



Prince George's County
Department of Permitting, Inspections
and Enforcement
SITE/ROAD PLAN REVIEW DIVISION
9400 Peppercorn Place
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STORM DRAIN & PAVING PLAN DESIGN REVIEW CHECKLIST

This checklist serves as a guide for the consultant in the preparation and for the County review of Storm Drain Plans. Any questions regarding items contained herein should be referred to the Prince George's County DPW&T for clarification. Applicable page number or section in the Stormwater Management Design Manual, County Code, Standards and Specifications for Roadways and Bridges, or Maryland Design Manual for specific design criteria are included for reference.

**NOTE: PLANS SUBMITTED WITHOUT A COMPLETED CHECKLIST
MAY BE RETURNED WITHOUT REVIEW**

Site/Project Name: _____ Date: _____

Applicant: _____ Consultant: _____

Phone Number: _____ Phone Number: _____

Email Address: _____ Email Address: _____

Site Development Concept Plan No.: _____ Site Development Plan No.: _____

Consultant — Please complete the checklist below by indicating the following:

C or ✓ = Complete or checked; X = Not Applicable; O = Outstanding, need to address

Please place the appropriate symbol in the CONSULT column.

Item #	Design Checklist Item	Reference	Consult	DPIE
A	COVER SHEET or FIRST SHEET			
A-1	Title Block includes: Name of Project (Legal Subdivision Name), Sheet Title, Election District, County, State, Owner, Developer & Applicant.	7.3.D		
A-2	A vicinity map at a 1 inch = 2000 feet scale (with Prince George's County ADC Map page and grid) is located in the upper right-hand corner of the first sheet, outside of DPIE approval block area.	2.2.1.B		
A-3	A 5" blank space is provided 4 inches in from the right-hand side of each sheet for approval blocks to be applied by DPIE.			
A-4	Miss Utility Note shown.	8.3.2.A		
A-5	County Storm Drain and Paving Standard Notes shown.	Appx 7-2		
A-6	As-built consultant certification (unsigned) is provided on cover sheet.	Stamp 6		
A-7	Sheet Index provided if more than 3 plan sheets.	2.2.1.D		
A-8	Professional consultants seal and original signature	Techno-gram 002-2022		
A-9	The limits of this permit are clear, with areas that are not part of the current permit being cross hatched and adjacent permit numbers labeled for all phases on the plan. A table is provided on the cover sheet showing the	7.3.C		

