

PROJECT GENERAL NOTES

ALL CONSTRUCTION AND MATERIALS INCLUDED ON THIS PROJECT SHALL BE IN ACCORDANCE WITH THE LATEST STATE OF OHIO DEPARTMENT OF TRANSPORTATION CONSTRUCTION AND MATERIALS SPECIFICATIONS.

ANY DEFECTS IN THE CONSTRUCTION INCLUDING MATERIALS OR WORKMANSHIP SHALL BE REPLACED OR CORRECTED BY REMOVAL AND REPLACEMENT BY THE CONTRACTOR OR OTHER APPROVED METHODS PRIOR TO ACCEPTANCE BY THE CITY ENGINEER AT NO ADDITIONAL COST.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL DAMAGES TO ROAD SURFACES, SIGNS, GUARDRAILS, MAIL/PAPER BOXES, CULVERTS, EASEMENTS OR RIGHT OF WAYS DISTURBED BY CONSTRUCTION OF ANY PART OF THIS IMPROVEMENT. ALL DAMAGES SHALL BE RESTORED AT NO COST TO THE CITY TO THE ORIGINAL CONDITION. THE CITY ENGINEER IN WRITING SHALL ACCEPT APPROVAL OF RESTORATION.

THE CONTRACTOR SHALL NOT COMMENCE WITH ANY FORM OF CONSTRUCTION WITHOUT NOTIFYING THE OFFICE OF THE CITY ENGINEER AT LEAST TWENTY-FOUR (24) HOURS PRIOR TO STARTING CONSTRUCTION.

THE CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS.

THE CONTRACTOR SHALL PROVIDE A TWENTY-FOUR (24) HOUR, SEVEN DAYS A WEEK EMERGENCY CONTACT LIST. THE CONTACT LIST SHALL INCLUDE CONTACT NAMES AND PHONE NUMBERS OF INDIVIDUALS WHO CAN BE REACHED AT ANY TIME. NO CONSTRUCTION SHALL OCCUR BEFORE CONTACT LIST IS PROVIDED TO THE CITY.

ALL LAWN AREAS REMOVED OR DISTURBED SHALL BE REPLACED BY SEEDING AND MULCHING IN ACCORDANCE WITH ITEM 659 OF ODOT SPECIFICATIONS AND SHALL BE RESEEDD AND MULCHED WHEN REQUESTED IF SATISFACTORY RE-ESTABLISHMENT OF LAWN DOES NOT OCCUR. PAYMENT SHALL BE MADE UPON EVIDENCE OF SATISFACTORY RE-ESTABLISHMENT OF LAWN AREA.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL DAMAGES TO THE EXISTING WATER, STORM AND SANITARY SYSTEM RESULTING FROM NON-CONFORMANCE WITH THE APPLICABLE STANDARDS OR THROUGH GENERAL NEGLIGENCE.

ALL VOIDS CREATED FROM BORING OF UTILITY LINES SHALL BE BACKFILLED WITH SAND OR GROUT.

THE CONTRACTOR SHALL MAINTAIN POSITIVE DRAINAGE AT ALL TIMES AND SHALL BACKFILL AND GRADE EXCAVATED AREAS TO ELIMINATE PONDING ON THE SITE.

DUST CONTROL:
THE CONTRACTOR SHALL SUPPLY ALL LABOR, MATERIALS AND EQUIPMENT NECESSARY INCLUDING A DUST-FREE STREET SWEEPING DEVICE OR AS DIRECTED BY THE CITY ENGINEER TO MAINTAIN ALL ROADWAYS BEING USED FOR ACCESS TO THE CONSTRUCTION SITE.

EROSION CONTROL:
THE CONTRACTOR SHALL BE RESPONSIBLE FOR TEMPORARY EROSION CONTROL METHODS IN ACCORDANCE WITH ODOT ITEM 207 AND AS REQUIRED BY THE CITY ENGINEER. EROSION CONTROL MEASURES MUST BE IN PLACE PRIOR TO ANY CONSTRUCTION ACTIVITIES. THE CONTRACTOR SHALL CLEAN ALL EXISTING STREETS OF MUD AND DIRT DURING THE CONSTRUCTION PHASE AS NEEDED OR DIRECTED BY THE CITY ENGINEER.

GENERAL SEWER:
AT ALL STORM SEWER MAIN AND SANITARY MAIN INTERSECTIONS, HAVING LESS THAN EIGHTEEN (18) INCH VERTICAL SEPARATION, ENCASE THE LOWER AND MONOLITHICALLY CRADLE THE UPPER PIPE IN 2500 PSI CONCRETE FOR THE WIDTH OF THE TRENCH.

LINE AND GRADE CONTROL:
THE LINE AND GRADE OF SEWER MAINS SHALL BE CONTROLLED DURING SEWER CONSTRUCTION BY USE OF AN APPROVED LASER DEVICE. THE LINE AND GRADE OF THE LASER SHALL BE "CHECKED" FROM LINE AND GRADE STAKES AT A MAXIMUM OF FIFTY FOOT (50) INTERVALS.

EARTHWORK:
ALL BACKFILL OF EXCAVATIONS (FOR TRENCHES AND STRUCTURES) UNDER BERM, PAVEMENT AREAS, EXISTING WALK, DRIVE AREAS, OR WITHIN A 45' INFLUENCE LINE FROM THE EDGE OF PAVEMENT, SHALL BE LIMESTONE AND SHALL CONFORM TO ODOT ITEM 611.08, TYPE A, ITEM 304 SUBBASE MATERIAL. SLAG MATERIAL, SAND OR SLACKER AGGREGATES SHALL NOT BE USED.

