

SANITARY SEWER SPECIFICATIONS:

MATERIALS:

SANITARY SEWER PIPE SHALL BE POLY-VINYL CHLORIDE (PVC) CONFORMING TO ASTM D3034, TYPE PSM FOR SIZES 4" TO 12". THE STANDARD DIMENSION RATIO (SDR) SHALL BE 35. IF THE PIPE IS TO BE BURIED AT A DEPTH OF FIFTEEN (15) FEET OR GREATER, THE PIPE SHALL HAVE A STANDARD DIMENSION RATIO (SDR) OF 26. THE PIPE SHALL BE MADE OF PVC PLASTIC HAVING A MINIMUM CELL CLASSIFICATION OF 12454-C, AND SHALL HAVE A MINIMUM PIPE STIFFNESS OF FORTY-SIX (46) POUNDS PER INCH PER INCH OF PIPE DIAMETER. JOINTS SHALL BE IN CONFORMANCE WITH ASTM D3212. GASKETS SHALL BE IN CONFORMANCE WITH ASTM F477.

MANHOLES SHALL BE FOUR (4) FOOT IN DIAMETER, FITTED WITH POLY-PROPYLENE STEPS AND SHALL BE PRE-CAST CONCRETE CONFORMING TO ASTM C478. MANHOLES SHALL BE CONSTRUCTED WITH A SILICA FLUME ADMIXTURE TO PREVENT HYDROGEN SULFIDE CORROSION. PIPE CONNECTIONS BETWEEN MANHOLES SHALL BE FLEXIBLE WATERTIGHT CONNECTIONS CONFORMING TO ASTM C-923.

MANHOLE CASTINGS SHALL CONFORM TO THE REQUIREMENTS OF GRAY IRON CASTINGS ASTM A48. THE MANHOLE LIDS SHALL HAVE CONCEALED HALF PICK HOLES AND HAVE THE WORD "SANITARY" CAST IN THE FACE OF THE LID.

BEDDING MATERIAL SHALL BE CA-6 AGGREGATE IN ACCORDANCE WITH IDOT SPECIFICATIONS. BEDDING MATERIAL FOR SANITARY SEWER PIPE SHALL BE CONSIDERED INCIDENTAL TO THE CONTRACT.

TRENCH BACKFILL SHALL BE COMPACTED CA-6 AGGREGATE AS SPECIFIED BY THE ILLINOIS DEPARTMENT OF TRANSPORTATION

TESTING:

AIR TESTING: IN CONFORMANCE WITH THE STANDARD SPECIFICATIONS FOR WATER AND SEWER MAIN CONSTRUCTION IN ILLINOIS.

MANDREL TESTING: IN CONFORMANCE WITH THE STANDARD SPECIFICATIONS FOR WATER AND SEWER MAIN CONSTRUCTION IN ILLINOIS.

VACUUM TESTING: IN CONFORMANCE WITH ASTM C-12447-93 STANDARD TEST METHOD FOR CONCRETE SEWER MANHOLES BY THE NEGATIVE AIR PRESSURE (VACUUM) TEST

EXECUTION:

SIX (6) INCH WYE FITTINGS WITH SIX (6) INCH LATERALS SHALL BE CONSTRUCTED FROM THE SANITARY SEWER MAIN TO THE BUILDING LINE OR FIVE (5) FEET FROM THE BUILDING AS DETAILED ON THE PLANS. EACH LATERAL SHALL EXTEND AT A 45° ANGLE TO THE SANITARY SEWER MAIN AND EXTEND UPWARD TO APPROXIMATELY ONE (1) FOOT FROM THE SANITARY SEWER MAIN FLOW LINE TO LATERAL FLOW LINE. LATERALS SHALL BE SLOPED AT ONE (1) PER CENT AND TERMINATED AS SHOWN ON THE PLANS.

SANITARY SEWER MANHOLES LOCATED ADJACENT TO DRAINAGE WAYS SHALL BE PROVIDED WITH SOLID BOLT DOWN LIDS HAVING A GASKET TO PRODUCE A WATERTIGHT FRAME AND LID.

MANHOLE FRAME AND LIDS MAY BE ADJUSTED WITH PRE-CAST CONCRETE ADJUSTING RINGS FOR ADJUSTMENTS UP TO A TWELVE (12) INCH DIMENSION. THE CONTRACTOR WILL BE RESPONSIBLE FOR ALL ADJUSTMENTS UP TO AND INCLUDING TWELVE (12) INCHES. ADJUSTMENTS OVER TWELVE (12) INCHES SHALL BE CONSIDERED EXTRA WORK.

ALL SANITARY SEWERS THAT COLLECT DEBRIS, SILT, MUD, CONCRETE, BUILDING SUPPLIES, OR OTHER DELETERIOUS MATERIALS SHALL BE JET CLEANED AND THE CLEANING SHALL BE THE SOLE COST AND RESPONSIBILITY OF THE CONTRACTOR.

