VILLAGE OF HUNTLEY APPROVED MATERIAL LIST

GENERAL ITEMS

1. **Bolts Placed Underground:** All below grade factory installed bolts and fasteners shall be Teflon coated 304-grade stainless steel

2. **Casing:**
   - A. Casing Spacers: Carrier pipe shall be centered within a casing by use of model CCS stainless steel Casing Spacers as manufactured by Cascade Waterworks Mfg.
   - B. Casing End Boots: Install model CCES End Boots as manufactured by Cascade Waterworks Mfg.

3. **Truncated Dome Detectable Warning Systems:**
   - A. Wet set reinforced polymer type; Brick red color homogenous throughout
   - B. Meeting requirements of Americans with Disabilities Act Accessibility Guidelines, the Illinois Assembly Code and applicable IDOT Standard Details
   - C. Approved Model: as manufactured by ADA Solutions, TufTile, and Armor-Tile (Herculite Series); Use same model throughout development/project

4. **Street Signs:**
   - A. Signs: High intensity prismatic meeting MUTCD requirements
   - B. Posts: Telescoping square galvanized tubing with 7/16" holes on all four sides; 10' height
5. Approved Model: as manufactured by Telespar

6. **Street Name Signs:**
   - A. Signs: High intensity prismatic meeting MUTCD requirements; White letters on green background
   - B. Posts: Round galvanized socket and wedge post; 2-3/8" outside diameter; 12' height
7. Approved Model: as manufactured by Telespar

8. **Reflective Pavement Markers:**
   - A. Type: Recessed
   - B. Approved Model: R-100 as manufactured by Marker One

9. **Street Lighting:**
   - A. To be reviewed on a project by project basis

SANITARY SEWER SYSTEM

1. **Sanitary Sewer Pipe:**
   - A. PVC pipe (depths 15' and less):
     - i. Gravity Sewer: PVC SDR 26 in accordance with D-3034 for pipe diameter 15" and less and F679 for pipe diameter greater than 15". Joints shall be in accordance with ASTM D-3212
     - ii. Pressure Sewer Force Main: 4-inch through 12-inch shall be C900 DR-18; 14-inch through 18-inch shall be C905 DR-18. Elastomeric gasket joints shall be in accordance with ASTM D-3139
     - iii. Pressure Sewer Force Main (only as authorized by Director of Public Works): PVC SDR 26 in accordance with D-2241 for pipe diameter 16" and less. Elastomeric gasket joints shall be in accordance with ASTM D-3139
   - B. Ductile iron (depths greater than 15 feet):
     - i. Class 52 conforming to ANSI/AWWA C151/A21.51:
     - ii. Mechanical or push-on joints shall conform to ANSI/AWWA C111/A21.11
     - iii. All DIP sewer mains shall be encased in an 8 mil high density polyethylene encasement with its material specifications and installation method in accordance with ANSI.AWWA C105/A21.5, ASTM A674, using "Method A" installation
     - iv. Brass wedges shall be installed to provide electrical conductivity

2. **Sewer Force Main Fittings:** All fittings shall be mechanical joint ductile iron and shall conform to ANSI/AWWA C110/A21.10 or ANSI/AWWA C153/A21.53. Fittings shall be U.L. Listed Class 350 and shall be manufactured in the United States

3. **Sewer Force Main Joint Restraint:**
   - A. All mechanical joint fittings shall have restraining glands installed:
     - i. DIP MJ restraint device shall be Mega-lug Series 1100 by EBAA Iron or Uni-flange Series 1400 by Ford Company
     - ii. PVC MJ restraint device shall be Mega-lug Series 2000PV by EBAA Iron or Uni-flange Series 1500 by Ford Company
   - B. DIP push joint pipe restraint shall be Field Lok® 350 gaskets by US Pipe or Series 1700 Mega-lug by EBAA Iron or Series 1390 Pipe Restraint by Ford
   - C. C900 PVC push joint pipe restraint shall be Series 1900 split serrated restraint harness by EBAA Iron or Series 1390 Pipe Restraint by Ford
   - D. C905 PVC push joint pipe restraint shall be Series 2800 Mega-lug restraint harness by EBAA Iron or Series 1390 Pipe Restraint by Ford
   - E. Lengths of pipe restraint shall be determined from manufacturer's installation specifications

4. **Manholes:**
   - A. Precast reinforced in accordance with ASTM C478. Eccentric cone type unless otherwise indicated on Drawings
   - B. Size:
     - i. through 21" sewer pipe ..... Min. 4' inside diameter manhole
     - ii. 24" through 30" sewer pipe ..... Min. 5' inside diameter manhole
     - iii. >30" through 48" sewer pipe ..... Min. 6' inside diameter manhole
   - C. Manhole Frame & Lids:
     - i. Neenah R-1712, self-sealing Type B cover or East Jordan Iron Works 1050 with self-sealing cover
     - ii. The words "SANITARY" and "VILLAGE OF HUNTLEY" shall be cast into the surface of the lid
   - D. Manhole Seal:
     - i. Barrel sections shall be sealed using butyl rubber sealant and an external butyl joint wrap similar to Barrel Wrap as manufactured by Adaptor, Inc., EZ Wrap as manufactured Press-Seal Gasket Corporation, Infi-Shield Gator Wrap as manufactured by Sealing Systems, Inc., or approved equal
     - ii. The chimney and adjusting rings shall be sealed using an external chimney seal as manufactured by Adaptor, Inc.
     - iii. A watertight flexible pipe-to-manhole connector shall be employed in the connection of the sanitary sewer pipe to precast manholes. The connector shall consist of a rubber gasket, an internal expansion sleeve, and one or more external compression take-up clamps. Approved materials for the connector shall be natural or synthetic rubber and Series 300 non-magnetic stainless steel. No plastic components shall be permitted. The rubber gasket element shall be constructed solely of synthetic or natural rubber, and shall meet/exceed the requirements of ASTM C 923

STORM SEWER SYSTEM

1. **Storm Sewer Pipe:**
   - A. Reinforced concrete Pipe (RCP):
     - i. Conforming to ASTM C-76
     - ii. Tongue & groove or bell & spigot joints using cement mortar, butyl sealant or o-ring gasket in accordance with ASTM C-351 or C-443
     - iii. Thickness class shall be in accordance with the IDOT Standard Specifications for a given pipe diameter and fill height over the top of pipe

   When authorized by the Director of Public Works, the following Storm Sewer Pipe materials may be allowed:
   - B. PVC pipe (depths 15' and less):
     - i. PVC SDR 26 in accordance with D-3034 for pipe diameter 15" and less and F679 for pipe diameter greater than 15". Joints shall be in accordance with ASTM D-3212
     - ii. Pressure sewer for water main separation requirements: PVC SDR 26 in accordance with D-2241 for pipe diameter 16" and less. C905 DR-18 for 18-inch; C905 DR-25 for 20" and 24". Elastomeric gasket joints shall be in accordance with ASTM D-3139
   - C. Ductile iron pipe (DIP):
     - i. Class 52 conforming to ANSI/AWWA C151/A21.51:
     - ii. Mechanical or push-on joints shall conform to ANSI/AWWA C111/A21.11
     - iii. All DIP sewer mains shall be encased in an 8 mil high density polyethylene encasement with its material specifications and installation method in accordance with ANSI.AWWA C105/A21.5, ASTM A674, using "Method A" installation
     - iv. Brass wedges shall be installed to provide electrical conductivity
   - D. High Density Polyethylene (HDPE):
     - i. FOR PRIVATE USE ONLY; NOT ALLOWED ON PUBLIC RIGHT-OF-WAY
     - ii. Smooth interior and annular exterior corrugations conforming to AASHTO M-294 and watertight flexible elastomeric seals conforming to ASTM D-3212 and F-477

2. **Manholes:**
   - A. Precast reinforced in accordance with ASTM C478. Eccentric cone type.
   - B. Size:
     - i. through 21" sewer pipe ..... Min. 4' inside diameter manhole
     - ii. 24" through 30" sewer pipe ..... Min. 5' inside diameter manhole
     - iii. >30" through 48" sewer pipe ..... Min. 6' inside diameter manhole
     - iv. greater than 48" sewer pipe ..... Special design required
   - C. Manhole Frame & Lids:
     - i. Neenah R-1772, Type B cover (cover may be open Type D when specified on drawings) or East Jordan Iron Works 1022
     - ii. The words "STORM" and "VILLAGE OF HUNTLEY" shall be cast into the surface of the lid

