GENERAL NOTES:

1. THE STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, ILLINOIS DEPARTMENT OF TRANSPORTATION, LATEST REVISION, AND THE STANDARD SPECIFICATION FOR WATER AND SEWER MAIN CONSTRUCTION IN ILLINOIS, LATEST REVISION, SHALL GOVERN CONSTRUCTION FOR THE PROPOSED IMPROVEMENTS, UNLESS SUPERCEDED BY SPECIAL PROVISIONS IN THE VILLAGE OF LOMBARD SUBDIVISION AND ENGINEERING SPECIFICATIONS MANUAL.

2. THE CONTRACTOR SHALL NOTIFY THE VILLAGE OF LOMBARD PRIVATE ENGINEERING SERVICES DIVISION OF THE DEPARTMENT OF COMMUNITY DEVELOPMENT, (630) 620-5749, AT LEAST TWO (2) WORKING DAYS BEFORE THE INITIAL START OF OPERATIONS, OPENING ANY STREET PAVEMENT OR ANY TEMPORARY STOP OR RESUMPTION OF OPERATIONS.

3. ALL NEW UNDERGROUND SERVICES SHALL BE PLACED AT LEAST FIVE (5) FEET FROM SANITARY AND WATER SERVICES.

4. WHEREVER THE WORDS “ENGINEER” OR “INSPECTOR” APPEARS, IT SHALL BE INTERPRETED TO MEAN A REPRESENTATIVE OF THE VILLAGE OF LOMBARD PRIVATE ENGINEERING SERVICES DIVISION OF THE DEPARTMENT OF COMMUNITY DEVELOPMENT.

5. A COPY OF THE VILLAGE APPROVED STAMPED PLANS AND SPECIFICATIONS AND OTHER AGENCIES’ PERMITS, I.E. COUNTY HIGHWAY, ILLINOIS ENVIRONMENTAL PROTECTION AGENCY, ETC., MUST BE KEPT ON THE JOB SITE DURING CONSTRUCTION OF THE PROJECT WORK.

6. CHANGES IN THE ENGINEERING PLANS MUST BE APPROVED BY THE VILLAGE ENGINEER, A WRITTEN REQUEST, ACCOMPANIED BY REVISED ENGINEERING PLANS, IS TO BE SUBMITTED AND APPROVED BEFORE CHANGES ARE STARTED.

7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL UTILITIES (AMERITECH, COMMONWEALTH EDISON ELECTRIC COMPANY, ETC.) PRIOR TO CONSTRUCTION AND ALL UTILITIES DAMAGED AND/ OR DISTURBED BY THE CONTRACTOR SHALL BE REPAIRED AT NO ADDITIONAL COST TO THE OWNER, LOCATIONS AS SHOWN ARE APPROXIMATE AND BASED UPON THE BEST AVAILABLE INFORMATION, CALL J.U.L.I.E. FOR MAJOR UTILITY LOCATIONS.

8. THE CONTRACTOR IS TO VERIFY ALL ELEVATIONS PRIOR TO THE START OF WORK AND, IF THERE ARE ANY DISCREPANCIES, IS TO NOTIFY THE DESIGN ENGINEER AT ONCE. NO WORK SHALL BE DONE UNTIL THE DISCREPANCIES ARE RESOLVED.

9. RECORD DRAWINGS SHALL BE PROVIDED FOR THE GRANTING OF OCCUPANCY PERMITS. RELIEF SHALL BE PROVIDED ONLY FOR ITEMS INCOMPLETE DUE TO WINTER CONDITIONS.

10. EXISTING UTILITIES TO BE ABANDONED IN PLACE SHALL BE REMOVED TO A MINIMUM DISTANCE OF 15 FEET ON EACH SIDE OF ANY EXISTING UTILITIES TO REMAIN IN SERVICE AND/OR ANY PROPOSED UTILITIES.

11. ROOT PRUNING SHALL BE COMPLETED ON ALL PUBLICLY OWNED TREES PRIOR TO EXCAVATION WITHIN A DISTANCE FROM THE TREE OF ONE FOOT PER INCH OF DIAMETER AT BREAST HEIGHT. EXCAVATION AND ROOT CUTTING IS NOT PERMITTED WITHIN THREE FEET OF THE TRUNK. ALL ROOTS OVER ONE INCH DIAMETER ON THE TREE SIDE OF THE TRENCH THAT BECOME EXPOSED BY EXCAVATION SHALL BE CUT BY HAND.

12. OSHA SAFETY STANDARDS SHALL BE FOLLOWED.

MASS GRADING

1. ALL UNSUITABLE MATERIAL MUST BE REMOVED FROM THE PROPOSED BUILDING AREA OR AS INDICATED ON THE SOILS REPORT FOR THE SUBJECT DEVELOPMENT.

2. PRIOR TO COMMENCEMENT OF CONSTRUCTION OF THE MASS GRADING OPERATIONS OF A SUBDIVISION OR PARCEL OF LAND, THE DEVELOPER OR BUILDER, MUST NOTIFY THE VILLAGE ENGINEER TO ARRANGE FOR APPROPRIATE CONSTRUCTION INSPECTION. IN ADDITION, PRIOR TO COMMENCEMENT OF ANY CONSTRUCTION, ALL REQUIRED BONDS MUST BE POSTED AND PERMIT FEES PAID, ALL MASS GRADING OPERATIONS OF A SUBDIVISION OR INDIVIDUAL BUILDING PARCEL, AS WELL AS ANY ROADWAY OR PARKING LOT IMPROVEMENT, MUST BE CONSTRUCTED ACCORDING TO THE STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, IN ILLINOIS, CURRENT EDITION, AS WELL AS THE AMERICAN SOCIETY OF STATE HIGHWAY OFFICIALS, CURRENT EDITION.

3. ALL GRADING OPERATIONS MUST BE CONSTRUCTED ACCORDING TO THE ELEVATIONS AND GRADES, AS SHOWN ON THE PLANS OR MODIFIED BY THE VILLAGE ENGINEER. ALL EXCAVATED MATERIAL SHALL BE PLACED AND STOCKPILED ON THE SUBJECT PROPERTY, AS PREVIOUSLY APPROVED. THE SUBDIVIDER OR BUILDER MUST ADHERE TO THE APPROVED ENGINEERING PLANS, DURING THE COURSE OF CONSTRUCTION OF THE DESIGNATED IMPROVEMENTS. POSITIVE DRAINAGE MUST BE PROVIDED AT ALL TIMES IN AN ATTEMPT NOT TO AFFECT THE SUBJECT DEVELOPMENT OR TO INFRINGE UPON ADJACENT PROPERTIES.

STORM SEWER

1. NO STORM SEWER CONSTRUCTION SHALL COMMENCE WITHIN THE LIMITS OF THE VILLAGE OF LOMBARD UNTIL THE VILLAGE HAS APPROVED THE DESIGN OF THE SYSTEM AND ISSUED THE NECESSARY PERMITS FOR THESE IMPROVEMENTS.

2. ALL STORM WATER DRAINS OR FIELD TILES ENCOUNTERED DURING CONSTRUCTION MUST BE DRAINED WITH A POSITIVE OUTFALL, BE CONNECTED TO THE PROPOSED STORM SEWER SYSTEM OR BE REPAIRED. THE CONNECTION POINT OF ALL FIELD TILES TO THE PROPOSED STORM SEWER SYSTEM MUST BE SHOWN ON THE RECORD DRAWINGS FOR THE STORM SEWER SYSTEM.

3. STORM WATER SHALL NOT BE DIRECTED INTO THE SANITARY SEWER SYSTEM AND NO CONNECTIONS BETWEEN THE STORM AND SANITARY SEWER SYSTEM WILL BE PERMITTED AT ANY TIME BEFORE, DURING, OR AFTER CONSTRUCTION.

4. MINIMUM COVER FOR STORM SEWER SHALL BE TWO (2) FEET. WHERE MINIMUM COVER IS UNATTAINABLE STORM SEWER SHALL BE CONSTRUCTED OF CLASS IV REINFORCED CONCRETE PIPE.

5. ALL MATERIAL AND CONSTRUCTION METHODS SHALL CONFORM TO THE STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION PREPARED BY THE STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION, CURRENT EDITION, EXCEPT WHERE MODIFIED BY SPECIFIC VILLAGE OF LOMBARD STANDARDS.

6. ALL STORM SEWERS SHALL BE POLYVINYL CHLORIDE (PVC) PIPE OR REINFORCED CONCRETE PIPE, CLASS IV, O-RING CONSTRUCTION. OTHER TYPES OF PIPE MAY BE USED ONLY UPON APPROVAL OF THE VILLAGE ENGINEER.

