

FIRE SAFE BUILDING CONSTRUCTION & METHODS for Wildland-Urban Interface Fire Areas



Application Manual

City of Redding
Fire and Building Departments
July 2008

FIRE SAFE BUILDING CONSTRUCTION AND METHODS FOR WILDLAND-URBAN INTERFACE

The following document outlines materials and construction methods for protecting exterior/interior exposures from wildland fires. This standard shall be used to mitigate the hazard to life and property from the intrusion of fire from wildland and adjacent structures and prevention of structure fires from spreading to wildland fuels.

Scope:

The provisions of this document shall apply to all new buildings located in the Very-High Fire Hazard Severity Zone or in any wildland urban interface fire area. The provisions of this document shall not apply to existing structures or to the addition of enclosed, habitable floor area to existing structures that do not exceed 25% of the value of the existing structure. If the value of the new work exceeds 25% of the value of the existing structure than, all new work must comply with the provisions of this document. It shall apply to the addition of decks and covered patio type structures that would trap heat, flame or embers from a wildland fire unless otherwise exempted by the Building Inspection Division and Fire Department. The provisions of this document shall apply to accessory and ancillary buildings and structures that front on or adjoin vegetated or open space areas, unless otherwise exempted by the Building Inspection Division and Fire Department.

Purpose:

The use of ignition-resistant and noncombustible construction methods as outlined in this document are intended to mitigate wildfire exposure as required in the California Building Code, Chapter 7A, and California Fire Code, Chapter 47.

Materials and Methods of Construction:

Roofing:

Roofs shall comply with the California Building Code, Chapter 15. Roofs shall have a roofing assembly installed in accordance with its listing and the manufacturer's installation instructions and shall be Class A roof assemblies or a non-combustible roof assembly.

Where the roof profile allows for a space between the roof covering and roof decking, the spaces shall be constructed to prevent the intrusion of flame and embers, be fire-stopped at the ends with approved materials or have one layer of No. 72 ASTM cap sheet installed over the combustible decking.

Where provided, valley flashing shall not be less than No. 26 gage galvanized sheet, corrosion-resistant metal installed over a minimum of 36 inches wide underlayment consisting of one layer of No. 72 ASTM cap sheet running the full length of the valley.

Roof Gutters:

Roof gutters shall be provided with the means to prevent the accumulation of leaves and debris in the gutter and be of noncombustible material.

Attic Ventilation:

When required by the California Building Code, Chapter 12, roof, attic and underfloor vents shall resist the intrusion of flame and embers into the ventilated area of the structure. Vents shall not be located on the downhill side of the structure when the venting regulations can be met without installation of the downhill venting. When vents are necessary on buildings, the vents shall be screened with an ignition-resistant, noncombustible wire mesh with 1/4- inch openings, or it's equivalent and be louvered to prevent the entry of sparks or burning embers. Turbine attic vents shall be equipped to allow movement in one way direction only.

Eave or Cornice Vents:

Eave and cornice vents shall not be installed unless they are of a type that is listed and approved to resist the intrusion of flame and burning embers into the attic area of the structure. Vents screened with non-combustible wire mesh with ¼ inch openings, or its equivalent may be used as soffit venting if located at least 12" out from the wall and if additional vent holes are provided in the eave blocking above the plate line between each rafter. (see Exhibits 2 through 10 on ignition resistant eaves).

Insulation:

Paper-faced insulation shall be prohibited in attics or ventilated spaces.

Eave Protection:

Eaves and soffits shall be protected by ignition-resistant materials or noncombustible construction on the exposed underside (see Exhibit 2 through 10). Also see Appendix A (attached)

Exterior Walls:

Exterior walls surfaces shall be constructed of approved noncombustible or ignition-resistant material, one-coat stucco, heavy timber or log wall construction or shall provide protection from the intrusion of flames and embers in accordance with standard SFM 12-7A-1.(See appendix A) The exterior wall covering shall extend from the top of the foundation to the roof and terminate at 2-inch nominal solid wood blocking between rafters at all roof overhangs, or in the case of enclosed eaves, terminate at the enclosure (see Exhibits 1 through 10). Also see Appendix A (attached) for items that meet standard SFM 12-7A-1.

Exterior Glazing and Window Walls:

Exterior windows, window walls, glazed doors and glazed openings within exterior doors, located where there is a wild fire exposure such as on the sides of the structure that face the wildland areas, shall be insulating-glass units with a minimum of one tempered glass pane, or glass block or have a fire-resistive rating of not less than 20 minutes when tested according to ASTM E 2074, or conform to the requirements of SFM 12-7A-2. Glazing frames made of vinyl materials shall have welded corners, metal reinforcement in the interlock area and display the ANSI/AAMA/NWDA 101/I.S.2-97 structural requirement, or conform to the performance requirements of State Fire Marshal Standard 12-7A-2 (see Exhibit 1).

Exterior Door Assemblies:

Exterior door assemblies shall conform to the performance requirements of the State Fire Marshal Standard 12-7A-1, or shall be of approved noncombustible construction, or solid core wood having styles 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-resistive rating of not less of 20 minutes when tested according to ASTM E 2074. Windows within glazed doors shall comply with the exterior glazing and window wall standard. Non-combustible or exterior fire-retardant treated wood vehicle access doors are not required to comply with the above provisions.

Decking:

Decking, surfaces, stair treads, risers and landings of decks, porches and balconies where any portion of such surface is within 10 feet of the primary structure shall comply with one of the following:

1. Shall be constructed of ignition-resistant materials and pass the performance requirements of SFM 12-7A-4, parts A and B. **See Appendix A (attached)** or as listed on the bottom of Exhibit 11.
2. Shall be of heavy timber construction as defined in the California Building Code, exterior fire-retardant treated wood, or approved non-combustible materials (see **Exhibit 11**), or one-hour, fire-resistive construction.

The use of paints, coatings, stain or other surface treatments are not an approved method of protection.

Underfloor, under-roof and Appendage Protection:

The underside of appendages and floor or roof projections shall maintain the ignition-resistant integrity of exterior walls, or the projection shall be enclosed to the grade. All under floor areas enclosed to the grade with exterior walls shall be constructed in accordance with the exterior wall requirements on page 2 (see **Exhibit 11**). Provisions shall be made for drainage of enclosed spaces with water permeable decking or surfaces above. The complete enclosure of the under floor areas may be omitted where the underside of all exposed floors, exposed structural columns, beams and supporting walls are protected as required with exterior ignition-resistant material construction or be heavy timber. Balconies and patio covers shall be enclosed on the underside with materials which are ignition-resistant or noncombustible construction. The exposed structural columns, beams and supporting elements for these balconies or patio covers shall be protected as required with exterior ignition-resistant material construction or be heavy timber (6x6 columns may be used if supporting only a single floor load or a single roof load.) (see **Exhibit 11**)

Residential Fire Sprinklers:

Any new building which is a place of human habitation, exposed to a wildfire threat which may readily transmit fire to the building, or a building fire to the vegetative fuel, which has the potential to threaten to destroy life, overwhelm fire suppression capabilities or result in large property losses, will require a residential fire sprinkler system as per NFPA 13D (see **Exhibit 12**). Unless otherwise approved by the Fire Marshal, accessory buildings 1000 sq. ft. or greater require fire sprinklers.

Skylights:

Skylights exposed to the wildland threat area shall be of tempered glass, wired glass, dual pane or Class A rated assembly. See Section CBC 2409 and 2603.7

Summary:

See exhibit diagrams for further information concerning these requirements.

Appendix "A"

Updated 3-31-08

Wildland Urban Interface (WUI) Products Exterior Wall Siding and Sheathing (SFM Standard 12-7A-1)

Products Must Still Be Approved By The City Of Redding

All Products are required to have min. 1/2" nominal sheathing behind them.

- ◇ Company Name: JAMES HARDIE BUILDING PRODUCTS, INC.
10901 Elm Avenue, Fontana, CA 92337
Product Description: "Artisan®" lap siding, fiber-cement, 5/8" thick

- ◇ Company Name: JAMES HARDIE BUILDING PRODUCTS, INC.
10901 Elm Avenue, Fontana, CA 92337
Product Description: "Cemplank®" lap siding, fiber-cement, 5/16" thick

- ◇ Company Name: JAMES HARDIE BUILDING PRODUCTS, INC.
10901 Elm Avenue, Fontana, CA 92337
Product Description: "Cempanel®" vertical siding, fiber-cement, 5/16" thick

- ◇ Company Name: JAMES HARDIE BUILDING PRODUCTS, INC.
10901 Elm Avenue, Fontana, CA 92337
Product Description: "HardieShingle™" panel, fiber-cement, 1/4" thick
"HardieShingle™" lap siding, fiber-cement, 1/4" thick

- ◇ Company Name: JAMES HARDIE BUILDING PRODUCTS, INC.
10901 Elm Avenue, Fontana, CA 92337
Product Description: "HardiePlank™" lap siding, fiber-cement, 5/16" thick
"HardiePanel™" vertical siding, fiber-cement, 5/16" thick

- ◇ Company Name: ROSEBURG FOREST PRODUCTS Co.
P.O. Box 1088, Roseburg, OR 97470
Product Description: "Breckenridge" Siding, 19/32" thick, plain square edge, APA certified siding

- ◇ Company Name: ROSEBURG FOREST PRODUCTS Co.
P.O. Box 1088, Roseburg, OR 97470
Product Description: "Douglas Fir" siding, 11/32" thick, 12" groove spacing, 1.5" groove width, 3/8" groove depth, shiplap, APA certified siding

- ◇ Company Name: ROSEBURG FOREST PRODUCTS Co.
P.O. Box 1088, Roseburg, OR 97470
Product Description: "DuraTemp" siding, 15/32" thick, 4 ply, 8" groove spacing, 3/8" groove width, lap edge, APA certified siding.

◇ Company Name: Various Manufacturers

Product Description: Solid "Wood" siding: "Redwood", "Western Red Cedar", "Incense Cedar", "Port Orford Cedar", and "Alaska Yellow Cedar", interlocking joint profiles of shiplap, tongued-and-grooved, or rabbeted bevel patterns. Sizes: Minimum nominal 1" thickness in basic profile by minimum nominal 6" width. (American Softwood Lumber Standard PS 20).
Lumber grades: No through holes or loose knots.
Special instructions: solid wood siding shall be installed horizontally over 15/32" minimum thickness structural plywood or oriented strand board (OSB) for shiplap and tongued-and-grooved patterns and plywood for rabbeted bevel patterns.
The recommended installation practice for solid wood siding in wall construction regarding butt and overlapping joints is: butt joints between pieces should be staggered a minimum of 12" and all butt joints should be flush with no gap. Nail joints into the studs or blocking members. One nail at each crossing with the wood frame support member shall be used for nominal 6" siding and 2 nails for nominal 8" or wider siding.

