

## CONFLUENCE QUESTIONS & COMMENTS

SPU received many comments from the public regarding the 60% design of the Thornton Creek Confluence Improvement project throughout August. A compilation of those questions and comments is here.

Thank you to all who took the time to provide feedback – it is greatly appreciated! SPU will be evaluating these comments in September and deciding if and how to incorporate suggestions into the next stage of design, given the primarily goals of the project to reduce flooding and improve Thornton Creek's natural habitat.

We hope to have responses to comments and our design tweaks posted by the end of September and to hold a follow-up public meeting in October to discuss how comments were evaluated and, in some instances, incorporated into the design.

### ***Modeling/Storm Event Definition***

- Is SPU designing for a 100-year storm event?
- I understand that FEMA has changed the definition of a 100-year storm event; are you using the old definition or the new definition?
- At the last public meeting in 2011 at Nathan Hale High School, you mentioned that FEMA also had a new definition for a 500-year storm event. Why not design for the 500-year storm event? Would it require more land than you have?
- At the last public meeting, SPU characterized the flooding that happened here as a 500-year storm event. That's what we should be designing for.
- If it requires more land, talk to the school district. They may be willing to give up some of the field space at Nathan Hale High School to protect their investment in the recent Nathan Hale remodel.
- Can you provide an animation of the inundation zone showing current and proposed conditions? \*
- Is the USGS stream gauge for Thornton Creek still operational? \*
- SPU's monitoring should include event correlation and show what links we use for getting information. \*

### ***Poplars and Conifer Grove***

- We've heard that a choice needs to be made to either remove the poplars along the south edge of Nathan Hale High School and open the channel in that area to increase flood storage area, or to leave the poplars and have less flood storage. Did you consider opening up storage in the adjacent open space instead?
- Based on the City's tree replacement policy, you'll have to place two trees for every poplar you take down. Where would they go without impacting the storage?
- SPU should step back and reevaluate the design at this point; there are ways to reorganize the improvements on the site that can improve flood storage, and keep the poplar trees and conifer grove.
- How will you decide which way to go – poplars or more flood storage?
- Will the maple tree and willow tree have to be taken out also?
- Removal of the poplar trees west of 35<sup>th</sup> is a good idea. Their roots are troublesome. \*

- As a member of the Thornton Creek Alliance, I would like to comment on the removal of poplar trees on the west side of 35<sup>th</sup> Ave. N.E. My feeling is DO IT. It is my understanding that poplars are not native to this area and in my opening is just a nuisance tree.
- We have no objection to removal of the poplar trees.
- I'd be in favor of removing the orange tagged poplar trees west of 35<sup>th</sup> Avenue NE to create more flood storage and improve the habitat. With this added flood storage, I'd like to see a trade off with a slight loss of flood storage east of 35<sup>th</sup> Avenue NE to accommodate at least one path across the northern side.

### ***Habitat***

- Will you remove the non-native plants such as blackberries and replace them with native species?
- You mentioned that improving the Chinook salmon habitat is a key component of the habitat improvements; where is the spawning area?
- How do you expect the design to support native frog habitat? \*

### ***Safety and Access***

- I've seen kids and dogs swimming in Meadowbrook Pond, and there is often negative behavior that happens in the park area around the pond. What are the plans for restricting or better monitoring public access to improve safety?
- Where will public go if there is no access for people through the site?
- I would prefer a path instead of an overlook.
- Have you decided whether 35<sup>th</sup> Ave NE could be partially or completely closed off during construction? It sounds better to shut it down and get construction done faster, but I understand Metro has to weigh in because of bus routes; have they?
- What would the bus detour plan be during construction?
- If 35<sup>th</sup> Ave NE is completely closed, will residents have access to their homes? Garbage pick-up? Emergency vehicles?
- Will the design create standing water in the western portion of the site (low-lying 'wetland' type areas)? Will this create mosquito issues? \*
- As frequent visitors to the pond, we find the openness of paths intimidates vandals and gives them less cover. Areas with cover invite problems. \*

### ***Process/Public Engagement***

- There are other parties involved such as King County. Have you consulted with them regarding their water and sewer pipes in the area?
- You have a public involvement problem; you aren't working with as productively as you could. You're only giving us two weeks to digest all of this and provide comment; can you give us two more weeks? This is complex and important.
- You aren't really giving us options to weigh in on, instead we get one option. The public involvement process to design Maple Leaf Park is a good example of how to present options and get public input. It was an iterative process that allowed the public to give feedback on options, and to track how the feedback was used in the design. They

weren't afraid to have back and forth discussions with us. I hope there will be more back and forth on this project going forward.

- Don't just think this is some project in the middle of nowhere that people don't care about.
- Including community input beginning at the 30% would go a long ways to ensuring the community feels truly involved. While technical design criteria has to come first, having lots of ideas from people who live and visit the sites is a good idea. You never know when someone will come up with a brilliant idea that can be implemented, or will spark a staff designer to tweak the plans producing an improvement.

### ***Site Design/General***

- Those of us who live closest to the site are the most impacted by flooding and the proposed improvements.
- Will the design you are presenting tonight help people further upstream?
- It looks like SPU is designing this to get as much efficiency out of the site as possible. This is an additive process; the City will add more piece by piece until the flood storage is sufficient.
- Will potential upwelling destabilize the existing 48-inch sewer pipe?
- This is a liquefaction zone. Have you considered what the impact would be on the 48-inch sewer pipe?
- What will happen to the 36-inch sewer pipe that runs between here and Lake Washington?
- Are new, single-family developments (new construction) required to include onsite stormwater detention like multi-family developments are?
- My main concern is that we still be able to get to upper stream area for educational purposes. Currently we use the footpath that travels from the culvert upstream past the bridges extensively to test for stream velocity and to study deposition and erosion in the stream bed. If restoration does not provide for access it will be much harder for us to engage students in an understanding of their stream.
- What are the elevations of the standpipe in the pond (bypass entrance at the pond) versus the entrance to the bypass in the stream versus the pond outlet? \*
- Is there real-time monitoring of the bypass and is it being used to maximum capacity? \*
- We like the attention to natural and habitat areas. Good work. \*
- It is exciting to see improvements made to the area! Restoration work and freeing up the stream will be welcome additions.
- Could a set [of design plans] be kept updates at the info desk at the community center?

