



WASTEWATER SYSTEM GENERAL NOTES

1. ALL WORK IS TO BE INSTALLED IN ACCORDANCE WITH THE STANDARDS OF THE CITY OF UNIVERSAL CITY MATERIALS AND CONSTRUCTION PROCEDURES WITHIN THE SCOPE OF THIS CONTRACT AND SHALL CONFORM TO APPLICABLE CITY OF UNIVERSAL CITY SUBDIVISION REGULATIONS AND, STANDARD SPECIFICATIONS AND DETAILS. MATERIAL AND CONSTRUCTION PROCEDURES SHALL COMPLY WITH THE FOLLOWING STANDARDS WHERE REFERENCED AND/OR WHEN APPLICABLE: A) TEXAS COMMISSION OF ENVIRONMENTAL QUALITY (T.C.E.Q.) "DESIGN CRITERIA FOR DOMESTIC WASTEWATER SYSTEM" TAC TITLE 30 PART 1 CHAPTER 217 AND "PUBLIC DRINKING WATER" TAC TITLE 30 PART 1 CHAPTER 290 AND/OR B) SAN ANTONIO WATER SYSTEM (SAWS) "STANDARD SPECIFICATIONS FOR WATER AND SANITARY SEWER CONSTRUCTION; LATEST EDITION OR PUBLICATION UNLESS OTHERWISE SPECIFIED IN THE CITY OF UNIVERSAL CITY STANDARD SPECIFICATIONS AND DETAILS. THE CONTRACTOR SHALL CONTACT THE CITY OF UNIVERSAL CITY DIRECTOR OF PUBLIC WORKS 72 HOURS PRIOR TO COMMENCING WORK ON EACH SECTION OF THE PROJECT AND 24 HOURS PRIOR TO THE NEED TO TIE INTO ANY SEWER MAIN.
2. EXCESS MATERIAL SHALL BE DISPOSED OF AS DIRECTED BY THE PROJECT ENGINEER. NO EXCESS MATERIAL SHALL BE DUMPED OR ALLOWED TO ENTER ANY WATERWAY, CULVERT OR DRAINAGE STRUCTURE. THE CONTRACTOR SHALL NOT PLACE ANY MATERIAL IN THE 100-YEAR FLOODPLAIN WITHOUT OBTAINING AN APPROVED FLOODPLAIN PERMIT. UNACCEPTABLE MATERIAL SHALL BE DEFINED AS EXISTING UNSTABLE MATERIALS AND LAYING CONDITIONS ENCOUNTERED ANY TIME DURING EXCAVATION, TRENCHING OR BACKFILLING. SUCH MATERIALS INCLUDE AND ARE NOT LIMITED TO THE FOLLOWING:
 - A. ANY SHARP ABRASIVE OBJECT, WATER, SILT, MUCK, TRASH OR DEBRIS, ROCK IN LEDGE, COARSE GRAVEL WITH PARTICLE SIZE LARGER THAN 1- $\frac{3}{4}$ INCH DIAMETER DURING INITIAL BACKFILL, ROCKS OR BOULDERS GREATER THAN ONE-HALF (1/2) THE TRENCH WIDTH DURING SECONDARY BACKFILL, AND ANY SUCH MATERIAL SHALL BE REMOVED FROM THE TRENCH AND THE JOB SITE.
 - B. THERE SHALL BE NO EXTRA COMPENSATION OR TIME ALLOWANCE FOR ENCOUNTERING ROCK, REMOVAL OF ROCK, DEBRIS OR ANY UNACCEPTABLE MATERIAL.
3. ALL SEWER LINES MUST PASS AN AIR TEST PER ITEM NO. 849 OF THE SAN ANTONIO WATER SYSTEM CONSTRUCTION SPECIFICATIONS, PRIOR TO ACCEPTANCE BY THE CITY OF UNIVERSAL CITY. ALL NEW MANHOLES ARE MUST PASS A VACUUM TEST CONDUCTED IN ACCORDANCE WITH SAN ANTONIO WATER SYSTEM CONSTRUCTION SPECIFICATIONS ITEM NO. 852 PRIOR TO ACCEPTANCE BY THE CITY OF UNIVERSAL CITY.