ALL BACKFILL OF EXCAVATIONS OUTSIDE OF PAVEMENT AREAS AND EXISTING WALK OR DRIVE AREAS SHALL CONFORM TO ODOT 611.08, TYPE C, COMPACTED EARTH.

WHEREVER UNSTABLE SOIL CONDITIONS ARE ENCOUNTERED THAT ARE NOT INDICATED ON THE PLANS, THE WORK SHALL BE DISCONTINUED UNTIL THE CITY ENGINEER APPROVES THE METHOD AND MATERIAL TO BE INCORPORATED INTO THE WORK. ALL CONDUITS SHALL BE INSTALLED ON A FIRM BED FOR ITS FULL LENGTH IN ACCORDANCE WITH ODOT ITEM 611.03 UNLESS OTHERWISE SPECIFIED.

ALL UNFORESEEN UNDERGROUND OR ABOVE GROUND UTILITIES OR CONDITIONS THAT ARE DISCOVERED IN THE PROJECT AREA DURING CONSTRUCTION SHALL BE REPORTED BY THE CONTRACTOR TO THE DESIGN ENGINEER IMMEDIATELY FOR EVALUATION / POSSIBLE REDESIGN. THE FIELD DATA SHALL INCLUDE MATERIAL TYPE, SIZE, CONDITION, LOCATION, DEPTH / ELEVATION, ETC...

MAINTENANCE OF TRAFFIC

INTERFERENCE WITH TRAFFIC:
THE CONTRACTOR SHALL MAINTAIN SAFE TRAFFIC CONDITIONS IN ACCORDANCE WITH THE MANUAL OF TRAFFIC CONTROL DEVICES PER ODOT 614.

TRAFFIC DIVERSION:
WHenever IT IS NECESSARY TO DIVERT TRAFFIC FROM ITS NORMAL CHANNEL INTO ANOTHER CHANNEL, SUCH DIVERSIONS SHALL BE CLEARLY MARKED BY CONES, DRUMS, BARRICADES OR TEMPORARY GUARDRAIL. IF THE MARKERS ARE LEFT IN PLACE AT NIGHT, SUITABLE LIGHTS SHALL BE PROVIDED AND MAINTAINED.

ONE WAY TRAFFIC:
WHenever ONE-WAY TRAFFIC IS ESTABLISHED, AT LEAST TWO FLAGMAN SHALL BE USED.

STREET CLOSING:
THE CONTRACTOR MAY NOT CLOSE THE STREET TO THROUGH TRAFFIC.

MAINTENANCE:
IF PROPER MAINTENANCE OF TRAFFIC FACILITIES AND/OR PROPER PROVISION FOR TRAFFIC CONTROL IS NOT BEING PROVIDED, THE CITY MAY TAKE NECESSARY STEPS TO CORRECT TRAFFIC MAINTENANCE. THE COST OF SUCH SERVICE WILL BE CHARGED TO THE CONTRACTOR.

UNDERGROUND UTILITY CONSTRUCTION REQUIREMENTS

UNDERGROUND UTILITIES:
UTILITIES INCLUDING GAS PIPES, TELEPHONE CABLES AND ELECTRICAL POWER AND STREET LIGHTING CIRCUITS ARE RECOMMENDED TO BE UNDERGROUND. ALL TRENCH BACKFILL IN PAVEMENT AREAS SHALL BE ODOT ITEM #304 AGGREGATE BASE COMPACTED BY VIBRATORY OR MECHANICAL TAMPING IN EIGHT (8) INCH LAYERS. ALL WIRING AND CABLES NOT CONTAINED WITHIN CONDUIT AND DIRECT BURIED, SHALL HAVE THEIR LOCATIONS MARKED WITH TECTO-TAPE OR FACSIMILE TWELVE (12) INCHES ABOVE SUCH DIRECT BURIED WIRING OR CABLE. REFER TO TRENCH EXCAVATION, BOTTOM PREPARATION AND BACKFILLING SECTION HEREIN.

ALL CONSTRUCTION OF UTILITY PIPE, CONDUIT, CABLE, WRES, VAULTS AND PERTINENT EQUIPMENT SHALL COMPLY WITH THE CURRENT REGULATIONS OF THE PUBLIC UTILITIES COMMISSION OF OHIO AND WITH THE REQUIREMENTS OF THE UTILITIES INVOLVED. ALL LOCATION AND DETAIL DRAWINGS OF THE UTILITIES PREPARED BY THE DEVELOPER AND/OR THE UTILITIES COMPANIES SHALL BE SUBMITTED TO THE CITY ENGINEER FOR APPROVAL.

THE LOCATION OF THE UNDERGROUND UTILITIES SHOWN ON THE PLANS HAS BEEN OBTAINED BY DILIGENT FIELD CHECK AND SEARCHES OF AVAILABLE RECORDS. IT IS BELIEVED THAT THEY ARE ESSENTIALLY CORRECT, BUT THE DESIGN ENGINEER DOES NOT GUARANTEE THEIR ACCURACY OR COMPLETENESS AND THE CONTRACTOR IS THEREFORE URGED TO PROCEED WITH CAUTION. EXISTING APPURTENANCES SUCH AS UTILITY POLES, VALVE BOXES, ETC. ARE TO BE SAFEGUARDED BY THE CONTRACTOR DURING CONSTRUCTION.

