Village of Hinsdale

Engineering Standards

July 2017

Table of Contents

SECTION 100 – GENERAL PROVISIONS, REQUIREMENTS, AND COVENANTS

Section 101 – General Provisions

The development of:

1. subdivisions,
2. new single family homes or buildings,
3. additions to existing single family homes or buildings,
4. auxiliary structures
5. landscaping that changes the grade of the site such that existing drainage flows will be altered (either hard or soft)
6. any project that includes the creation of a foundation and
7. the demolition of any building or structure.

shall comply with the laws, ordinances, rules and regulations set forth in this section including but not limited to the following:

1. The provisions of 65 ILCS municipal code, as amended from time to time
2. The Village of Hinsdale's Infrastructure Plans and Official Map
3. The Village of Hinsdale's Ordinances:
    a. Zoning Code
    b. Municipal Code
4. The Village Standard Details as amended from time to time.
5. All State of Illinois, DuPage County, and Cook Counties applicable rules and regulations.

Section 102 - Minimum Specifications and Codes

All construction shall be in accordance with, and materials used shall be in compliance with, the methods and materials required in the appropriate sections of the latest editions, amendments or revisions of the following:

1. All applicable Village Ordinances, Standards, Specifications, and Details, most recent edition, as adopted.
2. "Standard Specification for Road and Bridge Construction", Most Recent Edition, Illinois Department of Transportation (IDOT) ,
3. Flagg Creek Water Reclamation District standards, policies, and procedures, latest edition.
4. "Illinois Manual of Uniform Traffic Control Devices for Streets and Highways", Most Recent Edition, U.S. Department of Transportation, Federal Highway Administration; "A Policy on Geometric Design of Highways and Streets", Most Recent Edition, American Association of State Highway and Transportation Officials; "Standard Specifications for Water and Sewer Main Construction in Illinois", Most Recent Edition, Illinois Society of Professional Engineers et al; "Illinois Design Standards for Sewage Works", I.E.P.A., Division of Water Pollution Control; "Technical Policy Statements", I.E.P.A., Division of Public Water Supply; "Recommended Standards for Water Works', Great Lakes Upper Mississippi River Board of State Sanitary Engineers ("10 States Standards".) "Procedures and Standards for Urban Soil Erosion and Sedimentation Control in Illinois", the Urban Committee of the Association of Illinois Soil and Water Conservation Districts, ("Green Book");"Standards and Specifications for Soil Erosion and Sediment Control", I.E.P.A. ("Yellow Book"); "U.S. Soil Conservation Service Field Engineering Handbook" ;Illinois Department of Transportation Design Manual. American National Standard Practice for Roadway Lighting (ANSI/IES RP-8, Latest Edition); Illuminating Engineering Society of America Lighting for Parking Facilities (IESNA RP-20, Latest Edition); The National Electric Code (NEC, NFPA 70, Latest Edition); Recommended Standards for Wastewater Facilities (Wastewater Committee of The Great Lakes – Upper Mississippi River, Board of State and Provincial Public Health and Environmental Managers)

Where standards are not specifically set forth, improvements shall comply with standards established by the Village Board.

Section 103 – Required Improvements for Subdivisions

The following improvements shall be provided as part of the development of a proposed subdivision:

1. Street pavement structure improvements shall be bituminous concrete flexible type pavement or portland cement concrete pavement consisting of the following;
    a. Concrete curb and gutters
    b. Stable and compacted subgrade
    c. Base and sub-base course, as required.
    d. Bituminous concrete binder and surface courses for flexible type pavement
2. Portland cement concrete sidewalks;
3. Street and private parking lot lighting;
4. Landscaping and trees;
5. Street signs and pavement markings;
6. Any traffic safety installation such as guard railing, etc;
7. Public utilities for telephone, electric, cable, television, and natural gas;
8. Site and lot grading;
9. Storm Sewer Systems and Sump Pump Drainage System;
10. Storm Water Storage and Management;
11. Erosion Control;
12. Sanitary Sewer System; and
13. Water Distribution System

Section 104 – Oversized Design for Subdivisions

Where required in the overall planning as evidenced by the Village's Strategic Plan for water, sewer or streets, or the Official Village Plan, the subdivision improvements shall be designed and constructed in accordance with the community's anticipated needs. An agreement between the subdivider and the Village may be made allowing the subdivider to recapture added construction costs resulting from an increased design capacity beyond that necessary for the immediate subdivision. This shall apply but not be limited to: collector sewers, lift stations, disposal facilities, wells, pumping facilities, water mains, storage tanks, culverts, storm sewers, and streets.

Section 105 – Offsite Improvements/Existing Infrastructure Modifications

If it is determined that any existing infrastructure including, but not limited to, water distribution systems, sanitary sewers or other wastewater treatment facilities, storm sewers or other storm water management facilities, roads and curbs and gutters, which may be situated either in part or entirely off site, are inadequate to facilitate a proposed subdivision when one hundred (100) percent built-out, then improvements to any one or more or all of such facilities will be required.

Section 106 – Public Utilities

Section 106.01- Utility Lines

All utility lines for telephone, electric service, cable television, and gas or petroleum products shall be placed underground entirely throughout a subdivided area. All rights- of-way work shall be permitted and conform to Title 7: Chapter 1: Article G: Construction of Utility Facilities in the Rights-of-way, of Village Code.

Section 106.02- Cable

Cable may be installed by trenching or plowing, providing that special consideration is given to boring in order to minimize damage when crossing improved entrances and side roads.

Section 106.03- Placement

Said conduits or cables shall be placed within easements or dedicated public ways, in a manner which will not conflict or disturb other underground services.The utility lines shall be parallel to and not less than eighteen (18) inches from the property lines. Cover shall be provided and maintained at least in the amount specified in the following explanation for minimum cover for the type of facility:

1. Electrical lines, 30 inches;
2. Communication, Cable or Video Service Lines, 18 to 24 inches (as determined by Village);
3. Gas or Petroleum products, 30 inches;
4. Water Line, sufficient cover to provide freeze protection;
5. Sanitary Sewer, Storm Sewer, or Drainage Line, sufficient cover to provide freeze protection.

Corner property markers shall not be disturbed by the installation of utility lines. Further, all transformer boxes shall be located so as not to be unsightly or hazardous to the public.

Section 106.04- Facility Construction

Electrical power or communications facilities within Village rights-of-way shall be constructed, operated, and maintained in conformity with the provisions of 83 Ill. Adm. Code Part 305, as amended (formerly General Order 160 of the Illinois Commerce Commission) entitled “Rules for Construction of Electrical Power and Communications Lines,” and the National Electrical Safety Code, as amended.

Section 106.05- Contractor Obligations

Any utility proposing to construct facilities in the Village shall contact J.U.L.I.E. and ascertain the presence and location of existing above-ground and underground facilities within the rights-of-way to be occupied by its proposed facilities. Utilities will be in accordance with the Illinois Underground Facilities Damage Prevention Act (220 ILCS 50/1 et seq.), as amended. The developer shall coordinate with all utilities companies and provide to the Village a marked up copy of the utility plan with the proposed and existing utility locations.

Section 107 – Boundary, Lot, Right of Way line, and Benchmark Monumentation

Section 107.01 – Permanent Concrete Locations
Permanent concrete monuments shall be placed at all corners, changes in bearing of the exterior boundary and at such other points shall be required to enable ready establishment of lines with in the subdivision as indicated in the Village Ordinances and as provided by
765 ILCS 205

Section 107.02 – Permanent Concrete Monument Composition
Permanent concrete monuments shall be of concrete having a six (6) inch minimum diameter with one (1) number 4 vertical bars in its center, and be at least thirty-six (36) inches in length. Monuments shall be set flush with adjacent ground.

Section 107.03 – Iron Rod Monuments
Iron pipe monuments not less than ¾- inch diameter and 36 inches in length shall be set at all required lot corners, at changes in direction of exterior boundaries, at angle points in street lines exclusive of block corners, the beginning and ending of each fixed radius curve, and such other point as the Village Engineer may direct that have not been marked by permanent concrete monuments. The iron pipes shall be set flush with the finished ground elevation.

Section 107.04 – Permanent Benchmarks
A minimum of one permanent benchmark shall be established for each 50 acres, or fraction thereof, subdivided, at a location designated by the Village Engineer. This monument shall be of concrete with minimum dimensions of six-inch diameter, and shall be 72 inches long, with a brass plate securely fastened to the surface. On the brass plate shall be inscribed the number and elevation of the benchmark.

Section 107.05 – Acceptance
After construction of all improvements and before final acceptance by the Village, the subdivider shall replace or verify the existence of all monuments and markers.

Section 108 – Easements

Section 108.01 – Utility Easements
Easements for the installation, operation and maintenance of utilities shall be provided as follows:

1. Along all boundary lines of the subdivision having a width of not less than ten (10) feet.
2. Along all back lot lines having a width of not less than ten (10) feet.
3. Along all front lot lines having a width of not less than five (5) feet.
4. Along side and front lot lines where required. Easements for water, sanitary sewer and storm sewer lines shall have a minimum width of five (5) feet or shall be based upon three quarters (3/4) the depth of the utility. Separate and exclusive easements for water, sanitary, and storm sewer are required. Easements for electrical, street lighting, telephone, cable television and gas shall have a minimum width of five (5) feet on each side of the respective lot lines.
5. On abutting lots, back of lot lines and side lot lines easements shall be provided on each side of the lot line at the minimum width specified above.
6. Utility easements shall be laid out so as to provide continuity from block to block.
7. On wooded sites, utility easements shall be located and be of sufficient width so as to minimize environmental damage.

8. Utility easements and any easement provisions to be incorporated into the final plat or in the deed documents shall be reviewed and approved by the utility companies responsible to furnish the proposed services. The wording of the utility easement certificate on the final plat shall be approved by the Village Engineer.

Section 108.02 - Drainage and Stormwater Management Easements
Easements for the installation, operation and maintenance of Drainage and Storm water Management Facilities shall be provided as follows:

1. Drainage easements shall be provided at the side and rear of all lots to accommodate drainage from each lot. Unless otherwise specified, the width of drainage easements shall be not less than ten (10) feet wide along each rear lot line (totaling 20 feet) and five (5) feet along each side lot line totaling ten (10) feet.
2. Where a subdivision is traversed by a watercourse, drainage-way, channel or stream, or other body of water, appropriate dedications or easements, with adequate width to accommodate observed, computed, or anticipated Stormwater drainage through and from the subdivision, shall be made. The width of the easement or dedication shall be dependent on the area of land drained by the watercourse and shall allow access for construction and maintenance equipment. In general the easement shall conform substantially with the lines of the watercourse and shall include the flood plain, where applicable, plus an additional area not less than twenty (20) feet wide adjoining both edges of the flood plain.
3. All permanent storm water management facilities for a subdivision shall be protected by easements or dedications for drainage and shall permit ingress and egress for maintenance. All side lot lines shall have a minimum ten (10) foot easement on each lot. All lot lines adjacent to non-subdivided lands shall have a twenty (20) foot easement for drainage and utilities.
4. No construction of structure, dams, embankments or channels (except as indicated on the improvement plans) and no planting of trees, shrubbery or other vegetation, which hinder the flow of water of otherwise inhibit the intended purposes, shall be allowed within any drainage or Stormwater management facility easement. In the event the area with in such easement is obstructed, reshaped, regarded or restricted for uses other than as intended or as shown on the improvement plans, the Village will cause to have any alterations corrected at the expense of the party or parties causing said obstruction, restriction, regrading, or alteration.
5. Where possible drainage easements shall be separate and distinct from all utility easements.
6. Drainage and storm water management easements shall be adequately maintained so as to provide for removal of accumulation of vegetation, silt, debris or other material that may interfere with the flow characteristics of drainage-ways or the essential features of retention or detention facilities

Section 108.03 – Pedestrian Way Easements
Easements or dedications shall be provided for pedestrian ways where deemed appropriate by the Village Code. Pedestrian way easements shall be maintained to permit their continued use.

Section 108.04-Line of Sight Easements at Intersections
At all intersections, line of sight easements shall be granted to the Village to protect clear sight distance not to exceed twenty o ur (24) inches for solid structures (excluding existing buildings) and forty five (45) inches for shrubs, bushes and plantings above existing grade within the area formed by straight lines drawn between the center lines of intersecting streets at points a distance along each line of one hundred (100) feet from their point of intersection. No solid obstructions exceeding twenty four (24) inches above centerline grade or shrubs, bushes an plantings exceeding forty five (45) inches above centerline grade will be permitted within said easement.

Section 109 – Preservation of Natural Features

Section 109.01 – General
Due regard shall be given to the preservation of natural features within a proposed development, such as large trees, water courses, historical and similar community assets, which, if preserved, will add attractiveness and value to the property. The Developer shall take every precaution required to preserve said natural features in the planning and construction of said development.

Section 109.02 – Preservation of Existing Trees
When parcels proposed for development include trees measuring eight (8) inches in diameter at breast height or larger, a tree preservation and protection plan shall be prepared and submitted to the Village for review and approval. The tree preservation plan shall include a site plan of the property of a scale not less than one inch equals twenty feet (1" = 20'), which plan shall be graphically and accurately marked with all of the following information:

1. The street address or legal description of the property and all property lines of the property;
2. The location of all buildings, structures, driveways, walkways, and parking areas on the property;
3. The proposed location of all temporary storage areas during construction on the property;
4. The location of utility service lines on the property;
5. The location of all trees in excess of eight inches (8") in diameter measured at breast height (dbh) on the property and within fifteen feet (15') of any property line of the property (collectively the "protected trees");
6. Legend stating the dbh, genus and species, and general condition of each protected tree;
7. The root protection zones within the property of all protected trees;
8. A detailed proposal for protection of all protected trees and for protection of all trees other than protected trees that may be damaged or removed during the proposed construction activity, including, without limitation, such measures as pruning, root pruning, use of retaining walls or protective fencing, auguring of utility lines (to improve tree survivability), and similar measures;
9. A clear delineation of the perimeters of each construction activity area and each root protection area; and
10. A certification from an arborist that the tree preservation plan incorporates all reasonable steps necessary to minimize damage to trees on property adjacent to the property.

Section 109.03 – Evaluation of Existing Trees

The ability to save existing trees on the site shall be evaluated by the Developer and the Village to determine which trees shall be saved, and which trees may be removed for one or more of the following reasons:

1. To provide essential grade changes.
2. To provide for surface water drainage and utility installations.
3. To locate proposed structures without causing unreasonable economic hardship.
4. To observe good forestry practices, i.e., the number of healthy trees that the parcel will support.
5. That poses a safety hazard to pedestrian or vehicular traffic, or threatens to cause disruption of public services.
6. That poses a safety hazard to buildings, both existing and proposed.
7. That is diseased or weakened by age, storm, fire or other injury.
8. That are willows, silver maples, or other fast-growing softwood trees determined by the Village to be short lived or of poor quality.

All existing trees determined to be saved shall be identified on the preservation and protection plan and shall be preserved and protected during construction of the development.

Section 109.04 – Tree Replacement

In the event that a tree identified for preservation is destroyed or damaged during construction, such tree shall be replaced with a tree that is at least the same size caliper as the tree removed, or be replaced with smaller trees, each with a minimum caliper of two and one-half (2-1/2) inches, as measured fifty 4 (54) inches above grade, which add up to the caliper of the original tree. The species of the tree to be replaced shall comply with respective Village Ordinances.

Section 109.05 – Other Tree Preservation Requirements

Section 109.05.01- Approval

Approval of a development plan shall be withheld until all of the information required by this section of the Standards has been submitted, and the evaluation of existing trees on the subject property has been completed by the Village.

Section 109.05.02- Review of Tree Preservation Plan

The Village shall, at its discretion, have the right to retain a professional tree consultant/forester to review tree preservation plans and to submit a written report to the Village. All expenses incurred by the Village for the use of the tree consultant shall be reimbursed by the Developer.

Section 109.05.03- Inspection Rights

The Village shall have the right to inspect the subject property at any time during the construction process, in order to verify that the Developer and contractor have protected trees in accordance with the approved tree preservation plan.

Section 110 – Off-Street Parking

Any off-street parking improvements required to be constructed as part of the proposed subdivision improvements shall be in accordance with the requirements of the Zoning Ordinance of the Village of Hinsdale. Depth and width of all lots shall be adequate to provide off-street parking and loading spaces as required by the Zoning Ordinance.

SECTION 200 – GRADING, STORMWATER MANAGEMENT, WETLANDS, AND EROSION CONTROL

Section 201 – Grading

The site shall be graded such that a situation of positive drainage is created to convey surface water runoff to inlets, catch basins, manholes, or storm water management facilities in such a fashion that no greater than eight (8) inches (6" on roadway per DPC) of ponding occurs in any location through out the development.

Section 201.01 – Parcel Drainage

The parcel drainage shall be designed to flow away from the top of the foundation. Stormwater being directed to the side yard of the parcel shall be directed into a formed drainage swale, having a minimum slope of two percent (2%) and a maximum slope of seven percent (7%). Side yard swales shall have side slopes of 10:1 or less. In the event that conditions dictate that some parts of the lot be higher than the structure foundation, the grading plan must show specific drainage configurations for the parcel specifying that all drainage is to be directed to flow away from the foundation in an acceptable manner. Back lot line swales shall be graded to a positive outlet or inlet structure at a minimum flow line slope of one percent (1 %) and shall have side slopes of 6:1 or less.

Section 201.01.01- Walkway, Driveway, Landscape, & Structure Construction

Construction and work such as walkways, driveways, landscaping or any structure shall be installed so that the construction of same will not interfere with drainage. All sidewalks, driveways, patios and other flat work shall be at an elevation relative to the foundation wall so that water will drain away from the structure on all sides and off the lot in a manner which will provide reasonable freedom from erosion and permanently pocketed surface water.

Section 201.01.02- Site Flow

The flow from off-site tributary areas that are tributary to an intermittent stream or overflow route that must pass through the parcel must be identified and flow routes designed in such a way to adequately convey the flow of all surface water for a 100-year storm frequency without damage to adjoining structures.

Section 201.01.03- Overflow Routes

All overflow routes for the 100-year storm and for accumulated storm water runoff from several lots or from off-site catchment areas must be accounted for. The total width of the flow route shall be entirely contained within an easement for drainage purposes.

Section 201.01.04- On-Site Channels

On-site channels shall be design to accommodate the necessary flow for the design event.

Section 201.02 – Retaining Walls

Retaining walls over the height of 30 inches will be required to be designed by an Illinois Licensed Structural Engineer. Retaining walls over the height of 30 inches will require railing.

Section 202 – Storm Water Management Facilities

Section 202.01 – General Requirements
The requirements for Storm Water Management calculations can be found in the DuPage County Countywide Stormwater and Flood Plain Ordinance as adopted by Village Ordinance.

The following items are the minimum general requirements:

1. Storm water management facilities may be of Wet Bottom or Dry Bottom design methodology. Wet Bottom design methodology is preferred by the Village; however a Dry Bottom design may be permitted upon approval of the Village Engineer.

2. Detention Basins shall be constructed using compacted earth and the use of retaining walls is not permitted unless otherwise approved by the Village Engineer.

3. A minimum of one (1) foot of freeboard shall be provided above the high water elevation of the basin, except at the overflow weir.

4. Maximum side slopes for dry bottom basin shall be five horizontal to one vertical (5:1)

5. Wet bottom basin slopes as follows: 5:1 maximum from 1' above normal water line to 10' horizontally from edge of high water line. 8:1 maximum from edge of normal water line to 1' above. 10:1 safety shelf from edge of normal water line to 1' water depth. 3:1 maximum from safety shelf to bottom of basin.

6. The overflow weir shall be designed to provide adequate capacity for the peak 100-year flow for the entire upstream tributary area at a flow elevation of 12 inches across the weir.

7. The rim elevations shall set an elevation that will allow the necessary 100-year flow to reach the 100-year outlet restrictor.

8. The restrictor structure shall be placed in a location where it is accessible for maintenance during the design event.

9. The restrictor shall be located to reduce short-circuiting the proposed pond.

Section 202.02 – Wet Bottom Detention Basins
The following are the minimum requirements for Wet Bottom Detention Basin design:

1. The pond depth shall be a minimum of ten (10) feet deep over twenty-five percent (25%) of the surface area of the pond. The minimum depth shall not be less than five (5) feet.
2. A ten (10) foot safety ledge sloped at 10:1 maximum shall be provided at an elevation one foot below the normal water level (NWL).
3. Finished surface restoration including shoreline protection shall be provided including rip-rap with geogrid from the safety ledge to one (1) foot above the NWL, or aquatic and emergent vegetation across the entire safety ledge to the HWL with signs prohibiting mowing on each lot. The surface restoration must meet native planting requirements.
4. Aerators must be provided in all wet bottom basins. *Section 202.03 - Dry Bottom Detention Basin*

Section 202.03 – Dry Bottom Detention Basins

Dry Bottom Detention Basins shall be constructed at a minimum slope across the bottom of the pond equal to one percent (1%).

Section 202.04 – Wetland Bottom Detention Basin

The following are the minimum requirements for a Wetland Bottom Detention Basin design:

1. Basin depth shall be a maximum of one foot deep below the NWL for a minimum of 75% of the basin excluding sediment pools
2. The basin shall be vegetated with native, non-weedy species from the HWL to the bottom of the basin.
3. Signs shall be posted at the limits of the native vegetation prohibiting mowing.

Section 202.05 – Restrictor Structure

The following are the minimum requirements related to the Restrictor Structure:

1. The restrictor structure shall be a minimum of six (6) feet in diameter and shall be provided with two (2) Type 1 frames and lids, which will be installed on each side of the precast steel reinforced concrete wei wall. Steps shall be provided on both sides of the weir wall.

2. The weir wall shall be a precast steel reinforced concrete wall that shall be installed within the restrictor structure. Under no circumstances will a poured in place weir wall be permitted. The weir wall shall be a minimum of four (4) inches thick with the top of the wall set at the two (2) year high water elevation for the basin.

3. The two (2) year restrictor shall be an orifice restrictor within the weir wall and the one hundred (100) year restrictor shall be a tube restrictor in the outlet storm sewer pipe as indicated in the Village's Standard Details. The restrictor pipes shall be located on the downstream side of the outlet structure.

4. In subdivisions less than ten (10) acres in size, the two (2) year orifice restrictor shall be drilled directly through the precast steel reinforced concrete weir wall at the proposed diameter. The use of steel plate restrictors bolted to the weir wall shall not be permitted in subdivision less than ten (10) acres is size.

Section 202.06 – Outlet Erosion Control

Necessary erosions control measures in the vicinity of the overflow weir are required to protect against flow from the 100-year event.

Downstream erosion control measures and calculations shall be provided corresponding to the release velocity through the proposed restrictor.

Section 203 – Wetlands

A report of a site investigation shall be submitted to the Village during the Preliminary Plat process. If wetlands are present all requirements, as specified in the Dupage County Countywide Stormwater and Flood Plain Ordinance as adopted by the Village Ordinance shall be followed.

Section 204 – Storm Water Pollution Prevention Plan

All construction sites that are required to file for coverage under the National Pollutant Discharge Elimination System (NPDES) general or individual permit for storm water discharges from construction site activities shall have a Storm Water Pollution Prevention Plan (SWPPP) that meets the requirements of Part IV of NPDES Permit No. ILR10 including management practices, controls, and other provisions at least as protective as the requirements contained in the Illinois Urban Manual (latest version).

Section 204.01- Plan Measures

The Soil Erosion and Sediment Control Plan shall designate a series of practices which shall be implemented either at the direction of the permittee or the permittee's representative on site or at the direction of the Administrator should an inspection of the site indicate a deficiency in soil erosion and sediment control measures. At a minimum, these measures shall include the following:

1. sediment basins;
2. sediment traps;
3. diversion swales;
4. silt fence;
5. temporary seeding;
6. mulching;
7. erosion control blanket.

Section 204.02- Disturbed Areas

The Soil Erosion and Sediment Control Plan for all disturbed areas included with the SWPPP shall include the location, type, and details of all required site soil erosion and sediment control measures, and shall show any proposed ground cover areas such as seeding, sodding, etc. A detailed construction phasing plan shall be provided, including the sequence of grading activities and the sequence for the implementation of temporary soil erosion and sediment control measures for each construction phase. Initial sediment and erosion control measures to be installed prior to stripping existing vegetation or mass grading shall also be indicated on the plans.

Section 204.03-Maintenance Schedule

A maintenance schedule for each soil erosion and sediment control measure used shall be indicated on the plan. At a minimum, the applicant and/or their designee shall inspect all soil erosion and sediment control measures on site once every seven calendar days and within 24 hours of the end of a one-half inch or greater rainfall event and any required repairs shall be made to keep these measures functional as designed. All repairs and modifications shall be reviewed by the Administrator or his/her designee.

Section 204.04- Conveyance Routes
Methods for conveying flows through the site during construction shall be indicated on the plans along with the location of the 100-year overland flood route. These conveyance routes shall be accommodated with the necessary temporary and permanent erosion and sediment control measures to reduce velocity and erosion and to protect the downstream conveyance. The expected 2-year and 10-year runoff rates from all off-site areas draining into the site shall be identified on the plan.

Section 204.05- Stabilization & Vegetation Measures
A separate plan shall also include a description of final stabilization and vegetation measures and the identification of a responsible party to ensure post-construction maintenance.

Section 204.06- Waste Control
The SWPPP shall also include guidance regarding the control of waste such as discarded building materials, concrete truck washout, chemicals, litter, and sanitary waste at the construction site that may cause adverse impacts to water quality.

SECTION 300 – STORM SEWER AND SUMP PUMP DRAIN SYSTEMS

Section 301 – General

The standards and requirements found in this section are for the materials and construction of storm sewer and sump pump drain systems with in the Village of Hinsdale, Illinois.

Section 302 – Materials

The following shall be the permitted materials for the storm sewer and sump pump drain systems:

Section 302.01 – Pipe:

Section 302.01.01 Storm Sewer:

a. Public Storm Sewer
   i. Reinforced concrete pipe (ASTM C76) with rubber ring gaskets joints (ASTM C443). Pipe class must be equal to or greater than the requirements of Article 550.03 of the IDOT Standard Specification.
   ii. Reinforced concrete elliptical pipe, (ASTM C507) with rubber ring gasket joints (ASTM C443). Pipe class must be equal to or greater than the requirements of Article 550.03 of the IDOT Standard Specification.

b. Private Storm Sewer
   i. Reinforced concrete pipe and concrete elliptical pipe. Pipe class must be equal to or greater than the requirements of Article 550.03 of the IDOT Standard Specification.

c. Alternate Storm Sewer Materials - Alternate materials (PVC, HDPE, etc.) may be used with written approval of the Village Engineer.

Section 302.01.02 Sump Pump Drain:

a. Public Sump Pump Drain: Poly Vinyl Chloride (PVC) Pipe SDR 35 (ASTM D-3034)
b. Private Sump Pump Drain: Poly Vinyl Chloride (PVC) Pipe SDR 35 (ASTM D-3034)

Section 302.02 – Structures: Inlet, Catch Basin, Manhole

Section 302.02.01 Public Structures: Precast Reinforced concrete (ASTM C478) – 5" wall thickness minimum.

Section 302.02.02 Private Structures: Precast Reinforced concrete (ASTM C478) – 3" wall thickness minimum.

Section 302.03 – Trench Backfill:

All trenches for storm sewers falling under or within five (5) feet of proposed or existing paved surfaces, or structures shall be backfilled with select granular material conforming to the gradation of CA 7.

Section 303 – Design Requirements

Section 303.01 – General Information

An adequate system of storm water drainage shall be constructed and installed, consisting of pipes, storm water detention facilities, tiles, swales, manholes, inlets and other necessary facilities that will adequately drain the subdivision and protect roadway pavements and buildings from flooding. The storm water drainage system shall be in compliance with Village's Storm Water Management Ordinance, the Standard Details, all other applicable ordinances enacted by the Village, and subject to the approval by the Village Engineer.

Section 303.01.01 Field Tile

All field tile that is to be taken out of service shall be removed using approved methods and plugged with a clay plug at the exterior boundary of the development. Active field tile identified during or after design shall be connected to the nearest storm sewer.

Section 303.01.02 Computations

Computations for the storm sewer system for on-site and off-site drainage shall be presented with engineering plans for approval by the Village Engineer. These computations shall include a plan and analysis of the existing downstream conveyance from the site discharge location to the nearest downstream tributary water way. The existing subsurface or surface drainage system shall be evaluated with regard to existing capacity or capability to properly convey the low flow groundwater and site runoff storage facility release without damage to downstream structures and land use on adjacent properties. If the outfall subsurface or surface drainage systems prove to be inadequate, it will be necessary to modify the existing systems or construct new systems, which will not conflict with the existing systems and will not impact the existing surrounding property land use. Existing subsurface systems shall only be used with extended detention design.

Section 303.01.03 Surface Drainage

Whenever any stream or important surface drainage course is located in any area which is being subdivided, the subdivider shall reserve an adequate drainage right-of-way as determined by the Village and the Illinois Department of Transportation, Division of Water Resources along each side of the stream for the purpose of widening, deepening, sloping, improving, or protecting the stream.

Section 303.01.04 Storm Sewer System Design

The storm sewer system shall be designed in accordance with the DuPage County Countywide Stormwater and Flood Plain Ordinance using a ten (10) year storm frequency or other methods approved by the Village Engineer. Culvert design and capabilities shall be determined according to the Illinois Department of Highways Standard Design Methods using a twenty-five (25) year storm frequency.

Section 303.02 – Storm Sewer System

The Storm Sewer System shall be designed for the 10-year event using the Modified Rational Method. Hydraulic Grade Line (HGL) calculations shall be included that provide two feet of freeboard between the 10-year HGL and the proposed rim elevations for all structures within the system.

Section 303.02.01 Pipe Size

The minimum allowable pipe size shall be twelve (12) inches for the entire storm sewer system. Ten (10) inch storm sewer shall be permitted in the subsurface low flow drainage system only.

Section 303.02.02 Velocity

The minimum velocity under design conditions shall be two (2) fps and the maximum velocity under design conditions shall be ten (10) fps.

Section 303.02.03 Clearance

Provide vertical and horizontal clearance between water main and storm sewer in accordance with Standard Specifications for Water and Sewer Main Construction in Illinois.

Section 303.02.04 Storm Sewer Configuration

The storm structure configuration shall be constructed in the following manner:

1. Inlet to Catch Basin to Manhole to discharge location,

2. Storm structure with three or more pipes connected must be a minimum of four (4) feet in diameter.

3. Storm Structures that are four feet or larger in diameter must have steps and a minimum 24 inch diameter opening in the casting.

4. Flared end sections shall conform to the IDOT detail and shall be installed with galvanized steel grates.

5. All existing drain tiles encountered on site shall be connected to the proposed storm sewer system at a storm sewer structure.

6. Storm sewer structures shall be provided at every other lot corner in the rear yard of all proposed developments. These structures shall be either an inlet or manhole. Structures with sumps will not be allowed unless otherwise approved by the Village Engineer.

7. IDOT Type 8 storm sewer grates are not permitted.

8. The storm sewer system shall be televised after the completion of the storm sewer, after Commonwealth Edison and Nicor installations, and prior to issuance of the first certificate of final occupancy.

Section 303.03 – Stormwater and Groundwater Management for Individual Properties

1. Stormwater and groundwater management for Individual Properties shall meet the requirements of the Village Stormwater Ordinance and these engineering standards.
2. All developments (subdivision or single lots) requiring a stormwater management permit shall demonstrate that the proposed combination of stormwater and groundwater discharges from a site shall not exceed the existing stormwater run-off calculations into each adjacent property (public or private). Using stormwater modelling methods approved by the Village Engineer, it is the developer and owner's responsibility to design a stormwater management plan, on- and off-site, which meets this requirement. Pre- and post- construction stormwater model calculations shall be provided as part of the permit application.
3. All developments (subdivision or single lots) requiring a stormwater management permit shall manage all runoff from rooftops, parking lots, and discharge from sump pumps, that are not directed into a storm sewer or stormwater management system, by directing this runoff onto a pervious, erosion-controlled route for at least 20 feet prior to crossing a property line. A vegetated route is a preferred Best Management Practice (BMP) to promote infiltration of stormwater and filtration of stormwater pollutants.
    a. This requirement includes the surface or sub-surface discharge of drain tiles conveying down spouts or sump pumps. Drain tile discharges in the parkway or street curb are prohibited.
    b. Individual downspouts that discharge at the building's foundation are exempt from this requirement.
4. Prior to submitting design documents, the seasonal groundwater table shall be determined to identify the potential for overactive sump pump discharges. The Village Engineer shall provide groundwater level, test boring requirements for this groundwater analysis.
5. Any sump pump or downspout discharge that creates a public nuisance will be required to remediate the issue to eliminate the nuisance.
    a. The Village Engineer shall determine if a discharge is a public nuisance using criteria including, but not limited to, the following: The discharge creates
        i. slippery conditions such as water, ice, mud or algae on sidewalks, streets, or alleys;
        ii. unreasonable erosion of downstream properties;
        iii. surface ponding for more than 5 days;
        iv. channelizing or focusing of sheet flows; or
        v. unreasonable flows to downstream properties
    b. Plans and specifications for remediation must be submitted by the developer or owner as part of a permit application and must be approved by the Village Engineer.
6. All sump pump discharge designs shall include the use of a level spreader. The minimum size will be 20'L X 5'W X 5'D. They are to be positioned so that the length of the level spreader is perpendicular to the surface flow direction. No portion of the level spreader may be within 20 feet of any property line. See level spreader detail for construction requirements.
7. Level spreader overflows can be connected to the Village separated storm sewer system. Four (4) inch PVC connected to the highest riser pipe at a depth of 18" from ground level will be allowed. Overflow connections can only be made to Village storm sewer structures, that is – inlets, catch basins, or manholes.

8. Downspout connections to level spreaders are prohibited. Downspouts can be connected to the site Velocity Controlled Best Management Practices (VCBMPs).
9. Level spreaders without overflow connections may be located upstream of site VCBMPs. A five (5) foot minimum clearance between the stone underground must be maintained.
10. The installation of the level spreader and site VCBMPs require visual inspection by the Village's Engineering Department.
    a. Inspection coordination is the owner's responsibility and must be performed prior to backfilling these devices.
    b. The inspections should be carried out once the excavation is made, lined, and the required pipe work installed. The stone to be used for backfill should be on-site and available for inspection.
    c. As-built measurements and depths of level spreaders and VCBMPs are to be included on the Final Grading Survey. Proposed and constructed volumes must be tabulated and certified.
    d. A stormwater management easement shall be established over the as-built locations of the VCBMPs and level spreaders.
11. All existing or proposed site storm sewers and drain tiles that are managing stormwater or groundwater, their connection and discharge points (for sump pumps and downspouts) shall be identified on the Final Grading Survey.

Section 304 – Construction Requirements

Section 304.01 – Pipe Bedding
Granular Pipe bedding material or granular cradle shall be required on all storm sewers installed within the Village of Hinsdale. Granular pipe bedding shall be a minimum of four (4) inches. The trench shall be backfilled with granular material to the springline of the pipe. The backfilled material shall meet the IDOT gradation of CA 7. (See Detail 4)

Section 304.02 – Pipe Cover
All storm sewer pipes shall have a minimum cover of thirty six (36) inches cover. All sump pump drain trunk and service lines shall have a minimum cover of thirty (30) inches.

Section 304.03 – Handling of Pipe
Storm sewer and sump pump drains shall be handled in a manner that will prevent damage. Damaged or defective material on the job site shall be rejected and replaced to the satisfaction of the Village. Methods of construction conducive to the damage of the pipe shall be corrected when called to the attention of the contractor.

Section 304.04 – Structures
All structures without sumps shall be provided with a cast in place concrete fillet to provide a smooth flow between pipe sections (See Detail 3, 24)

Manholes and Catch Basins, Type A are to be constructed with steps and a cone or flat top assembly with the opening rotated as necessary to achieve optimal casting alignment.

Section 304.05 – Adjustments
When structure adjustments are necessary, they will be performed with a maximum of two (2) adjusting rings with a maximum total height of 12".

Adjusting rings shall be reinforced concrete for heights greater than two (2) to a maximum of twelve (12) inches. Adjusting rings of a height equal to or less than two (2) inches shall be preformed rubber.

If an adjustment is to be made to match a slope, preformed rubber tapered rings must be used.

Section 305 – Permit/Acceptance

Section 305.01 – Open Cutting of Pavement
Open cutting of pavement is not allowed unless approved by the Village.

Section 305.02 – Storm Sewer Acceptance
Prior to acceptance the storm sewer must be cleaned and operational. The storm sewer system shall be televised after the completion of the storm sewer, Commonwealth Edison and Nicor installations, and prior to issuance of the first certificate of final occupancy.
A copy of the video tape for the televising of the storm sewer shall be delivered to the Public Services Department.

Section 305.03 – Sump Pump Collection System Acceptance
Prior to acceptance, the sump pump collection system must be cleaned and operational. The sump collection system shall be televised at the time of final inspection. A copy of the video tape for the televising of the sump pump collection system shall be delivered to the Public Services Department.

SECTION 400 – SANITARY SEWER SYSTEM

Section 401 – General

The standards and requirements found in this article are for the materials and construction of sanitary sewers within the Village of Hinsdale.

Section 401.01 –Specifications
These specifications cover pipe for sanitary sewers and service connections, sewer fittings, manholes and all appurtenances normally used for sanitary sewer collection systems. Special considerations will be cover in the detailed plans and special provisions covering the proposed construction. Sanitary sewers shall be installed in accordance with the "Standard Specifications for Water and Sewer Main Construction in Illinois", latest edition, and applicable regulations of the Flagg Creek Water Reclamation District (FCWRD), or Metropolitan Water Reclamation District of Greater Chicago (MWRD) except as modified herein.

Section 401.02 – Start of Construction
Sanitary sewer construction shall not start before acquiring either a FCWRD or MWRD Permit and an IEPA Construction permit number and an Illinois Pollution Control Board permit number.

Section 401.03 – Sanitary Sewers
All sanitary sewerage of domestic and other water borne wastes shall be collected and conveyed in a sanitary sewer pipe system to a point of discharge into an existing sanitary sewer system, interceptor, or sewage treatment plant. No sanitary sewerage shall be allowed to enter any storm sewer system or discharge onto the ground or into receiving streams without first being treated in accordance with Village, County, State, and Federal regulations.

Section 402 – Materials

Section 402.01 - Pipe
All sanitary sewer pipe materials shall conform to the latest applicable ANSI, ASTM, AWWA, AASHTO, or other nationally accepted standards. Only the following sanitary sewer pipe and joint materials are approved for use in the Village of Hinsdale, Illinois.

1. Polyvinyl Chloride (PVC) pipe conforming to ASTM D2241 (SDR 26) with elastomeric gasket type joints conforming to ASTM F477 and ASTM D3139.
2. Polyvinyl Chloride (PVC) pipe conforming to AWWA C900 (DR 18) with joints conforming to ASTM D3139.
3. Polyvinyl Chloride (PVC) pipe conforming to AWWA C905 (DR 25) with joints conforming to ASTM D3139

The name of the manufacture, class and date of issue shall be clearly identified on all sections of pipe. The contractor shall also submit bills of lading, or other quality assurance documentation when requested by the Village Engineer.

Section 402.02 – Manholes
Precast Reinforced Concrete Manholes meeting ASTM C478 provided with the following:

1. Cretex internal Chimney Seals and Parsons Rainstopper inserts. b. Water stop gaskets (See Detail 20)
2. Macwrap External joint sealing bands in accordance with ASTM C877 or

approved equal.

Section 402.03 – Bedding and Trench Backfill

All sanitary sewer pipes will be bedded in select granular material conforming to the gradation of CA 7. All trenches for sanitary sewers falling under or within five (5) feet of proposed or existing paved surfaces, or structures shall be backfilled with select granular material conforming to the gradation of CA 7.

Section 403 – Design Requirements

Section 403.01 – Sanitary Sewer Collection System

The design of the sanitary sewer collection system shall comply with all IEPA Design Standards and either FCWRD or MWRD regulations, except as noted below:

1. The maximum length between manholes shall not exceed 400 feet.
2. The minimum allowable cover over public sanitary sewers shall be six feet.
3. Manholes are required at upstream ends of all pipes.
4. Manholes intended for future connections shall include one length of pipe, minimum, beyond the proposed structure.
5. The sanitary sewer system shall be extended to farthest limit of property unless directed otherwise in writing by Sanitary District.
6. The minimum sanitary sewer slopes shall be 0.05% higher than the minimum self-cleaning slope, except for interceptor sewers where minimum slope is required. For example, the minimum self-cleaning slope for eight (8) inch pipe is 0.40%. The proposed slope to be provided within the design shall be 0.45% except in the following instance:

8" Sanitary Sewer Minimum Slope Requirements

Number of Taps	Minimum slope, in percent
Less than 3	1.00%
4	0.90%
5	0.80%
6	0.65%
7	0.50%
8	0.45%

Section 403.01.01 Trunk Lines

The plan shall conform to overall Village plans for any trunk lines, existing or proposed, which traverse the subdivision

Section 403.01.02 Location of Sewer Structures

1. Proposed sanitary sewer and sanitary sewer structures are not permitted within proposed roadways, sidewalks, curbs and gutter or driveways except for utility crossings. All sanitary sewer structures shall be located within ten (10) feet of the common lot lines extended.

2. The location of the proposed sanitary sewer shall be located a minimum distance of three (3) feet behind the back of curb and shall be centered between the back of curb and front of sidewalk. The proposed sanitary sewer shall not be located within the rear or side yards of any proposed lot unless directed by the Village Engineer.

Section 403.02 – Sanitary Sewer Service Requirements

1. Minimum service diameter shall be six (6) inches.

2. Minimum permissible slope shall be one percent (1%). Lower slopes shall be permitted for larger diameter pipes if the service will provide a minimum velocity of two (2) fps at average daily flow.

3. Riser assemblies shall be constructed with the following materials:

Service Riser Angle	
Less than 45^{o}	45^{o} and Greater
PVC, SDR 26, fittings and pipe.	Ductile Iron Fittings and pipe.

4. Allowed sanitary sewer pipe remains as follows:
    a. PVC SDR 26, ASTM 2241, and ASTM 3139 gaskets.
    b. All PVC fittings and pipe shall comply with the requirements of ASTM 2241 an ASTM 3139.
    c. All Ductile Iron components shall be provided with Protecto 401 coating All services shall be extended to five (5) feet inside of the property line for single family residential lots.

5. One service shall be provided for each residential / commercial unit.

6. All sanitary services shall have a minimum depth at the property line equal to four (4) feet.
7. In locations where the proposed development includes a park site to be transferred to the Village, the site shall be provided with a sanitary sewer service.

Section 404 – Construction Requirements

Section 404.01 – Depth of Pipe Cover

1. All pipes shall be laid to a minimum depth of six (6) feet measured from the proposed ground surface to the top of the pipe, unless specifically allowed otherwise in special circumstances by the Village Engineer.

2. All sanitary sewer and service with ground cover more than fifteen (15) feet shall be constructed of PVC DR 18 or DR 25, conforming to AWWA C900 or AWWA C905 dependent upon depth.

