DPD	Director's Rule 15-2014
SPU	Director's Rule DWW-420.1

Applicant:	Page	Supersedes:
CITY OF SEATTLE Department of Planning and Development Seattle Public Utilities	1 of 7	
	Publication: 11/13/2014	**Effective:** 2/4/2015
Subject: Yesler Terrace Community Director's Rule: Allowable Stormwater, Groundwater, and Sewer Release Rates to the Combined Sewer System and Infiltration Zones	**Code and Section Reference:** SMC 22.800-808	
	Type of Rule: Code Interpretation	
	Ordinance Authority: SMC 3.06.040	
Index: SMC 22.805.050 and 22.805.080 (Stormwater Code) and SMC 21.16 (Side Sewer Code) Technical and Procedural Requirements	**Approved** **Date** (Signature on file) 2/3/2015 Ray Hoffman, Director, SPU (Signature on file) 2/2/2015 Diane M. Sugimura, Director, DPD	

PURPOSE

This Director's Rule for Yesler Terrace Community is in addition to all City and other applicable agency codes, rules, and regulations, with the following exceptions:

- Supersedes the City of Seattle's Flow Control Standard for Capacity Constrained Combined Sewer Basins by establishing specific flow discharge requirements for Yesler Terrace Community properties, and

- Documents infiltration facility feasibility determinations made in 2014.

Note This rule does not apply to stormwater requirements related to work in the City of Seattle Right-of-Way. Refer to the Yesler Terrace Redevelopment Final Plat Street Improvement Plan (SIP #190598) and the Yesler Terrace Redevelopment Final Plat SIP Stormwater Report (SIP #190598) dated June 10, 2014.

This Director's Rule governs the combined sewer flow control requirements while this Rule is in effect. This Director's Rule is not intended to and does not override or supersede SMC 22.805.050 and 22.805.080 (Stormwater Code) or SMC 25.09.080 (Regulations for Environmentally Critical Areas) related to the feasibility of infiltration facilities in proximity to landslide prone or steep slope critical areas. In the event a conflict arises between the intent and meaning of this Director's Rule and SMC 22.805 and SMC 25.09, the SMC shall control. The City reserves the right to amend this Director's Rule at any time.

Portions of the Yesler Terrace right-of-way are served by a dedicated storm drainage and detention system. The storm drainage system is designed for flow control of the right-of-way only. All developments covered under this rule are required to discharge to the combined sewer.

Who should use this Director's Rule?

Applicants: Parties involved in purchase, sale, or development of private properties within the Yesler Terrace Community that discharge sanitary sewer wastewater, stormwater, or groundwater to the combined sewer system. These parties are responsible for preparing permit submittals for Seattle's Department of Planning and Development (DPD).

DPD: Determine whether an applicant's proposed discharges to the combined sewer are allowed.

Seattle Public Utilities (SPU): Own and operate the public combined sewer system and manage flows within and downstream of the Yesler Terrace Community.

The Seattle Housing Authority (SHA): Manage and ensure flow allowances in the combined sewer system of the Yesler Terrace Community are not exceeded.

How this Director's Rule was Developed

This Director's Rule was developed in 2014 in accordance with Seattle Municipal Code (SMC) Section 22.805.020 "Ensure Sufficient Capacity" and Section 22.805.080 "Minimum requirements for Flow Control" to mitigate expected impacts to the public combined sewer of planned redevelopment in the Yesler Terrace Community, Subdivision 3012996.

Yesler Terrace is located within a combined sewer basin. The requirement under SMC 22.805.020 J. to "Ensure Sufficient Capacity" applies to sanitary sewer, stormwater, combined sewer, and groundwater discharges. Maximum allowable release rates were established based on a modeling analysis of anticipated sewer and storm drainage release rates for the Yesler Terrace Community redevelopment, ("Maximum Allowable Release Rates"), (see Figure 1). The model analysis, which included a site wide, contributing basin and downstream conveyance system model, demonstrated that the anticipated redevelopment and density assumptions in the "Final Environmental Impact Statement" dated April, 2011, by Seattle Housing Authority and Department of Human Services of Yesler Terrace would not adversely impact the downstream system when total peak discharges are within the limits shown on Figure 1.

Additionally, geotechnical investigations were completed across the Yesler Terrace site and were documented in the geotechnical report, "Geotechnical Engineering Services, Street Improvement Project, Yesler Terrace Redevelopment, Seattle, Washington," dated January 10, 2014, by GeoEngineers. This report was used to develop the infiltration feasibility map, Figure 2, attached to this Director's Rule and is discussed further under INFILTRATION WITHIN THE YESLER TERRACE REDEVELOPMENT section.

APPLICATION PROCESS

This section provides information on the process the applicant must follow to request review and demonstrate compliance with the Maximum Allowable Release Rates. SHA will maintain an "Allowable Stormwater, Groundwater, and Sewer Release Rates Tracking Form" ("Release Rates Tracking Form") for tracking the use of combined sewer development rights. Application submittal, review and approval shall follow this general procedure:

1. Obtain Sewer Capacity Form from SHA

Request a copy of the Release Rates Tracking Form from SHA, Development Department

2. Calculate Estimated Project Discharges

Complete the project specific portions of the Release Rates Tracking Form. Estimates shall be in accordance with the following:

a. Sanitary Sewer Average Daily Flow (ADF) - Prepared by a licensed Mechanical or Civil Engineer based on building uses and occupancy as stated in "Allowances" below. Alternative methods of calculating sanitary

sewer ADF may be used if approved in writing by SPU, see "ADJUSTMENTS" section below.

b. Groundwater/Dewatering Flow - Estimated by a licensed Geotechnical Engineer or Hydrogeologist.

c. Stormwater Peak Flows - Prepared by a licensed Civil Engineer using a Continuous Simulation Hydrologic Model approved by SPU. Estimated peak flow rates shall be calculated for the 6-mo, 2-yr, 5-yr, 10-yr and 25-yr recurrence and shall not exceed the rates indicated in “Allowances” below.

d. Adjustments – Include any adjustments in the values entered into the Release Rates Tracking Form. Document clearly in a letter the requested adjustment(s) with calculations and any additional back-up information (materials, practices, or other) to support approval of the adjustments. Demonstrate how the flows will be managed to achieve the proposed values. Letter and documentation shall be prepared by a licensed engineer. See “ADJUSTMENTS” below.

3. Obtain SHA Approval

Return the completed Release Rates Tracking Form to SHA. Upon SHA's approval and acceptance of the Sewer Capacity Form, SHA will return a signed copy to the applicant.

4. Develop a Sanitary and Drainage Control Plan(s)

Develop a Sanitary and Drainage Control Plan(s) in accordance with the current version of the Stormwater Code and applicable Director's Rules in effect at the time the development permit application is submitted. The stormwater release rates shown on the Sanitary and Drainage Control Plan(s) shall not exceed the allowable releases in the Release Rates Tracking Form.

5. Submittal to DPD

In addition to all other required permit submittals, provide the signed Release Rates Tracking Form to DPD and all flow rate calculations for drainage review. DPD will verify that the proposed Drainage Control Plan is consistent with the applicant's allowable releases in the Release Rates Tracking Form.

ALLOWANCES

This section outlines the flow allowances required to calculate the total flows proposed by a development. Some adjustments may be sought, see “ADJUSTMENTS” below.

1. Stormwater Flows

a. Maximum allowable peak discharge rate for the following recurrence intervals:
   i. 6-mo = 0.09 cfs/acre

ii. 2-yr = 0.15 cfs/acre
iii. 5-yr = 0.18 cfs/acre
iv. 10-yr = 0.22 cfs/acre
v. 25-yr = 0.40 cfs/acre

2. Sanitary Sewer Flows

a. Residential = 70 gallons/day/person
b. Medical Commercial = 500 gallons/day/1,000 sf
c. Other Commercial = 300 gallons/day/1,000 sf

3. Groundwater Flows

a. Estimate groundwater flows and document in a stamped geotechnical report prepared by a licensed geotechnical engineer or hydrogeologist.
b. i) Include flow values in the total allowable flows from the proposed development by reduction of the allowable release rates.
or
ii) Demonstrate that no groundwater will be conveyed or discharged off site.

Note
Portions of the Yesler Terrace Community right-of-way are served by a dedicated storm drainage and detention system. The storm drainage system is designed for flow control of the right-of-way only. All developments covered under this rule are required to discharge to the combined sewer.

ADJUSTMENTS to Allowances

An applicant may request flow adjustments to the allowances stated above, however it will be in the City's sole discretion as to whether or not such flow adjustments will be allowed. Submit all documentation supporting the adjustments request with the Release Rates Tracking Form to SHA and include with permit documents submitted to DPD.

1. Adjusting Storm, Sewer and Groundwater Flow Allowances

a. Calculating sanitary sewer flows for high-efficiency and low-use developments:
If an applicant provides documentation to demonstrate through the use of high efficiency fixtures and low-water-use practices that sewer flows are less than the allowance discharge rates specified above, then DPD or SPU may approve the demonstrated adjusted rates for use in calculating the total flows for the proposed development.

Note: DPD or SPU may request on-going documentation to verify adjusted flows are achieved.

b. Exchanging Sewer, Storm, or Groundwater Flow Capacity:
By providing the above documentation, an applicant may demonstrate to the satisfaction of the City that sewer, storm, or groundwater flows are below the required flows established by this Director's Rule. The available capacity created in one flow source (sewer, storm, or groundwater) due to flow reduction or control measures may be used by another flow source (sewer, storm, or groundwater), to calculate the total flows for the development.

2. Connection Points to Conveyance System:

Preferred connection points have been established for each potential development block and were reflected in the combined sewer modeling. (See Figure 1) If an applicant wishes to connect at a different location, the applicant shall submit to DPD a letter from SHA agreeing to the change and all supporting calculations on pipe capacity.

3. Changes in Down Gradient Geotechnical Conditions and Infiltration Feasibility

The Infiltration Infeasibility Map, Figure 2, included with this Director's Rule is based on conditions at the time of the report titled, Geotechnical Report, dated January 10, 2014. Changes in conditions, such as structural improvements to steep slopes and landslide prone areas, may increase the areas where infiltration facilities may be feasible. Individual projects which propose infiltration BMPs within areas marked as infeasible shall include a geotechnical report documenting the mitigation measures used to alleviate infeasibility.