7. ALL MANHOLES SHALL BE REINFORCED CONCRETE, TYPE A. WITH OFFSET CONES. FRAMES AND GRATES SHALL BE AS INDICATED ON PLANS. ALL SOLID COVERS SHALL BE STAMPED “STORM”.

8. ALL MANHOLES AND DRAINAGE STRUCTURES SHALL CONFORM TO ASTM C-478, ALL STRUCTURES WILL BE PRECAST AND SHALL HAVE A SIX (6) INCH THICK PRECAST CONCRETE BASE ON ONE PIECE, BEDDED IN AT LEAST SIX (6) INCHES OF GRAVEL OR CRUSHED STONE.

9. ALL INLETS SHALL BE REINFORCED CONCRETE, TYPE A. INLETS SHALL HAVE AN INTERNAL DIAMETER OF TWO (2) FEET AND A MINIMUM DEPTH OF THREE (3) FEET. SIDEWALLS SHALL BE PRECAST CONCRETE HAVING A THICKNESS OF FOUR (4) INCHES. BEDDED IN A MINIMUM OF SIX (6) INCHES OF GRAVEL OR CRUSHED STONE.

10. PLASTIC POLYMER STEPS MEETING THE REQUIREMENTS OF THE STANDARD DETAILS SHALL BE INSTALLED IN ALL MANHOLES OR CATCH BASINS DEEPER THAN FOUR FEET.

11. THE MANHOLE FRAME AND LID SHALL BE ADJUSTED TO FINAL GRADE BY TAPERED RUBBERIZED ADJUSTING RINGS OR PRECAST CONCRETE ADJUSTING RINGS. ONE (1) PRECAST CONCRETE ADJUSTING RING NOT LESS THAN THREE (3) INCHES THICK MAY BE USED. THE ADJUSTING RINGS SHALL HAVE A MINIMUM HEIGHT OF TWO (2) INCHES AND A MAXIMUM COMBINED HEIGHT OF TWELVE (12) INCHES. A MAXIMUM OF THREE (3) ADJUSTING RINGS (ALL RUBBER AND OR RUBBER AND CONCRETE MIX) WILL BE ALLOWED. ALL ADJUSTING RINGS AND FRAME SHALL BE SEALED WITH BITUMINOUS NON-PREFORMED, NON-HARDENING MASTIC TO ASSURE WATER TIGHTNESS. BRICKS, CONCRETE BLOCKS OR METAL SHIMS MAY NOT BE USED FOR ADJUSTMENTS AND MORTAR SHALL NOT BE USED FOR ACHIEVING WATER TIGHTNESS.

12. CONTRACTORS ARE RESPONSIBLE FOR ALL UTILITY LOCATIONS DURING CONSTRUCTION.

13. JOINTS FOR STORM SEWERS SHALL BE O-RING PREFORMED, FLEXIBLE, GASKET TYPE (ASTM C443). ALL EXTERNAL JOINTS SHALL BE WRAPPED WITH EZ WRAP.

14. BASED ON THE DEPTH TO WHICH A PARTICULAR TYPE OR CLASS OF PIPE MAY BE USED, THE PIPE SHALL BE SELECTED TO PROVIDE PROTECTION AGAINST STRUCTURAL FAILURE WHEN SUBJECTED TO ALL FUTURE DEAD LOADS PLUS IMPACT LOADS AND SHALL BE ASSUMED TO BE IN NO CASE LESS THAN THAT RESULTING FROM A SURCHARGE AT THE GROUND SURFACE OF 250 POUNDS PER SQUARE FOOT.

15. IT SHALL BE UNLAWFUL FOR ANY PERSON, FIRM, OR CORPORATION TO DISCHARGE OR PERMIT OR CAUSE TO BE DISCHARGE SANITARY OR INDUSTRIAL WASTE WATER INTO ANY STORM DRAIN OR SEWER, WHETHER SURFACE OR UNDERGROUND, WHICH CARRIES STORM AND SURFACE WATERS AND DRAINAGE.

16. AS A MINIMUM REQUIREMENT, THE SPECIFICATIONS FOR THE CONSTRUCTION OF STORM WATER FACILITIES SHALL NOT BE LESS STRINGENT THAN THE STANDARD EDITION, ADOPTED BY A JOINT COMMITTEE OF THE ILLINOIS SOCIETY OF PROFESSIONAL ENGINEERS, CONSULTING ENGINEERS COUNCIL OF ILLINOIS, ILLINOIS LEAGUE AND THE ASSOCIATED GENERAL CONTRACTORS OF ILLINOIS, COPY OF WHICH IS OBTAINABLE FROM THE ORGANIZATIONS MENTIONED. CONSTRUCTION REQUIREMENTS FOR DRAINAGE SWALES, RETENTION-DETENTION FACILITIES AND OPEN CHANNELS SHALL BE IN ACCORDANCE WITH SECTIONS 200, 500 AND 600 OF THE STATE STANDARD SPECIFICATIONS, CURRENT EDITION.

17. ALL STORM SEWERS SHALL BE PROPERLY CLEANED, FLUSHED AND RODDED, IF NECESSARY, PRIOR TO ACCEPTANCE BY THE VILLAGE. IF SANITARY WASTES ARE FOUND IN THE STORM DRAINAGE SYSTEM, THE SECTION OF STORM SEWER SUSPECTED SHALL BE TV TESTED IN ORDER TO LOCATE THE POINT(S) OF CROSS CONNECTION.

18. PRIOR TO RELEASE OF SECURITY DEPOSITS FOR THE STORM SEWER AND DRAINAGE SYSTEMS, AS-BUILT DRAWINGS OF THE SYSTEM MUST BE DELIVERED TO THE VILLAGE OF LOMBARD PRIVATE ENGINEERING SERVICES DIVISION.

SANITARY SEWER

1. SEWER PIPE SHALL BE EITHER REINFORCED CONCRETE SEWER PIPE (ASTM C-76 WITH ASTM C-443 FLEXIBLE GASKET MATERIAL "O" RINGS), DUCTILE IRON PIPE (ANSI A-21.51 CLASS 52 WITH AWWA C-104 MECHANICAL OR RUBBER RING JOINTS) OR POLYVINYL CHLORIDE PIPE (ASTM D-3034 SDR 26 WITH ASTM D-3212 FLEXIBLE ELASTOMERIC SEALS) UNLESS WATERMAIN QUALITY PIPE IS SPECIFIED. THE PIPE SHALL BE ALLOWED IN EIGHT (8) INCH, TEN (10) INCH AND TWELVE (12) INCH DIAMETERS FOR PUBLIC SEWERS**.**

   WATERMAIN QUALITY SEWER PIPE SHALL BE EITHER DUCTILE IRON PIPE (ANSI A-21.51 CLASS 52 WITH AWWA C-104 MECHANICAL OR RUBBER RING JOINTS) OR WATERMAIN QUALITY POLYVINYL CHLORIDE PIPE (ASTM D-2241 PVC SDR-26 CLASS 160 PSI WITH ASTM D-3139 JOINTS AND GASKETS). THE PIPE SHALL BE ALLOWED IN EIGHT (8) INCH, TEN (10) INCH AND TWELVE (12) INCH DIAMETER FOR PUBLIC SEWERS.

2. INFILTRATION OR EXFILTRATION SHALL NOT EXCEED FIFTY (50) GALLONS PER INCH DIAMETER PER MILE OF LENGTH PER DAY.

3. A DROP PIPE SHALL BE PROVIDED FOR A SEWER ENTERING A MANHOLE AT AN ELEVATION OF TWENTY-FOUR (24) INCHES OR MORE ABOVE THE MANHOLE INVERT. WHERE THE DIFFERENCE IN ELEVATION BETWEEN THE INCOMING SEWER AND THE MANHOLE INVERT IS LESS THAN TWENTY-FOUR (24) INCHES, THE INVERT SHALL BE FILLETED TO PREVENT SOLID DEPOSITION. ALL MANHOLES SHALL BE CONSTRUCTED WITH AN OUTSIDE DROP CONNECTION. INSIDE DROP CONNECTIONS ARE ONLY PERMITTED BY THE APPROVAL OF THE VILLAGE ENGINEER OR HIS DESIGNEE.

