Midpeninsula Regional
Open Space District

R-20-27
Meeting 20-06
March 11, 2020

AGENDA ITEM 6

AGENDA ITEM

Approval of Basis of Design recommendations to complete the Deer Hollow Farm White Barn Structural Stabilization Project at Rancho San Antonio Open Space Preserve

GENERAL MANAGER'S RECOMMENDATION

Approve the structural stabilization measures for the Deer Hollow Farm White Barn as recommended in the Basis of Design Report prepared by Wiss, Janney, Elstner Associates, Inc., dated December 18, 2019.

SUMMARY

In April 2019, the Midpeninsula Regional Open Space District (District) Board of Directors (Board) authorized a contract with Wiss, Janney, Elstner Associations, Inc., (WJE) to provide engineering design services for the Deer Hollow Farm White Barn Structural Stabilization Project (Project) at Rancho San Antonio Open Space Preserve (R-19-49). The contract includes a site assessment, basis of design development, construction documents, permitting assistance, bidding support, and construction administration.

WJE has completed the Basis of Design Report, which includes a structural condition assessment and recommended structural stabilization measures (Attachment 1). Concurrently, the District retained Garcia and Associates (GANDA) to complete a historical resource evaluation and cultural resource survey and their findings have been incorporated into WJE's recommendations. The General Manager recommends approving the structural stabilization measures recommended in the Basis of Design report. The recommended measures factor in longevity, cost, and input from Deer Hollow Farm staff. Costs for the recommended repairs total $166,833 with escalation and can be fully funded by donations received for Deer Hollow Farm. If approved by the Board, District staff will direct WJE to proceed with design development and the production of construction documents. The Project is anticipated to begin construction in Fall 2020.

BACKGROUND

Deer Hollow Farm is jointly operated by the District and City of Mountain View with funding support from the Friends of Deer Hollow Farm (FODHF) and County of Santa Clara. In 2016, the District and FODHF each accepted a $165,000 donation ($330,000 total) from the George Tindall Estate to fund projects that benefit Deer Hollow Farm. The District, City of Mountain View, and Deer Hollow Farm staff collectively determined that the Deer Hollow Farm White Barn (White Barn) stabilization was the best use of the donated funds. Initial structural

stabilization considerations included strengthening the undersized brick foundations and structural members, and repairing damage from weathering and water intrusion.

The Project began in Fiscal Year (FY) 2017-18 Action Plan, with an initial scope of assessing the White Barn's historical significance and stabilization needs. In March 2018, Page & Turnbull prepared a Historic Structure Report for the White Barn including a preliminary evaluation of historic significance and initial repair recommendations with associated costs. Page and Turnbull's preliminary evaluation found that the White Barn may be eligible for listing but that further evaluation of the White Barn and Deer Hollow Farm would be required to make that determination. In April 2019, the District awarded a contract to WJE to provide engineering design services for the Project (R-19-49). At this meeting, the Board requested that the Basis of Design be returned to them for review and discussion.

DISCUSSION

Historic Significance

In October 2019, GANDA was issued a Task Order through an on-call contract to prepare a Historical Resource Evaluation Report for the White Barn (Attachment 2). Deer Hollow Farm is located at the site of a working ranch, first established in 1849 as part of the Grant Homestead. In 1937, the property was purchased by George Sheldon Perham and operated as a family ranch until 1975. GANDA's assessment concluded that the White Barn was constructed between 1937 and 1948, with evidence pointing to a narrower date range between 1940 and 1948. Therefore, the White Barn's period of historical significance is associated with the Perham ownership period; this is after homesteading occurred in Santa Clara County (mid to late 1800s).

The White Barn and Deer Hollow Farm are not currently listed on federal, state, or local historic registers. GANDA's assessment used the California Register of Historical Resources (CRHR) Criteria for Designation to determine the historic eligibility for listing. GANDA's investigation determined that although the White Barn retains its historical integrity as defined under the California Environmental Quality Act (CEQA), it is ineligible for listing on the California Register of Historic Places. As detailed in GANDA's report, the White Barn did not meet the criteria for listing on the CRHR under Criterion A - D.

> Criterion A is associated with events that have made significant contributions to the broad patterns of California's history and cultural heritage.
> *GANDA concluded that although Deer Hollow Farm is associated with the continued agricultural development of Santa Clara County, the White Barn itself was not used for commercial operation and had no association with the establishment or growth of ranching and dairy operations in Santa Clara County. Therefore, the White Barn is not associated with events that occurred on the property between 1937 and 1975 that contributed to broad patterns of California or local history under Criterion A.*
>
> Criterion B is associated with the lives of persons important in our past.
> *Though George Perham was important to his company and a descendant of a prominent homesteader/rancher, GANDA concluded that he himself does not rise to the level of prominence as defined under Criterion B.*

Criterion C embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important individual.
GANDA concluded that the White Barn does not contain distinctive characteristics of type, period, region, or represent the work of a master. The building itself is vernacular in construction that is ubiquitous in California and the rest of the United States. Broken gable barns have been recorded for hay and livestock use in several eastern and western states and the style is not unique to Santa Clara County or California.

For Criterion D, the subject yields, or may be likely to yield, information important in prehistory or history.
GANDA concluded that as a built resource, the White Barn is not likely to yield or have yielded information important to prehistory or history.

Although the White Barn is ineligible for listing, GANDA recommends that all stabilization and repairs to the White Barn be conducted in accordance with the Secretary of the Interior's Standards for the Treatment of Historic Properties. This is because the White Barn may be a contributing element of a larger historic district that was once the site of a cattle ranch and dairy farm operation in Santa Clara County. The Secretary of the Interior's Standards provide advisory guidelines for the treatment of historic properties that minimize potential impacts due to substantial changes to historic resources. Some key components of the Standards include, but are not limited to, making minimal change to the defining characteristics of the building, avoiding removal or alteration of historic materials, repairing rather than replacing historic features when possible, and when features require replacement, matching the original feature in design, color, texture, and other visual qualities where possible.

Conditions Assessment

The White Barn is currently used for processing milk, housing goats, and storage. The White Barn is a wood-framed building about 30 feet wide by 58 feet long; it is 25 feet tall at its highest point. The roof is clad with corrugated metal panels. The White Barn has a concrete slab foundation in the northwest corner and is otherwise supported by low brick piers. In the northwest corner there is a milk room and a goat pen. The milk room was renovated by District staff in 2016 to add a concrete floor, interior wall sheathing, and a perimeter foundation. The center section is dedicated to hay storage, with a hay loft in the gable above (accessed by a steep wood staircase). In the southeast extension, horse stalls are currently used for storage. Public access is permitted in the milk room with staff present, but the majority of the White Barn is closed to the public. No change in use is proposed as part of this Project.

WJE completed a condition assessment of the White Barn as part of their Basis of Design Report. The consultant team included WJE for architecture and engineering, Langan for geotechnical, SCA Environmental for hazardous materials, and GANDA for historical and archaeological review. The review included visual observations of the interior and exterior of the White Barn, photographs of the exterior and surrounding area using a drone, archaeological soil investigations, soil borings and sampling, and material sampling. Structural calculations were prepared to assess the existing framing for gravity, wind, and seismic loads using the provisions of the California Existing Building Code. Overall, the White Barn was found to be in fair and serviceable condition owing to regular use and maintenance. However, the structural calculations concluded that areas of the roof, attic floor, and foundations are structurally deficient and in need of strengthening, seismic bracing, or other repairs:

1. Roof: The corrugated metal roof panels are in fair condition, though several panels appear to have biological growth and soil accumulation on them. Some panels also show signs of corrosion from the interior. Throughout the roof there are protruding fasteners, distressed flashing and gutters, missing downspouts, and many rafter tails are deteriorated. Throughout the wood skip sheathing that is supporting the metal panels there is damage from wood-boring insects and many of the skip sheathing boards are split along fastener locations. WJE's structural analysis also shows that the roof rafters and beams are overstressed for current building code design loads. The rafters are undersized, and they do not have blocking installed between the rafters, and one set of knee braces supporting a beam is missing.

2. Attic Floor: The attic floor framing has several deficiencies that should be addressed. One of the floor joists has numerous drilled holes, a notch cut out, and cracks have formed along those holes. Joists supporting the wood stairs are overstressed for design loads. It is evident that modifications have been made to the wood columns supporting the attic floor and roof, resulting in the columns being overstressed in some locations.

3. Footings: The brick footings supporting the columns appear to be in good condition. There is no observable structural connection of the column to the brick footings. Based on WJE's analysis and the geotechnical engineering report, the footings exceed allowable soil bearing capacity, which is the soils ability to support loads from the footings. Exceeding bearing capacity can lead to ongoing settlement of the footings or failure during a seismic event. The supports for the columns in the east section of the White Barn are not currently visible below wood flooring and WJE assumed they are inadequate. The exterior wood siding is deteriorated in several locations at the base of the building.

4. Floor: The floor in the main center section of the White Barn is exposed soil and Deer Hollow Farm staff have reported the presence of burrowing rodents. Farm staff also reported that this section does not adequately drain water. In the east section of the White Barn, the wood flooring and supporting framing shows severe signs of decay. The wood stairs that provide access to the attic are not compliant with current building code requirements.

5. WJE's wind and seismic analysis determined that the White Barn is inadequate to resist the current building code loads. The exterior walls resist lateral wind and seismic loads, however there is no direct connection from the walls and posts to transfer those loads to the foundations. Additionally, the large openings on the north side of the White Barn along with the deteriorated siding do not leave enough continual length of wall to resist the forces. The roof rafters are also not adequately attached to the roof beams to resist design wind uplift on the roof.

Hazardous Materials

In August 2019, SCA Environmental performed a hazardous materials assessment of the White Barn. Samples were taken and sent to laboratories to test for the presence of lead, asbestos, and

other potentially hazardous materials. The interior and exterior paint was found to contain detectable amounts of lead. The assessment found no materials containing asbestos or other hazardous materials.

The lead-based paint on the interior walls and ceiling is intact, well-adhered to the painted material, and can remain in place. Where paint on the exterior siding is loose and peeling, the paint will need to be removed and the material repainted to match. Proper dust control procedures and personal protective equipment shall be used during the removal of any lead-based paint and painted material. Monitoring by a qualified environmental consultant will also be required during any abatement or removal of lead-based paint.

Accessibility Improvements

The California Building Code requires accessibility improvements for existing buildings that are not fully compliant when alterations or additions are made. As the White Barn is not an ADA compliant building, upgrades for accessibility are required by building code to secure County permits. The upgrades shall be made to the primary accessible "path of travel", which includes a primary entrance to the building; restrooms, drinking fountains, and public telephones serving the area; and signs. The required accessibility improvements are limited to approximately 20% of the construction costs, depending on the total valuation of the project. The recommended accessibility improvements for the Project include accessible entrances and floor surfaces for the main central area and milk room of the White Barn, and replacing the existing drinking fountain with accessible fountains.

Basis of Design Recommendations

WJE's Basis of Design recommendations incorporate the required California Existing Building Code for the design and rehabilitation measures and the recommended Secretary of the Interior's Standards for the treatment of historic properties to maintain the character-defining features of the building (these latter standards are not required, only recommended as noted earlier). The details of the repair treatments can be found in the Basis of Design Report (Attachment 1) and are summarized below, with associated costs (Attachment 3).

Roof Repair Recommendations ($74,204)*:*

- Remove and replace all sheet metal roof panels to match existing panels.
- Remove and replace damaged skip sheathing.
- Install sister rafter directly next to damaged rafters.
- Remove and replace existing gutters and downspouts.
- Install wood blocking.
- Replace missing knee brace and install metal straps on all knee braces.

Exterior Wall Repair Recommendations ($20,360)*:*

- Remove damaged exterior sheathing and replace with wood sheathing to match.
- Strengthen sections of the exterior walls on each side of the White Barn to resist wind and seismic forces with diagonal wood braces installed between existing wood posts.

Attic Framing Repairs Recommendations ($16,592)*:*

- Install new wood framing adjacent to damaged framing.

- Install new wood columns adjacent to damaged columns.
- Install plywood on top of existing wood planking over the entire attic floor.
- Remove and replace stairs with a wooden pull-down style attic ladder.

Ground Floor and Foundation Repairs Recommendations ($32,076):

- Remove and replace floorboards and support framing in the east section.
- Replace supports located under posts in the east section of the White Barn.
- Install new concrete footings at column locations where seismic bracing is being added.
- Attach column bases to columns with steel plates and anchor bolts.
- Install new concrete floor slab in main center section of the White Barn.

Accessibility Improvements ($23,600):

- Install new concrete floor slab in main center section
- Install concrete approach and landing, and automatic door opening at south entrance.
- Modify door to Milk Room.
- Remove and Replace drinking fountain at southeast corner of White Barn.

Total Cost Estimate: $166,833
The cost estimate includes escalations and construction contingency.
Incorporation of the Secretary of Interior's Standards are not expected to add significant costs given the low-visibility nature of the recommended repairs.

Fire Safety

The White Barn does not currently have a fire suppression system in place and such a system is not required by code for barns and other agricultural facilities. The metal roof panels proposed as the preferred option for the roof repair are a non-combustible material and offer protection from airborne embers or other potential sources of ignition. Defensible space is maintained around the White Barn on all sides, and there is a fire hydrant located approximately 50 feet from the northeast corner of the White Barn. Additional consideration for fire prevention and safety will happen during design development and in permit review with the County Fire Marshal.

Impact on Deer Hollow Farm Operations

The Basis of Design Report recommendations will have minimal impact to the operations of Deer Hollow Farm. None of the added stabilization components, such as new foundations, diagonal braces, knee braces, sister rafters, etc., will significantly encroach upon the usable space. Moreover, some usable space around the stairs will be gained with the installation of an attic ladder. Staff from Deer Hollow Farm and the District should experience reduced maintenance needs related to water intrusion and rodent damage after the work is completed.

During construction, the White Barn will not be usable by staff. Temporary facilities will need to be identified or set up on site to house the goats and store materials currently stored in the White Barn. Milking will either need to take place elsewhere or be scheduled to take place outside of active construction hours. Activities in the White Barn during construction will need to be coordinated with the District project manager. Areas immediately adjacent to the White Barn will be used for construction access with safety barriers in place. Some construction staging can occur along the north and south sides of the White Barn, potentially requiring additional staging areas elsewhere in Rancho San Antonio or offsite. Construction staging and access needs will be further evaluated during the development of construction documents. Construction will take

place during Fall after educational activities at Deer Hollow Farm are completed for the year and is anticipated to take 3 months.

Cultural Resources

Deer Hollow Farm is known to contain cultural and archaeological resources from the various past uses of the site, however, no known resources have been found within the localized footprint of the White Barn project site. The Project aims to minimize ground disturbance where feasible to reduce the risk of unearthing any resources. The District will work with cultural and archaeological consultants to provide monitoring during all ground-disturbing activities as part of the Project. Schedule impacts are not anticipated unless there is a discovery during construction.

Biological Resources

In June 2019, Swaim Biological conducted habitat and occupancy surveys for special status mammal species at the White Barn. Though the White Barn provides potentially suitable habitat for day and night roosting bats, no bats were observed during the survey. However, guano was observed in the upper level of the White Barn indicating presence of bats. No dusky-footed woodrat nest structures were observed inside or near the White Barn.

In general, the site provides suitable day and night roosting bat habitat and has adjacent foraging and tree roost habitat. Swaim Biological recommends preconstruction surveys prior to the start of construction to confirm the absence of bats and dusky-footed woodrats. A bat roost deterrent plan may need to be developed prior to construction. Biological monitoring would be required during bat deterrence as well as during any ground-disturbing activities.

FISCAL IMPACT

The FY2019-20 budget includes $143,890 for the Rancho San Antonio – Deer Hollow Farm - White Barn Rehabilitation project (MAA11-002) for the design of the project. The recommended action has no direct fiscal impact at this time as construction is anticipated to begin in Fall 2020. The FY20 budget includes sufficient funds to cover project costs through the end of the fiscal year. Funding for future years budgets will be proposed as part of the annual Budget and Action Plan process.

Deer Hollow Farm Partnership Agreements

The District entered into the original Agreement for the operation of Deer Hollow Farm facilities and environmental education program in 2001 (R-01-46) for nine years. This agreement was extended in 2010 for an additional five years (R-10-133). In July 2015, the Board authorized the General Manager to execute a new Agreement with the City of Mountain View for the continued operation of Deer Hollow Farm for an additional five years through 2020 (R-15-91). The District is currently in negotiations with the City of Mountain View to extend the Agreement for a further five years through 2025, effectively starting July 2020.

In March 2018, the Legislative, Funding, and Public Affairs Committee (LFPAC) reviewed and confirmed a partnership funding agreement with the City of Mountain View for cost-sharing of the design phase and a funding agreement with the FODHF for the construction phase of the Structural Stabilization of the White Barn (R-18-31). In August 2018, the Board approved the LFPAC recommendations to enter into the two partnership funding agreements (R-18-95). The

funding agreements allow for the transfer of funds from the City of Mountain View and the FODHF to the District for design and construction. The City of Mountain View will contribute $35,000 towards the design phase of the Project. The final funding agreement will be presented to the City Council in March 2020 (Attachment 4) and will be incorporated as an amendment to the existing Deer Hollow Farm agreement between the District and City. FODHF will contribute its portion of the Tindall donation, a sum of $165,000, to the District for the construction phase of the Project, as part of their executed funding agreement with the District.

In total, $365,000 in donations and outside contributions is available to this Project ($35,000 from the City of Mountain View, $330,000 from the George Tindall Estate of which $165,000 is being transferred from the FODHF).

BOARD COMMITTEE REVIEW

The draft funding agreements were reviewed and confirmed by the LFPAC on March 27, 2018 (R-18-31).

PUBLIC NOTICE

Public notice was provided as required by the Brown Act. Additional notice was provided to the City of Mountain View and the Friends of Deer Hollow Farm.

CEQA COMPLIANCE

Approval of the Basis of Design recommendations is not subject to the California Environmental Quality Act (CEQA). Environmental review will be conducted for the proposed improvements and the findings will be brought to the Board as part of their consideration in awarding a construction contract.

NEXT STEPS

Following Board approval, District staff will direct WJE to proceed with design development and the production of construction documents. The Project is anticipated to begin construction in Fall 2020. Award of the construction contract will come back to the Board for review and approval at a future date.

Attachments

1. Basis of Design Report – Wiss, Janney, Elstner Associates, Inc. – December 2019
2. Historical Resource Evaluation Report – Garcia and Associates – October 2019
3. Conceptual Cost Estimate – Hattin Construction Managements, Inc. – October 2019
4. Amendment to Agreement between City of Mountain View and Midpeninsula Regional Open Space District for Operation and Management of Deer Hollow Farm

Responsible Department Head:
Jason Lin, Engineering and Construction Department Manager

Prepared by:
Leigh Guggemos, Capital Project Manager III, Engineering and Construction Department

DEER HOLLOW WHITE BARN
Deer Hollow Farm White Barn

Rancho San Antonio Open Space Preserve
Cupertino, California

Basis of Design
December 18, 2019
WJE No. 2018.0646

Prepared for:
Midpeninsula Regional Open Space District
330 Distel Circle
Los Altos, CA 94022

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DEER HOLLOW WHITE BARN
Deer Hollow Farm White Barn

Rancho San Antonio Open Space Preserve
Cupertino, California

Brian E. Kehoe, SE

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Basis of Design
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DEER HOLLOW WHITE BARN
Deer Hollow Farm White Barn

Rancho San Antonio Open Space Preserve
Cupertino, California

2x-click here to insert vertical photo.

Basis of Design
December 18, 2019
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Logo (if used)

Prepared for:
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WJE ENGINEERS ARCHITECTS MATERIALS SCIENTISTS

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WJE ENGINEERS ARCHITECTS MATERIALS SCIENTISTS

DEER HOLLOW WHITE BARN
Deer Hollow Farm White Barn

Rancho San Antonio Open Space Preserve
Cupertino, California

BACKGROUND

Wiss, Janney, Elstner Associates, Inc. (WJE) has been engaged by the Midpeninsula Regional Open Space District (District) to perform a structural and waterproofing evaluation of the White Barn at the Deer Hollow Farm. The farm is jointly operated by the District and the City of Mountain View, with additional funding assistance provided by Friends of Deer Hollow Farm, a nonprofit organization.

A Historic Structures Report prepared by Page & Turnbull for the District and dated March 2018 was reviewed as a part of this evaluation. This report recommended treatment for the building based on the assumption of it being a qualified historic building since it is within the Rancho San Antonio Open Space Preserve, which appears eligible for the National Register of Historic Places. A subsequent report prepared by Garcia and Associates titled *Historical Resource Evaluation Report for the White Barn Survey at Deer Hollow Farm within the Midpeninsula Open Space District, Santa Clara County, California*, dated October 2019, concluded that the White Barn is ineligible as an individual structure to be included on the California Register of Historic Resources. For the purposes of this evaluation it has been assumed that the building is not considered a historic structure.

The purpose of this assessment is to provide recommendations to structurally stabilize the White Barn as a voluntary measure to allow the barn to comply with applicable permitting requirements for existing facilities. This report provides our preliminary assessment of the building's present condition and recommendations for remediation of existing deficiencies.

BUILDING DESCRIPTION

The White Barn is a single-story, wood-framed structure located in the Rancho San Antonio Open Space Preserve. The date of construction of the barn is not known, but it has been estimated by Page & Turnbull that the barn was constructed prior to 1948. The Historical Resource Evaluation Report prepared by Garcia and Associates estimates that the date of construction to be between 1937 and 1948, with a likely range between 1940 and 1948. The barn is currently used for sheltering goats, storage of hay, and miscellaneous storage of other farm supplies. A milk room was added at the southwest corner of the barn in 2017.

The barn is approximately 58 feet in length and 30 feet in width. For this report, the long dimension will be referenced as being oriented roughly in the east-west direction with the side facing the creek considered as the north side (Figure 1). The exterior walls are sheathed with wood board siding that is generally oriented vertically. There are a number of doors and other openings in the exterior walls, with only two openings in the milk room that have windows installed. Exterior views of the barn are shown in Figure 2 and Figure 3.

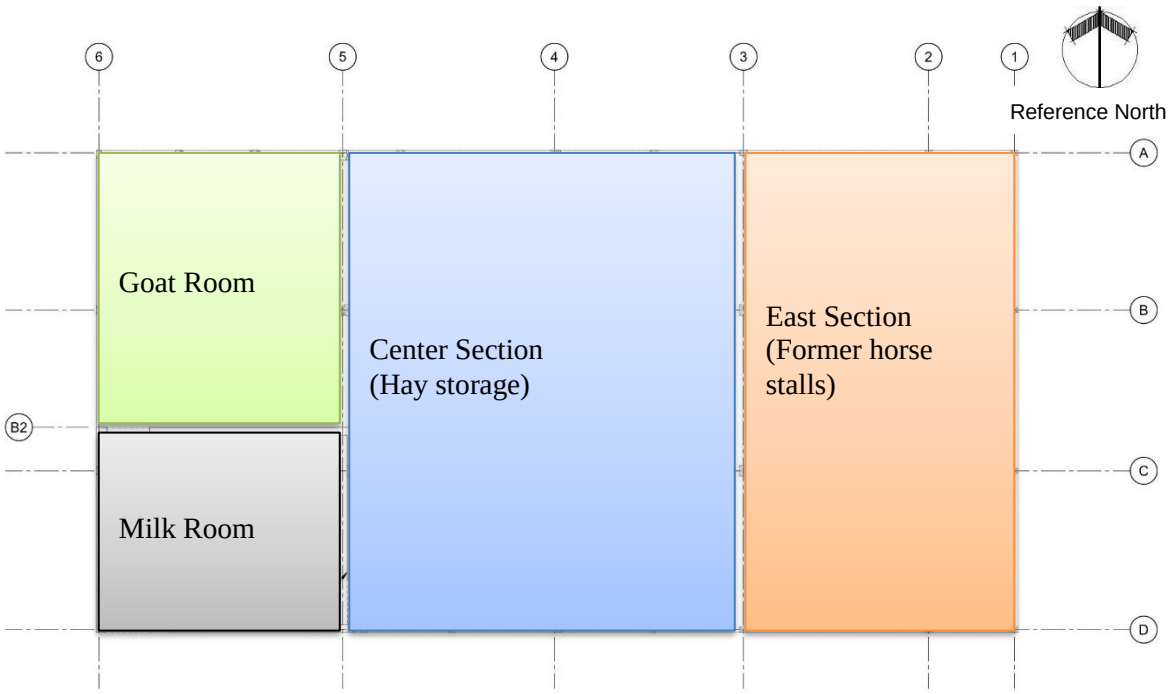


Figure 1. Floor plan of the barn

Figure 2. South elevation of the barn.

Figure 3. North elevation of the barn.

The barn is divided into three sections: the center section, which is used for storage of hay; the east side, which was formerly used as horse stalls and is now used for storage; and the west side, which includes the milk room and goat room. An attic exists over each of the three sections, with slight offsets in elevations, as shown in Figure 4 and Figure 5. The attic is accessed using fixed wood stairs located on the north side of the building.

Figure 4. Attic above the west side. Arrow shows the vertical offset at the attic over the center section.

Figure 5. Attic over the east side to the right and over the center section to the left.

The roof is clad with corrugated, galvanized sheet metal roofing panels. It is not known if the corrugated panels are original, however, it is typical for barns constructed in the early 1900s to have had a wood shake roof. The likelihood of the original roof being wood shake is also evidenced by the presence of wood skip sheathing over the rafters, typical for roof shake installation. The main gable is at the center of the building and the slope is roughly 6 in 12 vertical to horizontal. On each side of the gable are shed-roof extensions that vary from about 3.5 to 3.8 in 12 slope vertical to horizontal (Figure 6). Where the roof transitions between slopes, there is a step in the panels, creating a break in plane. Horizontally-oriented corrugated panels were used as "L" flashing at these transitions (Figure 7). The rakes and eaves overhang roughly 12 inches and the metal panels overhang the wood roof members by several inches. At these overhangs, the wood members are painted.

On the west side of the shed roof, at the eave, there is no fascia. The gutter is attached directly to the rafter tails and extends across the entire length of the building, with a downspout located at the southwest corner of the building (Figure 8). There are two rafter tails on the west eave that have been cut down and are half the depth of the other rafter tails (Figure 9). At the east side of the shed roof, at the eave, a fascia board covers the rafter tails and there is a short portion of gutter installed on the fascia directly above an electrical box; an additional 2x is sandwiched between the fascia and gutter. There is no downspout at this short gutter (Figure 10).

The underlying wood skip sheathing consists of 1-inch nominal boards with widths ranging from 4 to 12 inches in the center gable roof and 4 to 7 inches in the shed roofs. The spacing between the skip sheathing is consistently between 2 to 4 inches (Figure 11). Visible from the underside of the roof, there are areas where numerous fasteners were used during the installation of the roof panels have penetrated the underlying wood skip sheathing (Figure 12) or are not installed into the sheathing (Figure 13).

Figure 6. Aerial view of corrugated, galvanized sheet metal roofing panels.

Figure 7. Break in roof plane where transitions from gable to shed roof.

Figure 8. Gutter on the west side of the barn.

Figure 9. Two rafter tails have been cut and are half the depth of other rafter tails.

Figure 10. Short gutter at east side of the barn.

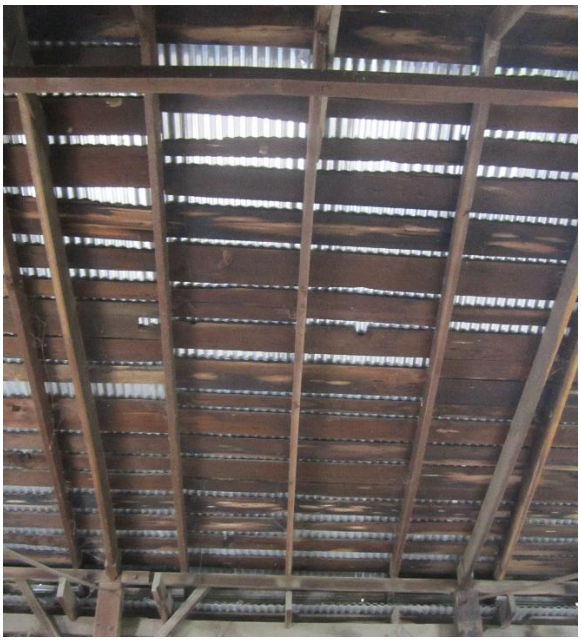


Figure 11. View of wood skip sheathing showing the various sizes and spacing typical at the center gable.

Figure 12. Numerous fastener penetrations for roof panels.

Figure 13. Fasteners not attached to the wood skip sheathing (arrows).

The wood rafters for the center gable section of the roof are irregularly spaced, varying from 9 inches to 35 inches, and are supported by wood beams that are supported by wood columns (Figure 14) with diagonal wood knee braces between the beams and columns. Two horizontal steel tie rods connect the tops of the wood columns along the east and west sides of the center section (Figure 15).

Figure 14. Wood rafters supporting the center section of roof with wood skip sheathing and corrugated metal deck.

Figure 15. Horizontal steel tie rod attached to the top of the wood post.

At the east and west sides, the shed roofs have a shallower slope than the center section. The framing consists of wood rafters supporting wood skip sheathing overlain with corrugated metal panels. The spacing of the rafters varies from an average of 23 inches on the east to 35 inches on the west side. The rafters are supported by the exterior walls on the east and west ends of the building (Figure 16 and Figure 17) and by wood beams attached to the sides of the wood columns that support the rafters for the center gable roof section (Figure 18 and Figure 19). The beams supporting the rafters for the west side are nominally about 2 inches by 4 inches (Figure 18), whereas the beams supporting the rafters for the east side are nominally about 2 inches by 6 inches (Figure 19).

Figure 16. Roof rafters for the west side supported on the exterior wall.

Figure 17. Roof rafters for the east side supported on the exterior wall.

Figure 18. Wood beam (arrow) supporting west side shed roof rafters.

Figure 19. Wood beam (arrow) supporting east side shed roof rafters.

The framing for the attic floor consists of wood planks supported on wood joists. In the center and west sections of the barn, the joists span across the north-south direction of the barn and are supported by east-west interior beams and on the north and south exterior walls (Figure 20). In the east section of the barn, the attic joists span in the east-west direction and are supported by the east exterior wall and north-south wood beams as shown in Figure 21.

Figure 20. Wood attic joists (arrows) in the center section supported by a wood beam and the exterior wall.

Figure 21. Wood attic rafters in the east section supported on north-south wood beams (arrows).

In the center section of the barn, the attic joists are supported by wood beams that are supported by wood columns with diagonal wood knee braces between the beams and the columns. The flooring consists of wood planks. Two openings exist in the attic floor: one near the center of the attic that is covered with wood boards, and one on the east side of the center section that is protected by a wood guardrail (Figure 22 and Figure 23).

Figure 22. Attic floor opening covered with wood boards (arrow).

Figure 23. Attic floor opening surrounded by wood guardrail.

The interior and exterior wood columns are supported by brick footings (Figure 24), except around the perimeter of the milk room, where the walls are supported by concrete footings (Figure 25). Throughout most of the barn, the floor is soil except in the east side there is a wood plank floor (Figure 26) and in the milk room there is a concrete slab (Figure 27). A drain exists in the floor of the milk room.

Figure 24. Wood post supported on square brick footing.

Figure 25. Concrete footing (arrow) supporting wall of the milk room.

Figure 26. Wood floor in the east side of the barn.

Figure 27. Concrete floor slab in the milk room.

CONDITION ASSESSMENT

WJE engineers and architects performed a site visit of the barn on August 29, 2019. During the site visit, the barn and surrounding area was photographed using an unmanned aerial vehicle (drone) and detailed observations were made of the barn framing from the interior. We prepared drawings showing the barn framing. These drawings are presented in Appendix A. Following the site visit, structural calculations were prepared to assess the existing framing for gravity loads, wind loads, and seismic loads using the provisions of the current (2019) California Existing Building Code (CEBC). The results of our observations and analyses are described below.

