



Board of Adjustment Staff Report

Meeting Date: June 6, 2019

Agenda Item: 8I

SPECIAL USE PERMIT CASE NUMBER: WSUP19-0005 (Lightning W Tank #2)

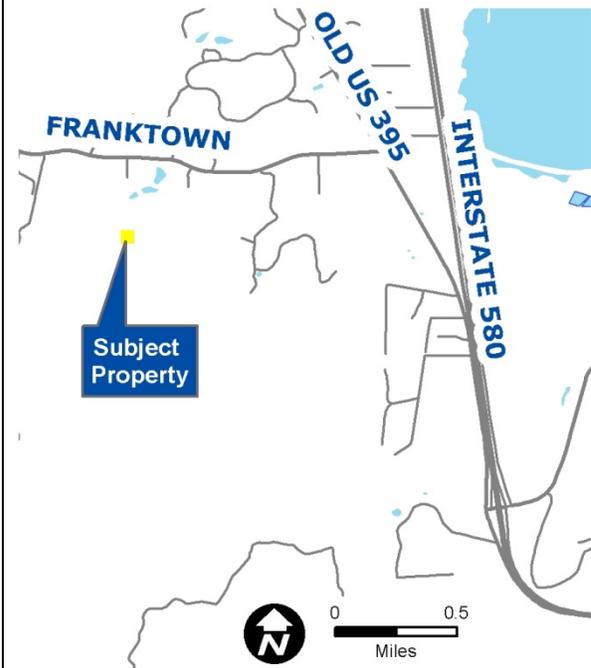
BRIEF SUMMARY OF REQUEST: For possible action, hearing, and discussion to approve the construction of a 250,000-gallon water tank and to modify landscaping and grading requirements.

STAFF PLANNER: Sophia Kirschenman, Park Planner
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CASE DESCRIPTION

For possible action, hearing, and discussion to approve the construction of a 250,000-gallon water tank adjacent to an existing 250,000-gallon water tank on the subject site and to modify all landscaping requirements of WCC Section 110.412.40 and to modify grading requirements to allow for 2:1 slopes instead of 3:1 slopes per WCC Section 110.438.45(a).

Owner/Applicant: Truckee Meadows Water Authority
Location: Franktown Road
APN: 055-210-21
Parcel Size: 2.066 Acres
Master Plan: Rural (R)
Regulatory Zone: General Rural (GR)
Area Plan: South Valleys
Citizen Advisory Board: South Truckee Meadows/Washoe Valley
Development Code: Authorized in Article 810, Special Use Permits; and Article 438, Grading
Commission District: 2 – Commissioner Lucey



STAFF RECOMMENDATION

APPROVE

APPROVE WITH CONDITIONS

DENY

POSSIBLE MOTION

I move that, after giving reasoned consideration to the information contained in the staff report and information received during the public hearing, the Washoe County Board of Adjustment approve with conditions Special Use Permit Case Number WSUP19-0005 for the Truckee Meadows Water Authority, having made all five findings in accordance with Washoe County Code Section 110.810.30, the two findings in accordance with the South Valleys Area Plan, and the modifications to WCC Section 110.438.45(a) *Grading of Slopes* and WCC Section 110.412.40 *Civic and Commercial Use Types (Landscaping)*.

(Motion with Findings on Page 18)

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Special Use Permit

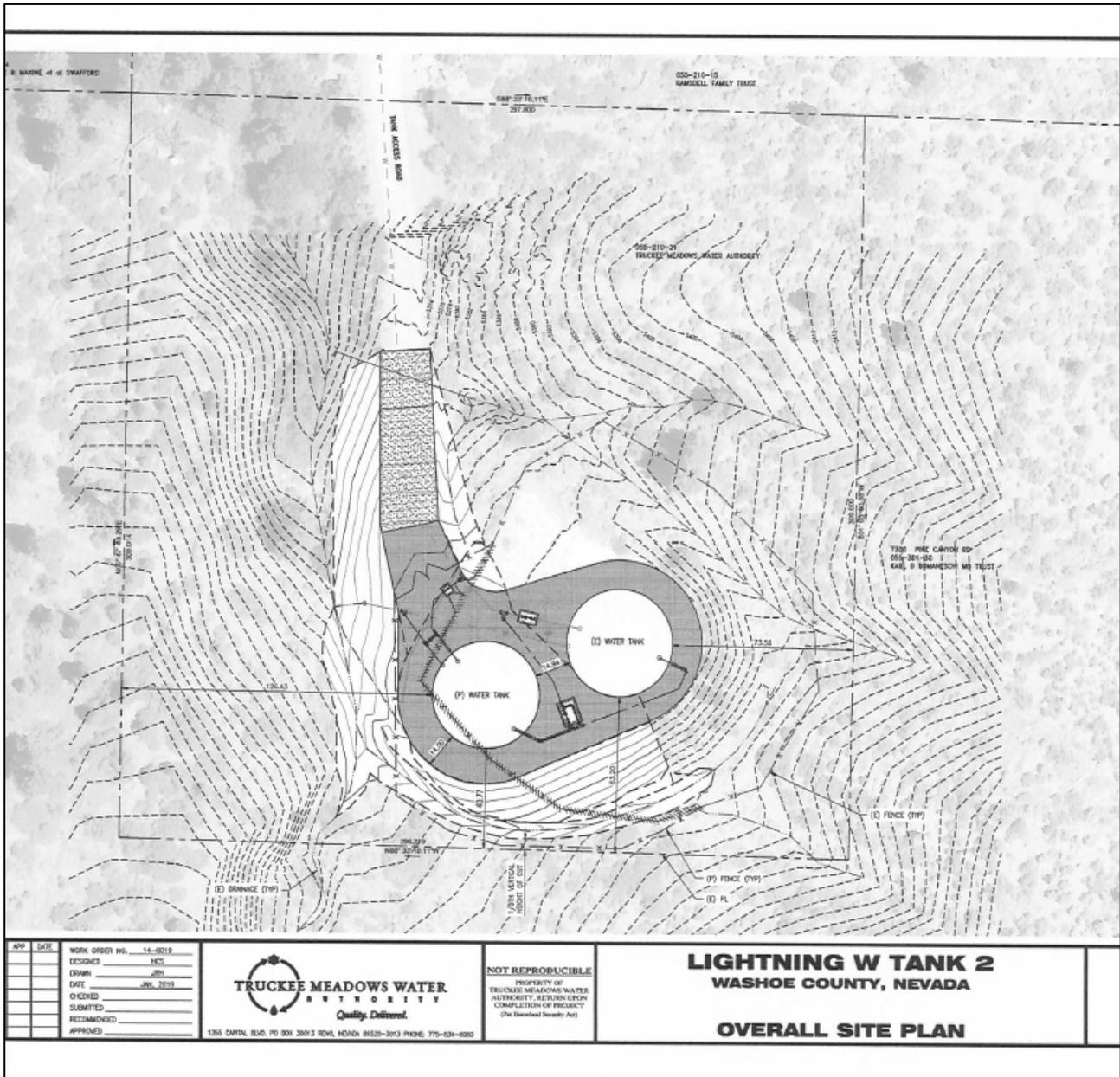
The purpose of a Special Use Permit is to allow a method of review to identify any potential harmful impacts on adjacent properties or surrounding areas for uses that may be appropriate within a regulatory zone; and to provide for a procedure whereby such uses might be permitted by further restricting or conditioning them so as to mitigate or eliminate possible adverse impacts. If the Board of Adjustment grants an approval of the Special Use Permit, that approval is subject to Conditions of Approval. Conditions of Approval are requirements that need to be completed during different stages of the proposed project. Those stages are typically:

- Prior to permit issuance (i.e. a grading permit, a building permit, etc.)
- Prior to obtaining a final inspection and/or a certificate of occupancy on a structure
- Prior to the issuance of a business license or other permits/licenses
- Some Conditions of Approval are referred to as “Operational Conditions.” These conditions must be continually complied with for the life of the business or project.

The Conditions of Approval for Special Use Permit Case Number WSUP19-0005 (Exhibit A) are attached to this staff report and will be included with the Action Order, if approved.

The subject property is designated as General Rural (GR). The proposed use of a 250,000-gallon water tank, which is classified as a Civic Use Type, is permitted in GR with a special use permit per Washoe County Code (WCC) Table 110.302.05.2. Therefore, the applicant is seeking approval of this SUP from the Board of Adjustment.

Additionally, the SUP ordinance allows variances to be granted in conjunction with the approval process per WCC 110.810.20(e). The applicant is also asking to vary the landscaping and grading requirements. The Board of Adjustment will also be ruling on these requests.



APP	DATE

WORK ORDER NO. 14-0019
 DESIGNED HCS
 DRAWN JMS
 DATE JUN 2019
 CHECKED
 SUBMITTED
 RECOMMENDED
 APPROVED

TRUCKEE MEADOWS WATER
 AUTHORITY
Quality. Delivered.

1365 CAPITAL BLVD. PO BOX 20013 RENAISSANCE, NEVADA 89520-3013 PHONE: 775-634-6900

NOT REPRODUCIBLE
 PROPERTY OF
 TRUCKEE MEADOWS WATER
 AUTHORITY. RETURN UPON
 COMPLETION OF PROJECT.
(As Mandated Nevada Act)

LIGHTNING W TANK 2
WASHOE COUNTY, NEVADA

OVERALL SITE PLAN

Site Plan

Project Evaluation

This application is a request for a special use permit to allow Truckee Meadows Water Authority (TMWA) to construct a 250,000-gallon water tank adjacent to an existing 250,000-gallon water tank on the project site. The subject parcel is located in the General Rural (GR) regulatory zone and the proposed water tank is classified as a civic use type. Per Table 110.302.05.2, utility services are permissible within the GR regulatory zone subject to the approval of a special use permit by the Board of Adjustment.

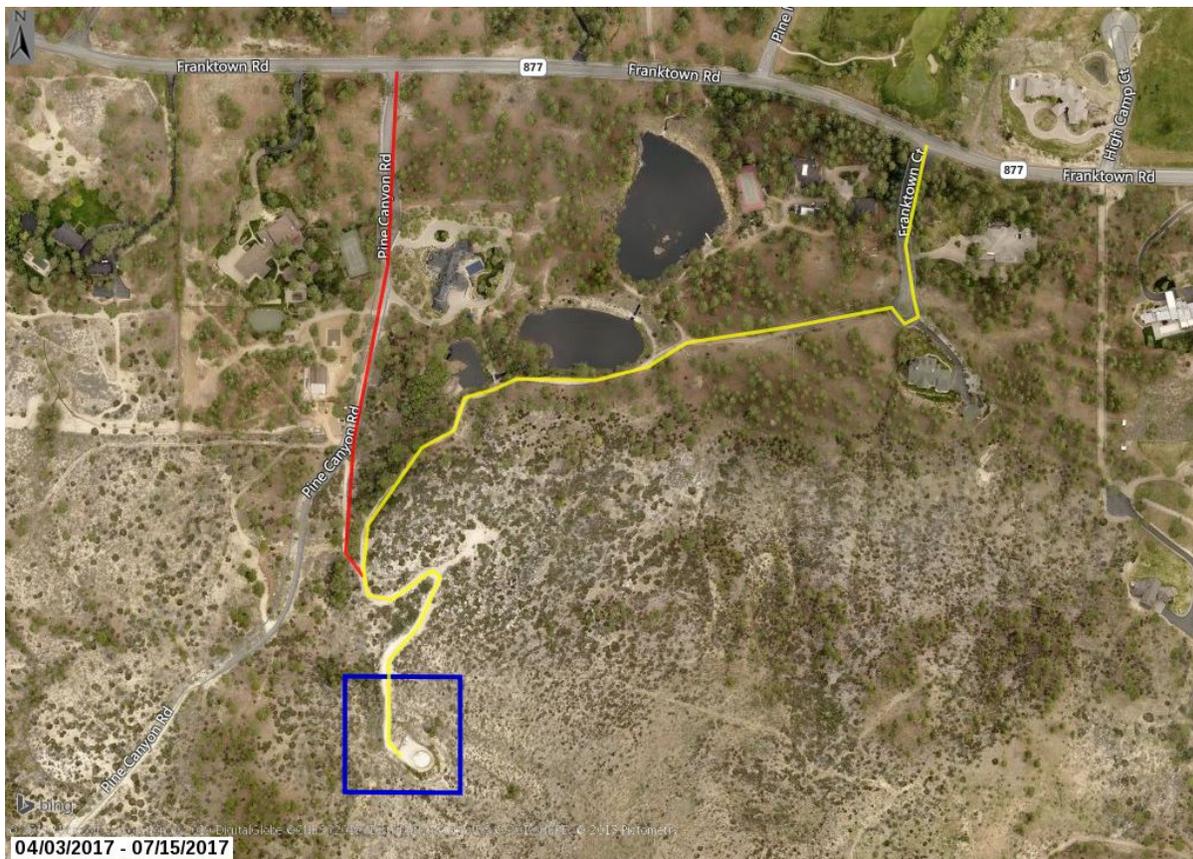
The 2.066 acre subject parcel is located approximately 1,800 feet south of the intersection of Franktown Road and Pine Canyon Road in the South Valleys Planning Area. The vacant parcel surrounding the subject parcel on the west, south, and east is zoned GR. The vacant parcel to the north of the subject site is zoned Medium Density Rural (MDR). The existing water tank is fenced and accessed through a gated chain link fence with barbed wire top, which would be expanded to protect the area where the new water tank is proposed to be located. TMWA owns the subject site and states that the existing tank, built in 1995, must be taken out of service temporarily for necessary rehabilitation. The tank is currently used for storage and service to other properties in the vicinity. TMWA indicated that the proposed second tank is not necessary for continued growth, and instead is necessary for redundancy and better reliability of water service in the vicinity. The tank would act as a back-up mechanism to bring water to the community in the event of a fire, or when one of the tanks must be taken out of service for rehabilitation.



In addition to the construction of a second 250,000-gallon water tank on the subject site, the applicant proposes to straighten, clean, and channelize approximately 85 linear feet of the existing drainageway on the west side of the tanks and place rip rap along drainage channels. Washoe County Development Code (WCC) Section 110.420.05(a)(1) will require the applicant to provide a drainage study prior to any alterations of the drainageway; this requirement can be found within the Conditions of Approval (Exhibit A). The application indicates the existence of intrusive vegetation within the channel. After conducting a site visit, it was determined that the “intrusive” vegetation consists of several different plant species, including willows. While willows can spread easily, Washoe County Regional Parks and Open Space (Parks) notes that appropriate riparian vegetation, such as willows, can decrease the rate of bank destabilization and reduce erosion, thereby better protecting the project site as well as downstream areas. Parks also notes that channelizing drainage ways does not always decrease erosion, as faster flows can increase sedimentation. Condition 1.e (Exhibit A) requires the applicant to submit a report assessing the

viability of maintaining the willows in place or replanting them post construction. Additionally, WCC Section 110.420.20(d)(1) requires that natural drainage ways remain in as near a natural state as is practicable and requires that any proposed modification be addressed in the drainage report.

TMWA also proposes placing new aggregate base on approximately 700 feet of the access road leading to the tank site. The aggregate base would be used to improve the existing road. However, during the South Truckee Meadows/Washoe Valley (STM/WV) Citizen Advisory Board (CAB) meeting, it was noted that a member of the community, Ronald Burdg, had suggested an alternate road alignment. Instead of utilizing the existing access road, which traverses Franktown Ct., Mr. Burdg suggested utilizing Pine Canyon Road. This access route would be straighter and would only pass by the property of one full-time resident, whereas the existing access road passes by the properties of four full-time residents. During the CAB meeting, the applicant noted that they were in agreement with Mr. Burdg and were actively analyzing the viability of this route. During a site visit, staff also considered the alternate access road alignment and is in agreement that it is the better option. Should the new access road be identified as the preferred alternative, TMWA will need to secure written permission from the property owners along the new route. If they cannot get permission, they will need to use the existing route; this requirement can be found in Condition 1.j (Exhibit A).



The photo above depicts the existing access road (in yellow) and the proposed access road (in red).

Other project elements include installing new piping underground to connect the tank to the existing water line and placing a hydroseed with a blend of native seed types on the disturbed slopes. The blend of native seed types will be approved or recommended by the Washoe-Storey Conservation District, pursuant to Condition 1.h (Exhibit A). The new piping is required to bring the new tank into service, but will not alter or expand the existing water line. The use of hydroseeding will be for slope stabilization without the need to utilize irrigation.

TMWA owns the subject site and intends to rehabilitate the existing water tank once this project is completed. After the tank has been rehabilitated, TMWA intends to use both tanks for storage and service. The new tank is proposed to be the same size and shape as the existing tank, but will add a center-mounted vent on the top of the tank, adding a maximum of three additional feet to the total height. Noise and traffic will increase during the construction and rehabilitation process, but will otherwise remain unchanged, as the site will be used in the same manner it is currently used and only TMWA staff will have access to the property. Light pollution on the surrounding properties is not expected as no lighting is proposed and only a small solar panel will be used to operate the tank systems, thereby complying with the relevant "dark sky" requirements included in the South Valleys Area Plan. The applicant included a Site Line Study with their application (Exhibit J) to demonstrate that the visual impacts on surrounding areas are expected to be minor. Additionally, the new tank and the existing tank will both be painted an earthtone color (Sherwin Williams Olivine #4023). This color has been used on TMWA water tanks in other parts of Washoe County to blend in with the surrounding landscape. It is of the opinion of staff that these project elements will minimize impacts on the view shed and surrounding neighborhood, and will ensure that the project is in compliance with applicable Area Plan and Master Plan policies.

Photos



The 2:1 slopes behind the existing water tank populated with mature vegetation



The location of the proposed water tank



The existing access road leading to the water tank. The tank location is in view of one property (shown in this photo).



The existing access road



The existing access route is to the right, while the proposed access route is to the left (the direction the truck is heading).

Modification of Standards

As part of the special use permit application, TMWA has also requested to modify the standards for two (2) requirements in the Washoe County Development Code. The first request is to allow 2:1 graded cut slopes in the area behind the proposed water tank and 2:1 fill slopes adjacent to the drainage instead of the 3:1 maximum slopes required pursuant to WCC Section 110.438.45(a). TMWA states that maintaining the 2:1 slope will better serve the project site and those who may be able to view it. They also state that transitioning from the existing 2:1 slope to a 3:1 slope would be difficult on this relatively small site, would potentially result in the construction of additional retaining walls, and would result in more scarring on the hillside. The Geotechnical Investigation prepared by Eastern Sierra Engineering (ESE) supports the construction of the proposed 2:1 slopes. ESE found that the existing slopes are stable, there is no evidence of excessive erosion, and the slopes are populated with mature vegetation. The report states that the proposed 2:1 cut slopes are acceptable so long as the disturbed slopes are revegetated post construction with an import growth medium and seed and then mulch or heavy-duty tackifier is applied to minimize erosion while the new vegetation is established. The report also states that the proposed 2:1 fill slopes are acceptable so long as they are protected with an angular fractured stone 8-12" in diameter.

Staff Comment: Planning staff asked for additional clarification about the basis for requesting the grading variance. Per WCC Section 110.438.45 (a), slopes are not to be steeper than 3 horizontal to 1 vertical (3:1) except in specific circumstances. WCC Section 110.438.45(a)(3) states that cut slopes may be permitted through a modification of standards when they are proposed to be located behind civic, commercial and industrial buildings and when the cut slope is shorter than and substantially screened by the proposed building, as is the case with this proposal. WCC Section 110.438.45(a)(1) states that slopes may also exceed the 3:1 standards when necessary for storm drainage improvements. This will need to be verified in the hydrological report required in Condition 2.h (Exhibit A). In a memo received by the applicant (Exhibit E), TMWA stated that in addition to the aesthetic reasons identified in the application, the 2:1 slopes are required in order to place the new tank to the west of the existing tank, thereby minimizing the amount of cut, removing the need for the construction of retaining walls, and minimizing impacts to the surrounding landscape. TMWA analyzed the viability of placing the new tank to the west of the existing tank and utilizing 3:1 slopes. According to the memo, this would require moving the tank approximately 14 feet to the northeast to keep construction limits out of the natural drainage to the west and within TMWA property lines. This would bring the new tank to within roughly 2 feet of the existing tank, making construction impossible. The applicant also considered placing the new tank to the north side of the existing tank. This option would require the removal of four mature trees. Additionally, 3:1 cut slopes would require two 8 to 10 foot high retaining walls and would require relocating another drainage located on the east side of the existing tank around the new tank and behind the retaining wall. This option would also require the construction of the tank partially on cut and partially on fill in the old drainage, which would be unstable. Overall, requiring that the new tank be built with 3:1 slopes would result in additional site disturbance, visual impacts and natural resource impacts, and excavation quantities would increase. Staff supports the request to modify the grading standard to allow for 2:1 slopes for the following reasons; this is a continuation of existing, stabilized 2:1 slopes; the Geotechnical Investigation supports the proposed 2:1 slopes; this configuration would minimize visual and environmental impacts; and the modification is allowed per WCC Sections 110.438.45(a)(1) and 110.438.45(a)(3).

The second request is to allow for hydroseeding the disturbed slope areas with a native seed mix in lieu of the traditional landscaping and irrigation requirements. Per WCC Section 110.412.40(a), a minimum of 20% of the total developed land area is required to be landscaped and any disturbance to undeveloped portions of the site must be mitigated. Additionally, WCC Section 110.412.40(c) requires a landscape buffer between the subject site and the property to the north, due to the adjacent property having a Medium Density Rural (MDR) regulatory zone. TMWA states that the subject site is located in a relatively remote area of south Washoe Valley and that

there is no irrigation capability onsite. They also state that the landscaping would not be seen by the general public due to the location of the tank.

Staff Comment: Landscaping requirements serve not only to enhance the viewshed in which a project is located, but also to reduce heat, erosion, and dust, and to stabilize slopes. As such, slope revegetation at the subject site is a crucial element of the development. Additionally, planning staff asked for clarification from ESE about whether the proposed hydroseeding would satisfy the landscaping requirements detailed in the Geotechnical Investigation. In their response (Exhibit H), ESE confirmed that the proposed hydroseeding supports the recommendations of the Geotechnical Investigation. The proposed landscaping meets the intent of relevant landscaping codes as it will stabilize the disturbed slopes. For these reasons and due to the lack of irrigation capacity on site, staff recommends approval of the proposed modifications to the landscaping requirements.

Washoe County Master Plan

This proposal was evaluated for consistency with the Washoe County Master Plan, South Valleys Area Plan, and with generally applicable Development Code requirements as well as the findings required for approval of a Special Use Permit.

The applicable Master Plan elements include the following Land Use and Transportation Plan policies:

LUT.23.1 Assess all development individually and cumulatively for potential impact upon the natural resources of the specific area of Washoe County.

Staff Comment: The proposed tank would be sited in a remote location with minimal development nearby. Staff has analyzed the proposal in conjunction with other development in the area and finds that it would not have a significant impact on natural resources in the area either individually or cumulatively. Any drainage alterations would need to be supported by a hydrological report demonstrating that channelization would not significantly alter downstream drainage functions.

LUT.25.1 Ensure that development proposals are in conformance with appropriate Master Plan policies and the relevant Area Plan policies.

Staff Comment: The proposed project has been analyzed and found to be in conformance with appropriate Washoe County Master Plan and South Valleys Area Plan policies.

LUT.27.3 Evaluate benefit/cost ratios on all public projects.

Staff Comment: Per a memo received by the applicant (Exhibit I), the proposed cost of adding a second water tank at this location and the maintenance of the existing tank is accounted for in TMWA's current capital improvements budget. These costs will not result in an increase in TMWA user fees. The benefit of this public project is to provide ongoing maintenance to existing public facilities and to provide additional system reliability and fire suppression capability with a second tank.

The applicable Master Plan elements include the following Public Service Facilities policies:

PSF.3.8.2 The Washoe County Department of Community Development will ensure that new development provides on-site detention and drainage facilities as needed to make sure that development of the site does not adversely impact downstream properties and is consistent with adopted wetlands protection policies.

Staff Comment: The Washoe County Engineering Division will be requiring a hydrology report to ensure that this requirement is met. This requirement can be found in Condition 2.h (Exhibit A).

PSF.4.5.1 During development review, the Department of Community Development shall coordinate with the appropriate fire protection agencies to ensure projects include fire resistant materials in buildings and structures to reduce their susceptibility to destructive fires.

Staff Comment: Truckee Meadows Fire Protection was consulted and relevant conditions were included in the Conditions of Approval (Exhibit A).

South Valleys Area Plan

The applicable South Valleys Area Plan policies are:

SV.2.3 Site development plans in the South Valleys planning area must submit a plan for the control of noxious weeds. The plan should be developed through consultation with the Washoe County District Health Department, the University of Nevada Cooperative Extension, and/or the Washoe-Storey Conservation District. The control plan will be implemented on a voluntary compliance basis.

Staff Comment: Per a memo received by the applicant (Exhibit I), a noxious weed management plan will be created with input from the Washoe County District Health Department, and, if possible, the Washoe-Storey Conservation District. This plan will be submitted for review and approval with the building permit application for this project.

SV.2.4 Applicants required to present their items to the Citizen Advisory Board (CAB) must submit a statement to staff regarding how the final proposal responds to the community input received from the CAB.

Staff Comment: Per a memo received by the applicant (Exhibit I) regarding the CAB meeting, all questions at the CAB meeting were sufficiently answered. Additionally, one of the community members impacted by the proposed development suggested an alternative access route alignment that TMWA is currently analyzing for viability.

SV.2.11 All landscape designs will emphasize the use of native vegetation, with nonnative and atypical vegetation integrated sparingly into any landscaped area.

Staff Comment: The project includes the placement of hyrdoseed with a blend of native seed types on the disturbed slopes after the grading is completed. The applicant has contacted the Washoe-Storey Conservation District in order to determine an appropriate seed mix for use in this location, but at the time of submittal, had yet to receive a response. Pursuant to Condition 1.h (Exhibit A), the applicant shall stabilize the disturbed slope using a native seed blend either approved or recommended by the Washoe-Storey Conservation District.

SV.2.13 The impact of development on adjacent land uses will be mitigated. The appropriate form of mitigation should be determined through a process of community consultation and cooperation. Applicants should be prepared to demonstrate how the project conforms to this policy.

Staff Comment: The parcel to the east, south, and west has a regulatory zone of GR and is vacant. The parcel to the north has a regulatory zone of MDR and is also currently vacant. The subject site is in a remote location and the addition of a second water tank will not increase traffic to the site after construction is completed. The adjacent properties contain significant topographic challenges which could pose difficulty in developing close to the subject parcel. Staff did conduct a site visit to the property and noted that at least one home was in view of the subject site. Staff finds that the addition of another water tank will not impact adjacent land uses.

SV.2.16 The approval of all special use permits and administrative permits must include a finding that the community character as described in the Character Statement can be adequately conserved through mitigation of any identified potential negative impacts.

