



Storm Sewer Construction Standards and Specifications

General Provisions for Storm Sewer

The storm sewers within the corporate limits or under the jurisdiction of the Village of Tinley Park shall be designed and constructed in accordance with the provisions listed below and be provided to serve each property in a subdivision or development.

The design of all storm sewer systems shall meet the following criteria:

- Current Federal and State Codes and Regulations
- Illinois Environmental Protection Agency Regulations (IEPA)
- Standard Specifications for Road and Bridge Construction, Latest Edition
- Village of Tinley Park Subdivision and Development Regulations
- Village of Tinley Park Design Standards and Village Code of Ordinances.

In addition, the following specifications and standards shall apply.

Permit Requirements

An Illinois Environmental Protection Agency (IEPA) NPDES Stormwater Pollution Prevention Plan (SWPPP), as well as a Metropolitan Water Reclamation District of Greater Chicago (MWRD), for improvements in Cook County, permits shall be prepared, submitted for review to the Village Engineer and signed off by the Village Engineer, Design Engineer and issued by the permit authorities authorizing the construction of the storm sewer in the Village before construction begins. A copy of the approved SWPPP permit shall be provided to the Village Engineer prior to the start of construction.

Submittal Requirements

All required submittal requirements entail:

- Plan and Design Calculations
- Plats
- Permits
- Easement Requests
- Licensing Agreements, etc.
- Other Agencies (ACOE, MWRD, IDOT, Will and/or Cook County, etc.)

All of these finalized, signed and approved items must be submitted to the Village Engineer to allow for review within two (2) weeks of construction. Any initial review

requirements by the Village Engineer shall be submitted during the preliminary stages of the project allowing sufficient time for comments, revisions and final approval.

Coordination and Staging

In addition to meeting the requirements of the Subdivision and Development Regulations, all land to be developed shall meet the requirements of the Village's Flood Plain Ordinance #73-0-003, the Sewer Permit Ordinance and the Watershed Management Ordinance of the Metropolitan Water Reclamation District of Greater Chicago (MWRDGC), latest versions.

All storm sewer work by the Contractor shall be approved by the Village Board then coordinated with the Village, County, State, Railroad and other authorities having jurisdiction. Owner/Contractor is responsible for maintenance of improvements for one (1) year following acceptance by the Village.

Storm sewer construction coordination shall be done through the Public Works Department. Construction shall be staged to service the adjacent properties. A Pre-Construction meeting shall be held to discuss these matters.

All storm sewer improvements shall be coordinated with the Village Engineer and Public Works Director to continue service to adjacent properties throughout construction. An Erosion Control Plan shall be submitted, by-pass pumping may be required.

Storm Sewer Design and Materials

- Storm sewer systems shall be constructed throughout each subdivision or development to carry storm water from all inlets and catch basins to an adequate outfall.
- The minimum design capacity shall be based upon the most recent version of the Illinois State Water Survey, Bulletin 70 for a 10-year, 24-hour storm event.
- Storm sewer shall be designed to flow full with a minimum velocity of three feet per second (3 fps) and not to exceed ten feet per second (10 fps).
- Drainage systems shall anticipate and provide capacity for transmitting drainage from other tributary areas, but not retention of these other tributary areas.
- System designs shall meet regulations for Long Range Flood Control programs established by the Metropolitan Reclamation District and/or Cook and Will County.
- Open roadside ditches shall be prohibited, except where required in State or County Right of Ways, or as otherwise approved by Village Board.
- Concrete headwall and apron with riprap shall be provided for any outfall storm sewer into an existing open ditch or natural water course as per Village Ordinances.
- Drain inlets shall be placed in street gutter at all intersections and elsewhere where required by terrain.
- Drains shall not be spaced more than three hundred (300') feet apart along the gutter.
- Storm sewers shall be a minimum of ten (10') feet clear from all water transmission mains or water services.
- Storm sewers shall not be directed into sanitary sewers. No connections between systems shall be permitted at any time, during or after construction.

