



TOWN OF ORCHARD PARK
ENGINEERING DEPARTMENT

SUBDIVISION
PLAN
REQUIREMENTS

OCTOBER 21, 2014



DISCLAIMER

This document is to be used as a general guide for the design of subdivisions within the Town of Orchard Park. While it is the Town's intent to outline all requirements, it should not be considered to be 100% complete.

Specific site conditions may require variations to these design standards. Any of these variations should be proposed to the Town Engineer as soon as possible in the design stage to prevent any unnecessary delays.

While the objective of this document is to provide a complete and up-to-date design guide, future changes in the specifications by the Town of Orchard Park and other outside agencies must be taken into account.

TOWN OF ORCHARD PARK
ENGINEERING DEPARTMENT

SUBDIVISION PLAN REQUIREMENTS

October 21, 2014

ALL SUBMITTALS TO THE ENGINEERING DEPARTMENT
MUST INCLUDE:

1. Three (3) Stamped Copies of the Engineers Report
2. Three (3) Stamped Copies of the SWPPP
3. Three (3) Stamped Copies of the Map Plan & Report for the Creation of the Drainage District.
4. Three (3) Complete, Stamped Sets of Plans (Rolled, NOT Folded). Plans are to be 24" X 36" sheets.

ALL PLAN SETS ARE TO INCLUDE:

1. Cover Sheet with Index and Location Map.
2. Map Cover (1" = 100')
3. Boundary Survey (1" = 100')
4. Topographic Survey (1" = 100')
5. Sanitary Sewer and Waterline Plans (1"=50')
6. Sanitary Sewer and Waterline Profiles (1"=50' H. & 1"=5' V.)
7. Paving and Drainage Plans (1"=50')
8. Paving and Drainage Profiles (1"=50' H. & 1"=5' V.)
9. Rear Yard Drainage Profiles (1"=50' H. & 1"=5' V.)
10. Cul-De-Sac Plans and Details (1"=20')
11. Detention/Retention Basin Plans and Sections
12. Lot Grading Plans (1"=50')
13. Landscaping Plans
14. Recreational Land Development Plans (If Required)
15. Stormwater Pollution Prevention Plans (1"=50')
16. Stormwater Pollution Prevention Details
17. Street Lighting Plan (1" = 100')
18. Special Detail Sheets
19. All Town of Orchard Park Standard Detail Sheets
20. Road Cross-Sections (1" = 5' H. & V.) Separate from Const. Plans

DESIGN STANDARDS AND REVIEW ITEMS

GENERAL

- Is the submittal complete and are all of the plans stamped by a professional engineer licensed in NYS?
- Has project phasing been shown?
- SEQR status?
- Does the north arrow point north on all sheets?
- Do the plans scale the same as the scale listed on the plans?
- Are the plans on 24" x 36" sheets? Are the plans 1" = 50' horizontal & 1" = 5" vertical? Are cross-sections 1" = 5' horizontal & vertical?
- Are all elevations based on USGS datum and the OP bench system and are benchmarks shown?
- Will Town monuments be placed within the proposed project?
- Is the project within an archaeologically sensitive area?
- Have any wetlands been delineated?
- Have soil borings been completed and submitted, and do they sufficiently cover the project area?

DRAINAGE DISTRICT MAP PLAN & REPORT

- Has the report been stamped by a professional engineer licensed in NYS?
 - Does the report include;
 1. Authority and Purpose
 2. Project Description
 3. Construction Cost
 4. Annual Maintenance Schedule & Costs
 5. District Formation and Financing & Projected Annual Cost
 6. Conclusions
 7. Recommendations
 8. Appendixes
 - A. Metes & Bounds Description for the District
 - B. Survey of the Parcel
 - C. SEQR
 - D. Paving & Drainage Construction Plan Sheets (Reduced)
 - E. Petition (Signed)
 - F. Notice of Intent (Signed)

- The following table and note are to be included in all reports;