Exterior Windows (SFM Standard 12-7A-2)

See page #2 for glazing requirements.

Under Eave (SFM Standard 12-7A-3)

◇ Company Name: JAMES HARDIE BUILDING PRODUCTS, INC.
10901 Elm Avenue, Fontana, CA 92337

Product Description: "CemSoffit®" un-vented, fiber-cement soffit, 3/16" thick and ¼" thick

◇ Company Name: JAMES HARDIE BUILDING PRODUCTS, INC.
10901 Elm Avenue, Fontana, CA 92337

Product Description: "HardieSoffit®" un-vented, fiber-cement soffit, 3/16" thick and ¼" thick

Decking (SFM Standard 12-7A-4)

◇ Company Name: ELK COMPOSITE BUILDING PRODUCTS, INC.

Product Description: "CrossTimbers FR" composite deck board, 1" thick x 5.5" width (nominal 1" x 6").
Test Protocol 12-7A-4, Part A only, Accelerated weathering.
Flame Spread Class B

◇ Company Name: FIBER COMPOSITES, LLC

Product Description: "Gray Meridian" composite deck board, 1" thick x 5 1/8" width.
Test Protocol 12-7A-4, Part A only, Accelerated weathering.
Flame Spread Class C (Refer to Exception of 704A.4.1.1(b))

◇ Company Name: FIBER COMPOSITES, LLC

Product Description: "Brown Selma" composite deck board, 1" thick x 5 1/2" width.
Test Protocol 12-7A-4, Part A only, Accelerated weathering.
Flame Spread Class C (Refer to Exception of 704A.4.1.1(b))

◇ Company Name: TREX COMPANY, INC.

Product Description: "Trex Accents: Fire Defense" wood and polyethylene composite deck board, nominal 5/4" thick x 5.5" width, nominal density of 0.036 lb/in³.
Test Protocol 12-7A-4, Part A only, Accelerated weathering.
Flame Spread Class B

◇ Company Name: Various Manufacturers

Product Description: Solid "Wood" decking: "Redwood", "Western Red Cedar", "Incense Cedar", "Port Orford Cedar", and "Alaska Yellow Cedar".

Sizes: Minimum nominal 2" thickness (American Softwood Lumber Standard PS 20).

Lumber grades: Construction Common and better grades for Redwood, 3 Common and better grades for Cedars, and Commercial decking or better grades for both Redwood and Cedars.

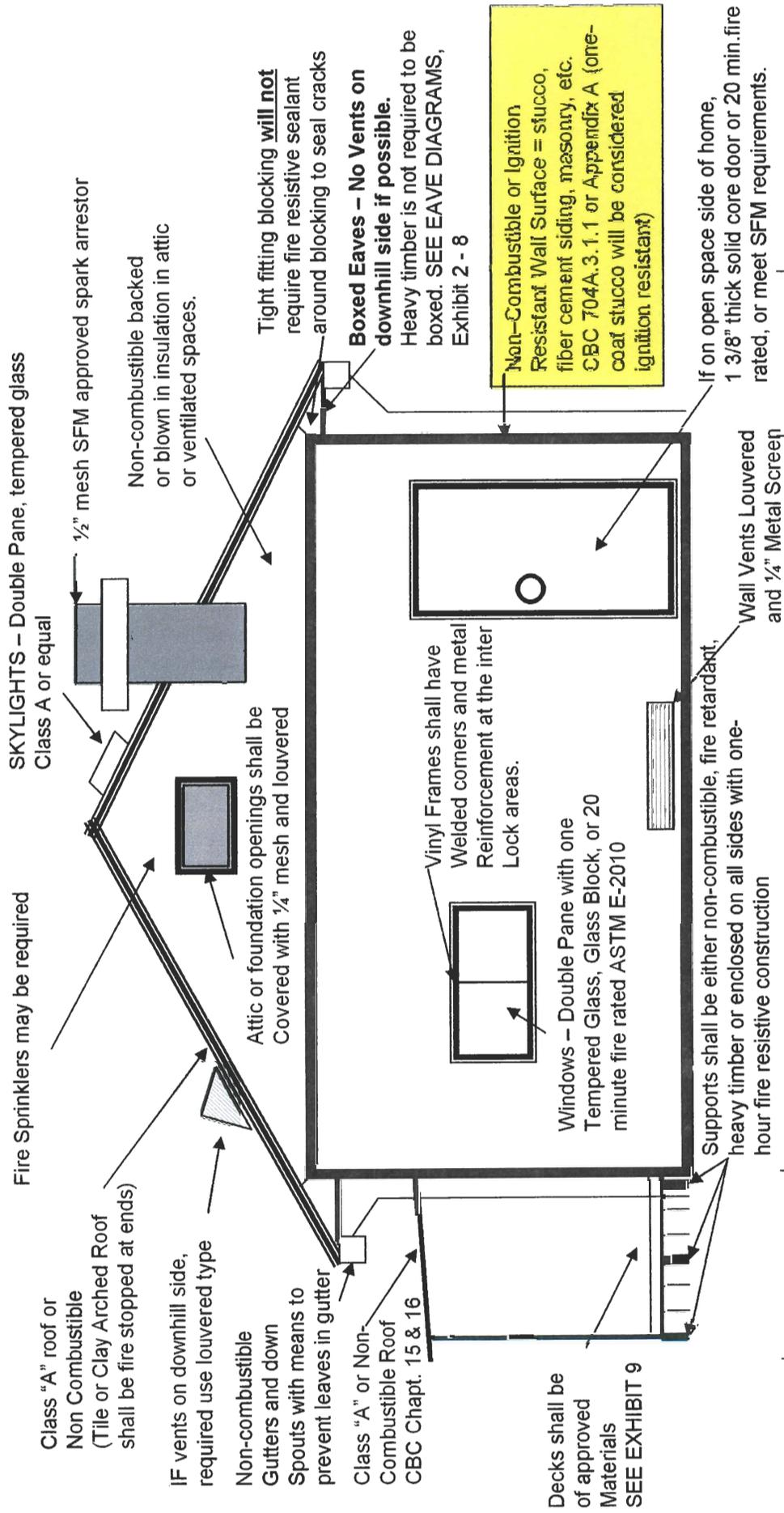
Special instructions: solid wood decking shall be installed over solid wood joists spacing 24" or less on center.

See the internet

<http://osfm.fire.ca.gov/pdf/fireengineering/bml/wuiproducts.pdf>

for an up to date list of approved products.

DIAGRAM OF FIRE SAFE STRUCTURE

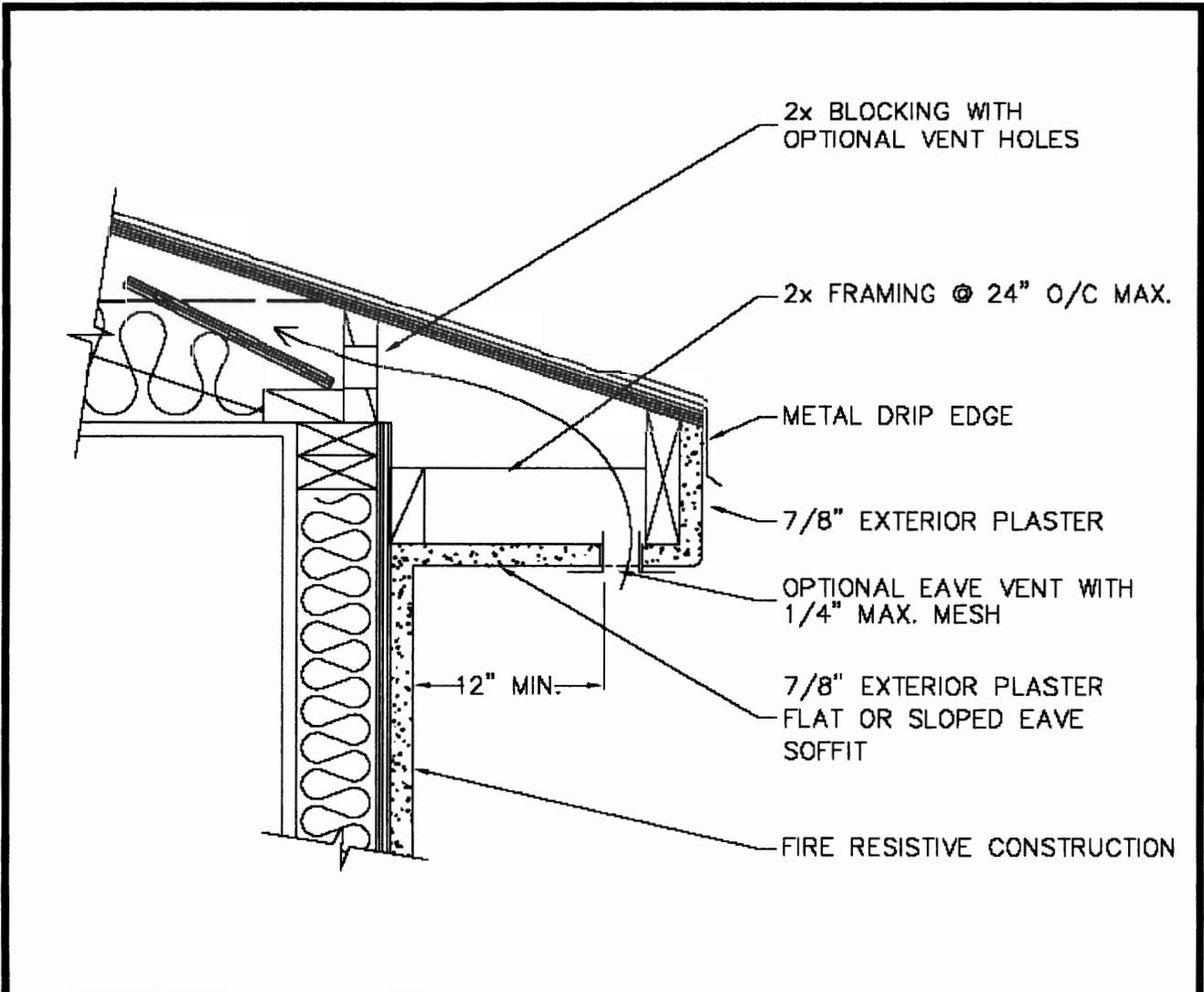


Vegetation Management Zones		
ZONE 2 200' – 100'	ZONE 1 100' – 0'	ZONE 1 0' – 100'
		ZONE 2 100' – 200'

