VILLAGE OF SUGAR GROVE
BOARD REPORT

TO: VILLAGE PRESIDENT & BOARD OF TRUSTEES

FROM: BRAD MERKEL, PUBLIC WORKS DIRECTOR
DANIELLE MARION, COMMUNITY DEVELOPMENT DIRECTOR

SUBJECT: ORDINANCE: APPROVING THE VILLAGE ENGINEERING MANUAL

AGENDA: FEBRUARY 4, 2025, VILLAGE BOARD MEETING

DATE: JANUARY 29, 2025

ISSUE

Shall the Village Board approve an Ordinance for the Village Engineering Manual.

DISCUSSION

The Village Board discussed this matter previously and was receptive to adopting an Engineering Manual that is separate from the Subdivision Ordinance. The purpose of having an Engineering Manual as a stand-alone document allows greater flexibility so when standards change from third parties, such as IDOT, the manual can be revised at an administrative level to reflect these changes rather than coming back for individual text amendments each time requirements change. The Village has proposed a text amendment that removes the engineering standards called out in the subdivision ordinance, that has already been reviewed and recommended for approval by the Planning Commission/Zoning Board of Appeals. This is an Ordinance Approving The Village Engineering Manual.

ATTACHMENTS

- Ordinance approving the Village Engineering Manual
- Village Engineering Manual

RECOMMENDATION

The Village Board approve the Ordinance for the Village Engineering Manual.

VILLAGE OF SUGAR GROVE
KANE COUNTY, ILLINOIS

ORDINANCE NO. 2025-0204_

AN ORDINANCE ADOPTING AN ENGINEER MANUAL

Adopted by the Board of Trustees and President of the Village of Sugar Grove
this 4th day of February 2025

Published in pamphlet form by authority of the Board of Trustees of the Village of Sugar Grove, Illinois
this 4th day of February 2025

ORDINANCE NO. 2025-0204_

AN ORDINANCE ADOPTING AN ENGINEER MANUAL

WHEREAS, the Village of Sugar Grove ("Village) is not a home rule municipality within Article VII, Section 6A of the Illinois Constitution and accordingly, act pursuant to the powers granted to it under 65 ILCS 5/1-1 *et seq.*; and,

WHEREAS, the Village currently maintains subdivision regulations governing the use and improvement of land within the Village; and,

WHEREAS, the Village finds that such restrictions provide for the safety and well-being of Village inhabitants and benefit the public welfare, safety and morals; and,

WHEREAS, the Village seeks to continue to promote these interests, and seeks to amend the Village Code to more fully protect and preserve the safety and well-being of such inhabitants; and,

WHEREAS, from time to time, it is necessary and desirable to modify the subdivision regulations in response to changes in community attitudes, technology, development and the law; and,

WHEREAS, the Village finds that Title 12, Chapter 11 (Standard Specifications of Improvements) of the Village's Subdivision Regulations contains information that is often driven by external agency and manufacturer requirements, resulting in the ordinance quickly becoming outdated; and,

WHEREAS, in accordance with the foregoing, pursuant to Ordinance No. _____ the Village adopted a text amendment to Title 12, Chapter 11 of the Village Code that removed certain engineering specifications from the Village's Subdivision Regulations with the intent that said specifications be adopted as part of a stand-alone Engineering Manual; and,

WHEREAS, the Village now wishes to adopt said Engineering Manual in accordance with the terms and conditions set forth herein.

NOW, THEREFORE, BE IT ORDAINED by the President and Board of Trustees of the Village of Sugar Grove, Kane County, Illinois, as follows:

SECTION ONE: Engineer Manual Adoption

That the Village hereby adopts the Engineering Manual set forth in **Exhibit A**, attached hereto and incorporated herein by reference.

That the Village Code shall be amended to create a new Title 1 (Administration), Chapter 12 (Engineering Manual), which shall read as follows:

Chapter 12 – Engineering Manual

12-1 Engineering Manual Adoption:

A. The Village of Sugar Grove Engineering Manual is hereby approved and adopted. A copy of the Engineering Manual is attached to Ordinance 2024-0820 and shall remain on file with the Community Development Department, as may be amended from time to time.

B. The Village of Sugar Grove Engineering Manual may be amended as follows:

   a. Amendments that are required by State Law or are mandated or imposed by third parties may be made administratively by staff. All amendments that are made by staff pursuant to this provision shall be brought to the Village Board annually for adoption.

   b. Amendments of any other kind shall require Village Board action by Resolution.

SECTION TWO: GENERAL PROVISIONS

REPEALER: All ordinances or portions thereof in conflict with this ordinance are hereby repealed.

SEVERABILITY: Should any provision of this Ordinance be declared invalid by a court of competent jurisdiction, the remaining provisions will remain in full force and effect the same as if the invalid provision had not been a part of this Ordinance.

EFFECTIVE DATE: This Ordinance shall be in full force and effect on and after its approval, passage and publication in pamphlet form as provided by law.

PASSED AND APPROVED by the President and Board of Trustees of the Village of Sugar Grove, Kane County, Illinois, this 4th day of February 2025.

ATTEST:

Jennifer Konen, President of the Board of Trustees	Tracey Conti, Village Clerk

	Aye	Nay	Absent	Abstain
Trustee Matthew Bonnie	___	___	___	___
Trustee Sean Herron	___	___	___	___
Trustee Heidi Lendi	___	___	___	___
Trustee Sean Michels	___	___	___	___
Trustee Michael Schomas	___	___	___	___
Trustee James White	___	___	___	___

Exhibit A

April 22, 2024

Village of Sugar Grove
Engineering Manual
Standard Specifications for Improvements

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Section I. General Conditions

These Village of Sugar Grove Standard Specifications for Improvements are supplemental to the Village of Sugar Grove Municipal Code as referred to therein and shall apply to all infrastructure improvements within the Village and may be modified by the Village Board as needed, upon the advice of the Director of Public Works and/or the Village Engineer, to address changes in State of Illinois specifications, accepted construction industry standards, material or equipment preferences of the Village or for special identified situations or conditions. Any clause or language within an annexation agreement or development agreement which discusses locking in or freezing of Codes, Ordinances or Standards of the Village shall NOT apply to these Standard Specifications for Improvements as long as they are applied equally to all infrastructure improvements within the Village. The Standard Specifications for Improvements that are in effect at the time of application for Final Plat approval are those that will govern unless approved otherwise by the Board of Trustees in conjunction with Final Plat approval.

All improvements constructed in the Village of Sugar Grove and within 1-1/2 miles of its corporate limits shall be designed and constructed in accordance with these Standard Specifications for Improvements. In addition to the specifications contained herein, all of said improvements shall conform with: 1) the Illinois Department of Transportation “Standard Specifications for Road and Bridge Construction”, latest edition; 2) the current edition of “Standard Specifications for Water And Sewer Main Construction In Illinois”; 3) The Illinois Urban Manual, latest edition; 4) The Manual on Uniform Traffic Control devices for Streets and Highways, latest edition; and 5) the “Illinois Accessibility Code” latest edition, and all amendments to any of the cited references. These documents shall be considered part of the Village of Sugar Grove Standard Specifications for Improvements. In the case of a conflict between any part, or parts of the said specifications, the most stringent requirements shall apply. The Village Engineer, with the advice of the Director of Public Works and the Board of Trustees, shall be the sole judge when interpreting the Standard Specifications for Improvements.

All work performed under these specifications shall be done by qualified approved contractors and subcontractors familiar with the type of work to be accomplished. Prior to awarding any contract for work to be done under these specifications, the developer or general contractor shall furnish to the Village the names and addresses of the contractors and subcontractors as they become available. These contractors and/or subcontractors shall be registered with the Village.

The Village Engineer may, under special conditions, grant deviations within the intent of these specifications. Any changes in the approved plans must have prior approval in writing by the Village Engineer.

These specifications shall become a part of each and every project approved by the Village Engineer and all such approval signatures shall be conditioned upon these specifications unless noted otherwise.

The Village Engineer, or their representative, will, upon notice of improper material or installation practices, issue a written document to the developer, or his contractor, stating that failure to stop and correct such deficiencies will result in the Village’s refusal to accept such improvements. If the work being performed causes an unsafe condition, the Village Engineer will issue a stop order. Failure to comply and eliminate the unsafe conditions will invoke the penalty clauses contained within the Municipal Code.

Contractors that have done unsatisfactory work within the Village of Sugar Grove will not be allowed to work within the public Right of Way.

I.A. Plan Submittals

Plan submittals shall be in accordance with the current checklists for plan submittal that are on file with the Village Clerk. All plans and plats shall be submitted under the signature and seal of the appropriate licensed professional. Improvement plans shall be clearly marked "Not for Construction" until such time as all approvals have been granted and applicable permits have been issued.

In general, the following requirements shall apply to all engineering plan submittals:

1. Plan sheet size shall be 22" x 34" or 24" x 36".

2. Minimum plan scale shall be 1"=50', except for general or overall reference sheets.

3. Geodetic Control: The State of Illinois and Kane County placed various monuments in 2000 and 2001. The State of Illinois installed 11 of these monuments along State roadways located within Kane County while Kane County's 51 monuments were strategically placed along County roads or other County property. This will provide a grid network that will facilitate GPS surveying methods. The 62 monuments are recorded to 1st order accuracy and are calibrated to the North American Datum 1983. The monumentation is bluebooked (published) with the National Geodetic Survey (NGS), which is accessible online at http://www.ngs.noaa.gov/. Also see http://www.co.kane.il.us/geodetic/index.aspx.

4. Coordinate System: The coordinate information contained in the drawings shall be delivered in the Illinois State Plane - East coordinate system using the North American Datum 1983 horizontal datum (Transverse Mercator projection) and North American Vertical Datum 1988 vertical datum using US Survey feet as units. These data shall be produced in real coordinate space with an insertion point of (0,0). Horizontal and vertical accuracy of these data shall meet the minimum industry standards for surveys and maps. The Village topographic datum is NGVD 1988. Plans with any other datum or conversion factors will not be accepted.

5. All design information shall be presented clearly and completely to the satisfaction of the Village Engineer. Pre-design meetings are encouraged to review specific subdivision design concerns and to minimize design time, review time and revisions.

All engineering plans shall include, but not be limited to, the following:

1. Cover Sheet containing plan title, engineer's certification, sheet index, datum information (including at least 2 on-site elevation reference marks), J.U.L.I.E. note and site location map. All benchmarks shall be tied into Village datum.

2. General Notes, Legends, Estimated Quantities and Specifications Sheet(s) which shall reference these Village of Sugar Grove Standard Specifications for Improvements in the heading paragraph. No general notes or specifications typically utilized by the design engineering firm which conflict with these Standard Specifications for Improvements, or any specifications referenced herein, will be allowed. An estimated quantities table shall be provided for all work proposed by the plan set.

3. Geometric Plan or Final Plat of Subdivision shall be included in the plan set indicating all geometric information for subdivision boundary, streets, lots and open space. Street names and lots numbers are required.

4. Overall Utility Plan with all structures (i.e., manholes, catch basins, inlets, valve vaults, fire hydrants, street lights) numbered, lettered or otherwise labeled. All water, sanitary sewer and storm sewer mains shall be shown on this sheet with pipe sizes indicated.

5. Grading and Drainage Plan showing existing and proposed contour lines, 1 foot interval, for all areas being developed. High points and low points of all roads shall be shown with centerline elevations at 100 foot intervals. Spot elevations shall be shown for all lot corners, tops of curb and sidewalk opposite front lot corners, all peaks and all low points with the rim elevations of yard inlet structures. Minimum top of foundation elevations shall be provided with a standard note regarding the relationship between top of foundation and garage floor. Lookout and walkout basements shall be indicated with minimum top of foundation elevations and the general location of foundation steps. Retaining walls will not be allowed for side yard grade transitions between lots. Lots shall be made wider or houses shall be custom designed such that the grade transitions are accomplished on individual lots with stepped foundations, lookout basements or dropped siding. Overflow routes for stormwater conveyance shall be clearly shown and cross sections with flow calculations and high water levels shall be provided. A storm sewer design report with map showing areas tributary to all inlets is required. Time of concentration calculations and composite runoff coefficient calculations are required.

6. Erosion and Sedimentation Control Plan, incorporating all design elements required by these Standard Specifications for Improvements and all requirements of the Illinois Urban Manual, the Kane County Stormwater Ordinance and the Kane-DuPage Soil and Water Conservation District. Topsoil stockpile areas shall be shown with silt fence on the perimeter. It shall be clearly noted that all areas of the subdivision to be vegetated shall be respread with a minimum of 6 inches of quality topsoil. Borrow pits will not be filled with topsoil and topsoil will not be transported out of the Village Corporate Boundary without written approval of the Village Engineer or the Village Board. This section of the plan set shall include a Storm Water Pollution Prevention Plan (SWPPP) in accordance with IEPA NPDES Phase II permitting requirements if the site is greater than 1 acre.

7. Plan and Profile Sheets shall be provided for all roads and for all easements containing water, sewer and storm sewer mains. Easements, a minimum of 10 feet beyond the centerline of such mains (wider if necessary depending on the depth and size of the utility and soil conditions), shall be indicated on the engineering plans and coordinated with the Final Plat of Subdivision. Rim and invert elevations for all pipes and all sanitary and storm structures shall be shown in plan view. Sanitary sewer manhole rims and inverts shall be shown in plan and profile. Sanitary sewer services shall be shown in plan view and in profile where they cross all water mains and where they cross any other utility with a potential elevation conflict. All risers shall be indicated, and all stub elevations shall be provided. Valve vault rims and top of water main elevations shall be shown. Fire hydrants shall be shown with finish grade elevations. Water service lines and curb box locations and finish grade elevations shall be shown. Use of a table presenting all service data is preferred. All lot numbers and street names shall be shown in the plan view. Pipeline lengths, sizes, types and slopes shall be shown in plan and profile views. 1”=5’ is the preferred vertical scale for all profile drawings. Water main shall be shown in profile as it will actually be laid. Fittings will not be allowed for vertical deflections at elevation conflicts. 90 degree bends are not allowed on the water main. Cross sections at 100 foot intervals shall be provided for all rural type roadways that do not utilize curb and gutter.

8. Intersection Details at a scale of 1"=10' shall be provided for all street intersections. All utilities shall be shown (with outside diameter of pipes and manholes to scale). Curb slopes and top of curb elevations, with stations at all curb return points of curvature, shall be shown. High points and curb return midpoint elevations shall be provided. Curb depression and spot elevations shall be indicated for all sidewalk ramps demonstrating compliance with accessibility standards. Street names and adjacent lot numbers shall also be provided.

9. Street Lighting, Traffic Control, Signage and Striping Plan, showing all street lights, street light wiring, traffic control devices, all traffic control signs and all striping as required for lanes, stop signs, parking, shared use paths and crosswalks.

10. Village of Sugar Grove Standard Notes and Detail Sheets, in their entirety, which will be provided by the Village Engineer in PDF format. Those details on any particular sheet which do not apply to a particular subdivision or plan set shall be crossed out.

I.B. Review and Inspection Fees

All proposed public improvements and Stormwater Management Facilities, whether privately or publicly maintained, shall be inspected during the course of construction by the Village Engineer or his/her duly authorized representative. The level of effort required for inspections (and subsequent billings to the developer) will be directly related to the type of improvements being installed and the demonstrated diligence, competence and willingness of the selected contractors to strictly follow all requirements of these specifications.

All Plats, Plans and other related documents shall be reviewed and approved in writing by Village Staff and/or the Village's professional consultants.

The costs for all such reviews, inspections and approvals shall be reimbursed by the subdivider, developer, applicant or owner.

I.C Required Permits, Meetings and Inspections

Prior to the start of construction for any project, a pre-construction conference shall be held. Required attendees shall be the developer, his or her project superintendent, a contractor's representative for each contractor who will perform work, the Director of Public Works and the Village Engineer. The pre-construction conference shall include, but not be limited to, discussion of the following: Construction schedule, subcontractors list, insurance requirements, existing utility locations, construction observation, emergency contacts list, permitting requirements, soil erosion and sediment control, material specifications, material suppliers, materials testing, construction record drawing requirements, letter of credit reductions and general safety requirements.

No work shall begin until all applicable permits have been received, the engineering plans have been approved in writing by the Village Engineer and accepted by the Village Board and the pre-construction conference has been held. Any changes to the approved plans must be approved in writing by the Village Engineer. The Village Engineer or a representative will, upon discovery of improper material or installation practices, issue a written document to the contractor, stating that failure to stop and correct

such deficiencies will result in the Village's refusal to accept such improvements or to issue any further building permits or to perform required inspections.

The developer and all (sub) contractors shall obtain and keep in force insurance coverage for Workers Compensation and Employers Liability, Commercial General Liability, Commercial Automobile Liability, and Umbrella Liability as described in IDOT's "Standard Specifications for Road and Bridge Construction". The Village, their employees, agents, consultants or other assignees shall be named as an additional insured. The insurance coverage shall remain in effect until the entire development is accepted by the Village. A copy of this insurance will need to be provided to the Village of Sugar at the time of contractor registration, and all contractors will need to renew its registration annually with the Village.

The Village, or its representative, will inspect all public and certain private improvements. The construction observer shall witness all utility tests and be present for all curb installation and pavement proof rolling.

The contractor/developer shall notify the construction observer a minimum of 48 hours in advance of starting any major construction phase and will also make arrangements 48 hours in advance for witnessing utility tests, curb installations and proof rolls.

The construction observer serves as the representative of the Village Engineer. The construction observer will not keep quantities or survey grades for the developer or contractor nor will the construction observer make decisions regarding major revisions to the approved engineering plans. The design engineer shall submit all revisions in writing to the Village Engineer for review and written approval.

A final inspection of all improvements will occur prior to final acceptance of the improvements. A punchlist will be created and submitted to the developer. Upon completion of the punchlist items, the developer shall notify the construction observer, in writing, for a re-inspection.

I.D. Construction Record Drawings

Prior to and as a condition of final acceptance of improvements, Construction Record Drawings shall be prepared and submitted for review and approval.

Upon approval, Construction Record Drawings shall be provided in the following formats:

a) Four (4) prints on paper.
b) An electronic file of the full set in Acrobat Adobe format.
c) An Electronic DWG file (AutoCAD format, most current version) via e-mail to the address designated by the Village Engineer.
d) An electronic GIS file - SHP (ESRI ArcView format) or ESRI Personal Geodatabase. An accompanying text file shall be included that describes the Layers along with the Layer Numbers or Layer Names in the digital data file. All digital files shall be mapped to scale and submitted to the Village on via e-mail to the address designated by the Village Engineer.

Data Layering Requirements

No formal layering scheme is required; however the following elements must be on separate layers:

- Parcel Boundary Lines / Road ROW Lines
- Road Centerline
- Easement Line
- Storm Sewer
- Sanitary Sewer
- Potable Water Line
- Water Service Line
- Storm Structure
- Sanitary Structure
- Sanitary Service Line
- Potable Water Structure
- Fire Hydrants
- Ponds / Detention Basins
- Street Lights
- Street Signs
- Traffic Signals
- Regulatory Signs
- Benchmarks/Monuments
- Pavement Extents
- Curb & Gutter Extents
- Gravel Shoulder Extents
- Sidewalk Extents
- Trail / Path Extents
- Contours
- Jurisdictional Wetlands / Waters of the U.S. extents
- B-Box Locations
- Parkway Tree Locations
- Water Treatment Plants, Storage Tanks, Well Locations
- Water Pressure Zones

For ESRI formats, the Layering Requirements refer to a Layer or Level field in the attribute file of the digital data file. Also, line work for these features shall be continuous and should contain topological consistency with other lines i.e. lines shall not be broken by label text or connected to other lines by marker pins.

Provide only plan view drawing at preferred scale of 1”=50’. Alternate allowable scales are 1”=40’, 1”=30’ and 1”=20’. Multiple sheets shall be used as necessary. Large scale details of stormwater restrictor structures and water main interconnects are encouraged and may be required.

All structures shall be numbered or lettered using the same system as the approved engineering plans for the subdivision. Rim and invert (or top of water main) elevations shall be shown at all structures and for all pipes entering and leaving each structure. Size, material, lengths and slopes (except slopes of water main or sanitary force main) of all pipelines shall be shown on the plan or in a table thereon. Sewer and water service stub locations shall be shown, including the b-box and cleanout. All b-boxes

shall be visible, accessible and be keyed in the presence of the Director of Public Works, or their representative, prior to acceptance. Cleanouts should be visible and accessible.

Topographic Surveys of all Stormwater Management Facilities shall be shown certifying all critical elevations, volumes and restrictor sizes. Elevations and cross sections of critical stormwater overflow routes may also be required as deemed appropriate by the Village Engineer.

All roadways shall be cross sectioned (top of curb, centerline and top of curb) with elevations provided at minimum 100 foot intervals and at all crests and low points.

Street lights and all underground wiring shall be shown.

Following the completion of, but prior to the Letter of Credit (or other guaranty) reduction with regard to the sanitary sewer and water main service stubs, an interim record drawing shall be submitted in an electronic format showing the actual constructed locations of sewer stubs and b-boxes.

The Final Construction Record Drawing shall have the following statement affixed and signed:

State of Illinois)
)ss
County of _____)

We, (name of engineering firm), hereby certify that these "Record Drawings" have been prepared under our direct supervision and that the information contained hereon has been provided and/or verified by us and accurately reflects the existing conditions on (date). We further certify that in our professional opinion, these "Record Drawings" adequately depict and substantiate that the improvements constructed as part of this project will function in substantial conformance with the design intent of the engineering plans and specifications as accepted and approved by the Village of Sugar Grove.

By: (Signature).

Title:_____.

Date:_____. seal

Illinois Licensed Professional Engineer No._____.

License Expiration Date:_____.

Section II. Streets

II.A. General Conditions

All street pavements shall be constructed in accordance with the design criteria for the various classes as established in the “Bureau of Design and Environment Manual” and “Highway Standards” of the State of Illinois Department of Transportation, latest edition. Construction materials and methods shall meet the requirements of the “Standard Specifications for Road and Bridge Construction”, latest edition. The thickness of the pavements for Major Collectors and Arterials shall be determined in accordance with the current Illinois Department of Transportation “Manual For Structural Design of Portland Cement Concrete Pavement” and the “Manual of Instructions For The Structural Design Of Bituminous Concrete Pavements”, or as required by the jurisdictional authority.

Streets shall not be constructed on a subgrade having an Illinois Bearing Ratio (I.B.R.) of less than 3.0. In no case shall the subbase material be placed on a wet subgrade. All removal of unsuitable material in the subgrade must be replaced with compacted clay of proper moisture content to a minimum 95 percent modified laboratory density in accordance with AASHTO T99 (Method A or C) or 1.5’ of riprap. The soil support I.B.R. value selected for use by the designer shall represent a minimum value for the soil to be used. An adequate number of soil borings shall be obtained to determine the subdivision’s soil characteristics for street and utility construction purposes. A copy of the Soil Borings Report shall be provided to the Village Engineer as part of the Final Engineering Plan submittal. A 1.5’ undercut with riprap is preferred.

The Village Engineer may approve lime stabilization as a last resort only, when soils are compatible as determined by a geotechnical engineer. The lime shall meet the Illinois Department of Transportation’s guidelines for Lime Stabilized Soil Mixture as outlined in the “Standard Specifications for Road and Bridge Construction”, latest edition.

When the soils report indicates a subbase area below the water table or having poor drainage characteristics, the pavement design must provide additional subbase drainage which will allow the new subgrade to be drained into the storm sewer or roadside ditch system.

On all streets where new pavements meet existing pavements, transitional pavement shall be provided in accordance with Illinois Department of Transportation District 1 Detail BD-32, *Butt Joint and HMA Taper Details*, most current version.

The sub-grade shall drain to the curb line and to the inlets and catch basins. Water will not be allowed to pocket if applied on the sub-grade. Positive drainage must be accomplished on the compacted subgrade or the placement of base material will not be allowed. Verification by the Village Engineer of the proper sub-grade drainage will be required prior to any additional roadwork.

The base material shall not be placed prior to approval of the subgrade by the Village Engineer. The subgrade, base course and binder course shall be proof rolled by the Contractor as described below. The Contractor shall contact the Village Engineer a minimum of forty-eight (48) hours minimum prior to the “proof roll”.

Proof rolls by the contractor and witnessed by the Village Engineer will be conducted as follows:

1. A loaded truck shall be slowly driven over the area to be tested at a speed, pattern, and number of cycles to be determined by the Village Engineer. The test truck shall be the common tractor-trailer type with no more than five (5) axles with a total of eighteen (18)

wheels loaded to a net weight of no less than twenty-two (22) tons. The load ticket shall be provided to the Village Engineer for record. Movements under the wheels greater than 3/4" will be marked by the Village Engineer or their representative indicating remediation is required.

2. Areas of unstable or damaged subbase, base course, or binder course shall be determined by the Village Engineer and removed and replaced to the satisfaction of the Village Engineer at no cost to the Village.

3. The Village Engineer is responsible for indicating whether the proof roll passes or fails. The Contractor is responsible for determining how to fix any unsatisfactory areas.

Final placement of hot mix asphalt surface course shall be delayed for a minimum of one full winter after binder installation and 70% of the adjacent, private improvements are in place unless otherwise approved by the Village and Village Engineer. The maximum delay for surface course is three (3) years after installation of the binder, unless otherwise approved by the Village Board under the recommendation of the Village Engineer. Before the placement of the surface course, all underground utility punch list items for final inspection shall be completed and approved and all parkway landscaping completed. Also, the binder course patches must be completed, and the curb and gutter repaired as required by the Village Engineer.

After any binder course deficiencies have been corrected to the satisfaction of the Village Engineer and immediately prior to placing the asphalt surface course, the pavement shall be thoroughly cleaned and primed with bituminous materials at a residual asphalt rate of 0.05 pounds per square foot. When bituminous materials are applied under traffic conditions, sanding at the approximate rate of 2 to 4 pounds per square yard will be required. All affected residents and businesses shall be notified a minimum of twenty-four (24) hours prior to placement of bituminous materials.

The bituminous base course (if any), leveling binder, binder course, and surface course mixtures shall be laid on a surface, which is dry and only when weather conditions meet all standards stated in the IDOT Standard Specifications for Road and Bridge Construction.

All paving shall be done with an IDOT approved paving machine utilizing electronic grade control of a minimum length of 15 feet, but the length of the machine shall be suitable for the width of the road and be verified as acceptable by the Village Engineer.

All asphalt mixtures shall be delivered and handled so that the asphalt mixture immediately behind the paver screed is at or above 270° F. All asphalt delivered to the project shall be covered.

Paving timeframe and condition requirements shall be consistent with IDOT Standard Specifications. However, the Village Engineer may approve a written request to allow the installation of binder course after this date provided the above requirements are met. The request must be made in writing to the Village Engineer 48 hours prior to the requested paving dates, along with a weather forecast for the next 96 hours. Surface course must be placed the paving season following binder course installation, after a winter has passed. The asphalt laying pattern must be approved by the Village Engineer or his/her representative in order to minimize longitudinal joints. A certified nuclear density technician must be on site to set the asphalt pavement rolling pattern and confirm compaction densities. The technician shall revise the rolling pattern as deemed necessary. The technician shall stop the paving operation if the required densities are not being met. Density test results shall be submitted to the Village Engineer within one week of completion of the paving operation.

The binder course and surface course may be tested for smoothness with a sixteen foot (16') straightedge after it has been thoroughly compacted. Any surface variations which warrant penalties per Section 406.11 of the Illinois Department of Transportation Standard Specifications will be paid to the Village of Sugar Grove per the rates per each surface variation and/or repairs identified in the Illinois Department of Transportation Standard Specifications. This will be done at the sole expense of the contractor. For any surface variations 0.75" or greater, the contractor shall remove and replace a large number of bumps; however, complete removal and replacement of the surface course at the contractor's expense will be required.

All streets and roadways shall conform to the minimum design standards shown in Table A, "Minimum Standards for Street Design". Existing roadways running through or adjacent to a development shall be reconstructed by the developer to comply with these Standard Specifications for Improvements unless the Village Engineer recommends and the Village Board concurs that "substantial improvement", in lieu of reconstruction, will meet the intent of these specifications. If these roadways to be improved exist within prescriptive right of way, off center improvements may be required with greater width dedications on the side of the proposed development.

II.B. Pavement

All street pavements shall be designed in accordance with the following minimum standards:

Procedure

The thickness of the pavements for Major Collectors and Arterials shall be determined in accordance with the current Illinois Department of Transportation "Manual For Structural Design of Portland Cement Concrete Pavement" and the "Manual of Instructions For The Structural Design Of Bituminous Concrete Pavements". Design Standards shall be not less than for Class III roads and based on a twenty (20) year pavement design. The above thickness determination procedures shall be followed unless required otherwise by a jurisdictional authority.

Minimum Design Criteria

The following are the minimum pavement requirements that will be required in the design and construction of all roadway pavements in the Village of Sugar Grove.

1. Pavement Standards

a. Pavements shall be typically constructed of Hot Mix Asphalt Mixtures. The hot mix asphalt mixtures shall be designed, produced and constructed in accordance IDOT Standard Specifications and IDOT District 1 special provisions. IDOT Portland Cement Concrete pavement designs are NOT prohibited and will be considered for some roadway designs if the developer so desires. All other alternative materials must be approved by the Village Engineer.

b. All roadways shall have concrete curb and gutter, Type M-3.12 where driveway access is allowed in residential neighborhoods, and Type B-6.12 in all other applications, unless recommended otherwise by the Village Engineer. The required cross section of these curb types is as shown in the Standard Details. Two No. 4 steel reinforcing bars, twenty feet (20') in length, shall be installed centered on all trench crossings. Expansion joints, in accordance with the Standard Detail, shall be spaced per the Typical Expansion Joint Spacing Curb and Gutter chart in the Standard Drawing, all points of curvature, five foot (5') each side of drainage structures and between separate pours. Minimum two-inch (2") deep contraction joints shall be saw cut at minimum ten feet (10') intervals within twenty-four (24) hours of curb placement.

Contraction joints shall be sealed with a sealant to be approved by the Village. An approved spray-on curing compound with white fugitive dye shall be applied immediately after finishing of the curb. A concrete sealer, WR Meadows TIAH, or approved equal, shall be applied between 7-10 days following curb installation. The curb shall be installed on a minimum of four inches (4") of the same aggregate base course used for the roadway construction. The compacted curb sub-grade shall be shaped parallel to the curb flow line and positively drained to the inlets and catch basins so that any water, if applied, would not pocket in this subgrade.

c. All rough grading of the roadway(s) shall be completed prior to construction of any underground utility with the exception of storm sewers and sanitary sewers.

d. Berms: In accordance with 605 Illinois Compiled Statutes 5/9-115.1 regarding the location of earthen berms in relation to the right of way, no part of a berm shall be located within ten feet (10') of the right of way line.

e. Pavement cross slope shall be two percent (2%) from the center of the road to the edge of the pavement.

f. Following installation of the asphalt surface course, hot poured joint sealer shall be applied to the joint between the finished pavement surface and the curb and gutter in accordance with Section 451 of the IDOT Standard Specifications.

g. All roadways shall be constructed on a select compacted sub-grade, graded parallel to the finish surface.

h. Any street cut which is permitted by the Village shall be restored to like or better conditions and shall be acceptable to the Village Engineer.

2. Typical Cross Sections for Streets

The definitions of all proposed roadway classifications shall be consistent with Table A, “Minimum Standards for Street Design.”

Table A, “Minimum Standards for Street Design”, sets forth the minimum design thickness for each roadway material for various road designations. For all categories in Table “A”, under Village jurisdiction, the Hot-Mix Asphalt Binder Course Hot Mix Surface Course shall be an IDOT approved mix. The CA-6 base course shall be compacted to a minimum 95 percent modified laboratory density in accordance with AASHTO T99 method A or C.

	TABLE A: TABLE OF MINIMUM STANDARDS									
Street Designation	**Minimum ROW Width**	**Minimum Pavement Width (B-B)**	**Minimum Structural Number**	**Minimum Horizontal Centerline Radius[4]**	**Minimum Tangent**	**Minimum Gradient**	**Maximum Gradient**	**Maximum ADT**	**Minimum Binder**	**Minimum Surface**
Local	66′	32′	3.30	200′	50′	0.50%	7.0%	1,000	2 ¾″	2″
Minor	66′	32′	3.65	300′	100′	0.50%	7.0%	2,500	3 ¾″	2″
Collector	80′	38′	3.65	400′	150′	0.50%	7.0%	5,000	4″	2″
Major	100′	65′	4.82	500′	200′	0.50%	5.0%	10,000	6″	2″
OR&I Boulevard	100′	27′ For each Set of lanes	5.12	500′	200′	0.50%	5.0%	10,000	6″	2″
Parking Lots										
Primary Automobile Traffic			3.0						2″	2″
Significant Truck Traffic			3.65						2 ¾″	2″

Notes:

1. All streets and parking lots shall have a minimum of four (4) inches and a maximum of twelve (12) inches combined total thickness of stone base course and/or subbase.
2. Right of way lines at street intersections shall have a rounded corner with a radius of twenty-five feet (25’).
3. These are minimum pavement thicknesses. For any proposed facility above a local road, perform a pavement design.
4. This column represents a minimum Horizontal Centerline Radius, but ultimately this Horizontal Centerline Radius shall be designed per the IDOT Bureau of Local Roads and Streets Manual.

II.C Sidewalks and Multi-Use Path Ramps

Curb & gutter, sidewalk and drive approaches shall be constructed in accordance with the timeframes, temperatures, and conditions set forth in the IDOT Standard Specifications Unless authorized in writing by the Village Engineer, concrete operations shall be discontinued if they are not being completed in accordance with the IDOT Standard Specifications.

All public sidewalks shall be constructed of concrete in accordance with an IDOT approved mix.

The base shall be four inches (4") inches of compacted, crushed stone base on a dry natural or compacted subgrade. In no case shall the base be placed on a subgrade of topsoil or other unsuitable material.

The sidewalk shall be five feet (5') wide and shall be placed within the Right of Way, one foot from the property line. The sidewalk shall be placed a minimum of five inches (5") thick. At all residential drive locations this minimum thickness shall be six inches (6"). At all commercial drive locations this minimum thickness shall be eight inches (8"). The surface finish shall be a light broom finish.

Sidewalk curb ramps with a detectable warning surface shall be constructed at all crosswalks according to the IDOT Standard in effect at the time of Final Plat approval. The IDOT Standard that appears on the approved engineering improvement plans shall be the standard at which the sidewalk ramps shall be evaluated for final Village acceptance. Note: Intersection details for all street intersections, showing the grading details and spot elevations for all curbs, curb depressions, ramps, manhole rims, pavement slopes, sidewalk slopes, curb slopes and parkway slopes shall be required as part of the engineering improvement plans.

The sidewalk shall be constructed with contraction joints at five foot (5') intervals and shall be saw cut to a minimum depth of one-inch (1") full width within twenty-four (24) hours of concrete placement, or tooled at the time of placement to the same depth.

Expansion joints of 3/4 inches full depth bituminous fiber material, or approved equal, are required where the new sidewalk abuts all curb, buildings, poles, other structures, through all drives on each side and at maximum intervals per the Typical Expansion Joint Spacing Curb and Sidewalk chart in the Standard Drawing.

Class SI concrete as specified in the IDOT "Standard Specification for Road and Bridge Construction" shall be used on all sidewalks. A concrete delivery ticket from the concrete supplier with this information and the location and date of the pour shall be submitted to the Village prior to any Village approvals of said work.

The contractor shall notify the Village forty-eight (48) hours prior to placing the concrete for an inspection of the base, reinforcing and formwork.

II.D Multi-Use Paths

Multi-use path construction and materials shall be in accordance with IDOT'S "Standard Specifications for Road and Bridge Construction.

Multiuse paths shall be comprised of 8" compacted aggregate base course Type B (CA-6), crushed, and a minimum of 2" hot-mix asphalt surface course, IL-9.5 (LOW ESAL). Alternate materials/thicknesses may be used at the approval of the Village Engineer. Asphalt thickness will be

increased to 4” thick if the path also provides access to Village Utilities. Furthermore, geotextile fabric shall be utilized as the soils dictate and/or as the Village Engineer or their representative indicates.

As indicated in the previous section, a ramp and detectable warning at all street crossings shall be provided with the Village’s sidewalk and bike path ramp detail and ADA requirements. If a conflict exists between the detail and the ADA requirements, the more stringent shall apply. This will require a minimum five-foot (5’) length of the multi-use path to be concrete at the ramp to allow for the placement of the red panels. The concrete at this location shall be 10 foot wide and meet the sidewalk detail requirements.

No utility structures shall be allowed in the multi-use path.

Proof rolls are required of the sub-grade and aggregate base. The contractor shall provide the loaded truck and driver for the proof rolls. The Village Engineer or their representative shall witness all proof rolls. The Village Engineer determines if the proof roll passes or fails. The contractor determines corrective measures and implements them. If required by the Village Engineer or their representative, subsequent additional proof rolls will be completed by the contractor and witnessed by the Village Engineer or their representative but at no expense to the Village.

The Village Engineer or their representative shall be notified forty-eight (48) hours prior to any proof roll or paving.

The contractor shall be responsible for having quality control testing. A tester shall take samples at the plant prior to paving and then be on site at the start of the paving. The Village reserves the right to perform quality assurance testing.

Two (2’) aggregate shoulder may be required.

Compacted trench backfill shall be utilized at all utility crossings under and within two feet (2’) of the path.

II.E Drive Approaches

All drive approaches shall be constructed with a sawcut or cast in place depressed curb (unless in a residential area where M-3.12 exists), with an twenty-four inch (24”) transition to make a neat transition to the curb opening and shall have a flare of three foot (3’) at the street. Maximum driveway width at the right of way line shall be twenty feet (20’). All drive approaches shall be constructed to a maximum grade within the Right of Way of 6%. In no case shall the algebraic difference of the drive grade and the street grade exceed 8% in new construction. See Standard Detail.

Where private streets, drives, entrances, and alleys intersect public streets, the public street curb and gutter shall remain continuous across the access and depressed where needed.

The contractor shall notify the Village forty-eight (48) hours prior to placing the concrete drive approach for an inspection of the base, reinforcing (if any) and formwork.

All drive approaches shall be constructed as a minimum to the standards outlined in the Village’s Zoning Ordinance (Chapter 11-12 of the Sugar Grove Ordinances).

For Commercial and Industrial Drives, a stop sign shall be installed outside of the right of way at the request of the Village Engineer. The sign shall meet Village standards as outlined in the Development Code and shall be owned and maintained by the property owner.

II.F Guardrail

Steel plate beam guardrail shall be provided when an embankment is six feet (6') or higher, having a side slope steeper than 4:1, or when, in the judgment of the Village Engineer, it is necessary to provide protection against roadside obstacles or a non-traversable roadside hazard. IDOT's current end section standard will be required at both ends of all guardrail installations.

II.G Traffic Regulatory Signs and Striping

Installation of regulatory signs will be required of the developer where shown on the final engineering plans and prior to issuance of an occupancy. All such signs shall conform to the "Manual on Uniform Traffic Control Devices for Streets and Highways", latest edition. Signs will be enforceable upon installation.

Stop signs shall be 30" x 30" on all streets. Yield signs shall be 30" x 30". Speed limit signs (R2-1) shall be 24" x 30". Warning signs shall be 30" x 30". "No Parking" signs shall be 12" x 18". All posts shall be Telespar, Black Powder Coat Finish, seven-foot (7') from finished grade to the bottom of the sign, one and three-quarters inch (1.75") square with a pyramidal rain cap with a 4 foot deep two-inch (2") Telespar base, or approved equal.

All sign faces shall be 3M Company, or approved equal, using reflective high intensity face material. Stop signs will be required where collector streets intersect with arterial streets and all other intersections where warranted or upon recommendation of the Village Engineer and shall include a 24 inch painted Stop Bar.

Cross walks shall be installed where determined necessary by pedestrian and traffic volumes or upon recommendation of the Village Engineer.

All striping shall follow IDOT Standards and shall be painted pavement markings.

II.H Street Name Signs

At each street intersection there shall be installed one or more street name signs showing the names of the streets and shall be indicated on the construction plans. Street signs shall be installed, by the developer, prior to issuance of building permits.

All local road intersections shall have one street sign on the northerly and easterly corner. Collector and major streets shall have two (2) street signs, one on the northerly and easterly corner and one on the southerly and westerly corner of the intersection. Signalized intersections shall install the two (2) required signs on the appropriate overhead mast arm per the applicable IDOT standard. An exception would be a tee intersection where one sign would be required on the terminating street side of the

intersection on the northerly or easterly corner thereof. All street signs shall be set three feet (3’) back from the curb on the radius midpoint. All street signs shall conform to the following specifications:

1. All street signs, including the installation thereof, shall conform to the “Manual on Uniform Traffic Control Devices for Streets and Highways”, latest edition, and the Illinois Supplement thereto.

2. Sign length is twenty-four inch (24”) minimum and as long as necessary determined by the length of the street name. Blanks shall have a three-quarter inch radius at all corners.

3. The blank faces shall be covered with Scotchlite™ brand reflective sheeting or approved equal. The initial letter shall be upper case 6 inches tall with following letters lower case four and one-half inches (4.5”) tall, cut and removed from 3M # 1177 Green Film, or approved equal, and then placed over the white film to produce white letters on a green background.

4. Nine-inch (9”) signs are covered on one side but two are required for each street. They are riveted to the sides of a Telespar, Black Powder Coat Finish, twelve foot (12’) long, one and three-quarter inch (1.75”) square, bolted in a two-inch (2”) square anchor, one per side for each street name with enough room at the top for a one and three-quarter inch (1.75”) pyramidal rain cap on the post.

5. The street signs shall be in place prior to the issuance of any building permits. Temporary street signs constructed of wood with neat lettering may be installed with seven-foot (7') clearance prior to the issuance of any building permit and must be removed immediately after the placement of the permanent street sign.

6. A uniform deviation from this street sign standard may be authorized by the Village Board as part of a Planned Development approval.

II.I Traffic Studies

A traffic study shall be required and shall include:

1. Levels of service for existing conditions.

2. Level of service for post-construction conditions.

3. Calculations conducted according to the “Highway Capacity Manual”.

4. Recommendations as to additional/limited access, additional lanes, signalization, etc.

The need or requirement for a traffic impact study shall be determined during the concept or preliminary planning stage of the proposed development. The developer/subdivider shall meet with Village of Sugar Grove officials during one of these stages for the purpose of determining the traffic study requirements. When the Village of Sugar Grove requires that a traffic study be prepared based upon the above, the study shall include, but not be limited to addressing the following issues:

INTRODUCTION: A general description of the proposed development including it’s size, location, the political jurisdiction in which the site is located, the boundary limits of the study area, and any other information needed to aide in the review of the development’s traffic impacts.

PROJECT DESCRIPTION: A description of the existing and proposed land uses of the development. (If alternative land uses are being proposed, the highest trip generation uses shall be assigned for each land use).

SITE ACCESSIBILITY: A clear and concise description of the proposed ingress/egress points to the proposed development including a sight distance analysis.

EXISTING EXTERNAL ROADWAY NETWORK: A description of the existing external roadway network in the vicinity of the proposed development to include functional classification, primary traffic control devices, signalized intersections, roadway configurations, geometric features (curves and grades), lane usage, parking regulations, street lighting, driveways serving sites across from or adjacent to the site, and right-of-way data. (The area of influence shall be determined by the traffic generated from the site, the trip distribution of traffic, and the trip assignment of the traffic generated by the development over the surrounding area road network).

EXISTING AM, PM AND TOTAL DAILY TRAFFIC VOLUMES – Existing AM, PM and total daily traffic volumes for access driveways (if existing), intersections and the roadway network in the site vicinity shall be determined and displayed on a graphic(s) in the final report. To determine AM and PM existing traffic volumes, machine counts and/or manual counts shall be conducted during a three-hour period of the morning between approximately 6:00 AM to 9:00 AM of an average or typical weekday, and between approximately 3:00 PM to 6:00 PM on an average or typical weekday. Peak hour counts may be required on Saturday and/or Sunday depending on the proposed land use. All AM and PM peak hour counts shall be recorded and summarized in fifteen (15) minute increments and included in the Appendix of the final report. Manual counts shall include vehicle classifications, i.e. passenger cars, single-unit, multi-unit trucks and buses. Traffic counts shall show both entering and exiting traffic at the proposed access points (if existing) in addition to turning and through traffic movements at critical intersections.

TRIP GENERATION RATES AND VOLUMES – Trip generation rates and volumes for each type of proposed land use shall be determined for the AM and PM peak hours, and total daily volumes may be required on Saturday and/or Sunday depending on the proposed land use. The trip generation rates shall be calculated from the latest data available contained in the Institute of Transportation Engineer's "Trip Generation Manual". If trip generation rates for a specific land use are not available from the "Trip Generation Manual", the Village of Sugar Grove shall approve the substitute rates.

SITE GENERATED TRIP DISTRIBUTION AND ASSIGNMENT – The most logically traveled routes in the vicinity of the development shall be used for trip distribution and assignment purposes. The directional distribution of site-generated traffic approaching and departing the development should be shown in both graphic and tabular form. All assumptions used in the determination of distribution and assignment shall be clearly stated.

EXISTING PLUS SITE GENERATED TRAFFIC VOLUMES – Existing plus site generated traffic volumes for the AM, PM peak hours and total daily traffic for access drives, intersections and the roadway network in the site vicinity shall be determined and displayed on a graphic(s) in the final report. Traffic volumes shall show both entering and exiting traffic at the proposed access points in addition to turning and through traffic movements at critical intersections.

FUTURE TRAFFIC (EXISTING PLUS SITE GENERATED) VOLUMES – Future traffic (existing plus site generated traffic volumes) for the AM and PM peak hours, and the total daily traffic for access drives, intersections and roadway network in the site vicinity shall be determined and displayed on a graphic(s) in the final report. Projected increases in the external (non-site related) roadway traffic must also be determined. The selection of a horizon year for which traffic operation conditions are to be characterized may be considered as the date full buildout and occupancy is achieved. If the project is a large multi-phased development in which several stages of development activity are planned, a number of horizon years may be required that correspond to the bringing online of major development phases. Horizon dates should be timed to coincide with major stages of the overall project or to coincide with increments of area transportation system improvements.

INTERSECTION CAPACITY ANALYSIS – Proposed access driveways and influenced intersections shall be subject to an existing plus projected capacity analysis. Projected traffic conditions shall include the effects of any committed developments with the influenced area. The existing and projected levels of service derived from the analysis shall be used to aid in the evaluation of design and operation alternatives of the access driveways and influenced intersections. The capacity analysis shall be in accordance with the techniques described in the most recent edition of the Transportation Research Board's "Highway Capacity Manual", Special Report 209.

SPECIALIZATION WARRANTS – If it is anticipated that the development's driveway(s) or existing external non-signalized intersections will satisfy signalized warrants, a warrant analysis shall be conducted using the projected volumes determined from the trip generation. The results of such an analysis shall be tabulated in the traffic impact study.