RECORD DRAWINGS SHALL BE SUBMITTED TO THE ENGINEER AND OWNER INDICATING THE INSTALLED TOP AND INVERT ELEVATION OF EACH MANHOLE; ALL PIPE SIZE AND INVERT ELEVATIONS ENTERING THE MANHOLE; STATIONING OF WYES OR TEES FROM THE NEAREST DOWNSTREAM MANHOLE; LENGTH AND SIZE OF LATERAL PIPING; AND APPROXIMATE DEPTH FROM FINISHED GROUND ELEVATION TO THE LATERAL PIPE INVERT. IN THE CASE OF A VERTICAL RISER ON THE SANITARY SEWER, THE ELEVATION SHALL BE TO THE ELBOW AT THE END OF THE 1/2 LATERAL RUN.

STORM SEWER SPECIFICATIONS:

MATERIALS:

STORM SEWERS/CULVERT PIPE (UNDER PAVED AREAS OR SIMILAR STRUCTURAL AREAS)

REINFORCED CONCRETE STORM SEWER PIPE

STORM SEWER PIPE SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M 170M (M170) CLASSES I TO V, TABLES I TO V, EXCEPT THAT THE USE OF ELLIPTICAL REINFORCEMENT IN CIRCULAR PIPE WILL NOT BE PERMITTED AND THE AGGREGATE SHALL CONFORM TO ARTICLES 1003.02 AND 1004.02 OF THE STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION WITH THE EXCEPTION OF GRADATION. THE REINFORCED CONCRETE STORM SEWER PIPE SHALL BE FITTED WITH GASKETED JOINTS. THE REINFORCED CONCRETE PIPE SHALL HAVE AN IDOT INSPECTION STAMP.

PRE-CAST REINFORCED CONCRETE FLARED END SECTIONS

PRE-CAST REINFORCED CONCRETE FLARED END SECTIONS SHALL CONFORM TO THE APPLICABLE REQUIREMENTS OF AASHTO M 170M (M170) CLASS III, WALL B REINFORCED CONCRETE PIPE. END BLOCKS SHALL BE EITHER PRE-CAST OR CAST IN PLACE, AND SHALL BE IN PROPER POSITION AND BACKFILLED ACCORDING TO THE APPLICABLE PARAGRAPHS OF ARTICLE 502.10 OF THE STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION PRIOR TO INSTALLATION OF THE PRE-CAST REINFORCE CONCRETE FLARED END SECTIONS

STORM SEWERS/CULVERT PIPE (EXTERIOR TO PAVEMENT OR STRUCTURAL AREAS)

HOPE

HIGH DENSITY POLYETHYLENE PIPE (HDPE) MEETING AASHTO M294-94.

STORM SEWER INLETS, CATCH BASINS, AND JUNCTION BOXES

PRE-CAST REINFORCED CONCRETE SECTIONS

PRE-CAST REINFORCED CONCRETE INLETS, CATCH BASINS, AND JUNCTION BOXES SHALL CONFORM TO ASTM C478. PRE-CAST REINFORCED CONCRETE SECTIONS SHALL BE CONSTRUCTED IN HORIZONTAL COURSES. THE UNITS SHALL BE LAID IN MORTAR, SEALED WITH EXTERNAL SEALING BANDS, OR SEALED USING MASTIC JOINT SEALER. WHEN MASTIC JOINT SEALER IS USED, THE MATERIAL SHALL COMPLETELY FILL THE JOINT AFTER THE UNITS HAVE BEEN BROUGHT TOGETHER. ALL PRE-CAST UNITS SHALL BE INSTALLED ON A FOUR- (4) INCH THICK SAND CUSHION OF FAT OR FA2 CONFORMING TO ARTICLE 1003.01 OF THE STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION.

CASTINGS

NEW CASTINGS, INCLUDING FRAMES, GRATES AND LIDS SHALL CONFORM TO ARTICLE 604.03 OF THE STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION.

EXECUTION:

ALL PRE-CAST INLETS, JUNCTION BOXES, AREA INLETS, DETENTION STRUCTURES, ETC., SHALL HAVE INVERTS THAT PRESENT A SMOOTH SURFACE FOR FLOW. CONTRACTOR SHALL ENSURE THAT THE DOWNSTREAM PIPE DOES NOT EXTEND INTO THE STRUCTURE CREATING AN OFFSET ON WHICH DEBRIS CAN COLLECT. STRUCTURES SHALL BE FILLETED AND GROUVED AS REQUIRED.

ALL CULVERT/STORM SEWER PIPES SHALL BE PROVIDED WITH APPURTENANT END SECTIONS IF OUTFALLING ONTO A PAVED SWALE, GRASS SWALE, OR RAP-RAP EROSION CONTROL SECTION.

CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT NO STORM WATER OR GROUND WATER SHALL ENTER SANITARY SYSTEM OF THE MUNICIPALITY DUE TO CONTRACTOR ACTIVITIES. THE MUNICIPALITY MAY IMPOSE A FINE PER EACH DAY OF EACH INFRACTION IN ACCORDANCE WITH THEIR DEVELOPMENT CODE.

WATER SYSTEM SPECIFICATIONS:

GENERAL:

FOUNTAIN WATER SHALL BE CONTACTED BEFORE ANY CONSTRUCTION IS TO BEGIN AND MUST OBSERVE ALL PHASES OF CONSTRUCTION AND PRESSURE TEST.

MATERIALS:

PVC (POLYVINYL CHLORIDE) PIPE WATER MAINS

WATER MAINS SHALL BE CONSTRUCTED OF POLY-VINYL (P.V.C.) PIPE CONFORMING TO NSF STANDARD 14 AND AWWA C-900. THE PIPE SHALL CONFORM TO ASTM D2241 AND SHALL BE CONSTRUCTED OF PIPING MATERIALS DESIGNATED AS CLASS 12454B (PVC 1120). THE PIPE SHALL HAVE A STANDARD DIMENSION RATIO (SDR) OF 18. SCHEDULE RATINGS SHALL BE IN ACCORDANCE WITH ASTM B 1785 (PVC).

JOINTS

ELASTOMERIC SEALS (GASKETS) USED FOR PUSH-ON JOINTS SHALL COMPLY WITH ASTM STANDARD F477, AND SHALL BE PRESSURE RATED IN ACCORDANCE WITH ASTM D3139.

FITTINGS

FITTINGS SHALL BE DUCTILE IRON, MECHANICAL JOINT, AND CEMENT MORTAR LINED. FITTINGS SHALL BE IN CONFORMANCE WITH AWWA C153/421.53-84, "AMERICAN NATIONAL STANDARD FOR DUCTILE-IRON COMPACT FITTINGS, 3 IN. THROUGH 12 IN., FOR WATER AND OTHER LIQUIDS." CEMENT MORTAR LINING SHALL BE IN CONFORMANCE WITH ANSI/AWWA C104/A21.4. THE FITTINGS SHALL BE FA2-COATED IN CONFORMANCE WITH AWWA C151. DUCTILE IRON PIPE FITTINGS SHALL BE UTILIZED AT ALL BENDS IN THE WATER MAIN.

WATER MAIN SERVICE PIPE (COPPER)

COPPER PIPE SHALL BE COPPER WATER TUBE, TYPE K, OR GREATER, SOFT TEMPER, FOR UNDERGROUND SERVICE, CONFORMING TO ASTM B-88 AND B 251. THE OUTSIDE DIAMETER OF THE PIPE SHALL CONFORM TO ASTM B 251 TABLE 2.

RESILIENT SEAT GATE VALVES

RESILIENT SEAT GATE VALVES SHALL IN DESIGN, SHELL WALL THICKNESS, MATERIAL AND WORKMANSHIP, CONFORM TO THE LATEST AWWA C509 STANDARD FOR RESILIENT SEAT GATE VALVES.

FIRE HYDRANTS

FIRE HYDRANTS SHALL BE OF A MANUFACTURE AND PATTERN APPROVED BY THE OWNER. HYDRANTS SHALL CONFORM TO AWWA C502 FOR DRY BARREL FIRE HYDRANTS. THE HYDRANTS SHALL BE DESIGNED FOR A WORKING PRESSURE OF 150 PSI AND EQUIPPED WITH NOT LESS THAN TWO (2) O-RING STEM SEALS. HYDRANTS SHALL BE OF THE "TRAFFIC" OR "BREAK-AWAY" DESIGN.

HYDRANTS WITH SIX INCH INLET CONNECTIONS SHALL BE FURNISHED WITH TWO (2) - 2-1/2 INCH HOSE NOZZLES, AND ONE (1) - 4-1/2 INCH PUMPER NOZZLE.

PIPE BEDDING

THERMOPLASTIC PIPE BEDDING MATERIAL SHALL BE CLASS I MATERIAL (ANGULAR 1/4-1/2 INCH GRADED STONE) IN CONFORMANCE WITH ASTM D2321-87.

TRACER WIRE

TRACER WIRE SHALL BE THIN SOFT DRAWN SOLID NO. 12 COPPER AND SHALL BE CONNECTED TO ALL VALVES AND HYDRANTS. WIRE SHALL BE BROUGHT UP OUTSIDE OF VALVE BOX.

(CONTINUED IN NEXT COLUMN)

FIRE HYDRANTS CONT.

TESTING:

MAIN SHALL BE PRESSURE TESTED FOR 6 HOURS AT A MINIMUM PRESSURE OF 190 P.S.I.

