

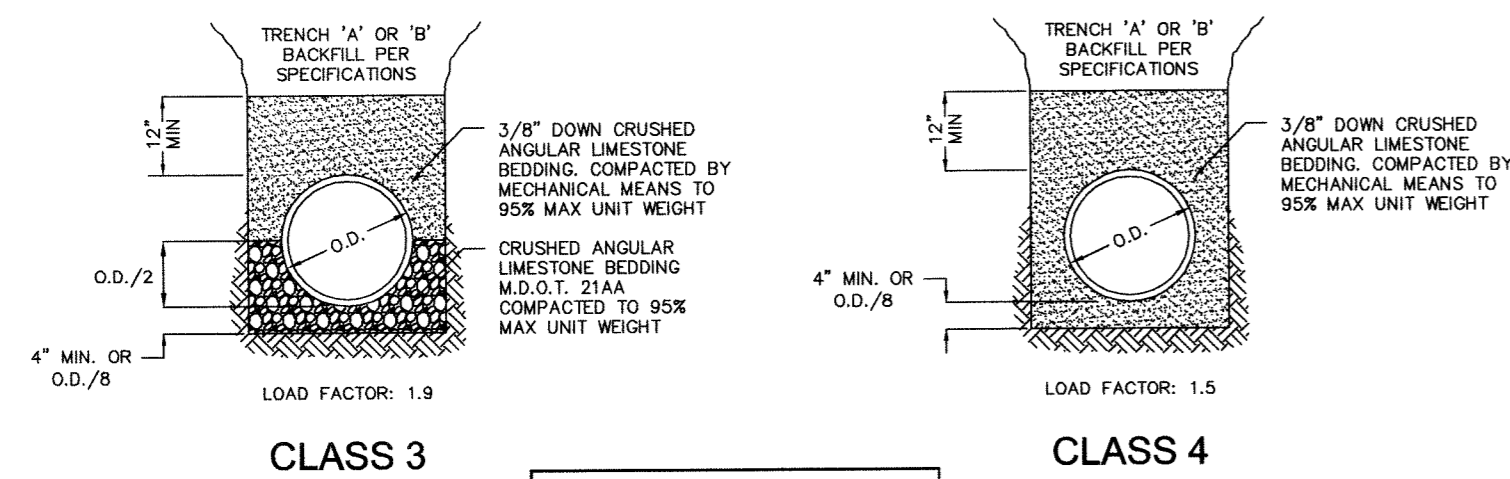
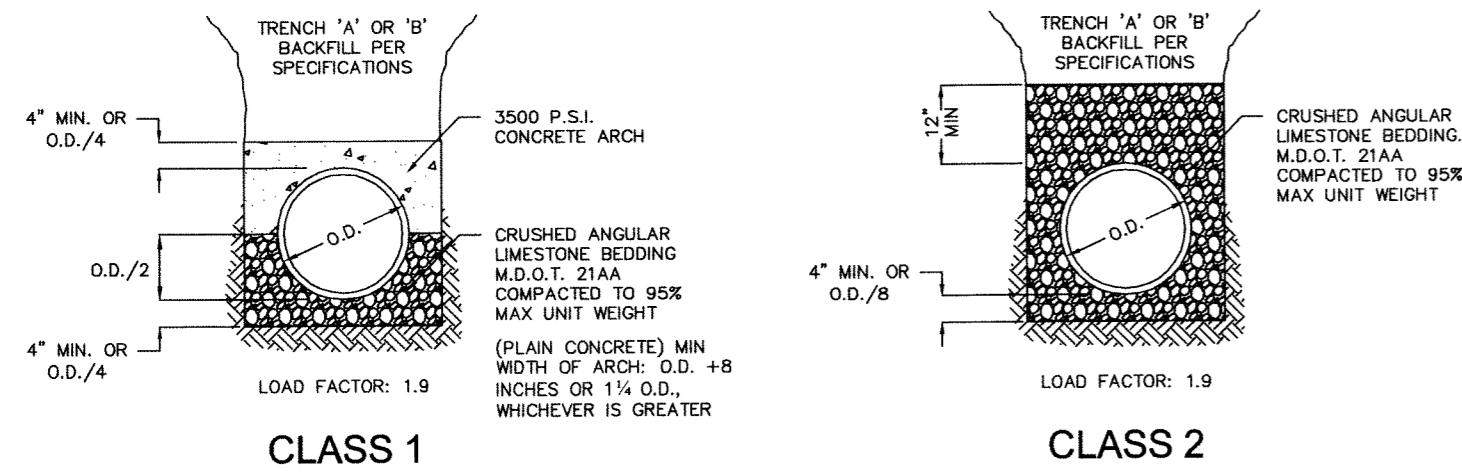
**SPECIFICATION:**

**TRENCH 'A' BACKFILL:**

SUITABLE EXCAVATED CLEAN MATERIAL (EXCLUDING BLUE CLAY) PLACED IN 12" LIFTS AND THOROUGHLY COMPACTED BY MECHANICAL METHODS TO 90 % MAX UNIT WEIGHT.