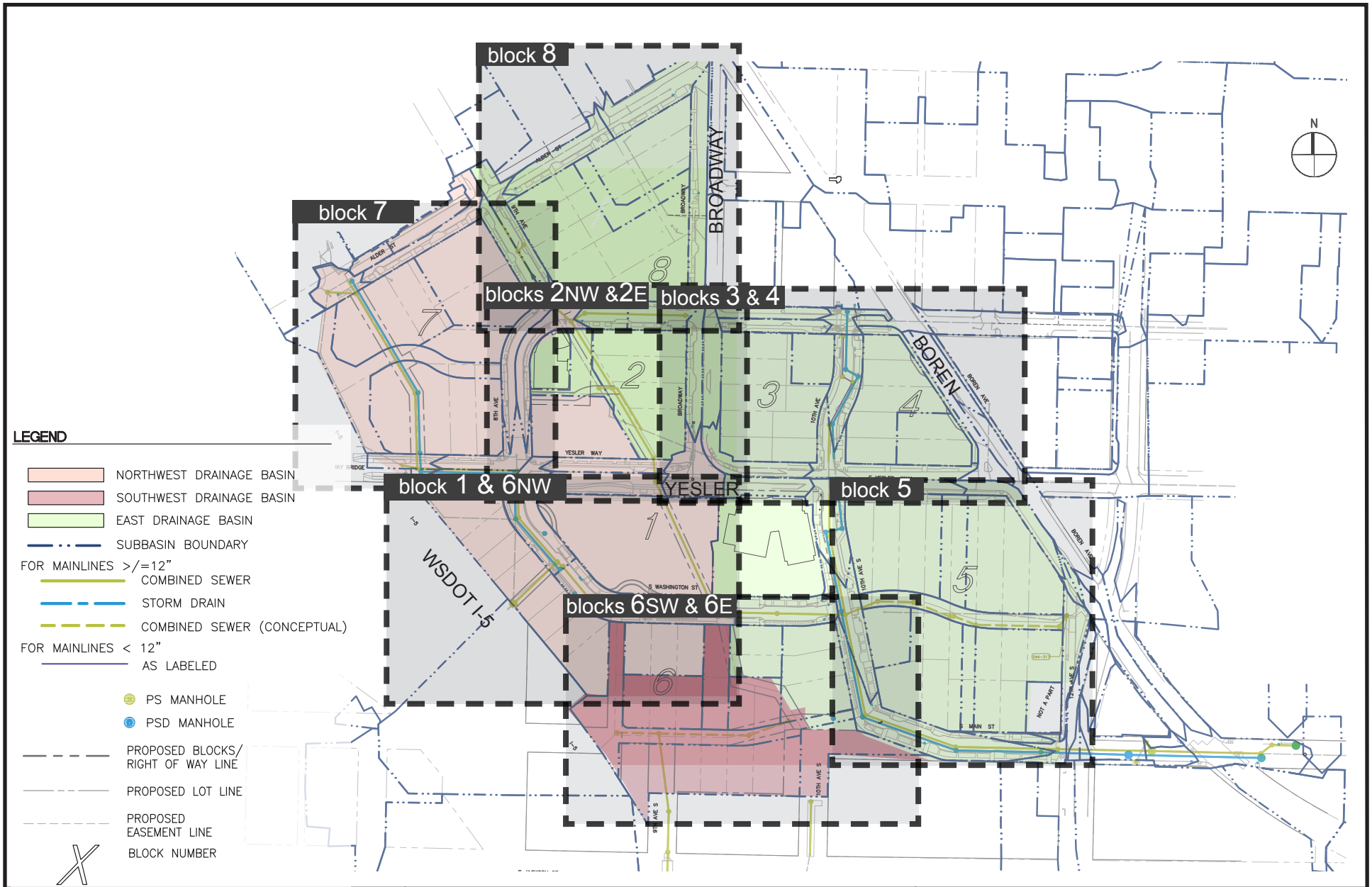
INFILTRATION WITHIN THE YESLER TERRACE REDEVELOPMENT

Figure 2 shows areas where infiltration facilities are not feasible for use in landslide-prone critical areas or within 10 times the slope height (500-foot maximum) of steep slope critical areas per the City's 2009 Stormwater Manual (Section 4.3.4.2).

Permeable pavement facilities and infiltrating bioretention facilities which receive run on from other surfaces are considered infiltration facilities (Section 4.4.7.1, 2009 Stormwater Manual Volume 3) and are not allowed within the setback areas. However, permeable pavement surfaces which are not designed to receive run on from other surfaces are not considered infiltration facilities (Section 4.4.7.3) and can be located within the setback area. Infiltrating areas not receiving run on from other surfaces (such as incidental infiltration on turf and landscaping), does not differ significantly from the existing conditions and are allowed within the setback requirements.

References

- “Seattle Housing Authority, Yesler Terrace Redevelopment, Final Plat SIP Stormwater Report,” dated June 10, 2014, by SvR Design
- Seattle Housing Authority, Yesler Terrace Redevelopment Final Plat SIP Plans SIP dated July 22,2014 by SvR Design
- “Geotechnical Engineering Services, Street Improvement Project, Yesler Terrace Redevelopment, Seattle, Washington,” dated January 10, 2014, by GeoEngineers.
- “Draft Environmental Impact Statement Yesler Terrace Redevelopment” dated October, 2010, by Seattle Housing Authority and Department of Human Services.
- “Final Environmental Impact Statement Yesler Terrace Redevelopment” dated April, 2011, by Seattle Housing Authority and Department of Human Services.
- “Downstream Modeling based on Hydraulic Modeling Approach – Results”, dated March 22, 2012, by SvR Design.
- “SWMM5 Modeling to Evaluate Yesler Terrace Development Impacts Downstream” dated April 20, 2012 by Aqualyze, Inc.
- “SWMM5 Modeling to Evaluate Yesler Terrace Development Impacts Downstream: Additional Information”, dated April 20, 2012 by SvR Design.
- “City of Seattle, Stormwater Manual, Volume 3 Stormwater Flow Control and Water Quality Treatment Technical Requirements Manual,” Seattle Public Utilities Director Rule 2009-005, November 5, 2009.



