Thomas P. Gordon
County Executive

J. Wayne Merritt
Acting General Manager

Sanitary Sewer Construction Plan Checklist

The Design Consultant shall submit this checklist (without appendices) with the initial sewer construction plan submission, and as directed by the Department of Special Services. All requirements on this checklist must be clearly addressed or the submission may be rejected and an additional review fee may be required for resubmission.

Project Name	
Date Submitted	
NCC Application Number	

For NCC Use Only

Date Received:	
Received By:	

1) Original and Check Print Construction Plan Submission Requirements

_____ a) One (1) paper set of sanitary sewer construction plans
- i) 24" x 36" bond, folded and stapled
- ii) Dated, Signed and Sealed by a Delaware P.E. or P.L.S

_____ b) One (1) electronic copy (*.DWF format) submitted on CD or DVD of the following:
- i) Sewer Construction Plan
- ii) Land Development Record Plan
- iii) Landscape Plan

_____ c) Completed Checklist (*original submission only*)
- i) All items addressed, with an "X", "√", or "N/A" if not applicable

_____ d) Design Calculations (*original submission only, unless changes required*)
- i) Dated, Signed and Sealed by a Delaware P.E.
- ii) Flow velocity analysis (when required)
- iii) Pump, force main, wet well and generator sizing
- iv) Grease Interceptor sizing

_____ e) Applicable Fees
- i) Sewer Review Fee, per New Castle County Code, Chapter 40, Appendix 2

2) Final Construction Plan Submission Requirements

_____ a) Eight (8) paper sets and one (1) mylar set (Six(6) paper sets if less than 2,000 GPD is proposed).
- i) Dated, Signed and Sealed by a Delaware P.E. or P.L.S. and property owner(s)

_____ b) Completed Checklist
- ii) All items addressed, with an "X", "√", or "N/A" if not applicable
- iii) Dated, Signed and Sealed by a Delaware P.E. or P.L.S.

_____ c) Inspection Fee

3) Index Plan Requirements

_____ a) Plan view of proposed sewer expansion and/or improvements, scaled at 1" = 200'
- i) Greater/Lesser scale is acceptable if appropriate for site size
- ii) Shows all on-site components, including but not limited proposed sewer system and connection to existing sewer system (including easements), any prescribed sewer improvements, labeling of manholes (including force main cleanouts); depiction of all natural resources as listed in Table 40.10.010 of the UDC; project phasing, a north arrow and names of adjacent property owners

_____ b) Location Map, scaled at 1" = 800'
- i) Site delineated, to include legible street names

_____ c) NAVD 88 for all Major Land Development Plans
- i) If Minor Land Development and NGVD 1929 is used, factor for conversion to NAVD 88

_____ d) State plane coordinates for horizontal control/location
- i) Major Land Development Plan only
- ii) All manhole locations (including force main cleanouts) and one benchmark

_____ e) Elevation Benchmark Source
- i) Existing feature, must be permanent

_____ f) General Notes (see Appendix A of Checklist)

_____ g) Purpose Statement

_____ h) Design Flow Data
- i) Include Average and Peak Daily Flows
- ii) Flows consistent with latest NCC flow standards found in Department Policy # 7 and LDIA Information Sheet

_____ i) Legend for all symbols

_____ j) Sewer Detail Table (see Appendix B of Checklist)

_____ k) Sewer ownership (public or private) via General Note
- i) Clearly delineated ownership if both public and private sewers

_____ l) Title Block information
- i) Name(s), address(es), telephone number(s) and email address(es) of the Owner(s) of the parcel, land developer, engineer/surveyor and applicant.
- ii) Name and Number of Application
- iii) ADC Map Page and Grid Number
- iv) Tax Parcel Number, postal address of the subject parcel, including Hundred
- v) Numerical and Graphical Scale
- vi) Date Plan was prepared and/or revised

_____ m) 2" x 4" Area for Department approval stamp

i) "FOR USE BY DEPARTMENT OF SPECIAL SERVICES" note

_____ n) Proper professional and owner certifications, signatures and seals (see Appendix A of Checklist)

_____ o) Index of Sheets

_____ p) Sewer Lateral Table (see Appendix B of Checklist)

4) Plan and Profile Requirements

_____ a) North Arrow, numerical and graphical scales and date plan last revised
- i) Max: 1" = 50' horizontal, 1" = 5' vertical

_____ b) Complete sewer system depicted to connection point

_____ c) Sheets show plan and profile on same sheet for the section of line shown
- i) Orientation is the same on each sheet
- ii) Plan and profile aligned with horizontal stationing
- iii) Sewer system shall flow right to left