4. MANHOLES SHALL BE MADE OF PRECAST CONCRETE. NO BRICK OR CONCRETE BLOCK MANHOLES SHALL BE PERMITTED WITHIN THE VILLAGE. ALL MANHOLES SHALL BE WATERPROOFED ON THE EXTERIOR SURFACE IN A MANNER APPROVED BY THE VILLAGE OF LOMBARD.

5. INLET AND OUTLET PIPES SHALL BE JOINED TO THE MANHOLE WITH A GASKETED FLEXIBLE WATER TIGHT CONNECTION OR ANOTHER WATERTIGHT CONNECTION ARRANGEMENT THAT ALLOWS DIFFERENTIAL SETTLEMENT OF THE PIPE AND MANHOLE WALL TO TAKE PLACE. THE STANDARD WATERTIGHT FRAME AND LID REQUIRED BY THE VILLAGE SHALL BE NEENAH FOUNDRY R-1772-C W/SOLID LID.

6. THE MANHOLE FRAME AND LID SHALL BE ADJUSTED TO FINAL GRADE BY) TAPERED RUBBERIZED ADJUSTING RINGS OR PRECAST CONCRETE ADJUSTING RINGS. ONE (1) PRECAST CONCRETE ADJUSTING RING NOT LESS THAN TWO (2) INCHES THICK MAY BE USED. THE ADJUSTING RINGS SHALL HAVE A MINIMUM HEIGHT OF THREE (3) INCHES AND A MAXIMUM COMBINED HEIGHT OF TWELVE (12) INCHES. A MAXIMUM OF THREE (3) ADJUSTING RINGS (ALL RUBBER AND OR RUBBER AND CONCRETE MIX) WILL BE ALLOWED. ALL ADJUSTING RINGS AND FRAME SHALL BE SEALED WITH BITUMINOUS NON-PREFORMED, NON-HARDENING MASTIC TO ASSURE WATER TIGHTNESS. CONCRETE BLOCKS, BRICKS OR METAL SHIMS SHALL NOT BE USED FOR ADJUSTMENTS AND MORTAR MAY NOT BE USED FOR ACHIEVING WATER TIGHTNESS. ALL EXTERIOR JOINTS SHALL BE WRPAPED WITH EZ WRAP.

7. SEWER SERVICES LATERALS SHALL BE MINIMUM OF SIX (6) INCHES IN DIAMETER AT A MINIMUM SLOPE OF ONE (1) PERCENT AND ARE TO BE CONNECTED TO THE SEWER MAIN AT THE TIME OF CONSTRUCTION BY USING A WYE. PROPOSED SERVICES ARE TO BE POLYVINYL CHLORIDE PIPE (PVC SDR-26) ASTM D-2241 WITH ASTM D-3139 FLEXIBLE ELASTOMERIC SEALS. WHERE A SANITARY SEWER SERVICE LINE IS TO CONNECT TO AN EXISTING SEWER MAIN OR LATERAL OR WHERE SPECIFIC APPROVAL HAS BEEN GRANTED BY THE VILLAGE OF LOMBARD FOR THE CONSTRUCTION OF A SERVICE LINE AFTER THE COMPLETION OF THE

LATERAL, THE CONSTRUCTION SHALL BE MADE BY ONE OF THE METHODS DETAILED BELOW:

A. INSTALLATION OF A MANHOLE.

B. BE MACHINE TAPPED USING APPROVED SDR 26 SADDLE WITH STAINLESS STEEL SADDLE HUB.

C. REMOVE AN ENTIRE SECTION OF PIPE AND REPLACE WITH A TEE BRANCH SECTION. PIPE SECTION SHALL BE REMOVED BY BREAKING ONLY TOP OF ONE BELL. AFTER THE WYE OR TEE BRANCH IS INSERTED, CONCRETE SHALL BE PLACED OVER THE BROKEN AREA TO A MINIMUM THICKNESS OF FOUR (4) INCHES AND TO A DIMENSION OF EIGHT (8) INCHES IN ALL DIRECTIONS.

D. USING PIPE CUTTER, NEATLY AND ACCURATELY CUT OUT DESIRED LENGTH OF PIPE FOR INSERTION OF PROPER FITTINGS. USE "BAND SEAL" COUPLINGS OR FITTING AND HOLD IT FIRMLY IN PLACE. FOLLOW MANUFACTURER'S RECOMMENDATIONS FOR THE INSTALLATION.

8. THE VILLAGE OF LOMBARD WILL REQUIRE AN AIR TEST TO BE PERFORMED WITH THE FOLLOWING AIR TESTING METHOD PROCEDURES: THE SECTION OF SEWER TO BE TESTED SHALL HAVE BEEN TRENCH-BACKFILLED AND CLEARED. PNEUMATIC PLUGS (HAVING A SEALING LENGTH EQUAL TO OR GREATER THAN THE DIAMETER OF THE PIPE TO BE TESTED) PLACED IN BOTH ENDS OF THE PIPE TO BE INFLATED TO 30 PSI. THE SEALED SEWER PIPE SHALL THEN BE PRESSURIZED TO 4.0 PSI ABOVE THE AVERAGE BACK PRESSURE OF GROUND WATER OVER THE SEWER PIPE AND THE AIR PRESSURE ALLOWED TO STABILIZE FOR AT LEAST TWO (2) MINUTES.

9. AFTER THE STABILIZATION PERIOD, THE LINE SHALL BE PRESSURIZED TO 3.5 PSI AND THE TIME IN MINUTES MEASURED FOR PRESSURE TO DROP 1.0 PSI. IF GROUND WATER IS PRESENT, THE AIR PRESSURE WITHIN SHALL BE INCREASED TO 3.5 PSI ABOVE THE LEVEL OF THE GROUND WATER AND THE DROP OF ONE (1) POUND OF AIR PRESSURE MEASURED IN MINUTES. THE LINE BEING TESTED SHALL BE DEEMED ACCEPTABLE WHEN THE AIR LEAKAGE TEST RESULTS ARE NOT LESS THAN THE TIME PER INCH OF PIPE DIAMETER PER LENGTH OF SEWER PIPE. A MANDREL TEST IS ALSO REQUIRED. THE MANDREL TEST SHALL BE PERFORMED AFTER THE PIPE HAS BEEN IN THE GROUND FOR A MINIMUM OF THIRTY (30) DAYS.

10. VACUUM TESTING SHALL BE CARRIED OUT IMMEDIATELY AFTER ASSEMBLY AND PRIOR TO BACKFILLING OF MANHOLES THAT ARE UP TO SEVENTY-TWO (72) INCHES IN DIAMETER. ALL LIFT HOLES SHALL BE PLUGGED WITH A NON-SHRINK GROUT, OR RUBBER PLUG. THE MANHOLE FRAME, ADJUSTING RINGS AND CHIMNEY SEALS SHALL BE IN PLACE BEFORE TESTING. NO GROUT SHALL BE PLACED IN THE HORIZONTAL JOINTS. ALL PIPES ENTERING THE MANHOLE SHALL BE PLUGGED, TAKING CARE TO SECURELY BRACE THE PLUGS FROM BEING DRAWN INTO THE MANHOLE WITH THE VACUUM TESTING. A VACUUM OF TEN (10) INCHES OF MERCURY SHALL BE DRAWN AND THE TIME MEASURED FOR THE VACUUM TO DROP TO NINE (9) INCHES OF MERCURY. THE VACUUM SHALL NOT DROP BELOW NINE (9) INCHES OF MERCURY FOR THE FOLLOWING TIME PERIODS FOR EACH MANHOLE.

FORTY-EIGHT (48) INCHES DIAMETER – SIXTY (60) SECONDS
SIXTY (60) INCHES DIAMETER – SEVENTY-FIVE (75) SECONDS
SEVENTY-TWO (72) INCHES DIAMETER – NINETY (90) SECONDS

CONTRACTOR SHALL PROVIDE ALL MATERIAL AND EQUIPMENT NECESSARY FOR TESTING. IF TESTING FAILS, CONTRACTOR SHALL SEAL ALL LEAKS WITH APPROVED MATERIALS. THE TESTING SHALL BE COMPLETED BREFOE BACKFILLING SO THAT ANY LEAKS CAN BE FOUND

AND FIXED EXTERNALLY, AND TO GIVE THE HORIZONTAL MANHOLE JOINTS AN OPPORTUNITY TO TIGHTEN.

