

Key Map:

PRELIMINARY
 NOT FOR CONSTRUCTION



Client:
Hearthside Homes
 6 Executive Circle
 Suite 250, Irvine, CA

Project:
Brightwater

County of Orange
 Huntington Beach, CA

Revisions:

Sheet Info:

Drawn By: BM
 Checked By: CSM, MS
 Scale: 1"=200'
 Date: December 12, 2005
 Job No.: 0754.021

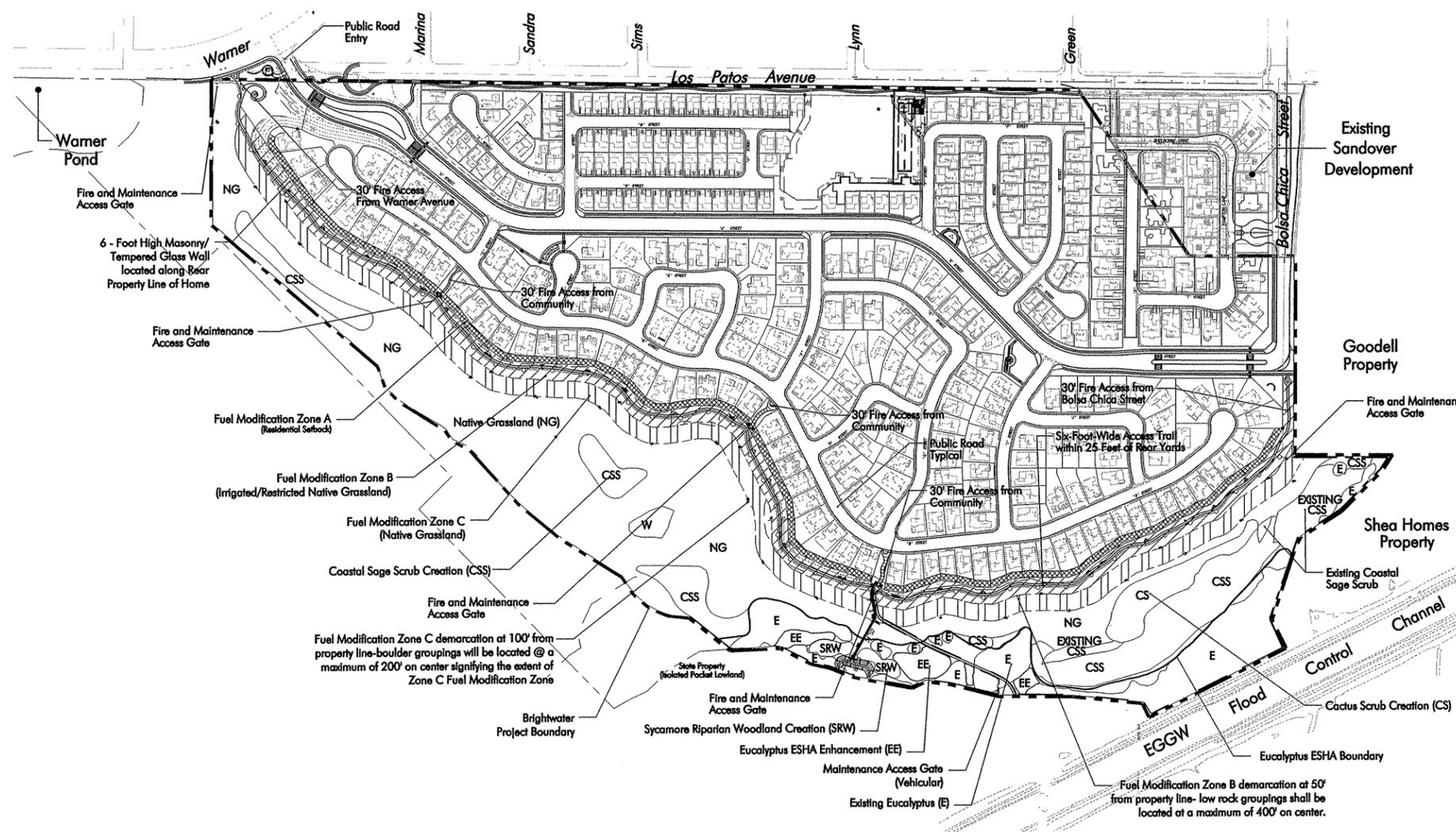
Sheet Title:

FUEL MODIFICATION

Sheet Reference:

FMP1

Sheet: 1 of 14



FUEL MODIFICATION ZONE B
 (0'-50' FROM REAR LOT LINES)
 PLANT PALETTE [diagonal lines] TOTAL AREA: 4.09 AC

Botanical Name	Common Name	Stock Type	Plant Spacing	No. per Acre	Total Plant Quantity
Dichelostemma capitatum	Wild hyacinth	rp	3' o.c.	150	614
Dudleya lascaevola	Lance-leaved dudleya	rp	5' o.c.	150	614
Dudleya pulchra	Chalk dudleya	rp	5' o.c.	100	409
Horkelia cuneata	Mesa horkelia	l gal	8' o.c.	30	160
Lotus heermannii	Woolly lotus	l gal	3' o.c.	100	409
Lythrum californicum	California boxhorn	l gal	8' o.c.	100	409
Melica imperfecta	Coast range melic	plugs	2' o.c.	750	1023
Mirabilis californica	Whitbone bush	rp	20' o.c.	6	75
Nassella pulchra	Purple needlegrass	plugs	2' o.c.	750	1023
Opuntia littoralis	Coast prickly-pear	l gal	25' o.c.	200	810
Opuntia prolifera	Coast cholla	l gal	25' o.c.	150	614
Sisyrinchium bellum	Blue-eyed grass	rp	3' o.c.	100	810
Total Container Stock				1695	6,936
				Lbs/Acre	Total Lbs.
Dichelostemma capitatum	Wild hyacinth	seed		3	173
Distichlis spicata	Salt grass	seed		5	205
Horkelia cuneata	Mesa horkelia	seed		5	205
Nassella lepida	Foothill needlegrass	seed		6	245
Sisyrinchium bellum	Blue-eyed grass	seed		3	173
Total Seed				22	900

FUEL MODIFICATION ZONE C
 (50'-100' FROM REAR LOT LINES)
 PLANT PALETTE [dotted] TOTAL AREA: 4.10 AC

Botanical Name	Common Name	Stock Type	Plant Spacing	No. per Acre	Total Plant Quantity
Dichelostemma capitatum	Wild hyacinth	rp	3' o.c.	700	940
Isocoma menziesii	Coast goldenbush	l gal	8' o.c.	50	230
Horkelia cuneata	Mesa horkelia	l gal	10' o.c.	100	410
Lythrum californicum	California boxhorn	l gal	10' o.c.	50	230
Mirabilis californica	Whitbone bush	l gal	10' o.c.	50	230
Melica imperfecta	Coast range melic	plugs	2' o.c.	1000	2300
Nassella pulchra	Purple needlegrass	plugs	3' o.c.	600	2300
Opuntia littoralis	Coast prickly-pear	l gal	10' o.c.	75	300
Opuntia prolifera	Coast cholla	l gal	10' o.c.	75	300
Sisyrinchium bellum	Blue-eyed grass	rp	5' o.c.	200	940
Total Container Stock				2000	9401
				Lbs/Acre	Total Lbs.
Argemone diegensis	San Diego bentgrass	seed		5	2350
Calochortus catalinae	Catalina mariposa lily	seed		2	940
Calochortus splendens	Splendid mariposa lily	seed		2	940
Dichelostemma capitatum	Wild hyacinth	seed		2	940
Horkelia cuneata	Mesa horkelia	seed		2	940
Nassella lepida	Foothill needlegrass	seed		8	3160
Plantago erecta	Dot seed plantain	seed		2	940
Sisyrinchium bellum	Blue-eyed grass	seed		2	940
Total Seed				26	1150

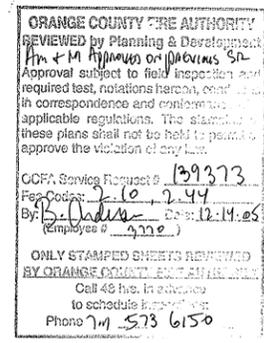
Notes: rp = rosepots
 o.c. = on center

Orange County Fire Authority Inspector Summary

- Private lots (i.e., 17-35, 83-87, 114-122, and 158-183) that have fuel modification zones have deed restrictions limiting plant material and construction shall be submitted to OCFA prior to occupancy.
- There will be a minimum of one maintenance effort per year and that is to be completed by June 1st each year after the grasses have cured.
- Only plant species from the list on the plans that are scheduled for the specific zones shall exist within Zones A, B, and C. All other plants shall be removed.
- A maintenance turnover inspection and educational effort is required when/if BMC turns over the responsibility to another company or entity.
- Zones will receive temporary irrigation to simulate rainfall and provide the necessary fuel moisture to the plants.
- Spacing and understory clearance of any plants taller than 4 feet in height shall be in accordance with OCFA spacing guideline attachment 6.
- The zone markers are showing the limit distance of the inspected and maintained zone.
- Plans must be submitted to OCFA when changing any feature of the established fuel modification zones.

NOTES:

- All revisions to the fuel modification zones shall be reviewed and approved by Orange County Fire Authority and the California Coastal Commission.
- Construction features of the homes required by the technical report shall be placed on the Master Fire Access and Water Plan.



November 28, 2005

Ed Mountford
 Hearthside Homes
 95 Argosium
 Suite 200
 Aliso Viejo, California 92656

SUBJECT: Brightwater Project, City of Huntington Beach, Orange County; Compliance with Special Condition 11 of CDP No. 5-05-020

Dear Mr. Mountford:

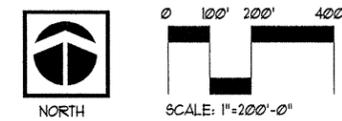
As required by Special Condition 11.1 of the Coastal Development Permit No. 5-05-22 (CDP), Glenn Lukos Associates has reviewed the plant palettes and landscape information included within the Fuel Modification Plans for the Brightwater Project. During this review, the plant palettes for each of the fuel modification zones (Zones A, B and C), the overlapping and adjacent HMP habitat, common landscape areas (Zones 1 thru 3), and private landscape areas (Zones 4 and 5) within Brightwater were examined to ensure compliance with the landscaping and habitat management requirements of CDP No. 5-05-020. It has been determined that the species chosen for each of these areas conforms to the landscape and habitat management guidelines set forth within the CDP.

Should you have any questions, please call me at (949) 837-0404 x 11.

Sincerely,

GLENN LUKOS ASSOCIATES, INC.

Eryn Serr
 Habitat Restoration Specialist
 e0310-13.0r.doc



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BRIGHTWATER FUEL MODIFICATION PROGRAM

1. Site Characterization

a. The Brightwater project area contains approximately 105.3 acres at the northeast corner of the Bolsa Chica Mesa near Warner Avenue and Bolsa Chica Street. The residential area of the project is located on what is commonly called the Mesa's "Upper Bench," which has an elevation of approximately 45 to 60 feet above mean sea level.

b. The Brightwater Project is not within a high fire hazard area. To the contrary, the area is adjacent to wetlands, the unvegetated East Garden Grove Wintersburg Flood Control Channel, and a 1,000-acre State Wetlands Restoration Project. Vegetation of concern is limited to the eucalyptus trees within an Environmentally Sensitive Habitat Area (ESHA) which must be protected by court order, and a future native grassland restoration of open space setbacks and ESHA buffers adjacent to the rear yards of the homes.

c. Existing vegetation within the proposed Habitat Restoration and Protection Area southwest of the proposed residential area is primarily made up of nonnative annual grasslands and ruderal species. The nonnative grasslands include brome and wild oats, as well as forbs such as summer or short-pod mustard. The ruderal species include telegraph weed, mustard, ice plant, and various grasses. There is a small wetland area (0.2 acres), which contains primarily willows and mulefat that will be retained, and is outside of the 120-foot Protection Zone.

2. Vegetation Removal Methodology

a. Nonnative, ruderal, and otherwise undesirable vegetation that is not part of the approved restoration plant palette will be removed by both mechanical and manual methods. Mechanical methods will be utilized in areas that are graded and are outside of the ESHA, and these may include graders, mowers, and other devices as recommended by the landscape contractor.

3. Overview of OCFA Protection Plan

a. The Protection Plan proposes a 50-foot-deep Fuel Modification Zone B - which is located adjacent to the residential rear yard (lot line) that comprise Fuel Modification Zone A, described on sheet FMP3. Plantings in Zone B will consist of low-fuel volume, low-growing (prostrate) plants that remain green all year, that is, they do not become dormant and dry out (please refer to the attached plant list) and scattered clumps of bunch grasses. This Zone will receive periodic irrigation that mimics natural rainfall conditions, from a permanent drip (e.g., microspray) irrigation system. The irrigation system shall be carefully monitored by the Brightwater Maintenance Corporation and adjusted if necessary to avoid adverse impacts including, but not limited to, attraction of Argentine ants. In addition to trash and weed removal, and any non-native/invasive dead plant material, including cured grasses, will be cut and removed as needed and by June 1 of each year. Additionally, any non-native/invasive plants will be removed. Cactus can be planted in this zone provided they are planted at 25' or greater intervals to minimize interference with fire fighting crews defending structures from a wildfire coming towards the Brightwater development from the southwest.

b. The Protection Plan proposes a 50-foot-deep Fuel Modification Zone C (50-100 feet from the residential rear lot lines for a minimum total of 120 feet from residential structures). Plantings within this Zone consist of native perennial bunch grass species common to grassland habitats within Orange County and widely-scattered, low-growing, low-fuel volume shrubs. This Zone will be temporarily irrigated only to obtain plant establishment. In addition to trash and weed removal, and any non-native/invasive plants, dead plants and plant material will be cut and removed as needed and by June 1 of each year.

c. Plant Spacing - The Brightwater Protection Plan is not proposing any trees, or any shrub species that would reach four feet in height. If it is determined that one of more of the species will exceed four feet in height, those species shall be planted in accordance with the OCFA Plant Group Spacing Requirements (Attachment 6 of the Fuel Modification Plan Guidelines):

- Trees and tree-form shrubs shall be single specimens or in a maximum grouping of three plants. Groupings shall be separated by a distance of three times the diameter of the largest individual mature crown or 15 feet, whichever is greater. Other limited grouping arrangements and spacing may be acceptable if approved by OCFA.
- Trees shall be single specimens or in a maximum grouping of three plants. Groupings shall be separated by a distance of three times the diameter of the largest individual mature crown or 30 feet, whichever is greater (see figure above). Other limited grouping arrangements and spacing may be acceptable if approved by OCFA.
- Plant specimens listed in the OCFA "Approved Plant Palette-Qualification Statements for Select Plant Species" shall comply with plant groupings and spacing requirements specified in those restrictions.

4. Requested Modifications

a. Request to add additional plants to OCFA-Approved Plant List to permit a Native Grass Restoration within Protection Zone B and C.

b. Request to provide three (3) thirty-foot access points along the Protection Zone to allow vehicular access instead of the ten-foot access points required every 500 feet. These access points are located to provide increased access to the areas closest to the existing Eucalyptus trees ESHA (which is outside of the OCFA Protection Zone).

c. Request to provide Fuel Modification Zones A, B, and C, and adjacent Habitat Areas per a Habitat Management Plan approved by the California Coastal Commission.

5. Special Project Design Features/Considerations

a. The Brightwater Project is not within a high fire hazard area. To the contrary, the area is adjacent to wetlands, the massive and unvegetated East Garden Grove Wintersburg Flood Control Channel, and a 1,000-acre State Wetlands Restoration Project. Vegetation of concern is limited to the Eucalyptus trees within the ESHA (which must be protected by court order) which are over 150 feet from the irrigated rear yards of the homes, and a future native grassland restoration of open space setbacks and ESHA buffers adjacent to the rear yards of the homes.

b. A 6-foot-wide trail is provided the entire length of the OCFA Protection Zone. This can be accessed from both Warner Avenue and Bolsa Chica Street, as well as from three (3) 30-foot-wide paved access points (Paseos) to the Protection Zone, that connect to public streets within the adjacent residential areas of the project.

c. All residential homes within Brightwater will be sprinklered to County of Orange requirements for residential sprinkler systems. These homes range in size from 2,830 to 4,260 square feet.

d. The roofs of all homes and any other occupied buildings within the Brightwater project will be of Class "A" construction.

e. Maintenance of the Fuel Modification and Habitat area will be by the Brightwater Maintenance Corporation (cf. Master Homeowners Association) or its designee.

f. A tempered glass wall will be located along the rear property lines throughout the OCFA Protection Zone to provide further protection for the homes.

g. Plants designated by the OCFA as Fire Prone Species will be removed from, and not be introduced into or allowed to invade, the OCFA Fuel Modification Zones A, B, and C.

APPLICABLE REQUIREMENTS FROM OCFA GUIDELINES FOR FUEL MODIFICATION AND MAINTENANCE

V. ZONE B - IRRIGATED FUEL MODIFICATION ZONE

This 50-foot-deep portion of the OCFA Protection Zone will consist of native low-growing species and two selected cacti that contain low fuel loads as described on the plant palette.

Zone B - Specific Requirements

All existing non-native species within this zone will be removed. A permanent drip/microspray irrigation system will be provided to establish the plants and assure deep root growth. Upon establishment of the plants, irrigation will be resumed in drought conditions to simulate winter rains and mimic normal rainfall conditions. Plants will be inspected monthly for the first 18 months, and quarterly thereafter for the first 5 years to assure establishment, and to remove dead and non-native species. A six-foot-wide trail is provided along the entire length of Zone B that will allow greater access and further reduce the fuel load. As in Zone A, combustible structures and construction are not allowed within Zone B.

VI. ZONE C - NON-IRRIGATED FUEL MODIFICATION ZONE

This 50-foot-deep portion of the OCFA Fuel Modification Zone and the Coastal Commission's Habitat Management Plan's (HMP's) Native Grassland Area will consist of non-irrigated native grassland species and selected succulents that contain low fuel loads as described on the plant palette.

Zone C - Specific Requirements

All existing non-native species within this zone will be removed. Temporary irrigation will be provided to establish the plants and assure deep root growth. Upon establishment of the plants, the temporary irrigation system will be removed. Per the CCC - approved HMP, maintenance within Zone C will not include the pruning, thinning, or mowing of approved native grassland vegetation which, by its nature, is a low fire-fuel plant palette. Plants will be inspected monthly for the first 18 months, and quarterly thereafter for the first 5 years to assure establishment and removal of non-native species. Maintenance within Zone C will include removal of non-native/invasive species and dead plant material, with the exception of the seasonally dry vegetative parts of native bunch grasses. As in Zone A, combustible structures and construction are not allowed within Zone C.

VII. IMPLEMENTATION & REQUIRED INSPECTIONS

- **Prior to Building Permit Issuance:** The developer shall complete that portion of the approved OCFA Protection Plan determined to be necessary by the OCFA prior to the introduction of any combustible materials into the area. This generally involves removal of dead and non-native/invasive plant materials indicated on the approved plan. All work must be consistent with the final HMP and final Precise FMP as approval by the California Coastal Commission.
- **Prior to Issuance of Certification of Occupancy:** The OCFA Protection Plan must be installed, completed, and inspected. This includes physical installation of features identified in the approved precise plan (including, but not limited to, plant establishment, permanent and temporary irrigation, zone markers, access easements, etc.). An OCFA Fire Inspector will provide written approval of completion at the time of this final inspection.
- **Prior to Brightwater Maintenance Corporation (BMC) Acceptance:** This activity must include the OCFA Fire Inspector and the following representatives:
 - Landscape design professional/Glenn Lukos Associates;
 - Installing landscape contractor;
 - BMC management representative; and
 - BMC landscape maintenance contractor.
 The OCFA Protection Plan shall be maintained as originally installed and approved. A copy of the approved plans must be provided to the BMC representatives at this time. Landscape professionals must convey ongoing maintenance requirements to the BMC representative.
- **Annual Inspection and Maintenance:** The individual residential property owners (for Zone A) and the BMC (for Zone B and C) are responsible for all maintenance of the OCFA Protection Plan. All areas must be maintained in accordance with the approved protection plan. Other activities include maintenance of temporary irrigation systems, replacement of dead or dying vegetation with approved materials, removal of dead plant material, and removal of undesirable and invasive species. The OCFA conducts regular inspections of established OCFA protection areas. Ongoing maintenance shall be conducted regardless of the date of these inspections.
- **Brightwater Maintenance Corporation (cf. Homeowners Association) Conditions, Covenants and Restrictions (CC&Rs):** The following notes shall be incorporated into the Brightwater Homeowners Association CC&Rs:
 - The CC&Rs shall contain all of the language from Attachment 5 of the Fuel Modification Guidelines.
 - The CC&Rs shall be reviewed by OCFA prior to approval of a Precise OCFA Protection Plan, and shall be approved by OCFA prior to recordation.
 - The CC&Rs shall state that there are restrictions on the types of plants used within the OCFA Protection Zones. All plants shall be approved by OCFA prior to planting.
 - The CC&Rs shall state that no combustible structures or construction is permitted in Protection Plan Zone "A".

UNDESIRABLE PLANT SPECIES TO BE REMOVED/NOT PLANTED WITHIN ZONES A, B, AND C

Cynara Cardunculus (Artichoke Thistle)
 Ricinus Communis (Castor Bean Plant)
 Cirsium Vulgare (Wild Artichoke)
 Brassica Nigra (Black Mustard)
 Silybum Marianum (Milk Thistle)
 Scaevola Austalis (Russian Thistle/Tumbleweed)
 Nicotiana Bigelovii (Indian Tobacco)
 Nicotiana Glauca (Tree Tobacco)
 Lactuca Serriola (Prickly Lettuce)
 Conyza Canadensis (Horseweed)
 Heterothaca Grandiflora (Telegraph Plant)
 Anthemix Cotula (Mayweed)
 Urtica Urens (Burning Nettle)
 Cardaria Draba (Noary Cress, Perennial Peppergrass)
 Brassica Rapa (Wild Turnip, Yellow Mustard, Field Mustard)
 Adenostoma Fasciculatum (Chamise)
 Adenostoma Sparsifolium (Red Shanks)
 Cortaderia Selloana (Pampas Grass)
 Artemisia Californica (California Sagebrush)
 Eriogonum Fasciculatum (Common Buckwheat)
 Salvia Mellifera (Black Sage)
 Ornamental:
 Corradiers (Pampas Grass)
 Cupressus sp (Cypress)
 Eucalyptus sp (Eucalyptus)
 Juniperus sp (Juniper)
 Pinus sp (Pine)

CONSISTENCY WITH COASTAL COMMISSION CDP NO. 5-05-020

Consistent with Special Condition No. 12, Revised Fuel Modification Plan Requirements, of Coastal Development Permit (CDP) No. 5-05-020 (Brightwater), approved by the California Coastal Commission on April 14, 2005:

1. The permittee under CDP No. 5-05-020 shall submit the final fuel management plan for the development for review and approval by the Executive Director, which plan shall be consistent with the requirements for CDP No. 5-05-020.
2. After approval by the Executive Director, any future changes to the final fuel modification plan, including any changes required by the relevant fire authority or other resource agencies, shall be reported to the Executive Director of the Coastal Commission, and shall require an amendment to CDP 5-05-020 or a new coastal development permit prior to implementation of those changes unless the Executive Director of the Coastal Commission determines that no amendment or new permit is required.
3. The permittee under CDP No. 5-05-020 shall undertake development in accordance with the approved final fuel modification plan. Any proposed changes to the approved final plan shall be reported to the Executive Director. No changes to the approved final plan shall occur without a Commission amendment to CDP No. 5-0-020 unless the Executive Director determines that no amendment is required.
4. Special Condition No. 12, Revised Fuel Modification Plan Requirements, of Coastal Development Permit No. 5-05-020 serves as notification to present and future property owners that certain structures and areas of land are subject to special fuel treatment requirements that are specified in the final fuel management plan approved by the Orange County Fire Authority and the Executive Director of the Commission. Among those requirements is a requirement that residential structures facing upon native restoration or open space areas incorporate building construction features consistent with Orange County Fire Authority guidelines for construction of structures within special fire hazard areas. Furthermore, there is a prohibition on the placement of combustible materials in the rear yards of the residential lots that abut open space areas. Proposed and future development shall conform to the requirements of the approved final fuel management plan.



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Key Map:

**PRELIMINARY
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Client:

Hearthside Homes
 6 Executive Circle
 Suite 250, Irvine, CA

Project:

Brightwater

**County of Orange
 Huntington Beach, CA**

Revisions:

No.	Description

Sheet Info:

Drawn By: **BM**
 Checked By: **CSM, MS**
 Scale: **1"=200'**
 Date: **December 12, 2005**
 Job No.: **0754.021**

Sheet Title:

**FUEL MOD.
 NOTES**

Sheet Reference:

FMP-2

Sheet: **2** of **14**

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OVERVIEW OF HABITAT AREAS

Types and Areas of Habitat to be Established and Preserved

Beyond the 4.7-acre irrigated/restricted native grassland and trail area, plantings on the moderately flat mesa top consist of 18.4 acres of relatively dense (approximately 80 percent cover), low-growing (2-3 feet) or succulent native species common to grassland habitats and ecotonal areas between grassland and scrub habitats within coastal Orange County. The proposed habitat will replace the existing non-native weeds and provide substantial function as raptor foraging and other wildlife habitat. The specific selection of plant material is representative of native grassland components within coastal Orange County, and will provide additional habitat diversity and structure. Plantings on the bluff slopes consist primarily of coastal sage scrub, coastal bluff scrub and cactus scrub species. CSS areas have been specifically located to avoid the Burrowing Owl ESHA and previously mapped southern tarplant locations. The scrub areas will provide valuable scrub habitat, which will enhance the bird and rodent populations in the vicinity of the Eucalyptus ESHA. The cactus scrub habitat will be especially valuable for the cactus wren.

Within the Zone B fuel management area, there were essentially two factors that shaped the approach to the plant palettes: (1) fuel considerations; and (2) the desire to establish native vegetation that is appropriate for the area. First, even though Zone B is subject to fuel modification requirements by the Orange County Fire Authority (OCFA), the composition of the proposed plant material in this zone was designed to be similar to native grassland and scrub habitats, even though there were no native habitat impacts that required mitigation. The species selection was designed to accomplish many of the habitat functions of a native grassland, while providing some additional habitat diversity, and taking into account the need to minimize fuel. The specific habitat plans contained herein implement the conceptual fuel modification and landscape plan that was approved by the CCC during its consideration of the CDP for the project. This is also consistent with the Precise Fuel Modification Plan approved by OCFA.

The components of the Creation and Monitoring Plan are itemized below:

1. Concurrent with construction of the proposed Project, approximately 27.28 acres of habitat composed of native grassland, CSS, and cactus scrub will be restored/created.
2. The creation area is primarily designed to function as a buffer between the proposed residential development and the adjacent open space while also providing habitat for local wildlife. The native grassland plant palette, CSS, and the cactus scrub plant palette incorporate species approved by the Orange County Fire Authority (OCFA), thereby eliminating the need for clearing and thinning typically required adjacent to structures and ensuring maximum habitat function.
3. The creation area will be planted with native plant species common to native grassland and CSS habitats typically found on coastal bluffs and terraces in Orange County (County).