City of Seattle

YESLER TERRACE
MAXIMUM ALLOWABLE DOWNSTREAM RELEASE RATES

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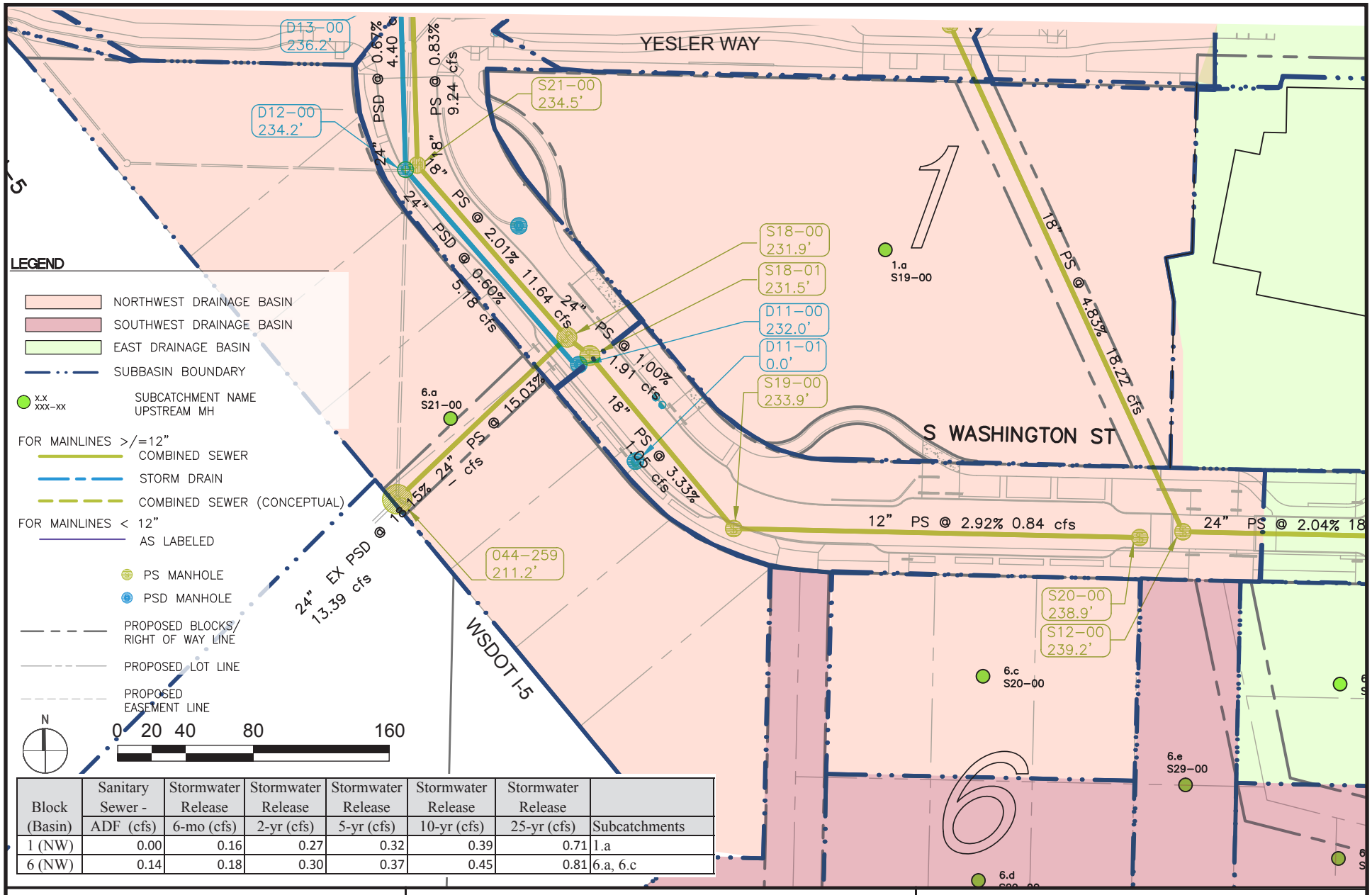
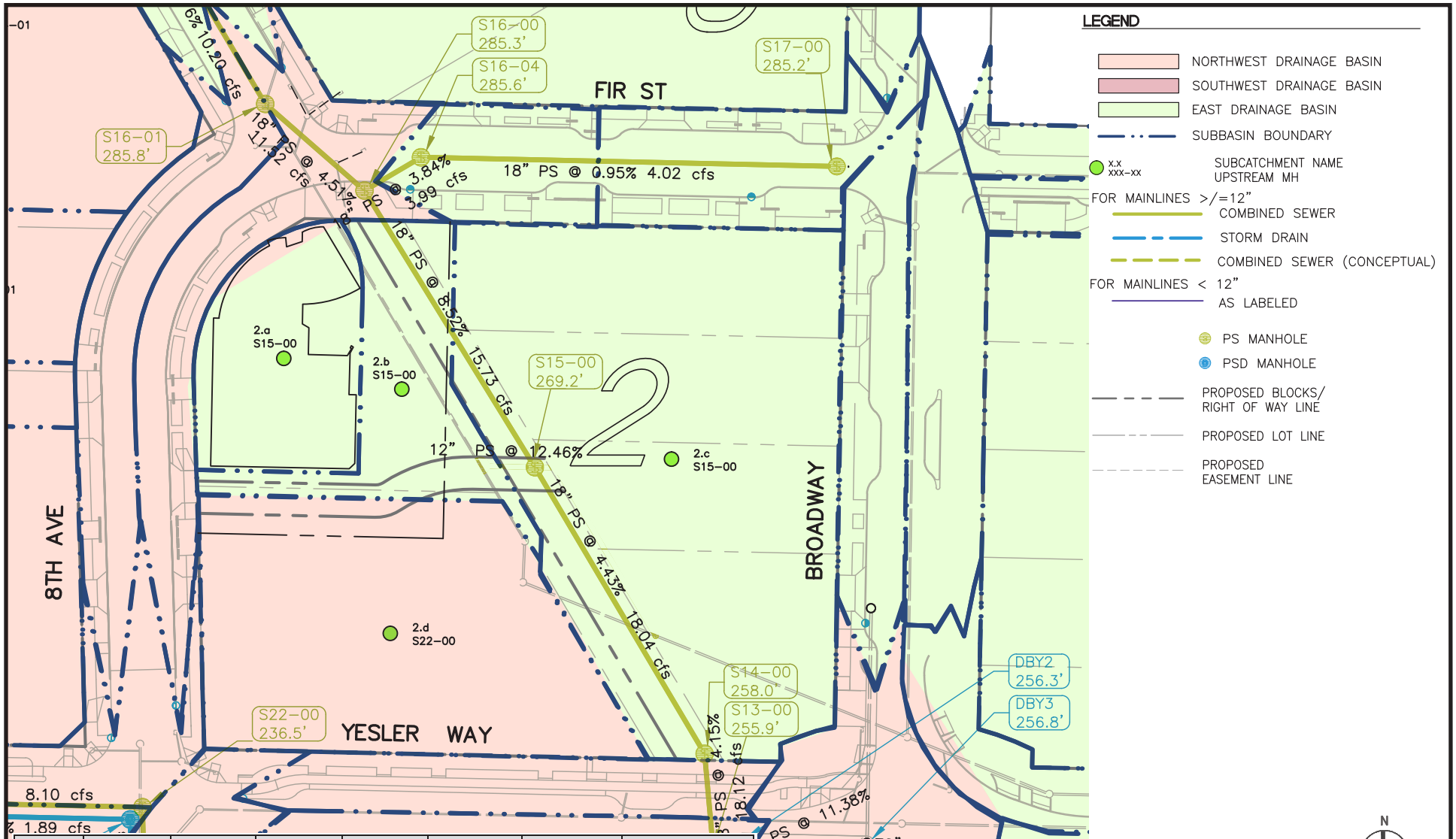
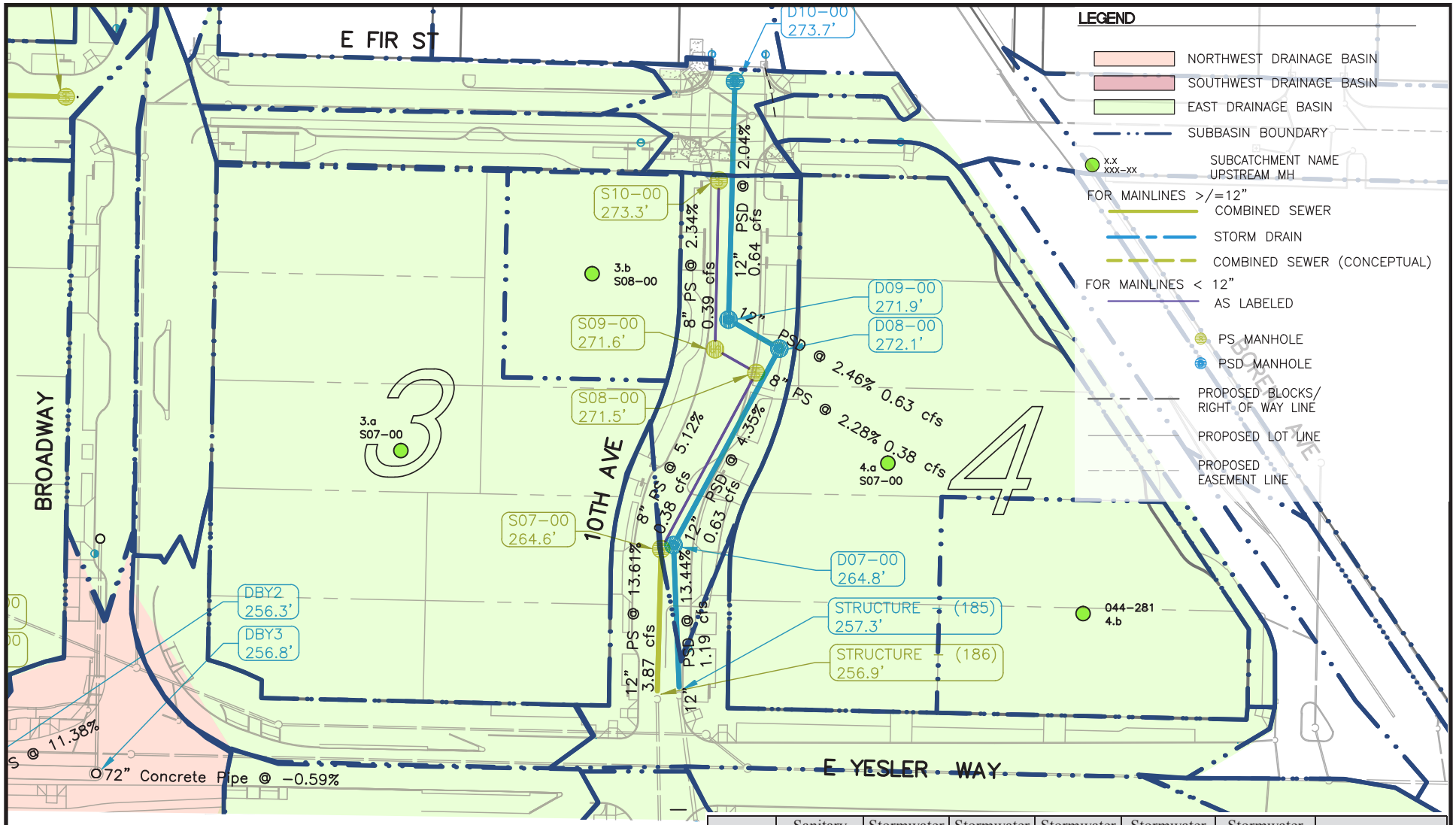


Block (Basin)	Sanitary Sewer - ADF (cfs)	Stormwater Release 6-mo (cfs)	Stormwater Release 2-yr (cfs)	Stormwater Release 5-yr (cfs)	Stormwater Release 10-yr (cfs)	Stormwater Release 25-yr (cfs)	Subcatchments
1 (NW)	0.00	0.16	0.27	0.32	0.39	0.71	1.a
6 (NW)	0.14	0.18	0.30	0.37	0.45	0.81	6.a, 6.c

