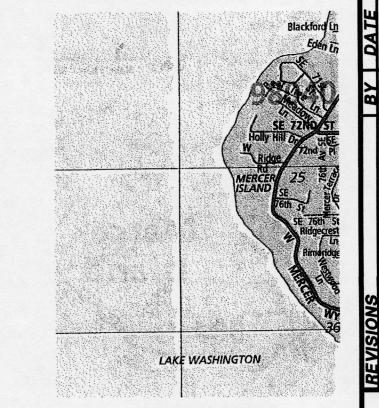


HAGSTROM RESIDENCE NW 1/4 OF SEC.25, T.24N., R.4E., W.M. CITY OF MERCER ISLAND, WASHINGTON

OWNERS: COLLIN AND JILLIAN HAGSTROM 7428 SE 71ST ST MERCER ISLAND, WA 98040 SITE ADDRESS: 7428 SE 71ST ST MERCER ISLAND, WA 98040

PARCEL NO: 536800-0300



DRAINA

SURVEYORS

DATE 6/17

SCALE 1"=10'

DESIGNED CLM

CHECKED RSF

APPROVED RSF

SHEET 1 OF 2

DRAWN CLM

CONSUL TANTS,

GRAPHIC SCALE (IN FEET)
1 inch = 10 ft.

EXISTING IMPERVIOUS AREA

16,469 S.F. 2,678 S.F. 2,810 S.F. LOT AREA: HOUSE/GARAGE BLDG ROOF AREA: DRIVEWAY & WALKWAY AREA: 5,488 S.F. TOTAL AREA:

NEW IMPERVIOUS AREA LOT AREA: HOUSE/GARAGE BLDG ROOF AREA:

16,469 S.F. 5,270 S.F. 1,231 S.F. DRIVEWAY & WALKWAY AREA:

PERCENT LOT COVERAGE 6,501/16,469 = 39.47%

PERCENT LOT COVERAGE 5,488/16,469 = 33.32%

SHEET INDEX

DRAINAGE AND GRADING PLAN TESC PLAN

LEGEND SECTION CORNER QUARTER CORNER FOUND MONUMENT SET REBAR W/CAP SET NAIL W/FLASHER FOUND MONUMENT (125.21') DEED MEASUREMENT 2X2 WOOD HUB WATER VALVE FIRE HYDRANT TELEPHONE PEDASTAL EXISTING CATCH BASIN

PROPOSED CATCH BASIN O∯ TREE TRAFFIC SIGN

INDEX LOCATION: SEC. 25 T. 24 N.R. 4E. W.M.

YARD DRAIN
RIM — 20.00
6" IE IN — 18.00
IE OUT — CONNECT TO
EXISTING STORM DRAIN.
TO BE POTHOLED
DURING CONSTRUCTION PLAT CLOSURE LINE N 88° 23' 46" E (NOT PROPERTY LINE) SANITARY SEWER W/
NEW BACKFLOW
PREVENTION VALVE 6"X 85 LF PVC DRAIN CONNECTION @ 3.53% SPA 163 SF - START OF PIPED WATERCOURSE 4"X 4 LF PVC DRAIN CONNECTION @ 2.50% YARD DRAIN RIM - 23.00 4" IE IN - 21.00 4" IE IN - 21.00 6" IE OUT - 21.00 PROPOSED RESIDENCE FF = 32.34 5,270 SF 4"X 63 LF PVC DRAIN -CONNECTION @ 13.49% B.O. GRADE: 27.00 EXISTING DRIVEWAY OUTLET WITH TRASH RACK - 29.50 -1' WIDE GRAVEL TRENCH PROPOSED REDUCED PRESSURE BACKFLOW~ ASSEMBLY 33.00 CONNECTION © 9.23%
OUTFALL — 30.50 EXISTING WATER METER-TO BE REPLACED IF NECESSARY EXISTING TYPE 1 CB-RIM (FL THRU)=32.94 IE (NE) 12" CONC. =27.24 IE (NW) 12" CONC. =27.20 IE (S) 8" CONC =27.14 SE 71ST STREET

NOTE: THE EXISTING UTILITIES AS SHOWN ARE ONLY APPROXIMATE. OTHER EXISTING UTILITIES MAY EXIST ALONG THIS PROPOSED ALIGNMENT. IT SHALL BE THE CONTRACTOR AND OR OWNERS RESPONSIBILITY TO VERIFY THE SIZE TYPE LOCATION AND DEPTH OF ALL EXISTING UTILITIES PRIOR TO STARTING CONSTRUCTION

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HAGSTROM RESIDENCE NW 1/4 OF SEC.25, T.24N., R.4E., W.M. CITY OF MERCER ISLAND, WASHINGTON

OWNERS: COLLIN AND JILLIAN HAGSTROM 7428 SE 71ST ST MERCER ISLAND, WA 98040

SITE ADDRESS: 7428 SE 71ST ST MERCER ISLAND, WA 98040

PARCEL NO: 536800-0300

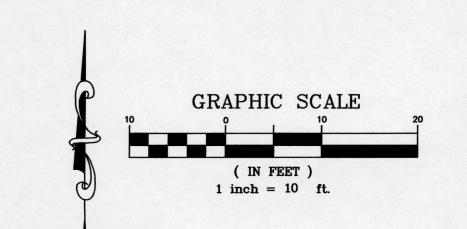
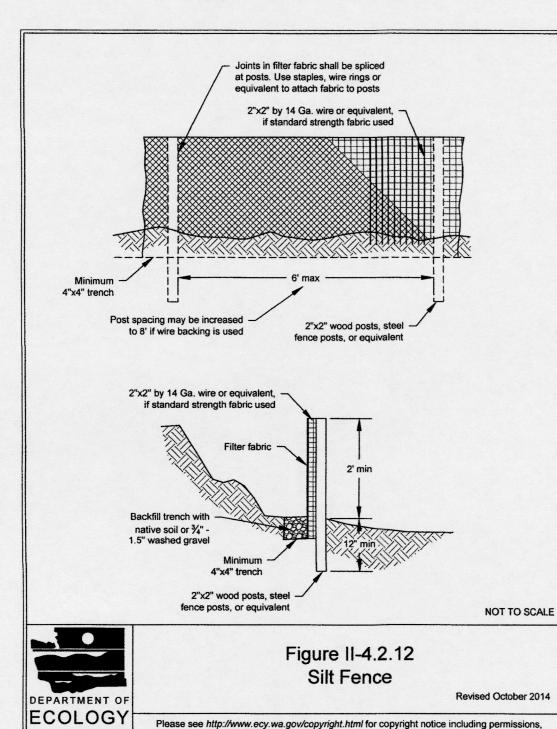
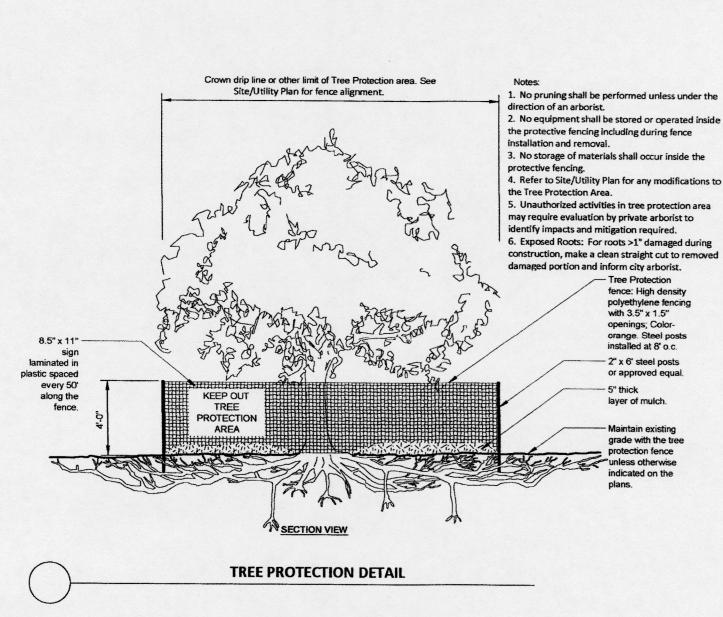
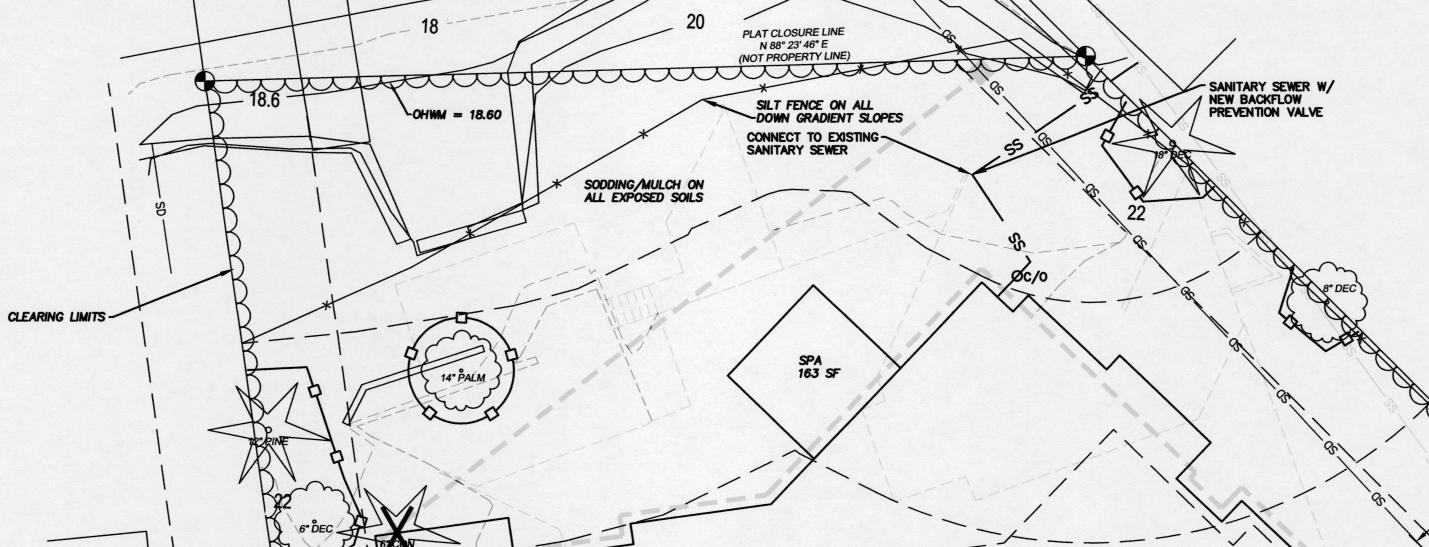