THE CONTRACTOR SHALL CONTACT THE UTILITIES PROTECTION SERVICE, 1-800-362-2764 AT LEAST FORTY-EIGHT (48) HOURS BEFORE ANY UNDERGROUND WORK IS COMMENCED IN EXISTING STREETS.

TRENCH EXCAVATION, BOTTOM PREPARATION AND BACKFILLING

GENERAL REQUIREMENTS:
ALL REQUIREMENTS FOR TRENCH EXCAVATION, BOTTOM PREPARATION AND BACKFILLING SHALL BE IN ACCORDANCE WITH ODOT ITEM 611.08 OR THE SPECIFICATIONS HEREIN. NO BACKFILL MATERIAL SHALL BE FROZEN.

TESTING AND INSPECTION:
ALL BACKFILL OF EXCAVATIONS (FOR TRENCHES AND STRUCTURES) UNDER BERM, PAVEMENT AREAS, EXISTING WALK, DRIVE AREAS, OR WITHIN A 45' ZONE OF INFLUENCE LINE FROM THE EDGE OF PAVEMENT, SHALL BE LIMESTONE AND SHALL CONFORM TO ODOT ITEM 611.08, TYPE A, ITEM 304 SUBBASE MATERIAL. SLAG MATERIAL, SAND OR SLACKER AGGREGATES SHALL NOT BE USED.

ALL BACKFILL OF EXCAVATIONS OUTSIDE OF PAVEMENT AREAS AND EXISTING WALK OR DRIVE AREAS SHALL CONFORM TO ODOT 611.08, TYPE C, COMPACTED EARTH.

IF MATERIAL OTHER THAN ODOT ITEM 304 MATERIAL IS PROPOSED FOR USE AS FILL WITHIN THE RIGHT-OF-WAY, A WRITTEN REQUEST MUST BE SUBMITTED TO THE CITY ENGINEER. THE MATERIAL IS SUBJECT TO THE FOLLOWING REQUIREMENTS:

- PROCTORS MUST BE CONDUCTED ON ALL FILL MATERIALS AND PLANNED COMPACTION METHODS SUBMITTED TO THIS OFFICE PRIOR TO ANY FILLING OPERATIONS BEING PERMITTED.
- NEW PROCTORS MUST BE OBTAINED AS OFTEN AS THE SOIL MATERIAL CHANGES.
- NO PROCTOR'S FROM PREVIOUS YEAR'S CONSTRUCTION WILL BE ACCEPTED.
- SLAG IS NOT PERMITTED.

ALL CONDUITS SHALL BE INSTALLED ON A FIRM BED FOR ITS FULL LENGTH IN ACCORDANCE WITH ODOT ITEM 611.03 UNLESS OTHERWISE SPECIFIED.

TRENCH EXCAVATION, BOTTOM PREPARATION AND BACKFILLING (CONTINUED)

TRENCH BACKFILLING:
WHERE BACKFILLING IS BEING PERFORMED, THE FOLLOWING SHALL CONFORM TO THE FOLLOWING LIMITS:
1) INSTALLATION UNDER PAVEMENT AND/OR WITHIN 45' ZONE OF INFLUENCE LINE OF PAVEMENT EDGE SHALL BE INSTALLED IN ACCORDANCE WITH ODOT ITEM 304 BACKFILL. THE ENTIRE TRENCH SHALL BE FILLED IN LAYERS NOT TO EXCEED EIGHT (8) INCHES IN THICKNESS AND COMPACTED WITH MECHANICAL TAMPERS AT THE SPECIFIED MOISTURE CONTENT UNTIL DRY DENSITY IS NOT LESS THAN 98% OF THE STANDARD PROCTOR. SLAG MATERIAL IS NOT ACCEPTABLE.

2) WITHIN THE RIGHT-OF-WAY (R/W) BUT NOT UNDER PAVEMENT OR NOT WITHIN 45' ZONE OF INFLUENCE LINE OF PAVEMENT EDGE, SUITABLE BACKFILL MATERIAL SHALL BE COMPACTED TO AT LEAST 95% OF THE STANDARD PROCTOR, AT THE SPECIFIED MOISTURE CONTENT. THE ENTIRE TRENCH SHALL BE FILLED IN LAYERS NOT TO EXCEED EIGHT (8) INCHES WITH A MECHANICAL TAMPER.

ADDITIONALLY, ODOT ITEM 611.081 MUST BE ADHERED TO. IF ANY CONFLICTING COMPACTION PERCENTAGES ARE FOUND TO EXIST BETWEEN THOSE INDICATED ABOVE AND ODOT SPECIFICATIONS, THE HIGHER COMPACTION PERCENTAGE SHALL GOVERN.

THESE REQUIREMENTS PERTAIN TO INSTALLATION OF ALL UTILITIES.