### ***Paths & Overlooks***

- We need more paths through the site. \*
- We consider paths through the site critical for educational purposes.
- An overlook from 35<sup>th</sup> in addition to a path is preferred. Keep bridges that add interest to the project. \*
- An overlook from 35<sup>th</sup> Ave. would be nice but would not replace the need for paths.
- The addition of an overlook on 35<sup>th</sup> Avenue NE would be most appreciated, but not in place of a path. The more of us from the neighborhood who can walk around the confluence and pond sites the better. It helps to keep down 'undesirable behavior' incidents.

- There is a woman who lives close to the site who comes to the site daily in her motorized wheelchair. There are also residents from the St. Anne's nursing home ...with walkers or wheelchairs. The existing paths and bridge deck at the pond are very accessible for them.

### ***Parking & Street Closure***

- Maybe 2 or 3 parking spots on 36<sup>th</sup>. More parking on 35<sup>th</sup> somewhere. \*
- Full closure of 35<sup>th</sup> for culvert is good idea and cheaper. \*
- The gravel parking lot isn't an area we use.
- We prefer a full road closure on 35<sup>th</sup> to speed up replacement of the culvert.
- I always walk to the site, but there are others, mostly older folks or handicapped who do drive there. I rarely saw more than 2 cars parked there at a time. A small parking area for 2 or 3 cars would be necessary to accommodate these people.
- I believe that with a partial closure people will still detour through the surrounding neighborhood. To me it seems safer to have one smoothly operating detour for a shorter period of time instead of multi, random detours for a longer period of time. So I prefer a full closure.

### ***Meadowbrook Pond***

- Is the bottom of Meadowbrook Pond concrete? Would removing the concrete help to minimize the flooding?
- What about the Meadowbrook Pond project? Was that put on hold?
- When you're all done, will there be any park left around Meadowbrook Pond?

### ***Additional comments***

*[insert the following pdf's, in this order]*

8.31.12 Peggy Gaynor

60%\_Gaynor Review Comments

8.31.12 Brad Johnson Comments

**From:** Brad Johnson [<mailto:bradleyjseattle@gmail.com>]  
**Sent:** Friday, August 31, 2012 4:53 PM  
**To:** Stevens, Greg; Crittenden, Julie  
**Cc:** Rocky Hrachovec  
**Subject:** Meadowbrook Pond Confluence comments (more)

Hi Greg & Julie,

I wanted to lend my support to Peggy Gaynor's suggestions.

1 -- In particular, I agree that the Nathan Hale side of the creek should be redesigned in a way to maximize the retention of the volunteer-constructed creeklet area. I'm OK with you removing whichever & any number of poplar trees you deem necessary, but as much as possible, I'd like to keep the meandering creeklet portion intact. Just last night at a Thornton Creek Alliance (TCA) board meeting, Janine VanSanden described the creation of the Meadowbrook Creeklet and her role as project & volunteer coordinator, along with Peggy as the designer. If I recall correctly, she said that over 200 different volunteers worked on that project over a number of years and it was done for just \$36,000!

I think it's incredibly important to honor the hard work of those volunteers by preserving what they accomplished.

But beyond that, I think it makes sense to maximize the length of the creeklet & have a lower-angled intersection with the main creek. Right now, it's a sudden shift, entering at almost 90-degrees to the creek flow. Likewise, it would be better (and less wasteful) to retain the current plantings around the creeklet. They've had more than a decade to mature. I hate the idea of ripping them out & starting over with dinky little plants.

Peggy's suggestions of starting the main creek's meandering further upstream & shifting it's path seems to make sense. Please consider it.

2 -- Also, I support her suggestion to reconnect/reactivate the manual irrigation system at the pond/confluence so plantings & artwork can be maintained & cleaned more easily. At least someone would be able to hook up a hose. My personal "fantasy" would be the addition of a [seasonal only?] drinking fountain somewhere at the pond for all the kids, joggers, dog-walkers, etc., who visit. Considering that there used to be a spray fountain in the spiral pool, I think a drinking fountain seems simple & reasonable.

3 -- I greatly prefer my idea of running the access road straight down 36th over the sewer line, and not building the arc road along the eastern edge at all. However, if this isn't feasible due to engineering considerations (say if shallower soil depth dangerously altered the distribution of SPU vehicle weight over the sewer line & it's too expensive to engineer a solution), perhaps a 6-foot-wide asphalt path could simply be paved over the articulated block, creating a smooth trail for pedestrians only. People really enjoy being surrounded by nature that way. Benches &/or overlooks would still be useful along there.

4 -- Finally, does that giant willow across the creek (south fork) from Ruth & Cecil's place really need to come down? Why? (It's so big, wouldn't its roots have already caused trouble, if they ever were going to?)

I look forward to hearing how our suggestions have been used, and what we (the community) can do to help you make them a reality. You can review most of my general ideas (drawings) here:

<http://www.facebook.com/media/set/?set=a.472301012787806.108341.118661354818442&type=1>

Thank you all!

-- Brad

PS: As to your main questions:

- Take down as many poplars as you wish. (But what will replace them in shading the creek?)
- No new public parking area on 36th. In fact, make the new cul-de-sac off limits to public parking. (May also reduce illicit behavior in parked cars.)
- Instead, encourage parking along 35th by building a path & bridge connecting 35th to 36th along the northern edge of the property.
- I would say close 35th entirely (faster & cheaper), but it's difficult for me to imagine a reasonable reroute for Metro buses & emergency vehicles.
- I would prefer paths with overlooks, but I think a path (especially along the northern edge) would be far more valuable (useful/functional & enjoyable) than any overlook. Perhaps in addition to paths, SPU could at least pour footings for overlooks &/or simple benches that could be added later as funding becomes available. Thanks!

