

PROPOSED INFILTRATION LOCATIONS  
TO BE PROTECTED FROM  
COMPACTION DURING CONSTRUCTION

PROPOSED INFILTRATION LOCATIONS  
TO BE PROTECTED FROM  
COMPACTION DURING CONSTRUCTION

NO STAGING OR STORAGE  
WITHIN RIGHT-OF-WAY  
ALL STAGING AND STORAGE  
TO TAKE PLACE WITHIN  
LIMITS OF WORK

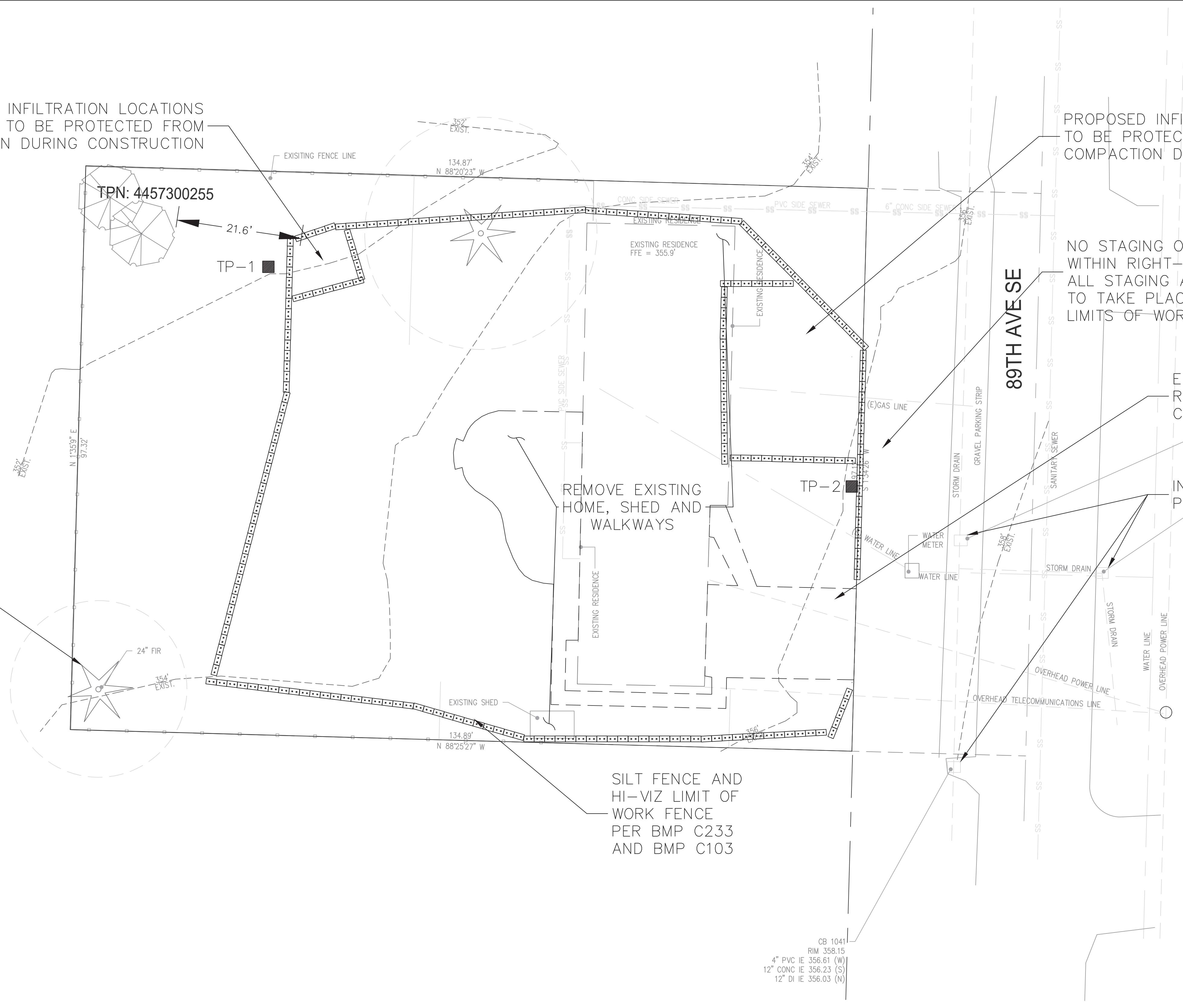
EXISTING DRIVEWAY TO BE  
RETAINED AND UTILIZED FOR  
CONSTRUCTION ENTRANCE

INSTALL STORM DRAIN INLET  
PROTECTION PER BMP C200

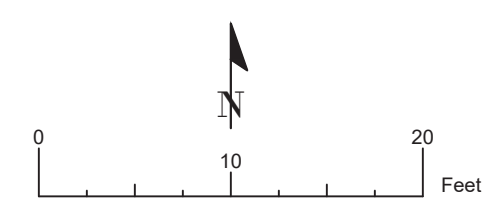
REMOVE EXISTING  
HOME, SHED AND  
WALKWAYS

PROTECT TREE  
BEYOND LIMITS  
OF WORK (TYP.)

SILT FENCE AND  
HI-VIZ LIMIT OF  
WORK FENCE  
PER BMP C233  
AND BMP C103



EARTH SOLUTIONS NORTHWEST OR ANOTHER GEOTECHNICAL ENGINEER SHALL PROVIDE SPECIAL INSPECTION MONITORING DURING THE CONSTRUCTION OF THE PROPOSED SINGLE-FAMILY RESIDENCE. THIS WILL INCLUDE ANY SPECIAL INSPECTION RELATING TO GEOTECHNICAL ELEMENTS OF THE CONSTRUCTION. GIVEN THE NATURE OF THIS PROJECT, INSPECTIONS WILL PRIMARILY INVOLVE MONITORING OF EROSION CONTROL (AS NECESSARY), SUBSURFACE