

APPENDIX 18A

Plan Reviewers Checklist

I. INTRODUCTION

When a plan reviewer receives a plan to review for work in the ROW, they should review for all aspects included in this checklist.

The audience for this document includes SPU Drainage, Wastewater and Water LOB plan review engineers.

There are some situations that will require input from Field Operations & Maintenance Branch. Each reviewer should request assistance as required from a senior plan review engineer or Field Operations & Maintenance if they do not have the experience to confidently make a decision about a situation.

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Procedure or Checklist	Item	Resource	LOB
Procedure	Determine project location. Identify if project is located within an ECA.	GIS, Project Plans	DWW & Water
Procedure	Determine project details.	<i>Link</i> Hansen Web Tools for project description, plans, photos, PASV report, etc in EDMS.	DWW & Water
Procedure	Determine project requirements.	<p><i>Links for below</i></p> <ul style="list-style-type: none"> -PAT/PAR to determine preliminary requirements for the projects. -PRD to review previous comments and early design guidance (check for be separate project numbers or addresses for previous submittals of the project) -WAC for water requirements. -SDOT FTP site for 30% and/or 60% review comments 	DWW & Water
Procedure	<p>Use resources to determine what SPU infrastructure exists near the site area. Be aware of infrastructure installed during recent projects that are not represented in Virtual Vault, GIS, etc. Examples of these projects are Sound Transit on MLK, High Point, and South Lake Union.</p> <p>-Drainage and Wastewater: Study contours. Note plan numbers, dates, and invert elevations. Verify sewer and/or storm drain destination. Note small lakes, creeks, wetlands, ditch/culvert, outfall, or Metro mainline.</p> <p>-Water: Note water main material, age, status, sensitivity to vibration, monitoring requirements, and other special considerations.</p>	<p>GIS, SPU Engineers involved in project in the area.</p> <ul style="list-style-type: none"> -Drainage and Wastewater: 200 sewer and drainage maps, Virtual Vault <i>Link</i>, Side Sewer Cards -Water: WAC, As-Builts, Card Index (in Central Building), Plans on floor 45 which are not in Vault, Service List (can be requested from Customer Service if needed for review—this lists all the water services and locations on a block) 	DWW & Water
Procedure	Verify that base map is complete and that it is correct and readable before proceeding. Check that datum is NAVD88. Are existing underground utilities accurately represented on the drawings? Return plan to SDOT if not acceptable.		DWW & Water
Procedure	Check that plan meets minimum requirements for SDOT circulation. If not, reject and return to SDOT. Ensure that	<i>Link</i> SDOT minimum requirements. The public SIP website is http://www.seattle.gov/transportation/stuse_sip.htm and	DWW & Water

Procedure or Checklist	Item	Resource	LOB
	TIR, Drainage Report, GSI Spreadsheet and Hydrostats Report are Included.	the checklists for Base Map, Survey, 60% and 90% can be found here.	
Procedure	If situation precludes standard design, SPU acceptance of non-standard design is required. <i>For SIP review process, all non standard design items should be addressed and approved by SPU prior to 90% plan circulation.</i>	- Check with senior reviewer for guidance -Bring up in weekly DWW Maintenance/Operations meeting -Trigger to WAC Appeals/Secondary Reviewer for Water	DWW & Water
Checklist	Verify that base map is complete, correct, and readable. Check that SPU sewer/drainage infrastructure and water mains and hydrants are accurately represented, as well as existing side sewers and water services/meters. Check that datum is NAVD88. Return plan to SDOT if basemap does not meet standards.	<i>Link</i> SDOT minimum requirements. The public SIP website is http://www.seattle.gov/transportation/stuse_sip.htm and the checklists for Base Map, Survey, 60% and 90% can be found here.	DWW & Water
Checklist	Verify that project requirements are met (mainline extensions, GSI requirements, etc).	PAT, PRD, WAC, SDOT FTP site	DWW & Water
Checklist	Standard general sewer and drainage notes are shown. Check that standard water notes are shown for water services and, if applicable, water mains. Check that standard notes are modified to fit the project.	<i>Link</i> Standard notes can be found on the Street Use Street Improvement Permit webpage under resources, plan preparation, standard notes. http://www.seattle.gov/transportation/stuse_sip.htm#check	DWW & Water
Checklist	Check that new side sewers and new water service meters are called out as "Under Separate Permit", and that the location is acceptable.	<i>Link</i> For side sewers, DWW Core Tap Procedures, Side Sewer DR For water service, DSG Chapter 17	DWW & Water
Checklist	Review drainage calculations, Stormwater Technical Information Report, Green Stormwater Infrastructure Calculation Worksheet, Hydrostats Report, Drainage Report, Geotech Report for Infiltration.	Stormwater Code	DWW
Checklist	Check stormwater code compliance. Do rough quantity take-offs of areas of new impervious surface areas. Sidewalks are non-pollution-generating impervious surface areas. Use stormwater code flow chart to determine requirements for detention requirements. Check the TIR to determine/verify that project type is "Roadway" or "Sidewalk".	Stormwater Code, Flow Control Standards spreadsheets <i>Link to flowchart(s)--11x17 and the monster</i>	DWW

