Development: _____

VOL Permit #_____ Review#:_____

(Information is summarized from standard specifications/details, ordinances and practical engineering design standards, items from Village code or Lombard's Standard Specifications are referenced. This is not a comprehensive list of all items that may be applicable.)

General Information:

- Please do not combine architectural and civil engineering drawings. This helps send architectural plans on for helping to expedite the review process.
- Submittal requirements:
- Access the online permit portal at https://www.villageoflombard.org/onlinepermits
  - Complete all forms on the online permit application
    - If all contractors are not known at the time of applying, they will be required prior to permit issuance. The contractors will need to have insurance, register, and/or provide a copy of their license before the permit will be issued. The requirements vary based on the contractor type.
  - Architectural:
    - Digital set of the architectural plans, in PDF format
  - Civil Engineering:
    - Digital set of the civil engineering/site plans, in PDF format (scaled for using an engineer scale (i.e. 1"=10', 20', 30', etc.)). **A bar scale should be included on all scalable sheets**.
    - Digital set of the stormwater calculations (if required, see below), in PDF format. These may be integrated into the plan set, if desired.
- General reminder: street cuts into the following streets must obtain approval from PD/FD/PW & may have restricted hours:
  - Main St, North Ave, Roosevelt Rd, Butterfield Road, St. Charles Rd, Westmore Ave, Grace St, Finley Rd, 22nd St, Route 53, Maple St, Wilson Ave, Madison St, and Highland Ave (south of IL 38)
- Please note that Village design requirements are located in a number of areas of the Village code. Below is only intended to be a summary of the more standard items. It is highly suggested that you review the following Village Code chapters and the Village Standard Specification Manual, all available online: Title 5, Chapters 50 & 51 and Title 15, Chapters 150, 151, 154, and 155.

Cover Sheet:

- Professional engineer sign/seal with expiration date
- Village of Lombard/FEMA Benchmark(s) (if needed, provide equation from VOL to FEMA)
- Location map
- Sheet index
- Revision block

Geometric/Paving Plans:

- Driveway geometry (summary only) (150.299-150.303):
  - Commercial:
    - Commercial driveways for each property shall be limited to 2 in the first 100 front feet; 1 per additional 100 front feet.
    - On arterial streets with ADT exceeding 20,000 VPD, minimum of 440-ft between centerlines of driveways. Circulation between driveways will be accomplished on a frontage road.
      - Currently (2016) this includes the following roads within the Village's limits:
        - Butterfield (entire length)
        - Columbine Road (between North Ave to St. Charles)
        - Finley Road (south of 22nd)

    - North Ave (entire length)
    - Roosevelt Road (entire length)
  - Distance between commercial driveways (measured at the curb line) shall not be less than 20-ft.
  - Distance from the end of the driveway curb cut to the nearest lateral property line shall not be less than 5-ft.
  - At heavily traveled intersections where separate right turn lanes are incorporated in the design, no driveway shall be constructed where the edge of the turning lane pavement is greater than 5-ft from the edge of the through pavement.
  - (1-way): 20-ft (max.) at property line
  - (2-way): 35-ft (max.) at property line
  - Radii: no more than 15-ft.
  - Angle: no less than 60 degrees from curb line to centerline of driveway
  - All service station gasoline pump islands shall be a minimum of 15-ft from any property line.
  - All loading docks or loading doors shall be a minimum of 45-ft from any property line which is parallel to such loading docks or doors.
  - No commercial driveways will be permitted into any parking lot or other facility which is designed in such a way as to make it necessary for exiting vehicles to back onto the street.
  - In no case shall any obstruction of any kind be permitted to obscure vehicles entering into public right-of-ways. Such obstruction shall not exceed a height of 30-inches within a depth of 30-ft from front, side, or rear property lines.
  - Above ground utility cabinets shall be located no less than 30-ft from any non-residential driveway (§97.012 (B))
  - The minimum lateral separation between the edge of a driveway pavement and any above ground obstruction (i.e. posts, poles, utility boxes, etc.) shall be three (3) feet. Parkway tree trunks are 10-ft. (Village Specs section 500.13(C))
- Driveway alignment with other driveways across the road

- Parking stalls sizing should follow the following zoning requirements (155.602):
  - Standard length of 18'-0"
  - For parking stalls adjacent to landscape islands and more than 5 feet from a property line, minimum length is 16'-0"
  - Parallel parking spaces minimum length is 24'-0"
  - Minimum width (based on zoning district):
    - B1, B2, B3, B4, B4A, B5, B5A: minimum 9'-0"
    - O (Office), I (Industrial), all residential districts & publicly owned commuter lots: minimum 8'-3"
- 2-way drive aisles shall be a minimum of (Table 6.2): (155.602)(C)
  - 8.25' stalls: 25'-0"
  - 9.0' stalls: 24'-0"
- 1-way drive aisles shall be a minimum of (Table 6.2):