DRAINAGE DISTRICT MAINTENANCE COSTS	
Catch Basin Cleaning	Once Every 5 Years @ \$50 per Basin per Cleaning
Field Inlet Cleaning	Once Every 5 Years @ \$75 per Inlet per Cleaning
Lawn Mowing/Landscape Maintenance	3 Times/Year @ \$150 per Mowing
Dry Basin Maintenance	Annually @ \$100 per Year
Wet Pond Maintenance	Annually @ \$300 per Year
Forebay Cleaning	Once Every 3 Years @ \$1,500 per Cleaning
Stormwater Treatment Unit Cleaning	Once Every 2 Years @ \$650 per Unit per Cleaning
Deep Sump Receiver w/ Hood	Once Every 2 Years @ \$100 per Unit per Cleaning
Street Sweeping	2 Times per Year @ \$100/Mile per Sweeping
Inspections of System	2 Times per Year @ \$75 per Inspection
Phase 2/MS4 Administration Costs	\$10 per Lot per Year
Future Capital Improvements	To Be Determined/As Necessary

Note: The total cost per lot to be levied shall be \$100.00 per lot per year. Although the above breakdown of cost estimates is still required in the District Map, Plan & Report, the Town has made the decision to levy equal assessments for all homes within drainage districts with adjustments to this amount at a future date once the Town has hard figures on the actual costs for the required maintenance.

ENGINEERS REPORT

- Has the report been stamped by a professional engineer licensed in NYS?

- Does the report include:
 1. Introduction
 2. Sanitary Sewer System Description, Design Flow Calculations, and Downstream Flow Calculations
 3. Watermain System Description, Design Flow Calculations
 4. Discussion of Storm Drainage System
 5. Stormwater Management – Existing Conditions Summary, Post Development Conditions Summary, Pond Calculation Summary (Refer to SWPPP for Full Computations)
 6. Earthwork Calculations and Summaries (fill & topsoil)
 7. Erosion Control Summary – Planned Practices, Construction Sequence, and Maintenance Schedule
 8. Appendices
 - A. Sanitary Sewer Application and Computations
 - B. Water Line Application and Computations
 - C. Storm System Drainage and Pipe Computations
 - D. Soils Map/Bore Locations and Soils Reports
 - E. Wetlands Delineation and Maps
 - F. Flood Plain Analysis and Maps if Required
 - G. Archaeological Study if Required

SWPPP

- Has the report been stamped by a professional engineer licensed in NYS?
- Does the report include:
 1. Introduction
 2. Stormwater Management
 1. Existing Conditions Summary
 2. Post Developed Summary
 3. Pond Calculation Summary
 4. Water Quality Calculation Summary
 5. Green Infrastructure Summary & Calculations
 3. Erosion Control Requirements
 1. Planned Control Practices
 2. Construction Sequence Schedule
 3. Disposal of Construction debris
 4. Construction Material Storage
 5. Maintenance Schedule
 6. Stabilization Measures
 7. Inspection Summary
 8. Site Contractor Certification Statement
 4. Standard Specifications and Details
 5. Appendices
 - A. Storm System Drainage and Pipe Computations
 - B. Stormwater Management Computations
(Detention/Retention/Water Quality)
 - C. Sediment Chamber Calculations
 - D. Drainage Area Maps
 - E. Soils Map
 - F. Green Infrastructure Calculations
- Add the following notes to all Plans:

“THE PROFESSIONAL CERTIFYING COMPLIANCE TO NYSDEC PHASE II STORMWATER REGULATION REQUIREMENTS MUST INSPECT AT A MINIMUM WEEKLY AND SHALL PROVIDE THESE INSPECTION REPORTS WITH A WRITTEN CERTIFICATION OF CONSTRUCTION COMPLIANCE TO THE TOWN OF ORCHARD PARK.”

“THE ENGINEER OF RECORD FOR THIS PROJECT CERTIFIES THAT THESE DESIGN PLANS MEET THE REQUIREMENTS AND ARE IN COMPLIANCE WITH THE NEW YORK STATE STORMWATER MANAGEMENT DESIGN MANUAL AND NYSDEC PHASE II STORMWATER REGULATION REQUIREMENTS.”

