



HPI DRAINAGE SERVICES

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EXTERIOR DRAINAGE SYSTEM SUMMARY

1234 Oribia Rd
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07/22/2026



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1: EXTERIOR DRAINAGE SUMMARY REPORT

Information

Date

07/22/2026

Drain Pipe Material

ABS, PVC, Triple Wall HDPE

Drain Condition

Minor Debris

Drain/Clean Out Map

Multiple In-Ground Drains, Downspouts, French Drains

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Northwest



North Backyard



North Backyard



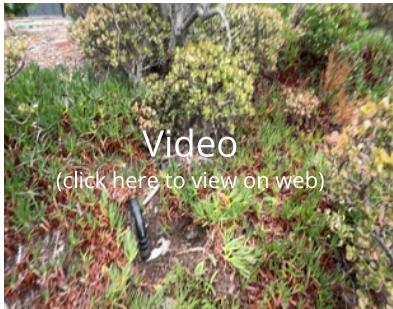
North Backyard



North Backyard Gutter Downspout



North



North



North



North



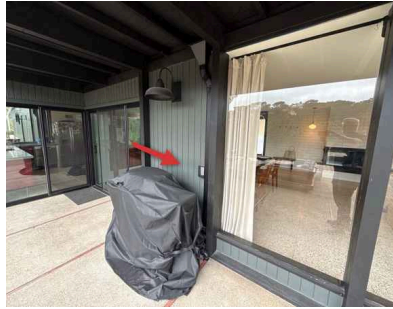
Southeast



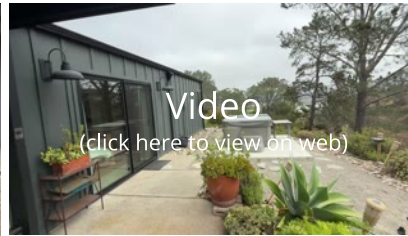
Southeast



East



East



East

Drain Pipe Limitations

Limited Access Points

If equipment becomes lodged, wedge, and or unable to remove or retrieved in whole or in part, customers will have 48 to remove it to make the equipment available to the contractor/vendor. Will retrieve on a time and materials basis and will not be held responsible for any repair/damage/replacement or rehabilitation of landscape or hardscape. The company does not guarantee or warranty outside drains, landscape drains, or storm drains for any time and will not be held responsible for any damage caused by flooding or water damage. That could be due to outside influences, poor excavation, etc. Drain screens or covers may be damaged while attempting to remove them. The company will not be held responsible for any accidents pertaining to broken drain screens or covers or accidents pertaining to. Any preparation done to the drains in the work area, including removing screens, cleaning out drain basins, and making drains accessible to the contractor, will help the contractor advance on the task at hand.

Summary: Outside Drainage System Summary

Comprehensive Drainage System, Topography, and Site Evaluation Summary

Performed a comprehensive evaluation of the property's existing exterior drainage systems, roof gutter downspout interconnections, site grading, topography, retaining walls, hardscape improvements, and surrounding sandstone hillside conditions to evaluate the overall design, functionality, and condition of the property's stormwater management system. The purpose of this inspection was to identify any visible deficiencies, installation irregularities, maintenance concerns, or areas where drainage improvements may benefit the long-term performance of the property by improving water management, reducing erosion potential, and minimizing unnecessary moisture accumulation around structural improvements.

As part of this evaluation, extensive water testing was performed on all accessible in-ground surface drains and roof gutter downspout interconnections located along the northwest corner of the property and the rear north brick patio. During testing, the north-side surface drainage system demonstrated satisfactory hydraulic performance, with captured water freely flowing through the drainage network without visible backup or ponding. Based on visual observations and camera inspection, this drainage system is primarily constructed of triple-wall polyethylene drainage piping with sections of flexible corrugated drain pipe that appear to have been installed during previous drainage improvements.

During the evaluation, the drainage system successfully conveyed water away from the immediate area. However, due to the property's steep topography, dense vegetation, and limited accessibility along the lower northeast hillside, the final discharge outlet could not be visually located. Based upon the observed flow characteristics during water testing, it appears the system ultimately releases near the lower northeast portion of the property adjacent to the mature pine trees and surrounding vegetation.