Figure II-4.2.12 Silt Fence







LEGEND

TESC PLAN

SECTION CORNER FOUND MONUMENT SET REBAR W/CAP SET NAIL W/FLASHER FOUND MONUMENT

2X2 WOOD HUB WATER VALVE FIRE HYDRANT TELEPHONE PEDASTAL EXISTING CATCH BASIN

PROPOSED CATCH BASIN O∯ TREE

TRAFFIC SIGN

B.O. GRADE: 27.00 DRIVEWAY AREA TO BE REMOVED

INDEX LOCATION:

SEC. 25 T. 24 N.R. 4E. W.M. JOB NO. 17068 DATE 6/17 SCALE 1"=10" DESIGNED CLM DRAWN CLM CHECKED RSF APPROVED RSF

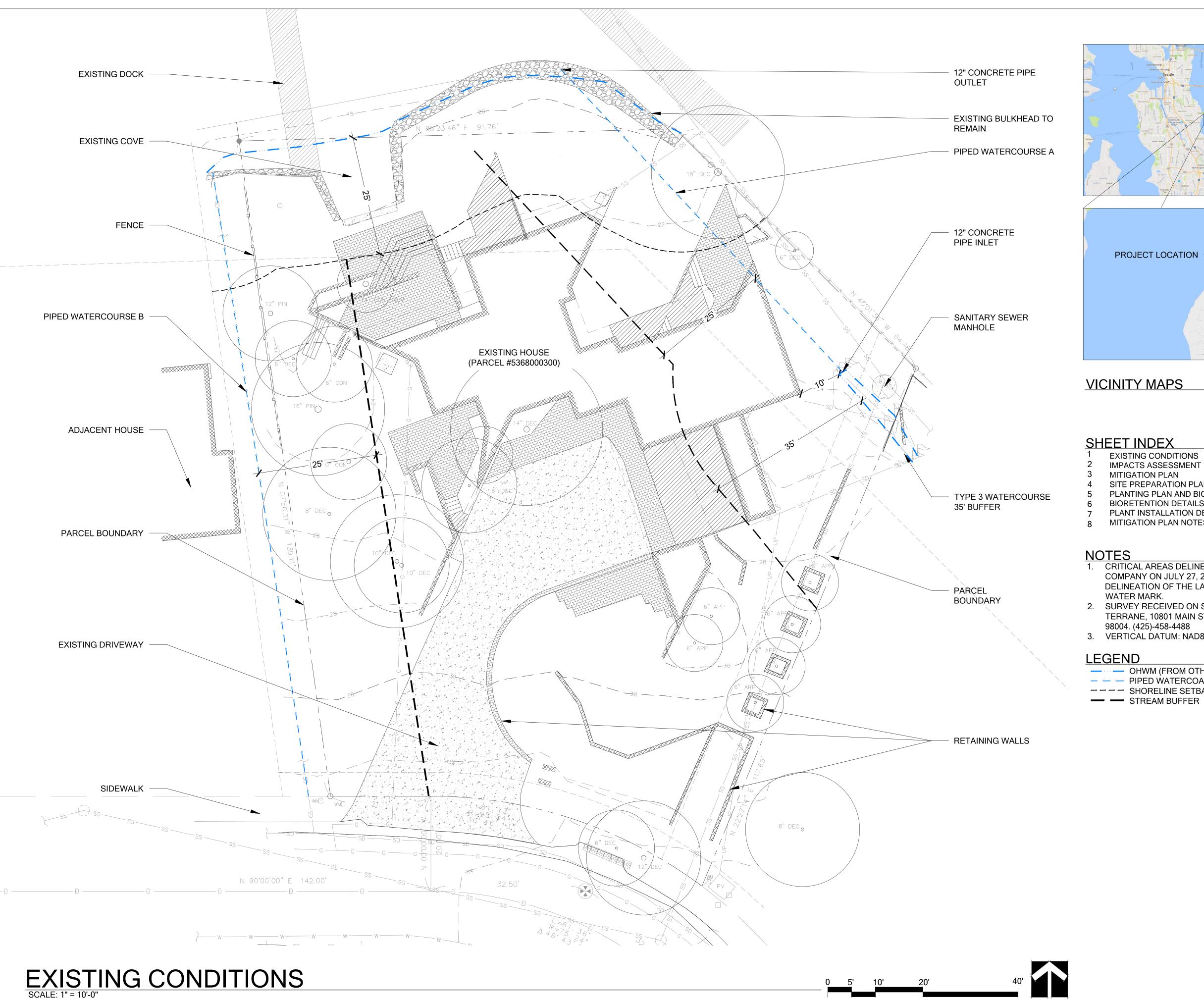
SHEET 2 OF 2

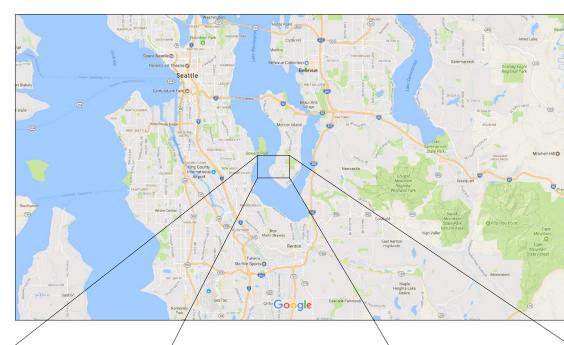
SURVEYORS

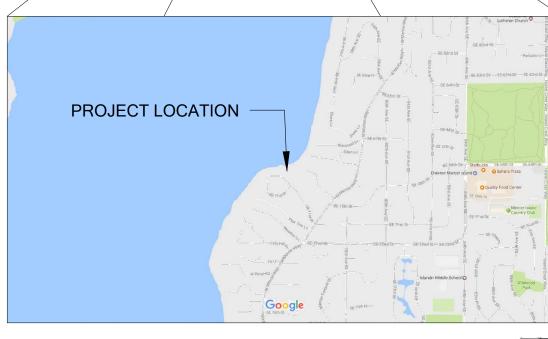
DOCK TO REMAIN

NOTE: THE EXISTING UTILITIES AS SHOWN ARE ONLY APPROXIMATE. OTHER EXISTING UTILITIES MAY EXIST ALONG THIS PROPOSED ALIGNMENT. IT SHALL BE THE CONTRACTOR AND OR OWNERS RESPONSIBILITY TO VERIFY THE SIZE TYPE LOCATION AND DEPTH OF ALL EXISTING UTILITIES PRIOR TO STARTING CONSTRUCTION

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VICINITY MAPS



- MITIGATION PLAN
- SITE PREPARATION PLAN PLANTING PLAN AND BIORETENTION AREA
- BIORETENTION DETAILS
- PLANT INSTALLATION DETAILS AND NOTES
- MITIGATION PLAN NOTES
- NOTES

 1. CRITICAL AREAS DELINEATED BY THE WATERSHED DELINEATION OF THE LAKE WASHINGTON ORDINARY HIGH WATER MARK.
- 2. SURVEY RECEIVED ON SEPTEMBER 13, 2016 FROM TERRANE, 10801 MAIN STREET, SUITE 102, BELLEVUE, WA 98004. (425)-458-4488
- 3. VERTICAL DATUM: NAD83
- OHWM (FROM OTHERS)
- − ← PIPED WATERCOARSE
- --- SHORELINE SETBACK

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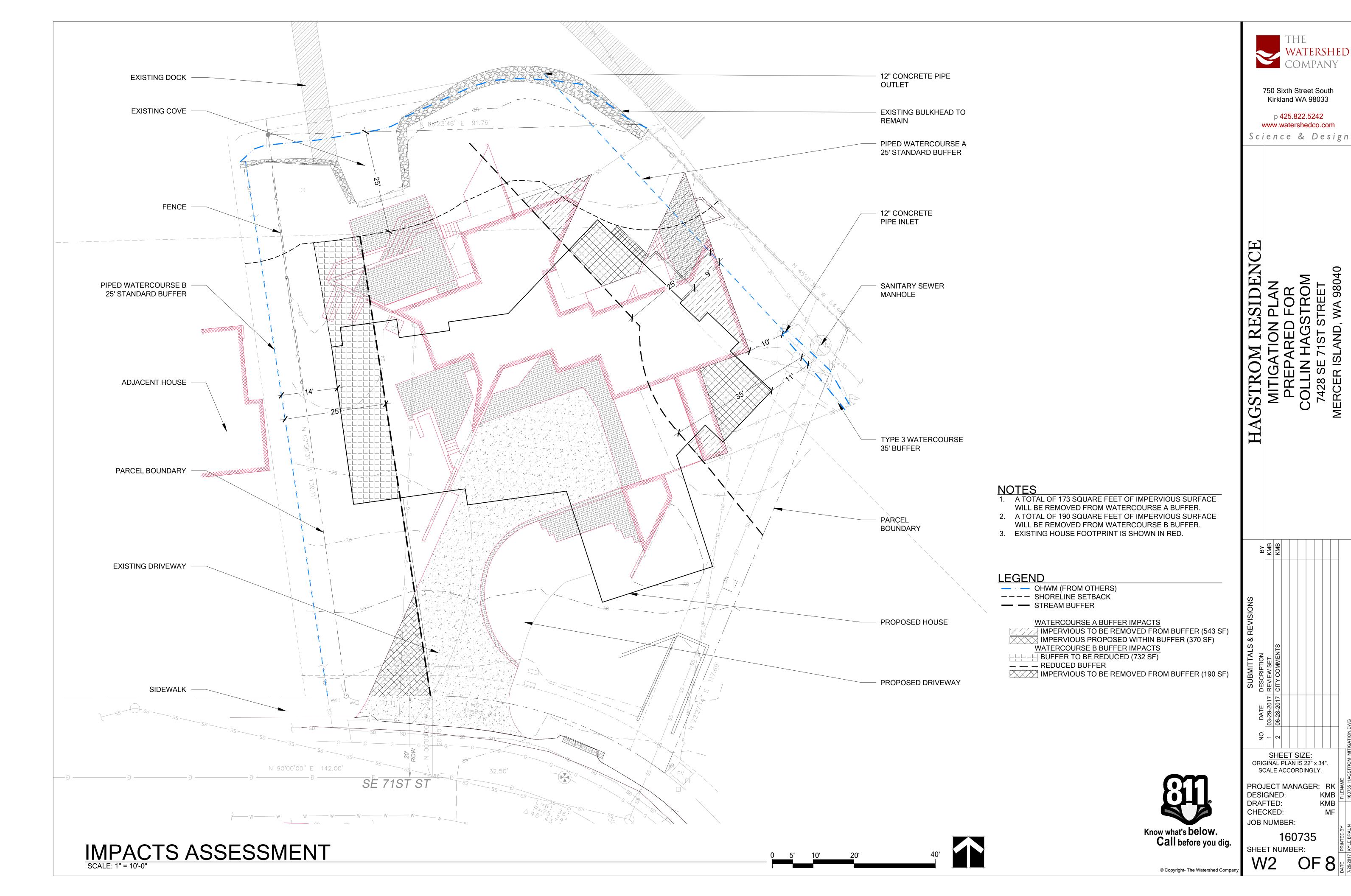
KMB KMB KMB