Roof

The corrugated metal roof panels are in fair condition. On the east side of the center gable, there appears to be biological growth and soil accumulation on the metal panels themselves as well as at the transition to the shed roof (Figure 28). Fasteners have become dislodged and are protruding from the roof surface (Figure 29). Several small holes were observed in the roof panels and leaking of the roof during rainstorms was reported. The ridge cap flashing is also showing signs of distress and fasteners are beginning to protrude from the roof surface at this location as well (Figure 30). The gutters on the east and west shed-roof eaves appear to be in fair condition when observed from the ground level. However, it is unclear how the gutters are flashed due to limited access. At the short gutter on east side of the barn, because there is no downspout, holes have been punched into the bottom of the gutter at one side and the gutter is beginning to corrode (Figure 33). At the west eave, where the gutter is attached directly to the rafter tails, we observed one rafter tail that was deteriorated (Figure 31). On the east side, where fascia is present, there are roughly six rafter tails that are deteriorated (Figure 32).

Figure 28. Corrosion, biological growth, and soiling on roofing panels on the west side.

Figure 29. Protruding fasteners at roof transition.

Figure 30. Distressed ridge flashing.

Figure 31. Deteriorated rafter tail on west side.

Figure 32. Deteriorated rafter tails on east side.

Figure 33. Soiling and corrosion at the underside of the gutter on the east side.

At the interior of the attic, where the roof transitions from the gable to shed roof, the "L" flashings appear to be in good condition; there are no visible signs of water infiltration at these two locations (Figure 34). At areas where numerous fasteners were used, or missed the underlying wood skip sheathing, the panels show signs of corrosion on the underside and the skip sheathing is deteriorated and split (Figure 35 and Figure 36). Additionally, throughout the skip sheathing boards, there is damage from wood-boring insects (Figure 37).

Figure 34. "L" flashing from the interior.

Figure 35. Corrosion at fastener that did not penetration skip sheathing.

Figure 36. Deteriorated skip sheathing.

Figure 37. Damage to the skip sheathing from wood-boring insects.

Hazardous Materials

SCA Environmental performed an assessment of the barn for the presence of potential hazardous materials. Sampling of representative materials was performed on August 29, 2019 and the samples were then sent to laboratories to test for the presence of lead, asbestos, and other potentially hazardous materials. The results of the testing found no materials containing asbestos. The interior and exterior paint was found to contain detectable amounts of lead. No other hazardous materials were found. A copy of the hazardous materials testing is included in Appendix B.

Site and Geotechnical

On September 16, 2019, Langan performed a limited geotechnical investigation of the site. A copy of their report is provided in Appendix C. Their investigation found that the existing soil are moderately expansive when subjected to variations in moisture. The allowable bearing pressure is 3,000 pounds per square foot for supporting combined dead loads and live loads.

Our preliminary analysis found that at some of the columns, the bearing pressure on the soil due to the design loads exceeds the allowable bearing pressure. This is based on the assumption that the footings are 12-inches square, as measured above the ground surface. If the footings increase in area below grade, most of the footings are adequate for gravity loads; however, footings that are required to resist wind and seismic loads will likely need to be enlarged by approximately 6 inches on each side.

The barn is located on a relatively level site. A dirt road passes along the north side of the barn with a seasonal creek to the north of the road. The data from the drone survey was used to develop a rough contour map of the site, which shows a very shallow slope of about 1 foot vertical downward over a horizontal distance of 75 feet (1 percent) from the south of the barn to the creek to the north (Figure 38).

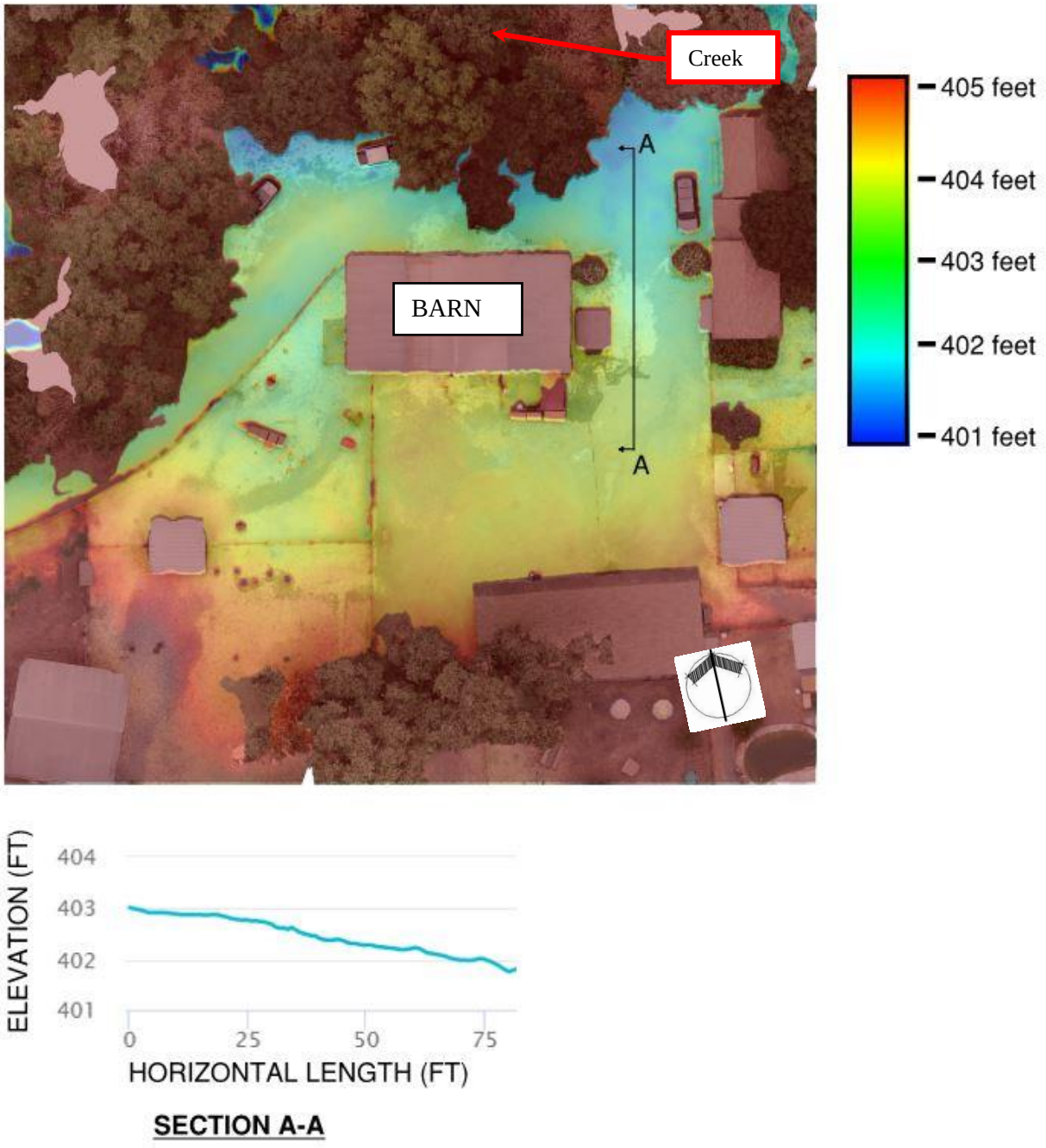


Figure 38. Site elevation based on data from drone survey showing a 1-foot elevation drop across the section to the east of the barn marked as A-A.

Structural Evaluation

Gravity Loads

The CEBC allows damaged elements to be restored to their pre-damage condition. This will apply to the skip sheathing as well as any rafters that are damaged as identified during the replacement of the roofing. If found to be damaged and in need of repair, our analysis indicates that the existing roof rafters and beams are overstressed for current CBC design loads. The roof rafters do not have blocking installed at the supports of the rafters; this blocking is necessary for lateral restraint at the ends of the beams. Due to the lack of blocking, the roof structure in its current condition does not have the required strength to support any of the-code required roof live load. If blocking were installed, the rafters for the center section and the shed roof sections would be capable of supporting less than half of the required roof live load (about 6 to 9 pounds per square foot (psf) compared to the 20 psf required by the CBC).

In addition, one set of diagonal knee braces for the beams that support the rafters for the center portion of the roof are missing and should be replaced (Figure 39). There is visible water staining of some of the rafters (Figure 40). Although these structural deficiencies are concerning, they are not an immediate concern for safety of the roof.

Figure 39. Locations where diagonal knee braces are missing (arrows)

Figure 40. Staining of roof rafters (arrows) likely caused by water leakage.

Our analysis of the attic floor indicates that the framing for the attic floor is capable of supporting at least 20 psf of design live loading. However, there are several conditions that should be addressed: One of the joists supporting the attic framing has numerous holes and a notch in the joist, and there are cracks in the joist that have significantly reduced its strength. (Figure 41); along the opening for the stair, two of the joists are supported by a perpendicular beam that is then supported on one end by a joist (Figure 42). This condition causes the joist supporting the beam to be overstressed when supporting the design live load in the attic space. The cracked joist is considered damaged and is required to be repaired or replaced to meet requirements of the CEBC. The framing around the stair opening is an existing, undamaged condition that could remain, but should be voluntarily strengthened if the stairs remain.

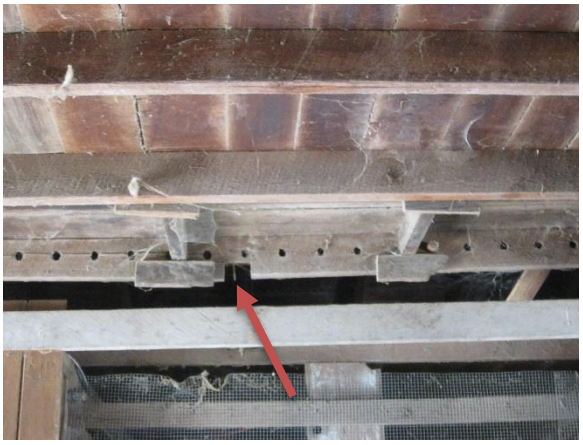


Figure 41. Attic joist weakened by holes and notch (arrow).

Figure 42. Attic joists supported by beam (red arrow) along the side of the stair opening. Joist (green arrow) supporting beam is overstressed.

The beams supporting the attic joists in the center section of the barn have diagonal knee braces connecting the beams to the wood columns. These knee braces were constructed to be inserted into notches in the columns. It appears that there was other framing that was mortised into the columns that was subsequently removed and some additional notching for unknown purposes (Figure 43). Some of the columns have supplemental wood framing added to the side to strengthen them (Figure 44). The mortising has caused the columns to be weaker and overstressed even in some locations where the columns have been strengthened with supplemental framing. The mortising was an original condition and not damage and therefore would not be required to be strengthened. The additional notching of the columns will need to be treated as a repair such that the columns are strengthened to meet the CEBC requirements.

Figure 43. Mortising of wood column (red arrow) and notch in column (green arrow).

Figure 44. Column mortise (Red arrow) and wood reinforcing plate (green arrow)

The wood columns are supported by wood shims on top of the brick footings that 12 inches square. The height of the brick footing above the adjacent ground varies from less than 4 inches to about 9 inches (Figure 45). The sizes of the footings below grade are not known. There is no observable structural connection of the column or wood shim to the brick footing (Figure 46). The brick footings appear to be in good condition with no obvious indications of deterioration, such as cracking or deterioration of the mortar. Since there is no damage to the footings, there is no CEBC requirement to upgrade the footings. However, voluntary strengthening of some of the footings may be performed where, based on our analysis, the soil pressures at the footings for design loads exceed the allowable bearing pressure provided by the geotechnical engineering report and to address the lack of connection of the columns to the footings.

Figure 45. Brick footing extending above the adjacent ground.

Figure 46. Wood shim between the column and the brick footing.

In the east section of the barn, the attic joists are supported by a wood beam that spans across the width of the building. At the north and south ends, this beam is supported by a wood beam that is an extension of the door header (Figure 47). On the interior, the attic beam is supported by five wood posts that are located between the former horse stalls. These posts are installed with a slope and are supported on the wood floor (Figure 48). The support framing for these inclined columns as well as the wood floor is unknown. Given that the wood flooring in the east section is decayed, we have assumed that the bases of these inclined columns are also damaged due to decay and that the bases of the posts will need to be strengthened to meet CEBC design requirements.

Figure 47. Door header beam (red arrow) supporting attic support beam (green arrow).

Figure 48. Sloped wood column supporting attic beam.

Wind and Seismic Loads

Lateral loads on the barn due to wind and seismic forces are resisted primarily by the exterior wood sheathing. Since there is no substantial structural damage to the wall framing that resists lateral loads, there is no requirement by the CEBC to evaluate or upgrade the seismic or wind resistance of the building. A voluntary evaluation was performed to assess the existing conditions. For wind and seismic forces acting in the north and south directions (perpendicular to the long sides of the building) the wind forces would govern the design based on the 2019 CBC requirements. The forces in the north and south directions are resisted by the exterior walls on the east and west sides of the building and interior lines of columns between the center section and the east and west sections. Although the east and west walls are sheathed with vertical wood boards, which is not typically used for resisting lateral forces, the required design force on these walls is relatively small and the walls were judged to be adequate; however the connection at the base of the walls to the foundation relies on the wood posts that are not directly attached to the brick foundations except at the milk room. In addition, the building lacks a structural diaphragm to transfer lateral forces to the exterior walls: the roof sheathing is not detailed to act as a diaphragm and the attic floor is interrupted by offsets between the center section and the east and west sections. The interior lines of columns are not designed and constructed to provide adequate resistance to these design lateral demands. Additionally, the lateral forces need to be transferred to these elements by the roof and attic floor which were also not designed and constructed to act as structural framing to transfer these lateral forces.

For lateral forces in the east and west directions (parallel to the long direction of the barn), lateral forces are resisted by the exterior wood walls on the north and south sides. Due to the amount of openings in the north side wall and the deterioration of the wood sheathing due to wood decay, the length of wall that can effectively resist lateral forces is minimal (Figure 49 and Figure 50). Similar to the east and west walls, the walls on the north and south sides are not structurally connected to the brick footings that support the wood columns.

Figure 49. Door openings in north side (red boxes)

Figure 50. Deteriorated wood sheathing at the base of the north side wall (arrow).

The roof rafters are subject to uplift forces from wind blowing over the top of the building. The uplift forces due to the design wind pressures exceed the uplift capacity of the connection of the rafters to the roof beams.

Interior Evaluation

At the east side, the wood floor is supported on wood framing that is elevated above the ground. The floor boards appear to be in serviceable condition with no holes or extensive areas of decay. The framing supporting the wood floor however, appears severely decayed based on limited observations. The damaged flooring needs to be repaired. Removal of the existing flooring will be needed to assess the scope of the repairs, but full removal of the flooring should be assumed.

The soil floor in the center section of the barn is reportedly subjected to rodents burrowing up through the floor. Additionally, it was reported that water in the center section of the barn does not adequately drain.

The wood stairs that provide access to the attic are not compliant with current building requirements, but the CEBC allows existing stairs and handrails to remain. The depth of the treads varies and is typically about 7 inches, which is less than the required width of 11 inches (Figure 51) and the height of the risers is typically about 10 inches, which is greater than the required maximum riser height of 7 inches (Figure 52). The width of the stairway is less than the current building code required minimum width of 36 inches. In addition, a handrail exists on only one side of the stair and the handrail does not meet the building code requirements for hand-grasp or extension at the top or bottom.

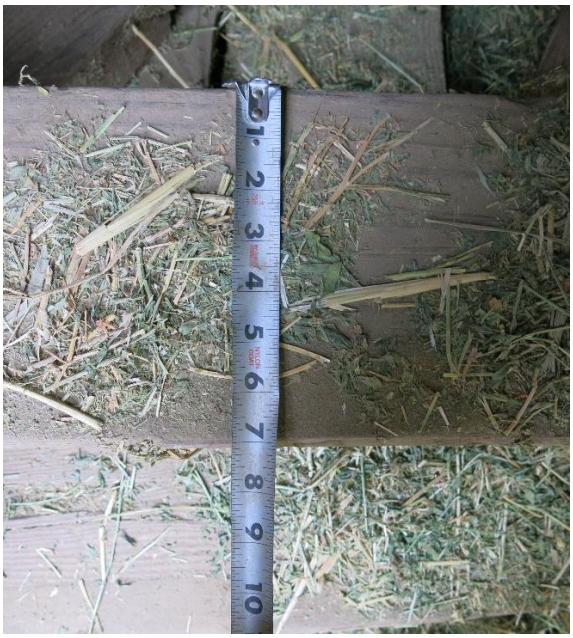


Figure 51. Horizontal width of attic stair tread.

Figure 52. Vertical rise of attic stair.

BASIS OF DESIGN RECOMMENDATIONS

Replacement of the roof to mitigate water leakage and repair of other water-related damage would be the motivation for the proposed repairs. There are a number of other conditions at the Deer Hollow White Barn that could also be addressed to maintain the building in a serviceable condition. In developing recommendations, we have used the CEBC requirements for repair of damage. Conditions that are not damaged but would be prudent to strength have been included and the design of that strengthening is intended to meet the requirements of the CEBC. Where the recommendations are affected by the results from the hazardous materials report, the treatment of those materials is discussed below. A preliminary cost estimate for the proposed repairs and strengthening has been prepared by Hattin Construction Management, Inc. (Hattin). A copy of the estimate has been provided in Appendix D.

Service Impact

We expect that the proposed repairs will impact the use of the barn during construction. This impact will include removal of the material being stored in the barn and relocation of the goats and milking operations. It may be possible to phase the work so that the entire barn is not disrupted for the entire duration of the project; however, due to the expected noise to be generated by the repairs, it will be likely that the goats may need to be out of the barn for the duration of the repairs.

Roof

We recommend that the sheet metal roof panels be removed and replaced in kind, or with a different material. The in-kind replacement would be to install new corrugated sheet metal panels with new flashings, drip edges, and ridge cap to match the existing. Another option for roof replacement would be to install new fire-retardant wood shakes per the assumed original design, however, there are a number of factors to consider as outlined below.

Four factors to consider in choosing the material for replacement of the roof are: cost, durability, fire resistance, and structural impact. Replacing the roof with new corrugated sheet metal panels will likely be less expensive than wood shakes. The metal panels are also more durable and more fire resistant than the wood shakes. Replacing the roof with new wood shakes would require the new assembly to be fire retardant per California Health and Safety Code. Per HSC 13132.7 (b), "the entire roof covering…shall be a fire-retardant roof covering that is at least class C…"[1] Because the barn is not listed on the National Register of Historic Places, it is not exempt from this requirement. If new wood shakes are chosen to replace the existing metal panels, we would recommend the use of a rated assembly, consisting of fire-retardant treated wood shakes, and the appropriate underlayment. However, adding the necessary underlayment would add weight to the building that would cause the rafters to be overstressed. A metal panel roof that weighs the same as the existing roof would not require strengthening of undamaged roof framing. We therefore recommend replacing the existing corrugated metal panels in kind with new metal panels to match.

With either approach, we recommend that any damaged skip sheathing be removed and replaced as necessary. The replacement sheathing can matching the existing sheathing per the CEBC. We recommend that a "sister" rafter be installed directly next to any damaged rafters, extending beyond the exterior wall.

One option to control water accumulation would be to remove the existing gutters and downspout and install new gutters that extend across the width of the barn with downspouts that would discharge onto splash blocks. Alternately, the water from the roof can be allowed to flow off the roof onto the ground, which was likely the original historic configuration. A French drain filled with gravel could be used to allow the water to discharge without accumulating next to the building or causing surface erosion.

Wood blocking should be installed at the ends of the roof rafters. The 2 by 4 inch nominal beam supporting the rafters for the west side shed roof should be strengthened by adding an additional beam to supplement the existing beam. The missing diagonal knee braces should be replaced to match the other knee braces. All of the knee braces should have steel strap connections added at the brace to column and brace to beam connections.

Exterior Walls

The exterior wall sheathing is not intended to provide a watertight enclosure for the building. Where it is undamaged, the exterior sheathing can remain. Existing wood sheathing that is deteriorated should be removed and replaced with wood sheathing to match the existing. Wood species that are decay resistant, such as redwood and cedar, can be used to improve the long-term durability; however, it would be preferable to match the species of the original wood siding, which is likely to be either Douglas Fir or Redwood. A sample of the wood can be taken for testing during the design phase to determine the species of wood.

We recommend that selected sections of the exterior walls should be voluntarily strengthened to resist wind and seismic forces prescribed by the current CBC. The areas to be strengthened would be one section of east and west walls and two sections on the north and south walls between existing wood posts on each side of the building. The strengthening can consist of diagonal wood braces installed between existing wood posts. New steel brackets will be needed to connect the diagonal braces to new concrete footings installed

[1] California Health and Safety Code. "HSC 13132.7". https://codes.findlaw.com/ca/health-and-safety-code/hsc-sect-13132-7.html

at the bases of the diagonal braces. A new horizontal beam should be installed at the base of the wall between footings where the diagonal braces are installed.

Attic Framing

The attic framing is generally adequate to support light storage loads, as it is currently being used. Heavy storage or public access would require significant strengthening of the framing. The existing joist that has holes and notches should be repaired by replacing the joist or strengthened with the addition of a new joist to the side of the existing. The joists adjacent to the stair opening should be strengthened with the addition of new wood framing attached to the side of the existing joists. Wood columns with notches should be repaired and the mortised wood columns supporting the attic should be strengthened by adding new wood members on the side of the existing columns. The new wood members should extend down to the footings, and connections using steel connectors should be installed at the footings.

The existing wood planking at the attic floor should be maintained in its current original appearance as viewed from the ground floor. Strengthening the attic floor to resist lateral forces can be accomplished by installing plywood sheathing on top of the existing floor sheathing. This plywood would also act as structural support to span across areas of the existing floor sheathing that have been deteriorated due to wood decay and provide a more uniform walking surface when accessing the attic.

The CEBC allows the existing stair that provides access to the attic to remain in its current condition. If the District desires to improve the use of the stair, the existing stair can be removed and replaced. Due to code requirements for design of stairs, a new stair in its current location would protrude into the large door opening on the north side of the barn. One option for replacement would be to install a pre-fabricated attic ladder that pulls down from the attic in place of the existing stair. This would minimize the potential blockage of the north side door opening. Another option would be to remove the stairs and install a steel ladder at the location of the stairs. The steel ladder would need to be supported on a concrete footing.

A prefabricated pull-down ladder would not require installation of a foundation and will not take up room within the barn when it is not in use. The prefabricated attic ladder will also be easier to use than a fixed steel ladder for going up and down, particularly when carrying items to and from the attic. The steel ladder would not require an effort to pull down and push up for use and storage.

Ground Floor and Foundation

In the east section of the barn, the structural framing for the wood floor is suspected to be deteriorated and should be repaired. Since the condition of the framing cannot be fully known until the framing is exposed by removing the floor boards, we recommend that the floor boards for the entire floor should be removed and assume that new support framing be installed to meet the current CBC designs requirements. In addition, since the supports for the interior sloped wood posts are also unknown, we recommend assuming that new supports under the interior posts will be needed.

One option is to install a new concrete grade beam that extends across the width of the barn and is located below the sloped wood columns. New pressure-treated wood framing would be designed to span from the east exterior wall to the new grade beam and from the new grade beam to the interior wall that separates the east side from the center section of the barn. The wood framing would be designed to support the reinstallation of the original wood floor boards. Additional isolated concrete footings may also be needed along these two walls.

Another option would be to install a concrete floor slab throughout the east section of the barn. The concrete slab can be designed to support the sloped wood columns. Wood "sleepers" (wood members that lay on the concrete floor slab) would be installed to support the reinstallation of the original wood floor boards.

The first option to install a concrete grade beam will require that a crawl space be provided below the new wood framing. This crawl space may provide a habitat for animals. The second option of a concrete floor slab prevents most animals from accessing the area under the floor. This floor slab would need to be installed with slope and a drain to prevent water accumulation under the floor.

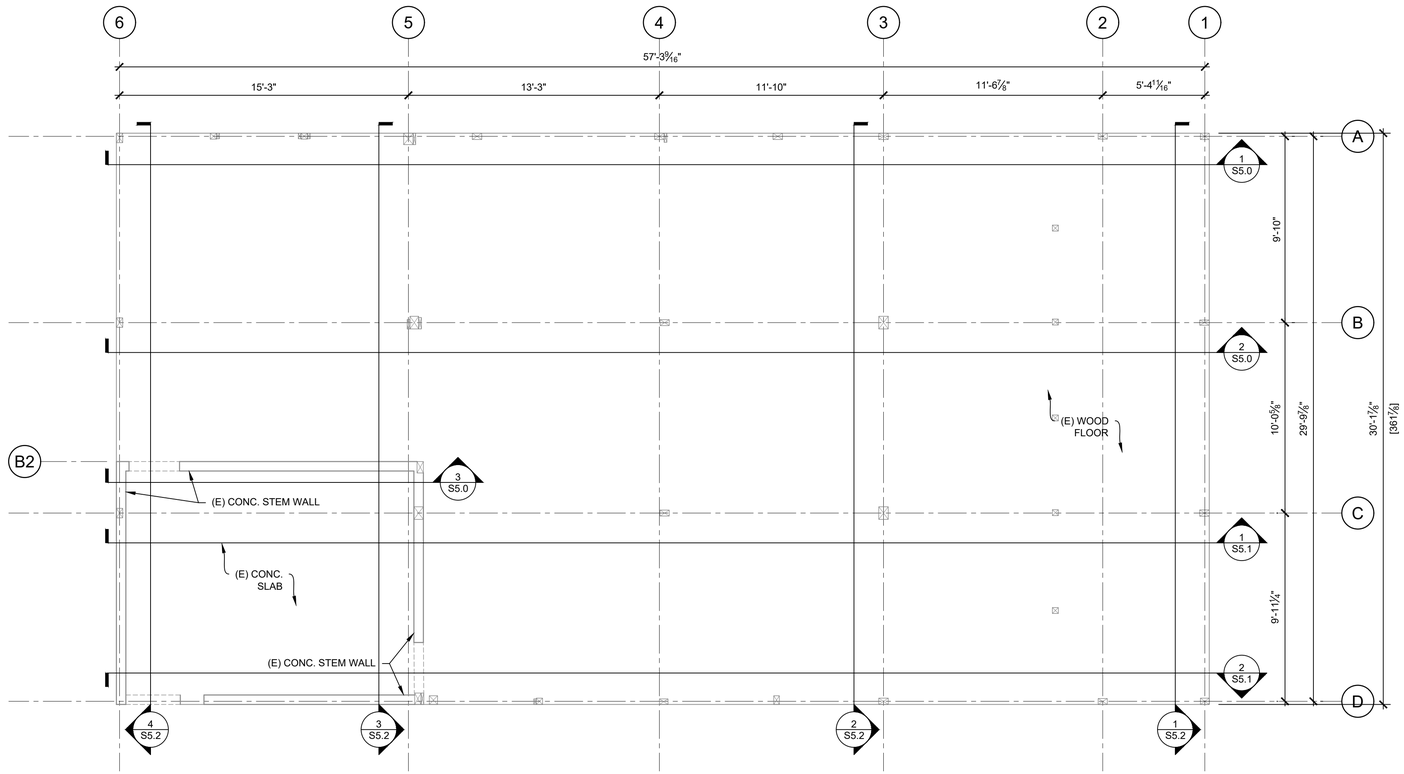
The existing footings for the wood columns at the interior and along the perimeter of the building can remain since they are not damaged. For those footings that will need to have additional wind and seismic loads applied, the size of the footings below grade may need to be determined to assess whether the bearing pressures are adequate. If the existing footings are found to be inadequate for the additional loads, supplemental strengthening of the footings will be needed by adding concrete to increase the effective size. Additionally, connections will need to be added to attach the bases of the columns to the footings. This can be accomplished using steel plates attached with screws to the wood posts and with anchor bolts to the brick footings. We also recommend removal of the soil in the center section (See Figure 1) to a depth of about 12 inches and installation of a porous concrete slab. The porous concrete slab would prevent rodents from burrowing up into the barn and would allow water that may get into the barn to drain into the soil below. The porous concrete slab should be overlain with a geotextile fabric that is then covered with 4 to 6 inches of soil to maintain the current appearance of having a dirt floor.

Fire Safety

As an existing building, there is no requirement for improving the fire safety of the building. There are voluntary improvements that could be made. One recommendation would be that the new roof sheathing be a fire-resistant assembly to protect the roof from air-born embers or other potential sources of ignition. Another recommendation would be to install smoke detectors in each roof and in the attic and provide fire extinguishers within the building.

Installation of a fire sprinkler system is not required but would have a benefit to protecting the structure given the remoteness of the site. Installation of a sprinkler system is likely to require local strengthening of the roof rafters that support the sprinklers since the existing roof framing is marginally adequate to support current design loads.

APPENDIX A - BARN DRAWINGS



1 FOUNDATION PLAN
SCALE: 1/4" = 1'-0"

WJE ENGINEERS ARCHITECTS MATERIALS SCIENTISTS

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Philadelphia | Princeton | San Francisco | Seattle | South Florida | Washington, D.C.