PRESSURE TEST IN CONFORMANCE WITH THE STANDARD SPECIFICATIONS FOR WATER AND SEWER MAIN CONSTRUCTION IN ILLINOIS

LEAKAGE TEST IN CONFORMANCE WITH THE STANDARD SPECIFICATIONS FOR WATER AND SEWER MAIN CONSTRUCTION IN ILLINOIS

DISINFECTION TESTING - ANY OF THE METHODS STATED IN AWWA STANDARD C651-92 ARE ACCEPTED AS A MEANS OF DISINFECTION OF WATER MAINS.

EXECUTION:

HORIZONTAL SEPARATION - WATER MAINS AND SEWERS

WATER MAINS SHALL BE LOCATED AT LEAST TEN (10) FEET HORIZONTALLY FROM ANY EXISTING OR PROPOSED DRAIN, STORM SEWER, SANITARY SEWER, COMBINED SEWER OR SEWER SERVICE CONNECTION.

WATER MAINS MAY BE LOCATED CLOSER THAN TEN (10) FEET TO A SEWER LINE WHEN: LOCAL CONDITIONS PREVENT A LATERAL SEPARATION OF TEN FEET; AND

- THE WATER MAIN INVERT IS AT LEAST EIGHTEEN (18) INCHES ABOVE THE CROWN OF THE SEWER, AND
- THE WATER MAIN IS EITHER IN A SEPARATE TRENCH OR IN THE SAME TRENCH ON AN UNDISTURBED EARTH SHELF LOCATED TO ONE SIDE OF THE SEWER.

WHEN IT IS IMPOSSIBLE TO MEET (A) OR (B) ABOVE, BOTH THE WATER MAIN AND DRAIN OR SEWER SHALL BE CONSTRUCTED OF SLIP-ON MECHANICAL JOINT CAST OR DUCTILE IRON PIPE, PRE-STRESSED CONCRETE PIPE, OR PVC PIPE EQUIVALENT TO WATER MAIN STANDARDS OF CONSTRUCTION.

VERTICAL SEPARATION - WATER MAINS AND SEWERS

A WATER MAIN SHALL BE SEPARATED FROM A SEWER SO THAT ITS INVERT IS A MINIMUM OF EIGHTEEN (18) INCHES ABOVE THE CROWN OF THE DRAIN OR SEWER WHENEVER WATER MAINS CROSS STORM SEWERS, SANITARY SEWERS, OR SEWER SERVICE CONNECTIONS. THE VERTICAL SEPARATION SHALL BE MAINTAINED FOR THAT PORTION OF THE WATER MAIN LOCATED WITHIN TEN (10) FEET HORIZONTALLY OF ANY SEWER OR DRAIN CROSSING. A LENGTH OF WATER MAIN PIPE SHALL BE CENTERED OVER THE SEWER TO BE CROSSED WITH JOINTS EQUIDISTANT FROM THE SEWER OR DRAIN.

BOTH THE WATER MAIN AND SEWER SHALL BE CONSTRUCTED OF SLIP-ON OR MECHANICAL JOINT CAST OR DUCTILE IRON, PRE-STRESSED CONCRETE PIPE, OR PVC PIPE EQUIVALENT TO WATER MAIN STANDARDS OF CONSTRUCTION WHEN:

- IT IS IMPOSSIBLE TO OBTAIN THE PROPER VERTICAL SEPARATION AS DESCRIBED IN (A) ABOVE; OR
 - THE WATER MAIN PASSES UNDER A SEWER OR DRAIN.
- A VERTICAL SEPARATION OF EIGHTEEN (18) INCHES BETWEEN THE INVERT OF THE SEWER OR DRAIN AND CROWN OF THE WATER MAIN SHALL BE MAINTAINED WHERE A WATER MAIN CROSSES UNDER A SEWER.

SUPPORT THE SEWER OR DRAIN LINES TO PREVENT SETTLING AND BREAKING THE WATER MAIN, AS APPROVED BY THE ENGINEER.

CONSTRUCTION SHALL EXTEND ON EACH SIDE OF THE CROSSING UNTIL THE PERPENDICULAR DISTANCE FROM THE WATER MAIN TO THE SEWER OR DRAIN LINE IS AT LEAST TEN (10) FEET.

EARTHWORK AND EROSION CONTROL SPECIFICATIONS:

MATERIALS AND EXECUTION:

GENERAL

ALL EXISTING VEGETATION AND TOPSOIL SHALL BE REMOVED FROM PLANNED CONSTRUCTION AREAS PRIOR TO PLACEMENT OF FILL. TOPSOIL THICKNESS VARIES OVER THE SITE AND WILL REQUIRE REMOVAL IN FILL AREAS.

ALL TOPSOIL REMOVED PRIOR TO BULK EARTH GRADING SHALL BE SPREAD EVENLY OVER THE RESIDENTIAL LOTS TO MEET THE FINAL GRADE PRIOR TO CONCLUDING EARTHWORK OPERATIONS.