**TRENCH 'B' BACKFILL:**

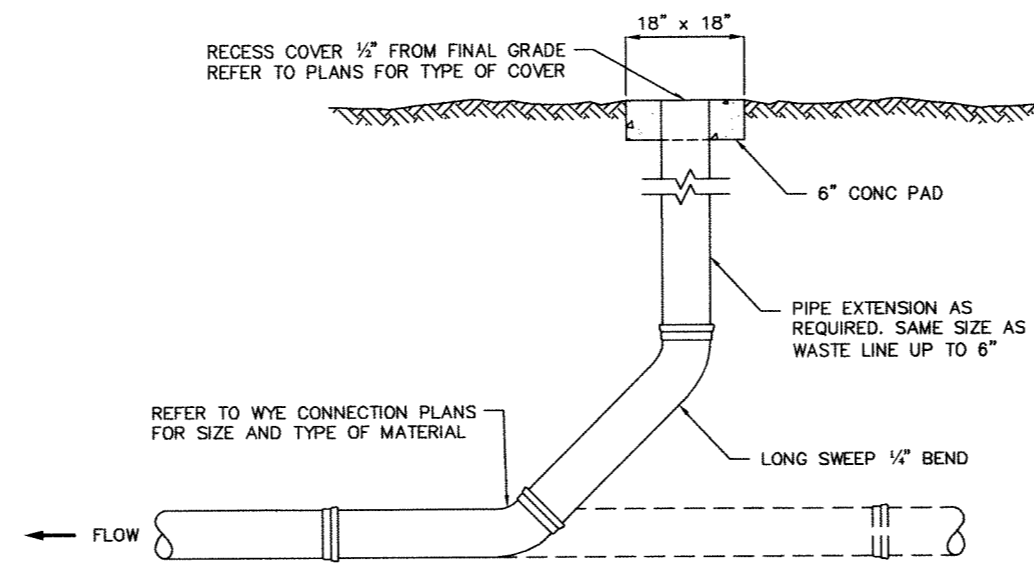
FULL DEPTH 3/8" DOWN CRUSHED ANGULAR LIMESTONE AGGREGATE PLACED IN 12" LIFTS AND THOROUGHLY COMPACTED BY MECHANICAL METHODS TO 98 % MAX UNIT WEIGHT.



MAX WIDTH OF TRENCH AT 12" ABOVE TOP OF PIPE
6" THRU 12" PIPE - 30" WIDE
15" THRU 36" PIPE - O.D. + 18"
42" THRU 60" PIPE - O.D. + 24"
OVER 60" PIPE - O.D. + 24"
MIN WIDTH OF TRENCH 12" ABOVE THE TOP OF PIPE SHALL BE 6" ON EACH SIDE OF PIPE