ZONE 1 = this zone includes the area from the building to a point 100 feet away. This zone must be cleared and planted with fire resistive plants. ZONE 2 = This zone is between 100 to 200 feet from the building. In this zone native vegetation may remain but must be thinned by 50% and all dead and dying vegetation must be removed. The modification of the vegetation will slow down fire spread and reduce flame heights. ** Treated deck wood or composite material, or light weight cement, or redwood. Products approved would include Fire Trex solid, Smartdeck solid, Weatherbest solid or hollow, Bedford reinforced, Redwood. SEE APPENDIX A



IGNITION RESISTANT EAVES

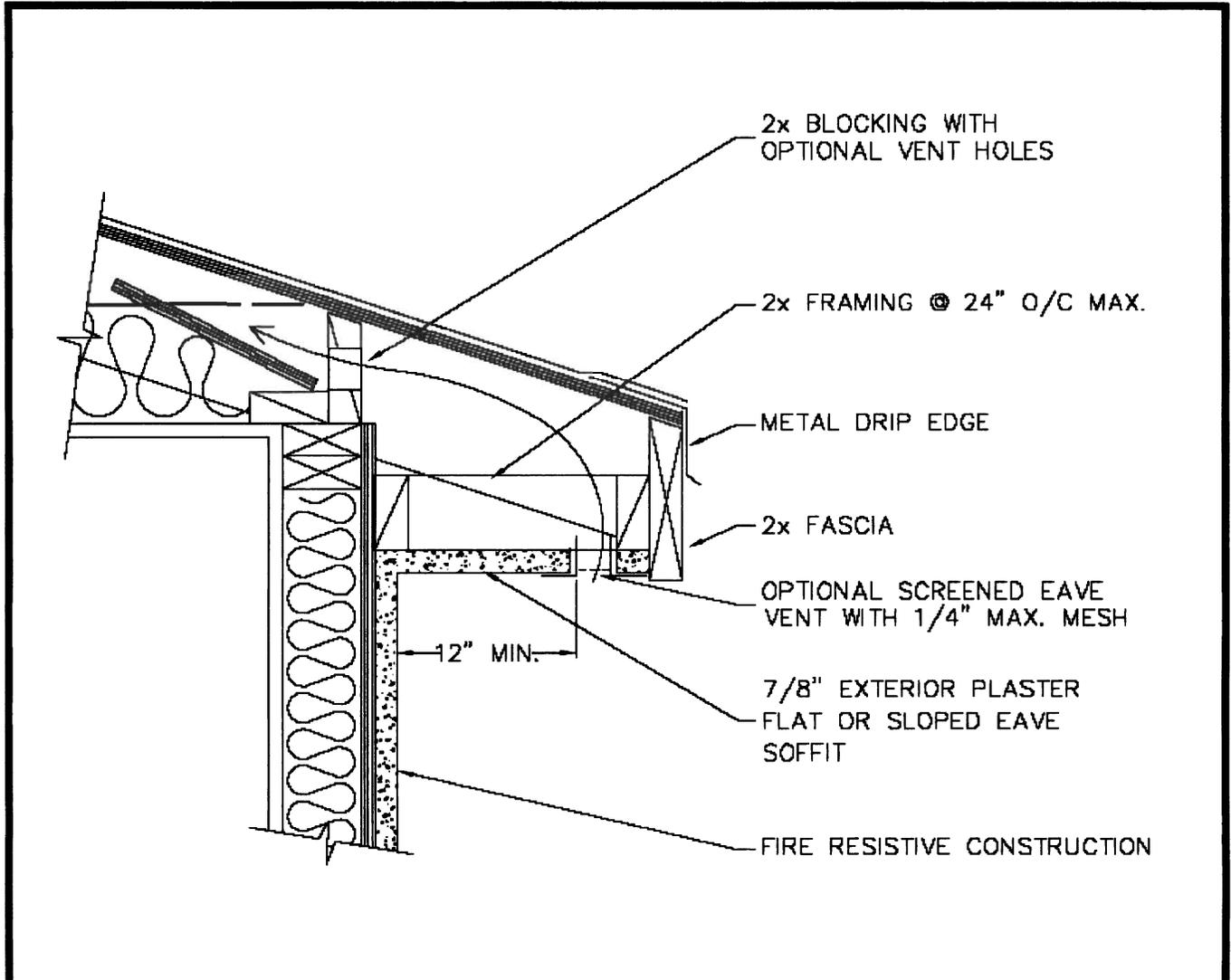


Date: 07/23/08	EXHIBIT 2 - BASIC
Scale: NONE	
Form:	STUCCO SOFFIT WITH FASCIA PROTECTED
1 of 9 Sheets	



CITY OF REDDING
C A L I F O R N I A

IGNITION RESISTANT EAVES



2x BLOCKING WITH
OPTIONAL VENT HOLES

2x FRAMING @ 24" O/C MAX.

METAL DRIP EDGE

2x FASCIA

OPTIONAL SCREENED EAVE
VENT WITH 1/4" MAX. MESH

12" MIN.

7/8" EXTERIOR PLASTER
FLAT OR SLOPED EAVE
SOFFIT

FIRE RESISTIVE CONSTRUCTION

Date: 07/23/08

Scale: NONE

Form:

2 of 9 Sheets

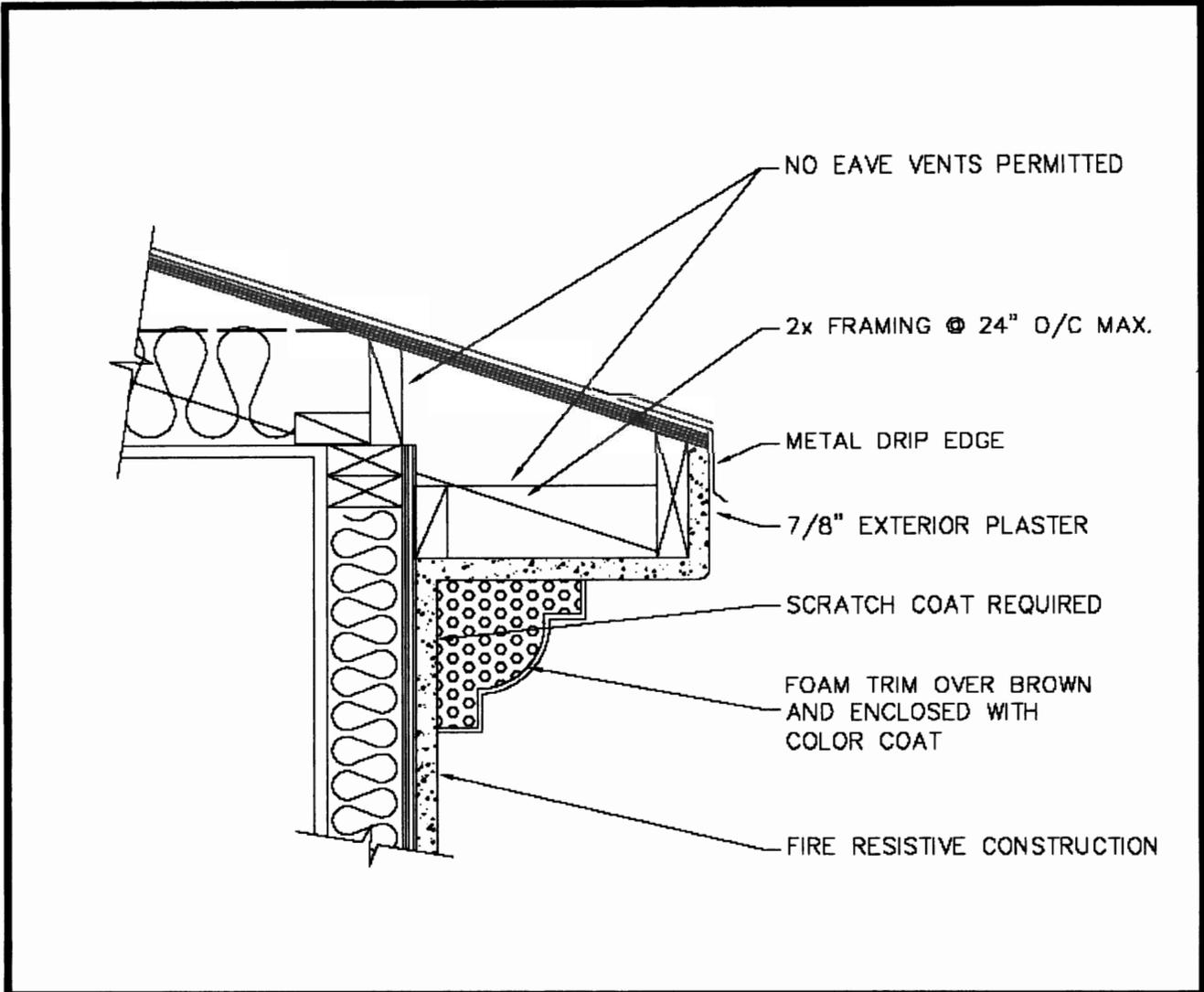
EXHIBIT 3 – BASIC

STUCCO SOFFIT WITH FASCIA EXPOSED

EXHIBIT 3



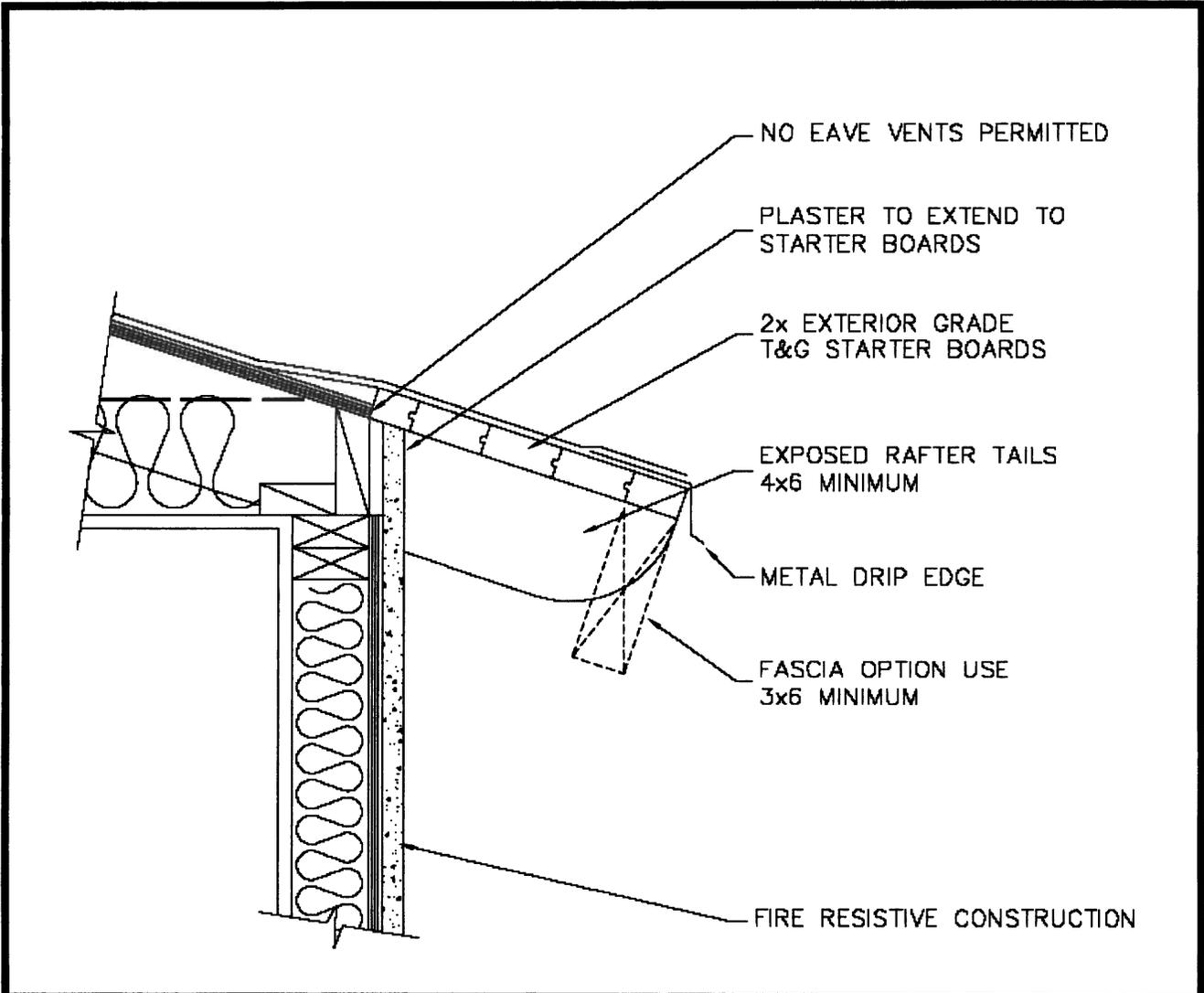
IGNITION RESISTANT EAVES



Date: 07/23/08	EXHIBIT 4 – BASIC
Scale: NONE	
Form:	FOAM TRIM WITH STUCCO
3 of 9 Sheets	



IGNITION RESISTANT EAVES

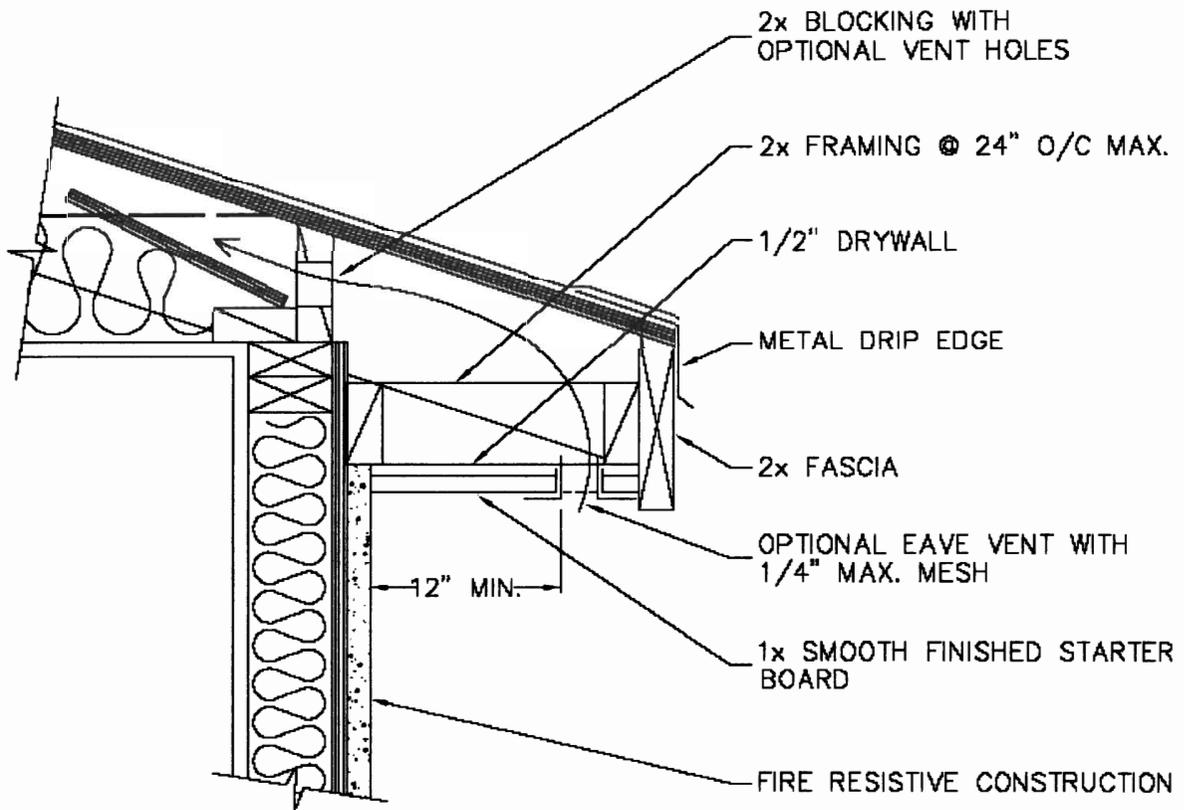


Date: 07/23/08	EXHIBIT 5 – BASIC
Scale: NONE	
Form:	HEAVY TIMBER
4 of 9 Sheets	



IGNITION RESISTANT EAVES

NOTE: ALL JOINTS MUST BE TIGHT FITTING AND CAULKED



Date: 07/23/08

Scale: NONE

Form:

5 of 9 Sheets

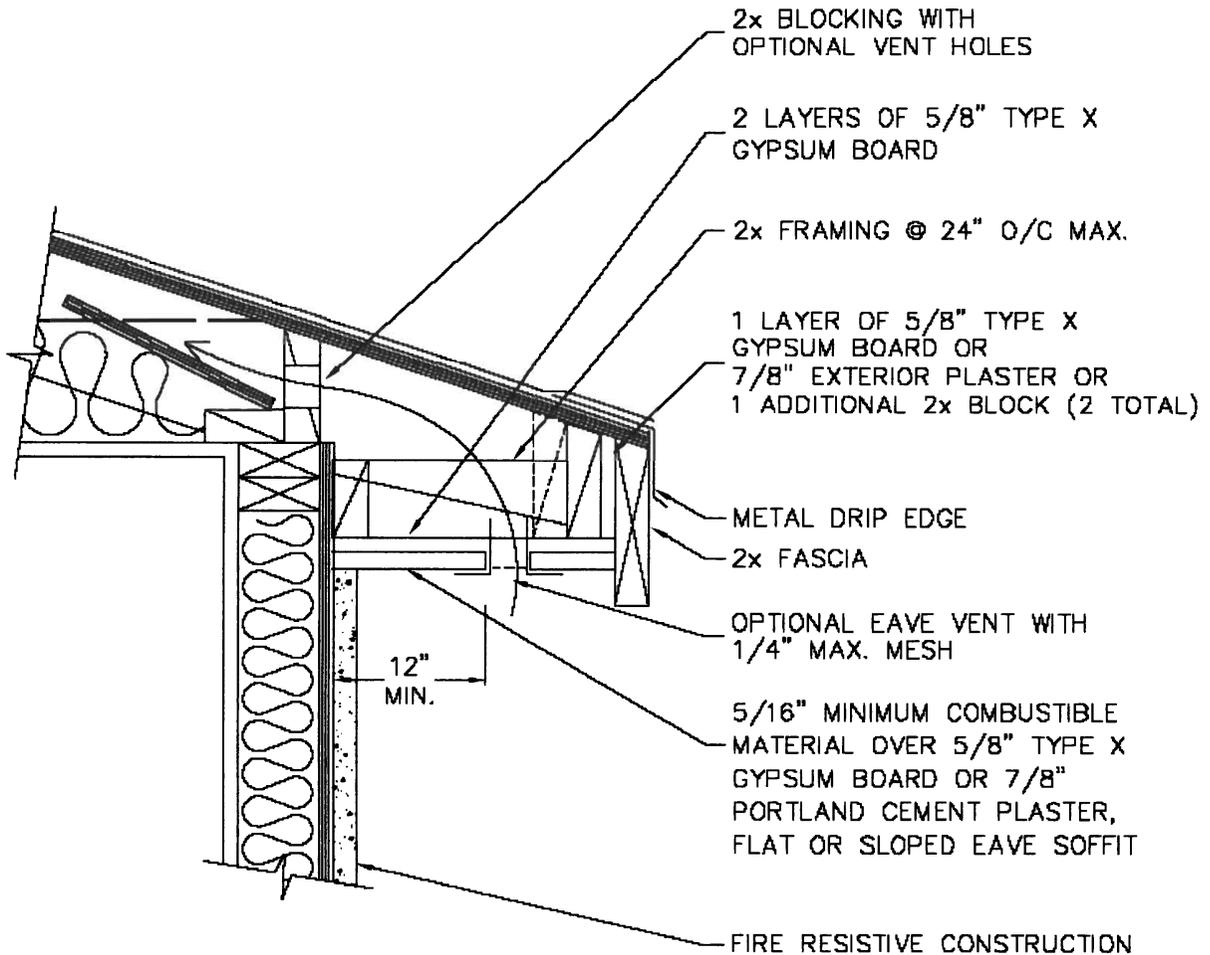
EXHIBIT 6 – BASIC

**EXPOSED WOOD WITH
DRYWALL UNDERLAYMENT**



IGNITION RESISTANT EAVES

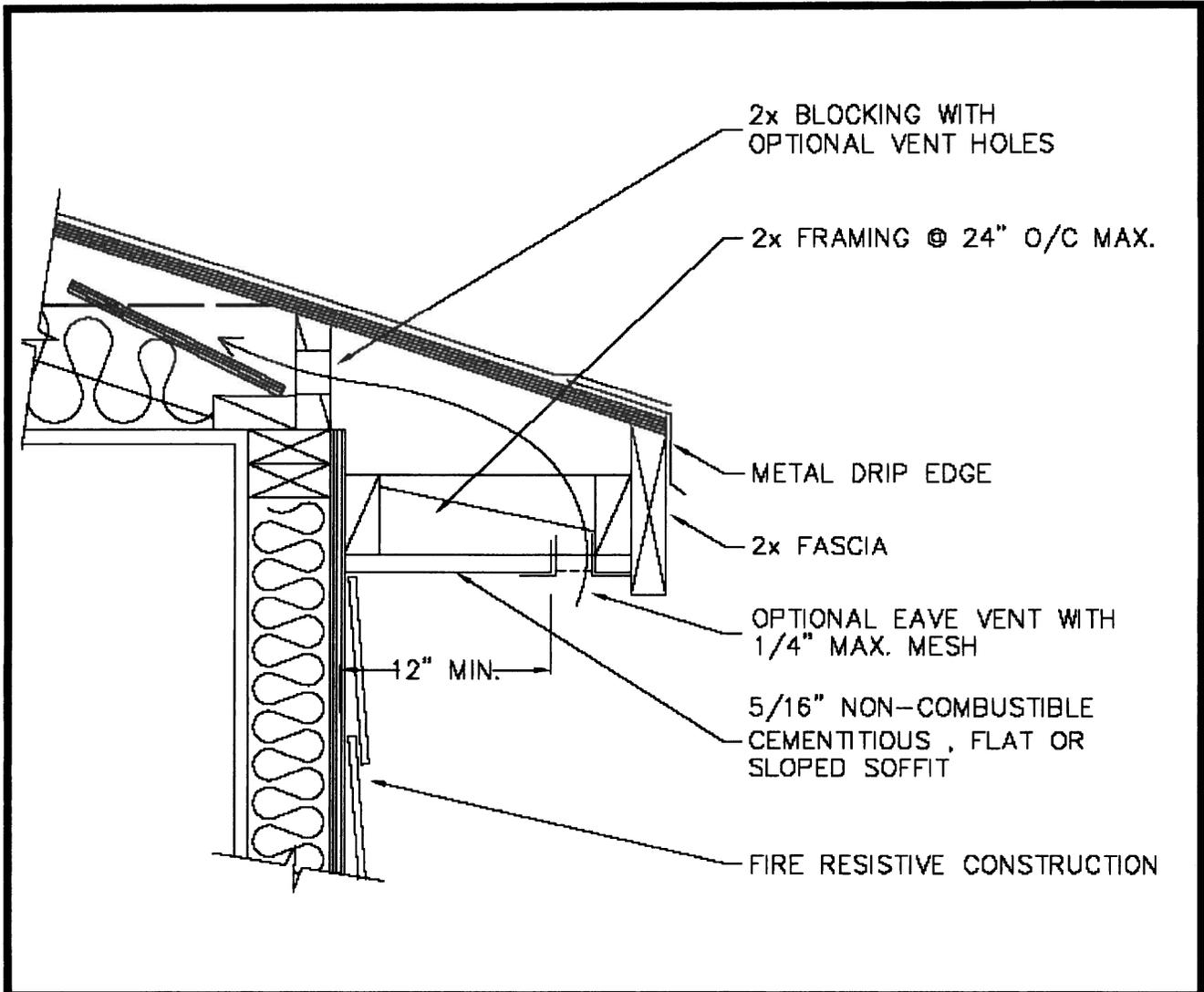
NOTE: ALL JOINTS MUST BE TIGHT FITTING AND CAULKED



Date: 07/23/08	EXHIBIT 7 – BASIC
Scale: NONE	
Form:	WOOD SOFFIT FASCIA EXPOSED WITH FIRE RESISTIVE UNDERLAYMENT
6 of 9 Sheets	



IGNITION RESISTANT EAVES



Date: 07/23/08

Scale: NONE

Form:

7 of 9 Sheets

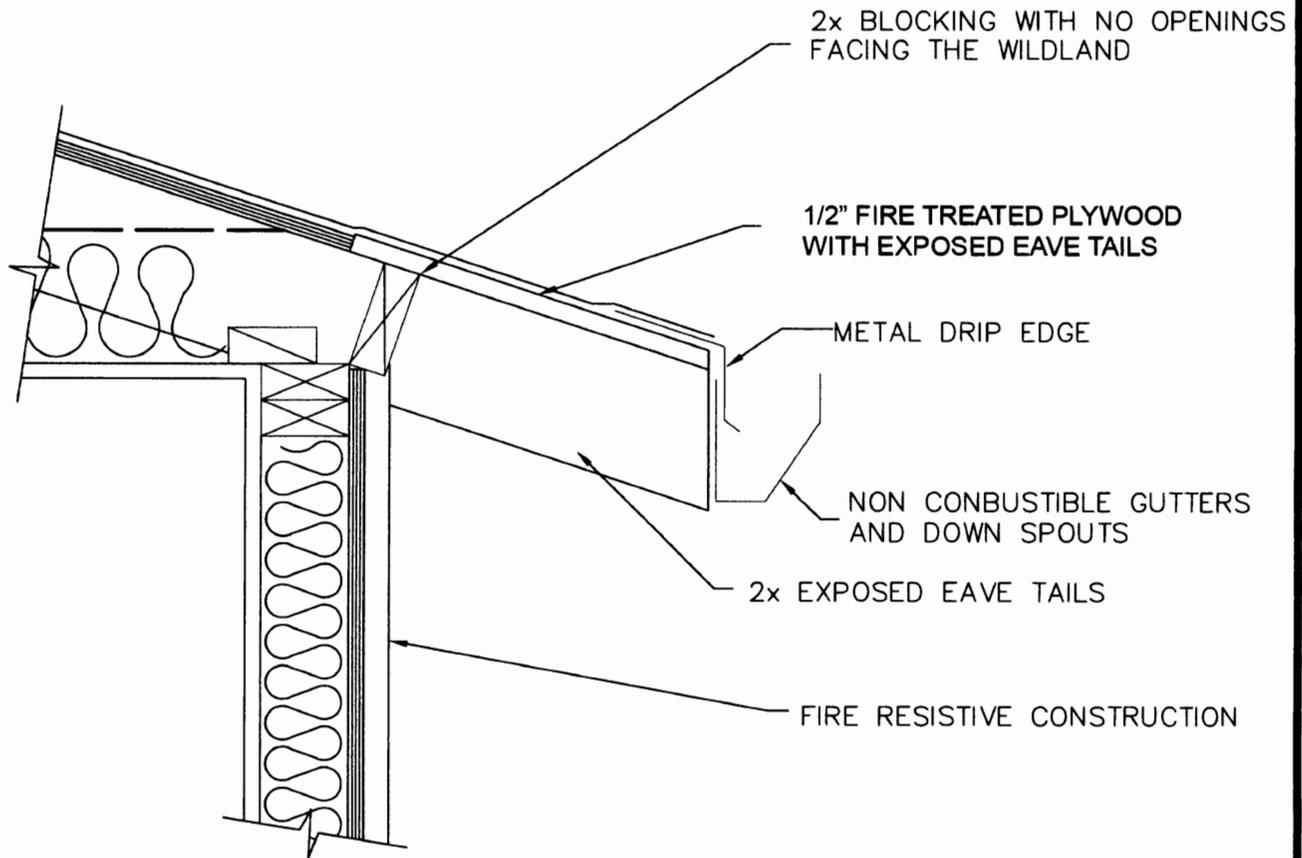
EXHIBIT 8 – BASIC

CEMENTITIOUS SIDING ON SOFFIT



IGNITION RESISTANT EAVES

NOTE: ALL JOINTS MUST BE TIGHT FITTING AND CAULKED



Date: 07/23/08

Scale: NONE

Form:

8 of 9 Sheets

EXHIBIT 9 – BASIC

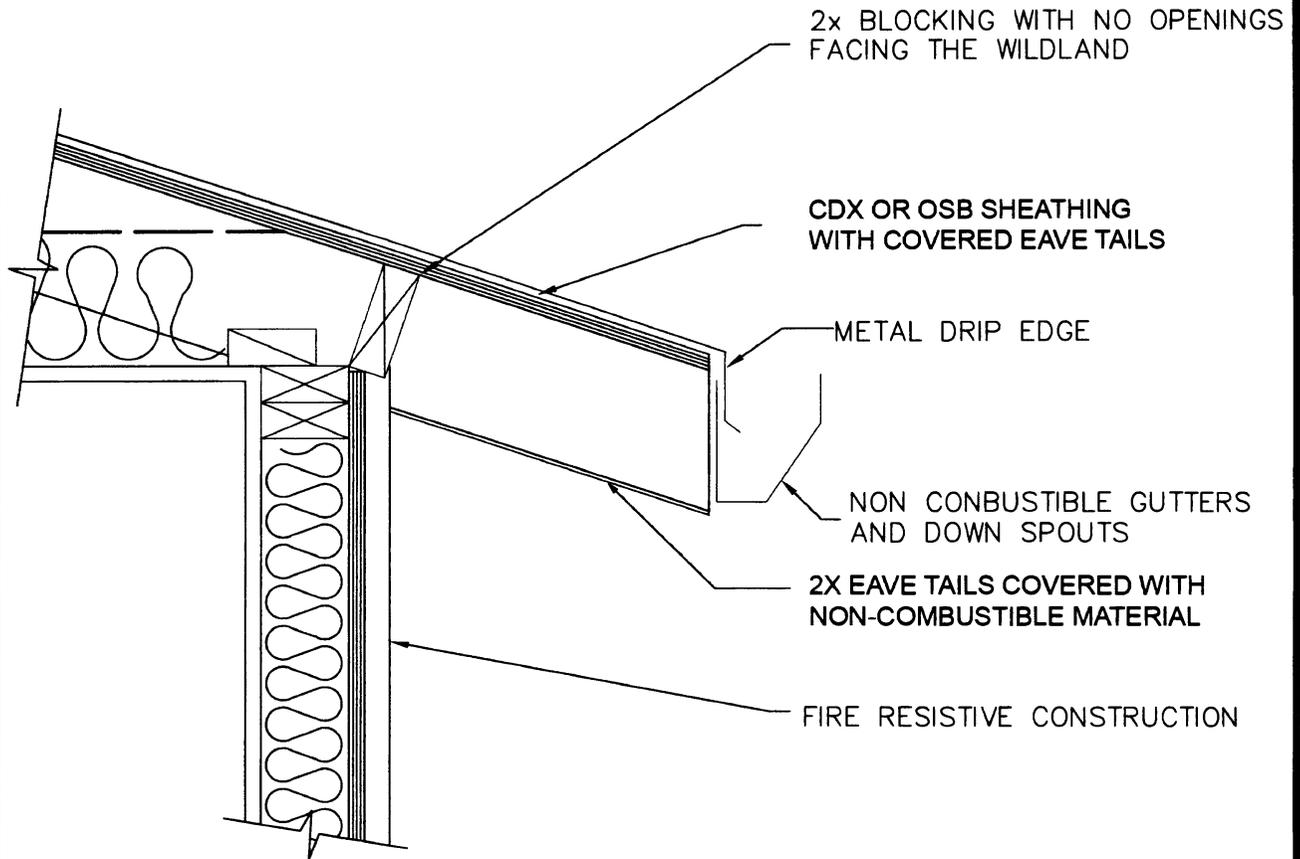
**OPEN EAVE WITH EXPOSED WOOD
WITH NO OPENINGS**

EXHIBIT 9



IGNITION RESISTANT EAVES

NOTE: ALL JOINTS MUST BE TIGHT FITTING AND CAULKED



Date: 07/23/08

Scale: NONE

Form:

9 of 9 Sheets

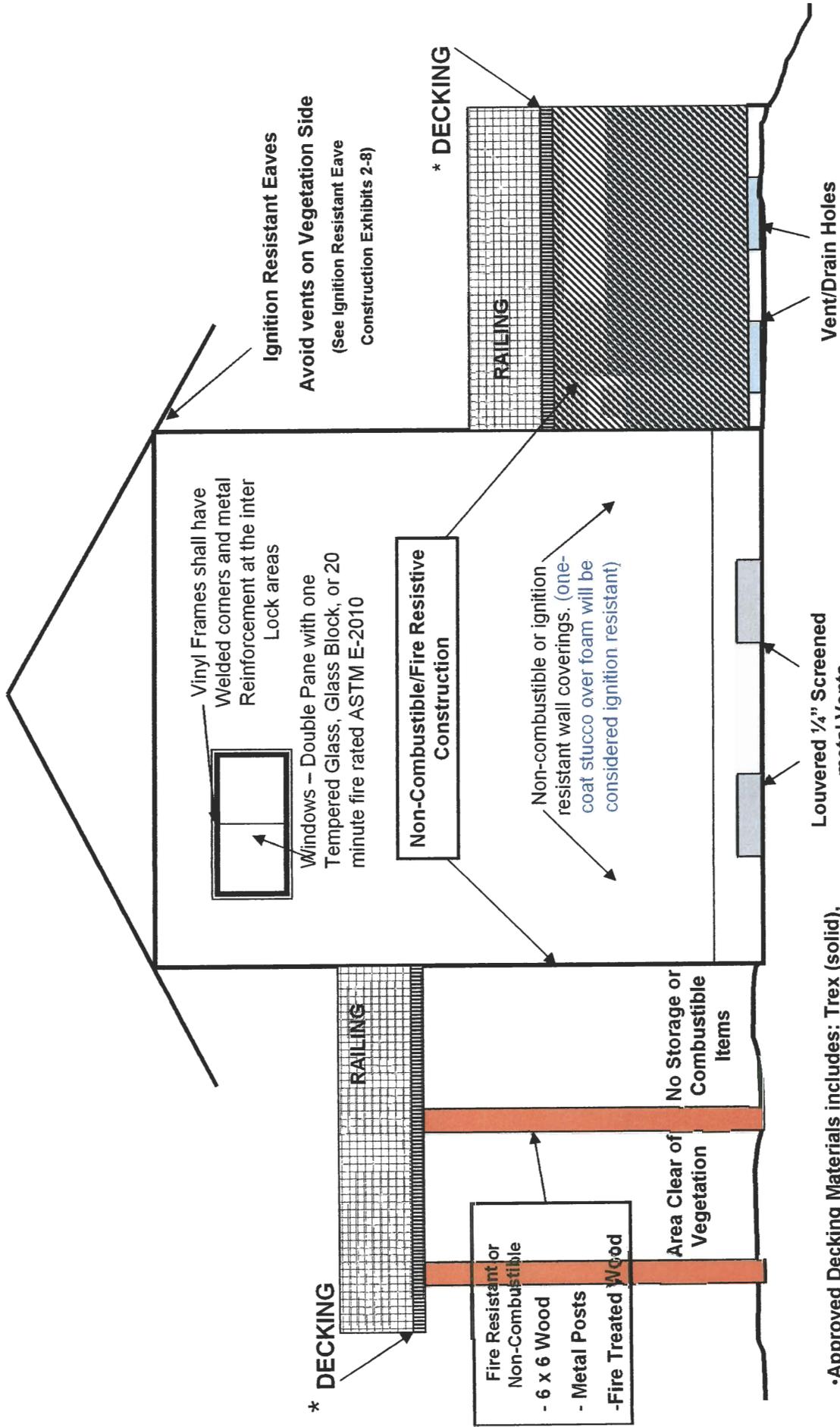
EXHIBIT 10 – BASIC

**CLOSED EAVE
WITH NO OPENINGS**

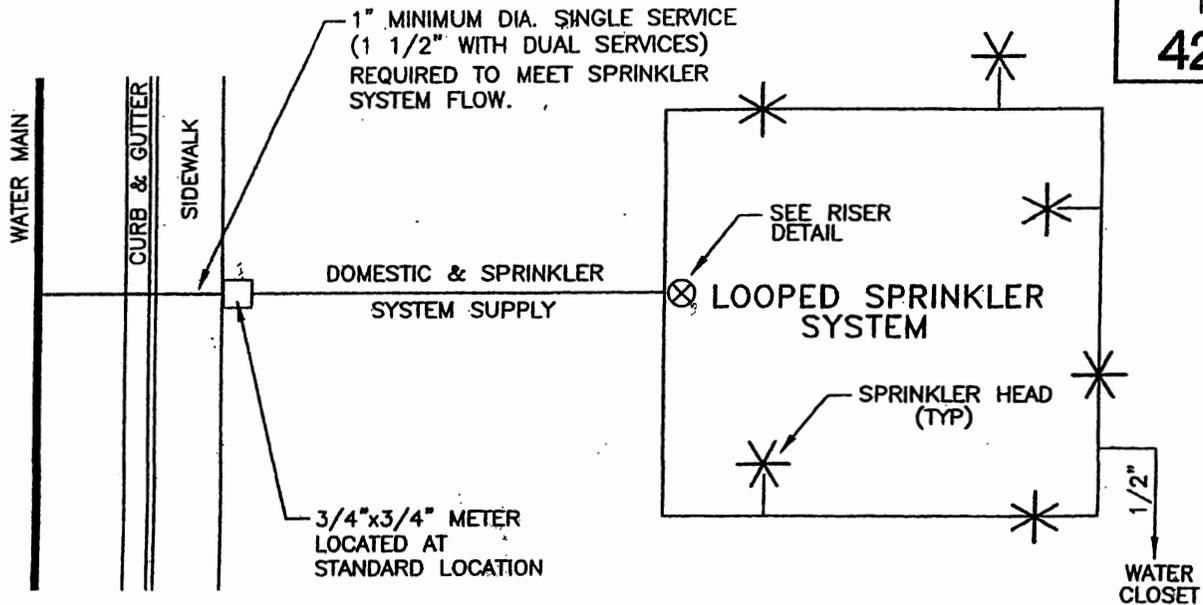
EXHIBIT 10

Decking Diagram

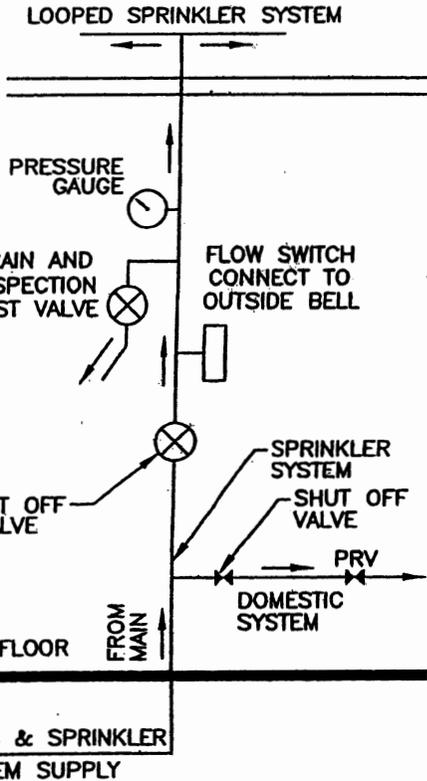
(Either of these designs is acceptable)



• Approved Decking Materials includes: Trex (solid), Smart Deck (solid), Weatherbest (solid or hollow), Bedford (reinforced), Redwood, Light Weight Concrete, Fire Treated Wood.