3. **Inlet and Catch Basin Frame & Lids:**
   - A. Frame & grates: Neenah R-1772, Type D open cover or East Jordan Iron Works 1022
   - B. Combination frame, grate and barrier curb box: Neenah R-3281-A with standard Type C grate
   - C. Combination frame, grate and mountable curb box: Neenah R-3501-TR (flow right) or TL (flow left) with standard Type L grate; alternate to be reviewed on case by case basis to match curb dimensions
   - D. Beehive frame & grates: Neenah R-4340-B

4. **Storm Sewer Structure Seal:**
   - A. Precast sections shall be sealed using butyl rubber sealant.
   - B. When storm sewer structure is installed in pavement, the chimney and adjusting rings shall be sealed using an external chimney seal as manufactured by Adaptor, Inc.
   - C. When storm sewer structures are placed within curb lines, the chimney and adjusting rings shall be sealed using heat activated Wrapid Seal an external chimney seal as manufactured by Canusa-CPS

WATER DISTRIBUTION SYSTEM

1. **Water Main Pipe:**
   - A. Ductile iron Class 52, conforming to ANSI/AWWA C151/A21.51:
     - i. Cement Lining, conforming to ANSI/AWWA C104/A21.4
     - ii. Mechanical or push-on joints shall conform to ANSI/AWWA C111/A21.11
     - iii. All DIP water mains shall be encased in an 8 mil high density polyethylene encasement with its material specifications and installation method in accordance with ANSI.AWWA C105/A21.5, ASTM A674, using "Method A" installation
     - iv. Brass wedges shall be installed to provide electrical conductivity
   - B. PVC pipe:
     - i. 8-inch through 12-inch shall be C900 DR-18
     - ii. 14-inch through 18-inch shall be C900 DR-18
     - iii. 20-inch and 24-inch shall be C900 DR-25
     - iv. All PVC water main shall be installed with a minimum 10 gauge solid copper tracer wire. The wire shall be continuous through the valve vaults and boxes and shall be accessible at grade within the vault frame or box

2. **Water Main Fittings:**
   - A. All fittings shall be mechanical joint ductile iron and shall conform to ANSI/AWWA C110/A21.10 or ANSI/AWWA C153/A21.53 and cement lined in accordance with ANSI/AWWA C104/A21.4. Fittings shall be U.L. Listed Class 350 and shall be manufactured in the United States

3. **Fire Hydrants:**
   - A. Approved Model:
     - i. Shall meet AWWA C-502
     - ii. Mueller Super Centurion A-423 break away style traffic design
   - B. All hydrants shall include (Refer to standard Fire Hydrant Detail)
     - i. 6" mechanical joint connection with retainer glands
     - ii. 5 ¼" valve opening
     - iii. One 4 ½" pumper nozzle and two 2 ½" hose nozzles
     - iv. 6" auxiliary valve and box with valve box stabilizer on lateral
     - v. Standard "Hydra-Finder" hydrant locator including 3/8" white laminar matrix fiberglass 5' long corrosion and UV resistant shaft with 6" wide red reflective tape, flag and spring
   - C. Fire Hydrant Paint: All publicly owned hydrants shall be painted red. All privately owned hydrants shall be painted yellow

4. **Valves:**
   - A. 6" through 10" diameter: Cast iron body, bronze fitted, resilient wedge gate valve with non-rising stem, standard operating nut and open in a counter clockwise direction. Resilient wedge gate valves shall be Mueller A-2361 Series in accordance with AWWA C-515
   - B. 12 inches and larger: Cast iron body, rubber seat type butterfly valves. All valves shall open counter clockwise with non-rising stem. Butterfly valves shall be Class 150B Mueller B-3211 in accordance with AWWA C-504

5. **Valve Box:**
   - A. Valve boxes shall be cast iron, two (2) piece 5¼" shafts screw type Tyler Model 6850 and installed on the valve with an Adaptor II valve box stabilizer as manufactured by Adaptor, Inc. Lids shall be marked "Water"

6. **Valve Vaults:**
   - A. Precast reinforced vaults in accordance with ASTM C478 are required for all valves greater than 10" and all valves located in pavement
   - B. Size:
     - i. through 8" valves ..... Min. 4' inside diameter
     - ii. 10" and larger valves ..... Min. 5' inside diameter
     - iii. Pressure Taps ..... Min. 5' inside diameter
   - C. Valve Vault Frame & Lids:
     - i. Neenah R-1712, self-sealing Type B cover or East Jordan Iron Works 1050 with self-sealing cover
     - ii. The words "WATER" and "VILLAGE OF HUNTLEY" shall be cast into the surface of the lid
   - D. Valve Vault Seal:
     - i. Barrel sections shall be sealed using butyl rubber sealant
     - ii. The chimney and adjusting rings shall be sealed using an external chimney seal as manufactured by Adaptor, Inc.
     - iii. A watertight flexible pipe-to-manhole connector shall be employed in the connection of the water main pipe to precast vaults. The connector shall consist of a rubber gasket, an internal expansion sleeve, and one or more external compression take-up clamps. Approved materials for the connector shall be natural or synthetic rubber and Series 300 non-magnetic stainless steel. No plastic components shall be permitted. The rubber gasket element shall be constructed solely of synthetic or natural rubber, and shall meet/exceed the requirements of ASTM C 923

7. **Joint Restraint:**
   - A. All mechanical joint fittings shall have restraining glands installed:
     - i. DIP MJ restraint device shall be Mega-lug Series 1100 by EBAA Iron or Uni-flange Series 1400 by Ford Company
     - ii. PVC MJ restraint device shall be Mega-lug Series 2000PV by EBAA Iron or Uni-flange Series 1500 by Ford Company
   - B. DIP push joint pipe restraint shall be Field Lok® 350 gaskets by US Pipe or Series 1700 Mega-lug by EBAA Iron or Series 1390 Pipe Restraint by Ford Company
   - C. 900 PVC push joint pipe restraint shall be Series 1900 split serrated restraint harness by EBAA Iron or Series 1390 Pipe Restraint by Ford Company
   - D. Lengths of pipe restraint shall be determined from manufacturer's installation specifications

8. **Copper Service Lines:**
   - A. 1.5-inch diameter minimum
   - B. Type K soft copper tubing in accordance with ANSI H23.1
   - C. Compression fittings only

9. **Service Line Taps:**
   - A. Service taps of 1 ½," & 2" require the use of a tapping saddle. Saddles shall be full circle, fusion bonded flexi coat epoxy ductile iron body (per ASTM A536) with double 304-grade stainless steel straps and hardware, and NSF 61 listed TaperSeal Nitrile gasket as manufactured by Smith-Blair; model #317
   - B. Existing service connections less than 1 ½" may be re-connected upon the authorization of the Director of Public Works utilizing the direct tap method to 6-inch mains and larger only

10. **Corporation Stops:**
    - A. Compression fittings
      - i. Mueller B-25008-N (1½-inch and 2-inch)

11. **Curb Stops:**
    - A. Compression fittings
      - i. Mueller B-25155-N 300 Ball (1½-inch and 2-inch)

12. **Curb Box:**
    - A. Extension type arch pattern Mueller H-10310 with stationary rod
    - B. Lid marked "WATER"

13. **Pressure Tapping:**
    - A. Tapping Sleeves:
      - i. Stainless steel meeting AWWA C223 and NSF 61; Mueller H-304, Smith – Blair 665, or Cascade Waterworks CST-EX
      - ii. Flange fasteners shall be 304-grade stainless steel
    - B. Tapping Valve:
      - i. Cast iron body, bronze fitted, resilient wedge gate valve with non-rising stem, standard operating nut and open in a counter clockwise direction. Resilient wedge tapping valves shall be Mueller T-2361 Series in accordance with AWWA C-515 and NSF 61

14. **Sampling Station:**
    - A. Unit shall be designed specifically for collecting bacteriological and other water samples at a designated point directly from the water main and shall be model Eclipse No. 88 with cold climate protection package as manufactured by Kupferle Foundry

