER SOIL TEST OR FOLLOWING TABLE:

LBS./1,000 S.F. N P K LIME TEMPORARY SEEDING 0.7 0.7 0.7 14 ENM+

1.0 1.4 1.4 14 ENM+ PERMANENT + SOIL TEST RESULTS TAKE PRECEDENCE, DUE TO HIGHLY VARIABLE SOIL PH.

MARCH 15 - NOVEMBER 1

#### SEEDING RATES TEMPORARY WHEAT OR RYE 150 LBS. / ACRE

PERMANENT 150 LBS. / ACRE KENTUCKY BLUEGRASS/ 6 LBS / 1000 S.F. PERENNIAL RYEGRASS 8 LBS / 1000 S.F. FINE FESCUE SEEDING PERIODS MARCH 1 - JUNE 1 LISTED LEGUMES/GRASSES AUGUST 1 - OCTOBER 1

## EARTHWORK NOTES

STOCK AND ASSOCIATES CONSULTING ENGINEERS.

STRUCTURES.

MAINTENANCE

ACCOMPLISHED PROMPTLY.

....± CUBIC YARD

STRAW BALE SILTATION CONTROL SPECIFICATIONS

DETAIL SHOWN ON SHEET C4.1.

SHOWN ON SHEET C4.1).

BE MADE PROMPTLY AS NEEDED.

TIGHTLY ABUTTING ONE ANOTHER.

MAINTENANCE

SHALL BE ACCOMPLISHED PROMPTLY.

PERMANENTLY STABILIZED.

CHANNEL FLOW APPLICATIONS

NOT AROUND IT.

BALES SHALL BE PLACED IN A SINGLE ROW, LENGTHWISE ON TH

CONTOUR, WITH BOTH ENDS OF ADJACENT BALES TIGHTLY ABUTTING ONE

ALL BALES SHALL BE EITHER WIRE-BOUND OR STRING-TIED. STRAW

(IN ORDER TO PREVENT DETERIORATION OF THE BINDINGS). SEE

THE BARRIER SHALL BE ENTRENCHED AND BACKFILLED. A TRENCH

BALES SHALL BE INSTALLED SO THAT BINDINGS ARE ORIENTED AROUND

SHALL BE EXCAVATED THE WIDTH OF A BALE AND THE LENGTH OF THE

PROPOSED BARRIER TO A MINIMUM DEPTH OF 4 INCHES. AFTER THE

BACKFILLED AGAINST THE BARRIER. BACKFILL SOIL SHALL CONFORM

TO THE GROUND LEVEL ON THE DOWNHILL AND SHALL BE BUILT UP TO

EACH BALE SHALL BE SECURELY ANCHORED BY AT LEAST TWO STAKES OR

BALES TOGETHER. STAKES OR REBARS SHALL BE DRIVEN DEEP ENOUGH

WITH STRAW TO PREVENT WATER FROM ESCAPING BETWEEN THE BALES

LOOSE STRAW SCATTERED OVER THE AREA IMMEDIATELY UPHILL FROM

À STRAW BALE BARRIER TENDS TO INCREASE BARRIER EFFICIENCY).

INSPECTION SHALL BE FREQUENT AND REPAIR OR REPLACEMENT SHALL

STRAW BALE BARRIERS SHALL BE REMOVED WHEN THEY HAVE SERVED

BALES SHALL BE PLACED IN A SINGLE ROW. LENGTHWISE. ORIENTED

PERPENDICULAR TO THE CONTOUR, WITH ENDS OF ADJACENT BALES

THE REMAINING STEPS FOR INSTALLING A STRAW BALE BARRIER FOR

BOTTOMS OF THE END BALES ARE HIGHER IN ELEVATION THAN THE TOP

OF THE LOWEST MIDDLE BALE (SEE DETAIL) TO ASSURE THAT SEDIMENT-

LADEN RUNOFF WILL FLOW EITHER THROUGH OR OVER THE BARRIER BUT

STRAW BALE BARRIERS SHALL BE INSPECTED IMMEDIATELY AFTER EACH

CLOSE ATTENTION SHALL BE PAID TO THE REPAIR OF DAMAGED FENCE,

RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL.