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	number of lots for the entire area governed by the street construction or grading permit, using the following format: <table><tr><td>Department Permit Number</td><td>Parcel and/or Lot and Block Identifiers</td></tr><tr><td></td><td></td></tr></table>	Department Permit Number	Parcel and/or Lot and Block Identifiers					
Department Permit Number	Parcel and/or Lot and Block Identifiers							
A-10	Utility certification – Sealed and dated by a professional engineer is provided. A table showing dates on which coordination was done to verify existing utilities is on the first plan sheet. <table><tr><td colspan="2">UTILITY CERTIFICATION I HEREBY CERTIFY THAT THE EXISTING AND/OR PROPOSED UNDERGROUND UTILITY INFORMATION SHOWN HEREON HAS BEEN CORRECTLY DUPLICATED FROM UTILITY COMPANY RECORDS. FURTHER, THAT THIS PROJECT HAS BEEN CAREFULLY COORDINATED WITH EACH INVOLVED UTILITY COMPANY, AND ALL AVAILABLE UNDERGROUND UTILITY INFORMATION RELATIVE TO THIS PLAN HAS BEEN SOLICITED FROM THEM.</td></tr><tr><td>DESIGN CONSULTANT NAME</td><td>REGISTRATION NUMBER</td></tr></table>	UTILITY CERTIFICATION I HEREBY CERTIFY THAT THE EXISTING AND/OR PROPOSED UNDERGROUND UTILITY INFORMATION SHOWN HEREON HAS BEEN CORRECTLY DUPLICATED FROM UTILITY COMPANY RECORDS. FURTHER, THAT THIS PROJECT HAS BEEN CAREFULLY COORDINATED WITH EACH INVOLVED UTILITY COMPANY, AND ALL AVAILABLE UNDERGROUND UTILITY INFORMATION RELATIVE TO THIS PLAN HAS BEEN SOLICITED FROM THEM.		DESIGN CONSULTANT NAME	REGISTRATION NUMBER			
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DESIGN CONSULTANT NAME	REGISTRATION NUMBER							
B	PLAN VIEW GENERAL							
B-1	North arrow and the datum are provided. New projects are in Horizontal: Maryland Coordinate System (State plane grid) based on North American Datum of 1983 (NAD83) Vertical: National Geodetic Vertical Datum of 1929 (NGVD 29). A minimum of three grid ticks are provided per sheet.	2.2.1 E, F and I						
B-2	Plan views are at the preferred scales: 1" = 50' for single family and 1" = 30' for townhouse, industrial, and commercial	2.2						
B-3	Existing and proposed buildings are shown. First floor and basement elevations for proposed and remaining existing buildings within the LOD are noted.							
B-4	All environmental features and their buffers are shown (wetlands, streams, floodplains, CBCA, PMA).	6.2.C						
B-5	Match lines coordinate with current number of sheets.	2.2.1.M						
B-6	Minimum text size is 0.08 or 0.10 inch tall (preferred)	2.2						
B-7	Limits of approved 100-year flood plain shown and the FPS Number is labeled.	8.3.1						
B-8	Adjacent property ownership and/or plat reference shown.	8.3.1						
B-9	Property lines, lot and block numbers shown.	8.3.1						
B-10	All existing and proposed (ultimate) road rights-of-way shown and labeled. Road improvements and right-of-way shown in compliance with Master Plan designation.	8.3.1						
B-11	UTILITIES <ul style="list-style-type: none">• All existing and proposed water and sewer lines, house connections and appurtenances shown and designed in accordance with CB-17-2018 and the Specifications and Standards, Appx. E: Prince George’s Co. Policy and Specifications for Utility Installation and Maintenance.• All existing storm drain lines shown.• All existing and proposed gas lines shown.• All existing and proposed utility poles, pole numbers, guy wires, and underground conduits shown.• All other facilities (telecommunication, electric, cable TV, etc.) shown.	8.3.2 CB-17-2018						

Item #	Design Checklist Item	Reference	Consult	DPIE
	<ul style="list-style-type: none"> Area dedicated for water meters in townhouse lots shown. If required, existing utility poles have been placed at the ultimate right-of-way within the project limit. All proposed underground utilities over County maintained culverts/bridges are designed in accordance with the latest edition of the DPW&T Standard Precast Concrete Culverts. 			
C	PLAN VIEW STORM DRAIN			
C-1	Overflow path for the 100-year storm is shown with directional arrows. If proposed storm drain system collects more than 10 acres of area, the system is designed to convey the 100-year storm or the overflow elevations and widths have been computed, shown on the plan and do not affect structures.	8.3.3.2.7 Techno-gram 001-2022		
C-2	Maximum 10-foot-long A-inlet on cul-de-sac bulb (maximum 6.75 cfs).	8.3.5.B.22		
C-3	The maximum street spread is 10 feet and collects at least 70% of flow at each street inlet.	8.3.5.B.5 St&Sp I-29		
C-4	Maximum ponding depth of the 10-year flow at a low point for non-public paved areas is 6".	8.3.5.B.11		
C-5	All pipes and structures are a minimum distance of 5 feet horizontal and 1 foot vertical from all utilities.	8.3.2.C.2		
C-6	Storm drain pipe parallel to property lines is located a minimum of 2 feet from the property line to allow for fencing of the property.	8.3.3.2.5		
C-7	Pipe is generally located in the center of the easement.	8.3.3.2.6		
C-8	Size, material (including class), and flow direction of pipe is labeled.			
C-9	All main line public pipe systems are a minimum 15" diameter (with the exception of pipe diversions to ESD or SWM devices, or as indicated in the manual).	8.3.3.1.7		
C-10	Pipe systems are not curved, with the exception of private systems 30" or larger.	8.3.3.2.2		
C-11	Maximum pipe distance between manholes is limited to 400 feet.	8.3.5.E.2		
C-12	The angle of the pipe entering a structure with a flat wall is not less than 45 degrees.	8.3.5.E.8		
C-13	Positive drainage is maintained for non-paved areas, per the County code (currently must be steeper than 2.5% for graded areas and 2% for sodded ditches).	CCS 32-151		
C-14	Inlets are located a minimum of 4.5 feet from fillet PC or PT and a minimum of 5 feet from driveway aprons.	8.3.5.A.2		
C-15	Yard inlets at low points, if clogged do not have a ponding depth greater than 2 feet to an overflow elevation.	8.3.5.E.11		
C-16	Lowest grade adjacent to a building is at least 1 foot higher (6 inches adjacent to the garage) than the overflow elevation along the yard inlet overflow path.	5.2.4.4.2(F)		
C-17	If the complete storm drain system is not included in the current plan, a note is provided indicating that the pipe stub is to be bricked shut. The pipe schedule indicates the stub length.			
C-18	Pipe stubs are extended through 10-foot PUE.			
C-19	Field connections are only provided in private systems and are identified with "FC-#".	8.3.3.2.3		
C-20	Existing pipes that will not be used in proposed conditions and are larger than 15-inch diameter are labeled to be removed. Smaller pipes are labeled whether they are to be removed or abandoned in place (filled with flowable material).			