The north-side roof gutter downspout is connected to a horizontal French drainage system that allows roof runoff to disperse into the surrounding sandstone soils before continuing through the drainage network. Water testing indicated that this portion of the drainage system is presently functioning as intended and effectively accepting roof runoff without restriction. Camera inspection, however, identified several installation methods that are considered unconventional by current drainage installation standards.

Several pipe connections throughout the drainage system were mechanically fastened together using oversized screws that protrude into the interior of the drainage piping. Although these fasteners currently do not appear to be restricting water flow, exposed screws inside drainage piping have the potential to collect leaves, roots, pine needles, sediment, and other debris over time. As debris accumulates, these protrusions may increase maintenance requirements and could eventually contribute to localized restrictions within the drainage system. While immediate repairs are not considered necessary, these areas should be monitored during future maintenance and camera inspections.

Additional observations identified portions of the French drainage system that were constructed using perforated drain pipe with the perforations oriented downward toward the center of the pipe rather than positioned according to conventional installation practices. During the camera inspection and simultaneous water testing, water was visibly exiting through these perforations directly into the underlying sandstone formation. Although this configuration still allows water to disperse into the surrounding soils, it reduces the efficiency of conveying stormwater to the designated outlet and may contribute to unnecessary moisture infiltration within portions of the hillside. Given the naturally porous sandstone soils found throughout the Del Mar coastal region, managing both surface water and subsurface moisture is important in helping minimize erosion and reducing hydrostatic pressure around retaining walls and sloped areas.

The two roof gutter downspouts located at the northeast corner of the backyard are currently not directly connected to the property's primary drainage system. Instead, roof runoff is discharged directly onto the adjacent hillside. Over an extended period, concentrated roof runoff may contribute to localized soil erosion, particularly within sandstone soils and sloping terrain. It is recommended that these downspouts be directly interconnected into the existing north-side drainage system. This improvement appears to be relatively straightforward, as the existing drainage line was successfully located at an approximate depth of 1 foot 5 inches below finished grade, allowing for a practical connection while minimizing excavation.

Water testing could not be performed on the southeast corner and east backyard roof gutter downspout systems because evaluating these components would have required roof access, which was outside the authorized scope of this inspection. From ground-level observations, these gutter systems appear to consist primarily of ABS drainage piping and appear to discharge toward the south side of the property. Because these systems could not be physically tested, their hydraulic performance, outlet conditions, and overall functionality could not be verified during this inspection.

Throughout the property, several areas exhibit visible negative grading, particularly along portions of the west side and front of the residence. Rather than encouraging surface water to drain away from the structure, these areas allow stormwater and irrigation runoff to migrate toward the home's foundation and surrounding hardscape. Although no active drainage failures were observed during this inspection, improving these grades would provide better long-term water management. Re-establishing positive drainage through minor regrading, natural drainage swales, and strategically placed surface drains would help redirect runoff away from the foundation while reducing unnecessary moisture accumulation adjacent to the residence.

The east-side paver patio exhibits visible settlement in several areas. Based upon visual observations, this settlement appears consistent with a combination of long-term soil movement, previous installation methods, and insufficient subsurface drainage beneath the hardscape. It also appears that portions of an older concrete patio remain beneath the paver installation. The underlying concrete shows visible cracking, deterioration, and differential settlement that likely reflects gradual erosion and movement beneath portions of the slab over time. Continued settlement may result in additional movement of the paver surface if these conditions are not addressed.