Section 404.02 – Pipe Bedding

Granular pipe bedding, haunching and initial backfill material or granular cradle shall be required on all sanitary sewers installed in the Village of Hinsdale. Granular pipe bedding shall be a minimum of four (4) inches. The trench shall be backfilled with granular material to a minimum of one (1) foot over the top of the pipe per Hinsdale Standard Detail No. 21. Bedding, haunching, initial and final backfill material shall conform to IDOT gradation CA 7.

Section 404.03 – Handling of Pipe

Sanitary sewer pipe shall be handled in a manner that will prevent damage. Damaged or defective material on the job site shall be rejected and replaced to the satisfaction of the Village Engineer. Methods of construction conducive to the damage of sewer pipe shall be corrected with called to the attention of the contractor. All pipe and fittings shall be examined by the contractor above grade before placement in the trench.

Section 404.04 – Laying of Pipe

Sanitary sewer pipe shall be laid true to line and grade as set forth in Section 31 paragraph 31-1.02 of the "Standard Specifications for Water and Sewer Main Construction in Illinois." Dirt and other foreign material shall be prevented from entering the pipe or pipe joint during handling of laying operations.

Any pipe or fitting that has been installed with dirt or foreign material in it shall be cleaned and re-inspected. At times when pipe laying is not in progress, and at the end of each working day, the open end of the pipe shall be closed with a water tight plug to ensure absolute cleanliness inside the pipe. The Village Engineer may request mechanical cleaning (jet flushing) if necessary to ensure clean acceptable pipes, at the contractor's expense.

Section 404.05 – Installing Pipe Through Casings

This work shall be in conformance with Section 20-2.19 of the "Standard Specification for Water and Sewer Main Construction in Illinois" except as modified in Hinsdale Standard Detail No. 23.

Section 404.06 – Utility Identification

A wood stake (4 inch by 4 inch by 6 foot) with not less than the top two (2) feet painted green shall be installed next to each sanitary sewer manhole, clean-out, and at the end of each sewer stub and service stub. The wood stake shall be maintained in a plumb position until Village acceptance of the utility structures.

When newly poured curbs are installed the contractor shall use a Village approved stamp to indent the wet concrete with an "S" to identify the location of each sewer service stub and "SM" for sanitary manholes. If the developer and/or the contractor fail to indent the curbs as outlined above, the Village will then require that identification medallions or other symbols as approved by the Village Engineer be affixed to the curb.

Section 405 – Testing and Acceptance

All sanitary sewers shall be pressure tested in accordance with Article 31- 1.11B(3) of the "Standard Specifications for Sewer and Water Construction in Illinois", latest edition, and deflection tested in accordance with Article 31-1.11B(4) of the "Standard Specifications for Sewer and Water Construction in Illinois", latest edition. Deflection testing shall be done no sooner than 30 days after the pipe has been backfilled. No sooner than 30 days after sewers have been installed, they shall be inspected by close circuit color television to determine if any pipe installation defects have occurred, and to determine the location of services. One copy of the video tape and written inspection reports shall be furnished to the Village.

All Sanitary manholes shall be tested for leakage by vacuum testing in accordance with ASTM C-1244. One copy of the written inspection reports shall be furnished to the Village.

SECTION 500 – WATER DISTRIBUTION SYSTEM

Section 501 – General

The standards and requirements found in this article are for materials and construction of water mains within the Village of Hinsdale, Illinois. Specific references made herein for manufactured materials such as pipe, hydrants, valves, and fittings refer to designations for American Water Works Association (AWWA) or to the American National Standards Institute (ANSI). Nothing herein shall constitute or imply an endorsement by the Village of Hinsdale of any one material over another.

Section 501.01 – Specifications

Theses specifications cover pipe and fittings and items normally used for water distribution systems. Special considerations will be covered with the "Standard Specifications for Water and Sewer Main Construction in Illinois", latest edition, except as modified herein. In cases of conflict between standards, the more restrictive standard shall apply, as determined by the Village Engineer.

Section 501.02 – Start of Construction

Water main construction shall not start before acquiring and IEPA Construction Permit.

Section 502 – Materials

Section 502.01 – Pipe

All water main pipe materials shall conform to the latest applicable ANSI and AWWA, or other nationally accepted standards. Only the following water main pipe and joint materials are approved for use in the Village of Hinsdale, Illinois

1. Water main quality PVC shall meet requirements of Section 40-2.03, .04, and .05 of the Standard Specifications for Water and Sewer Main Construction. PVC Pipe shall meet AWWA C900-75 SDR 18 quality and shall have the same outside diameter as ductile iron pipe as per Table 2 of AWWA C900-75. Tracer wire and warning tape shall be installed with the pipe.
2. Ductile Iron water main conforming to AWWA C151-76, thickness class 52 in conformance with AWWA C150-76 and provided with push on joints conforming to AWWA C111 with rubber gaskets. All pipe shall be cement lined and in conformance with AWWA C104. All ductile iron water main installed shall be polyethylene encased for corrosion protection. The polyethylene film encasement required for the ductile iron water main pipe installation shall have an 8mil minimum thickness and shall conform to ANSI/AWWA C105/A21.5-93 (only if authorized).

The Village shall make the determination of the material type to be used. The determination will be based on several factors including but not limited to traffic counts, in situ soil conditions, and etc.

Section 502.02 – Fittings

All fittings shall conform to AWWA C110-77 and be constructed of ductile iron with cement lining conforming AWWA C104.

All fittings shall have mechanical joints with Mega-Lug retainer glands by EBBA Iron, or Ford Wedge Action retainer glands. All bolts shall be stainless steel.

Section 502.03 – Valves

Only the following valves are approved for use in the Village of Hinsdale.

1. For valves sixteen (16) inches and less, Resilient wedge Gate Valves manufactured by Mueller, or Clow, or US Pipe C515 conforming to AWWA C509 with mechanical joint fittings and MEGA-LUG retainer glands manufactured by EBAA Iron or Ford Wedge Action Retainer, each with stainless steel bolts installed according to the table on Detail No. 14. All bolts and nuts in the assembly of and attachment of the valve shall be stainless steel.
2. For valves greater than sixteen [16] inches, Pratt Butterfly Valves conforming to AWWA C504 with mechanical joint fittings and MEGA-LUG retainer glands manufactured by EBAA Iron or Ford Wedge Action Retainer, each with stainless steel bolts installed according to the table on Detail No. 14. All bolts and nuts if the assembly of and attachment of the valve shall be stainless steel.

Section 502.04 –Fire Hydrant

Fire hydrants shall be US Pipe Metropolitan / M-94 type, provided with a 6" US Pipe or Mueller Resilient wedge Auxiliary gate valve attached to the hydrant with a flange type fitting conforming to AWWA C509 with a Mueller 10360 or East Jordan Iron Works 6645 Valve Box and Valve Box Stabilizer. (See Detail No. 11 and 12) All Nuts and bolts in the assembly and attachment shall be stainless steel.

Section 502.05 – Valve Vault

Valve Vaults shall be precast reinforced concrete conforming to ASTM C478 provided with extrudible preformed plastic gaskets at all joints and an East Jordan Iron Works 1050A frame and cover with "Village of Hinsdale" and Water cast into the cover. (See Detail No 14)

Section 502.06 – Pressure Connection

Pressure connections for water main sizes of up to 12" shall be made through a gate valve that complies with Section 502.03 of the Village Standard and a Mueller stainless steel tapping sleeve of the appropriate dimension. A valve vault that complies with Section 502.05 of the Village Standard shall house the pressure connection. Pressure connections shall be made only in the presents of an authorized Village of Hinsdale representative. (See Detail No. 13)

Section 502.07 – Sampling Station

Water Sampling Stations shall be manufactured by GIL Industries, Model Number EH101-50 or an approve equal. (See Detail No. 16)

Section 502.08 – Water Service

The following items shall be provided for each water service in the Village of Hinsdale

1. Service Pipe one and one half (1-1/2) inch or less in diameter shall be copper type K conforming to ASTM B88, with Flared fittings. Minimum depth shall be four and one half (4-1/2) ft of cover to finished grade. Minimum service pipe diameter is one and one half (1-1/2) inch.
2. Corporation stops shall be flared and with a plug valve. Accepted Manufactures are Mueller, Ford, or McDonald.
3. Curb stops shall be flared with a ball valve and Minneapolis pattern. Accepted manufactures are Mueller, Ford, or McDonald.
4. Service boxes for a one (1) inch service shall be a Mueller H-10302 or equivalent with a one and one half (1-1/2) inch pipe shaft.
5. Service boxes for a one and one half (1-1/2) inch services shall be a Mueller H-10302 or equivalent with a one and one half (1-1/2) inch pipe shaft.

All services shall require full circle stainless steel tapping clamps. Accepted models are JCM Type 164, or Smith-Blair type 264. The tap should be made at a forty-five (45) degree angle from the top of the main. Service taps shall be made no closer than sixteen (16) inches from other connections, bells, or fittings. The service line should be installed at a ninety (90) degree angle from the water main up to the service box.

Section 503 – Design Requirements

Section 503.01 – Water Distribution System Requirements:

1. The minimum water main diameter for public water main systems shall be eight (8) inches.

2. Dead end water mains are not permissible, except in cul-de-sacs as referenced later within this document.

3. The water distribution system shall be extended to farthest limit of property and looped to an existing system (unless directed otherwise in writing by Village Engineer).

4. Pressure taps are required for all connections to the existing water distribution systems unless otherwise directed in writing by the Village Engineer.

5. Fire Hydrants shall be spaced at a maximum separation of 350 feet measured along the proposed water main.

6. Fire hydrants and main line valves shall be installed adjacent to one another within ten (10) feet of the adjacent lot line extended.

7. Hydrant locations, dimension to the back of the nearest curb, final grade ring elevation. Hydrants shall be placed a minimum of three (3) feet behind the back of curb.

8. Hydrants shall not be placed in locations where utility crossings require a hydrant depth in excess of seven (7) feet.

9. A Sampling Station shall be provided for every development. The sampling station shall be staked for location and grade prior to construction.

10. Horizontal and vertical separation requirements shall be provided in conformance with IEPA regulations.

11. Proposed water mains within cul-de-sacs shall not be looped and shall be extended to the end of the cul-de-sac and terminated following the auxiliary valve and fire hydrant. The fire hydrant shall be thrust blocked as indicated in the Village's standard detail.

12. At locations of water main stubs for future connections, a fire hydrant shall be provided immediately before a gate valve and followed by a twenty (20) foot section of water main with the applicable plug and thrust-blocking.

13. The location of the proposed water main shall be located a minimum distance of three (3) feet behind the back of curb and shall be centered between the back of curb and front of sidewalk. The proposed water main shall not be located within the rear or side yards of any proposed lot unless directed by the Village Engineer.

14. In locations where the proposed development includes a park site to be transferred to the Village, the site shall be provided with a water service for future connections. A meter vault shall be installed on the future stub and all tap-on fees shall be paid by the developer.

15. Water valves shall be provided so that the maximum services affected by service loss in the event of a main break will not exceed 15 units. In addition, sufficient valving shall be provided to ensure that no more than three valves are necessary in order to isolate a section of water main.

16. Sixteen inch and larger mains shall include restrained joint pipe for three pipe lengths from each fitting.

Section 503.2 – Water Service

Water services shall not exceed one hundred (100) feet in length from the water main to the buffalo box. Splices within the water services shall not be permitted. The curb stop shall be installed in the parkway at a point eighteen (18) inches from the outer edge of the sidewalk if a sidewalk is in place. If there is no sidewalk, the curb stop shall be installed seven and one half (7-1/2) feet from the lot line, except that in commercial areas where there are no parkways. Buffalo boxes may be located at such points as may be approved by the Director of Public Services

Section 504 – Construction Requirements

Section 504.01 – Depth of Cover

Unless otherwise shown on the plans or indicated in the Special Provisions, all pipes shall be installed with a minimum of five feet of ground cover, measured from the proposed grade to the top of the pipe. In areas subject to subsequent excavation or fill, the mains shall be laid to the grades shown on the plans.

Section 504.02 – Pipe Foundation

The trench shall have a flat bottom conforming to the grade to which the pipe is laid. The pipe shall be laid on sound aggregate bedding, no less than four (4) inches in depth, true to grade and shall have a firm bearing for the full length of pipe. Any part of the trench excavated below grade shall be corrected with trench backfill material and thoroughly compacted. Once installed the pipe shall be bedded in aggregate to a depth of six inches above the pipe. Aggregate bedding shall conform to IDOT gradation CA 7.

Section 504.03 – Handling of Pipe

Section 504.03.01 Damage Prevention
All pipes shall be handled in such a manner as will prevent damage to the pipe or coating. Damaged pipe and other accessories shall be rejected and replaced to the satisfaction of the Village Engineer. No chains shall be used during the installation of the proposed water main. Any pipe that is scratched during installation shall be sprayed with a dialectric undercoating paint. The methods of handling shall be corrected to prevent further damage when called to the attention of the contractor.

Section 504.03.02 Pipe & Fitting Inspections
The pipe and fittings shall be inspected by the contractor for defects while suspended above grade.

Section 504.03.03 Dirt & Foreign Objects
Dirt or other foreign materials shall be prevented from entering the pipe or pipe joint during the handling or laying operations and any pipe or fitting that has been installed with dirt or foreign material in it shall be thoroughly cleaned. At times when pipe laying is not in progress, and at the end of each working day, the open ends of the pipe shall be closed by a water tight plug to ensue absolute cleanliness inside the pipe. The plugs shall not be removed until the trench has been dewatered to the satisfaction of the Village Engineer.

Section 504.04 – Connections to Existing Mains

A representative from the Village of Hinsdale Public Services Department must be present at all connections to existing water mains. Connection to existing water mains shall be accomplished without interruption to service. Stainless steel Pressure tapping saddles and valve with stainless steel hardware, nuts, and bolts are to be provided at the point of connection to the existing system. The material removed from the existing main, the “cookie” must be presented to the Village of Hinsdale Public Services department representative following the completion of the tap. The connection shall be made in accordance with Standard Detail No. 13.

Section 504.05 – Electrical Continuity Ductile Iron

All pipe fittings shall be connected so that electrical current flow will not be reduced. This shall be accomplished through the use of brass continuity wedges. PVC water main shall be installed with tracer wire.

Section 504.06 – Corrosion Protection

The polyethylene encasement tube shall be installed and securely taped in accordance with manufacturers specifications. Damaged encasement tube shall be repaired with tape and/or a polyethylene tube patch in accordance with manufacturer's specifications. Watermain installed in casing pipe sleeves, bridging sewers or other obstacles, shall not be encased.

Section 504.07 – Utility Identification

Section 504.07.01 Wood Stake Installation

A wood stake (4 inch by 4 inch by 6 foot) with not less than the top two (2) feet painted blue shall be installed next to each water vault, valve box, buffalo box, and at the end of each main stub. The wood stake shall be maintained in a plumb position until Village acceptance of the utility structures.

Section 504.07.02 Water Service Identification

When newly poured curbs are installed the contractor shall use a Village approved stamp to indent the wet concrete with a "W" to identify the location of each water service stub and "WV" for water valve vaults. If the developer and/or the contractor fail to indent the curbs as outlined above, the Village will then require that identification medallions or other symbols as approved by the Village Engineer be affixed to the curb.

Section 505 – Filling, Disinfection, and Flushing

Section 505.01-Water Draws

Water for all filling, testing and chlorinating shall be drawn from the Village's system at the proposed point of connection.

Section 505.02 – Flushing Schedule

A Flushing schedule shall be subject to the Village's Water Department's review and approval.

Section 505.03- Flushing & Disinfection Conformance

Water mains shall be flushed and the disinfected by use of chlorine in conformance with Article 41-2.14 of the "Standard Specification for Water and Sewer Main Construction in Illinois", latest edition.

Section 505.04- Chlorine Use

Dry Gas Chlorine, Liquid Chlorine, and Chlorine-Bearing Compounds in Water shall be introduced into the new main through a one (1) inch corporation stop.

Section 506 – Testing and Acceptance

Section 506.01 – Pressure Testing

All new mains shall be tested at a maximum pressure of 150 p.s.i., for two (2) hours and shall not exceed the allowable leakage indicated by the "Standard Specification for Water and Sewer Main Construction in Illinois", latest edition. The test shall be performed in accordance with AWWA C600 and C603. If the mains to be tested include cast in place concrete thrust blocking, the test must be performed a minimum of five (5) days after the installation of the thrust blocking.

Section 506.02 – Bacteriological Testing

Section 506.02.01-Residual Level
Following chlorination, all treated water shall be thoroughly flushed from the newly laid pipe at its extremities until the replacement water throughout it length shows, upon test, a residual not in excess of that carried in the source of supply.

Section 506.02.02- Bacteriological Results
After flushing, water samples collected, at the rate prescribed by the IEPA, from the treated piping system shall show satisfactory bacteriological results. The bacteriological analysis must be performed by a laboratory approved by the Director of the Illinois Department of Public Health.

Section506.02.03- Unsatisfactory Bacteriological Results
Should the initial treatment result in an unsatisfactory bacterial test, the original chlorination procedure shall be repeated by the contractor until satisfactory results are obtained.

Section 506.03 – Acceptance

The water main shall be accepted after the following requirements have been met:

1. Written test result for both pressure and bacteriological test submitted to the Village Engineer.

2. An approved inspection of the water main and its appurtenances has been conducted by the Village Department of Public Services.

SECTION 600 – PUBLIC ROADWAY SYSTEM

Section 601 – General

The following list of Standard Construction Documents defines the methods, materials, and testing to be utilized when designing and constructing roadway improvements. The sections in this specification are intended to define further particular elements of both design and construction of roadways in Hinsdale, Illinois. The Village Engineer shall decide all questions that arise as to the interpretation of the specifications.

1. "Standard Specification for Road and Bridge Construction", latest edition, prepared by Illinois Department of Transportation (IDOT)
2. Supplemental Specifications and Recurring Special Provisions, latest editions and updates (IDOT).
3. Design Manual, latest edition (IDOT)
4. Construction Manual, latest edition (IDOT)
5. Soils Manual, latest edition (IDOT)
6. Highway Standards, latest edition (IDOT)
7. Manual on Uniform Traffic Control Devices, latest edition (Federal Highway Administration)
8. AASHTO Standards, latest edition

Section 601.01 – Protection of Right of Way Improvements

Section 601.01.01- Damage Protection

The developer and contractor shall have the responsibility to adequately protect the pavement and property, curb and gutter and other right of way improvements, whether newly constructed or existing, from any and all damage. Sufficient means shall be employed by the contractor to protect against such damage to the satisfaction of the Village Engineer.

Section 601.01.02- Damage Repair & Replacement

Any new or existing improvements that are damaged shall be repaired or replaced in a manner which is satisfactory to the Village Engineer.

Section 601.01.03-Right to Work

The contractor and/or developer shall secure all necessary right to perform any work on private property not within the ownership right of the developer. The developer shall bear the sole responsibility for damages that may occur as a result of work performed under contracts that they initiate.

Section 601.2 – Roadway Signage

The Village shall provide and install all roadway signage along public right of way. The developer shall reimburse the village for the material and labor cost incurred for this work.

Section 602 – Design Requirements

Section 602.01 –Street Cross sections

Minimum required street cross sections have been developed for all streets with in the Village of Hinsdale. These are given in Standard Detail Nos 31 through 37. The cross section for the arterial roadway is the minimum allowable. A pavement design shall be submitted for all Arterial road improvements for approval by the Village Engineer. Any variance from the Standard Details for the remaining roadways will not be allowed unless approved by the Village Engineer. The minimum allowable pavement structure for residential pavement is 3.0; 2'' of surface course, 3.0'' of binder course, and 10'' of stone base.

Section 602.02 – Horizontal Alignment

The design of residential streets shall be so laid out that their use by through traffic will be discouraged. In a residential development where a lot is at the intersection of a residential street and a collector or arterial, the covenant for the subdivision shall prohibit the installation of driveways along the property line of the lot, which forms the line of the collector or arterial street. The following are required items:

1. Roads shall be designed so that all deflection in horizontal alignment will be accomplished through segments of circular curves properly incorporated into the design. The minimum permitted centerline radii shall be as follows:
    i. Collectors and arterial streets: 450 feet
    ii. All other streets: 250 feet

2. A tangent of at least 100 feet shall be introduced between two curves either one of which has a radius of 250 feet.

3. Street jog with center line offsets of less than 125 feet should be avoided unless otherwise approved by the Village Engineer.

4. Clear visibility, measured along the centerline of the street, shall be provided for at least 300 feet on all arterial streets, at least 200 feet on all collector streets, and at least 100 feet on all other streets, unless otherwise indicated by the Village Engineer. In some cases the Village Engineer reserves the right to request an Intersection Site Distance Study.

5. The design of intersection must show evidence that all street intersections and confluences encourage safe traffic flow.

Section 602.03 – Vertical Alignment

The minimum longitudinal pavement slope shall be 0.40%.

There shall be vertical curves at all locations where the algebraic difference exceeds 1.25%. The "K" values of the vertical curves shall meet the requirements of the intended design speed.

Section 602.04 – Cul-de-Sacs, "T" turnarounds and Block Length

Section 602.04.01- Cul-de-sacs

The length of a street terminating in a Cul – de – Sac shall be measured along the centerline of the road from the center of the circle to the near right of way of the intersecting street and shall not exceed 500 feet for subdivisions with lots having less than 15,000 square feet, or 900 feet for subdivisions with lots having at least 15,000 square feet and no more than 35,000 square feet, and in no case shall the length exceed 1,200 feet.

Section 602.04.02- "T" Turnarounds

Where there is a probability of extending a street beyond the present subdivision, a "T" turnaround should be considered, 20 feet wide by 30 feet in length on both sides of the street right of way. Driveways shall not be constructed on "T" turnarounds.

Section 602.04.03 – Block Length

The maximum length of blocks permitted is 1,200 feet. The minimum block width shall not be less than 250 feet. Blocks over 800 feet may require crosswalk easements. Crosswalk easements not less than ten (10) feet in width shall be provided where deemed necessary by the plan commission at the approximate centers of the blocks. The use of additional crosswalk ways in any instance to provide safe and convenient access to schools, parks, or other similar destination may be recommended by the plan commission.

Section 602.05 – Overland Flow Path Locations

In locations where the roadway is at a low point and the indicated overland flow route is to be directed through the side yard the design shall be such that a maximum of six (6) inches of ponding is allowed. The parkway shall be graded such that the overland flow route is accommodated. The sidewalk at these locations shall be constructed such that it does not impede the overland flow path. The developer shall construct a minimum of twenty lineal feet of sidewalk in all locations where an overland flow route is to cross the sidewalk.

Section 602.06 – Parkway Preparation and Restoration

Section 602.06.01 Parkway Restoration
All parkways within the street's right-of-way, which are to have a finished earth surface, shall be graded with topsoil and seeded or sodded.

Section 602.06.02 Parkway Grading
All parkways between the sidewalk and curb shall be graded so as to have a minimum cross-drainage slope of four (4%) percent and a maximum cross-drainage slope of eight (8%) to the curb line except in situation as detail in Section 602.04.

602.06.03 Acceptable Sub-grade
Unsuitable soil, boulders, and other debris, including broken or excess concrete shall be removed from the parkway so as to provide an acceptable subgrade. Stumps shall be removed to a minimum of 12-inches below the proposed finished grade.

Section 602.06.04 Top Soil Preparation
After the parkway subgrade has been prepared, acceptable topsoil material shall be placed to a minimum depth of six inches (6") and graded to proposed finish surface.

Section 603 – Flexible Pavement

All streets within Village limits shall be constructed of Flexible Pavement unless otherwise approved by the Village Engineer. The pavement of all streets and the material used shall comply with Standard Detail Nos. 31 – 37.

Section 604 – Curb and Gutter

Section 604.01 – Types
The types of curb and gutter allowed shall be either the barrier or mountable type as depicted in Standard Detail Nos. 27 and 28.

Section 604.02 – ADA Compatibility
Depressed curbs shall be provided at all intersection of sidewalk and roadway, as approved by the Village Engineer. The dimensions and locations shall comply with Detail No. 29.

Section 604.03 – Protective Treatment
All concrete curb, gutter, and sidewalks shall be cured in accordance with IDOT "Standard Specification for Road and Bridge Construction", latest edition. All provisions of Section 1020 shall be employed; in addition when membrane curing compounds are utilized they shall also be a type that provides a protective seal that is satisfactory to the Village Engineer. All membrane products shall be applied in accordance with the manufacturer's recommendations.

Section 605 – Roadway Lighting

Section 605.01 – General
This section is intended to further define the elements of both design and construction of street lighting and street light systems in Hinsdale, Illinois. All work and equipment performed and installed under this section shall be governed and comply with the following specifications, manuals, and codes. The most current editions and all subsequent revisions and alterations for the specifications are required. The Village Engineer shall decide all questions that arise as to the interpretation of the specifications.

1. The Standard Specifications for Road and Bridge Construction, adopted by the Illinois Department of Transportation.
2. The Manual on Uniform Traffic Control Devices for Streets and Highways, and the Illinois Supplement to the National Manual on Uniform Traffic Control Devises adopted by the Illinois Department of Transportation.
3. The National Electrical Code
4. The National Electrical Safety Code
5. The Safety Rules for the Installation and Maintenance of Electric Supply and Communication Lines
6. ASTM Specification
7. AASHTO Standards

Section 605.02 – Street Lighting Design
The Design of street lighting for streets under the jurisdiction of the Village of Hinsdale shall meet or exceed the following requirements.
Streetlight shall be placed:

1. At each intersection
2. On each Cul-De-Sac, on the point where the tangent meets the circular outside of the Cul-De-Sac
3. At mid-block locations. The spacing for mid-block streetlights shall not exceed 400 feet.

Section 606 – Material Testing

The testing of materials for improvements under the jurisdiction of the Village of Hinsdale shall meet or exceed the following requirements.

Test Item	Test	**Who Performs Test***	**Number of Tests**	**Test Paid for By**	**Test Ordered By**
Soil predesign (not required for residential streets)	IBR	SC	1 per 500 LF of Pavement, min 2 per location	Developer	Developer
Subgrade	Proof roll	VE	Min of entire road, each lane of travel	Developer	Village
	Stringline	VE	As Needed	Developer	Village
Base	Proof roll	VE	Min of entire road, each lane of travel	Developer	Village
	Stringline	VE	As Needed	Developer	Village
Concrete Curb and Gutter, Sidewalk	General	VE	As Needed		
	Strength	SC	1 Set (3 per set) for every 50 C.Y. min. 1 per pour.	Developer	Developer
Asphalt	General Laydown	VE	1st day for each material until roll pattern established	Developer	Developer
	Nuclear	SC	Min. of 4 sets of tests per day and location	Developer	Developer

*** SC = Soil Consultant, VE = Village Engineer**

Section 606.01 IDOT Standards

All tests performed shall be in accordance with the standards as set forth by the Illinois Department of Transportation.

Section 606.02 Proof Roll Requirements

The proof roll shall be performed using a full loaded 50,000 LB GVW, Tandem Axle, commonly referred to as a six wheeler. The developer or the developer's agent must provide the fully loaded vehicle.

Section 606.03 Rights & Responsibilities

The Village Engineer and/or his representative, reserves the right to reject all materials that were not tested at the time of installation or order testing of the installed materials. The developer will be responsible for all cost incurred for testing and any restoration required due to the testing.

If any material fails to meet the minimum requirements, the developer shall remove and replace the failing material.

SECTION 700 – SITE DEVELOPMENT

Section 701 – General Design Criteria

This section covers the Village of Hinsdale standards for site engineering for nonresidential developments and apartments. Design elements that are incorporated into this section include parking areas, vehicular and pedestrian access, and drainage. Stormwater detention requirements are provided in Section 200 of this manual.

Section 702 – Residential Site Requirements

Section 702.01 – Minimum Lot Area and Dimensions

The minimum lot area and lot line dimensions shall be as follows:

	R-1	R-2	R-3	R-4
Total Lot Area (S.F.)	30,000	30,000	15,000	15,000
Lot Area per Unit (S.F.)	30,000	30,000	15,000	15,000
Lot Width (FT.)				
interior Lot	125	100	70	70
corner Lot	125	100	80	80
Lot Depth (FT.)	125	125	125	125

Section 702.02 – Minimum Yard Requirements

The minimum required front yard for all residential districts shall be 35 feet.

The minimum side yard requirement shall be as follows:

	R-1	R-2	R-3	R-4
Corner Lot				
Corner side	35	35	35	35
Interior side	10	10	8	8
	or 6 feet plus 10% of lot width in excess of 50’ whichever is more			
Interior Lot				
minimum per yard	10	10	8	8
	or 6 feet plus 10% of lot width in excess of 50’ whichever is more			
minimum total	30% of lot width up to, and including, 125 feet plus 35% of lot width in excess of 125 feet			

The minimum rear yard requirement shall be as follows:

	R-1	R-2	R-3	R-4
Corner Lot	15% of lot depth , minimum 25 feet		25	25
Interior Lot	50	50	25	25

Section 702.03 – Residential Site Access

Each Single family dwelling shall be provided with a driveway that may traverse any required yard.

Section 702.03.01 – Driveway Requirements:

1. Driveways for single family dwellings shall be surfaced with a permanent dustproof surface, either concrete, hot mix asphalt, brick, or any other material approved by the Village.

2. The driveway width shall not exceed one-third (1/3) the lot frontage and in no case shall exceed twenty (20) feet in width. In a case where a detached garage located not more than ten (10) feet from a public alley lot line, the driveway shall not exceed the width of the detached garage. The width of the driveway approach measured at the curb shall in no case be greater than five (5) feet more than the width measured at the property line. Any driveway will be subject to the applicable lot coverage requirements.

Section 702.03.02 – Driveway Locations

A driveway shall not be located closer than one (1) foot from the property line. No driveway approach shall extend of the property line extended to the curb except that the flare may extend not more than two (2) feet beyond the property line extended.

Section 702.03.03 – Number of Driveways

Each lot shall be allowed one driveway and one curb cut or vehicular entrance onto a street or alley, except as listed below:

1. A lot abutting an alley may have a vehicular entrance from the alley only if the vehicular entrance does not connect to a driveway accessed from the public street right of way or frontage.
2. Circular Drives
   a. An interior or corner lot having a lot width of seventy five (75) feet or more may have a circular driveway with two curb cuts located in the actual front yard.
   b. A corner lot with a lot width of equal to or greater than seventy five feet may have a circular driveway with two curb cuts located in the actual front or corner side yard and one additional curb cut that serves as access to a permitted parking space that is not located along the same frontage of the circular driveway.
3. No driveway turnaround shall be permitted in a required front or corner side yard between the dwelling structure and the street except where the garage on the premises accommodates only one car and the lot has frontage on arterial street as designated in the Village's general development plan.

Section 703 – Commercial Site Access

Section 703.01 – Commercial Driveway Geometrics

1. Commercial driveways designed for one-way traffic flow shall not exceed 20 feet in width measured at the property line. Commercial driveways designed for two-way traffic flow shall have a minimum width of 24 feet and shall not exceed 35 feet in width measured at the property line. This width dimension is measured between the faces of curbs.

2. The minimum turning radius for commercial driveways, measured along the curb return, shall be 20 feet. A right-in/right-out driveway access should have a 50-foot radius, measured along the curb return.

3. The angle between the curb line of the street and the centerline of a full access driveway shall not be less than 60 degrees.

Section 703.02 – Commercial Driveway Safety Standards

1. No commercial driveways will be permitted into any parking lot or other facility that is designed in such a way as to make it necessary for exiting vehicles to back onto the street.

2. No driveway will be permitted into any facility that would require and/or allow a vehicle to drive or maneuver on the sidewalk area in any manner other than to cross it.

3. No driveway will be permitted for the purpose of allowing vehicles to park on the public right-of way.

4. In no case shall a driveway be constructed in such a way as to present a hazard to pedestrians or traffic on the public right-of-way.

5. In no case shall an object located within the right-of-way be permitted to obscure the vision of drivers of motor vehicles. Items in the right-of-way, within the required sight triangle, as previously described, shall be limited in height to no greater than twenty four (24) inches, and no less than seven (7) feet, including shrubs and tree branches.

Section 703.03 - Commercial Driveways on Arterial Streets

Any driveway onto an arterial street represents a potential impediment to traffic and/or a safety hazard. For this reason, access onto arterial streets shall be limited both in number of driveways and location, and may be granted only after review of the overall land development plan and traffic study for the project. Design criteria as established in this section represent minimum standards. Where hardships are demonstrated, exceptions to the minimum standard will be considered on a project-by-project basis. The use of cross access easements or frontage roads is preferable alternatives to additional driveways on arterial streets.

Section 703.03.01 - Minimum Spacing:
Driveways shall be located as far apart as practical. A minimum of 400 feet between centerlines of driveways on arterial streets (major and minor) should be sought.

Section 703.03.02 - Minimum Distance from Intersections
Driveway placement should always be designed to maximize the distance from the nearest intersections. The driveway location will be dictated by the recommendations of an approved traffic study or as approved by the Village Engineer.

Section 703.04 – Commercial Driveways on Collector and Local Streets
Driveways on collector and local streets shall be located in accordance with the following:

1. The location of driveways shall be approved by the Village Engineer. Driveway locations and spacing shall be such that the impact to the traffic flow due to the vehicular movements into and out of the commercial development is minimized.
2. The distance from the end of the driveway curb cut to the nearest crosswalk shall not be less than 5 feet.
3. Where bus stops exist at locations where driveways are desired, the minimum allowable distance between driveways, measured at curb line of the street, shall be 40 feet.
4. At intersections where a separate right-turn lane exists, no driveway shall be constructed where the edge of the turning lane taper pavement is greater than 5 feet from the edge of the through pavement.

Section 704 – Parking Lots
Section 704.01 – Required Number of Parking Spaces
Refer to the Village Code.

Section 704.02 – Stall and Aisle Dimensions
1. Parking stall dimensions shall be a minimum of 9 feet wide and 18 feet in length with a minimum of 180 square feet in area.
2. Minimum drive aisle width for two-way traffic is 24 feet.

Section 704.03 – Parking Lot Island Requirements
Islands are required at the ends of all parking rows and at intermediate locations such that there are a maximum of twenty (20) stalls between islands. Landscaping of the islands shall be in accordance with the requirements of Section 9-107 of the Village Zoning Code.

Section 704.04 – Parking Lot Pavement
All parking lots constructed in the Village of Hinsdale must have a paved surface and a pavement cross section that is in accordance with the Village's standard Residential Roadway pavement cross section.

Section 704.05 – Boundary Controls
All parking lots shall have 6-inch concrete barrier curb around the perimeter.

Section 704.06 – Drainage
Storm sewers that serve parking lots shall be designed to accommodate the 10-year storm event without surcharging out of the rim. The maximum depth of ponding in parking lots is eight (8) inches. This applies where parking lots are used for storm water detention and for other lots in the event that all storm sewers are blocked and surface overflows must be used to drain the lot.

Section 704.06.01 Minimum Requirements
All storm sewers, manholes, catch basins, and inlets shall meet the minimum requirements for materials set forth in Section 300 of this Manual.

Section 705 – Lighting

Section 705.01 – Luminaire Design Factors
Pathways, sidewalks, and trails within public right of way shall be lighted with low-level fixtures not to exceed eight (8) feet in pole height.

Section 705.01.01 Glare Control & Shield for Building Lighting
All building lighting for security or aesthetics shall include glare controls and shall be shielded.

Section 705.01.02 Floodlighting
Floodlighting is discouraged, and if used, shall be shielded to prevent disability glare for drives or pedestrians, light trespass beyond the property line, and light above a ninety-degree (90^{O}) horizontal plane.

Section 705.01.03 Glare Control & Shield for Parking Area Lighting
All parking area lighting shall include glare controls and shall be shielded.

Section 705.02 Pole Height
Poles supporting lights shall be no taller than twenty three (23) feet adjacent to a residential district, twenty five (25) feet in a commercial development with an total acreage of 10 or less, a commercial part of a residential planned unit development, or in office/business park districts, and thirty two (32) feet in any industrial district or commercial district with a total acreage that is greater than 10.

Section 705.02 – Pole Heights for Automotive Dealerships
The maximum height of a luminaire at automotive dealerships shall be twenty five (25) feet and shall be measured as from the ground directly below the centerline of the luminaire to the top of the pole or luminaire, whichever is higher.

Section 705.03 – Lighting Standards
Lighting Standards for All Uses except Automotive Dealerships Lighting shall be provided in accordance with the standards of the Illuminating Engineering Society of North America (IESNA) as follows for all uses with the exception of automotive dealerships:

IESNA Parking Lot Levels of Activity	IESNA Maintained Horizontal Illuminance Standards (Foot- Candles)					
	General Parking and Pedestrian Area Average	Vehicle Use Area (Only) Minimum	Uniformity Ratio	Average	Minimum	Uniformity Ratio
High	3.6	0.9	4:1	2.0	0.67	3:1
Medium	2.4	0.6	4:1	1.0	0.33	3:1
Low	0.8	0.2	4:1	0.5	0.13	4:1

Description of IESNA Parking Lot Levels of Activity	
High	Major athletic events, cultural events, Regional shopping centers (retail space above 300,000 square feet), fast food facilities (> 40 seats) Entertainment theaters.
Medium	Community shopping centers (retail space to 299,999 square feet), Office parks, Hospital parking, Multi-family residential complex
Low	Neighborhood shopping centers (retail space of less than 5,000 square feet), Industrial employee parking, Educational facilities, Church parking

In determining the maximum foot-candles standard provided above, all foot-candle measurements shall be taken from the ground at any point within the areas of activity or at the property line.

In determining the average foot-candle standard, all foot-candle measurements shall be taken from the ground at ten (10) foot increments throughout the areas of activity.

Section 705.04 - Lighting Standards for Automotive Dealerships
Lighting shall be provided in accordance with the standards of the Illuminating Engineering Society of North America (IESNA) as follows for automotive dealerships:

Areas of Activity	Description	Standards (foot-Candles) – Target Maintained Levels
Feature display area	The first row of vehicles adjacent to a major/minor arterial, including the area in front of the vehicle up to the property line and behind the vehicle up to the merchandise area	75 foot-candles maximum
Merchandise Area	All other rows of vehicles on a lot used for general auto sales, including all areas surrounding the vehicle up to the defined circulation area including related drive aisles.	50 foot-candles maximum
Circulation Area	Includes all portions of the lot dedicated to customer parking, employee parking, site entrance areas and inventory areas including related drive aisles.	10 foot-candles average
Security lighting, Monday - Sunday	The average amount of light found on site within each of the areas of activity, including the feature display area, merchandise area, and circulation area from 10:00 p.m. until sunrise.	10 foot-candles average

In determining the maximum foot-candles standard provided above, all foot-candle measurements shall be taken from the ground at any point within the areas of activity or at the property line.

In determining the average foot-candle standard, all foot-candle measurements shall be taken from the ground at ten (10) foot increments throughout the areas of activity.
Sag lenses are prohibited from use. All new fixtures shall have flat lenses.

Light shields used to control light and reduce glare shall be made of nonreflective material.

Section 705.05 –Allowable Lighting at Property Line
Exterior lighting shall be designed at or below the following average maintained foot- candles at the property line:

Location	Maximum Foot-Candles at Property Line – Horizontal Measurement
Residential to residential	Horizontal fc: 0.10
Nonresidential to nonresidential	Horizontal fc: 2.0
Nonresidential to residential	Horizontal fc: 0.5
Intensity at adjoining right of way, except for automotive dealerships	Horizontal fc: 0.50
Intensity at adjoining Arterial Right of Way for automotive dealerships	Horizontal fc: 10.0

Section 705.06 – Light Loss Factor
The light loss factor shall be a minimum of 0.75 to a maximum of 0.8 for all uses

Section 705.07 – Measuring Light Levels
Light levels of both direct and indirect light shall be measured in foot-candles with a direct reading, portable light meter. Readings shall be taken only after the cell has been exposed long enough to provide a constant reading.

Foot-candle horizontal measurements shall be taken at a height of three and one-half (3.5) feet above ground.

Section 705.08 – Exceptions and Variances:
1. Because of their unique requirement for nighttime visibility and their limited hours of operation, ball diamonds, playing fields, tennis courts, and other outdoor recreational facilities shall be exempted for the general standards of this section. Lighting for outdoor recreational facilities shall be shielded to minimize light and glare from spilling onto adjacent residential properties. The maximum permitted illumination at adjoining residential property lines shall be one foot-candle. The maximum permitted illumination at adjoining nonresidential property lines shall be two (2) foot-candles.

2. Luminaries used for public roadway illumination by a public transportation agency shall be exempt from the requirements of this section but may be subjected to the regulations of federal or state agencies or by intergovernmental agreements.

3. Decorative seasonal lighting shall be limited to a power rating of less than or equal to seventy-five (75) watts.

4. Temporary emergency lighting used by police, firefighters, and other emergency services, as well as all vehicular luminaries shall be exempt.

5. Hazard warning lights that are required by local or federal regulatory agencies shall be exempt.

6. Transportation facilities shall be exempt.

7. Public walkways shall be exempt

Section 705.09 – Exterior Lighting Plan
A lighting plan shall be required any time exterior lighting is proposed, or modified, that is associated with a residential use or greater density than a one or two family dwelling or with any commercial, office, industrial or other use. The lighting plan shall be submitted with the site plan information as required.

Section 705.09.01 Lighting Plan Requirements
The lighting plan shall include a site plan indicating location of light fixture and intensity of foot-candles at various points on the site, catalog cuts of the proposed fixtures, and a summary table containing average foot-candles, minimum foot-candles, maximum foot-candles, uniformity ratio (average and minimum), foot-candles at the property line, pole height, and light loss factor. The plan shall also contain a certification by the property owner or agent and the preparer of the plan that the exterior lighting depicted on the plan complies with the requirements of this section. One the plan is approved; the exterior lighting of the property shall conform to the plan.

Section 706 – Pedestrian Access

All commercial sites shall be designed so that sidewalks or other delineated pedestrian routes are available to provide pedestrian access continuity between the public sidewalk adjacent to the site and the main entrance to the building.

Section 707 – Landscaping

Landscaping shall be in accordance with Section 9-107 of the Village of Hinsdale Zoning Code.

Section 708 – Barrier – Free Accessibility

Section 708.01 Commercial Site Accessibility
All commercial sites shall comply with the accessibility requirements of the Illinois Accessibility Code, as amended from time to time.

Section 708.02 Commercial Site Accessibility Guidelines:

1. To ensure compliance with the requirements referenced above, the following guidelines should be considered in the site design for new construction of commercial projects (and may not apply for additions, alterations, or historic preservation):

2. An accessible route should be provided from accessible parking and passenger loading zones to an accessible entrance. Accessible routes shall be constructed with a minimum slope (< 2%) and be free from obstacles.

3. The cross slope of sidewalks should be kept at a minimum (¼"per 1 foot) as necessary for drainage. This will make it easier for a person utilizing a wheelchair to move forward without veering left or right.

4. Sidewalks should be flush with grass areas on either side to help prevent wheelchairs from overturning should a wheel roll off the sidewalk.

5. Sidewalks should be 5 feet wide, minimum, to allow two wheelchairs to pass. In high pedestrian traffic areas, such as the Central Business District, sidewalks should be 8 feet wide.

6. Where passenger loading zones are provided, an adjacent access aisle should be provided where the sidewalks are flush with the pavement.