CONCLUSIONS AND RECOMMENDATIONS – Clear and concise descriptions of the findings shall be presented in the final report. These findings shall include all recommended improvements for access facilities, internal roadways and intersections, and external roadway and intersection improvements.

ESTIMATE OF COST – Should the final report indicate a need for Village participation in improvements, then an itemized estimate of cost shall be provided to the Village.

II.J. Street Lighting

1. General

All plans for street lighting shall be designed by an Illinois registered professional engineer.

The subdivider and/or their project engineer shall be held responsible for coordinating all phases of the work and correcting any deficiencies to the satisfaction of the Village Engineer.

The Village Engineer must be notified at least forty eight (48) hours before any construction is to begin.

The plans shall include a time schedule or other schedule, setting forth when the street lights will be installed by the subdivider and such schedule shall be subject to approval by the Village Engineer. However, in all cases, the street lights shall be installed and operable prior to the issuance of any occupancy permits.

The street light plan shall be provided to the Village Engineer in electronic format.

2. Installation

a. Location: There shall be at least one streetlight on each intersection, curve, cul-de-sac, and at other points as may be required in the public interest in unusual or special conditions. They shall be located on the property lines and on the same side of the street as the sanitary sewer wherever possible and shall be set three feet (3') from the back of curb to face of pole. The streetlights shall be placed opposite of fire hydrant locations wherever possible.

b. Line Drop: Voltage drop shall be no greater than three percent (3%) from power supply to last unit with no wire size smaller than #6 and no larger than #2 type RHH or RHW underground service cable (USE). All street lights shall operate on one hundred twenty (120) volts.

c. Power Supply Location: Power supply shall be furnished by the nearest Commonwealth Edison pedestal.

d. Power Supply Connection: Connections to power supply shall be made by Commonwealth Edison Company.

e. Conduit: All existing driveways, street, and sidewalk crossovers shall have one and one-half inch (1/2") galvanized rigid steel conduit used as raceways for underground cable. Heavy duty PVC or A85 conduit will be allowed if it is encased in a three inch (3") minimum concrete collar.

f. Underground Cable Trenched into Place: All underground cable shall be placed in unit duct and buried at least thirty inches (30") below the normal finished grade. A red plastic marking tape shall be placed in the trench fifteen inches (15") below finished grade.

g. Splices: All cable on the underground cable section shall be continuous and no splicing shall be made underground. All necessary splices shall be made above ground level or readily accessible in a hand hole structure.

h. Underground Cable Location: Underground cable shall be installed in a trench not more than two feet (2') from the "back" edge of the curb except that in no case shall the underground cable be trenched under a sidewalk.

i. Grounding: Each street light fixture must be ground at the pole; an acorn ground connection shall be provided with a ground rod and #8 copper wire minimum. In addition, the grounding of the street light fixture and arm shall also be in accordance with the adopted Electrical Code.

   Each pole shall be connected to the ground by means of a copper wire of the #10 size and shall be welded to the inside wall of the pole and connected to a five-eighths inch ($^{5}/_{8}$") diameter, eight foot (8') long copper clad steel ground rod. The upper end of the ground rod shall be at least one foot (1') below finished grade.

j. Fusing: All underground feeders shall be fused at or below their rated capacity. Each standard shall contain Tron in-line fuse holders with rubber boots and proper fusing in series with each underground conductor to protect the luminaire located on that pole.

k. Street Light Standard: The lighting pole for all types of streets shall be as specified in the table in the next section (3. Streetlight Requirements).

3. Streetlight Requirements

Street Type	*Spacing*	*Pole*	*Arm*	*Luminaire*	*Luminaire Photocell*
Minor and Local Streets Option No. 1 Decorative Pole with no Arm	300' Approximate spacing IES printout required Poles to be placed at property lines and opposite of hydrants	King Luminaire KM15 Memphis spun concrete pole (S40 - pearl gray finish) or Village approved equal	n/a	King Luminaire model no. K56 Octagonal luminaire, Cleveland style (no spurs) C/W #15 final & 3 1/2" O.D. slipfitter Cul-de-sac: K56-C-T- P4AR-V-75(SSL)-7030-120(MT)-#15-PE All other locations: K56- C-T-P4AR-III-75(SSL)- 7030-120(MT)-#15-PE All paint: Black or Village approved equal	King Luminaire Twistlock receptacle c/w photo-eye or Village approved equal
Minor and Local streets Option No. 2 Conventional Pole with Arm	300' Approximate spacing IES printout required	Stresscrete Octagonal Pole model #E240-APO-G-S40 (S40 - pearl gray finish) or Village approved equal	Stresscrete arm model #184 or Village approved equal	AEL ATBS P30 MVOLT R2 3K P7 PCL 1	Tork S961 Electronic Series Photocontrol or Village approved equal
Collector Streets	300' Approximate spacing IES printout required	Stresscrete Octagonal Pole model #E280-APO-G-S40 (S40 - pearl gray finish) or Village approved equal	Stresscrete arm model #186 or Village approved equal	AEL ATBM P30 MVOLT R1 3K P7 PCLL	Tork S961 Electronic Series Photocontrol or Village approved equal
Major and OR&I Streets	300' approximate spacing Required on both sides with staggered spacing IES printout required	Stresscrete Octagonal Pole model #E280-APO-G-S40 (S40 - pearl gray finish) or Village approved equal	Stresscrete arm model #186 or Village approved equal	AEL ATBM P30 MVOLT R1 3K P7 PCLL	Tork S961 Electronic Series Photocontrol or Village approved equal

a. Conduit: All pipes shall be Yoloy, or approved equal, weathering steel pipe.

b. Wire: Underground cable from power supply to pole base shall be rated USE type RHH or RHW. The cable size shall be no smaller than #6 and no larger than #2, and shall be validated by an approved electrical analysis. Pole and bracket wire installed from the hand hole in the base of pole to photo cell and luminaire shall be #12 type RHW. Only copper wire shall be used, and the wire shall be stranded wire.

c. Parking Lot Lighting: Parking lots in areas zoned business, residential, or office-research shall be provided with lighting necessary to achieve a minimum average of 2.0 footcandles as measured across the entire parking lot, and a maximum of 1.0 footcandles as measured at the adjoining property lines. Parking lots in areas zoned manufacturing shall have a minimum average lighting intensity of 1.0 foot-candles. Lighting shall be designed to avoid casting direct light or glare onto adjacent residential property.

d. Inventory: The Developer shall supply to the Village an inventory equal to at least ten percent (10%) of the number of poles, luminaires, photocells, ballasts, etc., installed along public streets and for public parking lots for the subdivision. This inventory shall be used to replace lighting system components that fail or are damaged after expiration of the guarantee period. Inventory will be delivered to public works prior to starting work on the street lighting.

e. Minor And Local Residential Streets: Two (2) types of street lights are detailed below for use on minor and local residential streets. Option No. 1 shall be utilized for minor collector and local streets unless otherwise approved by the Village.

1) Minor And Local Residential Streets - Option No. 1:Decorative Pole with no arm.

a) Spacing: The maximum spacing shall be approximately three hundred feet (300') between luminaries on minor and local streets. A computer printout will be required to establish spacing, wattage, and mounting height for lighting. The standards for lighting levels shall be those recommended by the IES minimums and maximums. In general, poles should be located on property lines and opposite of hydrants.

b) Pole: The light pole shall be a King Luminaire Octagonal KM15-G-S40 C/W 140 (35/40) Memphis spun concrete pole with TBD polish or approved equal. Two (2) coats of VEX-HSFT acrylic coating shall be applied to the full length of the pole. The pole length shall be nineteen feet six inches (19'6"), of which fifteen feet zero inches (15'0") shall be above the ground and four feet six inches (4'6") shall be buried. The pole shall be backfilled with crushed CA-6 limestone watered and compacted around the butt of the pole.

c) Luminaire: The luminaire shall be King Luminaire catalogue no. K56-C-T-P4AR-V-75(SSL)-7030-120(MT)-#15-PE or approved equal for streetlights located at cul-de-sacs. The luminaire for streetlights located at all other locations shall be catalogue no. K56-C-T-P4AR-III-75(SSL)-7030-120(MT)-#15-PE or approved equal. The luminaire shall be set fifteen feet zero inches (15'0") above grade with a sixty (60) watt solid state lighting and one hundred twenty (120) volt operation and light emitting diodes (LED). All paint necessary on the luminaire shall be black.

d) Photocell: Each light shall be controlled by a King Luminaire Twistlock receptacle complete with photo-eye or approved equal.

e) Light Distribution: Luminaires of the type III distribution as approved by the Illuminating Engineering Society (hereinafter for brevity referred to as IES) shall be used except at cul-de- sacs where type V distribution shall be used. The Village Engineer may designate that IES type III distribution luminaires be used in the public interest under unusual or

special conditions.

2) Minor And Local Residential Streets - Option No. 2: Conventional pole with arm.

a) Spacing: The maximum spacing shall be approximately three hundred feet (300') between luminaries on minor and local streets. A computer printout will be required to establish spacing, wattage, and mounting height for lighting. The standards for lighting levels shall be those recommended by the IES minimums and maximums.

b) Pole: The light pole shall be a Stresscrete Octagonal Concrete Pole Model #E240-APO-G-S40 or #E280-APO-G-S40 with a natural polish and pearl gray finish or approved equal. The pole length shall be twenty-four feet zero inches (24'0"), of which nineteen feet zero inches (19'0") shall be above ground, and five feet zero inches (5'0") shall be buried. The pole shall be backfilled with crushed CA-6 limestone watered and compacted around the butt of the pole.

c) Luminaire: The luminaire shall be a American Electric Lighting ATBS-P20-MVOLT-R2-3K-P7-PCL1 on local residential streets on minor collector streets. The luminaire shall have a mounting height of twenty feet zero inches (20'0") above grade with a fifty (50) utility label wattage for the RSWS and eighty (80) utility label wattage for the RSWM, one hundred twenty (120) volt operation and light emitting diodes (LED), or approved equal.

d) Photocell: Each light shall be controlled by a photo-electric control mounted on top of the luminaire (Tork S961 Electronic Series Photocontrol or approved equal). The photocontrol shall be rated for LED luminaire use, UL listed and approved by the Village before installation.

e) Light Distribution: Luminaires of the type II distribution as approved by the IES shall be used. The Village Engineer may designate that IES type III distribution luminaires be used in the public interest under unusual or special conditions.

f) Arm: The four foot zero inch (4'0") arm shall be Stresscrete model #184. The bracket shall be furnished with the pole.

f. Collector Streets:

1) Spacing: The maximum spacing shall be approximately three hundred feet (300') between luminaries on major collector streets. A computer printout will be required to establish spacing, wattage, and mounting height for lighting. The standards for lighting levels shall be those recommended by the IES minimums and maximums.

2) Pole: The light pole shall be a Stresscrete Octagonal Concrete Pole model E280-APO-G-S40 with a natural polish and pearl gray finish or approved equal. The pole length shall be twenty eight feet zero inches (28'0"), of which twenty three feet zero inches (23'0") shall be above ground, and five feet zero inches (5'0") shall be buried. The pole shall be backfilled with crushed CA- 6 limestone watered and compacted around the butt of the pole.

3) Luminaire: The luminaire shall be a American Electric Lighting ATBM-P30-MVOLT-R2-#K-P7-PCLL luminaire with an eighty (80) utility label wattage, one hundred twenty (120) volt operation and light emitting diodes (LED), or approved equal.

4) Photocell: Each light shall be controlled by a photo-electric control mounted on top of the luminaire (Tork S961 Electronic Series Photocontrol or approved equal). The photocontrol shall be rated for LED luminaire use, UL listed and approved by the Village before

installation.

5) Light Distribution: Luminaires of the type II distribution as approved by the IES shall be used. The Village Engineer may designate that IES type III distribution luminaires be used in the public interest under unusual or special conditions.

6) Arm: The six-foot zero inch (6'0") arm shall be Stresscrete model #186. The bracket shall be furnished with the pole.

g. Major And Office Research And Industrial (OR&I) Streets:

1) Spacing: The maximum spacing shall be approximately three hundred feet (300') between luminaries with street lights on each side of the road on major and OR&I streets. Street light spacing shall be staggered on each side of the road. A computer printout will be required to establish spacing, wattage, and mounting height for lighting. The standards for lighting levels shall be those recommended by the IES minimums and maximums.

2) Pole: The light pole shall be a Stresscrete Octagonal Concrete Pole model E280-APO-G-S40 with a natural polish and pearl gray finish or approved equal. The pole length shall be twenty eight feet zero inches (28'0"), of which twenty three feet zero inches (23'0") shall be above ground, and five feet zero inches (5'0") shall be buried. The pole shall be backfilled with crushed CA- 6 limestone watered and compacted around the butt of the pole.

3) Luminaire: The luminaire shall be a American Electric Lighting ATBM-P30-MVOLT-R2-#K-P7-PCLL luminaire with an eighty (80) utility label wattage, one hundred twenty (120) volt operation and light emitting diodes (LED), or approved equal.

4) Photocell: Each light shall be controlled by a photo-electric control mounted on top of the luminaire (Tork S961 Electronic Series Photocontrol or approved equal). The photocontrol shall be rated for LED luminaire use, UL listed and approved by the Village before installation.

5) Light Distribution: Luminaires of the type II distribution as approved by the IES shall be used. The Village Engineer may designate that IES type III distribution luminaires be used in the public interest under unusual or special conditions.

6) Arm: The six foot zero inch (6'0") arm shall be Stresscrete model #186. The bracket shall be furnished with the pole.

h. Street Light Testing: The subdivider shall test the street lighting system by measuring insulation resistance, amperages, voltage drops, ground system continuity, and ground system resistance. Insulation resistance shall exceed fifty (50) megohms for circuits carrying over twenty (20) amperes, and shall exceed one hundred (100) megohms for circuits carrying less than twenty (20) amperes. Amperage readings shall be within ten percent (10%) of the connected load based on equipment ratings. Voltage drops shall not exceed three percent (3%). In addition, the subdivider shall manually trigger the photocell in order to have each street light burn continuously for at least forty eight (48) hours. Any component found to be faulty shall be repaired, and that component shall be re-tested.

II.K. Street Parkway Landscaping

All parkways within the dedicated street Right of Way shall be final graded with a minimum of six inches (6”) of topsoil and sodded in an approved manner. The sod will be watered by the developer in appropriate amounts until the sod is established, as determined by the Village Engineer. The minimum gradient of all parkways shall be two percent (2%) and the maximum shall be eight percent (8%). When working within existing conditions (not new conditions), a gradient more than 8% may be acceptable if approved by the Village Engineer prior to construction.

The subdivider, developer, or contractor shall provide and plant healthy and properly pruned trees along all streets at a rate of one tree per lot, provided that the lot width is seventy-five feet (75') or less. If the lot width is greater than seventy-five feet (75'), the subdivider shall provide and plant two (2) trees per lot. Corner lot plantings, trees shall be planted at least twenty feet (20') from the street intersection property corner. Corner lot planting on private property or public property shall within a certain triangular area be trimmed to a height of thirty inches (30") or less above the elevation of the nearest street centerline elevation. Said triangular area shall be described by the right of way lines of the two (2) intersecting streets extended, and a third line intersecting the right of way lines at points twenty feet (20') from the right of way line intersection. Corner lots shall have a minimum of one tree on each frontage measuring seventy five feet (75') or less and a minimum of two (2) trees on each frontage greater than seventy five feet (75').

All tree plantings within the right of way shall be completed through the Village’s Tree Consortium.

Prohibited tree species are as follows:

Aspen	Black Locust	Box Elder	Buckthorn
Chinese Elm	Siberian Elm	Cottonwood	Mulberry
Osage Orange	Persimmon	Poplar	Russian Olive
Silver Maple	Tree of Heaven	Black Willow	Corkscrew Willow

Permitted tree species are as follows:

European Black Alder	Blue Ash	Green Ash	White Ash
Bald Cypress	American Beech	European Beech	River Birch
Ohio Buckeye	Black Cherry	Kentucky Coffeetree	Crabapple
Regal Elm	Turkish Filbert	Ginko (Male only)	Common Hackberry
Bitternut Hickory	Shagbark Hickory	Honey Locust	American Hornbeam
European Hornbeam	Horsechestnut	Larch	Japanese Tree Lilac
Littleleaf Linden	Redmond Linden	Silver Linden	Amur Maple
Black Maple	Freeman Maple	Red Maple	Sugar Maple
Burr Oak	English Oak	Pin Oak	Red Oak
Swamp White Oak	White Oak	Ornamental Pear	Eastern Redbud
Allegheny Serviceberry	Apple Serviceberry	Downy Serviceberry	Tulip Tree
Japanese Zelkova			

All landscaping within the Right of Way shall be in accordance with the Final Landscaping Plan approved by the Village Board as part of the Planned Development or Subdivision application.

II.L. Temporary Turn Arounds

Temporary turn arounds when required by the Village Board shall be constructed with the following specifications:

1. The geometry of this temporary paving shall be a “T” configuration at the end of such a street which is paved from inside of sidewalk to the far side, inside of sidewalk fifteen feet (15') wide with two, fifteen foot (15’) radii to the street. The curb and gutter shall not be constructed through the temporary turn around, unless the curb is M-3.12 on that street.

2. The temporary turn around shall be paved with eight inches (8”) of compacted crushed limestone base and two and one-half inches (2.5”) of hot-mix asphalt surface course with no curb and gutter around the edges.

3. The section of sidewalk through the temporary turn around shall be six inches (6”) thick.

4. The Developer extending the street in the future shall remove the excess paving and base, construct the additional curbing so that the curb and gutter is continuous and uninterrupted from one development to another development, and shall landscape the parkway where disrupted by the asphalt and base removal.

II.M. Street Cuts

Any street cut which is permitted by the Village Engineer shall be repaired as directed by the Village Engineer or Director of Public Works. A bonded and licensed contractor per Village ordinance shall accomplish all work with a fully executed Right of Way Permit issued by the Village Engineer.

Section III. Utilities

III.A. Storm Sewer Collection and Conveyance

III.A.1. Specifications and Design Criteria

Control of storm water runoff and all stormwater management facilities shall be in accordance with the Kane County Stormwater Ordinance, adopted by the Village.

The proposed storm sewer system shall be sized, at a minimum, to convey the storm water runoff generated during a rainfall event with a return frequency of not less than 5 years. The design peak runoff shall be determined using the modified rational method. The design rainfall intensity shall be determined from “Illinois State Water Survey Bulletin 70”, specifically Appendix A (Aurora) and summarized below. Please note the table is only an excerpt from Bulletin 70 Appendix A for Aurora and reflects the depth of rainfall in inches and the rainfall intensity (in/hr) for a 5-year frequency in northeastern Illinois. The provided values can be interpolated to determine incremental intensity for various times of concentrations.

5-Year Frequency Rain Event (Bulletin 75)		
Duration	**Rainfall Depth**	**Intensity**
	(Inches)	**(Inch/Hour)**
5 min	0.52	6.24
10 min	0.90	5.4
15 min	1.16	4.64
30 min	1.59	3.18
1 hr	2.02	2.02
2 hr	2.49	1.25
3 hr	2.75	0.92
6 hr	3.23	0.54

10-Year Frequency Rain Event (Bulletin 75)		
Duration	**Rainfall Depth**	**Intensity**
	(Inches)	**(Inch/Hour)**
5 min	0.62	7.44
10 min	1.08	6.48
15 min	1.39	5.56
30 min	1.91	3.82
1 hr	2.42	2.42
2 hr	2.99	1.50
3 hr	3.3	1.10
6 hr	3.86	0.64

The time of concentration used to determine the design rainfall intensity shall be calculated for the fully developed condition using Worksheet 3, as published in the SCS Technical 55 Manual.

The capacity of the storm sewer system must be determined by gravity flow only. The Village will not allow siphons or pump stations to convey stormwater runoff. The design shall disallow the effects of

surcharging, with the exception of decreases in capacity due to tail water effects on outlets. The tailwater elevation of the receiving pond, or other body of water, to be used in storm sewer design shall be that which exists at the specific time being evaluated.

The storm sewer must be designed to have a minimum full flow velocity of two feet per second (2 fps). When storm sewers of different diameters enter or exit storm sewer structures, the controlling elevation shall be 0.8 times the respective diameters. Storm sewers smaller than the largest exit pipe may be raised above the controlling “0.8” elevation.

The composite runoff coefficient for the area tributary to each storm sewer structure collecting surface water shall be determined by the character of the land to be drained when fully developed using the following runoff coefficients:

- Grass - 0.40
- Impervious Surfaces - 0.96
- Water Surfaces – 1.00

Storm sewers of sufficient capacity shall be constructed throughout the entire subdivision and shall be connected to an adequate outfall. Intercepting storm water inlet or catch basin structures in streets shall be provided at maximum intervals such that the continuous length of flow along a gutter line is not in excess of three hundred feet (300’), as measured along the gutter line. However, additional inlets may be required, as determined by the Village Engineer, such that the width of flow during the design storm does not create a hazard to the motoring public. The Illinois Department of Transportation’s Drainage Manual shall be used as guidance for allowed pavement encroachment.

All stormwater runoff which flows overland into or out of a storm sewer system must enter or exit through a curb inlet, catch basin, flared end section, slope box, or a cast in place, reinforced concrete headwall. Grates shall be required on all flared end sections twelve-inch (12”) diameter and larger. The minimum diameter of all public storm sewers shall be twelve-inch (12”), with the exception of closed lid systems which accept no surface water and which are solely designed for handling sump pump discharges, in which case the minimum size shall be six inch (6”). Two feet minimum cover above the top of the pipe shall be provided for all storm sewers, unless otherwise approved by the Village Engineer due to unique circumstances. No pipe shall extend upward into the aggregate base course of a roadway.

Storm sewer trunk lines are encouraged in rear yards and limited longitudinal installation of storm sewer under roadways may be permitted by the Village Engineer. For each pair of curb inlet structures on opposite sides of a roadway, the downstream structure shall be a catch basin. No more than two (2) precast concrete adjusting rings, not exceeding eight inches (8”) thickness, may be used on any structure. All storm sewer structures, other than curb inlets and curb catch basins shall be marked at the time of construction with a hardwood post neatly installed vertically with a minimum four feet (4’) bury and a minimum four feet (4’) exposed. The top one foot (1’) of the post shall be neatly painted green.

All manholes, catch basins, and inlets shall be reinforced precast concrete and shall be sealed with Butyl rope joint sealant unless approved otherwise by the Village Engineer in high groundwater or high

moisture soil areas. Storm sewer manholes shall be spaced at a general interval of 400 feet. All manholes shall be placed near the extension of side property lines whenever possible.

All storm water from paved areas must pass through a catch basin prior to entering the storm sewer trunk line. All storm water will also be required to pass through a catch basin prior to entering a detention/retention pond. Inlets or catch basins with a diameter of 2 feet will not be allowed if more than one 12 inch diameter pipe is proposed. The exception to this rule is if the other connections are 4 inch diameter sump pump discharge lines. All catch basins and inlets will be backfilled with CA-7 crushed limestone or crushed gravel to allow for sub-grade seepage. If sub-grade conditions are excessively wet, excessively sensitive to moisture or special conditions exist as deemed by the Village or Village Engineer, a capped perforated pipe underdrain stubbed from the structure may be required.

The storm water drainage system shall be separate and independent of the sanitary sewer system. Storm sewer shall be constructed of reinforced concrete pipe (RCP) conforming to the ASTM designation C-76, Class III or better. Other materials for storm sewers may be used in special cases upon the written approval of the Village Engineer. Any flexible pipe storm sewer systems so approved by the Village Engineer shall be subject to mandrel testing, for all sections, 30 days following installation. Existing ground water drain tiles that enter the site from other properties shall be connected to the new storm sewer system with the use of a manhole or shall be restored to operating condition at the direction of the Village Engineer. The design capacity of the on-site storm sewer system shall consider all flows attributed to these drain tiles so connected. Joints for all concrete storm sewers shall be of the bituminous mastic or rubber gasket type, except when otherwise required by the Illinois Environmental Protection Agency or the Village Engineer. All storm sewers that encroach within fifteen feet (15') of any building foundation shall be ‘O’-ring, or other rubber, gasketed joints as per the A.S.T.M. C-443 specification.

Street grades and lot and block drainage shall be established so as to permit positive drainage to the storm sewer system. Parking lots shall be drained internally and directed to the storm sewer system where practical. Horseshoe drainage of individual lots should be avoided.

III.A.2 Manholes, Frames and Grates

Inlet and/or Catch Basin Castings

For M-3.12 curb and gutter under ponding or continuous grade conditions, inlet and/or catch basin frames and grates shall be Neenah R-3501-P, EJIW 7525, or approved equal. For B-6.12 curb and gutter under ponding conditions, inlet and/or catch basin frames and grates shall be Neenah R-3281-A, EJIW 7210 with Type M1 grate and T1 back, or approved equal. For B-6.12 curb and gutter under continuous grade conditions, inlet and/or catch basin frames and grates shall be Neenah R-3281-AL, EJIW 7210 with Type M4 vane grate and T1 back, or approved equal. All curb inlet frames shall be sealed with a hydraulic cement fillet between the frame and top adjusting ring or cone section.

When additional grate capacity is needed in ponding conditions to handle the tributary flow, additional inlet structures shall be utilized. In cases where storm sewer inlets are used in depressed barrier curb areas, use Neenah R-3339-1, EJIW 5130, or approved equal. In rear yards and all other turf applications (except roadside ditch drainage applications) catch basins shall use Neenah R-1713 with Type D cover, EJIW 1050 with Type M1 radial flat grate, or approved equal. Roadside ditch drainage structures shall be evaluated on a case by case basis.

All closed storm structure lids shall have “Village of Sugar Grove” and “Storm” cast into top and shall be the concealed pick hole type.

Sediment Control

All storm sewer inlet structures shall utilize Catch-All “HR”, with Overflow, as furnished by Marathon Materials, Inc., IPP inlet filter assembly, or approved equal, to properly manage sediment control and to minimize storm sewer televising and cleaning which would otherwise be required prior to Village acceptance of the storm sewer system. The inlet filter system shall consist of a replaceable reinforced filter bag suspended from a retainer ring. The filter bag shall be constructed of a non-woven polypropylene filter geotextile fabric with a minimum weight of 4 oz./square yard, a minimum of 145 gallons/minute/square foot, and designed for a minimum silt and debris capacity of 2 cubic feet. The filter bag shall be reinforces with a polyester mesh fabric with a minimum weight of 4 oz/square yard. The filter bag shall be suspended from a galvanized steel ring or frame, conforming to ASTM-36, utilizing a stainless steel band and locking clamp. The frame shall be designed with an overflow feature to prevent any ponding during heavy rainfall.

All inlet filters shall be properly maintained until such time as all areas tributary to a particular inlet have been adequately vegetated. Filter bags must be inspected once per week and ½” rains and maintained accordingly.

Manhole Castings

Construction and installation of all storm sewer manholes shall comply with the Standard Specifications for Water and Sewer Main Construction in Illinois. Storm sewer structures shall be sized such that a minimum of twelve inches (12”) of precast concrete structure is provided between all pipe openings. When closed lids are needed, manhole castings shall be IDOT Type 1 Neenah R-1713 frame and lid, EJIW 1050, or approved equal.

In areas of hot-mix asphalt (HMA) pavement, the space around the casting, a minimum of 18” from the casting, shall be filled with Class PP-2 concrete to a minimum depth of 10 inches and matching the elevation of the surface of the base course or binder course. HMA surface or binder course material shall not be allowed. In areas of concrete pavement, the space around the casting, a minimum of 18” from the casting, shall be filled with Class PP-2 concrete to a minimum depth of 10 inches and matching the elevation of the finished pavement surface.

When open lids are needed, use Neenah R-1713 with Type D cover, EJIW 1050 with Type M1 radial flat grate, or approved equal. All closed lid covers shall have “Village of Sugar Grove” and “STORM” cast into the top and shall be the concealed pick hole type.

III.A.3. Sump Pumps

The connection to the storm sewer shall be through a structure. Stubs shall be provided as appropriate for all lots and shall extend at a minimum to the easement line to avoid excavation issues with other buried utilities. All pipe used for sump pump discharge collector lines shall be PVC (SDR-26) of the size specified by the Engineer. Sump pump discharges to a closed pipe system shall be provided with an outside air break to facilitate flow.

All individual sump pump lines shall be connected to a storm structure or sump pump discharge collector line structure. Sump pump collection lines shall be 6 inches diameter minimum. Sump pump discharge collector lines shall have a cleanout/inlet structure at the upstream end and shall have a cleanout/inlet structure every three hundred feet (300’) maximum. Sump pump cleanout structures shall be two foot (2’) diameter structures and will not be allowed to pick up surface drainage. All sump

connections to the cleanout/inlet structure shall be precast or core drilled and shall be sealed inside and outside the structure with hydraulic cement. The minimum depth of cover for sump pump service lines is twenty-four inches (24”). The frame and lid shall be Neenah No. R-1706-1 or approved equal. All sump pump service stubs shall be marked at the time of construction with a wooden post neatly installed vertically with the bottom set at the invert elevation of the capped stub, a minimum three feet (3’) bury and a minimum four feet (4’) exposed. The top one foot (1’) of the post shall be neatly painted green.

III.B. Sanitary Sewer

III.B. General

Standard Specifications for Water and Sewer Main Construction in Illinois, and all requirements therein shall be met for any sanitary related work. In addition, all materials and construction of sanitary collection system improvements shall also be in accordance with any requirements, specifications and standards set forth by Fox Metro Water Reclamation District (FMWRD). FMWRD’s standard notes and details shall be included in all final engineering plan submittals. If there is a conflict with the requirements of FMWRD and these specifications, the more stringent shall apply.

Public sanitary sewers shall be constructed across the entire frontage of all lots unless otherwise approved by the Village. All lots shall have direct access to a public sanitary sewer. No service sewer shall run across another lot or connect to another service sewer. All lots having nonresidential uses shall have control manholes placed over their sanitary service lines to facilitate monitoring of wastewater characteristics.

The minimum diameter for all sanitary sewer mains is 8 inches. The maximum allowable distance between manholes is 400 feet. All sanitary sewer manholes shall be marked at the time of construction with a hardwood post neatly installed vertically with a minimum four feet (4’) bury and a minimum four feet (4’) exposed. The top one foot (1’) of the post shall be neatly painted green.

III.B.2 Sanitary Sewer Pipe Materials

All sanitary sewers shall be PVC (Polyvinyl Chloride) plastic pipe. All pipe and fittings shall conform to Type PSM (ASTM – SDR series) in accordance with ASTM D-1784, D-3034 for SDR 26, D-2241, D-3212, F-412 and F-477. The Standard Dimension Ratio (SDR) or Dimension Ratio (DR) for PVC pipe shall be 26 as a minimum and shall be dependent on the depth of cover. All PVC plastic pipes and fittings shall have a cell classification of 12454-B or C, as defined in ASTM D-1784.

The following pipe materials shall be used for various depths:

For applications where the finished cover is 15 feet or less, PVC, SDR-26 shall be used.

For applications where the finished cover is greater than 15 feet, but less than or equal to 20 feet, PVC, SDR-21 shall be used.

For applications where the finished cover is greater than 20 feet, PVC, DR-18 shall be used.

III.B.3. Manholes, Frames and Lids

All sanitary manhole frames shall be IDOT Type 1 (Standard 604001) and all manhole lids shall have “Village of Sugar Grove” and “Sanitary” cast into them.

All final adjustments of castings will be accomplished by the use of concrete adjusting rings set in butyl rope joint sealant; mortar joints will not be allowed. Height of adjusting rings shall not exceed eight inches (8").

III.B.4. Sanitary Service Lines

The minimum sanitary sewer service diameter is 6 inches. Service connections and services shall be constructed in accordance with Fox Metro Water Reclamation District's specifications and ordinances. All sanitary sewer service stubs shall be marked at the time of construction with a wooden post neatly installed vertically, with depth originating at the sewer service cap and extending a minimum 4 feet above ground. The top 1 foot of the post shall be neatly painted green.

The location of the ends of all sanitary sewer service locations shall be tied to each property corner with the location being included in the record drawings.

III.B.5. Sanitary Sewer Testing

Air Testing: All public sanitary sewers shall be exfiltration tested using air, by the developer or contractor, at his/her expense, under the supervision of the Village Engineer. A copy of the sanitary testing report shall be forwarded each to the Village of Sugar Grove and the Village Engineer.

Deflection Testing: A mandrel test (7 point minimum) shall be performed, by the developer, at their expense, under the supervision of the Village Engineer, for all PVC pipe thirty (30) days after backfilling. All testing will be done in conformance with the "Standard Specifications for Water And Sewer Main Construction In Illinois", current edition.

Closed Circuit Television: FMWRD is responsible for the televising of the sewer lines.

Manholes: All sanitary sewer manholes shall be vacuum tested after the frame has been set at finished grade. The test shall conform to the following specifications or other specifications approved by the Village:

- All lift holes shall be permanently plugged with an approved nonshrink grout. All pipes entering the manhole shall be temporarily blocked with braced plugs.

- A vacuum of ten inches (10") of mercury shall be applied to the manhole, after which the test pump shall be shut off. The time for the vacuum to drop to nine inches (9") of mercury shall be measured. The manhole/frame assembly shall be approved if the test time is greater than or equal to that listed ASTM C 1244-93 for the manhole diameter and depth specified.

- If the manhole/frame assembly fails the test, necessary repairs shall be made with a nonshrink grout while the vacuum is still being applied. Retesting shall proceed until a satisfactory test is achieved.

- If the manhole frame is readjusted after testing, the entire manhole shall be retested.

The Village Engineer shall witness all testing and shall be contacted 48 hours in advance of all testing. The Village Engineer will forward all test results to FMWRD upon passing results of the entire system.

III.B.6. Lift Stations

These standards shall be used for general guidance of design of sanitary lift stations for the Village. The final design shall be subject to the approval of the Village.

Storm Water Pumping Stations Prohibited: These standards are for sanitary sewage lift stations. Storm water pumping stations are not permitted.

Design: The sewage collection system and lift station shall be of conventional design. Sewage shall be collected and transported to the lift station by gravity sewers.

Force Mains: Force mains shall be sized to carry the initial, intermediate and ultimate flow rates from the tributary area at a velocity of between two feet (2') and eight feet (8') per second. Material shall be PVC, DR-18, AWWA C900 or AWWA C905. At the request of the Village Engineer, gate valves in vaults shall be constructed in the force main at intervals not exceeding six hundred feet (600') to allow quick isolation in the event of a leak. Blow-off valves in vaults shall be constructed at high points in the force main and shall discharge to sanitary sewers where possible. Air release valves shall be placed as necessary and/or directed by the Village Engineer. A continuous locating wire of a size and type to be approved by the Village shall be laid in the force main trench and shall be connected to all valves and extend into the discharge manhole and valve chamber. Force mains shall be tested at one hundred fifty (150) psi for two (2) hours and shall conform with AWWA C-600 and C-603.

Lift Stations: Lift stations shall be of the submersible design, have a wet well and valve chamber made of precast concrete and shall have at least two (2) pumps. Pumps shall be centrifugal and be capable of passing three inch (3") diameter solids. The valve chamber shall have a quick disconnect tee fitting to accommodate emergency bypass pumping.

Motor Control Center: The motor control center shall have solid state duplex logic. Sewage level in the wet well shall be measured with a pressure transducer. A dial out alarm system, matching that currently in use in the Village, shall be provided. The lift station shall include a backup generator capable of powering the ultimate pump motors. The generator shall be fueled by natural gas. The controls shall be consistent and compatible with the Village's current controls programming manufacture and type.

Lift Station Building: The wet well, valve chamber, motor control center, backup generator and all other equipment shall be covered and/or enclosed in a lift station building. The building shall be of frame construction with brick siding. The building doors shall be keyed to match the standard Village lock used for all lift stations. The building shall be accessible from the street by way of a paved driveway at least fifteen feet (15') wide. The building shall comply with all the Village building code regulations and shall be heated and ventilated. The subdivider shall follow normal building permit procedures and pay the normal fees for construction of the lift station building.

Parts Inventory: The subdivider or developer shall supply an inventory of three (3) sets of each size and type fuse, relay and other plug in type devices used in the lift station motor control center. These items shall be housed in a wall mounted metal cabinet. The subdivider or developer shall also supply a heavy-duty freestanding metal shelf with not less than twenty (20) square feet of shelf space and one fire extinguisher rated for type A, B and C fires.

Startup Training; Maintenance Manuals: The subdivider or developer shall provide adequate startup training to the Public Works Department personnel and shall provide three (3) sets of operations and maintenance manuals for all equipment at the lift station.

III.C. Water Supply

III.C.1. General

All work and material shall be in accordance with Village ordinances and with current “Standard Specifications for Water and Sewer Main Construction in Illinois”, latest edition, and the AWWA, American Water Works Association. In case of conflict, the Village Engineer shall be contacted to confirm which is correct.

The Village desires commodity standardization for all applicable items with economic use of function including standardization of application, simplification of design, maximum interchangeability of components and parts, minimum required spare parts, etc. Component items of use in a water distribution system are included below.

III.C.2 Water Main

Public water mains shall be constructed across the entire frontage of all lots, unless otherwise approved by the Village. All lots shall have direct access to a public water main. No water service shall run across another lot or connect to another water service. All water mains shall be looped and all areas of a development shall be double fed, unless approved otherwise by the Village Engineer. Subdivisions shall have a minimum of two (2) connections to the existing Village water distribution system. Water main shall extend to all property corners and/or key connection points for future or existing water main connections. Water mains shall be a minimum of eight inches (8”) internal diameter with a minimum depth of cover of five and one-half feet (5.5’) from the finished grade to the top of pipe or as noted on the plans.

Village water mains and hydrants shall be placed on the north and west sides of the streets unless approved otherwise by the Village Engineer.

All water main shall be Ductile Iron Pipe Class 52 with either mechanical or push on joints and shall conform to ANSI A21.51, AWWA C151 and ANSI A21.11, AWWA C111. Pipe shall be manufactured in the United States.

The 10-point soil evaluation procedure for ductile iron pipe conforming to Appendix A of the ANSI/AWWA C105/A21.5 standard shall be used to determine the corrosivity of the soils on a per project basis and whether or not polyethylene wrap is required for corrosion protection. If corrosion protection is required, the water main shall be wrapped with polyethylene wrap in accordance with ANSI/AWWA C105/A21.5.

Brass wedges shall be installed at each push joint for electrical conductivity. Wedges shall be installed 180˚ apart. Two (2) wedges shall be installed per joint for water main up to twelve inches (12”) and two (2) pairs of two (2) wedges shall be installed per joint on water main larger than twelve inches (12”).

Long radius curves, either horizontal or vertical, may be laid with standard pipe by deflections at the joints. Maximum deflections at pipe joints and laying radius for the various pipe lengths shall be in accordance with ANSI/AWWA C600. When rubber gasketed pipe is laid on a curve, the pipe shall be jointed in a straight alignment and then deflected to the curved alignment. Trenches shall be made wider on curves for this purpose.

Where feasible, all vertical water main adjustments shall be accomplished by deflection, not bends in the water main.

Water Main Protection: Water mains and water service lines shall be protected from sanitary sewers, storm sewers, combined sewers, house sewer service connections and drains in accordance with Title 35: Environmental Protection Agency Subtitle F: Public Water Supplies, Chapter II: Environmental Protection Agency, Parts 651 654 Technical Policy Statements, Section 653.119.

Whenever possible, a water main must be laid at least ten feet horizontally from any existing or proposed drain or sewer line. Should local conditions exist which would prevent a lateral separation of ten feet, a water main may be laid closer than ten feet to a storm or sanitary sewer provided that the water main invert is at least eighteen inches above the crown of the sewer, and is either in a separate trench or in the same trench on an undisturbed earth shelf located to one side of the sewer. If it is impossible to obtain proper horizontal or vertical separation as described above, then the sewer must also be constructed of water main type material (ductile iron pipe with slip-on or mechanical joints, prestressed reinforced concrete pipe with ASTM C-443 joints, etc.) and pressure tested to the maximum expected surcharge head to assure water tightness before backfilling.

Whenever water mains must cross house sewers, storm sewers or sanitary sewers, the water main shall be laid at such an elevation that the invert of the water main is eighteen inches above the crown of the drain or sewer. This vertical separation must be maintained for that portion of the water main located within ten feet horizontally of any sewer or drain crossed. This must be measured as the normal distance from the water main to the drain or sewer. If it is impossible to obtain the proper vertical separation as described above or if it is necessary for the water main to pass under a sewer or drain, then the sewer must be constructed of water main type material (as noted above). This construction must extend on each side of the crossing until the normal distance from the water main to the sewer or drain line is at least ten feet. In making such crossings, center a length of water main pipe over/under the sewer to be crossed so that the joints will be equidistant from the sewer and as remote therefrom as possible. Where a water main must cross under a sewer, a vertical separation of eighteen inches between the invert of the sewer and the crown of the water main shall be maintained, along with means to support the larger sized sewer lines to prevent their settling and breaking the water main.

III.C.3. Fittings

All fittings shall be Compact Ductile Iron and shall conform to ANSI/AWWA C153/421.53-84. Fittings shall be U.L. Listed Class 350, Tyler Union, Griffin or approved equal. Fittings shall be manufactured in the United States.

All pipe and fittings shall be cement lined in accordance with ANSI/AWWA C104/421.4.

All fittings shall be mechanical joint and installed with retainer glands unless otherwise shown on the drawings.

Sleeves shall be Rockwell D.I. Coupling Type 441, Tyler Union or approved equal. Sleeves shall be provided at locations shown on the plans or as required.

III.C.4. Valves and Vaults

All gate valves shall have a non-rising stem, shall have a standard operating nut and shall open in a counterclockwise direction. Gate valves shall be American Flow Control Series 2500 Ductile Iron Resilient Wedge Gate Valves in accordance with AWWA C-515 Standard. All water main gate valves shall be installed in valve vaults.

Valve vault frames shall be IDOT Type 1 with concealed pickholes and all lids shall have “Village of Sugar Grove” and “Water” cast into them.

Valve vaults shall be adjusted with precast concrete or other approved materials adjusting rings to a maximum of eight (8”) inches.

All valves on the water main except for fire hydrant auxiliary valves and service line valves shall be constructed within precast concrete valve vaults. Vault internal diameter shall be forty-eight inches (48") for eight-inch (8") diameter and smaller water mains, and a minimum of sixty inches (60") for water mains greater than eight inches (8") diameter. Valve vaults for pressure tap connections shall be sized as required by the Village Engineer. All valve vaults shall be completely sealed with butyl rope joint sealant, including all component parts, barrels, adjusting rings and castings. Vaults shall be fitted with rubber boots and sealed for a water-tight finish.

In areas of hot-mix asphalt (HMA) pavement, the space around the casting, a minimum of 18” from the casting, shall be filled with Class PP-2 concrete to a minimum depth of 10 inches and matching the elevation of the surface of the base course or binder course. HMA surface or binder course material shall not be allowed. In areas of concrete pavement, the space around the casting, a minimum of 18” from the casting, shall be filled with Class PP-2 concrete to a minimum depth of 10 inches and matching the elevation of the finished pavement surface.

Valves shall be installed each second consecutive hydrant at intersecting line and other locations as required such that a minimum number of services will be affected during the main isolation. Valves shall be installed at easily accessible locations as determined by the Village Engineer such that the number of single family water services affected by a water main isolation shall be 12-16 services and/or such that the number of multi-family (duplex, townhome, condominium) water services affected by a water main isolation shall be 18-24 services. For water mains that run along side lot lines, valves shall be installed wherever the main enters or exits the public Right of Way. All valve vaults shall be marked at the time of construction with a 4" x 4" hardwood post neatly installed vertically with a minimum 4 feet bury and a minimum 4 feet exposed. The top 1 foot of the post shall be neatly painted blue.

All mechanical joint fittings, valves and hydrants shall be restrained with retainer glands. Retainer glands shall be EBAA Iron Series 1100 Megalug or approved equal

CA-7 stone shall be utilized to backfill all around the operating nut on all valve boxes to prevent mud from penetrating valve boxes.

III.C.5. Pipe Restraint

All tees, bends, valves, and fire hydrants shall be adequately supported with a concrete base, and supported laterally with precast concrete thrust blocking (not poured-in-place) against undisturbed earth. The Village Engineer shall witness all thrust blocking, and it is the Contractor’s responsibility to contact the Village Engineer prior to backfilling such water system improvements.

In addition, all mechanical joint fittings, valves and hydrants shall be restrained with retainer glands. Retainer glands shall be EBAA Iron Series 1100 Megalug or approved equal. The Village Engineer shall witness all restrained joints, and it is the Contractor's responsibility to contact the Village Engineer prior to backfilling such water system improvements.

For subdivision inspection, all thrust blocking and mechanical restraining systems shall be inspected by the Village Engineer prior to backfilling. Should the system be backfilled prior to inspection, the restraint system will have to be excavated by the contractor for inspection at no cost to the Village of Sugar Grove.

III.C.6. Fire Hydrants

All hydrants shall be in accordance with Section Four (4) of AWWA C502-54 standard and shall be an American Flow Control/Waterous Pacer Model No. WB-67-250 (break away style traffic design) with one 4 ½" steamer nozzle and two 2 ½" hose outlets, of which the threads conform with the standards of the Village of Sugar Grove, Illinois. All hydrants shall have an auxiliary gate valve. Hydrant installations shall have 5.5' depth of cover. Hydrants shall be installed with a break-away traffic flange, pentagon nut and National Standard thread for fire service. Fire hydrants shall be placed 3 foot from the back of curb to the center of the hydrant, or where there is no curb and gutter, the face of the pumper nozzle shall be located five feet (5') from the paved road edge. Center line of pumper nozzle shall be eighteen inches (18") to twenty inches (20") above finish grade line (sidewalk to curb).

All fire hydrants and any required adjustment fittings along a potable water main shall be factory painted red. All fire hydrants along a raw water main shall be factory painted emerald green with the paint code M4157 by Waterous. Fire hydrants designated by the Village shall be fitted with flags or markers of a type to be approved by the Village.

All Fire Hydrant valve boxes shall be heavy wall high density polyethylene American Flow Control Trench Adapters. Lids to be marked "Water" (valve box extensions if required are considered incidental). Open graded (CA-7) limestone shall be utilized to backfill around the operating nut on all valve boxes to prevent mud from penetrating the valve boxes.

Fire hydrants shall be installed throughout the subdivision, at each intersection, ends of each cul-de-sac and at intervals approximately 300 feet within residential areas. Fire hydrants in a nonresidential area may have closer spacing if required by the Village or Fire Protection District. They shall be located on the property line except at block corners where they shall be placed at the curb return point of curvature.

Adjustments to grade, if required, shall be made with American Flow Control extension kits.

Base elbows of hydrants shall be properly thrust blocked and shall be provided with clean washed stone (CA-7).