11. ALL PUBLIC AND/OR PRIVATE IMPROVEMENTS THAT ARE TO BE ACCEPTED BY THE VILLAGE OF LOMBARD FOR MAINTENANCE AND OWNERSHIP SHALL HAVE THE ENTIRE SANITARY SEWER SYSTEM INSPECTED BY THE VILLAGE OF LOMBARD DURING THE COURSE OF THE CONSTRUCTION AND AT COMPLETION. SUCH INSPECTION WILL INCLUDE TELEVISION INSPECTION OF ALL NEW SEWER INSTALLATIONS AND SHALL BE REQUIRED AT TIME OF INSPECTION. VIDEOTAPES OF ALL TELEVISION INSPECTION SHALL BE PROVIDED PRIOR TO THE FINAL INSPECTION. THE VIDEOTAPES AND REPORTS MUST INCLUDE FOOTAGE COUNTERS FOR REFERENCE PURPOSES. ALL TELEVISION INSPECTION OF THE COMPLETED SANITARY SEWER IS THE RESPONSIBILITY OF THE CONTRACTOR.

12. ALL DEFECTS AND CORRECTIVE WORK REQUIRED AS THE RESULT OF TV INSPECTION SHALL BE TAKEN CARE OF BY THE CONTRACTOR WITHOUT DELAY. UPON COMPLETION THEREOF, THE SEWER SHALL BE RE-TESTED AND SUCH FURTHER INSPECTION OF THE WORK MADE AS DEEMED NECESSARY BY THE VILLAGE OF LOMBARD.

13. SPECIAL CONSIDERATION MUST BE GIVEN TO THE INSTALLATION OF THE SEWER SYSTEM BY THE CONTRACTOR DURING THE COURSE OF CONSTRUCTION TO INSURE PROTECTION OF THE ADJACENT AREA, SEWER ALIGNMENT, CONNECTION, WYE LOCATIONS, BACKFILLING, ETC. THE COMPLETED PROJECT MUST SATISFY THE INSPECTION AND TESTING REQUIREMENTS OF THE VILLAGE OF LOMBARD.

14. THE CONTRACTOR SHALL FURNISH AND PLACE A TEMPORARY STAKE OPPOSITE THE TERMINUS OF EACH SEWER SERVICE. AFTER CONSTRUCTION OF THE SIDEWALKS AND/OR CURB AND GUTTER ARE INSTALLED, THE CONTRACTOR SHALL NOTCH THE STREET OPPOSITE THE TERMINUS OF EACH SEWER SERVICE. WHERE WALKS OR CURBS ARE NOT AVAILABLE, AS PERMANENT RECORD OF SEWER SERVICE LOCATION, THE CONTRACTOR SHALL KEEP A RECORD OF THE LOCATION OF ALL SEWER SERVICES BY MEASUREMENT TO THE NEAREST DOWNSTREAM MANHOLE. SUCH RECORDS SHALL BE DELIVERED TO THE VILLAGE OF LOMBARD AT THE COMPLETION OF THE WORKDAY.

15. ANY DEVIATION FROM APPROVED PLANS OR SPECIFICATIONS AFFECTING CAPACITY, FLOW, OPERATION OF UNITS, OR POINT OF DISCHARGE SHALL BE APPROVED, IN WRITING BY THE VILLAGE OF LOMBARD BEFORE SUCH CHANGES ARE MADE AND SHALL BE SHOWN ON THE AS-BUILT DRAWINGS.

PAVEMENT

1. THE PAVEMENT DESIGN REQUIREMENTS OF ALL PUBLIC AND PRIVATE STREETS, AS WELL AS PRIVATE PARKING LOTS, SHALL BE BASED ON THE MINIMUM STANDARDS FOR STREET DESIGN IN THE VILLAGE OF LOMBARD.

2. PRIOR TO THE INSTALLATION OF THE FINAL WEARING SURFACE, THE VILLAGE ENGINEER WILL REVIEW THOSE STREETS AND SHALL HAVE A FINAL PUNCHLIST PREPARED REGARDING BASE AND BINDER COURSE DEFICIENCIES. ALL DEFICIENT AREAS SHALL BE REPAIRED ACCORDING TO THE REQUIREMENTS OF THE VILLAGE AND TO THE SATISFACTION OF THE VILLAGE ENGINEER. THE VILLAGE ENGINEER MAY, AT HIS DISCRETION, REQUIRE SUPPLEMENTAL INSPECTIONS, SUCH AS PAVEMENT CORINGS, DYNAFLECT PAVEMENT ELEVATIONS, ETC., IN ORDER TO DETERMINE THE STRUCTURAL STABILITY OF THE EXISTING PAVEMENT MATERIAL, PRIOR TO THE INSTALLATION OF THE FINAL WEARING SURFACE AND ACCEPTANCE BY THE VILLAGE OF LOMBARD FOR OWNERSHIP AND MAINTENANCE OR APPROVAL.

3. TRUCK WELLS IN COMMERCIAL DEVELOPMENTS, SHALL BE CONSTRUCTED OF A MINIMUM OF SIX (6) INCH PORTLAND CEMENT CONCRETE PAVEMENT WITH REINFORCING MATERIAL.

4. THE SUBGRADE OF ALL ROADS SHALL BE GRADED AND ROLLED IN ACCORDANCE WITH SECTION 301 OF THE STANDARD SPECIFICATIONS FOR THE ROAD AND BRIDGE CONSTRUCTION, CURRENT EDITION, BY THE DEPARTMENT OF TRANSPORTATION. PARTICULAR ATTENTION IS DIRECTED TO THE REQUIREMENTS FOR THE REPLACEMENT OF SOFT AND UNSTABLE MATERIAL AS CONTAINED IN ARTICLE 202.03 EMBANKMENT SHALL BE PLACED AND COMPACTED IN ACCORDANCE WITH SECTION 205 OF SAID SPECIFICATIONS.

5. SUBGRADE MATERIAL HAVING AN IBR LESS THAN 2.5 SHALL BE REMOVED AND REPLACED WITH SUITABLE FILL MATERIAL OR THE PAVEMENT MUST BE DESIGNED TO COMPENSATE FOR THE EXISTING SOIL CONDITIONS.

6. AT LEAST ONE STANDARD DENSITY TEST (PERFORMED IN ACCORDANCE WITH AASHTO T99) SHALL BE TAKEN IN EACH FILL SECTION, WITH THE MAXIMUM DISTANCE BETWEEN TESTS OF 300 FEET. ONE STANDARD PROCTOR TEST SHALL BE TAKEN FROM EACH DIFFERENT SOURCE OF BORROWED MATERIAL, IF REQUIRED BY THE VILLAGE ENGINEER. THE PROCTOR AND DENSITY TESTS MUST BE SUBMITTED FOR REVIEW AND APPROVAL BY THE VILLAGE ENGINEER. THE VILLAGE UPON APPROVAL OF THESE TESTS WILL MAKE AN INSPECTION OF THE SUBGRADE. THE SUBGRADE MUST BE APPROVED PRIOR TO PLACING ANY TYPE OF CURB AND GUTTER OR BASE MATERIAL. THE COST OF ALL TESTING WILL BE THE RESPONSIBILITY OF THE DEVELOPER.

7. THE BITUMINOUS CONCRETE BINDER AND SURFACE COURSE SHALL COMPLY WITH THE STATE OF ILLINOIS CLASS I, AS SET FORTH IN SECTION 406 OF THE STANDARD SPECIFICATIONS. A PRIME COAT SHALL BE APPLIED TO THE BASE COURSE AT A RATE OF 0.40 GALLONS PER SQUARE YARD.

8. AFTER A BASE CURING PERIOD OF NOT MORE THAN FIVE (5) DAYS AFTER PRIMING, A BITUMINOUS CONCRETE BINDER COURSE (MIXTURE B) SHALL BE CONSTRUCTED UPON THE BASE COURSE. THE COMPACTED THICKNESS OF THE BINDER AND COMPACTED GRANULAR BASE SHALL BE LISTED ON THE PLANS.

9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING THE BASE AND BINDER COURSE ON A SAFE AND PASSABLE CONDITION UNTIL THE SAID BASE IS SURFACED. SHOULD ANY CONDITION OCCUR WHICH, IN THE JUDGEMENT OF THE ENGINEER, WOULD CONSTITUTE A HAZARD TO VEHICULAR OR PEDESTRIAN TRAFFIC. THE CONTRACTOR SHALL DO WHATEVER IS REQUIRED TO RESTORE THE ROADWAY TO A SAFE CONDITION. IF THE CONTRACTOR DOES NOT CORRECT SUCH HAZARDOUS CONDITIONS WITHIN 12 HOURS AFTER NOTIFICATION BY THE ENGINEER, THEN THE VILLAGE MAY PERFORM REMEDIAL WORK AND BILL THE CHARGES TO THE CONTRACTOR.