7. Entrance areas near the door should have a nearly flat area (allowing for proper drainage to avoid ponding and icing).

8. All power door pedestals with push plates should be clear of the door swing, typically 5 feet from the door.

9. Accessible entrances should be considered for secondary entrance points in addition to the main entrance.

10. Accessible parking stalls should be close to both the main and auxiliary entrances, to provide maximum access for persons with disabilities.

11. Accessible parking stalls should be constructed with minimal slopes (¼"per 1 foot) which provides a nearly flat surface for wheelchairs and minimum slopes necessary for drainage.

12. Concrete wheel stops should not be used in accessible parking stall loading areas, which would obstruct the accessible route from accessible parking to an accessible entrance.

13. The sidewalk adjacent to accessible parking stalls should be flush with the pavement to provide an accessible route to an entrance.

14. Accessible parking spaces shall be appropriately designated through signage and striping. Signs shall be vertically mounted on a post or wall at front center of the parking space, no more than 5 feet horizontally from the front of the parking space and set a minimum of 4 feet from finished grade to the bottom of the sign.

15. Speed bumps can create a hazard for low riding wheelchair vans.

SECTION 800 – PROJECT DOCUMENTS

Section 800 – Project Documents

Section 800.01 – Intent
It is the intent of the following standards to provide for the thorough, relatively uniform presentation of pertinent development information by developers or others wishing to alter the present condition of real property. It is the intent of these standards to provide clear documentary evidence of what currently exists, what is proposed, what is constructed, and what all parties agree to. It is the intent of these standards to provide for the control of physical aspects of documentary material so that such material may be conveniently archived by the Village.

Section 800.02 – Applicability
These standards and specifications shall apply to the documentation for all subdivision and development activities within the Village and within the one and one-half (1-1/2) mile jurisdictional area surrounding the Village with the exception of architectural drawings having to do specifically with proposed buildings or like structures.

Section 800.03 – Document Specification and Standards
Documents shall conform to the following standards:

1. Documents that are primarily written, forms, correspondence, etc., shall be 8-1/2 by 11 inches except certain legal documents may be 8-1/2 by 14 inches.
2. Plats and plans shall be standard size sheets (approximately 24 by 36 inches) unless otherwise approved by the Village Engineer, Village Planner and/or Village Manager.
3. Documents, plats, and plans that consist of more than one sheet shall be bound at the top or left side. Bound sheets shall have a margin of one to two inches on the bound side.
4. Certain incidental documentation such as letters of transmittal, receipts, etc., may vary from the above standards and specifications. Some of the sketches or other early drawing items required in the conceptual stage of a project may also vary from the above standards and specifications except that no conceptual stage documentation shall be smaller than 8 by 11 inches.
5. Documents that are 11 by 17 inches shall be folded to 8-1/2 by 11 inches.
6. Information conveyed by radio or telephone or otherwise verbally shall not be considered binding unless documentation is also provided. The intent of this provision is to encourage the conveyance of important information by documentation so each transaction is as clear and unambiguous as possible.
7. Documents conveyed through the use of facsimile transceivers are to be considered as less binding than conveyance of original signature documents by mail or by hand delivery. Legal documents involving the Village shall all be original signature documents.

Section 801 – Final Improvement Plans

Section 801.01 – Intent
The improvement plan stage is for the purpose of accurately showing how the improvements will be constructed in order to conform to the layout and design objectives of the Preliminary Plan. As such, the improvement plan process is an extension of the Preliminary Plan process. Where conditions so warrant, the Village may require that portions of improvement plans are submitted during the preliminary plan review process in order to determine the land's suitability for the preliminary plan design. Any required off-site improvements and engineering studies shall be provided and paid for by the Subdivider upon request. Where the subdivision is to be developed in phases, and where soil and/or topographical conditions so warrant, the Village may require that improvement plans for the entire preliminary plan area be submitted prior to the construction of improvements.

Section 801.02 - Filing
Prior to the submittal of the final plat, the applicant shall ensure that they have complied with the Planning and Zoning Requirements

Section 801.03 – Final Engineering Plans Content
Final engineering plans shall, as a minimum, consist of the following:

1. Title Sheet;
2. Project Specifications and General Construction notes;
3. Geometric Plan;
4. Grading Plan, which includes the street paving plan, all storm sewer lines and structures, storm water retention/detention facilities, erosion control measures, flood plain and wetland protection measures;
5. Master and Detailed Utility Plan, which shows all storm sewers, sump pump drain lines, sanitary sewers, water main and any other public utility lines with appurtenant structures;
6. Lighting Plans shall include the layout for lighting standards, underground conduits for pavement crossings, unit duct, and transformers and junction boxes for electrical utility for off-street parking lighting and/or public street lighting systems;
7. Street Plan and Profiles;
8. Intersection Grading Plan;
9. Construction Details - Most Current Edition;
10. Water main, sanitary and storm sewer profiles;
11. Landscaping plan including parkway trees;
12. Striping and Signage Plan;
13. Maintenance of Traffic Plan including traffic signage; and
14. Storm Water Pollution Prevention Plan.

Section 801.04 – Required Information
Each Plan Sheet shall include the following information:

1. A title block that includes the project name, job number, sheet title (Geometric, Grading, etc.), sheet number, date of preparation, and latest revision date;
2. North arrow and scales;
3. Additional general plan notes and legend as may be required; and
4. A reduced (not to scale) location map on the plan and profile sheets indicating the location of the respective plan and profiles to the overall proposed subdivision.

Section 802 – Title Sheet

The Title Sheet shall include the following information:

1. Subdivision name and unit number or phase number;
2. Location map;
3. Seal, signature, address, and phone number of the registered professional engineer who prepared the plans and the person or firm that prepared the topographic surveys;
4. Developer's name, address, and phone number;
5. Index of sheets;
6. Permanent benchmarks need to be established at a rate of one benchmark per fifty acres. A minimum of three (3) benchmarks, both permanent and temporary need to be indicated;
7. Dates of preparation and any revisions;
8. Index of Standard Details used;
9. The standard drainage certificate as required by the Illinois Plat Act;
10. Standard legend;
11. A statement signed by the subdivider that he agrees to construct at his own expense the public improvements shown in detail in the final engineering plans.
12. A statement by the Village Engineer certifying that the improvements proposed by the subdivider as shown in the final engineering plans meet the minimum requirements of the Village Ordinance and all other applicable regulations.

Section 803 – Project Specifications and General Construction Notes

The Project Specifications and General Construction Notes shall include the following provisions:

1. All on-site and off-site improvements shall be constructed in accordance with the requirements of the "Village of Hinsdale";

2. Permits shall be obtained from all outside governmental agencies having jurisdiction;

3. All structure adjustments shall be accomplished in conformance with the most recent Village standard;

4. Existing field tiles encountered during construction shall be either integrated into the site drainage system, removed or plugged in a manner deemed appropriate by the Village Engineer;

5. The developer shall be responsible for all adjustments before and after final inspection, prior to final acceptance by the Village of Hinsdale;

6. The Village must have forty-eight (48) hour notice prior to the initiation of construction activity;

7. The testing and sterilization of all new water distribution facilities shall be completed prior to making water service taps by an outside testing service;

8. Material specifications comply with Village standards and include:
   a. Paving base materials;
   b. Paving surface materials;
   c. Concrete materials;
   d. Pipe materials.

9. All restoration work in the public right-of-way subject to the specific approval of the Village Engineer;

10. Village Police Department, Fire Department, School Districts and Administration shall be notified a minimum of forty-eight (48) hours prior to road or water main shutdowns.

11. Road closures and open cutting of pavement require Village Board approval;

12. Contractor shall contact JULIE (1-800-892-0123) prior to any excavation work (Including Section, Township, and Range numbers of property with note); and

13. Contractor shall maintain pavement crossing cuts until final pavement restoration is complete and accepted by the Village Engineer.

Sanitary Sewer plans and specifications shall conform to the "Standard Specifications for Water and Sewer Main Construction in Illinois, Most Recent Edition", FCWRD or MWRD requirements, and Village Ordinances. If a conflict arises, the Village ordinances shall govern.

Water distribution plans and specifications shall conform to "Standard Specifications for Water and Sewer Main Construction in Illinois, Most Recent Edition" and Village Ordinances. If a conflict arises, the Village Ordinances shall govern.

Pavement, curb and gutter, sidewalks, and storm sewer shall conform to "IDOT Standard Specifications for Road and Bridge Construction, Most Recent Edition"

Section 804 – Geometric Plan

The Geometric Plan shall include the following information:

1. Site boundaries and lot layout. This information shall be a copy of the final plat indicating easements and dedications, reduced if required, without the certificates;
2. All necessary geometric data required to layout the proposed improvements;
3. Show all streets adjacent to and within one hundred feet (100') of project site;
4. Show all site access roadways and driveways within one hundred feet (100') of project site;
5. All necessary geometric data required to show existing and proposed easements;
6. Street right-of-way width;
7. Street centerline and radii and curve data;
8. Street pavement width;
9. Location of curb and gutter;
10. Intersection geometric data;

11. Parking lot dimensioning and data including: lot aisle widths, space dimensions, handicap space dimensions; loading berth dimensions, curb radii, angle of parking, throat width of drives, angle of driveway at street intersection;
12. Setback lines and distances for all proposed building, parking lots, etc;
13. Proposed building footprint outlines;
14. Non-residential site area in square feet:
    a. Office building area in square feet (if applicable);
    b. Warehouse building area in square feet (if applicable).
15. Building envelope;
    a. Distance to front lot line, rear lot line, interior side lot line, and exterior lot line (if applicable);
    b. Distance to all existing off-site buildings within one hundred feet (100') of the subject site.

Section 805 – Maintenance of Traffic Plan

Maintenance of traffic plans shall be provided that provides the proposed construction traffic route and all necessary detour plans for applicable off site work adjacent to proposed developments.

Section 806 – Storm Water Pollution Prevention Plan

The Storm Water Pollution Prevention Plan shall include the following information:

1. Initial sediment and erosion control measures to be installed prior to stripping existing vegetation or mass grading.
2. Construction Phasing, including the sequence of grading activities and the sequence for the implementation of temporary soil erosion and sediment control measures for each construction phase.
3. A maintenance schedule
4. Method of conveying overland flow as well as the 100 year over land flow route. The 2 year and 10 year run-off rates from all off-site areas draining into the site shall be listed.
5. The final stabilization and vegetation measures as well as a description of the parties responsible for post-construction maintenance.
6. A location for the following information:
    a. Dumpster/Waste material storage area b. Concrete truck washout area
    c. Portable Toilet
    d. Chemical waste storage/containment

Section 807 – Grading Plan

The Grading Plan shall meet all requirements of the DuPage County Countywide Stormwater and Floodplain Ordinance and include the following information:

1. Existing and proposed finished ground topography of site at one-foot (1') contour intervals extending for one hundred feet (100') onto adjacent properties. All site and any affected adjoining properties draining to or from the proposed site need to be indicated and all existing and proposed channels, swales, lakes, ponds, and structures with control elevations, slopes and cross-sections need to be provided.
2. The Grading plan shall be no smaller than one (1) inch to fifty (50) feet in scale.
3. All existing structures located and described.
4. All streets, driveways, parking lots, and other paved areas.
5. Longitudinal slope of parkways, sidewalks and driveways where required.
6. Locations of all trees exceeding six inches (6") in diameter.
7. Flood hazard and wetlands delineation.
   a. Floodway delineation.
   b. One hundred year floodplain delineation.
   c. Drainage watershed delineation.
   d. Wetlands and other flora areas delineation.
   e. Delineation of all major watercourses.
8. Curb and gutter, sidewalks.
9. Proposed retaining walls.
10. Storm and sump pump drainage appurtenances
    a. Number all storm sewer structures.
    b. Rim and invert grades and pipe sizes noted for all drainage structures.
11. All elevations including contours shall be referenced to USGS datum NAVD 88 and established from approved bench circuits. Benchmark coordinates need to be obtained from the Village G.I.S. Technician:
    a. Existing contours to be shown as light dashed lines.
    b. Proposed contours to be shown as heavy solid lines.
12. Spot elevations at break points, at all lot corners, foundation corners, top curb elevation at all property lines extended to curb line, drainage inlet structures, and at other ground control points.
13. A list of Special Foundation Opening Restrictions needs to be provided in a tabular format.
14. Proposed building pad location and existing building footprints with top of foundation elevations, foundation opening elevations, and, where applicable, garage floor elevations. Basement floor elevations for proposed building with walkout basement or lowest unprotected opening adjacent to flood hazard area.
15. Drainage arrows around all proposed building foundations, along lot lines, swales, ditches, and wherever else required to delineate surface drainage direction and pattern.

16. All overflow routes for the 100-year storm and for accumulated storm water runoff from several lots or from off-site catchment areas must be clearly designated
17. Outline of the storage basin with finished contours at one-foot (1') intervals.
18. Typical cross-sections of storage basin showing the degree of side slopes, top of bank elevations, bottom elevations and proposed storage elevations.
19. A release structure with necessary details.
20. High and, where applicable, normal water storage elevation.
21. Calculated water storage volume in acre-feet.
22. Downstream erosion control measures, corresponding to the release velocity through the proposed restrictor.
23. The locations of all downstream detention facilities that will be affected by the proposed utility improvements shall be provided.
24. The locations of the existing downstream conveyance for which the proposed storm sewer is tributary shall be provided.

Section 808 – Master Utility Plan

The Master Utility Plan shall include the following information:

1. The location of all proposed and existing on-site and off-site water mains, sanitary sewers, storm sewers, and sump pump drain lines, gas lines, pipelines, cabled utilities, and all other private utilities and their appurtenant structures (hydrants, valves, manholes, etc), which shall be numbered for reference.
2. Show all streets, with curb and gutter line work and street names
3. The scale of the Master Utility Plans shall not be smaller than one (1) inch equal to 100 feet.

Section 809 – Detailed Utility Plan

The Detailed Utility Plan shall include the following information:

1. The location and size of all proposed and existing on-site and off-site water mains, sanitary sewers, storm sewers, and sump pump drain lines, gas lines, pipelines, cabled utilities, and all other private utilities and their appurtenant structures (hydrants, valves, manholes, etc.), which shall be numbered for reference.
2. The scale of the Detailed Utility Plans shall not be smaller than one (1) inch equal to fifty (50) feet.
3. The plan shall indicate size, slope, purpose, length, and type of material of all proposed utility lines.
4. Show all locations (preferably with shading) where granular trench backfill is required.
5. All existing structures, which require adjusting, reconstruction, or filling, shall be noted on plan.
6. Depict adjacent properties for proper utility and street match.
7. All Utility crossings shall be numbered. The utility crossing information shall be provided in tabular form indicating the proposed vertical separation between and the elevation of the top of the lower pipe and the bottom of the upper pipe for all proposed and existing utilities.
8. In locations where it is required to provide sanitary services constructed of water main quality pipe, the location must be clearly designated on the plans.
9. Locations of all existing drain tiles and how they will be connected to the proposed storm sewer system

10. The finished frame elevation and invert elevations shall be given for all structures. In addition, the station and offset for all structures shall be indicated.
11. The locations of all downstream detention facilities that will be affected by the proposed utility improvements.
12. The locations of the existing downstream conveyance for which the proposed storm sewer system is tributary.
13. All utility and drainage easements shall be indicated.

Section 810 – Lighting Plans

The Lighting Plan shall include the following information:

1. Light pole locations, heights, and spacing.
2. Location of existing light poles
3. Control system and underground site wiring diagram specifying wire size, locations, and other materials.
4. The scale of the Lighting Plans shall not be smaller than one (1) inch equal to fifty (50) feet.
5. Typical installation section showing:
    a. Type of pole
    b. Bracket or arm
    c. Luminaire wattage type lamp and ballast provided d. Mounting height

Section 811 – Street Plan and Profile

The Street Plan and Profile shall include the following information:

1. Plan view of all proposed street and sidewalk improvements showing, but not limited to, street name, centerlines with stationing, right-of-way lines and widths, pavement outline and widths, sidewalks, curb and gutter, return radii, all storm sewers and other drain lines with structures, sanitary sewers, water mains, and, where applicable, shoulders and drainage ditches.
2. Plan view shall show all locations where granular trench backfill is required.
3. Centerline profile of existing ground line with elevations shown at fifty foot (50') intervals minimum.
4. Centerline profile of proposed pavement surface with grades, vertical curve data, and elevations shown at fifty-foot (50') intervals minimum.
5. Profile of all proposed storm sewers, sanitary sewers, water mains and other drain lines with structures within the plan view area showing pipe size, slope, length, type of material, and finished frame and invert elevations for structures.
6. Profile of all utility crossings where a grade conflict may occur.
7. Vertical Curves and PVI locations need to be indicated in the profile view and shall be provided with the necessary lengths, algebraic difference and necessary "K" Values.
8. Plan view scale shall be one (1) inch equal to fifty (50) feet minimum and profile scales shall be horizontal, same as plan and vertical, one (1) inch equal to five (5) feet.

Section 812 – Intersection Detail Plan

The intersection Detail Plan shall provide the following information for all intersections:

1. Spot grades at the following locations and intervals
    a. At the edge of pavement to along all curb radiuses at fifteen (15) foot intervals
    b. At any drainage break point within the limits of the intersection
    c. Along the center line of all intersecting roadways at fifteen (15') foot intervals
    d. At the edge of pavement at all drainage structures
2. Flow arrows indicating the intended direction of water runoff. The scale of this plan shall be twenty (20) feet equal to one (1) inch.

Section 813 – Striping and Signage Plan

The design engineer shall submit the respective Utility Plan sheets for the entire development prior to completion of the Striping and Signage Plan. The Public Works Department will assign the location of the street signage within the development and return the marked-up plan to the design engineer for incorporation within the improvement plans. The striping and signage shall be designed in accordance with the MUTCD manual as well as the IDOT standard details.

Section 814 – Sanitary Sewer Profile

Sanitary Sewer Profiles with existing and proposed ground elevations shown at fifty (50) foot intervals minimum shall be provided at the request of the Village Engineer. The profile scales shall be horizontal, same as the detailed utility plan and vertical, one (1) inch equal to five (5) feet.

Section 815 – Landscaping Plan/Parkway Tree, Berm & Buffer Plan

A Landscaping Plan, prepared by a qualified landscape architect shall be submitted and shall include trees to be preserved, screening where required, the restoration of site flora and other areas to be stabilized and enriched according to Village Ordinances and all other Village requirements. The Landscaping plan shall include a proposed parkway tree plan, which shall provide the general location of all trees adhering to the Village Ordinances for spacing requirements. A table that indicates the specific tree types and spacing shall be provided. Trees should be located to avoid conflicts with driveways, manholes, fire hydrants, street lights and all above ground appurtenances. A copy of the approved Landscaping Plan / Parkway Tree Plan shall be incorporated into the final plan set for the proposed subdivision.

Section 816 – Street Cross Section

Street Cross Section shall be provided at the request of the Village Engineer. The Street cross sections shall have a scale of one (1) inch equals twenty (20) feet horizontal and one (1) inch equals five (5) feet vertical. The cross sections shall be at intervals of fifty feet. Additional cross sections should be provided at driveway locations and intersections. Each cross section should show the following applicable information:

1. Full pavement section
2. The location of all proposed and existing utilities
3. Station, existing, proposed elevation
4. Transverse pavement slope and side slopes

Section 817 – Construction Details

All details shall be of type standard with the Village of Hinsdale including but not limited to:

1. Manholes, inlets, catch basins, vaults
2. Standard utility structure covers
3. Standard valve and hydrant installation
4. Drainage structures
5. Concrete curb and gutter
6. Thrust block installation
7. Service connections
8. Typical Sections

Section 818 – Supporting Documents

The following supporting documents will be required at the time of submittal:

1. A detailed statement by the subdivider setting forth the nature, kind, character, and extent of all improvements that will be constructed within the subdivision, together with complete plans, profiles, and specifications clearly describing the same, with agreement to construct same in accordance therewith.
2. A statement by a professional engineer registered in the State of Illinois giving a detailed estimate of the total cost of construction for all proposed public improvements, erosion control items and storm water management facilities.
3. Any and all documents as may be required by the Village of Hinsdale to ensure that the dedication of all required rights of way and the granting of all required easements has or will be established.
4. Any covenants or other documents, which place certain restrictions on the use and development of the property and is, intended to be recorded with the Final Plat.
5. Five (5) completed copies of all permit application forms (IEPA, IDOT, IDOWR, etc.) required for construction of the proposed improvements.
6. Proof of compliance with all applicable impact fee ordinances.
7. Proof of compliance with all applicable ordinances.
8. Final studies, reports, drawings, and calculations for all proposed storm water sewers, drain lines, culverts, retention or detention storage basins, flood routing, and any other site storm water management facilities.

SECTION 900 – CONSTRUCTION AS-BUILTS

Section 901 – General

The submittal of the as-built drawings to the Village of Hinsdale shall be made prior to the issuance of a Building Permit for residential developments and prior to the issuance of a Certificate of Occupancy for commercial developments. This submittal shall be in plan format (Model Space) at full scale (1:1) showing the entire development as well as a digital copy of the full As-Built Plan set (Paper Space) consisting of all pages, modified as required, of the originally approved construction plan set . In the case of multiple unit developments, the entire subdivision shall be submitted with the completion of each unit indicating the complete as-built conditions of the entire subdivision at the completion of the respective unit.

The as-built plans shall be tied to the Village's coordinate system.

Section 902 – Required Information

The following is a list of allowable tolerances and required as-built information that shall be provided:

1. Locations of existing drain tile connections to the storm sewer shall be indicated.
2. Accurate utility crossing information shall be provided in tabular format providing the actual as-built separation between the as-built utilities.
3. Rough grading elevations shall be within +/- 0.3 feet of all spot elevations provided on the grading plans. Specifically these elevations shall adhere to the proposed plans at all easements, drainage swales and Public Rights of Way.
4. As-built rim elevations shall be within +/- 0.1 feet of the rim elevations provided on the proposed development plans.
5. Sanitary service stubs shall be located on the As-built drawings and shall be measured dimensionally from the nearest downstream sanitary manhole.
6. Water service stubs shall be located on the As-built drawings and shall be measured dimensionally from the nearest property corner for the respective lot.
7. Rim and invert elevations for all sanitary and storm structures shall be provided.
8. The locations of all sanitary services requiring riser assemblies shall be clearly designated on the plans and as-builts.
9. In locations where it is required to provide sanitary services constructed of water main quality pipe, the location must be clearly designated on the as-builts.
10. As-built locations of the sump pump collection system and cleanouts shall be provided.
11. The following information pertaining to the As-built Detention Basins shall be provided:
    a. A sealed statement shall be provided by the licensed professional design engineer indicating that the as-built volume of the pond has been verified.
    b. The actual High Water Elevation (HWL) shall be verified against the design calculations.
    c. The actual Normal Water Elevation (NWL) shall be verified against the design calculations.
    d. The emergency overflow elevation and outlet shall be verified to comply with the proposed design calculations.
    e. The two (2) year and one hundred (100) year restrictors shall be installed in placed and verified on the as-builts at the as-built elevations.

Section 903 – As-Built Submittal Format

Only one copy of the As-built plans shall be provided for review. Upon approval of the as-built submittal, the aforementioned information shall be provided to the Village in both electronic and paper format.

Section 903.01 – Approved As-Built Paper Format Submittal

The following information is the approved As-Built paper format submittal requirements:

1. Six (6) copies of the complete construction set of plans with the as-built information incorporated and sealed by a registered professional engineer and the drainage certificate must be signed by the design engineer and the owner or the owner's attorney.
2. One (1) separate as-built grading plan
3. One (1) Mylar copy of the complete construction set of plans with the as-built information incorporated and sealed by a registered professional engineer and the drainage certificate must be signed by the design engineer and the owner or the owner's attorney.
4. One (1) Mylar copy of the Final Recorded Plat.

Section 903.02 – Approved As-Built Electronic Format Submittal

The following information is the approved As-Built electronic format submittal requirements:

1. One (1) Digital copy of the as-built improvements, in model space on compact disc. The digital submittal shall be compatible with AutoCAD MAP 2004. The layer system shall be provided as follows: review layering
    i. The as-built benchmarks shall be placed on the layer GIS AB_BENCHMARK and all associated text shall be placed on the layer GIS AB_BENCHMARK_TEXT. The color associated with the layer shall be magenta.

    ii. The as-built storm sewer shall be placed on the layer GIS AB_STORM and all associated text shall be placed on the layer GIS AB_STORM_TEXT. The color associated with the layer shall be yellow.

    iii. The as-built sanitary sewer shall be placed on the layer GIS AB_SEWER and all associated text shall be placed on the layer GIS AB_SEWER_TEXT. The color associated with the layer shall be green.

    iv. The as-built water main shall be placed on the layer GIS AB_WATER and all associated text shall be placed on the layer GIS AB_WATER_TEXT. The color associated with the layer shall be blue.

v. The as-built parcel lot lines shall be placed on the layer GIS AB_PARCELS and all associated text shall be placed on the layer GIS AB_PARCELS_TEXT. The color associated with the layer shall be black.

vi. The as-built sump pump collection shall be placed on the layer GIS AB_SUMP and all associated text shall be placed on the layer GIS AB SUMP_TEXT. The color associated with the layer shall be orange.

vii. The as-built lighting system shall be placed on the layer GIS AB_LIGHTING and all associated text shall be placed on the layer GIS AB_LIGHTING_TEXT. The color associated with the layer shall be red.

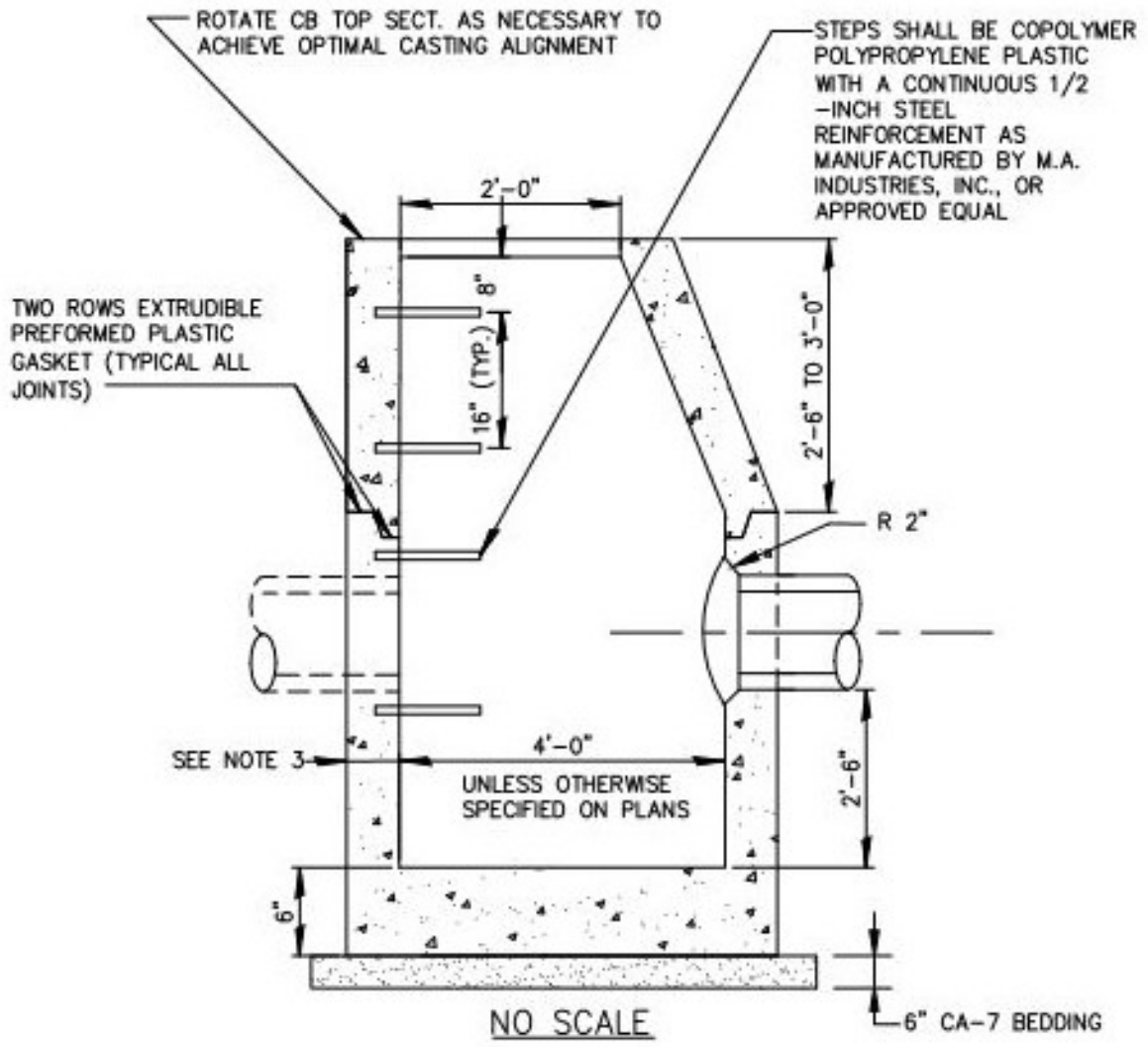
2. One (1) Digital copy of the paper space as-built plan set on compact disc. All sheets of the original approved construction plan set, modified as necessary, shall be included. The digital submittal shall be compatible with AutoCAD MAP 2004 on compact disc.

SECTION 1000 – STANDARD DETAILS

Detail No.	***Detail Description***
1	Catch Basin Type A
2	Catch Basin Type C
3	Inlet
4	Storm Sewer Installation
5	Sump Discharge Service Line
6	Casting Installation and Adjusting
7	Corbelling of Curb Inlets
8	Pipe Restrictor
9	Detention Pond Restrictor Structure No. 1
10	Detention Pond Restrictor Structure No. 2
11	Fire Hydrant
12	Fire Hydrant in Excess of 7’ Depth
13	Pressure Connection Valve Vault
14	Standard Valve
15	Thrust Block Installations
16	Water Sampling Station
17	Water Main Installation
18	Water Service
19	Drop Connection
20	Sanitary Manhole Pipe Connection
21	Sanitary Sewer Installation
22	Sewer Service for Sanitary Sewers
23	Casing Pipe
24	Manhole Type A
25	Typical Service Laterals
26	Pavement Patching
27	Mountable Combination Concrete Curb & Gutter Type M-3.12

Detail No.	*Detail Description*
28	Barrier Combination Concrete Curb & Gutter Type B-6.12
29	Curb Ramps Accessible to the Disabled
30	Multi-User Path
31	Alley Cross-Section
32	Roadway Cross-Section – Residential
33	Roadway Cross-Section – Multi-Family Street
34	Roadway Cross-Section – Collector
35	Roadway Cross Section – Minor Arterial
36	Roadway Cross Section - Arterial
37	Roadway Cross Section - Industrial
38	Concentric Cul-de-Sac
39	Typical Pavement Section at Cul-de-Sac Bubble
40	Commercial Entrance
41	Parking Lot Cross Section
42	Sidewalk
43	Permanent Monument
44	Tree Protection
45	Level Spreader
46	Groundwater Monitoring Wells
47	Brick Crosswalks
48	Sump Pump Drainage System Detail

DETAIL NO. 1



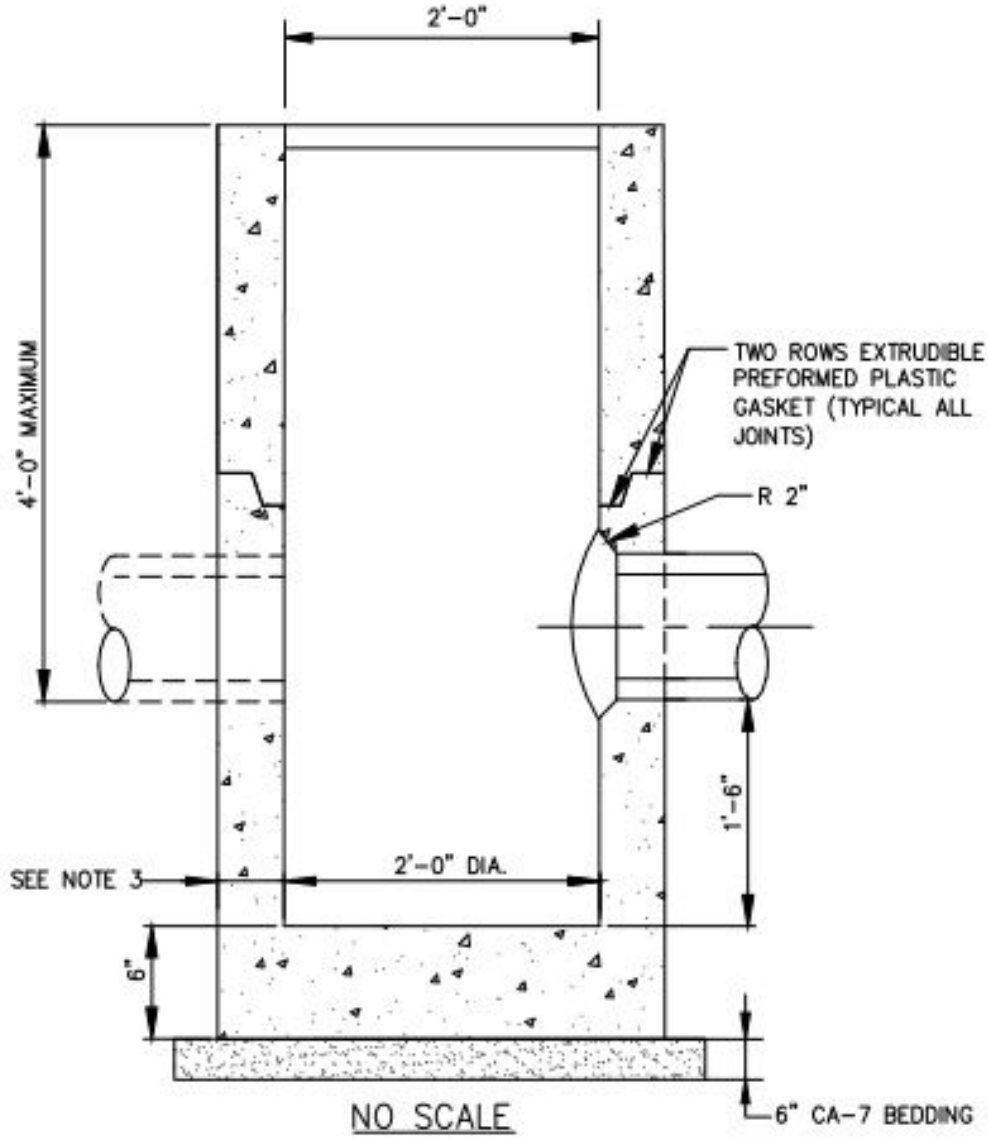
NO SCALE

NOTES:
1. SEE CASTING INSTALLATION AND ADJUSTMENT DETAIL FOR CASTING REQUIREMENTS.
2. STRUCTURE SHALL COMPLY WITH ASTM C478.
3. WALL THICKNESS SHALL BE IN ACCORDANCE WITH IDOT HIGHWAY STANDARD 602001

VILLAGE OF HINSDALE
STANDARD DETAIL
FOR
CATCH BASIN, TYPE A

REV:	
DATE:	APRIL 2008
FILE:	STORM\CBDET-A

DETAIL NO. 2



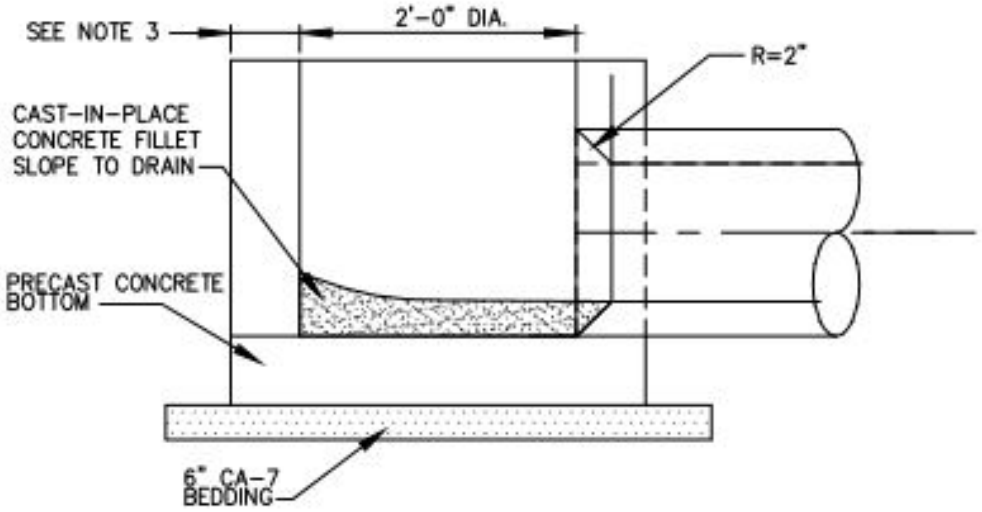
NO SCALE

NOTES:
1. SEE CASTING INSTALLATION AND ADJUSTMENT DETAIL FOR CASTING REQUIREMENTS.
2. STRUCTURE SHALL COMPLY WITH ASTM C478.
3. WALL THICKNESS SHALL BE IN ACCORDANCE WITH IDOT HIGHWAY STANDARD 602011

VILLAGE OF HINSDALE
STANDARD DETAIL
FOR
CATCH BASIN, TYPE C

REV:
DATE: APRIL 2008
FILE: STORM\CBDET-C

DETAIL NO. 3



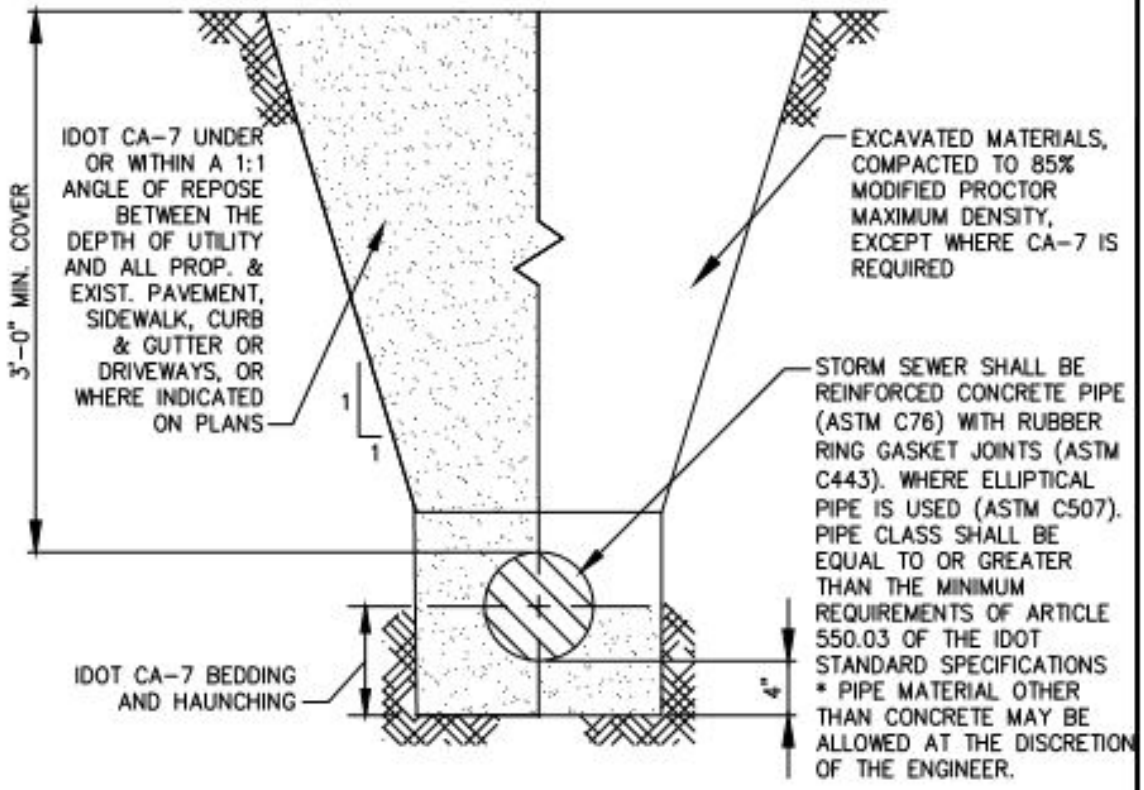
NO SCALE

NOTES:
1. SEE CASTING INSTALLATION AND ADJUSTMENT DETAIL FOR CASTING REQUIREMENTS.
2. STRUCTURE SHALL COMPLY WITH ASTM C478.
3. WALL THICKNESS SHALL BE IN ACCORDANCE WITH IDOT HIGHWAY STANDARD 602301

VILLAGE OF HINSDALE
STANDARD DETAIL
FOR
INLETS

REV:	
DATE:	APRIL 2008
FILE:	STORM\INLET

DETAIL NO. 4



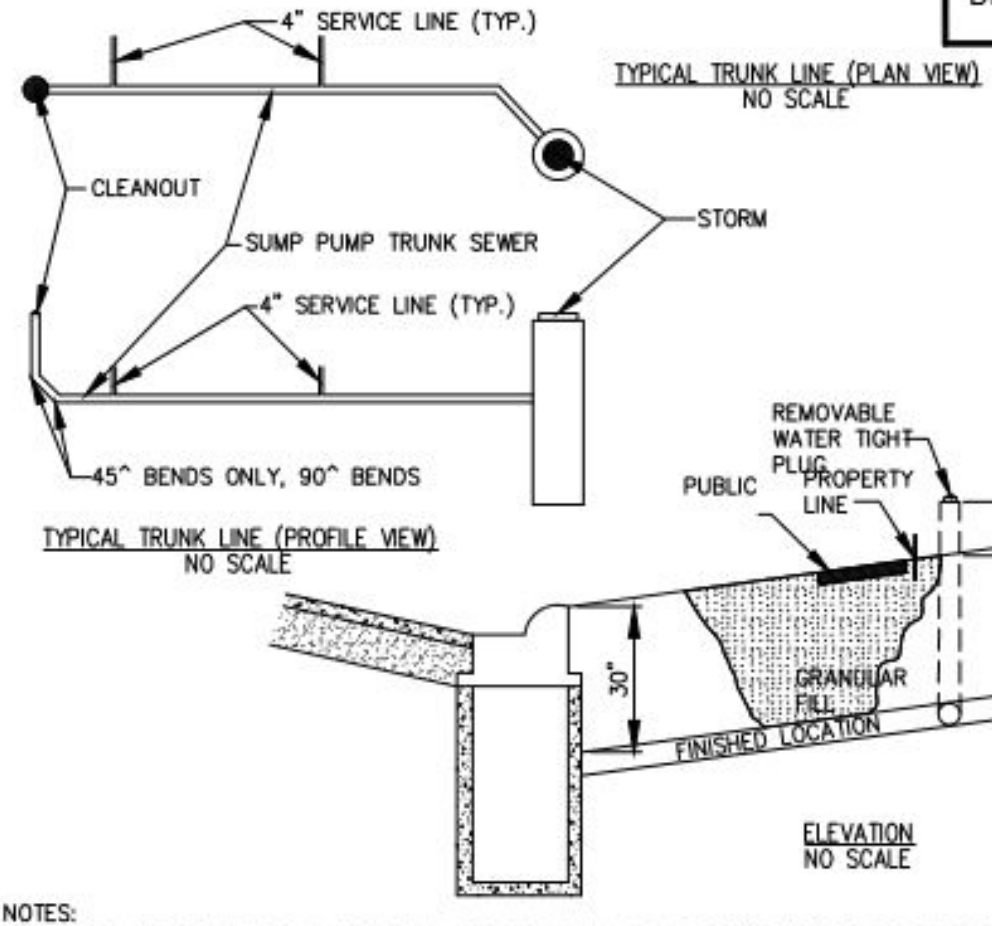
NO SCALE

PUBLIC STORM SEWER ONLY:
THE STORM SEWER SHALL BE TELEVISED FOLLOWING THE INSTALLATION OF THE COMMONWEALTH EDISON AND NICOR UNDERGROUND UTILITIES AND PRIOR TO THE ISSUANCE OF THE FIRST CERTIFICATE OF FINAL OCCUPANCY.
*NOTE: TELEVISING NOT REQUIRED ON PRIVATE STORM SEWER.

