385 N. Arrowhead Ave, First Floor, San Bernardino, CA 92415 | Phone: 909.387-8311 • Fax: 909.387.3249

www.SBCounty.gov

SAN BERNARDINO COUNTY

Land Use Services Department
Building & Safety Division

CONSTRUCTION REQUIREMENTS FOR FIRE SAFETY AREA 1 (FS1) AND CALIFORNIA BUILDING CODE (CBC) CHAPTER 7A

The Fire Safety Overlay District was created to provide greater public safety in areas prone to wildland fires.

I. The provisions of the Fire Safety Overlay and CBC Chapter 7A apply to the following types of construction activity for which the permit application is submitted on or after July 1, 2008:

A. All development applications or construction permits for new buildings.

Exception: New detached non habitable accessory structures without provisions for plumbing or mechanical equipment such as sheds or storage buildings less than 400 sq. ft. need only comply with roof, exterior wall coverings and separation requirements of Section VI.

See Section VI of this document if the above descriptions apply to the project under consideration.

II. The provisions of the Fire Safety Overlay without CBC Chapter 7A requirements apply to the following types of construction activity:

A. Additions, alterations or remodels.

B. When an addition equals or exceeds 50% of the existing structure, the entire existing structure shall be retrofitted to comply.

C. The entire roof shall be retrofitted to comply when 25% or more of the existing roofing is replaced or repaired.

See Section VII of this document if the above descriptions apply to the project under consideration.

III. A fire department project condition letter is required unless specifically exempted by the Fire Department having jurisdiction. Contact the Building and Safety Division office for more information.

IV. An approved <u>Erosion and Sediment Control</u> plan and permit will be required for all development projects, any site construction, grading and any other significant land disturbing activity within this Overlay District, except for ministerial projects within the FS2 and ministerial projects within the FS3 that are located on parcels that are less than one acre and that have a slope of less than 10%. Ask for the erosion control guidelines at any Building and Safety office for help with preparation of an erosion control plan.

V. The Fire Safety Overlay District is divided into three fire safety areas to correspond to district geographic areas and the associated wildland fire hazard.

A. Fire Safety Area 1 (FS1) includes those areas within the mountains and valley foothills. It includes all the land generally within the San Bernardino National Forest boundary and is characterized by areas with moderate and steep terrain and moderate to heavy fuel loading contributing to high fire hazard conditions.

B. Fire Safety Area 2 (FS2) includes those lands just to the north and east of the mountain FS1 area in the mountain-desert interface. These areas have gentle to moderate sloping terrain and contain light to moderate fuel loading. These areas are periodically subject to high wind conditions which have the potential of dramatically spreading wildland fires.

C. Fire Safety Area 3 (FS3) includes lands just to the south of the mountain FS1 area. These lands are primarily within the wildland-urban interface of the Valley Region and consist of varying terrain from relatively flat to steeply sloping hillside areas. Present and future development within FS3 is exposed to the impacts of wildland fires and other natural hazards primarily due to its proximity to FS1. These areas are subject to Santa Ana wind conditions which have the potential of dramatically spreading wildland fires during extreme fire behavior conditions.

VI. Construction requirements combined for FS1 and CBC Chapter 7A (new construction):

A. Roof covering: Roof coverings shall be either noncombustible or shall be fire retardant material not composed of organic fiber with a minimum Class A rating, as defined in the California Building Code. Tile shall be tight-fitting and the open ends of high-profile tile shall be capped with non-ignitable material to prevent bird's nests or other combustible material from accumulating. Gutters and downspouts shall be constructed of noncombustible material.

(1) Roof valley flashing, when provided, shall be of 26 gauge corrosion resistant metal 16" wide installed over a minimum 36" wide underlayment consisting of one layer of No. 72 ASTM cap sheet running the full length of the valley.

(2) Roof gutters shall be provided with a means to prevent the accumulation of leaves and debris in gutter.