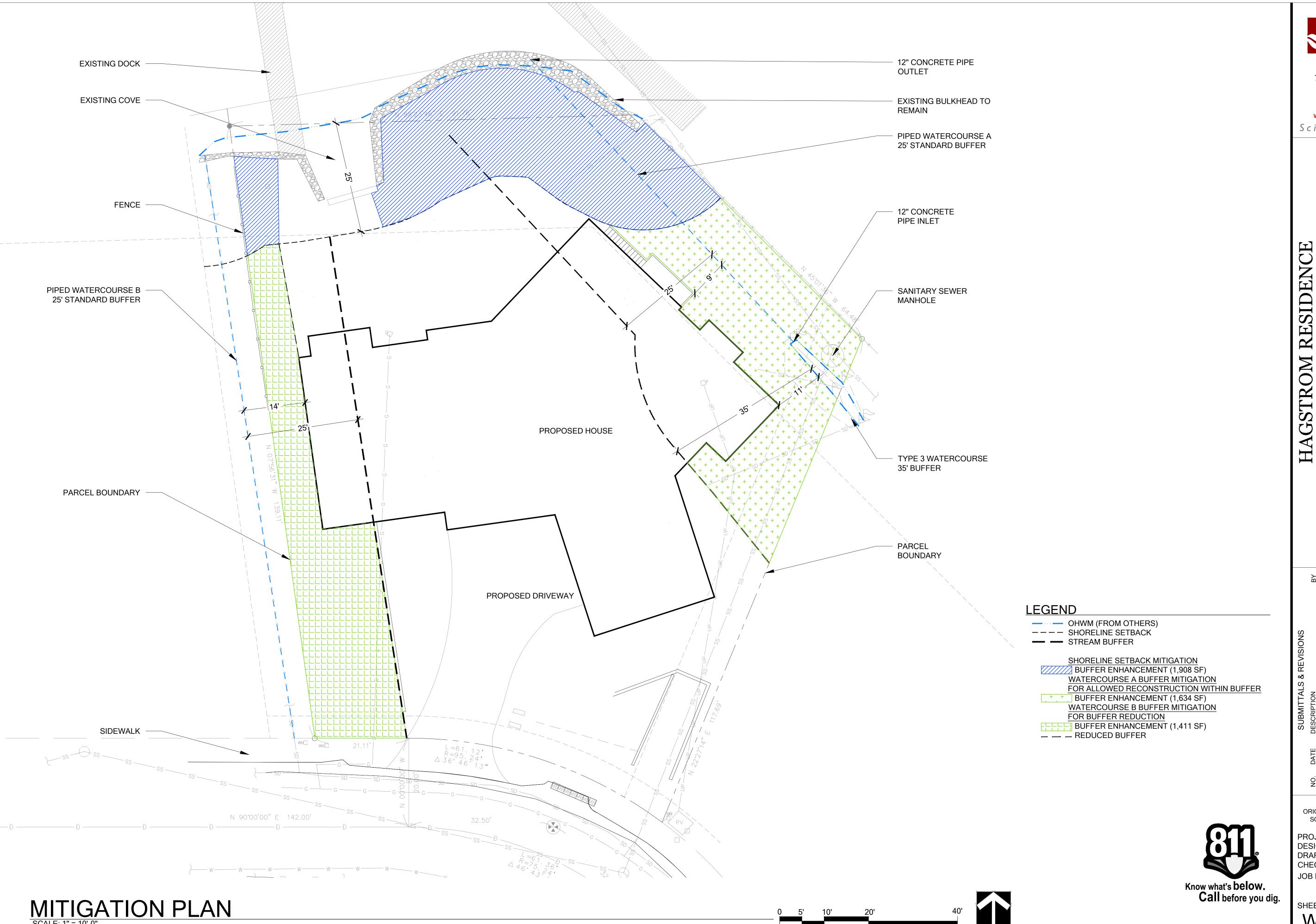
SHEET SIZE: ORIGINAL PLAN IS 22" x 34". SCALE ACCORDINGLY.

PROJECT MANAGER: RK DESIGNED: DRAFTED: KMB CHECKED:

JOB NUMBER:

SHEET NUMBER:





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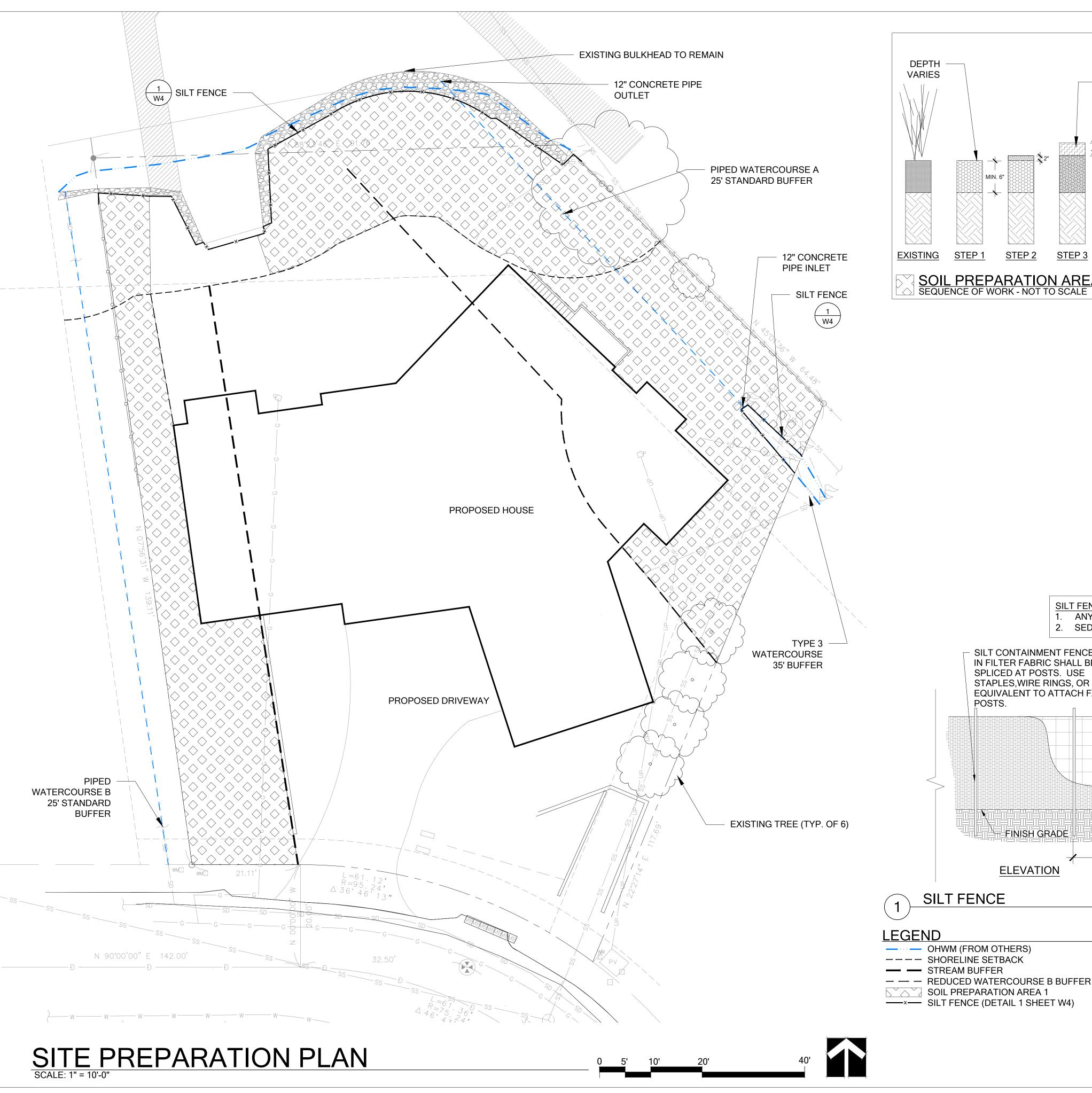
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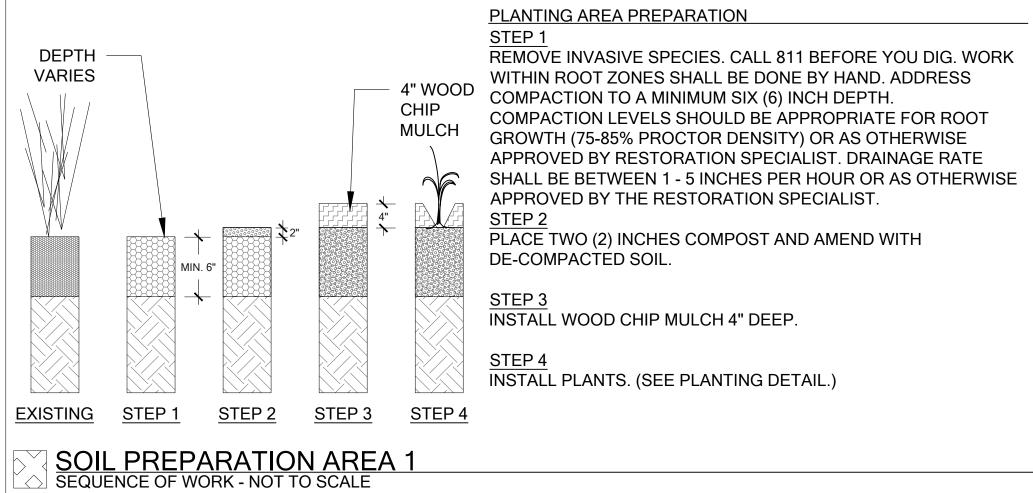
PROJECT MANAGER: RK DESIGNED: DRAFTED: KMB CHECKED:

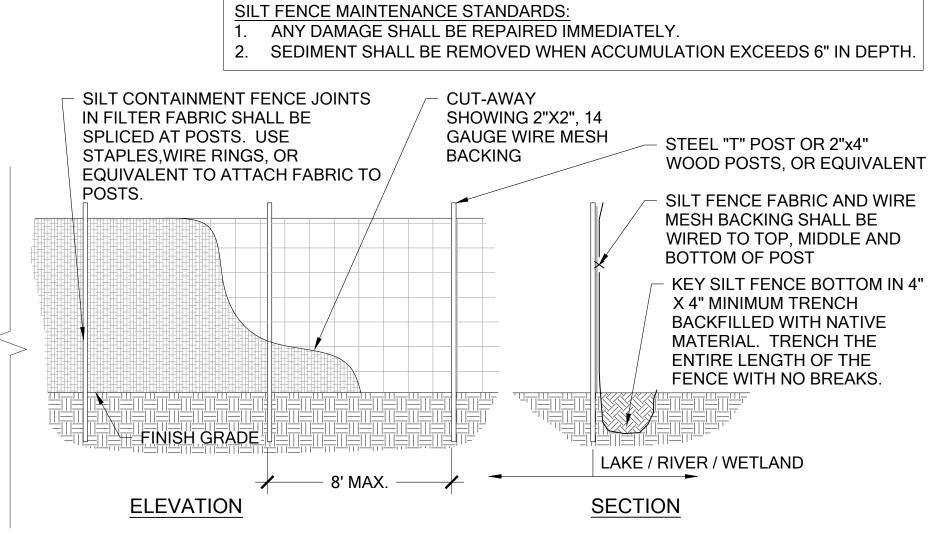
JOB NUMBER:

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SHEET NUMBER:







NOTES

1. SILT FENCE SHALL BE INSTALLED PRIOR TO ANY CONSTRUCTION ACTIVITIES.



Scale: NTS

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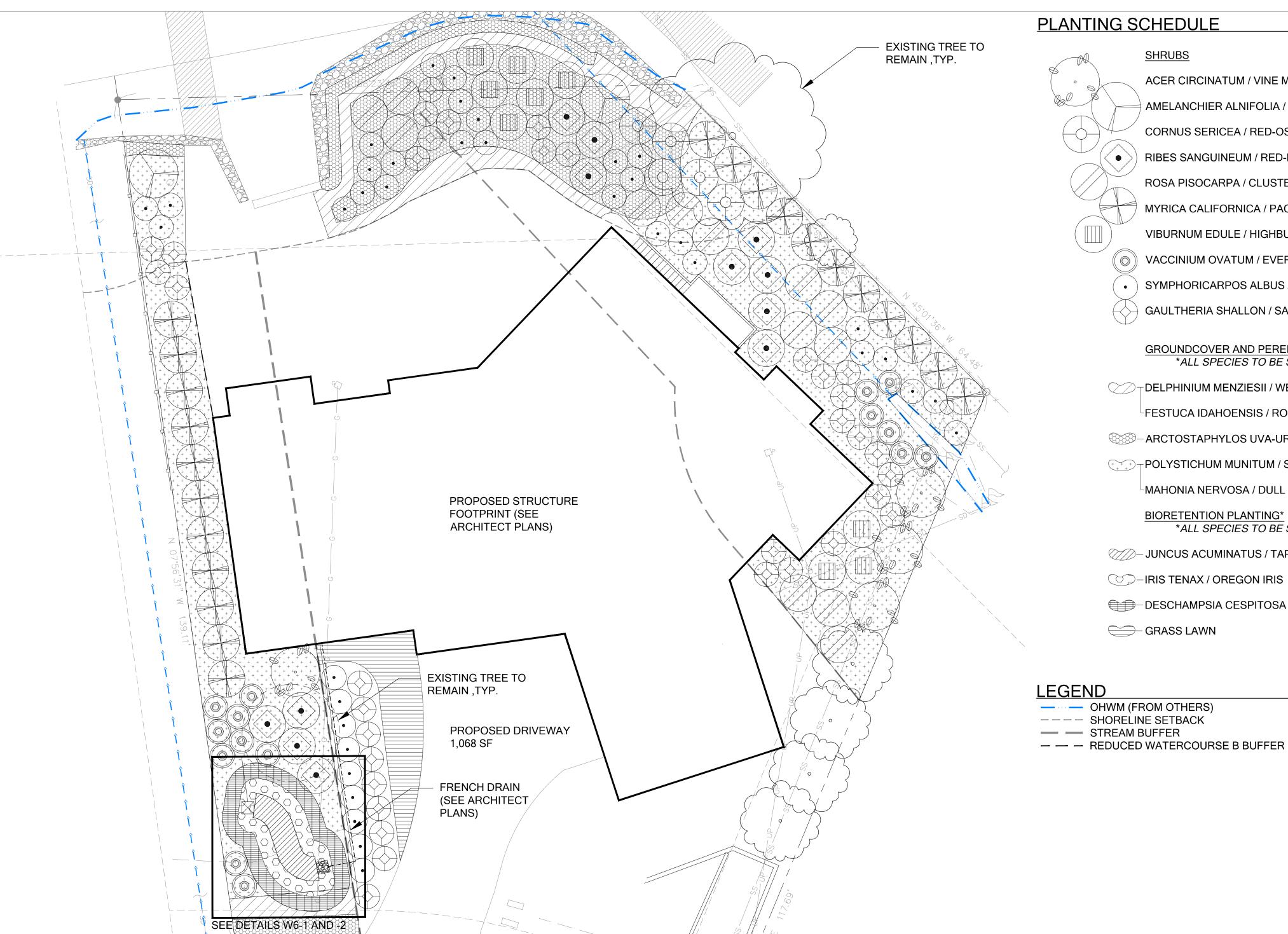
KMB KMB

SHEET SIZE: ORIGINAL PLAN IS 22" x 34". SCALE ACCORDINGLY.

PROJECT MANAGER: RK DESIGNED: KMB DRAFTED: KMB CHECKED:

JOB NUMBER: SHEET NUMBER:

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PLANTING SCHEDULE

| | <u>SHRUBS</u> | <u>QTY</u> | <u>SPACING</u> | SIZE |
|-------|--|------------|-----------------------|--------|
| • | ACER CIRCINATUM / VINE MAPLE | 4 | ALL SHRUBS TO | 5 GAL. |
| | AMELANCHIER ALNIFOLIA / SERVICEBERRY | 2 | BE SPACED PER PLAN | 5 GAL. |
| | CORNUS SERICEA / RED-OSIER DOGWOOD | 5 | I LIVI LAN | 2 GAL. |
| | RIBES SANGUINEUM / RED-FLOWERING CURRANT | 12 | | 2 GAL. |
| | ROSA PISOCARPA / CLUSTERED ROSE | 13 | | 2 GAL. |
| | MYRICA CALIFORNICA / PACIFIC WAX MYRTLE | 22 | | 5 GAL. |
| | VIBURNUM EDULE / HIGHBUSH-CRANBERRY | 9 | | 2 GAL. |
| | VACCINIUM OVATUM / EVERGREEN HUCKLEBERRY | 15 | | 2 GAL. |
| • | SYMPHORICARPOS ALBUS / SNOWBERRY | 37 | | 2 GAL. |
| | GAULTHERIA SHALLON / SALAL | 35 | | 2 GAL. |
| | GROUNDCOVER AND PERENNIALS* *ALL SPECIES TO BE SPACED TRIANGULARLY | | | |
| | DELPHINIUM MENZIESII / WESTERN LARKSPUR | 20 | 36" O.C. | 1 GAL. |
| | FESTUCA IDAHOENSIS / ROEMER'S FESCUE | 40 | 36" O.C. | 1 GAL. |
| | ARCTOSTAPHYLOS UVA-URSI / KINNIKINNICK | 130 | 36" O.C. | 1 GAL. |
| + + + | POLYSTICHUM MUNITUM / SWORD FERN | 85 | 48" O.C. | 1 GAL. |
| | MAHONIA NERVOSA / DULL MAHONIA (DWARF OREGON GRAPE) | 85 | 48" O.C. | 1 GAL. |
| | BIORETENTION PLANTING* *ALL SPECIES TO BE SPACED TRIANGULARLY | | | |
| | JUNCUS ACUMINATUS / TAPER-TIPPED RUSH | 15 | 24" O.C. | 1 GAL. |
| | -IRIS TENAX / OREGON IRIS | 50 | 18" O.C. | 1 GAL. |
| | DESCHAMPSIA CESPITOSA / TUFTED HAIRGRASS | 40 | 24" O.C. | 1 GAL. |
| | GRASS LAWN | | | |

LEGEND

— OHWM (FROM OTHERS) ---- SHORELINE SETBACK

— STREAM BUFFER

- 1. APPLICABLE EROSION CONTROL MEASURES SHALL BE INSTALLED PRIOR TO ANY CONSTRUCTION ACTIVITIES. 2. REFER TO DETAIL 2, SHEET W7 FOR PLANT SPACING
- 4. THE BIORETENTION AREA HAS BEEN ADEQUATELY SIZED TO TREAT 99% OF THE RUNOFF VOLUME THROUGH THE 18-INCH THICK BIORETENTION SOIL LAYER, FOR THE REQUIRED WATER QUALITY TREATMENT. DUE TO THE UNDERLYING LOW PERMEABLE NATIVE SOILS, NATIVE INFILTRATION IN THE SOIL SUBGRADE IS NOT ANTICIPATED. THE BIORETENTION AREA WILL BE EQUIPPED WITH A PERFORATED UNDERDRAIN LOCATED WITHIN A WILL CONVEY THE FLOWS NORTH, EVENTUALLY CONNECTING INTO THE EXISTING DRAINAGE SYSTEM.