- For all new construction, drainage structures shall be furnished along the rear property line on the corner of each and every lot. As-Built drawings shall be furnished to the Village Engineer or Public Works Director for approval. Occupancy Permit(s) shall not be issued until As-Built drawings are approved. See Record Drawing Requirements.
- Storm structures shall be precast, reinforced concrete sections, a minimum of four (4') feet in diameter with precast, reinforced concrete off-set cones, except if located at the end of a storm line. Concrete sections shall conform to ASTM C-478.
- Flared end sections shall be designed to be at or above Normal Water Level (NWL) when placed along detention ponds.
- Storm structures shall have all lifting holes, joints and gaps tuck pointed with hydraulic cement.
- Storm sewer in the right of way shall be Reinforced Concrete Pipe (RCP) with a minimum of twelve (12") inch diameter with flared end section and grates. Shall conform to ASTM C-76 or C-507 with joints conforming to C-443.
- Storm sewer outside the right of way may be dual-wall, smooth interior ADS HP Storm Sewer pipe meeting and exceeding ASTM F-2881 and AASHTO M-330. Pipe shall be joined with a gasketed, integral bell and spigot joint meeting ASTM F-2881.
- No storm structures shall be located in sidewalks, driveways or crosswalks.
- All structures shall have a maximum of twelve (12") inches of adjusting rings.
- Storm structures (manholes, catch basins and inlets) shall be precast sections conforming to ASTM D-478 and have eccentric cone sections installed to line up with the steps, in applicable.
- No storm sewer shall be located beneath buildings or structures. It shall be a minimum of ten (10') feet separation between the storm sewer and building or structures.
- An underdrain in a fabric lined trench shall be required at all low points in parking lots and roadways, or as recommended by the Village Engineer.
- In parking lot designs, a minimum of two ten (10') finger drains shall be provided.

Storm Sewer Services

- Services for sump pump discharge must be constructed for each lot or building.
- Storm sewer services must be minimum of four (4") inches in diameter. Size must accommodate sump pump discharge, as well as surface runoff.
- Service lines shall be a minimum of SDR 35.
- Services shall be connected to a manhole or catch basin, where available.
- Air gaps must be provided for all sump pump services. Where a service wye exists, connections can be made; but an air gap shall be provided where service exits the structure.
- Sump pumps shall be used to discharge storm water only.

Frame and Lids

- Frames shall be Heavy Duty - East Jordan Iron Works (EJIW) 1050Z1
- Closed lids shall be Type A solid cover with closed pick holes in the pavement areas that are not intended to take storm water (not curb line) with STORM and VILLAGE OF TINLEY PARK shall be cast on the lid

- Lids intended to take storm water shall be EJIW Type M2 flat grates that state “Dump no Waste”, “Drains to Waterways” and include fish symbol or approved equal in and outside pavement.
- Curb structures intended to take storm water shall be EJIW 1040 M1 or approved equal that state “Dump no Waste”, “Drains to Waterways” and include the trout symbol..
- Type 8 grates can be used in grass residential areas for inlets and catch basins.
- Frames shall be set on a bituminous material to prevent inflow as well.

Steel Plate Requirements for Roadway Excavations

- The use of steel plates is required for all projects requiring the cutting of roadway pavement. These standards ensure that the Village pavements are left in the same, if not better, condition than they were found before the project. This will reduce congestion and roadway hazards, as well as increase safety in and out of the construction limits.
- The use of steel plates by Contractors and Utility Companies as a temporary cover over an excavated area in the roadway can present safety hazards and other problems if allowed to remain in place for extended periods and not properly secured or maintained.
- When backfill operations of an excavated area in the traveled way cannot be properly completed within a work day, steel plate bridging will be required.
- See Construction Standards for Roadway section for more detail.

Inspection and Approval

- A Pre-Construction Meeting shall be scheduled with the Public Works and/or Building Department to discuss the following:
 - Project Contacts (Project Manager and 24-hour Contact)
 - Start and Completion Dates
 - Project Timeline (i.e. Village Holidays, Public Events, Weekend Work, etc.)
 - Required access for local residents, school buses, garbage trucks, etc.
 - Potential Detour Routes
 - Material Storage Locations
 - Resident Confrontation
 - Traffic Control and Protection
- Full time inspection may be required by the Village/Consultants while the storm sewer system are being constructed. It is the Developer’s responsibility to cover the cost of the inspection services.
- All storm sewer and structures shall be thoroughly cleaned of dirt and debris; as well as all joints mortared before final inspection and approval.