
Drainage Report

5000 West Mercer Way – Moran Residence

Mercer Island, WA

Prepared for

Edward & Catherine Moran
5000 West Mercer Way
Mercer Island, WA 98040

Prepared by

JMJ TEAM
PO Box 2066
Sumner, WA 98390
206.596.2020
Justin Jones, PE

April 20, 2022



PROJECT ENGINEER'S CERTIFICATION

"I hereby state that this Drainage Control Plan for the Moran Residence has been prepared by me or under my supervision and meets minimum standard of care and expertise which is usual and customary in this community for professional engineers. I understand that Pierce County does not and will not assume liability for the sufficiency, suitability, or performance of drainage facilities prepared by me."



Justin Jones, PE



04-20-2022

TABLE OF CONTENTS

Project Overview and Maps	1
Existing Conditions Summary	2
Proposed Conditions Summary	2
Summary of Minimum Requirements	4

Appendix A:
Site Development Drawings

Appendix B:
City of Mercer Island Detention Sizing Handout

EXISTING CONDITIONS SUMMARY

The Moran Residence is a undeveloped 0.42 Acre site with grass and tree vegetation covering most the property. The site has steep slopes that slope from east to west.

The existing project site is pervious. The total impervious coverage allowed for this project is 35% or 6,403 SF.

PROPOSED CONDITIONS SUMMARY

The Moran Residence project proposes a house, permeable paver walkaway, concrete driveway, and site retaining walls. Site improvements include the construction of the improvements, clearing and grading, and utility service connections for storm detention, sewer, water, power and communication.

Stormwater management was evaluated for both the building roof areas, and the concrete driveway. Detention has been selected to manage stormwater runoff from the site. Roof leaders will route stormwater along the building and connect to a Type 2 catch basin. Runoff from the driveway will be collected through the Type 2 catch basin located north of the house. Stormwater will be collected in the Type 2 catch basin prior to entering the detention tanks. A control structure will be installed to ensure stormwater flows do not exceed 0.15 CFS, flows from the control structure will be routed to a Type 1 catch basin located in the northwest corner of the site. Excess flows from the driveway will be collected using a trench drain located at the bottom of driveway and will be routed to the Type 1 catch Basin. Stormwater will then be conveyed through a 6 PVC pipe and daylight into an existing ditch located along West Mercer Way.

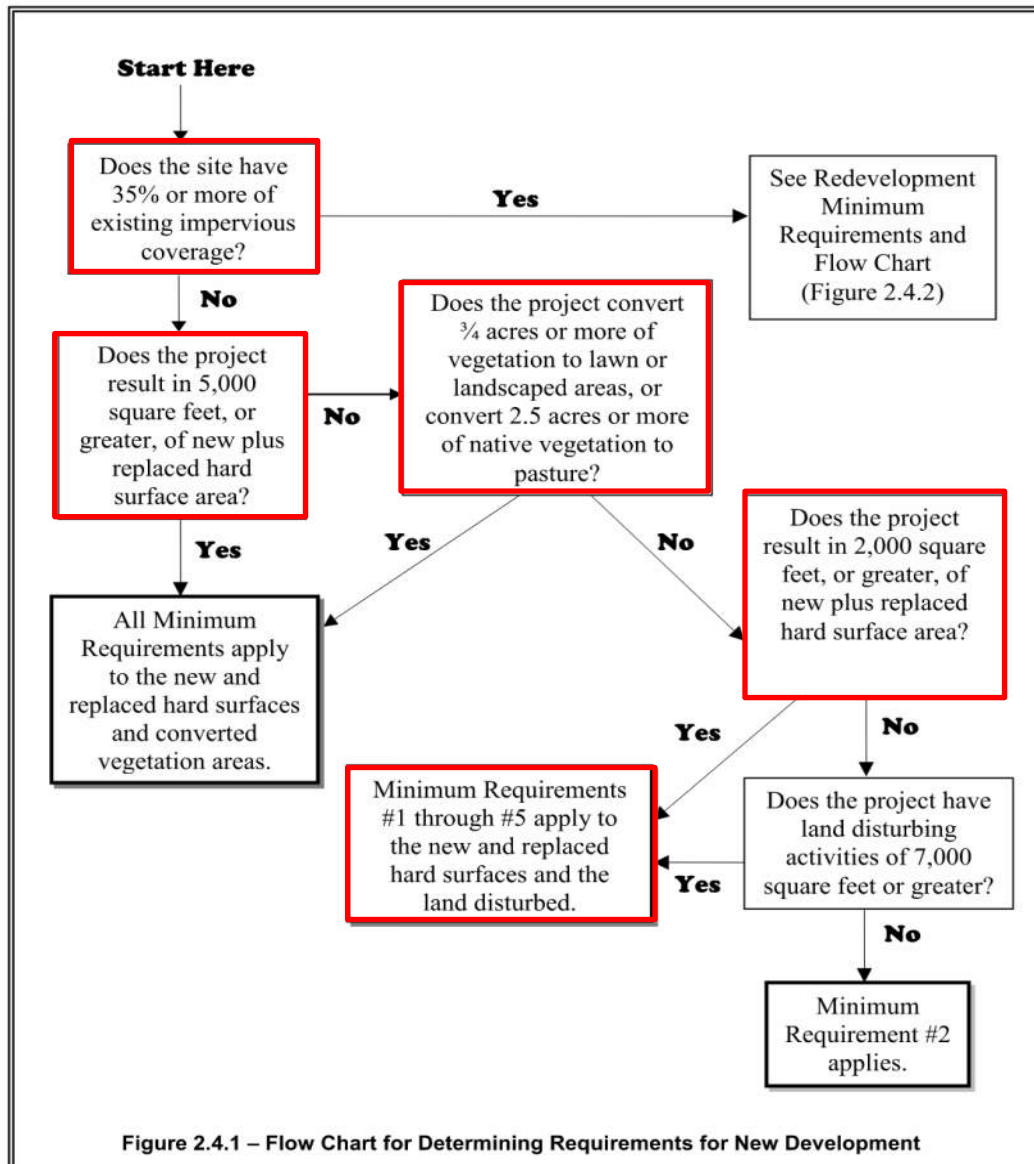
The impervious areas will be 25 percent of the entire site. Below is a summary of the proposed lot coverage.