From: Peggy Gaynor <[peggy@gaynorinc.com](mailto:peggy@gaynorinc.com)<<mailto:peggy@gaynorinc.com>>>  
Date: August 31, 2012 9:31:58 AM PDT  
To: Greg Stevens <[Greg.Stevens@seattle.gov](mailto:Greg.Stevens@seattle.gov)<<mailto:Greg.Stevens@seattle.gov>>>  
Subject: Thornton Creek Confluence - 60% review comments

Greg,

Thank you for the opportunity to review the 60% plan set for the Thornton Creek Confluence project. I am attaching a pdf portfolio of my comments marked up on specific plan sheets.

You probably realize that the small entirely spring-fed side tributary west of 35th, known as the Meadowbrook Creeklet, is a community volunteer-built and grant funded project. It was built in phases from 1991 - 1997. I worked for over 10 years with the community on this project, donating both design and labor, so know that there is a real attachment in the community to this project. The creeklet is a rearing habitat for juvenile salmon and an escape from high flows. Fry are observed well up the over 1/4 mile long channel, particularly in upwelling (hyporeic) areas of which there are several.

Many of my comments involve finding an alternative design west of 35th that accomplishes all the goals of TC improvement, which all want, and saving more of the length of Meadowbrook Creeklet and the now 15+ year old native planting associated. The creeklet should be made as fish-passable to juveniles as possible.

Please feel welcome to contact me with any questions or for more info. Thanks again.

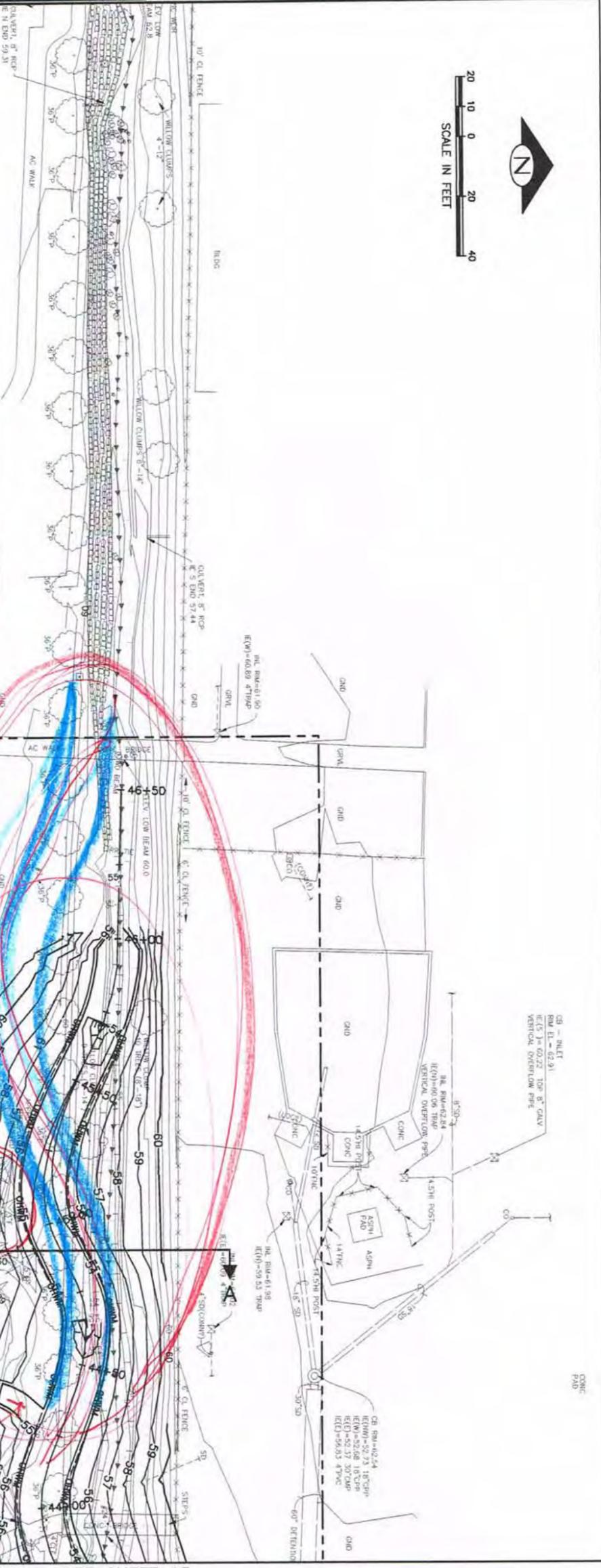
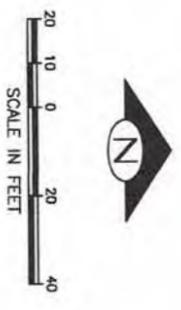
Peggy Gaynor  
Principal, GAYNOR, Inc.  
206.782.3277

creating environments through landscape architecture and art





Vault Serial No.	Date	Mark	Nature	Made	Chk'd	Rev'd
35811			REVISIONS			



Is Parks reviewing?

NOTE: side channel "Meadowbrook Creeklet" was built by a volunteer group - Funding. Design by Skymor, Inc. this end complete in 1997.

NEED: Start meanders & further west & save more of Meadowbrook Creeklet & planting rows 15-16 yrs old & planting of credit roads. Considered Meadowbrook sensitive areas. VEG 8/30/12

STAKE PLANTS - MAKE MORE CAUTION & credit " "

Prepare for Meadowbrook creeklet?

REMOVING/REPAIRING EX. RED BRANES?

FOR SENSITIVE? - WDG INTERFERED TO BE -

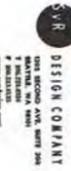
DEEP & STEEP. POSSIBLE IN THIS LIMITED CAPACITY. HOW RESTRICTIONS SIDE SLOPES? VEG? DATE?

Comments from Reymor Skymor, Inc. 8/30/12

GRADING WEST THORNTON CREEK

60% DRAWINGS

- NOTES:  
 1. TBD 90%.