4. THE CONTRACTOR SHALL PROVIDE AT LEAST 24 HOURS NOTICE TO HOMEOWNERS AND AT LEAST 48 HOURS NOTICE TO THE CITY OF UNIVERSAL CITY PUBLIC WORKS DIRECTOR PRIOR TO INTERRUPTING SERVICE TO MAKE CONNECTIONS OR EXTEND OWNERS SERVICE. THE SERVICE OUTAGE WILL BE LIMITED TO THE PERIOD OF 9:00 A.M. TO 4:00 P.M. THE CITY OF UNIVERSAL CITY DIRECTOR OF PUBLIC WORKS OR HIS AUTHORIZED REPRESENTATIVE SHALL BE PRESENT WHEN THE DISCONNECTION AND RECONNECTION IS MADE. PROPERTY OWNERS SHALL BE NOTIFIED PRIOR TO THE NEED TO OPEN ANY FENCE GATES, PRIOR TO THE REMOVAL OF ANY FENCES OR ANY LANDSCAPING STRUCTURES REQUIRED DUE TO THE TRENCHING. TYPES AND LOCATION OF ANY

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LANDSCAPING STRUCTURES, TREES, BUSHES OR SCRUBS SHALL BE FIELD VERIFIED PRIOR TO EXCAVATION AND AVOIDED WHERE POSSIBLE.

5. ALL SEWER LINES MUST PASS A DEFLECTION TEST IN COMPLIANCE WITH SAN ANTONIO WATER SYSTEM ITEM NO.849, PRIOR TO ACCEPTANCE BY THE CITY OF UNIVERSAL CITY. THE MANDREL SHALL MEET THE REQUIREMENTS OF SAN ANTONIO WATER SYSTEM ITEM NO. 848. THE TEST SHALL BE PERFORMED WITHOUT MECHANICAL DEVICES. ALL SANITARY SEWER MAINS SHALL BE LAID TO GRADE AND SHALL NOT SAG OR OTHERWISE STAND WATER IN THE MAIN OR IN THE MANHOLE INVERT SECTION.
6. SEWER SERVICE LATERALS SHALL BE SIX-INCH (6") PVC, SDR 26, AND BE INSTALLED PER CITY OF UNIVERSAL CITY STANDARD SPECIFICATIONS AND DETAILS AND NOT PROTRUDE INTO THE SEWER MAIN. FINAL APPROVAL FOR SEWER CONSTRUCTION BY THE CITY SHALL NOT BE GIVEN UNTIL ALL SERVICE LATERALS ARE INSTALLED AS SHOWN IN THE DRAWINGS. CONTRACTOR SHALL FURNISH THE ENGINEER AND CITY OF UNIVERSAL CITY DIRECTOR OF PUBLIC WORKS WITH AN AS-BUILT PLAN SHOWING THE LOCATION, LENGTH AND DEPTH OF EACH SEWER LATERAL.
7. MANHOLE TOPS SHALL BE SET TO THE ELEVATION PROVIDED BY THE ENGINEER. MANHOLES SHALL NOT HAVE MORE THAN FIVE (5) THROAT RINGS FOR ADJUSTMENT THAT MAY BE MADE BY THE STREET CONTRACTOR. ALL MANHOLE COVERS SHALL BE MOUNTED FLUSH WITH TOP OF FINISHED PAVEMENT. BOLT DOWN MANHOLES ARE REQUIRED OUTSIDE PAVEMENT AREA. MANHOLES SHALL MEET TCEQ CRITERIA AND HAVE THE UNIVERSAL CITY LOGO ON THE LID.
8. CONTRACTOR SHALL PRESERVE ALL CONSTRUCTION STAKES, MARKS, ETC. IF ANY STAKE, MARK, ETC. IS DESTROYED OR REMOVED BY THE CONTRACTOR OR THEIR EMPLOYEES, THEY WILL BE REPLACED BY THE CONTRACTOR AT THE CONTRACTOR'S EXPENSE.
9. STREETS ARE TO BE EXCAVATED TO SUBGRADE AND THE PARKWAY SHALL BE CUT TO TOP OF CURB BY THE STREET CONTRACTOR PRIOR TO CONSTRUCTION OF THE SEWER MAINS. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE A PAD FOR HIS EQUIPMENT IF NECESSARY.
10. THE MINIMUM RADIUS OF CURVATURE FOR ANY PIPE SHALL BE EITHER 200 FEET, OR THE MANUFACTURER'S RECOMMENDATION, WHICHEVER IS GREATER. THIS REQUIREMENT IS NO WAY INTENDED TO RELIEVE THE CONTRACTOR OF HIS RESPONSIBILITY TO SUCCESSFULLY PASS THE AIR AND MANDREL TESTING REQUIREMENTS. IF SEWER LINES ARE LAID ON A CURVE, THE MANHOLE SPACING SHALL BE REDUCED TO A MINIMUM OF 300 FEET.
