- GN #1 Driveway locations shall not interfere with the sidewalk handicap ramps, or curb inlet sumps
- GN #2 Sidewalks, curb ramps, ramps and accessible parking spaces shall be constructed in accordance with the current approved "American with Disabilities Act Accessibility Guidelines" (ADAAG) along with the required grades, construction materials, specifications and signage. If any conflict occurs between the above information and the plans, the ADAAG guidelines shall take precedence and the contractor prior to any construction shall notify the Project Engineer.
- GN #3 Truncated domes for curb ramps located in public right of way shall meet ADA requirements and shall be constructed using red pre cast truncated domes per pavement details.
- GN #5 The Contractor is responsible to call Missouri One Call and The City of O'Fallon for the location of utilities. Contact the City of O'Fallon at (636) 379—3814 for the location of City maintained cable for street lights and traffic signals. Call Missouri One Call at 1—800—DIG—RITE (1-800-344-7483) for all other utilities.
- GN #6 All proposed utilities and/or utility relocations shall be located underground.
- GN #7 All proposed fencing requires a separate permit through the Building Division.
- GN #8 All construction operations and work zone traffic control within the right of way will follow MoDOT or M.U.T.C.D. standards whichever is more stringent.
- GN #9 All free standing signs shall be located a minimum of ten (10) feet away from any right of way line and/or property line and a minimum of three (3) feet from the back of curbing or sidewalk. All signs shall abide by the regulations for visibility at corners, including corners from
- driveways and the street it intersects per Section 400.260 of the O'Fallon Zoning Code. GN #11 Materials such as trees, organic debris, rubble, foundations and other deleterious material that are not to be reused, shall be removed from the site and disposed of in compliance with all applicable laws and regulations. If the material listed previously are reused, a letter from a soil Engineer must clarify amount, location, depth. ect. and must be approved with the construction plans. Landfill tickets for such disposal shall be maintained on file by the 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. GN #12 Twenty—four (24) hours prior to starting any of the work covered by the above plans and after approval thereof, the developer shall make arrangements with the Construction Inspection Office to provide for inspection of the work, sufficient in the opinion of the City Engineer, to assure compliance with the plans and specifications as approved.
- GN #13 The City Engineer or their duly authorized representative shall make all necessary inspections of City infrastructure, escrow items or infrastructure located on the approved plans.

Grading Notes

- GRN #1 Developer must supply City construction inspectors with an Engineer's soils report prior to and during site grading. The soils report will be required to contain the following information on soil test curves (Proctor reports) for projects within the City:
 - 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% compaction and above as determined by the "Standard Proctor Test AASHTO T—99, Method C" (A.S.T.M.—D—698). Proctor type must be designated on document.
 - 5. Curve must have at least 5 density points with moisture content and sample locations listed on document.
 - 6. Specific gravity.
 - 7. Natural moisture content.
 - 8. Liquid limit.
 - Plastic limit.
 - Be advised that if this information is not provided to the City's Construction Inspector, the City will not allow grading or construction activities to proceed on any project site.
- GRN #2 All fill placed in areas other than proposed storm sewers, sanitary sewers, proposed roads, and paved areas shall be compacted from the bottom of the fill up in 8" lifts and compacted to 90% maximum density as determined by Modified AASHTO T—180 compaction test or 95% of maximum density as determined by the Standard Proctor Test AASHTO T-99. Ensure the moisture content of the soil in fill areas corresponds to the compactive effort as defined by the Standard or Modified Proctor Test. Optimum moisture content shall be determined using the same test that was used for compaction. Soil compaction curves shall be submitted to the City of O'Fallon prior to the placement of fill.
- GRN #3 The surface of the fill shall be finished so it will not impound water. If at the end of a days work it would appear that there may be rain prior to the next working day, the surface shall be finished smooth. If the surface has been finished smooth for any reason, it shall be scarified before proceeding with the placement of succeeding lifts. Fill shall not be placed on frozen ground, nor shall filling operations continue when the temperature is such as to permit the layer under placement to freeze.
- GRN #4 All sediment and detention basins are to be constructed during the initial phase of the grading operation or in accordance
- GRN #5 When grading operations are complete or suspended for more than 14 days, permanent grass must be established at sufficient density to provide erosion control on site. Between permanent grass seeding periods, temporary cover shall be provided
 - according to St. Charles Soil and Water Conservation District Model Sediment and Erosion Control Regulations. All
- finished grades (areas not to be disturbed by improvements) in excess of 20% slopes (5:1) shall be mulched and tacked at a rate of 100 pounds per 1000 square feet when seeded. GRN #6 No slopes shall exceed 3 (horizontal): 1 (vertical) unless otherwise approved by the soils report and specifically located
- on the plans and approved by the City Engineer.
- GRN #7 All low places whether on site or off shall be graded to provide drainage with temporary ditches.
- GRN #8 All existing wells on site shall be capped per DNR standards.
- GRN #10 All trench back fills 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 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 laid sewers. The jetting shall be performed with a probe route on not greater than 7.5 foot centers with the jetting probe centered over and parallel with the direction of the pipe. Trench widths greater than 10 feet will require multiple probes every 7.5 foot centers.
- a) 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
- b) Equipment, The jetting probe shall be a metal pipe with an interior diameter of 1.5 to 2 inches.
- c) 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.
- d) 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 rejetted. Compaction of the materials within the sunken/jetted area shall be compacted such that no further surface subsidence occurs.