Staff Comment: The proposed development is being undertaken to serve the properties in this area. While it is an effort to double the size of the existing development, it is entirely surrounded by vacant land, thus maintaining the rural nature described in the Character Statement. Additionally, the water tanks will not be visible from public roads and will not impact the scenic viewsheds that are important to this region, pursuant to the Sight Line Study included in the application materials (Exhibit J). Staff believes that this finding can be made.

SV.7.3 The review of all special use permits for the establishment of a non-residential use in West Washoe Valley must include a consideration of how the proposed use will impact adjacent neighborhoods, including but not limited to Best Management Practices “dark sky” lighting standards, hours of operation, traffic, parking and safety impacts, and its contribution to the community character described in the Character Statement. Standards for review should be distinctly rural, recognizing the integrated character of the area. The application of conditions to special use permits should seek to mitigate the potential impacts of these uses on residential areas, without constraining the pursuit of agricultural and other non-residential activities.

Staff Comment: Per a memo from the applicant (Exhibit I), consideration has been taken to minimize impact to adjacent neighbors by not including lighting as part of the project and thus maintaining the “dark sky” values of the area; and limiting the hours of operation.

SV.10.1 All development proposals must demonstrate how the established level of service on local transportation facilities will be maintained at the level determined to be acceptable by the Regional Transportation Commission (RTC).

Staff Comment: This application was sent to the RTC for review and no comments were received.

SV.12.2 The Washoe County Departments of Community Development and Public Works will establish and oversee compliance and enforcement of design standards for grading that minimize the visual impact of all residential and non-residential hillside development, including road cuts and driveways.

Staff Comment: The proposal includes revegetation of the disturbed cut slopes to minimize the visual impact of the hillside development and stabilize the slope area. The revegetation efforts will be monitored after 1 year and after 3 years. If revegetation does not meet success criteria at either of these time frames, additional hydroseeding will be required, pursuant to Condition 1.g (Exhibit A).

SV.12.3 The grading design standards referred to in Policy SV.12.2 will, at a minimum, ensure that disturbed areas shall be finished and fill slopes will not exceed a 3:1 slope, and that hillside grading will establish an undulating naturalistic appearance by creating varying curvilinear contours.

Staff Comment: The applicant has requested a modification of standards per WCC 110.810.20(e) to allow for 2:1 slopes. Staff supports this proposal for the reasons described above.

SV.12.5 Viewsheds and ridgelines shall be protected from significant degradation. Development near ridgelines should blend with the natural contours of the land and shall be sited in such a way so as not to create a silhouette against the skyline. Ridgeline areas that skyline are those viewed from any scenic corridor at a distance of 2.5 miles or less. Corridors for Washoe Valley include U.S. Highway 395, Eastlake Boulevard and Franktown Road. While full mitigation of development impacts may not be reasonable, negative impacts to the views throughout Washoe Valley should be minimized.

Staff Comment: The proposed project includes elements to minimize viewshed impacts, including painting the new tank and the existing tank an olive color to blend with the surrounding landscaping and not adding any lighting. Additionally, the subject site is not visible from public roads and can only be seen from one neighboring property.

SV.12.6 Even though development on slopes greater than 15 percent is discouraged, development on said slopes shall be managed in conjunction with all Washoe County Development Code requirements, such as Article 424, Hillside Development, as applicable. Requirements include minimizing impacts on prominent ridgelines, significant viewsheds, canyons and visually prominent rock outcroppings which reflect the visual value and scenic character of hillside areas.

Staff Comment: The proposed project includes elements to minimize viewshed impacts, including painting the new tank and the existing tank an earthtone color to blend with the surrounding landscaping and not adding any lighting. Additionally, the subject site is not visible from public

roads and can only be seen from one neighboring property. Therefore, staff finds that the proposed project would have minimal impacts on the viewshed.

SV.12.8 In order to encourage building designs that are compatible with the character of hillsides and to minimize the alteration of natural forms, the following guidelines should be followed: d. Structures shall be designed to blend into the natural character of the hillside by reducing the visual bulk of the structure through landscaping, terraced building forms and height variations, and by utilizing neutral colors that match the natural landscape.

Staff Comment: The proposed color of the new tank and the existing tank is an earthtone color, specifically chosen to match the natural landscape. Due to the remote location of the subject site, height variations and landscape screening are unnecessary.

SV.14.1 Prior to final map recordation of tentative maps and prior to issuance of building permits for special use permits, or public-initiated capital improvements in the South Valleys planning area, the Nevada Department of Conservation and Natural Resources and/or the State Historic Preservation Office (SHPO) will be contacted and, if required, an appropriate archaeological investigation/survey will be conducted.

Staff Comment: Per a memo received by the applicant (Exhibit I), TMWA will contact the State Historic Preservation Office (SHPO) regarding the project prior to the issuance of its building permit for the tank. Should any prehistoric or historic remains/artifacts be discovered during development of the site, work will be temporarily halted and SHPO will be notified per a required note on all improvement plans.

SV.18.2 Development in the South Valleys area will comply with all local, state and federal standards regarding air quality.

Staff Comment: The application was sent to the Washoe County Air Quality and Environmental Health Departments and no comments were received.

SV.18.3 The granting of special use permits in the South Valleys must be accompanied by a finding that no significant degradation of air quality will occur as a result of the permit. As necessary, conditions may be placed on special use permits to ensure no significant degradation of air quality will occur. The Department of Community Development will seek the advice and input of the Air Quality Division of the Department of Health in the implementation of this policy.

Staff Comment: Per a memo received by the applicant (Exhibit I), permanent degradation of air quality is not anticipated with the addition of a new water tank on the subject property. There may be minimal degradation of air quality as a result of construction activities for a short period of time. These activities are required to be compliant with regulations set forth by the Air Quality Division of the Department of Health, including obtaining a dust control permit and maintaining best practices to minimize dust creation. The applicant will be required to pull air quality permits, if necessary, per Condition 1.i (Exhibit A).

SV.19.1 Development proposals, with the exception of single family homes and uses accessory to single family homes, within the South Valleys planning area will include detailed soils and geotechnical studies sufficient to: a. Ensure structural integrity of roads and buildings. b. Provide adequate setbacks from potentially active faults or other hazards. c. Minimize erosion potential.

Staff Comment: A complete geotechnical report has been provided as a part of this special use permit application. This can be found within the complete application packet (Exhibit J).

SV.19.2 Development proposals on areas with identified geological hazards will follow the recommendations of any geo-technical study conducted pursuant to Policy SV.19.1.

Staff Comment: A Geotechnical Investigation was submitted as part of the application materials. Per Condition 1.f (Exhibit A), the applicant is required to adhere to all recommendations included in the Geotechnical Investigation. Initially, staff was concerned that the proposed hydroseeding is not in conformance with the recommendations included in the report, so additional clarification was

requested. In a memo from the applicant (Exhibit H), ESE confirmed that the proposed hydroseeding supports the recommendations included in the report.

South Truckee Meadows/Washoe Valley Citizen Advisory Board (STM/WV CAB)

The proposed project was presented by the applicant at the regularly scheduled Citizen Advisory Board meeting on May 2, 2019. The attached CAB minutes (Exhibit B) reflect discussion on the following items:

- The need for an additional water tank at this location due to growth
- Whether the existing water line would be expanded
- Questions about a new fire hydrant and fire access
- Damage liability during construction
- An alternative access route alignment

During the CAB meeting, the applicant presented an alternate access road route, as suggested by a member of the public, Ronald Burdg, during a phone call the previous day. Mr. Burdg, a property owner in the vicinity of the project, was also present at the meeting and reiterated that the access route he proposed is the logical option as it would only traverse the property of one full-time resident as opposed to the original route, which would traverse the properties of four full-time residents. He also emphasized that it is a straighter route, making it easier for service vehicles to access. Another property owner near the subject site, Rob Ramsdell, also commented at the CAB meeting, stating that he had spoken with the one property owner who would be impacted by the route change and she was fine with the new access route, so long as TMWA accepts full liability should construction or operations along the route result in any damages to her property. The applicant responded by stating that TMWA requires all contractors to take photos before and after construction, so that they can ensure that the area will look as it was prior to the project. He also stated that TMWA is not committed to either route at this point, but that the route proposed by Mr. Burdg appears easier, shorter, and straighter, and that they are going to pursue that option. Staff conducted a site visit with the applicant and agrees that the alternate route is preferred.

Reviewing Agencies

The following agencies received a copy of the project application for review and evaluation.

- Washoe County Community Services Department
 - Planning and Building Division
 - Engineering and Capital Projects Division
 - Utilities/Water Rights
 - Parks and Open Space
- Washoe County Health District
 - Air Quality Division
 - Environmental Health Services Division
- Truckee Meadows Fire Protection District
- Regional Transportation Commission
- Washoe-Storey Conservation District
- Nevada Department of Water Resources
- Nevada Department of Wildlife

Three of the eleven above listed agencies/departments provided comments and/or recommended conditions of approval in response to their evaluation of the project application. A **summary** of

each agency's comments and/or recommended conditions of approval and their contact information is provided. The Conditions of Approval document is attached to this staff report and will be included with the Action Order.

- Washoe County Planning and Building addressed operational requirements in effect for the life of the project and also imposed additional conditions related to revegetation of disturbed slopes and channelized areas.

Contacts: Sophia Kirschenman, Park Planner, 775.328.3623, SKirschenman@washoecounty.us; Chris Bronczyk, Planner, 775.328.3612, CBronczyk@washoecounty.us

- Washoe County Engineering and Capital Projects addressed grading, drainage channelization, revegetation, and stormwater requirements and imposed additional conditions to require the completion of a hydrology/hydraulic report.

Contacts: Leo Vesely, P.E., 775.328.2041, LVesely@washoecounty.us; Walt West, P.E., 775.328.2310, WWest@washoecounty.us

- Truckee Meadows Fire Protection District addressed fire and defensible space requirements.

Contact: Don Coon, 775.326.6077, Dcoon@tmfpd.us

Staff Comment on Required Findings

WCC Section 110.810.30, Article 810, *Special Use Permits*, requires that all of the following findings be made to the satisfaction of the Washoe County Board of Adjustment before granting approval of the request. Staff has completed an analysis of the special use permit application and has determined that the proposal is in compliance with the required findings as follows.

1. Consistency. That the proposed use is consistent with the action programs, policies, standards and maps of the Master Plan and the South Valleys Area Plan.

Staff Comment: The Proposal is consistent with the Master Plan and the South Valleys Area Plan.

2. Improvements. That adequate utilities, roadway improvements, sanitation, water supply, drainage, and other necessary facilities have been provided, the proposed improvements are properly related to existing and proposed roadways, and an adequate public facilities determination has been made in accordance with Division Seven.

Staff Comment: The proposed project includes roadway improvements to ensure that the water tanks are accessible to TMWA in the future. Drainage improvements may be required, as detailed in the required hydrology report. All other utilities and facilities are adequate to serve the site.

3. Site Suitability. That the site is physically suitable for the construction of an additional 250,000-gallon water tank, and for the intensity of such a development.

Staff Comment: The site is physically suitable for the construction of the proposed development. The South Valleys Area Plan Development Suitability Map identifies the majority of the subject site as having slopes of 15% or greater. However, the project is proposed to be located in the unconstrained portion of the site.

4. Issuance Not Detrimental. That issuance of the permit will not be significantly detrimental to the public health, safety or welfare; injurious to the property or improvements of adjacent properties; or detrimental to the character of the surrounding area.

Staff Comment: As proposed and with the Conditions of Approval, the proposed uses are expected to create minimal impacts and not cause significant detriment or injury to the public, adjacent properties, or surrounding area.

5. Effect on a Military Installation. Issuance of the permit will not have a detrimental effect on the location, purpose or mission of the military installation.

Staff Comment: No military installations are located within the required noticing distance; therefore, this finding does not apply to this project.

Staff Comment on Required South Valleys Findings

SV.2.16 The approval of all special use permits and administrative permits must include a finding that the community character as described in the Character Statement can be adequately conserved through mitigation of any identified potential negative impacts.

Staff Comment: The proposed development is being undertaken to serve the properties in this area. While it is an effort to double the size of the existing development, it is entirely surrounded by vacant land, thus maintaining the rural nature described in the Character Statement. Additionally, the water tanks will not be visible from public roads and will not impact the scenic viewsheds that are important to this region, pursuant to the Sight Line Study included in the application materials (Exhibit J). Staff believes that this finding can be made.

SV.18.3 The granting of special use permits in the South Valleys must be accompanied by a finding that no significant degradation of air quality will occur as a result of the permit. As necessary, conditions may be placed on special use permits to ensure no significant degradation of air quality will occur. The Department of Community Development will seek the advice and input of the Air Quality Division of the Department of Health in the implementation of this policy.

Staff Comment: Per a memo received by the applicant (Exhibit I), permanent degradation of air quality is not anticipated with the addition of a new water tank on the subject property. There may be minimal degradation of air quality as a result of construction activities for a short period of time. These activities are required to be compliant with regulations set forth by the Air Quality Division of the Health District, including obtaining a dust control permit and maintaining best practices to minimize dust creation. The applicant will be required to pull air quality permits, if necessary, per Condition 1.i (Exhibit A).

Recommendation

Those agencies which reviewed the application recommended conditions in support of approval of the project. Therefore, after a thorough analysis and review, Special Use Permit Case Number WSUP19-0005 is being recommended for approval with conditions. Staff offers the following motion for the Board's consideration.

Motion

I move that, after giving reasoned consideration to the information contained in the staff report and information received during the public hearing, the Washoe County Board of Adjustment approve with conditions Special Use Permit Case Number WSUP19-0005 for the Truckee Meadows Water Authority, having made all five findings in accordance with Washoe County Code Section 110.810.30, the two findings in accordance with the South Valleys Area Plan, and the modifications to WCC Section 110.438.45 (a) *Grading of Slopes* and WCC Section 110.412.40 *Civic and Commercial Use Types (Landscaping)*:

1. Consistency. That the proposed use is consistent with the action programs, policies, standards and maps of the Master Plan and the South Valleys Area Plan;
2. Improvements. That adequate utilities, roadway improvements, sanitation, water supply, drainage, and other necessary facilities have been provided, the proposed improvements are properly related to existing and proposed roadways, and an adequate public facilities determination has been made in accordance with Division Seven;

3. Site Suitability. That the site is physically suitable for a second 250,000-gallon water tank and for the intensity of such a development;
4. Issuance Not Detrimental. That issuance of the permit will not be significantly detrimental to the public health, safety or welfare; injurious to the property or improvements of adjacent properties; or detrimental to the character of the surrounding area;
5. Effect on a Military Installation. Issuance of the permit will not have a detrimental effect on the location, purpose or mission of the military installation.

Required Findings for Special Use Permits within the South Valleys Area Plan

SV.2.16 The approval of all special use permits and administrative permits must include a finding that the community character as described in the Character Statement can be adequately conserved through mitigation of any identified potential negative impacts.

SV.18.3 The granting of special use permits in the South Valleys must be accompanied by a finding that no significant degradation of air quality will occur as a result of the permit. As necessary, conditions may be placed on special use permits to ensure no significant degradation of air quality will occur. The Department of Community Development will seek the advice and input of the Air Quality Division of the Department of Health in the implementation of this policy

Appeal Process

Board of Adjustment action will be effective 10 calendar days after the written decision is filed with the Secretary to the Board of Adjustment and mailed to the applicant, unless the action is appealed to the Washoe County Board of County Commissioners, in which case the outcome of the appeal shall be determined by the Washoe County Board of County Commissioners. Any appeal must be filed in writing with the Planning and Building Division within 10 calendar days from the date the written decision is filed with the Secretary to the Board of Adjustment and mailed to the applicant.

Owner/Applicant: Truckee Meadows Water Authority
P.O. Box 30013
Reno, NV 89520

Consultant: Rubicon Design Group
1610 Montclair Ave, Suite B
Reno, NV 89509



Conditions of Approval

Special Use Permit Case Number WSUP19-0005

The project approved under Special Use Permit Case Number WSUP19-0005 shall be carried out in accordance with the Conditions of Approval granted by the Board of Adjustment on June 6, 2019. Conditions of Approval are requirements placed on a permit or development by each reviewing agency. These Conditions of Approval may require submittal of documents, applications, fees, inspections, amendments to plans, and more. These conditions do not relieve the applicant of the obligation to obtain any other approvals and licenses from relevant authorities required under any other act.

Unless otherwise specified, all conditions related to the approval of this Special Use Permit shall be met or financial assurance must be provided to satisfy the conditions of approval prior to issuance of a grading or building permit. The agency responsible for determining compliance with a specific condition shall determine whether the condition must be fully completed or whether the applicant shall be offered the option of providing financial assurance. All agreements, easements, or other documentation required by these conditions shall have a copy filed with the County Engineer and the Planning and Building Division.

Compliance with the conditions of approval related to this Special Use Permit is the responsibility of the applicant, his/her successor in interest, and all owners, assignees, and occupants of the property and their successors in interest. Failure to comply with any of the conditions imposed in the approval of the Special Use Permit may result in the institution of revocation procedures.

Washoe County reserves the right to review and revise the conditions of approval related to this Special Use Permit should it be determined that a subsequent license or permit issued by Washoe County violates the intent of this approval.

For the purpose of conditions imposed by Washoe County, “may” is permissive and “shall” or “must” is mandatory.

Conditions of Approval are usually complied with at different stages of the proposed project. Those stages are typically:

- Prior to permit issuance (i.e., grading permits, building permits, etc.).
- Prior to obtaining a final inspection and/or a certificate of occupancy.
- Prior to the issuance of a business license or other permits/licenses.
- Some “Conditions of Approval” are referred to as “Operational Conditions.” These conditions must be continually complied with for the life of the project or business.

The Washoe County Commission oversees many of the reviewing agencies/departments with the exception of the following agencies.

- **The DISTRICT BOARD OF HEALTH, through the Washoe County Health District, has jurisdiction over all public health matters in the Health District. Any conditions set by the Health District must be appealed to the District Board of Health.**

- **The RENO-TAHOE AIRPORT AUTHORITY is directed and governed by its own Board. Therefore, any conditions set by the Reno-Tahoe Airport Authority must be appealed to their Board of Trustees.**
- **The REGIONAL TRANSPORTATION COMMISSION (RTC) is directed and governed by its own board. Therefore, any conditions set by the Regional Transportation Commission must be appealed to that Board.**

FOLLOWING ARE CONDITIONS OF APPROVAL REQUIRED BY THE REVIEWING AGENCIES. EACH CONDITION MUST BE MET TO THE SATISFACTION OF THE ISSUING AGENCY.

Washoe County Planning and Building Division

1. The following conditions are requirements of Planning and Building, which shall be responsible for determining compliance with these conditions.

Contact Name – Chris Bronczyk, Planner, 775.328.3612, cbronczyk@washoecounty.us; Sophia Kirschenman, Park Planner, 775.328.3623, skirschenman@washoecounty.us

- a. The applicant shall attach a copy of the Action Order approving this project to all administrative permit applications (including building permits) applied for as part of this special use permit.
- b. The applicant shall demonstrate substantial conformance to the plans approved as part of this special use permit.
- c. The applicant shall submit complete construction plans and building permits shall be issued within two years from the date of approval by Washoe County. The applicant shall complete construction within the time specified by the building permits.
- d. Prior to issuance of building or grading permits, the applicant shall submit a noxious weed management plan developed through consultation with the Washoe County District Health Department, the University of Nevada Cooperative Extension, and/or the Washoe-Storey Conservation District. The plan will be implemented on a voluntary compliance basis.
- e. Prior to the issuance of building permits, a report shall be prepared by a licensed landscape architect analyzing:
 - i. The viability of leaving the willows and other riparian vegetation in place during and post channelization of the drainageway; and
 - ii. The viability of removing willow stakes during construction and replanting the willows for bank stabilization once channelization is complete. If the report finds that either of these options can be undertaken without increasing the risk of erosion to the project site, the applicant will be required to incorporate one of these elements into their project plans, with preference given to maintaining the vegetation in place. Willow stake success criteria shall be 50% survival of total willow stake plantings after three (3) years if this option is selected. If the criteria are not met, additional willows shall be planted.
- f. Final construction plans must adhere to all recommendations included in the Geotechnical Investigation.
- g. The applicant shall submit monitoring reports prepared by a licensed landscape architect or other qualified professional one (1) year and three (3) years after implementation of

the hydroseeding application to ensure that slope revegetation efforts result in at least 50% coverage of the hydroseeded area after one (1) year, and 100% coverage after three (3) years. If the criteria are not met, additional hydroseeding applications shall be required.

- h. The applicant shall stabilize the disturbed slopes using a native seed blend either approved or recommended by the Washoe-Storey Conservation District.
- i. The applicant shall pull all applicable air quality permits prior to construction.
- j. The applicant shall secure written permission from the property owners along the new proposed access road, should that route be identified as the preferred access option.
- k. A note shall be placed on all construction drawings and grading plans stating:

NOTE

Should any cairn or grave of a Native American be discovered during site development, work shall temporarily be halted at the specific site and the Sheriff's Office as well as the State Historic Preservation Office of the Department of Conservation and Natural Resources shall be immediately notified per NRS 383.170.

- l. The following **Operational Conditions** shall be required for the life of the development:
 - i. Failure to comply with the conditions of approval shall render this approval null and void. Compliance with this condition shall be determined by Planning and Building.

Washoe County Engineering and Capital Projects

- 2. The following general conditions are requirements of the Engineering Division, which shall be responsible for determining compliance with these conditions.

Contact Name – Leo Vesely, P.E., (775) 328-2041, L.Vesely@washoecounty.us

- a. A complete set of construction improvement drawings, including an on-site grading plan, shall be submitted when applying for a building/grading permit. Grading shall comply with best management practices (BMP's) and shall include detailed plans for grading, site drainage, erosion control (including BMP locations and installation details), slope stabilization, and mosquito abatement. Placement or removal of any excavated materials shall be indicated on the grading plan. Silts shall be controlled on-site and not allowed onto adjacent property.
- b. For construction areas larger than 1 acre, the developer shall obtain from the Nevada Division of Environmental Protection a Stormwater Discharge Permit and submit a copy to the Engineering Division prior to issuance of a grading permit.
- c. For construction areas larger than 1 acre, the developer shall complete and submit the Construction Permit Submittal Checklist and pay the Construction Stormwater Inspection Fee prior to obtaining a grading permit. The County Engineer shall determine compliance with this condition.
- d. Cut slopes, fill slopes, and berms shall be setback from parcel lines and access easements in accordance with Washoe County Code (WCC) Article 438.
- e. All riprap used for lining of the drainage channel shall be angular and in accordance with the current version of the Standard Specifications for Public Works Construction (aka Orange Book). All other riprap is prohibited per WCC Article 438.

- f. A revegetation bond shall be provided to the Engineering Division prior to approval of the grading or building permit. The amount of the bond shall be based on a cost estimate prepared by a licensed landscape architect, address adequate growing periods and criteria to confirm successful establishment of revegetation and shall include a 25 percent contingency.
- g. All disturbed areas left undeveloped for more than 30 days shall be treated with a dust palliative. Disturbed areas left undeveloped for more than 45 days shall be revegetated or mechanically stabilized. Methods and seed mix must be designed by a licensed landscape architect and approved by the County Engineer.

The following drainage conditions are requirements of the Engineering Division, which shall be responsible for determining compliance with these conditions.

Contact Name – Walt West, P.E., (775) 328-2310, WWest@washoecounty.us

- h. To comply with PSF.3.8.2, a detailed hydrology/hydraulic report prepared by a licensed engineer shall be submitted to the Engineering Division for review and approval prior to the approval of a grading or building permit. The report shall include the locations, points of entry and discharge, flow rates and flood limits of all 5- and 100-year storm flows impacting both the site and offsite areas and the methods for handling those flows. The report shall include all storm drain pipe and ditch sizing and rip-rap sizing calculations and a discussion of and mitigation measures for any impacts on existing offsite drainage facilities and properties.
- i. The maximum permissible flow velocity (that which does not cause scour) shall be determined for all proposed channels and open ditches. The determination shall be based on a geotechnical analysis of the channel soil, proposed channel lining and channel cross section, and it shall be in accordance with acceptable engineering publications/calculations. Appropriate linings shall be provided for all proposed channels and open ditches such that the 100-year flows do not exceed the maximum permissible flow velocity.

Truckee Meadows Fire Protection District (TMFPD)

- 3. The following general conditions are requirements of the Truckee Meadows Fire Protection District, which shall be responsible for determining compliance with these conditions. Unless otherwise stated, these conditions shall be met prior to the issuance of any building or grading permit or on an ongoing basis as determined by TMFPD.

Contact Name – Don Coon, 775.326.6077, Dcoon@tmfpd.us

- a. Fire protection of the new structures shall be as required by the current adopted International Fire Code, (IFC) International Wildland Urban Interface Code (IWUIC) 2012 Ed, with amendments and the requirements of the NFPA standard(s).
<https://codes.iccsafe.org/content/IWUIC2012>;
<https://codes.iccsafe.org/content/IFC2012>
- b. Provide a Vegetation selection, installation, management and Defensible Space Plan as required for the project in accordance with the requirements of the IWUIC.
- c. Provide an on-site fire hydrant as required by IFC 507.1 for new facilities as defined by Chapter 2 of the IFC.
- d. Provide an approved access gate locking system for Fire Department access as required per IFC D103.5.

*** End of Conditions ***



South Truckee Meadows/Washoe Valley Citizen Advisory Board

DRAFT: Approval of these draft minutes, or any changes to the draft minutes, will be reflected in writing in the next meeting minutes and/or in the minutes of any future meeting where changes to these minutes are approved by the CAB. Minutes of the regular meeting of the South Truckee Meadows/Washoe Valley Citizen Advisory Board held May 2, 2019 6:00 p.m. the South Valleys Library at 15650A Wedge Parkway, Reno, Nevada.

1. *CALL TO ORDER/ DETERMINATION OF QUORUM - Meeting was called to order at by Patricia Phillips at 6:00 p.m.

Member Present: Patricia Phillips, Tom Burkhart, Jim Rummings. A quorum was determined.

Absent: Kimberly Rossiter (excused), Shaun O’Harra (not excused).

2. *PLEDGE OF ALLEGIANCE - Patricia Phillips led the Pledge of Allegiance.

3. *GENERAL PUBLIC COMMENT AND DISCUSSION THEREOF-

Karen Critor invited the community to attend the Washoe Valley Alliance Celebration at Washoe Lakes State Park on May 18, 2019.

With no further requests for public comment, Patricia Phillips closed the public comment period.

4. APPROVAL OF AGENDA FOR THE MEETING OF MAY 2, 2019 (for Possible Action) –Jim Rummings moved to approve the agenda for MAY 2, 2019. Tom Burkhart seconded the motion to approve the agenda for MAY 2, 2019. Motion carried unanimously.