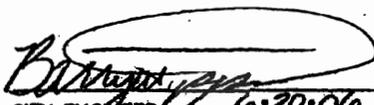
RESIDENTIAL FIRE SPRINKLER CONNECTION



NOTES:

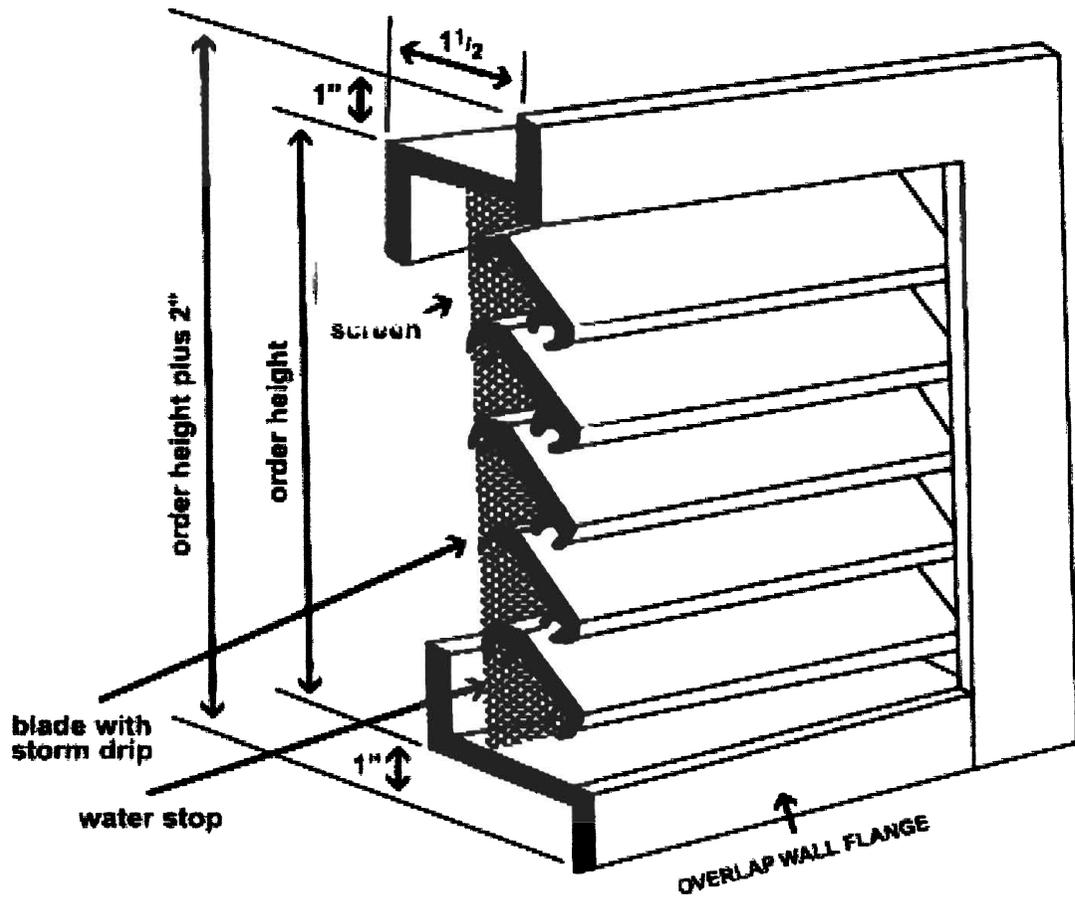
1. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE CITY OF REDDING CONSTRUCTION STANDARDS AND THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION AND NFPA 13D.
2. A SEPARATE FIRE SERVICE SHALL BE INSTALLED WHERE THE EXISTING DOMESTIC SERVICE IS SMALLER THAN THE REQUIRED RESIDENTIAL FIRE FLOW.
3. BACK FLOW DEVICES WILL NOT BE REQUIRED FOR A LOOPED SYSTEM CONNECTED TO A WATER CLOSET.
4. METER CHARGE SHALL BE FOR THE SIZE OF METER INSTALLED. SERVICE CONNECTION CHARGES SHALL BE FOR A 5/8" SERVICE. UNLESS RESIDENT REQUIRES FULL 3/4" OR 1" DOMESTIC CONNECTION THEN FULL 3/4" OR 1" CONNECTION FEE SHALL APPLY.
5. ALL UNDERGROUND PIPING SHALL BE PER NFPA 13D OR THE MATERIALS LISTED ON PAGE 400.00. ALL ABOVE GROUND PIPING SHALL BE PER NFPA 13D.
6. AN AREA OF 12" WIDE ON ALL SIDES OF PIPE TRENCH SHALL BE KEPT FREE OF ALL VEGETATIVE OBSTRUCTIONS.
7. ALL ABOVE GRADE PIPING AND VALVES SHALL BE WRAPPED WITH ADEQUATE INSULATION OR OTHER MEANS OF PROTECTION TO PREVENT FREEZING.
8. ALL FIRE SPRINKLER UNDERGROUND PIPE SHALL BE WRAPPED WITH 2" WIDE DETECTABLE METALIZED WARNING TAPE OR PIPED WITH FIRE SPRINKLER CPVC PIPE.
9. ALL PIPING PASSING THROUGH A SLAB SHALL PASS THROUGH A SLEEVE FOR THE FULL THICKNESS OF THE SLAB. THE SLEEVE SHALL HAVE AN INSIDE DIAMETER OF 1/2" LARGER THAN THE OUTSIDE DIAMETER OF THE SYSTEM PIPE.

RISER DETAIL

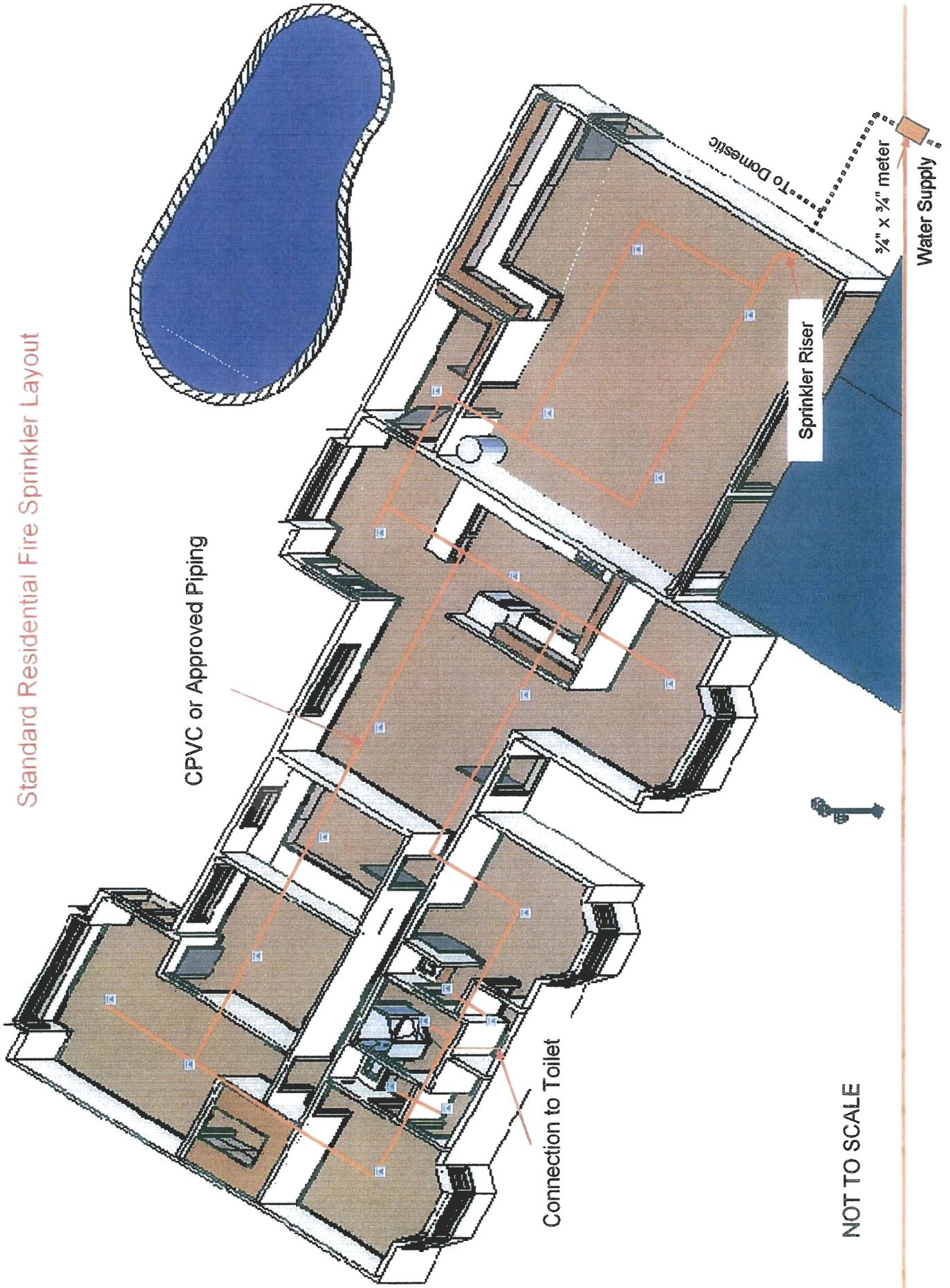
DWG DATE: 2-03		SCALE: NTS	CITY OF REDDING • TRANSPORTATION & ENGINEERING DEPARTMENT	
			APPROVED BY	RESIDENTIAL FIRE SERVICE
	4-06	NEW STD		
MARK	DATE	REVISION	CITY ENGINEER	6-20-06

Example

Louvered Vent with 1/4" screen



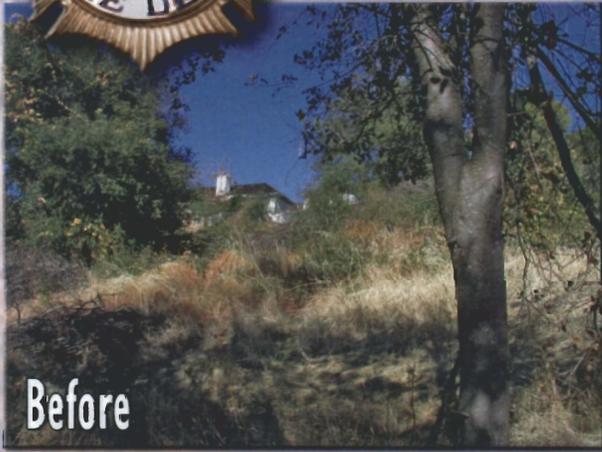
Standard Residential Fire Sprinkler Layout



NOT TO SCALE



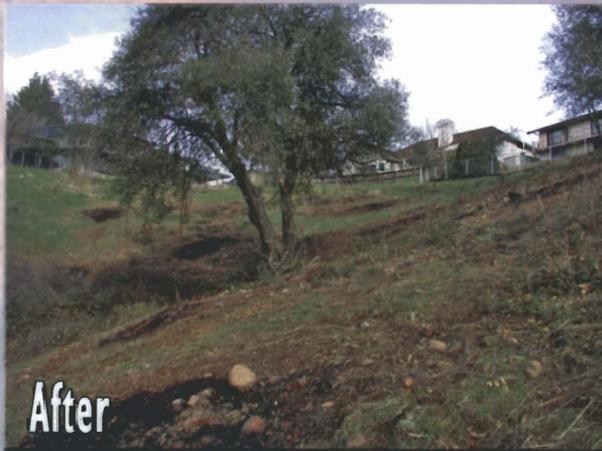
Property Owner's Guide to Reducing Wildfire Threat



Before

With the annual threat of wildfires, fire prevention measures not only keep fires from starting, but could be a determining factor in protecting your property, should a wildfire occur in the area. **ALL property owners in the City of Redding are required to maintain 100' of defensible space.**

Any additional assistance needed in determining whether your property meets the minimum requirements of the state law, please contact Fire Prevention Specialist, Jeff Cranberry at (530) 245-7162.