DRAINAGE INSTALLATION, AND SOIL BEARING VERIFICATION. ALTHOUGH EXPECTED TO BE RELATIVELY MINIMAL, INSPECTIONS WILL ALSO INCLUDE STRUCTURAL FILL VERIFICATION AND COMPACTION, AS DEEMED NECESSARY.



SEE C2 FOR DRAINAGE SITE PLAN

<b>Merlino Residence</b> Site Address: 4225 89th Ave SE Jurisdiction: Mercer Island Parcel No.: 445730-0255 Applicant: John Merlino Permit No.: Interlaken Project No.: SEA-20-041	 Interlaken Engineering and Design, PLLC Seattle, WA   (206) 470-9572 www.interlakenengineering.com	Revisions:	<h1>C1</h1> TESC/ Demo/ CSWPPP Scale: 1" = 10'
		2021-05-26: Updated for City of Mercer Island comments 2021-04-27: Updated for City of Mercer Island comments	

THE LAWN AND LANDSCAPE AREAS ARE REQUIRED TO PROVIDE POST-CONSTRUCTION SOIL QUALITY AND DEPTH IN ACCORDANCE WITH BMP T5.13. THE PROJECT CIVIL ENGINEER MUST PROVIDE A LETTER OF CERTIFICATION TO ENSURE THAT THE LAWN AND LANDSCAPE AREAS ARE MEETING THE POST-CONSTRUCTION SOIL QUALITY AND DEPTH REQUIREMENTS SPECIFIED ON THE APPROVED PLAN SET PRIOR TO FINAL INSPECTION ON THE PROJECT.