_____ d) Water distribution system (excluding individual services) provided

_____ e) Match lines provided at manholes or Stationing

_____ f) Clear reference to appropriate details

_____ g) Shows utilities (including above ground) within 20' of lateral separation of sewer lines

_____ h) Plan View Requirements

- i) Dedicated street names and dimensioned limits of public right of way
- ii) Lot lines and numbers
- iii) Easements in accordance with Department Policy #7
- iv) Manholes/cleanouts numbered consecutively.
- v) Flow angles and northing and easting coordinates for manholes
- vi) Lateral cleanout locations
- vii) Invert elevations of cleanouts upstream and downstream of external grease interceptor
- viii) Utility crossing provisions as required
- ix) Steep Slope Protection per Recommended Standards for Wastewater Facilities
- x) Roadway crossings per latest revision of DELDOT Utility Design Manual
- xi) Location of grease interceptor (if necessary)
- xii) Lateral distance between proposed tie-in location and closest existing manhole
- xiii) Existing NCC manhole number and NCC plan of record at tie-in location

_____ i) Profile View Requirements
- i) Minimum plumbing fixture elevation line (5' above proposed sewer)
- ii) Existing and proposed grades
- iii) Stationing (aligned with plan view)
- iv) Manhole location and design per Department Policy #7
- v) Rim, invert elevations and depth.
- vi) Distance between manholes

vii) Pipe material, nominal diameter and proposed slope shown to 4 decimals in ft/ft
viii) Concrete encasements for drainage way crossings with significant base flow (see detail)
ix) Dimensioned vertical separation between utility crossings and provided appropriate protection
x) Valves, cleanouts and other appurtenances for force main

_____ j) Pump Station/Force Main Requirements

i) Design in accordance with Department Policy # 7, Appendix A
ii) Pump station parcel dedicated to New Castle County
iii) Building requirements per latest revisions of UDC.
iv) Pump Station Site Plan includes Lines and Grades
v) Force Main plan, profile and stationing separate from gravity sewer
vi) Minimum 5 feet of paving on all sides of pump station
vii) Three (3) phase power supplied to pump station
viii) Confirmation from equipment manufacturer on equipment sizing and application.
ix) Influent manhole located on pump station parcel.
x) Technical Operation and Maintenance information for proposed equipment

_____ k) Detail Sheet Requirements

i) Details provided are the latest New Castle County Standard Details
ii) Non-standard details discussed and approved by Department.
iii) Detail for grease interceptor (design and requirement per Department Policy #7)

I, the undersigned, herby certify that I am a Professional Engineer / Land Surveyor in the State of Delaware with a background in Civil Engineering and to the best of my knowledge and belief, I certify that all of the information on the sanitary sewer drawings is true and correct to the accuracy required by accepted surveying and engineering standards and practices and by the New castle County Unified Development Code. Additionally, the sanitary sewer design has been prepared in accordance with and complies with all applicable regulations, codes, standards, guidelines, laws and policies, including but not limited to Chapter 38 of the New Castle County Code, the Department of Special Services Policies #6 and #7, the New Castle County Standard Specifications for Construction and Amendments and the Recommended Standards for Wastewater Facilities.

_____ _____

Signature and Seal of Delaware P.E. / P.L.S **Date**

New Castle County acceptance of this checklist does not relieve the applicant from his/her responsibility to comply with all applicable regulations, codes, standards, guidelines and policies. The Department of Special Services reserves the right to revise this checklist periodically as the need arises (Last Revised: March 1, 2010).

Appendix A – General Notes and Certifications

All General Notes listed herein shall be included on all Sanitary Sewer Construction Plans. If the Engineer wishes or is directed to include additional notes concerning the specific construction project, those additional notes shall be added as "Supplemental Notes", and shall be reviewed and approved by the Department.

1. Sanitary Sewers shall be constructed in accordance with the most recent New Castle County Standard Specifications for Construction, special provisions, supplemental specifications, Standard Details, and the Recommended Standards for Wastewater Facilities or stricter standards identified by the Engineer.

2. The Contractor's shall be responsible to obtain approval and acceptance of the sanitary sewer system by New Castle County upon completion of construction. As-built plans, signed and sealed by a Professional Land Surveyor or Professional Engineer registered in the State of Delaware must be submitted to New Castle County before acceptance.

3. During construction, the Contractor must have in his possession on site, a set of construction plans bearing New Castle County's stamp of approval.