VILLAGE OF HUNTLEY GENERAL NOTES

PROJECT INITIATION

1. A PRE-CONSTRUCTION MEETING SHALL BE CONDUCTED WITH THE VILLAGE OF HUNTLEY STAFF AND ALL CONTRACTORS PRIOR TO COMMENCING CONSTRUCTION ACTIVITIES. MEETING SHALL BE SCHEDULED WITH THE DEVELOPMENT SERVICES DEPARTMENT (847) 515-5200.
2. 24-HOUR EMERGENCY CONTACT NUMBERS SHALL BE PROVIDED TO THE VILLAGE OF HUNTLEY AT THE PRE-CONSTRUCTION MEETING.
3. PRIOR TO THE COMMENCEMENT OF WORK THE DEVELOPER RESPONSIBLE FOR CONSTRUCTION OF IMPROVEMENTS SHALL FILE WITH THE VILLAGE CLERK A CERTIFICATE OF INSURANCE PER THE VILLAGE'S SUBDIVISION REGULATIONS REQUIREMENTS.
4. PRIOR TO THE COMMENCEMENT OF WORK ALL CONTRACTORS PERFORMING WORK ON THE SITE SHALL BE REGISTERED WITH THE VILLAGE'S BUILDING DEPARTMENT.
5. WORKING HOURS SHALL BE BETWEEN THE HOURS IDENTIFIED IN THE VILLAGE OF HUNTLEY'S NOISE SECTION OF THE MUNICIPAL CODE LOCATED IN CHAPTER 130.09.
6. PRIOR TO THE COMMENCEMENT OF ANY CONSTRUCTION ACTIVITIES AN APPROVED IEPA NPDES PERMIT SHALL BE OBTAINED AND A COPY FORWARDED TO THE VILLAGE OF HUNTLEY'S PUBLIC WORKS AND ENGINEERING DEPARTMENTS.
7. PRIOR TO THE COMMENCEMENT OF ANY EXCAVATION, THE CONTRACTOR SHALL CALL "JULIE" AT 8-1-1 FOR FIELD LOCATIONS OF BURIED ELECTRIC, TELEPHONE, GAS AND CABLE TELEVISION FACILITIES. (2 WORKING DAY NOTIFICATION IS REQUIRED.) THE CONTRACTOR SHALL BE RESPONSIBLE TO CONTACT ANY INDIVIDUAL PRIVATE UTILITY ENTITY NOT MEMBERS OF THE "JULIE" LOCATE SERVICE.
8. LIMITED INVESTIGATION OF SUBSURFACE CONDITIONS AT THE PROPOSED SITE OF WORK HAS BEEN MADE FOR THE PURPOSE OF DESIGN. THE VILLAGE OF HUNTLEY, ITS AGENTS OR CONSULTANTS ASSUME NO RESPONSIBILITY WHATSOEVER WITH RESPECT TO THE SUFFICIENCY OR ACCURACY OF THESE PRELIMINARY INVESTIGATIONS, NOR THEIR INTERPRETATION, AND THERE IS NO GUARANTEE, EITHER EXPRESSED OR IMPLIED THAT CONDITIONS INDICATED ARE REPRESENTATIVE OF THOSE EXISTING THROUGHOUT THE WORK OR ANY PART OF IT, OR THAT UNFORESEEN DEVELOPMENTS MAY OCCUR.
9. THE CONTRACTOR SHALL COORDINATE INSPECTIONS AND TESTING OF THE PROPOSED IMPROVEMENTS WITH THE VILLAGE OF HUNTLEY'S ENGINEERING AND DEVELOPMENT SERVICES DEPARTMENTS AT LEAST ONE BUSINESS WORKING DAY IN ADVANCE.
10. NO CONSTRUCTION PLANS MAY BE USED UNLESS STAMPED "FOR CONSTRUCTION" BY THE VILLAGE OF HUNTLEY. A STAMPED SET OF "FOR CONSTRUCTION" PLANS SHALL BE MAINTAINED ON THE SITE AT ALL TIMES.

GENERAL

1. IN CASE OF CONFLICTS THE VILLAGE OF HUNTLEY GENERAL NOTES AND STANDARD DETAILS SHALL TAKE PRECEDENCE OVER OTHER NOTES OR STANDARD DETAILS LOCATED ELSEWHERE WITHIN THE APPROVED ENGINEERING DRAWINGS.
2. ALL CONSTRUCTION SHALL BE DONE IN ACCORDANCE WITH THE "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION", LATEST REVISION; THE LATEST EDITION OF THE "ILLINOIS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS", (MUTCD; THE "STANDARD SPECIFICATIONS FOR TRAFFIC CONTROL ITEMS", SSTCI); "THE STANDARD SPECIFICATIONS FOR WATER AND SEWER MAIN CONSTRUCTION IN ILLINOIS" LATEST EDITION; ADA STANDARDS FOR ACCESSIBLE DESIGN; THE VILLAGE OF HUNTLEY STANDARD DETAILS, THE VILLAGE OF HUNTLEY APPROVED MATERIAL LIST, SUBDIVISION REGULATIONS AND THE "SPECIAL PROVISIONS" INCLUDED IN THE CONTRACT DOCUMENTS. IN CASE OF CONFLICTING STANDARDS, GUIDELINES OR SPECIFICATIONS THE MORE RESTRICTIVE STANDARD, GUIDELINE OR SPECIFICATION SHALL GOVERN.
3. CODES OF THE IEPA TITLE 35, AND O.S.H.A. SHALL BE ADHERED TO FOR THE CONSTRUCTION OF THIS PROJECT.
4. ALL TRAFFIC CONTROL AND OTHER ADVISORY SIGNS NEEDED FOR CONSTRUCTION ARE TO BE FURNISHED BY THE CONTRACTOR IN ACCORDANCE WITH SECTION 700 OF THE STANDARD SPECIFICATIONS.
5. ALL REQUIRED PERMITS FROM THE PROPER GOVERNING AGENCY SHALL BE OBTAINED FOR CONSTRUCTION ALONG OR ACROSS EXISTING STREETS OR HIGHWAYS. THE CONTRACTOR SHALL MAKE ARRANGEMENTS FOR THE PROPER BRACING, SHEETING, SHORING AND OTHER REQUIRED PROTECTION OF ALL ROADWAYS BEFORE CONSTRUCTION BEGINS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO THE STREETS OR ROADWAYS AND ASSOCIATED STRUCTURES AND SHALL MAKE REPAIRS AS NECESSARY TO THE SATISFACTION OF THE AGENCY, AT THE CONTRACTOR'S OWN EXPENSE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE INSTALLATION AND MAINTENANCE OF ADEQUATE SIGNS AND WARNING DEVICES TO INFORM AND PROTECT THE PUBLIC.
6. THE CONTRACTOR SHALL PROVIDE AND MAINTAIN FENCING, BARRICADES, TRAFFIC CONTROL SIGNS, AND OTHER SAFETY MEASURES DURING THE COURSE OF ALL WORK TO PROTECT THE PUBLIC FROM ALL CONSTRUCTION OPERATIONS.
7. ACCESS TO ADJACENT STREETS DURING CONSTRUCTION SHALL BE MAINTAINED AT ALL TIMES. NO CLOSING OF STREETS UNLESS APPROVAL FIRST OBTAINED FROM THE AGENCY WITH JURISDICTION (VILLAGE ENGINEERING DEPARTMENT, KANE OR MCHENRY COUNTY DEPARTMENTS OF TRANSPORTATION, ILLINOIS DEPARTMENT OF TRANSPORTATION, ETC).
8. ANY DAMAGE TO THE PUBLIC RIGHT-OF-WAY, PUBLIC UTILITIES, STREETS, CURB, ETC. SHALL BE REPAIRED/REPLACED AS SOON AS POSSIBLE AND AS DIRECTED BY THE VILLAGE OF HUNTLEY.
9. THE USE OF VILLAGE FIRE HYDRANTS IS NOT ALLOWED. ONLY THE VILLAGE OF HUNTLEY'S DEPARTMENT OF PUBLIC WORKS MAY OPERATE EXISTING VALVES AND/OR HYDRANTS.
10. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY ALL DIMENSIONS AND CONDITIONS EXISTING IN THE FIELD PRIOR TO ORDERING MATERIALS AND BEGINNING CONSTRUCTION. CONTRACTOR SHALL NOTIFY THE VILLAGE OF HUNTLEY AND PROJECT ENGINEER OF ANY DISCREPANCIES IMMEDIATELY.
11. THE SAFE AND ORDERLY PASSAGE OF TRAFFIC AND PEDESTRIANS SHALL BE PROVIDED WHERE OPERATIONS ABUT PUBLIC THOROUGHFARES AND ADJACENT PROPERTY.

