



The following document is a guide for the preparation of plan submittals and is intended to aid in consistent plan reviews.
Please note that site-specific conditions may warrant requirements that are not contained within this document.

Engineering Department Subdivision Review Check List

Project: _____
 Owner: _____
 Engineer: _____

YES	NO	N/A		GENERAL SUBMITTAL REQUIREMENTS	PAGE
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1	Name of Project (w/ Phase #, Section #, or Map #).	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	2	PID# of parcel(s) within project boundaries and adjacent to the project.	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	3	Name, address of Developer, and contact person with phone number.	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	4	Name and address of Engineer.	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	5	Sheet size to be 24" x 36".	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	6	Date of Drawing / Revisions.	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	7	Clear vicinity sketch (include adjacent streets and North arrow)	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	8	Legend	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	9	North Arrow (all applicable sheets).	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	10	Signature and seal of NC Professional Engineer on every sheet.	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	11	Lot layout (building layout if multi-family) with dimensions.	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	12	Lot numbers.	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	13	A plan view is required for all profile drawings (on the same sheet).	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	14	The plan view is to be at the top and the profile is to be at the bottom of the sheet and shown in the same direction.	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	15	Plan/Profile scale (no less than 1"=40' HORIZ., 1"=4' VERT).	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	16	Elevations shall be labeled in 10' intervals on heavy lines (use 1' intermediate grid line intervals).	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	17	Plan & profile view data must match.	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	18	Match lines (w/station numbers on each sheet).	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	19	Include overall utility plan sheet (with summary of w/s lines by size and length, # MH's & F/H's).	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	20	Bench mark location and datum to be described with true elevations (clearly label on overall plan sheet).	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	21	Show existing grade on all profiles.	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	22	All dimensions must be legible.	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	23	All labels shall be horizontal or vertical (bottom of label to bottom or right side of sheet).	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	24	Show all existing and proposed utility easements with dimensions.	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	25	Maintain proper horizontal separation between water, sanitary sewer, and other utilities.	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	26	Other utility crossings shown in profile view with proper vertical separation (dimension separation @ crossings).	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	27	Evaluate all water and sewer taps for utility crossing conflicts.	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	28	Show 100 year flood plain data (fringe line, elevation, floodway, and FEMA panel number).	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	29	Show delineated wetlands.	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	30	Clearly indicate project phase lines (include gate valve, temporary blow-off, temporary turn-around as required).	
YES	NO	N/A		STREET INFORMATION	PAGE
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	31	Provide plan/profile of all proposed street segments.	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	32	Provide cross-sections for all offsite street improvements (every 50').	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	33	Street layout (w/names and R/W widths).	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	34	Provide all street centerline bearings and distances.	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	35	Provide all centerline horizontal and vertical curve information (see Std. Details 71G-1 & 71G-2 for design criteria).	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	36	Pavement width on plan view (back of curb to back of curb).	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	37	Typical roadway section (on at least 1 utility profile sheet).	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	38	Sidewalk location on plan view.	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	39	Dedicate minimum sight distance easements at all street intersections.	