III.C.7. Water Services

All water services shall be constructed of Type K copper pipe of such diameter as specified by Village Ordinance and in accordance with AWWA publication M-22 entitled, "Water Service Lines and Meters". Service line diameter is dependent upon peak water demand and meter distance from the main. Minimum service diameter shall be 1 inch.

All water services shall be installed in accordance with the rules and regulations of the Illinois Plumbing Code and Illinois Plumbing License Law (225 ILCS 320). Per the Illinois Plumbing Code, an Illinois

Licensed Plumber must perform the work associated with the water services. The work that must be performed by a Licensed Plumber includes but is not limited to the tap at the water main, service pipe installation, curb stop installation, b-box installation, connection to the existing water service and any other fittings required.

All water services shall be type "K" copper pipe with compression connections. No joints will be allowed between the corporation stop and the curb stop. Material and installation will be in general accordance with AWWA C800. The underground water service pipe and the building sewer shall be not less than ten feet (10') apart horizontally and shall be separated by undisturbed or compacted earth.

Services shall be equipped with corporation stop, curb stop, and curb box. Curb stops and all water service lines shall have a minimum 5.5 feet of cover. The curb stop shall have a concrete block placed under it for support. All curb boxes shall be marked at the time of construction with a hardwood post neatly installed vertically with a minimum 3 feet bury and a minimum 4 feet exposed. The top 1 foot of the post shall be neatly painted blue.

Domestic services may not be tapped on dead end water mains unless approved by the Village Engineer.

The installation of the water service shall meet the latest version of “Standard Specifications for Water and Sewer Main Construction in Illinois”, latest edition and governing plumbing codes. The water service pipe may be placed in the same trench with the building drain or building sewer if the conditions listed below are met:

1. The bottom of the water service pipe at all points shall be at least 18 inches above the top of the sewer line, while maintaining the minimum 5.5 feet of cover.

2. The water service pipe shall be placed on a solid shelf excavated at one side of the common trench.

A ductile iron saddle with 2 stainless steel straps and accessories is required for water services 1.5” or larger. All corporation stops, curb stops, and curb boxes shall be as follows:

BRAND	MUELLER		
SIZE	1"	1.5"	2"
CORPORATION STOP	B–25008	B–25008	B–25008
CURB STOP	B–25155	B–25155	B–25155
CURB BOX	H–10302	H–10302–99007	H–10302–99007
BRAND	FORD		
SIZE	1"	1.5"	2"
CORPORATION STOP	FB1000–4–Q	FB1000–6–Q	FB1000–7–Q
CURB STOP	B44–444–MQ	B44–666–MQ	B44–777–MQ
CURB BOX	EM2–55–67	EM2–55–67	EM2–55–67
BRAND	A.Y. McDONALD		
SIZE	1"	1.5"	2"
CORPORATION STOP	74701BQ (1")	74701BQ (1.5")	74701BQ (2")
CURB STOP	76104Q (1")	76104Q (1.5")	76104Q (2")
CURB BOX	@ 5.5' MIN. THREADED 1.25" UPPER, 1.5" BOTTOM THREAD 5615A		

The curb boxes shall be set between the sidewalk and the house/building. It shall be placed either within the right of way (between the sidewalk and the right of way) or in an easement adjacent to the right of way within 2 feet of the sidewalk. No curb box shall be allowed in a sidewalk, driveway or other paved surface. The location of all curb boxes shall be tied to each property corner with the location being included in the record drawings.

The Village shall witness all service taps greater than 1" in diameter. Accordingly, the Developer/Contractor shall contact the Village Engineer 48 hours in advance of the tap.

III.C.8. Tap Connections

All tap connections shall be made in accordance with these Standard Specifications and the Illinois Plumbing Code. Pressure connections are not allowed for same size pipes. Payments for all tap fees not otherwise provided for in the Village Code, Annexation Agreement or Development Agreement shall be paid prior to scheduling the tap with the Utilities Superintendent or his/her designated representative.

One-inch (1") taps made on Ductile Iron Pipe shall be direct and shall not require saddles. A ductile iron saddle with two (2) stainless steel straps and accessories is required for water services 1.5" or larger.

The Village shall witness all service taps greater than 1" in diameter. Accordingly, the Developer/Contractor shall contact the Village Engineer 48 hours in advance of the tap.

III.C.9. Pressure Connections

All pressure connections 3 inches and larger shall be enclosed in a minimum of a 48" diameter concrete vault. The vault size shall be based on the valve size. 3 inch taps and greater shall be made through a resilient wedge tapping valve and a tapping sleeve.

Pressure connections are not allowed when the pipe to be tapped and the new pipe are the same size. For this type of situation, a cut in tee shall be used.

All pressure taps to an existing Village main shall be made with an American Flow Control Series 2800 Compact Ductile Iron Mechanical Joint Tapping Sleeve and an American Flow Control Series 2500 Ductile Iron Resilient Wedge Tapping Valve (MJ x FL) and shall be constructed in a five (5') foot minimum diameter precast valve vault. All taps shall be performed by the Contractor after payment of applicable connection fees and shall be witnessed by the Village. The Village Engineer should be notified 48 hours in advance of any tap.

III.C.10. Miscellaneous – Water Systems

Water valves and fire hydrants shall be operated by Village of Sugar Grove Personnel only.

The Contractor shall obtain, erect, maintain and remove all signs, barricades, flagmen and other control devices as may be necessary for the purpose of regulating, warning or guiding traffic. Placement and maintenance of all traffic control devices shall be in accordance with the applicable parts of Article 107.14 of the Standard Specifications and the Illinois Manual on Uniform Traffic Control Devices for Streets and Highways. Contractor shall furnish a traffic control plan for IDOT or Village approval if required.

All work and materials shall be in accordance with code requirements.

The Contractor shall restore any area disturbed to a condition equal to or better than its original use. This shall include finish grading, establishment of a vegetative cover (seeding or sod), general cleanup and pavement replacement.

The Contractor shall be responsible for providing safe and healthful working conditions throughout the construction of the proposed improvements.

Before acceptance by the Village all work shall be inspected and approved by the Village or its representatives.

Easements for the existing utilities, both public and private, and utilities within public rights-of-way are shown on the plans according to available records. The contractor shall be responsible for determining the exact location in the field of these utility lines and their protection from damage due to construction operations. If existing utility lines of any nature are encountered which conflict in location with new construction, the contractor shall notify the engineer so that the conflict may be resolved.

III.C.11. Disinfection and Testing

The water mains shall be pressure tested at 150 PSI. Allowable leakage shall be as set forth in AWWA C-600 latest edition. The Contractor shall perform Hydrostatic Tests in accordance with Division IV, Section 41 of the Standard Specifications for Water and Sewer Main Construction in Illinois, latest edition, and applicable provisions of AWWA C-600 and C-603. The maximum allowable leakage shall

be based off of the first 1,000 feet of pipe (i.e. if 2,000 feet of pipe is being tested, the allowable leakage will be based on the first 1,000 feet only.) The duration of the test shall be for two hours minimum, and the maximum pressure drop during this two hour period is a cumulative 2 psi. To meet the testing requirements, the water main shall satisfy the pressure drop and the allowable leakage requirements. The gauge will be zeroed out before the pressure test begins. In addition, the pressure gauge used in the hydrostatic test shall be in 2 psi increments or less and have a minimum of a 3½" diameter face. When testing ductile iron services, the permanent valve on the building riser shall be installed prior to pressure testing.

Disinfection of the Water Mains: Upon satisfactory hydrostatic testing of the newly laid water mains, the water mains shall be disinfected in accordance with the American Water Works Association, Procedure Designation, AWWA C-651, latest edition. The Contractor is responsible for collecting samples and having bacteriological testing performed as required by the IEPA. The Contractor shall furnish to the Village the required documentation, test results, etc., required by the IEPA for placing the water mains or service lines in service and/or securing an operating permit.

The Developer/Contractor shall contact the Village Engineer to schedule operation of valves, flush and fill, pressure test, chlorination, and sampling. The Village Engineer will contact the Village accordingly. The Developer/Contractor shall provide 48 hours notice prior to performing any of these work items. The following activities must be scheduled with the Village Engineer on independent days:

- Flush and fill (Water main/service shall then be pre-tested.)
- Pressure Test (The gauge shall be zeroed out before the start of the test.)
- Chlorination
- 1st Day of Sampling
- 2nd Day of Sampling

All water main shall be pre-pressure tested prior to the actual pressure test the Village Engineer and/or the Village witnesses.

III.D Granular Backfill

All trenches caused by the construction of sewers, water mains, water service pipes, and the excavation around catch basins, manholes, inlets and other appurtenances which occur within 2 feet of the limits of existing or proposed pavements, sidewalks and curb and gutters, trails and driveways or where the edge of the trench shall be within 2 feet of said improvements, shall be backfilled with mechanically compacted granular backfill.

Granular backfill shall consist of CA-7 crushed limestone and shall be compacted to 95% of maximum density at optimum moisture as determined by the Modified Proctor Test.

III.E. Final Adjustments

All final adjustments of castings will be accomplished by the use of precast concrete or other approved material adjusting rings set in Butyl rope joint sealant; mortar joints will not be allowed. Height of adjusting rings shall not exceed eight inches 8" (no more than 2 rings) and the minimum adjusting ring thickness shall be 2 inches. Frames set in concrete are not permitted. Metal or plastic shims may be used for fine adjustments of frames.

Public utilities, which are outside of the project limits (off-site), shall be permanently located with clearly labeled, PVC markers subject to the approval of the Village Engineer. The marker installation requirement and location shall be determined on a case-by-case basis.

Section IV. Stormwater Management

The Village of Sugar Grove has adopted the Kane County Stormwater Ordinance (hereto referred as "Stormwater Ordinance"), by reference, as its Stormwater Ordinance. All submittals and designs shall be in accordance therewith. The Village Engineer is the Administrator of the Stormwater Ordinance.

Positive Drainage

Overland flood route shall be labeled on the plans and calculated to convey all the stormwater runoff for the 100-year runoff event to the proposed detention basin assuming the storm sewer system is fully functional and operating under the full head conditions of the 100 year conveyance. Roadways may be used to convey the overland flow route, but shall have a maximum flow depth at the curb of 6 inches (6") and in no case shall the depth of flow be greater than 12 inches. Reverse parkway slopes and depressed sidewalks shall be used along overflow routes to minimize the depth of water in roadways and the overland flow routes shall be graded such that runoff shall be directed away from homes and structures.

All areas of the property must provide an overland flow path that will pass the 100-year flow. If the tributary area is less than twenty (20) acres, the vertical distance between the 100 year high water level within the overland flow path and the lowest building opening shall be a minimum of 1 ft (1'). If the tributary area is greater than 20 acres, the 100-year high water level shall be at a stage at least 2 feet (2') below the lowest opening of any building in the vicinity of the flow path in accordance with the Kane County Stormwater Technical Guidance Manual section T201 (d).

Underground Detention

Underground Detention will be considered in commercial and industrial applications but shall utilize full storm water quality improvement methods.

Basement Floors

Basement floor elevations in relation to nearby stormwater management facilities normal and high water levels shall be determined by the Village Engineer based on evaluation of the soil strata in the vicinity. At a minimum the basement floors shall be set 2 feet (2') above the normal water level.

Minimum Detention Outlet Size

The minimum size for a single outlet storm detention release pipe shall be twelve inches (12") RCP with a minimum restrictor size of 4 inches (4") (PVC, SDR-26). If this minimum diameter permits release rates greater than that required, alternate outlet designs shall be utilized which incorporate self-cleaning flow restrictors. If restrictor size is greater than twelve inches (12") then the outlet pipe shall be at least one size larger than the restrictor.

Restrictor Type

All innovative restrictor designs that incorporate low maintenance and anti-clogging designs are encouraged and will be considered.

Parking Lots

The maximum stormwater ponding depth in any parking area shall not exceed one foot (1') for more than four (4) hours.

Overflow Structures

All stormwater detention basins shall be provided with an overflow structure capable of safely passing excess flows at a stage at least on foot (1') below the lowest foundation grade in the vicinity of the basin. The overflow weir shall be designed to convey the proposed critical duration 100-year peak flow entering the basin, shall not exceed one foot (1') of depth and shall have positive downstream conveyance. Once the width and elevation of the weir are established, the basin shall have a minimum of one foot (1') of freeboard above the weir elevation. The overflow weir shall have minimum width of five feet (5') and shall incorporate a concrete curtain wall, 4 feet longer than the width of the weir on each end, cast in place in a trench cut into the berm, a minimum of 42 inches (42") deep, eight inches (8") wide. Backslope and downstream erosion control measures may be required depending on earth slopes.

Setback Requirements

Setback between the High Water Level of the Retention/Detention Basin and the Building/Lot

All residential development shall comply with the more restrictive of the following requirements:

1. The High Water Level plus one foot (1') of freeboard shall not encroach onto a residential lot, or
2. The minimum distance between the residential building envelope and the High Water Level shall be fifteen feet (15').

Early Completion of Detention Facilities

Where detention, retention, or depressional storage areas are to be used as part of the drainage system for a property, they shall be completed as the first element of the initial earthwork program. This is to ensure that if soil erosion and sediment control practices are not adequately implemented, any eroded sediment will be captured in these areas and will have to be removed by the developer before project completion. **NOTE:** Following construction and stabilization of stormwater management facilities, silt fencing shall be installed between the facility and all areas of the subdivision that will have future construction activities. This silt fence shall be maintained until construction activities on all upstream tributary areas have been completed and all such areas have been re-vegetated. All storm sewer inlets to a stormwater management facility shall be installed to the extent that the stabilized basin and post-construction silt fence will not be disturbed by future storm sewer installation.

Location of Basins

Compliance shall be made with 605 Illinois Compiled Statutes 5/9-115.1 regarding the location of basins in relation to the Right-of-Way. No part of the basin shall be located within a distance of 10 feet plus one and one-half times the depth of the pond from the Right-of-Way line.

Design Computations

A copy of the design computations, showing contributing areas and other necessary information shall be submitted for approval to the Village Engineer, and shall be submitted by a registered professional engineer and sealed accordingly. All computer generated data shall also be submitted electronically.

B. Detention Basin Design

All detention basins shall be designed to remove stormwater pollutants, so as to be safe, aesthetically pleasing, and to provide recreational use whenever feasible. There is no depth limitation to basin

design, other than that necessitated by impoundment volume safety and/or vegetative survivability and maintenance concerns due to longer drawdown times.

Wet Basin Depths

The normal water pool in wet basins shall be at least 6 feet deep, excluding near shore banks and safety ledges and shall be at least 10 feet (10') deep over 25% of the normal water level surface area.

Permanent Pool Volume

The permanent pool volume at normal depth shall be equal to or greater than the runoff from its watershed for the two year event.

Life Saving Equipment

The subdivider shall install life-saving equipment at regular intervals around the perimeter of wet detention/retention ponds. The subdivider shall consult with the Police Department and the Fire Protection District regarding the type of equipment to be installed. The equipment shall be maintained by the entity that maintains the pond.

Dry Detention Ponds

Dry detention ponds shall be designed to have a high water depth of 4 feet (4') or less. Parking lots used for storm water detention shall not allow ponding greater than 6 inches deep for a period of four hours. All slopes shall not be steeper than 4 to 1 (horizontal to vertical).

Dry Basins

Dry basins shall be designed so that at least eighty percent of the bottom area shall standing water no longer than 72 hours for any runoff event less than the 100-year event. Underdrains directed to the outlet control shall be used to aid in keeping the pond bottom dry. (Ord. 604, 9-8-1994)

Aeration

All wet basins shall incorporate wind powered aeration systems to oxygenate the normal water pool. If it can be shown, based on a sheltered location of the basin, that wind powered aeration is not feasible, then an electric powered aeration system will be allowed.

Basin Slopes

The underwater side slopes of wet basins from the safety ledge to the high water elevation shall not be steeper than 4 to 1 (horizontal to vertical). All side slopes above normal water level shall be no steeper than 4 to 1 (horizontal to vertical). Backslopes on the side of a berm opposite the basin may be 3 to 1 if they are along the external boundary of a development and no/low maintenance groundcovers and landscaping are installed.

Safety Ledges

All wet detention basins shall have a level safety ledge at least 5 feet (5') in width from the normal water's edge and 3 feet below the Normal Water Level.

Desiltation Basins

Desiltation basins shall be provided at the pond's in-flow locations. Desiltation basin size shall be one hundred (100) cubic yards per acre of disturbed tributary area. Use of settlement basins or other

sediment control practices upstream of the basins shall be taken into consideration when reviewing the proposed desiltation volume.

Embankment Protection

Embankment protection shall be provided and approved by the Village Engineer.

Velocity Dissipation

Velocity dissipation measures shall be incorporated into dry basin designs to minimize erosion at inlets and outlets and to minimize the re-suspension of pollutants.

Inlet and Outlet Orientation for Both Wet and Dry Detention Basins

To the extent feasible, the distance between detention inlets and outlets shall be maximized. If possible, they should be at opposite ends of the basin.

Section V. Grading

V.A. General

Every engineering plan shall include a topographic survey of the existing project site and shall be signed and sealed by a Licensed Illinois Professional Land Surveyor. All topographic data shall be collected a minimum of fifty feet (50') beyond the project site, but in no case less than is necessary to determine all area drainage patterns that may effect, or be affected by construction of the subdivision. All plans shall indicate the existing contours with one foot (1') contour interval. The existing contours and spot elevations must be indicated on the plans in a lighter line style or shade to provide distinction between the existing and proposed conditions. All topographic surveys shall provide benchmark information and shall be based on NGVD 1988.

The minimum slope for all vegetated areas shall be two percent (2%) unless approved by the Village Engineer under special conditions. The maximum slope for all transition areas shall be twenty-five percent (25%).

Minimum slopes for parking areas shall be one half percent (0.50%) and the maximum slopes shall be four percent (4.0%). All parking areas that are adjacent to, and slope toward, storm water detention facilities shall be constructed with guardrails or sufficient structural parking stops to minimize or preclude the possibility of unattended vehicles rolling into the detention facility.

All grading plans shall indicate proposed spot elevations at a minimum of every fifty feet (50'). The calculated slope shall be shown with an arrow in the direction of the downward slope. Overland flood routes shall be shown with large arrows to depict the route.

Rim elevations for all storm sewer structures shall be shown on the grading plans.

V.B. Retaining Walls

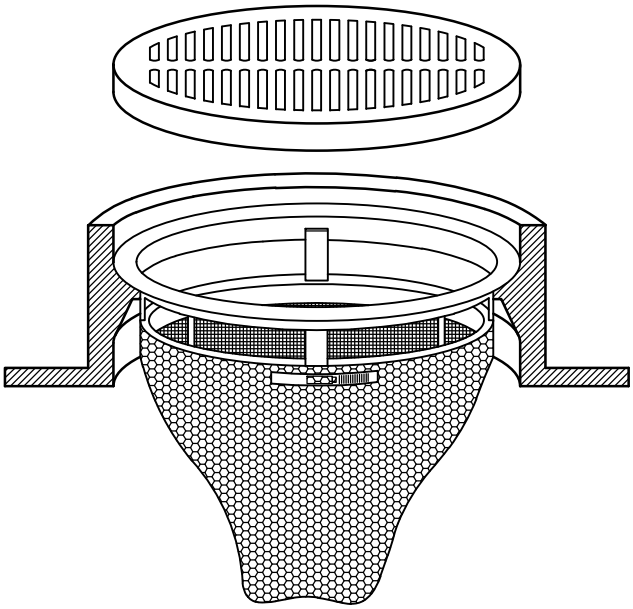
Should a site require a retaining wall, a detail shall be indicated on the plans to indicate the type and style of wall to be used. A retaining wall that is greater than three feet (3') in height shall be designed

and sealed by a Illinois Licensed Structural Engineer. The design criteria can be provided during the final engineering submittal.

Retaining walls around detention basins may not be continuous. There must be a sloped opening to allow for maintenance. Walls greater than three feet (3’) in height are not permitted in this application. If a height of greater than three feet (3’) must be attained, the wall must be constructed in a terrace fashion, three feet (3’) maximum high wall to a minimum three feet (3’) wide terrace, then another three feet (3’) maximum wall to another minimum three feet (3’) wide terrace, etc.

The underdrain outlet shall be connected to a storm sewer and shown on the plans. The ends of the retaining wall shall transition so that the grading shall not exceed the maximum transition grading of 4:1.

APPENDIX A:
STANDARD DETAILS



NOTES:

1. INLET FILTER SYSTEM SHALL CONSIST OF A REPLACEABLE REINFORCED FILTER BAG SUSPENDED FROM A RETAINER RING OR FRAME.

2. INLET FILTER SYSTEMS SHALL BE THE CATCH–ALL "HR", WITH OVERFLOW, AS FURNISHED BY MARATHON MATERIALS, INC., IPP INLET FILTER ASSEMBLY, OR PRE–APPROVED EQUAL.

3. THE FILTER BAG SHALL BE CONSTRUCTED OF A NON–WOVEN POLYPROPYLENE FILTER GEOTEXTILE FABRIC WITH A MINIMUM WEIGHT OF 4 OZ./SQ.YD., A MINIMUM FLOW RATE OF 145 GAL./MIN./SQ.FT., AND DESIGNED FOR A MINIMUM SILT AND DEBRIS CAPACITY OF 2 CU. FT. THE FILTER BAG SHALL BE REINFORCED WITH A POLYESTER MESH FABRIC WITH A MINIMUM WEIGHT OF 4 OZ./SQ.YD.

4. THE FILTER BAG SHALL BE SUSPENDED FROM A GALVANIZED STEEL RING OR FRAME, CONFORMING TO ASTM–A36, UTILIZING A STAINLESS STEEL BAND AND LOCKING CLAMP. THE FRAME SHALL BE DESIGNED WITH AN OVERFLOW FEATURE TO PREVENT ANY PONDING DURING HEAVY RAINFALL.

5. FILTER BAG MUST BE INSPECTED ONCE PER WEEK AND AFTER 1/2" RAINS.

INLET FILTER

Village of Sugar Grove
10 Municipal Drive
Sugar Grove, Illinois 60554
Phone: (630) 391–7200

SCALE:	FOLDER:	DRAWING NUMBER:	DRAWN BY:
N.T.S.	SG-SE	02	BLM
DATE: 4/2/24			REVISED:

R.O.W. & REMAINING GRASSED AREA: IDOT CLASS 1 SEEDING MIXTURE

PERMANENT SEEDING MIXTURE – 100 LBS./AC. KENTUCKY BLUEGRASS
60 LBS./AC. PERENNIAL RYEGRASS
40 LBS./AC. CREEPING RED FESCUE

TEMPORARY SEEDING MIXTURE – 50 LBS./AC. PERENNIAL RYE GRASS
64 LBS./AC. OATS, SPRING

GRASSED WATERWAY AREA: CLASS 5 SEEDING MIXTURE

PERMANENT SEEDING MIXTURE – 150 LBS./AC. KENTUCKY BLUEGRASS
150 LBS./AC. SMOOTH BROME GRASS

TEMPORARY SEEDING MIXTURE – 50 LBS./AC. PERENNIAL RYEGRASS
64 LBS./AC. OATS, SPRING

SEEDING SCHEDULE	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
PERMANENT SEEDING MIXTURE												
NONIRRIGATED				■	■	■			■	■		
IRRIGATED				■	■	■	■	■	■			
DORMANT (DOUBLE RATE)	■	■	■							■	■	■
TEMPORARY SEEDING MIXTURE												
RYE OR WHEAT							■	■	■			
OATS				■	■	■						

FERTILIZER MIXTURE FOR PROPOSED SEEDING AREAS

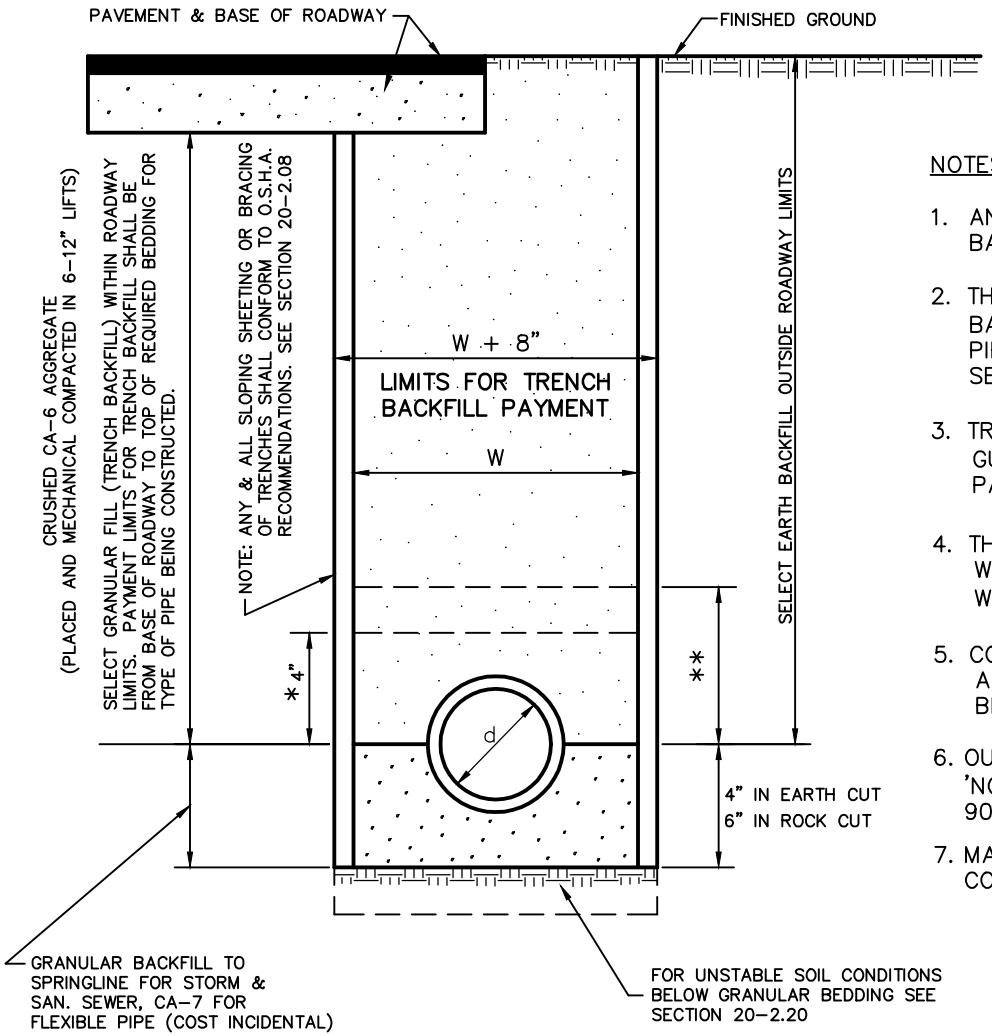
NITROGEN	(N)	90 LBS./AC.
PHOSPHORUS	(P)	90 LBS./AC/ OR 120 LBS./AC. P_2O_5
POTASSIUM	(K)	90 LBS./AC/ OR 120 LBS./AC. K_2O

EROSION CONTROL BLANKET SHALL BE PROVIDED AT ALL AREAS LOCATED WITHIN THE RIGHT OF WAY.

SEEDING INFORMATION AND SCHEDULE

Village of Sugar Grove
10 Municipal Drive
Sugar Grove, Illinois 60554
Phone: (630) 391-7200

SCALE:	FOLDER:	DRAWING NUMBER:	DRAWN BY:
N.T.S.	SG-SE	11	CLN
DATE: 4/2/24			REVISED:



NOTES:

1. ANY FLARE OR EXCAVATION BEYOND THE LIMITS SPECIFIED SHALL BE BACKFILLED ACCORDINGLY AT THE EXPENSE OF THE CONTRACTOR.
2. THE PROVIDING AND INSTALLATION OF THE CA-7 AGGREGATE BACKFILL FROM HEIGHT SPECIFIED TO 4" BELOW THE BOTTOM OF THE PIPE SHALL BE INCIDENTAL TO THE UNIT COST OF THE TYPE OF SEWER BEING CONSTRUCTED.
3. TRENCH BACKFILL LIMITS SHALL BE DEFINED AS 2' BEHIND CURB AND GUTTERS AND 2' BEYOND AGGREGATE SHOULDERS, SIDEWALKS, BIKE PATHS, OR OTHER PAVED AREAS.
4. THE BOTTOM WIDTH OF THE TRENCH (W) SHALL NOT EXCEED THE WIDTHS STATED IN THE STANDARD SPECIFICATIONS FOR WATER AND SEWER MAIN CONSTRUCTION IN ILLINOIS. (LATEST EDITION)
5. CONTRACTOR SHALL MAKE HIS OWN DETERMINATION AS TO THE ACTUAL AMOUNT OF GRANULAR TRENCH BACKFILL REQUIRED. NO ADJUSTMENT TO BID PRICE WILL BE ALLOWED UNLESS THERE IS A CHANGE IN THE PLANS.
6. OUTSIDE THE LIMITS FOR TRENCH BACKFILL, (AS DESCRIBED IN NOTE 3) 'NON-STRUCTURAL' FILL MATERIAL SHALL BE MANUALLY COMPACTED TO 90% OF THE STANDARD PROCTOR DENSITY.
7. MANUAL COMPACTION IS THE ONLY ACCEPTABLE FORM OF BACKFILL COMPACTION; JETTING IS NOT ALLOWED.

*4" ALL RIGID PIPE INSTALLATION

** CA-7 AGGREGATE TO 1.0' OVER TOP OF PIPE FOR FLEXIBLE PIPE

TYPICAL TRENCH DETAIL

Village of Sugar Grove
10 Municipal Drive
Sugar Grove, Illinois 60554
Phone: (630) 391-7200

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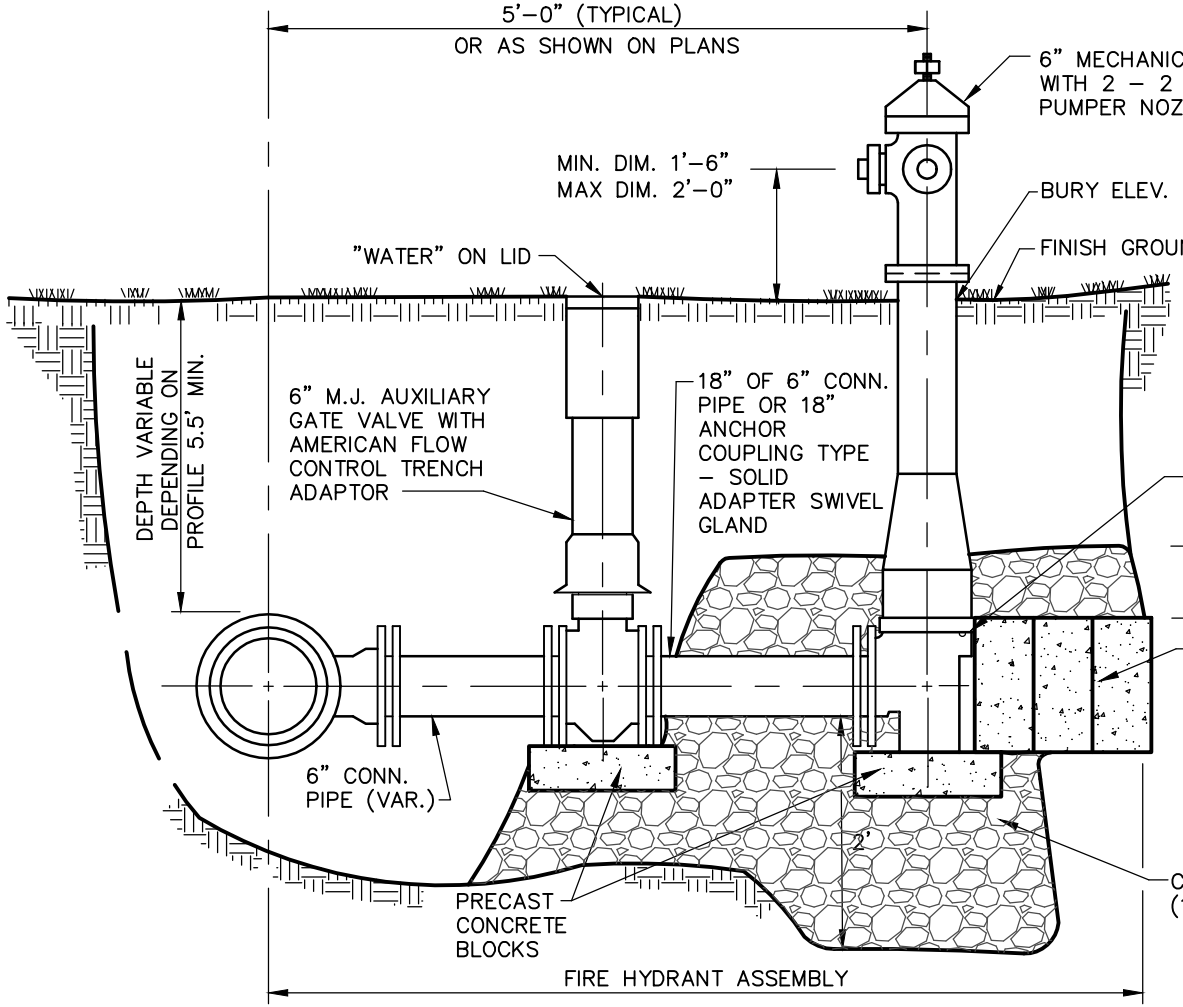
N.T.S.	SG-MI	01	KKP
DATE: 4/2/24			REVISED:



GATE VALVE – AMERICAN FLOW CONTROL DUCTILE IRON RESILIENT WEDGE

FIRE HYDRANT – WATEROUS PACER MODEL NO. WB–67–250 (BREAK AWAY STYLE)

NOTES:

1. CONTRACTORS WILL SUPPLY HYDRANTS WITH AUXILIARY VALVES & MECHANICAL JOINT CONNECTIONS WITH 18" LONG PLAIN END DUCTILE IRON PIPE OR 6"X18" SWIVEL X SOLID ADAPTOR BETWEEN HYDRANT AND VALVE.

2. ALL FIRE HYDRANTS ALONG A POTABLE WATER MAIN SHALL BE RED. ALL FIRE HYDRANTS ALONG A RAW WATER MAIN SHALL BE EMERALD GREEN BY WATEROUS, PAINT CODE M4157.

FIRE HYDRANT ASSEMBLY INSTALLATION

Village of Sugar Grove
10 Municipal Drive
Sugar Grove, Illinois 60554
Phone: (630) 391–7200

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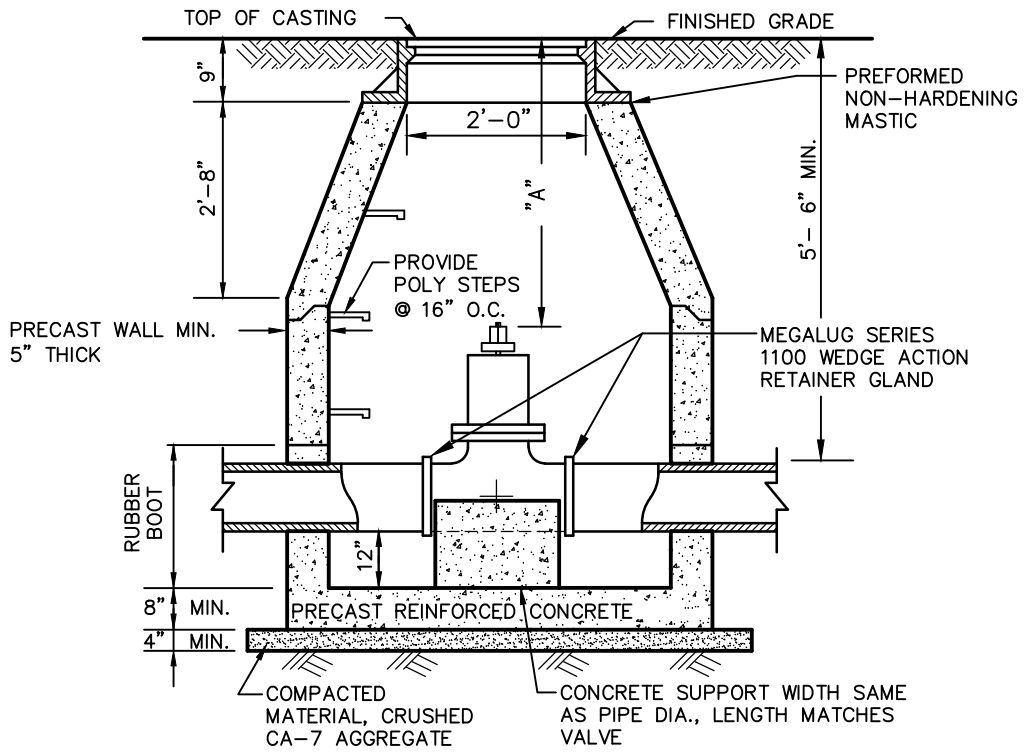

NOTES:

1. VALVES FOR ALL WATER MAINS SHALL BE AMERICAN FLOW CONTROL DUCTILE IRON RESILIENT WEDGE GATE VALVES. IN ACCORDANCE WITH AWWA C-515 STANDARD. ALL VALVES SHALL BE INSTALLED IN VAULTS.
2. IF "A" IS GREATER THAN 6'-0" PROVIDE AN EXTENSION ON THE OPERATING NUT.
3. VALVE VAULT SHALL HAVE A DIA. OF 48" FOR 8" AND SMALLER VALVES AND 60" FOR 10" AND LARGER VALVES. PRECAST REINFORCED CONCRETE MANHOLE SECTIONS SHALL BE IN ACCORDANCE WITH A.S.T.M. C-478 AND SET IN BUTYL ROPE.
4. FRAME AND LID SHALL BE NEENAH R-1713 WITH CONCEALED PICKHOLES. THE WORDS "VILLAGE OF SUGAR GROVE" AND "WATER" SHALL BE CAST INTO THE LID.
5. A MAXIMUM OF 8" OF ADJUSTING RINGS SHALL BE USED. NO MORE THAN 2 ADJUSTING RINGS ARE ALLOWED. BITUMINOUS MASTIC BED FOR EACH RING AND CASTING IS REQUIRED.
6. BETWEEN EACH MANHOLE SECTION JOINT, ADJUSTING RING AND FRAME, APPLY A CONTINUOUS LAYER OF PREFORMED NON-HARDENING BITUMINOUS MASTIC MATERIAL.
7. VALVE MUST ALIGN WITH THE CENTER OF VAULT OPENINGS.
8. CONES MUST BE CONCENTRIC UNLESS A PRESSURE TAP VALVE IS PROVIDED.

VALVE VAULT INSTALLATION

Village of Sugar Grove
10 Municipal Drive
Sugar Grove, Illinois 60554
Phone: (630) 391-7200

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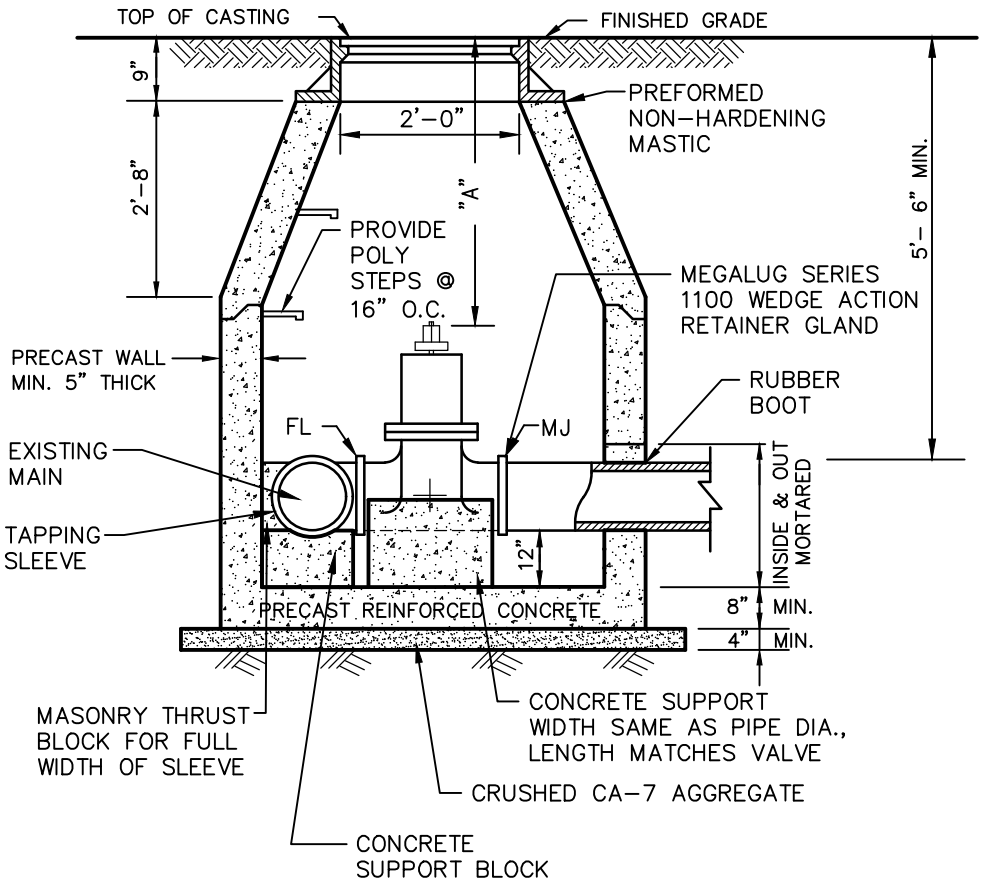

NOTES:

1. IF "A" IS GREATER THAN 6'-0" PROVIDE AN EXTENSION ON THE OPERATING NUT.
2. VALVE VAULTS WITH PRESSURE TAPS HAVE A MINIMUM DIA. OF 60".
3. A MAXIMUM OF 8" OF ADJUSTING RINGS SHALL BE USED. NO MORE THAN TWO (2) ADJUSTING RINGS ARE ALLOWED. CONCRETE RINGS SHALL BE SET IN PREFORMED NON-HARDENING BITUMINOUS MASTIC.
4. ALL PRESSURE TAPS SHALL BE MADE WITH AN AMERICAN FLOW CONTROL SERIES 2800 COMPACT DUCTILE IRON MECHANICAL JOINT TAPPING SLEEVE AND AN AMERICAN FLOW CONTROL SERIES 2500 DUCTILE IRON RESILIENT WEDGE TAPPING VALVE (MJ X FL).
5. VALVE MUST ALIGN WITH THE CENTER OF VAULT OPENINGS.
6. AN ECCENTRIC CONE MAY BE REQUIRED FOR PRESSURE TAP VALVES.
7. BETWEEN EACH MANHOLE SECTION JOINT, ADJUSTING RING AND FRAME, APPLY A CONTINUOUS LAYER OF NON-HARDENING PREFORMED BITUMINOUS MASTIC MATERIAL.
8. FRAME AND LID SHALL BE IDOT TYPE 1 WITH CONCEALED PICKHOLES. THE WORDS "VILLAGE OF SUGAR GROVE" AND "WATER" SHALL BE CAST INTO THE LID.

PRESSURE CONNECTION

Village of Sugar Grove
10 Municipal Drive
Sugar Grove, Illinois 60554
Phone: (630) 391-7200

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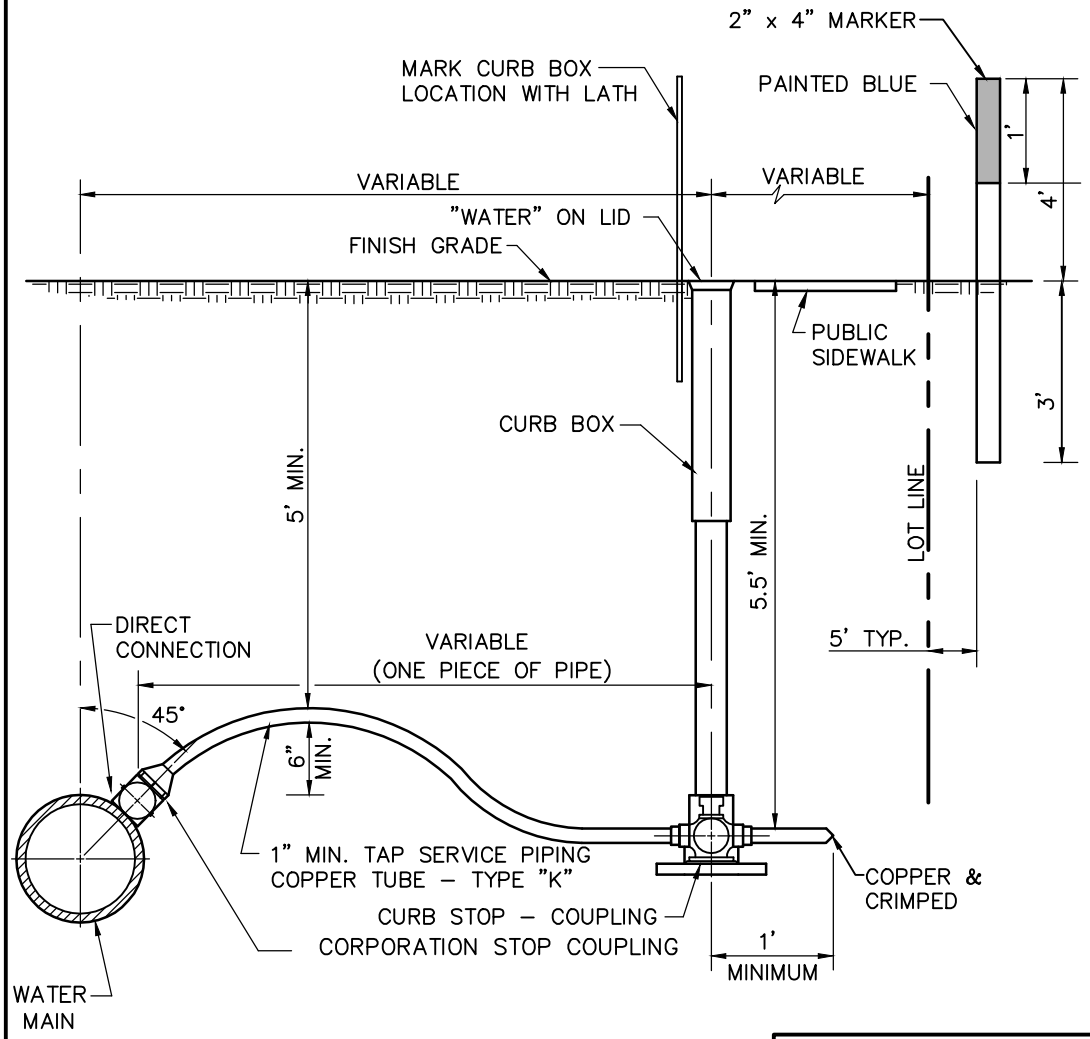

COMPRESSION FITTINGS ONLY

1. B–BOXES SHALL BE SET IN THE PARKWAY BETWEEN THE SIDEWALK AND BACK OF CURB.

2. NO JOINTS ARE ALLOWED BETWEEN THE CORPORATION STOP AND THE CURB STOP.

3. NO B–BOX SHALL BE ALLOWED IN A SIDEWALK, DRIVEWAY, OR OTHER PAVED SURFACE.

4. THE B–BOX SHALL BE LOCATED IN FRONT OF THE LOT IT SERVES.

5. ALL COPPER SERVICE LINES UNDER AND WITHIN 2 FEET OF PAVEMENT SHALL BE BACKFILLED WITH CA–7.

6. ALL WATER SERVICE FITTINGS SHALL HAVE COMPRESSION CONNECTIONS.

7. A DUCTILE IRON SADDLE WITH 2 STAINLESS STEEL STRAPS AND ACCESSORIES IS REQUIRED FOR WATER SERVICES 1.5" OR LARGER.

8. IN THE EVENT OF MULTI–FAMILY B–BOXES GROUPED TOGETHER. THE B–BOXES SHOULD BE PLACED IN A POURED PCC SLAB AND THE B–BOXES MARKED TO CORRESPOND WITH THE RESIDENTIAL UNIT NUMBER.

