GENERAL NOTES:

- 1. SAN ANTONIO RIVER AUTHORITY (RIVER AUTHORITY) STANDARD SPECIFICATIONS AND STANDARD DETAILS ARE PROVIDED FOR DESIGN AND CONSTRUCTION OF SEWER COLLECTION SYSTEMS MANAGED AND CONTRACTED BY THE RIVER AUTHORITY.
- 2. AT ANY TIME, THESE STANDARD SPECIFICATIONS AND DETAILS MAY BE ALTERED OR SUPERSEDED BY THE GENERAL CONDITIONS, SUPPLEMENTAL CONDITIONS, PLANS OR PROJECT SPECIFICATIONS WITHIN THE CONTRACT DOCUMENT PER DIRECTION FROM THE RIVER AUTHORITY.
- 3. ALL MATERIALS AND CONSTRUCTION PROCEDURES WITHIN THE SCOPE OF THIS CONTRACT SHALL BE APPROVED BY RIVER AUTHORITY AND COMPLY WITH THE CONTRACT DOCUMENTS AND THE FOLLOWING AS APPLICABLE:
- 3.1. CURRENT TEXAS COMMISSION ON ENVIRONMENTAL QUALITY (TCEQ) 'DESIGN CRITERIA FOR DOMESTIC WASTEWATER SYSTEM", TEXAS ADMINISTRATIVE CODE (TAC) TITLE 30, PART 1, CHAPTER 217.
- 3.2. CURRENT TEXAS DEPARTMENT OF TRANSPORTATION (TXDOT), "STANDARD SPECIFICATIONS FOR CONSTRUCTION OF HIGHWAYS, STREETS AND DRAINAGE".
- 3.3. CURRENT RIVER AUTHORITY "STANDARD SPECIFICATIONS FOR 10. WHERE WATER LINES AND NEW SEWER LINES ARE INSTALLED SANITARY SEWER CONSTRUCTION".
- 3.4. CURRENT CITY OF SAN ANTONIO "STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION". CURRENT CITY OF SAN ANTONIO "UTILITY EXCAVATION CRITERIA MANUAL".
- 4. THE CONTRACTOR IS TO NOTIFY AND MAKE ARRANGEMENTS WITH THE RIVER AUTHORITY INSPECTIONS DIVISION AT (210) 302-4200 FORTY EIGHT (48) HOURS PRIOR TO ANY EXCAVATION. CONTRACTOR SHALL ALSO PROVIDE PROCEDURES THAT WILL BE USED TO NOTIFY AFFECTED RESIDENTS AND/OR PROPERTY OWNERS 48 HOURS PRIOR TO ANY EXCAVATION OR CONSTRUCTION. A PRE-CONSTRUCTION CONFERENCE SHALL BE HELD BEFORE ANY EXCAVATION OR START OF PROJECT.
- 5. WORK SHALL NOT BE PERFORMED ON SATURDAYS, SUNDAYS, FEDERAL HOLIDAYS, RIVER AUTHORITY HOLIDAYS, BEFORE 7:30 AM, OR AFTER 4:30 PM, UNLESS PRIOR APPROVAL IS GRANTED BY THE RIVER AUTHORITY ENGINEER. REQUEST TO PERFORM WORK DURING THESE TIMES MUST BE EMAILED 48 HOURS IN ADVANCE TO UTILITIESDEVELOPMENT@SARIVERAUTHORITY.ORG.
- 6. NO EXTRA PAYMENT SHALL BE ALLOWED FOR WORK CALLED FOR IN THE PLANS BUT NOT INCLUDED IN THE BID SCHEDULE. THIS INCIDENTAL WORK WILL BE REQUIRED AND SHALL BE INCLUDED UNDER THE PAY ITEM WHICH IT RELATES TO.
- 7. WORK COMPLETED BY CONTRACTOR WHICH HAS NOT RECEIVED A WORK ORDER OR THE CONSENT OF RIVER AUTHORITY WILL BE SUBJECT TO REMOVAL AND REPLACEMENT AT THE EXPENSE OF THE CONTRACTOR.
- 8. LOCATIONS AND DEPTHS OF EXISTING UTILITIES AND SERVICE LATERALS SHOWN ON THE PLANS ARE UNDERSTOOD TO BE APPROXIMATE. ACTUAL LOCATIONS AND DEPTHS MUST BE FIELD VERIFIED BY THE CONTRACTOR AT LEAST 48 HOURS PRIOR TO CONSTRUCTION REGARDLESS OF ILLUSTRATION ON THE PLANS. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO LOCATE UTILITY SERVICE LINES AS REQUIRED FOR CONSTRUCTION AND

TO PROTECT THEM DURING CONSTRUCTION AT NO COST TO RIVER AUTHORITY. CONTRACTOR WILL BE RESPONSIBLE FOR ANY DAMAGES TO EXISTING UTILITIES AND REPAIRS WILL BE AT CONTRACTOR'S EXPENSE.

THE FOLLOWING CONTACT INFORMATION IS SUPPLIED FOR VERIFICATION PURPOSES:

EAST CENTRAL SPECIAL UTILITY DISTRICT	210-649-2383
CITY OF SAN ANTONIO DRAINAGE	210-207-5048
CITY PUBLIC SERVICE (CPS)	210-973-3500
CITY OF CONVERSE (PUBLIC WORKS)	210-659-9513
TIME WARNER	210-352-4872
VALERO ENERGY CO.	210-349-7555
RIVER AUTHORITY INSPECTIONS	210-302-4200
TEXAS 811	800-344-8377
SAN ANTONIO WATER SYSTEM (SAWS)	210-233-3500