Item #	Design Checklist Item	Reference	Consult	DPIE
C-21	Sufficient notes and details are provided when converting existing inlets to manhole.	8.3.3.1		
C-22	For parallel pipes, the distance between pipes is half the diameter or 1 foot, whichever is greater.	8.3.3.2.15		
C-23	Utility crossings are between 45 and 90 degrees, where possible.	8.3.2.C.3		
C-24	If a structure with a grate is proposed within the paving section, a bicycle safe grate is specified.	8.3.5B.24		
C-25	When available, the liber/folio for storm drain or SWM easements is noted on the permit plans. It is not required for plan approval, but is required for all as-built drawings.	11.1.1		
C-26	A minimum of an "A-10" inlet is specified for street sumps.	8.3.5.B		
C-27	No B-Type inlets are used for public storm drain.	8.3.5.B.14		
D	PLAN VIEW PAVING & ROADWAY DESIGN			
D-1	Sight Distances have been approved and a copy of the plan is included with the submission.	AASHTO		
D-2	Where widening of an existing roadway is proposed, cross-sections are provided every 50 feet that show the surveyed road elevations, and proposed widening and any future road widening are labeled. Each cross-section represents the full width of the ultimate right-of-way, and any additional width necessary to show grade tie-outs is provided.			
D-3	Scenic or historic roads are labeled as such on the plan view, including stations if necessary.			
D-4	Frontage improvements include milling and overlaying to the centerline of the road are shown. Utility pavement restoration requirements (Specifications and Standards, Appendix E: Prince George's County Policy and Specification for Utility Installation and Maintenance), roadway transitions (50 feet), and pavement marking adjustments are provided.			
D-5	Road grades are labeled with directional arrows for proposed roads on tangent portions, grade breaks, and curb fillets, showing high points, low points and directions of flow.			
D-6	All proposed road and sidewalks under this permit are shaded or hatched.			
D-7	All existing curb, gutter and sidewalk that are being removed and or replaced are labeled accordingly.			
D-8	Typical roadway and paving section provided for public and private roads. Subgrade/subbase preparation notes from DPIE are included after first review.			
D-9	Sidewalks and sidewalk ramps are shown at road intersections. Two sidewalk ramps are provided and are located near each fillet. Crosswalk widths are shown as a minimum of 8 feet wide with up to 12 feet maximum in high pedestrian-count areas.	Techno-gram 001-2025		
D-10	If road ends due to a phase limit, a temporary barricade and a T-shaped turnaround is proposed.			
D-11	Curb radii and spill gutter are shown at road intersections.			
D-12	Driveway culvert sizes for rural sections are noted.			
D-13	Rip rap or other erosion protection is provided at ends of all curbs and gutters, where an outfall situation would be created due to termination of road construction.			