TRENCH WIDTH:
WIDTHS OF TRENCHES SHALL BE HELD TO A MINIMUM TO ACCOMMODATE THE PIPE AND APPURTENANCES. NO SLAG IS ACCEPTABLE. THE TRENCH WIDTH SHALL BE MEASURED AT THE TOP OF THE PIPE BARREL AND SHALL CONFORM TO THE FOLLOWING LIMITS:

- ALL PIPE HAVING A DIAMETER LESS THAN TWENTY-FOUR (24) INCHES SHALL HAVE A MINIMUM WIDTH OF NINE (9) INCHES MEASURED FROM OUTSIDE OF PIPE BARREL TO TRENCH WALL.
- ALL PIPE HAVING A DIAMETER GREATER THAN TWENTY-FOUR (24) INCHES BUT LESS THAN SIXTY-SIX (66) INCHES SHALL HAVE A MINIMUM WIDTH OF TWELVE (12) INCHES MEASURED FROM OUTSIDE OF PIPE BARREL TO TRENCH WALL.
- ALL PIPE HAVING A DIAMETER GREATER THAN SIXTY-SIX (66) INCHES SHALL HAVE A MINIMUM WIDTH OF FIFTEEN (15) INCHES MEASURED FROM OUTSIDE OF PIPE BARREL TO TRENCH WALL.

TRENCH PROTECTION:
THE CONTRACTOR SHALL TAKE ALL PRECAUTIONS TO PREVENT ANY CAVING OR SETTLING OF EXCAVATION OR TRENCH WALLS WHICH COULD ENDANGER THE SAFETY OF ANY PERSON ENGAGED IN THE WORK OR IN ANY WAY DAMAGE THE UNDERGROUND INSTALLATIONS OF ADJACENT UTILITIES OR PROPERTY; OR DIMINISH THE TRENCH WIDTH NECESSARY FOR THE PROPER CONSTRUCTION OF THE UNDERGROUND INSTALLATION OR OTHERWISE INJURE OR DELAY THE WORK. THE TYPE AND AMOUNT OF SUCH PROTECTION, SUCH AS TRENCH BOXES, SHEETING, SHORING, OR BRACING SHALL BE CONSISTENT WITH THE DEPTH AND WIDTH OF EXCAVATION, THE COMPOSITION AND WATER CONTENT OF THE SOIL, THE PROXIMITY OF STRUCTURES OR OTHER UTILITIES, THE VIBRATION FROM EQUIPMENT AND THE SPOIL PLACEMENT SHALL BE IN ACCORDANCE WITH THE LATEST OSHA REGULATIONS.

DEWATERING:
IN ORDER TO REDUCE GROUND WATER SEEPAGE AND PROVIDE A STABLE TRENCH BOTTOM IT MAY BE NECESSARY TO DEWATER PRIOR TO EXCAVATION OF THE SEWER TRENCH AND/OR PROVIDE TEMPORARY SUMPS.

FOUNDATION BOTTOM:
FOUNDATION MATERIAL BELOW THE PIPE AND SIX (6) INCHES OF SUBBEDDING SHALL BE SUITABLE MATERIAL THAT PREVENTS PIPE FROM DEFLECTION DUE TO SETTLEMENT. IF, IN THE ENGINEER'S OPINION, THE MATERIAL FORMING THE TRENCH BOTTOM IS NOT SUITABLE FOR A SOLID FOUNDATION, FURTHER DEPTH SHALL BE EXCAVATED AND THE SAME FILLED WITH MATERIAL AND THICKNESS SPECIFIED BY THE ENGINEER.

SUBBEDDING MATERIAL:
AFTER PREPARATION OF THE TRENCH BOTTOM, BEDDING MATERIAL SHALL BE PLACED BELOW PIPE. BEDDING MATERIAL SHALL BE #57 LIMESTONE WITH A MINIMUM THICKNESS OF SIX (6) INCHES AND SPREAD THE FULL WIDTH OF THE TRENCH BOTTOM. BEDDING MATERIAL SHALL NOT HAVE STANDING WATER AND BE FREE OF DEBRIS. ALL CONDUITS SHALL BE INSTALLED ON A FIRM BED FOR ITS FULL LENGTH IN ACCORDANCE WITH ODOT ITEM 611.03 UNLESS OTHERWISE SPECIFIED.

PIPE PROTECTION:
ALL TRENCH EXCAVATION SHALL BE BACKFILLED IMMEDIATELY AFTER PIPE IS PLACED. AGGREGATE MATERIAL, #57 LIMESTONE, THOROUGHLY COMPACTED AND INSTALLED AS PER ASTM D-2321 SHALL PROTECT PIPE ACCORDING TO SPECIFICATIONS HEREIN. FLEXIBLE PIPE SHALL HAVE A MINIMUM COVERAGE OF TWELVE (12) INCHES OVER OUTSIDE PIPE BARREL. RIGID PIPE SHALL HAVE A MINIMUM COVERAGE OF SIX (6) INCHES OVER OUTSIDE PIPE BARREL.

GENERAL PIPE SPECIFICATIONS

GENERAL REQUIREMENTS:
THE FOLLOWING PIPE REQUIREMENTS APPLY TO ALL PIPES PLACED WITHIN THE MUNICIPALITY. ALL PIPE INSTALLATION SHALL CONFORM TO ODOT SPECIFICATION SECTION 611 IF NOT SPECIFIED HEREIN.