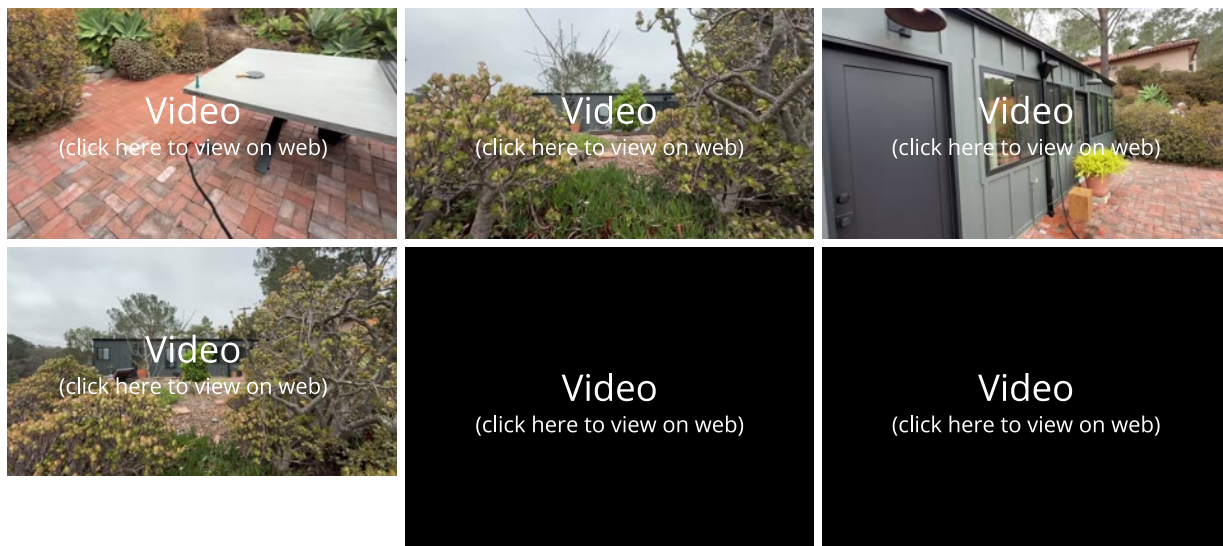
Supporting structural components beneath portions of the patio decking also exhibit visible deterioration. Areas of moisture-related wood deterioration and wood rot were observed affecting several supporting wood posts and framing

members. A qualified contractor should further evaluate these structural components to determine the extent of repairs necessary to restore long-term structural integrity.

The retaining walls located along the southeast corner of the property and adjacent to the east-side patio exhibit visible signs of age-related deterioration, moderate leaning, and long-term movement. While retaining wall movement can occur naturally over many years, particularly within coastal hillside environments, the combination of visible movement, sandstone topography, localized erosion, and limited drainage improvements indicates that additional evaluation would be beneficial. During the inspection, no visible French drainage systems, surface drainage collection systems, or weep holes were observed serving these retaining walls. Without adequate drainage, moisture can gradually accumulate behind retaining walls, increasing hydrostatic pressure and placing additional stress on the wall over time.

It is recommended that these retaining walls be evaluated by a qualified retaining wall contractor or structural professional to determine whether repairs or reinforcement are appropriate. Incorporating properly designed drainage improvements, including French drains, surface drains, and weep holes where applicable, would improve groundwater management, reduce hydrostatic pressure, minimize soil erosion, and help extend the service life and stability of both the retaining walls and the surrounding hillside.

Overall, the accessible drainage systems evaluated during this inspection appear to be generally functional and capable of conveying stormwater under normal operating conditions. However, several opportunities exist to improve overall drainage performance through upgraded downspout interconnections, correction of localized grading deficiencies, enhancement of retaining wall drainage, and ongoing maintenance of existing drainage infrastructure. Given the property's coastal Del Mar location, sandstone soils, sloping terrain, and mature landscaping, continued attention to water management and erosion control will be important in protecting the property's retaining walls, foundations, hardscape improvements, and overall long-term performance.