Native Grassland Description

Plantings within this area consist of native bunchgrasses, mostly perennial herbs and forbs common to Orange County grasslands, along with limited cover by native scrub and succulents common to grassland habitats and ecotonal areas between grassland and scrub habitats within coastal Orange County. All of the proposed species are native to coastal Orange County, and the grassland composition is represented on other existing coastal Orange County sites. As such, the proposed habitat will provide substantial function as habitat for the burrowing owl and foraging habitat for the species of raptors that use the Mesa. However, it should be noted that this community is not modeled after any specific native grassland area, because there are no pristine native grasslands left in Orange County. Instead, the species selection is based on the plan preparers' knowledge of the ecology of the area. Portions of the native grassland area closest to residential lots (Zone B) will be planted with succulents and lower growing species, which will be spaced appropriately to ensure that mowing or thinning of the plant material will not be necessary. Dominant species within this area include coast prickly pear (*Opuntia littoralis*), purple needlegrass (*Nassella pulchra*), blue-eyed grass (*Sisyrinchium bellum*), lance-leaved dudleya (*Dudleya lanceolata*), and chalk dudleya (*Dudleya pulverulenta*). Areas beyond the 50 feet nearest the residential lots will include the cactus species in low densities as well as species common to native grassland habitats, such as purple needlegrass (*Nassella pulchra*), coast range melic (*Melica imperfecta*), wishbone bush (*Mirabilis californica*), San Diego bentgrass (*Agrostis diegoensis*) and splendid mariposa lily (*Calochortus splendens*). This combination of species will provide biodiversity within the grassland areas and will function as enhanced foraging habitat for raptors and other native species within the site.

Coastal Sage Scrub and Cactus Scrub Description

This habitat type is composed of upland species compatible with existing conditions on the site. Dominant species to be planted in these areas include California sagebrush (*Artemisia californica*), California sunflower (*Encelia californica*), and buckwheat (*Eriogonum fasciculatum*). Other species to be planted in these areas include coast prickly pear (*Opuntia littoralis*), coastal cholla (*Opuntia prolifer*), deerweed (*Lotus scoparius*), coastal goldenbush (*Isocoma menziesii*), foothill needlegrass (*Nassella lepida*), purple needlegrass (*Nassella pulchra*), and wild hyacinth (*Dichelostema capitatum*). All species to be planted within the coastal sage scrub and cactus scrub areas are native to coastal Southern California.

HABITAT DESCRIPTIONS AND FIFTH-YEAR MONITORING SUCCESS STANDARDS

Native Grassland in Zone B and Native Grassland Creation Area

Native grassland in Zone B and the non-restricted native grassland area (beyond Zone B) will consist of native perennial bunchgrasses, with a substantial component of native forbs that are common components of native needlegrass grassland. The native grassland will also include shrubs and succulents that are commonly associated with both CSS and native grasslands and will provide additional structure. The majority of this area will exhibit habitat functions consistent with native perennial bunchgrass grassland, with limited areas exhibiting characteristics of native perennial bunchgrass grassland/CSS ecotone (depending on local densities of shrubs and cactus). The grasses will be grouped to mimic natural distributions with the shrubs and cactus evenly distributed throughout the zone in low densities. Bunchgrasses native to coastal Orange County will be distributed throughout the area including purple needlegrass, foothill needlegrass, coast range melic, and San Diego bentgrass. All of the bunchgrasses exhibit characteristics consistent with purple needlegrass having culm heights that range from one to just over three feet and vegetative parts ranging generally from eight to 14 inches. At maturity, the native grassland will exhibit cover by native grasses and associate grassland herbs and forbs of 90 percent, with shrubs and cactus 10 percent or less (some local areas where cactus is clumped will exhibit a higher shrub cover), consistent with grassland/CSS ecotone areas. Absolute cover for the native grassland areas at year five will be 80 percent with the cover for the contributing groups of species (i.e., bunchgrasses, forbs, and shrubs/succulents) as set forth below. The shrub component, generally comprising less than 15 percent cover will include low-growing, mounded shrubs such as wishbone bush and California boxthorn that generally are less than 14 (up to 18) inches in height.

The succulent component includes coast cholla that can reach heights of four feet or more and coast prickly pear, a sprawling cactus, reaching average heights of three to four feet.

The grassland associate herbs and forbs are generally low-growing with some species such as wild hyacinth and mariposa lilies generally reaching heights of up to 20 inches.

Based on the proposed planting densities and composition as well as seeding rates, it is expected that bunchgrasses will comprise between 70 and 80 percent of the total cover with grassland associate herbs/forbs comprising 10 to 20 percent of the total cover (particularly during the spring when many of the species emerge from bulbs (e.g., *Calochortus*, *Bloomeria*, *Dichelostemma*, etc.). Shrubs and succulents will comprise the remaining cover, generally accounting for less than 10 percent of the total cover. Based on observations of healthy native grasslands (including created and/or restored needlegrass grasslands) it is expected that at maturity, the absolute cover by native bunchgrasses and associate forbs will be range between 64 and 80 percent with native shrubs accounting for about 10 percent (5 to 15 percent) of the absolute cover.

The native grassland performance standards will be evaluated based on the range of the native bunchgrass, forbs and shrub/succulent cover listed below. During each year that monitoring is conducted, the success standards will be considered achieved where the contribution of the total target cover for bunchgrass, forbs and shrubs/succulents is within the below-cited performance standard ranges. For example, for year five, total cover requirement is a minimum of 80 percent. Native bunchgrasses will comprise 70 to 80 percent of the 80 percent or 56 to 64 percent absolute cover. Similarly, forbs would comprise between 8 and 16 percent of the total cover with shrubs and succulents accounting for 5 to 15 percent of the total cover.

Zone B will utilize these standards and be maintained in perpetuity.

CONTINUED... OVERVIEW OF HABITAT AREAS

Fifth-Year Monitoring Success Standards

- a. A minimum of 80 percent ground cover by native species;
- b. Native bunchgrasses will comprise between 56 to 64 percent ground cover;
- c. Bunchgrasses planted as container stock (*Nassella pulchra* and *Melica imperfecta*) will account for a minimum of 11 percent ground cover;
- d. Bunchgrasses planted as seed (*Nassella lepida* and *Agrostis diegoensis imperfecta*) will account for a minimum of 6 percent ground cover;
- e. Native forbs will comprise 8 to 16 percent ground cover;
- f. A minimum of 80 percent of the herb and forb species planted or seeded will be represented in the fifth year quadrats;
- g. Native shrubs and cactus will account for 5 to 15 percent cover;
- h. A minimum of 80 percent of the shrubs/cactus planted or seeded will be represented in the fifth year quadrats;
- i. Natural recruitment by native species is at least 4 percent cover;
- j. No more than 5 percent ground cover by nonnative species;
- k. At least six native species appropriate to the habitat must be present, with each providing at least 4 percent ground cover; and
- l. No single species shall provide more than 60 percent ground cover.

Coastal Sage Scrub and Cactus Scrub Creation Areas

These two habitat types will consist of native CSS and cactus scrub areas, with a substantial component of native herbs/forbs. The areas will exhibit habitat functions consistent with native CSS in Orange County and would be generally consistent with the description of Mixed CSS in the Orange County Habitat Classification System with a more-or-less equal dominance by California sagebrush (*Artemisia californica*), California sunflower (*Encelia californica*), and California buckwheat (*Eriogonum fasciculatum*).

Both the California sunflower and California buckwheat are rounded shrubs that generally range from 18 to 24 inches above the ground with the California sagebrush typically taller, reaching heights between two and four feet. Additional shrubs to be included in the CSS, including bladderpod and Brewer's saltbush can reach heights of five feet or more (see below for percent cover performance standards for the native bunchgrass grassland, succulents, and forb habitat components).

Based on the proposed planting densities and composition within the two habitat types, it is expected that by year five, native shrubs will comprise 64 to 72 percent of the ground cover in the CSS areas and 50 to 57 percent of the ground cover in the cactus scrub areas. Cactus cover in the CSS areas will be approximately 1 percent in the CSS areas and 5 percent in the cactus scrub areas. It is expected that the cactus patches in the cactus scrub areas will continue to fill in, ultimately resulting in approximately 20 percent cover by cactus, which meets the "cactus scrub" definition in the Orange County Habitat Classification system. Native bunchgrasses and forbs will comprise 8 to 16 percent of the ground cover in both habitat types.

The CSS performance standards will be evaluated based on absolute cover of the CSS native bunchgrass, forbs, and shrub/succulent cover referenced below. During each year that monitoring is conducted, the success standards will be considered achieved where the contribution of the total target cover for CSS shrubs/succulents and bunchgrasses/ forbs is within the cover ranges detailed below. For example, for year five, the absolute cover requirement is a minimum of 80 percent. In year five, the CSS area will have 64 to 72 percent native shrub cover with 1 percent cover by cactus species and the cactus scrub area will have 50 to 57 percent native ground cover and 5 percent cover by cactus species. Also in year five, bunchgrasses and forbs would comprise between 8- and 16-percent absolute cover. Cactus are slow growing plants; therefore, not until the years following the final performance standards are the cactus scrub area cactus species expected to reach 20 percent cover.

Fifth-Year Monitoring Success Standards

- a. A minimum of 80 percent ground cover by native species;
- b. In the CSS areas, native shrubs will comprise 64 to 72 percent ground cover, the total ground cover by the following three species (*Artemisia californica*, *Encelia californica*, *Eriogonum fasciculatum*) will be at least 50 percent with a minimum of 10 percent by each species, and cactus species will comprise 1 percent ground cover;
- c. In the cactus scrub area, the native shrubs will comprise 50 to 57 percent ground cover and cactus species will comprise 5 percent ground cover (This is the projected absolute ground cover after five years; as the cactus fills in over time, it is expected to constitute 20 percent of the habitat.);
- d. Native bunchgrasses and forbs will comprise 8 to 16 percent ground cover;
- e. A minimum of 80 percent of the herb/forbs/bunchgrasses species planted or seeded will be represented in the fifth year quadrats;
- f. A minimum of 80 percent of the shrubs/cactus species planted or seeded will be represented in the fifth year quadrats;
- g. Natural recruitment is at least 4 percent ground cover;
- h. No more than 5 percent ground cover by nonnative species;
- i. At least six native herbaceous species appropriate to the habitat must be present, with each providing at least 4 percent ground cover; and
- j. No single species shall provide more than 60 percent ground cover.

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Key Map:

PRELIMINARY
NOT FOR CONSTRUCTION



Client:

Hearthside Homes
6 Executive Circle
Suite 250, Irvine, CA

Project:

Brightwater

County of Orange
Huntington Beach, CA

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FUEL MOD.
NOTES continued

Sheet Reference:

FMP-2

continued

Sheet: 2 cont. of 14



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LANDSCAPE PALETTE FOR FUEL MODIFICATION ZONE 'A' AND HABITAT AREAS.

OCFA WILL ENFORCE AND INSPECT ONLY FUEL MODIFICATION ZONES 'B' AND 'C'. THE BRIGHTWATER MANAGEMENT CORPORATION (BMC) WILL MAINTAIN, ENFORCE, AND INSPECT FUEL MODIFICATION ZONE 'A', AND HMP HABITAT AREAS.

FUEL MODIFICATION ZONE A PRIVATE RESIDENTIAL LOT (FIRST 20' FROM REAR PROPERTY LINE AND PASEOS) PLANT PALETTE

TOTAL AREA: 1.74 AC

Botanical Name	Common Name
TREES	
<i>Acer macrophyllum</i>	Big Leaf Maple
<i>Cercocarpus betulifolia</i>	Red Dogwood
<i>Citrus speciosus</i>	Citrus
<i>Eriobotrya japonica</i>	Loquat
<i>Erythrina speciosa</i>	Coral Tree
<i>Ginkgo biloba</i>	Maidenhair Tree
<i>Juglans californica</i>	California Black Walnut
<i>Lagerströmia indica</i>	Crape Myrtle
<i>Liriodendron tulipifera</i>	Tulip Tree
<i>Lyonia floribunda ssp. Asplenifolia</i>	Fireleaf Ironwood
<i>Macadamia integrifolia</i>	Macadamia Nut
<i>Maytenus boaria</i>	Mayten Tree
<i>Metrosideros excelsa</i>	New Zealand Christmas Tree
<i>Pistacia chinensis</i>	Chinese Pistache
<i>Philadelphus undulatus</i>	Victorian Box
<i>Platanus racemosa</i>	California Sycamore
<i>Populus fremontii</i>	Western Cottonwood
<i>Quercus agrifolia</i>	Coast Live Oak
<i>Quercus engelmannii</i>	Engelmann Oak
<i>Quercus suber</i>	Cork Oak
<i>Rhus lancea</i>	African Sumac
<i>Sambucus mexicana</i>	Mexican Elderberry
SHRUBS	
<i>Agave attenuata</i>	Century Plant
<i>Agave viviparviana</i>	Octopus Agave
<i>Aloe arborescens</i>	Tree Aloe
<i>Aloe Vera</i>	Medicinal Aloe
<i>Baccharis pilularis 'Twin Peaks 2'</i>	Dwarf Coyote Bush
<i>Baccharis salicifolia</i>	Mulefat
<i>Bromus carinatus</i>	California Brome
<i>Carissa macrocarpa</i>	Green Carpet Natal Plum
<i>Ceanothus glaucus 'Point Reyes'</i>	Point Reyes Ceanothus
<i>Ceanothus griseus 'Louis Edmunds'</i>	Louis Edmunds Ceanothus
<i>Ceanothus griseus var. horizontalis</i>	Carmel Creeper Ceanothus
<i>Ceanothus g. var. horri. 'Yarkes Point'</i>	Yarkes Point Ceanothus
<i>Ceanothus megacarpus</i>	Big Foot Ceanothus
<i>Ceanothus prostratus</i>	Squaw Carpet Ceanothus
<i>Ceanothus spinosus</i>	Green Bark Ceanothus
<i>Ceanothus vertucosus</i>	Wart-Stem Ceanothus
<i>Cercatum tomentosum</i>	Snow-in-Summer
<i>Cercis occidentalis</i>	Western Redbud
<i>Chrysanthemum leucanthemum</i>	Oxeye Daisy
<i>Cistus hybridus</i>	White Rockrose
<i>Cistus incanus</i>	no common name
<i>Cistus incanus ssp. Corsicus</i>	no common name
<i>Cistus salvifolius</i>	Sageleaf Rockrose
<i>Cistus x purpureus</i>	Orchid Rockrose
<i>Convolvulus meconum</i>	Bush Morning Glory
<i>Coprosma tikiti</i>	Creeeping Coprosma
<i>Coprosma pumila</i>	Prostrate Coprosma
<i>Colomeaster buxifolius</i>	no common name
<i>Colomeaster spinosus</i>	no common name
<i>Crassula ovata</i>	Jade Tree
<i>Crassula viscosa</i>	Hogweed Bush
<i>Dodonaea viscosa</i>	Escallonia Varieties
<i>Escallonia speciosa</i>	Escallonia Varieties
<i>Ficus saliciana</i>	Pineapple Guava
<i>Gravelia occidentalis</i>	Starflower
<i>Hardenbergia complanata</i>	Lilac Vine
<i>Hesperaloe parviflora</i>	Aaron's Beard
<i>Kniphofia uvularia</i>	Red Hot Poker
<i>Lantana camara confertiflora</i>	Yellow Sage
<i>Lantana camara multivariata</i>	Trailing Lantana
<i>Lavandula dentata</i>	French Lavender
<i>Lepidospermum las 'Vigatum'</i>	Australian Tea Tree
<i>Leucophyllum frutescens</i>	Texas Ranger
<i>Ligustrum japonicum</i>	Texas Privet
<i>Limonium perzeli</i>	Sea Lavender
<i>Lonicera japonica 'Halliana'</i>	Hall's Japanese Honeyuckle
<i>Lonicera subspicata</i>	Wild Honeyuckle
<i>Mahonia aquifolium 'Golden Abundance'</i>	Golden Abundance Oregon Grape
<i>Mahonia navanii</i>	Nevin Mahonia
<i>Myoporum debile</i>	no common name
<i>Myoporum parvifolium</i>	no common name
<i>Myoporum 'Pacificum'</i>	no common name
<i>Nerium Oleander</i>	Oleander
<i>Nolina cuneata</i>	Chapparral Nolina
<i>Nolina speciosa</i>	Mexican Grass Tree
<i>Opuntia littoralis</i>	Prickly Pear
<i>Opuntia obovata</i>	Oracle Cactus
<i>Osteospermum fruticosum</i>	Trailing African Daisy
<i>Photinia fraseri</i>	no common name
<i>Prunus caroliniana</i>	Carolina Cherry Laurel
<i>Prunus ilicifolia ssp. 'Illicifolia'</i>	Holly Leafed Cherry
<i>Prunus lyonii</i>	Catalina Cherry
<i>Punica granatum</i>	Pomegranate
<i>Pyracantha speciosa</i>	Firethorn
<i>Quercus berberidifolia</i>	California Scrub Oak
<i>Quercus dumosa</i>	Coastal Scrub Oak
<i>Rhapidochloa speciosa</i>	India Hawthorn
<i>Rhus integrifolia</i>	Indian Bayberry
<i>Rhus ovata</i>	Sugarbush
<i>Romneya coulteri</i>	Matilija Poppy
<i>Romneya coulteri 'White Cloud'</i>	White Cloud Matilija Poppy
<i>Rosmarinus officinalis</i>	Rosemary

CONTINUED... FUEL MODIFICATION ZONE A PRIVATE RESIDENTIAL LOT (FIRST 20' FROM REAR PROPERTY LINE AND PASEOS) PLANT PALETTE

TOTAL AREA: 1.74 AC

Botanical Name	Common Name
SHRUBS (CONT.)	
<i>Salvia greggii</i>	Autumn Sage
<i>Salvia sonomensis</i>	Creeeping Sage
<i>Santolina chamaecyparissus</i>	Lavender Cotton
<i>Santolina virans</i>	Green Lavender Cotton
<i>Solanum xanthi</i>	Purple Nightshade
<i>Xylocopa congestum</i>	Shiny Xylocopa
<i>Yucca speciosa</i>	Yucca
<i>Yucca whipplei</i>	Yucca
TURF	
<i>'Marathon II' Festuca Arundinacea'</i>	Dwarf Tall Fescue
<i>Turf</i>	A-G Sod Farms Inc. - Elite Plus
* Drought Tolerant Plants	
GRASS/COVER	
<i>Ameria maritima</i>	Common Thrift
<i>Artemisia caucasicca</i>	Caucasian Artemisia
<i>Artemia cordifolia x Red Apple</i>	Strawberry
<i>Cistus crispus</i>	no common name
<i>Cercosoplia lanceolata</i>	no common name
<i>Cercis pulchella</i>	Australian Eucalypt
<i>Crassula lactea</i>	no common name
<i>Crassula multicaeva</i>	no common name
<i>Crassula tetragona</i>	no common name
<i>Delosperma 'alba'</i>	White trailing Ice Plant
<i>Diosanthemum floribundum</i>	Roses Ice Plant
<i>Diosanthemum hispidum</i>	no common name
<i>Diosanthemum speciosum</i>	Dwarfflower
<i>Eragrostis chilensis</i>	Wild Strawberry/Sand Strawberry
<i>Saxanila hybridus</i>	South African Daisy
<i>Saxanila rigens leucoloma</i>	Trailing Gazania
<i>Hedera canariensis</i>	English Ivy
<i>Iberis sempervirens</i>	Eging Candytuft
<i>Iberis umbellatum</i>	White Candytuft
<i>Lampranthus aurantiacus</i>	Bush Ice Plant
<i>Lampranthus filiculis</i>	Redondo Creeper
<i>Lampranthus spectabilis</i>	Trailing Ice Plant
<i>Lasthenia californica</i>	Dwarf Goldfields
<i>Lupinus arizonicus</i>	Desert Lupine
<i>Lupinus benthamii</i>	Spider Lupine
<i>Lupinus bicolor</i>	Sky Lupine
<i>Lupinus sparsiflorus</i>	Coastal Flowered Annual Lupine/Coulter's
<i>Ophiopogon japonicus</i>	Yonko Grass
<i>Palargonium peltatum</i>	Ivy Geranium
TURF	
<i>'Marathon II' Festuca Arundinacea'</i>	Dwarf Tall Fescue
<i>Turf</i>	A-G Sod Farms Inc. - Elite Plus
* Drought Tolerant Plants	
SHRUBS (CONT.)	
<i>Artemisia californica</i>	California Sagebrush
<i>Atriplex lentiformis breseri</i>	Breder's Saltbush
<i>Baccharis pilularis</i>	Coyote Bush
<i>Encelia californica</i>	California Sunflower
<i>Eriogonum fasciculatum</i>	Buckwheat
<i>Isomeris arborea</i>	Bladder Pod
<i>Lotus scoparius</i>	Deserted
<i>Mimulus aurantiacus</i>	Monkey Flower
<i>Opuntia littoralis</i>	Coast Prickly-pear
<i>Opuntia prolifera</i>	Coast Cholla
<i>Rhus integrifolia</i>	Lemonade Berry
Total Container Stock	1882 6262
<i>Artemisia californica</i>	California Sagebrush
<i>Dichelostemma capitatum</i>	Wild Hyacinth
<i>Isocoma menziesii</i>	Buckwheat
<i>Isocoma menziesii</i>	Coastal Goldenbush
<i>Muhlenbergia microcarpa</i>	Small Seed Muhly
<i>Nassella pulchra</i>	Foothill Needlegrass
<i>Nassella pulchra</i>	Purple Needlegrass
<i>Styrachium bellum</i>	Blue-eyed grass
Total Seed	21 832
Eucalyptus Enhancement Plant Palette	
Total Area: 0.53 AC	
<i>Argemone californica</i>	San Diego Centgrass
<i>Calochortus catalinae</i>	Catalina Mariposa Lily
<i>Calochortus splendens</i>	Splendid Mariposa Lily
<i>Dichelostemma capitatum</i>	Wild Hyacinth
<i>Hortensia cuneata</i>	Mesa Hortensia
<i>Lycium californicum</i>	California boxthorn
<i>Mirabilis californica</i>	Whitewine Bush
<i>Malva imperatoria</i>	Coast range mallow
<i>Nassella pulchra</i>	Purple needlegrass
<i>Opuntia littoralis</i>	Coast prickly-pear
<i>Opuntia prolifera</i>	Coast cholla
<i>Styrachium bellum</i>	Blue-eyed grass
Total Container Stock	2020 7136
<i>Argemone californica</i>	San Diego Centgrass
<i>Calochortus catalinae</i>	Catalina Mariposa Lily
<i>Calochortus splendens</i>	Splendid Mariposa Lily
<i>Dichelostemma capitatum</i>	Wild Hyacinth
<i>Hortensia cuneata</i>	Mesa Hortensia
<i>Lycium californicum</i>	California boxthorn
<i>Mirabilis californica</i>	Whitewine Bush
<i>Malva imperatoria</i>	Coast range mallow
<i>Nassella pulchra</i>	Purple needlegrass
<i>Opuntia littoralis</i>	Coast prickly-pear
<i>Opuntia prolifera</i>	Coast cholla
<i>Styrachium bellum</i>	Blue-eyed grass
Total Seed	25 34200

Notes: rp = rosepots
oc = on center

NON-IRRIGATED HMP HABITAT AREAS CONTINUED
Cactus Scrub Plant Palette
Total Area: 0.86 AC

Botanical Name	Common Name	Stock Type	Plant Spacing	No. per Acre	Total Plant Quantity
<i>Baccharis pilularis</i>	Coyote bush	1 gal.	5' oc.	75	22
<i>Encelia californica</i>	California sunflower	rp	5' oc.	50	43
<i>Isocoma menziesii</i>	Coastal goldenbush	1 gal.	8' oc.	75	22
<i>Lotus condensatus</i>	Giant wild-rye	1 gal.	12' oc.	50	43
<i>Lotus scoparius</i>	Coastal deerweed	1 gal.	5' oc.	50	43
<i>Mimulus aurantiacus</i>	Bush monkey flower	1 gal.	6' oc.	50	43
<i>Mirabilis californica</i>	California whitewine bush	1 gal.	6' oc.	75	22
<i>Opuntia littoralis</i>	Coast prickly pear	1 gal.	5' oc.	500	430
<i>Opuntia prolifera</i>	Coastal cholla	1 gal.	5' oc.	200	117
Total Container Stock				978	840
<i>Bromus carinatus</i>	California brome grass	seed		2	17
<i>Dichelostemma capitatum</i>	Wild hyacinth	seed		0.2	0.2
<i>Encelia californica</i>	California encelia	seed		1	0.9
<i>Eriophyllum confertiflorum</i>	Long-stemmed golden yarrow	seed		0.25	0.2
<i>Encelia californica</i>	California poppy	seed		1	0.9
<i>Gnaphalium bicolor</i>	Bicolorated cudweed	seed		0.35	0.3
<i>Isocoma menziesii</i>	Coastal goldenbush	seed		0.15	0.6
<i>Lasthenia californica</i>	Coastal goldfields	seed		0.35	0.3
<i>Lotus condensatus</i>	Giant wild-rye	seed		0.15	0.6
<i>Lotus scoparius</i>	Coastal deerweed	seed		0.15	0.6
<i>Lupinus bicolor</i>	Miniature lupine	seed		0.15	0.6
<i>Lupinus succulentus</i>	Arroyo lupine	seed		3	2.6
<i>Mimulus aurantiacus</i>	Bush monkey flower	seed		0.15	0.6
<i>Mirabilis californica</i>	California whitewine bush	seed		3	2.6
<i>Nassella lepidia</i>	Foothill needlegrass	seed		15	13
<i>Nassella pulchra</i>	Purple needlegrass	seed		3	2.6
<i>Phacelia parryi</i>	Parry's phacelia	seed		0.1	0.1
<i>Plantago erecta</i>	California plantain	seed		2.5	2.2
<i>Scrophularia californica</i>	California figwort	seed		0.1	0.1
<i>Styrachium bellum</i>	Blue-eyed grass	seed		1.75	1.1
<i>Solanum douglasii</i>	Douglas' nightshade	seed		1	0.9
<i>Trifolium willdenovii</i>	Valley clover	seed		0.15	0.6
Total Seed				25.6	220

Sycamore Riparian Woodland Plant Palette
Total Area: 0.24 AC

Botanical Name	Common Name	Stock Type	Plant Spacing	No. per Acre	Total Plant Quantity
<i>Artemisia californica</i>	California Sagebrush	1 gal.	5' oc.	75	6
<i>Baccharis salicifolia</i>	Mulefat	cutting	10' oc.	75	6
<i>Encelia californica</i>	California encelia	1 gal.	5' oc.	75	6
<i>Heteromeles arbutifolia</i>	Tayon	1 gal.	15' oc.	75	6
<i>Isocoma menziesii</i>	Coastal goldenbush	1 gal.	6' oc.	75	6
<i>Malva laurina</i>	Laurel mallow	1 gal.	15' oc.	15	4
<i>Mimulus aurantiacus</i>	Bush monkey flower	1 gal.	6' oc.	75	6
<i>Platanus racemosa</i>	Western sycamore	1 gal.	20' oc.	50	12
<i>Rhus integrifolia</i>	Lemonade berry	1 gal.	15' oc.	75	6
<i>Rosa californica</i>	California wild rose	1 gal.	6' oc.	75	18
<i>Rubus ursinus</i>	California blackberry	1 gal.	6' oc.	75	18
<i>Salix lasiolepis</i>	Arroyo willow	cutting	10' oc.	30	7
<i>Sambucus mexicana</i>	Mexican elderberry	1 gal.	15' oc.	70	5
Total Container Stock				440	106
<i>Artemisia californica</i>	Coastal sagebrush	seed		1	0.24
<i>Artemisia douglasiana</i>	California mugwort	seed		1	0.24
<i>Artemisia dracunculifolia</i>	Tarragon	seed		1	0.24
<i>Baccharis salicifolia</i>	Mulefat	seed		0.3	0.07
<i>Castilleja essenta</i>	Red oak's clover	seed		0.5	0.17
<i>Diutichia spicata</i>	Coastal salt grass	seed		1	0.24
<i>Encelia californica</i>	California encelia	seed		3	0.17
<i>Eriophyllum confertiflorum</i>	Long-stemmed golden yarrow	seed		0.5	0.17
<i>Gallium angustifolium</i>	Chapparral bedstraw	seed		1	0.24
<i>Gnaphalium bicolor</i>	Bicolorated cudweed	seed		1	0.24
<i>Gnaphalium californica</i>	California everlasting	seed		1	0.24
<i>Isocoma menziesii</i>	Coastal goldenbush	seed		2	0.48
<i>Isocoma menziesii</i>	Coastal goldenbush	seed		2	0.48
<i>Lotus condensatus</i>	Giant wild-rye	seed		5	0.17
<i>Lotus scoparius</i>	Bush monkey flower	seed		3	0.17
<i>Mimulus aurantiacus</i>	Bush monkey flower	seed		0.5	0.24
<i>Muhlenbergia rigens</i>	California deergrass	seed		0.3	0.07
<i>Nassella lepidia</i>	Foothill needlegrass	seed		2	0.48
<i>Nassella pulchra</i>	Purple needlegrass	seed		0.5	0.17
<i>Phacelia ramosissima</i>	Branching phacelia	seed		0.5	0.17
<i>Plantago erecta</i>	California plantain	seed		2	0.48
<i>Phytolacca odorata</i>	Marsh flea-bane	seed		0.1	0.05
<i>Rosa secundata</i>	Malpais blueberry	seed		2	0.48
<i>Solanum douglasii</i>	Douglas' nightshade	seed		1	0.24
<i>Stachys bullata</i>	California hedge-nettle	seed		0.5	0.17
<i>Trifolium willdenovii</i>	Valley clover	seed		0.15	0.12
<i>Urtica dioica</i>	Hoary nettle	seed		0.2	0.05
<i>Verbena lasiolepis</i>	Western verbena	seed		1	0.24
Total Seed				36.9	8.9

Native Grassland Plant Palette
Total Area: 1.68 AC

Botanical Name	Common Name	Stock Type	Plant Spacing	No. per Acre	Total Plant Quantity
<i>Dichelostemma capitatum</i>	Wild hyacinth	1 gal.	3' oc.	200	2136
<i>Isocoma menziesii</i>	Coast goldenbush	1 gal.	8' oc.	50	684
<i>Hortensia cuneata</i>	Mesa hortensia	1 gal.	3' oc.	100	1368

Landscape Palette Outside Fuel Modification and Habitat Areas

SPECIAL NOTE: RATIONALE FOR INCLUDING THIS LANDSCAPE PALETTE FOR AREAS OUTSIDE FUEL MODIFICATION AND HABITAT/BUFFER AREAS IN CONJUNCTION WITH THE FINAL FUEL MODIFICATION PLAN.