10. ALL BITUMINOUS BINDER COURSE MATERIALS MUST BE IN PLACE FOR A MINIMUM OF TEN (10) MONTHS, INCLUDING WINTER AND SPRING BEFORE THE INSTALLATION OF THE SURFACE COURSE.

11. A PRIME COAT SHALL THEN BE APPLIED AT A RATE OF 0.15 GALLONS PER SQUARE YARD, AFTER WHICH BITUMINOUS SURFACE COURSE, CLASS I, MODIFIED, SHALL BE CONSTRUCTED. THE CONTRACTOR SHALL BE REQUIRED TO SEAL ANY SHRINKAGE CRACKS WHICH BECOME APPARENT WITHIN ONE (1) YEAR AFTER PLACING SURFACE COURSE. SURFACE COURSE SHALL BE OF THE THICKNESS LISTED ON THE PLANS.

12. CONCRETE CURB AND GUTTER SHALL BE CONSTRUCTED IN CONFORMANCE WITH SECTION 606 OF THE STANDARD SPECIFICATIONS AT THE LOCATIONS AND IN CONFORMANCE WITH THE DETAILS SHOWN ON THE PLANS. TWO (2) CONTINUOUS #4 BARS OF REINFORCING STEEL

SHALL RUN THE ENTIRE LENGTH OF THE CURB AND GUTTER. CONCRETE CURB AND GUTTER SHALL BE AS INDICATED BY CONSTRUCTION DETAILS. THE CONCRETE USED THEREIN SHALL CONFORM TO STANDARD SPECIFICATIONS.

13. 3/4 INCH PRE-MOLDED BITUMINOUS EXPANSION JOINTS HAVING TWO (2) 3/4 INCH DOWEL BARS SHALL BE INSTALLED AT 45 FOOT INTERVALS AND AT ALL POINTS OF CURVATURE WHERE THE RADIUS IS LESS THAN 100 FEET. THE DOWEL BARS SHALL BE 18 INCHES LONG AND SHALL BE PROPERLY GREASED AND HAVE EXPANSION CAPS. CONTRACTION JOINTS SHALL BE FORMED AT 15-FOOT INTERVALS.

14. DEVELOPMENT PLANS SHALL INCLUDE SIDEWALK AND/OR CROSS WALKWAYS AND SHALL BE CONSTRUCTED OF PORTLAND CEMENT CONCRETE TO A MINIMUM THICKNESS OF FIVE (5) INCHES. ALL SIDEWALKS SHALL HAVE A MINIMUM OF A 6 BAG MIX WITH A MINIMUM OF 28 DAY COMPRESSIVE STRENGTH OF 4000 PSI. THE SIDEWALKS WHEN CONSTRUCTED SHALL CONTAIN NOT LESS THAN FOUR (4) PERCENT, NO MORE THAN SEVEN (7) PERCENT ENTRAINED AIR. THE SLUMP SHALL BE NOT LESS THAN TWO (2) INCHES, NOT MORE THAN FOUR (4) INCHES. ALL SIDEWALKS CONSTRUCTED WITHIN THE VILLAGE SHALL BE IN ACCORDANCE WITH THE APPROPRIATE SECTIONS OF THE SITE STANDARD SPECIFICATIONS.

15. ALL EXPOSED CONCRETE WORK INCLUDING SIDEWALKS AND CURBS MUST HAVE CURING COMPOUND APPLIED IN ACCORDANCE WITH THE STATE STANDARDS.

16. PRIOR TO CONSTRUCTING THE BITUMINOUS SURFACE COURSE, THE BASE COURSE WILL BE REPAIRED TO THE SATISFACTION OF THE ENGINEER. BASE AND BINDER REPAIR SHALL INCLUDE REMOVAL OF THE EXISTING BINDER, PREPARING AND PRIMING THE BASE COURSE AT THE SPECIFIED RATE AND PLACING AND COMPACTING A MINIMUM OF TWO (2) INCHES OF CLASS I BINDER. PRIOR TO THE CONSTRUCTION THE SURFACE COURSE THE BASE COURSE SHALL BE PREPARED TO THE SATISFACTION OF THE ENGINEER.

17. THE CONSTRUCTION OF ALL PAVEMENT, CURBS AND GUTTERS, AND SIDEWALK IMPROVEMENTS, INCLUDING THE USE OF ALL MACHINERY, EQUIPMENT AND TOOLS, AND THE FURNISHING OF ALL MATERIALS, AND THE CONSTRUCTION OF ALL OTHER WORK NECESSARY TO COMPLETE THE PROPOSED IMPROVEMENTS, SHALL BE CONSTRUCTED ACCORDING TO THE REQUIREMENTS AS OUTLINED IN THE STATE'S STANDARD SPECIFICATIONS. THE MATERIAL FOR THOSE IMPROVEMENTS SHALL BE IN CONFORMANCE WITH THE APPROPRIATE SECTION OF THE STATE STANDARD SPECIFICATIONS.

18. ALL EXISTING MANHOLES AND BASINS SHALL BE ADJUSTED TO MEET FINISHED GRADE. THIS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.

19. ALL PHASES OF PAVING IMPROVEMENTS WILL BE SUBJECT TO PERIODIC INSPECTION BY A REPRESENTATIVE OF THE ENGINEER. NO PROJECTS WILL BE ACCEPTED BY THE VILLAGE WITHOUT FINAL APPROVAL BY THE ENGINEER.

20. ALL PAVING IMPROVEMENTS INSTALLED WILL BE SUBJECT TO TESTING, AS PROVIDED FOR IN THESE SPECIFICATIONS AND IN THE STANDARD SPECIFICATIONS. A COMPANY APPROVED BY THE VILLAGE ENGINEER WILL PERFORM THE TESTING AT THE COST OF THE DEVELOPER. IF ANY IMPROVEMENTS ARE FOUND TO BE DEFECTIVE IN WORKMANSHIP OR MATERIALS, THEN THEY SHALL BE REMOVED AND REPLACED.

21. THE SUBGRADE MATERIALS MUST BE PROOF-ROLLED AND TESTED PRIOR TO ANY PAVING OR CURB IMPROVEMENTS. TESTING REPORTS MUST BE SUBMITTED TO THE VILLAGE ENGINEER OR HIS DESIGNEE, FOR REVIEW AND APPROVAL. BASE COURSE MATERIALS MUST ALSO BE INSPECTED AND TESTED. DENSITY TESTING OF THE BASE COURSE MATERIALS IS REQUIRED. ALL TESTING REPORTS MUST BE SUBMITTED TO THE VILLAGE ENGINEER OR HIS

DESIGNEE. TESTING WILL HAVE TO PASS A PROOF ROLL OF ONE QUARTER (¼) INCH DEFLECTION.

22. ALL STREETS, CURBS, GUTTERS AND SIDEWALKS WHICH ARE CONSTRUCTED WITHIN PUBLIC RIGHT-OF-WAY SHALL BE UNDER WARRANTY FOR ALL DEFECTS AND FAILURES FOR A PERIOD OF TWO (2) YEARS AFTER THE DATE OF ACCEPTANCE.

23. IN PAVEMENT AREAS WHERE UNSTABLE SOILS ARE PRESENT, TERRATEX NO. 8 GEOFABRIC OR APPROVED EQUAL SHALL BE USED AT THE DISCRETION OF THE FIELD ENGINEER. PLACE THE GEOFABRIC/GEOGRID SYSTEM IMMEDIATELY ABOVE THE STABLE PREPARED SUBGRADE AT BASE COURSE/SUBGRADE CONTACT, AND INSTALL FOLLOWING MANUFACTURER'S RECOMMENDED PROCEDURES. VILLAGE OF LOMBARD APPROVAL IS REQUIRED.

WATERMAIN

1. ALL VALVES SHALL BE MUELLER 2360 OR AMERICAN FLOW CONTROL 2500 AND MEET THE FOLLOWING SPECIFICATIONS: THE VALVES SHALL BE EPOXY COATED RESILIENT WEDGE TYPE WITH ALL STAINLESS STEEL NUTS AND BOLTS ON VALVE BODY AND PACKAGING GLAND. ALL VALVES ARE TO BE WRAPPED IN POLY WRAP UP TO AND INCLUDING THE PACKING GLAND.