ALL AREAS SUBJECT TO CLEARING AND GRADING THAT HAVE NOT BEEN COVERED BY IMPERVIOUS SURFACE, INCORPORATED INTO A DRAINAGE FACILITY OR ENGINEERED AS STRUCTURAL FILL OR SLOPE SHALL, AT PROJECT COMPLETION, DEMONSTRATE THE FOLLOWING:

1. A TOPSOIL LAYER WITH A MINIMUM ORGANIC MATTER CONTENT OF 10% DRY WEIGHT IN PLANTING BEDS, AND 5% ORGANIC MATTER CONTENT IN TURF AREAS, AND A PH FROM 6.0 TO 8.0 OR MATCHING THE PH OF THE UNDISTURBED SOIL. THE TOPSOIL LAYER SHALL HAVE A MINIMUM DEPTH OF EIGHT INCHES EXCEPT WHERE TREE ROOTS LIMIT THE DEPTH OF INCORPORATION OF AMENDMENTS NEEDED TO MEET THE CRITERIA. SUBSOILS BELOW THE TOPSOIL LAYER SHOULD BE SCARIFIED AT LEAST 4 INCHES WITH SOME INCORPORATION OF THE UPPER MATERIAL TO AVOID STRATIFIED LAYERS, WHERE FEASIBLE.
2. MULCH PLANTING BEDS WITH 2 INCHES OF ORGANIC MATERIAL.
3. USE COMPOST AND OTHER MATERIALS THAT MEET THESE ORGANIC CONTENT REQUIREMENTS:
  - A. THE ORGANIC CONTENT FOR "PRE-APPROVED" AMENDMENT RATES CAN BE MET ONLY USING COMPOST MEETING THE COMPOST SPECIFICATION FOR BIORETENTION (BMP T7.30), WITH THE EXCEPTION THAT THE COMPOST MAY HAVE UP TO 35% BIOSOLIDS OR MANURE. THE COMPOST MUST ALSO HAVE AN ORGANIC MATTER CONTENT OF 40% TO 65%, AND A CARBON TO NITROGEN RATIO BELOW 25:1. THE CARBON TO NITROGEN RATIO MAY BE AS HIGH AS 35:1 FOR PLANTINGS COMPOSED ENTIRELY OF PLANTS NATIVE TO THE PUGET SOUND LOWLANDS REGION.
  - B. CALCULATED AMENDMENT RATES MAY BE MET THROUGH USE OF COMPOSTED MATERIAL MEETING (A) ABOVE; OR OTHER ORGANIC MATERIALS AMENDED TO MEET THE CARBON TO NITROGEN RATIO REQUIREMENTS, AND NOT EXCEEDING THE CONTAMINANT LIMITS IDENTIFIED IN TABLE 220-B, TESTING PARAMETERS, IN WAC 173-350-220.
- THE RESULTING SOIL SHOULD BE CONDUCTIVE TO THE TYPE OF VEGETATION TO BE ESTABLISHED.
- IMPLEMENTATION OPTIONS: THE SOIL QUALITY DESIGN GUIDELINES LISTED ABOVE CAN BE MET BY USING ONE OF THE METHODS LISTED BELOW:
  1. LEAVE UNDISTURBED NATIVE VEGETATION AND SOIL, AND PROTECT FROM COMPACTION DURING CONSTRUCTION.
  2. AMEND EXISTING SITE TOPSOIL OR SUBSOIL EITHER AT DEFAULT "PREAPPROVED" RATES, OR AT CUSTOM CALCULATED RATES BASED ON TESTS OF THE SOIL AND AMENDMENT.
  3. STOCKPILE EXISTING TOPSOIL DURING GRADING, AND REPLACE IT PRIOR TO PLANTING. STOCKPILED TOPSOIL MUST ALSO BE AMENDED IF NEEDED TO MEET THE ORGANIC MATTER OR DEPTH REQUIREMENTS, EITHER AT A DEFAULT "PRE-APPROVED" RATE OR AT A CUSTOM CALCULATED RATE.
  4. IMPORT TOPSOIL MIX OF SUFFICIENT ORGANIC CONTENT AND DEPTH TO MEET THE REQUIREMENTS. MORE THAN ONE METHOD MAY BE USED ON DIFFERENT PORTIONS OF THE SAME SITE. SOIL THAT ALREADY MEETS THE DEPTH AND ORGANIC MATTER QUALITY STANDARDS, AND IS NOT COMPACTED, DOES NOT NEED TO BE AMENDED.