11. WHERE WATER AND SEWER LINES ARE INSTALLED WITH A SEPARATION DISTANCE OF LESS THAN NINE (9) FEET AS MEASURED FROM OUTSIDE TO OUTSIDE, THE INSTALLATION MUST MEET THE REQUIREMENTS OF TAC TITLE 30 PART1 CHAPTERS 217.53(d) AND 290.44(e).
12. THE VERTICAL ANGLE OF CONNECTION INTO A SEWER MAIN FOR ALL SERVICE CONNECTIONS SHALL BE 45 OR LESS DEGREES. CONNECTION COUPLINGS WILL BE STAINLESS STEEL BAND TYPE. SERVICE LATERALS SHALL HAVE A COVER OF AT LEAST THREE FEET (3') UNDER THE SUBGRADE. A TWO-WAY CLEANOUT SHALL BE INSTALLED AT THE PROPERTY LINE.

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13. ALL SANITARY SEWER PIPE SHALL BE NEW, COMPRESSION JOINT PVC SDR 26 PIPE.
14. WYE'S (Y) OR TEE'S (T) SHALL BE MANUFACTURED WYE'S OR TEE'S SUITABLE FOR USE IN SEWER SERVICE. NO FIELD FABRICATED TURNS OR ADAPTERS SHALL BE ALLOWED.
15. NO BLASTING WILL BE ALLOWED.
16. MANHOLES SHALL BE EITHER MONOLITHIC CAST IN-PLACE OR PRECAST. NO FIBERGLASS MANHOLES ARE ALLOWED. MANHOLES, INCLUDING RINGS AND COVERS, SHALL BE CONSTRUCTED, SO THAT THEY ARE WATERTIGHT. IF PRECAST MANHOLES ARE USED, THE CONTRACTOR SHALL PROVIDE A SUBMITTAL ON THE PRODUCT, GROUT, CONNECTION BOOT, SEALANT AND ANY OTHER APPURTENANCES TO THE CITY OF UNIVERSAL CITY DIRECTOR OF PUBLIC WORKS FOR APPROVAL PRIOR TO INSTALLATION.
17. ALL NEW MANHOLE INTERIOR WALLS SHALL BE COATED WITH A CITY OF UNIVERSAL CITY APPROVED SEWER STRUCTURAL COATING.
 - EPOXY COATING WITH SPECIFIED THICKNESS APPLICATION:
 - RAVEN 405 SERIES HIGH BUILD EPOXY LINER: REQUIRED THICKNESS 125 MILS.
 - FINISH COLOR SHALL BE LIGHT BLUE
18. IF CAST-IN-PLACE MANHOLES ARE USED, THE CONTRACTOR SHALL PROVIDE A SUBMITTAL ON THE CONCRETE MIX DESIGN, REINFORCING DETAILS AND ANY OTHER APPURTENANCES TO THE CITY OF UNIVERSAL CITY DIRECTOR OF PUBLIC WORKS PRIOR TO INSTALLATION.
19. ANY SEWER PIPE LAID AT TEN PERCENT (10%) SLOPE OR GREATER SHALL HAVE CONCRETE RETARDS A MINIMUM OF EVERY 20 FEET INSTALLED ACROSS THE ENTIRE WIDTH OF THE TRENCH.
20. ANY CAVERNS OR SOLUTION CHANNELS ENCOUNTERED DURING CONSTRUCTION WILL BE REPORTED TO THE ENGINEER AND THE CITY OF UNIVERSAL CITY WITH A REQUEST FOR A DESIGN REVISION WHEN THE STRENGTH OF THE PIPE IS NOT SUFFICIENT TO BRIDGE THE GAP. THE CONTRACTOR SHALL ALSO REPORT THE FINDING OF THE CAVERN TO THE APPROPRIATE REGULATORY AGENCIES AND STOP WORK UNTIL AUTHORIZATION TO CONTINUE IS RECEIVED.
21. NO WATER JETTING IS ALLOWED.
22. THE CONTRACTOR SHALL NOTIFY THE DIRECTOR OF PUBLIC WORKS AT LEAST 48 HOURS PRIOR TO BACKFILL OR TESTING SO THAT HE OR HIS AUTHORIZED REPRESENTATIVE MAY WITNESS ANY BACKFILLING OR TESTING.