PIPE REQUIREMENTS:
REINFORCED CONCRETE PIPE MATERIAL SHALL CONFORM TO ODOT SPECIFICATION SECTION 706.02, WITH RESILIENT AND FLEXIBLE GASKET CONFORMING TO ASTM C443, POLYVINYL CHLORIDE PIPE SHALL CONFORM TO ODOT SECTION 707.45, AND POLYETHYLENE PIPE SHALL CONFORM TO ODOT SECTION 707.53. THE GASKET JOINT SHALL BE OF THE INTEGRAL BELL DESIGN FORMED AS A CONTINUOUS, HOMOGENEOUS ENTITY WITH THE PIPE. THE GASKET SHALL BE FACTORY ASSEMBLED AND SECURELY LOCKED INTO PLACE TO PREVENT DISPLACEMENT DURING ASSEMBLY. A JOINT LUBRICANT SUPPLIED BY THE MANUFACTURER SHALL BE USED ON THE GASKET AND BELL DURING ASSEMBLY. THE GASKET SHALL MEET THE REQUIREMENTS OF ASTM F477 AND THE JOINT SHALL MEET THE REQUIREMENTS OF ASTM D3212. JOINT DEFLECTION SHALL NOT EXCEED THE MAXIMUM ALLOWABLE AS RECOMMENDED BY THE MANUFACTURER.

- TYPE A CONDUITS – CULVERTS
- MATERIAL SHALL BE CONCRETE.
 - MINIMUM COVER SHALL BE NINE (9) INCHES FROM SUBGRADE TO TOP OF PIPE. IF MINIMUM COVER CANNOT BE MAINTAINED, THE PIPE SHALL BE CONCRETE ENCASED.

- TYPE B CONDUITS – SEWERS UNDER PUBLIC ROADWAY PAVEMENT
- MATERIAL SHALL BE CONCRETE OR PLASTIC FOR CONDUIT SIZES UP TO AND INCLUDING TWENTY-FOUR (24) INCH DIAMETER WITH MINIMUM COVER OF TWENTY-FOUR (24) INCHES FROM SUBGRADE TO TOP OF PIPE.
 - MATERIAL SHALL BE CONCRETE FOR CONDUIT SIZES GREATER THAN TWENTY-FOUR (24) INCHES.
 - MATERIAL SHALL BE CONCRETE FOR CONDUITS WITH COVER LESS THAN TWENTY-FOUR (24) INCHES FROM SUBGRADE TO TOP OF PIPE.

- TYPE C CONDUITS – SEWERS NOT UNDER PUBLIC ROADWAY PAVEMENT
- MATERIAL SHALL BE CONCRETE OR PLASTIC FOR CONDUIT SIZES UP TO AND INCLUDING THIRTY-SIX (36) INCH DIAMETER WITH MINIMUM COVER OF TWELVE (12) INCHES FROM SUBGRADE TO TOP OF PIPE.
 - MATERIAL SHALL BE CONCRETE FOR CONDUIT SIZES GREATER THAN THIRTY-SIX (36) INCHES.
 - MATERIAL SHALL BE CONCRETE FOR CONDUITS WITH COVER LESS THAN TWELVE (12) INCHES FROM SUBGRADE TO TOP OF PIPE.

- TYPE D CONDUITS – DRIVE PIPES AND BIKEWAYS
- MATERIAL SHALL BE CONCRETE OR PLASTIC FOR CONDUIT SIZES UP TO AND INCLUDING TWENTY-FOUR (24) INCH DIAMETER WITH MINIMUM COVER OF TWELVE (12) INCHES FROM SUBGRADE TO TOP OF PIPE.
 - MATERIAL SHALL BE CONCRETE FOR CONDUIT SIZES GREATER THAN TWENTY-FOUR (24) INCHES.
 - MINIMUM SIZE SHALL BE TWELVE (12) INCHES.
 - ALL COMMERCIAL DRIVE CULVERTS SHALL BE CONCRETE.

TYPE E CONDUIT – MISCELLANEOUS SMALL DRAIN CONNECTIONS AND HEADERS SHALL BE AS PER ODOT SPECIFICATIONS.

TYPE F CONDUIT – CONDUITS ON STEEP SLOPES: UNDERDRAIN OUTLETS SHALL BE AS PER ODOT SPECIFICATIONS.

DIMENSIONS:
REINFORCED CONCRETE – UNLESS OTHERWISE SHOWN, THE MINIMUM THICKNESS FOR REINFORCED CONCRETE SHALL BE CLASS IV WITH THE CLASS VALUE INCREASING AS PER DESIGN.

HOME MARK:
ALL PIPE SPIGOTS SHALL HAVE A "HOME" MARK TO FACILITATE JOINT CLOSURE.

FITTINGS:
REINFORCED CONCRETE – FITTINGS SHALL BE FACTORY MADE AND PROVIDED WITH JOINTS MEETING ASTM C443 WITH RESILIENT AND FLEXIBLE GASKET JOINTS.

HDPE – FITTINGS SHALL BE FACTORY MADE AND PROVIDED WITH WATERTIGHT JOINTS AND POLYISOPRENE GASKETS MEETING ASTM D 2321 WITH AN INTEGRAL BELL AND SPIGOT.

CERTIFICATION:
A MANUFACTURER'S CERTIFICATE THAT THE REINFORCED CONCRETE AND/OR HDPE PIPE AND FITTINGS WERE TESTED IN ACCORDANCE WITH THE APPROPRIATE ASTM SPECIFICATIONS SHALL BE FURNISHED TO THE MUNICIPALITY PRIOR TO INSTALLATION.