Consultants

Project

DEER HOLLOW FARM
WHITE BARN
RANCHO SAN ANTONIO
PRESERVE
22500 CRISTO REY DR,
CUPERTINO, CA 95014

Client

MIDPENINSULA REGIONAL
OPEN SPACE DISTRICT
330 DISTEL CIRCLE
LOS ALTOS, CA 94022

Mark	Date	Description

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THIS SHEET PLOTS FULL SIZE AT 22x34 (INCHES)

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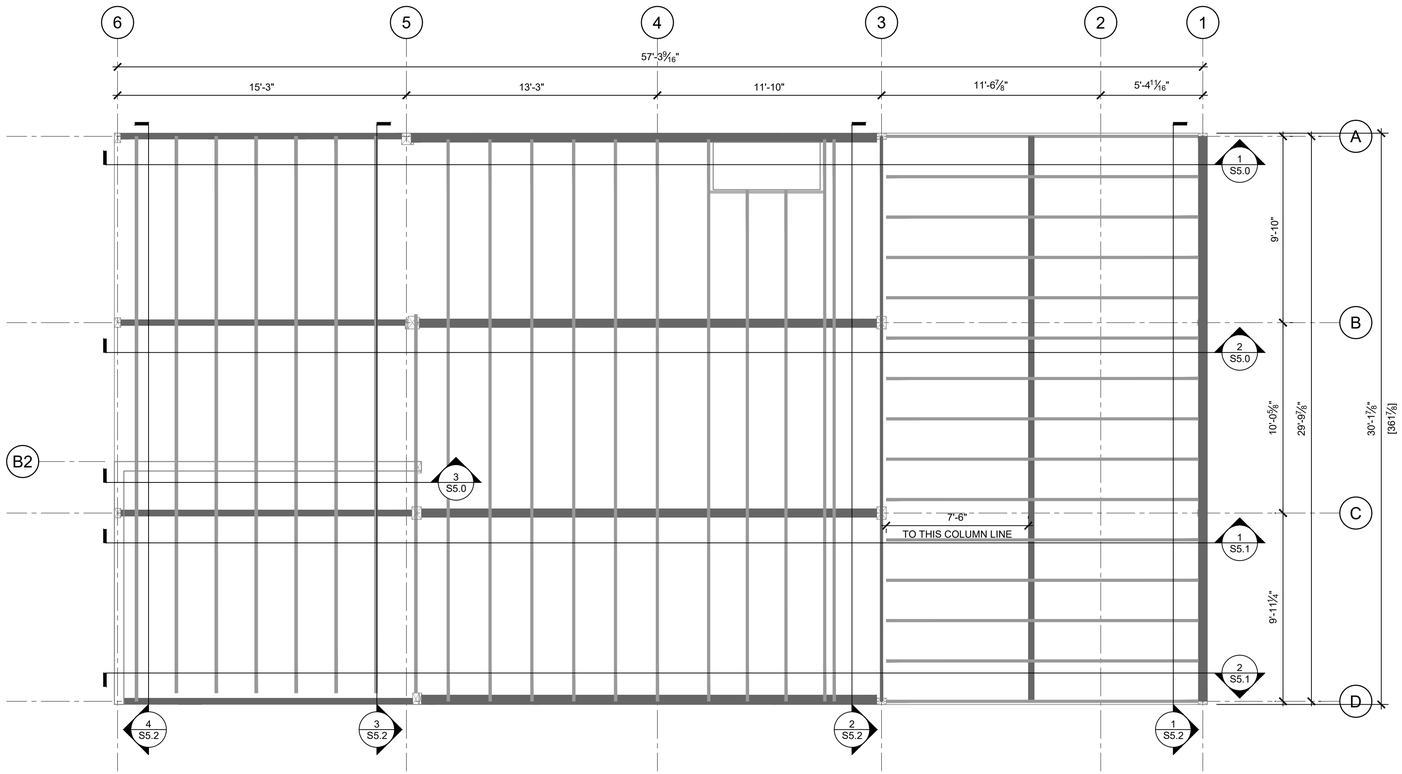

1 ATTIC FLOOR PLAN
SCALE: 1/4" = 1'-0"

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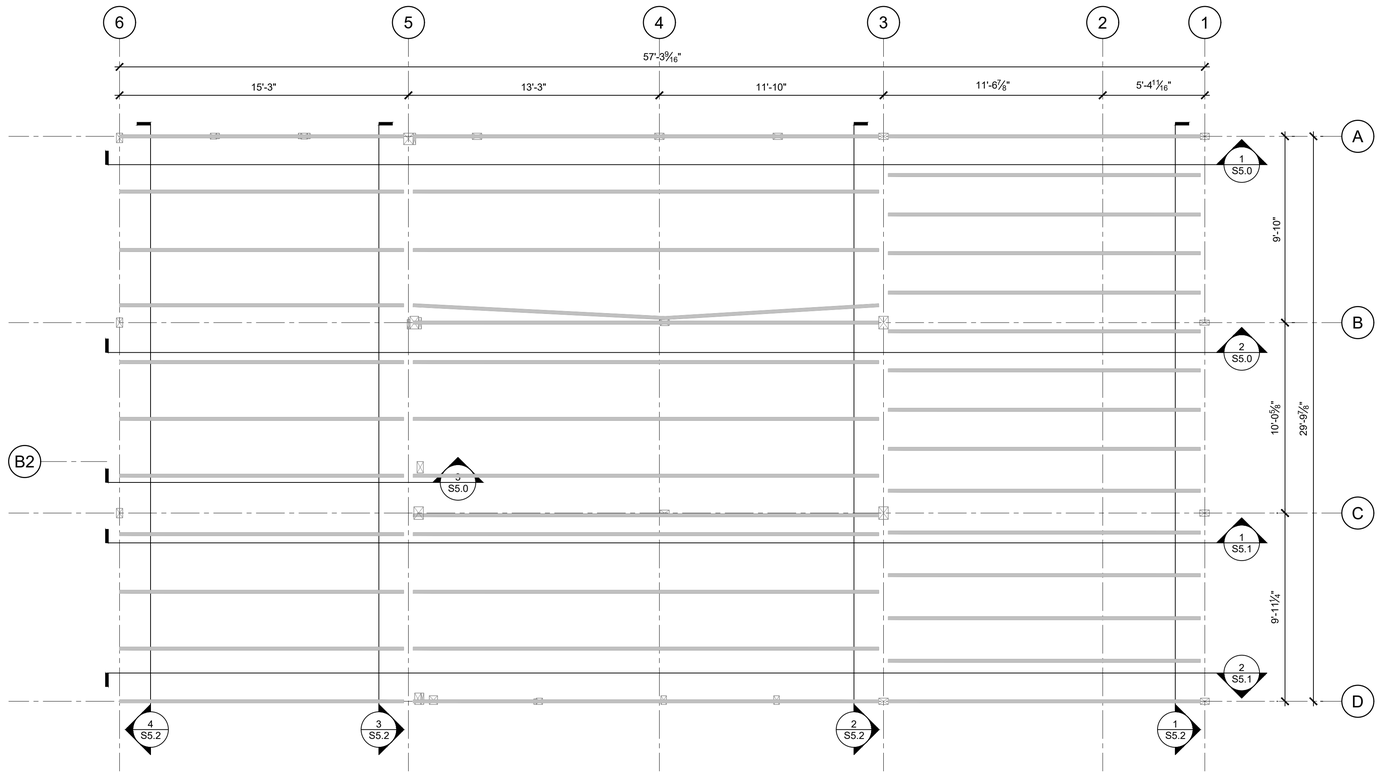

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ROOF RAFTER PLAN
SCALE: 1/4" = 1'-0"

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Consultants

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ROOF RAFTER PLAN

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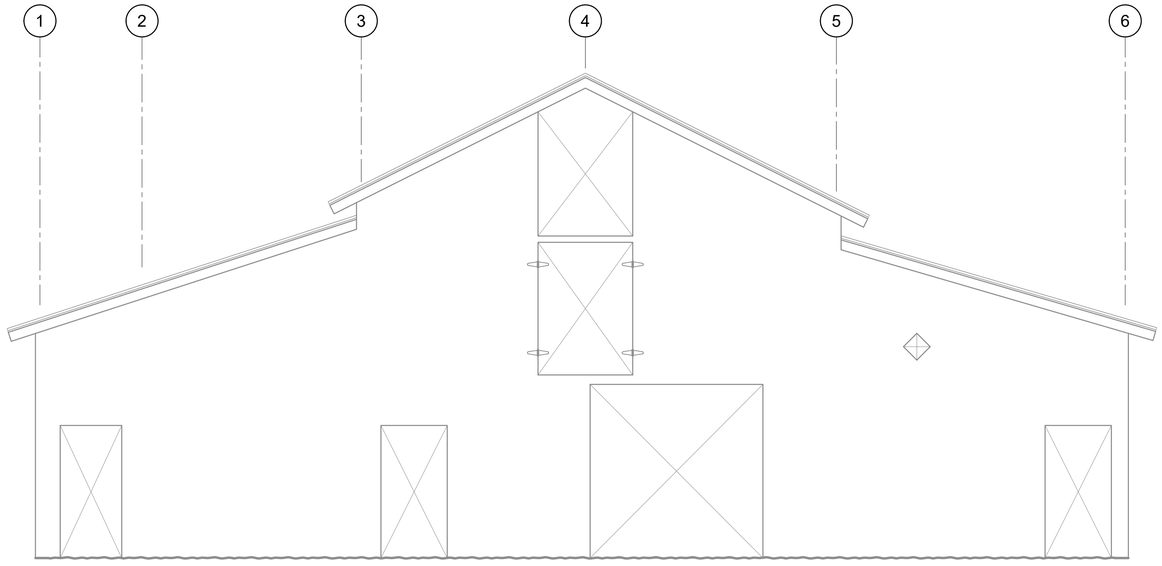

NORTH ELEVATION
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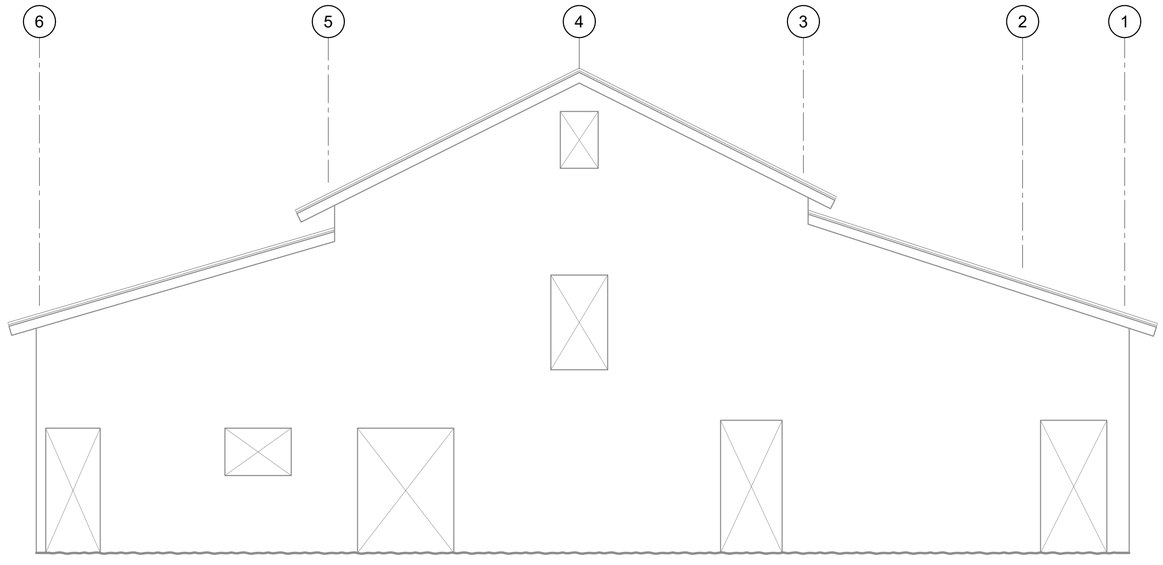

SOUTH ELEVATION
SCALE: 1/4" = 1'-0"

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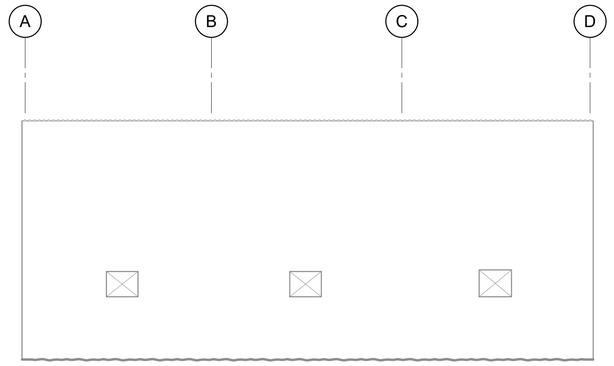
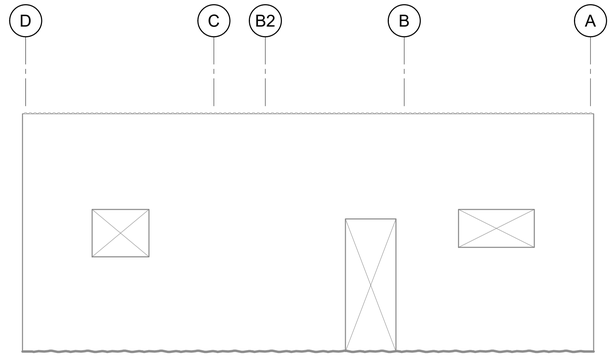
NORTH AND SOUTH ELEVATION

Sheet Title

Sheet No. **S4.0**



EAST ELEVATION
SCALE: 1/4" = 1'-0"



WEST ELEVATION
SCALE: 1/4" = 1'-0"

WJE ENGINEERS ARCHITECTS MATERIALS SCIENTISTS

Wiss, Janney, Elstner Associates, Inc.
2000 Powell Street, Suite 1650
Emeryville, California 94608
510.428.2907 tel | 510.428.0456 fax
www.wje.com

Headquarters & Laboratories: Northbrook, Illinois
Atlanta | Austin | Boston | Chicago | Cleveland | Dallas | Denver | Detroit
Honolulu | Houston | Los Angeles | Minneapolis | New Haven | New York
Philadelphia | Princeton | San Francisco | Seattle | South Florida | Washington, D.C.

Consultants

Project

DEER HOLLOW FARM WHITE BARN
RANCHO SAN ANTONIO PRESERVE
22500 CRISTO REY DR,
CUPERTINO, CA 95014

Client

MIDPENINSULA REGIONAL OPEN SPACE DISTRICT
330 DISTEL CIRCLE
LOS ALTOS, CA 94022

Mark	Date	Description

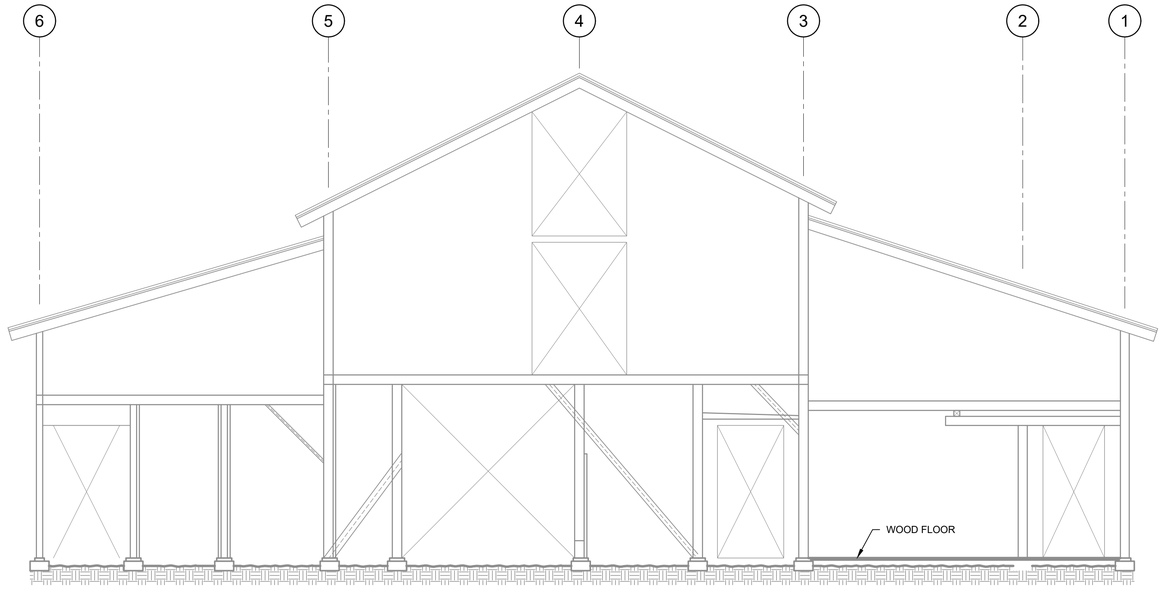
0 1/2" 1" 2"
THIS SHEET PLOTS FULL SIZE
AT 22x34 (INCHES)

Project No.	2019.0656.0
Date	Value
Drawn	QAG
Checked	BEK
Scale	As Noted

EAST AND WEST ELEVATION

Sheet Title

Sheet No. **S4.1**



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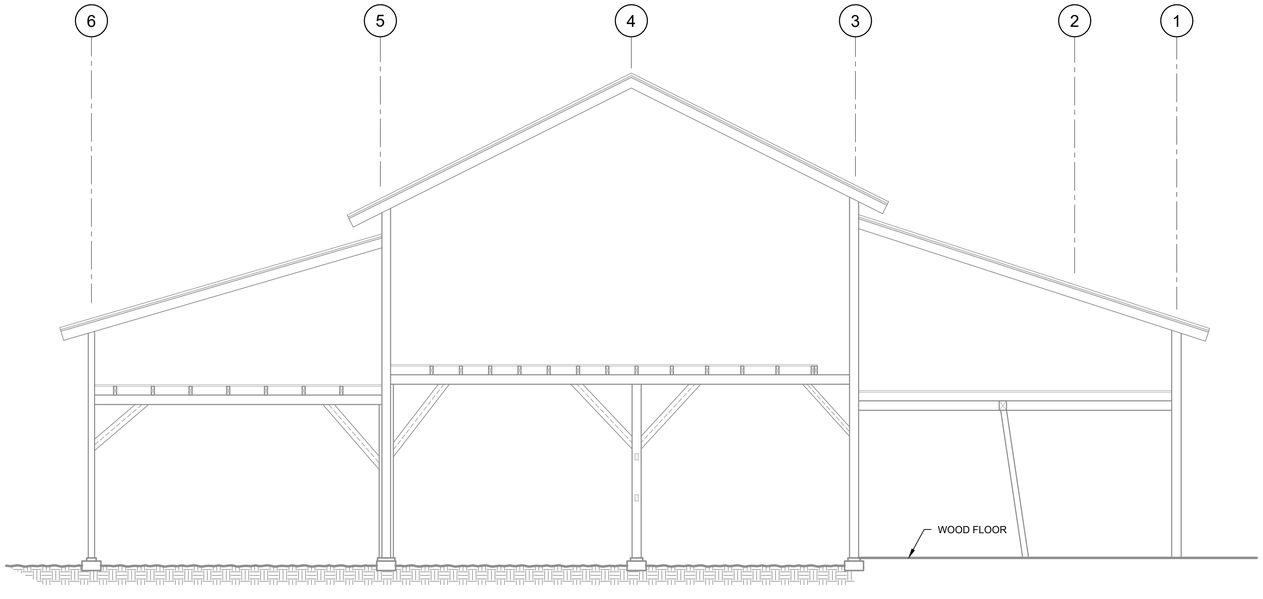
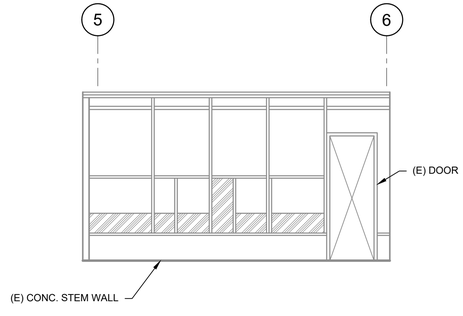


2 GRID LINE B INTERIOR SECTION
SCALE: 1/4" = 1'-0"



3 GRID LINE B2 INTERIOR SECTION
SCALE: 1/4" = 1'-0"

WJE ENGINEERS ARCHITECTS MATERIALS SCIENTISTS

Wiss, Janney, Elstner Associates, Inc.
2000 Powell Street, Suite 1650
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Honolulu | Houston | Los Angeles | Minneapolis | New Haven | New York
Philadelphia | Princeton | San Francisco | Seattle | South Florida | Washington, D.C.

Consultants

Project

DEER HOLLOW FARM WHITE BARN
RANCHO SAN ANTONIO PRESERVE
22500 CRISTO REY DR,
CUPERTINO, CA 95014

Client

MIDPENINSULA REGIONAL OPEN SPACE DISTRICT
330 DISTEL CIRCLE
LOS ALTOS, CA 94022

Mark	Date	Description

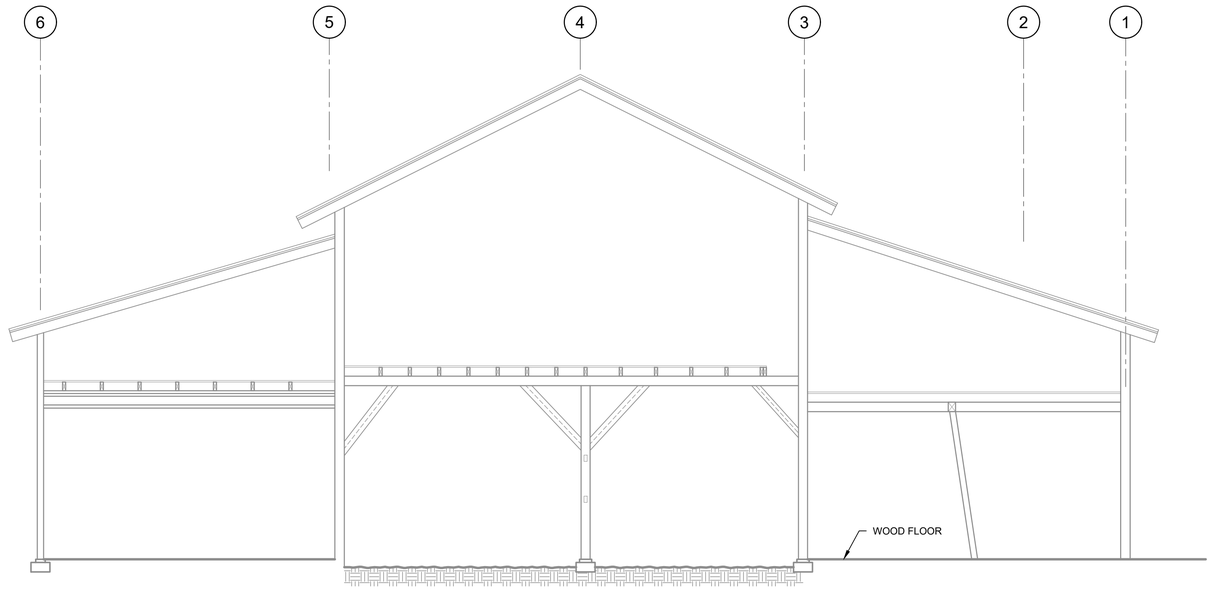
0 1/2" 1" 2"
THIS SHEET PLOTS FULL SIZE AT 22x34 (INCHES)

Project No.	2019.0656.0
Date	Value
Drawn	QAG
Checked	Checked By
Scale	As Noted

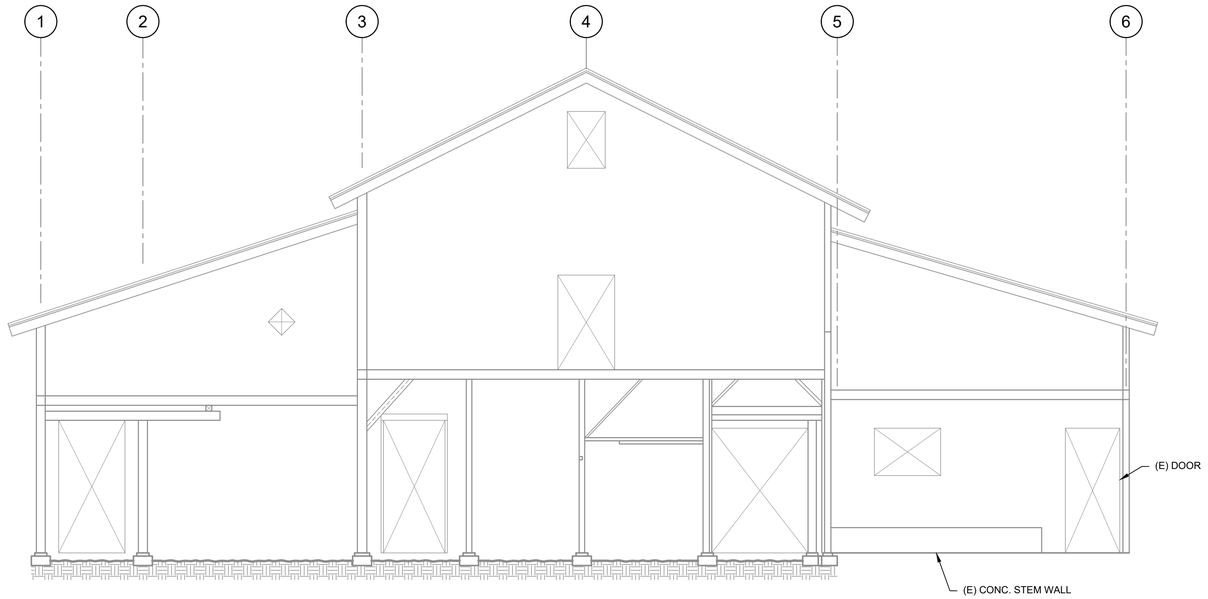
INTERIOR SECTIONS

Sheet Title

Sheet No. **S5.0**



1 GRID LINE C INTERIOR SECTION
SCALE: 1/4" = 1'-0"



2 SOUTH FACING INTERIOR SECTION
SCALE: 1/4" = 1'-0"

WJE ENGINEERS ARCHITECTS MATERIALS SCIENTISTS

Wiss, Janney, Elstner Associates, Inc.
2915 Premiere Parkway, Suite 100
Duluth, Georgia 30097
770.923.9822 tel | 770.232.9044 fax
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Honolulu | Houston | Los Angeles | Minneapolis | New Haven | New York
Philadelphia | Princeton | San Francisco | Seattle | South Florida | Washington, D.C.

Consultants

Project

DEER HOLLOW FARM
WHITE BARN
RANCHO SAN ANTONIO PRESERVE
22500 CRISTO REY DR,
CUPERTINO, CA 95014

Client

MIDPENINSULA REGIONAL OPEN SPACE DISTRICT
330 DISTEL CIRCLE
LOS ALTOS, CA 94022

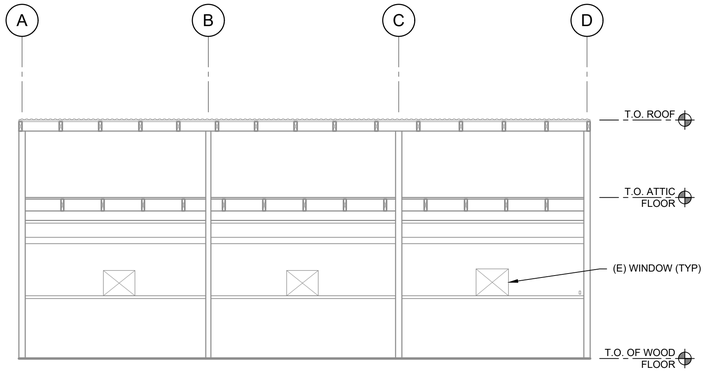
Mark	Date	Description

0 1/2" 1" 2"
THIS SHEET PLOTS FULL SIZE AT 22x34 (INCHES)

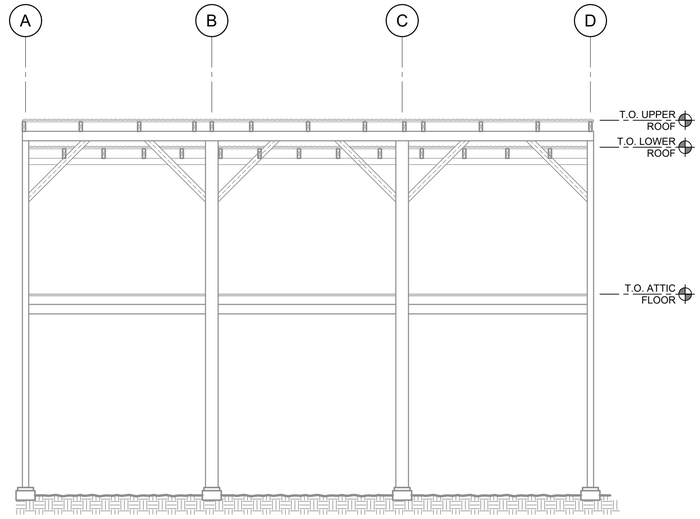
Project No.	2019.0656.0
Date	Value
Drawn	QAG
Checked	Checked By
Scale	As Noted

Sheet Title: INTERIOR SECTIONS

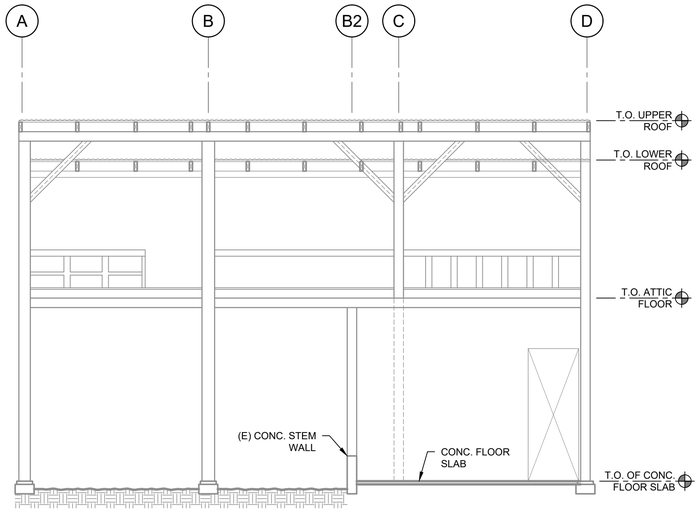
Sheet No.: **S5.1**



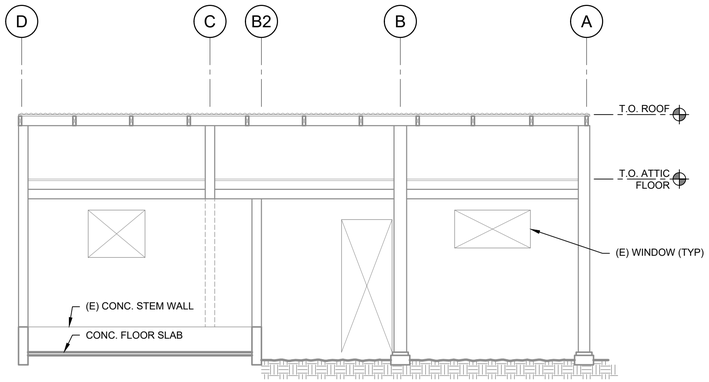
1 EAST FACING INTERIOR SECTION
SCALE: 1/4" = 1'-0"



2 GRID LINE 3 INTERIOR SECTION
SCALE: 1/4" = 1'-0"



3 GRID LINE 5 INTERIOR SECTION
SCALE: 1/4" = 1'-0"



4 GRID LINE 6 INTERIOR SECTION
SCALE: 1/4" = 1'-0"

WJE ENGINEERS ARCHITECTS MATERIALS SCIENTISTS

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Philadelphia | Princeton | San Francisco | Seattle | South Florida | Washington, D.C.

Consultants

Project

DEER HOLLOW FARM
WHITE BARN
RANCHO SAN ANTONIO PRESERVE
22500 CRISTO REY DR,
CUPERTINO, CA 95014

Client

MIDPENINSULA REGIONAL OPEN SPACE DISTRICT
330 DISTEL CIRCLE
LOS ALTOS, CA 94022

Mark	Date	Description

0 1/2" 1" 2"
THIS SHEET PLOTS FULL SIZE AT 22x34 (INCHES)

Project No.	2019.0656.0
Date	Value
Drawn	QAG
Checked	BEK
Scale	As Noted

INTERIOR SECTIONS

Sheet Title

Sheet No. **S5.2**

APPENDIX B - SCA ENVIRONMENTAL REPORT

SCA
ENVIRONMENTAL, INC.

September 13, 2019

Mr. Brian Kehoe, SE
Wiss, Janney, Elstner Associated, Inc. (WJE)
2000 Powell Street, Suite 1650
Emeryville, CA 94608 bkehoe@wje.com

Re: Non-destructive Pre-renovation Hazardous Materials Survey
Deer Hollow Farm White Barn, 22500 Cristo Rey Drive
Cupertino, CA 95014
SCA Project No.: B-13058

Dear Mr. Kehoe:

As requested, SCA Environmental, Inc. (SCA) completed a non-destructive pre-renovation survey at the above-referenced site in Cupertino, CA on August 29, 2019 as part of the future planned renovations. A picture of the building is shown below:

Sampling was limited to materials expected to be impacted by the renovations. Sampling was conducted by Mr. Dan Leung, CIH, CSP, a Cal/OSHA Certified Asbestos Consultant (CAC #07-4175) and a California Department of Public Health Certified Lead Inspector/Assessor and Project Monitor (CDPH #7329). EMSL Analytical, Inc. (EMSL), an NVLAP-accredited laboratory in San Leandro, CA, completed bulk asbestos and lead analyses.

Prior to any renovations or demolition, the National Emission Standard for Hazardous Air Pollutants (NESHAP) mandated by the Environmental Protection Agency (EPA) and locally enforced by the Bay Area Air Quality Management District (BAAQMD) require that all buildings be inspected for asbestos-containing materials (ACM) and materials subject to damage or which will be made friable, be removed.

Methodology
Asbestos sampling was performed in a fashion designed to minimize exposure of the surveyor or others to airborne asbestos fibers. Samples were typically removed from the substrate utilizing a knife or hollow drill bit bored through a wet sponge; the sample material was then placed into an airtight plastic vial. The vial's exterior was decontaminated with a wet sponge, and a unique sample I.D. written on the vial. The vial was then stored in a plastic bag. Sample substrates were patched with a high-temperature caulking compound, where required.

Samples of suspect materials were collected using triplicate sampling procedures, where applicable. Under these procedures, the first sample is analyzed. If it tests positive for asbestos (>1%), the analysis is suspended for further samples of that material. If the first sample tests only trace positive (between 0.1 to 1%), or negative, then the second and third samples are analyzed sequentially, in order to determine the possible presence of asbestos, as applicable. If all three samples test negative, the material is considered as non-asbestos. If one or more samples test "trace" positive (<1%), the material is considered to be trace positive. If one or more samples are positive for asbestos, the material is considered positive.

All asbestos samples collected were submitted to EMSL for analysis by polarized light microscopy with dispersion staining (DS/PLM). The Bay Area Air Quality Management District's (BAAQMD), the Federal Environmental Protection Agency's (EPA), and California Environmental Protection Agency's (Cal/EPA) regulations all specify the DS/PLM method.

Asbestos Standards
ACM is defined by EPA regulations as those substances containing greater than 1% asbestos. The BAAQMD and the Cal/EPA provide local enforcement of these regulations. Friable ACM with greater than 1% asbestos needs to be disposed of as asbestos waste.