- 9. CERTAIN PORTIONS OF THE PROJECT MAY PARALLEL AND/OR CROSS EXISTING UTILITIES, AND CONTRACTOR IS REQUIRED TO PROTECT THESE UTILITIES. ADDITIONAL SUPPORTIVE SHORING MAY BE REQUIRED. IT IS THE CONTRACTOR'S RESPONSIBILITY TO PROTECT HIS WORKERS, EXISTING UTILITIES, AND FINISHED WORK THROUGHOUT THE PROJECT. CONTRACTOR WILL BE RESPONSIBLE FOR ANY DAMAGES AND REPAIRS WILL BE AT CONTRACTORS EXPENSE.
- WITH A SEPARATION DISTANCE LESS THAN 9 FEET (I.E. WATER LINES CROSSING WASTEWATER LINES, WATER LINES PARALLELING WASTEWATER LINES OR WATER LINES NEXT TO MANHOLES), THE INSTALLATION MUST MEET THE REQUIREMENTS OF 30 TAC 217 AND 30 TAC 290.
- 11. DUE TO FEDERAL REGULATIONS TITLE 49, PART 192.161, CPS MUST MAINTAIN ACCESS TO GAS VALVES AT ALL TIMES. THE CONTRACTOR MUST PROTECT AND WORK AROUND VALVES THAT ARE IN THE PROJECT AREAS.
- 12. AN APPROPRIATELY SAFE OVERHEAD CLEARANCE MUST BE MAINTAINED BETWEEN ALL OVERHEAD EQUIPMENT AND PERSONNEL. THE CONTRACTOR SHALL NOTIFY CPS AT LEAST 48 HOURS PRIOR TO ANY CONSTRUCTION IN THE VICINITY OF CPS OVERHEAD LINES. CONTRACTOR SHALL MAINTAIN CPS RECOMMENDED CLEARANCE REQUIREMENTS.
- 13. ALL WORK IN THE TEXAS DEPARTMENT OF TRANSPORTATION (TXDOT) RIGHT-OF-WAY SHALL PROCEED DURING WORKING HOURS AGREED UPON BY RIVER AUTHORITY AND TXDOT INSPECTORS.
- 14. BEFORE THE START OF ANY CONSTRUCTION, THE PROJECT SITE MUST BE VIDEO RECORDED BY THE CONTRACTOR WITH ONE COPY SUBMITTED TO RIVER AUTHORITY. THE PRE-CON SITE VIDEO WILL PROVIDE ACCURATE DOCUMENTATION OF EXISTING CONDITIONS.
- 15. THE CONTRACTOR SHALL BE RESPONSIBLE FOR RESTORING EXISTING FENCES, CURBS, STREETS, DRIVEWAYS, SIDEWALKS, LANDSCAPING AND STRUCTURES TO ORIGINAL OR BETTER CONDITION AS A RESULT OF DAMAGE DONE DURING THE PROJECT CONSTRUCTION.
- 16. ANY AND ALL FENCING, INCLUDING ELECTRIC FENCE, WHETHER OR NOT IDENTIFIED ON THE PLANS, MUST BE MAINTAINED AT ALL TIMES. ANY AND ALL DAMAGES DIRECTLY ATTRIBUTED TO THE CONTRACTOR MUST BE REPLACED TO EQUAL OR

BETTER CONDITIONS AT THE CONTRACTOR'S EXPENSE AND AS APPROVED BY THE RIVER AUTHORITY INSPECTOR. GAPS IN THE FENCING MUST BE PROVIDED AT ALL LOCATIONS WHERE THE SEWER LINE EASEMENT CROSSES FENCING. FENCING REQUIRED TO MAINTAIN LIVESTOCK MUST BE MAINTAINED AT ALL TIMES.

- 17. CONTRACTOR MUST AVOID DAMAGE TO ADJACENT LAND OUTSIDE THE IDENTIFIED CONSTRUCTION LIMITS. ANY CLAIMS DIRECTLY ATTRIBUTED TO THE CONTRACTOR RESULTING FROM HIS STRAYING BEYOND THE CONSTRUCTION LIMITS MUST BE SETTLED BY THE CONTRACTOR TO THE SATISFACTION OF RIVER AUTHORITY AND THE APPROPRIATE LANDOWNER.
- 18. CONTRACTOR MUST MAINTAIN ACCESS FOR PRIVATE INDIVIDUALS AND BUSINESSES AT ALL TIMES. IF NORMAL ACCESS IS DAMAGED DURING CONSTRUCTION, THE CONTRACTOR MUST REPLACE THE ACCESS TO EQUAL OR BETTER CONDITION AT THE CONTRACTOR'S EXPENSE AND AS APPROVED BY RIVER AUTHORITY.
- 19. CONTRACTOR MUST COMPLY WITH TEXAS GOVERNMENT CODE SECTION 2166.303 UNIFORM TRENCH SAFETY CONDITIONS.
- 20. CONTRACTOR SHALL BACKFILL ALL OPEN TRENCHES AT THE END OF THE DAY. CONTRACTOR SHALL NOT INSTALL MORE PIPE THAN CAN BE COVERED. NO OPEN TRENCHES WILL BE PERMITTED OVERNIGHT. ALL ENDS OF OPEN PIPE SHALL BE PLUGGED OVERNIGHT.
- 21. NO TREES SHALL BE REMOVED AS PART OF THIS PROJECT UNLESS OTHERWISE SPECIFIED IN THE PLANS.
- 22. FOR PORTIONS OF THE CONSTRUCTION THAT ARE WITHIN THE LIMITS OF THE 100-YEAR FLOODPLAIN, THE CONTRACTOR IS REQUIRED TO KEEP THE CHANNEL CLEAR OF POTENTIAL OBSTRUCTIONS TO FLOOD FLOWS. POTENTIAL OBSTRUCTIONS INCLUDE HEAVY CONSTRUCTION EQUIPMENT, TEMPORARY ROADS ACROSS CHANNEL, EXCAVATED MATERIAL, STOCKPILED DEBRIS, AND ALL OTHER ITEMS DEEMED UNACCEPTABLE BY RIVER AUTHORITY. UNDER THREATENING WEATHER CONDITIONS AND WHERE FLOODING IS LIKELY, OBSTRUCTIONS SHALL BE IMMEDIATELY REMOVED BY THE CONTRACTOR AT NO ADDITIONAL COST TO RIVER AUTHORITY. THE CONTRACTOR ASSUMES ALL RISK FOR UNFINISHED WORK. NO EQUIPMENT OR MATERIALS SHALL BE STOCKPILED IN THE 100-YEAR FLOODPLAIN.
- 23. NO WASTE MATERIAL SHALL BE PLACED IN EXISTING DRAINAGE LOWS THAT WILL BLOCK OR ALTER FLOW LIMITS, NATURAL DRAINAGE, OR PLACED WITHIN THE LIMITS OF EXISTING FLOODPLAIN.
- 24. IF A THREATENED OR ENDANGERED PLANT OR ANIMAL SPECIES AND/OR CULTURAL/ARCHAEOLOGICAL RESOURCES ARE ENCOUNTERED DURING CONSTRUCTION, THE CONTRACTOR SHALL STOP WORK IMMEDIATELY AND NOTIFY THE APPROPRIATE PERSONNEL.