Paragraph H of Special Condition No. 11, Landscape Requirements, of Coastal Development Permit (CDP) No. 5-05-020 (Brightwater), approved by the California Coastal Commission on April 14, 2005, requires that the permittee provide written evidence to the Executive Director of the Coastal Commission that the Orange County Fire Authority (OCFA) has reviewed and approved the final Landscape Palette for the entire development of the Brightwater Project including not only the Fuel Modification and Habitat/Buffer Area Plant Lists, but the Non-Habitat/Non Buffer Area Plant List for the remainder of the development, that must be approved by the Executive Director of the Coastal Commission prior to the actual issuance of CDP No. 5-05-020 as set forth in Paragraph B of Condition 11 of the CDP.

This Landscape Palette is, among other things, intended to identify acceptable non-native, non-invasive, low water use plants and to specially exclude plant species listed as problematic and/or invasive by the California Native Plant Society, California Exotic Pest Plant Council, or as may be identified from time to time by the State of California, or any plant species listed as a 'noxious weed' by the State of California or the U.S. Federal Government shall be utilized anywhere within the proposed development area, including landscaping along the streets, roads, entries, parkways, parks and other development areas, including private residential lots within VTTM No.15460.

Following approval by OCFA, as well as by CDFG and USFWS, approval of this list by the Executive Director is intended to ensure compliance with the above criteria. Once approved by the Executive Director this list shall be known as the "Approved Plant List for Non-Habitat/Non-Buffer Area" and shall be recorded in the covenants, conditions and restrictions of the homeowners association pursuant to Special Condition 6 of CDP No. 5-05-020. Only those plants on the "Approved Plant List for Non-Habitat/Non-Buffer Areas" shall be planted and allowed to grow within the non-habitat/non-buffer areas of the project.

LANDSCAPE ZONE 1 - COMMUNITY ENTRIES

TREES - ZONE 1

- Arbutus unedo
- Archontophoenix cunninghamiana
- Brachycton populneus
- Bribea armata
- Cassia leptophylla
- Cercis occidentalis
- Cinnamomum camphora
- Cocos plumosa
- Eriobotrya deflexa
- Erythrina calltra
- Erythrina coralloides
- Feijoa sellowiana
- Ficus florida
- Ficus nitida 'Green Gem'
- Ficus rubiginosa
- Ginkgo biloba
- Jacaranda acutifolia
- Lagerstroemia speciosa
- Lauris nobilis
- Magnolia grandiflora and 'Samuel Sommers'/'Majestic Beauty'
- Melaleuca nesophila
- Melaleuca quinquenervia
- Metrosideros excelsus
- Neodypsis decaryi
- Phoenix canariensis

SHRUBS - ZONE 1

- Abelia grandiflora 'Edward Goucher'
- Agapanthus africanus
- Agave americana
- Alyogyne huegelii
- Armeria maritima
- Baccharis pilularis 'Pigeon Point'
- Baccharis pilularis 'Twin Peaks'
- Bergenia cordifolia
- Bougainvillea 'Tahitian Maid'
- Buxus japonica
- Campanula portenschlagiana
- Campanula poscharskyana
- Carex spissa
- Carissa macrocarpa 'Fancy'
- Cistus hybridus
- Cistus purpureus
- Cistus salviifolius
- Clivia miniata
- Crassula argentea
- Crassula argentea 'Crosby'
- Cuphea hyssopifolia
- Cyrtia cooperi
- Delosperma cooperi
- Dicksonia antarctica
- Dietes vegeta
- Eriogonum giganteum
- Escallonia 'fradesii'
- Grevillea 'Noellii'
- Hebe buxifolia
- Helictotrichon sempervirens
- Hemerocallis hybrid 'Mountain Violet'
- Heteromeles arbutifolia
- Heteromeles arbutifolia 'Davis Gold'
- Hibiscus spp.
- Jasminum nudiflorum
- Lantana sellowiana
- Lavandula pedunculata 'Atlas'
- Leptospermum laevigatum
- Leptospermum scoparium
- Miscanthus sinensis 'Yakushima'
- Miscanthus transmorrisonensis
- Muhlenbergia rigens
- Myrtus communis
- Nandina domestica
- Nephrolepis exaltata
- Nolina bigelovii
- Osteospermum fruticosum
- Pachysandra terminalis
- Philodendron selloum
- Phoenix roebelenii

TREES - ZONE 1 (continued)

- Phoenix dactylifera
- Pinus
- Podocarpus gracilior
- Prunus caroliniana
- Rhus integrifolia
- Rhus laurina
- Tabebuia chrysotricha
- Tabebuia impetiginosa
- Tabebuia ipe
- Tristania conferta
- Tristania laurina
- Tupidanthus calyptratus

- Phormium tenax
- Pittosporum crassifolium 'Nana'
- Pittosporum tobira
- Podocarpus spp.
- Rhapidolepis indica
- Rosmarinus officinalis
- Schefflera actinophylla
- Solanum xanthi
- Strelitzia nicolai
- Strelitzia reginae
- Teucrium fruticosum and cultivars

- Strawberry Tree*
- King Palm
- Bottle Tree
- Mexican Blue Palm*
- Gold Medallion Tree
- Western Red Bud
- Camphor Tree
- Queen Palm
- Bronze Loquat
- Kaffirboom Coral Tree*
- Coral Tree*
- Pineapple Guava
- Florida Fig
- Indian Laurel Fig - Green Gem
- Rustyleaf Fig
- Maidenhair
- Jacaranda
- Crape Myrtle
- Grecian Laurel*
- Southern Magnolia
- Pink Melaleuca*
- Cajuput Tree*
- New Zealand Christmas Tree*
- Triangle Palm*
- Canary Island Date Palm (Not to be used within 100' (close proximity) of natural areas - potential to naturalize)
- Date Palm (Not to be used within 100' (close proximity) of natural areas - potential to naturalize)
- Fern Pine
- Carolina Laurel Cherry*
- Lemonade Berry*
- Laurel Sumac*
- Golden Trumpet Tree*
- Pink Trumpet Tree*
- Trumpet Tree*
- Brisbane Box
- NCN
- Tupidanthus

- Abelia
- Lily-of-the-Nile
- Century Plant*
- Blue Hibiscus
- Common Thrift*
- Coyote Bush*
- Coyote Bush Prostrate*
- Winter Saxifage
- Double Bougainvillea*
- Japanese Boxwood
- Dalmatian Bellflower
- Serbian Bellflower
- San Diego Sedge
- Natal Plum*
- White Rockrose*
- Orchid Spot Rockrose*
- Rockrose Sageleaf*
- Kaffir Lily
- Jade Plant*
- Miniature Jade Plant*
- False Heather
- Australian Tree Fern
- Hardy Ice Plant
- Tasmanian Tree Fern
- Fortnight Lily
- St. Catherine's Lace*
- Pink Escallonia
- Grevillea
- Boxleaf Hebe*
- Blue Out Grass
- Evergreen Daylily
- Daylily
- Toyon*
- Toyon*
- Hibiscus
- Winter Jasmine
- Trailing Lantana*
- Spanish Lavender*
- Australian Tea Tree*
- New Zealand Tea Tree, Mamuka*
- Eulalia Grass
- Evergreen Maiden Grass (or Eulalia)
- Deer Grass
- True Myrtle
- Heavenly Bamboo
- Sword Fern
- Bigelow's bear grass*
- Pachysandra
- Big Leaf Philodendron
- Pigmy Date Palm (Not to be used within 100' (close proximity) of natural areas)
- New Zealand Flax
- Dwarf Kuro
- Mock Orange
- Fern Pine
- India Hawthorn
- Rosemary*
- Schefflera
- Purple Nightshade*
- Giant Bird of Paradise
- Bird of Paradise
- Bush Germander

- Trachelospermum asiaticum
- Trachelospermum jasminoides
- Tulbaghia violacea
- Tupidanthus calyptratus
- Viburnum suspensum
- Xylosma congestum 'Compacta'
- Xylosma congestum 'Ed Dorado'
- Yucca baccata
- Yucca filamentosa 'Variegata'
- Yucca rigida
- Ivory Star Jasmine or Asian Jasmine
- Star Jasmine
- Society Garlic
- Tupidanthus
- Sandankva Viburnum
- Xylosma*
- Dwarf Xylosma*
- Banana Yucca
- Variegated Yucca
- Blue Yucca*

VINES - ZONE 1

- Bougainvillea spp.
- Calliandra haematocephala
- Clytostoma callistegioides
- Distictis buccinatoria
- Grewia occidentalis
- Hardenbergia violacea
- Macfadyena unguis-cati
- Mandevilla splendens
- Mascagnia macroptera
- Parthenocissus tricuspidata
- Passiflora edulis
- Pandorea jasminoides
- Rosa banksiae 'Alba Plena'
- Trachelospermum jasminoides
- Bougainvillea*
- Pink Powder Puff
- Violet Trumpet Vine
- Blood-Red Trumpet Vine
- Lavender Starflower
- Hardenbergia
- Cat's Claw*
- Alice du Pont
- Golden Vine*
- Boston Ivy
- Passion Flower*
- Bower Vine
- Climbing Rose
- Star Jasmine

GROUND COVER - ZONE 1

- Armeria maritima
- Baccharis pilularis
- Baccharis pilularis 'Pigeon Point'
- Baccharis pilularis 'Twin Peaks #2'
- Baccharis pilularis 'Twin Peaks'
- Dimorphotheca aurantiaca
- Festuca ovina glauca
- Gazania 'Copper King'
- Gazania 'Moonglow'
- Gazania hybrid 'Mitsua Yellow'
- Lantana sellowiana
- Osteospermum 'Buttermilk'
- Osteospermum fru. 'African Queen'
- Osteospermum fru. 'Burgundy'
- Osteospermum fru. 'Whirligig'
- Osteospermum fruticosum
- Osteospermum fruticosum 'Hybrid White'
- Santolina cha. 'Nana'
- Verbena hybrida
- Verbena peruviana species
- Common Thrift*
- Dwarf Coyote Bush*
- Coyote Bush*
- Dwarf Coyote Bush*
- Coyote Bush Prostrate*
- African Daisy*
- Blue Fescue*
- Gazania*
- Gazania*
- Semi-trailing Yellow Gazania*
- Trailing Lantana*
- Osteospermum*
- Trailing African Daisy*
- Trailing African Daisy*
- Trailing African Daisy*
- Freevay Daisy*
- Freevay Daisy*
- Lavendar Cotton*
- Garden Verbena*
- Verbena*

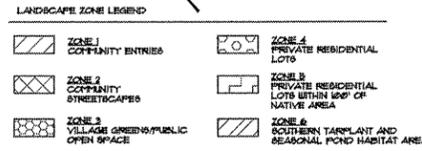
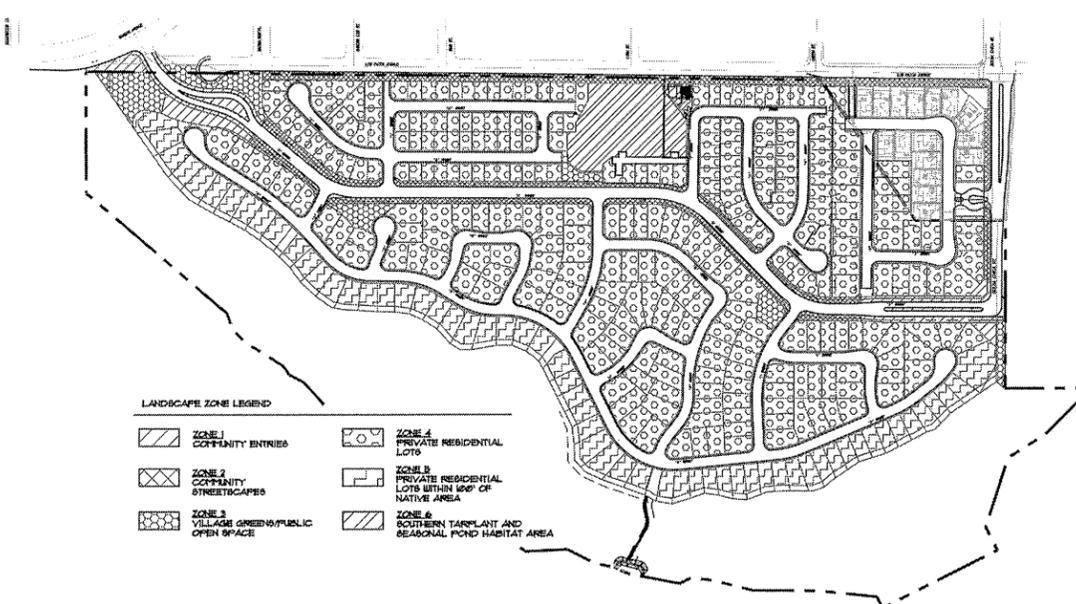
TURF - ZONE 1

- Marathon II 'Festuca Arundinacea'
- Turf
- Dwarf Tall Fescue
- A-G Sod Farms Inc. - Elite Plus*

LANDSCAPE ZONE 2 - STREETSCAPES

TREES - ZONE 2

- Arbutus unedo
- Archontophoenix cunninghamiana
- Brachycton populneus
- Cassia leptophylla
- Cercis occidentalis
- Cinnamomum camphora
- Cocos plumosa
- Eriobotrya deflexa
- Erythrina calltra
- Erythrina coralloides
- Feijoa sellowiana
- Ficus florida
- Ficus nitida 'Green Gem'
- Ficus rubiginosa
- Ginkgo biloba
- Jacaranda acutifolia
- Lagerstroemia speciosa
- Lauris nobilis
- Magnolia grandiflora and 'Samuel Sommers'/'Majestic Beauty'
- Melaleuca nesophila
- Melaleuca quinquenervia
- Metrosideros excelsus
- Phoenix canariensis
- Phoenix dactylifera
- Pinus halepensis
- Pinus eldarica
- Podocarpus gracilior
- Prunus caroliniana
- Rhus integrifolia
- Rhus laurina
- Tabebuia chrysotricha
- Tabebuia impetiginosa
- Tabebuia ipe
- Tristania conferta
- Tristania laurina
- Strawberry Tree*
- King Palm (Not to be used within 100' (close proximity) of natural areas)
- Bottle Tree
- Gold Medallion Tree
- Western Red Bud
- Camphor Tree
- Queen Palm (Not to be used within 100' (close proximity) of natural areas)
- Bronze Loquat
- Kaffirboom Coral Tree*
- Coral Tree*
- Pineapple Guava
- Florida Fig
- Indian Laurel Fig - Green Gem
- Rustyleaf Fig
- Maidenhair
- Jacaranda
- Crape Myrtle
- Grecian Laurel*
- Southern Magnolia
- Pink Melaleuca*
- Cajuput Tree*
- New Zealand Christmas Tree*
- Canary Island Date Palm (Not to be used within 100' (close proximity) of natural areas)
- Date Palm (Not to be used within 100' (close proximity) of natural areas)
- Aleppo Pine* (Not to be used within 100' (close proximity) of natural areas)Limited to Los Patos & Bolsa Chica Street
- Afghan Pine* (Not to be used within 100' (close proximity) of natural areas)Limited to Los Patos & Bolsa Chica Street
- Fern Pine
- Carolina Laurel Cherry*
- Lemonade Berry*
- Laurel Sumac*
- Golden Trumpet Tree*
- Pink Trumpet Tree*
- Trumpet Tree*
- Brisbane Box
- NCN



FORMA

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Key Map:

PRELIMINARY NOT FOR CONSTRUCTION



Client:
Hearthside Homes
6 Executive Circle
Suite 250, Irvine, CA

Project:
Brightwater

County of Orange
Huntington Beach, CA

Revisions:

Sheet Info:

Drawn By: BM
Checked By: CSM, MS
Scale: 1"=200'
Date: December 08, 2005
Job No.: 0754.021

Sheet Title:

PLANT PALETTE

Sheet Reference:

FMP-4

Sheet: **4** of **14**

* DROUGHT TOLERANT PLANTS

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SHRUBS - ZONE 2

Abelia grandiflora 'Edward Goucher'
 Agapanthus africanus
 Agave americana
 Alsophila australis
 Alyogyne huegelii
 Armeria maritima
 Baccharis pilularis 'Pigeon Point'
 Baccharis pilularis 'Twin Peaks'
 Bergenia cordifolia
 Bougainvillea 'Tahitian Maid'
 Buxus japonica
 Campanula portenschlagiana
 Campanula poscharskyana
 Carex spissa
 Carissa macrocarpa 'Fancy'
 Cistus hybridus
 Cistus purpureus
 Cistus salvifolius
 Clivia miniata
 Crassula argentea
 Crassula argentea 'Crosby'
 Cuphea hyssopifolia
 Cyathea cooperi
 Delosperma cooperi
 Dicksonia antarctica
 Dietes vegeta
 Eriogonum fasciculatum

Abelia
 Lily-of-the-Nile
 Century Plant*
 Australian Tree Fern
 Blue Hibiscus
 Common Thrift*
 Coyote Bush*
 Coyote Bush Prostrate*
 Winter Saxifage
 Double Bougainvillea
 Japanese Boxwood
 Dalmatian Bellflower
 Serbian Bellflower
 San Diego Sedge
 Natal Plum*
 White Rockrose*
 Orchid Spot Rockrose*
 Rockrose Sageleaf*
 Kaffir Lily
 Jade Plant*
 Miniature Jade Plant*
 False Heather
 Australian Tree Fern
 Hardy Ice Plant
 Tasmanian Tree Fern
 Fortnight Lily
 Common Buckwheat* (Not to be used within 100' (close proximity) of natural areas)
 Pink Escallonia*
 Grevillea*
 Boxleaf Hebe
 Blue Oat Grass
 Daylily
 Toyon*
 Toyon*
 Hibiscus spp.
 Winter Jasmine
 Trailing Lantana*
 Spanish Lavender*
 Eulalia Grass
 Evergreen Maiden Grass (or Eulalia)
 Lindheimer's Muhly Grass
 True Myrtle
 Heavenly Bamboo
 Sword Fern
 Bigelow's bear grass*
 Freeway Daisy*
 Pachysandra
 Big Leaf Philodendron
 Phoenix roebelenii (proximity) of natural areas)
 Phormium tenax
 Pittosporum crassifolium 'Nana'
 Pittosporum tobira
 Rhabdiopsis indica
 Rosmarinus officinalis
 Schefflera actinophylla
 Solanum xanthii
 Strelitzia nicolai
 Strelitzia reginae
 Teucrium fruticosum and cultivars
 Trachelospermum asiaticum
 Trachelospermum jasminoides
 Tulbaghia violacea
 Viburnum suspensum
 Xylosma congestum 'Compacta'
 Xylosma congestum 'Ed Dorado'
 Yucca baccata
 Yucca filamentosa 'Variegata'
 Yucca rigida

Escallonia 'fradesii'
 Grevillea 'Noellii'
 Hebe buxifolia
 Helictotrichon sempervirens
 Hemerocallis hybrid 'Mountain Violet'
 Heteromeles arbutifolia
 Heteromeles arbutifolia 'Davis Gold'
 Hibiscus spp.
 Jasminum nudiflorum
 Lantana sellowiana
 Lavandula pedunculata 'Atlas'
 Miscanthus sinensis 'Yakushima'
 Miscanthus transmorrisonensis
 Muhlenbergia lindheimeri
 Myrtus communis
 Nandina domestica
 Nephrolepis exaltata
 Nolina bigelovii
 Osteospermum fruticosum
 Pachysandra terminalis
 Philodendron selloum
 Phoenix roebelenii (proximity) of natural areas)
 Phormium tenax
 Pittosporum crassifolium 'Nana'
 Pittosporum tobira
 Rhabdiopsis indica
 Rosmarinus officinalis
 Schefflera actinophylla
 Solanum xanthii
 Strelitzia nicolai
 Strelitzia reginae
 Teucrium fruticosum and cultivars
 Trachelospermum asiaticum
 Trachelospermum jasminoides
 Tulbaghia violacea
 Viburnum suspensum
 Xylosma congestum 'Compacta'
 Xylosma congestum 'Ed Dorado'
 Yucca baccata
 Yucca filamentosa 'Variegata'
 Yucca rigida

Marathon II 'Festuca Arundinacea'
 Turf

TURF - ZONE 2

Marathon II 'Festuca Arundinacea'
 Turf

**LANDSCAPE ZONE 3 - VILLAGE GREENS/
PUBLIC OPEN SPACE**

TREES - ZONE 3

Arbutus unedo
 Archontophoenix cunninghamiana

Brachychiton populneus
 Cassia leptophylla
 Cercis occidentalis
 Cinnamomum camphora
 Cocos plumosa
 Eriobotrya deflexa
 Erythrina caffra
 Erythrina coralloides
 False Heather
 Australian Tree Fern
 Hardy Ice Plant
 Tasmanian Tree Fern
 Fortnight Lily
 Common Buckwheat* (Not to be used within 100' (close proximity) of natural areas)
 Pink Escallonia*
 Grevillea*
 Boxleaf Hebe
 Blue Oat Grass
 Daylily
 Toyon*
 Toyon*
 Hibiscus
 Winter Jasmine
 Trailing Lantana*
 Spanish Lavender*
 Eulalia Grass
 Evergreen Maiden Grass (or Eulalia)
 Lindheimer's Muhly Grass
 True Myrtle
 Heavenly Bamboo
 Sword Fern
 Bigelow's bear grass*
 Freeway Daisy*
 Pachysandra
 Big Leaf Philodendron
 Phoenix roebelenii (proximity) of natural areas)
 Phormium tenax
 Pittosporum crassifolium 'Nana'
 Pittosporum tobira
 Rhabdiopsis indica
 Rosmarinus officinalis
 Schefflera actinophylla
 Solanum xanthii
 Strelitzia nicolai
 Strelitzia reginae
 Teucrium fruticosum and cultivars
 Trachelospermum asiaticum
 Trachelospermum jasminoides
 Tulbaghia violacea
 Viburnum suspensum
 Xylosma congestum 'Compacta'
 Xylosma congestum 'Ed Dorado'
 Yucca baccata
 Yucca filamentosa 'Variegata'
 Yucca rigida

Podocarpus gracilior
 Prunus caroliniana
 Rhus integrifolia
 Rhus laurina
 Tabebuia chrysotricha
 Tabebuia impetiginosa
 Tabebuia ipe
 Tristania conferta
 Tristania laurina
 Tupidanthus calyptatus

SHRUBS - ZONE 3

Abelia grandiflora 'Edward Goucher'
 Agapanthus africanus
 Agave americana
 Alyogyne huegelii
 Armeria maritima
 Baccharis pilularis 'Pigeon Point'
 Baccharis pilularis 'Twin Peaks'
 Bergenia cordifolia
 Bougainvillea 'Tahitian Maid'
 Campanula portenschlagiana
 Campanula poscharskyana
 Camellia japonica
 Carex spissa
 Carissa macrocarpa 'Fancy'
 Cistus hybridus
 Cistus purpureus
 Cistus salvifolius
 Clivia miniata
 Crassula argentea
 Crassula argentea 'Crosby'
 Cuphea hyssopifolia
 Delosperma cooperi
 Dietes vegeta
 Escallonia 'fradesii'
 Grevillea 'Noellii'
 Helictotrichon sempervirens
 Hemerocallis hybrid 'Mountain Violet'
 Heteromeles arbutifolia
 Heteromeles arbutifolia 'Davis Gold'
 Hibiscus spp.
 Jasminum nudiflorum
 Lantana sellowiana
 Lavandula pedunculata 'Atlas'
 Miscanthus sinensis 'Yakushima'
 Miscanthus transmorrisonensis
 Muhlenbergia lindheimeri
 Myrtus communis
 Nandina domestica
 Nephrolepis exaltata
 Nolina bigelovii
 Osteospermum fruticosum
 Pachysandra terminalis
 Philodendron selloum
 Phoenix roebelenii (proximity) of natural areas)
 Phormium tenax
 Pittosporum crassifolium 'Nana'
 Pittosporum tobira
 Rhabdiopsis indica
 Rosmarinus officinalis
 Schefflera actinophylla
 Solanum xanthii
 Strelitzia nicolai
 Strelitzia reginae
 Teucrium fruticosum and cultivars
 Trachelospermum asiaticum
 Trachelospermum jasminoides
 Tulbaghia violacea
 Viburnum suspensum
 Xylosma congestum 'Compacta'
 Xylosma congestum 'Ed Dorado'
 Yucca baccata
 Yucca filamentosa 'Variegata'
 Yucca rigida

Strawberry Tree*
 King Palm (UPS) (Not to be used within 100' (close proximity) of natural areas)
 Bottle Tree
 Gold Medallion Tree
 Western Red Bud
 Camphor Tree
 Queen Palm (UPS) (Not to be used within 100' (close proximity) of natural areas)
 Bronze Loquat
 Kaffirboom Coral Tree*
 Coral Tree
 Pineapple Guava
 Florida Fig
 Indian Laurel Fig - Green Gem
 Rustyleaf Fig
 Maidenhair
 Crape Myrtle
 Grecian Laurel*
 Southern Magnolia

Pink Melaleuca*
 Cajepui Tree*
 New Zealand Christmas Tree*
 Triangle Palm (UPS)* (Not to be used within 100' (close proximity) of natural areas)
 Canary Island Date Palm (UPS) (Not to be used within 100' (close proximity) of natural areas)
 Date Palm (UPS) (Not to be used within 100' (close proximity) of natural areas)
 Fern Pine
 Carolina Laurel Cherry*
 Lemonade Berry*
 Laurel Sumac*
 Golden Trumpet Tree*
 Pink Trumpet Tree*
 Trumpet Tree*
 Brisbane Box
 NCN
 Tupidanthus

Fern Pine
 Carolina Laurel Cherry*
 Lemonade Berry*
 Laurel Sumac*
 Golden Trumpet Tree*
 Pink Trumpet Tree*
 Trumpet Tree*
 Brisbane Box
 NCN
 Tupidanthus

