



Greenforest Incorporated



Consulting Arborist

TO: William Altman

REFERENCE: Arborist Report, Altman Parcel A

PARCEL NUMBER: 3024059001

DATE: December 18, 2020

PREPARED BY: Favero Greenforest, ISA Certified Arborist # PN -0143A
ISA Tree Risk Assessment Qualified
ASCA Registered Consulting Arborist® #379

You contracted my services to prepare an inventory of the trees on the referenced parcel. Tree condition and attribute data were submitted previously in a 6/19/2019 Regulated Tree Inventory, based on a topographic survey from George Steirer of Plan to Permit, LLC., and my site visit of 6/10/2019.

Summary

The subject parcel is vacant and undeveloped. The subject trees include both deciduous and evergreen native species.

	<i>Onsite</i>	<i>Offsite</i>
<i>Small</i>	8	
<i>Significant</i>	27	
<i>Hazard</i>	0	
<i>Exceptional (Size)</i>	12	
<i>Exceptional (Grove)</i>	53	
<i>Outside Disturbance Area</i>	20	
<i>ROW/Offsite</i>		20

Totals for exceptional trees in the above summary have some overlap, as most exceptional size trees are also grove trees.

LIMITATIONS AND USE OF THIS REPORT

This document provides required tree attributes for a *tree inventory*: required data for an *arborist report* (as per MI code §19.10.090.c.2.b) shall be provided under separate cover and scope. This inventory shall be used in the building permit process for the subject parcel, and as an aid in tree retention with City planners.

This tree report establishes, via the most practical means available, the existing conditions of the trees on the subject property. Ratings for health and structure, as well as any recommendations are valid only through the development and construction process. This report is based solely on what is readily visible and observable, without any invasive means.

There are several conditions that can affect a tree's condition that may be pre-existing and unable to be ascertained with a visual-only analysis. No attempt was made to determine the presence of hidden or concealed conditions which may contribute to the risk or failure potential of trees on the site. These conditions include root and stem (trunk) rot, internal cracks, structural defects or construction damage to roots, which may be hidden beneath the soil. Additionally, construction and post-construction circumstances can cause a relatively rapid deterioration of a tree's condition.

TREE INSPECTION

Each tree was marked with white surveyor's tape and identified by number.

I visually inspected each tree from the ground. I performed a Level 1 risk assessment.¹ This is the standard assessment for populations of trees near specified targets, conducted in order to identify obvious defects or specified conditions such as a pre-development inventory. This is a limited visual assessment focuses on identifying trees with imminent and/or probable likelihood of failure, and/or other visible conditions that will affect tree retention.

I recorded tree species and size (DBH). I estimated the average dripline of each tree. I rated the condition of each tree, both health and structure/form. A tree's structure/form is distinct from its health. This inspection identifies what is visible with both.

High-risk trees can appear healthy in that they can have a dense, green canopy. This may occur when there is sufficient sapwood or adventitious roots present to maintain tree health, but inadequate strength for structural support.

¹ Companion publication to the ANSI A300 Part 9: Tree Shrub and Other woody Plant Management – Standard Practices, Tree Risk Assessment. 2011. ISA.

Conversely, trees in poor health may or may not be structurally stable. For example, tree decline due to root disease is likely to cause the tree to be structurally unstable, while decline due to drought or insect attack may not.

One way that tree health and structure/form are linked is that healthy trees are more capable of compensating for structural defects. A healthy tree can develop adaptive growth that adds strength to parts weakened by decay, cracks, and wounds.

This report identifies unhealthy trees based on existing health conditions and tree structure, and specifies which trees are most suitable for preservation.² No invasive procedures were performed on any trees. The results of this inspection are based on what was visible at the time of the inspection.

The attached inventory summarizes my inspection results and provides the following information for each tree:

- Outside of Disturbance Area** – identifies trees whose driplines are outside of the proposed disturbed area.
- ROW and Offsite Trees** – indicates if tree is off of the subject parcel and/or within the street right-of-way.
- Proposed Action** –
- Regulated Tree Category** – indicates if tree is small, large (significant) or exceptional as defined by Municipal code.
- Grove size tree** – grove trees include 8 or more trees, 10” DBH or larger that comprise a contiguous canopy.
- > 24”** – indicates trees with DBH equal to or greater than 24”.
- Tree number** as shown on tape in the field, and on attached exhibit.
- DBH** Stem diameter in inches measured 4.5 feet from the ground.
- QMD** - Multiple-stemmed trees are reported as a single integer, using quadratic mean.
- Tree Species** common name is listed in the attached inventory. All of the surveyed trees are of a species that are regulated by the municipality. Trees listed as Maple or Fir are either native Bigleaf maples, or Douglas-firs. These trees were not assessed as they are smaller than 10” DBH, and are not regulated. Since they have not yet been removed from the survey, they remain in this inventory and are identified as *small* trees to avoid confusion.

² Companion publication to the *ANSI A300 Part 5: Tree Shrub and Other woody Plant Maintenance – Standard Practices, Managing Trees During Construction*. 2008. ISA.

Latin binomials are as follows:

Bigleaf maple	<i>Acer macrophyllum</i>
Douglas-fir	<i>Pseudotsuga menzeisii</i>
Pacific dogwood	<i>Cornus nuttallii</i>
Pacific yew	<i>Taxus brevifolia</i>
Red alder	<i>Alnus rubra</i>
Western hemlock	<i>Tsuga heterophylla</i>
Western red-cedar	<i>Thuja plicata</i>

Dripline average branch extension from the trunk as radius in feet.

Health and Structure/Form ratings '1' indicates good to excellent condition; no visible health-related problems or structural defects, '2' indicates fair condition; minor visible problems or defects that may require attention if the tree is retained, and '3' indicates poor condition; significant visible problems or defects and tree removal is recommended.

Comments on Condition obvious structural defects or diseases visible at time of inspection, which includes:

Asymmetric canopy - the tree has an asymmetric canopy from space and light competition from adjacent trees.

Branch dieback - mature branches in canopy are dying/dead.

Bow in trunk - a trunk lean characterized by the top of the tree leaning over.
(Common with edge trees)

Canker - disease cankers are established on trunk/branches.

Chlorosis - yellowing or off-color foliage.

Crack - separation of wood fibers and predisposed to failure.

Dead - tree is dead.

Deadwood - large and/or multiple dead branches throughout canopy.

Decay - process of wood degradation by microorganisms resulting in weak and defective structure.

Diseased - foliage and trunk/stems are diseased.

Dogleg in trunk - trunk with a bow or defective bend (90°) in trunk often half way of further up the trunk.

Double leader - the tree has multiple stem attachments, which may require maintenance or monitoring over time.

Foliar disease - foliage is diseased with manageable fungus.

Gummosis - oozing resin from *Prunus sp.*, indicating stress/decline.

Heart rot - fungal infection with interior of tree decayed.

Included bark - an inclusion of bark at the attachment of multiple leaders that prevents a wood-to-wood attachment

Insect Injury - active insect injury affecting tree health.

Ivy - dense ivy prevents a thorough inspection, and other defects may be present.

Kretzschmaria – a wood-decaying fungi that causes the trunk to become brittle.

LCR - live crown ratio: the ratio of crown length to total tree height. Stand-alone trees with a LCR of 30 and lower are at increased risk of failure.

Lean - angle of the trunk from vertical.

Multiple leaders - the tree has multiple stem attachments, which may lead to tree failure and require maintenance or monitoring over time.

OHPL – overhead power lines.

Previous failure - tree trunk previously broken and defective.

Seam - visible anomaly vertically along the trunk that can indicate an internal self-propagating crack along the wood fibers.

Slender - tree lacks adequate trunk taper to stand lone.

Stem Canker - disease canker on trunk/branches.

Sweep in trunk - characterized by a leaning lower trunk and a more upright top.

Stilts - tree grew atop a stump or nurselog, and has an elevated rootcrown.

Thinning foliage - low foliage density may indicate stress, or early infection/declining health.

Self-corrected lean - self-corrected leans and sweeps are characterized by a leaning lower trunk and a top that is more upright.

Stumpsprout- tree previously cut at grade with multiple stems and potentially weak attachments.

Suppressed - tree crowded by larger adjacent trees, with defective structure and/or low vigor. Retain tree only as a grove tree, not stand-alone.

Sweep - tree leans away from adjacent trees. Characterized by a leaning lower trunk and a top that is more upright.

Taper - change in diameter over the length of trunks, branches and roots.

Topped – the tree is previously topped and has poor structure and/or stem decay.

Tree leans - trunk has significant lean from vertical.

Trunk decay - wood decay is visible in the trunk.

Twist in trunk - trunk fibers are twisted and subject to cracking in high winds.
Undermined rootplate – soil under a portion of the rootplate has eroded and
has put the tree at risk of failure.

Wound/decay base of trunk - open wound with visible decay in trunk.

Tree type – indicates if tree is coniferous (C), deciduous (D) or broadleaf evergreen (BE).

Viability - a determination by the arborist whether the tree is viable for retention.

LIMITS OF ALLOWABLE DISTURBANCE

Limits of Allowable Disturbance (LOAD) are calculated for all the significant trees (and for trees on adjoining parcels with overhanging driplines). They are provided in the attached inventory as radii in feet from the trunk for the side of the tree to be impacted by construction, and shown on the attached exhibit as circles around the trees near proposed disturbance.