23. CONTRACTOR WILL NOTIFY ALL UTILITY COMPANIES AT LEAST 72 HOURS PRIOR TO EXCAVATION. THE LIST PROVIDED BELOW IS A COURTESY AND SHALL NOT BE CONSTRUED AS TO INCLUDE ALL UTILILTY COMPANIES THAT MAY BE ENCOUNTERED.



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WATER AND SANITARY SEWER	(210) 658-5365
STORM DRAIN	(210) 658-5364
TRAFFIC SIGNAL OPERATIONS	
TXDOT	(210) 615-5975
CITY OF UNIVERSAL CITY	(210) 658-5364
DIG TESS	811
TEXAS STATE WIDE ONE CALL LOCATERS	811
CITY PUBLIC SERVICE	(210) 353-3333
TIME WARNER CABLE	811
AT&T	811
CENTERPOINT ENERGY GAS	1-800-427-7142
MCI	1-800-MCI-WORK

24. ALL TRENCHES IN TRAFFIC AREAS ARE TO BE BACKFILLED WITH FLOWABLE FILL FROM THE TOP OF BEDDING TO WITHIN TWO-INCHES (2") OF TOP GRADE FOR SURFACE HOT MIX, WARM MIX, OR CONCRETE.
25. CONTRACTOR SHALL PAY A HYDRANT METER DEPOSIT (REFUNDABLE UPON RETURN) AND FOR WATER USED DURING CONSTRUCTION. AN APPROVED BACKFLOW DEVICE SHALL BE ON ALL HOOKUPS TO FIRE HYDRANTS. (SEE CITY UTILITY ADMINISTRATION 659-0333. Ext.710)
26. CONTRACTOR SHALL FURNISH THE ENGINEER AND/OR THE CITY OF UNIVERSAL CITY DIRECTOR OF PUBLIC WORKS WITH AN AS-BUILT PLAN THAT SHALL HAVE THE FINAL MEASUREMENTS FOR ALL PIPE INSTALLED AND ALL MANHOLES AND SERVICES BY STATION AND END ELEVATIONS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL MATERIALS AND WORKMANSHIP AFTER PRELIMINARY ACCEPTANCE BY CITY AND UNTIL FINAL ACCEPTANCE BY CITY. AFTER FINAL ACCEPTANCE OF CONSTRUCTION IS ISSUED, THE CONTRACTOR SHALL PROVIDE A ONE (1) YEAR WARRANTY IN ACCORDANCE WITH THE SPECIFICATIONS SPECIAL CONDITIONS. THE CONTRACTOR SHALL REPAIR ANY AREAS WITH IN ONE (1) WEEK OF WRITTEN NOTIFICATION DURING THE WARRANTY PERIOD.
27. THE CONTRACTOR SHALL PROVIDE THE FOLLOWING SUPPORT ACTIVITY:
 - A. ATTEND PRE-CONSTRUCTION CONFERENCE WITH CITY AND SECURE CITY PERMIT.
 - B. ATTEND PRELIMINARY AND FINAL ACCEPTANCE INSPECTIONS WITH CITY AND PROVIDE SUPPORT MANPOWERAS NEEDED FOR TESTING AND INSPECTIONS.
28. THE CONTRACTOR SHALL MAINTAIN TWO-WAY TRAFFIC IN EXISTING STREETS AT ALL TIMES, EXCEPT AS NOTED. PAVEMENT CUTS ACROSS AN EXISTING STREET ARE TO BE MADE ONE-HALF (1/2) AT A TIME AND THE PAVEMENT SHALL BE SAWCUT. THE CONTRACTOR SHALL PROVIDE AND MAINTAIN ACCESS FOR CHILDREN, RESIDENTS, BUSINESSES, CITY REPRESENTATIVES AND MAINTAIN ONE-HALF (1/2) OF ALL STREETS OPEN TO THRU TRAFFIC AT ALL TIMES. THE CONTRACTOR SHALL PROVIDE STEEL PLATE TRAFFIC COVERS OVER THE TRENCH AT STREETS, SIDEWALKS, AND AT DRIVEWAYS AS REQUIRED. THE CONTRACTOR SHALL MAINTAIN ACCESS FOR THE US POSTAL SERVICE CARRIERS. ANY DAMAGES INCURRED TO MAILBOXES SHALL BE AT THE CONTRACTOR'S EXPENSE AND SHALL BE RESTORED TO THEIR ORIGINAL OR IMPROVED CONDITION. BARRICADES AND FLAG MEN SHALL BE PROVIDED FOR THE PROTECTION OF CHILDREN, PEDESTRIANS AND TO PROVIDE SMOOTH TRAFFIC FLOW ACCORDING TO THE TEXAS DEPARTMENT OF TRANSPORTATION (TXDOT) STANDARDS AND TO THE TEXAS MANUAL

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- ON UNIFORM TRAFFIC CONTROL DEVICES (LATEST VERSION AT TIME OF CONSTRUCTION).