Prior to demolition of a building, the BAAQMD requires abatement of friable ACM, as well as non-friable ACM that may become friable during demolition (practically, this means all non-friable ACM).

Federal Occupational Safety and Health Administrations (OSHA) regulations, locally enforced by CAL/OSHA, defines ACM as substances that contain greater than 1% asbestos. Cal/OSHA also mandates special training, medical exams, personal protective equipment and record keeping for employees working with ACM. If a material contains less than 1% asbestos but more than 0.1% asbestos, the material may be disposed of as non-ACM, but the Cal/OSHA requirements would still have to be followed regarding workers' protection and Contractor licensing.

"Trace" materials are currently regulated in California and require the following:

- Removal using wet methods;
- Prohibition of removal using abrasive saws or methods which would aerosolize the material;
- Prompt clean-up of the impacted zone, using HEPA-filtered vacuums, as applicable;
- Employer registration by Cal/OSHA for removal quantities exceeding 100 sq. ft. per year; and
- Cal/OSHA Carcinogen Registration by the Demolition or Abatement Contractor impacting such materials.

Lead Standards
Since elemental lead is a suspect carcinogen and known teratogen and neurotoxic in high doses, lead-containing materials need to be identified prior to the on-set of demolition activities. Using combinations of engineering controls and personal protective equipment, lead-containing materials can be remediated safely. Several sources of applicable standards are listed as follows:

1. Lead exposures in the workplace are regulated by Cal/OSHA, which has certain regulatory requirements for identifying and controlling potential lead exposures. Currently applicable regulations for the construction industry have been adopted by Cal/OSHA (8 CCR 1532.1) from the Federal OSHA

regulations. The current OSHA 8-hour Permissible Exposure Level (PEL) for lead is 50 µg/m^3.

2. Current EPA and Cal/EPA regulations do not require LBP to be removed prior to demolition, unless loose and peeling. Provided that the paints are securely adhered to the substrates (i.e., non-flaking or non-peeling), disposal of intact demolition debris can generally be handled in California as non-hazardous and non-RCRA waste.

The applicable standards for lead are tabulated below:

Agent	Total Threshold Level Concentration (TTLC) Wet-Weight Standard (mg/kg)[1]	Soluble Threshold Level Concentration (STLC) Standard (mg/l)[1]	CalOSHA Standard for Occupational Safety
Lead	1000	5	Any detectable levels; spot abatement required from coated metals before torching/welding

In California, loose and peeling LCP or other wastes require characterization and testing for leachability. Disposal requirements are outlined as follows:

Lead Disposal Standards

Classification and Disposal of Inorganic Lead Wastes in California								
Standards	TTLC	Leachable Lead						
Concentations	1000 mg/kg	5 mg/L						
	Test Methods & Results			Classifications				
Condition	Total Pb (mg/kg)	STLC Pb (mg/L)	TCLP Pb (mg/L)	Non-haz waste	CalHaz (Non-RCRA)	Fed Haz (RCRA)	Stabilization Required	Landfill Class
1a	<50 (a1)	NA		Yes	no	no	no	III
1b	<100 (a2)		NA	Yes	no	no	no	III
2a	50 to <1000	<5	<5	Yes (c)	no	no	no	III or II (d)
2b		>5	<5	no	Yes	no	no	I
2c		>5	>5	no	Yes	Yes	Yes	I
2d (b)		<5	>5	no	no	Yes	Yes	I
3a	>1000	<5	<5	No	Yes	No	no	I
3b		>5	<5	no	Yes	no	no	I
3c		>5	>5	no	Yes	Yes	Yes	I
3d (b)		<5	>5	no	no	Yes	Yes	I
4	any	any	>5	no	no	Yes	Yes	I

(a1) 50 = 10 x 5 (STLC for Pb). Per WET method, impossible to exceed STLC even if 100% soluble.
(a2) 100 = 20 x 5 (TCLP for Pb). Per TCLP method, impossible to exceed STLC even if 100% soluble.
(b) Physically impossible due to the stronger acid used in WET than TCLP.
(c) Landfills will likely require documentation that TCLP is <5, even though TCLP is almost always less than WET.
(d) Landfill dependent, function of permit, landfill liner, or landfill policy

3. The major definitions of LCP or lead-coated surfaces are listed as follows:

a. California Department of Public Health (CDPH) defines LBP as paint that contains either ≥0.5% by weight of lead, or ≥1 mg/cm^2.

b. Consumer Product Safety Commission (CPSC) prohibits the manufacturing of paint that contains more than 90 ppm of lead.

Note that adherence to CalOSHA's Construction Lead Standard is required for all paint with any measurable lead content.

4. Lead is on the "Proposition 65" list, given its toxic potential in causing reproductive hazards.

5. California Department of Public Health (CDPH) requires the use of Certified Lead Workers and Supervisors for lead abatement projects at public buildings with a greater than 20 years expected life or whenever work is completed specifically to abate Lead-Based Paint. The CDPH certification requirements do not apply to this facility; however, dust controls and personnel protection are still required under 17 CCR Sections 35001 through 36100.

Mercury-Containing Items and PCBs

SCA did not observe any fluorescent light fixtures that may contain PCB-containing ballasts in the building.

SCA did not observe any fluorescent lamps, which contain mercury vapors or mercury-containing thermostats during the survey of the building.

Results
Asbestos analyses by polarized light microscopy (PLM) analytical methods found the following results:

Asbestos-Containing: No suspect materials, which may be impacted by the renovation activities, were found to contain asbestos.

Assumed Asbestos-Containing: No suspect materials, which may be impacted by the renovation activities, were assumed to contain asbestos. If any concealed materials are discovered during the renovation activities, they will require further destructive testing.

Non-Asbestos: Several suspect materials that may be impacted by the renovation activities were tested or visually determined to be negative for asbestos, and are listed below:

Material ID	Non-asbestos Materials
FL-1-1,2	Gray concrete perimeter foundation wall (-) around milk room
WL-2-1,2	Gray concrete slab (-) in milk room
FOOT-3-1,2	Red brick (-) w/light gray mortar (-) support footings
CAULK-4-1,2	Off-white exterior caulking (-) around vinyl windows
ASPHALT-5-1,2	Black asphalt (-) ramp
FLOORS-NNN1	Dirt or wood floors
WALLS-NNN2	Wood walls
ROOF-NNN3	Corrugated metal roofing
ROOF-NNN4	Wood roofing shingles (No felt paper observed below shingles)

NNN=not suspect

Lead: Lead sampling results are tabulated below:

Sample ID	Location	Structure	Substrate	Color	FAA Results (ppm)	Condition
OW-1	Interior	Walls and ceilings	Wood	Off-white	<80	Intact
OW-2	Exterior	Walls	Wood	Off-white	<80	Loose & peeling

Dust control procedures are required during demolition/renovation of painted elements.

Conventional demolition techniques should be employed for all painted surfaces.

Mercury-Containing Items and Polychlorinated Biphenyls (PCB): SCA did not observe any fluorescent light fixtures that may contain PCB-containing ballasts in the building.

SCA did not observe any fluorescent lamps, which contain mercury vapors or mercury-containing thermostats during the survey of the building.

Please contact me if you have any questions.

Sincerely,
SCA ENVIRONMENTAL, INC.

Dan Leung, CIH, CSP, CAC, CDPH
Vice President
(415) 867-9544
dleung@sca-enviro.com

Table 1. Materials Matrix Report

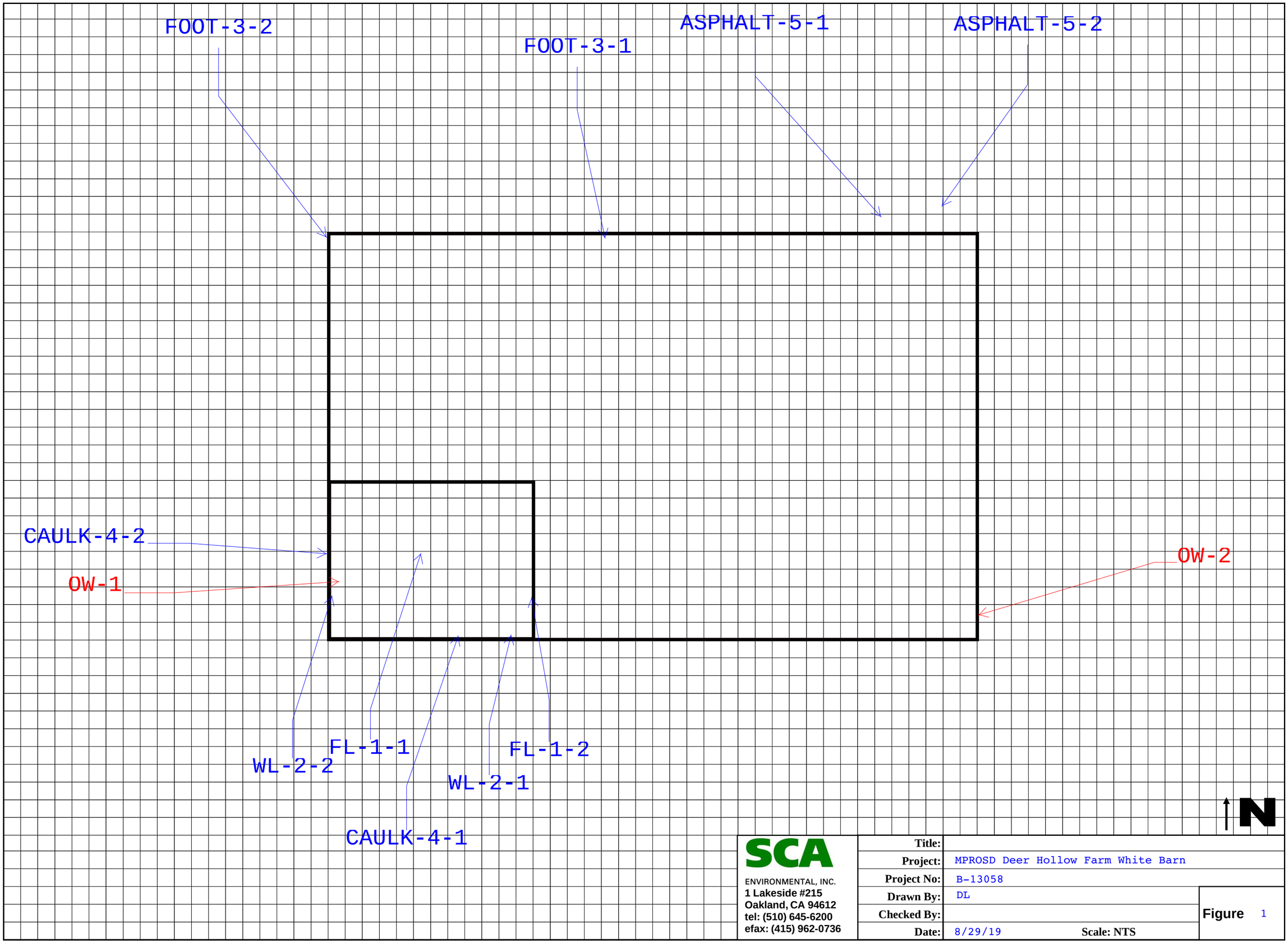
Figure 1. Sample Location Diagram

Attachments:
1. Asbestos Laboratory Report
2. Lead Laboratory Report
3. Photographs

Table 1: Materials Matrix Report-MPROSD, Deer Hollow Farm, White Barn, 22500 Christo Rey Drive, Cupertino, CA 95014

Material ID	Material Description	Sub-sample # A	B	C	D	E	F	G	Asbestos? Positive. Trace. Assumed. Negative	UNITS (LF, SF, EA)	First Floor Interior	Mezzanine Interior	Storage Shed Not in Scope	Roof Roof	Exterior Exterior	TOTAL (+/- 15%)
NON-ASBESTOS																
FL-1	Gray concrete perimeter foundation wall (-) around milk room	ND	ND							SF	225					225
WL-2	Gray concrete slab (-) in milk room	ND	ND							SF	180					180
FOOT-3	Red brick (-) w/light gray mortar (-) support footings	ND	ND						Negative	SF	60					60
CAULK-4	Off-white exterior caulking (-) around vinyl windows	ND	ND							SF	40					40
ASPHALT-5	Black asphalt (-) ramp	ND	ND							SF					40	40
FLOORS-NNN1	Dirt or wood floors									SF	1175	1925				3100
WALLS-NNN2	Wood walls								Not Suspect	SF	2720	2000				4720
ROOF-NNN3	Corrugated metal roofing									SF				2200		2200
ROOF-NNN4	Wood roofing shingles (No felt paper observed below shingles)									SF				20		20
LEAD									**PPM**							
OW-1	Off-white interior paint on walls and ceilings								<80	SF	PNQ					PNQ
OW-2	Off-white exterior paint on walls								<80	SF					PNQ	PNQ

Notes:
PNQ = Present, not quantified; CH = Chrysotile; ND = Not detected; NA = Not analyzed



SCA
ENVIRONMENTAL, INC.
1 Lakeside #215
Oakland, CA 94612
tel: (510) 645-6200
efax: (415) 962-0736

Title:	
Project:	MPROSD Deer Hollow Farm White Barn
Project No:	B-13058
Drawn By:	DL
Checked By:	
Date:	8/29/19 Scale: NTS

Figure 1

Attachment 1

Asbestos Laboratory Report

EMSL Analytical, Inc.

464 McCormick Street San Leandro, CA 94577

Tel/Fax: (510) 895-3675 / (510) 895-3680

http://www.EMSL.com / sanleandrolab@emsl.com

Attachment 1

EMSL Order:	091920603
Customer ID:	SCAE50
Customer PO:	B13058
Project ID:	

Attention:	Dan Leung	**Phone:**	(415) 867-9544
	SCA Environmental, Inc.	**Fax:**	(415) 962-0736
	320 Justin Drive	**Received Date:**	08/29/2019 10:45 AM
	San Francisco, CA 94112	**Analysis Date:**	09/01/2019
		Collected Date:	

Project: WJE MPROSD DEER HOLLOW FARM - B13058 - DL - DEER HOLLOW BARN, WHITE FARM - 8/29

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

			Non-Asbestos		Asbestos
Sample	**Description**	**Appearance**	**% Fibrous**	**% Non-Fibrous**	**% Type**
FL-1-1		Brown/Gray Non-Fibrous	2% Cellulose	20% Quartz 50% Ca Carbonate	None Detected
091920603-0001		Homogeneous		15% Gypsum 13% Non-fibrous (Other)	
FL-1-2		Gray Non-Fibrous		20% Quartz 50% Ca Carbonate	None Detected
091920603-0002		Homogeneous		10% Gypsum 20% Non-fibrous (Other)	
WL-2-1		Gray Non-Fibrous		15% Quartz 60% Ca Carbonate	None Detected
091920603-0003		Homogeneous		10% Gypsum 15% Non-fibrous (Other)	
WL-2-2		Gray Non-Fibrous		15% Quartz 60% Ca Carbonate	None Detected
091920603-0004		Homogeneous		10% Gypsum 15% Non-fibrous (Other)	
FOOT-3-1-Concrete		Tan Non-Fibrous		20% Quartz 50% Ca Carbonate	None Detected
091920603-0005		Homogeneous		10% Gypsum 20% Non-fibrous (Other)	
FOOT-3-1-Brick		Red Non-Fibrous		10% Quartz 30% Ca Carbonate	None Detected
091920603-0005A		Homogeneous		40% Gypsum 20% Non-fibrous (Other)	
FOOT-3-2-Concrete		Tan Non-Fibrous	2% Cellulose	20% Quartz 50% Ca Carbonate	None Detected
091920603-0006		Homogeneous		15% Gypsum 13% Non-fibrous (Other)	
FOOT-3-2-Brick		Red Non-Fibrous		10% Quartz 30% Ca Carbonate	None Detected
091920603-0006A		Homogeneous		40% Gypsum 20% Non-fibrous (Other)	
CAULK-4-1		White Non-Fibrous		20% Ca Carbonate 70% Matrix	None Detected
091920603-0007		Homogeneous		10% Non-fibrous (Other)	
CAULK-4-2		White Non-Fibrous		20% Ca Carbonate 70% Matrix	None Detected
091920603-0008		Homogeneous		10% Non-fibrous (Other)	
ASPHALT-5-1		Black Non-Fibrous		40% Quartz 40% Matrix	None Detected
091920603-0009		Homogeneous		20% Non-fibrous (Other)	
ASPHALT-5-2		Black Non-Fibrous		40% Quartz 40% Matrix	None Detected
091920603-0010		Homogeneous		20% Non-fibrous (Other)	

Initial report from: 09/01/2019 08:40:46

EMSL Analytical, Inc.
464 McCormick Street San Leandro, CA 94577
Tel/Fax: (510) 895-3675 / (510) 895-3680
http://www.EMSL.com / sanleandrolab@emsl.com

EMSL Order:	091920603
Customer ID:	SCAE50
Customer PO:	B13058
Project ID:	

Attachment 1

Analyst(s)
Shane Heisser (12)

Matthew Batongbacal
or Other Approved Signatory

Initial report from: 09/01/2019 08:40:46

OrderID: 091920603

Attachment 1

№091920603

CHAIN OF CUSTODY FORM

Bill to: SCA

Email report/COC/Invoice to:
Dan Leung (PROJ MGR)
Dan Leung (TECH)
labreports99@gmail.com (ACCT)

EMAIL HEADING: (Project #) - (Project Manager Initials) - (Site Name/Address) - (Date MMDD)
WSE MPROGD DEER HOLLOW BARN FARM B13058 DL DEER HOLLOW BARN, WHITE FARM 8/29

LAB EMSL

INSTRUCTIONS TO LAB:

COURIER
LAB REP NOTIFIED: Notification DATE/TIME:
AIRBILL/FLIGHT NO.: Shipper REFERENCE I.D.
EST ARRIVAL DATE: EST. ARRIVAL TIME:

Method Reference: 7400 PCM (PLM (asbestos)) AHERA TEM (<0.005 s/cc AnaSen) CARB-AHERA TEM 0.001 s/cc Ana Sensitivity Flame AA (Lead)

Sample Media: 25 37 mm 0.45 0.8 micron MCEF (Bulk) Water Wipe

RESULTS DUE: 3 DAYS AM / PM

CHAIN OF CUSTODY DATA:
Sending Info: 10 samples submitted by DL on 8/29 at 10:42A
Received by Lab: 10 samples received by [illegible] on 8/29 at 1045, WZ
Received by Analyst: _____ samples received by _____ on _____ at _____

SAMPLE ID	LITERS	Description	Ins/Blanks/Outs
FL-1-1,2			
WL-2-1,2			
FOOT-3-1,2			
CAULK-4-1,2			
ASPHALT-5-1,2			
	0 LITERS		BLANK
	0 LITERS		BLANK
	0 LITERS		BLANK

INSTRUCTIONS TO LAB (delete items not applicable AND circle items applicable):
1. Pickup requested:
Contact: _____
Time of Call: _____
2. Call contact to acknowledge receipt of samples.
3. Analyze samples by PCM only.
4. Analyze inside samples by PCM first; if any sample >0.01 f/cc, contact program manager.
5. If all samples are <0.01 f/cc, proceed with items 6, 7 or 8, as noted.
6. Analyze inside samples only; stop if Avg >70 str/mm^2, contact PM before analyzing outsides or blanks.
7. Analyze all samples, including outside samples and blanks.
8. Do NOT analyze outside or blank samples.
~~9. Analyze by TEM only the inside air sample with the highest PCM result.~~
(10.) Serial analysis; stop at first positive (>1%); first trace (<0.1%); except sheetrock and plaster samples.
11. Analyze all bulk samples, unless otherwise indicated.
12. PCB: <25 PPM detection limit required. Authorized to perform cleanup to meet the detection limit.
13. _____

Report Number:
Invoice Number:

Supplies/Equipment	Qty	Supplies/Equipment	Qty
Hi-Vol (3040)		Mold Cassettes	
Lo-Vol (3020)			
TEM / Pb cassettes (3520)			
PCM cassettes (3500)			
Bulk sampling supply (3710)	10		

ver 2015

Attachment 2

Lead Laboratory Report

EMSL Analytical, Inc
464 McCormick Street, San Leandro, CA 94577
Phone/Fax: (510) 895-3675 / (510) 895-3680
http://www.EMSL.com sanleandrolab@emsl.com

EMSL Order: 091920529
Attachment 1
CustomerID: SCAE50
CustomerPO: B13058
ProjectID:

Attn: **Dan Leung**
SCA Environmental, Inc.
320 Justin Drive
San Francisco, CA 94112

Phone: (415) 882-1675
Fax: (415) 962-0736
Received: 08/29/19 10:45 AM
Collected:

Project: **WJE MPROSD DEER HOLLOW FARM - B13058 - DL - DEER HOLLOW FARM, WHITE BARN - 8/29**

Test Report: Lead in Paint Chips by Flame AAS (SW 846 3050B/7000B)*

Client Sample Description	*Lab ID*	*Collected*	*Analyzed*	*Weight*	*Lead Concentration*
OW-1	*091920529-0001*		08/30/2019	0.2732 g	<80 ppm
OW-2	*091920529-0002*		08/30/2019	0.2613 g	<80 ppm

Julian Neagu, Lead Laboratory Manager
or other approved signatory

*Analysis following Lead in Paint by EMSL SOP/Determination of Environmental Lead by FLAA. Reporting limit is 0.010 % wt based on the minimum sample weight per our SOP. Unless noted, results in this report are not blank corrected. This report relates only to the samples reported above and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities. Samples received in good condition unless otherwise noted. "<" (less than) result signifies that the analyte was not detected at or above the reporting limit. Measurement of uncertainty is available upon request. The QC data associated with the sample results included in this report meet the recovery and precision requirements unless specifically indicated otherwise. Definitions of modifications are available upon request.

Samples analyzed by EMSL Analytical, Inc San Leandro, CA A2LA Accredited Environmental Testing Cert #2845.09

Initial report from 08/30/2019 18:48:03

№091920529 Attachment 1

CHAIN OF CUSTODY FORM

Bill to: SCA

Email report/COC/Invoice to:
Dan Leung (PROJ MGR)
Dan Leung (TECH)
lahreports99@gmail.com (ACCT)

EMAIL HEADING: (Project #) - (Project Manager Initials) - (Site Name/Address) - (Date MMDD)
WSE MPROGD DEEP HOLLOW FARM | B13058 | DL | DEER HOLLOW FARM, WHITE BARN | 8/29

LAB EMSL

INSTRUCTIONS TO LAB:

COURIER			
LAB REP NOTIFIED:		Notification DATE/TIME:	
AIRBILL/FLIGHT NO.:		Shipper REFERENCE I.D.	
EST ARRIVAL DATE:		EST. ARRIVAL TIME:	

Method Reference: 7400 PCM | AHERA TEM (<0.005 s/cc AnaSen) | CARB-AHERA TEM 0.001 s/cc Ana Sensitivity | PLM (asbestos) | Flame AA (Lead)

Sample Media: 25 37 mm 0.45 0.8 micron | MCEF (Bulk) Water Wipe

RESULTS DUE: 3 DAYS | AM / PM

CHAIN OF CUSTODY DATA:
Sending Info: 2 samples submitted by DL on 8/29 at 10:42A
Received by Lab: 2 samples received by [illegible] on 8/29 at 1045 LC
Received by Analyst: _____ samples received by _____ on _____ at _____

SAMPLE ID	LITERS	Description	In/Blanks/Outs
OW-1			REPORT RESULTS IN PPM.
OW-2			
	0 LITERS		BLANK
	0 LITERS		BLANK
	0 LITERS		BLANK

INSTRUCTIONS TO LAB (delete items not applicable AND circle items applicable):
1. Pickup requested:
   Contact: _____
   Time of Call: _____
2. Call contact to acknowledge receipt of samples.
3. Analyze samples by PCM only.
4. Analyze inside samples by PCM first; if any sample >0.01 f/cc, contact program manager.
5. If all samples are <0.01 f/cc, proceed with items 6, 7 or 8, as noted.
6. Analyze inside samples only; stop if Avg >70 str/mm^2, contact PM before analyzing outsides or blanks.
7. Analyze all samples, including outside samples and blanks.
8. Do NOT analyze outside or blank samples.
9. Analyze by TEM only the inside air sample with the highest PCM result.
10. Serial analysis; stop at first positive (>1%); first trace (<0.1%); except sheetrock and plaster samples.
11. Analyze all bulk samples, unless otherwise indicated.
12. PCB: <25 PPM detection limit required. Authorized to perform cleanup to meet the detection limit.
13. _____

Report Number:

Invoice Number:

Supplies/Equipment	Qty	Supplies/Equipment	Qty
Hi-Vol (3040)		Mold Cassettes	
Lo-Vol (3020)			
TEM / Pb cassettes (3520)			
PCM cassettes (3500)			
Bulk sampling supply (3710)	2		

ver 2015

Attachment 3

Photographs

Representative Photographs of Sampled materials
Deer Hollow Farm White Barn
August 29, 2019


ASPHALT-5


WALLS-NNN2

Representative Photographs of Sampled materials
Deer Hollow Farm White Barn
August 29, 2019


WALLS-NNN2 & OW-1


ROOF-NNN3

ROOF-NNN4

SHED (Not in Scope)

Representative Photographs of Sampled materials
Deer Hollow Farm White Barn
August 29, 2019

OW-2

APPENDIX C - LANGAN GEOTECHNICAL REPORT

GEOTECHNICAL SITE ASSESSMENT
Deer Hollow Farm White Barn
Santa Clara County, California

Prepared For:

Wiss, Janney, Elstner Associates, Inc.
2000 Powell Street, Suite 1650
Emeryville, California

Prepared By:

Langan Engineering and Environmental Services, Inc.
1 Almaden Boulevard, Suite 590
San Jose, California 95113

Wilson Wong, GE #3103
Senior Project Engineer

Serena T. Jang, GE #2702
Senior Associate/Vice President

11 October 2019
770659901

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GEOTECHNICAL SITE ASSESSMENT
Deer Hollow Farm White Barn
Santa Clara County, California

1.0 INTRODUCTION

This report presents the results of the geotechnical site assessment performed by Langan Engineering and Environmental Services, Inc. (Langan) for the proposed seismic retrofit of the White Barn structure within the Deer Hollow Farm located in the Rancho San Antonio Open Space Preserve.

The Rancho San Antonio Open Space Preserve is a 3,988-acre open space preserve located west of Highway 280 in Santa Clara County. Deer Hollow Farm is a historic 10-acre farm located within the preserve at a location approximately one mile east of the main County parking lot, as shown on Figure 1. There are several structures within Deer Hollow Farm, including several barns, sheds and enclosures, as shown on Figure 2. The existing White Barn is a 30-foot wide, 58-foot long and 25-foot tall two-story wood frame structure near the center of the farm, as shown on Figure 2.

We understand the proposed improvements include the structural retrofit of the existing White Barn. According to the discussion with the project team, the barn will be designed as a Risk Category Level I structure (2016 California Building Code (CBC) Table 1604.5) that will be used for housing animals and hay storage.

2.0 SCOPE OF SERVICES

We performed our services in accordance with our scope of services outlined in our proposal dated 18 February 2019. Our services included reviewing available subsurface information from available geologic maps and utility infrastructure plan, performing a limited field investigation, evaluating the findings of our current field exploration at the project site and performing engineering analyses to develop conclusions and recommendations regarding:

- subsurface conditions including estimates of groundwater levels;
- 2016 California Building Code (CBC) site classification, mapped values S_S and S_1, modification factors F_a and F_v and S_{MS} and S_{M1};
- site seismicity and potential for seismic hazards including liquefaction, lateral spreading, and fault rupture;

- potential foundation type(s) for the proposed building including estimates of vertical and lateral capacities and associated estimated settlements;
- expansion potential of the near surface soil;
- subgrade preparation for slab-on-grade floors and exterior slabs and flatwork, including sidewalks;
- site preparation, grading and excavation, including engineered fill criteria;
- construction considerations.

Our study was performed for the retrofit and improvements to the White Barn only. This study does not include an evaluation of the other structures within the Deer Hollow Farm.

3.0 FIELD INVESTIGATION AND LABORATORY TESTING

To evaluate the subsurface conditions at the site, we performed two hand auger (HA) borings and performed two dynamic penetrometer tests (DPTs) at the approximate locations shown on Figure 2. Prior to performing our field exploration, we notified Underground Service Alert (USA). Details of the field investigation activities and laboratory testing are described in the remainder of this section.

3.1 Hand-Auger Sampling

The two hand-auger borings, designated HA-1 and HA-2, were performed on 16 September 2019 by our field engineers to depths of about 5 feet below the existing ground surface (bgs). Samples were obtained between depths of ½ to 5 feet bgs. Three samples was collected from each hand auger boring at varying depths using a driven sampler. The hand driven sampler consisted of a 3.0-inch outside diameter and 2.5-inch inside diameter sampler lined with a steel tube with an inside diameter of 2.43-inches; the sampler was driven six inches. Upon completion, the boreholes were backfilled with soil cuttings.

3.2 Dynamic Penetrometer Tests (DPTs)

We performed DPTs near each of the hand-auger locations to depths of about 11½ to 14½ feet bgs to quantitatively evaluate the strength of the soil. Each DPT was performed using equipment that consists of a series of rods with a removable 60-degree apex angle cone end-piece. The end-piece has a projected area of 10-square centimeters. The rods and cone were driven into the soil using a 35-pound safety hammer with a 15-inch drop. The number of blows required to drive the rods and cone into the soil were recorded during the test. The blows used to drive

the probe were converted to equivalent Standard Penetration Test (SPT) N-values for use in estimating the strength of the soil. The DPT results for DPT-1 and DPT-2 are presented on Figure 3.

3.3 Laboratory Testing

The soil samples collected from the field exploration program were reexamined in the office for soil classification, and selected samples were submitted for laboratory testing. The laboratory testing program was designed to evaluate the expansion potential of the near surface soil at the site. Samples were tested to determine moisture content and plasticity (Atterberg Limits). The results of the laboratory testing are summarized below in Section 4.0 and on Figure 4.

4.0 SITE AND SUBSURFACE CONDITIONS

The following is a description of the site and subsurface conditions.

4.1 Site Conditions

Based on our review of the historic structure report (Page & Turnbull, 2017), the White Barn dates back to the late 1800s. The existing structure is a wood structure that occupies 3,500 square feet and has two levels, including the ground floor and a hay loft which can be accessed by a steep, narrow stair. On the southeast side of the barn, there is wood flooring on the ground level and this area is used for storage and includes a goat pen. The main center bay of the barn is used for hay and alfalfa storage over a dirt floor. On northwest side of the barn, there is a new milking room that has fully enclosed walls and a concrete floor.

Based on our preliminary structural findings report (Page & Turnball, 2017), the existing foundations of the barn are isolated brick pier foundations. According to the report, the brick pier foundations only exist under the interior and exterior vertical posts and appear to have performed "marginally well over the life of the building." The report recommends replacing the existing brick pier foundations.

The ground surface that surrounds the exterior of the barn is covered by gravel. The gravel appears to be underlain by 3 to 4 inches of cement treated soil; however, records of when and how the ground was cement treated were not available. A topographic survey of the site is currently not available to evaluate site drainage.

4.2 Subsurface Conditions

A summary of the near surface subsurface conditions encountered during our limited field investigation is presented in Table 1.

TABLE 1
Summary of Near Surface Subsurface Conditions

Location	Depth Below Ground Surface (feet)	Moisture Content (percent)	Plasticity Index[1]	Soil Description[2]
HA-1	0 to 0.3	18.6	--	CLAYEY SAND (SC), Gray-brown, hard, dry, with cement, fine gravel
	0.3 to 2	18.6	22	CLAYEY SAND (SC) Gray-brown, loose, dry, trace fine gravel
	2 to 3	14.3	--	CLAYEY SAND (SC) Red-brown, loose, moist
	3 to 5	20.1	--	SANDY CLAY (CL) Red-brown, medium stiff to stiff, moist
HA-2	0 to 0.3	12.7	--	CLAYEY SAND (SC), Gray-brown, hard, dry, with cement, fine gravel
	0.3 to 2	12.7	--	CLAYEY SAND (SC) Red-brown, medium dense to very dense, moist, fine gravel
	2 to 5	11.7	19	CLAYEY SAND (SC) Red-brown, medium dense to very dense, moist, with organics

Note:
1. The results of the Atterberg Limits test are also presented on Figure 4.
2. The soil was logged in accordance with the soil classification system described in Figure 5.