PRE-APPROVED AMENDMENT METHOD:  
TURF: 3111 SF x 5.4 CY / 1,000-SF = 17 CY  
TOTAL QUANTITY = 17 CY

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TYPE I CATCH BASIN  
12" SUMP  
RIM = 354.00  
INV. = 351.80  
CONNECT TO  
FOOTING DRAINS

GRAVEL DRYWELL  
DIAMETER = 8.5'  
GRAVEL DEPTH = 5'  
GROUND EL. = 352.25  
TOP OF GRAVEL = 351.25  
BOT. OF GRAVEL = 346.25  
PER BMP T5.10A

CONNECT TO EXISTING SIDE SEWER  
SET NEW CLEANOUT  
ABANDON SIDE SEWER UPSTREAM  
OF NEW CONNECTION POINT

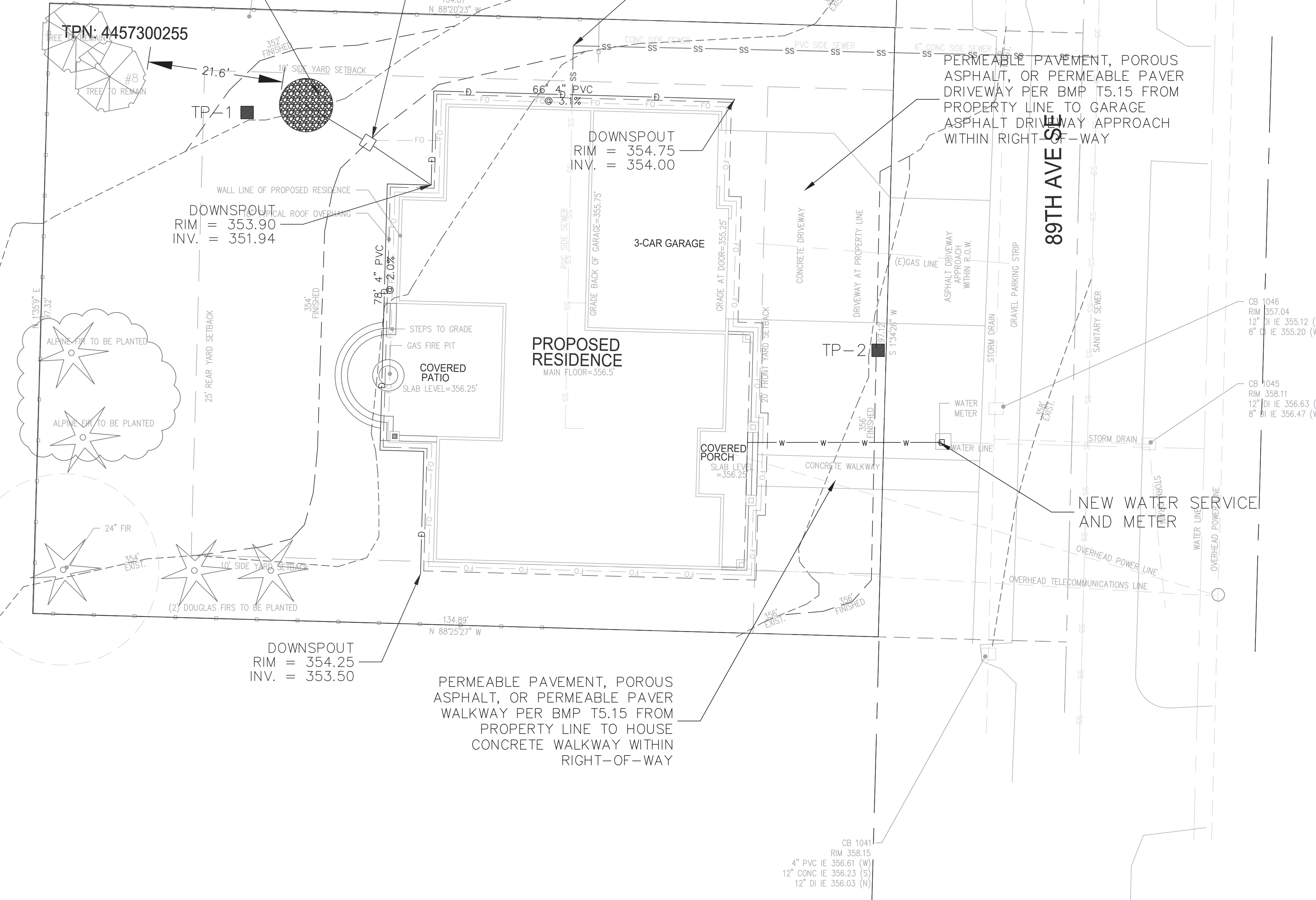
PERMEABLE PAVEMENT, POROUS ASPHALT, OR PERMEABLE PAVER DRIVEWAY PER BMP T5.15 FROM PROPERTY LINE TO GARAGE ASPHALT DRIVEWAY APPROACH WITHIN RIGHT-OF-WAY