	8.25' stalls	9' stalls	16' stalls
90 degree	20'	20'	20'
60 degree	18'	17'	n/a
45 degree	14'	13'	n/a

- Lighting: Parking lots shall be illuminated according to the standards in the Village code at all times that the parking lot is open for general use. (155.602)(A)(10)(d)
- Request truck/car turning exhibits when turning radius areas are in question (Autoturn, etc.)
- Parking lot structural number shall be in accordance with the following (Village of Lombard Standard Specifications):
  - Automobile loading: 2.5
    - HMA: 1.5" surface, 2" binder, 10" CA-6

- Truck loading: 3.0
  - HMA: 1.5" surface, 2" binder, 14" CA-6
- Off-street loading requirements (155.603)
  - Size: (Table 6.4: Schedule of Off-Street Loading Requirements)
    - Short:12' width by 30' length, access aisle: 12' one-way, 24' two-way
    - Long: 12' width by 50' length, access aisle: 14' one-way, 24' two-way
  - Maneuvering apron: 60'
  - Surface: paved with asphalt, concrete or other dustless all-weather material capable of bearing a live load of 200 pounds per square foot.
- Landscape island minimum width from back of curb is 7 feet & minimum of 120 SF in area. (155.706)(B)(2)(b)
- All parking lots shall have 6" barrier curb around the perimeter, with exception of small (1-2 feet wide) depressed curb areas for PCBMP designs (155.602)(A)(10)(f)
  - Such curbing shall be designed so that no part of any parked vehicle shall encroach into a required yard.
- Must be surfaced with "dustless, all weather material of asphalt or concrete" (155.602)(A)(10)(c)
- General design guidelines should be followed
  - Drive-thru drives should be left hand turns, people don't handle right hand turns well
- Sidewalks shall be shown, on-site as well as along street frontages
- Accessible ramp locations shall be called out
- ADA stall count complies with table 6.1 (155.602)(B)(2)

# Parking Spaces	1 to 25	26 to 50	51 to 75	76 to 100	101 to 150	151 to 200
Req'd # Accessible Spaces	1	2	3	4	5	6
# Parking Spaces	201 to 300	301 to 400	401 to 500	501 to 1000	Over 1000	
Req'd # Accessible Spaces	7	8	9	2%	20+1 per 100 over 1000	

- Trash dumpster areas shall be designated
- Details for all pavement/curbs/sidewalks/etc. items included. Village details utilized, when applicable.
- For street lane closures, IDOT standard details shall be followed.
- For subdivisions: per the USPS, all new subdivisions shall have cluster community mailboxes. Individual home mailboxes are no longer allowed. The site plan shall show the proposed location for the cluster mailbox. They should not be located within a requisite clear line of sight area.

Erosion Control (SWPPP) Plans:

- Silt fence on downhill side of development/disturbance (acceptable to install around perimeter)
- Inlet protection (filter fabric inserts/baskets/hay bales/silt boxes/etc.)
- Ditch check dams (for lengthy swale areas)
- Construction entrance called out
- VOL notes
- Details

Grading Plans:

- Paved area slopes between 1-5%
  - can be 0.5% if gutter or pavement under a canopy/building
- Grass/landscaped areas slopes between 2-25%
  - 1% allowed, if specific spot grades are called out
- Sidewalks (154.504)
  - Minimum sidewalk width: 5-ft
  - Maximum slope: not to exceed 6% or steeper than the street slope (per Public Rights of Way Code)

- Detention basins
  - Detention pond slopes maximums (VOL Std. Spec. Section 800.02)
    - Residential, or adjacent to residential: 4:1
    - Non-residential: 3:1
  - Ponds near ROW shall be set back 10'+1.5 times the depth of the pond (See IDOT sheet for specifics on different situations)
  - Bottom slope of the detention pond should be no less than 1.5% without underdrains
  - The highwater elevation (or HWL) shall allow for 1 foot of freeboard below the T/F (for commercial)
  - The highwater elevation (or HWL) shall allow for 1 foot of freeboard below the T/F (for residential)
  - All detention ponds shall have an overflow location with weir calculations to provide proof that 1.0 cfs/acre will flow through the overflow areas without detriment to the detention facility
- Driveways: residential aprons shall be between 2%-6% slope.
- If there is less than a continuous 1% minimum slope from the new impervious areas to a storm sewer or defined watercourse, then drain tiles, storm drains and/or a dry well shall be required to convey or store the 100-yr runoff.
- Accessible parking stalls shall have a maximum of 2%, in any direction (IL ADA)
- Accessible route shall have a maximum slope of 5%, except ramp locations (IL ADA)
- Sidewalk grades shall be no greater than 5%, 2% cross slope (IL ADA)
- If cross sections are needed to help clarify berms/retaining walls/etc. request them
- If pond has a natural water level (wet bottom pond) aerators may be included (and sized appropriately for the depth to prevent stagnate water) and the petitioner shall maintain them.