9. REFER TO SG–WA–04–2 FOR MODEL NUMBERS.

WATER SERVICE ACCESSORIES DETAIL

Village of Sugar Grove
10 Municipal Drive
Sugar Grove, Illinois 60554
Phone: (630) 391–7200

SCALE:	FOLDER:	DRAWING NUMBER:	DRAWN BY:
N.T.S.	SG-WA	04-1	CLN
DATE: 4/2/24			REVISED:

BRAND	**MUELLER**		
SIZE	1"	1.5"	2"
CORPORATION STOP	B-25008	B-25008	B-25008
CURB STOP	B-25155	B-25155	B-25155
CURB BOX	H-10302	H-10302-99007	H-10302-99007
BRAND	**FORD**		
SIZE	1"	1.5"	2"
CORPORATION STOP	FB1000-4-Q	FB1000-6-Q	FB1000-7-Q
CURB STOP	B44-444-MQ	B44-666-MQ	B44-777-MQ
CURB BOX	EM2-55-67	EM2-55-67	EM2-55-67
BRAND	**A.Y. McDONALD**		
SIZE	1"	1.5"	2"
CORPORATION STOP	74701BQ (1")	74701BQ (1.5")	74701BQ (2")
CURB STOP	76104Q (1")	76104Q (1.5")	76104Q (2")
CURB BOX	@ 5.5' MIN. THREADED 1.25" UPPER, 2" BOTTOM THREAD 5615A		

2 OF 2

WATER SERVICE ACCESSORIES DETAIL

Village of Sugar Grove
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Sugar Grove, Illinois 60554
Phone: (630) 391-7200

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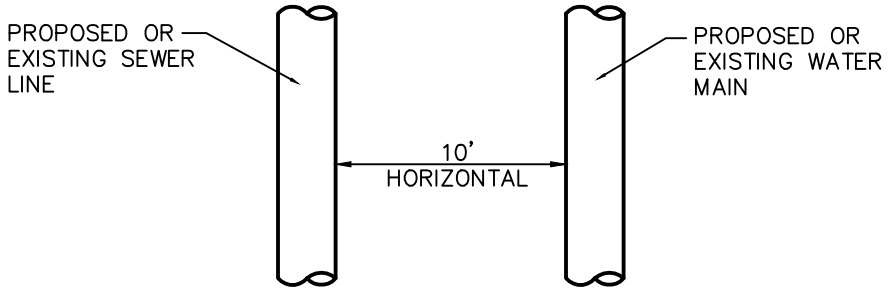
DATE: 4/2/24			REVISED:

PROPOSED SEWER (OR WATER) IS LOCATED 10 FEET OR MORE FROM EXISTING WATER (OR SEWER), NO SPECIAL CONSTRUCTION REQUIRED. SEE ARTICLE 41–2.01A(1).

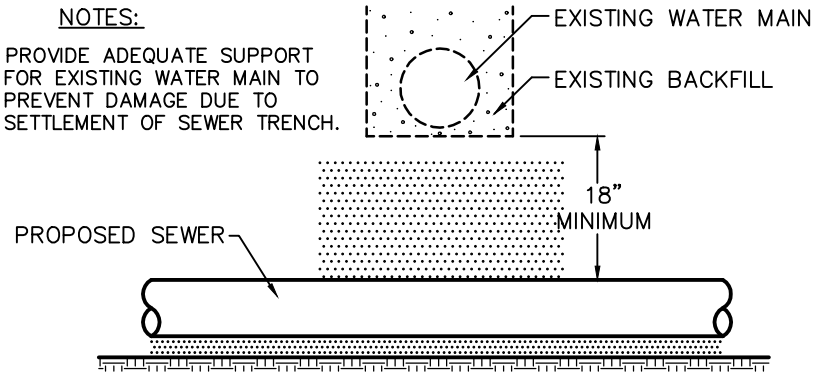


PLAN VIEW

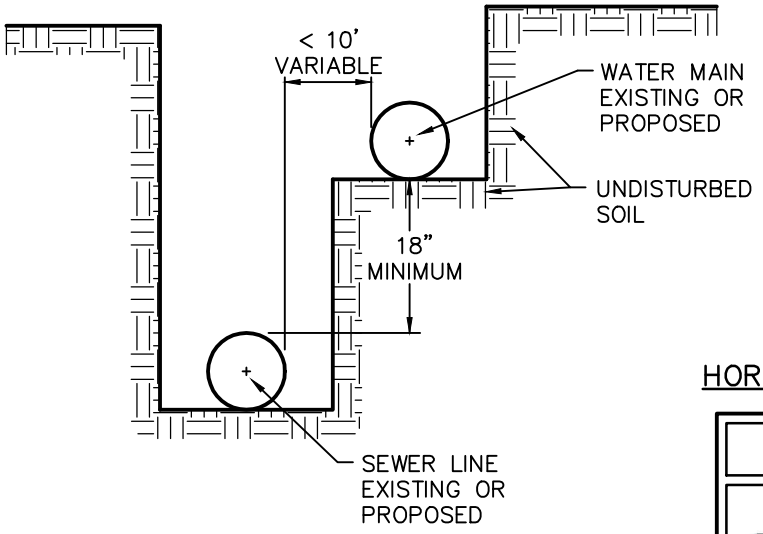
PROPOSED SEWER LINE BELOW EXISTING WATER MAIN WITH 18" MINIMUM VERTICAL SEPARATION.

NOTES:

1. PROVIDE ADEQUATE SUPPORT FOR EXISTING WATER MAIN TO PREVENT DAMAGE DUE TO SETTLEMENT OF SEWER TRENCH.



PROPOSED SEWER (OR WATER) IS LOCATED LESS THAN 10 FEET FROM EXISTING WATER (OR SEWER), DETAILS BELOW SHALL APPLY. SEE ARTICLE 41–2.01B(2).



HORIZONTAL

PROPOSED SEWER LINE BELOW EXISTING WATER MAIN WITH LESS THAN 18" MINIMUM VERTICAL SEPARATION.

NOTE: CLASS IV MATERIAL TO BE COMPACTED TO 95% OF STANDARD PROCTOR MAXIMUM DENSITY. DENSITY.

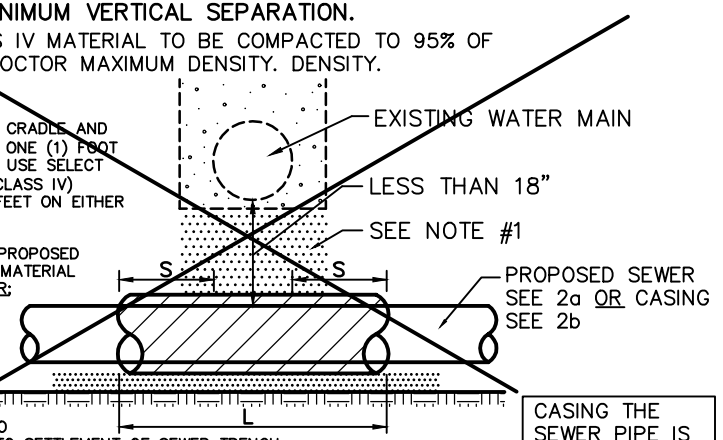
NOTES:

1. OMIT SELECT GRANULAR CRADLE AND GRANULAR BACKFILL TO ONE (1) FOOT OVER TOP OF PIPE AND USE SELECT EXCAVATED MATERIAL (CLASS IV) AND COMPACT FOR 10 FEET ON EITHER SIDE OF WATER MAIN.

2a. CONSTRUCT L FEET OF PROPOSED SEWER OF WATER MAIN MATERIAL AND PRESSURE TEST, OR;
b. USE L FEET OF CASING FOR PROPOSED SEWER AND SEAL ENDS OF CASING.

2. PROVIDE ADEQUATE SUPPORT FOR EXISTING WATER MAIN TO PREVENT DAMAGE DUE TO SETTLEMENT OF SEWER TRENCH.

3. "S" IS THE LENGTH NECESSARY TO PROVIDE 10 FEET OF SEPARATION AS MEASURED PERPENDICULAR TO THE EXISTING WATER MAIN.



CASING THE SEWER PIPE IS NOT PERMITTED BY THE VILLAGE

WATER & SEWER SEPARATION REQUIREMENTS

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10 Municipal Drive
Sugar Grove, Illinois 60554
Phone: (630) 391–7200

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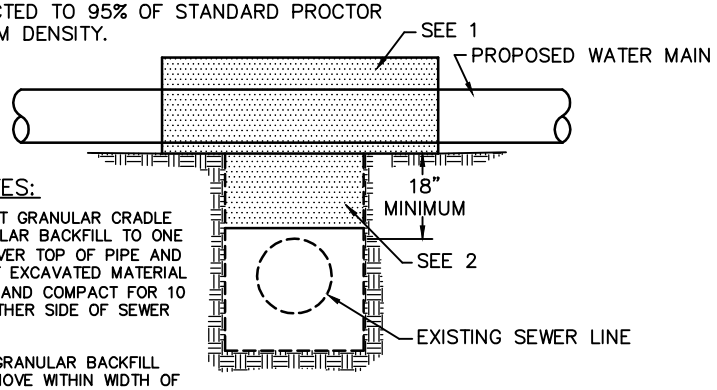
PROPOSED WATER MAIN ABOVE EXISTING SEWER LINE WITH 18" MINIMUM SEPARATION.

NOTE: CLASS IV MATERIAL SHALL BE COMPACTED TO 95% OF STANDARD PROCTOR MAXIMUM DENSITY.



NOTES:

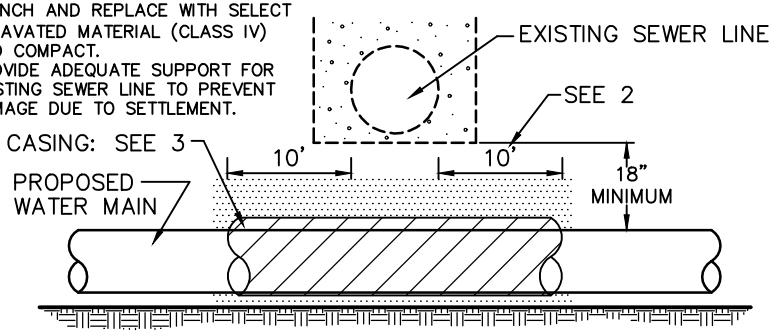
1. OMIT SELECT GRANULAR CRADLE AND GRANULAR BACKFILL TO ONE (1) FOOT OVER TOP OF PIPE AND USE SELECT EXCAVATED MATERIAL (CLASS IV) AND COMPACT FOR 10 FEET ON EITHER SIDE OF SEWER LINE.
2. IF SELECT GRANULAR BACKFILL EXISTS, REMOVE WITHIN WIDTH OF EXISTING SEWER LINE TRENCH AND REPLACE WITH SELECT EXCAVATED MATERIAL (CLASS IV) AND COMPACT.

PROPOSED WATER MAIN BELOW EXISTING SEWER LINE WITH 18" MINIMUM SEPARATION.

NOTE: CLASS IV MATERIAL SHALL BE COMPACTED TO 95% OF STANDARD PROCTOR MAXIMUM DENSITY.

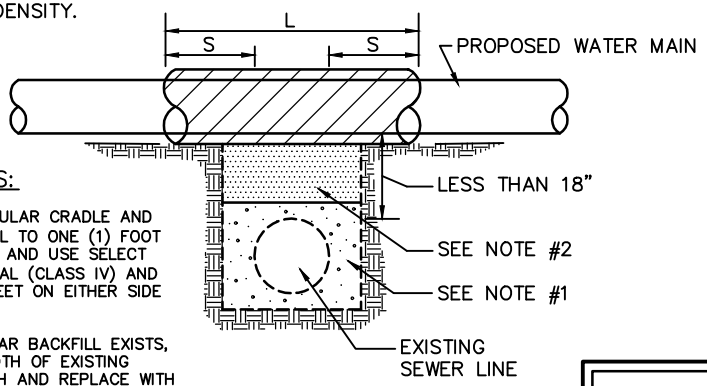
NOTES:

1. OMIT SELECT GRANULAR CRADLE AND GRANULAR BACKFILL TO ONE (1) FOOT OVER TOP OF PIPE AND USE SELECT EXCAVATED MATERIAL (CLASS IV) AND COMPACT FOR 10 FEET ON EITHER SIDE OF SEWER LINE.
2. IF SELECT GRANULAR BACKFILL EXISTS, REMOVE WITHIN WIDTH OF EXISTING SEWER LINE TRENCH AND REPLACE WITH SELECT EXCAVATED MATERIAL (CLASS IV) AND COMPACT.
3. PROVIDE ADEQUATE SUPPORT FOR EXISTING SEWER LINE TO PREVENT DAMAGE DUE TO SETTLEMENT.



PROPOSED WATER MAIN ABOVE EXISTING SEWER LINE WITH LESS THAN 18" SEPARATION.

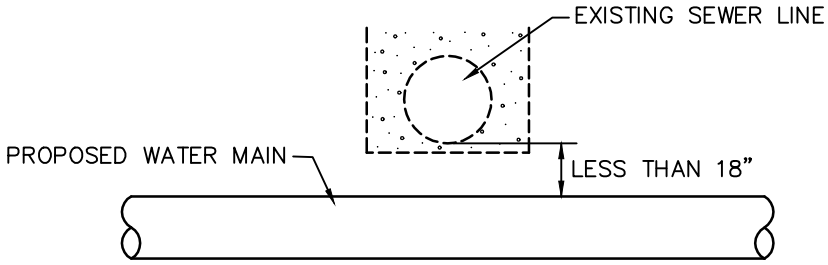
NOTE: CRUSHED CA-7 AGGREGATE SHALL BE COMPACTED TO 95% OF STANDARD PROCTOR MAXIMUM DENSITY.



NOTES:

1. OMIT SELECT GRANULAR CRADLE AND GRANULAR BACKFILL TO ONE (1) FOOT OVER TOP OF PIPE AND USE SELECT EXCAVATED MATERIAL (CLASS IV) AND COMPACT FOR S FEET ON EITHER SIDE OF SEWER LINE.
2. IF SELECT GRANULAR BACKFILL EXISTS, REMOVE WITHIN WIDTH OF EXISTING SEWER LINE TRENCH AND REPLACE WITH SELECT EXCAVATED MATERIAL (CLASS IV) AND COMPACT.
3. USE A CASING FOR PROPOSED WATER MAIN AND SEAL ENDS OF CASING
4. POINT LOADS SHALL NOT BE ALLOWED BETWEEN WATER MAIN OR WATER MAIN CASING AND SEWER.

PROPOSED WATER MAIN BELOW EXISTING SEWER LINE WITH LESS THAN 18" MINIMUM SEPARATION.



NOT ALLOWED*

MUST MAINTAIN 18" VERTICAL SEPARATION

WATER & SEWER SEPARATION REQUIREMENTS

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10 Municipal Drive
Sugar Grove, Illinois 60554
Phone: (630) 391-7200

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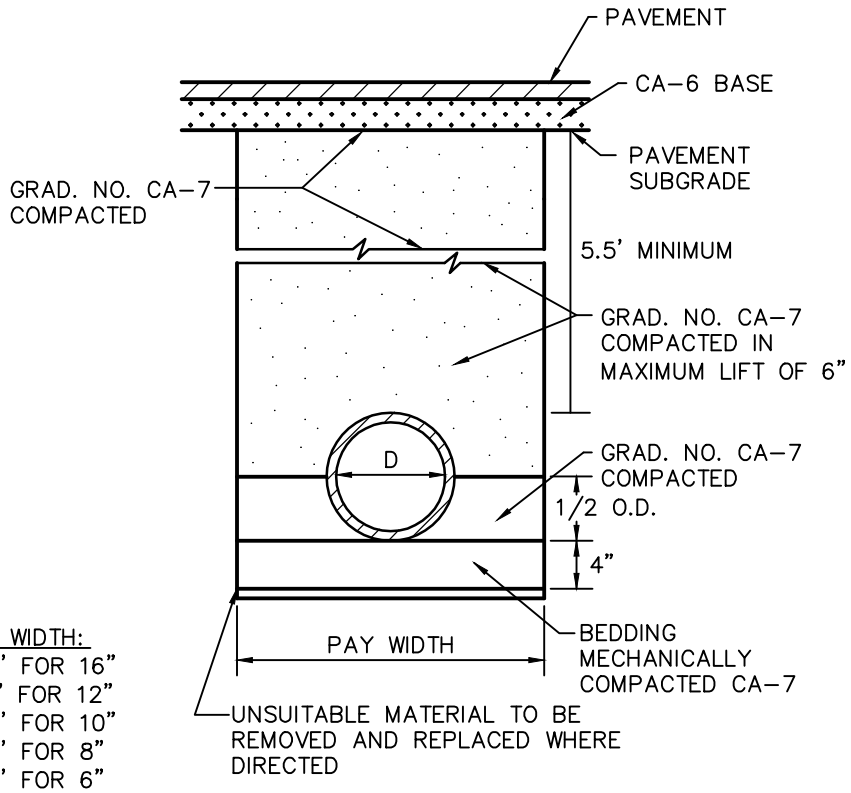
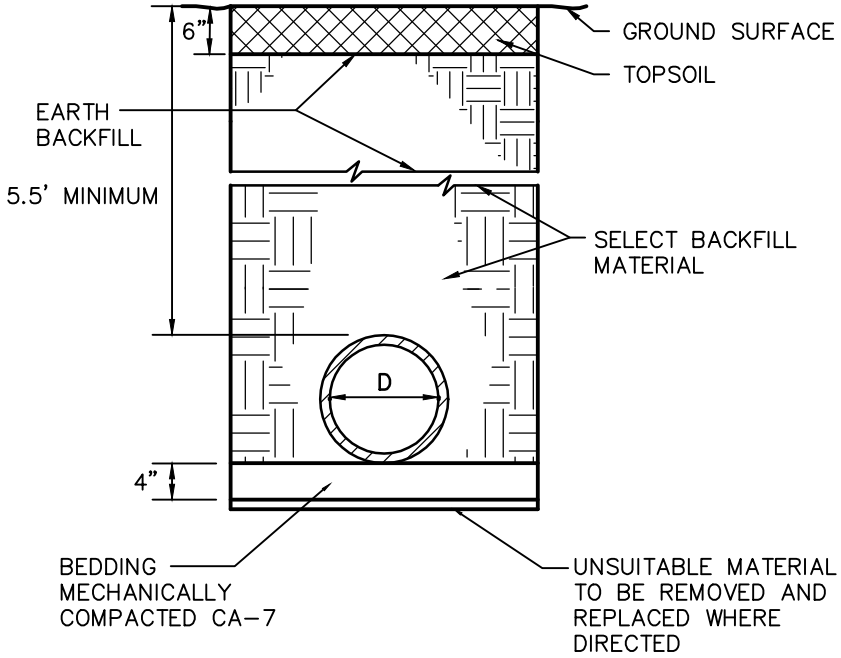


PAY WIDTH:
4.56' FOR 16"
4.17' FOR 12"
3.97' FOR 10"
3.78' FOR 8"
3.58' FOR 6"

PAVED AREAS & DRIVEWAYS

TRENCH BACKFILL INSTALLATION LIMITS ARE DEFINED AS ALL LOCATIONS UNDER AND WITHIN 2 FEET OF ANY PAVED AREA. PAVED AREAS INCLUDE SHOULDERS, CURB AND GUTTER, SIDEWALK, PATHS, AND ANY AGGREGATE SURFACE COURSE.



GRASSED AREAS

NOTE:
THE 10-POINT SOIL TEST EVALUATION FOR DUCTILE IRON PIPE CONFORMING TO ANSI/AWWA C105/A21.5 SHALL BE USED TO DETERMINE THE CORROSIVITY OF THE SOILS ON A PER PROJECT BASIS AND WHETHER OR NOT POLYETHYLENE WRAP IS REQUIRED FOR CORROSION PROTECTION.

WATER MAIN TRENCH DETAIL

Village of Sugar Grove
10 Municipal Drive
Sugar Grove, Illinois 60554
Phone: (630) 391-7200

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N.T.S.	SG-WA	07	CLN
DATE: 4/2/24			REVISED:

8'–0"

4'–0"

PROJECT TITLE

FOR INFORMATION ON THIS PROJECT CONTACT:

VILLAGE OF SUGAR GROVE
PUBLIC WORKS DEPARTMENT

630-391-7230

A-12

NOTE:
FOR USE ONLY ON VILLAGE FUNDED PROJECTS.

PROJECT IDENTIFICATION SIGN

Village of Sugar Grove
10 Municipal Drive
Sugar Grove, Illinois 60554
Phone: (630) 391–7200

SCALE:	FOLDER:	DRAWING NUMBER:	DRAWN BY:
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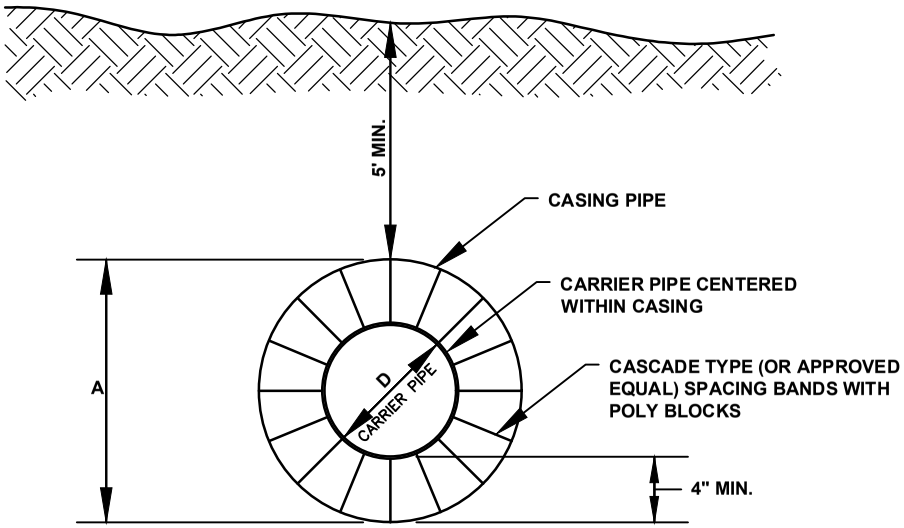


STEEL CASING PIPE DIA. AND WALL THICKNESS SHALL NOT BE LESS THAN THE FOLLOWING:		
CARRIER PIPE NOM. DIA.	MIN. CASING PIPE DIA. (O.D.)	WALL THICKNESS
30"	48"	0.625"
27"	42"	0.563"
24"	36"	0.563"
20" - 21"	36"	0.563"
18"	30"	0.500"
15 - 16"	30"	0.500"
12"	24"	0.438"
10"	22"	0.375"
8"	20"	0.375"
6"	18"	0.313"

GENERAL NOTES

BORINGS SHALL BE ACCOMPLISHED WITH AN AUGER AND CASING PIPE, THE DIAMETER OF THE AUGER SHALL NOT EXCEED THE OUTSIDE DIAMETER OF THE CASING PIPE BY MORE THAN ONE INCH.

BORINGS SHALL BE ACCOMPLISHED FROM PITS USING SHORING. THE SHORING SHALL BE DESIGNED, ERECTED, SUPPORTED, BRACED AND MAINTAINED SO THAT IS WILL SAFELY SUPPORT ALL VERTICAL AND LATERAL LOADS THAT MAY BE IMPOSED UPON IT DURING THE BORING OPERATION. ALL SHAFTS AND JACKING PITS SHALL CONFORM WITH APPLICABLE OSHA EXCAVATION, TRENCHING, AND SHORING STANDARDS.

PITS FOR BORING SHALL BE EXCAVATED NO MORE THAN 48 HOURS IN ADVANCE OF BORING AND BACKFILLED WITHIN 48 HOURS AFTER BORING OPERATIONS ARE COMPLETED. WHILE PITS ARE OPEN, THEY SHALL BE CLEARLY MARKED, FENCED OFF AND PROTECTED BY BARRICADES AND FENCING.

CASCADE TYPE (OR APPROVED EQUAL) CASING SPACERS SHALL BE USED TO CENTER WATER MAIN IN CASING PIPE. (SPACED EVERY 10' MIN.) METAL TO METAL CONTACT IS NOT PERMITTED.

CASCADE CASING SPACERS SHALL BE USED TO CENTER SANITARY SEWER IN CASING PIPE. (SPACED EVERY 10' MIN.)

STORM SEWER IS NOT REQUIRED TO BE CENTERED WITH IN THE CASING PIPE.

CASCADE CASING END SEALS SHALL BE USED TO LOOSELY SEAL THE ENDS OF THE CASING OR BRICK AND MORTAR.

ANNULAR SPACE BETWEEN CASING AND MAIN WILL NOT BE FILLED.

VALVES AND BENDS (IF ANY) WILL BE SITUATED TO ALLOW FOR EASIER REMOVAL OF MAIN FOR REPAIRS.

STEEL CASING PIPE SHALL HAVE A MINIMUM YIELD STRENGTH OF 35,000 PSI WITH WELDED JOINTS.

ALL WATER MAIN WITHIN CASING SHALL BE INSTALLED WITH FIELD LOK OR APPROVED EQUAL GASKET JOINTS.

DEWATERING SHALL BE CONSIDERED INCIDENTAL TO THE BORE AND JACK.

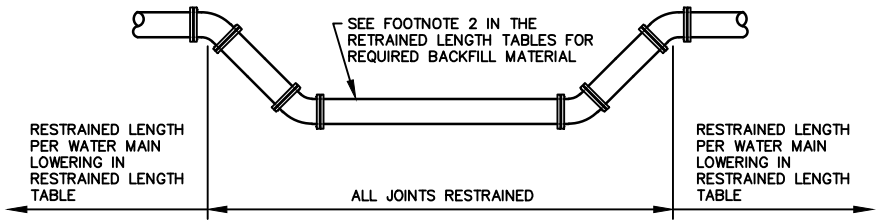
FIELD LOCK GASKETS MUST BE FROM THE SAME MANUFACTURER AS THE PIPE.

BORE AND JACK DETAIL

Village of Sugar Grove
10 Municipal Drive
Sugar Grove, Illinois 60554
Phone: (630) 391-7200

SCALE:	FOLDER:	DRAWING NUMBER:	DRAWN BY:
N.T.S.	SG-WA	09	KKP
DATE: 4/2/24			REVISED:

WATER MAIN LOWERING



NOTES:

1. THE 10–POINT SOIL TEST EVALUATION FOR DUCTILE IRON PIPE CONFORMING TO ANSI/AWWA C105/A21.5 SHALL BE USED TO DETERMINE THE CORROSIVITY OF THE SOILS ON A PER PROJECT BASIS AND WHETHER OR NOT POLYETHYLENE WRAP IS REQUIRED FOR CORROSION PROTECTION.
2. MECHANICAL JOINT FITTINGS WITH RETAINER GLANDS AND FIELD LOK 350 GASKETS OR APPROVED EQUAL SHALL BE USED TO SATISFY THE RESTRAINED LENGTH REQUIREMENTS. FIELD LOK GASKETS MUST BE FROM THE SAME MANUFACTURER AS THE PIPE.
3. THE MINIMUM RESTRAINT LENGTHS ARE ALL IN ADDITION TO THE USE OF PRECAST CONCRETE THRUST BLOCKS FOR HORIZONTAL BENDS AND DEAD ENDS.
4. THE WATER MAIN LOWERING RESTRAINED LENGTH IS ON EACH SIDE OF THE OUTERMOST BENDS. WHEN LOWERING WATER MAIN UNDER A PIPE WITH 4 BENDS, ALL JOINTS SHALL BE RESTRAINED BETWEEN THE OUTERMOST 45 DEGREE BENDS. THE WATER MAIN SHALL HAVE COMPACTED CA–7 FROM 4" BELOW THE PIPE TO 6" ABOVE THE PIPE WITHIN THE LOWERED SECTION.
5. THE TOTAL LENGTH BETWEEN THE FIRST JOINTS ON EITHER SIDE OF THE TEE ON THE RUN SHALL BE A MINIMUM OF 10'.

Minimum Restrained Length Tables Without Polyethylene Wrap

Minimum Restrained Length on Each Side of Fitting (ft)[1]				
	8"	10"	12"	16"
11.25˚ Horizontal Bend	5	5	6	8
22.5˚ Horizontal Bend	9	11	12	16
45˚ Horizontal Bend	18	21	25	33
Water Main Lowering[2]	38	47	57	77
Dead End	41	50	60	79

Minimum Length of Tee Branch to be Restrained (ft)[3]					
	6"	8"	10"	12"	16"
8" Tee Run X Branch	25	37			
10" Tee Run X Branch	23	35	45		
12" Tee Run X Branch	22	34	44	55	
16" Tee Run X Branch	19	32	42	53	74

Minimum Restrained Length of Larger Pipe Side (ft)			
	8"	10"	12"
Reducer: 10" X	17		
Reducer: 12" X	32	18	
Reducer: 16" X	58	47	34

Minimum Restrained Length Tables With Polyethylene Wrap

Minimum Restrained Length on Each Side of Fitting (ft)[1]				
	8"	10"	12"	16"
11.25˚ Horizontal Bend	5	6	7	10
22.5˚ Horizontal Bend	10	12	15	19
45˚ Horizontal Bend	21	25	30	39
Water Main Lowering[2]	56	69	83	111
Dead End	59	71	85	112

Minimum Length of Tee Branch to be Restrained (ft)[3]					
	6"	8"	10"	12"	16"
8" Tee Run X Branch	36	52			
10" Tee Run X Branch	33	50	65		
12" Tee Run X Branch	31	49	63	78	
16" Tee Run X Branch	27	45	60	76	105

Minimum Restrained Length of Larger Pipe Side (ft)			
	8"	10"	12"
Reducer: 10" X	24		
Reducer: 12" X	45	25	
Reducer: 16" X	82	67	48

MINIMUM RESTRAINED LENGTH

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Sugar Grove, Illinois 60554
Phone: (630) 391–7200

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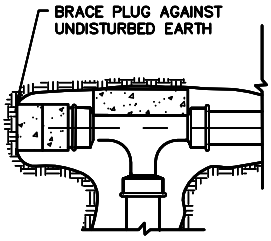
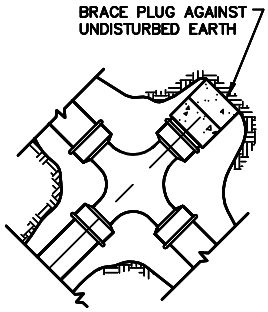
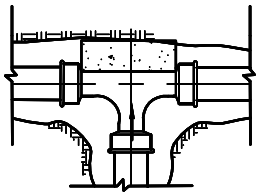


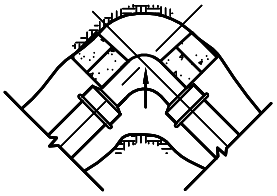
PLUGGED TEE



PLUGGED CROSS



TEE



90° ELBOW

NOTES:

1. ALL PRECAST CONCRETE BLOCKS SHALL BEAR AGAINST UNDISTURBED EARTH.
2. ARROWS INDICATE DIRECTION OF THRUST.
3. ALL BLOCKS TO BE 3000 P.S.I. CONCRETE AND A MINIMUM OF 12" THICK.
4. ALL FITTINGS SHOWN IN PLAN VIEW EXCEPT WATER MAIN LOWERING IS IN PROFILE..

TYPICAL THRUST BLOCK INSTALLATION

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10 Municipal Drive
Sugar Grove, Illinois 60554
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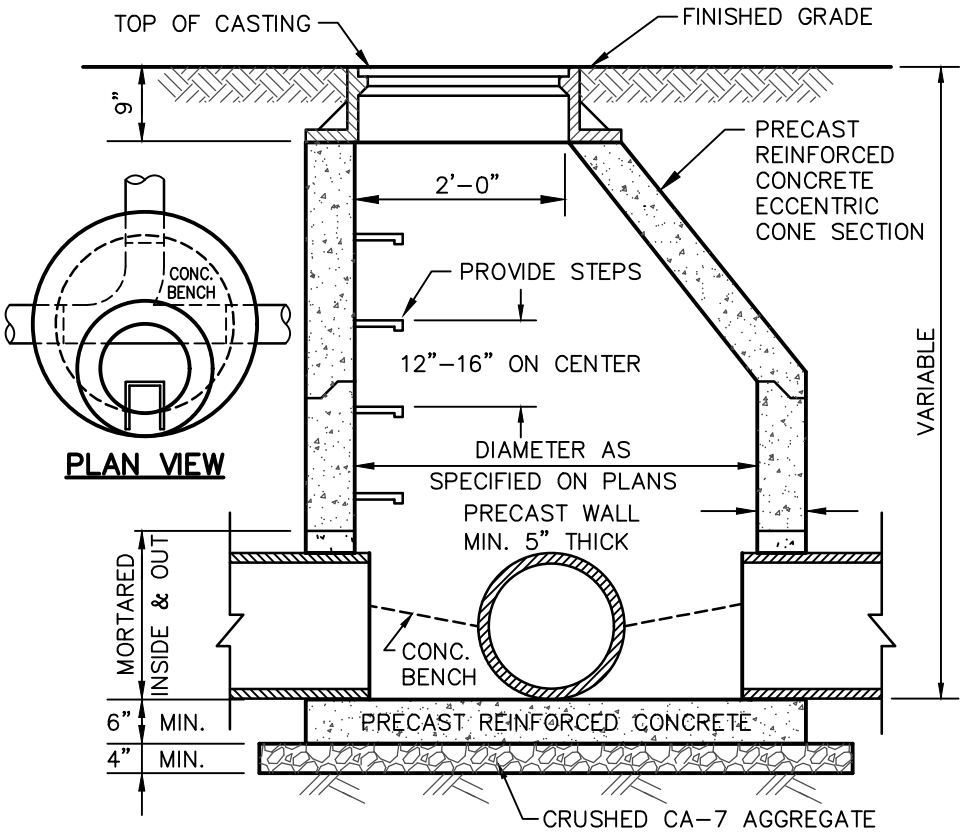

NOTES:

1. IN TURF AREAS, FRAME AND LID SHALL BE NEENAH R-1713 FRAME WITH TYPE B COVER, EJIW 1050, OR APPROVED EQUAL.
2. ALL "CLOSED" LIDS SHALL HAVE "VILLAGE OF SUGAR GROVE"AND "STORM" CAST INTO THEM.
3. IN PAVED AREAS, CAST-IN-PLACE CONCRETE BLOCKING A MINIMUM OF 10" THICK, EXTENDING 18" OUT FROM THE FRAME IS REQUIRED. THE SURFACE OF THE CONCRETE BLOCKING SHALL BE SET TO THE ELEVATION OF THE TOP OF THE BITUMINOUS BINDER COURSE. IN CONCRETE PAVEMENT APPLICATIONS, THE SURFACE OF THE BLOCKING SHALL MATCH THE FINISH PAVEMENT SURFACE.
4. A MAXIMUM OF 8" OF ADJUSTING RINGS SHALL BE USED FOR ALL MANHOLES. NO MORE THAN 2 PRECAST ADJUSTING RINGS, TOTALING NO MORE THAN 8" SHALL BE USED. BETWEEN EACH SECTION JOINT, ADJUSTING RING AND FRAME, APPLY A CONTINUOUS LAYER OF NON-HARDENING PREFORMED BITUMINOUS MASTIC MATERIAL.

STORM MANHOLE TYPE A

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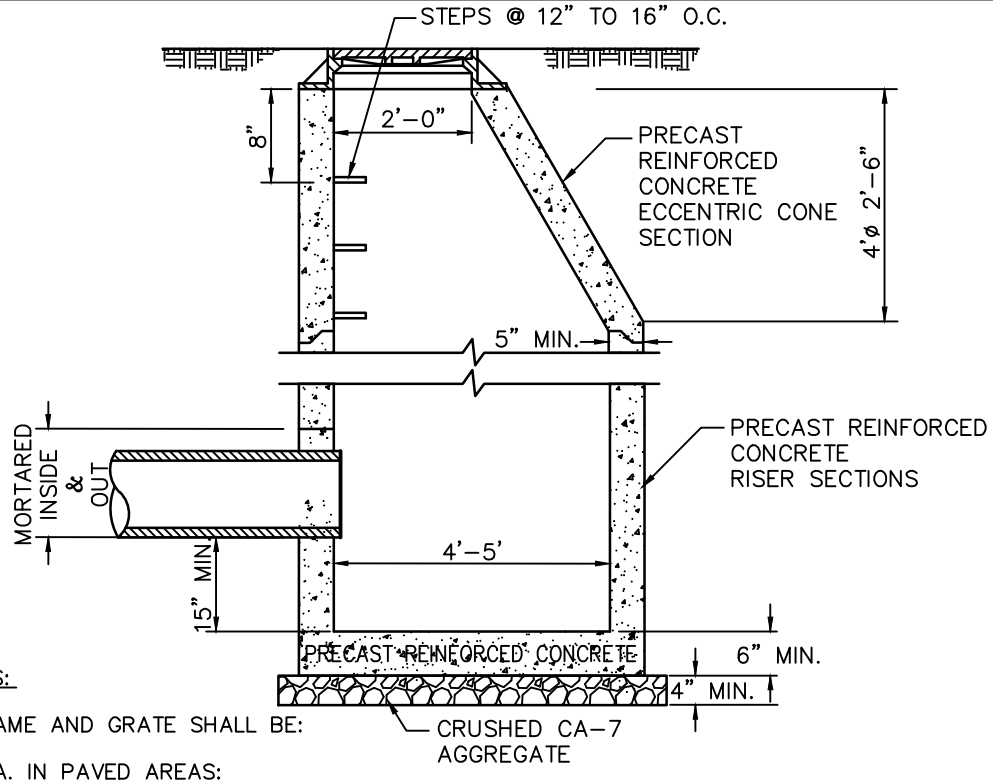

NOTES:

1. FRAME AND GRATE SHALL BE:

   A. IN PAVED AREAS:

      I. M-3.12 CURB & GUTTER (UNDER PONDING OR CONTINUOUS GRADE CONDITIONS): NEENAH R-3501-P, EJIW 7525, OR APPROVED EQUAL.

      II. B-6.12 CURB AND GUTTER (UNDER PONDING CONDITIONS): NEENAH R-3281-A, EJIW 7210 W/TYPE M2 GRATE AND T1 BACK, OR APPROVED EQUAL.

      III. B-6.12 CURB AND GUTTER (UNDER CONTINOUS GRADE CONDITIONS): NEENAH R-3281-AL, EJIW 7210 W/TYPE M4 VANE GRATE AND T1 BACK, OR APPROVED EQUAL.

   B. IN NON-PAVED AREAS: NEENAH R-1713 WITH TYPE D COVER, EJIW 1050 WITH TYPE M1 RADIAL FLAT GRATE, OR APPROVED EQUAL.

2. ROADSIDE DITCH DRAINAGE STRUCTURES SHALL BE EVALUATED ON A CASE-BY-CASE BASIS.

3. A MAXIMUM OF 8" OF ADJUSTING RINGS SHALL BE USED FOR ALL CATCH BASINS. NO MORE THAN 2 PRECAST ADJUSTING RINGS, TOTALING NO MORE THAN 8" SHALL BE USED. BETWEEN EACH SECTION JOINT, ADJUSTING RING AND FRAME, APPLY A CONTINUOUS LAYER OF NON-HARDENING PREFORMED BITUMINOUS MASTIC MATERIAL.

4. ALL CURB INLET FRAMES SHALL BE SEALED WITH A HYDRAULIC CEMENT FILLET BETWEEN THE FRAME AND TOP ADJUSTING RING OR CONE.

5. ALL CLOSED STRUCTURE LIDS SHALL HAVE "VILLAGE OF SUGAR GROVE" AND "STORM" CAST INTO TOP AND SHALL BE THE CONCEALED PICK HOLE TYPE.

CATCH BASIN - TYPE A

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10 Municipal Drive
Sugar Grove, Illinois 60554
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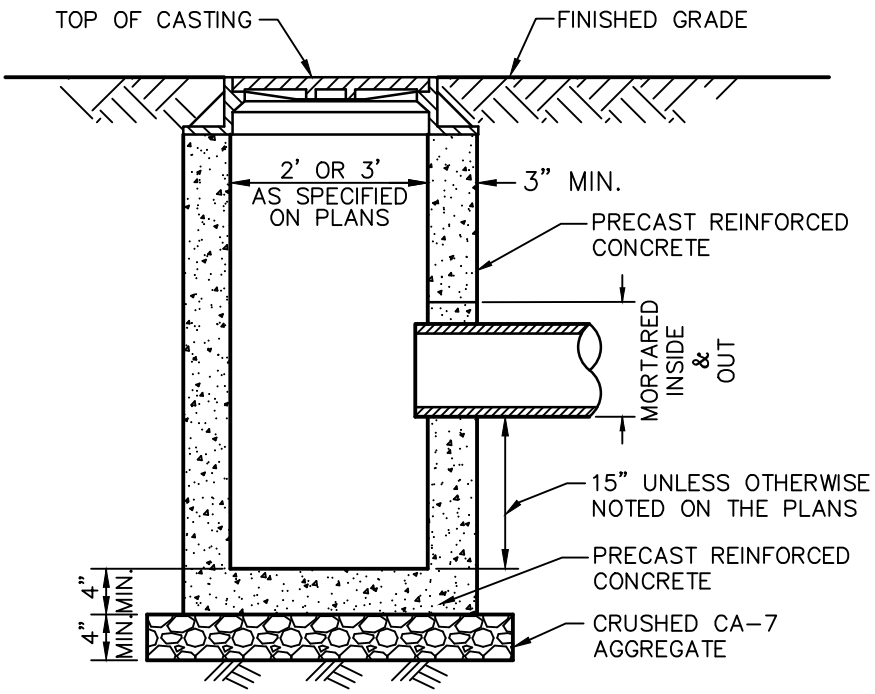

NOTES:

1. FRAME AND GRATE SHALL BE:

   A. IN PAVED AREAS:
      I. M-3.12 CURB & GUTTER (UNDER PONDING OR CONTINUOUS GRADE CONDITIONS): NEENAH R-3501-P, EJIW 7525, OR APPROVED EQUAL.
      II. B-6.12 CURB AND GUTTER (UNDER PONDING CONDITIONS): NEENAH R-3281-A, EJIW 7210 W/TYPE M2 GRATE AND T1 BACK, OR APPROVED EQUAL.
      III. B-6.12 CURB AND GUTTER (UNDER CONTINOUS GRADE CONDITIONS): NEENAH R-3281-AL, EJIW 7210 W/TYPE M4 VANE GRATE AND T1 BACK, OR APPROVED EQUAL.

   B. IN NON-PAVED AREAS: NEENAH R-1713 WITH TYPE D COVER, EJIW 1050 WITH TYPE M1 RADIAL FLAT GRATE, OR APPROVED EQUAL.

2. ROADSIDE DITCH DRAINAGE STRUCTURES SHALL BE EVALUATED ON A CASE-BY-CASE BASIS.

3. A MAXIMUM OF 8" OF ADJUSTING RINGS SHALL BE USED FOR ALL CATCH BASINS. NO MORE THAN 2 PRECAST ADJUSTING RINGS, TOTALING NO MORE THAN 8" SHALL BE USED. BETWEEN EACH SECTION JOINT, ADJUSTING RING AND FRAME, APPLY A CONTINUOUS LAYER OF NON-HARDENING PREFORMED BITUMINOUS MASTIC MATERIAL.

4. ALL CURB INLET FRAMES SHALL BE SEALED WITH A HYDRAULIC CEMENT FILLET BETWEEN THE FRAME AND TOP ADJUSTING RING OR CONE.

5. ALL CLOSED STRUCTURE LIDS SHALL HAVE "VILLAGE OF SUGAR GROVE" AND "STORM" CAST INTO TOP AND SHALL BE THE CONCEALED PICK HOLE TYPE.

CATCH BASIN - TYPE C

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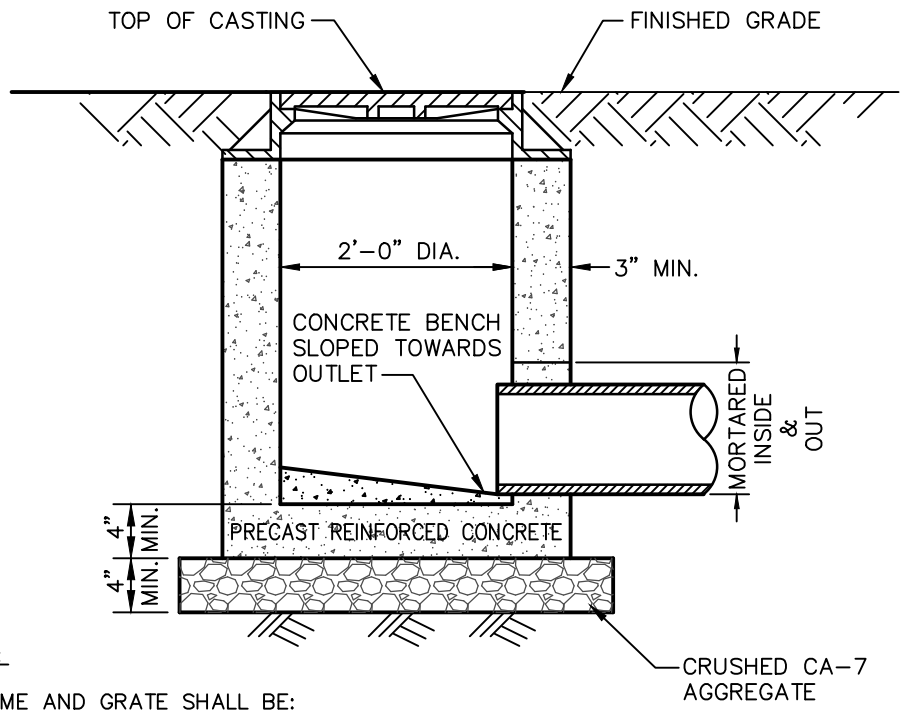

NOTES:

1. FRAME AND GRATE SHALL BE:

   A. IN PAVED AREAS:
      I. M-3.12 CURB & GUTTER (UNDER PONDING OR CONTINUOUS GRADE CONDITIONS): NEENAH R-3501-P, EJIW 7525, OR APPROVED EQUAL.
      II. B-6.12 CURB AND GUTTER (UNDER PONDING CONDITIONS): NEENAH R-3281-A, EJIW 7210 W/TYPE M2 GRATE AND T1 BACK, OR APPROVED EQUAL.
      III. B-6.12 CURB AND GUTTER (UNDER CONTINOUS GRADE CONDITIONS): NEENAH R-3281-AL, EJIW 7210 W/TYPE M4 VANE GRATE AND T1 BACK, OR APPROVED EQUAL.

