

T21N, R17W, Section 17, MDB&M
Scale 1:12,000
Contour Interval - 40'



7

8

THP 1-10-139-MEN

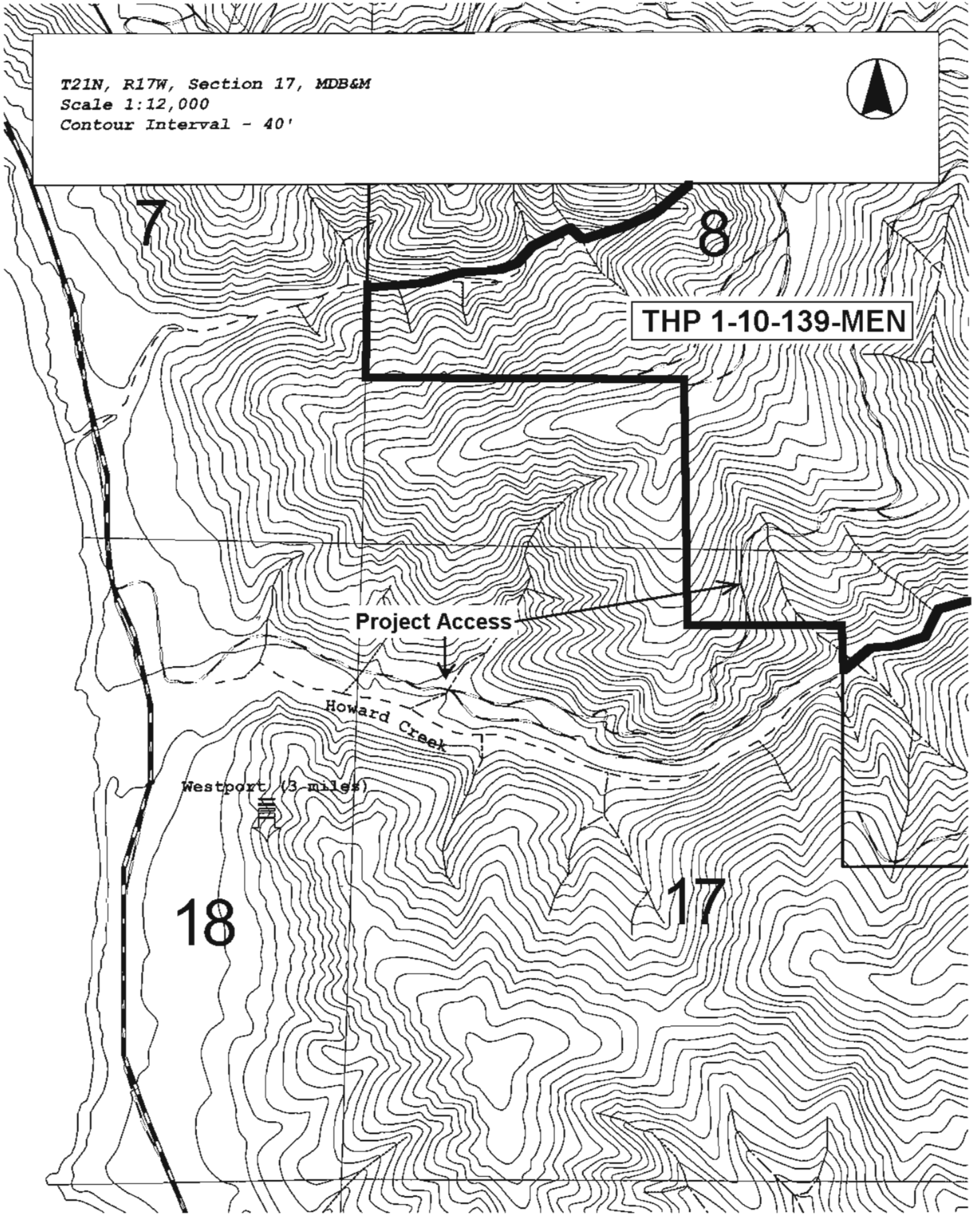
Project Access

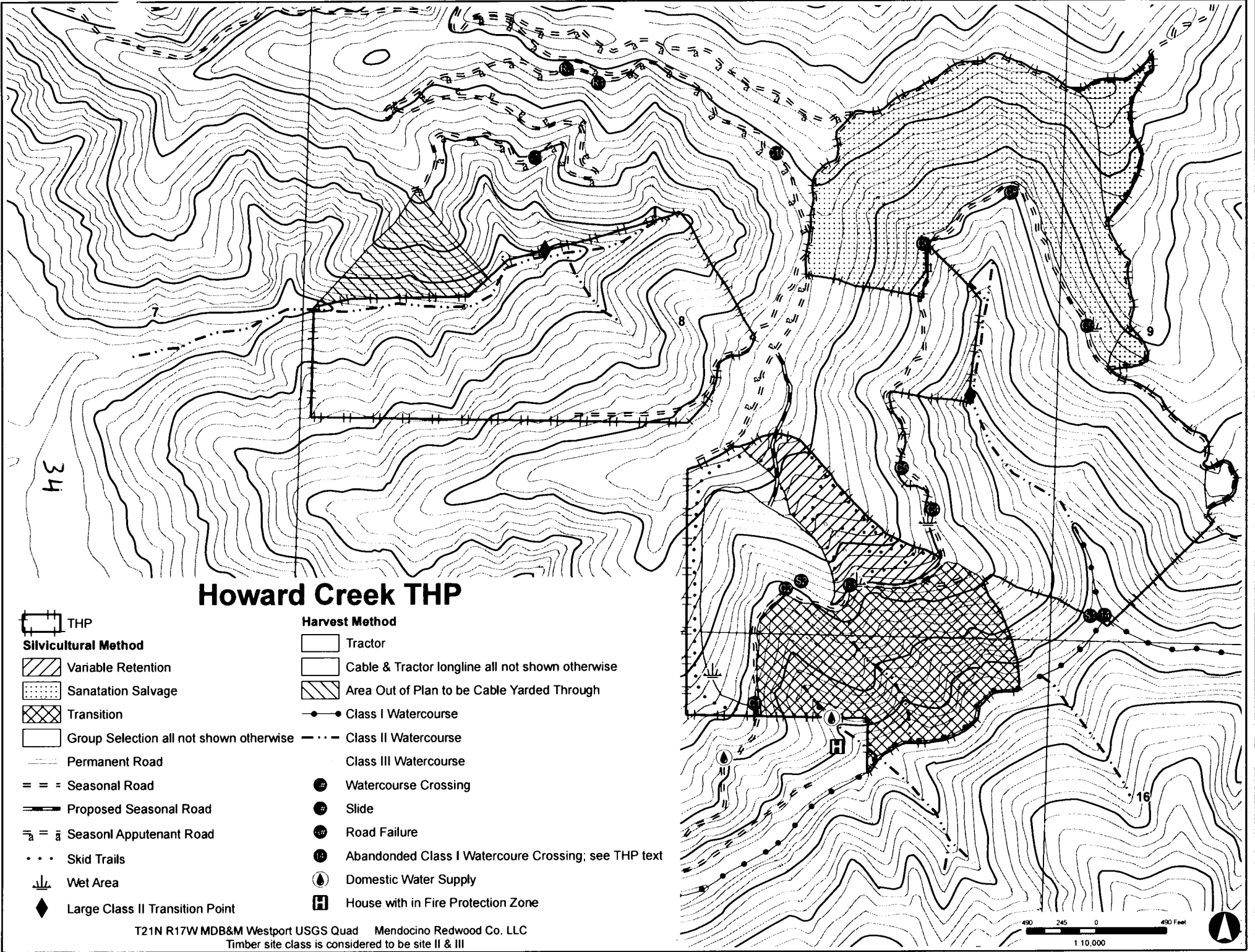
Howard Creek

Westport (3 miles)

18

17





Harvest restrictions in the WLPZ near major watercourses will insure that a robust stand of timber is retained adjacent to watercourses. Large woody debris that exists prior to harvest will not be salvaged from the WLPZ. LWD accidentally introduced into Class I or II watercourses, as a result of timber operations, will be removed immediately from the watercourse as per 14 CCR 916.3(b). Residual timber stands will provide a broad based resource pool for future LWD recruitment. Based on the retention of streamside timber stands and the extent to which uneven aged silviculture is used, I believe, I have sufficient reason to conclude that the proposed timber operation will not have a significant adverse cumulative impact on organic debris levels found in association with watercourses.

d) Chemical Contamination Effects – Potential sources of forestry related chemical cumulative watershed effects include run-off from roads treated with oil or other dust-retarding materials, direct application or run-off from pesticide treatments, contamination by equipment fuels and oils and the introduction of nutrients released during slash burning or wildfire from two or more locations.

Adverse cumulative effects from chemical contamination are not expected based upon the following observations and rationale: No chemical point sources are known to currently exist within the WAA. The potential for accidental contamination will be minimized by:

- 1) locating landings in areas upslope and well away from watercourses to the extent feasible,
- 2) using the existing road system within the plan area in mid-slope and ridge top locations replacing the original stream side locations to the extent feasible and
- 3) minimizing the use of ground based skidding equipment within the WLPZ and limiting operations adjacent to all watercourses.
- 4) Broadcast burning is not proposed.
- 5) Use of commercial dust abatement products on the primary road system is possible. Portions of these roads are intermittently located within WLPZ's. Use of dust abatement products will be according to the manufactures instructions. These dust control products have been used for many years without any incidences of documented adverse effects to wildland resources. Agency policies of making it increasingly difficult to draft water from local streams for dust control will inevitably result in the increased use of these commercial products. Based on extensive past use without documented adverse effects and use in adherence to manufactures instructions I believe that I have sufficient reason to conclude that continued use of these products is unlikely to lead to a significant adverse environmental effect.