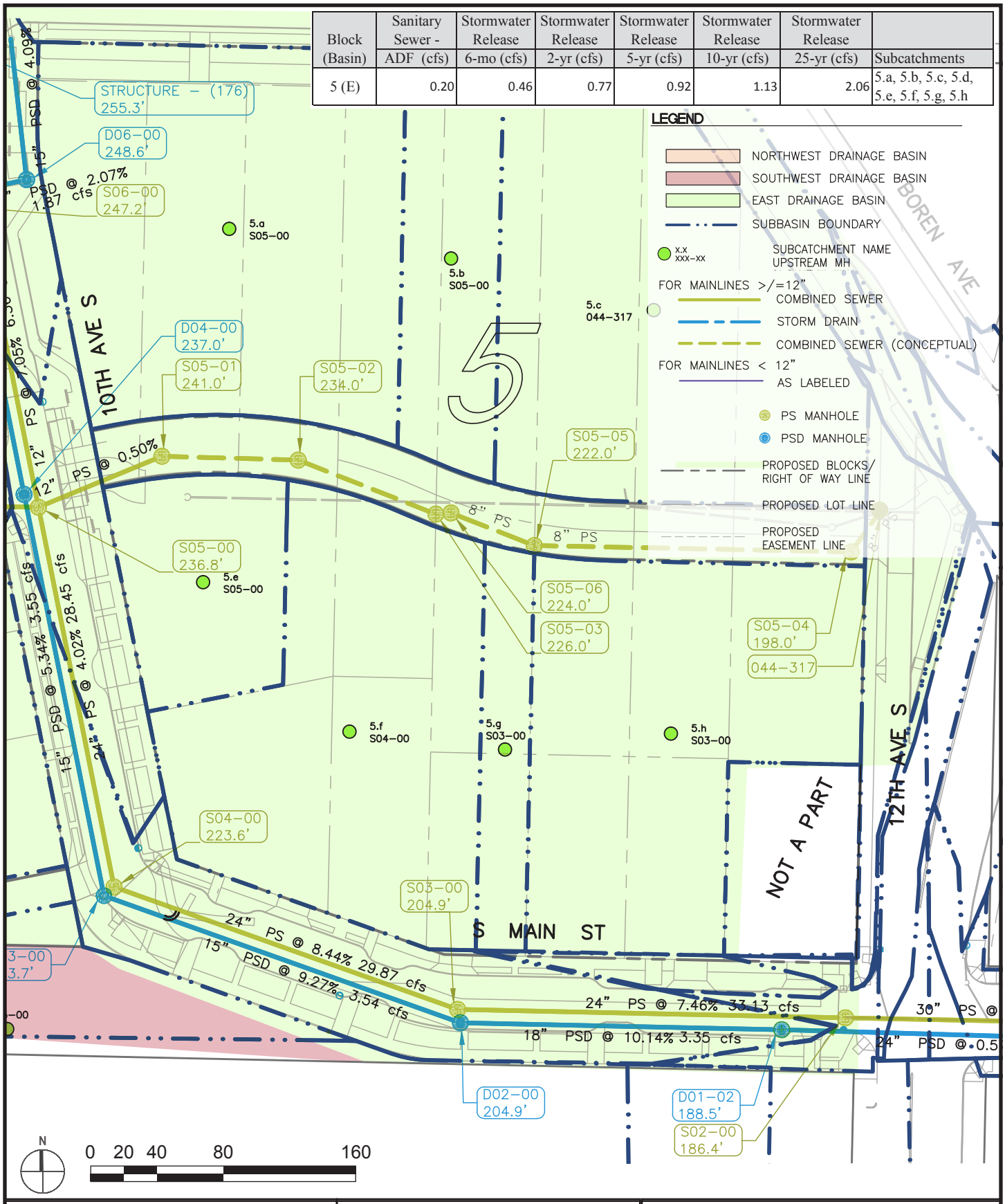


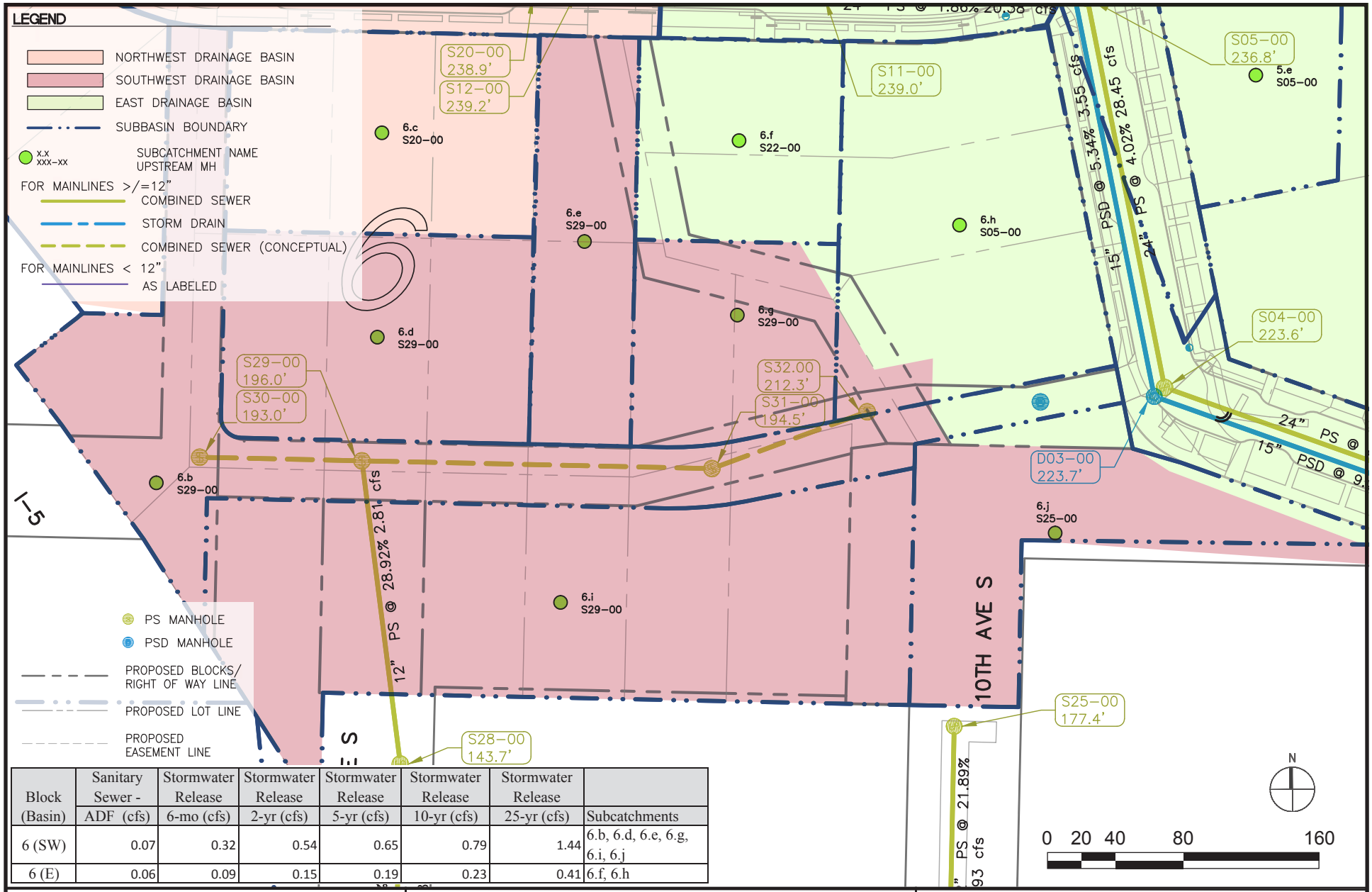
Block (Basin)	Sanitary Sewer - ADF (cfs)	Stormwater Release 6-mo (cfs)	Stormwater Release 2-yr (cfs)	Stormwater Release 5-yr (cfs)	Stormwater Release 10-yr (cfs)	Stormwater Release 25-yr (cfs)	Subcatchments
2 (NW)	0.02	0.06	0.10	0.12	0.15	0.27	2.d
2 (E)	0.07	0.15	0.25	0.30	0.37	0.68	2.a, 2.b, 2.c



Block (Basin)	Sanitary Sewer - ADF (cfs)	Stormwater Release 6-mo (cfs)	Stormwater Release 2-yr (cfs)	Stormwater Release 5-yr (cfs)	Stormwater Release 10-yr (cfs)	Stormwater Release 25-yr (cfs)	Subcatchments
3 (E)	0.09	0.15	0.24	0.29	0.36	0.65	3.a, 3.b
4 (E)	0.08	0.08	0.14	0.17	0.20	0.37	4.a
4 (E)	0.05	0.04	0.07	0.08	0.10	0.17	4.b

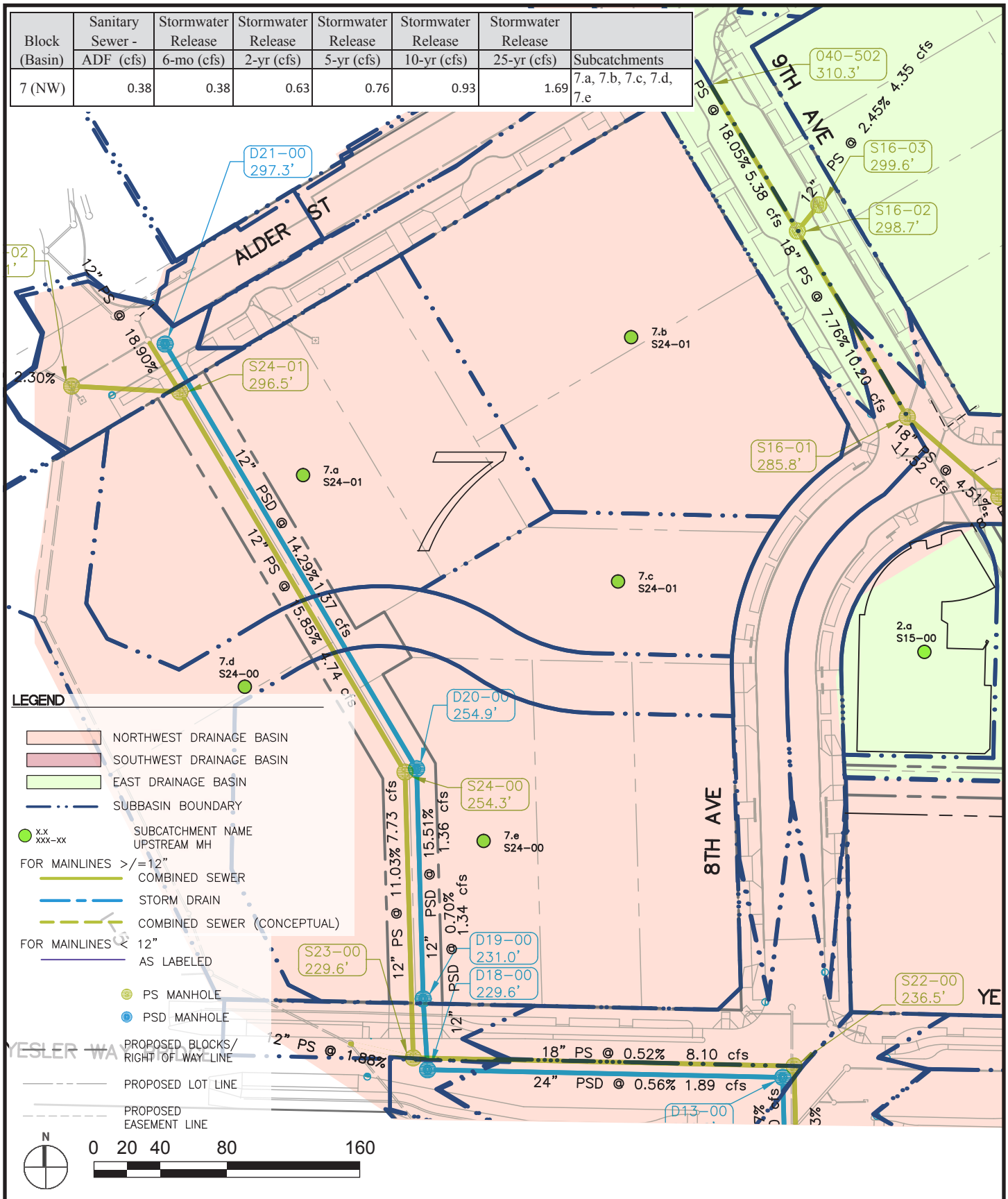
Block (Basin)	Sanitary Sewer - ADF (cfs)	Stormwater Release 6-mo (cfs)	Stormwater Release 2-yr (cfs)	Stormwater Release 5-yr (cfs)	Stormwater Release 10-yr (cfs)	Stormwater Release 25-yr (cfs)	Subcatchments
5 (E)	0.20	0.46	0.77	0.92	1.13	2.06	5.a, 5.b, 5.c, 5.d, 5.e, 5.f, 5.g, 5.h