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SEWER NOTES:

- 25. THE CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT NO SANITARY SEWER OVERFLOW (SSO) OCCURS AS A RESULT OF THE WORK. ALL PERSONNEL RESPONSIBLE FOR SSO PREVENTION AND CONTROL SHALL BE TRAINED ON THE PROPER RESPONSE. SHOULD AN SSO OCCUR, THE CONTRACTOR SHALL:
- IDENTIFY THE SOURCE OF THE SSO AND ATTEMPT TO 25.1. ELIMINATE ANY ADDITIONAL SPILLAGE.
- 25.2. NOTIFY RIVER AUTHORITY CONSTRUCTION INSPECTIONS DIVISION AT 210-302-4216 OR 210-219-0130.
- 25.3. ATTEMPT TO ELIMINATE THE SOURCE OF THE SSO. 25.4. CONTAIN SEWAGE FROM THE SSO TO PREVENT
- CONTAMINATION OF WATERWAYS. CLEAN UP THE SPILL SITE AND REMOVE CONTAMINATED 25.5. MATERIALS.
- 25.6. DISINFECT THE AREA OF THE SPILL WITH A MIXTURE OF HTH CHLORINE AND WATER.
- CLEAN THE AFFECTED SEWER LINE AND REMOVE ANY DEBRIS.
- IDENTIFY AND TRAIN PERSONNEL RESPONSIBLE FOR SPILLAGE 25.8. PREVENTION AND CONTROL.
- 25.9. NO SEPARATE MEASUREMENT OR PAYMENT SHALL BE MADE FOR THIS WORK. ALL WORK SHALL BE DONE ACCORDING TO GUIDELINES SET BY THE TCEQ AND RIVER AUTHORITY.
- 26. TIE-INS OR SHUTDOWNS OF EXISTING FORCE MAINS OF ANY SIZE MUST BE COORDINATED WITH THE RIVER AUTHORITY INSPECTOR AT LEAST ONE WEEK IN ADVANCE OF THE SHUTDOWN. CONTRACTOR SHALL PROVIDE A SEQUENCE OF WORK AS RELATED TO TIE-INS AT NO ADDITIONAL COST TO RIVER AUTHORITY OR THE PROJECT.
- 27. ELEVATIONS OF THE TOP OF MANHOLES AND INVERTS ARE FOR REFERENCE ONLY. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO MAKE ALLOWANCES AND ADJUSTMENTS FOR THE TOPS OF MANHOLES AND INVERTS TO MATCH THE FINISHED GRADE OF THE PROJECT IMPROVEMENTS (NSPI).
- 28. THE CONTRACTOR SHALL PROVIDE BYPASS PUMPING OF SEWAGE AROUND EACH SEGMENT OF PIPE TO BE REPLACED. CONTRACTOR SHALL HAVE STANDBY PUMPS AVAILABLE TO BYPASS FLOW IN CASE PRIMARY PUMP FAILS. THE CONTRACTOR SHALL PROVIDE A SEQUENCE OF BYPASS PUMPING FOR REVIEW AND APPROVAL BY RIVER AUTHORITY. THE CONTRACTOR SHALL ALSO PROVIDE A DETAILED SKETCH SHOWING THE LOCATION OF BYPASS PUMPING; SPECIFICATIONS FOR THE PUMPING EQUIPMENT; AND TYPE, SIZE, CAPACITY AND NUMBER OF PUMPS REQUIRED TO HANDLE THE PEAK WET WEATHER FLOW.
- 29. CONTRACTOR WILL MAINTAIN SERVICE TO ALL EXISTING SANITARY SEWERS AT ALL TIMES DURING CONSTRUCTION. CONTRACTOR WILL CLEAN ALL DEBRIS, GRAVEL, DIRT, ETC. OUT OF MANHOLES AND FIX ANY STOPPAGES CAUSED BY DEBRIS DURING CONSTRUCTION AT CONTRACTOR'S EXPENSE. ANY DAMAGE TO EXISTING MANHOLES OR SEWER MAIN WILL BE CORRECTED AT CONTRACTOR'S EXPENSE. CONTRACTOR SHALL TAKE ALL NECESSARY MEASURES TO PREVENT DAMAGE TO EXISTING OR NEW RINGS, COVERS, OR CONES FROM EQUIPMENT AND MATERIALS USED OR TAKEN THROUGH THE WORK AREA. IF AN EXISTING OR NEW MANHOLE COVER, RING, OR CONE IS DAMAGED BY THE CONTRACTOR. IT SHALL BE REPLACED AS DIRECTED BY THE RIVER AUTHORITY INSPECTOR. MANHOLES WILL NEED TO BE RESEALED WITH RIVER AUTHORITY APPROVED SEALANT. IF SEAL COATING IS COMPROMISED, CONTRACTOR WILL HAVE MANHOLE RECOATED. CONTRACTOR SHALL RESEAL ALL LEAKS AT CONTRACTOR EXPENSE.
- 30. CONTRACTOR TO ENSURE ALL PLUGS USED TO PLUG SEWER LINES WHILE TESTING THE PROJECT (SUCH AS AIR PLUGS, SCREW TYPE PLUGS, ETC.) ARE LABELED, MARKED OR TAGGED. THE CONTRACTOR SHALL RECORD HOW MANY PLUGS ARE BEING USED, AS WELL AS THE LOCATION AND IDENTIFICATION OF EACH PLUG. CONTRACTOR WILL REPORT TO PROJECT INSPECTOR OF ANY LOST OR UNRESTRAINED PLUGS.

- 31. CONTRACTOR WILL BE HELD LIABLE FOR ANY DAMAGE TO SEWER COLLECTION SYSTEM, STOPPAGES, OVER-FLOWS, OR BACKUPS INTO HOMES CAUSED BY LOST OR RUNAWAY SEWER PLUGS.
- 32. CONTRACTOR WILL BE HELD RESPONSIBLE FOR ANY DAMAGE TO WASTEWATER TREATMENT EQUIPMENT CAUSED BY LOST OR RUNAWAY SEWER PLUGS. CONTRACTOR WILL BE HELD LIABLE FOR REPAIRS.
- 33. RIVER AUTHORITY IS NOT RESPONSIBLE FOR ANY ABNORMALITIES ON STUB OUT, INVERT, GRADE OR SLOPE FOR ANY EXISTING MANHOLE TIE-IN OR SERVICE LATERAL

MANHOLE NOTES:

- 34. THERE SHALL BE 400 FEET MAXIMUM SPACE BETWEEN MANHOLES TO PROVIDE ACCESS FOR CLEANING. A 16-FOOT WIDE GATE WITH A LOCK SHALL ALSO BE SUPPLIED AND INSTALLED BY THE CONTRACTOR FOR ACCESSING THE SANITARY SEWER LINE IN EASEMENTS.
- 35. ALL MANHOLES SHALL BE CONSTRUCTED SO THAT THE TOP OF THE RING IS AT LEAST FOUR (4) INCHES ABOVE THE FINISHED GRADE OF THE SURROUNDING GROUND IN UNPAVED AREAS. IN PAVED AREAS, THE MANHOLE RING SHALL BE FLUSH WITH THE PAVEMENT.
- 36. EVERY THIRD MANHOLE COVER WILL HAVE A 1"HOLE FOR A VENT. VENTING SHALL COMPLY WITH TAC 217.55.
- 37. EACH MANHOLE SHALL HAVE TWO LOCKS INSTALLED TO PREVENT REMOVAL.
- 38. ALL MANHOLES SHALL HAVE A 30" OPENING, WATERTIGHT RINGS AND COVERS, WITH THE RIVER AUTHORITY LOGO AND I/I BARRIFR
- 39. NEW MANHOLE PROTECTIVE COATING LINER MUST BE APPLIED TO ALL MANHOLES. APPLICATION PROCEDURES SHALL BE IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATION AND PER THE FOLLOWING SPECIFICATIONS:
- 39.1. CONTRACTOR WILL BE RESPONSIBLE FOR MANHOLE SAFETY AND CONFINED SPACE ENTRY SET BY OCCUPATIONAL SAFETY AND HEALTH STANDARDS, 29 CFR 1910.146 APP. E.
- 39.2. THE CONTRACTOR SHALL NOTIFY THE RIVER AUTHORITY UTILITIES INSPECTIONS DEPARTMENT A MINIMUM OF 48 HOURS IN ADVANCE OF THE START OF ANY FIELD SURFACE PREPARATION WORK FOR MANHOLES.
- 39.3. ALL NEW MANHOLES AND THE EXISTING MANHOLE THAT THE PROPOSED SEWER LINE WILL TIE-IN TO SHALL HAVE THE INTERIOR WALL PREPPED AS PER MANUFACTURER'S RECOMMENDATIONS AND COATED WITH A RIVER AUTHORITY APPROVED PRODUCT.
- 39.4. FOR ALL MANHOLES, APPLY THE CEMENTITIOUS COATING FIRST. FOLLOWED BY THE EPOXY COATING, LAFARGE SEWPERCOAT 200 HR PRODUCT IS THE ONLY APPROVED PRODUCT WHICH COMBINES THE CEMENTITIOUS AND EPOXY COATINGS, UNLESS OTHERWISE LISTED IN THE APPROVED PRODUCT LIST.
- 39.5. CEMENTITIOUS COATING WITH REQUIRED ONE-INCH-THICK APPLICATION: SEE RIVER AUTHORITY APPROVED PRODUCT SHEET.
- EPOXY COATING: WITH SPECIFIED THICKNESS APPLICATION: 39.6. SEE RIVER AUTHORITY APPROVED PRODUCT SHEET.
- SPRAY WALL POLYURETHANE SYSTEM REQUIRED THICKNESS 397 150 MILS
- CONTRACTOR SHALL SUBMIT WARRANTY LETTER ON MANHOLE 39.8. PROTECTIVE COATING FOR 10 YEARS AFTER FINAL ACCEPTANCE OF PROTECTIVE COATINGS.
- 40. ANY CONNECTIONS TO EXISTING MANHOLES WILL REQUIRE A CRADLE TO SUPPORT THE INCOMING PIPE. A RUBBER GASKET WILL ALSO BE REQUIRED (CENTERED AT MANHOLE WALL) WITH GROUTING AT INTERIOR AND EXTERIOR PENETRATIONS.

- RESEALED.

- RIVER AUTHORITY ENGINEER.

- LINE AND TOP OF SEWER LINE.
- SPECIFICATIONS.
- ENGINEER.
- EACH DIRECTION.

41. PENETRATION INTO THE MANHOLE WILL BE CORE DRILLED. ANY S A N A N T O N I O RIVER AUTHORITY 100 E. GUENTHER STREET SAN ANTONIO, TEXAS 78283 DAMAGE TO EXISTING MANHOLE WILL BE REPAIRED AT CONTRACTOR'S EXPENSE. IF EXISTING SEWER MANHOLE SEAL COATING IS COMPROMISED, ALL OF THE MANHOLE WILL BE 42. IF ANY EXISTING MANHOLES CONNECTED WITH THIS PROJECT ARE FOUND TO HAVE INFILTRATION, THE MANHOLES SHALL BE SEALED AND TESTED AT CONTRACTORS EXPENSE. 43. MANHOLES WITH STUB-OUTS 8-INCH OR LARGER MUST BE LOCATED AT THE END OF ALL SEWER LINES THAT MAY BE EXTENDED IN THE FUTURE. STUB-OUTS SHALL BE PLUGGED. 44. MANHOLE COVER INSERTS ARE SHOWN IN RIVER AUTHORITY APPROVED PRODUCT SHEET. INSERTS SHALL BE INSTALLED IN STRICT ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAKING THE NECESSARY FIELD MEASUREMENTS FOR THE MANUFACTURER PRIOR TO PRODUCTION. 45. BEFORE BACK FILLING/COMPACTION/CONCRETE ENCASEMENT, ALL MANHOLE JOINT SECTION RISERS, CONE SECTIONS AND GRADE RING SHALL BE WRAPPED WITH INFI-SHIELD GATOR WRAP Ë SEALING SYSTEMS, BUTYL ADHESIVE SEALANT WITH A MINIMUM THICKNESS OF 30 MILS. JOINT SEALANT MUST MEET ASTM C923. MASTIC MUST MEETS ASTM C 990 OR BE APPROVED BY THE 46. IF CONCRETE THROAT RINGS ARE TO BE INSTALLED THEY MUST BE USED IN CONJUNCTION WITH A UV STABILIZED POLYETHYLENE ВҮ: LINER AND I/I BARRIER. I/I BARRIER MUST MEET THE FOLLOWING DESIGNED E DRAWN BY: CHECKED B APPROVED A DATE: ASTM STANDARDS: ASTM D-790/1505 DENSITY OF POLYETHYLENE MATERIALS, ASTM D-1238 MELT FLOW INDEX, ASTM 638 TENSILE STRENGTH@ YIELD (50 mm/mm), ASTM 790 FLEXURAL MODULUS, ASTM 648 HEAT DEFLECTION TEMPERATURE @IGEPAL, ASTM 1693 EsCR,100% IGEPAL /10% IGEPAL. 47. A MINIMUM OF TWO AND A MAXIMUM OF FOUR THROAT RINGS WILL BE USED AT EACH MANHOLE FOR ADJUSTMENT. 48. DROP MANHOLES SHALL BE REQUIRED WHEN THE INFLOW ELEVATION IS MORE THAN 24 INCHES ABOVE THE OUTFLOW ELEVATION. DROP SHALL BE LOCATED OUTSIDE THE MANHOLE WITH THE FLOWLINE ELEVATION LOCATED BETWEEN THE CENTER 49. THERE SHALL BE CONCRETE ENCASEMENT 18 INCHES AROUND MANHOLE RING, AND 28 INCHES AROUND THE GATOR WRAP SEALING SYSTEM. CONCRETE ENCASEMENT SHALL BE CIRCULAR, FORMED LEVEL, AND HAVE A SMOOTH OR BROOM FINISH. SEE 50. SEWER PIPE CONNECTIONS TO PRECAST MANHOLES SHALL BE APPROVED BY RIVER AUTHORITY. REFER TO APPROVED PRODUCT LIST. SEWER PIPE CONNECTIONS TO MONOLITHIC MANHOLES WILL BE AS SHOWN ON THE STANDARD DETAIL SHEET. ANY CHANGES IN THESE METHODS MUST BE APPROVED BY RIVER AUTHORITY VISED /2/2023 51. ALL PIPE TRENCHING, BEDDING AND BACKFILL SHALL BE DONE IN ACCORDANCE WITH APPROPRIATE ASTM/ANSI SPECIFICATIONS [REFERENCE 30 TAC 217.54; ASTM C-12 (ANSI A106.2) OR 10/ ASTM D-2321 (ANSI K65.171)]. ALL COMPACTION SHALL BE TO 98% DENSITY. THERE SHALL BE ONE RANDOM DENSITY TEST PER ES LIFT FOR EVERY 400 FEET. ALL TESTING SHALL BE IN COMPLIANCE WITH CURRENT TXDOT SPECIFICATIONS. 0 4 0 AL OF 52. A SAND MIGRATION PREVENTION COLLAR SHALL BE INSTALLED WHEN TRANSITIONING FROM SELECT INITIAL BACKFILL TO lER 2 OPTIONAL SELECT INITIAL BACKFILL. A 2-FOOT LONG CLASS B Ū. CONCRETE ENCASEMENT BETWEEN THE TWO SHALL BE PROVIDED FOR THE ENTIRE HEIGHT OF THE INITIAL BACKFILL EVERY 180 FEET ALONG PIPE AND 20 FEET FROM WALL OF MANHOLE IN SHEET 2 OF 5

