



Special-Regular Meeting Agenda

Planning Commission

Mohammad Habib - Chair
Malisha Kumar - Vice-Chair
Joseph Mueller - Planning Commissioner
Wayne Tanda - Planning Commissioner
Laura Gonzalez-Escoto - Planning Commissioner
Liam Downey - Planning Commissioner
Juan Miguel Munoz-Morris - Planning Commissioner

Tuesday, June 8, 2021 5:00 pm

Virtual Meeting

VIRTUAL MEETING GUIDELINES AND PUBLIC COMMENT

In accordance with Executive Order N-25-20 and guidance from the California Department of Public Health on gatherings, remote public participation is allowed. Physical meetings will not be in the City Council Chamber until further notice.

Planning Commission meetings will be live streamed on Channel 17, on the City's website and on the City's Facebook page. Those members of the community that would like to participate in the meetings remotely may do so by join the virtual meeting at: <https://bit.ly/PlanningCommissionMtg> or by calling in to: (669) 900-9128, then enter the webinar ID#: 862 0324 6251.

Public comment may be provided in the following ways:

- Join the virtual Planning Commission meeting via the link above, when public comment is opened, raise your virtual hand and be called upon to speak for up to 3 minutes
- Join the virtual meeting by calling in to the number above, dial *9 to raise your hand and *6 when called upon to speak for up to 3 minutes
- Send public comments in writing to the Minutes Clerk at pcpubliccomment@morganhill.ca.gov

* Please note that comments made on Facebook are not considered public comment.

SPECIAL/REGULAR MEETING

A special meeting of the Planning Commission is called at 5:00 p.m. for the purpose of conducting a joint meeting of the Planning Commission, City Council, Parks & Recreation Commission, and Library, Culture, and Arts Commission. (This session is open to the public but will not be recorded or live-streamed.)

5:00 p.m. Joint Meeting
7:00 p.m. Regular Meeting

SPECIAL MEETING

5:00 p.m. Joint Meeting

JOINT MEETING

Two-Hour Mandatory Harassment and Discrimination Prevention Training for Elected and Appointed Officials. (This is one of several training sessions that will be held for this required training)

REGULAR MEETING

7:00 p.m.

CALL TO ORDER

ROLL CALL ATTENDANCE

DECLARATION OF POSTING AGENDA

Pursuant to Government Code Section 54954.2

OPEN PUBLIC COMMENT PERIOD

Members of the public are entitled to address the Planning Commission concerning any item within the Morgan Hill Planning Commission's subject matter jurisdiction. Public comments are limited to no more than three minutes. Except for certain specific exceptions, the Planning Commission is prohibited from discussing or taking action on any item not appearing on the posted agenda. (See additional noticing at the end of this agenda)

ORDERS OF THE DAY

CONSENT AGENDA

1. APPROVE THE MAY 11, 2021 MEETING MINUTES

Recommendation:

Approve Minutes.

2. APPROVE THE MAY 25, 2021 MEETING MINUTES

Recommendation:

Approve Minutes.

PUBLIC HEARINGS

3. **AAE2021-0002, CUL2021-0001, EA2021-0002: OLD MONTEREY - APPLETREE - HISTORICAL RELOCATION PERMIT, DEVELOPMENT AGREEMENT AMENDMENT, AND ENVIRONMENTAL REVIEW FOR PROPERTY IDENTIFIED BY ASSESSOR PARCEL NUMBER 764-24-061 LOCATED AT 18755 OLD MONTEREY ROAD AT THE SOUTHWEST CORNER OF OLD MONTEREY ROAD AND MUSTARD AVENUE.**

Recommendation:

1. Open/Close public hearing;
2. Adopt resolution approving a Historical Relocation Permit; and
3. Adopt resolution recommending the City Council approve an amendment to Development Agreement DA2018-0001.

OTHER BUSINESS

4. **AN EVALUATION OF PROPOSED MODIFICATIONS TO AFFORDABLE HOUSING INCLUSIONARY REQUIREMENTS, INFORMATION ITEM ONLY**

Recommendation:

Receive and discuss the report by Keyser Marston Associates, Inc. (KMA), an evaluation of possible modifications to the Inclusionary Housing Ordinance.

LEGAL BRIEFING

DIRECTOR'S REPORT/ANNOUNCEMENTS

ADJOURNMENT

NOTICE

All public records relating to an open session item on this agenda, which are not exempt from disclosure pursuant to the California Public Records Act that are distributed to a majority of the legislative body less than 72 hours prior to an open session, will be made available for public inspection at the Office of the City Clerk at Morgan Hill City Hall located at 17575 Peak Avenue, Morgan Hill, CA, 95037 at the same time that the public records are distributed or made available to the legislative body. (Pursuant to Government Code 54957.5)

PUBLIC COMMENT

Members of the Public are entitled to directly address the Commission concerning any item that is described in the notice of this meeting, before or during consideration of that item. If you wish to address the Commission on any issue that is on this agenda, please complete a speaker request card located in the foyer of the Commission Chambers, and deliver it to the Minutes Clerk prior to discussion of the item. You are not required to give your name on the speaker card in order to speak to the Commission, but it is very helpful. When you are called, proceed to the podium and the Mayor will recognize you. If you wish to address the Commission on any other item of interest to the public, you may do so during the public comment portion of the meeting following the same procedure described above. Please limit your comments to three (3) minutes or less.

Please submit written correspondence to the Minutes Clerk, who will distribute correspondence to the Commission.

Persons interested in proposing an item for the Commission agenda should contact a member of the Commission who may plan an item on the agenda for a future Commission meeting. Should your comments require Commission action, your request may be placed on the next appropriate agenda. Commission discussion or action may not be taken until your item appears on an agenda. This procedure is in compliance with the California Public Meeting Law (Brown Act) Government Code §54950.

City Council Policies and Procedures (CP 03-01) outlines the procedure for the conduct of public hearings. Notice is given, pursuant to Government Code Section 65009, that any challenge of Public Hearing Agenda items in court, may be limited to raising only those issues raised by you or on your behalf at the Public Hearing described in this notice, or in written correspondence delivered to the Commission at, or prior to the Public Hearing on these matters.

The time within which judicial review must be sought of the action by the Commission, which acted upon any matter appearing on this agenda is governed by the provisions of Section 1094.6 of the California Code of Civil Procedure.

For a copy of Commission Policies and Procedures CP 97-01, please contact the City Clerk's office (408) 779-7259, (408) 779-3117 (fax) or by email cityclerk@morganhill.ca.gov.

AMERICANS WITH DISABILITIES ACT (ADA)

In compliance with the Americans with Disabilities Act, if you are a disabled person and you need a disability-related modification or accommodation to participate in this meeting, please contact the City Clerk's Office at (408)779-7259, (408)779-3117 (fax) or by email cityclerk@morganhill.ca.gov. Requests must be made as early as possible and at least two-full business days before the start of the meeting.

DRAFT



Meeting Minutes Planning Commission

<i>Mohammad Habib</i>	-	<i>Chair</i>
<i>Malisha Kumar</i>	-	<i>Vice-Chair</i>
<i>Joseph Mueller</i>	-	<i>Planning Commissioner</i>
<i>Wayne Tanda</i>	-	<i>Planning Commissioner</i>
<i>Laura Gonzalez-Escoto</i>	-	<i>Planning Commissioner</i>
<i>Liam Downey</i>	-	<i>Planning Commissioner</i>
<i>Juan Miguel Munoz-Morris</i>	-	<i>Planning Commissioner</i>

Tuesday, May 11, 2021 7:00 pm

Virtual Meeting

ROLL CALL ATTENDANCE

Attendee Name	Title	Status	Arrived
Mohammad Habib	Chair	Present	
Malisha Kumar	Vice-Chair	Present	
Joseph Mueller	Planning Commissioner	Present	
Wayne Tanda	Planning Commissioner	Present	
Laura Gonzalez-Escoto	Planning Commissioner	Present	
Liam Downey	Planning Commissioner	Present	
Juan Miguel Munoz-Morris	Planning Commissioner	Present	

CALL TO ORDER

Chair Habib called the meeting to order at 7:00 p.m.

DECLARATION OF POSTING AGENDA

Minutes Clerk Luna declared the posting of the Agenda at 7:00 p.m.

PLEDGE OF ALLEGIANCE

Planning Commissioner Gonzalez-Escoto led the Pledge of Allegiance at 7:01 p.m.

Minutes Acceptance: Minutes of May 11, 2021 7:00 PM (CONSENT AGENDA)

OPEN PUBLIC COMMENT PERIOD

Chair Habib opened the Public Comment Period at 7:01 p.m. Hearing no requests to speak, the Public Comment Period was closed.

ORDERS OF THE DAY

No changes made.

MINUTES APPROVAL

1. APPROVE THE APRIL 13, 2021 MEETING MINUTES

Recommendation:

Approve Minutes.

Staff will correct the time Planning Commission reconvened the meeting to 8:45 p.m.

RESULT:	ACCEPTED AS AMENDED [UNANIMOUS]
MOVER:	Joseph Mueller, Planning Commissioner
SECONDER:	Juan Miguel Munoz-Morris, Planning Commissioner
AYES:	Habib, Kumar, Mueller, Tanda, Gonzalez-Escoto, Downey, Munoz-Morris

OTHER BUSINESS

2. PRESENTATION: OVERVIEW OF DENSITY BONUS LAW, INCLUDING UPDATES FROM 2020-02021

Community Development Jennifer Carman gave a presentation at 7:05 p.m.

Chair Habib opened the Public Comment Period at 8:34 p.m. The following individual addressed the Planning Commission:

- Joe Baranwoski

Hearing no further requests to speak, the Public Comment Period was closed.

The Planning Commission meeting recessed at 8:39 p.m.

The Planning Commission reconvened at 8:46 p.m.

No action taken.

DIRECTOR'S REPORT/ANNOUNCEMENTS

Community Development Director Jennifer Carmen made and announcement 9:00 p.m.

LEGAL BRIEFING

3. DESIGN PERMIT PRESENTATION

Assistant City Attorney Cynthia gave a legal brief on the Design Permit process at 9:06 p.m.

No action taken

ADJOURNMENT

There being no further business, Chair Habib adjourned the meeting at 9:36 p.m.

MINUTES PREPARED BY:

Jenna Luna, Minutes Clerk

Minutes Acceptance: Minutes of May 11, 2021 7:00 PM (CONSENT AGENDA)

DRAFT



Meeting Minutes Planning Commission

Mohammad Habib - *Chair*
Malisha Kumar - *Vice-Chair*
Joseph Mueller - *Planning Commissioner*
Wayne Tanda - *Planning Commissioner*
Laura Gonzalez-Escoto - *Planning Commissioner*
Liam Downey - *Planning Commissioner*
Juan Miguel Munoz-Morris - *Planning Commissioner*

Tuesday, May 25, 2021 7:00 pm

Virtual Meeting

CALL TO ORDER

Chair Habib called the meeting to order at 7:00 p.m.

ROLL CALL ATTENDANCE

Minutes Clerk Luna called the attendance 7:00 p.m.

Attendee Name	Title	Status	Arrived
Mohammad Habib	Chair	Present	
Malisha Kumar	Vice-Chair	Present	
Joseph Mueller	Planning Commissioner	Present	
Wayne Tanda	Planning Commissioner	Present	
Laura Gonzalez-Escoto	Planning Commissioner	Present	
Liam Downey	Planning Commissioner	Present	
Juan Miguel Munoz-Morris	Planning Commissioner	Present	

DECLARATION OF POSTING AGENDA

Minutes Clerk Luna declared the posting of the agenda 7:01 p.m.

PLEDGE OF ALLEGIANCE

Planning Commissioner Downey led the Pledge of Allegiance at 7:01 p.m.

Minutes Acceptance: Minutes of May 25, 2021 7:00 PM (CONSENT AGENDA)

OPEN PUBLIC COMMENT PERIOD

Chair Habib opened the Public Comment Period at 7:02 p.m. Hearing no requests to speak, the Public Comment Period was closed.

ORDERS OF THE DAY

No further changes made to the orders.

PUBLIC HEARINGS

1. **SD2020-0011/SR2020-0029 THROUGH SR2020-0033 DE PAUL - TC MORGAN HILL VENTURE: REQUEST FOR A TENTATIVE PARCEL MAP AND DESIGN PERMITS FOR THE REDWOOD TECH AT 101, A FIVE BUILDING INDUSTRIAL PARK, ON A 29± ACRE SITE (APNS 728-30-006 AND 728-30-009)**

Recommendation:

1. Open/close the public hearing;
2. Adopt a Resolution approving a Vesting Tentative Parcel Map; and
3. Adopt a Resolution approving Design Permits for an industrial park consisting of five separate buildings.

Principle Planner Adam Paszkowski presented the Staff Report at 7:04 p.m.

Chair Habib opened the Public Hearing at 7:53 p.m. The following individuals addressed the Planning Commission:

- Don Little
- Teresa Goodwin
- Miguel Jimenez
- Susie Jimenez
- Kendra Hartman
- Michael Lozeau
- Joe Baranowski - Mr. Baranowski also spoke on the behalf of Terry Williams
- Britney Sherman

Hearing no further requests to speak, the Public Hearing was closed.

The Planning Commission meeting recessed at 8:46 p.m.

The Planning Commission meeting reconvened at 8:51 p.m.

MOTION:

Adopt a resolution approving the Design Permits with the following amendment: Buildings should have a consistent design on all elevations viewable from public streets. The Director shall work with the applicant to ensure colors and materials are included on all elevations that limit the amount of blank wall space.

RESULT:	ADOPTED AS AMENDED [6 TO 1]
MOVER:	Laura Gonzalez-Escoto, Planning Commissioner
SECONDER:	Wayne Tanda, Planning Commissioner
AYES:	Habib, Kumar, Tanda, Gonzalez-Escoto, Downey, Munoz-Morris
NAYS:	Mueller

MOTION:

Adopt a resolution approving a Vesting Tentative Parcel Map.

RESULT:	ADOPTED [6 TO 1]
MOVER:	Wayne Tanda, Planning Commissioner
SECONDER:	Liam Downey, Planning Commissioner
AYES:	Habib, Kumar, Tanda, Gonzalez-Escoto, Downey, Munoz-Morris
NAYS:	Mueller

The Planning Commission meeting recessed at 9:56 p.m.

The Planning Commission meeting reconvened at 10:01 p.m.

2. SR2020-0015: DEWITT - WEST HILLS CHURCH: PRELIMINARY PLAN REVIEW FOR A MASTER PLAN OF A 5.75-ACRE PARCEL FOR A REMODEL AND EXPANSION OF AN EXISTING PLACE OF WORSHIP LOCATED AT 16695 DEWITT AVENUE AND IDENTIFIED BY ASSESSORS PARCEL NUMBER 773-09-011.

Recommendation:

1. Open/close public hearing; and
2. Provide preliminary input on the proposed plan.

Associate Planner Tiffany Brown presented the Staff Report at 10:01 p.m.

Chair Habib opened the Public Hearing at 10:42 p.m. The following individuals addressed the Planning Commission:

- Leslie Carmichael
- Linda Kwong
- Irving
- David Frederick
- Laurie Beasley

Hearing no further requests to speak, the Public Comment Period was closed.

MOTION:

Extend the meeting to 11:15 p.m.

RESULT: EXTENDED [UNANIMOUS]

MOVER: Joseph Mueller

SECONDER: Liam Downey

AYES: Habib, Kumar, Tanda, Gonzalez-Escoto, Downey, Munoz-Morris

NAYS: None

No action taken. The Planning Commission reviewed, discussed, and provided feedback on the proposed plan.

RESULT:	NO ACTION TAKEN
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DIRECTOR'S REPORT/ANNOUNCEMENTS

Community Development Director Jennifer Carman made an announcement at 11:13 p.m.

LEGAL BRIEFING

No legal brief given.

ADJOURNMENT

There being no further business, Chair Habib adjourned the meeting at 11:15 p.m.

MINUTES PREPARED BY:
Jenna Luna, Minutes Clerk

Minutes Acceptance: Minutes of May 25, 2021 7:00 PM (CONSENT AGENDA)



CITY OF MORGAN HILL

PLANNING COMMISSION STAFF REPORT

MEETING DATE: June 8, 2021

PREPARED BY: Joey Dinh, Associate Planner

APPROVED BY: Jennifer Carman, Community Development Director

AAE2021-0002, CUL2021-0001, EA2021-0002: OLD MONTEREY - APPLETREE - HISTORICAL RELOCATION PERMIT, DEVELOPMENT AGREEMENT AMENDMENT, AND ENVIRONMENTAL REVIEW FOR PROPERTY IDENTIFIED BY ASSESSOR PARCEL NUMBER 764-24-061 LOCATED AT 18755 OLD MONTEREY ROAD AT THE SOUTHWEST CORNER OF OLD MONTEREY ROAD AND MUSTARD AVENUE.

RECOMMENDATION(S)

1. Open/Close public hearing;
2. Adopt resolution approving a Historical Relocation Permit; and
3. Adopt resolution recommending the City Council approve an amendment to Development Agreement DA2018-0001.

LOCATION MAP:



PROJECT SUMMARY:

1. Location: Southwest corner of Old Monterey Road and Mustard Ave/18755 Old Monterey Road (764-24-061)
2. Site Area: 1.13 Acres
3. General Plan: Residential Detached Medium (7 du/ac)
4. Zoning: Residential Detached Medium (RDM-7,000)

BACKGROUND:

An application was submitted for the 2016 Residential Development Control System (RDSCS) competition requesting five (5) building allotments for the project site. At the January 10, 2017 Planning Commission meeting, the Commission adopted Resolution No. 17-01 awarding the project five Fiscal Year 2018/2019 building allotments.

On July 23, 2008, the City Council adopted Ordinance No.1892 to update the City's Historical Resources Code by repealing Chapter 18.75 Cultural Resources Preservation and adopting Chapter 18.75 Historical Resources (renumbered to Chapter 18.60 by Ordinance No. 2277). The City Inventory List identified the property as potentially historically significant. As a part of the CEQA analysis, a Historical and Architectural Evaluation was prepared for the site. As a result, the development plans were amended to include five new single-family dwellings, retaining the historic house on Lot No. 4.

On June 6, 2018, the City Council adopted Ordinance No. 2277, approving a comprehensive update to Title 18 (Zoning), including an amendment to the City's Official Zoning Map. The update renamed the R-1 Single Family Medium Density (R1-7,000) zone district to Residential Detached Medium (RDM-7,000) and did not change the development standards.

On June 11, 2019, the Planning Commission adopted Resolution No. 19-06, approving a Tentative Subdivision Map for a six (6) lot residential subdivision. The Planning Commission also recommended approval of Development Agreement DA2018-0001 to the City Council.

On September 18, 2019, the City Council adopted Ord. No. 2303, approving a development agreement for the project. The development agreement specified terms for the development of five new single-family detached dwellings.

PROJECT DESCRIPTION:

The 18755 Old Monterey, LLC ("applicant") has acquired the Appletree residential subdivision project from the previous developer and is requesting to modify the approved project. The approved project included a Tentative Subdivision Map to subdivide a 1.13-acre parcel into six (6) lots to develop five (5) detached single-family dwelling units, two (attached) accessory dwelling units (ADUs) and associated improvements. An existing historical house located on Lot No. 4 was to be retained.

The applicant is requesting to relocate the existing historic house to provide enough developable area on Lot No. 4 for a new single-family unit. The relocated historical

housing would be converted into an ADU. The proposed changes require a Historic Relocation Permit and an amendment to the Development Agreement (DA).

The existing house will be historically preserved and relocated to the southwest corner of Lot No. 4 facing Mustard Avenue. The relocation will provide the opportunity for a sixth single family detached house to be developed. Detailed project plans have been provided (Attachment 5 and 6).

An addendum to the Historical and Architectural Evaluation was completed (Attachment 7) to provide additional guidance and recommended mitigations on the proposed relocation plans for the historic house consistent with the City's Municipal Code on historic resources (MHMC 18.60) and the Secretary of the Interior's Standards for Rehabilitating Historic Buildings.

The adopted DA for the project specifies the duration and permitted uses of the subject property, and the general location and density or intensity of uses. It also contains provisions concerning its transferability to any successor owners of the property. The DA outlines the benefits provided to the City by entering into the Agreement. The adopted DA included five single-family detached houses and retained the existing historic house. As a result, the DA must be amended to add one additional unit. An Amended Development Agreement has been provided as Attachment 3.

ANALYSIS:

All the requests were analyzed with respect to consistency with 1) General Plan; 2) Zoning Code; 3) Findings; and 4) California Environmental Quality Act.

1. General Plan

The site has a land use designation of Residential Detached Medium (RDM). RDM is intended to accommodate detached homes on smaller lots including courtyard homes, manufactured homes, and small-lot single-family homes. Accessory dwelling units are an allowed use. Up to 25 percent of a site may include duet units. The RDM designation generally allows a density up to 7 units per acre.

The 1.13-acre site would include six single-family dwelling units, two attached ADUs, with the historic house being converted into a third ADU. The site will connect to the adjoining properties in conformance with the General Plan policies. The project is surrounded by existing roadways on Old Monterey Road, Mustard Avenue, and Campoli Drive.

The following General Plan goals and policies are applicable to the project:

City and Neighborhood Form Element

Policy CNF-2.1 Orderly Development. Promote the orderly development of the City, with concentric growth and infill of existing developed areas.

Policy CNF-2.2 A Balanced Community. Plan for the needs of all socioeconomic segments of the community, encouraging a balance and match in jobs and housing within the City.

Policy CNF-8.2 Design Features. Encourage design features and amenities in new development and redevelopment, including, but not limited to:

- Highly connected street layouts, supporting multiple paths of travel for all modes.
- Cluster buildings to create useable open space.
- Abundant landscaping.
- Attractive transitions between uses.
- Comfortable pedestrian facilities that promote a high level of pedestrian activity.
- Distinctiveness and variety in architectural design.

Policy CNF-8.7 Design Sensitivity. Ensure that new development is sensitive to the character of adjacent structures and the immediate neighborhood.

Policy CNF-11.5 Outside Connections. Require new subdivisions to provide multiple connections to the surrounding community. Methods to achieve this may include:

- Providing multiple points of entry into the project for motorists, bicyclists, and pedestrians.
- Planning for future connections to adjacent undeveloped property.

Health Community Element

Policy HC-4.4 Historical Awareness. Acknowledge the contribution that history, historical sites, people, objects, landscapes, and areas have in creating the uniqueness of Morgan Hill and its environs. Promote awareness of and celebrate Morgan Hill's history through leadership, staff training, celebrations, and events. Take a leading role in the collection and preservation of these things by providing for museums and other exhibit spaces to collect, exhibit, and interpret historical records and objects for community benefit.

Policy HC-4.6 Placemaking. Use public art and interpretive plaques to designate special and unique areas of the City, including the downtown, areas of historic and cultural significance, and community gathering places.

Policy HC-8.2 Historic Structures. Encourage the preservation and rehabilitation of the City's historic structures.

Action HC-8.B Technical Assistance. Provide clear and easily accessible information to property owners and developers about design guidelines, financing options, assistance programs, and other technical issues involved in preserving and restoring historic buildings.

Consistency

The land use designation contemplates residential uses. The primary uses in the surrounding area include single family dwelling units and designated open space. The project will introduce single family dwelling units on approximately 7,000 square foot lots consistent with the surrounding neighborhood. Available infrastructure is located adjacent to the project site, including wet and dry utilities.

The project was previously analyzed and found to be consistent with the General Plan. The addition of one unit to the project will not exceed the maximum density of 7 du/acre established within the General Plan.

An addendum to the Historical and Architectural Evaluation was completed and all recommendations proposed within the addendum are included as Conditions of Approval.

2. Zoning Code

The applicant is proposing to relocate the historic house on Lot No. 4 and convert to an ADU. A new 2,830 square foot single-family detached house will be constructed on the same lot. The proposed plans would meet the requirements specified in the Table 18.16-3 of the Zoning Code, as demonstrated in the following table:

Table 1 – Zoning Consistency Summary

RDM-7,000 Site Requirements	Requirement	Proposed	Consistency
Lot Area	7,000 square feet; 7,500 square feet for corner lots	7,175 min square feet; 7,560 min square feet corner lots	Yes
Lot Width	60 feet	60.22 feet min	Yes
Lot Depth	85 feet	117.42 feet min	Yes
Lot Coverage	50%	<50%	Yes
Setbacks			
Front	First Story: 20 feet Upper Stories: 25 feet	First Story: 21.53 feet min Upper Stories: 25 feet min	Yes
Rear	First Story: 20 feet Upper Stories: 25 feet	30.73 feet min	Yes
Interior Side	First Story: 5 feet Upper Stories: 12.5 feet	First Story: 5 feet min Upper Stories: 12.5 feet min	Yes
Street Side	15 feet	15.92 feet min	Yes
Height	30 feet	<30 feet	Yes

A six-lot tentative subdivision map was approved, consistent with the Zoning Code. A final map is pending. A precise development plan was provided (Attachment 5) demonstrating that all development proposed will comply with the City development standards for the RDM-7,000 zone district.

A Design Review Permit was approved for five single-family detached dwellings and two attached ADU's on October 8, 2019. No additional Design Review would be required for the new single-family home proposed for Lot No. 4; however, the project has been conditioned to require the new single-family home be architecturally compatible with the design style approved with the Design Review permit (SR2019-0001 Old Monterey-Kelly Vo).

3. Findings

Historic Relocation Permit

It is unlawful for any person to tear down, demolish, remove, or relocate a potentially significant or significant historical resource, a resource that has been formally designated or listed on the city's adopted survey list, or which lies within an historic district, without first obtaining a historical resource demolition or relocation permit. Applications must comply with the Secretary of Interior's Standards for the Treatment of Historic Properties.

The Planning Commission is required to hold a public hearing on the historic relocation permit application. In review of the permit to relocate the significant historical resource, the Planning Commission may approve or disapprove the issuance of the permit.

An addendum to the Historical and Architectural Evaluation has been provided (Attachment 7) that has various recommendations for the proposed relocation to be consistent with the Secretary of Interior's Standards for Rehabilitating Historic Buildings and Preservation Briefs. The Planning Commission may approve issuance of the permit with conditions to require the proposed work be compliant with the Secretary of Interior's Standards.

Development Agreement

An amendment to the DA is proposed to include the additional unit. The initial terms and conditions contained within the DA remain unchanged. The Planning Commission is required to hold a public hearing to consider the amendment to the DA for recommendation to the City Council.

Morgan Hill Municipal Code Section 18.116.040 (C), Consideration of proposed Development Agreement—Findings required, requires that the following findings be made by the City Council to adopt the Development Agreement:

The Development Agreement:

- A. **Is consistent with the goals, objectives, policies, general land uses, and programs specified in the general plan and any applicable specific plan.**

As specified in the General Plan section of this report, the project would include six residential units consistent with the General Plan density provisions. There are no General Plan policy conflicts identified with the proposed project.

B. Is compatible with the uses authorized in the zoning district in which the real property is located.

The proposed residential use is permitted within the RDM-7,000 zoning district and would be compatible with the surrounding residential and light industrial uses.

C. Duly considers city mitigation programs in effect at the time of execution of the agreement.

The project would be subject to the payment of applicable impact fees and community benefit commitments as part of the RDCS process.

D. Will be non-detrimental to the public health, safety and general welfare of persons residing or working in the neighborhood and to property and improvements in the neighborhood.

The project's construction would adhere to state, local and federal laws. The project is residential housing consistent with the surrounding neighborhood.

E. Complies with the provisions of the California Environmental Quality Act and city's procedures adopted pursuant thereto.

The project is Categorically Exempt from CEQA pursuant to Section 15332 (In-fill Development). An Exemption Memorandum was previously prepared for the project.

F. Will not adversely affect the orderly development of property or the preservation of property values.

The project will provide high quality architecture consistent with the City's Architectural Design Guidelines. The project will also be consistent with state and local laws.

Conclusion

The project has been found to be consistent with the General Plan, Zoning Code, and CEQA. Staff recommends that the Planning Commission approve the Historic Relocation Permit and recommend approval of the Development Agreement incorporating the additional unit into the agreement.

California Environmental Quality Act (CEQA):

An environmental assessment was prepared for the project by David J. Powers &

Associates, Inc. dated February 27, 2019, in conformance with the California Environmental Quality Act (CEQA) (Attachment 8). The assessment determined the project qualifies for a Class 32 In-Fill Development exemption because it meets the criteria set forth in CEQA Guidelines Section 15332(a) through 15332(e). This categorical exemption memorandum included a historical and architectural evaluation performed by Urban Programmers dated September 25, 2018. This report contemplated the historic house and determined that any proposed alteration or relocation would require a Historic Alteration or Relocation Permit from the City.

The Development Services Director concluded that the project proposed for Old Monterey - Kelly Vo is Categorical Exempt pursuant to Section 15332 of the CEQA Guidelines.

An addendum to the Historic Evaluation dated March 25, 2021, was performed by Urban Programmers to analyze the proposed relocation. The report found relocating the historic house would be consistent with the CEQA guidelines and provided recommendations for rehabilitation consistent with the Secretary of the Interior's Standards for Rehabilitating Historic Buildings. These recommendations are included as part of the Conditions of Approval. No further CEQA clearance is required.

Community Engagement

The proposed project was publicly noticed (mailing to property owners within 300 feet of the project and newspaper legal noticing) for the minimum 10-day period and a sign was posted on the project site pursuant to the Planning Division Requirements.

LINKS/ATTACHMENTS:

1. Resolution for CUL2021-0001
2. Resolution for Appletree DA Amendments AAE2021-0002
3. 18775 Old Monterey Amended DA
4. Recorded DA for Appletree Investments, LLC
5. Appletree Precise Development Plan & Lot 4 Plot Plan
6. Appletree Improvement Plan Set
7. Addendum to Historical and Architectural Evaluation
8. Old Monterey-Appletree (Kelly Vo) CEQA CatEx Memorandum

RESOLUTION NO. 21-06

A RESOLUTION OF THE PLANNING COMMISSION OF THE CITY OF MORGAN HILL APPROVING A HISTORIC RELOCATION PERMIT TO ALLOW THE EXISTING HISTORICAL HOUSE LOCATED ON LOT NO. 4 OF THE APPLETREE SUBDIVISION TO BE RELOCATED TO THE NORTHWEST CORNER OF LOT NO. 4 AND CONVERTED TO A DETACHED ACCESSORY DWELLING UNIT. THE PROPERTY IS LOCATED ON THE SOUTHWEST CORNER OF OLD MONTEREY ROAD AND MUSTARD AVENUE AT 18755 OLD MONTEREY ROAD (APN 764-24-061)

WHEREAS, on January 26, 2021, 18755 Old Monterey, LLC submitted an application for a Historic Relocation Permit to allow the existing historical house located on Lot No. 4 of the Appletree subdivision to be relocated to the northwest corner of Lot No. 4 and converted to a detached accessory dwelling unit; and

WHEREAS, such request was considered by the Planning Commission at their regular meeting of June 8, 2021; and

WHEREAS, the Development Services Director has determined that the Appletree (Kelly Vo) project proposed is categorically exempt from CEQA pursuant to Section 15332 (In-fill Development); and

WHEREAS, testimony received at a duly-noticed public hearing, along with exhibits and drawings and other materials have been considered in the review process.

NOW, THEREFORE, THE MORGAN HILL PLANNING COMMISSION DOES RESOLVE AS FOLLOWS:

SECTION 1. The approved project shall be conducted in a manner consistent with the Conditions of Approval attached hereto as Exhibit A and consistent with the Secretary of Interior's Standards for Rehabilitating Historic Buildings.

PASSED AND ADOPTED THIS 8th DAY OF JUNE, 2021, AT A REGULAR MEETING OF THE PLANNING COMMISSION BY THE FOLLOWING VOTE:

AYES: COMMISSIONERS:

NOES: COMMISSIONERS:

ABSTAIN: COMMISSIONERS:

ABSENT: COMMISSIONERS:

City of Morgan Hill
Resolution No. 21-06
Page 2 of 7

ATTEST:

APPROVED:

Jenna Luna, Deputy City Clerk

Mohammad Habib, Chair

A F F I D A V I T

We, _____, applicants, hereby agree to accept and abide by the terms and conditions specified in this resolution.

By: _____

Date: _____

EXHIBIT "A"

CONDITONS OF APPROVAL

APPLICATION NO: CUL2021-0001: OLD MONTEREY – APPLETREE (KELLY VO)

THE FOLLOWING APPROVAL REQUIREMENTS AND ANY SPECIAL CONDITIONS SHALL BE APPLIED THROUGH THE DEVELOPMENT APPROVAL PROCESS.

Legend

MHMC= Morgan Hill Municipal Code
 MHARH= Morgan Hill Architectural Review Handbook
 CMH= City of Morgan Hill
 CFC= California Fire Code

I. PROJECT DESCRIPTION

The project includes a Historic Relocation Permit to allow the existing historical house located on Lot No. 4 of the Appletree subdivision to be relocated to the northwest corner of Lot No. 4 and converted to a detached accessory dwelling unit.

The project shall comply with all requirements of related project approvals granted by the City, including all of the following:

- A. AAE2021-0002
- B. EA2021-0002
- C. SR2019-0001
- D. DA2018-0001
- E. SD2018-0002
- F. RDCS2016-0008

II. PROJECT CONDITIONS OF APPROVAL

This Historic Relocation Permit approval is limited to the plan set date stamped June 8, 2021, on file (File Number CUL2021-0001) with the Development Services Department. The approved building plans and landscape plans must be in substantial conformance with the Historic Relocation Permit plans as determined by the Development Services Director. These documents show the location and dimensions of all vehicle and pedestrian circulation ways (ingress/egress), common areas, and other easement areas.

It shall be the responsibility of the Owner to ensure that any changes or modifications to the Project or any Unit are in compliance with the original City Conditions of Approval of the Project, which are hereby incorporated herein as set forth in full.

PLANNING DIVISION

DEFENSE AND INDEMNITY

- A. As part of, and in connection, with this application to the City of Morgan Hill, Applicant agrees to defend, indemnify, and hold harmless the City of Morgan Hill, its officers, agents, employees, officials and representatives (Indemnitees) from and against any and all claims, actions, or proceedings arising from any suit for damages or for equitable or injunctive relief which is filed against City to attack, set aside, void or annul its approval of this application or any related decision, or the adoption of any environmental documents which relates to said approval. The City shall promptly notify the Applicant of any such claim, action or proceeding and the City shall cooperate fully in the defense thereof. In the event that Applicant is required to defend Indemnitees in connection with the proceeding, Indemnitees shall retain the right to approve (a) the counsel to so defend Indemnitees; (b) all significant decisions concerning the manner in which the defense is conducted; and (c) any and all settlements, which approval shall not be unreasonably withheld. This indemnification shall include, but is not limited to, (a) all pre-tender litigation costs incurred on behalf of the City, including City's attorney's fees and all other litigation costs and expenses, including expert witnesses, required to defend against any lawsuit brought as a result of City's approval or approvals; (b) reasonable internal City administrative costs, including but not limited to staff time and expense spent on the litigation, after tender is accepted; and (c) all damages, costs, expenses, attorney fees or expert witness fees that may be awarded to the prevailing party arising out of or in connection with the approval of the application or related decision. City may, in its sole discretion, participate in the defense of such action; but such participation shall not relieve Applicant of its obligations under this condition. The undersigned hereby represents that they are the Applicant or are fully empowered by the Applicant as their agent to agree to provide the indemnification, defense and hold harmless obligations, and the signature below represents the unconditional agreement by Applicant to be bound by such conditions.

TIME LIMITS

- A. **Term:** The Historical Relocation Permit approval granted pursuant to this Resolution shall remain in effect for two years to June 8, 2023. Failure to obtain building permits within this term shall result in termination of approval unless an extension of time is granted with a showing of just cause prior to expiration date. **(MHMC 18.108.040)**

SITE DEVELOPMENT

- A. **Site Design:** The site shall be developed in accordance with Approval Certificate Number 19-017 for the existing Design Permit, except as modified herein.
- B. **Final Site Development Plans:** Final site development plans shall be reviewed for conformance with CUL2021-0001 and approved by the Development

Services Department prior to issuance of a building permit. All such plans shall include:

- i. Detail depicting all concrete curbs as full formed.
- ii. All mechanical equipment, including electrical and gas meters, post indicator valve, backflow prevention devices, etc., shall be architecturally screened from view or located interior to the building. All ground mounted utility appurtenances such as transformers shall not be visible from any public right-of-way and shall be adequately screened through the use or combination of concrete or masonry walls, berming, and landscaping. **(MHARH p.20, 45, 79)** For additional screening, backflow preventers shall be painted dark green, except the fire connection which shall be painted yellow.
- iii. All existing on-site overhead utilities shall be placed underground in an approved conduit from the service connection at the street or at the property line to the service connection at the building.

SECRETARY OF INTERIOR'S STANDARDS FOR REHABILITATING HISTORIC BUILDINGS AND PRESERVATION BRIEFS

- A. **Architectural Plans:** The architectural plan for the rehabilitation and any addition or alteration shall be prepared by a historic architect, recognized by the State of California (CRIS) and with experience rehabilitating wood buildings of this age. The Development Services Director shall verify the preparation of the plans by a qualified historic architect at building permit submittal.
- B. **Rehabilitation:** Prior to the start of the rehabilitation, the General Contractor shall receive training from the historic architect on the sensitive nature of the materials and their preservation and care during rehabilitation. Prior to starting work, all workers assigned to this building shall receive training regarding the care of historic materials during any work and the preservation of historic materials going forward, including the following:
 1. Cleaning Historic Wood: When protecting the historic wood and to prepare for new paint, the contractor shall use low pressure water and bristle brushes to clean the building. The contractor shall follow Preservation Briefs #9 and #10 of the U.S. Department of Interior National Park Service Cultural Resources – Heritage Preservation Services Preservation Briefs.
 - a. Preservation Brief 9: The Repair of Historic Wooden Windows
 - b. Preservation Brief 10: Exterior Paint Problems on Historic Woodwork

2. Repairing Historic Wood Elements: The historic features and design of the building shall be preserved. Wood that is too deteriorated to be retained shall be replaced with wood milled to match the historic wood elements and approved by the historic architect prior to installation.
 3. Repairing Historic Wood Window Sash: The historic windows shall be preserved. The wood sash shall be cleaned and repaired. If required, new cords and missing hardware shall be installed for windows to be operable.
 4. Roof Repair: Roof repairs shall follow the historic shape and form of the roof structure. Roof covering shall be wood or composition shingles, with replacement material approved by the historic architect prior to installation.
- C. **Site and Setting**: The historic building shall be relocated to provide greater visibility along Mustard Avenue, with the structure relocated to at a minimum the setback line along Mustard Avenue. The Development Services Director shall verify the setback of the structure prior to issuance of a building permit.
- D. **Relocation**: An experienced house mover shall be retained to brace and prepare the building prior to lifting it and relocating to a new foundation.
- E. **Loss of Setting**: An educational plaque shall be installed in the sidewalk or at the front of the building to provide context for the historic building and build public awareness of the local history. The plaque shall describe the history of the building and Madrone Station. The Development Services Director shall approve the design and location of the plaque prior to installation.
- A. **Historic Alteration Permit**: A major Historic Alteration Permit may be required if the restoration exceeds the scope of recommendations provided by the addendum report or if the alterations is estimated to be valued at \$10,000 or greater (MHMC 18.60.070.B.2.b).

GENERAL

- A. **Mitigation Fee Act**: Notice is hereby given that, pursuant to the Mitigation Fee Act, the City of Morgan Hill charges certain fees (as such term is defined in Government Code Section 66000) in connection with approval of this development project for the purpose of defraying all or a portion of the cost of public facilities related to this development project (Mitigation Fee Act Fees). These fees do not include fees for processing applications for governmental regulatory actions or approvals, fees collected as part of development agreements, or as a part of the application for the City's Residential Development Control System. The Mitigation Fee Act Fees applying to this project are listed in the schedule of fees to be provided at building permit stage. Notice is also hereby given that the Developer has an opportunity to protest the imposition of the Mitigation Fee Act Fees within 90 days of the approval or conditional

approval of this development project and that the 90-day protest period has begun.

- B. **SUBMIT SIGNED COPIES OF RESOLUTION:** Submit two (2) signed copies of the PLANNING COMMISSION RESOLUTION to the Planning Division prior to issuance of a building permit.

ENGINEERING DIVISION

- A. Submit the latest set of Improvement plans and map to the Engineering and Utilities Department (attention Mario Jimenez)
- B. Provide updated Storm Water calculations addressing additional runoff and sizing of onsite storm.

BUILDING DIVISION

- A. A separate Building Permit is required for the relocation.
- B. The findings within the Addendum to the Historical and Architectural Evaluation shall be included in those plans and construction documentations.

RESOLUTION NO. 21-07

A RESOLUTION OF THE PLANNING COMMISSION OF THE CITY OF MORGAN HILL RECOMMENDING APPROVAL OF AMENDMENTS TO DEVELOPMENT AGREEMENT DA2018-0001: OLD MONTEREY-KELLY VO FOR A 6-UNIT RESIDENTIAL DEVELOPMENT ON A 1.13-ACRE SITE LOCATED ON THE SOUTHWEST CORNER OF OLD MONTEREY ROAD AND MUSTARD AVENUE (APN 764-24-061)

WHEREAS, the current owner of the property, 18755 Old Monterey, LLC, applied for an amendment to the Development Agreement (application AAE2021-0002: Old Monterey-Appletree (Kelly Vo));

WHEREAS, the City Council of the City of Morgan Hill enacted Ordinance No. 1594 as amended, establishing a procedure for processing Development Agreements in Chapter 18.116 for projects receiving allotments through the Residential Development Control System, Chapter 18.156, of Title 18 of the Morgan Hill Municipal Code; and

WHEREAS, Sections 65864 through 65869.5 of the California Government Code authorizes the City of Morgan Hill to enter into binding Development Agreements with persons having legal or equitable interests in real property for the development of such property; and

WHEREAS, the City Council adopted Ordinance No. 2303 on September 18, 2019, approving a Development Agreement for the Old Monterey-Kelly Vo project; and

WHEREAS, an amendment to Development Agreement DA2018-0001 was considered by the Planning Commission at its regular meeting of June 8, 2021; and

WHEREAS, testimony received at a duly-noticed public hearing, along with exhibits and drawings and other materials have been considered in the review process.

NOW, THEREFORE, BE IT RESOLVED BY THE PLANNING COMMISSION OF THE CITY OF MORGAN HILL THAT:

SECTION 1. The Planning Commission recommends that the City Council approve the amendment to the Development Agreement (DA2018-0001) application AAE2021-0002: Old Monterey-Appletree (Kelly Vo) based on the determination and supporting reasoning described below as required by Morgan Hill Municipal Code Section 18.116.040.C.

SECTION 2. The Development Agreement is consistent with the goals, objectives, policies, general land uses and programs specified in the General Plan and any applicable specific plan.

The project would provide 6 single-family residential units. No General Plan policy conflicts have been identified with the proposed project.

SECTION 3. The Development Agreement is compatible with the uses authorized in the zoning district in which the real property is located.

The proposed residential use is permitted within the RDM-7,000 zoning district and would be compatible with the surrounding residential and commercial uses.

SECTION 4. The Development Agreement duly considers city mitigation programs in effect at the time of execution of the agreement.

The project would be subject to the payment of applicable impact fees and community benefit commitments as part of the RDCS process.

SECTION 5. The Development Agreement will be non-detrimental to the public health, safety and general welfare of persons residing or working in the neighborhood and to property and improvements in the neighborhood.

The project's construction would adhere to state, local and federal laws. The project is residential housing and would be compatible with the surrounding neighborhood.

SECTION 6. The Development Agreement complies with the provisions of the California Environmental Quality Act and city's procedures adopted pursuant thereto.

The project is Categorical Exempt from CEQA and meets the criteria for a Class 15332 - In-Fill Development exemption. A CEQA Categorical Exemption Memorandum has been prepared and adopted for the project.

SECTION 7. The Development Agreement will not adversely affect the orderly development of property or the preservation of property values.

The project will provide high quality architecture consistent with the City's Architectural Design Guidelines. The project will also be consistent with state and local laws.

PASSED AND ADOPTED THIS 8TH DAY OF JUNE 2021, AT A REGULAR MEETING OF THE PLANNING COMMISSION BY THE FOLLOWING VOTE:

AYES: COMMISSIONERS:

NOES: COMMISSIONERS:

ABSTAIN: COMMISSIONERS:

ABSENT: COMMISSIONERS:

ATTEST:

JENNA LUNA, Deputy City Clerk

APPROVED:

Mohammad Habib, Chair

Attachment: Resolution for Appletree DA Amendments AAE2021-0002 [Revision 4] (3105 : AAE2021-0002/CUL2021-0001/EA2021-0002: Old

RECORDING REQUESTED BY AND
WHEN RECORDED MAIL TO:

City of Morgan Hill
Development Services Department
17575 Peak Avenue
Morgan Hill, CA 95037

RECORDING FEES EXEMPT
PURSUANT TO GOVERNMENT
CODE SECTION 27383

(INSERT DEVELOPMENT AGREEMENT)

RECORDING REQUESTED BY AND
WHEN RECORDED MAIL TO:

City of Morgan Hill
Development Services Department
17575 Peak Avenue
Morgan Hill, CA 95037

RECORDING FEES EXEMPT
PURSUANT TO GOVERNMENT
CODE SECTION 27383

AMENDMENT TO DEVELOPMENT AGREEMENT

THIS AMENDMENT TO DEVELOPMENT AGREEMENT ("**Amendment**") is entered into as of the ____ day of _____, 2021, by and among 18755 OLD MONTEREY, LLC ("**Developer**") and CITY OF MORGAN HILL, a municipal corporation of the State of California ("**City**").

RECITALS

A. Appletree Investment, LLC, Developer's predecessor in interest, entered into a Development Agreement (DA) with City on September 18, 2019 adopted by the City Council as Ordinance No. 2303, to facilitate the development of that certain real property owned by Developer within the City of Morgan Hill, State of California, which is legally described in Exhibit A to the Development Agreement ("**Property**"). The DA was recorded on September 26, 2019 as document number 24290883. The DA was assigned to Developer on _____, 2021. Capitalized terms used but not otherwise defined herein shall have the meaning ascribed to such terms in the Development Agreement.

B. Developer has applied for a Historical Relocation Permit to allow for the existing building to be moved and a new residential be additionally located on Parcel 4.

C. Developer and City desire to enter into this Amendment to revise the project description to include an additional residential unit.

AGREEMENT

NOW, THEREFORE, Developer and City hereby agree as follows:

1. Amendment to Development Agreement.

A. Section 1.02(a)(10) is revised to read as follows:

"Project" means the development containing 6 units in a residential subdivision project, as more particularly described in the RDSCS Application RDSCS2016-0008, Historical Relocation Permit CUL2021-0001, Design Permit SR2019-0001, and Subdivision Application SD2018-0002 as described in

Exhibit B. Any reference in this Agreement to the "Project" shall mean and include the "Property".

B. Exhibit B "Description Of Project" is amended to read as follows:

RDCS APPLICATION NO. RDCS2016-0008: OLD MONTEREY-KELLY VO FOR A RESIDENTIAL DEVELOPMENT PROJECT THAT INCLUDES SIX (65) SINGLE FAMILY RESIDENCES.

2. Building Design. The new single-family detached home on Lot 4 must have a similar and complementary architectural design to the other five single-family homes within the Appletree Subdivision.

3. RDCS Commitments. The design of the new single-family detached home on Lot 4 must meet the Residential Development Control System (RDCS) commitments established in the Appletree Subdivision Development Agreement.

4. Building Code Requirements. The construction of a new dwelling unit on this lot will require that building to have its own construction plans and documentations. The construction plans and documentation for this building are required to comply with the 2019 California Building Standard Codes and the current Morgan Hill Municipal Code. The Master Plan for the other five building fall under the 2016 California Building Code since their Permit Application was submitted prior to the adoption of the 2019 California Building Standards codes and the current Morgan Hill Municipal Code prohibiting natural gas in newly constructed building ordinance.

5. Development Agreement in Full Force and Effect. Except as specifically provided herein with respect to the assignment, all the terms, covenants, conditions and provisions of the Development Agreement shall remain in full force and effect.

6. Recording. City shall cause this Amendment to be recorded in the Official Records of Santa Clara County.

7. Severability. Except as otherwise provided herein, if any provision(s) of this Amendment is (are) held invalid, the remainder of this Amendment shall not be affected, except as necessarily required by the invalid provisions, and shall remain in full force and effect unless amended or modified by mutual consent of the Parties.

8. Counterparts. This Amendment may be executed in one or more counterparts, each of which shall be deemed to constitute an original, but all of which, when taken together, shall constitute one and the same instrument, with the same effect as if all of the Parties to this Amendment had executed the same counterpart.

9. Effective Date/Amendments. The Effective Date of this Amendment shall be the date upon which this Amendment is approved by the City of Morgan City Council. This Amendment shall not be amended except by an agreement in writing signed by the parties hereto or their respective successors-in-interest.

[Signature Page Follows]

IN WITNESS WHEREOF, Developer and City have entered into this Agreement as of the date first above written.

“CITY”

CITY OF MORGAN HILL

Christina J. Turner
City Manager

Approved as to form:

Donald A. Larkin
City Attorney

Date: _____

“DEVELOPER”

18775 Old Monterey, LLC

By _____

Name _____

Its _____

Date: _____

(ALL SIGNATURES, EXCEPT CITY CLERK AND CITY ATTORNEY, MUST BE
ACKNOWLEDGED BEFORE A NOTARY)

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

STATE OF CALIFORNIA)
) ss.
COUNTY OF _____)

On _____, before me, _____
 _____ (insert name and title of the officer)

personally appeared _____,
who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s)
is/are subscribed to the within instrument and acknowledged to me that he/she/they executed
the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the
instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the
instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Signature _____

(Seal)

Attachment: 18775 Old Monterey Amended DA (3105 : AAE2021-0002/CUL2021-0001/EA2021-0002: Old Monterey - Appletree (Kelly Vo))

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

[illegible]

On _____, before me, _____
 _____ (insert name and title of the officer)

personally appeared _____, who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Signature _____

(Seal)

Attachment: 18775 Old Monterey Amended DA (3105 : AAE2021-0002/CUL2021-0001/EA2021-0002: Old Monterey - Appletree (Kelly Vo))

24290883Regina Alcomendras
Santa Clara County - Clerk-Recorder

09/26/2019 02:10 PM

RECORDING REQUESTED BY AND
WHEN RECORDED MAIL TO:City of Morgan Hill
Development Services Department
17575 Peak Avenue
Morgan Hill, CA 95037

Titles: 1 Pages: 35

Fees: \$0.00
Taxes: \$0
Total: \$0.00RECORDING FEES EXEMPT
PURSUANT TO GOVERNMENT
CODE SECTION 27383

16804-19-058

DEVELOPMENT AGREEMENT

[DA2018-0001: Old Monterey-Kelly Vo]

BY AND BETWEEN**THE CITY OF MORGAN HILL****AND****APPLETREE INVESTMENT LLC****REGARDING****THE OLD MONTEREY-KELLY VO RESIDENTIAL DEVELOPMENT PROJECT**

Attachment: Recorded DA for Appletree Investments, LLC (3105 : AAE2021-0002/CUL2021-0001/EA2021-0002: Old Monterey - Appletree (Kelly

RESIDENTIAL DEVELOPMENT AGREEMENT
 BY AND BETWEEN
 THE CITY OF MORGAN HILL
 AND
 APPLETREE INVESTMENT LLC
 REGARDING THE
 OLD MONTEREY-KELLY VO PROJECT

This Development Agreement ("**Agreement**") is entered into on the below-stated "**Effective Date**" by and between the City of Morgan Hill, a California municipal corporation, (hereinafter "**City**"), and Appletree Investment LLC, a California limited liability company, and its successor and assigns (hereinafter, collectively, "**Developer**"), pursuant to Section 65864 *et seq.* of the Government Code of the State of California and City's police powers. City and Developer are, from time to time, also hereinafter referred to individually as a "**Party**" and collectively as the "**Parties**."

NOW, THEREFORE, in consideration of the mutual covenants and promises contained herein and other considerations, the value and adequacy of which are hereby acknowledged, the Parties hereby agree as follows:

RECITALS

A. To strengthen the public planning process, encourage private participation in comprehensive planning and reduce the economic risk of development, the Legislature of the State of California adopted Government Code Sections 65864 *et seq.* ("**Development Agreement Statute**"), which regulates development agreements with any person having a legal or equitable interest in real property providing for the development of that property and establishes certain development rights in the property. In accordance with the Development Agreement Statute, and by virtue of its police powers, City has the authority to enter into development agreements, and has reflected that authority in its Morgan Hill Municipal Code (Chapter 18.116 *et seq.*) ("**Enabling Ordinance**"). This Agreement has been drafted and processed pursuant to the Development Agreement Statute and the Enabling Ordinance.

B. Developer currently has a legal and/or equitable interest in the Property.

C. Developer proposes to plan, develop, construct, operate and maintain the Project on the Property (as such terms are defined herein).

D. As of the Effective Date, various land use regulations, allotments, entitlements, grants, permits and other approvals have been adopted, issued, and/or granted by City relating to the Project (collectively "**Existing Approvals**"), including without limitation, all of the following:

1. RDCS Application RDCS2016-0008: Five (5) FY 2018-19 building allotments;
2. Environmental Assessment Application EA2018-0004;
3. Subdivision Application SD2018-0002; and,

4. Administrative Extension Application AAE2019-0002 which extended the exercise of allotment deadline to December 30, 2019;

The Existing Approvals are more particularly described in the CEQA Categorical Exemption Memorandum for the Old Monterey-Kelly Vo project and the resolutions adopting the Existing Approvals.

E. For the reasons recited herein, Developer and City have determined that the Project is the type of development for which this Agreement is appropriate. This Agreement will help to eliminate uncertainty in planning, provide for the orderly development of the Project consistent with the planning goals, policies, and other provisions of the City's General Plan and City's Municipal Code, and otherwise achieve the goals and purposes for which the Development Agreement Statute was enacted.

F. On January 10, 2017, the Morgan Hill Planning Commission awarded allotments for the Project as set forth in the Developer's application for residential allotments pursuant to Chapter 18.156 ("**Residential Development Control System**", or "**RDCS**") of the Morgan Hill Municipal Code ("**Code**"). This Agreement serves to secure in a permanent and enforceable manner the public benefits and commitments included in the Developer's application as required under Section 18.156.120.J of the Code.

G. On June 11, 2019, following a duly noticed and conducted public hearing, the Planning Commission of the City ("**Planning Commission**") considered the Development Agreement for recommendation to the City Council, and determined that the Development Agreement is consistent with the goals, objectives, policies, general land uses and programs specified in the General Plan and any applicable specific plan; is compatible with the uses authorized in the zoning district in which the real property is located; duly considers City mitigation programs in effect at the time of execution of the agreement; will be non-detrimental to the public health, safety and general welfare of persons residing or working in the neighborhood and to property and improvements in the neighborhood; complies with the provisions of the California Environmental Quality Act and City's procedures adopted pursuant thereto; and will not adversely affect the orderly development of property or the preservation of property values.

ARTICLE 1

ADMINISTRATION

1.01 Effective Date. Following a duly noticed and conducted public hearing, the Morgan Hill City Council ("City Council") introduced an ordinance ("**Ordinance**"), accepting the recommendation of the Planning Commission, finding that this Agreement's provisions are consistent with the General Plan and any applicable specific plan, approving this Agreement, and directing this Agreement's execution by City. The City adopted the Ordinance, and the Ordinance became effective thirty (30) days later. The "Effective Date" in this Agreement shall be the date that the Ordinance became effective.

1.02 Definitions.

(a) The following terms, phrases and words shall have the meanings and be interpreted as set forth in this Section:

- (1) "**Allotments**" shall mean those residential allotments awarded Developer through the Residential Development Control System

- (2) "**Applicable Law**" shall have that meaning set forth in Section 2.01(a) of this Agreement.
- (3) "**Commitments**" shall have that meaning set forth in Section 2.04(a) of this Agreement.
- (4) "**Director**" shall mean the Director of Community Development, and his or her designee.
- (5) "**Existing Approvals**" shall have that meaning set forth in paragraph D of the Recitals of this Agreement.
- (6) "**Existing City Laws**" shall mean all City ordinances, resolutions, rules, regulations, guidelines, motions, practices and official policies governing land use, zoning and development, RDCS, permitted uses, density and intensity of use, maximum height, bulk and size of proposed buildings, and other City land use regulations in force and effect on the Effective Date of this Agreement.
- (7) "**Impact Fees**" shall mean those fees imposed so that developments bear a proportionate share of the cost of public facilities and service improvements that are reasonably related to the impacts and burdens of the Project, adopted pursuant to Morgan Hill Municipal Code Chapter 3.56 and California Government Code Section 66001 *et seq.*
- (8) "**Legal Effect**" shall mean the ordinance, resolution, permit, license or other grant of approval that has been adopted by City and has not been overturned or otherwise rendered without legal and/or equitable force and effect by a court of competent jurisdiction, and all applicable administrative appeal periods and statutes of limitations have expired.
- (9) "**New City Laws**" shall mean any and all City ordinances, resolutions, orders, rules, official policies, standards, specifications and other regulations, whether adopted or enacted by City, its staff or its electorate (through their powers of initiative, referendum, recall or otherwise) that is not a Subsequent Approval, that takes "**Legal Effect**" after the Effective Date of this Agreement, and that applies City wide.
- (10) "**Project**" means the development containing 5 units in a residential subdivision project, as more particularly described in the RDCS Application RDCS2016-0008 and Subdivision Application SD2018-0002 as described in Exhibit B. Any reference in this Agreement to the "Project" shall mean and include the "Property".
- (11) "**Project Approvals**" mean, collectively, the Project's Existing Approvals and the Subsequent Approvals.
- (12) "**Property**" shall mean that certain real property consisting of approximately 1.13 acres located within the City, as more particularly described and shown on Exhibit A to this Agreement.
- (13) "**RDCS**" means the Residential Development Control System set forth in Chapter 18.156 of the Morgan Hill Municipal Code.
- (14) "**Second Notice**" shall have that meaning set forth in Section 4.07(c) of this Agreement.

- (15) **"Subdivision Document"** means, pursuant to Government Code Section 66452.6(a) and this Agreement, any tentative map, vesting tentative map, parcel map, or final map, or any such new map or any amendment to any such map, or any resubdivision.
- (16) **"Subsequent Approvals" and "Subsequent Approval"** mean those City permits, entitlements, approvals or other grants of authority (and all text, terms and conditions of approval related thereto), that may be necessary or desirable for the development of the Project, that are sought by Developer, and that are granted by City after the City Council adopts the Ordinance, including without limitation, subdivision maps and building permits.

(b) To the extent that any defined terms contained in this Agreement are not defined above, then such terms shall have the meaning otherwise ascribed to them elsewhere in this Agreement, or if not in this Agreement, by controlling law, including the Morgan Hill Municipal Code.

1.03 **Term.**

(a) The term ("**Term**") of this Agreement shall commence on the Effective Date, and then shall continue (unless this Agreement is otherwise terminated or modified as provided in this Agreement) until the earliest of (1) the loss of all residential allotments for the Project pursuant to the RDCS, if applicable, (2) the issuance of a certificate of occupancy for all units in the Project or (3) ten (10) years plus one day after the Effective Date; provided however that Developer's obligations pursuant to Sections 2.03 and 2.04 shall survive the termination of this Agreement until such obligations are fully performed and completed in accordance with this Agreement.

(b) If any "**Third-Party Challenge**" (as that term is defined in Section 4.06(a) of this Agreement) is filed, then the Term of this Agreement shall be tolled for the period or periods of time from the date of the filing of such litigation until the conclusion of such litigation by dismissal or entry of a final judgment ("**Litigation Tolling**"). Notwithstanding the foregoing, regardless of the number of Third-Party Challenges that may be filed during the Term of this Agreement, the sum total of such Litigation Tolling shall not exceed five (5) years. The filing of any Third-Party Challenge shall not delay or stop the development, processing or construction of the Project, or the approval or issuance of any Project Approvals, unless enjoined or otherwise controlled by a court of competent jurisdiction. The Parties shall not stipulate to the issuance of any such order unless mutually agreed to.

ARTICLE 2

APPLICABLE LAW

2.01 **Applicable Law—Generally.**

(a) As used in this Agreement, "**Applicable Law**" shall mean the rules, regulations, official policies, standards, and specifications applicable to the development of the Property listed below in this Section 2.01. The order of their importance is the order in which they are listed (with highest importance listed first, second most important listed second, etc.); in the event of a conflict between them, their order shall determine which one controls (the one listed higher controlling over the one listed lower):

- (1) All the provisions, terms and conditions of this Agreement.

- (2) Existing Approvals.
- (3) The Subsequent Approvals, provided such Subsequent Approvals are:
 - (i) In compliance with all controlling California law;
 - (ii) Mutually agreed to by the Parties;
 - (iii) In compliance with this Agreement; and
 - (iv) Duly enacted by City.
- (4) The "Existing City Laws" that are not in conflict with this Agreement and the Project Approvals.
- (5) Any "New City Laws" Developer is subject to as provided in Section 2.09 of this Agreement.

(b) The Parties shall cooperatively assemble all of the necessary documents to memorialize, to the best of their abilities, the Project Approvals, Existing City Laws, and the terms and conditions contained in this Agreement to assist Developer to maintain the documents assembled and to provide a continuing reference source for the approvals granted and the ordinances, policies and regulations in effect on the Effective Date of this Agreement.

2.02 Vested Right to Applicable Law.

(a) During the Term of this Agreement, Developer shall have the vested right to develop the Project subject only to, and in accordance with, the Applicable Law, and during the Term of this Agreement, City shall have the right to regulate the development and use of the Project subject only to, and in accordance with, the Applicable Law.

(b) Nothing contained herein will give Developer a vested right to obtain a sewer connection for said Project in the absence of sewer capacity available to the Project.

(c) Pursuant to this Agreement, the Applicable Law will be an expanding body of law, such as, for example, when Subsequent Approvals are granted by City, and/or when Developer becomes subject to a New City Law pursuant to this Agreement.

(d) The vested rights to develop the Project in accordance with Applicable Law and this Agreement shall be vested only to those residential units having an RDCS residential allotment. Nothing contained herein shall give Developer a vested right to develop the described Project absent valid RDCS residential allotments.

(e) Developer agrees that the terms and conditions of this Agreement and conditions of approval issued pursuant to this Agreement shall govern and dictate the vesting of the Developer's right to develop in lieu of any other instrument of vesting, including any vesting tentative map or any other agreement, instrument or document purporting to vest any right of development. Developer agrees to waive any vesting rights by operation of any otherwise applicable City, state or federal law.

2.03 Project Impacts and Costs.

(a) Agreement Subject to Project Mitigation Requirements. Notwithstanding any other express or implied term or condition of this Agreement (or the Approvals) to the contrary, throughout the Term of this Agreement, the full and complete mitigation of all environmental (including any mitigation measure adopted pursuant to CEQA), physical, fiscal and other impacts of the Project and the Property on the community and on the City of Morgan Hill and its services, facilities, operations and maintenance (collectively, "**Project Mitigation**") shall be borne by and shall be the sole and exclusive responsibility of the Developer. Such Project Mitigation may be conditions of any Applicable Law or Project Approval and may include a mix of different approaches, including without limitation, Developer construction of and/or financing of such services, facilities, operations and maintenance through the payment of impact fees or other fees, taxes, levies, assessments, or other financing mechanisms including without limitation, reimbursement agreements, Landscaping and Lighting Districts, Mello-Roos Districts, Community Facilities Districts, Assessment Districts, Tax-Exempt and Taxable Financing Mechanisms, Maintenance Districts, Homeowners Associations, and participation in the Statewide Communities Infrastructure Program (collectively, "**Financing Mechanisms**"). The necessary scope and extent of such Project Mitigation, and which combination of Financing Mechanisms should be employed relating to such Project Mitigation to assure success of the Project Mitigation, shall be determined by City, in its sole and exclusive discretion, pursuant to appropriate City ordinance, resolution, regulations or procedures, taking into account and guided by the pre-existing rights of others in the existing and future public services and facilities (including their operations and maintenance) that Developer may seek to use. If no Financing Mechanism is available to fund the Project Mitigation, then the Project shall not progress forward.

(b) Impact Fees. In addition to any agreed-upon Project-specific requirements as set forth in Section 2.04 and as part of the Developer's sole and exclusive obligation to cover Project Mitigation, Developer shall pay all Impact Fees and in the amounts in legal effect at the time any such Impact Fees become due and payable as provided for in the City's Municipal Code.

(c) Processing Fees. In addition to any agreed-upon Project-specific requirements as set forth in Section 2.04, the Project (including Developer as owner of same) shall be responsible for the costs to City of processing any and all Developer-requested land use approvals, including without limitation, building permits, plan checks, and environmental studies required pursuant to CEQA and other similar requests for City permits and entitlements, when such costs are incurred by City. City shall impose those funding requirements needed to ensure that the processing costs to the City are fully covered by the Developer. Further, if additional, accelerated, or more frequent inspections are requested by Developer of City than would otherwise take place in City's ordinary course of business, then City may either hire additional contract inspectors, plan checkers, engineers or planners, or City may hire a full or part time employee. If City hires additional contractors, then Developer shall reimburse City, on a monthly basis in arrears, the cost to City of hiring such additional contract inspectors, plus Developer shall pay to City an additional ten percent (10%) of such cost to City on the same payment schedule. City shall use such additional 10% to defray administrative costs. If City hires a full or part time employee, then Developer shall reimburse City, on a monthly basis, in arrears, for a pro rata share of the total cost to the City of such employee, plus ten percent (10%) for administrative costs, for the period from hire to the end of the Term of this Agreement.

2.04 RDCS and Other Specific Project-Specific Requirements.

(a) The Specific Restrictions and Requirements set forth in Exhibit C are public benefit commitments ("**Commitments**") voluntarily assumed by Developer in return for benefits derived from the City's

RDCS allotment approval program. These requirements are not Project Mitigation within the meaning of Section 2.03 of this Agreement. Developer hereby agrees that these requirements are not subject to credit, refund or reimbursement or prohibition pursuant to otherwise applicable City, state or federal law and hereby waives any such right to credit, refund, reimbursement or prohibition. These Commitments are voluntarily assumed by Developer in return for benefits derived from the RDCS. Pursuant to the RDCS, awarding of residential allotments to new development is a competitive process based on a point system. Additional points can be awarded to a development proposal that voluntarily commits towards providing a public benefit contribution in addition to those already required to mitigate its impacts. The Commitments result in additional points, thereby allowing the development proposal to secure a higher score pursuant to the RDCS, which in turn may provide a high enough score for the development proposal to secure residential allotments. The Commitments set forth in Exhibit C, derived from that RDCS process, are enforced through this Agreement.

(b) Substitution of Commitments within the same Objective may be allowed in limited circumstances, as provided in Section IV. F of the RDCS Competition Manual, with approval of the Community Development Director documented through an Administrative Amendment as provided in Section 3.05 of this Agreement. Substitution may be allowed only if the proposed changes result in the project receiving the same or higher score within each Objective, maintain or improve the quality of the project, and would result in the same or greater value to the City or its future residents. No changes which would subject the Project to further environmental review under CEQA shall be approved. In circumstances in which Substitution within the same Objective is not possible, Substitution may be allowed only by resolution of the Planning Commission.

(c) The Developer's RDCS application – RDCS2016-0008: Old Monterey-Kelly Vo and approval actions (as reflected in the official records, including agendas and minutes of the City Planning Commission on January 10, 2017 and City Council on February 15, 2017) shall be incorporated into this Agreement by this reference.

2.05 Construction Codes.

With respect to the development of any or all of the Project or the Property, Developer shall be subject to the California Building Code and all those other State-adopted construction, fire and other codes applicable to improvements, structures, and development, and the applicable version or revision of said codes by local City action (collectively referred to as "**Construction Codes**") in place at that time that a plan check application for a building, grading or other permit subject to such Construction Codes is submitted to City for approval, provided that such Construction Codes have been adopted by City and are in effect on a City-wide basis.

2.06 Timing of Development.

(a) Securing Building Permits and Beginning Construction. Developer is required to obtain any approvals or permits for the development of the Project in accordance with this Agreement, the Applicable Law, and the Project Approvals. However, any Subsequent Approval initiated by Property Owner which substantially changes the permitted uses or substantially increases the height, and density or floor area allowed under the Project Approvals, shall be subject to the rules, regulations, ordinances and official policies of the City then in effect. Developer agrees to secure building permits and to begin construction of the Project in accordance with the time requirements set forth in the Construction Codes and the RDCS, if applicable. In the event Developer fails to comply with the above permit issuance and beginning construction dates, and satisfactory progress towards completion of the project in accordance with the Construction Codes, Project Approvals, and

RDCS, Developer shall be in default of this Agreement, and must cure said default as provided in section 4.01 of this Agreement.

(b) Progress Reports Until Construction of Project is Complete. Developer shall make reports regarding the progress of construction in such detail and at such time as the Community Development Director of the City of Morgan Hill reasonably requests.

(c) City of Morgan Hill to Receive Construction Contract Documents. If the City reasonably requests copies of construction, off-site and landscaping contracts or documents, Developer agrees to furnish such documents to the City.

(d) Certificate of Completion. Within thirty (30) days after completion to the City's satisfaction of 100% of the total number of units in the Project, the City shall provide Developers with an instrument in recordable form certifying completion of the entire project.

2.07 Improvements.

In any instance where Developer is required to install improvements (including those set forth in Exhibit C), Developer shall obtain City approval of the plans and specifications and the timing and manner of the installation of improvements, and provided Developer has supplied all information required by City, City shall review and act on the application for such approval with good faith and in a reasonable manner. Where the actual cost of any improvement exceeds Developer's estimated cost or commitment, Developer shall be solely responsible for all improvement costs in excess of those approved by City unless otherwise provided for in a reimbursement agreement.

2.08 Overcapacity, Oversizing.

(a) City may require Developer to construct on-site and off-site improvements in a manner that provides for oversizing or overcapacity so that the constructed improvement will serve other development or residents or facilities and services outside of the Project ("**Oversizing**"). Such Oversizing shall be reasonable in scope. The Parties recognize that the City shall not require any Oversizing from Developer except in connection with the Project Approvals and in accordance with provisions of the Subdivision Map Act and Applicable Law.

(b) Unless no credit or reimbursement is owed to Developer pursuant to Section 2.04 of this Agreement, Developer's right to receive credits and reimbursements for Oversizing or excessive payment or performance shall be determined and processed pursuant to the City's Municipal Code and controlling practices (relative to credits and reimbursements) on the Effective Date.

2.09 New City Laws.

(a) City may apply any New City Law to the Project that is not in conflict with this Agreement and the Applicable Law it describes. City shall not apply any New City Law to the Project that is in conflict with this Agreement and the Applicable Law it describes, nor otherwise reduces the development rights or assurances provided by this Agreement. City shall not apply to the Project nor Property any no-growth or slow-growth ordinance, measure, policy, regulation or development moratorium either adopted by City or by a vote of the electorate and whether or not by urgency ordinance, interim ordinance, initiative, referendum or any other change in the laws of the City by any method or name which would alter the Applicable Law that may stop, delay, or effect the rate, timing or sequence of development.

(b) Without limiting the generality of the foregoing, and except as otherwise provided in this Agreement, a New City Law shall be deemed to be in conflict with this Agreement or the Applicable Law or to reduce the development rights provided hereby if the application to the Project would accomplish any of the following results, either by specific reference to the Project or as part of a general enactment which affects or applies to the Project:

(1) Change any land use designation or permitted use of the Property allowed by the Applicable Law or limit or reduce the density or intensity of the Project, or any part thereof, or otherwise require any reduction in the total number of residential dwelling units, square footage, floor area ratio, height of buildings, or number of proposed non-residential buildings, or other improvements;

(2) Limit or control the availability of public utilities, services, or facilities otherwise allowed by the Applicable Law;

(3) Limit or control the rate, timing, phasing or sequencing of the approval, development, or construction of all or any part of the Project in any manner, or take any action or refrain from taking any action that results in Developer having to substantially delay construction of the Project or require the acquisition of additional permits or approvals by the City other than those required by the Applicable Law;

(4) Limit or control the location of buildings, structures, grading, or other improvements of the Project in a manner that is inconsistent with or more restrictive than the limitations in the Existing Approvals.

(c) If City determines that it has the right pursuant to this Agreement to impose and apply a New City Law on the Property and Project, it shall send written notice to Developer of that City determination ("**Notice of New City Law**"). Upon receipt of the Notice of New City Law, if Developer believes that such New City Law is in conflict with this Agreement, Developer may send written notice to the City of the alleged conflict within thirty (30) days of receipt of City's Notice of New Law ("**Objection to New City Law**"). Developer's Objection to New City Law shall set forth the factual and legal reasons why Developer believes City cannot apply the New City Law to the Property/Project. City shall respond to Developer's Objection to New City Law ("**City Response**") within thirty (30) days of receipt of said Developer Objection to New City Law. The City Response shall set forth the factual and legal reasons why City believes it can apply the New City Law to the Project. Thereafter, the Parties shall meet and confer within thirty (30) days of the date of Developer's receipt of the City Response (the "**Meet and Confer Period**") with the objective of attempting to arrive at a mutually acceptable solution to this disagreement. Within fifteen (15) days of the conclusion of the Meet and Confer Period, City shall make its determination, and shall send written notice to Developer of that City determination. If City determines to "impose/apply" the New City Law to the Project, then Developer shall have a period of ninety (90) days from the date of receipt of such City determination within which to file legal action challenging such City action. In other words, a 90-day statute of limitations regarding Developer's right to judicial review of the New City Law shall commence upon Developer's receipt of City's determination following the conclusion of the Meet and Confer Period. If upon conclusion of judicial review of the New City Law (at the highest judicial level sought and granted), the reviewing court determines that Developer is not subject to the New City Law, such New City Law shall cease to be a part of the Applicable Law, and City shall return Developer to the position Developer was in prior to City's application of such New City Law (*e.g.*, City return fees, return dedications, etc.). The above-described procedure shall not be construed to interfere with City's right to adopt or apply the New City Law with regard to all other areas of City (excluding the Project).

(d) Developer in its sole and absolute discretion may elect to have applied to the Project a New City Law that is not otherwise a part of the Applicable Law, subject to the limitations set forth in this subdivision (d). In the event Developer so elects to be subject to a New City Law that is not otherwise a part of the Applicable Law, Developer shall provide notice to City of that election and thereafter such New City Law shall be part of the Applicable Law. In no event shall any New City Law become part of the Applicable Law if it would relieve Developer from, or impede Developer's compliance with, Developer's obligations pursuant to this Agreement, including without limitation Developer's obligations of full "Project Mitigation" pursuant to Section 2.03 or the "RDCS and Other Project Specific Requirement" pursuant to Section 2.04. Further, for the purposes of this Agreement, the "New City Laws" Developer may elect to be subject to pursuant to this Section shall not mean nor include any or all individual development agreements with other developers (including without limitation such development agreements' term and conditions, exhibits, etc.) executed before or after the Effective Date of this Agreement.

(e) City shall not be precluded from adopting and applying New City Laws to the Project to the extent that such New City Laws are specifically required to be applied by State or Federal laws or regulations, and implemented through the Federal, State, regional and/or local level ("**Mandated New City Laws**"), including without limitation those provisions in the Development Agreement Statute, or that such New City Laws are necessitated by or arise from a declaration of City, local, state or federal declaration of a state of emergency.

(f) In the event that an administrative challenge and/or legal challenge (as appropriate) to a Mandated New City Laws preventing compliance with this Agreement is brought and is successful in having the Mandated New City Law determined to not apply to this Agreement, this Agreement shall remain unmodified and in full force and effect.

ARTICLE 3

PROCESSING

3.01 Processing.

(a) This Agreement does not provide Developer with any right to the approval of Subsequent Approvals nor to develop or construct the Project beyond that which is authorized in the Existing Approvals. This Agreement simply provides a process by which such Subsequent Approvals may be processed by Developer, and later added to this Agreement, if and only if such Subsequent Approvals are compliant with all controlling California law (including Planning and Zoning Law and CEQA), and are adopted/approved by City, which shall retain all lawful discretion in this regard. The public review process is ongoing, and following the City's adoption of this Agreement, that public review process shall continue. Nothing in this Agreement shall be construed to limit the authority or obligation of City to hold necessary public hearings, or to limit the discretion of City or any of its officers or officials with regard to the Project Approvals that legally require the exercise of discretion by City. City's discretion as to the granting of Subsequent Approvals shall be the discretion afforded by the Applicable Law. The Parties agree that this Agreement does not modify, alter or change the City's obligations pursuant to CEQA and acknowledge that Subsequent Approvals may require additional environmental review pursuant to CEQA.

(b) Upon submission by Developer of any and all necessary and required applications for Subsequent Approvals and payment of any and all appropriate processing and other fees as provided in this Agreement, City shall use its best efforts to promptly commence and diligently complete all steps necessary to

acting on the requested Subsequent Approvals, including, but not limited to, (i) the holding of any and all required public hearings and notice for such public hearings, and (ii) the granting of the requested approval to the extent that it is consistent with Applicable Law.

3.02 Significant Actions by Third Parties Necessary to Implement the Existing Approvals.

(a) At Developer's sole discretion, Developer shall apply for such other permits, grants of authority, agreements, and other approvals from other private and/or public and quasi-public agencies, organizations, associations or other entities ("**Other Entity**") as may be necessary to the development of, or the provision of services and facilities to, the Project ("**Other Permits**").

(b) City shall cooperate with Developer in its endeavors to obtain any Other Permits and shall, from time to time, at the request of Developer, join with Developer in the execution of such permit applications and agreements as may be required to be entered into with any such other agency.

(c) In the event that any such Other Permit is not obtained from an Other Entity within the time permitted by law for such other entity to act and such circumstance materially deprives Developer of the ability to proceed with development of the Project or any portion thereof, or materially deprives City of a bargained-for public benefit of this Agreement, then, in such case, and at the election of either party, Developer and City shall meet and confer with the objective of attempting to mutually agree on solutions that may include alternatives, Subsequent Approvals, or an amendment(s) to this Agreement to allow the development of the Project to proceed with each Party substantially realizing its bargained-for benefit therefrom.

3.03 Establishment and Extension of Residential Development Control System Building Allotments.

Allotments shall be exercised pursuant to Section 18.156.160 of the Morgan Hill Municipal Code and Section IV.J of the RDCS Competition Manual. The City may approve an extension to the date by which an allotment must be exercised only as allowed by Section 18.156.170 of the City of Morgan Hill Municipal Code and Section IV.L of the RDCS Competition Manual. Extensions and allotment adjustments for ongoing projects shall be processed by Planning Commission resolution as provided in Section IV.H of the RDCS Competition Manual.

3.04 Amendments.

This Agreement may be amended from time to time by mutual consent in writing of the Parties to this Agreement in accordance with Government Code Section 65868. Any request by Developer for an amendment or modification to this Agreement or a Project Approval shall be subject to the applicable substantive and procedural provisions of the City's General Plan, zoning, subdivision, and other applicable land use ordinances and regulations (i.e., City review and approval) in effect when such an amendment or modification request is approved.

3.05 Administrative Amendment

Upon the written request of, and payment of the established fee by, Developer, Substitution of Commitments within the same criteria category may be processed administratively by the Community

Development Director. Any Administrative Amendment must be made in writing approved by the Director and approved by the City Attorney, and signed by the Developer.

ARTICLE 4

DEFAULT, VALIDITY PROVISIONS, ASSIGNMENT

4.01 Defaults.

(a) Any failure by City or Developer to perform any material term or provision of this Agreement, which failure continues uncured for a period of sixty (60) days (or 150 days for a Mortgagee (as that term is defined in Section 4.10(a)) following written notice of such failure from the other Party (unless such period is extended by written mutual consent) ("**Notice of Default**"), shall constitute a default pursuant to this Agreement ("**Default**"). Any Notice of Default shall specify the nature of the alleged failure and, where appropriate, the manner in which such alleged failure satisfactorily may be cured. If the nature of the alleged failure is such that it cannot reasonably be cured within such 60-day period (or 150 days for a Mortgagee), then the commencement of the cure within such time period, and the diligent prosecution to completion of the cure thereafter, shall be deemed to be a cure within such 60-day period (or 150 days for a Mortgagee). If the alleged failure is cured, then no Default shall exist and the noticing Party shall take no further action. If the alleged failure is not cured, then a Default shall exist pursuant to this Agreement and the non-defaulting Party may exercise any of the remedies available pursuant to this Article.

(b) No failure or delay in giving notice of default shall constitute a waiver of default; provided, however, that the provision of written notice and opportunity to cure shall nevertheless be a prerequisite to the enforcement or correction of any default. Waiver of a breach or default pursuant to this Agreement shall not constitute a continuing waiver or a waiver of a subsequent breach of the same or any other provision of this Agreement.

4.02 Actions During Cure Period.

(a) During any cure period and during any period prior to any delivery of notice of failure or default, the Party charged shall not be considered in default for purposes of this Agreement. If there is a dispute regarding the existence of a default, the Parties shall otherwise continue to perform their obligations hereunder to the maximum extent practicable in light of the disputed matter and pending its resolution, or formal termination of the Agreement, as provided herein.

(b) City will continue to process in good faith development applications during any cure period, but need not approve any such application if it relates to an alleged default of Developer hereunder.

4.03 Resolution of Disputes.

(a) In the event either Party is in default pursuant to the terms of this Agreement, the other Party may elect, in its sole and absolute discretion, to pursue any of the following courses of action: (i) waive such default; (ii) pursue administrative remedies as provided herein; (iii) pursue judicial remedies as provided for herein; and/or (iv) terminate this Agreement.

(b) Except as otherwise specifically stated in this Agreement, either Party may, in addition to any other rights or remedies, institute legal action to cure, correct, or remedy any default by another Party to this

Agreement, to enforce any covenant or agreement herein, to enjoin any threatened or attempted violation hereunder, or to seek specific performance. It is expressly understood and agreed that the sole legal remedy available to Developer for a breach or violation of this Agreement by City shall be a legal action in mandamus, specific performance, and/or other injunctive or declaratory relief to enforce the provisions of this Agreement, and that Developer shall not be entitled to bring an action for damages including, but not limited to, lost profits, consequential damages or other economic damages. For purposes of instituting a legal action pursuant to this Agreement, any City Council determination pursuant to this Agreement shall be deemed a final agency action.

(c) If any dispute arises between or among the Parties as to interpretation or application of any of the terms of this Agreement, the Parties shall attempt to resolve the dispute in accordance with this Agreement prior to third party mediation, arbitration, or formal court action. As to any such dispute, the Parties shall first meet and confer in good faith to resolve the matter between themselves. Each Party shall make all reasonable efforts to provide to the other Party or Parties all information relevant to the dispute, to the end that all Parties will have appropriate and adequate information to resolve the dispute. Should the Parties not resolve the dispute informally, the Parties agree to meet and confer in an effort to agree on utilizing Judicial Arbitration Mediation Services ("JAMS") for Alternative Dispute Resolution ("ADR"). However, no party shall be required to use JAMS or ADR.

4.04 Periodic Review.

(a) The City shall review this Agreement at least once annually to assure compliance with the RDCS, at which time the Developer is required to demonstrate good faith compliance with the terms of this Agreement.

(b) If, as a result of such annual review, the City finds and determines, on the basis of substantial evidence, that Developer has not complied in good faith with the terms or conditions of this Agreement, the City may rescind all or part of the allotments awarded pursuant to the RDCS, in addition to all other legally available remedies.

4.05 Force Majeure Delay, Extension of Times of Performance.

(a) Performance by any Party hereunder shall be excused, waived or deemed not to be in default where delays or defaults are due to acts beyond a Party's control such as war, insurrection, strikes, walkouts, riots, floods, earthquakes, fires, casualties, acts of God, unexpected acts of governmental entities other than City, including revisions to capacity ratings of the wastewater plant by the Regional Water Quality Control Board, the State Water Resources Board, enactment of conflicting State or Federal laws or regulations, or litigation (including without limitation litigation contesting the validity, or seeking the enforcement or clarification of this Agreement whether instituted by the Developer, City, or any other person or entity) (each a "Force Majeure Event").

(b) Any Party claiming a delay as a result of a Force Majeure Event shall provide the other Party with written notice of such delay and an estimated length of delay. Upon the other Party's receipt of such notice, an extension of time shall be granted in writing for the period of the Force Majeure Event, or longer as may be mutually agreed upon by the Parties, unless the other Party objects in writing within ten (10) days after receiving the notice. In the event of such objection, the Parties shall meet and confer within thirty (30) days after the date of objection to arrive at a mutually acceptable solution to the disagreement regarding the delay. If no mutually acceptable solution is reached, any Party may take action as permitted in this Agreement.

4.06 Third Party Legal Actions.

(a) In the event of any administrative, legal or equitable action or other proceeding instituted by any person, entity or organization (that is not a Party to this Agreement) challenging the validity of this Agreement, any Project Approvals, or the sufficiency of any environmental review pursuant to CEQA ("**Third-Party Challenge**"), the Parties shall cooperate with each other in good faith in the defense of any such challenge.

(b) City shall have the option to defend such Third-Party Challenge or to tender the complete defense of such Third-Party Challenge to the Developer ("**Tender**"). If City chooses to defend the Third-Party Challenge or Developer refuses City's Tender, City shall control all aspects of the defense and Developer shall pay City's attorneys' fees and costs (including related court costs).

(c) If Developer accepts City's Tender, Developer shall control all aspects of the defense and shall pay its own attorneys' fees and costs (including related court costs), and shall indemnify and hold harmless City against any and all third-party fees and costs arising out of such Third-Party Challenge. If City wishes to assist Developer when Developer has accepted the Tender, Developer shall accept that assistance and City shall pay City's own attorneys' fees and costs (including related court costs) ("**City Costs**"), and Developer shall pay its own attorneys' fees and costs (including related court costs), and shall indemnify and hold harmless City against any and all third-party fees and costs arising out of such Third Party Challenge (such third party fees and costs shall not include City Costs).

(d) If any part of this Agreement or any Project Approval is held by a court of competent jurisdiction to be invalid, the City shall: (1) use its best efforts to sustain and/or re-enact that part of this Agreement and/or Project Approval; and (2) take all steps possible to cure any inadequacies or deficiencies identified by the court in a manner consistent with the express and implied intent of this Agreement, and then adopting or re-enacting such part of this Agreement and/or Project Approval as necessary or desirable to permit execution of this Agreement and/or Project Approval.

4.07 Estoppel Certificate.

(a) Any Party may, at any time, and from time to time, deliver written notice to any other Party, and/or to the Developer's lender, requesting such Party to certify in writing that, to the knowledge of the certifying Party:

(1) This Agreement has not been amended or modified either orally or in writing or if so amended, identifying the amendments.

(2) The Agreement is in effect and the requesting Party is not known to be in default of the performance of its obligations pursuant to this Agreement, or if in default, to describe therein the nature and amount of any such defaults.

(b) This written certification shall be known as an "**Estoppel Certificate.**" A Party receiving a request hereunder shall execute and return such Estoppel Certificate within ten (10) days following the receipt of the request, unless the Party, in order to determine the appropriateness of the Estoppel Certificate, promptly commences and proceeds to conclude an Annual Review. The Parties acknowledge that an Estoppel Certificate may be relied upon by Assignees and other persons having an interest in the Project, including holders of mortgages and deeds of trust. The City Manager shall be authorized to execute an Estoppel Certificate for City.

(c) If a Party fails to deliver an Estoppel Certificate within the ten (10) day period, as provided for in Section 4.07(b) above, the Party requesting the Estoppel Certificate may deliver a second notice (the "**Second Notice**") to the other Party stating that the failure to deliver the Estoppel Certificate within ten (10) working days following the receipt of the Second Notice shall constitute conclusive evidence that this Agreement is without modification and there are no unexcused defaults in the performance of the requesting Party. Failure to deliver the requested Estoppel Certificate within the ten (10) working day period shall then constitute conclusive evidence that this Agreement is in full force and effect without modification and there are no unexcused defaults in the performance of the requesting Party.

4.08 Assignment/Covenants Run with the Land.

(a) Right to Assign. Developer shall have the right to sell, assign, or transfer this Agreement with all its rights, title and interests therein to any person, firm or corporation acquiring an interest in the Project or Property (or portion thereof associated with the Project) at any time during the term of this Agreement ("**Assignee**"). Developer shall provide City with written notice of any assignment or transfer of all or a portion of the Property no later than thirty (30) days prior to such action, which notice shall include specific portions of the Project or Property to be assigned and the proposed form of assignment. Any proposed assignment shall be subject to the express written consent of City, which consent shall not be unreasonably withheld, delayed or conditioned. City's approval of a proposed assignment or transfer shall be based upon the proposed assignee's reputation, experience, financial resources and access to credit and capability to successfully carry out the development of the Property to completion. The written assignment, assumption or release of rights or obligations with respect to a portion of the Project or of the Property shall specify the portion of the Project or Property and the rights assigned and obligations assumed, and shall be approved by the City Attorney. The express written assumption by an Assignee of the obligations and other terms and conditions of this Agreement with respect to the Property or such portion thereof sold, assigned or transferred shall relieve Developer of such obligations so assumed. Any such assumption of Developer's obligations pursuant to this Agreement shall be deemed to be to the satisfaction of the City Attorney if executed in the form as may be approved by the City Attorney.

(b) Release Upon Assignment. Upon assignment, in whole or in part, and the express written assumption by the Assignee of such assignment, of Developer's rights and interests pursuant to this Agreement, Developer shall be released from its obligations with respect to the Property/Project (or any portion thereof), and any lot, parcel, or portion thereof so assigned to the extent arising subsequent to the effective date of such assignment. A default by any Assignee shall only affect that portion of the Property/Project owned by such Assignee and shall not cancel or diminish in any way Developer's rights or obligations hereunder with respect to the assigned portion of the Property/Project not owned by such Assignee. The Assignee shall be responsible for the reporting and annual review requirements relating to the portion of the Property/Project owned by such Assignee, and any amendment to this Agreement between City and Assignee shall only affect the portion of the Property/Project owned by such Assignee.

(c) Covenants Run with the Land. This Agreement and all of its provisions, agreements, rights, powers, standards, terms, covenants and obligations shall be binding upon the Parties and their respective heirs, successors (by merger, consolidation, or otherwise) and assigns, devisees, administrators, representatives, lessees, and all other persons or entities acquiring the Project and/or Property, any lot, parcel or any portion thereof, or any interest therein, whether by sale, operation of law or in any manner whatsoever, and shall inure to the benefit of the Parties and their respective heirs, successors (by merger, consolidation or otherwise) and assigns. All of the provisions of this Agreement shall be enforceable during the Term as equitable servitudes and constitute covenants running with the land pursuant to applicable law, including, but not limited to Civil Code Section 1468.

This Agreement shall not be binding upon any consumer, purchaser, transferee, devisee, assignee, or any other successor of Developer acquiring a completed residential unit comprising all or part of the Project ("**Consumer**") unless such Consumer is specifically bound by a provision of this Agreement or by a separate instrument or Agreement.

4.09 Encumbrances on the Property.

The parties hereto agree that this Agreement shall not prevent or limit Developer, in any manner, at Developer's sole and absolute discretion, from encumbering the Property, or any portion thereof or any improvements thereon with any Mortgage securing financing with respect to the construction, development, use or operation of the Project. Mortgagee may require certain modifications to this Agreement, and City shall negotiate in good faith any such request for modification or subordination.

4.10 Obligations and Rights of Mortgage Lenders.

(a) The holder of any mortgage, deed of trust or other security arrangement with respect to the Property, or any portion thereof ("**Mortgagee**"), shall not be obligated pursuant to this Agreement to construct or complete improvements or to guarantee such construction or completion, but shall otherwise be bound by all of the terms and conditions of this Agreement that pertain to the Property or such portion thereof in which it holds an interest.

(b) Each Mortgagee shall be entitled to receive written notice from City of results of the annual review to be done pursuant to Section 4.04 and any default by Developer pursuant to this Agreement, provided such Mortgagee has informed City of its address for notices. Each Mortgagee shall have a further right, but not an obligation, to cure such default in accordance with the default and default cure provisions in Sections 4.01, 4.02, and 4.03 of this Agreement. In the event Developer (or any permitted Assignee) becomes subject to an order for relief pursuant to any chapter of Title 11 of the United States Code (the "**Bankruptcy Code**"), the cure periods provided for a Mortgagee in Section 4.01(a) of this Agreement shall be tolled for so long as the automatic stay of Section 362 of the Bankruptcy Code remains in effect as to Developer (or any permitted Assignee); provided, however, if City obtains relief from the automatic stay pursuant to Bankruptcy Code Section 362 to declare any default by or exercise any remedies against Developer (or any permitted Assignee), the tolling of any Mortgagee's cure period shall automatically terminate on the earlier of: (i) the date that is sixty days after entry of the order granting City relief from the automatic stay, or (ii) the date of the entry of an order granting Mortgagee relief from the automatic stay. Each Mortgagee shall be entitled to receive written notice from City of the filing of any motion by City in which City seeks relief from the automatic stay of Section 362 of the Bankruptcy Code to declare any default by or exercise any remedies against Developer (or any permitted Assignee).

(c) Any Mortgagee who comes into possession of the Property, or any portion thereof, pursuant to a foreclosure of a mortgage or a deed of trust, or deed in lieu of such foreclosure, shall take the Property, or such portion thereof, subject to any pro rata claims for payments or charges against the Property, or such portion thereof, that have accrued prior to the time such holder comes into possession. In addition, any Mortgagee who comes into possession of the Property or any portion thereof, pursuant to a foreclosure of mortgage or deed of trust, or deed in lieu of such foreclosure, shall, subject to Section 4.10(a) above, be a permitted Assignee and, as such, shall succeed to all the rights, benefits and obligations of Developer pursuant to this Agreement.

(d) Nothing in this Agreement shall be deemed to be construed to permit or authorize any such holder to devote the Property, or any portion thereof, to any uses, or to construct any improvements thereof, other than those uses and improvements provided for or authorized by this Agreement, subject to all of the terms and conditions of this Agreement.

4.11 Termination.

This Agreement shall terminate upon the expiration of the Term, as set forth in Section 1.03(a), or at such other time as this Agreement is terminated in accordance with the terms hereof, whichever occurs first. Upon termination of this Agreement, the City shall record a notice of such termination, in a form satisfactory to the City Attorney that the Agreement has been terminated.

ARTICLE 5

GENERAL PROVISIONS

5.01 Miscellaneous.

(a) Preamble, Recitals, Exhibits. References herein to "this Agreement" shall include the Preamble, Recitals and all of the exhibits of this Agreement.

(b) Requirements of Development Agreement Statute. The permitted uses of the Property; density and/or intensity of use of the Property; the maximum height and size of proposed buildings and other structures; provisions for reservation or dedication of land for public purposes; location of public improvements; and other terms and conditions applicable to the Project shall be those set forth in the Applicable Law.

(c) Governing Law and Attorneys' Fees. This Agreement shall be construed and enforced in accordance with the laws of the State of California and legal actions commenced pursuant to or pursuant to this Agreement shall be brought in Santa Clara Superior Court. Should any legal action be brought by a Party for breach of this Agreement or to enforce any provision herein, the prevailing party of such action shall be entitled to reasonable attorneys' fees, court costs, and such other costs as may be fixed by the court.

(d) Project as a Private Undertaking. No partnership, joint venture, or other association of any kind between Developer, on the one hand, and City on the other hand, is formed by this Agreement. The development of the Property is a separately undertaken private development. The only relationship between City and Developer is that of a governmental entity regulating the development of private Property and the owners of such private Property.

(e) Indemnification. Developer shall hold City, its elective and appointive boards, commissions, officers, agents, and employees, harmless from any liability for damage or claims for damage for personal injury, including death, as well as from claims for property damage which may arise from Developer's contractors, subcontractors', agents' or employees' operations on the Project, whether such operations be by Developer or by any Developer's contractors, subcontractors, or by any one or more persons directly or indirectly employed by, or acting as agent for Developer or any of Developer's contractors or subcontractors. Developer shall indemnify and defend City and its elective and appointive boards, commissions, officers, agents and employees from any suits or actions at law or in equity for damages caused, or alleged to have been caused, by reason of any of the aforesaid operations and Developer shall pay all reasonable attorney's fees and costs that the

City may incur. City does not, and shall not, waive any rights against Developer which it may have by reason of the aforesaid hold-harmless requirement of Developer because of the acceptance of improvements by City, or the deposit of security with City by Developer. The aforesaid hold-harmless requirement of Developer shall apply to all damages and claims for damages of every kind suffered, or alleged to have been suffered, by reason of any of the aforesaid operations referred to in this subsection, regardless of whether or not City has prepared, supplied or approved of, plans and/or specifications for the subdivision. Notwithstanding anything herein to the contrary, Developer's indemnification of City shall not apply to the extent that such action, proceedings, demands, claims, damages, injuries or liability is based upon the active negligence of the City.

(f) Insurance. Developer shall, during the life of this Agreement take out and maintain insurance coverage with an insurance carrier authorized to transact business in the State of California as will protect the Developer or any Contractor or any Subcontractor or anyone directly or indirectly employed by any of them or by anyone for whose acts any of them may be liable, from claims for damages because of bodily injury, sickness, disease, or death of their employees or any person other than their employees, or for damages because of injury to or destruction of tangible property, including loss of use resulting therefrom. The minimum limits of liability for such insurance coverage which shall include comprehensive general and automobile liability, including contractual liability assumed pursuant to this Agreement, shall be as follows:

Limit of Liability for Injury or Accidental Death:

Per Occurrence \$1,000,000

Limit of Liability for Property Damage:

Aggregate Liability for Loss \$1,000,000

Such liability insurance policies shall name the City as an additional insured, by separate endorsement, and shall agree to defend and indemnify the City against loss arising from operations performed pursuant to this agreement and before permitting any Contractor or Subcontractors to perform work pursuant to this agreement, the Developer shall require Contractor or Subcontractors to furnish satisfactory proof that insurance has been taken out and is maintained similar to that provided by the Developer as it may be applied to the Contractor's or Subcontractor's work.

(g) Interpretation/Construction. This Agreement has been reviewed and revised by legal counsel for both Developer and City, and any rule or presumption that ambiguities shall be construed against the drafting Party shall not apply to the interpretation or enforcement of this Agreement. The standard of review of the validity and meaning of this Agreement shall be that accorded legislative acts of City. As used in this Agreement, and as the context may require, the singular includes the plural and vice versa, and the masculine gender includes the feminine and neuter and vice versa.

(h) Notices.

(1) All notices, demands, or other communications that this Agreement contemplates or authorizes shall be in writing and shall be personally delivered or mailed, via first class mail, to the respective Party at the below listed address. Notice shall be deemed effective and received five days after the date of mailing or upon personal delivery.

If to City: City Clerk
17575 Peak Avenue
Morgan Hill, CA 95037
Tel: (408) 779-7259
Fax: (408) 779-3117

With a Copy To: City Attorney
17575 Peak Avenue
Morgan Hill, CA 95037
Tel: (408) 779-7271
Fax: (408) 779-1592

If to Developer: Kelly Vo
Appletree Investment LLC
PO Box 32115
San Jose, CA 95132
Tel: (408) 889-4507

With a Copy To: Vince Burgos
Development Process Consultants
220 Live Oak Drive
Danville, CA 94506
Tel: (408) 421-2695

(2) Any Party may change the address stated herein by giving notice in writing to the other Parties, and thereafter notices shall be addressed and transmitted to the new address. Any notice given to the Developer as required by this Agreement shall also be given to any lender which requests that such notice be provided. Any lender requesting receipt of such notice shall furnish in writing its address to the Parties to this Agreement.

(i) Recordation. The Clerk of the City shall record, within ten (10) days after the Effective Date, a copy of this Agreement in the Official Records of the Recorder's Office of Santa Clara County. Developer shall be responsible for all recordation fees, if any.

(j) Severability. If any term or provision of this Agreement, or the application of any term or provision of this Agreement to a specific situation, is found to be invalid, void, or unenforceable, the remaining terms and provisions of this Agreement, or the application of this Agreement to other situations, shall continue in full force and effect.

(k) Jurisdiction. The interpretation, validity, and enforcement of the Agreement shall be governed by and construed pursuant to the laws of the State of California.

(l) Entire Agreement. This Agreement, including these pages and all the exhibits (set forth below) inclusive, and all documents incorporated by reference herein, constitute the entire understanding and agreement of the Parties.

(m) Signatures. The individuals executing this Agreement represent and warrant that they have the right, power, legal capacity, and authority to enter into and to execute this Agreement on behalf of the respective legal entities of Developer and City. This Agreement may be executed in multiple originals, each of which is deemed to be an original.

(n) Counterparts. This Agreement may be executed in several counterparts, each of which shall be deemed an original, and all such counterparts shall together constitute one and the same instrument.

(o) Exhibits. The following exhibits are attached to this Agreement and are hereby incorporated herein by this reference for all purposes as if set forth herein in full:

Exhibit A Legal Description of Lot on Which Project is to be Located.

Exhibit B Description of Project.

Exhibit C RDCS Specific Restrictions and Requirements.

Signatures of all parties are on the following page.

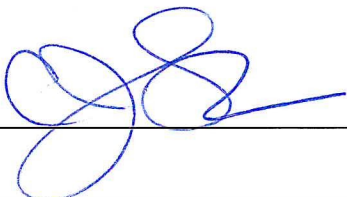
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IN WITNESS WHEREOF, City and Developer have executed this Agreement as of the date first hereinabove written.

CITY OF MORGAN HILL:

s/ 

Christina J. Turner
City Manager

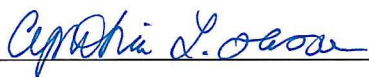
Date: 9/20/19

Attest:

s/ 

Angie Gonzalez
Deputy City Clerk

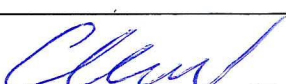
Approved as to Form:

s/ 

 Donald A. Larkin
City Attorney

Date: 7-10-19

DEVELOPER:

s/ 

Kelly Vo
Appletree Investment LLC

Date: 7/3/19

Corporate entities must provide a second signature:

s/ _____

Name/Title [print]

Date: _____

Adopted by Ordinance No. 2303
by action of City Council on September 18, 2019

**(ALL SIGNATURES, EXCEPT CITY CLERK AND CITY ATTORNEY,
MUST BE ACKNOWLEDGED BY A NOTARY)**

CALIFORNIA ALL-PURPOSE ACKNOWLEDGMENT**CIVIL CODE § 1189**

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

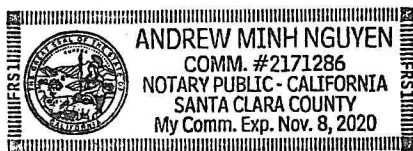
State of California)

County of Santa Clara)On July 3rd, 2019 before me, Andrew Minh Nguyen, Notary Public
Date Here Insert Name and Title of the Officerpersonally appeared Kelly Vo
Name(s) of Signer(s)

who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Signature Andrew
Signature of Notary Public

Place Notary Seal Above

OPTIONAL

Though this section is optional, completing this information can deter alteration of the document or fraudulent reattachment of this form to an unintended document.

Description of Attached Document

Title or Type of Document: Residential Development Agreement Document Date: N/A
Number of Pages: 21 Signer(s) Other Than Named Above: As above

Capacity(ies) Claimed by Signer(s)

Signer's Name: _____
☐ Corporate Officer — Title(s): _____
☐ Partner — ☐ Limited ☐ General
☒ Individual ☐ Attorney in Fact
☐ Trustee ☐ Guardian or Conservator
☐ Other: _____
 Signer Is Representing: _____

Signer's Name: _____
☐ Corporate Officer — Title(s): _____
☐ Partner — ☐ Limited ☐ General
☐ Individual ☐ Attorney in Fact
☐ Trustee ☐ Guardian or Conservator
☐ Other: _____
 Signer Is Representing: _____

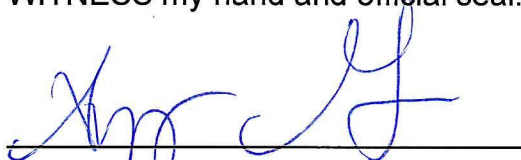
A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

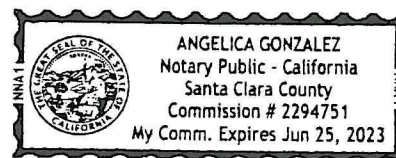
State of California
County of Santa Clara

On September 20, 2019 before me, Angelica Gonzalez, a Notary Public in and for said County and State, personally appeared Christina Turner, who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person, or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.