Although shown as circles, the LOAD applies only to one side of the tree, the side toward construction, and no soil disturbance is proposed around the entire tree. The critical root zone (CRZ) for each tree is the radius of the LOAD around the impacted side of the tree, plus the tree's dripline radius around the non-impacted side of the tree.

LOAD are also shown for offsite trees near proposed disturbance.

The LOAD are determined using rootplate³ and trunk diameter,^{4,5,6} and ISA Best Management Practices.⁷ These are the minimum distances from the trees for any soil disturbance, and represent the area to be protected during construction.

GROVE TREES

Municipal code defines Grove Trees (MIMC §19.16.010) as a group of 8 or more trees each 10 inches or more in diameter that form a continuous canopy. Trees that are part of a grove shall also be considered exceptional trees, unless they also meet the definition of a hazardous tree.

³ Coder, Kim D. 2005. *Tree Biomechanics Series*. University of Georgia School of Forest Resources.

⁴ Smiley, E. Thomas, Ph. D. *Assessing the Failure Potential of Tree Roots, Shade Tree Technical Report*. Bartlett Tree Research Laboratories.

⁵ Fite, Kelby and E. Thomas Smiley. 2009. *Managing Trees During construction; Part Two*. Arborist News. ISA.

⁶ Andrew R. Benson, Andrew Koeser, Justin Morgenroth. *Responses Of Mature Roadside Trees To Root Severance Treatments*. 2019. Journal of Urban Forestry & Urban Greening.

⁷ Companion publication to the ANSI A300 Series, *Part 5: Managing Trees During Construction*. 2008. ISA.

In a previous regulated inventory report, all trees 10" DBH or larger were identified with the potential of being grove trees. I reviewed a topographic survey with dripline indicated and determined that all identified in the previous report with stems 10" or greater are grove trees.

NECESSARY TREE REMOVAL

Current plans propose to remove 24 of the 89 regulated subject trees: 7 exceptional, 11 significant and 4 small; also 2 within the right-of-way. Removal of any tree on this site, particularly exceptional trees, is proposed only because it is necessary for construction of the house and installation of required utilities.

The trees proposed for removal range in diameter from 7 to 49 inches DBH, and stand within or near to the footprint of the proposed house, driveway or utility.

Tree clearing changes wind loading patterns for trees that remain, and it is impossible to predict the full effect of clearing on the retained trees, though I anticipate minimal to none. This is because the area proposed to be cleared is relatively narrow, and will remain surrounded by dense tree cover (from trees both on this and abutting parcels), and it will not create newly exposed edge trees on the prevailing windward side of the stand.

Attachments:

1. Assumptions and Limiting Conditions
2. Certification of Performance
3. Significant Tree Inventory
4. Tree Exhibit

Attachment No. 1 - Assumptions & Limiting Conditions

1. A field examination of the site was made 6/10/2019. My observations and conclusions are as of that date.
2. Care has been taken to obtain all information from reliable sources. All data has been verified insofar as possible; however, the consultant/arborist can neither guarantee nor be responsible for the accuracy of information provided by others.
3. I am not a qualified land surveyor. Reasonable care was used to match the trees indicated on the sheets with those growing in the field.
4. Construction activities can significantly affect the condition of retained trees. All retained trees should be inspected after construction is completed, and then inspected regularly as part of routine maintenance.
5. Unless stated other wise: 1) information contained in this report covers only those trees that were examined and reflects the condition of those trees at the time of inspection; and 2) the inspection is limited to visual examination of the subject trees without dissection, excavation, probing, or coring. There is no warranty or guarantee, expressed or implied that problems or deficiencies of the subject tree may not arise in the future.
6. The consultant/appraiser shall not be required to give testimony or to attend court by reason of this report unless subsequent contractual arrangements are made.
7. The consultant does not assume any liability for the subject tree and does not represent the transfer of such for any risks associated with the tree from the landowner to the consultant. **Risk management is solely the responsibility of the landowner.**



Attachment No. 2 - Certification of Performance

I, Favero Greenforest, certify that:

- I have personally inspected the trees and the property referred to in this report and have stated my findings accurately.
- I have no current or prospective interest in the vegetation or the property that is the subject of this report and have no personal interest or bias with respect to the parties involved.
- The analysis, opinion, and conclusions stated herein are my own and are based on current scientific procedures and facts.
- My analysis, opinion, and conclusions were developed and this report has been prepared according to commonly accepted arboricultural practices.
- No one provided significant professional assistance to me, except as indicated within the report.
- My compensation is not contingent upon the reporting of a predetermined conclusion that favors the cause of the client of any other party nor upon the results of the assessment, the attainment of stipulated results, or the occurrence of any subsequent events.

I further certify that I am a member in good standing of International Society of Arboriculture (ISA), and the ISA PNW Chapter, I am an ISA Certified Arborist (#PN-0143A) and am Tree Risk Assessment Qualified, and am a Registered Consulting Arborist® (#379) with American Society of Consulting Arborists. I have worked as an independent consulting arborist since 1989.

Signed:


GREENFOREST, Inc.
By Favero Greenforest, M. S.



Date: December 18, 2020



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Attachment No. 3 – Significant Tree Inventory

Tree Outside Of Disturbed Area	Offsite/Row	Removal Proposed	Regulated Category	Grove Tree	Tree > 24" DBH	Tree	DBH (QMD)	Tree Species (Common Name)	Exceptional Threshold (In.)	Dripline Radius (Ft.)	Health	Structure	Comments on Condition	Tree Type	Viable Tree?	LOAD (R')
	Sig			X		1	12	Western hemlock	24"	16	2	2	Suppressed, ivy	C	Y	6
			Sig	X		2	23	Western red-cedar	30"	16	1	3	Decay, ivy	C	N	12
X						2870										
X						2872										
X						2927										
X						2929										
X						2930										
X						2931										
X						2932										
X						2933										
X						2936										
X						2937										
X						2939										
			Exec	X	X	2940	23, 29 (37)	Bigleaf maple	30"	40	1	2	Asymmetric, double leader	D	Y	18
			Sig	X		2941	13	Bigleaf maple	30"	16	1	3	Topped, asymmetric, ivy	D	N	7
			Sig	X		2942	15	Bigleaf maple	30"	18	2	3	Decline, decay, sweep, perched on embankment	D	N	8
			Sig	X		2943	10, 12 (15)	Bigleaf maple	30"	18	2	3	Decline, decay, sweep, perched on embankment	D	N	7
		X	Sig	X	X	2945	25.5	Bigleaf maple	30"	20	3	3	Decline, double leader, perched on embankment	D	N	13



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Tree Outside Of Disturbed Area	Offsite/Row	Removal Proposed	Regulated Category	Grove Tree	Tree > 24" DBH	Tree	DBH (QMD)	Tree Species (Common Name)	Exceptional Threshold (In.)	Drip-line Radius (Ft.)	Health	Structure	Comments on Condition	Tree Type	Viable Tree?	LOAD (R')
			Sig	X		2946	22.5	Western hemlock	24"	20	1	1		C	Y	11
X						3108										
			Sig	X		3135	22	Bigleaf maple	30"	18	2	3	Deadwood, asymmetric, lean, tree is tagged 3125	D	N	11
			Sml			3137		Maple or Fir								6
		X	Exec	X	X	3138	(5) 14-16 (34)	Bigleaf maple	30"	25	2	3	Decline, stumpsprout	D	N	17
			Sig	X		3140	23	Douglas-fir	30"	18	1	2	Slender, ivy	C	Y	12
		X	Exec	X	X	3141	12, 12, 18, 18 (31)	Bigleaf maple	30"	16	3	3	Decline, slender, stumpsprout	D	N	15
		X	Exec	X	X	3142	43	Bigleaf maple	30"	35	2	2	Decline, deadwood	D	Y	21
		X	Sig	X		3143	16	Bigleaf maple	30"	18	2	3	Decline, asymmetric, ivy	D	N	8
						3145				0	3	3	Dead, excluded from totals			
		X	Sig	X		3147	10	Douglas-fir	30"	8	1	3	Top failure	C	N	6
		X	Sig	X		3150	15	Western hemlock	24"	16	1	1		C	Y	8
		X	Exec	X	X	3151	49	Bigleaf maple	30"	35	3	3	Decline, deadwood, decay	D	N	24
						3152				0	3	3	Dead, excluded from totals			
			Sig	X		3153	18	Bigleaf maple	30"	12	3	3	Suppressed, decay	D	N	17
			Exec	X	X	3154	41	Bigleaf maple	30"	35	1	2	Double leader, ivy	D	Y	20
			Sig	X		3157	10	Western hemlock	24"	8	2	2	Suppressed, ivy	C	Y	6
			Sig	X		3159	10	Western hemlock	24"	6	2	2	Suppressed, LCR. Mistagged--should be 3158	C	Y	6