Recommendations

1.1.1 Summary

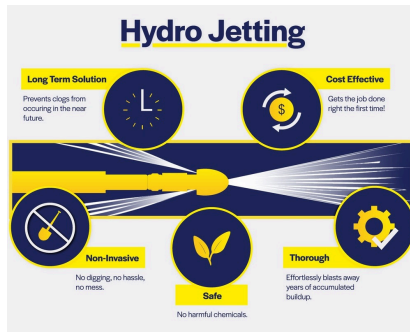
DRAINAGE SYSTEM: ANNUAL CLEAN/SERVICE/MAINTENANCE



- **Recommend a qualified professional to provide annual hydro-jetting cleaning/servicing/maintenance of the entire exterior drainage system. Debris/roots can build-up and develop inside the drainage system over time which can cause blockages/clogs to occur.**

Recommendation

Contact a qualified professional.



1.1.2 Summary

GROUND: NEGATIVE GRADING TOWARDS THE HOME

Grading slopes towards the home in one or more areas. This negative grading could lead to water intrusion and foundation issues.

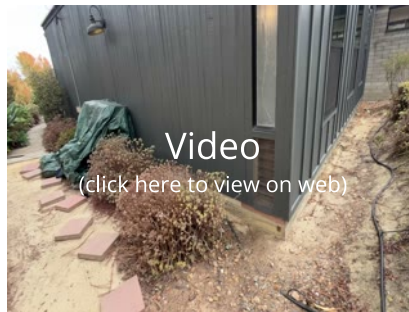
- **Recommend a qualified professional to further evaluate and repair.**

Recommendation

Contact a qualified professional.



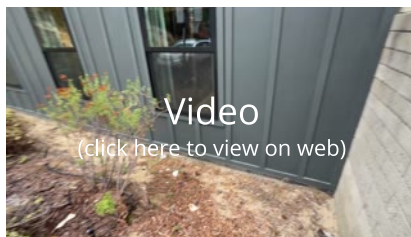
West



West



Front



Front



Front

1.1.3 Summary

GROUND: SOIL EROSION

Soil erosion appears to be occurring in one or more areas of the hillside/embankment.

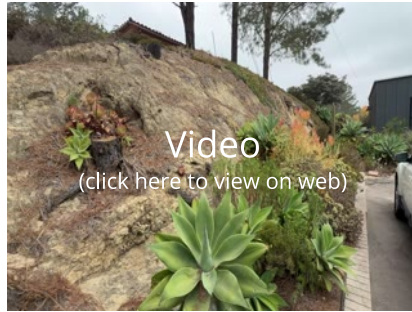
- **Recommend a qualified professional to further evaluate and repair.**

Recommendation

Contact a qualified professional.



West



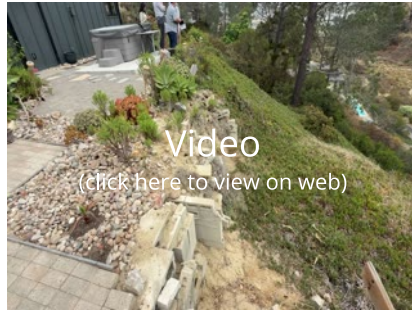
West



West



East



East



East



East



East



East



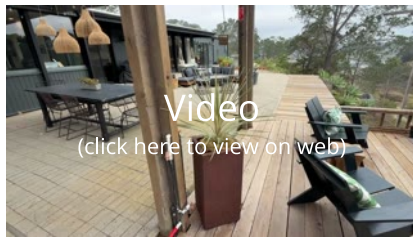
East



East



East



East



East

1.1.4 Summary

**RETAINING WALL(S): NOT VISIBLE DRAINAGE SYSTEMS**

Southeast Backyard Retaining Walls – Drainage Evaluation

During the visual inspection, no visible drainage improvements were observed behind or along the base of the southeast backyard retaining walls. Specifically, no French drainage system, surface drains, or weep holes were identified to provide relief for groundwater or subsurface moisture that may accumulate behind the retaining walls during irrigation or rainfall events.

While the retaining walls are currently functioning in their intended capacity, the absence of dedicated drainage components can allow hydrostatic pressure to gradually build behind the wall over time. Excessive moisture retention may contribute to unnecessary stress on the retaining wall system, potentially leading to movement, cracking, settlement, or reduced long-term performance.