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D-14	When the slope across a road intersection is less than 2 percent, a concrete valley gutter is provided at no less than 1 percent slope.	8.3.5.B.16		
D-15	The minimum radius for a fillet at an intersection with the largest road being a primary and/or secondary road is 37 feet.			
D-16	The minimum radius for a fillet at an intersection where the largest road is a collector road is 45 feet.			
D-17	The minimum radius for a fillet at an intersection where the largest road is an arterial road is 50 feet.			
D-18	CURB PROFILES — CUL-DE-SACS and FILLET PROFILES (Provided only if this information is not already on the applicable road/street grade establishment plans.) <ul style="list-style-type: none"> • Approach grades and TC elevations match the road/street grade at PC and PT. • A TC elevation is provided for each PC, PT, PRC, and lot line to the nearest tenth. • Profile number in each triangle matches the plan view. • High- or low-point TC elevations are provided to the nearest tenth and dimensioned from the closest lot line. • There is a smooth curve throughout. • Datum elevation is provided. • The road name is provided at or near the PC and PT. • Lot numbers are provided above the profile. 			
D-19	Existing and proposed Speed Humps are shown and designed on the plans in accordance with County Standards. (Prince George's County Neighborhood Traffic Management Program)	STD. 700.01		
E	TRAFFIC AND TRANSIT			
E-1	When applicable, raised and reflectorized pavement markers (RPM) are provided per Standards 700.15–700.16.			
E-2	If transit appurtenances (e.g., shelter, bus stop signs, etc.) are required to be constructed, there is a note on the plan that the Permittee must coordinate installation with the DPW&T Division of Transit at 301-883-5656.			
E-3	Roadway has been evaluated for required barrier/guardrails per the latest edition of AASHTO. The Length of Need (LON) spreadsheet has been completed and submitted for all required barrier treatment. The extent of barrier/guardrail required is shown on the plan.	FHWA Barrier Length of Need (LON)		
E-4	For new roads, the road grade is established, and the culvert/bridge is designed to pass 100-year flows with at least 1 foot of freeboard.			
E-5	Roadway complies with all County standards, or a waiver request has been submitted to the Director for consideration. <ul style="list-style-type: none"> • Complies with Standard road sections (Urban and Suburban) • Complies with Standard road horizontal radii • Complies with Standard road grades • Complies with Standard sidewalk (widths, both sides) • Bike Lanes are provided on both sides of roadways for Arterial and Collector roadways • Bicycle accommodation on residential roadways has been discussed and incorporated into the design. • Green paint has been incorporated into the bicycle lane design at conflict points, intersections, and commercial driveways. 	Prince George's County Urban Street Design Standards Specifications and Standards for Roadways and Bridges		