LOT COVERAGE

Proposed Lot Coverage		
	Impervious Areas (SF)	Pervious Areas (SF)
Proposed House	2,664	
Proposed Driveway	1,793	
Proposed Retaining Walls	70	
Permeable Pavers		119
Landscaping/Vegetaion		13,719
Totals	4,457	13,838
Lot Size	18,295	
Max Allowed Impervious Coverage	35% (6,403 SF)	
Impervious Lot Coverage	25%	

SUMMARY OF MINIMUM REQUIREMENTS

The 2014 Stormwater Management Manual for Western Washington describes the minimum requirements for a new development project. Using the flowchart below, Minimum Requirements 1-5 apply to the project site.



MINIMUM REQUIREMENT 1: PREPARATION OF STORMWATER SITE PLANS

Stormwater Site Plan drawings are submitted with this Permit.

MINIMUM REQUIREMENT 2: CONSTRUCTION STORMWATER POLLUTION PREVENTION

A Temporary Erosion and Sediment Control Plan is included with this Civil Permit. Construction Stormwater Pollution Prevention measures may include: storm drain inlet protection; construction entrance; silt fence and vegetative filtration. See "Temporary Erosion & Sediment Control Plan" in Appendix A for details.

MINIMUM REQUIREMENT 3: SOURCE CONTROL OF POLLUTION

Source control BMPs will be implemented to minimize stormwater contamination and help comply with the 2014 Stormwater Management Manual for Western Washington Manual. BMP's for the project may include:

- *Inspect and clean treatment BMPs, conveyance systems, and catch basins as needed, and determine necessary O & M Improvements.*

MINIMUM REQUIREMENT 4: PRESERVATION OF NATURAL DRAINAGE SYSTEMS AND OUTFALLS

Natural drainage for the site is overland flow from east to west flowing into an existing ditch located along West Mercer Way. Stormwater will be conveyed to detention tanks located in northern portion of the site, stormwater will then outfall to an existing ditch located to the west along West Mercer Way.

MINIMUM REQUIREMENT 5: ONSITE STORMWATER MANAGEMENT

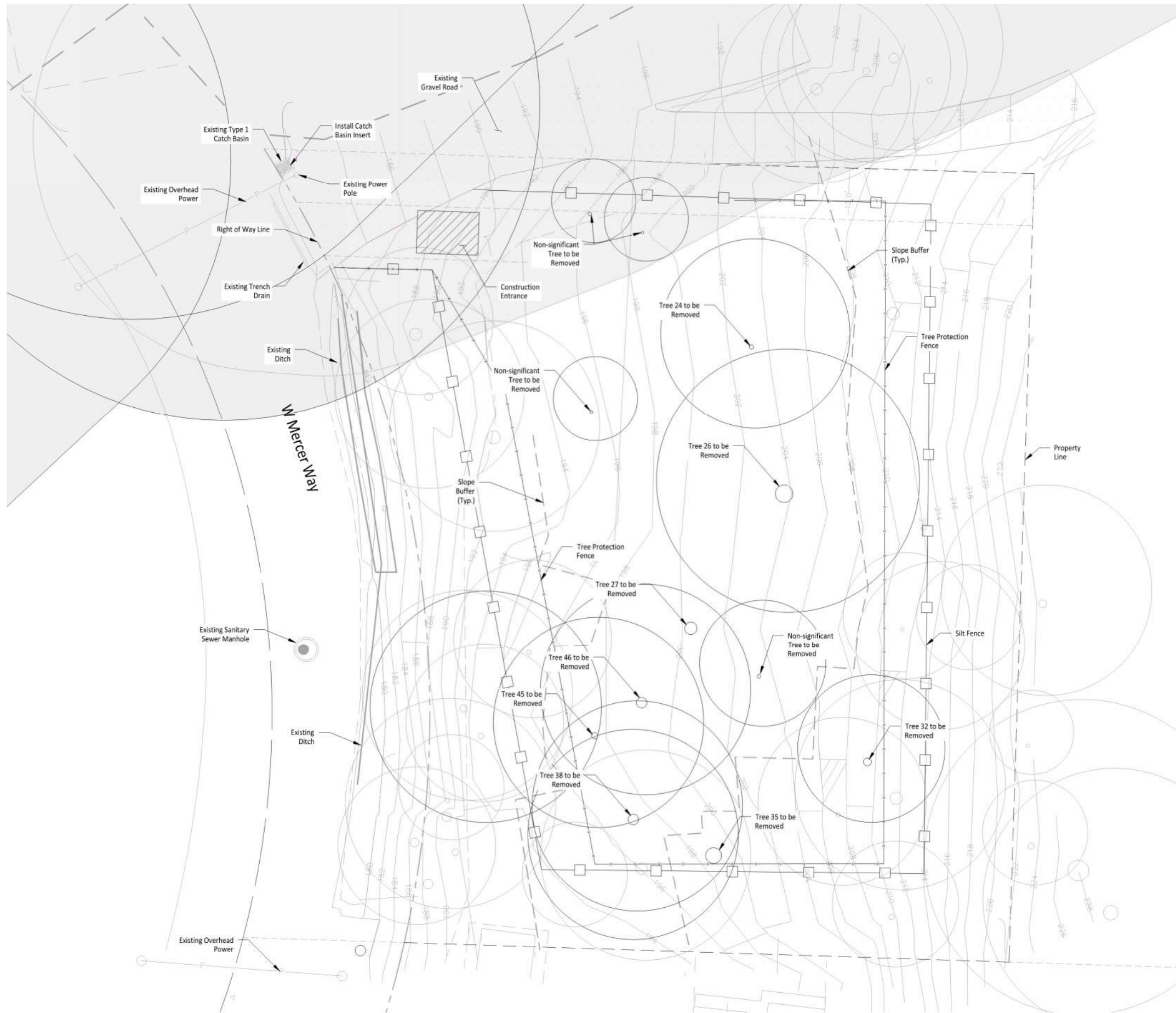
The Moran project site is 18,295 SF and will be 25% impervious after construction. Several stormwater management techniques were studied for the roof and driveway areas.