B. Exterior walls and building separation: Except as noted in VI(B)(2) below, all exterior wall coverings shall be approved noncombustible or ignition-resistant material, heavy timber, or log wall construction or shall provide protection from intrusion of flames and embers in accordance with State Fire Marshall Standard 12-7A-1 or one hour fire resistance rated construction. (See page 8 of this handout for one hour rated construction of Wood Sided Structures.) In addition, the following shall apply.

(1) All residential structures shall have interior side yard setbacks of twenty percent (20%) of the lot width. Interior side yards shall not be less than five feet (5') and need not exceed fifteen feet (15'). Eaves shall be permitted to project into the required setback no more than two feet (2'). No other projections shall be allowed into the interior side yard less than five feet from the property line. Exterior wall separations shall not be less than ten feet (10') for all buildings, including those on adjoining parcels. Where building separations are less than ten feet (10'), additional mitigation measures may be required by the responsible fire authority.

(2) When exterior walls of residential and accessory buildings or portions thereof are within 15' of interior side or rear lot lines or the exterior wall separation is less than 30', the outside of all such exterior walls or portions thereof shall be constructed with exterior wall coverings that are constructed of noncombustible materials or provide one hour fire-resistance-rated construction on the exterior side.

C. Eaves: Eaves shall provide one-hour fire resistance-rated construction or equivalent. See page 7 for details. Fascia shall be two inches nominal solid wood or stucco or equivalent protection.

D. Exterior glazing: Exterior glazing shall comply with the provisions of the California Building Code and with the following additional requirements:

(1) Exterior windows, window walls and glazed doors, and windows within exterior doors, shall be multi-layered glass panels (dual- or triple-paned with a minimum of one (1) tempered pane, or glass block), or other assemblies with a minimum of 20 min. fire resistive rating.

(2) Vinyl window frame assemblies shall be prohibited, except when they have all of the following characteristics:

(a) Frame and sash are comprised of vinyl material with welded corners;

(b) Metal reinforcement in the interlock area;

(c) Glazed with insulated glass with at least one (1) tempered pane;

(d) Frame and sash profiles are certified in American Architectural Manufacturing Association (AAMA) Lineal Certification Program; and

(e) Certified and labeled in accordance with American National Standards Institute structural requirements.

E. Exterior Doors and Exterior Door Assemblies: Exterior door assemblies shall meet standard SFM 12-7A-1 or shall be of approved noncombustible construction, or solid core wood having stiles and rails not less than 1-3/8" thick with interior field panel thickness no less than 1-1/4" thick, or shall have a fire resistance rating of not less than 20 minutes. For exterior doors with windows, refer to VI(D) above.

Noncombustible or exterior fire retardant treated wood vehicle access doors are not required to comply with this chapter.

F. Address Numbers: All new and existing non-accessory buildings shall have internally illuminated, noncombustible building address numbers legible from the street or road fronting the property. These numbers shall contrast with their background with a minimum of 4" high and 1/2" stroke numbers.

G. Structure openings: Louvers, ventilators, or openings in walls, roofs, attics, and underfloor areas having headroom less than four feet (4') in height which are not fitted with sash or doors, shall be covered with wire screen. The screen covering such openings shall be of corrosion-resistant metal or other approved material that offers equivalent protection and shall have a maximum mesh of one-eighth inch (1/8"). Eave vents and roof-mounted turbine vents are prohibited.

H. Insulation: Paper-faced insulation shall be allowed in attics or ventilated spaces only if the paper is not exposed to the attic open space. Cellulose insulation is required to be fire retardant.

I. Setback from National Forest Boundary: All buildings on lots which abut a National Forest that were created between March 9, 1988 and April 11, 2007 shall be set back at least thirty feet (30') from the boundary of the San Bernardino National Forest. Each structure on a lot that was created after April 12, 2007 shall be set back at least 100' from the boundary.

J. Chimneys: Every chimney used in conjunction with any fireplace or any heating appliance in which solid or liquid fuel is used, shall be maintained with a spark arrester. An approved spark arrester shall mean a device constructed of stainless steel, copper or brass, woven galvanized wire mesh, twelve (12) gauge minimum of three-eighths inch (3/8") minimum to one-half inch (1/2") maximum openings, mounted in or over all outside flue openings in a vertical and near vertical position, adequately supported to prevent movement and visible from the ground.