After



Defensible space can save your home

R.M.C. ORDINANCE 2148

CLEAN

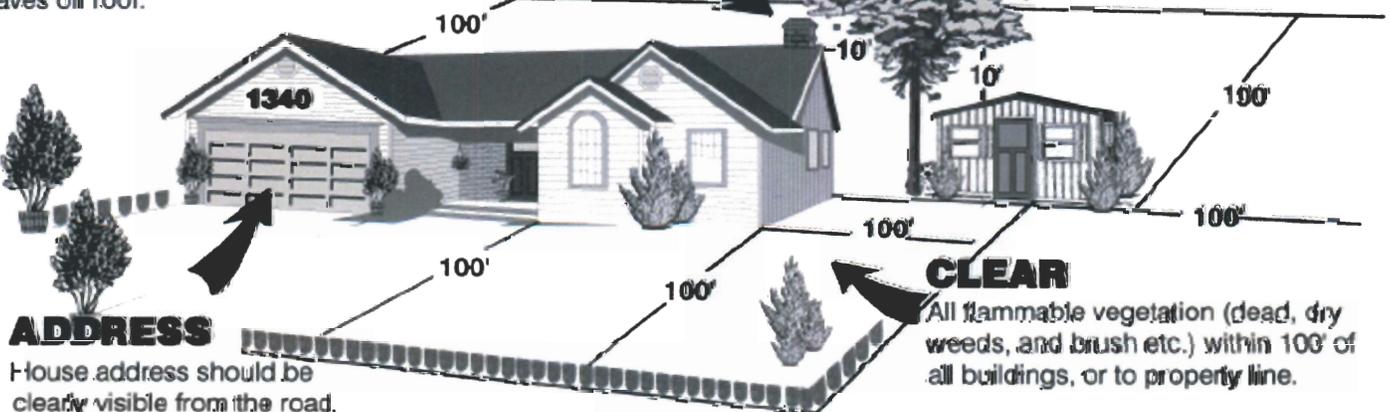
All needles and leaves off roof.

SCREEN

1/2" mesh screen on chimney outlets. To prevent smoke damage, installations should be vertical.

REMOVE

Limbs within 10' of chimney, dead limbs overhanging buildings.



ADDRESS

House address should be clearly visible from the road.

CLEAR

All flammable vegetation (dead, dry weeds, and brush etc.) within 100' of all buildings, or to property line.

CITY OF REDDING



FIRE DEPARTMENT

777 Cypress Avenue, Redding, CA 96001-2718

P.O. Box 496071, Redding, CA 96049-6071

530.225.4141 FAX 530.225.4322

The City of Redding Fire Department has compiled a list of fire resistant plants, along with undesirable non-fire resistant plants. Please keep these plants in mind when landscaping your property. Unsafe ornamental landscaping plants may actually increase the fire risk to your home.

Fire Resistant Plants

SMALL TREES, SHRUBS, WOODY PLANTS, & FORBS:

Skunkbush sumac (*Rhus trilobata*)
Gambel.oak (*Quercus gambelii*)
Wavyleaf oak (*Quercus undulata*)
Flowering or fragrant ash (*Fraxinus cuspidata*)
Chokecherry (*Prunus virginiana*)
New Mexico olive (or privet, or Forestiera)
(*Forestiera neomexicana*)
Native plum (*Prunus ameriana*)
Nanking cherry (*Prunus tomentosa*)
Lilac (*Syringa vulgaris*)
Mountain mahogany (*Cercocarpus* spp.)
New Mexico locust (*Robinia neomexicana*)
Hackberry (*Celtis occidentalis*)
Fendler brush (Antelope brush) (*Fendlera rupicola*)
Roses (Rose family) (*Rosaceae*)
Black sage (*Artemisia nova*)
Ocean spray or Mountain spray (*Holodiscus* spp.)
Wild raspberry (*Rubus* spp.)
Deerbrush or buckbrush (*Ceanothus* spp.)
Wild grape (*Vitis arizonica*)
Winterfat (*Eurotia* spp.)
Eriogonum (*Eriogonum raggaii* or *jamesii*)
Canadian violet (*Viola Canadensis*): forb for well-shaded north-facing slopes

Mockorange (*Philadelphus* spp.)
Littleleaf sumac (*Rhus microphylla*)
Silver buffaloberry (*Shepherdia argentea*)
Russett buffaloberry (*Shepherdia canadensis*)
Shrubby cinquefoil (*Potentilla fruticosa*)
Rocky Mountain zinnia (*Zinnia grandiflora*)
Rocky Mountain penstemon (*Penstemon strictus*)

TREES:

Quaking aspen (*Populus tremuloides*)
Narrowleaf cottonwood (*Populus angustifolia*)
Rocky Mountain maple (*Acer glabrum*)
Big-toothed maple (*Acer grandidentatum*)
Green ash (*Fraxinus virginiana*)
Black locust (*Robinia pseudoacacia*)
Boxelder (*Acer negundo*)

Undersirable Non-Fire Resistive Plants

UNDESIRABLE SPECIES INCLUDE

NATIVES SUCH AS:

Arborvitae (Tsuja)
Artichoke Thistle (Cynara Cardunculus)
Arundal
Black Mustard (Brassica Nigra)
Black Sage (Salvia Mellifera)
Burning Nettle (Urtica Urens)
Castor Bean Plant (Ricinus Communis)
Chamise (Adenostema spp)
California Coast Sage Brush (Artemisia Californica)
California Fan Palm (Palmae spp)
Coastal Sage Shrub
Common Buckwheat (erogonum fasciculatum)
Coyote Brush (Baccarus spp)
Eulalia Grass (Miscanthus)
Hopseed bush (Dodonaea viscose)
Horseweed (Conyza Canadensis)
Indian Tobacco (Nicotania Bigelevelil)
Laurel Sumac (Malosma laurina)
Madrone (Arbutus)
Mahonia (Mahonia spp)
Manzanita (Arcostaphylos spp)
Mayweed (anthemix Cotula)
Milk Thistle (Sylibum Marianum)
Monterey Pine (conifer)
Noary Cress, perennial Peppergrass (Cardera Draba)
Pink Flowering Sumac (Rhus)
Poison Oak (Rhus; firefighter safety issue)
Purple Nightshade (this is a toxic plant)
Prickly Lettuce (Lactuca Serriola)
Prostrate Coprosma (Coprosma pumila)
Red Shank (Adenostoma sparsifolium)
Russian Sage (Salvia)
Russian Thistle/Tumbleweed (Sacsola Austails)
Sage (Salvia spp)
Saltbush (atriplex semibaccata)
Scotchbroom (Cytisus)

Telegraph Plant (Heterothaca Grandiflora)
Tree Tobacco (Nicotania Glauca)
Wild Artichoke (Cirsium Vulgare)
Wild Turnip, Yellow Mustard, Field Mustard (Brassica Rapa)

SOME UNDESIRABLE EXOTICS INCLUDE:

Acacia (Acacia spp)
Bottle Tree (Crachychiton)
Bottlebrush (Callistoma spp)
Bougainvillea (Bougainvillea sp)
Cedar (cedrus spp)
Camphor Tree (Cinnamomum spp)
Chaparral Pea (Pickeringia Montana)
Cypress (Cupressus spp)
Deer Grass (Muhlenbergia)
Douglas Fir (Pseudotsuga menziesii)
English Ivy (Hedera Helix) Note: Builds up dead fuel
Eucalyptus (Eucalyptus spp)
Fern Pine (Podocarpus)
Fir Tree (Abies)
Fountain Grass (Pennisetum)
Giant Reed (Arundo Donax)
Heath (Erica)
Hemlock (Tsuga)
Hottentot Fig (Carpobretis adultis)
Ice Plant (Carpobrutos Drosanthemum hispidium) Note: Builds up dead fuel
Japanese Cryptomeria (Cryptomeria Japonica)
Japanese Honeysuckle (Lonicera Japonica)
Juniper (Juniperus spp)
Juniper Myrtle (Agonis)
Monkey Puzzle, north island pine (Arancaria spp)
Olive Tree (Olea europaea)
Palms (Palms spp)

- Pampas Grass (*Cortaderia selloana*)
- Pepper Trees (*Schinus* spp)
- Periwinkle, except *Vinca Minor*; Dwarf Periwinkle (*Vinca Major*)
- Pine, Cedar, etc, (Conifers, *Pinus* spp, *Cedrus*)
- Prostrate *Coprosma* (*Rubiaceae* Larch (*Larix*))
- Rosemary and Prostrate Rosemary (*Rosmarinus officinalis*) Note: Builds up dead understory
- Spruce (*Picea*)
- Tamarisk (*Tamarix*)
- Telegraph Plant (*Cheterotheca Grandiflora*)
- Yew Pine (*Podocarpus Taxus* spp)
- Yew (*Taxus*)

DO NOT PLANT, OR RETAIN, ANY OF THE ABOVE LISTED VEGETATION IN ANY VEGETATION MANAGEMENT ZONE OR IN ANY MEDIAN, PLANTER OR OPEN SPACE. DO NOT USE ANY OF THE ABOVE LISTED TREES OR SHRUBS AS STREET TREES OR SHRUBS.

jg/bh
05/19/05