DOWNSPOUT  
RIM = 354.75  
INV. = 354.00

DOWNSPOUT  
RIM = 353.90  
INV. = 351.94

DOWNSPOUT  
RIM = 354.25  
INV. = 353.50

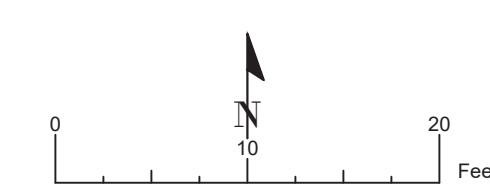
PERMEABLE PAVEMENT, POROUS ASPHALT, OR PERMEABLE PAVER WALKWAY PER BMP T5.15 FROM PROPERTY LINE TO HOUSE CONCRETE WALKWAY WITHIN RIGHT-OF-WAY



Hard Surface Data	
Existing Hard Surface	3038 sf
Existing Vegetation	10192 sf
New Roof	4589 sf
New Driveway (North)	635 sf
New Walkway (South)	85 sf
New Patio (West)	80 sf
Total Proposed	5389 sf
Proposed Vegetation	7841 sf
Replaced Hard Surface	2708 sf
Total New Hard Surface	2681 sf
Removed Hard Surface	330 sf
Total New + Replaced	5389 sf

SEE C1 FOR TESC/ DEMO CSWPPP  
SEE C3 FOR DRAINAGE DETAILS

**LEGAL DESCRIPTION**  
THE SOUTH 23 FEET OF LOT 3 AND ALL OF LOT 4, BLOCK 4, LUCAS HEIGHTS, ACCORDING TO THE PLAT THEREOF RECORDED IN VOLUME 17 OF PLATS, PAGES 5, RECORDS OF KING COUNTY WASHINGTON.  
TOGETHER WITH THE EAST HALF OF VACATED ALLEY ADJOINING.



**Merlino Residence**  
Site Address: 4225 89th Ave SE  
Jurisdiction: Mercer Island  
Parcel No.: 445730-0255  
Applicant: John Merlino  
Permit No.:  
Interlaken Project No.: SEA-20-041

**Interlaken Engineering and Design, PLLC**  
Seattle, WA | (206) 470-9572  
www.interlakenengineering.com

Revisions:  
  
2021-05-26: Updated for City of Mercer Island comments  
2021-04-27: Updated for City of Mercer Island comments