YES	NO	N/A		WATER LINE INFORMATION	PAGE
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	40	Water line located on the North and East sides of the street.	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	41	Water line designed at minimum depth (36" if < 10" diameter, 42" otherwise)	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	42	Provide plan/profile for all waterlines regardless of size.	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	43	Size & type of water line in both plan and profile views.	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	44	Length of main between fittings on plan view.	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	45	List all fittings or appurtenances (size and type) on plan view with station number.	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	46	Depth of water line (shown on profile).	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	47	Show water meter locations.	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	48	Dimension and depict water line in proper location (4.5' boc or 8' when using a 6' planting strip).	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	49	Reduction in waterline sizes to utilize reducer (in lieu of T/2 plug).	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	50	Proper fire hydrant spacing. (500' apart max., 250' from end of street, and at all intersections).	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	51	Gate valves @ all intersections.	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	52	Evaluate the need for air release valves (10' elevation change).	
YES	NO	N/A		SEWER LINE INFORMATION	PAGE
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	53	Size & type of sewer line in both plan and profile views.	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	54	Grade of sewer line in profile view (minimum 0.6%, maximum 10.0%).	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	55	Invert elevations in profile view.	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	56	Manholes shown by manhole and station numbers in plan and profile views.	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	57	Length of main between manholes in plan and profile views.	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	58	Manhole rim elevations in plan and profile view.	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	59	Minimum drop "across" manhole of 0.2'.	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	60	Minimum ground cover of 36" for all types of sewer line other than ductile iron.	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	61	Minimum ground cover of 30" if Ductile Iron and in roadway.	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	62	"Shade" DIP on profiles.	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	63	Manhole depths greater than 14' require 5' diameter manhole sections (label in plan/profile).	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	64	Show sanitary sewer tap locations.	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	65	If piers are required, city standard detail cited.	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	66	Location of piers by stations	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	67	Top of footing to be located a minimum of 1' below the invert of the creek (label elevation).	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	68	"Show" piles in profile view.	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	69	Show location, size, length, type, and depth of force main.	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	70	Label all sealed manholes, show vents in profile view with vent elevation (2' above 100 year elevation).	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	71	Minimum 30' GDUE required for SS outside of street R/W.	
YES	NO	N/A		STORM DRAIN INFORMATION	PAGE
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	72	Provide plan/profile of all proposed storm drainage segments.	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	73	Size & type of storm drainage in profile view.	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	74	Grade of storm drainage line in profile view.	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	75	Invert elevations in profile view.	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	76	Minimum drop "across" structure of 0.2'.	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	77	Structure "number" in plan view.	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	78	Rip-rap tables & calculations.	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	79	Minimum 20' GDUE required for SD outside of street R/W.	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	80	Max internal velocity = 20fps.	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	81	Max velocity at outlet structures = 5fps.	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	82	Calculations based on Gastonia's rainfall intensity of 7.20 in/hr, "n" = 0.013 (RCP).	

YES	NO	N/A	FLOOD STUDY INFORMATION		PAGE
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	83	Completed FEMA application form MT1/2.	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	84	Narrative on project and submittal explaining any adjustments, revisions, or omissions to any models.	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	85	Hydrologic computations along with digital files of computer models.	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	86	Hydraulic computations along with digital files of Duplicate Effective, Corrected Effective, and Proposed models used.	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	87	Certified topographic map with floodplain, floodway, and cross-section delineations.	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	88	Annotated FEMA FIRM and/or FBFM to reflect changes due to project.	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	89	Engineers "no-rise" certification.	
YES	NO	N/A	MINIMUM GRADING DESIGN STANDARDS (see current grading policy)		PAGE
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	90	Detailed grading plan utilizing 1' contours.	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	91	Show building pads (or building envelopes) with proposed pad elevation or FFE.	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	92	Identify lots utilizing basements, crawl spaces, or stem walls by "hatching".	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	93	Cut / Fill slopes 3:1 (MAX)	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	94	Terrace required for all grade changes > 10 feet.	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	95	Engineered swales required for all grade changes > 5 feet.	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	96	Engineered Swales Design Calculations	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	97	Engineered swales designed in designated 10 ft GDUE.	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	98	Back of Building Envelope 20 ft from GDUE or bottom/top of slopes.	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	99	Sides of Building Envelope 10' from GDUE or bottom/top of slopes.	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	100	Ditches-Swales between lots @ minimum 2%.	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	101	Retaining walls ≤ 8 ft in height.	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	102	Safety rail/fence specified for all retaining walls ≥ 30 inches in height.	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	103	Provide spot elevations at all intersections and cul-de-sacs.	
YES	NO	N/A	OTHER ITEMS:		PAGE
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	104	Land Development application submitted.	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	105	All utility applications submitted (water/sewer/contract, etc.).	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	106	Approved Erosion Control Plan and permit.	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	107	Temporary construction and/or off-site easement deeds submitted.	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	108	R/W documentations for all off-site street improvements.	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	109	NCDOT driveway permit and encroachment applications.	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	110	Private utility encroachments as required. (Duke Power, AT&T, PSNC, Bell South, Colonial, etc.)	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	111	Submit 3 sets of sealed engineering design tables and calculations. These must match the plans.	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	112	Wetlands delineation map and associated permit(s).	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	113	Legible storm drainage area map and associated calculations (24"x36", areas, structure #'s).	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	114	Include digital copy of the construction documents (with "final" submittal).	
YES	NO	N/A	COVER SHEET NOTES:		PAGE
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	115	This Preliminary Plat was approved by the G.P.C. on _____. This approval shall not constitute authority for recording this plat. Approval is subject to the following modifications:	
				GENERAL STORM DRAINAGE SYSTEM NOTES	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	116	MAXIMUM INTERNAL VELOCITY IN RCP SYSTEMS SHALL BE 20 FT./SEC.	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	117	THE FIELD INSPECTOR, WITH APPROVAL FROM THE CITY ENGINEER, SHALL HAVE THE AUTHORITY TO REQUIRE ADDITIONAL RIP-RAP ALONG DRAINAGE AREAS WHERE WARRANTED BY POSSIBLE EROSION OR WHERE DRAINAGE AREAS CROSS OTHER UTILITIES.	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	118	THE FIELD INSPECTOR, WITH APPROVAL FROM THE CITY ENGINEER, SHALL HAVE THE AUTHORITY TO REQUIRE EXTENSIONS FROM THE PROPOSED STORM DRAINAGE SYSTEMS WHERE FIELD CONDITIONS SO WARRANT.	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	119	STORM DRAINAGE SYSTEMS SHALL BE DESIGNED TO TERMINATE SO AS NOT TO REQUIRE TAIL DITCHES WITHIN THE 100 YEAR FLOOD PLAIN AREA. IF EXTENUATING CIRCUMSTANCES EXIST, ANY TAIL DITCHING WITHIN THE 100 YEAR FLOOD PLAIN SHALL BE APPROVED BY THE CITY ENGINEER PRIOR TO CONSTRUCTION.	