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Tree Outside Of Disturbed Area	Offsite/Row	Removal Proposed	Regulated Category	Grove Tree	Tree \geq 24" DBH	Tree	DBH (QMD)	Tree Species (Common Name)	Exceptional Threshold (In.)	DripLine Radius (Ft.)	Health	Structure	Comments on Condition	Tree Type	Viable Tree?	LOAD (R)
		X	Sml			3162		Maple or Fir								6
		X	Sml			3163		Maple or Fir								6
		X	Sig	X		3164	15	Bigleaf maple	30"	16	3	3	Decline, slender	D	N	8
		X	Sig	X		3165	13	Douglas-fir	30"	14	2	2	Suppressed, ivy	C	Y	7
		X	Exec	X	X	3166	13, 16, 25 (32)	Bigleaf maple	30"	30	1	2	Multiple leader	D	Y	16
		X	Sig	X		3168	22	Bigleaf maple	30"	25	1	2	Stumpsprout, double leader	D	Y	11
		X	Sml			3169		Maple or Fir								6
		X	Sml			3170		Maple or Fir								6
			Sml			3171	9	Douglas-fir	30"	14	1	2	Asymmetric	C	Y	6
	Sig			X		3172	11	Western red-cedar	30"	12	1	1		C	Y	6
	Sig			X		3173	12.8	Bigleaf maple	30"	16	3	3	Decline, asymmetric, ivy	D	N	6
	Sig			X		3174	20.8	Bigleaf maple	30"	20	1	3	Topped, ivy	D	N	11
			Sml			3176	8	Douglas-fir	30"	14	1	1		C	Y	6
	Sig			X		3177	11	Douglas-fir	30"	15	1	1		C	Y	6
			Exec	X	X	3231	36	Western red-cedar	30"	22	1	1		C	Y	18
			Sig	X	X	3239	29	Western red-cedar	30"	18	1	2	Sweep, previous failure	C	Y	14
			Sig	X		3241	15	Western red-cedar	30"	14	1	1		C	Y	8
			Sml			3249		Maple or Fir								6
X						3260										
X						3261										
X						3263										



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Tree Outside Of Disturbed Area	Offsite/Row	Removal Proposed	Regulated Category	Grove Tree	Tree \geq 24" DBH	Tree	DBH (QMD)	Tree Species (Common Name)	Exceptional Threshold (In.)	Drip-line Radius (Ft.)	Health	Structure	Comments on Condition	Tree Type	Viable Tree?	LOAD (R)
X						3266										
X						3267										
X						3268										
			Sig	X		3272	13	Western hemlock	24"	16	1	3	Previous failure, decay	C	N	7
X						3274										
			Sig	X		3275	18	Western hemlock	24"	17	1	1		C	Y	17
			Exec			3278	9	Pacific yew	6"	10	2	2	Decline, ivy	C	Y	6
			Sig	X		3282	20	Bigleaf maple	30"	18	2	3	Decline, previous failure, dogleg	D	N	10
		X	Sig	X		3283	20	Western hemlock	24"	18	1	2	Ivy	C	Y	10
		X	Exec			3284	7.2	Pacific dogwood	6"	12	1	2	Slender	D	Y	6
		X	Sig	X		3286	19.5	Western red-cedar	30"	16	1	2	Ivy	C	Y	10
			Exec	X	X	3288	32.5	Bigleaf maple	30"	18	3	3	Decline, previous failure, Kretzschmaria	D	N	16
	Sig	X		X		3364	22	Bigleaf maple	30"	20	3	3	Decline, topped, ivy	D	N	11
		X	Sig	X		3366	10	Western red-cedar	30"	14	1	1		C	Y	6
X						3367										
	Sig			X		3376	23	Bigleaf maple	30"	25	1	2	Topped, ivy	D	Y	12
	Sml					3377		Maple or Fir								6
	Sig			X		3378	10	Douglas-fir	30"	14	1	2	Pruned for OHPL, ivy	C	Y	6
	Sig			X		3379	21.5	Bigleaf maple	30"	25	1	2	Asymmetric, ivy	D	Y	11
	Sig			X	X	3380	27.5	Bigleaf maple	30"	30	2	2	Decline, ivy, asymmetric	D	Y	14



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Tree Outside Of Disturbed Area	Offsite/Row	Removal Proposed	Regulated Category	Grove Tree	Tree \geq 24" DBH	Tree	DBH (QMD)	Tree Species (Common Name)	Exceptional Threshold (In.)	Drip-line Radius (Ft.)	Health	Structure	Comments on Condition	Tree Type	Viable Tree?	LOAD (R)
	Sig			X		3381	13	Bigleaf maple	30"	18	2	3	Decline, asymmetric, ivy	D	N	7
		X	Exec	X	X	3382	39	Western red-cedar	30"	18	2	2	LCR, ivy	C	Y	20
	Sml					3383		Maple or Fir								6
	Sig			X		3384	6, 9 (11)	Bigleaf maple	30"	14	3	3	Topped, stumpsprout	D	N	6
	Sml					3386		Maple or Fir								6
			Sig	X		3390	10, 13 (16)	Bigleaf maple	30"	16	3	3	Decline, ivy, stumpsprout	D	N	8
	Sig			X		3404	11.8	Douglas-fir	30"	15	1	1		C	Y	6
	Sig			X		3405	13.5	Western hemlock	24"	16	1	2	Pruned for OHPL	C	Y	7
	Sig			X		3408	11	Western red-cedar	30"	15	1	1		C	Y	6
	Sig			X		3410	15	Western red-cedar	30"	16	1	1		C	Y	8
	Sml					3412		Maple or Fir								6
			Sig	X		3715	11	Western hemlock	24"	14	1	2	Asymmetric, ivy	C	Y	6



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Attachment No. 4 - LOAD & Grove Trees Along Easement

Easement trees	DBH from survey	Grove Tree	LOAD (R')
2517	19"	X	9'
2519	21"	X	11'
2521	29"	X	14'
2523	24"	X	12'
2524	24"	X	12'
2526	7"		6'
2605	28"	X	13'
2606	24"	X	12'
2666	20"	X	10'
2669	44"	X	16'
2670	24"	X	12'
2711	12"	X	6'
2712	8"		6'
2714	9"		6'
2832	6"		6'
2844	7"		6'
2857	13"	X	6'
2859	17"	X	8'
2861	6"		6'
2862	20"	X	10'

Easement trees	DBH from survey	Grove Tree	LOAD (R')
2864	20"	X	10'
2865	14"	X	6'
2867	10"	X	6'
2870	29"	X	14'
2872	24"	X	13'
2873	24"	X	12'
2927	20"	X	10'
2929	7"		6'
2930	11"	X	6'
2931	16"	X	7'
2932	15"	X	7'
2933	14"	X	7'
2946	24"	X	12'
2948	11"	X	6'
2949	9"		6'
2968	12"		6'
2969	5"		6'
2970	12"	X	6
2972	9"		6'
3108	45"	X	20'



PORTION OF NE1/4 OF SECTION 30, TOWNSHIP 24N, RANGE 5E, WM

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 Attachment No. - Tree Exhibit 1/2

LEGEND

- ⊕ FOUND MONUMENT IN CASE
- FOUND REBAR/CAP AS NOTED
- UTILITY POLE W/ UNDERGROUND (UG) CONDUIT
- UTILITY POLE W/ LIGHT, UG CONDUIT & TRANSFORMER
- UTILITY POLE W/ LIGHT (LP)
- UTILITY POLE (PP)
- POWER POLE GUY ANCHOR (GUY)
- ⊙ TELEPHONE MANHOLE (TMH)
- ⊙ SANITARY SEWER MANHOLE (SSMH)
- ⊙ POWER METER (EM)
- ⊙ FIRE HYDRANT (FH)
- ⊙ WATER METER (WM)
- ⊙ WATER VALVE (WV)
- ⊙ CATCH BASIN (CB)
- ⊙ MAILBOX (MB)
- ⊙ SIGN
- ⊙ GAS METER (GM)
- ⊙ GAS VALVE (GV)
- G - APPROX. GAS LINE LOCATION
- W - APPROX. WATER LINE LOCATION
- SS - APPROX. SANITARY SEWER LINE LOCATION
- SD - APPROX. STORM DRAIN LINE LOCATION
- FO - APPROX. TELECOMMUNICATIONS (TEL) LOCATION
- E - APPROX. OVERHEAD POWER & TEL LOCATION
- ▨ EXISTING ASPHALT PAVING
- ▨ EXISTING CONCRETE
- ▨ EXISTING GRAVEL
- ⊙ DECIDUOUS TREE TO REMAIN
- ⊙ CONIFEROUS TREE TO REMAIN
- ⊙ DECIDUOUS TREE TO BE REMOVED
- ⊙ CONIFEROUS TREE TO BE REMOVED
- PROPOSED STORM DRAIN
- PROPOSED SANITARY SIDE SEWER
- PROPOSED WATER SERVICE
- PROPOSED ASPHALT PAVING
- PROPOSED CONCRETE

ABBREVIATIONS

12" B	BIRCH
12" C	CHERRY
12" D	DEGIDUOUS
12" M	MAPLE
12" C	CEDAR
12" F	FIR
12" W	WOOD FENCE
CLFNC	CHAIN LINK FENCE
EX	EXISTING
LOC.	LOCATION
(REM.)	REMOVE