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NAME OR INITIALS AND DATE	INITIALS AND DATE
DESIGNED BY: H. HANCOCK	REVIEWED: [ ]
CHECKED BY: A. YOUNG	CONST. PROJ. WORK:
DRAWN BY: C. YOUNG	RECEIVED AS BUILT:
CHECKED BY: H. HANCOCK	

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 City of Seattle  
 Ray Hoffman, Director  
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THORNTON CREEK CONFLUENCE

PC C408023  
 VALU PLAN NO. 777-705  
 SHEET 12 OF 51

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**60% DRAWINGS**

- NOTES:**
- EXISTING CULVERT TO REMAIN AS HYDRAULIC CONVEYANCE. FILL INLET AND OUTLET WITH 2-MAN BOULDERS.
  - MAINTENANCE STAGING AND ACCESS RAMP. SURFACING TO BE ARTICULATED CONCRETE VEGATED WITH GRASS.
  - SPILLWAY INTO FLOOD RELIEF AREA. PROTECT KC METRO SEWER LINE FROM DAMAGE.
  - FLOOD RELIEF AREA.

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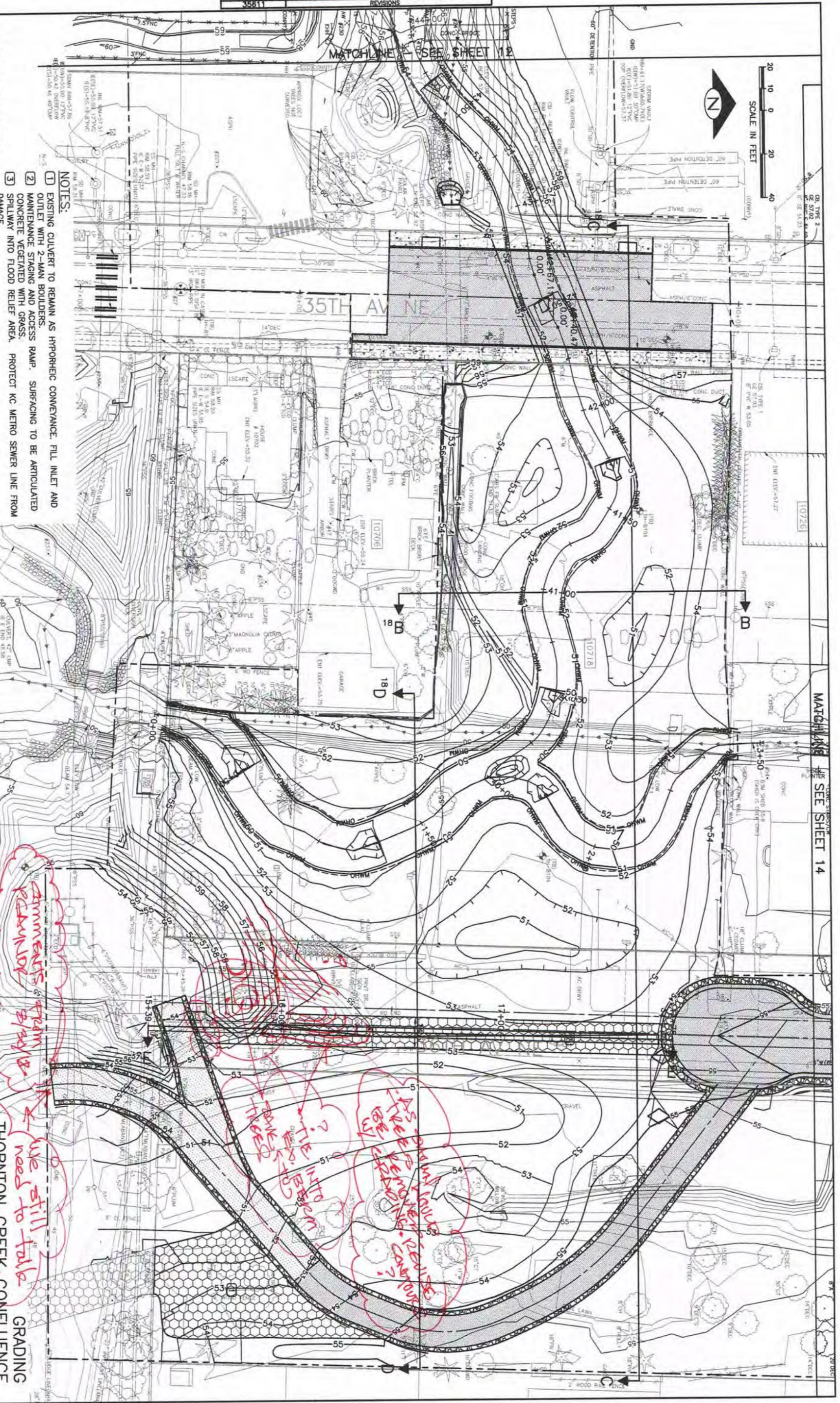
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City of Seattle  
 Ray Hoffman, Director

THORNTON CREEK CONFLUENCE  
 GRADING  
 THORNTON CREEK CONFLUENCE

PC C408023  
 R/W  
 W/VT PLAN NO. 777-705  
 SHEET 13 OF 51



*Comments & Plan Review 8/15/12*

*use still to talk about maint. needs to talk access to Pond*

*THE EXISTING CONTOUR...  
 INTO RESERVATION...  
 NEEDS TO BE...  
 THE EXISTING CONTOUR...*



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 SEATTLE, WASHINGTON  
 20

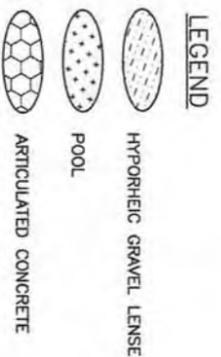
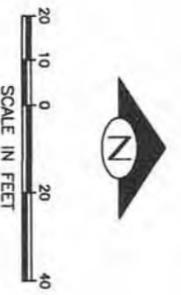
DESIGNED BY: M. HANCOCK  
 CHECKED BY: A. JOHNSON  
 DRAWN BY: C. YOUNG  
 CHECKED BY: M. HANCOCK  
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SEATTLE PUBLIC UTILITIES  
 Ray Hoffman, Director

THORNTON CREEK CONFLUENCE  
 GRADING  
 THORNTON CREEK CONFLUENCE

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 W/VT PLAN NO. 777-705  
 SHEET 13 OF 51

Vault Serial No.	Date	Mark	Nature	Made Chk'd	Rev'd
35811			REVISIONS		



**NOTES:**  
 1. RETAIN AND PROTECT EXISTING BRIDGE AND TRAIL.

**60% DRAWINGS**



0 1  
 IF THIS BAR DOES NOT MEASURE 1" WITH PLOTTING TO ORIGINAL SCALE.