53. UPON REQUEST FROM THE SAN ANTONIO RIVER AUTHORITY, CONTRACTOR SHALL PROVIDE SAMPLE VERIFYING PROPER INSTALLATION OF FLOWABLE BACKFILL, INCLUDING, BUT NOT LIMITED TO CORE SAMPLES.

SANITARY SEWER PIPING:

- 54. THE TYPE AND DESCRIPTION OF THE PIPE CONDUIT IS SHOWN ON THE PLANS. REFER TO RIVER AUTHORITY SPECIFICATIONS FOR MATERIALS, STIFFNESS, AND TYPE.
- 55. THE USE OF ASBESTOS CEMENT PIPE WILL BE PROHIBITED UNDER THIS CONTRACT.
- 56. ALL DUCTILE IRON PIPE USED IN THIS SYSTEM SHALL BE CORROSION PROTECTED ON BOTH THE INTERIOR AND EXTERIOR SURFACES. ALL CORROSION PROTECTION SHALL BE APPLIED AND INSTALLED IN SUCH A MANNER AS TO MAINTAIN A CONTINUOUSLY PROTECTED SURFACE AFTER FINAL PIPE INSTALLATION.
- 57. SEE SPECIFICATIONS FOR PVC SEWER PIPE WITH OVER 14 FEET OF COVER.
- 58. ALL SEWER PIPES SHALL HAVE COMPRESSION OR MECHANICAL JOINTS.
- 59. SAND MIGRATION PREVENTION COLLAR WHEN CHANGING THE INITIAL BACKFILL FROM SELECT INITIAL BACKFILL TO OPTIONAL SELECT INITIAL BACKFILL. A TWO (2) FOOT LONG CLASS B CONCRETE ENCASEMENT OR FIRMLY COMPACTED, CONSOLIDATED CLAY ENCASEMENT BETWEEN THE TWO SHALL BE PROVIDED FOR THE ENTIRE HEIGHT OF THE INITIAL BACKFILL, EVERY 180 FEET ALONG PIPE AND 20 FEET FROM WALL OF MANHOLE IN EACH DIRECTION.

SEWER LINE LOCATION:

- 60. SEWER LINES SHALL BE SIZED AND EXTENDED THROUGH THE LIMITS OF A DEVELOPMENT TO SERVE ADJACENT PROPERTY, WITH MANHOLE AND STUB-OUT AT END OF SEWER LINE.
- 61. IN PHASED CONSTRUCTION OF THOROUGHFARES, THE SEWER LINE SHALL BE EXTENDED THE ENTIRE LENGTH OF PROPOSED THOROUGHFARE.
- 62. ALL SANITARY SEWER LINES SHALL BE LOCATED A MINIMUM OF FIVE (5) FEET FROM ANY TREE.
- 63. SIZES AND GRADES FOR SANITARY SEWER SHALL BE AS REQUIRED BY THE RIVER AUTHORITY ENGINEER AND CONSIDERATION SHALL BE GIVEN AS TO POSSIBLE EXTENSIONS FOR FUTURE DEVELOPMENT. NO SANITARY SEWERS, OTHER THAN LATERALS AND FORCE MAINS, SHALL BE LESS THAN EIGHT (8) INCH IN DIAMETER.

SEWER SERVICE LATERALS

- 64. WHEN SEWER LATERALS ARE TO BE CONNECTED TO EXISTING SEWER MAINS AND NO STUB-OUT HAS BEEN EARLIER PROVIDED, THE CONNECTION MUST BE CONDUCTED PER THE RIVER AUTHORITY STANDARD DETAILS AND APPROVED PRODUCT LIST.
- 65. REFER TO THE RIVER AUTHORITY APPROVED PRODUCTS LIST FOR ACCEPTABLE FITTINGS AND CONNECTIONS.
- 66. ALL RESIDENTIAL SERVICE LATERALS SHALL BE SDR 26 PVC WITH RATING OF 115 PSI OR 160 PSI, DETERMINED BY RIVER AUTHORITY SPECIFICATION. LINE SHALL BE EXTENDED TO THE PROPERTY LINE AT (6 x 6) CAPPED AND SEALED. ATTACH SEWER BURIAL TAPE TO THE END OF ALL SEWER LATERALS AND BRING UP TO THE GROUND LEVEL FOR MARKER (GREEN). (SEE HOUSE LATERALS DETAILS).