SIGNATURE OF NOTARY PUBLIC



(ABOVE AREA FOR NOTARY SEAL)

EXHIBIT A
LEGAL DESCRIPTION OF THE PROPERTY ON WHICH
PROJECT IS BE LOCATED

THE LAND REFERRED TO HEREIN BELOW IS SITUATED IN THE CITY OF MORGAN HILL, COUNTY OF SANTA CLARA, STATE OF CALIFORNIA AND IS DESCRIBED AS FOLLOWS:

A PORTION OF LOTS 1 AND 2, AS SHOWN ON THAT CERTAIN MAP ENTITLED "MORGAN HILL RANCH MAP NO. 3", WHICH WAS FILED IN THE OFFICE OF THE RECORDER OF THE COUNTY OF SANTA CLARA, STATE OF CALIFORNIA ON SEPTEMBER 21, 1892 IN BOOK G OF MAPS, PAGES 20 AND 21 AND BEING DESCRIBED AS FOLLOWS:

BEGINNING AT A POINT IN THE SOUTHWESTERLY LINE OF MADRONE ROAD, AT THE NORTHERNMOST CORNER OF LOTS 1, AS SAID ROAD AND LOT ARE SHOWN ON THE MAP ABOVE REFERRED TO; THENCE FROM SAID POINT OF BEGINNING, SOUTH 57° 58' WEST ALONG THE NORTHWESTERLY LINE OF SAID LOT 1 FOR A DISTANCE OF 188.95 FEET TO THE NORTHERNMOST CORNER OF THAT CERTAIN 0.646 ACRE TRACT OF LAND DESCRIBED AS PARCEL ONE IN THE DEED TO JAMES J. CAMPOLI, ET UX, RECORDED FEBRUARY 15, 1961 IN BOOK 5072, PAGE 709 OF OFFICIAL RECORDS; THENCE SOUTH 38° 36' EAST ALONG THE NORTHWESTERLY LINE OF SAID 0.646 ACRE TRACT FOR A DISTANCE OF 295.27 FEET TO THE EASTERNMOST CORNER THEREOF IN THE NORTHWESTERLY LINE OF THAT CERTAIN 5.551 ACRE TRACT OF LAND DESCRIBED AS PARCEL ONE IN THE DEED TO NICK RIZZI, ET UX, RECORDED JUNE 13, 1944 IN BOOK 1206, PAGE 111 OF OFFICIAL RECORDS; THENCE NORTH 55° 22' EAST ALONG THE NORTHWESTERLY LINE OF SAID 5.551 ACRE TRACT, FOR A DISTANCE OF 188.42 FEET TO THE NORTHERNMOST CORNER THEREOF IN SAID SOUTHWESTERLY LINE OF MADRONE ROAD; THENCE NORTH 38° 45' WEST ALONG SAID LAST MENTIONED LINE 285.12 FEET TO THE POINT OF BEGINNING.

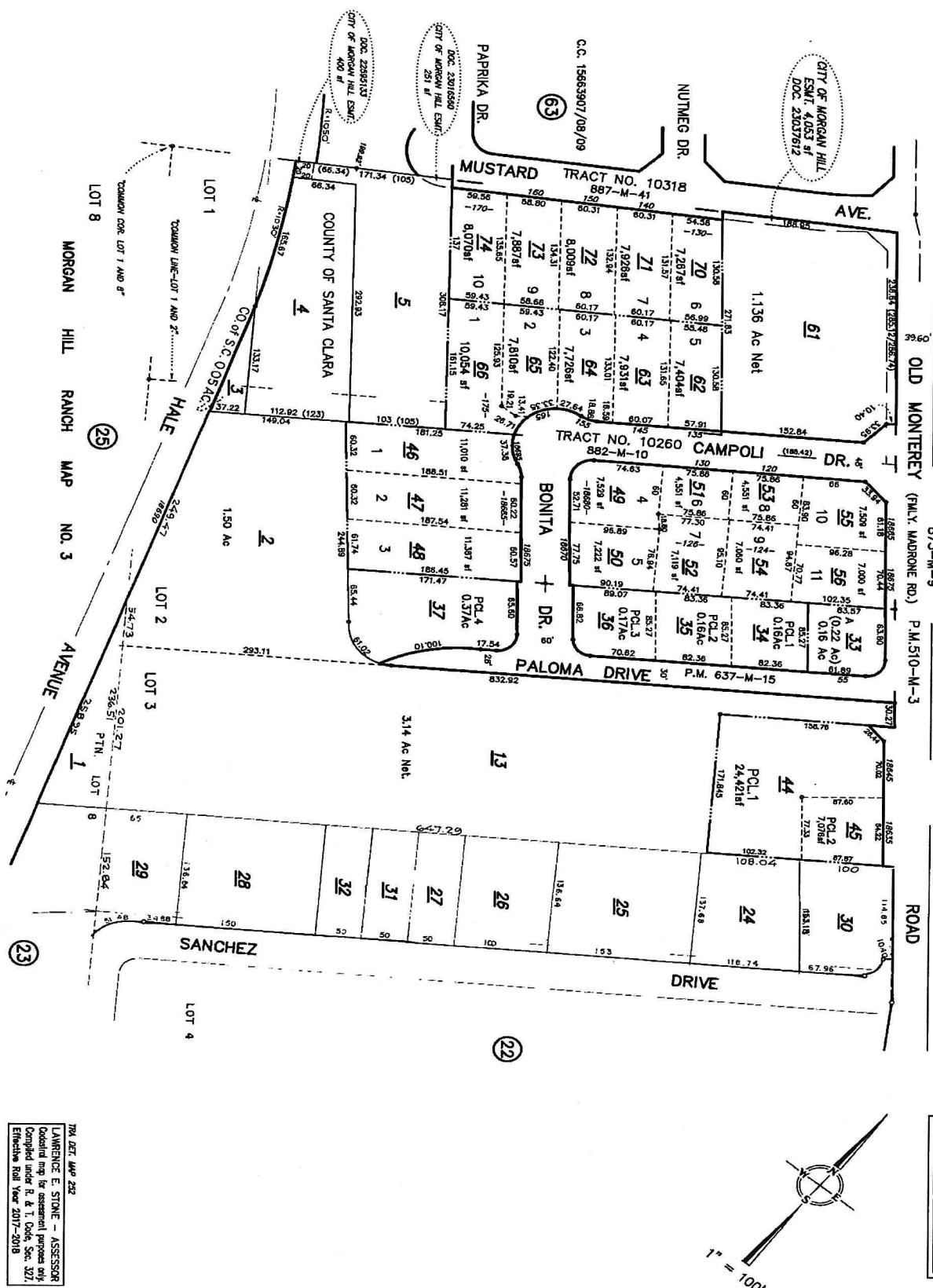


EXHIBIT B**DESCRIPTION OF PROJECT**

**RDCS APPLICATION NO. RDCS2016-0008: OLD MONTEREY-KELLY VO
FOR A RESIDENTIAL DEVELOPMENT PROJECT THAT INCLUDES SIX LOTS,
WITH FIVE NEW SINGLE FAMILY DWELLING UNITS AND ONE EXISTING
DWELLING UNIT.**

EXHIBIT B

-1-

EXHIBIT C

SPECIFIC RESTRICTIONS AND REQUIREMENTS

(INCLUDING RDCS REQUIREMENTS)

The following restriction and requirements apply to the Development proposed in the RDCS application date September 1st, 2016 or RDCS application #2016-0008 and shall apply to that portion of the Property included in the said phases of the development on the Property. The following chart describes the applicable reference in the Morgan Hill Municipal Code to the requirement, a description of the commitments specific to the Project, the requirement timing of the implementation and the total estimated costs of improvement or applicable fee commitment. These commitments are IN ADDITION to any mitigation requirements pursuant to CEQA, impact fees, in-lieu fees or other requirements pursuant to federal or state laws, or the Morgan Hill Municipal Code (See Section 2.03 of the Agreement)

*Contribution estimates may require augmentation for the completion of improvements. Impact fees are subject to the provisions of Section 2.03 (b) of this Agreement.

Section No.	Category/Criteria	Public Benefit/Commitment	Implementation	Estimated Contribution
	Public Schools			
B.1	Developer Fees	Commit to payment of district adopted developer fees as provided by the Leroy F. Green School Facilities Act of 1988.	Prior to the issuance of building permit	\$4,950 per unit
B.4	Off-site pedestrian safety improvements	Provide off-site pedestrian safety improvements or traffic safety improvements to an elementary school located within 3/4 miles of the project site or to a middle school or high school up to \$4,950 per unit. Project commits to provide safe walking improvements as designated	Prior to the issuance of building permit	\$4,950 per unit

EXHIBIT C

-1-

Section No.	Category/Criteria	Public Benefit/Commitment	Implementation	Estimated Contribution
		by MHUSD and the City of Morgan Hill Public Works Department.		
	Open Space			
B.4.b	TDC for projects (<25 units)	The project commits to double TDC's	Prior to building permit final	Double TDC fee per unit, applicable rate applies at time of payment.
	Orderly and Contiguous Development			
B.2	Fills in existing utility lines	Property owner or designee agrees to fill in 1 water line, 1 sewer line, 1 stormdrain, and 1 fire. The required utility easements shall be obtained prior to approval of the Final/Parcel Map and public improvement plans.	Prior to Site Review Approval	N/A
	Public Facilities			
B.2.b	Drainage concept consistent with City's storm drain system	Project drainage concept will be consistent with City's Storm drain system (e.g., the City Storm Drainage Master Plan, local area storm drain system)	Prior to Improvement Plan approval	N/A
B.2.f	Excess public improvements	Applicant will provide public improvements at \$4,400/unit.	Prior to Improvement Plan approval	\$4,400 per unit

EXHIBIT C

-2-

Section No.	Category/Criteria	Public Benefit/Commitment	Implementation	Estimated Contribution
B.2.g	Contribution to RDCS Capital Improvements fund	Applicant will contribute \$1,100 per unit to the RDCS Capital Improvement Program Fund	Prior to Improvement Plan approval	\$1,100 per unit
	Parks and Paths			
B.1	Park in-lieu fee (<50 units)	The project shall pay an in-lieu fee consistent with the requirements contained in Chapter 17.28 of the Municipal Code.	Prior to Parcel Map Approval	See Chapter 17.28 for fee calculation
B.2	On-site recreational amenities			
B.3	Bicycle/equestrian/pedestrian paths	Project shall provide at least 0.15 miles of Class II bike lanes. Prior to installation, the Project shall coordinate with City of Morgan Hill to determine the location for the Class II bike lane improvements to be installed	Prior to issuance of Offsite Improvements	N/A
B.7	Additional park fees (in-lieu fee) for projects (<50 units)	In addition to standard park fees, project shall pay the lesser of either twelve times the in-lieu park fees or \$4,400 per unit.	Prior to Parcel Map Approval	Twelve times the in-lieu park fees or \$4,400 per unit. Whichever is less.
	Housing Needs			
B.1	15% Granny units or R-2 projects 10%-25% single family units	Applicant commits to 2 secondary dwelling units for 2 points.	Prior to Site Review Approval	N/A

EXHIBIT C

-3-

Section No.	Category/Criteria	Public Benefit/Commitment	Implementation	Estimated Contribution
B.2.a	Standard Housing Fee	Applicant agrees to pay the standard housing fee	Prior to Building Permit final	\$12,000
B.2.b	Double Housing Fee	Applicant agrees to pay double the standard housing fee.	Prior to Building Permit final	\$24,000
	Quality of Construction Standards			
B.1.a	OSB/Plywood wrap	The project will include the installation of OSB/Plywood wrap.	Prior to Building Permit issuance	N/A
B.1.b	Foundations	The project will utilize alternate materials in the concrete mix such as fly ash, slag, silica fume or rice hull to achieve a 20% reeducation of cement.	Prior to Building Permit issuance	N/A
B.1.c	Wallboard	The project will include the installation of light weight wallboard for all walls excluding code requirement for fire walls.	Prior to Building Permit issuance	N/A
B.1.d	Electrical raceway	The project will include installation of one dedicated ¾ inch electrical raceway for a future circuit to accommodate two 220 Volt electric car charging stations inside the garage.	Prior to Building Permit issuance	N/A
B.1.f	90% high efficiency fan forced heating	The project will include the installation of 90% high efficiency fan forced heating	Prior to Building Permit issuance	N/A

EXHIBIT C
-4-

Section No.	Category/Criteria	Public Benefit/Commitment	Implementation	Estimated Contribution
B.1.g	Zoned heating and air conditioning	The project will include the installation of zoned heating and air conditioning for all one and two-story homes. For multi-family projects with multi-story units, air returns are installed on two floors to improve temperature distribution.	Prior to Building Permit issuance	N/A
B.1.h	Multiple efficiency improvements	The project will include: 1) the installation of listed sound attenuated materials in walls that adjoin a bathroom and/or bedroom walls, 2) installation of high efficiency energy star water heater with energy factor of 0.70, 3) the installation of ultra-high efficiency or dual flush toilet, and 4) installation of rain sensor monitor on irrigation system.	Prior to Building Permit issuance	N/A
	Safety and Security			
B.1.a	Fire proof safe	Project will install a fireproof safe in each unit.	Prior to Building Permit issuance	N/A
B.1.b	First aid kit	Project will provide a first aid kit with poison control document in the kitchen of each unit.	Prior to Building Permit issuance	N/A
B.1.d	Outdoor lighting	Applicant commits to providing lighting on all buildings that meet Police Department specifications, California Electrical Code and MHMC. Applicant will install motion detector light on each unit.	Prior to Building Permit issuance	N/A

EXHIBIT C

-5-

Section No.	Category/Criteria	Public Benefit/Commitment	Implementation	Estimated Contribution
B.1.f	Illuminated address numbers	Applicant commits to installing lighted address numbers on each building and illuminated unit numbers on each dwelling unit. Applicant commits to installing painted reflective curb numbers where possible.	Prior to Building Permit issuance	N/A
B.2	Crime Prevention through Environmental Design (CPTED)	Applicant commits to utilizing the design principles of CPTED of natural surveillance, territorial reinforcement for each dwelling unit.	Prior to Building Permit issuance	N/A
B.3	Lockable hardware	Applicant commits to installing lockable hardware on all side yard and patio gates.	Prior to Building Permit issuance	N/A
B.4	Central Monitoring	Project will install an intrusion, fire alarm, and heat detector system, monitored by a central station. Project will provide a one year monitoring contract with the purchase of each unit.	Prior to Building Permit issuance	N/A
	Livable Communities			
B.6	Architectural variation	Applicant will provide porches, two different roof lines, architectural profiles and massing and consistent architectural relief and detaining per stated requirements:	Prior to Site Review Approval	N/A

EXHIBIT C
-6-

Section No.	Category/Criteria	Public Benefit/Commitment	Implementation	Estimated Contribution
		a. Uses porches, balconies, for any area viewed from the public right-of-way or multi-unit courtyards interior to the project on at least 25% of units to promote a neighborhood feel. b. Uses at least two different roof lines and two different pitches throughout the project, i.e. gable, hipped, dormers, Mansard, etc. c. Uses architecture and profiles and massing that are compatible and works with the existing surrounding neighborhoods. Applicable only where a project adjoins an existing neighborhood on at least one side or twenty-five percent of the project's frontage. d. Provides a consistent level of architectural relief and detailing on all four building elevations. Where two-story rear and/or side-yard building elevations occur, architectural relief shall include some third dimensional design element such as bay windows, balconies, covered porches, decorative trellis, etc. In addition, each standard trim and base color must represent no more than 15%		

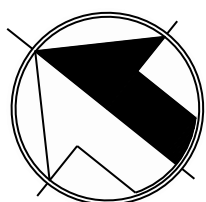
EXHIBIT C

-7-

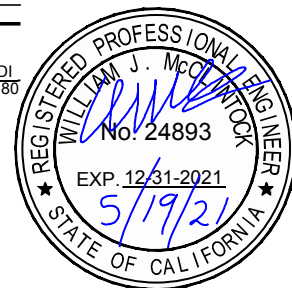
Section No.	Category/Criteria	Public Benefit/Commitment	Implementation	Estimated Contribution
		(project size permitting) of the project.		
B.7	Maximizes privacy	Windows on sides will alternate. Noise producing elements [i.e. air conditioners] are located away from the property lines.	Prior to Site Review Approval	N/A

EXHIBIT C

-8-



Old Monterey Road



EXISTING		PROPOSED						
				TOP OF SLOPE	BC	BEGINNING OF CURVE	GFF	GARAGE FINISH FLOOR
				SWALE	BLDG	BUILDING	HP/LP	HIGH/LOW POINT
				SLOPE / FLOW LINE	CB	CATCH BASIN	NV.	INVERT
				STORM DRAIN MANHOLE	CI	CURB INLET	LP	LOW POINT
				CURB INLET	CL	CENTERLINE	MOFG	MAX. OUTSIDE FINISH GRADE
				DROP INLET	DI	DROP INLET	NG	NATURAL GROUND
				SANITARY SEWER MANHOLE	DWY	DRIVEWAY	PL	PROPERTY LINE
				FIRE HYDRANT	EC	END OF CURVE	P.H.A.S.E.	PRIVATE HOMEOWNER ASSOC.,
				BLOW OFF VALVE	EG	EXISTING GRADE		SIDEWALK EASEMENT
				CLEAN OUT	ER	END OF RETURN	P.S.E.	PUBLIC SERVICE EASEMENT
				WATER VALVE	E.U.E.	EXCLUSIVE USE EASEMENT	P.S.D.E.	PRIVATE STORM DRAIN EASEMENT
				ELECTROLIER	EX.	EXISTING	RET. WALL	RETAINING WALL
				SEWER SERVICE	FF	FINISH FLOOR ELEVATION	S.A.E.	SIDEYARD ACCESS EASEMENT
				WATER SERVICE	FG	FINISH GRADE	TC	TOP OF CURB
				ELECTRICAL SERVICE	FL	FLOW LINE	TOB	TOP OF BAN
				PROPERTY LINE	GB	GRADE BREAK	TOE	TOE OF SLOPE
				CENTERLINE			TYP.	TYPICAL
				STORM DRAIN				
				SANITARY SEWER				
				WATER MAIN				

NOTE: SLOPE AND UTILITY LOCATIONS ARE BASED ON THE IMPROVEMENT PLANS, NOT AN AS-BUILT SURVEY, AND ARE ONLY APPROXIMATE. 1' MAX. ROOF OVERHANG @ 3' SIDEYARD SETBACK.

APPLE TREE

TRACT N. 10500

NOTE: SLOPE AND UTILITY LOCATIONS ARE BASED ON THE IMPROVEMENT PLANS, NOT AN AS-BUILT SURVEY, AND ARE ONLY APPROXIMATE. 1' MAX. ROOF OVERHANG @ 3' SIDEYARD SETBACK.

APPROXIMATE MAX. ROOF OVERHANG @ 5°
APPLE TREE
TRACT No. 10523



MH engineering Co.

16075 VINEYARD BOULEVARD, MORGAN HILL, CA 95037

(408) 779-7381

DRAWN BY: RS

DATE: 12/19

1 of 1

Packet Pg. 71

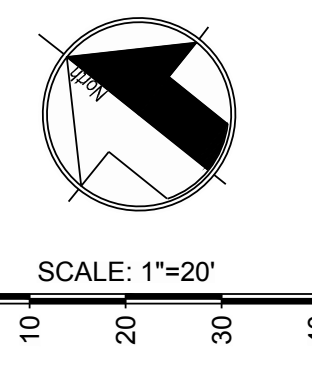


EXHIBIT C
SPECIFIC RESTRICTIONS AND REQUIREMENTS
(INCLUDING RDCS REQUIREMENTS)

The following restriction and requirements apply to the Development proposed in the RDCS application date September 1st, 2016 or RDCS application #2016-0008 and shall apply to that portion of the Property included in the said phases of the development on the Property. The following chart describes the applicable reference in the Morgan Hill Municipal Code to the requirement, a description of the commitments specific to the Project, the requirement timing of the implementation and the total estimated costs of improvement or applicable fee commitment. These commitments are IN ADDITION to any mitigation requirements pursuant to CEQA, impact fees, in-lieu fees or other requirements pursuant to federal or state laws, or the Morgan Hill Municipal Code (See Section 2.03 of the Agreement)

*Contribution estimates may require augmentation for the completion of improvements. Impact fees are subject to the provisions of Section 2.03 (b) of this Agreement.

Section No.	Category/Criteria	Public Benefit/Commitment	Implementation	Estimated Contribution
	Public Schools			
B.1	Developer Fees	Commit to payment of district adopted developer fees as provided by the Leroy F. Green School Facilities Act of 1988.	Prior to the issuance of building permit	\$4,950 per unit
B.4	Off-site pedestrian safety improvements	Provide off-site pedestrian safety improvements or traffic safety improvements to an elementary school located within 3/4 miles of the project site or to a middle school or high school up to \$4,950 per unit. Project commits to provide safe walking improvements as designated	Prior to the issuance of building permit	\$4,950 per unit

EXHIBIT C
-1-

Section No.	Category/Criteria	Public Benefit/Commitment	Implementation	Estimated Contribution
		by MHUSD and the City of Morgan Hill Public Works Department.		
	Open Space			
B.4.b	TDC for projects (<=25 units)	The project commits to double TDC's	Prior to building permit final	Double TDC fee per unit, applicable rate applies at time of payment.
	Orderly and Contiguous Development			
B.2	Fills in existing utility lines	Property owner or designee agrees to fill in 1 water line, 1 sewer line, 1 stormdrain, and 1 fire. The required utility easements shall be obtained prior to approval of the Final/Parcel Map and public improvement plans.	Prior to Site Review Approval	N/A
	Public Facilities			
B.2.b	Drainage concept consistent with City's storm drain system	Project drainage concept will be consistent with City's Storm drain system (e.g., the City Storm Drainage Master Plan, local area storm drain system)	Prior to Improvement Plan approval	N/A
B.2.f	Excess public improvements	Applicant will provide public improvements at \$4,400/unit.	Prior to Improvement Plan approval	\$4,400 per unit

EXHIBIT C
-2-

Section No.	Category/Criteria	Public Benefit/Commitment	Implementation	Estimated Contribution
B.2.g	Contribution to RDCS Capital Improvements fund	Applicant will contribute \$1,100 per unit to the RDCS Capital Improvement Program Fund	Prior to Improvement Plan approval	\$1,100 per unit
	Parks and Paths			
B.1	Park in-lieu fee (<50 units)	The project shall pay an in-lieu fee consistent with the requirements contained in Chapter 17.28 of the Municipal Code.	Prior to Parcel Map Approval	See Chapter 17.28 for fee calculation
B.2	On-site recreational amenities			
B.3	Bicycle/equestrian/pedestrian paths	Project shall provide at least 0.15 miles of Class II bike lanes. Prior to installation, the Project shall coordinate with City of Morgan Hill to determine the location for the Class II bike lane improvements to be installed	Prior to issuance of Offsite Improvements	N/A
B.7	Additional park fees (in-lieu fee) for projects (<50 units)	In addition to standard park fees, project shall pay the lesser of either twelve times the in-lieu park fees or \$4,400 per unit. Whichever is less.	Prior to Parcel Map Approval	Twelve times the in-lieu park fees or \$4,400 per unit. Whichever is less.
	Housing Needs			
B.1	15% Granny units or R-2 projects 10%-25% single family units	Applicant commits to 2 secondary dwelling units for 2 points.	Prior to Site Review Approval	N/A

EXHIBIT C
-3-

Section No.	Category/Criteria	Public Benefit/Commitment	Implementation	Estimated Contribution
B.2.a	Standard Housing Fee	Applicant agrees to pay the standard housing fee	Prior to Building Permit final	\$12,000
B.2.b	Double Housing Fee	Applicant agrees to pay double the standard housing fee.	Prior to Building Permit final	\$24,000
	Quality of Construction Standards			
B.1.a	OSB/Plywood wrap	The project will include the installation of OSB/Plywood wrap.	Prior to Building Permit issuance	N/A
B.1.b	Foundations	The project will utilize alternate materials in the concrete mix such as fly ash, slag, silica fume or rice hull to achieve a 20% reeducation of cement.	Prior to Building Permit issuance	N/A
B.1.c	Wallboard	The project will include the installation of light weight wallboard for all walls excluding code requirement for fire walls.	Prior to Building Permit issuance	N/A
B.1.d	Electrical raceway	The project will include installation of one dedicated 3/4 inch electrical raceway for a future circuit to accommodate two 220 Volt electric car charging stations inside the garage.	Prior to Building Permit issuance	N/A
B.1.f	90% high efficiency fan forced heating	The project will include the installation of 90% high efficiency fan forced heating	Prior to Building Permit issuance	N/A

EXHIBIT C
-4-

Section No.	Category/Criteria	Public Benefit/Commitment	Implementation	Estimated Contribution
B.1.g	Zoned heating and air conditioning	The project will include the installation of zoned heating and air conditioning for all one and two-story homes. For multi-family projects with multi-story units, air returns are installed on two floors to improve temperature distribution.	Prior to Building Permit issuance	N/A
B.1.h	Multiple efficiency improvements	The project will include: 1) the installation of listed sound attenuated materials in walls that adjoin a bathroom and/or bedroom walls, 2) installation of high efficiency energy star water heater with energy factor of 0.70, 3) the installation of ultra-high efficiency or dual flush toilet, and 4) installation of rain sensor monitor on irrigation system.	Prior to Building Permit issuance	N/A
	Safety and Security			
B.1.a	Fire proof safe	Project will install a fireproof safe in each unit.	Prior to Building Permit issuance	N/A
B.1.b	First aid kit	Project will provide a first aid kit with poison control document in the kitchen of each unit.	Prior to Building Permit issuance	N/A
B.1.d	Outdoor lighting	Applicant commits to providing lighting on all buildings that meet Police Department specifications, California Electrical Code and MHMC. Applicant will install motion detector light on each unit.	Prior to Building Permit issuance	N/A

EXHIBIT C
-5-

Section No.	Category/Criteria	Public Benefit/Commitment	Implementation	Estimated Contribution
B.1.f	Illuminated address numbers	Applicant commits to installing lighted address numbers on each building and illuminated unit numbers on each dwelling unit. Applicant commits to installing painted reflective curb numbers where possible.	Prior to Building Permit issuance	N/A
B.2	Crime Prevention through Environmental Design (CPTED)	Applicant commits to utilizing the design principles of CPTED of natural surveillance, territorial reinforcement for each dwelling unit.	Prior to Building Permit issuance	N/A
B.3	Lockable hardware	Applicant commits to installing lockable hardware on all side yard and patio gates.	Prior to Building Permit issuance	N/A
B.4	Central Monitoring	Project will install an intrusion, fire alarm, and heat detector system, monitored by a central station. Project will provide a one year monitoring contract with the purchase of each unit.	Prior to Building Permit issuance	N/A
	Livable Communities			
B.6	Architectural variation	Applicant will provide porches, two different roof lines, architectural profiles and massing and consistent architectural relief and detaining per stated requirements	Prior to Site Review Approval	N/A

EXHIBIT C
-6-

Section No.	Category/Criteria	Public Benefit/Commitment	Implementation	Estimated Contribution
		a. Uses porches, balconies, for any area viewed from the public right-of-way or multi-unit courtyards interior to the project on at least 25% of units to promote a neighborhood feel. b. Uses at least two different roof lines and two different pitches throughout the project, i.e. gable, hipped, dormers, Mansard, etc. c. Uses architecture and profiles and massing that are compatible and works with the existing surrounding neighborhoods. Applicable only where a project adjoins an existing neighborhood on at least one side or twenty-five percent of the project's frontage. d. Provides a consistent level of architectural relief and detailing on all four building elevations. Where two-story rear and/or side-yard building elevations occur, architectural relief shall include some third dimensional design element such as bay windows, balconies, covered porches, decorative trellis, etc. In addition, each standard trim and base color must represent no more than 15%		

EXHIBIT C
-7-

Section No.	Category/Criteria	Public Benefit/Commitment	Implementation	Estimated Contribution
		(project size permitting) of the project.		
B.7	Maximizes privacy	Windows on sides will alternate. Noise producing elements [i.e. air conditioners] are located away from the property lines.	Prior to Site Review Approval	N/A

EXHIBIT C
-8-

C:\Users\m2120017\OneDrive\Documents\Apple Tree\Development Agreement\Exhibit C.dwg - 25/03/2021 2:17 PM - Plotted 03/03/2021 2:20 PM by Morgan Hill

				WORK ACCEPTED:	INSPECTOR:
NO.	DESCRIPTION	DATE	BY	DATE	
REVISIONS					

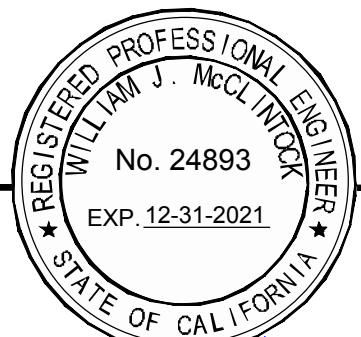


City of Morgan Hill
Public Works Department

17575 PEAK AVE. MORGAN HILL, CA 95037
(408) 776-6480 FAX (408) 779-7236

DRAWN: RS	DESIGN: WJM	HDR: AS SHOWN	SUPERVISED BY:
CHECKED:	DATE:	VERT:	
APPROVED:	DATE:	JOB NO. 215087	
Scott C. Creer CITY ENGINEER EXP. DATE 06-30-2021			

SIGNATURE	DATE
<i>William J. McClintock</i>	5/24/21



MH engineering Co.
SUBDIVISIONS - LAND PLANNING - LAND SURVEYS

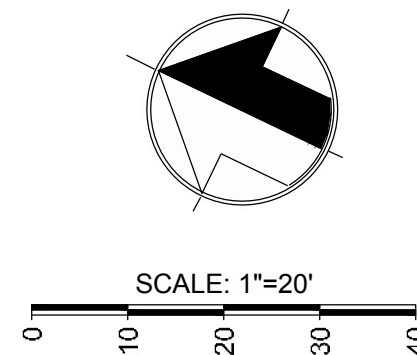
16075 VINEYARD BOULEVARD MORGAN HILL, CA 95037
(408) 779-7381 FAX: (408) 228-5712

Development Agreement Exhibit C
Apple Tree

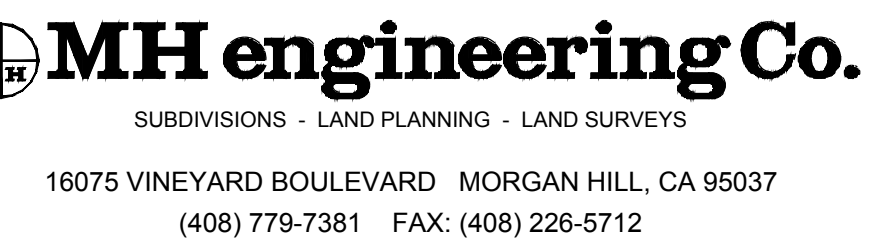
MORGAN HILL

CALIFORNIA

CITY FILE NO. ----
PLAN SET: 5/21
DRAWING: 2 of 10



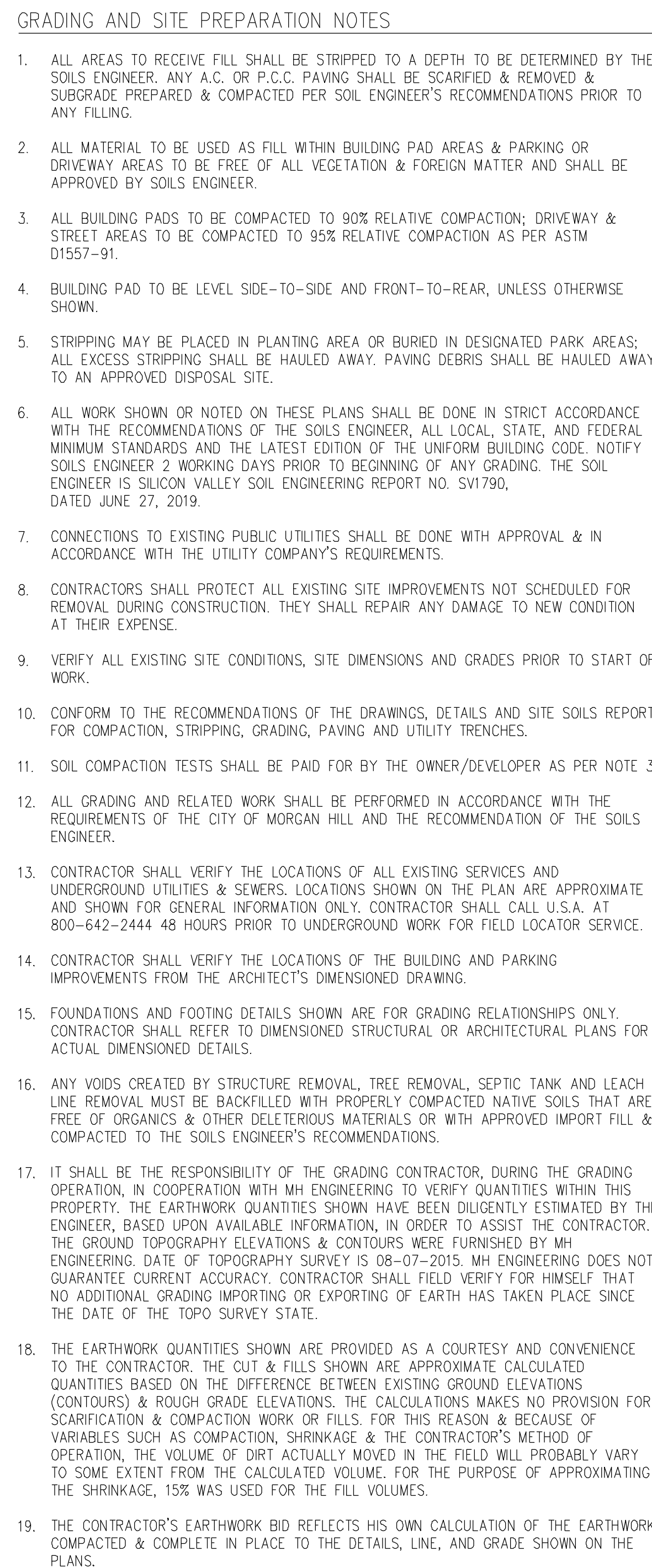
- 
- REGISTERED PROFESSIONAL ENGINEER
 WILLIAM J. MCCLINTOCK
 No. 24893
 EXP. 12-31-2021
 STATE OF CALIFORNIA



CALIFORNIA

CITY FILE NO.

PLAN SET:
5/21
DRAWING:
3
of 10



Low Impact Development (LID) Table:

	BMP Impervious Area
--	----------------------------

Proposed	With Adjusted Reason Coefficient (0.51)	
	2008	2009
1	1	1
2	1	1
3	1	1
4	1	1
5	1	1
6	1	1
7	1	1
8	1	1
9	1	1
10	1	1
11	1	1
12	1	1
13	1	1
14	1	1
15	1	1
16	1	1
17	1	1
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92	1	1
93	1	1
94	1	1
95	1	1
96	1	1
97	1	1
98	1	1
99	1	1
100	1	1

HMP No.	Public Hardscape	Private Hardscape
---------	---------------------	----------------------

	(S.F.)	(S.F.)

1	0	15,231
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		0
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CITY OF MORGAN HILL

1000

GRADING QUANTITIES

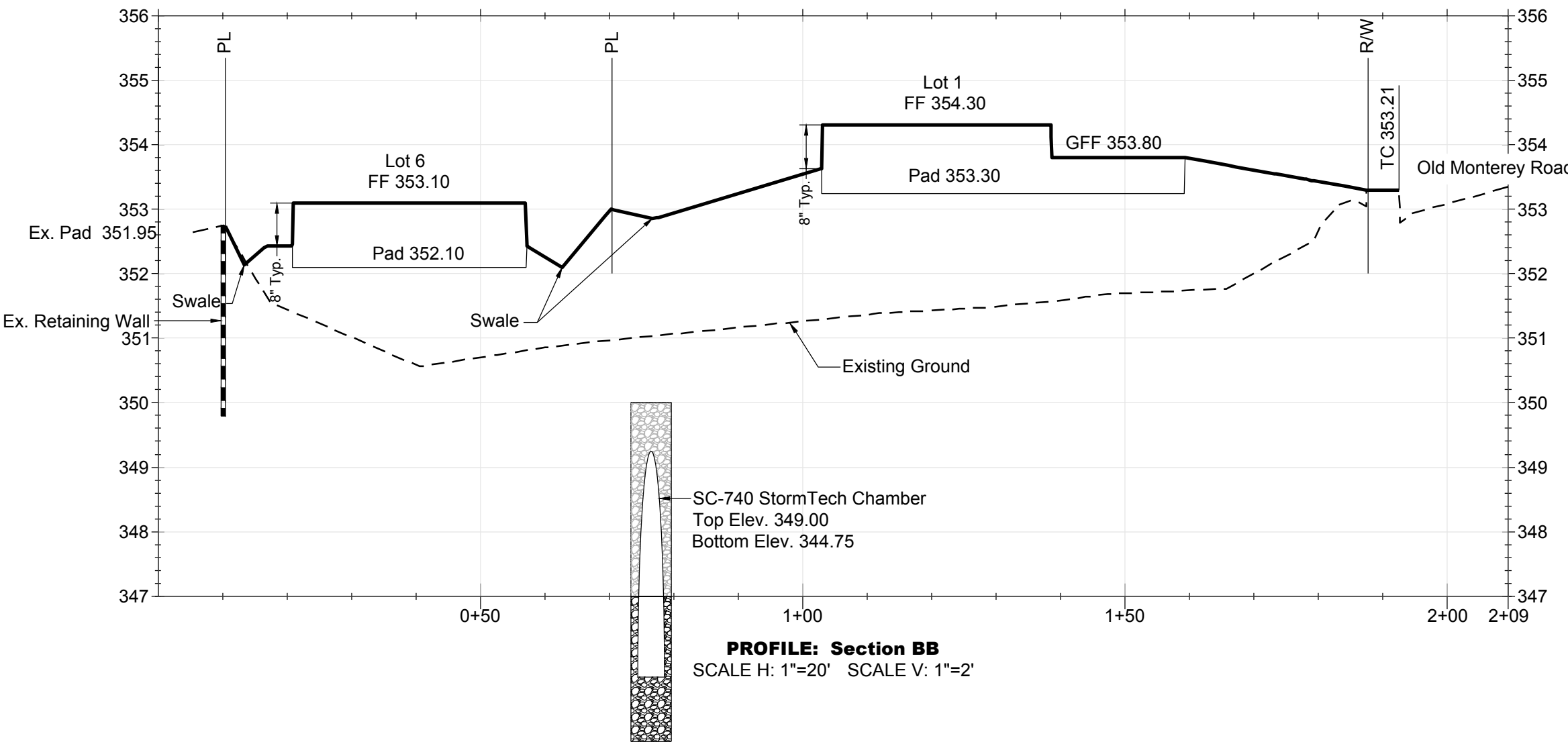
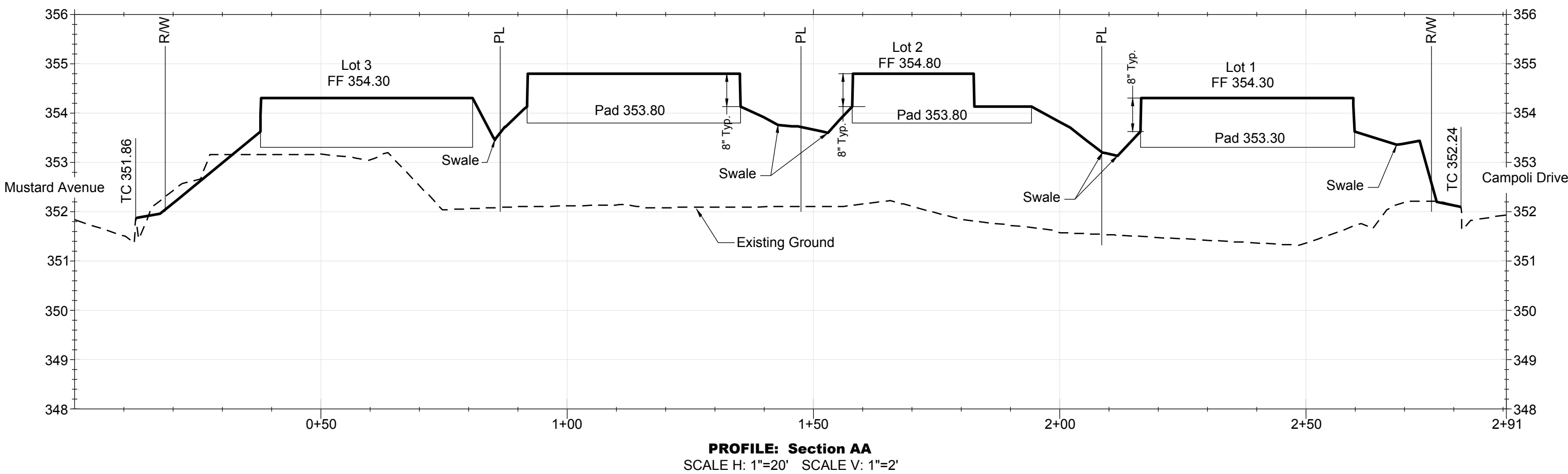
REGISTERED PROFESSIONAL ENGINEER
 WILLAM J. McCLINTOCK
 No. 24893
 EXP. 12-31-2021
 STATE OF CALIFORNIA

ent ch 5/24/21

STORM DRAIN DATA TABLE

LINE NO.	SIZE (IN)	TYPE	LENGTH (FT)	INV UP (FT)	INV DN (FT)	SLOPE (%)	STRUCT. (INP)	SUMP EL (FT)	RIM UP (FT)
1	12	RCP	18	347.58	345.40	12.11	Curb Inlet		350.92
2	12	RCP	18	346.22	346.04	1.00	Curb Inlet		350.92
3	12	HDPE	17	346.04	345.87	1.00	24"x24" DI	345.04	351.30
4	SC-740 ADS CHAMBER		BOTTOM OF GRAVEL ELEVATION 344.75 TOP ELEVATION 349.00						
5	24	HDPE	3	345.87	345.90	1.00	36"x36" DI	344.90	352.00
6	12	HDPE	12	345.93	345.81	1.00	24"x24" DI	345.00	353.10
7	12	HDPE	13	346.00	345.87	1.00	24"x24" DI	345.00	353.10
8	SC-740 ADS CHAMBER		BOTTOM OF GRAVEL ELEVATION 344.75 TOP ELEVATION 349.00						
9	24	HDPE	3	345.90	345.87	1.00	36"x36" DI	344.90	353.20
10	12	HDPE	13	345.94	345.81	1.00	24"x24" DI	345.00	353.00
11	12	HDPE	13	346.00	345.87	1.00	24"x24" DI	345.00	353.00
12	SC-740 ADS CHAMBER		BOTTOM OF GRAVEL ELEVATION 344.75 TOP ELEVATION 349.00						
13	24	HDPE	3	345.90	345.87	1.00	36"x36" DI	344.90	353.10
14	12	HDPE	13	346.03	345.90	1.00	24"x24" DI	345.00	352.60
15	12	HDPE	13	346.00	345.87	1.00	24"x24" DI	345.00	352.60
16	SC-740 ADS CHAMBER		BOTTOM OF GRAVEL ELEVATION 344.75 TOP ELEVATION 349.00						
17	24	HDPE	3	345.90	345.87	1.00	36"x36" DI	344.90	352.60
18	12	RCP	20	349.00	348.80	1.00	Curb Inlet		351.42
19	12	HDPE	11	348.01	345.90	1.00	24"x24" DI	344.97	350.80
20	12	HDPE	11	345.98	345.86	1.00	24"x24" DI	344.97	350.80
21	SC-740 ADS CHAMBER		BOTTOM OF GRAVEL ELEVATION 344.75 TOP ELEVATION 349.00						
22	24	HDPE	6	345.93	345.87	1.00	36"x36" DI	344.93	350.90
23	12	HDPE	11	345.97	345.86	1.00	24"x24" DI	344.98	351.30
24	12	HDPE	12	345.99	345.87	1.00	24"x24" DI	344.98	351.30
25	SC-740 ADS CHAMBER		BOTTOM OF GRAVEL ELEVATION 344.75 TOP ELEVATION 349.00						
26	24	HDPE	3	345.90	345.87	1.00	36"x36" DI	344.90	351.30

CITY FILE NO.	----
PLAN SET:	5/21
DRAWING:	4 of 10



C:\Users\m21201\OneDrive\Documents\City of Morgan Hill\Projects\2021\AAE2021-0002\CUL2021-0001\JEA2021-0002: Old Monterey - Apple Tree (Kelly Vo)\Packet 5/24/21.dwg, Project 5/24/21, Plotted 5/24/21 1:20 PM by Morgan Hill

				WORK ACCEPTED:		INSPECTOR:
NO.	DESCRIPTION	DATE	BY	BY	DATE	
REVISIONS						

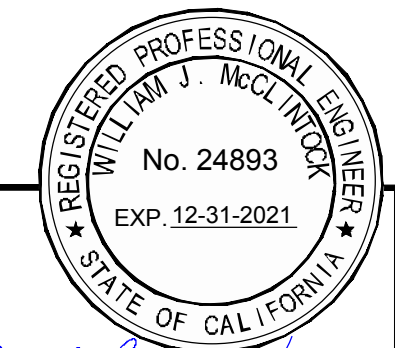


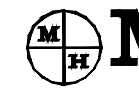
City of Morgan Hill
Public Works Department
CITY OF MORGAN HILL 17575 PEAK AVE. MORGAN HILL, CA 95037
(408) 776-6480 FAX (408) 779-7236

DRAWN: RS	DESIGN: WJM	HOR: AS SHOWN
CHECKED:	DATE:	VERT:
APPROVED:	DATE:	JOB NO. 215087
Scott C. Creer PCE 58879	CITY ENGINEER EXP. DATE 06-30-2021	

SUPERVISED BY:

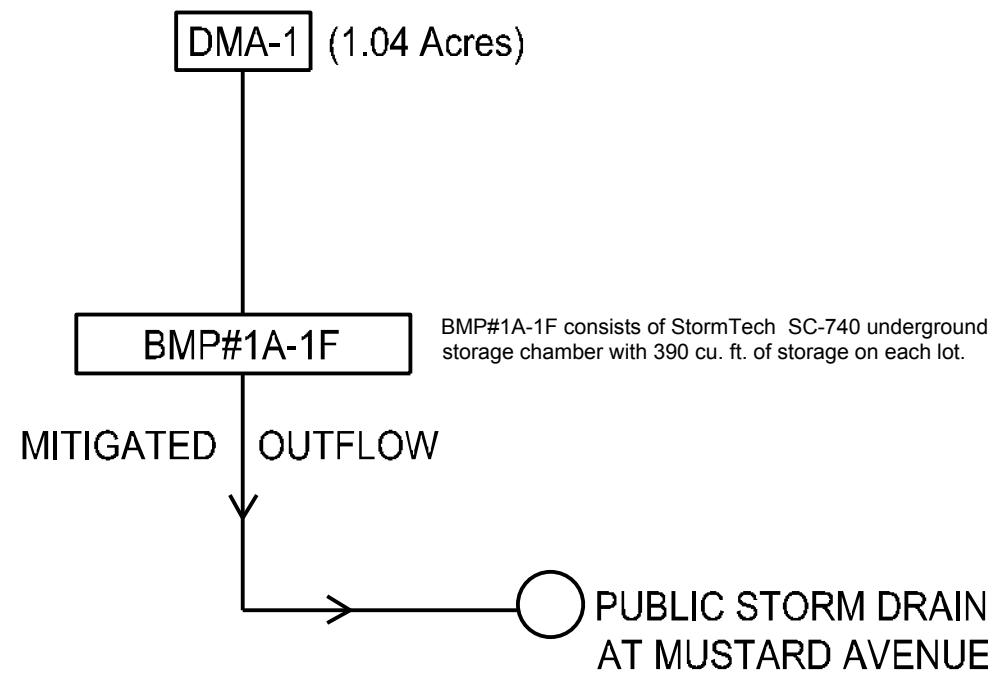
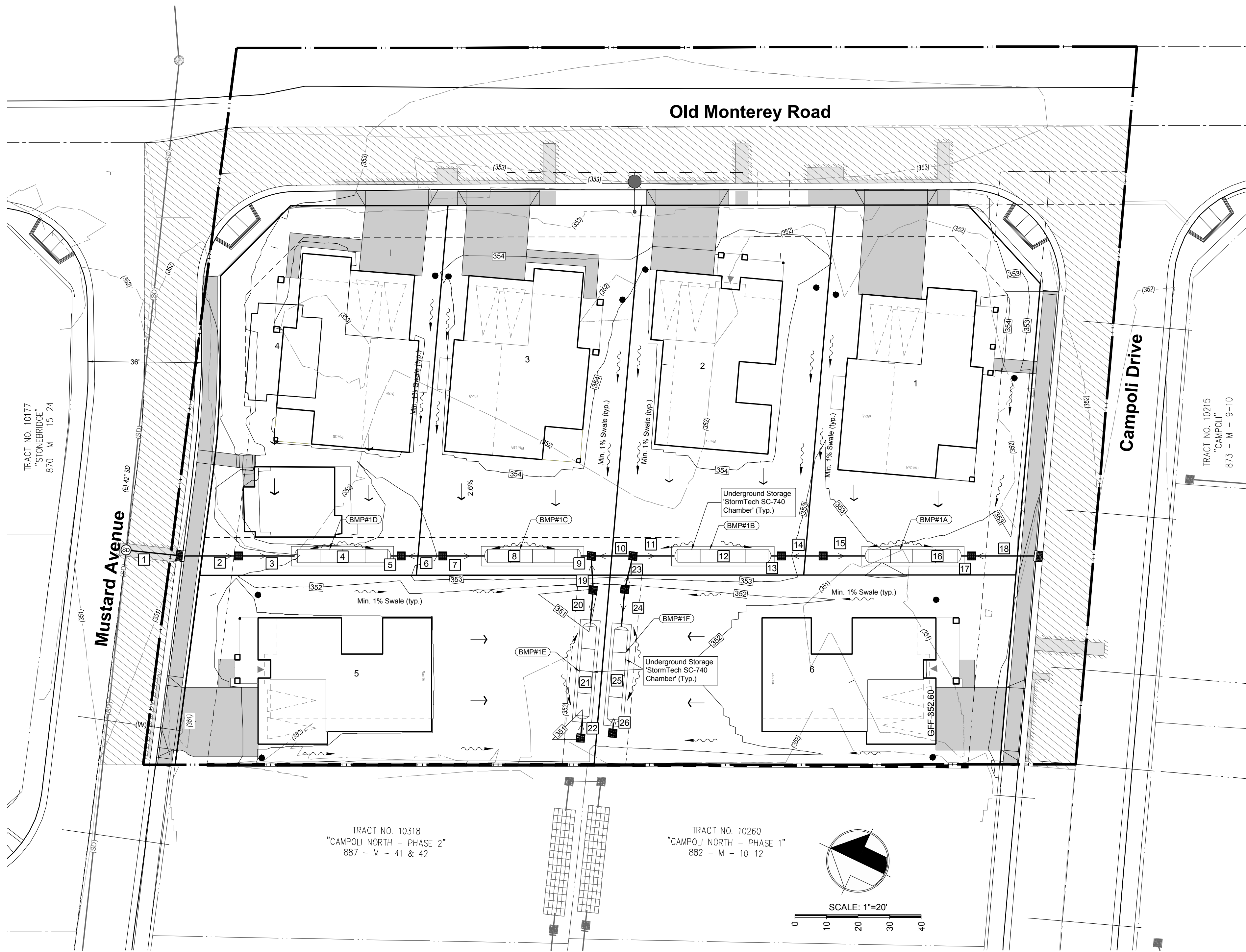
SIGNATURE DATE: 5/24/21



**MH engineering Co.**
SUBDIVISIONS - LAND PLANNING - LAND SURVEYS
16075 VINEYARD BOULEVARD MORGAN HILL, CA 95037
(408) 779-7381 FAX: (408) 228-5712

Grading Cross Sections
Apple Tree
MORGAN HILL CALIFORNIA

CITY FILE NO. ----
PLAN SET: 5/21
DRAWING: 5 of 10



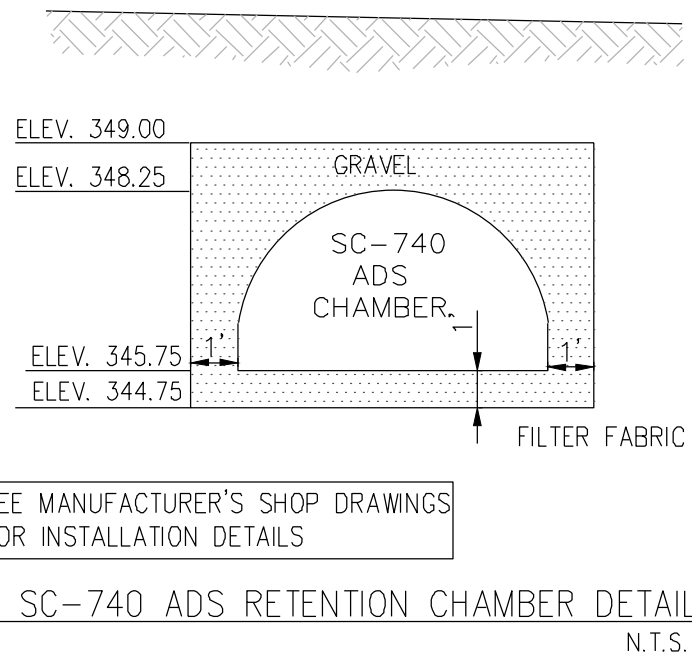
Total Project Area	Total proposed Impervious Area
45,298 S.F.	15,231 S.F.

Low Impact Development (LID) Table:

Proposed BMP No.	BMP Impervious Area With Adjusted Runoff Coefficient (0.51)		LID per C.3 Storm Water Handbook	Proposed BMP Volume (Cu. Ft.)	Native Soil Infiltration Rate (in/hr.)	BMP Loading Depth (Inches)	BMP Infiltration Duration (Hrs.) ≤ 72
	Public Hardscape (S.F.)	Private Hardscape (S.F.)					
1	0	15,231	1,515	2,340	2	48	24

STORM DRAIN DATA TABLE

LINE NO.	SIZE (IN)	TYPE	LENGTH (FT)	INV UP (FT)	INV DN (FT)	SLOPE (%)	STRCTR. (UP)	SUMP EL. (FT)	RIM UP (FT)
1	12	RCP	18	349.00	345.40	1.00	Curb Inlet		350.92
2	12	RCP	22	346.22	346.00	11.03	Curb Inlet		350.92
3	12	HDPE	13	346.00	345.87	1.00	24"x24" DI	345.00	352.00
4	SC-740 ADS CHAMBER BOTTOM ELEVATION 344.75 TOP ELEVATION 349.00								
5	24	HDPE	3	345.87	345.90	1.00	36"x36" DI	344.90	352.00
6	12	HDPE	12	349.00	345.81	26.43	24"x24" DI	345.00	353.10
7	12	HDPE	13	346.00	345.87	1.00	24"x24" DI	345.00	353.10
8	SC-740 ADS CHAMBER BOTTOM ELEVATION 344.75 TOP ELEVATION 349.00								
9	24	HDPE	3	345.90	345.87	1.00	36"x36" DI	344.90	353.20
10	12	HDPE	13	349.00	345.81	25.15	24"x24" DI	345.00	353.00
11	12	HDPE	13	346.00	345.87	1.00	24"x24" DI	345.00	353.00
12	SC-740 ADS CHAMBER BOTTOM ELEVATION 344.75 TOP ELEVATION 349.00								
13	24	HDPE	3	345.90	345.87	1.00	36"x36" DI	344.90	353.10
14	12	HDPE	13	349.00	345.90	23.60	24"x24" DI	345.00	352.60
15	12	HDPE	13	346.00	345.87	1.00	24"x24" DI	345.00	352.60
16	SC-740 ADS CHAMBER BOTTOM ELEVATION 344.75 TOP ELEVATION 349.00								
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18	12	RCP	20	349.00	348.80	1.00	Curb Inlet		351.42
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20	12	HDPE	11	345.98	345.87	1.00	24"x24" DI	344.97	350.80
21	SC-740 ADS CHAMBER BOTTOM ELEVATION 344.75 TOP ELEVATION 349.00								
22	24	HDPE	6	345.93	345.87	1.00	36"x36" DI	344.93	353.10
23	12	HDPE	11	349.00	345.86	29.58	24"x24" DI	344.98	351.30
24	12	HDPE	12	345.99	345.87	1.00	24"x24" DI	344.98	351.30
25	SC-740 ADS CHAMBER BOTTOM ELEVATION 344.75 TOP ELEVATION 349.00								
26	24	HDPE	3	345.90	345.87	1.00	36"x36" DI	344.90	351.30



PERVIOUS AND IMPERVIOUS SURFACES COMPARISON						
	Project Name		Apple Tree			
	MH Project No.		215087			
	Existing Condition (sq ft)	%	Proposed Condition (sq ft)	%	Difference (sq ft)	%
Site (acres):	1.253		45,298		-9,284	0.00%
Building Footprint(s)	627	1.15%	11,007	24.30%	10,380	23.15%
Parking	0	0.00%	0	0.00%	0	0.00%
Sidewalks, Patios, Paths, etc.	7,684	14.08%	4,224	9.32%	-3,460	-4.75%
Landscaping	0	0.00%	30,067	66.38%	30,067	66.38%
Undeveloped	46,271	84.77%	0	0.00%	-46,271	-84.77%
Permeable Pavement	0	0.00%	0	0.00%	0	0.00%
Total	54,582	100.00%	45,298	100.00%	-9,284	0.00%
Impervious Surfaces	8,311	15.23%	15,231	33.62%	6,920	18.40%
Pervious Surfaces	46,271	84.77%	30,067	55.09%	-16,204	-29.69%
Total	54,582	100.00%	45,298	82.99%	-9,284	-17.01%

City of Morgan Hill, California - 2021-2022 Stormwater Management Plan - Apple Tree - 3.6

NO.	DESCRIPTION	DATE	BY	REVISIONS

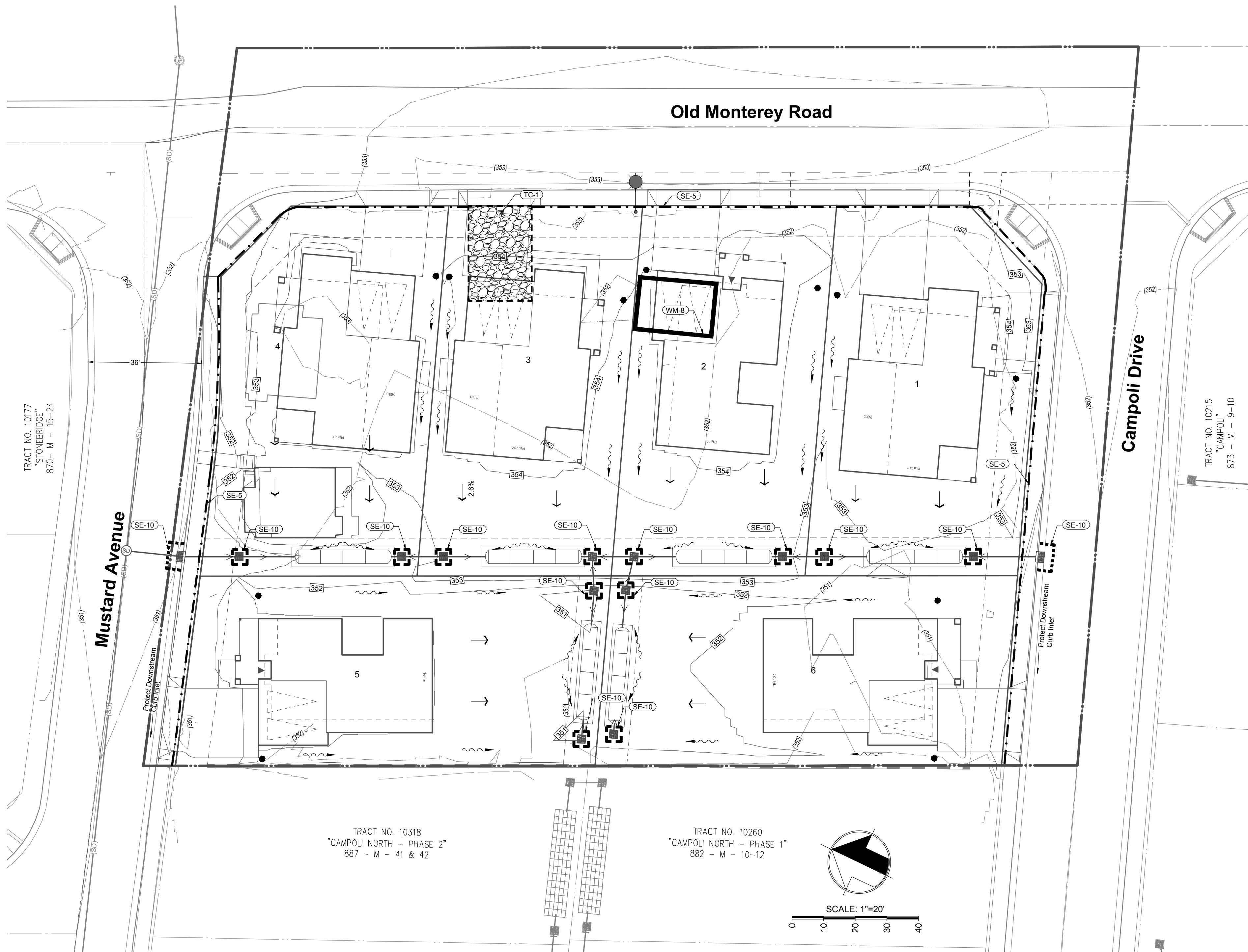
City of Morgan Hill
Public Works Department
17575 PEAK AVE. MORGAN HILL, CA 95037
(408) 776-6480 FAX (408) 779-7236

DRAWN: RS	DESIGN: WJM	HOR: 1"=20'	SUPERVISED BY: William J. McClintock
CHECKED: Scott C. Creer	DATE: 02/28/2021	VERT: N/A	EXP. DATE: 02/28/2021
APPROVED: Scott C. Creer	DATE: 02/28/2021	JOB NO: 215087	SIGNATURE: William J. McClintock

MH engineering Co.
SUBDIVISIONS - LAND PLANNING - LAND SURVEYS
16075 VINEYARD BOULEVARD MORGAN HILL, CA 95037
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Stormwater Management Plan
Apple Tree
MORGAN HILL CALIFORNIA

CITY FILE NO.:	5/21
PLAN SET:	6
DRAWING:	6
of 10	



LEGEND

- SE-5 FIBER ROLLS
- SE-10 STORM DRAIN INLET PROTECTION
- TC-1 STABILIZED CONSTRUCTION ENTRANCE
- WM-8 CONCRETE WASHOUT

MAINTENANCE NOTES:

1. SILT FENCES:
SILT FENCES AND FILTER BARRIERS SHALL BE INSPECTED IMMEDIATELY AFTER EACH SIGNIFICANT RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL. ANY REQUIRED REPAIRS SHALL BE MADE IMMEDIATELY.
2. IF THE FABRIC ON A SILT FENCE OR FILTER BARRIER DECOMPOSES OR BECOMES INEFFECTIVE PRIOR TO THE END OF THE EXPECTED USABLE LIFE AND THE BARRIER IS STILL NECESSARY, THE FABRIC SHALL BE REPLACED PROMPTLY.
3. SEDIMENT DEPOSITS REMAINING IN PLACE AFTER THE SILT FENCE OR FILTER BARRIER IS REMOVED SHALL BE DRESSED TO CONFORM WITH THE EXISTING GRADE AND SEEDED.
4. TEMPORARY DIVERSION DIKE:
THIS MEASURE SHALL BE INSPECTED AFTER EACH SIGNIFICANT STORM AND REPAIRS SHOULD BE MADE TO THE DIKE, FLOW CHANNEL AND OUTLET AS NECESSARY.
5. APPROXIMATELY ONCE EVERY WEEK, WHETHER A STORM HAS OCCURRED OR NOT, DIKES SHOULD BE INSPECTED AND REPAIRED IF NEEDED. LOOK FOR BREACHES CAUSED BY VEHICLES CROSSING THE DIKE. DAMAGES CAUSED BY CONSTRUCTION TRAFFIC OR OTHER ACTIVITY SHALL BE REPAIRED BEFORE THE END OF EACH WORKING DAY.
6. CONTRACTOR SHALL MAINTAIN THE CLEANLINESS OF ALL EXISTING STREETS AND REMOVE ALL SEDIMENTS CARRIED INTO THEM BY EROSION OF GRADED AREAS DAILY OR AS REQUIRED. FOR TYPICAL EROSION CONTROL DETAILS, SEE ATTACHED DETAIL SHEET.
7. STABILIZED ENTRANCE(S) SHALL BE IN PLACE AND MAINTAINED YEAR-ROUND.

GENERAL NOTES:

1. BEST MANAGEMENT PRACTICES(BMPs) FOR THIS PROJECT SHALL BE IN SUBSTANTIAL COMPLIANCE AT ALL TIMES WITH THE STORM WATER POLLUTION PREVENTION PLAN (SWPPP) PREPARED FOR THE PROJECT IN ACCORDANCE WITH THE STATE WATER RESOURCES CONTROL BOARD (SWRCB) ORDER NO. 2008-0009-DWQ NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) GENERAL PERMIT NO. CAS000002. THIS PERMIT REQUIRES THAT THE SWPPP BE KEPT UP TO DATE TO REFLECT THE CHANGING SITE CONDITIONS AND THE SWPPP IS TO BE AVAILABLE ON SITE AT ALL TIMES FOR REVIEW BY STATE AND LOCAL INSPECTORS.
2. THE EROSION CONTROL MEASURES ARE TO BE OPERABLE YEAR ROUND. BY SEPTEMBER 15, GRADING, INSTALLATION OF STORM DRAINAGE AND EROSION CONTROL FACILITIES WILL NEED TO BE COMPLETED WITH EROSION CONTROL PLANTING ESTABLISHED BY THAT TIME. NO GRADING SHALL OCCUR BETWEEN SEPTEMBER 15TH AND MAY 1ST UNLESS AUTHORIZED BY CITY OF MORGAN HILL.
3. STANDARD DROP INLET, UNDERGROUND DRAINAGE PIPE AND APPURTENANCES SHALL BE CONSTRUCTED PRIOR TO WINTERIZATION AND WILL REMAIN AS PERMANENT TRACT IMPROVEMENTS.
4. CHANGES TO THIS EROSION AND SEDIMENT CONTROL PLAN SHALL BE MADE TO MEET FIELD CONDITIONS ONLY WITH THE APPROVAL OF OR AT THE DIRECTION OF THE CITY OF MORGAN HILL.
5. DURING THE RAINY SEASON, ALL PAVED AREAS SHALL BE KEPT CLEAR OF EARTH MATERIAL AND DEBRIS. THE SITE SHALL BE MAINTAINED SO AS TO MINIMIZE SEDIMENT LADEN RUNOFF TO ANY STORM DRAINAGE SYSTEM.
6. THIS PLAN COVERS ONLY THE FIRST WINTER FOLLOWING GRADING. PLANS ARE TO BE RESUBMITTED FOR CITY APPROVAL PRIOR TO SEPTEMBER 1 OF EACH SUBSEQUENT YEAR UNTIL THE TRACT IMPROVEMENTS ARE ACCEPTED BY THE COUNTY.
7. SEED AND MULCH ARE TO BE PLACED ON ALL DISTURBED SLOPES STEEPER THAN 2% AND HIGHER THAN 3 FEET, ON ALL CUT AND FILL SLOPES WITHIN OR ADJACENT TO ALL PUBLIC RIGHTS OF WAY AND AS DIRECTED BY THE CITY. SEED PLACED BETWEEN MAY AND SEPTEMBER SHALL BE IRRIGATED AS NECESSARY TO ESTABLISH GROWTH BY OCTOBER 1.
8. STABILIZED ENTRANCE SHALL BE INSTALLED PER DETAIL TC-1 OF SWPPP MANUAL PRIOR TO GRADING ACTIVITIES.
9. DRAIN INLETS SHALL BE PROTECTED PER DETAIL SE-10 OF SWPPP MANUAL PRIOR TO GRADING ACTIVITIES OR AS SOON AS PRACTICAL.
10. SEDIMENT CONTROL BMPs SHALL BE INSTALLED PRIOR TO GRADING ACTIVITIES OR AS SOON AS PRACTICAL, AND MAINTAINED YEAR ROUND.

STORM WATER POLLUTION PREVENTION PLAN (SWPPP) MANUAL
GENERAL NOTES:

1. PRIOR TO CONSTRUCTION/GRADING ACTIVITY, A SWPPP MANUAL SHALL BE PREPARED BY ENGINEER/DEVELOPER AND APPROVED BY THE DEPARTMENT OF PUBLIC WORKS.
2. A COPY OF THE CURRENT SWPPP MANUAL SHALL BE MADE AVAILABLE TO OPERATING PERSONNEL AND REMAIN ON SITE WHILE UNDER CONSTRUCTION DURING WORKING HOURS, COMMENCING WITH THE INITIAL CONSTRUCTION ACTIVITY AND ENDING WITH TERMINATION OF COVERAGE UNDER THE GENERAL PERMIT.
3. PER THE SWPPP MANUAL ALL SWPPP MEASURES AND BEST MANAGEMENT PRACTICES (BMP'S) SHALL BE IMPLEMENTED AND MAINTAINED THROUGHOUT THE COURSE OF CONSTRUCTION.
4. THE OWNER/DEVELOPER/CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT ALL PROJECT CONTRACTORS AND SUBCONTRACTORS IMPLEMENT ALL APPLICABLE SWPPP MEASURES.
5. UNDER SECTION 308(b) OF THE CLEAN WATER ACT (CWA), THE SWPPP IS A REPORT TO BE MADE AVAILABLE TO THE PUBLIC. THE SWPPP SHALL BE PROVIDED, UPON REQUEST, TO THE REGIONAL WATER QUALITY CONTROL BOARD (RWQCB) OR CITY PERSONNEL.
6. AS CONSTRUCTION ACTIVITY CHANGES SITE CONDITIONS, THE SWPPP MANUAL SHALL BE AMENDED TO REFLECT THE CURRENT SITE CONDITIONS. ALL SWPPP AMENDMENTS SHALL BE DILIGENTLY RECORDED AND IMPLEMENTED.
7. OFF AND ON SITE PLANS SHALL COORDINATE WITH THE SWPPP MANUAL. IN CASE OF A CONFLICT WITH SITE PLANS AND THE SWPPP MANUAL THE MOST CONSERVATIVE CONDITION SHALL APPLY.
8. NPDES WASTE DISCHARGE IDENTIFICATION NUMBER (WDID#343C379839)

NOTES:
DEVELOPER/CONTRACTOR SHALL COORDINATE WITH SWPPP MANUAL WPCD AND THIS PLAN; AREAS DESIGNATED FOR (IF APPLICABLE):
a. CONSTRUCTION MATERIAL LOADING AND UNLOADING
b. MATERIAL AND EQUIPMENT STORAGE AREA
c. CHEMICAL AND HAZARDOUS MATERIALS STORAGE AREA
d. SOLID WASTE STORAGE AREA
e. VEHICLE MAINTENANCE/STORAGE AND SERVICE/FUELING AREA
f. CONCRETE, STUCCO AND PAINT WASHOUT AREAS
g. STOCKPILES

ALL ABOVE AREAS SHALL BE 50 FEET AWAY UPSTREAM OF PROPOSED AND EXISTING DRAIN INLETS.

THIS PLAN SHALL BE AMENDED TO REFLECT THE CURRENT SITE CONDITIONS.

NO.	DESCRIPTION	DATE	BY	BY	DATE
REVISIONS					

City of Morgan Hill
Public Works Department
CITY OF MORGAN HILL 17575 PEAK AVE. MORGAN HILL, CA 95037
(408) 776-6480 FAX (408) 779-7236

DRAWN: RS	DESIGN: WJM	HOR: 1"=20'
CHECKED:	DATE:	VERT: N/A
APPROVED:	DATE:	JOB NO. 215087

SUPERVISED BY: *William J. McClintock* 5/24/21
SIGNATURE DATE



MH engineering Co.
SUBDIVISIONS - LAND PLANNING - LAND SURVEYS
16075 VINEYARD BOULEVARD MORGAN HILL, CA 95037
(408) 779-7381 FAX: (408) 228-5712

Erosion And Sediment Control Plan
Apple Tree
MORGAN HILL CALIFORNIA

CITY FILE NO. ----
PLAN SET: 5/21
DRAWING: 7 of 10

Packet Pg. 80

PROJECT INFORMATION	
ENGINEERED	ERIC LAWRENCE
PRODUCT	916-898-7867
MANAGER	ERIC.LAWRENCE@ADS-PIPE.COM
ADS SALES REP	PETE CAMPOS
	408-781-3187
	PETE.CAMPOS@ADS-PIPE.COM
PROJECT NO.	S125220



APPLE TREE MORGAN HILL, CA

SC-740 STORMTECH CHAMBER SPECIFICATIONS

- CHAMBERS SHALL BE STORMTECH SC-740.
- CHAMBERS SHALL BE ARCH-SHAPED AND SHALL BE MANUFACTURED FROM VIRGIN, IMPACT-MODIFIED POLYPROPYLENE COPOLYMERS.
- CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F2418-16a, "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
- CHAMBER ROWS SHALL PROVIDE CONTINUOUS, UNOBSTRUCTED INTERNAL SPACE WITH NO INTERNAL SUPPORTS THAT WOULD IMPEDE FLOW OR LIMIT ACCESS FOR INSPECTION.
- THE STRUCTURAL DESIGN OF THE CHAMBERS, THE STRUCTURAL BACKFILL, AND THE INSTALLATION REQUIREMENTS SHALL ENSURE THAT THE LOAD FACTORS SPECIFIED IN THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, SECTION 12.12, ARE MET FOR: 1) LONG-DURATION DEAD LOADS AND 2) SHORT-DURATION LIVE LOADS, BASED ON THE AASHTO DESIGN TRUCK WITH CONSIDERATION FOR IMPACT AND MULTIPLE VEHICLE PRESENCES.
- CHAMBERS SHALL BE DESIGNED, TESTED AND ALLOWABLE LOAD CONFIGURATIONS DETERMINED IN ACCORDANCE WITH ASTM F2787, "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS". LOAD CONFIGURATIONS SHALL INCLUDE: 1) INSTANTANEOUS (<1 MIN) AASHTO DESIGN TRUCK LIVE LOAD ON MINIMUM COVER 2) MAXIMUM PERMANENT (75-YR) COVER LOAD AND 3) ALLOWABLE COVER WITH PARKED (1-WEEK) AASHTO DESIGN TRUCK.
- REQUIREMENTS FOR HANDLING AND INSTALLATION:
 - TO MAINTAIN THE WIDTH OF CHAMBERS DURING SHIPPING AND HANDLING, CHAMBERS SHALL HAVE INTEGRAL, INTERLOCKING STACKING LUGS.
 - TO ENSURE A SECURE JOINT DURING INSTALLATION AND BACKFILL, THE HEIGHT OF THE CHAMBER JOINT SHALL NOT BE LESS THAN 2".
 - TO ENSURE THE INTEGRITY OF THE ARCH SHAPE DURING INSTALLATION, a) THE ARCH STIFFNESS CONSTANT AS DEFINED IN SECTION 6.2.8 OF ASTM F2418 SHALL BE GREATER THAN OR EQUAL TO 550 LBS/IN. AND b) TO RESIST CHAMBER DEFORMATION DURING INSTALLATION AT ELEVATED TEMPERATURES (ABOVE 73° F / 23° C), CHAMBERS SHALL BE PRODUCED FROM REFLECTIVE GOLD OR YELLOW COLORS.
- ONLY CHAMBERS THAT ARE APPROVED BY THE SITE DESIGN ENGINEER WILL BE ALLOWED. UPON REQUEST BY THE SITE DESIGN ENGINEER OR OWNER, THE CHAMBER MANUFACTURER SHALL SUBMIT A STRUCTURAL EVALUATION FOR APPROVAL BEFORE DELIVERING CHAMBERS TO THE PROJECT SITE AS FOLLOWS:
 - THE STRUCTURAL EVALUATION SHALL BE SEALED BY A REGISTERED PROFESSIONAL ENGINEER.
 - THE STRUCTURAL EVALUATION SHALL DEMONSTRATE THAT THE SAFETY FACTORS ARE GREATER THAN OR EQUAL TO 1.95 FOR DEAD LOAD AND 1.75 FOR LIVE LOAD, THE MINIMUM REQUIRED BY ASTM F2787 AND BY SECTIONS 3 AND 12.12 OF THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS FOR THERMOPLASTIC PIPE.
 - THE TEST DERIVED CREED MODULUS AS REQUIRED BY SECTION 6.2.8 OF ASTM F2418 SHALL BE USED FOR PERMANENT DEAD LOAD DESIGN EXCEPT THAT IT SHALL BE THE 75-YEAR MODULUS USED FOR DESIGN.
- CHAMBERS AND END CAPS SHALL BE PRODUCED AT AN ISO 9001 CERTIFIED MANUFACTURING FACILITY.

IMPORTANT - NOTES FOR THE BIDDING AND INSTALLATION OF THE SC-740 SYSTEM

- STORMTECH SC-740 CHAMBERS SHALL NOT BE INSTALLED UNTIL THE MANUFACTURER'S REPRESENTATIVE HAS COMPLETED A PRE-CONSTRUCTION MEETING WITH THE INSTALLERS.
- STORMTECH SC-740 CHAMBERS SHALL BE INSTALLED IN ACCORDANCE WITH THE "STORMTECH SC-310/SC-740/DC-780 CONSTRUCTION GUIDE".
- CHAMBERS ARE NOT TO BE BACKFILLED WITH A DOZER OR AN EXCAVATOR SITUATED OVER THE CHAMBERS. STORMTECH RECOMMENDS 3 BACKFILL METHODS:
 - STONES/ROCKS LOCATED OFF THE CHAMBER BED.
 - BACKFILL AS ROWS ARE BUILT USING AN EXCAVATOR ON THE FOUNDATION STONE OR SUBGRADE.
 - BACKFILL FROM OUTSIDE THE EXCAVATION USING A LONG BOOM HOE OR EXCAVATOR.
- THE FOUNDATION STONE SHALL BE LEVELED AND COMPACTED PRIOR TO PLACING CHAMBERS.
- JOINTS BETWEEN CHAMBERS SHALL BE PROPERLY SEATED PRIOR TO PLACING STONE.
- MAINTAIN MINIMUM - 6" (150 mm) SPACING BETWEEN THE CHAMBER ROWS.
- EMBEDMENT STONE SURROUNDING CHAMBERS MUST BE A CLEAN, CRUSHED, ANGULAR STONE 3/4"-2" (20-50 mm).
- THE CONTRACTOR MUST REPORT ANY DISCREPANCIES WITH CHAMBER FOUNDATION MATERIALS BEARING CAPACITIES TO THE SITE DESIGN ENGINEER.
- ADS RECOMMENDS THE USE OF "FLEXSTORM CATCH IT" INSERTS DURING CONSTRUCTION FOR ALL INLETS TO PROTECT THE SUBSURFACE STORMWATER MANAGEMENT SYSTEM FROM CONSTRUCTION SITE RUNOFF.

NOTES FOR CONSTRUCTION EQUIPMENT

- STORMTECH SC-740 CHAMBERS SHALL BE INSTALLED IN ACCORDANCE WITH THE "STORMTECH SC-310/SC-740/DC-780 CONSTRUCTION GUIDE".
- THE USE OF CONSTRUCTION EQUIPMENT OVER SC-740 CHAMBERS IS LIMITED:
 - NO EQUIPMENT IS ALLOWED ON BARE CHAMBERS.
 - NO RUBBER Tired LOADERS, DUMP TRUCKS, OR EXCAVATORS ARE ALLOWED UNTIL PROPER FILL DEPTHS ARE REACHED IN ACCORDANCE WITH THE "STORMTECH SC-310/SC-740/DC-780 CONSTRUCTION GUIDE".
 - WEIGHT LIMITS FOR CONSTRUCTION EQUIPMENT CAN BE FOUND IN THE "STORMTECH SC-310/SC-740/DC-780 CONSTRUCTION GUIDE".
- FULL 36" (900 mm) OF STABILIZED COVER MATERIALS OVER THE CHAMBERS IS REQUIRED FOR DUMP TRUCK TRAVEL OR DUMPING.

USE OF A DOZER TO PUSH EMBEDMENT STONE BETWEEN THE ROWS OF CHAMBERS MAY CAUSE DAMAGE TO THE CHAMBERS AND IS NOT AN ACCEPTABLE BACKFILL METHOD. ANY CHAMBERS DAMAGED BY THE "DUMP AND PUSH" METHOD ARE NOT COVERED UNDER THE STORMTECH STANDARD WARRANTY.

CONTACT STORMTECH AT 1-888-892-2694 WITH ANY QUESTIONS ON INSTALLATION REQUIREMENTS OR WEIGHT LIMITS FOR CONSTRUCTION EQUIPMENT.

PROPOSED LAYOUT - TYPICAL 6 BEDS

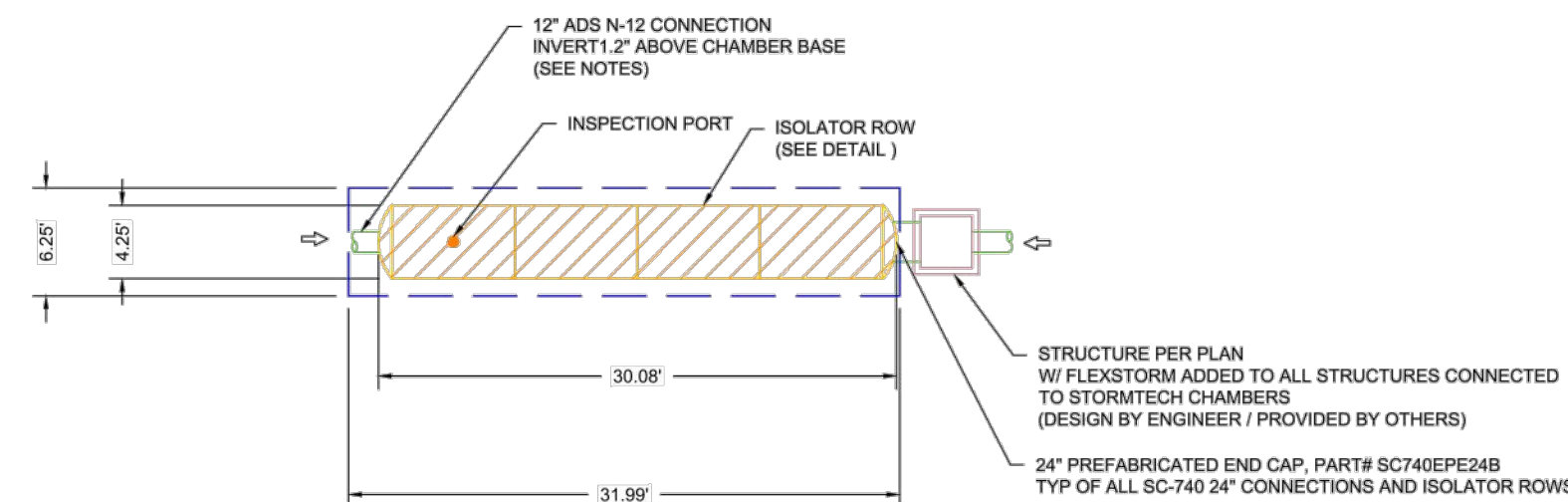
4	STORMTECH SC-740 CHAMBERS
2	STORMTECH SC-740 END CAPS
6	STONE ABOVE (in)
6	STONE BELOW (in)
40	% STONE VOID
390	INSTALLED SYSTEM VOLUME (CF) (PERIMETER STONE INCLUDED)
200	SYSTEM AREA (ft²)
76	SYSTEM PERIMETER (ft)

PROPOSED ELEVATIONS - TYPICAL 6 BEDS

354.75	MAXIMUM ALLOWABLE GRADE (TOP OF PAVEMENT (UNPAVED))
348.75	MINIMUM ALLOWABLE GRADE (UNPAVED WITH TRAFFIC)
348.25	MINIMUM ALLOWABLE GRADE (UNPAVED NO TRAFFIC)
348.25	MINIMUM ALLOWABLE GRADE (BASE OF FLEXIBLE PAVEMENT)
348.25	MINIMUM ALLOWABLE GRADE (TOP OF RIGID PAVEMENT)
347.25	TOP OF STONE
340.75	TOP OF SC-740 CHAMBER
344.35	12" BOTTOM CONNECTION
344.28	24" ISOLATOR ROW CONNECTION INVERT
344.25	BOTTOM OF SC-740 CHAMBER
343.75	UNDERDRAIN INVERT
343.75	BOTTOM OF STONE

NOTES

- MANIFOLD SIZE TO BE DETERMINED BY SITE DESIGN ENGINEER. SEE TECH SHEET #7 FOR MANIFOLD SIZING GUIDANCE.
- DUE TO THE ADAPTATION OF THIS CHAMBER SYSTEM TO SPECIFIC SITE AND DESIGN CONSTRAINTS, IT MAY BE NECESSARY TO CUT AND COUPLE ADDITIONAL PIPE TO STANDARD MANIFOLD COMPONENTS IN THE FIELD.
- THE SITE DESIGN ENGINEER MUST REVIEW ELEVATIONS AND IF NECESSARY ADJUST GRADING TO ENSURE THE CHAMBER COVER REQUIREMENTS ARE MET.
- THIS CHAMBER SYSTEM WAS DESIGNED WITHOUT SITE-SPECIFIC INFORMATION ON SOIL CONDITIONS OR BEARING CAPACITY. THE SITE DESIGN ENGINEER IS RESPONSIBLE FOR DETERMINING THE SUITABILITY OF THE SOIL AND PROVIDING THE BEARING CAPACITY OF THE INSTALLED SOILS. THE BASE STONE DEPTH MAY BE INCREASED OR DECREASED ONCE THIS INFORMATION IS PROVIDED.

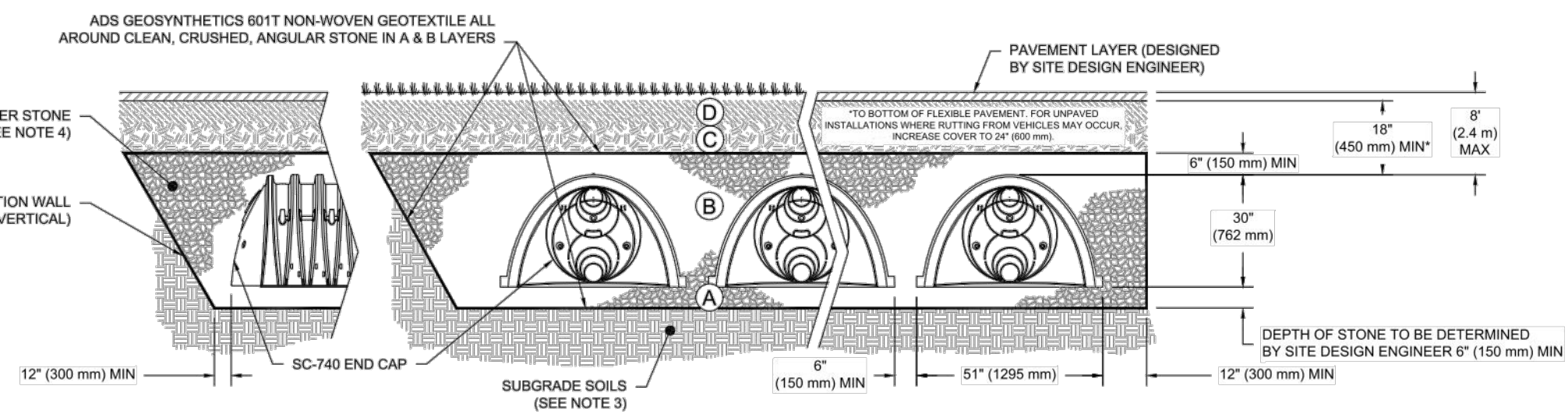


4640 TREEMAN BLVD HILLIARD, OH 43026	APPLE TREE MORGAN HILL, CA	DATE: 03/20/19	DRAWN: GDL	CHECKED: DAF
ADS PROJECT # S125220	PROJECT # S125220	RECEIVED THE DRAWING PRIOR TO CONSTRUCTION. IT IS THE ULTIMATE RESPONSIBILITY OF THE USER TO VERIFY THE ACCURACY OF THE INFORMATION PROVIDED. THE USER SHALL BE RESPONSIBLE FOR ANY ERRORS OR OMISSIONS. THE USER SHALL BE RESPONSIBLE FOR ANY CHANGES TO THE DRAWING. THE USER SHALL BE RESPONSIBLE FOR ANY DISCREPANCIES BETWEEN THE DRAWING AND THE FIELD CONDITIONS. THE USER SHALL BE RESPONSIBLE FOR ANY DISCREPANCIES BETWEEN THE DRAWING AND THE FIELD CONDITIONS.		
2	OF	5		

ACCEPTABLE FILL MATERIALS: STORMTECH SC-740 CHAMBER SYSTEMS

MATERIAL LOCATION	DESCRIPTION	AASHTO MATERIAL CLASSIFICATIONS	COMPACTION / DENSITY REQUIREMENT
D	FINAL FILL: FILL MATERIAL FOR LAYER 'D' STARTS FROM THE TOP OF THE 'C' LAYER TO THE BOTTOM OF FLEXIBLE PAVEMENT OR UNPAVED FINISHED GRADE ABOVE. NOTE THAT PAVEMENT SUBBASE MAY BE PART OF THE 'D' LAYER.	ANY SOIL/ROCK MATERIALS, NATIVE SOILS, OR PER ENGINEER'S PLANS. CHECK PLANS FOR PAVEMENT SUBGRADE REQUIREMENTS.	N/A
C	INITIAL FILL: FILL MATERIAL FOR LAYER 'C' STARTS FROM THE TOP OF THE EMBEDMENT STONE (8" LAYER) TO 18" (450 mm) ABOVE THE TOP OF THE CHAMBER. NOTE THAT PAVEMENT SUBBASE MAY BE A PART OF THE 'C' LAYER.	GRANULAR WELL-GRADED SOIL/AGGREGATE MIXTURES, <35% FINES OR PROCESSED AGGREGATE. MOST PAVEMENT SUBBASE MATERIALS CAN BE USED IN LIEU OF THIS LAYER.	AASHTO M45¹ A-1, A-2-4, A-3 OR AASHTO M43² 3, 357, 4, 467, 5, 56, 57, 6, 67, 68, 7, 78, 6, 89, 9, 10
B	EMBEDMENT STONE: FILL SURROUNDING THE CHAMBERS FROM THE FOUNDATION STONE (A' LAYER) TO THE 'C' LAYER ABOVE.	CLEAN, CRUSHED, ANGULAR STONE AASHTO M43³ 3, 357, 4, 467, 5, 56, 57	NO COMPACTION REQUIRED.
A	FOUNDATION STONE: FILL BELOW CHAMBERS FROM THE SUBGRADE UP TO THE FOOT (BOTTOM) OF THE CHAMBER.	CLEAN, CRUSHED, ANGULAR STONE AASHTO M43³ 3, 357, 4, 467, 5, 56, 57	PLATE COMPACT OR ROLL TO ACHIEVE A FLAT SURFACE 2,3

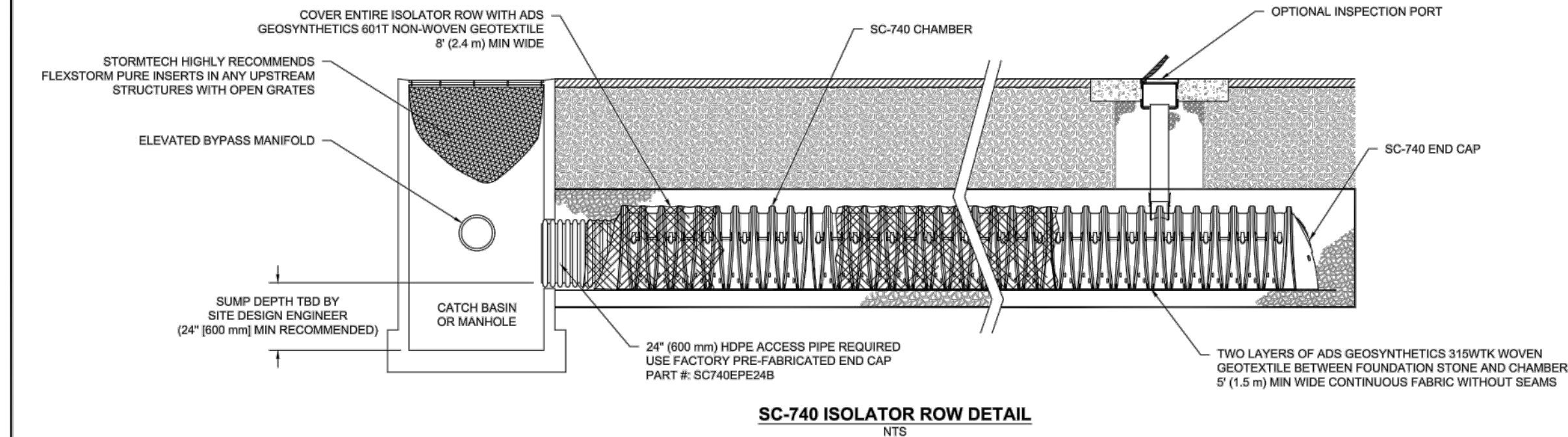
- PLEASE NOTE:
- THE LISTED AASHTO DESIGNATIONS ARE FOR GRADATIONS ONLY. THE STONE MUST ALSO BE CLEAN, CRUSHED, ANGULAR. FOR EXAMPLE, A SPECIFICATION FOR #4 STONE WOULD STATE: "CLEAN, CRUSHED, ANGULAR NO. 4 (AASHTO M43) STONE".
 - STORMTECH COMPACTION REQUIREMENTS ARE MET FOR 'A' LOCATION MATERIALS WHEN PLACED AND COMPACTED IN 6" (150 mm) MAX LIFTS USING TWO FULL COVERS WITH A VIBRATORY COMPACTOR.
 - WHERE INFILTRATION SURFACES MAY BE COMPROMISED BY COMPACTION, FOR STANDARD DESIGN LOAD CONDITIONS, A FLAT SURFACE MAY BE ACHIEVED BY RAKING OR DRAGGING WITHOUT COMPACTION EQUIPMENT. FOR SPECIAL LOAD DESIGNS, CONTACT STORMTECH FOR COMPACTION REQUIREMENTS.
 - ONCE LAYER 'C' IS PLACED, ANY SOIL/MATERIAL CAN BE PLACED IN LAYER 'D' UP TO THE FINISHED GRADE. MOST PAVEMENT SUBBASE SOILS CAN BE USED TO REPLACE THE MATERIAL REQUIREMENTS OF LAYER 'D' OR 'D' AT THE SITE DESIGN ENGINEER'S DISCRETION.



NOTES:

- CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F2418-16a, "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
- SC-740 CHAMBERS SHALL BE DESIGNED IN ACCORDANCE WITH ASTM F2787 "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
- THE SITE DESIGN ENGINEER IS RESPONSIBLE FOR ASSESSING THE BEARING RESISTANCE (ALLOWABLE BEARING CAPACITY) OF THE SUBGRADE SOILS AND THE DEPTH OF FOUNDATION STONE WITH CONSIDERATION FOR THE RANGE OF EXPECTED SOIL MOISTURE CONDITIONS.
- PERIMETER STONE MUST BE EXTENDED HORIZONTALLY TO THE EXCAVATION WALL FOR BOTH VERTICAL AND SLOPED EXCAVATION WALLS.
- REQUIREMENTS FOR HANDLING AND INSTALLATION:
 - TO MAINTAIN THE WIDTH OF CHAMBERS DURING SHIPPING AND HANDLING, CHAMBERS SHALL HAVE INTEGRAL, INTERLOCKING STACKING LUGS.
 - TO ENSURE A SECURE JOINT DURING INSTALLATION AND BACKFILL, THE HEIGHT OF THE CHAMBER JOINT SHALL NOT BE LESS THAN 2".
 - TO ENSURE THE INTEGRITY OF THE ARCH SHAPE DURING INSTALLATION, a) THE ARCH STIFFNESS CONSTANT AS DEFINED IN SECTION 6.2.8 OF ASTM F2418 SHALL BE GREATER THAN OR EQUAL TO 550 LBS/IN. AND b) TO RESIST CHAMBER DEFORMATION DURING INSTALLATION AT ELEVATED TEMPERATURES (ABOVE 73° F / 23° C), CHAMBERS SHALL BE PRODUCED FROM REFLECTIVE GOLD OR YELLOW COLORS.

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3	OF	5		

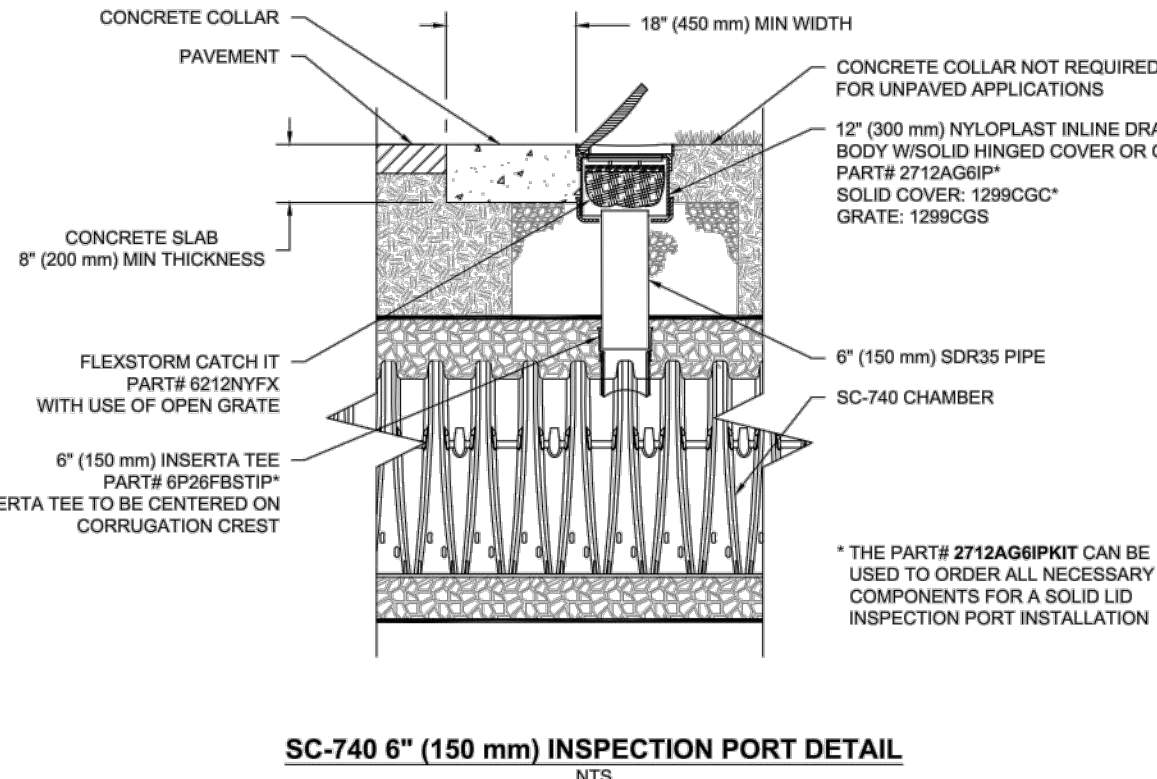


INSPECTION & MAINTENANCE

- STEP 1) INSPECT ISOLATOR ROW FOR SEDIMENT
- INSPECTION PORTS (IF PRESENT)
 - REMOVE/OPEN LID ON NYLOPLAST INLINE DRAIN
 - REMOVE AND CLEAN FLEXSTORM FILTER IF INSTALLED
 - USING A FLASHLIGHT AND STADIA ROD, MEASURE DEPTH OF SEDIMENT AND RECORD ON MAINTENANCE LOG
 - LOWER A CAMERA INTO ISOLATOR ROW FOR VISUAL INSPECTION OF SEDIMENT LEVELS (OPTIONAL)
 - IF SEDIMENT IS AT, OR ABOVE, 3" (80 mm) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.
- B. ALL ISOLATOR ROWS
- REMOVE COVER FROM STRUCTURE AT UPSTREAM END OF ISOLATOR ROW
 - USING A FLASHLIGHT, INSPECT DOWN THE ISOLATOR ROW THROUGH OUTLET PIPE
 - MIRRORS ON POLES OR CAMERAS MAY BE USED TO AVOID A CONFINED SPACE ENTRY
 - FOLLOW OSHA REGULATIONS FOR CONFINED SPACE ENTRY IF ENTERING MANHOLE
 - IF SEDIMENT IS AT, OR ABOVE, 3" (80 mm) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.
- STEP 2) CLEAN OUT ISOLATOR ROW USING THE JETVAC PROCESS
- A FIXED CULVERT CLEANING NOZZLE WITH REAR FACING SPREAD OF 45° (1.1 m) OR MORE IS PREFERRED
 - APPLY MULTIPLE PASSES OF JETVAC UNTIL BACKFLOWS WATER IS CLEAN
 - VACUUM STRUCTURE SUMP AS REQUIRED
- STEP 3) REPLACE ALL COVERS, GRATES, FILTERS, AND LIDS; RECORD OBSERVATIONS AND ACTIONS.
- STEP 4) INSPECT AND CLEAN BASINS AND MANHOLES UPSTREAM OF THE STORMTECH SYSTEM.

NOTES

- INSPECT EVERY 6 MONTHS DURING THE FIRST YEAR OF OPERATION, ADJUST THE INSPECTION INTERVAL BASED ON PREVIOUS OBSERVATIONS OF SEDIMENT ACCUMULATION AND HIGH WATER ELEVATIONS.
- CONDUCT JETTING AND VACTORING ANNUALLY OR WHEN INSPECTION SHOWS THAT MAINTENANCE IS NECESSARY.

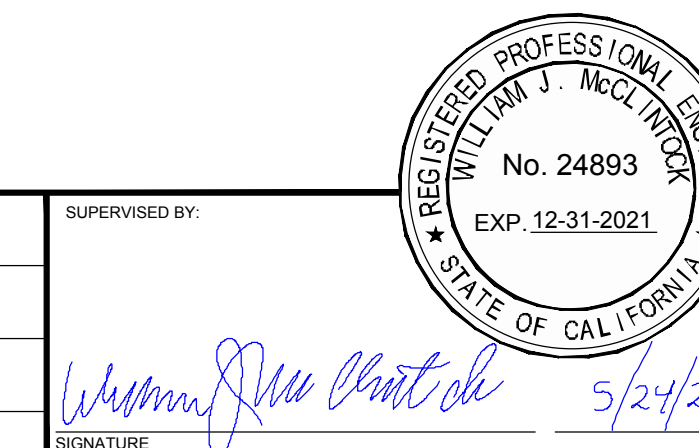


4640 TREEMAN BLVD HILLIARD, OH 43026	APPLE TREE MORGAN HILL, CA	DATE: 03/20/19	DRAWN: GDL	CHECKED: DAF
ADS PROJECT # S125220	PROJECT # S125220	RECEIVED THE DRAWING PRIOR TO CONSTRUCTION. IT IS THE ULTIMATE RESPONSIBILITY OF THE USER TO VERIFY THE ACCURACY OF THE INFORMATION PROVIDED. THE USER SHALL BE RESPONSIBLE FOR ANY ERRORS OR OMISSIONS. THE USER SHALL BE RESPONSIBLE FOR ANY CHANGES TO THE DRAWING. THE USER SHALL BE RESPONSIBLE FOR ANY DISCREPANCIES BETWEEN THE DRAWING AND THE FIELD CONDITIONS. THE USER SHALL BE RESPONSIBLE FOR ANY DISCREPANCIES BETWEEN THE DRAWING AND THE FIELD CONDITIONS.		
4	OF	5		

NO.	DESCRIPTION	DATE	BY	BY	DATE
REVISIONS					

City of Morgan Hill
Public Works Department
CITY OF MORGAN HILL 17575 PEAK AVE. MORGAN HILL, CA 95037
(408) 776-6480 FAX (408) 779-7236

DRAWN: RS	DESIGN: WJM	HOR: N/A	SUPERVISED BY: William J. McClintock
CHECKED:	DATE:	VERT: N/A	EXP. 12-31-2021
APPROVED:	DATE:	JOB NO. 215087	5/24/21
Scott C. Creer SEIT 58879	CITY ENGINEER EXP. DATE 06-30-2021		



MH engineering Co.
SUBDIVISIONS - LAND PLANNING - LAND SURVEYS
16075 VINEYARD BOULEVARD MORGAN HILL, CA 95037
(408) 779-7381 FAX: (408) 228-5712

StormTech Chamber Details
Apple Tree
MORGAN HILL CALIFORNIA

CITY FILE NO. ----	PLAN SET: 5/21
DRAWING: 9	of 10



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Packet Pg. 82



18755 Old Monterey Road, Morgan Hill, CA

Addendum #2 to the to the Historic Evaluation DPR 523 for 18755 Old Monterey Road, prepared by Urban Programmers on September 28, 2018.