STRAIGHTNESS:
PIPE INTENDED TO BE STRAIGHT SHALL HAVE A MAXIMUM DEVIATION FROM STRAIGHTNESS OF 1/16 IN PER LINEAL FOOT WHEN MEASURED IN ACCORDANCE WITH ASTM D2122.

LINE AND GRADE CONTROL:
THE LINE AND GRADE OF SEWER MAINS SHALL BE CONTROLLED DURING THE SEWER CONSTRUCTION BY USE OF AN APPROVED LASER DEVICE. THE LINE AND GRADE OF THE LASER SHALL BE "CHECKED" FROM LINE AND GRADE STAKES AT A MAXIMUM OF FIFTY FOOT (50) INTERVALS.

UNDERDRAIN:
UNDERDRAIN SHALL BE INSTALLED IN ACCORDANCE WITH ODOT ITEM 605. UNDERDRAIN CONDUIT SHALL MEET ONE OF THE FOLLOWING ODOT ITEM SPECIFICATIONS:

- ODOT ITEM 707.41 – FOUR (4) INCH POLYVINYL CHLORIDE (PVC) PIPE CONFORMING TO ASTM F758, TYPE PS46 WITH A MINIMUM OF FOUR (4) ROWS OF PERFORATIONS.
- ODOT ITEM 707.42 – FOUR (4) INCH (PVC) CORRUGATED, DOUBLED WALLED, SMOOTH INTERIOR PIPE CONFORMING TO ASTM F949 WITH PERFORATIONS.

BEDDING SHALL BE 57 WASHED LIMESTONE AND UNDERDRAIN SHALL BE FABRIC WRAPPED AS DIRECTED BY THE ENGINEER. THE GASKET JOINT SHALL BE OF THE INTEGRAL BELL DESIGN FORMED AS A CONTINUOUS, HOMOGENEOUS ENTITY WITH THE PIPE. THE GASKET SHALL BE FACTORY ASSEMBLED AND SECURELY LOCKED INTO PLACE TO PREVENT DISPLACEMENT DURING ASSEMBLY. A JOINT LUBRICANT SUPPLIED BY THE MANUFACTURER SHALL BE USED ON THE GASKET AND BELL DURING ASSEMBLY. THE GASKET SHALL MEET THE REQUIREMENTS OF ASTM F477 AND THE JOINT SHALL MEET THE REQUIREMENTS OF ASTM D3212. JOINT DEFLECTION SHALL NOT EXCEED THE MAXIMUM ALLOWABLE AS RECOMMENDED BY THE MANUFACTURER.

PAVEMENT CONSTRUCTION REQUIREMENTS

GENERAL REQUIREMENTS:
THE FOLLOWING REQUIREMENTS APPLY TO ALL PAVEMENT IMPROVEMENTS PLACED IN THE MUNICIPALITY.

COLD WEATHER:
NO ASPHALTIC PAVEMENT COURSE AND/OR CONCRETE PAVEMENT OR CURBING SHALL BE LAID ON FROZEN PAVEMENT, BASE OR SUBBASE.

SURFACE TEMPERATURES FOR ASPHALT PAVEMENT PLACEMENT SHALL BE 40 DEGREES FAHRENHEIT FOR THICKNESS GREATER THAN 1.5 INCHES AND 50 DEGREES FAHRENHEIT FOR SURFACE COURSES LESS THAN 1.5 INCHES. THE AIR TEMPERATURE SHOULD NOT BE LESS THAN 40 DEGREES FAHRENHEIT FOR ASPHALT PLACEMENT PER ODOT 401.06.

AMBIENT TEMPERATURE SHALL BE 35 DEGREE FAHRENHEIT AND RISING PER ODOT 451.06 FOR CONCRETE PLACEMENT. WINTER PROTECTION SHALL BE IN EFFECT WHEN TEMPERATURES FALL BELOW 40 DEGREES FAHRENHEIT FOR A PERIOD OF 3 SUCCESSIVE DAYS. PROTECTION CONSISTS OF VISQUEEN AND BLANKETS. ADDITIONAL CEMENT MAY BE ADDED TO ACCELERATE STRENGTH GAIN AND INCREASE THE TEMPERATURE OF THE CONCRETE.

EARTHWORK:
ALL FILLED AREAS, EXCLUDING TRENCHES WITHIN RIGHT-OF-WAY AREAS, SHALL BE COMPACTED IN ACCORDANCE WITH ODOT ITEM 203. IN ADDITION, FOR ANY FILL IN EXCESS OF TWO (2) FEET, AN APPROVED TESTING COMPANY IN ACCORDANCE WITH ODOT ITEM 203 SHALL PERFORM NUCLEAR COMPACTION TESTS.

ASPHALT PAVEMENT:
ALL MATERIAL MUST BE OBTAINED FROM A SOURCE APPROVED BY THE OHIO DEPARTMENT OF TRANSPORTATION. ASPHALT PAVING SHALL BE AS SHOWN ON THE TYPICAL SECTION.

MATERIALS:
AGGREGATE BASE – AGGREGATE BASE SHALL BE THE REQUIRED THICKNESS ACCORDING TO THE ATTACHED DETAILS AND IN ACCORDANCE TO ODOT ITEM 304. AGGREGATE BASE SHALL BE COMPACTED TO 98% MAXIMUM DENSITY PER ODOT 304.05.

SURFACE ASPHALT CONCRETE – SURFACE ASPHALT CONCRETE SHALL BE AS PER THE ATTACHED DETAILS. THE SURFACE COURSE SHALL BE FINISHED 1/4 INCH ABOVE THE GUTTER AND ALL CASTINGS IN ROADWAY.