2. ALL WATERMAINS SHALL BE DUCTILE IRON PIPE (CLASS 52), MEETING THE REQUIREMENTS OF A.S.A. SPECIFICATION A21.51/AWWA SPECIFICATION C151, WITH ASA SPECIFICATION A21.4/AWWA SPECIFICATION C104 CEMENT LINING, AND WITH PUSH ON TYPE JOINTS CONFORMING TO ASA SPECIFICATION A21.11/AWWA SPECIFICATION C111. THE THICKNESS CLASS OF THE DUCTILE IRON PIPE SHALL BE DETERMINED IN ACCORDANCE WITH TABLE 51.2 OF THE ASA SPECIFICATION A21.51. THE ENGINEER SHALL FURNISH THE VILLAGE WITH SUFFICIENT DATA TO SUBSTANTIATE THE THICKNESS CLASS USED.

3. THE MINIMUM DEPTH OF COVER OVER ALL WATERMAINS SHALL BE FIVE (5) FEET SIX (6) INCHES MEASURED FROM THE PROPOSED GROUND SURFACE OR ESTABLISHED GRADE TO THE TOP OF THE PIPE.

4. FITTINGS SHALL BE DUCTILE IRON PRODUCED WITH AN 80-60-02 METAL IN ACCORDANCE WITH ASTM SPECIFICATION A330, LATEST EDITION.

5. JOINTS SHALL BE COMPRESSION TYPE SIMILAR AND EQUAL TO U.S. "TYTON" OR CLOW "BELL TITE".

6. GATE VALVES ARE REQUIRED ON ALL MAINS TWELVE (12) INCHES IN DIAMETER OR SMALLER AND BUTTERFLY VALVES ARE REQUIRED ON ALL MAINS FOURTEEN (14) INCHES IN DIAMETER OR GREATER.

7. ALL BUTTERFLY VALVES SHALL HAVE THE NAME, MONOGRAM, OR INITIALS OF THE MANUFACTURER CAST THEREON. ALL VALVES SHALL BE FURNISHED WITH MECHANICAL JOINTS CONFORMING TO A.S.A SPECIFICATION A21.11/AWWA SPECIFICATION C111 OR SPECIFICATION C110.

8. GATE VALVES OF AN APPROVED TYPE ARE REQUIRED FOR ALL PRESSURE TAPS UNDER THE DIRECTION AND APPROVAL OF THE DIRECTOR OF PUBLIC WORKS OR HIS AUTHORIZED REPRESENTATIVE.

9. VALVES SHALL BE NON-RISING STEM GATE VALVES WITH OPERATION NUT, DESIGNED TO TAKE FULL PRESSURE ON EITHER FACE, FURNISHED IN FULL COMPLIANCE WITH AWWA C-500. ALL VALVES SHALL OPEN BY TURNING TO THE LEFT. VALVES SHALL OPERATE AT

WORKING PRESSURE OF ONE HUNDRED FIFTY (150) POUNDS PER SQUARE INCH AND A TEST PRESSURE OF THREE HUNDRED (300) POUNDS PER SQUARE INCH.

10. SPECIFIC MANUFACTURERS OF VALVES REQUIRE THE APPROVAL OF THE VILLAGE ENGINEER AND DIRECTOR OF PUBLIC WORKS.

11. A VALVE VAULT, TYPE A, SHALL BE INSTALLED IN CONJUNCTION WITH ALL WATERMAIN VALVES. THE VALVE VAULT SHALL HAVE AN INSIDE DIAMETER OF NOT LESS THAN FIVE (5) FEET FOR WATERMAINS TWO (2) INCHES IN DIAMETER OR LARGER.

12. ALL VALVE VAULTS SHALL BE EQUIPPED WITH A NEENAH R-1772-C FRAME W/SOLID LID WITH THE WORDS "WATER" CAST IN THE LID. VALVE VAULT'S FRAMES AND LIDS SHALL BE IN ACCORDANCE WITH THE STANDARDS DETAILS OF THE VILLAGE.

13. THE VALVE VAULT FRAME AND LID SHALL BE ADJUSTED TO FINAL GRADE BY RUBBERIZED ADJUSTING RINGS OR PRECAST CONCRETE ADJUSTING RINGS. ONE (1) PRECAST CONCRETE ADJUSTING RING NOT LESS THAN TWO (2) INCHES THICK MAY BE USED. THE ADJUSTING RINGS SHALL HAVE A MINIMUM HEIGHT OF THREE (3) INCHES AND A MAXIMUM COMBINED HEIGHT OF TWELVE (12) INCHES. A MAXIMUM OF THREE (3) ADJUSTING RINGS (ALL RUBBER AND OR RUBBER AND CONCRETE MIX) WILL BE ALLOWED. ALL ADJUSTING RINGS AND FRAME SHALL BE SEALED WITH BITUMINOUS NON-PREFORMED, NON-HARDENING MASTIC TO ASSURE WATER TIGHTNESS. CONCRETE BLOCKS, BRICKS OR METAL SHIMS SHALL NOT BE USED FOR ADJUSTMENTS AND MORTAR MAY NOT BE USED FOR ACHIEVING WATER TIGHTNESS.

14. VALVE VAULTS, SIDEWALL AND BASE CONSTRUCTION SHALL CONFORM TO THAT REQUIRED FOR CATCH BASINS AND MANHOLES.

15. FIRE HYDRANTS SHALL BE WATEROUS WB-67 FLANGE TYPE, WITH A FIVE AND A QUARTER (5 ¼) INCH VALVE OPENING, TWO (2), TWO AND ONE-HALF (2 ½) INCH HOSE NOZZLES, AND ONE (1) FOUR AND ONE-HALF (4 ½) INCH PUMPER NOZZLE, AND SHALL BE EQUIPPED WITH NATIONAL STANDARD THREADS AND OPERATION NUTS. ALL CONNECTING PIPE BOTTOM FLANGES SHALL BE MECHANICAL JOINT.

16. FIRE HYDRANTS SHALL MEET THE SPECIFICATIONS OF AWWA C-502, 300 PSI TEST AND 150 PSI WORKING PRESSURE.

17. EACH HYDRANT SHALL INCORPORATE A SIX (6) INCH AUXILIARY VALVE AND BOX. ALL AUXILIARY VALVES SHALL BE CONNECTED TO THE HYDRANT. CONNECTION OF THE HYDRANT AND AUXILIARY VALVE ASSEMBLY SHALL BE DIRECT. THE INSTALLATION OF THE FIRE HYDRANTS AND AUXILIARY VALVES SHALL BE IN ACCORDANCE WITH VILLAGE DETAILS.

18. FIRE HYDRANT AUXILIARY GATE VALVES (COMPLETE) WITH ROADWAY BOX SHALL BE MUELLER H-10366, CLOW F-4700 OR APPROVED EQUAL.

19. HYDRANTS SHALL BE SET PLUMB, WITH THE NOZZLE AND STEAMER CONNECTION FACING THE ROADWAY, SET NOT LESS THAN EIGHTEEN (18) INCHES NOR MORE THAN TWENTY-FOUR (24) INCHES ABOVE FINISHED GRADE. HYDRANTS SHALL BE LOCATED NOT LESS THAN THREE (3) FEET NOR MORE THAN TEN (10) FEET BEHIND THE CURB OR END OF A HARD SURFACED ALL WEATHER FIRE LANE WHICH SHALL BE A MINIMUM OF TEN (10) FEET IN WIDTH.

20. BLOCKING TO PREVENT MOVEMENT OF LINES UNDER PRESSURE AT BENDS, HYDRANTS, AND FITTINGS, SHALL BE PORTLAND CEMENT CONCRETE, A MINIMUM OF TWELVE (12) INCHES THICK, PLACED BETWEEN SOLID GROUND AND THE FITTINGS IN SUCH A MANNER THAT PIPE

FITTINGS AND JOINTS WILL BE ACCESSIBLE FOR REPAIR. ALL BENDS OF ELEVEN AND ONE QUARTER (11 ¼) DEGREES OR GREATER, AND ALL TEES AND PLUGS SHALL BE THRUST PROTECTED TO PREVENT MOVEMENT OF THE LINE UNDER PRESSURE.

21. ALL CONNECTIONS TO THE VILLAGE WATER DISTRIBUTION SYSTEM SHALL BE MADE UNDER FULL WATER SERVICE PRESSURE UNLESS OTHER WISE APPROVED BY THE VILLAGE ENGINEER AND THE DIRECTOR OF PUBLIC WORKS AT LOCATIONS APPROVED BY THE VILLAGE.