- a. Within City right—of—way. Material is to be placed in eight (8) inch to twelve (12) inch loose lifts and compacted per the approved compaction requirements. One (1) compaction test will be performed every two hundred fifty (250) feet along the centerline for each lift.
- b. Outside of City right—of—way. Material is to be placed in eight (8) inch to twelve (12) inch loose lifts and compacted per the approved compaction requirements. One (1) compaction test will be performed at two (2) foot vertical intervals and approximately every one thousand (1,000) cubic yards.

Storm Sewer Notes

- STM # 1 All Storm Sewer installation is to be in accordance with M.S.D. 2007 standards and specifications except as modified by the City of O'Fallon
- STM # 2 Brick shall not be used in the construction of storm sewer structures. Pre cast concrete structures are to be used unless otherwise approved
- by the City of O'Fallon.
- STM # 4 HDPE pipe is to be N-12WT or equal and to meet ASTM F1417 water tight field test.
- STM # 5 Encase with concrete both sanitary and storm sewer at crossing when storm sewer is within 18 inches above sanitary sewer. Add concrete cradle to only RCP storm sewer and encase HDPE storm sewer when it is more than 18 inches above sanitary line. Show on profile sheet.
- STM # 6 The storm sewers should run diagonally through the side yards to minimize any additional utility easements required.

STM # 3 A 5/8" trash bar shall be installed horizontally in the center of the opening(s) in all curb inlets and area inlets.

- STM # 7 All concrete pipes will be installed with 0—ring rubber type gaskets.
- STM # 8 Connections at all storm structures are to be made with A—lock joint or equal.
- STM # 9 Pre cast concrete inlet covers are not to be used.

will allow infiltration of storm water.

- STM #10 The swale in the detention basins shall have a minimum 1% longitudinal slope and be lined with a permanent erosion control blanket that
- STM #11 All storm sewer shall be reinforced concrete pipe or H.D.P.E. pipe. All structures and flared end sections must be concrete. Manufacturing specifications must be followed and details provided for the installation of H.D.P.E. pipe. H.D.P.E. pipe will not be allowed for detention
- basin outflows, final pipe run to detention basins, creek discharge or other approved means. STM #12 The discharge point of all flared end sections shall be protected by rip rap or other approved means.
- STM #13 Rip rap shown at flared end sections will be evaluated in the field by the Engineer, Contractor, and City Inspectors after installation for
- effectiveness and field modified, if necessary to reduce erosion on and off site. STM #14 Add 1" minus rock back fill to all storm sewer that lie within the 1:1 shear plane of the road.

