# 5236 W MERCER WAY

## SINGLE FAMILY RESIDENCE
## CIVIL ENGINEERING PLANS

### OCTOBER 2017


PACE
An Engineering Services Company
11255 Kirkland Way, Suite 300
Kirkland, WA 98033
*p.* 425.827.2014 | *f.* 425.827.5043
Civil | Structural | Planning | Survey
www. paceengrs.com


## PROJECT DATA

### AREA SUMMARY:

| | |
|---|---|
| TOTAL SITE AREA: | 37,350 SF |
| TOTAL IMPERVIOUS AREA: | 8,050 SF |
| IMPERVIOUS COVERAGE: | 21.4% |

### EARTHWORK QUANTITIES:

| | |
|---|---|
| CUT: | 3,200* CY |
| FILL: | 50* CY |
| NET: | 3,150* CY (CUT) |

* EARTHWORK QUANTITIES FOR PERMITTING PURPOSES ONLY

### SETBACKS:

| | |
|---|---|
| FRONT: | 20-FEET |
| SIDE: | 5 MIN. (SUM 15)-FEET EACH SIDE |
| REAR: | 25-FEET |

### RECORD LEGAL DESCRIPTION:

LOT 4A OF THE REVISED MILLS LOT LINE REVISION.

### SURVEY NOTES:

HORIZONTAL DATUM: NAD 1983/91 BASED ON FOUND MONUMENTS IN WEST MERCER WAY.

VERTICAL DATUM: NAVD 88 BASED ON FOUND MONUMENTS IN WEST MERCER WAY.

SITE AREA:37,350 SQUARE FEET, MORE OR LESS.

## UTILITY PURVEYOURS

**WATER:** CITY OF MERCER ISLAND

**SEWER:** CITY OF MERCER ISLAND

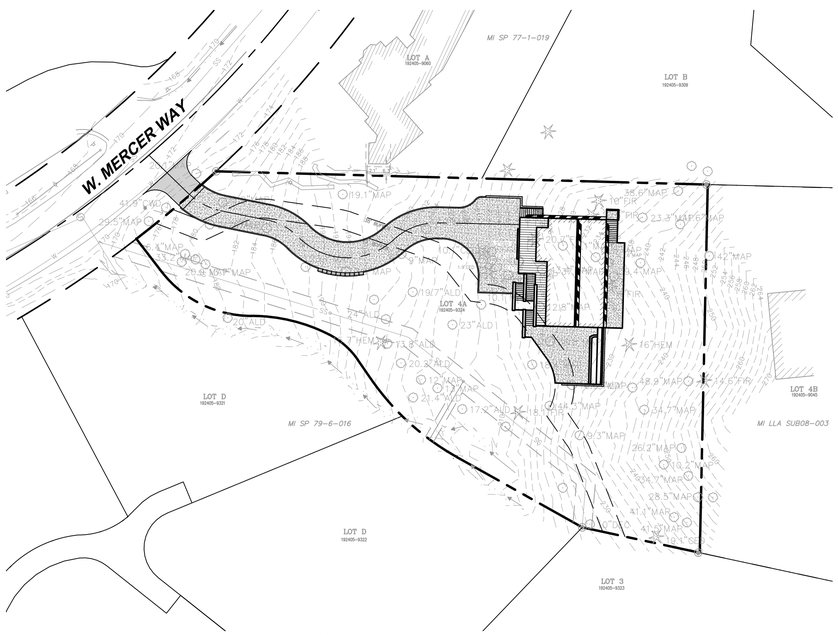
**GAS:** PUGET SOUND ENERGY

**POWER:** PSE

**CABLE:** COMCAST

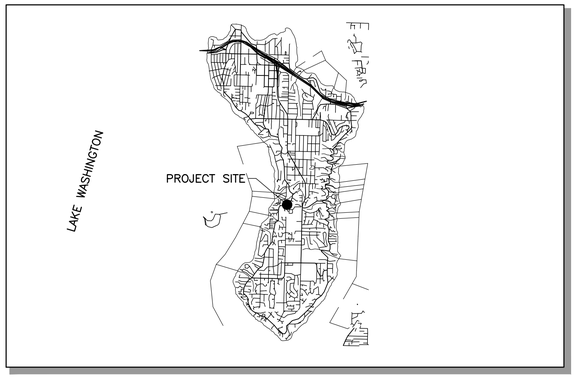
**PHONE:** COMCAST

**GARBAGE:** REPUBLIC SERVICES




N

**SITE PLAN**
SCALE= 1"=40'




N

**VICINITY MAP**
NTS

## SITE INFORMATION

**ADDRESS:**
5236 W MERCER WAY

**TAX PARCEL NO.: 192405-9324**

**ZONING: R-15**

## OWNER/DEVELOPER/CONSULTANTS

**APPLICANT / ARCHITECT:**
JOSEPH GREIF, AIA
GREIF ARCHITECTS/LIVING ARCHITECTURE
921 NE BOAT ST.
SEATTLE, WA 98105
(206) 465-4201
GREIF@MSN.COM

**CIVIL ENGINEER:**
DAN WESTLEY, P.E.
PACE ENGINEERS, INC.
11255 KIRKLAND WAY
SUITE 300
KIRKLAND, WA 98033
(425) 827-2014
DANW@PACEENGRS.COM

**GEOTECHNICAL ENGINEER:**
JON C. REHKOPF, P.E.
PANGEO, INC.
3213 EASTLAKE AVENUE EAST
SUITE B
SEATTLE, WA 98102
(206) 262-0370
JREHKOPF@PANGEOINC.COM

**SURVEYOR:**
BILL HAWKINS, P.L.S.
PACE ENGINEERS, INC.
11255 KIRKLAND WAY
SUITE 300
KIRKLAND, WA 98033
(425) 827-2014
BILLH@PACEENGRS.COM

**ARBORIST:**
RYAN RINGE
ARBOR OPTIONS, LLC
(206) 755-5826
RYAN@ARBOROPTIONS.COM

**STRUCTURAL ENGINEER:**
TOM WOLF
QUALITY ENGINEERING AND DESIGN
(206) 817-8834
WOLFTOMJ@MSN.COM

**WET LAND ENVIRONMENTALIST:**
MARK RIGOS
(425) 652-6013
MARKRIGOS@HOTMAIL.COM

**CONTRACTOR:**
PAUL FERLITO
(425) 953-3787
PAUL@EDENCUSTOMBUILDERS.COM

### SHEET LIST TABLE

| SHEET # | SHEET TITLE |
|---|---|
| C0.0 | COVER SHEET |
| C0.1 | EXISTING CONDITIONS |
| C0.2 | TREE PROTECTION PLAN |
| C1.0 | TESC PLAN |
| C1.1 | TESC DETAILS |
| C2.0 | ROAD, GRADING, STORM AND UTILITY PLAN |
| C2.1 | STORM DRAINAGE DETAILS |
| C2.2 | STORM DRAINAGE DETAILS |
| C2.3 | SANITARY SIDE SEWER DETAILS |
| C2.4 | WATER DETAILS |

CALL BEFORE YOU DIG 811
UNDERGROUND SERVICE (USA)

| S'YM | REVISION | DATE |
|---|---|---|


PACE
An Engineering Services Company
11255 Kirkland Way, Suite 300
Kirkland, WA 98033
*p.* 425.827.2014 | *f.* 425.827.5043
Civil | Structural | Planning | Survey
paceengrs.com


DANIEL EDWARD WESTLEY
STATE OF WASHINGTON
54340
REGISTERED PROFESSIONAL ENGINEER
10/24/17

5236 W MERCER WAY
SINGLE FAMILY RESIDENCE

COVER SHEET

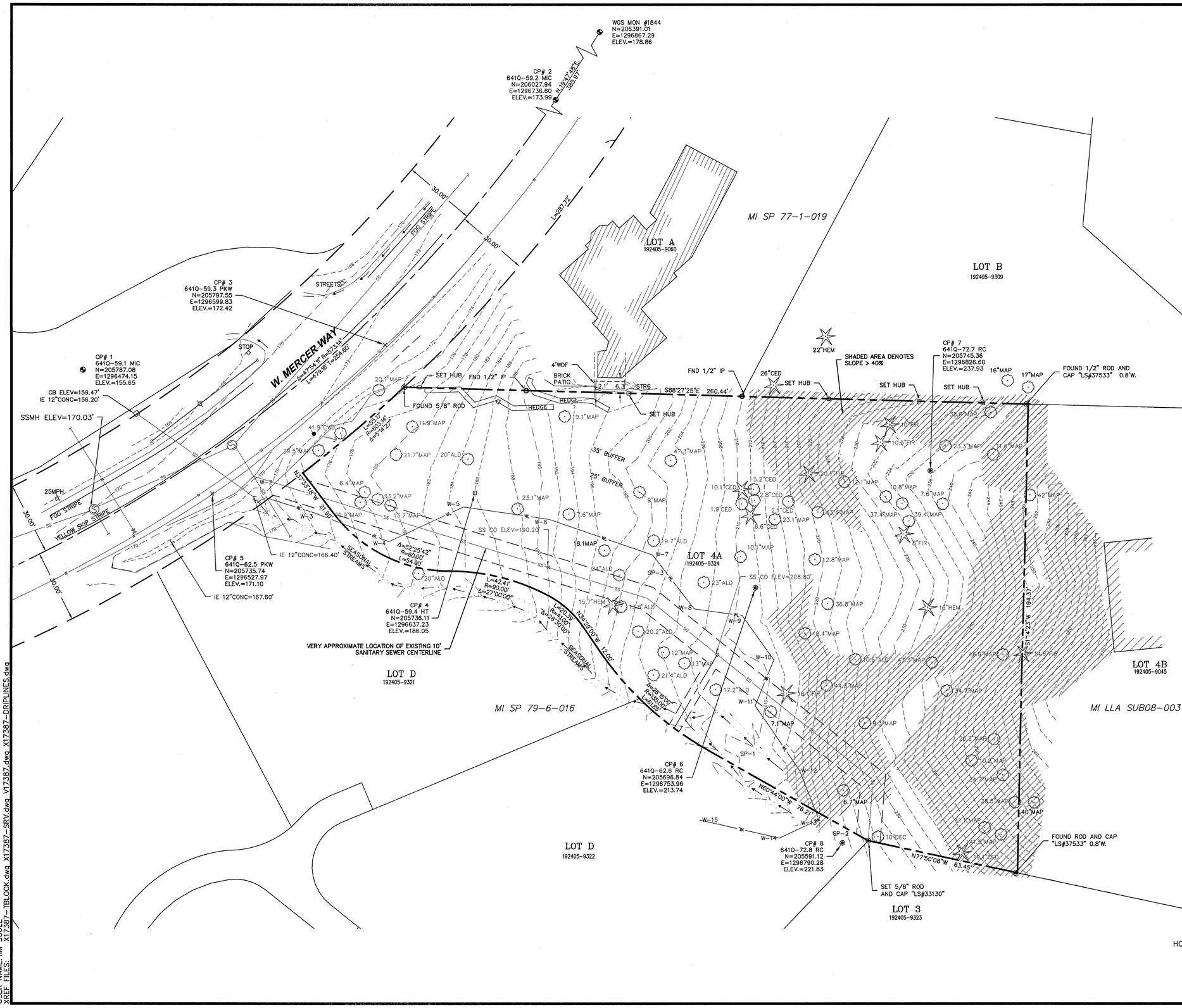
| SCALE: | DATE: |
|---|---|
| AS SHOWN | 10/10/17 |
| DESIGNED BY: DW | CHECKED BY: JS |

JOB NUMBER 17387

SHEET: **C0.0**

SHEET 1 OF 10

FILE NAME: P:\P17\17387 5236 WEST MERCER WAY SFR\CAD\ENGINEERING\SHEETS\P17387-CVR.DWG
SAVE TIME: 10/24/2017 2:10:03 PM
PLOT TIME: 10/24/2017 2:16 PM
USER NAME:TIM SOULE
XREF FILES: X17387-TBLOCK.dwg X17387-SRV.dwg V17387.dwg X17387-SP.dwg X17387-HA.dwg




## RECORD LEGAL DESCRIPTION:

LOT 4A OF THE REVISED MILLS LOT LINE REVISION.

## REFERENCES:

REVISED MILLS LOT LINE REVISION, MI LLA #SUB08-003. VOL. 265, PG. 020.
AF#20090710900001

## LEGEND

- WATER VALVE
- HYDRANT
- SOIL TEST PIT
- WETLAND FLAG
- WATER METER
- MANHOLES (SS/SD)
- CB
- POWER/UTILITY POLE
- GUY ANCHOR
- POWER TRANSFORMER
- POWER/TELEPHONE VAULT
- POWER METER
- TELEPHONE/TV RISER
- GAS VALVE
- JUNCTION BOX
- GAS METER
- STREET LIGHT
- LUMINAIRE
- SPOT ELEVATION
- SIGN
- MAILBOX
- ROCKERY
- CONIFEROUS TREE
- DECIDUOUS TREE
- CASED MONUMENT
- MAGNETIC NAIL W/ WASHER
- REBAR AND CAP
- HUB AND TACK

- CENTER LINES
- PROPERTY LINES
- RIGHT-OF-WAY LINES
- LOT LINES
- DITCH LINE
- FLOW LINE
- WATER LINE
- SANITARY SEWER LINE
- STORM DRAIN LINE
- GAS LINE
- UNDERGROUND POWER LINES
- UNDERGROUND TELEPHONE LINES
- UNDERGROUND CABLE TV LINES
- UNDERGROUND FIBER OPTIC LINES
- OVERHEAD POWER LINES
- OVERHEAD UTILITY LINES
- CHAIN LINK FENCE
- WIRE FENCE
- WOOD FENCE

SHADED AREA DENOTES SLOPE > 40%

## NOTES:

HORIZONTAL DATUM: NAD 1983/91 BASED ON FOUND MONUMENTS IN WEST MERCER WAY.