3. NECESSARY REPAIRS TO BARRIERS OR REPLACEMENT OF SILT FENCE

MUST BE REMOVED WHEN THE LEVEL OF DEPOSITION REACHES

FABRIC TO BE SUPPORTED BY METAL TEE POST WITH SPADE BASE

SPACED ON 5' CENTERS WITH 6 X 6/10 X 10 GAGE WELDED WIRE

FABRIC SHALL BE ENTRENCHED AND BACKFILLED. A TRENCH SHALL BE

THE EXCAVATED SOIL SHALL BE BACKFILLED AGAINST THE

EXCAVATED A MINIMUM OF 6 INCHES DEEP FOR THE LENGTH OF THE

FENCE HEIGHT SHALL BE A MINIMUM OF 4 FEET IN HEIGHT, WITH THE

SILT FENCE BARRIERS SHALL BE INSPECTED IMMEDIATELY AFTER EACH

CLOSE ATTENTION SHALL BE PAID TO THE REPAIR OF DAMAGED BALES, END RUNS AND UNDERCUTTING BENEATH BALES.

NECESSARY REPAIRS TO BARRIERS OR REPLACEMENT OF BALES SHALL BE

SEDIMENT DEPOSITS SHOULD BE REMOVED AFTER EACH RAINFALL. THEY MUST BE REMOVED WHEN THE LEVEL OF DEPOSITION REACHES

ANY SEDIMENT DEPOSITS REMAINING IN PLACE AFTER THE SILT FENCE

BARRIER IS NO LONGER REQUIRED SHALL BE DRESSED TO CONFORM TO

FABRIC INSTALLED ON THE FENCE ON THE UPSTREAM SIDE.

SILT FENCES SHALL BE INSTALLED AROUND ALL STORM SEWER

RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL.

APPROXIMATELY ONE-HALF THE HEIGHT OF THE BARRIER.

THE EXISTING GRADE, PREPARED AND SEEDED.

APPROXIMATELY ONE-HALF THE HEIGHT OF THE BARRIER.

4. SEDIMENT DEPOSITS SHOULD BE REMOVED AFTER EACH RAINFALL. THEY

ANY SEDIMENT DEPOSITS REMAINING IN PLACE AFTER THE STRAW BALE

BARRIER IS NO LONGER REQUIRED SHALL BE DRESSED TO CONFORM TO

END RUNS AND UNDERCUTTING BENEATH FENCE.

THE EXISTING GRADE, PREPARED AND SEEDED.

SILT FENCE SPECIFICATIONS

SHEET FLOW APPLICATIONS APPLY HERE, WITH THE FOLLOWING

THE BARRIER SHALL BE EXTENDED TO SUCH A LENGTH THAT THE

THEIR USEFULNESS, BUT NOT BEFORE THE UPSLOPE AREAS HAVE BEEN

REBARS DRIVEN THROUGH THE BALE. THE FIRST STAKE IN EACH BALE

BALES ARE STAKED AND CHINKED, THE EXCAVATED SOIL SHALL BE

4 INCHES AGAINST THE UPHILL SIDE OF THE BARRIER (SEE DETAIL

SHALL BE DRIVEN TOWARD THE PREVIOUSLY LAID BALE TO FORCE 1

THE GAPS BETWEEN BALES SHALL BE CHINKED (FILLED BY WEDGING

INTO THE GROUND TO SECURELY ANCHOR THE BALES.