29. WHENEVER POWER POLES ARE ADJACENT TO THE PROPOSED TRENCH, THE CONTRACTOR SHALL PROVIDE PROPER SHORING OR BRACING DURING CONSTRUCTION OF THE TRENCH ACCORDING TO THE METHODS APPROVED BY THE APPROPRIATE UTILITY COMPANY. ANY DAMAGES INCURRED SHALL BE REPAIRED AT THE CONTRACTORS EXPENSE AND RESORED TO ITS ORIGINAL OR IMPROVED CONDITION TO THE SATISFACTION OF THE UTILITY OWNER.
 30. THE CONTRACTOR SHALL PROTECT THE EXISTING SANITARY SEWER LINE UNTIL IT IS ABANDONED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING CONTINUOUS SERVICE AS THE PROPOSED SANITARY SEWER MAIN IS BEING LAID.
 31. NO PIPE WHICH HAS BEEN USED FOR ANY PREVIOUS PURPOSE SHALL BE ACCEPTED OR RELOCATED FOR USE IN THIS PROJECT.
 32. THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING THE PROPER CLEARANCE REQUIRED BY THE NATIONAL ELECTRICAL CODE; OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA), TEXAS STATE LAW VERNON'S ANNOTATED TEXAS STATUES ARTICLE 1436 (C) PERTAINING TO CLEARANCES WHEN WORKING IN CLOSE PROXIMITY TO OVERHEAD ELECTRICAL LINES AND EQUIPMENT, AND TEXAS STATE LAW HEALTH AND SAFETY CODE-CHAPTER 752, HIGH VOLTAGE OVERHEAD LINES. ALL COSTS INCURRED BY THE CITY OF UNIVERSAL CITY AND/OR A UTILITY PROVIDER BECAUSE OF THE FAILURE OF THE CONTRACTOR TO COMPLY WITH THE REQUIRED CLEARANCE WILL BE THE RESPONSIBILITY OF THE CONTRACTOR FOR NOT FOLLOWING EFFECTIVE PRECAUTIONARY MEASURES.
 33. THE CONTRACTOR'S STORM WATER POLLUTION PREVENTION PLAN (SWPPP) SHALL INCLUDE EROSION AND SEDIMENTATION CONTROLS FOR ALL SOIL STAGING AND STORAGE AREAS.
 34. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL INSTALL ALL EROSION AND SEDIMENTATION CONTROLS.
 35. THE LOCATION AND DEPTH OF EXISTING UTILITIES SHOWN ON THE PLANS OR MARKED IN THE FIELD ARE UNDERSTOOD TO BE APPROXIMATE ONLY AND ALL UTILITIES MAY NOT BE SHOWN. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL VERIFY THE EXACT LOCATION AND DEPTHS OF ALL UTILITIES, WHETHER SHOWN ON THE PLANS OR NOT. THE CONTRACTOR SHALL BE REPNOSIBLE FOR PROTECTION OF ALL UTILITIES DURING CONSTRUCTION AND SHALL REPAIR ANY DAMAGE TO ANY UTILITIES AT NO EXPENSE TO THE CITY OF UNIVERSAL CITY. THE TEXAS UTILITY CODE REQUIRES A CONTRACTOR TO CONTACT A NOTIFICATION CENTER AT LEAST 48 HOURS (BUSINESS DAYS) PRIOR TO DIGGING DEEPER THAN 16-INCHES, WITH LIMITED EXCEPTIONS.
 36. THE CONTRACTOR SHALL BE RESPONSIBLE FOR RESTORING TO ITS ORIGINAL OR BETTER CONDITION, ANY DAMAGES DONE TO EXISTING FENCES, CONCRETE ISLANDS, STREET PAVING, CURBS OR DRIVEWAYS, FIRE HYDRANTS, VALVES, RIGHT OF WAY MONUMENTS, GATES, ETC (NO SEPARATE PAY ITEM).