K. Fire hydrants: Fire hydrants shall be identified by a method specified by the Fire Authority.

L. Fuel tanks: Fuel tanks (e.g., liquefied petroleum tanks) shall be located at least ten (10) feet away from any structure and in accordance with the Uniform Fire Code, the Table of Projections and the Storage Standards specified by Fire Hazard Performance Standards in Chapters 5 and 9 in Division 7 of the Development Code. Such tanks shall be secured to the ground.

M. Water faucets: A minimum of two (2) three quarter inch (3/4") faucets with hose connections each served by a three quarter inch (3/4") waterline and installed prior to any pressure reducing device shall be available per habitable structure separated by at least one-third (1/3) of the perimeter of the structure. Such faucets should be on the side(s) of a structure facing fire hazardous areas whenever possible.

N. Decking surfaces, stair treads, risers, and landings of decks, porches and balconies where any portion of such surface is within ten feet (10') of the primary structure shall be constructed of ignition resistant materials conforming to State Fire Marshall Standard 12-7A-4, or heavy timber, or exterior fire retardant treated wood (factory applied) or approved noncombustible materials.

O. Piping: Exposed piping, except for plumbing vents above the roof, shall be noncombustible as defined in the California Building Code.

P. The underside of cantilevered and over hanging appendages and all exposed floors shall be enclosed with noncombustible or ignition resistant or one hour fire resistive materials on the exposed surface. All exposed structural columns, beams and supporting walls shall be protected as required for exterior walls.

Q. Firewood Storage: All areas used for the storage of firewood, or other flammable materials shall either be at least thirty feet (30') away from all structures, or wholly enclosed within a structure.

R. Where wood or vinyl fencing is used, there shall be a minimum of five (5) foot separation between the wood or vinyl fencing and the wall of the nearest structure except on those properties where previous construction occurred pursuant to a previous code. Fencing within

the five (5) foot separation area shall be of noncombustible material or modified one-hour fire-resistance-rated construction.

S. All fences or walls required adjacent to fuel modification areas or wildland areas as conditions of approval for a development project shall be constructed of noncombustible materials as defined in the California Building Code. All other fences, including those on the interior of such development project, are not subject to this requirement, except as required in IV(R) above.

T. Where side and rear yards are enclosed by fencing, gates shall be provided on both side yards for emergency access to the rear yard.

U. Prior to permit issuance, a certificate (Appendix F, attached) is required to be filled out and signed by the reviewing official signifying the structure as it is proposed to be built meets these standards. Prior to final approval, the responsible person shall sign Appendix F affirming the features were included in the construction of the structure.

V. A fuel modification plan may be required by the Fire Department. Contact the Fire Department having jurisdiction for more information.

W. Additional requirements: Dependent upon specific conditions of the site, such as fire flow, building separation, road conditions, slope, vegetation, etc., or combination thereof, the responsible fire authority may require any structures to meet more stringent construction standards as additional mitigation to the fire threat. Such standards include, but are not limited to, full perimeter exterior walls to be constructed to the modified or full one-hour construction standards, sprinklers, etc.

VII. Construction requirements for additions, alterations and remodels or retrofits when the addition equals or exceeds 50%, or reroofs of 25% or more (FS Overlay only):

A. The following items from Section VI need not be done:

1. Dual pane glazing is acceptable without one pane tempered or 20 minute rating.

2. When roof valleys are flashed, the 26 gauge metal and cap sheet are not required.

3. Roof gutters do not need to be provided with a means to prevent accumulation of debris.

4. Ignition resistant wall coverings are not required throughout, however, all exterior wall coverings within 15’ of a property line or less than 30’ to an adjacent building are required to be protected with non-combustible materials or provide one hour fire resistive construction on the exterior side. In this case, ignition resistant wall coverings are not an equivalent substitution.