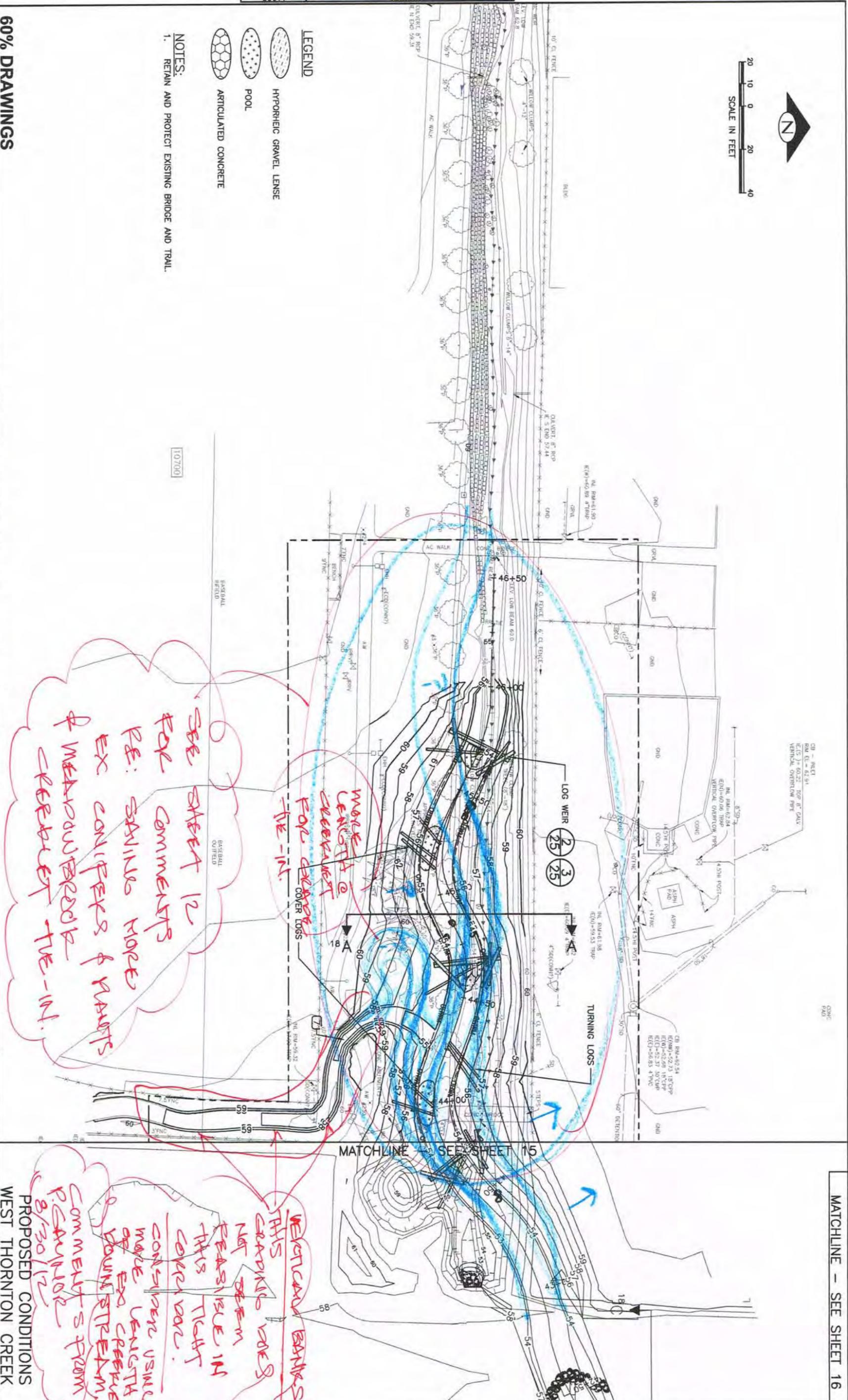
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CHECKED A. JOHNSON	CHECKED A. JOHNSON
DRAWN C. YOUNG	DRAWN C. YOUNG
CHECKED M. HUBACHYK	CHECKED M. HUBACHYK

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**THORNTON CREEK CONFLUENCE**