5. APPROVAL OF THE MINUTES FOR THE MEETING OF APRIL 4, 2019 (for Possible Action) – Jim Rummings moved to approve the meeting minutes for APRIL 4, 2019. Tom Burkhart seconded the motion to approve the meeting minutes for APRIL 4, 2019. Motion carried unanimously.

6. DEVELOPMENT PROJECTS– The project description is provided below.

6.A. Special Use Permit Case Number WSUP19-0005 (Lightning W Tank #2) – Request for community feedback, discussion and possible action to forward community and Citizen Advisory Board comments to Washoe County staff on a request for the construction of a new 250,000 gallon water tank next to the existing 250,000 gallon water tank on the property to allow for additional water storage and rehabilitation of the existing water tank and to allow 2:1 slopes instead of 3:1 slopes. (for Possible Action)

- Applicant/Property Owner: Rubicon Design Group/Truckee Meadows Water Authority
- Location: Franktown Road
- Assessor’s Parcel Number: 055-210-21
- Staff: Chris Bronczyk, Planner, 775-328-3612; cbronczyk@washoecounty.us
- Reviewing Body: Tentatively scheduled for the Board of Adjustment on June 6, 2019

Susan Pansky, Rubicon Design Group, Representing TMWA, provided a PowerPoint presentation:

- Requesting a Special Use Permit for construction of a second water tank ‘Lighting W tank’
- Existing tank is south of Franktown Road; it holds 250,000 gallons of water
- She showed the site plan with existing and proposed water tanks. The current tank needs to be rehabilitated.

- Requesting 2:1 slopes instead of 3:1 slopes to match existing slopes. Hydroseeds will be applied when grading is completed.
- She showed a photo simulation of two functioning water tanks that will serve together and provide additional water storage.
- 10 property owners were noticed about the project. She said they received one response regarding an alternative access preference. The neighbor was in favor of the alternative access point during construction.
- The current and existing tank are screened by trees and not visible from the community.
- Construction timeframe will be June-November for the construction of the new tank. Rehabilitation will take place November – April 2020 for existing water tank.

Jim Rummings asked about any proposed piping changes. Chris Struffert from TMWA said there will be changes directly at the site with a split and valves. Existing wells and supply lines will serve both tanks.

Tom Burkhart asked if this additional tank is to address growth in the area. Chris said this is for redundancy purposes. Both tanks will be filled for fire season. It's not for growth. There will be a yard hydrant hooked up for tanker trucks. He explained where the fire hydrants in the area are located.

Public Comment:

Ronald Burge said he called TMWA about the access road during construction; he said the ideal access road only has 4 fulltime residents on it. He said there is a hard right turn on the proposed access road. He suggested Pine Canyon which is a straight shot up to the construction. Pine Canyon only have a few residents on it. Large trucks will have easier access on the alternative route.

Ron Ramsdale said he deeded the site to Washoe County. He said he is ok with the project. He referred to the access map - The yellow line is a straight shot to the construction site. The neighbors don't have any problem with that access as long as TMWA repairs any damages. Chris Struffert said the yellow line is better access. He said he drove the road where it ties into the access road; it's shorter and straighter. He said we are required to video and photograph the preexisting conditions for records in order to ensure things were as they were or in better condition than when the project started.

MOTION: Jim Rummings moved to recommend approval of Special Use Permit Case Number WSUP19-0005 (Lightning W Tank #2). Tom Burkhart seconded the motion to recommend approval of the case. The motion carried unanimously.

6.B. Special Use Permit Case Number WSUP19-0008 (Houston Grading) – Request for community feedback, discussion and possible action to forward community and Citizen Advisory Board comments to Washoe County staff on a request for major grading of an area of approximately ±35,400 sq. ft. with ±7,428 cubic yards of cuts and ±2,769 cubic yards of fill to facilitate the construction of a new single family residence. (for Possible Action)

- Applicant/Property Owner: David Houston
- Location: 29 Bennington Court
- Assessor's Parcel Numbers: 046-151-05 & 046-151-06
- Staff: Julee Olander, Planner, 775-328-3627; jolander@washoecounty.us
- Reviewing Body: Tentatively scheduled for the Board of Adjustment on June 6, 2019.

Derek Allen, home builder for the Houston family, provided an overview of the project. He said they have come across issues to get to the top of this hill. He said they typically build on a 14% grade, but are requested

to build at 10%. He said they intended to use the existing road, but TMFPD said they couldn't use the road. The Houstons purchased the lot next door to build an access road. The Special Use Permit is for major grading. A lot of dirt work needs to happen. He said he has built several homes in St. James's Village. He said he follows guidelines set forth by St. James and Washoe County.

Julee Olander, Washoe County Planner, provided maps of the site. St. James' HOA has approved it; now we are working through Washoe County process.

Jim Rummings said fire access into there is very important. He said during the Little Valley fire, the fire department had issues getting in there. Having good access is extremely important and making sure the vegetation is controlled. It can be dangerous for fire personnel. Derek said that is why they changed the grading to 10%.

Ray Simms said the notice he received in the mail stated 4,000 cubic yards of dirt. He said he doesn't believe that was reflected in this presentation. Derek said that will be hauled off. Derek showed the existing road that cannot be used. The Houston's bought the lot next door and driveway will wind itself around the property. Mr. Simms explained the original access road was to get up to the lot. The problem was the access road went through another parcel that was sold. The new access is much more favorable to him. He asked if the grading all takes place in the dashed line on the map. Derek said yes; this is the best plan; it's only been passed by HOA. It's a steep gradient. Exporting 4,000 cubic yards of dirt. The general contractor for dirt work works on middle schools sites for Washoe County, and he is aware of keeping sites clean.

Tom Burkhart asked Ray if he is ok with the new access. Ray said the property owner can do what he wants with his property. Ray said he was concern with the cul-de-sac narrow access and difficult situation. With the purchase of the adjacent lot solves a lot of problems. Extensive roadwork is required to access the property.

Ray asked for the schedule for grading activities and timeline. Derek said he has a meeting set up for June 6, and work can begin after approval. He said he hoped to start right away. Ray asked about plans for old access road. Derek said re-vegetation is planned of the old access road. Patricia Phillips asked about construction times during the day. Ray said it's regulated by CCRs. Derek said 7 am – 5 pm.

MOTION: Tom Burkhart moved to recommend approval Special Use Permit Case Number WSUP19-0008 (Houston Grading). Jim Rummings seconded the motion to recommend approval of this case. Motion passed unanimously.

7. *CHAIRMAN/BOARD MEMBER ITEMS -

Patricia Phillips said she requested Del Monte Bartley Ranch Spot lights be reviewed. They have 6 flood lights.

8. *GENERAL PUBLIC COMMENT AND DISCUSSION THEREOF – With no request for public comment, Patricia Phillips closed public comment period.

ADJOURNMENT – the meeting adjourned 6:43 p.m.

Number of CAB members present: 3

Number of Public Present: 13

Presence of Elected Officials: 0

Number of staff present: 2



WASHOE COUNTY

COMMUNITY SERVICES DEPARTMENT

Engineering and Capital Projects

1001 EAST 9TH STREET
PO BOX 11130
RENO, NEVADA 89520-0027
PHONE (775) 328-3600
FAX (775) 328.3699

Date: May 8, 2019

To: Chris Bronczyk, Planner
Sophia Kirschenman, Park Planner

From: Leo Vesely, P.E., Licensed Engineer

Re: Special Use Permit Case **WSUP19-0005 – TMWA Lightning W Tank 2**
APN 055-210-21

GENERAL PROJECT DISCUSSION

Washoe County Engineering staff has reviewed the above referenced application. The Special Use Permit is for the construction of a second TMWA water tank at the site. The Engineering and Capital Projects Division recommends approval with the following comments and conditions of approval which supplement applicable County Code and are based upon our review of the site and the application prepared by the Rubicon Design Group. The County Engineer shall determine compliance with the following conditions of approval.

The application requests a variation to County Code to allow 2:1 cut and fill slopes in the vicinity of the new water tank. Engineering does not take exception to this request, given the presence of an existing 2:1 slope around the existing tank, provided that all proposed 2:1 slopes are either found to be stable and non-erosive through a geotechnical evaluation or the 2:1 slope is mechanically stabilized with angular rock rip-rap.

For questions related to sections below, please see the contact name provided.

GENERAL CONDITIONS

Contact Information: Leo Vesely, P.E. (775) 328-2041

1. A complete set of construction improvement drawings, including an on-site grading plan, shall be submitted when applying for a building/grading permit. Grading shall comply with best management practices (BMP's) and shall include detailed plans for grading, site drainage, erosion control (including BMP locations and installation details), slope stabilization, and mosquito abatement. Placement or removal of any excavated materials shall be indicated on the grading plan. Silts shall be controlled on-site and not allowed onto adjacent property.
2. For construction areas larger than 1 acre, the developer shall obtain from the Nevada Division of Environmental Protection a Stormwater Discharge Permit and submit a copy to the Engineering Division prior to issuance of a grading permit.
3. For construction areas larger than 1 acre, the developer shall complete and submit the Construction Permit Submittal Checklist and pay the Construction Stormwater Inspection Fee prior to obtaining a grading permit. The County Engineer shall determine compliance with this condition.
4. Cut slopes, fill slopes, and berms shall be setback from parcel lines and access easements in accordance with Washoe County Code Article 438.



INTEGRITY



EFFECTIVE
COMMUNICATION



QUALITY
PUBLIC SERVICE

Subject: **WSUP19-0005 – TMWA Lightning W Tank 2**
Date: May 8, 2019
Page: 2

5. All riprap used for slope stabilization or channel lining shall be angular and in accordance with the current version of the Standard Specifications for Public Works Construction (aka Orange Book).
6. A revegetation bond shall be provided to the Engineering Division prior to approval of the grading or building permit. The amount of the bond shall be based on a cost estimate prepared by a licensed landscape architect, address adequate growing periods and criteria to confirm successful establishment of revegetation and shall include a 25 percent contingency.
7. All disturbed areas left undeveloped for more than 30 days shall be treated with a dust palliative. Disturbed areas left undeveloped for more than 45 days shall be revegetated or mechanically stabilized. Methods and seed mix must be designed by a licensed landscape architect and approved by the County Engineer.

DRAINAGE (COUNTY CODE 110.416, 110.420, and 110.421)

Contact Information: Walt West, P.E. (775) 328-2310

1. To comply with PSF.3.8.2, a detailed hydrology/hydraulic report prepared by a licensed engineer shall be submitted to the Engineering Division for review and approval prior to the approval of a grading or building permit. The report shall include the locations, points of entry and discharge, flow rates and flood limits of all 5- and 100-year storm flows impacting both the site and offsite areas and the methods for handling those flows. The report shall include all storm drain pipe and ditch sizing and rip-rap sizing calculations and a discussion of and mitigation measures for any impacts on existing offsite drainage facilities and properties.
2. The maximum permissible flow velocity (that which does not cause scour) shall be determined for all proposed channels and open ditches. The determination shall be based on a geotechnical analysis of the channel soil, proposed channel lining and channel cross section, and it shall be in accordance with acceptable engineering publications/calculations. Appropriate linings shall be provided for all proposed channels and open ditches such that the 100-year flows do not exceed the maximum permissible flow velocity.

TRAFFIC AND ROADWAY (COUNTY CODE 110.436)

Contact Information: Mitch Fink, (775) 328-2050

1. No comments.

UTILITIES (County Code 422 & Sewer Ordinance)

Contact Information: Tim Simpson, P.E. (775) 954-4648

1. No comments

Truckee Meadows Fire Protection District (TMFPD)

1. The following conditions are requirements of the Truckee Meadows Fire Protection District, which shall be responsible for determining compliance with these conditions. Unless otherwise stated, these conditions shall be met prior to the issuance of any building or grading permit or on an ongoing basis as determined by TMFPD.

Contact Name – Don Coon, 775.326.6077, Dcoon@tmfpd.us

- a. Fire protection of the new structures shall be as required by the current adopted International Fire Code, (*IFC*) International Wildland Urban Interface Code (*IWUIC*) 2012 *Ed*, with amendments and the requirements of the NFPA standard(s). (<https://codes.iccsafe.org/content/IWUIC2012> <https://codes.iccsafe.org/content/IFC2012>)
- b. The Fire Hazard designation for your project is available on the provided Washoe Regional Mapping System link. (<https://gis.washoecounty.us/wrms/firehazard>) After you have found your property using the address search feature, the color of the background area will indicate your wildland fire risk.
- c. When you have determined your Fire Risk Rating use the link provided, to determine the *IWUIC* construction and defensible space requirements. (https://www.washoecounty.us/building/Files/Files/2012%20WUI%20CODE%20GUIDE_rev%2011-25-13.pdf)
- d. Provide a Vegetation selection, installation, management and Defensible Space Plan as required for the project in accordance with the requirements of the *IWUIC*.
- e. Provide an on-site fire hydrant as required by IFC 507.1 for new facilities as defined by Chapter 2 of the IFC.
- f. Provide an approved access gate locking system for Fire Department access as required per IFC D103.5.



Washoe County Community Services Department
1001 E. 9th St.
Reno, NV 89512
Attention: Ms. Sophia Kirschenman

May 08, 2019

Subject: WSUP19-0005 - Lightning W Tank #2 – Proposed Tank Location

Dear Sophia,

Thank you for taking the time to meet at the site yesterday.

As we discussed, TMWA explored alternate locations and grading configurations for the proposed tank before settling on the site arrangement submitted in the Special Use Permit application. The attached exhibit shows what was considered. The exhibit is explained below:

1. Existing Tank
 - This gray circle shows the location and elevation of the existing facility.
2. Proposed Tank Location
 - This dark gray circle shows the proposed location for Tank 2 as presented in the SUP application packet.
 - This location requires 2:1 slopes to fit between the natural drainage on the west, the existing tank on the east, and the property line on the south.
 - This location allows clearance for access, piping, and electrical appurtenances.
 - No retaining walls are required, and excavation is minimized.
3. Tank Location with 3:1 Slopes – West Side
 - This dashed red circle drawn to the left of the existing tank shows where the proposed location would move if the requested 2:1 slopes would be changed to the standard 3:1.
 - Laying our slopes back to 3:1 will require moving the tank approximately 14-feet to the northeast to keep construction limits out of the natural drainage to the west and within TMWA property lines. This will bring it to within about 2-feet of the existing tank making construction impossible.
4. Tank Location With 2:1 Cut Slopes – North side
 - This is the red dashed circle drawn with the accompanying grading limits.
 - This location would require the removal of four mature trees.
 - 2:1 cut slopes would extend beyond TMWA property lines or require an 8 to 10 foot high retaining wall on the west. 3:1 cut slopes would require a 16 to 20 foot high retaining wall.

- Relocating the existing drainage from the east around the new tank and behind the retaining wall would be difficult.
- Constructing the tank partially on cut and partially on fill in the old drainage would be unstable and contrary to the geotechnical report.
- Site disturbance and excavation quantities would increase.

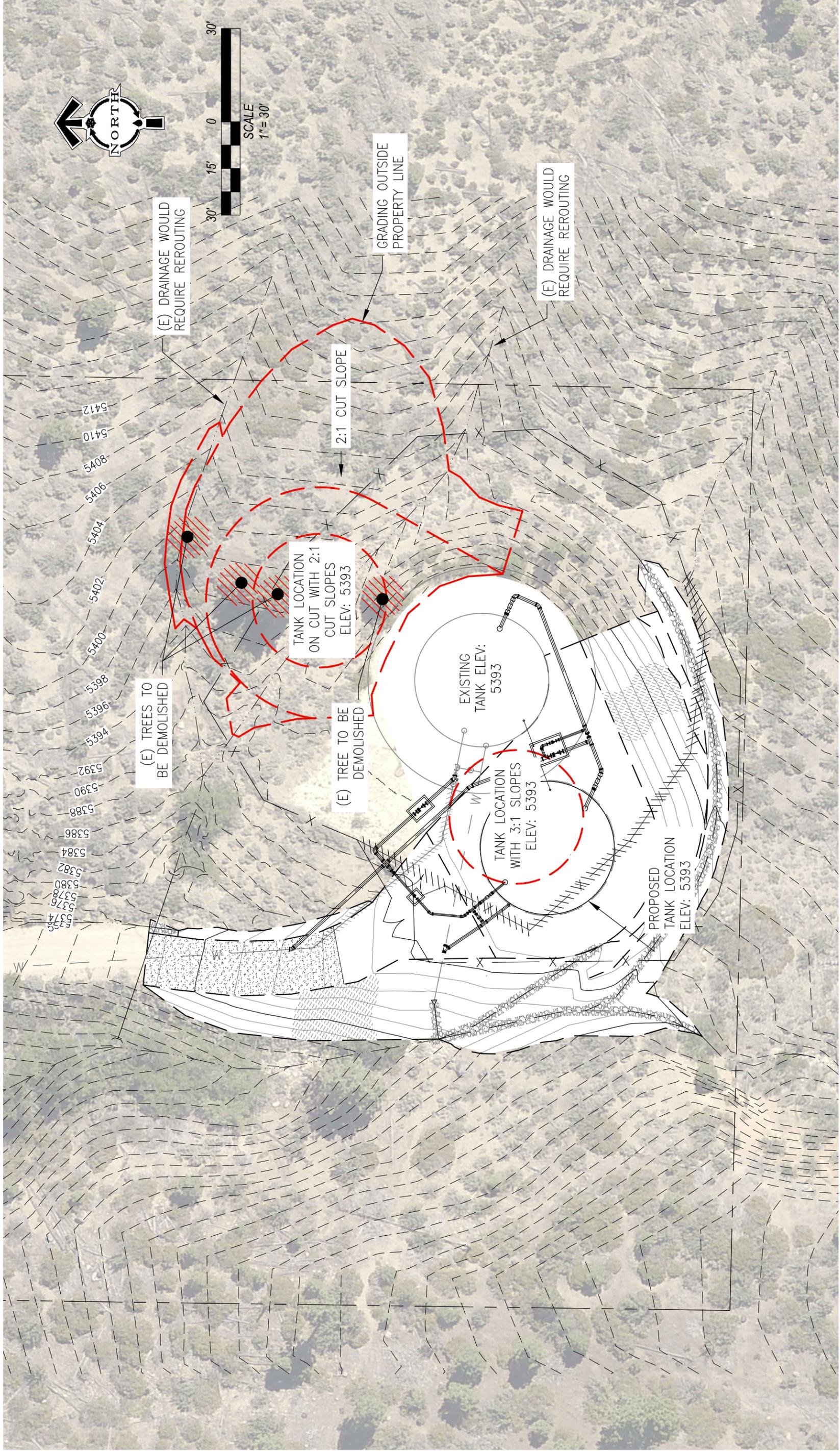
I believe we have exhausted the options for locating a second tank on this challenging site. From an engineering standpoint the proposed configuration is the clear preference.

Thank you,



Chris Struffert, P.E.
Principal Engineer

Enclosure: Figure A1 - Alternative Tank Locations



DATE:	MAY, 2019
DRAWN BY:	JRH
WORK ORDER #:	-
SCALE:	AS SHOWN

FIGURE
A1

LIGHTNING W TANK 2
-
ALTERNATIVE TANK LOCATIONS



1355 CAPITAL BLVD, PO BOX 30013 RENO, NEVADA 89520-3013 PHONE: 775-834-8080
May 07, 2019 - 3:12pm
K:\2018-19 Capital Projects\14-0019 Lightning W Tank\Design\CAD\14-0019 C1-CX.dwg



Washoe County Community Services Department
1001 E. 9th St.
Reno, NV 89512
Attention: Mr. Chris Bronczyk

May 06, 2019

Subject: WSUP19-0005 - Lightning W Tank #2 – Construction Access

Dear Chris,

This letter serves as a follow-up to the CAB meeting we attended on Thursday May 2nd.

One question that came up during the meeting was what route the contractor would use to access the site during construction. TMWA's current access easement from Franktown Court is shown on the attached exhibit in red. This is the route currently used by TMWA staff and contractors. The east-west portion of the route is relatively narrow, dusty, and passes by several residences and ponds.

The route through Pine Canyon Road shown in yellow was suggested by Messrs. Burdg and Ramsdell (adjacent property owners) since it is shorter, wider, and passes fewer homes. TMWA agrees that this route would be better suited as construction access.

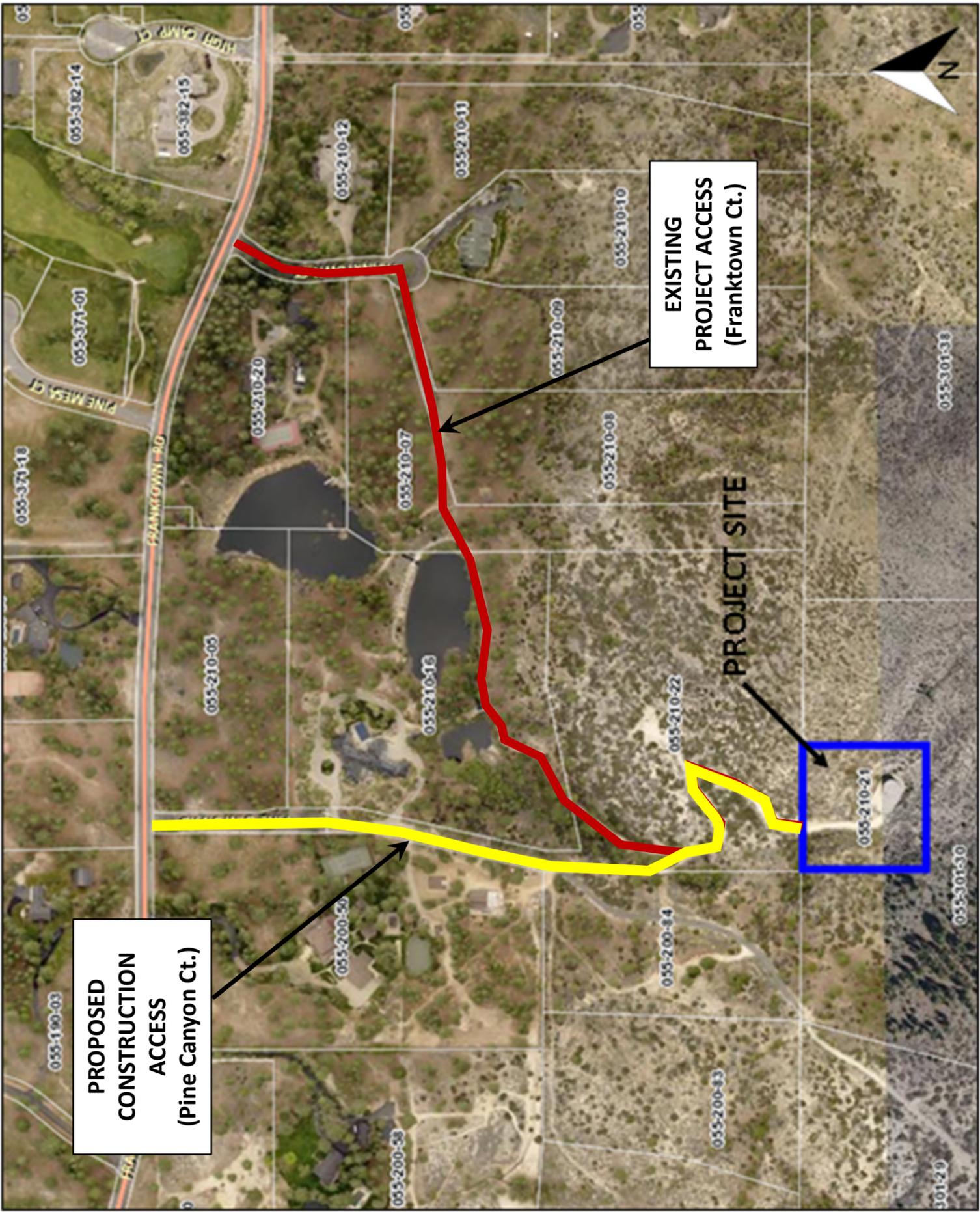
One concern related to property damage that might occur as a result of the construction vehicle traffic was voiced during the meeting. TMWA committed to making a video recording of the access route prior to the start of construction, and ensured attendees that any damage related to the project would be repaired to as good, or better than pre-existing conditions.

TMWA is pursuing the use of the Pine Canyon route at this time, and we appreciate the constructive suggestion.

Thank you,

Chris Struffert, P.E.
Principal Engineer

Enclosure: Access Route Options



Lightning W Tank #2 – Project Construction Access



Washoe County Community Services Department
1001 E. 9th St.
Reno, NV 89512
Attention: Mr. Chris Bronczyk

May 06, 2019

Subject: WSUP19-0005 - Lightning W Tank #2 – 2:1 Slope Along Drainage

Dear Chris,

This letter serves as a follow-up to the CAB meeting we attended on Thursday May 2nd.

As we discussed, there are two areas on the proposed grading plan for this project where the design calls out 2:1 slopes. The first is the cut slope behind the proposed tank. There are several justifications for this design feature:

- The cut slope behind the existing tank is graded at 2:1. This slope has been stable since the original tank was built in 1995. Native vegetation has established itself, and erosion is not an issue.
- Blending the proposed tank's slope at 3:1 into the existing slope at 2:1 would be awkward and require significantly more site disturbance to lay the shallower slope up the hillside.
- The geotechnical report for the proposed tank shows that a 2:1 slope is acceptable for the proposed tank based on site-specific soil conditions.

Mitigation for this proposed cut slope calls for the application of a native hydroseed mix. Establishment of vegetation will be monitored to ensure long-term success. Hydroseed reapplication will take place after one year if needed.

The cut slope behind the proposed tank is not related to the cut slope along the existing drainage, which is addressed separately below.

The second area that 2:1 slopes are proposed is in the area of the native drainage on the west side of the site. This drainage currently follows several meandering paths through a relatively wide channel that is partially overgrown with low shrubs and vegetation. Proposed sitework would include removing the in-channel vegetation, and straightening the path of flow to maximize water carrying capacity and reduce sidewall erosion. There are several justifications for this design feature as well:

- Existing slopes along the proposed channel improvements are as steep as 1:1.6 in certain areas, and as steep as 1:1 just upstream of the project location. 2:1 slopes would not adversely affect the stability of the channel.
- Laying the existing slope back to 3:1 would require significant excavation and site disturbance, to the extent that the location of the proposed tank would most likely not be feasible.

- Hard channel improvements such as concrete, gunite, or gabions would be visually obtrusive in this natural setting.
- Again, the geotechnical report for this site allows 2:1 slopes based on the soil characteristics encountered.

Recommended mitigation for the proposed 2:1 slopes along the drainage channel includes protection with 8-12" fractured rock (riprap). As we discussed last week, this would be supplemented with larger native rock screened from material excavated during sitework. This will improve slope protection, and also maintain the natural visual backdrop at the site.