IF THE CONTRACTOR ELECTS TO BURN CLEARED OR GRUBBED VEGETATION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING THE PERTINENT PERMITS FROM THE LOCAL MUNICIPALITY, COUNTY, AND ILLINOIS EPA, AS WELL AS NOTIFYING THE APPROPRIATE FIRE PROTECTION DISTRICT.

SOFT SOILS SHOULD BE EXCAVATED PRIOR TO PLACING FILL. IF REMOVAL OF SOFT SOILS IS NOT PRACTICAL DUE TO EXCESSIVE DEPTH, THE CONTRACTOR SHOULD NOTIFY THE ENGINEER TO DISCUSS METHODS OF STABILIZATION.

DEWATERING OF AREAS TO BE EXCAVATED OR FILLED SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.

ALL TRENCH EXCAVATION FOR ALL UTILITIES WITHIN TWO (2) FEET OF ANY PAVEMENT SURFACE SHALL BE BACKFILLED WITH CLEAN ROCK BACKFILL COMPACTED TO 95% COMPACTION.

FIELD TILE ENCOUNTERED SHALL BE REPLACED AND/OR CONNECTED TO THE STORM SEWER SYSTEM.

FILL AREAS IN PAVEMENT AND BUILDING AREAS SHALL BE PLACED TO 95% OF THE MATERIAL'S STANDARD PROCTOR MAXIMUM DRY DENSITY (ASTM D698). NATIVE SUB GRADE IN FILL AREAS AND DETENTION BASIN FILL AREAS SHALL BE PLACED TO 92% OF THE MATERIAL'S STANDARD PROCTOR MAXIMUM DRY DENSITY (ASTM D698).

COMPACTION TESTS ARE TO BE TAKEN IN STREETS. COMPACTION TESTS ARE REQUIRED FOR EACH FILL LIFT. NO LIFT TO EXCEED 12" IN DEPTH.

MAXIMUM FILL SLOPES SHALL NOT EXCEED 3:1. EROSION CONTROL MEASURES SHOULD BE CONSIDERED AROUND THE FACE OF EACH SLOPE. EROSION CONTROL MEASURES TYPICALLY EMPLOYED WOULD INCLUDE SILT FENCES; DITCH CHECKS AND TIMELY SEEDING OR SODDING.

ALL GRADING IN STREETS SHALL BE TO WITHIN ± 1/2 INCH OF SUB GRADE. ALL OTHER GRADES SHALL BE TO WITHIN ± 3 INCHES OF THOSE SHOWN ON THE GRADING PLAN. PERMETER SILT FENCE SHALL BE INSTALLED PRIOR TO INITIAL LAND DISTURBANCE ACTIVITIES OR AS SOON AS PRACTICAL. CONTRACTOR SHALL MAINTAIN A THREE FOOT BUFFER STRIP OF EXISTING VEGETATION BETWEEN ANY DISTURBED AREA AND THE SILT FENCE AROUND THE PERIMETER OF THE SITE TO REDUCE OFF-SITE EROSION AND SEDIMENTATION.

CONTRACTOR SHALL USE STAGED CLEARING AND GRADING WHERE PRACTICAL TO REDUCE THE AMOUNT OF DISTURBED AREA TO THE ABSOLUTE MINIMUM NEEDED FOR IMMEDIATE CONSTRUCTION ACTIVITIES.

CONTRACTOR SHALL INSTALL ANY SPECIFIED SEDIMENT TRAPS AND BASINS BEFORE CONSTRUCTION ACTIVITIES BEGIN.

IF SPECIFIED, THE CONTRACTOR SHALL USE DIVERSIONS, PERMETER DIKES AND WATERWAYS TO INTERCEPT OFF-SITE RUNOFF AND DIVERT IT AWAY FROM THE CONSTRUCTION SITE. THESE MEASURES ARE TO BE INSTALLED BEFORE CLEARING AND GRADING OPERATIONS BEGIN.

EXCEPT AS PREVENTED BY INCIDENT WEATHER CONDITIONS, STABILIZING MEASURES, SUCH AS TEMPORARY SEEDING OR PERMANENT VEGETATION, SODDING, MULCHING, SEDIMENT BASINS, EROSION CONTROL BLANKETS, OR OTHER SPECIFIED PROTECTIVE PRACTICES SHALL BE INSTALLED ON ALL DISTURBED AREAS LEFT INACTIVE FOR SEVEN DAYS.

IF SHOWN ON THESE PLANS, ENERGY-DISSIPATION DEVICES OR EROSION CONTROL AT THE OUTFALL OF THE STORM SEWER SYSTEM SHALL BE INSTALLED AT THE TIME OF THE CONSTRUCTION OF THE OUTFALL.