This addendum includes the relocation of the historic building to Lot 4 of the Apple Tree Improvement Plan, a new house on the same lot and the rehabilitation plan for the historic building following the Secretary of the Interior's Standards for Rehabilitation of Historic Buildings.

Bonnie Bamberg
Urban Programmers
10710 Ridgeview Ave.
San Jose CA 95127

408-254-7171

March 25, 2021
Revised April 21, 2021

Purpose of this Addendum #2 to the Historic Evaluation DPR 523 for 18755 Old Monterey Road, prepared by Urban Programmers on September 28, 2018.

The purpose of this Addendum #2 is to describe how the historic building might be moved on the same parcel and become an additional dwelling unit (ADU). A new house will also be constructed on the parcel (Lot 4 of the Appletree Investment Development Plan). The addendum will provide mitigation under CEQA for relocation and rehabilitation of the existing historic resource building that was determined eligible for listing in the California Register of Historic Resources through the survey process.

The 1.1-acre property at 18755 Old Monterey Road (corner of Old Monterey Road and Mustard Avenue, Morgan Hill), was approved by the City of Morgan Hill for a six-lot subdivision and development of 6 new houses on the lots. During the environmental review, it was determined that the existing building on the property was a historic resource under the CEQA Guidelines. The project was altered to include 5 new home sites and one parcel to retain the existing building. The project has been sold and the new owner's wish to amend the plan to relocate the historic building and rehabilitate the building for secondary residential use and allow a new house to also be constructed on the same parcel. The small building is eligible for listing in the California Register of Historic Resources and is a historic resource under the CEQA Guidelines.

The revised project may require an alteration permit under Morgan Hill Municipal Code Section 18.60.070. The alteration permit or other process must include the condition that the relocation and rehabilitation comply with the Secretary of the Interiors Standards for the Treatment of Historic Property. The building is planned to be used as a residence and therefore must also comply with the Secretary of the Interior's Standards for Rehabilitation of Historic Buildings.

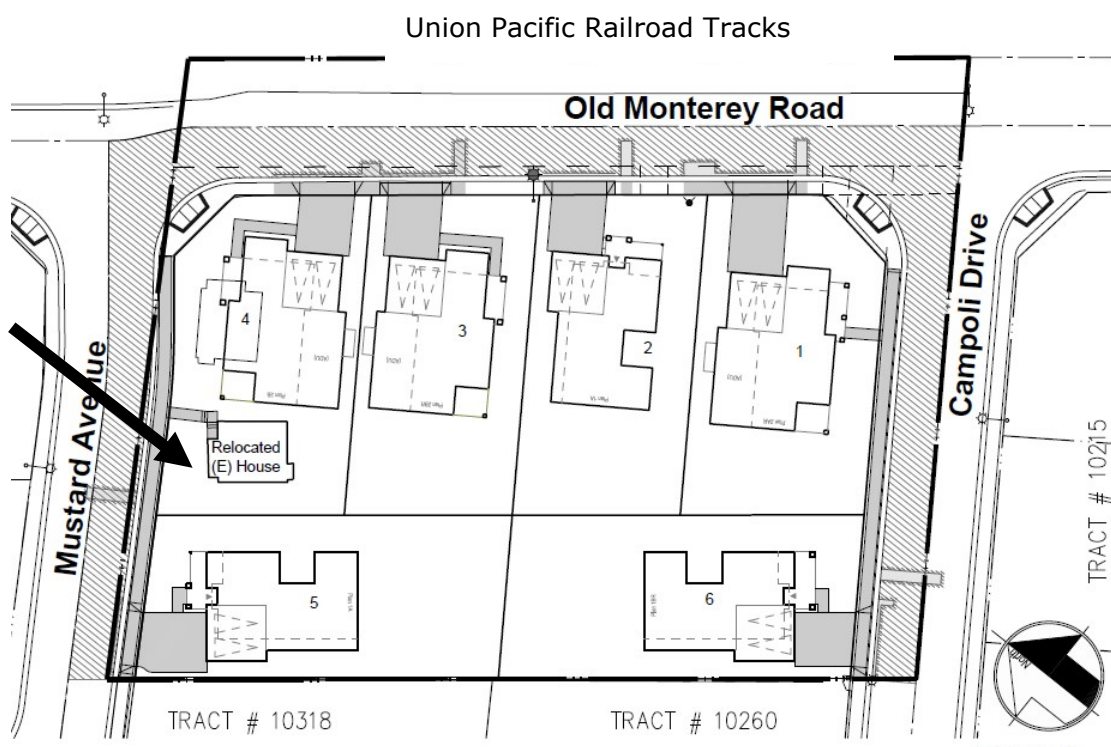


Figure 1 Site plan for the six-parcel subdivision showing the historic building to be relocated and to remain. The arrow points to the proposed site for the historic building on Lot 4 of the Apple Tree Improvement Plan Tract 10523. Source: MH Engineering Company dated 12/2020.

1. Location on Lot 4 Tract 10523 . Currently the small historic building is located toward the front of the parcel facing onto Old Monterey Road. Addendum 2 proposes the historic building to be relocated to the northwest corner of the parcel and rotated 45 degrees to face onto Mustard Avenue. This plan also shows a new two-story house on the parcel. The historic building is set in line with the new house. To provide adequate view and prominence for the historic building, it should be set forward to at least the setback line. The historic building should have a distinct presence on the street.

The site plan shows Lot 4 bounded by Old Monterey Road to the north and Mustard Avenue to the west. A proposed new two-story house is shown in the upper right portion of the lot, with a footprint of 354.30 sq ft, a pad of 353.30 sq ft, and a MOFG of 353.63 sq ft. A historic building is shown in the lower right portion of the lot, with a footprint of 354.80± sq ft, a pad of 353.30 sq ft, and a MOFG of 353.63 sq ft. The plan also shows various setbacks, easements, and utility lines. A blue arrow points from the text 'Proposed location of the new two-story house on Lot 4.' to the new house. Another blue arrow points from the text 'Proposed location of the historic building.' to the historic building.

Proposed location of the new two-story house on Lot 4.

Proposed location of the historic building.

2. Prior to relocating the building, the character defining features of the building must be identified and precautions made to brace and stabilize the building for the move. Although it is a small building, the move should be undertaken by a professional mover with experience in bracing, lifting, and moving historic wood buildings.

The historic resource building is single-story wood frame with wood siding and a steep pitched gable roof. The windows provide the architectural detail. The historic character of the building is found in the size, height, and shape of the building and its materials- the wood structure, wood horizontal board siding, wood window frames and sash, clear (old) glazing, the opening in the roof peak, and locations of doors and windows. The scroll work in the gable peak is not original but shows the transition from a commercial building to a residence and could be retained. Both front and back porches are additions, in poor condition, and are not historic materials or original to the building. The porches should be replaced. The front with a very simple design reflecting the utilitarian design of the building. The removal of a window that was replaced with a metal sliding window and infill wall should be evaluated and returned to the historic design.

Remarkably, the building is in reasonably good repair for approximately 145 years. This is due, in part, to the original artisanship in the construction that must be respected.

3. The architectural plan for the rehabilitation and any addition or alteration should be prepared by a historic architect, recognized by the State of California (CRIS) and with experience rehabilitating wood buildings of this age.

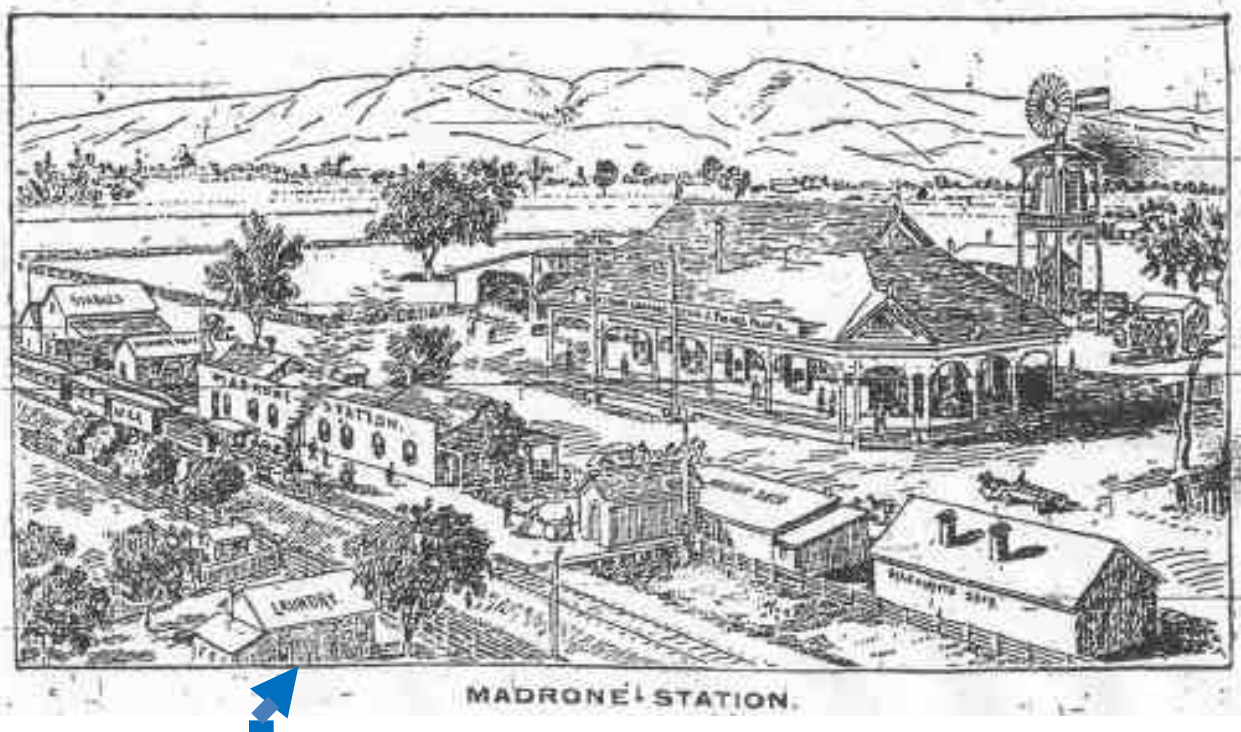
4. Prior to the start of the rehabilitation, the General Contractor must receive training from the historic architect on the sensitive nature of the materials and their preservation and care during rehabilitation. Prior to starting work, all workers assigned to this building must receive training regarding the care of historic materials during any work and the preservation of historic materials going forward.

Historic Background and Historical Significance: The property was traced to the first American owner William Fisher and his wife Liberta Fisher Bull Piatti. While owned by Liberta Fisher, the 18 Mile House was constructed on the property at Madrone Station in 1857. Subsequently a small commercial center grew, and a U.S. Post Office was opened there in 1867. The 18 Mile House was a respite for travelers and those on the Butterfield Overland Stage. The stage also delivered the mail beginning in 1857. The 18 Mile House was in the area known as "Sherman" and "Madrone Station," within the Burnett Township. In 1869, the San Jose-Pajaro Valley Monterey & Salinas railroad connected Burnett with San Jose to the north and Salinas to the south, as well as the Pajaro Valley and Monterey. Eventually, tracks connected to the rest of the nation. Communities began to develop at the train stops. Madrone Station served a large cattle ranching area and grew as the center around the post office, roadhouse and store. By 1895, Madrone included a church, school, general store, post express and telegraph office, laundry and other services.

After the death of Liberta Fisher Bull Piatti in 1905, the 140-acre property was subdivided into 10 and 20 acre lots that continued in agricultural use. Subsequent land divisions created the subject 1.1-acre parcel, with a c 1875-1880 building on the parcel. The building was moved to the site in the late 1920s and first appears on the property tax roll in this location in 1930.

Significance: The National Style, single-story wood building with three narrow double hung windows is one of the oldest buildings in Morgan Hill. The building exhibits a commercial architectural style from 1870-1880s era that is important in the history of Morgan Hill and of

which very few exist. The building may be the laundry building from Madrone Station shown in an etching that shows it located very close to the current site.¹ The building retains a high degree of integrity showing the style, materials, and artisanship, with only minor alterations to the exterior. One window has been removed to allow a metal frame sliding window in the top of the former opening. To enlarge the interior space, an addition was attached to the rear facade and the rear door frame was altered.



The building has been determined through the survey process and application to the City of Morgan Hill to be a historic resource based upon the style, integrity, age, and the last remaining building from Madrone Station, that makes the building eligible for listing in the California Register of Historic Resources under criterion 3. The building is also eligible for listing in the Morgan Hill Historic Resource Inventory due to its age, integrity, and historical significance, the last building from Madrone Station.

Regulatory Framework

The relocation is considered to comply with the California Environmental Quality Act (CEQA) and the City of Morgan Hill Historic Preservation Policies.

Chapter 18.60 - HISTORIC RESOURCES ²

18.60.010 - Purpose.

A. General Purpose. The purpose of this chapter is to promote the public health, safety and

¹ The etching appears on the cover page of the SANTA CLARA COUNTY HERITAGE RESOURCE INVENTORY UPDATE SOUTH COUNTY, County of Santa Clara Historical Heritage Commission and Environmental Resources Agency Planning Office (Unincorporated Areas Near Coyote, Morgan Hill, San Martin, and Gilroy,), 2003

² The Morgan Hill Municipal Code-[SHARE LINK TO SECTION](#)[PRINT SECTION](#)[DOWNLOAD \(DOCX\) OF SECTION](#)[EMAIL SECTION](#)[COMPARE VERSIONS](#)

general welfare by providing for the identification, protection, enhancement, perpetuation and use of historical resources, including buildings, structures, signs, objects, features, sites, areas, record, manuscript, historic, and prehistoric archaeological sites, places, districts, designed landscapes, cultural landscapes and areas within the city that reflect special elements of the city's architectural, artistic, cultural, engineering, aesthetic, historical, political, social, and other heritage.

18.60.080 - Historical resource demolition or relocation permit.

A. When Required. It is unlawful for any person to tear down, demolish, remove, or relocate a potentially significant or significant historical resource, a resource that has been formally designated or listed on the city's adopted survey list, or which lies within an historic district, without first obtaining a historical resource demolition or relocation permit as outlined below. Neither the community development director nor the building official shall grant any permit to carry out such work without the prior approval of a historical resources demolition or relocation permit by the planning commission.

B. Application. If a historical resource demolition or relocation permit is required pursuant to Section 18.60.050, the following procedures will be followed in processing the permit application:

1. Applications for a historical resource demolition or relocation permit shall be submitted to the development services department for review and consideration by the planning commission. Applications shall be accompanied by materials as required by the community development director and reasonably necessary for the proper review of the project, including but not limited to information regarding the age and construction of a building or structure and building permit records.
2. City staff will review applications for compliance with the Secretary of the Interior's Standards and may require that the applicant deposit funds for the city to retain the services of a qualified historic consultant if necessary.
3. Environmental review of a historical resource demolition or relocation permit application will be required as follows:
 - a. If the proposed demolition or relocation is in compliance with the Secretary of the Interior's Standards for the Treatment of Historic Properties, the potential impact on historical resources shall be considered less than significant and the project would be exempt from CEQA unless other factors are identified associated with the proposed project which could cause potentially significant environmental impacts.
 - b. If the proposed demolition or relocation is not in compliance with the Secretary of the Interior's Standards then CEQA review will be required.
4. Notice of public hearing for the planning commission consideration of a Historical Resource Demolition or Relocation Permit application shall be provided in accordance with Section 18.104.090 (Notice of Hearing).
5. The planning commission shall complete its review and shall render its decision after the conclusion of a public hearing on the application. In review of permits sought to wholly or partially relocate or demolish a potentially significant or significant historical resource, or resources within an historical resource site or historic district, the planning commission may approve or disapprove the issuance of the permit or permits. The planning commission may

also approve the issuance of the permit with conditions to bring the proposed work into compliance with the Secretary of the Interior's Standards.

6. The planning commission's decision to approve or deny a historical resource demolition or relocation permit may be appealed to the city council in accordance with Chapter 18.112 (Appeals).

California Environmental Quality Act (CEQA)

The following is taken from California Office of Historic Preservation Technical Assistance Series #1 California Environmental Quality Act (CEQA) and Historical Resources³

The California Environmental Quality Act (CEQA – pronounced see' kwa) is the principal statute mandating environmental assessment of projects in California. The purpose of CEQA is to evaluate whether a proposed project may have an adverse effect on the environment and, if so, if that effect can be reduced or eliminated by pursuing an alternative course of action or through mitigation. CEQA is part of the Public Resources Code (PRC), Sections 21000 et seq.

Under the CEQA Guidelines, any project that may cause a substantial adverse change in the significance of an historic resource (building or site) is considered to have a significant effect on the environment (section 15064.5). A substantial adverse change in the significance of an historical resource means physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of an historical resource would be materially impaired.

Mitigating Substantial Adverse Change

Mitigation of significant impacts must lessen or eliminate the physical impact that the project will have on the historical resource. This is often accomplished through redesign of a project to eliminate objectionable or damaging aspects of the project (e.g., retaining rather than removing a character-defining feature, reducing the size, or massing of a proposed addition, or relocating a structure outside the boundaries of an archeological site). Relocation of an historical resource may constitute an adverse impact to the resource. However, in situations where relocation is the only feasible alternative to demolition, relocation may mitigate below a level of significance provided that the new location is compatible with the original character and use of the historical resource and the resource retains its eligibility for listing on the California Register (14 CCR § 4852(d)(1)).

Identifying the Relocation site and Characteristics of the Historic Building

Relocating the historic building

Prior to relocation or rehabilitation, it is necessary to determine the character-defining features of the building so they may be protected and preserved.

Site: The current location is within the historic area known as Madrone Station. Although it appears the building has been relocated once, the parcel remains within the Madrone Station area, along Old Monterey Road. The proposed relocation site is within the same parcel, adjacent to Old Monterey Road. Relocating the end facing building to face toward Mustard Avenue will

³ <https://ohp.parks.ca.gov/pages/1054/files/ts01ca.pdf>

retain the same area and moving the building to the setback line or farther forward will provide the public with a view of the building that is similar to the current location.

Historic Building: The building is wood frame with horizontal wood siding. The structure and siding are character defining features important to the preservation of the building.

Grading and the new foundation must be designed to divert rain or landscape water away from the building. Plants should not be placed against the building to prevent moisture or plants attaching to the wood siding. Landscaping must be kept low to allow the public to view the historic building's sides and front.

Front Facade.



Photograph 1 Front facade.

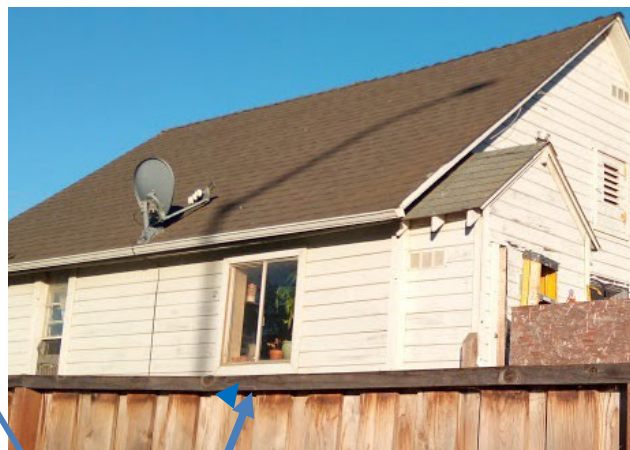
The character-defining features of the front facade include the horizontal siding, two double hung windows and the doorway (door was not visible to determine if it was the original or a replacement). The smaller window and vent in the peak of the gable appear original to the building and should be retained. The window may need a new wood sash. The porch is not original and can be removed with a new one constructed. The scroll work in the gable peak is not original but was likely added to give the building a residential appearance.

East facade (current).



The side facade has two narrow, vertical, double-hung windows with frames that are distinctive features and must be retained, repaired, and preserved. The window pattern in this building is the most interesting architectural detail and identifies the original use as commercial.

West Facade (current).



Altered window.

The character-defining features of the west facade are the two vertical windows. One has been reframed to a wider and shorter window. The original vertical, double-hung window with the frame must be repaired and retained. The altered window may be retained because the new size removed some of the horizontal siding that would be difficult to replace. The window, if it is replaced, should be single pane and not try to copy the other windows unless a restoration of the window is proposed.

Rear Facade.



The rear facade has a small addition that was made many years ago and could be retained and repaired or removed. The rear door has been altered and must be repaired and a new door installed with a frame similar to the one on the front. It may be possible to use an age-appropriate recycled door. Whether new or recycled, the door should be a plain style compatible with the simple building.

The Secretary of the Interior's Standards for Rehabilitating Historic Buildings.

The Secretary of the Interior's Standards for Rehabilitating Historic Buildings, were authored by the National Park Service, Cultural Resources Division, and can be found on the internet, the following sections and standards are taken from the website.
<https://www.nps.gov/tps/standards/rehabilitation/rehab/stand.htm>

*"Rehabilitation" is defined as "the process of returning a property to a state of utility, through repair or alteration, which makes possible an efficient contemporary use while preserving those portions and features of the property which are significant to its historic, architectural, and cultural values."*¹

*The Standards are to be applied to specific rehabilitation projects in a reasonable manner, taking into consideration economic and technical feasibility.*¹

Some of the "standards" are shown with commentary that was included based upon the amended plan (2) for the subdivision application that will relocated and retain the historic

building within the same parcel, Lot 4. The plan shows the orientation will be rotated so the front will face Mustard Avenue. Conversations with the Reyad Katwan, one of the developers described the rehabilitation planned for the historic building. Architectural plans were not available when this report was prepared. The proposed rehabilitation includes a new foundation, new electrical, plumbing and HVAC systems. The building is proposed to be cleaned and wood repaired where necessary, and repainted. New front and rear porches will be constructed after the building is relocated. The porches are small alterations and must be compatible with the existing design of the building.

1. A property shall be used for its historic purpose or be placed in a new use that requires minimal change to the defining characteristics of the building and its site and environment.

The proposed plan shows the building to continue use as an Auxiliary Dwelling Unit (ADU). The use is similar to the previous use of the historic building. The ADU use requires minimal change to the defining characteristics of the building and its site.

2. The historic character of a property shall be retained and preserved. The removal of historic materials or alteration of features and spaces that characterize a property shall be avoided.

The historic character of the building is found in the size, height, and shape of the building and its materials-the wood structure, wood horizontal board siding, wood window frames and sash, clear (old) glazing, the openings in the roof peaks, and locations of doors and windows. These features must be retained. The scroll work in the gable peak is an addition that compliments the residential use and should also be retained. Both front and back porches are additions and not historic materials.

3. Each property shall be recognized as a physical record of its time, place, and use. Changes that create a false sense of historical development, such as adding conjectural features or architectural elements from other buildings, shall not be undertaken.

The rehabilitation plans have not been prepared. They must not create a false sense of history.

4. Most properties change over time; those changes that have acquired historic significance in their own right shall be retained and preserved.

The alterations to the building include front porch, rear porch and metal sliding window (infill wall) have not acquired historic significance.

The scroll work in the peak of the roof has gained importance and should be retained.

5. Distinctive features, finishes, and construction techniques or examples of craftsmanship that characterize a property shall be preserved.

The distinctive features to be preserved are the wood structure, wood siding, wood window systems, gable pitch, size, shape, and height of the building above a new foundation.

6. Deteriorated historic features shall be repaired rather than replaced. Where the severity of deterioration requires replacement of a distinctive feature, the new feature shall match the old in

design, color, texture, and other visual qualities and, where possible, materials. Replacement of missing features shall be substantiated by documentary, physical, or pictorial evidence.

Where repair is required, the repair must be made using the same materials and design as the original. The noticeable missing feature is the window that was removed and replaced with a metal sliding window. Evidence of how to replace this window is found in the three remaining original window frames and shah.

7. Chemical or physical treatments, such as sandblasting, that cause damage to historic materials shall not be used. The surface cleaning of structures, if appropriate, shall be undertaken using the gentlest means possible.

The building is wood and must be cleaned of old paint using hand methods and low-pressure water. No harsh chemicals may be used. The specifications must describe the process for cleaning the building and preparing it for new paint. Paint should be compatible with the historic building and follow the Preservation Brief 9 (Preserving Wood Windows and Preservation Brief 10 Preserving Wood Siding that are found in the Appendix.⁴

8. Significant archeological resources affected by a project shall be protected and preserved. If such resources must be disturbed, mitigation measures shall be undertaken.

It is unlikely that significant archeological resources will be found during the rehabilitation. Should archeological materials be found State Law must be followed.

9. New additions, exterior alterations, or related new construction shall not destroy historic materials that characterize the property. The new work shall be differentiated from the old and shall be compatible with the massing, size, scale, and architectural features to protect the historic integrity of the property and its environment.

New porches are the only additions proposed.

10. New additions and adjacent or related new construction shall be undertaken in such a manner that if removed in the future, the essential form and integrity of the historic property and its environment would be unimpaired.

The new porches will be structured not to damage the historic building.

The Site and Subdivision Development- Compliance with the Standards

The historic building will be part of a suburban 1.1-acre subdivision with the surrounding parcels developed with two-story houses. The lots in this subdivision range from 7,940 to 7,175 square feet and are planned for two-story houses. The amended plan shows the historic building on Lot 4 relocated to face Mustard Avenue, there are no other historic buildings in the immediate area.

Historic building parcel:

Lot 4, the subject parcel is 7,840 square feet. The amended plan shows a new house on the front of the parcel facing Old Monterey Road and the historic building located to the rear of the

⁴ U.S. Department of the Interior National Park Service Cultural Resources Heritage Preservation Services

proposed new house and separated from other buildings. The new house is designed to set away from the historic building with the rear corner of the historic building the closest to the new house. The two-story building will have a shadowing effect of the historic building and visually minimize the size of the historic building. The design of this building should consider this relationship and provide a larger set back from the historic building. The orientation of the historic building facing Mustard Avenue is compatible with the original site. However, the historic building should be moved forward to set it apart from the setback of the houses on the street. The relocation and orientation provide the public with a view of the historic building and an understanding of the architecture that was present in Madrone Station.

Historic Building - Integrity:

Integrity is the ability of a property or convey its significance. The evaluation of integrity is something a subjective judgment, but it must always be grounded in an understanding of a property's physical features and how they relate to its significance. To evaluate integrity the National Register of Historic Places developed the criteria and recognized seven aspects or qualities that, in various combinations, define integrity.

SEVEN ASPECTS OF INTEGRITY

Location

Location is the place where the historic property was constructed or the place where the historic event occurred. The relationship between the property and its location is often important to understanding why the property was created or why something happened. The actual location of a historic property, complemented by its setting, is particularly important in recapturing the sense of historic events and persons. Except in rare cases, the relationship between a property and its historic associations is destroyed if the property is moved.

Research has identified the historic building maybe on the original location or it is likely that it has been relocated close to that location. Recent research believes the building is the former laundry located in Madrone Station. The amended plan relocates the building within the same site. The relocation appears necessary to preserve the historic building.

Design

Design is the combination of elements that create the form, plan, space, structure, and style of a property. It results from conscious decisions made during the original conception and planning of a property (or its significant alteration) and applies to activities as diverse as community planning, engineering, architecture, and landscape architecture. Design includes such elements as organization of space, proportion, scale, technology, ornamentation, and materials.

It appears the building has been altered very little and retains integrity of design. Rehabilitation of the building must follow the Secretary of the Interior's Standards for Rehabilitating historic buildings, to preserve the original design.

Setting

Setting is the physical environment of a historic property. Whereas location refers to the specific place where a property was built or an event occurred, setting refers to the character of the place in which the property played its historical role. It involves how, not just where, the property is situated and its relationship to surrounding features and open space. Setting often reflects the

basic physical conditions under which a property was built and the functions it was intended to serve. In addition, the way in which a property is positioned in its environment can reflect the designer's concept of nature and aesthetic preferences. The physical features that constitute the setting of a historic property can be either natural or manmade, including such elements as:

- *Topographic features (a gorge or the crest of a hill);*
- *Vegetation;*
- *Simple manmade features (paths or fences); and*
- *Relationships between buildings and other features or open space.*

These features and their relationships should be examined not only within the exact boundaries of the property, but also between the property and its surroundings. This is particularly important for districts.

The original setting in the small community of Madrone Station has been lost. This is the only building to remain. The orientation shows the relationship to the main road at that time and to the railroad tracks and station (not extant) The orientation remains to the same, only the road has been reduced to a side road and Monterey Road is on the other side of the railroad. The original setting for this historic building has been compromised by the loss of other buildings of the same era. The proposed houses will change the semi-rural setting that has surrounded the building for many years. However, the amended plan to relocate the historic building and incorporate it into the residential parcel will provide a setting that is close to the original location of Madrone Station and will allow the public a view of the small building. This is a different setting from the original and from the 70+ years it has been a residence.

Materials

Materials are the physical elements that were combined or deposited during a particular period of time and in a particular pattern or configuration to form a historic property. The choice and combination of materials reveal the preferences of those who created the property and indicate the availability of particular types of materials and technologies. Indigenous materials are often the focus of regional building traditions and thereby help define an area's sense of time and place.

A property must retain the key exterior materials dating from the period of its historic significance. If the property has been rehabilitated, the historic materials and significant features must have been preserved.

The historic building retains the majority of its exterior materials. Rehabilitation of the historic building must follow the Secretary of the Interior's Standards to preserve the historic materials. The subdivision and new homes will not diminish the historic materials of the building.

Workmanship

Workmanship is the physical evidence of the crafts of a particular culture or people during any given period in history or prehistory. It is the evidence of artisans' labor and skill in constructing or altering a building, structure, object, or site. Workmanship can apply to the property as a whole or to its individual components. It can be expressed in vernacular methods of construction and plain finishes or in highly sophisticated configurations and ornamental detailing. It can be based on common traditions or innovative period techniques.

Workmanship is important because it can furnish evidence of the technology of a craft, illustrate the aesthetic principles of a historic or prehistoric period, and reveal individual, local, regional, or national applications of both technological practices and aesthetic principles. Examples of workmanship in historic buildings include tooling, carving, painting, graining, turning, and joinery.

The original workmanship is evident in the construction of the historic building. Rehabilitation of the historic building must follow the Secretary of the Interior's Standards to preserve the workmanship. The planned subdivision and new homes do not impact the workmanship of the historic building.

Feeling

Feeling is a 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. For example, a rural historic district retaining original design, materials, workmanship, and setting will relate the feeling of agricultural life in the 19th century. A grouping of prehistoric petroglyphs, unmarred by graffiti and intrusions and located on its original isolated bluff, can evoke a sense of tribal spiritual life.

The feeling of the original setting in a small community c. 1870s has been lost with the removal of the other community buildings. For many years the subject historic building was in a setting of semi-rural agricultural land where the building changed to a residence. The Apple Tree subdivision and development of new houses creates a different feeling for the historic property, one of a suburban residential area. Because the original feeling of the 1870s community has not been present for a very long time, the new development is acceptable to preserve the historic building. However, it will be necessary to inform the public of its history in the new residential setting.

Association

Association is 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.

The association to the original user/owner or Madrone Station is lost.

The integrity of the historic setting was diminished when the settlement of Madrone Station was destroyed and again when the orchards and farms were developed with housing subdivisions. The amended plan for Lot 4 in the subdivision of 6 lots preserves the historic building, the plan shows the building on the same site. The location of the building the views of the historic building.

Conclusion: The Amended plan to relocate the historic building on Lot 4 within the 6 lot Apple Tree subdivision, and to provide rehabilitation consistent with the "Standards" achieves compliance with the Secretary of the Interior's Standards for the Treatment of Historic Property. The design of the new house on the lot should be studied to provide a greater separation from the historic building or reduce the height of the new house to a single story.

To mitigate the loss of the original setting, feeling, and association it is proposed that a substantial plaque be placed in the new sidewalk in front of the historic building to describe Madrone Station and the significance of this building, the only remaining building from that era.

Mitigation Schedule

All rehabilitation work, including the relocation must follow the Secretary of the Interior's Standards for Rehabilitating Historic Buildings and Preservation Briefs appropriate to the wood building. The following schedule identifies areas of particular concern.

Potential Adverse Change	Mitigation Measure	Purpose
1 Site and Setting	Move the historic building forward to at least the setback line on Mustard Ave.	Setting forward from the other residences will provide greater visibility. Historically, the building was at the sidewalk in Madrone Station.
2 Relocation	Experienced house mover to brace and prepare the building prior to lifting it and relocating to a new foundation	Preserve structure, windows and siding.
3 Cleaning Historic Wood	Use low pressure water and bristle brushes to clean the building. Follow Preservation Briefs #9 and #10,	Protect historic wood and allow new paint
4 Repairing Historic Wood Elements	Wood that is too deteriorated to be retained must be replaced with wood milled to match the historic wood elements	Preserve the historic features and design of the building
5 Repairing Historic Wood Window Sash	Wood sash shall be cleaned and repaired. Install new cords and missing hardware to be operable.	Preserve the historic windows
6 Roof Repair	Roof repairs must follow the historic shape and form of the roof structure. Roof covering must be wood or composition shingles.	Preserve the shape and appearance using wood or contemporary material shingles.
7 Loss of Setting	Provide a plaque, in the sidewalk or at the front of the building, to describe the history of the building and Madrone Station.	An educational plaque will provide context for the historic building and build public awareness of the local history.

Appendix

Department of the Interior, National Park Service Cultural Resources Branch, Preservation Briefs

- 1. Repair and Maintenance of Wood Windows**
- 2. Repair and Maintenance of Wood Siding**
- 3. Repair and Maintenance of Small Historic Buildings**



U.S. Department of the Interior
National Park Service
Cultural Resources
Heritage Preservation Services

Preservation Briefs: 9

The Repair of Historic Wooden Windows

John H. Myers

The windows on many historic buildings are an important aspect of the architectural character of those buildings. Their design, craftsmanship, or other qualities may make them worthy of preservation. This is self-evident for ornamental windows, but it can be equally true for warehouses or factories where the windows may be the most dominant visual element of an otherwise plain building (see figure 1). Evaluating the significance of these windows and planning for their repair or replacement can be a complex process involving both objective and subjective considerations. The *Secretary of the Interior's Standards for Rehabilitation*, and the accompanying guidelines, call for respecting the significance of original materials and features, repairing and retaining them wherever possible, and when necessary, replacing them in kind. This Brief is based on the issues of significance and repair which are implicit in the standards, but the primary emphasis is on the technical issues of planning for the repair of windows including evaluation of their physical condition, techniques of repair, and design considerations when replacement is necessary.

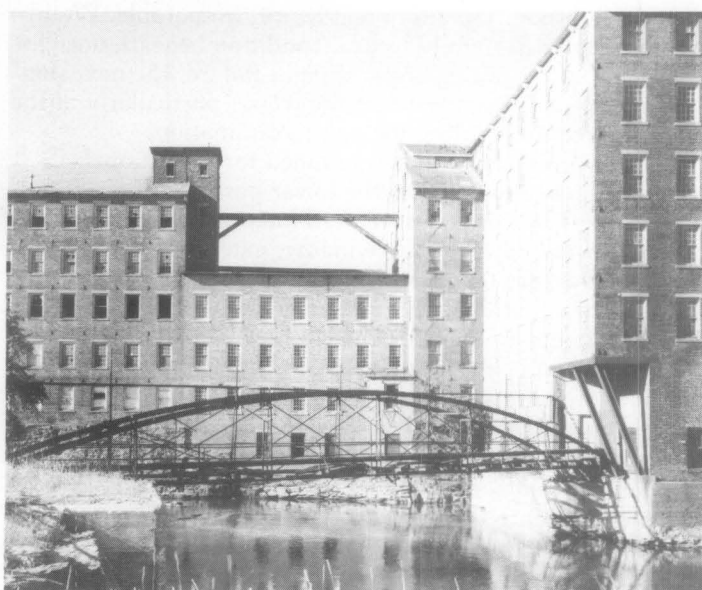


Figure 1. Windows are frequently important visual focal points, especially on simple facades such as this mill building. Replacement of the multi-pane windows here with larger panes could dramatically change the appearance of the building. The areas of missing windows convey the impression of such a change. Photo: John T. Lowe

Much of the technical section presents repair techniques as an instructional guide for the do-it-yourselfer. The information will be useful, however, for the architect, contractor, or developer on large-scale projects. It presents a methodology for approaching the evaluation and repair of existing windows, and considerations for replacement, from which the professional can develop alternatives and specify appropriate materials and procedures.

Architectural or Historical Significance

Evaluating the architectural or historical significance of windows is the first step in planning for window treatments, and a general understanding of the function and history of windows is vital to making a proper evaluation. As a part of this evaluation, one must consider four basic window functions: admitting light to the interior spaces, providing fresh air and ventilation to the interior, providing a visual link to the outside world, and enhancing the appearance of a building. No single factor can be disregarded when planning window treatments; for example, attempting to conserve energy by closing up or reducing the size of window openings may result in the use of *more* energy by increasing electric lighting loads and decreasing passive solar heat gains.

Historically, the first windows in early American houses were casement windows; that is, they were hinged at the side and opened outward. In the beginning of the eighteenth century single- and double-hung windows were introduced. Subsequently many styles of these vertical sliding sash windows have come to be associated with specific building periods or architectural styles, and this is an important consideration in determining the significance of windows, especially on a local or regional basis. Site-specific, regionally oriented architectural comparisons should be made to determine the significance of windows in question. Although such comparisons may focus on specific window types and their details, the ultimate determination of significance should be made within the context of the whole building, wherein the windows are one architectural element (see figure 2).

After all of the factors have been evaluated, *windows should be considered significant to a building if they:* 1) are original, 2) reflect the original design intent for the building, 3) reflect period or regional styles or building practices, 4) reflect changes to the building resulting from major periods or events, or 5) are examples of exceptional craftsmanship or design. Once this evaluation of significance has been completed, it is possible to pro-

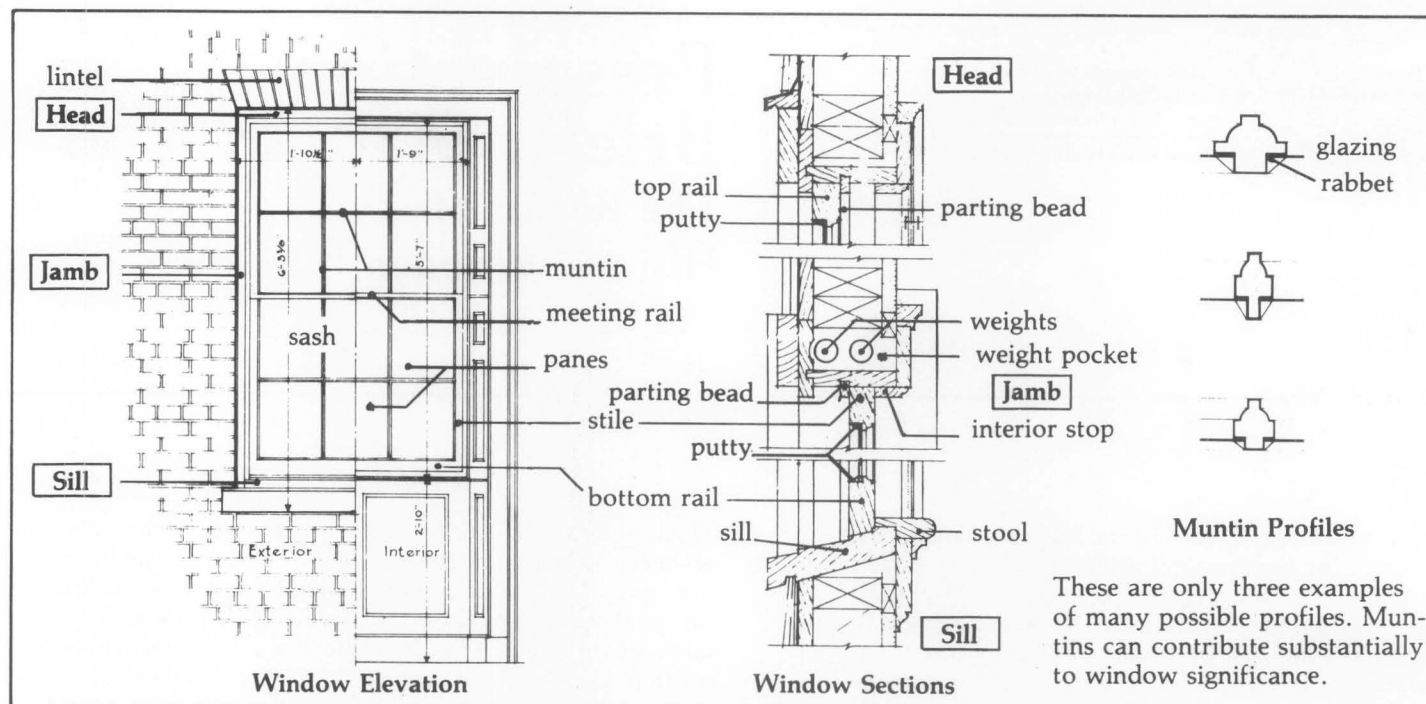


Figure 2. These drawings of window details identify major components, terminology, and installation details for a wooden double-hung window.

ceed with planning appropriate treatments, beginning with an investigation of the physical condition of the windows.

Physical Evaluation

The key to successful planning for window treatments is a careful evaluation of existing physical conditions on a unit-by-unit basis. A graphic or photographic system may be devised to record existing conditions and illustrate the scope of any necessary repairs. Another effective tool is a window schedule which lists all of the parts of each window unit. Spaces by each part allow notes on existing conditions and repair instructions. When such a schedule is completed, it indicates the precise tasks to be performed in the repair of each unit and becomes a part of the specifications. In any evaluation, one should note at a minimum, 1) window location, 2) condition of the paint, 3) condition of the frame and sill, 4) condition of the sash (rails, stiles and muntins), 5) glazing problems, 6) hardware, and 7) the overall condition of the window (excellent, fair, poor, and so forth).

Many factors such as poor design, moisture, vandalism, insect attack, and lack of maintenance can contribute to window deterioration, but moisture is the primary contributing factor in wooden window decay. All window units should be inspected to see if water is entering around the edges of the frame and, if so, the joints or seams should be caulked to eliminate this danger. The glazing putty should be checked for cracked, loose, or missing sections which allow water to saturate the wood, especially at the joints. The back putty on the interior side of the pane should also be inspected, because it creates a seal which prevents condensation from running down into the joinery. The sill should be examined to insure that it slopes downward away from the building and allows water to drain off. In addition, it may be advisable to cut a dripline along the underside of the sill. This almost invisible treatment will insure proper water run-off, particu-

larly if the bottom of the sill is flat. Any conditions, including poor original design, which permit water to come in contact with the wood or to puddle on the sill must be corrected as they contribute to deterioration of the window.

One clue to the location of areas of excessive moisture is the condition of the paint; therefore, each window should be examined for areas of paint failure. Since excessive moisture is detrimental to the paint bond, areas of paint blistering, cracking, flaking, and peeling usually identify points of water penetration, moisture saturation, and potential deterioration. Failure of the paint should not, however, be mistakenly interpreted as a sign that the wood is in poor condition and hence, irreparable. Wood is frequently in sound physical condition beneath unsightly paint. After noting areas of paint failure, the next step is to inspect the condition of the wood, particularly at the points identified during the paint examination.

Each window should be examined for operational soundness beginning with the lower portions of the frame and sash. Exterior rainwater and interior condensation can flow downward along the window, entering and collecting at points where the flow is blocked. The sill, joints between the sill and jamb, corners of the bottom rails and muntin joints are typical points where water collects and deterioration begins (see figure 3). The operation of the window (continuous opening and closing over the years and seasonal temperature changes) weakens the joints, causing movement and slight separation. This process makes the joints more vulnerable to water which is readily absorbed into the end-grain of the wood. If severe deterioration exists in these areas, it will usually be apparent on visual inspection, but other less severely deteriorated areas of the wood may be tested by two traditional methods using a small ice pick.

An ice pick or an awl may be used to test wood for soundness. The technique is simply to jab the pick into a wetted wood surface at an angle and pry up a small sec-



Figure 3. Deterioration of poorly maintained windows usually begins on horizontal surfaces and at joints where water can collect and saturate the wood. The problem areas are clearly indicated by paint failure due to moisture. Photo: Baird M. Smith, AIA

tion of the wood. Sound wood will separate in long fibrous splinters, but decayed wood will lift up in short irregular pieces due to the breakdown of fiber strength.

Another method of testing for soundness consists of pushing a sharp object into the wood, perpendicular to the surface. If deterioration has begun from the hidden side of a member and the core is badly decayed, the visible surface may appear to be sound wood. Pressure on the probe can force it through an apparently sound skin to penetrate deeply into decayed wood. This technique is especially useful for checking sills where visual access to the underside is restricted.

Following the inspection and analysis of the results, the scope of the necessary repairs will be evident and a plan for the rehabilitation can be formulated. Generally the actions necessary to return a window to "like new" condition will fall into three broad categories: 1) routine maintenance procedures, 2) structural stabilization, and 3) parts replacement. These categories will be discussed in the following sections and will be referred to respectively as Repair Class I, Repair Class II, and Repair Class III. Each successive repair class represents an increasing level of difficulty, expense, and work time. Note that most of the points mentioned in Repair Class I are routine maintenance items and should be provided in a regular maintenance program for any building. The neglect of these routine items can contribute to many common window problems.

Before undertaking any of the repairs mentioned in the following sections all sources of moisture penetration should be identified and eliminated, and all existing decay fungi destroyed in order to arrest the deterioration process. Many commercially available fungicides and wood preservatives are toxic, so it is extremely important to follow the manufacturer's recommendations for application, and store all chemical materials away from children and animals. After fungicidal and preservative treatment the windows may be stabilized, retained, and restored with every expectation for a long service life.

Repair Class I: Routine Maintenance

Repairs to wooden windows are usually labor intensive and relatively uncomplicated. On small scale projects this

allows the do-it-yourselfer to save money by repairing all or part of the windows. On larger projects it presents the opportunity for time and money which might otherwise be spent on the removal and replacement of existing windows, to be spent on repairs, subsequently saving all or part of the material cost of new window units. Regardless of the actual costs, or who performs the work, the evaluation process described earlier will provide the knowledge from which to specify an appropriate work program, establish the work element priorities, and identify the level of skill needed by the labor force.

The routine maintenance required to upgrade a window to "like new" condition normally includes the following steps: 1) some degree of interior and exterior paint removal, 2) removal and repair of sash (including reglazing where necessary), 3) repairs to the frame, 4) weatherstripping and reinstallation of the sash, and 5) repainting. These operations are illustrated for a typical double-hung wooden window (see figures 4a-f), but they may be adapted to other window types and styles as applicable.

Historic windows have usually acquired many layers of paint over time. Removal of excess layers or peeling and flaking paint will facilitate operation of the window and restore the clarity of the original detailing. Some degree of paint removal is also necessary as a first step in the proper surface preparation for subsequent refinishing (if paint color analysis is desired, it should be conducted prior to the onset of the paint removal). There are several safe and effective techniques for removing paint from wood, depending on the amount of paint to be removed. Several techniques such as scraping, chemical stripping, and the use of a hot air gun are discussed in "Preservation Briefs: 10 Paint Removal from Historic Woodwork" (see Additional Reading section at end).

Paint removal should begin on the interior frames, being careful to remove the paint from the interior stop and the parting bead, particularly along the seam where these stops meet the jamb. This can be accomplished by running a utility knife along the length of the seam, breaking the paint bond. It will then be much easier to remove the stop, the parting bead and the sash. The interior stop may be initially loosened from the sash side to avoid visible scarring of the wood and then gradually pried loose using a pair of putty knives, working up and down the stop in small increments (see figure 4b). With the stop removed, the lower or interior sash may be withdrawn. The sash cords should be detached from the sides of the sash and their ends may be pinned with a nail or tied in a knot to prevent them from falling into the weight pocket.

Removal of the upper sash on double-hung units is similar but the parting bead which holds it in place is set into a groove in the center of the stile and is thinner and more delicate than the interior stop. After removing any paint along the seam, the parting bead should be carefully pried out and worked free in the same manner as the interior stop. The upper sash can be removed in the same manner as the lower one and both sash taken to a convenient work area (in order to remove the sash the interior stop and parting bead need only be removed from one side of the window). Window openings can be covered with polyethylene sheets or plywood sheathing while the sash are out for repair.

The sash can be stripped of paint using appropriate techniques, but if any heat treatment is used (see figure 4c), the glass should be removed or protected from the sudden temperature change which can cause breakage. An



Figure 4a. The following series of photographs of the repair of a historic double-hung window use a unit which is structurally sound but has many layers of paint, some cracked and missing putty, slight separation at the joints, broken sash cords, and one cracked pane. Photo: John H. Myers



Figure 4b. After removing paint from the seam between the interior stop and the jamb, the stop can be pried out and gradually worked loose using a pair of putty knives as shown. To avoid visible scarring of the wood, the sash can be raised and the stop pried loose initially from the outer side. Photo: John H. Myers

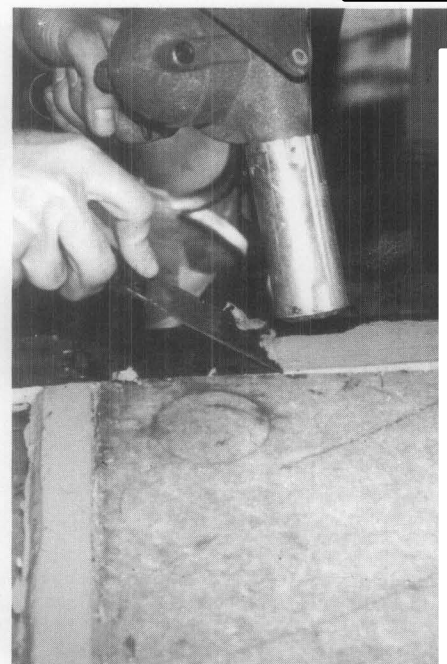


Figure 4c. Sash can be removed and repaired in convenient work area. Paint is being removed from this sash with a hot air gun while an asbestos sheet protects the glass from sudden temperature change. Photo: John H. Myers

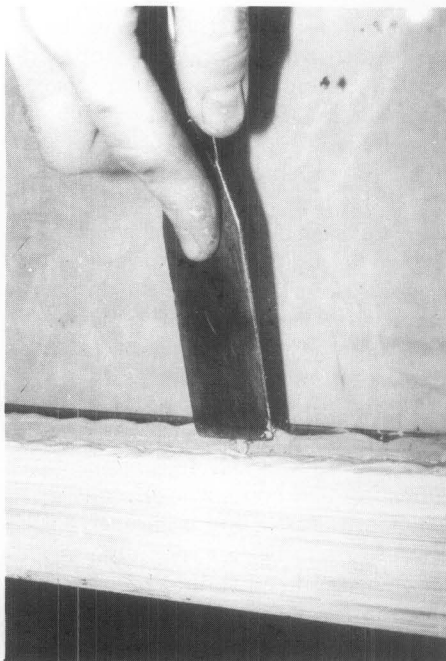


Figure 4d. Reglazing or replacement of the putty requires that the existing putty be removed manually, the glazing points be extracted, the glass removed, and the back putty scraped out. To reglaze, a bed of putty is laid around the perimeter of the rabbet, the pane is pressed into place, glazing points are inserted to hold the pane (shown), and a final seal of putty is beveled around the edge of the glass. Photo: John H. Myers



Figure 4e. A common repair is the replacement of broken sash cords with new cords (shown) or with chains. The weight pocket is often accessible through a removable plate in the jamb, or by removing the interior trim. Photo: John H. Myers



Figure 4f. Following the relatively simple repair the window is weathertight, like new in appearance, and serviceable for many years to come. Both the historic material and the detail and craftsmanship of this original window have been preserved. Photo: John H. Myers

overlay of aluminum foil on gypsum board or asbestos can protect the glass from such rapid temperature change. It is important to protect the glass because it may be historic and often adds character to the window. Deteriorated putty should be removed manually, taking care not to damage the wood along the rabbet. If the glass is to be removed, the glazing points which hold the glass in place can be extracted and the panes numbered and removed for cleaning and reuse in the same openings. With the glass panes out, the remaining putty can be removed and the sash can be sanded, patched, and primed with a preservative primer. Hardened putty in the rabbets may be softened by heating with a soldering iron at the point of removal. Putty remaining on the glass may be softened by soaking the panes in linseed oil, and then removed with less risk of breaking the glass. Before reinstalling the glass, a bead of glazing compound or linseed oil putty should be laid around the rabbet to cushion and seal the glass. Glazing compound should only be used on wood which has been brushed with linseed oil and primed with an oil based primer or paint. The pane is then pressed into place and the glazing points are pushed into the wood around the perimeter of the pane (see figure 4d). The final glazing compound or putty is applied and beveled to complete the seal. The sash can be refinished as desired on the inside and painted on the outside as soon as a "skin" has formed on the putty, usually in 2 or 3 days. Exterior paint should cover the beveled glazing compound or putty and lap over onto the glass slightly to complete a weathertight seal. After the proper curing times have elapsed for paint and putty, the sash will be ready for reinstallation.

While the sash are out of the frame, the condition of the wood in the jamb and sill can be evaluated. Repair and refinishing of the frame may proceed concurrently with repairs to the sash, taking advantage of the curing times for the paints and putty used on the sash. One of the most common work items is the replacement of the sash cords with new rope cords or with chains (see figure 4e). The weight pocket is frequently accessible through a door on the face of the frame near the sill, but if no door exists, the trim on the interior face may be removed for access. Sash weights may be increased for easier window operation by elderly or handicapped persons. Additional repairs to the frame and sash may include consolidation or replacement of deteriorated wood. Techniques for these repairs are discussed in the following sections.

The operations just discussed summarize the efforts necessary to restore a window with minor deterioration to "like new" condition (see figure 4f). The techniques can be applied by an unskilled person with minimal training and experience. To demonstrate the practicality of this approach, and photograph it, a Technical Preservation Services staff member repaired a wooden double-hung, two over two window which had been in service over ninety years. The wood was structurally sound but the window had one broken pane, many layers of paint, broken sash cords and inadequate, worn-out weatherstripping. The staff member found that the frame could be stripped of paint and the sash removed quite easily. Paint, putty and glass removal required about one hour for each sash, and the reglazing of both sash was accomplished in about one hour. Weatherstripping of the sash and frame, replacement of the sash cords and reinstallation of the sash, parting bead, and stop required an hour and a half. These times refer only to individual operations; the entire proc-

ess took several days due to the drying and curing times for putty, primer, and paint, however, work on other window units could have been in progress during these lag times.

Repair Class II: Stabilization

The preceding description of a window repair job focused on a unit which was operationally sound. Many windows will show some additional degree of physical deterioration, especially in the vulnerable areas mentioned earlier, but even badly damaged windows can be repaired using simple processes. Partially decayed wood can be water-proofed, patched, built-up, or consolidated and then painted to achieve a sound condition, good appearance, and greatly extended life. Three techniques for repairing partially decayed or weathered wood are discussed in this section, and all three can be accomplished using products available at most hardware stores.

One established technique for repairing wood which is split, checked or shows signs of rot, is to: 1) dry the wood, 2) treat decayed areas with a fungicide, 3) water-proof with two or three applications of boiled linseed oil (applications every 24 hours), 4) fill cracks and holes with putty, and 5) after a "skin" forms on the putty, paint the surface. Care should be taken with the use of fungicide which is toxic. Follow the manufacturers' directions and use only on areas which will be painted. When using any technique of building up or patching a flat surface, the finished surface should be sloped slightly to carry water away from the window and not allow it to puddle. Caulking of the joints between the sill and the jamb will help reduce further water penetration.

When sills or other members exhibit surface weathering they may also be built-up using wood putties or home-made mixtures such as sawdust and resorcinol glue, or whitening and varnish. These mixtures can be built up in successive layers, then sanded, primed, and painted. The same caution about proper slope for flat surfaces applies to this technique.

Wood may also be strengthened and stabilized by consolidation, using semi-rigid epoxies which saturate the porous decayed wood and then harden. The surface of the consolidated wood can then be filled with a semi-rigid epoxy patching compound, sanded and painted (see figure 5). Epoxy patching compounds can be used to build up



Figure 5. This illustrates a two-part epoxy patching compound used to fill the surface of a weathered sill and rebuild the missing edge. When the epoxy cures, it can be sanded smooth and painted to achieve a durable and waterproof repair. Photo: John H. Myers

missing sections or decayed ends of members. Profiles can be duplicated using hand molds, which are created by pressing a ball of patching compound over a sound section of the profile which has been rubbed with butcher's wax. This can be a very efficient technique where there are many typical repairs to be done. Technical Preservation Services has published *Epoxy for Wood Repairs in Historic Buildings* (see Additional Reading section at end), which discusses the theory and techniques of epoxy repairs. The process has been widely used and proven in marine applications; and proprietary products are available at hardware and marine supply stores. Although epoxy materials may be comparatively expensive, they hold the promise of being among the most durable and long lasting materials available for wood repair.

Any of the three techniques discussed can stabilize and restore the appearance of the window unit. There are times, however, when the degree of deterioration is so advanced that stabilization is impractical, and the only way to retain some of the original fabric is to replace damaged parts.

Repair Class III: Splices and Parts Replacement

When parts of the frame or sash are so badly deteriorated that they cannot be stabilized there are methods which permit the retention of some of the existing or original fabric. These methods involve replacing the deteriorated parts with new matching pieces, or splicing new wood into existing members. The techniques require more skill and are more expensive than any of the previously discussed alternatives. It is necessary to remove the sash and/or the affected parts of the frame and have a carpenter or woodworking mill reproduce the damaged or missing parts. Most millwork firms can duplicate parts, such as muntins, bottom rails, or sills, which can then be incorporated into the existing window, but it may be necessary to shop around because there are several factors controlling the practicality of this approach. Some woodworking mills do not like to repair old sash because nails or other foreign objects in the sash can damage expensive knives (which cost far more than their profits on small repair jobs); others do not have cutting knives to duplicate muntin profiles. Some firms prefer to concentrate on larger jobs with more profit potential, and some may not have a craftsman who can duplicate the parts. A little searching should locate a firm which will do the job, and at a reasonable price. If such a firm does not exist locally, there are firms which undertake this kind of repair and ship nationwide. It is possible, however, for the advanced do-it-yourselfer or craftsman with a table saw to duplicate moulding profiles using techniques discussed by Gordie Whittington in "Simplified Methods for Reproducing Wood Mouldings," *Bulletin of the Association for Preservation Technology*, Vol. III, No. 4, 1971, or illustrated more recently in *The Old House*, Time-Life Books, Alexandria, Virginia, 1979.

The repairs discussed in this section involve window frames which may be in very deteriorated condition, possibly requiring removal; therefore, caution is in order. The actual construction of wooden window frames and sash is not complicated. Pegged mortise and tenon units can be disassembled easily, if the units are out of the building. The installation or connection of some frames to the surrounding structure, especially masonry walls, can complicate the work immeasurably, and may even require

dismantling of the wall. It may be useful, therefore, to take the following approach to frame repair: 1) conduct regular maintenance of sound frames to achieve the longest life possible, 2) make necessary repairs in place wherever possible, using stabilization and splicing techniques, and 3) if removal is necessary, thoroughly investigate the structural detailing and seek appropriate professional consultation.

Another alternative may be considered if parts replacement is required, and that is sash replacement. If extensive replacement of parts is necessary and the job becomes prohibitively expensive it may be more practical to purchase new sash which can be installed into the existing frames. Such sash are available as exact custom reproductions, reasonable facsimiles (custom windows with similar profiles), and contemporary wooden sash which are similar in appearance. There are companies which still manufacture high quality wooden sash which would duplicate most historic sash. A few calls to local building suppliers may provide a source of appropriate replacement sash, but if not, check with local historical associations, the state historic preservation office, or preservation related magazines and supply catalogs for information.

If a rehabilitation project has a large number of windows such as a commercial building or an industrial complex, there may be less of a problem arriving at a solution. Once the evaluation of the windows is completed and the scope of the work is known, there may be a potential economy of scale. Woodworking mills may be interested in the work from a large project; new sash in volume may be considerably less expensive per unit; crews can be assembled and trained on site to perform all of the window repairs; and a few extensive repairs can be absorbed (without undue burden) into the total budget for a large number of sound windows. While it may be expensive for the average historic home owner to pay seventy dollars or more for a mill to grind a custom knife to duplicate four or five bad muntins, that cost becomes negligible on large commercial projects which may have several hundred windows.

Most windows should not require the extensive repairs discussed in this section. The ones which do are usually in buildings which have been abandoned for long periods or have totally lacked maintenance for years. It is necessary to thoroughly investigate the alternatives for windows which do require extensive repairs to arrive at a solution which retains historic significance and is also economical feasible. Even for projects requiring repairs identified in this section, if the percentage of parts replacement per window is low, or the number of windows requiring repair is small, repair can still be a cost effective solution.

Weatherization

A window which is repaired should be made as energy efficient as possible by the use of appropriate weatherstripping to reduce air infiltration. A wide variety of products are available to assist in this task. Felt may be fastened to the top, bottom, and meeting rails, but may have the disadvantage of absorbing and holding moisture particularly at the bottom rail. Rolled vinyl strips may also be tacked into place in appropriate locations to reduce infiltration. Metal strips or new plastic spring strips may be used on the rails and, if space permits, in

the channels between the sash and jamb. Weatherstripping is a historic treatment, but old weatherstripping (felt) is not likely to perform very satisfactorily. Appropriate contemporary weatherstripping should be considered an integral part of the repair process for windows. The use of sash locks installed on the meeting rail will insure that the sash are kept tightly closed so that the weatherstripping will function more effectively to reduce infiltration. Although such locks will not always be historically accurate, they will usually be viewed as an acceptable contemporary modification in the interest of improved thermal performance.

Many styles of storm windows are available to improve the thermal performance of existing windows. The use of exterior storm windows should be investigated whenever feasible because they are thermally efficient, cost-effective, reversible, and allow the retention of original windows (see "Preservation Briefs: 3"). Storm window frames may be made of wood, aluminum, vinyl, or plastic; however, the use of unfinished aluminum storms should be avoided. The visual impact of storms may be minimized by selecting colors which match existing trim color. Arched top storms are available for windows with special shapes. Although interior storm windows appear to offer an attractive option for achieving double glazing with minimal visual impact, the potential for damaging condensation problems must be addressed. Moisture which becomes trapped between the layers of glazing can condense on the colder, outer prime window, potentially leading to deterioration. The correct approach to using interior storms is to create a seal on the interior storm while allowing some ventilation around the prime window. In actual practice, the creation of such a durable, airtight seal is difficult.

Window Replacement

Although the retention of original or existing windows is always desirable and this **Brief** is intended to encourage that goal, there is a point when the condition of a window may clearly indicate replacement. The decision process for selecting replacement windows should *not* begin with a survey of contemporary window products which are available as replacements, but should begin with a look at the windows which are being replaced. Attempt to understand the contribution of the window(s) to the appearance of the facade including: 1) the pattern of the openings and their size; 2) proportions of the frame and sash; 3) configuration of window panes; 4) muntin profiles; 5) type of wood; 6) paint color; 7) characteristics of the glass; and 8) associated details such as arched tops, hoods, or other decorative elements. Develop an understanding of how the window reflects the period, style, or regional characteristics of the building, or represents technological development.

Armed with an awareness of the significance of the existing window, begin to search for a replacement which retains as much of the character of the historic window as possible. There are many sources of suitable new windows. Continue looking until an acceptable replacement can be found. Check building supply firms, local wood-working mills, carpenters, preservation oriented magazines, or catalogs or suppliers of old building materials, for product information. Local historical associations and state historic preservation offices may be good sources of

information on products which have been used successfully in preservation projects.

Consider energy efficiency as one of the factors for replacements, but do not let it dominate the issue. Energy conservation is no excuse for the wholesale destruction of historic windows which can be made thermally efficient by historically and aesthetically acceptable means. In fact, a historic wooden window with a high quality storm window added should thermally outperform a new double-glazed metal window which does not have thermal breaks (insulation between the inner and outer frames intended to break the path of heat flow). This occurs because the wood has far better insulating value than the metal, and in addition many historic windows have high ratios of wood to glass, thus reducing the area of highest heat transfer. One measure of heat transfer is the U-value, the number of Btu's per hour transferred through a square foot of material. When comparing thermal performance, the lower the U-value the better the performance. According to *ASHRAE 1977 Fundamentals*, the U-values for single glazed wooden windows range from 0.88 to 0.99. The addition of a storm window should reduce these figures to a range of 0.44 to 0.49. A non-thermal break, double-glazed metal window has a U-value of about 0.6.

Conclusion

Technical Preservation Services recommends the retention and repair of original windows whenever possible. We believe that the repair and weatherization of existing wooden windows is more practical than most people realize, and that many windows are unfortunately replaced because of a lack of awareness of techniques for evaluation, repair, and weatherization. Wooden windows which are repaired and properly maintained will have greatly extended service lives while contributing to the historic character of the building. Thus, an important element of a building's significance will have been preserved for the future.

Additional Reading

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- Morrison, Hugh. *Early American Architecture*. New York: Oxford University Press, 1952.
- Phillips, Morgan, and Selwyn, Judith. *Epoxies for Wood Repairs in Historic Buildings*. Washington, DC: Technical Preservation Services, U.S. Department of the Interior (Government Printing Office, Stock No. 024-016-00095-1), 1978.
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10 PRESERVATION BRIEFS



Exterior Paint Problems on Historic Woodwork

Kay D. Weeks and David W. Look, AIA



U.S. Department of the Interior
National Park Service
Cultural Resources
Heritage Preservation Services

A cautionary approach to paint removal is included in the guidelines to "The Secretary of the Interior Standards for Historic Preservation Projects." Removing paints down to bare wood surfaces using harsh methods can permanently damage those surfaces; therefore such methods are not recommended. Also, total removal obliterates evidence of the historical paints and their sequence and architectural context.

This Brief expands on that advice for the architect, building manager, contractor, or homeowner by identifying and describing common types of paint surface conditions and failures, then recommending appropriate treatments for preparing exterior wood surfaces for repainting¹ to assure the best adhesion and greatest durability of the new paint. Although the Brief focuses on responsible methods of "paint removal," several paint surface conditions will be described which do not require any paint removal, and still others which can be successfully handled by limited paint removal. In all cases, the information is intended to address the concerns related to *exterior wood*. It will also be generally assumed that, because houses built before 1950 involve one or more layers of lead-base paint,² the majority of conditions warranting paint removal will mean dealing with this toxic substance along with the dangers of the paint removal tools and chemical strippers themselves.

Purposes of Exterior Paint

Paint³ applied to exterior wood must withstand yearly extremes of both temperature and humidity. While never expected to be more than a temporary physical shield—requiring re-application every 5-8 years—its importance should not be minimized. Because one of the main causes of wood deterioration is moisture penetration, a primary purpose for painting wood is to exclude such moisture, thereby slowing deterioration not only of a building's exterior siding and decorative features but, ultimately, its underlying structural members. Another important purpose for painting wood is, of course, to define and accent architectural features and to improve appearance.

Treating Paint Problems in Historic Buildings

Exterior paint is constantly deteriorating through the processes of weathering, but in a program of regular maintenance—assuming all other building systems are functioning properly—surfaces can be cleaned, lightly scraped, and hand sanded in preparation for a new finish coat. Unfortunately, these are ideal conditions. More often, complex maintenance problems are inherited by owners of

historic buildings, including areas of paint that have failed⁴ beyond the point of mere cleaning, scraping, and hand sanding (although much so-called "paint failure" is attributable to interior or exterior moisture problems or surface preparation and application mistakes with previous coats).

Although paint problems are by no means unique to historic buildings, treating multiple layers of hardened, brittle paint on complex, ornamental—and possibly fragile—exterior wood surfaces necessarily requires an extremely cautious approach (see figure 1). In the case of recent construction, this level of concern is not needed because the wood is generally less detailed and, in addition, retention of the sequence of paint layers as a partial record of the building's history is not an issue.

When historic buildings are involved, however, a special set of problems arises—varying in complexity depending upon their age, architectural style, historical importance, and physical soundness of the wood—which must be carefully evaluated so that decisions can be made that are sensitive to the longevity of the resource.

Justification for Paint Removal

At the outset of this Brief, it must be emphasized that removing paint from historic buildings—with the exception of cleaning, light scraping, and hand sanding as part of routine maintenance—should be avoided unless absolutely essential. *Once conditions warranting removal have*

¹ General paint type recommendations will be made, but paint color recommendations are beyond the scope of this Brief.

² Douglas R. Shier and William Hall, *Analysis of Housing Data Collected in a Lead-Based Paint Survey in Pittsburgh, Pennsylvania, Part 1*, National Bureau of Standards, Inter-Report 77-1250, May 1977.

³ Any pigmented liquid, liquefiable, or mastic composition designed for application to a substrate in a thin layer which is converted to an opaque solid film after application. *Paint and Coatings Dictionary*, 1978. Federation of Societies for Coatings and Technology.

⁴ For purposes of the Brief, this includes any area of painted exterior woodwork displaying signs of peeling, cracking, or alligatoring to bare wood. See descriptions of these and other paint surface conditions as well as recommended treatments on pp. 5-10.

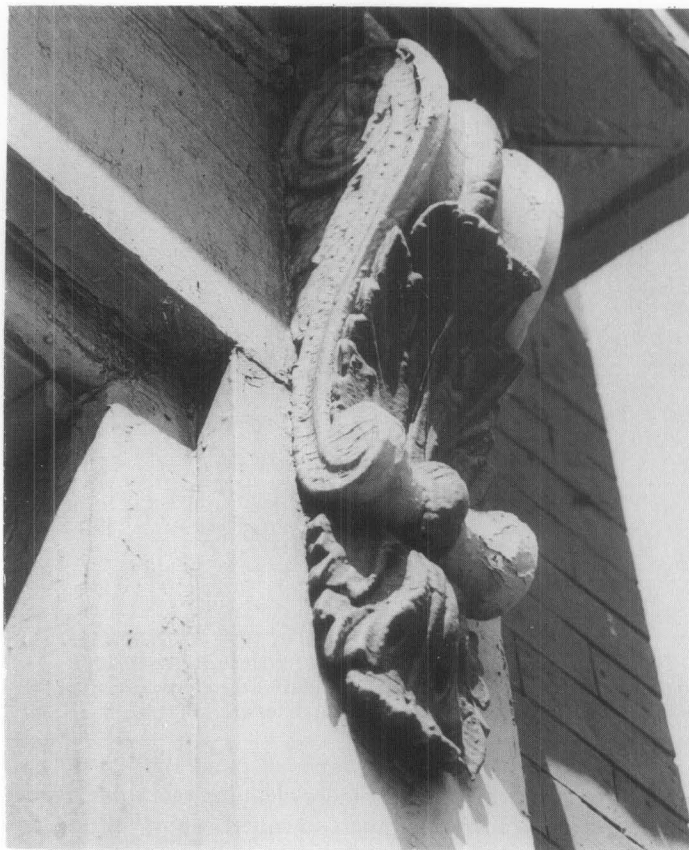


Fig. 1 Excessive paint build-up on architectural details such as this ornamental bracket does not in itself justify total paint removal. If paint is cracked and peeling down to bare wood, however, it should be removed using the gentlest means possible. Photo: David W. Look, AIA.

been identified, the general approach should be to remove paint to the next sound layer using the gentlest means possible, then to repaint (see figure 2). Practically speaking as well, paint can adhere just as effectively to existing paint as to bare wood, providing the previous coats of paint are also adhering uniformly and tightly to the wood and the surface is properly prepared for repainting—cleaned of dirt and chalk and dulled by sanding. But, if painted exterior wood surfaces display continuous patterns of deep cracks or if they are extensively blistering and peeling so that bare wood is visible, then the old paint should be completely removed before repainting. The only other justification for removing all previous layers of paint is if doors, shutters, or windows have literally been “painted shut,” or if new wood is being pieced-in adjacent to old painted wood and a smooth transition is desired (see figure 3).

Paint Removal Precautions

Because paint removal is a difficult and painstaking process, a number of costly, regrettable experiences have occurred—and continue to occur—for both the historic building and the building owner. Historic buildings have been set on fire with blow torches; wood irreversibly scarred by sandblasting or by harsh mechanical devices such as rotary sanders and rotary wire strippers; and layers of historic paint inadvertently and unnecessarily removed. In addition, property owners, using techniques that substitute speed for safety, have been injured by toxic lead vapors or dust from the paint they were trying to



Fig. 2 A traditionally painted bay window has been stripped to bare wood, then varnished. In addition to being historically inaccurate, the varnish will break down faster as a result of the sun's ultraviolet rays than would primer and finish coats of paint. Photo: David W. Look, AIA.

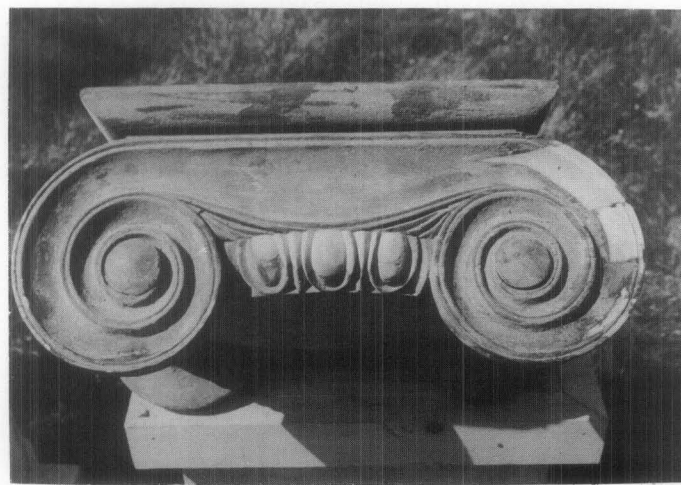


Fig. 3 If damage to parts of a wooden element is severe, new sections of wood will need to be pieced-in. When such piecing is required, paint on the adjacent woodwork should be removed so that the old and new woods will make a smooth profile when joined. After repainting, the repair should be virtually impossible to detect. Photo: Morgan W. Phillips.

remove or by misuse of the paint removers themselves.

Owners of historic properties considering paint removal should also be aware of the amount of time and labor involved. While removing damaged layers of paint from a door or porch railing might be readily accomplished within a reasonable period of time by one or two people, removing paint from larger areas of a building can, with-

out professional assistance, easily become unmanageable and produce less than satisfactory results. The amount of work involved in any paint removal project must therefore be analyzed on a case-by-case basis. Hiring qualified professionals will often be a cost-effective decision due to the expense of materials, the special equipment required, and the amount of time involved. Further, paint removal companies experienced in dealing with the inherent health and safety dangers of paint removal should have purchased such protective devices as are needed to mitigate any dangers and should also be aware of State or local environmental and/or health regulations for hazardous waste disposal.

All in all, paint removal is a messy, expensive, and potentially dangerous aspect of rehabilitating or restoring historic buildings and should not be undertaken without careful thought concerning first, its necessity, and second, which of the available recommended methods is the safest and most appropriate for the job at hand.

Repainting Historic Buildings for Cosmetic Reasons

If existing exterior paint on wood siding, eaves, window sills, sash, and shutters, doors, and decorative features shows no evidence of paint deterioration such as chalking, blistering, peeling, or cracking, then there is no *physical reason* to repaint, much less remove paint! Nor is color fading, of itself, sufficient justification to repaint a historic building.

The decision to repaint may not be based altogether on paint failure. Where there is a new owner, or even where ownership has remained constant through the years, taste in colors often changes. Therefore, if repainting is primarily to alter a building's primary and accent colors, a technical factor of paint accumulation should be taken into consideration. When paint builds up to a thickness of approximately 1/16" (approximately 16-30 layers), one or more extra coats of paint may be enough to trigger cracking and peeling in limited or even widespread areas of the building's surface. This results because excessively thick paint is less able to withstand the shrinkage or pull of an additional coat as it dries and is also less able to tolerate thermal stresses. Thick paint invariably fails at the weakest point of adhesion—the oldest layers next to the wood. Cracking and peeling follow. Therefore, if there are no signs of paint failure, it may be somewhat risky to add still another layer of unneeded paint simply for color's sake (extreme changes in color may also require more than one coat to provide proper hiding power and full color). When paint appears to be nearing the critical thickness, a change of accent colors (that is, just to limited portions of the trim) might be an acceptable compromise without chancing cracking and peeling of paint on wooden siding.

If the decision to repaint is nonetheless made, the "new" color or colors should, at a minimum, be appropriate to the style and setting of the building. On the other hand, where the intent is to restore or accurately reproduce the colors originally used or those from a significant period in the building's evolution, they should be based on the results of a paint analysis.⁵

Identification of Exterior Paint Surface Conditions/Recommended Treatments

It is assumed that a preliminary check will already have been made to determine, first, that the painted exterior surfaces are indeed wood—and not stucco, metal, or other wood substitutes—and second, that the wood has not decayed so that repainting would be superfluous. For example, if any area of bare wood such as window sills has been exposed for a long period of time to standing water, wood rot is a strong possibility (see figure 4). Repair or replacement of deteriorated wood should take place before repainting. After these two basic issues have been resolved, the surface condition identification process may commence.

The historic building will undoubtedly exhibit a variety of exterior paint surface conditions. For example, paint on the wooden siding and doors may be adhering firmly; paint on the eaves peeling; and paint on the porch balusters and window sills cracking and alligatoring. The accurate identification of each paint problem is therefore the first step in planning an appropriate overall solution.

Paint surface conditions can be grouped according to their relative severity: CLASS I conditions include minor blemishes or dirt collection and generally require *no* paint removal; CLASS II conditions include failure of the top layer or layers of paint and generally require *limited* paint removal; and CLASS III conditions include substantial or multiple-layer failure and generally require *total* paint removal. It is precisely because conditions will vary at different points on the building that a careful inspection is critical. Each item of painted exterior woodwork (i.e., siding, doors, windows, eaves, shutters, and decorative elements) should be examined early in the planning phase and surface conditions noted.

CLASS I Exterior Surface Conditions Generally Requiring No Paint Removal

- Dirt, Soot, Pollution, Cobwebs, Insect Cocoons, etc.

Cause of Condition

Environmental "grime" or organic matter that tends to cling to painted exterior surfaces and, in particular, protected surfaces such as eaves, do not constitute a paint problem unless painted over rather than removed prior to repainting. If not removed, the surface deposits can be a barrier to proper adhesion and cause peeling.

Recommended Treatment

Most surface matter can be loosened by a strong, direct stream of water from the nozzle of a garden hose. Stubborn dirt and soot will need to be scrubbed off using ½ cup of household detergent in a gallon of water with a medium soft bristle brush. The cleaned surface should then be rinsed thoroughly, and permitted to dry before further inspection to determine if repainting is necessary. Quite often, cleaning provides a satisfactory enough result to postpone repainting.

⁵ See the Reading List for paint research and documentation information. See also *The Secretary of the Interior's Standards for Historic Preservation Projects with Guidelines for Applying the Standards* for recommended approaches on paints and finishes within various types of project work treatments.

- **Mildew**

Cause of Condition

Mildew is caused by fungi feeding on nutrients contained in the paint film or on dirt adhering to any surface. Because moisture is the single most important factor in its growth, mildew tends to thrive in areas where dampness and lack of sunshine are problems such as window sills, under eaves, around gutters and downspouts, on the north side of buildings, or in shaded areas near shrubbery. It may sometimes be difficult to distinguish mildew from dirt, but there is a simple test to differentiate: if a drop of household bleach is placed on the suspected surface, mildew will immediately turn white whereas dirt will continue to look like dirt.

Recommended Treatment

Because mildew can only exist in shady, warm, moist areas, attention should be given to altering the environment that is conducive to fungal growth. The area in question may be shaded by trees which need to be pruned back to allow sunlight to strike the building; or may lack rain gutters or proper drainage at the base of the building. If the shady or moist conditions can be altered, the mildew is less likely to reappear. A recommend solution for removing mildew consists of one cup non-ammoniated detergent, one quart household bleach, and one gallon water. When the surface is scrubbed with this solution using a medium soft brush, the mildew should disappear; however, for particularly stubborn spots, an additional quart of bleach may be added. After the area is mildew-free, it should then be rinsed with a direct stream of water from the nozzle of a garden hose, and permitted to dry thoroughly. When repainting, specially formulated "mildew-resistant" primer and finish coats should be used.

- **Excessive Chalking**

Cause of Condition

Chalking—or powdering of the paint surface—is caused by the gradual disintegration of the resin in the paint film. (The amount of chalking is determined both by the formulation of the paint and the amount of ultraviolet light to which the paint is exposed.) In moderation, chalking is the ideal way for a paint to "age," because the chalk, when rinsed by rainwater, carries discoloration and dirt away with it and thus provides an ideal surface for repainting. In excess, however, it is not desirable because the chalk can wash down onto a surface of a different color beneath the painted area and cause streaking as well as rapid disintegration of the paint film itself. Also, if a paint contains too much pigment for the amount of binder (as the old white lead carbonate/oil paints often did), excessive chalking can result.

Recommended Treatment

The chalk should be cleaned off with a solution of $\frac{1}{2}$ cup household detergent to one gallon water, using a medium soft bristle brush. After scrubbing to remove the chalk, the surface should be rinsed with a direct stream of water from the nozzle of a garden hose, allowed to dry thoroughly, (but not long enough for the chalking process to recur) and repainted, using a non-chalking paint.

- **Staining**

Cause of Condition

Staining of paint coatings usually results from excess

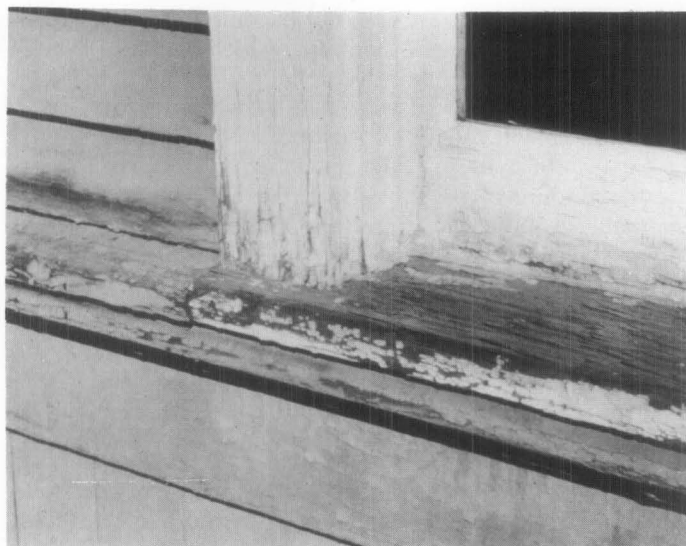


Fig. 4 Paint films wear unevenly depending on exposure and location. Exterior locations which are susceptible to accelerated deterioration are horizontal surfaces such as window sills. These and similar areas will require repainting more often than less vulnerable surfaces. In the case of this window sill where paint has peeled off and adjacent areas have cracked and alligatored, the paint should be totally removed. Prior to repainting, any weathered wood should be rejuvenated using a solution of 3 cups exterior varnish, 1 oz. paraffin wax, and mineral spirits/paint thinner/or turpentine to make 1 gallon. Liberal brush application should be made. This formula was tested over a 20-year period by the U.S. Department of Agriculture's Forest Products Laboratory and proved to be just as effective as water-repellent preservatives containing pentachlorophenol. After the surface has thoroughly dried (2-3 days of warm weather), the treated surface can be painted. A high quality oil-base primer followed by two top coats of a semi-gloss oil-enamel or latex-enamel paint is recommended. Photo: Baird M. Smith, AIA.

moisture reacting with materials within the wood substrate. There are two common types of staining, neither of which requires paint removal. The most prevalent type of stain is due to the oxidation or rusting of iron nails or metal (iron, steel, or copper) anchorage devices. A second type of stain is caused by a chemical reaction between moisture and natural extractives in certain woods (red cedar or redwood) which results in a surface deposit of colored matter. This is most apt to occur in new replacement wood within the first 10-15 years.

Recommended Treatment

In both cases, the source of the stain should first be located and the moisture problem corrected.

When stains are caused by rusting of the heads of nails used to attach shingles or siding to an exterior wall or by rusting or oxidizing iron, steel, or copper anchorage devices adjacent to a painted surface, the metal objects themselves should be hand sanded and coated with a rust-inhibitive primer followed by two finish coats. (Exposed nail heads should ideally be countersunk, spot primed, and the holes filled with a high quality wood filler except where exposure of the nail head was part of the original construction system or the wood is too fragile to withstand the countersinking procedure.)

Discoloration due to color extractives in replacement wood can usually be cleaned with a solution of equal parts denatured alcohol and water. After the affected area

has been rinsed and permitted to dry, a "stain-blocking primer" especially developed for preventing this type of stain should be applied (two primer coats are recommended for severe cases of bleeding prior to the finish coat). Each primer coat should be allowed to dry at least 48 hours.

CLASS II Exterior Surface Conditions Generally Requiring Limited Paint Removal

• **Crazing**

Cause of Condition

Crazing—fine, jagged interconnected breaks in the top layer of paint—results when paint that is several layers thick becomes excessively hard and brittle with age and is consequently no longer able to expand and contract with the wood in response to changes in temperature and humidity (see figure 5). As the wood swells, the bond between paint layers is broken and hairline cracks appear. Although somewhat more difficult to detect as opposed to other more obvious paint problems, it is well worth the time to scrutinize all surfaces for crazing. If not corrected, exterior moisture will enter the crazed surface, resulting in further swelling of the wood and, eventually, deep cracking and alligatoring, a Class III condition which requires total paint removal.

Recommended Treatment

Crazing can be treated by hand or mechanically sanding the surface, then repainting. Although the hairline cracks may tend to show through the new paint, the surface will be protected against exterior moisture penetration.

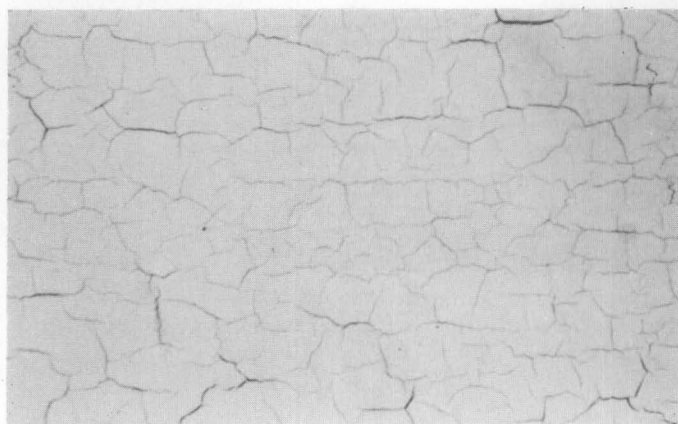


Fig. 5 Crazing—or surface cracking—is an exterior surface condition which can be successfully treated by sanding and painting. Photo: Courtesy, National Decorating Products Association.

• **Intercoat Peeling**

Cause of Condition

Intercoat peeling can be the result of improper surface preparation prior to the last repainting. This most often occurs in protected areas such as eaves and covered porches because these surfaces do not receive a regular rinsing from rainfall, and salts from air-borne pollutants thus accumulate on the surface. If not cleaned off, the new paint coat will not adhere properly and that layer will peel.

Another common cause of intercoat peeling is incompatibility between paint types (see figure 6). For example, if oil paint is applied over latex paint, peeling of the top

coat can sometimes result since, upon aging, the oil paint becomes harder and less elastic than the latex paint. If latex paint is applied over old, chalking oil paint, peeling can also occur because the latex paint is unable to penetrate the chalky surface and adhere.

Recommended Treatment

First, where salts or impurities have caused the peeling, the affected area should be washed down thoroughly after scraping, then wiped dry. Finally, the surface should be hand or mechanically sanded, then repainted.

Where peeling was the result of using incompatible paints, the peeling top coat should be scraped and hand or mechanically sanded. Application of a high quality oil type exterior primer will provide a surface over which either an oil or a latex topcoat can be successfully used.

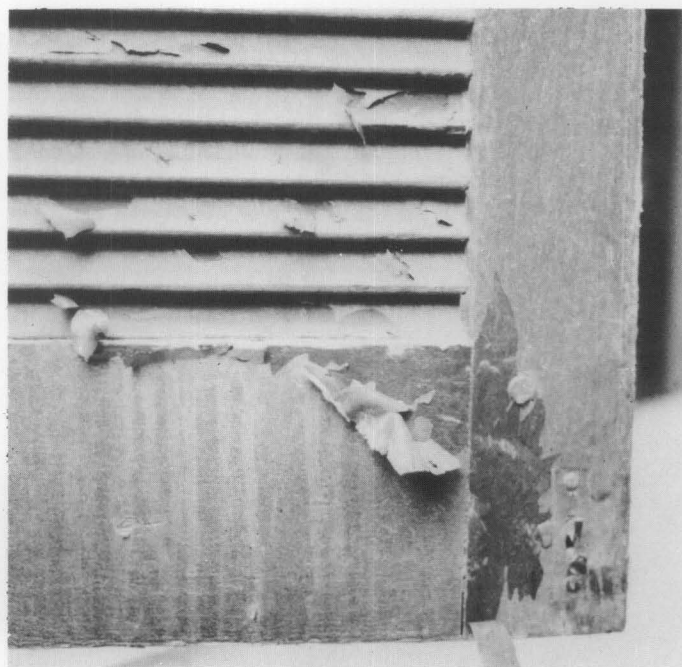


Fig. 6 This is an example of intercoat peeling. A latex top coat was applied directly over old oil paint and, as a result, the latex paint was unable to adhere. If latex is being used over oil, an oil-base primer should be applied first. Although much of the peeling latex paint can be scraped off, in this case, the best solution may be to chemically dip strip the entire shutter to remove all of the paint down to bare wood, rinse thoroughly, then repaint. Photo: Mary L. Oehrlein, AIA.

• **Solvent Blistering**

Cause of Condition

Solvent blistering, the result of a less common application error, is not caused by moisture, but by the action of ambient heat on paint solvent or thinners in the paint film. If solvent-rich paint is applied in direct sunlight, the top surface can dry too quickly and, as a result, solvents become trapped beneath the dried paint film. When the solvent vaporizes, it forces its way through the paint film, resulting in surface blisters. This problem occurs more often with dark colored paints because darker colors absorb more heat than lighter ones. To distinguish between solvent blistering and blistering caused by moisture, a blister should be cut open. If another layer of paint is visible, then solvent blistering is likely the problem whereas if bare wood is revealed, moisture is probably to blame. Solvent blisters are generally small.

Recommended Treatment

Solvent-blistered areas can be scraped, hand or mechanically sanded to the next sound layer, then repainted. In order to prevent blistering of painted surfaces, paint should not be applied in direct sunlight.

• Wrinkling

Cause of Condition

Another error in application that can easily be avoided is wrinkling (see figure 7). This occurs when the top layer of paint dries before the layer underneath. The top layer of paint actually moves as the paint underneath (a primer, for example) is drying. Specific causes of wrinkling include: (1) applying paint too thick; (2) applying a second coat before the first one dries; (3) inadequate brushing out; and (4) painting in temperatures higher than recommended by the manufacturer.

Recommended Treatment

The wrinkled layer can be removed by scraping followed by hand or mechanical sanding to provide as even a surface as possible, then repainted following manufacturer's application instructions.

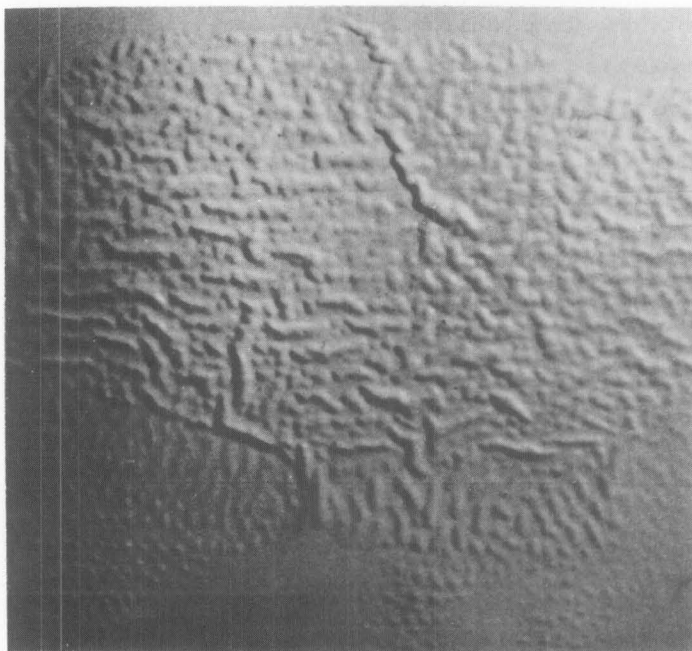


Fig. 7 Wrinkled layers can generally be removed by scraping and sanding as opposed to total paint removal. Following manufacturers' application instructions is the best way to avoid this surface condition. Photo: Courtesy, National Decorating Products Association.

CLASS III Exterior Surface Conditions Generally Requiring Total Paint Removal

If surface conditions are such that the majority of paint will have to be removed prior to repainting, it is suggested that a small sample of intact paint be left in an inconspicuous area either by covering the area with a metal plate, or by marking the area and identifying it in some way. (When repainting does take place, the sample should not be painted over). This will enable future investigators to have a record of the building's paint history.

• Peeling

Cause of Condition

Peeling to bare wood is most often caused by excess interior or exterior moisture that collects behind the paint

film, thus impairing adhesion (see figure 8). Generally beginning as blisters, cracking and peeling occur as moisture causes the wood to swell, breaking the adhesion of the bottom layer.

Recommended Treatment

There is no sense in repainting before dealing with the moisture problems because new paint will simply fail. Therefore, the first step in treating peeling is to locate and remove the source or sources of the moisture, not only because moisture will jeopardize the protective coating of paint but because, if left unattended, it can ultimately cause permanent damage to the wood. Excess interior moisture should be removed from the building through installation of exhaust fans and vents. Exterior moisture should be eliminated by correcting the following conditions prior to repainting: faulty flashing; leaking gutters; defective roof shingles; cracks and holes in siding and trim; deteriorated caulking in joints and seams; and shrubbery growing too close to painted wood. After the moisture problems have been solved, the wood must be permitted to dry out thoroughly. The damaged paint can then be scraped off with a putty knife, hand or mechanically sanded, primed, and repainted.

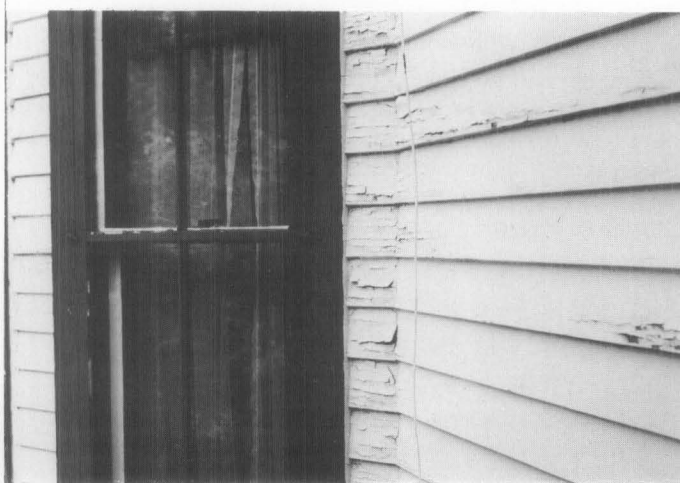


Fig. 8 Peeling to bare wood—one of the most common types of paint failure—is usually caused by an interior or exterior moisture problem. Photo: Anne E. Grimmer.

• Cracking/Alligatoring

Cause of Condition

Cracking and alligatoring are advanced stages of crazing (see figure 9). Once the bond between layers has been broken due to intercoat paint failure, exterior moisture is able to penetrate the surface cracks, causing the wood to swell and deeper cracking to take place. This process continues until cracking, which forms parallel to grain, extends to bare wood. Ultimately, the cracking becomes an overall pattern of horizontal and vertical breaks in the paint layers that looks like reptile skin; hence, "alligatoring." In advanced stages of cracking and alligatoring, the surfaces will also flake badly.

Recommended Treatment

If cracking and alligatoring are present only in the top layers they can probably be scraped, hand or mechanically sanded to the next sound layer, then repainted. However, if cracking and/or alligatoring have progressed to

bare wood and the paint has begun to flake, it will need to be totally removed. Methods include scraping or paint removal with the electric heat plate, electric heat gun, or chemical strippers, depending on the particular area involved. Bare wood should be primed within 48 hours, then repainted.

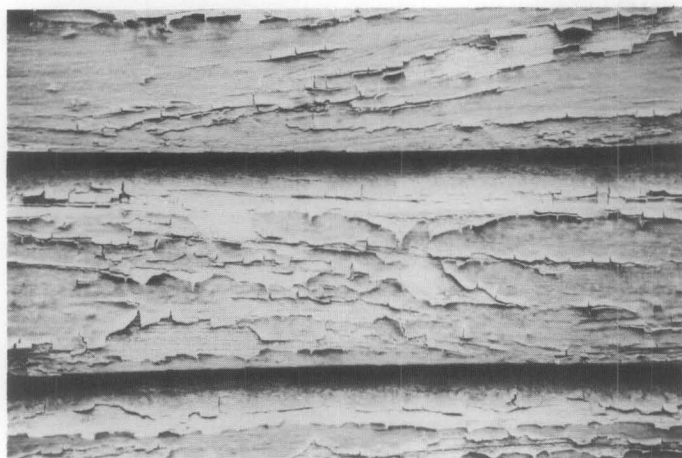


Fig. 9 Cracking, alligatoring, and flaking are evidence of long-term neglect of painted surfaces. The remaining paint on the clapboard shown here can be removed with an electric heat plate and wide-bladed scraper. In addition, unsound wood should be replaced and moisture problems corrected before primer and top coats of paint are applied. Photo: David W. Look, AIA.

Selecting the Appropriate/Safest Method to Remove Paint

After having presented the “hierarchy” of exterior paint surface conditions—from a mild condition such as mildew which simply requires cleaning prior to repainting to serious conditions such as peeling and alligatoring which require total paint removal—one important thought bears repeating: if a paint problem has been identified that warrants either limited or total paint removal, the gentlest method possible for the particular wooden element of the historic building should be selected from the many available methods.

The treatments recommended—based upon field testing as well as onsite monitoring of Department of Interior grant-in-aid and certification of rehabilitation projects—are therefore those which take three over-riding issues into consideration (1) the continued protection and preservation of the historic exterior woodwork; (2) the retention of the sequence of historic paint layers; and (3) the health and safety of those individuals performing the paint removal. By applying these criteria, it will be seen that no paint removal method is without its drawbacks and all recommendations are qualified in varying degrees.

Methods for Removing Paint

After a particular exterior paint surface condition has been identified, the next step in planning for repainting—if paint removal is required—is selecting an appropriate method for such removal.

The method or methods selected should be suitable for the specific paint problem as well as the particular wooden element of the building. Methods for paint removal can be divided into three categories (frequently, however, a combination of the three methods is used).

Each method is defined below, then discussed further and specific recommendations made:

Abrasive—“Abrading” the painted surface by manual and/or mechanical means such as scraping and sanding. Generally used for surface preparation and limited paint removal.

Thermal—Softening and raising the paint layers by applying heat followed by scraping and sanding. Generally used for total paint removal.

Chemical—Softening of the paint layers with chemical strippers followed by scraping and sanding. Generally used for total paint removal.

• Abrasive Methods (Manual)

If conditions have been identified that require limited paint removal such as crazing, intercoat peeling, solvent blistering, and wrinkling, scraping and hand sanding should be the first methods employed before using mechanical means. Even in the case of more serious conditions such as peeling—where the damaged paint is weak and already sufficiently loosened from the wood surface—scraping and hand sanding may be all that is needed prior to repainting.

Recommended Abrasive Methods (Manual)

Putty Knife/Paint Scraper: Scraping is usually accomplished with either a putty knife or a paint scraper, or both. Putty knives range in width from one to six inches and have a beveled edge. A putty knife is used in a pushing motion going under the paint and working from an area of loose paint toward the edge where the paint is still firmly adhered and, in effect, “beveling” the remaining layers so that as smooth a transition as possible is made between damaged and undamaged areas (see figure 10).

Paint scrapers are commonly available in 1½, 2½, and 3½ inch widths and have replaceable blades. In addition, profiled scrapers can be made specifically for use on moldings. As opposed to the putty knife, the paint scraper is used in a pulling motion and works by raking the damaged areas of paint away.

The obvious goal in using the putty knife or the paint scraper is to selectively remove the affected layer or layers of paint; however, both of these tools, particularly the paint scraper with its hooked edge, must be used with care to properly prepare the surface and to avoid gouging the wood.

Sandpaper/Sanding Block/Sanding sponge: After manually removing the damaged layer or layers by scraping, the uneven surface (due to the almost inevitable removal of varying numbers of paint layers in a given area) will need to be smoothed or “feathered out” prior to repainting. As stated before, hand sanding, as opposed to harsher mechanical sanding, is recommended if the area is relatively limited. A coarse grit, open-coat flint sandpaper—the least expensive kind—is useful for this purpose because, as the sandpaper clogs with paint it must be discarded and this process repeated until all layers adhere uniformly.

Blocks made of wood or hard rubber and covered with sandpaper are useful for handsanding flat surfaces. Sanding sponges—rectangular sponges with an abrasive aggregate on their surfaces—are also available for detail work that requires reaching into grooves because the sponge easily conforms to curves and irregular surfaces. All sanding should be done with the grain.

Summary of Abrasive Methods (Manual)

Recommended: Putty knife, paint scraper, sandpaper, sanding block, sanding sponge.

Applicable areas of building: All areas.

For use on: Class I, Class II, and Class III conditions.

Health/Safety factors: Take precautions against lead dust, eye damage; dispose of lead paint residue properly.

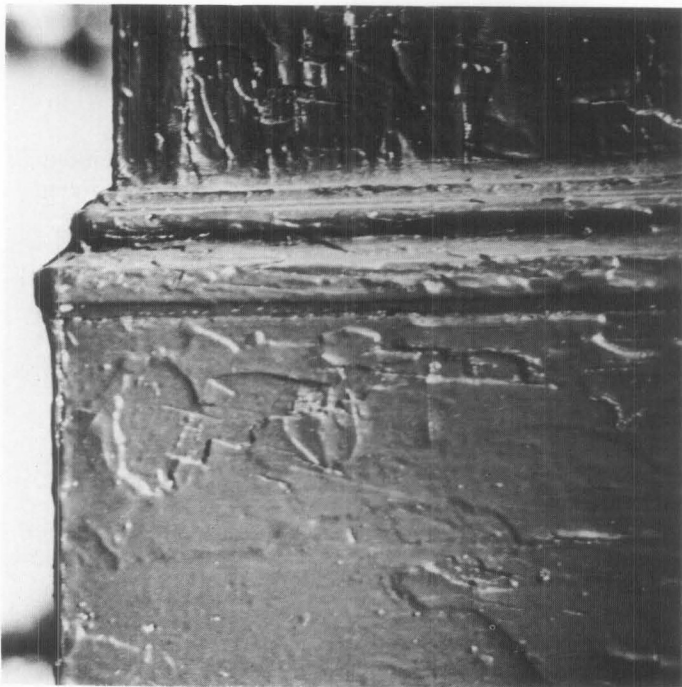


Fig. 10 An excellent example of inadequate scraping before repainting, the problems here are far more than cosmetic. This improperly prepared surface will permit moisture to get behind the paint film which, in turn, will result in chipping and peeling. Photo: Baird M. Smith, AIA.

• Abrasive Methods (Mechanical)

If hand sanding for purposes of surface preparation has not been productive or if the affected area is too large to consider hand sanding by itself, mechanical abrasive methods, i.e., power-operated tools may need to be employed; however, it should be noted that the majority of tools available for paint removal can cause damage to fragile wood and must be used with great care.

Recommended Abrasive Methods (Mechanical)

Orbital sander: Designed as a finishing or smoothing tool—not for the removal of multiple layers of paint—the orbital sander is thus recommended when limited paint removal is required prior to repainting. Because it sands in a small diameter circular motion (some models can also be switched to a back-and-forth vibrating action), this tool is particularly effective for “feathering” areas where paint has first been scraped (see figure 11). The abrasive surface varies from about 3×7 inches to 4×9 inches and sandpaper is attached either by clamps or sliding clips. A medium grit, open-coat aluminum oxide sandpaper should be used; fine sandpaper clogs up so quickly that it is ineffective for smoothing paint.

Belt sander: A second type of power tool—the belt sander—can also be used for removing limited layers of paint but,

in this case, the abrasive surface is a continuous belt of sandpaper that travels at high speeds and consequently offers much less control than the orbital sander. Because of the potential for more damage to the paint or the wood, use of the belt sander (also with a medium grit sandpaper) should be limited to flat surfaces and only skilled operators should be permitted to operate it within a historic preservation project.



Fig. 11 The orbital sander can be used for limited paint removal, i.e., for smoothing flat surfaces after the majority of deteriorated paint has already been scraped off. Photo: Charles E. Fisher, III.