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37. DUE TO FEDERAL REGULATIONS, TITLE 49, PART 192.181, CPS MUST MAINTAIN ACCESS TO GAS VALVES AT ALL TIMES. THE CONTRACTOR MUST PROTECT AND WORK AROUND ANY GAS VALVES THAT ARE IN THE PROJECT AREA.
38. CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR STRUCTURAL DESIGN/GEOTECHNICAL/SAFETY EQUIPMENT CONSULTANT, IF ANY, SHALL REVIEW THESE PLANS AND ANY AVAILABLE GEOTECHNICAL INFORMATION AND THE ANTICIPATED INSTALLATION SITE(S) WITHIN THE PROJECT WORK AREA IN ORDER TO DEVELOP THE CONTRACTOR'S PLAN TO IMPLEMENT THE PROJECT DESCRIBED IN THE CONTRACT DOCUMENTS. THE CONTRACTOR'S PLAN SHALL PROVIDE FOR AN ADEQUATE TRENCH SAFETY SYSTEM THAT COMPLIES WITH AS A MINIMUM OSHA STANDARDS FOR TRENCH EXCAVATIONS, SPECIFICALLY, CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR SAFETY CONSULTANT WILL DEVELOP AND IMPLEMENT A TRENCH SAFETY PROGRAM IN ACCORDANCE WITH OSHA STANDARDS GOVERNING THE PRESENCE OF INDIVIDUALS WORKING IN AND AROUND TRENCH EXCAVATION. TRENCH SAFETY REQUIREMENTS PERTAINS TO ALL WORK.
39. ALL SEWER LINES SHALL RECEIVE A POST CONSTRUCTION VIDEO INSPECTION IN ACCORDANCE WITH THE SAN ANTONIO WATER SYSTEM ITEMS NO. 866 AND 868. IN ADDITION, THE CONTRACTOR SHALL NOTIFY THE CITY OF UNIVERSAL CITY DIRECTOR OF PUBLIC WORKS SO THAT HE OR HIS AUTHORIZED REPRESENTATIVE MAY BE PRESENT DURING THE VIDEO INSPECTION, AND THE SEWER LINE SHALL HAVE THE VIDEO CONDUCTED WITH A CONSTANT FLOW OF CLEAN WATER.
40. ALL SERVICES THAT ENTER MANHOLES WILL BE INSTALLED A MINIMUM OF EIGHT-INCHES (8") AND A MAXIMUM OF 24-INCHES (24") ABOVE THE INVERT.
41. 30 TAC TITLE 30 CHAPTER 27 SUBCHAPTER C – SEPARATION DISTANCES. THE FOLLOWING RULES APPLY TO SEPARATION DISTANCES BETWEEN POTABLE WATER AND SANITARY SEWER LINES.
 - (A) WHEN SANITARY SEWERS ARE INSTALLED, THEY WILL BE INSTALLED NO CLOSER TO WATERLINES THAN NINE FEET (9') IN ALL DIRECTIONS. SEWERS THAT PARALLEL WATERLINES MUST BE INSTALLED IN SEPARATE TRENCHES. WHERE THE NINE-FOOT (9') SEPARATION DISTANCE CANNOT BE ACHIEVED, THE FOLLOWING GUIDELINES SHALL APPLY:
 - (1) WHERE A SANITARY SEWER PARALLELS A WATERLINE, THE SEWER WILL BE CONSTRUCTED OF CAST IRON, DUCTILE IRON OR PVC MEETING ASTM SPECIFICATIONS WITH A PRESSURE RATING FOR BOTH THE PIPE AND JOINTS OF 150 PSI. THE VERTICAL SEPARATION WILL BE A MINIMUM OF TWO FEET BETWEEN OUTSIDE DIAMETER AND THE HORIZONTAL SEPARATION WILL BE A MINIMUM OF FOUR FEET BETWEEN OUTSIDE DIAMETERS. THE SEWER MUST BE LOCATED BELOW THE WATERLINE.
 - (2) WHERE A SANITARY SEWER CROSSES A WATERLINE AND THE SEWER IS CONSTRUCTED OF CAST IRON, DUCTILE IRON OR PVC WITH A MINIMUM PRESSURE RATING OF 150 PSI, AN ABSOLUTE MINIMUM DISTANCE OF SIX-INCHES (6") BETWEEN OUTSIDE DIAMETERS WILL BE MAINTAINED. IN ADDITION, THE SEWER MUST BE LOCATED BELOW THE WATERLINE AND ONE LENGTH OF THE SEWER PIPE MUST BE CENTERED ON THE WATERLINE.