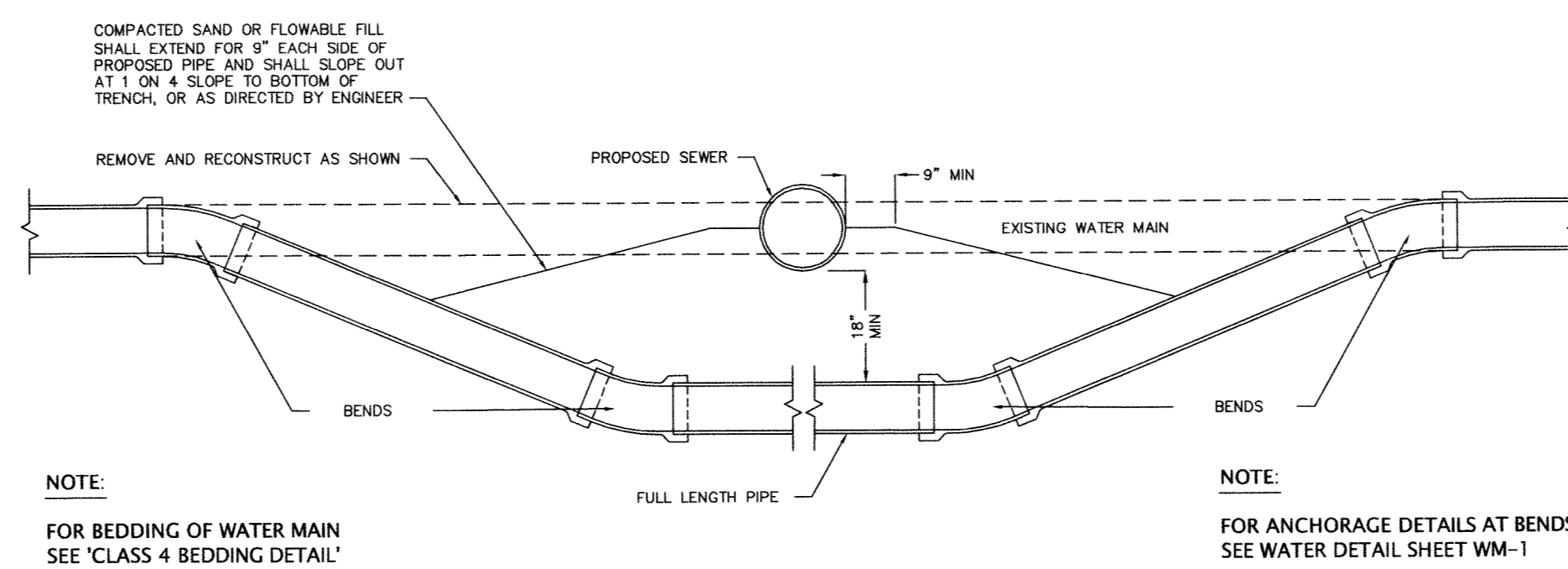
**PIPE BEDDING DETAILS**

MISC 1



**CLEAN OUT**

MISC 2



**RELOCATION OF WATER MAIN**

MISC 3

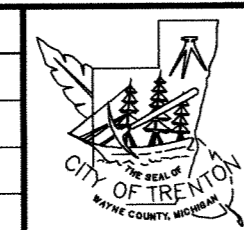
**GENERAL NOTES**

- PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL ATTEND A PRE CONSTRUCTION MEETING, AT A TIME AND PLACE AS ARRANGED BY THE CITY, IN WHICH VARIOUS UTILITY COMPANIES AND GOVERNMENTAL AGENCY REPRESENTATIVES WILL BE PRESENT.
- PRIOR TO CONSTRUCTION, THE CONTRACTOR MUST HAVE IN HIS POSSESSION A COPY OF ALL PERMITS NECESSARY TO CONSTRUCT A CONNECTION TO, OR AN EXTENSION OF, THE WATER SUPPLY, SANITARY SEWER, OR STORM SEWER SYSTEMS.
- THE CONTRACTOR SHALL MAINTAIN HIS CONSTRUCTION OPERATIONS WITHIN THE PRESENTLY EXISTING ROAD RIGHT-OF-WAY AND EASEMENTS AS NOTED ON THE PLANS THROUGHOUT THE PROJECT. IN THE EVENT THAT THE CONTRACTOR DEEMS IT NECESSARY OR ADVISABLE TO OPERATE BEYOND THE LIMITS OF THE EXISTING RIGHT-OF-WAY OR EASEMENTS, HE SHALL BE RESPONSIBLE FOR MAKING SPECIAL WRITTEN AGREEMENTS WITH THE PROPERTY OWNERS AND SHALL FURNISH SUCH COPIES OF AGREEMENTS TO THE CITY ENGINEER.
- THE CONTRACTOR SHALL NOTIFY "MISS DIG" (800-482-7171) 3 DAYS (NOT INCLUDING HOLIDAYS OR WEEKENDS) BEFORE STARTING CONSTRUCTION. HE SHALL MAKE ANY NECESSARY ARRANGEMENTS WITH UTILITY COMPANIES FOR RELOCATION OF EXISTING UTILITIES. THESE ARRANGEMENTS SHALL BE MADE IN SUFFICIENT TIME TO ALLOW THE RELOCATION WORK TO BE COMPLETED WITHOUT INTERFERING WITH OR DELAYING THE CONSTRUCTION.
- THE CONTRACTOR SHALL NOTIFY ALL UTILITY COMPANIES AND THE ENGINEER 48 HOURS PRIOR TO UNCOVERING ANY EXISTING UTILITIES.
- ON ALL WORK WITHIN THE WAYNE COUNTY RIGHT-OF-WAY, THE CONTRACTOR SHALL NOTIFY THE COUNTY ROAD COMMISSION, ENGINEER, AND THE CITY 72 HOURS PRIOR TO THE START OF ANY CONSTRUCTION.
- THE CONTRACTOR SHALL MAINTAIN ALL TRAFFIC AT ALL TIMES AS PER THE MICHIGAN MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES.
- THE CONTRACTOR SHALL AT ALL TIMES PROVIDE EMERGENCY ACCESS TO PROPERTY IN THE VICINITY OF THE CONSTRUCTION FOR POLICE AND FIRE EQUIPMENT, AMBULANCES OR OTHER EMERGENCY VEHICLES TO PROTECT LIFE, HEALTH AND PROPERTY. THE CONTRACTOR SHALL MAINTAIN PUBLIC ROADS AFFECTED BY THE CONSTRUCTION OPERATIONS IN A PASSABLE CONDITION UNTIL SUCH TIME AS FINAL RESTORATION OF THESE IMPROVEMENTS CAN BE MADE. IF THE PUBLIC SAFETY IS IN DANGER OR THE NECESSITY EXISTS FOR MAINTAINING TRAFFIC, BACKFILLING MUST BE COMPLETED IMMEDIATELY. IN THE EVENT THAT THE NECESSARY BACKFILL MATERIAL AND EQUIPMENT ARE NOT AVAILABLE WHEN DIRECTION IS GIVEN FOR IMMEDIATE BACKFILL, THE TRENCH SHALL BE BACKFILLED WITH NATIVE MATERIAL TO PROVIDE FOR THE NECESSARY MAINTENANCE OF TRAFFIC AND SAFETY, HOWEVER, THE NATIVE MATERIAL SHALL BE REMOVED WITHIN 48 HOURS AND THE TRENCH PROPERLY BACKFILLED.