- Roofs:
 - Bioretention/Rain Gardens were deemed infeasible based on the geo-tech report, due to steep slopes of the site and impermeable soils at shallow depths infiltration was deemed infeasible.
 - Downspout Dispersion Systems were evaluated and deemed infeasible due to the steepness of the site and site constraints to achieve minimum flow paths.
 - Perforated stub connections were considered infeasible based on the geo-tech report, due to steep slopes of the site and shallow impermeable soils making infiltration infeasible.
 - 65/10 dispersion was deemed to be infeasible as the existing property does not maintain 65% of the site area in a native condition.
 - A Dispersion Trench was considered infeasible due to site constraints and not having adequate space for the placement of a dispersion trench.
 - Infiltration trenches were evaluated and were determined infeasible due to the impermeable soils located on site, based on findings found in the geo-tech report.
 - Detention was evaluated and deemed feasible as the BMP for project site, roof runoff will be collected and routed to on site detention system.

- Other Hard surfaces:
 - Bioretention/Rain Gardens were deemed infeasible based on the geo-tech report, due to steep slopes of the site and impermeable soils at shallow depths infiltration was deemed infeasible.
 - 65/10 dispersion was deemed to be infeasible as the existing property does not maintain 65% of the site area in a native condition.
 - Infiltration trenches were evaluated and were determined infeasible due to the impermeable soils located on site, based on findings found in the geo-tech report.
 - Permeable Pavement was deemed infeasible due to impermeable soils located on site. Making infiltration infeasible.
 - Sheet flow dispersion was deemed infeasible due to site constraints, the site slope is greater than 15%.
 - Concentrated flow dispersion was evaluated and deemed infeasible due to the steep site slopes and site constraints that minimum flow paths can't be met.
 - Detention was reviewed and deemed feasible to manage runoff from the proposed driveway. Runoff will be collected through a Type 2 catch basin and routed to the onsite detention tank systems.

LID standards were evaluated, and the Moran residence does not meet the minimum LID thresholds. The projects proposes more than 2,000 SF of impervious area and has more than a net 500 SF impervious area increase to the project site. Therefore, the project is required to use onsite detention. Detention was sized using the City of Mercer Island Detention Sizing Handout (See Appendix B). Using the control structure, flows leaving the site will not exceed 0.15 CFS of the predeveloped flows of the site. Site flows will be routed to a Type 1 catch basin located on the west corner of the site and outfall to an existing ditch located along West Mercer Way.

APPENDIX A



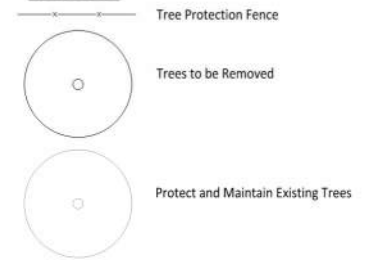
TESC NOTES

- Contractor to install temporary erosion and sediment control measures as necessary to ensure stormwater leaving the site is free of settleable solids.
- Roads shall be cleaned thoroughly as needed to protect stormwater infrastructure and downstream water resources. Sediment shall be removed from roads by shoveling or pickup sweeping and be transported to a controlled sediment disposal area.
- Install storm drain inlet protection in all existing catch basins within the project vicinity per City of Mercer Island Detail 4.2.8.
- Install Stabilized Construction Entrance per City of Mercer Island Detail 4.1.1.
- Install Silt Fence as necessary. See City of Mercer Island Detail 4.2.12.
- Install straw bale barriers, wattles and other TESC measures as necessary.
- Exposed soils shall be watered as necessary to prevent dust from leaving the site.
- Contractor to mark clearing limits with lath and flagging.
- Concrete handling and equipment washing shall in accordance with DOE BMP C151.

GENERAL NOTES

- See Tree Inventory Tables in Arborist Report included in this submittal.

LEGEND



Owner/Developer:

Edward & Catherine Moran
5000 West Mercer Way
Mercer Island, WA 98040

Architect:

Plan One Fine Home Design
5125 47th Ave S
Seattle, WA 98118
206-612-8511

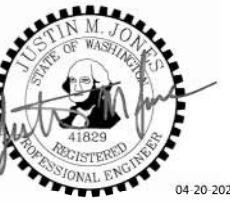
Engineer:

JM TEAM
Justin Jones, PE
PO Box 2066
Sumner, WA 98390
(206) 596-2020

Project:

Moran Residence

**ONE INCH AT FULL SCALE.
IF NOT, SCALE ACCORDINGLY**



REV	DATE	DESCRIPTION

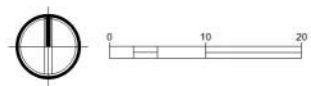
SHEET TITLE:
Existing Site & TESC Plan

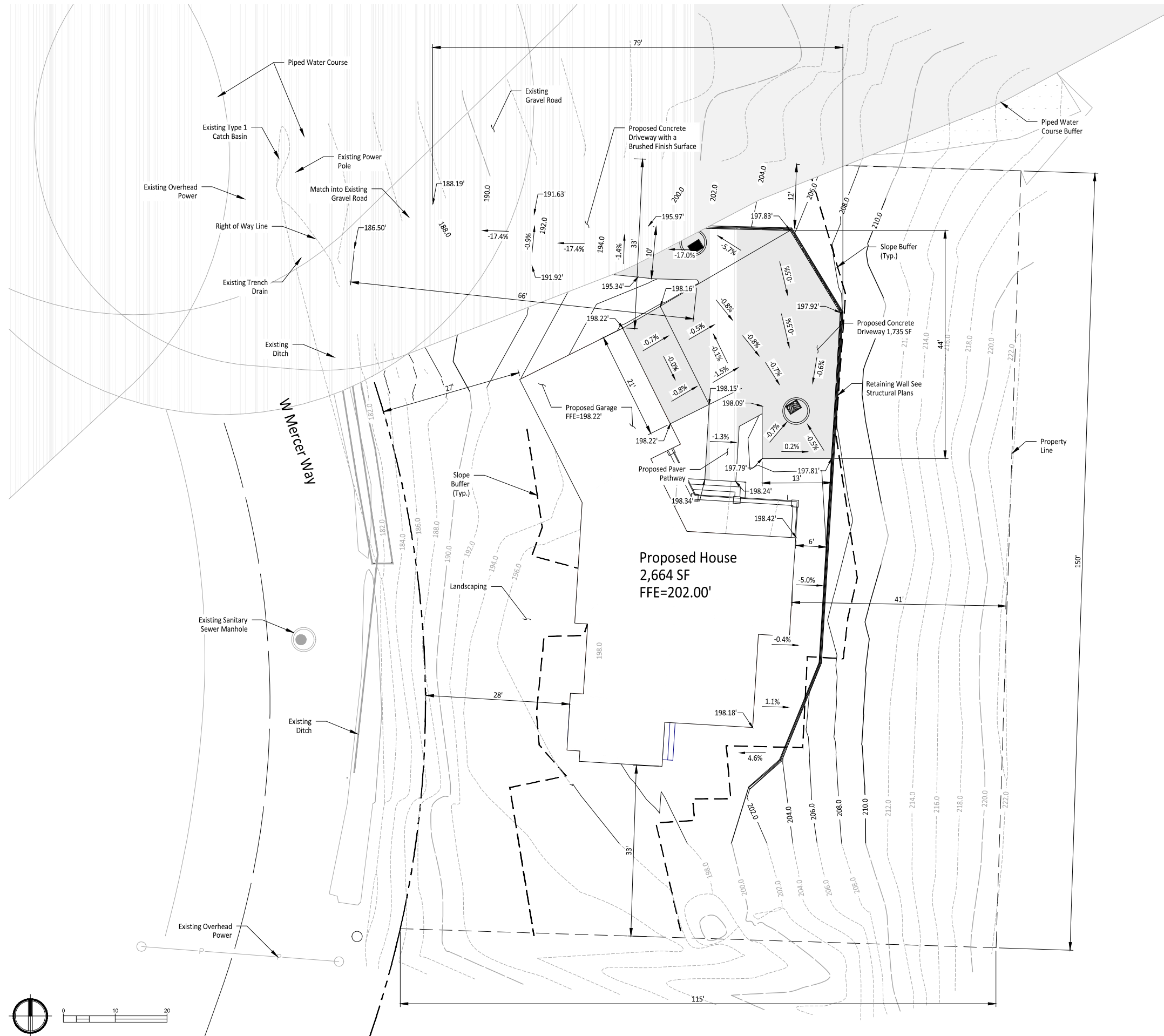
PROJ. NO: 1576001
DATE: April 20, 2022
DRAWN BY: DESIGN BY:

SHEET NUMBER:
C-01

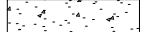


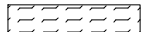
CALL TWO BUSINESS DAYS BEFORE YOU DIG
1-800-424-5555
UTILITIES UNDERGROUND LOCATION CENTER

File: 1576001-C-Ex.dwg Path: J:\1576 - Moran\001 - W. Mercer Way\CAD\ Plotted by: JMJ Team Date: 20-Apr-22 11:40:33am





LEGEND

-  Proposed Concrete
-  Proposed Concrete with Brushed Surface
-  Proposed Permeable Pavers
-  Landscaping/Native Vegetation

GENERAL NOTES

- See Detail on Sheet C-05 for Standard Concrete Section.
- See Detail on Sheet C-05 for Permeable Paver Section.
- Driveway Slopes over 20.0% add a Brush Surface Finish to increase Traction.

LOT COVERAGE

Proposed Lot Coverage		
	Impervious Areas (SF)	Pervious Areas (SF)
Proposed House	2,664	
Proposed Driveway	1,793	
Proposed Retaining Walls	70	
Permeable Pavers		119
Landscaping/Vegetation		13,719
Totals	4,457	13,838
Lot Size 18,295		
Max Allowed Impervious Coverage 35% (6,403 SF)		
Impervious Lot Coverage	25%	

Owner/Developer:
Edward & Catherine Moran
5000 West Mercer Way
Mercer Island, WA 98040

Architect:
Plan One Fine Home Design
5125 47th Ave S
Seattle, WA 98118
206-612-8511

Engineer:

Justin Jones, PE
PO Box 2066
Summer, WA 98390
(206) 596-2020

Project:
Moran Residence

ONE INCH AT FULL SCALE.
IF NOT, SCALE ACCORDINGLY




REV	DATE	DESCRIPTION

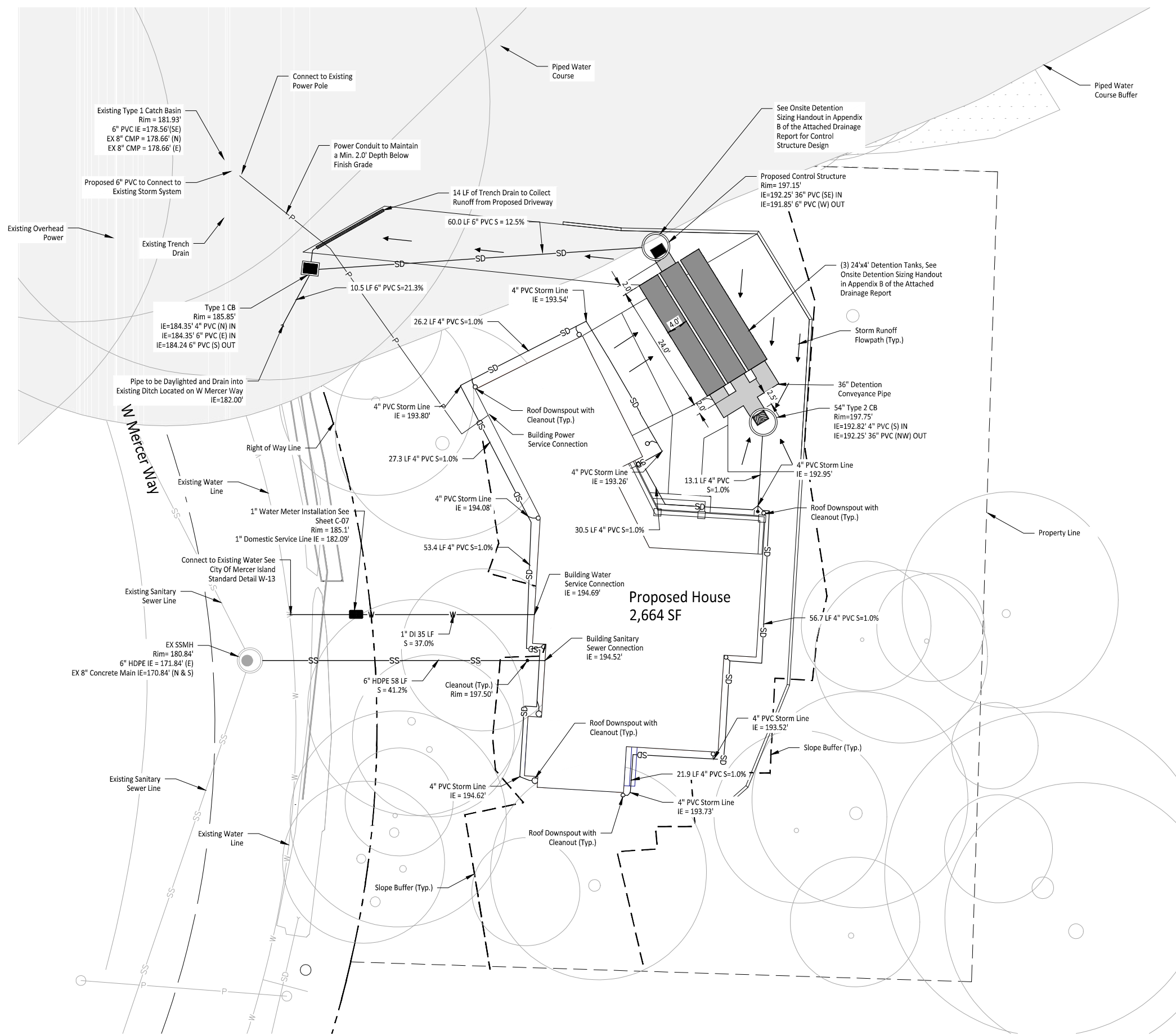
SHEET TITLE:
Site & Grading Plan

PROJ. NO: 1576001
DATE: April 20, 2022
DRAWN BY: DESIGN BY:

SHEET NUMBER:
C-02

CALL TWO BUSINESS DAYS BEFORE YOU DIG

1-800-424-5555
UTILITIES UNDERGROUND LOCATION CENTER

Path: J:\1576 - Moran\001 - W Mercer Way\CAD\ Plotted by: JMJ Team Date: 20-Apr-22 11:34:08am File: 1576001C-SP.dwg



LEGEND

- SS— Sanitary Sewer Line
- W— Water Line
- P— Power Conduit
- SD— Stormwater Line

CONSTRUCTION NOTES

- ASTM 3034 SDR 35 PVC pipe, fused solid wall HDPE, schedule 40 ABS, DIP or CIP (up to 8 ft. depth). Over 8 ft. depth and slopes more than 20%, DIP, CIP, or fused solid wall HDPE are required.
- Bedding material for open cut construction must be pea gravel, sand, control density fill (CDF), or 5/8" minus C.R.
- Select backfill material shall be 5/8" minus C.R. or control density fill (CDF).
- Imported backfill material shall be bank run gravel or pit run gravel from an approved supplier meeting APWA/WSDOT gradation specifications. Not allowed in right-of-way.
- Rubber gaskets must be used when appropriate.
- Rigid couplings must be used for connections to existing stubs in right-of-way.
- A stainless steel strap and saddle (Romac) must be used for coring.
- 1" Water Meter Installation see City of Mercer Island Detail on sheet C-05.
- Tapping Tee Installation see City of Mercer Island Detail on sheet C-05.

GENERAL NOTES

- Water Service laterals shall have a minimum cover of 12 inches.
- Roof leader locations to be verified by contractor prior to construction.
- Storm pipes to maintain a minimum cover of 1.5' from finish grade.
- Storm pipes to be SDR 35 PVC piping.
- Sanitary Sewer laterals to be solid wall HDPE piping.
- Sanitary Sewer laterals to maintain a minimum cover of 3.0' from finish grade.
- Pipes entering and exiting catch basins a tee section or bent elbow must be installed for spill control.
- Power conduit shall maintain a minimum cover of 2.0' from finish grade.

Owner/Developer:
Edward & Catherine Moran
5000 West Mercer Way
Mercer Island, WA 98040

Architect:
Plan One Fine Home Design
5125 47th Ave S
Seattle, WA 98118
206-612-8511

Engineer:
JMUTEAM
Justin Jones, PE
PO Box 2066
Sumner, WA 98390
(206) 596-2020

Project:
Moran Residence

ONE INCH AT FULL SCALE.
IF NOT, SCALE ACCORDINGLY



REV	DATE	DESCRIPTION

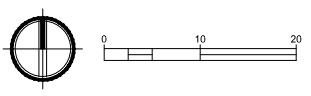
SHEET TITLE:
Utility Plan

PROJ. NO.	1576001
DATE	April 20, 2022
DRAWN BY:	DESIGN BY:

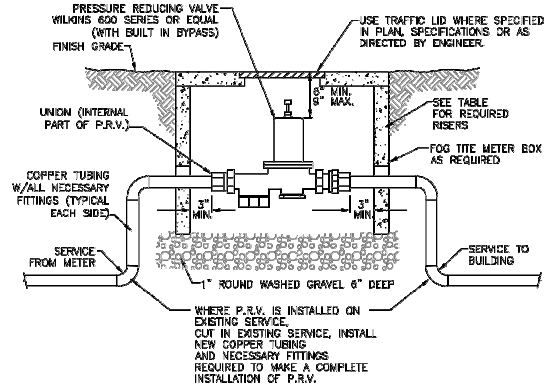
SHEET NUMBER:
C-03

DWG.

File: 1576001C-STRM.dwg Path: J:\1576 - Moran\001 - W Mercer Way\CAD\ Printed by: JMU Team Date: 20-Apr-22 2:35:17pm



CALL TWO BUSINESS DAYS BEFORE YOU DIG
1-800-424-5555
UTILITIES UNDERGROUND LOCATION CENTER



P.R.V. SIZE	FOG TITE METER BOX NO.	RISER REQUIRED
2"	2	12"
1-1/2"	2	12"
1-1/4"	1	8"
1"	1	8"
3/4"	1	4"
1/2"	1	4"

NOTES
1. P.R.V. SHALL HAVE AN INTEGRAL BYPASS.