VERTICAL DATUM: NAVD 88 BASED ON FOUND MONUMENTS IN WEST MERCER WAY.

SITE AREA: 37,350 SQUARE FEET, MORE OR LESS.

ALL DISTANCES SHOWN ARE GROUND DISTANCES UNLESS OTHERWISE NOTED.

THE LOCATION AND DESCRIPTION OF ALL SURVEY MARKERS SHOWN HEREON ARE BASED ON FIELD OBSERVATIONS TAKEN IN APRIL ,2017, UNLESS OTHERWISE INDICATED.

WORK PERFORMED IN CONJUNCTION WITH THIS SURVEY UTILIZED THE FOLLOWING EQUIPMENT AND PROCEDURES: (A) 1" TRIMBLE S6 SERIES ELECTRONIC TOTAL STATION, MAINTAINED TO THE MANUFACTURER'S SPECIFICATIONS PER W.A.C. 332-130-100. (B) FIELD TRAVERSE, EXCEEDING REQUIREMENTS SET FORTH IN W.A.C. 332-130-090.

THIS SURVEY WAS PERFORMED WITHOUT THE BENEFIT OF A TITLE REPORT AND DOES NOT PURPORT TO SHOW ALL EASEMENTS.

THIS TOPOGRAPHIC SURVEY DRAWING ACCURATELY PRESENTS SURFACE FEATURES LOCATED DURING THE COURSE OF THIS SURVEY. UNDERGROUND UTILITIES SHOWN HEREON ARE BASED SOLELY UPON INFORMATION PROVIDED BY OTHERS AND PACE ENGINEERS, INC. DOES NOT ACCEPT RESPONSIBILITY OR ASSUME LIABILITY FOR THEIR ACCURACY OR COMPLETENESS. CONTRACTOR/ENGINEERS SHALL VERIFY EXACT SIZE AND LOCATION PRIOR TO CONSTRUCTION.
CALL FOR LOCATE: UTILITY LOCATION SERVICE: 811

HORIZ. 0 10 20 40
Scale In Feet

**CALL BEFORE YOU DIG 811**
UNDERGROUND SERVICE (USA)

| SYM. | REVISION | DATE |
|---|---|---|
| | | |

PACE
An Engineering Services Company
11255 Kirkland Way, Suite 300
Kirkland, WA 98033
p. 425.827.2014 | f. 425.827.5043
Civil | Structural | Planning | Survey
paceengrs.com

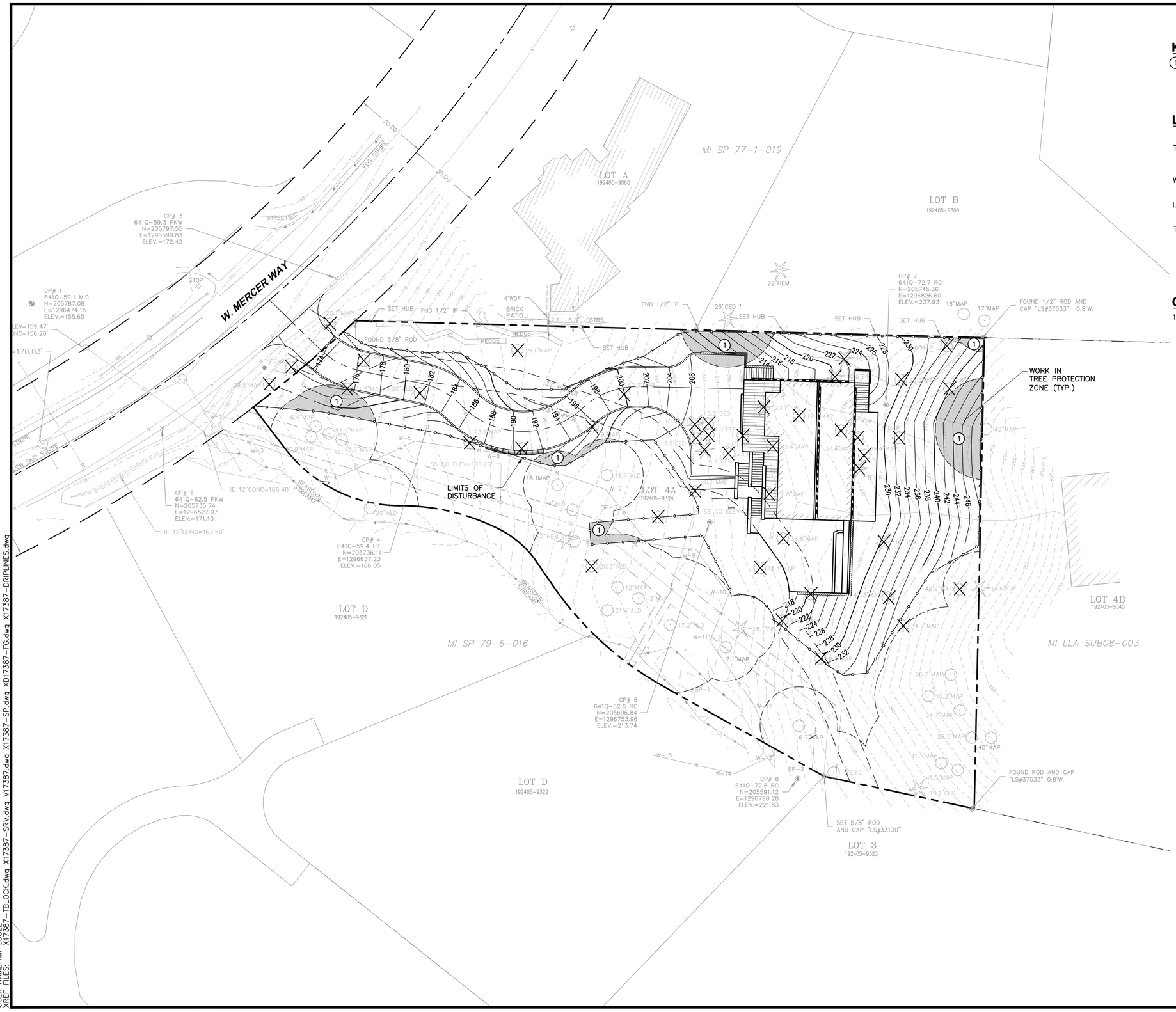
WILLIAM R. HAWKINS
STATE OF WASHINGTON
33130
REGISTERED
PROFESSIONAL LAND SURVEYOR
10/24/17

**5236 W MERCER WAY**
**SINGLE FAMILY RESIDENCE**

**EXISTING CONDITIONS**

| SCALE: | DATE: |
|---|---|
| AS SHOWN | 10/10/17 |
| DESIGNED BY: DW | CHECKED BY: JS |
| JOB NUMBER 17387 | |
| SHEET: **C0.1** | |
| SHEET 2 OF 10 | |

FILE NAME: P:\P17\17387 5236 WEST MERCER WAY SFR\CAD\ENGINEERING\SHEETS\P17387-EC.DWG
SAVE TIME: 10/24/2017 10:14 AM
PLOT TIME: 10/24/2017 2:16 PM
USER NAME: TIM SOULE
XREF FILES: X17387-TBLOCK.dwg X17387-SRV.dwg V17387.dwg X17387-DRIPLINES.dwg




## KEYED NOTES:

1. ARBORIST SUPERVISION WILL BE REQUIRED DURING EXCAVATION FOR ALL PRESERVED TREES WITH GRADING OR EXCAVATION OVER 4-INCHES IN THEIR TREE PROTECTION ZONES.

## LEGEND

TREE PROTECTION ZONE (TPZ)

WORK IN CRITICAL ROOT ZONE

LIMITS OF DISTURBANCE

TREE TO BE REMOVED

## GENERAL NOTE:

1. SEE ARBORIST PLAN AND ARBORIST REPORT FOR ADDITIONAL INFORMATION.

N

HORIZ. 0 10 20 40
Scale In Feet

CALL BEFORE YOU DIG 811
UNDERGROUND SERVICE (USA)

| S'YM | REVISION | DATE |
|---|---|---|
| | | |

PACE
An Engineering Services Company
11255 Kirkland Way, Suite 300
Kirkland, WA 98033
p. 425.827.2014 | f. 425.827.5043
Civil | Structural | Planning | Survey
paceengs.com

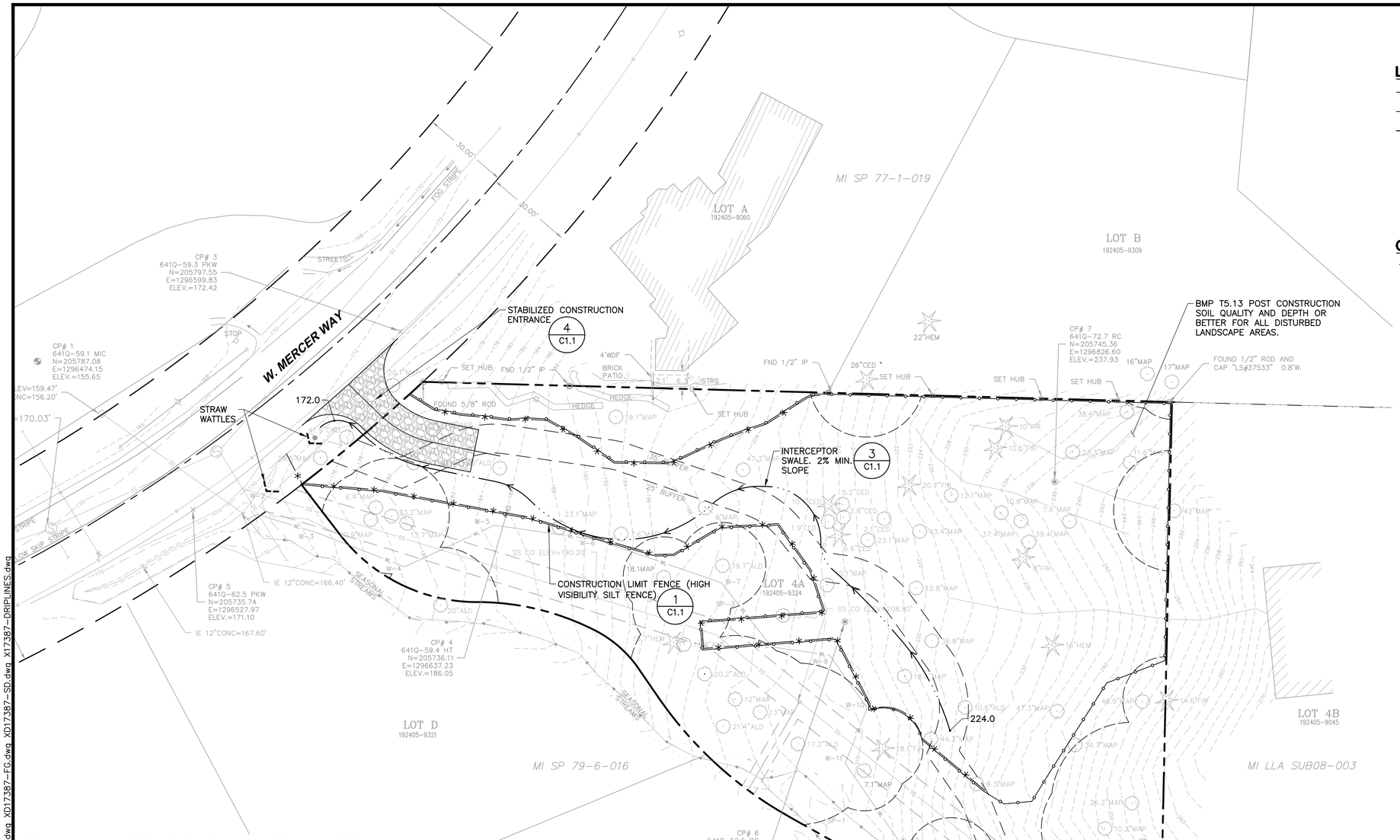
DANIEL EDWARD WESTLEY
STATE OF WASHINGTON
54340
REGISTERED PROFESSIONAL ENGINEER
10/24/17

**5236 W MERCER WAY**
**SINGLE FAMILY RESIDENCE**

**TREE PRESERVATION PLAN**

| SCALE: AS SHOWN | DATE: 10/10/17 |
|---|---|
| DESIGNED BY: DW | CHECKED BY: JS |
| JOB NUMBER 17387 | |
| SHEET: **C0.2** | |
| SHEET 3 OF 10 | |

FILE NAME: P:\P17\17387 5236 WEST MERCER WAY SFR\CAD\ENGINEERING\SHEETS\P17387-TREE.DWG
SAVE TIME: 10/24/2017 1:51:07 PM
PLOT TIME: 10/24/2017 2:16 PM
USER NAME:TIM SOULE
XREF FILES: X17387-TBLOCK.dwg X17387-SRV.dwg V17387.dwg X17387-SP.dwg XD17387-FG.dwg X17387-DRIPLINES.dwg