VILLAGE OF HINSDALE
STANDARD DETAIL
FOR
STORM SEWER
INSTALLATION

REV:	
DATE:	APRIL 2008
FILE:	STORM\STSI

DETAIL NO. 5



TYPICAL TRUNK LINE (PLAN VIEW)
NO SCALE

TYPICAL TRUNK LINE (PROFILE VIEW)
NO SCALE

ELEVATION
NO SCALE

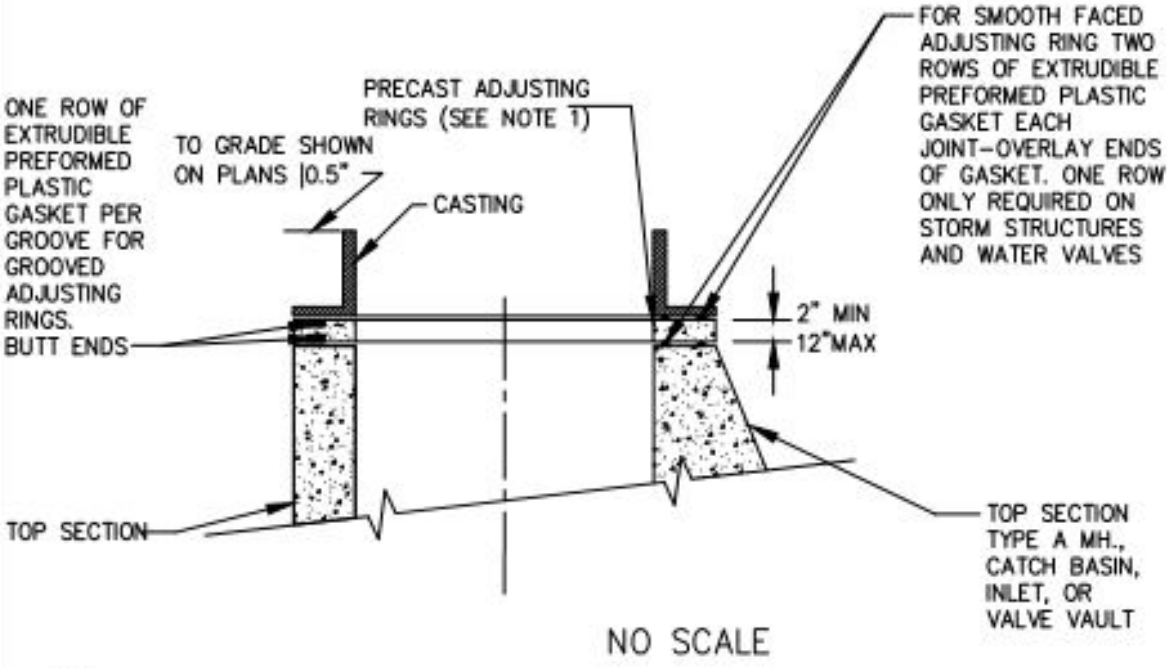
NOTES:

1. SUMP PUMP CONNECTION LINES SHALL BE POLYVINYL CHLORIDE (PVC) SDR 35 CONFORMING TO ASTM D-3034, SIZE AS INDICATED ON THE PLANS.
2. TRUNK LINES SHALL BE INSTALLED A MINIMUM OF THIRTY (30) INCHES BELOW THE TOP OF CURB AND FOLLOW THE CURB LINE FOR GRADE, AND SHALL BE LOCATED 2 FEET BEHIND THE FRONT PROPERTY LINE.
3. 10 GAUGE UNDERGROUND FEEDER TRACER WIRE SHALL BE INSTALLED IMMEDIATELY ABOVE THE TRUNK LINES AND SHALL TERMINATE AT THE CLEANOUTS OR STUBS. TRACER WIRE SHALL BE STRAPPED TO ALL STUBS AND CLEANOUTS AND SHALL EXTEND CONTINUOUSLY ALONG ALL PIPES, STUBS, AND CLEANOUTS. ADEQUATE WIRE SHALL BE LEFT IN ALL STRUCTURES TO ALLOW IT TO BE RAISED ABOVE THE FRAME. TRACER WIRE SHALL BE LOOPED BACK TO THE SERVICE STUB AND SHALL BE EXTENDED UP THROUGH THE CLEANOUT TO SURFACE GRADE. SPLICES IN TRACER WIRE SHALL USE A NO. 8 SPLIT BOLT SEALED WITH SELF-VULCANIZING TAPE.
4. UNDERGROUND CONTRACTOR SHALL ROTATE ELBOWS TO INSTALL SERVICE STUBS AS SHOWN IN TEMPORARY LOCATION.
5. HOUSE CONTRACTOR SHALL ROTATE ELBOWS TO INSTALL SERVICES AS SHOWN IN FINISHED LOCATION.
6. ALL CONNECTIONS TO INLETS, CATCH BASINS, OR MANHOLES FOR SERVICE STUBS OF SUMP PUMP MAINLINES SHALL BE CORED AND NOT SAWCUT.
7. PRIOR TO FINAL ACCEPTANCE OF THE SUMP PUMP COLLECTION SYSTEM, THE ENTIRE SYSTEM SHALL BE TELEVISED. A COPY OF THE VIDEO TAPE SHALL BE DELIVERED TO THE PUBLIC WORKS DEPT. AND ANY OBSTRUCTIONS SHALL BE REPAIRED.

VILLAGE OF HINSDALE
STANDARD DETAIL
FOR
SUMP DISCHARGE
SERVICE LINE

REV:	
DATE:	APRIL 2008
FILE:	STORM\SUMPDIS

DETAIL NO. 6



NO SCALE

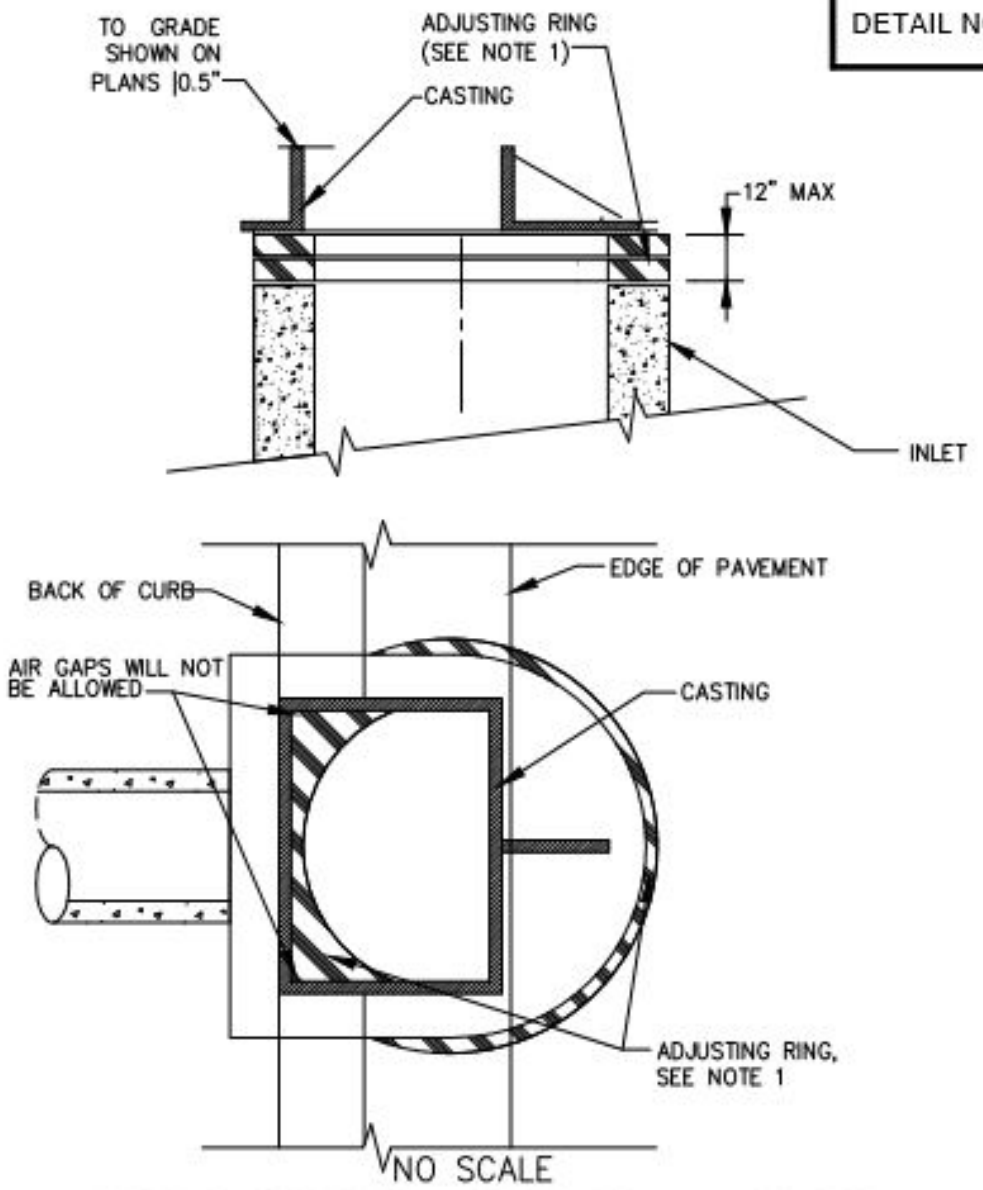
NOTES:

1. THERE SHALL BE A MAXIMUM OF 2 ADJUSTING RINGS WITH A MAXIMUM TOTAL HEIGHT OF 12".
2. ANY ADJUSTMENT OF 2" OR LESS SHALL USE PREFORMED RUBBER ADJUSTING RINGS, WHICH ARE 2" OR LESS IN THICKNESS.
3. THE FOLLOWING CASTING, OR APPROVED EQUAL, SHALL BE UTILIZED AS INDICATED:
   A. SANITARY MANHOLES: IDOT TYPE 1 FRAME, CLOSED WATERTIGHT LID WITH CONCEALED PICKHOLE, O–RING GASKETS, AND "HINSDALE" AND "SANITARY" CAST IN LID.
   B. WATER VALVE VAULTS: IDOT TYPE 1 FRAME, CLOSED WATERIGHT LID WITH CONCEALED PICKHOLE, O–RING GASKETS, AND "HINSDALE" AND "WATER" CAST IN LID.
   C. STORM MANHOLES: IDOT TYPE 1 FRAME, CLOSED LID WITH CONCEALED PICKHOLE, AND "HINSDALE" AND "STORM" CAST IN LID, FOR LIDS INDICATED AS "CLOSED" ON PLANS. FOR LIDS INDICATED AS "OPEN" ON PLANS, USE THE SAME CASTING, BUT WITH AN OPEN FLAT GRATE. THE "DRAINS TO CREEK" LOGO SHALL BE CAST INTO THE LID.
   D. DRAINAGE STRUCTURES IN OTHER AREAS WITH UNPAVED SURFACES: IDOT TYPE 1 FRAME, CLOSED LID WITH CONCEALED PICKHOLE AND "HINSDALE" AND "STORM" CAST IN LID FOR LIDS INDICATED AS "CLOSED ON PLANS. FOR LIDS INDICATED AS "OPEN ON PLANS, USE THE SAME CASTING, BUT WITH AND OPEN FLATE GRATE. THE "DRAINS TO CREEK" LOGO SHALL BE CAST
4. NOT FILTER FABRIC ALLOWED UNDER FRAMES OR GRATES. ALL STRUCTURES, EXCLUDING CURB STRUCTURES, SHALL HAVE INLET FILTERS INSTALLED. ALL INLET PROTECTION SHOULD BE IN ACCORDANCE WITH THE APPROVED STORMWATER POLLUTION PREVENTION PLAN.
5. "BEEHIVE" TYPE GRATES SHALL NOT BE USED.
6. IN PRIVATE STORM SEWER APPLICATIONS, "HINSDALE" LABEL SHALL BE OMITTED FROM THE LID.

VILLAGE OF HINSDALE
STANDARD DETAIL
FOR
CASTING INSTALLATION
AND ADJUSTING

REV:	
DATE:	APRIL 2008
FILE:	STORM\TYPCASTADJ

DETAIL NO. 7



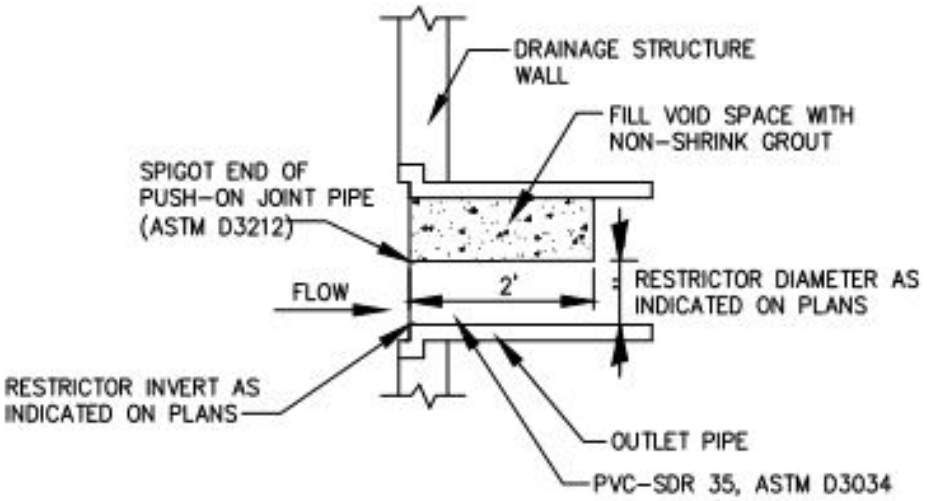
NOTES:

1. THE MAXIMUM NUMBER OF ADJUSTING RINGS SHALL BE TWO. THE MAXIMUM HEIGHT OF ADJUSTMENT SHALL BE 12". ONE ROW OF EXTUDIBLE PREFORMED PLASTIC GASKET SHALL BE USED ON ALL CONCRETE ADJUSTING RINGS.
2. ANY ADJUSTMENT OF 2" OR LESS SHALL USE PREFORMED RUBBER ADJUSTING RINGS, WHICH ARE 2" OR LESS IN THICKNESS.
3. IF THE CASTING MUST BE INSTALLED ON A SLOPE, PREFORMED RUBBER TAPERED RINGS MUST BE USED.
4. THE FOLLOWING CASTING, OR APPROVED EQUAL, SHALL BE UTILIZED AS INDICATED:
   A. DRAINAGE STRUCTURES IN MOUNTABLE CURB AND GUTTER: EAST JORDAN IRON WORKS # 7171 WITH TYPE M1 GRATE, OR APPROVED EQUAL. THE "DRAINS TO CREEK" LOGO SHALL BE CAST INTO THE GRATE.
   B. DRAINAGE STRUCTURES IN BARRIER CURB AND GUTTER: IDOT TYPE 11 FRAME AND GRATE. THE "DRAINS TO CREEK" LOGO SHALL BE CAST INTO THE GRATE OR HOOD.
5. EJIW #7171 CASTINGS CAN OVERLAP STRUCTURE EDGES A MAXIMUM OF 2.5 INCHES
6. IDOT TYPE 11 CASTINGS CAN OVERLAP STRUCTURE EDGES A MAXIMUM OF 2.0 INCHES.

VILLAGE OF HINSDALE
STANDARD DETAIL
FOR
CORBELING OF
CURB INLETS

REV:	
DATE:	APRIL 2008
FILE:	STORM\TYPCORB

DETAIL NO. 8

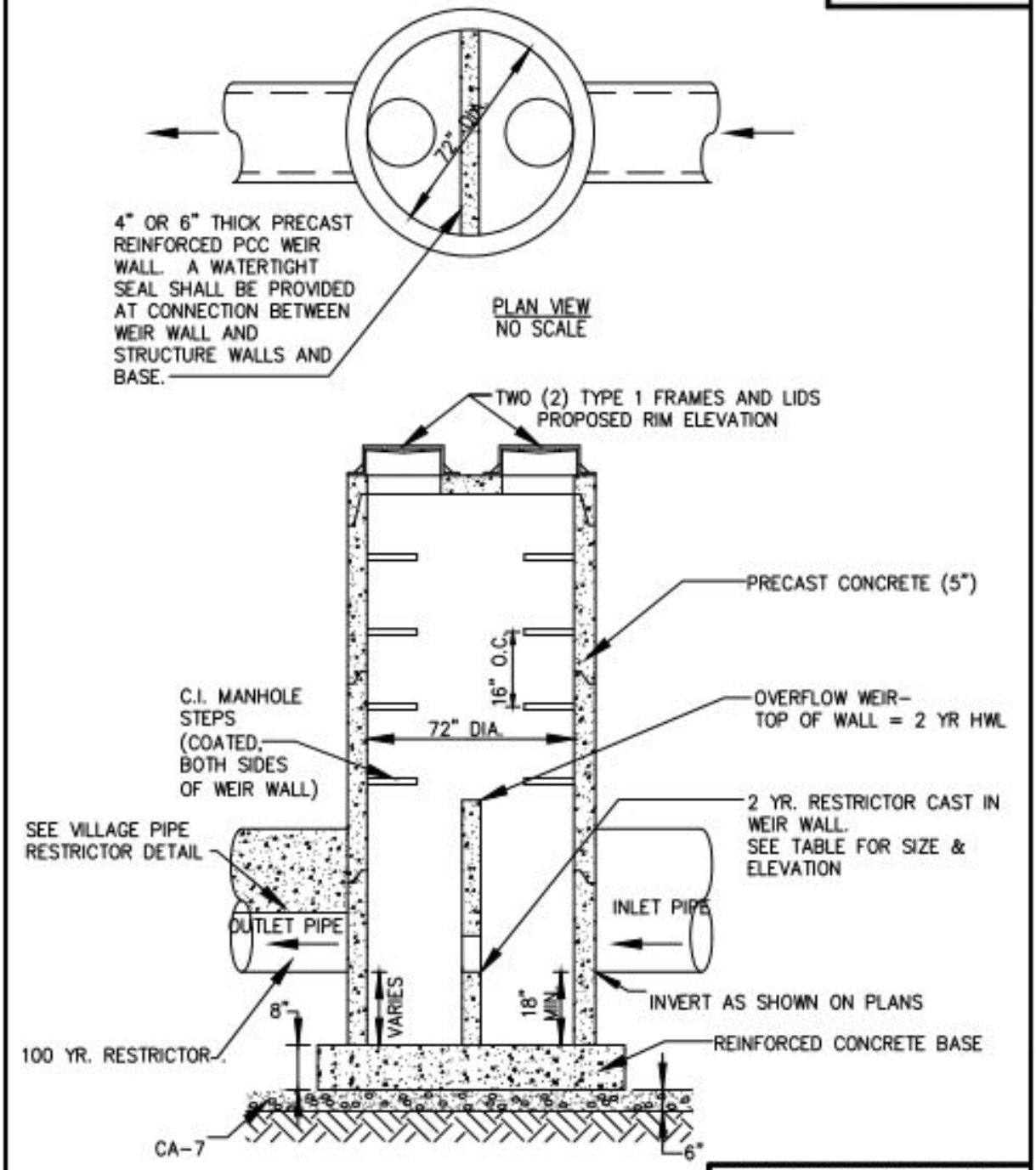


NO SCALE

VILLAGE OF HINSDALE
STANDARD DETAIL
FOR
PIPE RESTRICTOR

REV:	
DATE:	APRIL 2008
FILE:	STORM\PIPEREST

DETAIL NO. 9

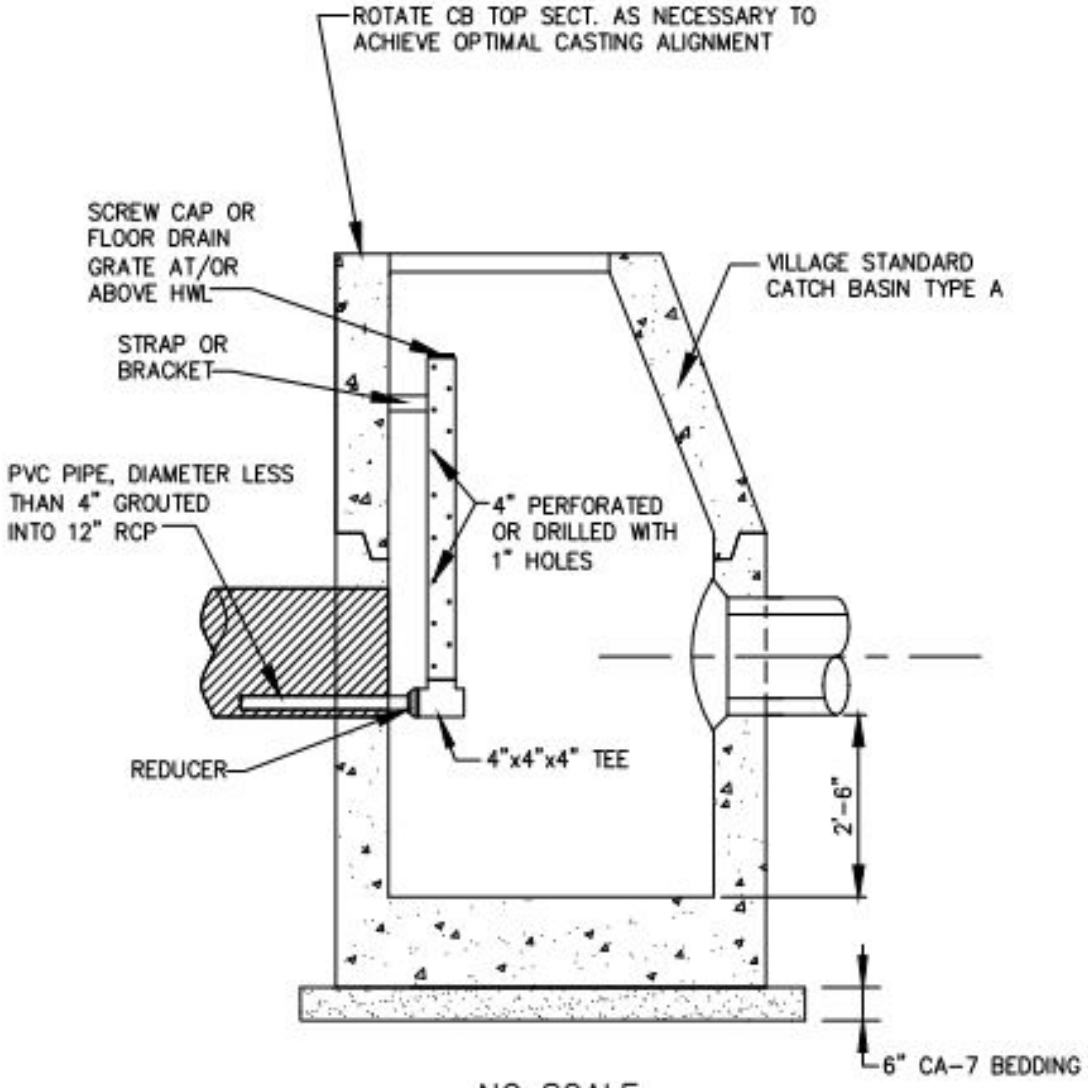


NO SCALE

VILLAGE OF HINSDALE
STANDARD DETAIL
FOR
DETENTION POND
RESTRICTOR
STRUCTURE NO. 1

REV:	
DATE:	JUNE 2013
FILE:	STORM\RESTICTSTRUC NO1

DETAIL NO. 10

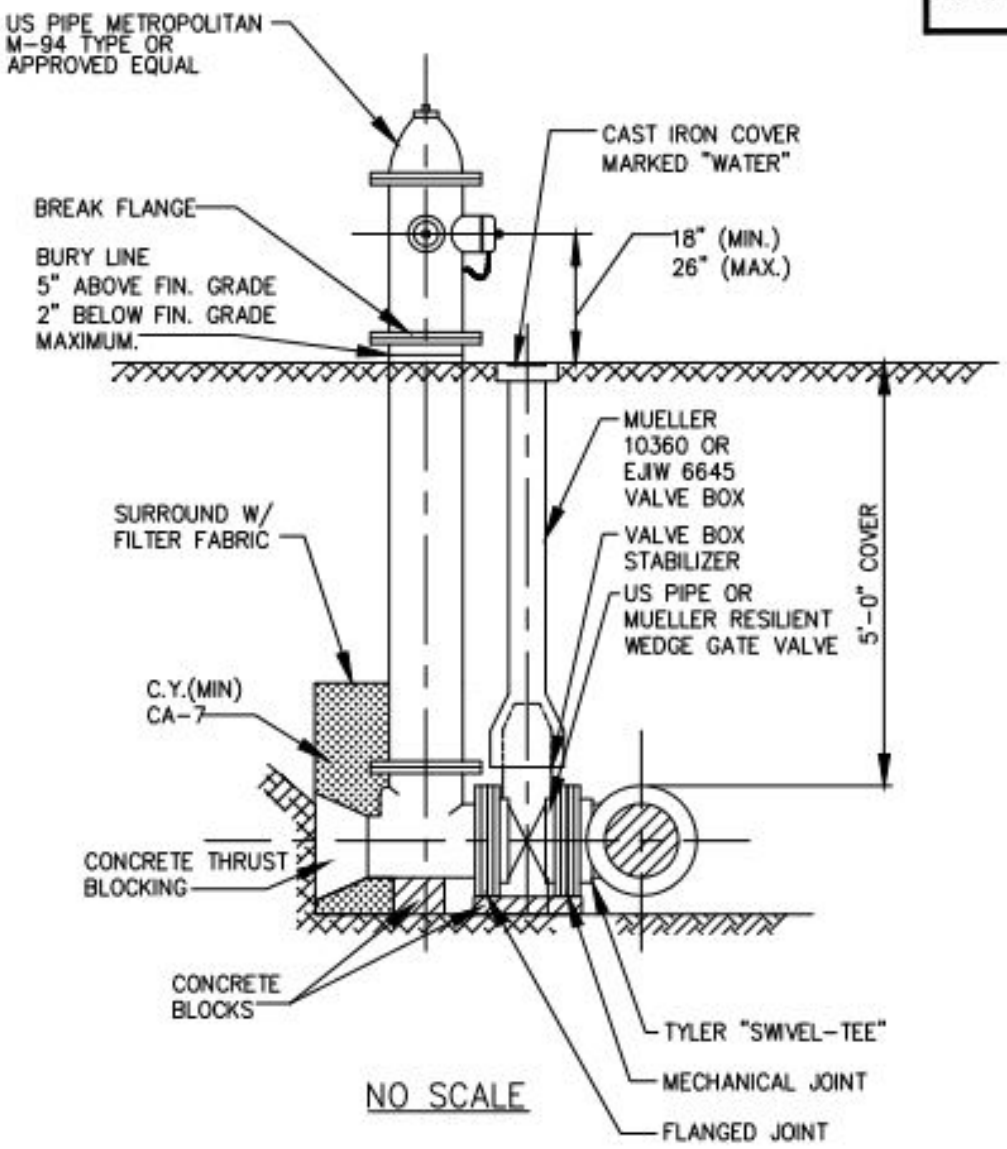


NO SCALE

VILLAGE OF HINSDALE
STANDARD DETAIL
FOR
DETENTION POND
RESTRICTOR
STRUCTURE NO. 2

REV:	
DATE:	APRIL 2008
FILE:	STORM\RESTICTSTRUC NO2

DETAIL NO. 11

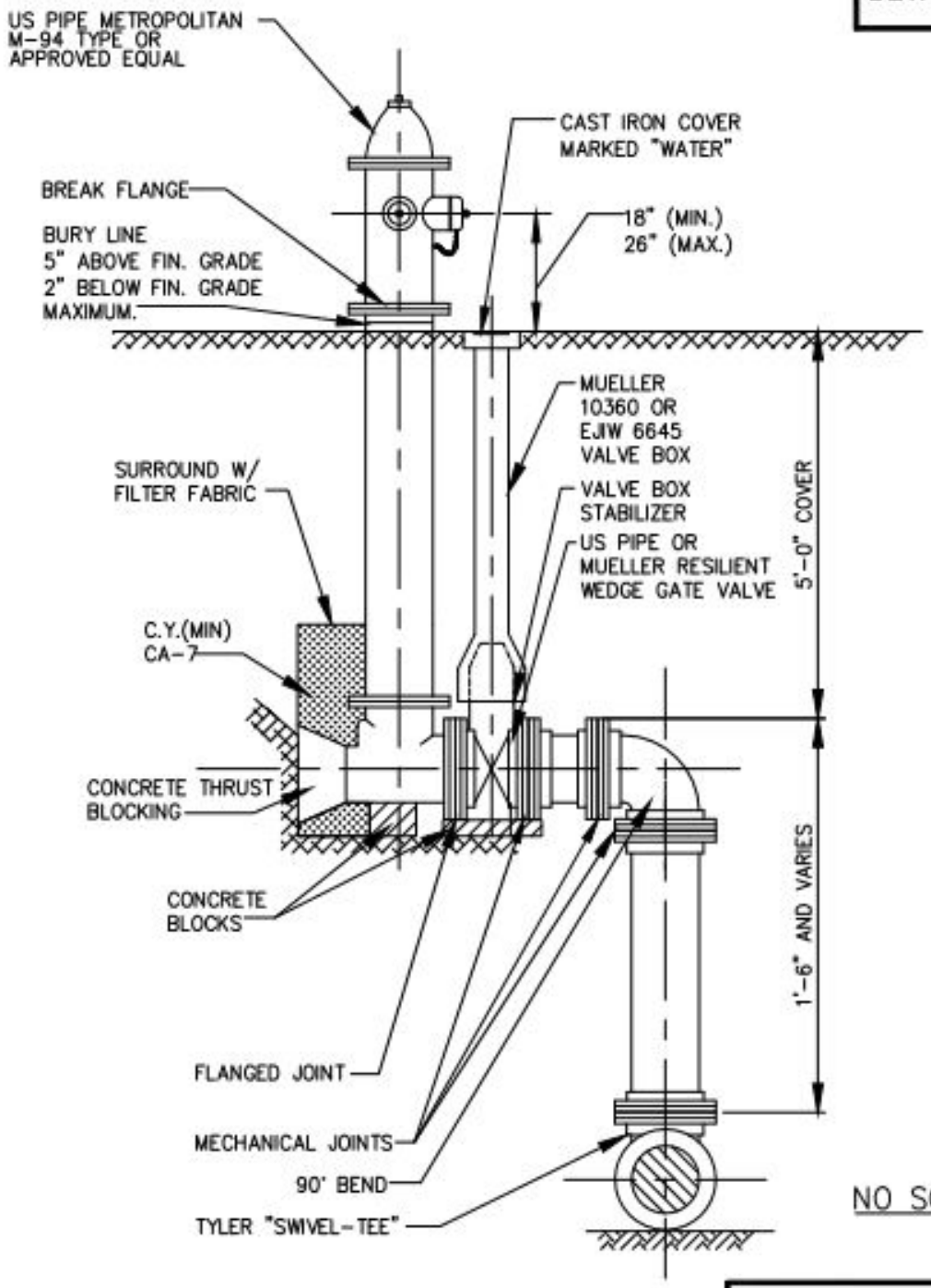


NOTES:
1. ALL BOLTS BELOW GRADE ON FIRE HYDRANT SHALL BE STAINLESS STEEL.
2. ALL BOLTS ON AUXILIARY VALVE SEAL PLATE AND BONNET SHALL BE STAINLESS STEEL.
3. THRUST BLOCKING SHALL BE CONSTRUCTED SO HYDRANT DRAIN HOLE IS NOT OBSTRUCTED.

VILLAGE OF HINSDALE
STANDARD DETAIL
FOR
FIRE HYDRANT

REV:	
DATE:	APRIL 2008
FILE:	WATER\FRHYDET

DETAIL NO. 12



NO SCALE

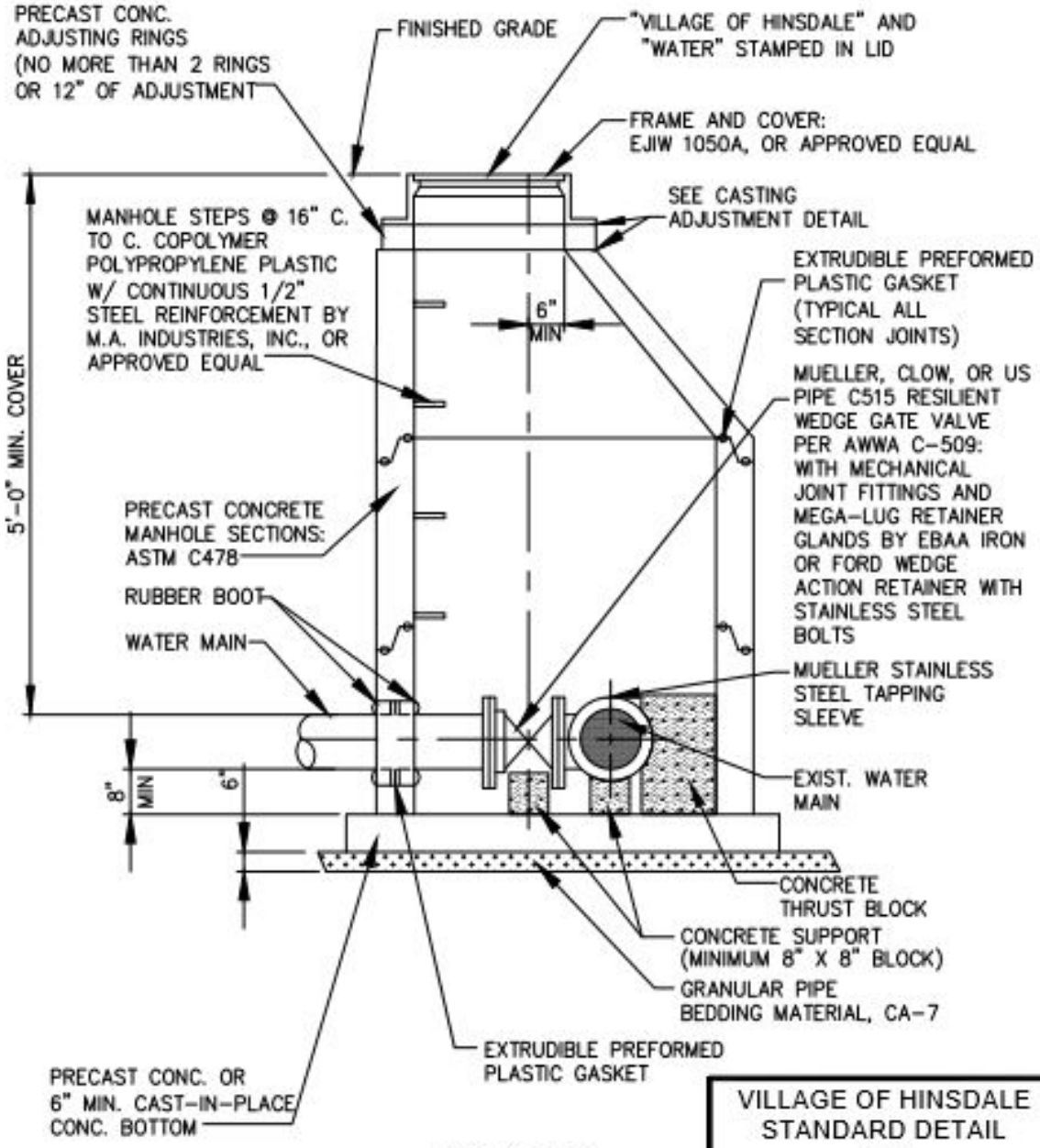
NOTES:
1. ALL BOLTS BELOW GRADE ON FIRE HYDRANT SHALL BE STAINLESS STEEL.
2. ALL BOLTS ON AUXILIARY VALVE SEAL PLATE AND BONNET SHALL BE STAINLESS STEEL.
3. THRUST BLOCKING SHALL BE CONSTRUCTED SO HYDRANT DRAIN HOLE IS NOT OBSTRUCTED.

VILLAGE OF HINSDALE
STANDARD DETAIL
FOR
FIRE HYDRANT
EXCESS OF 7' DEPTH

REV:	
DATE:	APRIL 2008
FILE:	WATER\FRHYDET7

DETAIL NO. 13

NOTES:
1. ECCENTRIC CONE REQUIRED
2. USE 4'-0" DIAMETER FOR WATER MAIN SIZES 8" OR LESS, USE 5'-0" DIAMETER FOR WATERMAIN SIZES 10" THRU 20", USE 6'-0" DIAMETER FOR WATERMAIN SIZES GREATER THAN 20"



NO SCALE

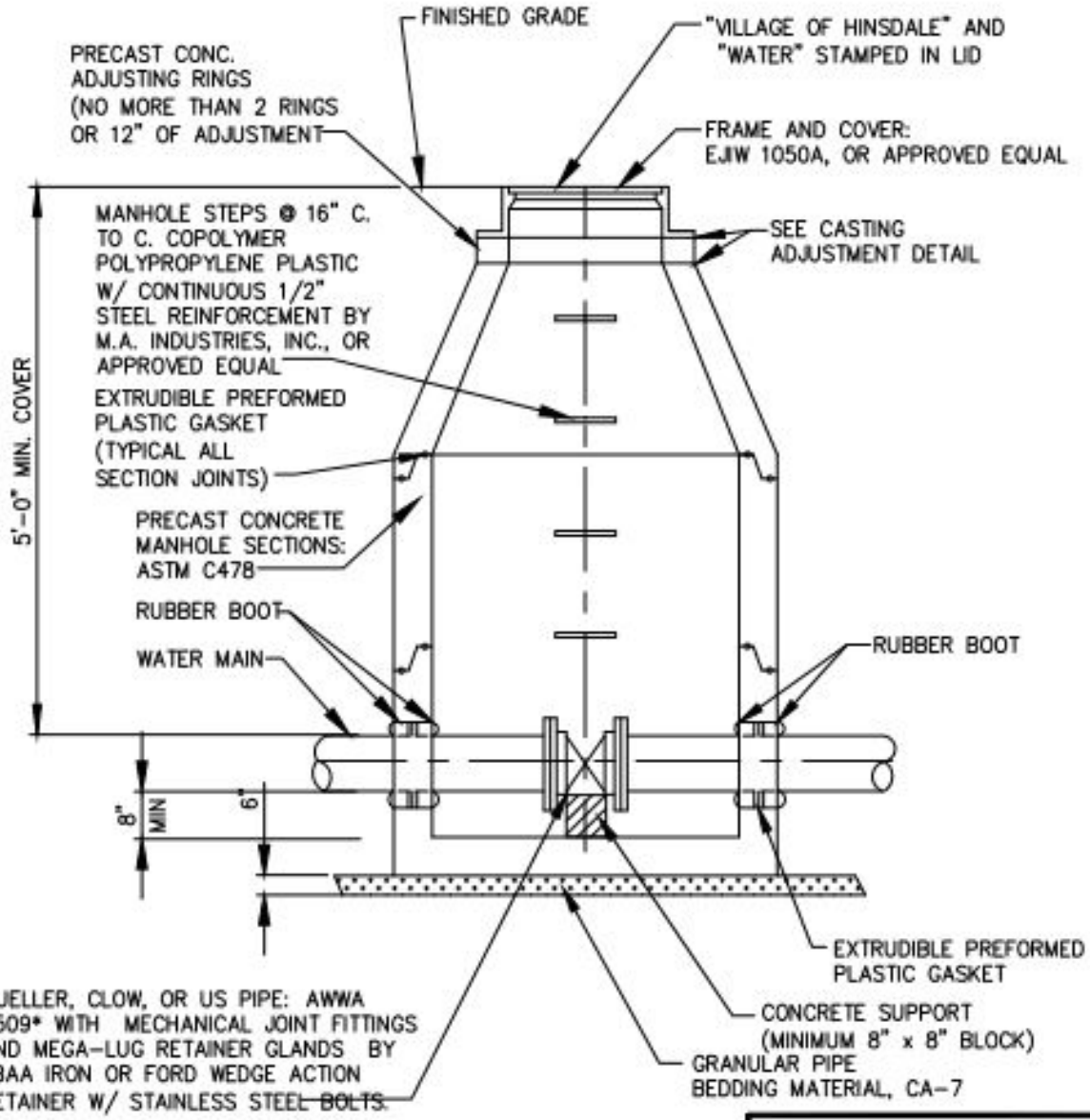
NOTE:
TAPPING OF WATER MAINS SHALL BE DONE ONLY IN THE PRESENCE OF AN AUTHORIZED VILLAGE REPRESENTATIVE.