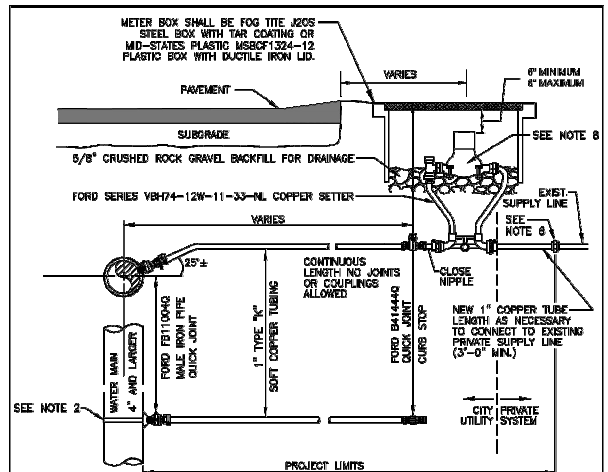


**CITY OF MERCER ISLAND
STANDARD DETAILS
WATER**

**RESIDENTIAL
PRESSURE REDUCING VALVE**

12-24-2013 NO SCALE W-28

REV	DATE	DESCRIPTION	APPROVED



- NOTES**
- WATER SERVICES SHALL COMPLY WITH THE REDUCTION OF LEAD IN DRINKING WATER ACT DATED 01/04/2014.
 - ON EXISTING WATER MAINS USE NYLON COATED D.I. SADDLE WITH STAINLESS STEEL DOUBLE STRAPS, ROMAC 2230S, OR APPROVED EQUAL.
 - MINIMUM DISTANCE BETWEEN CORP STOPS SHALL BE 18\"/>

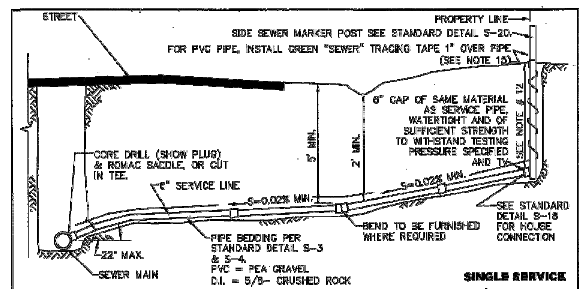


**CITY OF MERCER ISLAND
STANDARD DETAILS
WATER**

1" WATER METER INSTALLATION

02-05-2021 NO SCALE W-13

REV	DATE	DESCRIPTION	APPROVED



- NOTES**
- ELEVATIONS SHALL NOT BE GREATER THAN 40 DEGREES.
 - CLEAN OUT IS REQUIRED FOR EACH PIPE LENGTH GREATER THAN 100' AND FOR EACH 90° ACCUMULATED ELBOW.
 - RIGHT-OF-WAY RESTORATION SHALL MATCH OR EXCEED THE ORIGINAL CONDITION AND BE IN ACCORDANCE WITH CITY SPECIFICATIONS.
 - ALL TRENCH BACKFILL IN PUBLIC RIGHT-OF-WAY OR ROADWAY AREAS SHALL BE CRUSHED SURFACING PER WSDOT (S-DRAW) OR SALK RUN GRAVEL PER WSDOT S-533A, COMPACTED IN 4" LIFTS OR MAY BE TOP WORK SPECIFIED BY THE CITY ENGINEER (SEE DETAIL S-23).
 - LAY PIPE IN STRAIGHT LINE BETWEEN BENDS. MAKE ALL CHANGES IN GRADE OF LINE WITH 1/8" BENDS OR 90° CHANGES WITH 1/2" BEND AND 90°.
 - 8" SEWER PIPE MINIMUM SIZE IN RIGHT-OF-WAY, AND ELSEWHERE AS DIRECTED BY ENGINEER, TO THE GRADE (UNLESS DIRECTED BY ENGINEER, FOR MAXIMUM).
 - ALL 8" MAINS TO BE TAPPED IN ACCORDANCE WITH WAC 356-82-03735 STATE FEDERAL GUIDELINES AND CONVENTION.
 - CORNER PUNCTURE IN RIGHT-OF-WAY MUST BE DONE BY A REGISTERED AND LICENSED CONTRACTOR.
 - ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH CURRENT CITY SEWER ORDINANCES.
 - WHERE CITY ENGINEER ALLOWS SIDE SEWER CONNECTIONS TO MAINLINE, WIDTH OF SIDE SEWER SHALL BE EQUAL TO OR ABOVE MAIN SEWER CROWN, BUT NOT TO EXCEED 18" ABOVE INVERT OF MAIN SEWER.
 - UNLESS OTHERWISE INDICATED ON PLAN, SIDE SEWER SHALL BE MIN. OF 6" DEEP AT PROPERTY LINE, OR 9" LOWER THAN THE LOWEST ELEVATION, WHICH EVER IS LOWER.
 - ALL PIPE MATERIALS NOT TO STANDARD SHALL BE APPROVED AND REPLACED WITH SUSTAINABLE IRON OR PVC PIPE OF THE SAME SIZE.
 - IF A BUILDING SEWER IS TO SERVE MORE THAN ONE PROPERTY, BY JOB AGREEMENT OF THE OWNERS, AN APPROVED EASEMENT INSURING THAT ALL PROPERTIES PROVIDED SHALL HAVE PERPETUAL USE OF THE SIDE SEWER, HAVING PROVISIONS FOR OPERATION, MAINTENANCE, RECONSTRUCTION AND FOR ACCESS FOR REPAIR PURPOSES SHALL BE SIGNED BY THE OWNERS. THIS EASEMENT SHALL BE RECORDABLE WITH THE COUNTY CLERK. A SIX INCH (MINIMUM) DIA. 8" PIPE SHALL BE USED FOR THE COMMON LINE AND A SIX INCH CLEARANCE EXTENDING TO WITHIN 12 INCHES OF THE GROUND SURFACE SHALL BE PROVIDED AT THE VEE WHERE THE LIFTED BRACE CONNECTIONS ARE MADE. DISPOSABLE VALVES SHALL BE INSTALLED ON SERVICE LINES UPSTREAM OF THE CONNECTION TO THE SHARED SIDE SEWER.
 - THE CITY ENGINEER MAY REQUIRE BACKFLOW VALVES ON SIDE SEWER WHERE DEEMED NECESSARY. THE OPERATIVE OPERATION AND MAINTENANCE OF ANY BACKFLOW VALVE SHALL BE THE RESPONSIBILITY OF THE OWNER OF THE SIDE SEWER.
 - UTILITY PIPE TRACING TAPE SHALL BE DETECTABLE BELOW GROUND SURFACE, COLOR CODED, WITH UTILITY TAPE PRINTED ON TAPE. COLOR CODED UTILITY TAPE SHALL BE REQUIRED OVER ALL WATER PIPE. TAPE SHALL BE MANUFACTURER'S WRAPPED PERMANENT, BROWN-COLORED, CONTINUOUS PRINTED PLASTIC TAPE. ALL MAIN SINKERS PROVIDED FOR DUAL SERVICE, TAPE SHALL BE NOT LESS THAN 6" WIDE X 4 MILS THICK.