## LEGEND

- SILT FENCE
- CONSTRUCTION LIMITS/HIGH VISIBILITY FENCE
- INTERCEPTOR SWALE
- TEMPORARY CONSTRUCTION ENTRANCE
- INLET PROTECTION

## GENERAL NOTES:

1. TREE REMOVAL TO BE COORDINATED WITH ARBORIST AND THE CITY OF MERCER ISLAND.

## EROSION AND SEDIMENTATION CONTROL NOTES:

1. APPROVAL OF THIS EROSION AND SEDIMENTATION CONTROL (ESC) PLAN DOES NOT CONSTITUTE AN APPROVAL OF PERMANENT ROAD OR DRAINAGE DESIGN (E.G. SIZE AND LOCATION OF ROADS, PIPES, RESTRICTORS, CHANNELS, RETENTION FACILITIES, UTILITIES, ETC.)
2. THE IMPLEMENTATION OF THESE ESC PLANS AND THE CONSTRUCTION, MAINTENANCE, REPLACEMENT, AND UPGRADING OF THESE ESC FACILITIES IS THE RESPONSIBILITY OF THE APPLICANT/ESC SUPERVISOR UNTIL THE SITE IS STABILIZED.
3. THE BOUNDARIES OF THE CLEARING LIMITS SHOWN ON THIS PLAN SHALL BE CLEARLY FLAGGED BY SURVEY TAPE OR FENCING, IF REQUIRED, PRIOR TO CONSTRUCTION (SWDM APPENDIX D). DURING THE CONSTRUCTION PERIOD, NO DISTURBANCE BEYOND THE CLEARING LIMITS SHALL BE PERMITTED. THE CLEARING LIMITS SHALL BE MAINTAINED BY THE APPLICANT/ESC SUPERVISOR FOR THE DURATION OF CONSTRUCTION.
4. STABILIZED CONSTRUCTION ENTRANCES SHALL BE INSTALLED AT THE BEGINNING OF CONSTRUCTION AND MAINTAINED FOR THE DURATION OF THE PROJECT. ADDITIONAL MEASURES, SUCH AS CONSTRUCTED WHEEL WASH SYSTEMS OR WASH PADS, MAY BE REQUIRED TO ENSURE THAT ALL PAVED AREAS ARE KEPT CLEAN AND TRACK OUT TO ROAD RIGHT OF WAY DOES NOT OCCUR FOR THE DURATION OF THE PROJECT.
5. THE ESC FACILITIES SHOWN ON THIS PLAN MUST BE CONSTRUCTED PRIOR TO OR IN CONJUNCTION WITH ALL CLEARING AND GRADING SO AS TO ENSURE THAT THE TRANSPORT OF SEDIMENT TO SURFACE WATERS, DRAINAGE SYSTEMS, AND ADJACENT PROPERTIES IS MINIMIZED.
6. THE ESC FACILITIES SHOWN ON THIS PLAN ARE THE MINIMUM REQUIREMENTS FOR ANTICIPATED SITE CONDITIONS. DURING THE CONSTRUCTION PERIOD, THESE ESC FACILITIES SHALL BE UPGRADED AS NEEDED FOR UNEXPECTED STORM EVENTS AND MODIFIED TO ACCOUNT FOR CHANGING SITE CONDITIONS (E.G. ADDITIONAL COVER MEASURES, RELOCATION OF DITCHES AND SILT FENCES, PERIMETER PROTECTION ETC.).
7. THE ESC FACILITIES SHALL BE INSPECTED DAILY BY THE APPLICANT/ESC SUPERVISOR AND MAINTAINED TO ENSURE CONTINUED PROPER FUNCTIONING. WRITTEN RECORDS SHALL BE KEPT OF WEEKLY REVIEWS OF THE ESC FACILITIES.
8. ANY AREAS OF EXPOSED SOILS, INCLUDING ROADWAY EMBANKMENTS, THAT WILL NOT BE DISTURBED FOR TWO DAYS DURING THE WET SEASON OR SEVEN DAYS DURING THE DRY SEASON SHALL BE IMMEDIATELY STABILIZED WITH THE APPROVED ESC COVER METHODS (E.G., SEEDING, MULCHING, PLASTIC COVERING, ETC.).
9. ANY AREA NEEDING ESC MEASURES, NOT REQUIRING IMMEDIATE ATTENTION, SHALL BE ADDRESSED WITHIN SEVEN (7) DAYS.
10. THE ESC FACILITIES ON INACTIVE SITES SHALL BE INSPECTED AND MAINTAINED A MINIMUM OF ONCE A MONTH OR WITHIN 24 HOURS FOLLOWING A STORM EVENT.
11. AT NO TIME SHALL MORE THAN ONE (1) FOOT OF SEDIMENT BE ALLOWED TO ACCUMULATE WITHIN A CATCH BASIN. ALL CATCH BASINS AND CONVEYANCE LINES SHALL BE CLEANED PRIOR TO PAVING. THE CLEANING OPERATION SHALL NOT FLUSH SEDIMENT-LADEN WATER INTO THE DOWNSTREAM SYSTEM.
12. COVER MEASURES WILL BE APPLIED IN CONFORMANCE WITH APPENDIX D OF THE SURFACE WATER DESIGN MANUAL.
13. PRIOR TO THE BEGINNING OF THE WET SEASON (OCT. 1), ALL DISTURBED AREAS SHALL BE REVIEWED TO IDENTIFY WHICH ONES CAN BE SEEDED IN PREPARATION FOR THE WINTER RAINS. DISTURBED AREAS SHALL BE SEEDED WITHIN ONE WEEK OF THE BEGINNING OF THE WET SEASON. A SKETCH MAP OF THOSE AREAS TO BE SEEDED AND THOSE AREAS TO REMAIN UNCOVERED SHALL BE SUBMITTED TO THE DDES INSPECTOR FOR REVIEW.

N

HORIZ. 0 10 20 40
Scale In Feet

CALL BEFORE YOU DIG 811
UNDERGROUND SERVICE (USA)

| DATE | REVISION | STM |
|---|---|---|

PACE
An Engineering Services Company
11255 Kirkland Way, Suite 300
Kirkland, WA 98033
p. 425.827.2014 | f. 425.827.5043
Civil | Structural | Planning | Survey
paceengs.com

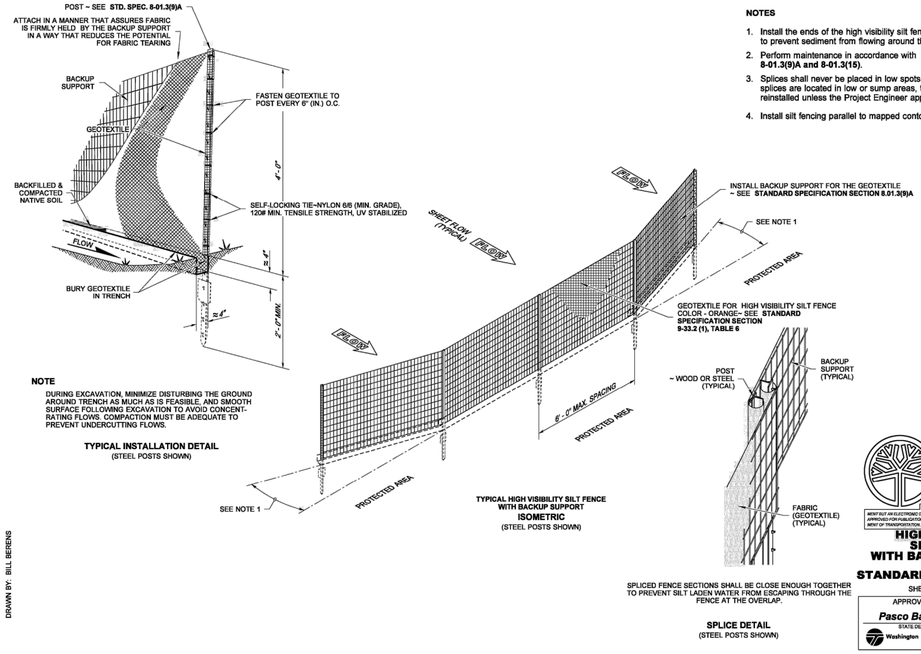
DANIEL EDWARD WESTLEY
STATE OF WASHINGTON
54340
REGISTERED PROFESSIONAL ENGINEER
10/24/17

**5236 W MERCER WAY**
**SINGLE FAMILY RESIDENCE**

**TESC PLAN**

| SCALE: AS SHOWN | DATE: 10/10/17 |
|---|---|
| DESIGNED BY: DW | CHECKED BY: JS |
| JOB NUMBER 17387 | |
| SHEET: **C1.0** | |
| SHEET 4 OF 10 | |

FILE NAME: P:\P17\17387 5236 WEST MERCER WAY SFR\CAD\ENGINEERING\SHEETS\P17387-TESC.DWG
SAVE TIME: 10/24/2017 1:57:45 PM
PLOT TIME: 10/24/2017 2:17 PM
USER NAME: TIM SOULE
XREF FILES: X17387-TBLOCK.dwg X17387-SRV.dwg V17387.dwg X17387-SP.dwg XD17387-FG.dwg XD17387-SD.dwg X17387-DRIPLINES.dwg




**NOTE**

DURING EXCAVATION, MINIMIZE DISTURBING THE GROUND AROUND TRENCH AS MUCH AS IS FEASIBLE, AND SMOOTH SURFACE FOLLOWING EXCAVATION TO AVOID CONCENTRATING FLOWS. COMPACTION MUST BE ADEQUATE TO PREVENT UNDERCUTTING FLOWS.

**TYPICAL INSTALLATION DETAIL**
(STEEL POSTS SHOWN)

**TYPICAL HIGH VISIBILITY SILT FENCE WITH BACKUP SUPPORT**
**ISOMETRIC**
(STEEL POSTS SHOWN)

SPLICED FENCE SECTIONS SHALL BE CLOSE ENOUGH TOGETHER TO PREVENT SILT LADEN WATER FROM ESCAPING THROUGH THE FENCE AT THE OVERLAP.

**SPLICE DETAIL**
(STEEL POSTS SHOWN)

**NOTES**

1. Install the ends of the high visibility silt fence to point slightly upslope to prevent sediment from flowing around the ends of the fence.
2. Perform maintenance in accordance with **Standard Specifications 8-01.3(9)A and 8-01.3(15)**.
3. Splices shall never be placed in low spots or sump locations. If splices are located in low or sump areas, the fence may need to be reinstalled unless the Project Engineer approves the installation.
4. Install silt fencing parallel to mapped contour lines.

STATE OF WASHINGTON REGISTERED LANDSCAPE ARCHITECT
SANDRA L. SALISBURY
CERTIFICATE NO. 000860

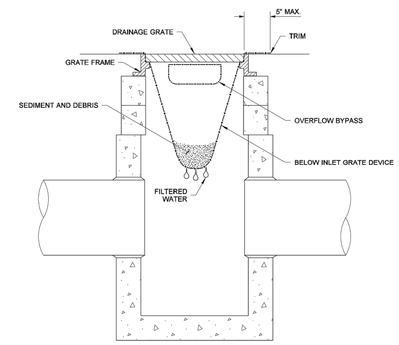
NOTE: THIS PLAN IS NOT A LEGAL ENGINEERING DOCUMENT BUT AN ELECTRONIC DUPLICATE OF THE ORIGINAL SIGNED BY THE ENGINEER AND APPROVED FOR PUBLICATION, IS KEPT ON FILE AT THE WASHINGTON STATE DEPARTMENT OF TRANSPORTATION. A COPY MAY BE OBTAINED UPON REQUEST.

**HIGH VISIBILITY SILT FENCE WITH BACKUP SUPPORT**
**STANDARD PLAN I-30.16-00**
SHEET 1 OF 1 SHEET
APPROVED FOR PUBLICATION
Pasco Bakotich III — STATE DESIGN ENGINEER — 3/22/13 — DATE
Washington State Department of Transportation

DRAWN BY: BILL BERENS

## 1 HIGH VISIBILITY SILT FENCE
NTS

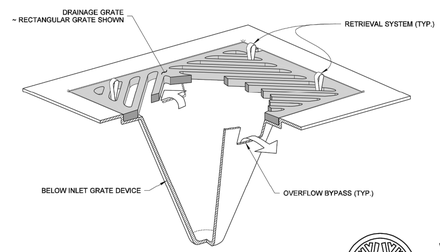
DRAWN BY: LISA CYFORD




**SECTION VIEW**
NOT TO SCALE

**NOTES**

1. Size the Below Inlet Grate Device (BIGD) for the storm water structure it will service.
2. The BIGD shall have a built-in high-flow relief system (overflow bypass).
3. The retrieval system must allow removal of the BIGD without spilling the collected material.
4. Perform maintenance in accordance with Standard Specification 8-01.3(15).




**ISOMETRIC VIEW**

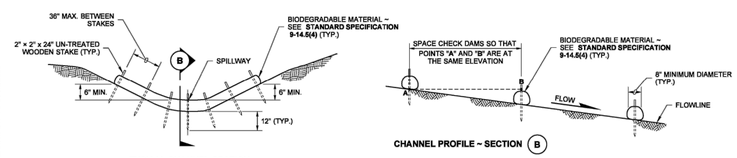
STATE OF WASHINGTON REGISTERED LANDSCAPE ARCHITECT
MARK W. MAURER
CERTIFICATE NO. 000598

NOTE: THIS PLAN IS NOT A LEGAL ENGINEERING DOCUMENT BUT AN ELECTRONIC DUPLICATE OF THE ORIGINAL SIGNED BY THE ENGINEER AND APPROVED FOR PUBLICATION, IS KEPT ON FILE AT THE WASHINGTON STATE DEPARTMENT OF TRANSPORTATION. A COPY MAY BE OBTAINED UPON REQUEST.