N.Y.S.D.E.C. SWPPP Checklist



NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION REGION 7 DIVISION OF WATER



SPDES General Permit for Stormwater Discharges from Construction Activity (GP-0-08-001)

Stormwater Pollution Prevention Plan Review Checklist

Project Name:	<input type="checkbox"/> Basic SWPPP (E&SC Plan)	<input type="checkbox"/> Full SWPPP
Site Address:	Municipality:	Reviewer:
	Country:	
Owner/Operator:	Phone:	Date:
Address:	Fax:	SPDES General Permit ID Number: NYR10

SWPPP Deficiencies as checked below:

- 1) Owner/Operator name, legal address, phone number
- 2) Copy of signed Notice of Intent (NOI)
- 3) Signature of SWPPP Preparer on NOI (must be a Professional Engineer for SWPPPs with engineered practices)
- 4) Contractor (and subcontractors if applicable) certification statement(s) [Part III.A.5. of GP-0-08-001]
- 5) Site address and legal description of site
- 6) Vicinity Map, showing project boundary and receiving water(s)
- 7) MS4 SWPPP Acceptance Form (for projects located in regulated MS4s)

Comments:

Existing and proposed mapping and plans (recommended scale of 1" = 50') which illustrate at a minimum:

SWPPP Deficiencies as checked below:

- 1) Existing and proposed topography (minimum 2-foot contours recommended)
- 2) Location of perennial and intermittent streams
- 3) Mapping and description of soils from USDA Soil Survey, including hydrologic soil group, as well as location of any site-specific borehole investigations that may have been performed
- 4) Boundaries of existing predominant vegetation and proposed limits of clearing
- 5) Location and boundaries of resource protection areas such as wetlands, lakes, ponds and other setbacks (e.g. stream buffers, drinking water well setbacks, septic setbacks)
- 6) Boundary and acreage of upstream watershed
- 7) Location of existing and proposed roads, lot boundaries, buildings and other structures
- 8) Location and size of staging areas, equipment storage areas, borrow pits, waste areas and concrete washout areas
- 9) Existing and proposed utilities (e.g. water, sewer, gas, electric) and easements
- 10) Location and flow paths of existing and proposed conveyance systems such as channels, swales, culverts and storm drains
- 11) Location of floodplain/foodway limits
- 12) Location and dimensions of proposed channel modifications, such as bridge or culvert crossings
- 13) Location, size, maintenance access and limits of disturbance of proposed temporary and permanent stormwater management and erosion and sediment control practices, including timing and duration of temporary practices
- 14) Documentation from NYS Historic Preservation Office that the project has no effect on property on or eligible for historic registers
- 15) Plans stamped and signed by qualified professional (must be a licensed professional on plans with engineered practices)

Comments:

Erosion and Sediment Control Plans and Vegetative Measures:

SWPPP Deficiencies as checked below:

- 1) Description of temporary and permanent structural and vegetative measures for soil stabilization, runoff control and sediment control for each stage of the project from initial land clearing and grubbing to project close-out
- 2) Material specifications, dimensions, installation details and operations and maintenance requirements for erosion and sediment control practices, including the location and sizing calculations for any temporary sediment basins
- 3) Site map/construction drawing(s) showing the specific locations, sizes, and lengths of each erosion and sediment control practice
- 4) Identification of any design elements not in conformance with the *New York Standards and Specifications for Erosion and Sediment Control*, reason for the deviation or alternative design, and demonstration that the alternative is equivalent to the technical standard
- 5) Inspection and Maintenance schedule to ensure continuous and effective operation of the erosion and sediment control practices, in accordance with the *New York Standards and Specifications for Erosion and Sediment Control*
- 6) Description of structural practices to divert flows from exposed soils, store flows, or otherwise limit runoff and the discharge of pollutants from exposed areas of the site to the degree attainable

- 7) Construction phasing plan and sequencing plan describing the intended sequence of construction activities, including clearing and grubbing; excavation and grading; implementation, timing and duration of temporary and permanent erosion and sediment control practices; installation of utilities and infrastructure; any other soil disturbing activity; and acreage to be disturbed in each phase
- 8) Final landscaping plans for structural stormwater management practices and any reforestation or revegetation
- 9) Description of pollution prevention measures to control construction litter, construction chemicals and debris
- 10) Description and location of any stormwater discharges associated with industrial activity other than construction at the site, including but not limited to, stormwater discharges from asphalt plants and concrete batch plants on the construction site

Comments:

For construction activities listed in Table 2 of Appendix B of GP-0-08-001:

Hydrologic and hydraulic analysis for all structural components of stormwater system (e.g. storm drains, open channels, swales, stormwater management practices, manufactured treatment systems, etc.) for applicable design storms including:

SWPPP Deficiencies as checked below:

- 1) Existing and Proposed condition analyses for time of concentrations, runoff rates, volumes, velocities, water surface elevations and routing showing methodologies used and supporting calculations
- 2) Channel Protection Volume and detention time calculations
- 3) Comparison summary of post-development stormwater runoff conditions with pre-development conditions for 1-year, 10-year, 100-year design storms in accordance with the *New York State Stormwater Management Design Manual*
- 4) Stormwater management practice sizing calculations using the Enhanced Phosphorus Removal Standards (TMDL watersheds)
- 5) Pollutant removal efficiencies of stormwater treatment practices, where necessary
- 6) Infiltration/percolation tests, where required

Comments:

Representative cross-section and profile drawings and details of structural stormwater management practices and conveyances (e.g. storm drains, open channels, swales, etc.) which include:

SWPPP Deficiencies as checked below:

- 1) Existing and proposed structural elevations (e.g. invert of pipes, manholes, etc.)
- 2) Construction drawing(s) identifying the specific locations and sizes of each post-construction stormwater control practice
- 3) Description, dimensions, material specifications and installation details for each post-construction stormwater control practice, including outlet structures, embankments, spillways, settling basins, grade control structures, conveyance channels, etc.
- 4) Logs of borehole investigations and supporting geotechnical report, if borings have been taken

Comments:

SWPPP Deficiencies as checked below:

- 1) Post-construction maintenance schedule to ensure continuous and effective operation of each post-construction stormwater control practice, including monitoring and maintenance frequency, identification of responsible parties, description of applicable easements, vegetative requirements, access and safety issues, and testing and disposal of sediments as they are removed
- 2) Weekly or twice-weekly inspection checklist identifying measures to be inspected by a qualified site inspector
- 3) Request to disturb greater than five acres at any given time including justification for disturbance, additional erosion and sediment control measures to mitigate disturbance, phasing plan, cuts and fills plan, and total acreage to be disturbed in each phase
- 4) Documentation of downstream analysis or discharge to fourth-order stream to request waiving control of Channel Protection Volume, Overbank Flood Control or Extreme Flood Control
- 5) Identification of any stormwater management practices that deviate from the *New York State Stormwater Management Design Manual*, reason for the deviation and demonstration that the alternative practice or deviation is equivalent to the technical standard

Comments:

File is located at: F:\Reference\Phase II Stormwater\2008 SPDES\SWPPP review checklist GP-0-08-001

DESIGN STANDARDS/PLAN REVIEW

GENERAL

- Does the information (elevations, stationing, etc.) shown on the plan sheets match the information shown on the profile sheets? This applies to all sections of the plans.
- Have all of the revisions from the latest review been addressed?
- Has anything that did not need revisions been revised unnecessarily and/or been eliminated?
- The profiles are to show all crossings of utilities. Designs must be checked to insure there are no conflicts between utilities.

HIGHWAY

- A tangent at least 100 feet long shall be introduced between reverse curves on arterial and collector streets.
- When connecting street lines deflect from each other at any one point by more than 10° , they shall be connected by a curve with a radius at the center line of not less than 250 feet for minor and collector streets and of such greater radii as the Planning Board shall determine for special cases.
- Streets shall be laid out so as to intersect as nearly as possible at right angles, and no street shall intersect any other street at less than 75° . Any change in street alignment to meet this requirement shall occur at least 100 feet from the intersection. The minimum distance between intersections shall be 150'.
- The property lines at street intersections shall be rounded with a radius of 20 feet or with a greater radius where the Engineering Department may deem such necessary. The Engineering Department may permit comparable cutoffs or chords in place of rounded corners.
- Curb radii at street intersections shall be not less than 30 feet as measured at the edge of pavement. Roads in industrial and commercial locations may require a larger radius to accommodate truck traffic.
- Street right-of-way widths shall be not less than 60 feet.
- Dead-end streets, designed to be such permanently, shall not be longer than 500 feet unless otherwise authorized by the Planning Board.
- Dead-end streets shall be provided at the closed end with a turnaround (cul-de-sac) having an outside roadway diameter of at least 166' and a street property line diameter of at least 200'.
- Street names are required prior to final approval.
- Vertical curves are required for all changes in grade over 1.00%.
- Stopping Site Distance (SSD) and Headlight Sight Distance (HSD) are to be a desirable minimum distance of 275' and must be a minimum of 250' for a 30 MPH design speed. Exceptions to the 250' minimum will be allowed in a sag vertical curve in a stopping situation at an intersection. Town subdivision roads are typically designed for a 40 MPH speed limit.
- Vertical curves are to be checked to insure that a curve isn't too long thus causing a flat spot at the high or low point.