EXISTING STRUCTURE LEGEND

- A EX. STORM DRAIN CATCH BASIN RM 227.17
E N 224.47 8" CP
E W 224.37 12" CP
- B EX. STORM DRAIN CATCH BASIN RM 201.34
E N 199.39 6" DIP
E E 197.49 12" CP
E W 197.49 12" CP
- C EX. STORM DRAIN CATCH BASIN RM 197.04
E N 132.64 12" PVC
E E 191.39 12" CP
E W 191.39 12" CP
- D EX. STORM DRAIN CATCH BASIN RM 150.05
E S 147.90 12" CP
E W 147.90 12" CP
- E EX. STORM DRAIN INTAKE RM 146.65 12" DIP
- F EX. STORM DRAIN CATCH BASIN RM 148.14
E S 146.54 8" DIP
E N 146.34 8" DIP
- G EX. STORM DRAIN CATCH BASIN RM 148.34
E S 145.94 8" DIP
E N 145.84 12" CP
- H EX. STORM DRAIN MANHOLE TYPE 2 W/ RND. CRT. LD RM 147.12
E SE 137.42 12" CP
E N 137.37 12" CP
E W 134.80 12" CP
E E 132.07 12" CP
- I EX. STORM DRAIN INTAKE RM 147.57
E N 141.36 8" CP
E SE 147.52 12" CP
- J EX. STORM DRAIN CATCH BASIN RM 147.97
E N 146.67 8" DIP
E N 146.22 8" DIP
- K EX. STORM DRAIN CATCH BASIN RM 144.86
E E 142.26 8" DIP
E W 142.26 8" DIP
- L EX. STORM DRAIN CATCH BASIN RM 142.10
E E 139.75 8" DIP
E W 139.75 8" DIP
- M EX. STORM DRAIN CATCH BASIN RM 136.46
E N 136.05 12" DIP
E W 135.90 12" PVC
- N EX. STORM DRAIN CATCH BASIN RM 135.63
E N 133.23 12" PVC
E S 133.23 12" PVC
- O EX. STORM DRAIN CATCH BASIN RM 135.24
E N 132.64 12" PVC
E S 132.64 12" PVC
- P EX. STORM DRAIN CATCH BASIN RM 135.51
E N 130.59 12" PVC
E S 127.56 12" CP
E N 126.86 12" PVC
- Q EX. STORM DRAIN CATCH BASIN RM 135.09
E N 132.79 8" PVC
E S 132.69 8" PVC
- R EX. STORM DRAIN INLET RM 107.63 36" 36" CONC
- S EX. SANITARY SEWER MANHOLE RM 152.81
E N 145.41 8" CP
E S 145.31 8" CP
- T EX. SANITARY SEWER MANHOLE RM 149.41
E N 141.36 8" CP
E S 141.26 8" CP
- U EX. SANITARY SEWER MANHOLE RM 134.30
E N 126.55 10" CP
E SE 126.45 10" CP
- V EX. SANITARY SEWER MANHOLE RM 131.18
E N 125.83 10" CP
E SE 125.73 10" CP
- W EX. SANITARY SEWER MANHOLE RM 135.68
E SE 125.73 8" CP
E N 125.68 8" CP
E W 125.48 10" CP
- X EX. SANITARY SEWER MANHOLE RM 125.48 10" CP
- Y EX. SANITARY SEWER MANHOLE RM 125.48 10" CP
- Z EX. SANITARY SEWER MANHOLE RM 125.48 10" CP

CONSTRUCTION SEQUENCE SCHEDULE

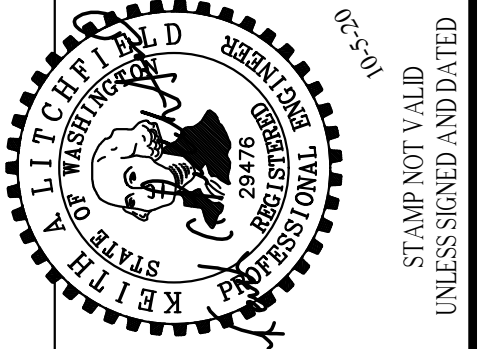
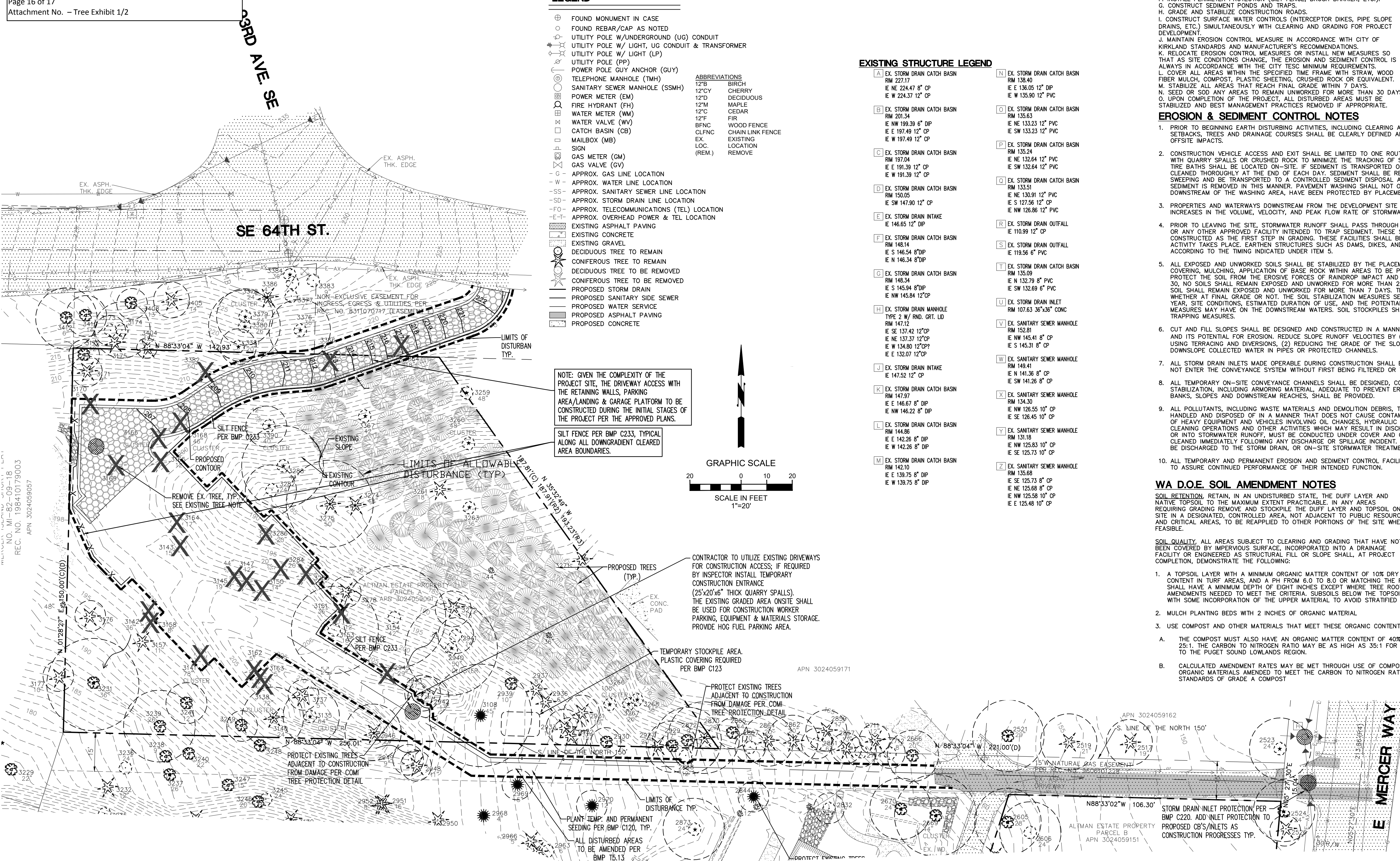
- A. CONDUCT PRE-CONSTRUCTION MEETING.
- B. FLAG OR FENCE CLEARING LIMITS.
- C. POST SIGN WITH NAME AND PHONE NUMBER OF TESC SUPERVISOR.
- D. INSTALL CATCH BASIN PROTECTION IF REQUIRED.
- E. GRADE AND INSTALL CONSTRUCTION ENTRANCES(S).
- F. INSTALL PERIMETER PROTECTION (SILT FENCE, BRUSH BARRIER, ETC.).
- G. CONSTRUCT SEDIMENT PONDS AND TRAPS.
- H. GRADE AND STABILIZE CONSTRUCTION ROADS.
- I. CONSTRUCT SURFACE WATER CONTROLS (INTERCEPTOR DIKES, PIPE SLOPE DRAINS, ETC.) SIMULTANEOUSLY WITH CLEARING AND GRADING FOR PROJECT DEVELOPMENT.
- J. MAINTAIN EROSION CONTROL MEASURE IN ACCORDANCE WITH CITY OF KIRKLAND STANDARDS AND MANUFACTURER'S RECOMMENDATIONS.
- K. RELOCATE EROSION CONTROL MEASURES OR INSTALL NEW MEASURES SO THAT AS SITE CONDITIONS CHANGE, THE EROSION AND SEDIMENT CONTROL IS ALWAYS IN ACCORDANCE WITH THE CITY TESC MINIMUM REQUIREMENTS.
- L. COVER ALL AREAS WITHIN THE SPECIFIED TIME FRAME WITH STRAW, WOOD FIBER MULCH, COMPOST, PLASTIC SHEETING, CRUSHED ROCK OR EQUIVALENT.
- M. STABILIZE ALL AREAS THAT REACH FINAL GRADE WITHIN 7 DAYS.
- N. SEED OR SOO ANY AREAS TO REMAIN UNWORKED FOR MORE THAN 30 DAYS.
- O. UPON COMPLETION OF THE PROJECT, ALL DISTURBED AREAS MUST BE STABILIZED AND BEST MANAGEMENT PRACTICES REMOVED IF APPROPRIATE.