- 67. THE SIZES AND LOCATIONS OF LATERALS SHALL BE DESIGNATED AS FOLLOWS UNLESS OTHERWISE DIRECTED BY THE RIVER AUTHORITY ENGINEER:
- 68. IN GENERAL, FOR SINGLE FAMILY DWELLING, THE LATERAL SIZE SHALL BE A SIX (6) INCH MINIMUM. HOUSE LATERALS SHALL BE INSTALLED SO THAT CLEANOUTS SHALL HAVE A TWO (2) FOOT SEPARATION FROM DRIVEWAYS, AND SHALL HAVE A NINE (9) FOOT SEPARATION FROM THE WATER SERVICE. THE SERVICE SHALL THEN BE EXTENDED AT A FORTY-FIVE (45) DEGREE ANGLE TO FOUR (4) FEET ABOVE THE FINISHED GRADE AND CAPPED. USE SEWER BURIAL TAPE TO MARK ALL SEWER SERVICE LATERALS.
- 69. MULTIPLE UNITS, APARTMENTS, LOCAL RETAIL AND COMMERCIAL SIX (6) INCH MINIMUM, MANUFACTURING AND INDUSTRIAL -EIGHT (8) INCH MINIMUM. OR LARGER AS REQUIRED.

TRAPS AND INTERCEPTORS (FOG - TECQ)

- 70. UNIFORM PLUMBING CODE, CITY OF SAN ANTONIO BUILDING INSPECTIONS DEPARTMENT. ALL COMMERCIAL BUILINGS WILL HAVE TRAPS (FOG - TECQ).
- OIL SEPARATORS
- 71. WHICH INCLUDE OIL SEPARATOR- GASOLINE SERVICE STATIONS, CAR WASHES, GARAGES, DRY CLEANERS, CHEMICAL PLANTS, GAS PLANTS, HIDE PROCESSORS, TESTING LABORATORIES, OR ANY PLACE WHERE OIL OR SOLVENTS MAY BE INTRODUCED INTO THE SANITARY SEWER SYSTEM. THE SIZING CRITERIA FOR OIL SEPARATORS SHALL BE BASED ON THE G.P.M. RATE OF ALL FIXTURES, APPLIANCE OR APPURTENANCE, DRAINING INTO SEWER SYSTEM.

SAND INTERCEPTORS

72. SAND INTERCEPTORS SHALL BE INSTALLED IN THE SEWER SYSTEM OF THE FOLLOWING ESTABLISHMENTS, GARAGES, CAR WASHES, SERVICE STATIONS, OR ANY PLACE OF BUSINESS WHERE HEAVY SOLIDS MAY BE INTRODUCED INTO THE SANITARY SEWER SYSTEM. THE SIZING CRITERIA FOR A SAND INTERCEPTOR SHALL BE BASED ON THE REQUIRED G.P.M. x 12 MINUTE RETENTION TIMES TO OBTAIN THE TANK SIZE IN GALLONS CAPACITY.

AUTOMATIC CAR WASHES

73. WITH HIGH PRESSURE SPRAYS AND /OR BRUSHES INSTALL A 50 G.P.M. INTERCEPTOR.MINIMUM, FOR A 4-BAY VEHICLE WASH, THE SIZE OF THE INTERCEPTOR SHALL INCREASE 10 G.P.M. FOR EACH ADDITIONAL WASH BAY OVER 4. SINGLE BAY OR PORTABLE WASHER TYPE VEHICLE WASHES SHALL INSTALL A 20 GPM INTERCEPTOR MINIMUM.

NEUTRALIZING DEVICES

74. IN NO CASE SHALL CORROSIVE LIQUIDS, SPENT ACIDS, OR OTHER HARMFUL CHEMICALS WHICH MIGHT DESTROY OR INJURE A DRAIN, SEWER, SOIL, OR WASTE PIPE, OR WHICH MIGHT CREATE NOXIOUS OR TOXIC FUMES, DISCHARGE INTO THE SANITARY SEWER SYSTEM WITHOUT BEING THOROUGHLY NEUTRALIZED BY PASSING THROUGH A PROPERLY CONSTRUCTED AND ACCEPTABLE NEUTRALIZING DEVICE. SUCH DEVICE SHALL BE PROVIDED WITH A SUFFICIENT INTAKE OF NEUTRALIZING MEDIUM, CONSISTING OF LIMESTONE OR MARBLE CHIPS, SO AS TO MAKE ITS CONTENTS NON-INJURIOUS BEFORE BEING DISCHARGED INTO THE SANITARY SEWER SYSTEM.

LINT TRAPS

SILVER RECOVERY UNITS

SYSTEM.

SOLIDS INTERCEPTORS

SYSTEM.

INTERCEPTORS

- (0.5 M).
- ÀFFIXED TO THE DEVICE.
- WASTEWATER.

75. PUBLIC AND PRIVATE LAUNDROMATS AND COMMERCIAL LAUNDRIES SHALL INSTALL A LINT TRAP EQUIPPED WITH A CONVENIENTLY LOCATED AND EASILY REMOVABLE WIRE BASKET OR OTHER SIMILAR DEVICE THAT WILL PREVENT THE STRINGS, RAGS, BUTTONS, OR OTHER PROHIBITED MATERIAL FROM ENTERING THE SANITARY SEWER SYSTEM. THE BASKET OR OTHER SIMILAR DEVICE SHALL PREVENT PASSAGE TO THE SANITARY SEWER SYSTEM OF SOLIDS GREATER THAN $\frac{1}{2}$ "INCH IN DIAMETER. THE LINT TRAP SIZE SHALL BE BASED ON THE TOTAL G.P.M. OF ALL FIXTURES, APPLIANCES AND APPURTENANCES DRAINING TO IT IN LIEU OF A LINT TRAP.A LINT INTERCEPTOR MAY BE INSTALLED. THE INTERCEPTOR SHALL BE SIZED AND DESIGNED BY A TEXAS REGISTERED ENGINEER WITH HIS SEAL AND SIGNATURE ON THE DRAWINGS.