ALL ON-SITE STORM DRAIN INLETS SHALL BE PROTECTED AGAINST SEDIMENTATION AS SHOWN ON THESE PLANS AT TIME OF CONSTRUCTION

CONTRACTOR SHALL NOTIFY THE ENGINEER/PROJECT MANAGER OF THE INDIVIDUAL WHO IS RESPONSIBLE FOR THE ROUTINE DAILY INSPECTION/MAINTENANCE CHECKS OF ALL EROSION AND SEDIMENT CONTROL MEASURES. THE CONTRACTOR ON A DAILY BASIS SHALL CHECK ALL EROSION AND SEDIMENT CONTROL MEASURES DURING THE PERIOD OF CONSTRUCTION ACTIVITY, AND AFTER EACH STORM EVENT.

REPAIRS OR CLEANING OF EACH EROSION CONTROL DEVICE SHALL BE A REQUIRED IN ORDER TO MAINTAIN THE EFFECTIVENESS OF THE CONTROL DEVICE. ALL EROSION CONTROL DEVICES SHALL BE CLEANED WHEN ONE-HALF OF THEIR EFFECTIVE AREA IS COVERED.

ALL EROSION CONTROL AND SEDIMENTATION CONTROL MEASURES DETAILED ON THE IMPROVEMENT PLANS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO INSTALL AND MAINTAIN. THE MAINTENANCE OF THESE EROSION CONTROL AND SEDIMENTATION CONTROL MEASURES SHALL BE CONSIDERED INCIDENTAL TO THE DEVICES THEMSELVES. MAINTENANCE SHALL CONTINUE TO BE THE RESPONSIBILITY OF THE CONTRACTOR UNTIL THE OWNER TAKES OWNERSHIP OF THE IMPROVEMENTS.

CONTRACTOR TO PROVIDE TEMPORARY SEEDING OVER ALL AREAS DISTURBED BY CONSTRUCTION ACTIVITIES UNLESS OTHERWISE INDICATED ON THE PLANS. TEMPORARY SEEDING SHALL BE IN ACCORDANCE WITH THE ILLINOIS DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION IN ACCORDANCE WITH SEEDING MIXTURE CLASS 1, AND MULCH METHOD 2, PROCEDURE 2.

AT THE COMPLETION OF CONSTRUCTION AND THE AREA STABILIZED, THE CONTRACTOR SHALL REMOVE EROSION CONTROL MEASURES NO LONGER NEEDED IN A MANNER THAT MINIMIZES SITE DISTURBANCE, AND SEED IMMEDIATELY OR COORDINATE THE TRANSFER OF MAINTENANCE RESPONSIBILITIES, AS REQUIRED WITH THE OWNER.

ROADWAY SUB-GRADE

SUB-GRADE CONSISTS OF THE SHAPING AND FINAL COMPACTION OF THE EARTH FOR THE CONSTRUCTION OF SUB-BASE, BASE, AND SURFACE COURSES. SUB-GRADE SHALL CONFORM TO SECTION 301 - SUB-GRADE PREPARATION OF THE ILLINOIS DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION.

THE ENTIRE SUB-GRADE SHALL BE COMPACTED TO NOT LESS THAN 95% OF THE STANDARD LABORATORY DENSITY. THE STANDARD LABORATORY DENSITY SHALL BE THE MAXIMUM DENSITY DETERMINED IN ACCORDANCE WITH AASHTO T 99 (METHOD A OR C). A COARSE PARTICLE CORRECTION IN ACCORDANCE WITH AASHTO T 224 SHALL BE USED WITH METHOD A AND MAY BE USED WITH METHOD C.

ALL HOLES, RUTS, SOFT PLACES AND OTHER DEFECTS SHALL BE CORRECTED. IN NO CASE SHALL THE GRANULAR SUB-BASE BE PLACED ON SOFT OR UNSTABLE MATERIAL, OR OVER AREAS THAT ARE NOT DRAINED IN A MANNER SATISFACTORY TO THE ENGINEER. IF THE SUB-GRADE IS DUSTY OR MUDDY, OPERATIONS SHALL BE DELAYED UNTIL IT IS IN A CONDITION SATISFACTORY TO THE ENGINEER.

LIME MODIFICATION FOR ROADWAY

THIS WORK CONSISTS OF THE CONSTRUCTION OF A LIME STABILIZED SOIL MIXTURE COMPOSED OF "REACTIVE" SOIL, LIME AND WATER THAT WILL BE CONSIDERED SUB-BASE. THE LIME STABILIZED SOIL SHALL BE CONSTRUCTED IN ACCORDANCE WITH SECTION 310 - LIME STABILIZED SOIL MIXTURE OF THE ILLINOIS DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION. THE THICKNESS OF THE LIME-MODIFIED SOILS SHALL BE 6 INCHES. LIME MODIFICATION FOR SUB-GRADE SHALL EXTEND A MINIMUM OF SIX (6) INCHES BEHIND THE CURB.