Based on the results of the hand augers and DPTs, the site appears to be underlain by loose to very dense clayey sand and medium stiff to stiff sandy clay to the maximum explored depth of 14½ feet bgs. Laboratory test results indicate the near surface soil has moderate expansion potential[1] with a plasticity index (PI) of 19 to 22.

Groundwater was not encountered within the depth of DPT investigation. However, the presence of creek near the project site may indicate historical shallow groundwater up to the creek water elevation. In addition, seasonal fluctuation in rainfall influence groundwater levels and may cause several feet of variation.

[1] Moderately expansive soil undergoes volume changes with changes in moisture content.

4.3 Site Geology

Permanente Creek meanders along the north side of the Deer Hollow Farm, approximately 60 to 100 feet west and north of the White Barn structure. During our site visit, we observed undercutting of the hillside to the north has undermined the slope along the northern edge of the creek causing several small landslides, however, the failing slopes do not appear to threaten the White Barn structure. Both banks of Permanente Creek appear to be heavily vegetated. Outcrops of greywacke sandstone were observed along the northern bank of Permanente Creek. Colluvium appear to overlay the outcrops.

The slope to the south of the White Barn structure shows signs of historic landslides with hummocky terrain, bent trees, and a potential headscarp, however, this area is heavily vegetated and covered in poison oak. During our site visit, our geologist was only able to view these features from a distance of approximately 100 feet.

In addition, no active seeps or other hydrologic features were observed upslope of the White Barn structure.

5.0 REGIONAL SEISMICITY

The major active faults in the area include the San Andreas, Monte Vista-Shannon/Berrocal, San Gregorio, Hayward, and Calaveras faults. These and other active faults in the region are shown on Figure 6. For each of the active faults within 50 kilometers of the site, the distance from the site and estimated mean characteristic Moment magnitude[2] are summarized in Table 2 [2007 Working Group on California Earthquake Probabilities (WGCEP) (2008) and Cao et al. (2003)].

[2] Moment magnitude is an energy-based scale and provides a physically meaningful measure of the size of a faulting event. Moment magnitude is directly related to average slip and fault rupture area.

TABLE 2
Regional Faults and Seismicity

Fault Segment	Approximate Distance from Site (km)	Direction from Site	Mean Characteristic Moment Magnitude
Monte Vista-Shannon/Berrocal	0.2	Southwest	6.50
N. San Andreas - Peninsula	5	Southwest	7.23
N. San Andreas (1906 event)	5	Southwest	8.05
N. San Andreas - Santa Cruz	19	Southwest	7.12
Total Hayward	26	Northeast	7.00
Total Hayward-Rodgers Creek	26	Northeast	7.33
San Gregorio Connected	26	West	7.50
Total Calaveras	29	East	7.03
Zayante-Vergeles	29	Southeast	7.00
Monterey Bay-Tularcitos	46	South	7.30

Figure 6 also shows the earthquake epicenters for events with magnitude greater than 5.0 from January 1800 through August 2014. Since 1800, four major earthquakes have been recorded on the San Andreas Fault. In 1836 an earthquake with an estimated maximum intensity of VII on the Modified Mercalli (MM) scale (Figure 7) occurred east of Monterey Bay on the San Andreas Fault (Toppozada and Borchardt 1998). The estimated Moment magnitude, $M_{w,}$ for this earthquake is about 6.25. In 1838, an earthquake occurred with an estimated intensity of about VIII-IX (MM), corresponding to an M_w of about 7.5. The San Francisco Earthquake of 1906 caused the most significant damage in the history of the Bay Area in terms of loss of lives and property damage. This earthquake created a surface rupture along the San Andreas Fault from Shelter Cove to San Juan Bautista approximately 470 kilometers in length. It had a maximum intensity of XI (MM), an M_w of about 7.9, and was felt 560 kilometers away in Oregon, Nevada, and Los Angeles. The Loma Prieta Earthquake occurred on 17 October 1989, in the Santa Cruz Mountains with an M_w of 6.9, approximately 35 kilometers from the site.

In 1868 an earthquake with an estimated maximum intensity of X on the MM scale occurred on the southern segment (between San Leandro and Fremont) of the Hayward Fault. The estimated M_w for the earthquake is 7.0. In 1861, an earthquake of unknown magnitude (probably an M_w of about 6.5) was reported on the Calaveras Fault. The most recent significant earthquake on this fault was the 1984 Morgan Hill earthquake (M_w = 6.2). The most recent earthquake to be felt in the Bay Area occurred on 24 August 2014 south of Napa, with an M_w of 6.0; the fault responsible

for this quake is still being determined, but is believed to have occurred within the Napa fault system, with the epicenter located approximately 103 km from the site.

The 2014 WGCEP (2015 report) at the U.S. Geologic Survey (USGS) predicted a 72 percent chance of a magnitude 6.7 or greater earthquake occurring in the San Francisco Bay Area in 30 years. More specific estimates of the probabilities for different faults in the Bay Area are presented in Table 3.

TABLE 3
WGCEP (2015) Estimates of 30-Year Probability of a Magnitude 6.7 or Greater Earthquake

Fault	Probability (percent)
Hayward-Rodgers Creek	32
N. San Andreas	33
Calaveras	25
Green Valley	7
San Gregorio	6
Mount Diablo Thrust	4

6.0 SEISMIC HAZARDS

During a major earthquake, strong to violent ground shaking is expected to occur at the project site. Strong ground shaking during an earthquake can result in ground failure such as that associated with soil liquefaction[3], lateral spreading[4], cyclic densification[5], and fault rupture.

Based on our review of seismic hazard maps (California Geologic Survey, 2002), the site is within a zone designated with the potential for liquefaction and seismically-induced slope instability. In addition, the White Barn structure is located approximately 60 feet west of Permanente Creek.

[3] Liquefaction is a transformation of soil from a solid to a liquefied state during which saturated soil temporarily loses strength resulting from the buildup of excess pore water pressure, especially during earthquake-induced cyclic loading. Soil susceptible to liquefaction includes loose to medium dense sand and gravel, low-plasticity silt, and some low-plasticity clay deposits.

[4] Lateral spreading is a phenomenon in which surficial soil displaces along a shear zone that has formed within an underlying liquefied layer. Upon reaching mobilization, the surficial blocks are transported downslope or in the direction of a free face by earthquake and gravitational forces.

[5] Cyclic densification is a phenomenon in which non-saturated, cohesionless soil is densified by earthquake vibrations, causing ground-surface settlement.

Therefore, we judge the potential of liquefaction, lateral spreading and seismically-induced slope instability may be high.

Historically, ground surface displacements closely follow the traces of geologically young faults. The site is not within an Earthquake Fault Zone, as defined by the Alquist-Priolo Earthquake Fault Zoning Act. However, potentially active Monte Vista-Shannon and Berrocal fault zone are at close proximity of the site. According to County of Santa Clara (Santa Clara County, California, Planning Office, 2015), the project site is located within Santa Clara County Fault Rupture Zone. We have not performed site-specific evaluations, however, we judge the risk of surface faulting at the site and consequent secondary ground failure is high.

Since the structure is designated as a Risk Category I, the structure represents a low hazard to human life. If the Risk Category of the structure is raised to Category II, III or IV in the future, a more in depth seismic hazard study, including test borings, Cone Penetration Tests (CPTs), slope stability and fault trench studies should be performed for the site.

7.0 DISCUSSION AND CONCLUSIONS

On the basis of our subsurface investigation, we conclude the project is feasible from a geotechnical standpoint provided the recommendations presented in this report are incorporated into the project plans and specifications and implemented during construction. The primary geotechnical issues for this project include:

- foundation support of the proposed improvements;
- potentially expansive near surface soils;
- potential foundation settlement.

Our conclusions regarding these and other geotechnical issues are discussed in the remainder of this section.

7.1 Foundations and Settlement

Based on the preliminary structural findings report (Page & Turnball, 2017), we understand the recommendation is to replace the existing brick pier foundations. We conclude that new foundations for the retrofit elements of the White Barn structure can be shallow footings. Localized soft soil, if encountered under footing locations, should be excavated and replaced with engineered fill or lean concrete.

Design recommendations for the structure's footings are presented in Section 8.2. Footings designed in accordance with these recommendations should not settle more than ½ inch; differential settlement between adjacent footings 50 feet apart, should not exceed ¼ inch.

The footings may be subject to large seismic induced settlements during a major earthquake. If in the future the structure is upgraded to Risk Category II, III and IV, seismic induced settlements should be evaluated.

7.2 Expansive Soil Considerations

The existing near-surface soil has moderate expansion potential. Moisture fluctuations in near-surface expansive soil could cause the soil to expand or contract resulting in movement and potential damage to improvements that overlie them. Potential causes of moisture fluctuations include drying during construction, and subsequent wetting from rain, capillary rise, landscape irrigation, and type of plant selection.

For improvements at-grade, the volume changes from expansive soil can cause cracking of foundations, floor slabs and exterior flatwork. Therefore, foundations, slabs, and concrete flatwork should be designed and constructed to resist the effects of expansive soil. These effects can be mitigated by moisture conditioning the expansive soil and providing select, non-expansive fill below exterior slabs and supporting foundations below the zone of seasonal moisture change.

7.3 Construction Considerations

The soil to be excavated from the site consists of materials that can be excavated with conventional earthmoving equipment such as loaders and backhoes, except where foundations and slabs of existing buildings are encountered. Removal of these may require the use of jackhammers or hoe-rams. Excavations resulting from the removal of foundations, slabs and underground utilities that extend below the bottom of the proposed foundation should be cleaned of any loose soil/debris and backfilled with lean concrete or properly compacted fill.

The surficial soil is clayey sand with moderate expansive potential. If earthwork is performed in wet weather conditions, it may be difficult to compact the soil; it may need to be aerated during dry weather. Light grading equipment may be needed to avoid damaging the subgrade.

I **Not felt by people, except under especially favorable circumstances. However, dizziness or nausea may be experienced.**
Sometimes birds and animals are uneasy or disturbed. Trees, structures, liquids, bodies of water may sway gently, and doors may swing very slowly.

II **Felt indoors by a few people, especially on upper floors of multi-story buildings, and by sensitive or nervous persons.**
As in Grade I, birds and animals are disturbed, and trees, structures, liquids and bodies of water may sway. Hanging objects swing, especially if they are delicately suspended.

III **Felt indoors by several people, usually as a rapid vibration that may not be recognized as an earthquake at first. Vibration is similar to that of a light, or lightly loaded trucks, or heavy trucks some distance away. Duration may be estimated in some cases.**
Movements may be appreciable on upper levels of tall structures. Standing motor cars may rock slightly.

IV **Felt indoors by many, outdoors by a few. Awakens a few individuals, particularly light sleepers, but frightens no one except those apprehensive from previous experience. Vibration like that due to passing of heavy, or heavily loaded trucks. Sensation like a heavy body striking building, or the falling of heavy objects inside.**
Dishes, windows and doors rattle; glassware and crockery clink and clash. Walls and house frames creak, especially if intensity is in the upper range of this grade. Hanging objects often swing. Liquids in open vessels are disturbed slightly. Stationary automobiles rock noticeably.

V **Felt indoors by practically everyone, outdoors by most people. Direction can often be estimated by those outdoors. Awakens many, or most sleepers. Frightens a few people, with slight excitement; some persons run outdoors.**
Buildings tremble throughout. Dishes and glassware break to some extent. Windows crack in some cases, but not generally. Vases and small or unstable objects overturn in many instances, and a few fall. Hanging objects and doors swing generally or considerably. Pictures knock against walls, or swing out of place. Doors and shutters open or close abruptly. Pendulum clocks stop, or run fast or slow. Small objects move, and furnishings may shift to a slight extent. Small amounts of liquids spill from well-filled open containers. Trees and bushes shake slightly.

VI **Felt by everyone, indoors and outdoors. Awakens all sleepers. Frightens many people; general excitement, and some persons run outdoors.**
Persons move unsteadily. Trees and bushes shake slightly to moderately. Liquids are set in strong motion. Small bells in churches and schools ring. Poorly built buildings may be damaged. Plaster falls in small amounts. Other plaster cracks somewhat. Many dishes and glasses, and a few windows break. Knickknacks, books and pictures fall. Furniture overturns in many instances. Heavy furnishings move.

VII **Frightens everyone. General alarm, and everyone runs outdoors.**
People find it difficult to stand. Persons driving cars notice shaking. Trees and bushes shake moderately to strongly. Waves form on ponds, lakes and streams. Water is muddied. Gravel or sand stream banks cave in. Large church bells ring. Suspended objects quiver. Damage is negligible in buildings of good design and construction; slight to moderate in well-built ordinary buildings; considerable in poorly built or badly designed buildings, adobe houses, old walls (especially where laid up without mortar), spires, etc. Plaster and some stucco fall. Many windows and some furniture break. Loosened brickwork and tiles shake down. Weak chimneys break at the roofline. Cornices fall from towers and high buildings. Bricks and stones are dislodged. Heavy furniture overturns. Concrete irrigation ditches are considerably damaged.

VIII **General fright, and alarm approaches panic.**
Persons driving cars are disturbed. Trees shake strongly, and branches and trunks break off (especially palm trees). Sand and mud erupts in small amounts. Flow of springs and wells is temporarily and sometimes permanently changed. Dry wells renew flow. Temperatures of spring and well waters varies. Damage slight in brick structures built especially to withstand earthquakes; considerable in ordinary substantial buildings, with some partial collapse; heavy in some wooden houses, with some tumbling down. Panel walls break away in frame structures. Decayed pilings break off. Walls fall. Solid stone walls crack and break seriously. Wet grounds and steep slopes crack to some extent. Chimneys, columns, monuments and factory stacks and towers twist and fall. Very heavy furniture moves conspicuously or overturns.

IX **Panic is general.**
Ground cracks conspicuously. Damage is considerable in masonry structures built especially to withstand earthquakes; great in other masonry buildings - some collapse in large part. Some wood frame houses built especially to withstand earthquakes are thrown out of plumb, others are shifted wholly off foundations. Reservoirs are seriously damaged and underground pipes sometimes break.

X **Panic is general.**
Ground, especially when loose and wet, cracks up to widths of several inches; fissures up to a yard in width run parallel to canal and stream banks. Landsliding is considerable from river banks and steep coasts. Sand and mud shifts horizontally on beaches and flat land. Water level changes in wells. Water is thrown on banks of canals, lakes, rivers, etc. Dams, dikes, embankments are seriously damaged. Well-built wooden structures and bridges are severely damaged, and some collapse. Dangerous cracks develop in excellent brick walls. Most masonry and frame structures, and their foundations are destroyed. Railroad rails bend slightly. Pipe lines buried in earth tear apart or are crushed endwise. Open cracks and broad wavy folds open in cement pavements and asphalt road surfaces.

XI **Panic is general.**
Disturbances in ground are many and widespread, varying with the ground material. Broad fissures, earth slumps, and land slips develop in soft, wet ground. Water charged with sand and mud is ejected in large amounts. Sea waves of significant magnitude may develop. Damage is severe to wood frame structures, especially near shock centers, great to dams, dikes and embankments, even at long distances. Few if any masonry structures remain standing. Supporting piers or pillars of large, well-built bridges are wrecked. Wooden bridges that "give" are less affected. Railroad rails bend greatly and some thrust endwise. Pipe lines buried in earth are put completely out of service.

XII **Panic is general.**
Damage is total, and practically all works of construction are damaged greatly or destroyed. Disturbances in the ground are great and varied, and numerous shearing cracks develop. Landslides, rock falls, and slumps in river banks are numerous and extensive. Large rock masses are wrenched loose and torn off. Fault slips develop in firm rock, and horizontal and vertical offset displacements are notable. Water channels, both surface and underground, are disturbed and modified greatly. Lakes are dammed, new waterfalls are produced, rivers are deflected, etc. Surface waves are seen on ground surfaces. Lines of sight and level are distorted. Objects are thrown upward into the air.

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Project
DEER HOLLOW FARM WHITE BARN
SANTA CLARA COUNTY CALIFORNIA

Drawing Title
MODIFIED MERCALLI INTENSITY SCALE

Project No. 770659901
Date 10/9/2019
Figure 7

Path: \\langan.com\data\SJO\data9\770659901\Project Data_Discipline\Geotechnical\Reports\770659901 Figure 7 Modified Mercalli Intensity Scale.mxd

8.0 RECOMMENDATIONS

Recommendations for site preparation, shallow foundations, seismic design, and other geotechnical issues are presented in the following sections of this report.

8.1 Earthwork

Grading operations should commence after demolition and removal of existing foundations and underground utilities within the development area. Following demolition, all areas to receive improvements should be stripped of vegetation and organic topsoil. The stripped organic soil can be stockpiled for later use in landscaped areas, if approved by the architect; organic topsoil should not be used as compacted fill.

Prior to placing fill, the subgrade exposed after stripping and site clearing, as well as other portions of the site that will receive new fill or site improvements, should be scarified to a depth of at least 12 inches, moisture-conditioned to at least three percent above optimum moisture content, and recompacted to between 88 and 93 percent relative compaction[6].

Any select fill placed during grading should meet the following criteria:

- be free of organic matter
- contain no rocks or lumps larger than three inches in greatest dimension
- have a low expansion potential (defined by a liquid limit of less than 40 and plasticity index lower than 12)
- have a low corrosion potential[7]
- be approved by the geotechnical engineer.

All fill placed beneath improvements should meet the criteria for select fill discussed in this section. All select fill should be moisture-conditioned to near optimum moisture content, placed in horizontal lifts not exceeding eight inches in loose thickness, and be compacted to at least 90 percent relative compaction. Where used, sand containing less than 10 percent fines (particles passing the No. 200 sieve) should also be compacted to at least 95 percent relative

[6] Relative compaction refers to the in-place dry density of soil expressed as a percentage of the maximum dry density of the same material, as determined by the ASTM D1557 laboratory compaction procedure.

[7] Low corrosion potential is defined as a minimum resistivity of 2,000 ohms-cm and maximum sulfate and chloride concentrations of 250 parts per million.

compaction. Samples of on-site and proposed import fill materials should be submitted to the geotechnical engineer for approval at least three business days prior to use at the site.

The existing soil does not meet the requirements for select fill. The existing soil may be used as general site fill below the select fill, provided the soil is moisture-conditioned to near optimum moisture content, and recompacted to between 88 and 93 percent relative compaction.

8.2 Spread Footings

The new foundations for the retrofit of the White Barn structure should consist of shallow, spread footings bearing on firm, native soil. The bottom of the footings be embedded at least 18 inches below the lowest adjacent soil subgrade and should be at least 18 inches wide for continuous footings and 24 inches for isolated spread footings. Footings adjacent to utility trenches (or other footings) should bear below an imaginary 1.5:1 (horizontal to vertical) plane projected upward from the bottom edge of the utility trench (or adjacent footings).

For the recommended minimum embedment, footings bearing on firm native soil may be designed using an allowable bearing pressure of 3,000 pounds per square foot (psf) for dead plus live loads, with one-third increase for total loads, including wind and/or seismic loads.

Lateral loads on footings can be resisted by a combination of passive resistance acting against the vertical faces of the footings and friction along the bases of the footings. Passive resistance may be calculated using lateral pressures corresponding to an equivalent fluid weight of 250 pounds per cubic foot (pcf); the upper foot of soil should be ignored unless confined by a concrete slab or pavement. Frictional resistance should be computed using a base friction coefficient of 0.30. The passive resistance and base friction values include a factor of safety of about 1.5 and may be used in combination without reduction.

Uplift loads may be resisted by the weight of the footing and any overlying soil. If footings are inadequate to provide the necessary uplift resistance, tiedowns may be used. If tiedowns are required, we should present design recommendations.

Weak soil or loose fill encountered in the bottom of footing excavations should be excavated and replaced with engineered fill or lean concrete. The bottoms and sides of the footing excavations should be wetted following excavation and maintained in a moist condition until concrete is placed.

We should check footing excavations prior to placement of reinforcing steel. Footing excavations should be free of standing water, debris, and disturbed materials prior to placing concrete.

8.3 Floor Slabs

If new floor slab is needed, the White Barn floor slab may be supported on grade. Due to the presence of the moderately expansive near surface soils, we recommend at least six inches of imported (select) material be placed beneath the floor slabs. Prior to placement of select fill in the building, the onsite soil exposed should be scarified to a depth of at least 12 inches, moisture-conditioned to at least three percent above optimum moisture content, and compacted to between 88 and 93 percent relative compaction. The soil subgrade should be kept moist until it is covered by select fill.

If the subgrade is disturbed during excavation for footings and utilities, it should be re-rolled. Loose, disturbed materials should be excavated, removed, and replaced with engineered fill during final subgrade preparation.

8.4 Exterior Concrete Slabs

Exterior concrete slabs should be underlain by at least six inches of select fill consists of Class 2 aggregate base. Even with six inches of select fill, these slabs may experience some cracking due to shrinking and swelling of the underlying expansive soil. Thickening the slabs and adding additional reinforcement will control this cracking to some degree. In addition, where slabs provide access to buildings, it would be prudent to dowel the entrance to the building to permit rotation of the slab as the exterior ground shrinks and swells and to prevent a vertical offset at the entries.

Class 2 AB should conform to the current Caltrans Standard Specifications. The upper six inches of the soil subgrade of the exterior concrete slabs should be moisture-conditioned to above optimum and compacted to at least 90 percent relative compaction and rolled to provide a smooth non-yielding surface. Aggregate base should be compacted to at least 95 percent relative compaction.

8.5 Site Drainage

Positive surface drainage should be maintained around any improvements to direct surface water away from the existing foundations. To reduce the potential for water ponding adjacent to the existing improvements, we recommend the ground surface within a horizontal distance of

five feet from the existing improvements be designed to slope down and away from the buildings with a surface gradient of at least two percent in unpaved areas and one percent in paved areas.

Cutoffs and drainage should be installed between site improvement subgrades and landscape to prevent water intrusion of the site improvement subgrades.

8.6 Seismic Design

For seismic design in accordance with the provisions of 2016 California Building Code (CBC) we recommend the following:

- Risk-Targeted Maximum Considered Earthquake (MCE_R) S_s and S_1 of 2.538g and 0.989g, respectively;
- Site Class D;
- Site Coefficients F_a and F_v of 1.0 and 1.5;
- MCE_R spectral response acceleration parameters at short periods, S_{MS}, and at one-second period, S_{M1}, of 2.538g and 1.483g, respectively;
- Design Earthquake (DE) spectral response acceleration parameters at short period, S_{DS}, and at one-second period, S_{D1}, of 1.692g and 0.989g, respectively;
- PGA_M of 0.964g.

9.0 SERVICES DURING DESIGN AND CONSTRUCTION

We should review the final project plans and specifications to check that they are in general conformance with the intent of our recommendations. During construction, our field engineer should provide on-site observation and testing during site preparation, grading, placement and compaction of fill, and installation of foundations. These observations will allow us to compare actual with anticipated soil conditions and to check that the contractor's work conforms to the geotechnical aspects of the plans and specifications.

10.0 LIMITATIONS

The conclusions and recommendations provided in this report result from our interpretation of the geotechnical conditions existing at the site inferred from a limited number of hand auger borings and DPTs. Actual subsurface conditions could vary. Recommendations provided are dependent upon one another and no recommendation should be followed independent of the others. Any proposed changes in structures, depths of excavation, or their locations should be

brought to Langan's attention as soon as possible so that we can determine whether such changes affect our recommendations. Information on subsurface strata shown in Table 1 represent conditions encountered only at the locations indicated and at the time of investigation. If different conditions are encountered during construction, they should immediately be brought to Langan's attention for evaluation, as they may affect our recommendations.

This report has been prepared to assist the Owner, landscape architect, and civil engineer in the design process and is only applicable to the design of the specific project identified. The information in this report cannot be utilized or depended on by engineers or contractors who are involved in evaluations or designs of facilities on adjacent properties which are beyond the limits of that which is the specific subject of this report.

REFERENCES

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FIGURES

NOTES:

World street basemap is provided through Langan's Esri ArcGIS software licensing and ArcGIS online.
Credits: Sources: Esri, DeLorme, NAVTEQ, USGS, Intermap, iPC, NRCAN.

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Project
DEER HOLLOW FARM WHITE BARN
SANTA CLARA COUNTY CALIFORNIA

Drawing Title
SITE LOCATION MAP

Project No. 770659901
Date 10/7/2019

Figure 1

Reference: Basemap based on plan titled "Deer Hollow Farm Water and Electric Utilities" by Midpeninsula Open Space District dated August 2018. Aerial by nearmaps 2019.

EXPLANATION:

The white barn

DPT-1 / HA-1 — Approximate location of Dynamic Penetrometer Test (DPT) and Hand Auger Boring (HA) by Langan, September 2019

0 80 Feet

Approximate scale

N

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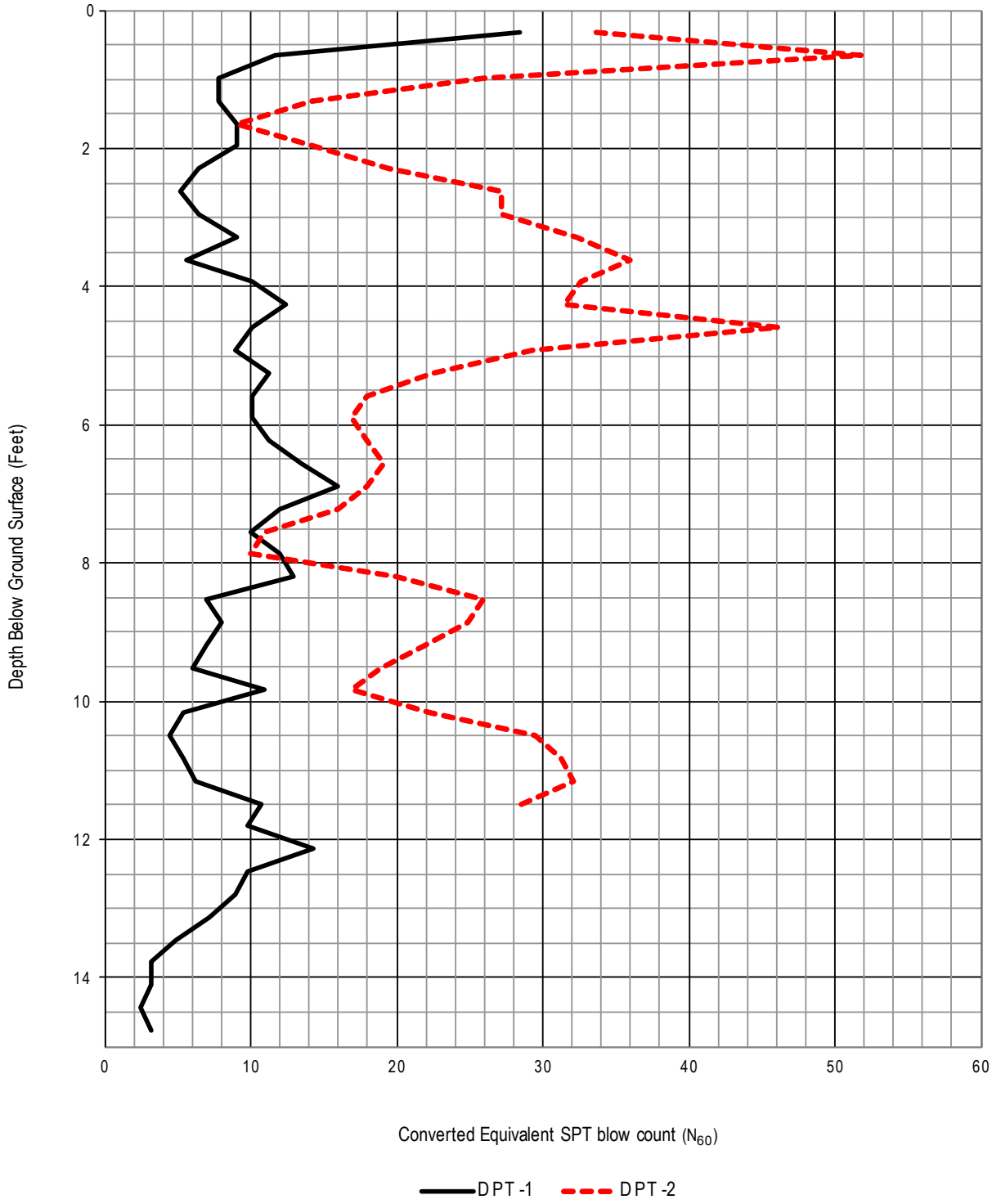
Project	DEER HOLLOW FARM WHITE BARN
	Santa Clara County California
Drawing Title	SITE PLAN
Project No.	770659901
Date	10/07/19
Drawn By	
Checked By	
Figure	2

Filename: \\langan.com\data\SJO\data9\770659901\Project Data\CAD\01\2D-DesignFiles\Geotechnical\FG02-770659901-B-GI0101.dwg Date: 10/10/2019 Time: 15:05 User: zwu Style Table: Langan.stb Layout: ANSIB-BL



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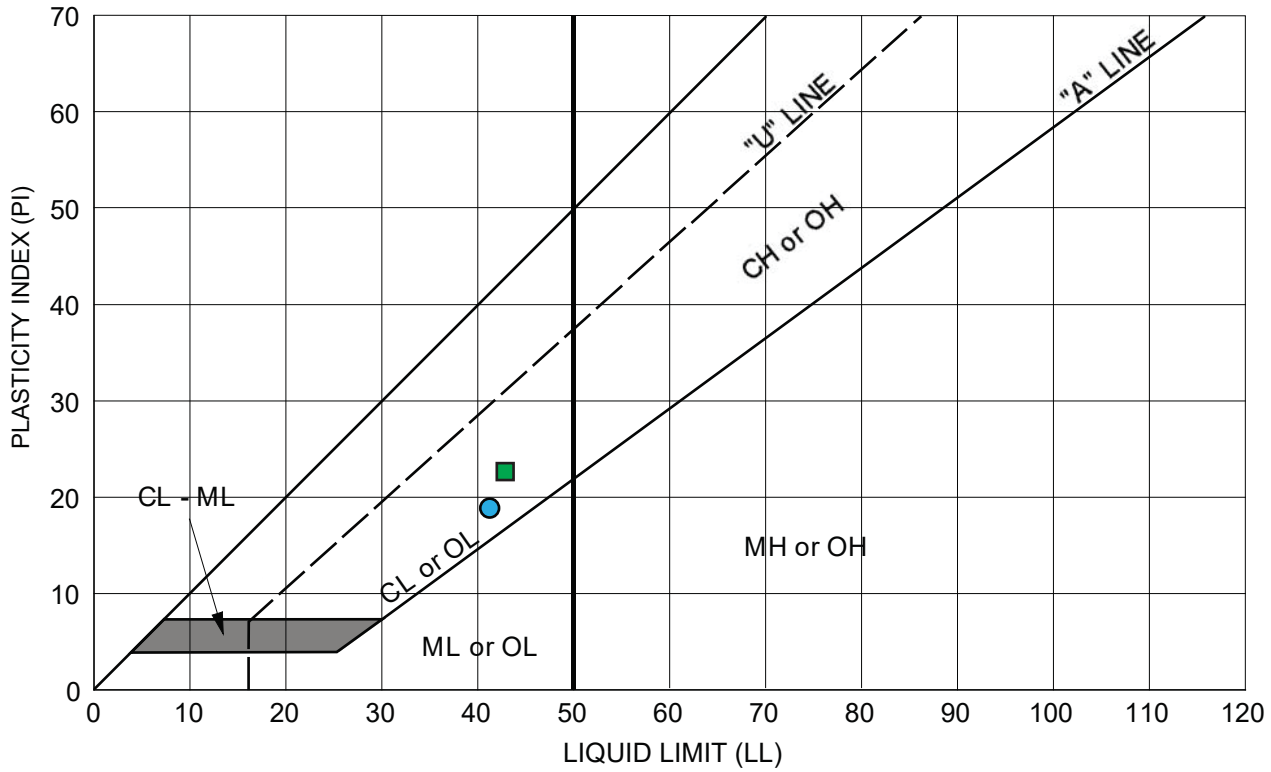
Project	Drawing Title	Project No.	Figure
DEER HOLLOW FARM WHITE BARN SANTA CLARA COUNTY CALIFORNIA	**DYNAMIC PENETROMETER TEST RESULTS**	770659901 Date 10/7/2019	3