EROSION & SEDIMENT CONTROL NOTES

1. PRIOR TO BEGINNING EARTH DISTURBING ACTIVITIES, INCLUDING CLEARING AND GRADING, ALL CLEARING LIMITS, EASEMENTS, SETBACKS, TREES AND DRAINAGE COURSES SHALL BE CLEARLY DEFINED AND MARKED IN THE FIELD TO PREVENT DAMAGE AND OFFSITE IMPACTS.
2. CONSTRUCTION VEHICLE ACCESS AND EXIT SHALL BE LIMITED TO ONE ROUTE IF POSSIBLE. ACCESS POINTS SHALL BE STABILIZED WITH QUARRY SPALLS OR CRUSHED ROCK TO MINIMIZE THE TRACKING OF SEDIMENTS ONTO PUBLIC STREETS. WHEEL WASH OR TIRE BATHS SHALL BE LOCATED ON-SITE. IF SEDIMENT IS TRANSPORTED ONTO A ROAD SURFACE, THE PAVEMENT SHALL BE CLEANED THOROUGHLY AT THE END OF EACH DAY. SEDIMENT SHALL BE REMOVED FROM THE PAVEMENT BY SHOVELING OR SWEEPING AND BE TRANSPORTED TO A CONTROLLED SEDIMENT DISPOSAL AREA. STREET WASHING WILL ONLY BE ALLOWED AFTER SEDIMENT IS REMOVED IN THIS MANNER. PAVEMENT WASHING SHALL NOT OCCUR UNTIL ALL STORM DRAIN INLETS, LOCATED DOWNSTREAM OF THE WASHING AREA, HAVE BEEN PROTECTED BY PLACEMENT OF A FILTER CLOTH UNDER THE INLET GRATE.
3. PROPERTIES AND WATERWAYS DOWNSTREAM FROM THE DEVELOPMENT SITE SHALL BE PROTECTED FROM EROSION DUE TO INCREASES IN THE VOLUME, VELOCITY, AND PEAK FLOW RATE OF STORMWATER RUNOFF FROM THE PROJECT SITE.
4. PRIOR TO LEAVING THE SITE, STORMWATER RUNOFF SHALL PASS THROUGH APPROVED SEDIMENT BARRIERS OR FILTERS, DIKES, OR ANY OTHER APPROVED FACILITY INTENDED TO PREVENT EROSION. THESE FACILITIES SHALL BE FUNCTIONAL BEFORE ANY OTHER LAND DISTURBING ACTIVITY TAKES PLACE. EARTHEN STRUCTURES SUCH AS DAMS, DIKES, AND DIVERSIONS SHALL BE SEEDED AND MULCHED ACCORDING TO THE TIMING INDICATED UNDER ITEM 5.
5. ALL EXPOSED AND UNWORKED SOILS SHALL BE STABILIZED BY THE PLACEMENT OF SOG OR OTHER VEGETATION. PLASTIC COVERING, MULCHING, APPLICATION OF BASE ROCK WITHIN AREAS TO BE PAVED, OR SOME OTHER APPROVED MEANS, TO PROTECT THE SOIL FROM THE EROSIIVE FORCES OF RAINFALL IMPACT AND FLOWING WATER. FROM OCTOBER 1 THROUGH APRIL 30, NO SOILS SHALL REMAIN EXPOSED AND UNWORKED FOR MORE THAN 2 DAYS. FROM MAY 1 THROUGH SEPTEMBER 30, NO SOIL SHALL REMAIN EXPOSED AND UNWORKED FOR MORE THAN 2 DAYS. THIS CONDITION APPLIES TO ALL SOILS ON SITE, WHETHER AT FINAL GRADE OR NOT. THE SOIL STABILIZATION MEASURES SELECTED SHOULD BE APPROPRIATE FOR THE TIME OF YEAR, SITE CONDITIONS, ESTIMATED DURATION OF USE, AND THE POTENTIAL WATER QUALITY IMPACTS THAT THE STABILIZATION MEASURES MAY HAVE ON THE DOWNSTREAM WATERS. SOIL STOCKPILES SHALL BE STABILIZED AND PROTECTED WITH SEDIMENT TRAPPING MEASURES.
6. CUT AND FILL SLOPES SHALL BE DESIGNED AND CONSTRUCTED IN A MANNER THAT WILL MINIMIZE EROSION. CONSIDER SOIL TYPE AND ITS POTENTIAL FOR EROSION. REDUCE SLOPE RUNOFF VELOCITIES BY (1) REDUCING THE LENGTH OF CONTINUOUS SLOPES BY USING TERRACING AND DIVERSIONS, (2) REDUCING THE GRADE OF THE SLOPE, AND (3) ROUGHEN SLOPE SURFACE. CONTAIN DOWNSLOPE COLLECTED WATER IN PIPES OR PROTECTED CHANNELS.
7. ALL STORM DRAIN INLETS MADE OPERABLE DURING CONSTRUCTION SHALL BE PROTECTED SO THAT STORMWATER RUNOFF SHALL NOT ENTER THE CONVEYANCE SYSTEM WITHOUT FIRST BEING FILTERED OR TREATED TO REMOVE SEDIMENTS.
8. ALL TEMPORARY ON-SITE CONVEYANCE CHANNELS SHALL BE DESIGNED, CONSTRUCTED AND STABILIZED TO PREVENT EROSION. STABILIZATION, INCLUDING ARMORING MATERIAL, ADEQUATE TO PREVENT EROSION AT ALL DISCHARGE POINTS, ADJACENT STREAM BANKS, SLOPES AND DOWNSTREAM REACHES, SHALL BE PROVIDED.
9. ALL POLLUTANTS, INCLUDING WASTE MATERIALS AND DEMOLITION DEBRIS, THAT OCCUR ON-SITE DURING CONSTRUCTION SHALL BE HANDLED AND DISPOSED OF IN A MANNER THAT DOES NOT CAUSE CONTAMINATION OF STORMWATER. MAINTENANCE AND REPAIR OF HEAVY EQUIPMENT AND VEHICLES INVOLVING OIL CHANGES, HYDRAULIC SYSTEM DRAIN DOWN, SOLVENT AND DE-GREASING CLEANING OPERATIONS AND OTHER ACTIVITIES WHICH MAY RESULT IN DISCHARGE OR SPILLAGE OF POLLUTANTS TO THE GROUND OR INTO STORMWATER RUNOFF, MUST BE CONDUCTED UNDER COVER AND ON IMPERVIOUS SURFACES. THESE SURFACES SHALL BE CLEANED IMMEDIATELY FOLLOWING ANY DISCHARGE OR SPILLAGE INCIDENT. WHEEL WASH, OR TIRE BATH WASTEWATER, SHALL NOT BE DISCHARGED TO THE STORM DRAIN, OR ON-SITE STORMWATER TREATMENT SYSTEM.
10. ALL TEMPORARY AND PERMANENT EROSION AND SEDIMENT CONTROL FACILITIES SHALL BE MAINTAINED AND REPAIRED AS NEEDED TO ASSURE CONTINUED PERFORMANCE OF THEIR INTENDED FUNCTION.

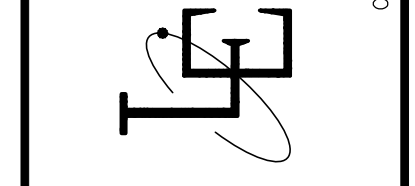
WA D.O.E. SOIL AMENDMENT NOTES

- SOIL RETENTION.** RETAIN, IN AN UNDISTURBED STATE, THE DUFF LAYER AND NATIVE TOPSOIL TO THE MAXIMUM EXTENT PRACTICABLE. IN ANY AREAS REQUIRING GRADING REMOVE AND STOCKPILE THE DUFF LAYER AND TOPSOIL ON SITE IN A DESIGNATED, CONTROLLED AREA, NOT ADJACENT TO PUBLIC RESOURCES AND CRITICAL AREAS, TO BE REAPPLIED TO OTHER PORTIONS OF THE SITE WHERE FEASIBLE.
- SOIL QUALITY.** ALL AREAS SUBJECT TO CLEARING AND GRADING THAT HAVE NOT BEEN COVERED BY IMPERVIOUS SURFACE, INCORPORATED INTO A DRAINAGE FACILITY OR ENGINEERED AS STRUCTURAL FILL OR SLOPE SHALL, AT PROJECT COMPLETION, DEMONSTRATE THE FOLLOWING:
1. A TOPSOIL LAYER WITH A MINIMUM ORGANIC MATTER CONTENT OF 10% DRY WEIGHT IN PLANTING BEDS, AND 5% ORGANIC MATTER CONTENT IN TURF AREAS, AND A PH FROM 6.0 TO 8.0 OR MATCHING THE PH OF THE UNDISTURBED SOIL. THE TOPSOIL LAYER SHALL HAVE A MINIMUM DEPTH OF EIGHT INCHES EXCEPT WHERE TREE ROOTS LIMIT THE DEPTH OF INCORPORATION OF AMENDMENTS NEEDED TO MEET THE CRITERIA. SUBSOILS BELOW THE TOPSOIL LAYER SHOULD BE SCARIFIED AT LEAST 4 INCHES WITH SOME INCORPORATION OF THE UPPER MATERIAL TO AVOID STRATIFIED LAYERS, WHERE FEASIBLE.
 2. MULCH PLANTING BEDS WITH 2 INCHES OF ORGANIC MATERIAL.
 3. USE COMPOST AND OTHER MATERIALS THAT MEET THESE ORGANIC CONTENT REQUIREMENTS:
 - A. THE COMPOST MUST ALSO HAVE AN ORGANIC MATTER CONTENT OF 40% TO 65%, AND A CARBON TO NITROGEN RATIO BELOW 25:1. THE CARBON TO NITROGEN RATIO MAY BE AS HIGH AS 35:1 FOR PLANTINGS COMPOSED ENTIRELY OF PLANTS NATIVE TO THE PUGET SOUND LOWLANDS REGION.
 - B. CALCULATED AMENDMENT RATES MAY BE MET THROUGH USE OF COMPOSTED MATERIALS MEETING (A.) ABOVE, OR OTHER ORGANIC MATERIALS AMENDED TO MEET THE CARBON TO NITROGEN RATIO REQUIREMENTS, AND MEETING THE CONTAMINANT STANDARDS OF GRADE A COMPOST