76. SILVER RECOVERY UNITS SHALL BE INSTALLED IN WASTE LINE(S) LEADING FROM X- RAY PROCESSING, PHOTOGRAPHIC PROCESSING, AND /OR ANY PROCEDURES IN ESTABLISHMENT SUCH AS MEDICAL LABS, DENTAL LABS, PHOTO FINISHERS, PRINTERS, GRAPHIC ARTS PRODUCTION FACILITIES, HOSPITAL, FACILITIES, VETERINARY HOSPITALS, OR OTHER ESTABLISHMENTS WHERE SILVER MAY BE INTRODUCED INTO THE SANITARY SEWER

77. SOLIDS INTERCEPTORS SHALL BE INSTALLED WHEN PRE-TREATMENT OF WASTE STREAMS IS NECESSARY TO PREVENT SOLIDS GREATER THAN 1/2" IN DIAMETER, WHICH MAY CAUSE LINE STOPPAGE FROM ENTERING THE SANITARY SEWER

78. INTERCEPTORS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE DESIGN APPROVED BY THE SAN ANTONIO RIVER AUTHORITY CONSISTING OF A MINIMUM OF TWO COMPARTMENTS WITH FITTINGS DESIGNED FOR GREASE RETENTION AND PROVIDE FOR A MINIMUM OF TWELVE (12) MINUTES RETENTION.

79. THERE SHALL BE AN ADEQUATE NUMBER OF MANHOLES TO PROVIDE ACCESS FOR CLEANING ALL AREAS OF AN INTERCEPTOR, ONE MANHOLE PER TRAP COMPARTMENT. MANHOLE COVERS SHALL BE GAS TIGHT IN CONSTRUCTION HAVING A MINIMUM OPENING DIMENSION OF 20 INCH INCHES

80. IN AREAS WHERE TRAFFIC MAY EXIST THE INTERCEPTOR SHALL BE DESIGNED TO HAVE ADEQUATE REINFORCEMENT AND COVER.

81. ALL INTERCEPTORS SHALL HAVE THE SIZE OF THE INTERCEPTOR (IN GALLON PER MINUTE OR GALLON CAPACITY) PERMANENTLY

82. ALL CONCRETE UTILIZED IN THE CONSTRUCTION OF INTERCEPTOR SHALL HAVE A MINIMUM STRENGTH OF 3000 PSI.

83. AN EFFLUENT SAMPLING WELL ON ALL INTERCEPTORS SHALL BE REQUIRED. THE SAMPLE WELL SHALL HAVE A RISER A MINIMUM OF 6" INCHES IN DIAMETER AND SHALL BE INSTALLED AFTER THE CONFLUENCE OF ALL WASTE STREAMS FROM THE FACILITY AND PRIOR TO DISCHARGING INTO SANITARY SEWER COLLECTION SYSTEM. THE WELL SHALL BE PERPENDICULAR TO THE EFFLUENT LATERAL TO ALLOW VISUAL OBSERVATION OF THE FLOW STREAM AND PROVIDE FOR SAMPLING OF



WATERTIGHT TESTING (24 HOURS):

- 84. ALL INTERCEPTORS SHALL BE WATER TESTED OUT AT JOB SITE AFTER BEING INSTALLED (PLUG BOTH ENDS AND FILL TO TOP OF INTERCEPTOR). INTERCEPTOR SHALL SHOW NO LEAKAGE FROM SECTION SEAMS, PINHOLES, OR OTHER IMPERFECTIONS. ANY LEAKAGE IS CAUSE FOR REJECTION. WHEN LEAKAGE OCCURS, ADDITIONAL WATER TESTING SHALL BE MADE. AFTER CORRECTING MEASURE TEST, REPORTS SHALL SHOW TOTAL NUMBER OF INTERCEPTERS TESTED. WHEN LEAKAGE OCCURS, CORRECTIVE MEASURES TAKEN SHALL BE REPORTED BY THE RIVER AUTHORITY INSPECTORS. RIVER AUTHORITY INSPECTORS SHALL RECORD IN DAILY LOG WITH PROJECT NAME, DATE IT WAS TESTED AND COMPLETED.
- 84.1. MANHOLES WILL BE REQUIRED ON SIX (6) INCH AND LARGER LATERALS WHERE THEY CONNECT TO THE MAIN.
- 84.2. LATERALS WILL NOT BE ATTACHED TO SEWER MAINS THAT ARE DEEPER THAN TWELVE (12) FEET.
- 84.3. FITTINGS ARE NOT PERMITTED ÓN LATERALS BETWEEN THE WYE AND THE PROPERTY LINE.
- 84.4. DEEP CUT OR DROP CONNECTIONS SHALL NOT BE PERMITTED.
- 84.5. A MINIMUM OF ONE (1) LATERAL PER BUILDING SHALL BE REQUIRED. ALSO, A MINIMUM OF ONE (1) LATERAL PER RESIDENTIAL LOT SHALL BE REQUIRED. DUPLEXES SHALL HAVE TWO (2) LATERALS THAT SHALL BE INDEPENDENTLY ATTACHED TO THE MAIN.
- 84.6. ALL SEWER LATERAL CROSSING WATER MAINS OR WATER SERVICE LINES SHALL CONFORM TO THE SAME REQUIREMENTS OF TAC CHAPTER 217.53, LATEST REVISION, SDR 26 150 PSI, OR DUCT IRON PIPE, CONCRETE ENCASMENT.
- 85. WHERE REQUIRED CONCRETE ENCASEMENT SHALL BE PLACED FOR FULL WIDTH OF THE TRENCH TO A PLAIN SIX (6) INCHES ABOVE THE TOP OF THE PIPE WITH PAY UNITS AS SHOWN ON THE STANDARD DETAIL SHEET.
- 86. A MINIMUM OF FOUR (4) FEET OF COVER IS TO BE MAINTAINED OVER THE SANITARY SEWER MAIN AND LATERALS AT GRADE, OTHERWISE CONCRETE ENCASEMENT IS REQUIRED.
- 87. WHERE POROUS MATERIAL INCLUDING "SUBGRADE FILLER" IS USED FOR BACKFLL IN THE BEDDING AND INITIAL BACKFILL ZONES, REFER TO SPECIFICATIONS SEC. 33-05-05 FOR SPACING OF SEEPAGE RETAINERS. RETAINERS SHALL CONSIST OF CLASS "D" CONCRETE ENCASEMENT OR FIRMLY COMPACTED CONSOLIDATED CLAY ENCASEMENT, THE RETAINERS SHALL EXTEND FROM THE BOTTOM OF THE TRENCH TO THE TOP OF THE GRANULAR MATERIAL FOR THE ENTIRE TRENCH WIDTH. ENCASEMENT SHALL BE 24 INCHES LONG. NO EXTRA PAY ITEM.

BLASTING

88. BLASTING SHALL NOT BE ACCEPTABLE.

TESTING

89. TESTING SHALL NOT BE CONDUCTED UNTIL ALL OTHER UTILITIES WITHIN THE VICINITY OF THE SANTIARY SEWER ARE FULLY INSTALLED.