INTERMEDIATE ASPHALT CONCRETE – INTERMEDIATE ASPHALT CONCRETE SHALL BE AS PER THE ATTACHED DETAILS.

BITUMINOUS AGGREGATE BASE (HEAVY DUTY LOCATIONS)– BITUMINOUS AGGREGATE BASE SHALL BE THE REQUIRED THICKNESS ACCORDING TO THE ATTACHED DETAILS AND IN ACCORDANCE TO ODOT ITEM 301.

JOINT SEALER – THE JOINT BETWEEN THE CONCRETE CURB AND PAVEMENT SURFACE SHALL BE SEALED WITH A FOUR (4) INCH WIDE APPLICATION OF RUBBERIZED JOINT SEALER OVERLAPPING THE CURB 1/2 INCH. THE SEAL SHALL BE LIGHTLY APPLIED IN A STRAIGHT LINE, SQUEEGEE AND LIGHTLY COVERED WITH SAND. THIS IS ALSO TO BE APPLIED TO THE PERIMETER OF UTILITY STRUCTURES IN PAVEMENT AREAS AS WELL AS WHERE NEW PAVEMENT MEETS EXISTING PAVEMENT. THESE AREAS SHALL BE SEALED WITH A FOUR (4) INCH WIDE APPLICATION OF RUBBERIZED JOINT SEALER OVERLAPPING THE UTILITY CASTING/EXISTING PAVEMENT SURFACE BY 1/2 INCH.

ASPHALT PAVEMENT REPAIR:
ASPHALT PAVEMENT REPAIR SHALL CONFORM TO ALL ODOT REQUIREMENTS AND SPECIFICATIONS HEREIN. IN ADDITION ASPHALT PAVEMENT REPAIRS SHALL BE IN ACCORDANCE WITH THE FOLLOWING:

- SUBBASE REPAIR SHALL INCLUDE REMOVAL AND DISPOSAL OF DAMAGED AGGREGATE AND REPLACEMENT WITH COMPACTED ODOT ITEM 304 LIMESTONE. AREAS FOR REPAIR SHALL BE DETERMINED AS DIRECTED BY THE ENGINEER.
- COLD WEATHER REPAIRS: DURING ADVERSE WEATHER CONDITIONS, LOW STRENGTH MORTAR (LSM) SHALL BE USED TO FILL THE TRENCH AND A 6" CONCRETE CAP TEMPORARILY INSTALLED USING A VISQUEEN BOND BREAKER.

ABUTTING ASPHALT CONTACT:
AT ANY POINT WHERE THE PROPOSED PAVEMENT MEETS EXISTING PAVEMENT, THE EXISTING PAVEMENT SHALL BE FULL DEPTH SAW CUT. THIS CUT SHALL BE PERPENDICULAR TO CENTERLINE REMOVING APPROXIMATELY ONE (1) FOOT OR ALL DAMAGED PAVEMENT AS DIRECTED BY THE ENGINEER. AN ADDITIONAL 18" OF ADJOINING ASPHALT SHALL BE MILLED 1 1/2" PRIOR TO APPLYING THE SURFACE COURSE. ASPHALT CONCRETE PER ODOT ITEM 404 SHALL BE USED TO FEATHER THE TRANSITION AND MAINTAIN POSITIVE DRAINAGE BETWEEN THE EXISTING AND PROPOSED PAVEMENT.

TEMPORARY BITUMINOUS PAVEMENT:
THE CONTRACTOR SHALL FURNISH, PLACE AND REMOVE PAVEMENT AS SHOWN ON THE PLANS OR WHERE DIRECTED BY THE ENGINEER AND AS SPECIFIED HEREIN. THE BITUMINOUS COLD MIX SHALL BE IN ACCORDANCE WITH ODOT ITEM 405. ALL TEMPORARY BITUMINOUS PAVEMENTS SHALL BE A MINIMUM OF TWO (2) INCHES THICK AND SHALL CONFORM TO THE GRADE OF THE EXISTING PAVEMENT, DRIVE OR WALK. ALL STREET, DRIVES AND WALKS SHALL BE MAINTAINED IN A SAFE AND USABLE CONDITION FOR PUBLIC USE DURING THE CONSTRUCTION PERIOD.

PAVEMENT DRIVE APRONS, SIDEWALK, CURBS AND CURB RAMP REQUIREMENTS

GENERAL REQUIREMENTS:
THE FOLLOWING REQUIREMENTS APPLY TO ALL PAVEMENT DRIVE APRONS, SIDEWALKS AND CURB RAMPS. ALL PAVEMENT DRIVES, SIDEWALKS AND/OR CURB RAMPS SHALL CONFORM TO ODOT SPECIFICATIONS IF NOT SPECIFIED HEREIN. ALL PAVEMENT DRIVES, SIDEWALKS AND CURB RAMP REPLACEMENTS SHALL CONFORM TO THE GRADE OF THE EXISTING PAVEMENT DRIVE, SIDEWALK AND/OR CURB RAMP.

MATERIAL:
ALL CONCRETE SHALL BE CLASS "C" PER ODOT 499 AND PROPERLY CONSOLIDATED (NO SLAG). CURING COMPOUND SHALL BE LIQUID WHITE CURING COMPOUND MEETING THE REQUIREMENTS OF SECTION 705.07 OF THE STANDARD SPECIFICATION AND APPLIED AT THE RATE OF 1 GALLON PER 200 SQUARE FEET.