Utility Plans:

Keep in mind: Spacing of trees shall be as follows (section 99.04):

- 35' intervals from existing trees
- Minimum of 10' from driveway aprons
- Minimum of 5' from water/sewer service lines
- Minimum of 15' from crosswalks
- Minimum of 5' from sidewalks
- Minimum of 15' from street light poles and utility poles
- Minimum of 10' from fire hydrants
- Minimum of 10' from catch basins
- Minimum of 15' from any traffic control device, not including signs
- Parkway trees will be planted by VOL forestry division and a charge of $350/tree will be part of the permit fee. The owner is responsible to plant any required parkway trees in IDOT or DuPage DOT right-of-ways.
- Distance between signs (with foundations) and Village Utilities:
  - Water Main: Minimum 10'
  - Storm or Sanitary Sewer: Minimum 5'

Sanitary Sewer:

- All sanitary connections to the ROW have a cleanout near the property line, where they leave the site
- All changes in direction have a minimum of a cleanout or a structure
- Utility crossing elevations should be shown on the plan, to verify no conflict manholes will be required.
- Sanitary service lines shall have a minimum of 1%. ("Standard Specifications for Water and Sewer Main Construction in Illinois")

Suggested Sanitary Sewer Main Slopes (not in the Village Code, but from IL Title 35, section 370.320(c))

Size of Pipe	Minimum Slope	Desired Slope	Maximum Slope
8”	0.40%	0.45%	12.00%
10”	0.28%	0.30%	12.00%
12”	0.23%	0.25%	12.00%

Flowing full of not less than 2.0 fps, based on Manning’s formula using an “n” value of 0.013.

Sanitary Services shall be between 1% minimum and 10% maximum (50.023)

Watermain/Water Services:

- Utility crossing elevations should be shown on the plan, to verify no conflict manholes will be required.
- Verify IEPA separation requirements are met for WM to sewers. (10-foot horizontal, 1.5-foot vertical, if water is lower: need 10-foot watermain quality pipe on each side of crossing)

Storm Sewer:

- Storm sewer slopes are not back-pitched
- Storm sewer materials are of the following (VOL Std. Spec. Section 200.02-200.03):
  - RCP or DIP in ROW,
  - PVC used in landscape areas or for roof drain connections from the building to the nearest available downstream structure) when located under a privately maintained paved area, but only when approved in writing by PES Division.
  - Precoated, fully-lined, galvanized corrugated steel pipe only for residential driveway crossings only when a ditch section is present.
- Storm sewer has 2-foot of cover (VOL Std. Spec. Section 200.05)
- All storm connections to the ROW have a cleanout near the property line, where they leave the site
- All changes in direction have a minimum of a cleanout or a structure
- No sumps in storm structures in non-paved areas (VOL Std. Spec. Section 200.06)
- Storm sewer calculations/HGL to verify 10-yr, 24-hour capacity, without surcharging the system. If overflow route is through pipe, they need to not surcharge for a 100-yr, 24 hour capacity.
  - Refer to the DuPage County technical guidance memo, issued October 16, 2019, for the specific rainfall to the followed. Prior to the dates in the memo, the 10-yr, 24-hr rainfall is 4.5”, after the dates in the memo, the 10-yr, 24-hr rainfall is 5.15”.
- Any restrictor detail and the location of the restrictor should be called out. The diameter of the restrictor should match the size called out in the stormwater submittal calculations.
- Utility crossing elevations should be shown on the plan, to verify no conflict manholes will be required.
- Details for all storm sewer items are included, Village of Lombard details required, as applicable.
- Minimum 3.0 fps minimum (and preferably 10 fps maximum, due to scour) flows are allowed in the pipes. Check the slope of the pipe with the pipe size for a pipe flowing full. (VOL Std. Spec. Section 200.01)

RCP example:

Size of Pipe	Minimum Slope	Maximum Slope (preferred)
10”	0.56%	6.19%
12”	0.44%	4.85%
15”	0.32%	3.60%
18”	0.25%	2.82%
21”	0.21%	2.30%
24”	0.17%	1.93%
30”	0.13%	1.43%
36”	0.10%	1.12%
48”	0.07%	0.76%

PVC example:

Size of Pipe	Minimum Slope	Maximum Slope (preferred)
4”	1.12%	12.43%
6”	0.65%	7.24%
8”	0.44%	4.93%
10”	0.33%	3.66%
12”	0.26%	2.87%
15”	0.19%	2.13%
18”	0.15%	1.67%
21”	0.13%	1.36%

- Inlet capacity calculations for frames to make sure the water can actually get into the pipes for the storm and duration requirement.