NP = Non Plastic

Symbol	Source	Description and Classification	Natural M.C. (%)	Liquid Limit (%)	Plasticity Index (%)	% Passing #200 Sieve
○	HA-1 at 1.5 feet	CLAYEY SAND (SC), dark brown	19	43	22	--
□	HA-2 at 1.5 feet	CLAYEY SAND (SC), dark brown	12	41	19	--

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Project
DEER HOLLOW FARM WHITE BARN
SANTA CLARA COUNTY CALIFORNIA

Drawing Title
PLASTICITY CHART

Project No. 770659901
Date 10/7/2019

Figure 4

UNIFIED SOIL CLASSIFICATION SYSTEM			
Major Divisions		**Symbols**	**Typical Names**
Coarse-Grained Soils (more than half of soil > no. 200 sieve size)	**Gravels** (More than half of coarse fraction > no. 4 sieve size)	**GW**	Well-graded gravels or gravel-sand mixtures, little or no fines
		GP	Poorly-graded gravels or gravel-sand mixtures, little or no fines
		GM	Silty gravels, gravel-sand-silt mixtures
		GC	Clayey gravels, gravel-sand-clay mixtures
	Sands (More than half of coarse fraction < no. 4 sieve size)	**SW**	Well-graded sands or gravelly sands, little or no fines
		SP	Poorly-graded sands or gravelly sands, little or no fines
		SM	Silty sands, sand-silt mixtures
		SC	Clayey sands, sand-clay mixtures
Fine -Grained Soils (more than half of soil < no. 200 sieve size)	**Silts and Clays** LL = < 50	**ML**	Inorganic silts and clayey silts of low plasticity, sandy silts, gravelly silts
		CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, lean clays
		OL	Organic silts and organic silt-clays of low plasticity
	Silts and Clays LL = > 50	**MH**	Inorganic silts of high plasticity
		CH	Inorganic clays of high plasticity, fat clays
		OH	Organic silts and clays of high plasticity
Highly Organic Soils		**PT**	Peat and other highly organic soils

GRAIN SIZE CHART		
Classification	**Range of Grain Sizes**	
	U.S. Standard Sieve Size	**Grain Size in Millimeters**
Boulders	Above 12"	Above 305
Cobbles	12" to 3"	305 to 76.2
Gravel	3" to No. 4	76.2 to 4.76
coarse	3" to 3/4"	76.2 to 19.1
fine	3/4" to No. 4	19.1 to 4.76
Sand	No. 4 to No. 200	4.76 to 0.075
coarse	No. 4 to No. 10	4.76 to 2.00
medium	No. 10 to No. 40	2.00 to 0.420
fine	No. 40 to No. 200	0.420 to 0.075
Silt and Clay	Below No. 200	Below 0.075

Unstabilized groundwater level

Stabilized groundwater level

SAMPLE DESIGNATIONS/SYMBOLS

Sample taken with Sprague & Henwood split-barrel sampler with a 3.0-inch outside diameter and a 2.43-inch inside diameter. Darkened area indicates soil recovered

Classification sample taken with Standard Penetration Test sampler

Undisturbed sample taken with thin-walled tube

Disturbed sample

Sampling attempted with no recovery

Core sample

Analytical laboratory sample

Sample taken with Direct Push or Drive sampler

SAMPLER TYPE

C Core barrel

CA California split-barrel sampler with 2.5-inch outside diameter and a 1.93-inch inside diameter

D&M Dames & Moore piston sampler using 2.5-inch outside diameter, thin-walled tube

O Osterberg piston sampler using 3.0-inch outside diameter, thin-walled Shelby tube

PT Pitcher tube sampler using 3.0-inch outside diameter, thin-walled Shelby tube

S&H Sprague & Henwood split-barrel sampler with a 3.0-inch outside diameter and a 2.43-inch inside diameter

SPT Standard Penetration Test (SPT) split-barrel sampler with a 2.0-inch outside diameter and a 1.5-inch inside diameter

ST Shelby Tube (3.0-inch outside diameter, thin-walled tube) advanced with hydraulic pressure

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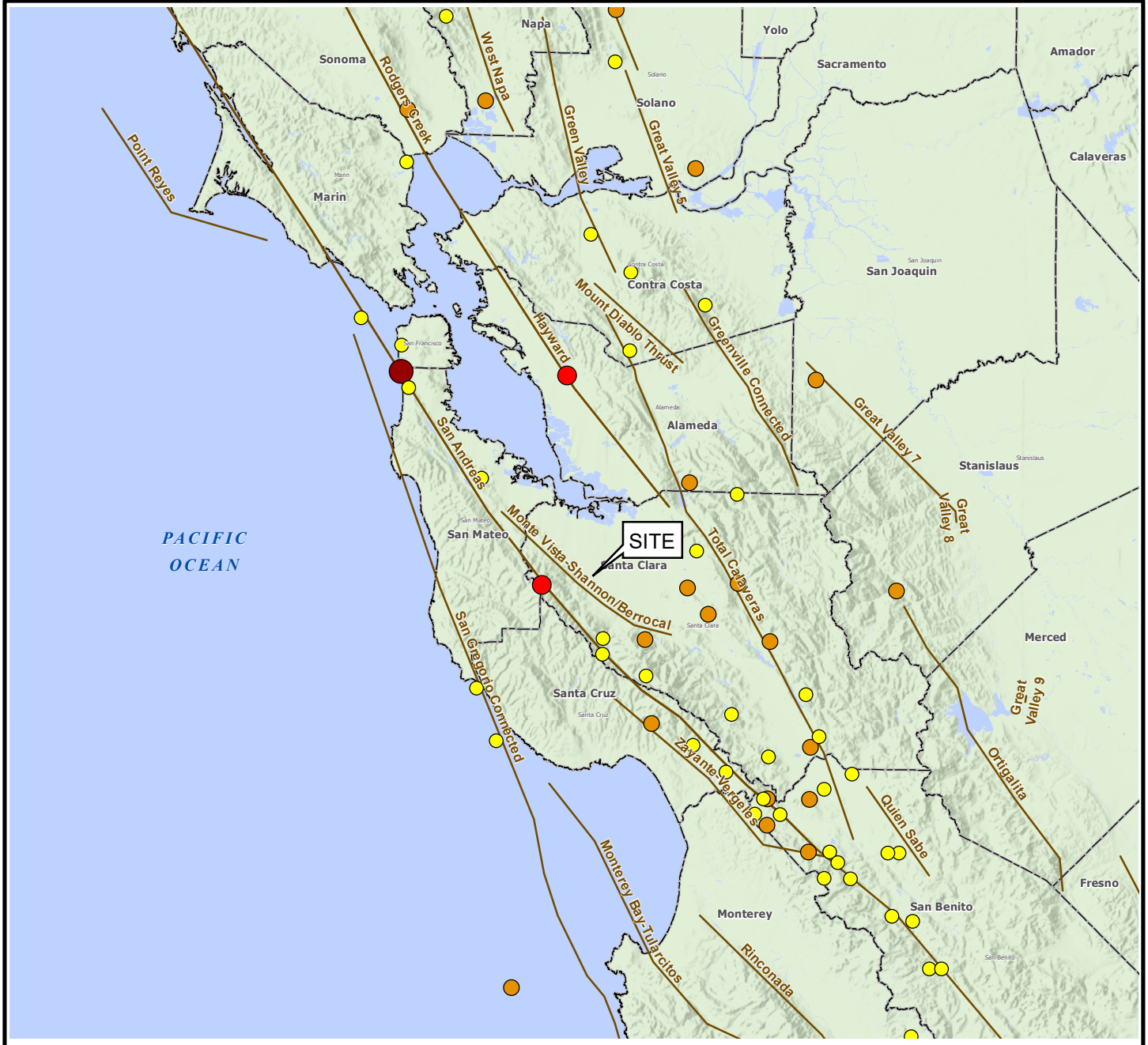
Project: **DEER HOLLOW FARM WHITE BARN**
SANTA CLARA COUNTY CALIFORNIA

Drawing Title: **SOIL CLASSIFICATION CHART**

Project No. 770659901
Date 10/7/2019
Figure 5



Legend

- County Boundary
- Fault

Earthquake Epicenter

Magnitude

- Magnitude 5 to 5.9
- Magnitude 6 to 6.9
- Magnitude 7 to 7.4
- Magnitude 7.5 to 8

0 10 20
Miles

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Notes:

1. Quaternary fault data displayed are based on a generalized version of USGS Quaternary Fault and fold database, 2010. For cartographic purposes only.
2. The Earthquake Epicenter (Magnitude) data is provided by the U.S Geological Survey (USGS) and is current through 08/26/2014.
3. Basemap hillshade and County boundaries provided by USGS and California Department of Transportation.
4. Map displayed in California State Coordinate System, California (Teale) Albers, North American Datum of 1983 (NAD83), Meters.

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Project
DEER HOLLOW FARM WHITE BARN
SANTA CLARA COUNTY CALIFORNIA

Drawing Title
MAP OF MAJOR FAULTS AND EARTHQUAKE EPICENTERS IN THE SAN FRANCISCO BAY AREA

Project No.	770659901
Date	10/9/2019
Scale	1 " = 20 miles
Drawn By	JFrank
Figure	6

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Richard D. Rodgers, GE #732
Senior Consultant

APPENDIX D - OPINION OF PROBABLE CONSTRUCTION COST BY HATTIN

MIDPENINSULA REGIONAL OPEN SPACE DISTRICT
DEER HOLLOW WHITE BARN
Deer Hollow Farm White Barn
Rancho San Antonio Open Space Preserve
Cupertino, CA

Opinion of Probable Construction Cost
Conceptual Cost Estimate

Prepared for : ***Wiss Janney Elstner Associates, Inc.***

October 22, 2019

by:

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MIDPENINSULA REGIONAL OPEN SPACE DISTRICT
DEER HOLLOW WHITE BARN REHABILITATION
Deer Hollow Farm White Barn
Rancho San Antonio Open Space Rrserve
Cupertino, CA

ESTIMATE OF PROBABLE CONSTRUCTION COST

EXECUTIVE SUMMARY

This Conceptual Design Cost Estimate represents the probable construction cost of **Midpeninsula Regional Open Space District – Deer Hollow Farm White Barn Rehabilitation in Cupertino, CA**. Considering that the drawings are preliminary design submittal, certain components, which may be required as part of this project may not be shown or mentioned in this estimate. Allowances have been made when detail description of equipment, work definition, or quantities are not available. Material pricing and labor costs are obtained from historical cost data and similar projects. Mechanical and electrical costs are based similar projects. The unit costs include material, labor, and subcontractor's markup, and are based on the design level of documents received.

Project Descriptions:
Deer Hollow White Barn Rehabilitation, Cupertino CA. Scope includes repair of roof rafter, exterior walls, attic framing, ground floor and foundation.

Documents Received as a Basis of Cost Estimate:
The following documentation was used in preparation of this estimate:
- Preliminary Drawings S1.0, S2.0, S3.0, S4.0, S4.1, S5.0, S5.1 & S5.2.
- Basis of Design dated October 10, 2019

Exclusions:
The following items are excluded:
- Change Order Contingency
- Hazardous materials abatement & disposal
- Land Cost
- Cost of money
- Offsite Utilities & Connection Fees
- Professional Consultants' and Construction Management fees
- Administrative costs
- Fees for testing construction materials
- Plan checks and inspection
- Permits
- Legal and financing costs
- Furnishings, furniture, and equipment (FFE)
- Relocation costs, if required
- Contractor off-hours and compressed time work schedule, if required
- Escalation beyond that stated.
- LEED

Possible Additional Cost Items:

Items that may change the Estimate of Probable Construction Cost include, but are not limited to, the following:

- Modifications to the scope of work, drawings, specifications included in this estimate
- Unforeseen conditions
- Construction phasing requirements
- Excessive contract and general conditions, and restrictive technical specifications
- Equipment, material, systems or product that cannot be obtained from at least three different sources
- Delays beyond the projected schedule
- Any other non-competitive bid situations
- Any addenda, changes not included in the basis of estimates.

Escalation:
Escalation of 4% up to midpoint of construction is included in the estimate, assumed at 12 months from October 01, 2019 at the rate of 4% per annum.

ESTIMATING ASSUMPTIONS AND COMMENTS
General:

a. Material prices are at 4th Quarter 2019 level; include taxes and contractor's markups.
b. Labor cost is based on prevailing wages.
c. Work to be done during normal business hours.
d. This estimate can vary due to change in scope.
e. Quantities were obtained as shown on the drawings.
f. Allowances are provided for items not shown in the drawings and are anticipated to be part of the estimate.
g. Installation cost, supervision, and coordination for material and equipment are included in the estimate.
h. General conditions assumed at 20% include mobilization, insurance, office personnel costs, dust control, and other items not mentioned in General requirements.
i. Design Contingency/Estimating Contingency is assumed at 25% due to the level of drawings used in the estimate.

ESTIMATE OF PROBABLE CONSTRUCTION COST
The estimated Probable Construction Costs reflects the anticipated cost of the **MROSD Deer Hollow White Barn Rehabilitation in Cupertino, CA.** This estimate is based on a competitive open bid process with a recommended five or more bids from reputable general contractors, and a minimum of three bids for all subcontracted items.

Cost of materials, labor, equipment or services furnished by others, and the contractors' or vendors' methods of determining prices are determined by market and/or economic conditions. Hence, the Estimator cannot and does not guarantee that proposals, bids or actual project costs will not vary from this Estimate of Probable Construction Cost.

This Estimate of Probable Construction Cost is exclusive of all costs associated with changes, modifications or addenda to the drawings and/or specifications subsequent to the preparation of this estimate.

Hattin Construction Management, Inc.
Project and Construction Management Services

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Telephone: (510)832-5800 - Fax: (510)832-5900

SUMMARY OF PROBABLE CONSTRUCTION COST

MIDPENINSULA REGIONAL OPEN SPACE DISTRICT
DEER HOLLOW WHITE BARN REHABILITATION
Deer Hollow Farm White Barn
Rancho San Antonio Open Space Preserve
Cupertino, CA
Type of Estimate: CONCEPTUAL ESTIMATE

Gross Area (SF) 1,740
HCM Job Number: 2019-052
Lead Estimator: EEV
Date: 10/22/2019
Revised:

ITEM	DESCRIPTION		TOTAL	%
	AREA (SF)		1,740	
1	ROOF RAFTER REPAIR - BASE	$	37,710	
	OPTION 1 - INSTALL NEW CORRUGATED SHEET METAL SHEATHING	$	36,495	
	OPTION 2 - INSTALL BUILDING PAPER & WOOD SHINGLES	$	24,330	
2	EXTERIOR WALLS REPAIR - BASE	$	23,378	
3	ATTIC FRAMING REPAIR - BASE	$	14,671	
	OPTION 1 - INSTALL PRE-FABRICATED ATTIC LADDER	$	1,921	
	OPTION 2 - INSTALL A STEEL LADDER WITH CONCRETE FOOTING	$	6,037	
4	GROUND FLOOR & FOUNDATION REPAIR - BASE	$	15,530	
	OPTION 1 - INSTALL PERVIOUS CONCRETE SLAB	$	16,546	
	OPTION 2 - INSTALL NEW GRADE BEAM	$	23,186	
	TOTAL PROBABLE BID DAY CONSTRUCTION COST - BASE REPAIR	$	91,289	
	TOTAL PROBABLE BID DAY CONSTRUCTION COST - OPTION 1 REPAIR	$	54,961	
	TOTAL PROBABLE BID DAY CONSTRUCTION COST - OPTION 2 REPAIR	$	53,553	

MIDPENINSULA REGIONAL OPEN SPACE DISTRICT
DEER HOLLOW WHITE BARN REHABILITATION
Deer Hollow Farm White Barn
Rancho San Antonio Open Space Preserve
Cupertino, CA
ROOF RAFTER REPAIR
Hattin Construction Management, Inc.

Estimate: Conceptual
HCM Job Number: 2019-052
Date: 10/22/2019
Revised:
Estimator: EEV/ARB

AREA : SF 1,740

Div.	Description	Qty	Unit	Cost	Extension	Total
Description:	**Roof Repair**					
	ROOF REPAIR - BASE					
1	**General Requirements**					
	Included in the General Conditions below.					
	General Requirements					$ -
6	**ROOF RAFTER**					
	Remove existing corrugated metal steel	1,900	SF	$ 2.00	$ 3,800	
	Remove damaged or deteriorated 1-by skipsheathing, 50%	950	SF	$ 1.50	$ 1,425	
	Install skipsheathing to match, 50%	950	SF	$ 3.00	$ 2,850	
	Install wood blocking between joists throughout	1,740	SF	$ 2.50	$ 4,350	
	the end of of the joist to the edge of eave - between Line 5-6	10	LOC	$ 175.00	$ 1,750	
	Sister a 3-foot long rafter tail where existing rafter tail is deteriorated, along line 1	10	LOC	$ 50.00	$ 500	
	Install new sheet metal gutter & downspout @ Line 1 & 6	60	LF	$ 30.00	$ 1,800	
	Install french drain filled with gravel	3	LOC	$ 300.00	$ 900	
	Replace missing diagonal knee braces	1,740	SF	$ 1.00	$ 1,740	
	Disposal of demolished materials	1	LS	$ 1,500.00	$ 1,500	
	ROOF RAFTER					$ 20,615
	TOTAL DIRECT COST					$ 20,615
	General Conditions/General Requirements	20.0%				$4,123
	SUBTOTAL					$ 24,738
	General Contractor's Overhead & Profit	10.0%				$2,474
	SUBTOTAL					$ 27,212
	Historic Preservation Factor	5.0%				$1,361
	Design Contingency/Estimating Contingency	25.0%				$6,803
	SUBTOTAL					$ 35,375
	Escalation up to midpoint of construction (12 months from October 1, 2019 @ 4%/year)	4.0%				$1,415
	SUBTOTAL					$ 36,790
	Bonds	2.5%				$920
	TOTAL PROBABLE BID DAY CONSTRUCTION COST - ROOF RAFTER REPAIR - BASE	1.8293				$ 37,710

MIDPENINSULA REGIONAL OPEN SPACE DISTRICT
DEER HOLLOW WHITE BARN REHABILITATION
Deer Hollow Farm White Barn
Rancho San Antonio Open Space Preserve
Cupertino, CA
ROOF RAFTER REPAIR
Hattin Construction Management, Inc.

Estimate: Conceptual
HCM Job Number: 2019-052
Date: 10/22/2019
Revised:
Estimator: EEV/ARB

AREA : SF 1,740

Div.	Description	Qty	Unit	Cost	Extension	Total
Description:	**Roof Repair**					
	ROOF REPAIR - OPTION 1					
1	**General Requirements**					
	Included in the General Conditions below.					
	General Requirements					**$ -**
7	**ROOFING**					
	Install new corrugated sheet metal sheathing	1,900	SF	$ 9.00	$ 17,100	
	Miscellaneous roof accessories	1,900	SF	$ 1.50	$ 2,850	
	ROOFING					**$ 19,950.00**
	MARK-UPS	0.8293				**$ 16,544.54**
	TOTAL PROBABLE BID DAY CONSTRUCTION COST - ROOF RAFTER REPAIR - OPTION 1					**$ 36,495**
	ROOF REPAIR - OPTION 2					
1	**General Requirements**					
	Included in the General Conditions below.					
	General Requirements					**$ -**
7	**ROOFING**					
	Install building paper	1,900	SF	$ 0.50	$ 950	
	Install wood shingles	1,900	SF	$ 5.00	$ 9,500	
	Miscellaneous roof accessories	1,900	SF	$ 1.50	$ 2,850	
	ROOFING					**$ 13,300.00**
	MARK-UPS	0.8293				**$ 11,029.69**
	TOTAL PROBABLE BID DAY CONSTRUCTION COST - ROOF RAFTER REPAIR - OPTION 2					**$ 24,330**

MIDPENINSULA REGIONAL OPEN SPACE DISTRICT
DEER HOLLOW WHITE BARN REHABILITATION
Deer Hollow Farm White Barn
Rancho San Antonio Open Space Preserve
Cupertino, CA

Estimate: Conceptual
HCM Job Number: 2019-052
Date: 6/14/2019
Revised:
Estimator EEV/ARB

EXTERIOR WALLS REPAIR

Hattin Construction Management, Inc. AREA : SF

Div.	Description	Qty	Unit	Cost	Extension	Total
Description:	**Exterior Wall Repair**					
	EXTERIOR WALLS REPAIR - BASE					
1	**General Requirements**					
	Included in the General Conditions below.					
	General Requirements					**$ -**
6	**EXTERIOR WALLS**					
	Remove & replace deteriorated exterior wood sheathing to match existing species of original wood siding, Allow 10%	340	SF	$ 5.00	$ 1,700.00	
	Paint the replacement siding to match existing	340	SF	$ 2.50	$ 850.00	
	NORTH & SOUTH FACING INTERIOR SECTION					
	Remove existing diagonal brace	2	LOC	$ 75.00	$ 150.00	
	Install new diagonal wood brace, 6 x 6	2	LOC	$ 150.00	$ 300.00	
	Install new PT beam, 4x6	2	LOC	$ 100.00	$ 200.00	
	Add 6"x12" concrete encasement around brick footing	2	LOC	$ 1,000.00	$ 2,000.00	
	GRID LINE B & C INTERIOR SECTION					
	beam	16	LOC	$ 50.00	$ 800.00	
	EAST FACING INTERIOR SECTION					
	Remove existing diagonal brace	0	LOC	$ 75.00	$ -	
	Install new diagonal wood brace, 6 x 6	1	LOC	$ 210.00	$ 210.00	
	Install new PT beam, 4x6	1	LOC	$ 150.00	$ 150.00	
	Add 6"x12" concrete encasement around brick footing	1	LOC	$ 1,000.00	$ 1,000.00	
	GRID LINE 3 INTERIOR SECTION					
	beam	12	LOC	$ 50.00	$ 600.00	
	Install new diagonal wood brace, 6 x 6	1	LOC	$ 210.00	$ 210.00	
	Install new PT beam, 4x6	1	LOC	$ 150.00	$ 150.00	
	Add 6"x12" concrete encasement around brick footing	1	LOC	$ 1,000.00	$ 1,000.00	
	GRID LINE 5 INTERIOR SECTION					
	beam	12	LOC	$ 50.00	$ 600.00	
	Install new brace to match existing	2	LOC	$ 50.00	$ 100.00	
	Install 4x6 under the existing beam and anchor to column	1	LOC	$ 400.00	$ 400.00	
	GRID LINE 6 INTERIOR SECTION					
	Remove existing diagonal brace	0	LOC	$ 75.00	$ -	
	Install new diagonal wood brace, 6 x 6	1	LOC	$ 210.00	$ 210.00	
	Install new PT beam, 4x6	1	LOC	$ 150.00	$ 150.00	
	Add 6"x12" concrete encasement around brick footing	1	LOC	$ 1,000.00	$ 1,000.00	
	Add 6"x12" concrete encasement around brick footing	1	LOC	$ 1,000.00	$ 1,000.00	
	EXTERIOR WALLS					**$ 12,780**
	TOTAL DIRECT COST					**$ 12,780**
	General Conditions/General Requirements	20.0%				$2,556
	SUBTOTAL					**$ 15,336**
	General Contractor's Overhead & Profit	10.0%				$1,534
	SUBTOTAL					**$ 16,870**
	Historic Preservation Factor	5.0%				$843
	Design Contingency/Estimating Contingency	25.0%				$4,217

MIDPENINSULA REGIONAL OPEN SPACE DISTRICT
DEER HOLLOW WHITE BARN REHABILITATION
Deer Hollow Farm White Barn
Rancho San Antonio Open Space Preserve
Cupertino, CA

Estimate: Conceptual
HCM Job Number: 2019-052
Date: 6/14/2019
Revised:
Estimator EEV/ARB

EXTERIOR WALLS REPAIR

Hattin Construction Management, Inc. AREA : SF

Div.	Description	Qty	Unit	Cost	Extension	Total
Description:	**Exterior Wall Repair**					
	SUBTOTAL					**$ 21,930**
	Escalation up to midpoint of construction (12 months from October 1, 2019 @ 4%/year)	4.0%				$877
	SUBTOTAL					**$ 22,808**
	Bonds	2.5%				$570
	TOTAL PROBABLE BID DAY CONSTRUCTION COST - EXTERIOR WALLS REPAIR - BASE					**$ 23,378**

MIDPENINSULA REGIONAL OPEN SPACE DISTRICT
DEER HOLLOW WHITE BARN REHABILITATION
Deer Hollow Farm White Barn
Rancho San Antonio Open Space Preserve
Cupertino, CA
ATTIC FRAMING REPAIR
Hattin Construction Management, Inc.

Estimate: Conceptual
HCM Job Number: 2019-052
Date: 10/22/2019
Revised:
Estimator: EEV/ARB

AREA : SF 1,740

Div.	Description	Qty	Unit	Cost	Extension	Total
Description:	**Roof Repair**					
	ATTIC FRAMING REPAIR - BASE					
1	**General Requirements**					
	Included in the General Conditions below.					
	General Requirements					**$ -**
6	**ATTIC FRAMING REPAIR**					
	Sister a new 2-joist to the side of existing joist along Line 5	1	LOC	$ 200.00	$ 200	
	Sister a new 2-joist to the side of existing joist along Line 4	1	LOC	$ 400.00	$ 400	
	Install sheet metal strap to connect beams to walls	4	LOC	$ 50.00	$ 200	
	Strengthen the mortised wood columns supporting attic	4	LOC	$ 500.00	$ 2,000	
	Install 1/2" plywood sheathing over the (e) wood sheathing	1,740	SF	$ 3.00	$ 5,220	
	ATTIC FRAMING REPAIR					**$ 8,020**
	TOTAL DIRECT COST					**$ 8,020**
	General Conditions/General Requirements	20.0%				$1,604
	SUBTOTAL					**$ 9,624**
	General Contractor's Overhead & Profit	10.0%				$962
	SUBTOTAL					**$ 10,586**
	Historic Preservation Factor	5.0%				$529
	Design Contingency/Estimating Contingency	25.0%				$2,647
	SUBTOTAL					**$ 13,762**
	Escalation up to midpoint of construction (12 months from October 1, 2019 @ 4%/year)	4.0%				$550
	SUBTOTAL					**$ 14,313**
	Bonds	2.5%				$358
	TOTAL PROBABLE BID DAY CONSTRUCTION COST - ROOF RAFTER REPAIR - BASE	1.8293				**$ 14,671**

MIDPENINSULA REGIONAL OPEN SPACE DISTRICT
DEER HOLLOW WHITE BARN REHABILITATION
Deer Hollow Farm White Barn
Rancho San Antonio Open Space Preserve
Cupertino, CA
ATTIC FRAMING REPAIR
Hattin Construction Management, Inc.

Estimate: Conceptual
HCM Job Number: 2019-052
Date: 10/22/2019
Revised:
Estimator: EEV/ARB

AREA : SF 1,740

Div.	Description	Qty	Unit	Cost	Extension	Total
Description:	**Roof Repair**					
	ATTIC FRAMING REPAIR - OPTION 1					
1	**General Requirements**					
	Included in the General Conditions below.					
	General Requirements					**$ -**
6	**ATTIC FRAMING**					
	Remove existing stair	1	LOC	$ 300.00	$ 300	
	Install new pre-fab wooden stair	1	LOC	$ 750.00	$ 750	
	ATTIC FRAMING					**$ 1,050.00**
	MARK-UPS	0.8293				**$ 870.77**
	TOTAL PROBABLE BID DAY CONSTRUCTION COST - ATTIC FRAMING REPAIR - OPTION 1	1,740	SF			**$ 1,921**
	ATTIC FRAMING REPAIR - OPTION 2					
1	**General Requirements**					
	Included in the General Conditions below.					
	General Requirements					**$ -**
6	**ATTIC FRAMING**					
	Remove existing stair	1	LOC	$ 300.00	$ 300	
	Install new steel ladder	1	LOC	$ 2,250.00	$ 2,250	
	New consrete footing	1	LOC	$ 750.00	$ 750	
	ATTIC FRAMING	1				**$ 3,300.00**
	MARK-UPS	0.8293				**$ 2,736.69**
	TOTAL PROBABLE BID DAY CONSTRUCTION COST - ATTIC FRAMING REPAIR - OPTION 2	1,740	SF			**$ 6,037**

MIDPENINSULA REGIONAL OPEN SPACE DISTRICT
DEER HOLLOW WHITE BARN REHABILITATION
Deer Hollow Farm White Barn
Rancho San Antonio Open Space Preserve
Cupertino, CA
GROUND FLOOR & FOUNDATION REPAIR
Hattin Construction Management, Inc.

Estimate: Conceptual
HCM Job Number: 2019-052
Date: 10/22/2019
Revised:
Estimator: EEV/ARB

AREA : SF 1,740

Div.	Description	Qty	Unit	Cost	Extension	Total
Description:	**Roof Repair**					
	GROUND FLOOR & FOUNDATION REPAIR - BASE					
1	**General Requirements**					
	Included in the General Conditions below.					
	General Requirements					**$ -**
3	**GROUND FLOOR REPAIR - CENTER SECTION**					
	Remove existing soil to a depth of 8", compact	720	SF	$ 1.50	$ 1,080	
	Dispose removed soil	18	CY	$ 75.00	$ 1,350	
	New pervious concrete slab, 4"	720	SF	$ 6.50	$ 4,680	
	Install new geotextile fiber	720	SF	$ 1.50	$ 1,080	
	Install pre-engineered compacted soil fill, 4"	10	CY	$ 30.00	$ 300	
	GROUND FLOOR REPAIR - CENTER SECTION					**$ 8,490**
	TOTAL DIRECT COST					**$ 8,490**
	General Conditions/General Requirements	20.0%				$1,698
	SUBTOTAL					**$ 10,188**
	General Contractor's Overhead & Profit	10.0%				$1,019
	SUBTOTAL					**$ 11,207**
	Historic Preservation Factor	5.0%				$560
	Design Contingency/Estimating Contingency	25.0%				$2,802
	SUBTOTAL					**$ 14,569**
	Escalation up to midpoint of construction (12 months from October 1, 2019 @ 4%/year)	4.0%				$583
	SUBTOTAL					**$ 15,152**
	Bonds	2.5%				$379
	TOTAL PROBABLE BID DAY CONSTRUCTION COST - FOUNDATION REPAIR - BASE	1.8293				**$ 15,530**

MIDPENINSULA REGIONAL OPEN SPACE DISTRICT
DEER HOLLOW WHITE BARN REHABILITATION
Deer Hollow Farm White Barn
Rancho San Antonio Open Space Preserve
Cupertino, CA
GROUND FLOOR & FOUNDATION REPAIR
Hattin Construction Management, Inc.