- NO STREET, ROAD OR SECTION THEREOF SHALL BE CLOSED TO THROUGH TRAFFIC UNLESS AUTHORIZED BY THE AGENCY WITH JURISDICTION OVER THE ROADS. PRIOR TO CLOSING A STREET, ROAD, OR SECTION THEREOF, THE CONTRACTOR SHALL PROVIDE THE ENGINEER WITH A COPY OF A DETOUR PLAN APPROVED BY THE AGENCY HAVING JURISDICTION OVER THE ROADS. IN THE EVENT ROADS ARE TO BE CLOSED, THE CONTRACTOR SHALL NOTIFY THE LOCAL FIRE DEPARTMENT, POLICE DEPARTMENT, LOCAL ROAD AUTHORITY, AMBULANCE AND EMERGENCY SERVICES, DEPARTMENT OF PUBLIC WORKS, PUBLIC TRANSIT AUTHORITY, PUBLIC SCHOOL SYSTEM, LOCAL TRASH PICKUP AUTHORITY, AND PUBLIC AND PRIVATE UTILITIES DAILY AS TO WHAT STREETS WILL BE PARTLY BLOCKED OR CLOSED, THE LENGTH OF TIME THE STREETS WILL BE BLOCKED OR CLOSED AND WHEN THE STREETS WILL BE REOPENED TO TRAFFIC.
- PAVED STREETS AND DRIVEWAYS SHALL BE MAINTAINED IN A REASONABLE STATE OF CLEANLINESS AND THE CONTRACTOR SHALL REMOVE ACCUMULATIONS OF DEBRIS CAUSED BY HIS OPERATIONS. THE CONTRACTOR SHALL HAVE, AS A MINIMUM, AN OPERATING SWEEPER BROOM ON THE SITE AT ALL TIMES. THE PAVEMENT SHALL BE CLEANED AT THE CLOSE OF EACH DAY'S OPERATION AND AS OFTEN AS NECESSARY BEFORE THAT TIME. FAILURE TO COMPLY SHALL BE CAUSE TO STOP CONSTRUCTION. CONTRACTOR SHALL ALSO COMPLY WITH THE LOCAL AIR POLLUTION CONTROL ORDINANCE.
- ALL GRAVEL AND DIRT ROADS, STREETS OR DRIVEWAYS USED SHALL BE MAINTAINED BY GRADING, PLACING DUST PALLIATIVES, AND MAINTENANCE GRAVEL IN SUFFICIENT QUANTITIES TO ELIMINATE DUST AND MAINTAIN TRAFFIC AS DIRECTED BY THE AGENCY.
- CONTRACTOR SHALL PROVIDE ALL NECESSARY SHEETING, SHORING, DEWATERING, BRACING, TRENCH BOXES, ETC., TO PERFORM WORK SAFELY AND PROTECT EXISTING UTILITIES AND IMPROVEMENTS.
- THE FLOW IN THE EXISTING SEWERS SHALL BE MAINTAINED AT ALL TIMES DURING CONSTRUCTION.
- CULVERTS, DITCHES, DRAIN TILES, TILE FIELD, DRAINAGE STRUCTURES, ETC., THAT ARE DISTURBED BY THE CONTRACTOR'S OPERATIONS SHALL BE IMMEDIATELY RESTORED.
- ALL PROPERTY IRONS AND MONUMENTS, IF DISTURBED OR DESTROYED BY THE CONTRACTOR'S OPERATION, SHALL BE REPLACED BY A LICENSED LAND SURVEYOR AT THE CONTRACTOR'S EXPENSE.