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E-6	A truck turnaround is provided in dead-end parking lots (townhouse, commercial, industrial, etc.). Location of trash dumpster is noted and adequate geometrics in parking lots is provided for truck access.			
E-7	Curb return or nose down curb is provided at the end of curbs, as necessary.			
E-8	MD MUTCD, Traffic impact study and AASHTO guidelines were used in design. The length and configuration of intersection turn lanes, accel lanes, decel lanes and taper lengths are provided. Storage bay lengths at signalized intersections use the 95 th percentile HCM queue length methodology and the MDOT <i>State Highway Administration Access Manual</i> guidelines for unsignalized intersections. Turn lanes are provided as needed. Appropriate lengths and tapers were determined using the cited references.	AASHTO's A Policy on Geometric Design of Highways and Streets; MD MUTCD		
E-9	Where feasible, new roadways/driveways are aligned directly across from existing roadways/driveways.			
E-10	New/proposed access points are spaced a sufficient distance from existing intersections as to not adversely impact traffic operations or safety. An operational analysis is provided when driveways are proposed within 200' of the center of a signalized intersection, to demonstrate the driveway does not impact the signalized intersection. Ensure driveways are not placed within the functional area of an intersection. Additional guidance provided by the permitting agency (on a case-by-case basis) has been incorporated.			
E-11	Median breaks are a minimum of 600' apart.			
E-12	Acceleration and deceleration lanes are provided when needed to address traffic volumes, safety, speeds and as determined by the permitting agency. Appropriate lengths and tapers were determined using the cited references.	MD SHA, AASHTO, MD MUTCD		
E-13	Bypass lanes are only provided when a left turn lane is not possible using the MDSHA Guidelines for Installation of Shoulder Bypass/Left Turn Lane. If used, bypass lanes are designed to accommodate the necessary speeds.	MD MUTCD		
E-14	The number of access points for an individual commercial property is minimized to reduce the amount of operational conflict. Multiple accesses have been justified and evidence has been provided to ensure they do not adversely impact traffic operations and safety.			
E-15	<p>Roundabouts</p> <ul style="list-style-type: none"> Design elements comply with the guidance provided in the latest edition of the FHWA's <i>Roundabouts: An Informational Guide</i>. Entry lanes: single lane entries are between 14'-18' from face of curb to face of curb; double lane entries are between 28'-32' from face of curb to face of curb. Circulating lanes are at a minimum as wide as the maximum entry width (up to 120 percent of the maximum entry width) and should remain constant throughout the roundabout. Crosswalks on the legs of the roundabout are a minimum of 20' back from the top of the divisional island. Bike lanes end 100' prior to the roundabout. Ramps are provided for bikes to exit the roadway at this point. Sidewalks around the roundabout are 10' to accommodate pedestrians and bicyclists. 	<p>FHWA's Roundabouts: An Informational Guide and AASHTO's Guide for Development of Bicycle Facilities</p>		

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	<ul style="list-style-type: none"> • Driveways and accesses are not proposed on roundabout approaches within the length of a divisional island. • Parking is not permitted in or on the approach to the roundabout. 			
F	STORM DRAIN & DRAINAGE RIGHTS-OF-WAY			
F-1	Storm drain easements are provided with widths per Table 11-1 of design manual. Easements have been extended to adjacent (parallel) property lines where easement line would be less than 2 feet away. Avoid multiple line segments.	11.1.1		
F-2	Outfall easements are sized to allow for future maintenance access to the endwalls and rip-rap. Easements extend to property line or stream channel.	11.1.1		
F-3	No parallel overlap of storm drain easement and PUE is proposed.	11.1.1		
F-4	All easements are shown, including but not limited to WSSC, PUE, floodplain, etc.	11.1		
F-5	Surface drainage easements shown on lots.	11.1.3 Code 32-151		
G	DRAINAGE AREA MAP			
G-1	Drainage Area Maps are included within the Plan Set.	2.2.1		
G-2	North arrow with scale and datum are provided on the north arrow or the in-title block.	2.2.1		
G-3	Maximum scale is 1" = 200 feet if no ESD devices and 1" = 50 feet (preferred) if ESD devices are included.			
G-4	Existing and Proposed contours are provided and labeled.			
G-5	Street and stream names are provided.			
G-6	Drainage divides, zoning and soils boundaries are shown and labeled on the plan. Hydrologic Soil Groups are also provided. Where time of concentration is not assumed as 5 or 10 minutes (per the manual), the time of concentration flow paths (with segment labels & slope) are shown.	8.2.2		
G-7	Area, Tc, Impervious acres, Curve Number or Runoff Coefficients used for each sub-drainage areas are either labeled or in a table.			
G-8	Existing/approved storm drain, ESD, or SWM facilities are shown.			
G-9	Off-site ownership is labeled with plat or deed reference and zoning.			
G-10	Offsite existing and onsite proposed drainage divides are shown.			
G-11	Structure number, drainage area and 'C' coefficient provided in a table or labeled within each area on the DA map.			
G-12	Cumulative drainage area is provided for each storm drain/SWM outfall location.			
H	COMPUTATIONS			
H-1	Storm drain is designed to handle Ultimate development of the drainage area.	8.2 Techno-gram 001-2022		
H-2	Adequate capacity of existing and/or approved downstream storm drain system has been confirmed.	5.2.6.1 Techno-gram 001-2022		
H-3	Storm drain computations including pipe size, street spread, inlet capacity, and 50% Blockage Computations (Yard Sump Inlets) are provided.	8.3.5.B.8 8.3.5.C 8.3.5.E.13		