A small amount of runoff will be added to the drainage channel under consideration due to the hard surfaces of the tank itself and the surrounding paved perimeter road. However, this contribution will be introduced downstream of the proposed channel improvements, and will be inconsequential when compared to the quantity of natural runoff, and the capacity of the channel.

TMWA is working with Eastern Sierra Engineering who conducted the geotechnical investigation for this site to also conduct a complete drainage study for the site. It is anticipated that this report will confirm the basis for design of the proposed improvements. The complete report will be submitted as soon as it is completed. In the meantime, please let me know if I can provide any further information or clarification.

Thank you,



Chris Struffert, P.E.
Principal Engineer

May 8, 2019

ESE Job #19114

Chris Struffert, P.E.
Truckee Meadows Water Authority
1355 Capital Blvd.
P.O. Box 30013
Reno, NV 89520

**Proposed Lighting W Tank 2
Slope Revegetation**

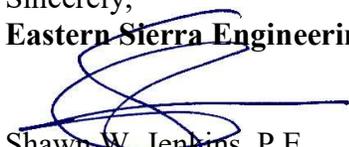
Dear Chris,

The intent of this correspondence is to clarify the revegetation requirements of the permanent cut slopes at the Proposed Lighting W Tank 2 site located in Washoe Valley, Nevada. Section 4.2.6 of our Geotechnical Investigation dated 4/11/19 requires that 2:1 cut slopes be revegetated by an import growth medium and seed and then place a much/heavy-duty tackifier application to minimize erosion while the new vegetation is established. We have reviewed TMWA's hydroseed revegetation specification and find that it satisfies the report requirements. In general the TWMA specification reads as follows:

Revegetation shall be by Hydroseeding. This process applies a slurry of water, fiber mulch, tackifier, fertilizer, and a seed mix. The specific seed mix and application rate shall be as recommended by the Washoe Storey Conservation District. Regrowth shall be evaluated annually, and hydroseeding repeated until successful. Temporary irrigation is not required.

We trust this provides the information you require at this time. Please do not hesitate to contact me at (775) 828-7220 extension 201 if you have any questions or require additional information.

Sincerely,
Eastern Sierra Engineering, P.C.



Shawn W. Jenkins, P.E.
Principal Engineer



May 8, 2019

Mr. Chris Bronczyk, Planner
Ms. Sophia Kirschenman, Park Planner
Washoe County Planning & Building Division
1001 E. Ninth Street
Reno, Nevada 89512

Re: WSUP-19-0005 – TMWA Lightning W Tank #2, Supplemental Information

Dear Mr. Bronczyk and Ms. Kirschenman:

Please accept this letter of response to Washoe County's request for additional information related to TMWA's Special Use Permit application for the Lightning W Tank #2 in south Washoe Valley. The information outlined below supports consistency with the Washoe County Master Plan and the South Valleys Area Plan, and includes the results of our presentation to the South Truckee Meadows/Washoe Valley Citizen Advisory Board on May 2, 2019. The additional required policies are listed below in *italic* type with our responses provided in **bold** type.

South Valleys Area Plan Policies:

S.V.2.3 Site development plans in the South Valleys planning area must submit a plan for the control of noxious weeds. The plan should be developed through consultation with the Washoe County District Health Department, the University of Nevada Cooperative Extension, and/or the Washoe-Storey Conservation District. The control plan will be implemented on a voluntary compliance basis.

A noxious weed plan will be created with input from the Washoe County District Health Department and, if possible, the Washoe-Storey Conservation District. This plan will be submitted for review and approval with the building permit application for this project.

SV.2.4 Applicants required to present their items to the Citizen Advisory Board (CAB) must submit a statement to staff regarding how the final proposal responds to the community input received from the CAB.

The proposed Special Use Permit was presented to the South Truckee Meadows/Washoe Valley Citizen Advisory Board on Thursday, May 2, 2019. Three board members were present, and all voted to recommend approval of the Special Use Permit. Specific questions and/or comments from the meeting are outlined below, with responses to each.

CAB Member Comments/Questions

1. Is the second tank for anticipated growth?

Response: No. The second tank will allow the existing tank to be taken out of service for maintenance and will create redundancy in the existing system.

2. Are the existing water lines from the tank changing as a result of the addition of this tank?

Response: Piping at the actual tank site will need to be modified to facilitate the second tank, but the water main up to the tank is sufficiently sized for two tanks and will not be modified or replaced.

3. Will you have a hydrant at the new tank and will fire trucks be able to access it? Why not a full size hydrant at this location?

Response: Pressure at tank sites is very low because they are at the highest points in our distribution system, so even with pumps it would take a long time to fill a fire truck at these sites. Additionally, due to the hilly terrain and narrow dirt roads, fire trucks cannot easily access tank sites, and have difficulty turning around.

TMWA's standard is to install a small yard hydrant as shown in the attached image at each new tank location for on-site use during cleaning and rehabilitation. One such hydrant is planned for the proposed Lightning W tank. But this type of hydrant is not suited for fire suppression. There are two actual fire hydrants just below the tank and south of Franktown Road (see the attached map for locations). These are the hydrants that can provide the pressures and flows necessary to properly fight fires.

Public Comment/Questions

1. Ronald Burdg – there are four full time residents on Franktown Court that would be disturbed by construction and making a right turn from Franktown Road onto Franktown Court would be difficult for larger trucks. These are the reasons for the suggestion to move the construction access to Pine Canyon Road.

Response: TMWA supports the change of construction access to Pine Canyon Road and agrees it is a more direct access for construction traffic. TMWA will pursue this option.

2. Rob Ramsdell – direct access through his property makes sense for construction. There's a minor fix to the road that needs to occur where the two accesses meet. Spoke with the other neighbor about the access as well and she is ok with it as long as TMWA or its contractor is responsible for any damage done to the road during construction.

Response: TMWA requires all contractors to document before and after conditions with construction projects and will require any damage to be repaired.

SV.7.3 The review of all special use permits for the establishment of a non-residential use in West Washoe Valley must include a consideration of how the proposed use will impact adjacent neighborhoods, including but not limited to Best Management Practices "dark sky" lighting standards, hours of operation, traffic, parking and safety impacts, and its contribution to the community character described in the Character Statement. Standards for review should be distinctly rural, recognizing the integrated character of the area. The application of conditions to special use permits should seek to mitigate the potential impacts of these uses on residential areas, without constraining the pursuit of agricultural and other non-residential activities.

The proposed Special Use Permit for a second water tank on the subject property is an expansion of an existing non-residential use in West Washoe Valley. Consideration has been taken to minimize impact to adjacent neighbors in the following ways:

1. A letter was sent to property owners in the immediate vicinity surrounding the proposed project site ahead of the May 2, 2019 CAB meeting. This letter was to inform them of the project and to invite them to contact TMWA with comments and concerns, or to attend the CAB or Board of Adjustment meetings. A copy of this letter is attached for reference.
2. No lighting is proposed on the water tank. This will help maintain dark skies in the area.
3. Hours of operation for this type of construction are typically from 7:00am to 5:30pm Monday through Friday, excluding holidays. This will ensure minimal disturbance to surrounding property owners during the early mornings, evenings and on weekends.
4. Parking is not applicable for this request, and we have received input from surrounding properties of their desire to utilize an alternate construction access on Pine Canyon Road, which TMWA will pursue with the cooperation of the property owners where that access is located.

The addition of the proposed water tank will support and protect the existing rural quality of life in West Washoe Valley. It will allow for maintenance on the existing water tank to take place and will provide a second fully operational tank that will create redundancy and additional reliability in the water system. It will also provide an additional water source for fire suppression in the area.

SV.14.1 Prior to final map recordation of tentative maps and prior to issuance of building permits for special use permits, or public-initiated capital improvements in the South Valleys planning area, the Nevada Department of Conservation and Natural Resources and/or the State Historic Preservation Office (SHPO) will be contacted and, if required, an appropriate archaeological investigation/survey will be conducted.

TMWA will contact SHPO regarding the project prior to the issuance of its building permit for the tank. Should any prehistoric or historic remains/artifacts be discovered during development of the site, work will be temporarily halted and SHPO will be notified to record and photograph the site.

SV.18.3 The granting of special use permits in the South Valleys must be accompanied by a finding that no significant degradation of air quality will occur as a result of the permit. As necessary, conditions may be placed on special use permits to ensure no significant degradation of air quality will occur. The Department of Community Development will seek the advice and input of the Air Quality Division of the Department of Health in the implementation of this policy.

Permanent degradation of air quality is not anticipated with the addition of a new water tank on the subject property. There may be minimal degradation of air quality as a result of construction activities for a short period of time. These activities are required to be compliant with regulations set forth by the Air Quality Division of the Department of Health including obtaining a dust control permit and maintaining best practices to minimize dust creation.

SV.19.1 Development proposals, with the exception of single-family homes and uses accessory to single family homes, within the South Valleys planning area will include detailed soils and geo-technical studies sufficient to: a. Ensure structural integrity of roads and buildings. b. Provide adequate setbacks from potentially active faults or other hazards. c. Minimize erosion potential.

A complete geotechnical report has been provided as a part of this Special Use Permit application.

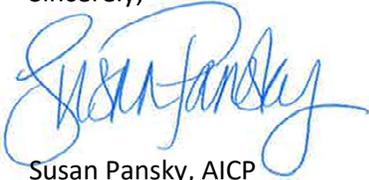
Master Plan Land Use and Transportation Policy:

LUT.27.3 Evaluate benefit/cost ratios on all public projects

The proposed cost of adding a second water tank at this location and the maintenance of the existing tank is accounted for in TMWA's current capital improvements budget. These costs will not result in an increase in TMWA user fees. The benefit of this public project is to provide ongoing maintenance to existing public facilities and to provide additional system reliability and fire suppression capability with a second tank.

If you have additional comments or questions, please feel free to contact me at (775) 425-4800 or spansky@rubicondesigngroup.com. Thank you for your consideration.

Sincerely,



Susan Pansky, AICP
Senior Planner

Attachments:

- Hydrant Locations Exhibit
- TMWA Property Owner Notification Letter



HYDRANT LOCATIONS



April 26, 2019

APN: 055-210-12 and 055-210-11
Jeanette C. Lowe Trust
2 Franktown Court
Washoe Valley, Nevada 89704

Dear Property Owner:

You are receiving this letter because you own property located in the vicinity of a proposed upcoming Truckee Meadows Water Authority (TMWA) project. TMWA has submitted a Special Use Permit application to Washoe County to allow for the construction of a new 250,000-gallon water tank next to our existing 250,000-gallon water tank on Parcel 055-210-21 (shown on the vicinity map below).



TMWA has determined that the existing water tank at this location needs rehabilitation work including steel repairs and interior and exterior recoating. To complete this work, the tank must be taken out of service. It is important to ensure uninterrupted water service to our customers in this area; therefore, we are proposing to construct a new tank that is identical in size and shape to the existing tank on the same property. Once the new tank is constructed and operational, the existing tank will be taken out of service and rehabilitated. Upon completion of both projects, two identical water tanks will remain on the TMWA property. A second tank will provide back-up service if one tank becomes inoperable and will provide additional water storage for the area.

We believe the location, size and color of the new tank will not negatively impact your property as the tank site is in a relatively remote area and intended to blend with the surrounding landscape. Upon completion of construction, the graded areas will be revegetated with a native seed mix and the tank site will continue to function as it has since the original tank was constructed in 1995. For reference, we have included a picture of the current tank and a photo simulation of what the two tanks will look like side by side upon completion.

Your property may experience a temporary increase in noise and traffic as a result of construction of the new tank and rehabilitation of the existing tank. We apologize for any inconvenience this may cause and appreciate your support and understanding while the work is completed. This work is anticipated to be done relatively quickly and we have provided a tentative construction timeline below.

<p>Construction of New Tank #2 (June – November 2019)</p> <ul style="list-style-type: none"> ○ Grading and Site Drainage ○ Foundation and Piping ○ Steel Erection ○ Interior and Exterior Blast/Coat ○ Disinfect, Fill and Perform Water Quality Analysis ○ Perimeter Road Surfacing ○ Reseeding 	<p>Rehabilitation of Tank #1 (November 2019 – April 2020)</p> <ul style="list-style-type: none"> ○ Make Any Necessary Steel Repairs ○ Interior and Exterior Blast/Coat ○ Disinfect, Fill and Perform Water Quality Analysis
--	---

The Special Use Permit for this project, called the Lightning W Tank #2 project, is on file with Washoe County as applications WSUP19-0005 and WDMOD19-0002. The public meetings where this project will be presented are listed below.

South Truckee Meadows/Washoe Valley
 Citizen Advisory Board
Thursday, May 2, 2019 at 6:00pm
 South Valleys Library
 15650 Wedge Parkway
 Reno, Nevada

Washoe County Board of Adjustment
Thursday, June 6, 2019 at 1:30pm
 Washoe County Commission Chambers
 1001 E. 9th Street, Building A, 1st Floor
 Reno, Nevada

Thank you for the opportunity to inform you of TMWA's proposed water tank project in your area. If you have any questions or concerns, please don't hesitate to contact us at hedmunson@tmwa.com or (775) 762-4162, or our land use planner, Susan Pansky, AICP of Rubicon Design Group at (775) 250-7981 or spansky@rubicondesigngroup.com.

Sincerely,



Heather Edmunson
Land Agent II

Enclosure: Existing Tank Photo and Simulation of Completed Tank Project

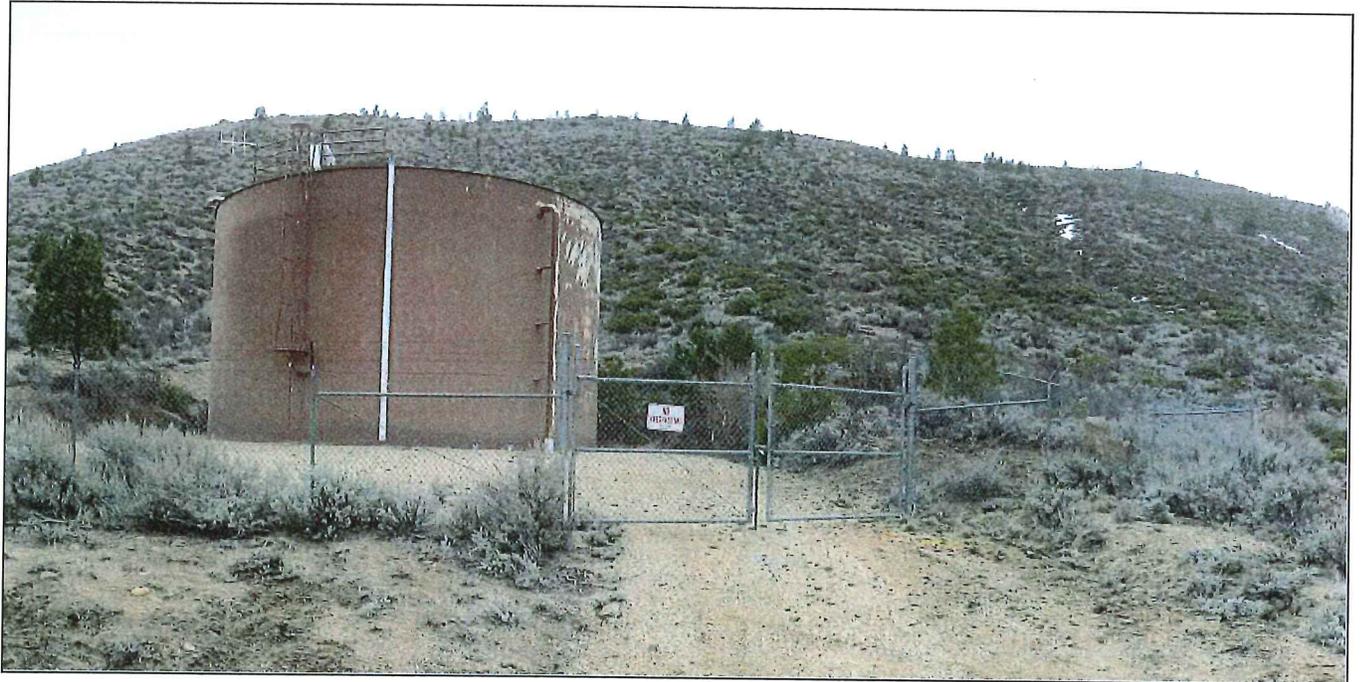
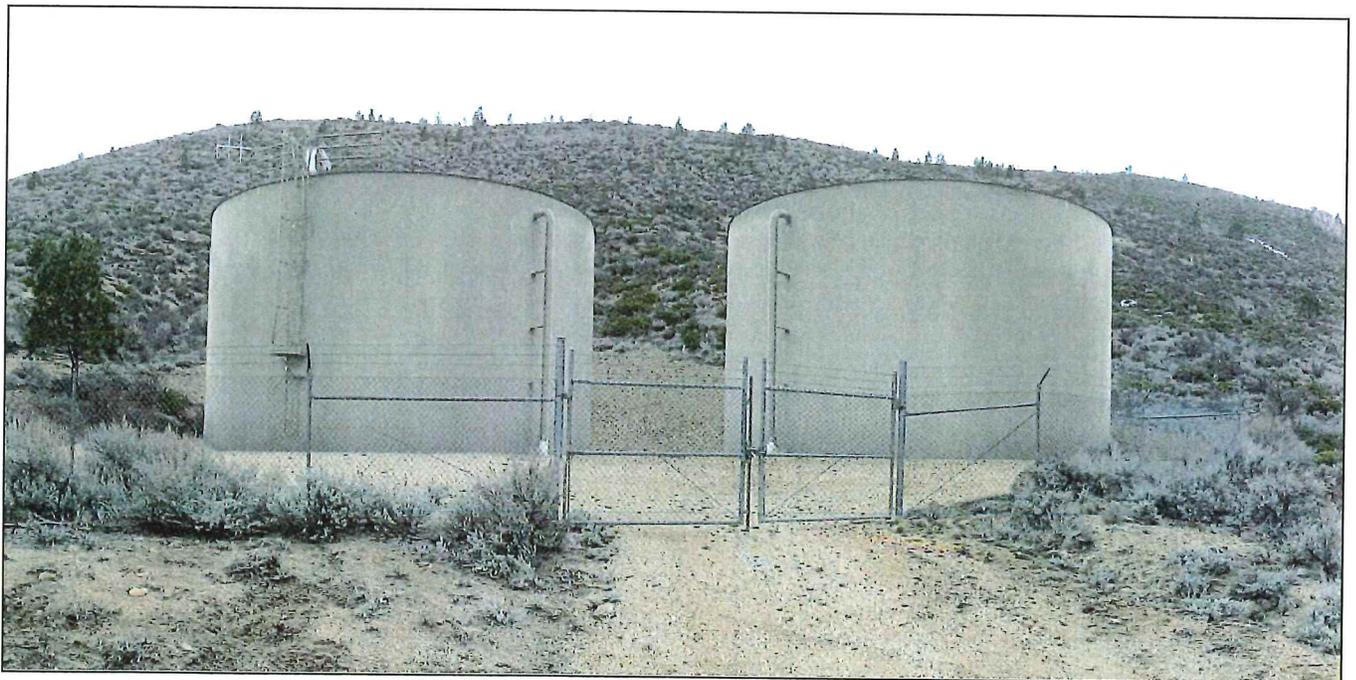


Photo of Existing 250,000-Gallon Water Tank (looking south from access road)



ORIGINAL



TMWA
Lightning W Tank #2
Special Use Permit and
Director's Modification of Standards



Prepared by:



April 15, 2019

WSUP19-0005
EXHIBIT J

TMWA

Lightning W Tank #2

SPECIAL USE PERMIT AND

DIRECTOR'S MODIFICATION OF STANDARDS

Prepared for:

Truckee Meadows Water Authority

P.O. Box 30013

Reno, NV 89520

Prepared by:

Rubicon Design Group, LLC

1610 Montclair Ave., Suite B

Reno, Nevada 89509

(775) 425-4800

www.rubicondesigngroup.com

TMWA LIGHTNING W TANK #2
SPECIAL USE PERMIT & DIRECTOR'S MODIFICATION OF STANDARDS

Table of Contents

Introduction 1
Project Location 1
Existing Conditions 2
Project Description 2
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Figure 2 – Existing Conditions (Site Photo Looking South from Access Road) 2
Figure 3 – Overall Site Plan 3
Figure 4 – Photo Simulation of Completed Project with Matching Tanks 3
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Figure 6 – Sight Line Study Photograph Locations 6
Figure 7 – Photographs of Approximate Tank Location (3) 7

Appendices:

Special Use Permit Application
Director's Modification of Standards Application
Property Owner Affidavit
Washoe County Tax Certificate
8.5x11 Overall Site Plan
8.5x11 Preliminary Grading Plan
8.5x11 Grading Cross Sections
8.5x11 Photo Exhibits
Geotechnical Investigation

Map Pocket:

Overall Site Plan
Preliminary Grading Plan
Grading Cross Sections

TMWA LIGHTNING W TANK #2 SPECIAL USE PERMIT & DIRECTOR'S MODIFICATION OF STANDARDS

Introduction

This application includes the following requests:

- A **Special Use Permit** to allow the construction of a 250,000-gallon water tank in the General Rural (GR) zoning district, *and to vary standards in accordance w/ 110.810.20 (e).*
- A **Director's Modification of Standards** to allow for graded 2:1 slopes in lieu of 3:1 slopes, and to allow for a native seed mix without irrigation in lieu of traditional site landscaping.

Project Location

The Lightning W Tank #2 project site (APN 055-210-21) consists of 2.066± acres located approximately 1,800 feet south of the intersection of Franktown Road and Pine Canyon Road in south Washoe Valley. Figure 1 (below) depicts the project location.

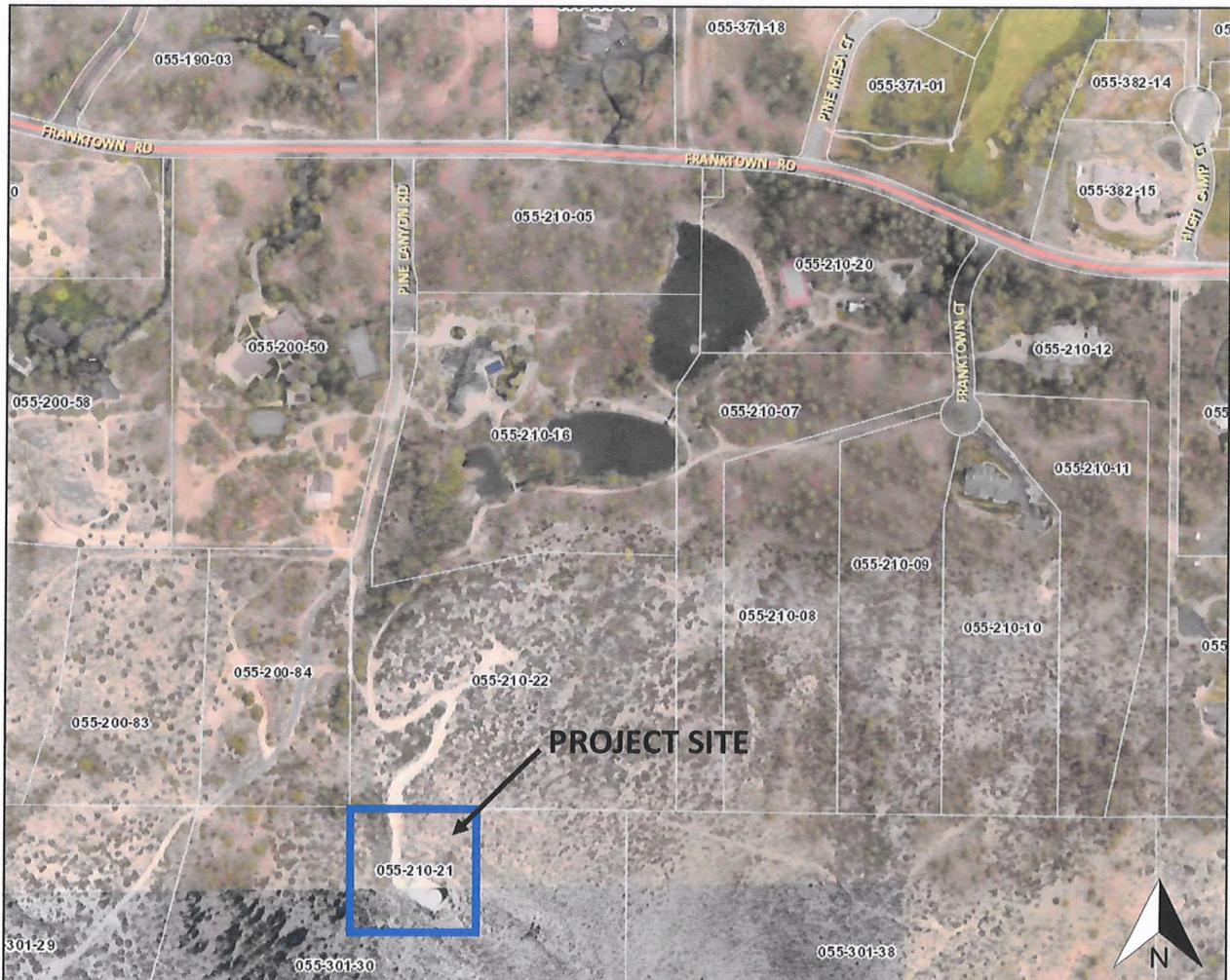


Figure 1 – Vicinity Map

TMWA LIGHTNING W TANK #2 SPECIAL USE PERMIT & DIRECTOR'S MODIFICATION OF STANDARDS

Existing Conditions

The Lightning W #2 Tank site parcel is the site of an existing 250,000-gallon water tank owned and operated by the Truckee Meadows Water Authority (TMWA) that was constructed in 1995. Existing site improvements also include 2:1 graded slopes around the south and west side of the tank, a graded dirt access road and chain link fence topped with barbed wire. Surrounding uses include a vacant rural parcel that surrounds the subject property on the west, south and east sides, and a vacant residential parcel on the north side. Figure 2 (below) depicts the existing onsite conditions.



Figure 2 – Existing Conditions (Site Photo Looking South from Access Road)

The project site is designated as Rural in the Washoe County Master Plan, as is the property that surrounds the site on the west, south and east. The property to the north is designated Rural Residential. Zoning for the project site is General Rural (GR), as is the property on the west, south and east sides. The zoning for the property to the north is Medium Density Rural (MDR).