Not Recommended

Rotary Drill Attachments: Rotary drill attachments such as the rotary sanding disc and the rotary wire stripper should be avoided. The disc sander—usually a disc of sandpaper about 5 inches in diameter secured to a rubber based attachment which is in turn connected to an electric drill or other motorized housing—can easily leave visible circular depressions in the wood which are difficult to hide, even with repainting. The rotary wire stripper—clusters of metals wires similarly attached to an electric drill-type unit—can actually shred a wooden surface and is thus to be used exclusively for removing corrosion and paint from metals.

Waterblasting: Waterblasting above 600 p.s.i. to remove paint is not recommended because it can force water into the woodwork rather than cleaning loose paint and grime from the surface; at worst, high pressure waterblasting causes the water to penetrate exterior sheathing and damages interior finishes. A detergent solution, a medium soft bristle brush, and a garden hose for purposes of rinsing, is the gentlest method involving water and is recommended when cleaning exterior surfaces prior to repainting.

Sandblasting: Finally—and undoubtedly most vehemently “not recommended”—sandblasting painted exterior woodwork will indeed remove paint, but at the same time can scar wooden elements beyond recognition. As with rotary wire strippers, sandblasting erodes the soft porous fibers (spring wood) faster than the hard, dense fibers (summer wood), leaving a pitted surface with ridges and valleys. Sandblasting will also erode projecting areas of carvings and moldings before it removes paint from concave areas (see figure 12). Hence, this abrasive method is potentially the most damaging of all possibilities, even if a contractor promises that blast pressure can be controlled so that the paint is removed without harming the historic exterior woodwork. (For Additional Information, See Preservation Briefs 6, “Dangers of Abrasive Cleaning to Historic Buildings”.)



Fig. 12 Sandblasting has permanently damaged this ornamental bracket. Even paint will not be able to hide the deep erosion of the wood. Photo: David W. Look, AIA.

Summary of Abrasive Methods (Mechanical)

Recommended: Orbital sander, belt sander (skilled operator only).

Applicable areas of building: Flat surfaces, i.e., siding, eaves, doors, window sills.

For use on: Class II and Class III conditions.

Health/Safety factors: Take precautions against lead dust and eye damage; dispose of lead paint residue properly.

Not Recommended: Rotary drill attachments, high pressure waterblasting, sandblasting.

• Thermal Methods

Where exterior surface conditions have been identified that warrant total paint removal such as peeling, cracking, or alligatoring, two thermal devices—the electric heat plate and the electric heat gun—have proven to be quite successful for use on different wooden elements of the historic building. One thermal method—the blow torch—is not recommended because it can scorch the wood or even burn the building down!

Recommended Thermal Methods

Electric heat plate: The electric heat plate (see figure 13) operates between 500 and 800 degrees Fahrenheit (not hot enough to vaporize lead paint), using about 15 amps of power. The plate is held close to the painted exterior surface until the layers of paint begin to soften and blister, then moved to an adjacent location on the wood while the softened paint is scraped off with a putty knife (it should be noted that the heat plate is most successful when the paint is very thick!). With practice, the operator can successfully move the heat plate evenly across a flat surface such as wooden siding or a window sill or door in a continuous motion, thus lessening the risk of scorching the wood in an attempt to reheat the edge of the paint sufficiently for effective removal. Since the electric heat plate's coil is “red hot,” extreme caution should be taken to avoid igniting clothing or burning the skin. If an extension cord is used, it should be a heavy-duty cord (with 3-prong grounded plugs). A heat plate could overload a circuit or, even worse, cause an electrical fire; therefore, it is recommended that this implement be used with a single circuit and that a fire extinguisher always be kept close at hand.



Fig. 13 The electric heat plate (with paint scraper) is particularly useful for removing paint down to bare wood on flat surfaces such as doors, window frames, and siding. After scraping, some light sanding will probably be necessary to smooth the surface prior to application of primer and top coats. Photo: David W. Look, AIA.

Electric heat gun: The electric heat gun (electric hot-air gun) looks like a hand-held hairdryer with a heavy-duty metal case (see figure 14). It has an electrical resistance coil that typically heats between 500 and 750 degrees Fahrenheit and, again, uses about 15 amps of power which requires a heavy-duty extension cord. There are some heat guns that operate at higher temperatures but they should not be purchased for removing old paint.

because of the danger of lead paint vapors. The temperature is controlled by a vent on the side of the heat gun. When the vent is closed, the heat increases. A fan forces a stream of hot air against the painted woodwork, causing a blister to form. At that point, the softened paint can be peeled back with a putty knife. It can be used to best advantage when a paneled door was originally varnished, then painted a number of times. In this case, the paint will come off quite easily, often leaving an almost pristine varnished surface behind. Like the heat plate, the heat gun works best on a heavy paint build-up. (It is, however, not very successful on only one or two layers of paint or on surfaces that have only been varnished. The varnish simply becomes sticky and the wood scorches.)

Although the heat gun is heavier and more tiring to use than the heat plate, it is particularly effective for removing paint from detail work because the nozzle can be directed at curved and intricate surfaces. Its use is thus more limited than the heat plate, and most successfully used in conjunction *with* the heat plate. For example, it takes about two to three hours to strip a paneled door with a heat gun, but if used in combination with a heat plate for the large, flat area, the time can usually be cut in half. Although a heat gun seldom scorches wood, it can cause fires (like the blow torch) if aimed at the dusty cavity between the exterior sheathing and siding and interior lath and plaster. A fire may smolder for hours before flames break through to the surface. Therefore, this thermal device is best suited for use on solid decorative elements, such as molding, balusters, fretwork, or "gingerbread."



Fig. 14 The nozzle on the electric heat gun permits hot air to be aimed into cavities on solid decorative elements such as this applied column. After the paint has been sufficiently softened, it can be removed with a profiled scraper. Photo: Charles E. Fisher, III.

Not Recommended

Blow Torch: Blow torches, such as hand-held propane or butane torches, were widely used in the past for paint removal because other thermal devices were not available. With this technique, the flame is directed toward the paint until it begins to bubble and loosen from the surface. Then the paint is scraped off with a putty knife. Although this is a relatively fast process, at temperatures between 3200 and 3800 degrees Fahrenheit the open flame is not only capable of burning a careless operator and causing severe damage to eyes or skin, it can easily scorch or ignite the wood. The other fire hazard is more insidious. Most frame buildings have an air space between the exterior sheathing and siding and interior lath and plaster. This cavity usually has an accumulation of dust which is also easily ignited by the open flame of a blow torch. Finally, lead-base paints will vaporize at high temperatures, releasing toxic fumes that can be unknowingly inhaled. Therefore, because both the heat plate and the heat gun are generally safer to use—that is, the risks are much more controllable—the blow torch should definitely be avoided!

Summary of Thermal Methods

Recommended: Electric heat plate, electric heat gun.

Applicable areas of building: Electric heat plate—flat surfaces such as siding, eaves, sash, sills, doors. Electric heat gun—solid decorative molding, balusters, fretwork, or "gingerbread."

For use on: Class III conditions.

Health/Safety factors: Take precautions against eye damage and fire. Dispose of lead paint residue properly.

Not Recommended: Blow torch.

• Chemical Methods

With the availability of effective thermal methods for total paint removal, the need for chemical methods—in the context of preparing historic exterior woodwork for repainting—becomes quite limited. Solvent-base or caustic strippers may, however, play a supplemental role in a number of situations, including:

- Removing paint residue from intricate decorative features, or in cracks or hard to reach areas if a heat gun has not been completely effective;
- Removing paint on window muntins because heat devices can easily break the glass;
- Removing varnish on exterior doors after all layers of paint have been removed by a heat plate/heat gun if the original varnish finish is being restored;
- Removing paint from detachable wooden elements such as exterior shutters, balusters, columns, and doors by dip-stripping when other methods are too laborious.

Recommended Chemical Methods (Use With Extreme Caution)

Because all chemical paint removers can involve potential health and safety hazards, no wholehearted recommendations can be made from that standpoint. Commonly known as "paint removers" or "strippers," both solvent-base or caustic products are commercially available that, when poured, brushed, or sprayed on painted exterior woodwork are capable of softening several layers of paint at a time so that the resulting "sludge"—which should be remembered is nothing less than the sequence of historic

paint layers—can be removed with a putty knife. Detachable wood elements such as exterior shutters can also be “dip-stripped.”

Solvent-base Strippers: The formulas tend to vary, but generally consist of combinations of organic solvents such as methylene chloride, isopropanol, toluol, xylol, and methanol; thickeners such as methyl cellulose; and various additives such as paraffin wax used to prevent the volatile solvents from evaporating before they have time to soak through multiple layers of paint. Thus, while some solvent-base strippers are quite thin and therefore unsuitable for use on vertical surfaces, others, called “semi-paste” strippers, are formulated for use on vertical surfaces or the underside of horizontal surfaces.

However, whether liquid or semi-paste, there are two important points to stress when using any solvent-base stripper: First, the vapors from the organic chemicals can be highly toxic if inhaled; skin contact is equally dangerous because the solvents can be absorbed; second, many solvent-base strippers are flammable. Even though application out-of-doors may somewhat mitigate health and safety hazards, a respirator with special filters for organic solvents is recommended and, of course, solvent-base strippers should never be used around open flames, lighted cigarettes, or with steel wool around electrical outlets.

Although appearing to be the simplest for exterior use, a particular type of solvent-base stripper needs to be mentioned here because it can actually cause the most problems. Known as “water-rinsable,” such products have a high proportion of methylene chloride together with emulsifiers. Although the dissolved paint can be rinsed off with water with a minimum of scraping, this ultimately creates more of a problem in cleaning up and properly disposing of the sludge. In addition, these strippers can leave a gummy residue on the wood that requires removal with solvents. Finally, water-rinsable strippers tend to raise the grain of the wood more than regular strippers.

On balance, then, the regular strippers would seem to work just as well for exterior purposes and are perhaps even better from the standpoint of proper lead sludge disposal because they must be hand scraped as opposed to rinsed off (a coffee-can with a wire stretched across the top is one effective way to collect the sludge; when the putty knife is run across the wire, the sludge simply falls into the can. Then, when the can is filled, the wire is removed, the can capped, and the lead paint sludge disposed of according to local health regulations).

Caustic Strippers: Until the advent of solvent-base strippers, caustic strippers were used exclusively when a chemical method was deemed appropriate for total paint removal prior to repainting or refinishing. Now, it is more difficult to find commercially prepared caustic solutions in hardware and paint stores for home-owner use with the exception of lye (caustic soda) because solvent-base strippers packaged in small quantities tend to dominate the market.

Most commercial dip stripping companies, however, continue to use variations of the caustic bath process because it is still the cheapest method available for removing paint. Generally, dip stripping should be left to professional companies because caustic solutions can dissolve skin and permanently damage eyes as well as present serious disposal problems in large quantities.

If exterior shutters or other detachable elements are be-

ing sent out⁶ for stripping in a caustic solution, it is wise to see samples of the company's finished work. While some companies do a first-rate job, others can leave a residue of paint in carvings and grooves. Wooden elements may also be soaked too long so that the wood grain is raised and roughened, requiring extensive hand sanding later. In addition, assurances should be given by these companies that caustic paint removers will be neutralized with a mild acid solution or at least thoroughly rinsed with water after dipping (a caustic residue makes the wood feel slippery). If this is not done, the lye residue will cause new paint to fail.

Summary of Chemical Methods

Recommended, with extreme caution: Solvent-base strippers, caustic strippers.

Applicable areas of buildings: decorative features, window muntins, doors, exterior shutters, columns, balusters, and railings.

For use on: Class III Conditions.

Health/Safety factors: Take precautions against inhaling toxic vapors; fire; eye damage; and chemical poisoning from skin contact. Dispose of lead residue properly

General Paint Type Recommendations

Based on the assumption that the exterior wood has been painted with oil paint many times in the past and the existing top coat is therefore also an oil paint,* it is recommended that for CLASS I and CLASS II paint surface conditions, a top coat of high quality oil paint be applied when repainting. The reason for recommending oil rather than latex paints is that a coat of latex paint applied directly over old oil paint is more apt to fail. The considerations are twofold. First, because oil paints continue to harden with age, the old surface is sensitive to the added stress of shrinkage which occurs as a new coat of paint dries. Oil paints shrink less upon drying than latex paints and thus do not have as great a tendency to pull the old paint loose. Second, when exterior oil paints age, the binder releases pigment particles, causing a chalky surface. Although for best results, the chalk (or dirt, etc.) should *always* be cleaned off prior to repainting, a coat of new oil paint is more able to penetrate a chalky residue and adhere than is latex paint. Therefore, unless it is possible to thoroughly clean a heavy chalked surface, oil paints—on balance—give better adhesion.

If however, a latex top coat is going to be applied over several layers of old oil paint, an oil primer should be applied first (the oil primer creates a flat, porous surface to which the latex can adhere). After the primer has thoroughly dried, a latex top coat may be applied. In the long run, changing paint types is more time consuming and expensive. An application of a new oil-type top coat on the old oil paint is, thus, the preferred course of action.

⁶ Marking the original location of the shutter by number (either by stamping numbers into the end grain with metal numeral dies or cutting numbers into the end with a pen knife) will minimize difficulties when rehanging them.

* If the top coat is latex paint (when viewed by the naked eye or, preferably, with a magnifying glass, it looks like a series of tiny craters) it may either be repainted with new latex paint or with oil paint. Normal surface preparation should precede any repainting.

If CLASS III conditions have necessitated total paint removal, there are two options, both of which assure protection of the exterior wood: (1) an oil primer may be applied followed by an oil-type top coat, preferably by the same manufacturer; or (2) an oil primer may be applied followed by a latex top coat, again using the same brand of paint. It should also be noted that primers were never intended to withstand the effects of weathering; therefore, the top coat should be applied as soon as possible after the primer has dried.

Conclusion

The recommendations outlined in this Brief are cautious because at present there is no completely safe and effective method of removing old paint from exterior woodwork. This has necessarily eliminated descriptions of several methods still in a developmental or experimental stage, which can therefore neither be recommended nor precluded from future recommendation. With the ever-increasing number of buildings being rehabilitated, however, paint removal technology should be stimulated and, in consequence, existing methods refined and new methods developed which will respect both the historic wood and the health and safety of the operator.

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This publication has been prepared pursuant to The Economic Recovery Tax Act of 1981, which directs the Secretary of the Interior to certify rehabilitations of historic buildings that are consistent with their historic character; the advice and guidance in this brief will assist property owners in complying with the requirements of this law.

Preservation Briefs 10 has been developed under the technical editorship of Lee H. Nelson, AIA, Chief, Preservation Assistance Division, National Park Service, U.S. Department of the Interior, Washington, D.C. 20240. Comments on the usefulness of this information are welcomed and can be sent to Mr. Nelson at the above address.

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Preservation Briefs

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PRESERVATION BRIEFS

47

Maintaining the Exterior of Small and Medium Size Historic Buildings

Sharon C. Park, FAIA

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Preservation is defined as “the act or process of applying measures necessary to sustain the existing form, integrity, and materials of an historic property. Work, including preliminary measures to protect and stabilize the property, generally focuses upon the ongoing maintenance and repair of historic materials and features rather than extensive replacement and new construction.”¹

Maintenance helps preserve the integrity of historic structures. If existing materials are regularly maintained and deterioration is significantly reduced or prevented, the integrity of materials and workmanship of the building is protected. Proper maintenance is the most cost effective method of extending the life of a building. As soon as a building is constructed, restored, or rehabilitated, physical care is needed to slow the natural process of deterioration. An older building has already experienced years of normal weathering and may have suffered from neglect or inappropriate work as well.

Decay is inevitable but deterioration can accelerate when the building envelope is not maintained on a regular basis. Surfaces and parts that were seamlessly joined when the building was constructed may gradually become loose or disconnected; materials that were once sound begin to show signs of weathering. If maintenance is deferred, a typical response is to rush in to fix what has been ignored, creating additional problems. Work done on a crisis level can favor inappropriate treatments that alter or damage historic material.

There are rewards for undertaking certain repetitive tasks consistently according to a set schedule. Routine and preventive care of building materials is the most effective way of slowing the natural process of deterioration. The survival of historic buildings in good condition is primarily due to regular upkeep and the preservation of historic materials.

Well-maintained properties tend to suffer less damage from storms, high winds, and even small earthquakes. Keeping the roof sound, armatures and attachments such as shutters tightened and secured, and having joints and connections functioning well, strengthens the ability of older buildings to withstand natural occurrences.

Over time, the cost of maintenance is substantially less than the replacement of deteriorated historic features and involves considerably less disruption. Stopping decay before it is widespread helps keep the scale and complexity of work manageable for the owner.

This Preservation Brief is designed for those responsible for the care of small and medium size historic buildings, including owners, property administrators, in-house maintenance staff, volunteers, architects, and maintenance contractors. The Brief discusses the benefits of regular inspections, monitoring, and seasonal maintenance work; provides general guidance on maintenance treatments for historic building exteriors; and emphasizes the importance of keeping a written record of completed work.

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Understanding how building materials and construction details function will help avoid treatments that are made in an attempt to simplify maintenance but which may also result in long-term damage. It is enticing to read about “maintenance free” products and systems, particularly waterproof sealers, rubberized paints, and synthetic siding, but there is no such thing as maintenance free when it comes to caring for historic buildings. Some approaches that initially seem to reduce maintenance requirements may over time actually accelerate deterioration.

Exterior building components, such as roofs, walls, openings, projections, and foundations, were often constructed with a variety of functional features, such as overhangs, trim pieces, drip edges, ventilated cavities, and painted surfaces, to protect against water infiltration, ultraviolet deterioration, air infiltration, and pest infestation. Construction assemblies and joints between materials allow for expansion and contraction and the diffusion of moisture vapor, while keeping water from penetrating the building envelope. Older buildings use such features effectively and care must be taken to retain them, avoiding the temptation to reduce air infiltration or otherwise alter them.

Monitoring, inspections, and maintenance should all be undertaken with safety in mind. Besides normal safety procedures, it is important to be cognizant of health issues more commonly encountered with older buildings, such as lead-based paint, asbestos, and bird droppings, and to know when it is necessary to seek professional services (see sidebar).



Figure 1. Maintenance involves selecting the proper treatment and protecting adjacent surfaces. Using painter's tape to mask around a brass doorknocker protects the painted door surface from damage when polishing with chemical compounds. On the other hand, hardware with a patinated finish was not intended to be polished and should simply be cleaned with a damp cloth.

Original building features and examples of special craftsmanship should be afforded extra care. The patina or aging of historic materials is often part of the charm and character of historic buildings. In such cases, maintenance should avoid attempts to make finishes look new by over-cleaning or cladding existing materials. As with any product that has the potential to harm historic materials, the selection of a cleaning procedure should always involve testing in a discreet location on the building to ensure that it will not abrade, fade, streak, or otherwise damage the substrate (Figure 1).

Cautions During Maintenance Work

All maintenance work requires attention to safety of the workers and protection of the historic structure. Examples include the following:

- Care should be taken when working with historic materials containing lead-based paint. For example, damp methods may be used for sanding and removal to minimize air-borne particles. Special protection is required for workers and appropriate safety measures should be followed.

- Materials encountered during maintenance work, such as droppings from pigeons and mice, can cause serious illnesses. Appropriate safety precautions need to be followed. Services of a licensed contractor should be obtained to remove large deposits from attics and crawlspaces.
- Heat removal of paint involves several potential safety concerns. First, heating of lead-containing paint requires special safety precautions for workers. Second, even at low temperature levels, heat removal of paint runs the risk of igniting debris in walls. Heat should be used only with great caution with sufficient coverage by smoke detectors in work areas. Work periods need to be timed to allow monitoring after completion of paint removal each day, since debris will most often smolder for a length of time before breaking out into open flame. The use of torches, open flames, or high heat should be avoided.
- Many chemical products are hazardous and volatile organic compounds (VOC) are banned in many areas. If allowed, appropriate respirators and other safety precautions are essential for use.
- Personal protection is important and may require the use of goggles, gloves, mask, closed-toed shoes, and a hard hat.
- Electrical service should be turned off before inspecting a basement after a flood or heavy rain, where there is high standing water.

Cyclical Maintenance Checklist (Figure 2)

Cyclic Building Inspection Checklist: Horse Stable			Inspection date: 04/24/05	
Building Feature	Material(s)	Condition Description	Maintenance Action Required	Work Done
ROOF:				
Covering	Clay tile	Two slipped tiles	Reattach tiles	5/4/05
	Painted metal standing seam	Slight corrosion; blistering paint on metal roof section	Sand and repaint area that is peeling	6/8/05
Flashing	Painted metal	Flashing in good condition	N/A	N/A
Gutters/Downspouts	6" half round galvanized metal	Gutter sagging; downspouts OK	Realign gutter and put on new hanger strap	5/4/05
			Flush out downspouts	5/5/05
Chimneys	No masonry chimney	N/A	N/A	N/A
Attachments/Penetrations	Metal vent stack and weathervane	Vent stack hood has some peeling paint; vane OK	Sand and repaint vent stack	6/8/05

Figure 2. All personnel associated with a historic structure need to become acquainted with how existing building features should appear and during their daily or weekly routines look for changes that may occur. This will help augment the regular maintenance inspection that will occur at specified intervals based on seasonal changes, use, and other factors. A segment of an inspection form showing the roof elements of a horse stable is shown. The inspection report should be kept along with the maintenance plan and other material in notebook, file or electronic form

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Organizing related work into a written set of procedures, or a Maintenance Plan, helps eliminate duplication, makes it easier to coordinate work effort, and creates a system for prioritizing maintenance tasks that takes into account the most vulnerable and character-defining elements.

The first time a property owner or manager establishes a maintenance plan or program, it is advisable to have help from a preservation architect, preservation consultant, and/or experienced contractor. Written procedures should outline step-by-step approaches that are custom-tailored to a building. No matter how small the property, every historic site should have a written guide for maintenance that can be as simple as:

1. Schedules and checklists for inspections;

2. Forms for recording work, blank base plans and elevations to be filled in during inspections and upon completion of work;
3. A set of base-line photographs to be augmented over time;
4. Current lists of contractors for help with complex issues or in case of emergencies;
5. Written procedures for the appropriate care of specific materials, including housekeeping, routine care, and preventive measures;
6. Record-keeping sections for work completed, costs, warranty cards, sample paint colors, and other pertinent material.

This information can be kept in one or more formats, such as a three-ring binder, file folders, or a computer database. It is important to keep the files current with completed work forms to facilitate long-term evaluations and planning for future work (Figure 2).

Proper maintenance depends on an organized plan with work prescribed in manageable components. Regular maintenance needs to be considered a priority both in terms of time allotted for inspections and for allocation of funding.

Maintenance work scheduling is generally based on a variety of factors, including the seriousness of the problem, type of work involved, seasonal appropriateness, product manufacturer's recommendations, and staff availability. There are other variables as well. For example, building materials and finishes on southern and western exposures will often weather faster than those on northern or eastern exposures. Horizontal surfaces facing skyward usually require greater maintenance than vertical ones; in regions with moderate or heavy rainfall, wood and other materials in prolonged shadow are subject to more rapid decay.

Maintenance costs can be controlled, in part, through careful planning, identification of the amount of labor required, and thoughtful scheduling of work. Maintenance schedules should take into account daily and seasonal activities of the property in order to maximize the uninterrupted time necessary to complete the work. Institutions generally need to budget annually between 2 and 4 percent of the replacement value of the building to underwrite the expense of full building maintenance.² Use of trained volunteers to undertake maintenance can help reduce costs.

Exterior inspections usually proceed from the roof down to the foundation, working on one elevation at a time, moving around the building in a consistent direction. On the interior, the attic, inside surfaces of exterior walls, and crawlspaces or basements should be examined for signs of potential or existing problems with the building envelope.

The following chart lists suggested inspection frequencies for major features associated with the building's exterior, based on a temperate four-season climate and moderate levels of annual rainfall. For areas of different climate conditions and rainfall, such as in the more arid southwest, the nature of building decay and frequency of inspections will vary. For buildings with certain inherent conditions, heavy use patterns, or locations with more extreme weather conditions, the frequency of inspections should be altered accordingly.

Note: All building features should be inspected after any significant weather event such as a severe rainstorm or unusually high winds.

Survey observations can be recorded on a standardized report form and photographs taken as a visual record. All deficient conditions should be recorded and placed on a written schedule to be corrected or monitored.

INSPECTION FREQUENCY CHART

Feature	Minimum Inspection Frequency	Season
Roof	Annually	Spring or fall; every 5 years by roofer
Chimneys	Annually	Fall, prior to heating season; every 5 years by mason
Roof Drainage	6 months; more frequently as needed	Before and after wet season, during heavy rain
Exterior Walls and Porches	Annually	Spring, prior to summer/fall painting season
Windows	Annually	Spring, prior to summer/fall painting season
Foundation and Grade	Annually	Spring or during wet season
Building Perimeter	Annually	Winter, after leaves have dropped off trees

Entryways	Annually; heavily used entries may merit greater frequency	Spring, prior to summer/fall painting season
Doors	6 months; heavily used entry doors may merit greater frequency	Spring and fall; prior to heating/cooling seasons
Attic	4 months, or after a major storm	Before, during and after wet season
Basement/Crawlspace	4 months, or after a major storm	Before, during and after rain season

Building Components [return to top](#) ▲

For purposes of this discussion, the principal exterior surface areas have been divided into five components and are presented in order from the roof down to grade. While guidance for inspection and maintenance is provided for each component, this information is very general in nature and is not indeed to be comprehensive in scope. Examples have been selected to address some typical maintenance needs and to help the reader avoid common mistakes.

Roofs/Chimneys

The roof is designed to keep water out of a building. Thus one of the principal maintenance objectives is to ensure water flows off the roof and into functional gutters and downspouts directly to grade and away from the building—and to prevent water from penetrating the attic, exterior walls, and basement of a building. (Note: Some buildings were designed without gutters and thus assessments must be made as to whether rain water is being properly addressed at the foundation and perimeter grade.) Keeping gutters and downspouts cleared of debris is usually high on the list of regular maintenance activities (Figure 3). Flashing around chimneys, parapets, dormers, and other appendages to the roof also merit regular inspection and appropriate maintenance when needed. The material covering the roof—wood shingles, slate, tile, asphalt, sheet metal, rolled roofing—requires maintenance both to ensure a watertight seal and to lengthen its service life; the type and frequency of maintenance varies with the roofing material. Older chimneys and parapets also require inspection and maintenance. With the exception of cleaning and minor repairs to gutters and downspouts, most roof maintenance work will necessitate use of an outside contractor.

Inspection

The functioning of gutters and downspouts can be safely observed from the ground during rainy weather and when winter ice has collected. Binoculars are a useful tool in helping to identify potential roofing problems from the same safe vantage point. Careful observation from grade helps to identify maintenance needs between close-up inspections by an experienced roofer. Observation from the building interior is also important to identify possible leak locations. When access can be safely gained to the roof, it is important to wear shoes with slip-resistant soles and to use safety ropes. Depending on the nature of the roof, some common conditions of concern to look for are:

- sagging gutters and split downspouts;
- debris accumulating in gutters and valleys;
- overhanging branches rubbing against the roof or gutters
- plant shoots growing out of chimneys;
- slipped, missing, cracked, bucking, delaminating, peeling, or broken roof coverings;
- deteriorated flashing and failing connections at any intersection of roof areas or of roof and adjacent wall;
- bubbled surfaces and moisture ponding on flat or low sloped roofs;
- evidence of water leaks in the attic;
- misaligned or damaged elements, such as decorative cresting, lightning rods, or antennas; and
- cracked masonry or dislodged chimney caps.

Maintenance

- Remove leaves and other debris from gutters and downspouts. Utilize a ladder with a brace device, if necessary, to keep the ladder from crushing the gutter. Use a garden hose to flush out troughs and downspouts. Patch or repair holes in gutters using products such as fiberglass tape and epoxy adhesive in metal gutters. Avoid asphalt compounds since acidic material can cause further deterioration of metal gutters.



Figure 3. Keeping gutters clean of debris can be one of the most important cyclical maintenance activities. On this small one-story addition, a garden hose is being used to flush out the trough to ensure that the gutter and downspouts are unobstructed. Gutters on most small and medium size buildings can be reached with an extension ladder and a garden hose. Photo: Bryan Blundell.

- Correct misaligned gutters and adjust, if necessary, so that water flows to drains and does not pond. If gutter edges sag, consider inserting wooden wedges between the fascia board and the back of the gutter to add support. Seal leaking seams or pinholes in gutters and elbows.
- Broom sweep branch or leaf debris away from shingles, valleys, and crickets, particularly around chimneys and dormers.
- Where mechanical equipment is mounted on flat or low-sloped roofs, ensure that access for maintenance can be provided without damaging the roof. Clean out trapped leaves and debris from around equipment base and consider adding a protective walkway for access.



Figure 4. Damage to roofs often requires immediate attention. As a temporary measure, this damaged roof tile could be replaced with a brown aluminum sheet wedged between the existing tiles. Photo: Chad Randl.

- Remove biological growth where it is causing erosion or exfoliation of roofing. Use low-pressure garden hose water and a natural or nylon scrubbing brush to remove such growth, scraping with a plastic putty knife or similar wood or plastic tool as needed on heavier buildup. Most growth is acidic and while there are products designed to kill spores, such as diluted chlorine bleach, they should be avoided. Even fairly weak formulas can still cause unexpected color changes, efflorescence, or over-splash damage to plantings or surfaces below the roof. Where appropriate, trim adjacent tree branches to increase sunlight on the roof since sunlight will deter further biological growth.
- Re-secure loose flashing at the dormers, chimneys or parapets. Clean out old mortar, lead, lead wool, or fastening material and make sure that flashing is properly inserted into reglet (slot) joints, taking care not to damage the substrate. Avoid installing new step flashing as a single metal component where multiple pieces are required to provide proper waterproofing. Also avoid attaching step flashing with mastic or sealant. Properly re-bed all step flashing. Use appropriate non-ferrous flashing metal or painted metal if needed. Since cap, step, valley, cricket, and apron flashings each have specific overlap and extension requirements, replacement flashing should match the existing material unless there has been a proven deficiency.

- Repoint joints in chimneys, parapet, or balustrade capping stones using a hydraulic lime mortar or other suitable mortar where the existing mortar has eroded or cracked, allowing moisture penetration. In general, a mortar that is slightly weaker than the adjacent masonry should be used. This allows trapped moisture in the masonry to migrate out through the mortar and not the masonry. Spalled masonry is often evidence of the previous use of a mortar mix that was too hard.
- Use professional services to repair chimneys and caps. Avoid the use of mortar washes on masonry since they tend to crack, allowing moisture to penetrate and promoting masonry spalling. Repoint masonry with a durable mortar that is slightly weaker than the adjacent masonry. Slope the masonry mortar cap to insure drainage away from the flue. If a chimney rain cap is installed, ensure adequate venting and exhaust.
- As a temporary measure, slip pieces of non-corrosive metal flashing under or between damaged and missing roofing units until new slate, shingles, or tile can be attached. Repair broken, missing or damaged roofing units with ones that match. Follow roofing supplier and industry guidance on inserting and attaching replacement units (Figure 4). Avoid using temporary asphalt patches as it makes a proper repair difficult later on.
- For long-term preservation of wooden shingle roofs coated with a preservative, recoat every few years following the manufacturer's recommendations. Be aware of environmental considerations.
- Scrape and repaint selected areas of coated ferrous metal roofing as needed; repaint on a regularly scheduled basis. Ferrous metal roofs can last a long time if painted regularly. Alkyd coatings are generally used on metal roofs; be sure to wash and properly prepare the area beforehand. Environmental regulations may restrict the use of certain types of paints. Apply the coating system in accordance with manufacturer's recommendations. Prepare the surface prior to application to obtain good adhesion with the prime coat. Apply both a prime coat and a topcoat for good bonding and coverage; select primer and topcoat products from the same manufacturer.
- Re-secure loose decorative elements, such as finials and weathervanes. Seek



Figure 5. The use of a sealant to close an exposed joint is not always an effective long-term solution. Where this decorative wood element connects to the slate roof, the sealant has failed within a short time and a proper metal flashing collar is being fitted instead. Photo: Bryan Blundell.

professional advice if decorative elements exhibit considerable corrosion, wood rot, or structural instability. Small surface cracks may benefit from a flexible sealant to keep moisture out; sealants have a limited life and require careful inspection and periodic

replacement (Figure 5).



Figure 6. Stucco applied to an exterior wall or foundation was intended to function as a watertight surface. Unless maintained, rainwater will penetrate open joints and cracks that may occur over time. A spalled section of stucco indicates some damage has occurred and a wooden mallet is being used to tap the surface to determine whether the immediate stucco has lost adhesion. Photo: Bryan Blundell.

Exterior Walls [return to top](#)

Exterior walls are designed to help prevent water infiltration, control air infiltration, and serve as a barrier for unwanted animals, birds and insects. The primary maintenance objective is to keep walls in sound condition and to prevent water penetration, insect infestation, and needless decay (Figure 6). Depending on the materials and construction methods, walls should have an even appearance, free from unwanted cracks, and should be able to shed excess moisture. Where surfaces are significantly misaligned or where there are bulging wall sections or cracks indicative of potential structural problems, seek professional guidance as to the cause of distress and appropriate corrective measures. Wood-frame construction generally will require more frequent maintenance than buildings constructed of brick, stone, or terra cotta (Figure 7).

Inspections

It is best to inspect walls during dry as well as wet weather. Look for moisture patterns that may appear on the walls after a heavy or sustained rainfall or snow,

recording any patterns on elevation drawings or standard recording forms. Monitoring the interior wall for moisture or other potential problems is important as well. Look for movement in cracks, joints, and around windows and doors and try to establish whether movement is seasonal in nature (such as related to shrinkage of wood during dry weather) or signs of an ongoing problem. For moderate size buildings, a ladder or mechanical lift may be necessary, though in some cases the use of binoculars and observations made from windows and other openings will be sufficient. When examining the walls, some common conditions of concern to look for are:

- Misaligned surfaces, bulging wall sections, cracks in masonry units, diagonal cracks in masonry joints, spalling masonry, open joints, and nail popping;
- Evidence of wood rot, insect infestation, and potentially damaging vegetative growth;
- Deficiencies in the attachment of wall mounted lamps, flag pole brackets, signs, and similar items;
- Potential problems with penetrating features such as water spigots, electrical outlets, and vents;
- Excessive damp spots, often accompanied by staining, peeling paint, moss, or mold; and
- General paint problems (Figure 8).

Maintenance

- Trim tree branches away from walls. Remove ivy and tendrils of climbing plants by first cutting at the base of the vine to allow tendrils to die back, and later using a plastic scraper to dislodge debris and an appropriate digging tool to dislodge and remove root systems. Be cautious if using a commercial chemical to accelerate root decay; follow safety directions and avoid contact of chemicals with workers and wall materials.
- Wash exterior wall surfaces if dirt or other deposits are causing damage or hiding deterioration; extend scheduled times for cleaning for cosmetic purposes to reduce frequency (Figure 9). When cleaning, use the gentlest means possible; start with natural bristle brushes and water and only add a mild phosphate-free detergent if necessary. Use non-abrasive cleaning methods and low-pressure water from a garden hose. For most building materials, such as wood and brick, avoid abrasive methods such as mechanical scrapers and high-pressure water or air and such additives as sand, natural soda, ice crystals, or rubber products. All abrasives remove some portion of the surface and power-washing drives excessive moisture into wall materials and even into wall cavities and interior walls. If using a mild detergent, two people are recommended, one to brush and one to prewet and rinse. When graffiti or stains are present, consult a preservation specialist who may use poultices or mild chemicals to remove the stain. If the entire building needs cleaning other than described above, consult a specialist.

- Repoint masonry in areas where mortar is loose or where masonry units have settled.

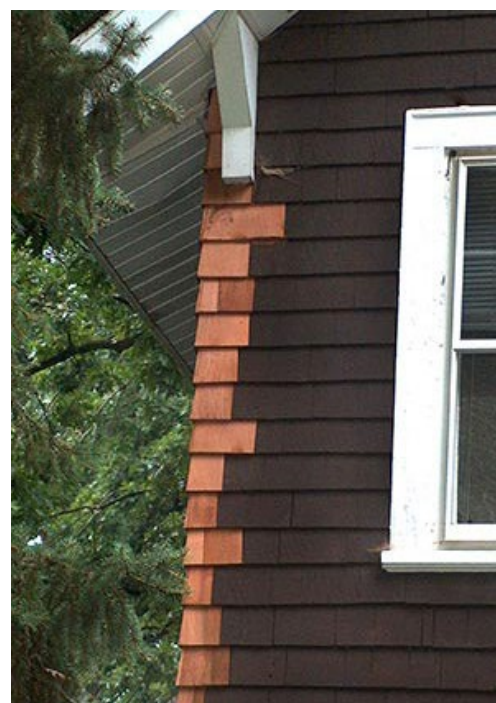


Figure 7. One of the advantages of wood shingles as a wall covering is that individual shingles that are damaged can easily be replaced. On this highly exposed corner, worn shingles have been selectively replaced to help safeguard against water damage. The new shingles will be stained to match the existing shingles.

Resolve cause of cracks or failure before resetting units and repointing. Rake out joints by hand, generally avoiding rotary saws or drills, to a depth of 2 ½ times the width of the joint (or until sound mortar is encountered), to make sure that fresh mortar will not pop out. Repointing mortar should be lime-rich and formulated to be slightly weaker than the masonry units and to match the historic mortar in color, width, appearance, and tooling. Off-the-shelf pre-mixed cement mortars are not appropriate for most historic buildings. Avoid use of joint sealants in place of mortar on vertical masonry wall surfaces, as they are not breathable and can lead to moisture-related damage of the adjacent masonry (Figure 10).

- Correct areas that trap unwanted moisture. Damaged bricks or stone units can sometimes be removed, turned around, and reset, or replaced with salvaged units. When using traditional or contemporary materials for patching wood, masonry, metal, or other materials, ensure that the materials are compatible with the substrate; evaluate strength, vapor permeability, and thermal expansion, as well as appearance.
- When patching is required, select a compatible patch material. Prepare substrate and

install patch material according to manufacturer's recommendations; respect existing joints. Small or shallow surface defects may not require patching; large or deep surface defects may be better addressed by installation of a dutchman unit than by patching.



Figure 9. To help extend a repainting cycle, dirt and spider webs should be removed before permanent staining occurs. In this case, a natural bristle brush and a soft damp cloth are being used to remove insect debris and refresh the surface appearance.

- Where a damaged area is too large to patch, consider replacing the section with in-kind material. For stucco and adobe materials, traditional patching formulas are recommended.
- When temporarily removing wood siding to repair framing or to tighten corner boards and loose trim, reuse the existing siding where possible. Consider using stainless steel or high strength aluminum nails as appropriate. Putty or fill nail holes flush with siding prior to repainting. Back-prime any installed wood with one coat of primer and coat end grain that might be exposed with two coats of primer.
- Prepare, prime, and spot paint areas needing repainting. Remember that preparation is the key to a successful long lasting paint job. Ensure beforehand the compatibility of new and existing paints to avoid premature paint failure. Remove loose paint to a sound substrate; sand or gently rough surface if needed for a good paint bond; wipe clean; and repaint with appropriate primer and topcoats. Follow manufacturer's recommendations for application of coatings, including temperature parameters for paint application. Use top quality coating materials. Generally paint when sun is not shining directly onto surfaces to be painted.
- Remove deteriorated caulks and sealants, clean, and reapply appropriate caulks and sealants using backer rods as necessary. Follow manufacturer's instructions regarding preparation and installation.
- Correct deficiencies in any wall attachments such as awning and flag pole anchors, improperly installed electrical outlets, or loose water spigots.

Openings [return to top](#)

Exterior wall openings primarily consist of doors, windows, storefronts, and passageways. The major maintenance objectives are to retain the functioning nature of the opening and to keep in sound condition the connection between the opening and the wall in order to reduce air and water infiltration.

Inspection

Wall openings are typically inspected from inside as well as out. Examinations should include the overall material condition; a check for unwanted water penetration, insect infiltration, or animal entry; and identification of where openings may not be properly functioning. Frames should be checked to make sure they are not loose and to ascertain whether the intersection between the wall and the frame is properly sealed. Secure connections of glazing to sash and between sash and frames are also important. Particular attention should be placed on exposed horizontal surfaces of storefronts and window frames as they tend to deteriorate much faster than vertical surfaces. Inspections should identify:



Figure 8. The paint on the siding of this south-facing wall needs to be scraped, sanded, primed and repainted. Postponing such work will lead to further paint failure, require greater preparatory costs, and could even result in the need to replace some siding. Photo: Charles Fisher.



Figure 10. Repointing of masonry should usually be approached as repair rather than maintenance work in part because of the need for a skilled mason familiar with historic mortar. In this case, a moisture condition was not corrected and the use of a waterproof coating and off-the-shelf Portland cement mortar trapped water and resulted in further damage to these 19th century bricks. Photo: NPS files

- loose frames, doors, sash, shutters, screens, storefront components, and signs that present safety hazards;
- slipped sills and tipped or cupped thresholds;
- poorly fitting units and storm assemblies, misaligned frames, drag marks on thresholds from sagging doors and storm doors;
- loose, open, or decayed joints in door and window frames, doors and sash, shutters, and storefronts;
- loose hardware, broken sash cords/chains, worn sash pulleys, cracked awning, shutter and window hardware, locking difficulties, and deteriorated weatherstripping and flashing;
- broken/cracked glass, loose or missing glazing and putty;
- peeling paint, corrosion or rust stains; and
- window well debris accumulation, heavy bird droppings, and termite and carpenter ant damage.

Maintenance

- Replace broken or missing glass as soon as possible; in some cases cracked glass may be repaired using specialty glues. For historic crown glass and early cylinder glass, a conservation approach should be considered to repair limited cracks. Where panes with a distinct appearance are missing, specialty glass should be obtained to match, with sufficient inventory kept for future needs. Avoid using mechanical devices to remove old putty and match historic putty bevels or details when undertaking work.
- Reputty window glazing where putty is deteriorated or missing. Take care in removing putty so as not to crack or break old glass or damage muntins and sash frames. Re-glaze with either traditionally formulated oil putties or modern synthetic ones, making sure to properly bed the glass and secure with glazing points (Figure 11).
- Clean window glass, door glazing, storefronts, transom prism lights, garage doors, and storm panels using a mild vinegar and water mixture or a non-



Figure 11. Glazing putty should be maintained in sound condition to prevent unwanted air infiltration and water damage. New glazing putty should be pulled tight to the glass and edge of the wood, creating a clean bevel that matches the historic glazing

alkaline commercial window cleaner. Be cautious with compounds that contain ammonia as they may stain brass or bronze hardware elements if not totally removed. When using a squeegee blade or sponge, wipe wet corners with a soft dry cloth. Avoid high-pressure washes.

- Clean handles, locks and similar hardware with a soft, damp cloth. Use mineral spirits or commercial cleaners very sparingly, as repeated use may remove original finishes. Most metal cleaners include ammonia that can streak and stain metal, so it is important to remove all cleaning residue. Polished hardware subject to tarnishing or oxidation, particularly doorknobs, often benefits from a thin coat of paste wax (carnauba), hand buffed to remove extra residue. Avoid lacquer finishes for high use areas, as they require more extensive maintenance. Patinated finishes should not be cleaned with any chemicals, since the subtle aged appearance contributes to the building's character.
- Remove and clean hardware before painting doors and windows; reinstall after the paint has dried.
- Tighten screws in doorframes and lubricate door hinges, awning hardware, garage door mechanisms, window sash chains, and pulleys using a graphite or silicone type lubricant.
- Check weather stripping on doors and windows and adjust or replace as necessary. Use a durable type of weather stripping, such as spring metal or high quality synthetic material, avoiding common brush and bulb or pile weather stripping that require more frequent replacement.
- Adjust steel casement windows as needed for proper alignment and tight fit. Avoid additional weather stripping as this may lead to further misalignment, creating pathways for air and water infiltration.
- Check window sills for proper drainage. Fill cracks in wood sills with a wood filler or epoxy. Follow manufacturer's instructions for preparation and installation. Do not cover over a wood sill with metal panning, as it may trap moisture and promote decay.
- Repair, prime, and repaint windows, doors, frames, and sills when needed. Clean out putty debris and paint chips from windows using a wet paper towel and dispose of debris prior to repair or repainting. Take appropriate additional precautions when removing lead-based paint. Sand and prepare surfaces and use material-specific patching compounds to fill any holes or areas collecting moisture (Figure 12). Avoid leaving exposed wood unpainted for any length of time, as light will degrade the wood surface and lead to premature failure of subsequent paint applications. Immediately prime steel sash after paint is removed and the substrate prepared for repainting.
- Adjust wood sash that bind when operated. Apply beeswax, paraffin, or similar material to tracks or sash runs for ease of movement. If sash are loose, replace worn parting beads. Sash runs traditionally were unpainted between the stop and parting bead; removing subsequent paint applications will often help improve sash operation.
- Correct perimeter cracks around windows and doors to prevent water and air infiltration. Use traditional material or modern

sealants as appropriate. If fillers such as lead wool have been used, new wool can be inserted with a thin blade tool, taking care to avoid excess air infiltration around windows by repairing and lubricating sash locks so that



Figure 12. Good surface preparation is essential for long lasting paint. Scraping loose paint, filling nail holes and cracks, sanding, and wiping with a damp cloth prior to repainting are all important steps whether touching up small areas or repainting an entire feature. Always use a manufacturer's best quality paint. Windows and shutters may need repainting every five to seven years, depending on exposure and climate.

ning units and ensure that water from units does not drain onto sills or wall surfaces. Closing units when not in season is recommended.

check that weep holes at the bottom of the panels are open so water will not be trapped. Windows are best attached using screws and not tightly adhered with sealant. Use of sealant for maintenance and can contribute to moisture entrapment if weep holes become

more for later repair. Consider adding a zinc or painted metal top to shutters as a weathered end grain. This will extend the life of the shutters.



Figure 13. Window air conditioning units can cause damage to surfaces below when condensation drips in an uncontrolled manner. Drip extension tubes can sometimes be added to direct the discharge.

Contracting Maintenance and Repair Work

Many contractors are very proficient in using modern construction methods and materials; however, they may not have the experience or skill required to carry out maintenance on historic buildings. The following are tips to use when selecting a contractor to work on your historic building:

1. Become familiar with work done on similar historic properties in your area so that you can obtain names of possible preservation contractors.
2. Be as specific as possible in defining the scope of work you expect to undertake.
3. Ask potential contractors for multiple references (three to five) and visit previous work sites. Contact the building owner or manager and ask how the job proceeded; if the same work crew was retained from start to finish; if the workers were of a consistent skill level; whether the project was completed in a reasonable time; and whether the person would use the contractor again.
4. Be familiar with the preservation context of the work to be undertaken. Use the written procedures in your maintenance plan to help define the scope of work in accordance with preservation standards and guidelines. Always request that the gentlest method possible be used. Use a preservation consultant if necessary to ensure that the work is performed in an appropriate manner.
5. Request in the contract proposal a detailed cost estimate that clearly defines the work to be executed, establishes the precautions that will be used to protect adjoining materials, and lists specific qualified subcontractors, if any, to be

used.

6. Insure that the contractor has all necessary business licenses and carries worker compensation.

Projections [return to top](#)

Numerous projections may exist on a historic building, such as porches, dormers, skylights, balconies, fire escapes, and breezeways. They are often composed of several different materials and may include an independent roof. Principal maintenance objectives include directing moisture off these features and keeping weathered surfaces in good condition. Secondary projections may include brackets, lamps, hanging signs, and similar items that tend to be exposed to the elements.

Inspection

In some cases, projections are essentially independent units of a building and so must be evaluated carefully for possible settlement, separation from the main body of the building, and materials deterioration. Some electrical features may require inspection by a electrician or service technician. Common conditions of concern to look for are:

- damaged flashing or tie-in connections of projecting elements;
- misaligned posts and railings;
- deteriorated finishes and materials, including peeling paint, cupped and warped decking, wood deterioration, and hazardous steps;
- evidence of termites, carpenter ants, bees, or animal pests (Figure 14);
- damaged lamps, unsafe electrical outlets or deteriorated seals around connections;
- loose marker plaques, sign, or mail boxes; and
- rust and excessive wear of structural, anchorage, and safety features of balconies and fire escapes.

Maintenance

- Selectively repair or replace damaged roofing units on porches and other projections. Ensure adequate drainage away from the building. Repair flashing connections as needed; clean and seal open joints as appropriate.
- Secure any loose connections, such as on porch rails or fire escapes.
- Maintain ferrous metal components by following manufacturer's recommendation for cleaning and repainting. Remove rust and corrosion from porch handrails, balconies, fire escapes, and other metal features; prepare, prime, and repaint using a corrosion-inhibitive coating system. Apply new primer before new corrosion sets in, followed by new topcoat. Take appropriate safety measures when dealing with existing lead-based paint and in using corrosion-removal products (Figure 15).
- Reattach loose brackets, lamps, or signs. With electrical boxes for outlets or lighting devices, ensure that cover plates are properly sealed. Prime and paint metal elements as needed.
- Keep porch decks and steps free from dust, dirt, leaf debris, and snow as soon as it accumulates using a broom or plastic blade shovel.
- Repair areas of wood decay or other damage to railings, posts, and decorative elements. Repair with wood dutchman, wood putty, or epoxy filler, as appropriate; replace individual elements as needed. Prime and repaint features when necessary and repaint horizontal surfaces on a more frequent basis.



Figure 15. Metal projecting elements on a building, such as sign armatures and railings, are easily subject to rust and decay. Proper surface preparation to remove rust is essential. Special metal primers and topcoats should be use

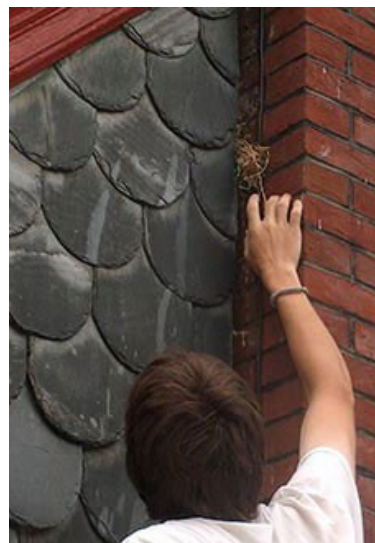


Figure 14. When inspecting connections between projections and the main building, look for areas where birds, bees and pests may enter or nest. Birds have been nesting in this porch roof and the area is being cleaned of their debris. Where an opening exists, it may be necessary to cover it with a trim piece, screening, or sealant. Photo: Bryan Blundell

- Sand and repaint porch floorboards to keep weather surfaces protected. The exposed ends of porch floorboards are especially susceptible to decay and may need to be treated every year or two.

- Carefully cut out damaged or buckled porch flooring and replace with wood to match. Back-prime new wood that is being installed; treat end grain with wood preservative and paint primer. Ensure that new wood is adequately kiln or air-dried to avoid shrinkage and problems with paint adherence.
- Repair rotted stair stringers; adjust grade or add stone pavers at stair base to keep wooden elements from coming into direct contact with soil.
- Consider durable hardwoods for replacement material where beading, chamfering, or other decorative work is required in order to match existing features being replaced. Although appropriate for certain applications, pressure treated lumber is hard to tool and may inhibit paint adherence if not allowed to weather prior to coating application.
- Clean out any debris from carpenter bees, ants, termites, and rodents, particularly from under porches. Replace damaged wood and add screening or lattice to discourage rodents. Consider treating above ground features with a borate solution to deter termites and wood rot and repaint exposed surfaces.

Foundations and Perimeter Grades [return to top](#) ▲

The foundation walls that penetrate into the ground, the piers that support raised structures, and the ground immediately around a foundation (known as grade) serve important structural functions. To help sustain these functions, it is important that there is good drainage around and away from the building. The maintenance goal is to prevent moisture from entering foundations and crawl spaces and damaging materials close to the grade, and to provide ventilation in damp areas.

Inspection

Inspections at the foundation should be done in conjunction with the inspection of the downspouts to ensure that water is being discharged a sufficient distance from the building perimeter to avoid excessive dampness in basements or crawl spaces. In addition, crawl spaces should be adequately vented to deter mold and decay and should be screened or otherwise secured against animals.

Look for:

- depressions or grade sloping toward the foundation; standing water after a storm;
- material deterioration at or near the foundation, including loss of mortar in masonry, rotting wood clapboards, or settlement cracks in the lower sections of wall;
- evidence of animal or pest infestation;
- vegetation growing close to the foundation, including trees, shrubs and planting beds;
- evidence of moisture damage from lawn and garden in-ground sprinkler systems;
- evidence of moss or mold from damp conditions or poorly situated downspout splash blocks (Figure 16); and
- blocked downspout drainage boots or clogged areaway grates.

Maintenance

- Remove leaves and other debris from drains to prevent accumulation. Detach drain grates from paved areas and extract clogged debris. Flush with a hose to ensure that there is no blockage. Use a professional drain service to clear obstructions if necessary.
- Conduct annual termite inspections. Promptly address termite and other insect infestations. Use only licensed company for treatment where needed.
- Keep the grade around the foundation sloping away from the building. Add soil to fill depressions particularly around downspouts and splash blocks. Make sure that soil does not come too close to wooden or metal elements. A 6" separation between wooden siding and the grade is usually recommended.
- Avoid use of mulching material immediately around foundations as such material may promote termite infestation, retain moisture or change existing grade slope.
- Reset splash blocks at the end of downspouts or add extender tubes to the end of downspouts as necessary (Figure 17).
- Lubricate operable foundation vent grilles to facilitate seasonal use; paint as needed.
- Manage vegetation around foundations to allow sufficient air movement for wall surfaces to dry out during damp periods. Trim plantings and remove weeds and climbing vine roots. Be careful not to scar foundations or porch piers with grass or weed cutting



Figure 16. This chronically wet area has a mildew bloom brought on by heat generated from the air-conditioning condenser unit. The dampness could be caused by a clogged roof gutter, improper grading, or a leaking hose bibb.

equipment. If tree roots appear to be damaging a foundation wall, consult an engineer as well as a tree company.

- Wash off discoloration on foundations caused by splash-back, algae, or mildew. Use plain water and a soft natural or nylon bristle brush. Unless thoroughly researched and tested beforehand on a discreet area of the wall, avoid chemical products that may discolor certain types of stone. If cleaning products are used, test beforehand in a discreet area; and avoid over splash to plantings and adjacent building materials.
- Selectively repoint unit masonry as needed. Follow guidance under the wall section in regard to compatible mix, appearance, and texture for pointing mortar.
- Avoid using salts for de-icing and fertilizers with a high acid or petro-chemical content around foundations, as these materials can cause salt contamination of masonry. Use sand or organic materials without chloride additives that can damage masonry. Where salt is used on icy walks, distribute it sparingly and sweep up residual salt after walks have dried.
- Use snow shovels and brooms to clean snow from historic paths and walkways. Avoid blade-type snow removers as they may chip or abrade cobblestones, brick, or stone paving. Note that use of steel snow removal tools in areas where salt-containing snow melters are used may result in rust staining from steel fragments left on the paving.

Sealants and Caulks

Using sealants and caulks has become a familiar part of exterior maintenance today. As the use of precision joinery and certain traditional materials to render joints more weathertight has waned in recent years, caulks and more often elastomeric sealants are used to seal cracks and joints to keep out moisture and reduce air infiltration. Where cracks and failing joints are indicators of a serious problem, sealants and caulks may be used as a temporary measure. In some cases they may actually exacerbate the existing problem, such as by trapping moisture in adjacent masonry, and lead to more costly repairs.

Manufacturer's recommendations provide instructions on the proper application of caulks and sealants. Special attention should be placed on ensuring that the subsurface or joint is properly prepared and cleaned. Backer rods may be necessary for joints or cracks. Tooling of the caulk or sealant is usually necessary to ensure contact with all edge surfaces and for a clean and consistent appearance.

Caulks generally refer to older oil resin-based products, which have relatively limited life span and limited flexibility. Contemporary elastomeric sealants are composed of polymer synthetics. Elastomeric sealants are more durable than caulks and have greater flexibility and wider application. Caulks and sealants can become maintenance problems, as they tend to deteriorate faster than their substrates and must be replaced periodically as a part of cyclical maintenance of the structure.

The selection criteria for caulks and sealants include type of substrate, adhesion properties, size and configuration of joint, intended appearance/color and paintability, movement characteristics, and service life. Both one-part and two-part sealants are available; the latter require mixing as part of the application process. Sealants are commonly used for a variety of places on the exterior of a building such as around windows and doors, at interfaces between masonry and wood, between various wood features or elements, and at attachments to or through walls or roofs, such as with lamps, signs, or exterior plumbing fixtures. Their effectiveness depends on numerous factors including proper surface preparation and application. Applications of sealants and caulks should be examined as part of routine maintenance inspection, irrespective of their projected life expectancy.

Installation of caulks and sealants often can be undertaken by site personnel. For large and more complex projects, a contractor experienced in sealant installation may be needed. In either case, the sealant manufacturer should be consulted on proper sealant selection, preparation, and installation procedures.

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Maintenance is the most important preservation treatment for extending the life of a historic property. It is also the most cost effective. Understanding the construction techniques of the original builders and the performance qualities of older building materials, using traditional maintenance and repair methods, and selecting in-kind materials where replacements are needed will help preserve the building and its historic character.

Maintenance can be managed in small distinct components, coordinated with other work, and scheduled over many years to ensure that materials are properly cared for and their life span maximized. A written maintenance plan is the most

effective way to organize, schedule, and guide the work necessary to properly care for a historic building. The maintenance plan should include a description of the materials and methods required for each task, as well as a schedule for work required for maintenance of different building materials and components.

Historic house journals, maintenance guides for older buildings, preservation consultants, and preservation maintenance firms can assist with writing appropriate procedures for specific properties. Priorities should be established for intervening when unexpected damage occurs such as from broken water pipes or high winds. Worker safety should always be paramount. When work is beyond the



Figure 17. Extending downspouts at their base is one of the basic steps to reduce dampness in basements, crawl spaces and around foundations. Extensions should be buried, if possible, for aesthetics, ease of lawn care, and to avoid creating a tripping hazard. Photo: NPS files.

capabilities of in-house personnel and must be contracted, special efforts should be made to ensure that a contractor is both experienced in working with historic buildings and utilizes appropriate preservation treatments.

A well-maintained property is a more valuable property and one that will survive as a legacy for generations to come.

Endnotes

1. *The Secretary of the Interior's Standards for the Treatment of Historic Properties*. Washington, D.C.: U.S. Department of the Interior, National Park Service, 1995.
2. Committee on Advanced Maintenance Concepts for Buildings et al, *Committing to the Cost of Ownership: Maintenance and Repair of Public Buildings*, Washington, D.C.: National Academy Press, 1990.

Acknowledgements

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This publication has been prepared pursuant to the National Historic Preservation Act, as amended, which directs the Secretary of the Interior to develop and make available information concerning historic properties. Comments about this publication should be made to: Charles Fisher, Technical Publications Program Manager, Technical Preservation Services-2255, National Park Service, 1849 C Street, NW, Washington, D.C. 20240. This publication is not copyrighted and can be reproduced without penalty. Normal procedures for credit to the author and the National Park Service are appreciated. Unless otherwise noted, photographs in this Brief are by Sharon C. Park, FAIA. Except for the author's photos, the photographs used in this publication may not be used to illustrate other publications without permission of the owner.

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EXPERIENCE YOUR AMERICA

MEMORANDUM

February 27, 2019

From: Akoni Danielsen, Principal PM
David J. Powers & Associates, Inc.
1871 The Alameda, Suite 200
San José, CA 95126

To: Joey Dinh, Associate Planner
City of Morgan Hill
17575 Peak Avenue
Morgan Hill, CA 95037

Re: Qualification of Monterey-Kelly Vo Residential Subdivision for CEQA Categorical Exemption

INTRODUCTION TO CATEGORICAL EXEMPTIONS

The California Environmental Quality Act (CEQA) Guidelines contain classes (or categories) of projects that have generally been determined not to have a significant effect on the environment, and are therefore exempt from the provisions of CEQA. CEQA Guidelines Sections 15301 – 15333 constitute the list of categorically exempt projects and contain specific criteria that must be met in order for a project to be found exempt. Additionally, CEQA Guidelines Section 15300.2 includes a list of exceptions to exemptions, none of which may apply to a project in order for it to qualify for a categorical exemption, i.e. if an exception applies, a project is precluded from being found categorically exempt.

CEQA Guidelines Section 15332 – In-Fill Development Projects sets forth criteria for projects characterized as in-fill development that may be found categorically exempt. The analysis below shows that: a) none of the exceptions contained in 15300.2 apply to the project, and, b) the project is consistent with the in-fill criteria in Section 15332. We conclude that the project proposed for Monterey Kelly-Vo can be found categorically exempt from CEQA under Guidelines Section 15332.

PROJECT DESCRIPTION

Existing Setting and Surrounding Land Uses

The 1.13-acre project site is located at the west side of Old Monterey Road, between Campoli Drive and Mustard Avenue in Morgan Hill. There is currently a single-family residence on site (18755 Old Monterey Road). The site is bounded by Old Monterey Road to the northeast, Mustard Avenue to the north, single-family residences to the west, and Campoli Drive to the south. The site is within a single-family residential area of Morgan Hill.

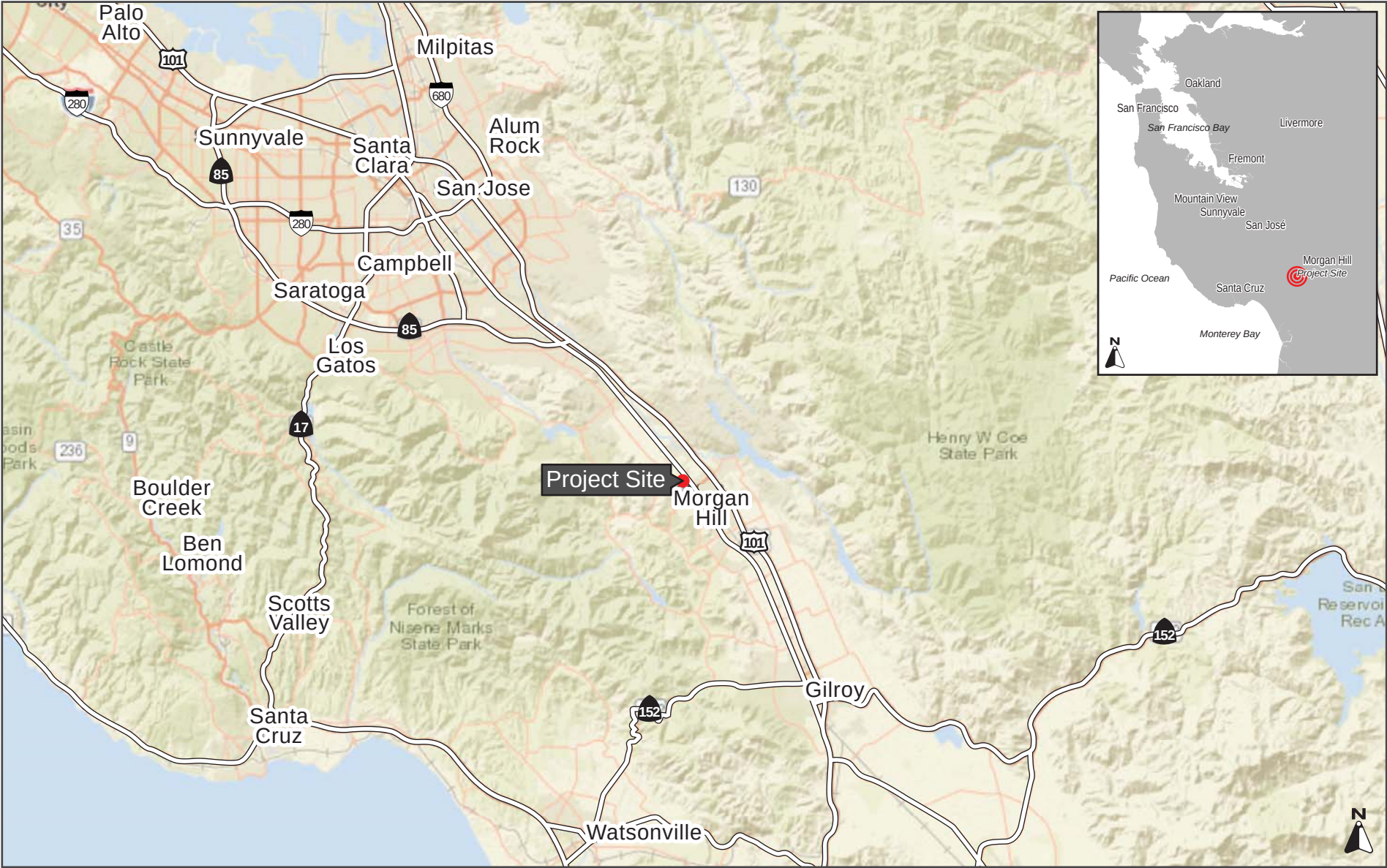
Figures 1, 2, and 3 contain Regional, Vicinity, and Aerial maps of the project site and surrounding land uses, respectively.

Proposed Project

The project proposes to subdivide the 1.13-acre parcel to construct five (5) new single-family residences. There is an existing historic single-family residence on the northern corner where Mustard Avenue and Old Monterey Road intersect. The existing historic residence is the subject of a Historical and Architectural Evaluation (see Appendix A) prepared for the project and is further discussed in Section I of this memorandum. The remainder of the site is undeveloped with mature orchard trees throughout the property. As described in Section II, the project site is designed *Residential Detached Medium* in the City of Morgan Hill's General Plan and is zoned Residential Detached Medium 7,000 (RDM 7,000) *District*.

The existing single-family residence on-site would be retained with the proposed project. A new driveway and garage would be constructed on the existing single-family residential lot. The five single-family residential lots would be approximately 7,560 square feet (Lot 1), 7,182 sf (Lot 2), 7,175 sf (Lot 3), 7,860 sf (Lot 4 containing the existing residence), 7,940 sf (Lot 5), and 7,780 sf (Lot 6). Each new residence would have a driveway connecting to either Mustard Avenue, Old Monterey Road, or Campoli Drive. The residences would be at maximum two-stories in height and would have between four and five bedrooms. Refer to Figure 4 for the project site plan.

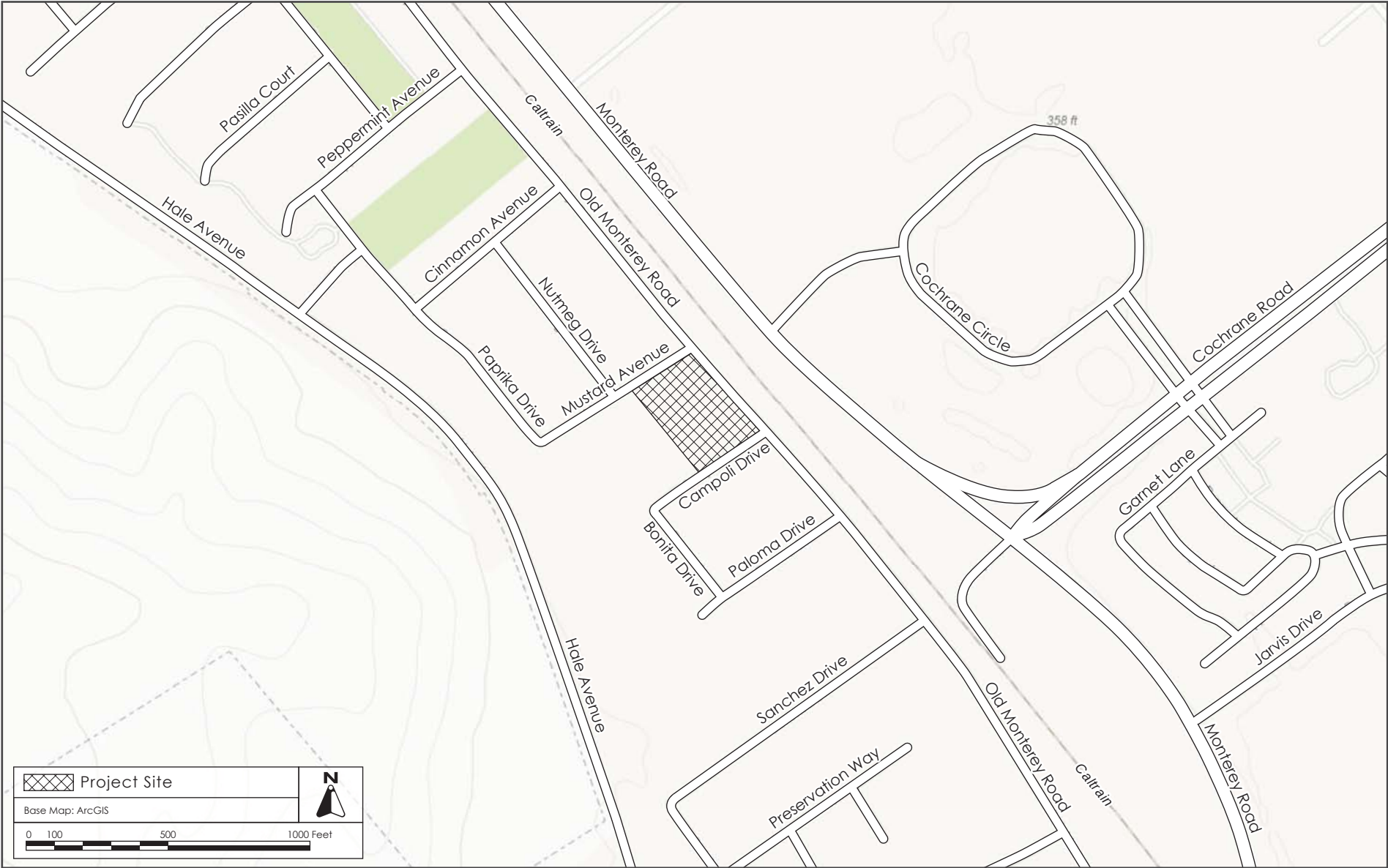
Construction for the project would involve removal of trees and grading and excavation to accommodate the new residences and utility connection.



REGIONAL MAP

FIGURE 1

Attachment: Old Monterey-Apple Tree (Kelly Vo) CEQA CatEx Memorandum (3105 : AAE2021-



VICINITY MAP

FIGURE 2

Attachment: Old Monterey-Appletree (Kelly Vo) CEQA CatEx Memorandum (3105 : AAE2021-



AERIAL PHOTOGRAPH AND SURROUNDING LAND USES

FIGURE 3

Attachment: Old Monterey-Appletree (Kelly Vo) CEQA CatEx Memorandum (3105 : AAE2021-



I. EXCEPTIONS TO CATEGORICAL EXEMPTIONS

This section documents that none of the exceptions in CEQA Guidelines Section 15300.2 would disqualify the project from being found categorically exempt.

CEQA Guidelines Section 15300.2 – Exceptions

(a) Location: Classes 3, 4, 5, 6, and 11 are qualified by consideration of where the project is to be located – a project that is ordinarily insignificant in its impact on the environment may in a particularly sensitive environment be significant. Therefore, these classes are considered to apply all instances, except where the project may impact on an environmental resource of hazardous or critical concern where designated, precisely mapped, and officially adopted pursuant to law by federal, state, or local agencies.

This exception only applies to Class 3, 4, 5, 6, and 11 exemptions. The proposed project is categorically exempt under Class 32, therefore the exception under CEQA Guidelines Section 15300.2(a) is inapplicable.

(b) Cumulative Impact: All exemptions for these classes are inapplicable when the cumulative impact of successive projects of the same type in the same place, over time is significant.

Greenhouse Gas Emissions

In its CEQA Air Quality Guidelines, the Bay Area Air Quality Management District (BAAQMD) developed screening criteria to provide lead agencies and project applicants with a conservative indication of whether a proposed project could result in potentially significant air quality impacts. If the size of the project is below the BAAQMD screening criteria, then the lead agency does not need to perform a detailed air quality assessment to compare the project's emissions to the BAAQMD significance thresholds. Global climate change is by its very nature a cumulative impact.

The project is below the BAAQMD CEQA screening size for operational greenhouse gas emissions of 56 dwelling units the single-family land use type for projects that exist prior to 2021 and are subject to the state's AB32 targets for 2020, and below the interpolated 40% lower 33-unit screening size for projects that exist after 2020 that are subject to the state's 2030 GHG thresholds set by SB 32, which are 40% below the 2020 statewide target. Similarly, the adjacent Campoli Residential Projects (North Campoli and South Campoli) constructed six single-family residential lots on a 2.04-acre parcel and 11 single-family residential lots on 2.35 acres, respectively. For both the North and South Campoli projects, the Initial Study/Mitigated Negative Declaration determined that the projects would have less than significant project operational and construction GHG emissions impacts.¹ The Campoli Residential Projects were also found to result in a less than significant cumulative GHG emissions impact. Given that the proposed Monterey Kelly-Vo project is smaller in number of units proposed and acreage than the Campoli Residential Projects, the proposed project would not have a project-level or cumulatively considerable GHG emissions impact whether constructed prior to, or after, 2020.

¹ City of Morgan Hill. *Initial Study - Campoli Residential Projects*. March 2013.

Regional Criteria Pollutants

Project construction and operations would generate regional criteria pollutants that would contribute to cumulative regional air quality impacts. BAAQMD has adopted thresholds for screening levels for land uses to indicate whether a project would contribute a significant cumulative regional air quality impact. The project would not exceed the operational criteria pollutant screening threshold of 325 dwelling units for NO_x, and the construction-related screening size threshold of 114 dwelling units for ROG. The project therefore, would not contribute to a significant cumulative impact to regional criteria pollutants.

(c) Significant Effect: A categorical exemption shall not be used for an activity where there is a reasonable possibility that the activity will have a significant effect on the environment due to unusual circumstances.

The proposed project and project site do not contain any features that are unique or that would constitute 'unusual' circumstances for a residential subdivision in the San Francisco Bay Area. The single-family residences would be constructed to a similar height and mass as surrounding homes, and proposed lot sizes are also in keeping with surrounding development patterns.

There are no special-status species or sensitive habitats on the site that could be impacted by the project. The project site is disked land and does not contain unusual geologic or seismic characteristics that might create a hazard to future residents. The proposed project would not result in a significant effect on the environment, and there are no unusual circumstances related to the project or the project site that might cause significant effects.

(d) Scenic Highways: A categorical exemption shall not be used for a project which may result in damage to scenic resources, including but not limited to, trees, historic buildings, rock outcroppings, or similar resources, within a highway officially designated as a state scenic highway. This does not apply to improvements which are required as mitigation by an adopted negative declaration or certified EIR.

There are no highways within the vicinity of the project site. Old Monterey Road, adjacent to the project site, is not considered a scenic highway. Monterey Road is also not a designated state scenic highway. The project does not involve the removal of trees that are designated as scenic resources. The proposed residences would be similar in height and mass to surrounding residences and would not obstruct views in the area.

(e) Hazardous Waste Sites: A categorical exemption shall not be used for a project located on a site which is included on any list compiled pursuant to Section 65962.5 of the Government Code.

The project site is not included on any lists compiled pursuant to Section 65962.5 of the Government Code, therefore no exceptions to the exemption apply under 15300.2(e).²

² California Department of Toxic Substances Control. *Cortese List: Section 65962.5(a)*. October 6, 2011. Accessed November 25, 2013. Available at: <http://www.calepa.ca.gov/sitecleanup/corteselist/SectionA.htm>

(f) Historical Resources: A categorical exemption shall not be used for a project which may cause a substantial adverse change in the significance of a historical resource.

A Historical and Architectural Evaluation and Department of Parks & Recreation (DRP) forms were prepared by *Urban Programmers* to evaluate the historical significance of the single-family residence on-site, constructed circa 1875-1880. A copy of the evaluation is included as Appendix A of this memorandum. The results of the evaluation determined that the single-family residence is considered a historic resource, based on the following Cal Register criterion:

Criterion 3: Property embodies the distinctive characteristics of a type, period, or method of construction or represents the work of a master, or possesses high artistic values, or represents a significant and distinguishable entity whose components lack individual distinction.

The single-family residence was found to embody the distinctive characteristics of the 1875-1880 time period by its design and construction and association with the former Madrone Station area of Morgan Hill. The evaluation noted the residence retains a high degree of original design and materials that are not often found in the Morgan Hill area.

The proposed project would retain the existing residence on-site in its current location, which was either the structure's original location or close to the original location. The feeling of the original setting in a small 1870s community associated with the Madrone Station area has since been lost with the removal of other historic buildings and the former orchards and farms were developed with housing subdivisions. The qualified historian evaluating the project found the proposed site plan for the five new single-family residences would not compromise the historic setting of the site since the historic setting has been lost with the surrounding modern residential development.

The project would construct a new detached garage and driveway extending from Old Monterey Road onto the parcel where the historic home is located. As currently proposed, the historic integrity of the historic residence would be retained in that the project would not alter/modify/rehabilitate the existing house. However, if such plans are proposed in the future, the proposed alteration would be reviewed by City staff as part of an alteration permit (per Morgan Hill Municipal Code Section 18.60.070), and for conformance with the Secretary of the Interior's Standards for Rehabilitation. The alteration permit would be required to comply with the applicable Secretary of the Interior's Standards for Rehabilitating Historic Buildings, as listed below:

Conditions of Approval:

1. A property shall be used for its historic purpose or be placed in a new use that requires minimal change to the defining characteristics of the building and its site and environment.
2. The historic character of a property shall be retained and preserved. The removal of historic materials or alteration of features and spaces that characterize a property shall be avoided.
3. Each property shall be recognized as a physical record of its time, place, and use. Changes that create a false sense of historical development, such as adding conjectural features or architectural elements from other buildings, shall not be undertaken.

4. Most properties change over time; those changes that have acquired historic significance in their own right shall be retained and preserved.
5. Distinctive features, finishes, and construction techniques or examples of craftsmanship that characterize a property shall be preserved.
6. Deteriorated historic features shall be repaired rather than replaced. Where the severity of deterioration requires replacement of a distinctive feature, the new feature shall match the old in design, color, texture, and other visual qualities and, where possible, materials. Replacement of missing features shall be substantiated by documentary, physical, or pictorial evidence.
7. Chemical or physical treatments, such as sandblasting, that cause damage to historic materials shall not be used. The surface cleaning of structures, if appropriate, shall be undertaken using the gentlest means possible.
8. Significant archaeological resources affected by a project shall be protected and preserved. If such resources must be disturbed, mitigation measures shall be undertaken.

An Archaeological Literature Search for the adjacent Campoli Residential Project was prepared in July 2012 by *Holman & Associates* (see Appendix B). The results concluded that the Campoli site, adjacent to the proposed project site, would not likely uncover buried archaeological resources during project grading and excavation. Given the project site's proximity to the Campoli Residential project site, conditions on the subject site are expected to be similar, and it is unlikely that buried archaeological resources would be uncovered during project construction activities. Nevertheless, the project would adhere to the following standard measures to avoid impacts to unknown subsurface resources:

- Discovery of Archaeological Resources. If prehistoric or historic-period cultural materials are unearthed during ground-disturbing activities, all work within 100 feet of the find shall halt until a qualified archaeologist and Native American representative can assess the significance of the find. If the find is determined to be potentially significant, the archaeologist, in consultation with the Native American representative, will develop a treatment plan that could include site avoidance, capping, or data recovery.
- Discovery of Human Remains. In the event of the discovery of human remains during construction or demolition, there shall be no further excavation or disturbance of the site within a 50-foot radius of the location of such discovery, or any nearby area reasonably suspected to overlie adjacent remains. The Santa Clara County Coroner shall be notified and shall make a determination as to whether the remains are Native American. If the Coroner determines that the remains are not subject to his authority, he shall notify the Native American Heritage Commission who shall attempt to identify descendants of the deceased Native American. If no satisfactory agreement can be reached as to the disposition of the remains pursuant to this State law, then the land owner shall re-inter the human remains and items associated with Native American burials on the property in a location not subject to further subsurface disturbance.

Conclusion

Based on the analysis above, none of the exceptions to categorical exemptions detailed in CEQA Guidelines Section 15300.2 apply to the proposed project.

II. INFILL CRITERIA

This section documents that the proposed project qualifies for a Class 32 In-Fill Development exemption because it meets the criteria set forth in CEQA Guidelines Section 15332(a) – 15332(e).

CEQA Guidelines Section 15332 – In-Fill Development Projects

Class 32 consists of projects characterized as in-fill development meeting the conditions described in this section.

(a) The project is consistent with the applicable general plan designation and all applicable general plan policies as well as with applicable zoning designation and regulations.

General Plan

The project site is designated *Residential Detached Medium* in the Morgan Hill General Plan. The *Residential Detached Medium* designation is intended for detached homes on smaller lots, including courtyard homes, manufactured homes, and small-lot single-family homes. The designation provides a transition from non-residential areas to lower-density neighborhoods. *Residential Detached Medium* lands have a density allowances of up to seven units per acre.

Zoning

The project site is zoned *Residential Detached Medium 7,000 (RDM 7,000)*. The *RDM 7,000* district is intended to stabilize and protect the residential character of neighborhoods and to promote and encourage a suitable environment for family life. Permitted uses within the zoning district include: single-family detached dwellings; residential care facility-small; duplex or two single-family attached dwellings on corner lots; manufactured homes; small and large family day care homes; and secondary dwelling units. Structures on site are limited to a maximum height of two and one-half stories, or thirty feet, whichever is less.

Project Consistency

The project proposes to subdivide a 1.13-acre parcel into six single-family residential lots, consistent with the site's General Plan and zoning designations. The proposed residences would not exceed two and one-half stories in height (or 30 feet).

(b) The proposed development occurs within city limits on a project site of no more than five acres substantially surrounded by urban uses.

The project site is located within Morgan Hill city limits and is fewer than five acres in size. The project site is located west of Old Monterey Road and is surrounded by single-family residences to the north, south, and west.

(c) *The project site has no value as habitat for endangered, rare or threatened species.*

The project site is within a developed residential area of Morgan Hill. The site itself is disked land with one single-family residence. There is minimal plant life on-site, other than several existing trees.

Based on the Santa Clara Valley Habitat Agency's Habitat Plan Map, the project site has a landcover of *Rural Residential* (1.13 acres) and is within a Plan Survey Zone. The project would be required to prepare a Habitat Plan Application to pay applicable fees to the Habitat Agency commensurate with the level of project impact. Payment of applicable fees and compliance to related Conditions found within the Habitat Plan would reduce potential impacts to plant species on-site. The project site is not located within a Wildlife Survey Area, and therefore, would not impact potential special-status animal species.

The project site and surrounding area do not contain sensitive habitats or special-status species. Fisher Creek is over 400 feet west of the site, separated by intervening residential properties. There are 23 total trees onsite: 21 mature Black walnut trees, one Apricot tree, and one plum tree, grown out of an orchard root stock. The project proposes to remove 20 trees on-site. The project would replace trees removed on-site consistent with the City of Morgan Hill's Tree Removal ordinance

If construction of the proposed project occurs during the bird nesting season (February 1-August 31), construction activities have the potential to impact nesting birds that are protected under the Migratory Bird Treaty Act (MBTA). In compliance with the MBTA and the California Fish and Wildlife Code, the proposed project shall implement the following standard measures, as conditions of approval to reduce or avoid construction-related impacts to nesting raptors and their nests:

- General construction activities and the removal of trees could impact nesting birds. To the extent practicable, vegetation removal shall be performed from September 1 through February 28 to avoid the general nesting period for birds. If tree removal cannot be performed during this period, preconstruction surveys for nesting birds shall be conducted by a qualified wildlife biologist no more than 14 days prior to the start of vegetation removal grading or other construction activities.
- If vegetation removal or other construction or operational activities are not started within 14 days of the survey, another survey shall be required. The survey area shall include all of the construction site and staging areas as well as areas within 150 feet of the project site. In the event that an active nest is discovered in the areas to be cleared and or developed or in habitats within 150 feet of the proposed activities vegetation removal and construction shall be postponed for at least two weeks or until a wildlife biologist has determined that the young have fledged and the nest is vacated and there is no evidence of a second nesting attempt.

(d) Approval of the project would not result in any significant effects relating to traffic, noise, air quality, or water quality.

Traffic

Based on data from the Institute for Transportation Engineers *Trip Generation Manual*, 10th Edition, 2017 for “Single-Family Detached Housing” (ITE land use code 210), the project would generate an average of approximately 50 trips per day, including 4 trips during the AM peak hour and 5 during the PM peak hour. Given the relative few number of trips generated by the project, project implementation would not result in significant traffic related impacts.

There are no bicycle or pedestrian facilities within the project vicinity, other than sidewalks. Project implementation, therefore, would not impact bicycle or pedestrian facilities.

The nearest public transit stop within walking distance of the site is Hale & Llagas, located just south of the Hale Avenue and Llagas Road intersection, approximately 0.7 miles southwest of the project site.

Noise

The following discussion is based, in part, on a Noise and Vibration Assessment prepared by *Illingworth & Rodkin, Inc.* in May 2012 for an adjacent residential development on Campoli Drive, west of the project site. The report is attached as Appendix C to this memorandum.

Future Exterior Noise Environment

The future noise environment at the project site would continue to primarily result from railroad train passbys on the Union Pacific Railroad (UPRR). Based on previous noise and vibration studies in the surrounding area, noise levels ranged from 70 to 72 dBA while vibration levels measured between 80 and 90 feet of the UPRR were below the Federal Transit Authority’s 75 VdB “occasional events” criteria for a general vibration assessment.³ The vibration levels were also below the FTA’s criteria for conducting a detailed vibration analysis.⁴

Future Interior Noise Environment

The City of Morgan Hill requires interior noise levels be maintained at 45 dBA CNEL or less for new residential housing units. Residences of the proposed project will require proper wall construction techniques, the selections of proper windows and doors, and the incorporation of a forced-air mechanical ventilation system to allow the occupant the option of controlling noise by closing the windows.

³ Illingworth & Rodkin, Inc. *South Campoli Drive Residential Project in Morgan Hill – Noise and Vibration Assessment*. May 3, 2012.

⁴ Ibid.

The project shall include the following design treatment measures with the proposed project:

- Provide a suitable form of forced-air mechanical ventilation, as determined by the local building official, for homes throughout the site, so that windows could be kept closed at the occupant's discretion to control interior noise and achieve the interior $L_{\max}$ and L_{dn} noise standards.
- Provide sound rated windows and doors to maintain interior noise levels at acceptable levels. Preliminary calculations made based on the data contained in the conceptual design plans indicate that sound-rated windows and doors with a sound transmission class rating of STC 38 to 43 would be sufficient to control maximum instantaneous noise levels to 50 dBA $L_{\max}$ in bedrooms, 55 dBA $L_{\max}$ in other habitable rooms, and to also achieve the 45 dBA L_{dn} interior noise standard. Additional treatments may include, but are not limited to, sound rated wall construction, acoustical caulking, insulation, acoustical vents, etc. Large windows and doors should be oriented away from the railroad where possible. Bedrooms should be located away from the UPRR.
- Confirm the final specifications for noise insulation treatments during final design of the project, based on the best available data regarding future usage assumptions for the UPRR. Results of the analysis, including the description of the necessary noise control treatments, will be submitted to the City along with the building plans and approved prior to issuance of a building permit.

The implementation of the above measures would reduce exterior and interior noise level to acceptable levels, consistent with City noise policies. As this is a case of the existing environment affecting the site, it is beyond the normal scope of CEQA, but is included as it pertains to the project's conformance with City policies.

Construction Noise

Construction of the Monterey-Kelly Vo project would expose nearby existing residences to construction noise which would temporarily elevate ambient noise levels at sensitive land uses in the vicinity. Although detailed schedules and phasing of construction activities are unknown at this time, construction activities on site would be limited to hours consistent with the City of Morgan Hill's Municipal Code. The City's Municipal Code limits activities between the hours of 7:00 AM and 8:00 PM., Monday through Friday, and between the hours of 9:00 AM and 6:00 PM on Saturdays. No construction activities should occur on Sundays or federal holidays (Section 8.28.040 of the Morgan Hill Municipal Code).

Typically, significant noise impacts do not result when standard construction noise control measures are enforced at the project site and when the duration of the noise generating construction period is limited to one construction season (typically one year) or less. Noise generated by grading, infrastructure improvements and the construction of residences would not be expected to result in noise levels exceeding 60 dBA L_{eq} and the ambient noise environment by 5 dBA L_{eq} for a period greater than one year

The following standard conditions are assumed to be included in the project:

- Construction activities shall be limited to the hours between 7:00 a.m. and 8:00 p.m., Monday through Friday, and between the hours of 9:00 a.m. and 6:00 p.m. on Saturdays. No construction

activities should occur on Sundays or federal holidays (Consistent with Section 8.28.040 of the Morgan Hill Municipal Code).

- Equip all internal combustion engine driven equipment with intake and exhaust mufflers that are in good condition and appropriate for the equipment.
- Locate stationary noise generating equipment (e.g. rock crushers, compressors) as far as possible from adjacent residential receivers.
- Acoustically shield stationary equipment located near residential receivers with temporary noise barriers or recycled demolition materials.
- Utilize "quiet" air compressors and other stationary noise sources where technology exists.
- The contractor shall prepare a detailed construction plan identifying the schedule for major noise-generating construction activities. The construction plan shall identify a procedure for coordination with adjacent residential land uses so that construction activities can be scheduled to minimize noise disturbance.
- Designate a "disturbance coordinator" who would be responsible for responding to any complaints about construction noise. The disturbance coordinator will determine the cause of the noise complaint (e.g., bad muffler, etc.) and will require that reasonable measures be implemented to correct the problem.

Implementation of the above measures would reduce construction noise levels emanating from the site, limit construction hours, and minimize disruption and annoyance. With the implementation of these measures, and recognizing the duration of project construction activities, the substantial temporary increase in ambient noise levels would be less-than-significant.

Groundborne Vibration from Construction

The construction of the project may generate perceptible vibration when heavy equipment or impact tools (e.g. jackhammers, hoe rams) are used, but would not expose persons to excessive groundborne vibration. Construction activities would include site preparation work, foundation work, and new building framing and finishing. The proposed project would not require pile driving, which can cause excessive vibration.

In areas where vibration would not be expected to cause structural damage, vibration levels may still be perceptible. However, as with any type of construction, this would be anticipated and it would not be considered significant given the intermittent and short duration of the phases that have the highest potential of producing vibration (demolition and use of jackhammers and other high power tools). By use of administrative controls such as notifying adjacent residences of scheduled construction activities and scheduling construction activities with the highest potential to produce perceptible vibration to hours with the least potential to affect these uses, perceptible vibration can be kept to a minimum and as such would not result in a significant impact with respect to perception.

Impacts to Nearby Sensitive Receptors

A noise increase is considered substantial if it increases the ambient noise level by three dB or more in sensitive noise areas. A three dB increase is generally equivalent to a doubling of traffic on local roadways. The project would add approximately 50 daily trips, which would not result in a doubling of traffic on local roadways. Therefore, the project would not result in a significant operational traffic noise increase.

Air Quality

The following discussion is based, in part, on a Toxic Air Contaminant (TAC) and PM_{2.5} analysis prepared by *Illingworth & Rodkin, Inc.* in April 2012 for an adjacent residential development on Campoli Drive, west of the project site. The TAC and PM_{2.5} analysis is attached as Appendix D to this memorandum.

The project proposes to subdivide the project site and construct five single-family residences, which is below the screening size threshold of the Bay Area Air Quality Management District's (BAAQMD) CEQA Air Quality Guidelines for conducting quantified emissions analysis. Operation of the project therefore, would not contribute to a violation of an ambient air quality standard or would result in a cumulatively considerable emissions of an air pollutant that BAAQMD considers to be in non-attainment. Project construction, however, could cause localized impacts to the adjacent sensitive receptors (e.g. residences on Campoli Drive and Mustard Avenue).

Impacts to Nearby Sensitive Receptors

As described above, the closest sensitive receptors to the project site are residences on Campoli Drive and Mustard Avenue, approximately 10 feet west and 60 feet northwest of the project site boundaries, respectively.

Construction TAC and PM_{2.5} Impacts

A TAC analysis and PM_{2.5} analysis was prepared for the Campoli Residential project. The Campoli Residential project included a north and south portion, proposing 10 and 11 single-family homes on the respective northern and southern portions of the project. The assessment found that TAC Emissions, including cancer risk and PM_{2.5} concentrations would be less than 9.4 excess cancer cases per million and PM_{2.5} concentrations less than 0.1 µgm³, consistent with BAAQMD screening thresholds. The proposed Monterey-Kelly Vo project proposes fewer units and construction across a smaller site and, therefore, would not result in construction TAC or PM_{2.5} impacts. Nevertheless, the project would include the following BAAQMD best management practices to reduce construction air quality disturbances to adjacent residences:

Best Management Practices

1. Include basic measures to control dust and exhaust during construction. During any construction period ground disturbance, the applicant shall ensure that the project contractor implement measures to control dust and exhaust. Implementation of the measures recommended by BAAQMD and listed below would reduce the air quality impacts associated with grading and new construction to a less than significant level. The contractor shall implement the following best management practices that are required of all projects:
 - All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day.
 - All haul trucks transporting soil, sand, or other loose material off-site shall be covered.
 - All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power

- vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited.
- All vehicle speeds on unpaved roads shall be limited to 15 miles per hour (mph).
- All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used.
- Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the California airborne toxics control measure Title 13, Section 2485 of California Code of Regulations [CCR]). Clear signage shall be provided for construction workers at all access points.
- All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation.
- Post a publicly visible sign with the telephone number and person to contact at the Lead Agency regarding dust complaints. This person shall respond and take corrective action within 48 hours. The Air District's phone number shall also be visible to ensure compliance with applicable regulations.

Roadway and Train TAC and PM_{2.5} Impacts

Monterey Highway is a busy arterial roadway near the project site with an estimated 39,300 daily trips (2-way) between Peebles Avenue and Madrone Parkway (according to City's General Plan Circulation Element traffic study). New residences developed by the project would be setback approximately 25 feet from Old Monterey Road and approximately 180 feet from Monterey Highway. The BAAQMD provides screening tables that indicate predicted community risk impacts that roadways pose. At 100 feet from the Monterey Highway, these tables indicate cancer risk would be less than 7.2 cases per million and at 100 feet and PM_{2.5} concentrations would be less than 0.26 µg/m³. These levels are below the BAAQMD significance thresholds, and therefore, the exposures would be considered less than significant.

Train TAC and PM_{2.5} Impacts

Impacts from trains upon the Campoli Residential project were also predicted. The UPRR line runs parallel to Old Monterey Road and is adjacent to the northeastern property boundaries of the proposed Monterey-Kelly Vo project. The UPRR is used by trains for passenger and freight service. Along this portion of the UPRR line CalTrain operates 3 trains per weekday between Gilroy and San José, Amtrak has one passenger train daily, and there are about 6 freight trains daily.

DPM and PM_{2.5} emissions from trains on the UPRR rail line were computed using EPA emission factors for locomotives and California Air Resources Board (CARB) adjustment factors to account for fuels used in California. The Campoli Residential project prepared dispersion modeling of locomotive emissions using the EPA's ISCST3 model and a five-year set of hourly meteorological data for the San Martin Airport. Locomotive emissions were modeled as a line source along the rail line, near the project. Concentrations were calculated at receptor locations within the project site where residential development would occur.

The Campoli Residential Project computed its maximum increased cancer risk from train traffic based on an adjacent project site. Given the proposed project's adjacency to the Campoli Residential Project sites,

the maximum increased cancer risk conclusions would be comparable to the cancer risk occurrences at the proposed project site. The residential project (Hale-Signature) adjacent to the Campoli Residential Project calculated its maximum increased cancer risk as 4.2 million cases at the nearest receptor to the railroad line along Monterey Road. Cancer risks at other residential areas within the Hale-Signature project site would be lower than the maximum cancer risk. The maximum average PM_{2.5} concentration of 0.03 µg/m³ occurred at the same receptor that had the maximum cancer risk. The maximum predicted cancer risk and PM_{2.5} concentration for the Hale-Signature project is below the BAAQMD significance thresholds for cancer risk and PM_{2.5} exposure.

Based on the Monterey-Kelly Vo project site's proximity to the Hale-Signature project site and to Monterey Highway, as well as similar setbacks as the Hale-Signature project, the Monterey-Kelly Vo project would have TAC and PM_{2.5} exposures equal to or less than the Hale-Signature project. The proposed Monterey-Kelly Vo project therefore, would not result in significant TAC and PM_{2.5} impacts.

With implementation of best management practices described above regarding project construction, the project would have a less than significant impact to air quality.

Hydrology and Water Quality

NPDES Municipal Stormwater Permit

The EPA has delegated management of NPDES requirements for municipal urban runoff discharges in California to the SWRCB and the nine RWQCB's. The City of Morgan Hill is designated a smaller municipal separate storm sewer system (small MS4s) serving less than 100,000 people. The City has prepared and adopted a Storm Water Management Plan (SWMP) and been issued the NPDES Small MS4s General Permit by the CCRWQCB [Water Quality Order Number 2013-0001-DWQ]. The City's SWMP outlines a comprehensive five-year plan to establish Best Management Practices (BMPs) through six Minimum Control Measures (MCMs) to help reduce the discharge of pollutants into waterways and to protect local water quality caused by stormwater and urban run-off within the corporate limits of Morgan Hill.

Projects resulting in the addition and/or replacement of 5,000 square feet of impervious surfaces are required to comply with the City's NPDES Small MS4s General Permit and implement a project specific SWMP.

Construction Activities

The proposed project would construct approximately 0.08 acres in driveway area and 0.28 acres of building coverage on the 1.13-acre site. In total, the project would result in a 29.48 percent increase in impervious surfaces on-site, equivalent to approximately 13,394 square feet. Under existing conditions, 700 square feet is already developed with impervious surfaces from the existing single-family residence

Construction activities temporarily increase the amount of debris on-site and grading activities, which could increase pollutant loads of eroded material in stormwater runoff. The project will be required to

implement standard measures listed below as a standard condition prior to issuance of building and/or grading permit. Conformance with the measures in the erosion control plan would reduce the potential for substantial adverse impacts to water quality during construction.

Since the proposed project would create or replace more than 10,000 square feet of impervious surfaces, the project would be subject to the requirements of the Municipal Regional Stormwater Permit (MRP) for the San Francisco Bay Area.

The project site is greater than one acre in size and would therefore, be subject to the Statewide Construction General Permit. Construction water quality control measures will be implemented based on Regional Water Quality Control Board Best Management Practices (BMPs), as detailed below.

- The project shall comply with the requirements of the Municipal Regional Permit as well as other local, state, and federal requirements. Specifically, the project shall comply with provision C.3 of the MRP, which provides enhanced performance standards for the management of stormwater for new development.
- The project shall comply with all City of Morgan Hill ordinances, policies, and processes regarding the construction treatment of stormwater runoff. Specifically, a Stormwater Management Plan (SWMP) will be developed prior to issuance of building permits for project construction, to ensure compliance with City of Morgan Hill and MRP requirements. The SWMP will meet the criteria for stormwater protection outlined in the City's Environmental Compliance Program.
- Construction BMPs shall be implemented for reducing the volume of runoff and pollution in runoff to the maximum extent practicable during site excavation, grading, and construction. All measures shall be included in the project's SWMP and printed on all construction documents, contracts, and project plans. These would include:
 - Restrict grading to the dry season or meet City requirements for grading during the rainy season.
 - Use effective, site-specific erosion and sediment control methods during the construction periods. Provide temporary cover of all disturbed surfaces to help control erosion during construction. Provide permanent cover as soon as is practical to stabilize the disturbed surfaces after construction has been completed.
 - Cover soil, equipment, and supplies that could contribute non-visible pollution prior to rainfall events or perform monitoring of runoff. Cover stockpiles with secure plastic sheeting or tarp.
 - Implement regular maintenance activities such as sweeping driveways between the construction area and public streets. Clean sediments from streets, driveways, and paved areas on-site using dry sweeping methods. Designate a concrete truck washdown area.
 - Dispose of all wastes properly and keep site clear of trash and litter. Clean up leaks, drips, and other spills immediately so that they do not contact stormwater.

- Place fiber rolls or silt fences around the perimeter of the site. Protect existing storm and sewer inlets in the project area from sedimentation with filter fabric and sand or gravel bags.

Implementation of standard BMPs identified above would avoid construction and post-construction water quality impacts.

Post-Construction Activities

Since the proposed project would be replacing more than 5,000 square feet of impervious surface, the project would implement post-construction water quality best management practices (BMPs) that control pollutant levels to pre-development levels, or to the maximum extent practicable for the project. The BMPs shall be designed in accordance with engineering criteria in the *California Stormwater BMP Handbook for New and Redevelopment* or other accepted guidance. Stormwater on the site would be conveyed to an existing 42" storm drain in Mustard Avenue. Since the storm drainage facilities already receive some runoff from the existing site conditions, the capacity of nearby storm drainage infrastructure will not need to be expanded in order to accommodate the proposed project.

Implementation of standard measures and development of best management practices consistent with the *California Stormwater BMP Handbook for New and Redevelopment* would avoid construction and post-construction water quality impacts.

Flooding

The following discussion is based on a Hydraulic Analysis prepared for the project by *Schaaf & Wheeler* in February 2019. The analysis memo is attached as Appendix E.

The project site is located with FEMA Flood Hazard Zone D, an area that has not been previously studied. Therefore, a hydraulic analysis was prepared to confirm site conditions. Results of the hydraulic analysis prepared for the project show that the project site is not located within the 100-year floodplain from Fisher Creek and is located within a Zone X floodplain designation, which is an area subject to inundation from a 500-year flood event, i.e. 0.2 percent chance of flooding in a given year. The project site is at an approximate elevation of 352 feet, and the 100-year (or 1% flood) water surface is approximately 349.10 feet. The project, therefore, would not place residences within a 100-year floodplain and would result in a less than significant flooding impact.

(e) *The site can be adequately served by all required utilities and public services.*

Public Services

The proposed project would be constructed to meet the City's Municipal and Fire Codes which would ensure the project be adequately served by the utilities and services. The project would generate

approximately 16 new residents in the City of Morgan Hill who would require public services.⁵ Since the proposed project is consistent with the site's General Plan designation and zoning district, the population growth resulting from the project was accounted for in the City's General Plan. Based on the City's General Plan Environmental Impact Report, buildout of the General Plan would result in an increase in demand for police and fire services however, the increase in demand would not be considered a significant impact. The project, therefore, would have a less than significant impact on public services.

Utilities and Service Systems

Water

There is an existing eight-inch water line with Mustard Avenue and an existing eight-inch ductile iron pipe water line in Campoli Drive. Assuming a 400 gallon per day (gpd) water demand per residence, the project would generate approximately 2,400 gpd of potable water. The project proposes minimal landscaping which would not generate a sizeable water demand. Based on the City's General Plan projections of population growth and the additional of six single-family residences, the existing water supply is adequate to serve the anticipated development on the site.

Sanitary Sewer

The proposed project would connect to existing municipally-owned eight-inch diameter sanitary sewer pipes within Mustard Avenue. The City's General Plan and Sewer System Master Plan indicates that the existing and as-planned capacity of the water and sewer systems in the City will be able to accommodate the buildout of the General Plan. The project would generate approximately 2,040 gallons per day of wastewater and no capacity improvements would need to be made to the City's sewer system to meet the increased sewage flow.⁶

Storm Drainage

Under existing conditions, stormwater on-site percolates through the exposed soil into the Fisher Creek watershed.

Stormwater from the project site would be conveyed to an existing 42-inch storm drain line located within Mustard Avenue. Given the relatively small amount of new impervious surface area proposed, the existing storm drain line in Mustard Avenue would be able to accommodate the stormwater draining from the project site.

The project site is within the urban service area of the City of Morgan Hill and would be adequately served by all public services. As noted above, the sewage and stormwater pipes in the project area are adequately sized to serve the proposed project, and adequate water supplies exist to serve the project.

⁵ Estimate based on the assumption of 3.06 persons per household for each residential unit.

⁶ Wastewater represents approximately 85 percent of indoor water demand generated by the project. As the project is estimated to generate approximately 2,400 gpd, the project would generate a demand of 2,040 gpd.

CONCLUSION

With incorporation of the standard measures and best management practices and conditions of approval listed below and detailed in this memorandum into the project, the proposed project meets the criteria for a Class 32 In-fill Development exemption and none of the exceptions to the exemptions set forth in CEQA Guidelines Section 15300.2 apply to the project.

