

**NORTHBROOK DEPARTMENT OF DEVELOPMENT & PLANNING
ENGINEERING SUBMITTAL GUIDELINES FOR:
RESIDENTIAL DEVELOPMENT
(NEW SINGLE-FAMILY RESIDENCE / ADDITION OVER 400 SF NEW IMPERVIOUS)
Revised October 2021 (Page 1 of 3)**



This handout has been prepared by Engineering Division staff in order to confirm applicable requirements concerning Engineering drawing requirements for proposed residential development within the Village. Please be advised the subsequent information defines minimal submittal requirements concerning the subject improvement and additional provisions may be warranted following a thorough review by staff.

COVER SHEET:

- Engineering consultant contact information (please include applicable email address)
- Subject address along with reference to neighboring property addresses
- North Arrow
- Scale (1" = 10' preferably)
- Project benchmark elevation and description (NAVD '88 Datum). A FEMA reference mark shall be utilized for properties located within the regulatory floodplain
- PE Seal in ink along with Civil Engineer's signature
- Signed/dated drainage Certification
- Date of drawing along with all subsequent revisions
- Index of sheets which outline the composition of the plan set

EXISTING CONDITIONS:

- Pre-existing building footprint along with all other existing hard surfaces delineated (i.e. driveway, patio, service walk, pool, shed, etc.)
- Existing mainline utilities (Storm, Sanitary, Water) including direction of flow, rim/invert elevations, etc.
- Miscellaneous utility features within right-of-way (manholes, fire hydrants, street lights, utility poles, transformers, junction boxes, pads/pedestals, etc.)
- Existing topography (1 ft. Contours) of the subject property and extending a minimum 25 ft. into the adjacent properties in confirming existing drainage patterns
- Topography of existing roadside ditch (if applicable)
- Roadway Features (material composition, delineation of edge-of-pavement/curb, applicable elevations, etc.)
- Existing Easements referenced
- Applicable front, rear, side yard setback dimensions
- Size/type of all trees 6" dia. or greater at 4 ½ feet above adjacent ground on the subject property, extending a minimum 25 ft. into the adjacent properties and entire limits within Village right-of-way

GRADING PLAN:

- Proposed Building Footprint along with applicable hard surface (i.e. driveway, patio, service walk, pool, shed, etc.)
- Top-Of-Foundation (T/F) elevation of neighboring structures
- Proposed T/F elevation of new residence
- Proposed Finished Grade (F/G) elevation at foundation
- Delineation of all proposed variations to foundation (i.e. step foundation, brick ledge, etc.)
- Proposed Topography (1 ft. contours)
- Directional flow arrows clearly depicting proposed flow path
- Depiction of proposed side yard swales with flowline elevations at 20 ft. intervals, delineating all summit points
- Side yard cross-sections depicting adequate drainage; this would include
 - five (5) cross sections taken at the 1.) Front face of building 2.) Center of building 3.) Rear face of building 4.) 25 ft. behind rear face and 5.) 25 ft. in front of front face
 - elevation at the flowline (this spot elevation must also be delineated upon the plan view)
 - elevation at the respective lot line
 - the finished grade elevation at the foundation
 - the pre-existing profile that existed prior to the development
- Spot elevations of proposed fronting sidewalk (if applicable)
- Designated on-site Overflow Route (bold arrows), along with description of continual off-site path until reaching appropriate outlet
- Delineation of erosion control/silt fence limits along with all other erosion control devices
- If a proposed driveway is within three-feet of a common property line the installation of a barrier curb will be required.
- All Public Sidewalk cannot exceed a maximum cross slope of 25. Including any portion through the driveway.

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UTILITY PLAN:

- Location of proposed 1 1/2" diameter Type "K" copper water service along with B-Box location being situated between the fronting property line and sidewalk, within the public right-of-way
- Location of 4" diameter sanitary service along with referenced clean-out
- Location of 4" diameter PVC SDR 26 sump pump discharge line connection into storm sewer
- All details pertaining to the required on-site drainage system on the property (see Stormwater Improvements)
- All applicable tree preservation measures (mulching, root pruning, auger/boring, etc.) as specified by Village Tree Preservation Officer, Mark Cacioppo (847/664-4123)
- Delineation of auger/boring of sanitary service beneath public roadway pavement (open-cutting is impermissible)
- Confirmation of all applicable IEPA requirements (vertical/horizontal separation of water main)

STORMWATER IMPROVEMENTS:

An on-site drainage system is required for all new single family developments within the Village, unless specified otherwise by the Village Engineer. Given the characteristics of existing infrastructure within the vicinity of the subject property, one of the three criteria will apply:

*1. Direct Connection into Existing Infrastructure
(Self-explanatory)*

2. Off-Site Storm Sewer Extension

- Complete topography of off-site work limits with all affected properties delineated
- Plan/Profile view of proposed improvements
- Proposed finished grading pattern
- Delineation of all right-of-way restoration measures (driveway, culvert, swale, etc.)
- Photographic record of off-site work limits for Village record

3. On-Site Detention/Restricted Outlet (Sub-Standard Drainage Areas)

When there is an increase of new impervious coverage to the existing property site 1,000 s.f. and greater, the resulting change to the land topography will trigger the requirement for On-site Stormwater Detention.

- Stormwater Management Report which will consist of:
 - cover sheet (dated, signed/sealed by P.E.)
 - summary of design characteristics (HWL, overflow, control, etc.)
 - routing table results (Illinois Bulletin 75 Rainfall Data)
 - orifice solution (assume 0.15 release, 1.5" diameter minimum restrictor)
 - ADS spreadsheet tabulation confirming the attainment of the required detention (if applicable)
- Given area constraints, detention shall be provided on private property utilizing an underground detention system designed by Advanced Drainage Systems (ADS) or approved equal. Necessary information will include:
 - all applicable construction details pertaining to the underground detention system
 - the location of the proposed detention facility along with confirmation of adequate cover over the pipe per required specifications.
 - a detailed schematic of the system indicating dimensions and item location.
 - a schedule of materials providing a detailed description of each item along with the quantity needed.
 - delineation of sump pump discharge/downspout connections into the proposed facility
- Restrictive Covenant concerning designated stormwater detention area

FLOODPLAIN DEVELOPMENT:

- Delineation of 100-Yr. BFE contour
- Delineation of scaled Regulatory floodway
- Stationed cross-section locations taken in 20 ft. intervals within the work limits of the floodplain
- Completed floodplain development permit (available on-line at <http://www.northbrook.il.us/index.aspx?page=116>)
- Pre/Post Construction Elevation Certificate
- Request of Letter Of Map Amendment (LOMA) to FEMA

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- Compensatory Storage Analysis (if applicable) which will consist of:
 - cover sheet (dated, signed/sealed by P.E.)
 - cross-sections depicting the 10/100-yr BFE along with existing/proposed profile with cut/fill areas shaded
 - cut/fill quantity derivation (in tabular format) amid the 0 to 10-yr BFE confirming balance (1:1)
 - cut/fill quantity derivation (in tabular format) amid the 10 to 100-yr BFE confirming balance (1:1)

CONSTRUCTION DETAILS/GENERAL NOTES

- All applicable Village standard details (all details available at <http://www.northbrook.il.us/index.aspx?page=117>)
- All applicable Village General Notes (contact the Public Works Department for more information)

MISCELLANEOUS:

Impervious Coverage Calculations

- Detailed impervious coverage calculations provided in a tabular format of both existing and proposed conditions with delineation of the resulting net increase
- Proposed impervious coverage calculations for the front yard are also required. The front yard is defined as the portion of the lot between the front property line and the recorded building line. A maximum impervious coverage of 30% is allowed for the front yard.

Pre-Notification to Affected Residence

- Approved building permits require submitting a copy of a notification letter to all affected properties which will be impacted by the proposed off-site utility service connections. The notification letter must contain contact information (name, address & phone number(s)) for the owner & general contractor, define the work and specify immediate backfilling following completion and final restoration within five (5) calendar days, weather permitting. In addition, written notification of work at least 10 days in advance to affected residents shall still apply. A sample letter is available upon request.

Erosion Control/Silt Fence Inspection

- Be advised that the installation/Village inspection of silt control fencing on the subject property will be required as specified in the building permit. Contact the Development & Planning Services Department (847/664-4050) to schedule an inspection.

BUILDING & DEVELOPMENT DEPARTMENT DISCLAIMER:

Please be advised that the Village of Northbrook is not responsible in either determining or confirming what other permitting authorities (i.e. Mission brook Sanitary District, CCHD, IDOT, MWRDGC, IEPA, IDNR, USACOE, FPDCC, etc) may warrant in regards to the proposed improvement. This is the sole responsibility of the permittee. In addition, it must be understood that the approval by such outside permitting authority may be contingent upon Village approval of the subject permit.

Please contact Project Engineer, Jim Baxa at 847/664-4119 concerning any questions regarding the above information.