**STORM DRAIN INLET PROTECTION**
**STANDARD PLAN I-40.20-00**
SHEET 1 OF 1 SHEET
APPROVED FOR PUBLICATION
Pasco Bakotich III — STATE DESIGN ENGINEER — 09-20-07 — DATE
Washington State Department of Transportation

## 2 INLET PROTECTION
NTS

DRAWN BY: FERN LIDDELL




**TYPICAL CHANNEL SECTION**

**BIODEGRADABLE CHECK DAM**



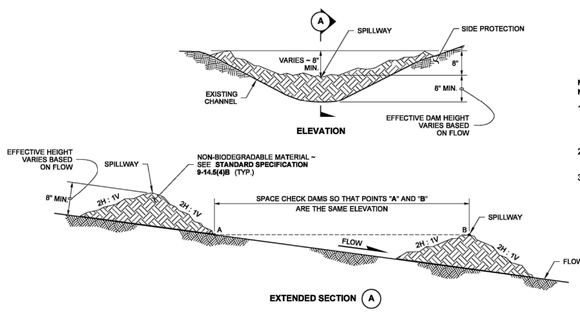

**CHANNEL PROFILE ~ SECTION (B)**

**BIODEGRADABLE CHECK DAM NOTE**

1. Biodegradable Check Dams may need additional or modified staking to prevent undercutting or scouring.

**GENERAL NOTES**

1. Check Dams shall meet the requirements of **Standard Specifications 8-01.3(6) and 9-14.5(4).**
2. In channels, install the sloped ends of the Check Dam a minimum of 8" higher than the spillway to ensure water flows over the dam and not around it.
3. Perform maintenance in accordance with **Standard Specification 8-01.3(15).**
4. Remove Check Dams in accordance with **Standard Specification 8-01.3(16).**




**ELEVATION**

**EXTENDED SECTION (A)**

**NON-BIODEGRADABLE CHECK DAM**

**NON-BIODEGRADABLE CHECK DAM NOTES**

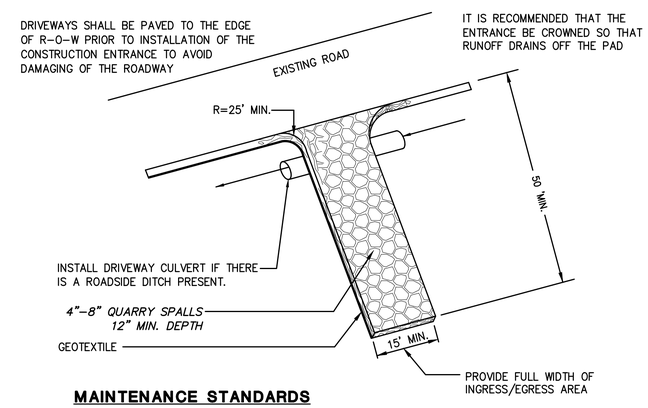
1. Non-Biodegradable Manufactured Check Dam devices approved for use under **Standard Specification 9-14.5(4)** shall be installed per manufacturer's recommendations and shall perform in accordance with **Standard Specification 8-01.3(6).**
2. Rock Check Dams shall be placed outside of the clear zone or behind traffic barrier.
3. To ensure adequate damming time, Rock Check Dams used as sediment control may need to be enhanced with plastic that meets the requirements of **Standard Specification 9-14.5(3)** or fabric that meets the geotextile requirements of **Standard Specification 9-33.2(1), Table 6.**

STATE OF WASHINGTON REGISTERED LANDSCAPE ARCHITECT
Sandra L. Salisbury
SANDRA L. SALISBURY
LICENSE NO. 860
DATE: June 6, 2013

NOTE: THIS PLAN IS NOT A LEGAL ENGINEERING DOCUMENT BUT AN ELECTRONIC DUPLICATE OF THE ORIGINAL SIGNED BY THE ENGINEER AND APPROVED FOR PUBLICATION, IS KEPT ON FILE AT THE WASHINGTON STATE DEPARTMENT OF TRANSPORTATION. A COPY MAY BE OBTAINED UPON REQUEST.

**CHECK DAMS ON CHANNELS**
**STANDARD PLAN I-50.20-01**
SHEET 1 OF 1 SHEET
APPROVED FOR PUBLICATION
Pasco Bakotich III — STATE DESIGN ENGINEER — 6/10/13 — DATE
Washington State Department of Transportation

## 3 INTERCEPTOR SWALE W/ROCK CHECK DAMS
NTS




### MAINTENANCE STANDARDS

1. QUARRY SPALLS SHALL BE ADDED IF THE PAD IS NO LONGER IN ACCORDANCE WITH THE SPECIFICATIONS.
2. IF THE ENTRANCE IS NOT PREVENTING SEDIMENT FROM BEING TRACKED ONTO PAVEMENT, THEN ALTERNATIVE MEASURES TO KEEP THE STREETS FREE OF SEDIMENT SHALL BE USED. THIS MAY INCLUDE STREET SWEEPING, AN INCREASE IN THE DIMENSIONS OF THE ENTRANCE, OR THE INSTALLATION OF A WHEEL WASH. IF WASHING IS USED, IT SHALL BE DONE ON THE AREA COVERED WITH CRUSHED ROCK, AND WASH WATER SHALL DRAIN TO A SEDIMENT TRAP OR POND.
3. ANY SEDIMENT THAT IS TRACKED ONTO PAVEMENT SHALL BE REMOVED IMMEDIATELY BY SWEEPING. THE SEDIMENT COLLECTED BY SWEEPING SHALL BE REMOVED OR STABILIZED ON-SITE. THE PAVEMENT SHALL NOT BE CLEANED BY WASHING DOWN THE STREET, EXCEPT WHEN SWEEPING IS INEFFECTIVE AND THERE IS A THREAT TO PUBLIC SAFETY. IF IT IS NECESSARY TO WASH THE STREETS, THE CONSTRUCTION OF A SMALL SUMP SHALL BE CONSIDERED. THE SEDIMENT WOULD THEN BE WASHED INTO THE SUMP.
4. ANY ROCK SPALLS THAT ARE LOOSENED FROM THE PAD AND END UP ON THE ROADWAY SHALL BE REMOVED IMMEDIATELY.
5. IF VEHICLES ARE ENTERING OR EXITING THE SITE AT POINTS OTHER THAN THE CONSTRUCTION ENTRANCE(S), FENCING SHALL BE INSTALLED TO CONTROL TRAFFIC.

## 4 STABILIZED CONSTRUCTION ENTRANCE
NTS

CALL BEFORE YOU DIG 811
UNDERGROUND SERVICE (USA)

| S'M | REVISION | DATE |
|---|---|---|
| | | |


PACE
An Engineering Services Company
11255 Kirkland Way, Suite 300
Kirkland, WA 98033
p. 425.827.2014 | f. 425.827.5043
Civil | Structural | Planning | Survey
paceengrs.com

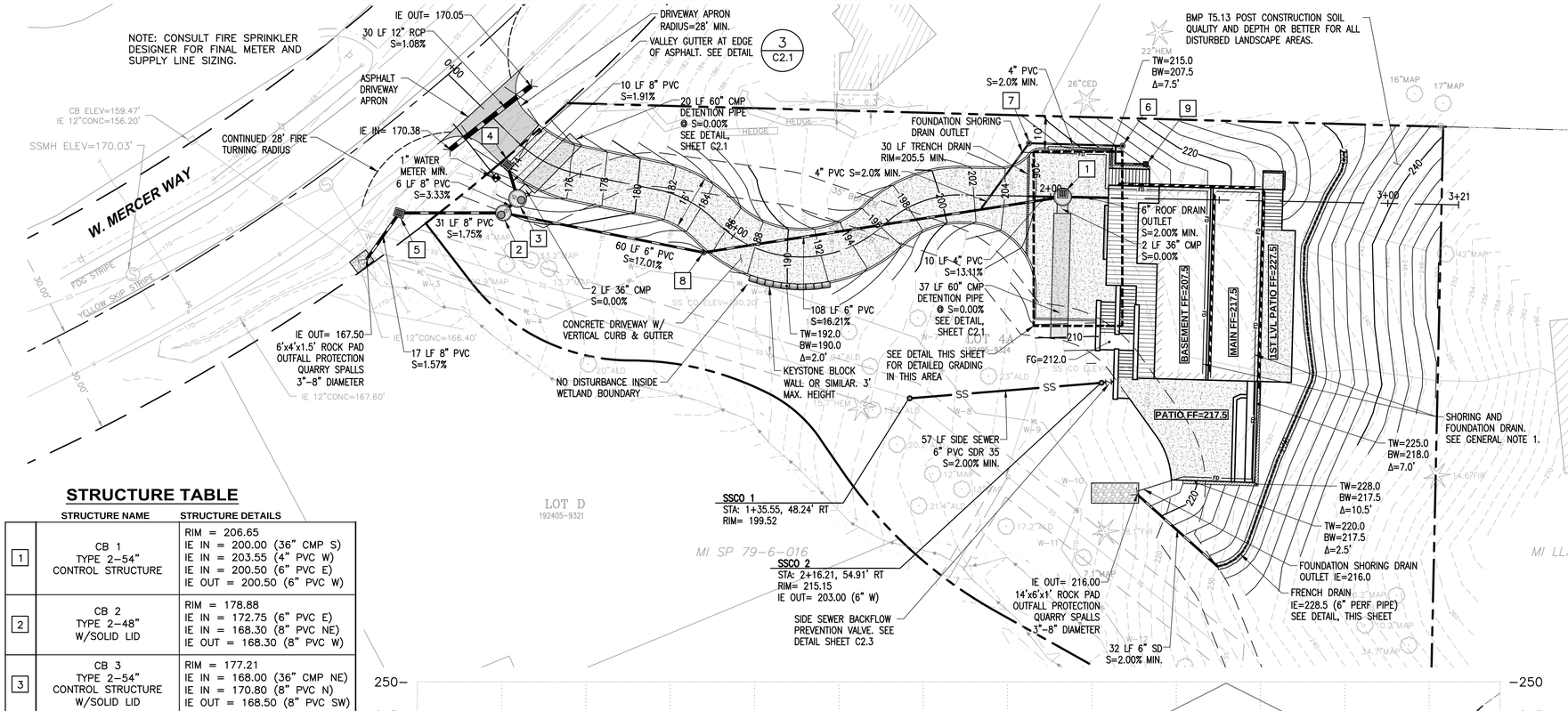

DANIEL EDWARD WESSELMAN — STATE OF WASHINGTON — 54340 — REGISTERED PROFESSIONAL ENGINEER
10/24/17

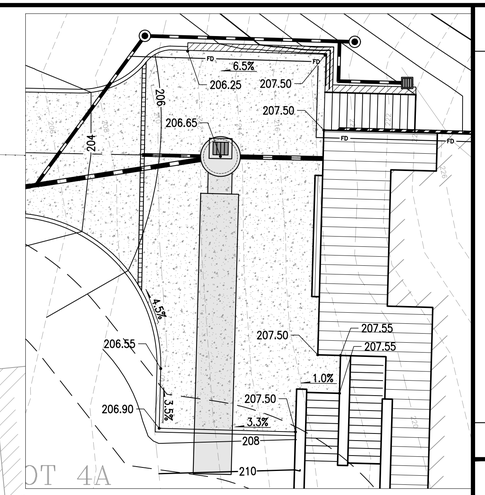
**5236 W MERCER WAY**
**SINGLE FAMILY RESIDENCE**

**TESC DETAILS**

| SCALE: AS SHOWN | DATE: 10/10/17 |
|---|---|
| DESIGNED BY: DW | CHECKED BY: JS |
| JOB NUMBER 17387 | |
| SHEET: C1.1 | |
| SHEET 5 OF 10 | |

FILE NAME: P:\P17\17387 5236 WEST MERCER WAY SFR\CAD\ENGINEERING\SHEETS\P17387-TESC.DWG
SAVE TIME: 10/24/2017 1:51:45 PM
PLOT TIME: 10/24/2017 2:17 PM
USER NAME:TIM SOULE
XREF FILES: X17387-TBLOCK.dwg X17387-SRV.dwg V17387.dwg X17387-SP.dwg XD17387-FG.dwg XD17387-SD.dwg X17387-DRIPLINES.dwg




## DRIVEWAY GRADING

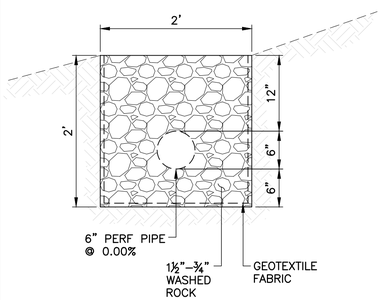
1"=10'

## GENERAL NOTES:

1. REFERENCE SHORING AND STRUCTURAL DETAILS FOR SHORING AND FOUNDATION DRAIN OUTLET DETAILS.
2. BASEMENT FLOOR SHORING–FOUNDATION DRAIN OUTLET SD @ 2.0% MIN.
3. YARD DRAIN OUTLET SD @ 2.0% MIN.
4. STORM CONVEYANCE PIPE SHALL BE SDR 35 PVC.
5. FIRE PROTECTION SYSTEM REQUIRED AND SHALL BE DESIGNED BY A FIRE SPRINKLER DESIGNER.