- **Recommendation: It is recommended that a qualified retaining wall and drainage contractor further evaluate the retaining wall system and determine the most appropriate drainage improvements. These may include the installation of a properly designed French drainage system behind the retaining walls, strategically placed surface drains to capture runoff, and weep holes at the base of the wall to provide pressure relief. Incorporating these drainage improvements can help reduce hydrostatic pressure, improve water management, and enhance the long-term stability and service life of the retaining wall system.**

Recommendation

Contact a qualified professional.



Southeast



Southeast

1.1.5 Summary

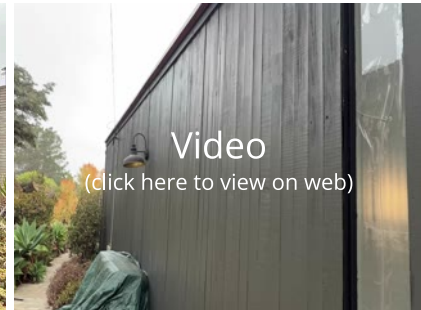
**GUTTER(S): MISSING**

Root gutters are missing in some areas around the home. Roof gutters collect water from the roof and flow the water to proper exit locations around the house property. Missing gutters can cause water to pond are the home and its foundation and also cause deterioration to the siding, trim, and fascia boards/eaves.

- **Recommend having a qualified roof professional to further evaluate and install proper gutter/downspout system.**

Recommendation

Contact a qualified roofing professional.



1.1.6 Summary

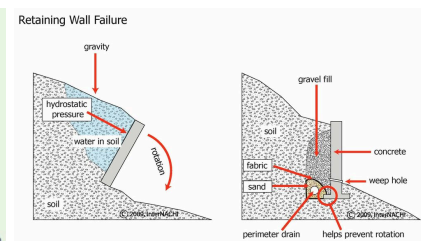
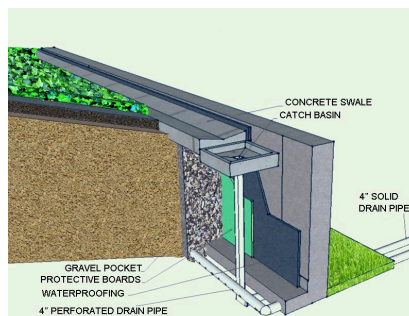
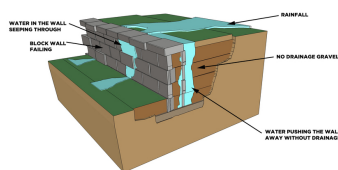
RETAINING WALL: DETERIORATION/ DAMAGE

The retaining wall is showing signs of deterioration/damage and has visible cracks. Lack of maintenance and improper/missing drainage can cause deterioration/damage.

- **Recommend having a qualified professional to further evaluate and repair.**

Recommendation

Contact a qualified professional.



East



East East



East



Southeast

1.1.7 Summary

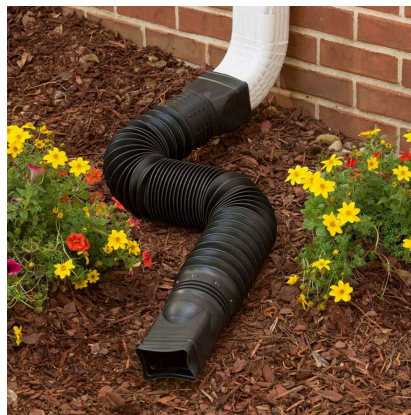
GUTTER DOWNSPOUTS: EXTENSIONS MISSING

Extensions are missing on gutter downspouts in some areas around the home. Extensions flow water away from the house, preventing water from ponding near the home's foundation and siding.

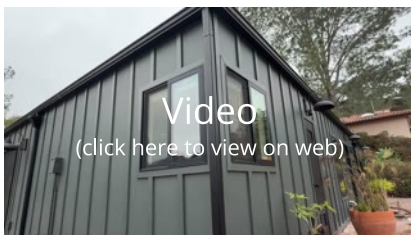
Recommend having a qualified professional to evaluate and repair.

Recommendation

Contact a qualified roofing professional.



Northeast



East



East