Herbicides

Past Use

Herbicides have been used in the vicinity of the plan area within the past 10 years to reduce hardwood presence. The method of application was hack & squirt and it is thought that the herbicide utilized was Imazapyr. It appears that the plan area itself has been subjected only minimally if at all to previous herbicide treatments.

Proposed Use

The THP proposes herbicide treatment to reduce hardwood (tanoak) presence. Imazapyr is the anticipated herbicide to be used in conjunction with this THP. The anticipated method of application will be a stem injection method (hack & squirt).

Future Use

Hardwood treatment beyond that prescribed in this THP is not anticipated in this area. We believe, a shift to uneven age management combined with the current favorable stand composition and the likelihood of future hardwood markets will make future herbicide use unnecessary for the control of hardwoods in this area. As mentioned above small concentrations of hardwoods may be treated in the future if conifer site dominance becomes threatened. Future herbicide use may occur in this area to control non-native species such as pampas grass and scotch broom.

Potential Impacts, Hazards and Minimization Strategies

Improper use or application can result in health or contamination concerns. To minimize the potential for improper use and application the State Department of Pesticide Regulation has checks and balances in place to ensure that only State licensed Pest Control Advisers are allowed to recommend application techniques, chemical types, and chemical application rates for a particular situation.

Perceived Use/Application Hazards:

A potential concern is that the user may be unaware of requirements. To this end the State Department of Pesticide Regulation has checks and balances in place to ensure that only State licensed Pest Control Advisers are allowed to recommend application techniques, chemical types, and chemical application rates for a particular situation.

The potential existing that herbicides could inadvertently be deposited into watercourses. Labeling requirements prohibit mixing of chemicals in locations where spillage may enter waterways. For chemicals applied to forest species, labeling requirements prohibit the application of such chemicals to waterways. Herbicide use within a WLPZ is prohibited in the THP. Ground based application eliminates the potential for over spray which is associated with aerial application.

A possible impact is that chemicals could build up in soils/landfills from discarded containers. To reduce the risk of unintended contamination labeling requirements require that containers be triple rinsed and that rinse water not be disposed of in locations where it may enter a watercourse. Best Management Practices also recommend that rinse water not be disposed of at all, but instead re-utilized as a mixing agent in the next application.

A potential hazard is that workers may be unaware of required safety precautions. State law requires that licensed applicators inform and educate their employees about the hazards of applying chemicals. Licensed applicators are required by law to provide their workers with appropriate Personal Protective Equipment (PPE) to protect them from exposure to chemicals and labeling requirements mandate that workers wear said PPE.

A concern is that chemical may build up in soil, both short and long term. The potential risk is much lower in forestry applications where chemicals are usually applied only once or twice in the life of a stand (every 50 to 100 years) than in agricultural settings where crops are grown on an annual basis. Since future wide spread applications of herbicide in this area is not anticipated (see above), residual chemical build up in the forest soil is not considered to be a significant threat.

e) Peak Flow Effects – Cumulative watershed effects that are caused by management induced peak flow increases in streams, during storm events, are difficult to anticipate. Peak flow increases may result from management activities that reduce vegetative cover, compact soils, or change hydrological connectivity of the fluvial system in ways that alter time of concentration during high intensity winter storm events. Typically man induced changes in peak flows are small relative to the magnitude of natural peak flows resulting from medium and large storms.

Past research done on the South Fork of Casper Creek, in Mendocino County, has shown that no significant increases in large winter peak storm flows occurred following removal of 65% of the forest canopy, and compaction of 15% of the watershed with tractor roads, landings, and logging roads (Wright and others 1990). The Casper Creek and Howard Creek watersheds exist in the same rain dominated hydro-geologic environment. Also, these watersheds are subject to the same regional flood events, although flood frequencies may slightly differ according to basin characteristics and varying micro-site effects. The proposed logging operations are far less in magnitude for this project as compared to what has occurred in Caspar Creek.

I considered the potential for this specific project to alter hydrologic processes and impact peak stream flows. Since this operation is located in the redwood region at lower elevations, impacts associated with rain on snow events were considered to be unlikely. Watercourse crossings are planned and constructed so that the potential for watercourse diversion is minimized and flows from watercourses will not be diverted from one drainage to another thereby altering peak flows. Soil compaction and associated increased run-off is minimized by utilizing existing roads and skid trails where possible. Based on the above factors and my 30+ years of field experience with similar timber harvesting operations I believe that my reasoned analysis concluding that increased peak flows are not likely to occur is substantially justified.