Project Description

TMWA proposes to construct a 250,000-gallon water tank (Tank #2) on the 2.066± acre site, directly adjacent to the existing 250,000-gallon water tank (Tank #1). The purpose for the additional tank is to allow the original tank to be taken out of service temporarily for much needed rehabilitation. Tank #2 is proposed to be constructed of welded steel 43 feet in diameter with a wall height of 24 feet and a total height of approximately 26 feet at the center of the cone roof. A center-mounted vent will sit on top of the tank adding a maximum of an additional three feet to the total height. This size and shape is the same as existing Tank #1. The new tank will be painted an earthtone color (Sherwin Williams Olivine #4023), which has been used on new TMWA tanks in other parts of Washoe County to blend with the surrounding landscape. Tank #1 will also be painted the Olivine color upon completion of the rehabilitation.

TMWA LIGHTNING W TANK #2
SPECIAL USE PERMIT & DIRECTOR'S MODIFICATION OF STANDARDS

Figure 3 (below) shows the overall site plan for the tanks and Figure 4 (below) is a photo simulation of what both tanks will look like on the site after the project is completed.

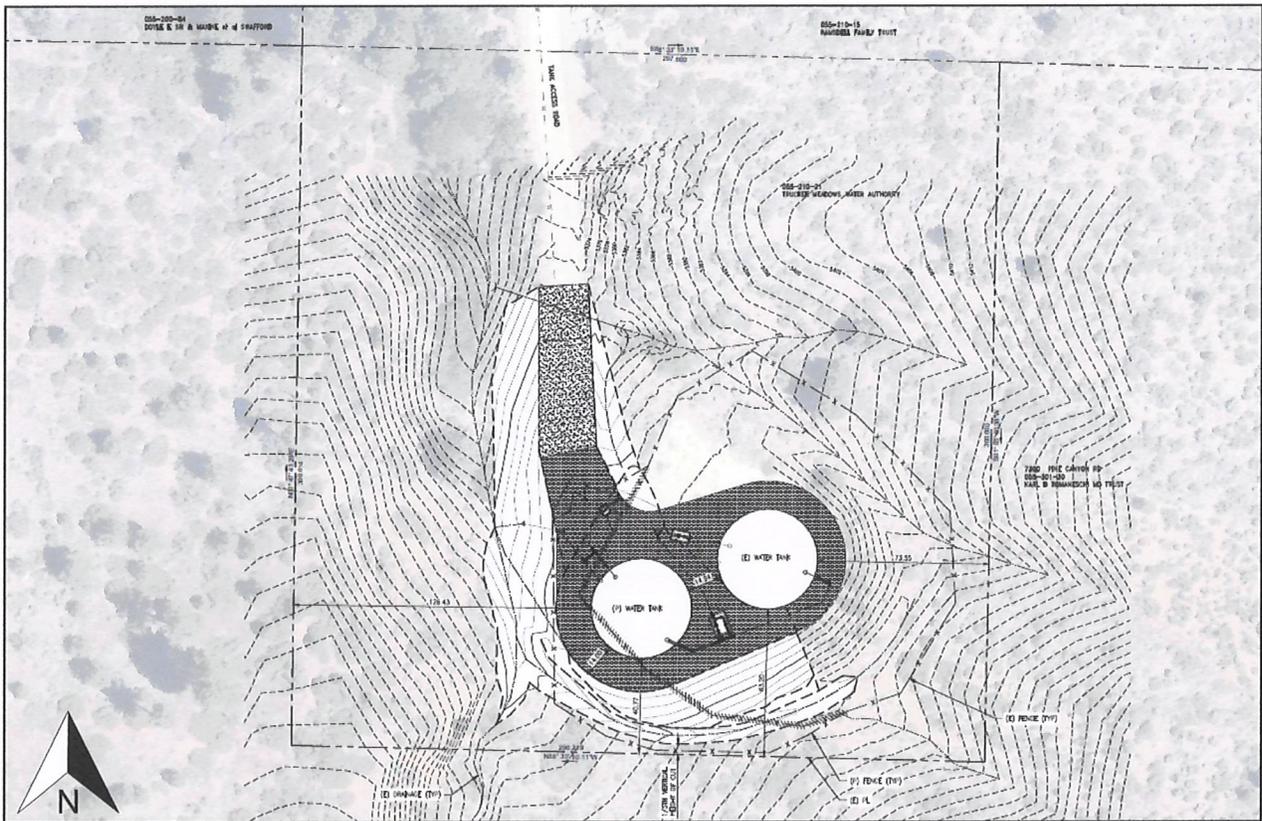


Figure 3 – Overall Site Plan

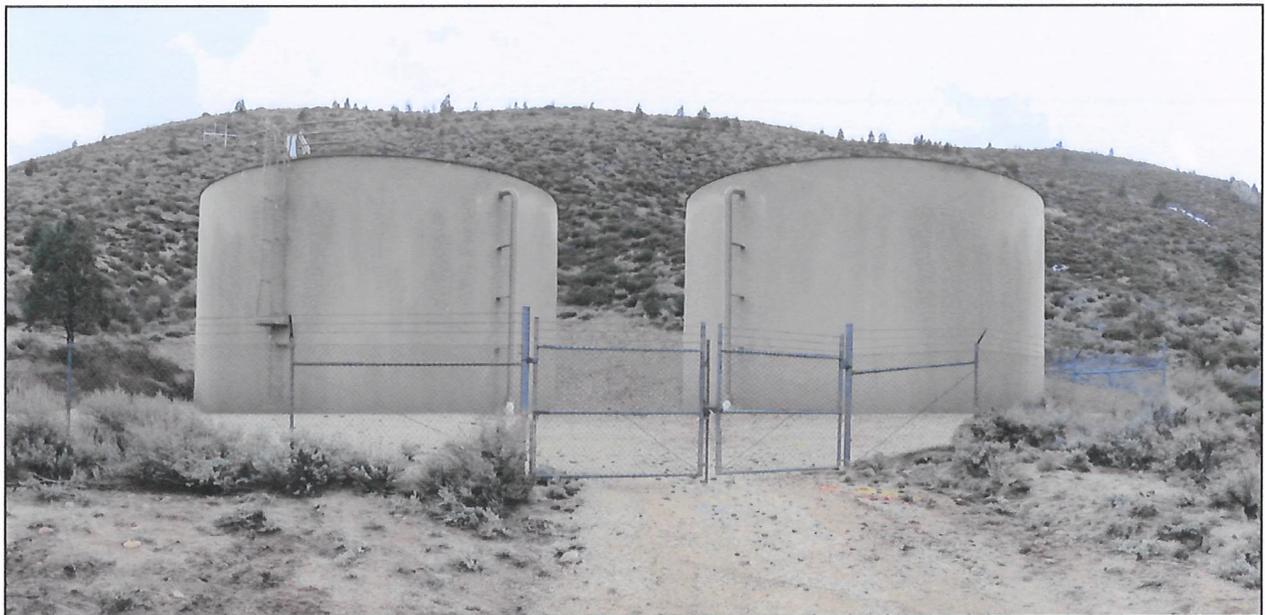


Figure 4 – Photo Simulation of Completed Project with Matching Tanks

TMWA LIGHTNING W TANK #2
SPECIAL USE PERMIT & DIRECTOR'S MODIFICATION OF STANDARDS

Site improvements associated with the construction of Tank #2 consist of grading a building pad including cuts into the existing slope to the south and west, placement of rip rap along drainage channels, new aggregate base placement on approximately 700 feet of the access road leading to the tank site, new piping underground to connect the tank to the existing water line, expansion of the chain link fencing with barbed wire top and placement of hydroseed with a blend of native seed types on the disturbed slopes. Contact with the Washoe Storey Conservation District was attempted prior to this submittal to obtain direction on an appropriate seed mix, but as of the submittal date for this project (April 15, 2019) the applicant's representative had not yet received a return phone call.

During initial discussions with staff, it was noted that the drainage on site is proposed to be slightly modified as a part of the site improvements for Tank #2, and that a drainage study would be required for construction. A drainage study has been initiated but has not yet been completed. The report will be provided as soon as it is available. Approximately 85 linear feet of the existing meandering drainageway on the west side of the tank will be straightened, cleaned up, and channelized. This will protect the proposed tank site from future erosion during heavy runoff events, remove intrusive vegetation that has established in the channel, and improve flow through this section. The proposed cut slopes are 2:1, and the disturbed section of channel will be protected with rounded riprap of varying sizes to closely match the existing landscape.

An estimated timeline of activities has been provided below. When the project is completed, both 250,000-gallon tanks will be put into service, and the addition of the second tank will provide double the water storage capacity that currently exists.

KEY ACTIVITY

TIMEFRAME

• **Permitting and Design**

March – May 2019

- SUP, Building, Air Quality, Health, etc.
- Geotechnical Report
- Grading Plan
- Site Piping
- Tank and Appurtenances
- Erosion Control/Revegetation

• **Construction of Tank #2**

May – November 2019

- NRS 338 Bidding
- Grading and Site Drainage
- Foundation and Piping
- Steel Erection
- Interior and Exterior Blast/Coat
- Disinfect, Fill and Perform Water Quality Analysis
- Perimeter Road Surfacing
- Reseeding

• **Rehabilitation of Tank #1**

November 2019 – April 2020

- NRS 338 Bidding
- Make Any Necessary Steel Repairs
- Interior and Exterior Blast/Coat
- Disinfect, Fill and Perform Water Quality Analysis

TMWA LIGHTNING W TANK #2 SPECIAL USE PERMIT & DIRECTOR'S MODIFICATION OF STANDARDS

In addition to the Special Use Permit required for this project, TMWA is requesting a ~~Director's Modification of Standards~~ *to vary and modify standards* for two requirements in the Washoe County Development Code. The first is a request to utilize 2:1 slopes for the areas around the site instead of 3:1 slopes. The second is a request to hydroseed the disturbed slope areas with a native seed mix at the end of construction in lieu of traditional landscaping with irrigation. The preliminary grading plan is provided as Figure 5 (below) and shows the proposed slopes and hydroseed areas.

Tank #1 was constructed in 1995 with graded slopes of 2:1. Although the requirements are minimum 3:1 slopes, TMWA believes maintaining the 2:1 slope for this project will better serve the project site and any that may be able to view it. Transitioning from an existing 2:1 slope to a 3:1 slope would be awkward on this relatively small site, would result in potential retaining walls, and more scarring of the hillside because the slope would be laid back farther with the 3:1 slope. Allowing a 2:1 slope would maintain stability while also being less visually obtrusive by minimizing slope cut areas. The geotechnical investigation provided as a part of this application supports the proposal of 2:1 slopes as indicated in Section 4.2.6 (Permanent Slopes) of the investigation. The geotechnical investigation is provided as an appendix to this report.

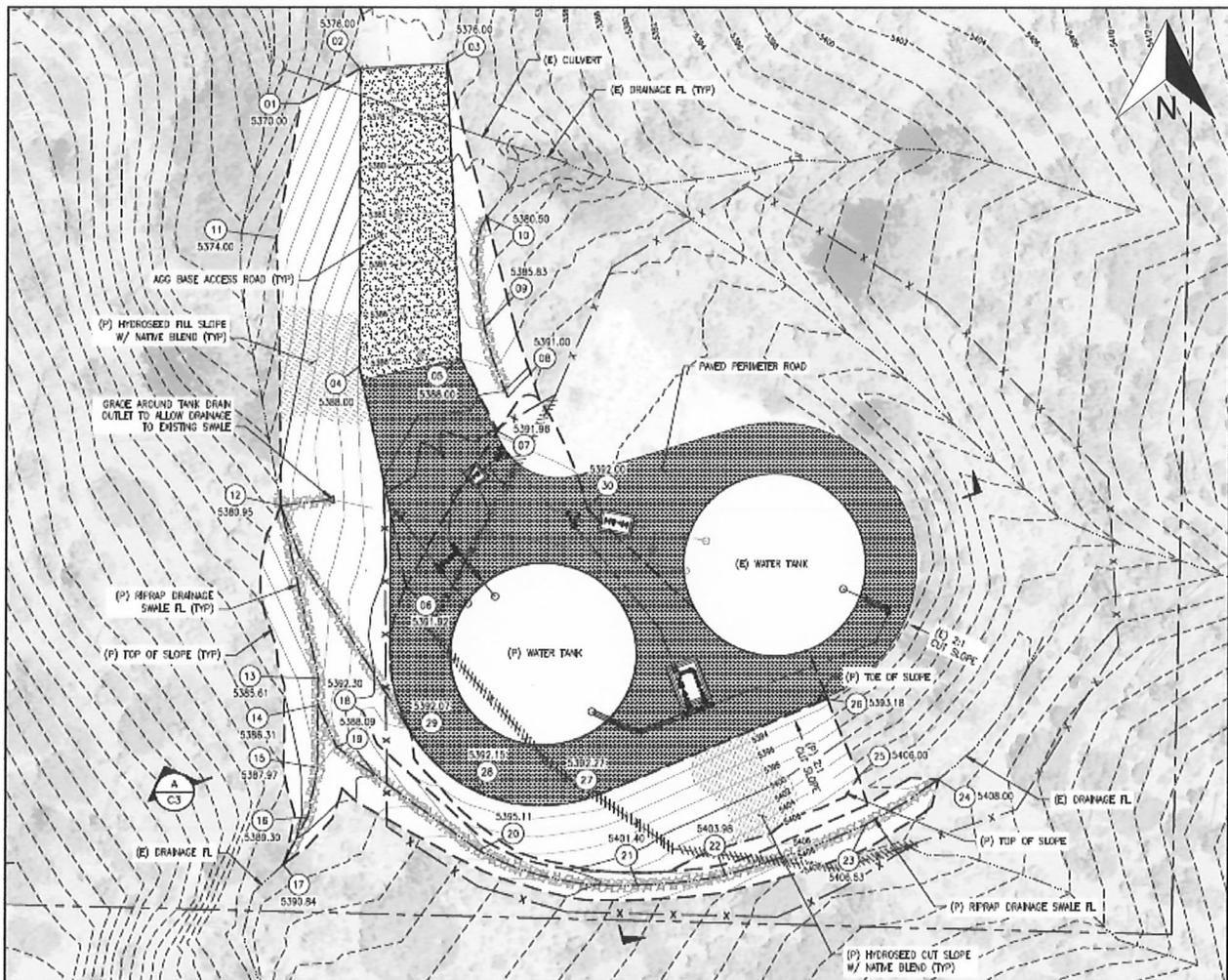


Figure 5 – Preliminary Grading Plan

TMWA LIGHTNING W TANK #2

SPECIAL USE PERMIT & DIRECTOR'S MODIFICATION OF STANDARDS

The TMWA tank is located in a relatively remote area of south Washoe County and although the site has a water tank, it is for storage and service to other properties in the vicinity. As such, no irrigation capability exists onsite. For that reason, TMWA requests to be allowed to hydroseed the disturbed slopes with a native seed mix as shown on the grading plan on Page 5, rather than place traditional landscaping in the form of trees, shrubs and ground cover. Not only would this landscaping not be seen by the general public due to the location of the tank, but it would be impossible to maintain without onsite irrigation.

Potential Impacts

Negative impacts for this site are not expected due to the proposed expansion of an existing public utility use. The site is located in an area surrounded by hills on the east, west and south sides and it behind the tree line in Washoe Valley so is not visible from public roadways. There will be noise during the construction and rehabilitation processes, but this will be temporary only. Light intrusion on surrounding properties is not expected as no lighting is proposed for Tank #1, only a small solar panel to operate the tank systems. Traffic will not increase except during the construction and rehabilitation process as only TMWA staff will access the site on a continual basis, as they do now. To demonstrate lack of visibility of the tank from various locations in south Washoe Valley, a sight line study with photographs is included in this application. Figure 6 (below) depicts the locations from where photos were taken, followed by Figure 7 (Pages 7 and 8) which show three photographs indicating where the tank site is located. These photographs along with referenced exhibits are included in the appendix of this report.

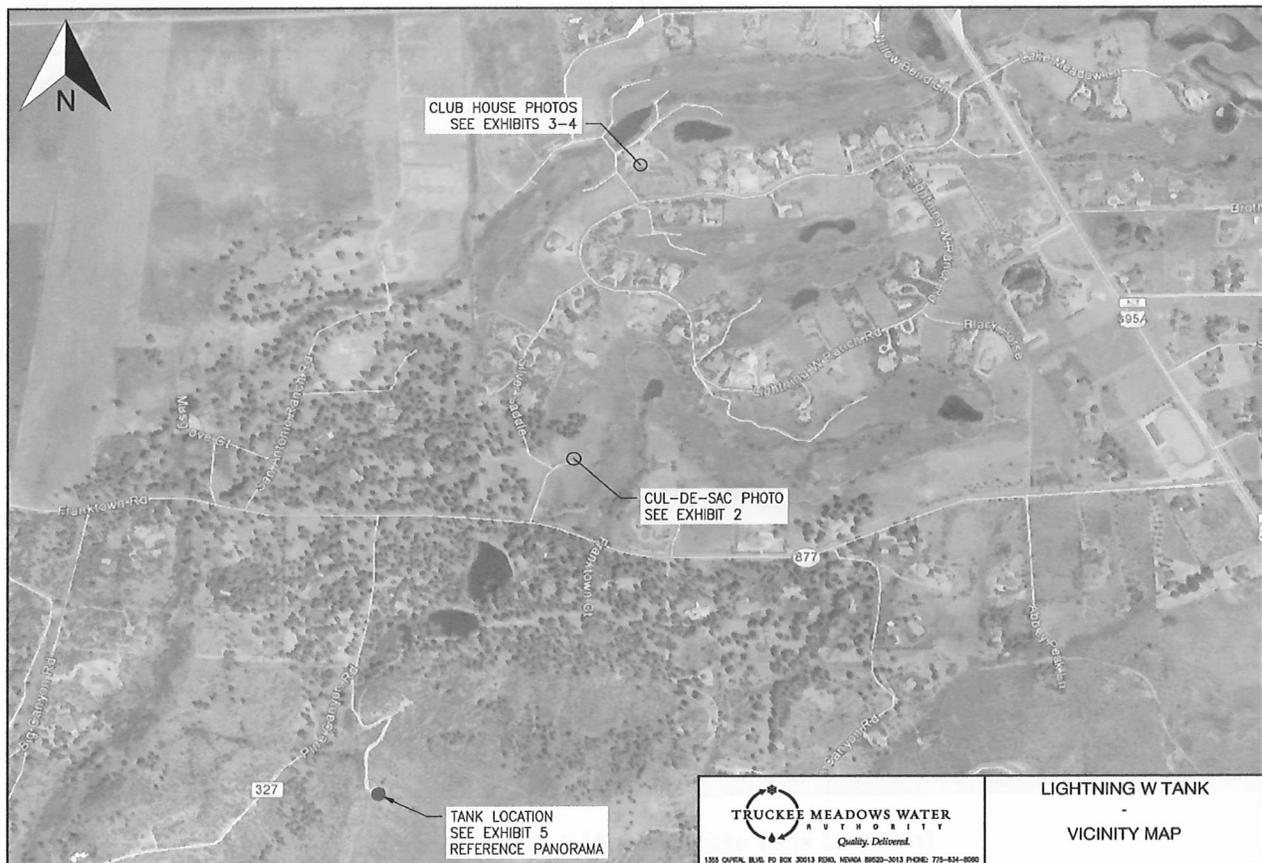


Figure 6 – Sight Line Study Photograph Locations

**TMWA LIGHTNING W TANK #2
SPECIAL USE PERMIT & DIRECTOR'S MODIFICATION OF STANDARDS**



Figure 7 – Photo 3 (Approximate Tank Location)

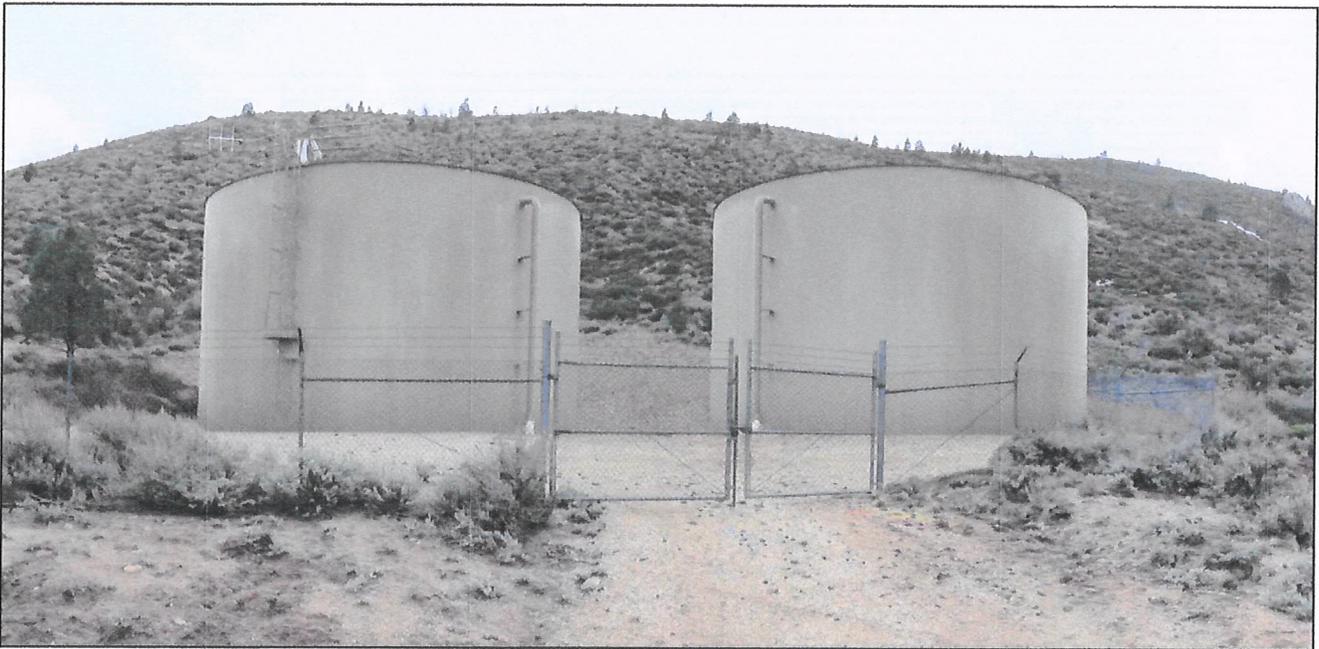
Special Use Permit Findings

The Washoe County Development Code establishes findings that must be made by the Board of Adjustment to approve a Special Use Permit request. These findings are listed below in *italic* type and are addressed in **bold** type.

- a. *Consistency. The proposed use is consistent with the action programs, policies, standards and maps of the Master Plan and the applicable area plan;*

The proposed addition of a second water tank at this location is consistent with the action programs, policies, standards and maps of the Master Plan and the South Valleys Area Plan. The project site is located in the Rural land use area, which allows for public and semi-public facilities. A water tank already exists on the site. In addition, the proposed tank is consistent with policies from the Washoe County Master Plan listed on the following page.

Appendices



Washoe County Development Application

Your entire application is a public record. If you have a concern about releasing personal information, please contact Planning and Building staff at 775.328.6100.

Project Information		Staff Assigned Case No.: _____	
Project Name: Lightning W Water Tank #2			
Project Description: Construction of a new 250,000 gallon water tank next to the existing 250,000 gallon water tank on the property to allow for additional water storage and rehabilitation of the existing water tank <i>and to allow 2:1 slopes</i>			
Project Address: Franktown Road			
Project Area (acres or square feet): 2.066 acres			
Project Location (with point of reference to major cross streets AND area locator): Approximately 1800 feet south of the Franktown Rd/Pine Canyon Rd intersection in South Washoe Valley			
Assessor's Parcel No.(s):	Parcel Acreage:	Assessor's Parcel No.(s):	Parcel Acreage:
055-210-21	2.066 acres		
Indicate any previous Washoe County approvals associated with this application: Case No.(s). N/A			
Applicant Information (attach additional sheets if necessary)			
Property Owner:		Professional Consultant:	
Name: Truckee Meadows Water Authority		Name: Rubicon Design Group	
Address: P.O. Box 30013		Address: 1610 Montclair Ave., Suite B	
Reno, NV	Zip: 89520	Reno, NV	Zip: 89509
Phone: (775) 834-8047	Fax:	Phone: (775) 425-4800	Fax:
Email: cstruffert@tmwa.com		Email: spansky@rubicondesigngroup.com	
Cell:	Other:	Cell: (775) 250-7981	Other:
Contact Person: Chris Struffert		Contact Person: Susan Pansky, AICP	
Applicant/Developer:		Other Persons to be Contacted:	
Name: Same as Property Owner		Name:	
Address:		Address:	
	Zip:		Zip:
Phone:	Fax:	Phone:	Fax:
Email:		Email:	
Cell:	Other:	Cell:	Other:
Contact Person:		Contact Person:	
For Office Use Only			
Date Received:	Initial:	Planning Area:	
County Commission District:		Master Plan Designation(s):	
CAB(s):		Regulatory Zoning(s):	

instead of 3:1 slopes.

Special Use Permit Application Supplemental Information

(All required information may be separately attached)

1. What is the project being requested?

Please see the attached application report.

2. Provide a site plan with all existing and proposed structures (e.g. new structures, roadway improvements, utilities, sanitation, water supply, drainage, parking, signs, etc.)

Please see the site plan included with the application report.

3. What is the intended phasing schedule for the construction and completion of the project?

Tank #2 will be constructed in one phase estimated to be completed in November 2019. Once Tank #2 is operational, existing Tank #1 will be taken out of service for rehabilitation, estimated to be completed in April 2020.

4. What physical characteristics of your location and/or premises are especially suited to deal with the impacts and the intensity of your proposed use?

The tank site is located in a remote hillside area in South Washoe Valley and is the site of an existing 250,000 water tank. The size of the parcel is adequate to accommodate two water tanks at the proposed size.

5. What are the anticipated beneficial aspects or affects your project will have on adjacent properties and the community?

The existing water tank is nearly 25 years old and in need of rehabilitation. The proposed project will allow necessary repairs and maintenance to occur on the existing tank, and will provide an additional 250,000 gallon water storage facility once both tanks are operational.

6. What are the anticipated negative impacts or affect your project will have on adjacent properties? How will you mitigate these impacts?

Negative impacts as a result of this project are not anticipated.

7. Provide specific information on landscaping, parking, type of signs and lighting, and all other code requirements pertinent to the type of use being purposed. Show and indicate these requirements on submitted drawings with the application.

421.77 cubic yards

8. Can the disturbed area be seen from off-site? If yes, from which directions and which properties or roadways?

Very few properties can see the disturbed area due to the limited number of homes constructed in this area and the lot sizes. The disturbed site is not visible from nearby roadways.

9. Could neighboring properties also be served by the proposed access/grading requested (i.e. if you are creating a driveway, would it be used for access to additional neighboring properties)?

No. The proposed grading is on the project site only and will not serve any surrounding properties.

10. What is the slope (horizontal/vertical) of the cut and fill areas proposed to be? What methods will be used to prevent erosion until the revegetation is established?