VILLAGE OF HINSDALE
STANDARD DETAIL
FOR
PRESSURE CONNECTION
VALVE VAULT

REV:	1 - S.S. BOLTS REQ'D.
DATE:	AUG. 2011
FILE:	WATER\PCVAVT

DETAIL NO. 14

NOTES:
1. ECCENTRIC CONE REQUIRED
2. USE 4'-0" DIAMETER FOR WATER MAIN SIZES 8" OR LESS, USE 5'-0" DIAMETER FOR WATERMAIN SIZES 10" THRU 20", USE 6'-0" DIAMETER FOR WATERMAIN SIZES GREATER THAN 20"



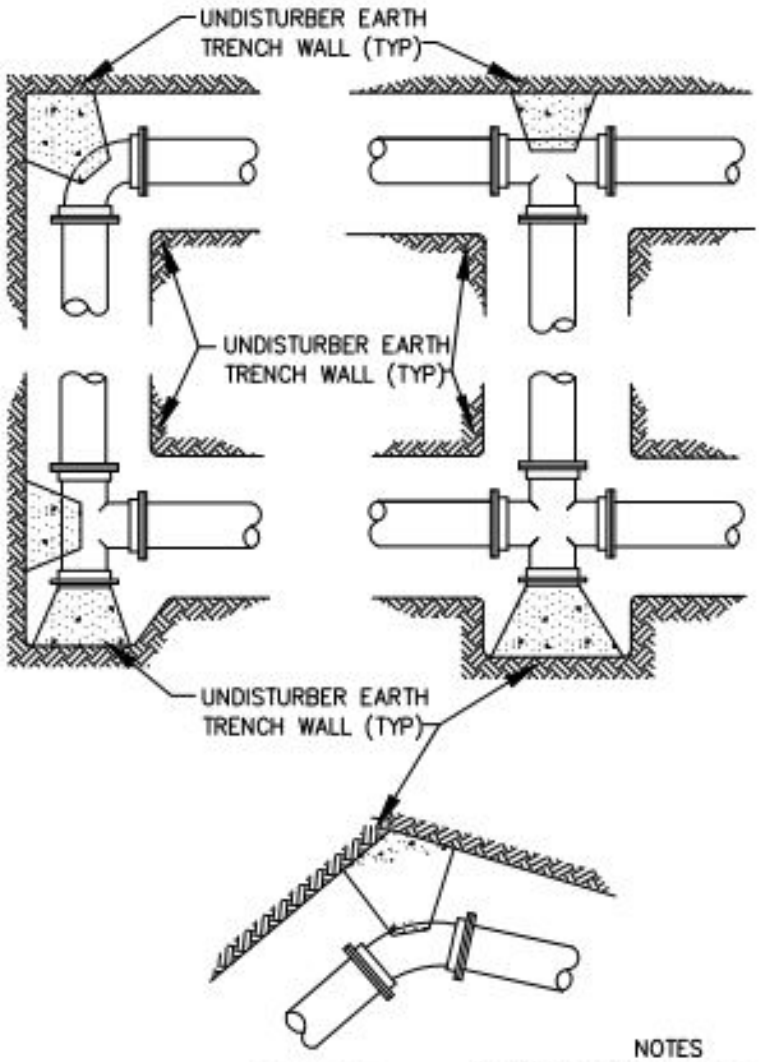
NO SCALE

* VALVES LARGER THAN 16" SHALL BE PRATT BUTTERFLY VALVES PER AWWA C504

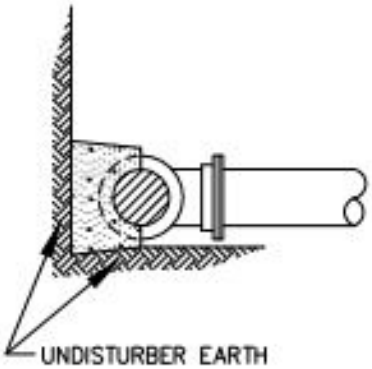
VILLAGE OF HINSDALE
STANDARD DETAIL
FOR
STANDARD VALVE

REV:	1 - S.S. BOLTS
DATE:	AUG. 2011
FILE:	WATER\STANVAVT

DETAIL NO. 15



PLAN VIEW
NO SCALE



SECTION
NO SCALE

NOTES

1. PROVIDE PRECAST OR CAST-IN-PLACE IDOT CLASS SI CONCRETE THRUST BLOCKS OF ADEQUATE SIZE AND THRUST BEARING SURFACE TO PREVENT MOVEMENT OF PIPE LINE UNDER PRESSURE.

2. PLACE THE BASE AND THRUST BEARING SIDES OF THE THRUST BLOCK DIRECTLY AGAINST UNDISTURBED EARTH.

3. PLACE THRUST BLOCKING SO THE FITTING JOINTS WILL BE ACCESSIBLE FOR REPAIR

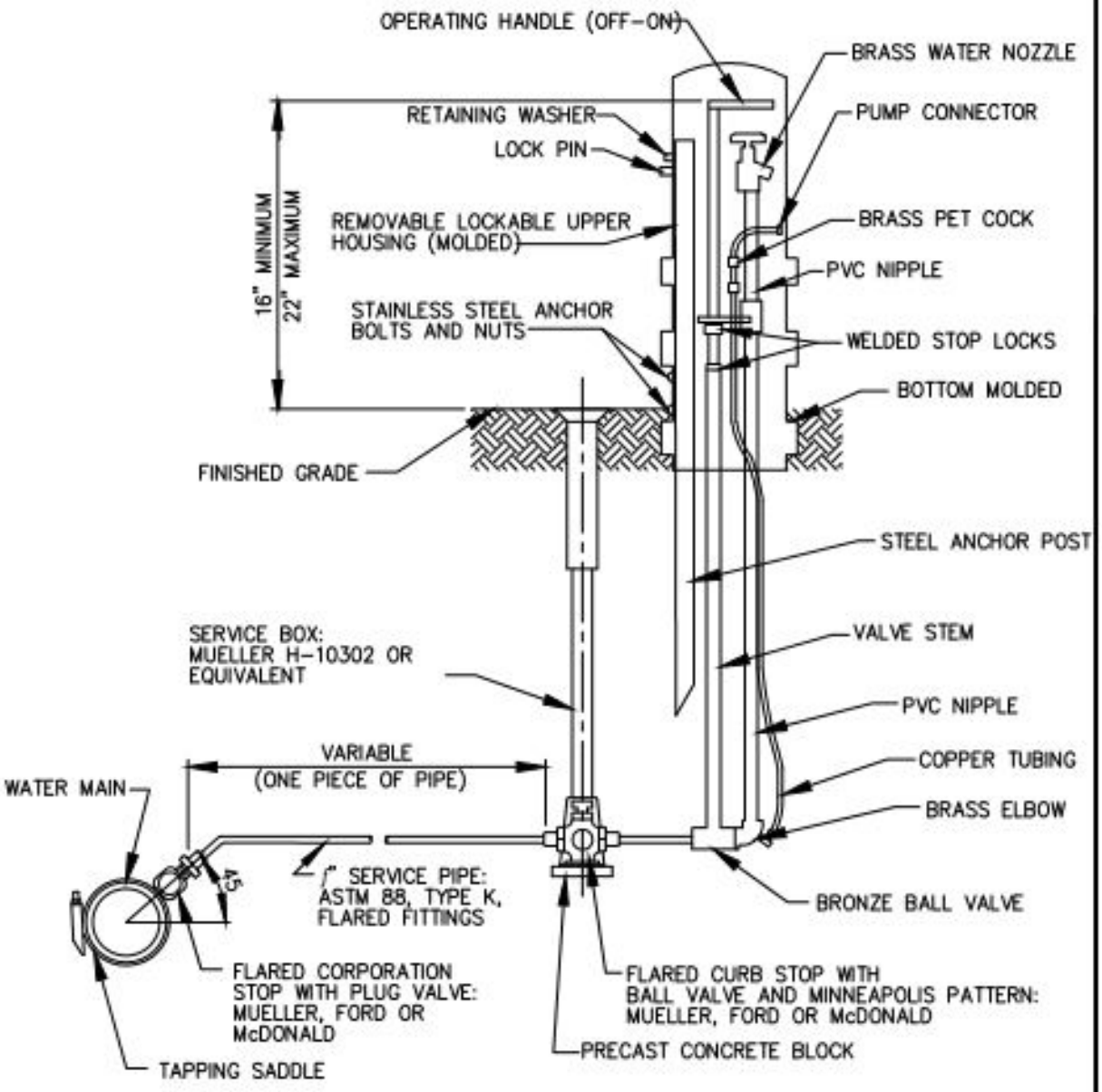
4. ALL FITTING SHALL HAVE MECHANICAL JOINTS WITH MEGA-LUG RETAINER GLANDS BY EBAA IRON, OR FORD WEDGE ACTION RETAINER AND STAINLESS STEEL BOLTS

NO SCALE

VILLAGE OF HINSDALE
STANDARD DETAIL
FOR
THRUST BLOCK
INSTALLATIONS

REV:	1 - S.S. BOLTS REQ'D
DATE:	AUG. 2011
FILE:	WATER\THRUSTBK

DETAIL NO. 16



1) SAMPLING STATION SHALL BE GIL INDUSTRIES MODEL EH101-50 OR APPROVED EQUAL.

2) SAMPLING STATION SERVICE SHALL REQUIRE TAPPING SADDLE. THE SADDLE SHALL BE STAINLESS, SMITH BLAIR #264 OR JCM #163

3) LOCATION OF SAMPLING STATION SHALL BE DETERMINED DURING FINAL ENGINEERING OF THE PROPOSED DEVELOPMENT.

4) CONTRACTOR SHALL HAVE SAMPLING STATION STAKED FOR LOCATION AND ELEVATION AND APPROVED BY THE VILLAGE PRIOR TO INSTALLATION.

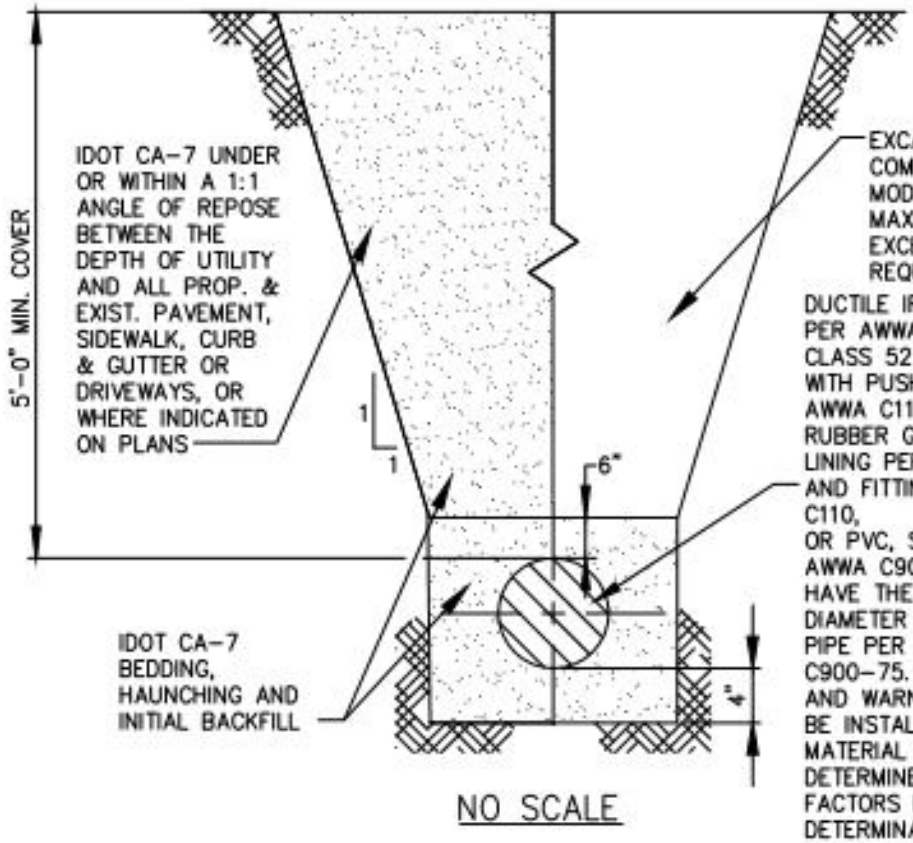
5) WATER SAMPLING STATIONS SHALL BE INDICATED ON THE DRAWINGS USING THE SYMBOL SHOWN BELOW

WS

VILLAGE OF HINSDALE
STANDARD DETAIL
FOR
WATER SAMPLING
STATION

REV:	1 - TAPPING SADDLE
DATE:	AUG. 2011
FILE:	WATER\WATERSAMPLER

DETAIL NO. 17



NO SCALE

NOTES:

1. WATER FOR ALL FILLING, TESTING AND CHLORINATING SHALL BE DRAWN FROM THE VILLAGE'S SYSTEM AT THE PROPOSED POINT OF CONNECTION, USING THE VILLAGE'S METERING EQUIPMENT. THIS EQUIPMENT SHALL BE AVAILABLE FROM THE VILLAGE AFTER A 48-HOUR PRIOR NOTICE. EQUIPMENT SHALL BE RETURNED TO THE VILLAGE IMMEDIATELY UPON COMPLETION OF THE TEST, WHETHER SUCCESSFUL OR NOT. CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING 2-INCH FLARED CORPORATION ON NEW MAIN TO CONNECT WITH VILLAGE'S EQUIPMENT. FLUSHING SCHEDULE SHALL BE SUBJECT TO VILLAGE WATER DEPARTMENT'S REVIEW AND APPROVAL

2. MAINS SHALL BE PRESSURE TESTED AT A MAXIMUM PRESSURE OF 150 PSI FOR 2 HOUR AND SHALL NOT EXCEED THE ALLOWABLE LEAKAGE WITH AWWA C600 AND AWWA C603. IF MAINS TO BE TESTED INCLUDE CONCRETE THRUST BLOCKING, DO NOT BEGIN TEST UNTIL AT LEAST 5 DAYS AFTER THE INSTALLATION OF THE THRUST BLOCKING.

3. NO CHAINS SHALL BE USED DURING THE INSTALLATION OF THE PROPOSED WATER MAIN. NYLON STRAPS SHALL BE UTILIZED INSTEAD. ANY PIPE THAT IS SCRATCHED DURING INSTALLATION SHALL BE SPRAYED WITH A DIALECTRIC UNDERCOATING PAINT.

4. BRONZE WEDGES SHALL BE INSTALLED AT ALL DUCTILE IRON PIPE JOINTS

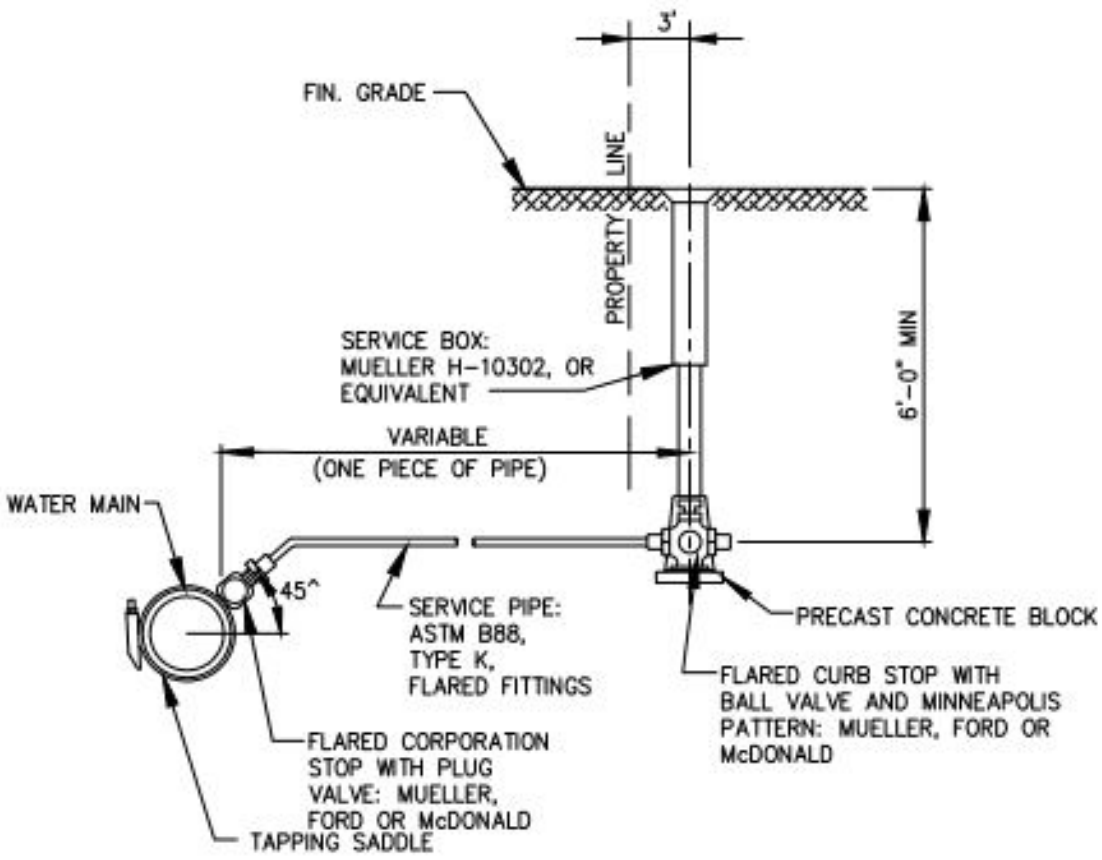
5. WATER MAINS SHALL BE FLUSHED AND THEN DISINFECTED BY PER ARTICLE 41-2.14 OF THE STANDARD SPECIFICATIONS FOR WATER & SEWER MAIN CONSTRUCTION IN ILLINOIS, FIFTH EDITION.

6. 16-INCH AND LARGER MAINS SHALL INCLUDE RESTRAINED JOINT PIPE FOR THREE PIPE LENGTHS FROM EACH FITTING

VILLAGE OF HINSDALE
STANDARD DETAIL
FOR
WATER MAIN
INSTALLATION

REV:	1 - MATERIAL CHOICE
DATE:	AUG. 2011
FILE:	WATER\WMI

DETAIL NO. 18



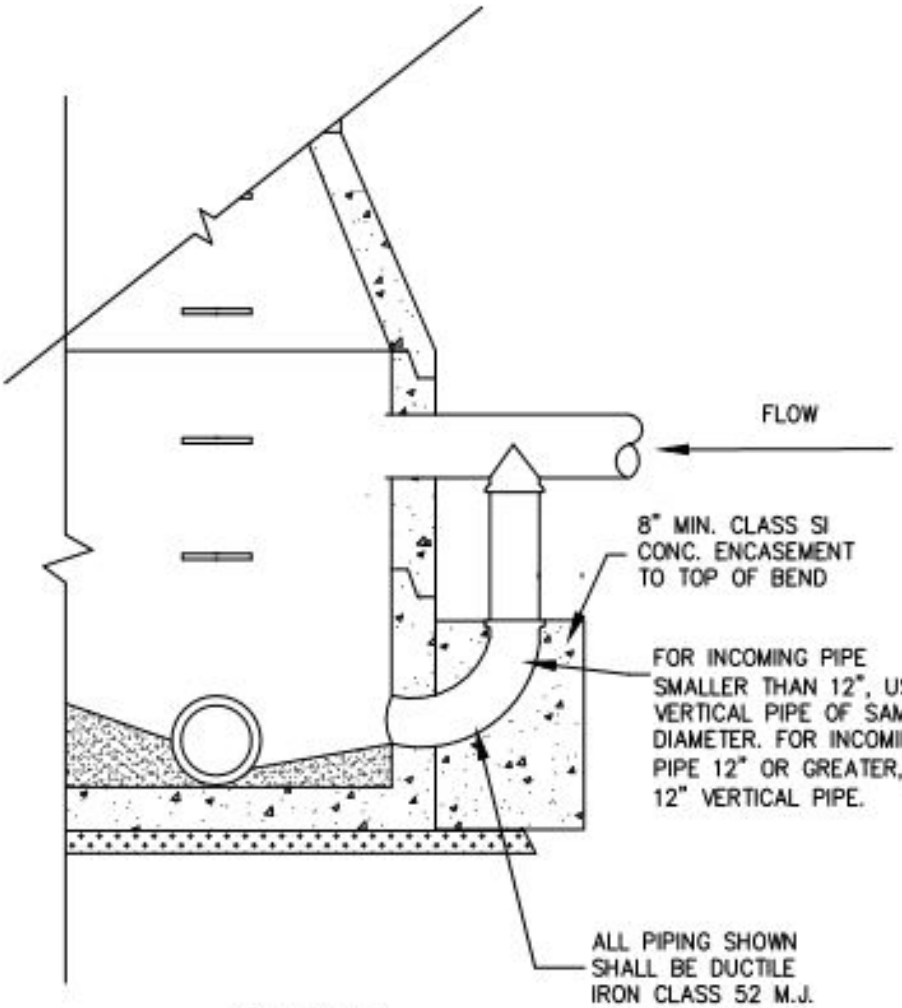
NO SCALE

NOTE:
1. TRENCH BACKFILL SHALL BE INSTALLED PER WATER MAIN INSTALLATION DETAIL.
2. WATER SERVICES SHALL NOT EXCEED 100' IN LENGTH. SPLICES IN THE WATER SERVICE SHALL NOT BE PERMITTED.
3. ALL SERVICES SHALL REQUIRE SADDLES. THE SADDLE SHALL BE STAINLESS, SMITH BLAIR #264 OR JCM #163.

VILLAGE OF HINSDALE
STANDARD DETAIL
FOR
WATER SERVICE

REV:	1 – TAPPING SADDLE
DATE:	AUG. 2011
FILE:	WATER\WSRV

DETAIL NO. 19



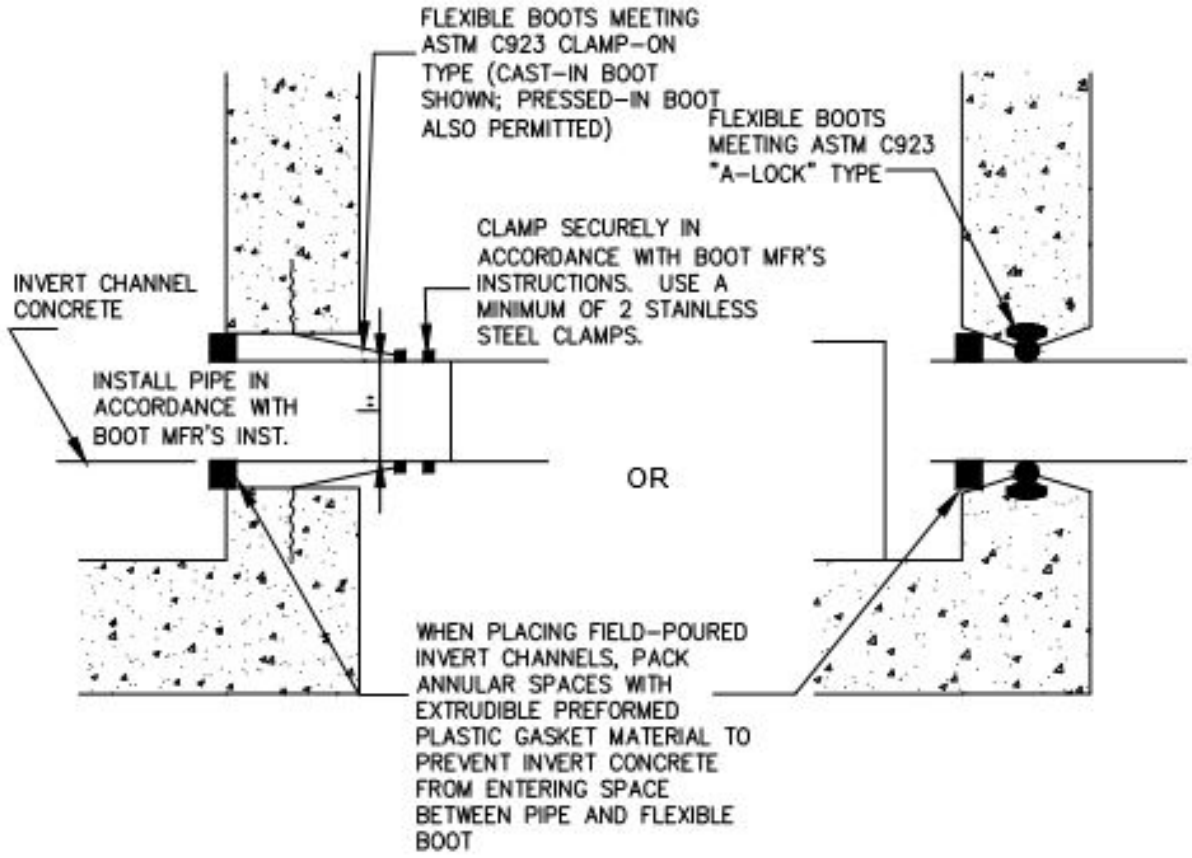
NO SCALE

NOTE:
20 FEET OF DUCTILE IRON PIPE WITH PROTECTO 401 COATING SHALL BE INSTALLED UPSTREAM OF TEE.

VILLAGE OF HINSDALE
STANDARD DETAIL
FOR
DROP CONNECTION

REV:	
DATE:	APRIL 2008
FILE:	SANITARY\DROP

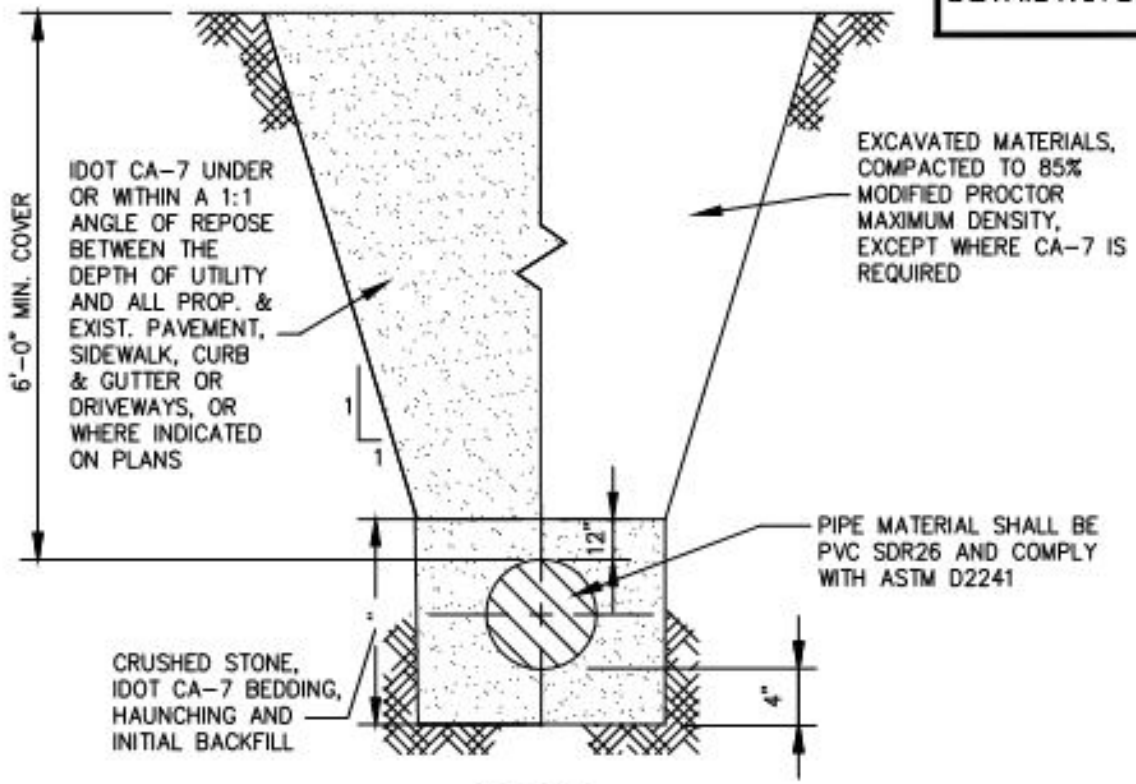
DETAIL NO. 20



VILLAGE OF HINSDALE
STANDARD DETAIL
FOR
SANITARY MANHOLE PIPE CONNECTION

REV:	
DATE:	APRIL 2008
FILE:	SANITARY\SMNHLPC

DETAIL NO. 21



NO SCALE

NOTES:

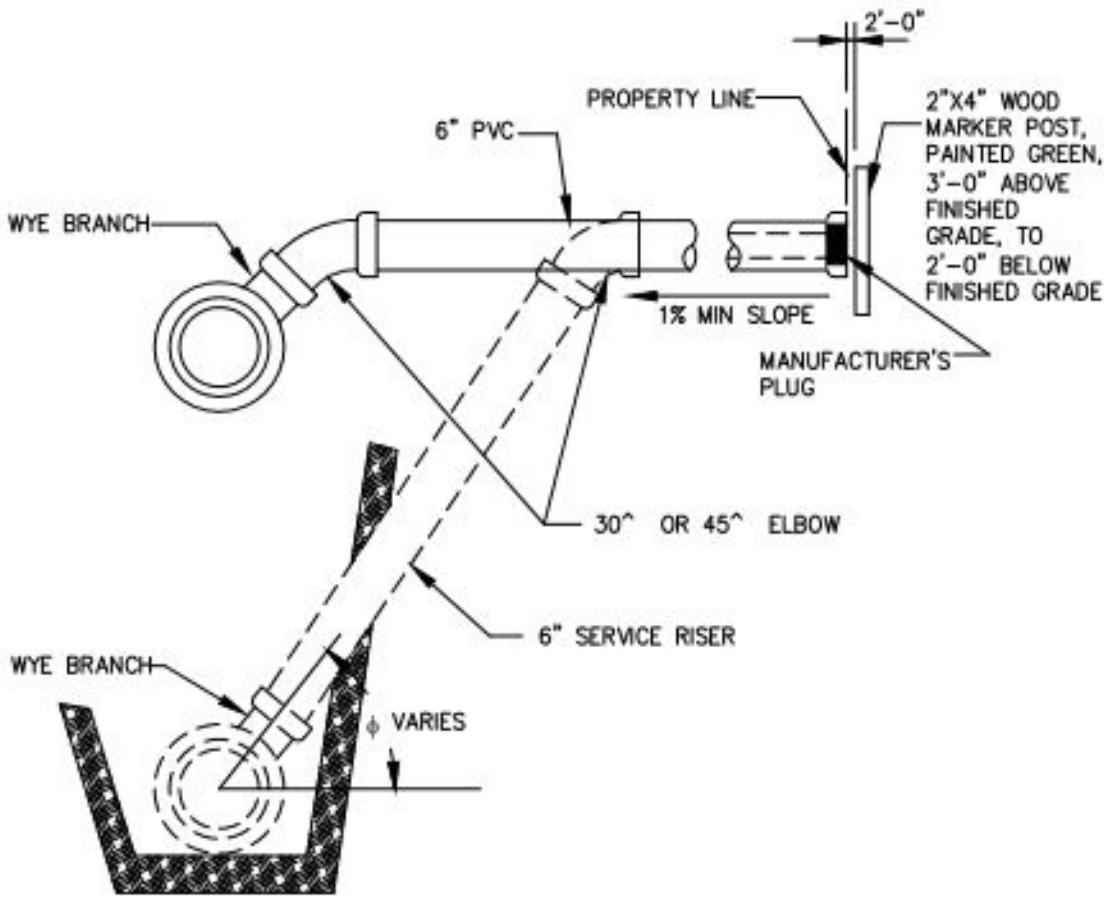
1. JOINTS FOR GRAVITY SANITARY SEWER SHALL USE PUSH ON BELL AND SPIGOT TYPE WITH RUBBER RING GASKETS CONFORMING TO ASTM D3139 AND ASTM F477 FOR SDR 26 APPLICATIONS.
2. WHERE INDICATED ON THE PLANS, SANITARY SEWER PRESSURE PIPE SHALL COMPLY WITH ASTM D2241 FOR 160 PSI PRESSURE RATED PIPE SDR 26, MADE OF TYPE 1, GRADE 1 POLYVINYL CHLORIDE CONFORMING TO ASTM D1784. JOINTS SHALL USE PUSH-ON BELL AND SPIGOT TYPE WITH RUBBER RING SEAL GASKETS CONFORMING TO ASTM D3139.
3. GRAVITY SANITARY SEWER FITTINGS SHALL COMPLY WITH ASTM D3139 WITH A SDR OF 26. THE FITTINGS SHALL BE MADE WITH MANUFACTURER'S STANDARD PIPE BELLS AND GASKETS. GRAVITY SEWER RISERS AND SERVICE PIPE AND FITTINGS SHALL COMPLY WITH ASTM D2241 WITH A SDR OF 26.
4. PRESSURE SANITARY SEWER FITTINGS SHALL BE FACTORY FABRICATED WITH ATTACHED MAIN LINE COUPLING, WITH SAME RATING AS PIPE. PRESSURE SEWER RISERS AND SERVICE PIPE AND FITTINGS SHALL COMPLY WITH ASTM D2241, 160 PSI PRESSURE RATED, SDR 26 PIPE. SEPARATE NOTIFICATION SHALL BE PROVIDED TO PUBLIC WORKS DEPARTMENT PRIOR TO INSTALLING PRESSURE SANITARY SEWERS.
5. SANITARY SEWERS SHALL BE PRESSURE TESTED IN ACCORDANCE WITH ARTICLE 31-1.11B(3) OF THE STANDARD SPECIFICATIONS FOR SEWER & WATER CONSTRUCTION IN ILLINOIS, FIFTH EDITION; AND DEFLECTION TESTED IN ACCORDANCE WITH ARTICLE 31-1.11B(4) OF THE STANDARD SPECIFICATIONS FOR SEWER & WATER CONSTRUCTION IN ILLINOIS, FIFTH EDITION. DEFLECTION TESTING SHALL BE DONE NO SOONER THAN 30 DAYS AFTER THE PIPE HAS BEEN BACKFILLED. NO SOONER THAN 30 DAYS AFTER SEWERS HAVE BEEN INSTALLED, THEY SHALL BE INSPECTED BY CLOSED CIRCUIT COLOR TELEVISION TO DETERMINE IF ANY PIPE INSTALLATION DEFECTS HAVE OCCURRED, AND TO DETERMINE THE LOCATION OF SERVICES. ONE COPY OF THE VIDEOTAPE AND WRITTEN INSPECTION REPORT SHALL BE FURNISHED TO THE VILLAGE.
6. SEWER PLUGS SHALL BE INSTALLED AT DOWNSTREAM ENDS OF ALL NEW SEWERS AND LEFT IN PLACE UNTIL VILLAGE ACCEPTS SEWERS. SEWER PLUGS SHALL BE INSTALLED AT UPSTREAM ENDS OF NEW SEWERS AT THE END OF EACH DAY'S WORK.

* THE VILLAGE RESERVES THE RIGHT TO REQUIRE ALTERNATE SANITARY SEWER PIPE AND JOINT MATERIALS AS IT DEEMS NECESSARY

VILLAGE OF HINSDALE
STANDARD DETAIL
FOR
SANITARY SEWER
INSTALLATION

REV:	
DATE:	APRIL 2008
FILE:	SANITARY\SSI

DETAIL NO. 22



NOTES:

1. IF $\phi < 45^\circ$ USE PVC PUSH-ON JOINT WYE, P.V.C. ELBOW, P.V.C. RISER PIPE & P.V.C. TOP ELBOW.

2. IF $\phi > 45^\circ$ USE DUCTILE IRON M.J. TEE WITH P.V.C./DUCTILE TRANSITION GASKET, DUCTILE IRON RISER PIPE AND DUCTILE IRON TOP ELBOW. ALL DUCTILE IRON COMPONENTS SHALL BE COATED WITH PROTECTO 401 OR APPROVED EQUAL.

3. ALL PVC PIPE AND FITTINGS SHALL BE ASTM D3034, SDR 26, WITH ELASTOMERIC GASKET TYPE JOINTS COMPLYING WITH ASTM F477 AND ASTM D3212

4. A MINIMUM DISTANCE OF 3 FT IS REQUIRED BETWEEN 45^ BENDS.

5. TRENCH BACKFILL SHALL BE INSTALLED PER SANITARY SEWER INSTALLATION DETAIL.

VILLAGE OF HINSDALE
STANDARD DETAIL
FOR
SEWER SERVICE FOR
SANITARY SEWERS

REV:	
DATE:	APRIL 2008
FILE:	SANITARY\SWSER1

DETAIL NO. 23

NOTES:

1. CASING PIPE SHALL BE NEW PIPE CONFORMING TO ASTM C139 GRADE A WITH CONTINUOUS FIELD-WELDED BUTT JOINTS IN ACCORDANCE WITH AWWA C206, A MINIMUM YIELD STRENGTH OF 35,000 PSI, AND THE FOLLOWING MINIMUM WALL THICKNESS:

NOMINAL PIPE SIZE - INCHES	MINIMUM WALL THICKNESS - INCHES	
	UNDER HIGHWAY	UNDER RAILROAD
UNDER 14	0.188	0.2500
14 AND 16	0.250	0.3125
18	0.250	0.3125
20	0.250	0.3750
24	0.312	0.4375
30	0.312	0.5000
36	0.375	0.5625
42	0.375	0.563
48	0.375	0.625
54	0.500	0.719
60	0.575	0.781
66	0.650	0.875
72	0.650	0.938

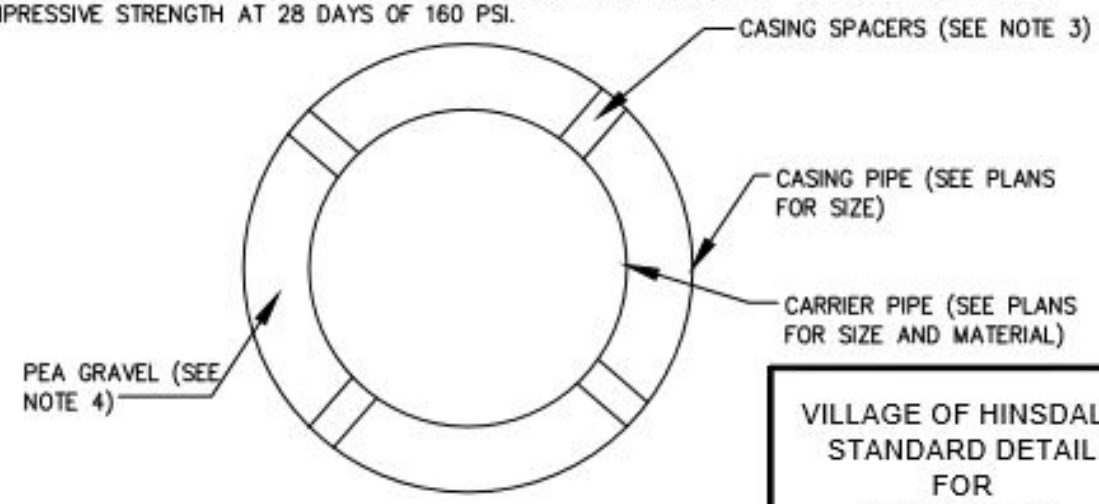
2. COAT EXTERIOR SURFACES OF THE CASING PIPE WITH COAL-TAR EPOXY COMPLYING WITH AWWA C210.

3. PROVIDE CARRIER PIPE SUPPORT SYSTEM TO POSITION CARRIER PIPE AT THE INDICATED ELEVATION AND SLOPE WITHIN THE CASING, USING POWERSEAL CASING CHOCK MODEL 4810 STAINLESS STEEL SPACERS CONSISTING OF 4 GAUGE TYPE 304 STAINLESS STEEL SHELLS, PVC LINER, HIGH MOLECULAR WEIGHT POLYMER RUNNERS, AND STAINLESS STEEL BOLTS AND LOCK NUTS, OR APPROVED EQUAL. A MINIMUM OF THREE SPACERS SHALL BE PROVIDED PER CARRIER PIPE LENGTH, ON 6-FOOT CENTERS.

4. FILL ANNULAR SPACE BETWEEN CARRIER AND CASING PIPES FOR ALL PIPES EXCEPT WATER MAINS WITH PEA GRAVEL.

5. CONSTRUCT END SEALS WITH CONCRETE BRICK LAID LENGTHWISE WITH MORTAR OR PREMANUFACTURED RUBBER END SEALS MADE SPECIFICALLY FOR THIS PURPOSE.

6. FILL VOIDS AROUND EXTERIOR OF CASING PIPE WITH MEARL GEOFOAM LIQUID CONCENTRATE LOW DENSITY CELLULAR CONCRETE GROUT HAVING A MINIMUM NET DENSITY OF 45 PCF AND A MINIMUM COMPRESSIVE STRENGTH AT 28 DAYS OF 160 PSI.