THE SIDES RATHER THAN ALONG THE TOPS AND BOTTOMS OF THE BALES

SHEET FLOW APPLICATIONS

BULK FILL 35,000 (INCLUDES 10% SHRINKAGE) ± CUBIC YARD PER EALIER CONVERSATIONS WITH THE OWNER, THE SITE GRADING

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

AND CALCULATIONS WERE TO BE SHORT OF A BALANCED SITE. THE

CALCULATIONS DO NOT INCLUDE SPOILS FROM FOOTINGS, WALLS, SEWERS

AND UTILITIES WHICH COULD MAKE UP FOR THE EXTRA DIRT REQUIRED.

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 SIXTY 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

UNSUITABLE MATERIAL THAT MUST BE REMOVED FROM SITE. THE ABOVE QUANTITIES ARE AN ESTIMATE AND SHOULD BE CONSIDERED AS SUCH. IT IS THE GRADING CONTRACTORS RESPONSIBILITY TO PREPARE A QUANTITY TAKEOFF AND NOTE ANY DISCREPANCIES TO THE ENGINEER.

THE ENGINEER ASSUMES NO RESPONSIBILITY FOR COSTS INCURRED DUE TO

SUCH ITEMS MAY VARY FROM THE ESTIMATE SHOWN ABOVE.

**ASSUMPTIONS:** 10% SHRINKAGE ON FILL BUILDING SUBGRADE = 12" PAVEMENT SUB-GRADE = 12"

ANY TOPSOIL IS TO BE USED ON SITE

IT IS THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN "ALL" GEOTECHNICAL INVESTIGATIONS FROM THE "OWNER". CONTRACTOR SHALL REVIEW AND FAMILIARIZE THEMSELVES WITH RECOMMENDATIONS AS OUTLINED BY THE PROJECT GEOTECHNICAL ENGINEER AND INCORPORATE IT IN THEIR PROPOSED SCOPE OF WORK.

IT IS THE CONTRACTOR'S RESPONSIBILITY TO FOLLOW RECOMMENDATIONS PROVIDED IN THE GEOTECHNICAL REPORT PREPARED BY SCI ENGINEERING, INC. (PROJ. NO. 2012-0308.11, TASK 101) DATED JULY 2019. TITLED 1147 TECHNOLOGY DRIVE. O'FALLON. MISSOURI AND ADDENDUM DATED FEBRUARY 10. 2020. TITLED "GEOTECHNICAL REPORT ADDENDUME - PTI SLAB PARAMETERS. SCI NO. 2012-0308.11, TASK 102, AND ALL ITS SUPPLEMENTAL PROVISIONS FOR ADDITIONAL EARTHWORK REMEDIATION, SUBGRADE PREPARATION, BACKFILL AND PAVEMENT RECOMMENDATIONS.

## CITY ROADWAY NOTES

- 1. ALL PAVING (PUBLIC OR PRIVATE) TO BE IN ACCORDANCE WITH ST. LOUIS COUNTY STANDARDS AND SPECIFICATIONS EXCEPT AS MODIFIED BY THE CITY OF O'FALLON ORDINANCES. 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. 3. PROVIDE 6" OF CONCRETE OVER 5" OF AGGREGATE BASE ROCK OR ASPHALT EQUIVALENT FOR MINOR RESIDENTIAL STREETS PER CITY CODE 405.370. 3.1. ROCK TO MEET ALL THE REQUIREMENTS OF MODOT TYPE 5 WITH A TIGHTER RESTRICTION ON THE FINES BEING THAT NO MORE THAN TEN PERCENT (10%) FINES SHALL PASS A NO. 200 SIEVE. (CITY CODE
- 405.210.B.1). THE GRADATION OF THIS ROCKS NEEDS TO BE SUBMITTED TO THE CITY FOR APPROVAL ANY DELIVERIES MADE WITHOUT THE PROPER DELIVERY TICKET, INCLUDING SIGNATURE, WILL NOT BE ACCEPTED. THE DELIVERY TICKET MUST LIST THE PROJECT NAME OR JOBSITE LOCATION. A SEPARATE
- DATED WITHIN 4 WEEKS OF THE DELIVERY. (CITY CODE 405.210.A.2.k) MULTI-USE TRAIL (WHEN REQUIRED) SHALL HAVE A MINIMUM OF 3" TYPE 'C' ASPHALT OVER 4" AGGREGATE BASE PER CITY REQUIREMENTS.
- TYPE 'C' (BP-1) COMPACTION REQUIREMENTS SHALL BE 98% MINIMUM DENSITY ACCORDING TO ST. LOUIS COUNTY STANDÁRD SPECIFICATIONS.
- 6. PROVIDE PAVEMENT STRIPING AT ANY POINT WHERE THE MULTI-USE TRAIL CROSSES EXISTING OR PROPOSED