5. Garage doors may be of any material permitted by code.

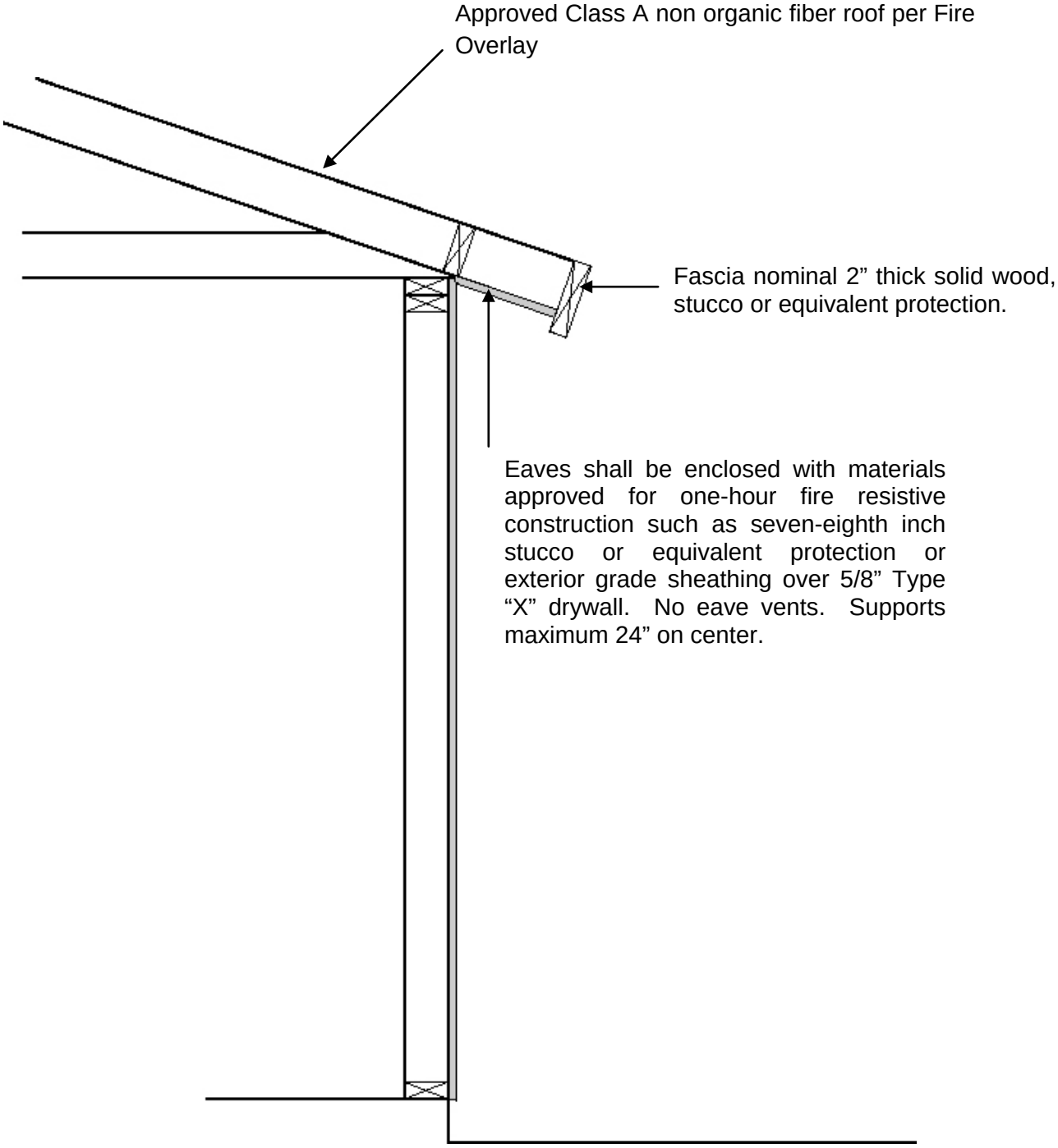
6. Deck surfaces may be constructed of any species of wood provided it is at least 1-1/2” thick and meets all structural requirements.

7. A completed and signed Appendix F is not required except for manufactured homes when the Building and Safety Division was not the inspection agency.

All other features of Section VI that apply are required.