KWB KWB

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CHECKED:

JOB NUMBER:

WATERSHED

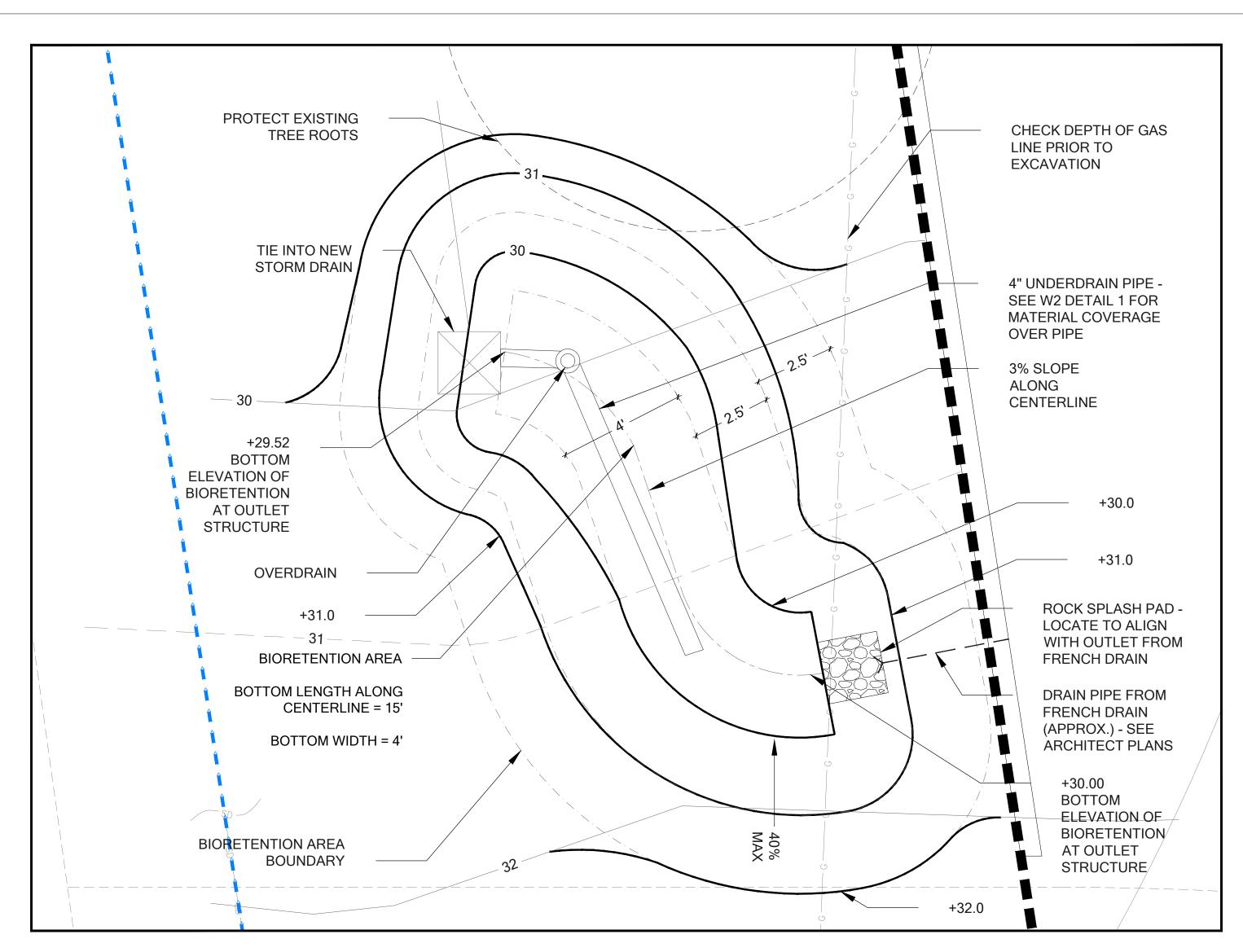
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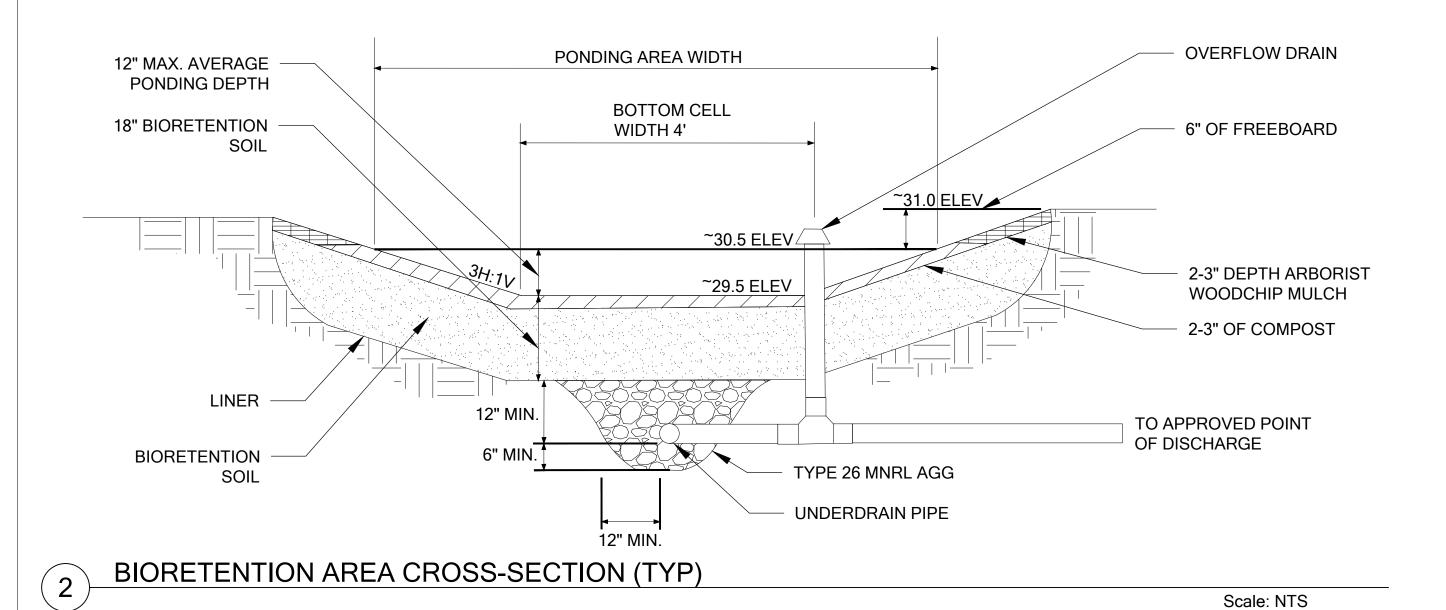
LAYOUT. DETAIL. 3. REFER TO DETAIL 1, SHEET W7 FOR CONTAINER PLANTING DETAIL

GRAVEL SUB-BASE THAT WILL COLLECT THE TREATED RUNOFF FROM THE BIORETENTION SOIL LAYER AND



BIORETENTION PLAN DETAIL

Scale: NTS



NOTE

- APPLICABLE EROSION CONTROL MEASURES SHALL BE INSTALLED PRIOR TO ANY CONSTRUCTION ACTIVITIES.
- 2. THE BIORETENTION AREA HAS BEEN ADEQUATELY SIZED TO TREAT 99% OF THE RUNOFF VOLUME THROUGH THE 18-INCH THICK BIORETENTION SOIL LAYER, FOR THE REQUIRED WATER QUALITY TREATMENT. DUE TO THE UNDERLYING LOW PERMEABLE NATIVE SOILS, NATIVE INFILTRATION IN THE SOIL SUBGRADE IS NOT ANTICIPATED. THE BIORETENTION AREA WILL BE EQUIPPED WITH A PERFORATED UNDERDRAIN LOCATED WITHIN A GRAVEL SUB-BASE THAT WILL COLLECT THE TREATED RUNOFF FROM THE BIORETENTION SOIL LAYER AND WILL CONVEY THE FLOWS NORTH, EVENTUALLY CONNECTING INTO THE EXISTING DRAINAGE SYSTEM.



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HAGSTROM RESIDENCE
MITIGATION PLAN
PREPARED FOR
COLLIN HAGSTROM

SUBMITTALS & REVISIONS

NO. DATE DESCRIPTION

1 03-29-2017 REVIEW SET

2 06-28-2017 CITY COMMENTS

SI NO-12-2017 BIORETENTION AREA

SI NO-12-2017 BIORETENTION AREA

LM

SI NO-12-2017 BIORETENTION AREA

BIORETENTION AREA

BIORETENTION AREA

BIORETENTION AREA

BIORETENTIO

SCALE ACCORDINGLY

LM/MF/KMB

DESIGNED: DRAFTED:

CHECKED:

JOB NUMBER:

SHEET NUMBER:

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BIORETENTION DETAILS





PLANT INSTALLATION SPECIFICATIONS

GENERAL NOTES

QUALITY ASSURANCE

- PLANTS SHALL MEET OR EXCEED THE SPECIFICATIONS OF FEDERAL, STATE, AND LOCAL LAWS REQUIRING INSPECTION FOR PLANT DISEASE AND INSECT CONTROL
- 2. PLANTS SHALL BE HEALTHY, VIGOROUS, AND WELL-FORMED, WITH WELL DEVELOPED, FIBROUS ROOT SYSTEMS, FREE FROM DEAD BRANCHES OR ROOTS. PLANTS SHALL BE FREE FROM DAMAGE CAUSED BY TEMPERATURE EXTREMES, LACK OR EXCESS OF MOISTURE, INSECTS, DISEASE, AND MECHANICAL INJURY. PLANTS IN LEAF SHALL BE WELL FOLIATED AND OF GOOD COLOR. PLANTS SHALL BE HABITUATED TO THE OUTDOOR ENVIRONMENTAL CONDITIONS INTO WHICH THEY WILL BE PLANTED (HARDENED-OFF).
- 3. TREES WITH DAMAGED, CROOKED, MULTIPLE OR BROKEN LEADERS WILL BE REJECTED. WOODY PLANTS WITH ABRASIONS OF THE BARK OR SUN SCALD WILL BE REJECTED.
- 4. NOMENCLATURE: PLANT NAMES SHALL CONFORM TO FLORA OF THE PACIFIC NORTHWEST BY HITCHCOCK AND CRONQUIST, UNIVERSITY OF WASHINGTON PRESS, 1973 AND/OR TO A FIELD GUIDE TO THE COMMON WETLAND PLANTS OF WESTERN WASHINGTON & NORTHWESTERN OREGON, ED. SARAH SPEAR COOKE, SEATTLE AUDUBON SOCIETY, 1997

- 1. PLANTS/PLANT MATERIALS. PLANTS AND PLANT MATERIALS SHALL INCLUDE ANY LIVE PLANT MATERIAL USED ON THE PROJECT. THIS INCLUDES BUT IS NOT LIMITED TO CONTAINER GROWN, B&B OR BAREROOT PLANTS; LIVE STAKES AND FASCINES (WATTLES); TUBERS, CORMS, BULBS, ETC..; SPRIGS, PLUGS, AND LINERS.
- 2. CONTAINER GROWN. CONTAINER GROWN PLANTS ARE THOSE WHOSE ROOTBALLS ARE ENCLOSED IN A POT OR BAG IN WHICH THAT PLANT GREW.