Roadway Notes

- RN # 1 All paving (public and private) to be in accordance with 2006 St. Charles County Standards and Specifications except as modified by the City of O'Fallon ordinances.
- RN # 2 If the intersecting road does not have a curb, then the curb on the new entrance shall begin 10' from the edge of the existing road.
- RN # 3 Provide 6" of concrete over 4" of MoDot type 1 or type 5 aggregate rock or asphalt equivalent for minor residential streets per City Code 405.370. RN # 4 Multi—use trail (when required) Shall have a minimum of 3" Type "C" Asphalt over 4" aggregate base per City requirements.
- RN # 5 Type C (BP-1) Compaction requirements shall be 98% minimum density according to St. Charles Co. Standard Specifications.
- RN # 6 Provide pavement striping at any point where the multi—use trail crosses existing or proposed pavement
- RN # 7 All street stub—outs over 250' in length will require a temporary turnaround.
- RN # 8 All sub grade in cut or fill will need to conform to the City of O'Fallon Compaction requirements
- RN # 9 Material Testing And Frequency. Materials for construction shall be tested and inspected per the appropriate ASTM code or at the City Engineer's discretion. The developer's engineer shall perform the following quality control guidelines: Concrete.
 - a. Cylinders/compressive strength. One (1) set of four (4) cylinders within the first fifty (50) cubic yards and one (1) set per one hundred (100) cubic yards thereafter. One (1) cylinder must be tested at seven (7) days, one (1) at fourteen (14) days and two (2) at twenty—eight (28) days. If the first (1st) cylinder does not meet specifications at twenty—eight (28) days, then the second (2nd) cylinder must be held and tested at day fifty—six (56).
 - b. Percent air and temperature. First (1st) truck batch each day and two (2) thereafter until a consistency is encountered. Once a consistency is encountered, then tests will be performed in conjunction with the concrete cylinders.
 - c. Slump. First (1st) truck batch each day and two (2) thereafter until a consistency is encountered. Once a consistency is encountered, then tests will be performed in conjunction with the concrete cylinders.
 - d. If concrete is batched from more than one (1) plant, then the aforementioned guidelines will be applicable to each plant.
 - 2. Sub grade and base.
 - a. Proof roll as described in Section 405.210(B). b. One (1) compaction test per two hundred fifty (250) feet of mainline paving, three (3) tests per intersection, five (5) tests within cul—de—sacs
 - and one (1) test per repair slab. c. Gradation test for sub base material.
 - 3. Asphalt.
 - a. One (1) set of compaction tests per two hundred fifty (250) feet of mainline. One (1) set includes three (3) tests across the paved lane at the same station.
- b. One (1) bulk density test per paving operation.
- RN #10 Approval Of Sub grade And Base (Sub base). The City Engineer or representative shall approve the sub grade before any base is placed thereon and shall approve the base before concrete or surface course is placed. The sub grade and base shall be so constructed that it will be uniform in
- RN #11 In all fill areas in the roadways, soil tests shall be submitted and approved by the City Engineer for each foot of fill and at least one (1) test and an average of one (1) test within every two hundred fifty (250) feet.
- RN #12 No traffic will be allowed on new concrete pavement until it has cured for seven (7) days and it reaches three thousand five hundred (3,500) psi within 28 days. Concrete pavements shall not be approved unless it reaches a strength of four thousand (4,000) psi.Cylinders/compressive strength. One (1) set of four (4) cylinders within the first fifty (50) cubic yards and one (1) set per one hundred (100) cubic yards thereafter. One (1) cylinder must be tested at seven (7) days, one (1) at fourteen (14) days and two (2) at twenty—eight (28) days. If the first (1st) cylinder does not meet specifications at twenty—eight (28) days, then the second (2nd) cylinder must be held and tested at day fifty—six (56).
- RN #13 Prior to placement of aggregate base material on sub grade and prior to placement of pavement on base material, the sub grade and base must be proof—rolled with a fully loaded (ten (10) ton load) tandem truck or equivalent tire vehicle with one (1) pass down each driving lane no faster than three (3) miles per hour. If soft spots are detected, or pumping, rutting or heaving occurs greater than one (1) inch at the sub grade, the roadbed shall be considered unsatisfactory and the soil in these areas shall be remediated to the depth indicated by the contractor's testing firm and approved by a representative of the City Engineer.
- RN #14 Sub grade and base beneath pavements shall be compacted to St. Charles County Highway Department specifications. The moisture range shall be determined by the Standard or Modified Proctor Density Method AASHTO T-99 and within -2/+4 percentage points of the optimum moisture
- RN #15 The entire width and length will conform to line, grade and cross section shown on the plans or as established by the engineer. If any settling or washing occurs, or where hauling results 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-hundredths (+0.04) feet.
- RN #16 Utility Work Prior To Base Construction. No base course work may proceed on any street until all utility excavations (storm and sanitary sewers, water, gas, electric, etc.) have been properly back filled with granular material, crushed stone or gravel mechanically tamped in ten (10) inch lifts. Utilities installed after sub grade preparation shall be bored. Compaction requirements shall follow St. Charles County standards (2006).
- RN #17 Equipment calibration. The developer's contractors and subcontractors must have their equipment calibrated by the following minimum standards.
 - a. Air meter——weeklv.
 - b. Cylinder compression—annually by independent calibration service.
 - c. Batch scales——monthly.
 - d. Nuclear testing devices—every six (6) months.
 - e. Proctor equipment—every six (6) months. f. Slump cone——monthly.
- RN #18 All permanent traffic control will be per M.U.T.C.D. or MoDot standards. S1-1 from the M.U.T.C.D. manual will be used at all crosswalk locations accompanied with ether w16-9p or w16-7p signs
- RN #19 All traffic signals, street signs, sign post, backs and bracket arms shall be painted black using Carboline Rust Bond Penetrating Sealer SG and Carboline 133 HB paint (or equivalent as approved by City of O'Fallon and MoDOT).
- RN #20 Traffic control is to be per MODOT or MUTCD, whichever is more stringent.
- RN #21 All identification or directional signs must have the locations and sizes approved and permitted separately through the Planning and Development Division.