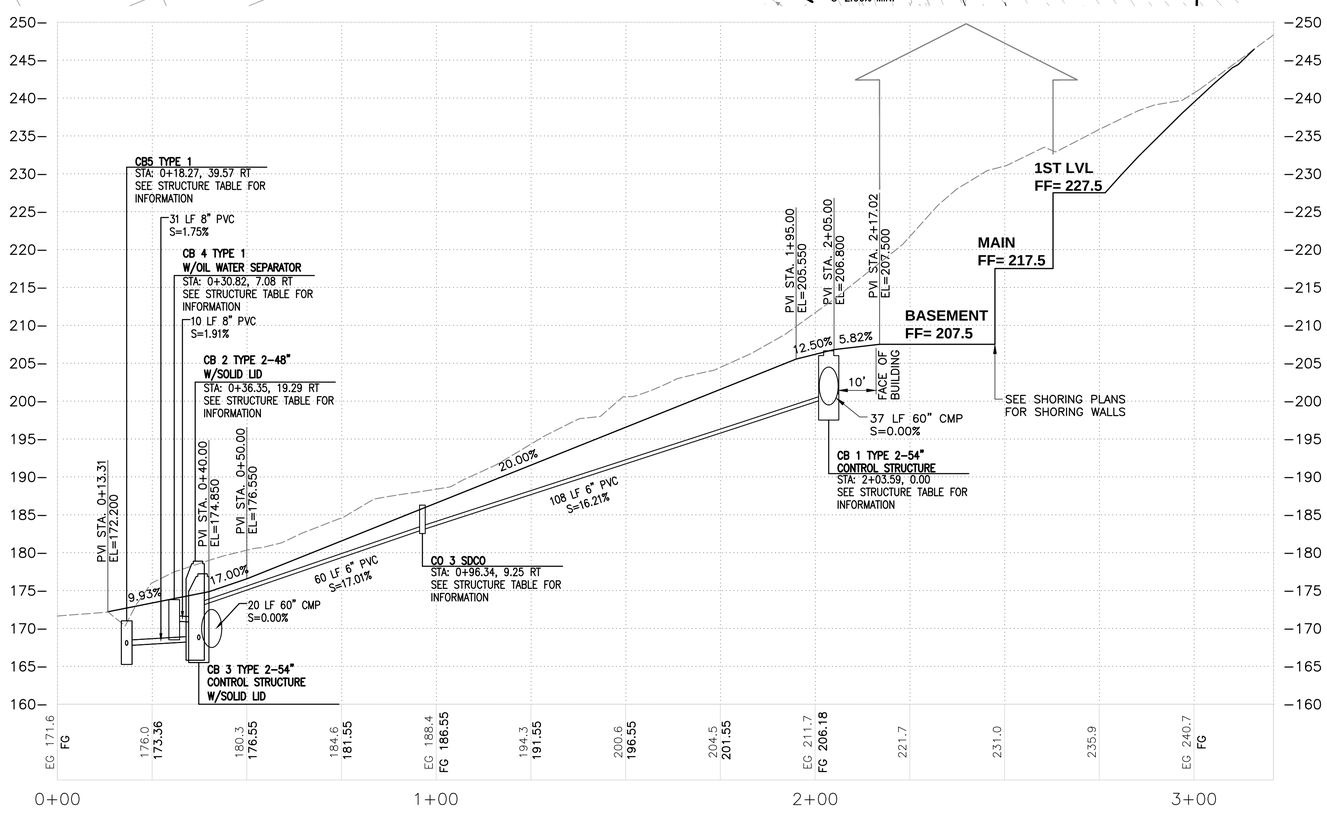
## STRUCTURE TABLE

| | STRUCTURE NAME | STRUCTURE DETAILS |
|---|---|---|
| 1 | CB 1<br>TYPE 2–54"<br>CONTROL STRUCTURE | RIM = 206.65<br>IE IN = 200.00 (36" CMP S)<br>IE IN = 203.55 (4" PVC W)<br>IE IN = 200.50 (6" PVC E)<br>IE OUT = 200.50 (6" PVC W) |
| 2 | CB 2<br>TYPE 2–48"<br>W/SOLID LID | RIM = 178.88<br>IE IN = 172.75 (6" PVC E)<br>IE IN = 168.30 (8" PVC NE)<br>IE OUT = 168.30 (8" PVC W) |
| 3 | CB 3<br>TYPE 2–54"<br>CONTROL STRUCTURE<br>W/SOLID LID | RIM = 177.21<br>IE IN = 168.00 (36" CMP NE)<br>IE IN = 170.80 (8" PVC N)<br>IE OUT = 168.50 (8" PVC SW) |
| 4 | CB 4<br>TYPE 1<br>W/OIL WATER SEPARATOR | RIM = 173.80<br>IE OUT = 171.00 (8" PVC S) |
| 5 | CB5<br>TYPE 1 | RIM = 171.00<br>IE IN = 167.76 (8" PVC E)<br>IE OUT = 167.76 (8" PVC SW) |
| 6 | CO 1<br>SDCO | RIM = 214.66<br>IE OUT = 211.68 (4" PVC W) |
| 7 | CO 2<br>SDCO | RIM = 207.20<br>IE IN = 206.85 (4" PVC E)<br>IE OUT = 206.85 (4" PVC SW) |
| 8 | CO 3<br>SDCO | RIM = 186.28<br>IE IN = 183.03 (6" PVC E)<br>IE OUT = 183.03 (6" PVC W) |
| 9 | YD 1<br>YARD DRAIN | RIM = 214.39<br>IE OUT = 212.00 (4" PVC W) |




## FRENCH DRAIN

NTS




## LEGEND

- PERMANENT SHORING
- TEMP. SHORING
- SANITARY SIDE SEWER — SS —
- SS CLEANOUT
- STORM DRAIN
- TRENCH DRAIN
- FRENCH DRAIN
- SD CLEANOUT
- YARD DRAIN
- CB TYPE 1
- CB TYPE 2

N

HORIZ. 0 10 20 40 Scale In Feet

VERT. 0 5 10 20 Scale In Feet

CALL BEFORE YOU DIG 811 UNDERGROUND SERVICE (USA)

| DATE | REVISION | STM |
|---|---|---|

PACE Engineering Services Company
11255 Kirkland Way, Suite 300
Kirkland, WA 98033
p. 425.827.2014 | f. 425.827.5043
Civil | Structural | Planning | Survey
paceengrs.com

DANIEL EDWARD WESTLEY STATE OF WASHINGTON 54340 REGISTERED PROFESSIONAL ENGINEER 10/24/17

**5236 W MERCER WAY**
**SINGLE FAMILY RESIDENCE**

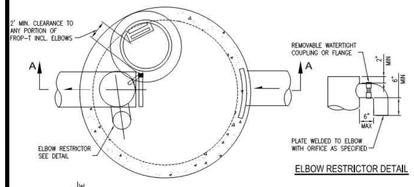
**ROAD, GRADING, STORM AND UTILITY PLAN**

| SCALE: AS SHOWN | DATE: 10/10/17 |
|---|---|
| DESIGNED BY: DW | CHECKED BY: JS |
| JOB NUMBER 17387 | |
| SHEET: C2.0 | |
| SHEET 6 OF 10 | |

FILE NAME: P:\P17\17387 5236 WEST MERCER WAY SFR\CAD\ENGINEERING\SHEETS\P17387-GP.DWG
SAVE TIME: 10/24/2017 2:15:28 PM
PLOT TIME: 10/24/2017 2:17 PM
USER NAME: TIM SOULE
XREF FILES: X17387-TBLOCK.dwg X17387-SRV.dwg V17387.dwg X17387-SP autoturn.dwg X17387-PROF.dwg X017387-ALIGN.dwg X17387-HA.dwg X17387-SP.dwg XD17387-FG.dwg XD17387-SD.dwg

**Attachment 1**

*CITY OF MERCER ISLAND*
*STANDARD DETENTION SYSTEM WORKSHEET*
*(FOR IMPERVIOUS AREA OF 5,000 SF OR LESS)*

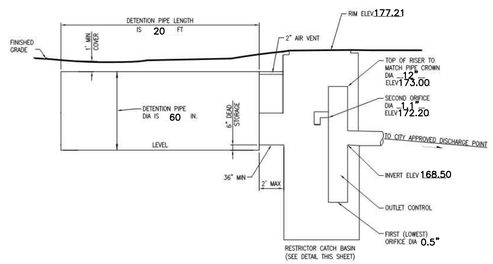



ELBOW RESTRICTOR DETAIL

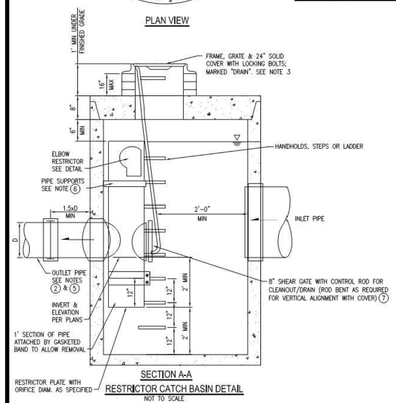
PLAN VIEW

| | | | |
|---|---|---|---|
| OWNER: | | ADDRESS: 5236 W. MERCER WAY MERCER ISLAND, WA | PREPARED BY: D. WESTLEY |
| PERMIT #: | | | PHONE: 425.827.2014 |
| | | | DATE: 10/6/2017 |
| IMPERVIOUS SURFACE AREA (SF): 3,000 | DETENTION PIPE DIA (INCH): 60 | DETENTION PIPE LENGTH (FT): 20 | ORIFICE #1: DIA 0.5 INCH, ELEV 166.50 |
| | PIPE MATERIAL: CORRUGATED ALUMINUM PIPE | | ORIFICE #2: DIA 1.1 INCH, ELEV 172.20 |

*FOOTING DRAINS SHALL NOT BE CONNECTED TO DETENTION SYSTEM*




STANDARD PIPE DETENTION SYSTEM
NOT TO SCALE (ENGINEER TO FILL IN BLANKS)




SECTION A-A
RESTRICTOR CATCH BASIN DETAIL
NOT TO SCALE

RESTRICTOR CATCH BASIN NOTES:

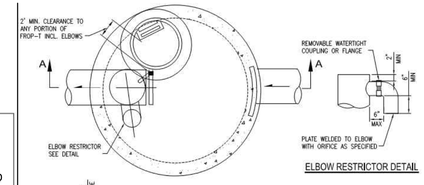
1. USE A MINIMUM OF A 72 IN. DIAM. TYPE 2 CATCH BASIN WHEN CONNECTING PIPE MATERIAL IS CONCRETE OR LCPE. A 54 IN. DIAM. TYPE 2 CATCH BASIN MAY BE USED FOR OTHER CIRCULAR SINGLE WALL PIPE (SUCH AS CORRUGATED ALUMINUM PIPE).
2. OUTLET PIPE: MIN. 6 INCH.
3. METAL PARTS: CORROSION RESISTANT. NON-GALVANIZED PARTS PREFERRED. GALVANIZED PIPE PARTS TO HAVE ASPHALT TREATMENT 1.
4. FRAME AND LADDER OR STEPS OFFSET SO:
   A. CLEANOUT GATE IS VISIBLE FROM TOP;
   B. CLIMB-DOWN SPACE IS CLEAR OF RISER AND CLEANOUT GATE;
   C. FRAME IS CLEAR OF CURB.
5. IF METAL OUTLET PIPE CONNECTS TO CEMENT CONCRETE PIPE, OUTLET PIPE TO HAVE SMOOTH O.D. EQUAL TO CONCRETE PIPE I.D. LESS 1/4 IN.
6. PROVIDE AT LEAST ONE 3 X 0.090 GAUGE SUPPORT BRACKET ANCHORED TO CONCRETE WALL WITH 5/8 IN. STAINLESS STEEL EXPANSION BOLTS OR EMBEDDED SUPPORTS 2 IN. INTO CATCH BASIN WALL (MAXIMUM 3'-0" VERTICAL SPACING).
7. THE SHEAR GATE SHALL BE MADE OF ALUMINUM ALLOY IN ACCORDANCE WITH ASTM B 26M AND ASTM B 275, DESIGNATION 2C32A, OR CAST IRON IN ACCORDANCE WITH ASTM A 48, CLASS 30B.
   THE LIFT HANDLE SHALL BE MADE OF A SIMILAR METAL TO THE GATE (TO PREVENT GALVANIC CORROSION), IT MAY BE OF SOLID ROD OR HOLLOW TUBING, WITH ADJUSTABLE HOOK AS REQUIRED.
   A NEOPRENE RUBBER GASKET IS REQUIRED BETWEEN THE RISER MOUNTING FLANGE AND THE GATE FLANGE. INSTALL THE GATE SO THAT THE LEVEL-LINE MARK IS LEVEL WHEN THE GATE IS CLOSED.
   THE MATING SURFACES OF THE LID AND THE BODY SHALL BE MACHINED FOR PROPER FIT.
   ALL SHEAR GATE BOLTS SHALL BE STAINLESS STEEL.