HIGHWAY (CONT'D)

- The desirable maximum road grade is to be 6%. The maximum allowable grade is 8%. The minimum centerline road grade (edge of pavement for cul-de-sacs) allowed is 0.50%. This requires a minimum grade of 0.75% at the centerline of cul-de-sacs.
- Side streets are to meet the through street at a grade to match the crown of the through street which is a standard 2.08% unless the through street is an existing street; in which case the grade may vary.
- Complete curve data for all curves including radius, delta angle and tangent.
- Proper site distance is to be verified at all intersections, this must also be verified by the State DOT or Erie County Highway if the subdivision involves and intersection with a State or County highway.
- Have proper turn-arounds been provided at phase lines? Turn-arounds are to be placed beyond dedicated sublots.
- Has the correct barricade been shown at the end of pavement at a phase line?
- Have the proper size conduits been shown to be placed as necessary (under basin access drives, stormwater treatment unit access, etc.) for the installation of the private utilities (gas, electric, phone, cable TV)?

HIGHWAY DRAINAGE

- Drainage receiver rims within the road gutter are to be set at 0.5' below the centerline elevation of the road except for unusual circumstances such as divided entrances or parkways.
- Underdrain pipes are to be set at standard (Std.) where ever possible. Standard depths are shown on the typical road section detail sheet. Note: Where pipes are run at a set grade and do not follow the road profile through a vertical curve at standard, the pipe may be at less than the minimum depth which is unacceptable.
- The maximum distance between drainage receivers is 300'.
- Drainage receivers are not to be placed within curve radii at intersections unless it cannot be avoided.
- All pipes within the R.O.W. or the last section of rear yard drainage connecting to a receiver within the R.O.W. are to be CMP.
- Gutter radii at intersections are to be checked for possible artificial low points.
- Has the stationing been called out for all receivers?
- Are the inverts for the receivers listed as N, S, E or W?
- No storm pipe shall enter a receiver and closer than 8" to the outside corner of a receiver. If pipes at an angle are closer than 11" either a "Type B" or a special receiver must be used at that location.
- Have details been provided for any non-standard drainage structures?
- The maximum allowable pipe size around a 30' radius at an intersection is 15".
- All cross-culverts are to be a minimum 15' diameter.
- Have provisions been made to temporarily outlet the underdrains at phase lines? Do the underdrain pipes extend a sufficient distance (Min. 10') beyond the end of pavement?

DRAINAGE FACILITIES

- Detention basins shall be designed using the SCS unit hydrograph method. The basin shall be designed to contain a 10, 25, 50 and 100-yr storm after development with 1' of freeboard while restricting the outflow to a rate equal to a 10 yr. Storm prior to development. The basin shall also include an auxiliary emergency spillway to direct stormwater to a positive outlet in the event of an overflow.
- Does the basin provide the required emergency spillway and does the spillway have the required downstream overbank/capacity?
- Have profiles been provided for all storm drainage systems (road systems, backyard drainage, cross-lot drainage, outfall ditches, etc.)?
- Have the outflow control structure grates been sized to accept the 25 yr. storm?
- Has the detention/retention basin been designed to meet the Town standards?
- Has the retention (wet pond) been designed with an 8' minimum depth (15' desirable) to prevent weed growth?
- Show 10, 25, 50 and 100-yr storms calculated and design basin water elevations; also show normal water elevation and acre-feet of storage per all elevations.
- All receiver over 5' in depth are to be a "Type B" and are to have steps.
- Does the proposed stormwater treatment unit have the required 3rd party testing and has the unit been approved by the NYSDEC?
- Does the stormwater treatment unit meet the 80% TSS removal as required?
- Accepted stormwater treatment units are;
 - CDS (watch % TSS removal)
 - Vortechnics
 - Stormceptor
 - Baysaver
 - CST (Crystal Stream Technologies)
- Is the total depth of the stormwater treatment unit 12' or less?
- Proper access is to be provided to the pond outflow control structure and is to include a sufficient turn-around area.
- A paved or turf block access drive is to be provided for the stormwater treatment units.
- Have end sections or beveled pipe ends been called out at all necessary locations?