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 SHEET 14 OF 51

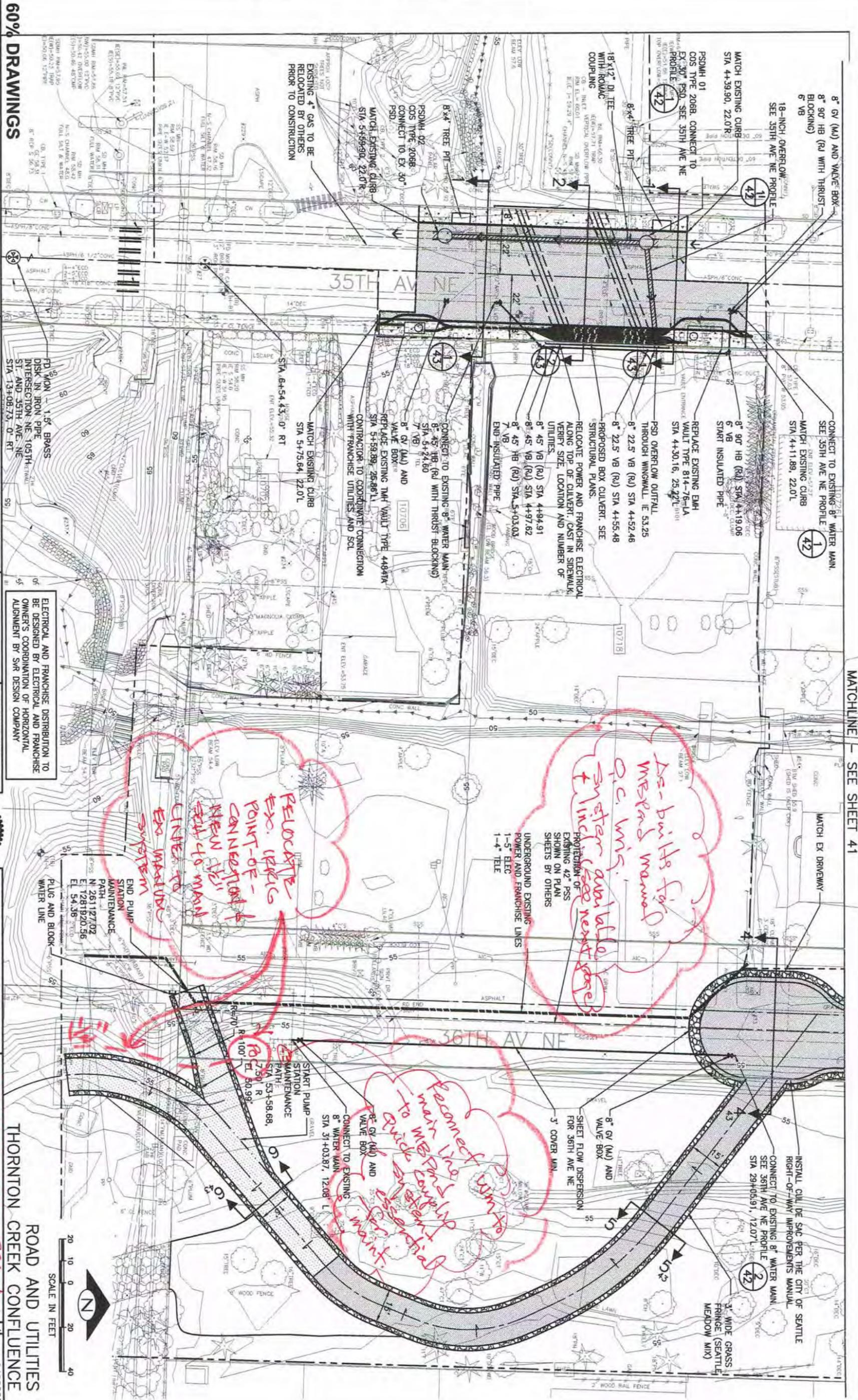


*SEE SHEET 12 FOR COMMENTS RE: SWIMMING MORE EX CONIFERS & ROOTS REFER TO THE -IN.*

*VERTICAL BANKS? THIS GRABBLE DOES NOT SEEM FEASIBLE IN THIS TIGHT CORNER. CONSIDER USING MORE LENGTH OF EXO CURVE AT DOWNSTREAM. COMMENT FROM 8/30/12*

MATCHLINE - SEE SHEET 16

Vault Serial No.	Date	Mark	Nature	Made	Chk'd	Rev'd
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**60% DRAWINGS**

**SVR DESIGN COMPANY**  
 1000 SECOND AVE, SUITE 300  
 SEATTLE, WA 98101  
 P: 206.461.1100  
 F: 206.461.1101  
 WWW.SVRDESIGN.COM

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**Thornton Creek Confluence**  
 ROAD AND UTILITIES  
 COMMENETS FROM PC/ANR  
 THORNTON CREEK CONFLUENCE  
 8/13/12

SCALE IN FEET  
 0 10 20 40

SHEET 40 OF 51

ELECTRICAL AND FRANCHISE DISTRIBUTION TO BE DESIGNED BY ELECTRICAL AND FRANCHISE OWNERS COORDINATION OF HORIZONTAL ALIGNMENT BY SVR DESIGN COMPANY