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- (3) WHERE A SEWER CROSSES UNDER A WATERLINE AND THE SEWER IS CONSTRUCTED OF ABS TRUSS PIPE, SIMILAR SEMI-RIGID PLASTIC COMPOSITE PIPE, CLAY PIPE OR CONCRETE PIPE WITH GASKETED JOINTS, A MINIMUM OF TWO-FEET (2') SEPARATION DISTANCE MUST BE MAINTAINED. THE INITIAL BACKFILL WILL BE CEMENT STABILIZED SAND COMPRISED OF TWO (2) OR MORE 80 POUND BAGS OF CEMENT PER CUBIC YARD OF SAND FOR ALL SECTIONS OF SEWER WITHIN NINE FEET (9') OF THE WATERLINE. THIS INITIAL BACKFILL WILL BE FROM ONE QUARTER (1/4) DIAMETER BELOW THE CENTERLINE OF THE PIPE TO ONE PIPE DIAMETER (BUT NOT LESS THAN 12") ABOVE THE TOP OF THE PIPE.
 - (4) WHERE A SEWER CROSSES OVER A WATERLINE ALL PORTIONS OF THE SEWER WITHIN NINE FEET (9') OF THE WATERLINE WILL BE CONSTRUCTED OF CAST IRON, DUCTILE IRON, OR PVC PIPE WITH A PRESSURE RATING OF AT LEAST 150 PSI USING APPROPRIATE ADAPTERS. IN LIEU OF THIS PROCEDURE THE NEW CONVEYANCE MAY BE ENCASED IN A JOINT OF 150 PSI PRESSURE CLASS PIPE AT LEAST 18 FEET LONG AND TWO (2) NOMINAL SIZES LARGER THAN THE NEW CONVEYANCE. THE SPACE AROUND THE CARRIER PIPE WILL BE SUPPORTED AT FIVE FOOT (5') INTERVALS WITH SPACERS OR BE FILLED TO THE SPRINGLINE WITH WASHED SAND.
 - (5) THE ENCASEMENT PIPE SHOULD BE CENTERED ON THE CROSSING AND BOTH ENDS SEALED WITH NON SHRINK CEMENT GROUT OR A MANUFACTURED SEAL.
- (B) WATERLINE/MANHOLE SEPARATION. UNLESS SANITARY SEWER MANHOLES AND THE CONNECTING SEWERS CAN BE MADE WATERTIGHT AND TESTED FOR NO LEAKAGE, THEY MUST BE INSTALLED SO AS TO PROVIDE A MINIMUM OF NINE FEET (9') OF HORIZONTAL CLEARANCE FROM AN EXISTING OR PROPOSED WATERLINE. WHERE THE NINE-FOOT (9') SEPARATION DISTANCE CANNOT BE ACHIEVED, THE SEWER PIPE SHALL BE INSTALLED IN ACCORDANCE WITH PARAGRAPH A ITEMS 1-4 IN THE PRECEEDING PARAGRAPH.
42. ALL BEDDING PLACED IN THE SEWER TRENCHES SHALL BE COMPACTED IN MAXIMUM EIGHT-INCH (8") LIFTS TO 95% DENSITY OF TXDOT'S TEST METHOD TEX 113-E. PROVIDE TESTING ON EACH EIGHT-INCH (8") COMPACTED LIFT. SUBGRADE MOISTURE DENSITY TESTING SHALL BE AT THE MINIMUM FREQUENCY OF THREE (3) PER BLOCK AND SHALL NOT EXCEED A FIVE HUNDRED-FOOT (500') SPACING.
 43. THE CONTRACTOR SHALL BE RESPONSIBLE TO ENSURE THAT NO OVERFLOWS OR SPILLAGE OF SEWAGE OCCURS. THE PERSON IDENTIFIED WITH THIS RESPONSIBILITY SHALL BE ON-SITE WHEN ACTIVIES THAT COULD RESULT IN A SPILL OR OVERFLOW ARE BEING PERFORMED. THE CONTRACTOR SHALL NOTIFY THE CITY OF UNIVERSAL CITY DIRECTOR OF PUBLIC WORKS WITH THE NAME AND PHONE NUMBER WHERE THIS PERSON CAN BE REACHED. SHOULD AN OVERFLOW OR SPILL OCCUR, THE CONTRACTOR SHALL IMMEDIATELY: 1) IDENTIFY THE SOURCE OF THE SPILL, ATTEMPT TO STOP AND ELIMINATE ANY ADDITIONAL SPILLAGE OR OVERFLOW, 2) NOTIFY THE CITY OF UNIVERSAL CITY PUBLIC WORKS DEPARTMENT, 3) CONTAIN THE SPILL IN PLACE AND PREVENT CONTAMINATION OF STREAMS AND WATERWAYS, 4) CLEAN UP THE SPILL AND DISPOSE OF CONTAMINATED MATERIALS, 5) DISENFECT THE AREA WITH A MIXTURE OF HTH CHLORINE AND WATER, 6) IDENTIFY AND TRAIN CONTRACTOR'S PERSONNEL RESPONSIBLE FOR SPILL PREVENTION AND CONTROL, 7) ALL WORK PERFORMED IN RELATION TO A SPILL SHALL BE IN CONFORMANCE WITH TCEQ REGULATIONS AND AT NO ADDITIONAL COST TO THE CITY OF UNIVERSAL CITY.