**C2**  
Drainage Site Plan  
Scale: 1" = 10'

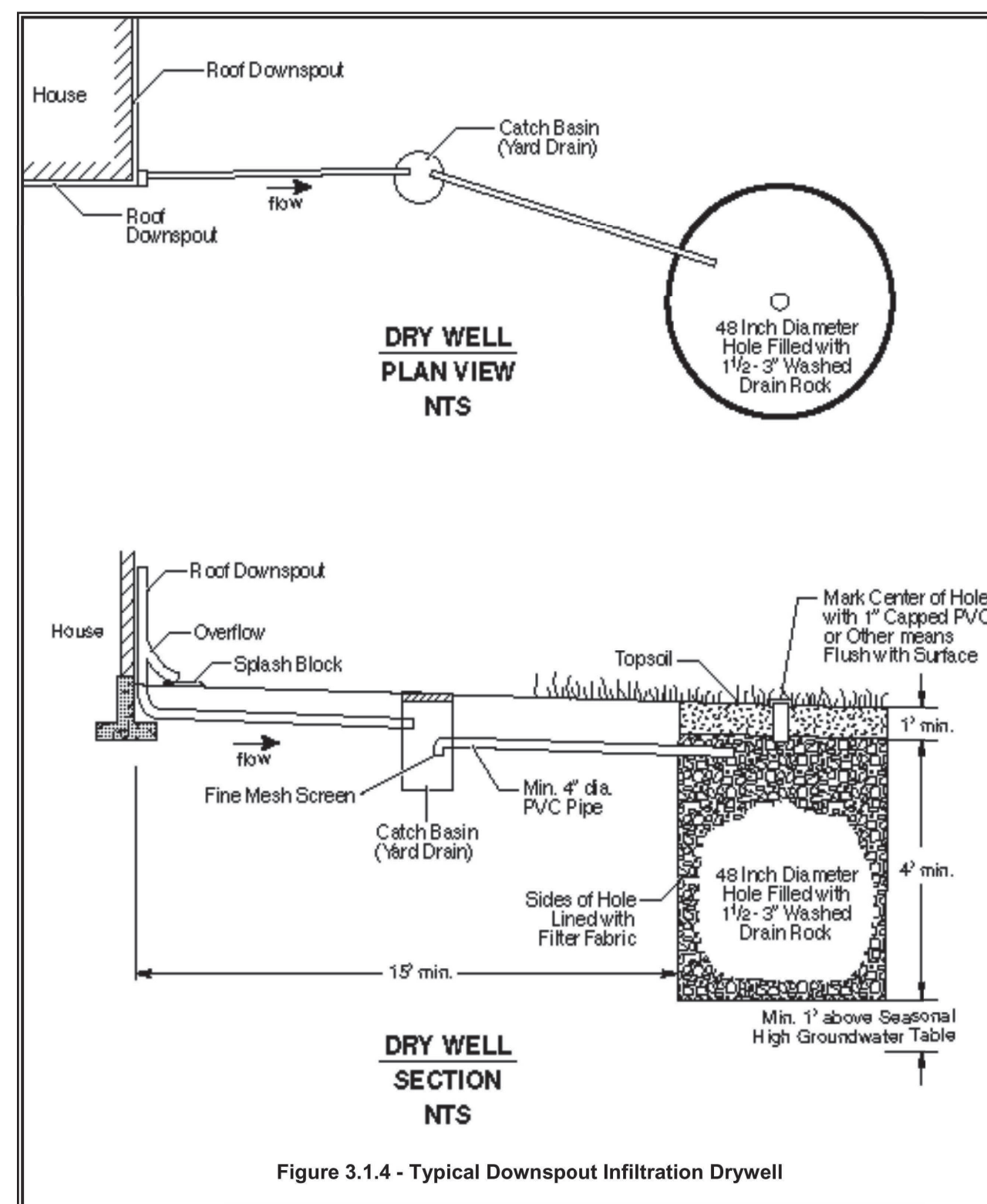


Figure 3.1.4 - Typical Downspout Infiltration Drywell

Source: King County

## CITY OF MERCER ISLAND

Community Planning and Development  
9611 SE 36TH STREET | MERCER ISLAND, WA 98040  
PHONE: 206.275.7605 | www.mercer.gov.org  
Inspection Requests: Online: www.MyBuildingPermit.com VM: 206.275.7730



### PERMEABLE PAVER BLOCK DESIGN GUIDELINES (Single-Family Residential Projects)

#### Permeable Pavers

The City of Mercer Island allows the use of permeable pavers in limited situations as a material exempted from impervious surface lot coverage for certain applications. Refer to MICC 19.02.020(D)(2) for specific exemptions.