NOTIFICATION TO RESIDENTS:
THE SCHEDULING FOR THIS WORK SHALL BE DISCUSSED WITH EACH PROPERTY OWNER AFFECTED PRIOR TO COMMENCING THE REPLACEMENT OPERATION. EXCAVATION IN TRAFFIC AREAS SHALL NOT BE LEFT OPEN OVERNIGHT. ALL DRIVE APRON CONSTRUCTION SHALL FOLLOW A SCHEDULE THAT ALLOWS ACCESS TO AND FROM RESIDENCE, BUSINESS, ETC. AT ALL TIMES. THE DISRUPTION OF ACCESS TO DRIVEWAYS DUE TO THIS WORK SHALL BE KEPT TO A MINIMUM.

SIGNAGE:
THE CONTRACTOR MUST PROVIDE ADEQUATE SIGNS, MARKERS AND BARRICADES TO PROTECT PEDESTRIAN TRAFFIC, VEHICULAR TRAFFIC AND CONSTRUCTION PERSONNEL DURING THE PROGRESS OF THIS WORK. ADDITIONAL SIGNS INDICATING ENTRANCES FOR BUSINESSES IN A CONSTRUCTION ZONE ARE REQUIRED AS DIRECTED BY THE CITY ENGINEER.

PAVEMENT DRIVE APRONS:
PAVEMENT DRIVE APRONS SHALL HAVE A MINIMUM THICKNESS OF SIX (6) INCHES FOR ONE OR TWO FAMILY RESIDENTIAL DRIVEWAYS AND EIGHT (8) INCHES FOR ALL OTHER DRIVEWAYS. 6"x 6" WELDED WIRE MESH SHALL BE USED.

SIDEWALK:
ALL SIDEWALKS SHALL HAVE A MINIMUM THICKNESS OF FOUR (4) INCHES EXCEPT WITHIN THE LIMITS OF THE DRIVEWAYS, WHERE THE MINIMUM THICKNESS SHALL BE SIX (6) INCHES FOR ONE OR TWO FAMILY RESIDENTIAL DRIVEWAYS AND EIGHT (8) INCHES FOR ALL OTHER DRIVEWAYS.

ONE-HALF (1/2) INCH EXPANSION JOINTS SHALL BE PLACED AT INTERVALS NOT TO EXCEED ONE HUNDRED (100) FEET. EXPANSION JOINTS SHALL BE SEALED WITH 1/2" THICK SELF LEVELING URETHANE CHALK, LIMESTONE GRAY IN COLOR. ALL CONCRETE SIDEWALK AND/OR CURB SHALL BE OF MONOLITHIC CONSTRUCTION. ALL SIDEWALKS SHALL HAVE A FOUR (4) INCH MINIMUM SUBBASE, ODOT ITEM 304, COMPACTED TO 95% COMPACTION.

CURB RAMPS:
CURB RAMPS SHALL BE PLACED AS SHOWN ON THE PLANS. ALL SIDEWALKS SHALL CONNECT TO THE PAVEMENT OR CURB AT INTERSECTIONS WITH WHEELCHAIR RAMPS AND ONE-HALF (1/2) INCH EXPANSION JOINTS BETWEEN THE WALK AND CURB. EXPANSION JOINTS SHALL BE SEALED WITH 1/2" THICK SELF LEVELING URETHANE CHALK, LIMESTONE GRAY IN COLOR. ALL CURB RAMPS SHALL MEET THE CURRENT ADA REQUIREMENTS WITH TRUNCATED DOMES.

CONSTRUCTION SAW CUTTING:
WHERE IT IS NECESSARY TO DISTURB EXISTING PAVEMENT DRIVES, CURB RAMPS OR SIDEWALKS THE CONCRETE SHALL BE SAW CUT IN NEAT STRAIGHT LINES AS DIRECTED BY CITY. THE DEPTH OF SAW CUT SHALL BE FULL DEPTH. WHERE IT IS NECESSARY TO DISTURB EXISTING PAVEMENT DRIVES, CURBS AND/OR WALKS THE ASPHALT CONCRETE SHALL BE LINE CUT WITH STRAIGHT VERTICAL EDGES. ALL CUT BITUMINOUS SURFACES SHALL BE SEALED WITH A 4" WIDE RUBBERIZED JOINT SEALER USING A SQUEEGEE.

CONCRETE SHALL BE REMOVED IN SECTIONS. SAW CUT LINES ARE TO TAKE PLACE AT JOINTS.

CURING COMPOUND:
AN APPROVED SEALER SHALL SEAL ALL EXPOSED CONCRETE APPROPRIATE TO APPLICATION ON SURFACE OF CONCRETE. SEE ODOT SPECIFICATION 451.10 FOR APPLICATION METHODS.

STRUCTURES ENCOUNTERED:
THE CONTRACTOR SHALL ADJUST ANY "SURFACE STRUCTURE" IN THE AREA OF SIDEWALK AND/OR PAVEMENT DRIVE TO GRADE. THE CONTRACTOR SHALL FURNISH NECESSARY PARTS AND REPAIR ALL "SURFACE STRUCTURES" DAMAGED BY CONSTRUCTION OF IMPROVEMENT.