DATE	NOTES
4-8-2020	SUBMITTED TO CLIENT
10-5-2020	REVISED PER CITY COMMENTS

LITCHFIELD ENGINEERING
 12840 81ST AVENUE NE
 KIRKLAND, WA 98034
 Tel (425) 521-5068 Fax (425) 521-5739



APN: 302405-9001
TESC PLAN
ALTMAN PARCEL A
 MERCER ISLAND, WASHINGTON
 ESTATE OF JAMES H. ALTMAN, SR.
 MERCER ISLAND, WASHINGTON 98040

Call 2 Working Days Before You Dig
1-800-424-5555
 Utilities Underground Location Center
 (ID, MT, ND, OR, WA)

APPROVED:
 CITY OF MERCER ISLAND DEVELOPMENT SERVICES GROUP

PORTION OF NE1/4 OF SECTION 30, TOWNSHIP 24N, RANGE 5E, WM

ALTMAN PARCEL A

William Altman
RE: Arborist Report, TPN 302405901
December 18, 2020
Page 17 of 17
Attachment No. - Tree Exhibit 2/2

SPECIAL CONTRACTOR NOTES

CONTRACTOR TO INSURE THAT THE FINAL DRIVEWAY GRADE AND CATCH BASIN/YARD DRAIN ELEVATIONS ARE CONSTRUCTED TO RESTRICT ANY STORM DRAINAGE FROM LEAVING THE DRIVEWAY SURFACE.

RETAINING WALL NOTES

ALL WALL DESIGN, REINFORCEMENT, WATERPROOFING, AND RETAINING WALL DRAINAGE CONTROL PER STRUCTURAL AND ARCHITECTURAL PLANS AND SPECIFICATIONS.

INSTALL 36" HANDRAILING AS NECESSARY WHERE WALLS EXCEED 30" IN HEIGHT SEE ARCHITECT'S PLANS.

WORK WITHIN EXISTING TREE DRILLINES NOTES

ALL TRENCHES THAT ARE EXCAVATED WITHIN TREE DRIP LINES SHALL BE EXCAVATED WITH AN AIR SPADE SO THAT UTILITY LINES CAN BE INSTALLED WITHOUT CUTTING MAJOR ROOTS. ROOTS EXPOSED IN OPEN TRENCHES MUST BE KEPT MOIST BY BEING COVERED WITH MOISTENED BURLAP UNTIL THE TRENCH CAN BE CLOSED.

ALL GRADING WITHIN THE TPZ OF THE TREES TO REMAIN SHALL BE ACCOMPLISHED UNDER THE DIRECTION OF THE ARBORIST.

SOIL AMENDMENT NOTE

THE LAWN AND LANDSCAPE AREAS ARE REQUIRED TO PROVIDE POST-CONSTRUCTION SOIL QUALITY AND DEPTH IN ACCORDANCE WITH BMP 15.13. THE PROJECT GEOTECHNICAL ENGINEER MUST PROVIDE A LETTER OF CERTIFICATION TO ENSURE THAT THE LAWN AND LANDSCAPE AREAS ARE MEETING THE POST CONSTRUCTION SOIL QUALITY AND DEPTH REQUIREMENT SPECIFIED ON THE APPROVED PLAN SET PRIOR TO FINAL INSPECTION OF THE PROJECT.

TRENCH EXCAVATION NOTES

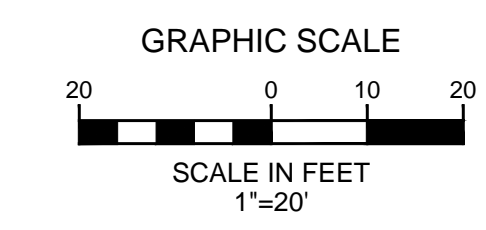
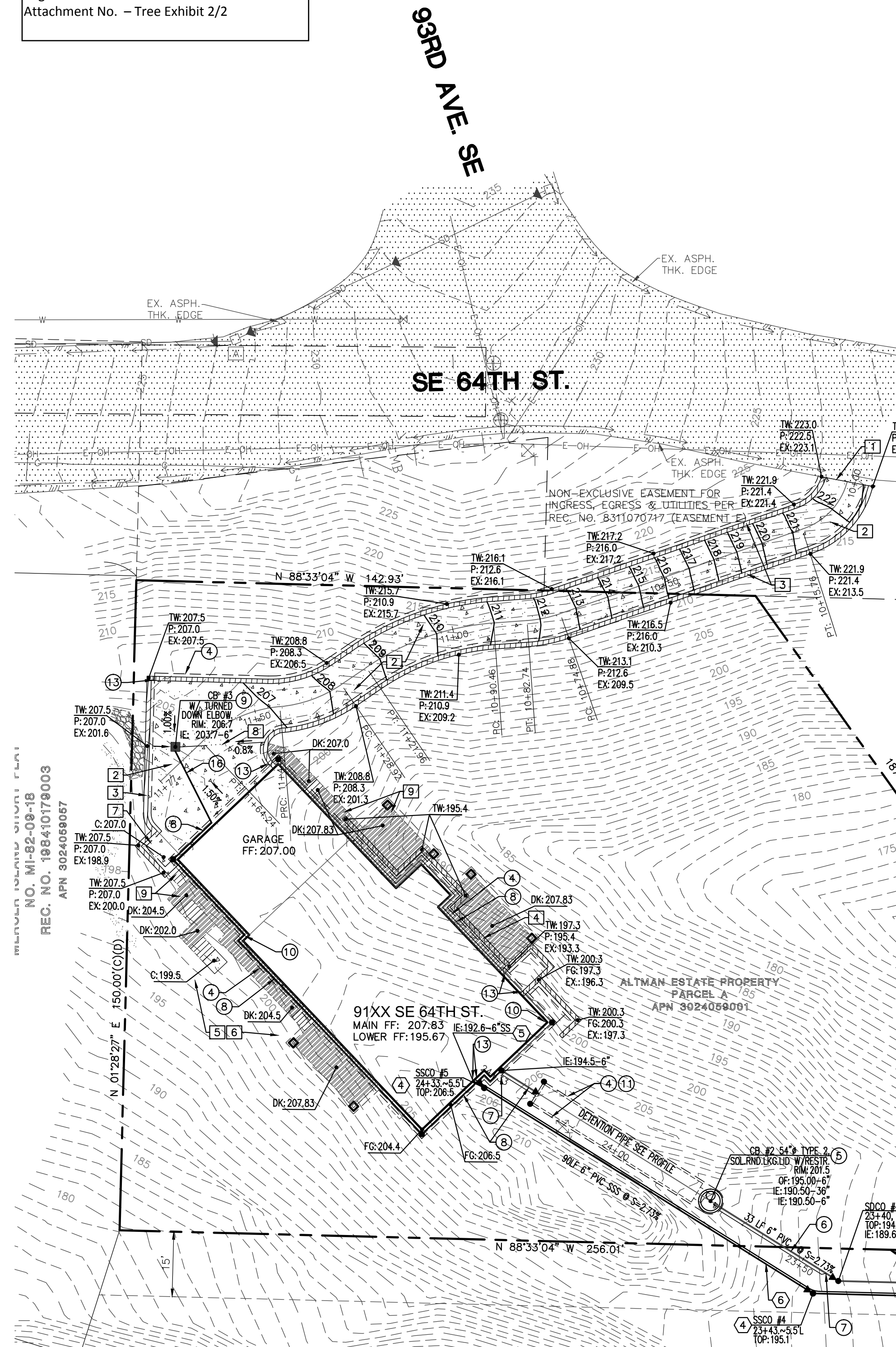
ALL SEWER AND DRAINAGE PIPES SHALL BE BACKFILLED TO 95% MDD (INTENT: TO RESTRICT SUBSURFACE DRAINAGE FROM TRAVELING ALONG THE PIPE BARREL).