COMPACTION OF THE MIXTURE SHALL BEGIN AS SOON AS IS PRACTICAL AFTER MIXING. IN NO CASE SHALL COMPACTION BE STARTED LATER THAN 3 DAYS AFTER MIXING UNLESS APPROVED BY THE ENGINEER. IF COMPACTION IS TO BE DELAYED, THE SURFACE OF THE LIME MODIFIED SOIL SHALL BE CROWN-GRADED AND SEALED BY EITHER BLADE DRAGGING OR LIGHT ROLLING IMMEDIATELY AFTER MIXING.

COMPACTION SHALL BE CONTINUED UNTIL THE LIME MODIFIED SOIL LAYER HAS A DENSITY OF NOT LESS THAN 95% OF THE STANDARD DRY DENSITY. THE STANDARD DRY DENSITY OF THE LIME TREATED SOIL SHALL BE DETERMINED FROM AASHTO T 99 (METHOD C). AASHTO T 191 OR AASHTO T 238 AND T 239 WILL DETERMINE THE FIELD IN-PLACE DRY DENSITY.

CONTRACTOR SHALL ENSURE THAT SUB-GRADE ELEVATION IS SUCH THAT WHEN IT IS AT "SUB-GRADE" FOR STREETS THAT THE LIME MODIFIED SUB-GRADE IS SIX (6) INCHES THICK. LIME MODIFICATION OF SIX (6) INCHES THAT REQUIRES ADDITIONAL TRIMMING OR CUTTING IS UNACCEPTABLE.

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LIME MODIFICATION FOR ROADWAY CONT.

ROADWAY COMPACTION

EACH LAYER OF THE EMBANKMENT MATERIAL SHALL BE DISKED SUFFICIENTLY TO BREAK DOWN OVERSIZE CLOUDS, MIX THE DIFFERENT MATERIALS, SECURE A UNIFORM MOISTURE CONTENT, AND ENSURE UNIFORM DENSITY AND COMPACTION.

IF THE EMBANKMENT IS LESS THAN 1-1/2 FEET, ALL LIFTS SHALL BE COMPACTED TO NOT LESS THAN 95% OF THE STANDARD LABORATORY DENSITY. IF THE EMBANKMENT HEIGHT IS BETWEEN 1-1/2 AND 3 FEET, INCLUSIVE, THE FIRST LIFT SHALL BE COMPACTED TO NOT LESS THAN 90 PERCENT, AND THE BALANCE TO A MINIMUM OF 95% OF THE STANDARD LABORATORY DENSITY. IF THE EMBANKMENT EXCEEDS 3 FEET IN HEIGHT, THE LOWER 1/3 OF THE EMBANKMENT, BUT NOT TO EXCEED THE LOWER 2 FEET, SHALL BE COMPACTED IN A MANNER THAT WILL YIELD A MINIMUM OF 90% OF STANDARD LABORATORY DENSITY TO THE UPPERMOST LIFT OF THAT PORTION OF THE EMBANKMENT. THE NEXT 1 FOOT OF EMBANKMENT SHALL BE COMPACTED TO NOT LESS THAN 93%, AND THE BALANCE OF THE EMBANKMENT COMPACTED TO NOT LESS THAN 95% OF THE STANDARD LABORATORY DENSITY.

THE TOP TWO FEET OF ALL EMBANKMENTS SHALL NOT CONTAIN MORE THAN 120 PERCENT OF THE OPTIMUM MOISTURE DETERMINED IN ACCORDANCE WITH AASHTO T 99 (METHOD C).

THE STANDARD LABORATORY DENSITY SHALL BE THE MAXIMUM DENSITY AS DETERMINED ACCORDING TO AASHTO T 99 (METHOD A OR C). A COARSE PARTICLE CORRECTION ACCORDING TO AASHTO T 224 SHALL BE USED WITH METHOD A AND MAY BE USED WITH METHOD C.

EMBANKMENT PLACED ADJACENT TO A STRUCTURE SHALL NOT CONTAIN MORE THAN 110 PERCENT OF THE OPTIMUM MOISTURE DETERMINED ACCORDING TO AASHTO T99 (METHOD C).

TESTING:

MONROE COUNTY SHALL PREFORM COMPACTION TESTING OF THE STREET SUB-GRADE. THE CONTRACTOR MAY HAVE A REPRESENTATIVE AVAILABLE TO ATTEND THE TESTING. (IF APPLICABLE)

PAVEMENT SPECIFICATIONS:

MATERIALS:

PORTLAND CEMENT CONCRETE PAVEMENT

THIS WORK SHALL CONSIST OF CONSTRUCTING PORTLAND CEMENT CONCRETE PAVEMENT TO THE THICKNESS SHOWN ON THESE PLANS. THE PORTLAND CEMENT CONCRETE PAVEMENT SHALL CONFORM TO SECTION 420 - PORTLAND CEMENT CONCRETE PAVEMENT OF THE ILLINOIS DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION.