**SANITARY SEWER NOTES**

- AFTER ALL THE PIPE, STRUCTURES, ETC., HAVE BEEN LAID, CONSTRUCTED, AND BACKFILLED, THE SYSTEM SHALL BE TESTED AND FINAL INSPECTED. THE INSPECTION AND TESTING SHALL CONSIST OF A FIRST INSPECTION, TELEVISION INSPECTION (IF APPLICABLE) TESTING, AND FINAL INSPECTION AND MEASUREMENT. THE CONTRACTOR SHALL PROVIDE THE NECESSARY SUPERVISION, LABOR, TOOLS, EQUIPMENT, AND THE MATERIALS NECESSARY FOR THE TESTS, WHICH SHALL BE CONDUCTED IN THE PRESENCE OF THE ENGINEER. THE ENGINEER SHALL BE NOTIFIED TWO (2) WORKING DAYS IN ADVANCE OF ALL TESTING.
- THE FIRST INSPECTION SHALL BE COMPLETED AND ALL REPAIRS MADE IN AMPLE TIME SO THAT THE TELEVISION INSPECTION OF THE UNDERGROUND PORTION OF THE SYSTEM CAN BE COMPLETED WITHIN FOUR (4) WEEKS OF THE COMPLETION OF THE CONSTRUCTION. WHEN RE-TELEVISION IS NECESSARY, AN ADDITIONAL TWO (2) WEEKS WILL BE ALLOWED FOR COMPLETION. TESTING OF THE SYSTEM AS HEREIN DESCRIBED SHALL IMMEDIATELY FOLLOW THE TELEVISION INSPECTION AND SHALL BE COMPLETED WITHIN A TWO (2) WEEK PERIOD.
- FAILURE TO MAINTAIN A SCHEDULE IN COMPLIANCE WITH THESE TERMS WILL AUTOMATICALLY CAUSE THE STOPPAGE OF OTHER WORK AT THE PARTICULAR SITE IN QUESTION UNTIL SUCH TIME AS THE FINAL INSPECTION OF THE COMPLETED UNDERGROUND PORTION OF THE SYSTEM HAS PROGRESSED TO ACCEPTABLE LIMITS.
- THE CONTRACTOR SHALL HAVE THE UNDERGROUND PORTION OF THE SEWER SYSTEM READY FOR THE FIRST INSPECTION WITHIN TWO (2) WEEKS AFTER THE COMPLETION OF UTILITY.
- THE FIRST INSPECTION SHALL CONSIST OF A VISIBLE AND AUDIBLE CHECK OF SEWERS, MANHOLES, GATE WELLS, AND OTHER STRUCTURES TO ASCERTAIN THAT THE STRUCTURE STEPS HAVE BEEN PLACED, ALL LIFT HOLES PLUGGED, THE CHANNELING OF THE MANHOLE BOTTOMS COMPLETED, ALL VISIBLE OR AUDIBLE LEAKS STOPPED, ALL PIPE HAS BEEN PLACED STRAIGHT AND TRUE TO THE PROPER GRADES AND ELEVATION, THE REQUIRED ADJUSTING RINGS AND FRAME AND COVER PROPERLY INSTALLED, ALL TRENCHES AND STRUCTURES BACKFILLED IN AN ACCEPTABLE MANNER AND THAT THE SYSTEM HAS BEEN THOROUGHLY CLEANED.
- THE FIRST INSPECTION SHALL BE CONSIDERED COMPLETE WHEN ALL THE REPAIRS HAVE BEEN MADE AND THE SYSTEM IS READY FOR TELEVISION INSPECTION AND SUBSEQUENT TESTING.
- THE CONTRACTOR SHALL PROVIDE FOR TELEVISION INSPECTION OF THE SANITARY SEWER LINES.
- THE CONTRACTOR SHALL ARRANGE FOR, ENGAGE, AND PAY ALL EXPENSES INVOLVED FOR THE SERVICES OF A COMPETENT COMPANY TO PERFORM THIS TELEVISION INSPECTION.