SUBSTITUTIONS

- 1. IT IS THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN SPECIFIED MATERIALS IN ADVANCE IF SPECIAL GROWING, MARKETING OR OTHER ARRANGEMENTS MUST BE MADE IN ORDER TO SUPPLY SPECIFIED MATERIALS.
- 2. SUBSTITUTION OF PLANT MATERIALS NOT ON THE PROJECT LIST WILL NOT BE PERMITTED UNLESS AUTHORIZED IN WRITING BY THE RESTORATION CONSULTANT.
- 3. IF PROOF IS SUBMITTED THAT ANY PLANT MATERIAL SPECIFIED IS NOT OBTAINABLE, A PROPOSAL WILL BE CONSIDERED FOR USE OF THE NEAREST EQUIVALENT SIZE OR ALTERNATIVE SPECIES, WITH CORRESPONDING ADJUSTMENT OF CONTRACT PRICE.
- SUCH PROOF WILL BE SUBSTANTIATED AND SUBMITTED IN WRITING TO THE CONSULTANT AT LEAST 30 DAYS PRIOR TO START OF WORK UNDER THIS SECTION.

INSPECTION

- 1. PLANTS SHALL BE SUBJECT TO INSPECTION AND APPROVAL BY THE RESTORATION CONSULTANT FOR CONFORMANCE TO SPECIFICATIONS, EITHER AT TIME OF DELIVERY ON-SITE OR AT THE GROWER'S NURSERY. APPROVAL OF PLANT MATERIALS AT ANY TIME SHALL NOT IMPAIR THE SUBSEQUENT RIGHT OF INSPECTION AND REJECTION DURING PROGRESS OF THE WORK
- 2. PLANTS INSPECTED ON SITE AND REJECTED FOR NOT MEETING SPECIFICATIONS MUST BE REMOVED IMMEDIATELY FROM SITE OR RED-TAGGED AND REMOVED AS SOON AS POSSIBLE.
- THE RESTORATION CONSULTANT MAY ELECT TO INSPECT PLANT MATERIALS AT THE PLACE OF GROWTH. AFTER INSPECTION AND ACCEPTANCE. THE RESTORATION CONSULTANT MAY REQUIRE THE INSPECTED PLANTS BE LABELED AND RESERVED FOR PROJECT. SUBSTITUTION OF THESE PLANTS WITH OTHER INDIVIDUALS, EVEN OF THE SAME SPECIES AND SIZE, IS UNACCEPTABLE.

MEASUREMENT OF PLANTS

- 1. PLANTS SHALL CONFORM TO SIZES SPECIFIED UNLESS SUBSTITUTIONS ARE MADE AS OUTLINED IN THIS CONTRACT.
- 2. HEIGHT AND SPREAD DIMENSIONS SPECIFIED REFER TO MAIN BODY OF PLANT AND NOT BRANCH OR ROOT TIP TO TIP. PLANT DIMENSIONS SHALL BE MEASURED WHEN THEIR BRANCHES OR ROOTS ARE IN THEIR NORMAL POSITION.
- WHERE A RANGE OF SIZE IS GIVEN, NO PLANT SHALL BE LESS THAN THE MINIMUM SIZE AND AT LEAST 50% OF THE PLANTS SHALL BE AS LARGE AS THE MEDIAN OF THE SIZE RANGE. (EXAMPLE: IF THE SIZE RANGE IS 12" TO 18", AT LEAST 50% OF PLANTS MUST BE 15" TALL.).

SUBMITTALS

PROPOSED PLANT SOURCES

1. WITHIN 45 DAYS AFTER AWARD OF THE CONTRACT, SUBMIT A COMPLETE LIST OF PLANT MATERIALS PROPOSED TO BE PROVIDED DEMONSTRATING CONFORMANCE WITH THE REQUIREMENTS SPECIFIED. INCLUDE THE NAMES AND ADDRESSES OF ALL GROWERS AND NURSERIES

PRODUCT CERTIFICATES

- PLANT MATERIALS LIST SUBMIT DOCUMENTATION TO CONSULTANT AT LEAST 30 DAYS PRIOR TO START OF WORK UNDER THIS SECTION THAT PLANT MATERIALS HAVE BEEN ORDERED. ARRANGE PROCEDURE FOR INSPECTION OF PLANT MATERIAL WITH CONSULTANT AT TIME OF SUBMISSION.
- HAVE COPIES OF VENDOR'S OR GROWERS' INVOICES OR PACKING SLIPS FOR ALL PLANTS ON SITE DURING INSTALLATION INVOICE OR PACKING SLIP SHOULD LIST SPECIES BY SCIENTIFIC NAME, QUANTITY, AND DATE DELIVERED (AND GENETIC ORIGIN IF THAT INFORMATION WAS PREVIOUSLY REQUESTED).

DELIVERY, HANDLING, & STORAGE

NOTIFICATION

CONTRACTOR MUST NOTIFY CONSULTANT 48 HOURS OR MORE IN ADVANCE OF DELIVERIES SO THAT CONSULTANT MAY ARRANGE FOR INSPECTION.

PLANT MATERIALS

- TRANSPORTATION DURING SHIPPING, PLANTS SHALL BE PACKED TO PROVIDE PROTECTION AGAINST CLIMATE EXTREMES, BREAKAGE AND DRYING. PROPER VENTILATION AND PREVENTION OF DAMAGE TO BARK, BRANCHES, AND ROOT SYSTEMS MUST BE ENSURED.
- SCHEDULING AND STORAGE PLANTS SHALL BE DELIVERED AS CLOSE TO PLANTING AS POSSIBLE. PLANTS IN STORAGE MUST BE PROTECTED AGAINST ANY CONDITION THAT IS DETRIMENTAL TO THEIR CONTINUED HEALTH AND VIGOR
- HANDLING PLANT MATERIALS SHALL NOT BE HANDLED BY THE TRUNK, LIMBS, OR FOLIAGE BUT ONLY BY THE CONTAINER, BALL BOX, OR OTHER PROTECTIVE STRUCTURE, EXCEPT BAREROOT PLANTS SHALL BE KEPT IN BUNDLES UNTIL PLANTING AND THEN HANDLED CAREFULLY BY THE TRUNK OR STEM.
- LABELS PLANTS SHALL HAVE DURABLE, LEGIBLE LABELS STATING CORRECT SCIENTIFIC NAME AND SIZE. TEN PERCENT OF CONTAINER GROWN PLANTS IN INDIVIDUAL POTS SHALL BE LABELED. PLANTS SUPPLIED IN FLATS. RACKS. BOXES, BAGS, OR BUNDLES SHALL HAVE ONE LABEL PER GROUP.

WARRANTY

PLANT WARRANTY

PLANTS MUST BE GUARANTEED TO BE TRUE TO SCIENTIFIC NAME AND SPECIFIED SIZE, AND TO BE HEALTHY AND CAPABLE OF VIGOROUS GROWTH.

REPLACEMENT

- 1. PLANTS NOT FOUND MEETING ALL OF THE REQUIRED CONDITIONS AT THE CONSULTANT'S DISCRETION MUST BE REMOVED FROM SITE AND REPLACED IMMEDIATELY AT THE CONTRACTOR'S EXPENSE.
- 2. PLANTS NOT SURVIVING AFTER ONE YEAR TO BE REPLACED AT THE CONTRACTOR'S EXPENSE.

PLANT MATERIAL

GENERAL

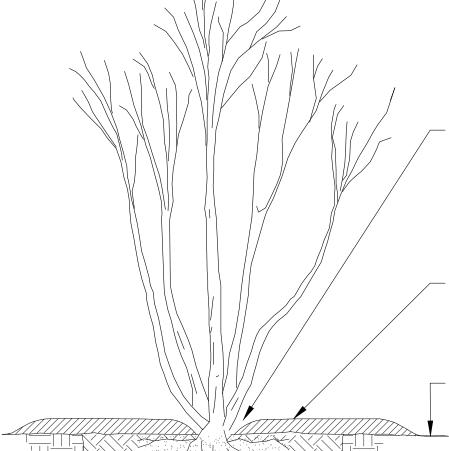
- 1. PLANTS SHALL BE NURSERY GROWN IN ACCORDANCE WITH GOOD HORTICULTURAL PRACTICES UNDER CLIMATIC CONDITIONS SIMILAR TO OR MORE SEVERE THAN THOSE OF THE PROJECT SITE.
- PLANTS SHALL BE TRUE TO SPECIES AND VARIETY OR SUBSPECIES. NO CULTIVARS OR NAMED VARIETIES SHALL BE USED UNLESS SPECIFIED AS SUCH.

QUANTITIES

SEE PLANT LIST ON ACCOMPANYING PLANS AND PLANT SCHEDULES.

ROOT TREATMENT

- CONTAINER GROWN PLANTS (INCLUDES PLUGS): PLANT ROOT BALLS MUST HOLD TOGETHER WHEN THE PLANT IS REMOVED FROM THE POT, EXCEPT THAT A SMALL AMOUNT OF LOOSE SOIL MAY BE ON THE TOP OF THE ROOTBALL.
- PLANTS MUST NOT BE ROOT-BOUND; THERE MUST BE NO CIRCLING ROOTS PRESENT IN ANY PLANT INSPECTED.
- ROOTBALLS THAT HAVE CRACKED OR BROKEN WHEN REMOVED FROM THE CONTAINER SHALL BE REJECTED.