22. (GENERAL DESCRIPTION). A WATER SERVICE LINE, FOR THE PURPOSE OF THIS MANUAL, IS DEFINED AS A WATER PIPE DESIGNED TO DELIVER WATER FROM A WATERMAIN TO A SINGLE BUILDING, EXTENDING FROM THE WATERMAIN TO THE BUILDING AND INCLUDING CORPORATION COCK, STOP COCK AND BUFFALO BOX. IN RIGHTS-OF-WAY, THE SERVICE LINE SHALL BE AT APPROXIMATELY A RIGHT ANGLE TO THE CENTERLINE OF THE RIGHT-OF-WAY. EACH DWELLING UNIT MUST INCLUDE A SEPARATE SERVICE LINE WITH A B-BOX.

23. WATER SERVICE CONNECTIONS FROM ONE (1) INCH DIAMETER THROUGH TWO (2) INCH DIAMETER SHALL BE TYPE K (SOFT) COPPER TUBING MEETING SPECIFICATIONS OF THE FOLLOWING TABLE AND ASTM B-88 AND B-251:

NOMINAL SIZE (IN.)	O.D. (IN.)	WALL THICKNESS (IN.)	POUNDS PER FOOT
1.00	1.125	0.065	0.513
1.50	1.625	0.072	0.833
2.00	2.125	0.082	1.027

24. WATER SERVICE CONNECTIONS OVER TWO (2) INCHES IN DIAMETER SHALL BE DUCTILE IRON PIPE WATERMAIN AND SHALL COMPLY WITH ALL SPECIFICATIONS FOR WATERMAINS, FITTINGS, VALVES, VALVE VAULTS, AND APPURTENANCES. ALL TAPS MADE INTO CAST IRON WATERMAIN FOUR (4) INCHES IN DIAMETER SHALL INCORPORATE AN APPROVED TAPPING CLAMP. THREE (3) INCH WATER SERVICE CONNECTIONS WILL NOT BE PERMITTED. ALL COPPER CONNECTIONS SHALL BE MADE WITH FLARED JOINTS. COMPRESSION TYPE JOINTS SHALL BE ALLOWED UNDERGROUND OFF THE CORPORATION STOP AND ROUNDWAY KEY STOP. ALL WATER SERVICE SHALL HAVE A MINIMUM OF FIVE (5) FEET-SIX (6) INCHES OF COVER ON THE SERVICE. AT TIME OF CONSTRUCTION, ALL WATER SERVICES SHALL BE LEFT COMPLETELY EXPOSED UNTIL A REPRESENTATIVE OF THE VILLAGE OF LOMBARD HAS INSPECTED THEM. TWENTY-FOUR (24) HOURS NOTICE IS REQUIRED FOR SUCH INSPECTION. AT THE TIME THE INSPECTION IS MADE, A REPRESENTATIVE OF THE CONTRACTOR SHALL BE PRESENT. THE CONTRACTOR WILL MAKE ALL WATER SERVICE TAPS INTO EXISTING MAINS, THE CONTRACTOR SHALL GIVE TWENTY-FOUR (24) NOTICE TO THE WATER DEPARTMENT OF THE VILLAGE, BEFORE ANY WATERMAIN IS TO BE TAPPED. AT THE TIME THE TAP IS MADE, A REPRESENTATIVE OF THE CONTRACTOR SHALL BE PRESENT.

25. ALL WATER SERVICES LARGER THAN TWO (2) INCHES SHALL BE SUBJECTED TO A HYDROSTATIC PRESSURE OF 150 PSI GAUGED FOR A PERIOD OF NOT LESS THAN ONE (1) HOUR, SUCH HYDROSTATIC TEST SHALL BE WITNESSED BY AN AUTHORIZED REPRESENTATIVE OF THE VILLAGE OF LOMBARD. ALL WATER SERVICES USED FOR FIRE PROTECTION SHALL BE CHLORINATED AFTER SATISFACTORY RESULTS OF THE HYDROSTATIC TEST. WATER SERVICES ARE NOT TO EXCEED A MAXIMUM DEPTH OF EIGHT (8) FEET FROM PROPOSED FINISHED GRADE.

26. IN ALL DEVELOPMENT, WATER SERVICE TAPS MUST BE MADE AFTER PRESSURE TESTING AND CHLORINATING.

27. THE CORPORATION STOP FOR A 1" WATER SERVICE SHALL BE MUELLER COMPANY H-15008N, FORD F600-NL OR APPROVED EQUAL; FOR 1.5' AND 2' WATER SERVICES THE CORPORATION STOP SHALL BE MUELLER COMPANY B-25008N, FORD FB600-NL OR APPROVED EQUAL AND

SHALL BE INSTALLED BY TAPPING THE WATERMAIN WITH AN APPROVED TAPPING MACHINE. THE TAP SHALL BE MADE IN THE UPPER THIRD OF THE MAIN, AS CLOSE TO A FORTY-FIVE (45) DEGREE ANGLE AS IS PRACTICAL. A TAP INTO THE TOP OF THE MAIN WILL NOT BE PERMITTED. SERVICE LINES GREATER THAN 1" IN DIAMETER SHALL HAVE A STAINLESS STEEL BANDED DUCTILE IRON SADDLE, SMITH BLAIR 238 FULL CIRCLE REPAIR CLAMP OR APPROVED EQUAL.

28. THE ROUNDWAY KEY STOP SHALL BE MUELLER COMPANY B-25155 OR FORD B22-444M, WITH A MUELLER H10302 MINNEAPOLIS PATTERN BUFFALO BOX. ONLY CAST IRON BUFFALO STYLE BOXES AND LIDS ARE ALLOWED.

29. THE ROUNDWAY KEY STOP AND BUFFALO BOX SHALL BE LOCATED WITHIN THE PARKWAY AREA SEVEN (7) FEET FROM THE PROPERTY LINE OR AS APPROVED BY THE DIRECTOR OF PUBLIC WORKS OR HIS AUTHORIZED REPRESENTATIVE. THE COVER OF THE BUFFALO BOX SHALL HAVE THE WORD "WATER" CAST THEREIN. THE CONTRACTOR SHALL RECORD THE LOCATION OF EACH BUFFALO BOX AND TAP IN RELATION TO THE NEAREST CORNER LOT LINE. TWO COPIES OF THE RECORD SHALL BE FILED WITH THE VILLAGE PRIOR TO FINAL INSPECTION.

30. THE CONTRACTOR OR DEVELOPER SHALL CONTACT THE PRIVATE ENGINEERING SERVICES DIVISION OF THE VILLAGE OF LOMBARD FOR INSPECTION DURING ALL WATER SERVICE INSTALLATIONS. WHEN COMPLETE AND INSTALLED, IN CONFORMANCE WITH SPECIFICATIONS, THE CONTRACTOR OR DEVELOPER SHALL CONTACT THE PRIVATE ENGINEERING SERVICES DIVISION OF THE VILLAGE OF LOMBARD TO SET UP FINAL INSPECTION FOR THE VILLAGE ACCEPTANCE AND FUTURE MAINTENANCE OF THE INSTALLATION. PRIOR TO THE FINAL INSPECTION THE CONTRACTOR OR THE DEVELOPER SHALL SEE THAT ALL ON SURFACE WATER APPURTENANCES ARE CLEARLY VISIBLE AND LOCATABLE AND OPERABLE.

31. ALL WATERMAINS OR ANY VALVED SECTION OF A WATERMAIN SHALL BE PARTIALLY BACKFILLED. IT SHALL THEN BE SUBJECTED TO A HYDROSTATIC PRESSURE OF 150 PSI GAUGED. THE DIRECTOR OF PUBLIC WORKS OR HIS AUTHORIZED REPRESENTATIVE SHALL WITNESS THE PRESSURE TEST. ALLOWABLE LEAKAGE SHALL NOT EXCEED A FIVE (5) POUND LOSS FOR FOUR (4) HOURS AND THE VILLAGE MAY EXERCISE THE RIGHT TO CONTINUE THE TEST TO THE MAXIMUM SIX (6) HOUR DURATION. ALLOWABLE LEAKAGE FOR THE HYDROSTATIC PRESSURE OF 150 PSI GAUGED IS BASED ON THE FOLLOWING TABLE:

MAIN SIZE	**ALLOWABLE LEAKAGE**
10"	0.92 GALLON/HR/1000' OF MAIN
8"	0.74 GALLON/HR/1000' OF MAIN
6"	0.55 GALLON/HR/1000' OF MAIN
4"	0.37 GALLON/HR/1000' OF MAIN

ALLOWABLE LEAKAGE FOR MAIN SIZES GREATER THAN TWELVE (12) INCHES SHALL BE AS INDICATED IN THE VILLAGE ORDINANCES OR AS DIRECTED BY THE PRIVATE ENGINEERING SERVICES DIVISION OF THE VILLAGE OF LOMBARD.