Project Conditions of Approval/Best Management Practices

Cultural Resources

1. A property shall be used for its historic purpose or be placed in a new use that requires minimal change to the defining characteristics of the building and its site and environment.
 2. The historic character of a property shall be retained and preserved. The removal of historic materials or alteration of features and spaces that characterize a property shall be avoided.
 3. Each property shall be recognized as a physical record of its time, place, and use. Changes that create a false sense of historical development, such as adding conjectural features or architectural elements from other buildings, shall not be undertaken.
 4. Most properties change over time; those changes that have acquired historic significance in their own right shall be retained and preserved.
 5. Distinctive features, finishes, and construction techniques or examples of craftsmanship that characterize a property shall be preserved.
 6. Deteriorated historic features shall be repaired rather than replaced. Where the severity of deterioration requires replacement of a distinctive feature, the new feature shall match the old in design, color, texture, and other visual qualities and, where possible, materials. Replacement of missing features shall be substantiated by documentary, physical, or pictorial evidence.
 7. Chemical or physical treatments, such as sandblasting, that cause damage to historic materials shall not be used. The surface cleaning of structures, if appropriate, shall be undertaken using the gentlest means possible.
 8. Significant archaeological resources affected by a project shall be protected and preserved. If such resources must be disturbed, mitigation measures shall be undertaken.
- Discovery of Archaeological Resources. If prehistoric or historic-period cultural materials are unearthed during ground-disturbing activities, all work within 100 feet of the find shall halt until a qualified archaeologist and Native American representative can assess the significance of the find. If the find is determined to be potentially significant, the archaeologist, in consultation with the Native American representative, will develop a treatment plan that could include site avoidance, capping, or data recovery.
 - Discovery of Human Remains. In the event of the discovery of human remains during construction or demolition, there shall be no further excavation or disturbance of the site within a 50-foot radius of the location of such discovery, or any nearby area reasonably suspected to overlie adjacent remains. The Santa Clara County Coroner shall be notified and shall make a determination as to whether the remains are Native American. If the Coroner determines that the remains are not subject to his

authority, he shall notify the Native American Heritage Commission who shall attempt to identify descendants of the deceased Native American. If no satisfactory agreement can be reached as to the disposition of the remains pursuant to this State law, then the land owner shall re-enter the human remains and items associated with Native American burials on the property in a location not subject to further subsurface disturbance.

Biological Resources

- General construction activities and the removal of trees could impact nesting birds. To the extent practicable, vegetation removal shall be performed from September 1 through February 28 to avoid the general nesting period for birds. If tree removal cannot be performed during this period, preconstruction surveys for nesting birds shall be conducted by a qualified wildlife biologist no more than 14 days prior to the start of vegetation removal grading or other construction activities.
- If vegetation removal or other construction or operational activities are not started within 14 days of the survey, another survey shall be required. The survey area shall include all of the construction site and staging areas as well as areas within 150 feet of the project site. In the event that an active nest is discovered in the areas to be cleared and or developed or in habitats within 150 feet of the proposed activities vegetation removal and construction shall be postponed for at least two weeks or until a wildlife biologist has determined that the young have fledged and the nest is vacated and there is no evidence of a second nesting attempt.

Noise & Vibration

- Provide a suitable form of forced-air mechanical ventilation, as determined by the local building official, for homes throughout the site, so that windows could be kept closed at the occupant's discretion to control interior noise and achieve the interior L_{max} and L_{dn} noise standards.
- Provide sound rated windows and doors to maintain interior noise levels at acceptable levels. Preliminary calculations made based on the data contained in the conceptual design plans indicate that sound-rated windows and doors with a sound transmission class rating of STC 38 to 43 would be sufficient to control maximum instantaneous noise levels to 50 dBA L_{max} in bedrooms, 55 dBA L_{max} in other habitable rooms, and to also achieve the 45 dBA L_{dn} interior noise standard. Additional treatments may include, but are not limited to, sound rated wall construction, acoustical caulking, insulation, acoustical vents, etc. Large windows and doors should be oriented away from the railroad where possible. Bedrooms should be located away from the UPRR.
- Confirm the final specifications for noise insulation treatments during final design of the project, based on the best available data regarding future usage assumptions for the UPRR. Results of the analysis, including the description of the necessary noise control treatments, will be submitted to the City along with the building plans and approved prior to issuance of a building permit. The following standard conditions are assumed to be included in the project:

- Construction activities shall be limited to the hours between 7:00 a.m. and 8:00 p.m., Monday through Friday, and between the hours of 9:00 a.m. and 6:00 p.m. on Saturdays. No construction activities should occur on Sundays or federal holidays (Consistent with Section 8.28.040 of the Morgan Hill Municipal Code).
- Equip all internal combustion engine driven equipment with intake and exhaust mufflers that are in good condition and appropriate for the equipment.
- Locate stationary noise generating equipment (e.g. rock crushers, compressors) as far as possible from adjacent residential receivers.
- Acoustically shield stationary equipment located near residential receivers with temporary noise barriers or recycled demolition materials.
- Utilize "quiet" air compressors and other stationary noise sources where technology exists.
- The contractor shall prepare a detailed construction plan identifying the schedule for major noise-generating construction activities. The construction plan shall identify a procedure for coordination with adjacent residential land uses so that construction activities can be scheduled to minimize noise disturbance.
- Designate a "disturbance coordinator" who would be responsible for responding to any complaints about construction noise. The disturbance coordinator will determine the cause of the noise complaint (e.g., bad muffler, etc.) and will require that reasonable measures be implemented to correct the problem.

Air Quality

- Include basic measures to control dust and exhaust during construction. During any construction period ground disturbance, the applicant shall ensure that the project contractor implement measures to control dust and exhaust. Implementation of the measures recommended by BAAQMD and listed below would reduce the air quality impacts associated with grading and new construction to a less than significant level. The contractor shall implement the following best management practices that are required of all projects:
 - All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day.
 - All haul trucks transporting soil, sand, or other loose material off-site shall be covered.
 - All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited.
 - All vehicle speeds on unpaved roads shall be limited to 15 miles per hour (mph).
 - All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used.
 - Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the California airborne toxics control measure Title 13, Section 2485 of California Code of Regulations [CCR]). Clear signage shall be provided for construction workers at all access points.

- All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation.
- Post a publicly visible sign with the telephone number and person to contact at the Lead Agency regarding dust complaints. This person shall respond and take corrective action within 48 hours. The Air District's phone number shall also be visible to ensure compliance with applicable regulations.

Hydrology and Water Quality

- The project shall comply with the requirements of the Municipal Regional Permit as well as other local, state, and federal requirements. Specifically, the project shall comply with provision C.3 of the MRP, which provides enhanced performance standards for the management of stormwater for new development.
- The project shall comply with all City of Morgan Hill ordinances, policies, and processes regarding the construction treatment of stormwater runoff. Specifically, a Stormwater Management Plan (SWMP) will be developed prior to issuance of building permits for project construction, to ensure compliance with City of Morgan Hill and MRP requirements. The SWMP will meet the criteria for stormwater protection outlined in the City's Environmental Compliance Program.
- Construction BMPs shall be implemented for reducing the volume of runoff and pollution in runoff to the maximum extent practicable during site excavation, grading, and construction. All measures shall be included in the project's SWMP and printed on all construction documents, contracts, and project plans. These would include:
 - Restrict grading to the dry season or meet City requirements for grading during the rainy season.
 - Use effective, site-specific erosion and sediment control methods during the construction periods. Provide temporary cover of all disturbed surfaces to help control erosion during construction. Provide permanent cover as soon as is practical to stabilize the disturbed surfaces after construction has been completed.
 - Cover soil, equipment, and supplies that could contribute non-visible pollution prior to rainfall events or perform monitoring of runoff. Cover stockpiles with secure plastic sheeting or tarp.
 - Implement regular maintenance activities such as sweeping driveways between the construction area and public streets. Clean sediments from streets, driveways, and paved areas on-site using dry sweeping methods. Designate a concrete truck washdown area.
 - Dispose of all wastes properly and keep site clear of trash and litter. Clean up leaks, drips, and other spills immediately so that they do not contact stormwater.
 - Place fiber rolls or silt fences around the perimeter of the site. Protect existing storm and sewer inlets in the project area from sedimentation with filter fabric and sand or gravel bags.

Appendix A
Historical and Architectural Evaluation

**HISTORICAL AND ARCHITECTURAL EVALUATION
For the Property at 18755 Old Monterey Road
Morgan Hill, Santa Clara County, California**



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Date: September 25, 2018

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Historical and Architectural Evaluation for the House and property at 18755 Old Monterey Road, City of Morgan Hill, Santa Clara County, California.

1. Introduction:

A proposal has been submitted to the City of Morgan Hill to develop the property at 18755 Old Monterey Road, Morgan Hill. To comply with City policies and the California Environmental Act, an historical and architectural evaluation of the existing building is required. The property has one building used as a house and a shed. The rest of the property is vacant.

1.1 Project Location

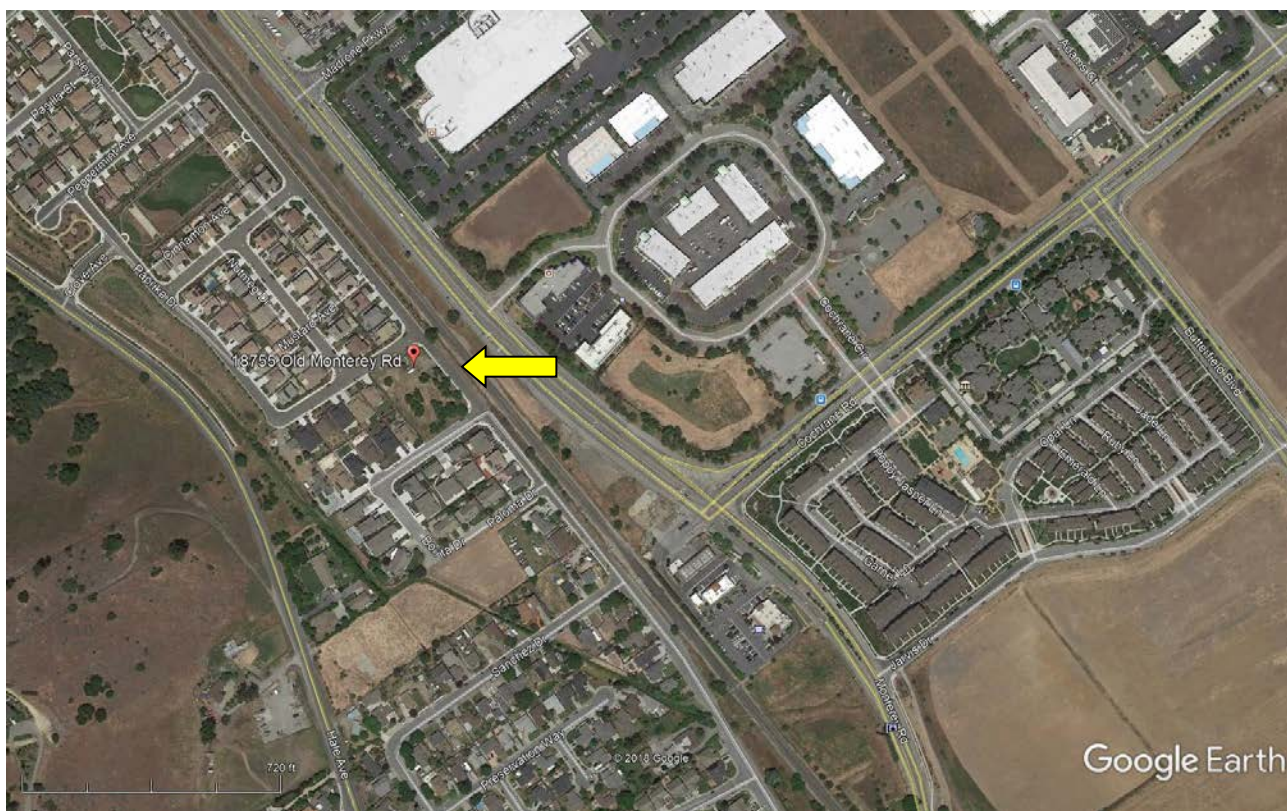


Figure 1 Aerial map showing 18755 Old Monterey Road
Map Source: Google Earth Pro, April 5, 2016

1.2 Current Resource Listings: The property is not listed in the Morgan Hill Inventory of Cultural Resources, the Santa Clara County Heritage Resource Inventory (October 1999), or with the North West Information Center (CRIS).

1.3 Executive Summary The property was traced to the first American owner William Fisher and his wife Liberta Fisher Bull Piatti. After her death in 1905, the 140 acre property was subdivided into 10 and 20 acres lots that continued the agricultural use. The only building on the remaining 1.1 acre parcel is a c.1875-1880 building used as a residence. The building was moved to the site in the late 1920s and first appears on the property tax roll in 1930. The National Style building with narrow double hung windows is one of the oldest in Morgan Hill. Because it exhibit a style from an era that is no longer found in Morgan Hill, and retains a high degree of integrity showing the style, materials and craftsmanship, the building is eligible for listing in the California Register of Historic Resources under criterion 3, and is eligible to be listed in the Morgan Hill Historic Resource Inventory,

1.4 Methodology: Standard research methodology was used, which included the compilation and research of data from the public records, maps, deeds, and published and unpublished materials, as well as contacting individuals with knowledge of the property and related historical subjects. Site investigations and photographs were also part of the research. Unless otherwise noted, historical information presented in this report was drawn from Sanborn Insurance Company maps, city directories, tax assessment rolls, and block books, U.S. Census, Voter Registers and when appropriate the internet. Evaluation was the final step prior to preparing the written report.

The report reviews the historical background of the subject parcel, and describes the building, and structures, located on the property. These were considered as having the potential to be eligible for listing in the California Register of Historical Resources or meet the criteria for historical significance in the Morgan Hill Municipal Code Section 18.75.

1.4 Report Preparation: The report was prepared by Urban Programmers and compiled by Bonnie Bamburg. Ms. Bamburg has over 35 years of experience in preparing historic surveys and evaluation reports for cities, counties, and the federal government. She has prepared numerous National Register Nominations for individual sites and historic districts. Additionally, she has advised owners and architects on compliance with the Secretary of the Interior's Standards for Rehabilitating Historic Buildings and has prepared Certifications for historic properties in several states. She is a former instructor in Historic Preservation at SJSU, a lecturer in historic preservation, and former San Jose Historical Landmark Commissioner (1974-1980). Ms. Bamburg is an advisor to Preservation Action Council San Jose, and is a former board member of the Western Region of the Association for Preservation Technology, the international Association for Preservation Technology, and History San Jose.

Other members associated with the firm have specialized backgrounds significant to the project. William Zavlaris, B.A, MUP, received his education in art and architectural history at UCB and received his Master's Degree in urban planning and city design from SJSU. Mr. Zavlaris has 28 years of experience evaluating architecture for local historical surveys as well as National Register Nominations for private clients and government agencies. Other associates who work with the firm include; Douglas Bright, MS. Historic Preservation from Savannah College of Art and Design, and Marvin Bamburg, AIA, who has over 40 years of experience in historic preservation architecture for residential and commercial properties. The firm meets the Secretary of the Interior's Standards for Professional disciplines.

2. GENERAL HISTORICAL BACKGROUND AND DESCRIPTION OF THE MADRONE STATION AREA.

Early Inhabitants:

The first known inhabitants of the area were the Ohlone, part of the Costanoan Language group, who lived a relatively peaceful hunter-gather existence for several thousand years before the immigration of Europeans. Very little physical vestiges of these early inhabitants remain.

Spanish Exploration, Settlement, and Ranchos 1769-1846

The first Europeans to visit the south county area that includes the subject property came 1769, led by Spaniard Gaspar de Portolá who was accompanied by sixty-four men. The following years saw several Spaniards traveling to what would become the Santa Clara Valley. The expedition of Juan Bautista de Anza in 1776 brought settlers to Yerba Buena (San Francisco). The following year, El Pueblo de San Jose de Guadalupe and Mission Santa Clara were established at the north end of the Santa Clara Valley. These necessitated travel routes along El Camino Real through South Santa Clara County. During the next 18 years very little trade occurred and what was grown or created around the Missions, Presidios, or in the Pueblo of San Jose, remained in the area as the harbors were controlled by Spanish law and were not open to other traders. In 1794 port authority relaxed and allowed trade of excess hides, tallow, and grain, produced on Ranchos granted by Presidio Commanders. Mexico declared independence from Spain in 1821, after which the governance of Alta California fell under Mexican authority. Mexico issued land grants that established 13 Ranchos in southern Santa Clara Valley, a practice that continued until 1846.

The subject property was part of the Rancho Laguna Seca ("Refugio de la Laguna Seca"- Dry Lake Refuge), a Mexican land grant given by Governor José Figueroa to Juan Alvires.^[1] The grant extended southward along Coyote Creek from Rancho Santa Teresa and Coyote to Rancho Ojo del Agua de la Coche and Morgan Hill. The 23,040-acre grant bordered the Rancho Ojo De Agua De La Coche on the southeast and the base of the low foothills where the valley floor gently rises. During the time Alvires owned the land he

appears to have followed most of the rancho owners in raising cattle and wheat. Although the location and date are not known, it appears that a wheat mill was operated on the Rancho Laguna Seca.¹ The Rancho was sold to William Fisher in 1845. Fisher passed away in 1850 and the property transferred to his wife Liberta Fisher.

Early American Period 1846-1869

The Rancho lands produced a broad spectrum of agricultural and manufactured products. Dairy farms in the area produced enough cheese that it led to a commercial cheese industry. To the south of Morgan Hill, the Miller-Lux holdings included 20,000 acres of cattle land divided in parcels throughout the South County and said to be one days horseback ride apart. The company was among the largest in the state organized for shipping herds to market—usually they were sent to South San Francisco. At the time of Miller's death in 1916, the holdings extended into Nevada and Oregon and he carried a personal wealth of \$250,000,000.

Martin Murphy Sr. arrived in the Morgan Hill area in 1846 and acquired the Rancho Ojo de Agua de la Coche, about 9,000 acres of land. Within about 25 years Martin's seven sons and daughters had managed to acquire more than 70,000 acres in the area. The youngest son, Daniel, married Maria Fisher in 1851. She inherited the 19,000 acre Rancho Laguna Seca, adjacent to the Murphy land. In 1882, their only child, Diana, secretly married Hiram Morgan Hill. Upon her father's death Diana inherited 4,500 acres of the original Rancho Ojo de Agua de la Coche, at the base of El Toro Mountain. The area became known as the Morgan Hill Ranch.

The gold rush of 1849 transformed the state and South Santa Clara Valley. Many of the settlers left the Santa Clara Valley for the gold fields of the lower Sierras. Few found wealth mining gold. The majority returned to farming or businesses based upon supplying the miners and later the inhabitants of the emerging towns that sprang up along transportation routes. In 1857 the 18 Mile House was established at Madrone in Burnett Township north of Morgan Hill. In 1869, 200 acres was sold by Liberta Cesena Fisher Bull Paitti to Jose Maria Malaguerra who planted vineyards and established a commercial winery that bore his name. Some owners planted wheat or hay, but adapted as the markets opened to plant fruit orchards in the Morgan Hill area.

After her husbands death in 1850, the area of this study was owned Libereta Fisher² The 18 Mile House was constructed on her property at Madrone Station in 1857. Subsequently a small commercial center grew and a U.S. Post Office was opened in 1867. The 18 Mile House was a respite for travelers and those on the Butterfield Overland Stage that also delivered the mail beginning in 1857.³ Roadhouses (restaurants,

¹ Dill Design, Santa Clara County Heritage Resource Survey Update, South County, March 31, 2003, page 11

² Liberta Cesena Fisher married Geoerge Bull who passed away in 1854. Her next husband was Piatti a native of Milan Italy.

³ Prior to the stagecoach service mail took months between the east and west coasts by ship around South America. The Butterfield Overland Stage company tool 27 days to deliver mail form St. Lewis to San Francisco with a stop in Burnett.

small hotels, and horse care stations) sprung up along the El Camino Real (Monterey Road) at varying distances from the established communities. In the case of South Santa Clara County, the distances were marked from San Jose the closest major city. The area where the 18 Mile House opened was known as "Sherman" and "Madrone Station," within the Burnett Township. In 1869, the San Jose-Pajaro Valley Monterey & Salinas railroad connected Burnett with San Jose to the north and Salinas to the south, as well as the Pajaro Valley and Monterey. Eventually, tracks connected to the rest of the nation. The train stopped at Madrone Station replacing the stage coach for delivering mail. The Thompson & West Historical Atlas for Santa Clara County 1876, shows Liberta C Piatt (L.C. Piatti), was the owner of the 140 acres that included the subject 1.1 acre parcel while her husband (Piatti) owned a 17 acre parcel to the South.

Late Nineteenth Century:

With the advent of the railroad, in 1869, communities began to spring up at every stop. Often stations were established where a roadhouse existed. The Tennent Station (21 Mile House) and Madrone Station (18 Mile House) were followed by many that took their station names from the adjacent landowners or settlements. Toward the end of the century, large tracts of land—the former Ranchos—were subdivided and the lots sold for homesteads and farms. The resized parcels became orchards and farms, with fruit and vegetables replacing wheat, previously the dominant crop. On the east side, the 4,500 acre Rancho Ojo de Agua de la Coche, owned by Diana Murphy Hill and Hiram Morgan Hill, was sold in 1892 to real estate developer Chauncey Phillips, as was Rancho San Francisco de las Llagas, owned by Daniel Murphy Jr.. Both large holdings were subdivided and the initial survey of a town—Morgan Hill—was laid out at the center of the subdivision. The subdivision offered lots of 5, 10, and 20 acres. By 1896, the small town had a train station, newspaper, churches, dry goods stores, telephone, telegraph, express shipping, and a school. North along the El Camino, part of the 10,000 acre San Martin Ranch was also sold in lots of 5, 10, and 20 acres. The 8 square block community of San Martin was surveyed as well. From it, lots were created that, by 1896, supported a Post Office, telephone, telegraph, and express office—all necessary to connect the rural farm owners with supplies and communications. While both communities served a large section of the rural valley, it was Gilroy, 10 miles south of Morgan Hill, that was incorporated in 1870 and grew to be the regional shipping center and the larger city. The City of Morgan Hill was incorporated 36 years later, in 1906. During this period the subject property was included in Madrone Township, an unincorporated area of Santa Clara County north of Morgan Hill that was also referred to as Burnett. The name Burnett came from Peter Burnett, a farmer and resident who became California's first governor.

Twentieth Century:

At the turn of the century, agriculture was the primary industry in South County. Acres of orchards and farm land were owned by Americans and immigrants from Europe, Asia, Canada, and Mexico. By the first decades of the 1900s, there were many ranchers and

farmers with less than 200 planted acres that were the suppliers of the canneries and fruit dryers located along the length of the County. The canneries needed labor and support industries and communities grew in response.

In the Morgan Hill area, the population grew at a steady rate with most jobs relating to agriculture and the supporting businesses of box factories, can factories, shipping centers, paper mills, and label makers, all considered part of agriculture, the strongest growth industry in Santa Clara County between the years 1900-1936. Prunes were at the top of the list for the export market. While there were cycles of boom and bust, nothing was as devastating as the boycotting of California prunes and dried fruit by Germany and its allies in 1936. The European market was a large part of the industry's sales and, without it, the glut of prunes caused financial ruin for many local ranchers. Those who could hold on to their land replanted orchards to take advantage of improved shipping for fresh fruit as well as fruit for the canneries. Some turned into vineyards and some to row crop farming. However, all were helped by the start of WWII and the federal government's contracts to provide food to the Allied troops. When WWII ended, so did the lucrative federal contracts, and again the industry faced challenges. In the late 1940s, frozen and prepared foods were being perfected for the consumer market. Strawberries were the first locally frozen crops to come from South County.

In the late 1940s, north Santa Clara County experienced a shift from an agricultural community to new industries in electronics and high tech and subdivisions of new homes. South County continued to be mainly agricultural into the 1970s. However, at that time, the growing population spread from the industrial centers of Silicon Valley to South County, and the land became more valuable as residential and commercial subdivisions than agricultural land. The increased population and resulting traffic congested the older roadways, which necessitated an era of infrastructure improvements. Maps from the early 1990s, show the subject property with at least one building and several other structures on the property and agricultural fields to the north.

Twenty First Century:

As in the early eras, the corridors north and south were of prime importance. Highway 101 was aligned east of Monterey Avenue (El Camino Real) while most of the residential development occurred west of Monterey Avenue. Santa Teresa Boulevard came from San Jose, crossed San Martin, and connected to Hale Avenue after Llagas Road, in Morgan Hill. Old Monterey Road ended at Campoli Drive until development moved to the area after 2005⁴. The population grew during the late 1920s-1930s, influenced by the increase in agriculture and the processed food industry. Then the population grew due to general growth in population throughout the county, but particularly as companies in the Silicon Valley expanded and new businesses located in the Morgan Hill area. Morgan Hill has an established industrial area as well as commercial sections that have given balance to the community, although a high number of residents still commute north. The subject property was the developed corner of a large agricultural fields until 2015, when a tract

⁴ Thomas Guide-Santa Clara and San Mateo Street Map. 2006 page 916

of single family houses was constructed removing the agricultural fields and dividing the parcel with Paprika Drive on the north and Old Monterey Road on the south. At that time there was the existing building, a dilapidated chicken coop and a former “chicken house” that appeared to be a residence.⁵ By 2018, the only building on the property is the subject house- the rest of the land is vacant.

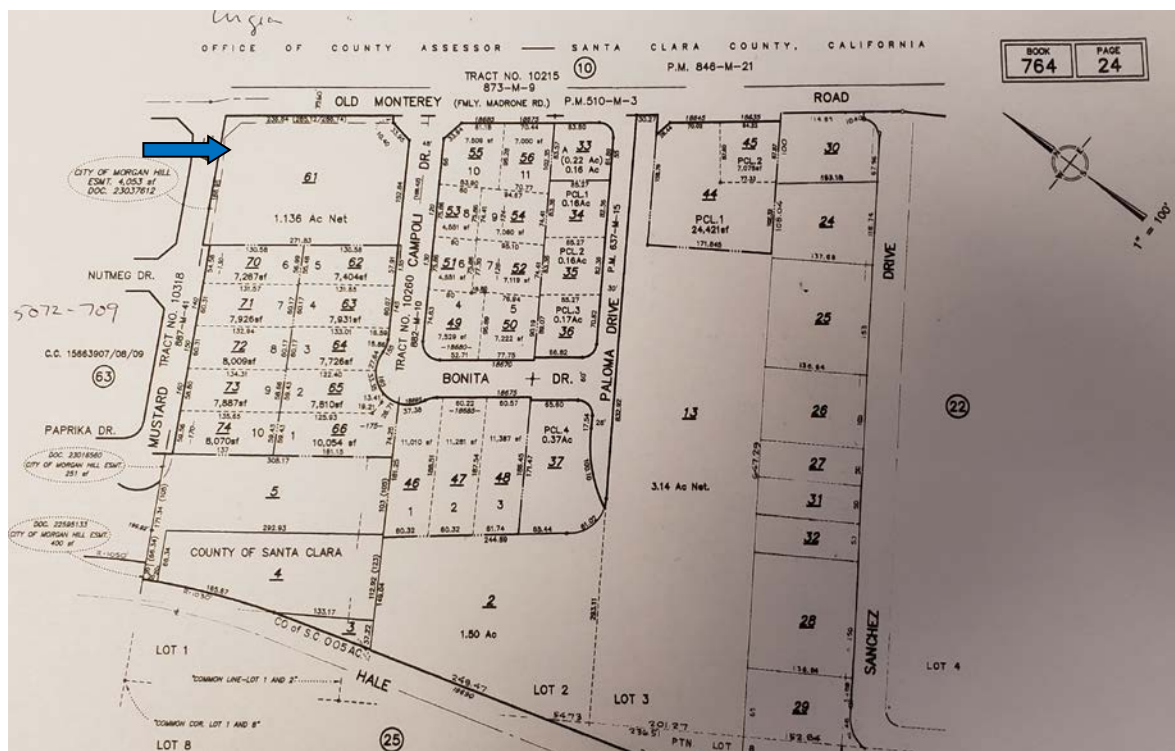


Figure 3 APN 764-24-061 18755 Old Monterey Road
Source Santa Clara County Assessor's Map

⁵ Santa Clara County Assessor's Property Record.

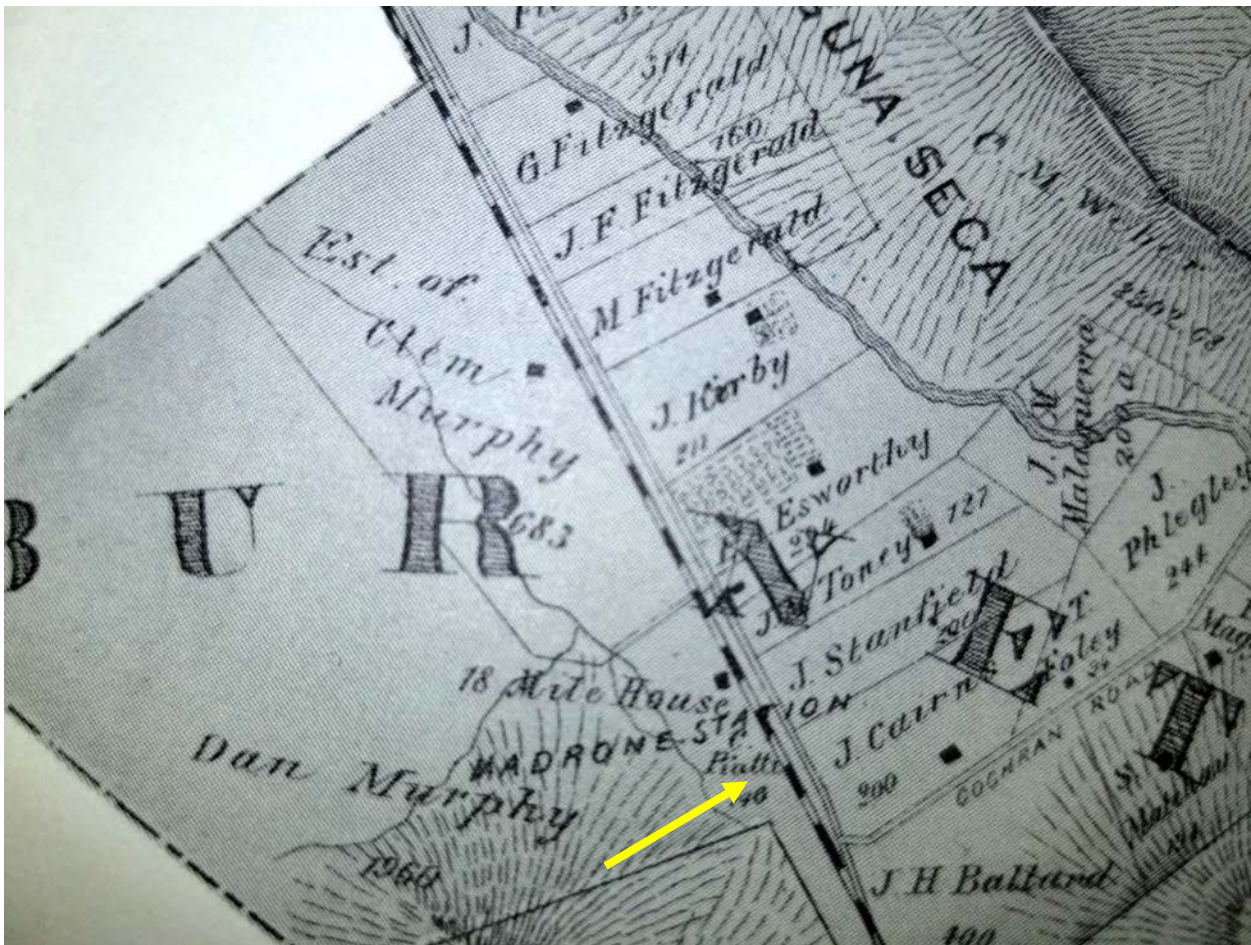


Figure 4 18755 Old Monterey Road, Morgan Hill
View: Section of Historical Atlas of Santa Clara County - Thompson & West 1876, page 56, Map # 7. The 140 acres of land north of Cochran Road on the west side of the SPRR tracks belonged to L.C. Piatti. The arrow points to the land at Madrone Station.

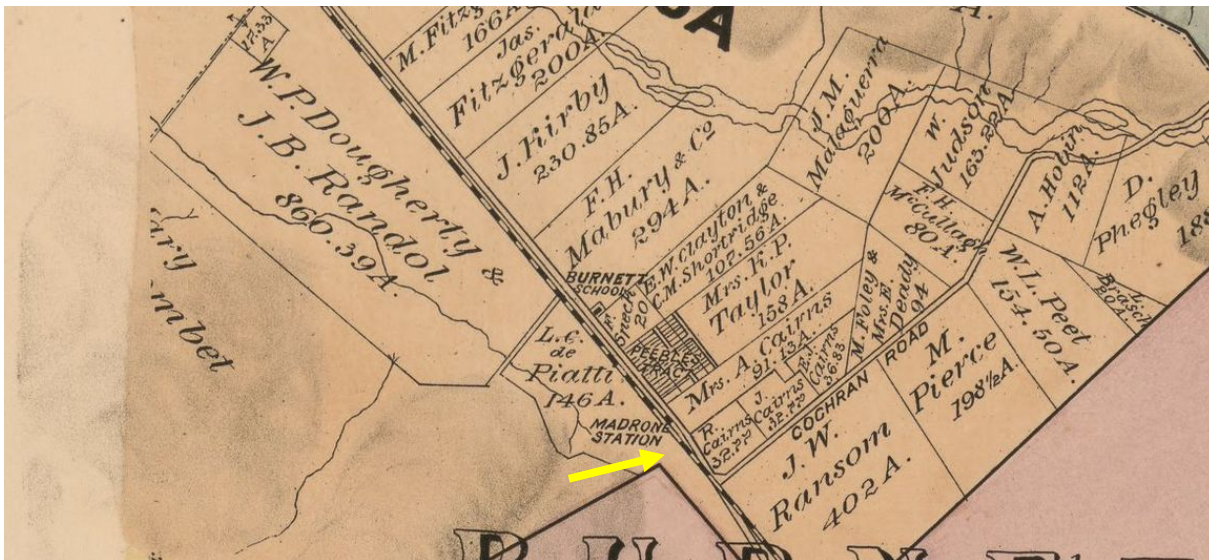


Figure 3 1875 Old Monterey Road, Morgan Hill

View: Portion of the Official map of the County of Santa Clara, California : compiled from U.S. surveys, county records, and private surveys and the tax-list of 1889, by order of the Hon. Board of Supervisors. Arrow indicates the approximate location of the subject property.

2.1. 1875 Old Monterey Road

Liberta C. Fisher Bull Piatti owned the property inherited the property after William Fisher passed away in 1850.. Liberta was from Mexico and had married William Fisher and come to California in 1846. After her first two husbands passed away Liberta married C. Piatti. Piatti came from Milan Italy and worked in the Madrone area before acquiring his own property. The 1860 U.S. Census lists him owning real estate worth \$27,000 and personal property worth \$1,000. His occupation is listed as farmer and one farm laborer lives at the same place in Burnett.⁶ The 1862 Federal Excise Tax Assessment for Santa Clara County lists C. Piatti charged in San Jose for a valuation of \$227.00 for which he was charged \$11.35.⁷ He was similarly charged in 1863 and 1864.

The Historical Atlas of Santa Clara County-Thompson & West 1876, shows the 140 acres that were owned by L C. Piatti in Burnett and the 18 Mile House at Madrone Station is on her property- no other buildings are shown. The listing of owners and residents of the County shows that C. Piatti lived on N. First Street in San Jose and was a farmer and fruit rancher, and he also is listed on a 17 acre parcel in south Burnett Township. The atlas lists Piatti as coming from Italy and locating in Santa Clara County in 1850 and working in Burnett Township where he owned livestock.

It appears from the style and construction of the subject building on the property that it The architectural style is National, a very simple box of a building with narrow double-hung windows, a steep pitched roof, and a front door- a back door was added later.

⁶ Street addresses are not listed in the census.

⁷ *Records of the Internal Revenue Service*. Record Group 58. The National Archives at Washington, DC. California District 2 Annual and Special Tax Lists 1861-62.

The 1889 Official Map of Santa Clara County (figure 3) shows the 148 acres was still owned by L.C. Pietti and listed at Madrone Station in the unincorporated Burnett area of Santa Clara County.⁸ Liberta Piatti lived in San Jose where she passed away in December of 1905.⁹

After Liberta's death in 1905, the property in Madrone Township was subdivided and in 1910 the parcel containing the subject 1.1 acres of farm land was sold to May and Jack Myers. The Myers lived in San Jose where Jack was the proprietor at a clothing store.¹⁰¹¹ Ten years later the property was sold to Antonio Lo Bue.¹²

Antonio Lo Bue emigrated from Trabia, Italy becoming a farmer in Santa Clara County before purchasing the land in Madrone. Lo Bue did not move to Madrone right away. In 1924, he applied for naturalization listing his residence in San Jose. When he appeared before the Santa Clara Superior Court for the final declaration of naturalization on June 3, 1929 he listed his children that were living with him as Mary (20), Antonio (19) and Rose (16).¹³ This declaration lists his home as Madrone.

In the late 1920s the small wood building c. 1875-80 that exists on the property was moved to the site.¹⁴ The Santa Clara Assessor's Office lists the first assessment for tax with a house on the property was in 1930. The last City Directory listing for Lo Bue in Madrone is 1933. He passed away in 1935, leaving the property to his wife Roselia Lo Bue. Roselia operated the farm for nine years.¹⁵ ¹⁶ The property remained in her ownership until February 1944, when she sold the land to Giulio Campoli and his wife Argia.¹⁷

The Campoli family moved from San Jose where Giulio had been a fruit ranch worker. Prior to moving to California, the family lived in Rockford Illinois where both Agria and Giulio became naturalized citizens in 1920. When the 1930 U. S. Census was recorded the family still lived in Illinois. They had 10 children; Antonia (20) was not listed and may have already married, Warren (19), Helen (17), Frank (16), John (15), James (11), Pearl (10), Joseph (8), Mary (5) Aletta (3) and Anthony(1). The first listing for the family in California is in 1938, when Giulio (Giulio) registered to vote in Santa Clara County. His occupation was recorded only as orchard. Giulio, was born in 1881 in Italy, and is listed

⁸ Official Map of Santa Clara County, 1898

⁹ "ONE OF THE EARLIEST SETTLERS OF SANTA CLARA COUNTY IS DEAD" THE EVENING NEWS, San Jose, December 5, 1905, page 2, column 2-3

¹⁰ Record of ownership, Santa Clara County Records Records

¹¹ U.S. Census for Santa Clara County, San Jose Ward 4, 1910

¹² Deed recorded December 7, 1920 in Book 511 of deeds page 42.

¹³ U,S, Naturalization Records, Northern District of California

¹⁴ At this time the original location is not known..

¹⁵ Santa Clara County Assessor' records. The land was appraised prior to 1930, but that is the first year the house was recorded having a building.

¹⁶ The USGS 1917 Topographical Map for Morgan Hill does not show the building. The first time it is shown on a USGS map is 1947.

¹⁷ Deed, Book 1178, Official Records of Santa Clara County page558. Recorded February 7, 1944.

as a farmer in the 1947 Santa Clara County Directory and again in the 1949-50 city directory living on the property in Madrone. The family continued farming and in 1961, the property was deeded to Anthony and Mariam Campoli, as a life estate with the remainder 2/3 to Thomas M. and 1/3 to Cynthia A. Campoli. Argia passed away in 1965 and Giulio in 1975. Both are buried at Mount Hope Cemetery in Morgan Hill. The property has several sheds and outbuildings when it was leased. Cynthia A Campoli sold the property in 2000 to Jewel Rodriguez.¹⁸

In a preplanned transaction the property was sold by Rodriguez to Michael D Barger and Mary Barger on the same day.¹⁹ The property sold again April 29, 2006 to Khanah T. Vo, and again in 2011 to Dailac Nguyen, the current owner. It appears the property has been leased for many years. In 2018, only the c. 1875 building remains on the property.

In 1958, the City of Morgan Hill annexed the area of Madrone Station into the City.

Summary: The property was part of a larger parcel that was owned by William Fisher in 1848 and then his wife Libereta Fisher Bull Piatti. The land included the 18 Mile House at Madrone Station with the rest farmed or planted with fruit trees. As subdivisions lessened the acreage, the subject 1.1 acre parcel became a residence and poultry farm. The remaining building c.1875-80 appears on the property in 1929, and was the home of Antonio and Roselia Lo Bue. The building first appears on the tax rolls in 1930, and thereafter was occupied by members of the Lo Bue and Campoli families. Although the origins of the small building are unknown, the age, style and integrity identify it as one of the oldest building in Morgan Hill.

2.2 Description:

The location is in the North West edge of The City of Morgan Hill on Old Monterey Road (El Camino Real) north of Cochrane Road. The site is 1.1 acre that is surrounded by single-family tract houses constructed in 2016-17. The only building on the subject parcel is a small house that is single-story, rectangular in form, and is constructed entirely of wood with a concrete perimeter foundation.²⁰ A simple form with a pitched roof the only decorative element is pieces of scrollwork in the front roof peak, in front of a vent at the very top and a square opening below that is closed with plywood. The siding is dropped horizontal board that extends to the ground. The building floor is raised approximately 2.5 feet above grade. The front facade is symmetrical with the front door in the center and a tall, narrow double-hung window on each side. The front porch extends across the facade and is an obvious addition that has been tacked on to the building. The roof is composition roofing laid on top of plywood.²¹ Wood lattice pieces from a home improvement store cover the space below the porch. The sides are similar with two evenly spaced windows on each side. These are the same style as those on the front;

¹⁸ deed recorded June 21, 2000, #115287643

¹⁹ Document #152837

²⁰ No permit was found for the foundation. Urban Programmers was only able to view one section of the foundation and believe the rest is the same.

²¹ The form of the roof suggests plywood, however we were not able to inspect to verify the construction.

however, on the north side one has been replaced with a short metal sliding style, typical for a bathroom.²² The south side retains the two narrow, tall wood sash, double-hung windows that are original to the period c. 1875-80. There is no other ornamentation or style elements on the side facades. The rear has a pitched roof addition that has been on the building since the 1930 assessment. Other than the addition, the rear facade is plain with only a door in the center. A wood deck and railing extends from the rear facade c. 1980s. The fenestration is unusual for a house and suggests the building may have been adapted to residential use in the late 1920s when it was placed on the site.

Summary: The building is a very simple form, the most basic for any building, a single-story rectangle with a front gable (pitched roof) The style is often called a Folk Vernacular or National Style. With the addition of the scrollwork in the peak of the front gable- the building has a slight Folk-Victorian appearance. Constructed much like a barn with balloon framing, the roof appears to have a bevel rafter structure with very narrow eaves. A very small trim board covers the roof to wall connection. It is without decoration except for the scroll piece in the peak of the front. The basic utilitarian form has minimal alterations. It would likely have had a single stair to the front door and back door if that is original. If heat was provided, it was by a stove inside as there is no evidence of a chimney. The overall condition appears good. The building, now annexed to Morgan Hill may be one of the oldest buildings in the City.

²² Originally, the building did not have a bathroom. The sliding windows is into the bathroom.

2.3. Photographs: The photographs were taken on August 5, 2018 at 3:30 PM using a digital format.



Photograph 1 18755 Old Monterey Road, Morgan Hill CA
View: Front (east) facade

Camera facing: west



Photograph 2 18755 Old Monterey Road, Morgan Hill CA
View: Front (east) and south side facade
Camera facing: NW



Photograph 3 18755 Old Monterey Road, Morgan Hill CA
View: Front (east) and north side facade
Camera facing: SW



Photograph 4 18755 Old Monterey Road, Morgan Hill CA
View: Rear (west) facade Small addition attached to the building on the left.
Camera facing: East

3. Regulatory Framework:

3.1 Federal

The National Historic Preservation Act was adopted in 1966 and most recently amended in 2000. One of the most important provisions of the Act is the establishment of the National Register of Historic Places (National Register), the official record of historical resources. Districts, sites, buildings, structures, and objects are eligible for listing in the National Register. The National Register is administered by the National Park Service (NPS). To be listed in the National Register, a property must be significant under one of the following criteria:

1. It is associated with events that have made a significant contribution to the broad patterns of our history;
2. It is associated with the lives of persons significant in our past;

3. It embodies the distinctive characteristics of a type, period, or method of construction, that represent the work of a master, that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
4. It has yielded, or may be likely to yield, information important to history or prehistory.

For a property to qualify under the National Register's Criteria for Evaluation, it must also retain "historic integrity of those features necessary to convey its significance." While a property's significance relates to its role within a specific historic context, its integrity refers to "a property's physical features and how they relate to its significance." To determine if a property retains the physical characteristics corresponding to its historic context, the National Register has identified seven aspects of integrity:

1. Location: the place where the historic property was constructed or the place where the historic event occurred.
2. Design: the combination of elements that create the form, plan, space, structure, and style of a property.
3. Setting: the physical environment of a historic property.
4. Materials: the physical elements that were combined or deposited during a particular period of time and in a particular pattern or configuration to form a historic property.
5. Workmanship: the physical evidence of the crafts of a particular culture or people during any given period in history or prehistory.
6. Feeling: a property's expression of the aesthetic or historic sense of a particular period of time.
7. Association: the direct link between an important historic event or person and a historic property.

Since integrity is based on a property's significance within a specific historic context, an evaluation of a property's integrity can only occur after historic significance has been established.

3.2 State of California

The California Register of Historical Resources ("California Register") is "an authoritative listing and guide to be used by state and local agencies, private groups, and citizens in identifying the existing historical resources of the state and to indicate which resources deserve to be protected, to the extent prudent and feasible, from substantial adverse change" (Public Resources Code Section 5024.1[a]). The criteria for eligibility to the California Register are based on National Register criteria (Public Resources Code Section 5024.1[b]). Certain resources are determined by the statute to be automatically included in the California Register, including California properties formally determined eligible for or listed in the National Register. To be eligible for the California Register as a historical resource, a prehistoric or historic-period resource must be significant at the local or state level under one or more of the following criteria:

1. It is associated with events that have made a significant contribution to the broad patterns of local or regional history, or the cultural heritage of California or the United States;
2. It is associated with the lives of persons important to local, California, or national history;
3. It embodies the distinctive characteristics of a type, period, region, or method of construction, represents the work of a master, or possesses high artistic values; or
4. It has yielded, or has the potential to yield, information important to the prehistory or history of the local area, California, or the nation.

For a resource to be eligible for the California Register, it must also retain enough integrity to be recognizable as a historical resource and to convey its significance. The seven aspects of integrity are: location, design, setting, materials, workmanship, feeling, and association. A resource that does not retain sufficient integrity to meet the National Register criteria may still be eligible for listing in the California Register. A resource that has lost its historic character or appearance may still have sufficient integrity for the California Register if it maintains the potential to yield significant scientific or historical information or specific data.

See below under Standards of Significance for state guidance on analysis of historic resources under CEQA.

3.3 City of Morgan Hill Cultural Resources Designation Criteria (Section 18.75.030)

For purposes of this Chapter, an improvement may be designated a cultural resource by the planning commission and any area within the city may be designated as a historic district by the commission pursuant to Section 2.36.040 if it meets one or more of the following criteria.

A. Historical, Cultural Importance.

1. It has significant character, interest, or value , as a part of the development, heritage, or cultural characteristics of the city, county, state or nation; or is associated with the life of a person(s) significant in the past;
2. It is the site of a historic event with a significant effect upon society;
3. It exemplifies the cultural, political, economic, social, or historical heritage of the community;

B. Architectural, engineering Importance:

1. It portrays the environments in an era of history characterized by a distinctive architectural style;

2. It embodies those distinguishing characteristics of an architectural type or engineering specimen;
3. It is the work of a designer or master builder whose individual work has significantly influenced the development of Morgan Hill;
4. It contains elements of design, detail, materials, or craftsmanship which represent a significant innovation;

C. Geographic Importance:

1. By being part of or related to a square, park, or other distinctive area, it should be developed or preserved according to a plan based on a historic, cultural, or architectural motif;
2. Owing to its unique location or singular physical characteristics, it represents an established and familiar visual feature of a neighborhood, community, or city; or

D. Archaeological Importance:

1. It has yielded, or may be likely to yield information in pre-history.²³

3.4 California Historical Resource Status Codes

To manage all the resources in California that have been identified through some level of evaluation or survey, including those that are to be surveyed, the system of status codes was created by the State Office of Historic Preservation. The system rates resources from the most important in the history of California or the nation to those that have been surveyed and found not eligible for listing in the National Register of Historic Places, the California Register of Historic Resources of a County or Municipality's inventory of historic resources.

²³ Ord. 1111 N.S., Section 50 (part), 1992; ord; N.S. Section 50 (part), 1992: Ord 980 N.S. Section 3 (part), 1990)

California Historical Resource Status Codes

- 1 Properties listed in the National Register (NR) or the California Register (CR)**
- 1D Contributor to a district or multiple resource property listed in NR by the Keeper. Listed in the CR.
 - 1S Individual property listed in NR by the Keeper. Listed in the CR.
 - 1CD Listed in the CR as a contributor to a district or multiple resource property by the SHRC
 - 1CS Listed in the CR as individual property by the SHRC.
 - 1CL Automatically listed in the California Register – Includes State Historical Landmarks 770 and above and Points of Historical Interest nominated after December 1997 and recommended for listing by the SHRC.
- 2 Properties determined eligible for listing in the National Register (NR) or the California Register (CR)**
- 2B Determined eligible for NR as an individual property and as a contributor to an eligible district in a federal regulatory process. Listed in the CR.
 - 2D Contributor to a district determined eligible for NR by the Keeper. Listed in the CR.
 - 2D2 Contributor to a district determined eligible for NR by consensus through Section 106 process. Listed in the CR.
 - 2D3 Contributor to a district determined eligible for NR by Part I Tax Certification. Listed in the CR.
 - 2D4 Contributor to a district determined eligible for NR pursuant to Section 106 without review by SHPO. Listed in the CR.
 - 2S Individual property determined eligible for NR by the Keeper. Listed in the CR.
 - 2S2 Individual property determined eligible for NR by a consensus through Section 106 process. Listed in the CR.
 - 2S3 Individual property determined eligible for NR by Part I Tax Certification. Listed in the CR.
 - 2S4 Individual property determined eligible for NR pursuant to Section 106 without review by SHPO. Listed in the CR.
 - 2CB Determined eligible for CR as an individual property and as a contributor to an eligible district by the SHRC.
 - 2CD Contributor to a district determined eligible for listing in the CR by the SHRC.
 - 2CS Individual property determined eligible for listing in the CR by the SHRC.
- 3 Appears eligible for National Register (NR) or California Register (CR) through Survey Evaluation**
- 3B Appears eligible for NR both individually and as a contributor to a NR eligible district through survey evaluation.
 - 3D Appears eligible for NR as a contributor to a NR eligible district through survey evaluation.
 - 3S Appears eligible for NR as an individual property through survey evaluation.
 - 3CB Appears eligible for CR both individually and as a contributor to a CR eligible district through a survey evaluation.
 - 3CD Appears eligible for CR as a contributor to a CR eligible district through a survey evaluation.
 - 3CS Appears eligible for CR as an individual property through survey evaluation.
- 4 Appears eligible for National Register (NR) or California Register (CR) through other evaluation**
- 4CM Master List - State Owned Properties – PRC §5024.
- 5 Properties Recognized as Historically Significant by Local Government**
- 5D1 Contributor to a district that is listed or designated locally.
 - 5D2 Contributor to a district that is eligible for local listing or designation.
 - 5D3 Appears to be a contributor to a district that appears eligible for local listing or designation through survey evaluation.
 - 5S1 Individual property that is listed or designated locally.
 - 5S2 Individual property that is eligible for local listing or designation.
 - 5S3 Appears to be individually eligible for local listing or designation through survey evaluation.
 - 5B Locally significant both individually (listed, eligible, or appears eligible) and as a contributor to a district that is locally listed, designated, determined eligible or appears eligible through survey evaluation.
- 6 Not Eligible for Listing or Designation as specified**
- 6C Determined ineligible for or removed from California Register by SHRC.
 - 6J Landmarks or Points of Interest found ineligible for designation by SHRC.
 - 6L Determined ineligible for local listing or designation through local government review process; may warrant special consideration in local planning.
 - 6T Determined ineligible for NR through Part I Tax Certification process.
 - 6U Determined ineligible for NR pursuant to Section 106 without review by SHPO.
 - 6W Removed from NR by the Keeper.
 - 6X Determined ineligible for the NR by SHRC or Keeper.
 - 6Y Determined ineligible for NR by consensus through Section 106 process – Not evaluated for CR or Local Listing.
 - 6Z Found ineligible for NR, CR or Local designation through survey evaluation.
- 7 Not Evaluated for National Register (NR) or California Register (CR) or Needs Revaluation**
- 7J Received by OHP for evaluation or action but not yet evaluated.
 - 7K Resubmitted to OHP for action but not reevaluated.
 - 7L State Historical Landmarks 1-769 and Points of Historical Interest designated prior to January 1998 – Needs to be reevaluated using current standards.
 - 7M Submitted to OHP but not evaluated - referred to NPS.
 - 7N Needs to be reevaluated (Formerly NR Status Code 4)
 - 7N1 Needs to be reevaluated (Formerly NR SC4) – may become eligible for NR w/restoration or when meets other specific conditions.
 - 7R Identified in Reconnaissance Level Survey: Not evaluated.
 - 7W Submitted to OHP for action – withdrawn.

12/8/2003

3.5 Standards of Significance

CEQA Guidelines appendix G indicates that a project may have a significant effect on the environment if it would:

- cause a substantial adverse change in the significance of a historical resource as defined in section 15064.5;
- cause a substantial adverse change in the significance of an archaeological resource pursuant to section 15064.5;
- directly or indirectly destroy a unique paleontological resource, site, or unique geologic feature;
- disturb any human remains, including those interred outside of formal cemeteries; or
- conflict with a plan or policy adopted for the purpose of avoiding or mitigating an environmental effect.

A “substantial adverse change” to a historical resource is defined in Guidelines Section 15064.5(b) as “physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of a historical resource would be materially impaired.” Furthermore, the 4. significance of an historic resource is materially impaired when a project “demolishes or materially alters in an adverse manner those physical characteristics of a historical resource that convey its historical significance and that justify its inclusion in, or eligibility for inclusion in the California Register of Historical Resources; or demolishes or materially alters in an adverse manner those physical characteristics that account for its inclusion in a local register of historical resources... or demolishes or materially alters in an adverse manner those physical characteristics of a historical resource that convey its historical significance and that justify its eligibility for inclusion in the California Register of Historical Resources as determined by a lead agency for purposes of CEQA.”

For the purposes of CEQA (Guidelines Section 15064.5), the term “historical resources” shall include the following:

1. A resource listed in, or determined by the State Historical Resources Commission to be eligible for listing in, the California Register (Public Resources Code §5024.1, Title 14 California Code of Regulations, Section 4850 et seq.).
2. A resource included in a local register of historical resources, as defined in Section 5020.1(k) of the Public Resources Code or identified as significant in a historical resource survey meeting the requirements of Section 5024.1(g) of the Public Resources Code, shall be presumed to be historically or culturally significant. Public agencies must treat any such resource as significant unless the preponderance of evidence demonstrates that it is not historically or culturally significant.

3. CEQA Section 15064.5(3) states that Any object, building, structure, site, area, place, record, or manuscript which a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California, may be considered to be a historical resource, provided the lead agency's determination is supported by substantial evidence in light of the whole record. Generally, a resource shall be considered by the lead agency to be "historically significant" if the resource meets the criteria for listing in the California Register (Public Resources Code Section 5024.1, Title 14 California Code of Regulations, Section 4852).

Under CEQA §15064.5, "generally, a project that follows the Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring and Reconstructing Historic Buildings or the Secretary of the Interior's Standards for Rehabilitation with Guidelines for Rehabilitating Historic Buildings shall be considered as mitigated to a level of less than a significant impact on the historical resource."

4. Evaluation following the Criteria of the California Register of Historic Resources

Context and History: Agriculture was the primary industry in the Madrone and Morgan Hill area from the mid- 1800s until the 1970s. At the time the subject building was constructed, Madrone Station had only a few buildings, primarily those associated with agriculture and the 18 Mile House. Early recordings of the property owners and uses are found in the Thompson & West Historical Atlas of Santa Clara County 1876. This does not show a building on the property, but one is shown on a 12 acre parcel also owned by Piatti north of the subject property and on the Nicholas C Murphy property. After 1930, the property at 18755 Old Monterey Road included several buildings and sheds, a chicken house and was surrounded by farm land. Currently the only building is a wood building used as a residence. The design and construction indicate a building from the 1875-1880 period but it was moved to the site in late 1920s and according to the Santa Clara County Assessor's records first recorded for tax assessment in 1930. The building is one of the oldest remaining in the Burnett Township area of The City of Morgan Hill. It exhibits the style and construction of the early development period in Burnett Township. Because the original site of the building is unknown it may have additional attributes.

After 1990, the building is the remainder of a complex of buildings that were used in operating the agriculture land surrounding this parcel when it was part of a larger holding and later the site had poultry coops.²⁴

²⁴ The Santa Clara County Assessor's records show two chicken houses on the property c. 1970.

The two families known to be closely associated with the property are those of Antonio Lo Bue and Giulio Campoli; both engaged in farming on the land adjacent to the subject parcel prior to subdividing the land.

The period of significance is 1875-1958, and the theme is shelter and architecture in early the development of Burnett Township. The building appears to be one of the oldest in the City of Morgan Hill.²⁵

The Morgan Hill Historical Context Statement for the Pioneer Settlers c. 1845-1890 states, "No architectural representatives exist from this period within the municipal boundaries of Morgan Hill. Further research and surveying may uncover representatives of the property types listed above and should be included as an appendix to this document"²⁶

The Morgan Hill Historical Context Statement for Community Development c.1857-1900 describes the development of Burnett, the coming of the railroad and the listing of U.S. Post offices. The representative buildings identified in the Context Statement begin in the 1890s making the building at 18755 Old Monterey Road older than those currently recorded.

The four criteria of the California Register of Historic Resources.

1. It is associated with events that have made a significant contribution to the broad patterns of local or regional history, or the cultural heritage of California or the United States;

The building does not appear to have made a significant contribution to the broad patterns of history.

2. It is associated with the lives of persons important to local, California, or national history;

The origins of the building are unclear. It does not appear to be associated with persons important to local, California or national history.

3. It embodies the distinctive characteristics of a type, period, region, or method of construction, represents the work of a master, or possesses high artistic values;

²⁵ Further research may provide the original location of this building and thus the original owner/builder.

²⁶ Circa Historic Property Development, Historic Context Statement for the City of Morgan Hill, Final Report, City of Morgan Hill, California, Historic Context 2 Early Settlers, October 2006

The building is eligible for the CRHR under criterion 3 because the small building embodies the distinctive characteristics of c.1875-80 by exhibiting design and construction that was often frugal in the rural townships. The narrow windows and centered front door are typical of this era as styles were leaving the austerity and symmetry of Greek or Gothic Revival and approaching the Victorian era of Queen Anne design with scroll work and more decorative ornamentation. The building retains a high degree of original design and materials that is seldom found in the Morgan Hill area.

4. It has yielded, or has the potential to yield, information important to the prehistory or history of the local area, California, or the nation.

The building is eligible under criterion 4 because buildings of this age exhibit materials and craftsmanship that are no longer in common use. This is important in understanding the construction methods of the late 1800s.

City of Morgan Hill Cultural Resources Designation Criteria (Section 18.75.030)

The Morgan Hill Cultural Resources criteria is refined to four categories. The category that applies to this building is D.

D. Architectural, engineering Importance:

1. It portrays the environments in an era of history characterized by a distinctive architectural style;

The building portrays the design and construction of wood frame, efficiently constructed rural architecture in the late 1800s
2. It embodies those distinguishing characteristics of an architectural type or engineering specimen;

The building embodies the distinguishing characteristics of the National or Folk style, an efficient and compact building design.
3. It is the work of a designer or master builder whose individual work has significantly influenced the development of Morgan Hill;

Because the building was relocated to the property, the early origins are unknown. It is unlikely to have been designed by a master designer or builder, although the construction appears very solid.
4. It contains elements of design, detail, materials, or craftsmanship which represent a significant innovation;

The building does not represent significant innovation.

Findings: The building meets at least three of the four criteria under category D. The building is eligible for listing in the Morgan Hill Historic Resource Inventory.

5 IMPACTS OF THE PROPOSED PROJECT: Residential subdivision and six new homes

The small building on the subject parcel is eligible for listing in the California Register of Historic Resources and for listing in the Morgan Hill Historic Resource Inventory for the National design, a type and style of c. 1875-80 building that represents a period in history from which few buildings remain from the Madrone Station area or in Morgan Hill. The project proposes demolition of the building. That action creates a significant impact as defined in the guidelines for the California Environmental Quality Act.

6. MITIGATION

For the proposed project to proceed, mitigation is required to comply with the California Environmental Quality Act. Mitigation alternatives are based upon the plan by MH Engineering dated April 18, 2018.

1. The preferred mitigation is to retain the building in its existing location allowing for adaptive reuse following the Secretary of the Interior's Standards for the Treatment of Historic Property, and the Rehabilitation of Historic Buildings. The new development plan must provide a view corridor from the public sidewalk for the building. This would require redesigning the development plan and would result in the loss of one units.²⁷
2. Relocate the building on site allowing for adaptive reuse following the Secretary of the Interior's Standards for the Treatment of Historic Property, and Rehabilitation of Historic Buildings and provide a view corridor from the public sidewalk for the building. This would require redesigning the development plan and may require a reduction in units.
3. The building has been moved at least once in its history. Relocating the building off site to a location that is similar in setting and context would achieve adequate mitigation. Relocation must be provided by an experienced house mover and the building must be braced prior to lifting the building. In the new location adaptive reuse must follow the Secretary of the Interior's Standards for the Treatment of Historic Property, and Rehabilitation of Historic Buildings. The new location must provide a view corridor for the building. This would retain the existing development plan. Finding a suitable location may be challenging and this would involve additional costs of the relocation and at least stabilization of the building following The Secretary of the Interiors Standards for Stabilization of Historic Buildings.

Prior to any change to the building, the building must be photographed by a qualified photographer with experience documenting historic buildings prior to any work or relocation, and after fences have been removed. Photography may be 36mm using a

²⁷ Without a survey that overlays the exact location of the historic building it is assumed to be on Lot 4.

digital format or high-resolution film. The photographic documentation (labeled photographs, a map key and either negatives or disk with untouched images) are to be provided to the Morgan Hill Historical Society

7. APPENDIX

List of Repositories Consulted

City of Morgan Hill Building Permits
Morgan Hill Historical Museum
Santa Clara County Assessor's Office
Santa Clara County Official Records: County Recorder's Office:

References

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Santa Clara County Historical Heritage Commission, Santa Clara County Heritage Resource Inventory, San Jose, CA, 1979, 1999

Sawyer, Eugene T., History of Santa Clara County, Historic Records Company, Los Angeles, CA, 1922

Thomson & West, 1876 Historical Atlas of Santa Clara Co. California, (reprint) Smith McKay, San Jose, 1973

Wyman, Beth; Hiram Morgan Hill, Morgan Hill, 1990

Interviews

Beth Wyman, chairperson of the Morgan Hill Historic Preservation Survey and author of Hiram Morgan Hill. Email 9/28/2018 regarding the building at 18755 Old Monterey Road. Not seen before.



18755 Old Monterey Road, Morgan Hill CA

Addendum #1 to the to the Historic Evaluation DPR 523 for 18755 Old Monterey Road, prepared by Urban Programmers September 28, 2018.

This addendum includes the Secretary of the Interior's Standards for Rehabilitation of Historic Buildings

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January 19, 2019

Purpose of this addendum #1 to the Historic Evaluation DPR 523 for 18755 Old Monterey Road, prepared by Urban Programmers September 28, 2018.

The purpose is to provide mitigation under CEQA for an approved subdivision that includes an existing historic resource building eligible for listing in the California Register of Historic Resources.

The 1.1 acre property at 18755 Old Monterey Road (corner of Old Monterey Road and Mustard Avenue), Morgan Hill was submitted to the City of Morgan Hill for approval of a six lot subdivision and development of 6 new houses on the lots. During the environmental review, it was determined that the existing building on the property was a historic resource under the CEQA Guidelines. The project was altered to include 5 new home sites with new homes and one parcel to retain the existing building. The building is eligible for listing in the California Register of Historic Resources and is a historic resource under the CEQA Guidelines.

The revised project will require an alteration permit under Morgan Hill Municipal Code Section 18.60.070. The alteration permit must comply with the Secretary of the Interiors Standards for the Treatment of Historic Property. The building is planned to be used as a residence and therefore must also comply with the Secretary of the Interior's Standards for Rehabilitation of Historic Buildings.

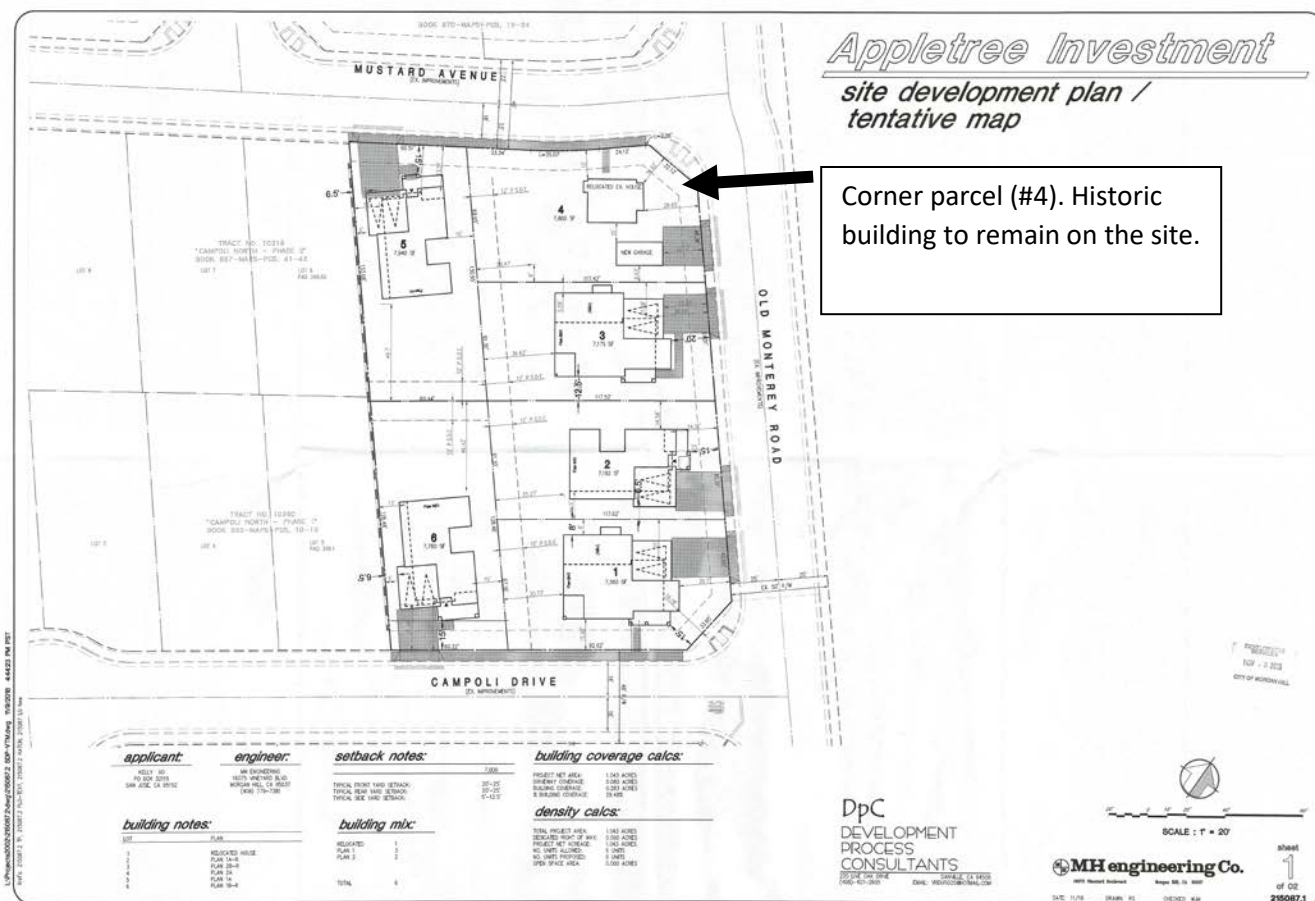


Figure 1 Site plan for the six parcel subdivision showing the historic building to remain.
Source: MH Engineering Company.

This addendum provides the Secretary of the Interiors Standards for Rehabilitation of Historic Buildings and sections from the Morgan Hill Zoning Code to apply for a permit to rehabilitate the historic building.

1. Description The historic resource building is a small, single-story wood frame and sided building with a steep pitch gable roof. The windows provide the architectural detail. The historic character of the building is found in the size, height, and shape of the building and its materials; the wood structure, wood horizontal board siding, wood window frames and sash, clear (old) glazing, the opening in the roof peak, and locations of doors and windows. The scroll work in the gable peak may not be original but has gained importance. Both front and back porches are additions, in poor condition and not historic materials. Porches will need to be replaced. The removal of a window that was replaced with a metal sliding window and infill wall should be evaluated and replaced.

Remarkably, the building has been maintained in reasonably good repair for approximately 145 years. This is due, in part, to the artisanship in the construction that must be respected.

2. The architectural plan for the rehabilitation and any addition or alteration must be prepared by a historic architect, recognized by the State of California (CRIS) and with experience rehabilitating wood buildings of this age. All historic materials and features must be identified prior to rehabilitation planning.

3. Prior to the start of the rehabilitation, the General Contractor must receive training from the historic architect on the sensitive nature of the materials and their preservation and care during rehabilitation. Prior to starting work, all workers assigned to this building must receive training regarding the care of historic materials during any work and the preservation of historic materials.

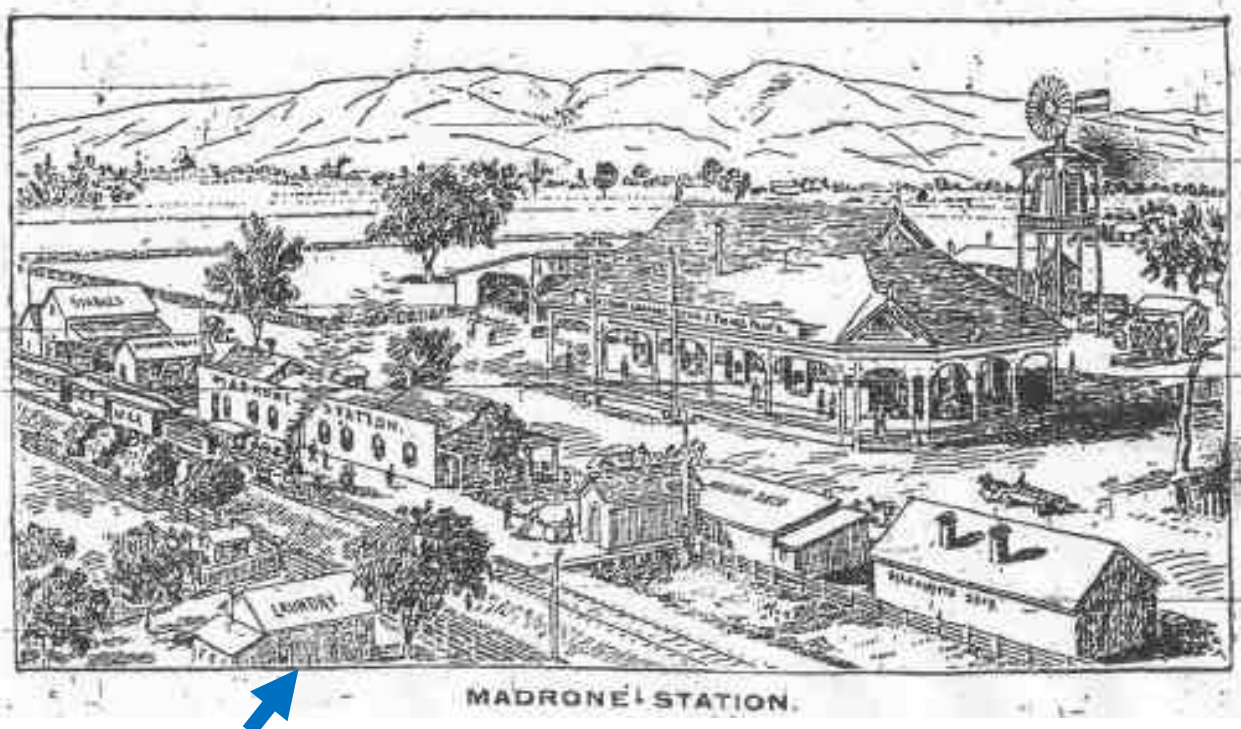
Historic Background and Historical Significance: The property was traced to the first American owner William Fisher and his wife Liberta Fisher Bull Piatti. While owned by Liberta Fisher, the 18 Mile House was constructed on the property at Madrone Station in 1857. Subsequently a small commercial center grew and a U.S. Post Office was opened in 1867. The 18 Mile House was a respite for travelers and those on the Butterfield Overland Stage. The stage also delivered the mail beginning in 1857. The 18 Mile House was in the area known as "Sherman" and "Madrone Station,," within the Burnett Township. In 1869, the San Jose-Pajaro Valley Monterey & Salinas railroad connected Burnett with San Jose to the north and Salinas to the south, as well as the Pajaro Valley and Monterey. Eventually, tracks connected to the rest of the nation. Communities began to develop at the train stops. Madrone Station served a large cattle ranching area and grew as the center around the post office, Road House and store. By 1895, Madrone included a church, school, general store, post express and telegraph office, laundry and other services.

After her death in 1905, the 140 acre property was subdivided into 10 and 20 acres lots that continued the agricultural use. Subsequent land divisions created the subject 1.1 acre parcel, with a c 1875-1880 building on the parcel. The building was moved to the site in the late 1920s and first appears on the property tax roll in this location in 1930.

Significance: The National Style, single-story wood building with three narrow double hung windows is one of the oldest buildings in Morgan Hill. The building exhibits a commercial architectural style from 1870-1880s era that is important in the history of Morgan Hill and of which very few exist. The building may be the laundry building from Madrone Station shown in an etching¹, located very close to the current site. The building retains a high degree of integrity

¹ The etching appears on the cover page of the SANTA CLARA COUNTY HERITAGE RESOURCE INVENTORY U

showing the style, materials and artisanship, with only minor alterations to the exterior, one window has been removed to allow a small metal frame (bathroom) windows in the top of the opening and an addition to the rear facade.



The building has been determined through the survey process and application to the City of Morgan Hill to be a historic resource based upon the integrity, age, style and scarcity that make the building eligible for listing in the California Register of Historic Resources under criterion 3. The building is also eligible for listing in the Morgan Hill Historic Resource Inventory due to its age, integrity and historical significance,

The Secretary of the Interior's Standards for Rehabilitating Historic Buildings.

The Secretary of the Interior's Standards for Rehabilitating Historic Buildings, were authored by the National Park Service, Cultural Resources Division, and can be found on the internet, the following sections and standards are taken from the website.

<https://www.nps.gov/tps/standards/rehabilitation/rehab/stand.htm>

*"Rehabilitation" is defined as "the process of returning a property to a state of utility, through repair or alteration, which makes possible an efficient contemporary use while preserving those portions and features of the property which are significant to its historic, architectural, and cultural values."*¹

*The Standards are to be applied to specific rehabilitation projects in a reasonable manner, taking into consideration economic and technical feasibility.*¹

Some of the "standards" are shown with commentary that was included based upon the revised plan for the subdivision application that will retain the historic building in the current location.

1. A property shall be used for its historic purpose or be placed in a new use that requires minimal change to the defining characteristics of the building and its site and environment.

The proposed plan shows the building to continue use as a residence. The residential use is over 78 years with little alteration to the historic building.. The continued use requires minimal change to the defining characteristics of the building and its site.

2. The historic character of a property shall be retained and preserved. The removal of historic materials or alteration of features and spaces that characterize a property shall be avoided.

The historic character of the building is found in the size, height, and shape of the building and its materials; the wood structure, wood horizontal board siding, wood window frames and sash, clear (old) glazing, the opening in the roof peak, and locations of doors and windows. The scroll work in the gable peak should also be retained, both front and back porches are additions and not historic materials.

3. Each property shall be recognized as a physical record of its time, place, and use. Changes that create a false sense of historical development, such as adding conjectural features or architectural elements from other buildings, shall not be undertaken.

The rehabilitation plans have not been prepared. They must not create a false sense of history.

4. Most properties change over time; those changes that have acquired historic significance in their own right shall be retained and preserved.

The alterations to the building include, front porch, rear porch and metal sliding window (infill wall) have not acquired historic significance.

The scroll work in the peak of the roof has gained importance and must be retained.

5. Distinctive features, finishes, and construction techniques or examples of craftsmanship that characterize a property shall be preserved.

The distinctive features to be preserved are the wood structure, wood siding, wood window systems, gable pitch, size, shape and height of the building.

6. Deteriorated historic features shall be repaired rather than replaced. Where the severity of deterioration requires replacement of a distinctive feature, the new feature shall match the old in design, color, texture, and other visual qualities and, where possible, materials. Replacement of missing features shall be substantiated by documentary, physical, or pictorial evidence.

Where repair is required the repair must be made using the same materials and design as the original. The noticeable missing feature is the window that was removed and replaced with a metal sliding window. Documentation to replace this window is the three remaining windows frames and sash.

7. Chemical or physical treatments, such as sandblasting, that cause damage to historic materials shall not be used. The surface cleaning of structures, if appropriate, shall be undertaken using the gentlest means possible.

The building is wood and must be cleaned of old paint using hand methods and low pressure water. No harsh chemicals may be used. The specifications must describe the process for cleaning the building and preparing it for new paint, and the paint.

8. Significant archeological resources affected by a project shall be protected and preserved. If such resources must be disturbed, mitigation measures shall be undertaken.

It is unlikely that significant archeological resources will be found during the rehabilitation. Should archeological materials be found State Law must be followed.

9. New additions, exterior alterations, or related new construction shall not destroy historic materials that characterize the property. The new work shall be differentiated from the old and shall be compatible with the massing, size, scale, and architectural features to protect the historic integrity of the property and its environment.

No addition has been proposed

10. New additions and adjacent or related new construction shall be undertaken in such a manner that if removed in the future, the essential form and integrity of the historic property and its environment would be unimpaired.

No addition has been proposed.

The Site and Subdivision Development

The historic building will be part of a suburban 1.1 acre subdivision with the surrounding parcels developed with two-story houses. The lots in this subdivision range from 7,940 to 7,175 square feet, and are planned for two-story houses, with the exception of the corner lot at Old Monterey Road and Mustard Avenue. There are no other historic buildings in the immediate area. The historic building has been and will be isolated from other historic buildings and have a setting within a suburban neighborhood.

Historic building parcel:

Lot 4, the subject parcel is 7,840 square feet with the historic building located on the east half of the parcel with a new single-car garage and a 20 ft wide driveway that accesses from Old Monterey Road. The orientation of the historic building and new garage are east-toward Old Monterey Road. The parcel with the historic building, Lot 4, faces Old Monterey Road and across that is a utility right-of-way and the tracks of the railroad. This is corridor creates open space separating the historic building from Monterey Road.

Site and Scale of the new houses:

The new houses are planned to be two-stories. The two parcels adjoining Lot 4, are Lot 5 to the west and Lot 3 to the south. These are planned for two-story houses. Across Mustard Avenue, the existing subdivision is two-story houses. The height of the peak in a roof for a typical two-story house is approximately 28-30 feet with the rest of the roof lower. The house to the north (lot 5) is approximately 64 feet from the back wall of the historic building with the orientation toward Mustard Avenue. The house to the east (lot 3) is approximately 33 feet from the sidewall of the historic building and orients toward Old Monterey Road. The lots 1, 2, and 6 are away from the historic building's site. The location of the historic building is close to the corner of Old Monterey Road and Mustard Avenue, with setback of 24-32 feet from the a new sidewalk, curb, gutter and improved streets, on the north and west sides of the parcel.

Effect of new development on the historic building.

Integrity:

Integrity is the ability of a property or convey its significance.. The evaluation of integrity is something a subjective judgment, but it must always be grounded in a understanding of a property's physical features and how they relate to its significance. To evaluate inte

National Register of Historic Places developed the criteria and recognized seven aspects or qualities that, in various combinations, define integrity.

SEVEN ASPECTS OF INTEGRITY

Location

Location is the place where the historic property was constructed or the place where the historic event occurred. The relationship between the property and its location is often important to understanding why the property was created or why something happened. The actual location of a historic property, complemented by its setting, is particularly important in recapturing the sense of historic events and persons. Except in rare cases, the relationship between a property and its historic associations is destroyed if the property is moved.

Research has identified the historic building is likely on the original location or that it has been relocated close to that location. Recent research believes the building is the former laundry located in Madrone Station. The planned subdivision does not relocate the historic building.

Design

Design is the combination of elements that create the form, plan, space, structure, and style of a property. It results from conscious decisions made during the original conception and planning of a property (or its significant alteration) and applies to activities as diverse as community planning, engineering, architecture, and landscape architecture. Design includes such elements as organization of space, proportion, scale, technology, ornamentation, and materials.

It appears the building has been altered very little and retains integrity of design. Rehabilitation of the building must follow the Secretary of the Interior's Standards to preserve the original design. The proposed development does not alter the historic building.

Setting

Setting is the physical environment of a historic property. Whereas location refers to the specific place where a property was built or an event occurred, setting refers to the character of the place in which the property played its historical role. It involves how, not just where, the property is situated and its relationship to surrounding features and open space. Setting often reflects the basic physical conditions under which a property was built and the functions it was intended to serve. In addition, the way in which a property is positioned in its environment can reflect the designer's concept of nature and aesthetic preferences. The physical features that constitute the setting of a historic property can be either natural or manmade, including such elements as:

Topographic features (a gorge or the crest of a hill);

Vegetation;

Simple manmade features (paths or fences); and

Relationships between buildings and other features or open space.

These features and their relationships should be examined not only within the exact boundaries of the property, but also between the property and its surroundings. This is particularly important for districts.

The original setting in a small community of Madrone Station has been lost. This is the only building to remain. The orientation shows the relationship to the main road at that time and to the railroad tracks and station (not extant) The orientation remains to the same, only the road has been reduced to a side road and Monterey Road is on the other side of the railroad. The original setting for this historic building has been compromised by the loss of other buildings of the same era. The proposed houses will change the semi-

rural setting that has surrounded the building for many years. However, the large parcel will retain enough land to have the building be recognized as a historic building c. 1870s. The new two-story houses are distant enough that they do not overwhelm the smaller building.

Materials

Materials are the physical elements that were combined or deposited during a particular period of time and in a particular pattern or configuration to form a historic property. The choice and combination of materials reveal the preferences of those who created the property and indicate the availability of particular types of materials and technologies. Indigenous materials are often the focus of regional building traditions and thereby help define an area's sense of time and place.

A property must retain the key exterior materials dating from the period of its historic significance. If the property has been rehabilitated, the historic materials and significant features must have been preserved.

The historic building retains the majority of its exterior materials. Rehabilitation of the historic building must follow the Secretary of the Interior's Standards to preserve the historic materials. The subdivision and new homes will not diminish the historic materials of the building.

Workmanship

Workmanship is the physical evidence of the crafts of a particular culture or people during any given period in history or prehistory. It is the evidence of artisans' labor and skill in constructing or altering a building, structure, object, or site. Workmanship can apply to the property as a whole or to its individual components. It can be expressed in vernacular methods of construction and plain finishes or in highly sophisticated configurations and ornamental detailing. It can be based on common traditions or innovative period techniques.

Workmanship is important because it can furnish evidence of the technology of a craft, illustrate the aesthetic principles of a historic or prehistoric period, and reveal individual, local, regional, or national applications of both technological practices and aesthetic principles. Examples of workmanship in historic buildings include tooling, carving, painting, graining, turning, and joinery.

The original workmanship is evident in the construction of the historic building. Rehabilitation of the historic building must follow the Secretary of the Interior's Standards to preserve the workmanship. The planned subdivision and new homes do not impact the workmanship of the historic building.

Feeling

Feeling is a 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. For example, a rural historic district retaining original design, materials, workmanship, and setting will relate the feeling of agricultural life in the 19th century. A grouping of prehistoric petroglyphs, unmarred by graffiti and intrusions and located on its original isolated bluff, can evoke a sense of tribal spiritual life.

The feeling of the original setting in a small community c. 1870s has been lost with the removal of the other historic buildings. For many years the building was in a setting of semi-rural agricultural and the feeling changed to a residence in that setting. The planned subdivision and development of new houses creates a different feeling for the historic property, one of a suburban residential area. The original feeling has not been present for a very long time. The new development preserves the historic building and allows sufficient land to allow the building to be recognized as a building of the 1870s.

Association

Association is 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.

Like the feeling, the association to the Madrone Station is not present and has not been for many years. The planned subdivision and development of new houses does not replace the original Station association, nor does it continue the semi-rural association. The association to former historic eras is lost.

The majority of the aspects defining integrity are present in the building. The aspects of setting feeling and association have not been present for many years. Yet the historic building conveys the important aspects that convey its importance as a c 1870s building, of which there are few in Morgan Hill. The planned subdivision and development of new two-story houses changes the setting and feeling but does not diminish the historic significance of the building.

The integrity of the historic setting was diminished when the settlement of Madrone Station was destroyed and again when the orchards and farms were developed with housing subdivisions. The planned subdivision of 6 lots preserves the largest lot for the historic building that is located on the north-east corner of the parcel. The plan shows the building on the same site and location. The location of the building allows a separation from the new houses that preserves the views of the historic building.

Morgan Hill Zoning Ordinance Section 18.60 Historic Preservation

18.60.030 Local Designation of Historic Resources:.....For the purposes of this chapter, an object, building, structure, site, area, district, unique archaeological resource, place, record, or manuscript may be classified a designated historical resource and placed on the local register by the planning commission pursuant to Section 2.36.040 if it is determined through survey and documentation to be a "Historical Resource" as defined in this chapter, which are determined to have (a) age, (b) integrity and (c) historical significance as defined by this chapter

18.60.070 – Historical Alterations Permit

A. When Required. Unless waived pursuant to paragraph 18.62.030.E, it is unlawful for any person to alter or modify character-defining features of a potentially significant or significant historical resource, a resource that has been formally designated or listed on the City's adopted survey list, or which lies within an historic district, without first obtaining a Historical Alteration Permit as outlined below. Neither the Community Development Director nor the Building Official shall grant any permit to carry out such work without the approval of a Historical Alteration Permit.

B. Application. If a Historical Alteration Permit is required pursuant to Section 18.60.040, the following procedures will be followed in processing the permit application:

1. Historical Alteration Permit applications shall be submitted to the Community Development Department for review and approval. Applications shall be accompanied by materials as required by the Community Development Director and reasonably necessary for the proper review of the project, including but not limited to information regarding the age and construction of a building or structure and building permit records;
2. The Community Development Director or designated staff shall determine whether the application will be processed as "minor" or "major" historical alteration permit;

a. "Minor" historical alteration permits shall apply to alterations with a valuation of less than \$10,000 or as determined to be minor by the community development director.

b. "Major" historical alteration permits shall apply to alterations with a valuation of \$10,000 or greater.

3. City Staff will review applications for compliance with the Secretary of the Interior's Standards and may require that the applicant deposit funds for the City to retain the services of a qualified historic consultant if necessary;

4. Environmental review of a historical alteration permit application will be required as follows:

a. If the proposed alteration or modification is in compliance with the Secretary of the Interior's Standards for the Treatment of Historic Properties, the potential impact on historical resources shall be considered less than significant and the project would be exempt from CEQA unless other factors are identified which could cause other potentially significant environmental impacts.

b. If the proposed alteration or modification is not in compliance with the Secretary of the Interior's Standards then CEQA review will be required.

5. Historical Alteration Permit applications (both minor and major) will require the review and approval of the Community Development Director or designated staff, except as provided below:

a. Any application involving preparation of an initial study, negative declaration or environmental impact report shall be referred to the Planning Commission for approval at a duly noticed public hearing.

b. The Community Development Director may also require a historical alteration permit application to be reviewed and approved by the planning commission at his/her discretion.

6. As part of the review process, the Community Development Director or Planning Commission may impose conditions on a project to bring the proposed work into compliance with the Secretary of the Interior's Standards.

7. The Community Development Director or Planning Commission decision to approve or deny a Historical Alteration Permit or to impose conditions on a project may be appealed in accordance with Chapter 18.112 (Appeals).

18.60.120 – Enforcement and Penalties;

A. Methods of Enforcement. In addition to the regulations of this chapter, other chapters of the Municipal Code and other provisions of law which govern the approval or disapproval of applications for permits or licenses covered by this chapter, the Community Development Director and Building Official have the authority to implement the enforcement thereof by any of the following means:

1. Serving notice requiring the removal of any violation of this chapter upon the owner, agent, occupant or tenant of the improvement, building, structure or land;

2. Calling upon the City Attorney to institute any necessary legal proceedings to enforce the provisions of this chapter, and the City Attorney is authorized to institute any actions to that end; and

3. Calling upon the Chief of Police and authorized agents to assist in the enforcement of this chapter.

B. Injunctive Relief. In addition to any of the remedies described in Subsection A above, the City Attorney may maintain an action for injunctive relief to restrain or enjoin or to cause correction or removal of any violation of this chapter, or for an injunction in appropriate cases.

C. Restoration. Any person who demolishes, alters, or constructs a building or structure in violation of this act shall be required to restore the building or structure and its site to its appearance prior to the violation. Any action to enforce this subsection shall be brought by the city attorney. This civil remedy shall be in addition to and not in lieu of any criminal prosecution and penalty.

Recommendation: To mitigate the loss of the original setting, it is proposed that a substantial plaque be placed in the new sidewalk in front of the historic building to describe Madrone Station and the significance of this building.

Appendix B
Campoli Residential Project Archaeological Literature Search



holman & ASSOCIATES

Archaeological Consultants

"SINCE THE BEGINNING"

3615 FOLSOM ST. SAN FRANCISCO,
CALIFORNIA 94110 415/550-7286

Julie Wright
David J. Powers & Associates
1871 The Alameda
San Jose, CA 95126

July 24, 2012

Dear Ms. Wright:

RE: CULTURAL RESOURCES STUDY OF THE CAMPOLI RESIDENTIAL PROJECT
AREAS, MORGAN HILL, SANTA CLARA COUNTY, CALIFORNIA

At your request I have completed an archaeological field inspection and a new archaeological literature review for the above referenced project area in Morgan Hill, Santa Clara County, California. No evidence of historic or prehistoric archaeological resources was discovered during my inspection. The following is a summary of information gained to date.

PROJECT DESCRIPTION

The proposed project area consists of a total of 4 lots located between Madrone Road on the northwest, Sanchez Drive on the southeast, and Hale Avenue on the west. Located on the Morgan Hill U.S.G.S. map, the parcels are comprised of a single rectangular shaped parcel (parcel 10) of 2.36 acres bordering Madrone Road, and three separate parcels which border parcel 10 on its northwestern side; each of these adjacent parcels are approximately 0.6 acres in size, containing structures (not evaluated for this report) and/or the remnants of orchards and other signs of agricultural use.

ARCHAEOLOGICAL LITERATURE REVIEW

An updated archaeological literature review was done by this author at the Northwest Information Center (NWIC) located in Rohnert Park on March 9, 2012 (NWIC file no. 11-0994). In the past 11 years, no new archaeological materials have been found inside and/or near the current project areas. In 2001 this author prepared a report for Powers & Associates for the adjacent 30 acre parcel then known as the Roman Catholic Diocese High School project. No archaeological materials were found at that time, and no traces of an historic site recorded in the 1990s north of the High School site were found inside the parcel.

CAMPOLI COX CULTURAL RESOURCE STUDY

DESCRIPTION OF FIELD INSPECTION

A visual inspection of the 4 lots was conducted by this author on March 22, 2012 by walking 30 foot transects over the open portions of the property. The Campoli Residences parcel, made up of the single 2.36 acre piece, consist of mostly open field, with a house in the center; at the time of the survey the open space was covered by a dense covering of high grasses and weeds, restricting a visual inspection of the ground surface to less than 20% of the ground. The property also contains the remnants of a walnut orchard.

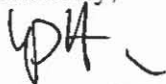
Where visible the soils consist of a silty clay loam similar to the adjacent High School site, containing scant amounts of water worn small gravels. No evidence of either historic or prehistoric archaeological deposits was seen.

The adjacent three contiguous parcels, known also as the Campoli Cox parcel, contains walled in field on the west and north. The soils visible consist of the same silty clay loam, much of which was obscured either by dense grasses or numerous piles of dumped fill material. Farm equipment and several small sheds are seen inside the parcels, along with the remnants of the walnut orchard seen on the adjacent parcel.

FINDING/RECOMMENDATIONS

In summary, no evidence of either historic and/or prehistoric archaeological deposits was seen anywhere inside the project area. It is the opinion of this author that future development will have no effect on cultural resources. This report makes no further recommendations for mechanical subsurface presence/absence testing and does not recommend archaeological monitoring during construction related grading and/or trenching.

Sincerely,



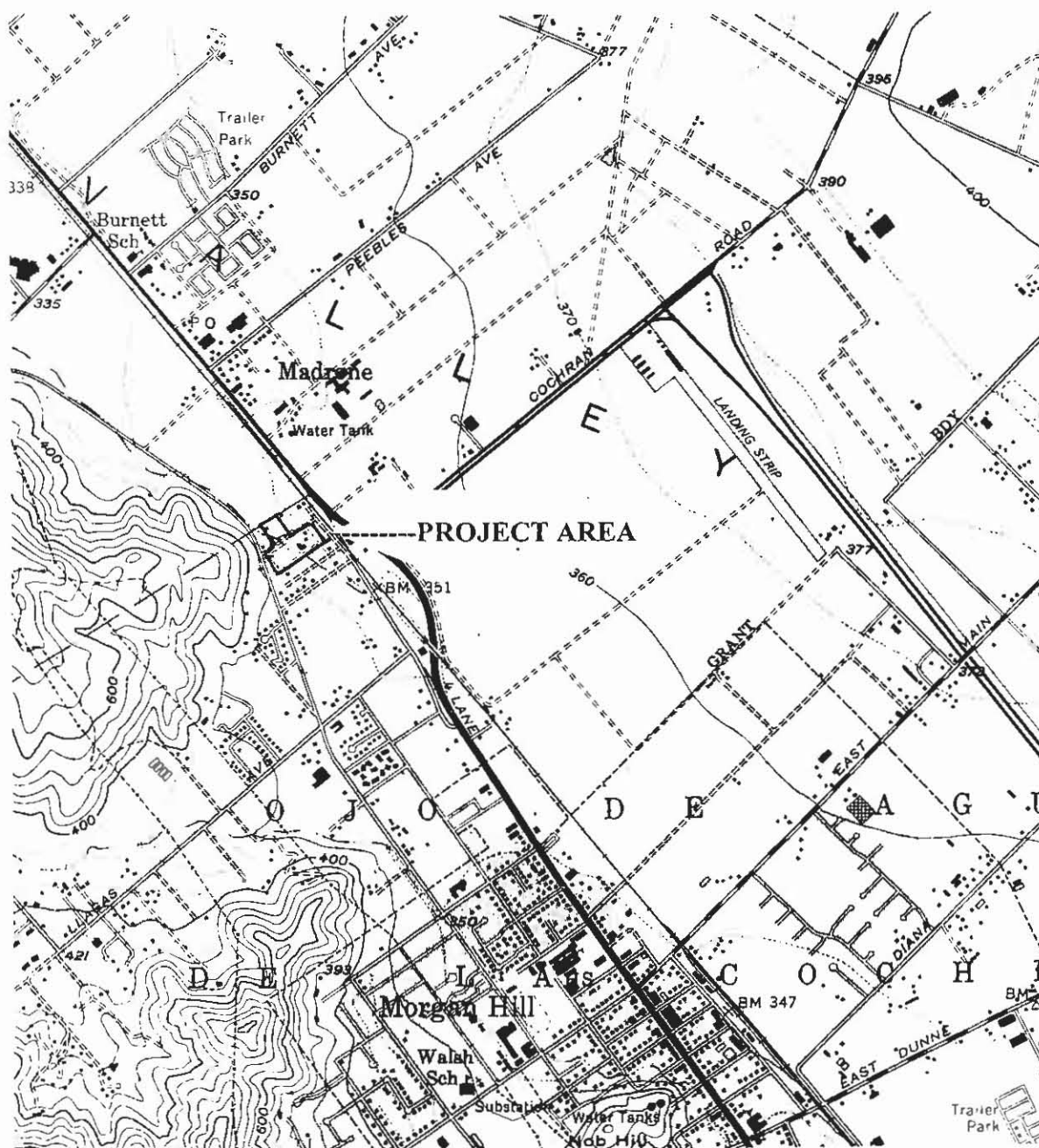
Miley Paul Holman
Holman & Associates

REFERENCES

- | | |
|-----------------------|---|
| Holman, Miley
2001 | Cultural resources study of the Roman Catholic Diocese of San Jose High School site, Morgan Hill, Santa Clara County, California. On file, Holman & Associates. |
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CAMPOLI RESIDENTIAL PROJECTS

MORGAN HILL, SANTA CLARA COUNTY, CALIFORNIA
MORGAN HILL U.S.G.S. MAP



Appendix C
Campoli Residential Project Noise and Vibration Assessment

Memo

To: Julie Wright
David J. Powers & Associates, Inc.

Date: May 3, 2012

From: Jordan L. Roberts

Subject: North Campoli Drive Residential Project in Morgan Hill, CA - Noise and Vibration Assessment

Two residential projects are proposed in Morgan Hill that would be adjacent to Old Monterey Road and near the Union Pacific Railroad line (UPRR) that serves CalTrain. The North Campoli Drive Project proposes 10 single-family homes and the South Campoli Drive Project proposes 11 single-family homes. A noise and vibration analysis was conducted previously for the Madrone Villages Project at the adjacent Hale-Signature project site. The purpose of this memo is to describe that analysis and apply those results to the North Campoli Drive Residential project.

Results from Hale Signature Project Assessment

The Hale-Signature Project noise and vibration assessment evaluated the project's potential to result in significant impacts with respect to applicable CEQA guidelines. Two long-term measurements established ambient noise levels attributable to nearby sources. LT-1 was located at the setback of existing and proposed residences, 85 feet from the centerline of the Union Pacific Railroad (UPRR) and about 195 feet from the centerline of Monterey Highway. Noise levels measured at this site were primarily the result of railroad train passbys, yielding an Ldn that ranged from 70 to 72 dBA. LT-1 represents the noise environment at residences on easternmost portions of the Hale Signature Project site. Site LT-2 was approximately 45 feet from the center of Hale Avenue/Santa Teresa Boulevard, and was selected to quantify the daily trend in noise levels attributable to traffic along the roadway. The Ldn at this location was 70 dBA. Residential units at the western portion of project sites would be located further away from the roadway than this measurement location, resulting in lower ambient noise levels.

Additionally, short-term noise measurements ST-1 through ST-4 were made at various locations throughout the project site representative of proposed noise-sensitive residential land uses. Ldn noise levels at short-term measurement sites were approximated by correlating them to corresponding periods at long-term sites. ST-1 was located 195 feet from the center of Monterey Highway, and a calculated Ldn ranging from 70 to 72 dBA was a result of Monterey Highway traffic only, there were no train passbys during the measurement. ST-2 was located 180 feet from the center of Hale Avenue/Santa Teresa Boulevard, which resulted in a calculated Ldn of 55 dBA. An Ldn of 65 dBA was calculated from ST-3 data, measured 280 feet from the center of UPRR and 390 feet from Monterey Highway and

included an Amtrak train passby. ST-4 was located 195 feet from the center of Monterey Highway and resulted in a calculated L_{dn} ranging from 70 to 72 dBA.

Application to North Campoli Drive Residential Project

Noise and Land Use Compatibility

A significant impact would occur if residential land uses proposed by the project would be exposed to exterior noise levels exceeding 60 dBA L_{dn} from traffic noise and 70 dBA L_{dn} from railroad noise. Future noise levels would not exceed the City's noise and land use compatibility standards. The North Campoli Drive project is located immediately south and adjacent to the Hale-Signature project site and proposes 10 single family homes that would be set back further from Monterey Highway, Hale Avenue and the UPRR than the Hale-Signature project. The North Campoli Drive Residential project is much smaller than the Hale-Signature project.

North Campoli Drive residences would be located no closer than 260 feet from the centerline of UPRR and 375 feet from the centerline of Monterey Highway. Assuming sound attenuation due to distance, noise levels are calculated to be 64 to 66 dBA L_{dn} at the easternmost areas of the project site. Since noise levels at these locations would be less than 70 dBA L_{dn} and dominated by railroad noise, this is a less than significant impact.

Residences proposed on the North Campoli Drive site would be no closer than 205 feet from the centerline of Hale Avenue/Santa Teresa Boulevard. Noise levels are calculated to be 54 dBA L_{dn} at westernmost residential facades. Since noise levels from traffic would be less than 60 dBA L_{dn} at these locations, this is a less than significant impact.

Construction Noise

Construction of the North Campoli Drive Residential project would expose nearby existing residences to construction noise comparable to construction noise assessed for the Hale-Signature Project in the Madrone Villages Noise and Vibration Assessment. Noise levels generated by project construction activities would temporarily elevate ambient noise levels at sensitive land uses in the vicinity. Although detailed schedules and phasing of construction activities are unknown at this time, construction activities on site would be limited to no more than one construction season.

Typically, significant noise impacts do not result when standard construction noise control measures are enforced at the project site and when the duration of the noise generating construction period is limited to one construction season (typically one year) or less. Noise generated by grading, infrastructure improvements and the construction of building shells would not be expected to result in noise levels exceeding 60 dBA L_{eq} and the ambient noise environment by 5 dBA L_{eq} for a period greater than one year.

The following standard controls are assumed to be included in the project:

- Construction activities shall be limited to the hours between 7:00 a.m. and 8:00 p.m., Monday through Friday, and between the hours of 9:00 a.m. and 6:00 p.m. on Saturdays. No construction activities should occur on Sundays or federal holidays (Consistent with Section 8.28.040 of the Morgan Hill Municipal Code).
- Equip all internal combustion engine driven equipment with intake and exhaust mufflers that are in good condition and appropriate for the equipment.

- Locate stationary noise generating equipment (e.g. rock crushers, compressors) as far as possible from adjacent residential receivers.
- Acoustically shield stationary equipment located near residential receivers with temporary noise barriers or recycled demolition materials.
- Utilize "quiet" air compressors and other stationary noise sources where technology exists.
- The contractor shall prepare a detailed construction plan identifying the schedule for major noise-generating construction activities. The construction plan shall identify a procedure for coordination with adjacent residential land uses so that construction activities can be scheduled to minimize noise disturbance.
- Designate a "disturbance coordinator" who would be responsible for responding to any complaints about construction noise. The disturbance coordinator will determine the cause of the noise complaint (e.g., bad muffler, etc.) and will require that reasonable measures be implemented to correct the problem.

Implementation of the above measures would reduce construction noise levels emanating from the site, limit construction hours, and minimize disruption and annoyance. With the implementation of these measures, and recognizing the duration of project construction activities, the substantial temporary increase in ambient noise levels would be less-than-significant.

Mitigation Measure: No additional measures required.

Groundborne Vibration from Construction

The construction of the project may generate perceptible vibration when heavy equipment or impact tools (e.g. jackhammers, hoe rams) are used, but would not expose persons to excessive groundborne vibration. Construction activities would include site preparation work, foundation work, and new building framing and finishing. The proposed project would not require pile driving, which can cause excessive vibration.

Consistent with Hale-Signature Project impacts, vibration generated by construction activities near common property lines would at times be perceptible, however, would not be expected to result in "architectural" damage to buildings. This is a less-than-significant impact.

In areas where vibration would not be expected to cause structural damage, vibration levels may still be perceptible. However, as with any type of construction, this would be anticipated and it would not be considered significant given the intermittent and short duration of the phases that have the highest potential of producing vibration (demolition and use of jackhammers and other high power tools). By use of administrative controls such as notifying adjacent commercial shops of scheduled construction activities and scheduling construction activities with the highest potential to produce perceptible vibration to hours with the least potential to affect these uses, perceptible vibration can be kept to a minimum and as such would not result in a significant impact with respect to perception.

12-044

JLR

Memo

To: Julie Wright
David J. Powers & Associates, Inc.

Date: May 3, 2012

From: Jordan L. Roberts

Subject: South Campoli Drive Residential Project in Morgan Hill, CA - Noise and Vibration Assessment

Two residential projects are proposed in Morgan Hill that would be adjacent to Old Monterey Road and near the Union Pacific Railroad line (UPRR) that serves CalTrain. The North Campoli Drive Project proposes 10 single-family homes and the South Campoli Drive Project proposes 11 single-family homes. A noise and vibration analysis was conducted previously for the Madrone Villages Project at the adjacent Hale-Signature project site. The purpose of this memo is to describe that analysis and apply those results to the South Campoli Drive Residential project.