SITE IMPROVEMENT NOTES

- 1 PROVIDE SMOOTH TRANSITION FROM EXISTING IMPROVEMENTS TO NEW IMPROVEMENTS.
2 CONSTRUCT DRIVEWAY SECTION PER DETAIL SHEET 5. FINISH, TEXTURE, JOINTS, REINF. ETC. PER ARCHITECTS & STRUCTURAL PLANS.
3 RETAINING WALLS AT LOCATIONS SHOWN. FINISH, TEXTURE, JOINTS, REINF. ETC. PER ARCHITECTS & STRUCTURAL PLANS. SEPARATE BUILDING PERMIT REQUIRED IF GREATER THAN 4' HIGH.
4 CONSTRUCT MODULAR LANDSCAPE RETAINING WALLS ADJACENT TO BUILDING PER MANUFACTURER REQT'S. PERMIT REQUIRED IF GREATER THAN 4' HIGH.
5 SEE LANDSCAPING PLAN BY OTHERS FOR LANDSCAPE.
6 SEE ILLUMINATION PLAN BY OTHERS FOR LANDSCAPE LIGHTING & ASSOCIATED APPURTENANCES.
7 REFUSE / RECYCLE AREA PER ARCHITECTS PLANS.
8 FLOWLINE OF DRIVEWAY PAVEMENT, TYP.
9 DECKS, CATWALKS, STEPS AS SHOWN. MATERIAL, FINISH, TEXTURE, ETC. PER ARCHITECTS & STRUCTURAL PLANS.

STORM DRAINAGE NOTES

- 1 CB TYPE 1 WSDOT SD B-5.20-00 W/ SOL. LOCKING LID. LOCATE ON EXISTING 12" CP.
2 SDCO PER SD MI S-19 W/ TRAFFIC RATED LID.
3 SDCO PER SD MI S-19 W/ PVC CAP 6" ABOVE FINISH GRADE.
4 CONSTRUCT 4" PER. PVC FOOTING DRAIN.
5 CATCH BASIN TYPE 2-54" W/ SOL. LOCKING LID & RESTRICTOR PER CITY OF MERCER ISLAND ON-SITE DETENTION SYSTEM WORKSHEET DETAIL. SEE DETENTION SYSTEM WORKSHEET, PLAN & PROFILES SHEETS 3 & 4.
6 CONSTRUCT 6" PVC OUTFALL STORM DRAIN SYSTEM.
7 CONNECT FOOTING DRAIN TO TIGHTLINE TO OUTFALL STORM SYSTEM 1' MIN. LOWER THAN LOWEST FOOTING DRAIN.
8 CONSTRUCT 6" PVC ROOF DRAIN COLLECTOR @ S=1.00% MIN.
9 PRIVATE YARD\AREA DRAIN SEE DETAIL SHEET 5.
10 DOWNSPOUTS PER ARCHITECT'S PLANS.
11 FOOTING DRAIN NOT TO BE CONNECTED TO DETENTION SYSTEM.
12 STORM DRAIN CLEANOUT 100 FEET MAXIMUM BETWEEN CLEANOUTS.
13 PROVIDE DIP PIPE SLEEVE FOR PENETRATIONS THROUGH WALLS AS REQUIRED. COORDINATE LOCATIONS W/ STRUCTURAL PLANS. SLEEVE TO BE ONE PIPE SIZE LARGER THAN DESIGN PIPING SIZE (O.D.).
14 SAWCUT, REMOVE & PATCH EXISTING PAVEMENT PER CITY OF MERCER ISLAND REQUIREMENTS IN RIGHT-OF-WAY AT TRENCH CROSSING PER COMI STANDARDS.
15 SAWCUT, REMOVE & PATCH EXISTING PAVEMENT TO ORIGINAL CONDITION OR BETTER PER COMI STANDARDS.
16 6" PVC ROOF/AREA DRAIN PIPING TO CONNECT TO ROOF DRAIN COLLECTOR



EXISTING STRUCTURE LEGEND

- A EX. STORM DRAIN CATCH BASIN RM 227.17
B EX. STORM DRAIN CATCH BASIN RM 201.34
C EX. STORM DRAIN CATCH BASIN RM 197.04
D EX. STORM DRAIN CATCH BASIN RM 150.05
E EX. STORM DRAIN INTAKE IE 146.65 12" DIP
F EX. STORM DRAIN CATCH BASIN RM 148.14
G EX. STORM DRAIN CATCH BASIN RM 148.34
H EX. STORM DRAIN MANHOLE TYPE 2 W/ RND. CRT. LID IE 224.47 8" CP
I EX. STORM DRAIN CATCH BASIN RM 147.12
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Q EX. STORM DRAIN CATCH BASIN RM 133.51
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AA EX. SANITARY SEWER MANHOLE RM 126.55 10" CP
AB EX. SANITARY SEWER MANHOLE RM 126.45 10" CP
AC EX. SANITARY SEWER MANHOLE RM 131.18
AD EX. SANITARY SEWER MANHOLE IE 125.73 8" CP
AE EX. SANITARY SEWER MANHOLE IE 125.73 10" CP
AF EX. SANITARY SEWER MANHOLE RM 135.68
AG EX. SANITARY SEWER MANHOLE IE 125.73 8" CP
AH EX. SANITARY SEWER MANHOLE IE 125.68 8" CP
AI EX. SANITARY SEWER MANHOLE IE 125.58 10" CP
AJ EX. SANITARY SEWER MANHOLE IE 125.48 10" CP

WATER NOTES

- 1-1" WATER SERVICE PER SD MI W-13. METER/SERVICE SIZE PER WATER SYSTEM BUILDING PLANS BY PLUMBING/MECHANICAL DESIGNER. CONSTRUCT OVERSIZE POLY PIPE OR PVC TO RESIDENCE TO ACCOMMODATE FLOW REQUIREMENTS (1-1/4" MINIMUM SIZE).
2 SAWCUT, REMOVE & PATCH EXISTING PAVEMENT TO ORIGINAL CONDITION OR BETTER AT PRIVATE TRENCH PER COMI STANDARDS.
3 RESTORE DISTURBED LANDSCAPE AREAS TO PRE-EXISTING CONDITION OR BETTER TO THE SATISFACTION OF THE PROPERTY OWNER.
4 EXISTING WATER SERVICE LINES ARE LOCATED WITHIN THE IMMEDIATE AREA OF WORK. CONTRACTOR RESPONSIBLE TO COORDINATE ANY SHUT-DOWNS WITH ADJACENT PROPERTIES. REPAIR ANY SERVICE LINES DAMAGED TO ORIGINAL CONDITION OR BETTER.

SANITARY SEWER NOTES

- 1 CONNECT NEW 6" SIDE SEWER TO EXISTING SANITARY SEWER SYSTEM PER COMI STANDARDS. VERIFY LOCATION & INVERTS.
2 SAWCUT, REMOVE & PATCH EXISTING PAVEMENT PER CITY OF MERCER ISLAND REQUIREMENTS IN RIGHT-OF-WAY AT TRENCH CROSSING PER COMI STANDARDS.
3 SDCO PER SD MI S-19 W/ TRAFFIC RATED LID.
4 SDCO PER SD MI S-19 W/ PVC CAP 6" ABOVE FINISH GRADE.
5 CONSTRUCT TEMP. CAP FOR FUTURE BUILDING CONNECTION.
6 CONSTRUCT 6" SANITARY SIDE SEWER AT S=0.0200'/MINIMUM TO BUILDING. SEE SANITARY SEWER SYSTEM BUILDING PLANS BY PLUMBING DESIGNER CONFIRM LOCATION W/ ARCHITECT.
7 SAWCUT, REMOVE & PATCH EXISTING PAVEMENT TO ORIGINAL CONDITION OR BETTER PER COMI STANDARDS.
8 EXISTING GAS LINE IN WORK AREA. CONTRACTOR TO COORDINATE CONSTRUCTION OF SANITARY SIDE SEWER & PROTECT GAS LINE FROM ANY DAMAGE.