EROSION CONTROL

1. PUBLIC/PRIVATE STREETS SHALL BE KEPT FREE OF DIRT AND DEBRIS WITH REGULAR CLEANING, SWEEPING, AND SCRAPING CONDUCTED BY THE CONTRACTOR. GARBAGE AND DEBRIS SHALL NOT BE ALLOWED TO ACCUMULATE, BLOW, OR SCATTER ONTO STREETS OR ADJACENT PROPERTIES.
2. WHENEVER DURING CONSTRUCTION OPERATIONS ANY LOOSE MATERIAL IS DEPOSITED IN THE FLOW LINE OF DRAINAGE STRUCTURES SUCH THAT THE NATURAL FLOW OF WATER IS OBSTRUCTED, IT SHALL BE REMOVED AT THE CLOSE OF EACH WORKING DAY. AT THE CONCLUSION OF CONSTRUCTION OPERATIONS, ALL UTILITY STRUCTURES SHALL BE FREE FROM DIRT AND DEBRIS.
3. ALL SPECIFIED EROSION CONTROL MEASURES SHALL BE INSTALLED AND MAINTAINED PER THE REQUIREMENTS OF THE PROJECT'S SWPPP, KANE COUNTY STORMWATER ORDINANCE AND IN ACCORDANCE WITH THE ACTIVE PROJECT'S NPDES PERMIT.
4. CONTINUOUS MONITORING OF EROSION CONTROL MEASURES IS REQUIRED. MAINTAIN RECORDS OF INSPECTION REPORTS PER THE APPROVED IEPA NPDES PERMIT. COPIES OF THE INSPECTION REPORTS SHALL BE FORWARDED TO THE VILLAGE'S ENGINEERING DEPARTMENT ON A REGULAR BASIS.
5. THE CONTRACTOR SHALL IMPLEMENT ANY ADDITIONAL EROSION CONTROL MEASURES DEEMED NECESSARY BY SITE'S EROSION CONTROL INSPECTOR, THE STANDARDS OF THE VILLAGE OF HUNTLEY AND THE ILLINOIS URBAN MANUAL.
6. ALL STORM SEWER CATCH BASINS, SUMPS AND/OR RETENTION BASINS PROVIDED WITH THIS PROJECT ARE TO BE CLEANED AT THE END OF CONSTRUCTION OF THE PROJECT PRIOR TO FINAL ACCEPTANCE. CLEANING MAY ALSO BE REQUIRED DURING THE COURSE OF THE CONSTRUCTION OF THE PROJECT IF IT IS DETERMINED THAT THE SILT AND DEBRIS TRAPS ARE NOT PROPERLY FUNCTIONING AND THEIR PERFORMANCE IS IMPAIRED.

EARTHWORK

1. ALL REMOVAL OR EXCAVATION ITEMS BEING DISPOSED OF AT AN UNCONTAMINATED SOIL FILL OPERATION OR CLEAN CONSTRUCTION AND DEMOLITION DEBRIS (CCDD) FILL SITE SHALL MEET THE REQUIREMENTS OF 415ILCS 5/22.51. ALL COSTS ASSOCIATED WITH MEETING THESE REQUIREMENTS SHALL BE INCLUDED IN THE UNIT PRICE COST FOR THE ASSOCIATED REMOVAL OR EXCAVATION ITEMS IN THE CONTRACT. THESE COSTS SHALL INCLUDE BUT ARE NOT LIMITED TO ALL REQUIRED TESTING, LAB ANALYSIS, CERTIFICATION BY A LICENSED PROFESSIONAL ENGINEER, AND STATE AND LOCAL TIPPING FEES.
2. THE GRADING AND CONSTRUCTION OF THE PROJECT'S IMPROVEMENTS SHALL NOT CAUSE PONDING OF STORM WATER. ALL AREAS ADJACENT TO PROPOSED IMPROVEMENTS SHALL BE GRADED TO MAINTAIN POSITIVE DRAINAGE.
3. THE LOCATION OF ON-SITE TOPSOIL STOCKPILES SHALL BE IDENTIFIED ON THE APPROVED PLANS.
4. THE PROPOSED GRADING ELEVATIONS SHOWN ON THE PLANS ARE FINISHED GRADE. THE SPECIFIED DEPTH OF TOPSOIL IS TO BE PLACED BEFORE FINISHED GRADE ELEVATIONS ARE ACHIEVED.
5. EMBANKMENT MATERIAL WITHIN PARKWAY AND OPEN SPACE AREAS SHALL BE COMPACTED TO A MINIMUM OF NINETY PERCENT (90%) OF MAXIMUM DENSITY IN ACCORDANCE WITH ASTM SPECIFICATION D-1557 (MODIFIED PROCTOR METHOD), OR TO SUCH OTHER DENSITY AS MAY BE DETERMINED APPROPRIATE BY THE PROJECT'S GEOTECHNICAL ENGINEER. FILL SHALL BE MONITORED BY A GEOTECHNICAL ENGINEER ON-SITE WITH COMPACTION REPORTS FORWARDED TO THE ENGINEERING DEPARTMENT FOR REVIEW.
6. ALL SUBGRADE MATERIAL SHALL HAVE A MINIMUM IBR (ILLINOIS BEARING RATIO) OF 3.0 AS DETERMINED BY THE PROJECT'S GEOTECHNICAL ENGINEER, OR BASE REPLACEMENT AND PAVEMENT DESIGN REVISIONS SHALL BE PROVIDED WHICH ARE ADEQUATE TO OBTAIN EQUIVALENT PAVEMENT STRENGTH.
7. PROPOSED PAVEMENT AREAS, BUILDING PADS, DRIVEWAYS AND SIDEWALKS AND YARD/OPEN SPACE AREAS SHALL BE EXCAVATED OR FILLED TO PLUS OR MINUS 0.1 FOOT OF DESIGN SUBGRADE ELEVATIONS BY THE CONTRACTOR.
8. ANY BORROW PIT LOCATIONS SHALL BE IDENTIFIED ON THE APPROVED SITE PLANS AND FORWARDED TO THE ENGINEERING DEPARTMENT AT LEAST 24-HOURS PRIOR TO EXCAVATION. PROVIDE BACKFILL COMPACTION REPORTS FROM A GEOTECHNICAL ENGINEER AND AS-BUILT PLANS TO THE ENGINEERING DEPARTMENT FOR ANY BORROW PIT AREA. BACKFILL SHALL BE MONITORED BY A GEOTECHNICAL ENGINEER ON-SITE WITH COMPACTION REPORTS FORWARDED TO THE ENGINEERING DEPARTMENT FOR REVIEW.
9. A WATER TRUCK SHALL BE ON-SITE AT ALL TIMES DURING MASS GRADING OPERATIONS AND BE AVAILABLE AS NEEDED FOR THE PURPOSES OF DUST CONTROL AT THE REQUEST OF THE VILLAGE OF HUNTLEY.
10. TOPSOIL STOCKPILED FOR FUTURE USE SHALL BE RELATIVELY FREE FROM LARGE ROOTS, STICKS, WEEDS, BRUSH, STONES LARGER THAN ONE (1) INCH DIAMETER, OR OTHER LITTER AND WASTE PRODUCTS INCLUDING OTHER EXTRANEOUS MATERIALS NOT CONDUCIVE TO PLANT GROWTH.
11. TOPSOIL SHALL BE STOCKPILED IN SEQUENCE TO ELIMINATE ANY RE-HANDLING OR DOUBLE MOVEMENTS BY THE CONTRACTOR. NO MATERIAL SHALL BE STOCKPILED WITHIN EXISTING OR PROPOSED UTILITY EASEMENTS OR WITHIN THE PUBLIC RIGHT-OF-WAY.
12. TOPSOIL STOCKPILES SHALL BE LOCATED IN AREAS TO AVOID EROSION OF SAID STOCKPILE TO OFFSITE AREAS.