- 1. PLANTING PIT SHALL NOT BE LESS THAN (2) TIMES THE WIDTH OF THE ROOT BALL DIA.
- 2. LOOSEN SIDES AND BOTTOMS OF PLANTING PIT
- 3. SOAK PLANTING PIT AFTER PLANTING

REMOVE FROM POT OR BURLAP & ROUGH-UP ROOT BALL BEFORE INSTALLING. UNTANGLE AND STRAIGHTEN CIRCLING ROOTS - PRUNE IF NECESSARY. IF PLANT IS EXCEPTIONALLY ROOT-BOUND, DO NOT PLANT AND RETURN TO NURSERY FOR AN ACCEPTABLE ALTERNATIVE

SPECIFIED MULCH LAYER. HOLD BACK MULCH FROM TRUNK/STEMS

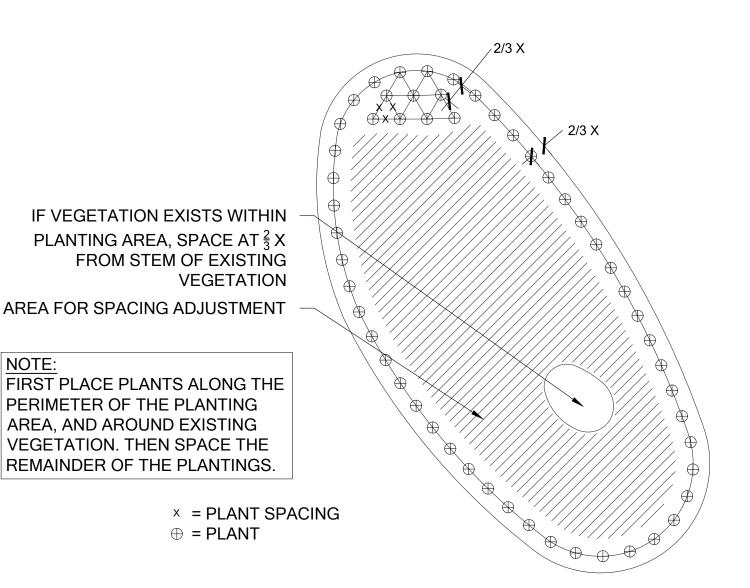
FINISH GRADE

REMOVE DEBRIS AND LARGE ROCKS FROM PLANTING PIT AND SCARIFY SIDES AND BASE. BACKFILL WITH SPECIFIED SOIL, FIRM UP SOIL AROUND PLANT.

TREE AND SHRUB PLANTING

- 2X MIN DIA. ROOTBALL 🛶

Scale: NTS



PLANT SPACING

Scale: NTS

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HA

BY KMB KMB

ORIGINAL PLAN IS 22" x 34". SCALE ACCORDINGLY **DESIGNED:**

PROJECT MANAGER: RK DRAFTED:

SHEET SIZE:

KMB

KMB

CHECKED: JOB NUMBER:

SHEET NUMBER:

PLANT INSTALLATION DETAILS AND NOTES

MITIGATION PLAN NOTES

OVERVIEW

A COMPREHENSIVE FIVE-YEAR MAINTENANCE AND MONITORING PLAN IS INCLUDED AS PART OF THE BUFFER ENHANCEMENT. THE PLAN SPECIFIES APPROPRIATE SPECIES FOR PLANTING AND PLANTING TECHNIQUES, DESCRIBES PROPER MAINTENANCE ACTIVITIES, AND SETS FORTH PERFORMANCE STANDARDS TO BE MET YEARLY DURING MONITORING. THIS WILL ENSURE THAT ENHANCEMENT/RESTORATION PLANTINGS WILL BE MAINTAINED, MONITORED, AND SUCCESSFULLY ESTABLISHED WITHIN THE FIRST FIVE YEARS FOLLOWING IMPLEMENTATION.

PROPOSED RESTORATION BEGINS WITH INCORPORATING COMPOST INTO THE ENHANCEMENT AREA. THIS WILL BE FOLLOWED BY INSTALLATION OF NATIVE SHRUB AND GROUNDCOVER SPECIES SUITABLE TO THE SITE (APPENDIX A). NINE NATIVE SMALL TREE/SHRUB SPECIES FIVE NATIVE GROUNDCOVER, PERENNIAL, OR GRASS SPECIES ARE PROPOSED IN THE MITIGATION AREA. THE PLAN CALLS FOR NEW PLANTINGS WITHIN THE INNER 25-FOOT SHORELINE AREA AND THE WATERCOURSE BUFFERS. NATIVE PLANTINGS ARE INTENDED TO INCREASE NATIVE PLANT COVER, IMPROVE NATIVE SPECIES DIVERSITY, INCREASE VEGETATIVE STRUCTURE, AND PROVIDE FOOD AND OTHER HABITAT RESOURCES FOR WILDLIFE.

GOALS

1. ENHANCE SHORELINE AND WATERCOURSE BUFFERS.

- a. REDUCE THE AMOUNT OF IMPERVIOUS SURFACE AREA WITHIN WATERCOURSE BUFFERS.
- b. ESTABLISH DENSE AND DIVERSE NATIVE SMALL TREE, SHRUB, AND GROUNDCOVER VEGETATION THROUGHOUT THE MITIGATION AREAS.

PERFORMANCE STANDARDS

THE STANDARDS LISTED BELOW WILL BE USED TO JUDGE THE SUCCESS OF THE PLAN OVER TIME. IF THE STANDARDS ARE MET AT THE END OF THE FIVE-YEAR MONITORING PERIOD, THE CITY SHALL ISSUE RELEASE OF THE PERFORMANCE BOND.

1. SURVIVAL:

- a. 100% SURVIVAL OF ALL INSTALLED TREES AND SHRUBS AT THE END OF YEAR ONE. THIS STANDARD MAY BE MET THROUGH ESTABLISHMENT OF INSTALLED PLANTS OR BY REPLANTING AS NECESSARY TO ACHIEVE THE REQUIRED NUMBERS.
- b. 80% SURVIVAL OF ALL TREES AND SHRUBS AT THE END OF YEAR TWO. THIS STANDARD MAY BE MET THROUGH ESTABLISHMENT OF INSTALLED PLANTS OR BY REPLANTING AS NECESSARY TO ACHIEVE THE REQUIRED NUMBERS.
- i. SURVIVAL BEYOND YEAR TWO IS DIFFICULT TO TRACK. THEREFORE, A DIVERSITY STANDARD IS PROPOSED IN PLACE OF SURVIVAL (SEE #3, BELOW).

2. NATIVE VEGETATION COVER IN PLANTED AREAS:

- a. ACHIEVE AT LEAST 60% COVER OF NATIVE PLANTS BY THE END OF YEAR 3. VOLUNTEER SPECIES MAY COUNT TOWARDS THIS STANDARD. TOTAL NATIVE PLANT COVER MUST INCLUDE A MINIMUM OF 40% TREE AND SHRUB COVER.
- b. ACHIEVE AT LEAST 80% COVER OF NATIVE PLANTS BY THE END OF YEAR 5. VOLUNTEER SPECIES MAY COUNT TOWARDS THIS STANDARD. TOTAL NATIVE PLANT COVER MUST INCLUDE A MINIMUM OF 60% TREE AND SHRUB COVER.

3. SPECIES DIVERSITY IN PLANTED AREAS:

- a. ESTABLISH AT LEAST SIX NATIVE SMALL TREE/SHRUB SPECIES AND FOUR NATIVE GROUNDCOVER, SPECIES THROUGHOUT THE ENHANCEMENT AREAS BY YEAR 5. VOLUNTEER SPECIES MAY COUNT TOWARDS THIS STANDARD. "ESTABLISHMENT" IS CONSIDERED AT LEAST FIVE HEALTHY, INDIVIDUAL PLANTS OF A GIVEN SPECIES PRESENT WITHIN THE ENHANCEMENT AREAS.
- 4. INVASIVE SPECIES STANDARD: NO MORE THAN 10% COVER OF INVASIVE SPECIES IN THE PLANTING AREA, IN ANY MONITORING YEAR. INVASIVE SPECIES ARE DEFINED AS ANY CLASS A, B, OR C NOXIOUS WEEDS AS LISTED BY THE KING COUNTY NOXIOUS WEED CONTROL BOARD.

MONITORING METHODS

THIS MONITORING PROGRAM IS DESIGNED TO TRACK THE SUCCESS OF THE MITIGATION SITE OVER TIME BY MEASURING THE DEGREE TO WHICH THE PERFORMANCE STANDARDS LISTED ABOVE ARE BEING MET. AN AS-BUILT PLAN WILL BE PREPARED WITHIN 30 DAYS OF SUBSTANTIALLY COMPLETE CONSTRUCTION OF THE MITIGATION AREAS. THE AS-BUILT PLAN WILL DOCUMENT CONFORMANCE WITH THESE PLANS AND WILL DISCLOSE ANY SUBSTITUTIONS OR OTHER NON-CRITICAL DEPARTURES. THE AS-BUILT PLAN WILL ESTABLISH BASELINE PLANT INSTALLATION QUANTITIES, PHOTOPOINTS, AND THREE 50-FOOT MONITORING TRANSECTS THAT WILL BE USED THROUGHOUT THE MONITORING PERIOD TO MEASURE THE PERFORMANCE STANDARDS.

MONITORING WILL OCCUR TWICE ANNUALLY FOR FIVE YEARS. THE FIRST MONITORING VISIT WILL TAKE PLACE IN THE SPRING. THIS VISIT WILL RECORD NECESSARY WEEDING, INVASIVE CONTROL, AND OTHER MAINTENANCE NEEDS. THE RESTORATION SPECIALIST WILL THEN NOTIFY THE OWNER AND/OR MAINTENANCE CREWS OF NECESSARY EARLY SEASON MAINTENANCE. THE LATE-SEASON VISIT WILL OCCUR IN LATE SUMMER OR FALL AND WILL RECORD THE FOLLOWING AND BE SUBMITTED IN AN ANNUAL REPORT TO THE CITY:

- 1. GENERAL SUMMARY OF THE SPRING VISIT.
- 2. FIRST- AND SECOND-YEAR COUNTS OF SURVIVING AND DEAD/DYING PLANTS BY SPECIES IN THE PLANTING AREAS.
- 3. ESTIMATES OF NATIVE SPECIES COVER USING COVER CLASS METHOD.
- 4. ESTIMATES OF INVASIVE SPECIES COVER USING COVER CLASS METHOD.
- 5. COUNTS OF ESTABLISHED NATIVE SPECIES TO DETERMINE SPECIES RICHNESS.
- 6. PHOTOGRAPHIC DOCUMENTATION AT PERMANENT PHOTOPOINTS.
- 7. INTRUSIONS INTO THE PLANTING AREAS, EROSION, VANDALISM, TRASH, AND OTHER ACTIONS DETRIMENTAL TO THE OVERALL HEALTH OF THE MITIGATION AREAS.
- 8. RECOMMENDATIONS FOR MAINTENANCE IN THE MITIGATION AREAS.
- 9. RECOMMENDATIONS FOR REPLACEMENT OF ALL DEAD OR DYING PLANT MATERIAL WITH SAME OR LIKE SPECIES AND NUMBER AS ON THE APPROVED PLAN.