FD 90'ION - 1.5" BRASS DISK IN IRON PIPE INTERSECTION NE 35TH ST. AND 35TH AVE. NE STA 13+08.73, 0+ RT

EXISTING 4" GAS TO BE RELOCATED BY OTHERS PRIOR TO CONSTRUCTION

RELOCATE EXISTING 42" PPS PROTECTION OF EXISTING 42" PPS SHOWN ON PLAN SHEETS BY OTHERS

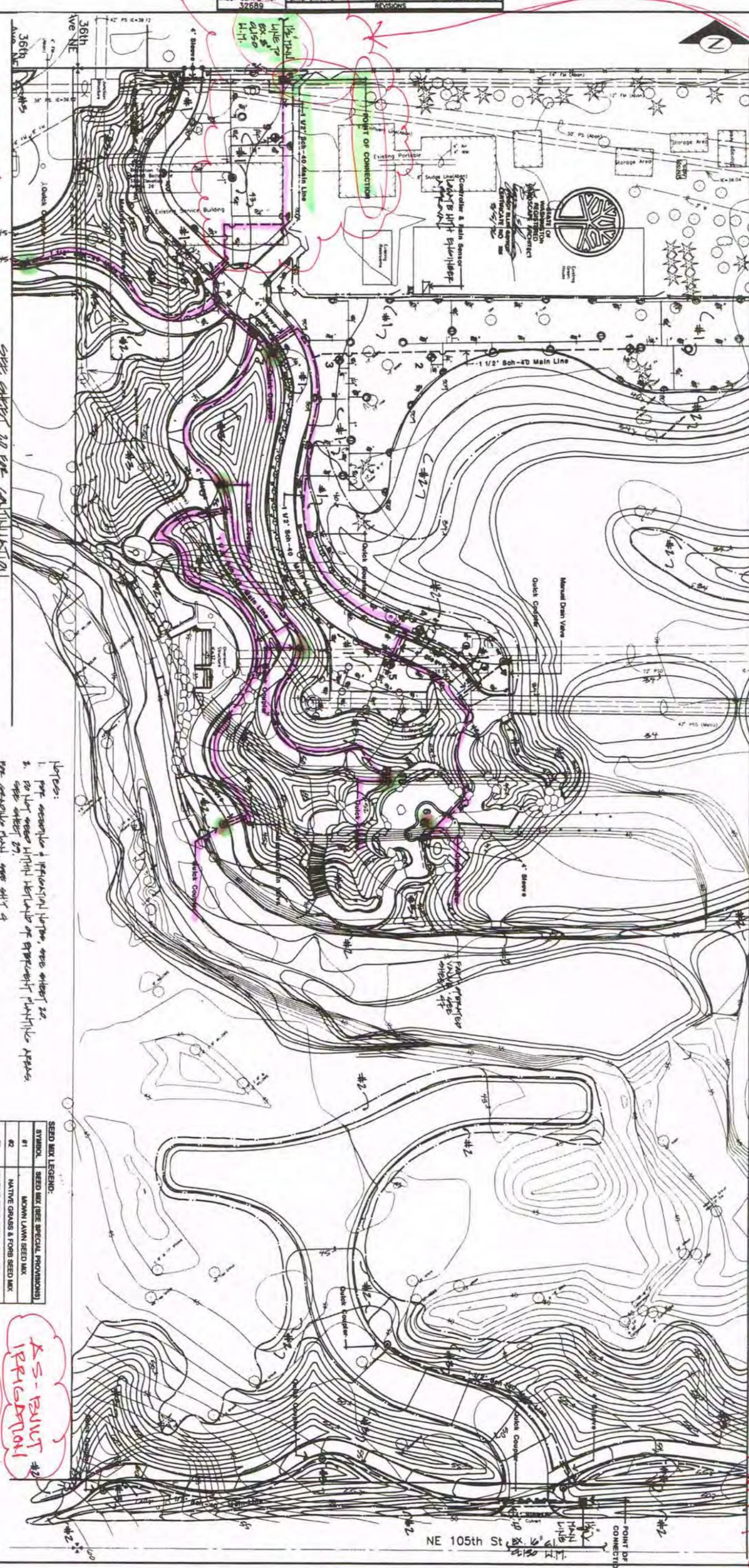
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RELOCATE EXISTING 42" PPS PROTECTION OF EXISTING 42" PPS SHOWN ON PLAN SHEETS BY OTHERS

PLEASE  
 RELOCATE POINT-OF-CONNECTION & PROVIDE NEW  
 1 1/2" SOFT TO MAIN LINE TO RE-CONNECT TO EX. MANUAL QUICK COUPLER IRRIG. SUGGEST - essential for maintenance of art + more  
 SEE SHEET 18



Quick Coupler  
 Point of Connection (ex)

SEE SHEET 20 FOR CONNECTION  
 1 1/2" MAIN LINE  
 (EXPOSED W.C.)

- Notes:
1. pipe assemblies & irrigation layout, see sheets 20, 21, 22
  2. so that water will not be used for irrigation plants, see sheet 27.
  3. pipe assemblies shall, see sheet 4
  4. pipe on the irrigation layout, see sheet 7
  5. pipe, multiple & landscape plants, see sheets 24 & 29
  6. pipe festival plant, see sheet 22

SEED MIX LEGEND:

SYMBOL	SEED MIX (SEE SPECIAL PROVISIONS)
#1	DOWN LAWN SEED MIX
#2	NATIVE GRASS & FORG SEED MIX
#3	NATIVE FORG SEED MIX; SEED OVER 1 1/4" MIN. SPACED TREE TRUNKING MATCH INSTALL JUTE MATING ON 2x1 OR STEEPER SLOPES AS NOTED

IRRIGATION & SEEDING PLAN  
 REFLECTIVE REFUGE 1% FOR ART  
 MEADOWBROOK POND

SEATTLE ARTS COMMISSION  
 1% FOR ART TEAM:  
 LYDIA ALDREDGE ■ PEGGY GAYNOR ■ KATE WADE

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 DIRECTOR OF ADMINISTRATIVE SERVICES  
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 DESIGN REVIEW: [Signature] / 6/78

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 REVISION NO. 1  
 DATE: 6/78

THE CITY OF SEATTLE  
 DEPARTMENT OF ENGINEERING  
 JOHN D. OKAMOTO DIRECTOR OF ENGINEERING  
 APPROVED: [Signature]  
 SCALE: 1" = 20'  
 DIRECTOR'S BOOK

Thornton Creek - Lake City  
 Sewage Treatment Plant Detention  
 Contract B

PC TS1980A  
 R/W TS1980C  
 VALT PLAN NO. 777-454  
 SHEET 19 OF 11



VAULT SERIAL NO.	DATE	MARK	NATURE	MADE	CHK'D	REV'D
35811			REVISIONS			

LOCATION	LAYER	SPECIES	COMMON NAME	SIZE	AVG. SPACING*	% OF PLANTING AREA	SQ. FT. TO PLANT (SQ. FT)	AREA PER PLANT (SQ. FT)	QTY.
DENSE UPLAND 2440 SQ. FT.	SHRUBS	CORYLUS CORNUTA OEMLIARIA CERASIFORMI RIBES SANGUINEUM	BEAKED HAZELNUT OSOBERRY	1-2 GAL	5	10	244	25	10
		RIBES SANGUINEUM	RED FLOWERING CURRANT	1-2 GAL	5	10	244	16	15
		ROSA NUTKANA	NOOTKA ROSE	1-2 GAL	3	20	488	9	54
		RUBUS PARVIFLORUS	THIMBLEBERRY	1-2 GAL	3	20	488	9	54
		SYMPHORICA RPOS ALBUS	SNOWBERRY	1-2 GAL	2	20	488	4	122
							2,196		285
	GROUND	GAULTHERIA SHALLOON	SALAL	1 GAL	1.5	20	488	2	217
		POLYSTICHUM M MUNITUM	SWORD FERN	1 GAL	1.5	30	732	2	325
							1,220		542
									HERBS

\* AVERAGE SPACING IS INTENDED AS A GENERAL GUIDELINE. IDEALLY ALL PLANTS OF LIKE SPECIES SHOULD BE GROUPED MORE TIGHTLY IN CLUSTERS OF 3-7 PLANTS WITH GAPS BETWEEN CLUSTERS.