   B. IN NON-PAVED AREAS: NEENAH R-1713 WITH TYPE D COVER, EJIW 1050 WITH TYPE M1 RADIAL FLAT GRATE, OR APPROVED EQUAL.

2. ROADSIDE DITCH DRAINAGE STRUCTURES SHALL BE EVALUATED ON A CASE-BY-CASE BASIS.

3. A MAXIMUM OF 8" OF ADJUSTING RINGS SHALL BE USED FOR ALL CATCH BASINS. NO MORE THAN 2 PRECAST ADJUSTING RINGS, TOTALING NO MORE THAN 8" SHALL BE USED. BETWEEN EACH SECTION JOINT, ADJUSTING RING AND FRAME, APPLY A CONTINUOUS LAYER OF NON-HARDENING PREFORMED BITUMINOUS MASTIC MATERIAL.

4. ALL CURB INLET FRAMES SHALL BE SEALED WITH A HYDRAULIC CEMENT FILLET BETWEEN THE FRAME AND TOP ADJUSTING RING OR CONE.

5. ALL CLOSED STRUCTURE LIDS SHALL HAVE "VILLAGE OF SUGAR GROVE" AND "STORM" CAST INTO TOP AND SHALL BE THE CONCEALED PICK HOLE TYPE.

INLET - TYPE A

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10 Municipal Drive
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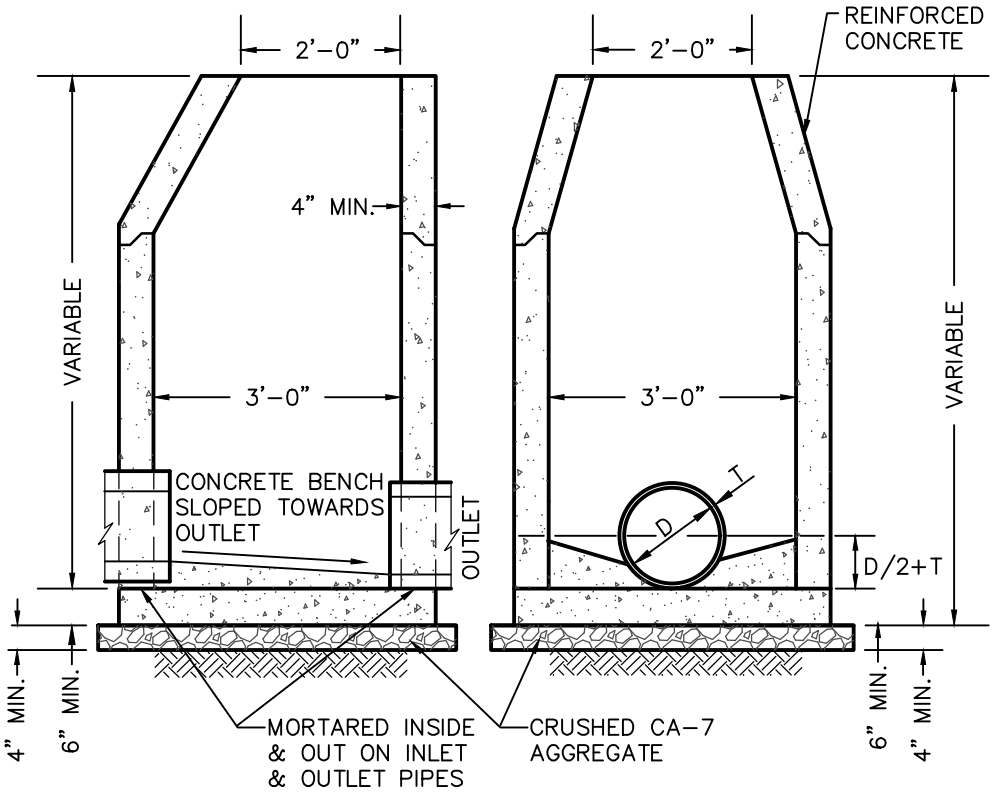
PLAN–ECCENTRIC

PLAN–CONCENTRIC



NOTES:

1. FRAME AND GRATE SHALL BE:

   A. IN PAVED AREAS:
      I. M–3.12 CURB & GUTTER (UNDER PONDING OR CONTINUOUS GRADE CONDITIONS): NEENAH R–3501–P, EJIW 7525, OR APPROVED EQUAL.
      II. B–6.12 CURB AND GUTTER (UNDER PONDING CONDITIONS): NEENAH R–3281–A, EJIW 7210 W/TYPE M2 GRATE AND T1 BACK, OR APPROVED EQUAL.
      III. B–6.12 CURB AND GUTTER (UNDER CONTINOUS GRADE CONDITIONS): NEENAH R–3281–AL, EJIW 7210 W/TYPE M4 VANE GRATE AND T1 BACK, OR APPROVED EQUAL.

   B. IN NON–PAVED AREAS: NEENAH R–1713 WITH TYPE D COVER, EJIW 1050 WITH TYPE M1 RADIAL FLAT GRATE, OR APPROVED EQUAL.

2. ROADSIDE DITCH DRAINAGE STRUCTURES SHALL BE EVALUATED ON A CASE–BY–CASE BASIS.

3. A MAXIMUM OF 8" OF ADJUSTING RINGS SHALL BE USED FOR ALL INLETS. NO MORE THAN 2 PRECAST ADJUSTING RINGS, TOTALING NO MORE THAN 8" SHALL BE USED. BETWEEN EACH SECTION JOINT, ADJUSTING RING AND FRAME, APPLY A CONTINUOUS LAYER OF NON–HARDENING PREFORMED BITUMINOUS MASTIC MATERIAL.

4. ALL CURB INLET FRAMES SHALL BE SEALED WITH A HYDRAULIC CEMENT FILLET BETWEEN THE FRAME AND TOP ADJUSTING RING OR CONE.

5. ALL CLOSED STRUCTURE LIDS SHALL HAVE "VILLAGE OF SUGAR GROVE" AND "STORM" CAST INTO TOP AND SHALL BE THE CONCEALED PICK HOLE TYPE.

INLET - TYPE B

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10 Municipal Drive
Sugar Grove, Illinois 60554
Phone: (630) 391–7200

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N.T.S.	SG-ST	05	CLN
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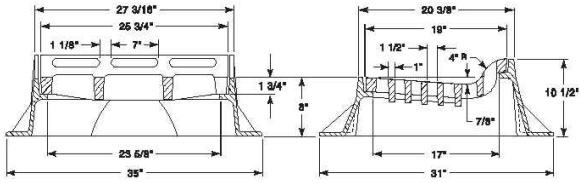
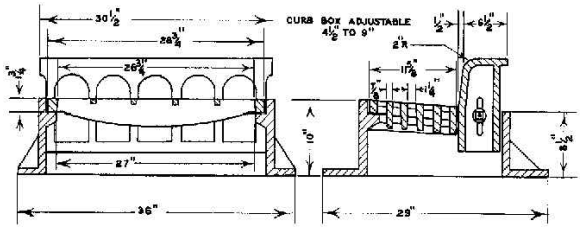
M–3.12 CURB & GUTTER
(UNDER PONDING OR CONTINUOUS GRADE CONDITIONS)

NEENAH R–3501–P, EJIW 7525
OR APPROVED EQUAL



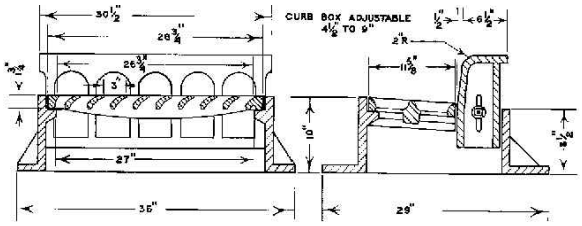
B–6.12 CURB & GUTTER
(UNDER PONDING CONDITIONS)

NEENAH R–3281–A, EJIW 7210
W/ TYPE M1 GRATE AND T1 BACK
OR APPROVED EQUAL



B–6.12 CURB & GUTTER
(UNDER CONTINUOUS GRADE CONDITIONS)

NEENAH R–3281–AL, EJIW 7210 W/TYPE M4
VANE GRATE & T1 BACK OR APPROVED
EQUAL



STANDARD CASTINGS

Village of Sugar Grove
10 Municipal Drive
Sugar Grove, Illinois 60554
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R-4340-B SERIES OR EAST JORDAN 6527 ROUND BEHIVE GRATE

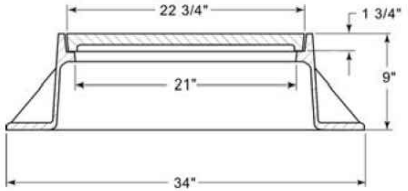
Dimensions in inches

Catalog No.	O Dia.	O.D. Lugs	Dia. Bhv.	Ht. Bhv.	No. Lugs	Size Bars	Size Op.	Pipe Size
R-4340-A	34	26 1/4	23 7/8	6	*	1 1/2	1	24
R-4340-B	33	23	23	2	6	2	1 1/2	24
R-4340-C	33	29	23	5 3/4	4	1	1 1/4	24
R-4340-F	33	28	25	5	4	1	1	24
R-4340-F1 **	25 1/2	21 3/4	17	3	4	1	1	18
R-4340-G **	28	18	19	3	3	1 3/4	2	15
R-4340-H	25	15	17	3	3	1 5/8	1 3/4	12

* Furnished with ring instead of lugs.
** Frame not available.
Grate flange lettered "DUMP NO WASTE – DRAINS TO RIVER"

Illustrating R-4340-B

R-1713 FRAME AND LID, EJIW 1050 OR APPROVED EQUAL



NOTE:

TYPE D GRATES TO BE USED FOR OPEN LIDS. CLOSED LIDS SHALL HAVE "VILLAGE OF SUGAR GROVE" AND "STORM" CAST INTO THE LID.

Illustrating type D cover – flat

STANDARD CASTINGS

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Sugar Grove, Illinois 60554
Phone: (630) 391-7200

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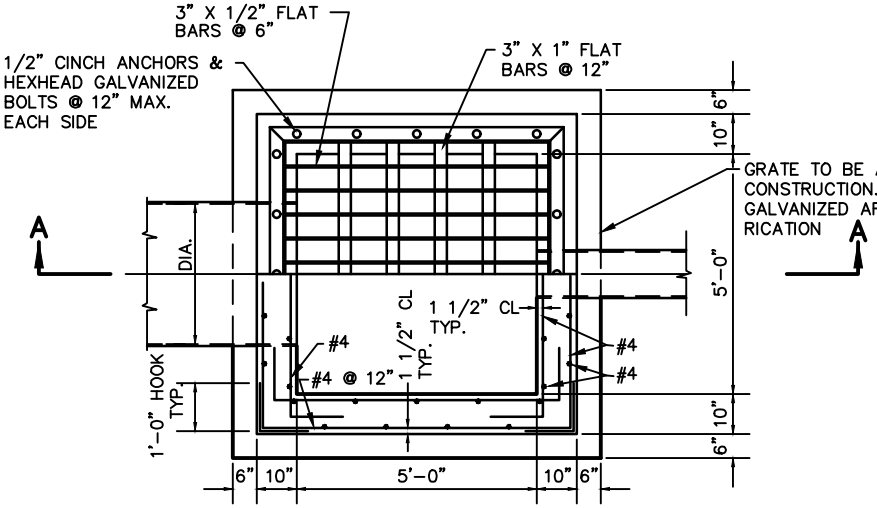
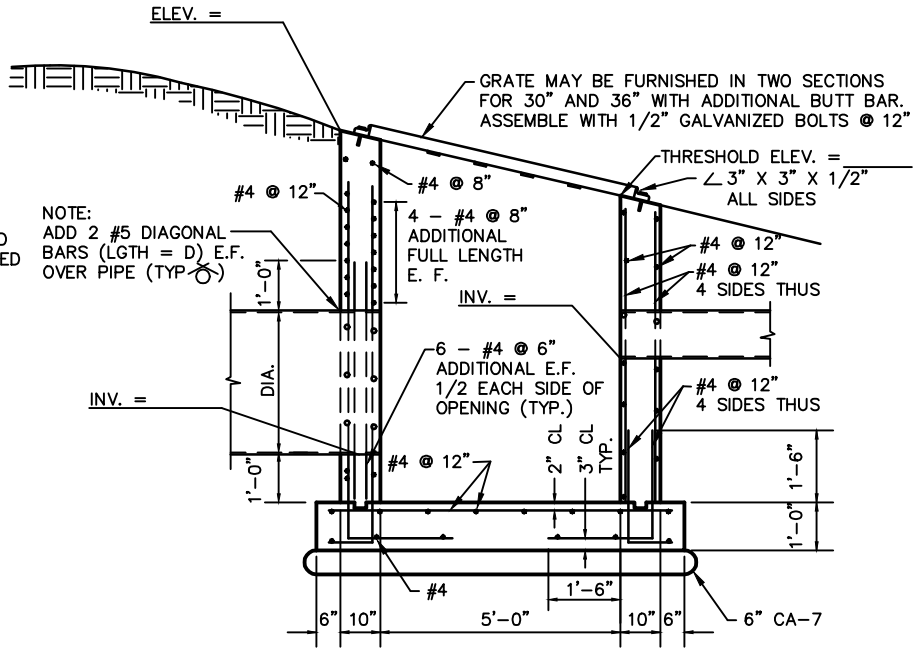


HALF – PLAN



SECTION A–A

SEE PLANS FOR PIPE DIAMETER AND ORIENTATION

NOTES

1. MIN. SOIL BEARING CAPACITY 1500 P.S.F.
2. ALL REINFORCING BARS SHALL BE DEFORMED NEW BILLET STEEL A.S.T.M. A 614, GRADE 60
3. CONCRETE COMPRESSION STRENGTH AT 28 DAYS, 3500 P.S.I. MINIMUM
4. ALL STRUCTURAL STEEL SHALL CONFORM TO THE LATEST A.S.T.M. REQUIREMENTS FOR A36 STEEL

FOR 18" THROUGH 36" OUTLET PIPE DIAMETERS

OUTFLOW STRUCTURE

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10 Municipal Drive
Sugar Grove, Illinois 60554
Phone: (630) 391-7200

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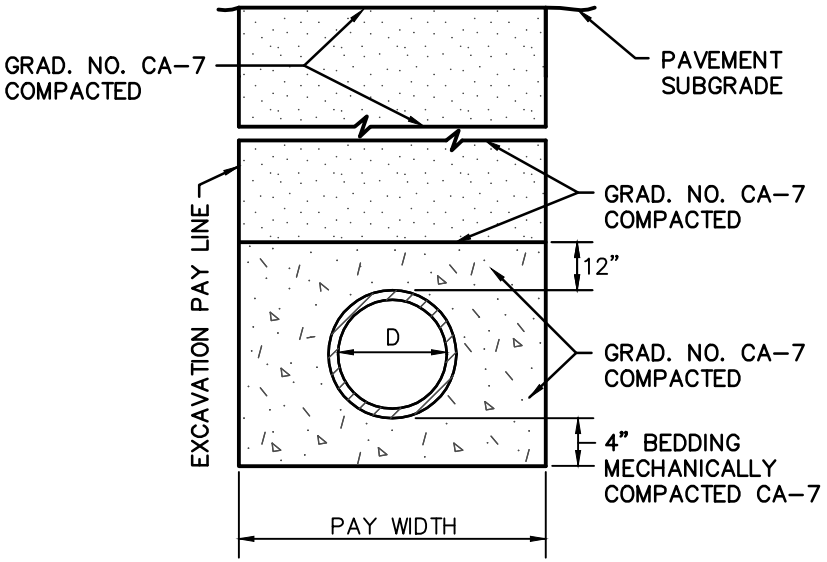
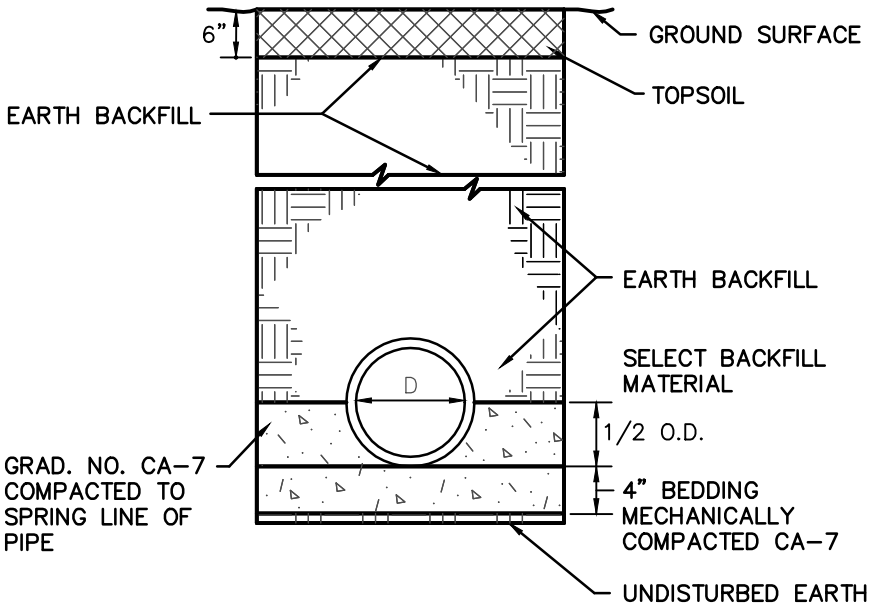


SECTION IN PAVED AREAS



SECTION IN GRASS AREAS

STORM SEWER TRENCH DETAIL

Village of Sugar Grove
10 Municipal Drive
Sugar Grove, Illinois 60554
Phone: (630) 391-7200

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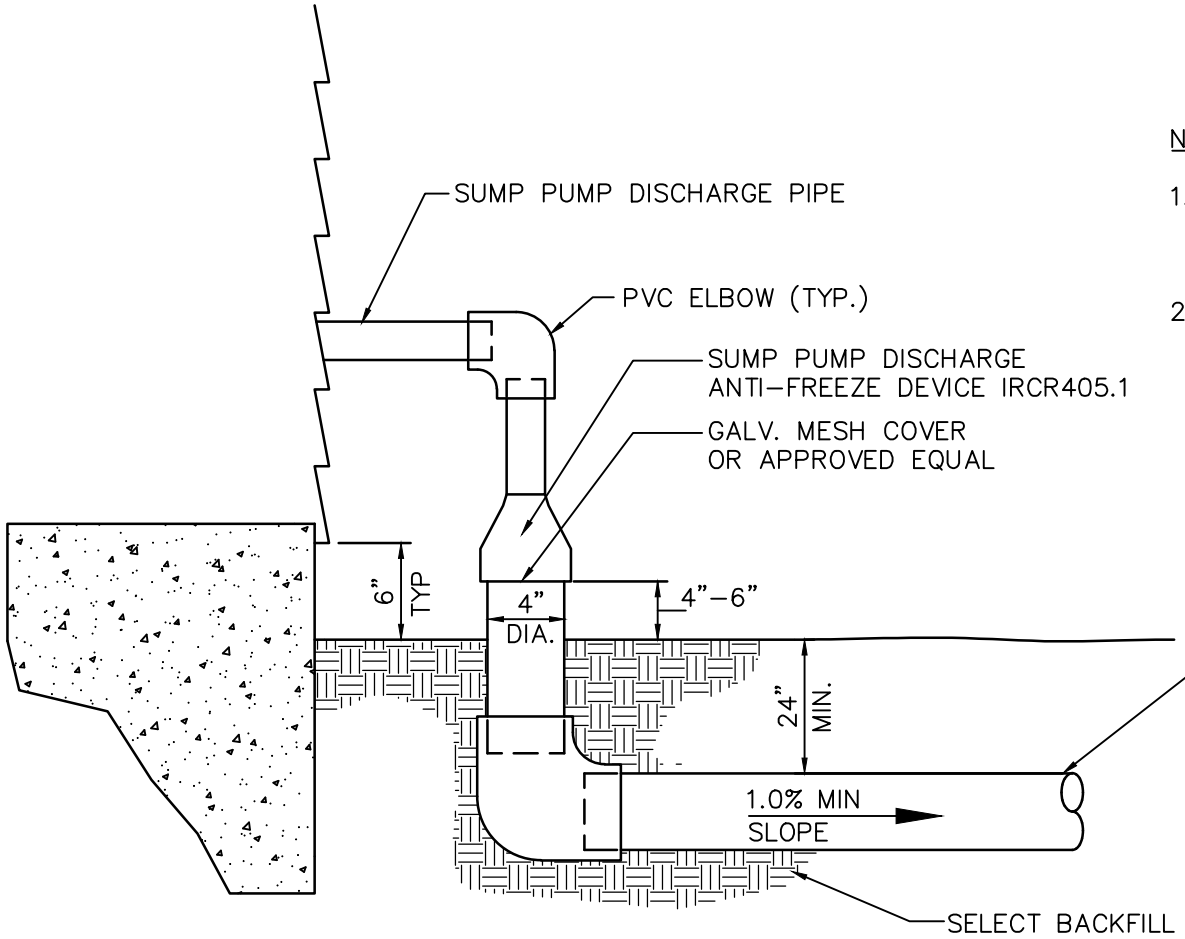

NOTES:

1. ALL SUMP PUMP SYSTEMS SHALL DISCHARGE TO THE PUBLIC STORM SEWER SYSTEM.
2. ALL PIPE USED FOR INDIVIDUAL SUMP PUMP DISCHARGE LINES SHALL BE 4" (MIN.) PVC (SDR 26).

SUMP PUMP SERVICE LINE

Village of Sugar Grove
10 Municipal Drive
Sugar Grove, Illinois 60554
Phone: (630) 391–7200

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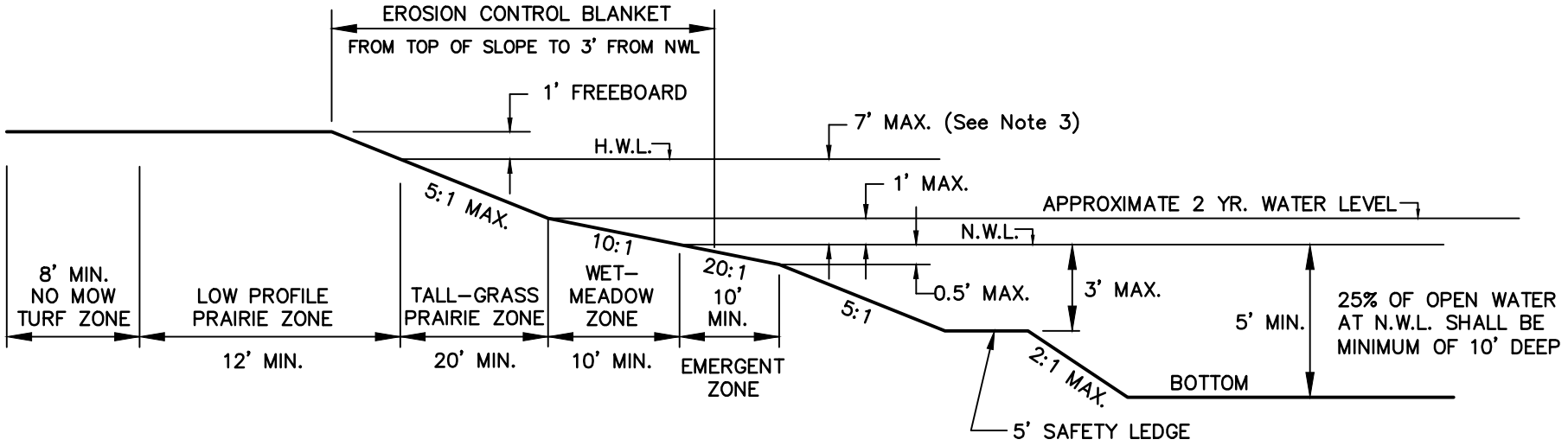
DATE: 4/2/24			REVISED:

NOTES:

1. ENTIRE BASIN FROM THE EMERGENT ZONE TO THE LOT LINE WILL CONTAIN A MINIMUM OF 12" ORGANIC RICH TOPSOIL.
2. BOTTOM OF WETLAND BASINS SHALL BE ESTABLISHED 6" BELOW NORMAL WATER LEVEL.
3. MAXIMUM BOUNCE SHALL BE SUBJECT TO DRAWDOWN TIME AND ITS EFFECT ON BASIN VEGETATION.
4. ALL WET BASINS SHALL INCORPORATE WIND-POWERED AERATION SYSTEMS TO OXYGENATE THE NORMAL WATER POOL.



NATURALIZED STORMWATER MANAGEMENT FACILITY CROSS-SECTION

Village of Sugar Grove
10 Municipal Drive
Sugar Grove, Illinois 60554
Phone: (630) 391-7200

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N.T.S.	SG-ST	14	KKP
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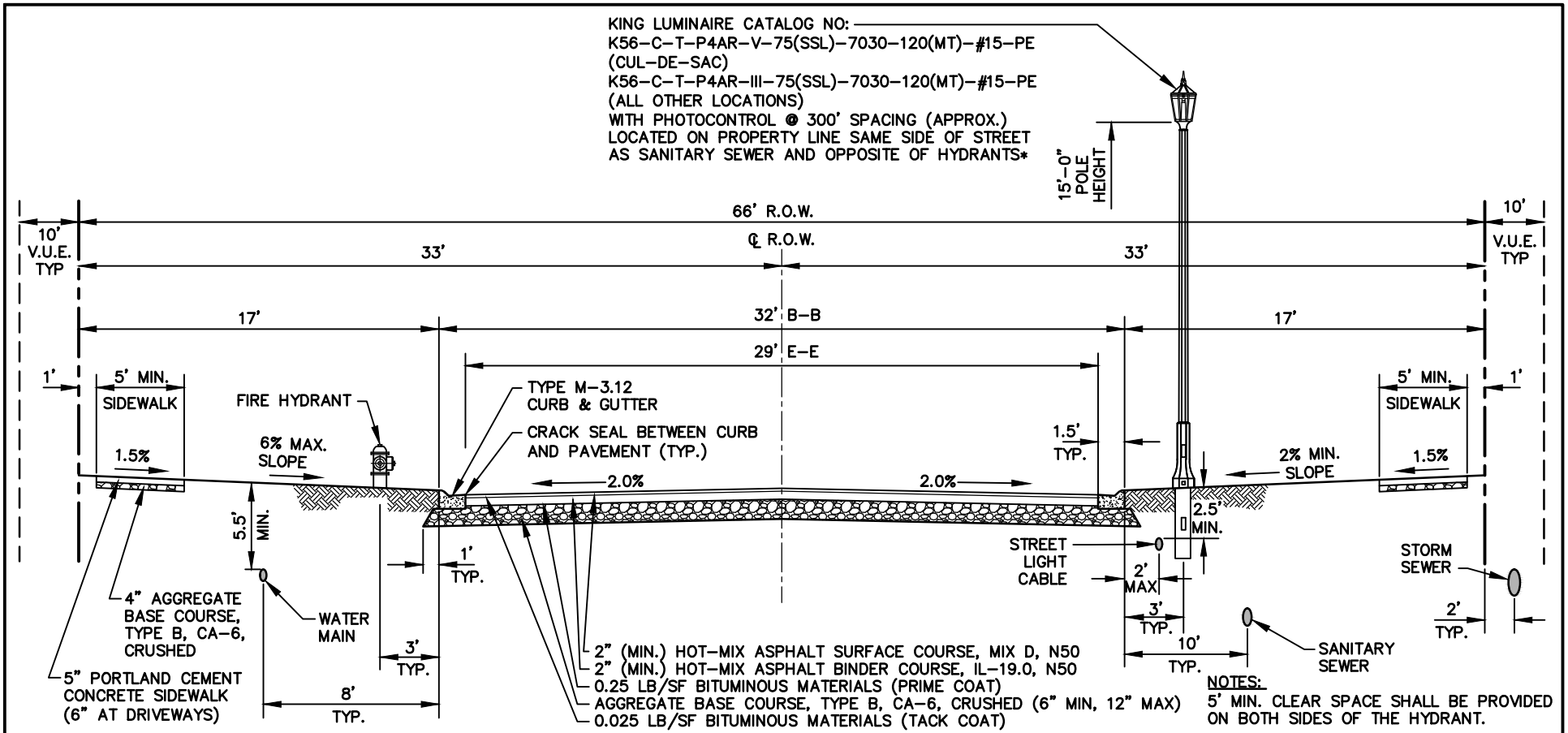


MINIMUM STRUCTURAL NUMBER = 3.3

IBR SHALL NOT BE < 3.0

NOTES:
5' MIN. CLEAR SPACE SHALL BE PROVIDED ON BOTH SIDES OF THE HYDRANT.

STREET LIGHTS AND FIRE HYDRANTS SHALL BE PLACED BY PROPERTY LOT LINE.

FIRE HYDRANTS AND STREET LIGHTS SHALL BE LOCATED OPPOSITE EACH OTHER.

*STREET LIGHT ALTERNATIVE (ONLY IF APPROVED IN WRITING BY VILLAGE STAFF) (SEE DETAIL SG-EL-03):
POLE HEIGHT = 19'-7"
LUMINAIRE IS "AMERICAN ELECTRIC LIGHTING" MODEL
150W ATBS-P30-MVOLT-R2-3K-P7-PCL1

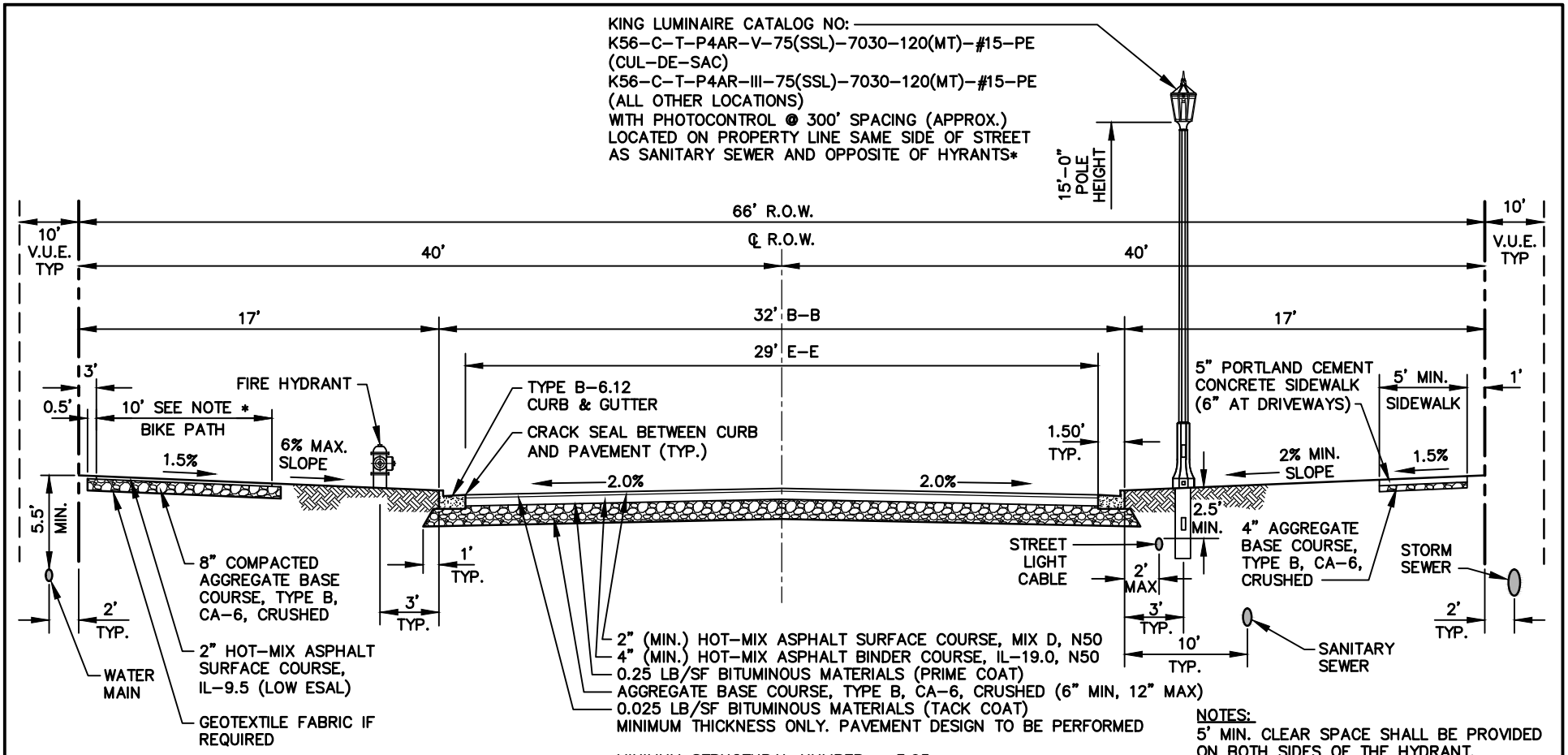
NOTES: UTILITY STRUCTURES ARE NOT PERMITTED IN PAVED AREAS.

STREET LIGHT SPACING SHALL BE APPROX. 300' UNLESS A PHOTOMETRIC ANALYSIS IS REQUIRED BY VILLAGE AND THEN SPACING SHALL BE AMENDED ACCORDINGLY.

TYPICAL STREET SECTION - LOCAL (66' ROW)

Village of Sugar Grove
160 Municipal Drive
Sugar Grove, Illinois 60554
Phone: 630-391-7230

SCALE:	FOLDER:	DRAWING NUMBER:	DRAWN BY:
N.T.S.	SG-RD	01	KKP
DATE: 4/2/24			REVISED:



MINIMUM STRUCTURAL NUMBER = 3.65

BR SHALL NOT BE < 3.0

*NOTE: AN ADDITIONAL 2' WIDE SHOULDER MAY BE REQUIRED.

NOTES:
5' MIN. CLEAR SPACE SHALL BE PROVIDED ON BOTH SIDES OF THE HYDRANT.

STREET LIGHTS AND FIRE HYDRANTS SHALL BE PLACED BY PROPERTY LOT LINE.

FIRE HYDRANTS AND STREET LIGHTS SHALL BE LOCATED OPPOSITE EACH OTHER.

*STREET LIGHT ALTERNATIVE (ONLY IF APPROVED IN WRITING BY VILLAGE STAFF) (SEE DETAIL SG-EL-03):
POLE HEIGHT = 19'-7"
LUMINAIRE IS "AMERICAN ELECTRIC LIGHTING" MODEL
150W ATBS-P30-MVOLT-R2-3K-P7-PCL1

NOTES: UTILITY STRUCTURES ARE NOT PERMITTED IN PAVED AREAS.

STREET LIGHT SPACING SHALL BE APPROX. 300' UNLESS A PHOTOMETRIC ANALYSIS IS REQUIRED BY VILLAGE AND THEN SPACING SHALL BE AMENDED ACCORDINGLY.

TYPICAL STREET SECTION - MINOR (66' ROW)

Village of Sugar Grove
160 Municipal Drive
Sugar Grove, Illinois 60554
Phone: 630-391-7230

SCALE:	FOLDER:	DRAWING NUMBER:	DRAWN BY:
N.T.S.	SG-RD	02	KKP
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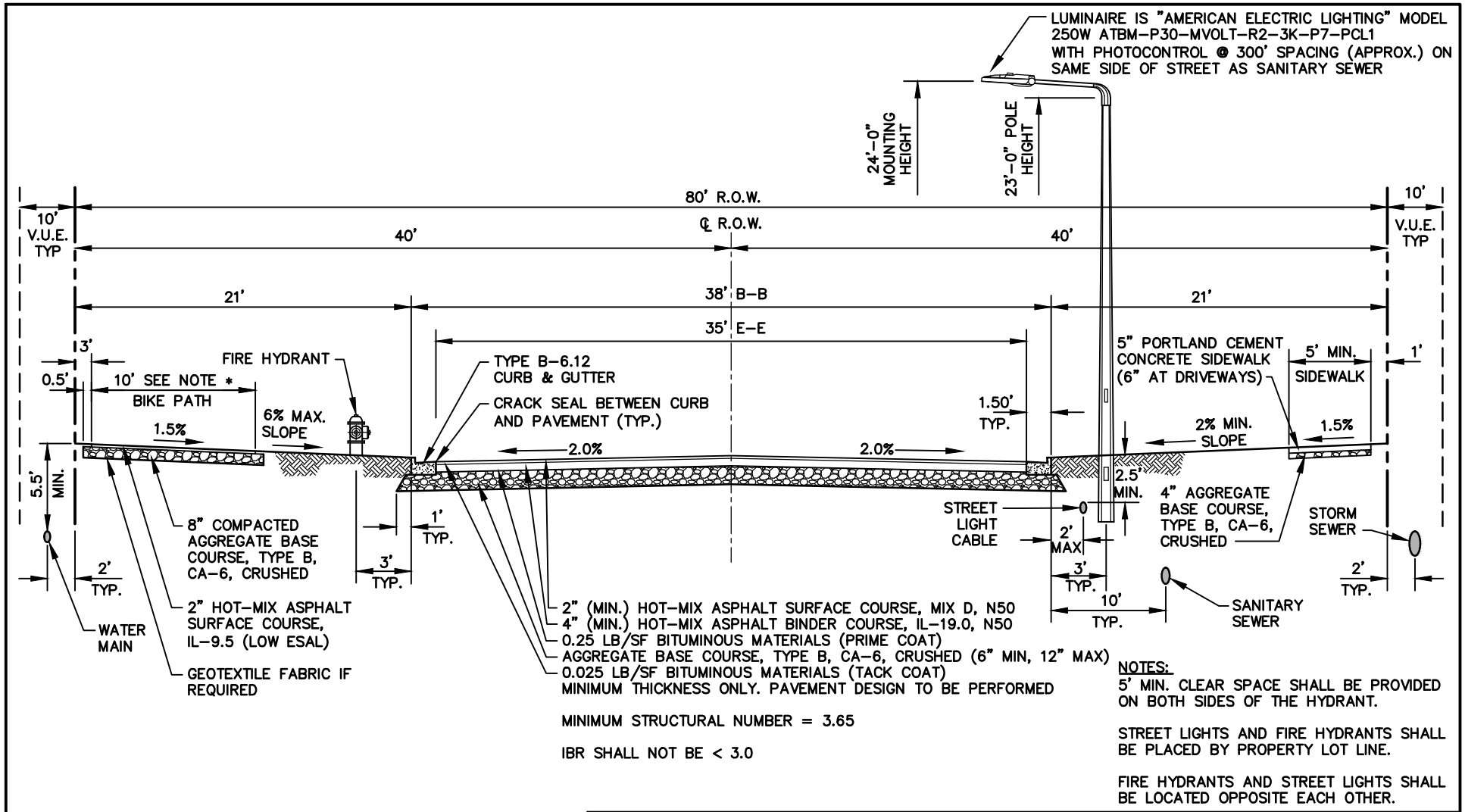

NOTES:
5' MIN. CLEAR SPACE SHALL BE PROVIDED ON BOTH SIDES OF THE HYDRANT.

STREET LIGHTS AND FIRE HYDRANTS SHALL BE PLACED BY PROPERTY LOT LINE.

FIRE HYDRANTS AND STREET LIGHTS SHALL BE LOCATED OPPOSITE EACH OTHER.

*NOTE: AN ADDITIONAL 2' WIDE SHOULDER MAY BE REQUIRED.

NOTES: UTILITY STRUCTURES ARE NOT PERMITTED IN PAVED AREAS.

STREET LIGHT SPACING SHALL BE APPROX. 300' UNLESS A PHOTOMETRIC ANALYSIS IS REQUIRED BY VILLAGE AND THEN SPACING SHALL BE AMENDED ACCORDINGLY.

TYPICAL STREET SECTION - COLLECTOR (80' ROW)

Village of Sugar Grove
160 Municipal Drive
Sugar Grove, Illinois 60554
Phone: 630-391-7230

SCALE:	FOLDER:	DRAWING NUMBER:	DRAWN BY:
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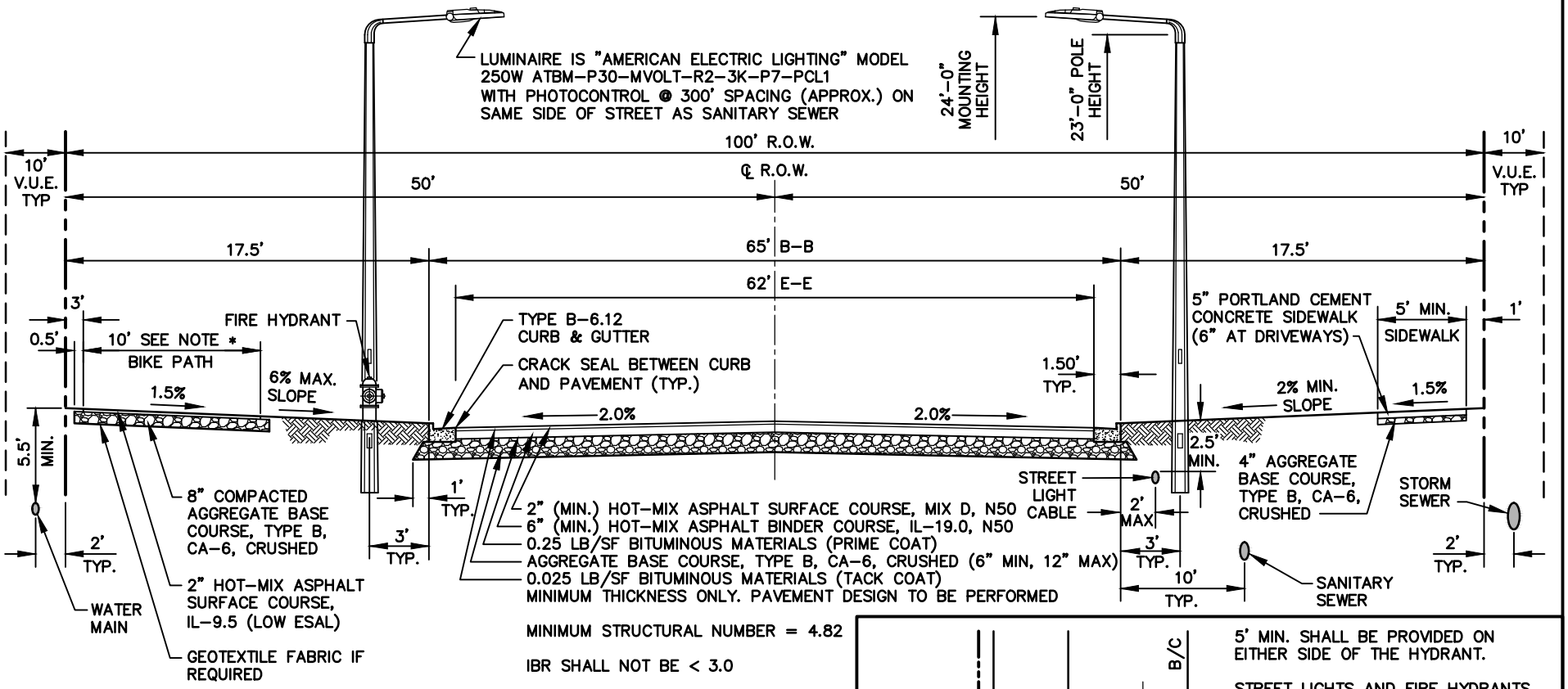
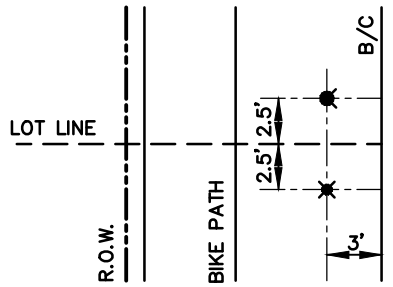
DATE: 4/2/24			REVISED:





5' MIN. SHALL BE PROVIDED ON EITHER SIDE OF THE HYDRANT.

STREET LIGHTS AND FIRE HYDRANTS SHALL BE PLACED BY PROPERTY LOT LINE.

FIRE HYDRANTS AND STREET LIGHTS SHALL BE LOCATED NEAR EACH OTHER, BUT SHALL ALSO HAVE ADEQUATE DISTANCE BETWEEN THEM SUCH THAT ACCESS TO THE FIRE HYDRANT IS NOT HINDERED.

*NOTE: AN ADDITIONAL 2' WIDE SHOULDER MAY BE REQUIRED.

NOTES: UTILITY STRUCTURES ARE NOT PERMITTED IN PAVED AREAS.

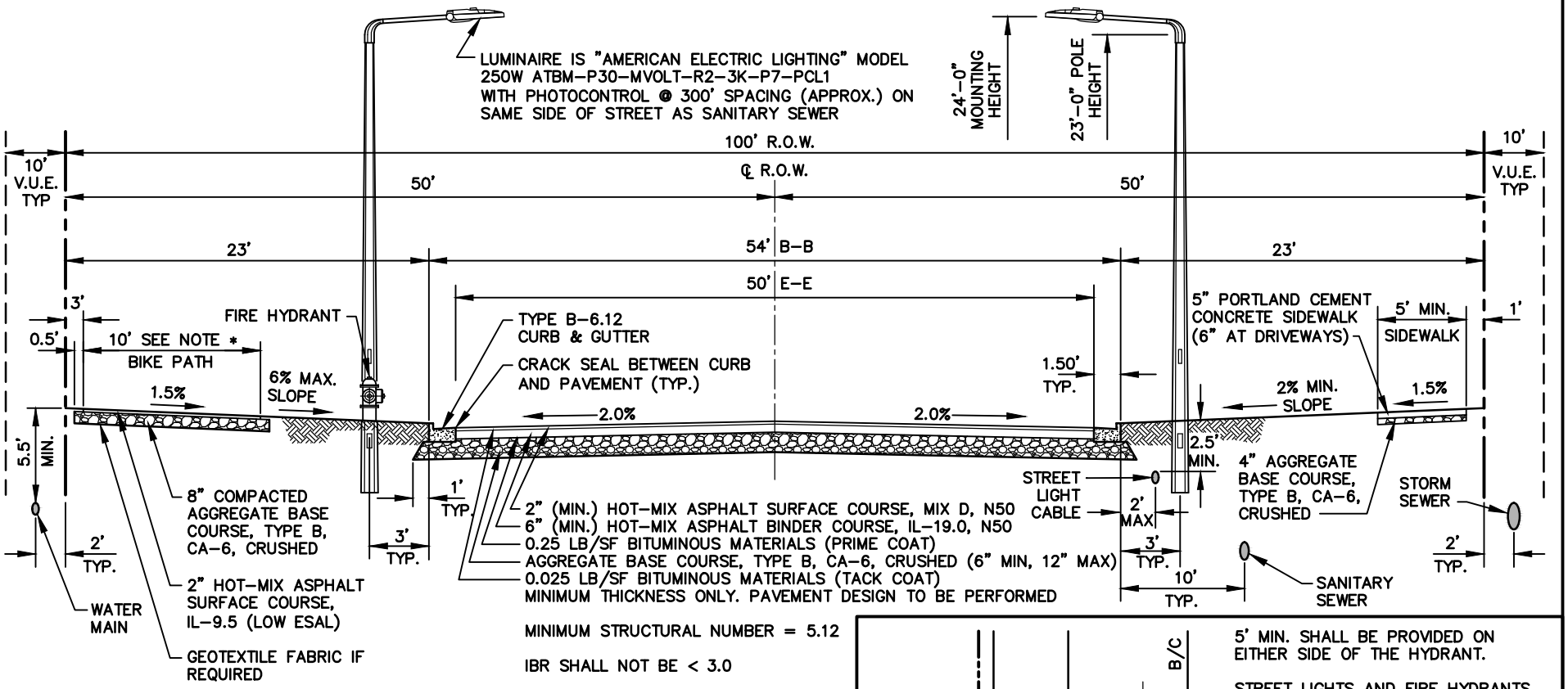
STREET LIGHT SPACING SHALL BE EVENLY STAGGERED FROM ONE SIDE OF THE ROAD TO THE OTHER.