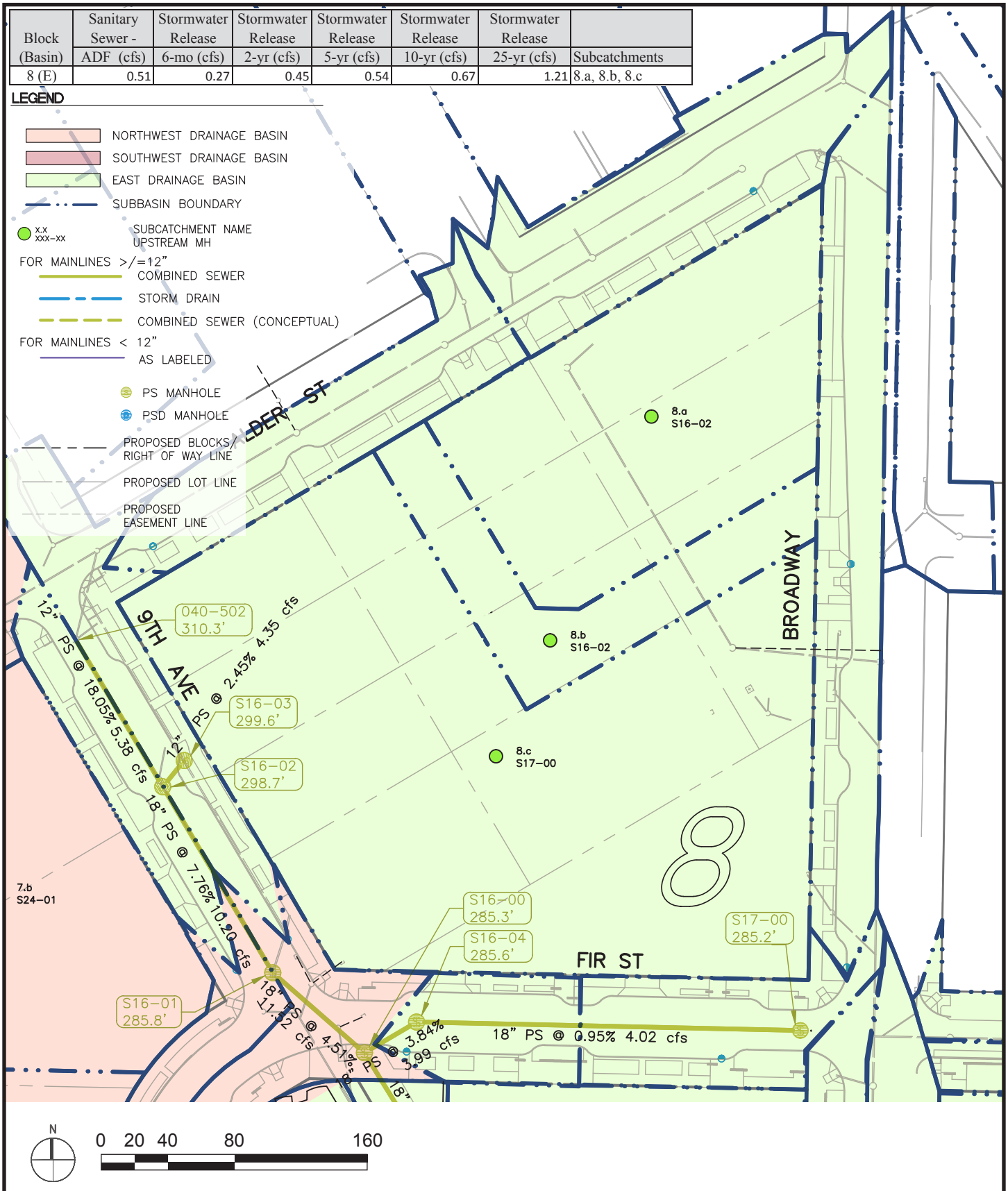


Block (Basin)	Sanitary Sewer - ADF (cfs)	Stormwater Release 6-mo (cfs)	Stormwater Release 2-yr (cfs)	Stormwater Release 5-yr (cfs)	Stormwater Release 10-yr (cfs)	Stormwater Release 25-yr (cfs)	Subcatchments
6 (SW)	0.07	0.32	0.54	0.65	0.79	1.44	6.b, 6.d, 6.e, 6.g, 6.i, 6.j
6 (E)	0.06	0.09	0.15	0.19	0.23	0.41	6.f, 6.h

Block (Basin)	Sanitary Sewer - ADF (cfs)	Stormwater Release 6-mo (cfs)	Stormwater Release 2-yr (cfs)	Stormwater Release 5-yr (cfs)	Stormwater Release 10-yr (cfs)	Stormwater Release 25-yr (cfs)	Subcatchments
7 (NW)	0.38	0.38	0.63	0.76	0.93	1.69	7.a, 7.b, 7.c, 7.d, 7.e



Block (Basin)	Sanitary Sewer - ADF (cfs)	Stormwater Release 6-mo (cfs)	Stormwater Release 2-yr (cfs)	Stormwater Release 5-yr (cfs)	Stormwater Release 10-yr (cfs)	Stormwater Release 25-yr (cfs)	Subcatchments
8 (E)	0.51	0.27	0.45	0.54	0.67	1.21	8.a, 8.b, 8.c

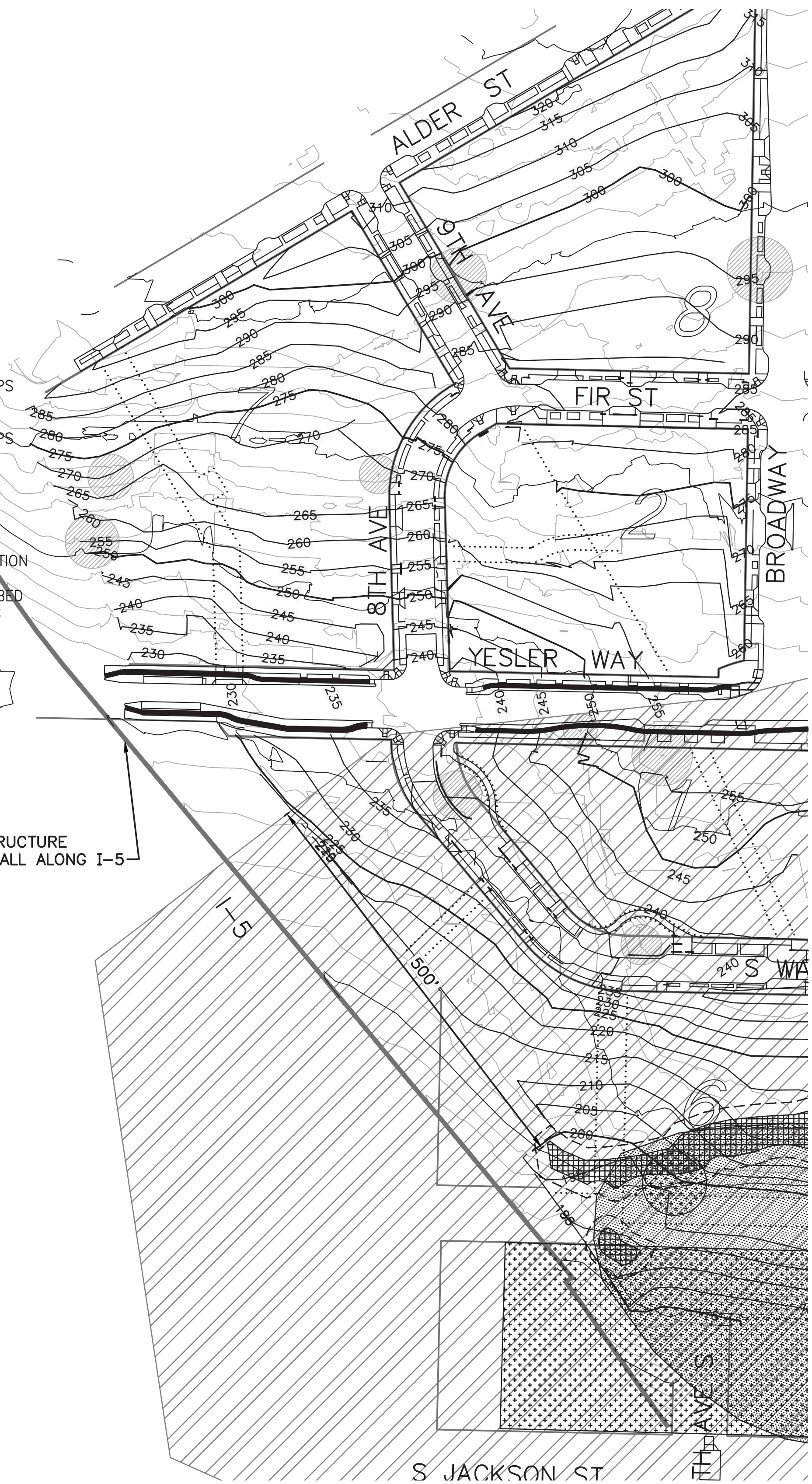


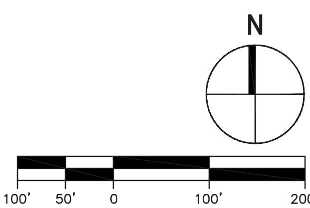
LEGEND

- RIGHT OF WAY LINE
- EASEMENTS
- 250 / 255 — ROUGH GRADING CONTOURS
- EXISTING CONTOURS
- 15' STEEP SLOPE BUFFER
- COS ECA CRITICAL SLOPE, AS DEFINED PER SMC 25.09.020 40% OR GREATER FOR 10' VERTICAL DROP OR GREATER. LIMITS SHOWN PER FIELD SURVEY
- KNOWN SLIDE AREAS CITY OF SEATTLE DPD GIS MAPS
- POTENTIAL SLIDE AREA PER CITY OF SEATTLE DPD GIS MAPS
- TIER 1 TREES
- 8 — BLOCK NUMBERS
- AREA EXCLUDING ALL INFILTRATION FACILITIES PER GEOTECHNICAL RECOMMENDATIONS AS DESCRIBED NOTES AND DIRECTOR'S RULES