*Sparganium sibiricum  
\* 3 specimens*

LOCATION	LAYER	SPECIES	COMMON NAME	SIZE	AVG. SPACING*	% OF PLANTING AREA	SQ. FT. TO PLANT (SQ. FT)	AREA PER PLANT (SQ. FT)	QTY.
ROSE-SNOW BERRY THICKET 3530 SQ. FT.	SHRUBS	RIBES SANGUINEUM	RED FLOWERING CURRANT	2-5 GAL	6.000000	10.000000	353	36	10
		ROSA NUTKANA	NOOTKA ROSE	1-2 GAL	2.000000	45.000000	1,589	4	397
		RUBUS PARVIFLORUS	THIMBLEBERRY	1-2 GAL	3.000000	20.000000	706	9	78
		SYMPHORICA RPOS ALBUS	SNOWBERRY	1-2 GAL	2.500000	25.000000	883	6	485
							2,530		971
									SHRUBS

\* AVERAGE SPACING IS INTENDED AS A GENERAL GUIDELINE. IDEALLY ALL PLANTS OF LIKE SPECIES SHOULD BE GROUPED MORE TIGHTLY IN CLUSTERS OF 3-7 PLANTS WITH GAPS BETWEEN CLUSTERS. THIS PLANTING AREA IS INTENDED TO BE PLANTED VERY DENSELY TO CREATE A DENSE AND IMPENETRABLE SHRUB THICKET THAT PREVENTS ACCESS TO THE SITE ALONG 35TH.

LOCATION	LAYER	SPECIES	COMMON NAME	SIZE	AVG. SPACING*	% OF PLANTING AREA	SQ. FT. TO PLANT (SQ. FT)	AREA PER PLANT (SQ. FT)	QTY.
LOW GROWING UPLAND 7050 SQ. FT.	TREES	FRAXINUS LATIFOLIA	OREGON ASH	2-5 GAL	8.000000	30.000000	2,115	64	33
	SHRUBS	SAMBUCUS RACEMOSA	RED ELDERBERRY	1-2 GAL	5.000000	30.000000	2,115	25	85
	GROUND	CAREX DEWEXIANA	DEWEY SEDGE	PUG - 4"	2' OC PER CLUMP OF 4	10.000000	705	4	705
		CAREX PACHYSTACHYA	CHAMISSA SEDGE	PUG - 4"	2' OC PER CLUMP OF 4	10.000000	705	4	705
		CAREX PENNSYLVANICA	LONG-STOLON ED SEDGE	PUG - 4"	2' OC PER CLUMP OF 4	10.000000	705	4	705
		DRYOPTERIS EXPANSA	WOOD FERN	4"POT-1 GAL	2.000000	5.000000	353	4	88
		ELYNUS GLAUCUS	BLUE WILDRYE	SEED	NA	20.000000	1,410		
		POA PRAETENSIS	KENTUCKY BLUEGRASS	SEED	NA	20.000000	1,410		
		PTERIDIUM AQUILINUM	BRACKEN FERN	4"POT-1 GAL	2.000000	5.000000	353	4	88
		SOLIDAGO CANADENSIS	CANADA GOLDENROD	4"POT-1 GAL	2.000000	10.000000	705	4	176
		STACHYS COOLEYI	COOLEY HEDGE NETTLE	4"POT-1 GAL	2.000000	10.000000	705	4	176
							7,050		2,844
									HERBS/EMERGENTS

\* AVERAGE SPACING IS INTENDED AS A GENERAL GUIDELINE. IDEALLY ALL PLANTS OF LIKE SPECIES SHOULD BE GROUPED MORE TIGHTLY IN CLUSTERS OF 3-7 PLANTS WITH GAPS BETWEEN CLUSTERS.

*SPARGANIUM sibiricum - ever elynus & a "weed" here - not appropriate for cover - native elynus & a "weed" here - not appropriate for & nitrogen fixer*

LOCATION	LAYER	SPECIES	COMMON NAME	SIZE	AVG. SPACING*	% OF PLANTING AREA	SQ. FT. TO PLANT (SQ. FT)	AREA PER PLANT (SQ. FT)	QTY.
CONIFEROUS STREAMSIDE NODES 4260 SQ. FT.	TREES	THUJA PLICATA**	WESTERN RED CEDAR	2-5 GAL	8.000000	100.000000	4,260	64	67
	SHRUBS	ACER CIRCUMTUM	VINE MAPLE	1-2 gal	5.000000	50.000000	2,130	25	85
							50,000,000		2,130
									85
									SHRUBS

\* AVERAGE SPACING IS INTENDED AS A GENERAL GUIDELINE. IDEALLY ALL PLANTS OF LIKE SPECIES SHOULD BE GROUPED MORE TIGHTLY IN CLUSTERS OF 3-7 PLANTS WITH GAPS BETWEEN CLUSTERS. \*\* CEDAR TO BE PLANTED WITH STEMS ANGLING OFF OF PERPENDICULAR WITH STEMS SET AT APPROX. 30-45 DEGREE ANGLE OVERHANGING STREAM CHANNEL.

**60% DRAWINGS**

*Comments from Reanyor Spritz*

*more diversity in general would be good on all plant pallets*



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 NANCY LOCKE  
 DEPARTMENT OF FINANCE & ADMINISTRATIVE SERVICES  
 SEATTLE, WASHINGTON 20

NAME OR INITIALS AND DATE	DESIGNED	CHECKED	REVIEWED
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			M. HANCOCK

Seattle Public Utilities  
 City of Seattle  
 Ray Hoffmann, Director

**THORNTON CREEK CONFLUENCE**