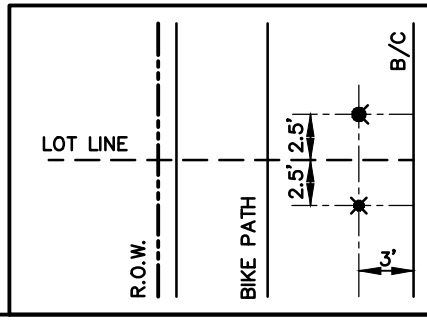
STREET LIGHT SPACING SHALL BE APPROX. 300' UNLESS A PHOTOMETRIC ANALYSIS IS REQUIRED BY VILLAGE AND THEN SPACING SHALL BE AMENDED ACCORDINGLY.

TYPICAL STREET SECTION - MAJOR (100' ROW)

Village of Sugar Grove
160 Municipal Drive
Sugar Grove, Illinois 60554
Phone: 630-391-7230

SCALE:	FOLDER:	DRAWING NUMBER:	DRAWN BY:
N.T.S.	SG-RD	04	KKP
DATE: 4/2/24			REVISED:





5' MIN. SHALL BE PROVIDED ON EITHER SIDE OF THE HYDRANT.

STREET LIGHTS AND FIRE HYDRANTS SHALL BE PLACED BY PROPERTY LOT LINE.

FIRE HYDRANTS AND STREET LIGHTS SHALL BE LOCATED NEAR EACH OTHER, BUT SHALL ALSO HAVE ADEQUATE DISTANCE BETWEEN THEM SUCH THAT ACCESS TO THE FIRE HYDRANT IS NOT HINDERED.

*NOTE: AN ADDITIONAL 2' WIDE SHOULDER MAY BE REQUIRED.

NOTES: UTILITY STRUCTURES ARE NOT PERMITTED IN PAVED AREAS.

STREET LIGHT SPACING SHALL BE EVENLY STAGGERED FROM ONE SIDE OF THE ROAD TO THE OTHER.

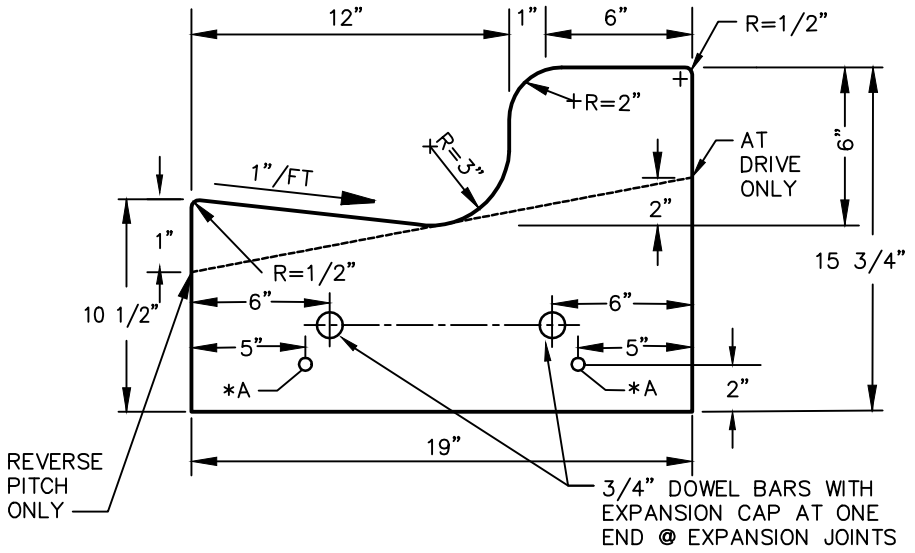
STREET LIGHT SPACING SHALL BE APPROX. 300' UNLESS A PHOTOMETRIC ANALYSIS IS REQUIRED BY VILLAGE AND THEN SPACING SHALL BE AMENDED ACCORDINGLY.

TYPICAL STREET SECTION - OR&I (100' ROW)

Village of Sugar Grove
160 Municipal Drive
Sugar Grove, Illinois 60554
Phone: 630-391-7230

SCALE:	FOLDER:	DRAWING NUMBER:	DRAWN BY:
N.T.S.	SG-RD	05	KKP
DATE: 4/2/24			REVISED:

1. ALL CONCRETE FOR CURB AND GUTTER SHALL CONFORM TO I.D.O.T. STD. SPEC. FOR ROAD & BRIDGE CONST. SEC. 606 AND BE CLASS "SI" CONCRETE SIX BAG MIX, WITH 5% TO 8% AIR ENTRAINMENT.
2. CONTRACTION JOINTS SHALL BE PLACED AT TEN (10) FOOT (MIN.) O.C. PER ARTICLE 420.05 AND SHALL BE SAW CUT TO A MINIMUM DEPTH OF TWO (2) INCHES FROM FRONT TO BACK WITHIN TWENTY-FOUR (24) HOURS OF CONCRETE PLACEMENT AND SHALL BE SEALED WITH POLYSULFIDE JOINT SEALANT PER ARTICLE 420.12.
3. 2- 3/4" X 18" SMOOTH DOWEL BARS WITH CAPS AND WITH ONE END GREASED SHALL BE USED AT ALL EXPANSION JOINTS. 3/4" PREMOLDED EXPANSION JOINTS TO BE PLACED AT ALL P.C.'S, P.T.'S AND AS INDICATED BELOW.
4. EXPANSION JOINTS, AS DETAILED HEREIN, SHALL BE CONSTRUCTED AT A MINIMUM SPACING AS INDICATED BELOW.
5. ALL CURBS SHALL BE CURED TO THE REQUIREMENTS OF ARTICLE 1020.13 OF THE STATE OF ILLINOIS STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, LATEST EDITION. MEMBRANE CURING SHALL BE W.R. MEADOWS CS 309 WITH WHITE FUGITIVE DYE AS PER TYPE II MEMBRANE CURING OR APPROVED EQUAL.
6. THE MINIMUM LONGITUDINAL CURB SLOPE SHALL BE 0.5%.
7. CUTS IN THE CURB WILL BE MADE FULL DEPTH WITH FULL EXPANSION JOINTS DRILLED AT EACH END AS SHOWN HEREIN.
8. CURB AND GUTTER SHALL HAVE A LIGHT BROOM FINISH.
9. CURB TO BE PLACED ON A 4" (MINIMUM) CRUSHED CA-6 AGGREGATE BASE THAT EXTENDS BEYOND THE BACK OF CURB BY 1'.
10. THE CURB AND GUTTER SHALL BE DEPRESSED AT ALL SIDEWALK AND MULTI-USE PATH TEES IN COMPLIANCE WITH ILLINOIS ACCESSIBILITY STANDARDS.
11. THE COMPACTED CURB SUBGRADE SHALL BE SHAPED PARALLEL TO CURB FLOW LINE AND POSITIVELY DRAINED TO THE INLETS AND CATCH BASINS.
12. THE MINIMUM CURB AND GUTTER REPLACEMENT SHALL BE 10 FEET AND SHALL BE NO LESS THAN JOINT TO JOINT EXCEPT WHERE RECOMMENDED BY THE VILLAGE ENGINEER.
13. ALL CURB AND GUTTER SHALL BE PROTECTED PER IDOT ARTICLE 1020.13 WHEN WEATHER CONDITIONS DICTATE.
14. ALL WEATHER AND CONCRETE CONDITIONS SHALL MEET IDOT REQUIREMENTS.
15. ALL WATER AND SANITARY SERVICES SHALL BE STAMPED WITH A "W" OR AN "S" ACCORDINGLY IN THE FACE OF THE CURB HEAD.
16. THE VILLAGE ENGINEER SHALL BE NOTIFIED 48 HOURS PRIOR TO ANY POUR.
17. CURB CUTS/DEPRESSIONS ARE PERMITTED AT DRIVEWAYS ON A CASE BY CASE BASIS AS APPROVED BY VILLAGE ENGINEER.



*A 2-20', NO.4 REBAR AT ALL TRENCH CROSSINGS

TYPICAL EXPANSION JOINT SPACING CURB AND GUTTER

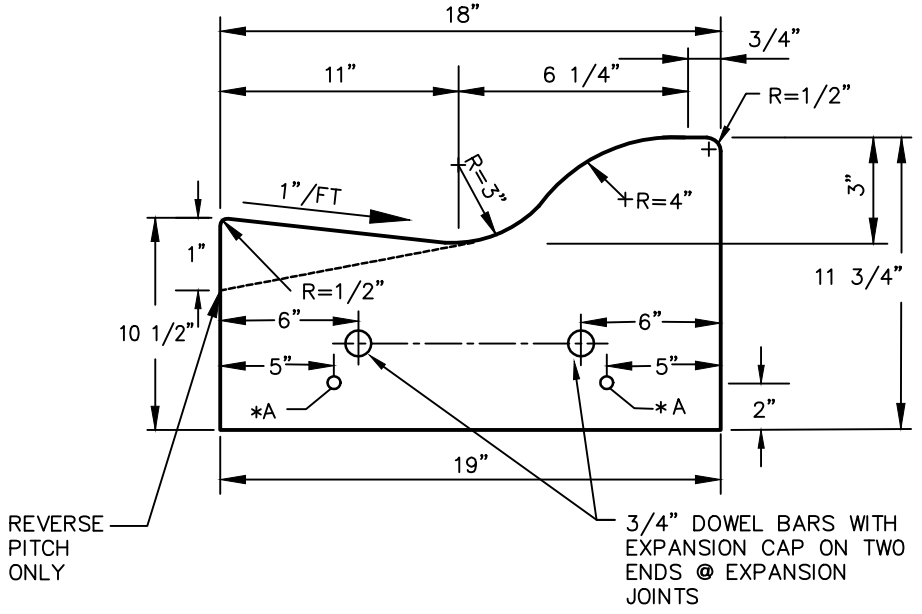
POUR TEMP. (DEG. F°)	EXPANSION JOINT (SPACING FT.)
40 MIN.....	70'
45.....	75'
50.....	80'
55.....	90'
60.....	95'
65.....	105'
70.....	115'
75.....	125'
80.....	145'
85.....	160'
90 MAX.....	190'

TYPE B-6.12 CONCRETE CURB & GUTTER

Village of Sugar Grove
160 Municipal Drive
Sugar Grove, Illinois 60554
Phone: 630-391-7230

SCALE:	FOLDER:	DRAWING NUMBER:	DRAWN BY:
N.T.S.	SG-RD	06	KKP
DATE: 4/2/24			REVISED:

1. ALL CONCRETE FOR CURB AND GUTTER SHALL CONFORM TO I.D.O.T. STD. SPEC. FOR ROAD & BRIDGE CONST. SEC. 606 AND BE CLASS "SI" CONCRETE SIX BAG MIX, WITH 5% TO 8% AIR ENTRAINMENT.
2. CONTRACTION JOINTS SHALL BE PLACED AT TEN (10) FOOT (MIN.) O.C. PER ARTICLE 420.05 AND SHALL BE SAW CUT TO A MINIMUM DEPTH OF TWO (2) INCHES FROM FRONT TO BACK WITHIN TWENTY–FOUR (24) HOURS OF CONCRETE PLACEMENT AND SHALL BE SEALED WITH POLYSULFIDE JOINT SEALANT PER ARTICLE 420.12.
3. 2– 3/4" X 18" SMOOTH DOWEL BARS WITH CAPS AND WITH ONE END GREASED SHALL BE USED AT ALL EXPANSION JOINTS. 3/4" PREMOLDED EXPANSION JOINTS TO BE PLACED AT ALL P.C.'S, P.T.'S AND AS INDICATED BELOW.
4. EXPANSION JOINTS, AS DETAILED HEREIN, SHALL BE CONSTRUCTED AT A MINIMUM SPACING AS INDICATED BELOW.
5. ALL CURBS SHALL BE CURED TO THE REQUIREMENTS OF ARTICLE 1020.13 OF THE STATE OF ILLINOIS STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, LATEST EDITION. MEMBRANE CURING SHALL BE W.R. MEADOWS CS 309 WITH WHITE FUGITIVE DYE AS PER TYPE II MEMBRANE CURING OR APPROVED EQUAL.
6. THE MINIMUM LONGITUDINAL CURB SLOPE SHALL BE 0.5%.
7. CUTS IN THE CURB WILL BE MADE FULL DEPTH WITH FULL EXPANSION JOINTS DRILLED AT EACH END AS SHOWN HEREIN.
8. CURB AND GUTTER SHALL HAVE A LIGHT BROOM FINISH.
9. CURB TO BE PLACED ON A 4" (MINIMUM) CRUSHED CA–6 AGGREGATE BASE THAT EXTENDS BEYOND THE BACK OF CURB 1'.
10. THE CURB AND GUTTER SHALL BE DEPRESSED AT ALL SIDEWALK AND MULTI–USE PATH TEES IN COMPLIANCE WITH ILLINOIS ACCESSIBILITY STANDARDS.
11. THE COMPACTED CURB SUBGRADE SHALL BE SHAPED PARALLEL TO CURB FLOW LINE AND POSITIVELY DRAINED TO THE INLETS AND CATCH BASINS.
12. THE MINIMUM CURB AND GUTTER REPLACEMENT SHALL BE 10 FEET AND SHALL BE NO LESS THAN JOINT TO JOINT EXCEPT WHERE RECOMMENDED BY THE VILLAGE ENGINEER.
13. ALL CURB AND GUTTER SHALL BE PROTECTED PER IDOT ARTICLE 1020.13 WHEN WEATHER CONDITIONS DICTATE.
14. ALL WEATHER AND CONCRETE CONDITIONS SHALL MEET IDOT REQUIREMENTS.
15. ALL WATER AND SANITARY SERVICES SHALL BE STAMPED WITH A "W" OR AN "S" ACCORDINGLY IN THE FACE OF THE CURB HEAD.
16. THE VILLAGE ENGINEER SHALL BE NOTIFIED 48 HOURS PRIOR TO ANY POUR.
17. CURB CUTS/DEPRESSIONS ARE PERMITTED AT DRIVEWAYS ON A CASE BY CASE BASIS AS APPROVED BY VILLAGE ENGINEER.



*A 2–20', NO.4 REBAR AT ALL TRENCH CROSSINGS

TYPICAL EXPANSION JOINT SPACING CURB AND GUTTER

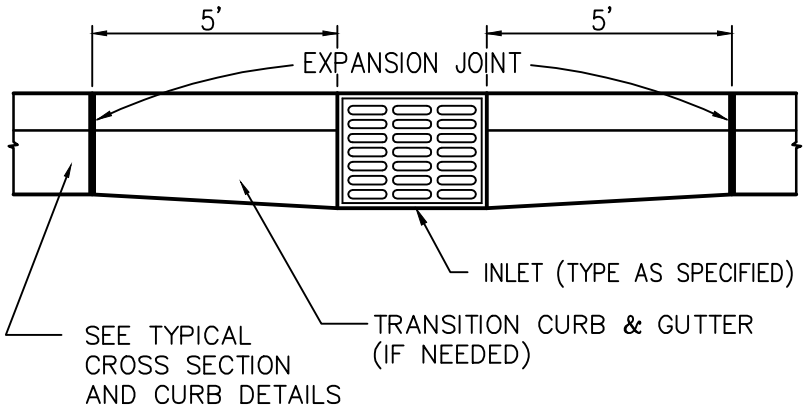
POUR TEMP. (DEG. F°)	EXPANSION JOINT (SPACING FT.)
40 MIN.....	70'
45.....	75'
50.....	80'
55.....	90'
60.....	95'
65.....	105'
70.....	115'
75.....	125'
80.....	145'
85.....	160'
90 MAX.....	190'

TYPE M-3.12 CONCRETE CURB & GUTTER

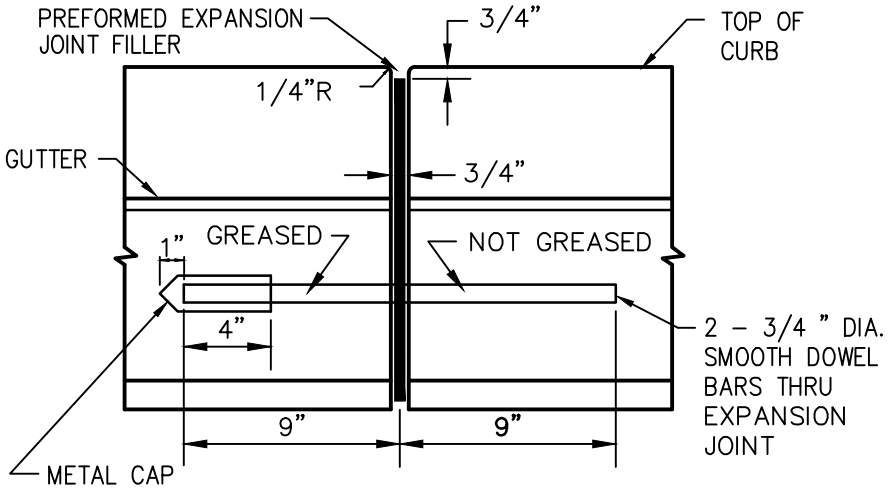
Village of Sugar Grove
160 Municipal Drive
Sugar Grove, Illinois 60554
Phone: 630–391–7230

SCALE:	FOLDER:	DRAWING NUMBER:	DRAWN BY:
N.T.S.	SG-RD	07	KKP
DATE: 4/2/24			REVISED:

CURB & GUTTER
TRANSITION DETAIL AT INLETS

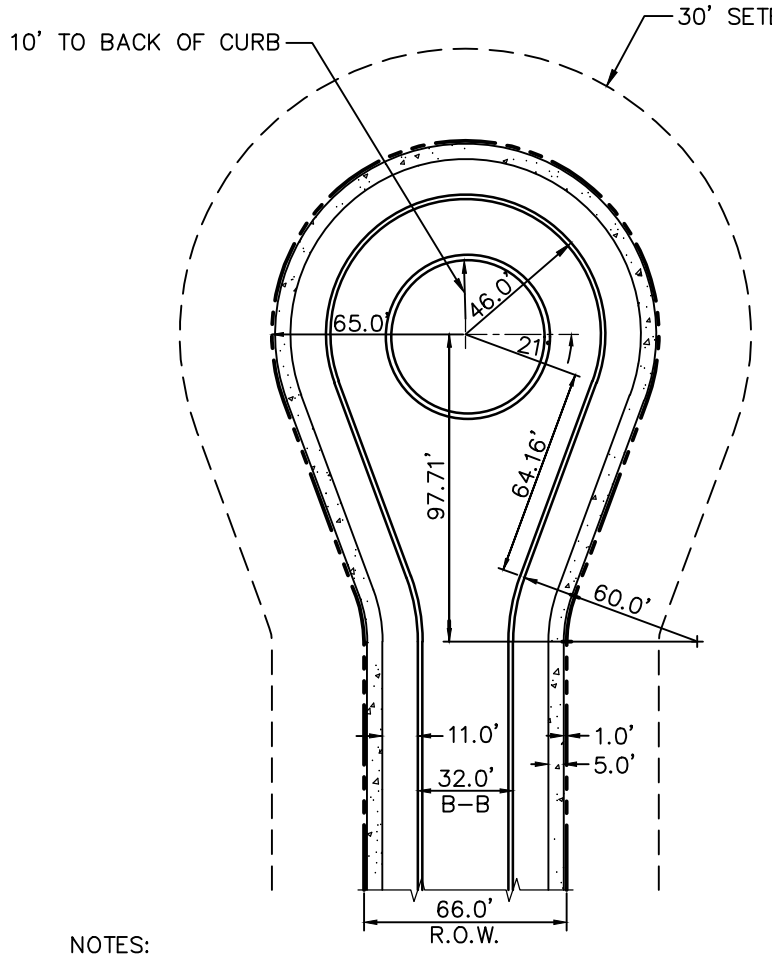


CURB & GUTTER
EXPANSION JOINT DETAIL



EXPANSION JOINT DETAIL & TRANSITION DETAIL AT INLETS

Village of Sugar Grove 160 Municipal Drive Sugar Grove, Illinois 60554 Phone: 630–391–7230	SCALE: N.T.S.	FOLDER:	DRAWING NUMBER:	DRAWN BY: KKP
	DATE: 4/2/24	SG-RD	08	REVISED:



NOTES:

1. MAINTENANCE RESPONSIBILITY FOR THE LANDSCAPED ISLAND SHALL BE ASSIGNED TO THE HOMEOWNER'S ASSOCIATION. ISLAND SHALL BE AN OUTLOT DEDICATED TO H.O.A.
2. LANDSCAPING FOR THE ISLAND SHALL BE PER THE ORDINANCE AND APPROVED BY THE VILLAGE.
3. NO UTILITIES IN ISLAND.
4. ISLANDS ARE PERMITTED AT THE DISCRETION OF THE VILLAGE BOARD.

CONCENTRIC CUL-DE-SAC

Village of Sugar Grove
160 Municipal Drive
Sugar Grove, Illinois 60554
Phone: 630–391–7230

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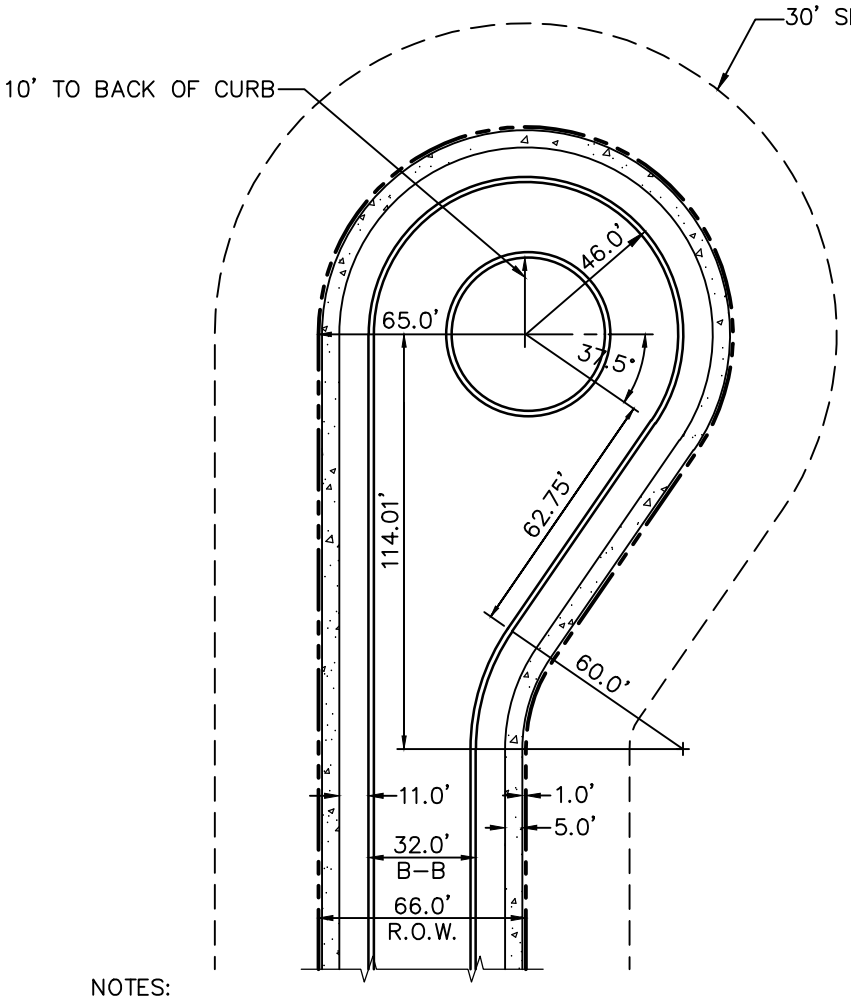
N.T.S.	SG-RD	09	KKP
DATE: 4/2/24			REVISED:



NOTES:

1. MAINTENANCE RESPONSIBILITY FOR THE LANDSCAPED ISLAND SHALL BE ASSIGNED TO THE HOMEOWNER'S ASSOCIATION. ISLAND SHALL BE AN OUTLOT DEDICATED TO H.O.A.
2. LANDSCAPING FOR THE ISLAND SHALL BE PER THE ORDINANCE AND APPROVED BY THE VILLAGE.
3. NO UTILITIES IN ISLAND.
4. ISLANDS ARE PERMITTED AT THE DISCRETION OF THE VILLAGE BOARD.

ECCENTRIC CUL-DE-SAC

Village of Sugar Grove
160 Municipal Drive
Sugar Grove, Illinois 60554
Phone: 630–391–7230

SCALE:	FOLDER:	DRAWING NUMBER:	DRAWN BY:
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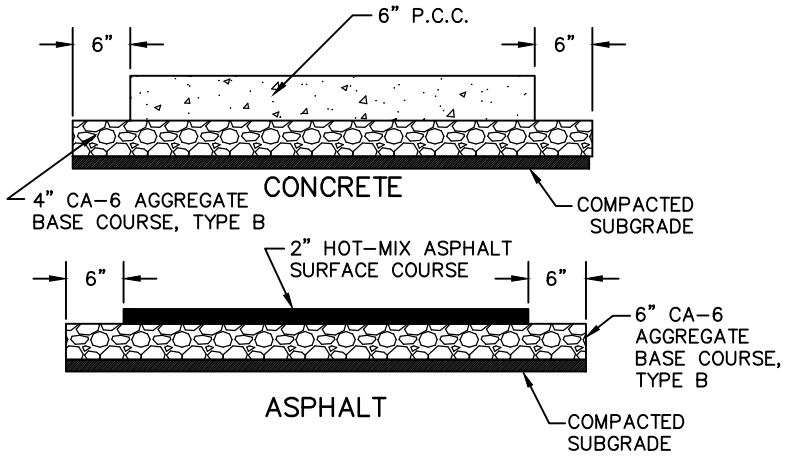
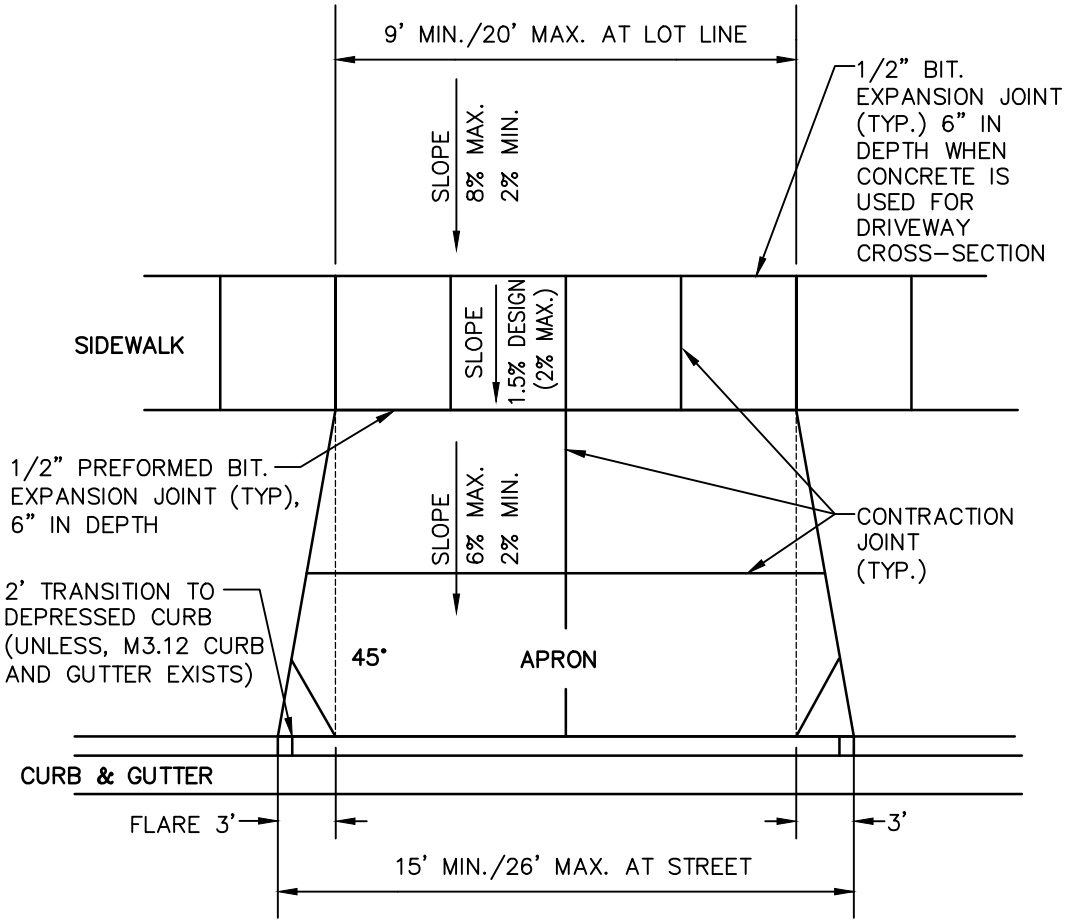
TYPICAL PAVEMENT SECTIONS



NOTES:

1. CONCRETE SHALL CONFORM TO I.D.O.T. STD. SPEC. FOR ROAD AND BRIDGE CONSTRUCTION SEC. 420 AND SHALL BE CLASS "SI" CONCRETE, 6 BAG, WITH 5% TO 8% AIR-ENTRAINMENT.
2. HOT-MIX ASPHALT SURFACE COURSE SHALL BE MIX C, N50.
3. AGGREGATE BASE COURSE SHALL BE COMPACTED CA-6.
4. 6" CONTINUOUS PRE MOLDED EXPANSION JOINTS SHALL BE PROVIDED AGAINST SIDEWALK AND CURB & GUTTER. (CONCRETE DRIVE ONLY)
5. CONCRETE DRIVEWAYS MAY BE REINFORCED WITH WELDED WIRE FABRIC.
6. NO UTILITY STRUCTURES SHALL BE INSTALLED IN PAVED AREAS.
7. 20' – NO. 4 REBAR SHALL BE INSTALLED AT TRENCH CROSSINGS IN CONCRETE DRIVEWAYS,
8. IF CONCRETE, THE DRIVEWAY SHALL BE CURED AS PER THE REQUIREMENTS FOR SIDEWALKS.
9. ALL CONCRETE SHALL BE PROTECTED PER IDOT ARTICLE 1020.13 WHEN THE WEATHER DICTATES IT.
10. ALL CONCRETE SLABS SHALL BE SYMMETRICALLY JOINTED.
11. CURB CUTS / DEPRESSIONS ARE PERMITTED AT DRIVEWAYS ON A CASE BY CASE BASIS AS APPROVED BY VILLAGE ENGINEER.
12. IN NO CASE SHALL THE ALGEBRAIC DIFFERENCE OF THE DRIVE GRADE AND STREET GRADE EXCEED 8%.

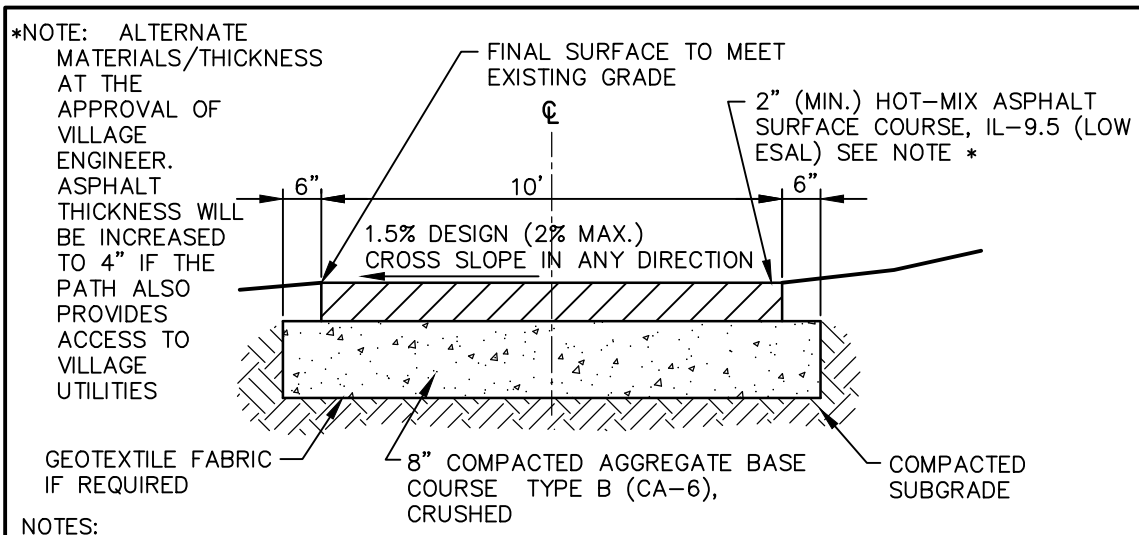
TYPICAL DRIVEWAY APRON



RESIDENTIAL DRIVEWAY APRON DETAIL

Village of Sugar Grove
160 Municipal Drive
Sugar Grove, Illinois 60554
Phone: 630-391-7230

SCALE:	FOLDER:	DRAWING NUMBER:	DRAWN BY:
N.T.S.	SG-RD	11	KKP
DATE: 4/2/24			REVISED:



NOTES:

1. THE PATH CONSTRUCTION AND MATERIALS SHALL BE IN ACCORDANCE WITH IDOT'S "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION."

2. PROVIDE RAMP AND DETECTABLE WARNING AT ALL STREET CROSSINGS IN ACCORDANCE WITH THE VILLAGE'S SIDEWALK AND BIKE PATH RAMP DETAIL AND ADA REQUIREMENTS. IF A CONFLICT EXISTS BETWEEN THE DETAIL AND ADA REQUIREMENTS, THE MORE STRINGENT REQUIREMENT WILL APPLY. THIS WILL REQUIRE A MINIMUM 5 FOOT LENGTH OF THE MULTI-USE PATH TO BE CONCRETE AT THE RAMP TO ALLOW FOR THE PLACEMENT OF THE RED PANELS. THE CONCRETE AT THIS LOCATION SHALL BE 10 FOOT WIDE AND MEET THE SIDEWALK DETAIL REQUIREMENTS.

3. NO UTILITY STRUCTURES SHALL BE ALLOWED IN THE MULTI-USE PATH.

4. PROOF ROLLS ARE REQUIRED OF THE SUB-GRADE AND AGGREGATE BASE. THE CONTRACTOR SHALL PROVIDE THE LOADED TRUCK AND DRIVER FOR THE PROOF ROLLS. THE VILLAGE ENGINEER SHALL WITNESS ALL PROOF ROLLS. THE CONTRACTOR SHALL PROVIDE A COPY OF THE LOAD TICKET TO THE VILLAGE ENGINEER. THE VILLAGE ENGINEER DETERMINES IF THE PROOF ROLL PASSES OR FAILS. THE CONTRACTOR DETERMINES CORRECTIVE MEASURES AND IMPLEMENTS THEM. IF REQUIRED BY VILLAGE ENGINEER, SUBSEQUENT ADDITIONAL PROOF ROLLS WILL BE COMPLETED BY THE CONTRACTOR AND WITNESSED BY THE VILLAGE ENGINEER, BUT AT NO ADDITIONAL EXPENSE TO THE VILLAGE.

5. THE VILLAGE ENGINEER SHALL BE NOTIFIED 48 HOURS PRIOR TO ANY PROOF ROLL OR PAVING.

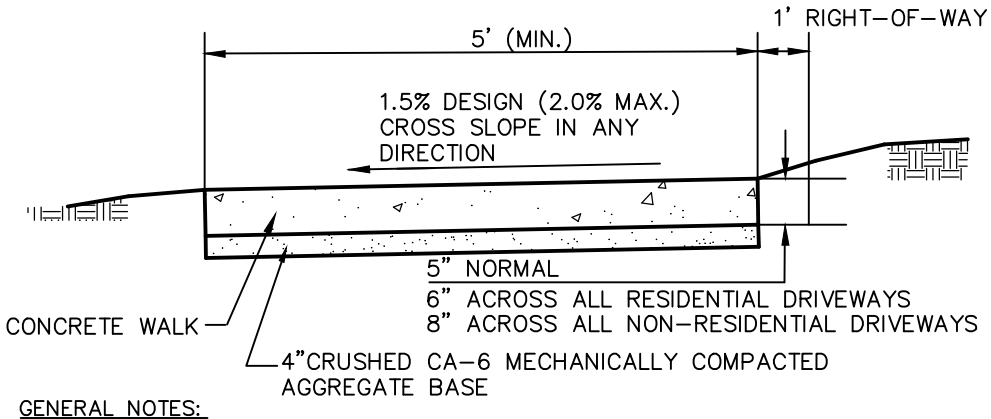
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR HAVING QUALITY CONTROL TESTING. A TESTER SHALL TAKE SAMPLES AT THE PLANT PRIOR TO PAVING AND THEN BE ON SITE AT THE START OF THE PAVING. THE VILLAGE RESERVES THE RIGHT TO PERFORM QUALITY ASSURANCE TESTING.

7. TWO FOOT (2') AGGREGATE SHOULDER MAY BE REQUIRED.

TYPICAL MULTI-USE PATH SECTION

Village of Sugar Grove
160 Municipal Drive
Sugar Grove, Illinois 60554
Phone: 630-391-7230

SCALE:	FOLDER:	DRAWING NUMBER:	DRAWN BY:
N.T.S.	SG-RD	12	KKP
DATE: 4/2/24			REVISED:



GENERAL NOTES:

1. REMOVE ALL TOPSOIL. PLACE CONCRETE ON 4" MIN. COMPACTED CA-6 STONE.
2. A CONTROL (CONTRACTION) JOINT SHALL BE TOOLED AT 5' INTERVALS AT THE TIME OF PLACEMENT. EXPANSION JOINTS WITH 1/2" BITUMINOUS FILLER MATERIAL SHALL BE SPACED AT INTERVALS SPECIFIED BELOW, AND AT 2.5' EITHER SIDE OF UTILITY STRUCTURES.
3. SIDEWALK SHALL BE INSTALLED THROUGH ALL RESIDENTIAL AND NON-RESIDENTIAL ACCESS DRIVES WITHIN THE VILLAGE'S RIGHT OF WAY. SIDEWALK SHALL BE 6" THICK MIN. AT RESIDENTIAL DRIVEWAY CROSSINGS AND AT SIDEWALK RAMPS, 8" THICK MIN. AT NON-RESIDENTIAL DRIVEWAYS, AND 5" MIN. OTHER AREAS.
4. CONCRETE SHALL BE CLASS SI.
5. PLACE 3/4" PREFORMED BIT. FILLER MATERIAL AT THE FULL DEPTH OF CONCRETE AT EDGES ABUTTING SIDEWALKS, CONCRETE DRIVES OR PRIVATE SIDEWALKS.
6. MAX. LONGITUDINAL SLOPE IS 5.0%.
7. THE SURFACE SHALL HAVE A LIGHT BROOM FINISH.
8. ALL SIDEWALK SHALL BE CURED TO THE REQUIREMENTS OF ARTICLE 1020.13 OF THE STATE OF ILLINOIS STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTIONS, LATEST EDITION. MEMBRANE CURING SHALL BE W.R. MEADOWS CS 309 WITH WHITE FUGITIVE DYE AS PER TYPE II MEMBRANE CURING OR APPROVED EQUAL.
9. QUALITY CONTROL TESTING SHALL BE THE RESPONSIBILITY OF THE DEVELOPER/CONTRACTOR. QUALITY ASSURANCE TESTING SHALL BE THE RESPONSIBILITY OF THE VILLAGE. THE MIX SHALL MEET IDOT SPECIFICATIONS.
10. THE VILLAGE ENGINEER SHALL BE CONTACTED 48 HOURS PRIOR TO THE POUR FOR A REVIEW OF THE BASE, REINFORCING AND FORMWORK.
11. CONCRETE DELIVERY TICKETS FROM THE CONCRETE SUPPLIER SHALL BE PROVIDED TO THE VILLAGE ENGINEER INDICATING A MINIMUM OF SIX (6) BAG MIX, CLASS "SI" CONCRETE, 5% TO 8% AIR ENTRAINMENT, AND THE LOCATION, AND DATE OF THE POUR. A COPY OF THE DATED BILLING FOR THE CURING COMPOUND SHALL ALSO BE REQUIRED FOR APPROVAL.
12. 2-20' - NO. 4 REBAR IS REQUIRED AT ALL TRENCH CROSSINGS.
13. UTILITY STRUCTURES ARE NOT PERMITTED IN THE SIDEWALK.
14. PROVIDE RAMP AND DETECTABLE WARNING AT ALL STREET CROSSINGS IN ACCORDANCE WITH THE VILLAGE'S SIDEWALK AND BIKE PATH RAMP DETAIL AND ADA REQUIREMENTS. IF A CONFLICT EXISTS BETWEEN THE DETAIL AND ADA REQUIREMENTS, THE MORE STRINGENT REQUIREMENT WILL APPLY.
15. SIDEWALK SHALL BE POURED IN A MONOLITHIC POUR WHEN POSSIBLE.
16. ALL SIDEWALKS SHALL BE PROTECTED PER IDOT ARTICLE 1020.13 WHEN WEATHER CONDITIONS DICTATE.
17. ALL WEATHER AND CONCRETE CONDITIONS SHALL MEET IDOT REQUIREMENTS.

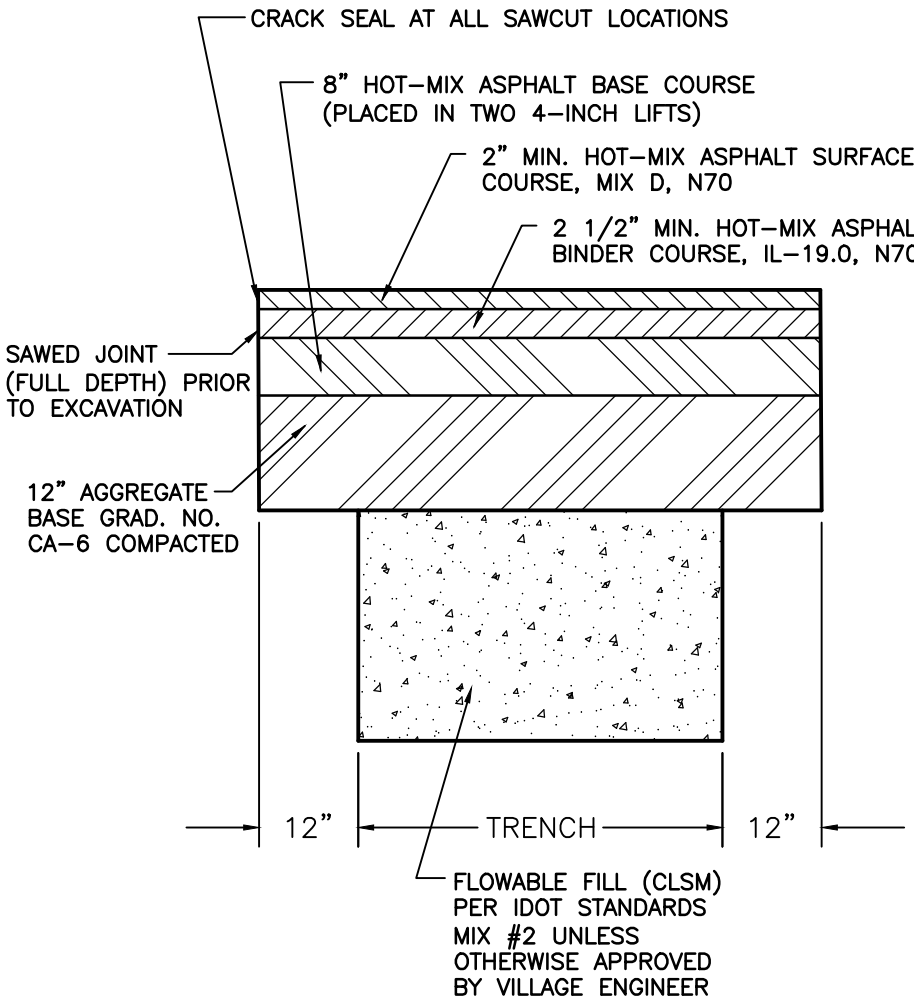
TYPICAL EXPANSION JOINT SPACING CURB AND SIDEWALK

POUR TEMP. (DEG. F°)	EXPANSION JOINT (SPACING FT.)
40 MIN.....	70'
45.....	75'
50.....	80'
55.....	90'
60.....	95'
65.....	105'
70.....	115'
75.....	125'
80.....	145'
85.....	160'
90 MAX.....	190'

TYPICAL SIDEWALK SECTION

Village of Sugar Grove
160 Municipal Drive
Sugar Grove, Illinois 60554
Phone: 630-391-7230

SCALE:	FOLDER:	DRAWING NUMBER:	DRAWN BY:
N.T.S.	SG-RD	13	KKP
DATE: 4/2/24			REVISED:



NOTE:

1. PAVEMENT SHALL BE REMOVED OUTSIDE OF THE TRENCH NEAT LINE ONLY AFTER THE TRENCH HAS BEEN BACKFILLED. THEN THE EXISTING SURFACE SHALL BE SAWED TO PRESERVE A NEAT LINE FOR THE ENTIRE LENGTH OF TRENCH ON EACH SIDE.