ADDITIONAL STORM SEWER NOTES

OUTSIDE (BEYOND) THE PAVEMENT LIMITS. EXCAVATIONS SHALL BE JETTED WITH WATER AND ALLOWED TO SET FOR A LENGTH OF TIME SATISFACTORY TO THE CITY ENGINEER.

1. JETTING: GRANULAR MATERIALS AND EARTH MATERIALS ASSOCIATED WITH NEW CONSTRUCTION BEYOND THE PAVEMENT MAY BE JETTED, TAKING CARE TO AVOID DAMAGE TO NEWLY LAID SEWERS. THE JETTING SHALL BE PERFOMED WITH A PROBE ROUTE ON NOT GREATER THAN SEVEN AND ONE-HALF (7.5) FOOT CENTERS WITH THE JETTING PROBE CENTERED OVER AND PARALLEL WITH THE DIRECTION OF THE PIPE. TRENCH WIDTHS GREATER THAN TEN (10) FEET WILL REQUIRED MULTIPLE PROBES EVERY SEVEN AND ONE-HALF (7.5)

A. DEPTH: TRENCH BACKFILL LESS THAN EIGHT (8) FEET IN DEPTH SHALL BE PROBED TO A DEPTH EXTENDING TO HALF THE DEPTH OF THE TRENCH BACKFILL BUT NOT LESS THAN THREE (3) FEET. TRENCH BACKFILL GREATER THAN EIGHT (8) FEET IN DEPTH SHALL BE PROBED TO HALF THE DEPTH OF THE TRENCH BACKFILL BUT NOT GREATER THAN EIGHT (8) FEET.

B. EQUIPMENT. THE JETTING PROBE SHALL BE A METAL PIPE WITH AN EXTERIOR DIAMETER OF ONE AND ONE-HALF (1.5) TO TWO (2) INCHES.

C. METHOD. JETTING SHALL BE PERFORMED FROM THE LOW SURFACE TOPOGRAPHIC POINT AND PROCEED TOWARD THE HIGH POINT, AND FROM THE BOTTOM OF THE TRENCH BACKFILL TOWARDS THE SURFACE. THE FLOODING OF EACH JETTING PROBE SHALL BE STARTED SLOWLY ALLOWING SLOW SATURATION OF THE SOIL. WATER IS NOT ALLOWED TO FLOW AWAY FROM THE DITCH WITHOUT FIRST SATURATING THE TRENCH.

D. SURFACE BRIDGING. THE CONTRACTOR SHALL IDENTIFY THE LOCATIONS OF THE SURFACE BRIDGING (THE TENDENCY FOR THE UPPER BACKFILL CRUST TO ARCH OVER THE TRENCH RATHER THAN COLLAPSE AND CONSOLIDATE DURING THE JETTING PROCESS). THE CONTRACTOR SHALL BREAKDOWN THE BRIDGED AREAS USING AN APPROPRIATE METHOD SUCH AS WHEELS OR BUCKET OF A BACKHOE. WHEN THE SURFACE CRUST IS COLLAPSED, THE VOID SHALL BE BACKFILLED WITH THE SAME MATERIAL USED AS TRENCH BACKFILL AND REJETTED. COMPACTION OF THE MATERIALS WITHIN THE SUNKEN/JETTED AREA SHALL BE COMPACTED SUCH THAT NO FURTHER SURFACE SUBSIDENCE OCCURS