CERTIFICATION SHEET MAY BE PROVIDED ATTACHED TO THE DELIVERY TICKET WITH A SIGNATURE OF THE

COMPANY'S QUALITY CONTROL MANAGER. THE QUALITY CONTROL CERTIFICATION MUST BE CURRENT AND

7. ALL STREET STUB-OUTS OVER 250' IN LENGTH WILL REQUIRE A TEMPORARY TURNAROUND. 8. ALL SUB GRADE IN CUT OR FILL WILL NEED TO CONFORM TO THE CITY OF O'FALLON COMPACTION

9. MATERIAL TESTING AND FREQUENCY. MATERIALS FOR CONSTRUCTION SHALL BE TESTED AND INSPECTED PER

12.1. CONCRETE PAVEMENTS SHALL NOT BE APPROVED UNLÉSS IT REACHES A STRENGTH OF FOUR THOUSAND

UNSATISFACTORY AND THE SOÌL IN THESE AREAS SHALL BE REMEDIATED TO THE DEPTH INDICATED BY THE

- THE APPROPRIATE ASTM CODE OR AT THE CITY ENGINEER'S DISCRETION. THE DEVELOPER'S ENGINEER SHALL PERFORM QUALITY CONTROL GUIDELINES, IN ACCORDANCE WITH ST. LOUIS COUNTY REQUIREMENTS 501.3.1. 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. 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. 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.
- (4,000) PSI. CYLINDERS/COMPRESSIVE STRENGTH. ONE (1) SET OF FIVE (5) 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, THREE (3) AT TWENTY-EIGHT (28) DAYS, AND ONE (1) HELD IN RESERVE 13. PRIOR TO PLACEMENT OF AGGREGATE BASE MATERIAL ON SUB GRADE AND PRIOR TO PLACEMENT 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
- 14. SUB GRADE AND BASE BENEATH PAVEMENTS SHALL BE COMPACTED TO ST. LOUIS COUNTY TRANSPORTATION 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. 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 SETTLING OR WASHING OCCURS, OR WHERE HAULING RESULTS

CONTRACTOR'S TESTING FIRM AND APPROVED BY A REPRESENTATIVE OF THE CITY ENGINEER.

- IN RUTS OR OTHER OBJECTIONABLE IRREGULARITIES, THE CONTRACTOR SHALL IMPROVE THE 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-HUNDRETHS (+/-0.04) FFFT. 16. ÙTÍLITY WÓRK 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 GRADE PREPARATION SHALL BE BORED. COMPACTION REQUIREMENTS SHALL FOLLOW ST. LOUIS COUNTY STANDARDS.
- 17. EQUIPMENT CALIBRATION. THE DEVELOPER'S CONTRACTORS AND SUBCONTRACTORS MUST HAVE THEIR EQUIPMENT CALIBRATED BY THE FOLLOWING MINIMUM STANDARDS. 17.1. AIR METER - WEEKLY 17.2. CYLINDER COMPRESSION - ANNUALLY BY INDEPENDENT CALIBRATION SERVICE
- 17.3. BATCH SCALES MONTHLY 17.4. NUCLEAR TESTING DEVICES - EVERY SIX (6) MONTHS 17.5. PROCTOR EQUIPMENT — EVERY SIX (6) MONTHS 17.6. SLUMP CONE - MONTHLY

WILL BE RESTORED BY PLACING A 28 DAY, 4,000 PSI CONCRETE MIX.