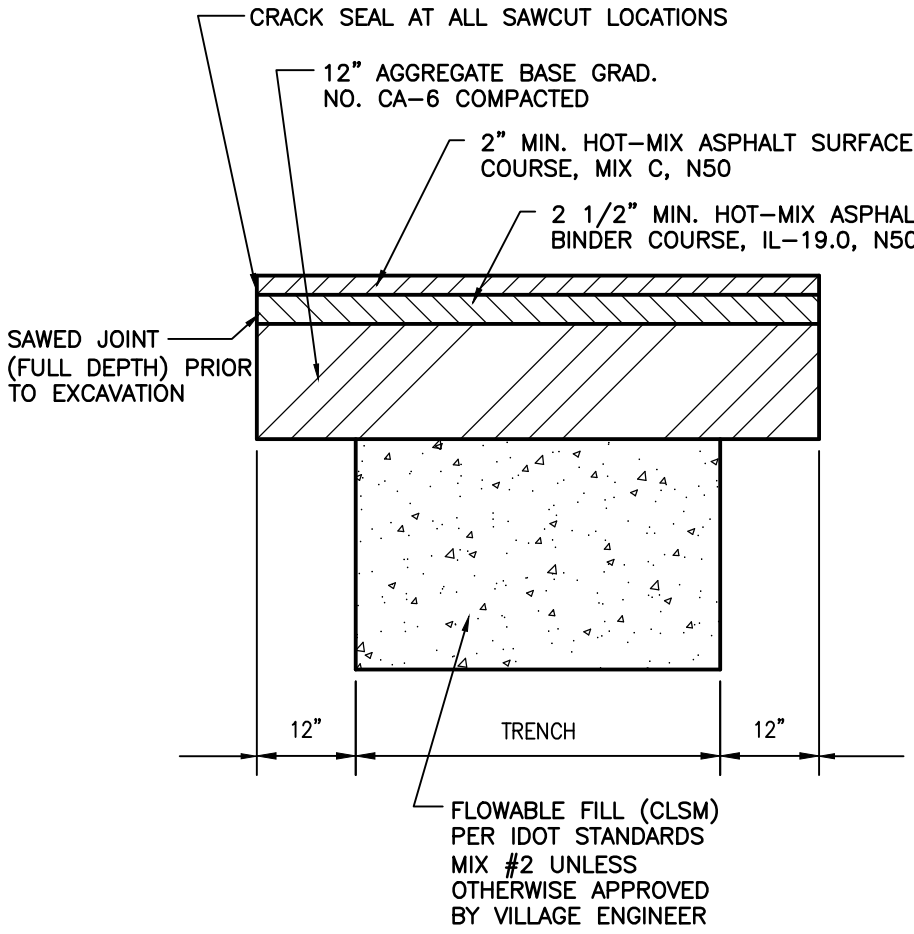
2. THE THICKNESS ABOVE REPRESENTED MINIMUM AT THE DIRECTION OF THE VILLAGE ENGINEER, CORE SAMPLES MAY NEED TO BE TAKEN AND THESE MAY BE REQUIRED TO BE INCREASED.

MAJOR ROAD

PAVEMENT REMOVAL AND REPLACEMENT DETAIL

Village of Sugar Grove
160 Municipal Drive
Sugar Grove, Illinois 60554
Phone: 630-391-7230

SCALE:	FOLDER:	DRAWING NUMBER:	DRAWN BY:
N.T.S.	SG-RD	16	KKP
DATE: 4/2/24			REVISED:



NOTE:

1. PAVEMENT SHALL BE REMOVED OUTSIDE OF THE TRENCH NEAT LINE ONLY AFTER THE TRENCH HAS BEEN BACKFILLED. THEN THE EXISTING SURFACE SHALL BE SAWED TO PRESERVE A NEAT LINE FOR THE ENTIRE LENGTH OF TRENCH ON EACH SIDE.

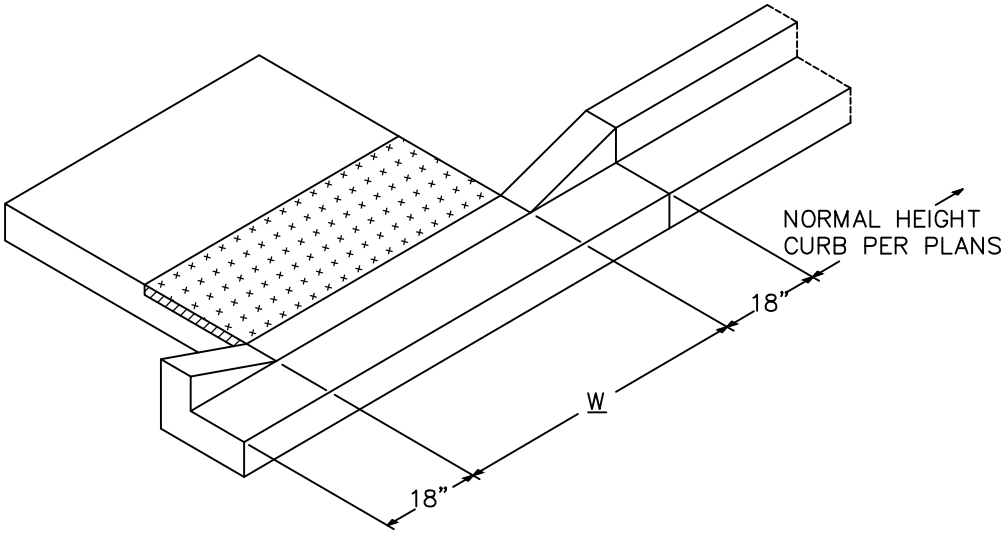
2. THE THICKNESS ABOVE REPRESENTED MINIMUM AT THE DIRECTION OF THE VILLAGE ENGINEER, CORE SAMPLES MAY NEED TO BE TAKEN AND THESE MAY BE REQUIRED TO BE INCREASED.

LOCAL ROAD

PAVEMENT REMOVAL AND REPLACEMENT DETAIL

Village of Sugar Grove
160 Municipal Drive
Sugar Grove, Illinois 60554
Phone: 630-391-7230

SCALE:	FOLDER:	DRAWING NUMBER:	DRAWN BY:
N.T.S.	SG-RD	17	KKP
DATE: 4/2/24			REVISED:



NOTES:

1. PLACEMENT OF DETECTABLE WARNING TILES SHALL ADHERE TO LOCATIONS AND SETBACKS AS SHOWN IN IDOT HIGHWAY STANDARDS. SIDEWALK RAMP WIDTH (W) AND LAYOUT SHALL BE ACCORDING TO THE MOST CURRENT IDOT HIGHWAY STANDARDS, EXCEPT A SIDE CURB SHALL NOT BE CONSTRUCTED IN LANDSCAPED AREAS. THE ENGINEER SHALL INCLUDE THE MOST CURRENT IDOT STANDARDS IN THE FINAL ENGINEERING PLANS.

2. A PREFABRICATED, BRICK RED (FEDERAL STANDARD COLOR 30166) DETECTABLE WARNING PANEL WITH SQUARE PATTERNED TRUNCATED DOMES, SHALL BE UTILIZED. THE PANEL SHALL BE AN ADA SOLUTIONS CAST IN PLACE DETECTABLE WARNING PANEL OR APPROVED EQUAL BY VILLAGE ENGINEER.

3. TILES SHALL BE INSTALLED PER MANUFACTURER INSTRUCTIONS.

4. THE COLORING AND STAMPING OF CONCRETE WILL NOT BE ALLOWED.

5. ALL CONCRETE SHALL BE POURED IN PLACE.

6. THE PANEL SHALL LIE PERPENDICULAR TO THE STREET AND SHALL BE ALIGNED WITH RAMPS ACROSS THE STREET.

7. A FIELD MEETING SHALL BE SET UP WITH THE VILLAGE ENGINEER OR THEIR REPRESENTATIVE PRIOR TO BEGINNING WORK ON ANY RAMP. THE CONTRACTOR'S FIELD SUPERINTENDENT RESPONSIBLE FOR RAMP CONSTRUCTION SHALL BE PRESENT AT MEETING.

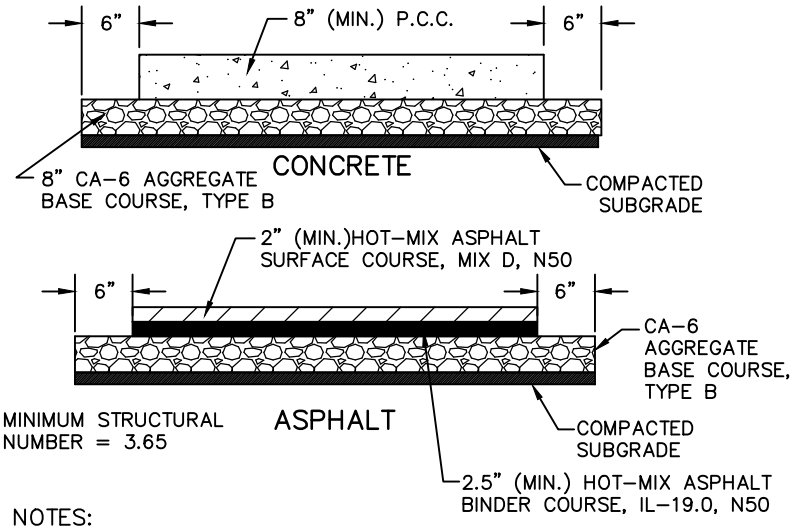
8. DESIGN ENGINEER SHALL INCLUDE CURRENT IDOT RAMP DETAIL IN PLAN SET.

CURB HEAD TAPER AT PEDESTRIAN RAMPS FOR SIDEWALKS IN LANDSCAPED AREAS

Village of Sugar Grove
160 Municipal Drive
Sugar Grove, Illinois 60554
Phone: 630-391-7230

SCALE:	FOLDER:	DRAWING NUMBER:	DRAWN BY:
N.T.S.	SG-RD	18	KKP
DATE: 4/2/24			REVISED:

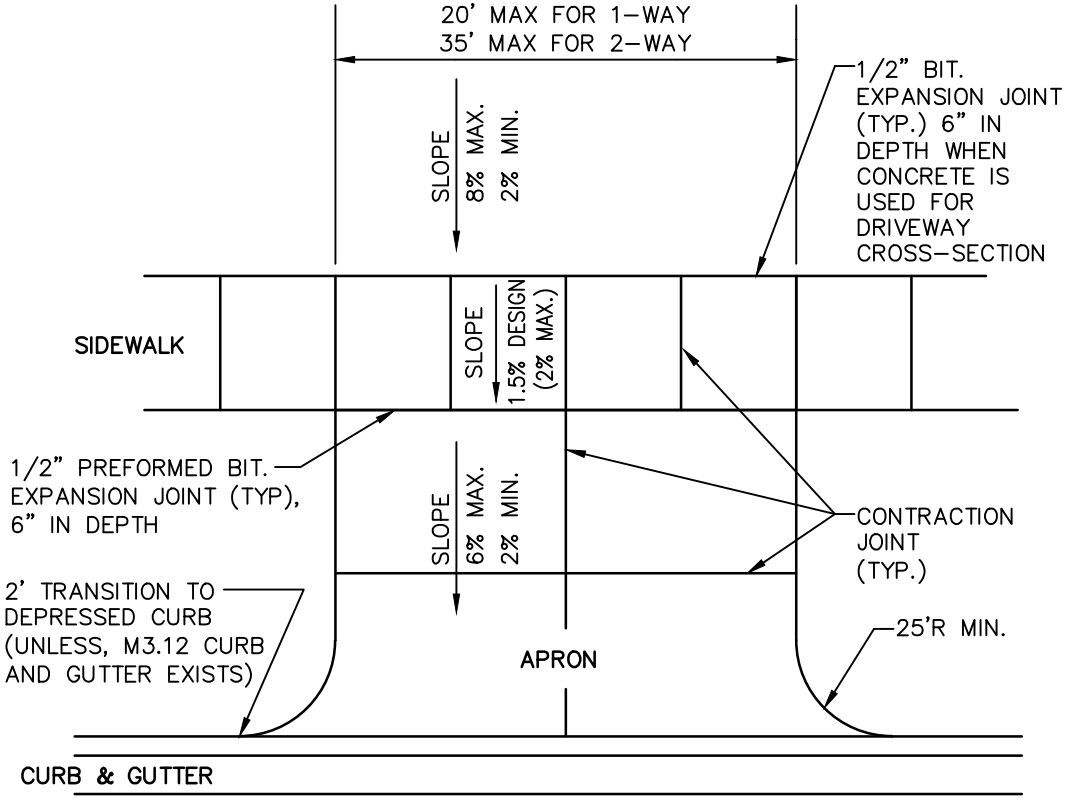
TYPICAL PAVEMENT SECTIONS



NOTES:

1. CONCRETE SHALL CONFORM TO I.D.O.T. STD. SPEC. FOR ROAD AND BRIDGE CONSTRUCTION SEC. 420 AND SHALL BE CLASS "SI" CONCRETE, 6 BAG, WITH 5% TO 8% AIR-ENTRAINMENT.
2. HOT-MIX ASPHALT SURFACE COURSE SHALL BE MIX C, N50.
3. AGGREGATE BASE COURSE SHALL BE COMPACTED CA-6.
4. 6" CONTINUOUS PRE MOLDED EXPANSION JOINTS SHALL BE PROVIDED AGAINST SIDEWALK AND CURB & GUTTER. (CONCRETE DRIVE ONLY)
5. CONCRETE DRIVEWAYS SHALL BE REINFORCED WITH WELDED WIRE FABRIC.
6. NO UTILITY STRUCTURES SHALL BE INSTALLED IN PAVED AREAS.
7. 20' – NO. 4 REBAR SHALL BE INSTALLED AT TRENCH CROSSINGS IN CONCRETE DRIVEWAYS,
8. IF CONCRETE, THE DRIVEWAY MAY BE CURED AS PER THE REQUIREMENTS FOR SIDEWALKS.
9. ALL CONCRETE SHALL BE PROTECTED PER IDOT ARTICLE 1020.13 WHEN THE WEATHER DICTATES IT.
10. ALL CONCRETE SLABS SHALL BE SYMMETRICALLY JOINTED.
11. CURB CUTS / DEPRESSIONS ARE PERMITTED AT DRIVEWAYS ON A CASE BY CASE BASIS AS APPROVED BY VILLAGE ENGINEER.
12. IN NO CASE SHALL THE ALGEBRAIC DIFFERENCE OF THE DRIVE GRADE AND STREET GRADE EXCEED 8%.

TYPICAL DRIVEWAY APRON



NON-RESIDENTIAL DRIVEWAY APRON DETAIL

Village of Sugar Grove
160 Municipal Drive
Sugar Grove, Illinois 60554
Phone: 630-391-7230

SCALE:	FOLDER:	DRAWING NUMBER:	DRAWN BY:
N.T.S.	SG-RD	19	KKP
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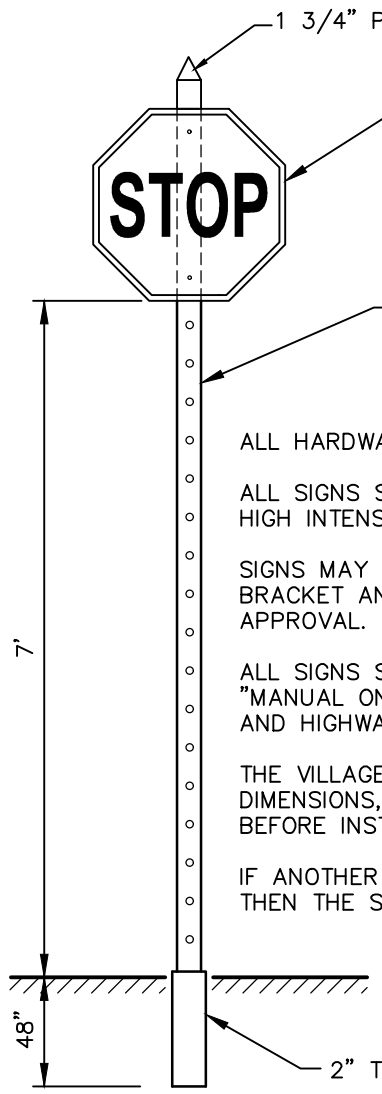


ALL HARDWARE SHALL BE BREAKAWAY OR TAMPER RESISTANT.

ALL SIGNS SHALL BE 3M COMPANY, OR APPROVED EQUAL, USING HIGH INTENSITY REFLECTIVE PAPER.

SIGNS MAY BE MOUNTED TO STREET LIGHTS WITH A STANDARD BRACKET AND DOUBLE BUCKLE STRAPS SUBJECT TO VILLAGE APPROVAL.

ALL SIGNS SHALL CONFORM TO THE LATEST EDITION OF THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS."

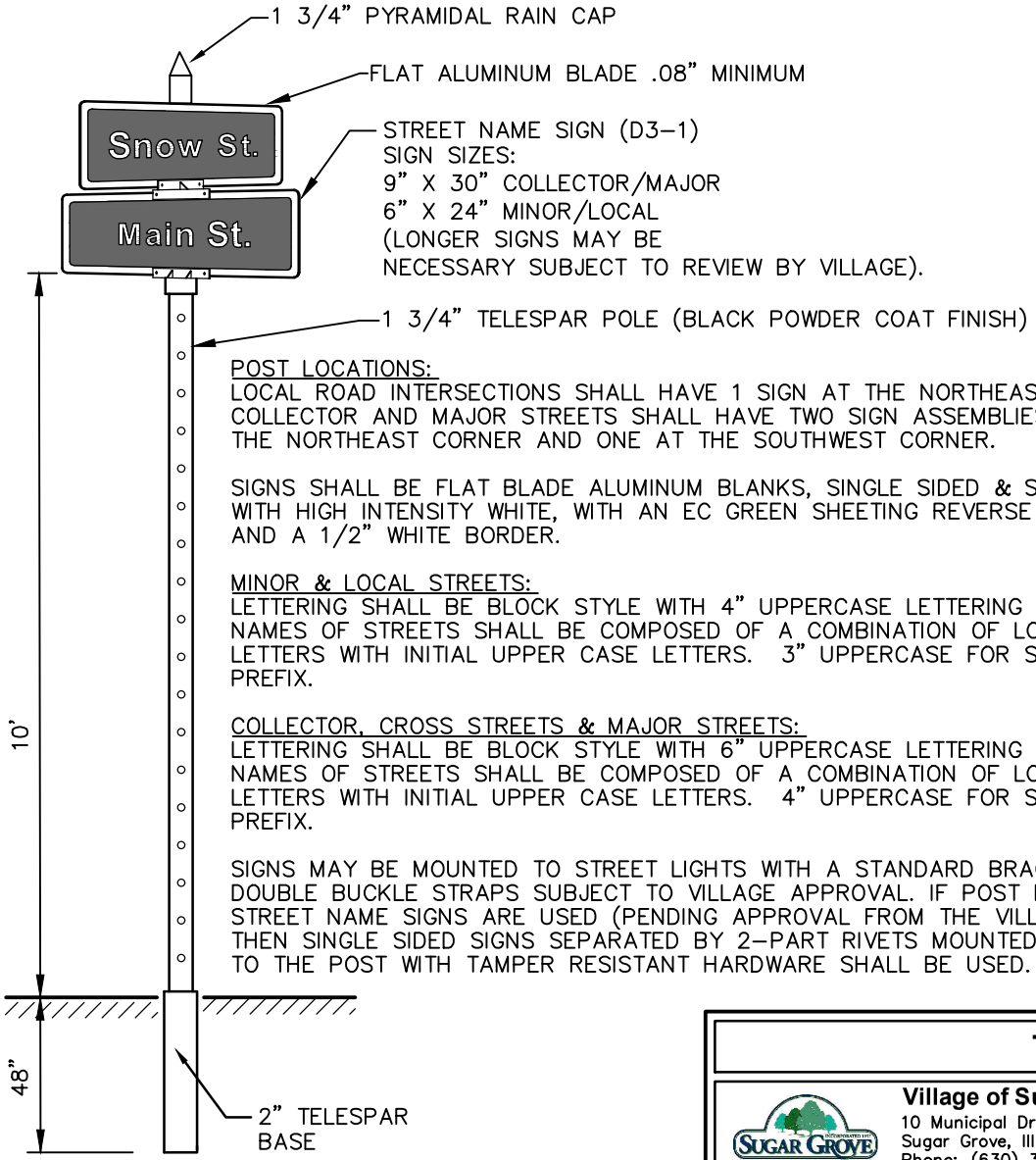
THE VILLAGE OF SUGAR GROVE MUST APPROVE ALL SIGN DIMENSIONS, MOUNTING LOCATIONS & HARDWARE APPLICATIONS BEFORE INSTALLATION.

IF ANOTHER SIGN IS MOUNTED BACK-TO-BACK WITH A STOP SIGN, THEN THE SHAPE OF THE STOP SIGN SHALL NOT BE OBSCURED.

REGULATORY SIGNS

Village of Sugar Grove
10 Municipal Drive
Sugar Grove, Illinois 60554
Phone: (630) 391-7200

SCALE:	FOLDER:	DRAWING NUMBER:	DRAWN BY:
N.T.S.	SG-SI	01	KKP
DATE: 4/2/24			REVISED:



ALL SIGNS SHALL CONFORM TO THE LATEST EDITION OF THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS."

THE VILLAGE OF SUGAR GROVE MUST APPROVE ALL SIGN DIMENSIONS, MOUNTING LOCATIONS & HARDWARE APPLICATIONS BEFORE INSTALLATION.

ALL HARDWARE SHALL BE BREAKAWAY OR TAMPER RESISTANT.

THE SIGN FACES SHALL BE 3M COMPANY OR APPROVED EQUAL, USING REFLECTIVE HIGH INTENSITY PAPER UTILIZING SILVER LETTERS ON A GREEN BACKGROUND.

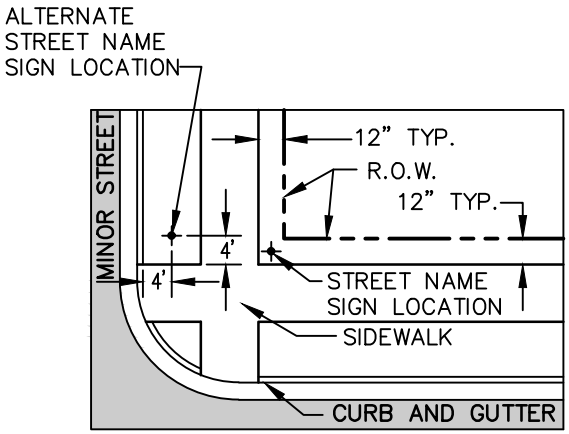
POST LOCATIONS:
LOCAL ROAD INTERSECTIONS SHALL HAVE 1 SIGN AT THE NORTHEAST CORNER. COLLECTOR AND MAJOR STREETS SHALL HAVE TWO SIGN ASSEMBLIES; ONE AT THE NORTHEAST CORNER AND ONE AT THE SOUTHWEST CORNER.

SIGNS SHALL BE FLAT BLADE ALUMINUM BLANKS, SINGLE SIDED & SHEETED WITH HIGH INTENSITY WHITE, WITH AN EC GREEN SHEETING REVERSE OVERLAY AND A 1/2" WHITE BORDER.

MINOR & LOCAL STREETS:
LETTERING SHALL BE BLOCK STYLE WITH 4" UPPERCASE LETTERING FOR NAMES OF STREETS SHALL BE COMPOSED OF A COMBINATION OF LOWER-CASE LETTERS WITH INITIAL UPPER CASE LETTERS. 3" UPPERCASE FOR SUFFIX & PREFIX.

COLLECTOR, CROSS STREETS & MAJOR STREETS:
LETTERING SHALL BE BLOCK STYLE WITH 6" UPPERCASE LETTERING FOR NAMES OF STREETS SHALL BE COMPOSED OF A COMBINATION OF LOWER-CASE LETTERS WITH INITIAL UPPER CASE LETTERS. 4" UPPERCASE FOR SUFFIX & PREFIX.

SIGNS MAY BE MOUNTED TO STREET LIGHTS WITH A STANDARD BRACKET AND DOUBLE BUCKLE STRAPS SUBJECT TO VILLAGE APPROVAL. IF POST MOUNTED STREET NAME SIGNS ARE USED (PENDING APPROVAL FROM THE VILLAGE), THEN SINGLE SIDED SIGNS SEPARATED BY 2-PART RIVETS MOUNTED DIRECTLY TO THE POST WITH TAMPER RESISTANT HARDWARE SHALL BE USED.

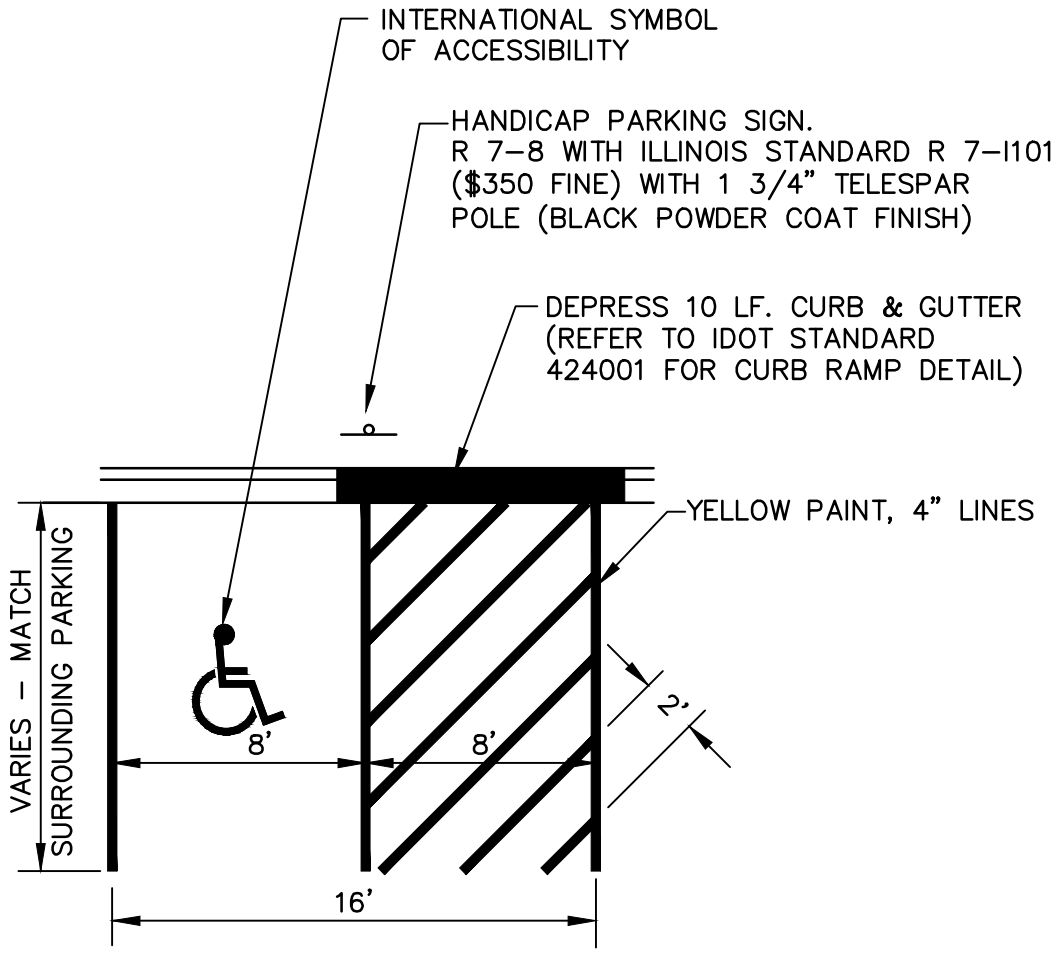


TYPICAL SIGN LOCATION

TYPICAL STREET SIGN DETAIL

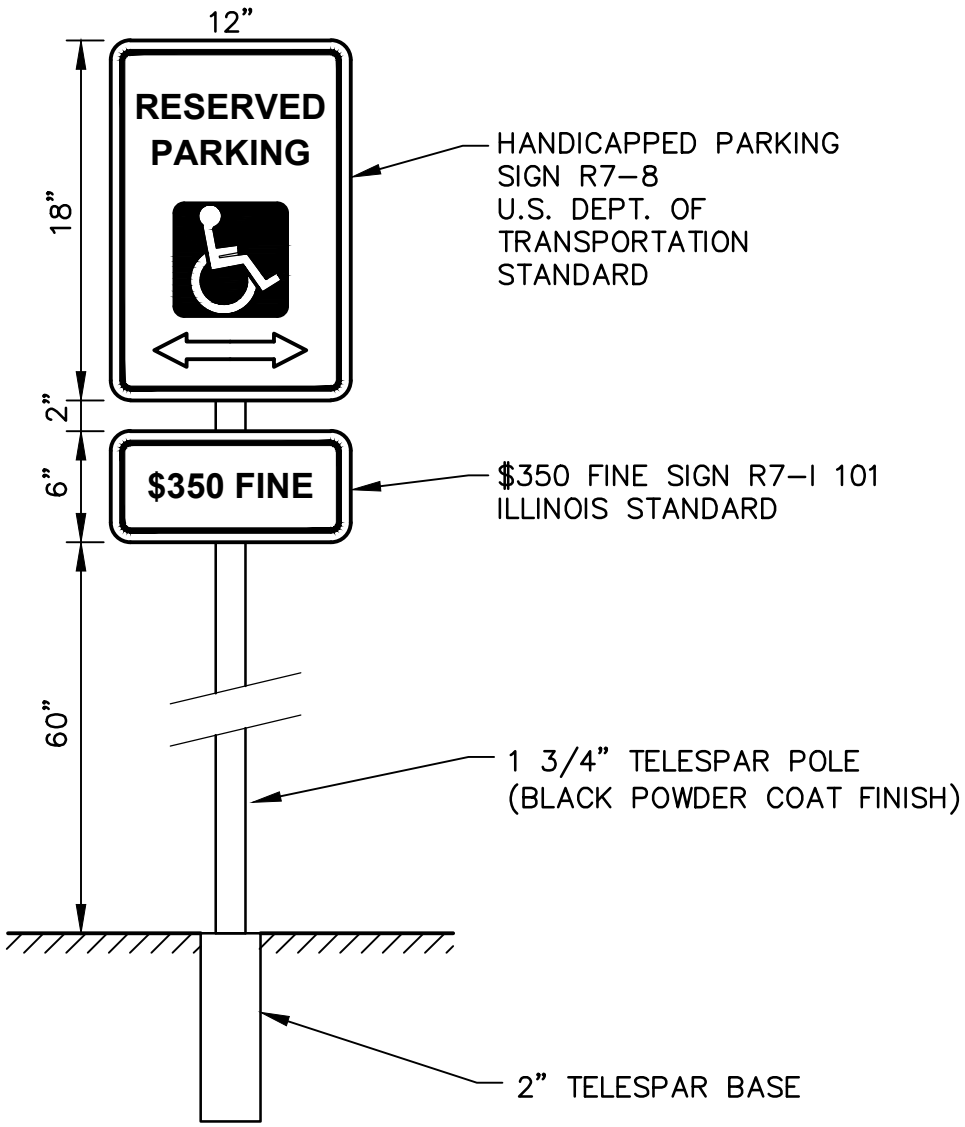
Village of Sugar Grove
10 Municipal Drive
Sugar Grove, Illinois 60554
Phone: (630) 391-7200

SCALE:	FOLDER:	DRAWING NUMBER:	DRAWN BY:
N.T.S.	SG-SI	02	KKP
DATE: 4/2/24			REVISED:



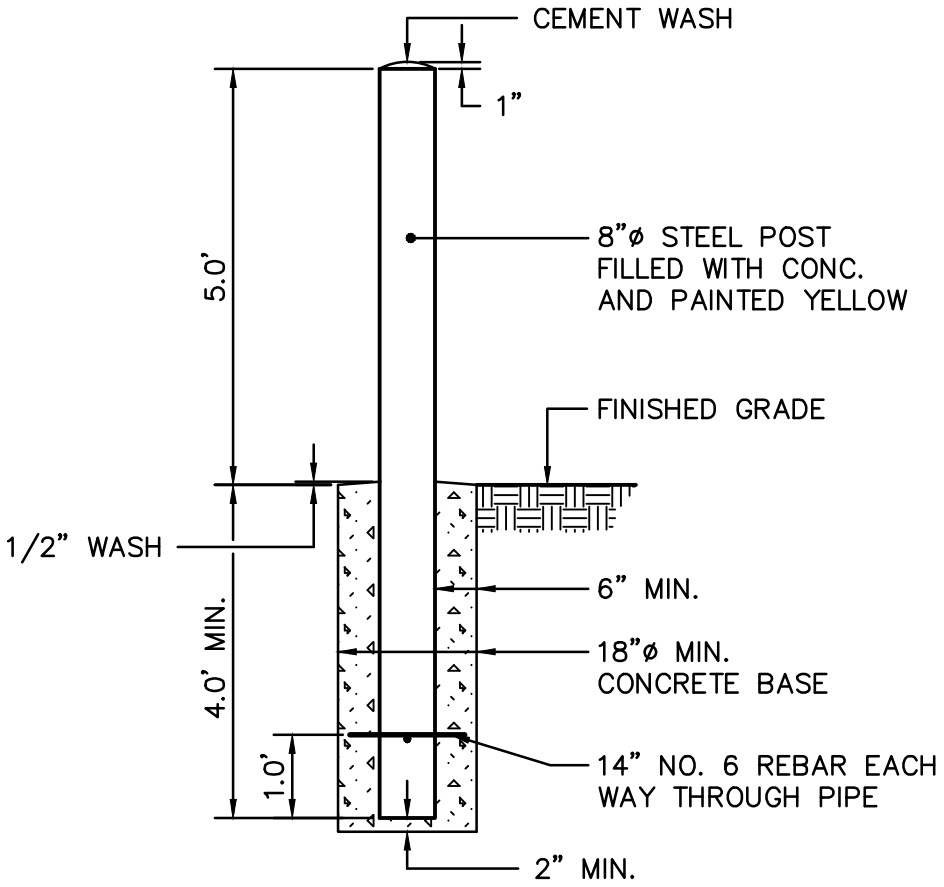
HANDICAP PARKING STALL (TYPICAL)

Village of Sugar Grove 10 Municipal Drive Sugar Grove, Illinois 60554 Phone: (630) 391-7200	SCALE: N.T.S. DATE: 4/2/24	FOLDER: SG-SI	DRAWING NUMBER: 03	DRAWN BY: KKP REVISED:	



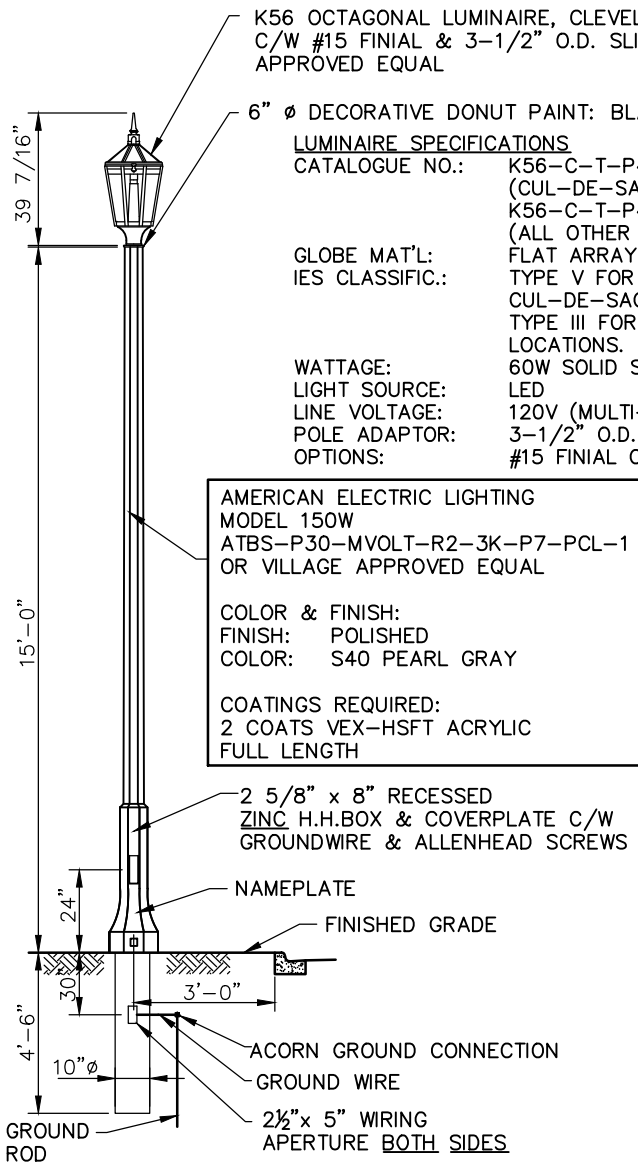
HANDICAP PARKING SIGN (TYPICAL)

Village of Sugar Grove 10 Municipal Drive Sugar Grove, Illinois 60554 Phone: (630) 391-7200	SCALE: N.T.S. DATE: 4/2/24	FOLDER: SG-SI	DRAWING NUMBER: 04	DRAWN BY: KKP REVISED:	



BOLLARD (TYPICAL)

Village of Sugar Grove 10 Municipal Drive Sugar Grove, Illinois 60554 Phone: (630) 391-7200	SCALE: N.T.S. DATE: 4/2/24	FOLDER: SG-SI	DRAWING NUMBER: 05	DRAWN BY: KKP REVISED:	



LUMINAIRE SPECIFICATIONS

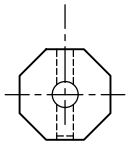
CATALOGUE NO.:	K56-C-T-P4AR-V-75(SSL)-7030-120(MT)-#15-PE (CUL-DE-SAC) K56-C-T-P4AR-III-75(SSL)-7030-120(MT)-#15-PE (ALL OTHER LOCATIONS)
GLOBE MAT'L:	FLAT ARRAY ACRYLIC RIPPLED
IES CLASSIFIC.:	TYPE V FOR STREET LIGHTS LOCATED AT CUL-DE-SACS. TYPE III FOR STREET LIGHTS AT ALL OTHER LOCATIONS.
WATTAGE:	60W SOLID STATE LIGHTING
LIGHT SOURCE:	LED
LINE VOLTAGE:	120V (MULTI-TAP)
POLE ADAPTOR:	3-1/2" O.D. WELD ON TENON X 4" LONG
OPTIONS:	#15 FINIAL C/W TWISTLOCK RECEPTACLE AND PHOTO-EYE

POLE SPECIFICATIONS

CATALOGUE NO.:	KM15-G-S40 C/W 140 (35/40)
QUANTITY:	
SECTION:	OCTAGONAL
COLOR:	S40 PEARL GRAY
FINISH:	POLISHED
POLE TOP:	5" FL/FL
POLE BUTT:	10" ø
POLE LENGTH:	19'-6"
APPROX WEIGHT:	1,000 lbs.

NOTE:

THE POLE SHALL BE BACKFILLED WITH CRUSHED CA-6 LIMESTONE WATERED AND COMPACTED AROUND THE BUTT OF THE POLE.



H.H.BOX NAMEPLATE THRU APERTURE

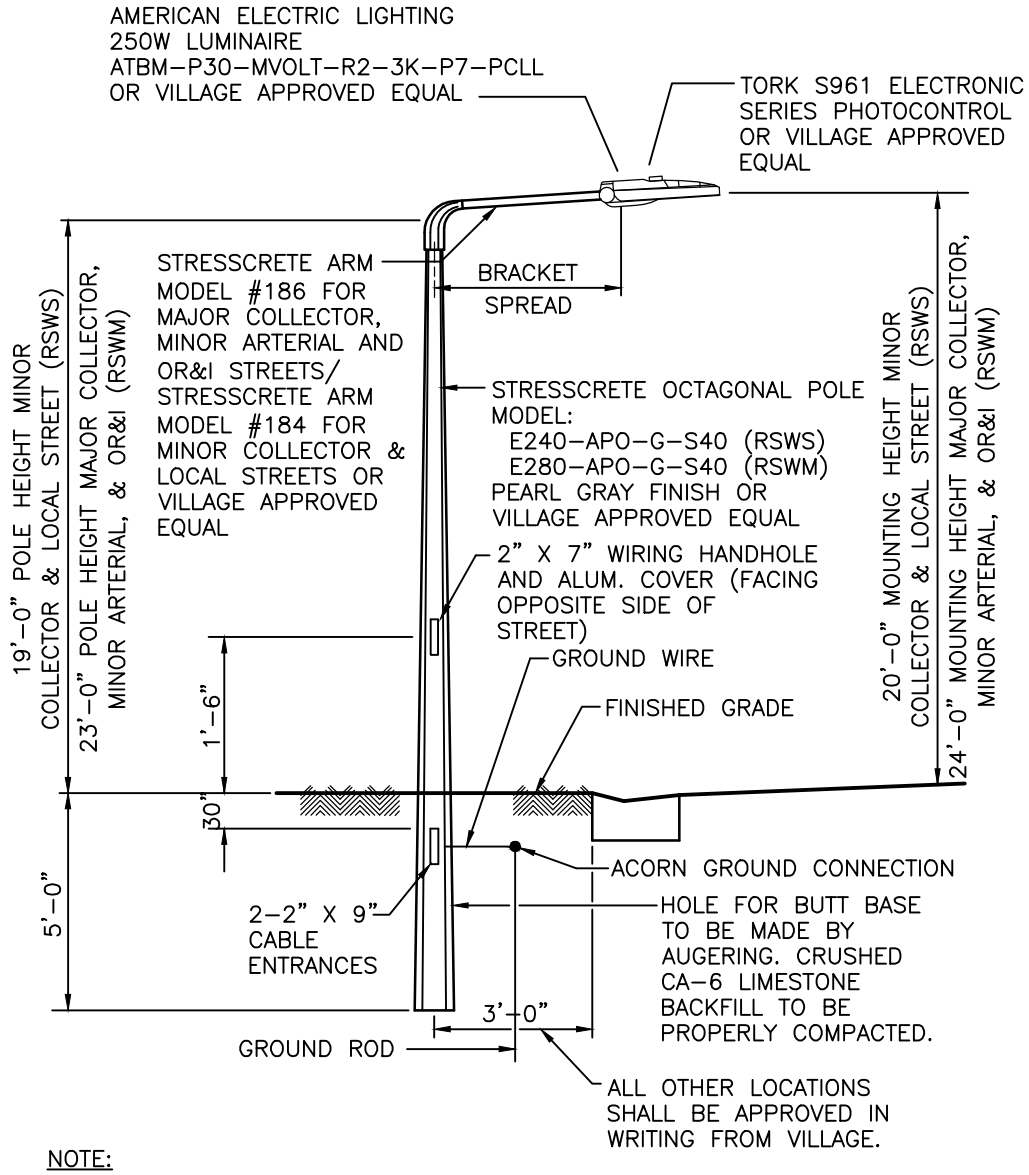
TOP VIEW

HOLE FOR BUTT BASE TO BE MADE BY AUGERING CRUSHED CA-6 LIMESTONE BACKFILL TO BE PROPERLY COMPACTED

STREET LIGHT DETAIL - OPTION NO. 1

Village of Sugar Grove
10 Municipal Drive
Sugar Grove, Illinois 60554
Phone: (630) 391-7200

SCALE:	FOLDER:	DRAWING NUMBER:	DRAWN BY:
N.T.S.	SG-EL	02	KKP
DATE: 4/2/24			REVISED:

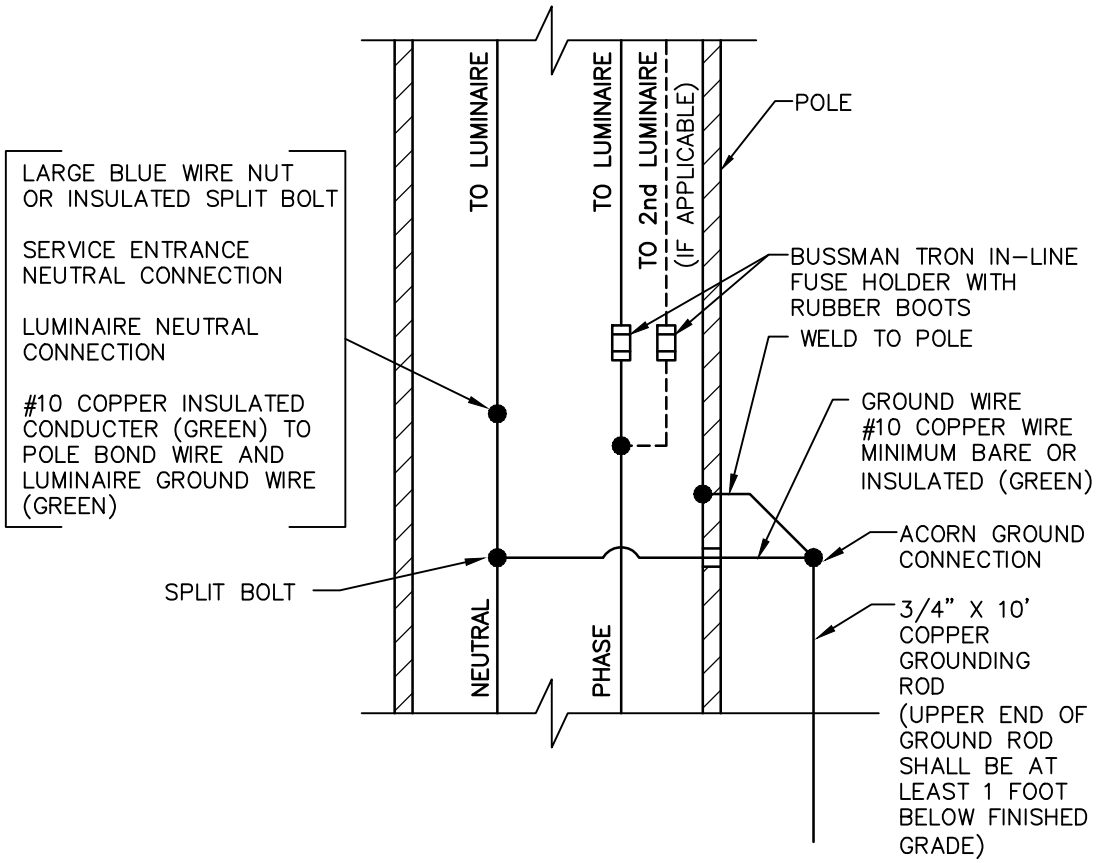


NOTE:

COATINGS REQUIRED: 2 COATS VEX-HSFT FULL LENGTH OF POLE.