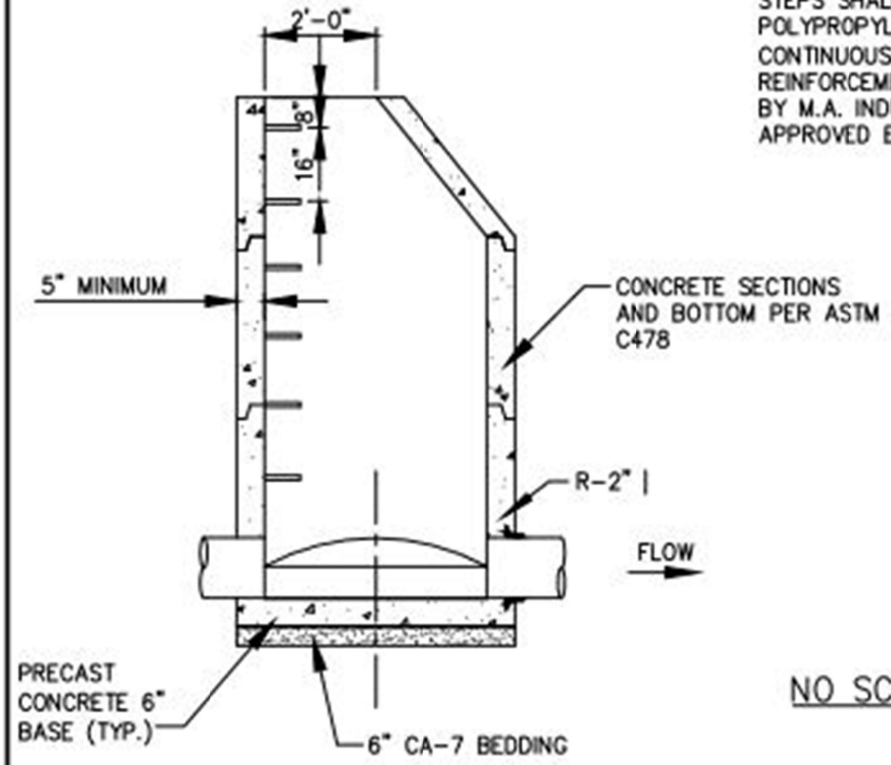


NO SCALE

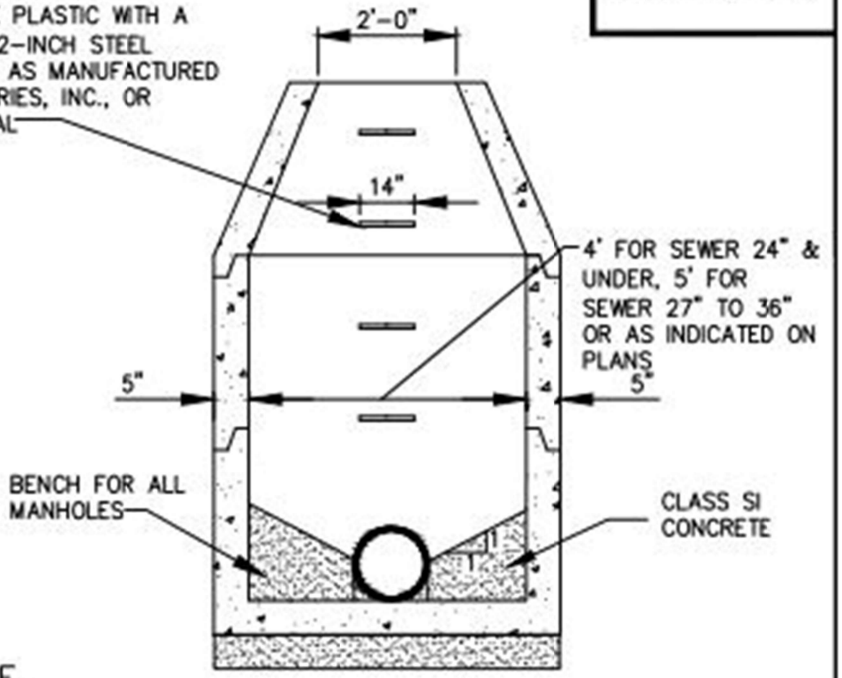
VILLAGE OF HINSDALE
STANDARD DETAIL
FOR
CASING PIPE

REV:	
DATE:	APRIL 2008
FILE:	MISC\CASPIPE

DETAIL NO. 24



STEPS SHALL BE COPOLYMER POLYPROPYLENE PLASTIC WITH A CONTINUOUS 1/2-INCH STEEL REINFORCEMENT AS MANUFACTURED BY M.A. INDUSTRIES, INC., OR APPROVED EQUAL



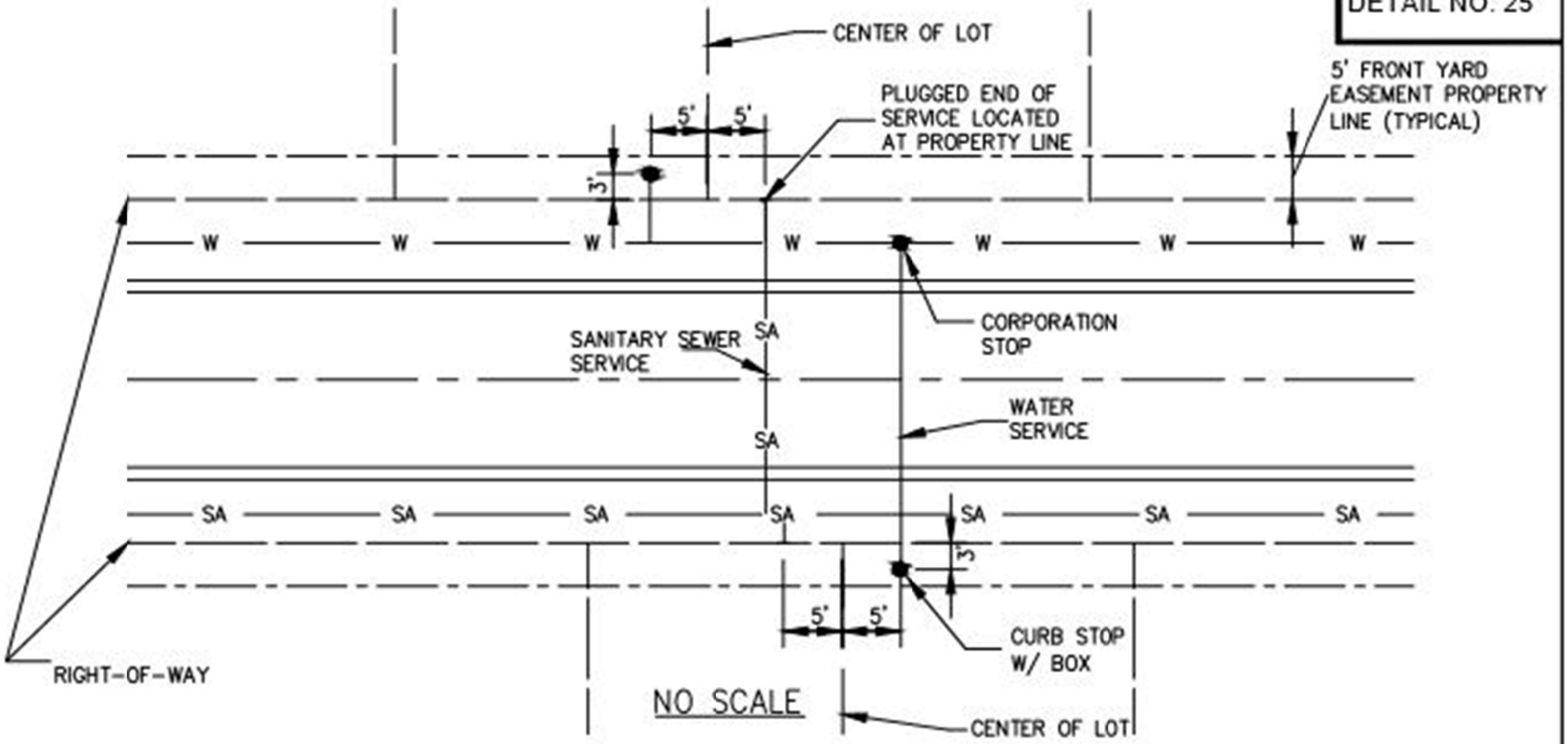
NO SCALE

NOTE:
1. SANITARY MANHOLES SHALL HAVE WATERSTOP GASKETS CAST INTO STRUCTURES AT ALL PIPE PENETRATIONS. (SEE MANHOLE PIPE CONNECTION DETAIL)
2. SANITARY MANHOLES SHALL HAVE CRETEX INTERNAL CHIMNEY SEALS AND PARSONS RAINSTOPPER INSERTS OR EQUAL.
3. SANITARY MANHOLES SHALL HAVE INTEGRAL BASES.
4. MANHOLE BARREL JOINTS SHALL BE TONGUE AND GROOVE TYPE WITH TWO ROWS OF EXTRUDIBLE PREFORMED PLASTIC GASKET MATERIAL (BUTYL ROPE).
5. MACWRAP EXTERNAL JOINT SEALING BANDS IN ACCORDANCE WITH ASTM C-877, OR APPROVED EQUIVALENT, MUST BE PROVIDED AT SANITARY MANHOLE JOINTS.
6. STORM MANHOLES SHALL HAVE A WALL THICKNESS OF 6" FOR 5' DIAMETER STRUCTURES AND 7" FOR 6' DIAMETER STRUCTURES
7. SANITARY MANHOLES SHALL PASS VACUUM-TESTING PER ASTM C-1244.
8. SEE CASTING INSTALLATION AND ADJUSTING DETAIL FOR CASTING REQUIREMENTS.

VILLAGE OF HINSDALE
STANDARD DETAIL
FOR
MANHOLE, TYPE A

REV:	
DATE:	APRIL 2008
FILE:	MISC\MHA

DETAIL NO. 25



NOTES:
1. LOCATION OF SEWER AND WATER SERVICES SHALL BE AS SHOWN ABOVE UNLESS INDICATED OTHERWISE ON PLANS.

2. THE END OF EACH WATER SERVICE SHALL BE MARKED WITH A BLUE 2"X4" POST.

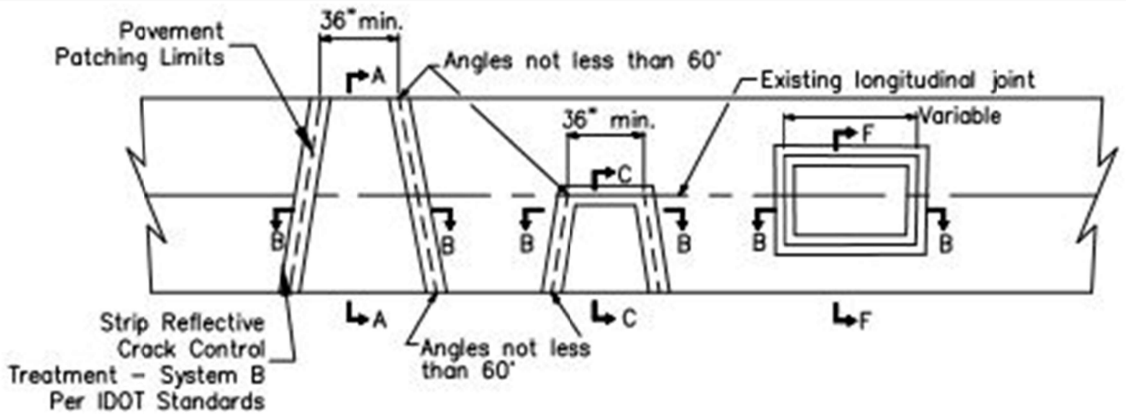
3. THE END OF EACH SANITARY SEWER SERVICE SHALL BE MARKED WITH A GREEN 2"X4" POST.

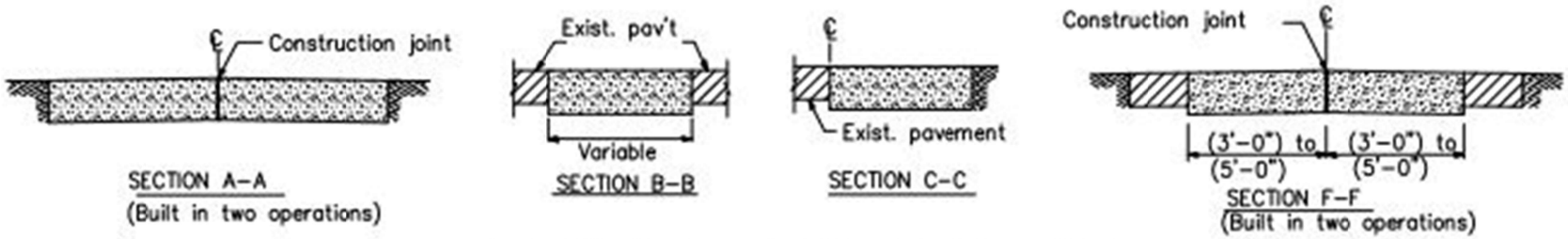
4. WATER SERVICES SHALL END AT THE BUFFALO BOX UNLESS OTHERWISE INDICATED ON PLANS.

VILLAGE OF HINSDALE
STANDARD DETAIL
FOR
TYPICAL SERVICE
LATERALS

REV:	
DATE:	APRIL 2008
FILE:	MISC\TYPSERLATS

DETAIL NO. 26





HOT MIX ASPHALT ROADWAYS (TEMP. GREATER THAN 40° F)

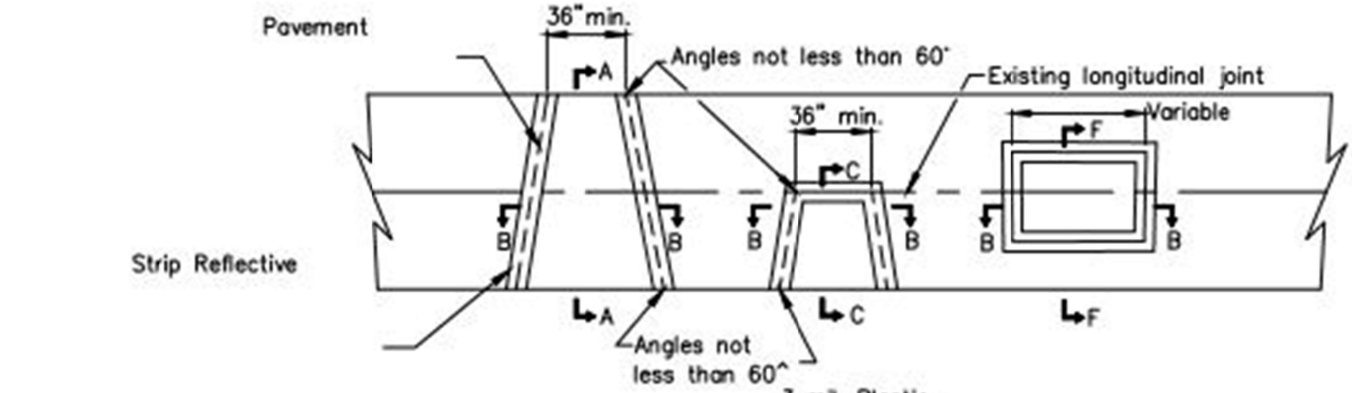
GENERAL NOTES:

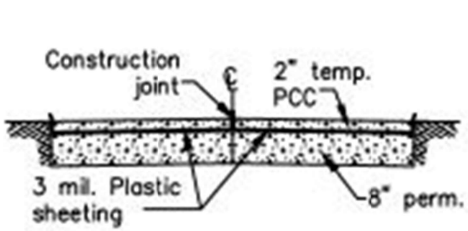
1. All pavements must be saw cut using a wet saw prior to any excavation.
2. All Street patches must be inspected prior to placement of hot mix asphalt materials.
3. All granular backfill must be compacted through jetting or tamping.
4. Granular material will not be permitted as a temporary surface material. Steel plates, cold mix asphalt, or other materials approved by the Village Engineer shall be utilized.
5. In locations where bituminous patches will be overlayed with bituminous surface course, strip reflective crack control treatment shall be applied to all pavement joints and centered along the respective joints.
6. In locations where the pavement patch will not be overlayed, two (2) inches of bituminous surface course shall be laid in the final lift of the patch.
7. The depth of the bituminous pavement patch shall match the full depth of the existing pavement, but shall not be less than the Village Standard for the respective pavement section.

VILLAGE OF HINSDALE
STANDARD DETAIL
FOR
PAVEMENT PATCHING
SHEET 1

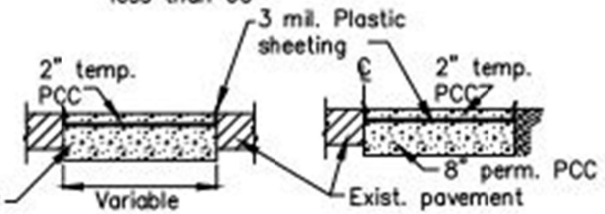
REV:	
DATE:	APRIL 2008
FILE:	TRANS\PAVE-PATCH

DETAIL NO. 26



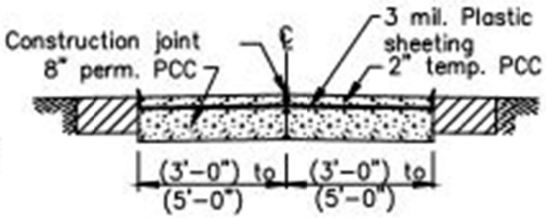


SECTION A–A
(Built in two operations)



SECTION B–B

SECTION C–C



SECTION F–F
(Built in two operations)

HOT MIX ASPHALT ROADWAYS (TEMP. LESS THAN 40° F)

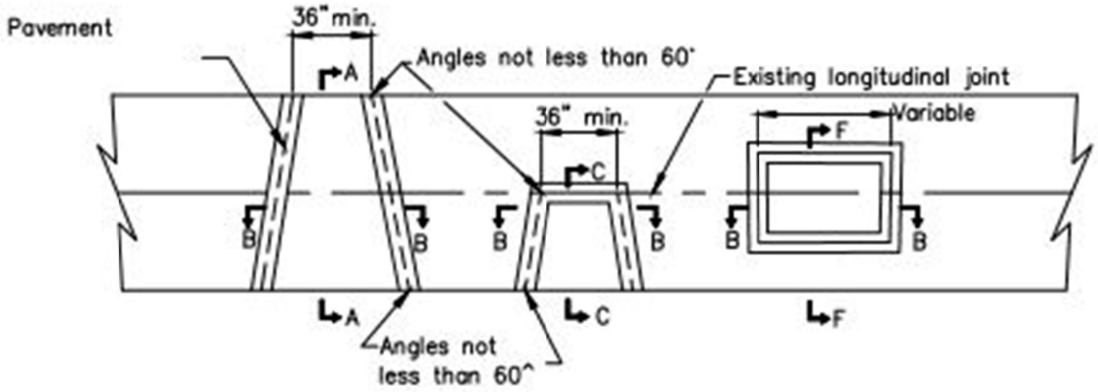
GENERAL NOTES:

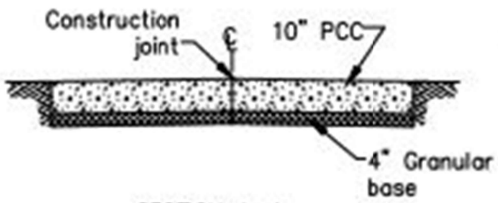
1. All pavements must be saw cut using a wet saw prior to any excavation.
2. All Street patches must be inspected prior to placement of patching materials.
3. All granular backfill must be compacted through jetting or tamping.
4. Granular material will not be permitted as a temporary surface material. Steel plates, cold mix asphalt, or other materials approved by the Village Engineer shall be utilized.
5. Once the 8" permanent PCC has been placed, 2 sheets of 3 mil polyethylene plastic shall be placed over the concrete. The polyethylene sheeting shall be approximately 12" longer than the width and length of the patch.
6. Once the 8" PCC lift has cured, a second 2" temporary PCC lift shall be placed. A steel plate shall be placed over the concrete until cured. When temperatures permit, the 2" temporary PCC lift shall be removed and replaced with hot mix asphalt surface mix.
7. In locations where bituminous patches will be overlayed with bituminous surface course, strip reflective crack control treatment shall be applied to all pavement joints and centered along the respective joints.

VILLAGE OF HINSDALE
STANDARD DETAIL
FOR
PAVEMENT PATCHING
SHEET 2

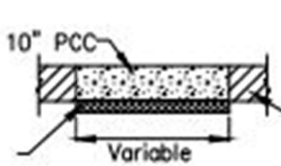
REV:	
DATE:	APRIL 2008
FILE:	TRANS\PAVE-PATCH

DETAIL NO. 26

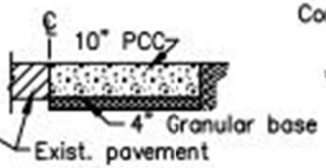




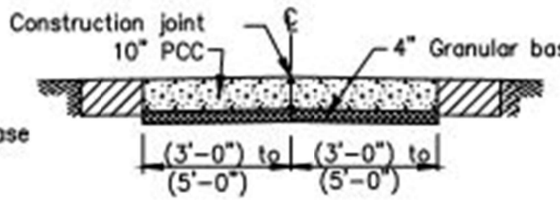
SECTION A–A
(Built in two operations)



SECTION B–B



SECTION C–C



SECTION F–F
(Built in two operations)

CONCRETE ROADWAYS

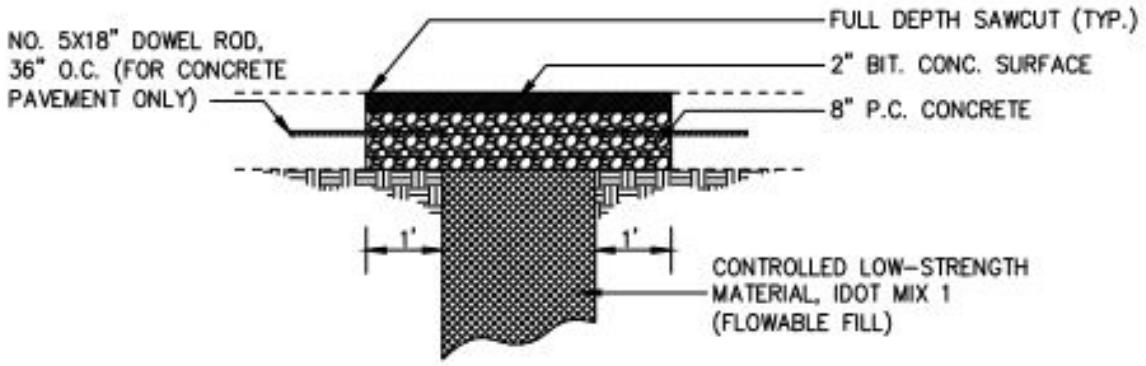
GENERAL NOTES:

1. Existing tie bars shall be either cut or removed. Marginal bars shall be cut.
2. Concrete patches shall be poured to a minimum thickness of 10" over a minimum of 4" compacted granular base.
3. A steel plate shall be placed over the patch after the completion of the concrete placement. The steel plate shall be fixed in place and appropriate warning devices shall be erected. In the event of significant pavement slope or when the plate is moving due to traffic, cold patch should be used to ramp the plate to hold it in place.
4. The steel plate shall remain in place for a minimum of 3 calendar days for curing of the concrete. The steel plates shall be removed in a timely manner following the minimum curing period.

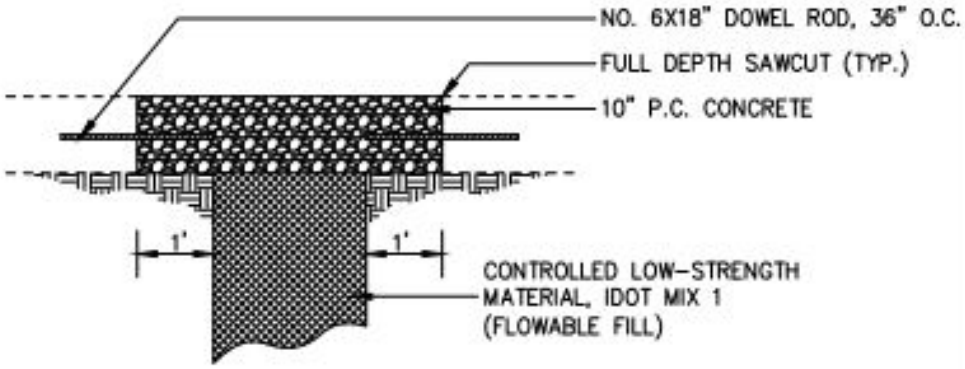
VILLAGE OF HINSDALE
STANDARD DETAIL
FOR
PAVEMENT PATCHING
SHEET 3

REV:	
DATE:	APRIL 2008
FILE:	TRANS\PAVE-PATCH

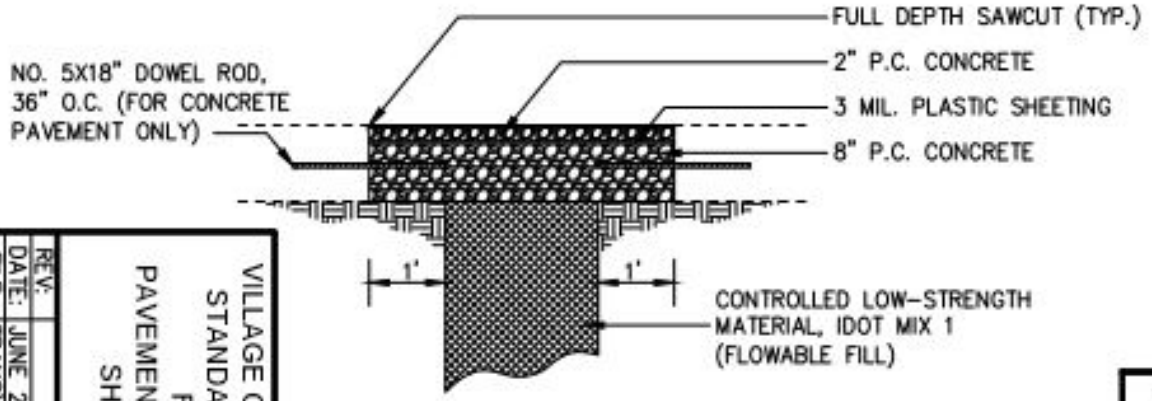
TYPICAL PAVEMENT RESTORATION FOR SERVICE CONNECTIONS AND UTILITY CROSSINGS



FOR PAVEMENT WITH AGGREGATE BASE AND BITUMINOUS SURFACE
OR
CONCRETE PAVEMENT WITH BITUMINOUS OVERLAY



FOR CONCRETE PAVEMENT



FOR WINTER TEMPORARY

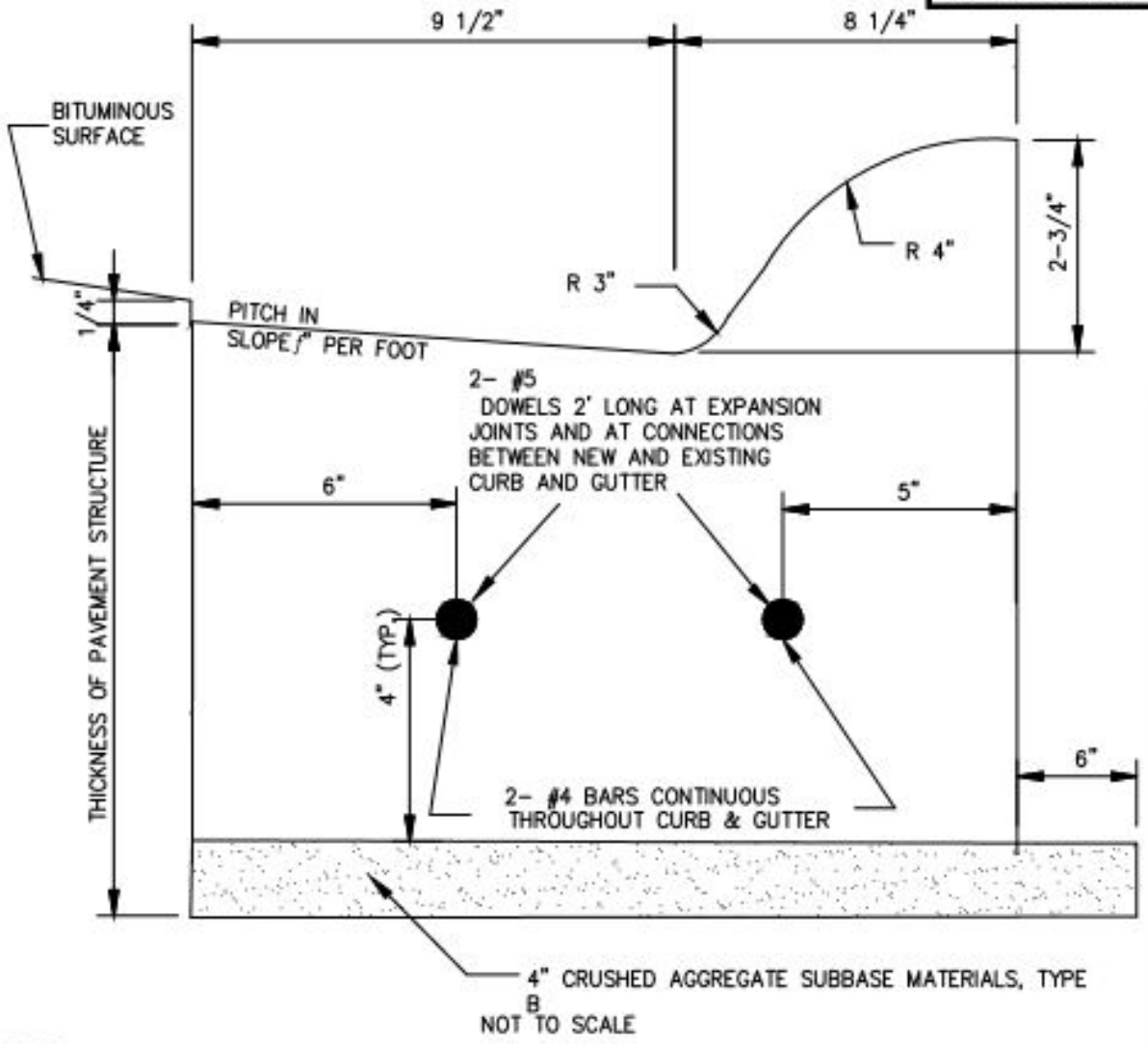
CONTRACTOR MUST CALL FOR AN INSPECTION PRIOR TO PLACING THE FLOWABLE FILL AND PRIOR TO PLACING THE ASPHALT/CONCRETE

VILLAGE OF HINSDALE
STANDARD DETAIL
FOR
PAVEMENT PATCHING
SHEET 4

REV:
DATE: JUNE 2013
FILE: TRANS\PAVE-PATCH

DETAIL NO. 26

DETAIL NO. 27



NOT TO SCALE

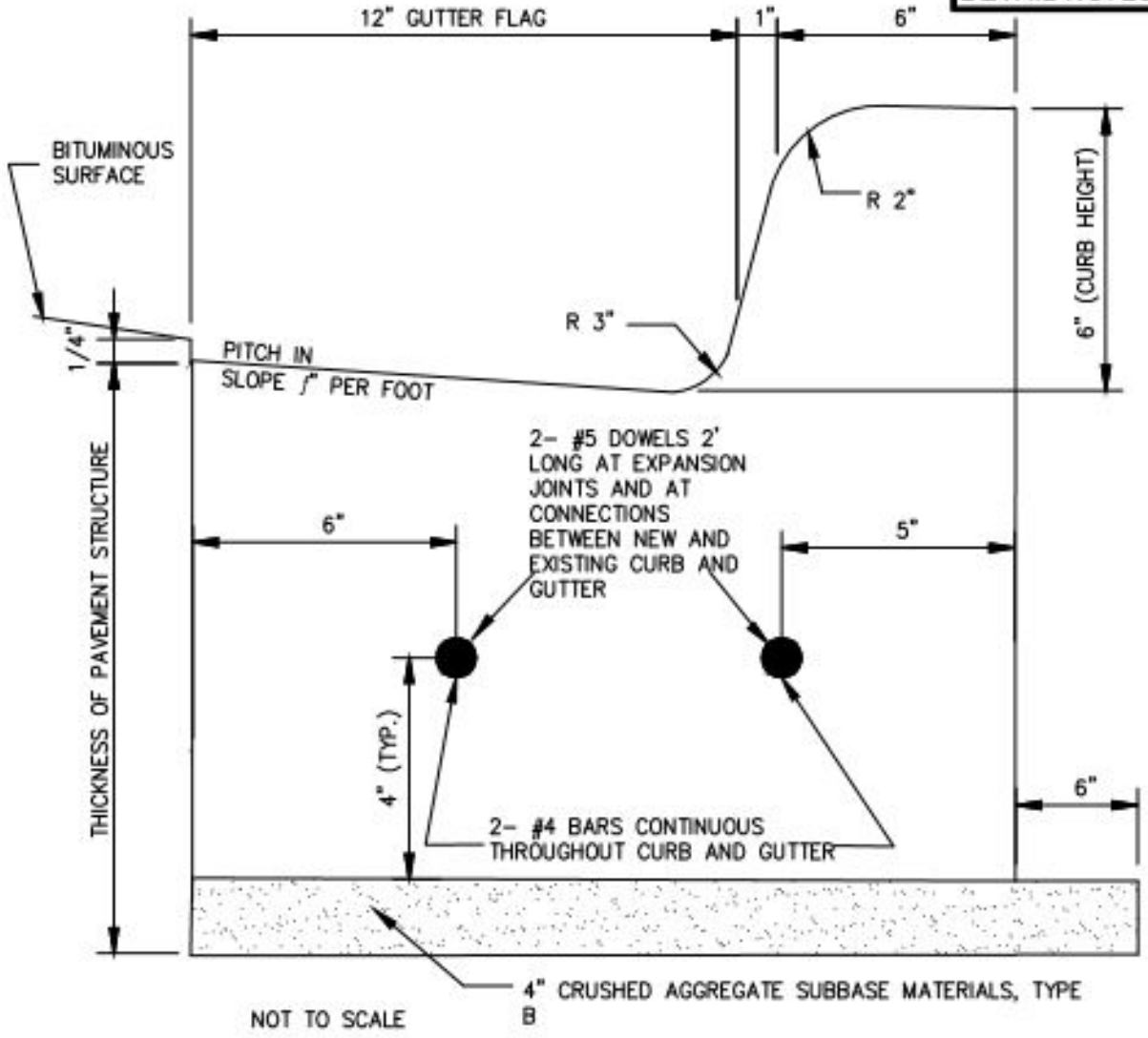
NOTES:

1. ALL CURB AND GUTTER SHALL BE CONSTRUCTED WITH IDOT CLASS SI CONCRETE WITH A MINIMUM COMPRESSIVE STRENGTH OF 3500 PSI AT 14 DAYS. PROVIDE AND TEST 3 CYLINDERS FOR EACH DAY'S POUR, OR 50 CUBIC YARDS, WHICHEVER IS LESS.
2. CONTRACTION JOINTS SHALL BE SAW-CUT AT MAXIMUM 20' INTERVALS AND CAULKED.
3. PREFORMED EXPANSION JOINTS, 1/2" THICK, SHALL BE PLACED FIVE FEET EITHER SIDE OF STORM STRUCTURES IN CURB AND GUTTER, AT CURB RETURNS AND AT POINTS OF CURVATURE, AT ALL CONNECTIONS BETWEEN NEW AND EXISTING CURB AND GUTTER, AND AT 200' INTERVALS ON TANGENTS.
4. CURB AND GUTTER AT STORM STRUCTURES SHALL BE BOXED-OUT A MINIMUM OF 5' ON EACH SIDE OF STRUCTURE AND HAND-FORMED BETWEEN EXPANSION JOINTS. FORMS SHALL BE PLACED AND INSPECTED BY VILLAGE PRIOR TO POURING CONCRETE. STRUCTURE FRAMES SHALL BE PLACED AND ADJUSTED PRIOR TO THIS INSPECTION.
5. THE FOLLOWING SHALL BE STAMPED IN THE CURB AT THE INDICATED LOCATIONS:
   - "W" FOR WATER SERVICES
   - "S" FOR SANITARY SEWER SERVICES
   - "CO" FOR STORM SEWER SERVICE LINE CLEAN-OUTS
   - "WV" FOR WATER VALVE VAULTS
   - "SM" FOR SANITARY MANHOLES
6. DOWELS AT EXPANSION JOINTS SHALL BE CENTERED ON THE JOINT (DRILLED INTO EXISTING CURB AND GUTTER), AND SHALL BE INSTALLED WITH GREASE CAPS ON ONE SIDE.

VILLAGE OF HINSDALE
STANDARD DETAIL
FOR MOUNTABLE
COMBINATION CONCRETE
CURB & GUTTER
TYPE M-3.12

REV:	
DATE:	APRIL 2008
FILE:	TRANS\C-M312

DETAIL NO. 28



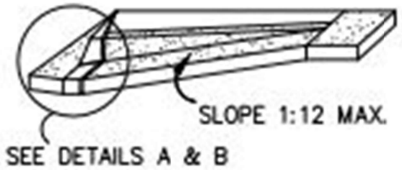
NOTES:

1. ALL CURB AND GUTTER SHALL BE CONSTRUCTED WITH IDOT CLASS SI CONCRETE WITH A MINIMUM COMPRESSIVE STRENGTH OF 3500 PSI AT 14 DAYS. PROVIDE AND TEST 3 CYLINDERS FOR EACH DAY'S POUR, OR 50 CUBIC YARDS, WHICHEVER IS LESS.
2. CONTRACTION JOINTS SHALL BE SAW-CUT AT MAXIMUM 20' INTERVALS AND CAULKED.
3. PREFORMED EXPANSION JOINTS, 1/2" THICK, SHALL BE PLACED FIVE FEET EITHER SIDE OF STORM STRUCTURES IN CURB AND GUTTER, AT CURB RETURNS AND AT POINTS OF CURVATURE, AT ALL CONNECTIONS BETWEEN NEW AND EXISTING CURB AND GUTTER, AND AT 200' INTERVALS ON TANGENTS.
4. CURB AND GUTTER AT STORM STRUCTURES SHALL BE BOXED-OUT A MINIMUM OF 5' ON EACH SIDE OF STRUCTURE AND HAND-FORMED BETWEEN EXPANSION JOINTS. FORMS SHALL BE PLACED AND INSPECTED BY VILLAGE PRIOR TO POURING CONCRETE. STRUCTURE FRAMES SHALL BE PLACED AND ADJUSTED PRIOR TO THIS INSPECTION.
5. THE FOLLOWING SHALL BE STAMPED IN THE CURB AT THE INDICATED LOCATIONS:
   - "W" FOR WATER SERVICES
   - "S" FOR SANITARY SEWER SERVICES
   - "CO" FOR STORM SEWER SERVICE LINE CLEAN-OUTS
   - "WV" FOR WATER VALVE VAULTS
   - "SM" FOR SANITARY MANHOLES
6. DOWELS AT EXPANSION JOINTS SHALL BE CENTERED ON THE JOINT (DRILLED INTO EXISTING CURB AND GUTTER), AND SHALL BE INSTALLED WITH GREASE CAPS ON ONE SIDE.

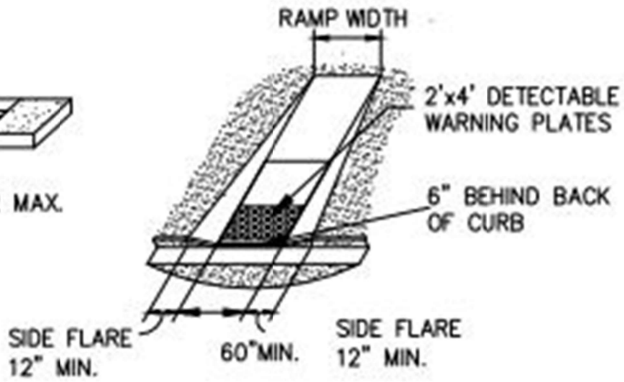
VILLAGE OF HINSDALE
STANDARD DETAIL
FOR BARRIER
COMBINATION CONCRETE
CURB AND GUTTER
TYPE B-6.12

REV:	
DATE:	APRIL 2008
FILE:	TRANS\C-GB612

DETAIL NO. 29

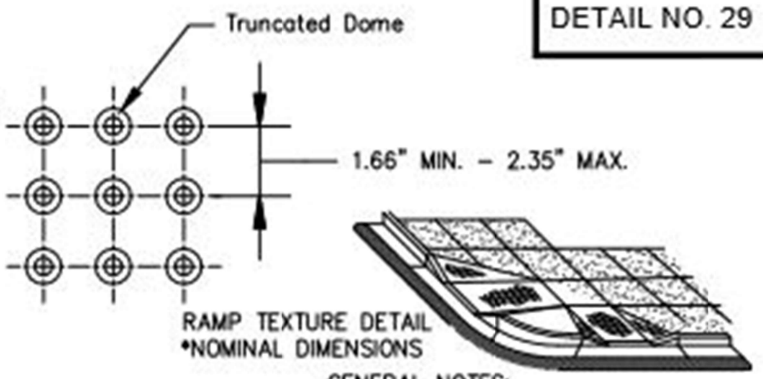


RAMP PROFILE

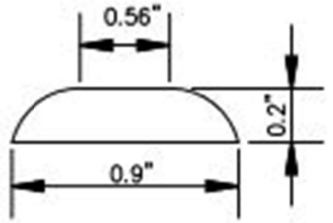


DETAIL OF RAMPS

(NOT TO SCALE)



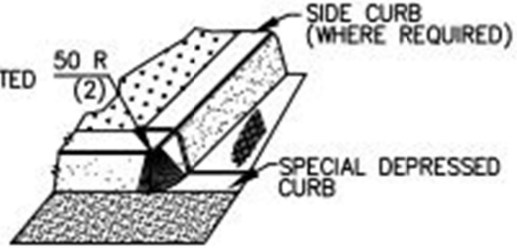
RAMP TEXTURE DETAIL
*NOMINAL DIMENSIONS



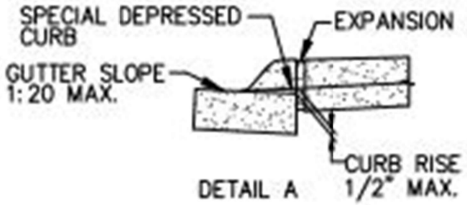
TRUNCATED DOME DETAIL

DETAIL OF SIDE CURB

SIDE CURB MAY BE CONSTRUCTED MONOLITHICALLY WITH RAMP



DETAIL B



DETAIL A

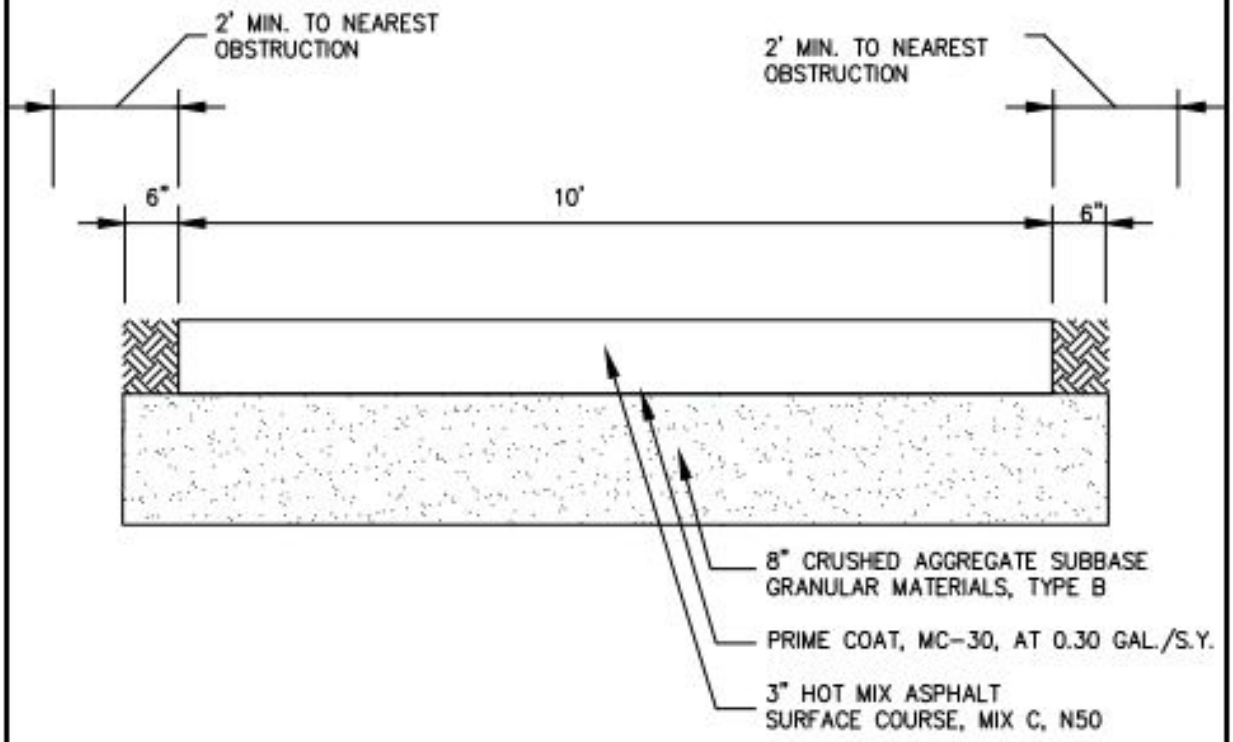
GENERAL NOTES:

1. THE MAXIMUM SLOPE OF THE SIDE FLARE FOR RAMPS SHALL BE 1:10; HOWEVER, IF THE WIDTH OF THE LANDING AREA BETWEEN THE TOP OF THE RAMP AND AN OBSTRUCTION IS LESS THAN 1.2 m (4'–0") THEN THE MAXIMUM SLOPE SHALL BE 1:12.
2. ALL SLOPE RATIOS ARE EXPRESSED AS UNITS OF VERTICAL DISPLACEMENT TO UNITS OF HORIZONTAL DISPLACEMENT (V/H)
3. ALL DIMENSIONS ARE IN INCHES UNLESS OTHERWISE SHOWN.
4. THE DETECTABLE WARNING FOR CURB RAMPS SHALL BE CAST IRON TRUNCATED DOME PLATE AS MANUFACTURED BY EAST JORDAN IRON WORKS, OR AN APPROVE EQUAL. EACH CURB RAMP SHALL INCORPORATE A MINIMUM OF TWO (2) 24" x 24" PLATES. THE CONTRACTOR SHALL PROTECT THE METAL SURFACE WITH PLASTIC SHEETING DURING INSTALLATION.