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44. IT IS THE CONTRACTOR'S RESPONSIBILITY TO SEE THAT ALL SIGNS AND BARRICADES ARE PROPERLY INSTALLED AND MAINTAINED. ALL LOCATIONS AND DISTANCES SHALL BE DECIDED UPON IN THE FIELD BY THE CONTRACTOR, USING THE TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES. THE CITY'S CONSTRUCTION INSPECTOR/TRAFFIC ENGINEERING REPRESENTATIVE SHALL ONLY BE RESPONSIBLE TO INSPECT BARRICADES AND SIGNS. IF IN THE OPINION OF THE TRAFFIC ENGINEERING REPRESENTATIVE/ CONSTRUCTION INSPECTOR, THE TRAFIC CONTROL DEVICES DO NOT CONFORM TO ESTABLISHED STANDARDS, ARE INCORRECTLY PLACED OR INSUFFICIENT IN QUANTITY TO PROTECT THE TRAVELING GENERAL PUBLIC, THE CONSTRUCTION INSPECTOR SHALL HAVE THE OPTION OF STOPPING THE OPERATIONS UNTIL SUCH TIME AS THE CONDITIONS ARE CORRECTED AT NO EXPENSE TO THE CITY OF UNIVERSAL CITY.
45. THE CONTRACTOR SHALL BE REPSONSIBLE TO MAINTAIN CONTINUOUS SEWER SERVICE FOR ALL ACTIVE SERVICE CONNECTIONS DURING CONSTRUCTION. WHEN BYPASS PUMPING IS NECESSARY, THE CONTRACTOR SHALL PROVIDE BYPASS PUMPING IN ACCORDANCE WITH SAN ANTONIO WATER SYSTEM ITEM NO. 864. IN ADDITION, PRIOR TO IMPLEMENTING ANY BYPASS PUMPING, THE CONTRACTOR SHALL PROVIDE IN WRITING A SEQUENCE OF BYPASS PUMPING FOR REVIEW AND APPROVAL BY THE PUBLIC WORKS DEPARTMENT. THE PROCEDURE SHALL INCLUDE AS A MINIMUM 1) SKETCH OF THE PROPOSED LOCATION(S) OF THE PUMPS, PIPING AND TRAFFIC CONTROL DEVICES FOR EACH SEGMENT WHERE BYPASS PUMPING IS TO OCCUR, 2) PUMP EQUIPMENT TYPE, SIZE, CAPACITY AND NUMBER OF PUMPS WHICH DEMONSTRATE THAT THE BYPASS PUMPING CAN HANDLE WET WEATHER FLOWS, 3) TYPE OF JOINING FOR PIPE MATERIALS, 4) SPILL CONTROL AND PREVENTION MEASURES, 5) CONTRACTOR AFTER HOURS MONITORING PROCEDURES AND 6) AFTER HOURS CONTACT INFORMATION FOR THE RESPONSIBLE CONTRACTOR PERSONNEL.
46. DISTURBED EXCAVATED AREAS WITHIN THE CITY RIGHT-OF-WAY SHALL BE RESODDED TO MATCH THE EXISTING SITE CONDITIONS.
47. ANY WORK COMPLETED WITHOUT PRIOR AUTHORIZATION WHETHER INCLUDED IN THE PLANS AND SPECIFICATIONS OR NOT, SHALL NOT BE COMPENSATED BY THE CITY OF UNIVERSAL CITY.
48. THE CONTRACTOR SHALL EXERCISE CARE WHEN EXCAVATING AROUND AND PROTECT ALL SPECIES OF OAK TREES.