UTILITIES

1. THE CONTRACTOR SHALL COORDINATE INSPECTIONS AND TESTING OF WATER MAIN, WATER SERVICE, SANITARY SEWER, SANITARY SEWER SERVICES AND STORM SEWER WITH THE VILLAGE OF HUNTLEY'S ENGINEERING AND DEVELOPMENT SERVICES DEPARTMENTS AT LEAST 24 HOURS IN ADVANCE.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING THE OWNERS OF ALL EXISTING FACILITIES SO THAT THE UTILITIES AND THEIR APPURTENANCES MAY BE LOCATED AND ADJUSTED OR MOVED, IF NECESSARY, PRIOR TO THE START OF CONSTRUCTION OPERATIONS. THE CONTRACTOR SHALL COOPERATE WITH ALL UTILITY OWNERS AS PROVIDED FOR IN THE STANDARD SPECIFICATIONS.
3. THE LOCATIONS OF EXISTING VILLAGE OF HUNTLEY DRAINAGE STRUCTURES, STORM AND SANITARY SEWERS, WATER SERVICE LINES AND OTHER UTILITY LINES ARE APPROXIMATE, AND THE VILLAGE OF HUNTLEY DOES NOT GUARANTEE THEIR ACCURACY. THEIR EXACT HORIZONTAL AND VERTICAL LOCATIONS ARE TO BE DETERMINED IN THE FIELD BY THE CONTRACTOR.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL UNDERGROUND OR SURFACE UTILITIES EVEN THOUGH THEY MAY NOT BE SHOWN ON THE PLANS. ANY UTILITY THAT IS DAMAGED DURING CONSTRUCTION SHALL BE REPAIRED OR REPLACED TO THE SATISFACTION OF THE OWNER, THE ENGINEER AND THE VILLAGE OF HUNTLEY. THIS WORK SHALL BE AT THE CONTRACTOR'S EXPENSE.
5. WHEN OPEN CUTTING IS ALLOWED OR OTHER PAVEMENT OPENING IS REQUIRED, BACKFILL SHALL BE PLACED PRIOR TO THE END OF THE WORKING DAY UNLESS OTHERWISE AUTHORIZED BY THE VILLAGE. ALL EXCAVATIONS SHALL BE BACKFILLED PER THE VILLAGE'S STANDARD TRENCH DETAIL. A TEMPORARY BITUMINOUS PATCH OF AT LEAST TWO INCHES IN THICKNESS SHALL BE CONSTRUCTED WITHIN 24 HOURS. IT IS UNDERSTOOD THAT THE 2 INCH BITUMINOUS PATCH IS ONLY TEMPORARY. THE TEMPORARY PATCH SHALL BE MAINTAINED BY THE CONTRACTOR. THE PERMANENT PAVEMENT REPAIR WILL BE COMPLETED NO LATER THAN 6 MONTHS AFTER EXCAVATION. IN LIEU OF A BITUMINOUS PATCH, A STEEL PLATE (MINIMUM OF ONE INCH OF THICKNESS) OVER THE EXCAVATION MAY BE APPROVED UPON REQUEST BY THE CONTRACTOR.
6. EXISTING STRUCTURES SHALL BE CIRCULAR CORED AND BOOTED WHEN EXISTING MANHOLES ARE TO BE TIED INTO.
7. ALL TRENCHES RESULTING FROM THE CONSTRUCTION OF STORM SEWERS, WATER MAINS, SANITARY SEWERS AND SERVICE PIPES SHALL BE BACKFILLED WITH COMPACTED TRENCH BACKFILL ACCORDING TO IDOT STANDARD SPECIFICATIONS, VILLAGE OF HUNTLEY'S STANDARD DETAIL AND STANDARD SPECIFICATIONS FOR WATER AND SEWER MAIN CONSTRUCTION IN ILLINOIS.
8. AT THE END OF EACH WORK DAY THE END OF ALL PARTIALLY COMPLETED SEWER OR WATER RUNS SHALL BE PLUGGED WITH A WATER TIGHT FITTING TO ENSURE SUBSURFACE WATER OR MATERIAL WILL NOT ENTER THE SEWER OR WATER SYSTEM.
9. PRECAST CONCRETE ADJUSTING RINGS ARE NOT TO EXCEED EIGHT (8) INCHES IN OVERALL HEIGHT AND SHALL BE USED IF AN ADJUSTMENT OF STRUCTURES TO THE FINISHED GRADE ESTABLISHED BY THE PROJECT ENGINEER IS NECESSARY. A MAXIMUM OF TWO (2) PRECAST CONCRETE ADJUSTING RINGS SHALL BE USED.
10. THE CONTRACTOR SHALL COOPERATE WITH THE VILLAGE IN ANY UNDERGROUND UTILITY CONSTRUCTION WHICH THE VILLAGE MAY WANT TO PLACE DURING THE CONTRACTOR'S OPERATIONS.
11. NO MANHOLES, INLETS, VALVE VAULTS OR OTHER TYPES OF STRUCTURES SHALL BE ALLOWED TO BE CONSTRUCTED IN RESIDENTIAL OR COMMERCIAL DRIVEWAYS OR SIDEWALKS.

PUBLIC WATER SYSTEM

1. AN IEPA CONSTRUCTION PERMIT MUST BE SECURED PRIOR TO BEGINNING CONSTRUCTION. THE NEW WATER MAIN SHALL NOT BE ACTIVATED UNTIL AN OPERATING PERMIT APPROVED BY THE IEPA HAS BEEN RETURNED TO THE VILLAGE.
2. ALL EXISTING VALVES MAINTAINED BY THE VILLAGE OF HUNTLEY SHALL BE OPERATED BY THE VILLAGE OF HUNTLEY DEPARTMENT OF PUBLIC WORKS PERSONNEL ONLY. UNAUTHORIZED USE SHALL SUBJECT THE OFFENDER TO ARREST AND PROSECUTION.
3. MINIMUM COVER FROM FINISHED GRADE TO TOP OF WATER MAIN SHALL BE MINIMUM OF FIVE (5) FEET; MAXIMUM COVER SHALL BE SIX (6) FEET.
4. FOR WATER MAIN SHUT OFFS, THE CONTRACTOR SHALL GIVE THE VILLAGE A MINIMUM OF 48 HOURS NOTICE. THE VILLAGE SHALL PROVIDE NOTIFICATION FORMS AND DETERMINE THE LIMIT OF THE AFFECTED AREAS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DISTRIBUTION OF THE NOTIFICATION FORMS TO ALL AFFECTED RESIDENTS, BUSINESSES AND PROPERTY OWNERS.
5. ALL WATER MAIN SHUT DOWNS SHALL BE PERFORMED BY THE VILLAGE OF HUNTLEY DEPARTMENT OF PUBLIC WORKS.
6. APPROVED RETAINER GLANDS AND THRUST BLOCKING SHALL BE INSTALLED ON WATER MAINS AT ALL BENDS, TEES, ELBOWS, ETC.
7. AN ILLINOIS LICENSED PLUMBER IS REQUIRED FOR ANY LIVE WATER MAIN TAP.
8. ALL DUCTILE IRON WATER MAINS MUST BE POLY-WRAPPED (8 MIL. THICKNESS).
9. <u>HYDROSTATIC TESTS.</u>