32. THE WATERMAIN OR ANY VALVE SECTION SHALL BE CHLORINATED ONLY AFTER THE RESULTS OF THE HYDROSTATIC TEST ARE SATISFACTORY TO THE DIRECTOR OF PUBLIC WORKS OR HIS AUTHORIZED REPRESENTATIVE AND THE VALVED SECTION HAS BEEN FLUSHED. THE LIQUID CHLORINE GAS MIXTURE METHOD OF PROCEDURE, AS STATED HEREINAFTER, SHALL BE FOLLOWED:

A. PRIOR TO CHLORINATION, ALL DIRT AND FOREIGN MATERIAL SHALL BE REMOVED FROM THE MAIN, OR ANY VAVLED SECTION, BY A THOROUGH FLUSHING THROUGH THE HYDRANTS, OR BY OTHER APPROVED METHODS.

B. A CHLORINE GAS-WATER MIXTURE SHALL BE APPLIED BY MEANS OF A SOLUTION FEED CHLORINATION DEVICE, OR IF APPROVED BY THE DIRECTOR OF PUBLIC WORKS OR HIS AUTHORIZED REPRESENTATIVE, THE GAS SHALL BE FED DIRECTLY FROM A CHLORINE CYLINDER EQUIPPED FOR DIFFUSION OF THE GAS WITHIN THE PIPE. ALL SAMPLE TAPS FOR CHLORINE INJECTION SHALL BE PROVIDED FOR IN THE VALVE VAULT.

C. THE PREFERABLE POINT OF APPLICATION OF THE CHLORINATING AGENT SHALL BE THROUGH A CORPORATION STOP INSERTED NEAR THE HORIZONTAL AXIS OF THE PIPE AT THE BEGINNING OF THE PIPE LINE EXTENSION OF ANY VALVE SECTION TO BE PLACED IN SERVICE. THE WATER INJECTOR FOR DELIVERING THE GAS-WATER MIXTURE INTO THE PIPE SHALL BE SUPPLIED BY A TAP ON THE PRESSURE SIDE OF A VALVE CONTROLLING THE FLOW INTO THE PIPE TO BE CHLORINATED.

D. WATER FROM THE PRESSURE SIDE OF THE VALVE OR OTHER SOURCE OF SUPPLY SHALL BE CONTROLLED TO FLOW VERY SLOWLY INTO THE NEWLY LAID PIPE LINE DURING THE APPLICATION OF CHLORINE. THE RATE OF CHLORINE GAS-WATER MIXTURE FLOW SHALL BE IN SUCH PROPORTION TO THE RATE OF WATER ENTERING THE PIPE THAT THE CHLORINE DOSE APPLIED TO THE WATER ENTERING THE NEWLY LAID PIPE SHALL HAVE A CHLORINE RESIDUAL OF NOT LESS THAN 100 PPM. IT SHALL BE LEFT IN CONTACT WITH THE MAIN FOR AT LEAST TWENTY-FOUR (24) HOURS WITH A 50 PPM CHLORINE RESIDUAL REMAINING AFTER THE CONTACT PERIOD.

E. FOLLOWING THE CHLORINATION, ALL TREATED WATER SHALL BE THOROUGHLY FLUSHED FROM THE NEW SECTION OF MAIN. SAMPLES SHALL BE COLLECTED FOR BACTERIOLOGICAL ANALYSIS ON TWO (2) SUCCESSIVE DAYS FROM VARIOUS POINTS ON THE NEW PORTION OF THE SYSTEM UNDER THE SUPERVISION OF THE WATER DEPARTMENT SUPERINTENDENT OR HIS AUTHORIZED REPRESENTATIVE. THE SAMPLES WILL BE TESTED FOR POTABILITY IN A LABORATORY APPROVED BY THE STATE OF ILLINOIS. A REPORT WILL BE FURNISHED TO THE VILLAGE, INDICATING NEGATIVE BACTERIOLOGICAL SAMPLES. THE SAMPLES SHALL BE TAKEN AT APPROXIMATE TWENTY-FOUR (24) HOUR INTERVALS.

33. THE CONTRACTOR SHALL CONTACT THE PRIVATE ENGINEERING SERVICES DIVISION OF THE VILLAGE OF LOMBARD WHEN ALL WATERMAIN EXTENSIONS ARE COMPLETED AND INSTALLED, IN CONFORMANCE WITH THE SPECIFICATIONS, TO SET UP A FINAL INSPECTION FOR VILLAGE ACCEPTANCE AND FUTURE MAINTENANCE OF THE EXTENSION. AS-BUILT SEPIA MYLARS ARE REQUIRED AFTER INSTALLATION OF THE WATERMAIN IMPROVEMENTS.

34. WHENEVER POSSIBLE, A WATERMAIN MUST BE LAID AT LEAST TEN (10) FEET HORIZONTALLY FROM ANY EXISTING OR PROPOSED DRAIN OR SEWER LINE. SHOULD LOCAL CONDITIONS EXIST WHICH WOULD PREVENT A LATERAL SEPARATION OF TEN (10) FEET, A WATERMAIN MAY BE LAID CLOSER THAN TEN (10) FEET TO A STORM OR SANITARY SEWER PROVIDED THAT THE WATERMAIN INVERT IS AT EIGHTEEN (18) INCHES ABOVE THE CROWN OF THE SEWER, AND IS HIGHER IN A SEPARATE TRENCH OR IN THE SAME TRENCH ON AN UNDISTURBED EARTH SHELF LOCATED TO ONE SIDE OF THE SEWER. IF IT IS IMPOSSIBLE TO OBTAIN PROPER HORIZONTAL AND VERTICAL SEPARATION AS DESCRIBED ABOVE, BOTH THE WATERMAIN AND SEWER SHALL BE CONSTRUCTED OF DUCTILE IRON PIPE (DIP) TO WATERMAIN STANDARDS.

35. ALL WORK DONE AND MATERIAL USED IN CONNECTION WITH THE INSTALLATION OF ANY WATERMAIN EXTENSION, TAPPING OF WATERMAINS AND THE INSTALLATION OF SERVICE

PIPES AND APPURTENANCES FROM THE VILLAGE WATER DISTRIBUTION SYSTEM SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE MUNICIPAL CODE OF THE VILLAGE OF LOMBARD, AMERICAN WATER WORKS ASSOCIATION SPECIFICATIONS, AMERICAN STANDARD ASSOCIATION SPECIFICATIONS, AND STANDARD SPECIFICATIONS FOR WATER AND SEWER MAIN CONSTRUCTION IN ILLINOIS, CURRENT EDITIONS, AND THE FOLLOWING SPECIFICATIONS WITHIN THIS SECTION.

36. ALL PROPOSED WATERMAIN SHALL BE POLYWRAPPED.

37. ALL WATER SERVICE STUBS THAT ARE NOT USED FOR THE DEVELOMENT SHALL BE ABANDONED AT THE WATERMAIN AND REMOVED FROM THE PUBLIC RIGHT-OF-WAY.

EROSION CONTROL

1. THE SEDIMENTATION AND EROSION CONTROL MEASURES SHALL BE IN ACCORDANCE WITH THE STANDARDS AND SPECIFICATIONS FOR SOIL AND SEDIMENTATION CONTROL, PROCEDURES AND STANDARDS FOR URBAN SOIL AND SEDIMENTATION CONTROL IN ILLINOIS, AND THE VILLAGE OF LOMBARD.

2. PERMANENT OR TEMPORARY SOIL STABILIZATION MUST BE APPLIED WITHIN 15 CALENDAR DAYS OF THE END OF ACTIVE SOIL DISTURBANCE.

3. SEDIMENTATION BASINS, BARRIERS, AND ALL APPROPRIATE EROSION CONTROL MEASURES SHALL BE INSTALLED PRIOR TO MASS GRADING.

4. ALL TEMPORARY AND PERMANENT EROSION CONTROL MEASURES SHALL BE MAINTAINED AND REPAIRED AS DEEMED NECESSARY BY THE DUPAGE COUNTY DEPARTMENT OF ENVIRONMENTAL CONCERNS AND THE VILLAGE OF LOMBARD.

5. INSTALL PERMANENT SEEDING AND SOD IN ALL AREAS SHOWN IN THE PLANS.

6. UPON COMPLETION OF THE RETENTION FACILITY, INSTALL PERMANENT SEEDING ON SIDE SLOPES AND DISTURBED AREAS.