VILLAGE OF HINSDALE STANDARD DETAIL FOR CURB RAMPS ACCESSIBLE TO THE DISABLED

REV:	
DATE:	APRIL 2008
FILE:	TRANS\CURB-RAMPS

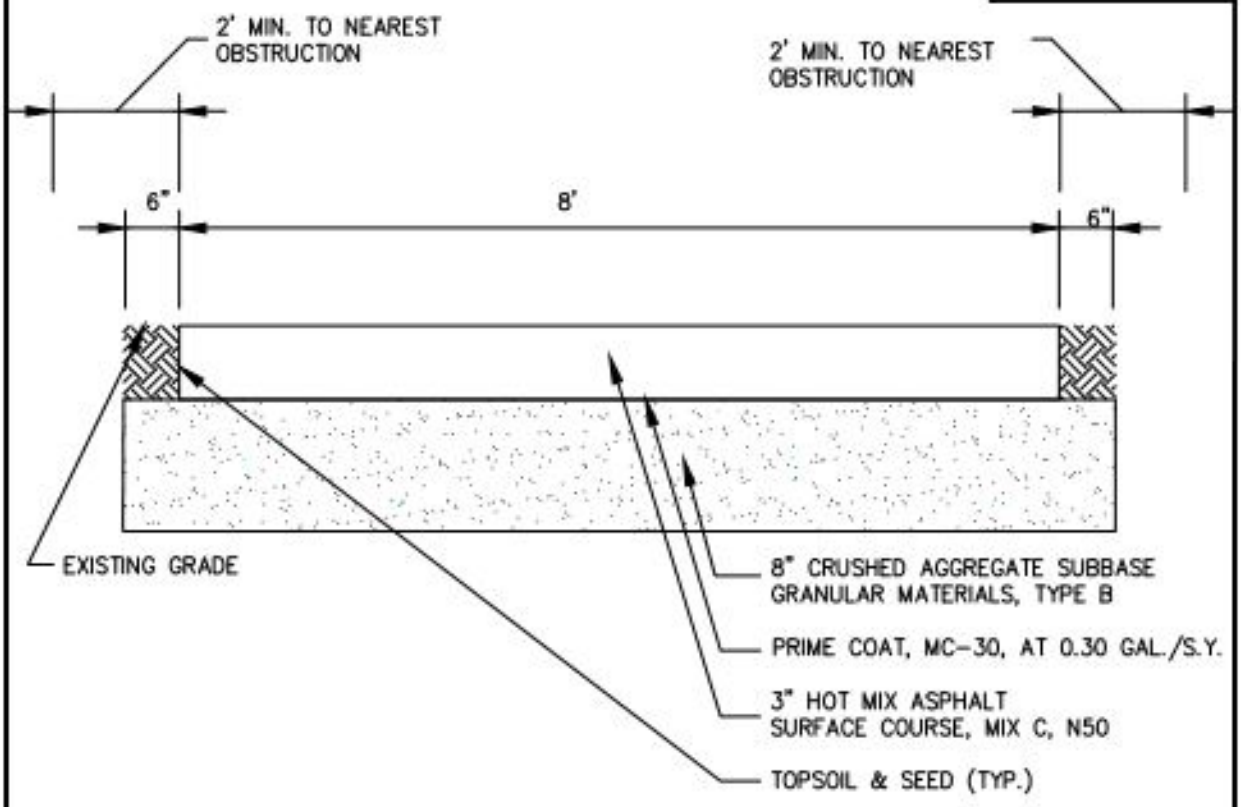
DETAIL NO. 30

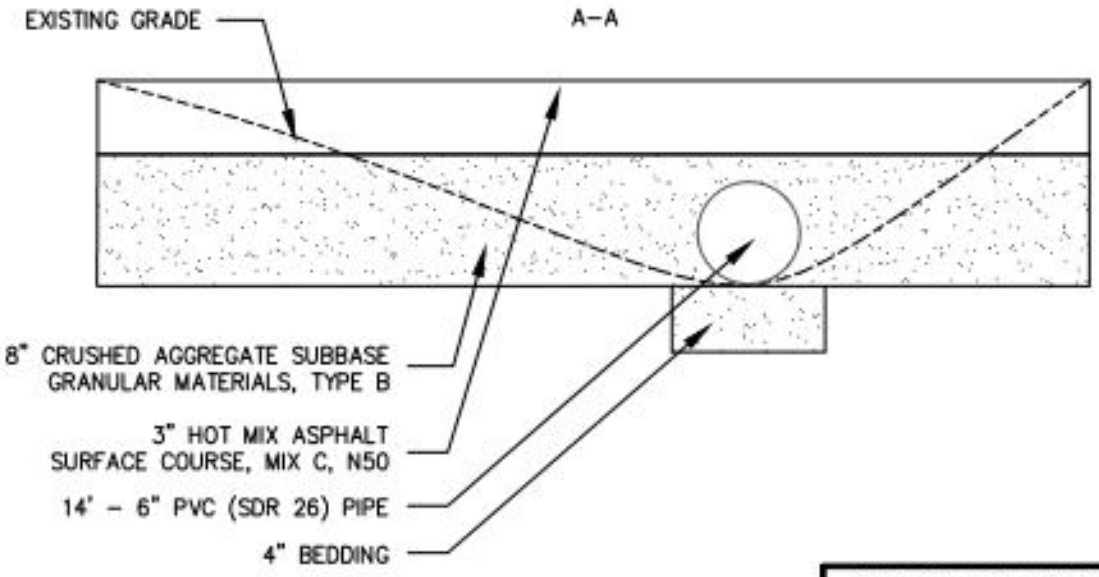


VILLAGE OF HINSDALE
STANDARD DETAIL
FOR
MULTI-USER PATH

REV:	
DATE:	APRIL 2008
FILE:	TRANS\MULTI-PATH

DETAIL NO. 30





DRAINAGE PIPE CROSSING
B-B
(TYP.)

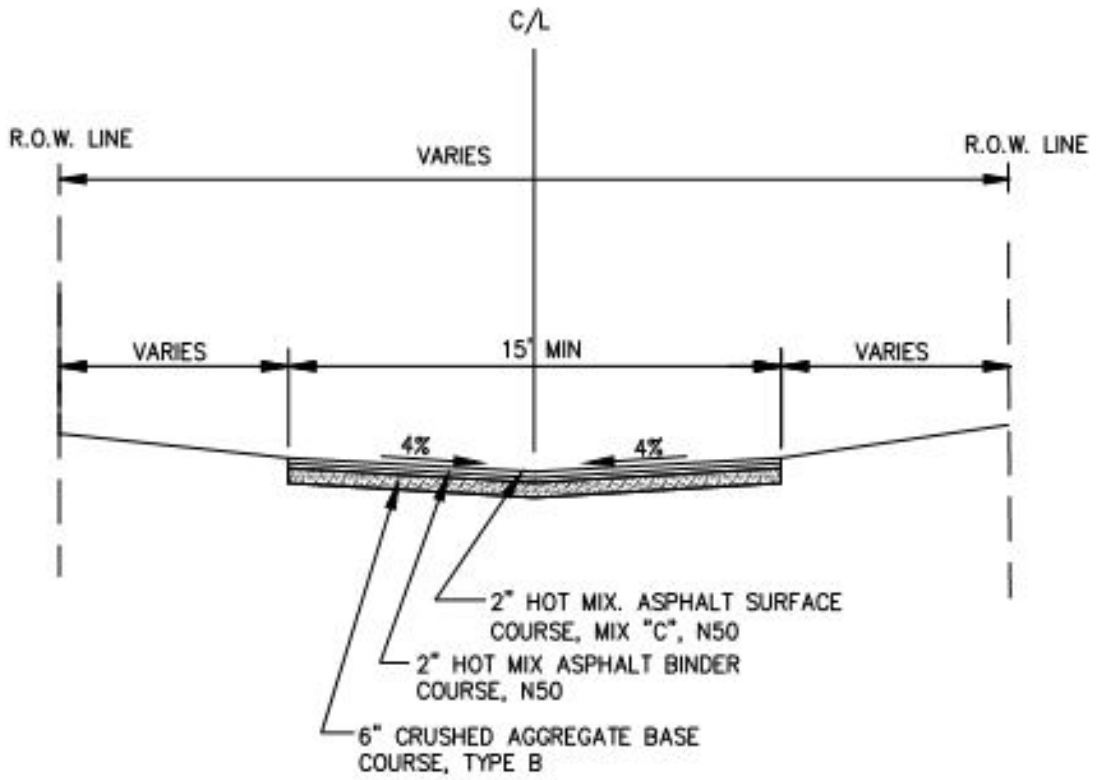
GENERAL NOTES:

1. MULTI-USER PATH TO MATCH EXISTING GRADE EXCEPT AT DRAINAGE PIPE CROSSING.
2. CONTRACTOR TO DISPOSE OF EXCESS MATERIAL OFF-SITE.

VILLAGE OF HINSDALE
STANDARD DETAIL
FOR
MULTI-USER PATH

REV:	
DATE:	APRIL 2008
FILE:	TRANS\MULTI-PATH

DETAIL NO. 31

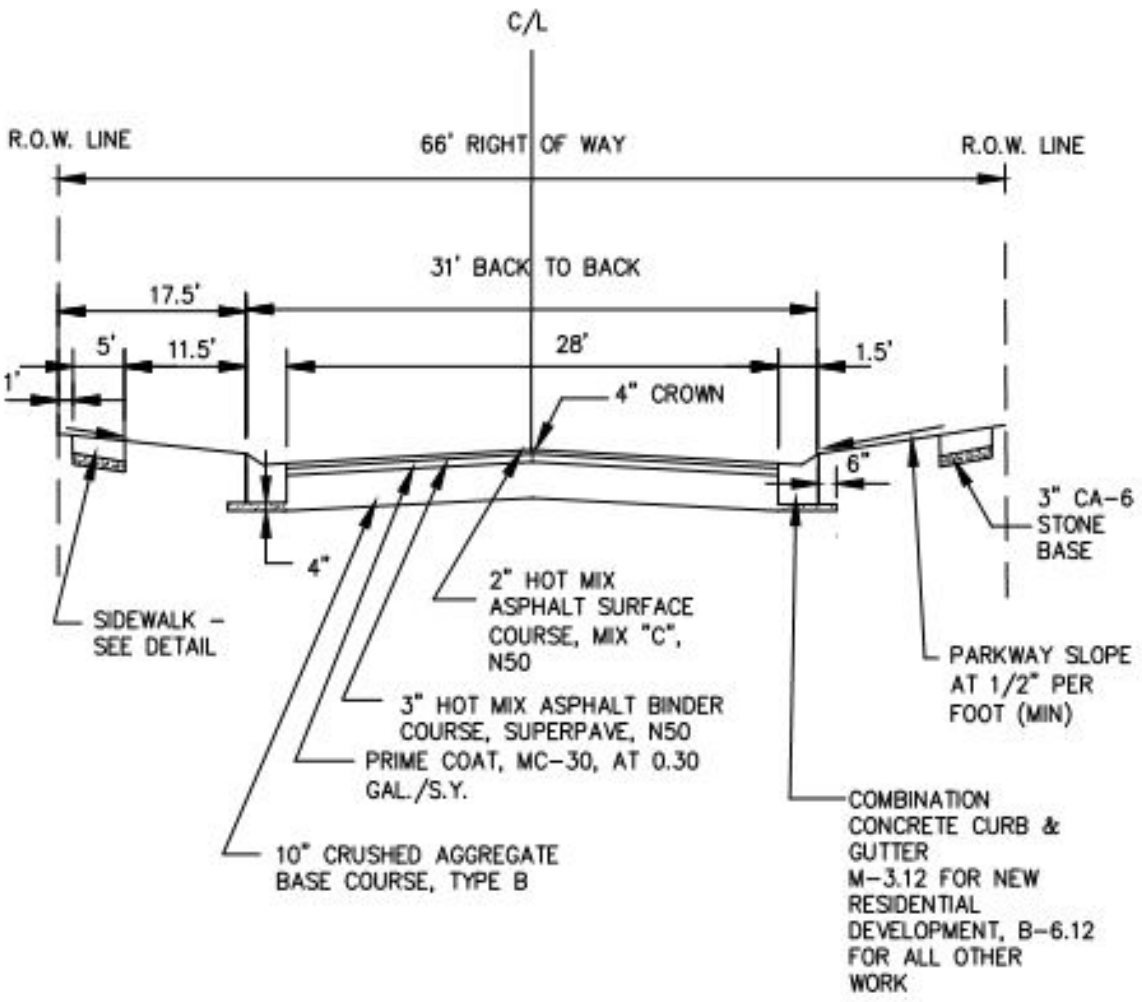


NOTES:
1. PARKWAYS SHALL BE FINISHED WITH A MINIMUM OF SIX INCHES OF TOPSOIL.
2. TESTING OF SUBGRADE AND ALL ROADWAY MATERIALS SHALL BE DONE IN ACCORDANCE WITH THE VILLAGE'S SUBDIVISION ORDINANCE.

VILLAGE OF HINSDALE
STANDARD DETAIL
FOR ALLEY
CROSS-SECTION

REV:	
DATE:	APRIL 2008
FILE:	TRANS\ALLEYXSEC1

DETAIL NO. 32

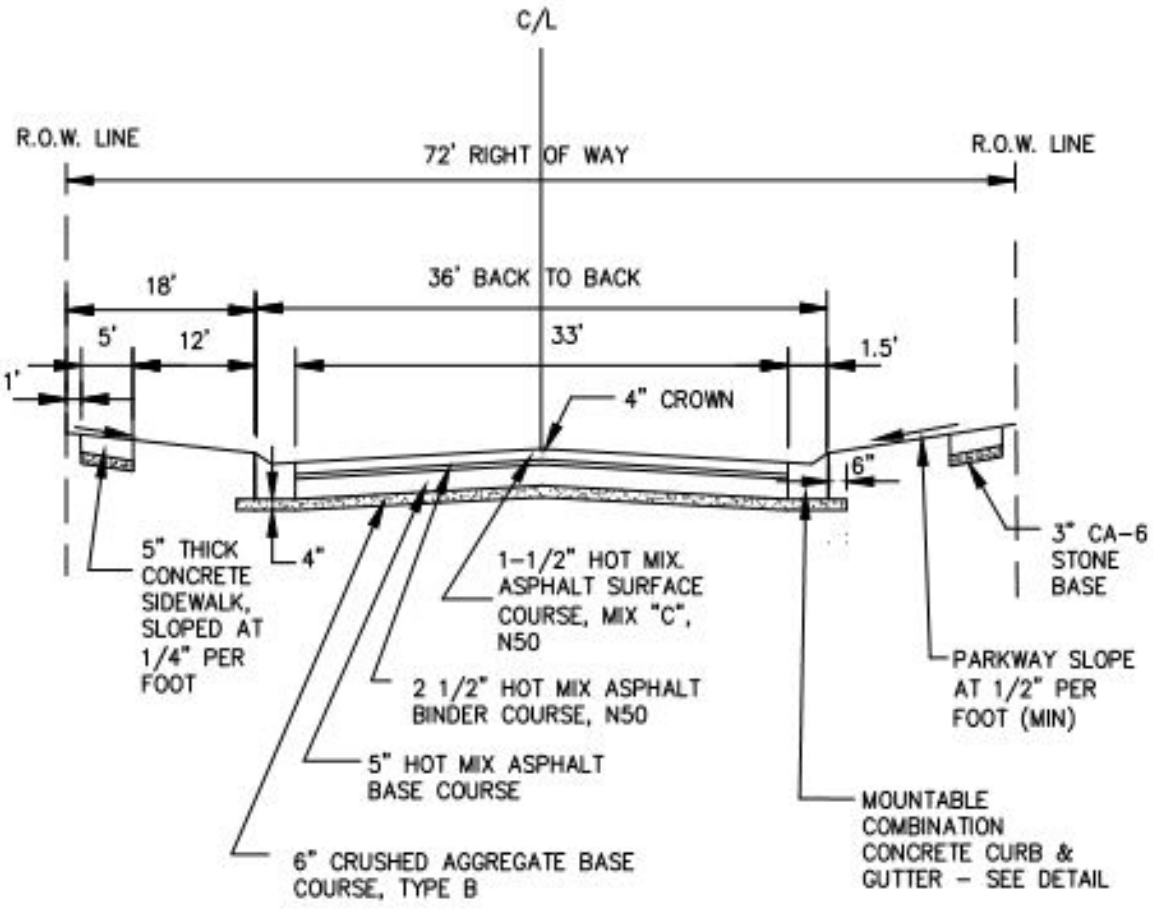


NOTES:
1. ALL CURBS AND SIDEWALKS SHALL BE CONSTRUCTED WITH IDOT CLASS "SI" CONCRETE WITH A MINIMUM COMPRESSIVE STRENGTH OF 3,500 PSI AT 14 DAYS.
2. PARKWAYS SHALL BE FINISHED WITH A MINIMUM OF SIX INCHES OF TOPSOIL.
3. TESTING OF SUBGRADE AND ALL ROADWAY MATERIALS SHALL BE DONE IN ACCORDANCE WITH THE VILLAGE'S SUBDIVISION ORDINANCE.

VILLAGE OF HINSDALE
STANDARD DETAIL
FOR ROADWAY
CROSS-SECTION
RESIDENTIAL

REV:	
DATE:	APRIL 2008
FILE:	TRANS\RDXSEC3

DETAIL NO. 33

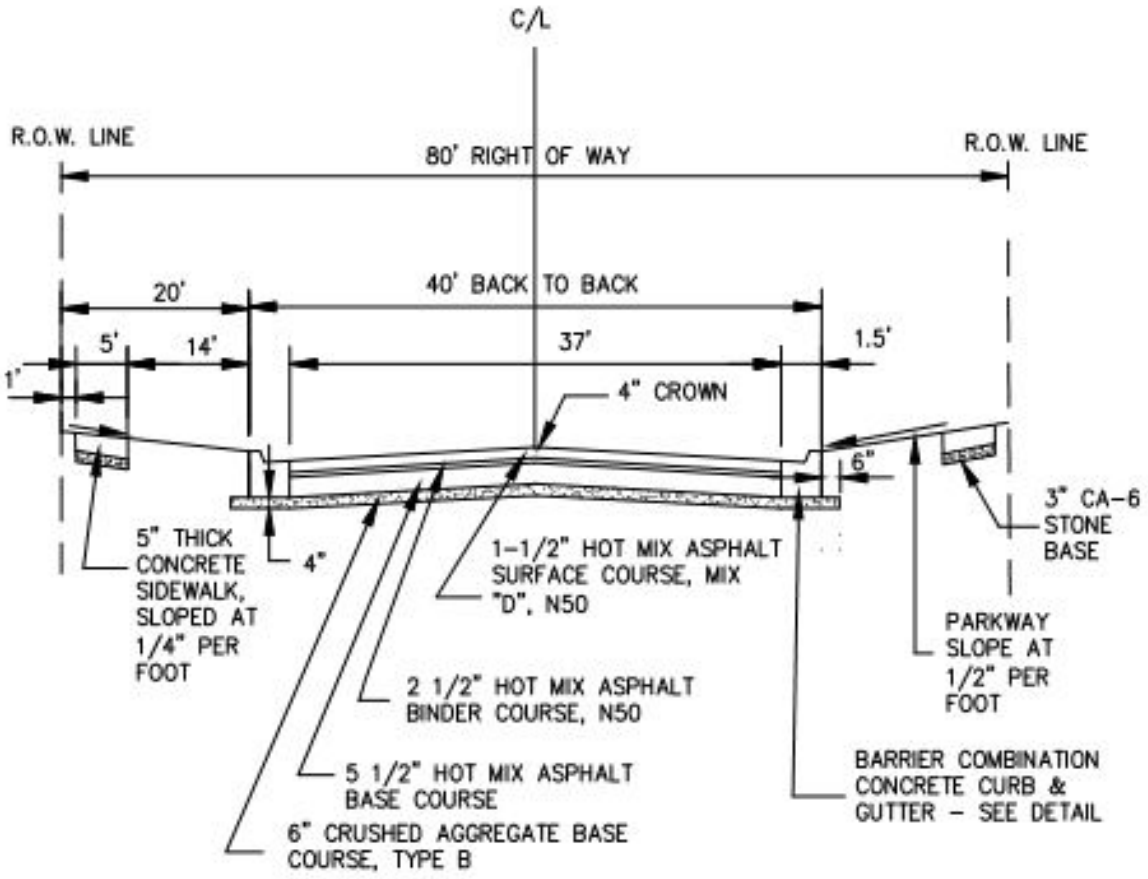


NOTES:
1. ALL CURBS AND SIDEWALKS SHALL BE CONSTRUCTED WITH IDOT CLASS "SI" CONCRETE WITH A MINIMUM COMPRESSIVE STRENGTH OF 3,500 PSI AT 14 DAYS.
2. PARKWAYS SHALL BE FINISHED WITH A MINIMUM OF SIX INCHES OF TOPSOIL.
3. TESTING OF SUBGRADE AND ALL ROADWAY MATERIALS SHALL BE DONE IN ACCORDANCE WITH THE VILLAGE'S SUBDIVISION ORDINANCE.

VILLAGE OF HINSDALE
STANDARD DETAIL
FOR ROADWAY
CROSS-SECTION
MULTI-FAMILY STREET

REV:	
DATE:	APRIL 2008
FILE:	TRANS\RDXSEC1

DETAIL NO. 34

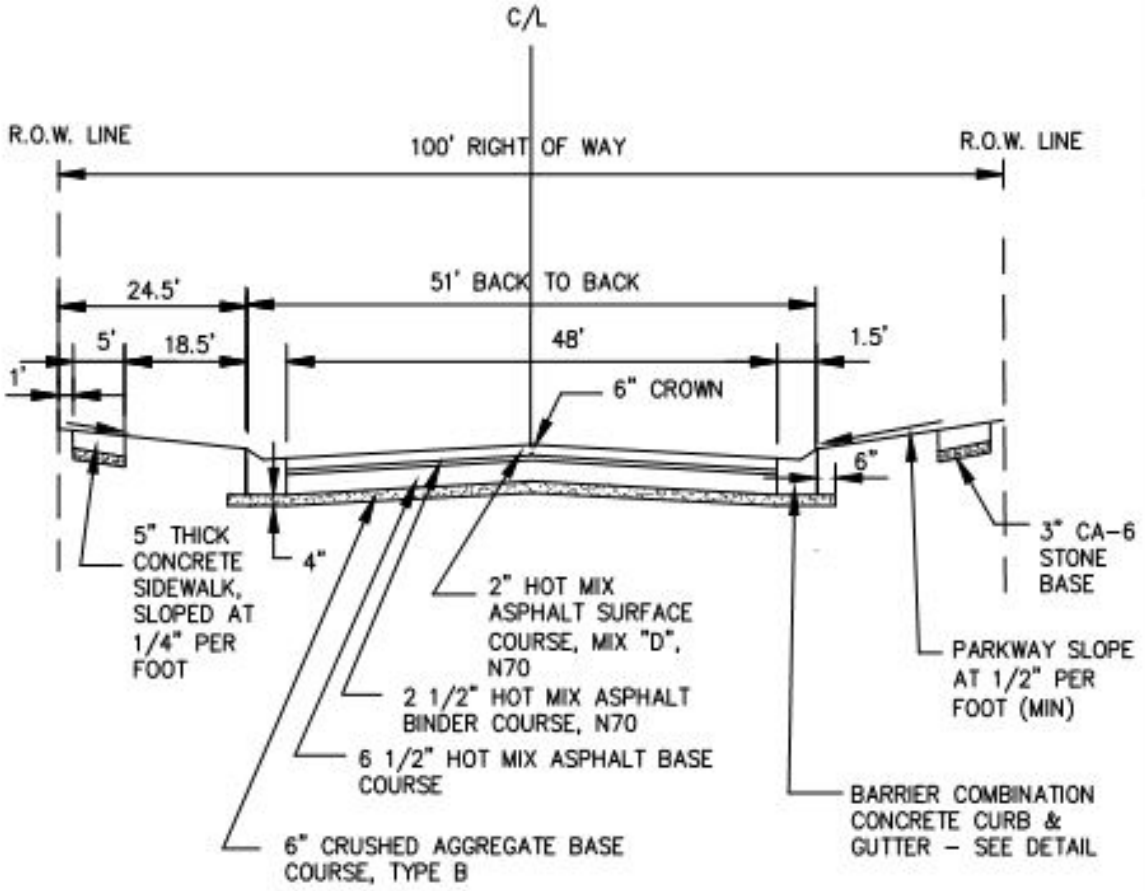


NOTES:
1. ALL CURBS AND SIDEWALKS SHALL BE CONSTRUCTED WITH IDOT CLASS "SI" CONCRETE WITH A MINIMUM COMPRESSIVE STRENGTH OF 3,500 PSI AT 14 DAYS..
2. PARKWAYS SHALL BE FINISHED WITH A MINIMUM OF SIX INCHES OF TOPSOIL.
3. TESTING OF SUBGRADE AND ALL ROADWAY MATERIALS SHALL BE DONE IN ACCORDANCE WITH THE VILLAGE'S SUBDIVISION ORDINANCE.

VILLAGE OF HINSDALE
STANDARD DETAIL
FOR ROADWAY
CROSS-SECTION
COLLECTOR

REV:	
DATE:	APRIL 2008
FILE:	TRANS\RDXSEC2

DETAIL NO. 35

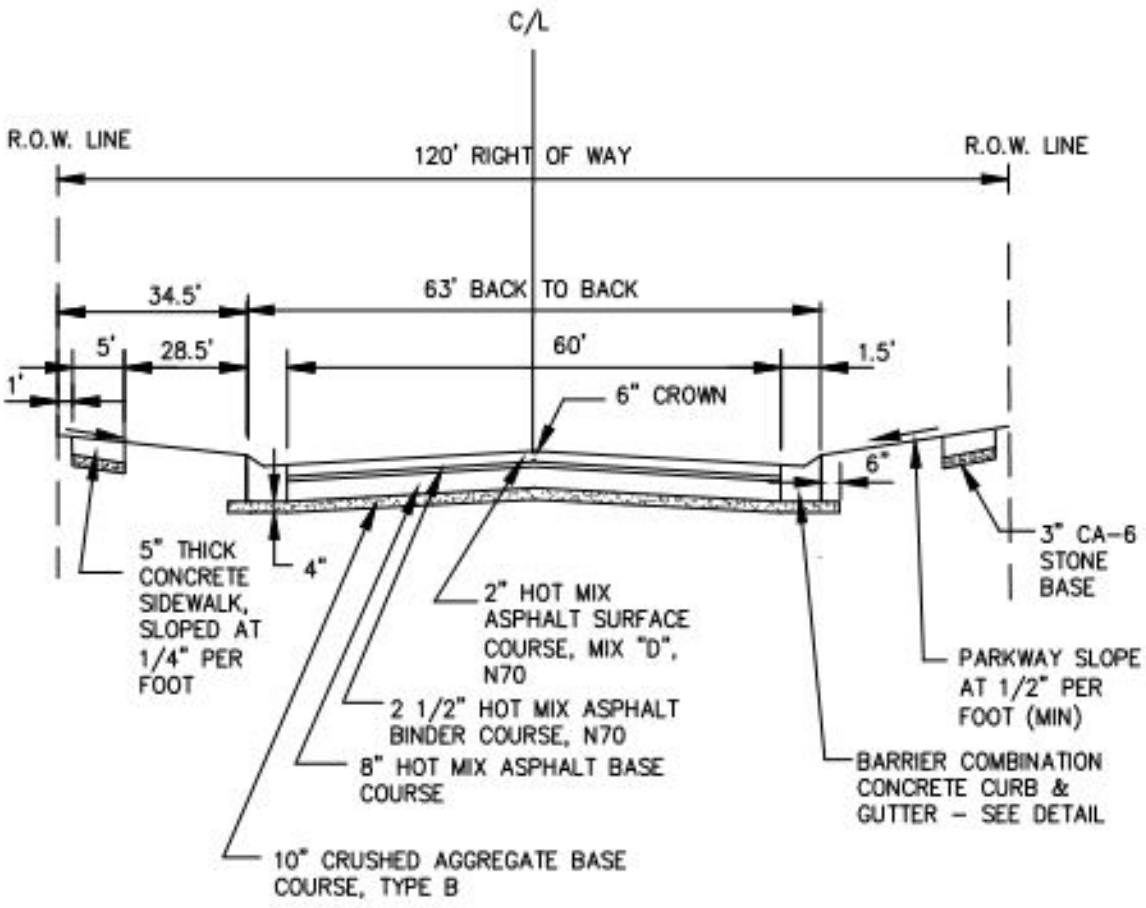


NOTES:
1. ALL CURBS AND SIDEWALKS SHALL BE CONSTRUCTED WITH IDOT CLASS "SI" CONCRETE WITH A MINIMUM COMPRESSIVE STRENGTH OF 3,500 PSI AT 14 DAYS.
2. PARKWAYS SHALL BE FINISHED WITH A MINIMUM OF SIX INCHES OF TOPSOIL.
3. TESTING OF SUBGRADE AND ALL ROADWAY MATERIALS SHALL BE DONE IN ACCORDANCE WITH THE VILLAGE'S SUBDIVISION ORDINANCE.

VILLAGE OF HINSDALE
STANDARD DETAIL
FOR ROADWAY
CROSS-SECTION
MINOR ARTERIAL

REV:	
DATE:	APRIL 2008
FILE:	TRANS\RDXSEC4

DETAIL NO. 36

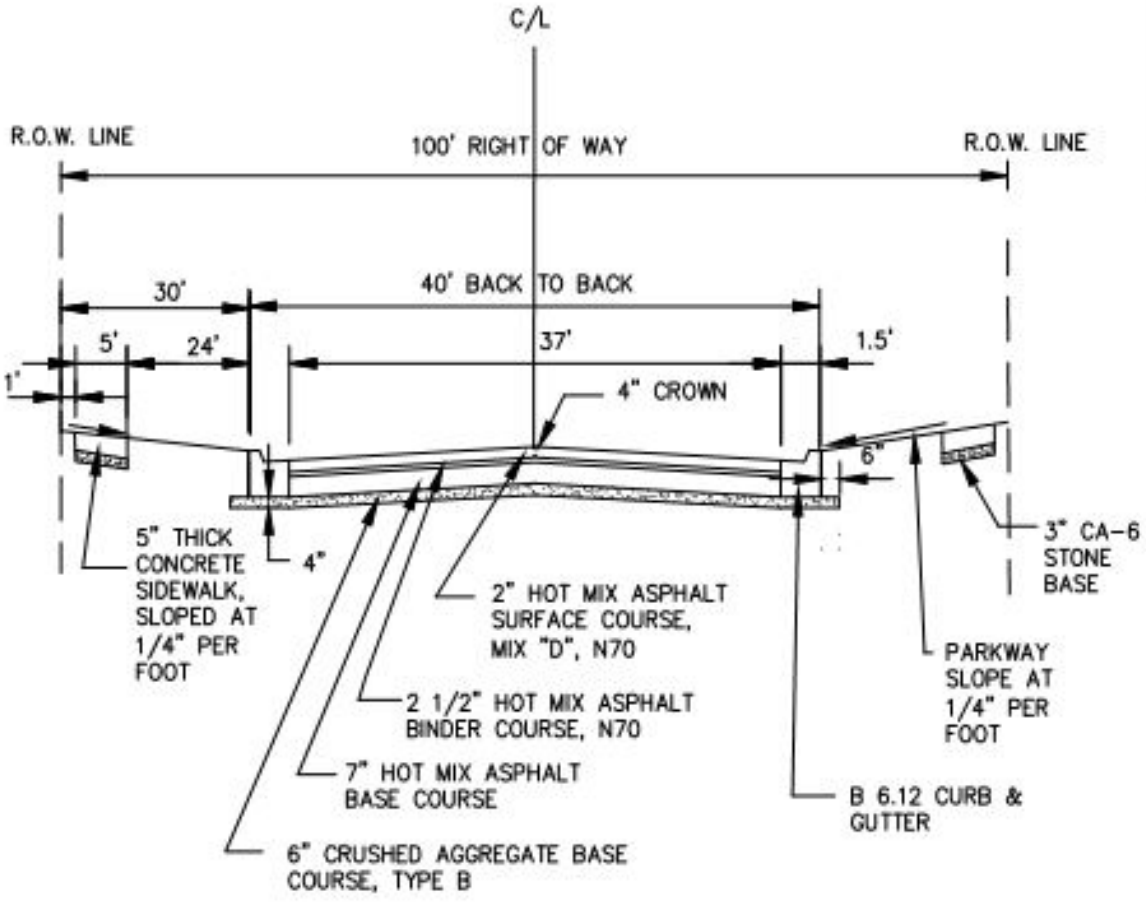


NOTES:
1. THE ABOVE PAVEMENT SECTION REPRESENTS THE MINIMUM ALLOWABLE. A PAVEMENT DESIGN SHALL BE SUBMITTED USING THE CALCULATED AVERAGE DAILY TRAFFIC FROM AN APPROVED TRAFFIC IMPACT STUDY.
2. A CONCRETE PAVEMENT ALTERNATIVE MAY BE SUBMITTED FOR REVIEW AND APPROVAL.
3. ALL CURBS AND SIDEWALKS SHALL BE CONSTRUCTED WITH IDOT CLASS "SI" CONCRETE WITH A MINIMUM COMPRESSIVE STRENGTH OF 3,500 PSI AT 14 DAYS.
4. PARKWAYS SHALL BE FINISHED WITH A MINIMUM OF SIX INCHES OF TOPSOIL.
5. TESTING OF SUBGRADE AND ALL ROADWAY MATERIALS SHALL BE DONE IN ACCORDANCE WITH THE VILLAGE'S SUBDIVISION ORDINANCE.

VILLAGE OF HINSDALE
STANDARD DETAIL
FOR ROADWAY
ARTERIAL

REV:	
DATE:	APRIL 2008
FILE:	TRANS\RDXSEC5

DETAIL NO. 37



NOTES:
1. A CONCRETE PAVEMENT SECTION ALTERNATIVE MAY BE SUBMITTED FOR REVIEW AND APPROVAL.
2. ALL CURBS AND SIDEWALKS SHALL BE CONSTRUCTED WITH A MINIMUM COMPRESSIVE STRENGTH OF 3500 PSI AT 14 DAYS.
2. PARKWAYS SHALL BE FINISHED WITH A MINIMUM OF SIX INCHES OF TOPSOIL.
3. TESTING OF SUBGRADE AND ALL ROADWAY MATERIALS SHALL BE DONE IN ACCORDANCE WITH THE VILLAGE'S SUBDIVISION ORDINANCE.

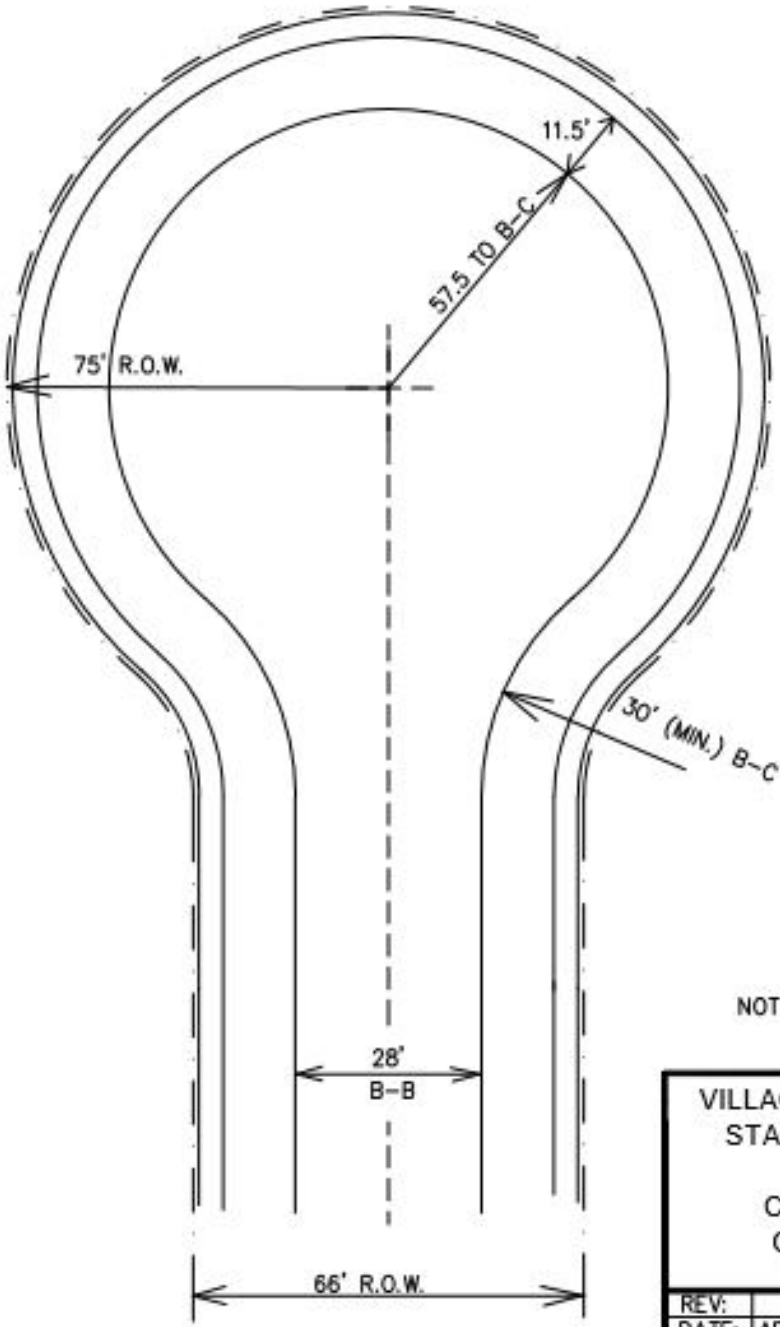
VILLAGE OF HINSDALE
STANDARD DETAIL
FOR
INDUSTRIAL

REV:	
DATE:	APRIL 2008
FILE:	TRANS\RDXSEC6

DETAIL NO. 38

NOTES:

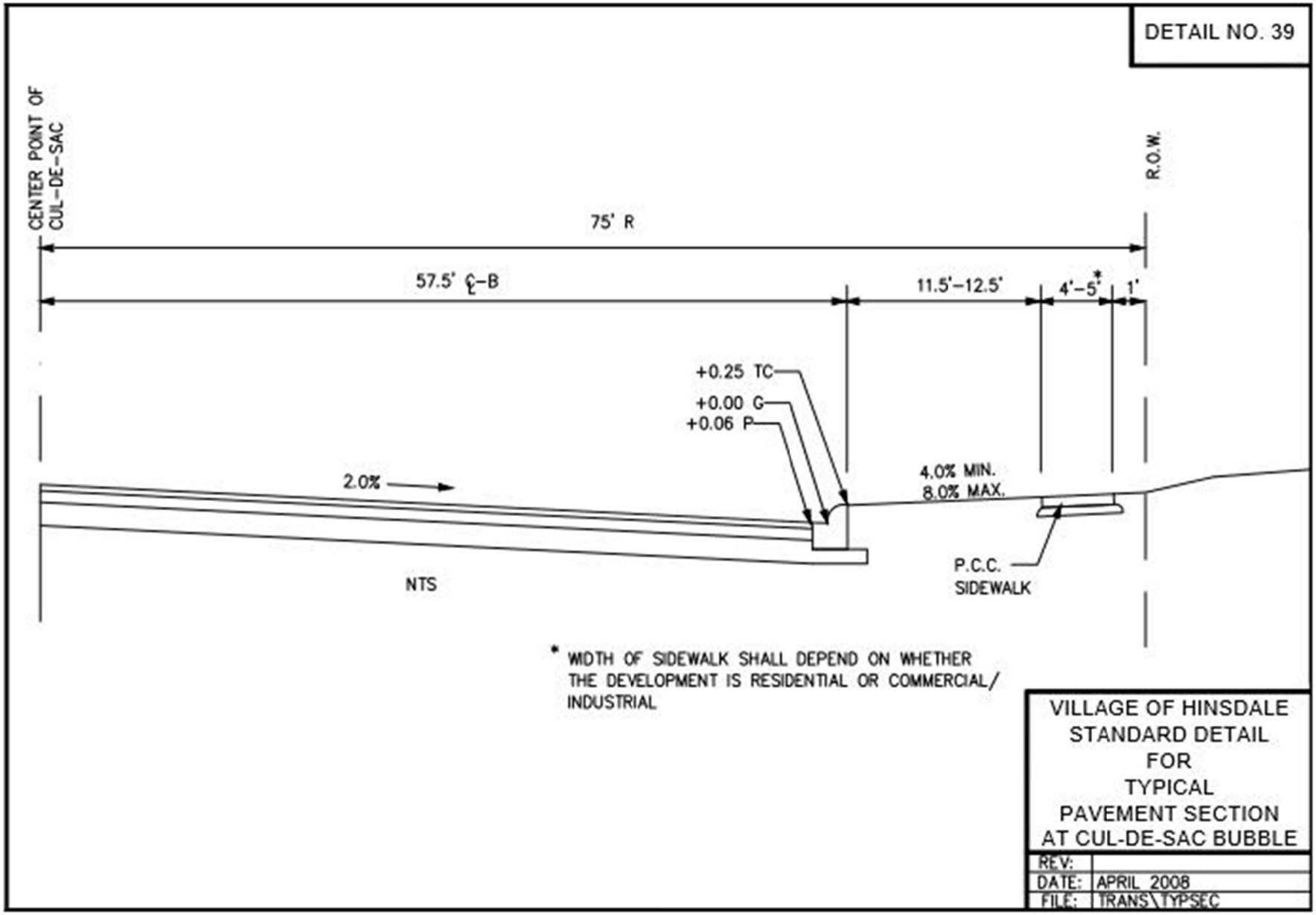
1.) PAVEMENT SLOPE 1/4" PER FOOT.
2.) MINIMUM 1.0% SLOPE ON CURB
3.) MAXIMUM 6.0% SLOPE ON CURB
4.) A MINIMUM OF TWO CURB STORM STRUCTURE SHALL BE INSTALLED IN CUL-DE-SACS
5.) ONLY ONE CUL-DE-SAC IS PERMITTED IN DEVELOPMENTS SMALLER THAN 80 ACRES
6.) EYEBROWS AND NON-CONCENTRIC CUL-DE-SACS ARE NOT PERMITTED
7.) ISLANDS WITHIN THE CUL-DE-SACS ARE NOT PERMITTED
8.) CUL-DE-SACS ARE NOT PERMITTED IN MULTI-FAMILY RESIDENTIAL SUBDIVISIONS UNLESS THE SUBDIVISION IS PRIVATELY OWNED AND MAINTAINED



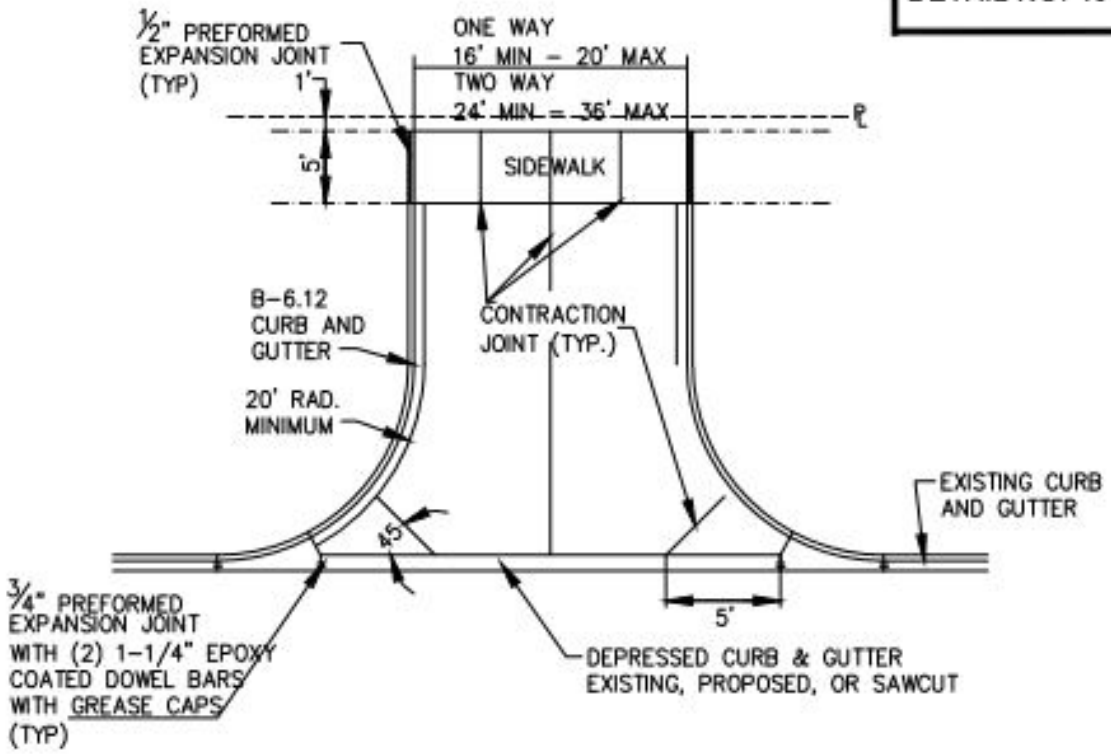
NOT TO SCALE

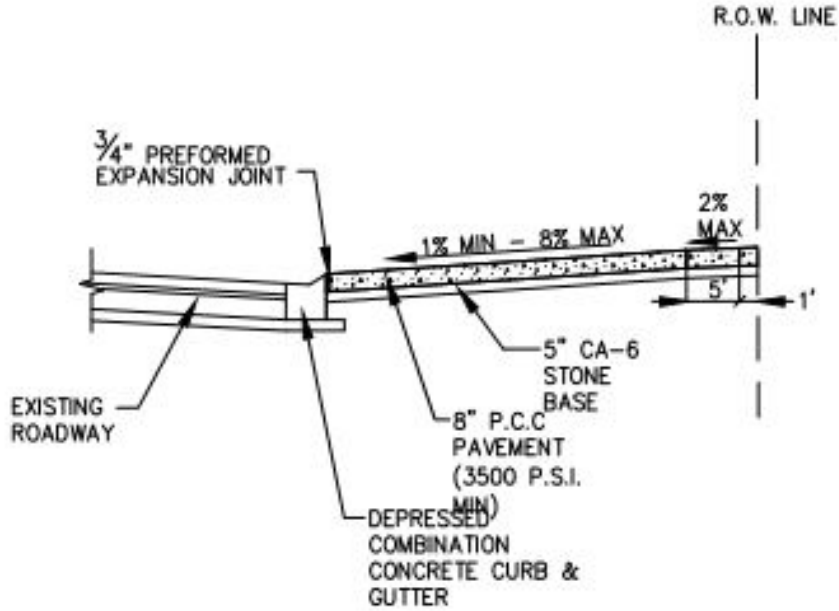
VILLAGE OF HINSDALE
STANDARD DETAIL
FOR
CONCENTRIC
CUL-DE-SAC

REV:	
DATE:	APRIL 2008
FILE:	TRANS\CULDESAC-CON


DETAIL NO. 39
CENTER POINT OF CUL-DE-SAC
R.O.W.
75' R
57.5' ℄-B
11.5'-12.5'
4'-5'*
1'
+0.25 TC
+0.00 G
+0.06 P
2.0%
4.0% MIN.
8.0% MAX.
P.C.C. SIDEWALK
NTS
* WIDTH OF SIDEWALK SHALL DEPEND ON WHETHER THE DEVELOPMENT IS RESIDENTIAL OR COMMERCIAL/ INDUSTRIAL
VILLAGE OF HINSDALE
STANDARD DETAIL
FOR
TYPICAL
PAVEMENT SECTION
AT CUL-DE-SAC BUBBLE
REV:
DATE: APRIL 2008
FILE: TRANS\TYPSEC

DETAIL NO. 40



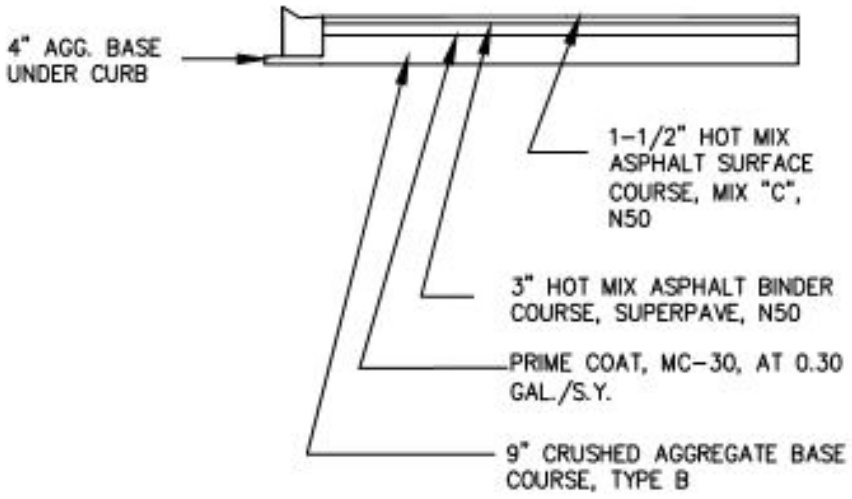


NOTES:
1. ALL CONCRETE SHALL BE IDOT CLASS "SI" CONCRETE WITH A MINIMUM COMPRESSIVE STRENGTH OF 3,500 PSI AT 14 DAYS.
2. THE SUBGRADE SHALL BE STABLE AND MECHANICALLY COMPACTED.
3. ALL AGGREGATE SUBBASE SHALL BE MECHANICALLY COMPACTED.