- 18. ALL PERMANENT TRAFFIC CONTROL WILL BE PER M.U.T.C.D. OR MODOT STANDARDS. S1-1 FROM M.U.T.C.D. MANUAL WILL BE USED AT ALL CROSSWALK LOCATIONS ACCOMPANIED WITH EITHER W16-9p OR W16-7p 19. ALL TRAFFIC SIGNALS, STREET SIGNS, SIGN POSTS, BACK AND BRACKET ARMS SHALL BE PAINTED BLACK
- APPROVED BY CITY OF O'FALLON AND MODOT). 20. IF THE EXCAVATIONS ARE MADE IN THE IMPROVED PORTION OF THE RIGHT-OF-WAY, TWELVE (12) INCHES OF GRANULAR BACKFILL WILL BE PLACED OVER EXPOSED FACILITIES AND CONTROLLED LOW STRENGTH MATERIAL CLSM) AKA FLOWABLE FILL WILL FILL THE HOLE WITH FIGHT (8) INCHES OF THE FINISHED SURFACE FOR CONCRETE PAVEMENT. THERE WILL BE A PLASTIC MEMBRANE PLACED BETWEEN THE ROCK BASE AND THE CLSM TO PREVENT THE MATERIAL FROM BLEEDING INTO THE ROCK BASE. THE REMAINING EIGHT (8) INCHES

USING CARBOLINE RUST BOND PENETRATING SEALER SG AND CARBOLINE 133 HB PAIN (OR EQUIVALENT AS

# **GRADING NOTES**

DEVELOPER MUST SUPPLY CITY CONSTRUCTION INSPECTORS WITH AN ENGINEER'S SOIL REPORTS PRIOR TO AND DURING SITE GRADING. THE SOIL REPORT WILL BE REQUIRED TO CONTAIN THE FOLLOWING INFORMATION ON SOIL TEST CURVES (PROCTOR REPORTS):

1.1 MAXIMUM DRY DENSITY

1.2 OPTIMUM MOISTURE CONTENT 1.3 MAXIMUM AND MINIMUM ALLOWABLE MOISTURE CONTENT 1.4 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" (ASTM-D-1157) OR FROM A MINIMUM OF 95% AS DETERMINED BY THE "STANDARD PROCTOR TEST AASHTO T-99. METHOD 'C' (ASTM-D-698). PROCTOR TYPE MUST BE DESIGNATED ON DOCUMENT. 1.5 CURVE MUST HAVE AT LEAST 5 DENSITY POINTS WITH MOISTURE CONTENT AND SAMPLE LOCATIONS LISTED ON DOCUMENT.

1.6 SPECIFIC GRAVITY 1.7 NATURAL MOISTURE CONTENT 1.8 LIQUID LIMIT

THE CITY OF O'FALLON PRIOR TO THE PLACEMENT OF FILL.

1.9 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.

- 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% MAXIMUM DENSITY AS DETERMINED BY THE STANDARD PROCTOR TEST AASHTO T-99. ENSURE THE MOISTURE CONTENT OF THE SOIL 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 SUBMITTED TO
- 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.
- 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.
- 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 TO MISSOURI DEPARTMENT OF NATURAL RESOURCES PROTECTING WATER QUALITY - A FIELD GUIDE TO EROSION, SEDIMENT AND STORMWATER BEST MANAGEMENT PRACTICES FOR DEVELOPMENT SITES IN MISSOURI AND KANSAS. 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.
- 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.