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H-4	The 10- and 100-year ponding elevations are computed at the upstream headwall by inlet and outlet control.	8.3.7.1.		
H-5	The 10-year WSEL for an open channel is at least 6" below edge of paved shoulder or bottom of curb.	8.4.1		
H-6	Computed 10-year flow rates are greater than the minimum for the size of the pipe: 15" RCP Minimum flow rate 0.45 cfs 18" RCP Minimum flow rate 0.5 cfs 21" RCP Minimum flow rate 0.55 cfs 24" RCP Minimum flow rate (with slope 0.5%) 1.2 cfs	8.3.3.3.6		
H-7	Gutter flow is less than 2 cfs (10-year) across or around a street intersection. Gutter flow is less than 3 cfs (10-year) across commercial driveways.	8.3.5.B.3 8.3.5.B.2		
H-8	For yard inlets, the maximum ponding is 6" based on 50% reduction in capacity for the 10-year storm.	8.3.5.E.13		
H-9	Flow in swales and to yard inlets does not exceed 3 cfs.	32-162.a.6 5.2.4.4.2		
H-10	Maximum flow in swales and to yard inlets above Marlboro Clay, Howell or Christiana soils do not exceed 2 cfs for 100-year storm.	5.2.4.4.2		
I	STORM DRAIN PROFILE			
I-1	Scale of pipe profile is 1" = 50' horizontal and 1" = 5' vertical (preferred).	8.3.3.3.H		
I-2	Structure numbers match Plan View, Structure Schedule, and Drainage Area Map.	8.3.3.3.H		
I-3	"Existing Ground" and "Proposed Grade" are labeled.	2.2.1		
I-4	Provide for future extension of the storm drain system by ensuring that storm drain is sufficiently deep so that the remainder of the watershed can be drained.	8.3.3.1.14		
I-5	An endwall or end section is proposed at either end of the termination of the storm drain system, unless a temporary condition is approved for a future phase's connection.	8.3.3.2.12		
I-6	Pipes less than 24" are designed with a min. slope of 1% and pipes 24" or greater have been designed with a minimum slope of 0.5%.	8.3.3.3.7		
I-7	Profiles are provided for any pipe system with a size of 12" or larger.	8.3.3.3.		
I-8	A minimum of 1 foot of cover is provided over the outside of the pipe material for RCP. Under pavement, a minimum of 9 inches of clearance is provided between the gravel subbase and the outside of the pipe material. A note is provided on the profile stating the required cover where cover is close to the minimum.	8.3.3.3.1		
I-9	A minimum of 2 feet of cover is provided over the outside of the pipe material for flexible pipes. Under pavement, a minimum of 2 feet of clearance is provided between the gravel subbase and the outside of the pipe material. A note is provided on the profile stating the required cover where cover is close to the minimum.			
I-10	If polypropylene pipe is proposed for use in the public right-of-way all cover, backfill and notes meet the requirements set forth in Techno-gram 002-2023, or as revised.	Techno-gram 002-2023		