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	120	OPEN DRAINAGE SYSTEMS RECEIVING GREATER THAN ONE (1) ACRE OF DRAINAGE AREA SHALL NOT BE ALLOWED TO DISCHARGE OVER THE STREET CURB WITHOUT A STORM DRAINAGE SYSTEM DESIGNED IN ACCORDANCE WITH CITY STANDARDS AND SPECIFICATIONS. OPEN DRAINAGE SYSTEMS OF GREATER THAN ONE (1) ACRE OF DRAINAGE AREA SHALL BE PIPED WITH STORM DRAINAGE SYSTEMS, IN ACCORDANCE WITH CITY STANDARDS AND SPECIFICATIONS, BEHIND THE RIGHT-OF-WAY, OR AS POLICY MAY DICTATE AT THE REAR PROPERTY LINE.	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	121	THE DEVELOPER'S ENGINEER SHALL BE REQUIRED TO ASSURE IN AREAS BEING DEVELOPED, THAT ADEQUATE DRAINAGE FACILITIES WILL BE INSTALLED, AS PER CITY STANDARDS AND SPECIFICATIONS, AT ALL STREET INTERSECTIONS SO AS TO PREVENT PONDING OF WATER IN THE STREET INTERSECTION CURBS.	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	122	NOTE: Construction <u>SHALL NOT</u> begin prior to a preliminary construction inspection of the site. Contact the Construction Engineer / Right-of-Way Administrator at (704) 854-6626 at least one (1) working day prior to beginning construction.	
YES	NO	N/A		NOTES:	PAGE
				SEWER	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	123	Contractor to provide video of completed sanitary sewer as required by the COG.	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	124	Contractor is to provide compaction testing for the installation of all sanitary sewer lines in fill areas.	
				WATER	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	125	Contractor to coordinate water & sewer taps to minimize conflicts with driveways. (watermeters are not to be located in driveways). A fee will be charged to move watermeters out of driveways.	

Reviewed By: _____

Date: _____