NOTES

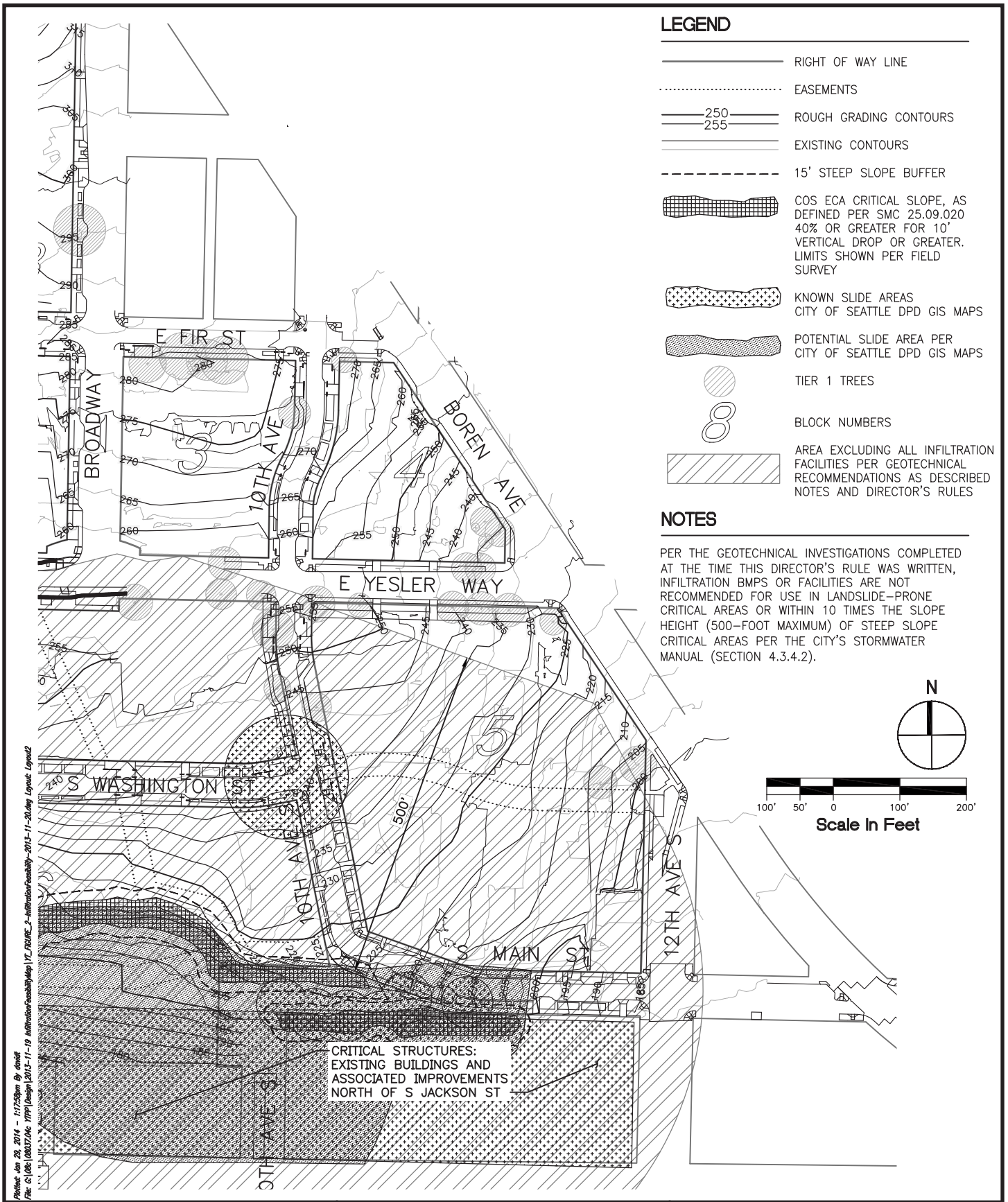
PER THE GEOTECHNICAL INVESTIGATIONS COMPLETED AT THE TIME THIS DIRECTOR'S RULE WAS WRITTEN, INFILTRATION BMPS OR FACILITIES ARE NOT RECOMMENDED FOR USE IN LANDSLIDE-PRONE CRITICAL AREAS OR WITHIN 10 TIMES THE SLOPE HEIGHT (500-FOOT MAXIMUM) OF STEEP SLOPE CRITICAL AREAS PER THE CITY'S STORMWATER MANUAL (SECTION 4.3.4.2).





City of Seattle

YESLER TERRACE INFILTRATION FEASIBILITY MAP


LEGEND
RIGHT OF WAY LINE
EASEMENTS
250
255
ROUGH GRADING CONTOURS
EXISTING CONTOURS
15' STEEP SLOPE BUFFER
COS ECA CRITICAL SLOPE, AS DEFINED PER SMC 25.09.020 40% OR GREATER FOR 10' VERTICAL DROP OR GREATER. LIMITS SHOWN PER FIELD SURVEY
KNOWN SLIDE AREAS CITY OF SEATTLE DPD GIS MAPS
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N
100' 50' 0 100' 200'
Scale In Feet
E FIR ST
BROADWAY
10TH AVE
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S WASHINGTON ST
S MAIN ST
12TH AVE S
9TH AVE S
500'
CRITICAL STRUCTURES: EXISTING BUILDINGS AND ASSOCIATED IMPROVEMENTS NORTH OF S JACKSON ST

Notes for Applicant

1. Always check with SHA to ensure you are using the latest version of this spreadsheet.
2. Calculate your project's estimated discharge rates (dry weather, groundwater and stormwater) in accordance with the Yesler Terrace Director's Rule.
3. Locate the first manhole upstream of your proposed combined side sewer connection point using the Yesler Terrace Director's Rule.
4. Input your project information and estimated discharge rates under the appropriate upstream manhole (light green cells).

Notes for SHA Review

1. Confirm the Applicant is using the latest record copy of this spreadsheet.
2. Review the Applicant's proposed discharge rates. Some useful questions to consider would include the following:
   - Is the Applicant proposing to discharge to a location other than the preferred discharge location? If yes, confirm there is sufficient capacity for future anticipated development in this basin.
   - Is the Applicant proposing to discharge at a lower than recommended rate (see "Allowances" section of the Director's Rule)? If yes, confirm Applicant has prepared justification for SPU/DPD review.
   - Is the Applicant proposing to discharge at a higher than recommended rate (see "Allowances" section of the Director's Rule)? If yes, confirm there is sufficient capacity for future anticipated development in this basin.
   - Is the Applicant proposing to discharge groundwater? If yes, confirm there is sufficient capacity for future anticipated development in this basin.
   - Is the Design Pipe Capacity exceeded? If yes, approved discharge rates will need to be approved by DPD/SPU. Confirm there is sufficient capacity for future anticipated development in this basin.
   - Is the Basin Capacity exceeded? If yes, discharge rates will need to be approved by DPD/SPU. DPD/SPU may require additional downstream analysis or improvements.
3. When SHA review is complete, return a signed PDF copy of the spreadsheet to the Applicant.
4. Once a signed copy has been returned to the Applicant, copy the "This Project" inputs (light green cells) from the Applicant's spreadsheet into SHA's record copy under the "Previous Projects" columns (light red cells).

Allowable Stormwater, Groundwater and Sewer Release Rates Tracking Form

Seattle Housing Authority
Yesler Terrace Director's Rule
Created 2/10/2014

Northern West Basin	Upstream MH	LOT & BLOCK # OR ADDRESS	OWNER	PERMIT STATUS	PREVIOUS PROJECTS							THIS PROJECTS							REMAINING (PIPE)	
					DRY WEATHER FLOW (ADF in CFS)	GROUND WATER (CFS)	6-MO RELEASE (CFS)	2-YR RELEASE (CFS)	5-YR RELEASE (CFS)	10-YR RELEASE (CFS)	25-YR RELEASE (CFS)	DRY WEATHER FLOW (ADF in CFS)	GROUND WATER (CFS)	6-MO RELEASE (CFS)	2-YR RELEASE (CFS)	5-YR RELEASE (CFS)	10-YR RELEASE (CFS)	25-YR RELEASE (CFS)	DESIGN PIPE CAPACITY REMAINING (%)	TOTAL PIPE CAPACITY REMAINING (%)
	24-01				0.28	0	0.19	0.32	0.39	0.47	0.86	0	0	0	0	0	0	0	-33%	89%
		Example Proj 1	Owner 1	Constructed	0.28	0	0.19	0.32	0.39	0.47	0.86									
	24-00				0.09	0	0.19	0.31	0.37	0.46	0.83	0	0	0	0	0	0	0	-22%	65%
		Example Proj 2	Owner 2	Constructed	0.09	0	0.19	0.31	0.37	0.46	0.83									
	23-00				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0%	0%
	22-00				0.02	0	0.06	0.1	0.12	0.15	0.27	0	0	0	0	0	0	0	0%	19%
		Example Proj 3	Owner 1	Constructed	0.02	0	0.06	0.1	0.12	0.15	0.27									
	21-00				0.12	0	0.14	0.23	0.27	0.34	0.61	0	0	0	0	0	0	0	-4%	53%
		Example Proj 4	Owner 1	Constructed	0.12	0	0.14	0.23	0.27	0.34	0.61									
	20-00				0	0	0.05	0.08	0.09	0.11	0.2	0	0	0	0	0	0	0	0%	96%
		Example Proj 5	Owner 3	Constructed	0	0	0.05	0.08	0.09	0.11	0.2									
	19-00				0.02	0	0.16	0.27	0.32	0.39	0.71	0	0	0	0	0	0	0	0%	95%
		Example Proj 6	Owner 4	Constructed	0.02	0	0.16	0.27	0.32	0.39	0.71									
	18-01				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0%	96%
	18-00				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0%	95%
																		>> <<Hidden		

MAXIMUM ALLOWABLE (BASIN)				
6-MO RELEASE (CFS)	2-YR RELEASE (CFS)	5-YR RELEASE (CFS)	10-YR RELEASE (CFS)	25-YR RELEASE (CFS)
1.31	1.84	2.1	2.45	4.02

TOTAL USED (BASIN)				
6-MO RELEASE (CFS)	2-YR RELEASE (CFS)	5-YR RELEASE (CFS)	10-YR RELEASE (CFS)	25-YR RELEASE (CFS)
1.32	1.84	2.09	2.45	4.01

REMAINING (BASIN)				
6-MO RELEASE (CFS)	2-YR RELEASE (CFS)	5-YR RELEASE (CFS)	10-YR RELEASE (CFS)	25-YR RELEASE (CFS)
-0.01	0	0.01	0	0.01

SHA Signature

X _____Date:_____

Red Cells are filled in by SHA
Green Cells are filled in by Developer

Notes
Refer to the Yesler Terrace Director's Rule for allowable release rates by block.
Do not include runoff from the public right-of-way.
Any project, regardless of size is required to submit calculations of runoff to SHA.
Any project that redevelops a portion of a previous project should report only the delta for the overlapping portion and the total for the non-overlapping portion.
Total Pipe Capacity is based on pipe capacity allocated to YT only and therefore is less than full flow capacity.