Estimate: Conceptual
HCM Job Number: 2019-052
Date: 10/22/2019
Revised:
Estimator: EEV/ARB

AREA : SF 1,740

Div.	Description	Qty	Unit	Cost	Extension	Total
Description:	**Roof Repair**					
	FOUNDATION REPAIR - OPTION 1					
1	**General Requirements**					
	Included in the General Conditions below.					
	General Requirements					$ -
3	**GROUND FLOOR REPAIR - EAST SECTION**					
	Remove existing wood flooring	510	SF	$ 1.00	$ 510	
	Remove existing soil to a depth of 6", compact	510	SF	$ 1.50	$ 765	
	Dispose removed soil	10	CY	$ 75.00	$ 750	
	New pervious concrete slab, 6"	510	SF	$ 7.50	$ 3,825	
	Attach posts to the new slab	18	LOC	$ 50.00	$ 900	
	Install PT sleeper over concrete	510	SF	$ 2.50	$ 1,275	
	Reinstall wood flooring	510	SF	$ 2.00	$ 1,020	
	FOUNDATION REPAIR - OPTION 1					$ 9,045.00
	MARK-UPS	0.8293				$ 7,501.02
	TOTAL PROBABLE BID DAY CONSTRUCTION COST - FOUNDATION REPAIR - OPTION 1	1,740	SF			$ 16,546
	FOUNDATION REPAIR - OPTION 2					
1	**General Requirements**					
	Included in the General Conditions below.					
	General Requirements					$ -
3	**GROUND FLOOR REPAIR - EAST SECTION**					
	Remove existing wood flooring	510	SF	$ 1.00	$ 510	
	Install new concrete grade beam	30	LF	$ 150.00	$ 4,500	
	Remove existing soil to a depth of 4", compact	510	SF	$ 1.50	$ 765	
	Dispose removed soil	7	CY	$ 75.00	$ 525	
	New pervious concrete slab, 4"	510	SF	$ 6.50	$ 3,315	
	Install new geotextile fiber	510	SF	$ 1.50	$ 765	
	Install PT sleeper over concrete	510	SF	$ 2.50	$ 1,275	
	Reinstall wood flooring	510	SF	$ 2.00	$ 1,020	
	FOUNDATION REPAIR - OPTION 2					$ 12,675.00
	MARK-UPS	0.8293				$ 10,511.38
	TOTAL PROBABLE BID DAY CONSTRUCTION COST - FOUNDATION REPAIR - OPTION 2	1,740	SF			$ 23,186

HISTORICAL RESOURCE EVALUATION REPORT FOR THE WHITE BARN SURVEY AT DEER HOLLOW FARM WITHIN THE MIDPENINSULA REGIONAL OPEN SPACE DISTRICT, SANTA CLARA COUNTY, CALIFORNIA

Midpeninsula Open Space District

October 2019

Historical Resource Evaluation Report for the White Barn Survey at Deer Hollow Farm within the Midpeninsula Open Space District Santa Clara County, California

PREPARED FOR:
Midpeninsula Regional Open Space District
330 Distel Circle
Los Altos, California 94022

PREPARED BY:

Kelly Higelmire, M.A.
Rachel Gordon, B.A.
Garcia and Associates (GANDA)
813 D Street
San Rafael, California 94901

October 2019

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SUMMARY OF FINDINGS

This report presents the results of an identification and California Register of Historical Resources evaluation of the White Barn located within Deer Hollow Farm. The Midpeninsula Regional Open Space District proposes to perform maintenance and repair of the White Barn structure. The scope and scale of the Project area is still under review by the Midpeninsula Board of Directors, but the Project is anticipated to stabilize portions of the structure and conduct interior modifications and repairs, including the installation of shallow dug concrete floors, the stabilization of brick support piers and wooden columns, and maintenance of the staircase and hay loft flooring, the repair of rodent and insect damage, the installation of concrete flooring within the interior of the barn, the repair of brick piers and column supports, and the repair of wooden features throughout the structure. A Historic Structure Report was completed by Page and Turnbull in 2018. The report summarized the needed structural repairs and treatment and work recommendations, with respect to the Secretary of Interior's Standards for the Treatment of Historic Properties. In response to Page and Turnbull's (2018) recommendation of a historic eligibility study, Midpeninsula Regional Open Space District commissioned an Historical Resources Evaluation of the White Barn. Garcia and Associates performed the assessment and evaluation on September 12, 2018. Evaluation of the White Barn was completed using the California Register of Historical Resources Criteria for Designation as defined under California Code of Regulations Title 14, Chapter 3, Section 15064.5. As a result of this investigation, the White Barn was found to be more than 45 years of age and it retains its historical integrity (as defined under the California Environmental Quality Act). However, the White Barn is recommended ineligible for listing on the California Register of Historic Places.

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1.0 PROJECT DESCRIPTION

1.1 OVERVIEW

This Historical Resources Evaluation Report (HRER) presents the results of a built-environment resource investigation for the White Barn located within Deer Hollow Farm for the Midpeninsula Regional Open Space District (Project; MIDPEN) (Figures 1 and 2). The Project is subject to compliance with the California Environmental Quality Act (CEQA) and MIDPEN is the Lead Agency under CEQA. Consistent with CEQA policy and recommendation by Page and Turnbull (2018) to assess the White Barn for inclusion on the California Register of Historic Resources (CRHR), Garcia and Associates (GANDA) conducted a historic resource evaluation of the proposed affected building. This assessment included review of the physical structure of the White Barn, historic research and analysis, and the review of public records. The Historical Resources Evaluation Report (HRER) describes those efforts and evaluates the White Barn for inclusion on the HRER. The results and recommendations of the architectural survey, evaluation, and recommendations are below.

1.2 PROJECT LOCATION

The Project area is in the eastern portion of Rancho San Antonio Open Space Preserve and on the property of Deer Hollow Farm in the northwest portion of the City of Cupertino in the unincorporated area of Santa Clara County. The City of Loyola is located to the immediate east of Deer Hollow Farm and extends to the north, with the Permanente Quarry located to the south, and Monte Bello Preserve to the west.

Deer Hollow Farm is a fully operational historic livestock ranch and provides environmental education programs to the public. The Project area measures approximately 443 square feet, with an existing 183-square-foot two-story mixed-use building (White Barn) in the northeastern portion that dominates the Project area. The Project area is bound to the north by public-use land and trails operated by MIDPEN, and to the northeast by a dirt graded limited vehicle access road, Rancho San Antonio Service Road, and is situated on the southern bank and the North Fork of the seasonal Permanente Creek. A gravel and graded dirt entrance driveway and the Ranger Office are located to the immediate east. Adjacent to the Project area are fenced sheep and goat pens to the west, a gravel and dirt entrance and driveway to the southwest, and a machine shop to the south.

1.3 PROJECT DESCRIPTION

The Project proposes to design and implement the structural stabilization of the White Barn, including the interior of the Hay Room and Storage Room. No portions of the existing structure are expected to be removed, however repairs related to structural support construction are anticipated. New building materials will be used for repairs and installation of support components. The Project will include the installation of a new shallow concrete pad foundation under the White Barn. The new foundation will require ground-disturbing activities by excavating the existing packed earthen floor to a depth of approximately 3 to 4 feet below ground surface, with an additional 1 foot of disturbance to level the excavated area. The maximum depth of excavation for this portion of the Project area will therefore extend to a depth of approximately 5 feet. Other ground-disturbing activities required for the Project will include minor surface grading of a segment of Rancho San Antonio Service Road and the entrance and driveway located to the south and southwest of the White Barn. Grading work is not expected to extend further than 20 feet from the perimeter of the White Barn. At the time of this review, the Project is in the planning and development phase, therefore other detailed aspects of the Project are unknown. This includes the type of equipment that will be used, requirements for staging area(s), the exact construction schedule, and the depth of grading.

1.4 AREA OF POTENTIAL EFFECTS

The Area of Potential Effects (APE) includes the White Barn and immediate surrounding area. The APE was established by MIDPEN during the planning phase of this project. The APE includes the area of planned ground disturbance, laydown areas, and the White Barn. The APE map (Figure 2) encompasses the maximum extent of construction disturbances and includes staging areas.

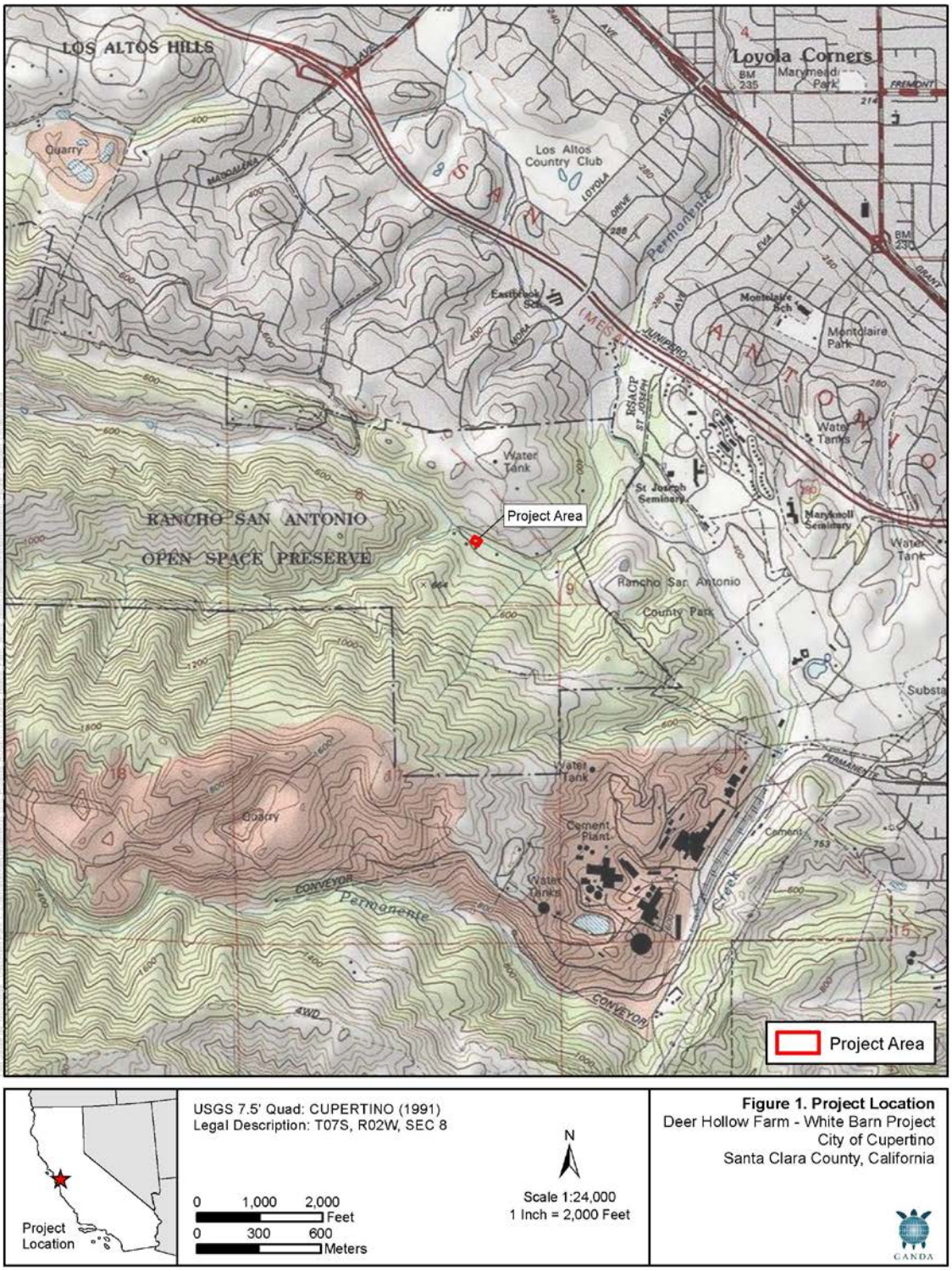

Figure 1. Project Location

Figure 2. Project Area and Survey Coverage

2.0 REGULATORY CONTEXT

Cultural resources may be determined to be significant if they meet national, state, or local criteria, either individually or in combination. Resource evaluation criteria are determined by the compliance requirements of each specific project. Applicable state and local government policies and significance criteria are briefly presented below.

3.1 STATE REGULATIONS AND CRITERIA

California Environmental Quality Act

CEQA requires the lead agency to consider the effects of a project on historical resources (State CEQA Guidelines Section 15064.5[b]). *Historical resources* are those meeting the requirements listed below:

- Resources listed in or determined eligible for listing in the California Register of Historical Resources (CRHR) (State CEQA Guidelines Section 15064.5[a][1]).
- Resources included in a local register as defined in Public Resources Code (PRC) Section 5020.1(k), "unless the preponderance of evidence demonstrates" that the resource "is not historically or culturally significant" (State CEQA Guidelines Section 15064.5[a][2]).
- Resources that are identified as significant in surveys that meet the standards provided in PRC Section 5024.1[g] (State CEQA Guidelines Section 15064.5[a][3]).
- Resources that the lead agency determines are significant, based on substantial evidence (State CEQA Guidelines Section 15064.5[a][3]).

The process for identifying historical resources is typically accomplished by applying the criteria for listing in the CRHR (14 California Code of Regulations [CCR] Section 4852), which states that a historical resource must be significant at the local, state, or national level under one or more of the following four criteria:

- Criterion A. Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage, or the United States (CCR, Title 14, Section 4852[b][1]),
- Criterion B. Is associated with the lives of persons important in our past (14 CCR 4852[b][2]),
- Criterion C. Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values (14 CCR 4852[b][3]), or;
- Criterion D. Yields, or may be likely to yield, information important in prehistory or history (14 CCR 4852[b][4]).

To be considered a historical resource for CEQA, the resource must also have *integrity*, which is the authenticity of a resource's physical identity evidenced by the survival of characteristics that existed during the resource's period of significance. Resources, therefore, must retain enough of their historic character or appearance to be recognizable as historical resources and to convey the reasons for their significance. Integrity is evaluated with regard to the retention of location, design, setting, materials, workmanship, feeling and association. It must also be judged with reference to the particular criteria under which an eligible for listing in the CRHR (14 CCR 14 Section 4852[c]).

- ***Location***: where the historic property was constructed or the place where the historic event occurred.
- ***Design***: the combination of elements that create the historic form, plan, space, structure, and style of a property. This includes organization of space, proportion, scale, technology, ornamentation, and materials. This is applicable to larger properties for the historic way in which the buildings, sites, and structures are related.

- ***Setting***: the physical environment of a historic property. It refers to the historic character of the property. It includes the historical relationship of the property to surrounding features and open space. These include topographic features, vegetation, simple manmade paths or fencing and the relationships between buildings, structures or open space.
- ***Materials***: the physical elements that were combined during a particular period of time and in a particular pattern or configuration to form the historic property.
- ***Workmanship***: the physical evidence of the crafts of a particular culture or people during a given period in history. It may be expressed in vernacular methods of construction and plain finishes or in highly sophisticated configuration and ornamental detailing.
- ***Feeling***: the property's expression of the aesthetic or historic sense of a particular period of time. It results from the presence of physical features that, taken together, convey the property's historic character.
- ***Association***: the direct link between an important historic event or person and a historic property. A property retains association if it is the place where the event or activity occurred and is sufficiently intact to convey that relationship to an observer. Like feeling, association requires the presence of physical features that convey a property's historic character.

Resources that meet the significance criteria and integrity considerations must be considered. Note: if a resource is not listed in or determined to be eligible for listing in the CRHR, not included in a local register of historical resources, or identified in an historical resource survey, it does not preclude a lead agency under CEQA from determining that the resource may be an historical resource as defined in PRC Section 5020.1(j) or 5024.1 (State CEQA Guidelines Section 15064.5[a][4]).

3.0 RESEARCH METHODS

GANDA completed background research consisting of a record search at the Northwest Information Center (NWIC) of the California Historical Resources Information System (CHRIS), archival research at relevant local and regional repositories, a review of historic maps, and consultation with local historical societies. The results were evaluated by GANDA. The methods and results of the background research are presented below.

3.1 RECORDS SEARCH

On September 10, 2019, a records search was conducted at NWIC/CHRIS at Sonoma State University in Rohnert Park by GANDA Archaeologist Robin Fies (File No. 19-0446). The NWIC is a repository of all site records, previously conducted archaeological resources investigations, and historic information concerning resources for 18 counties, including Santa Clara County. The records search area consisted of 0.25 mile around the Project site, and the purpose of this records search was to compile information pertaining to the locations of previously recorded archaeological resources, built-environment resources and prior studies in proximity to the Project area that inform the archaeological sensitivity. The following sources were consulted during the records search:

- NWIC base map: U.S. Geological Survey (USGS) 7.5-minute series topographic quadrangles of Cupertino, California (1991).
- Survey reports from previous archaeological resources investigations and site records to identify recorded archaeological sites and built environmental resources (i.e., buildings, structures, and objects) located within the Project area.
- California Office of Historic Preservation (OHP) sources, including the California Inventory of Historic Resources (1976), California Archaeological Determinations of Eligibility (2012a), and the Historic Properties Directory (2012b), which combines resources listed as California Points of Historical Interest and California Historical Landmarks and those that are listed in or determined eligible for listing in the National Register of Historic Places (NRHP) or the CRHR.

3.2 ARCHIVAL RESEARCH

GANDA Architectural Historian Kelly Higelmire and Archaeologist Rachel Gordon conducted archival research at local and county repositories to obtain information on the history and development of the properties located within the APE. These repositories included the Santa Clara County Public Library, Los Altos History Museum, Cupertino Historic Society and Museum, University of California Berkeley, California Historical Society, Fremont Historical Society, Santa Clara University, and digital collections such as the Online Archive of California, Newspapers.com, and Ancestry.com. GANDA staff reviewed a wide array of primary and secondary documents, building permit records, city directories, historical maps and photographs, newspaper articles, and published books. Additional archival research included local cancelled tax maps, deed records, and tax records held by Santa Clara County, which were used to locate information about parcel development for Deer Hollow Farm and, more specifically, the White Barn.

3.3 HISTORICAL MAP REVIEW

GANDA Architectural Historian Kelly Higelmire and Staff Archaeologist Rachel Gordon reviewed historical maps and aerial photographs illustrating features such as buildings, roads, railways, and o provide additional information to assess the sensitivity for the presence of built environment resources within the APE. Historical maps are available at numerous repositories, including the USGS historic topographic map collection, the University of California, Berkeley, Earth Sciences and Map Library, and the David Rumsey Historical Map Collection. The following sources were consulted during the historic map review:

- General Land Office (GLO) Plat Map, Township 7 South, Range 2 West Mt. Diablo Meridian (1864)
- David Rumsey Map Collection
- Library of Congress *1890 Atlas map of Santa Clara County (Hermann Bros. 1890).*
- Historical aerials (Historic Aerials 1946, 1958, 1959, 1968)
- USGS 1991 1:24000 Cupertino Quadrangle

4.0 FIELD METHODS

On September 12, 2019, Mr. Higelmire conducted an initial site visit to perform a reconnaissance-level architectural survey of the APE to document and assess the White Barn and verify historical research. The field survey was recorded in field notes and digital photographs and resulted in the documentation of the historic rural structure and its surroundings. The White Barn is described in detail below in Section and recorded on Department of Parks and Recreation (DPR) 523 forms presented in Appendix B.

4.1 BUILT ENVIRONMENT SURVEY

GANDA Architectural Historian, Kelly Higelmire, M.A., conducted an architectural history pedestrian survey of the APE. Mr. Higelmire walked the extent of the Architectural APE. Photos were taken of the White Barn and Deer Hollow Farm, previously identified as a possible built-environment resource by Page and Turnbull (2018). Mr. Higelmire recorded the structure, materials, and landscape of the structure and its surroundings. Locational data, architectural styles, modifications, and current use were recorded for the built environment resource on GANDA standard field forms. Locational data for known built-environment resources were drawn from aerial photographs of the APE (Figure 2). The White Barn is an active building within the Deer Hollow Farm environmental education center and was accessible during the field survey. The resource was recorded and all elevations were photographed. Additional architectural information was taken from Google Earth imagery and current aerial photographs. Furthermore, Mr. Higelmire traveled to the nearby Planning Department to investigate public records for Deer Hollow Farm. All records, photographs, and field forms were taken back to the GANDA San Rafael office for analysis.

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5.0 HISTORICAL OVERVIEW

The history of the project APE and Deer Hollow Farm has been previously described in both the Page and Turnbull (2018) Historical Resource Evaluation (HRE) and the Cultural Resources Survey conducted by GANDA (Gordon and Higelmire 2018). Construction of the White Barn was completed sometime between 1937 and 1948 and is associated with George Sheldon Perham. Perham was the second owner of the property and owned the ranch from 1937 to 1975. These dates also correspond to the White Barn's Period of Significance as it relates to ranch expansion during Perham's ownership. This section offers a brief history of ownership and development prior to 1937 but focuses on the White Barn and its association with Perham during the Period of Significance.

Prior to the purchase of what is now called Deer Hollow Farm, the ranch was associated with the original homesteading of Santa Clara County. Homesteaders populated Santa Clara County in the mid-late 1800s, settling on former Spanish land grants for farming and ranching operations. Formerly known as Sleepy Hollow, the ranch property was first purchased by George Henry and Theodore Franklin (Frank) Grant (the Grant brothers) in 1853 The Grant brothers bought 150 acres of former Rancho San Antonio and added additional acreage to the property in subsequent years, accumulating to its current size of 360 acres (Bureau of Land Management 1868). During the Grant brothers' ownership, the property consisted of the foreman's cabin, the T. F. Grant residence, and two barns (interviews with Louis Grant and Virginia Grant Murphy, Deer Hollow Farm. May 1995 *in* Page and Turnbull 2018). After the deaths of both Grant Brothers in the late 1800s, the property was held by the descendants of Theodore Frank Grant until its sale to George Sheldon Perham, in 1937 (Friends of Deer Hollow Farm 2017; Lewis 2017; *The Times* 1955).

George Sheldon Perham was the son of prominent San Francisco homesteader and rancher George Lawrence Perham, who founded and operated Boston Ranch in the City of San Francisco. George Sheldon Perham began his dairy and ranching career working in his father's company as a driver with the Dairy Delivery Company, a subsidiary of the ranch. His contribution to dairy farming came only after his father sold his partnership of the Dairy Delivery Company to the Borden Company. George Sheldon Perham stayed on with the Dairy Delivery Company (later known as the Borden Dairy Delivery Company) as the vice president of the Oakland division. By 1936, George Sheldon Perham was promoted to president, heading up the company's Western Division. He held this post until his retirement in 1955 (Lewis 2017; *The Times* 1955).

In 1937, one year after his promotion, George Sheldon Perham purchased the ranch land (Deer Hollow Farm) from the descendants of the Frank Grant. Perham started a small ranching and dairy operation, separate from his company, that continued until the property's eventual sale in 1975 to MIDPEN, and eventually renamed the ranch Deer Hollow Farm (Deer Hollow Farm Friends 2017). During the time of Perham's ownership, the ranch was expanded to include several outbuildings and working sheds, two residences, a garage, and several associated ranching features, such as corrals, fences, roads, and water features. Perham also constructed two barns, located on the original Grant-built barn sites (interviews with Louis Grant and Virginia Grant Murphy, Deer Hollow Farm, May 1995 *in* Page and Turnbull 2018). The actual date of construction for the White Barn is unclear, though from interviews from his descendants and aerial photography, the date of construction can be narrowed between 1937 and 1948.

5.1 WHITE BARN HISTORY

Two barns were constructed by the Grant Brothers during their residence of the property. However, when Perham purchased the ranch, the original barns may not have existed, or were demolished by Perham. According to later accounts by the Grant family descendants, the current White Barn was built on top of the original barn location (interviews with Louis Grant and Virginia Grant Murphy, Deer Hollow Farm, May 1995 *in* Page and Turnbull 2018). Aerial photography shows the existing footprint of the barn as early as 1948 (Google Earth 2019). While the date of construction is uncertain, an interview with George Perham Jr., conducted by the Los Altos History Show, further narrows the date of construction for this building. According to George Perham Jr., son of George Sheldon Perham, while unloading hay in his youth, Perham Jr. failed to disconnect a rope between the hay truck and barn. As the truck drove away, the barn roof collapsed and many of the "supports were bent" (Los Altos

History Show. Episode #61 "Deer Hollow Farm" Guest George Perham Jr, Johnny Jonigan, January 2000). The White Barn was reconstructed in the same area after the accident.

No exact date for the construction or rebuilding of the barn could be accurately ascertained, but it is estimated that this event occurred between the 1940s and 1950s, during Perham Jr.'s adolescence. The only evidence of construction or repair in the Santa Clara County records is a permit for the 2017–2018 renovation of the milk room, located within the northwest portion of the building, which was enclosed with solid walls over a newly installed concrete floor. Vinyl windows were cut into the exterior for ventilation (Page and Turnbull 2018).

6.0 DESCRIPTION OF CULTURAL RESOURCES

One historic building was present within the APE. The following section presents a description of the White Barn, located within the active Deer Hollow Farm. A Historic Structure Report (HRE) was previously compiled by Page and Turnbull (2018) to assess the condition of the building and recommend treatment and work recommendations for the repair and stabilization of the structure. The HRE recommended a formal evaluation of the White Barn for inclusion on the CRHR as an individual property. The White Barn was recorded on DPR 523a and 523b forms, including Primary and Building, Structure, and Object Record (BSO) forms. The results of the CRHR evaluation of these resources can be found below

6.1 EVALUATION OF SIGNIFICANCE

The White Barn is a substantial barn structure within Deer Hollow Farm. The building was assessed on September 12, 2019 as an individual historic resource under CEQA. GANDA applied the criteria for listing in the CRHR, evaluating the barn under Criteria A-D. The Period of Significance for this evaluation was determined to be 1937 to 1975. The period is associated with the owning and operation of the ranch, now known as Deer Hollow Farm, by George Sheldon Perham. Although Deer Hollow Farm can be dated back further to the original homestead of George Henry and Theodore Franklin Grant, the White Barn was constructed during the Perham family's residence. While no records of construction exist, aerial photographs show the barn was constructed prior to 1948. An interview with descendants of the Grant Brothers (interviews with Louis Grant and Virginia Grant Murphy, Deer Hollow Farm, May 1995, *in* Page and Turnbull 2018) revealed that the existing barn is located on the foundation of another barn built by the Grant brothers, but was built after Perham purchased the property, and after an accident left an earlier building in disrepair (Los Altos History Show, Episode #61 "Deer Hollow Farm" Guest George Perham Jr, Johnny Jonigan, January 2000). No exact date for building or rebuilding of the barn could be ascertained so the Period of Significance remains tied to the ownership of the farm by the Perham family between 1937 and 1975.

The White Barn was evaluated in this report under CRHR under Criterion 1-4. The property was not evaluated for inclusion on NRHP as part of this report. However, evaluation under the NRHP Criteria was completed within the White Barn DPR Form 523. During the evaluation, the White Barn was considered ineligible for listing on the NRHP under Criteria A-D (DPR 523). Evaluation under CEQA follows below.

White Barn Physical Description

The White Barn is a Broken Gable structure (Photos 1–4) with gable roof and flanking lean-to sheds on northwest and southeastern sides of the central barn, forming a broken slope. The wood frame building is approximately 30 feet wide by 58 feet long and is 25 feet tall at its highest point. The roof is clad with corrugated, galvanized zinc sheet metal roofing panels. The structure is supported with low brick piers (east) and a new concrete slab foundation (west). The exterior is clad in vertical circular saw cut uniform lumber boards. The interior of the building is divided into several sections with lumber framing. The northwest shed-roofed extension includes a milk room, to the south side of the shed, and a goat pen, to the north. The center section is dedicated to hay storage, with a hay loft in the gable above, accessed by a steep wood built-in staircase (Page and Turnbull 2018). In the southeast shed-roofed extension, there are horse stalls, which are currently used for storage. The horse stalls and goat pen have openings that are connected to the center hay storage section. There are also openings in the hay loft's floor which provide access to various parts of the ground floor. The construction date, architect, and builder are all unknown for this resource; however, the hay barn (middle section) was most-likely built earlier than the flanking lean-to shed additions, suggesting expansion of the barn with growth of the farm operation.

Photo 1. White Barn front facade, view west.

Photo 2. White Barn rear elevation, view north-northwest.

Photo 3. White Barn southeastern elevation, view west.

Photo 4. White Barn northwest elevation, view southeast.

Evidence for the barn expansion can be seen in the differing roofline pitches and joining of roof materials, closed "ghost" entryways, and differences in hardware and construction methods used between the main gable. The main structure is two stories with exposed eaves of horizontal boards cut to varying sizes and spaced unequally to support the roof. The front gable roofline consists of corrugated and galvanized overlapping metal sheeting. The metal sheeting terminates with a 90-degree bend on the eastern and western pitches before meeting with the soft slope of the flanking sheds. Each shed also utilizes exposed eaves (Photo 5); however, the sheds feature uniform rafter tails (Photo 6), evenly spaced and supporting wood beams underneath the metal roof. Within the interior ceilings, both the main gable structure and sheds differ between horizontal planks used in the former and standardized timber construction utilized in the latter.

Photo 5. Detail of main gable exposed eaves, view south.

Photo 6. Detail of shed eaves, view west.

The main gabled structure also contains three "ghost" entryways on the front façade (Photos 7 and 8). Flanking the main solid hinged double door entry are two adjacent entries that have been boarded up with irregular cut lumber boards but show gaps where doors were previously utilized. A third "hay loft" door is also located under the steep eave. The eastern and western flanking sheds utilize a rolling, single-wide barn door and hinged outwardly swing door, respectively, replacing the need for the main gable entries. Another difference between the construction methods includes the likely use of recycled square cut nails and spikes in the interior of the main gabled structure, hammered standardized cut nails in the clad board surrounding the structure, and post and beam supports within the gable structure. This is in stark contrast to the more uniformed hammered and pneumatically driven standardized nails and squared bolts throughout the framing and clad board found on both shed extensions.

Photo 7. White Barn main gable detail with "ghost" entryways, view south.

Photo 8. Detail of boarded "ghost" entryway, view south.

Since the time of completion, the barn has undergone alterations within the interior and to the floor and exterior of the Milk Room. Within the interior, horse stalls and hay compartments were installed. The barn was also retrofitted with electricity to accommodate overhead lighting in all three sections. The Milk Room is the most dramatically changed. Per the 2016–2017 building permit, the Milk Room was renovated to include installation of a shallow dug concrete drainage floor and solid walls. The walls on the southern and western sides included framing and installation of vinyl sliding windows (Photo 9), in compliance with the 2016 California Building Code. Wood cladding was cut to provide concrete stem walls.

Photo 9. Detail of vinyl window installed during milk room renovation, view southeast.

Integrity

GANDA assessed the integrity of the White Barn under the seven aspects detailed under CEQA. The White Barn has retained its integrity of location, setting, design, materials, workmanship, feeling, and association in relation to the structure and its agricultural and rural setting. The White Barn does not appear to have been moved since its construction. The only changes since its completion includes the renovation of the milk room, in 2017–2018, with installation of concrete stem walls and floors, solid walls, and vinyl windows. These renovations do not diminish from the characteristics of the building and enhance its use as a functional rural structure for the surrounding farm.

Criterion 1 (Events)

Deer Hollow Farm is associated with the original homesteading of Santa Clara County in the mid to late 1800s. Ranchers utilized former Spanish land grants for farming and ranching operations. Deer Hollow Farm was first established in 1853 by George Henry and Theodore Franklin Grant. The Grant Brothers purchased the first 150 acres during this time and added additional acreage to the property in subsequent years accumulating to its current size of 357 acres. During the Grant brother's ownership, the property consisted of the foreman's cabin, the T.F. Grant residence, and two barns (interviews with Louis Grant and Virginia Grant Murphy, Deer Hollow Farm. May 1995 *In* Page and Turnbull 2018). After the Grant brothers' deaths, the property was sold to the George Sheldon Perham in 1937, who began a small family ranching operation. Though Deer Hollow Farm is associated with early homesteading in Santa Clara County, the Perham family did not establish the homestead or utilize the original buildings on the Grant property. Furthermore, the White Barn, was built after the original homesteading of the ranch during the Perham family farm operation and does not have association with the early homestead development. As evidenced in two separate interviews, the White Barn was built by Perham after a farming accident in the 1940s and its association is with the Perham family solely. As a barn within the family farm, the White Barn was not utilized for commercial operation and had no association with the establishment or growth of ranching and dairy operations in Santa Clara County. Thus, the White Barn is not eligible for listing on the CRHR under Criterion A as no events occurred on the property between 1937 and 1975 that contributed to broad patterns of California or local history.

Criterion 2 (Persons)
The White Barn is associated with George Sheldon "Shel" Perham, who purchased the property from the Grant family in 1937. Perham was the son of a San Francisco homesteader (George Lawrence Perham) known for his association with the Boston Ranch (later Borden Company) in the City of San Francisco. Though Shel Perham began his dairy career under his father, his contribution to dairy farming came only after his father sold his partnership to the Borden Company. Shel Perham stayed on with the Dairy Delivery Company as the vice president of this division. Later, Shel Perham became president of the Borden Company Dairy Delivery Company in 1936 and was head of Western (Oakland) Division until retirement in 1955.

Though George Sheldon Perham was important to his company and a descendant of a prominent homesteader/rancher, he himself does not rise to the level of prominence defined as defined under Criterion B. George Sheldon Perham did not establish, direct, or influence dairy farming, commercial delivery, or local/state markets in a highly meaningful way to rise to the level of importance under this criteria. Thus, the White Barn is not eligible under Criterion 2 under the CRHR.

