

Exhibit D

CONSTRUCTION SPECIFICATIONS

STANDARD GENERAL CONDITIONS AND SPECIFICATIONS

1. Standard General Conditions

All work shall be governed by the latest edition of the Standard General Conditions of the Construction Contract prepared by the Engineers Joint Contract Document Committee, the General Requirements and Covenants of the Standard Specifications for Water and Sewer Construction in Illinois, or the General Requirements and Covenants of the Illinois Department of Transportations Standard Specifications for Road and Bridge Construction. The Design Engineer shall choose one of the foregoing.

2. Supplementary Conditions

a. Special Definitions for Subdivision and Planned Unit Development Construction.

1. Contractor – The Developer is considered to be the primary Contractor by the Village for Bonding, Insurance, an Indemnification purposes.
2. Engineer – Design Engineer or other Registered Professional Engineer employed by the Developer. The Village Engineer is not responsible to or acting on behalf of the Developer.
3. Owner – The Village shall have the authority to accept or reject the work. In all other cases the Developer shall have the authority and responsibility of the Owner.

b. Contractor and Liability Insurance

The Village of Shorewood and its designated Engineer shall be named as additional insured. The Contractor shall include insurance coverage required by the Village for the respective officers and employees of all such additional insureds.

c. Notification Prior to Commencement of Construction

1. The Contractor shall give the Village and Village Engineer two (2) working days notice before work commences on each category of construction.
2. The Contractor shall notify all utility companies prior to construction to verify in the field all existing and underground utilities adjacent to the project, and be responsible for protection of same.

d. Maintenance of Traffic

1. The Contractor shall be responsible for the installation and maintenance of adequate signs and warning devices to inform and protect the public. The “Manual on Uniform Traffic Control Device for Streets and Highways”, as

Exhibit D

CONSTRUCTION SPECIFICATIONS

adopted by the Illinois Department of Transportation, current edition, shall be consulted. Appropriate control methods shall be applied to the specific situations and types of construction operations being performed.

2. On a street previously opened to traffic, no holes are to be left open in the pavement over a holiday, weekend, or after 3 p.m. on the day preceding a holiday or a weekend.

e. Protection and Restoration of Existing Facilities

1. All existing utilities or improvements, including walks, curbs, pavement and parkways damaged or removed during construction shall be promptly restored to their respective original condition. Roadways and driveways will be restored in kind to saw-cut, uniform edges. Areas to be seeded will be fine graded. Minimum depth of topsoil replacement shall be 6-inches.
2. The Contractor shall be aware of potential conflicts with existing utilities as indicated on the plans. The Contractor shall excavate around utilities to determine elevations before beginning construction of new facilities which may conflict with existing utilities.
3. All existing field drainage tile encountered or damaged during construction are to be restored to their original condition, properly rerouted and/or connected to the storm sewer system. All locations of encountered field drainage tile shall be indicated on the record set of drawings.
4. All existing pavement or concrete to be removed shall be sawcut along limits of proposed removal before removal operation begins.

f. Testing

1. All tests required shall be witnessed by the Village Engineer. At least two (2) working days notice shall be given to the Village Engineer prior to testing.

g. Acceptance by Village

1. All tests shall be witnessed by the Village before final acceptance.
2. Record drawings prepared by the Engineer shall be submitted to the Village and reviewed by the Village Engineer before final acceptance. The record drawings shall include as-constructed inverts and rim elevations of all manholes, valve vaults, and drainage structures. The record drawings shall also include any significant location deviation of underground piping, including previously existing piping, from the design drawings, especially any such deviation that might locate such pipes outside of easements or rights-of-way. If invert elevations and/or lengths between structures vary significantly, the as-constructed gradients shall be shown on the record drawings. As-constructed sanitary sewer wye locations shall be dimensioned from the

Exhibit D

CONSTRUCTION SPECIFICATIONS

downstream manhole. As-constructed water service locations shall be dimensioned from the nearest fire hydrant.

3. Standard Specifications

- a. Standard Specifications for Water Sewer Main Construction in Illinois, latest edition.
- b. Illinois Department of Transportation, "Standard Specifications for Road and Bridge Construction," latest edition.
- c. Illinois Department of Transportation, "Standard Specifications for Traffic Control Items," latest edition.
- d. United States Department of Transportation, "Manual on Uniform Traffic Control Devices for Streets and Highways," and the "Illinois Supplement to the National Manual on Uniform Traffic Control Devices for Streets and Highway," latest editions.
- e. United States Department of Agriculture Natural Resources Conservation Service, "Illinois Urban Manual," latest edition.

4. Conflict of Construction Documents and Village Code

In case of conflict with the General Conditions, Standard Specification, and/or the Contract Drawings, the Village Code of the Village of Shorewood, Illinois, shall take precedence and shall govern.

STANDARD SPECIFICATIONS FOR SEWERS

1. Standard Specifications

The "Standard Specifications for Water and Sewer Main Construction in Illinois," latest edition, shall govern the construction of the proposed sewer improvements except as modified herein and by the Standard Construction Details.