Allowable Stormwater, Groundwater and Sewer Release Rates Tracking Form

Seattle Housing Authority
Yesler Terrace Director's Rule
Created 2/10/2014

					PREVIOUS PROJECTS							THIS PROJECTS							REMAINING (PIPE)	
Southern West Basin	Upstream MH	LOT & BLOCK # OR ADDRESS	OWNER	PERMIT STATUS	DRY WEATHER FLOW (ADF in CFS)	GROUND WATER (CFS)	6-MO RELEASE (CFS)	2-YR RELEASE (CFS)	5-YR RELEASE (CFS)	10-YR RELEASE (CFS)	25-YR RELEASE (CFS)	DRY WEATHER FLOW (ADF in CFS)	GROUND WATER (CFS)	6-MO RELEASE (CFS)	2-YR RELEASE (CFS)	5-YR RELEASE (CFS)	10-YR RELEASE (CFS)	25-YR RELEASE (CFS)	DESIGN PIPE CAPACITY REMAINING (%)	TOTAL PIPE CAPACITY REMAINING (%)
	29-00				0.07	0	0.28	0.47	0.57	0.69	1.26	0	0	0	0	0	0	0	-68%	92%
		Example Proj 1	Owner 1	Constructed	0.07	0	0.28	0.47	0.57	0.69	1.26									
	28-00				0	0	0	0	0	0	0	0	0	0	0	0	0	0	-1%	85%
	27-00				0	0	0	0	0	0	0	0	0	0	0	0	0	0	-1%	85%
	26-00				0	0	0.04	0.07	0.08	0.1	0.18	0	0	0	0	0	0	0	5%	99%
		Example Proj 2	Owner 2	Constructed	0	0	0.04	0.07	0.08	0.1	0.18									
	SJT2				0	0	0	0	0	0	0	0	0	0	0	0	0	0	5%	99%

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MAXIMUM ALLOWABLE (BASIN)				
6-MO RELEASE (CFS)	2-YR RELEASE (CFS)	5-YR RELEASE (CFS)	10-YR RELEASE (CFS)	25-YR RELEASE (CFS)
0.39	0.61	0.72	0.86	1.51

TOTAL USED (BASIN)				
	2-YR RELEASE (CFS)	5-YR RELEASE (CFS)	10-YR RELEASE (CFS)	25-YR RELEASE (CFS)
0.39	0.61	0.72	0.86	1.51

REMAINING (BASIN)				
6-MO RELEASE (CFS)	2-YR RELEASE (CFS)	5-YR RELEASE (CFS)	10-YR RELEASE (CFS)	25-YR RELEASE (CFS)
0	0	0	0	0

SHA Signature

x _____Date:_____

Allowable Stormwater, Groundwater and Sewer Release Rates Tracking Form

Seattle Housing Authority
Yesler Terrace Director's Rule
Created 2/10/2014

East Basin	Upstream MH	LOT & BLOCK # OR ADDRESS	OWNER	PERMIT STATUS	PREVIOUS PROJECTS							THIS PROJECTS							REMAINING (PIPE)	
					DRY WEATHER FLOW (ADF in CFS)	GROUND WATER (CFS)	6-MO RELEASE (CFS)	2-YR RELEASE (CFS)	5-YR RELEASE (CFS)	10-YR RELEASE (CFS)	25-YR RELEASE (CFS)	DRY WEATHER FLOW (ADF in CFS)	GROUND WATER (CFS)	6-MO RELEASE (CFS)	2-YR RELEASE (CFS)	5-YR RELEASE (CFS)	10-YR RELEASE (CFS)	25-YR RELEASE (CFS)	DESIGN PIPE CAPACITY REMAINING (%)	TOTAL PIPE CAPACITY REMAINING (%)
	17-00				0.13	0	0.18	0.29	0.35	0.43	0.78	0	0	0	0	0	0	0	-17%	87%
		Example Proj 1	Owner 1	Constructed	0.13	0	0.18	0.29	0.35	0.43	0.78									
	16-04				0	0	0	0	0	0	0	0	0	0	0	0	0	0	-17%	95%
	044-502				0.38	0	0.1	0.16	0.19	0.24	0.43	0	0	0	0	0	0	0	N/A	92%
		Example Proj 2	Owner 1	Constructed	0.38	0	0.1	0.16	0.19	0.24	0.43									
	16-02				0	0	0	0	0	0	0	0	0	0	0	0	0	0	N/A	96%
	16-01				0	0	0	0	0	0	0	0	0	0	0	0	0	0	-88%	93%
	16-00				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0%	90%
	15-00				0.07	0	0.15	0.25	0.3	0.37	0.67	0	0	0	0	0	0	0	-3%	62%
		Example Proj 3	Owner 2	Constructed	0.07	0	0.15	0.25	0.3	0.37	0.67									
	14-00				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0%	58%
	13-00				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0%	67%
	12-00				0	0	0.03	0.05	0.06	0.07	0.13	0	0	0	0	0	0	0	0%	84%
		Example Proj 4	Owner 3	Constructed	0	0	0.03	0.05	0.06	0.07	0.13									
	11-00				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0%	80%
	10-00				0	0	0.02	0.04	0.05	0.06	0.1	0	0	0	0	0	0	0	0%	94%
		Example Proj 5	Owner 3	Constructed	0	0	0.02	0.04	0.05	0.06	0.1									
	09-00				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0%	94%

MAXIMUM ALLOWABLE (BASIN)				
6-MO RELEASE (CFS)	2-YR RELEASE (CFS)	5-YR RELEASE (CFS)	10-YR RELEASE (CFS)	25-YR RELEASE (CFS)
2.3	3.13	3.55	4.1	6.6

TOTAL USED (BASIN)				
6-MO RELEASE (CFS)	2-YR RELEASE (CFS)	5-YR RELEASE (CFS)	10-YR RELEASE (CFS)	25-YR RELEASE (CFS)
2.3	3.13	3.55	4.1	6.59

REMAINING (BASIN)				
6-MO RELEASE (CFS)	2-YR RELEASE (CFS)	5-YR RELEASE (CFS)	10-YR RELEASE (CFS)	25-YR RELEASE (CFS)
0	0	0	0	0.01

Allowable Stormwater, Groundwater and Sewer Release Rates Tracking Form

Seattle Housing Authority
Yesler Terrace Director's Rule
Created 2/10/2014

East Basin (Cont.)	Upstream MH	LOT & BLOCK # OR ADDRESS	OWNER	PERMIT STATUS	PREVIOUS PROJECTS							THIS PROJECTS							REMAINING (PIPE)	
					DRY WEATHER FLOW (ADF in CFS)	GROUND WATER (CFS)	6-MO RELEASE (CFS)	2-YR RELEASE (CFS)	5-YR RELEASE (CFS)	10-YR RELEASE (CFS)	25-YR RELEASE (CFS)	DRY WEATHER FLOW (ADF in CFS)	GROUND WATER (CFS)	6-MO RELEASE (CFS)	2-YR RELEASE (CFS)	5-YR RELEASE (CFS)	10-YR RELEASE (CFS)	25-YR RELEASE (CFS)	DESIGN PIPE CAPACITY REMAINING (%)	TOTAL PIPE CAPACITY REMAINING (%)
	08-00				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0%	96%
	07-00				0.16	0	0.21	0.35	0.41	0.51	0.92	0	0	0	0	0	0	0	-16%	89%
		Example Proj 6	Owner 1	Constructed	0.16	0	0.21	0.35	0.41	0.51	0.92									
	SYY2				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0%	51%
	SYY1				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0%	78%
	06-00				0	0	0	0	0	0	0	0	0	0	0	0	0	0	33%	76%
	05-00				0.1	0	0.22	0.37	0.44	0.54	0.98	0	0	0	0	0	0	0	0%	78%
		Example Proj 7	Owner 3	Constructed	0.1	0	0.22	0.37	0.44	0.54	0.98									
	04-00				0.07	0	0.08	0.13	0.16	0.19	0.35	0	0	0	0	0	0	0	0%	87%
		Example Proj 8	Owner 2	Constructed	0.07	0	0.08	0.13	0.16	0.19	0.35									
	03-00				0.06	0	0.09	0.16	0.19	0.23	0.42	0	0	0	0	0	0	0	6%	84%
		Example Proj 9	Owner 4	Constructed	0.06	0	0.09	0.16	0.19	0.23	0.42									
	02-00				0	0	0	0	0	0	0	0	0	0	0	0	0	0	7%	86%
	044-317				0.03	0	0.13	0.22	0.27	0.32	0.59	0	0	0	0	0	0	0	60%	60%
		Example Proj 10	Owner 3	Constructed	0.03	0	0.13	0.22	0.27	0.32	0.59									
	044-508				0	0	0	0	0	0	0	0	0	0	0	0	0	0	100%	100%
	044-532				0	0	0	0	0	0	0	0	0	0	0	0	0	0	100%	100%
	044-278				0	0	0	0	0	0	0	0	0	0	0	0	0	0	100%	100%

Allowable Stormwater, Groundwater and Sewer Release Rates Tracking Form

Seattle Housing Authority
Yesler Terrace Director's Rule
Created 2/10/2014

East Basin (Cont.)	Upstream MH	LOT & BLOCK # OR ADDRESS	OWNER	PERMIT STATUS	PREVIOUS PROJECTS: DRY WEATHER FLOW (ADF in CFS)	GROUND WATER (CFS)	6-MO RELEASE (CFS)	2-YR RELEASE (CFS)	5-YR RELEASE (CFS)	10-YR RELEASE (CFS)	25-YR RELEASE (CFS)	THIS PROJECTS: DRY WEATHER FLOW (ADF in CFS)	GROUND WATER (CFS)	6-MO RELEASE (CFS)	2-YR RELEASE (CFS)	5-YR RELEASE (CFS)	10-YR RELEASE (CFS)	25-YR RELEASE (CFS)	REMAINING (PIPE): DESIGN PIPE CAPACITY REMAINING (%)	TOTAL PIPE CAPACITY REMAINING (%)
	044-277				0	0	0	0	0	0	0	0	0	0	0	0	0	0	100%	100%
	044-279				0	0	0	0	0	0	0	0	0	0	0	0	0	0	100%	100%
	044-280				0	0	0	0	0	0	0	0	0	0	0	0	0	0	100%	100%
	044-281				0.05	0	0.04	0.06	0.08	0.09	0.17	0	0	0	0	0	0	0	96%	96%
		Example Proj 11	Owner 3	Constructed	0.05	0	0.04	0.06	0.08	0.09	0.17									

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SHA Signature

X _____Date:_____

THIS WORKSHEET IS SECURED. USE PASSWORD "**SHA**" TO UNLOCK.