**CITY OF MERCER ISLAND
STANDARD DETAILS
SEWER**

SIDE SEWER CONNECTION AND STUB

6-5-2008 NO SCALE S-17

REV	DATE	DESCRIPTION	APPROVED

Owner/Developer:

Edward & Catherine Moran
5000 West Mercer Way
Mercer Island, WA 98040

Architect:

Plan One Fine Home Design
5125 47th Ave S
Seattle, WA 98118
206-612-8511

Engineer:

JMTEAM
Justin Jones, PE
PO Box 2066
Sumner, WA 98390
(206) 596-2020

Project:

Moran Residence

ONE INCH AT FULL SCALE.
IF NOT, SCALE ACCORDINGLY



04-20-2022

REV	DATE	DESCRIPTION

SHEET TITLE:

Details

PROJ. NO. 1576001

DATE: April 20, 2022

DRAWN BY: DESIGN BY:

SHEET NUMBER:

C-06

CALL TWO BUSINESS DAYS BEFORE YOU DIG
1-800-424-5555
UTILITIES UNDERGROUND LOCATION CENTER

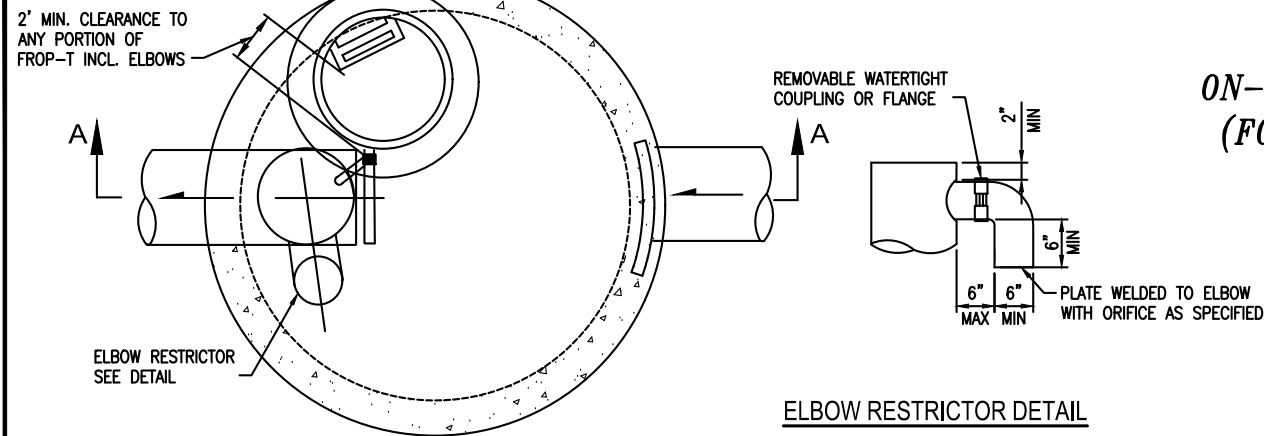


UTILITIES UNDERGROUND LOCATION CENTER

File: 1576001C-DT.dwg Path: J:\1576 - Moran\001 - W. Mercer Way.CAD Plotted by: JMD Team Date: 20-Apr-22 11:36:23am

APPENDIX B

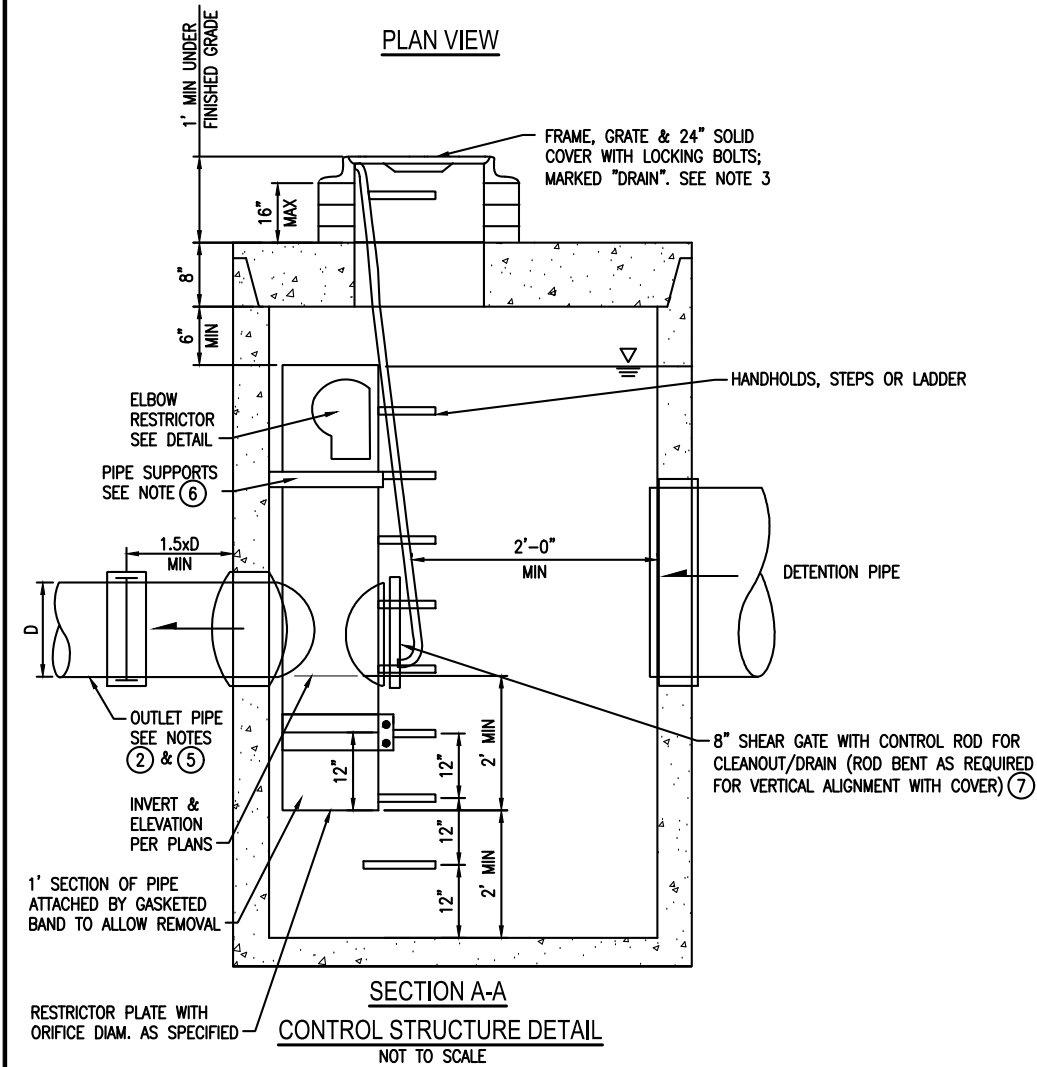
ATTACHMENT 1
CITY OF MERCER ISLAND
ON-SITE DETENTION SYSTEM WORKSHEET
(FOR NEW PLUS REPLACED IMPERVIOUS
AREA OF 9,500 SF OR LESS)