STANDARD DETENTION SYSTEM NOTES:

1. CALL DEVELOPMENT SERVICES (206-275-7605) 24 HOURS IN ADVANCE FOR A DETENTION SYSTEM INSPECTION BEFORE BACKFILLING AND FOR FINAL INSPECTIONS.
2. RESPONSIBILITY FOR OPERATION AND MAINTANANCE OF DRAINAGE SYSTEMS ON PRIVATE PROPERTY IS RESPONSIBILITY OF THE PROPERTY OWNER. MATERIAL ACCUMULATED IN THE STORAGE PIPE MUST BE REMOVED FROM CATCH BASINS TO ALLOW PROPER OPERATION. THE OUTLET CONTROL ORIFICE MUST BE KEPT OPEN AT ALL TIMES.
3. PIPE MATERIAL, JOINT, AND PROTECTIVE TREATMENT SHALL BE IN ACCORDANCE WITH SECTION 7.04 AND 9.05 OF THE WSDOT STANDARD SPECIFICATION FOR ROAD, BRIDGE, AND MUNICIPAL CONSTRUCTION, LATEST VERSION. SUCH MATERIALS INCLUDE THE FOLLOWING, LINED CORRUGATED POLYETHYLENE PIPE (LCPE), ALUMINIZED TYPE 2 CORRUGATED STEEL PIPE AND PIPE ARCH (MEETS AASHTO DESIGNATIONS M274 AND M36), CORRUGATED OR SPIRAL RIB ALUMINUM PIPE, OR REINFORCED CONCRETE PIPE. CORRUGATED STEEL PIPE IS NOT ALLOWED.

**Attachment 1**

*CITY OF MERCER ISLAND*
*STANDARD DETENTION SYSTEM WORKSHEET*
*(FOR IMPERVIOUS AREA OF 5,000 SF OR LESS)*

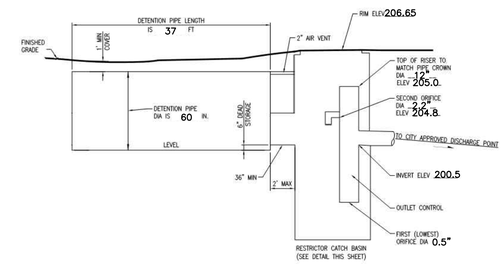



ELBOW RESTRICTOR DETAIL

PLAN VIEW

| | | | |
|---|---|---|---|
| OWNER: | | ADDRESS: 5236 W. MERCER WAY MERCER ISLAND, WA | PREPARED BY: D. WESTLEY |
| PERMIT #: | | | PHONE: 425.827.2014 |
| | | | DATE: 10/6/2017 |
| IMPERVIOUS SURFACE AREA (SF): 5,000 | DETENTION PIPE DIA (INCH): 60 | DETENTION PIPE LENGTH (FT): 37 | ORIFICE #1: DIA 0.5 INCH, ELEV 198.5 |
| | PIPE MATERIAL: CORRUGATED ALUMINUM PIPE | | ORIFICE #2: DIA 2.2 INCH, ELEV 204.8 |

*FOOTING DRAINS SHALL NOT BE CONNECTED TO DETENTION SYSTEM*




STANDARD PIPE DETENTION SYSTEM
NOT TO SCALE (ENGINEER TO FILL IN BLANKS)




SECTION A-A
RESTRICTOR CATCH BASIN DETAIL
NOT TO SCALE


RESTRICTOR CATCH BASIN NOTES:

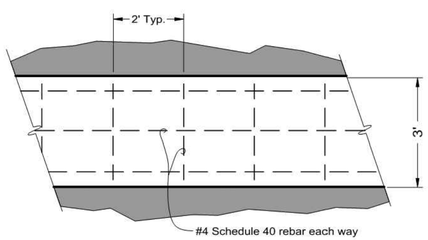
1. USE A MINIMUM OF A 72 IN. DIAM. TYPE 2 CATCH BASIN WHEN CONNECTING PIPE MATERIAL IS CONCRETE OR LCPE. A 54 IN. DIAM. TYPE 2 CATCH BASIN MAY BE USED FOR OTHER CIRCULAR SINGLE WALL PIPE (SUCH AS CORRUGATED ALUMINUM PIPE).
2. OUTLET PIPE: MIN. 6 INCH.
3. METAL PARTS: CORROSION RESISTANT. NON-GALVANIZED PARTS PREFERRED. GALVANIZED PIPE PARTS TO HAVE ASPHALT TREATMENT 1.
4. FRAME AND LADDER OR STEPS OFFSET SO:
   A. CLEANOUT GATE IS VISIBLE FROM TOP;
   B. CLIMB-DOWN SPACE IS CLEAR OF RISER AND CLEANOUT GATE;
   C. FRAME IS CLEAR OF CURB.
5. IF METAL OUTLET PIPE CONNECTS TO CEMENT CONCRETE PIPE, OUTLET PIPE TO HAVE SMOOTH O.D. EQUAL TO CONCRETE PIPE I.D. LESS 1/4 IN.
6. PROVIDE AT LEAST ONE 3 X 0.090 GAUGE SUPPORT BRACKET ANCHORED TO CONCRETE WALL WITH 5/8 IN. STAINLESS STEEL EXPANSION BOLTS OR EMBEDDED SUPPORTS 2 IN. INTO CATCH BASIN WALL (MAXIMUM 3'-0" VERTICAL SPACING).
7. THE SHEAR GATE SHALL BE MADE OF ALUMINUM ALLOY IN ACCORDANCE WITH ASTM B 26M AND ASTM B 275, DESIGNATION 2C32A, OR CAST IRON IN ACCORDANCE WITH ASTM A 48, CLASS 30B.
   THE LIFT HANDLE SHALL BE MADE OF A SIMILAR METAL TO THE GATE (TO PREVENT GALVANIC CORROSION), IT MAY BE OF SOLID ROD OR HOLLOW TUBING, WITH ADJUSTABLE HOOK AS REQUIRED.
   A NEOPRENE RUBBER GASKET IS REQUIRED BETWEEN THE RISER MOUNTING FLANGE AND THE GATE FLANGE. INSTALL THE GATE SO THAT THE LEVEL-LINE MARK IS LEVEL WHEN THE GATE IS CLOSED.
   THE MATING SURFACES OF THE LID AND THE BODY SHALL BE MACHINED FOR PROPER FIT.
   ALL SHEAR GATE BOLTS SHALL BE STAINLESS STEEL.

STANDARD DETENTION SYSTEM NOTES:

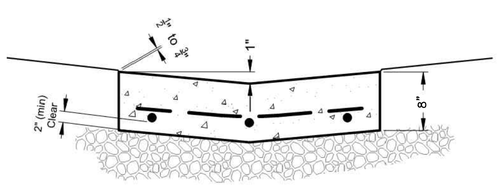
1. CALL DEVELOPMENT SERVICES (206-275-7605) 24 HOURS IN ADVANCE FOR A DETENTION SYSTEM INSPECTION BEFORE BACKFILLING AND FOR FINAL INSPECTIONS.
2. RESPONSIBILITY FOR OPERATION AND MAINTANANCE OF DRAINAGE SYSTEMS ON PRIVATE PROPERTY IS RESPONSIBILITY OF THE PROPERTY OWNER. MATERIAL ACCUMULATED IN THE STORAGE PIPE MUST BE REMOVED FROM CATCH BASINS TO ALLOW PROPER OPERATION. THE OUTLET CONTROL ORIFICE MUST BE KEPT OPEN AT ALL TIMES.
3. PIPE MATERIAL, JOINT, AND PROTECTIVE TREATMENT SHALL BE IN ACCORDANCE WITH SECTION 7.04 AND 9.05 OF THE WSDOT STANDARD SPECIFICATION FOR ROAD, BRIDGE, AND MUNICIPAL CONSTRUCTION, LATEST VERSION. SUCH MATERIALS INCLUDE THE FOLLOWING, LINED CORRUGATED POLYETHYLENE PIPE (LCPE), ALUMINIZED TYPE 2 CORRUGATED STEEL PIPE AND PIPE ARCH (MEETS AASHTO DESIGNATIONS M274 AND M36), CORRUGATED OR SPIRAL RIB ALUMINUM PIPE, OR REINFORCED CONCRETE PIPE. CORRUGATED STEEL PIPE IS NOT ALLOWED.


## 1 DETENTION SYSTEM DETAIL (WEST)
NTS

## 2 DETENTION SYSTEM DETAIL (EAST)
NTS




PLAN




TYPICAL SECTION

## 3 VALLEY GUTTER CURB
NTS

CALL BEFORE YOU DIG 811
UNDERGROUND SERVICE (USA)

| DATE | REVISION | STM |
|---|---|---|


PACE
An Engineering Services Company
11255 Kirkland Way, Suite 300
Kirkland, WA 98033
p. 425.827.2014 | f. 425.827.5043
Civil | Structural | Planning | Survey
paceengrs.com

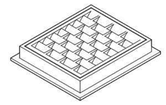

DANIEL EDWARD WESTLEY
STATE OF WASHINGTON
54340
REGISTERED PROFESSIONAL ENGINEER
10/24/17

**5236 W MERCER WAY**
**SINGLE FAMILY RESIDENCE**
**STORM DRAINAGE DETAILS**

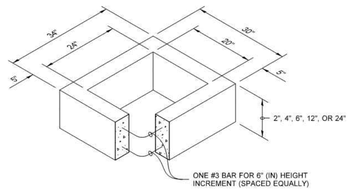
| SCALE: AS SHOWN | DATE: 10/10/17 |
|---|---|
| DESIGNED BY: DW | CHECKED BY: JS |
| JOB NUMBER 17387 | |
| SHEET: **C2.1** | |
| SHEET 7 OF 10 | |

FILE NAME: P:\P17\17387 5236 WEST MERCER WAY SFR\CAD\ENGINEERING\SHEETS\P17387-DET.DWG
SAVE TIME: 10/20/2017 9:02:33 AM
PLOT TIME: 10/24/2017 2:17 PM
USER NAME: TIM SOULE
XREF FILES: X17387-TBLOCK.dwg

DRAWN BY: LISA CYFORD



FRAME AND VANED GRATE



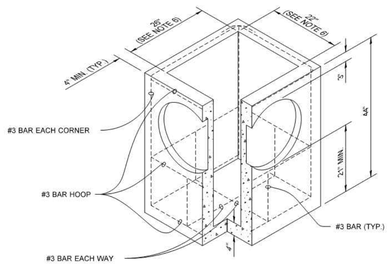

RECTANGULAR ADJUSTMENT SECTION

| PIPE ALLOWANCES | |
|---|---|
| PIPE MATERIAL | MAXIMUM INSIDE DIAMETER (INCHES) |
| REINFORCED OR PLAIN CONCRETE | 12" |
| ALL METAL PIPE | 15" |
| CPSSP ★ (STD. SPEC. SECT. 9-05.20) | 12" |
| SOLID WALL PVC (STD. SPEC. SECT. 9-05.12(1)) | 15" |
| PROFILE WALL PVC (STD. SPEC. SECT. 9-05.12(2)) | 15" |

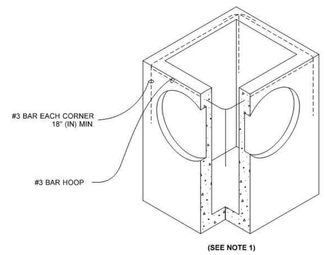
★ CORRUGATED POLYETHYLENE STORM SEWER PIPE

NOTES

1. As acceptable alternatives to the rebar shown in the **PRECAST BASE SECTION**, fibers (placed according to the Standard Specifications), or wire mesh having a minimum area of 0.12 square inches per foot shall be used with the minimum required rebar shown in the ALTERNATIVE **PRECAST BASE SECTION**. Wire mesh shall not be placed in the knockouts.
2. The knockout diameter shall not be greater than 20" (in). Knockouts shall have a wall thickness of 2" (in) minimum to 2.5" (in) maximum. Provide a 1.5" (in) minimum gap between the knockout wall and the outside of the pipe. After the pipe is installed, fill the gap with joint mortar in accordance with **Standard Specification Section 9-04.3**.
3. The maximum depth from the finished grade to the lowest pipe invert shall be 5' (ft).
4. The frame and grate may be installed with the flange down, or integrally cast into the adjustment section with flange up.
5. The Precast Base Section may have a rounded floor, and the walls may be sloped at a rate of 1 : 24 or steeper.
6. The opening shall be measured at the top of the **Precast Base Section**.
7. All pickup holes shall be grouted full after the basin has been placed.




PRECAST BASE SECTION




ALTERNATIVE PRECAST BASE SECTION

JULIE HEILMAN
STATE OF WASHINGTON
41819
REGISTERED
PROFESSIONAL ENGINEER

Heilman, Julie
Jan 25 2017 2:53 PM
coisgn

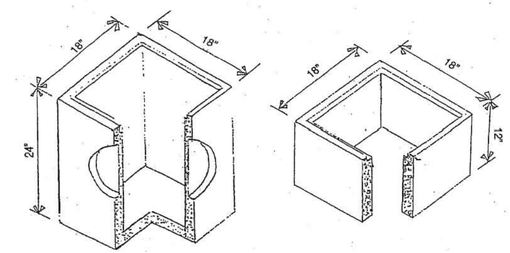
**CATCH BASIN TYPE 1**

**STANDARD PLAN B-5.20-02**

SHEET 1 OF 1 SHEET

APPROVED FOR PUBLICATION
Carpenter, Jeff
Jan 26 2017 6:08 AM
coisgn
STATE DESIGN ENGINEER
Washington State Department of Transportation

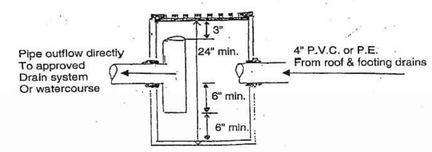
## 1 TYPE 1 CATCH BASIN
NTS




Catch Basin (C.B.)
Depth & Volume are
Minimum Dimensions.