THE FOLLOWING SEQUENCE WILL BE STRICTLY ADHERED TO:

- A. PULL MANDREL AFTER 30 DAYS OF INSTALLATION
- B. PERFORM AIR TEST
- C. PULL WIPER (AFTER STREET HAS BEEN ASPHALTED), AS APPLICABLE
- D. VACUUM TEST ALL MANHOLES WITHIN THE PROJECT
- E. CCTV- ALL OF THE NEW LINES AND PAN/TILT ALL SERVICE LATERALS TO 6"X6" CLEAN OUT. CONTRACTOR SHALL FLOOD ALL LINES BEFORE CCTV.

AT END OF PROJECT, CONTRACTOR SHALL SUBMIT FIELD COPY PLAN AND PROFILES SHOWING AS-BUILT WORK, CCTV DVD, AND COMPACTION DENSITY REPORTS FOR MAIN SEWER LINES AND ALL SERVICE LATERALS. CONTRACTOR SHALL ALSO ISSUE WARRANTY LETTERS FOR MATERIAL AND WORKMANSHIP FOR 12 MONTHS AFTER FINAL ACCEPTANCE.

- 90. ALL SEWER LINES MUST BE TESTED IN ACCORDANCE WITH THE FOLLOWING:
- A. 217.57; DEFLECTION TEST FOR FLEXIBLE AND SEMI-RIGID PIPE CONDUCTED AFTER FINAL BACKFILL HAS BEEN IN PLACED AT LEAST 30 DAYS.
- B. 217.57, OR RIVER AUTHORITY SPECIFICATIONS INFILTRATION AND OR EXFILTRATION AND OR LOW-PRESSURE AIR TEST.
- C. 217.58 OR RIVER AUTHORITY SPECIFICATIONS: ALL MANHOLES AND WET WELLS MUST BE TESTED SEPARATELY AND INDEPENDENTLY OF THE COLLECTION LINES.
- D. IN THE EVENT THAT TESTING REQUIREMENTS CONFLICT, THE LATEST TCEQ DESIGN CRITERIA SHALL BE USED.
- 91. SEWER LINES SHALL BE TESTED FROM MANHOLE TO MANHOLE.
- 92. SANITARY SEWER CONNECTIONS MADE DIRECTLY TO EXISTING MANHOLES WHICH REQUIRE PENETRATION INTO THE MANHOLE WILL BE CORE DRILLED. ANY DAMAGE TO EXISTING MANHOLE WILL BE REPLACED AT CONTRACTOR'S EXPENSE AND WILL REQUIRE SUCCESSFUL TESTING OF THE EXISTING MANHOLE IN ACCORDANCE WITH THE RIVER AUTHORITY SPECIFICATIONS. THEY MUST HAVE A PROTECTIVE COATING SPECIFIED IN THE RIVER AUTHORITY APPROVED PRODUCTS LIST, COATING WILL BE MINIMUM OF 200 MILS THICKNESS DEPENDING ON EXISTING CONDITIONS, TO PREVENT INFRASTRUCTURE INFILTRATION, FOLLOW MANUFACTURER'S RECOMMENDATION ON PROTECTIVE COATING.
- 93. AFTER CONSTRUCTION, TESTING WILL BE DONE BY PAN/TILT TV CAMERA BY THE CONTRACTOR AND OBSERVED BY THE INSPECTOR. WASTEWATER ENGINEERING PERSONNEL AND CONTRACTOR AS CAMERA IS RUN THROUGH THE LINES. PAN/TILT ALL 6" SERVICE LATERALS TO 6"X6" STUB-OUT. VIDEOS MUST INCLUDE SUBDIVISION NAME, MANHOLE NUMBER, SERVICE LATERAL STATION NUMBER, FLOW DIRECTION, LOCATION ANY ABNORMALITIES, SUCH AS BROKEN PIPE OR MISALIGNED, JOINT, GRAVEL, DIRT, MUST BE CLEANED OUT, REPLACE AT CONTRACTOR'S EXPENSE. NEW SEWER SYSTEM WILL BE FLOODED WITH H20 BEFORE BEING TV. ALL SEWER LINES MUST BE PRESSURE CLEANED TO INCLUDE SERVICE LATERALS 6"INCH TO STUB-OUT. ALL VIDEOS SHALL BE SUBMITTED IN DVD FORMAT WITH WRITTEN REPORTS.

- AUTHORITY.
- OF SERVICE.

EXCAVATION

- AROUND TRENCH EXCAVATION.
- FLOODPLAIN.

94. A COPY OF ALL TESTING REPORTS INCLUDING BACKFILL COMPACTION TESTS SHALL BE FORWARDED TO THE RIVER

95. DENSITY TEST WILL BE REQUIRED ON ALL SANITARY SEWER TRENCHES INCLUDING SERVICE LATERALS. SERVICE LATERALS TO BE CHOSEN RANDOMLY BY FIELD INSPECTOR. DENSITIES ON SERVICE LATERAL SHALL NOT EXCEED 25% OF TOTAL NUMBER

96. CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR STRUCTURAL DESIGN / GEOTECHNICAL / SAFETY / EQUIPMENT CONSULTANT, IF ANY, SHALL REVIEW THESE PLANS AND AVAILABLE GEOTECHNICAL INFORMATION AND THE ANTICIPATED INSTALLATION SITE(S) WITHIN THE PROJECT WORK AREA IN ORDER TO IMPLEMENT CONTRACTORS TRENCH EXCAVATION SAFETY PROTECTION SYSTEMS, PROGRAMS AND/OR PROCEDURES. THE CONTRACTOR'S IMPLEMENTATION OF THE SYSTEMS, PROGRAMS AND/OR PROCEDURES SHALL PROVIDE FOR ADEQUATE TRENCH EXCAVATION SAFETY PROTECTION THAT COMPLIES WITH AS A MINIMUM OSHA STANDARDS FOR TRENCH EXCAVATIONS. SPECIALLY, CONTRACTOR AND/OR CONTRACTORS INDEPENDENTLY RETAINED EMPLOYEE OR SAFETY CONSULTANT SHALL IMPLEMENT A TRENCH SAFETY PROGRAM IN ACCORDANCE WITH OSHA STANDARDS GOVERNING THE PRESENCE AND ACTIVITIES OF INDIVIDUALS WORKING IN AND

97. CONTRACTOR IS RESPONSIBLE FOR REMOVAL OF ALL WASTE MATERIALS UPON PROJECT COMPLETION. THE CONTRACTOR SHALL NOT STOCKPILE ANY WASTE MATERIAL IN THE 100 YEAR