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I-11	The lowest invert of an incoming pipe in a manhole or inlet is a minimum of 0.1 foot higher than the invert of the outgoing pipe.	8.3.3.3.9		
I-12	The crown of the outgoing pipe does not exceed the elevation of the crown of the lowest incoming pipe.	8.3.3.3.9		
I-13	Field connections are not proposed for public systems.	8.3.3.2.3		
I-14	All utility crossings are shown, and a 1-foot minimum vertical clearance is provided. A note is provided on the profile stating the required separation where clearance is close to the minimum.	8.3.3.3.5		
I-15	Pipe lengths are shown by stationing at each structure (0+00 at low end), lengths are measured from inside of structure to inside of structure, rounded up to the nearest foot.			
I-16	All proposed RCP is a minimum of Class IV for all pipe located within the public right-of-way.	8.3.3.1.1		
I-17	Pipe class for RCP has been determined based on the minimum and maximum cover.	8.3.3.3.3 Approx. 8-12		
I-18	Q_{10} , V_{10} , and $S_{10 \text{ MIN}}$ are provided for each pipe run and $V_{10 \text{ ACT}}$ is provided at each outfall. Where storm drain is designed for 100-year conveyance, Q_{100} , V_{100} , $S_{100 \text{ MIN}}$ and $V_{100 \text{ ACT}}$ are also provided.			
I-19	Public and private ownership and the specific entity responsible for maintenance are labeled on the profile and in structure schedules as County, Private, SHA, etc. Developer constructed structures on M-NCPPC property are not in easements.			
I-20	Maintenance responsibility is labeled for Storm drain and SWM systems. Include on pipe profiles, structure schedules, and BMP summary tables: <ul style="list-style-type: none"> Public in easements or right-of-ways — maintenance by PGDPWT or SHA as applicable Private — maintenance by HOA or BOA or applicable property owner Private (on County projects) — maintenance by PGCPs or OCS or M-NCPPC as applicable Public constructed by developer on M-NCPPC parcel (generally no easement) — maintenance by PGDPWT Private constructed by developer on M-NCPPC parcel — maintenance by HOA or BOA — not M-NCPPC Private BMPs on private residential lots — maintenance by homeowner, when applicable. This is typical for BMP built on the lot versus HOA parcel. Note: ESD type BMPs within the public right-of-way are limited to bioswales and grass swales.			
I-21	Continuation notes are clearly provided on separated profiles.			
I-22	A 4-inch-thick granite block bottom is noted for structures when greater than a 2-foot drop is present between the lowest incoming and the outgoing pipe. Brick channelization is provided where the drop is less than 2 feet.	8.3.3.3.11		
I-23	For pipes with a slope steeper than 20%, pipe anchorage (per SD 100.0) stationing is on the profile.	8.3.3.3		

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I-24	Rubber gaskets are noted as required for all storm drain pipe.	8.3.4.C.6		
I-25	Fence is proposed on endwalls when pipe size is 24" or larger.	8.3.3.3.O DPW&T SD 300.27&28		
I-26	A riprap apron, designed using charts from <i>2011 Maryland Standards and Specifications for Soil Erosion and Sediment Control</i> (as updated) is provided at 0% slope. Pipes less than 21" have a minimum length of 5 feet and 10 feet for all others. Outfall stabilization type, riprap size, length, width, and thickness are labeled.	8.3.7.A.2		
I-27	A 3-foot deep grouted riprap cutoff wall is shown and labeled at the end of all Class I riprap aprons.	8.3.7.A.4		
I-28	A minimum of Class II riprap is provided for 30" outfalls or larger.	8.3.8.A.13		
I-29	All pipe outfalls are to a floodplain or other natural area, and the downstream slope between the riprap and the stream channel is less than 10% and the discharge nonerosive.	8.3.7.A.9		
I-30	Stream outfall slopes greater than 10% require gabions or other material acceptable to PGDPIE, PGDPWT and PGSCD.	8.3.5.E.5		
I-31	The last pipe segment is sloped at 1% or less.	8.3.3.3.I		
I-32	The end of the riprap channel ties to the existing ground.	8.3.7.A.16		
I-33	The 10-year and 100-year WSEL's are noted at both upstream headwalls and downstream endwalls.	8.3.7.1.C		
I-34	Where the pipe is not flowing full, the hydraulic gradient is shown no lower than the crown of pipe.	8.3.4.C.7		
I-35	The 10-year hydraulic gradient is not higher than 12 inches below the grate elevation or bottom of the curb.	8.3.4.C		
I-36	Structure loss for each structure are provided on the profile sheet.	8.3.4.C.10		
L	PIPE AND STRUCTURE SCHEDULES			
L-1	Size, type, class, and length of pipes as well as total lengths for each maintenance entity are provided.	App 8-13		
L-2	Roadway underdrain pipes are included in the pipe schedule. SWM underdrain pipes are included as a separate line item in the pipe schedule, with perforated and solid totals indicated.	Techno-gram 03-2022		
L-3	Structure Schedule indicates the type of structure, top of structure elevation (upper and lower, if on a slope), structure width, all incoming pipes and outgoing pipe inverts, and pertinent standard detail number.	App 8-11		
L-4	Remarks column indicates any modifications to standards, whether shop drawings are required, and any slot opening(s), size and location (e.g. north, southeast, etc.).	App 8-11		
L-5	Structure numbers match those shown on plan, profile, and Drainage Area Map, and in computations.	8.3.3.3.V		
L-6	Inlets are wide enough and manhole diameter large enough for all pipes into and out of structure. Precast openings have a minimum of 6" clearance.	8.3.5.E.8		
L-7	If a structure will have a temporary pipe, the size and invert of the opening is included in the structure schedule's "Remarks" column.			
M	PAVEMENT SECTION, SUPPORTING SOILS & SUBBASE STONE			
M-1	All applicable standards of Category 100 are depicted on the paving plans. Any modifications to those standards have been approved by	DPWT Specs & Stds.		