The proposed slope for the project is 2:1 to maintain consistency with the existing 2:1 slope around the existing Tank #1 that was constructed in 1995. _____

11. Are you planning any berms?

Yes	No XX	If yes, how tall is the berm at its highest?
-----	--------------	--

12. If your property slopes and you are leveling a pad for a building, are retaining walls going to be required? If so, how high will the walls be and what is their construction (i.e. rockery, concrete, timber, manufactured block)?

No. As a part of this application we have requested to utilize 2:1 slopes.

13. What are you proposing for visual mitigation of the work?

N/A

14. Will the grading proposed require removal of any trees? If so, what species, how many and of what size?

No

15. What type of revegetation seed mix are you planning to use and how many pounds per acre do you intend to broadcast? Will you use mulch and, if so, what type?

We will work with the Washoe Storey Conservation District to determine an appropriate seed mix for revegetation.

16. How are you providing temporary irrigation to the disturbed area?

Temporary irrigation will be provided with water used for construction.

17. Have you reviewed the revegetation plan with the Washoe Storey Conservation District? If yes, have you incorporated their suggestions?

We will work with the Washoe Storey Conservation District to determine an appropriate seed mix for revegetation.

18. Are there any restrictive covenants, recorded conditions, or deed restrictions (CC&Rs) that may prohibit the requested grading?

Yes	No XX	If yes, please attach a copy.
-----	--------------	-------------------------------

Washoe County Development Application

Your entire application is a public record. If you have a concern about releasing personal information, please contact Planning and Building staff at 775.328.6100.

Project Information		Staff Assigned Case No.: _____	
Project Name: Lightning W Water Tank #2			
Project Description: Construction of a new 250,000 gallon water tank next to the existing 250,000 gallon water tank on the property to allow for additional water storage and rehabilitation of the existing water tank.			
Project Address: Franktown Road/Pine Canyon Road in South Washoe Valley			
Project Area (acres or square feet): 2.066 acres			
Project Location (with point of reference to major cross streets AND area locator): Approximately 1800 feet south of the Franktown Rd/Pine Canyon Rd intersection in South Washoe Valley			
Assessor's Parcel No.(s):	Parcel Acreage:	Assessor's Parcel No.(s):	Parcel Acreage:
055-210-21	2.066 acres		
Indicate any previous Washoe County approvals associated with this application: Case No.(s).			
Applicant Information (attach additional sheets if necessary)			
Property Owner:		Professional Consultant:	
Name: Truckee Meadows Water Authority		Name: Rubicon Design Group	
Address: P.O. Box 30013		Address: 1610 Montclair Ave., Suite B	
Reno, NV	Zip: 89520	Reno, NV	Zip: 89509
Phone: (775) 834-8047	Fax:	Phone: (775) 425-4800	Fax:
Email: cstruffert@tmwa.com		Email: spansky@rubicondesigngroup.com	
Cell:	Other:	Cell: (775) 250-7981	Other:
Contact Person: Chris Struffert, PE		Contact Person: Susan Pansky, AICP	
Applicant/Developer:		Other Persons to be Contacted:	
Name: Same as Property Owner		Name:	
Address:		Address:	
	Zip:		Zip:
Phone:	Fax:	Phone:	Fax:
Email:		Email:	
Cell:	Other:	Cell:	Other:
Contact Person:		Contact Person:	
For Office Use Only			
Date Received:	Initial:	Planning Area:	
County Commission District:		Master Plan Designation(s):	
CAB(s):		Regulatory Zoning(s):	

RTF = Regional Technology Fee. Adopted by the BCC on June 28, 2016 and is effective when the Regional License Platform (L) included as a component of the Health fee.

Director's Modification of Standards Supplemental Information

(All required information may be separately attached)

1. What modification or deviation are you requesting? **Be specific.**

~~Modification from required 3:1 slopes to allow for 2:1 slopes consistent with existing, previously graded slopes on site; and modification from required landscaping and irrigation to allow instead for post grading re-vegetation with a native seed mix. See report for additional info.~~

2. Why is the modification or deviation necessary to the success of the project/development? **Be specific.** Are there any extenuating circumstances or physical conditions on the proposed project/development site?

~~Deviation from 3:1 graded slopes is necessary to provide a seamless transition from existing 2:1 graded slopes to new graded slopes. Deviation from the minimum landscape and irrigation standards in favor of revegetation through native seed mix due to remote location of site and lack of on-site irrigation. See report for additional info.~~

3. Are you proposing to mitigate the effect of the modification or reduction?

~~To help stabilize the proposed 2:1 slopes and in lieu of the minimum landscape requirements, a native seed mix is proposed to be applied following completion of the grading on site. See report for additional info.~~ *In lieu of the minimum landscape requirements*

4. What section of code are you requesting to modify or deviate? **Be specific.** List the code section and if there are specific requirements for the modification, provide detailed information. For deviation, provide the percentage of the deviation.

~~Grading: 110.438.45 (Grading of Slopes)
Landscaping: 110.412.40 (Civic and Commercial Uses), 110.412.60 (Planting Standards), 110.410.65 (Irrigation Standards)~~

5. For Minor Deviation request; list what properties/parcels are affected by the deviation? Explain if there will be any impacts to the affected neighboring properties. (At a minimum, affected property owners are those owners of parcels that immediately abut the location of the proposed minor deviation.)

N/A

RTF = Regional Technology Fee. Adopted by the BCC on June 28, 2016 and is effective when the Regional License Platform (L) included as a component of the Health fee.

Bill Detail

[Back to Account Detail](#)

[Change of Address](#)

[Print this Page](#)

Washoe County Parcel Information

Parcel ID	Status	Last Update
05521021	Active	4/8/2019 2:07:14 AM
Current Owner: TRUCKEE MEADOWS WATER AUTHORITY PO BOX 30013 RENO, NV 89520		SITUS: 0 FRANKTOWN RD WASHOE COUNTY NV
Taxing District 4000	Geo CD:	
Legal Description		
Township 16 Section 27 Lot 1 Block Range 19 SubdivisionName LIGHTNING "W" RANCH PINES SUB		

Installments

Period	Due Date	Tax Year	Tax	Penalty/Fee	Interest	Total Due
INST 1	8/20/2018	2018	\$0.00	\$0.00	\$0.00	\$0.00
Total Due:			\$0.00	\$0.00	\$0.00	\$0.00

Tax Detail

	Gross Tax	Credit	Net Tax
State of Nevada	\$141.90	(\$141.90)	\$0.00
Truckee Meadows Fire Dist	\$450.75	(\$450.75)	\$0.00
Washoe County	\$1,161.69	(\$1,161.69)	\$0.00
Washoe County Sc	\$950.33	(\$950.33)	\$0.00
Total Tax	\$2,704.67	(\$2,704.67)	\$0.00

Payment History

No Payment Records Found

Pay By Check

Please make checks payable to:
WASHOE COUNTY TREASURER

Mailing Address:
P.O. Box 30039
Reno, NV 89520-3039

Overnight Address:
1001 E. Ninth St., Ste D140
Reno, NV 89512-2845

Change of Address

All requests for a mailing address change must be submitted in writing, including a signature (unless using the online form).

To submit your address change online [click here](#)

Address change requests may also be faxed to: (775) 328-2500

Address change requests may also be mailed to:
Washoe County Treasurer
P O Box 30039
Reno, NV 89520-3039

LIGHTNING W TANK 2
WASHOE COUNTY, NEVADA
GRADING PLAN

NOT REPRODUCIBLE
PROPERTY OF TRUCKEE MEADOWS WATER
TRUCKEE MEADOWS WATER
AUTHORITY OR TRUCKEE WATER
UTILITY AUTHORITY
(P) Horizontal Security Act

TRUCKEE MEADOWS WATER
UTILITY AUTHORITY
Quality. Delivered.

1555 CAPITAL BLVD. PO BOX 30013 REDO, NEVADA 89220-3013 PHONE: 775-834-8800

REVISION	DESCRIPTION	BY	APP	DATE

WORK ORDER NO.	14-0015
DESIGNED	KMS
DRAWN	JRH
DATE	JAN, 2019
CHECKED	
SUBMITTED	
RECOMMENDED	
APPROVED	

GRADING TAG TABLE

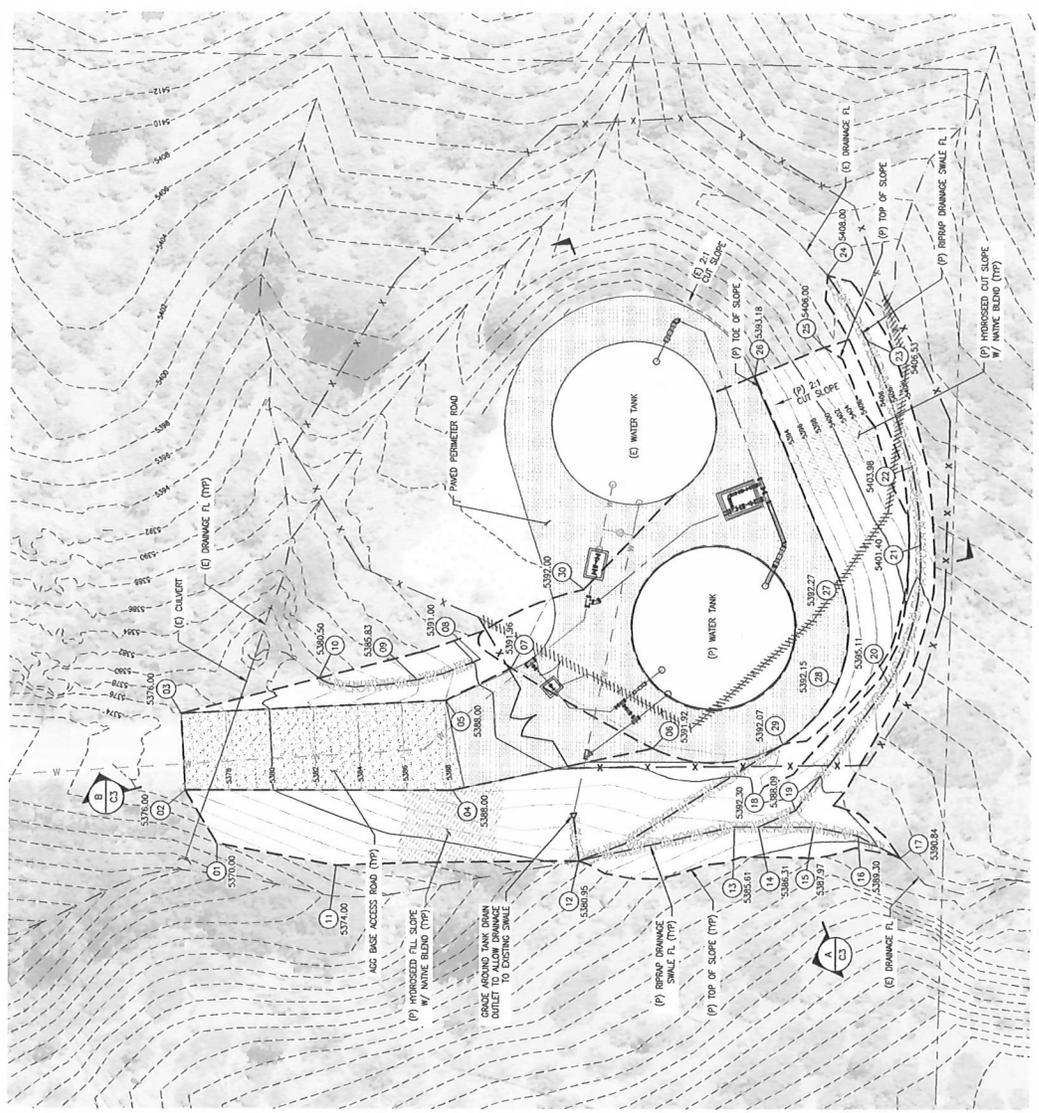
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05	2270328.8618	14759409.2403	5370.00
06	2270328.8618	14759409.2403	5370.00
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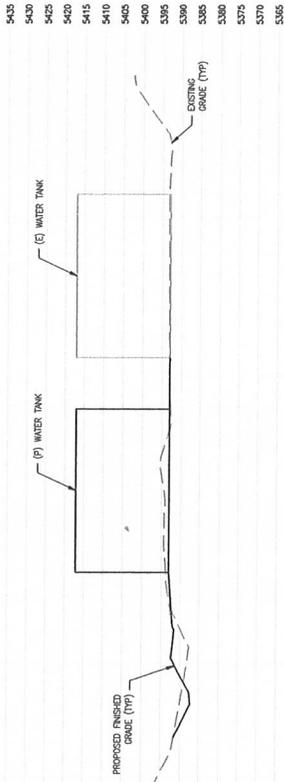
GRADING VOLUME REPORT

Volume Summary

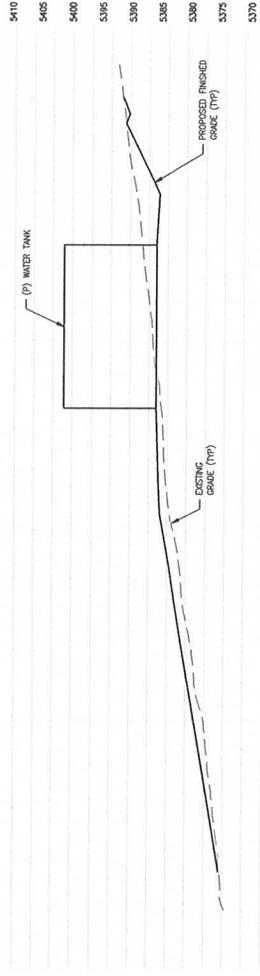
Name	Type	Volume	2d Area (Sq. Ft.)	Cut (Cu. Yds.)	Fill (Cu. Yds.)	Net (Cu. Yds.)
01	Fill	0.859	15431.53	421.77*	453.20	31.43*
Total						

* Value adjusted by cut or fill factor other than 1.0





GRADING SECTION A
SCALE: 1/16" = 1'-0"



GRADING SECTION B
SCALE: 1/16" = 1'-0"

PRELIMINARY
NOT FOR CONSTRUCTION
APRIL 2019

SHEET NUMBER
C3
5 OF 22

LIGHTNING W TANK 2
WASHOE COUNTY, NEVADA
GRADING SECTIONS AND DETAILS

NOT REPRODUCIBLE
WITHOUT PERMISSION OF TRUCKEE MEADOWS WATER AUTHORITY. RETURN TO PROJECT MANAGER (Per Hazardous Security Act)

TRUCKEE MEADOWS WATER AUTHORITY
Quality. Different.
1356 CAPITAL BLVD. PO BOX 30013 Reno, Nevada 89520-3013 PHONE: 775-834-0000

WORK ORDER NO.	14-0019
DESIGNED	HCS
DRAWN	JRH
DATE	JAN, 2019
CHECKED	
SUBMITTED	
RECOMMENDED	
APPROVED	

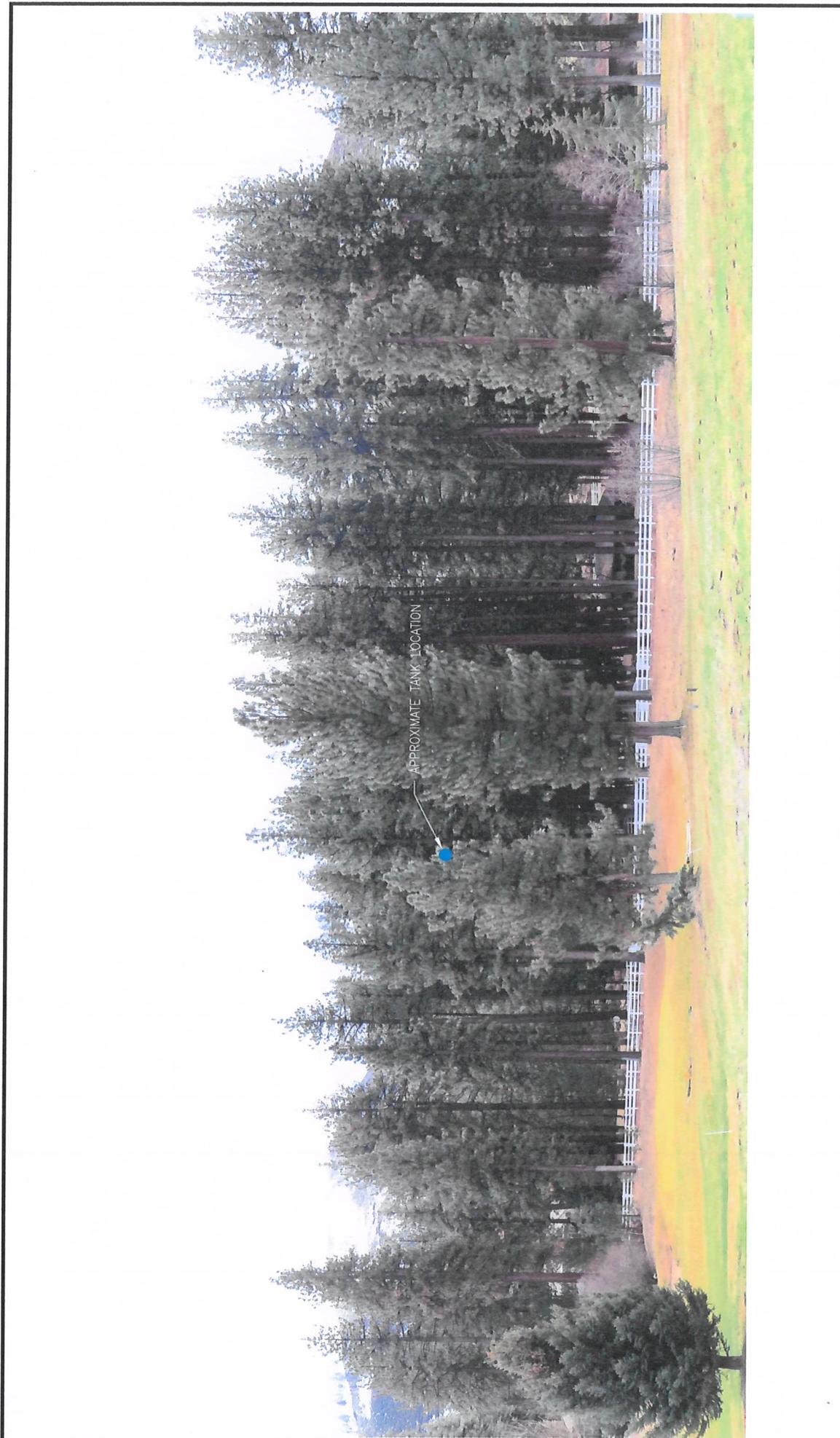
REVISION	DESCRIPTION	BY	DATE



TRUCKEE MEADOWS WATER AUTHORITY
Quality. Dedicated.
1335 CAPITAL BLVD, PO BOX 30013 BEND, MICHIGAN 49825-3013 PHONE 771-624-8800

LIGHTNING W TANK - VICINITY MAP

DATE:	MARCH 2019
DRAWN BY:	JRH
WORK ORDER #:	14-0019
SCALE:	NTS



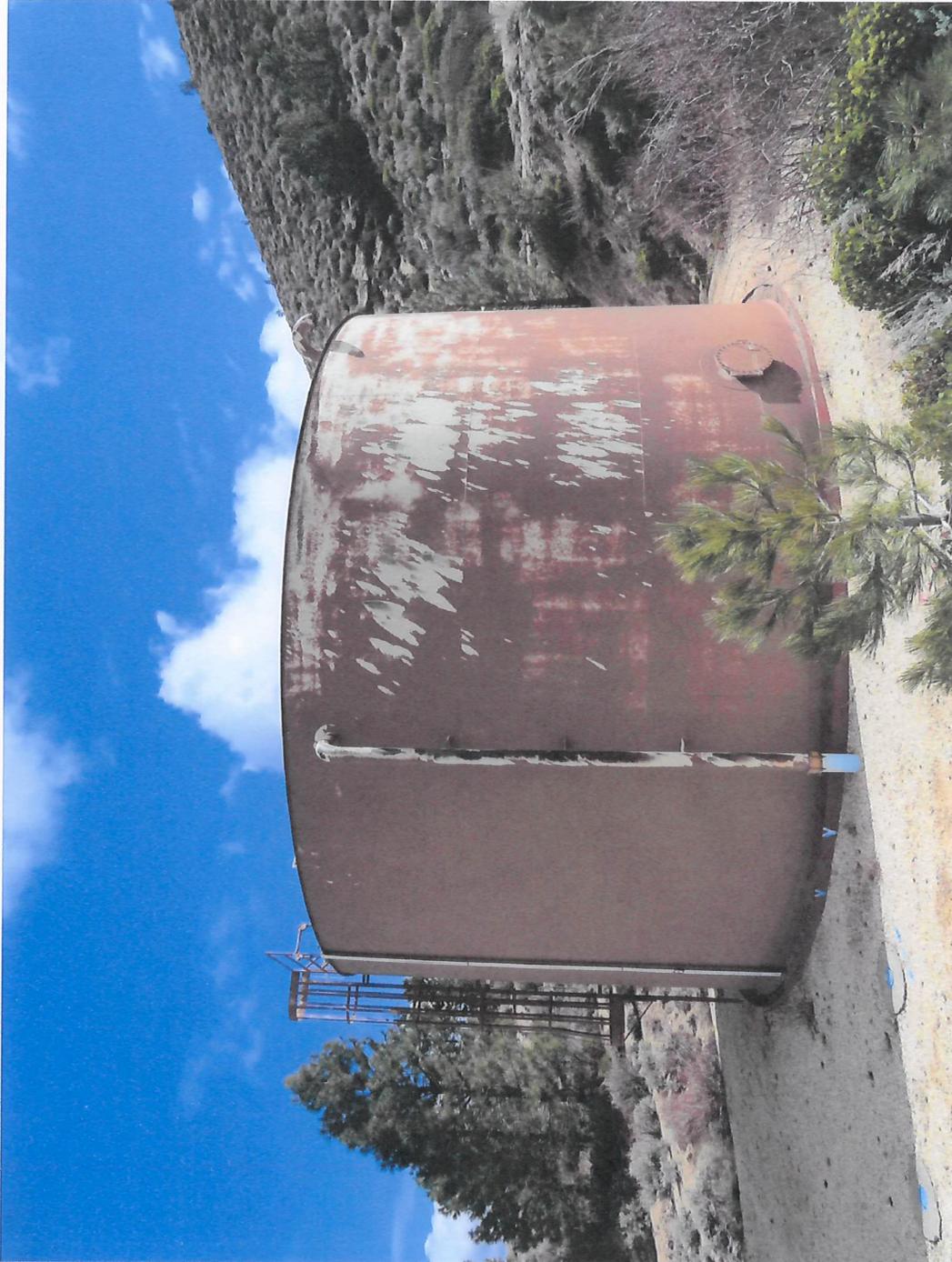
APPROXIMATE TANK LOCATION

 <p>TRUCKEE MEADOWS WATER AUTHORITY Quality. Different. 1335 CAPITAL BLVD, PO BOX 30013 BLDG, RENO, NEVADA 89520-3013 PHONE: 775-334-8000</p>		<p>LIGHTNING W TANK</p> <p>VIEW FROM CUL-DE-SAC OFF FRANKTOWN RD</p>		<p>DATE: MARCH 2019</p> <p>DRAWN BY: JRH</p> <p>WORK ORDER #: 14-0019</p> <p>SCALE: NTS</p>	<p>EXHIBIT</p> <p>2</p>
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APPROXIMATE TANK LOCATION
BEHIND HILLSIDE AND TREES

 <p>TRUCKEE MEADOWS WATER AUTHORITY Quality. Different.</p> <p><small>1305 CAPITAL BLVD., PO BOX 30013 RENO, NEVADA 89502-3013 PHONE 775-104-4000</small></p>		<p>LIGHTNING W TANK</p> <p>VIEW FROM CLUBHOUSE PARKING LOT</p>	<p>DATE: MARCH 2019</p> <p>DRAWN BY: JRH</p> <p>WORK ORDER #: 14-0019</p> <p>SCALE: NTS</p>	<p>EXHIBIT</p> <p>3</p>
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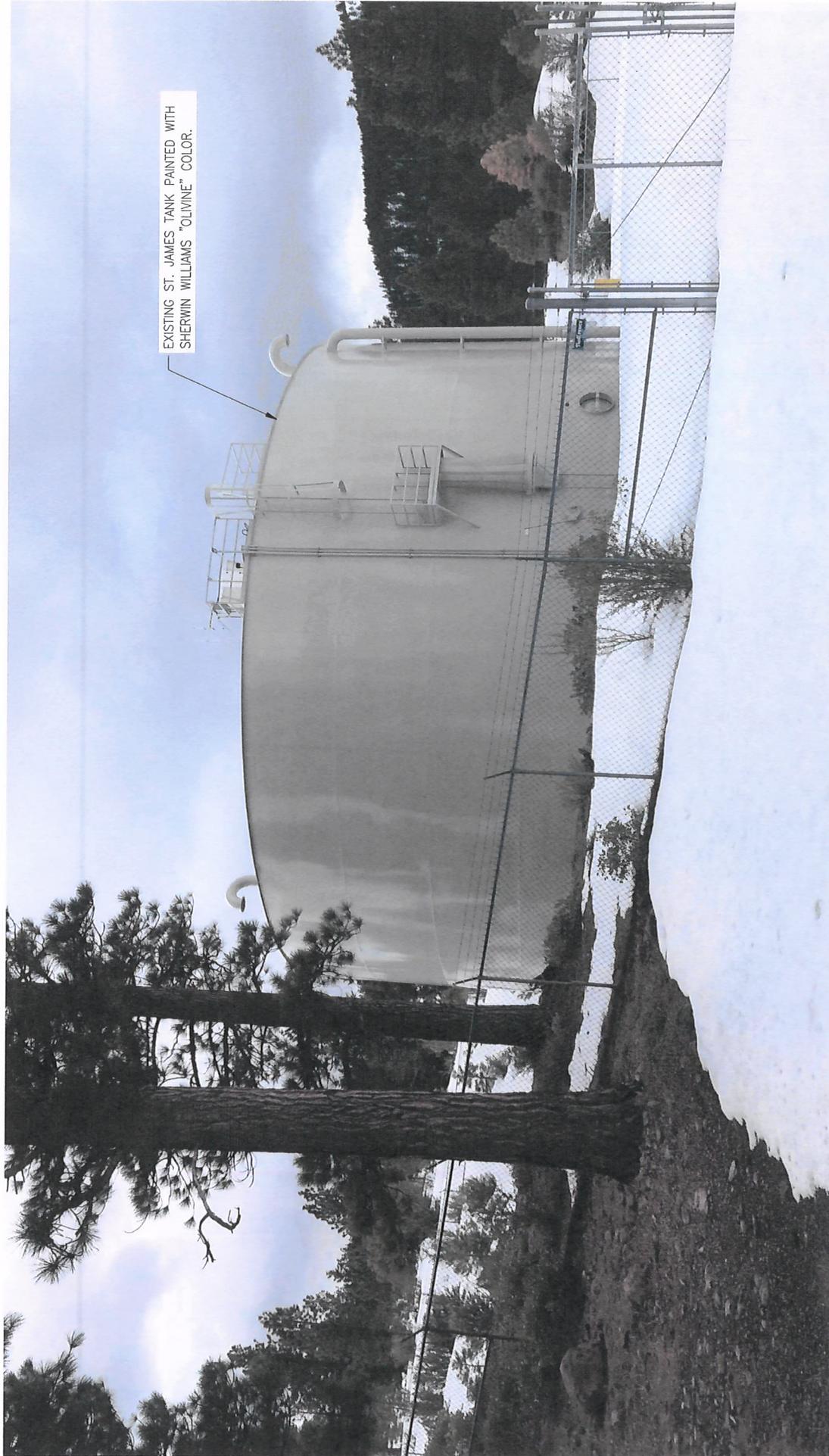



TRUCKEE MEADOWS WATER AUTHORITY
 Quality. Dedicated.
1335 CAPITAL BLVD. PO BOX 30013 Reno, Nevada 89520-3013 PHONE: 775-334-8000

LIGHTNING W TANK
 -
 TANK CONDITION PHOTO

DATE	MARCH 2019
DRAWN BY:	JRH
WORK ORDER #:	14-0019
SCALE	NTS

EXHIBIT
5



EXISTING ST. JAMES TANK PAINTED WITH SHERWIN WILLIAMS "OLIVINE" COLOR.