   - A. WHERE ANY SECTION OF A WATER LINE IS PROVIDED WITH CONCRETE THRUST BLOCKING FOR FITTINGS, THE HYDROSTATIC TESTS SHALL NOT BE MADE UNTIL AT LEAST FIVE DAYS AFTER INSTALLATION OF THE CONCRETE THRUST BLOCKING.
   - B. DISPOSAL OF WASTEWATER FROM HYDROSTATIC TESTS, AND FOR DISINFECTION, SHALL BE APPROVED IN ADVANCE BY THE VILLAGE PUBLIC WORKS AND ENGINEERING DEPARTMENTS. FULL BORE FLUSHING SHALL BE WITNESSED BY THE HUNTLEY FIRE PROTECTION DISTRICT (HFPD).
   - C. THE NEW WATER MAINS AND SERVICE LINES, INCLUDING VALVES AND HYDRANTS, SHALL BE SUBJECTED TO A HYDROSTATIC PRESSURE OF 125 PSI. THE TEST PRESSURE SHALL BE HELD FOR A DURATION OF ONE HOUR WITHOUT PRESSURE LOSS OR FURTHER PRESSURE APPLICATION.
   - D. EACH VALVE SHALL BE OPENED AND CLOSED SEVERAL TIMES DURING THE TEST.
   - E. CAREFUL EXAMINATION OF EXPOSED PIPE, JOINTS, FITTINGS, AND VALVES IS REQUIRED.
   - F. JOINTS SHOWING VISIBLE LEAKAGE SHALL BE REMADE OR REPLACED.
   - G. CRACKED PIPE, DEFECTIVE PIPE, AND CRACKED OR DEFECTIVE JOINTS, FITTINGS, AND VALVES SHALL BE REPLACED WITH APPROVED MATERIAL AND THE TEST REPEATED UNTIL RESULTS ARE SATISFACTORY.
10. <u>LEAKAGE TEST.</u>
   - A. A METERED LEAKAGE TEST SHALL BE CONDUCTED AFTER THE PRESSURE TEST HAS BEEN SATISFACTORILY COMPLETED.
   - B. DURATION OF EACH LEAKAGE TEST SHALL BE AT LEAST 24 HOURS. DURING THE TEST, WATER LINES SHALL BE SUBJECTED TO THE NORMAL WATER PRESSURE OF THE VILLAGE WATER SYSTEM.
   - C. MAXIMUM ALLOWABLE LEAKAGE SHALL CONFORM TO CURRENT IEPA LEAKAGE TESTING SPECIFICATIONS.
   - D. SHOULD ANY TEST OF PIPE DISCLOSE LEAKAGE GREATER THAN THE MAXIMUM ALLOWABLE AMOUNT, THE DEFECTIVE JOINT OR JOINTS SHALL BE LOCATED AND REPAIRED AND THE 24-HOUR METERED LEAKAGE TEST REPEATED UNTIL THE LEAKAGE IS WITHIN THE SPECIFIED ALLOWANCE.
11. <u>FIRE SUPPRESSION MAINS</u>. SUCH PIPE SHALL BE RATED TO MEET AND ACHIEVE THE 200-PSI TESTING PROCEDURES IN ACCORDANCE WITH HUNTLEY FIRE PROTECTION DISTRICT REQUIREMENTS. BOTH THE VILLAGE DIRECTOR OF PUBLIC WORKS AND ENGINEERING AND THE HUNTLEY FIRE PROTECTION DISTRICT INSPECTOR SHALL ONLY GRANT EXEMPTION TO THIS REQUIREMENT IN WRITING.
12. <u>DISINFECTION.</u>
   - A. AFTER ALL MAINS HAVE BEEN PRESSURE TESTED AND ACCEPTED BY THE VILLAGE, THE CONTRACTOR SHALL PROCEED TO DISINFECT THE MAIN IN ACCORDANCE WITH AWWA STANDARD C-651. THE CHLORINATED WATER SHALL BE RETAINED IN THE MAIN FOR A PERIOD OF AT LEAST 24 HOURS. AT THE END OF THE 24-HOUR PERIOD, THE TREATED WATER SHALL CONTAIN NO LESS THAN 25 MG/L CHLORINE THROUGHOUT THE MAIN. THE CONTRACTOR WILL SAMPLE THE CHLORINATED DISINFECTING SOLUTION TO ASSURE THAT THESE MINIMUMS ARE MAINTAINED.
   - B. AFTER AN APPLICABLE RETENTION PERIOD, THE HEAVILY CHLORINATED WATER SHALL BE FLUSHED FROM THE MAIN UNTIL THE CHLORINE CONCENTRATION IN THE WATER LEAVING THE MAIN IS NOT HIGHER THAN THAT GENERALLY PREVAILING IN THE SYSTEM. THE CHLORINATED WATER BEING FLUSHED FROM THE SYSTEM SHALL BE DECHLORINATED TO MEET USEPA WATER QUALITY CRITERIA FOR "TOTAL RESIDUAL CHLORINE."
   - C. AFTER FINAL FLUSHING, AND AS WITNESSED BY THE VILLAGE PUBLIC WORKS DEPARTMENT AND THE HUNTLEY FIRE PROTECTION DISTRICT, TWO SAMPLES OF WATER SHALL BE OBTAINED FROM THE MAIN FOR BACTERIOLOGICAL TESTING. THE DEVELOPER SHALL BE RESPONSIBLE FOR OBTAINING, DELIVERY, AND PAYMENT OF THE SAMPLES FOR TESTING PURPOSES. FOR MAJOR WATER MAIN INSTALLATION, THE NUMBER OF SAMPLES MAY BE INCREASED AS DETERMINED BY THE VILLAGE PUBLIC WORKS DEPARTMENT. A SECOND SERIES OF SAMPLES SHALL BE COLLECTED NO LESS THAN 24 HOURS AFTER THE FIRST SET OF SAMPLES HAS BEEN COLLECTED. THE INDIVIDUAL SETS OF SAMPLES SHALL BE BACTERIOLOGICALLY TESTED TO SHOW THE ABSENCE OF COLIFORM ORGANISMS. IF EITHER, OR BOTH, SETS OF SAMPLES DO NOT PASS THE BACTERIOLOGICAL EXAMINATION, THE CONTRACTOR SHALL AGAIN DISINFECT THE MAIN IN ACCORDANCE WITH PROCEDURES UNTIL SUCH TIME THAT SATISFACTORY SAMPLES ARE COLLECTED. ALL SAMPLES SHALL BE DELIVERED AND ANALYZED BY PDC LABORATORIES, INC. 4314 W. CRYSTAL LAKE RD, MCHENRY, IL 60050.
   - D. NO PART OF THE PERMITTED WATER SYSTEM SHALL BE PLACED IN SERVICE UNTIL THE VILLAGE OF HUNTLEY RECEIVES THE OPERATING PERMIT. UPON RECEIPT OF THE IEPA OPERATING PERMIT, ALL VALVES ON THE SYSTEM SHALL BE OPENED WITH PERMISSION OF THE VILLAGE PUBLIC WORKS DEPARTMENT. THE DEVELOPER SHALL BE RESPONSIBLE FOR CERTIFYING, IN WRITING TO THE DIRECTOR OF PUBLIC WORKS AND ENGINEERING, THAT HE OR HIS REPRESENTATIVES HAVE WITNESSED THE OPENING OF ALL VALVES PURSUANT TO THE OPERATING PERMIT.
13. THE CONTRACTOR SHALL CONSIDER INCIDENTAL TO THE CONTRACT ANY CHLORINATION AND TESTING OF EXISTING WATER MAIN WHERE CONNECTIONS TO AND CONCLUSION OF SUCH MAINS IS INDICATED ON THE DRAWINGS.