SANITARY SEWER

- Manholes are to be at lot lines wherever possible.
- Drop legs manholes are required for all manholes with an elevation change greater than 2.0'.
- Drop leg manholes are to be 5' diameter minimum and are to be outside drop legs.
- Changes in direction of flow in manholes are to be less than 90° whenever possible.
- All manholes with a change of direction are to have a drop of at least 0.10' wherever possible.
- Manhole rim elevations are to be set 0.50' above finished grade to prevent infiltration.
- The sanitary sewer shall be a minimum of 7.5' from the back of the gutter. The sewer shall be placed on easement wherever necessary.
- Cross-lot (between lots) sanitary sewer lines are to be avoided when ever possible. Where necessary the easement shall be a minimum of 30' wide.
- Wyes are to be placed a minimum of 5' from any manhole and are to be 5' min. from any other wye.
- Wye connections are not to be placed under paved areas or gutters.
- Sanitary laterals are to be laid at a grade of 2.00% or greater and are to maintain a minimum 4.0' of cover over the pipe. An absolute minimum grade of 1.00% will be allowed only under special conditions.
- Sanitary laterals are to be laid at a sufficient depth to provide proper clearance under the water main. Sanitary sewer mains shall be approximately 9' deep at farside lateral location to maintain 18" separation at the water main crossing.
- Select fill is to be shown for all farside sanitary laterals
- The angles between the holes for the sanitary sewer main at manholes are to be called out.
- Any required bores for the sanitary sewer are to be shown. Sufficient detail of all topography in the areas of the bore pit and receiving pit is required.

WATERLINES

- All waterline bends are to be called out.
- Hydrants are to be centered on lots wherever possible.
- The nearest hydrants and/or the distance to nearest hydrants along adjoining existing streets are to be shown.
- Hydrants shall be provided at each street intersection and at intermediate points between intersections as recommended by the State Insurance Services Office. Hydrants are to be spaced at a maximum distance of 550' apart to maintain a maximum distance of 400' to the nearest structure. Additional hydrants may be necessary for certain circumstances such as flag lots with deep setbacks.
- Foot valves are to be shown for all hydrants.
- 3 valve clusters are to be provided at intersections. The valve for the section crossing the road shall be placed at the opposite side of the road to allow the isolation of the section under the road.
- Ductile iron pipe is required for all road crossings.
- Do all crossings of the storm sewer, sanitary sewer main and laterals maintain the minimum 18" separation? Are all of the crossings shown?
- Sufficient number of valves shall be provided on watermains so that inconvenience and sanitary hazards will be minimized during future maintenance or repairs. Valves shall be located at not more than 500-foot intervals in commercial/industrial areas and at not more than one block or 800-foot intervals (whichever is less) in other areas. Other spacing requirements are as follows:

Water Main Size (Inches) -Maximum Distance (Feet)

8" – 800'

10" – 1200'

12" – 1400'

16" – 2000'

24" and larger 2500'

- Sections requiring restrained joints are to be note on the profile with starting and ending stations called out.
- Valves shall be placed in unpaved areas.
- Valves shall be the same size as the watermain.

WATERLINES (CONT'D)

- Blow-offs shall be located at selected low points in the system to allow the draining of the watermain. The location must consider discharge of the water in an environmentally acceptable manner. Where a low point is near the end of a water system the blow-off should be located at the end of the system. Hydrants shall be used as blow-offs where possible for the dead end situations.
- Chlorination and sampling points are to be shown.
- Any required bores for the waterline are to be shown. Sufficient detail of all topography in the areas of the bore pit and receiving pit is required.

GRADING PLANS

- The maximum driveway grade allowable is 10%; a grade of 8% or less is desirable.
- All foundation/first floor elevations are to be shown.
- All existing and proposed contours and/or spot elevations are to be shown.
- Clearing limits shall be a minimum of 100' wide (R.O.W. width + 15' each side) to allow for private utilities. Clearing of easements shall be the width of the easements.
- Topsoil and excess fill stockpile locations are to be shown on the grading plans. The locations shall not be within wooded areas when possible and are to be placed such that they will not interfere with future construction.
- The estimated volumes are to be listed for the stockpiles. These volumes are to match the earthwork calculations submitted in the Engineers report.
- Cut/Fill areas within the project are to be indicated and final contours shown.