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Checklist	Check for conflicts: Make sure no other utilities or objects that can affect SPU's ability to dig down and repair or provide customers with new connections are present. Check that new catch basins, manholes, vaults, and underground piping are located to avoid conflicts with existing underground utilities. Check for conflicts with new GSI proposed in ROW. Look for existing utilities, structures, power poles, rockeries, trees, new sidewalk dimensions, new tree plantings, existing thrust blocks.	Link Tree Planting around Sewer Pipe Guidance Paper (on J: Plan Review folder)	DWW
Checklist	Check for Operations & Maintenance issues. If work is to be performed on existing or new infrastructure that is extremely deep, on a steep slope, in a high water table, with 200 feet from a water body, or other access issues; a non-standard tap is required, a drop inlet is proposed, etc.	-Check with senior reviewer for guidance -Bring up in weekly DWW Maintenance/Operations meeting	DWW
Checklist	Check that new pipes meet standard requirements for slope, size, and material.	Standard Sewer & Drainage Notes	DWW
Checklist	Check catch basin/inlet is in correct location per standard plan and that the structure type is adequate.	Link For locations, see CAM 1180. For Structure type: -Type 250 A Inlet (for curb heights less than 4") -Type 250 B Inlet (for 6" minimum curb height, preferred standard, not to be used in a closed contour) -Type 242 A CB (catch basin) (for curb heights less than 4") -Type 242 B CB (for 6" minimum curb height, preferred standard, required for closed contours and steeply graded streets) -Type 240 A CB to be used in conjunction with type 250 A or B inlets -Type 240 B CB (for alleys or parking lots) -Type 240 C CB (for use in lieu of type 242 A for extra sump capacity or height of outlet pipe)	DWW

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		-Type 240 D CB (for use in lieu of type 242 B for extra sump capacity or height of outlet pipe) -Type 241 CB (for alleys and parking lots only)	
Checklist	Check rim to invert distances will fit within standards for specific structure called out.	Standard Plans	DWW
Checklist	If a proposed side sewer is shown in the ROW, ensure it is called out as "Under Separate Permit". If location shown is not allowed, inform applicant of the discrepancy with a comment and direct them to coordinate with DPD. Communicate to DPD your guidance to the applicant via parcel notes, etc.	Side Sewer Code & Director's Rules, SideSewerInfo@seattle.gov, Parcel Notes Layer on GIS	DWW
Checklist	Are invert elevations consistent between plan view and profile drawings?		DWW
Checklist	Cross slope is shown as 2% minimum toward gutter, both from property line to gutter and from street toward gutter (unless street is throw away from curb).	Standard Plan 400	DWW
Checklist	Is the surface flow direction correct on all drawings?		DWW
Checklist	Check grading for closed contours and low spots--ensure drainage is collected. Check that low spot on curb radius coincides with location of inlet; review spot elevations and curb return tables for depressions. Check curb bulb and bus bulb drainage design, ensure drainage path to inlet is acceptable.		DWW

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Checklist	Check that infrastructure will be adequate in the event of a system failure. SPU may require additional backup infrastructure to avoid claims and liability in an overflow scenario. (If failure of system, should a redundant infrastructure be added to avoid claims? At low points? Herman?)		DWW
Checklist	Cement concrete alley, inverted crown cross slope is 4.7%	Standard Plan 403	DWW
Checklist	For all existing castings to remain in disturbed ROW, see that there is a callout to adjust cover to finished grade (i.e. existing water service meters, drainage inlets, maintenance hole/CB lids, etc).		DWW & Water
Procedure	Once 90% review is completed, record new infrastructure and enter into Donated Assets spreadsheet for SPU reporting purposes.	<i>Link</i> Donated Assets spreadsheet located in J: Plan Review folder	DWW
Checklist	Check that all meters are labeled as existing, new, to be retired, or to be reused. Check for meter conflicts not shown on the base map.	GIS, potentially Service List provided by Customer Service	Water
Checklist	Check that existing thrust blocks will not be compromised by new work.	Determine main material (GIS), and if not Restrained Joint Pipe then any bend or tee will likely have a thrust block.	Water
Checklist	Check for conflicts. Compare location of new service vaults and lines to: Trees-- outside of dripline of existing trees, 5' from trunk of new tree. Sidewalk ramp/corner-- 10' from radius Property Line--vault placement 5' from property line Curb--vault placement 2' min from face of curb (this is the preferred location), or 2' from property line. Driveway--vault access shall not be located in a driveway. Existing Utilities--franchise utilities (telephone, electric, gas, steam), power poles, existing thrust blocks	<i>Link</i> DSG Chapter 17	Water

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Checklist	Check that vault is perpendicular to sidewalk.		Water
Checklist	Check that vault and meter access panels are not located in a driveway or other drivable surface.		
Checklist	Check that profile for each new vault and service is shown in plans, and that crossing utilities (i.e. sewer, ductbanks) are shown with adequate cover.	<p><i>Link</i> DSG Chapter 17</p> <ul style="list-style-type: none"> -2" & smaller service line, minimum 2' cover. -Greater than 2" Service line, minimum 3' cover. -18" minimum vertical spacing -no water service located below sewers 	Water
Checklist	Review hydrant location for new or relocated hydrants. Verify hydrant location meets standards. Hydrant location to be 3' min from face of curb, 5' from tree trunk, 10' from side sewer, 3' from Property Line, 5' from edge of driveway, etc.	Standard Plan 314	Water
Checklist	Check for special circumstances to communicate to project associated with water main material, age, status, sensitivity to vibration, monitoring requirements, and other special considerations.	GIS, As- BUILTS, Card Index, Plans on floor 45 that are not in Vault, WAC, SPU Engineers involved in project in the area.	Water