Results from Hale-Signature Project Assessment

Hale-Signature Noise

The Hale-Signature Project noise and vibration assessment evaluated the project's potential to result in significant impacts with respect to applicable CEQA guidelines. Two long-term measurements established ambient noise levels attributable to nearby sources. LT-1 was located at the setback of existing and proposed residences, 85 feet from the centerline of the Union Pacific Railroad (UPRR) and about 195 feet from the centerline of Monterey Highway. Noise levels measured at this site were primarily the result of railroad train passbys, yielding an Ldn that ranged from 70 to 72 dBA. LT-1 represents the noise environment at residences on easternmost portions of the Hale Signature Project site. Site LT-2 was approximately 45 feet from the center of Hale Avenue/Santa Teresa Boulevard, and was selected to quantify the daily trend in noise levels attributable to traffic along the roadway. The Ldn at this location was 70 dBA. Residential units at the western portion of project sites would be located further away from the roadway than this measurement location, resulting in lower ambient noise levels.

Additionally, short-term noise measurements ST-1 through ST-4 were made at various locations throughout the project site representative of proposed noise-sensitive residential land uses. Ldn noise levels at short-term measurement sites were approximated by correlating them to corresponding periods at long-term sites. ST-1 was located 195 feet from the center of Monterey Highway, and a calculated Ldn ranging from 70 to 72 dBA was a result of Monterey Highway traffic only, there were no train passbys during the measurement. ST-2 was located 180 feet from the center of Hale Avenue/Santa

Teresa Boulevard, which resulted in a calculated Ldn of 55 dBA. An Ldn of 65 dBA was calculated from ST-3 data, measured 280 feet from the center of UPRR and 390 feet from Monterey Highway and included an Amtrak train passby. ST-4 was located 195 feet from the center of Monterey Highway and resulted in a calculated Ldn ranging from 70 to 72 dBA.

Hale-Signature Vibration

Vibration measurements of railroad trains were made at one location approximately 80 feet from the UPRR tracks, representing the easternmost boundaries of the nearest residential lots proposed at the Hale-Signature project site. Vibration levels measured on the site are representative of vibration levels at ground level (i.e. vibration levels that would enter the building foundation).

Caltrain passbys resulted in maximum overall levels ranging from 72 to 73 VdB. Data collected during the vibration monitoring survey were compared to data collected near Tilton Avenue in 2006 to confirm that the sample was representative. Vibration levels measured between 80 feet and 90 feet of the UPRR were below the FTA's 75 VdB "occasional events" criteria for a general vibration assessment and below the FTA's criteria for conducting a detailed vibration analysis.

Application to South Campoli Drive Residential Project

Noise and Land Use Compatibility

A significant impact would occur if residential land uses proposed by the project would be exposed to exterior noise levels exceeding 60 dBA L_{dn} from traffic noise and 70 dBA L_{dn} from railroad noise. The South Campoli Drive Project proposes 11 single family houses. This project is adjacent to Old Monterey Road with a setback from the UPRR that is similar to building setbacks of the Hale-Signature Project. The South Campoli Drive Residential project is smaller than the Hale-Signature project.

South Campoli Drive residences would be located no closer than 100 feet from the centerline of UPRR and 250 feet from the centerline of Monterey Highway. Assuming sound attenuation due to distance, noise levels are calculated to be 69 to 71 dBA L_{dn} at the easternmost areas of the project site.

The future exterior noise environment at residential land uses proposed adjacent to the UPRR and Monterey Highway would exceed 60 dBA Ldn from traffic noise and 70 dBA Ldn from railroad noise. Future noise levels would exceed the City's noise and land use compatibility standards. However, it is assumed that the private outdoor use areas of Lots 10 and 11, adjoining the UPRR, would be shielded by the residential units themselves, providing a minimum of 10 dB noise attenuation at exterior use areas.

Residences proposed on the South Campoli Drive site would be no closer than 205 feet from the centerline of Hale Avenue/Santa Teresa Boulevard. Noise levels are calculated to be 54 dBA L_{dn} at westernmost residential facades. Since noise levels from traffic would be less than 60 dBA L_{dn} at these locations, this is a less than significant impact.

Corresponding with the future interior noise environment of the Hale-Signature project, the design of eastern residences of the South Campoli Drive Project will require proper wall construction techniques, the selections of proper windows and doors, and the incorporation of a forced-air mechanical ventilation system to allow the occupant the option of controlling noise by closing the windows. Additional treatments may include, but are not limited to, sound rated wall construction, acoustical caulking, insulation, acoustical vents, etc.

Mitigation Measure:

The following measures shall be included in the design of the project:

- Provide a suitable form of forced-air mechanical ventilation, as determined by the local building official, for units throughout the site, so that windows could be kept closed at the occupant's discretion to control interior noise and achieve the interior $L_{\max}$ and L_{dn} noise standards.
- Provide sound rated windows and doors to maintain interior noise levels at acceptable levels. Preliminary calculations made based on the data contained in the conceptual design plans indicate that sound-rated windows and doors with a sound transmission class rating of STC 38 to 43 would be sufficient to control maximum instantaneous noise levels to 50 dBA $L_{\max}$ in bedrooms, 55 dBA $L_{\max}$ in other habitable rooms, and to also achieve the 45 dBA L_{dn} interior noise standard. Additional treatments may include, but are not limited to, sound rated wall construction, acoustical caulking, insulation, acoustical vents, etc. Large windows and doors should be oriented away from the railroad where possible. Bedrooms should be located away from the UPRR.
- Confirm the final specifications for noise insulation treatments during final design of the project, based on the best available data regarding future usage assumptions for the UPRR and HST alignments. Results of the analysis, including the description of the necessary noise control treatments, will be submitted to the City along with the building plans and approved prior to issuance of a building permit.

The implementation of the above measures would reduce exterior and interior noise level to acceptable levels, resulting in a less-than-significant impact.

South Campoli Drive Vibration

The easternmost boundaries of residential lots proposed for the South Campoli Drive site would be at about the same setbacks from the UPRR railroad tracks as easternmost boundaries of Hale-Signature Project residences. Therefore, maximum overall levels ranging from 72 to 73 VdB would be expected at these residential boundaries as well, and would also be below the FTA's 75 VdB "occasional events" criteria for a general vibration assessment. No mitigation would be required.

Construction Noise

Construction of the South Campoli Drive Residential project would expose nearby existing residences to construction noise comparable to construction noise assessed for the Hale-Signature Project in the Madrone Villages Noise and Vibration Assessment. Noise levels generated by project construction activities would temporarily elevate ambient noise levels at sensitive land uses in the vicinity. Although detailed schedules and phasing of construction activities are unknown at this time, construction activities on site would be limited to no more than one construction season.

Typically, significant noise impacts do not result when standard construction noise control measures are enforced at the project site and when the duration of the noise generating construction period is limited to one construction season (typically one year) or less. Noise generated by grading, infrastructure improvements and the construction of building shells would not be expected to result in noise levels exceeding 60 dBA L_{eq} and the ambient noise environment by 5 dBA L_{eq} for a period greater than one year.

The following standard controls are assumed to be included in the project:

- Construction activities shall be limited to the hours between 7:00 a.m. and 8:00 p.m., Monday through Friday, and between the hours of 9:00 a.m. and 6:00 p.m. on Saturdays. No construction activities should occur on Sundays or federal holidays (Consistent with Section 8.28.040 of the Morgan Hill Municipal Code).
- Equip all internal combustion engine driven equipment with intake and exhaust mufflers that are in good condition and appropriate for the equipment.
- Locate stationary noise generating equipment (e.g. rock crushers, compressors) as far as possible from adjacent residential receivers.
- Acoustically shield stationary equipment located near residential receivers with temporary noise barriers or recycled demolition materials.
- Utilize "quiet" air compressors and other stationary noise sources where technology exists.
- The contractor shall prepare a detailed construction plan identifying the schedule for major noise-generating construction activities. The construction plan shall identify a procedure for coordination with adjacent residential land uses so that construction activities can be scheduled to minimize noise disturbance.
- Designate a "disturbance coordinator" who would be responsible for responding to any complaints about construction noise. The disturbance coordinator will determine the cause of the noise complaint (e.g., bad muffler, etc.) and will require that reasonable measures be implemented to correct the problem.

Implementation of the above measures would reduce construction noise levels emanating from the site, limit construction hours, and minimize disruption and annoyance. With the implementation of these measures, and recognizing the duration of project construction activities, the substantial temporary increase in ambient noise levels would be less-than-significant.

Mitigation Measure: No additional measures required.

Groundborne Vibration from Construction

The construction of the project may generate perceptible vibration when heavy equipment or impact tools (e.g. jackhammers, hoe rams) are used, but would not expose persons to excessive groundborne vibration. Construction activities would include site preparation work, foundation work, and new building framing and finishing. The proposed project would not require pile driving, which can cause excessive vibration.

Consistent with Hale-Signature Project impacts, vibration generated by construction activities near common property lines would at times be perceptible, however, would not be expected to result in "architectural" damage to buildings. This is a less-than-significant impact.

In areas where vibration would not be expected to cause structural damage, vibration levels may still be perceptible. However, as with any type of construction, this would be anticipated and it would not be considered significant given the intermittent and short duration of the phases that have the highest potential of producing vibration (demolition and use of jackhammers and other high power tools). By

May 3, 2012

Page 5

use of administrative controls such as notifying adjacent commercial shops of scheduled construction activities and scheduling construction activities with the highest potential to produce perceptible vibration to hours with the least potential to affect these uses, perceptible vibration can be kept to a minimum and as such would not result in a significant impact with respect to perception.

12-044

JLR

Appendix D
Campoli Residential Project TAC & PM_{2.5} Analysis

Memo

To: Julie Wright
David J. Powers & Associates, Inc.

Date: April 25, 2012

From: James A. Reyff

Subject: Campoli Residential Projects in Morgan Hill, CA - TAC and PM_{2.5} Assessment

Two residential projects are proposed in Morgan Hill that would be adjacent to Old Monterey Road and near the Union Pacific Railroad line (UPRR) that serves CalTrain. The number of residences proposed by these projects is below the screening size recommended in the Bay Area Air Quality management (BAAQMD) CEQA Air Quality Guidelines for conducting quantified emissions analysis. Therefore, the impact from these projects on air quality in terms of their effect from air pollutant emissions could be considered less than significant. That is, they would not cause or contribute to a violation of an ambient air quality standard nor would they result in cumulatively considerable emissions of an air pollutant (or precursor air pollutant) that the air basin is considered non attainment. However, project construction emissions could cause localized impacts to nearby residences and existing sources of traffic and train emissions could adversely affect future residences of the proposed project. An analysis of these impacts was conducted previously for the Hale-Signature Project, which is adjacent to these projects. The purpose of this memo is to describe that analysis and apply those results to the Campoli Residential projects.

The Hale-Signature air quality and greenhouse gas emissions assessment evaluated the effect of toxic air contaminant (TAC) emissions in two ways:

1. An analysis of health risk impacts at nearby existing residences caused by project emissions of TACs during construction.
2. Analysis of long-term roadway and train emissions of TACs upon future sensitive receptors (new project residences) in terms of health risk.

Results of these assessments are applied to the Campoli projects.

TAC Construction Impacts

Construction of the Campoli Residential projects would emit TACs that could affect nearby existing residences in terms of increased cancer risk and PM_{2.5} concentrations.

Results from Hale Signature Project Assessment

Construction TAC and PM_{2.5} impacts for the Hale-Signature project were assessed previously. TAC emissions, in the form of diesel particulate matter or DPM, from construction of about 108 residential units were computed and then input to a dispersion model to predict concentrations of fine particulate matter (PM_{2.5}). Specifically, emissions were computed using the URBEMIS2007 model along with projected construction activity. The project information and preliminary construction schedule was entered into the URBEMIS2007 model, which predicted anticipated construction and associated emissions. Construction of the project was expected to occur over three years, 2013 through 2015. The URBEMIS2007 model provided annual PM_{2.5} exhaust emissions (assumed to be all diesel particulate matter) for the off road construction equipment.

The U.S. EPA ISCST3 dispersion model was used to predict concentrations of DPM at existing residences surrounding the project site. The ISCST3 modeling included area sources to represent the project construction area. Receptors were coded into the model to represent positions where existing residences are located relative to construction activities. Receptor locations are meant to represent positions where sensitive receptors could have prolonged exposure to construction emissions. These emissions were modeled as occurring during the daytime only. Emissions for each of the construction years were modeled. The model used a 5-year data set of hourly meteorological data collected at San Martin Airport. Annual concentrations from construction activities were predicted for each construction year (2013 – 2015), with the concentrations for each construction year based on the 5-year average concentrations from modeling 5 years of meteorological data.

Increased cancer risks were calculated using the maximum modeled annual concentration and BAAQMD recommended risk assessment methods for both a child exposure (3rd trimester through 2 years of age) and for an adult exposure. Since the modeling was conducted assuming emissions occurred 365 days per year, the default OEHH¹ exposure period of 350 days per year was used.

Results of that assessment indicate a incremental child cancer risk of 9.4 excess cancer cases per million and the adult incremental cancer risk is 0.5 excess cancer cases per million. This cancer risk is below the BAAQMD's threshold of 10 in one million excess cancer cases per million. As a result, the project would have a less than significant impact with respect to community risk caused by construction activities.

Application to Campoli Residential Projects

The Campoli North project is located immediately adjacent to the Hale-Signature project. This project proposes 10 single family houses that would be set back further from Monterey Highway, Hale Avenue and the UPRR than the Hale-Signature project. The South Campoli Drive Project proposes 11 single family houses. This project is adjacent to the Old Monterey Road with a setback to the UPRR that is similar to the Hale-Signature project.

Both Campoli Residential projects are much smaller than the Hale-Signature project. As a result, TAC emissions during construction would be much lower. Therefore, cancer risk and PM_{2.5} concentrations would be lower than those predicted for the Hale-Signature project. Cancer risk associated with these projects would be less than 9.4 excess cancer cases per million and PM_{2.5} concentrations would be less than 0.1 µgm³. This impact would be considered less than significant.

¹ OEHH¹ 2003. Air Toxics Hot Spots Program Risk Assessment Guidelines, *The Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments*. Office of Environmental Health Hazard Assessment. August 2003.

Roadway and Train TAC and PM_{2.5} Impacts

Both the Campoli Residential projects are in close proximity to existing TAC sources, identified as Monterey Highway and trains using the UPRR.

The Hale-Signature project evaluated TAC and PM_{2.5} impacts from Monterey Highway and trains using the UPRR upon new sensitive receptors or future residences associated with the project. Stationary sources of substantial TAC or PM_{2.5} emissions were not identified near the project site.

Roadway TAC and PM_{2.5}

Monterey Highway is a busy arterial roadway near the project site with an estimated 39,300 daily trips (2-way) between Peebles Avenue and Madrone Parkway (according to City's General Plan Circulation Element traffic study). New residences developed by the project would be about 150 feet or further from this roadway. The BAAQMD provides screening tables that indicate predicted community risk impacts that roadways pose. At 100 feet from the Monterey Highway, these tables indicate cancer risk would be less than 7.2 cases per million and at 100 feet and PM_{2.5} concentrations would be less than 0.26 µg/m³. These levels are below the BAAQMD significance thresholds, and therefore, the exposures would be considered less than significant. Hale Avenue has much less traffic and a greater setback, so the exposures are less than Monterey Highway. The Campoli North project has a setback further from Monterey Highway than the closest proposed residence with the Hale-Signature project, so levels of TACs and PM_{2.5} would be less. The South Campoli Drive project has a setback similar to the Hale-Signature project, so exposures would be similar.

Train TAC and PM_{2.5}

Impacts from trains upon the Hale-Signature project were also predicted. The UPRR line runs parallel to Old Monterey Road and is adjacent to the northeastern property boundaries of the Campoli property. The UPRR is used by trains for passenger and freight service. Along this portion of the UPRR line CalTrain operates 3 trains per weekday between Gilroy and San Jose, Amtrak has one passenger train daily, and there about 6 freight trains daily.

DPM and PM_{2.5} emissions from trains on the UPRR rail line were computed using EPA emission factors for locomotives and CARB adjustment factors to account for fuels used in California. Each passenger train was assumed to use one locomotive. Although the freight trains may have more than one locomotive, it was assumed that for this section of the rail line, which is relatively level, only one locomotive would be powering the trains. Emissions from the freight trains were calculated assuming they would use locomotives with 4,300 hp engines and would be traveling at about 60 mph with the engines operating at about 60% load. Passenger train locomotives were assumed to have 3,200 hp engines operating at 60% load and would be traveling at 60 mph. Emissions were calculated for years 2014, 2015, 2020, and 2025. Electrification or use of Electro-Multiple Units are part of CalTrain's future plans, but were not incorporated into the study.

Similar to construction impacts, dispersion modeling of locomotive emissions was conducted using EPA's ISCST3 model and a five-year set of hourly meteorological data for the San Martin Airport. Locomotive emissions were modeled as a line source (series of volume sources) along the rail line in the vicinity of project. Concentrations were calculated at receptor locations within the project site where residential development would occur.

Using the maximum modeled long-term average DPM concentration, the maximum individual cancer risk at the project site was computed. The factors used to compute cancer risk are highly dependent on

modeled concentrations, exposure period or duration, and the type of receptor. The exposure level is determined by the modeled concentration. This assessment conservatively assumed long-term residential exposures for a nearly-continuous exposure of 70 years. It should be noted that the cancer risk calculations applied the BAAQMD-recommended Age Sensitivity Factors to the cancer risks for residential exposures, accounting for age sensitivity to toxic air contaminants.

The maximum increased cancer risk from train traffic was computed as 4.2 per million for the Hale-Signature property. This was modeled at the receptor closest to railroad line, about midway along the northeastern portion of the Hale-Signature site closest to Monterey Road. Cancer risks at other residential areas within the Hale-Signature project site would be lower than the maximum cancer risk. The maximum average PM_{2.5} concentration of 0.03 µg/m³ occurred at the same receptor that had the maximum cancer risk. The maximum predicted cancer risk and PM_{2.5} concentration for the Hale-Signature project is below the BAAQMD significance thresholds for cancer risk and PM_{2.5} exposure.

Similar to Monterey Highway impacts, the Campoli Residential projects have setbacks from the UPRR that are similar or greater than the Hale-Signature project. Therefore, TAC and PM_{2.5} exposure would be equal or less and insignificant.

Cumulative TAC Sources

The combination of roadway and train TAC and PM_{2.5} emissions were found result in concentrations at the Hale-Signature project that are well below any of the cumulative TAC thresholds recommended by BAAQMD. A similar finding would apply to the Campoli Residential projects.

12-044

JR

Appendix E
Hydraulic Analysis

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 s&w@swwsv.com

Schaaf & Wheeler
 CONSULTING CIVIL ENGINEERS

MEMORANDUM

TO: Caroline Weston, David J. Powers & DATE: February 28, 2019
 Associates, Inc.

FROM: Katie Hogan JOB#: DPOW.107
 Caitlin Gilmore, PE

SUBJECT: Old Monterey Road Hydraulic Study

Introduction

A 1 acre site is proposed to be developed along Old Monterey Road between Campoli Drive and Mustard Avenue in Morgan Hill, California, as shown in Figure 1. The attached FEMA FIRM Map shows that the project site is located in a FEMA Flood Hazard Zone D identified as an area not previously studied. The site's proximity to Fisher Creek warrants investigation to determine the 100-year water surface elevations along the channel in this area. Schaaf & Wheeler completed a hydrologic and hydraulic analysis of the relocation of Fisher Creek for the nearby Madrone Village development and Clove Avenue bridge crossing documented in the "Madrone Villages Morgan Hill Hydrology Study" dated September 2012. This study was used as the basis for the Old Monterey Road Site analysis and is included as an attachment to this memorandum.

Analysis

Hydrology

The HEC-1 hydrologic analysis performed for the Madrone Villages development study remained unchanged. The previous study mentions that the Butterfield Channel was to be completed and operating in 2012; however, the channel is not functioning for flood relief at this time. The discharges used for this study therefore assume that the Butterfield Channel is not completed, and flows from the Ventana Basin east of the railroad continue to discharge to Fisher Creek. This configuration is more conservative producing higher flows on Fisher Creek.

Hydraulics

An unsteady HEC-RAS model was developed for the Madrone Villages Study using post-project discharges on Fisher Creek summarized in Table 1. The post-project model for Madrone Villages was run using HEC-RAS version 5.0.6 to determine the existing conditions water surface elevations at the Old Monterey Site. This model includes the realignment of Fisher Creek and the Clove Avenue channel crossing. Slight changes in water surface elevations as compared to the previous study are attributed to model version updates. The right overbank of cross section 3765.056 was extended to bound the 100-year water surface elevation using 2006 Santa Clara LiDAR data.

Table 1. 100-year Discharge Summary

Location	100yr Q (cfs)
4013.781	266
3489.31	336

Results

The hydraulic results show that the Old Monterey development is not located within the 100-year floodplain from Fisher Creek and is within a Zone X floodplain designation. Based on 2006 Santa Clara County LiDAR, the site is at an approximate elevation of 352 feet, and the water surface is approximately 349.10 feet. Table 2 summarizes the 100-year water surface elevations. All elevations reference the NAVD 1988 datum. Cross sections 3489.31 and 3765.056 represent the topography near the project site and are included in Figures 2 and 3. Figure 4 shows the 100-year floodplain boundary in relation to the project site

Table 2. 100-year Water Surface Elevation Summary

River Station	WSE (FT)
4013.781	349.47
3765.056	349.14
3489.31	348.46

Conclusions

The proposed project site is located outside of the 100-year water surface elevation for Fisher Creek and would be located within a Zone X FEMA flood hazard zone. Further hydraulic analysis is not required for proposed site grading; however, proposed structures should be constructed so that finished floor elevations meet local and federal criteria.

Attachments:

Site Plan
Madrone Hydrology Report, September 2012
FEMA FIRM

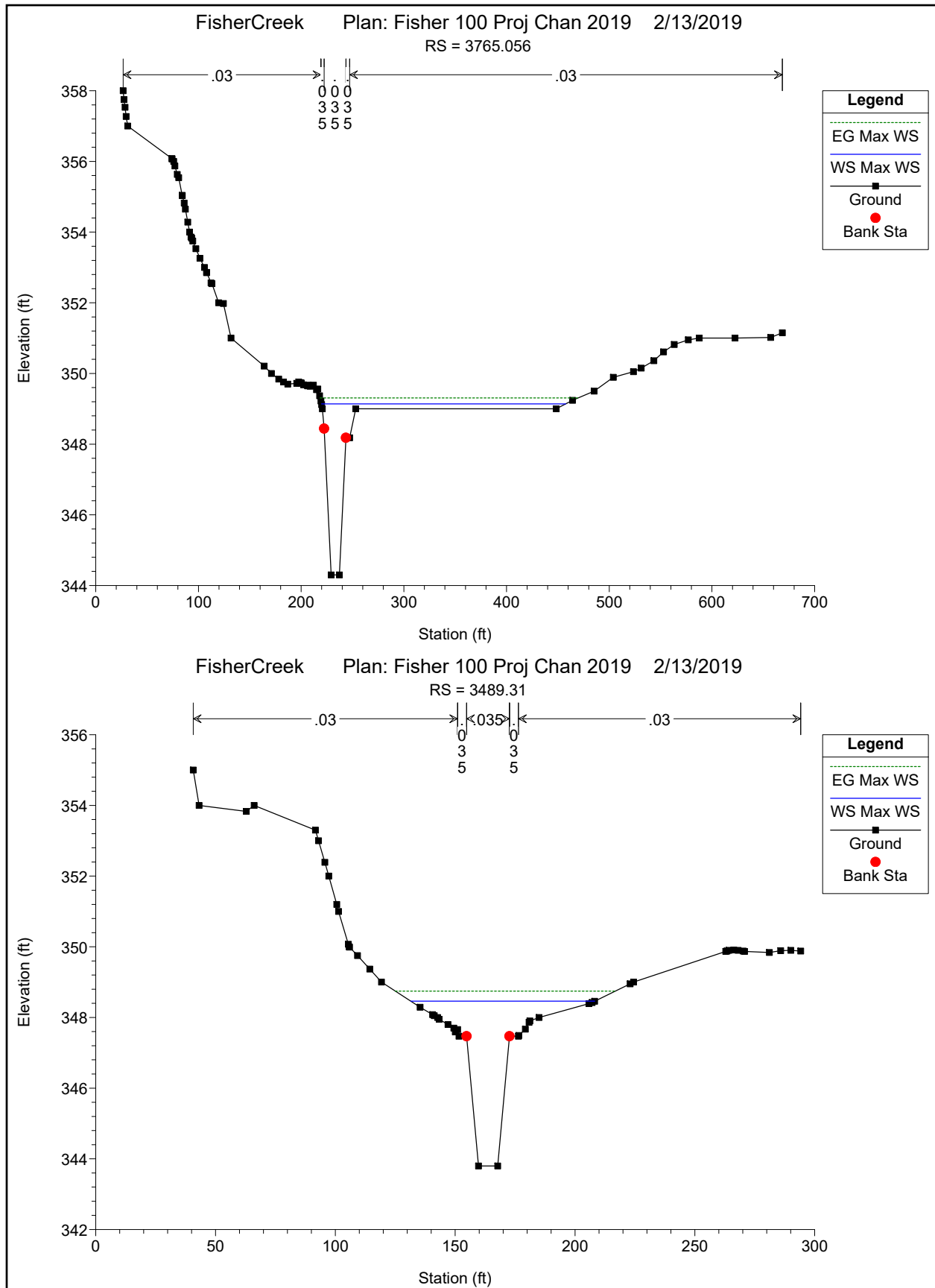


FIGURE 1:

Study Area

Packet Pg. 222

Figures 2 and 3. Cross Sections 3765.056 and 3489.31





Legend

- Stream Centerline
- 100 Year Floodplain
- Site Boundary
- Cross Sections
- 5 FT Contours
- 1 FT Contours

FIGURE 4:

Hydraulic Workmap

Old Monterey S

Packet Pg. 224

NOTES TO USERS

This map is for use in administering the National Flood Insurance Program. It does not necessarily identify all areas subject to flooding, particularly from local drainage sources of small size. The **community map repository** should be consulted for possible updated or additional flood hazard information.

To obtain more detailed information in areas where **Base Flood Elevations** (BFEs) and/or **floodways** have been determined, users are encouraged to consult the Flood Profiles and Floodway Data and/or Summary of Stillwater Elevations tables contained within the Flood Insurance Study (FIS) report that accompanies this FIRM. Users should be aware that BFEs shown on the FIRM represent rounded whole-foot elevations. These BFEs are intended for flood insurance rating purposes only and should not be used as the sole source of flood elevation information. Accordingly, flood elevation data presented in the FIS report should be utilized in conjunction with the FIRM for purposes of construction and/or floodplain management.

Coastal Base Flood Elevations shown on this map apply only landward of 0.0' North American Vertical Datum of 1988 (NAVD 88). Users of this FIRM should be aware that coastal flood elevations are also provided in the Summary of Stillwater Elevations tables in the Flood Insurance Study report for this jurisdiction. Elevations shown in the Summary of Stillwater Elevations tables should be used for construction and/or floodplain management purposes when they are higher than the elevations shown on this FIRM.

Boundaries of the **floodways** were computed at cross sections and interpolated between cross sections. The floodways were based on hydraulic considerations with regard to requirements of the National Flood Insurance Program. Floodway widths and other pertinent floodway data are provided in the Flood Insurance Study report for this jurisdiction.

Certain areas not in Special Flood Hazard Areas may be protected by **flood control structures**. Refer to Section 2.4 "Flood Protection Measures" of the Flood Insurance Study report for information on flood control structures for this jurisdiction.

The **projection** used in the preparation of this map was Universal Transverse Mercator (UTM) zone 10. The **horizontal datum** was NAD 83, GRS80 spheroid. Differences in datum, spheroid, projection or UTM zones used in the production of FIRMs for adjacent jurisdictions may result in slight positional differences in map features across jurisdiction boundaries. These differences do not affect the accuracy of this FIRM.

Flood elevations on this map are referenced to the North American Vertical Datum of 1988. These flood elevations must be compared to structure and ground elevations referenced to the same **vertical datum**. For information regarding conversion between the National Geodetic Vertical Datum of 1929 and the North American Vertical Datum of 1988, visit the National Geodetic Survey website at <http://www.ngs.noaa.gov> or contact the National Geodetic Survey at the following address:

NGS Information Services
NOAA, N/NGS12
National Geodetic Survey
SSMC-3 #9202
1315 East-West Highway
Silver Spring, Maryland 20910-3282
(301) 713-3242

To obtain current elevation, description, and/or location information for **bench marks** shown on this map, please contact the Information Services Branch of the National Geodetic Survey at (301) 713-3242, or visit its website at <http://www.ngs.noaa.gov>.

Base map information shown on this FIRM was provided in digital format by the USDA National Agriculture Imagery Program (NAIP). This information was photogrammetrically compiled at a scale of 1:24,000 from aerial photography dated 2005.

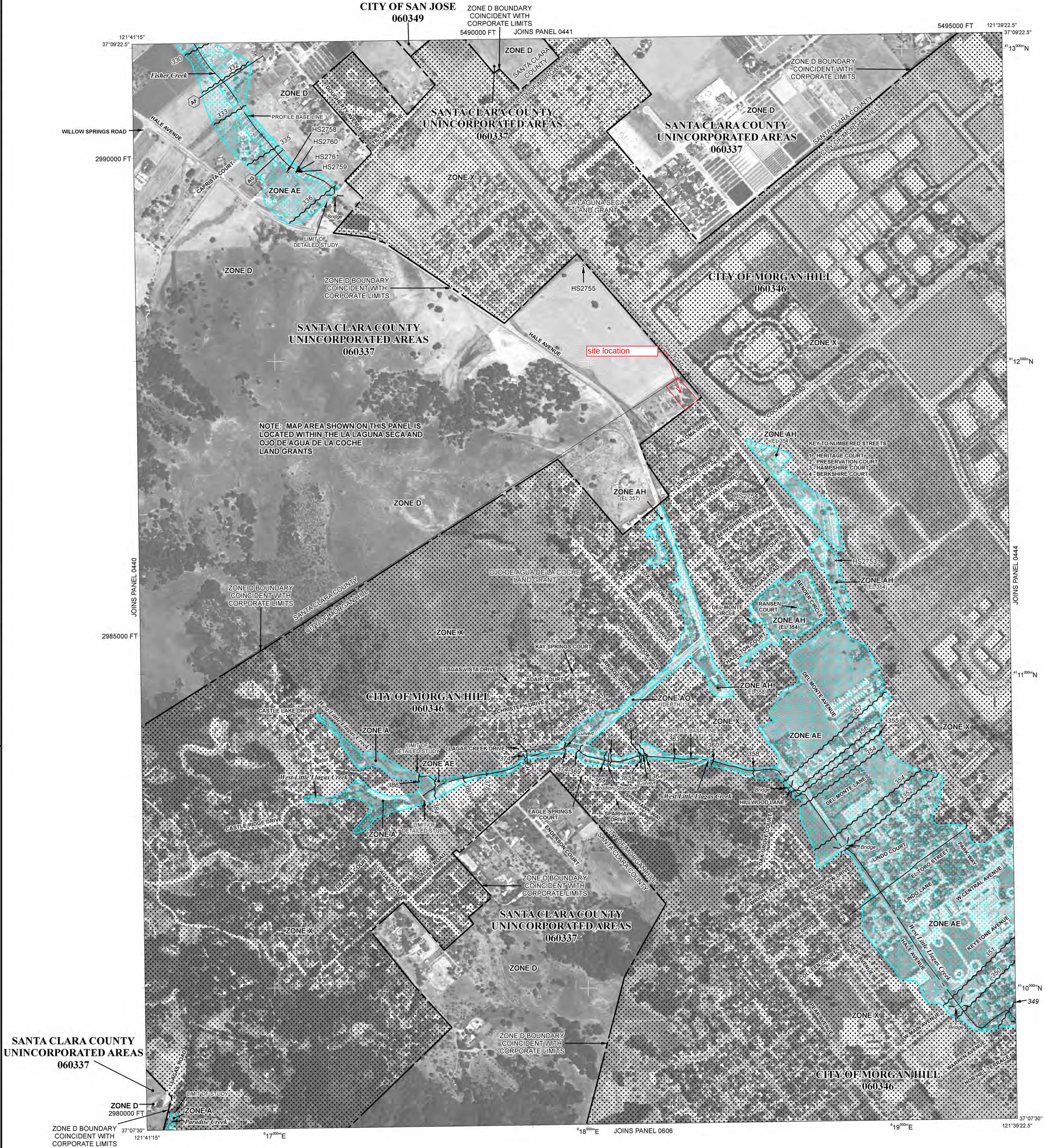
This map reflects more detailed and up-to-date **stream channel configurations** than those shown on the previous FIRM for this jurisdiction. The floodplains and floodways that were transferred from the previous FIRM may have been adjusted to conform to these new stream channel configurations. As a result, the Flood Profiles and Floodway Data tables in the Flood Insurance Study Report (which contains authoritative hydraulic data) may reflect stream channel distances that differ from what is shown on this map.

Corporate limits shown on this map are based on the best data available at the time of publication. Because changes due to annexations or de-annexations may have occurred after this map was published, map users should contact appropriate community officials to verify current corporate limit locations.

Please refer to the separately printed **Map Index** for an overview map of the county showing the layout of map panels; community map repository addresses; and a Listing of Communities table containing National Flood Insurance Program dates for each community as well as a listing of the panels on which each community is located.

Contact the **FEMA Map Service Center** at 1-800-358-9616 for information on available products associated with this FIRM. Available products may include previously issued Letters of Map Change, a Flood Insurance Study report, and/or digital versions of this map. The FEMA Map Service Center may also be reached by Fax at 1-800-358-9620 and its website at <http://msc.fema.gov>.

If you have **questions about this map** or questions concerning the National Flood Insurance Program in general, please call 1-877-FEMA MAP (1-877-336-2627) or visit the FEMA website at <http://www.fema.gov>.



LEGEND

SPECIAL FLOOD HAZARD AREAS SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD

The 1% annual flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V, and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.

ZONE A No Base Flood Elevations determined.

ZONE AE Base Flood Elevations determined.

ZONE AH Flood depths of 1 to 3 feet (usually areas of ponding); Base Flood Elevations determined.

ZONE AO Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.

ZONE AR Special Flood Hazard Area formerly protected from the 1% annual chance flood by a flood control system that was subsequently identified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.

ZONE A99 Area to be protected from 1% annual chance flood by a Federal flood protection system under construction; no Base Flood Elevations determined.

ZONE V Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.

ZONE VE Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.

FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.

OTHER FLOOD AREAS

ZONE X Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.

OTHER AREAS

ZONE X Areas determined to be outside the 0.2% annual chance floodplain.

ZONE D Areas in which flood hazards are undetermined, but possible.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPAs)

CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

1% annual chance floodplain boundary

0.2% annual chance floodplain boundary

Floodway boundary

Zone D boundary

CBRS and OPA boundary

Boundary dividing Special Flood Hazard Area zones and boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths or flood velocities.

Base Flood Elevation line and value; elevation in feet*

Base Flood Elevation value where uniform within zone; elevation in feet*

* Referenced to the North American Vertical Datum of 1988

Cross section line

Transsect line

87°07'45", 32°22'30"

76°00'N

600000 FT

5000-foot grid ticks; California State Plane coordinate system, zone III (FIPSZONE 0403), Lambert Conformal Conic projection

Bench mark (see explanation in Notes to Users section of this FIRM panel)

M1.5

River Mile

MAP REPOSITORY

Refer to listing of Map Repositories on Map Index

EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP

May 18, 2009

EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL

For community map revision history prior to countywide mapping, refer to the Community Map History table located in the Flood Insurance Study report for this jurisdiction.

To determine if flood insurance is available in this community, contact your Insurance agent or call the National Flood Insurance Program at 1-800-638-6620.

MAP SCALE 1" = 500'

250 0 500 1000 FEET

150 0 150 300 METERS

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0443H

FIRM

FLOOD INSURANCE RATE MAP

SANTA CLARA COUNTY, CALIFORNIA AND INCORPORATED AREAS

PANEL 443 OF 830
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS

COMMUNITY	NUMBER	PANEL	SUFFIX
MORGAN HILL CITY OF	060346	0443	H
SAN JOSE CITY OF	060349	0443	H
SANTA CLARA COUNTY	060337	0443	H

Notice to User: The Map Number shown below should be used when placing map orders; the Community Number shown above should be used on insurance applications for the subject community.

MAP NUMBER
06085C0443H

EFFECTIVE DATE
MAY 18, 2009

Federal Emergency Management Agency

Draft Hydrology Study

MADRONE VILLAGES MORGAN HILL

Prepared for:
Signature Properties

September 18, 2012

Schaaf & Wheeler

CONSULTING CIVIL ENGINEERS

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Santa Clara, CA 95050

(408) 246-4848

FAX: 408-246-5624

Hydrology Study Madrone Villages Morgan Hill

Introduction

This hydrology study was prepared to evaluate the existing flood conditions on the Signature Properties site for the proposed Madrone Villages residential development. The site is adjacent to Fisher Creek and is not shown in a flood zone on the FEMA Flood Insurance Rate Map. However, the areas north and south of the site are shown in Zone X. The City has requested a flooding study to establish 100-year base flood elevations for the project, since no detailed study has been completed.

The study also includes an analysis of the potential effects of the project on the existing floodplain conditions. Increased runoff from the additional impervious area on the site could increase peak flows in the channel downstream. In addition, the study includes the proposed channel realignment for Fisher Creek which would be included in the project. The new channel alignment would allow for widening of Hale Avenue on the west side of the channel.

Proposed Project

The proposed project site is approximately 30 acres, located between Hale Avenue and Monterey Road one half mile south of Tilton Avenue and Hale Avenue in Morgan Hill. The site currently vacant, containing fallow fields, but has been farmed in the past. The site is surrounded by existing residential development to the north and south.

The proposed project development would include approximately 120 single family homes. The project would include a widening of Hale Avenue through the project frontage, and a realignment of Fisher Creek to the east by approximately 35 feet to allow for the roadway widening. The project would also include a new roadway crossing of the creek at the new location to provide vehicle access to the site from Hale Avenue. The project would also include two detention basin areas adjacent to the new creek channel to detain runoff from the site and minimize potential increased flows in Fisher Creek.

Existing Flood Conditions

The FEMA FIS did study Fisher Creek north of Tilton Avenue. The study did not include analyses south of Tilton Road, at the project site. The areas in the City of Morgan Hill immediately north and south of the project site between Monterey Road and Hale Avenue are shown as Zone X on the FEMA Flood Insurance Rate Maps (FIRMs). Zone X is defined as being in the 500-year floodplain, or shallow flooding less than 1 foot deep for the 100-year flood event.

The FEMA FIS did on include published flowrates for the study at Tilton Avenue, but the available hydraulic models for the study included a 100-year peak flow rate of 235 cfs at Tilton Avenue.

HMP Detention Storage

The proposed Madrone Village project includes detention storage required for the Regional Water Quality Control Board (RWQCB) municipal regional permit. The detention storage is to control increased peak flow discharges to Fisher Creek which may cause increased erosion and turbidity in the stream. The increased peak flows are called hydromodification in the permit. The detention basins are called HMP (hydromodification management plan) basins. The basis for the design of the HMP basins is to minimized increased flow to maintain a flow duration frequency relationship for the project runoff which is similar to the existing runoff conditions. The RWQCB BAHM computer model was used to design the specific HMP basins for the site.

BAHM Model

The project preliminary design information dated September 22, 2011 have been used to characterize the Madrone Villages development that affect the HMP basin sizing. For the pre-project condition, the site was assumed to be entirely pervious.

Rainfall

The planned Madrone Villages development lies within Santa Clara County. The BAHM model references the Morgan Hill rainfall gage based on the project location.

Soils

The soil characteristics influence the permeability of the pervious areas of the site, directly affecting the stormwater runoff. The NRCS/USDA Web Soil Survey was used to determine the soil types underlying the project site. The Project site is underlain 100% by soils classified as Group B soils of fair permeability.

Land Use

For pervious areas, the BAHM model requires land uses to be categorized by soil type. Since impervious areas are independent of the underlying soil but do have varying runoff characteristics, these are only categorized by land use.

The existing site currently has no urban development, so all of the pre-development area is assumed to be pervious. Land uses for flat slopes were used, which is described in the BAHM model as 0-5%, since the existing slope of the site is less than 1%. Impervious percentages were estimated to be 60% for the site and 50% for the off-site area which drains to the site. Schaaf & Wheeler estimated how these impervious percentages may break down by land use type including landscaping, parking lots, roads, and buildings, etc. These calculations are included in Tables 1 and 2 and were used in the HMP modeling.

Table 1 – North Basin Land Use Areas (in acres)

	BAHM Category	Pre-Development Land Use	Mitigated Land Use
Pervious	B, Grass, Flat (0-5%)	17.3	0
	B, Urban, Flat (0-5%)	0	6.9
Impervious	Roads, Flat (0-5%)	0	4.3
	Roof Area	0	3.5
	Driveways, Flat (0-5%)	0	0.9
	Sidewalks, Flat (0-5%)	0	1.7

Table 2 – South Basin (Including Offsite Area) Land Use Areas (in acres)

	BAHM Category	Pre-Development Land Use	Mitigated Land Use
Pervious	B, Grass, Flat (0-5%)	13.2	0
	B, Urban, Flat (0-5%)	0	5.5
Impervious	Roads, Flat (0-5%)	0	3.1
	Roof Area	0	2.6
	Driveways, Flat (0-5%)	0	0.7
	Sidewalks, Flat (0-5%)	0	1.3

Conditions were input into the BAHM model for two different scenarios – a pre-project scenario and a post-project scenario. The post-project scenario includes the HMP basin in the calculations. Rainfall is based on the specified site location. A map of Santa Clara County is provided in the program and, as one of the first steps of setting up the model, the general location of the project site is marked on the map.

The other input parameters used in running the BAHM model for the analysis are detailed in Tables 1 and 2 above. The “Pre-development” column gives values used to represent the existing conditions, and the “Post-developed” columns give values used to represent the post-development conditions.

HMP Basin Sizing

After inserting the various parameters into the model, the basin scenario was run, and the output was analyzed for conformance to the HMP criterion. The mitigated post-development curve must match the pre-development curve between the limits of 10% of the pre-development 2-year stormwater runoff flow and the 10-year stormwater runoff flow. Tables 3 and 4 list the hydrologic parameters for the project as calculated within the BAHM. The mitigated flows exiting the HMP basins are also given for comparison and should be the same or less than the pre-developed flows.

Table 3 – North Basin Stormwater Runoff Flows (in cfs) for HMP Analysis

	Pre-developed	Mitigated
10% of the 2-Year	0.025	0.0007
2-Year	0.25	0.007
10-Year	4.15	2.03

Table 4 – South Basin Stormwater Runoff Flows (in cfs) for HMP Analysis

	Pre-developed	Mitigated
10% of the 2-Year	0.019	0.0023
2-Year	0.19	0.023
10-Year	3.17	1.83

The north basin was sized using the footprint provided by RJA as a guide (Figure 1). The invert of the basin was established to be 0.5 feet of storage below the outlet pipe, allowing low flows to remain onsite and percolate instead of being drained offsite. The south basin was designed to correspond to the preliminary grading design but the storage is all located above the outlet pipe. The riser widths, riser heights, and orifice diameters for each HMP basin were adjusted until the HMP requirements for both basins were satisfied.

The proper functioning of both basins is dependent on achieving a 0.39-inch constant percolation rate. A field percolation test needs to be accomplished to verify this and the results will affect the design. Without a favorable percolation rate, the north basin will not be able to achieve HMP standards.

Both HMP basins were designed based on a constant 0.39-inch per hour percolation rate. This value is considered conservative for the type of soils identified for the site, but the final design of the detention areas will need to consider the actual site conditions.

The basin concepts as shown in Figures 1 and 2 are adequate for meeting the HMP requirements. The proposed outlet structures for each HMP basin area described below.

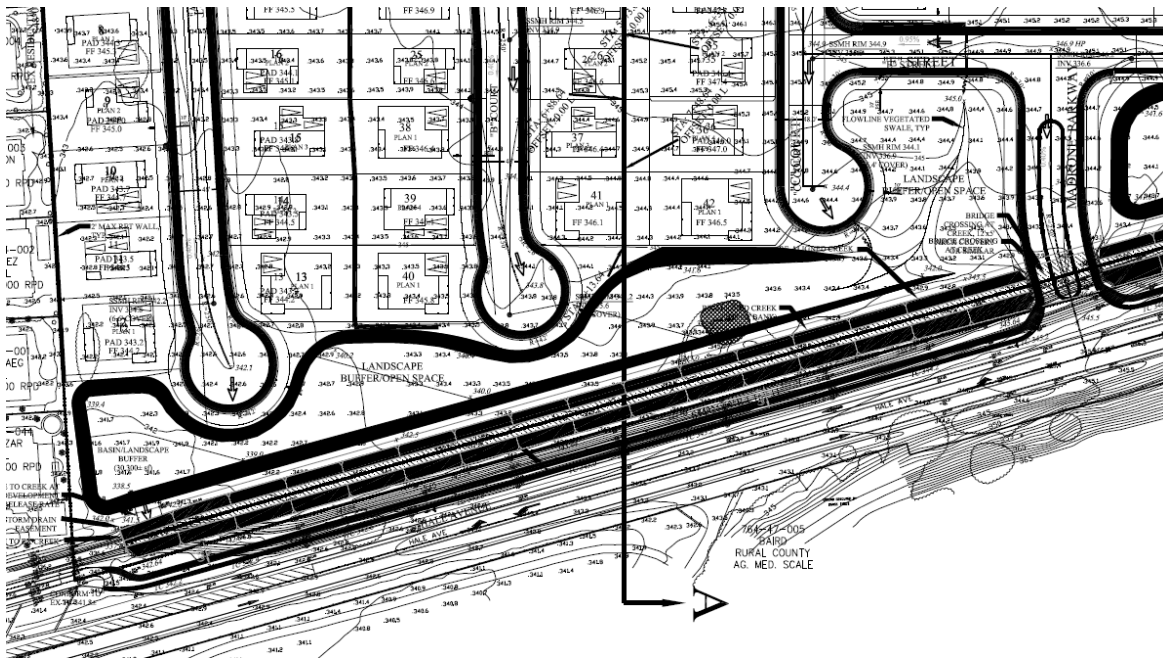


Figure 1. Proposed North Bioretention Basin

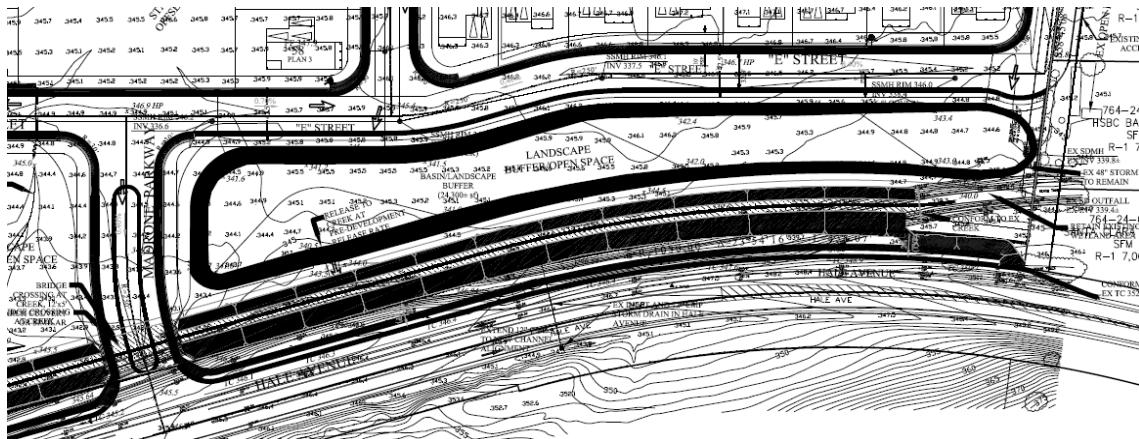


Figure 2. Proposed South Bioretention Basin

The basin concepts as shown in Figures 1 and 2 are adequate for meeting the HMP requirements. The proposed outlet structures for each HMP basin area described below.

Table 5 – North Detention Basin Details

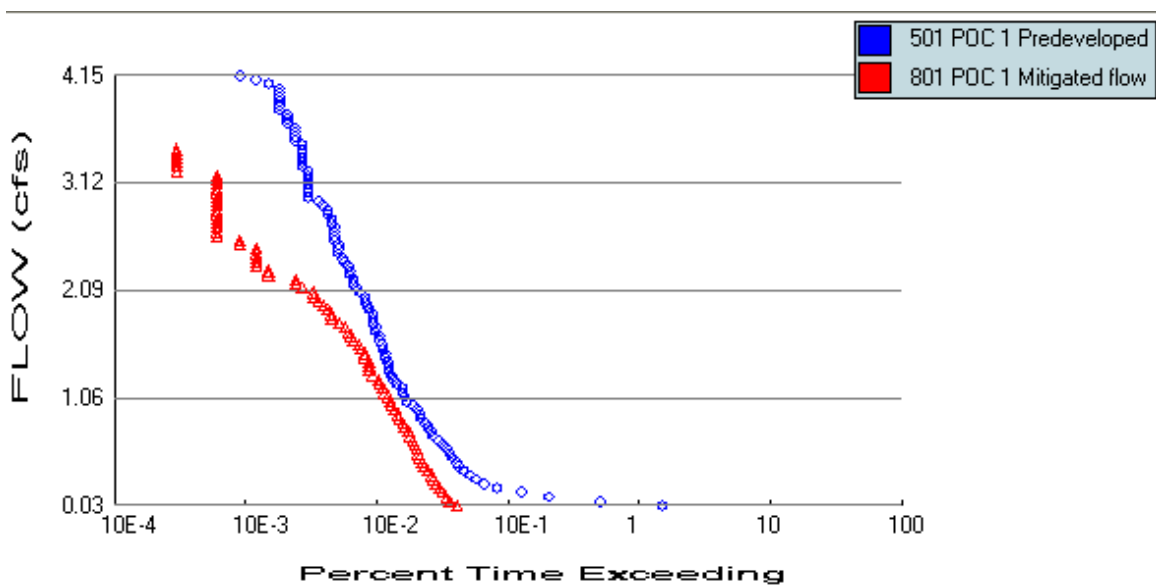
Maximum Water Surface		3.7 ft. (elev. 341.7 ft)
Orifice	Diameter	0.75 in.
	Invert above basin bottom	0.5 ft. (elev. 338.5 ft)
Riser	Diameter	8 in
	Invert above basin bottom	3 ft. (elev. 341 ft)

Table 6 – South Detention Basin Details

Maximum Water Surface		3.5 ft. (elev. 344 ft)
Orifice	Diameter	0.75 in.
	Invert above basin bottom	0 ft. (elev. 340.5 ft)
Riser	Diameter	8 in
	Invert above basin bottom	3 ft. (elev. 343.5 ft)

The top of the riser is to be left open and the orifice will be cut in the side of the riser.

Figures 3 and 4 show the Project site flow-frequency curves between the HMP limits, as described above. The figure indicates that the proposed basin adequately mitigates the post-development hydrograph to match the hydrograph of the pre-developed conditions within the required parameters of the 10-year flood event and 10% of the 2-year flood event. In other words, the mitigated flows output from the HMP basin do not exceed the pre-developed flows at any point within the flow limits.

**Figure 3. Hydrographs of the North Basin**

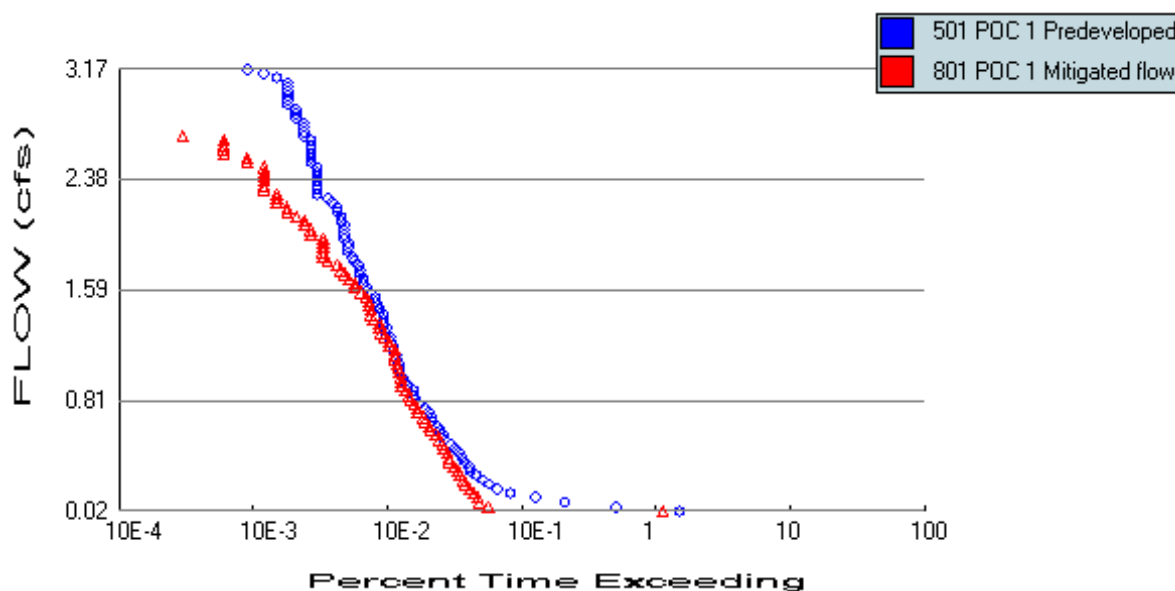


Figure 4. Hydrographs of the South Basin

Another requirement of the HMP basin is that it must drain within 3-5 days for vector control. Based on the storage-elevation-discharge curves, the north basin will take 3.7 days to drain and the south basin will take 2.9 days to drain.

Hydrologic Models

A rainfall runoff model for the 100-year flood event was prepared to evaluate the potential increased runoff to Fisher Creek from the development for the 100-year storm event regulated by the FEMA National Flood Insurance Program. The rainfall runoff model and hydraulic model analysis was intended to evaluate the effects of the project detention basins on the 100-year flood hydrographs. The HMP design basis is to control increased flows for events between 10 percent of the 2-year storm and the existing conditions 10-year storm. The HMP design does not consider larger flood events including the 100-year storm. The rainfall runoff model was based on the Santa Clara County Drainage Manual hydrograph procedure. The model was run using the Corps of Engineers HEC-1 computer model to generate hydrographs for the specific subareas needed for the analysis. The hydrographs generated by the rainfall runoff model were input to the Corp of Engineers HEC-RAS hydraulic model to include the detention basins and the channel hydraulics.

Four watershed subareas were used to model the Fisher Creek watershed upstream of Tilton Avenue. One subarea represents the watershed upstream of Tilton Avenue, west of the UPRR upstream to approximately Llagas Road. The watershed area at Llagas Road was based on subarea maps from the SCVWD and includes some area west of Hale Avenue which drains to a culvert at Llagas Road that connects to West Little Llagas Creek to the south. Due to the very limited capacity of the culvert, flows to Fisher Creek have been assumed to include this area. Flow in excess of the culvert capacity flow over Hale Avenue and overland to Fisher Creek south of the project site.

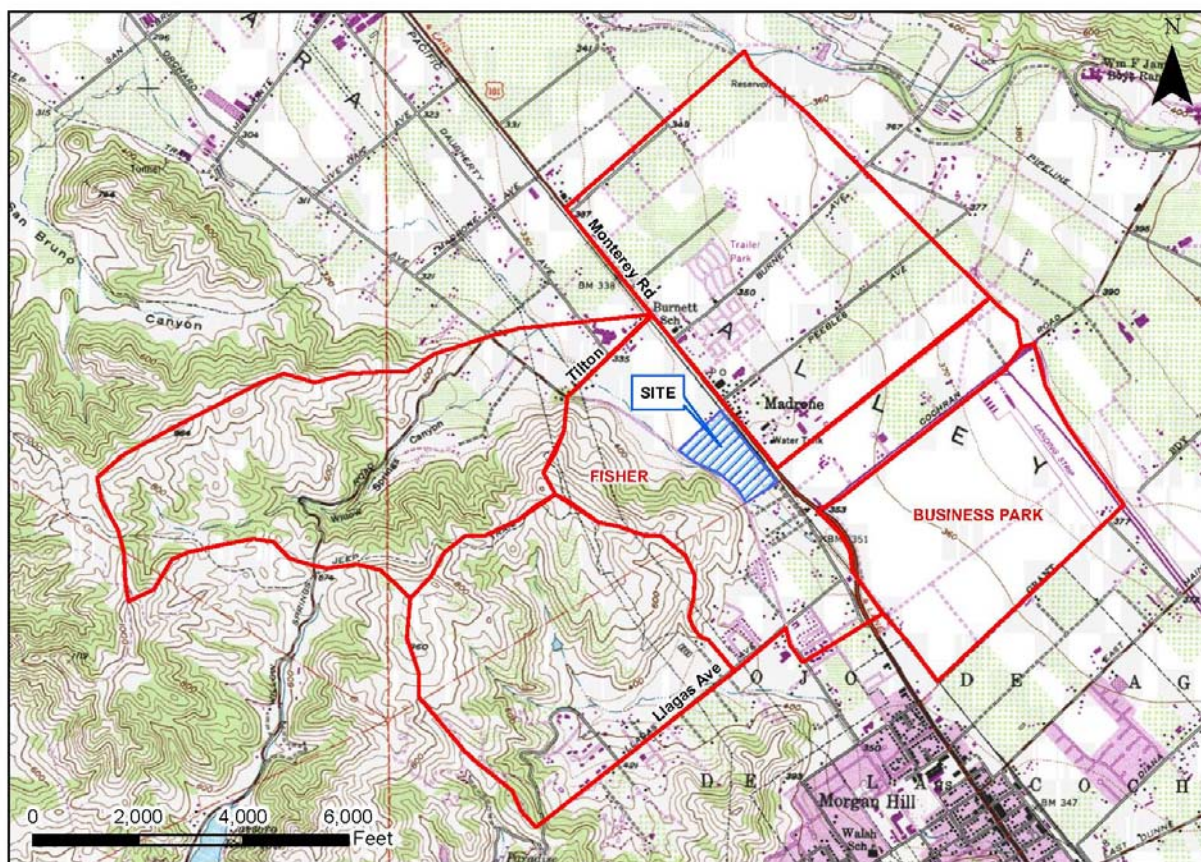


Figure 5. Watershed Subarea Map

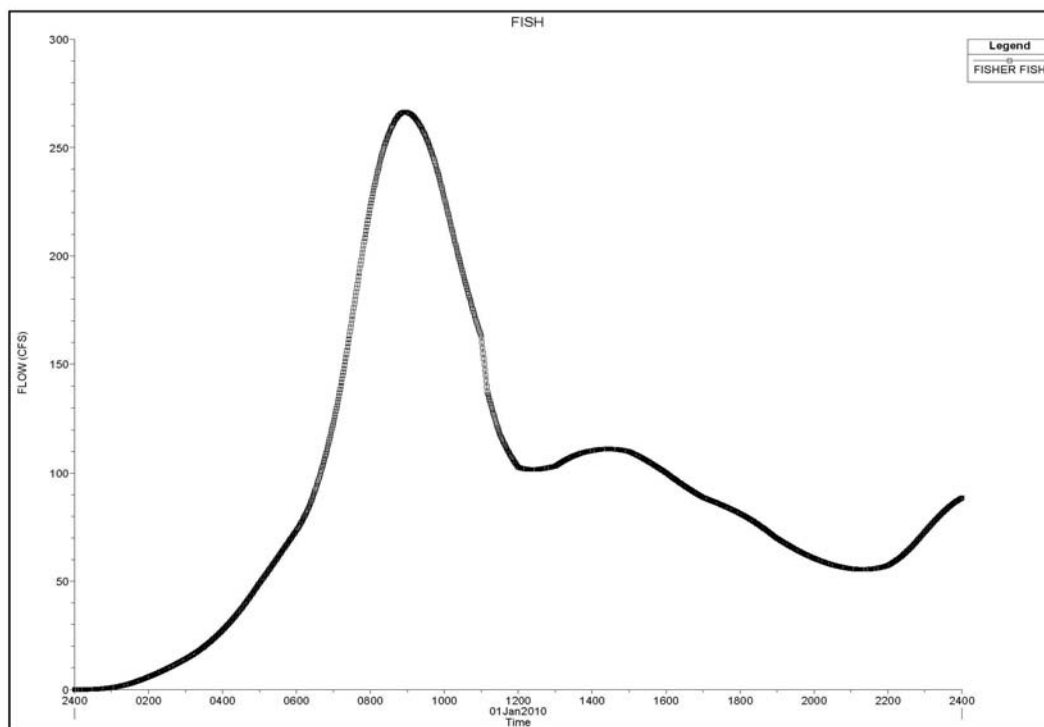
Two subareas were defined for the project site for both existing and project conditions. The two site subareas represent the separate drainage areas which drain to the two onsite detention ponds in the project condition.

The last sub area represents the business park south of Cochrane Road east of Monterey Road, between Monterey Road and Highway 101. The business park partially drains to the Butterfield Channel, a City drainage channel which drains to East Little Llagas Creek, to the south. However there is a detention basin and stormwater pump station which discharges to a channel near the UPRR west of Monterey Road which then drains to Fisher Creek upstream of the project site. The business park subarea was included in the hydrology to include the pump station outflow in the Fisher Creek hydraulic analysis. The hydraulic modeling for the business park discharge is discussed later in this report.

Table 7 – Subarea Watershed Parameters

Subarea	Area (sqmi)	Curve Number	Percent Impervious	Lag (hr)
Fisher	0.933	75.5	38.5	2.48
Business Park	0.649	79	41.2	1.81
Site North Existing	0.027	69	0	0.23
Site South Existing	0.021	69	0	0.23
Site North Proj	0.027	58	60	0.20
Site South Proj	0.021	58	60	0.20

The hydrographs were modeled for a 24-hour 100-year storm based on the drainage manual storm pattern. The total 24-hour precipitation depth was based on a mean annual precipitation of 19 inches for the site and the business park, and 20 inches for the Fisher Creek basin which includes hillside areas to the west. The 100-year 24-hour precipitation for the project site was 5.44 inches.

**Figure 6. Subarea Hydrograph for Fisher Creek at Tilton Ave, 100-Year Storm**

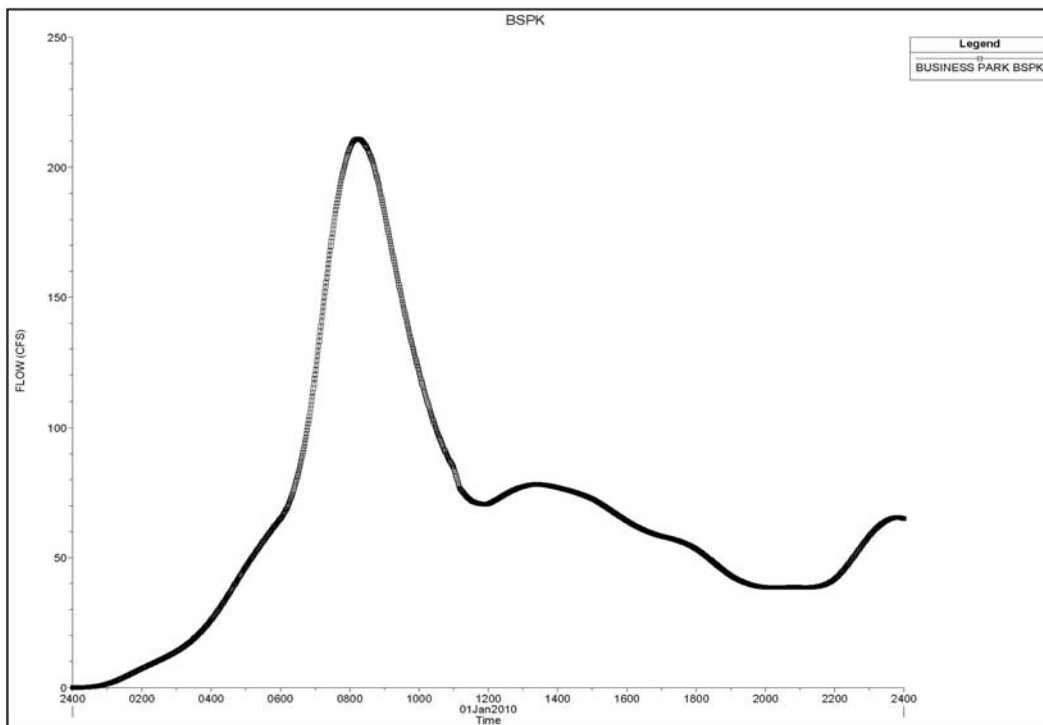


Figure 8. Subarea Hydrograph for Business Park, 100-Year Storm

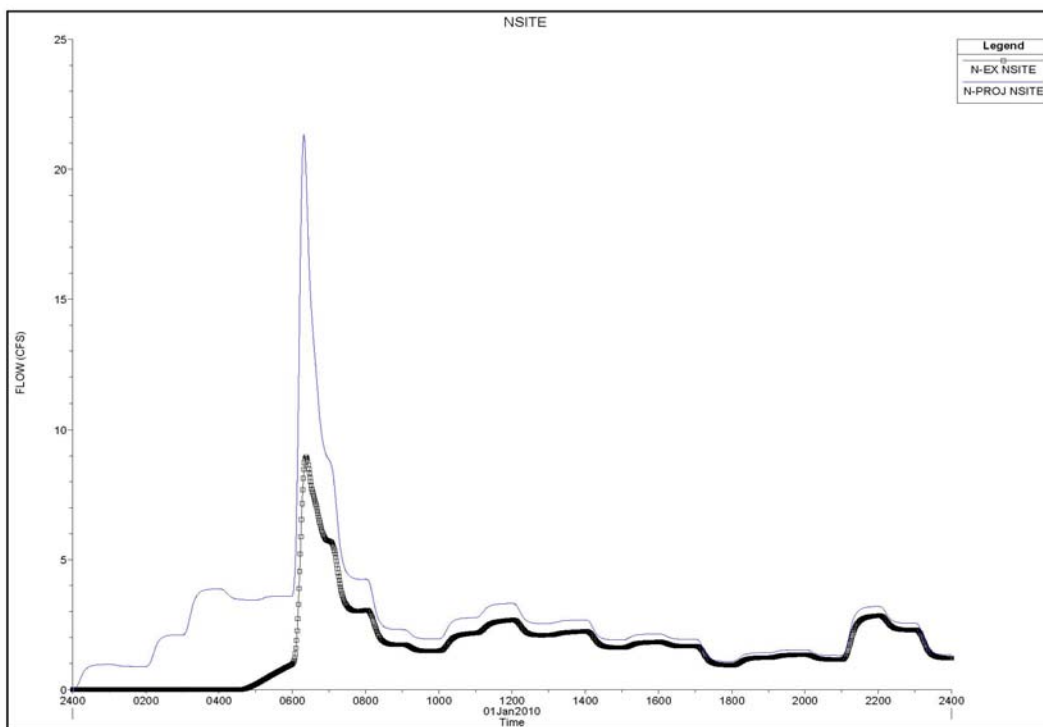


Figure 9. Subarea Hydrographs for Madrone Villages North Area, 100-Year Storm

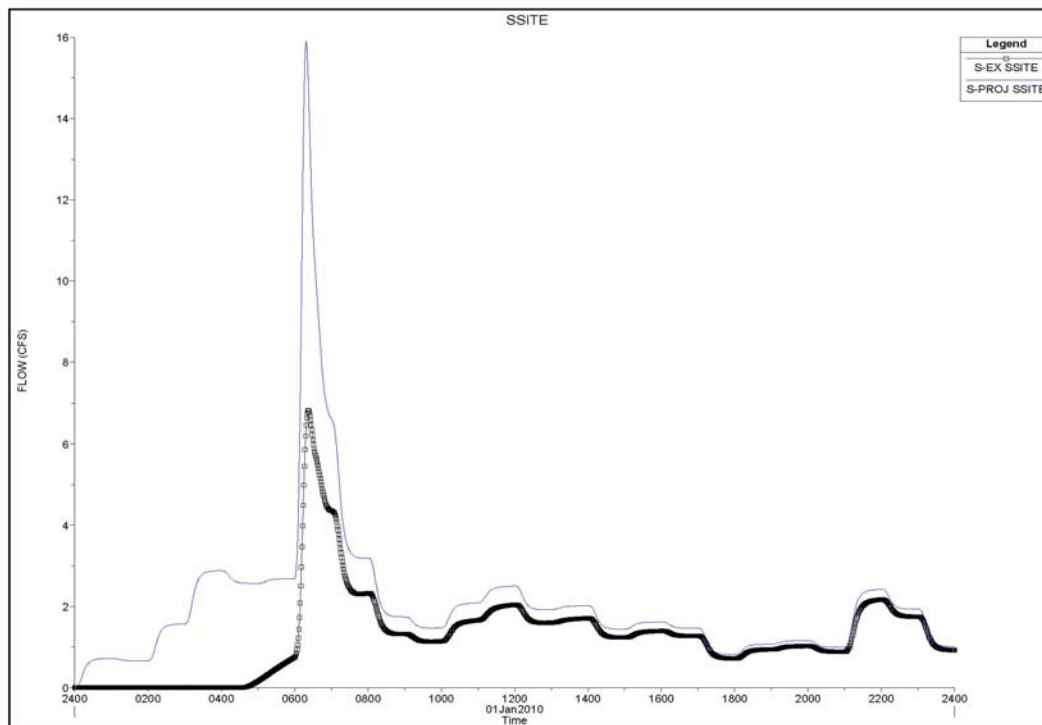


Figure 10. Subarea Hydrographs for Madrone Villages South Area, 100-Year Storm

Hydraulic Models

The existing condition and project condition analyses included two separate hydraulic models to include the routing of the subarea hydrographs through the detention basin systems. One HEC-RAS model only included the business park subarea and the detention basin and pump system which discharges to upper Fisher Creek. The system was designed to limit the business park runoff contribution to the Butterfield Channel to the south and discharge runoff to the Fisher Creek system comparable to the capacity of the old drainage systems at Monterey Road before construction of the business park. The detention system was to be used until completion of the downstream Butterfield Channel improvements. The Ventana basin system was constructed before the Butterfield Channel was extended to East Little Llagas Creek. The channel extension is under construction and should be completed in 2012. The design of the channel extension includes allowing all runoff from the business park subarea to drain to the Butterfield Channel.

For existing conditions, the Ventana basin system has a restricted outlet for low flows to the Butterfield Channel. The low flow outlet has a capacity of approximately 10 to 12 cubic feet per second (cfs). Higher flows start to fill the Ventana detention basin and overflow to a culvert under Monterey Road. The estimated capacity of the culvert and downstream channel is approximately 58 cfs. For higher flows which exceed the capacity of the detention basin, the basin overflows on the east side of the UPRR and the excess flows flow south to East Little Llagas Creek. The hydraulic model for the Ventana basin was based on construction plans for the basin, pump station and stormdrain system. The model elevations were adjusted to datum NAVD88.

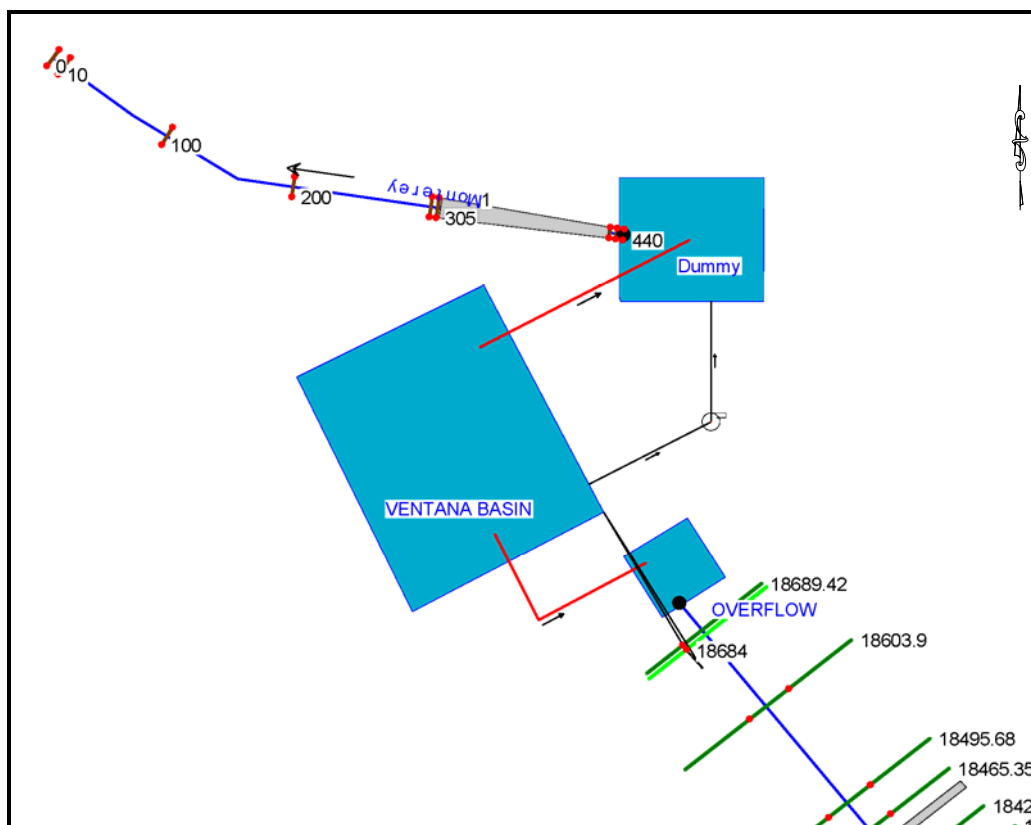


Figure 11. Ventana Basin Schematic

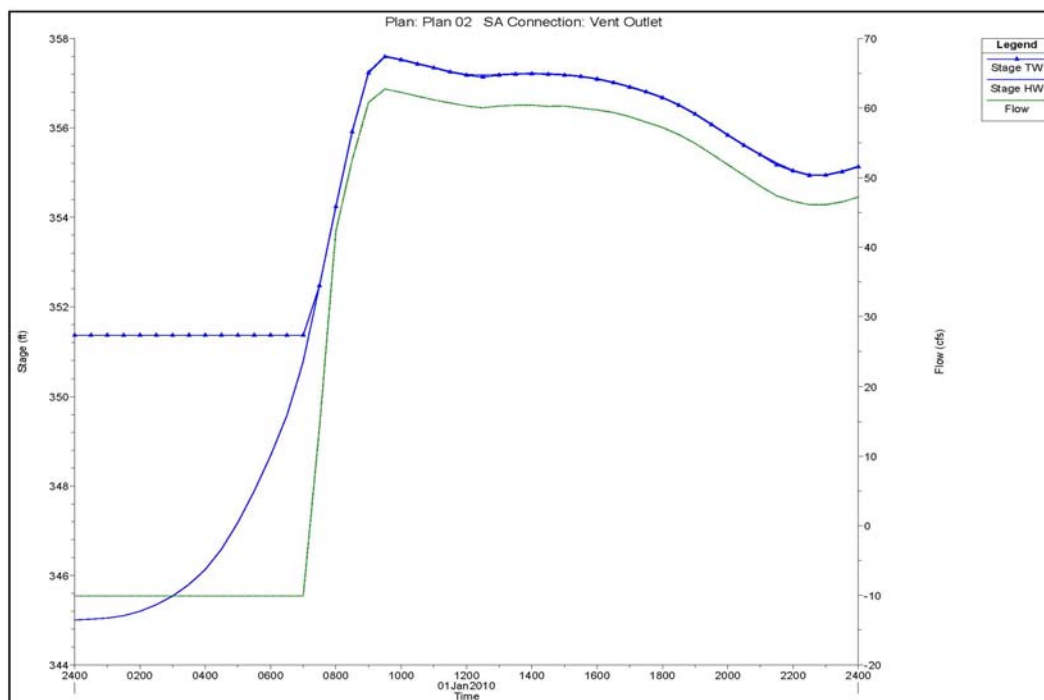


Figure 12. Ventana Basin 100-Year Flows to Fisher Creek – Case 1

A second hydraulic model was prepared for the Fisher Creek channel from Tilton Avenue upstream to approximately 600 feet upstream of the Madrone Villages project site. Cross sections for the channel upstream and downstream of the project site were based on the county LIDAR survey information. Cross sections for the channel and project site were based on recent site topography from RJJA.

For existing conditions, the hydrographs for the Fisher Creek subarea and the Ventana basin outflow were added at the upstream end of the study reach. Since a portion of the Fisher Creek subarea is located downstream from the project this may be slightly conservative and overestimate the channel flow. The same assumption was used for both the existing and project conditions to avoid any bias in the project evaluation.

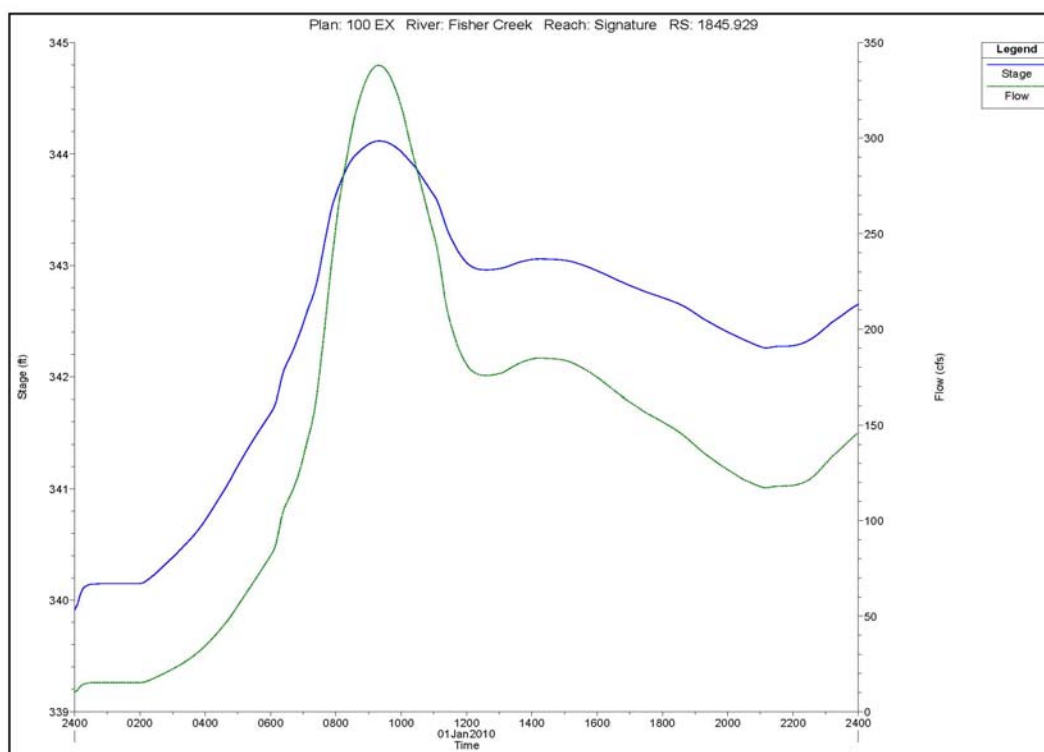


Figure 13. Fisher Creek Hydrograph Downstream of Project, 100-Year Storm



Figure 14. Existing Condition Floodplain on Project Site, 100-Year Storm

For project conditions, the existing conditions model cross sections were revised to include the relocated alignment for the Fisher Creek channel as shown in Figure 15. The channel size is similar to the existing channel and the downstream channel. The new Madrone Village crossing was included as a simple box culvert with a base width of 8 feet to be similar to the bottom width of the channel. The bottom of the culvert could be below the invert of the channel to avoid an exposed concrete bed within the channel. A larger span or bridge would also be possible depending on the final design constraints.

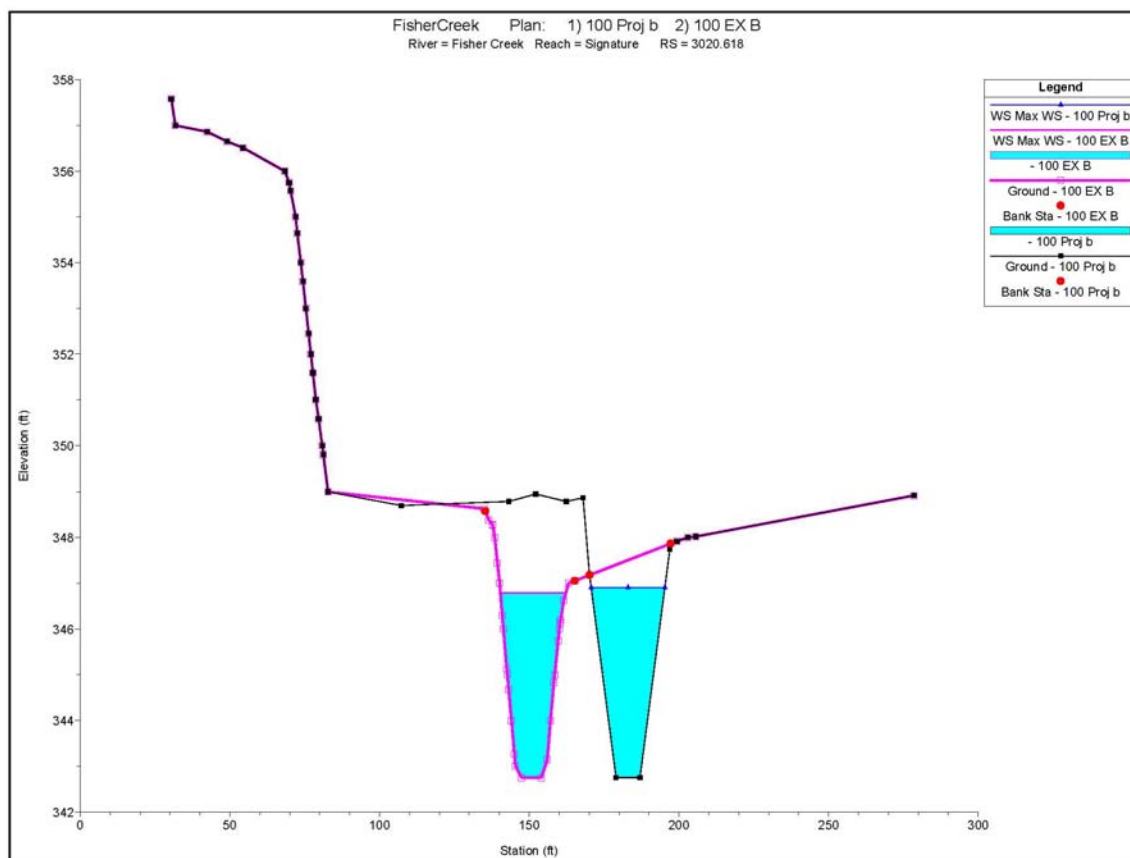


Figure 15. Typical Section Relocated Fisher Creek, Existing (red) and Project (black)

The project conditions were analyzed for two potential offsite conditions related to the Ventana basin. The flows to Fisher Creek from the Ventana basin may stop after completion of the Butterfield Channel extension, but the new operation of the Butterfield Channel and Maple Avenue Regional Detention Basin has not been finalized with the SCVWD and County of Santa Clara. Therefore, the evaluation of the potential 100-year flooding effects of the Madrone Villages project considered both cases. Case 1 includes flows from the Ventana basin for both the existing and project conditions. The peak flow in Fisher Creek downstream of the project site was estimated to be 339 cfs. For Case 2, the Ventana basin contribution was removed for both the existing and project conditions. The existing condition peak flow for Case 2 was 268 cfs. The existing condition was reduced for Case 2 to provide a comparison of the effects of the Madrone Villages project drainage systems with or without the Ventana basin flows, but not to use the reduced flows from the Ventana basin to mitigate for any effects of the Madrone Villages project.

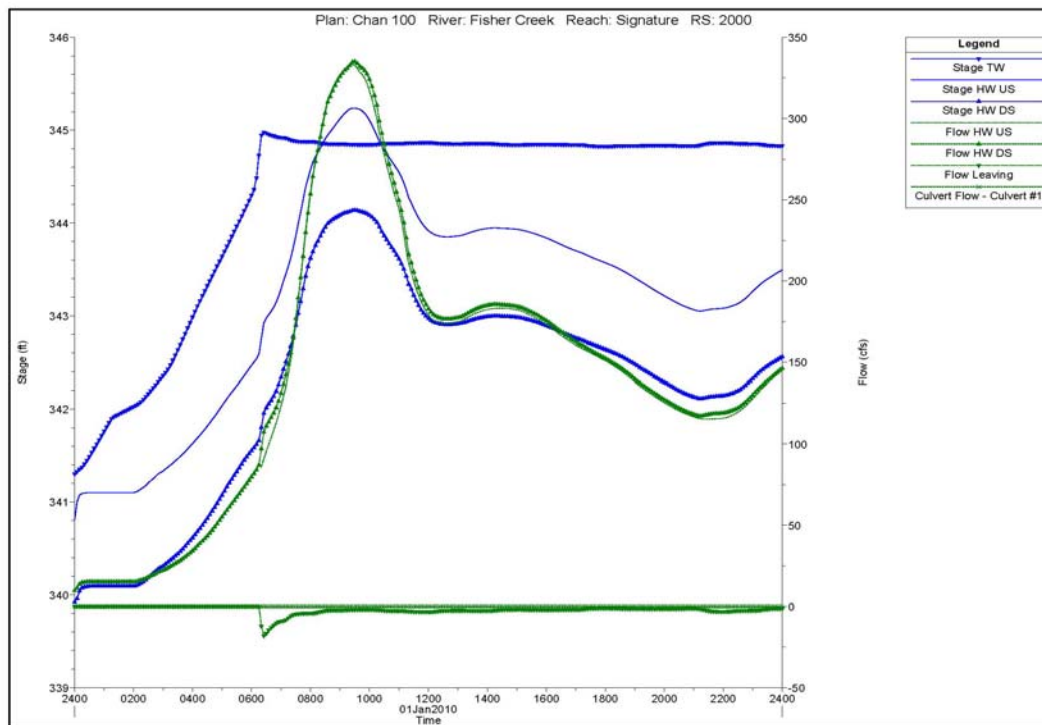


Figure 16. North Detention Basin 100-Year Flows – Case 1

Figure 16 shows the model results for the operation of the outlet from the north detention basin into Fisher Creek. The Stage TW line represents the water surface elevation in the detention basin which starts near elevation 341 feet and increases to a maximum near elevation 345.6 hours into the storm. The Stage HW DS line represents the water surface elevation in Fisher Creek just downstream of the outlet, which is near elevation 342 feet at the time of the peak elevation in the detention basin, and increases to approximately 344 feet at the time of the peak flow in the creek, approximately 9 hours into the storm. The Flow Leaving line at the bottom of the graph shows a negative flow leaving of approximately 20 cfs at the time of the peak water level in the detention basin. The negative flow leaving in the model represents the outlet flow from the detention basin into the channel (negative flow leaving the channel). Typical outlet flows late in the storm are approximately 1 to 2 cfs due to the restricted outlet from the detention basin.

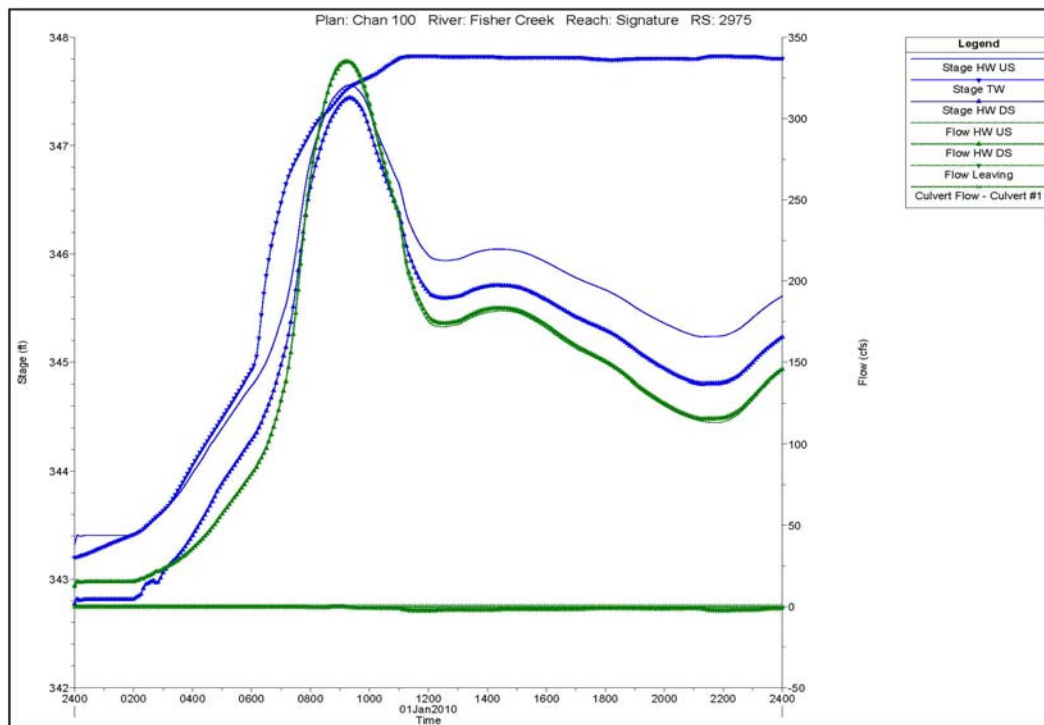


Figure 17. South Detention Basin 100-Year Flows – Case 1

Figure 17 shows the operation of the south detention basin for Case 1. The operation is similar to the north detention basin. However, the south basin has more capacity in comparison to the area which drains to the basin. The maximum water surface in the basin (Stage TW) rises to an elevation of approximately 347.7 feet which is a 0.4 feet above the top of the outlet riser. Therefore, there is very little flow from the detention basin into the creek.

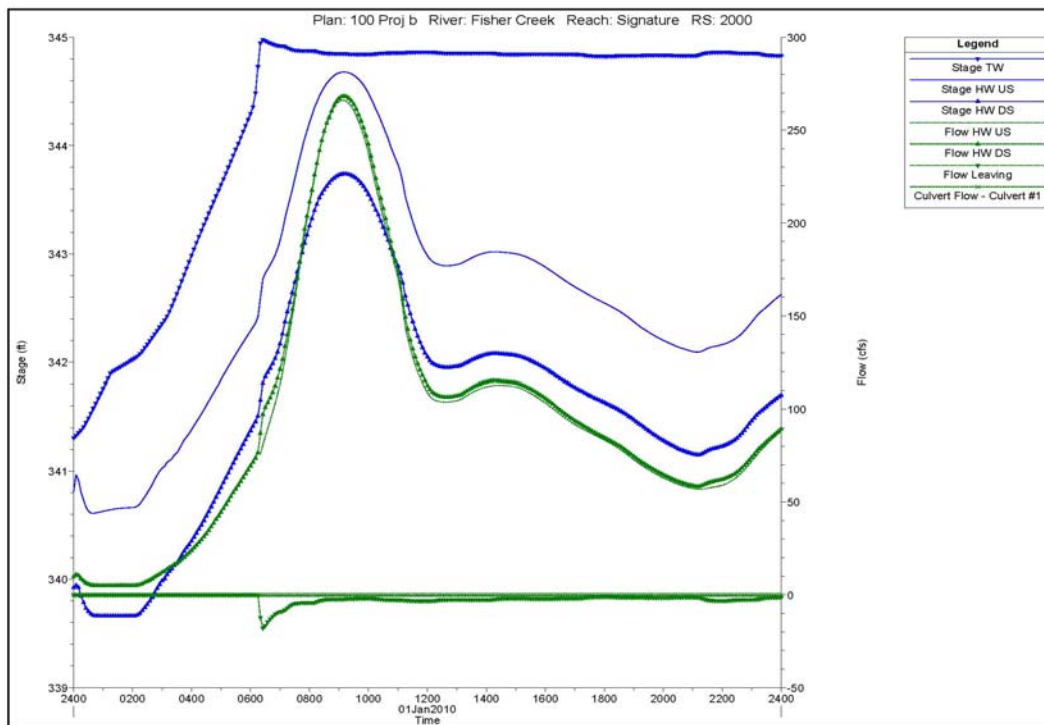


Figure 18. North Detention Basin 100-Year Flows – Case 2

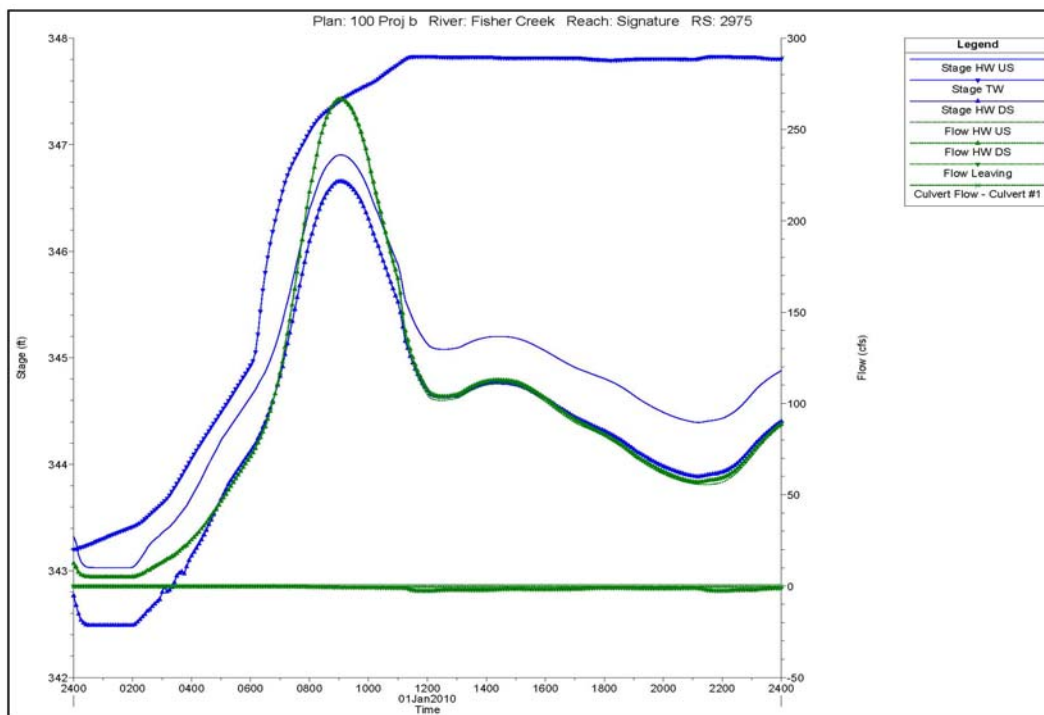


Figure 19. South Detention Basin 100-Year Flows – Case 2

For Case 1, the project condition 100-year flow rate downstream of the project is 3.17 cfs less than the existing condition peak flow. For Case 2, the project condition 100-year flow rate downstream of the project is 0.09 cfs less than the existing condition peak flow. The detention basins on the site and the outlet structures are the same for both cases. The onsite detention has some additional effects for Case 1 because the water surface elevation in Fisher Creek is generally 0.5 to 0.9 feet higher with the larger flow, and very little flow enters the creek from the Madrone Villages detention system basins. The Flow HW DS line in Figures 16 and 18 show the Fisher Creek flow hydrographs for Case 1 and Case 2. There are no significant changes from the existing condition hydrographs.

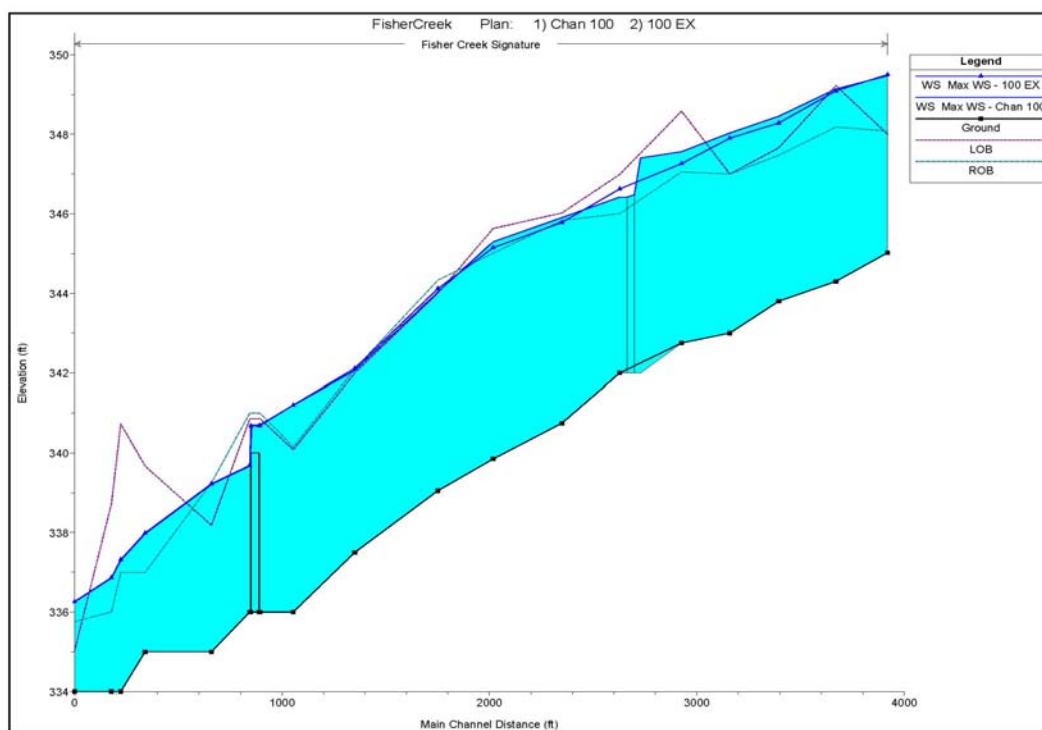


Figure 20. Fisher Creek Profile 100-Year Flow – Case 1

Figure 20 shows the 100-year maximum water surface profile for Fisher Creek for Case 1 from Tilton Avenue (station 0) upstream to approximately 600 feet upstream of the Madrone Villages site. The proposed Madrone Villages access crossing is shown at approximately station 2700 feet. The project condition water surface in shaded, the existing condition water surface is shown, but not shaded. The project condition water surface elevations are higher within portions of the project particularly at the bridge crossing. The water surface is within the proposed channel and would not affect other properties. There are no estimated changes to the downstream water surface profile. The project condition water surface is less than 0.2 feet higher than the existing condition at the upstream end of the project.

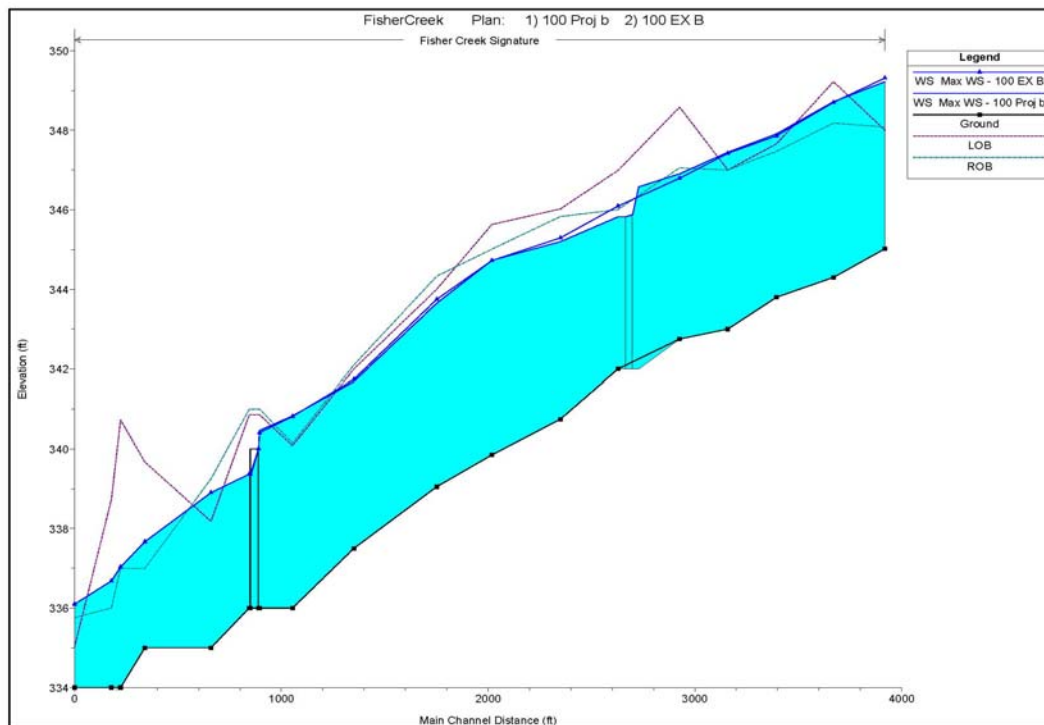


Figure 21. Fisher Creek Profile 100-Year Flow – Case 2

Figure 21 shows the 100-year maximum water surface profile for Fisher Creek for Case 2. As with Case 1, the project condition water surface elevations are higher within portions of the project upstream of the road crossing. The effect is less than for Case 1 because the creek flows are less for Case 2 with no inflow from the upstream business park subarea. The water surface is within the proposed channel and would not affect other properties. There are no estimated changes to the downstream water surface profile. The project condition water surface is less than 0.05 feet higher than the existing condition at the upstream end of the project.

Conclusions

The results of the hydrologic analysis show that proposed north and south detention basins will provide sufficient storage to meet the HMP requirements of the RWQCB regional permit. The flow duration results show no significant increase for the project condition, including the south basin which has inflows from an offsite area.

The Fisher Creek hydrology and hydraulics analysis shows that the north and south detention basins as designed for the HMP requirements will also mitigate for increased runoff in the larger 100-year storm which potentially could affect flooding. Peak flows in Fisher Creek downstream of the project would be slightly reduced.

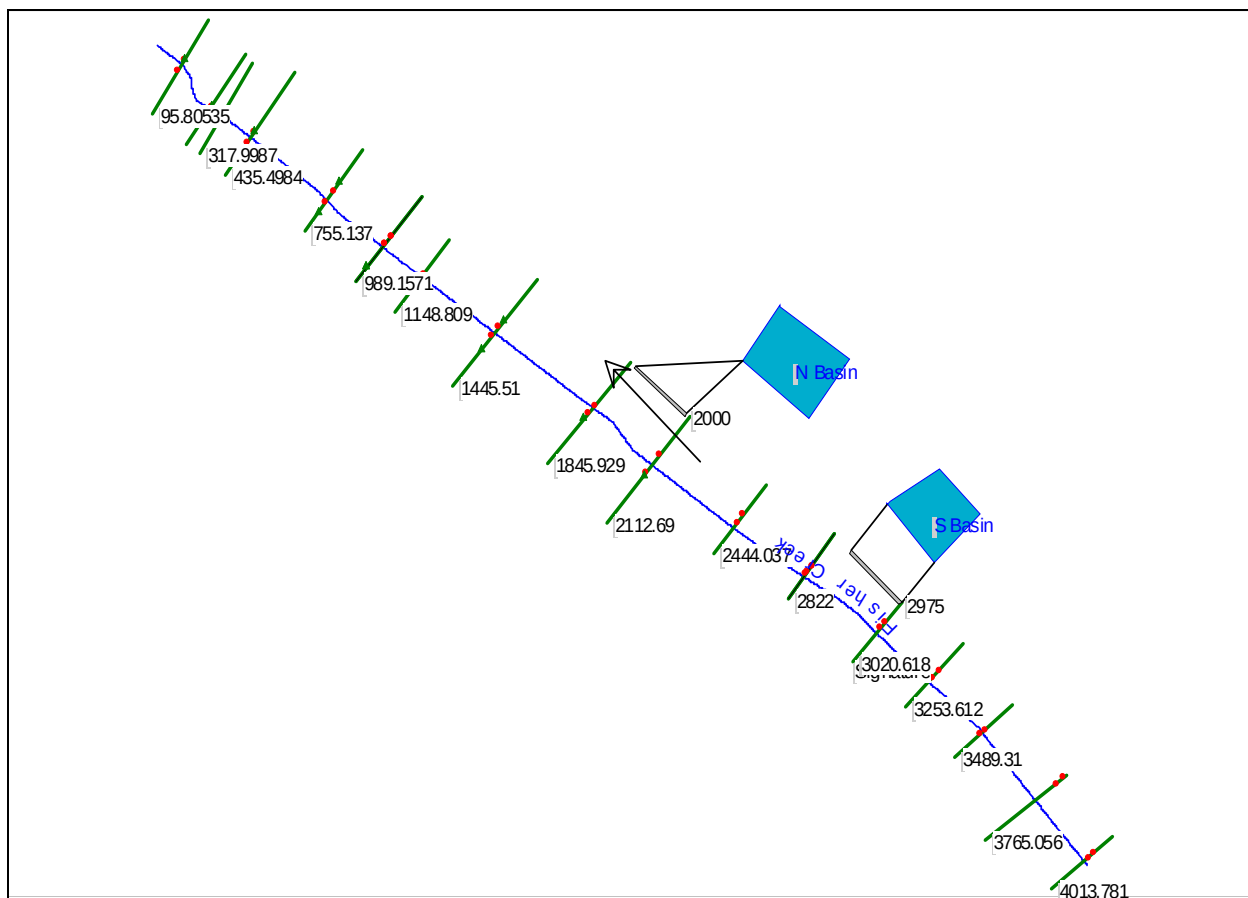
The hydrologic analysis included two alternative cases for the Fisher Creek conditions. Case 1 based on continued operation of the Ventana detention basin at the Cochrane Road business park, and Case 2 if the flow to Fisher Creek from the business park is all drained to the

Butterfield Channel, away from Fisher Creek. The Butterfield Channel extension is under construction and expected to be completed in 2012, but the City has not made a decision to change the operation of the Ventana basin at this time. The proposed detention basins for the Madrone Villages project would mitigate for the potential floodplain impacts for either condition. The peak flow rates and 100-year water surface elevations in Fisher Creek would be lower if the business park drainage goes to the Butterfield Channel.