	Cummulative	Storm	Cummulative								Storm	Storm	Storm	Storm	Storm								
NW Basin	Estimated DWF	Estimated 25-yr	Full Flow Capacity	Target Max %	Target Capacity	25yr Model Flow	Extra Capacity	YT Available Capacity	Used DWF	Used Ground-water (GW)	Used 6-mo	Used 2-yr	Used 5-yr	Used 10-yr	Used 25-yr	Used Capacity	Design DWF	Design 25-yr	Design Capacity	Remaining Design Capacity	Remaining Design Capacity %	Remaining Total Capacity	Remaining Total Capacity %
24-01	0	0.86	14.18	1	14.18	4.73	9.45	10.31	0.28	0	0.19	0.32	0.39	0.47	0.86	1.14	0.00	0.86	0.86	-0.28	-33%	9.17	89%
24-00	0	1.69	11.83	1	11.83	7.66	4.17	5.86	0.09	0	0.19	0.31	0.37	0.46	0.83	2.06	0.00	1.69	1.69	-0.37	-22%	3.8	65%
23-00	0.37	1.69	7.57	1	7.57	7.57	0	2.06	0	0	0	0	0	0	0	2.06	0.37	1.69	2.06	0.00	0%	0	0%
22-00	0.39	1.96	9.57	1	9.57	9.02	0.55	2.9	0.02	0	0.06	0.1	0.12	0.15	0.27	2.35	0.39	1.96	2.35	0.00	0%	0.55	19%
21-00	0.39	2.57	14.89	1	14.89	11.35	3.54	6.5	0.12	0	0.14	0.23	0.27	0.34	0.61	3.08	0.39	2.57	2.96	-0.12	-4%	3.42	53%
20-00	0	0.2	6.09	1	6.09	0.82	5.27	5.47	0	0	0.05	0.08	0.09	0.11	0.2	0.2	0.00	0.20	0.20	0.00	0%	5.27	96%
19-00	0.02	0.91	19.17	1	19.17	1.02	18.15	19.08	0.02	0	0.16	0.27	0.32	0.39	0.71	0.93	0.02	0.91	0.93	0.00	0%	18.15	95%
18-01	0.02	0.91	22.62	1	22.62	1.84	20.78	21.71	0	0	0	0	0	0	0	0.93	0.02	0.91	0.93	0.00	0%	20.78	96%
18-00	0.53	3.48	87.7	1	87.7	12.93	74.77	78.78	0	0	0	0	0	0	0	4.01	0.53	3.48	4.01	0.00	0%	74.77	95%

	Allow DWF	Combined Allow 6-mo	Combined Allow 2-yr	Combined Allow 5-yr	Combined Allow 10-yr	Combined Allow 25-yr	Used DWF	Used GW	Combined Used 6-mo	Combined Used 2-yr	Combined Used 5-yr	Combined Used 10-yr	Combined Used 25-yr	Rem. 6-mo	Rem. 2-yr	Rem. 5-yr	Rem. 10-yr	Rem. 25-yr
Bottom Line Summary	0.53	1.31	1.84	2.10	2.45	4.02	0.53	0	1.32	1.84	2.09	2.45	4.01	-0.01	0	0.01	0	0.01
														-1%	0%	0%	0%	0%

	Cummulative	Storm	Cummulative								Storm	Storm	Storm	Storm	Storm								
SW Basin	Estimated DWF	Estimated 25-yr	Full Flow Capacity	Target Max %	Target Capacity	25yr Model Flow	Extra Capacity	YT Available Capacity	Used DWF	Used Ground-water (GW)	Used 6-mo	Used 2-yr	Used 5-yr	Used 10-yr	Used 25-yr	Used Capacity	Design DWF	Design 25-yr	Design Capacity	Remaining Design Capacity	Remaining Design Capacity %	Remaining Total Capacity	Remaining Total Capacity %
29-00	0	0.79	19.16	1	19.16	2.8	16.36	17.15	0.07	0	0.28	0.47	0.57	0.69	1.26	1.33	0.00	0.79	0.79	-0.54	-68%	15.82	92%
28-00	0.07	1.25	12.2	1	12.2	4.86	7.34	8.66	0	0	0	0	0	0	0	1.33	0.07	1.25	1.32	-0.01	-1%	7.33	85%
27-00	0.07	1.25	12.53	1	12.53	4.86	7.67	8.99	0	0	0	0	0	0	0	1.33	0.07	1.25	1.32	-0.01	-1%	7.66	85%
26-00	0	0.19	16.67	1	16.67	0.58	16.09	16.28	0	0	0.04	0.07	0.08	0.1	0.18	0.18	0.00	0.19	0.19	0.01	5%	16.1	99%
SJT2	0	0.19	13.51	1	13.51	0.54	12.97	13.16	0	0	0	0	0	0	0	0.18	0.00	0.19	0.19	0.01	5%	12.98	99%

	Allow DWF	Combined Allow 6-mo	Combined Allow 2-yr	Combined Allow 5-yr	Combined Allow 10-yr	Combined Allow 25-yr	Used DWF	Used GW	Combined Used 6-mo	Combined Used 2-yr	Combined Used 5-yr	Combined Used 10-yr	Combined Used 25-yr	Rem. 6-mo	Rem. 2-yr	Rem. 5-yr	Rem. 10-yr	Rem. 25-yr
Bottom Line Summary	0.07	0.39	0.61	0.72	0.86	1.51	0.07	0	0.39	0.61	0.72	0.86	1.51	0	0	0	0	0
														0%	0%	0%	0%	0%

	Cummulative	Storm	Cummulative								Storm	Storm	Storm	Storm	Storm								
E Basin	Estimated DWF	Estimated 25-yr	Full Flow Capacity	Target Max %	Target Capacity	25yr Model Flow	Extra Capacity	YT Available Capacity	Used DWF	Used Ground-water (GW)	Used 6-mo	Used 2-yr	Used 5-yr	Used 10-yr	Used 25-yr	Used Capacity	Design DWF	Design 25-yr	Design Capacity	Remaining Design Capacity	Remaining Design Capacity %	Remaining Total Capacity	Remaining Total Capacity %
17-00	0	0.78	10.24	1	10.24	3.98	6.26	7.04	0.13	0	0.18	0.29	0.35	0.43	0.78	0.91	0.00	0.78	0.78	-0.13	-17%	6.13	87%
16-04	0	0.78	20.58	1	20.58	3.91	16.67	17.45	0	0	0	0	0	0	0	0.91	0.00	0.78	0.78	-0.13	-17%	16.54	95%
044-502	0	0	15.14	1	15.14	5.31	9.83	9.83	0.38	0	0.1	0.16	0.19	0.24	0.43	0.81	0.00	0.00	0.00	-0.81	N/A	9.02	92%
16-02	0	0	29.26	1	29.26	9.9	19.36	19.36	0	0	0	0	0	0	0	0.81	0.00	0.00	0.00	-0.81	N/A	18.55	96%
16-01	0	0.43	22.31	1	22.31	11.37	10.94	11.37	0	0	0	0	0	0	0	0.81	0.00	0.43	0.43	-0.38	-88%	10.56	93%
16-00	0.51	1.21	30.66	1	30.66	15.69	14.97	16.69	0	0	0	0	0	0	0	1.72	0.51	1.21	1.72	0.00	0%	14.97	90%
15-00	0.51	1.88	22.11	1	22.11	17.99	4.12	6.51	0.07	0	0.15	0.25	0.3	0.37	0.67	2.46	0.51	1.88	2.39	-0.07	-3%	4.05	62%
14-00	0.58	1.88	21.4	1	21.4	17.98	3.42	5.88	0	0	0	0	0	0	0	2.46	0.58	1.88	2.46	0.00	0%	3.42	58%
13-00	0.58	1.88	23.08	1	23.08	17.99	5.09	7.55	0	0	0	0	0	0	0	2.46	0.58	1.88	2.46	0.00	0%	5.09	67%
12-00	0.58	2.01	32.31	1	32.31	18.53	13.78	16.37	0	0	0.03	0.05	0.06	0.07	0.13	2.59	0.58	2.01	2.59	0.00	0%	13.78	84%
11-00	0.58	2.01	30.85	1	30.85	20.34	10.51	13.1	0	0	0	0	0	0	0	2.59	0.58	2.01	2.59	0.00	0%	10.51	80%
10-00	0	0.1	1.9	1	1.9	0.39	1.51	1.61	0	0	0.02	0.04	0.05	0.06	0.1	0.1	0.00	0.10	0.10	0.00	0%	1.51	94%
09-00	0	0.1	1.82	1	1.82	0.37	1.45	1.55	0	0	0	0	0	0	0	0.1	0.00	0.10	0.10	0.00	0%	1.45	94%
08-00	0	0.1	2.73	1	2.73	0.37	2.36	2.46	0	0	0	0	0	0	0	0.1	0.00	0.10	0.10	0.00	0%	2.36	96%
07-00	0	1.02	13.14	1	13.14	3.87	9.27	10.29	0.16	0	0.21	0.35	0.41	0.51	0.92	1.18	0.00	1.02	1.02	-0.16	-16%	9.11	89%
SYY2	0.16	1.02	5.26	1	5.26	4.01	1.25	2.43	0	0	0	0	0	0	0	1.18	0.16	1.02	1.18	0.00	0%	1.25	51%
SYY1	0.16	1.02	8.16	1	8.16	3.98	4.18	5.36	0	0	0	0	0	0	0	1.18	0.16	1.02	1.18	0.00	0%	4.18	78%
06-00	0.16	1.6	9.46	1	9.46	6.22	3.24	5	0	0	0	0	0	0	0	1.18	0.16	1.60	1.76	0.58	33%	3.82	76%
05-00	0.84	4.01	45.35	1	45.35	28.16	17.19	22.04	0.1	0	0.22	0.37	0.44	0.54	0.98	4.85	0.84	4.01	4.85	0.00	0%	17.19	78%
04-00	0.91	4.36	65.72	1	65.72	29.45	36.27	41.54	0.07	0	0.08	0.13	0.16	0.19	0.35	5.27	0.91	4.36	5.27	0.00	0%	36.27	87%
03-00	0.91	5.21	61.79	1	61.79	32.47	29.32	35.44	0.06	0	0.09	0.16	0.19	0.23	0.42	5.75	0.91	5.21	6.12	0.37	6%	29.69	84%
02-00	1	5.21	68.39	1	68.39	32.29	36.1	42.31	0	0	0	0	0	0	0	5.75	1.00	5.21	6.21	0.46	7%	36.56	86%
044-317	0	0.16					1.39	1.55	0.03	0	0.13	0.22	0.27	0.32	0.59	0.62				0.93	60%	0.93	60%
044-508							3.12	3.12	0	0	0	0	0	0	0	0				3.12	100%	3.12	100%
044-532							1.14	1.14	0	0	0	0	0	0	0	0				1.14	100%	1.14	100%
044-278							3.08	3.08	0	0	0	0	0	0	0	0				3.08	100%	3.08	100%
044-277							6.74	6.74	0	0	0	0	0	0	0	0				6.74	100%	6.74	100%
044-279							4.07	4.07	0	0	0	0	0	0	0	0				4.07	100%	4.07	100%
044-280	0	0					4.01	4.01	0	0	0	0	0	0	0	0				4.01	100%	4.01	100%
044-281	0.05	0.17					5.17	5.39	0.05	0	0.04	0.06	0.08	0.09	0.17	0.22				5.17	96%	5.17	96%

	Allow DWF	Combined Allow 6-mo	Combined Allow 2-yr	Combined Allow 5-yr	Combined Allow 10-yr	Combined Allow 25-yr	Used DWF	Used GW	Combined Used 6-mo	Combined Used 2-yr	Combined Used 5-yr	Combined Used 10-yr	Combined Used 25-yr	Rem. 6-mo	Rem. 2-yr	Rem. 5-yr	Rem. 10-yr	Rem. 25-yr
Bottom Line Summary	1.05	2.3	3.13	3.55	4.1	6.6	1.05	0	2.3	3.13	3.55	4.1	6.59	0	0	0	0	0.01
														0%	0%	0%	0%	0%

These are checks
EQ
Not used
Unique EQ