Not all concrete pavers are considered permeable. The following list of paver materials meets the definition of "pavers" according to MICC 19.16.010(P) when installed properly.

Uni-Group USA (www.uni-grouppusa.org)

Eco-Stone  
Ecoloc  
Eco Optiloc  
Eco Piora

SF Concrete Technologies (www.sfconcrete.com)

SF Rima  
SF Matoro  
VSS Eco  
VSS Drain

Advanced Pavement Technologies (www.advancedpavement.com)

Eco Bric  
Aqua Bric  
Aqua Bric Type 4  
Aqua Loc  
Aqua Bricloc

**Note:** There may be other paver systems that meet the definition of "paver". In general, the paver system should be pre-manufactured, interlocking, have an effective open/permeable surface area of at least 12% and conform to the cross-section shown on page 3. Manufacturer's specifications for paver systems not listed above must be submitted for compliance review prior to issuance of a permit. The use of non-permeable pavers (e.g. flagstone, stepping stones, architectural slabs, dimensional stone, etc.) in a permeable manner is described below in the following section.

#### Other Pavers and Stones

Other pavers and stone material may be considered permeable when installed in a manner that provides equivalent performance function to permeable interlocking concrete pavers. The installation will require sufficient aggregate material beneath and in between the pavers/stones to allow the free flow of surface water runoff between and below the pavers/stones. The effective open/permeable surface area ("gap")

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between the pavers/stones shall be a minimum of 12 percent. See below for paver dimensions and the corresponding minimum gap required

PAVER/STONE SIZE	MINIMUM REQUIRED GAP SURROUNDING EACH INDIVIDUAL PAVER
12" x 12" (144 square inches)	1"
24" x 24" (576 square inches)	2"
24" x 36" (864 square inches)	3"
30" x 30" (900 square inches)	4"

*Note: Sites not specified above, or oddly shaped pavers/stones require submittal of additional performance and specific review of proposed material and design confirming a 12 percent minimum gap.*

Additional requirements include the following:

- Gap between pavers shall be filled with stone fill (ASTM No. 8) or other free draining material.
- Gap cannot be planted if using topsoil or other planting media that impedes the free flow of water between the pavers unless approved by the City Engineer.
- Pavers shall be underlain by at least 6" reservoir course (ASTM No. 57) and 2" leveling course stone fill (ASTM No. 8) in accordance with the typical cross-section for Pervious Concrete Block or "Paver" Systems.
- Refer also to the design and construction criteria below.