2. Connections to Existing Sewer Mains or Structures

- a. When connecting to an existing sewer main by means other than an existing wye or tee, one of the following methods shall be used:
 - i. Circular saw-cut of the sewer main by proper tools ("Sewer-Tap" machine or similar) and proper installation of hub-wye saddle or hub-tee saddle; or
 - ii. With pipe cutter, neatly and accurately cut out desired length of pipe for insertion of proper fitting, using "Band-Seal" or similar mission couplings to hold it firmly in place.

Exhibit D

CONSTRUCTION SPECIFICATIONS

- b. Connection of a new pipe to an existing structure shall be by core-drilling with Link-Seal, A-Loc, or equal insert.

STANDARD SPECIFICATIONS FOR WATER MAINS

1. Standard Specifications

The “Standard Specifications for Water and Sewer Main Construction in Illinois,” latest edition, shall govern the construction of the proposed water main improvements except as modified herein and by the Standard Construction Details.

2. Testing Water Mains

Pressure testing, flushing and chlorination of mains should be performed without unnecessary delay. Each valve section shall be tested at a pressure of one hundred fifty (150) pounds per square inch for two (2) hours. Allowable leakage is to be only that which is predetermined by the “Standard Specifications for Sewer and Water Main Construction in Illinois”. At no time is there to be any visible leakage from the main.

3. Chlorination

Each valved section of water main is to be flushed and sterilized in accordance with the “Standard Specifications” and the following requirements. Building service taps shall not be made until the laboratory results show that the water main has been properly sterilized. A set of samples must be collected and tested for safe results on two (2) consecutive days.

- a. Procedure:
 - i. Minimum 24 hour notice is needed before chlorinating. Chlorination shall be scheduled with the Village Utility Foreman.
 - ii. Only authorized Village of Shorewood employees shall operate all water system valves and turn on/off sampling whips while samples are being collected.
 - iii. Under no circumstances will chlorine contractors be allowed to apply heat to the chlorine cylinder (i.e. hot baths, propane torches, etc.). While the cylinder is being used it must be in a vertical position, as well as being affixed to a solid object.
 - iv. Prior to work, the Chlorinator must provide a detailed written chlorination and flushing plan to the Village for review and approval.
 - v. At any time, the Village, or its authorized representative, may ask for proof of any of all of the above information.
- b. Equipment: All chlorination and safety equipment must meet or exceed the standards and recommendations set by The Chlorine Institute, Inc.
- c. Requirements for Chlorination Contractors:

Exhibit D

CONSTRUCTION SPECIFICATIONS

- i. Chlorinator must be licensed plumber or certified Illinois water operator with a minimum of 5 years experience and a minimum of 5 years experience working with chlorine disinfection of water supply systems.
- ii. Two people must be present to chlorinate: One to monitor the cylinder and the other to monitor in the field.
- iii. Chlorination contractor must be bonded and insured, and have proof of both on file with the Village.
- iv. Chlorination contractor must have updated emergency phone numbers on file with the Village.
- v. Chlorination contractor must comply with state and federal regulations regarding transportation and handling of chlorine cylinders:
 - (1) Shipping and emergency papers for every job location
 - (2) Proof of insurance for hauling and handling chlorine gas
 - (3) Commercial Drivers License with Hazmat endorsement and medical card
 - (4) Copy of Emergency Response Guidebook in vehicle
 - (5) Hazmat certificate of registration
 - (6) Hazardous material placards displayed on vehicle
 - (7) Cylinder strapped upright in truck

SPECIFICATIONS FOR STREET AND SIDEWALK CONSTRUCTION

1. Standard Specifications

The “Standard Specifications for Road and Bridge Construction” shall govern the construction of streets and sidewalks.

2. Density Testing of Subgrade and Base

The Contractor shall provide a fully loaded vehicle approved by the Village Engineer, and proof-roll as follows: The Village Engineer shall observe and approve the proof-rolling of subgrade and the base course. Proof-Rolling tolerances shall be a maximum deflection of 1” for the subgrade and ½” for the base course. The above criteria is intended as a maximum deflection standard and that proof-rolling of a majority of the area will have less deflection than specified above. In any case of deficiency the subgrade and/or base course shall be repaired and retested before proceeding with the pavement construction.

3. Closure to Traffic

Once the subgrade had satisfactorily passed the above density testing, no vehicular or construction equipment, except that being used to construct the road, shall be allowed on the roadway until after the bituminous binder course has completed. The Contractor shall adequately barricade the roadway to prevent its use.

Exhibit D

CONSTRUCTION SPECIFICATIONS

4. Concrete Construction

- a. Expansion joints shall be provided wherever a P.C.C. surface contact with another.
- b. No concrete will be placed when the air temperature is 35° F or less, without permission from the Village Engineer. No concrete shall be placed on ice, snow or frozen surfaces. The Contractor shall be responsible for all concrete damaged by low-temperatures, and any concrete so damaged shall be removed and replaced by him at his expense.
- c. If at any time during the three days curing period, it is forecast that the air temperature will be 32° F or less, the Contractor shall place 12 inches of loose, dry straw on top of whatever curing method the Contractor uses and shall cover the straw with a layer of polyethylene sheet. This procedure is to be used as protection due to low temperatures, and shall remain in place until permission for removal is granted by the Engineer.