VINES - ZONE 2

Bougainvillea spp.
 Calliandra haematocephala
 Clytostoma callistegioides
 Distictis buccinatoria
 Grewia occidentalis
 Hardenbergia violacea
 Macfadyena unguis-cati
 Mandevilla splendens
 Mascagnia macroptera
 Parthenocissus tricuspidata
 Passiflora edulis
 Pandorea jasminoides
 Rosa banksiae 'Alba Plena'
 Trachelospermum jasminoides

Bougainvillea*
 Pink Powder Puff
 Violet Trumpet Vine
 Blood-Red Trumpet Vine
 Lavender Starflower
 Hardenbergia
 Cat's Claw*
 Alice du Pont
 Golden Vine*
 Boston Ivy
 Passion Flower*
 Bower Vine
 Climbing Rose
 Star Jasmine

GROUND COVER - ZONE 2

Armeria maritima
 Baccharis pilularis
 Baccharis pilularis 'Pigeon Point'
 Baccharis pilularis 'Twin Peaks #2'
 Baccharis pilularis 'Twin Peaks'
 Dimorphotheca aurantiaca
 Festuca ovina glauca
 Gazania 'Copper King'
 Gazania 'Moonglow'
 Gazania hybrid 'Mitsua Yellow'
 Lantana sellowiana
 Osteospermum 'Buttermilk'
 Osteospermum fru. 'African Queen'
 Osteospermum fru. 'Burgundy'
 Osteospermum fru. 'Whirligig'
 Osteospermum fruticosum
 Osteospermum fruticosum 'Hybrid White'
 Santolina cha. 'Nana'
 Verbena hybrida
 Verbena peruviana species

Common Thrift*
 Dwarf Coyote Bush*
 Coyote Bush*
 Dwarf Coyote Bush*
 Coyote Bush Prostrate*
 African Daisy*
 Blue Fescue*
 Gazania*
 Gazania*
 Semi-trailing Yellow Gazania*
 Trailing Lantana*
 Osteospermum*
 Trailing African Daisy*
 Trailing African Daisy*
 Trailing African Daisy*
 Freeway Daisy*
 Freeway Daisy*
 Lavendar Cotton*
 Garden Verbena*
 Verbena*

Bougainvillea*
 Pink Powder Puff
 Violet Trumpet Vine
 Blood-Red Trumpet Vine
 Lavender Starflower
 Hardenbergia
 Cat's Claw*
 Alice du Pont
 Golden Vine*
 Boston Ivy
 Passion Flower*
 Bower Vine
 Climbing Rose
 Star Jasmine

Phormium tenax
 Pittosporum crassifolium 'Nana'
 Pittosporum tobira
 Rhabdiopsis indica
 Rosmarinus officinalis
 Schefflera actinophylla
 Solanum xanthii
 Strelitzia nicolai
 Strelitzia reginae
 Teucrium fruticosum and cultivars

Trachelospermum asiaticum
 Trachelospermum jasminoides
 Tulbaghia violacea
 Viburnum suspensum
 Xylosma congestum 'Compacta'
 Xylosma congestum 'Ed Dorado'
 Yucca baccata
 Yucca filamentosa 'Variegata'
 Yucca rigida

VINES - ZONE 3

Bougainvillea spp.
 Calliandra haematocephala
 Clytostoma callistegioides
 Distictis buccinatoria
 Grewia occidentalis
 Hardenbergia violacea
 Macfadyena unguis-cati
 Mandevilla splendens
 Mascagnia macroptera
 Parthenocissus tricuspidata
 Passiflora edulis
 Pandorea jasminoides
 Rosa banksiae 'Alba Plena'
 Trachelospermum jasminoides

GROUND COVER - ZONE 3

Armeria maritima
 Baccharis pilularis
 Baccharis pilularis 'Pigeon Point'
 Baccharis pilularis 'Twin Peaks #2'
 Baccharis pilularis 'Twin Peaks'
 Dimorphotheca aurantiaca
 Festuca ovina glauca
 Gazania 'Copper King'
 Gazania 'Moonglow'
 Gazania hybrid 'Mitsua Yellow'
 Lantana sellowiana
 Osteospermum 'Buttermilk'
 Osteospermum fru. 'African Queen'
 Osteospermum fru. 'Burgundy'
 Osteospermum fru. 'Whirligig'
 Osteospermum fruticosum
 Osteospermum fruticosum 'Hybrid White'
 Santolina cha. 'Nana'
 Verbena hybrida
 Verbena peruviana species

TURF - ZONE 3

Marathon II 'Festuca Arundinacea'
 Turf

**LANDSCAPE ZONE 4 - PRIVATE RESIDENCE
LANDSCAPE**

TREES - ZONE 4

Arbutus unedo
 Archontophoenix cunninghamiana

Brachychiton populneus
 Cassia leptophylla
 Cercis occidentalis
 Cinnamomum camphora
 Cocos plumosa
 Eriobotrya deflexa
 Erythrina caffra
 Erythrina coralloides
 Feijoa sellowiana
 Ficus florida
 Ficus nitida 'Green Gem'
 Ficus rubiginosa
 Ginkgo biloba
 Jacaranda acutifolia
 Lagerstroemia species
 Lauris nobilis
 Magnolia grandiflora
 and 'Samuel Sommers'/'Majestic Beauty'
 Melaleuca nesophila
 Melaleuca quinquevernia
 Metrosideros excelsus
 Podocarpus gracilior
 Prunus caroliniana
 Rhus integrifolia
 Rhus laurina
 Tabebuia chrysotricha
 Tabebuia impetiginosa
 Tabebuia ipe
 Tristania conferta
 Tristania laurina

Ivory Star Jasmine or Asian Jasmine
 Star Jasmine
 Society Garlic
 Sandankwa Viburnum
 Xylosma*
 Dwarf Xylosma*
 Banana Yucca
 Variegated Yucca
 Blue Yucca*

Bougainvillea*
 Pink Powder Puff
 Violet Trumpet Vine
 Blood-Red Trumpet Vine
 Lavender Starflower
 Hardenbergia
 Cat's Claw*
 Alice du Pont
 Golden Vine*
 Boston Ivy
 Passion Flower*
 Bower Vine
 Climbing Rose
 Star Jasmine

Common Thrift*
 Dwarf Coyote Bush*
 Coyote Bush*
 Dwarf Coyote Bush*
 Coyote Bush Prostrate*
 African Daisy*
 Blue Fescue*
 Gazania*
 Gazania*
 Semi-trailing Yellow Gazania*
 Trailing Lantana*
 Osteospermum*
 Trailing African Daisy*
 Trailing African Daisy*
 Freeway Daisy*
 Freeway Daisy*
 Lavendar Cotton*
 Garden Verbena*
 Verbena*

Dwarf Tall Fescue
 A-G Sod Farms Inc. - Elite Plus*

SHRUBS - ZONE 4

Abelia grandiflora 'Edward Goucher'
 Agapanthus africanus
 Agave americana
 Alsophila australis
 Alyogyne huegelii
 Armeria maritima
 Baccharis pilularis 'Pigeon Point'
 Baccharis pilularis 'Twin Peaks'
 Bergenia cordifolia
 Bougainvillea 'Tahitian Maid'
 Buxus japonica
 Campanula portenschlagiana
 Campanula poscharskyana
 Carex spissa
 Carissa macrocarpa 'Fancy'
 Cistus hybridus
 Cistus purpureus
 Cistus salvifolius
 Clivia miniata
 Crassula argentea
 Crassula argentea 'Crosby'
 Cuphea hyssopifolia
 Cyathea cooperi
 Delosperma cooperi
 Dicksonia antarctica
 Dietes vegeta
 Escallonia 'fradesii'
 Grevillea 'Noellii'
 Hebe buxifolia
 Helictotrichon sempervirens
 Hemerocallis hybrid 'Mountain Violet'
 Heteromeles arbutifolia
 Heteromeles arbutifolia 'Davis Gold'
 Hibiscus spp.
 Jasminum nudiflorum
 Lantana sellowiana
 Lavandula pedunculata 'Atlas'
 Miscanthus sinensis 'Yakushima'
 Miscanthus transmorrisonensis
 Muhlenbergia lindheimeri
 Myrtus communis
 Nandina domestica
 Nephrolepis exaltata
 Nolina bigelovii
 Osteospermum fruticosum
 Pachysandra terminalis
 Philodendron selloum
 Phoenix roebelenii (proximity) of natural areas)
 Phormium tenax
 Pittosporum crassifolium 'Nana'
 Pittosporum tobira
 Rhabdiopsis indica
 Rosmarinus officinalis
 Schefflera actinophylla
 Solanum xanthii
 Strelitzia nicolai
 Strelitzia reginae
 Teucrium fruticosum and cultivars
 Trachelospermum asiaticum
 Trachelospermum jasminoides
 Tulbaghia violacea
 Viburnum suspensum
 Xylosma congestum 'Compacta'
 Xylosma congestum 'Ed Dorado'
 Yucca baccata
 Yucca filamentosa 'Variegata'
 Yucca rigida

Abelia
 Lily-of-the-Nile
 Century Plant*
 Australian Tree Fern
 Blue Hibiscus
 Common Thrift*
 Coyote Bush*
 Coyote Bush Prostrate*
 Winter Saxifage
 Double Bougainvillea
 Japanese Boxwood
 Dalmatian Bellflower
 Serbian Bellflower
 San Diego Sedge
 Natal Plum*
 White Rockrose*
 Orchid Spot Rockrose*
 Rockrose Sageleaf*
 Kaffir Lily
 Jade Plant*
 Miniature Jade Plant*
 False Heather
 Australian Tree Fern
 Hardy Ice Plant
 Tasmanian Tree Fern
 Fortnight Lily
 Pink Escallonia*
 Grevillea*
 Boxleaf Hebe
 Blue Oat Grass
 Daylily
 Toyon*
 Toyon*
 Hibiscus
 Winter Jasmine
 Trailing Lantana*
 Spanish Lavender*
 Eulalia Grass
 Evergreen Maiden Grass (or Eulalia)
 Deer Grass
 True Myrtle
 Heavenly Bamboo
 Sword Fern
 Bigelow's bear grass*
 Freeway Daisy*
 Pachysandra
 Big Leaf Philodendron
 Phoenix roebelenii (proximity) of natural areas)
 Phormium tenax
 Pittosporum crassifolium 'Nana'
 Pittosporum tobira
 Rhabdiopsis indica
 Rosmarinus officinalis
 Schefflera actinophylla
 Solanum xanthii
 Strelitzia nicolai
 Strelitzia reginae
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 Trachelospermum jasminoides
 Tulbaghia violacea
 Viburnum suspensum
 Xylosma congestum 'Compacta'
 Xylosma congestum 'Ed Dorado'
 Yucca baccata
 Yucca filamentosa 'Variegata'
 Yucca rigida

Common Thrift*
 Dwarf Coyote Bush*
 Coyote Bush*
 Dwarf Coyote Bush*
 Coyote Bush Prostrate*
 African Daisy*
 Blue Fescue*
 Gazania*
 Gazania*
 Semi-trailing Yellow Gazania*
 Trailing Lantana*
 Osteospermum*
 Trailing African Daisy*
 Trailing African Daisy*
 Freeway Daisy*
 Freeway Daisy*
 Lavendar Cotton*
 Garden Verbena*
 Verbena*

Phormium tenax
 Pittosporum crassifolium 'Nana'
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 Viburnum suspensum
 Xylosma congestum 'Compacta'
 Xylosma congestum 'Ed Dorado'
 Yucca baccata
 Yucca filamentosa 'Variegata'
 Yucca rigida

VINES - ZONE 4

Bougainvillea spp.
 Calliandra haematocephala
 Clytostoma callistegioides
 Distictis buccinatoria
 Grewia occidentalis
 Hardenbergia violacea
 Macfadyena unguis-cati
 Mandevilla splendens
 Mascagnia macroptera
 Parthenocissus tricuspidata
 Passiflora edulis
 Pandorea jasminoides
 Rosa banksiae 'Alba Plena'
 Trachelospermum jasminoides

Common Thrift*
 Dwarf Coyote Bush*
 Coyote Bush*
 Dwarf Coyote Bush*
 Coyote Bush Prostrate*
 African Daisy*
 Blue Fescue*
 Gazania*
 Gazania*
 Semi-trailing Yellow Gazania*
 Trailing Lantana*
 Osteospermum*
 Trailing African Daisy*
 Trailing African Daisy*
 Freeway Daisy*
 Freeway Daisy*
 Lavendar Cotton*
 Garden Verbena*
 Verbena*

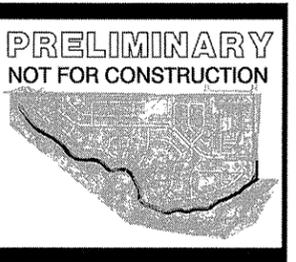
Phormium tenax
 Pittosporum crassifolium 'Nana'
 Pittosporum tobira
 Rhabdiopsis indica
 Rosmarinus officinalis
 Schefflera actinophylla
 Solanum xanthii
 Strelitzia nicolai
 Strelitzia reginae
 Teucrium fruticosum and cultivars
 Trachelospermum asiaticum
 Trachelospermum jasminoides
 Tulbaghia violacea
 Viburnum suspensum
 Xylosma congestum 'Compacta'
 Xylosma congestum 'Ed Dorado'
 Yucca baccata
 Yucca filamentosa 'Variegata'
 Yucca rigida

Bougainvillea*
 Pink Powder Puff
 Violet Trumpet Vine
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 Lavender Starflower
 Hardenbergia
 Cat's Claw*
 Alice du Pont
 Golden Vine*
 Boston Ivy
 Passion Flower*
 Bower Vine
 Climbing Rose
 Star Jasmine



PLANNING · DESIGN · LANDSCAPE ARCHITECTURE
 17712 Mitchell North Irvine, CA 92614-5645
 Ph: (949) 680-1900 FAX: (949) 880-9140
 Web: www.formacompanies.com

Key Map:



Client:
 Hearthside Homes
 6 Executive Circle
 Suite 250, Irvine, CA

Project:
 Brightwater

County of Orange
 Huntington Beach, CA

Revisions:

Sheet Info:

Drawn By: BM
 Checked By: CSM, MS
 Scale: 1"=200'
 Date: December 08, 2005
 Job No.: 0754.021

Sheet Title:

PLANT
 PALETTE

Sheet Reference:

FMP-5

Sheet: 5 of 14

* DROUGHT TOLERANT PLANTS

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Key Map:

**PRELIMINARY
 NOT FOR CONSTRUCTION**



Client:
Hearthside Homes
 6 Executive Circle
 Suite 250, Irvine, CA

Project:
Brightwater

County of Orange
 Huntington Beach, CA

Revisions:

Sheet Info:

Drawn By: BM
 Checked By: CSM, MS
 Scale: 1"=200'
 Date: December 08, 2005
 Job No.: 0754.021

Sheet Title:

**PLANT
 PALETTE**

Sheet Reference:

FMP-6

Sheet: 6 of 14

* DROUGHT TOLERANT PLANTS

GROUND COVER - ZONE 4

Armeria maritima
 Baccharis pilularis
 Baccharis pilularis 'Pigeon Point'
 Baccharis pilularis 'Twin Peaks #2'
 Baccharis pilularis 'Twin Peaks'
 Dimorphotheca aurantiaca
 Festuca ovina glauca
 Gazania 'Copper King'
 Gazania 'Moonglow'
 Gazania hybrid 'Mitsua Yellow'
 Lantana sellowiana
 Osteospermum 'Buttermilk'
 Osteospermum fru. 'African Queen'
 Osteospermum fru. 'Burgundy'
 Osteospermum fru. 'Whirligig'
 Osteospermum fruticosum
 Osteospermum fruticosum 'Hybrid White'
 Santolina cha. 'Nana'
 Verbena hybrida
 Verbena peruviana species

Common Thrift*
 Dwarf Coyote Bush*
 Coyote Bush*
 Dwarf Coyote Bush*
 Coyote Bush Prostrate*
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 Blue Fescue*
 Gazania*
 Gazania*
 Semi-trailing Yellow Gazania*
 Trailing Lantana*
 Osteospermum*
 Trailing African Daisy*
 Trailing African Daisy*
 Trailing African Daisy*
 Freeway Daisy*
 Freeway Daisy*
 Lavendar Cotton*
 Garden Verbena*
 Verbena*

TURF - ZONE 4

Marathon II 'Festuca Arundinacea'
 Turf
 Dwarf Tall Fescue
 A-G Sod Farms Inc. - Elite Plus*

LANDSCAPE ZONE 5 - PRIVATE RESIDENTIAL
 LOTS WITHIN 100' OF NATIVE AREA

TREES - ZONE 5

Arbutus unedo
 Brachychiton populneus
 Cassia leptophylla
 Cereis occidentalis
 Cinnamomum camphora
 Eriobotrya deflexa
 Erythrina caffra
 Erythrina coralloides
 Feijoa sellowiana
 Ficus florida
 Ficus nitida 'Green Gem'
 Ficus rubiginosa
 Ginkgo biloba
 Lagerstroemia species
 Lauris nobilis
 Magnolia grandiflora
 and 'Samuel Sammers' / 'Majestic Beauty'
 Melaleuca nesophila
 Melaleuca quinquevria
 Metrosideros excelsus
 Podocarpus gracillor
 Prunus caroliniana
 Rhus integrifolia
 Rhus laurina
 Tabebuia chrysotricha
 Tabebuia impetiginosa
 Tabebuia ipe
 Tristania conferta
 Tristania laurina
 Tupidanthus calyptatus

Strawberry Tree*
 Bottle Tree
 Gold Medallion Tree
 Western Red Bud
 Camphor Tree
 Bronze Loquat
 Kaffirboom Coral Tree*
 Coral Tree
 Pineapple Guava
 Florida Fig
 Indian Laurel Fig - Green Gem
 Rustyleaf Fig
 Maidenhair
 Cape Myrtle
 Grecian Laurel*
 Southern Magnolia
 Pink Melaleuca*
 Cajepai Tree*
 New Zealand Christmas Tree*
 Fern Pine
 Carolina Laurel Cherry*
 Lemonade Berry*
 Laurel Sumac*
 Golden Trumpet Tree*
 Pink Trumpet Tree*
 Trumpet Tree*
 Brisbane Box
 NCN
 Tupidanthus

SHRUBS - ZONE 5

Abelia grandiflora 'Edward Goucher'
 Agapanthus africanus
 Agave americana
 Alyogyne huegelii
 Armeria maritima
 Baccharis pilularis 'Pigeon Point'
 Baccharis pilularis 'Twin Peaks'
 Bergenia cordifolia
 Bougainvillea 'Tahitian Maid'
 Campanula portenschlagiana
 Campanula poscharskyana
 Camellia japonica
 Carex spissa
 Carissa macrocarpa 'Fancy'
 Cistus hybridus
 Cistus purpureus
 Cistus salvifolius
 Clivia miniata
 Crassula argentea
 Crassula argentea 'Crosby'
 Cuphea hyssopifolia
 Delosperma cooperi
 Dietsis vegeta
 Escallonia 'fradesii'
 Grevillea 'Noelii'
 Helictotrichon sempervirens
 Hemerocallis hybrid 'Mountain Violet'
 Heteromeles arbutifolia
 Heteromeles arbutifolia 'Davis Gold'
 Hibiscus spp.
 Jasminum nudiflorum
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 Lavandula pedunculata 'Atlas'
 Miscanthus sinensis 'Yakushima'
 Miscanthus transmorrisonensis
 Muhlenbergia lindheimeri
 Myrtus communis
 Nandina domestica
 Nephrolepis exaltata
 Nolina bigelovii
 Osteospermum fruticosum
 Pachysandra terminalis

Abelia
 Lily-of-the-Nile
 Century Plant*
 Blue Hibiscus
 Common Thrift*
 Coyote Bush*
 Coyote Bush Prostrate*
 Winter Saxifage
 Double Bougainvillea*
 Dalmatian Bellflower
 Serbian Bellflower
 Camellia
 San Diego Sedge
 Natal Plum*
 White Rockrose*
 Orchid Spot Rockrose*
 Rockrose Sageleaf*
 Kaffir Lily
 Jade Plant*
 Miniature Jade Plant*
 False Heather
 Hardy Ice Plant
 Fortnight Lily
 Pink Escallonia
 Grevillea*
 Blue Oat Grass
 Daylily
 Toyon*
 Toyon*
 Hibiscus
 Winter Jasmine
 Trailing Lantana*
 Spanish Lavender*
 Eulalia Grass
 Evergreen Maiden Grass (or Eulalia)
 Lindheimer's Muhly Grass
 True Myrtle
 Heavenly Bamboo
 Sword Fern
 Bigelow's bear grass*
 Freeway Daisy*
 Pachysandra

Philodendron seifoum
 Phormium tenax
 Pitosporum crassifolium 'Nana'
 Pitosporum tobira
 Rhampholepis indica
 Rosmarinus officinalis
 Schefflera actinophylla
 Solanum xanthi
 Strelitzia nicolai
 Strelitzia reginae
 Teucrium fruticans and cultivars
 Trachelospermum asiaticum
 Trachelospermum jasminoides
 Tulbaghia violacea
 Viburnum suspensum
 Xylosma congestum 'Compacta'
 Xylosma congestum 'Ed Dorado'
 Yucca baccata
 Yucca filamentosa 'Variegata'
 Yucca rigida

Big Leaf Philodendron
 New Zealand Flax
 Dwarf Karo
 Mock Orange
 India Hawthorn
 Rosemary*
 Queensland Umbrella Tree, Octopus Tree
 Purple Nightshade*
 Bird of Paradise
 Bird of Paradise
 Bush Germander
 Ivory Star Jasmine or Asian Jasmine
 Star Jasmine
 Society Garlic
 Sandankwa Viburnum
 Xylosma*
 Dwarf Xylosma*
 Banana Yucca
 Variegated Yucca
 Blue Yucca*

VINES - ZONE 5

Bougainvillea spp.
 Calliandra haematocephala
 Clytostoma callistegioides
 Distictis buccinatoria
 Grewia occidentalis
 Hardenbergia violacea
 Macfadyena unguis-cati
 Mandevilla splendens
 Mascagnia macroptera
 Parthenocissus tricuspidata
 Passiflora edulis
 Pandorea jasminoides
 Rosa banksiae 'Alba Plena'
 Trachelospermum jasminoides

Bougainvillea*
 Pink Powder Puff
 Violet Trumpet Vine
 Blood-Red Trumpet Vine
 Lavender Starflower
 Hardenbergia
 Cat's Claw*
 Alice du Pont
 Golden Vine*
 Boston Ivy
 Passion Flower*
 Bower Vine
 Climbing Rose
 Star Jasmine

GROUND COVER - ZONE 5

Armeria maritima
 Baccharis pilularis
 Baccharis pilularis 'Pigeon Point'
 Baccharis pilularis 'Twin Peaks #2'
 Baccharis pilularis 'Twin Peaks'
 Dimorphotheca aurantiaca
 Festuca ovina glauca
 Gazania 'Copper King'
 Gazania 'Moonglow'
 Gazania hybrid 'Mitsua Yellow'
 Lantana sellowiana
 Osteospermum 'Buttermilk'
 Osteospermum fru. 'African Queen'
 Osteospermum fru. 'Burgundy'
 Osteospermum fru. 'Whirligig'
 Osteospermum fruticosum
 Osteospermum fruticosum 'Hybrid White'
 Santolina cha. 'Nana'
 Verbena hybrida
 Verbena peruviana species

Common Thrift*
 Dwarf Coyote Bush*
 Coyote Bush*
 Dwarf Coyote Bush*
 Coyote Bush Prostrate*
 African Daisy*
 Blue Fescue*
 Gazania*
 Gazania*
 Semi-trailing Yellow Gazania*
 Trailing Lantana*
 Osteospermum*
 Trailing African Daisy*
 Trailing African Daisy*
 Trailing African Daisy*
 Freeway Daisy*
 Freeway Daisy*
 Lavendar Cotton*
 Garden Verbena*
 Verbena*

TURF - ZONE 5

Marathon II 'Festuca Arundinacea'
 Turf
 Dwarf Tall Fescue
 A-G Sod Farms Inc. - Elite Plus*

LANDSCAPE ZONE 6 - SOUTHERN TARPLANT
 AND SEASONAL POND HABITAT AREA

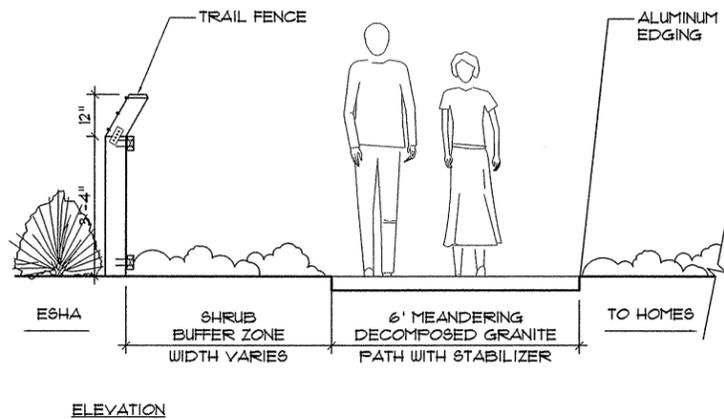
AREA

SHRUBS - ZONE 6

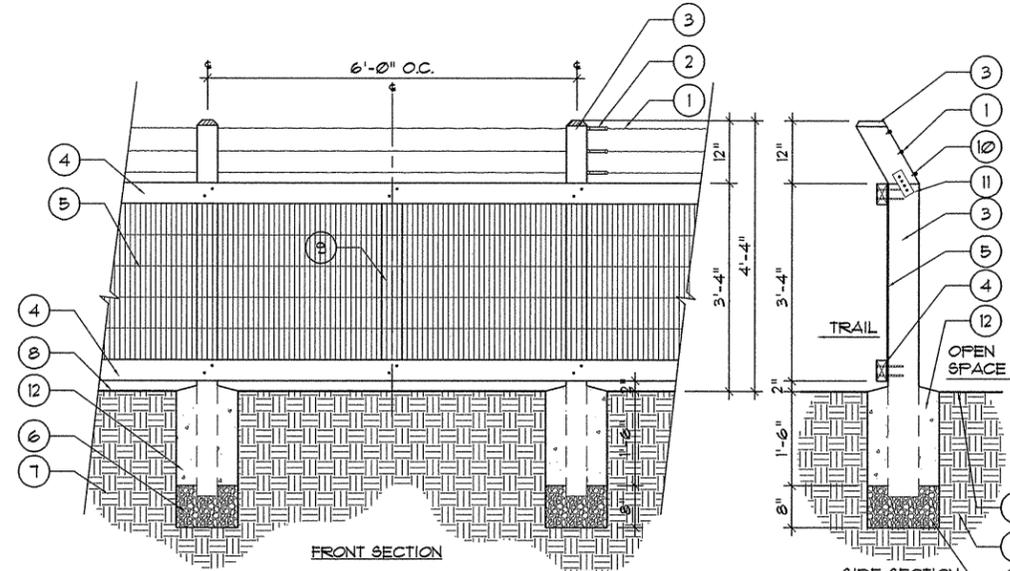
Ambrosia psilostachya
 Baccharis pilularis
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 Chaenactis glabriuscula
 Encelia californica
 Eriogonum parvifolium
 Eriophyllum confertiflorum
 Eschscholzia californica
 Gnaphalium bicolor
 Grindelia camporum
 Isocoma menziesii var. vernonioides
 Lathenia californica
 Lupinus bicolor
 Nassella pulchra
 Opuntia littoralis
 Plantago erecta
 Sistrinchium bellum
 Verbena lasiostachys
 Vulpia microstachys var. pauciflora

Western Ragweed
 Coyote Brush*
 Beach Evening Primrose
 Yellow Pincushion
 California Encelia
 Coast Buckwheat
 Golden Yarrow
 California Poppy
 Bicolored Cudweed
 Big Gumplant
 Coast Goldenbush
 Coastal Goldfields
 Lupinus Lupine
 Purple Needlegrass
 Coast Prickly Pear
 California plantain
 California Blue-Eyed Grass
 Western Vervain
 Pacific Fescue





ELEVATION
DBNDYFENCE-ELEVATION
SCALE: 1/2"=1'-0"



FRONT SECTION
SIDE SECTION
SCALE: 3/4"=1'-0"

- ① HEAVY GAUGE ALUMINUM OR GALVANIZED ALUMINUM MESH NAILED TO FRONT OF POSTS TO SECURE IN PLACE AND NAILED TO BACK OF TOP & BOTTOM AND MID RAILS. HOLES IN ALUMINUM MESH NOT TO EXCEED 1" WIDE X 4" HIGH.
- ② 8" DEEP X 12" SQUARE, 3/4" CRUSHED AGGREGATE BASE TO ALLOW FOR WATER DRAINAGE AWAY FROM POST.
- ③ COMPACTED SUBGRADE PER GEO-TECHNICAL REPORT.
- ④ FINISH GRADE
- ⑤ 2X4 MID RAIL - NAIL OR LAG BOLT TO TOP AND BOTTOM RAIL WITH GALVANIZED HARDWARE.
- ⑥ HEAVY DUTY ALUMINUM OR GALVANIZED STEEL EYE HOOK SIZED TO RECEIVE AND SUPPORT TWISTED WIRE ALONG TOP OF FENCE.
- ⑦ HEAVY DUTY GALVANIZED STEEL STRAP ATTACHED TO BOTH SIDES OF POST. USE GALVANIZED BOLTS & HARDWARE.
- ⑧ CONCRETE FOOTING

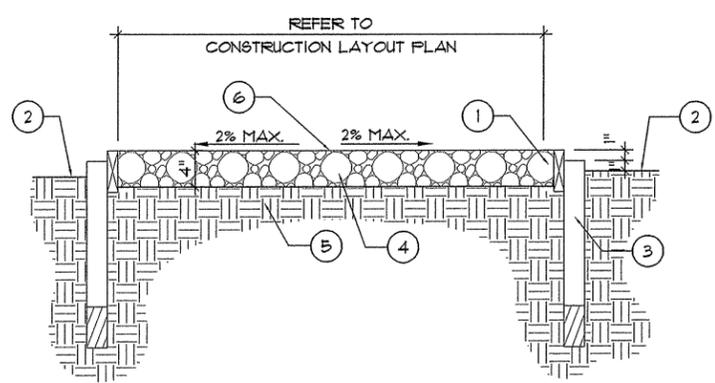
NOTE:
1. ALL NON-COMBUSTIBLE MATERIAL SHALL BE NON-COMBUSTIBLE HEAVY-GAUGE ALUMINUM MATERIAL, NON-COMBUSTIBLE SIMULATED WOOD BUILDING MATERIAL (CLASS A RATED), IRON WOODS BRAND IPE (CLASS A RATED), OR EQUIVALENT UNLESS OTHERWISE NOTED.
2. ALL NAILS AND METAL HARDWARE SHALL BE HOT-DIPPED GALVANIZED.
3. CONTRACTOR SHALL PROVIDE SHOP DRAWINGS FOR A COMPLETE 6' POST TO POST SECTION OF FENCE AND SHALL CONSTRUCT A MOCK UP OF THAT SECTION IN THE FIELD FOR REVIEW BY THE OWNER OR OWNER'S REPRESENTATIVE PRIOR TO CONSTRUCTION.