TRUCKEE MEADOWS WATER
UTILITY
Quality. Delivered.

1305 CAPITAL BLVD., PO BOX 30013 Reno, NEVADA 89520-3013 PHONE: 775-834-6000

LIGHTNING W TANK
 TANK COLOR EXAMPLE

DATE: MARCH 2019
 DRAWN BY: JPH
 WORK ORDER #: 14-0019
 SCALE: NTS

EXHIBIT
 6





TRUCKEE MEADOWS WATER
A U T H O R I T Y
 Quality. Different.

1335 CAPITAL BLVD. PO BOX 30013 DENVER, COLORADO 80202-3013 PHONE: 773-624-8800

LIGHTNING W TANK
 -
TANK 2 SIMULATION
FROM ACCESS ROAD

DATE:	APRIL 2019
DRAWN BY:	JRH
WORK ORDER #:	14-0019
SCALE:	NIS

EXHIBIT
8

**TMWA LIGHTNING W TANK #2
SPECIAL USE PERMIT & DIRECTOR'S MODIFICATION OF STANDARDS**

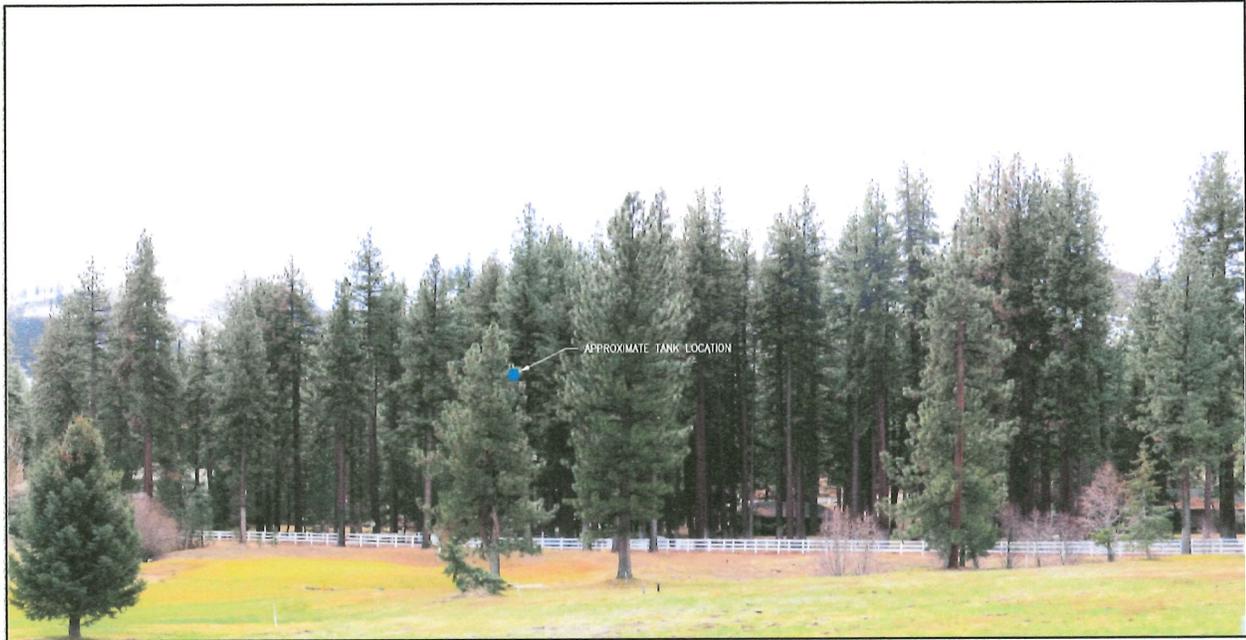


Figure 7 – Photo 1 (Approximate Tank Location)



Figure 7 – Photo 2 (Approximate Tank Location)

TMWA LIGHTNING W TANK #2
SPECIAL USE PERMIT & DIRECTOR'S MODIFICATION OF STANDARDS

PSF.1.13 – Ensure that a safe and dependable water supply is provided.

PSF.1.20 – Ensure water quality standards are maintained consistent with the Safe Drinking Water Act and in Compliance with the Nevada Water Pollution Control Law and underground injection control regulations.

The addition of Tank #2 will allow the existing Tank #1 to be taken out of service for rehabilitation. This will ensure that a safe, dependable and quality water supply is maintained during rehabilitation, and perpetuated through additional storage capabilities that will exist once both tanks are operating side by side.

- b. *Improvements.* Adequate utilities, roadway improvements, sanitation, water supply, drainage, and other necessary facilities have been provided, the proposed improvements are properly related to existing and proposed roadways, and an adequate public facilities determination has been made in accordance with Division Seven;

The proposed water tank will be an addition to the public facilities already located in the project site area. It will allow for the rehabilitation of the existing water tank and provide additional water storage. Adequate utilities, roadway improvements, sanitation, water supply and other necessary facilities are not applicable to the type of development contemplated with this application. Drainage improvements include minimal channel realignment on site to improve drainage flows, and the addition of rip rap in drainage areas where necessary.

- c. *Site Suitability.* The site is physically suitable for the type of development and for the intensity of development;

The project site is the location of an existing 250,000-gallon water tank and has proven to be suitable for this type of development. The site is large enough to accommodate an additional 250,000 gallon water tank with little to no impact to the surrounding area.

- d. *Issuance Not Detrimental.* Issuance of the permit will not be significantly detrimental to the public health, safety or welfare; injurious to the property or improvements of adjacent properties; or detrimental to the character of the surrounding area; and

The issuance of a Special Use Permit for a water tank at this location will not be detrimental to the public health, etc., injurious to property or improvements of adjacent properties, or detrimental to the area's character. The project site is located on a relatively remote parcel that is surrounding by vacant land, is screened from view from nearly all existing development in the vicinity and will serve to ensure that water quality and quantity in the area is maintained. The proposal of 2:1 graded slopes instead of 3:1 slopes will allow a smaller area of land to be disturbed and is supported by the soil types on site.

- e. *Effect on a Military Installation.* Issuance of the permit will not have a detrimental effect on the location, purpose or mission of the military installation.

The project site is not located near a military installation.



APPROXIMATE TANK LOCATION
BEHIND HILLSIDE AND TREES

 TRUCKEE MEADOWS WATER AUTHORITY <i>Quality. Different.</i> <small>1352 CAPITAL BLVD., PO BOX 3003, RENO, NEVADA 89503-3003 PHONE: 775-844-8888</small>	LIGHTNING W TANK - VIEW FROM CLUBHOUSE PARKING LOT - MAGNIFIED		DATE: MARCH 2019 DRAWN BY: JPH WORK ORDER #: 14-0019 SCALE: NIS	EXHIBIT 4
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 <p>TRUCKEE MEADOWS WATER A U T H O R I T Y Quality. Distinguished.</p> <p><small>1525 CAPITAL BLVD., PO BOX 20012 RENO, NEVADA 89520-3013 PHONE: 775-831-4000</small></p>	<p>LIGHTNING W TANK</p>		<p>DATE: APRIL 2019</p>	<p>EXHIBIT</p>
	<p>EXISTING TANK FROM ACCESS ROAD</p>		<p>DRAWN BY: ERS</p>	<p>7</p>
			<p>WORK ORDER #: 14-0019</p>	<p>SCALE: NTS</p>

GEOTECHNICAL INVESTIGATION

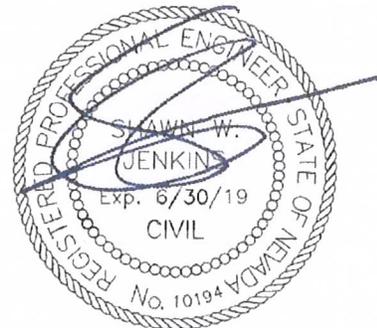
**Lighting W Tank 2
Washoe County, Nevada**

April 4, 2019

Prepared for:



1355 Capital Boulevard
Reno, Nevada 89502



4-10-19

ESE Project No. 19114

Prepared by:



4515 Towne Drive ❖ Reno ❖ NV ❖ 89521 ❖ 775-828-7220

**WSUP19-0005
EXHIBIT J**

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1.0 INTRODUCTION AND SCOPE

This Report presents the results of Eastern Sierra Engineering's (ESE's) geotechnical investigation for the proposed Lighting W Tank 2 project in Washoe County, Nevada. The project location is approximately 2,800 feet southwest of the intersection of Franktown Road and Franktown Court. We understand that the site of the proposed tank is southwest of the existing tank and that the finish grade for new tank will be the same as the existing tank. Maximum cuts and fills will be 12 feet and 8 feet respectively. The limits of the project are shown on Figure 1.

The following scope of services was provided:

- Located and marked two (2) test pits and contacted Underground Service Alert (USA) to notify them of our intent to excavate at the site;
- Excavated, logged, and sampled two (2) test pits ranging in depth from 9 feet to 13 feet;
- Performed laboratory testing that included particle size analysis, Atterberg limits, moisture content, and corrosivity (pH, sulfate, chloride, resistivity, sulfides and redox potential) testing;
- Prepared conclusions and recommendations addressing foundation design criteria, site grading, temporary and permanent slopes, and 1997 UBC seismic soil coefficients;
- Prepared this report that summarizes field activities, subsurface soil conditions and laboratory testing. Also included is a site plan with approximate boring locations, boring logs, particle size distribution charts, plasticity charts, and construction recommendations.

This report was prepared for the sole use of the Truckee Meadows Water Authority (TMWA), the only intended beneficiary of ESE's work. No other party should rely on the information contained herein without prior written consent of TMWA and ESE.



2.0 FIELD INVESTIGATION AND LABORATORY TESTING

2.1 Field Investigation

ESE explored subsurface conditions by excavating two (2) test pits (TP-1 and TP-2) on March 19, 2019. Test pits were excavated to depths ranging from 9 to 13 feet below the existing grade using a Komatsu PC 158 excavator. The approximate locations of test pits are presented on Figure 1. During excavating activities, ESE's geologist logged the test pits and obtained representative loose bulk samples at various depths. At the completion of logging and sampling, the test pits were backfilled in lifts and compacted using the excavator bucket. Groundwater, if encountered, was measured prior to backfilling test pits. Summary logs of test pits TP-1 and 2 are presented on Figures 2 through 4.

Soil samples were classified in accordance with the Unified Soil Classification System (ASTM D2487-00) presented on Figure 5.

2.2 Laboratory Testing

Soil samples were taken to ESE's American Association of State Highway and Transportation Officials (AASHTO) certified materials testing laboratory for further examination and selected laboratory testing. Laboratory testing included particle size analysis, Atterberg limits (plasticity), moisture content; additionally select samples were sent to WETLAB for corrosivity (pH, sulfate, sulfides chloride, resistivity and redox potential) testing. Results of laboratory testing are presented in Figures 7 through 10. Results are also summarized in Table 1 and on the logs of the borings, Figures 2 through 4.

TABLE 1 - Laboratory Test Results

Test Pit No.	Sample Depth (ft.)	Moisture Content (%)	Percent Passing No. 200 Sieve Size (%)	Atterberg Limits (%)	Soil Type
TP-1	0.5 – 4.0	9.6	13.3	LL = -- PI = NP	Silty Sand WITH Gravel (SM)

TABLE 1 - Laboratory Test Results (cont.)

Test Pit No.	Sample Depth (in.)	Moisture Content (%)	Percent Passing No. 200 Sieve Size %	Atterberg Limits (%)	Soil Type
TP-1	4.0 – 8.0	9.8	12.9	LL = -- PI = NP	Silty Sand with Gravel (SM)
TP-2	0.5 – 4.5	7.9	9.3	LL = -- PI = NP	Poorly Graded Sand with Silt and Gravel (SP-SM)

3.0 SURFACE AND SUBSURFACE CONDITIONS

3.1 Surface Conditions

The ground surface is moderately to densely covered with sage brush and other shrubs. Surface soils generally consisted of loose to medium dense silty, clayey sand with cobbles and boulders spread across the site. A natural drainage channel runs down to the northwest of the proposed tank. The existing water tank is located to the northeast of proposed tank. The ground surface slopes down to the northwest with an elevation drop of approximately twenty (20) feet in the area of the proposed water tank.

3.2 Subsurface Conditions

The tank site is located within an area mapped by the Nevada Bureau of Mines and Geology (NBMG) in the Carson City Folio Geologic Map, Carson City Area, Nevada (Dennis T. Trexler, 1977) as: “**Kdg**” – **Hornblende-biotite granodiorite** – “Grayish white to gray and greenish gray, medium to coarse-grained, equigranular to porphyritic, and locally foliated and lineated. Locally grades into quartz monzonite or quartz diorite”. “**Tlt**” – **Lenihan Canyon Tuff** – “Pale-lavender to purplish-tan, moderately to densely welded, devitrified, fine-grained hornblende quartz latite crystal-vitric tuff. 0-300 m thick”. “**QTg**” – **Pediment gravel** – “Yellowish-gray to light-brown boulder sandy cobble gravel. Most clasts subrounded and consist of all bedrock lithologies”.

Based on ESE’s field investigation and laboratory testing, subsurface soils underlying the clayey sand (0-.5’) surface soils generally consist of medium dense to dense, silty sand with gravel, cobble and boulders, poorly graded sand with silt, gravel, cobble and boulders to a depth of 8.5 feet in TP-1 and 5.5’ in TP-2. Underlying the soils is a



granodiorite bedrock that is massive, little to occasionally fractured, low hardness to moderately hard, weak to moderately strong, moderately to deeply weathered. The excavator met refusal at 13.0 feet in TP-1 and at 9.0' in TP-2. Physical Properties Criteria For Rock Descriptions is presented on Figure 6.

Groundwater was encountered in both test pits at the top of bedrock, 8.5 feet in TP-1 and 5.5 feet in TP-2. Groundwater elevations should be expected to seasonally fluctuate due to precipitation and snowmelt.

4.0 CONCLUSIONS AND RECOMMENDATIONS

4.1 General

Based on ESE's field investigation, laboratory testing, and engineering analysis there are no geotechnical engineering constraints to prevent the construction of the proposed tank. ESE understands the proposed new water tank finish grade elevation will match the grade of the existing tank of approximately 5392 feet with cuts on the order of 12 feet and fills on the order of 8 feet.

Based on the field exploration, native silty sand with gravel, cobble and boulders were encountered to depths of 8.5 feet in TP-1 and to a depth of 5.5 feet in TP-2 below existing grade. Beneath the silty sand was granodiorite bedrock. The Komatsu PC 158 excavator was able to advance the excavations through bedrock to 13.0 feet in TP-1 and to 9.0 feet in TP-2 which was below the proposed site grading elevation for the tank. Groundwater was observed flowing through soil, on top of the bedrock in both test pits.

4.2 Site Grading

4.2.1 Site Preparation

Proposed structural areas shall be stripped of any surface vegetation and underlying roots and organics. Clearing and stripping limits should extend 5 feet laterally beyond structural areas. The estimated stripping depth is on the order of 12 inches. The stripped material is unsuitable for use as engineered select fill, may be used as growth medium to reclaim areas disturbed beyond the structural areas.

ESE recommends that existing soil beneath the proposed water tank be removed 2 feet below bottom of footings and replaced with compacted engineered select fill.



4.2.2 Engineered Select Fill Criteria

Import or onsite soils used as engineered select fill shall be non-expansive, reasonably well-graded soil and be free of organics, other perishable material and construction debris. In addition, they shall meet the following criteria:

<u>Sieve Size</u>	<u>Percent Passing (by dry weight)</u>
3"	100
No. 4	70-100
No. 200	0-25
Liquid Limit	35
Plasticity Index	12

4.2.3 Engineered Select Fill Placement

Before engineered select fill or aggregate base (AB) is placed, exposed soil surfaces shall be proofrolled until nonyielding as determined by ESE. Engineered select fill and AB shall be placed in lifts not exceeding 8 inches (loose thickness), moisture conditioned to near optimum moisture content, and compacted to at least 95 percent relative compaction below foundations and minimum 90 percent relative compaction below proposed access road.

During fill placement, the work surface shall be graded to direct runoff away from engineered select fill areas to prevent saturation of the exposed surface of fill material during a precipitation event. The Contractor shall also provide positive drainage away from all excavations. No frozen fill shall be placed and no fill shall be placed on frozen ground, upon standing water, or on yielding soil.

The compaction of engineered select fill shall be accomplished under continuous engineering inspection and testing.

4.2.4 Unstable Subgrade

If areas of soft, wet, unstable subgrade are encountered or created, it may require the Contractor to overexcavate and stabilize the subgrade by placing Engineer approved 8-inch to 12-inch diameter, clean, crushed, angular rock, and/or combine the crushed rock with Mirafi HP570 woven geofabric (or acceptable equivalent) to create a working platform. **NOTE:** A test area is recommended to determine the most suitable method of creating a working platform. Relatively light, nonvibratory compaction equipment shall be used during this operation to minimize further softening and pumping of the exposed subgrade.



4.2.5 Temporary Excavations

The Contractor is responsible for the selection, design, construction and maintenance of the shoring method and temporary slopes. Safety requirements established by OSHA or other regulatory agencies shall be followed during excavation and construction by the Contractor. Heavy construction equipment, construction materials, or soil stockpiles shall not be located near the top of any excavation. Sloughing of excavation sidewalls should be anticipated during construction excavation due to cohesionless granular soils.

4.2.6 Permanent Slopes

TMWA's conceptual plan indicates 2 to 1 Horizontal to Vertical cut and fill slopes for the new tank which would match the existing cut slopes adjacent to the existing tank. The existing slopes were observed to be stable by ESE with no evidence of excessive erosion. These slopes had mature vegetation on them preventing excessive erosion. Therefore it is ESE's opinion that 2 to 1 cut slopes are acceptable provided that the slope construction include an import growth medium and seed and then place a mulch/heavy-duty tackifier application to minimize erosion while the new vegetation is established, and 2 to 1 fill slopes are acceptable provided the slope is protected with an angular fractured stone 8-12" in diameter.

4.3 Foundations

ESE recommends that the base of the steel water tank bear on a minimum of 12 inches of Type 2, Class B aggregate base (AB) compacted to at least 95 percent relative compaction. The steel water tank ring footing should bear entirely on a minimum of 24 inches of engineered select fill compacted to at least 95 percent relative compaction. The water tank bottom founded on a minimum of 12 inches of AB may be designed for a maximum allowable soil bearing pressure of 2,500 pounds per square foot for dead plus live loads. This value may be increased one-third for total loads including wind and seismic loads.

Foundations shall be founded at least 2 feet below the lowest adjacent finished ground surface for confinement and frost protection. The maximum estimated total settlement for the water tank foundation designed as presented above is on the order of 1-inch. Maximum differential settlement is estimated to be on the order of 1/2 inch from center to edge of tank.

Resistance to lateral loads for footings can be obtained from a combination of passive earth pressures acting against the sides of footings and soil friction at the base of the footings. For computing base friction, ESE recommends using an allowable friction coefficient of 0.40. The coefficient of friction shall be applied to vertical dead loads only. ESE recommends a passive pressure of 400 psf/foot of depth. Passive resistance shall be neglected in the upper foot unless confined by slab or pavement.



4.4 Seismic Design

For seismic loadings evaluated using 2015 International Building Code (IBC) method, ESE recommends the following design criteria:

Soil Profile Type = Site Class C

$S_s = 2.227 g$

$S_1 = 0.819 g$

$S_{MS} = 2.227 g$

$S_{MI} = 1.065 g$

$S_{DS} = 1.485 g$

$S_{DI} = 0.71 g$

No faults are mapped crossing the project site. Based on a review of the Carson City Quadrangle Earthquake Hazards Map, (Dennis T. Trexler and John W. Bell, 1979) shows one fault south and west of the site trending north to south and east to west, and one north east of the site trending east to west and north to south. These faults have been identified as indeterminate; predominantly bedrock faults with last probable movement of pre-pleistocene age. Additionally Holocene faults have been identified approximately 2 miles west of the site trending north to south, and 1.5 miles to the east trending north and south. A Pleistocene age fault (11,000 to 2 Million years old) is considered “potentially active”. A Holocene age or “active” fault is considered to be any movement in the last 11,000 years.

Based on the above referenced Hazards Map potential for ground shaking at site during a seismic event is variable severity of shaking, includes older fan deposits, granodiorite which ranges in degree and depth of weathering, and Tertiary ash-flow tuffs, which exhibit various degrees of alteration, welding and fracture spacing.

4.5 Corrosion Potential

The results of the corrosion testing on boring soil samples are presented in Table 2.

TABLE - 2
Corrosivity Test Results

Boring No.	Sample Depth (ft.)	Chloride (mg/kg)	Sulfate (mg/kg)	Resistivity (ohm-cm)	pH	Sulfides	Redox potential (mV)
TP-1	0.5 - 4.0	ND	ND	77000	6.6	ND	380
TP-1	4.0 - 8.0	ND	ND	61000	6.7	ND	380
TP-2	0.5 - 4.5'	ND	ND	120000	6.7	ND	380



Based on the results of analytical testing there is negligible potential for sulfate exposure/attack to concrete, therefore a Type II cement is acceptable for use. Also, based on the results of laboratory testing the degree of corrosive potential for metals is also negligible. Corrosion protection of metal pipelines shall be based upon the recommendations found in AWWA C105, Appendix A and the Design Engineers judgment.

5.0 ADDITIONAL SOILS ENGINEERING SERVICES

Prior to and during construction, the following should be performed under ESE observations to ensure conformance with the intent of ESE's recommendations.

- Excavation;
- Suitability of onsite and imported fill materials;
- Bedding and backfill placement and compaction;

Observation of these operations will allow ESE to check that soil conditions are consistent with this geotechnical investigation and to evaluate variations in soils conditions, which may require special consideration or modification of the recommendations.

6.0 LIMITATIONS

Recommendations contained in this report are based on our field explorations, laboratory tests, and our understanding of the proposed construction. The study was a cost-effective method to evaluate some of the potential geotechnical concerns.

The soils data used in the preparation of this report were obtained from test pits located for this investigation. It is possible that variations in soils exist between the points explored. The nature and extent of soil variations may not be evident until construction occurs. If any soil conditions are encountered at this site, which are different from those described in this report, our firm should be immediately notified so that we may make any necessary revisions to our recommendations.

This report may be used only by TMWA and only for the purposes stated within a reasonable time from issuance, but in no event later than three years from the date of the report. Land or facility use, on and off-site conditions, regulations, or other factors may change over time, and additional work may be required with the passage of time.

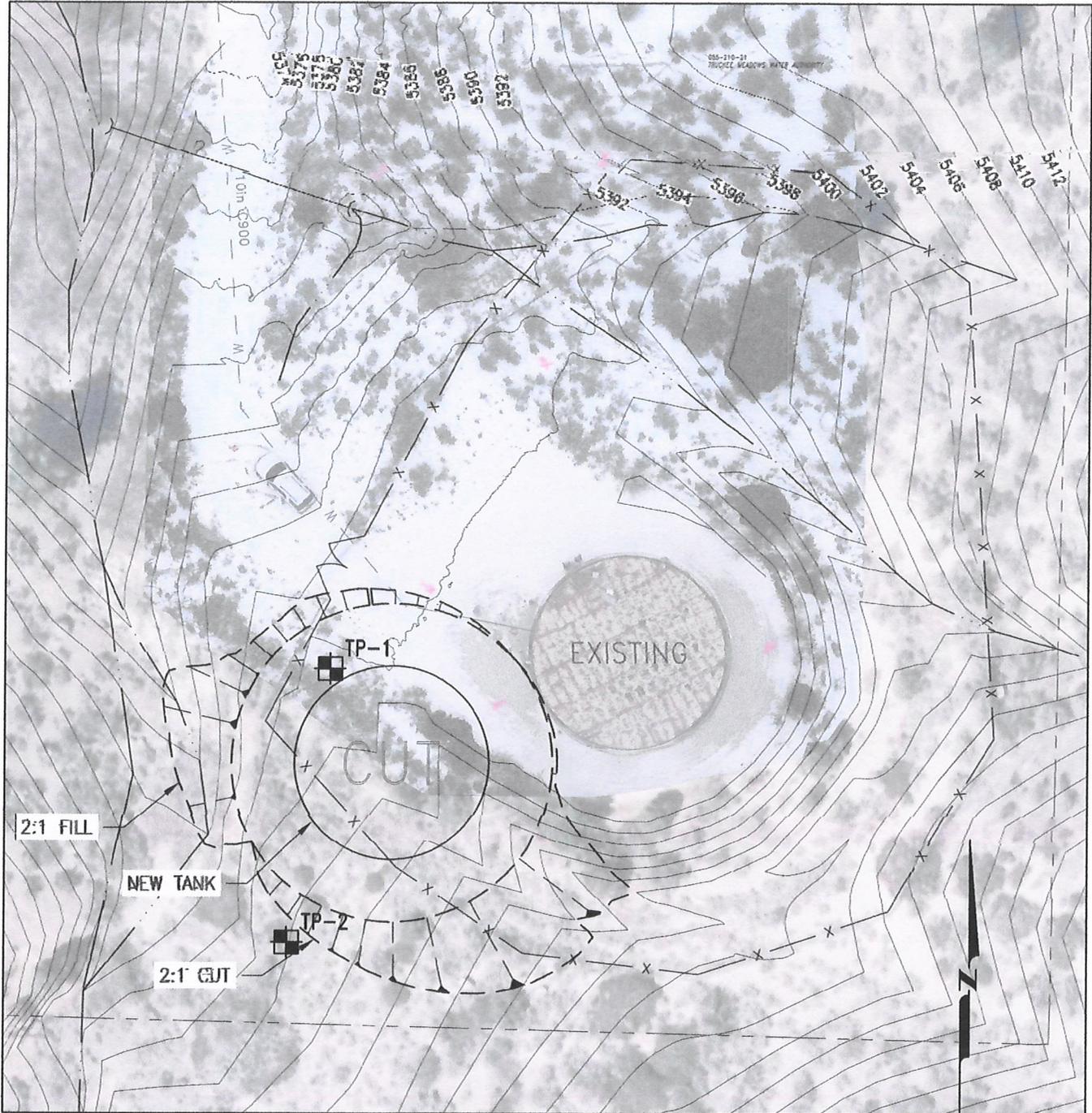


7.0 REFERENCES

- *Geologic Map of the Reno Folio, Washoe County, Nevada.* H.F. Bonham Jr. and E.C. Bingler, Nevada Bureau of Mines and Geology, U.S. Geological Survey, 1973.
- *Carson City Quadrangle Earthquake Hazards Map.* Dennis T. Trexler and John W. Bell, Nevada Bureau of Mines and Geology, U.S. Geological Survey, 1979.
- *International Building Code 2015*, International Code Council, 2015.
- USGS, Earthquake Hazards Program, <http://earthquake.usgs.gov/research/hazmaps/design>, March 25, 2019
- *Standard Specifications for Public Works Construction.* RTC of Washoe County, Washoe County, City of Sparks, City of Reno, Carson City, and City of Yerington, Revision No. 9, December 21, 2016
- *Construction and Design Standards*, Truckee Meadows Water Authority <https://tmwa.com/new-construction/standards/>

APPENDIX A - FIGURES





N.T.S.