- THE TELEVISION INSPECTION SHALL BE OBSERVED BY REPRESENTATIVES OF THE OWNER, ENGINEER, AND THE CONTRACTOR. ANY TELEVISION VIEWING PERFORMED IN THE ABSENCE OF THE ENGINEER WILL NOT BE CONSIDERED AS A PART OF THE FINAL INSPECTION.
- THE INSPECTION SHALL INVOLVE THE VISUAL OBSERVATION BY CLOSED CIRCUIT TELEVISION OF ALL SANITARY SEWER INSTALLED AS PART OF THIS CONTRACT. THE INSPECTION SHALL BE PERFORMED AT A RATE OF SPEED WHICH WILL ALLOW EXAMINATION OF ALL POINTS OF INFILTRATION, CRACKED OR CRUSHED PIPE, DEFECTIVE JOINTS, MISALIGNMENT IN LINE OR GRADE, LOCATION OF ALL WYE OPENINGS AND ANY DEFECTS OR ITEMS OF POOR WORKMANSHIP WHICH MAY APPEAR. ANY ITEMS WHICH, IN THE OPINION OF THE ENGINEER, REQUIRE REPAIR SHALL BE PRECISELY LOCATED AND PHOTOGRAPHED ALONG WITH A DETAILED STATEMENT OF THE CONDITION. THE CONTRACTOR SHALL TAKE IMMEDIATE ACTION TO REPAIR ALL SUCH DEFECTS INCLUDING EXCESSIVE INFILTRATION AT ANY SPECIFIC LOCATION, EVEN THOUGH THE INFILTRATION LIMITS AS HEREIN SPECIFIED HAVE NOT BEEN EXCEEDED FOR THE ENTIRE LENGTH OF SEWER BEING INSPECTED. FOLLOWING COMPLETION OF THE REPAIR, THE ENGINEER AT THEIR DISCRETION, MAY REQUIRE A SECOND TELEVISION INSPECTION OF ANY REPAIRED AREAS. THE CONTRACTOR SHALL ARRANGE FOR AND PAY ALL COSTS INVOLVED IN PERFORMING THIS RE-INSPECTION.
- AFTER ALL TESTING, TELEVISION INSPECTION, FINAL RESTORATION AND CLEAN UP HAS BEEN COMPLETED, A FINAL INSPECTION AND MEASUREMENT WILL BE DONE. THE FINAL INSPECTION SHALL BE REQUESTED BY THE CONTRACTOR AND CONSIST OF, BUT IS NOT LIMITED TO, CHECKING FOR PROPER ALIGNMENT, PROPER GRADE, CLEANLINESS, LEAKS, CONFORMANCE TO THE PLANS AND SPECIFICATION, PROPER STRUCTURAL AND MECHANICAL ADJUSTMENTS, AND RESTORATION. FINAL MEASUREMENT INCLUDES STRUCTURE ELEVATIONS, DISTANCES BETWEEN STRUCTURES, AND CONFIRMATION UTILITIES ARE LOCATED WITHIN EASEMENT AND RIGHT-OF-WAY AREAS.
- SUCCESSFUL COMPLETION OF ANY TEST OR INSPECTION SHALL NOT RELIEVE THE CONTRACTOR FROM THEIR RESPONSIBILITY TO CORRECT ANY DEFICIENCY OR NONCONFORMANCE TO THE PLANS OR SPECIFICATIONS WHICH MAY THEREAFTER BECOME KNOWN.

REVISIONS	DATE	BULLETIN



**CITY OF TRENTON, WAYNE COUNTY, MI**  
**ENGINEERING AND BUILDING DEPARTMENT**  
 2800 THIRD ST., TRENTON, MI 48183 PH (734)675-8251 FAX (734)675-8504  
 CITY ENGINEER: BOYD W. ARTHURS, P.E.

**MISCELLANEOUS DETAILS**

DRAWN BY	AEO	DATE	5-30-2002	DWG FILE	misc_detail
DESIGNED BY		SCALE	NONE	SHEET	MISC-1
APPROVED BY	WRH				