SANITARY SEWER SYSTEM

1. NON-SHEAR STAINLESS STEEL COUPLINGS SHALL BE USED WHEN CONNECTING SEWER PIPES OF DISSIMILAR MATERIALS AND PIPES WITH NO HUB JOINTS.
2. PIPE AND FITTINGS SHALL BE THE PRODUCTS OF ONE APPROVED MANUFACTURER ONLY, AND THERE SHALL NOT BE MIXING OF PIPE AND FITTINGS OF DIFFERENT MANUFACTURERS.
3. CONTRACTOR SHALL TEST SEWERS AND SERVICE CONNECTIONS FOR WATER TIGHTNESS BY THE LOW-PRESSURE AIR TESTING, OR EXFILTRATION OR INFILTRATION METHOD AS SELECTED BY THE VILLAGE ENGINEER.
4. <u>LEAKAGE TESTS.</u>
   - A. LOW PRESSURE AIR TEST.
     - i. PRIOR TO TESTING FOR LEAKAGE, FLUSH AND CLEAN THE SEWERS BY PASSING A SNUG-FITTING INFLATED RUBBER BALL THROUGH THE SEWER BY UPSTREAM WATER PRESSURE.
     - ii. SEAL PIPE OPENINGS WITH AIRTIGHT PLUGS AND BRACES.
     - iii. WHENEVER THE SEWER TO BE TESTED IS SUBMERGED UNDER GROUNDWATER, INSERT A PIPE PROBE BY BORING OR JETTING INTO THE BACKFILL MATERIAL ADJACENT TO THE CENTER OF THE SEWER TO DETERMINE THE GROUNDWATER HYDROSTATIC PRESSURE BY FORCING AIR TO FLOW SLOWLY THROUGH THE PROBE PIPE.
     - iv. ADD AIR TO THE PLUGGED SEWER SECTIONS UNDER TEST UNTIL INTERNAL AIR PRESSURE REACHES 4.0 PSIG GREATER THAN ANY GROUNDWATER HYDROSTATIC PRESSURE.
     - v. ALLOW AT LEAST TWO MINUTES FOR AIR TEMPERATURE TO STABILIZE AND ADD AIR TO MAINTAIN THE INITIAL TEST PRESSURE.
     - vi. SHUT OFF THE AIR SUPPLY AFTER STABILIZING THE AIR TEMPERATURE AND RECORD THE TIME IN SECONDS FOR THE INTERNAL SEWER PRESSURE TO DROP FROM 3.5 PSIG TO 2.5 PSIG GREATER THAN ANY GROUNDWATER HYDROSTATIC PRESSURE.
     - vii. ALLOWABLE LIMITS. TOTAL RATE OF AIR LOSS NOT TO EXCEED 0.0030 CUBIC FEET OF AIR PER MINUTE PER SQUARE FOOT OF INTERNAL PIPE AREA.
     - viii. IF THE AIR TEST FAILS TO MEET THESE REQUIREMENTS, LOCATE AND REPAIR, OR REMOVE AND REPLACE THE FAULTY SECTIONS OF SEWER IN A MANNER APPROVED BY THE VILLAGE ENGINEER, AS NECESSARY TO MEET THE ALLOWABLE LIMITS UPON RETESTING.
     - ix. DO NOT USE ACRYLAMIDE GEL SEALANT TO CORRECT LEAKAGE.
   - B. WATER EXFILTRATION TESTS.
     - i. SEAL THE SECTION OF SEWER TO BE TESTED BY INSERTING INFLATABLE RUBBER STOPPERS OR BY OTHER MEANS APPROVED BY THE VILLAGE ENGINEER.
     - ii. FILL THE MANHOLE AND PIPE WITH WATER TO A POINT TWO FEET ABOVE THE TOP OF THE SEWER AT THE UPPER MANHOLE; OR, IF GROUNDWATER IS PRESENT, TWO FEET ABOVE THE AVERAGE ADJACENT GROUNDWATER LEVEL FOR A PERIOD OF NOT LESS THAN 24 HOURS PRIOR TO MEASURING LEAKAGE.
     - iii. MEASURE THE LEAKAGE BY THE AMOUNT OF WATER ADDED TO MAINTAIN THE WATER LEVEL AT THAT LEVEL FOR A PERIOD AS REQUIRED BY THE VILLAGE ENGINEER BUT NOT LESS THAN ONE HOUR.
   - C. WATER INFILTRATION TEST.
     - i. IF, IN THE OPINION OF THE VILLAGE ENGINEER, EXCESSIVE GROUNDWATER (A MINIMUM OF 24 INCHES ABOVE THE TOP OF THE SEWER) IS ENCOUNTERED IN THE CONSTRUCTION OF A SECTION OF THE SEWER, THE EXFILTRATION TEST SHALL NOT BE USED.
     - ii. CLOSE THE END OF THE SEWER AT THE UPPER STRUCTURE SUFFICIENTLY TO PREVENT THE ENTRANCE OF WATER.
     - iii. PUMP OUT GROUNDWATER IN THE SEWER TO ALLOW THE INFILTRATION TO COME TO EQUILIBRIUM, THEN TEST FOR INFILTRATION.
   - D. ALLOWABLE LIMITS FOR WATER INFILTRATION OR EXFILTRATION TEST SHALL NOT EXCEED 200 GALLONS PER INCH OF PIPE DIAMETER PER 24 HOURS PER MILE OF SEWER, INCLUDING BUILDING SERVICE CONNECTIONS.
   - E. CONTRACTOR TO PROVIDE AND USE MEASURING DEVICES APPROVED BY THE VILLAGE ENGINEER.
   - F. CONTRACTOR TO PROVIDE WATER, MATERIALS, AND LABOR FOR MAKING REQUIRED TESTS.
   - G. CONTRACTOR TO PERFORM TESTS IN THE PRESENCE OF THE VILLAGE ENGINEER, GIVING AT LEAST THREE DAYS ADVANCE NOTICE OF BEING READY FOR TEST OBSERVATION.
5. <u>DEFLECTION TEST.</u>
   - A. TEST THE DEFLECTION IN THE INITIAL 1,200 FEET OF INSTALLED PVC AND OTHER FLEXIBLE THERMOPLASTIC PIPE AND NOT LESS THAN 10% OF THE REMAINDER OF THE SEWER PROJECT AT RANDOM LOCATIONS SELECTED BY THE VILLAGE ENGINEER.
   - B. PERFORM THE TEST NO SOONER THAN 30 DAYS AFTER BACKFILLING HAS BEEN COMPLETED.
   - C. PERFORM THE TEST BY PULLING A MANDREL OR RIGID BALL HAVING A DIAMETER EQUAL TO 95% OF THE INSIDE DIAMETER OF THE PIPE THROUGH THE PIPE FROM MANHOLE TO MANHOLE WITHOUT USING MECHANICAL PULLING DEVICES.
   - D. ALLOWABLE DEFLECTION LIMITS. FIVE PERCENT OF THE BASE INSIDE DIAMETER OF THE PVC PIPE.
   - E. WHEREVER THE DEFLECTION LIMITATION IS EXCEEDED, UNCOVER THE PIPE, CAREFULLY REPLACE COMPACTED EMBEDMENT AND BACKFILL MATERIAL, AND RETEST FOR DEFLECTION.
   - F. IN THE EVENT 10% OR MORE OF THE SEWER TESTED EXCEEDS THE ALLOWABLE DEFLECTION LIMITS, TEST THE ENTIRE SEWER SYSTEM.
6. <u>VACUUM TESTING OF MANHOLES.</u>
   - A. SANITARY SEWER MANHOLES SHALL BE TESTED FOR LEAKAGE IMMEDIATELY AFTER INSTALLATION.
   - B. LIFT HOLES SHALL BE PLUGGED WITH A NON-SHRINK GROUT.
   - C. INLET AND OUTLET PIPES AT THE MANHOLE SHALL BE PLUGGED, TAKING CARE TO SECURELY BRACE PLUG TO AVOID ITS BEING DRAWN INTO MANHOLE.
   - D. VACUUM TEST EQUIPMENT SHALL BE PLACED AT INSIDE OF TOP OF CONE SECTION AND SEAL INFLATED TO 40 PSI TO EFFECT A SEAL BETWEEN VACUUM BASE AND STRUCTURE
   - E. A VACUUM OF TEN INCHES OF MERCURY SHALL BE DRAWN AND VACUUM PUMP SHUT-OFF.
   - F. WITH VALVE CLOSED, TIME SHALL BE MEASURED FOR VACUUM TO DROP TO NINE INCHES.
   - G. MANHOLE INTEGRITY IS ACCEPTABLE IF THE TIME EXCEEDS 60 SECONDS FOR A 48-INCH DIAMETER MANHOLE, 75 SECONDS FOR A 60-INCH DIAMETER MANHOLE, AND 90 SECONDS FOR A 72-INCH DIAMETER MANHOLE.
   - H. IF MANHOLE FAILS INITIAL TEST, NECESSARY REPAIRS SHALL BE MADE WITH A NON-SHRINK GROUT OR OTHER ACCEPTABLE AND APPROVED MATERIALS.
   - I. RETESTING SHALL PROCEED UNTIL A SATISFACTORY TEST IS OBTAINED.
   - J. CONTRACTOR SHALL REPAIR ALL VISIBLE DEFECTIVE JOINTS OR LEAKS IN MANHOLE EVEN THOUGH VACUUM TEST REQUIREMENTS ARE MET. UPON COMPLETION OF TESTING, THE TOP TWO (2) STEPS SHALL BE REMOVED FROM ALL MANHOLES.
7. ALL PUBLIC SANITARY SEWER SHALL BE INTERNALLY RECORDED BY REMOTE CAMERA. RECORDINGS SHALL BE IN COLOR DVD FORMAT AND SUBMITTED TO THE VILLAGE ENGINEER FOR REVIEW AND APPROVAL PRIOR TO ACCEPTANCE OF THE SEWER IMPROVEMENTS BY THE VILLAGE. TELEVISING OF THE SEWER PIPE SHALL NOT TAKE PLACE SOONER THAN ONE YEAR AFTER INSTALLATION UNLESS APPROVED BY THE DIRECTOR OF PUBLIC WORKS AND ENGINEERING.

STORM WATER SYSTEM

1. WHEN EXISTING DRAINAGE FACILITIES ARE DISTURBED, THE CONTRACTOR SHALL PROVIDE AND MAINTAIN TEMPORARY OUTLETS AND CONNECTIONS FOR ALL PRIVATE OR PUBLIC DRAINS, SEWERS OR CATCH BASINS. THE CONTRACTOR SHALL PROVIDE FACILITIES TO TAKE IN ALL STORM WATER WHICH WILL BE RECEIVED BY THESE DRAINS AND SEWERS AND DISCHARGE THE SAME. THE CONTRACTOR SHALL PROVIDE AND MAINTAIN AN EFFICIENT PUMPING PLANT, IF NECESSARY, AND A TEMPORARY OUTLET AND BE PREPARED AT ALL TIMES TO DISPOSE OF THE WATER RECEIVED FROM THESE TEMPORARY CONNECTIONS UNTIL SUCH TIME AS THE PERMANENT CONNECTIONS WITH SEWERS ARE BUILT AND IN SERVICE.
2. WHEN THE REQUIRED VERTICAL AND HORIZONTAL CLEARANCES, AS SPECIFIED BY THE IEPA, BETWEEN PROPOSED STORM SEWER AND EXISTING OR PROPOSED WATER MAINS CANNOT BE MET, CIRCULAR PIPE SHALL BE INSTALLED OF WATER MAIN QUALITY PIPE FOR THE STORM SEWER.