PLAN VIEW

ELBOW RESTRICTOR DETAIL

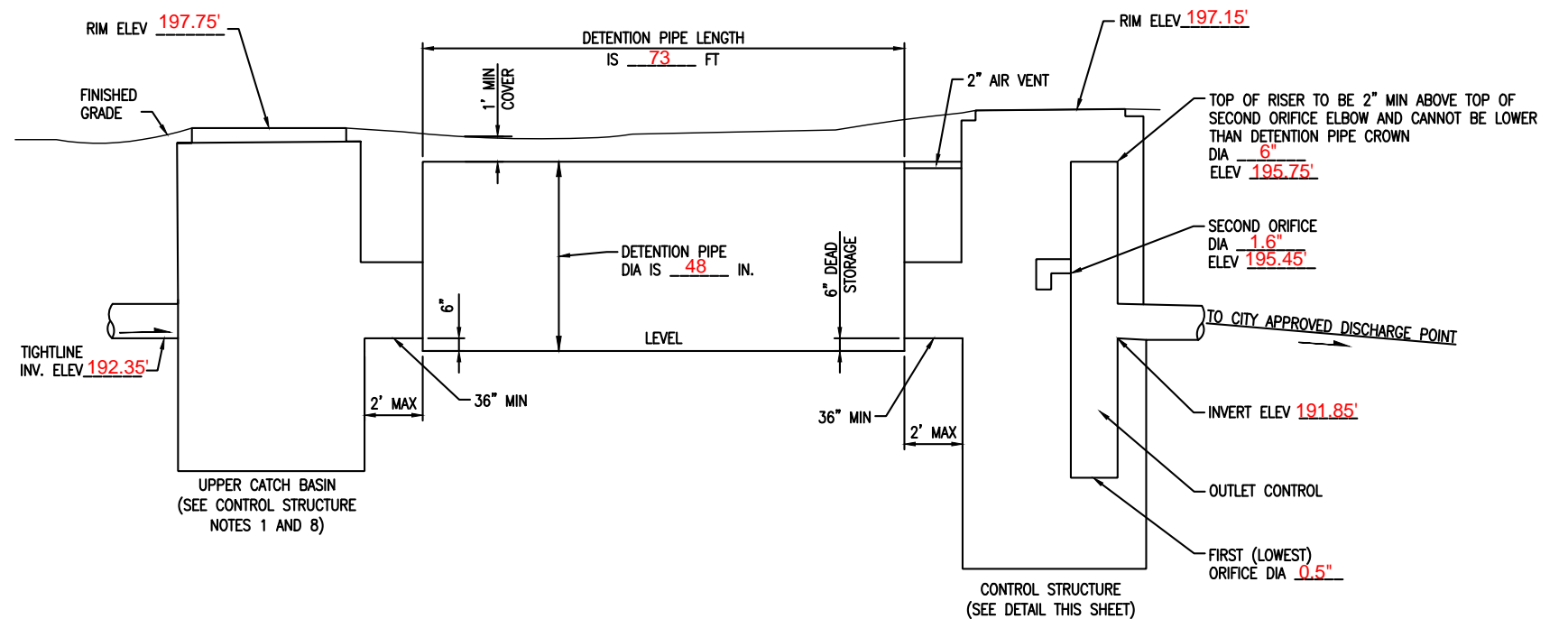
OWNER: <u>Edward & Cathrine Moran</u>	ADDRESS: <u>5000 West Mercer Way</u>	PREPARED BY: <u>Justin Jones</u>
PERMIT #: _____	<u>Mercer Island, WA</u>	PHONE: <u>206-596-2020</u>
		DATE: <u>04/20/2022</u>
NEW PLUS REPLACED IMPERVIOUS SURFACE AREA (SF): <u>4,457 SF</u>	DETENTION PIPE DIA (INCH): <u>48"</u>	DETENTION PIPE LENGTH (FT): <u>73</u>
SOIL TYPE: <u>Type B</u>	PIPE MATERIAL: <u>HDPE</u>	ORIFICE #1 DIA <u>0.5</u> INCH, ELEV <u>189.85'</u>
		ORIFICE #2 DIA <u>1.6</u> INCH, ELEV <u>195.45'</u>



SECTION A-A

CONTROL STRUCTURE DETAIL

NOT TO SCALE



ON-SITE DETENTION SYSTEM
 NOT TO SCALE (ENGINEER TO FILL IN BLANKS)

CONTROL STRUCTURE NOTES:

- ① USE A MINIMUM OF A 54 IN. DIAM. TYPE 2 CATCH BASIN. THE ACTUAL SIZE IS DEPENDENT ON CONNECTING PIPE MATERIAL AND DIAMETER.
- 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 ZG32A; 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.
- ⑧ THE UPPER CATCH BASIN IS REQUIRED IF THE LENGTH OF THE DETENTION PIPE IS GREATER THAN 50 FT.

ON-SITE 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.
4. FOOTING DRAINS SHALL NOT BE CONNECTED TO THE DETENTION SYSTEM.