TRAIL ELEVATION

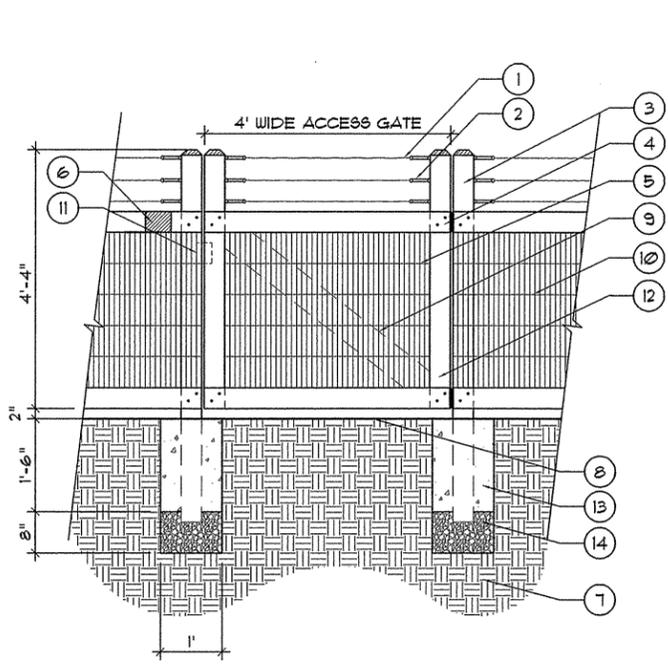
2

TRAIL FENCE

1



H-DGR-02
SCALE: 1-1/2"=1'-0"



DBNDYGATE
SCALE: 3/4"=1'-0"

- ① THREE (3) ROWS OF TWO (2) HEAVY DUTY TWISTED-TOGETHER ALUMINUM WIRES (3/16" #), EQUALLY SPACED.
- ② HEAVY DUTY ALUMINUM TURNBUCKLE LOCATED AT EVERY 5TH POST (30'-0" O.C.) TO ALLOW FOR WIRE TWISTING/TENSION ADJUSTMENT.
- ③ 4X4 NON-COMBUSTIBLE HEAVY-GAUGE ALUMINUM MATERIALS, NON-COMBUSTIBLE SIMULATED WOOD BUILDING MATERIALS (CLASS A RATED), IRON WOOD BRAND IPE (CLASS A RATED), OR EQUIVALENT POST AND CHAMFER TOP OF POST AS DETAILED. SET POST INTO CONCRETE FOOTING.
- ④ 2X4 NON-COMBUSTIBLE HEAVY-GAUGE ALUMINUM MATERIALS, NON-COMBUSTIBLE SIMULATED WOOD BUILDING MATERIALS (CLASS A RATED), IRON WOOD BRAND IPE (CLASS A RATED), OR EQUIVALENT TOP AND BOTTOM RAIL - LAG BOLT INTO POSTS WITH GALVANIZED HARDWARE. COUNTERSINK LAG BOLT INTO 2X4 MEMBER.
- ⑤ HEAVY GAUGE ALUMINUM OR GALVANIZED STEEL MESH NAILED TO FRONT OF POSTS TO SECURE IN PLACE AND NAILED TO BACK OF TOP & BOTTOM AND MID RAILS. HOLES IN ALUMINUM MESH NOT TO EXCEED 1" WIDE X 4" HIGH.
- ⑥ SURFACE MOUNTED KNOX BOX
- ⑦ COMPACTED SUBGRADE PER GEOTECHNICAL REPORT.
- ⑧ FINISH GRADE
- ⑨ 1X4 BRACE ATTACHED ON BACK SIDE OF GATE WITH GALVANIZED BRACKET.
- ⑩ TRAIL FENCE, REFER TO DETAIL 1, SHEET FAD-1
- ⑪ SELF-LATCHING/SELF-LOCKING GALVANIZED LOCK - CONTRACTOR TO SUBMIT SPECIFICATION WITHIN SHOP DRAWINGS FOR LANDSCAPE ARCHITECT REVIEW AND CLIENT APPROVAL.
- ⑫ TWO (2) 1X4 SANDWICHED TOGETHER TO HOLD MESH & WITHIN GATE FRAME. WOOD TO BE S4S PRESSURE TREATED DOUGLAS FIR.
- ⑬ CONCRETE FOOTING.
- ⑭ 8" DEEP X 12" SQUARE, 3/4" CRUSHED AGGREGATE BASE TO ALLOW FOR WATER DRAINAGE AWAY FROM WOOD POST.

NOTE:
1. ALL NON-COMBUSTIBLE MATERIALS ARE NON-COMBUSTIBLE HEAVY ALUMINUM MATERIALS, NON-COMBUSTIBLE SIMULATED WOOD BUILDING MATERIALS (CLASS A RATED), IRON WOOD BRAND IPE (CLASS A RATED), OR EQUIVALENT.
2. ALL NAILS AND METAL HARDWARE SHALL BE HOT-DIPPED GALVANIZED.
3. CONTRACTOR SHALL PROVIDE SHOP DRAWINGS FOR A COMPLETE GATE AND SHALL CONSTRUCT A MOCK UP OF THAT GATE IN THE FIELD FOR REVIEW BY THE OWNER OR OWNER'S REPRESENTATIVE PRIOR TO CONSTRUCTION.
4. CONTRACTOR SHALL PROVIDE LOCKING HARDWARE FOR EACH GATE LOCATION. LOCKING MECHANISM SHALL BE APPROVED BY THE OWNER OR OWNER'S REPRESENTATIVE.
5. CONTRACTOR SHALL PROVIDE A KNOX BOX APPROVED BY THE GOVERNING FIRE AUTHORITY AND SHALL BE LOCATED AT EACH GATE LOCATION. CONTRACTOR SHALL CONFIRM NUMBER OF GATED PRIOR TO PURCHASE OF THE KNOX BOX.

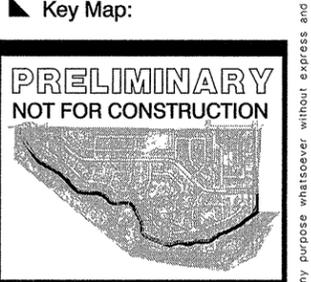


6' WIDE TRAIL

4

ACCESS GATE ALONG TRAIL FENCE

3



Client:
Hearthside Homes
6 Executive Circle
Suite 250, Irvine, CA

Project:
Brightwater

County of Orange
Huntington Beach, CA

Revisions:

Sheet Info:
Drawn By: BM
Checked By: CSM, MS
Scale: VARIES
Date: December 08, 2005
Job No.: 0754.021

Sheet Title:
FUEL MOD. DETAILS

Sheet Reference:
FMP-7

Sheet: 7 of 14

Disclaimer for Construction Drawings: FORMA drawings, as instruments of service, remain its property and are not to be copied, reproduced, disposed of, either directly or indirectly, used for another project or any purpose whatsoever without express and written permission of FORMA. 0754.021 BRIGHTWATER - COUNTY OF ORANGE - OCFA SR #137357

Key Map:

PRELIMINARY
 NOT FOR CONSTRUCTION



Client:
Hearthside Homes
 6 Executive Circle
 Suite 250, Irvine, CA

Project:
Brightwater

County of Orange
 Huntington Beach, CA

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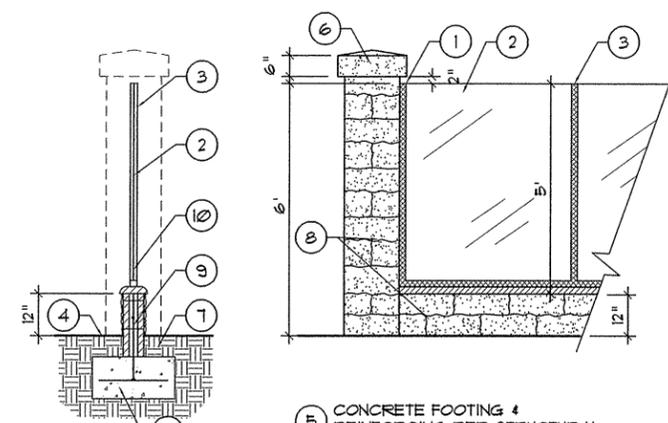
Sheet Title:

**FUEL MOD.
 DETAILS**

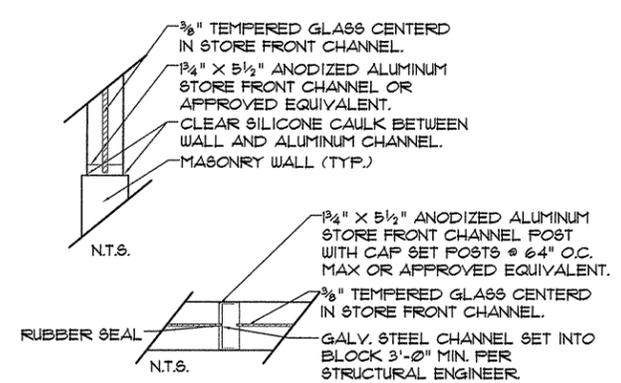
Sheet Reference:

FMP-8

Sheet: 8 of 14

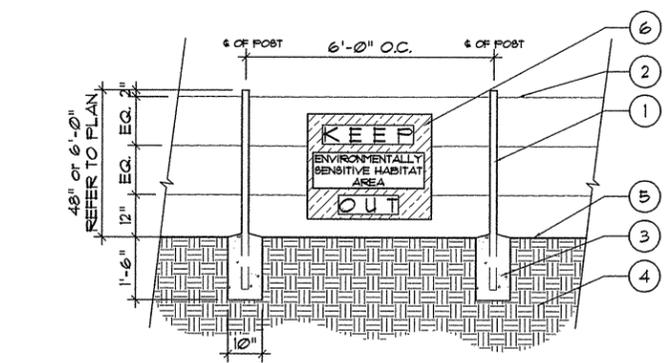


- 1 1/2" x 5 1/2" ANODIZED ALUMINUM STORE FRONT CHANNEL WITH RUBBER SEAL OR APPROVED EQUIVALENT.
- 2 3/8" TEMPERED GLASS CENTERED IN STORE FRONT CHANNEL.
- 3 1/2" x 5 1/2" ANODIZED ALUMINUM STORE FRONT CHANNEL POST SEAL AND CAP, SET POSTS @ 64" O.C. MAX OR APPROVED EQUIVALENT.
- 4 FINISH GRADE
- 5 CONCRETE FOOTING & REINFORCING PER STRUCTURAL ENGINEER.
- 6 PRECAST CONCRETE CAP - DETAIL DESIGN AND COLOR TO BE DETERMINED.
- 7 COMPACTED SUBGRADE PER GEOTECHNICAL REPORT.
- 8 SPLIT-FACE BLOCK PILASTER AND LOW WALL.
- 9 6 X 8 X 16 OR 8 X 8 X 16 SPLIT FACE BLOCK, GROUT SOLID ALL CELLS. REINFORCING PER STRUCTURAL ENGINEER'S PLANS.
- 10 ROUNDED MORTAR CAP. COLOR TO MATCH SPLIT-FACE ROCK.



NOTES:
 A. ALUMINUM FABRICATOR SHALL FIELD VERIFY AND VERIFY WITH STRUCTURAL ENGINEER ALL DIMENSIONS PRIOR TO FABRICATION.
 B. ALUMINUM FABRICATOR SHALL SUBMIT SHOP DRAWINGS WITH HARDWARE SPECIFICATION TO OWNER AND LANDSCAPE ARCHITECT FOR REVIEW PRIOR TO FABRICATION.
 C. 1/8" FILLET WELDS ALL AROUND AT ALL JOINTS AND CONNECTIONS, MATERIALS AND TEXTURES.
 D. GROUT/MORTAR TO MATCH BLOCK/CAP COLOR.
 E. SPLIT-FACE BLOCK COLOR TO MATCH EXISTING NU-FAD OR TAN.
 F. FOOTING DESIGN AND REINFORCING PER CIVIL ENGINEER.
 G. REFER TO CIVIL PLANS FOR HORIZONTAL CONTROL AND WALL ELEVATIONS.
 H. WALL REINFORCING PER CIVIL PLANS.

SCALE: 1/2"=1'-0"



- 1 2" DIAM. TUBULAR ALUMINUM OR GALVANIZED STEEL POST @ 6'-0" O.C. WITH PLASTIC CAP.
- 2 1/4" # HEAVY DUTY ALUMINUM OR GALVANIZED STEEL CABLE.
- 3 CONCRETE FOOTING.
- 4 COMPACTED SUBGRADE PER GEOTECHNICAL REPORT.
- 5 FINISH GRADE.
- 6 A "KEEP OUT" ENVIRONMENTALLY SENSITIVE HABITAT AREA SIGNAGE LOCATED EVERY TWELFTH (12TH) FENCE SECTION.

NOTES:
 1. ALUMINUM/GALVANIZED STEEL FABRICATOR SHALL FIELD VERIFY ALL DIMENSIONS PRIOR TO FABRICATION.
 2. ALUMINUM/GALVANIZED STEEL FABRICATOR SHALL SUBMIT SHOP DATA WITH HARDWARE SPEC. TO OWNER AND LANDSCAPE ARCHITECT FOR REVIEW PRIOR TO FABRICATION.
 3. WELD ALL AROUND ALL JOINTS AND CONNECTIONS, GRIND WELDS SMOOTH.
 4. ANY AND ALL STEEL WORK SHALL BE HOT-DIPPED GALVANIZED. ALL ALUMINUM/GALVANIZED STEEL SHALL BE PAINTED WITH ONE (1) COAT CORROSION RESISTANT PRIMER & TWO (2) COATS EXTERIOR ENAMEL. COLOR TO BE DETERMINED. CONTRACTOR SHALL SUBMIT (1) 6" X 6" SAMPLES TO LANDSCAPE ARCHITECT FOR REVIEW & APPROVAL PRIOR TO FABRICATION AND INSTALLATION.
 5. ALL STEEL SHALL BE HOT-DIPPED GALVANIZED. DRILL HOLES BEFORE GALVANIZING. ALL FOUR (4) SIDES OF ALL METAL SURFACES.

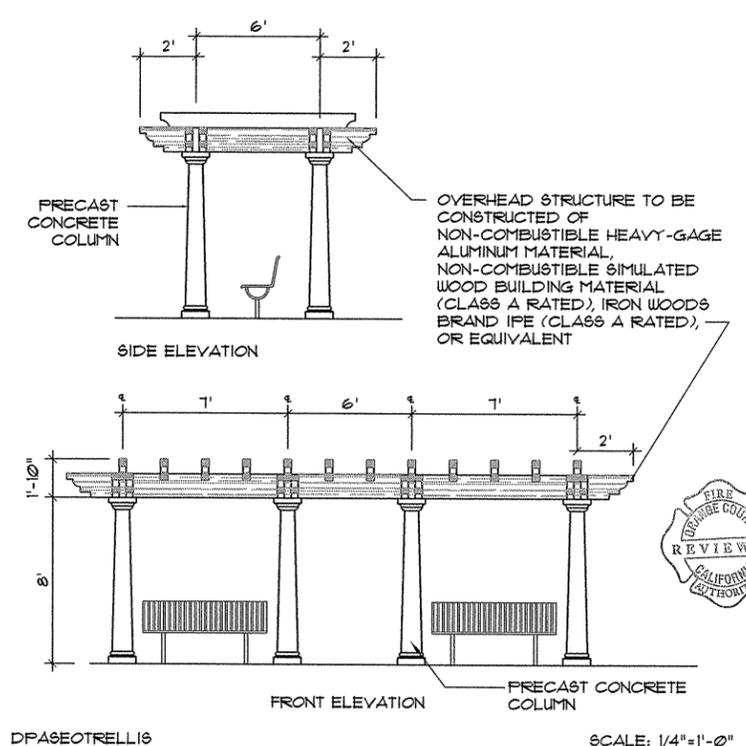
SCALE: 1/2"=1'-0"

6' HIGH MASONRY/TEMPERED GLASS WALL

2

ESHA FENCE

1



DPASEOTRELLIS

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

PASEO TRELLIS

3

Key Map:

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 NOT FOR CONSTRUCTION**



Client:
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 Suite 250, Irvine, CA

Project:
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County of Orange
 Huntington Beach, CA

Revisions:

No.	Description

Sheet Info:

Drawn By: BM
 Checked By: CSM, MS
 Scale: 1"=30'
 Date: December 08, 2005
 Job No.: 0754.021

Sheet Title:

**IRRIGATION
 LAYOUT**

Sheet Reference:

U-1

Sheet: **9** of **14**

IRRIGATION LEGEND (brightwater):

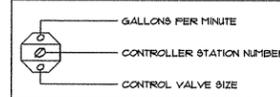
SYMBOL	MANUFACTURER	MODEL NUMBER	DESCRIPTION	RAD.	F&I	GPM	DETAIL
▽	AGRIFFM	HYP-500	9" POP-UP RISER WITH BOURNITH FAN-JET NOZZLE (BLACK)	6'	30	0.12	A
▽	AGRIFFM	HYP-500	9" POP-UP RISER WITH BOURNITH FAN-JET NOZZLE (BLUE)	6'	30	0.21	A
▽	AGRIFFM	CHAP-12	12" RISER ASSEMBLY W/ 1/2" MIPT INLET WITH BOURNITH FAN-JET NOZZLE (BLACK)	6'	30	0.12	B
▽	AGRIFFM	CHAP-12	12" RISER ASSEMBLY W/ 1/2" MIPT INLET WITH BOURNITH FAN-JET NOZZLE (ORANGE)	6'	30	0.11	B
▽	AGRIFFM	CHAP-12	12" RISER ASSEMBLY W/ 1/2" MIPT INLET WITH BOURNITH FAN-JET NOZZLE (BLACK)	6'	30	0.12	B
▽	AGRIFFM	CHAP-12	12" RISER ASSEMBLY W/ 1/2" MIPT INLET WITH BOURNITH FAN-JET NOZZLE (VIOLET)	6'	30	0.28	B

NOTE: INSTALL ALL SPRINKLERS ON RISER NEXT TO FENCES AND WALLS A MINIMUM OF 6X (6) INCHES AWAY FROM THE STRUCTURE.

○	RAIN BIRD	FEBB-FRS SERIES	ELECTRIC CONTROL VALVE	C
○	RAINBIRD	330LRC	QUICK COUPLING VALVE	D
○	NIBCO	T-520-Y	ISOLATION BALL VALVE	E
○	EXISTING		DOMESTIC WATER METER PROVIDED FOR AND INSTALLED BY OTHERS, FOR SIZE AND FLOW, REFER TO POC SCHEDULE THIS SHEET	---
□	FEBCO	0251A	BACKFLOW PREVENTION DEVICE FOR SIZE, REFER TO POC SCHEDULE THIS SHEET	F
□	UGT		UNITED GREEN TECH CONTROLLER ASSEMBLY, REFER TO THE CONTROLLER SCHEDULE, THIS SHEET, FOR MODEL NUMBER AND SIZE.	G 4 H
—	APPROVED	FVC SCH 40	IRRIGATION WIRE CONDUIT (SEE NOTES FOR SIZE)	I
—	APPROVED	FVC SCH 40	IRRIGATION BLEEVE (SEE NOTES FOR SIZE)	I
—	APPROVED	FVC CL200	LATERAL LINE PIPE (SIZE AS NOTED)	I 4 J
—	APPROVED	FVC 315	POTABLE SOURCE PRESSURE SUPPLY LINE FOR 2" DIAMETER AND LARGER	I 4 J
—	APPROVED	FVC SCH 40	POTABLE SOURCE PRESSURE SUPPLY LINE FOR 1 1/2" DIAMETER AND SMALLER	I 4 J
—	APPROVED	UVR-FVC SCH 40	LATERAL LINE PIPE ON GRADE (SIZE AS NOTED)	B
—	APPROVED	FVC SCH 40	TRANSITION COUPLING FROM BURIED PIPE TO ON-GRADE PIPE	---

NOTE: ALL MAIN LINE PIPE FOR THE HOME OWNER ASSOCIATION AREAS TO BE 2 1/2" UNLESS OTHERWISE NOTED.

CONTROLLER VALVE CALL-OUT



IRRIGATION CONSTRUCTION NOTES:

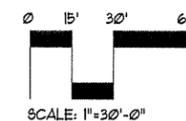
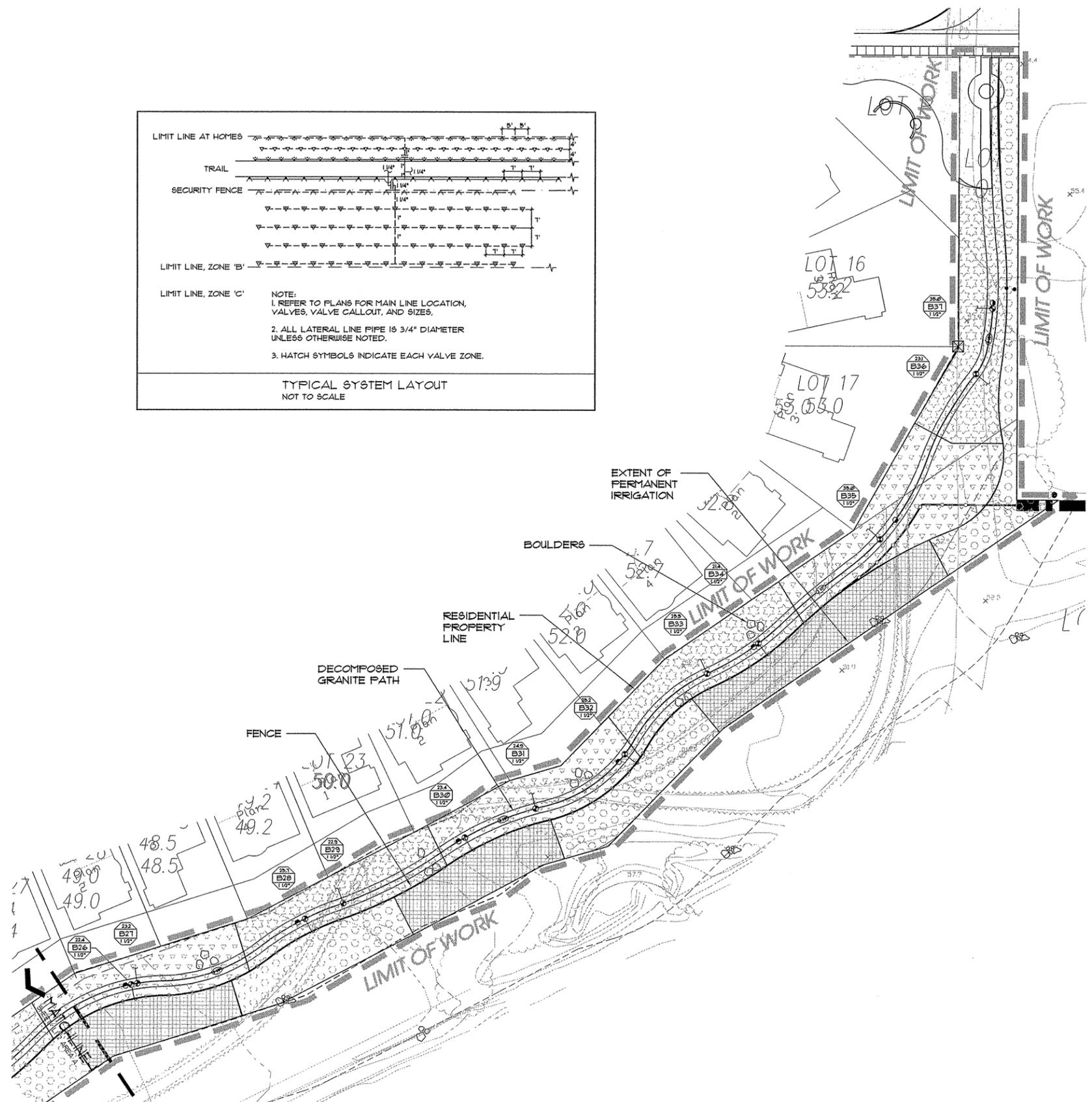
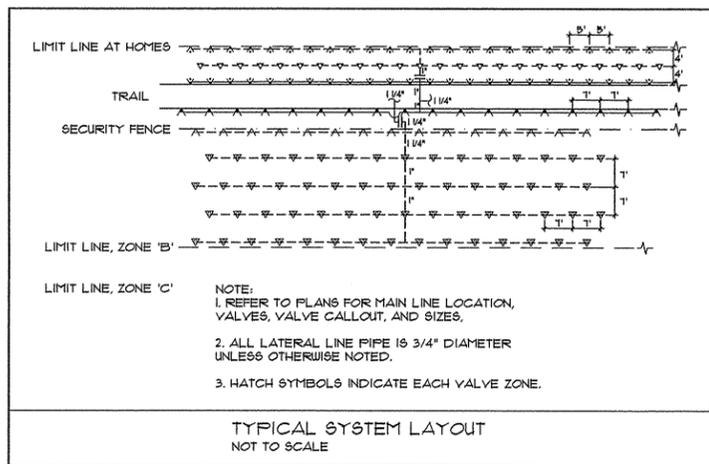
- PROVIDE AND INSTALL A 1 1/2" DOMESTIC WATER METER PER CITY OF HUNTINGTON BEACH STANDARDS. RUN A 2 1/2" FVC CLASS 315 MAIN LINE PIPE FROM THE WATER METER TO THE 2 1/2" BACKFLOW PREVENTION DEVICE THEN TO THE SYSTEM AS NOTED ON THE DRAWINGS. FINAL LOCATION OF THE BACKFLOW PREVENTION DEVICE SHALL BE APPROVED BY THE OWNER'S AUTHORIZED REPRESENTATIVE. THE SYSTEM HAS BEEN DESIGNED FOR A MAXIMUM FLOW OF 100 GPM AT A MINIMUM OPERATING PRESSURE OF --- PSI.
- PROVIDE AND INSTALL ONE (1) UNITED GREEN TECH (UGT) MODEL NUMBER CA2-C93-40/40/RS2/ARRA IN THE LOCATION APPROVED BY THE OWNER'S AUTHORIZED REPRESENTATIVE. 120VAC POWER PROVIDED AND INSTALLED BY OTHERS. THE CONTRACTOR SHALL COORDINATE THE POWER FROM THE SOURCE TO THE CONTROLLER AND MAKE THE FINAL HOOK-UP. THE LANDSCAPE CONTRACTOR SHALL CONNECT ALL LOW VOLTAGE CONTROL WIRES TO THE CONTROLLER TERMINAL STRIP IN THE SEQUENCE NOTED ON THE DRAWINGS.
- PROVIDE AND INSTALL A 2" DOMESTIC WATER METER PER THE CITY OF HUNTINGTON BEACH STANDARDS. RUN A 2 1/2" FVC CLASS 315 MAIN LINE PIPE FROM THE WATER METER TO THE 2" BACKFLOW PREVENTION DEVICE. STUD AND CAP THE MAIN LINE PIPE FOR FUTURE USE BY OTHERS. BEYOND THE LIMIT LINE AS NOTED ON THE DRAWINGS. FINAL LOCATION OF THE BACKFLOW PREVENTION DEVICE SHALL BE APPROVED BY THE OWNER'S AUTHORIZED REPRESENTATIVE. THE SYSTEM HAS THE CAPACITY TO DELIVER 150 GPM AT --- PSI.
- PROVIDE A 2 1/2" STUB OUT FOR THE FUTURE IRRIGATION SYSTEM BY OTHERS.