Item #	Design Checklist Item	Reference	Consult	DPIE
	DPIE. This applies to all public roads and all private roads in townhouse or single-family developments.			
M-2	Pavement sections meet or exceed the County standards listed in Section III, specifically Category 100.	Specs. & Stds. Section III		
M-3	The DPIE Geotechnical Requirements sheet is included on the cover sheet of the paving plans for the convenience of construction.			
M-4	Private pavement sections for private parking lots and streets in commercial, industrial, multifamily, and institutional developments have been included on the plans and comply with the recommendations of the Permittee's geotechnical engineer of record.			
M-5	Subgrade strength has been evaluated utilizing the California Bearing Ratio (CBR) test, and if the minimum CBR value of 7 is not met, geotechnical recommendations for subgrade modification or improvement are included on the plan.	Specs. & Stds. Sec. I		
M-6	Pavement sections are NOT directly supported on Class III fill, unsuitable fill, or untreated diatomaceous soil; and they are at least 2 ft away from high plasticity soils (CH or MH, Marlboro/Christiana Clay).			
M-7	For pavements of secondary residential streets or narrower that will be supported on soil-cement (at least 5% cement), a waiver of the required 6" lift of CR-6 subbase stone has been requested by the Permittee's Geotech engineer, then reviewed and approved by DPIE Geotechnical Reviewer. The subbase stone will be hydraulically connected to the required underdrains of urban roads or to the roadside ditches of rural roads.			
M-8	For roadways with deeply weak spots (impractical to be fully removed & replaced), at least 12" of surge stone (#2 choked with #57 stone) shall be used for bridging over instead of the subbase stone, unless other methods are proposed to & preapproved by DPIE for that purpose.			
M-9	If recycled concrete (like RC-6) is proposed for permanent application, the latest revision of Techno-gram 003-2023 has been implemented.	Techno-gram 003-2022		
N	PAVEMENT DRAINAGE			
N-1	The pavement section is at least 2 feet above the groundwater table to prevent capillary action that results in loss of stability and possible frost damage.	Chapter 3, A.7 (page 37)		
N-2	The applicable DPW&T Standards 300.13 ~ 300.17 for PVC or HDPE underdrains are shown on the submitted plans.	Underdrain Techno-gram 003-2022		
N-3	The plan shows locations of underdrain stumps on rural roadways in areas of high groundwater, in low-lying areas extending from the low point or storm drain inlet to 25 feet on each side of the inlet, and where deemed necessary by the DPIE Inspector or Geotech Engineer.			
N-4	Underdrains drain into the nearest storm drain inlet if present or into suitable, protected outfall if no storm drain exists.			
N-5	The extent of underdrains are defined in paving notes on plans.			
N-6	The depth of the underdrains is at least 2 feet. Where trees are planted between the curb and sidewalk, underdrains are at least 4.5 feet deep to avoid tree roots.			