LIGHTING PLANS

- Street lights are to be placed at lot lines.
- Street light spacing is to be checked for the proper coverage.
- Are there any existing street lights at a proposed intersection that could be utilized?
- After preliminary approval is granted by the Town, the project engineer is to submit a copy of the preliminary plat to NYSEG for their design of the lighting and electrical system.
- Does the proposed lighting plan and electrical plan cause conflicts with public utilities (storm, sanitary, water)?
- Have the necessary conduits been shown on the paving and drainage plans for the installation of the electrical system?

GENERAL NOTES

All Sheets

- "CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE TOWN OF ORCHARD PARKS SPECIFICATIONS WHERE APPLICABLE AND/OR SUBJECT TO THE LATEST REVISIONS BY THE TOWN ENGINEER."
- "FILL SHALL BE PLACED AND SATISFACTORILY COMPACTED PRIOR TO INSTALLATION OF UTILITIES, AND MUST BE APPROVED BY THE SUPERVISING PROJECT ENGINEER".
- "ALL UTILITY LOCATIONS SHOWN ARE APPROXIMATE. CONTRACTOR SHALL VERIFY ALL LOCATIONS BEFORE BEGINNING WORK AS REQUIRED BY APPLICABLE LAWS AND REGULATIONS".
- "ALL BACKFILL WITHIN THE ROADWAY IS TO BE MECHANICALLY TAMPED SELECT MATERIAL IN MAXIMUM 6" LIFTS."
- "AS-BUILTS ARE TO BE PROVIDED FOR ALL DRAINAGE SYSTEMS, THE SANITARY SEWER SYSTEM AND WATERLINES AT THE COMPLETION OF CONSTRUCTION AND PRIOR TO FINAL SUBDIVISION DEDICATION".
- "MONUMENTS SHALL BE PLACED AT ALL PROPERTY CORNERS AND ANGLE POINTS OF ALL PROPERTIES TO BE DEDICATED TO THE TOWN. MONUMENTS SHALL ALSO BE PLACED AT ALL BLOCK CORNERS, ANGLE POINTS AND POINTS OF CURVES AND STREETS AND INTERMEDIATE POINTS, AS REQUIRED BY THE TOWN ENGINEER."
- "MARKERS SHALL BE LOCATED IN THE GROUND TO FINAL GRADE AT ALL LOT CORNERS. SUCH MARKERS SHALL BE OF METAL, 3/4 INCH IN DIAMETER AND AT LEAST 24 INCHES LONG."

Drainage Notes

- “ALL RECEIVERS AND/OR FIELD INLETS WITH PIPES LARGER THAN 24 INCHES IN DIAMETER PIPE ENTERING/EXITING SHALL BE A TYPE “B” RECEIVER. ALL RECEIVERS AND/OR FIELD INLETS WITH PIPES LARGER THAN 36 INCHES IN DIAMETER PIPE ENTERING/EXITING SHALL BE A SPECIAL RECEIVER OR STORM MANHOLE.”
- “ALL STORM RECEIVERS AND/OR FIELD INLETS OVER 4 FEET IN DEPTH SHALL BE TYPE “B” RECEIVERS WITH STEPS. THE CALCULATED RECEIVER/FIELD INLET DEPTH IS TO INCLUDE THE STANDARD 9 INCH (0.75’) DEEP SUMP.”
- “ALL STORM RECEIVERS AND/OR FIELD INLETS OVER 8 FEET IN DEPTH ARE TO BE A 4 FOOT IN DIAMETER (MIN.) MANHOLE WITH STEPS. THE CALCULATED RECEIVER/FIELD INLET DEPTH SHALL INCLUDE THE STANDARD 9 INCH (0.75’) DEEP SUMP.”
- “ALL RECEIVERS AND/OR FIELD INLETS WITH PIPES 12 INCHES IN DIAMETER AND LARGER ENTERING/EXITING AT A SKEWED ANGLE SHALL BE A MINIMUM TYPE “B” RECEIVER OR A SPECIALLY DESIGNED STRUCTURE AS REQUIRED. NO PIPE ENTERING OR EXITING THE STRUCTURE SHALL DO SO WITHIN 9-INCHES OF THE OUTSIDE CORNER OF THE STRUCTURE TO MAINTAIN THE INTEGRITY OF TH STRUCTURE. ANY SPECIAL STRUCTURES ALONG THE ROADWAY SHALL NOT EXTEND UNDER THE ROAD PAVEMENT, AND SHALL HAVE TOPS DESIGNED TO ALIGN THE GRATE OPENING, AS REQUIRED. THE DESIGN SHALL ALSO SHOW THE PLACEMENT OF THE STEPS WITHIN THE SPECIAL STRUCTURE.”