NOTES:

- THE HATCHED AREAS REFERENCED IN THESE IRRIGATION PLANS REPRESENT DIFFERENT VALVE ZONES.
- PERMANENT IRRIGATION IS LOCATED WITHIN THE FIRST 50' FROM THE RESIDENTIAL PROPERTY LINE.

TEMPORARY IRRIGATION NOTE:

TEMPORARY IRRIGATION IS REQUIRED FOR ESTABLISHMENT OF PLANT MATERIAL IN ZONES C. IRRIGATION PIPE, TAN IN COLOR, SHALL BE INSTALLED ON-GRADE WITH ROTORS AND THE LAYOUT SHALL BE DESIGNED TO PROVIDE HEAD TO HEAD COVERAGE THROUGHOUT THE PLANTED AREAS. THE TEMPORARY IRRIGATION SYSTEM SHALL BE SHUT OFF AT THE END OF THE 5 YEAR MAINTENANCE PERIOD OR WHEN THE PLANT MATERIAL HAS BEEN ESTABLISHED. WHEN THE IRRIGATION SYSTEM IS NO LONGER REQUIRED, THE SYSTEM SHALL BE DISCONNECTED AND REMOVED.



Disclaimer: For Construction Drawings: FORMA drawings, as instruments of service, remain its property and are not to be copied, reproduced, disposed of, either directly or indirectly, used for another project or any purpose whatsoever without express and written permission of FORMA. 0754.021 BRIGHTWATER - COUNTY OF ORANGE - OCFA SR #137357

Key Map:

PRELIMINARY
 NOT FOR CONSTRUCTION



Client:
 Hearthside Homes
 6 Executive Circle
 Suite 250, Irvine, CA

Project:
Brightwater

County of Orange
 Huntington Beach, CA

Revisions:

Sheet Info:

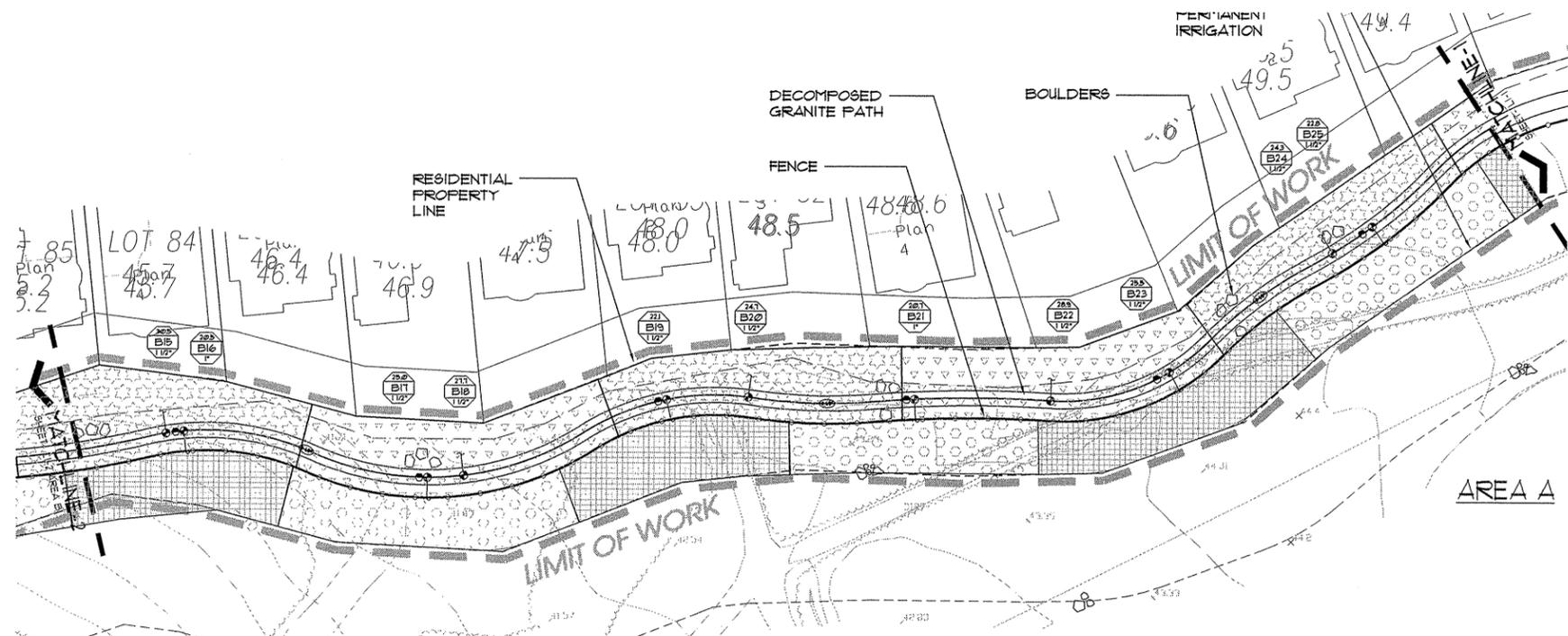
Drawn By: BM
 Checked By: CSM, MS
 Scale: 1"=30'
 Date: December 08, 2005
 Job No.: 0754.021

Sheet Title:

IRRIGATION LAYOUT

Sheet Reference:

LI-2
 Sheet: 10 of 14



IRRIGATION LEGEND (brightwater):

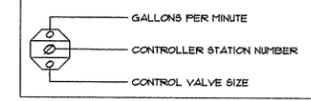
SYMBOL	MANUFACTURER	MODEL NUMBER	DESCRIPTION	RAD.	P.S.I.	G.P.M.	DETAIL
▼	AGRFIM	HYP-500	3" POP-UP RISER WITH BOUSMITH FAN-JET NOZZLE (BLACK)	6'	30	012	A
▼	AGRFIM	HYP-500	3" POP-UP RISER WITH BOUSMITH FAN-JET NOZZLE (BLUE)	6'	30	021	A
▼	AGRFIM	CMAP-12	12" RISER ASSEMBLY W/ 1/2" MIPT INLET WITH BOUSMITH FAN-JET NOZZLE (BLACK)	6'	30	012	B
▼	AGRFIM	CMAP-12	12" RISER ASSEMBLY W/ 1/2" MIPT INLET WITH BOUSMITH FAN-JET NOZZLE (ORANGE)	6'	30	011	B
▼	AGRFIM	CMAP-12	12" RISER ASSEMBLY W/ 1/2" MIPT INLET WITH BOUSMITH FAN-JET NOZZLE (BLACK)	6'	30	012	B
▼	AGRFIM	CMAP-12	12" RISER ASSEMBLY W/ 1/2" MIPT INLET WITH BOUSMITH FAN-JET NOZZLE (VIOLET)	6'	30	028	B

NOTE: INSTALL ALL SPRINKLERS ON RISER NEXT TO FENCES AND WALLS A MINIMUM OF SIX (6) INCHES AWAY FROM THE STRUCTURE.

○	RAIN BIRD	FE59-FRS SERIES	ELECTRIC CONTROL VALVE	C
○	RAINBIRD	33DLRC	QUICK COUPLING VALVE	D
⊕	NIBCO	T-590-Y	ISOLATION BALL VALVE	E
⊕	EXISTING	DOMESTIC WATER METER PROVIDED FOR AND INSTALLED BY OTHERS, FOR SIZE AND FLOW, REFER TO POC SCHEDULE THIS SHEET	---	
⊕	FEBCO	825YA	BACKFLOW PREVENTION DEVICE FOR SIZE, REFER TO POC SCHEDULE THIS SHEET	F
⊕	UGT	UNITED GREEN TECH CONTROLLER ASSEMBLY, REFER TO THE CONTROLLER SCHEDULE THIS SHEET, FOR MODEL NUMBER AND SIZE.	G + H	
---	APPROVED	PVC SCH 40	IRRIGATION WIRE CONDUIT (SEE NOTES FOR SIZE)	I
---	APPROVED	PVC SCH 40	IRRIGATION SLEEVE (SEE NOTES FOR SIZE)	J
---	APPROVED	PVC CL200	LATERAL LINE PIPE (SIZE AS NOTED)	L + J
---	APPROVED	PVC 3/8"	POTABLE SOURCE PRESSURE SUPPLY LINE FOR 2" DIAMETER AND LARGER	L + J
---	APPROVED	PVC SCH 40	POTABLE SOURCE PRESSURE SUPPLY LINE FOR 1 1/2" DIAMETER AND SMALLER	L + J
---	APPROVED	UVR-PVC SCH 40	LATERAL LINE PIPE ON GRADE (SIZE AS NOTED)	B
---	APPROVED	PVC SCH 40	TRANSITION COUPLING FROM BURIED PIPE TO ON-GRADE PIPE	---

NOTE: ALL MAIN LINE PIPE FOR THE HOME OWNER ASSOCIATION AREAS TO BE 2 1/2" UNLESS OTHERWISE NOTED.

CONTROLLER VALVE CALL-OUT

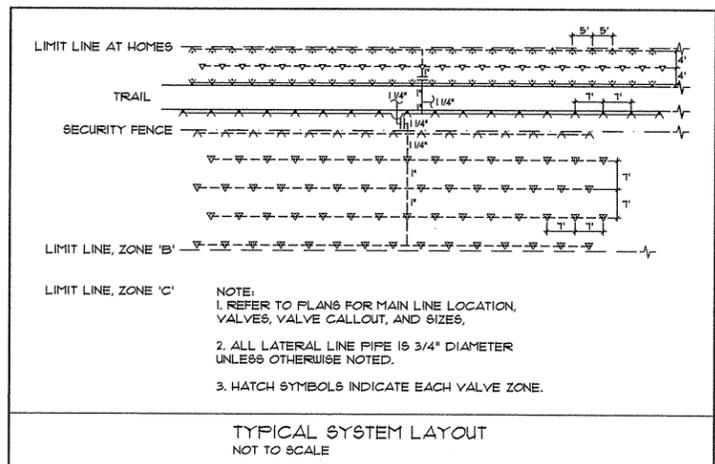
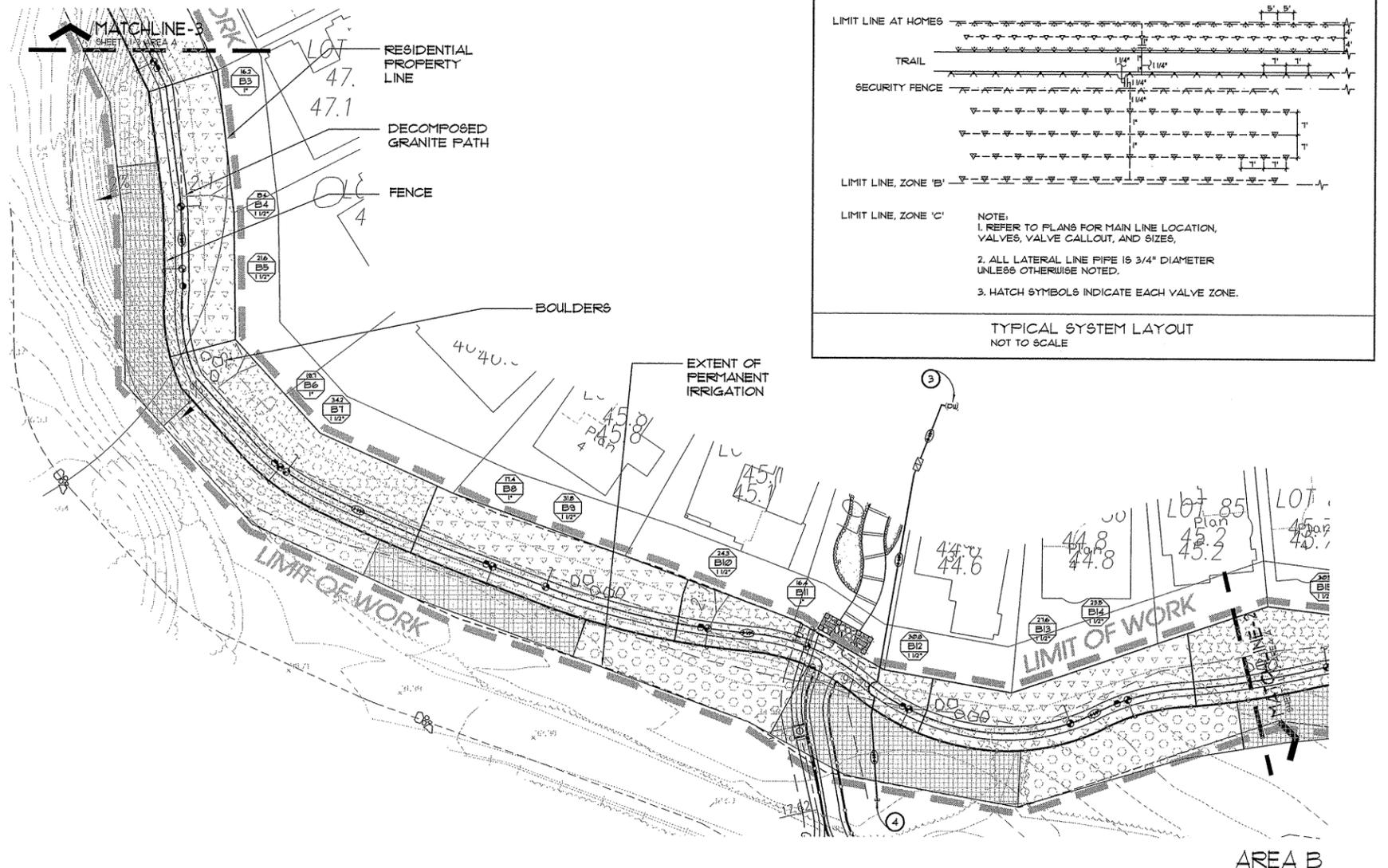


IRRIGATION CONSTRUCTION NOTES:

- PROVIDE AND INSTALL A 1 1/2" DOMESTIC WATER METER PER CITY OF HUNTINGTON BEACH STANDARDS. RUN A 2 1/2" PVC CLASS 98 MAIN LINE PIPE FROM THE WATER METER TO THE 2 1/2" BACKFLOW PREVENTION DEVICE THEN TO THE SYSTEM AS NOTED ON THE DRAWINGS. FINAL LOCATION OF THE BACKFLOW PREVENTION DEVICE SHALL BE APPROVED BY THE OWNER'S AUTHORIZED REPRESENTATIVE. THE SYSTEM HAS BEEN DESIGNED FOR A MAXIMUM FLOW OF 100 GPM AT A MINIMUM OPERATING PRESSURE OF --- PSI.
- PROVIDE AND INSTALL ONE (1) UNITED GREEN TECH (UGT) MODEL NUMBER CA1-033-40/40/RES/AREA IN THE LOCATION APPROVED BY THE OWNER'S AUTHORIZED REPRESENTATIVE. 120VAC POWER PROVIDED AND INSTALLED BY OTHERS. THE CONTRACTOR SHALL COORDINATE THE POWER FROM THE SOURCE TO THE CONTROLLER AND MAKE THE FINAL WIRE-HOOK-UP. THE LANDSCAPE CONTRACTOR SHALL CONNECT ALL LOW VOLTAGE CONTROL WIRES TO THE CONTROLLER TERMINAL STRIP IN THE SEQUENCE NOTED ON THE DRAWINGS.
- PROVIDE AND INSTALL A 2" DOMESTIC WATER METER PER THE CITY OF HUNTINGTON BEACH STANDARDS. RUN A 2 1/2" PVC CLASS 200 MAIN LINE PIPE FROM THE WATER METER TO THE 2" BACKFLOW PREVENTION DEVICE. STUB AND CAP THE MAIN LINE PIPE FOR FUTURE USE BY OTHERS. BEYOND THE LIMIT LINE AS NOTED ON THE DRAWINGS. FINAL LOCATION OF THE BACKFLOW PREVENTION DEVICE SHALL BE APPROVED BY THE OWNER'S AUTHORIZED REPRESENTATIVE. THE SYSTEM HAS THE CAPACITY TO DELIVER 100 GPM AT --- PSI.
- PROVIDE A 2 1/2" STUB OUT FOR THE FUTURE IRRIGATION SYSTEM BY OTHERS.

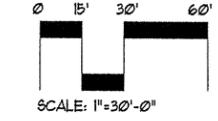
NOTES:
 1. THE HATCHED AREAS REFERENCED IN THESE IRRIGATION PLANS REPRESENT DIFFERENT VALVE ZONES.
 2. PERMANENT IRRIGATION IS LOCATED WITHIN THE FIRST 50' FROM THE RESIDENTIAL PROPERTY LINE.

TEMPORARY IRRIGATION NOTE:
 TEMPORARY IRRIGATION IS REQUIRED FOR ESTABLISHMENT OF PLANT MATERIAL IN ZONE C. IRRIGATION PIPE, TAN IN COLOR, SHALL BE INSTALLED ON-GRADE WITH ROTORS AND THE LAYOUT SHALL BE DESIGNED TO PROVIDE HEAD TO HEAD COVERAGE THROUGHOUT THE PLANTED AREAS. THE TEMPORARY IRRIGATION SYSTEM SHALL BE SHUT OFF AT THE END OF THE 5 YEAR MAINTENANCE PERIOD OR WHEN THE PLANT MATERIAL HAS BEEN ESTABLISHED. WHEN THE IRRIGATION SYSTEM IS NO LONGER REQUIRED, THE SYSTEM SHALL BE DISCONNECTED AND REMOVED.



NOTE:
 1. REFER TO PLANS FOR MAIN LINE LOCATION, VALVES, VALVE CALLOUT, AND SIZES.
 2. ALL LATERAL LINE PIPE IS 3/4" DIAMETER UNLESS OTHERWISE NOTED.
 3. HATCH SYMBOLS INDICATE EACH VALVE ZONE.

TYPICAL SYSTEM LAYOUT
 NOT TO SCALE



Key Map:

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 6 Executive Circle
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Project:
Brightwater

County of Orange
 Huntington Beach, CA

Revisions:

Sheet Info:

Drawn By: BM
 Checked By: CSM, MS
 Scale: 1"=30'
 Date: December 08, 2005
 Job No.: 0754.021

Sheet Title:

IRRIGATION LAYOUT

Sheet Reference:

LI-3
 Sheet 11 of 14

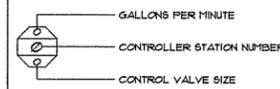
IRRIGATION LEGEND (brightwater):

SYMBOL	MANUFACTURER	MODEL NUMBER	DESCRIPTION	RAD.	P.S.I.	G.P.M.	DETAIL
▽	AGRIFIM	HYP-500	3" POP-UP RISER WITH BOUSHMITH FAN-JET NOZZLE (BLACK)	6'	30	0.12	A
▽	AGRIFIM	HYP-500	3" POP-UP RISER WITH BOUSHMITH FAN-JET NOZZLE (BLUE)	6'	30	0.21	A
▽	AGRIFIM	CHAP-12	12" RISER ASSEMBLY W/ 1/2" MIPT INLET WITH BOUSHMITH FAN-JET NOZZLE (BLACK)	6'	30	0.12	B
▽	AGRIFIM	CHAP-12	12" RISER ASSEMBLY W/ 1/2" MIPT INLET WITH BOUSHMITH FAN-JET NOZZLE (ORANGE)	6'	30	0.11	B
▽	AGRIFIM	CHAP-12	12" RISER ASSEMBLY W/ 1/2" MIPT INLET WITH BOUSHMITH FAN-JET NOZZLE (BLACK)	6'	30	0.12	B
▽	AGRIFIM	CHAP-12	12" RISER ASSEMBLY W/ 1/2" MIPT INLET WITH BOUSHMITH FAN-JET NOZZLE (VIOLET)	6'	30	0.28	B

NOTE: INSTALL ALL SPRINKLERS ON RISER NEXT TO FENCES AND WALLS A MINIMUM OF 6X (6) INCHES AWAY FROM THE STRUCTURE.

○	RAIN BIRD	FEBB-PRS SERIES	ELECTRIC CONTROL VALVE	C
○	RAINBIRD	33DLRC	QUICK COUPLING VALVE	D
○	NIBCO	T-590-Y	ISOLATION BALL VALVE	E
(DU)	EXISTING		DOMESTIC WATER METER PROVIDED FOR AND INSTALLED BY OTHERS, FOR SIZE AND FLOW, REFER TO POC SCHEDULE THIS SHEET	---
[Z]	FEBCO	075A	BACKFLOW PREVENTION DEVICE FOR SIZE, REFER TO POC SCHEDULE THIS SHEET	F
[A]	UGT		UNITED GREEN TECH CONTROLLER ASSEMBLY, REFER TO THE CONTROLLER SCHEDULE, THIS SHEET, FOR MODEL NUMBER AND SIZE.	G + H
—○—	APPROVED	FVC SCH 40	IRRIGATION WIRE CONDUIT (SEE NOTES FOR SIZE)	I
—○—	APPROVED	FVC SCH 40	IRRIGATION SLEEVE (SEE NOTES FOR SIZE)	I
—○—	APPROVED	FVC CL1200	LATERAL LINE PIPE (SIZE AS NOTED)	I + J
—○—	APPROVED	FVC 3/8"	POTABLE SOURCE PRESSURE SUPPLY LINE FOR 2" DIAMETER AND LARGER	I + J
—○—	APPROVED	FVC SCH 40	POTABLE SOURCE PRESSURE SUPPLY LINE FOR 1 1/2" DIAMETER AND SMALLER	I + J
—○—	APPROVED	UVR-FVC SCH 40	LATERAL LINE PIPE ON GRADE (SIZE AS NOTED)	B
—○—	APPROVED	FVC SCH 40	TRANSITION COUPLING FROM BURIED PIPE TO ON-GRADE PIPE	---

CONTROLLER VALVE CALL-OUT



IRRIGATION CONSTRUCTION NOTES:

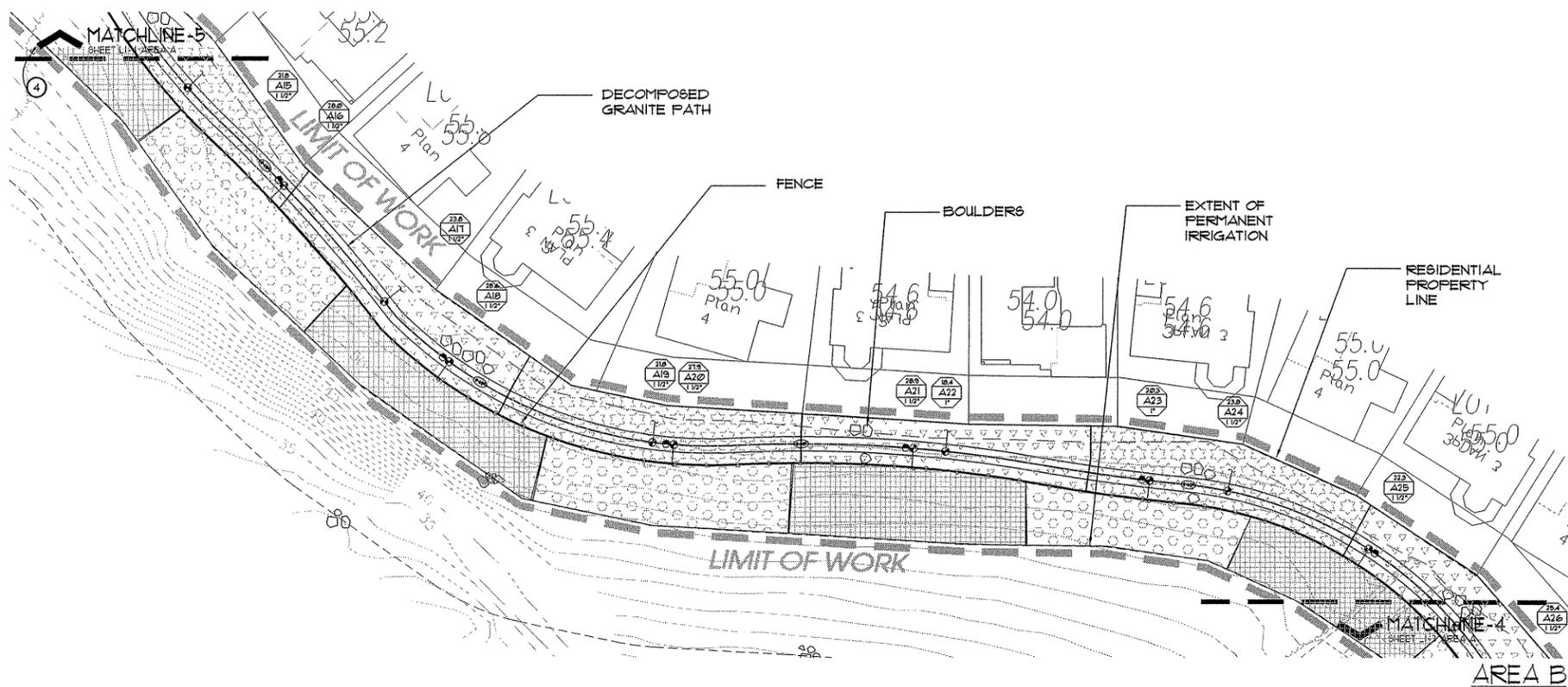
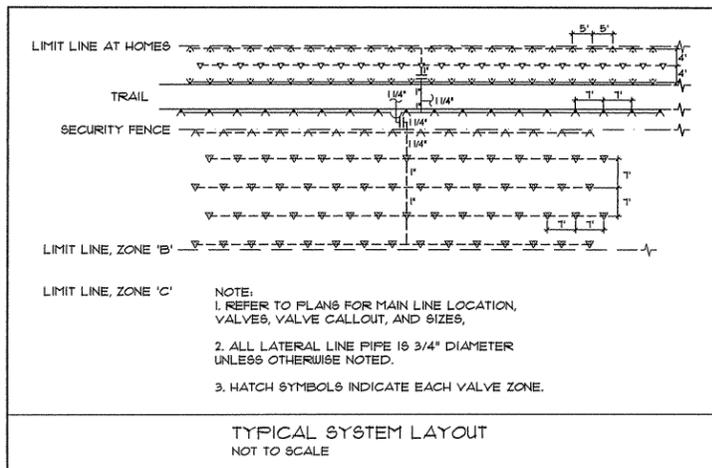
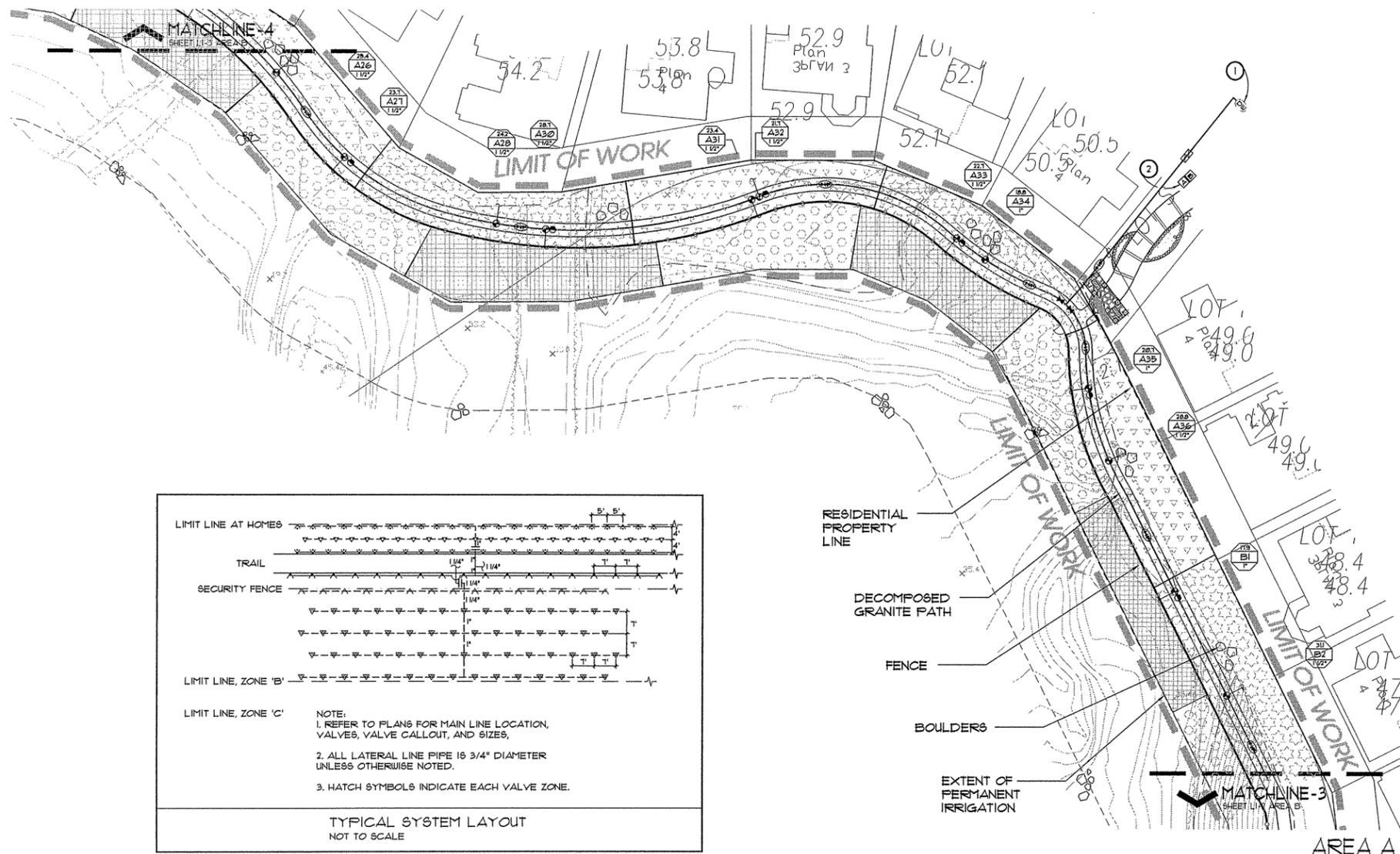
- PROVIDE AND INSTALL A 1 1/2" DOMESTIC WATER METER PER CITY OF HUNTINGTON BEACH STANDARDS. RUN A 2" PVC CLASS 315 MAIN LINE PIPE FROM THE WATER METER TO THE 2" BACKFLOW PREVENTION DEVICE THEN TO THE SYSTEM AS NOTED ON THE DRAWINGS. FINAL LOCATION OF THE BACKFLOW PREVENTION DEVICE SHALL BE APPROVED BY THE OWNER'S AUTHORIZED REPRESENTATIVE. THE SYSTEM HAS BEEN DESIGNED FOR A MAXIMUM FLOW OF 100 GPM AT A MINIMUM OPERATING PRESSURE OF --- PSI.
- PROVIDE AND INSTALL ONE (1) UNITED GREEN TECH (UGT) MODEL NUMBER CA2-C63-40/40/RSB2/MRRA IN THE LOCATION APPROVED BY THE OWNER'S AUTHORIZED REPRESENTATIVE. 120VAC POWER PROVIDED AND INSTALLED BY OTHERS. THE CONTRACTOR SHALL COORDINATE THE POWER FROM THE SOURCE TO THE CONTROLLER AND MAKE THE FINAL HOOK-UP. THE LANDSCAPE CONTRACTOR SHALL CONNECT ALL LOW VOLTAGE CONTROL WIRES TO THE CONTROLLER TERMINAL STRIP IN THE SEQUENCE NOTED ON THE DRAWINGS.
- PROVIDE AND INSTALL A 2" DOMESTIC WATER METER PER THE CITY OF HUNTINGTON BEACH STANDARDS. RUN A 2" PVC CLASS 315 MAIN LINE PIPE FROM THE WATER METER TO THE 2" BACKFLOW PREVENTION DEVICE. STUB AND CAP THE MAIN LINE PIPE FOR FUTURE USE BY OTHERS. BEYOND THE LIMIT LINE AS NOTED ON THE DRAWINGS. FINAL LOCATION OF THE BACKFLOW PREVENTION DEVICE SHALL BE APPROVED BY THE OWNER'S AUTHORIZED REPRESENTATIVE. THE SYSTEM HAS THE CAPACITY TO DELIVER 100 GPM AT --- PSI.
- PROVIDE A 2 1/2" STUB OUT FOR THE FUTURE IRRIGATION SYSTEM BY OTHERS.

NOTES:

- THE HATCHED AREAS REFERENCED IN THESE IRRIGATION PLANS REPRESENT DIFFERENT VALVE ZONES.
- PERMANENT IRRIGATION IS LOCATED WITHIN THE FIRST 50' FROM THE RESIDENTIAL PROPERTY LINE.

TEMPORARY IRRIGATION NOTE:

TEMPORARY IRRIGATION IS REQUIRED FOR ESTABLISHMENT OF PLANT MATERIAL IN ZONES C. IRRIGATION PIPE, TAN IN COLOR, SHALL BE INSTALLED ON-GRADE WITH ROTORS AND THE LAYOUT SHALL BE DESIGNED TO PROVIDE HEAD TO HEAD COVERAGE THROUGHOUT THE PLANTED AREAS. THE TEMPORARY IRRIGATION SYSTEM SHALL BE SHUT OFF AT THE END OF THE 5 YEAR MAINTENANCE PERIOD OR WHEN THE PLANT MATERIAL HAS BEEN ESTABLISHED. WHEN THE IRRIGATION SYSTEM IS NO LONGER REQUIRED, THE SYSTEM SHALL BE DISCONNECTED AND REMOVED.



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Key Map:

PRELIMINARY
 NOT FOR CONSTRUCTION



Client:
Hearthside Homes
 6 Executive Circle
 Suite 250, Irvine, CA

Project:
Brightwater

County of Orange
 Huntington Beach, CA

Revisions:

Sheet Info:

Drawn By: BM
 Checked By: CSM, MS
 Scale: 1"=30'
 Date: December 08, 2005
 Job No.: 0754.021

Sheet Title:

IRRIGATION LAYOUT

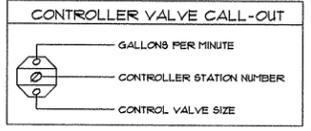
Sheet Reference:

LI-4
 Sheet: 12 of 14

IRRIGATION LEGEND (brightwater):

SYMBOL	MANUFACTURER	MODEL NUMBER	DESCRIPTION	RAD.	P.S.L.	G.P.M.	DETAIL
▽	AGRIFIM	HYP-5020	9" POP-UP RISER WITH BOUSHMITH FAN-JET NOZZLE (BLACK)	6"	30	0.12	A
▽	AGRIFIM	HYP-5020	9" POP-UP RISER WITH BOUSHMITH FAN-JET NOZZLE (BLUE)	6"	30	0.21	A
▽	AGRIFIM	CMAP-12	12" RISER ASSEMBLY W/ 1/2" MIPT INLET WITH BOUSHMITH FAN-JET NOZZLE (BLACK)	6"	30	0.12	B
▽	AGRIFIM	CMAP-12	12" RISER ASSEMBLY W/ 1/2" MIPT INLET WITH BOUSHMITH FAN-JET NOZZLE (ORANGE)	6"	30	0.11	B
▽	AGRIFIM	CMAP-12	12" RISER ASSEMBLY W/ 1/2" MIPT INLET WITH BOUSHMITH FAN-JET NOZZLE (BLACK)	6"	30	0.12	B
▽	AGRIFIM	CMAP-12	12" RISER ASSEMBLY W/ 1/2" MIPT INLET WITH BOUSHMITH FAN-JET NOZZLE (VIOLET)	6"	30	0.28	B
○	RAIN BIRD	FESB-FRS SERIES	ELECTRIC CONTROL VALVE				C
○	RAINBIRD	33DLRC	QUICK COUPLING VALVE				D
○	NIBCO	T-590-Y	ISOLATION BALL VALVE				E
○	EXISTING		DOMESTIC WATER METER PROVIDED FOR AND INSTALLED BY OTHERS. FOR SIZE AND FLOWS, REFER TO POC SCHEDULE THIS SHEET				---
□	FEBCO	825YA	BACKFLOW PREVENTION DEVICE FOR SIZE, REFER TO POC SCHEDULE THIS SHEET				F
□	UGT		UNITED GREEN TECH CONTROLLER ASSEMBLY. REFER TO THE CONTROLLER SCHEDULE, THIS SHEET, FOR MODEL NUMBER AND SIZE.				G 4 H
—	APPROVED	PVC SCH 40	IRRIGATION WIRE CONDUIT (SEE NOTES FOR SIZE)				I
—	APPROVED	PVC SCH 40	IRRIGATION SLEEVE (SEE NOTES FOR SIZE)				I
—	APPROVED	PVC CL200	LATERAL LINE PIPE (SIZE AS NOTED)				I 4 J
—	APPROVED	PVC 315	POTABLE SOURCE PRESSURE SUPPLY LINE FOR 2" DIAMETER AND LARGER				I 4 J
—	APPROVED	PVC SCH 40	POTABLE SOURCE PRESSURE SUPPLY LINE FOR 1 1/2" DIAMETER AND SMALLER				I 4 J
—	APPROVED	UVR-PVC SCH 40	LATERAL LINE PIPE ON GRADE (SIZE AS NOTED)				B
—	APPROVED	PVC SCH 40	TRANSITION COUPLING FROM BURIED PIPE TO ON-GRADE PIPE				---

NOTE: INSTALL ALL SPRINKLERS ON RISER NEXT TO FENCES AND WALLS A MINIMUM OF SIX (6) INCHES AWAY FROM THE STRUCTURE.

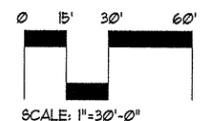
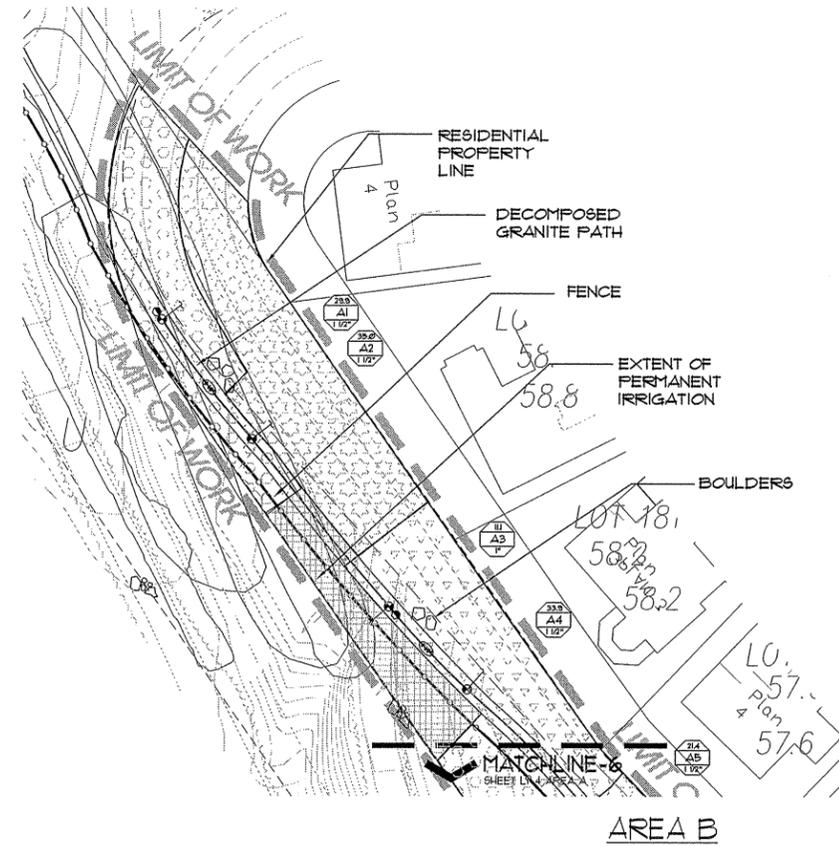
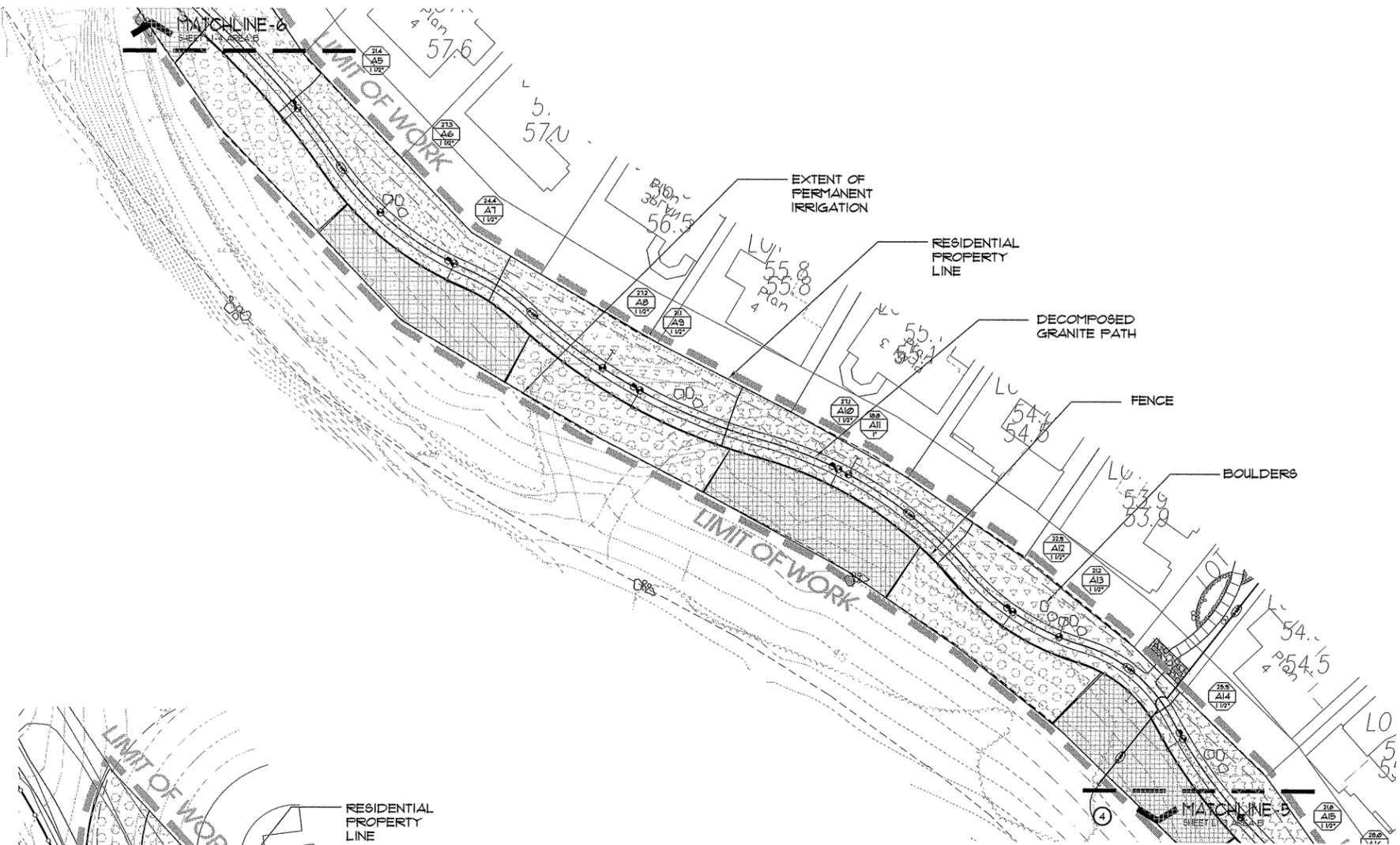
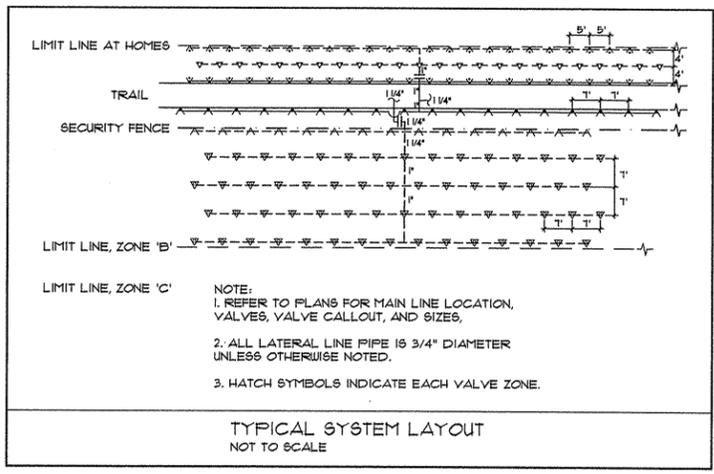


IRRIGATION CONSTRUCTION NOTES:

- PROVIDE AND INSTALL A 1 1/2" DOMESTIC WATER METER PER CITY OF HUNTINGTON BEACH STANDARDS. RUN A 2 1/2" PVC CLASS 315 MAIN LINE PIPE FROM THE WATER METER TO THE 1 1/2" BACKFLOW PREVENTION DEVICE THEN TO THE SYSTEM AS NOTED ON THE DRAWINGS. FINAL LOCATION OF THE BACKFLOW PREVENTION DEVICE SHALL BE APPROVED BY THE OWNER'S AUTHORIZED REPRESENTATIVE. THE SYSTEM HAS BEEN DESIGNED FOR A MAXIMUM FLOW OF 10.0 GPM AT A MINIMUM OPERATING PRESSURE OF --- PSI.
- PROVIDE AND INSTALL ONE (1) UNITED GREEN TECH (UGT) MODEL NUMBER CA2-C93-40/40/RSE2/ARRA IN THE LOCATION APPROVED BY THE OWNER'S AUTHORIZED REPRESENTATIVE. 120VAC POWER PROVIDED AND INSTALLED BY OTHERS. THE CONTRACTOR SHALL COORDINATE THE POWER FROM THE SOURCE TO THE CONTROLLER AND MAKE THE FINAL WIRE-HOOK-UP. THE LANDSCAPE CONTRACTOR SHALL CONNECT ALL LOW VOLTAGE CONTROL WIRES TO THE CONTROLLER TERMINAL STRIP IN THE SEQUENCE NOTED ON THE DRAWINGS.
- PROVIDE AND INSTALL A 2" DOMESTIC WATER METER PER THE CITY OF HUNTINGTON BEACH STANDARDS. RUN A 2 1/2" PVC CLASS 200 MAIN LINE PIPE FROM THE WATER METER TO THE 2" BACKFLOW PREVENTION DEVICE. STUB AND CAP THE MAIN LINE PIPE FOR FUTURE USE BY OTHERS. BEYOND THE LIMIT LINE AS NOTED ON THE DRAWINGS. FINAL LOCATION OF THE BACKFLOW PREVENTION DEVICE SHALL BE APPROVED BY THE OWNER'S AUTHORIZED REPRESENTATIVE. THE SYSTEM HAS THE CAPACITY TO DELIVER 150 GPM AT --- PSI.
- PROVIDE A 2 1/2" STUB OUT FOR THE FUTURE IRRIGATION SYSTEM BY OTHERS.

NOTES:
 1. THE HATCHED AREAS REFERENCED IN THESE IRRIGATION PLANS REPRESENT DIFFERENT VALVE ZONES.
 2. PERMANENT IRRIGATION IS LOCATED WITHIN THE FIRST 50' FROM THE RESIDENTIAL PROPERTY LINE.

TEMPORARY IRRIGATION NOTE:
 TEMPORARY IRRIGATION IS REQUIRED FOR ESTABLISHMENT OF PLANT MATERIAL IN ZONES C. IRRIGATION PIPE, TAN IN COLOR, SHALL BE INSTALLED ON-GRADE WITH ROTORS AND THE LAYOUT SHALL BE DESIGNED TO PROVIDE HEAD TO HEAD COVERAGE THROUGHOUT THE PLANTED AREAS. THE TEMPORARY IRRIGATION SYSTEM SHALL BE SHUT OFF AT THE END OF THE 5 YEAR MAINTENANCE PERIOD OR WHEN THE PLANT MATERIAL HAS BEEN ESTABLISHED. WHEN THE IRRIGATION SYSTEM IS NO LONGER REQUIRED, THE SYSTEM SHALL BE DISCONNECTED AND REMOVED.



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Key Map:

PRELIMINARY
 NOT FOR CONSTRUCTION



Client:
Hearthside Homes
 6 Executive Circle
 Suite 250, Irvine, CA

Project:
Brightwater

County of Orange
 Huntington Beach, CA

Revisions:

Sheet Info:

Drawn By: BM
 Checked By: CSM, MS
 Scale: N/A
 Date: December 08, 2005
 Job No.: 0754.021

Sheet Title:

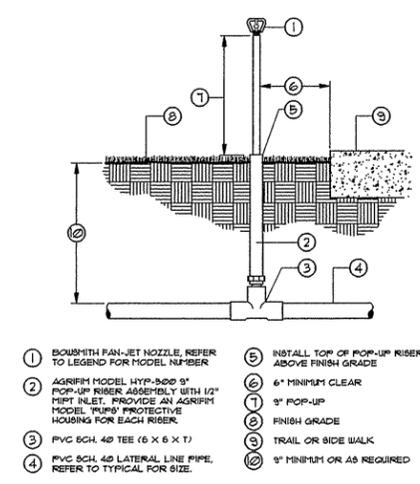
IRRIGATION
 DETAILS

Sheet Reference:
LID-1

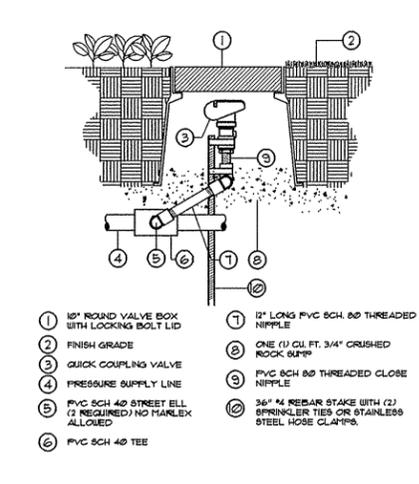
Sheet: **13** of **14**



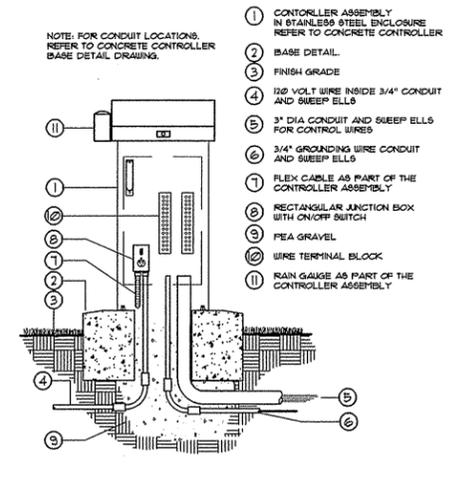
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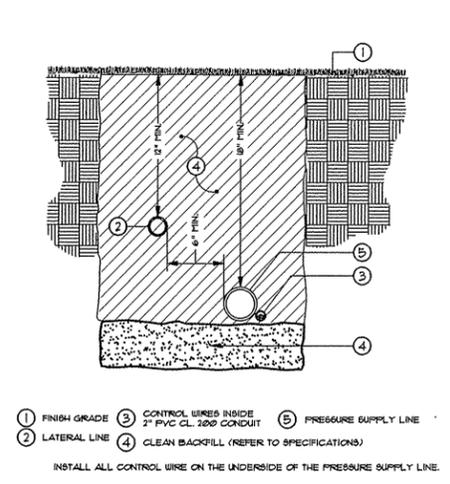
(A) FAN-JET NOZZLE ON POP-UP RISER