EAVE PROTECTION IN FS-1 AND FS-2 FIRE HAZARD OVERLAY

Eave overhang projections into interior side yards are not allowed to project into the required setback more than two feet. No other projections are allowed less than five feet to a side or rear property line.



WOOD SIDED STRUCTURES

The following options are suggested methods of construction for wood sided buildings subject to a modified one-hour exterior wall requirements as specified in the FS1, FS2 and FS3 areas.

A. PLYWOOD:

Exterior side-one layer 5/8" Type X gypsum sheathing, applied parallel to 2x4 or 2x6 wood studs, 16" on center with galvanized roofing nails, 1 3/4" long, 0.120" shank, 7/16" or 1/2 head, 7" on center in the field and at top and bottom plates, 4" on center at side perimeters. Exterior type plywood (3/8" minimum) to be attached over the gypsum sheathing to studs. Nailing and thickness of the plywood as required per manufacturer's specifications and Table 2306.4.1 of the California Building Code for plywood applied over gypsum sheathing <u>or</u> per engineer's specifications.* When Table 2306.4.1 is used it will usually result in 10d common nails or 10d galvanized box nails. Both of these 10d nails are 3" in length. Substitution with a shorter nail is not allowed.

B. DROP SIDING:

Exterior surface with ¾" drop siding over ½" gypsum sheathing on 2x4 wood studs at 16" on center. Gypsum sheathing nailing with 1¾" by No. 11 gauge by 7/16" head galvanized nails at 8" on center. Siding nailed with galvanized smooth box nails of a size sufficient to penetrate a minimum of 1½" into the framing members.*

C. Other methods may be acceptable provided they can be documented with a specific listing or approval.

APPENDIX F
COMPLIANCE CERTIFICATE

FIRE SAFETY (FS) OVERLAY AND CALIFORNIA BUILDING CODE CHAPTER 7A

OWNER_____PERMIT NUMBER_____

ADDRESS_____OVERLAY AREA_____

REGION_____(MOUNTAIN, VALLEY OR DESERT)

If proposed building is a manufactured home, complete the following:

Manufacturer_____Model_____HUD #_____

This form is required as part of the approved plans when a structure is proposed to be built or installed in the FS Overlay District of San Bernardino County. Submit this completed form with the signature of the owner or other authorized agent prior to final inspection.

APPLICABLE FS OVERLAY AREA	CIRCLE	
1, 2, 3	Yes	Roof is non-combustible or fire retardant Class A rated non-organic fiber.
1, 2, 3	Yes	High profile tile shall have open ends capped with non-ignitable material.
1, 2, 3	Yes	Eave enclosed with 7/8” thick stucco, one-hour fire-resistive or equal.
1, 2, 3	Yes	Fascia shall be two inches nominal solid wood, stucco or equivalent protection.
1, 2, 3	Yes	No eave projection shall be in the interior side yard more than two feet (2’).
1, 2	Yes	Other than 2’ eave projections into the required side yard setback, no other projections are allowed less than five feet (5’) to a side or rear property line.
3	Yes	In the valley region, no projections of any kind into the side yard less than five feet (5’) to a side property line.
1, 2, 3	Yes	No eave vents or roof mounted turbine vents.
1, 2, 3	Yes	Louvers, ventilators, or openings in walls, roofs, attics, and underfloor areas having headroom less than four feet (4’) in height which are not fitted with sash or doors, shall be covered with wire screen. The screen covering such openings shall be of corrosion-resistant metal or other approved material that offers equivalent protection and shall have a maximum mesh of one-eighth inch (1/8”).