Hydrology Study

MADRONE VILLAGES MORGAN HILL

HEC-RAS Output



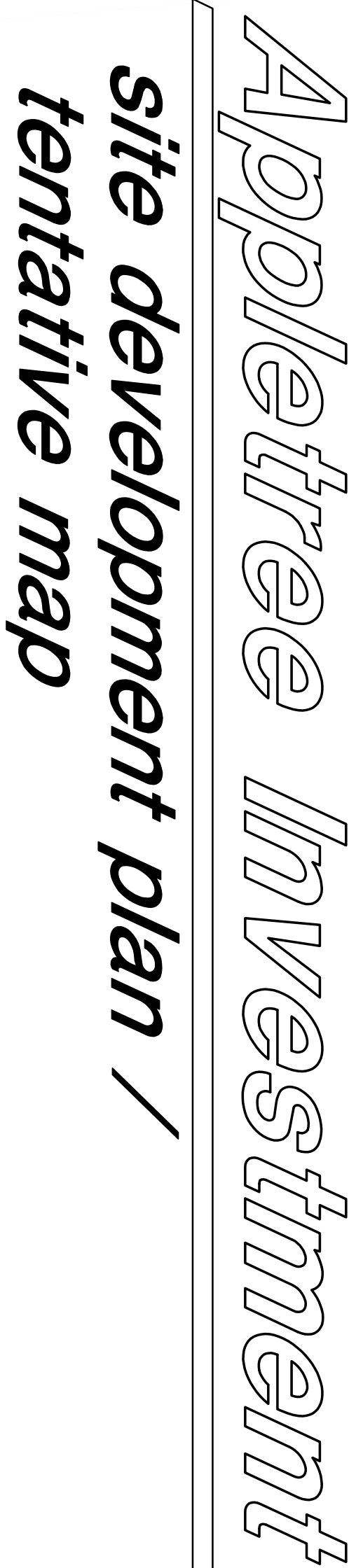
Fisher Creek Cross Section Schematic

Case 1

HEC-RAS River: Fisher Creek Reach: Signature Profile: Max WS													
Reach	River Sta	Profile	Plan	Q Total (cfs)	Min Ch El (ft)	W S Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
Signature	4013.781	Max WS	100 EX	266.03	345.02	349.50		349.70	0.001868	3.77	83.92	62.49	0.37
Signature	4013.781	Max WS	Chan 100	266.03	345.02	349.47		349.64	0.001362	3.43	89.76	60.71	0.32
Signature	3765.056	Max WS	100 EX	265.43	344.30	349.09		349.26	0.001671	3.34	81.23	32.98	0.35
Signature	3765.056	Max WS	Chan 100	265.42	344.30	349.14		349.31	0.001302	3.36	83.68	33.27	0.31
Signature	3489.31	Max WS	100 EX	336.67	343.80	348.28		348.57	0.002992	4.40	84.84	64.61	0.46
Signature	3489.31	Max WS	Chan 100	335.64	343.80	348.45		348.74	0.002437	4.55	91.48	76.30	0.42
Signature	3253.612	Max WS	100 EX	336.60	343.00	347.90		348.07	0.001226	3.43	111.11	63.58	0.31
Signature	3253.612	Max WS	Chan 100	335.16	343.00	348.03		348.24	0.001707	3.68	91.76	35.74	0.36
Signature	3020.618	Max WS	100 EX	336.53	342.75	347.26		347.59	0.003354	4.63	73.46	33.69	0.48
Signature	3020.618	Max WS	Chan 100	334.41	342.75	347.56		347.80	0.002047	3.95	84.68	26.96	0.39
Signature	2822	Max WS	Chan 100	334.75	342.00	347.40		347.52	0.000892	2.90	147.47	125.95	0.27
Signature	2722.839	Max WS	100 EX	336.12	342.00	346.63		346.83	0.002031	3.73	105.02	82.69	0.37
Signature	2722.839	Max WS	Chan 100	334.42	342.00	346.42		346.73	0.002957	4.47	76.44	40.73	0.47
Signature	2444.037	Max WS	100 EX	336.97	340.75	345.78		346.10	0.003244	4.54	74.28	25.88	0.47
Signature	2444.037	Max WS	Chan 100	334.01	340.75	345.90		346.10	0.001579	3.54	94.35	28.61	0.34
Signature	2112.69	Max WS	100 EX	336.64	339.85	345.14		345.32	0.001604	3.32	101.76	170.05	0.34
Signature	2112.69	Max WS	Chan 100	333.17	339.85	345.29		345.43	0.002458	2.96	112.61	203.19	0.40
Signature	1845.929	Max WS	100 EX	338.12	339.05	344.12		344.46	0.005005	4.71	71.97	111.14	0.57
Signature	1845.929	Max WS	Chan 100	334.95	339.05	344.03		344.40	0.005504	4.86	68.97	101.97	0.59
Signature	1445.51	Max WS	100 EX	337.93	337.50	342.12		342.46	0.005120	4.72	71.75	121.75	0.58
Signature	1445.51	Max WS	Chan 100	334.63	337.50	342.06		342.39	0.004701	4.58	73.13	107.86	0.55
Signature	1148.809	Max WS	100 EX	337.83	336.00	341.20		341.44	0.001867	4.00	93.30	91.57	0.38
Signature	1148.809	Max WS	Chan 100	334.50	336.00	341.20		341.43	0.001833	3.97	93.22	91.47	0.37
Signature	989.1571	Max WS	100 EX	337.84	336.00	340.69	339.18	341.03	0.003228	4.66	72.49	64.65	0.48
Signature	989.1571	Max WS	Chan 100	334.47	336.00	340.71	339.17	341.04	0.003122	4.59	72.85	65.26	0.47
Signature	975			Bridge									
Signature	940	Max WS	100 EX	337.80	336.00	339.69		340.39	0.008639	6.75	50.03	20.29	0.76
Signature	940	Max WS	Chan 100	334.45	336.00	339.67		340.37	0.008596	6.72	49.76	20.24	0.76
Signature	755.137	Max WS	100 EX	337.73	335.00	339.23		339.38	0.001484	3.16	112.41	68.98	0.33
Signature	755.137	Max WS	Chan 100	334.38	335.00	339.21		339.36	0.001479	3.15	111.69	68.59	0.33
Signature	435.4984	Max WS	100 EX	337.33	335.00	337.99		338.34	0.005084	4.79	70.48	218.41	0.59
Signature	435.4984	Max WS	Chan 100	333.87	335.00	337.97		338.33	0.005093	4.77	69.96	208.51	0.59
Signature	317.9987	Max WS	100 EX	337.35	334.00	337.32		337.74	0.005418	5.19	64.99	130.71	0.61
Signature	317.9987	Max WS	Chan 100	333.86	334.00	337.30		337.72	0.005409	5.17	64.57	130.24	0.61
Signature	273.7088	Max WS	100 EX	337.34	334.00	336.87		337.44	0.008171	6.08	55.46	94.30	0.75
Signature	273.7088	Max WS	Chan 100	333.87	334.00	336.86		337.42	0.008111	6.05	55.21	94.24	0.75
Signature	95.80535	Max WS	100 EX	337.31	334.00	336.26	335.86	336.41	0.003172	3.52	119.81	187.95	0.46
Signature	95.80535	Max WS	Chan 100	333.84	334.00	336.25	335.85	336.40	0.003182	3.52	118.77	187.69	0.46

Case 2

HEC-RAS River: Fisher Creek Reach: Signature Profile: Max WS													
Reach	River Sta	Profile	Plan	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
Signature	4013.781	Max WS	100 EX B	266.39	345.02	349.31		349.56	0.002452	4.15	73.15	51.54	0.42
Signature	4013.781	Max WS	100 Proj b	266.39	345.02	349.22		349.44	0.001870	3.83	76.41	46.23	0.38
Signature	3765.056	Max WS	100 EX B	266.35	344.30	348.70		348.94	0.002559	3.90	68.99	29.40	0.42
Signature	3765.056	Max WS	100 Proj b	266.35	344.30	348.72		348.95	0.002081	3.91	70.38	29.58	0.39
Signature	3489.31	Max WS	100 EX B	266.25	343.80	347.86		348.14	0.003416	4.23	64.22	35.29	0.47
Signature	3489.31	Max WS	100 Proj b	266.19	343.80	347.91		348.24	0.003212	4.69	60.74	37.19	0.47
Signature	3253.612	Max WS	100 EX B	266.20	343.00	347.42		347.58	0.001320	3.25	85.39	43.51	0.31
Signature	3253.612	Max WS	100 Proj b	266.18	343.00	347.45		347.64	0.001854	3.54	75.14	25.92	0.37
Signature	3020.618	Max WS	100 EX B	266.09	342.75	346.79		347.08	0.003025	4.34	61.38	21.88	0.46
Signature	3020.618	Max WS	100 Proj b	266.13	342.75	346.90		347.14	0.002461	3.93	67.72	24.61	0.42
Signature	2922	Max WS	100 Proj b	266.61	342.00	346.58		346.75	0.001551	3.36	83.28	48.24	0.34
Signature	2722.839	Max WS	100 EX B	265.94	342.00	346.09		346.32	0.002419	3.83	69.91	37.91	0.40
Signature	2722.839	Max WS	100 Proj b	266.50	342.00	345.82		346.13	0.003463	4.46	59.79	23.29	0.49
Signature	2444.037	Max WS	100 EX B	266.99	340.75	345.29		345.57	0.003028	4.27	62.56	22.50	0.45
Signature	2444.037	Max WS	100 Proj b	266.22	340.75	345.20		345.39	0.001860	3.54	75.11	25.79	0.37
Signature	2112.69	Max WS	100 EX B	266.74	339.85	344.72		344.86	0.001239	3.01	88.58	133.50	0.30
Signature	2112.69	Max WS	100 Proj b	266.08	339.85	344.73		344.87	0.001263	3.07	86.62	133.00	0.31
Signature	1845.929	Max WS	100 EX B	268.36	339.05	343.75		344.06	0.004889	4.47	59.98	66.63	0.55
Signature	1845.929	Max WS	100 Proj b	268.25	339.05	343.65		343.99	0.005438	4.69	57.15	54.38	0.58
Signature	1445.51	Max WS	100 EX B	268.22	337.50	341.74		342.06	0.005160	4.53	59.22	66.45	0.57
Signature	1445.51	Max WS	100 Proj b	268.14	337.50	341.69		341.99	0.004617	4.40	60.88	61.62	0.54
Signature	1148.809	Max WS	100 EX B	268.21	336.00	340.82		341.03	0.001840	3.68	76.77	38.11	0.37
Signature	1148.809	Max WS	100 Proj b	268.10	336.00	340.83		341.04	0.001809	3.66	77.29	38.40	0.36
Signature	989.1571	Max WS	100 EX B	268.20	336.00	340.41	338.82	340.67	0.002633	4.08	65.71	54.05	0.43
Signature	989.1571	Max WS	100 Proj b	244.03	336.00	340.46	338.69	340.67	0.002071	3.64	67.01	56.72	0.38
Signature	975		Bridge										
Signature	940	Max WS	100 EX B	268.19	336.00	339.37		339.95	0.007848	6.13	43.74	19.13	0.71
Signature	940	Max WS	100 Proj b	268.08	336.00	339.37		339.95	0.007845	6.13	43.73	19.13	0.71
Signature	755.137	Max WS	100 EX B	268.16	335.00	338.90		339.03	0.001407	2.91	95.59	60.03	0.32
Signature	755.137	Max WS	100 Proj b	268.05	335.00	338.90		339.03	0.001407	2.91	95.57	60.02	0.32
Signature	435.4984	Max WS	100 EX B	268.00	335.00	337.67		337.98	0.005322	4.50	59.58	118.46	0.59
Signature	435.4984	Max WS	100 Proj b	267.88	335.00	337.67		337.98	0.005322	4.50	59.57	118.38	0.59
Signature	317.9987	Max WS	100 EX B	267.99	334.00	337.03		337.38	0.005113	4.72	56.77	114.85	0.59
Signature	317.9987	Max WS	100 Proj b	267.88	334.00	337.03		337.38	0.005112	4.72	56.75	114.55	0.59
Signature	273.7088	Max WS	100 EX B	267.99	334.00	336.68		337.12	0.006816	5.30	50.52	93.15	0.68
Signature	273.7088	Max WS	100 Proj b	267.88	334.00	336.68		337.12	0.006814	5.30	50.52	93.15	0.68
Signature	95.80535	Max WS	100 EX B	267.96	334.00	336.10	335.71	336.24	0.003325	3.38	99.36	182.73	0.47
Signature	95.80535	Max WS	100 Proj b	267.87	334.00	336.10	335.71	336.24	0.003326	3.38	99.33	182.72	0.47



MH engineering Co.

18075 Vineyard Boulevard
Morgan Hill, CA 95037

215087.2

LOT	PLAN
-----	------

KELLY VO
P0 BOX 32115
SAN JOSE, CA 95152

MH ENGINEERING
16075 VINEYARD BLVD.
MORGAN HILL, CA 95037
(408) 779-7381

7,000

TYPICAL FRONT YARD SETBACK:
TYPICAL REAR YARD SETBACK:
TYPICAL SIDE YARD SETBACK:

20'-25'
20'-25'
5'-12.5'

PROJECT NET AREA: 1043 ACRES

% BUILDING COVERAGE

0.080 ACRES
0.283 ACRES
29.48%

TOTAL PROJECT AREA:	1.043 ACRES
DEDICATED RIGHT OF WAY:	0.000 ACRES
PROJECT NET ACREAGE:	1.043 ACRES
NO. UNITS ALLOWED:	6 UNITS
NO. UNITS PROPOSED:	6 UNITS
OPEN SPACE AREA:	0.000 ACRES

TOTAL PROJECT AREA: 1.043 ACRES

DEDICATED RIGHT OF WAY: 0.000 ACRES

NO. UNITS ALLOWED: 6 UNITS

OPEN SPACE AREA: 0.000 ACRES

Appendix F
Arborist Report



License #678321 ~ Arborist #WE-6620A ~ Insured PL/PD ~ Workers Compensation ~ 408-722-8942 ~ arborist@garlic.com ~ www.mokismith.com

Apple Tree Investments
P.O. Box 32115
San Jose, CA 95152
(408) 799-4507
vkelly1979@yahoo.com

February 9, 2019

Contact: Kelly Vo
Property at: Campoli Dr X Old Monterey R
18755 Old Monterey Rd
Project: Morgan Estate

As per your request I visited the property listed above to inspect 23 trees located on the site.

All but 1 of these trees are Black walnut and appear to have grown up out of orchard root stock.

It is likely that originally these trees were English walnut grafted onto Black walnut root stock which is a customary orchard stock since the Black walnut is more resistant to pest and other infestations than English walnut.

The life span for walnut orchard trees in California is normally approximately 35 years and this orchard has outlived its life span.

None of the trees on this site are considered significant and can be removed to facilitate construction.

Please feel free to request any additional information or clarification.

Respectfully submitted,

Moki Smith

Moki Smith
Smith Tree Specialists, Inc
Arborist #WE-6620

12084.	Common Name	Species	D.B.H.	Height	Canopy Spread	Condition
	Black walnut	<i>Juglans nigra</i>	32"	22'	18'	Poor

Observations:

This tree is in poor condition and in a state of decline

This tree is not considered significant in the City of Morgan Hill and can be removed.

Recommendations:

Remove

12085.	Common Name	Species	D.B.H.	Height	Canopy Spread	Condition
	Black walnut	<i>Juglans nigra</i>	24"	18'	14'	Poor

Observations:

This tree is in poor condition and in a state of decline

This tree is not considered significant in the City of Morgan Hill and can be removed.

Recommendations:

Remove

12086.	Common Name	Species	D.B.H.	Height	Canopy Spread	Condition
	Black walnut	<i>Juglans nigra</i>	6" 8" 10"	20'	12'	Poor

Observations:

This tree has a multi leader main stem with 3 main uprights.

This tree is in poor condition and in a state of decline

This tree is not considered significant in the City of Morgan Hill and can be removed.

Recommendations:

Remove

12087.	Common Name	Species	D.B.H.	Height	Canopy Spread	Condition
	Black walnut	<i>Juglans nigra</i>	36"	15'	20'	Poor

Observations:

This tree is in poor condition and in a state of decline
This tree is not considered significant in the City of Morgan Hill and can be removed.

Recommendations:

Remove

12088.	Common Name	Species	D.B.H.	Height	Canopy Spread	Condition
	Black walnut	<i>Juglans nigra</i>	24"	20'	12'	Poor

Observations:

This tree is in poor condition and in a state of decline
This tree is not considered significant in the City of Morgan Hill and can be removed.

Recommendations:

Remove

12089.	Common Name	Species	D.B.H.	Height	Canopy Spread	Condition
	Black walnut	<i>Juglans nigra</i>	24"	22'	16'	Poor

Observations:

This tree is in poor condition and in a state of decline
This tree is not considered significant in the City of Morgan Hill and can be removed.

Recommendations:

Remove

12090.	Common Name	Species	D.B.H.	Height	Canopy Spread	Condition
	Black walnut	<i>Juglans nigra</i>	24"	15'	12'	Poor

Observations:

This tree is in poor condition and in a state of decline
This tree is not considered significant in the City of Morgan Hill and can be removed.

Recommendations:

Remove

12091.	Common Name	Species	D.B.H.	Height	Canopy Spread	Condition
	Black walnut	<i>Juglans nigra</i>	26"	18'	12'	Poor

Observations:

This tree is in poor condition and in a state of decline

This tree is not considered significant in the City of Morgan Hill and can be removed.

Recommendations:

Remove

12092.	Common Name	Species	D.B.H.	Height	Canopy Spread	Condition
	Black walnut	<i>Juglans nigra</i>	16"	12'	16'	Poor

Observations:

This tree is in poor condition and in a state of decline

This tree is not considered significant in the City of Morgan Hill and can be removed.

Recommendations:

Remove

12093.	Common Name	Species	D.B.H.	Height	Canopy Spread	Condition
	Black walnut	<i>Juglans nigra</i>	38"	18'	12'	Poor

Observations:

This tree is in poor condition and in a state of decline

This tree is not considered significant in the City of Morgan Hill and can be removed.

Recommendations:

Remove

12094.	Common Name	Species	D.B.H.	Height	Canopy Spread	Condition
	Black walnut	<i>Juglans nigra</i>	12"	14'	12'	Poor

Observations:

This tree is in poor condition and in a state of decline

This tree is not considered significant in the City of Morgan Hill and can be removed.

Recommendations:

Remove

12095.	Common Name	Species	D.B.H.	Height	Canopy Spread	Condition
	Black walnut	<i>Juglans nigra</i>	18"	15'	12'	Poor

Observations:

This tree is in poor condition and in a state of decline

This tree is not considered significant in the City of Morgan Hill and can be removed.

Recommendations:

Remove

12096.	Common Name	Species	D.B.H.	Height	Canopy Spread	Condition
	Black walnut	<i>Juglans nigra</i>	18"	15'	12'	Poor

Observations:

This tree is in poor condition and in a state of decline

This tree is not considered significant in the City of Morgan Hill and can be removed.

Recommendations:

Remove

12097.	Common Name	Species	D.B.H.	Height	Canopy Spread	Condition
	Black walnut	<i>Juglans nigra</i>	16"	12'	15'	Poor

Observations:

This tree is in poor condition and in a state of decline

This tree is not considered significant in the City of Morgan Hill and can be removed.

Recommendations:

Remove

12098.	Common Name	Species	D.B.H.	Height	Canopy Spread	Condition
	Apricot	<i>Prunus sp.</i>	4"	9'	6'	Fair

Observations:

This tree is in poor condition and in a state of decline

This tree is not considered significant in the City of Morgan Hill and can be removed.

Recommendations:

Remove

12099.	Common Name	Species	D.B.H.	Height	Canopy Spread	Condition
	Black walnut	<i>Juglans nigra</i>	18"	16'	15'	Poor

Observations:

This tree is in poor condition and in a state of decline
This tree is not considered significant in the City of Morgan Hill and can be removed.

Recommendations:

Remove

12100.	Common Name	Species	D.B.H.	Height	Canopy Spread	Condition
	Black walnut	<i>Juglans nigra</i>	20"	16'	14'	Poor

Observations:

This tree is in poor condition and in a state of decline
This tree is not considered significant in the City of Morgan Hill and can be removed.

Recommendations:

Remove

12101.	Common Name	Species	D.B.H.	Height	Canopy Spread	Condition
	Black walnut	<i>Juglans nigra</i>	24"	16'	15'	Poor

Observations:

This tree is in poor condition and in a state of decline
This tree is not considered significant in the City of Morgan Hill and can be removed.

Recommendations:

Remove

12102.	Common Name	Species	D.B.H.	Height	Canopy Spread	Condition
	Black walnut	<i>Juglans nigra</i>	6"	10'	6'	Poor

Observations:

This tree is in poor condition and in a state of decline
This tree is not considered significant in the City of Morgan Hill and can be removed.

Recommendations:

Remove

12103.	Common Name	Species	D.B.H.	Height	Canopy Spread	Condition
	Black walnut	<i>Juglans nigra</i>	26"	18'	15'	Poor

Observations:

This tree is in poor condition and in a state of decline
This tree is not considered significant in the City of Morgan Hill and can be removed.

Recommendations:

Remove

12104.	Common Name	Species	D.B.H.	Height	Canopy Spread	Condition
	Black walnut	<i>Juglans nigra</i>	16"	14'	12'	Poor

Observations:

This tree is in poor condition and in a state of decline
This tree is not considered significant in the City of Morgan Hill and can be removed.

Recommendations:

Remove

12105.	Common Name	Species	D.B.H.	Height	Canopy Spread	Condition
	Black walnut	<i>Juglans nigra</i>	30"	18'	12'	Poor

Observations:

This tree is in poor condition and in a state of decline
This tree is not considered significant in the City of Morgan Hill and can be removed.

Recommendations:

Remove

NO Tag.	Common Name	Species	D.B.H.	Height	Canopy Spread	Condition
	Plum	<i>Prunus sp.</i>	8"	19'	12'	Poor

Observations:

This tree is not tagged. It is located behind a fence and not accessible.
This tree is in poor condition and in a state of decline.
This tree is not considered significant in the City of Morgan Hill and can be removed.

Recommendations:

Remove



Tag #12084



Tag #12085



Tag #12086



Tag #12087



Tag #12088



Tag #12089



Tag #12090



Tag #12091



Tag #12092



Tag #12093



Tag #12094



Tag #12095



Tag #12096



Tag #12097



Tag #12098



Tag #12099



Tag #12100



Tag #12101



Tag #12102



Tag #12103



#12104

Attachment: Old Monterey-Appletree (Kelly Vo) CEQA CatEx Memorandum (3105 : AAE2021-0002/CUL2021-0001/EA2021-0002: Old Monterey -



Tag #12105



No Tag

Located behind fence not accessible.

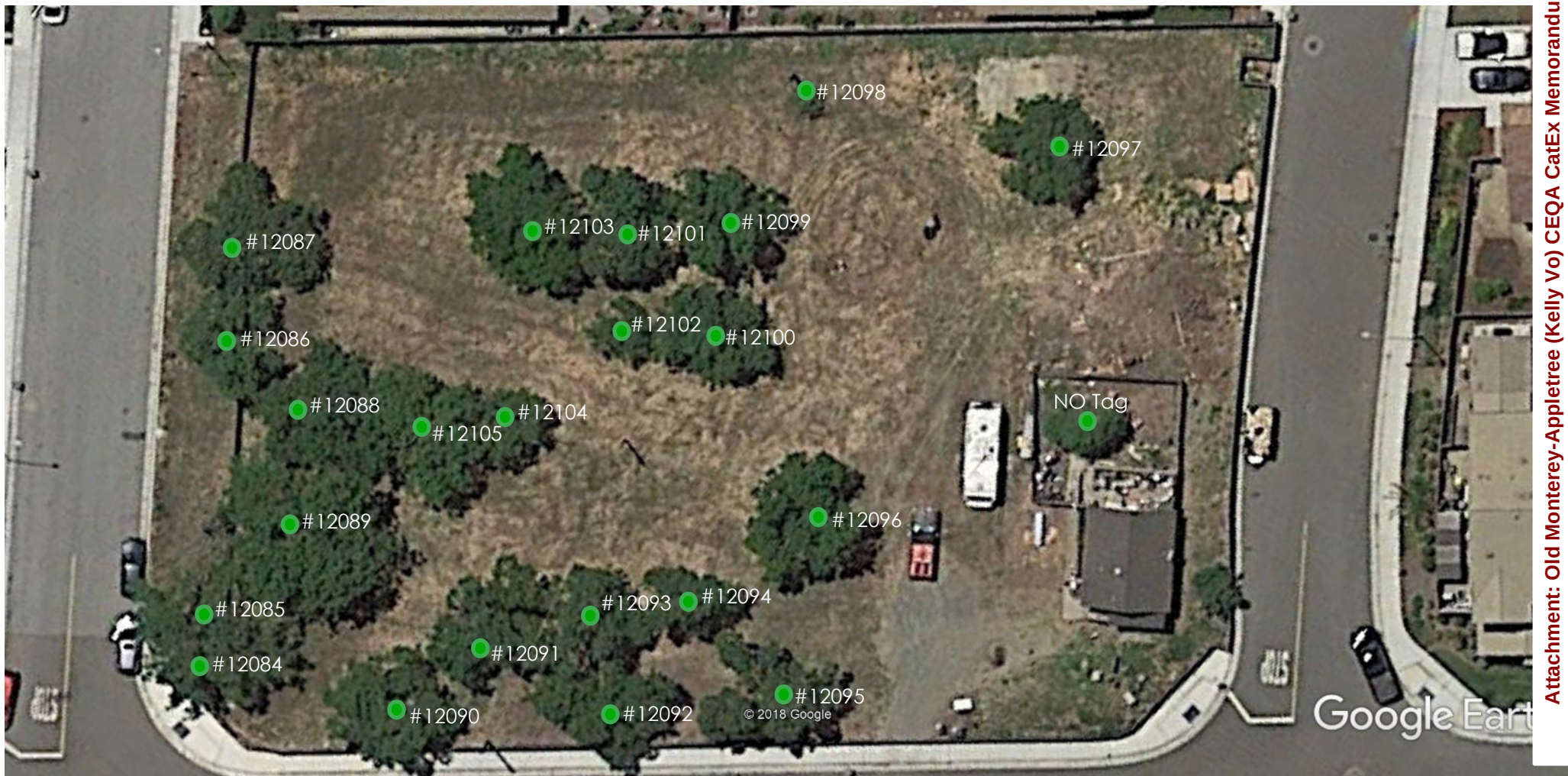
Attachment: Old Monterey-Appletree (Kelly Vo) CEQA CatEx Memorandum (3105 : AAE2021-0002/CUL2021-0001/EA2021-0002: Old Monterey -

Apple Tree Investments
P.O. Box 32115
San Jose, CA 95152
(408) 799-4507
vkelly1979@yahoo.com

February 9, 2019

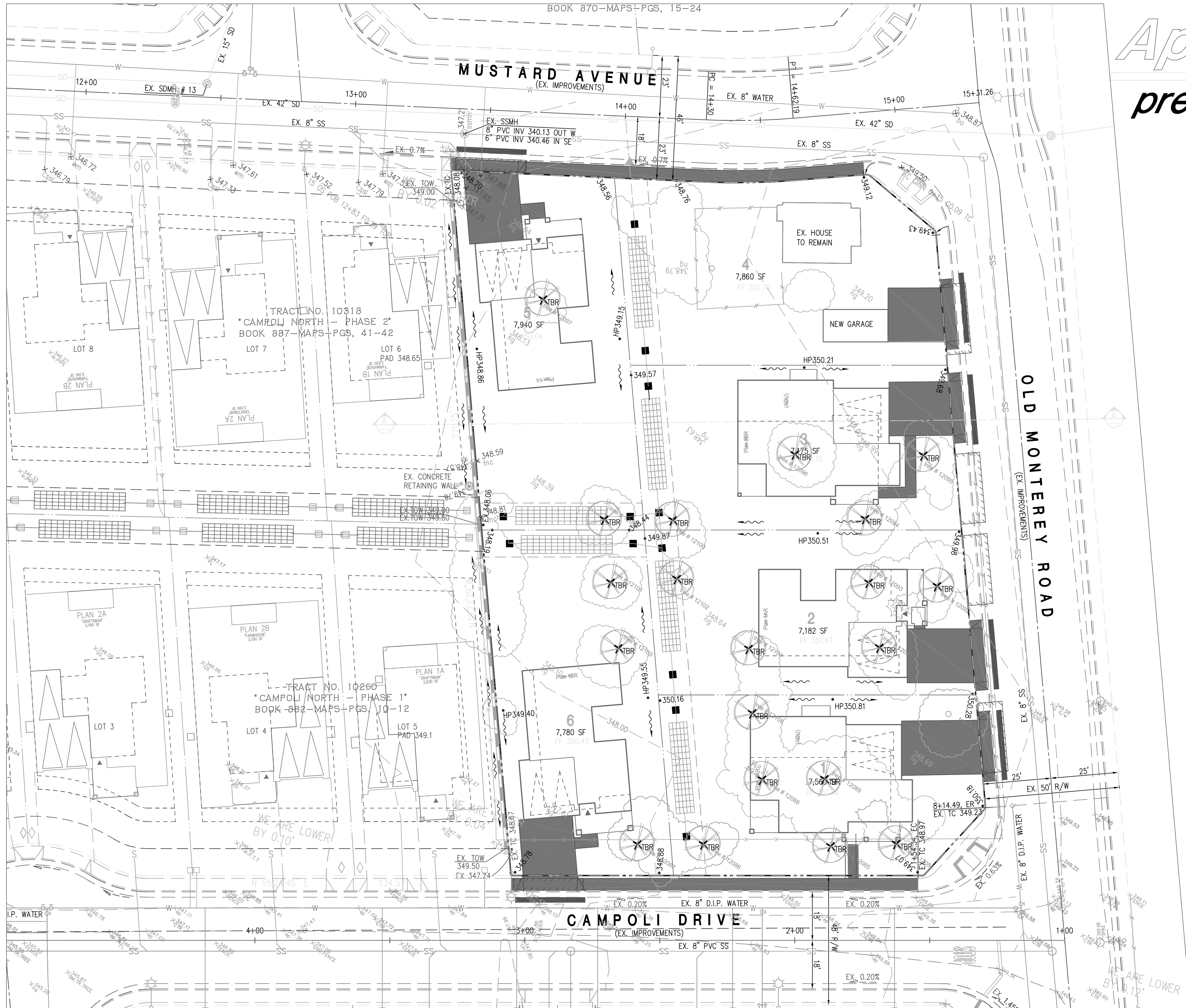
Contact: Kelly Vo
Property at: Campoli Dr X Old Monterey Rd
APN # TBD

Attachment: Old Monterey-Appletree (Kelly Vo) CEQA CatEx Memorandum (3105 : AAE2021-



License #678321 ~ Arborist #WE-6620A ~ Insured PL/PD ~ Workers Compensation ~ 408-722-8942 ~ arborist@garlic.com ~ www.mokismith.com

L:\Projects\2002\215087.2\dwg\215087.2-P&P.dwg 1/4/2019 3:33:12 PM PST
Xref's: 215087.2 TP, 215087.2 HATCH, 215087.2 PLO-TEXT, 215087.2 3D, 215087 LO New

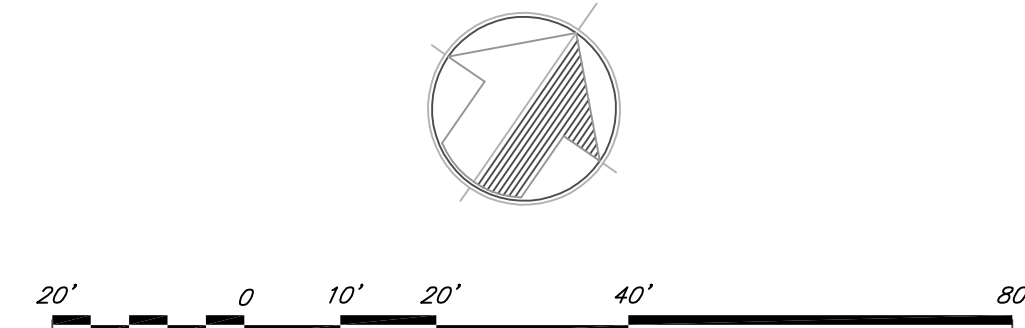


Appletree Investment

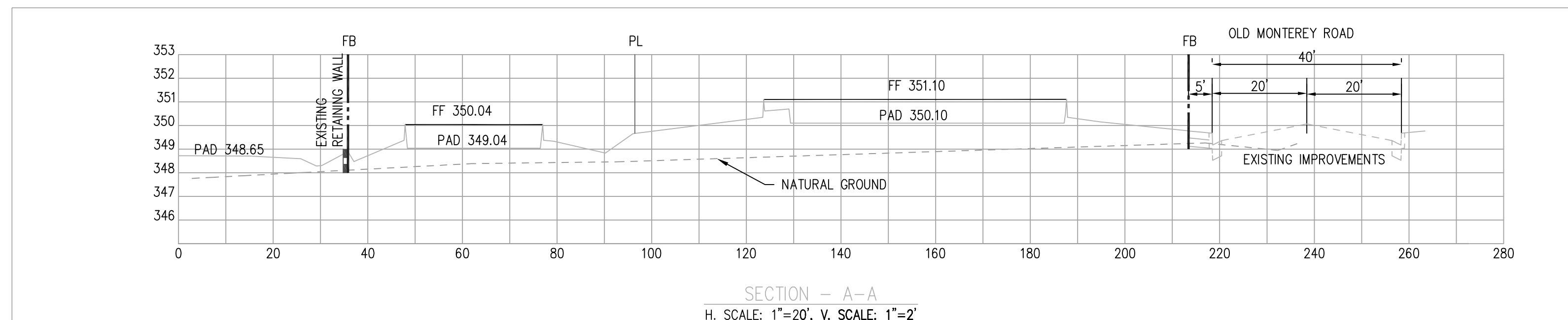
preliminary grading plan

legend

- TREE TO REMAIN
- TREE TO BE REMOVED
- "RAINTANK" INFILTRATION TANK
- STORM DRAIN INLET



SCALE : 1" = 20'



applicant:

Kelly Vo
P.O. Box 32115
San Jose, CA 95132
(408) 779-4507

engineer:

MH ENGINEERING
16075 VINEYARD BLVD.
MORGAN HILL, CA 95037
(408) 779-7381

planner:

VINCE BURGOS
220 LIVE OAK DRIVE
DANVILLE, CA 94506
(408) 421-2695

DpC
DEVELOPMENT
PROCESS
CONSULTANTS

220 LIVE OAK DRIVE DANVILLE, CA 94506
(408)-421-2695 EMAIL: VRBURGOS@HOTMAIL.COM

MH engineering Co.
18075 Vineyard Boulevard Morgan Hill, CA 95037

DATE: 2/19 DRAWN: RS CHECKED: WJM

sheet

2
of 02

215087.2

Packet Pg. 285



PLANNING COMMISSION STAFF REPORT

MEETING DATE: June 8, 2021

PREPARED BY: Rebecca Garcia, Housing Manager

APPROVED BY: Jennifer Carman, Community Development Director

AN EVALUATION OF PROPOSED MODIFICATIONS TO AFFORDABLE HOUSING INCLUSIONARY REQUIREMENTS, INFORMATION ITEM ONLY

RECOMMENDATION(S)

Receive and discuss the report by Keyser Marston Associates, Inc. (KMA), an evaluation of possible modifications to the Inclusionary Housing Ordinance.

POLICY CONSIDERATIONS:

How should the Inclusionary Housing Ordinance be amended to create deeper affordability in the Below Market Rate (BMR) Ownership Program and to help create Very Low-Income Housing?

BACKGROUND:

In 1977, the City of Morgan Hill adopted the Residential Development Control System (RDSCS), originally approved by the City of Morgan Hill voters. Governor Newsom signed Senate Bill 330 into law effective as of January 1, 2020. This enacted Government Code Section 66300, the "Housing Crisis Act of 2019," and suspended the provisions of the RDSCS program while the Housing Crisis Act is in effect.

Throughout the years and through the RDSCS Program, the City, in partnership with the Development Community, has been able to develop more than 500 Below Market Rate (BMR) homes for income qualified families. In response to concerns over the elimination of RDSCS, on July 25, 2018, the Morgan Hill City Council adopted a Citywide Inclusionary Housing Ordinance (IHO). The purpose of the IHO was to ensure that part of Morgan Hill's remaining developable land would be used to provide affordable housing and to encourage an economically balanced community. The IHO established policies requiring builders of new market-rate housing projects to include some affordable housing within their projects to households of very low, lower, and moderate incomes. The production of inclusionary units is intended to assist the City meet its regional housing need allocation, known as RHNA, as well as implement the City's Housing Element goals and objectives.

Since 1977, the City has amassed one of the largest BMR housing portfolios in the State. The BMR Program provides for ownership and rental opportunities to low-income and moderate-income households. Currently, lower income families are served by the rental portion of the program and moderate-income families are served by the

ownership portion of the program. One of eight homes in Morgan Hill is affordable (income restricted) through the City's commitment to its affordable housing program.

The City's IHO requires housing developments of more than two units outside of Downtown to restrict fifteen percent (15%) of the total number of units to moderate income households, restricted at the top end of the Moderate-Income level (120% of Area Median Income – AMI). Housing developments in Downtown are required to restrict ten percent (10%) of their units to moderate income households, also at the top end of the Moderate-Income level.

Similarly, rental projects of more than two units are required to provide affordable units. The units are required to be provided at affordable rents for Low-Income and Very Low-Income households. Additionally, at least one-half (1/2) of the units are required to be offered exclusively to Very Low-Income Households. With City Council approval, developers are also given the option to pay a fee in-lieu of providing on-site units. The City's inclusionary requirements are codified in Chapter 14.04 of the City's Municipal Code.

On December 2, 2020, the City Council directed staff to explore options to amend the IHO to require Low, Lower Moderate- and Moderate-Income units in all new ownership developments. There were no proposed changes to the rental portion of the Program.

Requiring projects to set-aside both Low and Moderate-Income units would increase the financial cost to developers and would also proportionately increase the in-lieu fee to make it equivalent to the burden of providing on-site BMR Units. Identifying the amount of the in-lieu fee required an economic analysis.

ANALYSIS:

The Average Median income (AMI) of Santa Clara County has continued to increase substantially (see AMI table attached). To expand the City's affordable housing program and to specifically deepen the overall level of affordability for the for-sale inclusionary units, City staff retained Keyser Marston Associates, Inc. (KMA) to evaluate:

1. The additional financial cost to new for-sale residential projects to provide the proposed deeper levels of on-site affordable units; and
2. Changes to current in-lieu fee levels that would approximate the cost of providing the proposed deeper levels of on-site affordable units.

The report is attached and summarizes the preliminary findings.

At the request of the City, KMA describes two alternatives. Under the first alternative, the Moderate-Income category would be stratified into two sub-categories, with 50% of the units available at prices affordable to Median Income households. Under the second alternative, the inclusionary requirement would include a component of Low-income units as well as a lower price structure for Moderate-income units.

Based on KMA's review of the case study projects and the analysis described above that was intended to deepen affordability, KMA analyzed two alternatives referred to as Alternative A and B.

Alternative A consists of a stratified Moderate-Income with two sub-categories, one with 50% of the units available at prices affordable to Median Income households with a blended level of affordability with an average of 100% of the AMI. Currently, the City's inclusionary program creates homes that are affordable to households earning 120% of AMI. To deepen the level of affordability of ownership units, the City could amend the IHO to require inclusionary homes be offered at prices based on 90% of the AMI (which would be affordable to households earning up to 100% of the AMI) and 110% of the AMI (which would be affordable to households earning up to 120% of the AMI). The blended average level of affordability would average 100% of the AMI.

Alternative B the inclusionary requirement would include a component of Low-income units as well as a lower price structure for Moderate-income units. The blended average level of affordability would approximate 90% of the AMI and could have an adverse impact on the level of housing construction in the City.

In addition to Alternatives A and B, KMA recommended considering the establishment of two different In-Lieu fee rates, one for Townhomes/Condominiums and one for *large* Single Family Detached homes. The two fees would address the significant difference in unit size and corresponding prices between the traditional single family detached homes, the attached condominiums, and townhomes. This would result in a modification to the fee schedule so that the large single family detached projects are subject to a higher in-lieu fees.

KMA also recommended the revision of fee levels to encourage inclusionary units rather than payment of in-lieu fees. To encourage developers to build on-site affordable units rather than request to pay an in-lieu fee, increasing higher fees than the cost of providing on-site units is one approach to incentivizing the construction of units. To achieve that objective, the in-lieu fees would be at the upper end of the ranges established by the analysis. Please see attached report for more detailed analysis.

Desired Level of Inclusionary Requirement	Detached Units	Attached Townhomes and Condos
Downtown Project In-lieu Fee Schedule, Per SF		
Alternative A (Avg. Blended Price at 100% AMI)	\$23.00 vs. current \$13.20	\$13.50 vs. current \$13.20
Alternative B Avg. Blended Price at 90% AMI)	Not Recommended	
Outside of Downtown Project In-Lieu Fee Schedule		

Alternative A (Avg. Blended Price at 100% AMI)	\$34.50 vs. current \$19.70	\$20.30 vs. current \$19.70
Alternative B Avg. Blended Price at 90% AMI)	Not Recommended	

In addition to the KMA analysis, staff has been hosting a number of housing workshop and meetings with housing developers to better understand the City's housing needs, challenges and opportunities as well as understand the implications of such policy modifications to the development community's ability to deliver projects. At the City Council on June 2, 2021 Housing Workshop, the Council discussed the need to meet the City's RHNA numbers so that the City would not be subject to SB35 which allows projects to be constructed in a streamlined fashion with a ministerial review process, no CEQA review and no discretionary local entitlements. The City has been doing fairly well in meeting its required RHNA allocation but for the Very Low-Income units which are more difficult to obtain. If a goal of the City is to produce these *hard to get* Very Low-Income units earlier in the RHNA cycle, then the City may want to revise the IHO to create incentives for developers or amend the fee structure to encourage the creation of these units or incentivize a payment-in-lieu so the City can construct these units.

The original intent of the IHO revisions was to simply deepen affordability of the BMR portfolio and make the City's affordable housing stock more accessible. However, the goals of the program modifications are evolving to also solve for the generation of Very Low-Income units to position the City to meet the RHNA requirements as early as feasible. The intent of this workshop is to get feedback from the Planning Commission, the community and the housing development partners to explore how to best modify the IHO to meet the City's affordable housing goals.

COMMUNITY ENGAGEMENT

The team held two developer workshops on May 24, 2021, to obtain feedback from the development community. This Planning Commission workshop will provide an additional opportunity to obtain feedback.

This is an informational Item only. Staff does not yet have a recommendation. Once revisions are completed, an amendment to the IHO will be prepared and publicly noticed. The Ordinance amendment is tentatively scheduled for review with the Planning Commission in August 2021, with the City Council to tentatively consider the recommendation of the Planning Commission in September 2021.

CEQA (California Environmental Quality Act):

This is not a project as defined in Section 15378 of the State CEQA guidelines because it is an administrative activity that does not involve any commitment to any specific project that may result in physical environmental impacts and will not result in direct or indirect physical changes in the environment.

ZONING ORDINANCE AND GENERAL PLAN CONSISTENCY:

The Housing Element of the City's General Plan implements the established policy of

the State of California that each community should foster an adequate supply of housing for persons at all economic levels. On February 18, 2015, the City Council approved the City's Housing Element, a chapter of the General Plan which includes strategies to build new housing to meet the full range of future community housing needs, including affordable and accessible housing.

LINKS/ATTACHMENTS:

1. Keyser Marston Associates, Evaluation of IHO
2. Presentation
3. 2021 Income Limits



KEYSER MARSTON ASSOCIATES

DRAFT EVALUATION OF PROPOSED MODIFICATIONS TO AFFORDABLE HOUSING INCLUSIONARY REQUIREMENTS

Prepared for
City of Morgan Hill

Prepared by
Keyser Marston Associates, Inc.

May 7, 2021

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I. INTRODUCTION

The City of Morgan Hill is considering modifying its affordable housing inclusionary program to deepen the overall level of affordability of for-sale inclusionary units. The City's current program requires new for-sale residential projects to either: 1) restrict 10% or 15%¹ of total units at affordable sales prices to Moderate-Income households; or 2) pay a fee in-lieu of providing on-site units. Two alternative program changes are being considered. Under the first alternative, the Moderate-Income category would be stratified into two sub-categories, with 50% of the units available at prices affordable to Median Income households. Under the second alternative, the inclusionary requirement would include a component of Low-income units as well as a lower-price structure for Moderate-income units.

The City's inclusionary requirements are codified in Chapter 14.04 of the City's municipal code.

The City has retained Keyser Marston Associates, Inc. (KMA) to evaluate:

1. The additional financial cost to new for-sale residential projects to provide the proposed deeper levels of on-site affordable units; and
2. Changes to current in-lieu fee levels that would approximate the cost of providing the proposed deeper levels of on-site affordable units.

This report summarizes the preliminary findings of our evaluation.

¹ Projects in Downtown Morgan Hill are required to restrict 10% of their units as Moderate-Income units while projects located outside of the Downtown, are required to restrict 15% of their units as Moderate-Income units.

II. ANALYSIS

A. Summary of the Current Affordable Housing Inclusionary Requirements

The eligibility of households to purchase inclusionary units is based on the annual income of households relative to the income limits that are annually published by the State Department of Housing and Community Development (HCD). Current maximum limits by household size and by level of affordability are provided in the following chart.

HCD Income Limits April 2021								
Household Size	1	2	3	4	5	6	7	8
Extremely Low	\$34,800	\$39,800	\$44,750	\$49,700	\$53,700	\$57,700	\$61,650	\$65,650
Very Low	\$58,000	\$66,300	\$74,600	\$82,850	\$89,500	\$96,150	\$102,750	\$109,400
Low	\$82,450	\$94,200	\$106,000	\$117,750	\$127,200	\$136,600	\$146,050	\$155,450
Median	\$105,900	\$121,050	\$136,150	\$151,300	\$163,400	\$175,500	\$187,600	\$199,700
Moderate	\$127,100	\$145,250	\$163,400	\$181,550	\$196,050	\$210,600	\$225,100	\$239,650

The City's current program serves Moderate-Income households. The maximum annual eligible household income ranges from \$127,100 for a household of one (1) person to \$239,650 for a household with eight (8) people. As shown, a 4-person household can earn up to \$181,550 per year and be eligible for a Moderate-income inclusionary unit.

The maximum prices that can be charged for inclusionary units are calculated at the upper end of the range permitted for Moderate-income households. Prices are calculated based on:

- household incomes at 120% of the Area Median income adjusted for household size, which is the ceiling for qualifying as Moderate-income;
- permitted expenditures on housing costs equal to 35% of income, and
- an assumed household size equal to the number of bedrooms plus one.

The calculation of allowable current maximum prices is detailed in Appendix Tables A-1 through A-7. The current maximum prices for inclusionary units are as follows:

Maximum Home Prices of Inclusionary Units: Current Program							
			Number of Bedrooms In Unit				
			2	3	4	5	6
% of Units Set Aside							
Projects Located Outside of Downtown							
Upper End of Moderate Income (120% of AMI)	15%		\$581,842	\$651,001	\$704,718	\$758,643	\$820,738
Projects Located in Downtown							
Upper End of Moderate Income (120% of AMI)	10%		\$581,842	\$651,001	\$704,718	\$758,643	\$820,738

Source: City of Morgan Hill

In summary, new for-sale residential projects located within downtown must restrict ten percent (10%) of their units for sale at affordable prices to Moderate -Income households. New projects located outside of downtown are required to restrict fifteen percent (15%) of their units for sale at affordable prices to Moderate-Income households.

The City's ordinance provides for some projects with approval by the City Council to make a payment in-lieu of providing on-site inclusionary units. The current in-lieu fee schedule is \$19.70 per habitable square foot for for-sale projects outside of downtown and \$13.20 per habitable square foot for projects located within downtown.

Current Affordable Housing In-Lieu Fee for Ownership Projects	
Projects Located Outside of Downtown	\$19.70 per square foot
Projects Located in Downtown	\$13.20 per square foot

B. Summary of Proposed Alternative Affordable Inclusionary Requirements

As proposed, the overall inclusionary requirement of 10% for downtown projects and 15% for projects outside of downtown would not change but affordability would be deepened. Under Alternative A, two bands of Moderate Income units would be established. The first band would be priced to be affordable to households that earn up to 100% of the Area Median Income (AMI), adjusted for household size. The second band would be targeted to households that earn between 110% and 120% of the AMI. Projects located outside of the Downtown would be required to set-aside 7.5% of units as "Median Income" units and 7.5% as Moderate-Income units. Projects located within the Downtown, would be required to set-aside 5% of units as Median Income units and 5% as Moderate-Income units. Median-income units would be priced at 90% of the AMI, and Moderate-Income units would be priced at 110% of AMI Under Alternative A, the blended price of Moderate-Income units would decline from the current level of 120% of AMI to 100% of AMI.

Under Alternative B, affordability would be further enhanced by adding a Low-Income component to the inclusionary requirement. Projects outside of Downtown would be required to restrict 5% of their units to Low-income households, 5% to Median-income households and 5% to Moderate-Income households. As shown in the following chart, projects within the downtown would be required to restrict 5% of their units to Low-Income households and 5% of their units to Moderate-Income households. Low-Income units would be priced at 70% of the Area Median Income (AMI), Median-income units would be priced at 90% of the AMI, and Moderate-Income units would be priced at 110% of AMI. The objective of establishing these multiple tiers of affordability is to provide housing that is affordable to Low-income households as well as households that are within the Moderate-Income category, but who earn less than 120% of the Area Median Income. Under Alternative B, the blended average level of affordability of the inclusionary units would deepen from the current program level of 120% of AMI to 90% of AMI.

Both alternatives would significantly reduce the prices of inclusionary units. As shown in the following chart, under Alternative A, the blended average price for 3-bedroom inclusionary units located outside of downtown would be \$521,600, which is approximately \$129,000 less than the current maximum price for a Moderate-income three-bedroom unit. Under Alternative B, the blended price for 3-bedroom inclusionary units located outside of Downtown would approximate \$435,300, which is \$216,000 less than the current maximum price for a Moderate-income three-bedroom unit. Low-income units would range in price from \$232,500 for a two-bedroom unit to \$339,400 for a six-bedroom unit.

Maximum Home Prices of Inclusionary Units: Program Alternatives						
% of Units Set-Aside	Number of Bedrooms In Unit					
	2	3	4	5	6	
	Number of Bedrooms In Unit					
2	3	4	5	6		
Alternative A - Inclusion of Median Priced Units						
Projects Located Outside of Downtown						-
Total % of Inclusionary Units	15%					-
Median Income (90% AMI)	7.5%	\$407,169	\$456,891	\$495,084	\$533,486	\$580,057
Moderate Income (110% AMI)	7.5%	\$523,618	\$586,298	\$634,840	\$683,591	\$740,511
Blended Average (100% AMI)	15%	\$465,394	\$521,595	\$564,962	\$608,539	\$660,284
Projects Located in Downtown						-
Total % of Inclusionary Units	10%					-
Median Income (90% AMI)	5%	\$407,169	\$456,891	\$495,084	\$533,486	\$580,057
Moderate Income (110% AMI)	5%	\$523,618	\$586,298	\$634,840	\$683,591	\$740,511
Blended Average (100% AMI)	10%	\$465,394	\$521,595	\$564,962	\$608,539	\$660,284
Alternative B - Inclusion of Median and Low Income Units						
Projects Located Outside of Downtown						
Low Income (70% AMI)	5%	\$232,495	\$262,781	\$285,450	\$308,328	\$339,375
Median Income (90% AMI)	5%	\$407,169	\$456,891	\$495,084	\$533,486	\$580,057
Moderate Income (110% AMI)	5%	\$523,618	\$586,298	\$634,840	\$683,591	\$740,511
Blended Average (90% AMI)	15%	\$387,761	\$435,323	\$471,791	\$508,468	\$553,314
Projects Located in Downtown						
Low Income (70% AMI)	5%	\$232,495	\$262,781	\$285,450	\$308,328	\$339,375
Moderate Income (110% AMI)	5%	\$523,618	\$586,298	\$634,840	\$683,591	\$740,511
Blended Average (90% AMI)	10%	\$378,057	\$424,540	\$460,145	\$495,960	\$539,943

The income limits for eligible households would change to correspond to the new pricing tiers. As shown in the following chart, the maximum income for households to qualify for Low-income units would range from \$82,450 for a household of one to \$155,450 for a household with eight

people. The income limits for Median price units would range from \$105,900 for a household of one to \$199,700 for a household of eight (8).

HCD Income Limits April 2021								
Household Size	1	2	3	4	5	6	7	8
Low	\$82,450	\$94,200	\$106,000	\$117,750	\$127,200	\$136,600	\$146,050	\$155,450
Median	\$105,900	\$121,050	\$136,150	\$151,300	\$163,400	\$175,500	\$187,600	\$199,700
Moderate	\$127,100	\$145,250	\$163,400	\$181,550	\$196,050	\$210,600	\$225,100	\$239,650

C. Residential Prototypes/Case Studies

To evaluate the economics of providing inclusionary housing, we have examined the profiles of two data bases. The first data base is comprised of seven (7) residential developments that have recently been or are currently marketing units in Morgan Hill. Five of the projects are attached townhome developments and two are detached single family developments. The projects are detailed in Table 3 and summarized in the following chart:

Development	Type	Avg. Unit Size	Units in Marketing Phase ²	Average Home Price
Madison Gate	Townhome	1,783	50	\$779,000
Veneto- Attached	Townhome	1,981	60	\$773,000
The Gables	Townhome	1,718	37	\$7795,990)
Los Colinas	Townhomes	1,906	32	\$961,333)
Valencia	Townhomes	2,036	84	\$934,333
Veneto – Detached	Detached SF	2,791	14	\$1,019,715
Borello Ranch Estates	Detached	4,477	107	\$2,346,852
Average, Townhomes		1,885		\$848,911
Average, Detached		3,364		\$1,683,014
Average, All projects		2,385		\$1,087,226

The second data base consists of all newly constructed market rate residential units in Morgan Hill that have been sold since 2019, using data published by Corelogic. We identified 142 new units that have been sold since 2019. The sales are provided in Table 4 and summarized in the following chart:

² Per Real Estate Economics. The unit count of the marketing phase is generally consistent with the unit count identified on the recorded maps, with the exception of Madrone Plaza II.

Sales of Newly constructed Homes	Number of Units	Avg. Unit Size	Average Bedroom Count	Average Home Price
Single Family	133	3,053	4.16	\$1,474,406
Condominiums	9	1,987	3.75	\$817,438
Total	142	2,986	4.13	\$1,432,767

The two data sets are very consistent with respect to the sizes of traditional detached units. They average over 3,000 square feet and are priced, on average, above \$1.5 million. Many are on very large lots. Despite the large sizes of these homes, the price per square foot ranges from \$455 to \$571 per square foot, which is equal to the price per square foot of smaller units. The townhome units are also relatively large, with all units containing at least 3 bedrooms and the average bedroom count at 3.5 to 3.75 bedrooms per unit. Townhome prices are typically priced in the \$850,000 range, with prices per square foot ranging from \$395 to \$475.

Based on information provided by City staff, many projects are requesting to meet their affordable housing obligations by paying an in-lieu fee. This is to be expected given the large unit sizes of the traditional single-family homes and the price differential between market rate prices that exceed \$1.5 million and Moderate-income prices in the \$650,000 to \$700,000 range (in 2020). The attached townhomes are more likely to provide on-site inclusionary units, which is consistent with expectations given that the unit sizes are smaller and the differential between market rate prices and the deed restricted Moderate-income prices are in the range of \$200,000 to \$300,000 per unit (in 2020).

D. Analysis of Prototypes

Using the case study project data and the sales data on new homes, we have developed hypothetical projects to estimate the sales revenues, development costs, profit margins and impact of providing inclusionary units reflecting the City's current requirements and proposed requirements under both Alternative A and Alternative B. Similar to the methodology that was used to set the current in-lieu fee schedule, the cost to the developer of providing on-site affordable units is calculated as the difference between the net potential profits generated by a 100% market rate project and the estimated profits generated by the project with onsite inclusionary affordable units. The hypothetical projects that have been evaluated consist of the following

	Existing Inclusionary Requirements		Proposed Requirements	
	Within Downtown	Outside of Downtown	Within Downtown	Outside of Downtown
Case Study Townhome Project	✓	✓	✓	✓
Case Study Detached Project	✓	✓	✓	✓
Average of All Case Study Projects	✓	✓	✓	✓
Condominium project reflecting new home sales data	✓	✓	✓	✓
Detached project reflecting new home sales data	✓	✓	✓	✓
Blended project reflecting new home sales data	✓	✓	✓	✓

The analysis of each prototype project is provided in Table 5 through 40. For purposes of this analysis, it has been assumed that the market rate projects achieve, on average, a 10% profit margin, which yields an estimate of market rate unit development costs approximating 90% of unit sales prices. Based on available data, it has been assumed that the average size of inclusionary units within attached product types approximates 90% of the size of market rate units. The average size of inclusionary units within large, detached single family developments have historically approximated 75% of the average size of the market rate units, which has been assumed in this analysis. The per square foot cost of developing the affordable units has been estimated based on the per square foot cost of the market rate units with an adjustment for the smaller size of the affordable units. A 3% transaction fee has been included in the cost of developing/selling inclusionary units.

III. FINDINGS AND RECOMMENDATIONS

A. Downtown Projects

The findings of the analyses for the “Downtown” scenarios are presented in Table 1. As shown, there is a significant cost differential between providing inclusionary attached townhome / condominium units and providing inclusionary large, detached units. This differential is due to the fact that restricted home prices are based on bedroom count and are the same for both townhomes and large detached homes, regardless of square footage. The market rate price of a large, detached home, however, is significantly higher than the price of a smaller townhome with the same bedroom count. As a result, the price differential between a large market rate home and an income-restricted home is much larger than the price differential between a market rate townhome and an income-restricted home with comparable number of bedrooms. The cost of providing the deeper levels of affordable housing under the proposed inclusionary alternatives is also significantly higher than the cost of meeting the current Moderate-income requirements.

Per Square Foot Cost of Providing Inclusionary Units: Within the Downtown		
	<i>Detached Units</i>	<i>Attached Townhomes and Condos</i>
Cost of Current Inclusionary Requirements	\$16.57 to \$19.33	\$4.00 to \$7.00
Cost of Alternative A Inclusionary Requirements (Blended Avg. Affordable Price at 100% of AMI)	\$21.07 to \$22.97	\$10.82 to \$13.50
Cost of Alternative B Inclusionary Requirements (Blended Avg. Affordable Price at 90% of AMI)	\$24.44 to \$25.69	\$15.84 to \$18.69

B. Projects Located Outside of Downtown

The findings of the analyses for the “Outside of Downtown” scenarios are presented in Table 2. Similar to the findings of the “Downtown Scenarios”, there is a significant cost differential between providing inclusionary attached townhome / condominium units and providing inclusionary large, detached units. The cost of providing the deeper levels of affordable housing under the proposed inclusionary alternatives is also significantly higher than the cost of meeting the current Moderate-income requirements. Given that projects outside of downtown have a 15% inclusionary requirement compared with a 10% requirement for projects within downtown, the cost of meeting the inclusionary requirements for projects outside of downtown is significantly higher than the cost for projects within downtown.

Per Square Foot Cost of Providing Inclusionary Units: Outside of Downtown		
	<i>Detached Units</i>	<i>Attached Townhomes and Condos</i>
Cost of Current Inclusionary Requirements	\$24.86 to \$29.00	\$6.00 to \$10.00
Cost of Alternative A Inclusionary Requirements (Blended Avg. Affordable Price at 100% of AMI)	\$31.60 to \$34.45	\$16.23 to \$20.25
Cost of Alternative B Inclusionary Requirements (Blended Avg. Affordable Price at 90% of AMI)	\$36.09 to \$38.08	\$22.92 to \$27.17

C. Accessory Dwelling Units Are Not Comparable to Inclusionary Units

The City's current program permits inclusionary units to be smaller, on average, than the blended average of all market rate units within a specific project, but not less than the size of the smallest market rate unit of the same product type and bedroom count. Based on available data, inclusionary detached homes have been in the range of 1,600 to 1,800 square feet and inclusionary attached townhomes / condominiums have ranged from 1,400 to 1,600 square feet. Inclusionary units are separately owned by income eligible households. In contrast, accessory dwelling units (ADUs) typically range from 500 to 700 square feet, which makes them much smaller and less costly to build than inclusionary units. They are also not separately owned by income eligible households. Because of these differences, ADUs are not comparable to inclusionary units and cannot count toward the inclusionary unit requirement.

D. Other Jurisdictions' Inclusionary Requirements and In-lieu Fee Provisions

As shown on the following chart, the on-site inclusionary requirements of neighboring communities range from 12.5% to 15% of on-site units. Most of the programs require only Moderate-income inclusionary units. Only two jurisdictions have Low-income components. The in-lieu fee provisions are typically levied per square foot of livable area. Fees range from \$17.82 per square foot to \$125 per square foot.

City	Inclusionary Percent	Affordability Level	In-Lieu Fee**
Campbell	15%	Low and Moderate	\$34.50
Los Altos	15%	Majority Mod and some Low	TBD
Santa Clara	15%	Average 100% AMI	Detached: \$30 psf; Townhome \$25 psf; Condo: \$20 per sf
Cupertino	15%	50% Moderate, 50% Median	\$17.82 psf for detached; \$19.60 psf for small lot
San Jose*	15%	Moderate	Transitioning to \$25 per sf
Mountain View	15% general 15% to 20% for townhomes	Median for 15%; Moderate for 20%	\$54.50 per sf; \$125 per sf for townhomes
Sunnyvale	12.5%	Moderate	7% of sales price****
Palo Alto	15% < 5 acres; 20% > 5 acres	2/3 Median; 1/3 Moderate	\$77.62 psf; \$51.75 psf for attached and condos

E. Recommendations

Based on our review of the case study projects and the analysis described above, we offer the following recommendations:

1. Select Alternative A if the City Desires to Deepen the Level of Affordability of the Inclusionary Program

The City's current inclusionary program creates homes that are affordable to households earning 120% of AMI. If the City desires to serve a broader range of households and deepen the level of affordability of affordable units, we recommend that the City adopt Alternative A. Under Alternative A, inclusionary homes would be offered at prices based on 90% of the AMI (which would be affordable to households earning up to 100% of the AMI) and 110% of the AMI (which would be affordable to households earning up to 120% of the AMI). The blended average level of affordability would average 100% of the AMI.

Under Alternative B, the blended average level of affordability would approximate 90% of the AMI. To our knowledge, the inclusionary programs of other jurisdictions do not average less than 100% of AMI. If the proposed changes are adopted, Morgan Hill could have the deepest inclusionary requirement within the County, which could have an adverse impact on the level of housing construction in the City.

2. Consider Establishing Two In-Lieu Fee Rates: One Rate for Townhomes / Condominiums and One Rate for Large Single Family Detached Homes

Given the significant difference in unit size and corresponding price between the traditional single family detached homes and the attached condominiums and townhomes, we recommend that the City consider modifying the fee schedule so that the large single family detached projects are subject to a different in-lieu fee schedule than attached townhomes and condominiums. The in-lieu fees for large single family detached homes should be higher than the in-lieu fees charged for attached townhomes and condominiums.

3. Fee Levels to Encourage Inclusionary Units Rather than Payment of In-Lieu Fees

It is our understanding that the City would like to encourage developers to build on-site affordable units rather than request to pay an in-lieu fee. Charging somewhat higher fees than the cost of providing on-site units is one approach to incentivizing the construction of units. To achieve that objective, we would recommend that the in-lieu fees be at the upper end of the ranges established by the analysis, as follows:

Desired Level of Inclusionary Requirement	Detached Units	Attached Townhomes and Condos
<i>Downtown Project In-lieu Fee Schedule, Per SF</i>		
Current Program (Prices at 120% AMI)	\$19.30	\$7.00
Alternative A (Avg. Blended Price at 100% AMI)	\$23.00	\$13.50
Alternative B Avg. Blended Price at 90% AMI)	Not Recommended	
<i>Outside of Downtown Project In-Lieu Fee Schedule</i>		
Current Program (Prices at 120% AMI)	\$29.00	\$10.00
Alternative A (Avg. Blended Price at 100% AMI)	\$34.50	\$20.30
Alternative B Avg. Blended Price at 90% AMI)	Not Recommended	

Table 1

Summary of Cost of Providing 10% Affordable Inclusionary Units: Projects Located in Downtown Morgan Hill
City of Morgan Hill

	Case Study Indicators					
	Newly Built Units in Morgan Hill, Sold from 2019 -2021			Sample of Seven (7) Current Projects		
	All Units	Non Condo Units	Condo Units	All Units	Detached Units	Attached Townhomes
Average Size of Market Rate Unit	2,986	3,053	1,987	2,385	3,634	1,885
Average Bedroom Count	4.13	4.16	3.75	3.61	3.64	3.5
Average Market Rate Price	\$1,432,767	\$1,474,406	\$817,438	\$1,087,226	\$1,683,014	\$848,911
Price Per SF	\$480	\$483	\$411	\$456	\$463	\$450
Assumed Size of Inclusionary Unit	2,269	2,290	1,788	2,051	2,726	1,697
Current Inclusionary Requirement: 10% Moderate (120% of AMI)						
Avg. Price of Affordable Units	\$711,728	\$713,346	\$691,289	\$683,768	\$685,380	\$677,860
On-Site Cost (Foregone Profit)						
Per Affordable Unit	\$490,000	\$506,000	\$80,000	\$340,000	\$703,000	\$120,000
Per SF, all Units	\$16.34	\$16.57	\$4.00	\$14.19	\$19.33	\$7.00
Alternative A Inclusionary Requirement: 5% Median (90% AMI) and 5% Moderate (110% AMI)						
Avg. Price of Affordable Units	\$570,627	\$571,934	\$554,120	\$548,049	\$549,350	\$543,278
On-Site Cost (Foregone Profit)						
Per Affordable Unit	\$620,000	\$640,000	\$210,000	\$470,000	\$830,000	\$250,000
Per SF, all Units	\$20.92	\$21.07	\$10.82	\$19.71	\$22.97	\$13.50
Alternative B Inclusionary Requirement: 5% Low (70% AMI) and 5% Moderate (110% AMI)						
Avg. Price of Affordable Units	\$464,801	\$465,875	\$451,244	\$446,259	\$447,327	\$442,342
On-Site Cost (Foregone Profit)						
Per Affordable Unit	\$730,000	\$750,000	\$310,000	\$570,000	\$930,000	\$350,000
Per SF, all Units	\$24.36	\$24.44	\$15.84	\$23.85	\$25.69	\$18.69

Table 2

Summary of Cost of Providing 15% Affordable Inclusionary Units: Projects Located Outside of the Downtown
City of Morgan Hill

	Case Study Indicators					
	Newly Built Units in Morgan Hill, Sold from 2019 -2021			Sample of Seven (7) Current Projects		
	All Units	Non Condo Units	Condo Units	All Units	Detached Units	Attached Townhomes
Average Size of Market Rate Unit	2,986	3,053	1,987	2,385	3,634	1,885
Average Bedroom Count	4.13	4.16	3.75	3.61	3.64	3.5
Average Market Rate Unit Price	\$1,432,767	\$1,474,406	\$817,438	\$1,087,226	\$1,683,014	\$848,911
Price Per SF	\$480	\$483	\$411	\$456	\$463	\$450
Assumed Size of Inclusionary Unit	2,269	2,290	1,788	2,051	2,726	1,697
Current Inclusionary Requirement: 15% Moderate (120% of AMI)						
Avg. Price of Affordable Units	\$711,728	\$713,346	\$691,289	\$683,768	\$685,380	\$677,860
On-Site Cost (Foregone Profit)						
Per Affordable Unit	\$490,000	\$506,000	\$80,000	\$340,000	\$703,000	\$120,000
Per SF, all Units	\$24.51	\$24.86	\$6.00	\$21.29	\$29.00	\$10.00
Alternative A Requirement: 0% Low (70% AMI), 7.5% Median (90% AMI), and 7.5% Moderate (110% AMI)						
Avg. Price of Affordable Units	\$570,627	\$571,934	\$554,120	\$548,049	\$549,350	\$543,278
On-Site Cost (Foregone Profit)						
Per Affordable Unit	\$620,000	\$640,000	\$210,000	\$470,000	\$830,000	\$250,000
Per SF, all Units	\$31.39	\$31.60	\$16.23	\$29.57	\$34.45	\$20.25
Alternative B Requirement: 5% Low (70% AMI), 5% Median (90% AMI), and 5% Moderate (110% AMI)						
Avg. Price of Affordable Units	\$476,559	\$477,660	\$462,674	\$457,569	\$458,663	\$453,557
On-Site Cost (Foregone Profit)						
Per Affordable Unit	\$720,000	\$730,000	\$300,000	\$560,000	\$920,000	\$340,000
Per SF, all Units	\$35.97	\$36.09	\$22.92	\$35.09	\$38.08	\$27.17

Table 3
Morgan Hill Residential Projects Marketed in 2020

Name	Developer	Product Type	Avg. Price	Avg. SF	Bedroom Count	Homes offered	Price Per SF
Madison Gate	Tri Pointe Homes	Attached Townhome	\$779,900	1,783	3	50	\$437
	Plan A		\$749,900	1,639	3		\$458
	Plan B		\$749,900	1,771	3		\$423
	Plan C		\$834,900	1,941	3		\$430
Veneto - Detached	Van Daele Homes	Detached	\$1,019,175	2,791	3	14	\$365
	Plan A		\$1,028,350	2,742	3		\$375
	Plan B		\$1,010,000	2,841	3		\$356
Veneto - Attached	Van Daele Homes	Attached Townhome	\$773,000	1,981	3.7	60	\$390
	Plan A		\$683,000	1,559	3		\$438
	Plan B		\$785,000	1,986	4		\$395
	Plan C		\$851,000	2,398	4		\$355
The Gables	Van Daele Homes	Attached Townhome	\$795,990	1,718	3.3	37	\$463
	Plan A		\$729,990	1,409	3		\$518
	Plan B		\$808,990	1,647	3		\$491
	Plan C		\$849,990	2,100	4		\$405
Borello Ranch Estates	Toll Brothers	Detached	\$2,346,852	4,477	4.3	107	\$524
	Plan A		\$1,975,995	3,401	4		\$581
	Plan B		\$2,031,995	3,595	4		\$565
	Plan C		\$2,340,995	4,057	4		\$577
	Plan D		\$2,159,995	4,167	3		\$518
	Plan E		\$2,395,995	4,266	4		\$562
	Plan F		\$2,765,995	5,921	6		\$467
	Plan G		\$2,756,995	5,932	5		\$465
Los Colinas	ividend Home	Attached Townhome	\$961,333	1,906	4	32	\$504
	Plan A		\$869,000	1,795	4		\$484
	Plan B		\$895,000	1,872	4		\$478
	Plan C		\$1,120,000	2,052	4		\$546
Valencia	ividend Home	Attached Townhome	\$934,333	2,036	4	84	\$459
	Plan A		\$903,000	1,802	4		\$501
	Plan B		\$935,000	1,870	4		\$500
	Plan C		\$965,000	2,438	4		\$396
Average							
All Projects			\$1,087,226	2,385	3.61		\$456
3 Beds			\$972,781	2,191	3		\$444
4 Beds			\$1,301,382	2,587	4		\$503
5 Beds			\$2,756,995	5,932	5		\$465
6 Beds			\$2,765,995	5,921	6		\$467
Attached Units			\$848,911	1,885	3.50		\$450
3 Beds			\$824,379	1,944	3		\$424
4 Beds			\$908,110	2,035	4		\$446
Detached Units			\$1,683,014	3,634	3.64		\$463
3 Beds			\$1,459,782	3,213	3		\$454
4 Beds			\$2,186,245	3,830	4		\$571
5 Beds			\$2,756,995	5,932	5		\$465
6 Beds			\$2,765,995	5,921	6		\$467

Table 4
Sales of New Homes in Morgan Hill in 2019 through 2021

source: Corelogic

Address	Zip	Sale Date	Sale Price	Type	# Bed	SF	Lot SF	Year Built	Price Per SF
17065 Saint Brendan Loop	95037	01/14/2021	\$1,265,000	Sfr	3	1877	5,647	2018	\$674
1300 Red Bird Ln	95037	03/09/2021	\$1,342,500	Sfr	3	2383	5,862	2018	\$563
1304 Rainbow Crow Ln	95037	02/23/2021	\$1,335,000	Sfr	3	2383	6,481	2018	\$560
85 Via Ravenna	95037	03/01/2021	\$831,000	Sfr	3	1409	1,417	2019	\$590
17089 Saint Brendan Loop	95037	06/27/2019	\$694,500	Sfr	3	1877	4484	2018	\$370
17105 Saint Brendan Loop	95037	10/29/2019	\$964,500	Sfr	3	1877	4490	2018	\$514
16815 Murphy Ave	95037	08/02/2019	\$1,160,000	Sfr	3	2841	6088	2018	\$408
18730 Corte Paterna	95037	02/01/2019	\$1,962,000	Sfr	3	4168	12338	2019	\$471
51 Hencken Oaks Ln	95037	09/04/2020	\$785,000	Sfr	3	1562	2180	2019	\$503
47 Hencken Oaks Ln	95037	09/04/2020	\$766,000	Sfr	3	1562	1726	2019	\$490
43 Hencken Oaks Ln	95037	10/14/2020	\$759,000	Sfr	3	1562	1701	2019	\$486
39 Hencken Oaks Ln	95037	10/01/2020	\$779,000	Sfr	3	1562	2189	2019	\$499
35 Hencken Oaks Ln	95037	12/17/2020	\$728,000	Sfr	3	1562	2193	2019	\$466
31 Hencken Oaks Ln	95037	10/09/2020	\$760,000	Sfr	3	1562	1709	2019	\$487
27 Hencken Oaks Ln	95037	10/23/2020	\$760,000	Sfr	3	1562	1730	2019	\$487
23 Hencken Oaks Ln	95037	09/28/2020	\$779,000	Sfr	3	1562	2076	2019	\$499
41 W Dunne Ave	95037	09/28/2020	\$699,000	Sfr	3	1223	1890	2019	\$572
45 W Dunne Ave	95037	09/16/2020	\$699,000	Sfr	3	1223	1597	2019	\$572
15513 Monterey St	95037	03/09/2020	\$836,000	Sfr	3	1649	2365	2019	\$507
65 Via Ravenna	95037	11/20/2019	\$690,500	Sfr	3	1409	1412	2019	\$490
64 Via Ravenna	95037	01/02/2020	\$677,500	Sfr	3	1409	1413	2019	\$481
84 Via Ravenna	95037	12/21/2019	\$772,000	Sfr	3	1649	2164	2019	\$468
15531 Salerno Ln	95037	10/14/2020	\$850,000	Sfr	3	1649	2495	2019	\$515
1295 Bloom Ln	95037	11/24/2020	\$789,000	Condominium	3	1559	2545	2020	\$506
1235 Canopy Ln	95037	08/21/2019	\$689,500	Condominium	3	1559	2545	2020	\$442
225 Valencia Ave	95037	03/09/2021	\$888,000	Condominium	4	2000		2018	\$444
17073 Saint Brendan Loop	95037	01/07/2019	\$1,150,000	Sfr	4	2500	7900	2018	\$460
17097 Saint Brendan Loop	95037	02/14/2019	\$1,032,500	Sfr	4	1952	4869	2018	\$529
17113 Saint Brendan Loop	95037	10/15/2019	\$975,000	Sfr	4	1952	4876	2018	\$499
17121 Saint Brendan Loop	95037	11/26/2019	\$1,051,500	Sfr	4	2500	5712	2018	\$421
335 Calle Del Rey	95037	04/08/2019	\$935,000	Sfr	4	1870	4288	2018	\$500
295 Calle Del Rey	95037	04/08/2019	\$929,000	Sfr	4	2051	3669	2018	\$453
275 Calle Del Rey	95037	04/08/2019	\$919,500	Sfr	4	2054	3677	2018	\$448
221 Vereda La Paz	95037	04/08/2019	\$939,500	Sfr	4	1870	4146	2018	\$502
201 Vereda La Paz	95037	04/08/2019	\$898,000	Sfr	4	1870	3995	2018	\$480
161 Vereda La Paz	95037	06/10/2019	\$925,000	Sfr	4	1870	5201	2018	\$495
270 Calle Del Rey	95037	04/08/2019	\$1,150,000	Sfr	4	2438	6071	2018	\$472
260 Calle Del Rey	95037	04/08/2019	\$959,000	Sfr	4	2051	4631	2018	\$468
240 Calle Del Rey	95037	04/08/2019	\$920,000	Sfr	4	1870	4165	2018	\$492
15625 Rome Ave	95037	08/06/2019	\$790,000	Condominium	4	2009	1333	2018	\$393
215 Valencia Ave	95037	03/25/2019	\$695,000	Condominium	4	2199	1333	2018	\$316
225 Valencia Ave	95037	03/26/2019	\$631,000	Condominium	4	2000	1333	2018	\$316
235 Valencia Ave	95037	09/27/2019	\$840,000	Condominium	4	2199	1333	2018	\$382
265 Valencia Ave	95037	03/13/2020	\$795,000	Condominium	4	2009	1333	2018	\$396
15600 Santorini Ln	95037	03/26/2019	\$734,500	Condominium	4	2426	1371	2018	\$303
15610 Santorini Ln	95037	07/30/2019	\$715,500	Condominium	4	2199	1333	2018	\$325
15640 Santorini Ln	95037	03/29/2019	\$850,000	Condominium	4	2000	1333	2018	\$425
15660 Santorini Ln	95037	10/14/2019	\$774,500	Condominium	4	2426	1374	2018	\$319
15521 Monterey St	95037	11/02/2020	\$899,000	Sfr	4	2099	2354	2018	\$428
15509 Monterey St	95037	01/30/2020	\$805,500	Sfr	4	2106	2405	2018	\$382
110 Lucca Ave	95037	12/02/2020	\$920,000	Sfr	4	2099	2279	2018	\$438
17900 Calle Granada	95037	04/08/2019	\$1,190,000	Sfr	4	2438	5930	2019	\$488
205 Calle Del Rey	95037	04/08/2019	\$1,215,000	Sfr	4	2438	7221	2019	\$498

Table 4
Sales of New Homes in Morgan Hill in 2019 through 2021

source: Corelogic

Address	Zip	Sale Date	Sale Price	Type	# Bed	SF	Lot SF	Year Built	Price Per SF
17810 Calle Granada	95037	04/08/2020	\$938,000	Sfr	4	2054	4013	2019	\$457
17800 Calle Granada	95037	04/08/2019	\$918,000	Sfr	4	1796	4232	2019	\$511
17895 Calle Granada	95037	04/08/2019	\$1,217,500	Sfr	4	2438	6068	2019	\$499
17865 Calle Granada	95037	04/08/2019	\$1,085,000	Sfr	4	1796	4110	2019	\$604
17855 Calle Granada	95037	04/08/2019	\$1,195,000	Sfr	4	2438	5600	2019	\$490
1350 Golden Eagle Ln	95037	04/22/2019	\$1,325,000	Sfr	4	2424	8845	2019	\$547
1340 Golden Eagle Ln	95037	05/29/2019	\$1,480,000	Sfr	4	3091	9209	2019	\$479
18740 Corte Paterna	95037	03/28/2019	\$1,884,500	Sfr	4	3402	16750	2019	\$554
18720 Corte Paterna	95037	01/02/2019	\$1,788,500	Sfr	4	3402	13090	2019	\$526
2290 Via Orista	95037	02/04/2019	\$2,273,000	Sfr	4	4270	23143	2019	\$532
2270 Via Orista	95037	03/25/2019	\$2,211,000	Sfr	4	4057	20036	2019	\$545
18640 Corte Arcangel	95037	07/02/2019	\$1,797,500	Sfr	4	3595	11027	2019	\$500
18680 Corte Arcangel	95037	06/13/2019	\$2,177,500	Sfr	4	4057	19298	2019	\$537
18675 Corte Arcangel	95037	07/30/2019	\$2,027,000	Sfr	4	3402	11927	2019	\$596
18655 Corte Arcangel	95037	04/01/2019	\$2,051,500	Sfr	4	3402	13319	2019	\$603
18645 Corte Arcangel	95037	05/02/2019	\$2,219,500	Sfr	4	4057	18206	2019	\$547
37 W Dunne Ave	95037	02/08/2021	\$895,000	Sfr	4	1724		2019	\$519
33 W Dunne Ave	95037	01/22/2021	\$890,000	Sfr	4	1724		2019	\$516
16733 Murphy Ave	95037	01/14/2021	\$1,199,000	Sfr	4	2831		2019	\$424
18605 Corte Arcangel	95037	05/07/2019	\$1,936,000	Sfr	4	3402	16089	2019	\$569
2255 Via Orista	95037	01/15/2020	\$1,945,000	Sfr	4	4651	13563	2019	\$418
18530 Corte Catalina	95037	08/21/2019	\$2,120,000	Sfr	4	3402	15576	2019	\$623
18520 Corte Catalina	95037	12/12/2019	\$2,229,500	Sfr	4	4477	14441	2019	\$498
18510 Corte Catalina	95037	08/21/2019	\$2,080,000	Sfr	4	3402	13188	2019	\$611
18440 Corte Anacapi	95037	01/21/2020	\$2,263,500	Sfr	4	3402	17121	2019	\$665
29 W Dunne Ave	95037	09/16/2020	\$879,000	Sfr	4	1724	3872	2019	\$510
16827 Murphy Ave	95037	07/29/2019	\$1,033,000	Sfr	4	2841	4735	2019	\$364
16821 Murphy Ave	95037	07/29/2019	\$1,051,000	Sfr	4	2820	4660	2019	\$373
16775 Murphy Ave	95037	07/31/2019	\$1,059,500	Sfr	4	2820	4470	2019	\$376
16769 Murphy Ave	95037	07/29/2019	\$1,046,000	Sfr	4	2831	4230	2019	\$369
16763 Murphy Ave	95037	07/29/2019	\$1,046,000	Sfr	4	2841	4159	2019	\$368
16757 Murphy Ave	95037	08/12/2019	\$991,500	Sfr	4	2820	4154	2019	\$352
16751 Murphy Ave	95037	08/12/2019	\$1,051,409	Sfr	4	2831	4150	2019	\$371
16745 Murphy Ave	95037	08/12/2019	\$1,069,500	Sfr	4	2841	4145	2019	\$376
16739 Murphy Ave	95037	08/12/2019	\$1,028,500	Sfr	4	2820	4140	2019	\$365
16727 Murphy Ave	95037	08/12/2019	\$1,052,000	Sfr	4	2841	4131	2019	\$370
16721 Murphy Ave	95037	08/12/2019	\$1,043,000	Sfr	4	2831	4126	2019	\$368
16715 Murphy Ave	95037	08/12/2019	\$1,108,000	Sfr	4	2820	4637	2019	\$393
1346 Bloom Ln	95037	08/12/2019	\$939,000	Condominium	4	2398	2545	2019	\$392
1342 Bloom Ln	95037	08/12/2019	\$880,000	Condominium	4	1986	2545	2019	\$443
2210 Via Orista	95037	01/29/2020	\$2,389,000	Sfr	4	4360	18996	2020	\$548
2170 Via Orista	95037	02/24/2020	\$2,196,500	Sfr	4	4057	16136	2020	\$541
18410 Corte Anacapi	95037	06/01/2020	\$2,049,000	Sfr	4	3402	14820	2020	\$602
2110 Via Orista	95037	06/01/2020	\$2,270,000	Sfr	4	4270	20347	2020	\$532
2070 Via Orista	95037	07/20/2020	\$2,820,500	Sfr	4	4360	20573	2020	\$647
1995 Via Tolentino	95037	05/18/2020	\$2,108,500	Sfr	4	4477	12302	2020	\$471
2135 Via Orista	95037	04/07/2020	\$2,410,000	Sfr	4	4057	19430	2020	\$594
1206 Canopy Ln	95037	08/14/2019	\$838,500	Condominium	4	2410	2545	2020	\$348
1262 Canopy Ln	95037	08/14/2019	\$805,500	Condominium	4	1986	2545	2020	\$406
1237 Canopy Ln	95037	08/14/2019	\$832,500	Condominium	4	1986	2545	2020	\$419
1233 Canopy Ln	95037	08/14/2019	\$816,500	Condominium	4	2410	2545	2020	\$339
645 Price Dr 1	95037	12/07/2020	\$1,950,000	Sfr	5	3353	31932	2018	\$582
215 Calle Del Rey	95037	04/08/2019	\$1,315,000	Sfr	5	2695	6941	2019	\$488
17890 Calle Granada	95037	04/08/2019	\$1,315,000	Sfr	5	2728	7252	2019	\$482
290 Calle Del Rey	95037	04/08/2019	\$1,239,000	Sfr	5	2695	6395	2019	\$460

Table 4
Sales of New Homes in Morgan Hill in 2019 through 2021

source: Corelogic

Address	Zip	Sale Date	Sale Price	Type	# Bed	SF	Lot SF	Year Built	Price Per SF
280 Calle Del Rey	95037	04/08/2019	\$1,225,000	Sfr	5	2695	6250	2019	\$455
17850 Calle Granada	95037	04/08/2019	\$1,275,000	Sfr	5	2695	7929	2019	\$473
17885 Calle Granada	95037	04/08/2019	\$1,315,000	Sfr	5	2695	5030	2019	\$488
17845 Calle Granada	95037	04/08/2019	\$1,290,000	Sfr	5	2728	6919	2019	\$473
1400 Golden Eagle Ln	95037	09/15/2019	\$1,752,500	Sfr	5	3930	14528	2019	\$446
1390 Golden Eagle Ln	95037	04/23/2019	\$1,610,000	Sfr	5	3418	10572	2019	\$471
1380 Golden Eagle Ln	95037	07/12/2019	\$1,625,000	Sfr	5	3875	10921	2019	\$419
2250 Via Orista	95037	03/12/2019	\$2,232,500	Sfr	5	4477	16955	2019	\$499
2230 Via Orista	95037	03/01/2019	\$2,727,500	Sfr	5	5932	16636	2019	\$460
18600 Corte Arcangel	95037	07/02/2019	\$2,758,500	Sfr	5	5932	14223	2019	\$465
18685 Corte Arcangel	95037	06/18/2019	\$2,716,500	Sfr	5	6260	18734	2019	\$434
18665 Corte Arcangel	95037	05/07/2019	\$2,115,000	Sfr	5	4477	14343	2019	\$472
18625 Corte Arcangel	95037	06/13/2019	\$2,720,000	Sfr	5	4753	25849	2019	\$572
18615 Corte Arcangel	95037	04/01/2019	\$1,919,000	Sfr	5	4141	11220	2019	\$463
2245 Via Orista	95037	05/07/2019	\$2,901,000	Sfr	5	5932	19810	2019	\$489
2265 Via Orista	95037	05/17/2019	\$1,977,000	Sfr	5	3885	15719	2019	\$509
2275 Via Orista	95037	03/12/2019	\$2,308,500	Sfr	5	4540	20684	2019	\$508
18500 Corte Catalina	95037	12/13/2019	\$3,017,000	Sfr	5	6260	24798	2019	\$482
2050 Via Orista	95037	09/08/2020	\$1,943,000	Sfr	5	4141	13680	2019	\$469
515 Cipres Ln	95037	01/21/2020	\$1,270,000	Sfr	5	2764	5762	2020	\$459
525 Cipres Ln	95037	01/21/2020	\$1,250,000	Sfr	5	2764	5706	2020	\$452
535 Cipres Ln	95037	01/21/2020	\$1,245,000	Sfr	5	2764	5643	2020	\$450
545 Cipres Ln	95037	01/21/2020	\$1,285,000	Sfr	5	2753	6589	2020	\$467
17030 Abeto Ln	95037	01/21/2020	\$1,259,000	Sfr	5	2753	5704	2020	\$457
2205 Via Orista	95037	01/14/2020	\$2,212,500	Sfr	5	4141	10025	2020	\$534
18430 Corte Anacapi	95037	09/08/2020	\$1,989,500	Sfr	5	4141	12955	2020	\$480
18420 Corte Anacapi	95037	10/19/2020	\$3,341,000	Sfr	5	6260	17358	2020	\$534
18400 Corte Anacapi	95037	06/22/2020	\$1,945,500	Sfr	5	4141	14674	2020	\$470
18735 Corte Paterna	95037	07/15/2019	\$3,294,500	Sfr	6	5928	27647	2019	\$556
18710 Corte Paterna	95037	03/12/2019	\$2,503,500	Sfr	6	5932	17593	2019	\$422
18450 Corte Anacapi	95037	12/12/2019	\$2,783,500	Sfr	6	6260	16769	2019	\$445
2095 Via Orista	95037	11/06/2020	\$3,402,000	Sfr	6	6260	19056	2019	\$543
2115 Via Orista	95037	11/23/2020	\$2,872,000	Sfr	6	5928	20323	2019	\$484
18540 Corte Catalina	95037	03/06/2020	\$2,692,500	Sfr	6	6260	21023	2020	\$430

	<u>Units</u>	<u>Price</u>	<u>Beds</u>	<u>SF</u>	<u>Lot size</u>	<u>Yr Built</u>	<u>Price per SF</u>
Units built in 2018 - 20, sold 2019 - 2021	142	\$1,432,767	4.13	2,986	8,570	2,019	\$479.89
3 beds	25	\$894,920	3.00	1,786	3,229	2,019	\$501.19
4 beds	79	\$1,297,309	4.00	2,735	7,571	2,019	\$474.41
5 beds	32	\$1,907,641	5.00	3,960	12,867	2,019	\$481.74
6 beds	6	\$2,924,667	6.00	6,095	20,402	2,019	\$479.87
Condominiums	9	\$817,438	3.75	1,987	2,545	2,020	\$411.39
3 beds	2	\$739,250	3.00	1,559	2,545	2,020	\$474.18
4 beds	7	\$857,143	4.00	2,168	2,545	2,019	\$395.36
SF	133	\$1,474,406	4.16	3,053	8,978	2,019	\$482.91
3 beds	23	\$908,457	3.00	1,805	3,289	2,019	\$503.22
4 beds	72	\$1,340,103	4.00	2,790	8,059	2,019	\$480.38
5 beds	32	\$1,907,641	5.00	3,960	12,867	2,019	\$481.74
6 beds	6	\$2,924,667	6.00	6,095	20,402	2,019	\$479.87

Table 5

All Units Sold 2019-2021, built since 2018

Current Inclusionary Requirements, Downtown

Avg. unit size 2986 4.13 bedrooms; mix of 3, 4, 5, 6 beds

All Units built 2018-2020; Sold 2019 - 2021; Affordable Size = 76% of Market

-----On-site Affordable Units-----				
Total Units	100	Affordable size,	76%	
Inclusionary Rqmt	10%			
	<u>Market Rate</u>	<u>Affordable</u>	<u>Total</u>	
Units	90	10	100	
SF	2,986	2,269		76%
Price Per Du	\$1,432,767	\$711,728	120%	
Sales transaction	\$42,983	\$21,352		
Cost per DU, ex. Trans	\$1,289,490	\$1,078,014		
Price Per sf	\$479.83	\$313.63		
Cost per sf	\$432	\$475		110%
Revenues	\$125,080,559	\$6,903,764	\$131,984,323	
Costs	\$116,054,127	\$10,780,139	\$126,834,266	
Fractional fee		\$0	\$0	
Profit	\$9,026,432	-\$3,876,375	\$5,150,057	
-----All Market Rate Units-----				
Total Units	100			
Inclusionary Rqmt	0			
	<u>Market Rate</u>	<u>Affordable</u>	<u>Total</u>	
Units	100	0	100	
SF	2,986	2,269	298,600	
Price Per Du	\$1,432,767	\$711,728		
Sales Transaction	\$42,983	\$21,352		
Cost per DU	\$1,289,490	\$1,078,014		
Price Per sf	\$480	\$314		
Cost per sf	\$432	\$475		
Revenues	\$138,978,399	\$0	\$138,978,399	
Costs	\$128,949,030	\$0	\$128,949,030	
Profit	\$10,029,369	\$0	\$10,029,369	
-----On-site Compliance Cost-----				
	<u>Per unit</u>	<u>Per SF</u>	<u>Total</u>	
100% Mkt. Rate Profit	\$100,294	\$33.59	\$10,029,369	
Profit W/ Affordable	<u>\$51,500.57</u>	\$17.25	\$5,150,057	
Difference	\$48,793	\$16.34	\$4,879,312	
	Per Affordable		\$490,000	
	Per SF, all units		\$16.34	
	Per unit, all units		\$48,800	
	% of Price		3.41%	

Table 6

All Non-Condo Sales; Built 2018-2020; Sold 2019-2021

Current Inclusionary Requirements, Downtown

Avg. Unit Size 3,053 sf

Affordables = 75% of Market Rate Avg. Bed count 4.16

-----On-site Affordable Units-----

Total Units	100			
Inclusionary Rqmt	10%			
	<u>Market Rate</u>	<u>Affordable</u>	<u>Total</u>	
Units	90	10	100	
SF	3,053	2,290		75%
Price Per Du	\$1,474,406	\$713,346	120%	
Transaction costs (3%)	\$44,232	\$21,400		
Cost per DU	\$1,326,965	\$1,094,746		
Price Per sf	\$483	\$312		
Cost per sf	\$435	\$478		110%
Revenues	\$128,715,644	\$6,919,456	\$135,635,100	
Costs	\$119,426,886	\$10,947,465	\$130,374,351	
Fractional fee		\$0	\$0	
Profit	\$9,288,758	-\$4,028,008	\$5,260,749	

-----All Market Rate Units-----

Total Units	100			
Inclusionary Rqmt	0			
	<u>Market Rate</u>	<u>Affordable</u>	<u>Total</u>	
Units	100	0	100	
SF	3,053	2,290	305,300	
Price Per Du	\$1,474,406	\$713,346		
Transaction costs (3%)	\$44,232	\$21,400		
Cost per DU	\$1,326,965	\$1,094,746		
Price Per sf	\$483	\$312		
Cost per sf	\$435	\$478		
Revenues	\$143,017,382	\$0	\$143,017,382	
Costs	\$132,696,540	\$0	\$132,696,540	
Profit	\$10,320,842	\$0	\$10,320,842	

-----On-site Compliance Cost-----

	<u>Per unit</u>	<u>Per SF</u>	<u>Total</u>
100% Mkt. Rate Profit	\$103,208	\$33.81	\$10,320,842
Profit W/ Affordable	<u>\$52,607</u>	\$17.23	\$5,260,749
Difference	\$50,601	\$16.57	\$5,060,093
	Per Affordable		\$506,000
	Per SF, all units		\$16.57
	Per unit, all units		\$50,600
	% of Price		3.43%

Table 7

All Condominium Units Built 2018-2020; Sold 2019

Current Inclusionary Requirements, Downtown

Affordable Size = 90% of Market

Avg. Size	1,987	Avg. Beds	3.75
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-----On-site Affordable Units-----

Total Units	100			
Inclusionary Rqmt	10%			
	<u>Market Rate</u>	<u>Affordable</u>	<u>Total</u>	
Units	90	10	100	
SF	1,987	1,788		90%
Price Per Du	\$817,438	\$691,289	0	
Sales Transaction (3%)	\$24,523	\$20,739		
Cost per DU, ex. Trans	\$735,694	\$695,231		
Price Per sf	\$411	\$386.56		
Cost per sf	\$370	\$389		105%
Revenues	\$71,362,337	\$6,705,501	\$78,067,838	
Costs	\$66,212,478	\$6,952,310	\$73,164,788	
Fractional Fee		\$0	\$0	
Profit	\$5,149,859	-\$246,809	\$4,903,050	\$4,903,050

-----All Market Rate Units-----

Total Units	100			
Inclusionary Rqmt	0			
	<u>Market Rate</u>	<u>Affordable</u>	<u>Total</u>	
Units	100	0	100	
SF	1,987	1788.3	198,700	
Price Per Du	\$817,438	\$691,289		
Sales transaction	\$24,523	\$20,739		
Cost per DU	\$735,694	\$695,231		
Price Per sf	\$411	\$387		
Cost per sf	\$370	\$389		
Revenues	\$79,291,486	\$0	\$79,291,486	
Costs	\$73,569,420	\$0	\$73,569,420	
Profit	\$5,722,066	\$0	\$5,722,066	

-----On-site Compliance Cost-----

	<u>Per unit</u>	<u>Per SF</u>	<u>Total</u>
100% Mkt. Rate Profit	\$57,221	\$28.80	\$5,722,066
Profit W/ Affordable	<u>\$49,031</u>	\$24.68	\$4,903,050
Difference	\$8,190	\$4.12	\$819,016
	Per Affordable	\$80,000	
	Per SF, all units	\$4.00	
	Per unit, all unit	\$8,200	
	% of Price	1.00%	

Table 8

All Units Sold 2019-2021, built since 2018

Current Inclusionary Requirements, Outside of Downtown

Avg. unit size 2,986 4.13 bedrooms; mix of 3, 4, 5, 6 beds

All Units built 2018-2020; Sold 2019 - 2021; Affordable Size = 75% of Market

-----On-site Affordable Units-----			
Total Units	100	Affordable size,	0.76
Inclusionary Rqmt	15%		
	<u>Market Rate</u>	<u>Affordable</u>	<u>Total</u>
Units	85	15	100
SF	2,986	2,269	76%
Price Per Du	\$1,432,767	\$711,728	120%
Sales transaction	\$42,983	\$21,352	
Cost per DU, ex. Trans	\$1,289,490	\$1,078,014	
Price Per sf	\$479.83	\$313.63	
Cost per sf	\$432	\$475	110%
Revenues	\$118,131,639	\$10,355,646	\$128,487,285
Costs	\$109,606,676	\$16,170,208	\$125,776,884
Fractional fee		\$0	\$0
Profit	\$8,524,964	-\$5,814,562	\$2,710,401
-----All Market Rate Units-----			
Total Units	100		
Inclusionary Rqmt	0		
	<u>Market Rate</u>	<u>Affordable</u>	<u>Total</u>
Units	100	0	100
SF	2,986	2269.36	298,600
Price Per Du	\$1,432,767	\$711,728	
Sales Transaction	\$42,983	\$21,352	
Cost per DU	\$1,289,490	\$1,078,014	
Price Per sf	\$480	\$314	
Cost per sf	\$432	\$475	
Revenues	\$138,978,399	\$0	\$138,978,399
Costs	\$128,949,030	\$0	\$128,949,030
Profit	\$10,029,369	\$0	\$10,029,369
-----On-site Compliance Cost-----			
	<u>Per unit</u>	<u>Per SF</u>	<u>Total</u>
100% Mkt. Rate Profit	\$100,294	\$33.59	\$10,029,369
Profit W/ Affordable	<u>\$27,104.01</u>	\$9.08	\$2,710,401
Difference	\$73,190	\$24.51	\$7,318,968
	Per Affordable		\$490,000
	Per SF, all units		\$24.51
	Per unit, all units		\$73,200
	% of Price		5.11%

Table 9

All Non-Condo Sales; Built 2018-2020; Sold 2019-2021
Current Inclusionary Requirements, Outside of Downtown

Avg. Unit Size 3,053 sf

Affordables = 75% of Market Rate Avg. Bed count 4.16

-----On-site Affordable Units-----

Total Units	100			
Inclusionary Rqmt	15%			
	<u>Market Rate</u>	<u>Affordable</u>	<u>Total</u>	
Units	85	15	100	
SF	3,053	2,290		75%
Price Per Du	\$1,474,406	\$713,346	120%	
Transaction costs (3%)	\$44,232	\$21,400		
Cost per DU	\$1,326,965	\$1,094,746		
Price Per sf	\$483	\$312		
Cost per sf	\$435	\$478		110%
Revenues	\$121,564,775	\$10,379,184	\$131,943,959	
Costs	\$112,792,059	\$16,421,197	\$129,213,256	
Fractional fee		\$0	\$0	
Profit	\$8,772,716	-\$6,042,013	\$2,730,703	

-----All Market Rate Units-----

Total Units	100			
Inclusionary Rqmt	0			
	<u>Market Rate</u>	<u>Affordable</u>	<u>Total</u>	
Units	100	0	100	
SF	3,053	2,290	305,300	
Price Per Du	\$1,474,406	\$713,346		
Transaction costs (3%)	\$44,232	\$21,400		
Cost per DU	\$1,326,965	\$1,094,746		
Price Per sf	\$483	\$312		
Cost per sf	\$435	\$478		
Revenues	\$143,017,382	\$0	\$143,017,382	
Costs	\$132,696,540	\$0	\$132,696,540	
Profit	\$10,320,842	\$0	\$10,320,842	

-----On-site Compliance Cost-----

	<u>Per unit</u>	<u>Per SF</u>	<u>Total</u>	
100% Mkt. Rate Profit	\$103,208	\$33.81	\$10,320,842	
Profit W/ Affordable	<u>\$27,307</u>	\$8.94	\$2,730,703	
Difference	\$75,901	\$24.86	\$7,590,139	
	Per Affordable		\$506,000	
	Per SF, all units		\$24.86	
	Per unit, all units		\$75,900	
	% of Price		5.15%	

Table 10
All Condominium Units Built 2018-2020; Sold 2019
Current Inclusionary Requirements, Outside of Downtown
Affordable Size = 90% of Market

Avg. Size	1,987	Avg. Beds	3.75
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-----On-site Affordable Units-----				
Total Units	100			
Inclusionary Rqmt	15%			
	<u>Market Rate</u>	<u>Affordable</u>	<u>Total</u>	
Units	85	15	100	
SF	1,987	1,788		90%
Price Per Du	\$817,438	\$691,289	0	
Sales Transaction (3%)	\$24,523	\$20,739		
Cost per DU, ex. Trans	\$735,694	\$695,231		
Price Per sf	\$411	\$386.56		
Cost per sf	\$370	\$389		105%
Revenues	\$67,397,763	\$10,058,251	\$77,456,014	
Costs	\$62,534,007	\$10,428,465	\$72,962,472	
Fractional Fee		\$0	\$0	
Profit	\$4,863,756	-\$370,214	\$4,493,542	\$4,493,542

-----All Market Rate Units-----				
Total Units	100			
Inclusionary Rqmt	0			
	<u>Market Rate</u>	<u>Affordable</u>	<u>Total</u>	
Units	100	0	100	
SF	1,987	1788.3	198,700	
Price Per Du	\$817,438	\$691,289		
Sales transaction	\$24,523	\$20,739		
Cost per DU	\$735,694	\$695,231		
Price Per sf	\$411	\$387		
Cost per sf	\$370	\$389		
Revenues	\$79,291,486	\$0	\$79,291,486	
Costs	\$73,569,420	\$0	\$73,569,420	
Profit	\$5,722,066	\$0	\$5,722,066	

-----On-site Compliance Cost-----			
	<u>Per unit</u>	<u>Per SF</u>	<u>Total</u>
100% Mkt. Rate Profit	\$57,221	\$28.80	\$5,722,066
Profit W/ Affordable	<u>\$44,935</u>	\$22.61	\$4,493,542
Difference	\$12,285	\$6.18	\$1,228,524
	Per Affordable		\$80,000
	Per SF, all units		\$6.00
	Per unit, all unit		\$12,300
	% of Price		1.50%