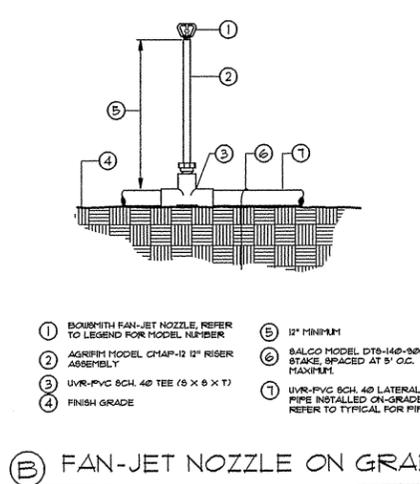
(D) QUICK COUPLING VALVE



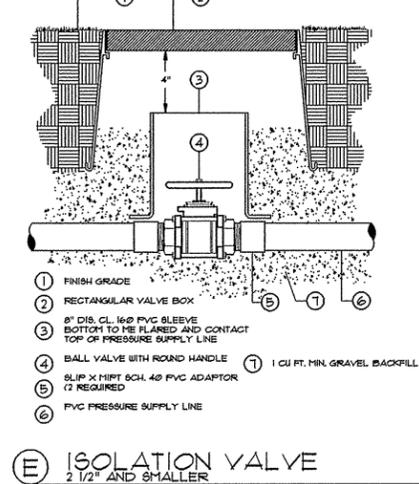
(G) CONTROLLER ASSEMBLY



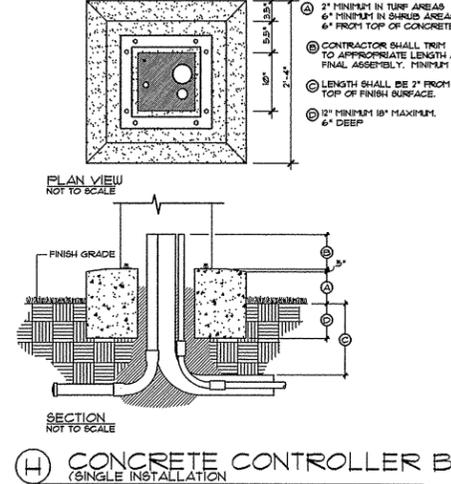
(J) TRENCHING IN LANDSCAPE AREAS



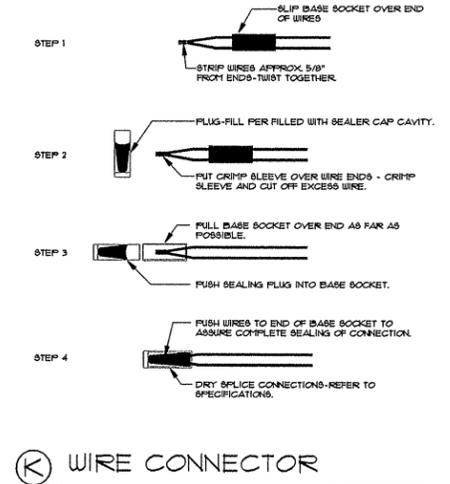
(B) FAN-JET NOZZLE ON GRADE



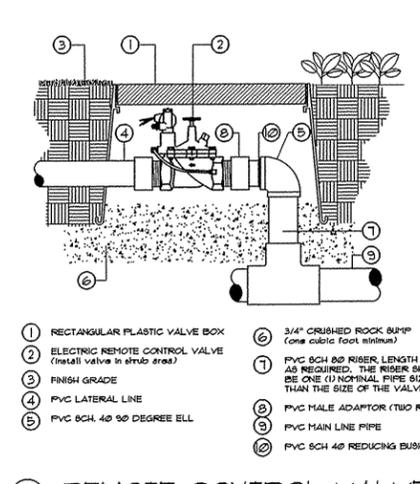
(E) ISOLATION VALVE 2 1/2" AND SMALLER



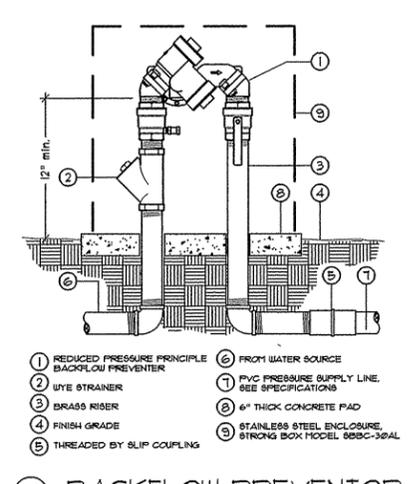
(H) CONCRETE CONTROLLER BASE (SINGLE INSTALLATION)



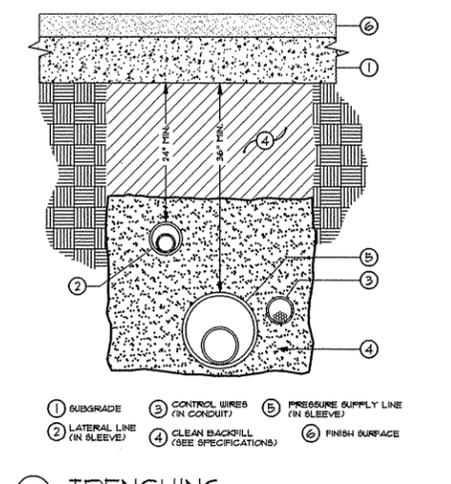
(K) WIRE CONNECTOR



(C) REMOTE CONTROL VALVE



(F) BACKFLOW PREVENTOR RIP TYPE (3/4" - 2") IN ENCLOSURE



(I) TRENCHING UNDER HARDSCAPE

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GENERAL IRRIGATION NOTES

- ALL CITY AND STATE LAWS, RULES AND REGULATION GOVERNING OR RELATING TO ANY PORTION OF THIS WORK ARE HEREBY INCORPORATED INTO AND MADE A PART OF THESE SPECIFICATIONS AND THEIR PROVISIONS SHALL BE CARRIED OUT BY THE CONTRACTOR.
- IT IS THE RESPONSIBILITY OF THE IRRIGATION CONTRACTOR TO FAMILIARIZE HIMSELF WITH ALL GRADE DIFFERENCES, LOCATION OF WALLS, RETAINING WALLS, STRUCTURES AND UTILITIES. THE IRRIGATION CONTRACTOR SHALL REPAIR OR REPLACE ALL ITEMS DAMAGED BY HIS WORK AT NO EXPENSE TO THE OWNER. HE SHALL COORDINATE HIS WORK WITH OTHER CONTRACTORS FOR THE LOCATION AND INSTALLATION OF PIPE SLEEVES AND LATERAL LINES THROUGH WALLS, UNDER ROADWAYS, DRIVES, AND PAVING, ETC.
- THE CONTRACTOR SHALL OBTAIN THE PERTINENT ENGINEERING OR ARCHITECTURAL PLANS BEFORE BEGINNING WORK.
- THE CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS REQUIRED TO PERFORM THE WORK INDICATED HEREIN BEFORE BEGINNING WORK.
- THIS DESIGN IS DIAGRAMMATIC. ALL PIPING, VALVES, ETC., SHOWN WITHIN PAVED AREAS IS FOR DESIGN CLARIFICATION ONLY AND SHALL BE INSTALLED IN PLANTING AREAS WHEREVER POSSIBLE. THE MAIN LINE PIPE SHALL BE INSTALLED AND ROUTED TO AVOID UNFORESEEN BELOW GRADE CONDITIONS. THE CONTRACTOR SHALL LOCATE ALL VALVES IN SHRUB AREAS UNLESS OTHERWISE DIRECTED BY THE OWNER'S REPRESENTATIVE.
- THE SPRINKLER SYSTEM DESIGN IS BASED ON THE MINIMUM OPERATING PRESSURE AND THE MAXIMUM FLOW DEMAND SHOWN ON THE IRRIGATION DRAWINGS AT EACH POINT OF CONNECTION. THE IRRIGATION CONTRACTOR SHALL VERIFY WATER PRESSURE PRIOR TO EACH CONSTRUCTION. REPORT ANY DIFFERENCE BETWEEN THE WATER PRESSURE INDICATED ON THE DRAWINGS AND THE ACTUAL PRESSURE READING AT THE IRRIGATION POINT OF CONNECTION TO THE OWNER'S AUTHORIZED REPRESENTATIVE. IN THE EVENT PRESSURE DIFFERENCES ARE NOT REPORTED PRIOR TO THE START OF CONSTRUCTION, THE IRRIGATION CONTRACTOR SHALL ASSUME FULL RESPONSIBILITY FOR ANY REVISION NECESSARY.
- DO NOT WILLFULLY INSTALL THE SPRINKLER SYSTEM AS SHOWN ON THE DRAWINGS WHEN IT IS OBVIOUS IN THE FIELD THAT UNKNOWN OBSTRUCTIONS, GRADE DIFFERENCES OR DIFFERENCES IN THE AREA DIMENSIONS EXIST THAT MIGHT NOT HAVE BEEN CONSIDERED IN THE ENGINEERING. SUCH OBSTRUCTIONS OR DIFFERENCES SHOULD IMMEDIATELY BE BROUGHT TO THE ATTENTION OF THE OWNER'S AUTHORIZED REPRESENTATIVE. IN THE EVENT THIS NOTIFICATION IS NOT PERFORMED, THE IRRIGATION CONTRACTOR SHALL ASSUME FULL RESPONSIBILITY FOR ANY REVISIONS NECESSARY.
- ALL SPRINKLER HEADS SHALL BE SET PERPENDICULAR TO FINISH GRADE UNLESS OTHERWISE SPECIFIED.
- THE IRRIGATION CONTRACTOR SHALL FLUSH AND ADJUST ALL SPRINKLER HEADS AND VALVES FOR OPTIMUM COVERAGE AND TO PREVENT OVER SPRAY ONTO WALKS, STREETS, WALLS, ETC. THIS SHALL INCLUDE USE OF RAIN-BIRD PRESSURE COMPENSATING SCREENS "PCS", SELECTING THE BEST DEGREE OF ARC TO FIT THE EXISTING SITE CONDITIONS AND TO THROTTLE THE FLOW CONTROL AT EACH REMOTE CONTROL VALVE TO OBTAIN THE OPTIMUM OPERATING PRESSURE FOR EACH SYSTEM.
- 120 VAC POWER SOURCE FOR THE CONTROLLER SHALL BE PROVIDED UNDER THE ELECTRICAL SECTION OF THE SPECIFICATIONS. IT SHALL BE THE RESPONSIBILITY OF THE IRRIGATION CONTRACTOR TO COORDINATE ELECTRICAL SERVICE WITH THE GENERAL CONTRACTOR AND SHALL MAKE THE FINAL CONNECTION FROM THE ELECTRICAL SOURCE TO THE CONTROLLER.
- ALL MAIN LINE PIPING AND CONTROL WIRES UNDER PAVING SHALL BE INSTALLED IN SEPARATE SLEEVES. MAIN LINE SLEEVE SIZE SHALL BE A MINIMUM OF TWICE (2X) THE DIAMETER OF THE PIPE TO BE SLEEVED. CONTROL WIRE SLEEVES SHALL BE OF SUFFICIENT SIZE FOR THE REQUIRED NUMBER OF WIRES UNDER PAVING. IN ADDITION TO THE CONTROL WIRE SLEEVES SHOWN ON THE DRAWINGS, THE IRRIGATION CONTRACTOR SHALL BE RESPONSIBLE FOR THE INSTALLATION OF CONTROL WIRE SLEEVES OF SUFFICIENT SIZE UNDER ALL PAVED AREAS.
- ALL LATERAL LINE PIPING UNDER PAVING WITHOUT A SLEEVE SHALL BE PVC SCHEDULE 40 PIPE AND SHALL BE INSTALLED PRIOR TO PAVING.
- PIPE SIZES SHALL CONFORM TO THOSE SHOWN ON THE DRAWINGS. NO SUBSTITUTIONS OF SMALLER PIPE SHALL BE PERMITTED BUT SUBSTITUTIONS OF LARGER SIZES MAY BE APPROVED. ALL DAMAGED AND REJECTED PIPE SHALL BE REMOVED FROM THE SITE AT THE TIME OF SAID REJECTION.
- FINAL LOCATION OF THE AUTOMATIC CONTROLLER LOCATION SHALL BE APPROVED BY THE OWNER'S AUTHORIZED REPRESENTATIVE.
- ALL POP-UP TYPE SPRINKLER HEADS INSTALLED IN SHRUB AND GROUND COVER AREAS SHALL BE INSTALLED SO THAT THE TOP OF THE SPRINKLER HEAD IS 1-INCH ABOVE FINISH GRADE.
- ALL POP-UP TYPE SPRINKLER HEADS INSTALLED IN LAWN AREAS SHALL BE INSTALLED SO THAT THE TOP OF THE SPRINKLER HEADS ARE FLUSH WITH ADJACENT SIDEWALK OR CURB.
- AFTER RECEIVING NOTIFICATION BY THE OWNER'S AUTHORIZED REPRESENTATIVE, THE IRRIGATION CONTRACTOR WITHIN TEN (10) DAYS SHALL ADJUST ALL LAWN HEADS SO THAT THE TOP OF THE SPRINKLER HEAD IS 1/4-INCH ABOVE FINISH GRADE.
- ALL EQUIPMENT INSTALLED IN VALVE BOXES SHALL BE INSTALLED PER DETAIL DRAWINGS WITHOUT CUTTING SIDE WALLS OF THE VALVE BOX. CUT VALVE BOXES WILL BE REPLACED WITH NEW VALVE BOXES AS INSPECTED BY THE OWNER'S AUTHORIZED REPRESENTATIVE AT THE CONTRACTOR'S OWN EXPENSE.
- THE CONTRACTOR SHALL RUN THREE (3) SPARE WIRES AND ONE (1) COMMON WIRE FROM THE CONTROLLER TO EACH END OF THE MAIN LINE. HE SHALL EXTEND THE GROUPING OF WIRE 10', MAKING A COIL TO FIT INSIDE A RECTANGULAR PULL BOX. LABEL THE LID OF THE PULL BOX 'SW'.
- ALL SPRINKLER EQUIPMENT NOT OTHERWISE DETAILED OR SPECIFIED SHALL BE INSTALLED AS PER MANUFACTURER'S RECOMMENDATIONS AND SPECIFICATIONS.
- ADV. (ANTI DRAIN VALVE) UNITS AS SHOWN IN THE DETAIL DRAWINGS ARE FOR TYPICAL INSTALLATION ONLY, AND MAY NOT BE REQUIRED ON ALL HEADS. PRIOR TO INSTALLATION THE CONTRACTOR SHALL VERIFY WITH THE ON SITE GRADES IF THERE IS AN ELEVATION DIFFERENCE OF 24" OR MORE BETWEEN THE HIGHEST HEAD AND LOWEST HEAD ON A SYSTEM, THE ADV. SHALL BE INSTALLED PER DETAIL DRAWING.
- THE CONTRACTOR SHALL ALLOW FOR A ASSORTMENT OF VARIABLE ADJUSTABLE NOZZLES (VAN) TO BE INSTALLED IN AREAS WHERE STANDARD PATTERN NOZZLES ARE NOT APPLICABLE.
- REFER TO SPECIFICATIONS FOR ADDITIONAL DETAILED INFORMATION.
- "HEAT BRAND" THE TOPS OF THE VALVE BOX LIDS WITH THE APPROPRIATE IDENTIFICATION. REFER TO THE IRRIGATION SPECIFICATIONS.
- TREE LOCATIONS TAKE PRIORITY OVER IRRIGATION PIPING. STAKE TREE LOCATIONS PRIOR TO TRENCHING FOR PIPE.

IRRIGATION CRITERIA:

UNLESS OTHERWISE NOTED, SUPPLEMENTAL IRRIGATION IS TO BE USED SOLELY FOR THE PURPOSE OF ESTABLISHING THE PLANTS AT THE CREATION SITE AND IS OF A TEMPORARY NATURE. THE GOAL OF THE IRRIGATION PROGRAM IS TO OBTAIN GERMINATION AND GROWTH WITH THE LEAST AMOUNT OF IRRIGATION. FREQUENT IRRIGATION ENCOURAGES WEED INVASION AND LEACHES NUTRIENTS FROM THE SOIL. ALL IRRIGATION, BOTH TEMPORARY AND PERMANENT, SHALL BE PROHIBITED IN WETLANDS AND EUCALYPTUS ESHA, BURROWING GULLS ESHA, AND SOUTHERN TARPLANT ESHA, EXCEPT WHERE EXPLICITLY PERMITTED BY THE EXECUTIVE DIRECTOR OF THE CALIFORNIA COASTAL COMMISSION.

THE PORTION OF THE CREATION SITE LOCATED WITHIN ZONE 'B' SHALL BE SUPPORTED BY A PERMANENT DRIP IRRIGATION SYSTEM. THE REMAINING PORTIONS OF THE CREATION SITE WILL INITIALLY BE SUPPORTED BY A SHORT-TERM AUTOMATIC IRRIGATION SYSTEM. THE CONTAINER STOCK WILL BE IRRIGATED AS LONG AS NECESSARY TO ESTABLISH THE ROOT SYSTEMS IN THE NATIVE SOILS, PROBABLY TWO OR THREE SUMMERS. THE MAIN LINE AND ALL LATERAL LINES WILL BE INSTALLED ABOVE-GRADE FOR EASE OF REMOVAL AND INSPECTION, AND SHALL BE REMOVED AFTER THE RESTORATION IS DEEMED SUCCESSFUL PURSUANT TO THE BRIGHTWATER HABITAT MANAGEMENT PLAN APPROVED BY THE CALIFORNIA COASTAL COMMISSION.

THE CRITICAL PERIOD FOR IRRIGATION IS DURING THE FIRST WINTER AND EARLY SPRING FOLLOWING PLANTING. DURING THIS TIME, ROOTS ARE NOT WELL ESTABLISHED AND AN UNSEASONABLE DROUGHT CAN CAUSE HIGH MORTALITY. DURING DRY PERIODS AFTER PLANT INSTALLATION, THE PROJECT BIOLOGIST AND THE MAINTENANCE CONTRACTOR WILL REGULARLY INSPECT SOIL MOISTURE. WATERING DURING THE SUMMER DRY SEASON WILL OCCUR AS FREQUENTLY AS REQUIRED.

AFTER THE INITIAL PLANT ESTABLISHMENT PERIOD, WATER WILL BE APPLIED INFREQUENTLY AND ONLY AS REQUIRED TO PREVENT THE MORTALITY OF PLANTS AND SEEDLINGS. THE IRRIGATION METHODS EMPLOYED WILL ATTEMPT TO MIMIC WET RAINFALL YEARS BY INCORPORATING EVENLY SPACED, INFREQUENT, DEEP APPLICATIONS OF WATER.

WHEN THE PLANTINGS ARE SUFFICIENTLY ESTABLISHED AND NO LONGER REQUIRE SUPPLEMENTAL IRRIGATION, THE PROJECT BIOLOGIST SHALL NOTIFY THE LANDSCAPE CONTRACTOR TO REMOVE ALL ABOVE-GRADE IRRIGATION SYSTEM COMPONENTS FROM THE CREATION SITE.

IRRIGATION WATER VOLUME FREQUENCY:

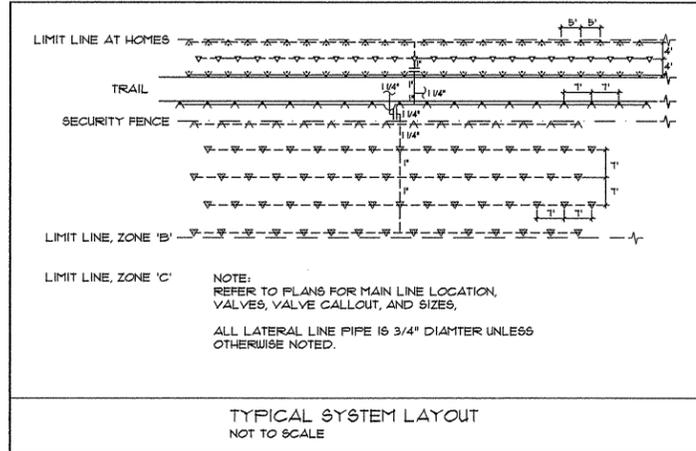
THE CONTRACTOR SHALL BE RESPONSIBLE FOR APPLYING SUFFICIENT IRRIGATION WATER TO ADEQUATELY ESTABLISH NEW PLANT MATERIALS, AND GERMINATE AND ESTABLISH THE APPLIED SEED. IRRIGATION WATER SHALL BE APPLIED IN SUCH A WAY AS TO ENCOURAGE DEEP ROOT GROWTH (PERIODIC DEEP IRRIGATION VERSUS FREQUENT LIGHT IRRIGATION). THE CONTRACTOR WILL ALLOW SOIL TO DRY DOWN TO APPROXIMATELY 50 TO 60 PERCENT OF FIELED CAPACITY (IN THE TOP SIX OR TEN INCHES AG-FTER GERMINATION AND DURING SEEDLING ESTABLISHMENT) BEFORE THE NEXT IRRIGATION CYCLE. WETTING OF THE FULL ROOT ZONE AND DRYING OF THE SOIL BETWEEN IRRIGATION EVENTS IS ESSENTIAL TO THE MAINTENANCE OF THE PLANTS AND THE PROMOTION OF A DEEP ROOT ZONE THAT WILL SUPPORT THE VEGETATION IN THE YEARS AFTER ESTABLISHMENT. SYSTEMS MAY NEED TO BE ON FOR AS LONG AS SIX TO EIGHT HOURS AT A TIME IN ORDER TO GET COMPLETE WATER PENETRATION TO THE LOWER SOIL HORIZONS TO ENCOURAGE DEEP ROOT GROWTH. A SOIL PROBE OR SHOVEL SHALL BE USED TO EXAMINE SOIL MOISTURE AND ROOTING DEPTH DIRECTLY.

GENERAL MAINTENANCE OF IRRIGATION SYSTEM:

THE CONTRACTOR WILL BE RESPONSIBLE FOR THE RESPONSIBLE FOR THE REGULAR MAINTENANCE AND REPAIR OF ALL ASPECTS OF THE IRRIGATION SYSTEM. POORLY FUNCTIONING OR NON-FUNCTIONING PART SHALL BE REPLACED IMMEDIATELY SO AS TO NOT ENDANGER THE PLANTING.

GENERAL SYSTEM CHECKS SHALL BE CONDUCTED NO LESS THAN WEEKLY FOR THE FIRST MONTH AFTER INSTALLATION TO ASSURE THE SYSTEM IS FUNCTIONING CORRECTLY, AND MONTHLY THEREAFTER, EXCEPT DURING PERIODS WHEN THE IRRIGATION SYSTEM IS NOT IN OPERATION AS RECOMMENDED BY THE PROJECT BIOLOGIST/RESTORATION SPECIALIST.

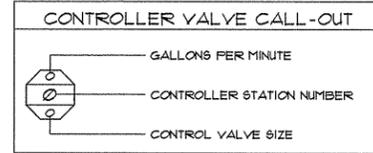
THE CONTRACTOR, AT HIS/HER EXPENSE, SHALL REPAIR ANY EROSION SLIPPAGE OF SOIL CAUSED BY THE CONTRACTOR'S INADEQUATE MAINTENANCE OR OPERATION OF IRRIGATION FACILITIES.



IRRIGATION LEGEND (brightwater):

SYMBOL:	MANUFACTURER:	MODEL NUMBER:	DESCRIPTION:	RAD.:	P.S.I.:	G.P.M.:	DETAIL:
∇	AGRIFIM	HYF-500	3" POP-UP RISER WITH BOUSHMITH FAN-JET NOZZLE (BLACK)	6'	30	0.12	A
∇	AGRIFIM	HYF-500	3" POP-UP RISER WITH BOUSHMITH FAN-JET NOZZLE (BLUE)	6'	30	0.21	A
∇	AGRIFIM	CMAP-12	12" RISER ASSEMBLY W/ 1/2" MIPT INLET WITH BOUSHMITH FAN-JET NOZZLE (BLACK)	6'	30	0.12	B
∇	AGRIFIM	CMAP-12	12" RISER ASSEMBLY W/ 1/2" MIPT INLET WITH BOUSHMITH FAN-JET NOZZLE (BLUE)	6'	30	0.11	B
∇	AGRIFIM	CMAP-12	12" RISER ASSEMBLY W/ 1/2" MIPT INLET WITH BOUSHMITH FAN-JET NOZZLE (VIOLET)	6'	30	0.12	B
∇	AGRIFIM	CMAP-12	12" RISER ASSEMBLY W/ 1/2" MIPT INLET WITH BOUSHMITH FAN-JET NOZZLE (VIOLET)	6'	30	0.28	B
⊕	RAIN BIRD	FESB-FRS SERIES	ELECTRIC CONTROL VALVE				C
⊕	RAINBIRD	33DLRC	QUICK COUPLING VALVE				D
⊕	NIBCO	T-530-Y	ISOLATION BALL VALVE				E
⊕	EXISTING		DOMESTIC WATER METER PROVIDED FOR AND INSTALLED BY OTHERS, FOR SIZE AND FLOW, REFER TO POC SCHEDULE THIS SHEET				---
⊕	FEBCO	825YA	BACKFLOW PREVENTION DEVICE FOR SIZE, REFER TO POC SCHEDULE THIS SHEET				F
⊕	UGT	UNITED GREEN TECH	CONTROLLER ASSEMBLY. REFER TO THE CONTROLLER SCHEDULE, THIS SHEET, FOR MODEL NUMBER AND SIZE.				G 4 H
---	APPROVED	FVC SCH 40	IRRIGATION WIRE CONDUIT (SEE NOTES FOR SIZE)				I
---	APPROVED	FVC SCH 40	IRRIGATION SLEEVE (SEE NOTES FOR SIZE)				I
---	APPROVED	FVC CL200	LATERAL LINE PIPE (SIZE AS NOTED)				I 4 J
---	APPROVED	FVC 315	POTABLE SOURCE PRESSURE SUPPLY LINE FOR 2" DIAMETER AND LARGER				I 4 J
---	APPROVED	FVC SCH 40	POTABLE SOURCE PRESSURE SUPPLY LINE FOR 1 1/2" DIAMETER AND SMALLER				I 4 J
---	APPROVED	UVR-FVC SCH 40	LATERAL LINE PIPE ON GRADE (SIZE AS NOTED)				B
---	APPROVED	FVC SCH 40	TRANSITION COUPLING FROM BURIED PIPE TO ON-GRADE PIPE				---

NOTE: INSTALL ALL SPRINKLERS ON RISER NEXT TO FENCES AND WALLS A MINIMUM OF SIX (6) INCHES AWAY FROM THE STRUCTURE.



IRRIGATION CONSTRUCTION NOTES:

- PROVIDE AND INSTALL A 1 1/2" DOMESTIC WATER METER PER CITY OF HUNTINGTON BEACH STANDARDS. RUN A 2 1/2" PVC CLASS 315 MAIN LINE PIPE FROM THE WATER METER TO THE 2 1/2" BACKFLOW PREVENTION DEVICE THEN TO THE SYSTEM AS NOTED ON THE DRAWINGS. FINAL LOCATION OF THE BACKFLOW PREVENTION DEVICE SHALL BE APPROVED BY THE OWNER'S AUTHORIZED REPRESENTATIVE. THE SYSTEM HAS BEEN DESIGNED FOR A MAXIMUM FLOW OF 100 GPM AT A MINIMUM OPERATING PRESSURE OF --- PSI.
- PROVIDE AND INSTALL ONE (1) UNITED GREEN TECH (UGT) MODEL NUMBER CA2-C83-40-40/RS2/ARRA IN THE LOCATION APPROVED BY THE OWNER'S AUTHORIZED REPRESENTATIVE. 120VAC POWER PROVIDED AND INSTALLED BY OTHERS. THE CONTRACTOR SHALL COORDINATE THE POWER FROM THE SOURCE TO THE CONTROLLER AND MAKE THE FINAL HOOK-UP. THE LANDSCAPE CONTRACTOR SHALL CONNECT ALL LOW VOLTAGE CONTROL WIRES TO THE CONTROLLER TERMINAL STRIP IN THE SEQUENCE NOTED ON THE DRAWINGS.
- PROVIDE AND INSTALL A 2" DOMESTIC WATER METER PER THE CITY OF HUNTINGTON BEACH STANDARDS. RUN A 2 1/2" PVC CLASS 200 MAIN LINE PIPE FROM THE WATER METER TO THE 2" BACKFLOW PREVENTION DEVICE. STUB AND CAP THE MAIN LINE PIPE, FOR FUTURE USE BY OTHERS, BEYOND THE LIMIT LINE AS NOTED ON THE DRAWINGS. FINAL LOCATION OF THE BACKFLOW PREVENTION DEVICE SHALL BE APPROVED BY THE OWNER'S AUTHORIZED REPRESENTATIVE. THE SYSTEM HAS THE CAPACITY TO DELIVER 150 GPM AT --- PSI.
- PROVIDE A 2 1/2" STUB OUT FOR THE FUTURE IRRIGATION SYSTEM BY OTHERS.



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Key Map:

**PRELIMINARY
NOT FOR CONSTRUCTION**



Client:
Hearthside Homes
6 Executive Circle
Suite 250, Irvine, CA

Project:
Brightwater

County of Orange
Huntington Beach, CA

Revisions:

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**IRRIGATION NOTES
AND LEGEND**

Sheet Reference:

LID-2
Sheet: 14 of 14



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