STREET LIGHT DETAIL - OPTION 2

Village of Sugar Grove 10 Municipal Drive Sugar Grove, Illinois 60554 Phone: (630) 391-7200	SCALE: N.T.S. DATE: 4/2/24	FOLDER: SG-EL	DRAWING NUMBER: 03	DRAWN BY: KKP REVISED:	



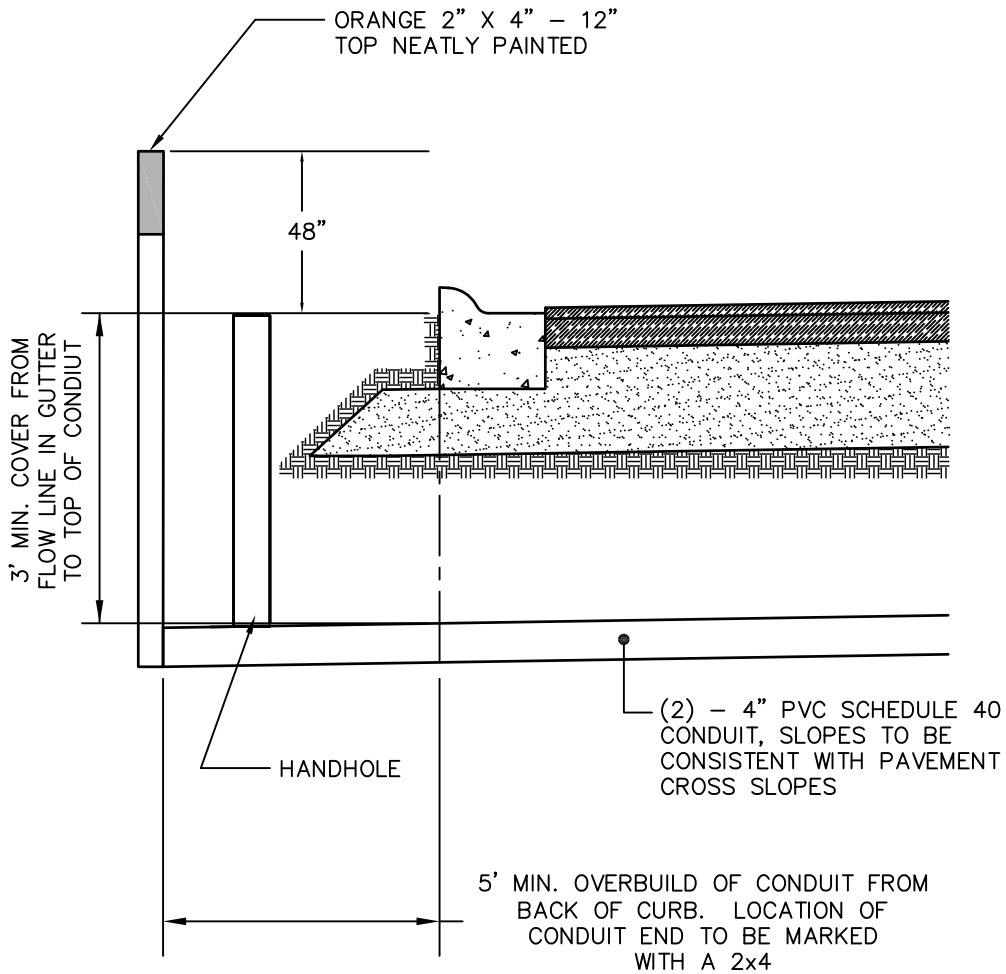
NOTES:

1. UNDERGROUND SERVICE CABLE SHALL BE TYPE RHH OR RHW. THE CABLE SIZE SHALL BE NO SMALLER THAN #6 AND NO LARGER THAN #2.
2. ALL UNDERGROUND CONDUIT LOCATIONS SHALL BE MARKED IN THE FIELD FOR THE ELECTRICAL CONTRACTOR AND SHALL BE SHOWN ON THE AS-BUILT PLANS.
3. ALL UNDERGROUND CABLE SHALL BE BURIED AT LEAST THIRTY SIX INCHES (36") BELOW FINISHED GRADE.
4. WIRE INSTALLED FROM THE HANDHOLE IN THE BASE OF THE POLE TO THE PHOTO CELL AND LUMINAIRE SHALL BE #12 TYPE RHW. FUSES SHALL BE 10 AMP UNLESS OTHERWISE DIRECTED.
5. THE NEUTRAL CABLE SHALL BE CONNECTED TO GROUND INSIDE THE POLE (SEE LEFT).
6. THE HANDHOLE INTO THE POLE SHALL BE LOCATED ON THE FACE OF THE POLE OPPOSITE OF THE STREET.
7. ONLY COPPER WIRE SHALL BE USED. THE WIRE SHALL BE STRANDED WIRE.
8. ALL STREETLIGHTS SHALL OPERATE ON 120 VOLTS.

STREET LIGHT DETAIL

Village of Sugar Grove
10 Municipal Drive
Sugar Grove, Illinois 60554
Phone: (630) 466-4507

SCALE:	FOLDER:	DRAWING NUMBER:	DRAWN BY:
N.T.S.	SG-EL	04	KKP
DATE: 4/2/24			REVISED:



NOTES:

1. ALL UTILITY TRENCHES TO BE BACKFILLED WITH COMPACTED CA–7 TO 95% OF THE PROCTOR DENSITY.

2. ALL ELECTRIC CONDUITS TO BE INSTALLED PRIOR TO SUBGRADE PROOFROLL.

ELECTRICAL CONDUIT CROSSING

Village of Sugar Grove 10 Municipal Drive Sugar Grove, Illinois 60554 Phone: (630) 466–4507	SCALE: N.T.S. DATE: 4/2/24	FOLDER: SG-EL	DRAWING NUMBER: 01	DRAWN BY: BLM REVISED:	

APPENDIX B:
STANDARD NOTES

VILLAGE OF SUGAR GROVE
STANDARD NOTES FOR GENERAL NOTES

1. A preconstruction meeting shall be held prior to the start of any construction, including the installation of tree protection and soil erosion control measures. The Contractor shall notify the Village Engineer a minimum of 10 days in advance of starting any work. The Village Engineer will coordinate the preconstruction meeting with the Village Staff, Fire District, Police Department, Park District, Township, and Kane County Department of Transportation. The Developer/Owner, the General Contractor, and all major subcontractors shall attend the meeting.

2. In addition to the formal preconstruction meeting at the beginning of the project, a preconstruction meeting shall be held on site before each major work item (i.e. underground work, curbs and gutter, paving, etc.). The General Contractor and the foreman to complete the work shall attend the meeting at a minimum. The Village Engineer shall be contacted 48 hours in advance of the meeting so that the meeting can be coordinated with the appropriate Public Works staff members and other agencies. J.U.L.I.E. markings should be recent and visible at the time of the meeting.

3. The IDOT "Standard Specifications for Road and Bridge Construction" latest edition and revisions, the "Standard Specifications for Water and Sewer Main Construction in Illinois", latest edition and revisions thereto, these improvement plans and details, special provisions and codes and ordinances of the Village of Sugar Grove, Illinois shall govern applicable portions of this project. If conflicts arise, the strictest of the requirements shall govern.

4. Locations of utilities shown on plans are approximate only, and are not necessarily complete. Contractor shall make his own investigations as to location and elevation of all existing underground structures, cables, utilities and pipe lines.

5. If existing utility lines of any nature are encountered which conflict in location with new construction, the contractor shall notify the project engineer and Village so that the conflict may be resolved.

6. The contractor shall be responsible for the protection of all private and public utilities even though they may not be shown on the plans. Any utility that is damaged during construction shall be repaired or replaced to the satisfaction of the project engineer, the Village, and/or the utility company by the contractor at his own expense.

7. The contractor shall notify J.U.L.I.E. (1-800-892-0123) at least ten days prior to construction so that each utility company can stake out any underground improvements that they may have which might interfere with the proposed construction.

8. The contractor shall be required to make arrangements for the proper bracing, shoring and other required protection of all roadways, structures, poles, cables and pipe lines, before construction begins. The contractor shall be responsible for any damage to the streets or roadways and associated structures and shall make repairs as necessary to the satisfaction of the Village Engineer and Village at the contractor’s own expense.

9. The contractor shall obtain, erect, maintain and remove all signs, barricades, flagmen and other control devices as may be necessary for the purpose of regulating, warning or guiding traffic. Placement and maintenance of all traffic control devices shall be in accordance with the applicable parts of Article 107.14 of the IDOT Standard Specifications, the "Standard Specifications for Traffic Control Items".

10. The contractor shall be responsible for providing safe and healthful working conditions throughout the construction of the proposed improvements.

11. Before acceptance and release of the surety by the Village and final payment, all work shall be inspected and approved by the Village Engineer.

12. The contractor will have in his possession on the job site at all times a copy of the Village approved plans and specifications during construction.

13. The contractor shall restore any area disturbed to a condition equal to or better than its original use and to the satisfaction of the Village Engineer. This shall include finish grading, excess stone removal establishment of a vegetative cover (seeding or sod), general cleanup and pavement replacement.

14. No unprotected excavation shall remain open over any weekend. Overnight open excavations shall be satisfactorily protected and meet all OSHA requirements.

15. With the exception of curb inlets, utility structures shall not be constructed in paved areas, including roadways, sidewalks, curb and gutter, and/or trails.

16. Trench backfill shall be provided at all utility trenches and removal of utility trenches in all paved areas and 2 feet beyond, including roadways, curbs and gutter, sidewalk, trails, and driveways. Initial trench backfill and bedding shall be graded CA-7 stone. The Village Engineer can approve the option to use flowable fill (CLSM) IDOT Mix #2 in lieu of the stone. The final trench backfill shall be CA-6 crushed aggregate and shall be compacted in place to ninety five percent (95%) of maximum density at optimum moisture as determined by the modified standard proctor test.

17. Curb protection is required at all times.

18. Tree protection shall be installed on site prior to the start of any construction.

19. Prior to the start of underground utilities, the site shall be rough graded to within 1 foot of the final grade.

20. Marking Of Valve Vaults, Buffalo Boxes And Manholes: All main line valve vaults, buffalo boxes and manholes shall be marked at the time of construction with a four inch by four inch (4" x 4") hardwood post neatly installed vertically with a minimum three feet (3') bury and a minimum four feet (4') exposed. The top one foot (1') of the post shall be painted as follows: blue for water and green for sanitary sewers.

21. All final adjustments of castings will be accomplished by the use of concrete (or other approved material) adjusting rings set in butyl rope joint sealant; mortar joints will not be allowed. Height of adjusting rings shall not exceed eight inches (8") or exceed two (2) rings.

22. At a minimum, all parkways within the dedicated street right of way shall be graded, foreign materials removed, topsoil placed to a minimum thickness of four inches (4"), erosion control blanket placed, and seeded (Class 1A minimum unless otherwise specified) or sodded in an approved manner. Sidewalks, trails, and parkway trees shall be properly installed and approved prior to acceptance and release of sureties.

23. Absolutely no substitutions or variances will be permitted to any of the Village of Sugar Grove Standard Notes or Ordinances unless approved otherwise by the Village <u>IN WRITING</u> prior to commencing construction activity.

VILLAGE OF SUGAR GROVE
STANDARD NOTES FOR SOIL EROSION AND SEDIMENTATION CONTROL

1. General

a) On site sediment control measures, as specified below, shall be constructed and functional prior to initiating clearing, grading, stripping, excavation or fill activities on the site.

b) The Contractor shall provide Soil Erosion and Sedimentation Control in accordance with Village ordinances, Village Standard Specifications for Improvements, "Standards and Specifications For Soil Erosion And Sediment Control" (the yellow book), the Illinois Urban Manual (latest edition), and in accordance with the approved plans, the Kane County Stormwater Management Ordinance, the Village's MS4 Permit, and as applicable both the Stormwater Pollution Prevention Plan and the Notice of Intent as issued by the Illinois Environmental Protection Agency (IEPA).

c) The Contractor shall be responsible for maintaining a log of the conditions of the soil erosion and sedimentation control measures per the National Pollutant Discharge Elimination System (NPDES) (regional or project specific) permit requirements. The contractor is obligated to review and record the status of the soil erosion and sedimentation control measures at minimum every week and after every ½" rainfall event. This log shall be kept on site, and the Village and/or Village Engineer reserves the right to review this log upon request. Soil erosion and sedimentation control measures shall be cleaned and restored as required.

d) The Village Engineer or his representative will have the authority to stop work if proper soil stabilization and sedimentation controls are not being observed.

e) Any deficiencies in soil erosion and sedimentation control measures will be reported to the Illinois Environmental Protection Agency.

2. Soil Stabilization

a) Topsoil Stripping – Stripped topsoil shall be stockpiled on-site (for reuse) at the location(s) designated on the approved plans and stabilized accordingly.

b) Temporary Seeding - Temporary seeding shall be provided within 7 days to any disturbed areas that are scheduled to remain denuded for longer than 15 days.

c) Permanent Seeding - Immediately following finish grading and topsoil placement, seeding or sod shall be installed in areas as designated on plans.

d) Dust Control – Under dry conditions where soil migration is an issue, the contractor will be required to wet the exposed unprotected soil surface with watering trucks to effectively eliminate soil migration. Grading activities producing dust must be suspended until the nuisance is abated. If, at the Village Engineer's discretion, proper dust control is not being observed, an order to immediately stop work will be issued until proper dust control measures are implemented.

e) Paved Areas – The aggregate base course should be installed as soon as possible to stabilize the exposed soil subgrade. In certain conditions and as recommended by a geotechnical professional, lime stabilization of roadway sub-grade may be approved by the Village Engineer. Village Engineer approval must be obtained IN WRITING prior to lime stabilization.

f) Slope Protection – Steep slopes may require additional stabilization, in addition to seeding, such as mulch, geotextiles, sod, or equal.

3. Sediment Control

a) For projects disturbing greater than 1 acre, the project shall comply with IEPA regulations with a Notice of Intent and Stormwater Pollution Prevention Plan.

b) For disturbed areas more than one acre, a sediment trap or equivalent control measure shall be constructed at the downslope point of the disturbed area.

c) Sediment basin and sediment trap designs shall provide for both detention storage and sediment storage. The detention storage shall be composed of equal volumes of wet detention storage and dry detention storage, and each shall be sized for the 2-year, twenty-four (24) hour runoff from the site under maximum runoff conditions during construction. The release rate of the basin shall be that rate required to achieve minimum detention times of at least ten (10) hours. The elevation of the outlet structure shall be placed such that it only drains the dry detention storage.

d) Adjacent Property Protection – Adjacent properties shall be protected from sediment deposition by preserving a vegetated buffer strip (minimum width of 25 feet) or sediment barriers (e.g. silt fence) at the lower perimeter of the lot. Where possible, both a vegetated buffer strip and sediment barrier shall be installed.

e) Stockpile Protection – Sedimentation barriers shall be provided in all areas around the perimeter of stockpile areas.

f) Storm Sewer Inlet Protection – During construction sediment shall be filtered through a filter fabric barrier around all front, side, or backyard inlets before it enters newly constructed storm sewer (straw bales are not allowed). The Village recommends all storm sewer inlet structures (including roadway and front, side, or backyard structures) utilize IPP Inlet Filters™, Marathon Materials, Inc. “Catch All Inlet Protector” sediment control inlet filters or approved equal to properly manage sediment control and to minimize storm sewer televising and cleaning which would otherwise be required prior to Village acceptance of the storm sewer system. All inlet filters shall be properly maintained until such time as all areas tributary to a particular inlet have been adequately vegetated as determined by the Village Engineer.

g) Ditch Protection – Rock dams shall be installed as ditch checks and staked in place at 250 lineal feet maximum spacing in all swales. If ditch slopes are severe, closer spacing of ditch checks may be required. Straw bales and silt fences are not allowed as ditch checks.

h) Construction Access - Construction traffic shall enter and leave the site at a designated access. Provisions shall be made to minimize the transport of sediment by runoff or vehicle tracking onto state/county/township highways or local streets. Truck washing facilities may be required. If necessary, highways or local streets shall be cleaned daily at the end of each workday or as required by the Village Engineer to keep mud and/or other debris off of any highway or street.

i) Roadway Cleaning & Street Sweeping – Roadways shall be kept clean during the course of construction by utilizing manual cleaning, street sweepers, or other machinery. Upon the installation of the final surface course of the roadway, absolutely no heavy machinery (e.g. skid steer, endloader) shall be utilized for roadway cleaning.

j) Removal of Control Measures – After final site stabilization is deemed achieved by the Village Engineer, all temporary erosion and sediment control measures shall be removed within 30 days.

4. Field Review

a) The Village Engineer or their representative shall make field reviews as described below, and shall either state that the portion of the work is completed satisfactorily or shall notify the Developer when the work fails to comply with the site development or erosion and sedimentation control plan as approved. In order to obtain field reviews and to ensure compliance with the approved erosion and sediment control plan, the grading or building permit, and this title, the Developer shall notify the Village Engineer within two (2) working days of the completion of the construction stages specified below:
    1. Upon completion of installation of sediment and runoff control measures (including perimeter controls and diversions), prior to proceeding with any other earth disturbance or grading;
    2. After stripping and clearing;
    3. After rough grading;
    4. After final grading;
    5. After seeding and landscaping deadlines; and
    6. After final stabilization and landscaping, prior to removal of sediment controls.

b) If stripping, clearing, grading and/or landscaping are to be done in phases or areas, the Developer shall give notice and request a field review at the completion of each of the above work stages in each phase or area. If a field review is not made and notification of the results given within five (5) working days after notice is received from the Developer, the Developer may continue work at his own risk, without presuming acceptance by the Village. Notification of the results of the inspection shall be given in writing to the Developer.

VILLAGE OF SUGAR GROVE
STANDARD NOTES FOR WATER MAIN CONSTRUCTION

1. All water main construction shall be in accordance with the "Standard Specifications for Water and Sewer Main Construction in Illinois", latest edition and revisions thereto, these improvement plans and details, special provisions and in accordance with codes and ordinances of the Village of Sugar Grove, Illinois. In case of conflict with Village codes, drawings, and these standard notes, the Village Engineer shall be contacted to confirm which is correct.

2. All water main shall be Ductile Iron Pipe Class 52 with either mechanical or push-on joints with brass wedges and shall conform to ANSI A21.51, AWWA C151 and ANSI A21.11, AWWA C111. Pipe shall be manufactured in the United States.

3. All fittings shall be Compact Ductile Iron and shall conform to ANSI/AWWA C153/421.53-84. Fittings shall be U.L. Listed Class 350, Tyler, Griffin or approved equal. Fittings shall be manufactured in the United States.

4. All pipe and fittings shall be cement lined in accordance with ANSI/AWWA C104/421.4.

5. All fittings shall be mechanical joint and installed with retainer glands unless otherwise shown on the drawings.

6. Long radius curves, either horizontal or vertical, may be laid with standard pipe by deflections at the joints. Maximum deflections at pipe joints and laying radius for the various pipe lengths shall be in accordance with ANSI/AWWA C600. When rubber gasketed pipe is laid on a curve, the pipe shall be jointed in a straight alignment and then deflected to the curved alignment. Trenches shall be made wider on curves for this purpose.

7. Sleeves shall be Rockwell D.I. Coupling Type 441, Tyler Union or equal. Sleeves shall be provided at locations shown on the plans or as required. The cost of sleeves is considered as incidental to the cost of the project.

8. All gate valves shall have a non-rising stem, shall have a standard operating nut and shall open in a counter-clockwise direction. Gate valves shall be American Flow Control Series 2500 Ductile Iron Resilient Wedge Gate Valves in accordance with AWWA C-515 Standard. All gate valves shall be installed in precast PCC valve vaults.

9. All Valve Boxes shall be heavy wall high density polyethylene American Flow Control Trench Adapters. Lids to be marked "Water". Open graded (CA-7) limestone shall be utilized to backfill around the operating nut on all valve boxes to prevent mud from penetrating the valve boxes.

10. All hydrants shall be in accordance with Section Four (4) of AWWA C502-54 standard and shall be an American Flow Control/Waterous Pacer Model No. WB-67-250 (break away style traffic design) with one 4 ½" steamer nozzle and two 2 ½" hose outlets, of which the threads conform with the standards of the Village of Sugar Grove, Illinois. All hydrants shall have an auxiliary gate valve. Hydrant installations shall have 5.5' depth of cover. Fire hydrants shall be placed 3 foot from the back of curb to the center of the hydrant, or where there is no curb and gutter, the face of the pumper nozzle shall be located five feet (5') from the paved road edge. Center line of pumper nozzle shall be eighteen inches (18") to twenty inches (20") above finish grade line (sidewalk to curb).

11. All fire hydrants shall be factory painted. Potable water fire hydrants shall be red, and raw water fire hydrants shall be green. The exact colors shall be approved by the Village Engineer. Fire hydrants shall be flagged.

12. All mechanical joint fittings, valves and hydrants shall be restrained with retainer glands. Retainer glands shall be UNI-FLANGE SERIES 1400 Wedge Action retainer gland or approved equal.

13. All pressure taps to an existing Village main shall be made with an American Flow Control Series 2800 Compact Ductile Iron Mechanical Joint Tapping Sleeve and an American Flow Control Series 2500 Ductile Iron Resilient Wedge Tapping Valve (MJ x FL) and shall be constructed in a five (5') foot minimum diameter valve vault. All taps shall be performed by the Contractor after payment of applicable connection fees and shall be witnessed by the Village. The Village Engineer should be notified 48 hours in advance of any tap.

14. All tees, bends, valves, and fire hydrants shall be adequately supported with a concrete block base, and supported laterally with precast concrete thrust blocking (not poured-in-place) against undisturbed earth.

15. All water mains shall have a minimum depth of cover of 5.5' from the finish grade to the top of pipe or as noted on plans.

16. Where feasible, all vertical water main adjustments shall be accomplished by deflection, not bends in the water main.

17. All water services shall be minimum one (1") inch diameter type "K" copper pipe with compression connections. Larger services are allowed upon proper justification and approval by Village Engineer. No joints will be allowed between the corporation stop and the curb stop. Material and installation will be in general accordance with AWWA C800. The underground water service pipe and the building sewer shall be not less than ten feet (10') apart horizontally and shall be separated by undisturbed or compacted earth.

18. The buffalo boxes shall be set in the parkway between the back of curb and the sidewalk. Long services shall be set at the mid-point between the back of curb. Short services shall be set one foot off of the sidewalk.

19. The Contractor shall obtain, erect, maintain and remove all signs, barricades, flagmen and other control devices as may be necessary for the purpose of regulating, warning or guiding traffic. Placement and maintenance of all traffic control devices shall be in accordance with the applicable parts of Article 107.14 of the Standard Specifications and the Illinois Manual on Uniform Traffic Control Devices for Streets and Highways. Contractor shall furnish a traffic control plan for IDOT or Village approval if required.

20. All work and materials shall be in accordance with code requirements.

21. The Contractor shall restore any area disturbed to a condition equal to or better than its original use. This shall include finish grading, establishment of a vegetative cover (seeding or sod), general cleanup and pavement replacement.

22. The Contractor shall be responsible for providing safe and healthful working conditions throughout the construction of the proposed improvements.

23. Before acceptance by the Village all work shall be inspected and approved by the Village or its representatives.

24. Easements for the existing utilities, both public and private, and utilities within public rights-of-way are shown on the plans according to available records. The contractor shall be responsible for determining the exact location in the field of these utility lines and their protection from damage due to construction operations. If existing utility lines of any nature are encountered which

conflict in location with new construction, the contractor shall notify the engineer so that the conflict may be resolved.

25. Water mains and water service lines shall be protected from sanitary sewers, storm sewers, combined sewers, house sewer service connections and drains in accordance with Title 35: Environmental Protection Agency Subtitle F: Public Water Supplies, Chapter II: Environmental Protection Agency, Parts 651-654 Technical Policy Statements, Section 653.119.

26. Whenever possible, a water main must be laid at least ten feet horizontally from any existing or proposed drain or sewer line. Should local conditions exist which would prevent a lateral separation of ten feet, a water main may be laid closer than ten feet to a storm or sanitary sewer provided that the water main invert is at least eighteen inches above the crown of the sewer, and is either in a separate trench or in the same trench on an undisturbed earth shelf located to one side of the sewer. If it is impossible to obtain proper horizontal or vertical separation as described above, then the sewer must also be constructed of water main type material (ductile iron pipe with slip-on or mechanical joints, prestressed reinforced concrete pipe with ASTM C-443 joints, etc.) and pressure tested to the maximum expected surcharge head to assure water tightness before backfilling.

27. Whenever water mains must cross house sewers, storm sewers or sanitary sewers, the water main shall be laid at such an elevation that the invert of the water main is eighteen inches above the crown of the drain or sewer. This vertical separation must be maintained for that portion of the water main located within ten feet horizontally of any sewer or drain crossed. This must be measured as the normal distance from the water main to the drain or sewer. If it is impossible to obtain the proper vertical separation as described above or if it is necessary for the water main to pass under a sewer or drain, then the sewer must be constructed of water main type material (as noted in item 26). This construction must extend on each side of the crossing until the normal distance from the water main to the sewer or drain line is at least ten feet. In making such crossings, center a length of water main pipe over/under the sewer to be crossed so that the joints will be equidistant from the sewer and as remote therefrom as possible. Where a water main must cross under a sewer, a vertical separation of eighteen inches between the invert of the sewer and the crown of the water main shall be maintained, along with means to support the larger sized sewer lines to prevent their settling and breaking the water main.

28. Valve vault frames shall be IDOT Type 1 (Standard 604001) and all lids shall have “Sugar Grove” and “Water” cast into them.

29. Valve vaults shall be adjusted with a maximum two (2) adjusting rings to a maximum of eight (8”) inches. Rings shall be precast concrete or other material approved by the Village Engineer.

30. Hydrostatic Tests - The Contractor shall perform Hydrostatic Tests in accordance with Division IV, Section 41 of the Standard Specifications for Water and Sewer Main Construction in Illinois, latest edition, and applicable provisions of AWWA C-600 and C-603. The water mains shall be pressure tested at 150 PSI. Allowable leakage shall be as set forth in AWWA C-600 latest edition. The maximum allowable leakage shall be based off of the first 1,000 feet of pipe (i.e. if 2,000 feet of pipe is being tested, the allowable leakage will be based on the first 1,000 feet only.) The duration of the test shall be for two hours minimum, and the maximum pressure drop during this two hour period is a cumulative 2 psi. To meet the testing requirements, the water main shall satisfy the pressure drop and the allowable leakage requirements. The gauge will be zeroed out before the pressure test begins. In addition, the pressure gauge used in the hydrostatic test shall be in 2 psi increments or less and have a minimum of a 3½” diameter face.

31. Disinfection of the Water Mains - Upon completion and satisfactory pressure testing of the newly laid water mains, the water mains shall be disinfected in accordance with the American Water Works Association, Procedure Designation, AWWA C-651, latest edition. The Contractor is responsible for collecting samples and having bacteriological testing performed as required by the

IEPA. The Contractor shall furnish to the Village the required documentation, test results, etc., required by the IEPA for placing the water mains or service lines in service and/or securing an operating permit.

32. Water valves and fire hydrants shall be operated by Village of Sugar Grove Personnel, only.

33. The Developer/Contractor shall contact the Village Engineer to schedule operation of valves, flush and fill, pressure test, chlorination, and sampling. The Village Engineer will contact the Village accordingly. The Developer/Contractor shall provide 48 hours notice prior to performing any of these work items. The following activities must be scheduled with the Village Engineer on independent days:
    - ✓ Flush and fill (Water main/service shall then be pre-tested.)
    - ✓ Pressure Test (The gauge shall be zeroed out before the start of the test.)
    - ✓ Chlorination
    - ✓ 1st Day of Sampling
    - ✓ 2nd Day of Sampling (Consecutive day after 1st Day of Sampling)

34. The Village shall witness all service taps greater than 1" in diameter. Accordingly, the Developer/Contractor shall contact the Village Engineer 48 hours in advance of the tap.

35. Fox Metro Water Reclamation District shall be contacted by the Developer/Contractor to observe the construction of all water service lines to a building/house. Their observation is required from the service valve to the building/house.

36. All water main shall be pre-pressure tested prior to the actual pressure test the Village Engineer and/or the Village witnesses.

VILLAGE OF SUGAR GROVE
STANDARD NOTES FOR SANITARY SEWER CONSTRUCTION

1. All sanitary manhole frames shall be Fox Metro Water Reclamation District (FMWRD) approved type, and all manhole lids shall have “Sugar Grove” and “Sanitary” cast into them.
2. All sanitary sewers are subject to the requirements, specifications, and standards of Fox Metro Water Reclamation District (FMWRD).
3. At the cost of the Developer/Contractor, all sanitary sewers shall be air and mandrel (deflection) tested per FMWRD specifications. Likewise, all sanitary manholes shall be air tested by FMWRD specifications. The Village Engineer shall witness all testing and shall be contacted 48 hours in advance of all testing. The Village Engineer will forward all test results to FMWRD upon passing results of the entire system. FMWRD is responsible for the televising of the sewer lines at the expense of the contractor.
4. The location of the ends of all sanitary sewer service locations shall be neatly marked by wooden posts and shall be tied to each property corner with the location being included in the record drawings. The top 1’ of the marker shall be painted green.
5. All final adjustments of castings will be accomplished by the use of concrete or other approved material adjusting rings set in butyl rope joint sealant; mortar joints will not be allowed. Height of adjusting rings shall not exceed two (2) rings or eight inches (8”). Any adjustments made after testing may require further testing.

VILLAGE OF SUGAR GROVE
STANDARD NOTES FOR STORM SEWER CONSTRUCTION

1. General

a) All work and material shall be in accordance with Village ordinances, Village Standard Specifications for Improvements, and the "Standard Specifications for Water and Sewer Main Construction In Illinois" (latest edition). In case of conflict, the more stringent of the requirements shall apply.

b) The stormwater drainage system shall be separate and independent of the sanitary sewer system.

c) All storm sewer structures, other than curb inlets and curb catch basins shall be marked at the time of construction with a 4" x 4" hardwood post neatly installed vertically with a minimum 4 feet bury and a minimum 4 feet exposed. The top 1 foot of the post shall be neatly painted green.

2. Storm Sewer

a) Storm sewer within or adjacent to the right of way shall be constructed of reinforced concrete pipe (RCP) conforming to the ASTM designation C-76, Class III or better. Other materials for storm sewers may be used in special cases upon the written approval of the Village Engineer. Any flexible pipe storm sewer systems so approved by the Village Engineer shall be subject to mandrel testing, for all sections, 30 days following installation.

b) Joints for all concrete storm sewers shall be of the bituminous mastic type, except when otherwise required by the Illinois Environmental Protection Agency or the Village Engineer.

c) All storm sewers that encroach within fifteen feet (15') of any building foundation shall be 'O'-ring, or other rubber, gasketed joints as per the ASTM C-443 specification.

d) Existing groundwater drain tiles encountered on site shall be connected to storm sewers with the use of a manhole or shall be restored to operating condition at the direction of the Village Engineer. Existing groundwater drain tiles that enter the site from other properties shall be connected to the new storm sewer system with the use of a manhole.

e) All closed storm structure lids shall have "Sugar Grove" and "Storm" cast into them and shall be the concealed pick hole type.

3. Manholes, Frames and Lids

a) All manholes, catch basins, and inlets shall be reinforced precast concrete and shall be sealed with Butyl rope joint sealant unless approved otherwise by the Village Engineer in high groundwater or high moisture soil areas.

b) Storm sewer structures shall be sized such that a minimum of 12 inches of precast concrete structure is provided between all pipe openings. In paved areas, manhole castings shall be IDOT Type 1 Neenah R-1713 frame and lid, EJIW 1050, or approved equal. In non-paved areas, where closed lids are needed, use Neenah R-4340-B, EJIW 6512, or approved equal.

c) In areas of hot-mix asphalt pavement, the space around the casting, a minimum of 18" from the casting, shall be filled with Class PP-2 concrete to a minimum depth of 10 inches and matching the elevation of the surface of the base course or binder course. HMA surface or binder course material shall not be allowed. In areas of concrete pavement, the space around the casting, a minimum of 18" from the casting, shall be filled with Class PP-2 concrete to a minimum depth of 10 inches and matching the elevation of the finished pavement surface.

d) All catch basins and inlets will be backfilled with CA-7 crushed limestone or crushed gravel to allow for sub-grade seepage. If sub-grade conditions are excessively wet, excessively sensitive to moisture or special conditions exist, a capped perforated pipe stubbed from the structure may be required.

e) For M-3.12 curb and gutter under ponding or continuous grade conditions, inlet and/or catch basin frames and grates shall be Neenah R-3501-P, EJIW 7525, or approved equal. For B-6.12 curb and gutter under ponding conditions, inlet and/or catch basin frames and grates shall be Neenah R-3281-A with Type M1 grate, EJIW 7210 with Type M1 grate, or approved equal. For B-6.12 curb and gutter under continuous grade conditions, inlet and/or catch basin frames and grates shall be Neenah R-3281-AL, EJIW 7210 with Type M4 vane grate & T1 back or approved equal. When additional grate capacity is needed in ponding conditions to handle the tributary flow, additional inlet structures shall be utilized. In cases where storm sewer inlets are used in depressed barrier curb areas, use Neenah No. R-3506-B, or approved equal. In rear yards and all other turf applications (except roadside ditch drainage applications) catch basins shall use use Neenah R-4340-B, EJIW 6512, or approved equal. Roadside ditch drainage structures shall be evaluated on a case by case basis.

f) No more than two (2) pre-cast concrete or other approved material adjusting rings, not exceeding 8 inches thickness, may be used for curb inlets or curb catch basins. In all other storm sewer applications, not more than 2 precast concrete or other approved materialadjusting rings shall be used, totaling no more than 8 inches, on any structure.

4. Sump Pumps & Service Lines

a) All sump pump systems shall discharge to the public storm sewer system. Perforated pipe shall not be used within 10 feet of a foundation wall. Sump pump discharges to a closed pipe system shall be provided with an outside air break to facilitate flow.

b) The connection to the storm sewer shall be through a structure. Stubs shall be provided as appropriate for all lots and shall extend at a minimum to the easement line to avoid excavation issues with other buried utilities. All pipe used for sump pump discharge collector lines shall be perforated PVC (SDR-35) or ADS N-12 of the size specified by the Engineer.

c) All individual sump pump lines shall be connected to a storm structure or sump pump discharge collector line structure. Sump pump collection lines shall be 6 inches diameter minimum. Sump pump discharge collector lines shall have a cleanout/inlet structure at the upstream end and shall have a cleanout/inlet structure every 300 feet maximum. Sump pump cleanout structures shall be 2 foot diameter structures and will not be allowed to pick up surface drainage. The frame and lid shall be Neenah No. R-1706-1 or approved equal.

d) The minimum depth of cover for sump pump service lines is 30”.

e) All sump pump service stubs shall be marked at the time of construction with a 2" x 4" wood post neatly installed vertically with the bottom set at the invert elevation of the capped stub, a minimum 3 feet bury and a minimum 4 feet exposed. The top 1 foot of the post shall be neatly painted green.

f) A sump pump discharge anti-freeze device IRCR405.1 or approved equal shall be provided.

VILLAGE OF SUGAR GROVE
STANDARD NOTES FOR PARKING LOT CONSTRUCTION

1. Construction materials and methods for parking lot construction shall meet the requirements of the "Standard Specifications for Road and Bridge Construction", latest edition, and Village code. If a conflict arises, the more restrictive requirement will apply.

2. Prior to the construction of any parking lot pavement, all of the major underground work shall be completely installed.

3. The Village Engineer shall be notified 48 hours prior to the pouring of the curb and gutter in order to review the aggregate base and string line/formwork of the curb and gutter. The curb and gutter within the parking lot shall be machine placed and shall be completed in a monolithic installation unless previously approved by the Village Engineer.

4. Curing and weather protection of all exposed concrete surfaces shall be in accordance with the IDOT Standard Specifications, latest edition, including any revisions. No honeycombing of the concrete will be accepted.

5. Proofrolls are required on the sub-grade and aggregate base, as well as binder course when required by the Village Engineer. The proof roll shall be witnessed by the Village Engineer. The Village Engineer shall be provided a minimum of 48 hours advanced notice prior to the proofroll. Each proofroll shall be at the cost of the Contractor and shall be to the satisfaction of the Village Engineer as follows:
    a. A loaded truck provided by the Contractor shall be driven over the area to be tested at a speed pattern and number of cycles to be determined by the Village Engineer. The test truck shall be the common tractor trailer type with no more than five (5) axles with a total of eighteen (18) wheels loaded to a net weight of no less than twenty two (22) tons. The load ticket shall be provided the Village Engineer for record.
    b. Any unstable or damaged subgrade, aggregate sub-base, or binder course shall be removed and replaced to the satisfaction of the Village Engineer at no cost to the Village.
    c. The Village Engineer is responsible for indicating whether the proofroll passes or fails. The Contractor is responsible for determining how to fix any unsatisfactory areas.

6. The Village Engineer shall be notified 48 hours prior to the start of any paving.

7. Final placement of hot mix asphalt surface course shall be delayed for a minimum of one full winter unless otherwise approved by the Village and Village Engineer. Before the placement of the surface course, all underground utility punch list items for final inspection shall be completed and approved. Also, the binder course patches must be completed and the curb and gutter repaired as required by the Village Engineer. All parkway improvements shall be completed prior to surface course to avoid unnecessary movements on the surface.

8. The hot mix asphalt binder course and surface course mixtures shall be laid on a surface, which is dry and only when weather conditions meet all standards stated in the IDOT Standard Specifications for Road and Bridge Construction. The hot mix asphalt binder course shall be placed only when the temperature in the shade is at least forty degrees Fahrenheit (40°F), when the temperature in the shade for the previous twenty four (24) hours is at least thirty two degrees Fahrenheit (32°F) and when the forecast is for rising temperatures. The surface course shall be placed only when the temperature in the shade is at least forty-five degrees Fahrenheit (45°F), when the temperature in the shade for the previous twenty-four (24) hours is at least forty degrees Fahrenheit (40°F), and

when the forecast is for rising temperatures.

9. Immediately prior to placing hot mix asphalt surface course, the pavement shall be thoroughly cleaned, flushed (if needed) and primed with bituminous materials (SS-1) at a rate not to exceed one-tenth (0.1) gallon per square yard. When bituminous materials (SS-1) are applied under traffic conditions, sanding at the approximate rate of four (4) pounds per square yard will be required.

10. All hot mix asphalt shall be delivered and handled so that the hot mix asphalt immediately behind the paver screen is at or above two hundred seventy degrees Fahrenheit (270°F). All asphalt delivered to the project shall be covered when the temperature is at or below seventy degrees Fahrenheit (70°F).

11. The mix design shall be submitted the Village Engineer 48 hours in advance of paving.

12. All testing shall be per IDOT specifications. A certified nuclear density technician must be on site to set the asphalt pavement rolling pattern and confirm compaction densities. The technician shall revise the rolling pattern as deemed necessary. The technician shall stop the paving operation if the required densities are not being met. Density test results shall be submitted to the Village Engineer within one week of completion of the paving operation. The Contractor shall be responsible for Quality Control testing. The Village reserves the right to perform Quality Assurance testing. The Village Engineer reserves the right to stop paving operations if the Contractor does not have a qualified tester on site at the start of the paving operations.

VILLAGE OF SUGAR GROVE
STANDARD NOTES FOR STREET PAVING AND CONSTRUCTION

1. All street pavements shall be constructed in accordance with the design criteria for the various classes as established in the "Bureau of Design and Environment Manual" and "Highway Standards" of the State of Illinois Department of Transportation, latest edition. Construction materials and methods shall meet the requirements of the "Standard Specifications for Road and Bridge Construction", latest edition. The thickness of the pavements for Major Collectors and Arterials shall be determined in accordance with the current Illinois Department of Transportation "Manual for Structural Design of Portland Cement Concrete Pavement" and the "Manual of Instructions For The Structural Design Of Bituminous Concrete Pavements", or as required by the jurisdictional authority.

2. Prior to the construction of any roadway pavement, all of the major underground work shall be completely installed in place.

3. The Village Engineer shall be notified 48 hours prior to the pouring of the curb and gutter in order to review the aggregate base and string line/formwork of the curb and gutter. The curb and gutter within the parking lot shall be machine placed and shall be completed in a monolithic installation unless previously approved by the Village Engineer.

4. All concrete shall be protected when required due to weather conditions per the Illinois Department of Transportation Standard Specifications for Road and Bridge Construction, latest edition, including any revisions.

5. Proofrolls are required on the sub-grade, aggregate base, hot mix asphalt base, and the binder course, and shall be witnessed by the Village Engineer. The Village Engineer shall be provided a minimum of 48 hours advanced notice prior to the proofroll. Each proofroll shall be at the cost of the Contractor and shall be to the satisfaction of the Village Engineer as follows:
    a. A loaded truck provided by the Contractor shall be driven over the area to be tested at a speed pattern and number of cycles to be determined by the Village Engineer. The test truck shall be the common tractor trailer type with no more than five (5) axles with a total of eighteen (18) wheels loaded to a net weight of no less than twenty two (22) tons. The load ticket shall be provided the Village Engineer for record.
    b. Any unstable or damaged subgrade, aggregate sub-base, or binder course shall be removed and replaced to the satisfaction of the Village Engineer at no cost to the Village.
    c. The Village Engineer is responsible for indicating whether the proofroll passes or fails. The Contractor is responsible for determining how to fix any unsatisfactory areas.

6. The Village Engineer shall be notified 48 hours prior to the start of any paving.

7. Final placement of hot mix asphalt surface course shall be delayed for a minimum of one full winter after binder installation and 70% of the adjacent, private improvements are in place unless otherwise approved by the Village and Village Engineer. The maximum delay for surface course is three (3) years after installation of the binder, unless otherwise approved by the Village Board under the recommendation of the Village Engineer. Before the placement of the surface course, all underground utility punch list items for final inspection shall be completed and approved. Also, the binder course patches must be completed, and the curb and gutter repaired as required by the Village Engineer. The parkway landscaping and restoration must be completed to avoid having equipment marring the surface.

8. On all streets where new pavements meet existing hot mix asphalt or Portland cement concrete pavements, a butt joint with a transitional length of not less than ten feet (10') will be required. The subgrade shall be graded parallel to the final surface grade and as such shall drain to the curb lane and to the inlets and catch basins. Positive drainage must be accomplished on the compacted sub-grade or the placement of base material will not be allowed. Certification by the Village Engineer verifying proper subgrade drainage will be required prior to any additional roadwork.

9. The hot mix asphalt base course, leveling binder, binder course, and surface course mixtures shall be laid on a surface, which is dry and only when weather conditions meet all standards stated in the IDOT Standard Specifications for Road and Bridge Construction. The hot mix asphalt base course, leveling binder and binder courses shall be placed only when the temperature in the shade is at least forty degrees Fahrenheit (40°F), when the temperature in the shade for the previous twenty four (24) hours is at least thirty two degrees Fahrenheit (32°F) and when the forecast is for rising temperatures. The surface course shall be placed only when the temperature in the shade is at least forty-five degrees Fahrenheit (45°F), when the temperature in the shade for the previous twenty four (24) hours is at least forty degrees Fahrenheit (40°F), and when the forecast is for rising temperatures.

10. After any binder course surface variations have been corrected to the satisfaction of the Village Engineer and immediately prior to placing hot mix asphalt surface course, the pavement shall be thoroughly cleaned, flushed and primed with bituminous materials (SS-1) at a rate not to exceed one-tenth (0.1) gallon per square yard. When bituminous materials (SS-1) are applied under traffic conditions, sanding at the approximate rate of four (4) pounds per square yard will be required.

11. All hot mix asphalt shall be delivered and handled so that the hot mix asphalt immediately behind the paver screen is at or above two hundred seventy degrees Fahrenheit (270°F). All asphalt delivered to the project shall be covered when the temperature is at or below seventy degrees Fahrenheit (70°F).

12. The mix design shall be submitted the Village Engineer 48 hours in advance of paving.

13. All testing for both concrete placement and hot mix asphalt paving shall be per IDOT specifications. The asphalt laying pattern must be approved by the Village Engineer or his representative in order to minimize transverse joints. A certified nuclear density technician must be on site to set the asphalt pavement rolling pattern and confirm compaction densities. The technician shall revise the rolling pattern as deemed necessary. The technician shall stop the paving operation if the required densities are not being met. Density test results will be submitted to the Village Engineer within one week of completion of the paving operation. The Contractor shall be responsible for Quality Control testing. The Village shall be responsible for Quality Assurance testing. Therefore, at the time of asphalt paving, a representative from the Contractor's testing agency and a representative from the Village's testing agency shall be present at the asphalt plant prior to paving and on site at the start of paving. The Village Engineer reserves the right to stop paving and/or concrete operations if the Contractor does not have a qualified tester on site at the start of the paving and/or concrete operations.

14. All paving shall be done with paving machines utilizing electronic grade control and a string line shoe on wheels of a minimum length of fifteen feet (15').

15. All rollers shall be per IDOT specifications.

16. All hot mix asphalt plants being used by the contractor shall be approved by IDOT. In addition, all paving contractors performing work within the right of way shall furnish an

IDOT Certificate of Eligibility to the Village prior to the start of paving.

17. Load tickets shall be furnished to the Village Engineer at the time of paving.

18. The nose of all islands in the roadway shall be tapered per IDOT standards as to not hinder snowplow operations.

19. The Village Engineer may approve lime stabilization, when soils are compatible as determined by a geotechnical engineer. The lime shall be mixed to a minimum depth of 16 inches and meet the Illinois Department of Transportation's guidelines for Lime Stabilized Soil Mixture as outlined in the "Standard Specifications for Road and Bridge Construction", latest edition. Drainage Fabric will not be required if Lime Stabilization, in accordance with IDOT Standard Specifications, is utilized for soil sub-base modification.

VILLAGE OF SUGAR GROVE
STANDARD NOTES FOR STREETLIGHT CONSTRUCTION

1. Power Supply Connection: Connections to power supply shall be made by Commonwealth Edison or the Village's approved electrical provider.

2. Conduit: All driveways, street, and sidewalk crossovers shall have a minimum of one and one-half inch (1 1/2") galvanized rigid steel conduit used as raceways for underground cable. Heavy duty PVC or A85 conduit will be allowed if it is encased in a three inch (3") minimum concrete collar. All conduits and raceways shall be marked on the as-built drawings.

3. Underground Cable: All trenched underground cable shall be placed in unit duct and buried at least thirty-six inches (36") below the normal finished grade. A red plastic marking tape shall be placed in the trench fifteen inches (15”) below finished grade where the unit duct is trenched. All conduits and ducts shall be marked on the as-built drawings.

4. Splices: All cable on the underground cable section shall be continuous and no splicing shall be made underground. All necessary splices shall be made above ground level.

5. Underground Cable/Unit Duct Location: Underground cable shall be installed in a trench not more than two feet (2') from the "back" edge of the curb except that in no case shall the underground cable be installed under a sidewalk.

6. Fusing: All ungrounded feeders shall be fused at or below their rated capacity. Each standard shall contain proper fusing in series with each ungrounded conductor to protect the luminaire located on that pole. Streetlights with multiple luminaires shall have separate fuses for each luminaire.

7. Guarantee: The developer shall supply to the Village an inventory equal to at least ten percent (10%) of the number of poles, luminaires, photocells, ballasts, etc., installed along public streets and for public parking lots for the subdivision. This inventory shall be used to replace lighting system components that fail or are damaged after expiration of the guarantee period. The inventory shall be delivered to the Village of Sugar Grove Public Works at the start of the lighting construction.

8. No above ground structures unless approved by the Village Engineer.

9. Maintain a minimum of 5’ horizontal separation and 2’ vertical separation with Village utilities. Additional separation may be required by the Village Engineer depending on the depth of the utilities.