**LIGHTING W TANK 2
SITE PLAN AND TEST PIT LOCATIONS
TRUCKEE MEADOWS WATER AUTHORITY**

**FIGURE
1**

DRAWN
JSC

JOB NUMBER
19114

APPROVED
SWJ

DATE
3/26/2019

REVISED

DATE

TEST PIT LOG

TEST PIT NO: TP-1
 EQUIPMENT: KOMATSU PC 158 EXCAVATOR
 LOGGED BY: M. PHELPS

DATE: 3/19/2019
 DEPTH TO GROUND WATER (ft): N/A
 GROUND ELEVATION (ft): N/A

LIQUID LIMIT (%)	PLASTICITY INDEX	MOISTURE (%)	% PASSING #200 SIEVE	BLOWS/FT.	SAMPLE	DEPTH (FT)	USCS SYMBOL	LITHOLOGY
--	NP	9.6	13.3			2	SC-SM	BROWN SILTY, CLAYEY SAND WITH GRAVELS, COBBLES AND BOULDERS (SC-SM); loose, wet BROWN SILTY SAND WITH GRAVEL, COBBLE AND BOULDERS (SM); medium dense to dense, moist to wet Encountered a 5 feet boulder at 3.0'.
--	NP	9.8	12.9			6	SM	Encountering large cobbles and small boulders.
						10	GD	GRAY-WHITE GRANODIORITE (GD); little to occasionally fractured, low hardness, weak to moderately strong, moderately to deeply weathered. Bedrock becoming more difficult to excavate, getting stronger, harder and less weathered.



TEST PIT LOG: TP-1
 LIGHTING W TANK 2
 TRUCKEE MEADOWS WATER AUTHORITY

FIGURE
2

DRAWN MPP	JOB NUMBER 19114	APPROVED SWJ	DATE 3/26/2019	REVISED	DATE
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TEST PIT LOG

BORING NO: TP-1 cont
 EQUIPMENT: KOMATSU PC 158 EXCAVATOR
 LOGGED BY: M. PHELPS

DATE: 3/19/2019
 DEPTH TO GROUND WATER (ft): N/A
 GROUND ELEVATION (ft): N/A

LIQUID LIMIT (%)	PLASTICITY INDEX	MOISTURE (%)	% PASSING #200 SIEVE	BLOWS/FT.	SAMPLE	DEPTH (FT)	USCS SYMBOL	LITHOLOGY
						12	GD	GRAY-WHITE GRANODIORITE (GD); little to occasionally fractured, low to moderately hard, moderately strong, moderately weathered
						14		Refusal at 13 feet. Groundwater was encountered at 8.5 feet.
						16		
						18		
						20		
						22		
						24		



TEST PIT LOG: TP-1 Cont.
 LIGHTING W TANK 2
 TRUCKEE MEADOWS WATER AUTHORITY

FIGURE
3

DRAWN MPP	JOB NUMBER 19114	APPROVED SWJ	DATE 3/26/2019	REVISED	DATE
--------------	---------------------	-----------------	-------------------	---------	------

TEST PIT LOG

TEST PIT NO: TP-2	DATE: 3/19/2019
EQUIPMENT: KOMATSU PC 158 EXCAVATOR	DEPTH TO GROUND WATER (ft): N/A
LOGGED BY: M. PHELPS	GROUND ELEVATION (ft): N/A

LIQUID LIMIT (%)	PLASTICITY INDEX	MOISTURE (%)	% PASSING #200 SIEVE	BLOWS/FT.	SAMPLE	DEPTH (FT)	USCS SYMBOL	LITHOLOGY
-	NP	7.9	9.3			0	SC-SM	BROWN SILTY, CLAYEY SAND WITH GRAVELS, COBBLES AND BOULDERS (SC-SM); loose, wet
						2	SP-SM	BROWN POORLY GRADED SAND WITH SILT, GRAVEL, COBBLE AND BOULDERS (SP-SM); medium dense to dense, moist to wet
						4		Difficult excavating due to large volume of cobble size rock.
						6	GD	GRAY-WHITE GRANODIORITE (GD); little to occasionally fractured, low hardness, weak to moderately strong, moderately to deeply weathered
						8		Bedrock becoming more difficult to excavate, getting stronger, harder and less weathered.
						10		Refusal at 9.0 feet. Groundwater was encountered at 5.5 feet.
						12		

 EASTERN SIERRA ENGINEERING	TEST PIT LOG: TP-2	FIGURE
	LIGHTING W TANK 2	4
TRUCKEE MEADOWS WATER AUTHORITY		
DRAWN MPP	JOB NUMBER 19114	APPROVED SWJ
DATE 3/26/2019	REVISED	DATE

UNIFIED SOIL CLASSIFICATION—ASTM D2487—00

MAJOR DIVISIONS			TYPICAL NAMES		
COARSE-GRAINED SOILS MORE THAN HALF IS COARSER THAN No. 200 SIEVE	GRAVELS MORE THAN HALF COARSE FRACTION IS LARGER THAN No. 4 SIEVE SIZE	CLEAN GRAVELS WITH LITTLE OR NO FINES	GW		WELL GRADED GRAVELS WITH OR WITHOUT SAND, LITTLE OR NO FINES
			GP		POORLY GRADED GRAVEL WITH OR WITHOUT SAND, LITTLE OR NO FINES
		GRAVELS WITH OVER 12% FINES	GM		SILTY GRAVELS, SILTY GRAVELS WITH SAND
			GC		CLAYEY GRAVELS, CLAYEY GRAVELS WITH SAND
	SANDS MORE THAN HALF COARSE FRACTION IS SMALLER THAN No. 4 SIEVE SIZE	CLEAN SANDS WITH LITTLE OR NO FINES	SW		WELL GRADED SANDS WITH OR WITHOUT GRAVEL, LITTLE OR NO FINES
			SP		POORLY GRADED SANDS WITH OR WITHOUT GRAVEL, LITTLE OR NO FINES
		SANDS WITH OVER 12% FINES	SM		SILTY SANDS WITH OR WITHOUT GRAVEL
			SC		CLAYEY SANDS WITH OR WITHOUT GRAVEL
FINE-GRAINED SOILS MORE THAN HALF IS FINER THAN No. 200 SIEVE	SILTS AND CLAYS LIQUID LIMIT 50% OR LESS		ML		INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTS WITH SANDS AND GRAVELS
			CL		INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, CLAYS WITH SANDS AND GRAVELS, LEAN CLAYS
			OL		ORGANIC SILTS OR CLAYS OF LOW PLASTICITY
	SILTS AND CLAYS LIQUID LIMIT GREATER THAN 50%		MH		INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS, FINE SANDY OR SILTY SOILS, ELASTIC SILTS
			CH		INORGANIC CLAYS OF HIGH PLASTICITY, FAT CLAYS
			OH		ORGANIC SILTS OR CLAYS OF MEDIUM TO HIGH PLASTICITY
HIGHLY ORGANIC SOILS			Pt		PEAT AND OTHER HIGHLY ORGANIC SOILS

M(80)	-	Moisture Content (%)		
DD(105)	-	Dry Density (pcf)		
Perm	-	Permeability		
Consol	-	Consolidation		
LL	-	Liquid Limit (%)		
PI	-	Plasticity Index (%)		
G _s	-	Specific Gravity		
MA	-	Particle Size Analysis		
OC	-	Organic Content		
R-Value	-	Resistance Value		
CBR	-	California Bearing Ratio		
■	-	"Undisturbed" Sample		
☒	-	Bulk or Classification Sample		
			TxUU 3200 (2600)	Unconsolidated Undrained Triaxial Shear
			(FM) or (S)	(field moisture or saturated)
			TxCU 3200 (2600)	Consolidated Undrained Triaxial Shear
			(P)	(with or without pore pressure measurement)
			TxCD 3200 (2600)	Consolidated Drained Triaxial Shear
			SSCU 3200 (2600)	Simple Shear Consolidated Undrained
			(P)	(with or without pore pressure measurement)
			SSCD 3200 (2600)	Simple Shear Consolidated Drained
			DSCD 2700 (2000)	Consolidated Drained Direct Shear
			UC 470	Unconfined Compression
			LVS 700	Laboratory Vane Shear
			DSUU	Unconsolidated Undrained Direct Shear



**LIGHTING W TANK 2
UNIFIED SOIL CLASSIFICATION
TRUCKEE MEADOWS WATER AUTHORITY**

FIGURE

5

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
MPP	19114	SWJ	3/26/2019		

I CONSOLIDATION OF SEDIMENTARY ROCKS; usually determined from unweathered samples.
 Largely dependent on cementation.
 U = unconsolidated
 P = poorly consolidated
 M = moderately consolidated
 W = well consolidated

II BEDDING OF SEDIMENTARY ROCKS

Splitting Property	Thickness	Stratification
Massive	Greater than 4.0 ft.	very thick bedded
Blocky	2.0 to 4.0 ft.	thick-bedded
Slabby	0.2 to 2.0 ft.	thin-bedded
Flaggy	0.05 to 0.2 ft.	very thin-bedded
Shaly or platy	0.01 to 0.05 ft.	laminated
Papery	less than 0.01 ft.	thinly laminated

III FRACTURING

Intensity	Size of Pieces in Feet
Very little fractured	Greater than 4.0 ft.
Occasionally fractured	2.0 to 4.0 ft.
Moderately fractured	0.2 to 2.0 ft.
Closely fractured	0.05 to 0.2 ft.
Intensely fractured	0.01 to 0.05 ft.
Crushed	less than 0.01 ft.

IV HARDNESS

1. Soft – Reserved for plastic material alone.
2. Low hardness – can be gauged deeply or carved easily with a knife blade.
3. Moderately hard – can be readily scratched by a knife blade; scratch leaves a heavy trace of dust and is readily visible after the powder has been blown away.
4. Hard – can be scratched with difficulty; scratch produces little powder and is often faintly visible.
5. Very hard – cannot be scratched with knife blade; leaves a metallic streak.

V STRENGTH

1. Plastic or very low strength.
2. Friable – crumbles easily by rubbing with fingers.
3. Weak – An unfractured specimen of such material will crumble under light hammer blows.
4. Moderately strong – Specimen will withstand a few heavy hammer blows before breaking.
5. Strong – Specimen will withstand a few heavy ringing blows and will yield with difficulty only dust and small flying fragments.
6. Very strong – Specimen will resist ringing hammer blows and will yield with difficulty only dust and small flying fragments.

VI WEATHERING – The physical and chemical disintegration and decomposition of rocks and minerals by natural processes such as oxidation, reduction, hydration, solution, carbonation and freezing and thawing.

- D. Deep – Moderate to complete mineral decomposition; deep and thorough discoloration; many fractures, all extensively coated or filled with oxides, carbonates and/or clay silt.
- M. Moderate – Slight change or partial decomposition of minerals; little disintegration; cementation little to unaffected. Moderate to occasionally intense discoloration. Moderately coated fractures.
- L. Little – No megascopic decomposition of minerals; little or no effect on normal cementation. Slight and intermittent, or localized discoloration. Few stains on fracture surfaces.
- F. Fresh – Unaffected by weathering agents. No disintegration or discoloration. Fractures usually less numerous than joints.



**EASTERN
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LIGHTING W TANK 2
 PHYSICAL PROPERTIES CRITERIA FOR ROCK DESCRIPTIONS
 TRUCKEE MEADOWS WATER AUTHORITY

FIGURE
 6

DRAWN
 MPP

JOB NUMBER
 19114

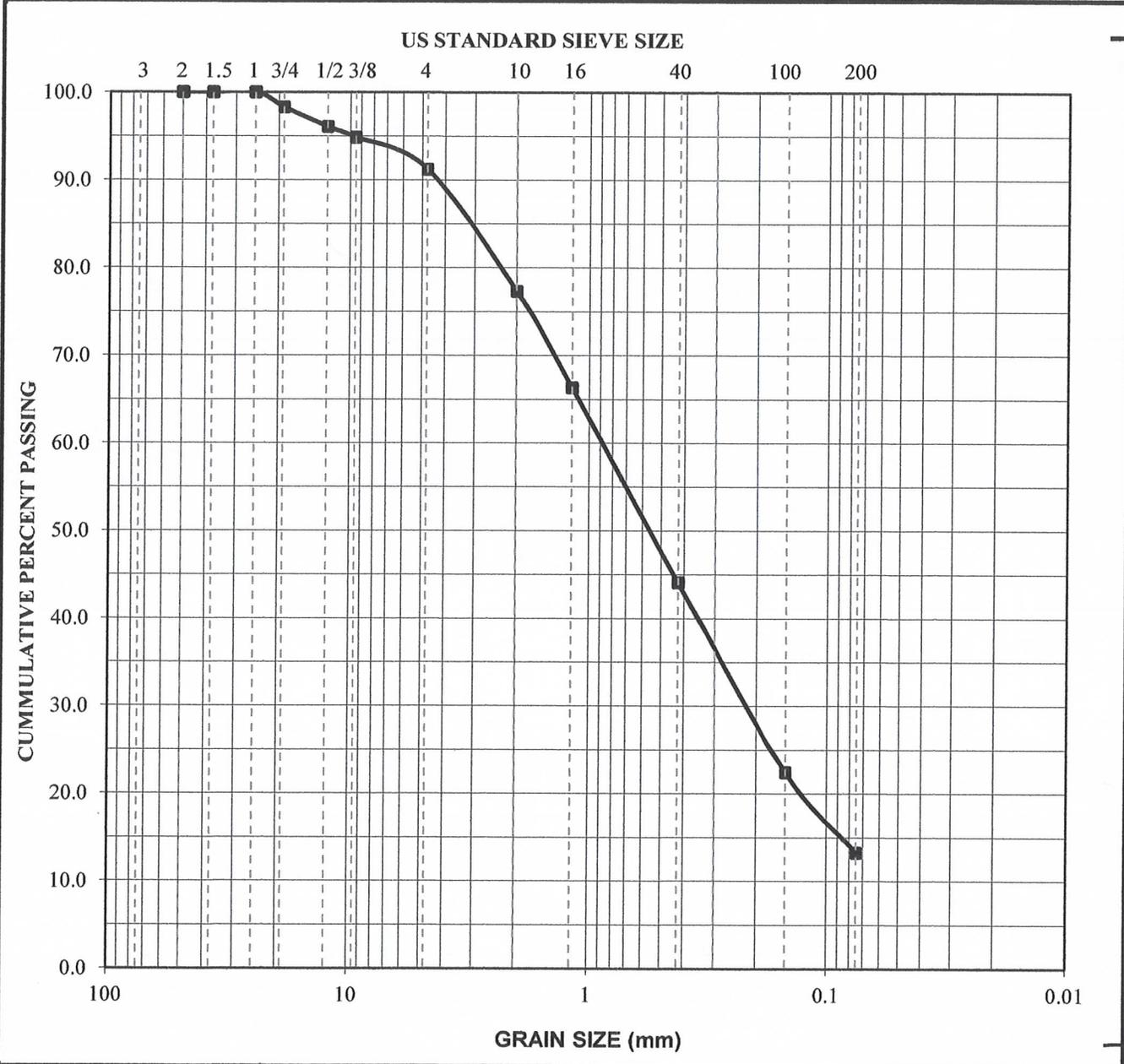
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 SWJ

DATE
 3/26/2019

REVISED

DATE

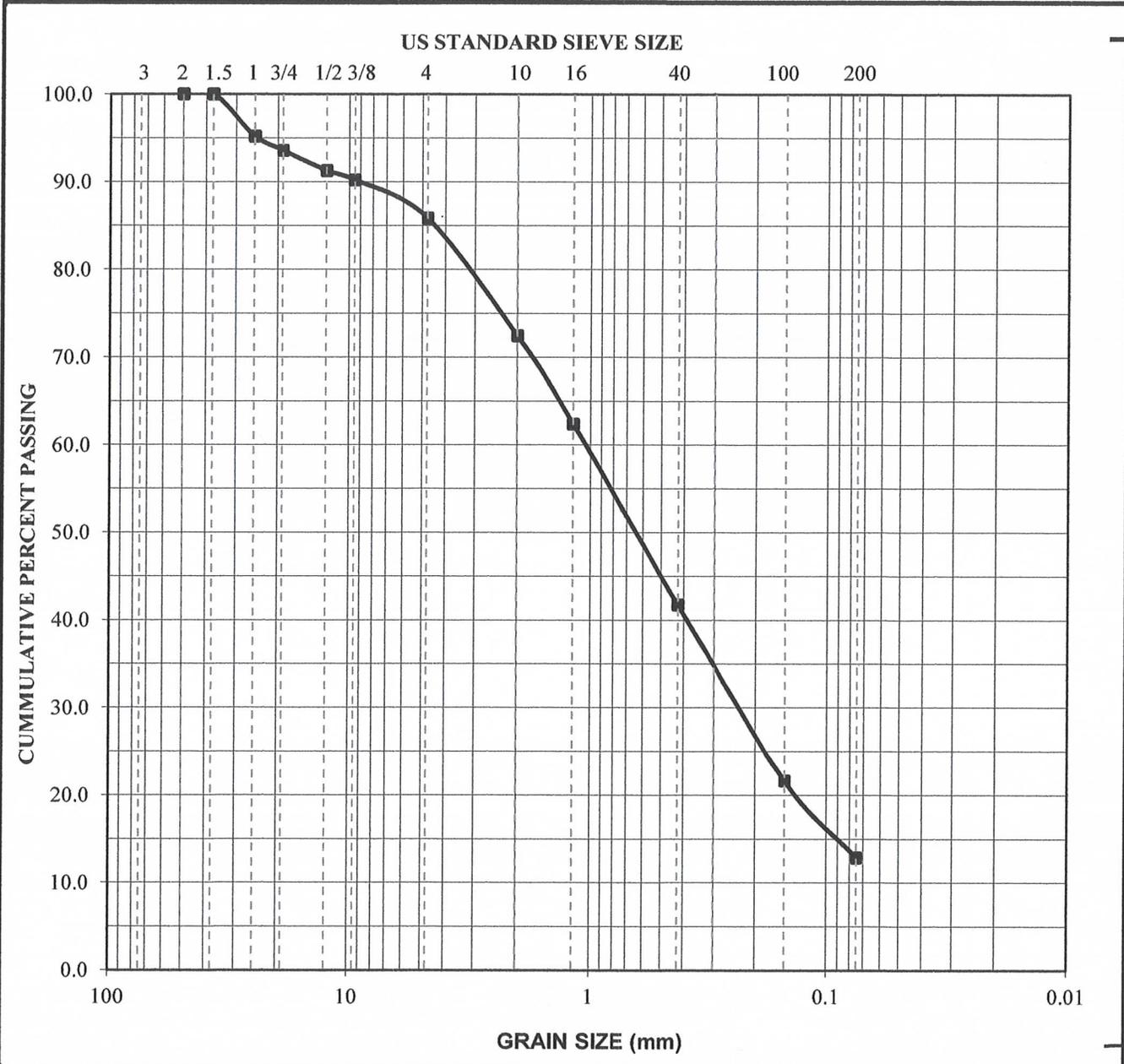
APPENDIX B - LABORATORY RESULTS



COBBLES	GRAVEL	SAND	SILT OR CLAY
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Symbol	Sample Source	Classification
■	TP-1 @ 0.5' - 4.0'	SILTY SAND WITH GRAVEL (SM)

	PARTICLE SIZE ANALYSIS LIGHTING W TANK 2 TRUCKEE MEADOWS WATER AUTHORITY	FIGURE 7
	DRAWN: MPP JOB NUMBER: 19114 APPROVED: SWJ DATE: 3/21/2019 REVISED: DATE:	



COBBLES | GRAVEL | SAND | SILT OR CLAY

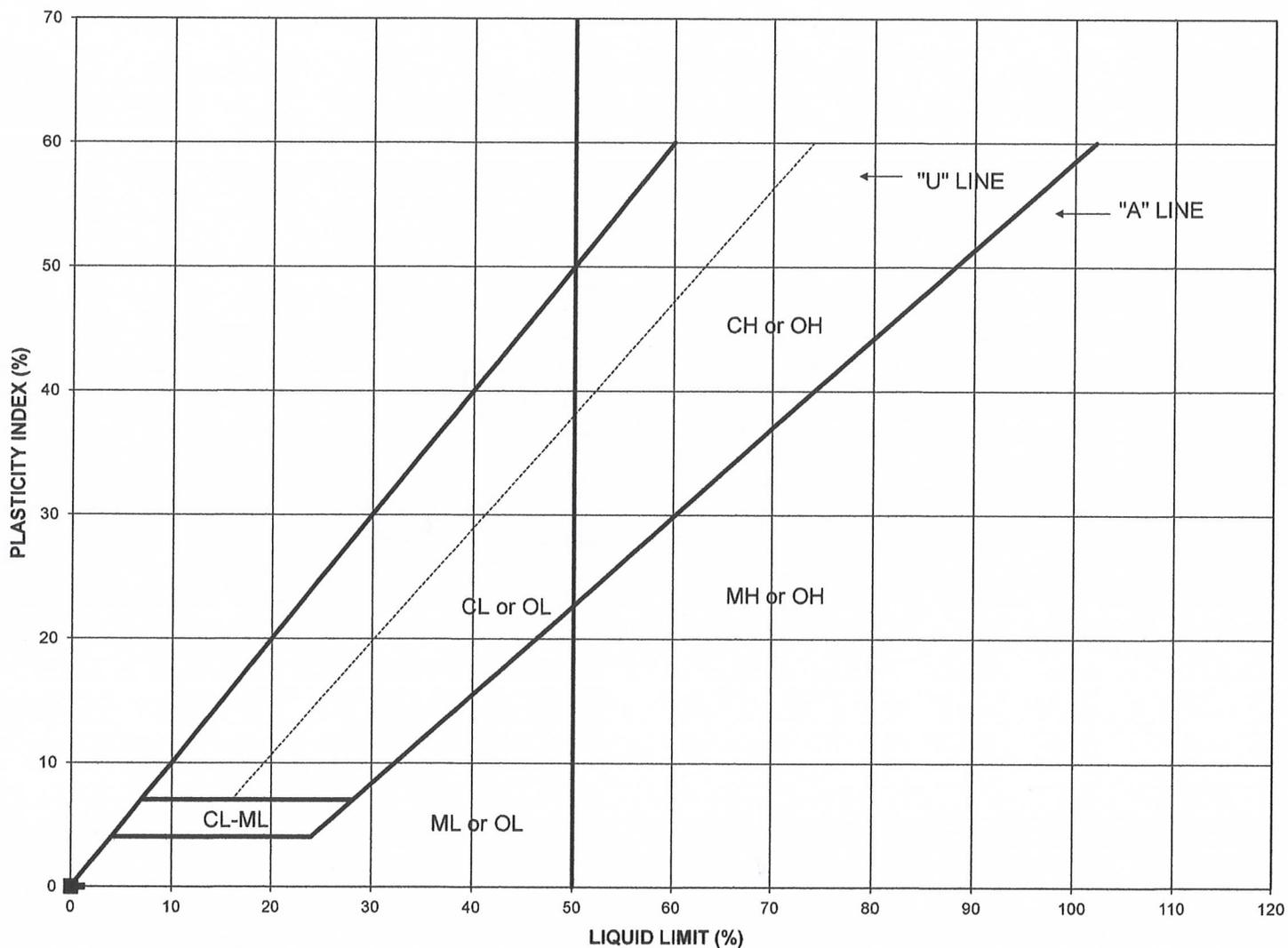
Symbol	Sample Source	Classification
■	TP-1 @ 4.0' - 8.0'	SILTY SAND WITH GRAVEL (SM)

 EASTERN SIERRA ENGINEERING	PARTICLE SIZE ANALYSIS LIGHTING W TANK 2 TRUCKEE MEADOWS WATER AUTHORITY		FIGURE 8
	DRAWN MPP	JOB NUMBER 19114	APPROVED SWJ
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COBBLES		GRAVEL		SAND		SILT OR CLAY	
Symbol	Sample Source			Classification			
■	TP-2 @ 0.5' - 4.5'			POORLY GRADED SAND W/ SILT & GRAVEL (SP-SM)			

 EASTERN SIERRA ENGINEERING	PARTICLE SIZE ANALYSIS LIGHTING W TANK 2 TRUCKEE MEADOWS WATER AUTHORITY			FIGURE 9	
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Symbol D 4318-10	Sample Source	Classification	Natural M.C. (%)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)	% Passing #200 Sieve
■	TP-1 @ 0.5' - 4.0'	SILTY SAND WITH GRAVEL (SM)	9.6			NP	13.3
◆	TP-1 @ 4.0' - 8.0'	SILTY SAND WITH GRAVEL (SM)	9.8			NP	12.9
▲	TP-2 @ 0.5' - 4.5'	POORLY GRADED SAND WITH SILT AND GRAVEL (SP-SM)	7.9			NP	9.3
●							
┃							



PLASTICITY CHART
LIGHTING W TANK 2
TRUCKEE MEADOWS WATER AUTHORITY

FIGURE

10

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