Table 11

All Units Sold 2019-2021, built since 2018

Alternative A Inclusionary Requirements, Downtown

Avg. unit size 2,986 4.13 bedrooms; mix of 3, 4, 5, 6 beds

All Units built 2018-2020; Sold 2019 - 2021; Affordable Size = 76% of Market

-----On-site Affordable Units-----				
Total Units	100			
Inclusionary Rqmt	10%			
	<u>Market Rate</u>	<u>Affordable</u>	<u>Total</u>	
Units	90	10	100	
SF	2,986	2,269		76%
Price Per Du	\$1,432,767	\$570,627		
Transaction costs (3%)	\$42,983	\$17,119		
Cost per DU	\$1,289,490	\$1,078,014		
Price Per sf	\$480	\$251		
Cost per sf	\$432	\$475		110%
Revenues	\$125,080,559	\$5,535,081	\$130,615,640	
Costs	\$116,054,127	\$10,780,139	\$126,834,266	
Fractional Fee		\$0	\$0	
Profit	\$9,026,432	-\$5,245,058	\$3,781,375	
-----All Market Rate Units-----				
Total Units	100			
Inclusionary Rqmt	0			
	<u>Market Rate</u>	<u>Affordable</u>	<u>Total</u>	
Units	100	0	100	
SF	2,986	2,269	298,600	
Price Per Du	\$1,432,767	\$570,627		
Transaction costs (3%)	\$42,983	\$17,119		
Cost per DU	\$1,289,490	\$1,078,014		
Price Per sf	\$480	\$251		
Cost per sf	\$432	\$475		
Revenues	\$138,978,399	\$0	\$138,978,399	
Costs	\$128,949,030	\$0	\$128,949,030	
Profit	\$10,029,369	\$0	\$10,029,369	
-----On-site Compliance Cost-----				
	<u>Per unit</u>	<u>Per SF</u>	<u>Total</u>	
100% Mkt. Rate Profit	\$100,294	\$33.59	\$10,029,369	
Profit W/ Affordable	\$37,814	\$12.66	\$3,781,375	
Difference	\$62,480	\$20.92	\$6,247,994	
	Per Affordable		\$620,000	
	Per SF, all units		\$20.92	
	Per unit, all units		\$62,000	
	% of Price		4.33%	

Table 12

All Non-Condo Sales; Built 2018-2020; Sold 2019-2021

Alternative A Inclusionary Requirements, Downtown

Avg. Unit Size 3,053 sf

Affordables = 75% of Market Rate Avg. Bed count 4.16

-----On-site Affordable Units-----

Total Units	100			
Inclusionary Rqmt	10%			
	<u>Market Rate</u>	<u>Affordable</u>	<u>Total</u>	
Units	90	10	100	
SF	3053	2,290		75%
Price Per Du	\$1,474,406	\$571,934		
Transaction costs (3%)	\$44,232	\$17,158		
Cost per DU	\$1,326,965	\$1,094,746		
Price Per sf	\$483	\$250		
Cost per sf	\$435	\$478		110%
Revenues	\$128,715,644	\$5,547,762	\$134,263,406	
Costs	\$119,426,886	\$10,947,465	\$130,374,351	
Fractional Fee		\$0	\$0	
Profit	\$9,288,758	-\$5,399,702	\$3,889,055	

-----All Market Rate Units-----

Total Units	100			
Inclusionary Rqmt	0			
	<u>Market Rate</u>	<u>Affordable</u>	<u>Total</u>	
Units	100	0	100	
SF	3,053	2,290	305,300	
Price Per Du	\$1,474,406	\$571,934		
Transaction costs (3%)	\$44,232	\$17,158		
Cost per DU	\$1,326,965	\$1,094,746		
Price Per sf	\$483	\$250		
Cost per sf	\$435	\$478		
Revenues	\$143,017,382	\$0	\$143,017,382	
Costs	\$132,696,540	\$0	\$132,696,540	
Profit	\$10,320,842	\$0	\$10,320,842	

-----On-site Compliance Cost-----

	<u>Per unit</u>	<u>Per SF</u>	<u>Total</u>
100% Mkt. Rate Profit	\$103,208	\$33.81	\$10,320,842
Profit W/ Affordable	<u>\$38,891</u>	\$12.74	\$3,889,055
Difference	\$64,318	\$21.07	\$6,431,787
	Per Affordable		\$640,000
	Per SF, all units		\$21.07
	Per unit, all units		\$64,000
	% of Price		4.34%

Table 13

All Condominium Units Built 2018-2020; Sold 2019

Alternative A Inclusionary Requirements, Downtown

Affordable Size = 90% of Market

Avg. Size	1,987	Avg. Beds	3.75
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-----On-site Affordable Units-----

Total Units	100		
Inclusionary Rqmt	10%		
	<u>Market Rate</u>	<u>Affordable</u>	<u>Total</u>
Units	90	10	100
SF	1,987	1,788	90%
Price Per Du	\$817,438	\$554,120	
Transaction costs (3%)	\$24,523	\$16,624	
Cost per DU	\$735,694	\$695,231	
Price Per sf	\$411	\$310	
Cost per sf	\$370	\$389	105%
Revenues	\$71,362,337	\$5,374,965	\$76,737,303
Costs	\$66,212,478	\$6,952,310	\$73,164,788
Fractional Fee		\$0	\$0
Profit	\$5,149,859	-\$1,577,345	\$3,572,514

-----All Market Rate Units-----

Total Units	100		
Inclusionary Rqmt	0		
	<u>Market Rate</u>	<u>Affordable</u>	<u>Total</u>
Units	100	0	100
SF	1,987	1,788	198,700
Price Per Du	\$817,438	\$554,120	
Transaction costs (3%)	\$24,523	\$16,624	
Cost per DU	\$735,694	\$695,231	
Price Per sf	\$411	\$310	
Cost per sf	\$370	\$389	
Revenues	\$79,291,486	\$0	\$79,291,486
Costs	\$73,569,420	\$0	\$73,569,420
Profit	\$5,722,066	\$0	\$5,722,066

-----On-site Compliance Cost-----

	<u>Per unit</u>	<u>Per SF</u>	<u>Total</u>
100% Mkt. Rate Profit	\$57,221	\$28.80	\$5,722,066
Profit W/ Affordable	<u>\$35,725</u>	<u>\$17.98</u>	<u>\$3,572,514</u>
Difference	\$21,496	\$10.82	\$2,149,552
	Per Affordable		\$210,000
	Per SF, all units		\$10.82
	Per unit, all units		\$21,500
	% of Price		2.63%

Table 14

All Units Sold 2019-2021, built since 2018

Alternative A Inclusionary Requirements, Outside of Downtown

Avg. unit size 2,986 4.13 bedrooms; mix of 3, 4, 5, 6 beds

All Units built 2018-2020; Sold 2019 - 2021; Affordable Size = 76% of Market

-----On-site Affordable Units-----				
Total Units	100			
Inclusionary Rqmt	15%			
	<u>Market Rate</u>	<u>Affordable</u>	<u>Total</u>	
Units	85	15	100	
SF	2,986	2,269		76%
Price Per Du	\$1,432,767	\$570,627		
Transaction costs (3%)	\$42,983	\$17,119		
Cost per DU	\$1,289,490	\$1,078,014		
Price Per sf	\$480	\$251		
Cost per sf	\$432	\$475		110%
Revenues	\$118,131,639	\$8,302,622	\$126,434,261	
Costs	\$109,606,676	\$16,170,208	\$125,776,884	
Fractional Fee		\$0	\$0	
Profit	\$8,524,964	-\$7,867,586	\$657,377	
-----All Market Rate Units-----				
Total Units	100			
Inclusionary Rqmt	0			
	<u>Market Rate</u>	<u>Affordable</u>	<u>Total</u>	
Units	100	0	100	
SF	2,986	2,269	298,600	
Price Per Du	\$1,432,767	\$570,627		
Transaction costs (3%)	\$42,983	\$17,119		
Cost per DU	\$1,289,490	\$1,078,014		
Price Per sf	\$480	\$251		
Cost per sf	\$432	\$475		
Revenues	\$138,978,399	\$0	\$138,978,399	
Costs	\$128,949,030	\$0	\$128,949,030	
Profit	\$10,029,369	\$0	\$10,029,369	
-----On-site Compliance Cost-----				
	<u>Per unit</u>	<u>Per SF</u>	<u>Total</u>	
100% Mkt. Rate Profit	\$100,294	\$33.59	\$10,029,369	
Profit W/ Affordable	\$6,574	\$2.20	\$657,377	
Difference	\$93,720	\$31.39	\$9,371,992	
	Per Affordable		\$620,000	
	Per SF, all units		\$31.39	
	Per unit, all units		\$94,000	
	% of Price		6.56%	

Table 15

All Non-Condo Sales; Built 2018-2020; Sold 2019-2021

Alternative A Inclusionary Requirements, Outside of Downtown

Avg. Unit Size 3,053 sf

Affordables = 75% of Market Rate Avg. Bed count 4.16

-----On-site Affordable Units-----

Total Units	100			
Inclusionary Rqmt	15%			
	<u>Market Rate</u>	<u>Affordable</u>	<u>Total</u>	
Units	85	15	100	
SF	3053	2,290		75%
Price Per Du	\$1,474,406	\$571,934		
Transaction costs (3%)	\$44,232	\$17,158		
Cost per DU	\$1,326,965	\$1,094,746		
Price Per sf	\$483	\$250		
Cost per sf	\$435	\$478		110%
Revenues	\$121,564,775	\$8,321,643	\$129,886,418	
Costs	\$112,792,059	\$16,421,197	\$129,213,256	
Fractional Fee		\$0	\$0	
Profit	\$8,772,716	-\$8,099,554	\$673,162	

-----All Market Rate Units-----

Total Units	100			
Inclusionary Rqmt	0			
	<u>Market Rate</u>	<u>Affordable</u>	<u>Total</u>	
Units	100	0	100	
SF	3,053	2,290	305,300	
Price Per Du	\$1,474,406	\$571,934		
Transaction costs (3%)	\$44,232	\$17,158		
Cost per DU	\$1,326,965	\$1,094,746		
Price Per sf	\$483	\$250		
Cost per sf	\$435	\$478		
Revenues	\$143,017,382	\$0	\$143,017,382	
Costs	\$132,696,540	\$0	\$132,696,540	
Profit	\$10,320,842	\$0	\$10,320,842	

-----On-site Compliance Cost-----

	<u>Per unit</u>	<u>Per SF</u>	<u>Total</u>
100% Mkt. Rate Profit	\$103,208	\$33.81	\$10,320,842
Profit W/ Affordable	<u>\$6,732</u>	\$2.20	\$673,162
Difference	\$96,477	\$31.60	\$9,647,680
	Per Affordable		\$640,000
	Per SF, all units		\$31.60
	Per unit, all units		\$96,000
	% of Price		6.51%

Table 16
All Condominium Units Built 2018-2020; Sold 2019
Alternative A Inclusionary Requirements, Outside of Downtown
Affordable Size = 90% of Market

Avg. Size	1,987	Avg. Beds	3.75
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-----On-site Affordable Units-----

Total Units	100			
Inclusionary Rqmt	15%			
	<u>Market Rate</u>	<u>Affordable</u>	<u>Total</u>	
Units	85	15	100	
SF	1,987	1,788		90%
Price Per Du	\$817,438	\$554,120		
Transaction costs (3%)	\$24,523	\$16,624		
Cost per DU	\$735,694	\$695,231		
Price Per sf	\$411	\$310		
Cost per sf	\$370	\$389		105%
Revenues	\$67,397,763	\$8,062,448	\$75,460,211	
Costs	\$62,534,007	\$10,428,465	\$72,962,472	
Fractional Fee		\$0	\$0	
Profit	\$4,863,756	-\$2,366,017	\$2,497,739	

-----All Market Rate Units-----

Total Units	100			
Inclusionary Rqmt	0			
	<u>Market Rate</u>	<u>Affordable</u>	<u>Total</u>	
Units	100	0	100	
SF	1,987	1,788	198,700	
Price Per Du	\$817,438	\$554,120		
Transaction costs (3%)	\$24,523	\$16,624		
Cost per DU	\$735,694	\$695,231		
Price Per sf	\$411	\$310		
Cost per sf	\$370	\$389		
Revenues	\$79,291,486	\$0	\$79,291,486	
Costs	\$73,569,420	\$0	\$73,569,420	
Profit	\$5,722,066	\$0	\$5,722,066	

-----On-site Compliance Cost-----

	<u>Per unit</u>	<u>Per SF</u>	<u>Total</u>
100% Mkt. Rate Profit	\$57,221	\$28.80	\$5,722,066
Profit W/ Affordable	<u>\$24,977</u>	<u>\$12.57</u>	<u>\$2,497,739</u>
Difference	\$32,243	\$16.23	\$3,224,327
	Per Affordable		\$210,000
	Per SF, all units		\$16.23
	Per unit, all units		\$32,200
	% of Price		3.94%

Table 17

All Units Sold 2019-2021, built since 2018

Alternative B Inclusionary Requirements, Downtown

Avg. unit size 2986 4.13 bedrooms; mix of 3, 4, 5, 6 beds

All Units built 2018-2020; Sold 2019 - 2021; Affordable Size = 76% of Market

-----On-site Affordable Units-----				
Total Units	100			
Inclusionary Rqmt	10%			
	<u>Market Rate</u>	<u>Affordable</u>	<u>Total</u>	
Units	90	10	100	
SF	2,986	2,269		76%
Price Per Du	\$1,432,767	\$464,801		
Transaction costs (3%)	\$42,983	\$13,944		
Cost per DU	\$1,289,490	\$1,078,014		
Price Per sf	\$480	\$205		
Cost per sf	\$432	\$475		110%
Revenues	\$125,080,559	\$4,508,569	\$129,589,128	
Costs	\$116,054,127	\$10,780,139	\$126,834,266	
Fractional Fee		\$0	\$0	
Profit	\$9,026,432	-\$6,271,570	\$2,754,862	
-----All Market Rate Units-----				
Total Units	100			
Inclusionary Rqmt	0			
	<u>Market Rate</u>	<u>Affordable</u>	<u>Total</u>	
Units	100	0	100	
SF	2,986	2,269	298,600	
Price Per Du	\$1,432,767	\$464,801		
Transaction costs (3%)	\$42,983	\$13,944		
Cost per DU	\$1,289,490	\$1,078,014		
Price Per sf	\$480	\$205		
Cost per sf	\$432	\$475		
Revenues	\$138,978,399	\$0	\$138,978,399	
Costs	\$128,949,030	\$0	\$128,949,030	
Profit	\$10,029,369	\$0	\$10,029,369	
-----On-site Compliance Cost-----				
	<u>Per unit</u>	<u>Per SF</u>	<u>Total</u>	
100% Mkt. Rate Profit	\$100,294	\$33.59	\$10,029,369	
Profit W/ Affordable	<u>\$27,549</u>	\$9.23	\$2,754,862	
Difference	\$72,745	\$24.36	\$7,274,507	
	Per Affordable		\$730,000	
	Per SF, all units		\$24.36	
	Per unit, all units		\$73,000	
	% of Price		5.10%	

Table 18

All Non-Condo Sales; Built 2018-2020; Sold 2019-2021

Alternative B Inclusionary Requirements, Downtown

Avg. Unit Size 3,053 sf

Affordables = 75% of Market Rate Avg. Bed count 4.16

-----On-site Affordable Units-----

Total Units	100		
Inclusionary Rqmt	10%		
	<u>Market Rate</u>	<u>Affordable</u>	<u>Total</u>
Units	90	10	100
SF	3,053	2,290	75%
Price Per Du	\$1,474,406	\$465,875	
Transaction costs (3%)	\$44,232	\$13,976	
Cost per DU	\$1,326,965	\$1,094,746	
Price Per sf	\$483	\$203	
Cost per sf	\$435	\$478	110%
Revenues	\$128,715,644	\$4,518,991	\$133,234,634
Costs	\$119,426,886	\$10,947,465	\$130,374,351
Fractional Fee		\$0	\$0
Profit	\$9,288,758	-\$6,428,474	\$2,860,284

-----All Market Rate Units-----

Total Units	100		
Inclusionary Rqmt	0		
	<u>Market Rate</u>	<u>Affordable</u>	<u>Total</u>
Units	100	0	100
SF	3,053	2,290	305,300
Price Per Du	\$1,474,406	\$465,875	
Transaction costs (3%)	\$44,232	\$13,976	
Cost per DU	\$1,326,965	\$1,094,746	
Price Per sf	\$483	\$203	
Cost per sf	\$435	\$478	
Revenues	\$143,017,382	\$0	\$143,017,382
Costs	\$132,696,540	\$0	\$132,696,540
Profit	\$10,320,842	\$0	\$10,320,842

-----On-site Compliance Cost-----

	<u>Per unit</u>	<u>Per SF</u>	<u>Total</u>
100% Mkt. Rate Profit	\$103,208	\$33.81	\$10,320,842
Profit W/ Affordable	<u>\$28,603</u>	\$9.37	\$2,860,284
Difference	\$74,606	\$24.44	\$7,460,558
	Per Affordable		\$750,000
	Per SF, all units		\$24.44
	Per unit, all units		\$75,000
	% of Price		5.09%

Table 19
All Condominium Units Built 2018-2020; Sold 2019
Alternative B Inclusionary Requirements, Downtown
Affordable Size = 90% of Market

Avg. Size	1,987	Avg. Beds	3.75
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-----On-site Affordable Units-----

Total Units	100		
Inclusionary Rqmt	10%		
	<u>Market Rate</u>	<u>Affordable</u>	<u>Total</u>
Units	90	10	100
SF	1,987	1,788	90%
Price Per Du	\$817,438	\$451,244	
Transaction costs (3%)	\$24,523	\$13,537	
Cost per DU	\$735,694	\$695,231	
Price Per sf	\$411	\$252	
Cost per sf	\$370	\$389	105%
Revenues	\$71,362,337	\$4,377,063	\$75,739,401
Costs	\$66,212,478	\$6,952,310	\$73,164,788
Fractional Fee		\$0	\$0
Profit	\$5,149,859	-\$2,575,247	\$2,574,612

-----All Market Rate Units-----

Total Units	100		
Inclusionary Rqmt	0		
	<u>Market Rate</u>	<u>Affordable</u>	<u>Total</u>
Units	100	0	100
SF	1,987	1,788	198,700
Price Per Du	\$817,438	\$451,244	
Transaction costs (3%)	\$24,523	\$13,537	
Cost per DU	\$735,694	\$695,231	
Price Per sf	\$411	\$252	
Cost per sf	\$370	\$389	
Revenues	\$79,291,486	\$0	\$79,291,486
Costs	\$73,569,420	\$0	\$73,569,420
Profit	\$5,722,066	\$0	\$5,722,066

-----On-site Compliance Cost-----

	<u>Per unit</u>	<u>Per SF</u>	<u>Total</u>
100% Mkt. Rate Profit	\$57,221	\$28.80	\$5,722,066
Profit W/ Affordable	<u>\$25,746</u>	<u>\$12.96</u>	<u>\$2,574,612</u>
Difference	\$31,475	\$15.84	\$3,147,454
	Per Affordable		\$310,000
	Per SF, all units		\$15.84
	Per unit, all units		\$31,500
	% of Price		3.85%

Table 20

All Units Sold 2019-2021, built since 2018

Alternative B Inclusionary Requirements, Outside of Downtown

Avg. unit size 2986 4.13 bedrooms; mix of 3, 4, 5, 6 beds

All Units built 2018-2020; Sold 2019 - 2021; Affordable Size = 76% of Market

-----On-site Affordable Units-----				
Total Units	100			
Inclusionary Rqmt	15%			
	<u>Market Rate</u>	<u>Affordable</u>	<u>Total</u>	
Units	85	15	100	
SF	2,986	2,269		76%
Price Per Du	\$1,432,767	\$476,559		
Transaction costs (3%)	\$42,983	\$14,297		
Cost per DU	\$1,289,490	\$1,078,014		
Price Per sf	\$480	\$210		
Cost per sf	\$432	\$475		110%
Revenues	\$118,131,639	\$6,933,938	\$125,065,578	
Costs	\$109,606,676	\$16,170,208	\$125,776,884	
Fractional Fee		\$0	\$0	
Profit	\$8,524,964	-\$9,236,270	-\$711,306	
-----All Market Rate Units-----				
Total Units	100			
Inclusionary Rqmt	0			
	<u>Market Rate</u>	<u>Affordable</u>	<u>Total</u>	
Units	100	0	100	
SF	2,986	2,269	298,600	
Price Per Du	\$1,432,767	\$476,559		
Transaction costs (3%)	\$42,983	\$14,297		
Cost per DU	\$1,289,490	\$1,078,014		
Price Per sf	\$480	\$210		
Cost per sf	\$432	\$475		
Revenues	\$138,978,399	\$0	\$138,978,399	
Costs	\$128,949,030	\$0	\$128,949,030	
Profit	\$10,029,369	\$0	\$10,029,369	
-----On-site Compliance Cost-----				
	<u>Per unit</u>	<u>Per SF</u>	<u>Total</u>	
100% Mkt. Rate Profit	\$100,294	\$33.59	\$10,029,369	
Profit W/ Affordable	<u>-\$7,113</u>	-\$2.38	-\$711,306	
Difference	\$107,407	\$35.97	\$10,740,675	
	Per Affordable		\$720,000	
	Per SF, all units		\$35.97	
	Per unit, all units		\$107,000	
	% of Price		7.47%	

Table 21

All Non-Condo Sales; Built 2018-2020; Sold 2019-2021

Alternative B Inclusionary Requirements, Outside of Downtown

Avg. Unit Size 3,053 sf

Affordables = 75% of Market Rate Avg. Bed count 4.16

-----On-site Affordable Units-----

Total Units	100		
Inclusionary Rqmt	15%		
	<u>Market Rate</u>	<u>Affordable</u>	<u>Total</u>
Units	85	15	100
SF	3,053	2,290	75%
Price Per Du	\$1,474,406	\$477,660	
Transaction costs (3%)	\$44,232	\$14,330	
Cost per DU	\$1,326,965	\$1,094,746	
Price Per sf	\$483	\$209	
Cost per sf	\$435	\$478	110%
Revenues	\$121,564,775	\$6,949,948	\$128,514,723
Costs	\$112,792,059	\$16,421,197	\$129,213,256
Fractional Fee		\$0	\$0
Profit	\$8,772,716	-\$9,471,249	-\$698,533

-----All Market Rate Units-----

Total Units	100		
Inclusionary Rqmt	0		
	<u>Market Rate</u>	<u>Affordable</u>	<u>Total</u>
Units	100	0	100
SF	3,053	2,290	305,300
Price Per Du	\$1,474,406	\$477,660	
Transaction costs (3%)	\$44,232	\$14,330	
Cost per DU	\$1,326,965	\$1,094,746	
Price Per sf	\$483	\$209	
Cost per sf	\$435	\$478	
Revenues	\$143,017,382	\$0	\$143,017,382
Costs	\$132,696,540	\$0	\$132,696,540
Profit	\$10,320,842	\$0	\$10,320,842

-----On-site Compliance Cost-----

	<u>Per unit</u>	<u>Per SF</u>	<u>Total</u>
100% Mkt. Rate Profit	\$103,208	\$33.81	\$10,320,842
Profit W/ Affordable	<u>-\$6,985</u>	-\$2.29	-\$698,533
Difference	\$110,194	\$36.09	\$11,019,375
	Per Affordable		\$730,000
	Per SF, all units		\$36.09
	Per unit, all units		\$110,000
	% of Price		7.46%

Table 22

All Condominium Units Built 2018-2020; Sold 2019

Alternative B Inclusionary Requirements, Outside of Downtown

Affordable Size = 90% of Market

Avg. Size	1,987	Avg. Beds	3.75
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-----On-site Affordable Units-----

Total Units	100		
Inclusionary Rqmt	15%		
	<u>Market Rate</u>	<u>Affordable</u>	<u>Total</u>
Units	85	15	100
SF	1,987	1,788	90%
Price Per Du	\$817,438	\$462,674	
Transaction costs (3%)	\$24,523	\$13,880	
Cost per DU	\$735,694	\$695,231	
Price Per sf	\$411	\$259	
Cost per sf	\$370	\$389	105%
Revenues	\$67,397,763	\$6,731,912	\$74,129,675
Costs	\$62,534,007	\$10,428,465	\$72,962,472
Fractional Fee		\$0	\$0
Profit	\$4,863,756	-\$3,696,554	\$1,167,202

-----All Market Rate Units-----

Total Units	100		
Inclusionary Rqmt	0		
	<u>Market Rate</u>	<u>Affordable</u>	<u>Total</u>
Units	100	0	100
SF	1,987	1,788	198,700
Price Per Du	\$817,438	\$462,674	
Transaction costs (3%)	\$24,523	\$13,880	
Cost per DU	\$735,694	\$695,231	
Price Per sf	\$411	\$259	
Cost per sf	\$370	\$389	
Revenues	\$79,291,486	\$0	\$79,291,486
Costs	\$73,569,420	\$0	\$73,569,420
Profit	\$5,722,066	\$0	\$5,722,066

-----On-site Compliance Cost-----

	<u>Per unit</u>	<u>Per SF</u>	<u>Total</u>
100% Mkt. Rate Profit	\$57,221	\$28.80	\$5,722,066
Profit W/ Affordable	<u>\$11,672</u>	<u>\$5.87</u>	<u>\$1,167,202</u>
Difference	\$45,549	\$22.92	\$4,554,864
	Per Affordable		\$300,000
	Per SF, all units		\$22.92
	Per unit, all units		\$45,500
	% of Price		5.57%

Table 23

Summary of Seven (7) Sample Projects

Current Inclusionary Requirements, Downtown

Avg. unit size 2385 3.61 Bedrooms

Seven Current Projects

-----On-site Affordable Units-----				
Total Units	100	Affordable size,	0.86	
Inclusionary Rqmt	10%			
	<u>Market Rate</u>	<u>Affordable</u>	<u>Total</u>	
Units	90	10	100	
SF	2,385	2,051		86%
Price Per Du	\$1,087,226	\$683,768	120%	
Sales transaction	\$32,617	\$20,513		
Cost per DU, ex. Trans	\$978,503	\$925,664		
Price Per sf	\$455.86	\$333.37		
Cost per sf	\$410	\$451		110%
Revenues	\$94,914,830	\$6,632,553	\$101,547,383	
Costs	\$88,065,306	\$9,256,642	\$97,321,948	
Fractional fee		\$0	\$0	
Profit	\$6,849,524	-\$2,624,089	\$4,225,435	
-----All Market Rate Units-----				
Total Units	100			
Inclusionary Rqmt	0			
	<u>Market Rate</u>	<u>Affordable</u>	<u>Total</u>	
Units	100	0	100	
SF	2,385	2051.1	238,500	
Price Per Du	\$1,087,226	\$683,768		
Sales Transaction	\$32,617	\$20,513		
Cost per DU	\$978,503	\$925,664		
Price Per sf	\$456	\$333		
Cost per sf	\$410	\$451		
Revenues	\$105,460,922	\$0	\$105,460,922	
Costs	\$97,850,340	\$0	\$97,850,340	
Profit	\$7,610,582	\$0	\$7,610,582	
-----On-site Compliance Cost-----				
	<u>Per unit</u>	<u>Per SF</u>	<u>Total</u>	
100% Mkt. Rate Profit	\$76,106	\$31.91	\$7,610,582	
Profit W/ Affordable	<u>\$42,254.35</u>	\$17.72	\$4,225,435	
Difference	\$33,851	\$14.19	\$3,385,147	
	Per Affordable		\$340,000	
	Per SF, all units		\$14.19	
	Per unit, all units		\$33,900	
	% of Price		3.12%	

Table 24

Summary of Two (2) Detached SF Projects

Current Inclusionary Requirements, Downtown

Avg. Unit Size 3,634 sf

Affordables = 75% of Market Rate Avg. Bed count 3.64

-----On-site Affordable Units-----

Total Units	100			
Inclusionary Rqmt	10%			
	<u>Market Rate</u>	<u>Affordable</u>	<u>Total</u>	
Units	90	10	100	
SF	3,634	2,726		75%
Price Per Du	\$1,683,014	\$685,380	120%	
Transaction costs (3%)	\$50,490	\$20,561		
Cost per DU	\$1,514,713	\$1,249,638		
Price Per sf	\$463	\$251		
Cost per sf	\$417	\$458		110%
Revenues	\$146,927,122	\$6,648,185	\$153,575,307	
Costs	\$136,324,134	\$12,496,379	\$148,820,513	
Fractional fee		\$0	\$0	
Profit	\$10,602,988	-\$5,848,194	\$4,754,794	

-----All Market Rate Units-----

Total Units	100			
Inclusionary Rqmt	0			
	<u>Market Rate</u>	<u>Affordable</u>	<u>Total</u>	
Units	100	0	100	
SF	3,634	2,726	363,400	
Price Per Du	\$1,683,014	\$685,380		
Transaction costs (3%)	\$50,490	\$20,561		
Cost per DU	\$1,514,713	\$1,249,638		
Price Per sf	\$463	\$251		
Cost per sf	\$417	\$458		
Revenues	\$163,252,358	\$0	\$163,252,358	
Costs	\$151,471,260	\$0	\$151,471,260	
Profit	\$11,781,098	\$0	\$11,781,098	

-----On-site Compliance Cost-----

	<u>Per unit</u>	<u>Per SF</u>	<u>Total</u>
100% Mkt. Rate Profit	\$117,811	\$32.42	\$11,781,098
Profit W/ Affordable	<u>\$47,548</u>	\$13.08	\$4,754,794
Difference	\$70,263	\$19.33	\$7,026,304
	Per Affordable		\$703,000
	Per SF, all units		\$19.33
	Per unit, all units		\$70,300
	% of Price		4.18%

Table 25
Summary of Five (5) Attached Townhome Projects
Current Inclusionary Requirements, Downtown
Affordable Size = 90% of Market

Avg. Size	1,885	Avg. Beds	3.5
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-----On-site Affordable Units-----				
Total Units	100			
Inclusionary Rqmt	10%			
	<u>Market Rate</u>	<u>Affordable</u>	<u>Total</u>	
Units	90	10	100	
SF	1,885	1,697		90%
Price Per Du	\$848,911	\$677,860	0	
Sales Transaction (3%)	\$25,467	\$20,336		
Cost per DU, ex. Trans	\$764,020	\$721,999		
Price Per sf	\$450	\$399.56		
Cost per sf	\$405	\$426		105%
Revenues	\$74,109,930	\$6,575,237	\$80,685,167	
Costs	\$68,761,791	\$7,219,988	\$75,981,779	
Fractional Fee		\$0	\$0	
Profit	\$5,348,139	-\$644,751	\$4,703,388	\$4,703,388

-----All Market Rate Units-----				
Total Units	100			
Inclusionary Rqmt	0			
	<u>Market Rate</u>	<u>Affordable</u>	<u>Total</u>	
Units	100	0	100	
SF	1,885	1696.5	188,500	
Price Per Du	\$848,911	\$677,860		
Sales transaction	\$25,467	\$20,336		
Cost per DU	\$764,020	\$721,999		
Price Per sf	\$450	\$400		
Cost per sf	\$405	\$426		
Revenues	\$82,344,367	\$0	\$82,344,367	
Costs	\$76,401,990	\$0	\$76,401,990	
Profit	\$5,942,377	\$0	\$5,942,377	

-----On-site Compliance Cost-----				
	<u>Per unit</u>	<u>Per SF</u>	<u>Total</u>	
100% Mkt. Rate Profit	\$59,424	\$31.52	\$5,942,377	
Profit W/ Affordable	<u>\$47,034</u>	\$24.95	\$4,703,388	
Difference	\$12,390	\$6.57	\$1,238,989	
	Per Affordable		\$120,000	
	Per SF, all units		\$7.00	
	Per unit, all unit		\$12,400	
	% of Price		1.46%	

Table 26

Summary of Seven (7) Sample Projects

Current Inclusionary Requirements, Outside of Downtown

Avg. unit size 2385 3.61 Bedrooms

Seven Current Projects

-----On-site Affordable Units-----			
Total Units	100	Affordable size,	0.86
Inclusionary Rqmt	15%		
	<u>Market Rate</u>	<u>Affordable</u>	<u>Total</u>
Units	85	15	100
SF	2,385	2,051	86%
Price Per Du	\$1,087,226	\$683,768	120%
Sales transaction	\$32,617	\$20,513	
Cost per DU, ex. Trans	\$978,503	\$925,664	
Price Per sf	\$455.86	\$333.37	
Cost per sf	\$410	\$451	110%
Revenues	\$89,641,784	\$9,948,830	\$99,590,613
Costs	\$83,172,789	\$13,884,963	\$97,057,752
Fractional fee		\$0	\$0
Profit	\$6,468,995	-\$3,936,133	\$2,532,861
-----All Market Rate Units-----			
Total Units	100		
Inclusionary Rqmt	0		
	<u>Market Rate</u>	<u>Affordable</u>	<u>Total</u>
Units	100	0	100
SF	2,385	2051.1	238,500
Price Per Du	\$1,087,226	\$683,768	
Sales Transaction	\$32,617	\$20,513	
Cost per DU	\$978,503	\$925,664	
Price Per sf	\$456	\$333	
Cost per sf	\$410	\$451	
Revenues	\$105,460,922	\$0	\$105,460,922
Costs	\$97,850,340	\$0	\$97,850,340
Profit	\$7,610,582	\$0	\$7,610,582
-----On-site Compliance Cost-----			
	<u>Per unit</u>	<u>Per SF</u>	<u>Total</u>
100% Mkt. Rate Profit	\$76,106	\$31.91	\$7,610,582
Profit W/ Affordable	<u>\$25,328.61</u>	\$10.62	\$2,532,861
Difference	\$50,777	\$21.29	\$5,077,721
	Per Affordable		\$340,000
	Per SF, all units		\$21.29
	Per unit, all units		\$50,800
	% of Price		4.67%

Table 27

Summary of Two (2) Detached SF Projects

Current Inclusionary Requirements, Outside of Downtown

Avg. Unit Size 3,634 sf

Affordables = 75% of Market Rate Avg. Bed count 3.64

-----On-site Affordable Units-----

Total Units	100			
Inclusionary Rqmt	15%			
	<u>Market Rate</u>	<u>Affordable</u>	<u>Total</u>	
Units	85	15	100	
SF	3,634	2,726		75%
Price Per Du	\$1,683,014	\$685,380	120%	
Transaction costs (3%)	\$50,490	\$20,561		
Cost per DU	\$1,514,713	\$1,249,638		
Price Per sf	\$463	\$251		
Cost per sf	\$417	\$458		110%
Revenues	\$138,764,504	\$9,972,277	\$148,736,782	
Costs	\$128,750,571	\$18,744,568	\$147,495,139	
Fractional fee		\$0	\$0	
Profit	\$10,013,933	-\$8,772,291	\$1,241,642	

-----All Market Rate Units-----

Total Units	100			
Inclusionary Rqmt	0			
	<u>Market Rate</u>	<u>Affordable</u>	<u>Total</u>	
Units	100	0	100	
SF	3,634	2,726	363,400	
Price Per Du	\$1,683,014	\$685,380		
Transaction costs (3%)	\$50,490	\$20,561		
Cost per DU	\$1,514,713	\$1,249,638		
Price Per sf	\$463	\$251		
Cost per sf	\$417	\$458		
Revenues	\$163,252,358	\$0	\$163,252,358	
Costs	\$151,471,260	\$0	\$151,471,260	
Profit	\$11,781,098	\$0	\$11,781,098	

-----On-site Compliance Cost-----

	<u>Per unit</u>	<u>Per SF</u>	<u>Total</u>
100% Mkt. Rate Profit	\$117,811	\$32.42	\$11,781,098
Profit W/ Affordable	<u>\$12,416</u>	\$3.42	\$1,241,642
Difference	\$105,395	\$29.00	\$10,539,456
	Per Affordable		\$703,000
	Per SF, all units		\$29.00
	Per unit, all units		\$105,400
	% of Price		6.26%

Table 28
Summary of Five (5) Attached Townhome Projects
Current Inclusionary Requirements, Outside of Downtown
Affordable Size = 90% of Market

Avg. Size	1,885	Avg. Beds	3.5
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-----On-site Affordable Units-----				
Total Units	100			
Inclusionary Rqmt	15%			
	<u>Market Rate</u>	<u>Affordable</u>	<u>Total</u>	
Units	85	15	100	
SF	1,885	1,697		90%
Price Per Du	\$848,911	\$677,860	0	
Sales Transaction (3%)	\$25,467	\$20,336		
Cost per DU, ex. Trans	\$764,020	\$721,999		
Price Per sf	\$450	\$399.56		
Cost per sf	\$405	\$426		105%
Revenues	\$69,992,712	\$9,862,856	\$79,855,568	
Costs	\$64,941,692	\$10,829,982	\$75,771,674	
Fractional Fee		\$0	\$0	
Profit	\$5,051,020	-\$967,126	\$4,083,894	\$4,083,894

-----All Market Rate Units-----				
Total Units	100			
Inclusionary Rqmt	0			
	<u>Market Rate</u>	<u>Affordable</u>	<u>Total</u>	
Units	100	0	100	
SF	1,885	1696.5	188,500	
Price Per Du	\$848,911	\$677,860		
Sales transaction	\$25,467	\$20,336		
Cost per DU	\$764,020	\$721,999		
Price Per sf	\$450	\$400		
Cost per sf	\$405	\$426		
Revenues	\$82,344,367	\$0	\$82,344,367	
Costs	\$76,401,990	\$0	\$76,401,990	
Profit	\$5,942,377	\$0	\$5,942,377	

-----On-site Compliance Cost-----			
	<u>Per unit</u>	<u>Per SF</u>	<u>Total</u>
100% Mkt. Rate Profit	\$59,424	\$31.52	\$5,942,377
Profit W/ Affordable	<u>\$40,839</u>	\$21.67	\$4,083,894
Difference	\$18,585	\$9.86	\$1,858,483
	Per Affordable		\$120,000
	Per SF, all units		\$10.00
	Per unit, all unit		\$18,600
	% of Price		2.19%

Table 29

Summary of All Seven (7) Projects

Alternative A Inclusionary Requirements, Downtown

Avg. unit size 2,385 3.61 Beds

-----On-site Affordable Units-----				
Total Units	100			
Inclusionary Rqmt	10%			
	<u>Market Rate</u>	<u>Affordable</u>	<u>Total</u>	
Units	90	10	100	
SF	2,385	2,051		86%
Price Per Du	\$1,087,226	\$548,049		
Transaction costs (3%)	\$32,617	\$16,441		
Cost per DU	\$978,503	\$925,664		
Price Per sf	\$456	\$267		
Cost per sf	\$410	\$451		110%
Revenues	\$94,914,830	\$5,316,072	\$100,230,902	
Costs	\$88,065,306	\$9,256,642	\$97,321,948	
Fractional Fee		\$0	\$0	
Profit	\$6,849,524	-\$3,940,570	\$2,908,954	
-----All Market Rate Units-----				
Total Units	100			
Inclusionary Rqmt	0			
	<u>Market Rate</u>	<u>Affordable</u>	<u>Total</u>	
Units	100	0	100	
SF	2,385	2,051	238,500	
Price Per Du	\$1,087,226	\$548,049		
Transaction costs (3%)	\$32,617	\$16,441		
Cost per DU	\$978,503	\$925,664		
Price Per sf	\$456	\$267		
Cost per sf	\$410	\$451		
Revenues	\$105,460,922	\$0	\$105,460,922	
Costs	\$97,850,340	\$0	\$97,850,340	
Profit	\$7,610,582	\$0	\$7,610,582	
-----On-site Compliance Cost-----				
	<u>Per unit</u>	<u>Per SF</u>	<u>Total</u>	
100% Mkt. Rate Profit	\$76,106	\$31.91	\$7,610,582	
Profit W/ Affordable	<u>\$29,090</u>	\$12.20	\$2,908,954	
Difference	\$47,016	\$19.71	\$4,701,628	
	Per Affordable		\$470,000	
	Per SF, all units		\$19.71	
	Per unit, all units		\$47,000	
	% of Price		4.32%	

Table 30

Summary of Two (2) Detached SF Projects

Alternative A Inclusionary Requirements, Downtown

Avg. Unit Size 3,634 sf

Affordables = 75% of Market Rate Avg. Bed count 3.64

-----On-site Affordable Units-----

Total Units	100			
Inclusionary Rqmt	10%			
	<u>Market Rate</u>	<u>Affordable</u>	<u>Total</u>	
Units	90	10	100	
SF	3,634	2,726		75%
Price Per Du	\$1,683,014	\$549,350		
Transaction costs (3%)	\$50,490	\$16,480		
Cost per DU	\$1,514,713	\$1,249,638		
Price Per sf	\$463	\$202		
Cost per sf	\$417	\$458		110%
Revenues	\$146,927,122	\$5,328,692	\$152,255,814	
Costs	\$136,324,134	\$12,496,379	\$148,820,513	
Fractional Fee		\$0	\$0	
Profit	\$10,602,988	-\$7,167,687	\$3,435,301	

-----All Market Rate Units-----

Total Units	100			
Inclusionary Rqmt	0			
	<u>Market Rate</u>	<u>Affordable</u>	<u>Total</u>	
Units	100	0	100	
SF	3,634	2,726	363,400	
Price Per Du	\$1,683,014	\$549,350		
Transaction costs (3%)	\$50,490	\$16,480		
Cost per DU	\$1,514,713	\$1,249,638		
Price Per sf	\$463	\$202		
Cost per sf	\$417	\$458		
Revenues	\$163,252,358	\$0	\$163,252,358	
Costs	\$151,471,260	\$0	\$151,471,260	
Profit	\$11,781,098	\$0	\$11,781,098	

-----On-site Compliance Cost-----

	<u>Per unit</u>	<u>Per SF</u>	<u>Total</u>
100% Mkt. Rate Profit	\$117,811	\$32.42	\$11,781,098
Profit W/ Affordable	<u>\$34,353</u>	\$9.45	\$3,435,301
Difference	\$83,458	\$22.97	\$8,345,797
	Per Affordable		\$830,000
	Per SF, all units		\$22.97
	Per unit, all units		\$83,000
	% of Price		4.93%

Table 31
Summary of Five (5) Attached Unit Projects
Alternative A Inclusionary Requirements, Downtown
Affordable Size = 90% of Market

Avg. Size	1,885	Avg. Beds	3.5
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-----On-site Affordable Units-----				
Total Units	100			
Inclusionary Rqmt	10%			
	<u>Market Rate</u>	<u>Affordable</u>	<u>Total</u>	
Units	90	10	100	
SF	1,885	1,697		90%
Price Per Du	\$848,911	\$543,278		
Transaction costs (3%)	\$25,467	\$16,298		
Cost per DU	\$764,020	\$721,999		
Price Per sf	\$450	\$320		
Cost per sf	\$405	\$426		105%
Revenues	\$74,109,930	\$5,269,799	\$79,379,729	
Costs	\$68,761,791	\$7,219,988	\$75,981,779	
Fractional Fee		\$0	\$0	
Profit	\$5,348,139	-\$1,950,189	\$3,397,950	

-----All Market Rate Units-----				
Total Units	100			
Inclusionary Rqmt	0			
	<u>Market Rate</u>	<u>Affordable</u>	<u>Total</u>	
Units	100	0	100	
SF	1,885	1,697	188,500	
Price Per Du	\$848,911	\$543,278		
Transaction costs (3%)	\$25,467	\$16,298		
Cost per DU	\$764,020	\$721,999		
Price Per sf	\$450	\$320		
Cost per sf	\$405	\$426		
Revenues	\$82,344,367	\$0	\$82,344,367	
Costs	\$76,401,990	\$0	\$76,401,990	
Profit	\$5,942,377	\$0	\$5,942,377	

-----On-site Compliance Cost-----				
	<u>Per unit</u>	<u>Per SF</u>	<u>Total</u>	
100% Mkt. Rate Profit	\$59,424	\$31.52	\$5,942,377	
Profit W/ Affordable	<u>\$33,980</u>	<u>\$18.03</u>	<u>\$3,397,950</u>	
Difference	\$25,444	\$13.50	\$2,544,427	
	Per Affordable		\$250,000	
	Per SF, all units		\$13.50	
	Per unit, all units		\$25,400	
	% of Price		2.99%	

Table 32
Summary of All Seven (7) Projects
Alternative A Inclusionary Requirements, Outside of Downtown
Avg. unit size 2,385 3.61 Beds

-----On-site Affordable Units-----				
Total Units	100			
Inclusionary Rqmt	15%			
	<u>Market Rate</u>	<u>Affordable</u>	<u>Total</u>	
Units	85	15	100	
SF	2,385	2,051		86%
Price Per Du	\$1,087,226	\$548,049		
Transaction costs (3%)	\$32,617	\$16,441		
Cost per DU	\$978,503	\$925,664		
Price Per sf	\$456	\$267		
Cost per sf	\$410	\$451		110%
Revenues	\$89,641,784	\$7,974,108	\$97,615,892	
Costs	\$83,172,789	\$13,884,963	\$97,057,752	
Fractional Fee		\$0	\$0	
Profit	\$6,468,995	-\$5,910,855	\$558,140	
-----All Market Rate Units-----				
Total Units	100			
Inclusionary Rqmt	0			
	<u>Market Rate</u>	<u>Affordable</u>	<u>Total</u>	
Units	100	0	100	
SF	2,385	2,051	238,500	
Price Per Du	\$1,087,226	\$548,049		
Transaction costs (3%)	\$32,617	\$16,441		
Cost per DU	\$978,503	\$925,664		
Price Per sf	\$456	\$267		
Cost per sf	\$410	\$451		
Revenues	\$105,460,922	\$0	\$105,460,922	
Costs	\$97,850,340	\$0	\$97,850,340	
Profit	\$7,610,582	\$0	\$7,610,582	
-----On-site Compliance Cost-----				
	<u>Per unit</u>	<u>Per SF</u>	<u>Total</u>	
100% Mkt. Rate Profit	\$76,106	\$31.91	\$7,610,582	
Profit W/ Affordable	\$5,581	\$2.34	\$558,140	
Difference	\$70,524	\$29.57	\$7,052,442	
	Per Affordable		\$470,000	
	Per SF, all units		\$29.57	
	Per unit, all units		\$71,000	
	% of Price		6.53%	

Table 33

Summary of Two (2) Detached SF Projects

Alternative A Inclusionary Requirements, Outside of Downtown

Avg. Unit Size 3,634 sf

Affordables = 75% of Market Rate Avg. Bed count 3.64

-----On-site Affordable Units-----

Total Units	100			
Inclusionary Rqmt	15%			
	<u>Market Rate</u>	<u>Affordable</u>	<u>Total</u>	
Units	85	15	100	
SF	3,634	2,726		75%
Price Per Du	\$1,683,014	\$549,350		
Transaction costs (3%)	\$50,490	\$16,480		
Cost per DU	\$1,514,713	\$1,249,638		
Price Per sf	\$463	\$202		
Cost per sf	\$417	\$458		110%
Revenues	\$138,764,504	\$7,993,038	\$146,757,542	
Costs	\$128,750,571	\$18,744,568	\$147,495,139	
Fractional Fee		\$0	\$0	
Profit	\$10,013,933	-\$10,751,530	-\$737,597	

-----All Market Rate Units-----

Total Units	100			
Inclusionary Rqmt	0			
	<u>Market Rate</u>	<u>Affordable</u>	<u>Total</u>	
Units	100	0	100	
SF	3,634	2,726	363,400	
Price Per Du	\$1,683,014	\$549,350		
Transaction costs (3%)	\$50,490	\$16,480		
Cost per DU	\$1,514,713	\$1,249,638		
Price Per sf	\$463	\$202		
Cost per sf	\$417	\$458		
Revenues	\$163,252,358	\$0	\$163,252,358	
Costs	\$151,471,260	\$0	\$151,471,260	
Profit	\$11,781,098	\$0	\$11,781,098	

-----On-site Compliance Cost-----

	<u>Per unit</u>	<u>Per SF</u>	<u>Total</u>	
100% Mkt. Rate Profit	\$117,811	\$32.42	\$11,781,098	
Profit W/ Affordable	<u>-\$7,376</u>	-\$2.03	-\$737,597	
Difference	\$125,187	\$34.45	\$12,518,695	
	Per Affordable		\$830,000	
	Per SF, all units		\$34.45	
	Per unit, all units		\$125,000	
	% of Price		7.43%	

Table 34
Summary of Five (5) Attached Unit Projects
Alternative A Inclusionary Requirements, Outside of Downtown
Affordable Size = 90% of Market

Avg. Size	1,885	Avg. Beds	3.5
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-----On-site Affordable Units-----				
Total Units	100			
Inclusionary Rqmt	15%			
	<u>Market Rate</u>	<u>Affordable</u>	<u>Total</u>	
Units	85	15	100	
SF	1,885	1,697		90%
Price Per Du	\$848,911	\$543,278		
Transaction costs (3%)	\$25,467	\$16,298		
Cost per DU	\$764,020	\$721,999		
Price Per sf	\$450	\$320		
Cost per sf	\$405	\$426		105%
Revenues	\$69,992,712	\$7,904,699	\$77,897,410	
Costs	\$64,941,692	\$10,829,982	\$75,771,674	
Fractional Fee		\$0	\$0	
Profit	\$5,051,020	-\$2,925,284	\$2,125,737	

-----All Market Rate Units-----				
Total Units	100			
Inclusionary Rqmt	0			
	<u>Market Rate</u>	<u>Affordable</u>	<u>Total</u>	
Units	100	0	100	
SF	1,885	1,697	188,500	
Price Per Du	\$848,911	\$543,278		
Transaction costs (3%)	\$25,467	\$16,298		
Cost per DU	\$764,020	\$721,999		
Price Per sf	\$450	\$320		
Cost per sf	\$405	\$426		
Revenues	\$82,344,367	\$0	\$82,344,367	
Costs	\$76,401,990	\$0	\$76,401,990	
Profit	\$5,942,377	\$0	\$5,942,377	

-----On-site Compliance Cost-----				
	<u>Per unit</u>	<u>Per SF</u>	<u>Total</u>	
100% Mkt. Rate Profit	\$59,424	\$31.52	\$5,942,377	
Profit W/ Affordable	<u>\$21,257</u>	<u>\$11.28</u>	<u>\$2,125,737</u>	
Difference	\$38,166	\$20.25	\$3,816,640	
	Per Affordable		\$250,000	
	Per SF, all units		\$20.25	
	Per unit, all units		\$38,200	
	% of Price		4.50%	

Table 35

Summary of All Seven (7) Projects

Alternative B Inclusionary Requirements, Downtown

Avg. unit size 2385 3.61 Beds

-----On-site Affordable Units-----				
Total Units	100			
Inclusionary Rqmt	10%			
	<u>Market Rate</u>	<u>Affordable</u>	<u>Total</u>	
Units	90	10	100	
SF	2,385	2,051		86%
Price Per Du	\$1,087,226	\$446,259		
Transaction costs (3%)	\$32,617	\$13,388		
Cost per DU	\$978,503	\$925,664		
Price Per sf	\$456	\$218		
Cost per sf	\$410	\$451		110%
Revenues	\$94,914,830	\$4,328,711	\$99,243,541	
Costs	\$88,065,306	\$9,256,642	\$97,321,948	
Fractional Fee		\$0	\$0	
Profit	\$6,849,524	-\$4,927,931	\$1,921,593	
-----All Market Rate Units-----				
Total Units	100			
Inclusionary Rqmt	0			
	<u>Market Rate</u>	<u>Affordable</u>	<u>Total</u>	
Units	100	0	100	
SF	2,385	2,051	238,500	
Price Per Du	\$1,087,226	\$446,259		
Transaction costs (3%)	\$32,617	\$13,388		
Cost per DU	\$978,503	\$925,664		
Price Per sf	\$456	\$218		
Cost per sf	\$410	\$451		
Revenues	\$105,460,922	\$0	\$105,460,922	
Costs	\$97,850,340	\$0	\$97,850,340	
Profit	\$7,610,582	\$0	\$7,610,582	
-----On-site Compliance Cost-----				
	<u>Per unit</u>	<u>Per SF</u>	<u>Total</u>	
100% Mkt. Rate Profit	\$76,106	\$31.91	\$7,610,582	
Profit W/ Affordable	<u>\$19,216</u>	\$8.06	\$1,921,593	
Difference	\$56,890	\$23.85	\$5,688,989	
	Per Affordable		\$570,000	
	Per SF, all units		\$23.85	
	Per unit, all units		\$57,000	
	% of Price		5.24%	

Table 36

Summary of Two (2) Detached SF Projects

Alternative B Inclusionary Requirements, Downtown

Avg. Unit Size 3,634 sf

Affordables = 75% of Market Rate Avg. Bed count 3.64

-----On-site Affordable Units-----

Total Units	100		
Inclusionary Rqmt	10%		
	<u>Market Rate</u>	<u>Affordable</u>	<u>Total</u>
Units	90	10	100
SF	3,634	2,726	75%
Price Per Du	\$1,683,014	\$447,327	
Transaction costs (3%)	\$50,490	\$13,420	
Cost per DU	\$1,514,713	\$1,249,638	
Price Per sf	\$463	\$164	
Cost per sf	\$417	\$458	110%
Revenues	\$146,927,122	\$4,339,072	\$151,266,194
Costs	\$136,324,134	\$12,496,379	\$148,820,513
Fractional Fee		\$0	\$0
Profit	\$10,602,988	-\$8,157,307	\$2,445,681

-----All Market Rate Units-----

Total Units	100		
Inclusionary Rqmt	0		
	<u>Market Rate</u>	<u>Affordable</u>	<u>Total</u>
Units	100	0	100
SF	3,634	2,726	363,400
Price Per Du	\$1,683,014	\$447,327	
Transaction costs (3%)	\$50,490	\$13,420	
Cost per DU	\$1,514,713	\$1,249,638	
Price Per sf	\$463	\$164	
Cost per sf	\$417	\$458	
Revenues	\$163,252,358	\$0	\$163,252,358
Costs	\$151,471,260	\$0	\$151,471,260
Profit	\$11,781,098	\$0	\$11,781,098

-----On-site Compliance Cost-----

	<u>Per unit</u>	<u>Per SF</u>	<u>Total</u>
100% Mkt. Rate Profit	\$117,811	\$32.42	\$11,781,098
Profit W/ Affordable	<u>\$24,457</u>	\$6.73	\$2,445,681
Difference	\$93,354	\$25.69	\$9,335,417
	Per Affordable		\$930,000
	Per SF, all units		\$25.69
	Per unit, all units		\$93,000
	% of Price		5.53%

Table 37
Summary of Five (5) Attached Unit Projects
Alternative B Inclusionary Requirements, Downtown
Affordable Size = 90% of Market

Avg. Size	1,885	Avg. Beds	3.5
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-----On-site Affordable Units-----

Total Units	100		
Inclusionary Rqmt	10%		
	<u>Market Rate</u>	<u>Affordable</u>	<u>Total</u>
Units	90	10	100
SF	1,885	1,697	90%
Price Per Du	\$848,911	\$442,342	
Transaction costs (3%)	\$25,467	\$13,270	
Cost per DU	\$764,020	\$721,999	
Price Per sf	\$450	\$261	
Cost per sf	\$405	\$426	105%
Revenues	\$74,109,930	\$4,290,720	\$78,400,650
Costs	\$68,761,791	\$7,219,988	\$75,981,779
Fractional Fee		\$0	\$0
Profit	\$5,348,139	-\$2,929,268	\$2,418,871

-----All Market Rate Units-----

Total Units	100		
Inclusionary Rqmt	0		
	<u>Market Rate</u>	<u>Affordable</u>	<u>Total</u>
Units	100	0	100
SF	1,885	1,697	188,500
Price Per Du	\$848,911	\$442,342	
Transaction costs (3%)	\$25,467	\$13,270	
Cost per DU	\$764,020	\$721,999	
Price Per sf	\$450	\$261	
Cost per sf	\$405	\$426	
Revenues	\$82,344,367	\$0	\$82,344,367
Costs	\$76,401,990	\$0	\$76,401,990
Profit	\$5,942,377	\$0	\$5,942,377

-----On-site Compliance Cost-----

	<u>Per unit</u>	<u>Per SF</u>	<u>Total</u>
100% Mkt. Rate Profit	\$59,424	\$31.52	\$5,942,377
Profit W/ Affordable	<u>\$24,189</u>	<u>\$12.83</u>	<u>\$2,418,871</u>
Difference	\$35,235	\$18.69	\$3,523,506
	Per Affordable		\$350,000
	Per SF, all units		\$18.69
	Per unit, all units		\$35,200
	% of Price		4.15%

Table 38**Summary of All Seven (7) Projects****Alternative B Inclusionary Requirements, Outside of Downtown****Avg. unit size 2385 3.61 Beds**

-----On-site Affordable Units-----				
Total Units	100			
Inclusionary Rqmt	15%			
	<u>Market Rate</u>	<u>Affordable</u>	<u>Total</u>	
Units	85	15	100	
SF	2,385	2,051		86%
Price Per Du	\$1,087,226	\$457,569		
Transaction costs (3%)	\$32,617	\$13,727		
Cost per DU	\$978,503	\$925,664		
Price Per sf	\$456	\$223		
Cost per sf	\$410	\$451		110%
Revenues	\$89,641,784	\$6,657,626	\$96,299,410	
Costs	\$83,172,789	\$13,884,963	\$97,057,752	
Fractional Fee		\$0	\$0	
Profit	\$6,468,995	-\$7,227,337	-\$758,342	
-----All Market Rate Units-----				
Total Units	100			
Inclusionary Rqmt	0			
	<u>Market Rate</u>	<u>Affordable</u>	<u>Total</u>	
Units	100	0	100	
SF	2,385	2,051	238,500	
Price Per Du	\$1,087,226	\$457,569		
Transaction costs (3%)	\$32,617	\$13,727		
Cost per DU	\$978,503	\$925,664		
Price Per sf	\$456	\$223		
Cost per sf	\$410	\$451		
Revenues	\$105,460,922	\$0	\$105,460,922	
Costs	\$97,850,340	\$0	\$97,850,340	
Profit	\$7,610,582	\$0	\$7,610,582	
-----On-site Compliance Cost-----				
	<u>Per unit</u>	<u>Per SF</u>	<u>Total</u>	
100% Mkt. Rate Profit	\$76,106	\$31.91	\$7,610,582	
Profit W/ Affordable	<u>-\$7,583</u>	-\$3.18	-\$758,342	
Difference	\$83,689	\$35.09	\$8,368,924	
	Per Affordable		\$560,000	
	Per SF, all units		\$35.09	
	Per unit, all units		\$84,000	
	% of Price		7.73%	

Table 39

Summary of Two (2) Detached SF Projects

Alternative B Inclusionary Requirements, Outside of Downtown

Avg. Unit Size 3,634 sf

Affordables = 75% of Market Rate Avg. Bed count 3.64

-----On-site Affordable Units-----

Total Units	100		
Inclusionary Rqmt	15%		
	<u>Market Rate</u>	<u>Affordable</u>	<u>Total</u>
Units	85	15	100
SF	3,634	2,726	75%
Price Per Du	\$1,683,014	\$458,663	
Transaction costs (3%)	\$50,490	\$13,760	
Cost per DU	\$1,514,713	\$1,249,638	
Price Per sf	\$463	\$168	
Cost per sf	\$417	\$458	110%
Revenues	\$138,764,504	\$6,673,545	\$145,438,049
Costs	\$128,750,571	\$18,744,568	\$147,495,139
Fractional Fee		\$0	\$0
Profit	\$10,013,933	-\$12,071,024	-\$2,057,091

-----All Market Rate Units-----

Total Units	100		
Inclusionary Rqmt	0		
	<u>Market Rate</u>	<u>Affordable</u>	<u>Total</u>
Units	100	0	100
SF	3,634	2,726	363,400
Price Per Du	\$1,683,014	\$458,663	
Transaction costs (3%)	\$50,490	\$13,760	
Cost per DU	\$1,514,713	\$1,249,638	
Price Per sf	\$463	\$168	
Cost per sf	\$417	\$458	
Revenues	\$163,252,358	\$0	\$163,252,358
Costs	\$151,471,260	\$0	\$151,471,260
Profit	\$11,781,098	\$0	\$11,781,098

-----On-site Compliance Cost-----

	<u>Per unit</u>	<u>Per SF</u>	<u>Total</u>
100% Mkt. Rate Profit	\$117,811	\$32.42	\$11,781,098
Profit W/ Affordable	<u>-\$20,571</u>	-\$5.66	-\$2,057,091
Difference	\$138,382	\$38.08	\$13,838,189
	Per Affordable		\$920,000
	Per SF, all units		\$38.08
	Per unit, all units		\$138,000
	% of Price		8.20%

Table 40
Summary of Five (5) Attached Unit Projects
Alternative B Inclusionary Requirements, Outside of Downtown
Affordable Size = 90% of Market

Avg. Size	1,885	Avg. Beds	3.5
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-----On-site Affordable Units-----

Total Units	100		
Inclusionary Rqmt	15%		
	<u>Market Rate</u>	<u>Affordable</u>	<u>Total</u>
Units	85	15	100
SF	1,885	1,697	90%
Price Per Du	\$848,911	\$453,557	
Transaction costs (3%)	\$25,467	\$13,607	
Cost per DU	\$764,020	\$721,999	
Price Per sf	\$450	\$267	
Cost per sf	\$405	\$426	105%
Revenues	\$69,992,712	\$6,599,259	\$76,591,971
Costs	\$64,941,692	\$10,829,982	\$75,771,674
Fractional Fee		\$0	\$0
Profit	\$5,051,020	-\$4,230,723	\$820,298

-----All Market Rate Units-----

Total Units	100		
Inclusionary Rqmt	0		
	<u>Market Rate</u>	<u>Affordable</u>	<u>Total</u>
Units	100	0	100
SF	1,885	1,697	188,500
Price Per Du	\$848,911	\$453,557	
Transaction costs (3%)	\$25,467	\$13,607	
Cost per DU	\$764,020	\$721,999	
Price Per sf	\$450	\$267	
Cost per sf	\$405	\$426	
Revenues	\$82,344,367	\$0	\$82,344,367
Costs	\$76,401,990	\$0	\$76,401,990
Profit	\$5,942,377	\$0	\$5,942,377

-----On-site Compliance Cost-----

	<u>Per unit</u>	<u>Per SF</u>	<u>Total</u>
100% Mkt. Rate Profit	\$59,424	\$31.52	\$5,942,377
Profit W/ Affordable	<u>\$8,203</u>	<u>\$4.35</u>	<u>\$820,298</u>
Difference	\$51,221	\$27.17	\$5,122,079
	Per Affordable		\$340,000
	Per SF, all units		\$27.17
	Per unit, all units		\$51,200
	% of Price		6.03%

APPENDIX A

Appendix A Table 1

Morgan Hill 0 Bedroom

Maximum Affordable Homeownership Unit Sales Price

Calculator

2021 HCD Chart

Income Limits as of April 26, 2021

[Federal: HUD Limits Here \(See HUD Income Chart\)](#)[State: California HCD Limits Here \(See HCD Income Chart\)](#)[County: See Utility Allowance Schedules](#)

	A	B	C	D
Interest Rate	4.000	4.000	4.000	4.000
Term	360	360	360	360
Number of Bedrooms	0	0	0	0
Household Size	1	1	1	1
Income Category	Low	Lower Moderate	Moderate	Moderate
A Median Income for Household Size	\$ 105,900.00	\$ 105,900.00	\$ 105,900.00	\$ 105,900.00
B Affordable Income Percentage	70%	90%	110%	120%
C Affordability Percentage (i.e. 30% for Very Low Income)	30%	35%	35%	35%
D Amount of Income Available for Housing Payment (A x B)	\$ 22,239.00	\$ 33,358.50	\$ 40,771.50	\$ 44,478.00
E Affordable Housing Payment (D / 12)	\$ 1,853.25	\$ 2,779.88	\$ 3,397.63	\$ 3,706.50
F Taxes				
G Insurance				
H Non Mortgage Percentage of Affordable Payment % Assigned to Project	30%	30%	30%	30%
I Sub Total of Non Mortgage Expense (E x H)	\$ 555.98	\$ 833.96	\$ 1,019.29	\$ 1,111.95
J Utility Allowance (assuming electric heating, water heating, and cooking from Annual Schedule)	\$ 223.00	\$ 223.00	\$ 223.00	\$ 223.00
K HOA Fee for 2020 (updated annually based on prior 3-year closing costs study)	\$ 284.87	\$ 284.87	\$ 284.87	\$ 284.87
L Total Non Mortgage Expense (I + J + K)	\$ 1,063.85	\$ 1,341.83	\$ 1,527.16	\$ 1,619.82
M Remaining Available for Mortgage (E - L)	\$ 789.41	\$ 1,438.04	\$ 1,870.47	\$ 2,086.68
Interest Rate - Convert Interest Rate Whole Number into Payment Decimal	0.003333	0.003333	0.003333	0.003333
Interest Rate - Use Term to Create Compounding Interest Rate	3.313498	3.313498	3.313498	3.313498
Interest Rate - Create a Mortgage Payment Multiplier	0.004774	0.004774	0.004774	0.004774
Max Mortgage Amount	\$ 165,349.75	\$ 301,214.17	\$ 391,790.44	\$ 437,078.58
Sales Price w/ 0% Down and 4% Interest	165,349.75	301,214.17	391,790.44	437,078.58
Sales Price v1 without Transaction Fee (Rounded Up)	165,350.00	301,214.00	391,790.00	437,079.00
Transaction Fee	4,960.50	9,036.42	11,753.70	13,112.37
Total Sales Price (rounded up and including Transaction Fee)	170,310.50	310,250.42	403,543.70	450,191.37
Sales Price v2 (including Transaction Fee)	170,311.00	310,250.00	403,544.00	450,191.00

Instructions: Complete highlighted sections.

Version Date: 3/17/2021

Appendix A Table 2

Morgan Hill 1 Bedroom

Maximum Affordable Homeownership Unit Sales Price

Calculator

2021 HCD Chart

Income Limits as of April 26, 2021

[Federal: HUD Limits Here \(See HUD Income Chart\)](#)[State: California HCD Limits Here \(See HCD Income Chart\)](#)[County: See Utility Allowance Schedules](#)

		A	B	C	D
	Interest Rate	4.000	4.000	4.000	4.000
	Term	360	360	360	360
	Number of Bedrooms	1	1	1	1
	Household Size	2	2	2	2
	Income Category	Low	Lower Moderate	Moderate	Moderate
A	Median Income for Household Size	\$ 121,050.00	\$ 121,050.00	\$ 121,050.00	\$ 121,050.00
B	Affordable Income Percentage	70%	90%	110%	120%
C	Affordability Percentage (i.e. 30% for Very Low Income)	30%	35%	35%	35%
D	Amount of Income Available for Housing Payment (A x B)	\$ 25,420.50	\$ 38,130.75	\$ 46,604.25	\$ 50,841.00
E	Affordable Housing Payment (D / 12)	\$ 2,118.38	\$ 3,177.56	\$ 3,883.69	\$ 4,236.75
F	Taxes				
G	Insurance				
H	Non Mortgage Percentage of Affordable Payment % Assigned to Project	30%	30%	30%	30%
I	Sub Total of Non Mortgage Expense (E x H)	\$ 635.51	\$ 953.27	\$ 1,165.11	\$ 1,271.03
J	Utility Allowance (assuming electric heating, water heating, and cooking from Annual Schedule)	\$ 236.00	\$ 236.00	\$ 236.00	\$ 236.00
K	HOA Fee for 2020 (updated annually based on prior 3-year closing costs study)	\$ 284.87	\$ 284.87	\$ 284.87	\$ 284.87
L	Total Non Mortgage Expense (I + J + K)	\$ 1,156.38	\$ 1,474.14	\$ 1,685.98	\$ 1,791.90
M	Remaining Available for Mortgage (E - L)	\$ 961.99	\$ 1,703.42	\$ 2,197.71	\$ 2,444.86
	Interest Rate - Convert Interest Rate Whole Number into Payment Decimal	0.003333	0.003333	0.003333	0.003333
	Interest Rate - Use Term to Create Compounding Interest Rate	3.313498	3.313498	3.313498	3.313498
	Interest Rate - Create a Mortgage Payment Multiplier	0.004774	0.004774	0.004774	0.004774
	Max Mortgage Amount	\$ 201,500.14	\$ 356,801.25	\$ 460,335.32	\$ 512,102.36
	Sales Price w/ 0% Down and 4% Interest	201,500.14	356,801.25	460,335.32	512,102.36
	Sales Price v1 without Transaction Fee (Rounded Up)	201,500.00	356,801.00	460,335.00	512,102.00
	Transaction Fee	6,045.00	10,704.03	13,810.05	15,363.06
	Total Sales Price (rounded up and including Transaction Fee)	207,545.00	367,505.03	474,145.05	527,465.06
	Sales Price v2 (including Transaction Fee)	207,545.00	367,505.00	474,145.00	527,465.00

Instructions: Complete highlighted sections.

Version Date: 3/17/2021

Appendix A Table 3

Morgan Hill 2 Bedroom

Maximum Affordable Homeownership Unit Sales Price

Calculator

2021 HCD Chart

Income Limits as of April 26, 2021

[Federal: HUD Limits Here \(See HUD Income Chart\)](#)[State: California HCD Limits Here \(See HCD Income Chart\)](#)[County: See Utility Allowance Schedules](#)

	A	B	C	D
Interest Rate	4.000	4.000	4.000	4.000
Term	360	360	360	360
Number of Bedrooms	2	2	2	2
Household Size	3	3	3	3
Income Category	Low	Lower Moderate	Moderate	Moderate
A Median Income for Household Size	\$ 136,150.00	\$ 136,150.00	\$ 136,150.00	\$ 136,150.00
B Affordable Income Percentage	70%	90%	110%	120%
C Affordability Percentage (i.e. 30% for Very Low Income)	30%	35%	35%	35%
D Amount of Income Available for Housing Payment (A x B)	\$ 28,591.50	\$ 42,887.25	\$ 52,417.75	\$ 57,183.00
E Affordable Housing Payment (D / 12)	\$ 2,382.63	\$ 3,573.94	\$ 4,368.15	\$ 4,765.25
F Taxes				
G Insurance				
H Non Mortgage Percentage of Affordable Payment % Assigned to Project	30%	30%	30%	30%
I Sub Total of Non Mortgage Expense (E x H)	\$ 714.79	\$ 1,072.18	\$ 1,310.44	\$ 1,429.58
J Utility Allowance (assuming electric heating, water heating, and cooking from Annual Schedule)	\$ 273.00	\$ 273.00	\$ 273.00	\$ 273.00
K HOA Fee for 2020 (updated annually based on prior 3-year closing costs study)	\$ 284.87	\$ 284.87	\$ 284.87	\$ 284.87
L Total Non Mortgage Expense (I + J + K)	\$ 1,272.66	\$ 1,630.05	\$ 1,868.31	\$ 1,987.45
M Remaining Available for Mortgage (E - L)	\$ 1,109.97	\$ 1,943.89	\$ 2,499.83	\$ 2,777.81
Interest Rate - Convert Interest Rate Whole Number into Payment Decimal	0.003333	0.003333	0.003333	0.003333
Interest Rate - Use Term to Create Compounding Interest Rate	3.313498	3.313498	3.313498	3.313498
Interest Rate - Create a Mortgage Payment Multiplier	0.004774	0.004774	0.004774	0.004774
Max Mortgage Amount	\$ 232,495.17	\$ 407,168.83	\$ 523,617.93	\$ 581,842.48
Sales Price w/ 0% Down and 4% Interest	232,495.17	407,168.83	523,617.93	581,842.48
Sales Price v1 without Transaction Fee (Rounded Up)	232,495.00	407,169.00	523,618.00	581,842.00
Transaction Fee	6,974.85	12,215.07	15,708.54	17,455.26
Total Sales Price (rounded up and including Transaction Fee)	239,469.85	419,384.07	539,326.54	599,297.26
Sales Price v2 (including Transaction Fee)	239,470.00	419,384.00	539,327.00	599,297.00

Instructions: Complete highlighted sections.

Version Date: 3/17/2021

Appendix A Table 4

Morgan Hill 3 Bedroom

Maximum Affordable Homeownership Unit Sales Price

Calculator

2021 HCD Chart

Income Limits as of April 26, 2021

[Federal: HUD Limits Here \(See HUD Income Chart\)](#)[State: California HCD Limits Here \(See HCD Income Chart\)](#)[County: See Utility Allowance Schedules](#)

	A	B	C	D
Interest Rate	4.000	4.000	4.000	4.000
Term	360	360	360	360
Number of Bedrooms	3	3	3	3
Household Size	4	4	4	4
Income Category	Low	Lower Moderate	Moderate	Moderate
A Median Income for Household Size	\$ 151,300.00	\$ 151,300.00	\$ 151,300.00	\$ 151,300.00
B Affordable Income Percentage	70%	90%	110%	120%
C Affordability Percentage (i.e. 30% for Very Low Income)	30%	35%	35%	35%
D Amount of Income Available for Housing Payment (A x B)	\$ 31,773.00	\$ 47,659.50	\$ 58,250.50	\$ 63,546.00
E Affordable Housing Payment (D / 12)	\$ 2,647.75	\$ 3,971.63	\$ 4,854.21	\$ 5,295.50
F Taxes				
G Insurance				
H Non Mortgage Percentage of Affordable Payment % Assigned to Project	30%	30%	30%	30%
I Sub Total of Non Mortgage Expense (E x H)	\$ 794.33	\$ 1,191.49	\$ 1,456.26	\$ 1,588.65
J Utility Allowance (assuming electric heating, water heating, and cooking from Annual Schedule)	\$ 314.00	\$ 314.00	\$ 314.00	\$ 314.00
K HOA Fee for 2020 (updated annually based on prior 3-year closing costs study)	\$ 284.87	\$ 284.87	\$ 284.87	\$ 284.87
L Total Non Mortgage Expense (I + J + K)	\$ 1,393.20	\$ 1,790.36	\$ 2,055.13	\$ 2,187.52
M Remaining Available for Mortgage (E - L)	\$ 1,254.56	\$ 2,181.27	\$ 2,799.08	\$ 3,107.98
Interest Rate - Convert Interest Rate Whole Number into Payment Decimal	0.003333	0.003333	0.003333	0.003333
Interest Rate - Use Term to Create Compounding Interest Rate	3.313498	3.313498	3.313498	3.313498
Interest Rate - Create a Mortgage Payment Multiplier	0.004774	0.004774	0.004774	0.004774
Max Mortgage Amount	\$ 262,780.65	\$ 456,891.00	\$ 586,297.90	\$ 651,001.35
Sales Price w/ 0% Down and 4% Interest	262,780.65	456,891.00	586,297.90	651,001.35
Sales Price v1 without Transaction Fee (Rounded Up)	262,781.00	456,891.00	586,298.00	651,001.00
Transaction Fee	7,883.43	13,706.73	17,588.94	19,530.03
Total Sales Price (rounded up and including Transaction Fee)	270,664.43	470,597.73	603,886.94	670,531.03
Sales Price v2 (including Transaction Fee)	270,664.00	470,598.00	603,887.00	670,531.00

Instructions: Complete highlighted sections.

Version Date: 3/17/2021

Appendix A Table 5

Morgan Hill 4 Bedroom

Maximum Affordable Homeownership Unit Sales Price

Calculator

2021 HCD Chart

Income Limits as of April 26, 2021

[Federal: HUD Limits Here \(See HUD Income Chart\)](#)[State: California HCD Limits Here \(See HCD Income Chart\)](#)[County: See Utility Allowance Schedules](#)

		A	B	C	D
Interest Rate		4.000	4.000	4.000	4.000
Term		360	360	360	360
Number of Bedrooms		4	4	4	4
Household Size		5	5	5	5
Income Category		Low	Lower Moderate	Moderate	Moderate
A Median Income for Household Size		\$ 163,400.00	\$ 163,400.00	\$ 163,400.00	\$ 163,400.00
B Affordable Income Percentage		70%	90%	110%	120%
C Affordability Percentage (i.e. 30% for Very Low Income)		30%	35%	35%	35%
D Amount of Income Available for Housing Payment (A x B)		\$ 34,314.00	\$ 51,471.00	\$ 62,909.00	\$ 68,628.00
E Affordable Housing Payment (D / 12)		\$ 2,859.50	\$ 4,289.25	\$ 5,242.42	\$ 5,719.00
F Taxes					
G Insurance					
H Non Mortgage Percentage of Affordable Payment % Assigned to Project		30%	30%	30%	30%
I Sub Total of Non Mortgage Expense (E x H)		\$ 857.85	\$ 1,286.78	\$ 1,572.73	\$ 1,715.70
J Utility Allowance (assuming electric heating, water heating, and cooking from Annual Schedule)		\$ 354.00	\$ 354.00	\$ 354.00	\$ 354.00
K HOA Fee for 2020 (updated annually based on prior 3-year closing costs study)		\$ 284.87	\$ 284.87	\$ 284.87	\$ 284.87
L Total Non Mortgage Expense (I + J + K)		\$ 1,496.72	\$ 1,925.65	\$ 2,211.60	\$ 2,354.57
M Remaining Available for Mortgage (E - L)		\$ 1,362.78	\$ 2,363.61	\$ 3,030.82	\$ 3,364.43
Interest Rate - Convert Interest Rate Whole Number into Payment Decimal		0.003333	0.003333	0.003333	0.003333
Interest Rate - Use Term to Create Compounding Interest Rate		3.313498	3.313498	3.313498	3.313498
Interest Rate - Create a Mortgage Payment Multiplier		0.004774	0.004774	0.004774	0.004774
Max Mortgage Amount		\$ 285,449.59	\$ 495,083.64	\$ 634,839.67	\$ 704,717.68
Sales Price w/ 0% Down and 4% Interest		285,449.59	495,083.64	634,839.67	704,717.68
Sales Price v1 without Transaction Fee (Rounded Up)		285,450.00	495,084.00	634,840.00	704,718.00
Transaction Fee		8,563.50	14,852.52	19,045.20	21,141.54
Total Sales Price (rounded up and including Transaction Fee)		294,013.50	509,936.52	653,885.20	725,859.54
Sales Price v2 (including Transaction Fee)		294,014.00	509,937.00	653,885.00	725,860.00

Instructions: Complete highlighted sections.

Version Date: 3/17/2021

Appendix A Table 6

Morgan Hill 5 Bedroom

Maximum Affordable Homeownership Unit Sales Price

Calculator

2021 HCD Chart

Income Limits as of April 26, 2021

Federal: [HUD Limits Here \(See HUD Income Chart\)](#)

State: [California HCD Limits Here \(See HCD Income Chart\)](#)

County: [See Utility Allowance Schedules](#)

	A	B	C	D
Interest Rate	4.000	4.000	4.000	4.000
Term	360	360	360	360
Number of Bedrooms	5	5	5	5
Household Size	6	6	6	6
Income Category	Low	Lower Moderate	Moderate	Moderate
A Median Income for Household Size	\$ 175,500.00	\$ 175,500.00	\$ 175,500.00	\$ 175,500.00
B Affordable Income Percentage	70%	90%	110%	120%
C Affordability Percentage (i.e. 30% for Very Low Income)	30%	35%	35%	35%
D Amount of Income Available for Housing Payment (A x B)	\$ 36,855.00	\$ 55,282.50	\$ 67,567.50	\$ 73,710.00
E Affordable Housing Payment (D / 12)	\$ 3,071.25	\$ 4,606.88	\$ 5,630.63	\$ 6,142.50
F Taxes				
G Insurance				
H Non Mortgage Percentage of Affordable Payment % Assigned to Project	30%	30%	30%	30%
I Sub Total of Non Mortgage Expense (E x H)	\$ 921.38	\$ 1,382.06	\$ 1,689.19	\$ 1,842.75
J Utility Allowance (assuming electric heating, water heating, and cooking from Annual Schedule)	\$ 393.00	\$ 393.00	\$ 393.00	\$ 393.00
K HOA Fee for 2020 (updated annually based on prior 3-year closing costs study)	\$ 284.87	\$ 284.87	\$ 284.87	\$ 284.87
L Total Non Mortgage Expense (I + J + K)	\$ 1,599.25	\$ 2,059.93	\$ 2,367.06	\$ 2,520.62
M Remaining Available for Mortgage (E - L)	\$ 1,472.01	\$ 2,546.94	\$ 3,263.57	\$ 3,621.88
Interest Rate - Convert Interest Rate Whole Number into Payment Decimal	0.003333	0.003333	0.003333	0.003333
Interest Rate - Use Term to Create Compounding Interest Rate	3.313498	3.313498	3.313498	3.313498
Interest Rate - Create a Mortgage Payment Multiplier	0.004774	0.004774	0.004774	0.004774
Max Mortgage Amount	\$ 308,327.99	\$ 533,485.74	\$ 683,590.90	\$ 758,643.48
Sales Price w/ 0% Down and 4% Interest	308,327.99	533,485.74	683,590.90	758,643.48
Sales Price v1 without Transaction Fee (Rounded Up)	308,328.00	533,486.00	683,591.00	758,643.00
Transaction Fee	9,249.84	16,004.58	20,507.73	22,759.29
Total Sales Price (rounded up and including Transaction Fee)	317,577.84	549,490.58	704,098.73	781,402.29
Sales Price v2 (including Transaction Fee)	317,578.00	549,491.00	704,099.00	781,402.00

Instructions: Complete highlighted sections.

Version Date: 3/17/2021

Appendix A Table 7

Morgan Hill 6 Bedroom

Maximum Affordable Homeownership Unit Sales Price

Calculator

2021 HCD Chart

Income Limits as of April 26, 2021

State: [California HCD Limits Here \(See HCD Income Chart\)](#)

County: [See Utility Allowance Schedules](#)

		A	B	C	D
	Interest Rate	4.000	4.000	4.000	4.000
	Term	360	360	360	360
	Number of Bedrooms	6	6	6	6
	Household Size	7	7	7	7
	Income Category	Low	Lower Moderate	Moderate	Moderate
A	Median Income for Household Size	\$ 187,600.00	\$ 187,600.00	\$ 187,600.00	\$ 187,600.00
B	Affordable Income Percentage	70%	90%	110%	120%
C	Affordability Percentage (i.e. 30% for Very Low Income)	30%	35%	35%	35%
D	Amount of Income Available for Housing Payment (A x B)	\$ 39,396.00	\$ 59,094.00	\$ 72,226.00	\$ 78,792.00
E	Affordable Housing Payment (D / 12)	\$ 3,283.00	\$ 4,924.50	\$ 6,018.83	\$ 6,566.00
F	Taxes				
G	Insurance				
H	Non Mortgage Percentage of Affordable Payment % Assigned to Project	30%	30%	30%	30%
I	Sub Total of Non Mortgage Expense (E x H)	\$ 984.90	\$ 1,477.35	\$ 1,805.65	\$ 1,969.80
J	Utility Allowance (assuming electric heating, water heating, and cooking from Annual Schedule)	\$ 393.00	\$ 393.00	\$ 393.00	\$ 393.00
K	HOA Fee for 2020 (updated annually based on prior 3-year closing costs study)	\$ 284.87	\$ 284.87	\$ 284.87	\$ 284.87
L	Total Non Mortgage Expense (I + J + K)	\$ 1,662.77	\$ 2,155.22	\$ 2,483.52	\$ 2,647.67
M	Remaining Available for Mortgage (E - L)	\$ 1,620.23	\$ 2,769.28	\$ 3,535.31	\$ 3,918.33
	Interest Rate - Convert Interest Rate Whole Number into Payment Decimal	0.003333	0.003333	0.003333	0.003333
	Interest Rate - Use Term to Create Compounding Interest Rate	3.313498	3.313498	3.313498	3.313498
	Interest Rate - Create a Mortgage Payment Multiplier	0.004774	0.004774	0.004774	0.004774
	Max Mortgage Amount	\$ 339,375.39	\$ 580,056.82	\$ 740,511.12	\$ 820,738.26
	Sales Price w/ 0% Down and 4% Interest	339,375.39	580,056.82	740,511.12	820,738.26
	Sales Price v1 without Transaction Fee (Rounded Up)	339,375.00	580,057.00	740,511.00	820,738.00
	Transaction Fee	10,181.25	17,401.71	22,215.33	24,622.14
	Total Sales Price (rounded up and including Transaction Fee)	349,556.25	597,458.71	762,726.33	845,360.14
	Sales Price v2 (including Transaction Fee)	349,556.00	597,459.00	762,726.00	845,360.00

Instructions: Complete highlighted sections.

Version Date: 3/17/2021



Developer Workshop

Proposed Modifications to Affordable Housing Inclusionary Requirements



Process



- Keyser Marston Associates, Inc. prepared an evaluation of the proposed modifications
- May 24th Developer Workshop
- June 8th Planning Commission Meeting, Informational Item only
- Return to Planning Commission, Date TBD, formal recommendation to Council required
- August/September 2021 return to City Council with a report and recommendation

Purpose



- The City is considering modifying its affordable housing inclusionary program to deepen the overall level of affordability of for-sale inclusionary units.
- Obtain feedback from the Development Community



Current Requirement

Requires new for-sale residential projects to either:

- 1) restrict 10% or 15% of total units at affordable sales prices to Moderate-Income households;
- 2) or pay a fee in-lieu of providing on-site units.

The City's inclusionary requirements are codified in Chapter 14.04 of the City's municipal code.

Alternative Program Changes



A. Under the first alternative, the Moderate-Income category would be stratified into two sub-categories, with a blended average price set at 100% of the Area Median Income.

B. Under the second alternative, the inclusionary requirement would include a component of Low-income units as well as a lower-price structure for Moderate-income units.

Keyser Marston Associates, Inc. (KMA)

Evaluation:



- The additional financial cost to new for-sale residential projects to provide the proposed deeper levels of on-site affordable units; and
- Changes to current in-lieu fee levels that would approximate the cost of providing the proposed deeper levels of on-site affordable units.

California Housing and Community Development (HCD) income limits

4.2



**HCD Income Table
(Effective April 26, 2021)**

Household size	1	2	3	4	5	6	7	8
Extremely Low 0-30%	\$34,800	\$39,800	\$44,750	\$49,700	\$53,700	\$57,700	\$61,650	\$65,650
Very Low 30-50%	\$58,000	\$66,300	\$74,600	\$82,850	\$89,500	\$96,150	\$102,750	\$109,400
Lower 50-80%	\$82,450	\$94,200	\$106,000	\$117,750	\$127,200	\$136,600	\$146,050	\$155,450
Median	\$105,900	\$121,050	\$136,150	\$151,300	\$163,400	\$175,500	\$187,600	\$199,700
Moderate 80-120%	\$127,100	\$145,250	\$163,400	\$181,550	\$196,050	\$210,600	\$225,100	\$239,650

Attachment: Presentation (3117 : INCLUSIONARY HOUSING ORDINANCE AMENDMENT -



Maximum Prices for Inclusionary Units:

Maximum Home Prices of Inclusionary Units: Current Program						
		Number of Bedrooms In Unit				
		2	3	4	5	6
% of Units Set Aside						
Projects Located Outside of Downtown						
Upper End of Moderate Income (120% of AMI)	15%	\$581,842	\$651,001	\$704,718	\$758,643	\$820,738
Projects Located in Downtown						
Upper End of Moderate Income (120% of AMI)	10%	\$581,842	\$651,001	\$704,718	\$758,643	\$820,738

In-lieu Fee Payment



The City's ordinance provides for some projects with approval by the City Council to make a payment in-lieu of providing on-site inclusionary units. The current in-lieu fee schedule is \$19.70 per habitable square foot for for-sale projects outside of downtown and \$13.20 per habitable square foot for projects located within downtown.

Summary of Proposed Alternative Affordable Inclusionary Requirements

4.2



The overall inclusionary requirement of 10% for downtown projects and 15% for projects outside of downtown would not change but affordability would be deepened.

Alternative A



Two bands of Moderate-Income units would be established. The first band would be priced to be affordable to households that earn up to 100% of the Area Median Income (AMI), the second band would be targeted to households earning up to 120% of the AMI.

Projects located outside of the Downtown would be required to set-aside 7.5% of units as “Median Income” units and 7.5% as Moderate-Income units (15%).

Projects located within the Downtown, would be required to set-aside 5% of units as Median Income units and 5% as Moderate-Income units (10%).

Median-income units would be priced at 90% of the AMI, and Moderate-Income units would be priced at 110% of AMI. The blended price of Moderate-Income units would decline from the current level of 120% of AMI to 100% of AMI.

Alternative B



Adds a Low-Income component to the inclusionary requirement.

Projects outside of Downtown would be required to restrict 5% of their units to Low-income households, 5% to Median-income households and 5% to Moderate-Income households (15%).

Projects within the downtown would be required to restrict 5% of their units to Low-Income households and 5% of their units to Moderate-Income households (10%).

Low-Income units would be priced at 70% of the Area Median Income (AMI), Median-income units would be priced at 90% of the AMI, and Moderate-Income units would be priced at 110% of AMI.

The blended average level of affordability of the inclusionary units would deepen from the current program level of 120% of AMI to 90% of AMI.

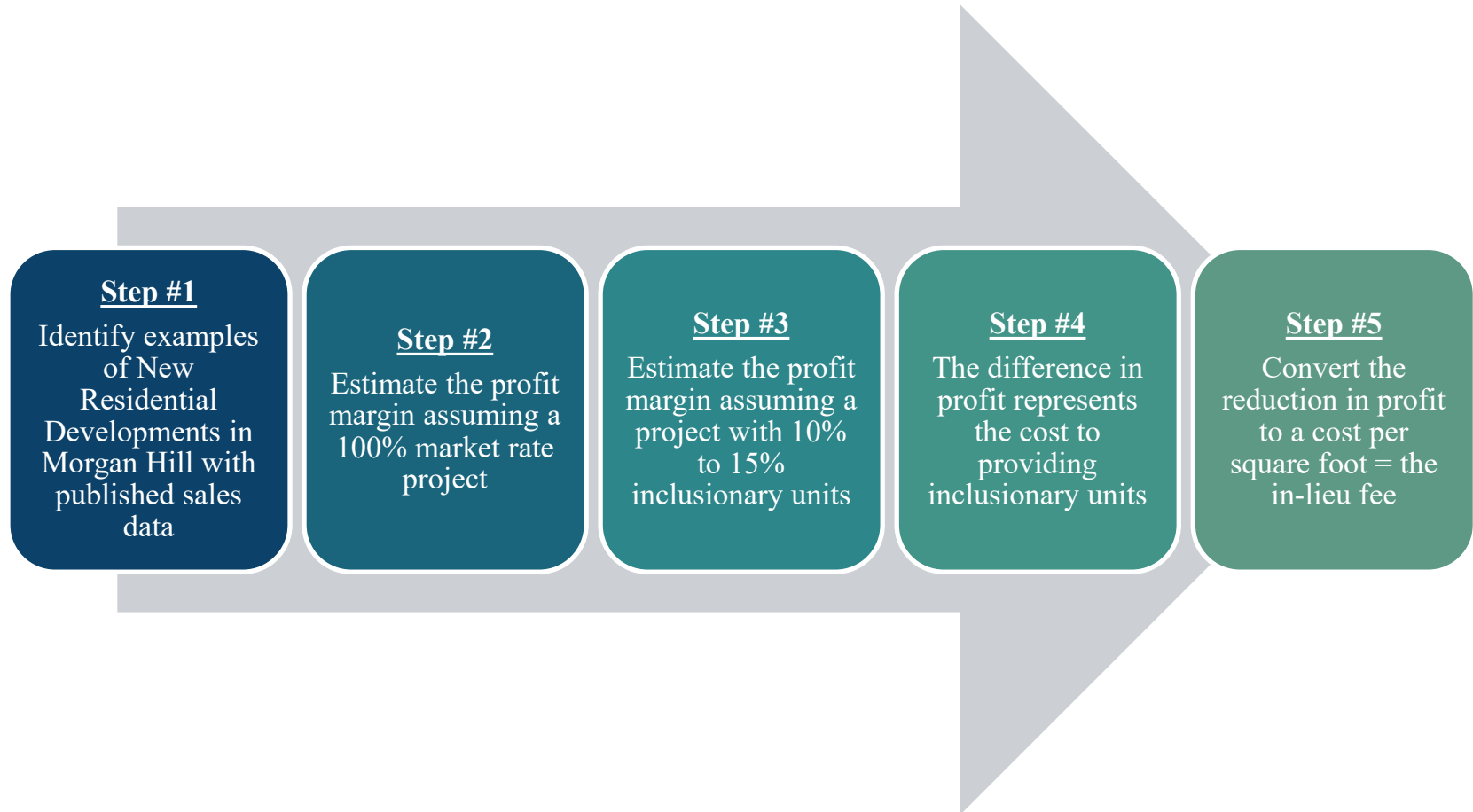
Alternative A & B Pricing



Alternative A: the blended average price for 3-bedroom inclusionary units located outside of downtown would be \$521,600, which is approximately \$129,000 less than the current maximum price for a Moderate-income three-bedroom unit.

Alternative B: the blended price for 3-bedroom inclusionary units located outside of Downtown would approximate \$435,300, which is \$216,000 less than the current maximum price for a Moderate-income three-bedroom unit. Low-income units would range in price from \$232,500 for a two-bedroom unit to \$339,400 for a six-bedroom unit.

Approach to Calculating In-Lieu Fees



Sample Attached / Condo developments

Attached Townhomes	Avg. Price	Avg. SF	Bedroom Count	Homes offered	Price Per SF
Madison Gate	\$779,900	1,783	3	50	\$437
Veneto	\$773,000	1,981	3.7	60	\$390
The Gables	\$795,990	1,718	3.3	37	\$463
Los Colinas	\$961,333	1,906	4	32	\$504
Valencia	\$934,333	2,036	4	84	\$459
Average	\$848,911	1,885	3.50		\$450
3 Beds	\$824,379	1,944	3		\$424
4 Beds	\$908,110	2,035	4		\$446

Sample Detached Developments

Detached Units	Developer	Avg. Price	Avg. SF	Bedroom Count	Homes offered	Price Per SF
Veneto	Van Daele Homes	\$1,019,175	2,791	3	14	\$365
Borello Ranch Estates	Toll Brothers	\$2,346,852	4,477	4.3	107	\$524
Average		\$1,683,014	3,634	3.64		\$463
3 Beds		\$1,459,782	3,213	3		\$454
4 Beds		\$2,186,245	3,830	4		\$571
5 Beds		\$2,756,995	5,932	5		\$465
6 Beds		\$2,765,995	5,921	6		\$467

Proposed Maximum Inclusionary Home Prices

Maximum Price	Bedroom Count				
	3.0	3.5	4.0	4.5	5.0
90% AMI	\$ 456,891	\$ 475,988	\$ 495,084	\$514,285	\$533,486
110% AMI	\$ 586,298	\$ 610,569	\$ 634,840	\$659,216	\$683,591
Average, 100% AMI	\$ 521,595	\$ 543,278	\$ 564,962	\$586,750	\$608,539

Calculation of In-lieu Fee – Attached Homes– Alternative A Inclusionary Requirements, Outside of Downtown

All Market Rate Units			
Total Units	100	Bedrooms	3.5
Inclusionary Rqmt	0		
	<u>Market Rate</u>	<u>Affordable</u>	<u>Total</u>
Units	100	0	100
SF	1,885	1,697	188,500
Price Per Du	\$848,911	\$543,278	
Transaction costs (3%)	\$25,467	\$16,298	
Cost per DU	\$764,020	\$721,999	
Price Per sf	\$450	\$320	
Cost per sf	\$405	\$426	
Revenues	\$82,344,367	\$0	\$82,344,367
Costs	\$76,401,990	\$0	\$76,401,990
Profit	\$5,942,377	\$0	\$5,942,377

On-site Affordable Units				
Total Units	100		Bedrooms	3.5
Inclusionary Rqmt	15%			
	<u>Market Rate</u>	<u>Affordable</u>	<u>Total</u>	
Units	85	15	100	
SF	1,885	1,697		90%
Price Per Du	\$848,911	\$543,278		
Transaction costs (3%)	\$25,467	\$16,298		
Cost per DU	\$764,020	\$721,999		
Price Per sf	\$450	\$320		
Cost per sf	\$405	\$426		105%
Revenues	\$69,992,712	\$7,904,699	\$77,897,410	
Costs	\$64,941,692	\$10,829,982	\$75,771,674	
Fractional Fee		\$0	\$0	
Profit	\$5,051,020	-\$2,925,284	\$2,125,737	

On-site Compliance Cost			
	<u>Per unit</u>	<u>Per SF</u>	<u>Total</u>
100% Mkt. Rate Profit	\$59,424	\$31.52	\$5,942,377
Profit W/ Affordable	\$21,257	\$11.28	\$2,125,737
Difference	\$38,166	\$20.25	\$3,816,640
		Per Affordable	\$250,000
		Per SF, all units	\$20.25
		Per unit, all units	\$38,200
		% of Price	4.50%

Calculation of In-Lieu Fee– Detached Homes - Alternative A Inclusionary Requirements - Outside of Downtown

All Market Rate Units			
Total Units	100	Bedrooms	3.64
Inclusionary Rqmt	0		
	<u>Market Rate</u>	<u>Affordable</u>	<u>Total</u>
Units	100	0	100
SF	3,634	2,726	363,400
Price Per Du	\$1,683,014	\$549,350	
Transaction costs (3%)	\$50,490	\$16,480	
Cost per DU	\$1,514,713	\$1,249,638	
Price Per sf	\$463	\$202	
Cost per sf	\$417	\$458	
Revenues	\$163,252,358	\$0	\$163,252,358
Costs	\$151,471,260	\$0	\$151,471,260
Profit	\$11,781,098	\$0	\$11,781,098

On-site Affordable Units			
Total Units	100	Bedrooms	3.64
Inclusionary Rqmt	15%		
	<u>Market Rate</u>	<u>Affordable</u>	<u>Total</u>
Units	85	15	100
SF	3,634	2,726	7,360
Price Per Du	\$1,683,014	\$549,350	
Transaction costs (3%)	\$50,490	\$16,480	
Cost per DU	\$1,514,713	\$1,249,638	
Price Per sf	\$463	\$202	
Cost per sf	\$417	\$458	11
Revenues	\$138,764,504	\$7,993,038	\$146,757,542
Costs	\$128,750,571	\$18,744,568	\$147,495,139
Fractional Fee		\$0	\$0
Profit	\$10,013,933	-\$10,751,530	-\$737,597

On-site Compliance Cost			
	<u>Per unit</u>	<u>Per SF</u>	<u>Total</u>
100% Mkt. Rate Profit	\$117,811	\$32.42	\$11,781,098
Profit W/ Affordable	-\$7,376	-\$2.03	-\$737,597
Difference	\$125,187	\$34.45	\$12,518,695
		Per Affordable	\$830,000
		Per SF, all units	\$34.45
		Per unit, all units	\$125,000
	% of Price		7.43%

FINDINGS & RECOMMENDATIONS

DOWNTOWN PROJECTS

4.2



There is a significant cost differential between providing inclusionary attached townhome / condominium units and providing inclusionary large, detached units. Restricted home prices are based on bedroom count and are the same for both townhomes and large detached homes, regardless of square footage.

Per Square Foot Cost of Providing Inclusionary Units: Within the Downtown

	Detached Units	Attached Townhomes and Condos
Cost of Current Inclusionary Requirements	\$16.57 to \$19.33	\$4.00 to \$7.00
Cost of Alternative A Inclusionary Requirements	\$21.07 to \$22.97	\$10.82 to \$13.50
Cost of Alternative B Inclusionary Requirements	\$24.44 to \$25.69	\$15.84 to \$18.69

FINDINGS & RECOMMENDATIONS OUTSIDE OF DOWNTOWN PROJECTS

4.2



There is a cost differential between providing inclusionary attached townhome / condominium units and providing inclusionary large, detached units. The cost of providing the deeper levels of affordable housing under the proposed inclusionary alternatives is also significantly higher than the cost of meeting the current Moderate-income requirements.

Per Square Foot Cost of Providing Inclusionary Units: Outside of Downtown

	Detached Units	Attached Townhomes and Condos
Cost of Current Inclusionary Requirements	\$24.86 to \$29.00	\$6.00 to \$10.00
Cost of Alternative A Inclusionary Requirements	\$31.60 to \$34.45	\$16.23 to \$20.25
Cost of Alternative B Inclusionary Requirements	\$36.09 to \$38.08	\$22.92 to \$27.17

Accessory Dwelling Units (ADU)

The City's current program permits inclusionary units to be not less than the size of the smallest market rate unit of the same product type and bedroom count.

Based on available data, inclusionary detached homes have been in the range of 1,600 to 1,800 square feet and inclusionary attached townhomes /condominiums have ranged from 1,400 to 1,600 square feet.

Inclusionary units are separately owned by income eligible households. Accessory dwelling units (ADUs) range from 500 to 700 square feet, smaller and less costly to build. They are also not separately owned by income eligible households. Because of these differences, ADUs are not comparable to inclusionary units and do not count toward the inclusionary unit requirement.

Other Jurisdictions' Inclusionary Requirements and In-lieu Fee Provisions

City	Inclusionary Percent	Affordability Level	In-Lieu Fee**
Campbell	15%	Low and Moderate	\$34.50
Los Altos	15%	Majority Mod and some Low	TBD
Santa Clara	15%	Average 100% AMI	Detached: \$30 psf; Townhome \$25 psf; Condo: \$20 per sf
Cupertino	15%	50% Moderate, 50% Median	\$17.82 psf for detached; \$19.60 psf for small lot
San Jose*	15%	Moderate	Transitioning to \$25 per sf
Mountain View	15% general 15% to 20% for townhomes	Median for 15%; Moderate for 20%	\$54.50 per sf; \$125 per sf for townhomes
Sunnyvale	12.5%	Moderate	7% of sales price****
Palo Alto	15% < 5 acres; 20% > 5 acres	2/3 Median; 1/3 Moderate	\$77.62 psf; \$51.75 psf for attached and condos

RECOMMENDATIONS:



1. Consider Alternative A, if the City Desires to Deepen the Level of Affordability. Inclusionary homes would be offered at prices based on 90% of the AMI (which would be affordable to households earning up to 100% of the AMI) and 110% of the AMI (which would be affordable to households earning up to 120% of the AMI). The blended average level of affordability would average 100% of the AMI.
2. Consider Establishing Two In-Lieu Fee Rates: One Rate for Townhomes / Condominiums and One Rate for Large Single Family Detached Homes, given the significant difference in unit size and corresponding price.



RECOMMENDATIONS:

3. Fee Levels to Encourage Inclusionary Units Rather than Payment of In-Lieu Fees

Desired Level of Inclusionary Requirement	Detached Units	Attached Townhome and Condos
Downtown Project In-lieu Fee Schedule, Per SF		
Current Program (Prices at 120% AMI)	\$19.30	\$7.00
Alternative A (Avg. Blended Price at 100% AMI)	\$23.00 vs. Current: \$13.20	\$13.50 vs. Current \$13.20
Alternative B (Avg. Blended Price at 90% AMI)	Not Recommended	
Outside of Downtown Project In-Lieu Fee Schedule		
Current Programs (Prices @ 120% AMI)	\$29.00	\$10.00
Alternative A (Avg. Blended Price at 100% AMI)	\$34.50 vs. Current \$19.70	\$20.30 vs. Current \$19.70
Alternative B (Avg. Blended Price at 90% AMI)	Not Recommended	

QUESTIONS? COMMENTS....



CITY OF MORGAN HILL



- Planning Commission June 8, Informational Item
- Recommendation to City Council August/September

HOUSING ENGAGEMENT EVENTS:



5:30 PM virtual community workshops:

- All Things Housing - Wednesday, May 19th *recorded*
- State Mandates for Housing Production - Wednesday, June 2nd
- Housing Affordability - Wednesday, June 16th
- Housing and Long-Term Sustainability - Wednesday, June 23rd

Additional events:

- Affordable Housing 101 in Spanish with English Translation - Tuesday, May 18th at 5:00 pm *recorded*
- A Model for Agricultural Workforce Housing in South County - Friday, May 28th at 10:00 am
- Creating Inclusive Communities through Design Form - Thursday, June 10th at 5:30 pm
- Hablando Vivienda con Nuestras Familias in Spanish with English Translation - Sunday, May 23rd *recorded*



Morgan Hill Housing Conversation

<https://www.morgan-hill.ca.gov/2162/2021-Housing-Conversation>



2021 Household Size & Income Limits

Santa Clara County (effective 4/26/2021)

Household
Size:

Percent age of the 100% Median	Income Category	1	2	3	4	5	6	7	8	9
30	Extremely Low	\$34,800	\$39,800	\$44,750	\$49,700	\$53,700	\$57,700	\$61,650	\$65,650	\$69,650
50	Very Low	\$58,000	\$66,300	\$74,600	\$82,850	\$89,500	\$96,150	\$102,750	\$109,400	\$116,550
70	Pricing Only	\$74,130	\$84,735	\$95,305	\$105,910	\$114,380	\$110,250	\$131,320	\$139,790	\$148,250
80	Low	\$82,450	\$94,200	\$106,000	\$117,750	\$127,200	\$136,600	\$146,050	\$155,450	\$164,850
90	Median	\$89,190	\$101,970	\$114,705	\$127,440	\$137,655	\$147,825	\$158,040	\$168,210	\$178,400
100	Median	\$105,900	\$121,050	\$136,150	\$151,300	\$163,400	\$175,500	\$187,600	\$199,700	\$211,800
110	Moderate	\$116,490	\$133,155	\$149,765	\$166,430	\$179,740	\$193,050	\$206,360	\$219,670	\$232,980
120	Moderate	\$127,100	\$145,250	\$163,400	\$181,550	\$196,050	\$210,600	\$225,100	\$239,650	\$254,084