Minimum Volume = 24 gal.

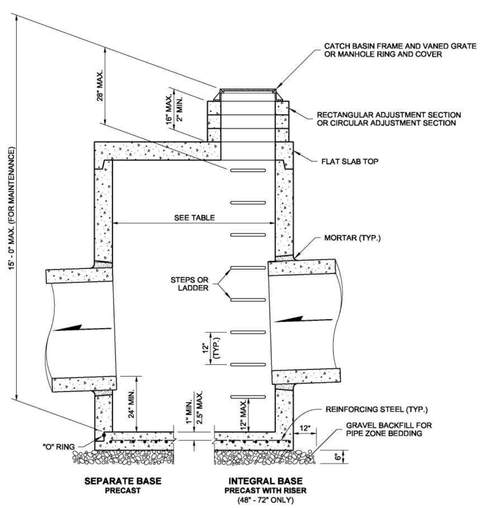
6" & 12" Adjustment Riser




Catch Basin with Oil Separator

## 3 CATCH BASIN WITH OIL SEPARATOR
NTS

DRAWN BY: LISA CYFORD




NOTES

1. No steps are required when height is 4' or less.
2. The bottom of the precast catch basin may be sloped to facilitate cleaning.
3. The rectangular frame and grate may be installed with the flange up or down. The frame may be cast into the adjustment section.
4. Knockouts shall have a wall thickness of 2" minimum to 2.5" maximum. Provide a 1.5" minimum gap between the knockout wall and the outside of the pipe. After the pipe is installed, fill the gap with joint mortar in accordance with **Standard Specification 9-04.3.**

| CATCH BASIN DIMENSIONS | | | | |
|---|---|---|---|---|
| CATCH BASIN DIAMETER | MIN. WALL THICKNESS | MIN. BASE THICKNESS | MAXIMUM KNOCKOUT SIZE | MINIMUM DISTANCE BETWEEN KNOCKOUTS |
| 48" | 4" | 6" | 36" | 8" |
| 54" | 4.5" | 8" | 42" | 8" |
| 60" | 5" | 8" | 48" | 8" |
| 72" | 6" | 8" | 60" | 12" |
| 84" | 8" | 12" | 72" | 12" |
| 96" | 8" | 12" | 84" | 12" |
| 120" | 10" | 12" | 96" | 12" |
| 144" | 12" | 12" | 108" | 12" |

| PIPE ALLOWANCES | | | | | |
|---|---|---|---|---|---|
| CATCH BASIN DIAMETER | PIPE MATERIAL WITH MAXIMUM INSIDE DIAMETER | | | | |
| | CONCRETE | ALL METAL | CPSSP ① | SOLID WALL PVC ② | PROFILE WALL PVC ③ |
| 48" | 24" | 30" | 24" | 30" | 30" |
| 54" | 30" | 36" | 30" | 36" | 36" |
| 60" | 36" | 42" | 36" | 42" | 42" |
| 72" | 42" | 54" | 42" | 48" | 48" |
| 84" | 54" | 60" | 54" | 48" | 48" |
| 96" | 60" | 72" | 60" | 48" | 48" |
| 120" | 66" | 84" | 60" | 48" | 48" |
| 144" | 78" | 96" | 60" | 48" | 48" |

① Corrugated Polyethylene Storm Sewer Pipe **(Standard Specification 9-05.20)**
② **(Standard Specification 9-05.12(1))**
③ **(Standard Specification 9-05.12(2))**

CASEY M. KRAMER
STATE OF WASHINGTON
44535
REGISTERED
PROFESSIONAL ENGINEER

NOTE: THIS PLAN IS NOT A CERTIFIED DOCUMENT IN ELECTRONIC FORMAT. THE ORIGINAL DOCUMENT IS SEALED AND SIGNED. ALTERATIONS TO THIS DOCUMENT IN ELECTRONIC FORMAT MAY BE DETECTABLE BY VISUAL INSPECTION. A COPY MAY BE OBTAINED UPON REQUEST.

**CATCH BASIN TYPE 2**

**STANDARD PLAN B-10.20-01**

SHEET 1 OF 1 SHEET

APPROVED FOR PUBLICATION
*Pasco Bakotich III* *02-07-12*
STATE DESIGN ENGINEER DATE
Washington State Department of Transportation

## 2 TYPE 2 CATCH BASIN
NTS

CALL BEFORE YOU DIG 811
UNDERGROUND SERVICE (USA)

| S'YM | REVISION | DATE |
|---|---|---|


PACE
An Engineering Services Company
11255 Kirkland Way, Suite 300
Kirkland, WA 98033
p. 425.827.2014 | f. 425.827.5043
Civil | Structural | Planning | Survey
paceengs.com


DANIEL EDWARD WESTLEY
STATE OF WASHINGTON
54340
REGISTERED
PROFESSIONAL ENGINEER
10/24/17

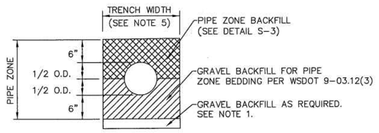
**5236 W MERCER WAY**
**SINGLE FAMILY RESIDENCE**

**STORM DRAINAGE DETAILS**

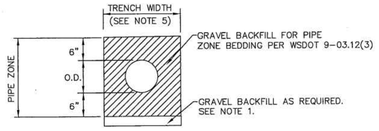
| SCALE: AS SHOWN | DATE: 10/10/17 |
|---|---|
| DESIGNED BY: DW | CHECKED BY: JS |
| JOB NUMBER 17387 | |
| SHEET: **C2.2** | |
| SHEET 8 OF 10 | |

FILE NAME: P:\P17\17387 5236 WEST MERCER WAY SFR\CAD\ENGINEERING\SHEETS\P17387-DET.DWG
SAVE TIME: 10/20/2017 9:02:33 AM
PLOT TIME: 10/24/2017 2:17 PM
USER NAME: TIM SOULE
XREF FILES: X17387-TBLOCK.dwg

## BEDDING FOR RIGID PIPE MATERIAL




## BEDDING FOR FLEXIBLE PIPE MATERIAL




**NOTES**

1. EXCAVATE UNSTABLE MATERIAL DOWN TO FIRM SOIL. REPLACE WITH GRAVEL BACKFILL PER WSDOT 9-03.12(3) AS DIRECTED BY THE CITY ENGINEER.
2. PROVIDE UNIFORM SUPPORT UNDER BARREL.
3. HAND TAMP UNDER HAUNCHES.
4. COMPACT BEDDING AND BACKFILL MATERIAL TO 95% MAX. DENSITY EXCEPT DIRECTLY OVER PIPE. HAND TAMP ONLY UNTIL MINIMUM 6" ABOVE TOP OF PIPE.
5. 30" MAXIMUM TRENCH WIDTH FOR PIPE UP TO AND INCLUDING 12", FOR PIPE LARGER THAN 12", USE O.D. PLUS 16".

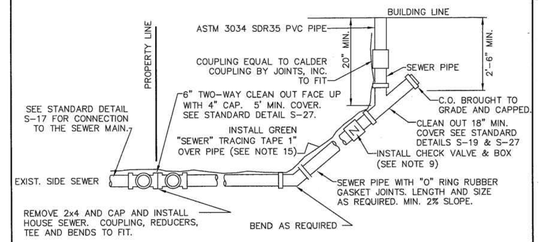
CITY OF MERCER ISLAND
**STANDARD DETAILS**
SEWER

PIPE BEDDING

| 6-5-2009 | NO SCALE | S-4 |
|---|---|---|

REV DATE | APPROVED

## 1 PIPE BEDDING
NTS




**BUILDING CONNECTION**

**NOTES**

1. ELBOWS SHALL NOT BE GREATER THAN 45 DEGREES.
2. CLEAN OUT IS REQUIRED FOR EACH PIPE LENGTH GREATER THAN 100' AND FOR EACH 90° ACCUMULATED ELBOW/100'.
3. ALL HOUSE PLUMBING OUTLETS MUST BE CONNECTED TO THE SEWER. NO DOWN SPOUTS OR STORM DRAINAGE MAY BE CONNECTED TO THE SEWER SYSTEM.
4. 18" MINIMUM COVERAGE OVER PIPE.
5. LAY PIPE IN STRAIGHT LINE BETWEEN BENDS. MAKE ALL CHANGES IN GRADE OR LINE WITH $\frac{1}{8}$ BEND OR WYE. 90° CHANGE WITH 1/8 BEND AND WYE.
6. 4" SEWER PIPE MINIMUM SIZE ON PROPERTY. 2% MINIMUM GRADE.
7. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH CURRENT SEWER ORDINANCES.
8. ALL CONSTRUCTION REQUIRES A PLAN SHOWING PROPERTY AND DIMENSIONS AND COMPLETION OF SIDE SEWER APPLICATION AND MAINTENANCE AGREEMENT, AS NEEDED.
9. BACK WATER VALVE (CHECK VALVE) IS REQUIRED:
   A. IF CONNECTED TO A SHARED SIDE SEWER.
   B. IF CONNECTION AT HOUSE IS LOWER THAN BOTH UPSTREAM AND DOWNSTREAM MANHOLE.
   C. SEE S-23 & S-24 FOR LAKE LINE REQUIREMENTS.
10. AS-BUILT DRAWING SHOWING LOCATION OF SIDE SEWER & ALL BENDS, C.O. ETC., IN RELATION TO THE HOUSE IS REQUIRED AFTER INSPECTION & INSTALLATION. SEE STANDARD DETAIL S-38 FOR A TYPICAL "AS BUILT".
11. THE MINIMUM PIPE SIZE FOR SIDE SEWERS SHALL BE:
    6" – WITHIN THE PUBLIC RIGHT-OF-WAY.
    4" – SINGLE FAMILY RESIDENCES.
    6" – 2 TO 6 SINGLE FAMILY RESIDENCES.
    6" – BUILDINGS OTHER THAN SINGLE FAMILY RESIDENCES.
12. UTILITY PIPE TRACER TAPE SHALL BE DETECTABLE BELOW GROUND SURFACE, COLOR CODED, WITH UTILITY NAME PRINTED ON TAPE. CONDUCTIVE WARNING TAPE REQUIRED OVER ALL WATER PIPE. TAPE SHALL BE MANUFACTURER'S STANDARD PERMANENT, BRIGHT-COLORED, CONTINUOUS PRINTED PLASTIC TAPE, ALUMINUM BACKED, INTENDED FOR DIRECT-BURIAL SERVICE. TAPE SHALL BE NOT LESS THAN 6" WIDE X 4 MILS THICK.

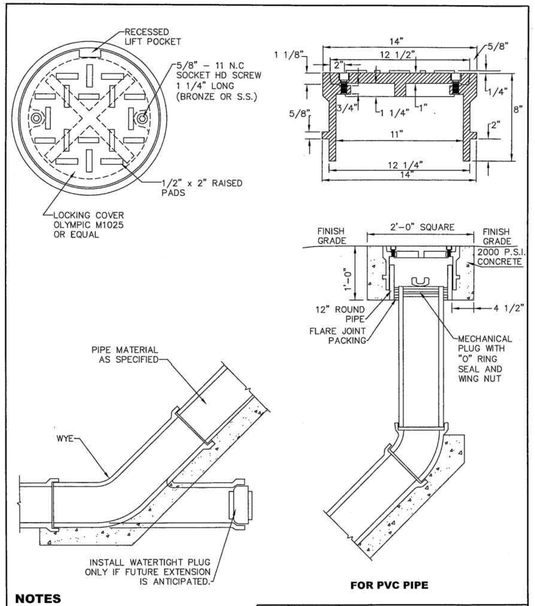
CITY OF MERCER ISLAND
**STANDARD DETAILS**
SEWER

HOUSE SEWER CONNECTION

| 6-5-2009 | NO SCALE | S-18 |
|---|---|---|

REV DATE | APPROVED

## 2 HOUSE SEWER CONNECTION
NTS




**NOTES**

1. SEE S-27 FOR INSTALLATION DETAILS.

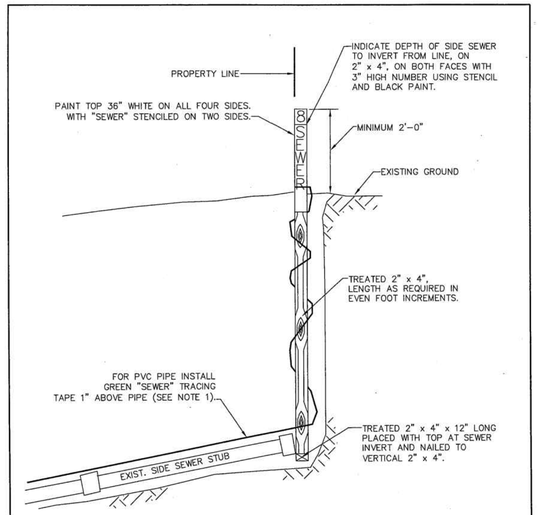
CITY OF MERCER ISLAND
**STANDARD DETAILS**
SEWER

CLEAN OUT DETAIL

| 6-5-2009 | NO SCALE | S-19 |
|---|---|---|

REV DATE | APPROVED

## 3 CLEAN OUT DETAIL
NTS




**NOTES**

1. UTILITY PIPE TRACER TAPE SHALL BE DETECTABLE BELOW GROUND SURFACE, COLOR CODED, WITH UTILITY NAME PRINTED ON TAPE. CONDUCTIVE WARNING TAPE REQUIRED OVER ALL WATER PIPE. TAPE SHALL BE MANUFACTURER'S STANDARD PERMANENT, BRIGHT-COLORED, CONTINUOUS PRINTED PLASTIC TAPE, ALUMINUM BACKED, INTENDED FOR DIRECT-BURIAL SERVICE. TAPE SHALL BE NOT LESS THAN 6" WIDE X 4 MILS THICK.