4. The Contractor shall not place, plant, put or set any structure within the sanitary sewer easement.

5. A construction permit issued by the State of Delaware, Department of Transportation (DelDOT) is required before any work is performed within a DelDOT right-of-way. All work performed within DelDOT's right-of-way or property owned by the State of Delaware shall be performed in accordance with the most recent DelDOT Standard Specifications and Utility Manual.

6. Sanitary sewer is to be **publicly/privately** owned and maintained. *[Provide the appropriate benefactor]*

7. Construction shall not deviate from the plans and specifications approved by New Castle County without written permission from New Castle County's Department of Special Services.

8. Erosion and sediment control measures shall be in accordance with the Delaware Sediment and Stormwater Regulations, Delaware Erosion and Sediment Control Handbook and the New Castle County Drainage Code, as amended.

9. Typical Sequence of Construction:

    a. Contact New Castle County Department of Special Services (48 hours notice at 395-5756) prior to any excavation or activity involving sanitary sewer construction, pump station construction or lateral tie-in's to existing lines.
    b. Construct proposed sanitary sewer system as approved by New Castle County.
    c. Backfill and re-grade as required.

d. Perform air test, if required, in accordance with Section 32.01-3 of the New Castle County Standard Specifications for Construction, in the presence of a New Castle County Inspector.
e. Following a passing air test (if applicable), a final visual inspection (Lamp Test) must be performed prior to acceptance by New Castle County.
f. Based upon the results of the visual inspection, a Mandral Test may be required following the visual inspection.
g. Lateral connections from new homes/office buildings into the sewer line will not be permitted until after final acceptance.
h. Prior to New Castle County making a Final Inspection, the following items must be completed:
    i. All manholes must be brought to grade and have concrete collars installed.
    ii. Channels must be completed in all manholes.
    iii. All manholes and sewer pipes must be cleaned and flushed.
    iv. As-built drawings (signed and sealed by a registered Land Surveyor or Professional Engineer in Delaware) with one (1) mylar and three (3) sets of prints must be submitted to New Castle County.
    v. Turf Trail is constructed in accordance with NCC Detail SS-MISC-2, or if pipe and manholes are within a proposed roadway, stabilized roadway access is constructed for the purpose of maintaining the constructed sanitary sewer system until final paving is completed.
i. Certificates of Occupancy will not be issued until the as-built drawings have been received, reviewed, and approved and the sanitary sewer construction (including all appurtenances has been accepted by New Castle County.

10. Manhole cover(s) on privately owned and maintained sewer systems **shall not** be labeled "NEW CASTLE COUNTY."

PROFESSIONAL ENGINEER / LAND SURVEYOR CERTIFICATION:

I, _____, hereby certify that I am a registered Professional [**Engineer / Land Surveyor**] in the State of Delaware with a background in Civil Engineering and to the best of my knowledge and belief, I certify that all of the information on these sanitary sewer drawings is true and correct to the accuracy required by accepted surveying and engineering standards and practices and by the New Castle County Unified Development Code. Additionally, the sanitary sewer design has been prepared in accordance with and complies with all applicable regulations, codes, standards, guidelines, laws and policies, including but not limited to Chapter 38 of the New Castle County Code, the Department of Special Services Policies #6 and #7, the New Castle County Standard Specifications for Construction and Amendments and the Recommended Standards for Wastewater Facilities.

OWNER'S CERTIFICATION:

I, _____, hereby certify that I am the current, legal owner of the property to be sewered and that the sanitary sewer will be constructed in accordance with all applicable regulations, codes, standards, guidelines, laws and policies, including but not limited to Chapter 38 of the New Castle County Code, the Department of Special Services Policies #6 and #7, the New Castle County Standard Specifications for Construction and Amendments and the Recommended Standards for Wastewater Facilities.

Appendix B

SEWER DETAIL TABLE

Street Name	Total Number of Manholes	Nominal Diameter of Sanitary Sewer Pipe *(in inches)*	Total Linear Feet of Gravity Sanitary Sewer Pipe	Total Linear Feet of Force Main	Pipe Material
Smith Street	4	8	725	0	PVC SDR-26
Jones Drive	6	6	0	2000	DIP

SEWER LATERAL TABLE

Lot Number	Lateral Invert at Connection Point to sanitary sewer main	Minimum plumbing fixture elevation	Elevation of lowest floor sewered by gravity *(indicate when a basement elevation)*	Upstream MH Number and Rim Elevation	Downstream MH Number	Distance of Lateral Connection from upstream manhole	Backwater valve required
1	86.00'	91.00'	91.00' (basement)	#25 @ 100.00'	#24	0 + 00	Yes
2	87.25'	92.25'	101.00'	#26 @ 95.00'	#25	0 + 50	No