ARCHITECTURAL & STRUCTURAL NOTES

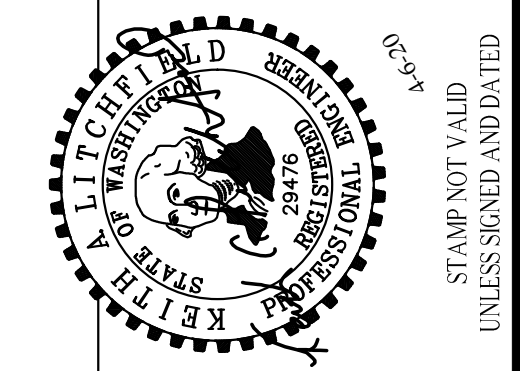
- 1 THESE PLANS ARE APPROVED FOR STANDARD ROAD AND DRAINAGE IMPROVEMENTS ONLY. PLANS FOR STRUCTURES SUCH AS RETAINING WALLS - REQUIRE A SEPARATE REVIEW AND APPROVAL PRIOR TO CONSTRUCTION.
2 SPECIAL INSPECTIONS FOR STRUCTURAL ASPECTS OF THE PROJECT MAY BE REQUIRED DURING VARIOUS STAGES OF THE PROJECT. CONTRACTOR TO BE RESPONSIBLE FOR COORDINATION AND OBTAINING INSPECTIONS WHEN AND WHERE NECESSARY.
3 SEE ARCHITECTURAL PLANS FOR BUILDING SECTIONS AND ALL LOCATIONAL/DIMENSIONAL ASPECTS OF BUILDINGS.
4 SEE ARCHITECTURAL AND STRUCTURAL PLANS FOR ALL BUILDING AND RETAINING WALL DETAILS.
5 COORDINATE ALL SITE CIVIL CONSTRUCTION WITH ARCHITECTURAL, STRUCTURAL, MECHANICAL/PLUMBING AND LANDSCAPE PLANS

SITE IMPROVEMENT NOTES

- 1 PROOF OF LIABILITY INSURANCE SHALL BE SUBMITTED TO THE CITY PRIOR TO THE PRE-CONSTRUCTION MEETING.
2 THESE PLANS ARE APPROVED FOR GRADING, DRAINAGE, AND UTILITY IMPROVEMENTS ONLY. PLANS FOR STRUCTURES REQUIRE A SEPARATE REVIEW AND APPROVAL.
3 RETAINING WALLS GREATER THAN FOUR (4) FEET IN HEIGHT REQUIRE A SEPARATE BUILDING PERMIT.
4 FILL MATERIAL PLACED UNDER BUILDING FOUNDATIONS OR PAVEMENT SHALL BE CRUSHED BASE ROCK OR COMPACTED STRUCTURAL FILL IN ACCORDANCE WITH CITY AND WSDOT STANDARD SPECIFICATIONS.
5 ALL DRAINAGE STRUCTURES, SUCH AS CATCH BASINS AND MANHOLES, NOT LOCATED WITHIN A TRAVELED ROADWAY OR SIDEWALK, SHALL HAVE SOLID LOCKING LIDS.
6 THIS PLAN DOES NOT SHOW THE LOCATION OF ALL EXISTING UTILITIES. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO LOCATE ALL EXISTING UTILITIES PRIOR TO EXCAVATION.
7 THE CONTRACTOR SHALL EXPOSE ALL EXISTING PIPING THAT WILL BE CONNECTED TO WITH NEW PIPING. DEPTH, LOCATION, AND CONDITION SHALL BE RELAYED TO THE ENGINEER IF CONDITIONS VARY SIGNIFICANTLY FROM WHAT IS DETAILED OR ANTICIPATED.
8 ALL WORK SHALL BE PERFORMED IN STRICT ACCORDANCE TO DETAILS AND SPECIFICATIONS OF CITY STANDARDS. ALL CONSTRUCTION DEBRIS GENERATED DURING CONSTRUCTION TO BE REMOVED & DISPOSED OF AT AN APPROVED LOCATION OFF SITE.
9 ALL CUT MATERIAL GENERATED DURING THE PROJECT THAT IS NOT ACCEPTABLE FOR USE AS COMPACTED FILL MATERIAL AT ANOTHER LOCATION ON-SITE MUST BE HAULED TO AN APPROVED LOCATION OFF-SITE.

STORM DRAIN GENERAL NOTES

- 1 A PRE-CONSTRUCTION CONFERENCE SHALL BE HELD PRIOR TO THE START OF CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SECURING ALL NECESSARY PERMITS PRIOR TO CONSTRUCTION.
2 BEFORE ANY CONSTRUCTION MAY OCCUR, THE CONTRACTOR SHALL HAVE PLANS WHICH HAVE BEEN SIGNED AND APPROVED BY THE CITY OF MERCER ISLAND PUBLIC WORKS DEPARTMENT, OBTAINED ALL CITY, COUNTY, STATE, FEDERAL AND OTHER REQUIRED PERMITS, AND HAVE POSTED ALL REQUIRED BONDS.
3 ALL STORM DRAINAGE IMPROVEMENTS SHALL BE DESIGNED AND CONSTRUCTED IN ACCORDANCE WITH THE LATEST EDITION OF THE CITY OF MERCER ISLAND PUBLIC WORKS PRE-APPROVED PLANS AND POLICES AND THE STANDARD SPECIFICATIONS FOR ROAD, BRIDGE AND MUNICIPAL CONSTRUCTION, PREPARED BY WSDOT AND THE AMERICAN PUBLIC WORKS ASSOCIATION (APWA).
4 ANY DEVIATION FROM THE APPROVED PLANS WILL REQUIRE WRITTEN APPROVAL. ALL CHANGES SHALL BE SUBMITTED TO THE CITY.
5 A COPY OF THE APPROVED STORM WATER PLANS MUST BE ON THE JOB SITE WHENEVER CONSTRUCTION IS IN PROGRESS.
6 ALL DISTURBED AREAS SHALL BE SEEDED AND MULCHED OR SIMILARLY STABILIZED TO THE SATISFACTION OF THE CITY OF MERCER ISLAND DEPARTMENT OF PUBLIC WORKS FOR THE PREVENTION OF ON-SITE EROSION AFTER THE COMPLETION OF CONSTRUCTION.
7 MINIMUM COVER OVER STORM DRAINAGE PIPES IN ROW OR VEHICULAR PATH SHALL BE 18 INCHES, UNLESS OTHER DESIGN IS APPROVED.
8 CONSTRUCTION OF DEWATERING (GROUNDWATER) SYSTEMS SHALL BE IN ACCORDANCE WITH THE APWA STANDARD SPECIFICATIONS.
9 ALL TRENCH BACKFILL SHALL BE COMPACTED TO 95 PERCENT DENSITY IN ROADWAYS, ROADWAY SHOULDERS, ROADWAY PRISM AND DRIVEWAYS, AND 85 PERCENT DENSITY IN UNPAVED AREAS. ALL PIPE ZONE COMPACTATION SHALL BE 95 PERCENT.
10 THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ADEQUATE SAFEGUARDS, SAFETY DEVICES, PROTECTIVE EQUIPMENT, CONFINED SPACE PROTECTION, FLAGGERS, AND ANY OTHER NEEDED ACTIONS TO PROTECT THE LIFE, HEALTH, AND SAFETY OF THE PUBLIC, AND TO PROTECT PROPERTY IN CONNECTION WITH THE PERFORMANCE OF WORK COVERED BY THE CONTRACT.
11 APPROXIMATE LOCATIONS OF EXISTING UTILITIES HAVE BEEN OBTAINED FROM AVAILABLE RECORDS AND ARE SHOWN FOR CONVENIENCE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFICATION OF EXISTING UTILITY LOCATIONS WHETHER OR NOT THESE UTILITIES ARE SHOWN ON THE PLANS. THE CONTRACTOR SHALL EXERCISE ALL CARE TO AVOID DAMAGE TO ANY UTILITY. IF CONFLICTS WITH EXISTING UTILITIES ARISE DURING CONSTRUCTION, THE CONTRACTOR SHALL NOTIFY THE CITY CONSTRUCTION INSPECTOR AND ANY CHANGES REQUIRED SHALL BE APPROVED BY THE DEVELOPMENT ENGINEER PRIOR TO COMMENCEMENT OF RELATED CONSTRUCTION ON THE PROJECT.
12 THE UNDERGROUND UTILITY LOCATION SERVICE SHALL BE CONTACTED FOR FIELD LOCATION OF EXISTING UTILITIES PRIOR TO ANY CONSTRUCTION. THE OWNER OR HIS REPRESENTATIVE SHALL BE CONTACTED IF A UTILITY CONFLICT EXISTS. FOR UTILITY LOCATION IN KING COUNTY, CALL 811. THE CONTRACTOR IS RESPONSIBLE TO ENSURE THAT UTILITY LOCATES ARE MAINTAINED THROUGHOUT THE LIFE OF THE PROJECT.
13 OPEN CUT ROAD CROSSINGS FOR UTILITY TRENCHES ON EXISTING TRAVELED ROADWAY SHALL BE BACKFILLED ONLY WITH 5/8" MINUS CRUSHED ROCK AND MECHANICALLY COMPACTED (UNLESS OTHERWISE APPROVED BY THE CITY). CUTS INTO THE EXISTING ASPHALT SHALL BE NEAT LINE CUT WITH SAW OR JACKHAMMER IN A CONTINUOUS LINE. A TEMPORARY COLD MIX PATCH MUST BE PLACED IMMEDIATELY AFTER BACKFILL AND COMPACTION. A PERMANENT HOT MIX PATCH SHALL BE PLACED WITHIN 30 DAYS AND SHALL BE A MINIMUM OF 1" THICKER THAN THE ORIGINAL ASPHALT WITH A MINIMUM THICKNESS OF 2".
14 ALL DAMAGES INCURRED TO PUBLIC AND/OR PRIVATE PROPERTY BY THE CONTRACTOR DURING THE COURSE OF CONSTRUCTION SHALL BE PROMPTLY REPAIRED TO THE SATISFACTION OF THE CITY CONSTRUCTION INSPECTOR BEFORE PROJECT APPROVAL AND/OR THE RELEASE OF THE PROJECT'S PERFORMANCE BOND.
15 GROUT ALL SEAMS AND OPENINGS IN ALL INLETS, CATCH BASINS, AND MANHOLES.



NOTES table with columns: DATE, CHD BY, DWN BY, SUBMITTED TO CLIENT

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ESTATE OF JAMES H. ALTMAN, SR.
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SHEET 3 of 5

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