Detention Calculations: Please note, there is no longer a residential subdivision development size allowance anymore as part of the countywide stormwater ordinance (as of the 2012 Countywide Ordinance overhaul). All lots and subdivisions, regardless of size or development type, are now subject to the following requirements.

- Stormwater calculations should be submitted in the DuPage County tabbed format.
- Unless otherwise noted, the stormwater certification date is the same date at the approved civil engineering plans approved by PES.
- Stormwater tracking (if no separate detailed calculations are provided, minimally add this as a note on the plans)
  - Provide existing impervious coverage in square feet.
    - Existing impervious as of 4/23/13 (for BMP requirements)
    - Existing impervious as of 7/1/12 (for detention requirements)
  - Provide proposed impervious coverage in square feet.
- Further detailed calculations are required when the following apply (regardless of development type):
  - Is net new impervious proposed over 2,500 SF, based on existing on 4/23/13?
    - If yes, need BMPs for all, not just new impervious surfaces
      - Post-Construction Best Management Practices (PCBMP)
      - Volume Control Best Management Practices: 1.25” for all impervious surfaces
      - If a drywell is being proposed, is there a minimum clearance of 2-ft between the seasonal high water table and the bottom of the dry well? (County requirement, due to concern for groundwater contamination) Provide information from soils testing.
  - Is net new TIA (Total Impervious Area) proposed over 5,000 SF, based on existing on 7/1/12? (Same as County Ordinance, except the amount of square footage when required, unless subdivision of more than 5 lots, then County may be more restrictive for meeting the threshold(s))
    - If yes, need detention for all disturbed areas, not just net new impervious surfaces.
      - Maximum of 0.10 cfs/acre release rate, based on the 24-hr, 100-yr storm per ISWS updated Bulletin 75 rainfall depth.
      - For sites less than 5-acres in area, the unit area site runoff storage nomograph from the Northeastern Illinois Planning Commission publication “Investigation of Hydrologic Methods for Site Design in Northeastern Illinois” will be considered an acceptable calculation methodology for determining the volume of site runoff storage required in lieu of modeling. **** Once enforcement of the updated Bulleting 70 (8.57” 100-yr, 24-hr storm) is being enforced, the nomograph is no longer acceptable until an updated one is issued based on the updated rainfall tables. ****

- For sites 5-acres or greater, a hydrologic model that produces a runoff hydrograph shall be utilized.
- **UNLESS** (calculations required):
  - a) the net TIA without detention will be within 5,000 sf of the TIA that existed on 2/15/92,
  - b) the TIA will decrease by at least 5% from its highest level in the past 3 years,
  - c) the TIA will be less than 10% of the entire development property area

➢ Is soil type and hydrologic soil group properly identified?

➢ Are calculations done per the allowable methods?

- ISWS updated Bulletin 75, NE section rainfall statistics
  - Continuous simulations: NOAA continuous record from 1949 to present at Wheaton gauge
  - Facilities with trib.
  - Area over 100-acres: perform critical duration analysis & highest peak discharge for conveyance design, testing events up to 24-hr duration.
- Site under 5 acres: hydrograph allowed; however, NIPC/CMAP publication "Investigation of Hydrologic Methods for Site Design in NE IL" nomograph is acceptable calculation method in lieu of modeling. **** Once enforcement of the updated Bulleting 70 (8.57" 100-yr, 24-hr storm) is being enforced, the nomograph is no longer acceptable until an updated one is issued based on the updated rainfall tables. ****
- Over 5 acres, must use hydrograph method
- Utilize NRCS Curve Number (excerpt below) (TR-55)
  - Please note, subdivisions should assume 50% lot coverage for subdivision detention basins. Otherwise, individual lots may run into additional detention issues in the future as they try to add additional improvements to their sites.