PROVIDE A MARKING ON THE STORM SEWER INLETS. THE CITY WILL ALLOW 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	3-7/8"	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

DUCKETT CREEK SANITARY DISTRICT 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 OR 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 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 D-1557)". ALL TESTS SHALL BE VERIFIED BY A SOILS ENGINEER CONCURRENT WITH GRADING AND BACKFILLING OPERATIONS. THE COMPACTED FILL SHALL BE FREE OF RUTTING AND SHALL BE NON-YIELDING AND NON-PUMPING DURING PROOFROLLING AND COMPACTION.
- 5. THE CONTRACTOR SHALL PREVENT ALL STORM, SURFACE WATER, MUD AND 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.
- 6. ALL SANITARY SEWER FLOWLINES AND TOPS BUILT WITHOUT ELEVATIONS FURNISHED BY THE ENGINEER WILL BE THE RESPONSIBILITY OF THE SEWER CONTRACTOR.
- 7. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO ADJUST ALL SANITARY SEWER MANHOLES (THAT ARE AFFECTED BY THE DEVELOPMENT) TO FINISH GRADE.
- 8. EASEMENTS SHALL BE PROVIDED FOR ALL SANITARY SEWERS, STORM SEWERS AND ALL UTILITIES ON THE
- 9. ALL SANITARY SEWER CONSTRUCTION AND MATERIALS SHALL CONFORM TO THE CURRENT CONSTRUCTION STANDARDS OF THE DUCKETT CREEK SANITARY DISTRICT. 10. THE DUCKETT CREEK SANITARY DISTRICT SHALL BE NOTIFIED AT LEAST 48 HOURS PRIOR TO CONSTRUCTION
- FOR COORDINATION OF INSPECTION 11. ALL SANITARY SEWER BUILDING CONNECTIONS SHALL BE DESIGNED SO THAT THE 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 2.5 FEET. 12. ALL SANITARY SEWER MANHOLES SHALL BE WATERTIGHT IN ACCORDANCE WITH MISSOURI DEPARTMENT OF NATURAL RESOURCES SPECIFICATION 10 CSR 20-8.120(6)(F) 1.
- 13. ALL PVC SANITARY SEWER PIPE SHALL CONFORM TO THE REQUIREMENTS OF ASTM D-3034 STANDARD SPECIFICATIONS 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 MATERAIL, LARGE ROCKS OR STONES, OR OTHER UNSTABLE MATERIALS SHALL NOT BE USED WITHIN 2 FEET FROM THE TOP OF PIPE
- 14. ALL SANITARY AND STORM SEWER TRENCH BACKFILLS SHALL BE WATER JETTED. GRANULAR BACJFILL WILL BE USED UNDER PAVEMENT AREAS. 15. ALL PIPES SHALL HAVE POSITIVE DRAINAGE THROUGH MANHOLES. FLAT INVERT STRUCTURES NOT ALLOWED.
- 16. EPOXY COATING SHALL BE USED ON ALL SANITARY SEWER MANHOLES THAT RECEIVE PRESSURIZED MAINS. 17. ALL CREEK CROSSINGS SHALL BE LINED WITH RIP-RAP AS DIRECTED BY DISTRICT INSPECTORS. 18. BRICK SHALL NOT BE USED ON SANITARY SEWER MANHOLES. 19. EXISTING SANITARY SEWER SERVICE SHALL NOT BE INTERRUPTED
- 21. PRE-MANUFACTURED ADAPTERS SHALL BE USED AT ALL PVC TO DIP CONNECTIONS. RUBBER BOOT /MISSION-TYPE COUPLINGS WILL NOT BE ALLOWED.

20. MAINTAIN ACCESS TO EXISTING RESIDENTIAL DRIVEWAYS AND STREETS.

- 22. ANY PERMITS, LICENSES, EASEMENTS, OR APPROVALS REQUIRED TO WORK ON PUBLIC OR PRIVATE PROPERTIES OR ROADWAYS ARE THE RESPONSIBILITY OF THE DEVELOPER. 23. "TYPE N" LOCK-TYPE COVER AND LOCKING DEVICE (LOCK-LUG) SHALL BE USED WHERE LOCK-TYPE
- COVERS ARE REQUIRED 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 INCLUDE:
 - 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 TEST 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" THAT 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
 - 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

08/04/17 CITY & DCSD

MICHAEL CLAY VANCE, P.E

E-25616

REVISED