Permit Number_____

APPLICABLE FS OVERLAY AREA	CIRCLE	
1, 2, 3	Yes	Wall Covering All exterior wall coverings shall be approved non-combustible or ignition resistant material or heavy timber or log wall construction or shall provide protection from intrusion of flames and embers in accordance with SFM 12-7A-1 or shall provide equivalent one hour fire- resistance-rated construction on exterior side.
1, 2, 3	Yes	When exterior walls of residential and accessory buildings or portions thereof are within fifteen feet (15') of interior side or rear lot lines, or the exterior wall separation is less than thirty feet (30'), the outside of all such exterior walls or portions thereof shall be constructed with exterior wall coverings that are constructed of noncombustible materials or provide the one hour fire- resistance-rated construction on the exterior side. (See handout for Wood Sided Structures.) Where building separations are less than ten feet (10'), additional mitigation measures may be required by the responsible fire authority. This applies to the following walls: North_____ East_____ South_____ West_____
1, 2, 3	Yes	Vinyl window frame assemblies, if installed, shall have all of the following characteristics: (A) Frame and sash are comprised of vinyl material with welded corners; (B) Metal reinforcement in the interlock area; (C) Glazed with insulated glass with a minimum of one tempered pane per light; (D) Frame and sash profiles are certified in American Architectural Manufacturing Association (AAMA) Lineal Certification Program; and (E) Certified and labeled in accordance with American National Standards Institute (ANSI)/AAMA/National Wood Window and Door Association (NWWDA) structural requirements.
1, 2, 3	Yes	All exterior wood doors are solid core.
1, 2, 3	Yes	All exterior glazing is multi-pane with a minimum of one tempered pane or glass block or other assembly with a minimum of 20 min. fire resistive rating.
1, 2, 3	Yes	Paper-faced insulation shall be allowed in attics or ventilated spaces only if the paper is not exposed to the attic open space. Cellulose insulation is required to be fire retardant.
1, 2, 3	Yes	Every chimney used in conjunction with any fireplace or any heating appliance in which solid or liquid fuel is used, shall be maintained with a spark arrester. An approved spark arrester shall mean a device constructed of stainless steel, copper or brass, woven galvanized wire mesh, twelve (12) gauge minimum of three-eights (3/8) inch minimum to one-half (1/2) inch maximum openings, mounted in or over all outside flue openings in a vertical or near vertical position, adequately supported to prevent movement and visible from the ground.

Permit Number_____

APPLICABLE FS OVERLAY AREA	CIRCLE	
1, 2, 3	Yes	A minimum of two (2) three quarter (3/4) inch faucets with hose connections each served by a three quarter (3/4) inch waterline and installed prior to any pressure reducing device shall be available per habitable structure separated by at least one-third (1/3) of the perimeter of the structure. Such faucets should be on the side(s) of a structure facing fire hazardous areas whenever possible. If hose bibbs are not provided as part of the manufactured home construction, they shall be externally provided.
1, 2, 3	Yes	Decking – Decking, surfaces, stair treads, risers, and landings of decks, porches and balconies where any portion of such surface is within 10' of the primary structure shall be constructed of fire department approved solid wood 1 ½" thick or ignition resistant materials, or heavy timber, or exterior fire retardant treated wood (factory applied) or approved non combustible materials.
1, 2, 3	Yes	The exterior exposed underside of cantilevered and overhanging appendages and all exterior exposed floors shall be enclosed with one hour materials.
1, 2, 3	Yes	Structural columns, beams and supporting members in all exterior exposed floors shall be protected as required for exterior walls.
1, 2, 3	Yes	A fuel modification plan, when required by the Fire Department having jurisdiction, shall be completed prior to final inspection approval.
1, 2, 3	Yes	The local fire agency may require additional fire protection measures. Obtain a "Fire Department Project Condition Letter" for additional requirements.

REVIEWING OFFICIAL_____ DATE_____

The undersigned owner, or other authorized person affirms by signature below, that all of the applicable requirements or features indicated above have been incorporated into the construction plans and documents of the above described structure. The building proposed to be built by these plans complies with all materials and construction methods for wildfire exposure as described in California Building Code Chapter 7A and the Fire Safety Overlay of San Bernardino County. Deviation from the plan requires concurrence of the reviewing authority.

_____ DATE_____

(Signature of Owner or Authorized Agent or Plant IPIA/Plant Quality Control Inspector or Authorized HCD Inspector)

_____ DATE_____

(Print Name)

PLANT OR OFFICE ADDRESS_____

PHONE NUMBER_____