	Average % Impervious Area	A	B	C	D
Open Space : Good (Pervious)		39	61	74	80
Paved (Impervious)		98	98	98	98
Gravel		76	85	89	91
Urban District: Commercial/Business	85	89	92	94	95
Urban District: Industrial	72	81	88	91	93

- Design rainfall depth for 100-yr is 8.57" (per ISWS Bulletin 75) (see County technical guidance memo for implementation dates)
- Release rate: 0.10 cfs/acre, unless existing release rate is less, then that rate shall be followed
- Overflow conveyance designed for 1 cfs/acre

EOPC Calculations

➢ Does it include all public improvements required? (154.603) Public Improvement Definition (154.704, def. updated on 1/1/22)

- Sanitary sewer
- Storm sewer
- Drainage ditch
- Detention area
- Watermain
- Roadway
- Public lighting
- Pavement
- Curb/gutter
- Signage
- Pavement marking
- Grading
- Retaining walls
- Other improvement for public use or benefit

Misc.

- Village code and details and specifications/notes are available in .pdf formats on the Village's website, www.villageoflombard.org. Shortcuts are listed below for your use.
- Village Code: https://www.municode.com/library/il/lombard/codes/code_of_ordinances
- Village Specifications/Details: https://www.villageoflombard.org/343/Private-Engineering

Available Village Details (Use when applicable; otherwise, provide other details):

Storm Details:			
Stm 1:Manhole Type A	Stm 2:Inlet Type A	Stm 3:Catch Basin Type A	Stm 4:Catch Basin Type C
Stm 5:Precast Tee Manhole (1)	Stm 5A:Precast Tee Manhole (2)	Stm 6A:Connection Box for Precast Manhole (1)	Stm 6B:Connection Box for Precast Manhole (2)
Stm 6C:Connection Box for Precast Manhole (3)	Stm 7:Casting Adjustments for Structures in Paved Areas	Stm 8:Casting Adjustments for Structures in the Curb Line	Stm 9:Subsurface Drain Tile Connection
Stm 10:Sump Pump Connection (1)	Stm 10A:Sump Pump Connection (2)	Stm 11:Storm Sewer Trench Section (1)	Stm 11A:Storm Sewer Trench Section (2)
Stm 12:Storm Sewer Grate for Box Inlet	Stm 13:Manhole Step	Stm 14: Open Lid Sediment Protection	Stm 15:Silt Fence Installation
Stm16:Retaining Wall (1)	Stm 16A:Retaining Wall (2)	Stm 17:Split-Rail Fence	Stm 18:Dry Well
Stm 19:Restrictor	Stm 20:Swale		
Sanitary Details:			
San 1:Sanitary Manhole	San 2:Drop Connection to Sanitary Manhole	San 2A:Interior Drop Connection	San 3:Sanitary Manhole Frame & Grate
San 4:Riser w/ Cleanout Service Lateral (1)	San 4A:Riser w/ Cleanout Service Lateral (2)	San 5:Sanitary Sewer Trench Section (1)	San 5A:Sanitary Sewer Trench Section (2)
San 6:Precast Cone and Chimney	San 7:Casing	San 8:Coring Boot	
Water Details:			
Wtr 1:Water Service Tap & Connection	Wtr 2:Hydrant Setting	Wtr 3:Valve Box Installation	Wtr 4:Water Tight Valve Vault
Wtr 5:Valve Vault Frame & Cover	Wtr 6:Thrust Block Installation	Wtr 7:Water Main Trench Section	Wtr 8:Water & Sewer Separation
Wtr 9:Concrete Saddle Support	Wtr 10:Typical Pressure Connection in Vault	Wtr 11:B-Box encasement	Wtr 12:Water Service w/ Hydrant
Wtr 13: Water Service w/o Hydrant			
Pavement Details:			
Pmt 1:Concentric Cul-de-sac	Pmt 2:Sidewalk	Pmt 3A:Handicapped Sidewalk Ramp (1)	Pmt 3B:Handicapped Sidewalk Ramp (2)
Pmt 4:Sidewalk Construction	Pmt 5:Typical Pavement Cross Section	Pmt 6:Residential Driveway Apron	Pmt 7:Commercial Driveway Apron
Pmt 8:Curb & Gutter	Pmt 9:Storm Sewer Inlet Curb & Gutter	Pmt 10:Rigid Pavement Utility Trench	Pmt 11:Flexible Pavement Utility Trench
Pmt 12:Pavement Butt Joint	Pmt 13:Typical Parking Lot Pavement	Pmt 14:Handicap Stall	Pmt 15:Driveway Curb Edge
Lighting Details:			
Lt 1:Lighting Foundation Size Chart	Lt 2A:Lighting Foundation		
Erosion & Sediment Control:			
Land 1: Parkway Tree Protection			