Sanitary Sewer & Waterline Notes

- "ALL SANITARY SEWER CONSTRUCTION SHALL CONFORM TO THE TOWN OF ORCHARD PARK SPECIFICATIONS AND DETAILS, AND ERIE COUNTY SEWER DISTRICT RULES AND REGULATIONS."
- "THE TOWN OF ORCHARD AND THE ERIE COUNTY DIVISION OF SEWAGE MANAGEMENT WHO OPERATES AND MAINTAINS THE EXISTING SEWER LINES & APPURTENANCES WITHIN COUNTY DISTRICTS ARE TO BE NOTIFIED 24 HOURS IN ADVANCE OF THE START OF CONSTRUCTION."
- "THE PROFESSIONAL ENGINEER SUPERVISING CONSTRUCTION OF SANITARY LINES SHALL PROVIDE A WRITTEN CERTIFICATION OF CONSTRUCTION COMPLIANCE, INCLUDING THE RESULTS OF THE HYDROSTATIC LEAKAGE TEST, LAMP TEST, DEFLECTION TEST, AIR TEST, ETC. TO THE TOWN OF ORCHARD PARK AND TO THE ERIE COUNTY DIVISION OF SEWAGE MANAGEMENT WITHIN THIRTY (30) DAYS AFTER CONSTRUCTION COMPLETION."
- "P.V.C. (POLYVINYL CHLORIDE) SANITARY SEWER SHALL CONFORM TO A.S.T.M. SDR-35 SPECIFICATIONS OR APPROVED EQUAL"
- "WATERMAINS SHALL BE INSTALLED IN ACCORDANCE WITH E.C.W.A. AND TOWN OF ORCHARD PARK SPECIFICATIONS AND DETAILS."
- "P.V.C. (POLYVINYL CHLORIDE) WATERLINE PIPE SHALL CONFORM TO A.W.W.A. C-900 SPECIFICATIONS OR APPROVED EQUAL."
- "D.I.P. (DUCTILE IRON) WATERLINE PIPE SHALL CONFORM TO ANSI/AWWA C151/A.21.51 SPECIFICATIONS (CLASS 52)."
- "THE MAXIMUM DEGREE OF DEFLECTION AT WATERLINE JOINTS IS ONE HALF (1/2) OF THE PIPE MANUFACTURERS RECOMMENDED DEGREE OF DEFLECTION, WHICH WILL MEET AND SATISFY THE ERIE COUNTY WATER AUTHORITY STANDARDS. ANY DEVIATION FROM THIS STANDARD PROCEEDURE WILL REQUIRE THE INSTALLATION OF BENDS WITH RESTRAINING JOINTS."

Sanitary Sewer & Waterline Notes (cont.)

- "FIELD CONDITIONS MAY REQUIRE MINOR ALIGNMENT AND BEND LOCATION ADJUSTMENTS WHICH WILL BE PERMITTED AS LONG AS ALL MINIMUM OFFSETS FROM OTHER UTILITIES AND MAXIMUM ALLOWABLE JOINT DEFLECTIONS ARE MAINTAINED."
- "CHLORINATION AND TESTING SHALL BE DONE IN ACCORDANCE WITH A.W.W.A. SPECIFICATIONS C-600."
- "THE PROFESSIONAL ENGINEER SUPERVISING CONSTRUCTION OF THE WATERLINE SHALL PROVIDE A WRITTEN CERTIFICATION OF CONSTRUCTION COMPLIANCE, INCLUDING THE RESULTS OF THE HYDROSTATIC PRESSURE AND LEAKAGE TESTS, CHLORINE TEST, ETC. TO THE TOWN OF ORCHARD PARK AND TO ERIE COUNTY WATER AUTHORITY WITHIN THIRTY (30) DAYS AFTER CONSTRUCTION COMPLETION."