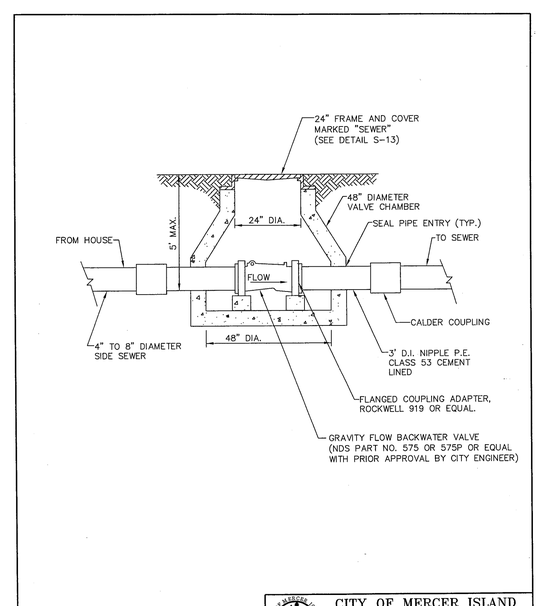
CITY OF MERCER ISLAND
**STANDARD DETAILS**
SEWER

SIDE SEWER MARKER POST

| 6-5-2009 | NO SCALE | S-20 |
|---|---|---|

REV DATE | APPROVED

## 4 SIDE SEWER MARKER POST
NTS




CITY OF MERCER ISLAND
**STANDARD DETAILS**
SEWER

BACK WATER VALVE ASSEMBLY
FOR JOINT USE SIDE SEWER
(4" OR 6" DIAMETER)

| 6-5-2009 | NO SCALE | S-26 |
|---|---|---|

REV DATE | APPROVED

## 5 BACKFLOW PREVENTION VALVE
NTS

**CALL BEFORE YOU DIG 811**
UNDERGROUND SERVICE (USA)

| DATE | REVISION | S'M |
|---|---|---|


PACE
An Engineering Services Company
11255 Kirkland Way, Suite 300
Kirkland, WA 98033
p. 425.827.2014 | f. 425.827.5043
Civil | Structural | Planning | Survey
paceengrs.com

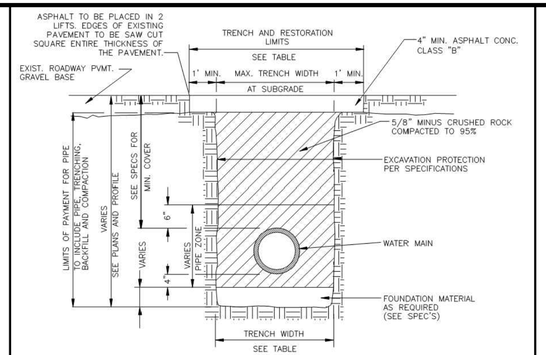

DANIEL EDWARD WESSELMAN
STATE OF WASHINGTON
54340
REGISTERED
PROFESSIONAL ENGINEER
10/24/17

**5236 W MERCER WAY**
**SINGLE FAMILY RESIDENCE**

**SANITARY SIDE SEWER DETAILS**

| SCALE: AS SHOWN | DATE: 10/10/17 |
|---|---|
| DESIGNED BY: DW | CHECKED BY: JS |
| JOB NUMBER 17387 | |
| SHEET: C2.3 | |
| SHEET 9 OF 10 | |

FILE NAME: P:\P17\17387 5236 WEST MERCER WAY SFR\CAD\ENGINEERING\SHEETS\P17387-DET.DWG
SAVE TIME: 10/20/2017 9:02:33 AM
PLOT TIME: 10/24/2017 2:18 PM
USER NAME: TIM SCULLE
XREF FILES: X17387- TBLOCK.dwg




| TRENCH WIDTH | | | |
|---|---|---|---|
| PIPE SIZE | PIPE ZONE MAX. TRENCH WIDTH | MAX. TRENCH WIDTH AT SUBGRADE | MAX. RESTORATION WIDTH AT SURFACE |
| WATER SERVICES | 2'-0" | 2'-0" | 4'-0" |
| 4" OR 6" | 2'-2" | 3'-0" | 5'-0" |
| 8" | 2'-4" | 4'-0" | 6'-0" |
| 10" | 2'-6" | 4'-0" | 6'-0" |
| 12" | 2'-8" | 4'-6" | 6'-6" |
| 16" | 3'-0" | 5'-0" | 7'-0" |

**NOTES**

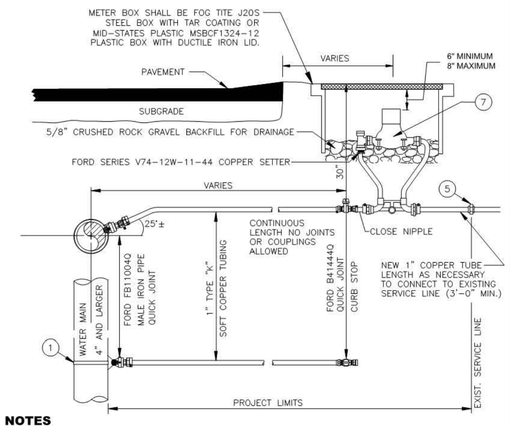
1. CALL TWO BUSINESS DAYS BEFORE YOU DIG. (1-800-424-5555)
2. ALL TRENCH BACKFILL MATERIAL SHALL BE 100% 5/8" MINUS CRUSHED ROCK PER WSDOT 9-03.9(3) UNLESS DIRECTED OTHERWISE BY CITY ENGINEER.

CITY OF MERCER ISLAND
**STANDARD DETAILS**
WATER
TRENCH SECTION

| 12-23-2013 | NO SCALE | W-3 |
|---|---|---|

REV DATE | APPROVED

## 1 TRENCH SECTION
NTS




**NOTES**

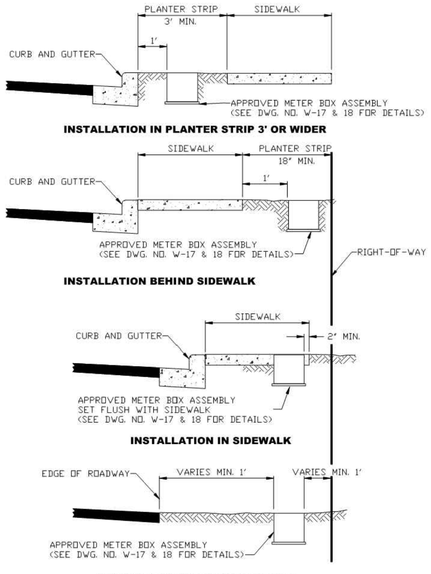
1. ON EXISTING WATER MAINS USE NYLON COATED D.I. SADDLE WITH STAINLESS STEEL SINGLE STRAP, ROMAC 101NS, OR APPROVED EQUAL. ON NEW DUCTILE IRON WATER MAIN 6" DIA. OR LARGER, THE SERVICE MAY BE DIRECTLY TAPPED.
2. MINIMUM DISTANCE BETWEEN CORP STOPS SHALL BE 18". MINIMUM DISTANCE BETWEEN TAPS, BETWEEN CORP STOP AND PIPE ENDS SHALL BE 24", ALL HORIZONALLY STAGGERED.
3. PLASTIC METER BOXES SHALL NOT BE INSTALLED WITHIN ROADWAY, SIDEWALK, OR DRIVEWAYS.
4. WHEN METER BOXES ARE INSTALLED IN PORTLAND CEMENT CONCRETE PAVEMENT OR SIDEWALK, CONTINUOUS FELT EXPANSION MATERIAL SURROUNDING THE PERIMETER OF THE METER BOX SHALL BE PROVIDED.
5. WHEN CONNECTING TO EXISTING SERVICE LINE CONTAINING FERROUS METAL, PROVIDE INSULATING COUPLING (DB SERIES WITH C21 SERIES ADAPTERS) AND PROVIDE REDUCER AS NECESSARY TO MATCH EXISTING SERVICE LINE DIAMETER.
6. SERVICE LINE SHALL BE PERPENDICULAR TO THE WATER MAIN AND STRAIGHT TO WATER METER, UNLESS OTHERWISE APPROVED BY CITY ENGINEER. PROVIDE WINDING SLACK IN THE SERVICE LINE BETWEEN THE MAIN AND WATER METER.
7. WATER METER SUPPLIED BY CITY.
8. ALL FITTINGS TO BE BRASS COMPRESSION TYPE, FORD QUICK JOINT OR EQUAL.
9. NO SERVICE CONNECTIONS BETWEEN BLOW-OFF AND END OF MAIN.

CITY OF MERCER ISLAND
**STANDARD DETAILS**
WATER
1" WATER METER INSTALLATION

| 10-16-2013 | NO SCALE | W-13 |
|---|---|---|

REV DATE | APPROVED

## 2 1" WATER METER INSTALLATION
NTS

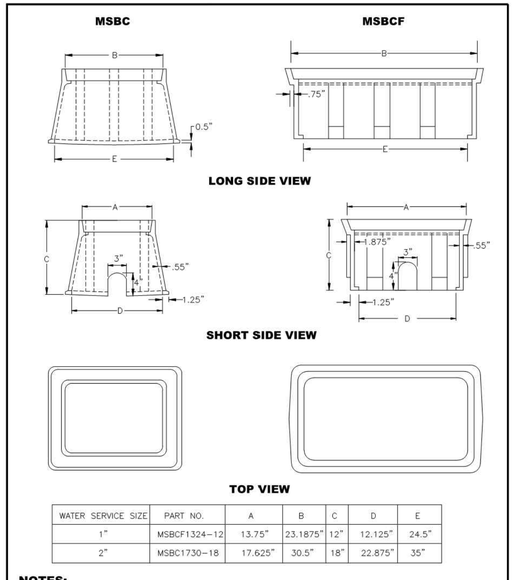



CITY OF MERCER ISLAND
**STANDARD DETAILS**
WATER
WATER METER PLACEMENT

| 3-20-2006 | NO SCALE | W-16 |
|---|---|---|

REV DATE | APPROVED

## 3 WATER METER PLACEMENT
NTS




| WATER SERVICE SIZE | PART NO. | A | B | C | D | E |
|---|---|---|---|---|---|---|
| 1" | MSBCF1324-12 | 13.75" | 23.1875" | 12" | 12.125" | 24.5" |
| 2" | MSBC1730-18 | 17.625" | 30.5" | 18" | 22.875" | 35" |

**NOTES:**

1. METER BOX SHALL BE MID-STATES PLASTICS AS SHOWN, WITH A DUCTILE IRON LID WITH A FLIP OR HINGED INSPECTION LID TO INCLUDE A 3/4" PICK HOLE.
2. PLASTIC WATER METER BOXES SHALL NOT BE INSTALLED WITHIN A DRIVING OR PARKING AREA.

CITY OF MERCER ISLAND
**STANDARD DETAILS**
WATER
1" & 2" PLASTIC WATER METER BOX

| 12-23-2013 | NO SCALE | W-18A |
|---|---|---|

REV DATE | APPROVED

## 4 1" & 2" PLASTIC WATER METER BOX
NTS

CALL BEFORE YOU DIG 811
UNDERGROUND SERVICE (USA)

| SYM | REVISION | DATE |
|---|---|---|

PACE
An Engineering Services Company
11255 Kirkland Way, Suite 300
Kirkland, WA 98033
p. 425.827.2014 | f. 425.827.5043
Civil | Structural | Planning | Survey
paceengrs.com

DANIEL EDWARD WISSLER
STATE OF WASHINGTON
54340
REGISTERED PROFESSIONAL ENGINEER
10/24/17

**5236 W MERCER WAY**
**SINGLE FAMILY RESIDENCE**
**WATER DETAILS**

| SCALE: AS SHOWN | DATE: 10/10/17 |
|---|---|
| DESIGNED BY: DW | CHECKED BY: JS |
| JOB NUMBER 17387 | |
| SHEET: C2.4 | |

SHEET 10 OF 10

FILE NAME: P:\P17\17387 5236 WEST MERCER WAY SFR\CAD\ENGINEERING\SHEETS\P17387-DET.DWG
SAVE TIME: 10/20/2017 9:02:33 AM
PLOT TIME: 10/24/2017 2:18 PM
USER NAME: TIM SOULE
XREF FILES: X17387-TBLOCK.dwg