#### Design and Construction Criteria for Paver Blocks

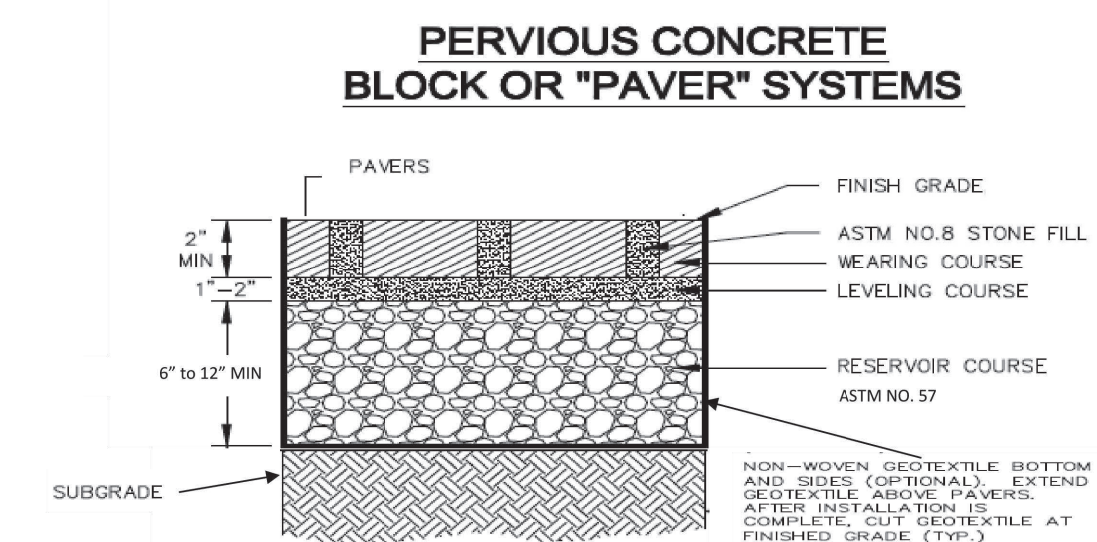
The following notes (as a minimum) shall be included on the construction drawings for single-family residential projects intended to use permeable pavers:

- General:** Installation must be in accordance with the manufacturer's requirements and specifications.
- Subgrade:** Compact the subgrade to the minimum necessary for structural stability. Use static dual wheel small mechanical rollers or plate vibration machines for compaction. Do not allow heavy compaction due to heavy equipment operation. The subgrade should not be subject to truck traffic.
- Geotextile:** Geotextile fabric shall be placed beneath the reservoir layer in areas where soil remains saturated part of the year, where there is soil freeze and thaw, or over clay and moist silty subgrade soils. The geotextile fabric should pass water at a greater rate than the subgrade soils.
- Underdrain:** Provide an underdrain pipe when subgrade soils are poorly draining, or soils remain saturated part of the year.
- Aggregate Materials (stone fill, leveling course, and base/sub-base reservoir layer):** Use crushed aggregate. Clean and washed. No fines. "Open graded" rock containing only a small percentage of aggregate in the small range. Do not use round rock.
  - Stone Fill/Leveling Course** - ASTM No. 8 crushed aggregate. Minimum 1" to 2" thickness.
  - Reservoir Course** - ASTM No. 57 crushed aggregate. Minimum 6" to 12" thickness depending on permeability of the subgrade soils.
- Limitations:** The design shall have no surface drainage onto the pavers from other surfaces. If surface drainage comes from minor or incidental pervious areas, those areas must be fully stabilized. Slope adjacent impervious surfaces away from the permeable pavement to the maximum extent practicable. The maximum installed slope is generally 5%.
- Protection:** After work is complete, the contractor shall be responsible for protecting work from sediment deposition and damage due to subsequent construction activity on the site.
- Improper Installation:** May result in loss of impervious surface exemption or may require reconstruction of the paving system.

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- Inspections:** The contractor shall call for inspection of the subgrade preparation prior to placement of base material and for a subsequent inspection of the base material placement prior to installation of blocks.
- Maintenance:** Homeowners must adequately maintain their permeable block pavements. Over time, the space between the pavers will tend to clog. Conduct periodic visual inspections to determine if surfaces are clogged with vegetation or fine grain soils. Clogged surfaces should be corrected immediately. Surfaces should be swept with a high-efficiency or vacuum sweeper twice per year; preferably, once in the autumn after leaf fall, and again in early spring. As long as annual infiltration rate testing demonstrates that a rate of 5 inches per hour or greater is being maintained, the sweeping frequency can be reduced to once per year.

#### PERVIOUS CONCRETE BLOCK OR "PAVER" SYSTEMS



SEE C2 FOR DRAINAGE SITE PLAN

### Merlino Residence

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Revisions:


# C3

Drainage Details

Scale: As Noted