PAVING

1. ALL SUBGRADES AND BASES SHALL BE PROOF-ROLLED AND APPROVED BY THE PROJECT'S GEOTECHNICAL ENGINEER AND WITNESSED BY THE VILLAGE OF HUNTLEY ENGINEERING DEPARTMENT PRIOR TO BASE OR BINDER INSTALLATION.
2. SUBGRADES SHALL BE FINISHED BY THE CONTRACTOR TO WITHIN 0.1 FOOT PLUS OR MINUS OF PLAN ELEVATION. THE CONTRACTOR SHALL COORDINATE THE INSPECTION OF THE SUBGRADE FOR ELEVATION WITH THE VILLAGE OF HUNTLEY ENGINEERING DEPARTMENT PRIOR TO THE PLACEMENT OF THE PROPOSED AGGREGATE SUBBASE.
3. THE CONTRACTOR SHALL ENSURE THE SUBGRADE HAS BEEN PROPERLY PREPARED AND THE FINISHED TOP OF SUBGRADE ELEVATION HAS BEEN GRADED WITHIN THE TOLERANCES ALLOWED IN THESE SPECIFICATIONS. UNLESS THE PAVING CONTRACTOR ADVISES THE OWNER AND VILLAGE ENGINEER IN WRITING PRIOR TO FINE GRADING FOR BASE COURSE CONSTRUCTION, IT IS UNDERSTOOD THE CONTRACTOR HAS APPROVED AND ACCEPTS RESPONSIBILITY FOR THE SUBGRADE.
4. FOR THE PURPOSE OF PROVIDING HANDICAP ACCESSIBILITY AND COMPLYING WITH THE AMERICANS WITH DISABILITIES ACT AND VILLAGE STANDARDS, CURBS SHALL BE DEPRESSED AT LOCATIONS WHERE PUBLIC WALKS OR PEDESTRIAN PATHS INTERSECT CURB LINES AT STREET INTERSECTIONS AND OTHER LOCATIONS AS DIRECTED.
5. 3/4 INCH THICK PRE-MOLDED FIBER EXPANSION JOINTS WITH TWO (2) EPOXY COATED 24" LONG NO. 6 PLAIN ROUND STEEL DOWEL BARS SHALL BE INSTALLED AT DESIGNATED INTERVALS AND AT ALL P.C., P.T., CURB RETURNS AND AT THE END OF EACH POUR. ALTERNATE ENDS OF THE DOWEL BARS SHALL BE GREASED AND FITTED WITH PLASTIC OR METAL EXPANSION CAPS.
6. 3/4 INCH THICK FIBER EXPANSION JOINTS SHALL BE USED IN EVERY CASE WHERE THE SIDEWALK COINCIDES WITH THE CURB AND GUTTER.
7. CONTRACTION JOINTS SHALL BE SAW CUT AT DESIGNATED INTERVALS IN THE CURB. THE COST OF THESE JOINTS SHALL BE CONSIDERED AS INCIDENTAL.
8. CURB & GUTTER AND SIDEWALKS SHALL BE CONSTRUCTED AT THE DIMENSIONS AS SHOWN IN THE CONSTRUCTION PLANS. ALL CONCRETE SHALL BE AN IDOT APPROVED CLASS SI CONCRETE MIX AND SHALL DEVELOP A MINIMUM OF 3,500 PSI COMPRESSIVE STRENGTH AT FOURTEEN (14) DAYS.
9. SIDEWALK CONTROL JOINTS SHALL BE SET AT FIVE (5) FOOT CENTERS, AND ONE-HALF INCH (1/2 INCH) PRE-MOLDED FIBER EXPANSION JOINTS AT FIFTY (50) FOOT CENTERS AND WHERE THE SIDEWALK MEETS THE CURB OR ANOTHER SIDEWALK, OR AT THE END OF EACH POUR. ALL SIDEWALKS CONSTRUCTED OVER UTILITY TRENCHES AND/OR ABUTTING DRIVEWAY APRONS SHALL BE REINFORCED WITH TWO (2) NO. 4 REINFORCING BARS (20 FOOT MINIMUM LENGTH).
10. ALL CONSTRUCTION INTERSECTING PUBLIC OR PRIVATE ROADWAYS SHALL BE RAMPED TO MEET A DEPRESSED CURB AND GUTTER SECTION IN CONFORMANCE WITH CURRENT STANDARDS OF THE AMERICANS WITH DISABILITIES ACT. TRUNCATED DOME PANELS MUST BE INSTALLED PER MANUFACTURER REQUIREMENTS. PANELS MUST MEET CURRENT VILLAGE APPROVED MATERIAL LIST REQUIREMENTS.
11. THE CONTRACTOR IS RESPONSIBLE FOR THE MATERIAL TESTING OF ALL SUBGRADES, SUBBASES, HMA AND PCC ITEMS CONSTRUCTED IN MUNICIPAL EASEMENTS, PUBLIC ROW OR ROADWAY CONSTRUCTION. TESTING PROCESSES, PROCEDURES AND FREQUENCIES SHALL MEET IDOT QUALITY CONTROL MINIMUM REQUIREMENTS. THE VILLAGE RESERVES THE RIGHT TO REQUIRE ADDITIONAL MATERIAL TESTING TO ENSURE ALL MATERIALS MEET REQUIRED SPECIFICATIONS. MATERIAL TESTING SHALL BE PERFORMED BY A QUALIFIED MATERIAL TESTING FIRM AND PERSONNEL. ALL MATERIAL TESTING REPORTS SHALL BE PROVIDED TO THE VILLAGE FOR REVIEW AND PROJECT ACCEPTANCE.

PROJECT ACCEPTANCE

1. THE CONTRACTOR SHALL CONDUCT AN INSPECTION OF ALL WORK AND MAKE REPAIRS OR ADJUSTMENTS PRIOR TO REQUESTING INITIAL ACCEPTANCE BY THE VILLAGE OF HUNTLEY.
2. UPON WRITTEN REQUEST OF THE SUBDIVIDER, AND AFTER THE REQUIRED IMPROVEMENTS HAVE BEEN COMPLETED AND RECORD DRAWINGS HAVE BEEN SUBMITTED, THE VILLAGE ENGINEER SHALL MAKE A FINAL INSPECTION OF THE COMPLETED WORK. THE VILLAGE ENGINEER SHALL THEN PREPARE A FINAL PUNCH LIST, ITEMIZING ALL ITEMS NOT MEETING THE REQUIREMENTS OF THE APPROVED DRAWINGS AND SPECIFICATIONS. UPON COMPLETION OF ALL ITEMS LISTED IN THE FINAL PUNCH LIST, THE SUBDIVIDER SHALL REQUEST, IN WRITING, A FINAL INSPECTION. WHEN ALL ITEMS ARE FOUND TO MEET THE REQUIREMENTS OF THE VILLAGE AND THE APPROVED DRAWINGS AND SPECIFICATIONS, THE VILLAGE ENGINEER SHALL NOTIFY THE VILLAGE MANAGER, IN WRITING, OF HIS RECOMMENDATION FOR APPROVAL AND ACCEPTANCE OF THE IMPROVEMENTS.
3. THE VILLAGE MANAGER SHALL SCHEDULE THE ACCEPTANCE FOR THE NEXT AVAILABLE REGULAR VILLAGE BOARD COMMITTEE OF THE WHOLE MEETING. PRIOR TO FINAL ACCEPTANCE OF THE PUBLIC IMPROVEMENTS, THE SUBDIVIDER SHALL SUBMIT A 10% MAINTENANCE BOND FOR THE FULL VALUE OF THE PUBLIC IMPROVEMENTS AS ESTIMATED BY THE SUBDIVIDER'S ENGINEER AND APPROVED BY THE VILLAGE ENGINEER. SAID MAINTENANCE BOND SHALL BE THE DEVELOPER'S GUARANTEE AGAINST DEFECTS OF THE PUBLIC IMPROVEMENTS / WORKMANSHIP, AND SHALL TERMINATE THREE YEARS AFTER ACCEPTANCE OF MAINTENANCE OF THE PUBLIC IMPROVEMENTS BY THE VILLAGE BOARD. UPON ACCEPTANCE BY THE VILLAGE BOARD, THE BALANCE OF THE PUBLIC IMPROVEMENTS CONSTRUCTION GUARANTEE SHALL BE RELEASED TO THE SUBDIVIDER.
4. WRITTEN ACCEPTANCE REQUEST AFOREMENTIONED MUST BE SUBMITTED BETWEEN APRIL 1ST AND SEPTEMBER 1ST (OF THE SAME CALENDAR YEAR). FINAL ACCEPTANCE BY THE VILLAGE BOARD OF TRUSTEES MUST OCCUR BY OCTOBER 15TH OF THE SAME YEAR AS THE WRITTEN ACCEPTANCE REQUEST. FAILURE TO MEET THE OCTOBER 15TH DATE WILL RESULT IN DEFERRAL OF THE ACCEPTANCE PROCEDURES TO THE FOLLOWING CALENDAR YEAR.
5. ANY AREA OUTSIDE PROPERTY LINES OR IDENTIFIED CONSTRUCTION LIMITS USED BY THE GENERAL OR SUB-CONTRACTORS SHALL BE RETURNED TO THE STATE IT WAS FOUND PRIOR TO CONSTRUCTION.

HUNTLEY ILLINOIS

VILLAGE OF HUNTLEY
10987 MAIN STREET
HUNTLEY, IL 60142
(847) 515-5200

STANDARD DETAILS - GENERAL NOTES

SCALE: NTS	DRAWN/CHECKED CBBEL/TPF	DRAWING NUMBER -/-
DATE: 1/1/2016	REVISED: 10/21/2021	