Criterion 3 (Architecture)
The White Barn is not eligible for listing on the CRHR under Criterion C. While the barn was constructed prior to 1948 and meets eligibility for being at least 50 years old, the building does not contain distinctive characteristics of type, period, region, or represent the work of a master or possess high artistic value. The building itself is vernacular in construction that is ubiquitous in California and the rest of the United States. Broken Gable Barns have been recorded for hay and livestock use in several eastern and western states. Author Earl Thollander produced illustrations of other examples of the style within California (Thollander 1974). The style is not unique to Santa Clara County or California. The building is built for functionality and was not designed or constructed by a master or possess high artistic value. The barn as does not "represent a significant and distinguishable entity whose components may lack individual distinction."

Criterion 4 (Information Potential)
This criterion is generally applied to sites that may provide archaeological resources. The White Barn is a built resource and is not likely to yield or have yielded information important to prehistory or history.

7.0 CONCLUSIONS AND RECOMMENDATIONS

The White Barn was determined ineligible for inclusion on the CRHR as an individual property. Though the White Barn retains its integrity, the barn is not eligible for listing on the CRHR as an individual resource because it does not meet the criteria for listing on the CRHR under Criterion A–D. The building is part of a working ranch established in 1849 and utilized until 1975. The White Barn is not associated with the original Grant Homestead and the period of significance for the structure was determined to occur after homesteading in Santa Clara County. This White Barn is associated with the purchase and operation of a family ranch by George Sheldon Perham between 1937 and 1975. The construction of the barn occurred sometime between 1937 and 1948, with evidence pointing to a narrower date range between 1940 and 1948. The White Barn is not associated with events, persons, or architectural trends that influence California or the local Santa Clara region.

Though the White Barn is not eligible for inclusion on the CRHR as an individual resource, the White Barn may be a contributing element of a larger historic district pertaining to the Perham ranch. GANDA recommends that Deer Hollow Farm be evaluated as a historic district under the Perham Period of Significance, 1937–1975, barn may be eligible for the CRHR as a contributing historic element to a larger historic district pertaining to the Perham Family Farm (Deer Hollow Farm) and its development between 1937 and 1975. GANDA recommends evaluation of Deer Hollow Farm as a historic district under Criterion A, B, and C. Deer Hollow farm is likely significant under Criterion A as part of the homesteading and continuous operation of cattle ranching within Santa Clara County and association with dairy farming within the Bay Area. Furthermore, the establishment and continuous use of the farm would include its association with both the Grant and Perham families between 1853 and 1975, under Criterion B. Construction and expansion of the ranch, including the corrals, buildings, pens, and landscape may be significant for the homestead period and regional ranching methods between 1937 and 1975. Contributing elements under Criterion C should also be evaluated for their vernacular architectural styles. GANDA further recommends that all stabilization and repairs of the White Barn, associated with this Project, be conducted as specified by Page and Turnbull (2018) to retain the integrity of the structure.

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Appendix A: Department of Parks and Recreation (DPR) 523 Forms

MIDPENINSULA REGIONAL OPEN SPACE DISTRICT
DEER HOLLOW WHITE BARN
Deer Hollow Farm White Barn
Rancho San Antonio Open Space Preserve
Cupertino, CA

Opinion of Probable Construction Cost
Conceptual Cost Estimate

Prepared for : ***Wiss Janney Elstner Associates, Inc.***

October 22, 2019

by:

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MIDPENINSULA REGIONAL OPEN SPACE DISTRICT
DEER HOLLOW WHITE BARN REHABILITATION
Deer Hollow Farm White Barn
Rancho San Antonio Open Space Rrserve
Cupertino, CA

ESTIMATE OF PROBABLE CONSTRUCTION COST

EXECUTIVE SUMMARY

This Conceptual Design Cost Estimate represents the probable construction cost of **Midpeninsula Regional Open Space District – Deer Hollow Farm White Barn Rehabilitation in Cupertino, CA**. Considering that the drawings are preliminary design submittal, certain components, which may be required as part of this project may not be shown or mentioned in this estimate. Allowances have been made when detail description of equipment, work definition, or quantities are not available. Material pricing and labor costs are obtained from historical cost data and similar projects. Mechanical and electrical costs are based similar projects. The unit costs include material, labor, and subcontractor's markup, and are based on the design level of documents received.

Project Descriptions:
Deer Hollow White Barn Rehabilitation, Cupertino CA. Scope includes repair of roof rafter, exterior walls, attic framing, ground floor and foundation.

Documents Received as a Basis of Cost Estimate:
The following documentation was used in preparation of this estimate:
- Preliminary Drawings S1.0, S2.0, S3.0, S4.0, S4.1, S5.0, S5.1 & S5.2.
- Basis of Design dated October 10, 2019

Exclusions:
The following items are excluded:
- Change Order Contingency
- Hazardous materials abatement & disposal
- Land Cost
- Cost of money
- Offsite Utilities & Connection Fees
- Professional Consultants' and Construction Management fees
- Administrative costs
- Fees for testing construction materials
- Plan checks and inspection
- Permits
- Legal and financing costs
- Furnishings, furniture, and equipment (FFE)
- Relocation costs, if required
- Contractor off-hours and compressed time work schedule, if required
- Escalation beyond that stated.
- LEED

Possible Additional Cost Items:

Items that may change the Estimate of Probable Construction Cost include, but are not limited to, the following:

- Modifications to the scope of work, drawings, specifications included in this estimate
- Unforeseen conditions
- Construction phasing requirements
- Excessive contract and general conditions, and restrictive technical specifications
- Equipment, material, systems or product that cannot be obtained from at least three different sources
- Delays beyond the projected schedule
- Any other non-competitive bid situations
- Any addenda, changes not included in the basis of estimates.

Escalation:
Escalation of 4% up to midpoint of construction is included in the estimate, assumed at 12 months from October 01, 2019 at the rate of 4% per annum.

ESTIMATING ASSUMPTIONS AND COMMENTS
General:

a. Material prices are at 4th Quarter 2019 level; include taxes and contractor's markups.
b. Labor cost is based on prevailing wages.
c. Work to be done during normal business hours.
d. This estimate can vary due to change in scope.
e. Quantities were obtained as shown on the drawings.
f. Allowances are provided for items not shown in the drawings and are anticipated to be part of the estimate.
g. Installation cost, supervision, and coordination for material and equipment are included in the estimate.
h. General conditions assumed at 20% include mobilization, insurance, office personnel costs, dust control, and other items not mentioned in General requirements.
i. Design Contingency/Estimating Contingency is assumed at 25% due to the level of drawings used in the estimate.

ESTIMATE OF PROBABLE CONSTRUCTION COST
The estimated Probable Construction Costs reflects the anticipated cost of the **MROSD Deer Hollow White Barn Rehabilitation in Cupertino, CA.** This estimate is based on a competitive open bid process with a recommended five or more bids from reputable general contractors, and a minimum of three bids for all subcontracted items.

Cost of materials, labor, equipment or services furnished by others, and the contractors' or vendors' methods of determining prices are determined by market and/or economic conditions. Hence, the Estimator cannot and does not guarantee that proposals, bids or actual project costs will not vary from this Estimate of Probable Construction Cost.

This Estimate of Probable Construction Cost is exclusive of all costs associated with changes, modifications or addenda to the drawings and/or specifications subsequent to the preparation of this estimate.

Hattin Construction Management, Inc.
Project and Construction Management Services

300 Frank H. Ogawa Plaza, Suite 239 Oakland, CA 94102
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SUMMARY OF PROBABLE CONSTRUCTION COST

MIDPENINSULA REGIONAL OPEN SPACE DISTRICT
DEER HOLLOW WHITE BARN REHABILITATION
Deer Hollow Farm White Barn
Rancho San Antonio Open Space Preserve
Cupertino, CA
Type of Estimate: CONCEPTUAL ESTIMATE

Gross Area (SF) 1,740
HCM Job Number: 2019-052
Lead Estimator: EEV
Date: 10/22/2019
Revised:

ITEM	DESCRIPTION		TOTAL	%
	AREA (SF)		1,740	
1	ROOF RAFTER REPAIR - BASE	$	37,710	
	OPTION 1 - INSTALL NEW CORRUGATED SHEET METAL SHEATHING	$	36,495	
	OPTION 2 - INSTALL BUILDING PAPER & WOOD SHINGLES	$	24,330	
2	EXTERIOR WALLS REPAIR - BASE	$	20,360	
3	ATTIC FRAMING REPAIR - BASE	$	14,671	
	OPTION 1 - INSTALL PRE-FABRICATED ATTIC LADDER	$	1,921	
	OPTION 2 - INSTALL A STEEL LADDER WITH CONCRETE FOOTING	$	6,037	
4	GROUND FLOOR & FOUNDATION REPAIR - BASE	$	15,530	
	OPTION 1 - INSTALL CONCRETE SLAB	$	16,546	
	OPTION 2 - INSTALL NEW GRADE BEAM	$	22,253	

TOTAL PROBABLE BID DAY CONSTRUCTION COST - BASE REPAIR	$	88,271
TOTAL PROBABLE BID DAY CONSTRUCTION COST - OPTION 1 REPAIR	$	54,961
TOTAL PROBABLE BID DAY CONSTRUCTION COST - OPTION 2 REPAIR	$	52,620

MIDPENINSULA REGIONAL OPEN SPACE DISTRICT
DEER HOLLOW WHITE BARN REHABILITATION
Deer Hollow Farm White Barn
Rancho San Antonio Open Space Preserve
Cupertino, CA
ROOF RAFTER REPAIR
Hattin Construction Management, Inc.

Estimate: Conceptual
HCM Job Number: 2019-052
Date: 10/22/2019
Revised:
Estimator: EEV/ARB

AREA : SF 1,740

Div.	Description	Qty	Unit	Cost	Extension	Total
Description:	**Roof Repair**					
	ROOF REPAIR - BASE					
1	**General Requirements**					
	Included in the General Conditions below.					
	General Requirements					**$ -**
6	**ROOF RAFTER**					
	Remove existing corrugated metal steel	1,900	SF	$ 2.00	$ 3,800	
	Remove damaged or deteriorated 1-by skipsheathing, 50%	950	SF	$ 1.50	$ 1,425	
	Install skipsheathing to match, 50%	950	SF	$ 3.00	$ 2,850	
	Install wood blocking between joists throughout	1,740	SF	$ 2.50	$ 4,350	
	the end of of the joist to the edge of eave - between Line 5-6	10	LOC	$ 175.00	$ 1,750	
	Sister a 3-foot long rafter tail where existing rafter tail is deteriorated, along line 1	10	LOC	$ 50.00	$ 500	
	Install new sheet metal gutter & downspout @ Line 1 & 6	60	LF	$ 30.00	$ 1,800	
	Install french drain filled with gravel	3	LOC	$ 300.00	$ 900	
	Replace missing diagonal knee braces	1,740	SF	$ 1.00	$ 1,740	
	Disposal of demolished materials	1	LS	$ 1,500.00	$ 1,500	
	ROOF RAFTER					**$ 20,615**
	TOTAL DIRECT COST					**$ 20,615**
	General Conditions/General Requirements	20.0%				$4,123
	SUBTOTAL					**$ 24,738**
	General Contractor's Overhead & Profit	10.0%				$2,474
	SUBTOTAL					**$ 27,212**
	Historic Preservation Factor	5.0%				$1,361
	Design Contingency/Estimating Contingency	25.0%				$6,803
	SUBTOTAL					**$ 35,375**
	Escalation up to midpoint of construction (12 months from October 1, 2019 @ 4%/year)	4.0%				$1,415
	SUBTOTAL					**$ 36,790**
	Bonds	2.5%				$920
	TOTAL PROBABLE BID DAY CONSTRUCTION COST - ROOF RAFTER REPAIR - BASE	1.8293				**$ 37,710**

MIDPENINSULA REGIONAL OPEN SPACE DISTRICT
DEER HOLLOW WHITE BARN REHABILITATION
Deer Hollow Farm White Barn
Rancho San Antonio Open Space Preserve
Cupertino, CA
ROOF RAFTER REPAIR
Hattin Construction Management, Inc.

Estimate: Conceptual
HCM Job Number: 2019-052
Date: 10/22/2019
Revised:
Estimator: EEV/ARB

AREA : SF 1,740

Div.	Description	Qty	Unit	Cost	Extension	Total
Description:	**Roof Repair**					
	ROOF REPAIR - OPTION 1					
1	**General Requirements**					
	Included in the General Conditions below.					
	General Requirements					**$ -**
7	**ROOFING**					
	Install new corrugated sheet metal sheathing	1,900	SF	$ 9.00	$ 17,100	
	Miscellaneous roof accessories	1,900	SF	$ 1.50	$ 2,850	
	ROOFING					**$ 19,950.00**
	MARK-UPS	0.8293				**$ 16,544.54**
	TOTAL PROBABLE BID DAY CONSTRUCTION COST - ROOF RAFTER REPAIR - OPTION 1					**$ 36,495**
	ROOF REPAIR - OPTION 2					
1	**General Requirements**					
	Included in the General Conditions below.					
	General Requirements					**$ -**
7	**ROOFING**					
	Install building paper	1,900	SF	$ 0.50	$ 950	
	Install wood shingles	1,900	SF	$ 5.00	$ 9,500	
	Miscellaneous roof accessories	1,900	SF	$ 1.50	$ 2,850	
	ROOFING					**$ 13,300.00**
	MARK-UPS	0.8293				**$ 11,029.69**
	TOTAL PROBABLE BID DAY CONSTRUCTION COST - ROOF RAFTER REPAIR - OPTION 2					**$ 24,330**

MIDPENINSULA REGIONAL OPEN SPACE DISTRICT
DEER HOLLOW WHITE BARN REHABILITATION
Deer Hollow Farm White Barn
Rancho San Antonio Open Space Preserve
Cupertino, CA

Estimate: Conceptual
HCM Job Number: 2019-052
Date: 6/14/2019
Revised:
Estimator EEV/ARB

EXTERIOR WALLS REPAIR

Hattin Construction Management, Inc. AREA : SF

Div.	Description	Qty	Unit	Cost	Extension	Total
Description:	**Exterior Wall Repair**					
	EXTERIOR WALLS REPAIR - BASE					
1	**General Requirements**					
	Included in the General Conditions below.					
	General Requirements					**$ -**
6	**EXTERIOR WALLS**					
	Remove & replace deteriorated exterior wood sheathing to match existing species of original wood siding, Allow 10%	340	SF	$ 5.00	$ 1,700.00	
	NORTH & SOUTH FACING INTERIOR SECTION					
	Remove existing diagonal brace	2	LOC	$ 75.00	$ 150.00	
	Install new diagonal wood brace, 6 x 6	2	LOC	$ 150.00	$ 300.00	
	Install new PT beam, 4x6	2	LOC	$ 100.00	$ 200.00	
	Add 6"x12" concrete encasement around brick footing	2	LOC	$ 600.00	$ 1,200.00	
	GRID LINE B & C INTERIOR SECTION					
	Install sheet metal straps to connect brace to column & beam	16	LOC	$ 50.00	$ 800.00	
	EAST FACING INTERIOR SECTION					
	Remove existing diagonal brace	0	LOC	$ 75.00	$ -	
	Install new diagonal wood brace, 6 x 6	1	LOC	$ 210.00	$ 210.00	
	Install new PT beam, 4x6	1	LOC	$ 150.00	$ 150.00	
	Add 6"x12" concrete encasement around brick footing	1	LOC	$ 1,000.00	$ 1,000.00	
	GRID LINE 3 INTERIOR SECTION					
	beam	12	LOC	$ 50.00	$ 600.00	
	Install new diagonal wood brace, 6 x 6	1	LOC	$ 210.00	$ 210.00	
	Install new PT beam, 4x6	1	LOC	$ 150.00	$ 150.00	
	Add 6"x12" concrete encasement around brick footing	1	LOC	$ 1,000.00	$ 1,000.00	
	GRID LINE 5 INTERIOR SECTION					
	beam	12	LOC	$ 50.00	$ 600.00	
	Install new brace to match existing	2	LOC	$ 50.00	$ 100.00	
	Install 4x6 under the existing beam and anchor to column	1	LOC	$ 400.00	$ 400.00	
	GRID LINE 6 INTERIOR SECTION					
	Remove existing diagonal brace	0	LOC	$ 75.00	$ -	
	Install new diagonal wood brace, 6 x 6	1	LOC	$ 210.00	$ 210.00	
	Install new PT beam, 4x6	1	LOC	$ 150.00	$ 150.00	
	Add 6"x12" concrete encasement around brick footing	1	LOC	$ 1,000.00	$ 1,000.00	
	Add 6"x12" concrete encasement around brick footing	1	LOC	$ 1,000.00	$ 1,000.00	
	EXTERIOR WALLS					**$ 11,130**

MIDPENINSULA REGIONAL OPEN SPACE DISTRICT
DEER HOLLOW WHITE BARN REHABILITATION
Deer Hollow Farm White Barn
Rancho San Antonio Open Space Preserve
Cupertino, CA

Estimate: Conceptual
HCM Job Number: 2019-052
Date: 6/14/2019
Revised:
Estimator EEV/ARB

EXTERIOR WALLS REPAIR

Hattin Construction Management, Inc. AREA : SF

Div.	Description	Qty	Unit	Cost	Extension	Total
Description:	**Exterior Wall Repair**					
	TOTAL DIRECT COST					**$ 11,130**
	General Conditions/General Requirements	20.0%				$2,226
	SUBTOTAL					**$ 13,356**
	General Contractor's Overhead & Profit	10.0%				$1,336
	SUBTOTAL					**$ 14,692**
	Historic Preservation Factor	5.0%				$735
	Design Contingency/Estimating Contingency	25.0%				$3,673
	SUBTOTAL					**$ 19,099**
	Escalation up to midpoint of construction (12 months from October 1, 2019 @ 4%/year)	4.0%				$764
	SUBTOTAL					**$ 19,863**
	Bonds	2.5%				$497
	TOTAL PROBABLE BID DAY CONSTRUCTION COST - EXTERIOR WALLS REPAIR - BASE					**$ 20,360**

MIDPENINSULA REGIONAL OPEN SPACE DISTRICT
DEER HOLLOW WHITE BARN REHABILITATION
Deer Hollow Farm White Barn
Rancho San Antonio Open Space Preserve
Cupertino, CA
ATTIC FRAMING REPAIR
Hattin Construction Management, Inc.

Estimate: Conceptual
HCM Job Number: 2019-052
Date: 10/22/2019
Revised:
Estimator: EEV/ARB

AREA : SF 1,740

Div.	Description	Qty	Unit	Cost	Extension	Total
Description:	**Roof Repair**					
	ATTIC FRAMING REPAIR - BASE					
1	**General Requirements**					
	Included in the General Conditions below.					
	General Requirements					**$ -**
6	**ATTIC FRAMING REPAIR**					
	Sister a new 2-joist to the side of existing joist along Line 5	1	LOC	$ 200.00	$ 200	
	Sister a new 2-joist to the side of existing joist along Line 4	1	LOC	$ 400.00	$ 400	
	Install sheet metal strap to connect beams to walls	4	LOC	$ 50.00	$ 200	
	Strengthen the mortised wood columns supporting attic	4	LOC	$ 500.00	$ 2,000	
	Install 1/2" plywood sheathing over the (e) wood sheathing	1,740	SF	$ 3.00	$ 5,220	
	ATTIC FRAMING REPAIR					**$ 8,020**
	TOTAL DIRECT COST					**$ 8,020**
	General Conditions/General Requirements	20.0%				$1,604
	SUBTOTAL					**$ 9,624**
	General Contractor's Overhead & Profit	10.0%				$962
	SUBTOTAL					**$ 10,586**
	Historic Preservation Factor	5.0%				$529
	Design Contingency/Estimating Contingency	25.0%				$2,647
	SUBTOTAL					**$ 13,762**
	Escalation up to midpoint of construction (12 months from October 1, 2019 @ 4%/year)	4.0%				$550
	SUBTOTAL					**$ 14,313**
	Bonds	2.5%				$358
	TOTAL PROBABLE BID DAY CONSTRUCTION COST - ROOF RAFTER REPAIR - BASE	1.8293				**$ 14,671**

MIDPENINSULA REGIONAL OPEN SPACE DISTRICT
DEER HOLLOW WHITE BARN REHABILITATION
Deer Hollow Farm White Barn
Rancho San Antonio Open Space Preserve
Cupertino, CA
ATTIC FRAMING REPAIR
Hattin Construction Management, Inc.

Estimate: Conceptual
HCM Job Number: 2019-052
Date: 10/22/2019
Revised:
Estimator: EEV/ARB

AREA : SF 1,740

Div.	Description	Qty	Unit	Cost	Extension	Total
Description:	**Roof Repair**					
	ATTIC FRAMING REPAIR - OPTION 1					
1	**General Requirements**					
	Included in the General Conditions below.					
	General Requirements					**$ -**
6	**ATTIC FRAMING**					
	Remove existing stair	1	LOC	$ 300.00	$ 300	
	Install new pre-fab wooden stair	1	LOC	$ 750.00	$ 750	
	ATTIC FRAMING					**$ 1,050.00**
	MARK-UPS	0.8293				**$ 870.77**
	TOTAL PROBABLE BID DAY CONSTRUCTION COST - ATTIC FRAMING REPAIR - OPTION 1	1,740	SF			**$ 1,921**
	ATTIC FRAMING REPAIR - OPTION 2					
1	**General Requirements**					
	Included in the General Conditions below.					
	General Requirements					**$ -**
6	**ATTIC FRAMING**					
	Remove existing stair	1	LOC	$ 300.00	$ 300	
	Install new stell ladder	1	LOC	$ 2,250.00	$ 2,250	
	New consrete footing	1	LOC	$ 750.00	$ 750	
	ATTIC FRAMING	**1**				**$ 3,300.00**
	MARK-UPS	0.8293				**$ 2,736.69**
	TOTAL PROBABLE BID DAY CONSTRUCTION COST - ATTIC FRAMING REPAIR - OPTION 2	1,740	SF			**$ 6,037**

MIDPENINSULA REGIONAL OPEN SPACE DISTRICT
DEER HOLLOW WHITE BARN REHABILITATION
Deer Hollow Farm White Barn
Rancho San Antonio Open Space Preserve
Cupertino, CA
GROUND FLOOR & FOUNDATION REPAIR
Hattin Construction Management, Inc.

Estimate: Conceptual
HCM Job Number: 2019-052
Date: 10/22/2019
Revised:
Estimator: EEV/ARB

AREA : SF 1,740

Div.	Description	Qty	Unit	Cost	Extension	Total
Description:	**Roof Repair**					
	GROUND FLOOR & FOUNDATION REPAIR - BASE					
1	**General Requirements**					
	Included in the General Conditions below.					
	General Requirements					**$ -**
3	**GROUND FLOOR REPAIR**					
	Remove existing soil to a depth of 8", compact	720	SF	$ 1.50	$ 1,080	
	Dispose removed soil	18	CY	$ 75.00	$ 1,350	
	New pervious concrete slab, 4"	720	SF	$ 6.50	$ 4,680	
	Install new geotextile fiber	720	SF	$ 1.50	$ 1,080	
	Install pre-engineered compacted soil fill, 4"	10	CY	$ 30.00	$ 300	
	GROUND FLOOR REPAIR					**$ 8,490**
	TOTAL DIRECT COST					**$ 8,490**
	General Conditions/General Requirements	20.0%				$1,698
	SUBTOTAL					**$ 10,188**
	General Contractor's Overhead & Profit	10.0%				$1,019
	SUBTOTAL					**$ 11,207**
	Historic Preservation Factor	5.0%				$560
	Design Contingency/Estimating Contingency	25.0%				$2,802
	SUBTOTAL					**$ 14,569**
	Escalation up to midpoint of construction (12 months from October 1, 2019 @ 4%/year)	4.0%				$583
	SUBTOTAL					**$ 15,152**
	Bonds	2.5%				$379
	TOTAL PROBABLE BID DAY CONSTRUCTION COST - FOUNDATION REPAIR - BASE	1.8293				**$ 15,530**

MIDPENINSULA REGIONAL OPEN SPACE DISTRICT
DEER HOLLOW WHITE BARN REHABILITATION
Deer Hollow Farm White Barn
Rancho San Antonio Open Space Preserve
Cupertino, CA
GROUND FLOOR & FOUNDATION REPAIR
Hattin Construction Management, Inc.

Estimate: Conceptual
HCM Job Number: 2019-052
Date: 10/22/2019
Revised:
Estimator: EEV/ARB

AREA : SF 1,740

Div.	Description	Qty	Unit	Cost	Extension	Total
Description:	**Roof Repair**					
	FOUNDATION REPAIR - OPTION 1					
1	**General Requirements**					
	Included in the General Conditions below.					
	General Requirements					$ -
3	**GROUND FLOOR REPAIR**					
	Remove existing wood flooring	510	SF	$ 1.00	$ 510	
	Remove existing soil to a depth of 6", compact	510	SF	$ 1.50	$ 765	
	Dispose removed soil	10	CY	$ 75.00	$ 750	
	New concrete slab, 6"	510	SF	$ 7.50	$ 3,825	
	Attach posts to the new slab	18	LOC	$ 50.00	$ 900	
	Install PT sleeper over concrete	510	SF	$ 2.50	$ 1,275	
	Reinstall wood flooring	510	SF	$ 2.00	$ 1,020	
	FOUNDATION REPAIR - OPTION 1					**$ 9,045.00**
	MARK-UPS	0.8293				**$ 7,501.02**
	TOTAL PROBABLE BID DAY CONSTRUCTION COST - FOUNDATION REPAIR - OPTION 1	1,740	SF			**$ 16,546**
	FOUNDATION REPAIR - OPTION 2					
1	**General Requirements**					
	Included in the General Conditions below.					
	General Requirements					$ -
3	**GROUND FLOOR REPAIR**					
	Install new concrete grade beam	30	LF	$ 150.00	$ 4,500	
	Remove existing soil to a depth of 4", compact	510	SF	$ 1.50	$ 765	
	Dispose removed soil	7	CY	$ 75.00	$ 525	
	New concrete slab, 4"	510	SF	$ 6.50	$ 3,315	
	Install new geotextile fiber	510	SF	$ 1.50	$ 765	
	Install PT sleeper over concrete	510	SF	$ 2.50	$ 1,275	
	Reinstall wood flooring	510	SF	$ 2.00	$ 1,020	
	#	**1**				**$ 12,165.00**
	MARK-UPS	0.8293				**$ 10,088.43**
	TOTAL PROBABLE BID DAY CONSTRUCTION COST - FOUNDATION REPAIR - OPTION 2	1,740	SF			**$ 22,253**

AMENDMENT TO AGREEMENT BETWEEN THE CITY OF MOUNTAIN VIEW AND MIDPENINSULA REGIONAL OPEN SPACE DISTRICT FOR OPERATION AND MANAGEMENT OF DEER HOLLOW FARM

This AMENDMENT NO. 1 to the Agreement is dated this ____ day of _____ 2020, by and between the CITY OF MOUNTAIN VIEW, a California Charter City and municipal corporation, whose address is P.O. Box 7540, Mountain View, California, 94039 (hereinafter "CITY"), and MIDPENINSULA REGIONAL OPEN SPACE DISTRICT, a pubic district under the laws of California, whose address is 330 Distel Circle, Los Altos, California, 94022-1404 (hereinafter "DISTRICT"), (CITY and DISTRICT, hereinafter collectively "Parties" or individually "Party").

RECITALS

A. WHEREAS, on November 12, 1981, CITY and DISTRICT entered into an Agreement allowing CITY to provide activities for its citizens at Deer Hollow Farm within DISTRICT's Rancho San Antonio Open Space Preserve ("the 1981 Agreement") and thereafter amended said Agreement on June 12, 1986, November 19, 1991, July 1, 1994 and July 1, 1995 (the "1986 Amendment," the "1991 Amendment," the "1994 Amendment" and the "1995 Amendment," respectively); and

B. WHEREAS, on June 1, 1996, CITY, DISTRICT and the County of Santa Clara (hereinafter "COUNTY") entered into a new Agreement for the joint operation of Deer Hollow Farm and thereafter amended said Agreement on August 1, 1999; and entered into a further Agreement in July 2000 and June 2001; and

C. WHEREAS, on July 1, 2010, July 1, 2011, and July 1, 2013, CITY and DISTRICT amended said Agreement (the "2010 Amendment", the "2011 Amendment" and the "2013 Amendment," respectively); and

D. WHEREAS, effective July 1, 2015, CITY and DISTRICT entered into a new Agreement for the operation and management of Deer Hollow Farm (the "Agreement"); and

E. WHEREAS, the Agreement provides that CITY and DISTRICT may mutually agree upon cost sharing for repairs or replacements of structures or facilities at Deer Hollow Farm in excess of Two Thousand Dollars ($2000); and

F. WHEREAS, one of the primary structures on the Deer Hollow Farm, as shown on Exhibit A to the Agreement, is the "White Barn," which is in need of renovation work, including the replacement of its foundation ("Renovation Work"), the costs of which shall exceed two thousand dollars ($2000).

G. WHEREAS, CITY and DISTRICT, and the non-profit organization "Friends of Deer Hollow Farm" ("Friends") intend to contribute to the costs of the Renovation Work using funds donated to each respective organization by the Tindall Family estate; and

H. WHEREAS, CITY and DISTRICT desire to amend said Agreement dated July 1, 2015 for identification, and all amendments thereto, to reflect said modifications.

NOW, THEREFORE, in consideration of the recitals and mutual promises of the parties contained herein, CITY and DISTRICT agree to the below-referenced amendments to said Agreement dated July 1, 2015 for identification, and all amendments thereto, as follows:

The language to follow shall be added to the end of Section 4, "Description of Repair and Maintenance Services":

"g Cost-Sharing for Deer Hollow Farm White Barn Renovation Work. Relating to the need for renovation work at the White Barn, including the replacement of its foundation ("Renovation Work"), and notwithstanding anything else included herein, the parties agree as follows:

i. DISTRICT shall perform and/or manage the contracts, as appropriate, for the planning, historic and structural evaluation, CEQA review, permitting, engineering, design, and construction of the Renovation Work.

ii. CITY shall contribute up to Thirty-Five Thousand Dollars ($35,000) toward the design-phase costs of the Renovation Work, as incurred by DISTRICT. CITY shall reimburse DISTRICT within thirty (30) days of receipt and approval of an invoice. The invoice shall include a copy of the vendor's invoice and proof of payment by DISTRICT.

iii. DISTRICT shall be responsible for the remaining costs necessary to complete the design phase of the Renovation Work, in addition to the contribution of staff time in planning and managing the contracts for the design work.

iv. DISTRICT shall contribute the Tindall Family estate donation funds in the amount of Three Hundred Thirty Thousand Dollars ($330,000) to the construction phase of the project, and shall secure

any necessary supplemental funding to complete the Renovation Work. Such contribution will be in addition to, and separate from, all other DISTRICT contributions or funding provided for herein. The CITY shall have no responsibility for any such construction or supplemental funding."

In addition, the Agreement shall be amended to include Section 25, Counterparts.

25. **Counterparts.** This Agreement may be executed in counterparts, each of which shall be deemed to be an original, but all of which in the aggregate shall constitute one and the same instrument, and the parties hereto agree that signatures on this Agreement shall be sufficient to bind the parties."

All other terms and conditions in that certain Agreement dated July 1, 2015 for identification, above referenced, shall remain in full force and effect.

IN WITNESS WHEREOF, this Amendment No.1, between the City of Mountain View and Midpeninsula Regional Open Space District for the operation and management of Deer Hollow Farm, is executed by CITY and DISTRICT.

"CITY":
CITY OF MOUNTAIN VIEW,
a California Charter City and municipal corporation

By: _____
Max Bosel
Interim City Manager

Attest:
____
Lisa Natusch
City Clerk

APPROVED AS TO CONTENT:

_____
Community Services Director

FINANCIAL APPROVAL:

_____
Finance and Administrative
Services Director

APPROVED AS TO FORM:

_____
City Attorney

"DISTRICT":
MIDPENINSULA REGIONAL OPEN SPACE DISTRICT, a public district under the laws of California

By: _____
Ana Maria Ruiz, AICP
General Manager

Attest:
By: _____
Jennifer Woodworth
District Clerk

APPROVED AS TO FORM:

_____
Hilary Stevenson
General Counsel