Aggregate Base Course

The base course shall consist of furnishing and placing one or more courses of aggregate on a prepared sub-grade or sub-base in conformance with Section 351 - Aggregate Base Course of the Illinois Department of Transportation Standard Specifications for Road and Bridge Construction.

The base course shall be CA-6 aggregate Type A or Type B in conformance with Article/Section 1004.04 - Coarse Aggregate for Aggregate Surface Course, Granular Embankment Special, Aggregate and Stabilized Aggregate Base, Sub-base and Shoulder Courses of the Illinois Department of Transportation Standard Specifications for Road and Bridge Construction. The aggregate base course shall be compacted to a final thickness as specified in the pavement section detail.

FLEXIBLE PAVEMENT

Bituminous Concrete Binder and Surface Course Class I

Bituminous Concrete Binder

Bituminous concrete binder shall be Class I, Type I, Binder Mixture A, in conformance with SECTION 406 OF THE Illinois Department of Transportation Standard Specifications for Road and Bridge Construction. The bituminous concrete binder shall be constructed to a final compacted thickness AS SPECIFIED on the pavement section plans.

Bituminous Surface Course

Bituminous surface course shall be Class I, Type I, Surface Mixture C, in conformance with the Illinois Department of Transportation Standard Specifications for Road and Bridge Construction. The bituminous surface course shall be constructed to a final compacted thickness as specified on the pavement section plans

CURB AND GUTTER

Concrete curb, concrete gutter, combination concrete curb and gutter, and paved ditch shall be constructed in accordance with Section 606 - Concrete Gutter, Curb, Median and Paved Ditch of the IDOT Standard Specifications for Road and Bridge Construction.

Portland cement concrete shall conform to Class SI concrete as specified in Article 1020 - Portland Cement Concrete of the IDOT Standard Specifications for Road and Bridge Construction. The concrete shall conform to the following requirements:

| Class of Concrete | Cement Factor cwt/c.y. | Slump (inches) | Mix Design Compressive Strength (psi) | Mix Design Flexural Strength (psi) | Air Content % |
|-------------------|------------------------|----------------|---------------------------------------|------------------------------------|---------------|
| SI | 5.65 (1) | 2-4 | Minimum 3500 At 14 days | Minimum 650 At 14 days | 5-8 |
| | 6.05 (2) | | | | |

- (1) Stationary Mixed
- (2) Truck mixed or shrink mixed

SIDEWALK

Concrete sidewalks and handicapped ramps shall be constructed in accordance with Section 424 - Portland Cement Concrete Sidewalk of the IDOT Standard Specifications for Road and Bridge Construction.

Portland cement concrete shall conform to Class SI concrete as specified in Article 1020 - Portland Cement Concrete of the IDOT Standard Specifications for Road and Bridge Construction. The concrete shall conform to the following requirements:

| Class of Concrete | Cement Factor cwt/c.y. | Slump (inches) | Mix Design Compressive Strength (psi) | Mix Design Flexural Strength (psi) | Air Content % |
|-------------------|------------------------|----------------|---------------------------------------|------------------------------------|---------------|
| SI | 5.65 (1) | 2-4 | Minimum 3500 At 14 days | Minimum 650 At 14 days | 5-8 |
| | 6.05 (2) | | | | |

- (1) Stationary Mixed
- (2) Truck mixed or shrink mixed

Sidewalks shall be four (4) inches thick except in driveway areas or entrance areas where the thickness of the sidewalk shall be increased to six (6) inches and number six reinforcing mesh shall be utilized. Sidewalks shall be constructed to a minimum width of FOUR (4) FEET IN RESIDENTIAL AREAS AND six (6) FEET wide in COMMERCIAL AREAS unless otherwise indicated on the plans.

WHEN SIDEWALKS ARE REQUIRED, CURBS SHALL BE DEPRESSED IN ACCORDANCE WITH ILLINOIS ACCESSIBILITY CODE REQUIREMENTS.

PAVEMENT JOINTS

TRANSVERSE CONTRACTION JOINTS SHALL BE PLACED AT REGULAR INTERVALS NOT TO EXCEED FIFTEEN (15) FEET.

TRANSVERSE EXPANSION JOINTS USING LOAD TRANSFER DEVICES SHALL BE INSTALLED ACCORDING TO ARTICLE 420.10(E) OF THE STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION.

LONGITUDINAL SAWED JOINTS SPACING SHALL NOT EXCEED 12.5 FEET. DEFORMED STEEL THE BARS OF SPECIFIED LENGTH, SIZE, SPACING AND MATERIAL SHALL BE PLACED PERPENDICULAR TO THE LONGITUDINAL SAW