- 7. ALL LOW PLACES WHETHER ON SITE OR OFF SITE SHALL BE GRADED TO PROVIDE DRAINAGE WITH TEMPORARY
- 8. ANY EXISTING WELLS AND/OR SPRINGS WHICH MAY EXIST ON THE PROPERTY MUST BE SEALED IN A MANNER ACCEPTABLE TO THE CITY OF O'FALLON CONSTRUCTION INSPECTION DEPARTMENT AND FOLLOWING MISSOURI DEPARTMENT OF NATURAL RESOURCES STANDARDS AND SPECIFICATIONS. 9. ALL TRENCH BACKFILLS UNDER PAVED AREAS SHALL BE GRANULAR BACK FILL, AND COMPACTED MECHANICALLY ALL OTHER TRENCH BACK FILLS MAY BE EARTH MATERIAL (FREE OF LARGE CLODS, OR STONES) AND COMPACTED

USING EITHER MECHANICAL TAMPING OR WATER JETTING. GRANULAR MATERIAL AND EARTH MATERIAL ASSOCIATED

WITH NEW CONSTRUCTION OUTSIDE OF PAVEMENTS MAY BE JETTED, TAKING CARE TO AVOID DAMAGE TO NEWLY

CENTERS WITH THE JETTING PROBE CENTERED OVER AND PARALLEL WITH THE DIRECTION OF THE PIPE. TRENCH

LAID SEWERS. THE JETTING SHALL BE PERFORMED WITH A PROBE ROUTE ON NOT GREATER THAN 7.5 FOOT

WIDTHS GREATER THAN 10 FEET WILL REQUIRE MULTIPLE PROBES EVERY 7.5 FOOT CENTERS. 9.1 DEPTH, TRENCH BACK FILLS LESS THAN 8 FEET DEEP SHALL BE PROBED TO A DEPTH EXTENDING HALF THE DEPTH OF THE TRENCH BACK FILL, BUT NOT LESS THAN 3 FEET. TRENCH BACK FILL GREATER THAN 8 FEET IN DEPTH SHALL BE PROBED TO HALF THE DEPTH OF THE TRENCH BACK FILL BUT NOT GREATER THAN 8 FEET. 9.2 EQUIPMENT, THE JETTING PROBE SHALL BE A METAL PIPE WITH AN INTERIOR DIAMETER OF 1.5 TO 2 INCHES. 9.3 METHOD. JETTING SHALL BE PERFORMED FROM THE LOWEST SURFACE TOPOGRAPHIC POINT AND PROCEED TOWARD THE HIGHEST POINT, AND FROM THE BOTTOM OF THE TRENCH BACK FILL TOWARD 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 TRENCH WITHOUT FIRST SATURATING THE TRENCH. 9.4 SURFACE BRIDGING. THE CONTRACTOR SHALL IDENTIFY THE LOCATIONS OF THE SURFACE BRIDGING (THE TENDENCY FOR THE UPPER SURFACE TO CRUST AND ARCH OVER THE TRENCH RATHER THAN COLLAPSE AND CONSOLIDATE DURING THE JETTING PROCESS). THE CONTRACTOR SHALL BREAK DOWN THE BRIDGED AREAS USING AN APPROPRIATE METHOD SUCH AS WHEELS OR BUCKET OF A BACKHOE. WHEN SURFACE CRUST IS COLLAPSED, THE VOID SHALL BE BACK FILLED WITH THE SAME MATERIAL USED AS TRENCH BACK FILL AND RE-JETTED. COMPACTION OF THE MATERIALS WITHIN THE SUNKEN/JETTED AREA SHALL BE COMPACTED SUCH THAT NO FURTHER SURFACE SUBSIDENCE OCCURS.

10. SITE GRADING.

(1,000) CUBIC YARDS.

10.1 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. 10.2 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

11. ACCESS TO THE SITE FROM ANY OTHER LOCATION OTHER THAN THE PROPOSED CONSTRUCTION ENTRANCE IS STRICTLY PROHIBITED.

GEORGE MICHAEL STOCK PE-25116 GEORGE M. STOCK E-25116 CERTIFICATE OF AUTHORITY

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GENERAL NOTES AND SPECIFICATION SHEET

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