CONSTRUCTION NOTES AND SPECIFICATIONS

SPECIFICATIONS FOR ITEMS IN BOLD CAN BE FOUND UNDER "MATERIAL SPECIFICATIONS AND DEFINITIONS."

GENERAL NOTES

- THE RESTORATION SPECIALIST WILL OVERSEE THE FOLLOWING:
- 1. CLEARING, SOIL DECOMPACTION, AND COMPOST INCORPORATION.
- 2. INVASIVE WEED CLEARING; AND
- 3. PLANT MATERIAL INSPECTION.

a) PLANT DELIVERY INSPECTION.

- b) 50% PLANT INSTALLATION/LAYOUT INSPECTION.
- c) 100% PLANT INSTALLATION INSPECTION

WORK SEQUENCE

- 1. CLEAR THE PLANTING AREA OF ALL INVASIVE WOODY VEGETATION INCLUDING BUT NOT LIMITED TO HIMALAYAN BLACKBERRY, ENGLISH IVY, AND ENGLISH LAUREL.
- 2. PREPARE BIORETENTION SUBGRADE BY RIPPING 6-8 INCHES DEEP.
- 3. INSTALL BIORETENTION UTILITIES (UNDERDRAIN, OVERDRAIN AND GRAVEL)
- 4. PLACE BIORETENTION SOIL
- 5. ROTO-TILL 2 INCHES OF COMPOST INTO THE UPPER 9 INCHES OF THE SOIL (NO COMPOST IN BIORETENTION AREA).
- 6. ALL PLANT INSTALLATION WILL TAKE PLACE DURING THE DORMANT SEASON (OCTOBER 15TH TO MARCH 1ST).
- 7. LAYOUT VEGETATION TO BE INSTALLED PER THE PLANTING PLAN AND PLANT SCHEDULE.
- 8. PREPARE A PLANTING PIT FOR EACH PLANT AND INSTALL PER THE PLANTING DETAILS.
- 9. MULCH EACH TREE AND SHRUB WITH A CIRCULAR WOOD CHIP MULCH RING, 4 INCHES THICK AND EXTENDING 9 INCHES FROM THE BASE OF THE PLANT (18-INCH DIAMETER).
- 10. INSTALL A TEMPORARY OR PERMANENT IRRIGATION SYSTEM AS NEEDED TO INSURE THAT ALL PLANTS RECEIVE AT LEAST ONE INCH OF WATER PER WEEK FROM JUNE 1ST SEPTEMBER 30TH.

 MAINTAIN IRRIGATION SYSTEM IN WORKING CONDITION FOR AT LEAST TWO SUMMERS AFTER INITIAL PLANT INSTALLATION.

MAINTENANCE

THIS SITE WILL BE MAINTAINED FOR FIVE YEARS FOLLOWING COMPLETION OF THE PLANT INSTALLATION.

- 1. REPLACE EACH PLANT FOUND DEAD IN THE SUMMER MONITORING VISIT DURING THE UPCOMING FALL DORMANT SEASON (OCTOBER 15TH TO MARCH 1ST).
- 2. FOLLOW THE RECOMMENDATIONS NOTED IN THE SPRING MONITORING SITE VISIT.
- 3. INVASIVE SPECIES MAINTENANCE PLAN:
- a) HIMALAYAN BLACKBERRY, ENGLISH IVY, ENGLISH LAUREL, AND OTHER INVASIVE WOODY VEGETATION WILL BE GRUBBED OUT BY HAND ON AN ONGOING BASIS, WITH CARE TAKEN TO GRUB OUT ROOTS EXCEPT WHERE SUCH WORK WILL JEOPARDIZE THE ROOTS OF INSTALLED OR VOLUNTEER NATIVE PLANTS.
- b) IF IT IS LIKELY THAT HAND REMOVAL WILL NOT BE COMPLETELY EFFECTIVE OR WILL DAMAGE DESIRABLE SPECIES, THEN APPLICATION OF AN HERBICIDE APPROVED FOR USE IN AQUATIC AREAS MAY BE USED. HERBICIDE APPLICATIONS MUST BE CONDUCTED ONLY BY A STATE-LICENSED APPLICATOR. APPLICATIONS SHOULD BE DONE BETWEEN MID-SPRING AND MID-SUMMER TO MAXIMIZE UPTAKE BY PLANTS. APPLICATION SHOULD BE A TARGETED METHOD SUCH AS SPOT SPRAY (PREFERRED FOR HIMALAYAN BLACKBERRY), OR WICK.
- 4. AT LEAST TWICE YEARLY, REMOVE BY HAND ALL COMPETING WEEDS AND WEED ROOTS FROM BENEATH EACH INSTALLED PLANT AND ANY DESIRABLE VOLUNTEER VEGETATION TO A DISTANCE OF 12 INCHES FROM THE MAIN PLANT STEM. WEEDING SHOULD OCCUR AS NEEDED DURING THE SPRING AND SUMMER. FREQUENT WEEDING WILL RESULT IN LOWER MORTALITY AND LOWER PLANT REPLACEMENT COSTS.
- 5. DO NOT WEED THE AREA NEAR THE PLANT BASES WITH STRING TRIMMER (WEED WHACKER). NATIVE PLANTS ARE EASILY DAMAGED OR KILLED, AND WEEDS EASILY RECOVER AFTER TRIMMING.
- APPLY SLOW RELEASE GRANULAR FERTILIZER TO EACH INSTALLED PLANT ANNUALLY IN THE SPRING (BY JUNE 1) OF YEARS 2 THROUGH 5.
- 7. MULCH THE WEEDED AREAS BENEATH EACH PLANT WITH WOOD CHIP MULCH AS NECESSARY TO MAINTAIN A MINIMUM 4-INCH-THICK, 18-INCH-DIAMETER MULCH RING.
- 8. THE TEMPORARY IRRIGATION SYSTEM WILL BE OPERATED TO ENSURE THAT PLANTS RECEIVE A MINIMUM OF ONE INCH OF WATER PER WEEK FROM JUNE 1ST THROUGH SEPTEMBER 30TH FOR THE FIRST TWO YEARS FOLLOWING INSTALLATION. IRRIGATION BEYOND THE SECOND YEAR MAY BE NEEDED BASED ON SITE PERFORMANCE OR SIGNIFICANT REPLANTING.

MATERIAL SPECIFICATIONS AND DEFINITIONS

- 1. COMPOST: CEDAR GROVE COMPOST OR EQUIVALENT PRODUCT. 100% VEGETABLE COMPOST WITH NO APPRECIABLE QUANTITIES OF SAND, GRAVEL, SAWDUST, OR OTHER NON-ORGANIC MATERIALS. QUANTITY REQUIRED: 30 CUBIC YARDS.
- 2. FERTILIZER: <u>SLOW RELEASE</u>, <u>GRANULAR PHOSPHOROUS-FREE</u> FERTILIZER. FOLLOW MANUFACTURER'S INSTRUCTIONS FOR APPLICATION. KEEP FERTILIZER IN A WEATHER-TIGHT CONTAINER WHILE ON SITE. NOTE THAT FERTILIZER IS TO BE APPLIED ONLY IN YEARS 2 THROUGH 5 AND <u>NOT</u> IN THE FIRST YEAR.
- 3. RESTORATION SPECIALIST: THE WATERSHED COMPANY [(425) 822-5242] PERSONNEL OR OTHER PERSON QUALIFIED TO EVALUATE ENVIRONMENTAL RESTORATION PROJECTS.
- 4. WOOD CHIP MULCH: CHIPPED WOODY MATERIAL APPROXIMATELY 1 INCH MINIMUM TO 3 INCHES IN MAXIMUM DIMENSION (NOT SAWDUST OR COARSE HOG FUEL). MULCH SHALL NOT CONTAIN APPRECIABLE QUANTITIES OF GARBAGE, PLASTIC, METAL, SOIL, AND DIMENSIONAL LUMBER OR CONSTRUCTION/ DEMOLITION DEBRIS. PACIFIC TOPSOIL SELLS SUITABLE WOODCHIP MULCH CALLED "WOOD CHIP MULCH" AT MANY OF THEIR LOCATIONS. PACIFIC TOPSOIL: (800) 884-7645. NOTE: ARBORIST WOODCHIPS GENERALLY CONTAIN WEED SEEDS AND ARE NOT A RELIABLE ALTERNATIVE. QUANTITY REQUIRED: 3.2 CUBIC YARDS
- 5. BIORETENTION SOIL: HOMOGENOUS MIXTURE OF APPROXIMATELY 2 PARTS BY VOLUME (APPROX. 65%) MINERAL AGGREGATE TO 1 PART (APPROX. 35%) FINE COMPOST (IN ACCORDANCE WITH WAC 173-350-220). THE MIXTURE SHALL HAVE AN ORGANIC MATTER CONTENT OF 4% TO 8% DETERMINED USING THE LOSS ON IGNITION METHOD. APPROVED PRODUCTS INCLUDE CEDAR GROVE BIORETENTION MIX.

MINERAL AGGREGATE FOR BIORETENTION SOIL SHALL BE ANALYZED BY AN ACCREDITED LAB USING THE SIEVE SIZES NOTED BELOW; AND MEET THE FOLLOWING GRADATION:

| SIEVE SIZE | PERCENT PASSING |
|------------|-----------------|
| 1" INCH | 100 |
| NO. 4 | 60 - 100 |
| NO. 10 | 40 - 100 |
| NO. 40 | 15 - 50 |
| NO. 200 | 2 - 5 |



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Science & Design

AGSTROM RESIDENC
MITIGATION PLAN
PREPARED FOR
COLLIN HAGSTROM
7428 SE 71ST STREET

HA

SHEET SIZE:
ORIGINAL PLAN IS 22" x 34".
SCALE ACCORDINGLY.

PROJECT MANAGER: RK
DESIGNED: LM/MF/KMB
DRAFTED: LM/MF/KMB

CHECKED:
JOB NUMBER:

16073 SHEET NUMBER:

NUMBER:

MITIGATION PLAN NOTES

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