VILLAGE OF HINSDALE
STANDARD DETAIL
FOR
COMMERCIAL
ENTRANCE

REV:	
DATE:	APRIL 2008
FILE:	TRANS\COM ENT

DETAIL NO. 41

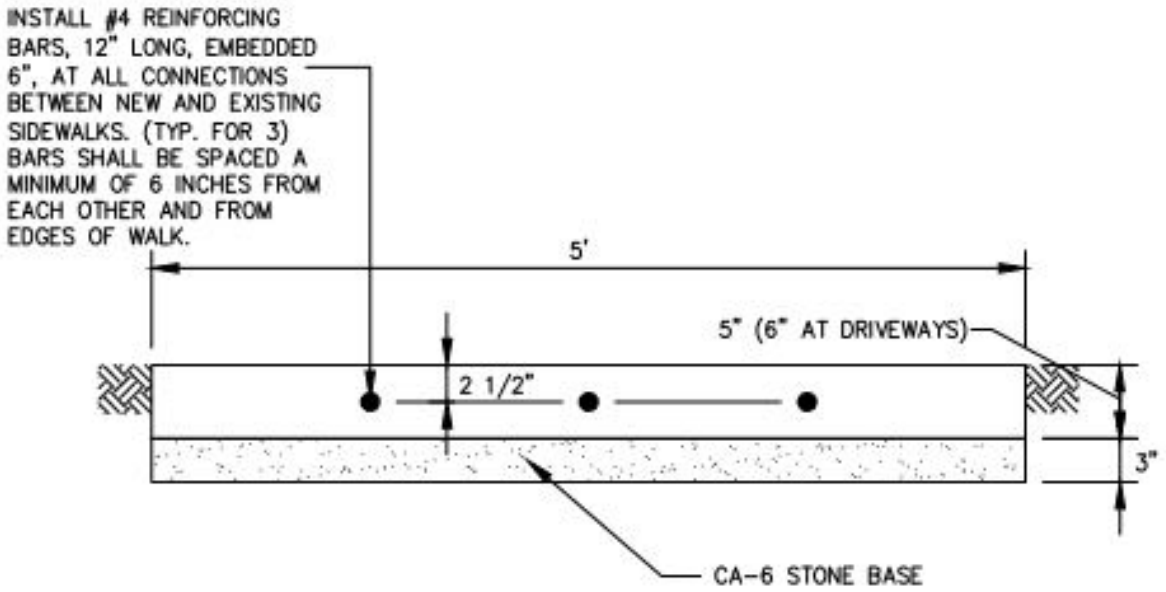


NOTES:
1. TESTING OF SUBGRADE AND ALL ROADWAY MATERIALS IN RESIDENTIAL AND MIXED USE PARKING AREAS SHALL BE DONE IN ACCORDANCE WITH THE VILLAGE'S SUBDIVISION ORDINANCE.

VILLAGE OF HINSDALE
STANDARD DETAIL
FOR
PARKING LOT
CROSS-SECTION

REV:	
DATE:	APRIL 2008
FILE:	TRANS\COMXSEC1

DETAIL NO. 42

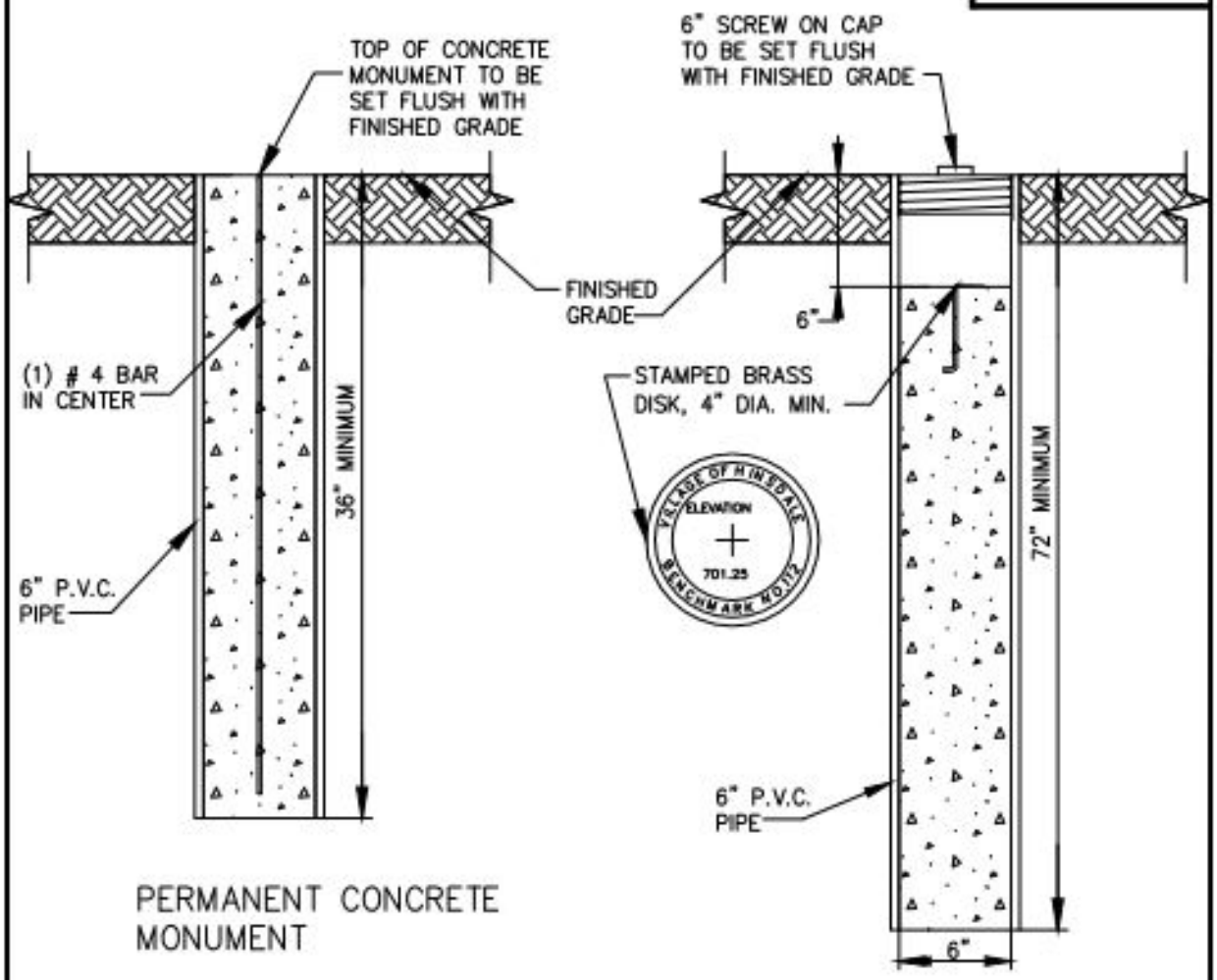


NOTES:
1. SIDEWALKS ADJACENT TO THE BACK OF CURB SHALL BE A MINIMUM OF 6' IN WIDTH.
2. ALL SIDEWALK SHALL BE CONSTRUCTED WITH IDOT CLASS "SI" CONCRETE WITH A MINIMUM COMPRESSIVE STRENGTH OF 3,500 PSI AT 14 DAYS
3. PREFORMED EXPANSION JOINTS (3/4" THICK) SHALL BE CONSTRUCTED IN SIDEWALK EVERY 100 FEET AND AT ALL ABUTTING DRIVEWAYS AND CURB AND GUTTER.
4. TOOLED CONTRACTION JOINTS SHALL BE CONSTRUCTED IN SIDEWALK EVERY FIVE FEET.
5. SIDEWALK SHALL HAVE 1/4" PER FOOT CROSS-SLOPE.
6. SIDEWALKS SHALL BE TESTED PER VILLAGE CODE 11-6-6(B).

VILLAGE OF HINSDALE
STANDARD DETAIL
FOR
SIDEWALK

REV:	
DATE:	APRIL 2008
FILE:	MISC\SIDEWALK

DETAIL NO. 43



PERMANENT CONCRETE MONUMENT

NO SCALE

PERMANENT BENCHMARK

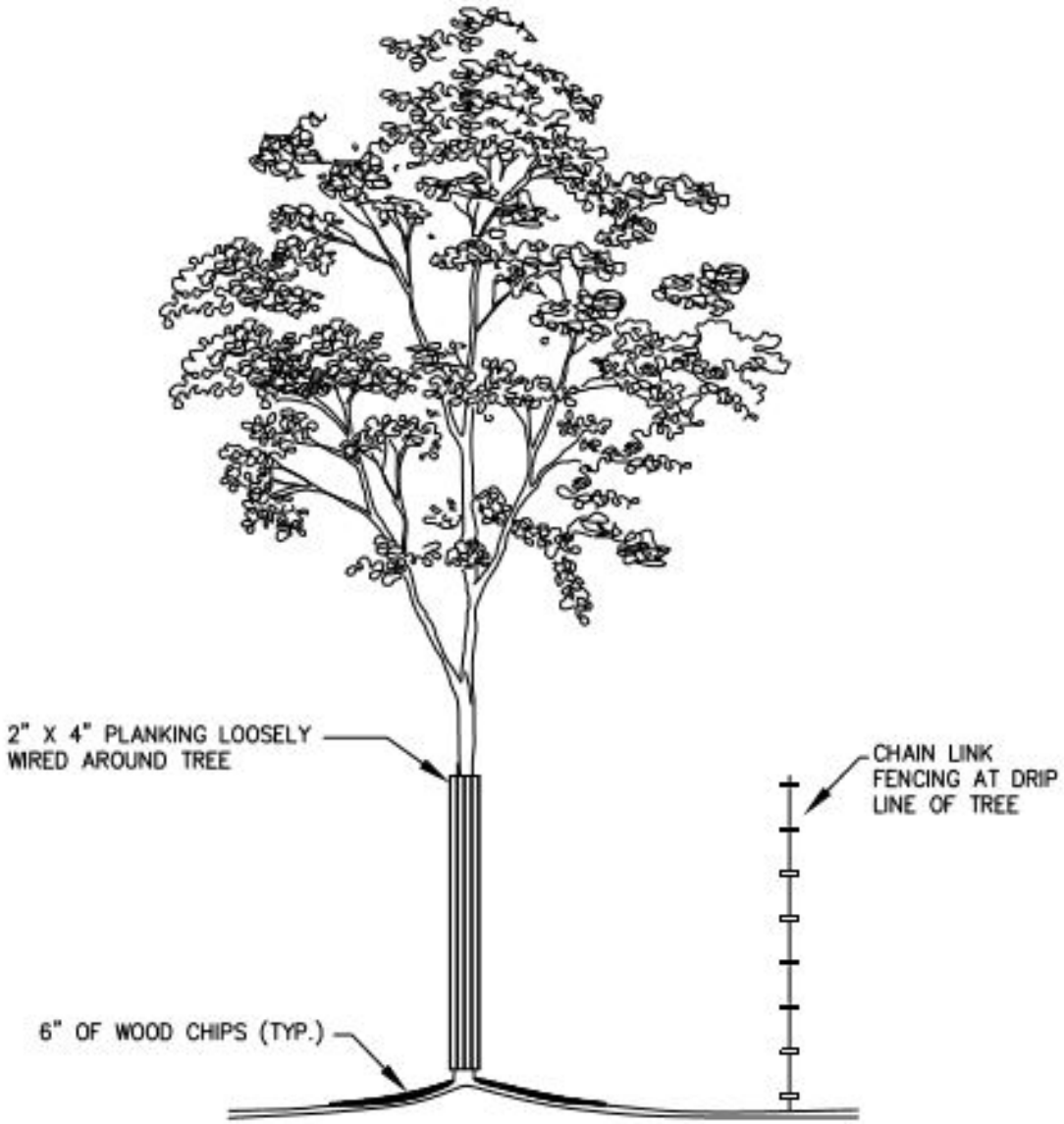
NOTES:
1. PERMANENT CONCRETE MONUMENTS SHALL BE PLACED AT ALL CORNERS AND CHANGES IN BEARING OF THE EXTERIOR BOUNDARY.

2. A MINIMUM OF ONE PERMANENT BENCHMARK SHALL BE ESTABLISHED FOR EACH 50 ACRES, OR FRACTION THEREOF, SUBDIVIDED, AT A LOCATION DESIGNATED ON THE CONSTRUCTION PLANS AND APPROVED BY THE VILLAGE ENGINEER.

VILLAGE OF HINSDALE
STANDARD DETAIL
FOR
PERMANENT
MONUMENT

REV:	
DATE:	APRIL 2008
FILE:	MISC\PERM-MON

DETAIL NO. 44

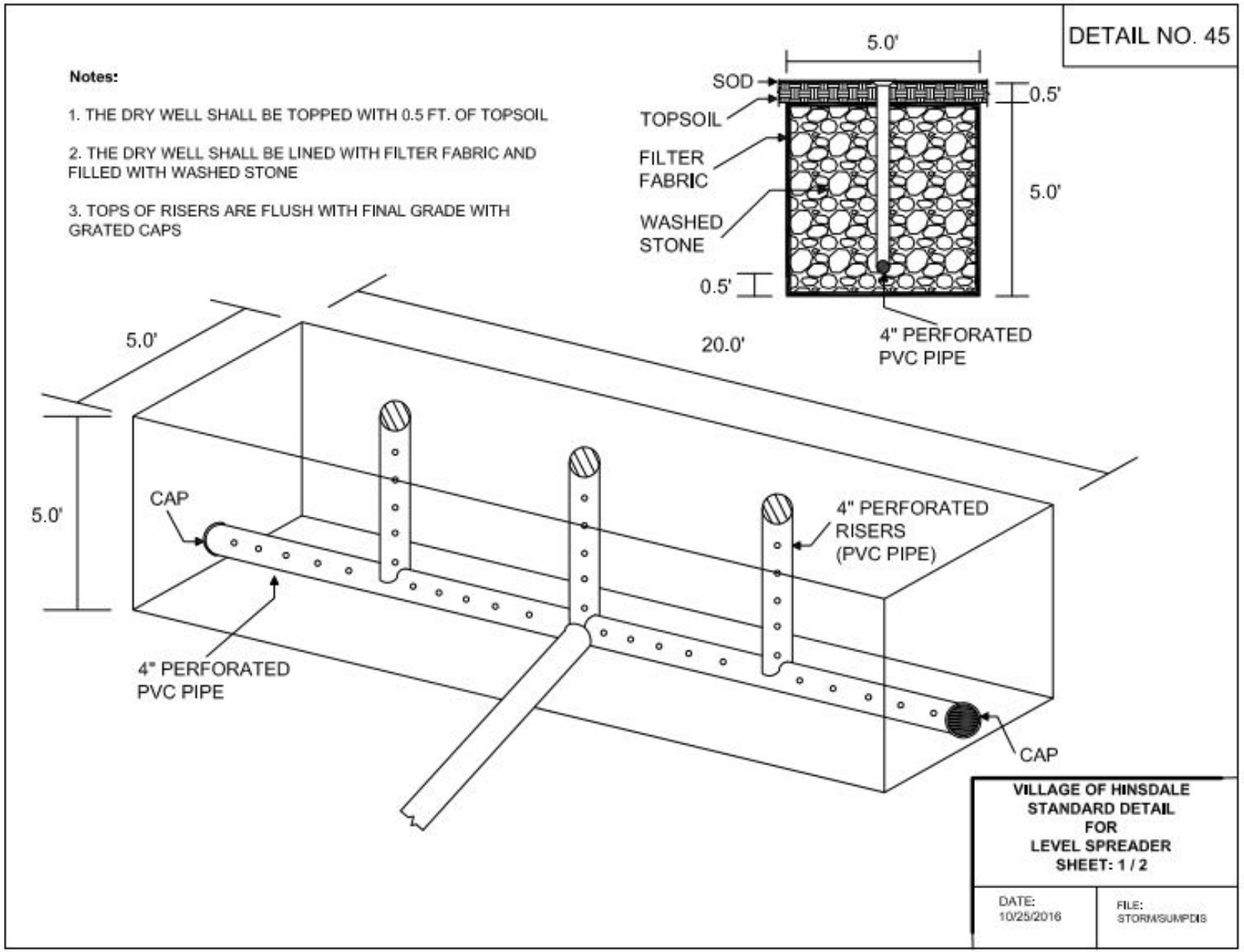


NO SCALE

NOTES:
1. INSTALL 6" OF WOOD CHIPS IN AREAS WHERE EQUIPMENT OPERATES.
2. PROTECT TRUNK WITH PLANKING TO REDUCE SCARING BY EQUIPMENT.
3. REMOVE PLANKING, MATTING, AND MULCH AS SOON AS OPERATIONS ARE FINISHED.

VILLAGE OF HINSDALE
STANDARD DETAIL
FOR
TREE PROTECTION

REV:	
DATE:	JUNE 2013
FILE:	MISC\TREE-PROTECTION


DETAIL NO. 45
Notes:
1. THE DRY WELL SHALL BE TOPPED WITH 0.5 FT. OF TOPSOIL
2. THE DRY WELL SHALL BE LINED WITH FILTER FABRIC AND FILLED WITH WASHED STONE
3. TOPS OF RISERS ARE FLUSH WITH FINAL GRADE WITH GRATED CAPS
5.0'
SOD
TOPSOIL
FILTER FABRIC
WASHED STONE
0.5'
0.5'
5.0'
4" PERFORATED PVC PIPE
5.0'
20.0'
5.0'
CAP
4" PERFORATED RISERS (PVC PIPE)
4" PERFORATED PVC PIPE
CAP
VILLAGE OF HINSDALE
STANDARD DETAIL
FOR
LEVEL SPREADER
SHEET: 1 / 2
DATE: 10/25/2016
FILE: STORM/SUMPDIS

DETAIL NO. 45

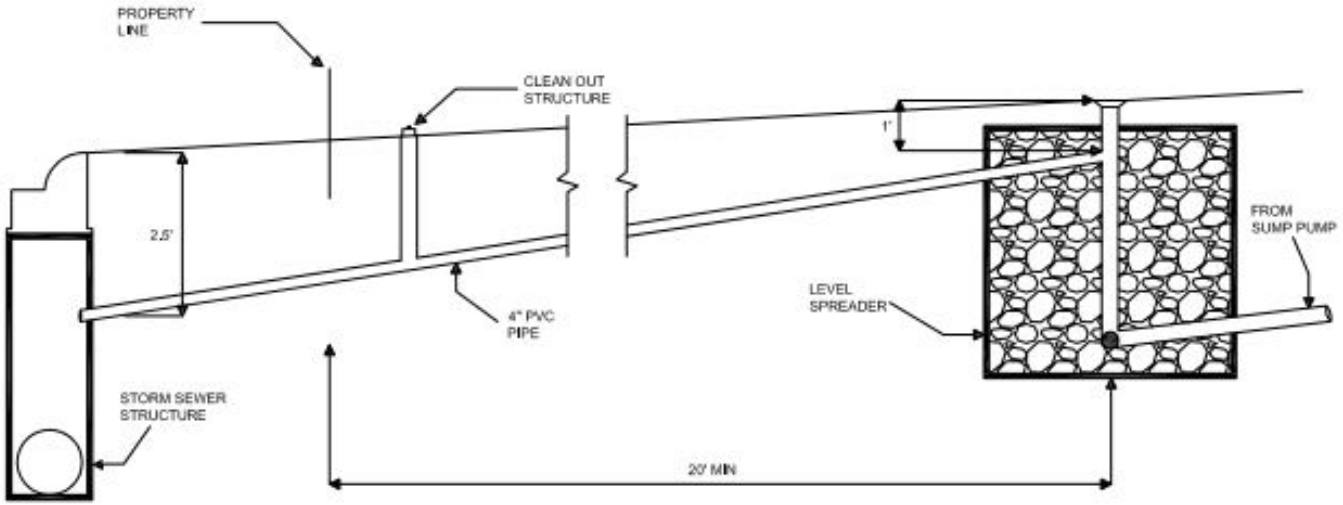
Notes:

1. SUMP PUMP / LEVEL SPREADER / OVERFLOW LINES SHALL BE POLYVINYL CHLORIDE (PVC) SDR 35 CONFORMING TO ASTM D-3034, SIZE AS INDICATED ON THE PLANS

2. HOUSE CONTRACTOR SHALL ROTATE ELBOWS TO INSTALL SERVICE STUBS AS SHOWN IN LOCATION

3. ALL CONNECTIONS TO INLETS, CATCH BASINS, OR MANHOLES FOR SERVICE STUBS OF SUMP PUMP OVERFLOWS SHALL BE CORED AND NOT SAW CUT

4. OVERFLOW CAN ONLY BE CONNECTED TO STORM SEWER (CAN NOT BE CONNECTED TO COMBINED OR SANITARY)



VILLAGE OF HINSDALE
STANDARD DETAIL
FOR
LEVEL SPREADER
(OVERFLOW OPTIONAL)
SHEET: 2 / 2

DATE:	FILE:
10/25/2016	STORM/SUMPDIS

Notes:

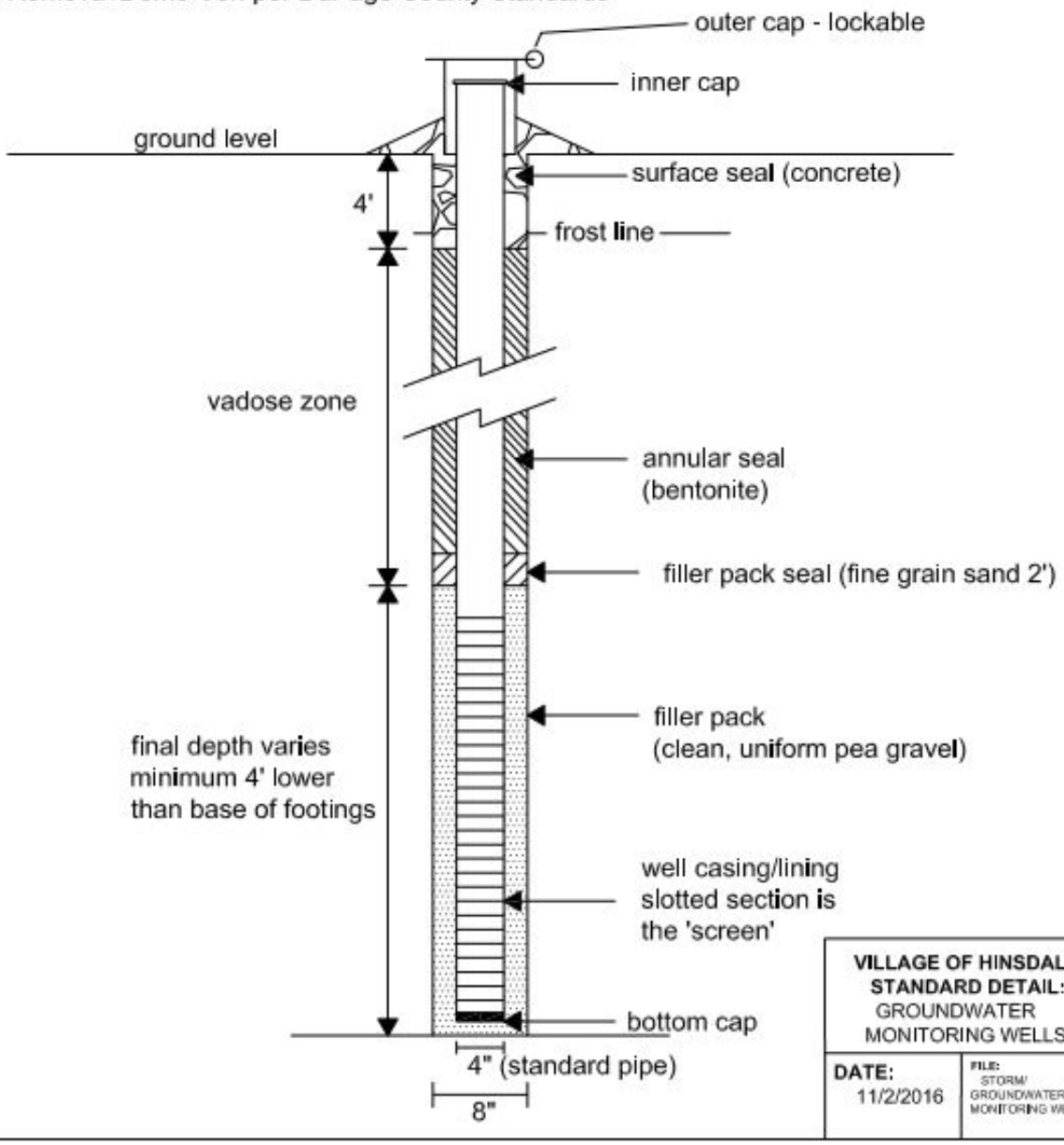
DETAIL NO. 46

1) Data must be collected over a 3 week period from the monitoring wells

2) Minimum of 2 boreholes are required per site, within proposed building footprint

3) Depth of the borehole must be a minimum of 4' lower than the proposed depth for the development

4) Removal/Demolition per DuPage County Standards

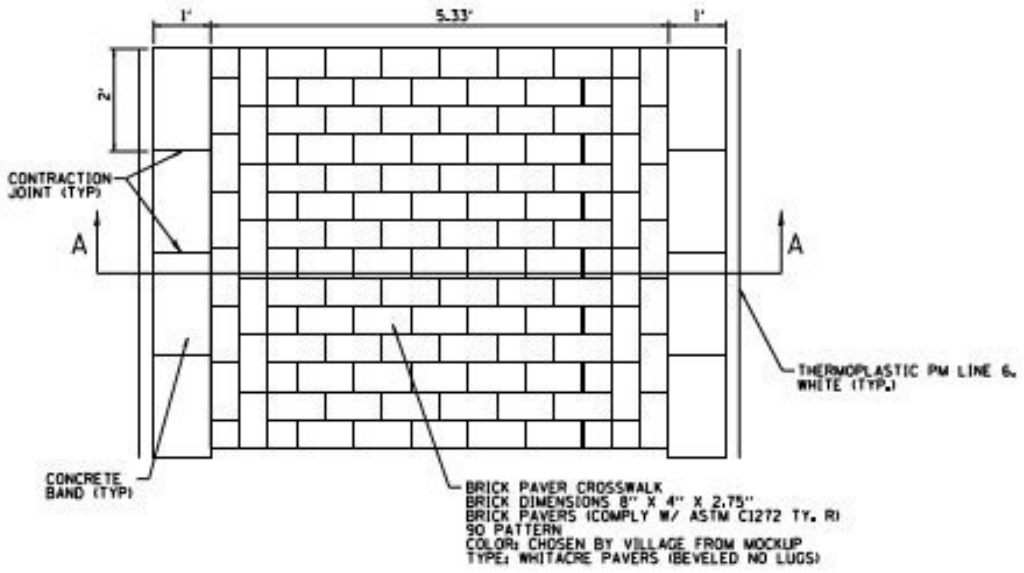


VILLAGE OF HINSDALE STANDARD DETAIL: GROUNDWATER MONITORING WELLS

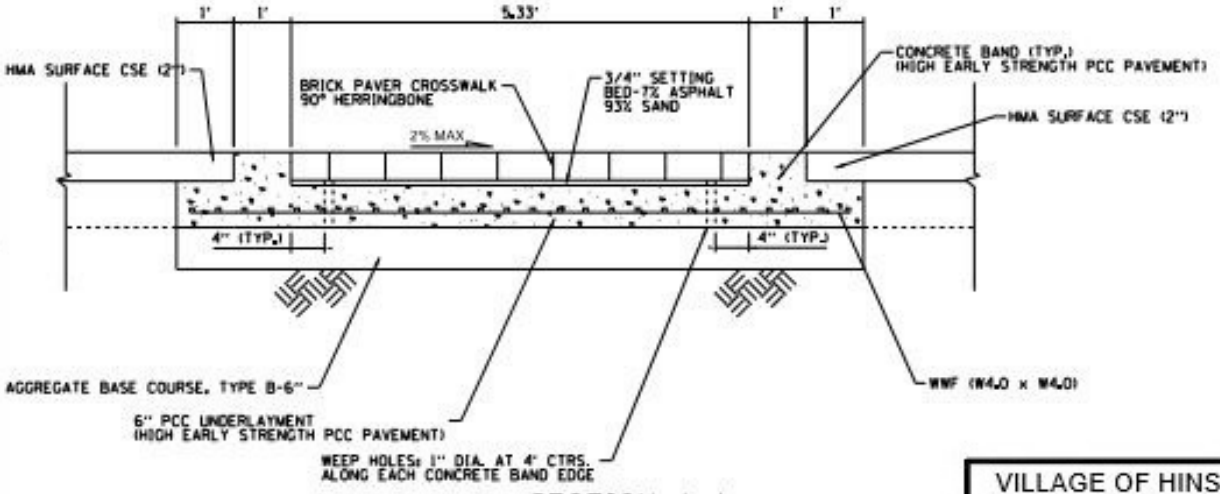
DATE: 11/2/2016

FILE: STORM/ GROUNDWATER MONITORING WELL

DETAIL NO. 47



BRICK PAVER CROSSWALKS
N.T.S.

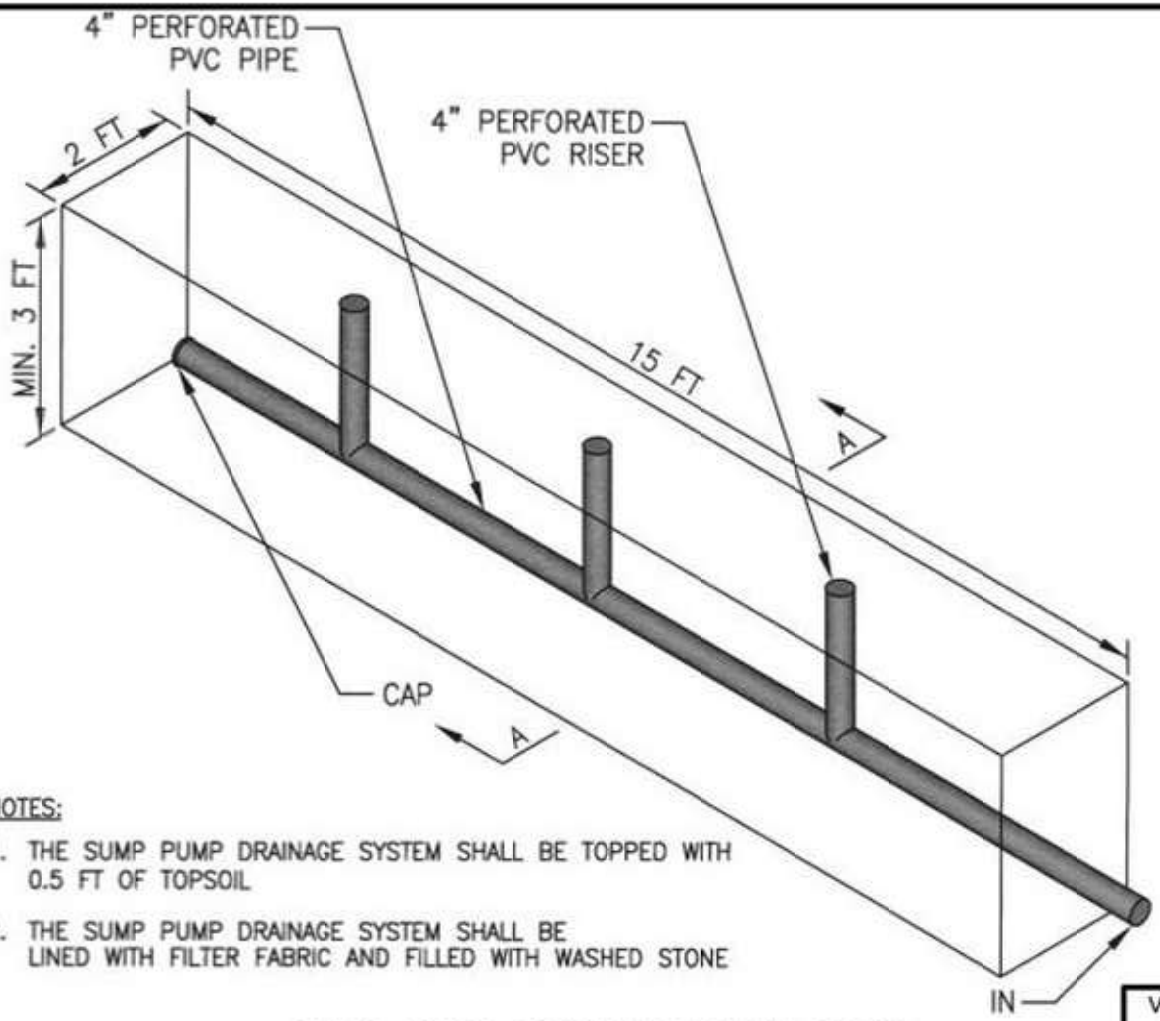


SECTION A-A

VILLAGE OF HINSDALE
STANDARD DETAIL
FOR
BRICK CROSSWALKS

REV:	
DATE:	JUNE 2013
FILE:	MISC\

DETAIL NO. 48

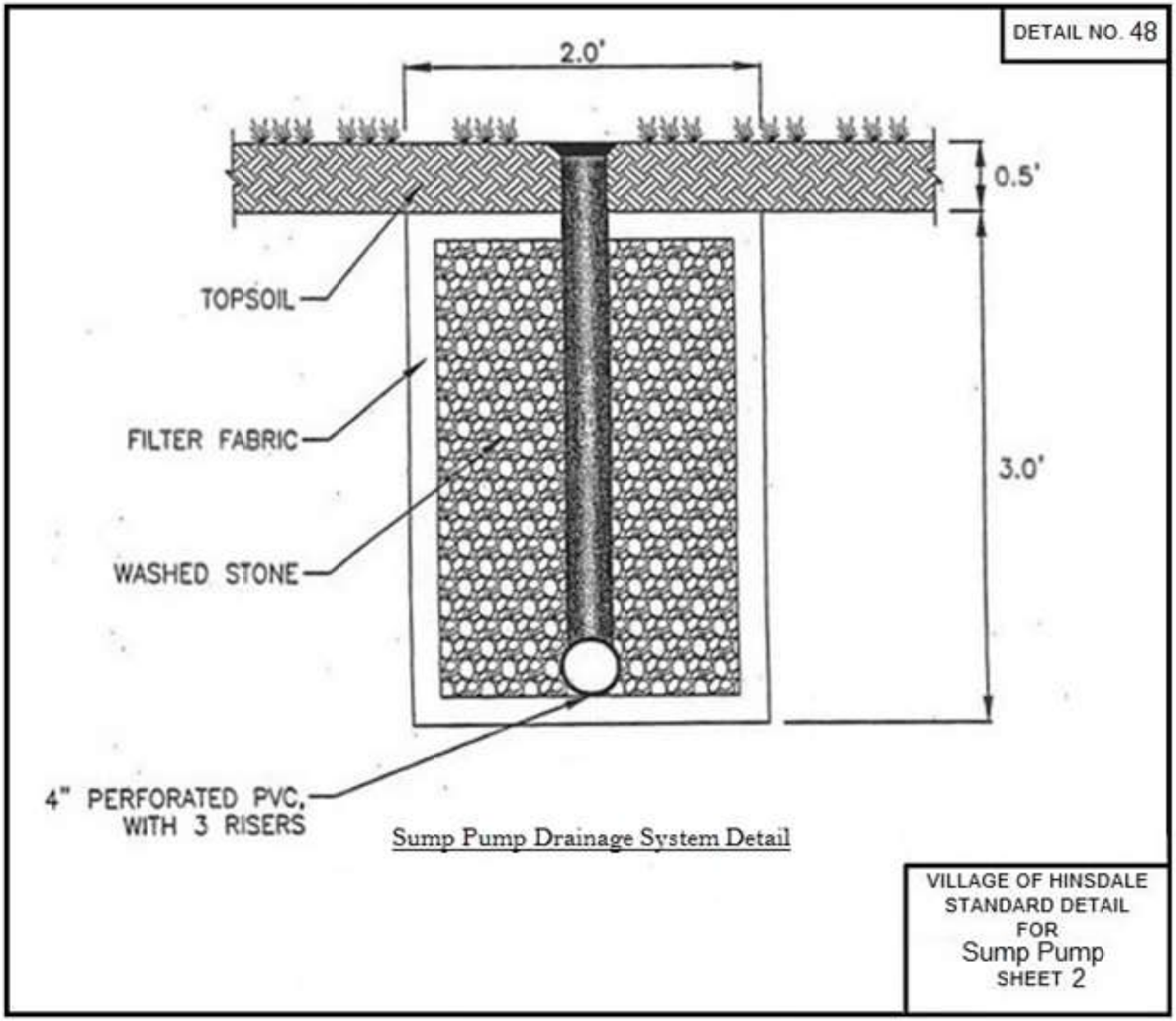


NOTES:

1. THE SUMP PUMP DRAINAGE SYSTEM SHALL BE TOPPED WITH 0.5 FT OF TOPSOIL
2. THE SUMP PUMP DRAINAGE SYSTEM SHALL BE LINED WITH FILTER FABRIC AND FILLED WITH WASHED STONE

SUMP PUMP DRAINAGE SYSTEM DETAIL

VILLAGE OF HINSDALE
STANDARD DETAIL
FOR
Sump Pump
SHEET 1


DETAIL NO. 48
2.0'
0.5'
TOPSOIL
FILTER FABRIC
WASHED STONE
3.0'
4" PERFORATED PVC, WITH 3 RISERS
Sump Pump Drainage System Detail
VILLAGE OF HINSDALE
STANDARD DETAIL
FOR
Sump Pump
SHEET 2